NOKIA 9300

RAE-6

Phone characteristics:

- Triband GSM
- 900/ 1800/1900 (Eur, Apac) 850/1800/1900 (Americas)
- 5-way conference call
- USB 2.0, IrDa, Bluetooth, Pop-port™
- e-mail -IMAP4, POP3, SMTP - TCP/IP based
- MMS -3GPP PPS5 SMIL
- SMS, Fax Nokia VPN client
- OMA Device management 1.1.2 OMA client provisioning 1.1
- Nokia OTA 7.0 and smart messaging 3.0
- PC Suite for local data sync
- SyncML 1.1.2 for remote data sync
- Device to device synchronisation
- Java™ 2.0 (+ personal profile)
- Html browser (4.01/xHTML) JavaScript 1.3 and 1.5 support
- OMA DRM Forward-lock
- Two colour displays with 640x200 pixels and 128x128 pixels
- Symbian OS 7.0s software platform
- Data Mover (move your data from 9200 series Communicator)
- MMC card slot with “hot swap” support
- Office tools: Documents, Sheet, Presentations, Pdf viewer, Zip Manager

For details see Nokia.com

Transceiver with BP-6M 970mAh Li-Polymer battery pack

Talk time	Standby	Note
3h -7h	150h –200h	Depends on network parameters

Environmental characteristics:

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

SERVICE MANUAL

Service Level 1&2

TABLE OF CONTENT

Page

CHANGE HISTORY

Status	Version No.	Date	Comments
Draft	0.1	21.10.2004	Initial draft
Approved	1.0	07.12.2004	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 -->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 >

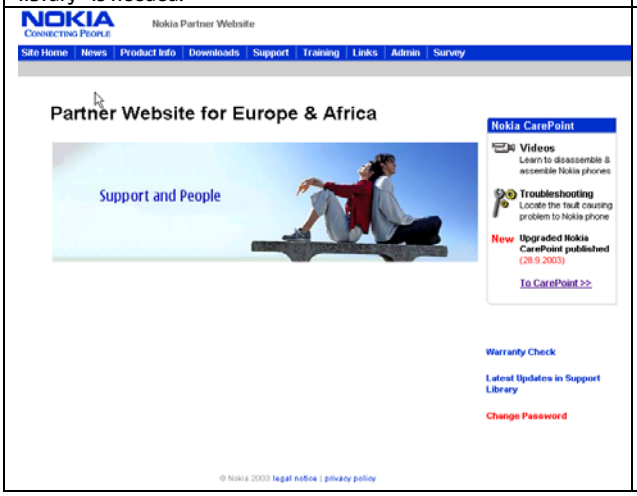
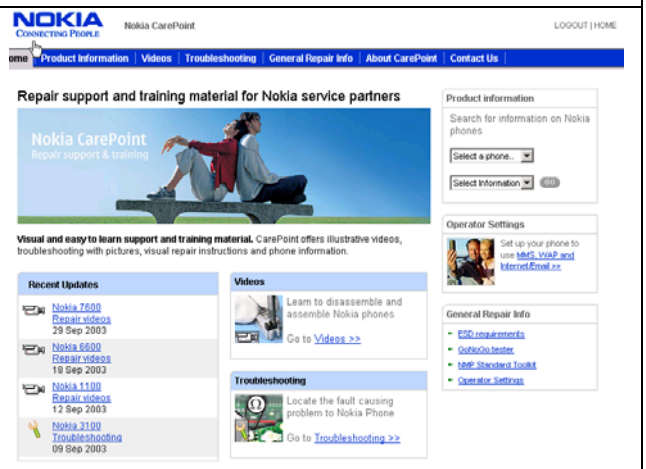
1. **Instructions**
2. **General Service Bulletins**
3. **Product related documents**
4. **Spare Part Service Bulletins**
5. **Service Tools Service Bulletins**
6. **Common Softwares Service Bulletins**
   etc,...

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)
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.		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.
		

