

# NOKIA 7280

RM-14



## Transceiver characteristics:

- Tri-band GSM 900/1800/1900
- Answer and end calls in true style with the active slide
- Breathtaking display supports up to 65,536 colors within 104 x 208 pixels
- SMS and MMS with AMR voice clips
- Integrated VGA Camera
- HSCSD and EGPRS for high-speed data connectivity
- GPRS for convenient 'always on' browsing
- Bluetooth wireless technology
- Infrared
- XHTML browser
- Nokia PC Suite
- SyncML for daily synchronization of day and night phones
- Nokia Collector supports synchronization with Apple for photos, audio files, and video clips
- Video streaming
- Voice-activated user interface
- Internal handsfree speaker for group calls
- Polyphonic ringing tones (MIDI)
- Integrated FM radio

Transceiver with BL-8N 700mAh Li-ion battery pack

Talk time	Standby	Note
3h	240h	Depends on network parameters

## Environmental characteristics:

- Lead-free soldered
- RoHS compliant (Restriction on Hazardous Substances, 2002/95/EC)

# SERVICE MANUAL

## Service Level 3

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**CHANGE HISTORY**

Status	Version No.	Date	Comments
Draft	0.1	29.10.2004	Initial draft
Approved	1.0	24.11.2004	Approval

## 1. INTRODUCTION

The purpose of this document is to help Nokia service level 3 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.
- 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 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](#) and [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>
	

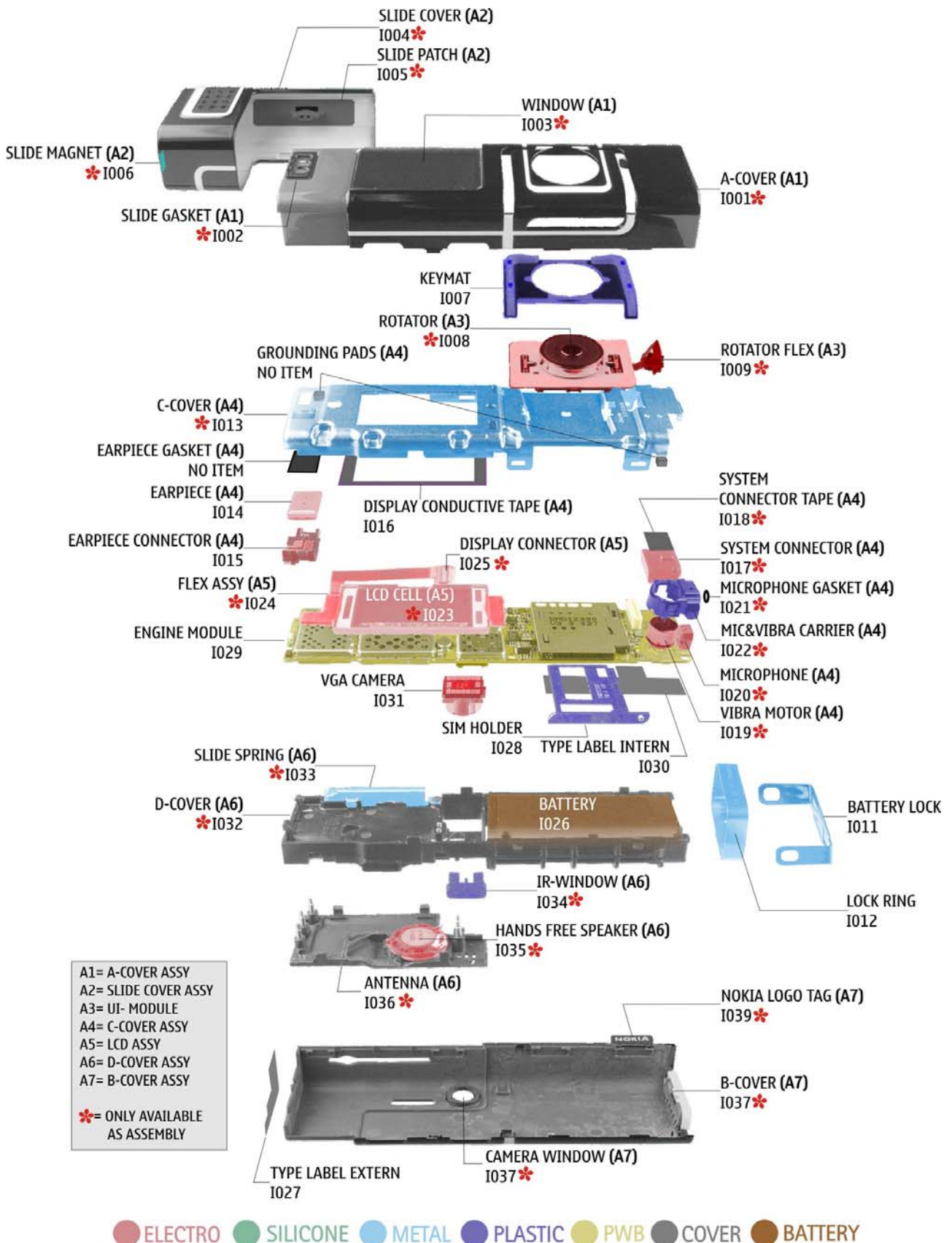
It is mandatory to watch for newest technical and organizational information on a daily basis to be updated as required (see "Latest Updates in support Library"). Every new information has to be processed and implemented as soon as possible.

When logged into PWS 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)

