

# NOKIA

## 6225

RH-27



### Transceiver characteristics:

- High resolution color display (128x128 pixels)
- Integrated VGA Camera
- Integrated FM Radio
- User-changeable Xpress-on™ Front and Battery covers
- WAP 2.0 minibrowser
- 4-way scroll keys for easy navigation of Web sites.
- Universal Headset Jack to support non-Nokia headsets and TTY/TDD devices.
- GPS Technology
- 1900/800 MHz CDMA and 800 AMPS support

Transceiver with BLD-3 780mAh Li-Ion battery pack

System	Talk time	Standby	Note
CDMA (Digital)	Up to 2.4h	Up to 10 days	Depends on network parameters
Analog (AMPS)	Up to 50 min.	Up to 20h	

## SERVICE MANUAL

### Service Level 1&2

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**TABLE OF CONTENT**

	Page
1. INTRODUCTION.....	3
2. GENERAL REPAIR INFORMATION.....	4
3. PATHFINDER FOR WORKSHOP STAFF.....	5
4. EXPLODED VIEW AND COMPONENT DISPOSAL.....	6
5. SPARE PARTS LIST.....	7
6. SERVICE TOOLS.....	8
7. SW-UPDATE.....	10
8. DISASSEMBLY INSTRUCTIONS (ALSO SEE THE VIDEO CLIPS ON CARE POINT).....	11
9. LEGEND FOR QUICK TROUBLE SHOOTER.....	16
10. QUICK TROUBLE SHOOTER PART 1.....	17
11. QUICK TROUBLE SHOOTER PART 2.....	18
12. CAMERA GONOGO TEST.....	19
13. INFRARED TEST.....	20
14. GONOGO TEST.....	21
15. BATTERY TEST.....	22
16. FOR FORWARDING OF REPAIRS.....	23
17. ESD PROTECTION REQUIREMENTS.....	24

**CHANGE HISTORY**

Status	Version No.	Date	Comments
Draft	0.1	14.10.2004	Initial draft
Approved	1.0	22.10.2004	Approval

## 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. 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 Partner Web Site/Nokia Online. Also see ESD Protection Requirements in this Service Manual.

## 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 [www.nokia.com](http://www.nokia.com) -->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.
- 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 PWS/NOL - CarePoint, 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 Partner Web Site/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 Softwares Service Bulletins  
etc,...


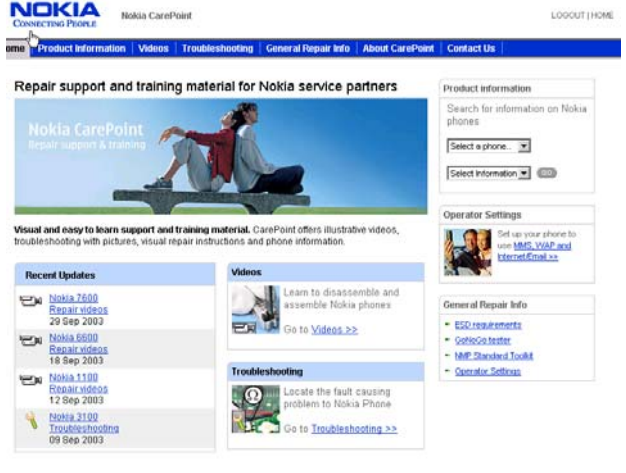
Use General SB-217 as a reference or overview.

Please also check Nokia Partner Web Site (PWS)/Nokia Online (NOL) for latest news and files on a regular basis.

### 3. PATHFINDER FOR WORKSHOP STAFF

In addition to the information in this Service Manual, there are several instructions and information, which have to be followed.

Main documentation database is Nokia [Partner Website](#) / [Nokia Online](#), which refers also to [Nokia Care Point](#) with the purpose of serving different multimedia content, like video clips or interactive tutorials.

Nokia Partner Web Site	Nokia Care Point (access through Partner Web Site)
<p>Nokia Partner Web Site for EMEA region is the most important document database for all service suppliers (level 1-4). All service relevant information like e.g. Service Manuals, Service Bulletins or general instructions are available. Content is restricted according your access level. To be kept up-to-date also concerning newest software updates, a daily check of "latest updates in support library" is needed.</p>	<p>Nokia Care Point is repair support and training channel for Nokia service suppliers (mainly for service levels 1 and 2). By providing visual and easy to learn support and training material, such as illustrative repair videos, troubleshooting with pictures, product information and general repair information, Nokia Care Point offers user-friendly channel for service suppliers to learn technical issues.</p>
	