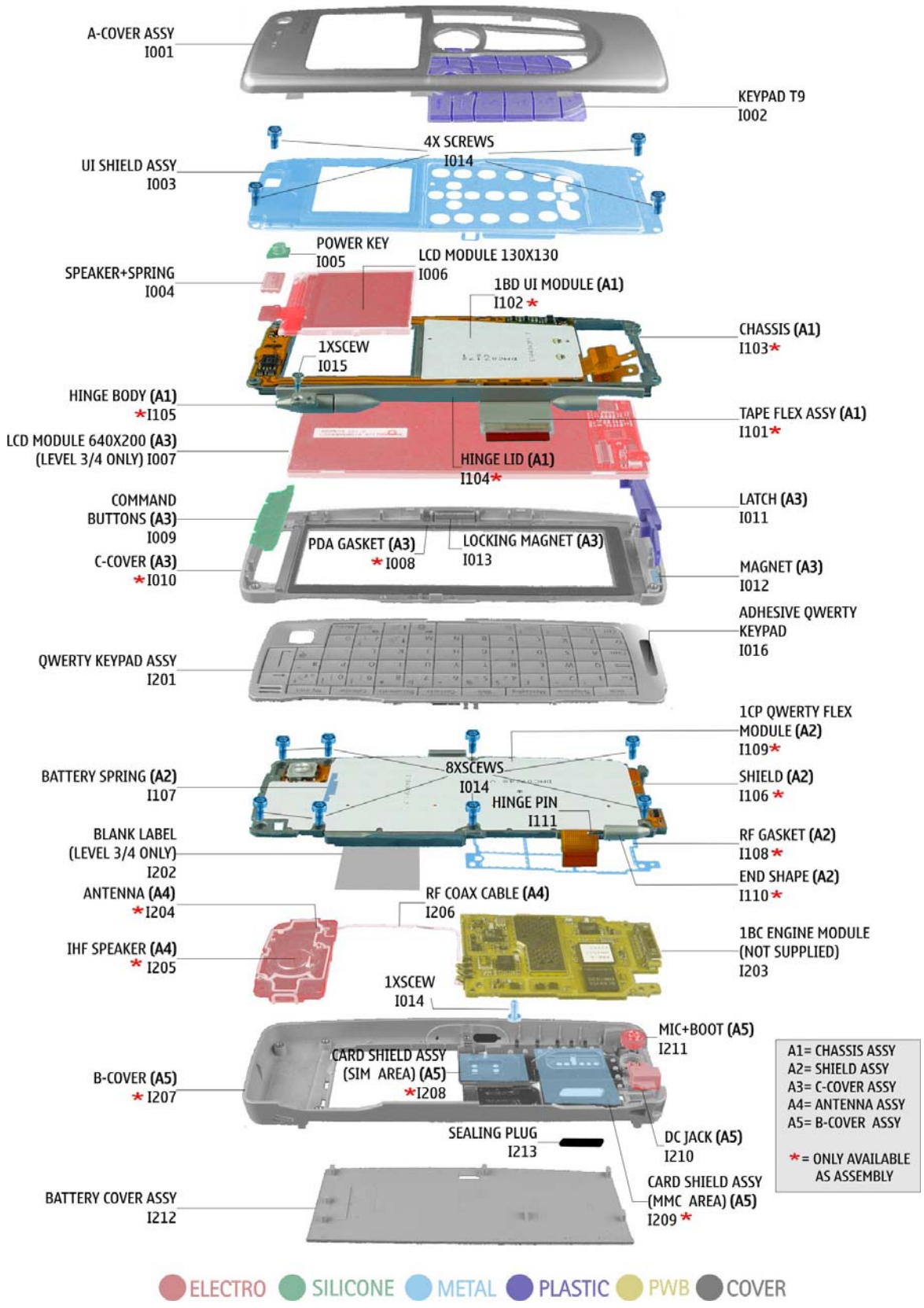
It is mandatory to watch for newest technical and organizational information on a daily basis to be updated as required (see **"Latest Updates in support Library"**). Every new information has to be processed and implemented as soon as possible.
When logged into PWS you can also find needed information in different folder like:

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

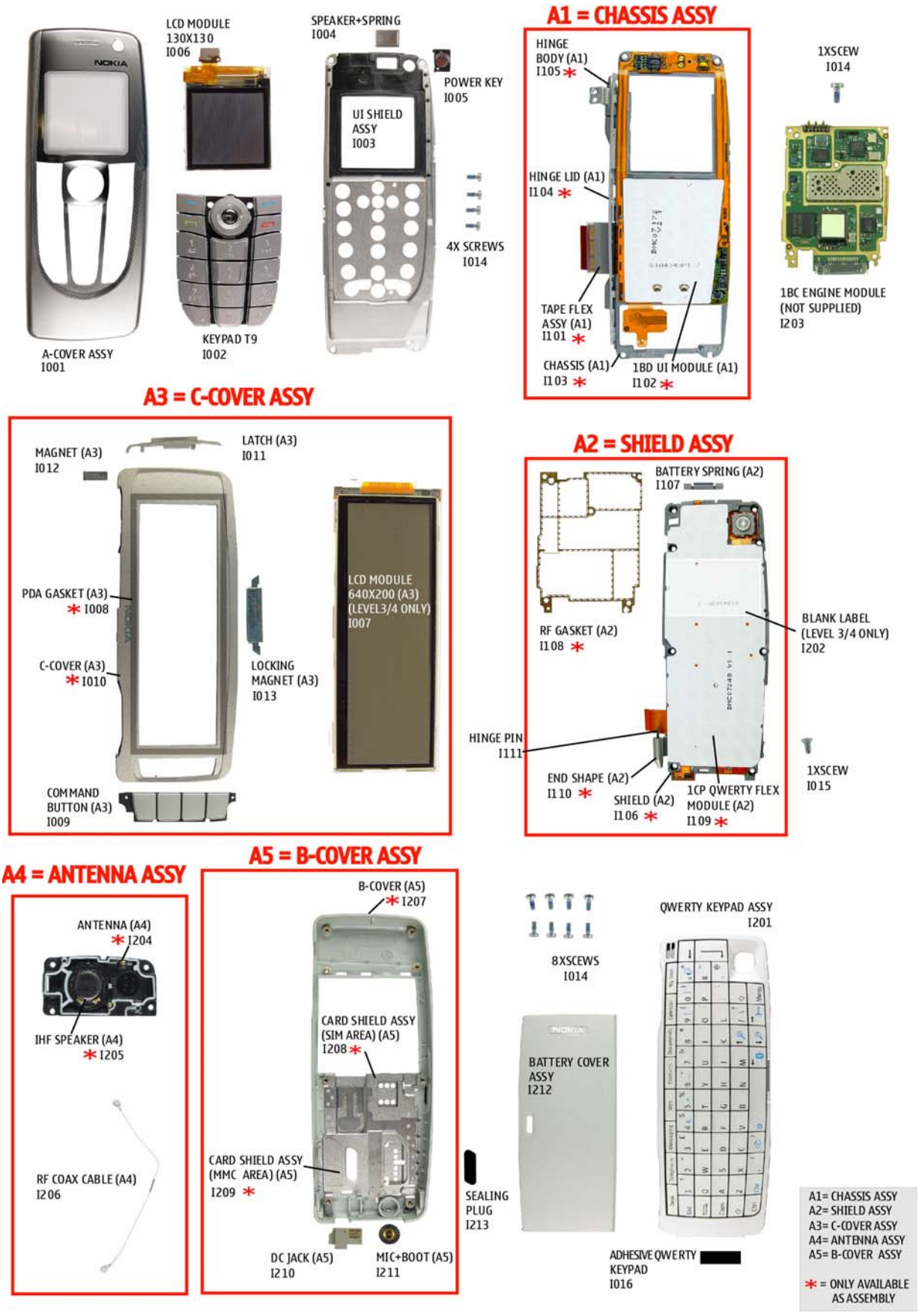
To reduce the server traffic it is recommended to download newest version of huge files like videos, Phoenix packages or Service Manuals only once and distribute it internally for further use.

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 OVERVIEW



6. SPARE PARTS LIST

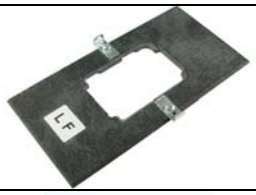
Please exchange this page (placeholder) with latest corresponding Service Bulletins (spare parts, SWAP units and service tools) from PWS/NOL!

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

	**FLS-4S incl. ACF-8, Driver and User Guide** is a dongle and flash device incorporated into one package, developed specifically for POS use.
	**ACF-8** Universal Power Supply is used to power FLS-4S.
	**Internal Battery BP-6M** Inserted under the back cover, this Li-Polymer 970 mAh battery provides power in a lightweight package.
	**Stand DT-5** Nokia Connectivity Desk Stand DT-5 Provides convenient data synchronization between the Nokia 9300 smartphone and a compatible PC
	**Travel Charger ACP-12E** Small and lightweight charger for fast charging of your phone battery.
	**Headset HDS-3** Small and lightweight stereo headset for handsfree functionality and listening to FM radio.
	**XCS-1** Service Cable is used to connect FLS-4S to SF-24.
	**SF-24** 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.
	**Test Pins** for Flash Adapter SF-24



RJ-28
Soldering Jig

Lead-free Solder Wire
Mandatory for lead-free products.