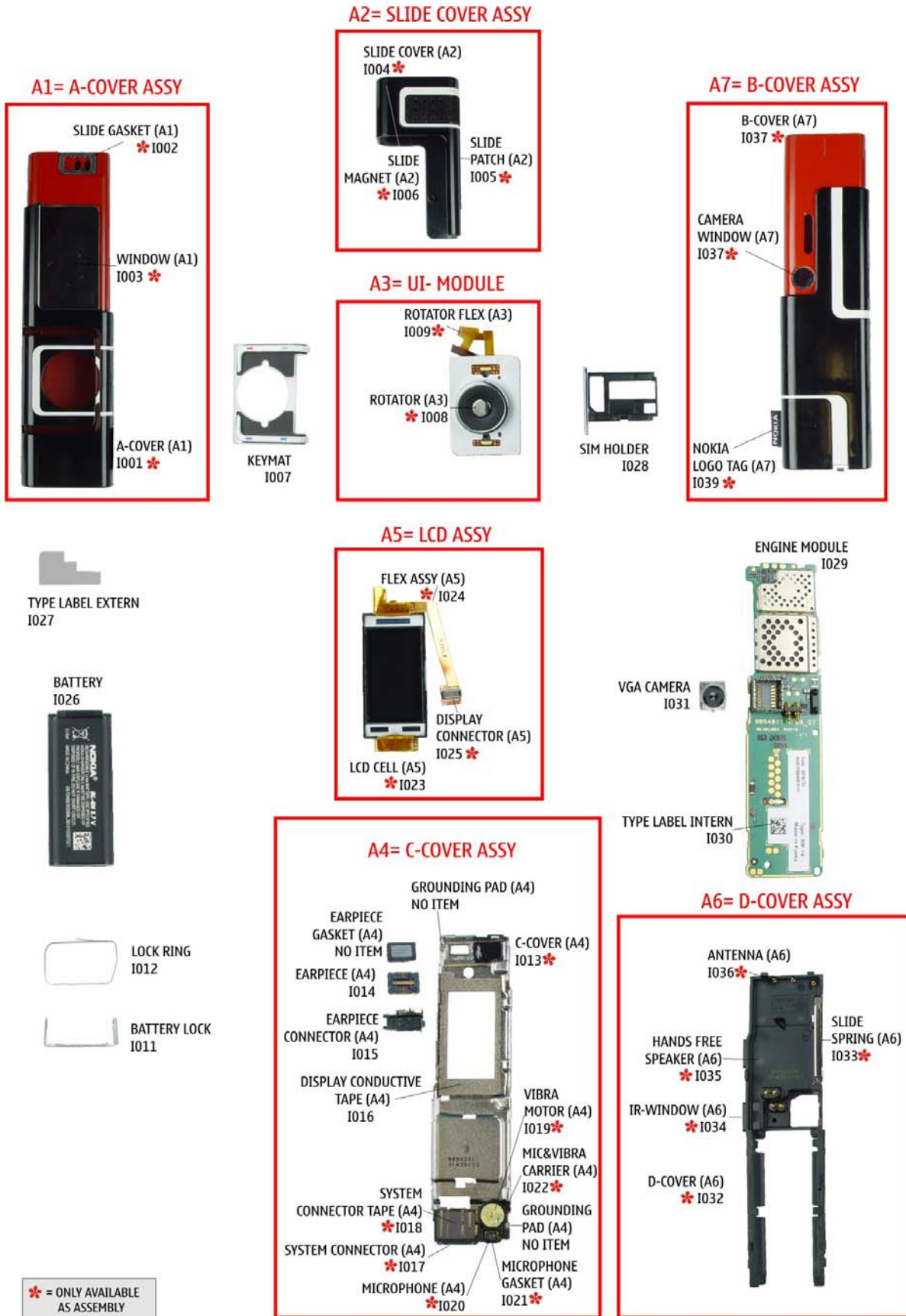
To reduce the server traffic it is recommended to download newest version of huge files like videos, Phoenix packages or Service Manuals only once and distribute it internally for further use.

## 4. EXPLODED VIEW





**5. SPARE PARTS OVERVIEW**



## 6. SPARE PARTS LIST









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



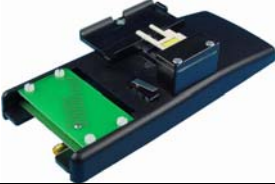






**This will ensure, that you are using up-to-date order codes only.**







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



## 7. SERVICE TOOLS

	<b>FPS-8</b> Flash Prommer (incl. ACF-8, AXS-4, CA10DS)
	<b>FPS-11</b> (incl. power supply, power cords USB cable)
	<b>SX-2</b> Smart Card
	<b>ACF-8</b> Universal Power Supply
	<b>AXS-4</b> Serial Cable D9-D9
	<b>Travel Charger ACP-12</b> Charger for fast charging of phone battery
	<b>Headset HDC-5</b>
	<b>XCS-1</b> Service Cable is used to connect FLS-4S to SF-30
	<b>CA 28 DS</b> For SPF-11

	<b>PKD-1</b> SW Security Device
	<b>JBV-1</b> Docking Station
	<b>DA-40+SA-41</b> Docking Station Adapter
	<b>Spare SIM Interface for DA-40</b>
	<b>CA-5S</b> DC Cable
	<b>DAU-9S</b> MBUS Cable
	<b>PCS-1</b> Power Supply Cable
	<b>XCS-4</b> Service Cable
	<b>SRT-10</b> Camera Removal Tool

	<p><b>SF-30</b>                  POS Flash Adapter is used in POS (Point of Sales) environment for software updating. It provides controlled supply voltage and necessary connections between the phone and the Flash Device. It substitutes for the phone's standard battery during the software update.</p>
	<p><b>Spare SIM Interface for SF-30</b></p>
	<p><b>RJ 38</b>                  Soldering jig</p>
	<p><b>SIM Tray Release Tool</b></p>
	<p><b>Lead-free Solder Wire</b>                  Mandatory for lead-free products</p>
 <p><b>Standard Toolkit</b></p> <p>Gloves                  Micro Fibre Cloth                  Airbrush                  Side Cutter                  SRT-6                  ESD Brush                  Scissors                  Goggles                  Dental Tool                  Tweezers                  Slot                  Torque Driver                  Bits</p>	<p><b>0772040 NMP Standard Toolkit</b></p> <ul style="list-style-type: none"> <li>▪ Nokia opening tool SRT-6 Nokia No. 0770431</li> <li>▪ Tonichi torque driver Nokia No. 6901525</li> <li>▪ <a href="#">Hoya</a> micro fibre cloth MX304</li> <li>▪ <a href="#">Dastex</a> gloves S, M, XL</li> <li>▪ <a href="#">Artilux</a> goggles AH166</li> <li>▪ <a href="#">Wera</a> bit T5 867/4TX 5x50</li> <li>▪ Wera bit T6 867/4TX 6x50</li> <li>▪ Wera bit T6 PLUS® 867/4TX 6IP</li> <li>▪ <a href="#">Facom</a> side cutter 416E</li> <li>▪ Facom T5 driver SP.14032</li> <li>▪ Facom T6 driver SP.14033</li> <li>▪ Facom slot screwdriver AEF. 2x35.E</li> <li>▪ <a href="#">Wetec</a> tweezers 7abb SA-ESD</li> <li>▪ Wetec tweezers 22 SA-ESD</li> <li>▪ Wetec tweezers 13 SA-SMD ESD</li> <li>▪ Wetec tweezers PSF SA-ESD</li> <li>▪ Wetec ESD brush E1211</li> <li>▪ Kaiser <a href="#">Fototechnik</a> airbrush 6315</li> <li>▪ Wetec dental tool DEM83266/0</li> <li>▪ <a href="#">RS Components</a> Scissors 323-5732</li> </ul>

## 8. SW-UPDATE

To use FLS-45 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](#).