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

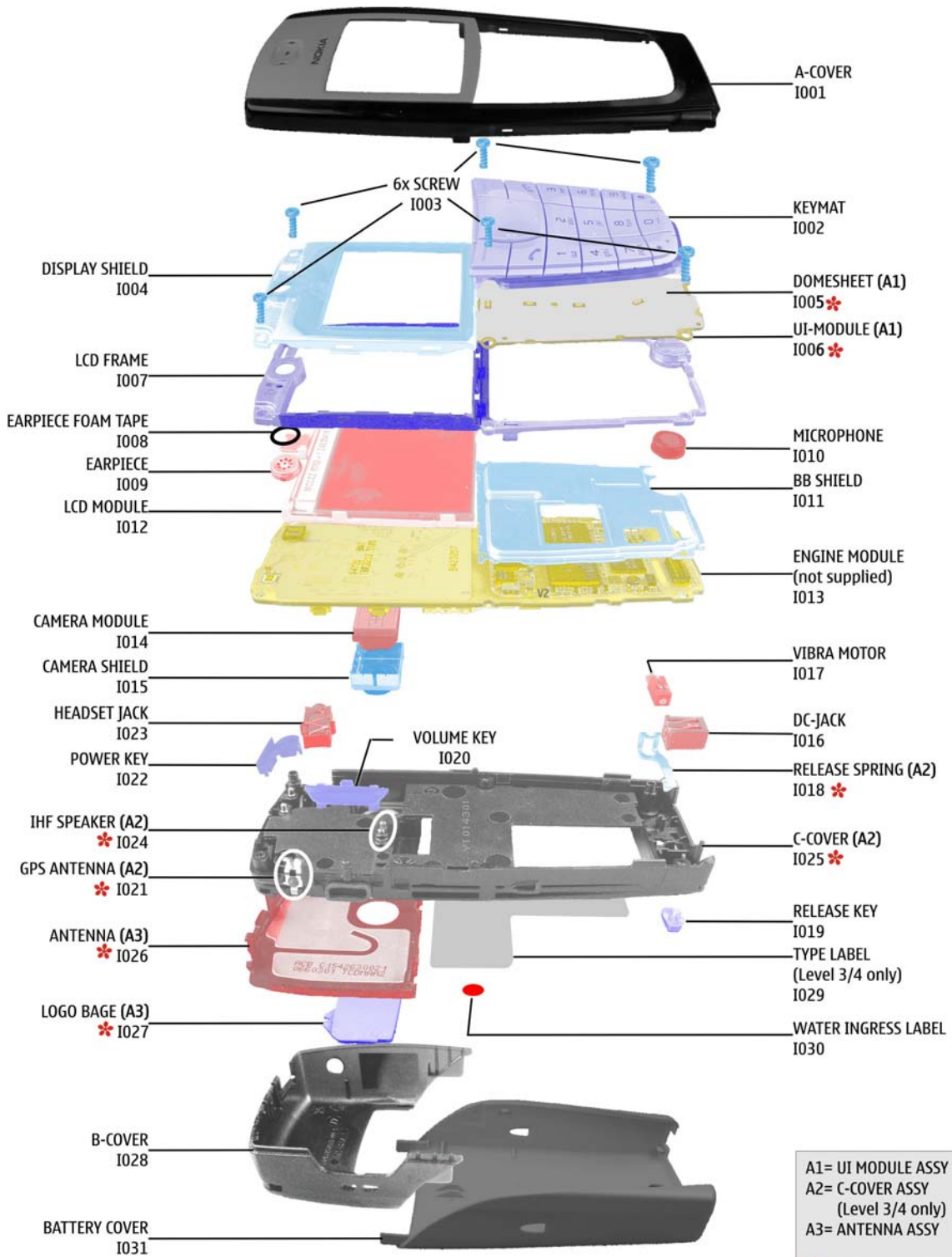
When logged into PWS/NOL you can also find needed information in different folder like:

- Downloads
- Support Library
  - Accessories
  - Battery Tester
  - Common Software
  - Flashing Tools
  - General -> Instructions
  - GoNoGo Tester
  - Service Tools
  - Tester Support
  - Wintesia
  - Products (Service Manuals, Service Bulletins)

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.

### 4. EXPLODED VIEW AND COMPONENT DISPOSAL

Recommendation for the ecologically friendly disposal of components. Colorized components show the different categories. See corresponding ITEM/CIRCUIT REF in the Spare Parts Service Bulletins on PWS/NOL.



## 5. SPARE PARTS LIST

**Please exchange this page (placeholder) with latest corresponding Service Bulletins (spare parts, SWAP units and service tools) from PWS/NOL!**

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

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

## 6. SERVICE TOOLS

	<p><b>FLS-4S incl. ACF-8, Driver and User Guide</b> is a dongle and flash device incorporated into one package, developed specifically for POS use.</p>
	<p><b>ACF-8</b> Universal Power Supply is used to power FLS-4S.</p>
	<p><b>Internal Battery BLD-3</b> Inserted under the back cover, this Li-Ion 780 mAh battery provides power in a lightweight package.</p>
	<p><b>Stand DCV-14</b> Provides easy charging and convenient data synchronization with a compatible computer using the Connectivity Adapter Cable DKU-5 (supplied separately).</p>
	<p><b>Travel Charger ACP-12</b> Small and lightweight charger for fast charging of your phone battery.</p>
	<p><b>Headset HDS-3</b> Small and lightweight stereo headset for handsfree functionality and listening to FM radio.</p>
	<p><b>SS-49</b> Camera removal tool.</p>
	<p><b>CA-22DS</b> Service Cable is used to connect FLS-4S with the phone..</p>
	<p><b>RJ-47</b> Soldering Jig</p>

**0772040 NMP Standard Toolkit**

- Nokia opening tool SRT-6 Nokia No. 0770431
- Tonichi torque driver Nokia No. 6901525
- [Hoya](#) micro fibre cloth MX304
- [Dastex](#) gloves S, M, XL
- [Artlux](#) goggles AH166
- [Wera](#) bit T5 867/4TX 5x50
- [Wera](#) bit T6 867/4TX 6x50
- [Wera](#) bit T6 PLUS® 867/4TX 6IP
- [Facom](#) side cutter 416E
- [Facom](#) T5 driver SP.14032
- [Facom](#) T6 driver SP.14033
- [Facom](#) slot screwdriver AEF. 2x35.E
- [Wetec](#) tweezers 7abb SA-ESD
- [Wetec](#) tweezers 22 SA-ESD
- [Wetec](#) tweezers 13 SA-SMD ESD
- [Wetec](#) tweezers PSF SA-ESD
- [Wetec](#) ESD brush E1211
- [Kaiser-Fototechnik](#) airbrush 6315
- [Wetec](#) dental tool DEM83266/0
- [RS-Components](#) Scissors 323-5732

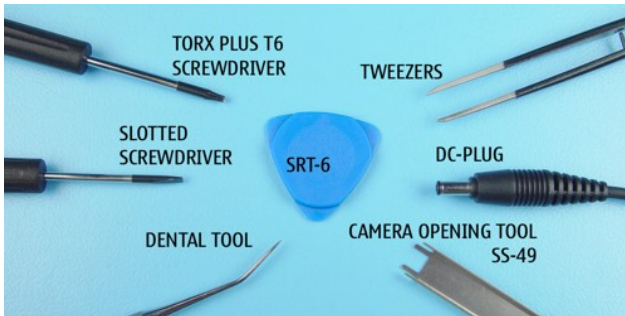
## 7. SW-UPDATE

To use FLS-4S 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 [Partner Web Site](#) / [Nokia Online](#).