0772040 NMP Standard Toolkit

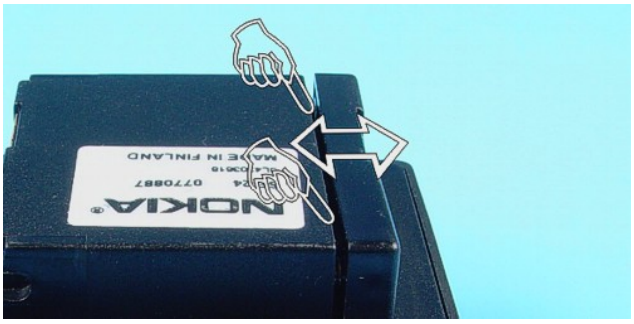
- Nokia opening tool SRT-6 Nokia No. 0770431
- Tonichi torque driver Nokia No. 6901525
- Hoya micro fibre cloth MX304
- Dastex gloves S, M, XL
- Artilux goggles AH166
- Wera bit T5 867/4TX 5x50
- Wera bit T6 867/4TX 6x50
- Wera bit T6 PLUS® 867/4TX 6IP
- Facom side cutter 416E
- Facom T5 driver SP.14032
- 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

8. SW-UPDATE

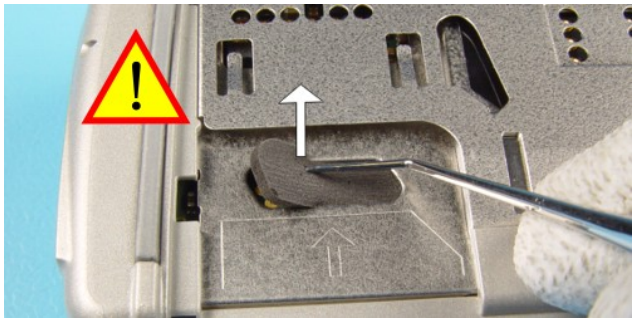
To use FLS-4S Flash Dongle you have to follow the user guide inside the sales package. Please check always for the latest version of flash software, which is available on Nokia Partner Web Site /Nokia Online.

Flash Concept – (Point of Sales)

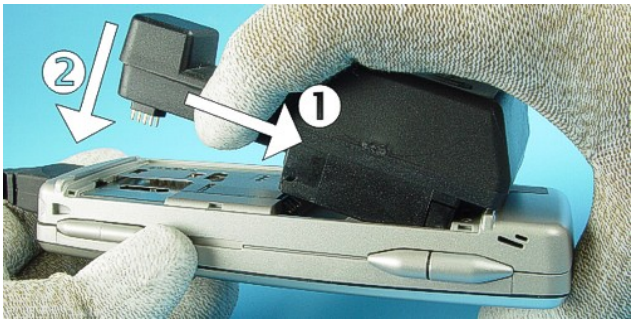
It is very important to follow this insertion and removal procedure, otherwise the contact pins of Flash Adapter will be damaged.



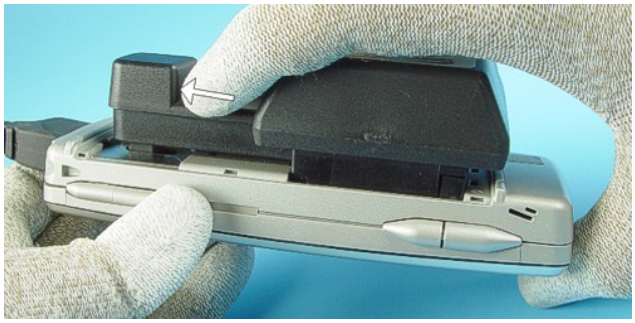
The Flash Adapter is equipped with a movable part, which is attached to the springs for fitting into the battery holder.