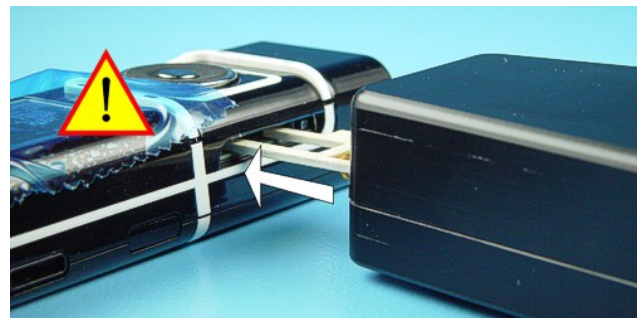
### Flash Concept – (Point of Sales)



It is very important to follow this insertion and removal procedure, otherwise the spring contacts of Flash Adapter will be damaged.



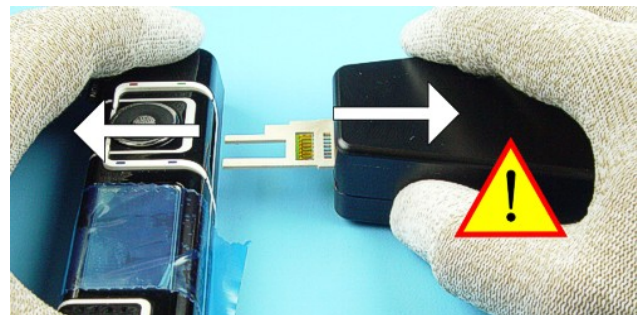
1.) Use the SIM Tray Release Tool to open the **SIM Holder**. Note! When the SIM Holder is removed, the phone cannot be switched on. The battery voltage is disconnected.



2.) Insert the Flash Adapter like a **SIM Holder** into the SIM gate carefully.



3.) The device gets its power from the Flash Adapter during flashing.



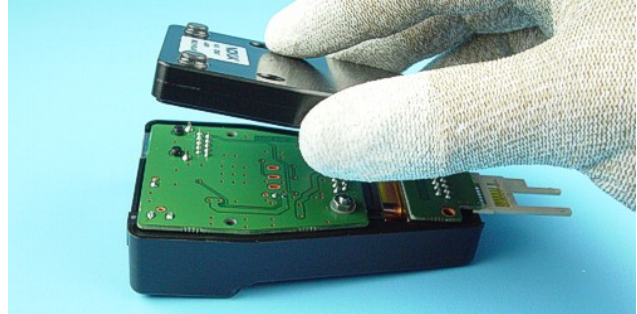
4.) Important! When removing the device from the Flash Adapter, please pull it straight out to avoid damaging the connector of the Flash Adapter.



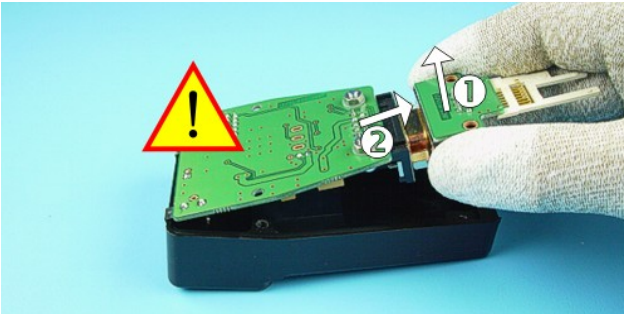
## 9. EXCHANGE OF SPARE SIM INTERFACE



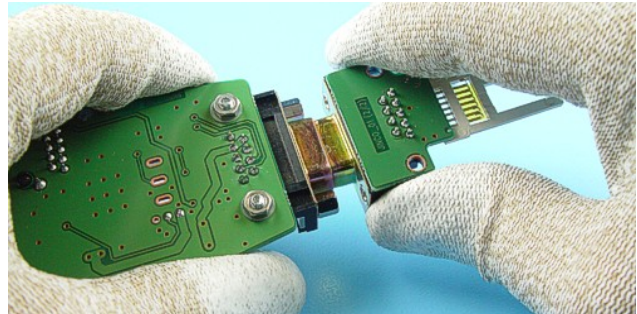
1.) First unscrew the four screws.



2.) Remove the bottom cover.



3.) Take away the modules carefully.



4.) Disconnect the Spare SIM Interface from the module and connect a new one carefully.



5.) Note the right position of the LED when assembling the Flash Adapter.



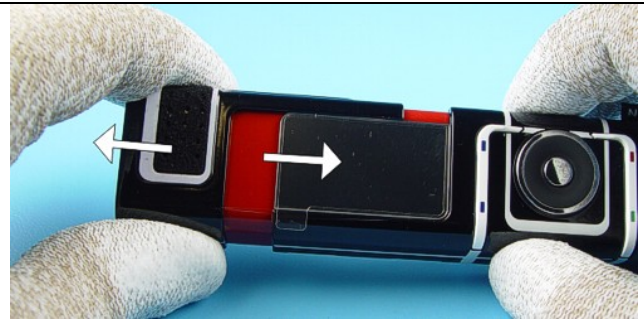
6.) Tighten the screws.



**10. DISASSEMBLY INSTRUCTIONS (ALSO SEE THE VIDEO CLIPS ON CARE POINT)**



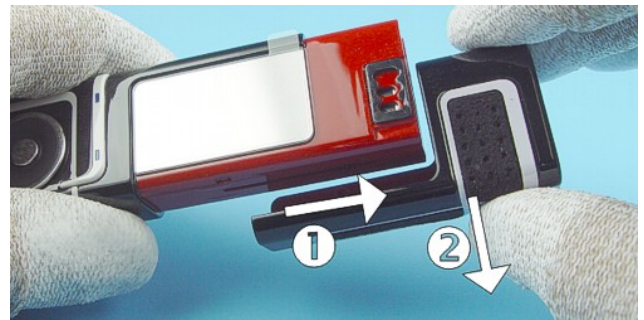
1.) Use the SIM Tray Release Tool to open the SIM Holder.



2.) Open the Slide Cover.



3.) Use the SRT-6 as a lever to remove the Slide Cover.



4.) First shift the Slide Cover as far as it will go and then remove it from its guide.

**For assembly only!**



It is necessary to protect the Slide Gasket when assembling the Slide Cover. Therefore put a folded strip of the protection film on the A-Cover as shown.