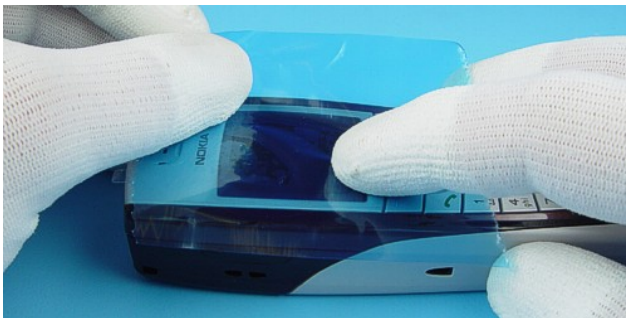
Flash Concept – (Point of Sales)



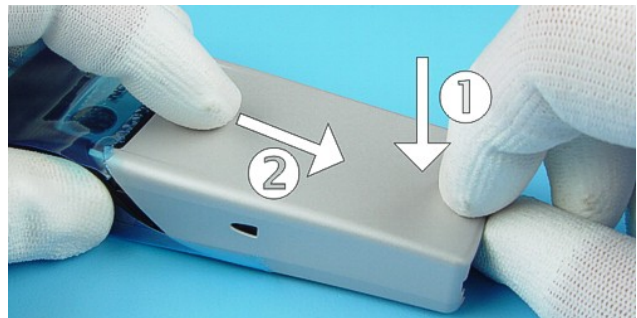
## 8. DISASSEMBLY INSTRUCTIONS (ALSO SEE THE VIDEO CLIPS ON CARE POINT)



1) Needed tools for disassembly/assembly.



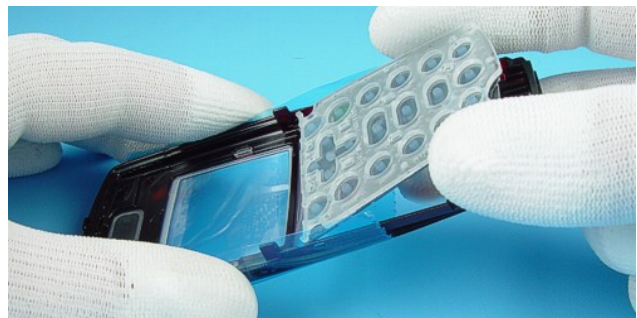
2) Check condition of window and protect the window with a film.



3) Press the **Release Button** before pulling up the **B-Cover**.



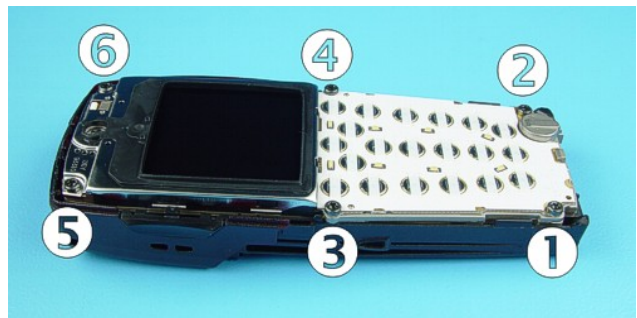
4) Remove the **A-Cover**.



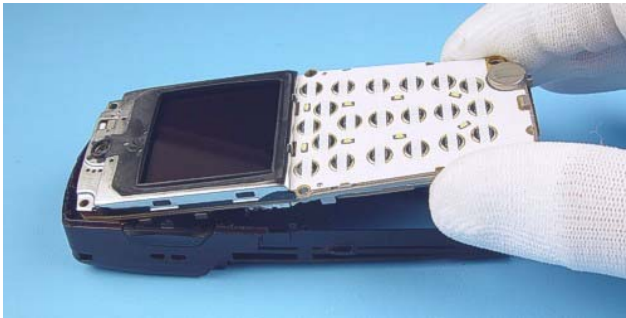
5) Take away the **Keymat**.



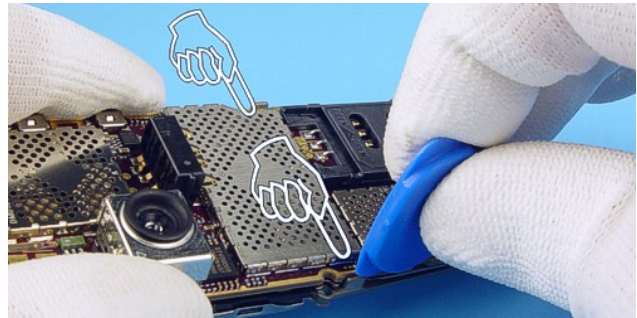
6) Protect the inner side of the window with a film.



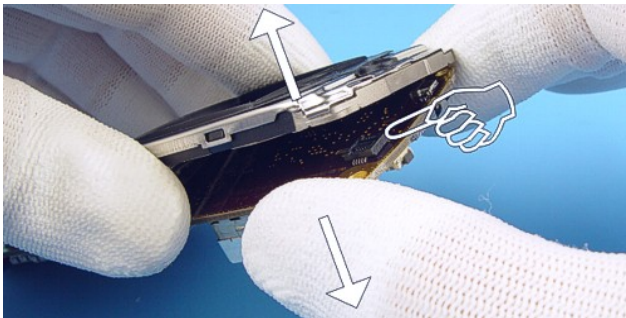
7) Unscrew the six Torx PLUS® size 6 screws. **For assembly, the reverse order and a torque driver with a torque of 20Ncm have to be used.**



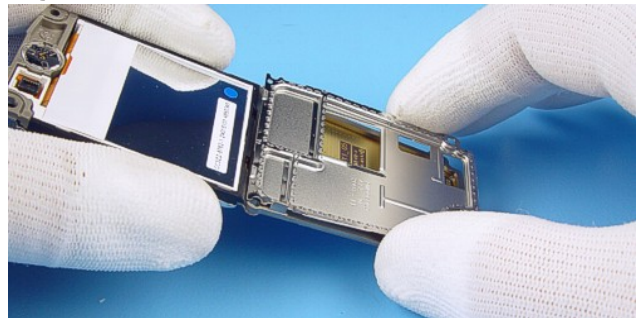
8) Remove the modules from **C-Cover**.