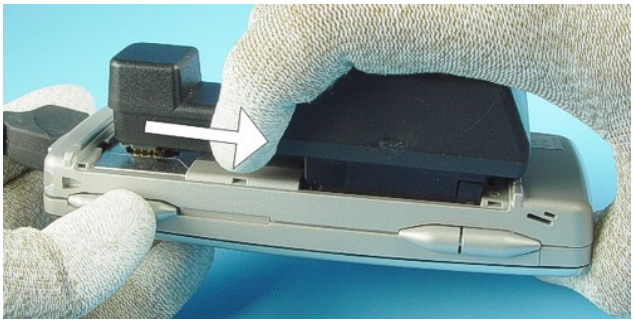
1.) Remove the **Sealing Plug** carefully by using the dental tool. Do not scratch the test pads.



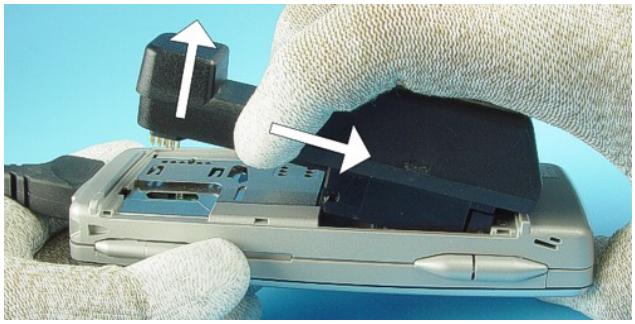
2.) Insert by starting from Battery Spring side. (NOT from Battery Connector side) To fix the Flash Adapter first press the adapter spring and then connect the test pins with the test pads of the device.



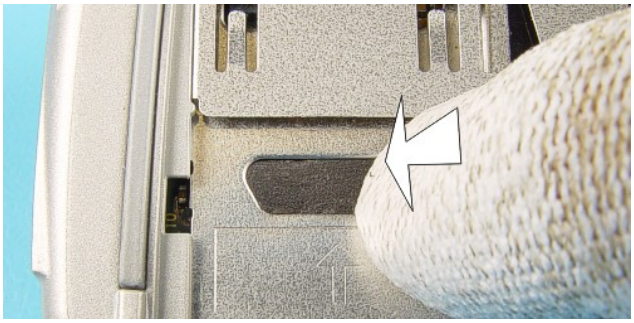
3.) Now, make sure that the contacts springs are settled correctly.



1.) When removing the Adapter first release tension by pressing as shown in the picture.



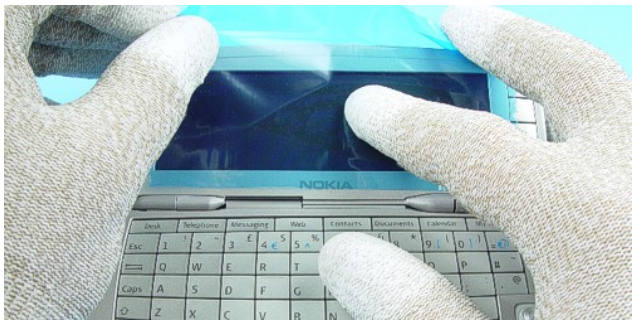
2.) Lift up the Adapter while holding the release tension.



3.) Put back the **Sealing Tape** after the flashing.

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

1.) Protect the window with a film.



2.) Fit protective film to the **LCD Module.**

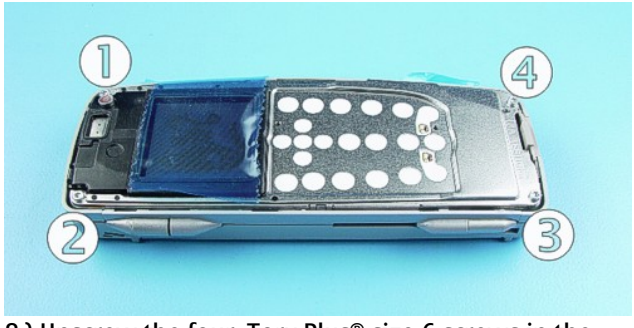
3.) Press down the **Latch** and open the **Battery Cover.**

4.) Be sure that the battery is removed and then continue with disassembly. Note to put back the **Sealing Tape** after the re-assembly.

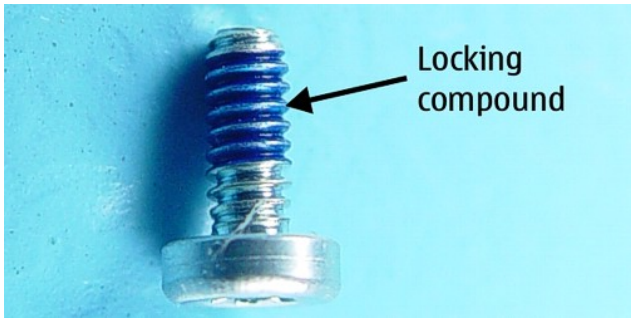
5.) Push the **Latch** and open the **A-Cover Assy.**

6.) Protect the **LCD Module** with a film.