**For assembly only!**



Then assemble the Slide Cover Assy in the shown order.

**For assembly only!**



Open the Slide Cover Assy and remove the strip carefully.





5.) Place SRT-6 between the **A-Cover** and **B-Cover** and shift it along the edge. **Use always a new A-Cover and a new B-Cover when reassembling.**



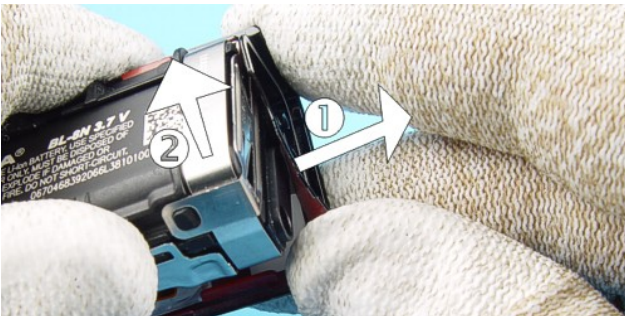
6.) Open the other snaps.



7.) Separate the both covers from each other.



8.) The **Keymat** drops out when turning the **A-Cover**.



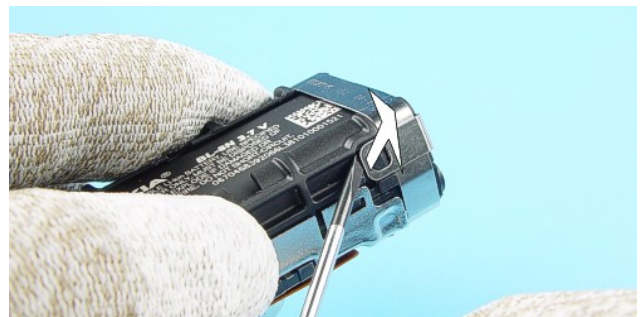
9.) Remove the modules from the **B-Cover** as shown in the picture.



10.) Protect the **LCD Cell** with a film.

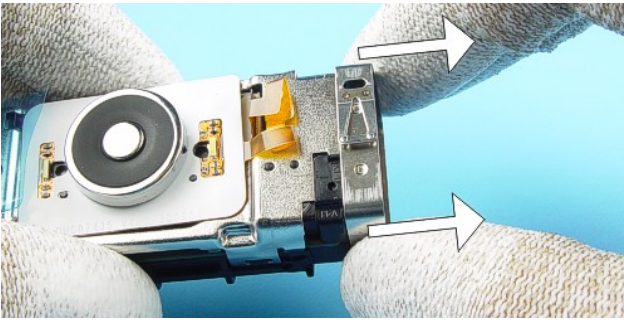


11.) Use a slotted screwdriver to lift the **Battery Lock**.

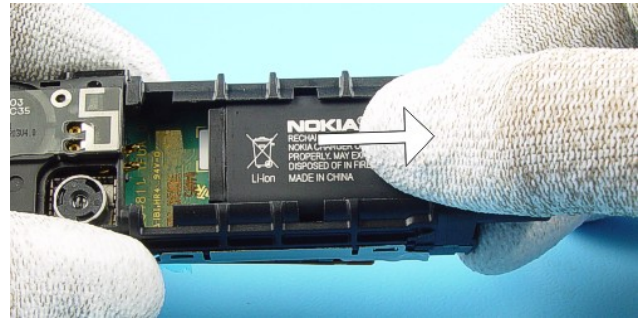


12.) Do the same on the other side.

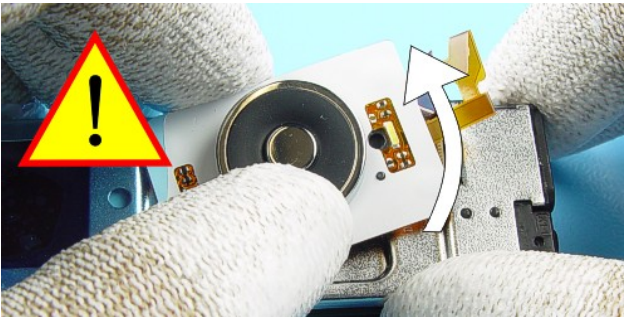




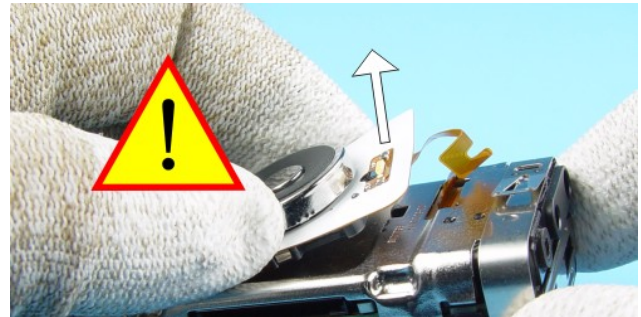
13.) Remove the **Locking Ring**.



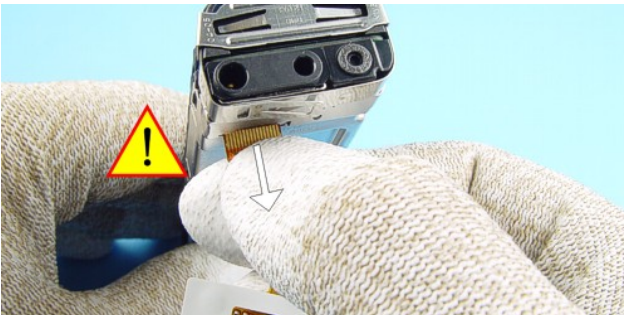
14.) Remove the **Battery**.



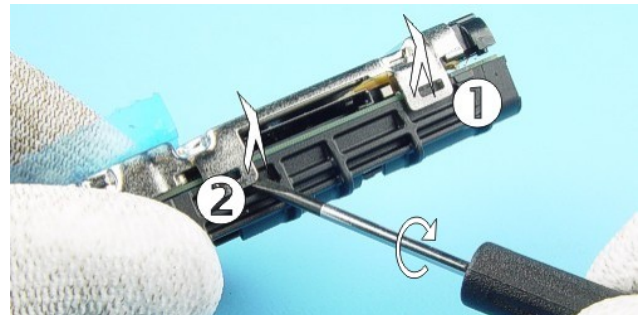
15.) Unlock the **UI Module** by turning it a bit.



16.) Now, lift the **UI-Module** as shown in the picture. Take care not to damage the **Rotator Flex**.



17.) Be careful when removing the **Rotator Flex**. Note the right position of the contacts when assembling.