9) Open the snaps with SRT-6 on both sides of the **Engine Module**.



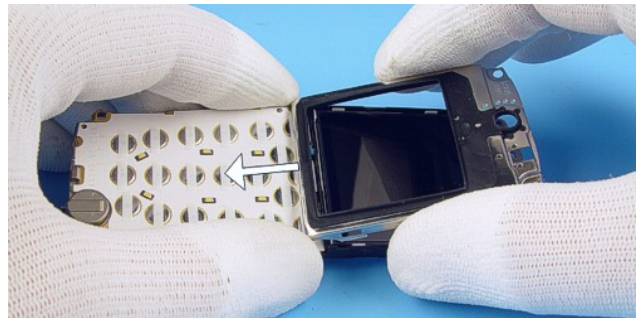
10) Unplug the display connector by pulling the modules apart carefully.



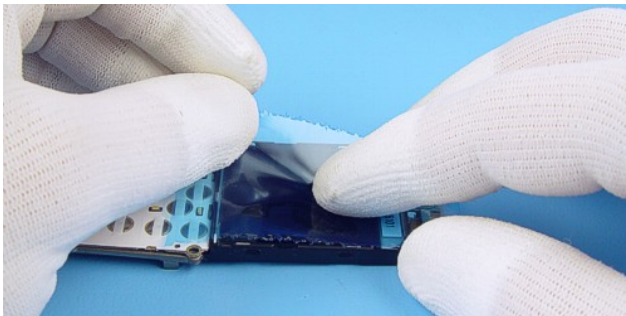
11) Remove the **BB Shield**.



12) Unlock the clips with SRT-6 on both sides of the **Display Shield**.



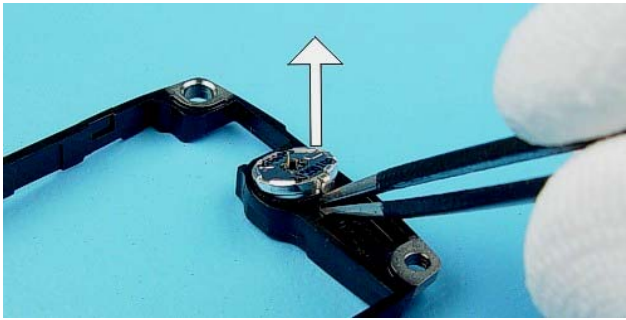
13) Remove the **Display Shield**.



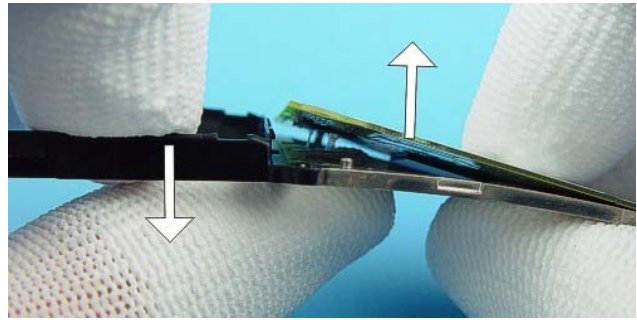
14) Protect **LCD Module** with a film.



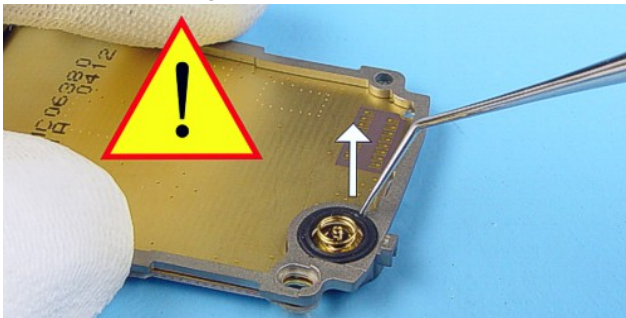
15) Remove the **LCD Module** by using SRT-6 as shown in the picture.



16) The Earpiece is attached with double-sided adhesive Foam Tape.



17) Unlock UI Module on the left side first and lift it up carefully.



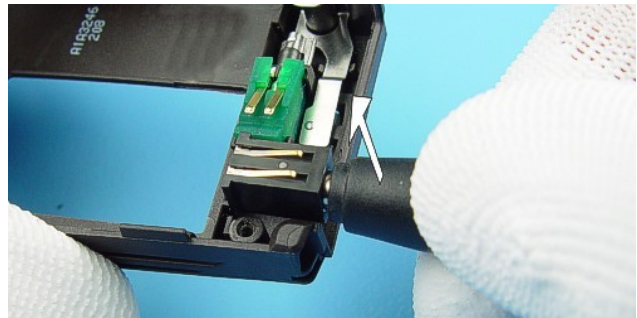
18) Do not damage the spring contacts, when removing the Microphone.



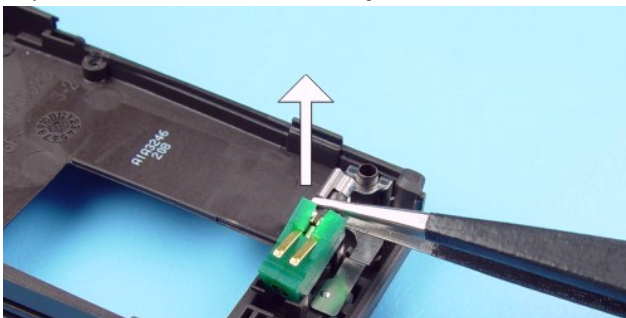
19) Spread the B-Cover from both sides until snaps inside will release it.



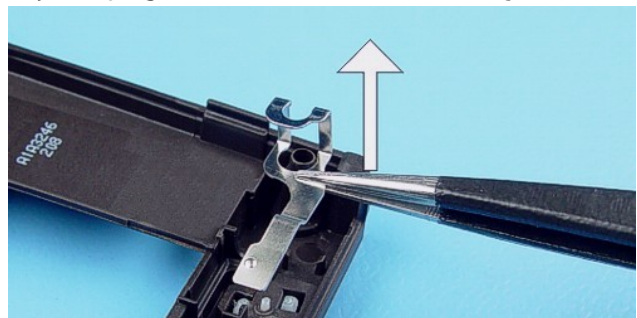
20) Remove the B-Cover carefully.