18.) Use a slotted screwdriver to open the **C-Cover clips**.

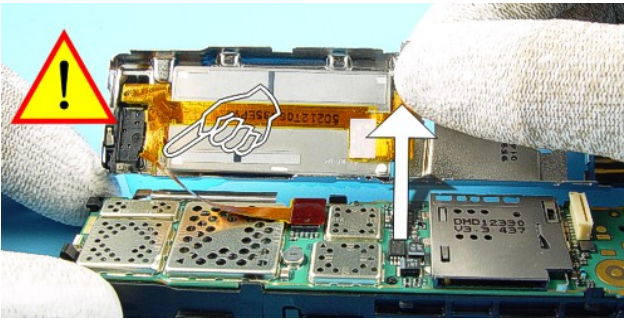


19.) The same procedure on the other side.

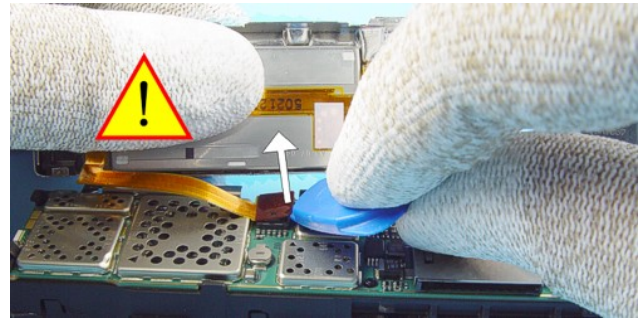


20.) Move the **C-Cover Assy** a bit to the left as shown in the picture.

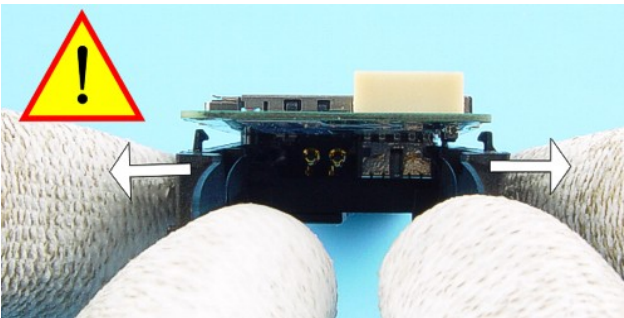




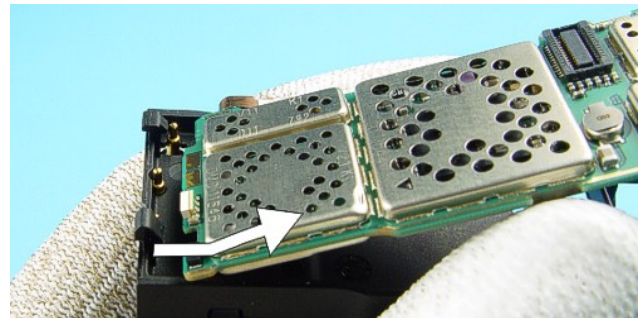
21.) Turn over the **C-Cover Assy** carefully. Do not damage the **Flex Assy**.



22.) Open the **Display Connector** carefully by using the **SRT-6**.

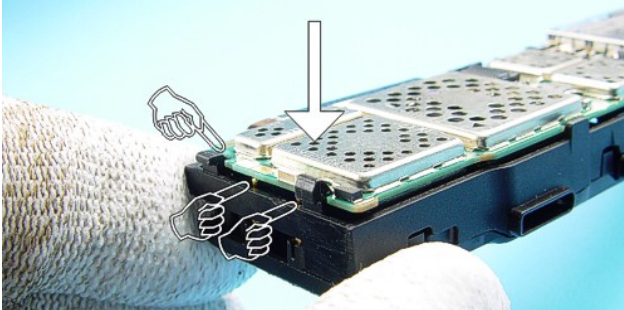


23.) Release the **Engine Module** by bending slightly both plastic battery guides of the **D-Cover**.



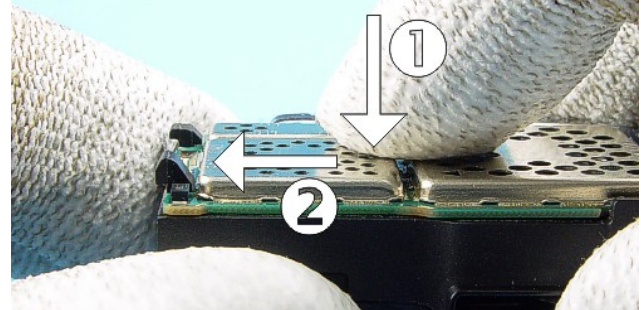
24.) Remove the **Engine Module** from the **D-Cover**.

**For assembly only!**



Put the **Engine Module** onto the **Pogo Pins** of the **D-Cover**.

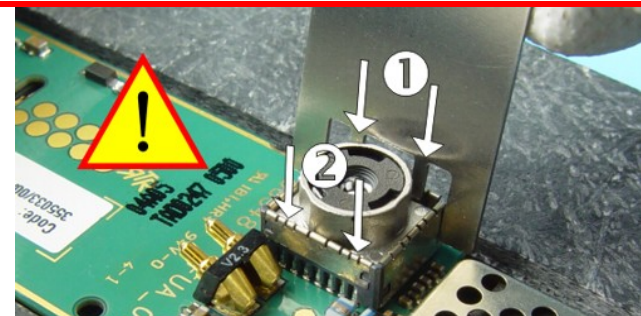
**For assembly only!**



Place the **Engine Module** into the clamps of the **D-Cover** by pressing it slightly.

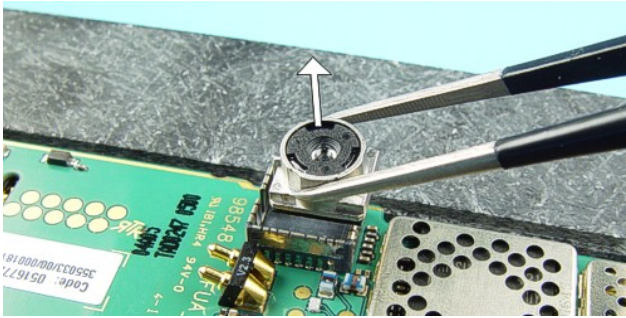


25.) Put the **Engine Module** into the soldering jig.

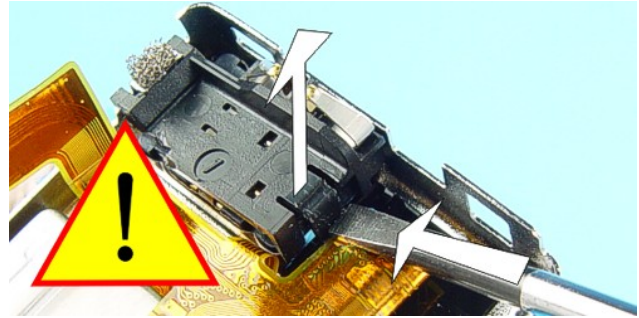


26.) Use the **SRT-10** to release the **VGA Camera**.





27.) Remove the VGA Camera by using the corrugated tweezers.



28.) Release the snap of Earpiece Connector by using the slotted screwdriver.

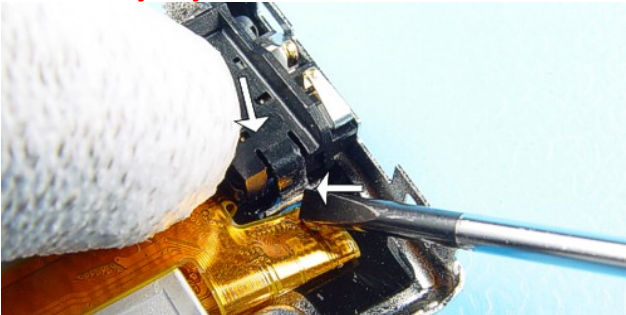


29.) Remove the Earpiece Connector.

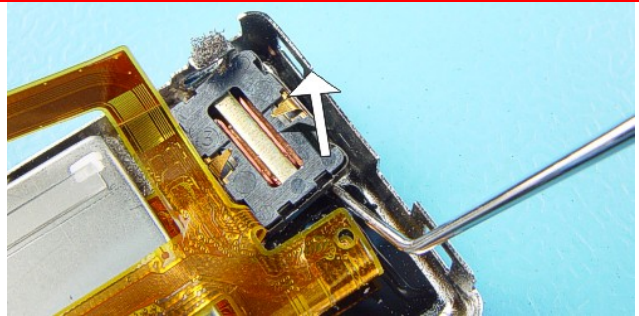


Place the Earpiece Connector in its guidance.

For assembly only!

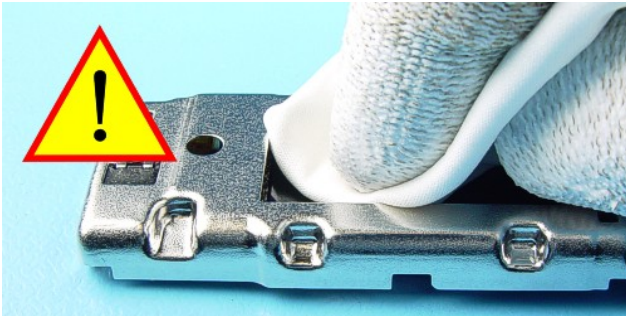


Lock the snap of the Earpiece Connector by using a slotted screwdriver. Take care of the Flex Assy.



30.) Remove the Earpiece. Do not damage the adhesive Earpiece Gasket.

## 11. DISPLAY EXCHANGE INSTRUCTIONS



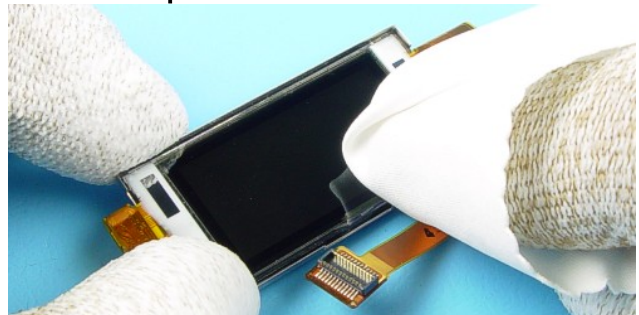
1.) Push out the **LCD Cell** carefully by using a clean cloth.



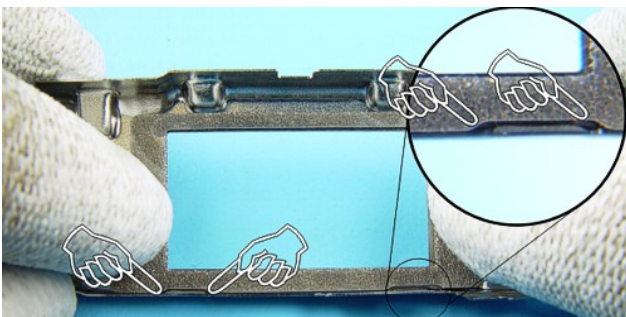
2.) Remove the remaining adhesive of **Display Conductive Tape**.



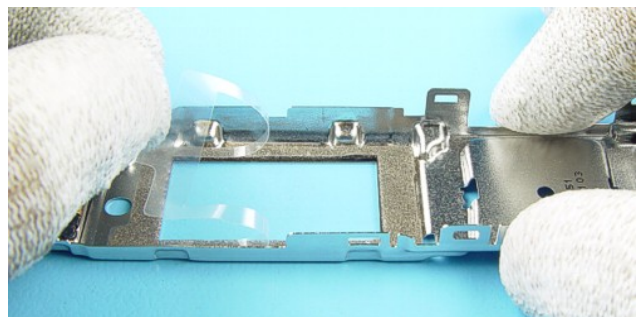
3.) Be carefully when removing the remaining adhesive from the **LCD CELL**. Do not scratch the surface.



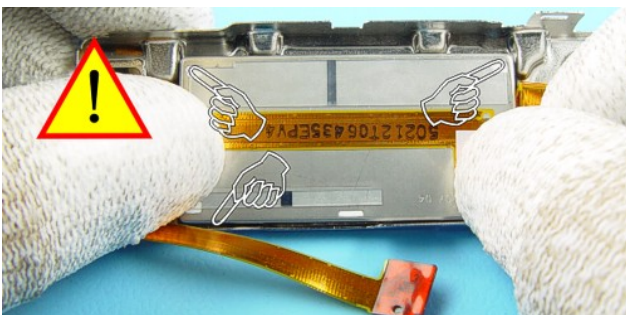
4.) Clean the **LCD CELL** with a clean micro fibre cloth carefully.



5.) Fit the **Display Conductive Tape** to the **C-Cover**. Note the right position.



6.) Remove the protective film.











7.) Place the **LCD-Cell** in the **C-Cover**.