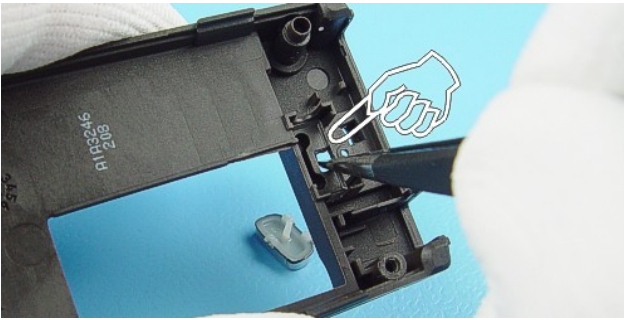
21) A DC plug can be used to remove the DC Jack.



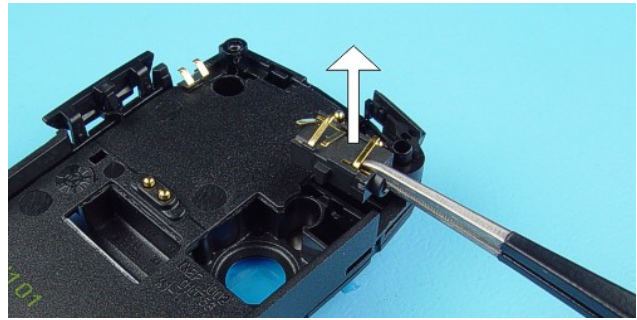
22) Remove the Vibra Motor with tweezers.



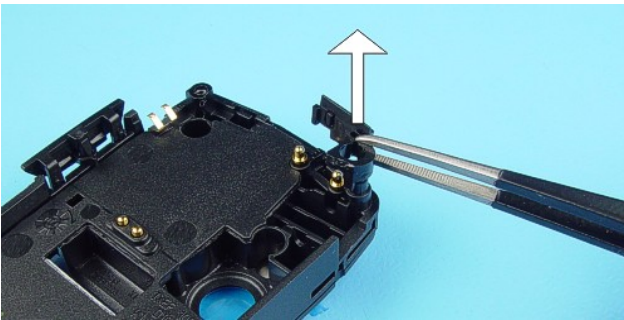
23) Remove the Release Spring.



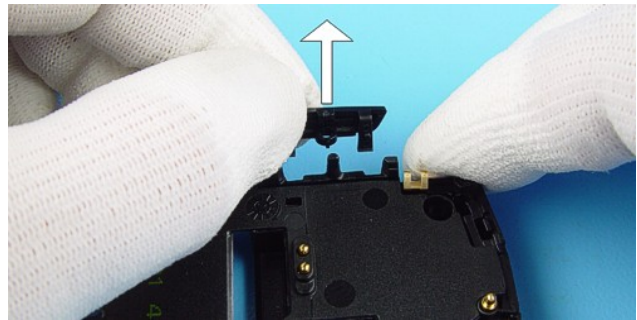
24) The Release Key can be removed by pushing with tweezers through the opening in C-Cover.



25) Remove the Headset Jack.

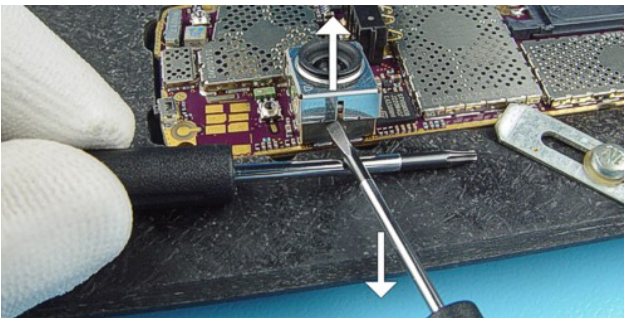


26) Remove the Power Key.

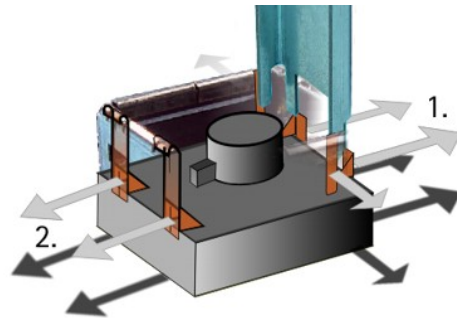


27) Remove the Volume Key.

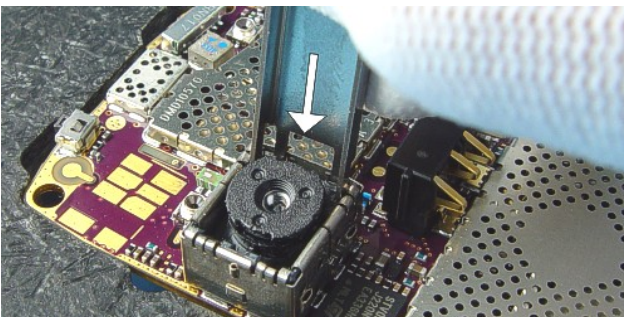
## Camera removal



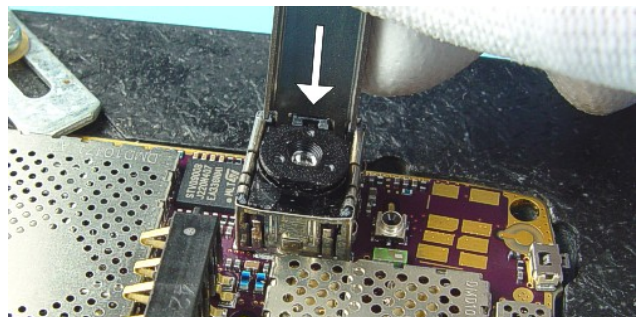
28) A slotted screwdriver can be used as a lever to open the Camera Shield.