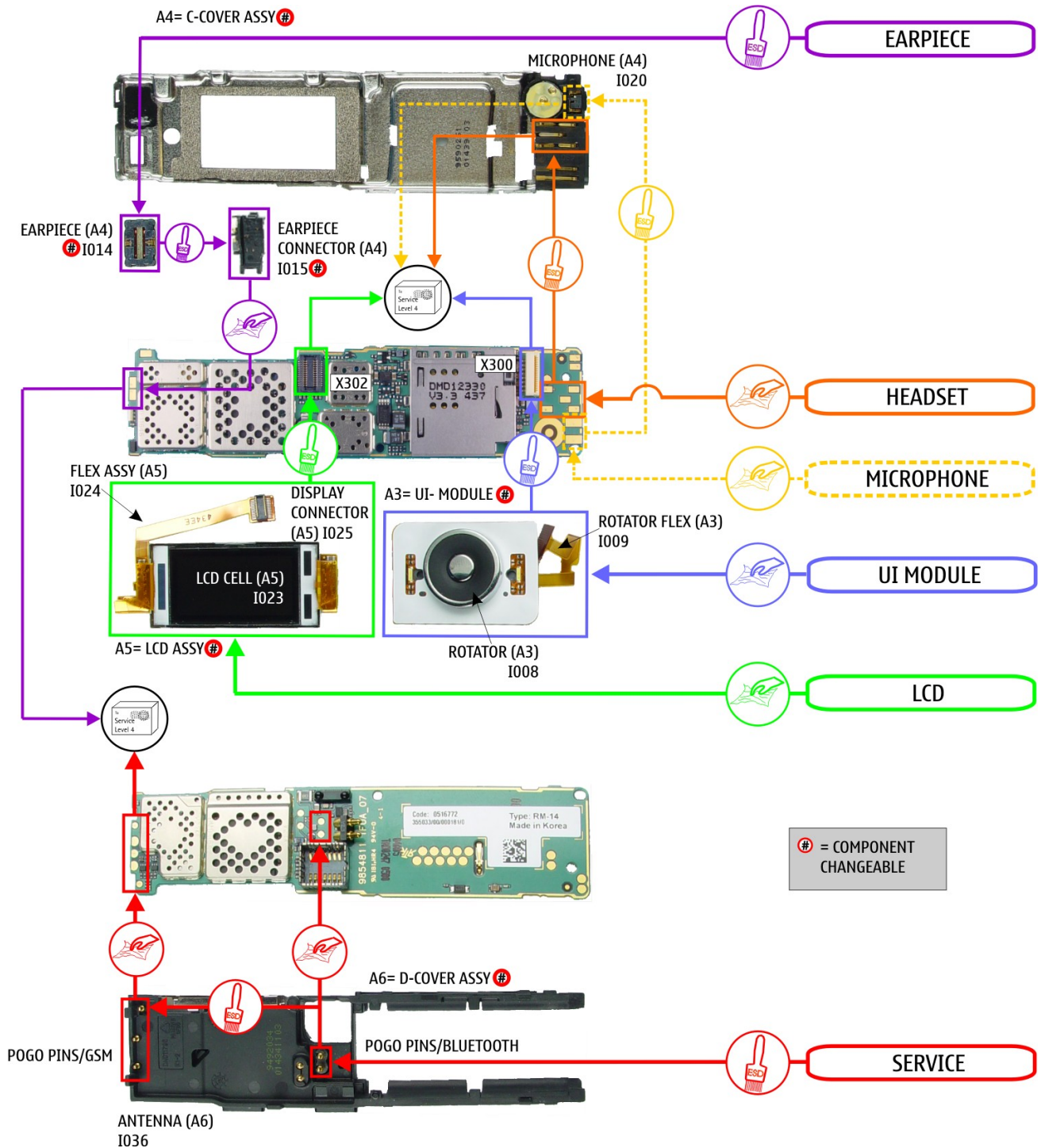
## 12. LEGEND FOR QUICK TROUBLE SHOOTER

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

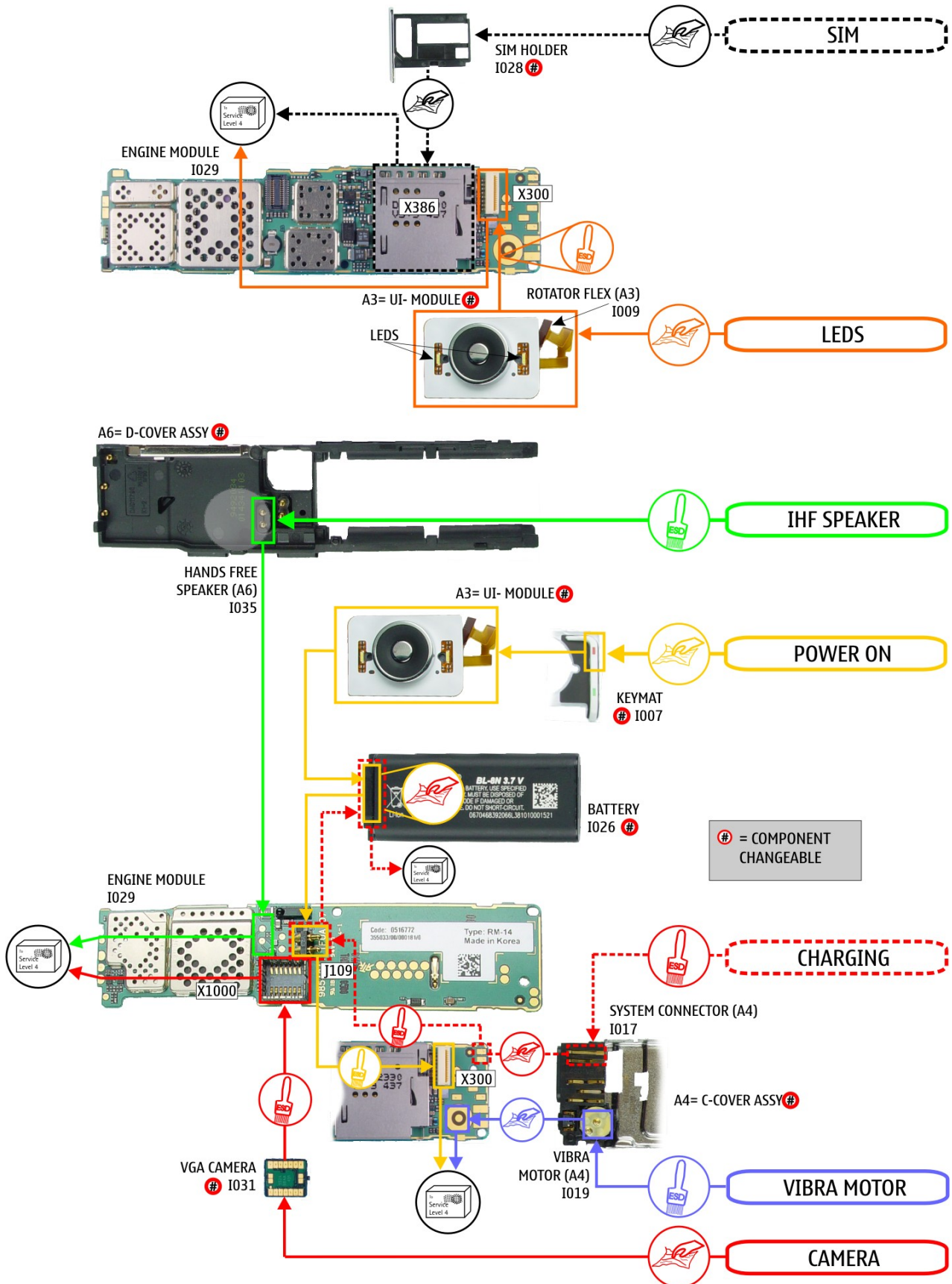
Follow the steps until the problem is solved. If this doesn't help, you are not authorized to go forward.	
	Only marked components ( e.g. I002  ) can be changed.
	The start point of repair activities regarding the appeared fault symptoms.
	Follow the arrows step by step
	Pads or contacts: Check optical and mechanical condition particularly regarding to corrosion. Clean if necessary.
	Measure component for electrical functionality and change, if needed.
	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.