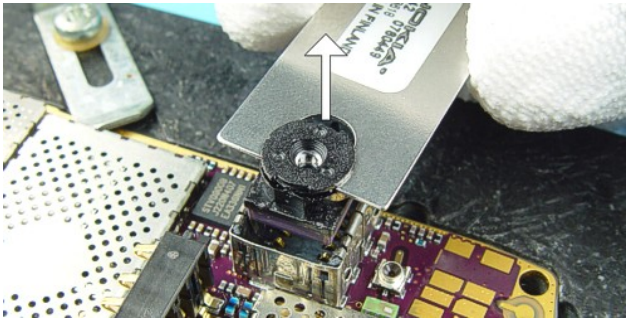
29) Camera Module is attached with six snaps into its guidance. Place SS-49 as shown in the picture. Note the release order.



30) Unlock the snaps as shown in the picture. **Note!** The Camera removal tool has to different endings. For removal use the side with four pikes.



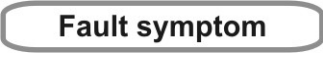





31) Turn over the removal tool and unlock the other snaps.



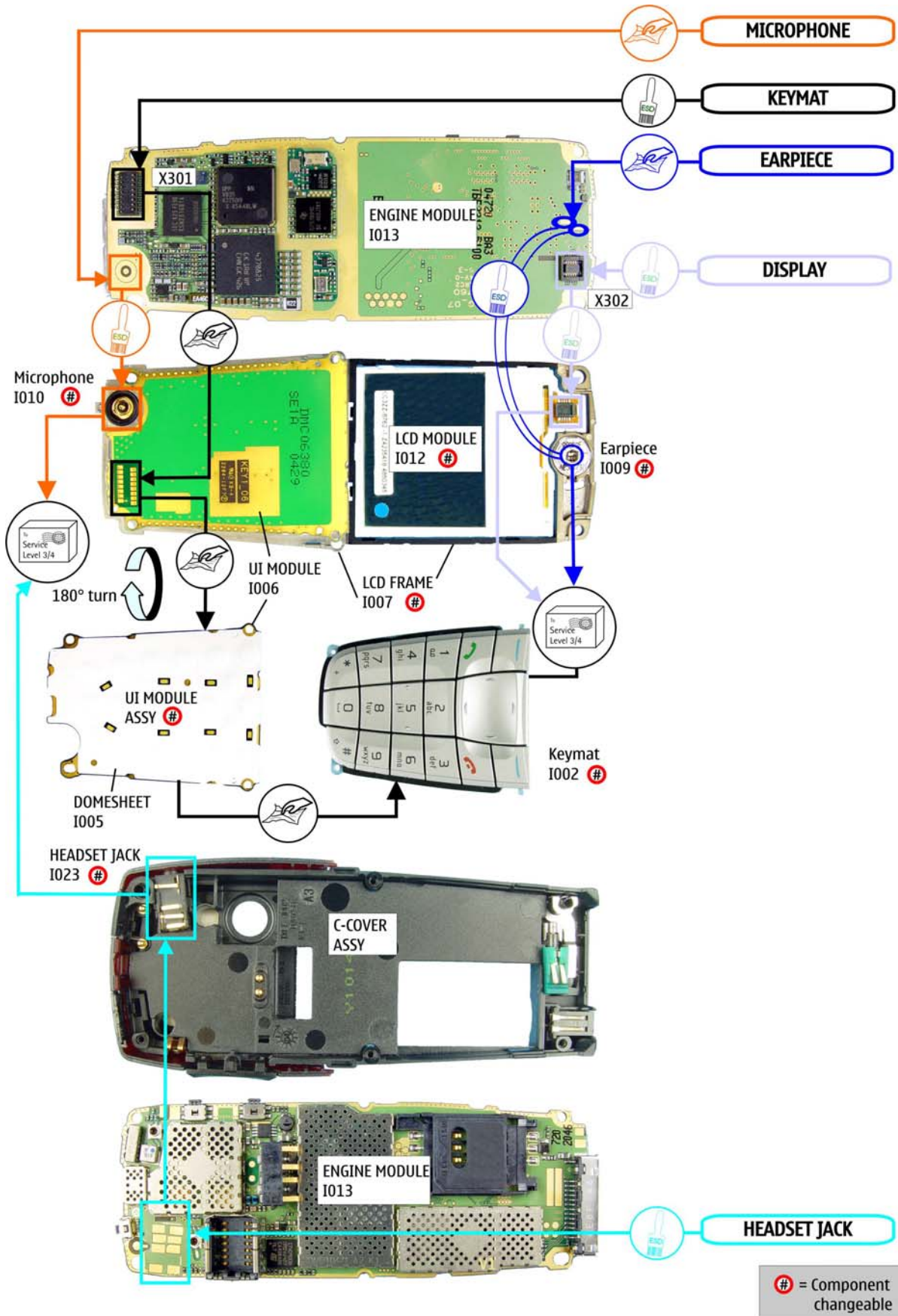
32) Remove **Camera Module** carefully. Take care that camera marking is directed to right side when assembling. Do not touch contacts and camera lens. For disassembly use SS-42 or tweezers if the tool is not available.

## 9. LEGEND FOR QUICK TROUBLE SHOOTER

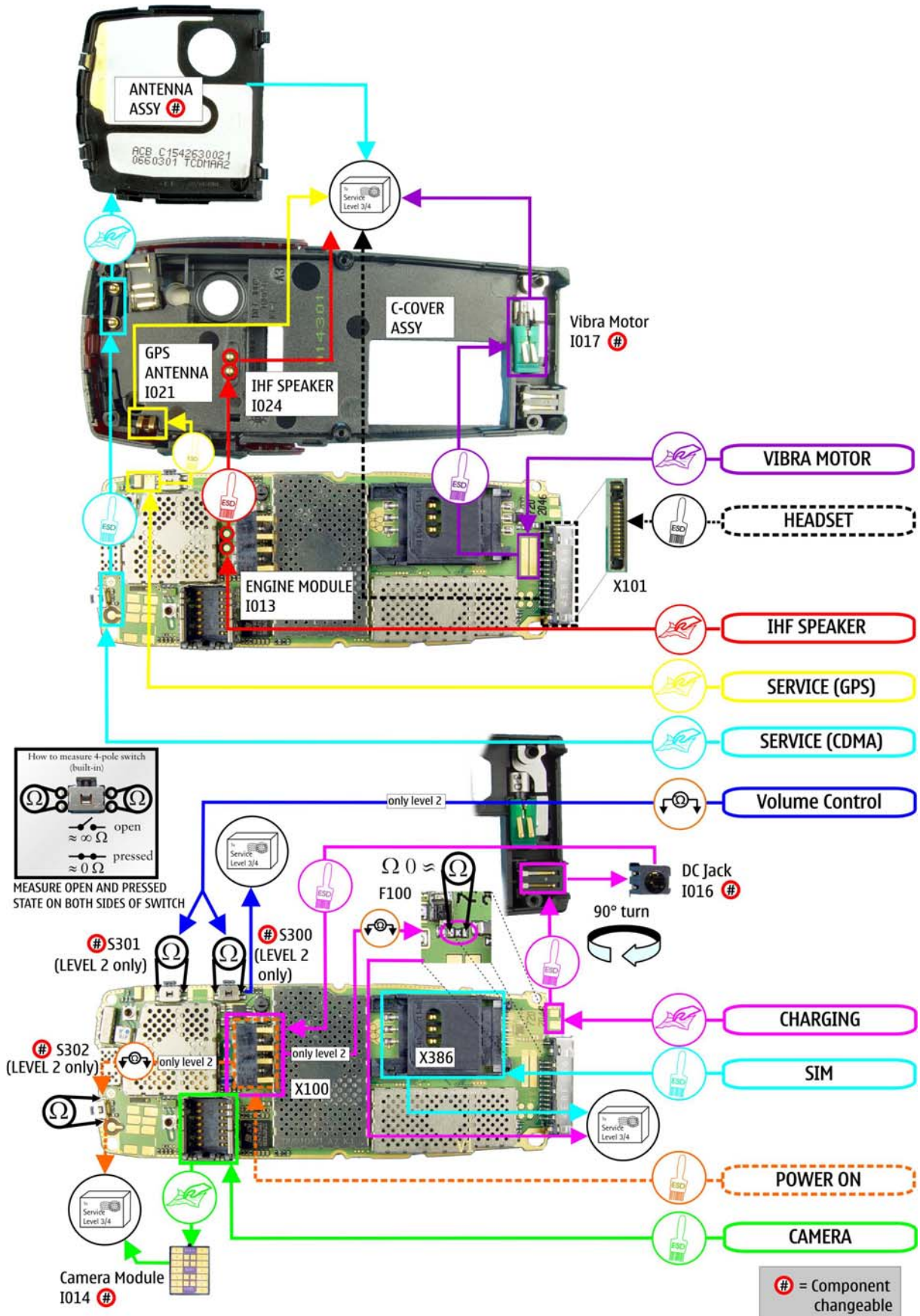
This legend is valid for all parts of the **Quick Trouble Shooter**

Follow the steps until the problem is solved. If this doesn't help, you are not authorized to go forward. Only marked components with this symbol (#) ( e.g. I002 (#) ) can be changed.	
	The start point of repair activities regarding the appeared fault symptoms.
	Follow the arrows step by step
	Pads or contacts: Check optical and mechanical condition particularly regarding to corrosion. Clean if necessary.
	Measure component for electrical functionality and change, if needed. (Level 2 only)
	Pads or contacts: Check optical and mechanical condition particularly regarding to corrosion. Clean with ESD brush only, if necessary.
	No more actions possible send product to the appropriate service supplier with higher service level.

## 10. QUICK TROUBLE SHOOTER PART 1



## 11. QUICK TROUBLE SHOOTER PART 2




## 12. CAMERA GONOGO TEST

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



- Press the red receiver button to reach the Home Menu.



- From Home Menu, press the  Menu key
- To take a picture press the Menu key (Capture)
- This Image will be saved to Gallery into the Photos folder automatically.
- Test was successful, if the Image appears on your Display. The camera is ok.
- Select **Options**
- Select **Delete**
- Select **OK**
- Select **EXIT** for Home Menu
- If the test is failed see Quick Trouble Shooter.

## 13. INFRARED TEST

### Infrared test

You need another infrared device (e.g. 6310i) to do a GoNoGo test. The infrared windows of the devices must be directed to each other and should have a distance of approximate 15 cm. Make sure that infrared is activated in receiver device.

**Warning:** Do not point the IR (infrared) beam at anyone's eye or allow it to interfere with other IR devices. This device is a Class 1 Laser product.




Test unit



Reference unit, infrared activated

Settings on the test unit:

- Press the red receiver button to reach the Home Menu.
- Push the  Menu key down. This displays Phonebook entries (Contacts).
- If phone is empty, create one new entry.
- Choose one phonebook entry and select **Details**.
- Select **Options**
- Select **Send bus. Card**

A) - for infrared test: Select **Via infrared**

If sending of business card fails, make sure again that infrared windows are directed to each other and infrared is activated in reference device. Then try again sending.

Test was successful, if you get this message on receiver device.

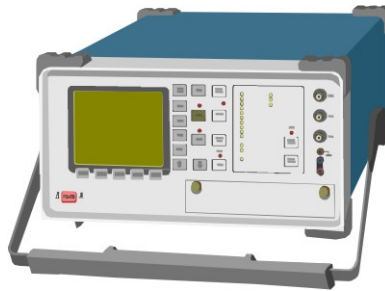
You will **not** get a confirmation on sender device.

- Press red receiver button for Home Menu.

## 14. GONOGO TEST

After the optical check a GoNoGo test has to be carried out if the unit has been unscrewed to guarantee the functionality of the phone.

**Please refer to the actual information on Partner Web Site/Nokia Online and Nokia Care Point. When using delivered tester support files, take care of the right setup according to the tester type and product type. Please refer to “Recommended Service Equipment” on Nokia Partner Web Site/Nokia Online.**



Mobile Phone Tester

## 15. BATTERY TEST

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

Please refer to the actual information on Partner Web Site/Nokia Online.