### 13. QUICK TROUBLE SHOOTER 1



## 14. QUICK TROUBLE SHOOTER 2



## 15. CAMERA GONOGO TEST

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



- Press the red **End** key to reach the Home Menu
- Open the **Slide Cover**
- From Home Menu, select **Go to**
- Select **Camera**
- Press **Capture** to take a photo  
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 **Yes**
- Close the **Slide Cover**  
If the test is failed see Quick Trouble Shooter.

## 16. BLUETOOTH & INFRARED TEST

### Bluetooth test

You need another Bluetooth device (e.g. 6310i) 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.

### 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.



Reference unit, Bluetooth /infrared activated

Test unit

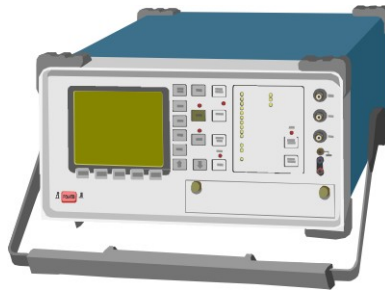
Settings on the test unit:

- Press the red **End** key to reach the Home Menu
  - Select **Names** and select **Search** for an entry  
 If phone and SIM memory is empty, create one new entry.
  - **Select** an entry and select **Details**
  - Select **Options**
  - Select **Send business 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.
    - B) - for Bluetooth test: Select **Via Bluetooth**
      - If needed (for e.g. after a sw-update), enter a name for this device.
      - select **Options**
      - select **Accept**
      - Search window appears, if all Bluetooth devices in range will be displayed, the test is successful!
  - Press red **End** key to reach Home Menu
- Note: If Bluetooth is activated switch it off!**

## 17. GONOGO TEST

After the optical check a GoNoGo test has to be carried out if the unit has been opened 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

## 18. BATTERY TEST

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

Please refer to the actual information on Partner Web Site.



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



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



## 19. 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.

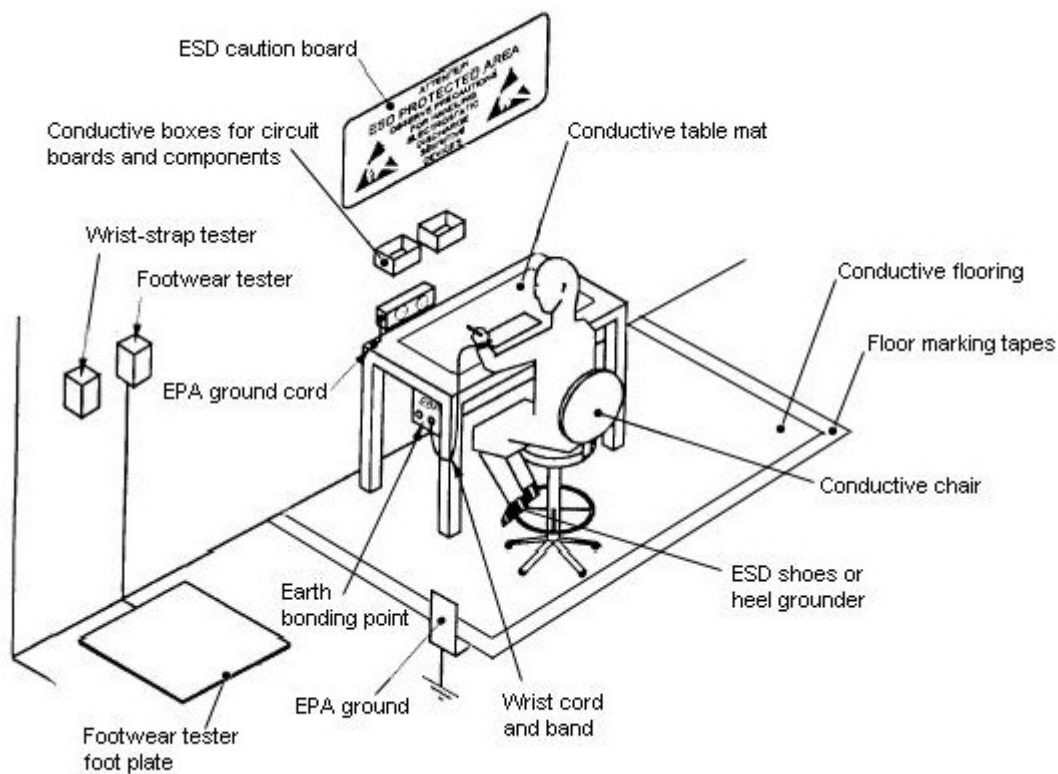


There are two different sizes of swap cartons for common mobile phones.



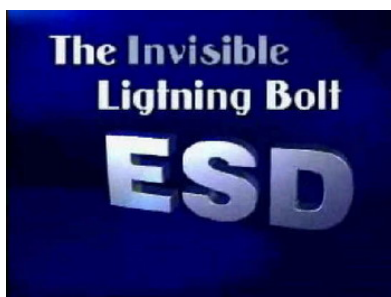
## 20. ESD PROTECTION REQUIREMENTS

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