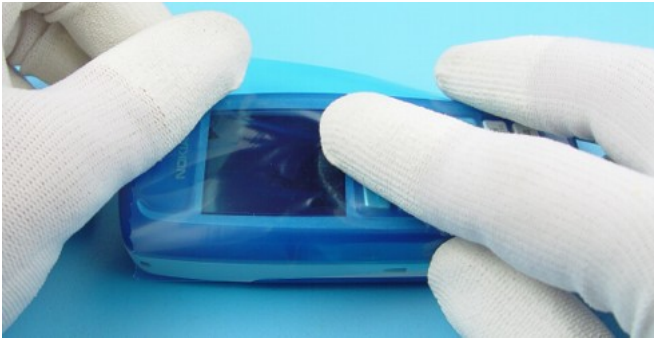
<http://www.astratec.co.uk/>



<http://www.cadex.com/>

## 16. FOR FORWARDING OF REPAIRS

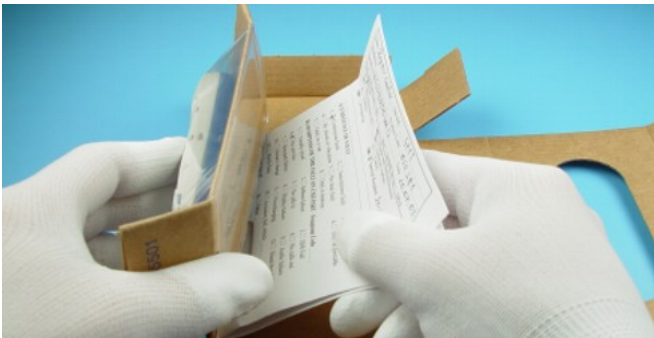
When it is necessary to forward of repairs to appropriate service supplier with higher service level we recommend using the offered swap phone cartons as described in Spare Parts SB-004.



Always Protect the window with a protection film.



Put the unit under the stretch film.



Add repair documentation e.g. filled-in service note into the swap carton.



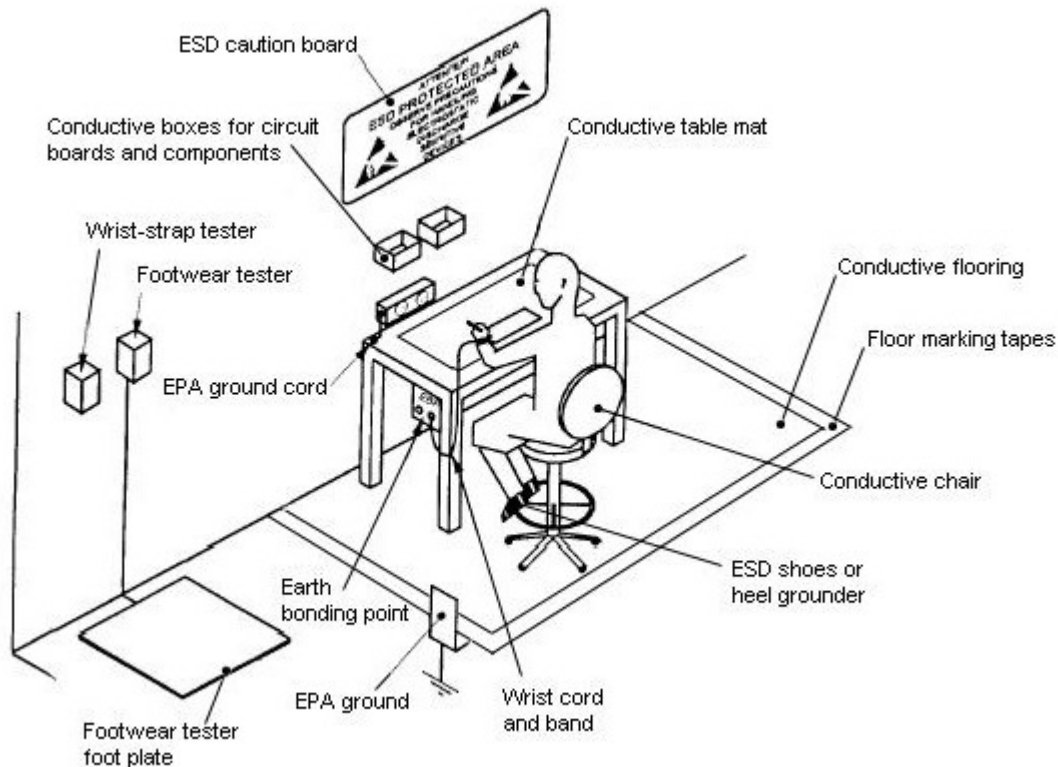
Fold the swap carton as shown in Spare Parts SB-004.



There are two different sizes of swap cartons for common mobile phones.

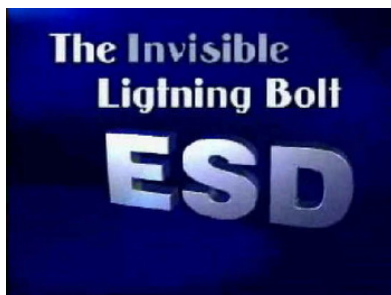
## 17. ESD PROTECTION REQUIREMENTS

Please refer to the Partner Web Site/Nokia Online document [Service Supplier Requirements](#) in folder General instructions.



- USE** Conductive bags and boxes
- USE** ESD compatible service tools
- USE** Conductive wastebaskets
- USE** ESD gloves when handling PWBs/PCBs
- USE** Cleaning material without changing el. Characteristics
- USE** Grounded service equipment, i.e. soldering station
- USE** ESD clothes such as coat or frock

- NO** Smoking
- NO** Drinking
- NO** Eating
- NO** Dust
- NO** Useless Items
- NO** Normal pressured air for cleaning modules/displays



The video covers general issues concerning Electro-Static Discharge (ESD)  
source: Nokia Care Point