7.) Remove the **Keypad.** Note the guide openings on the **UI Shield Assy** when assembling the **Keypad.**

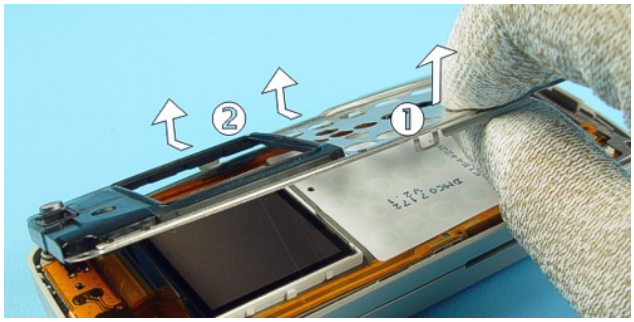


8.) Unscrew the four, Torx Plus® size 6 screws in the shown order. Always use new screws when re-assembling! For assembly, reverse the order and use a Torx Plus® size 6 driver with a torque setting of 25Ncm.

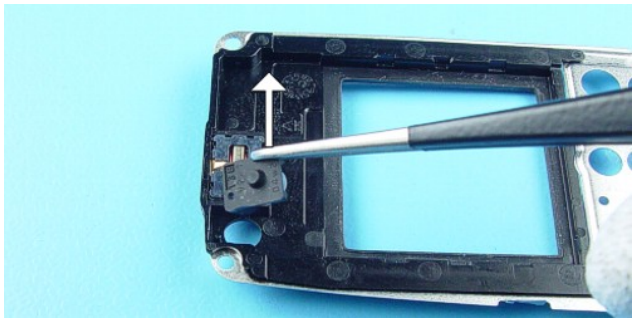


9.) The screws are not reusable.

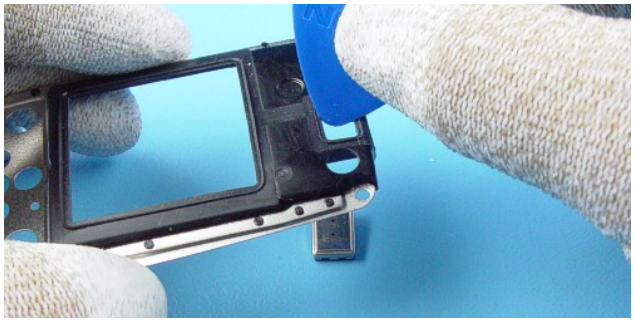
10.) Open the flap carefully by using the dental tool.



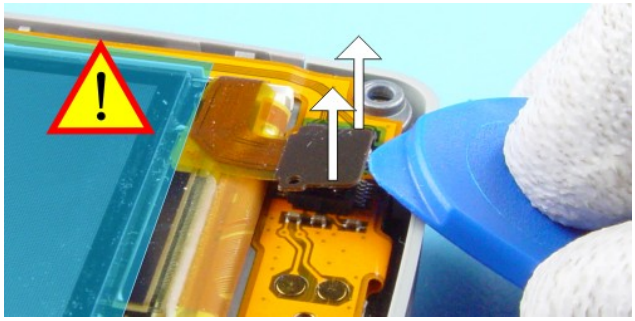
11.) Remove the **SHIELD** in shown order.



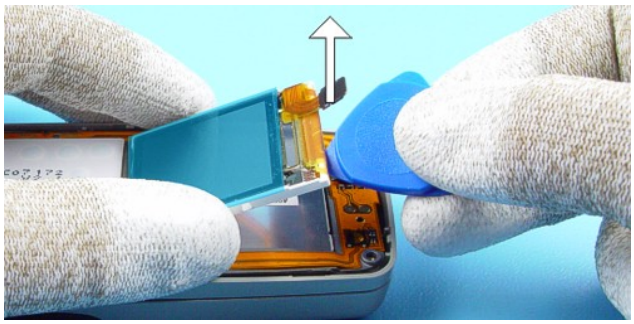
12.) Remove the **Power Key.**



13.) Push out the **Speaker** with SRT-6.

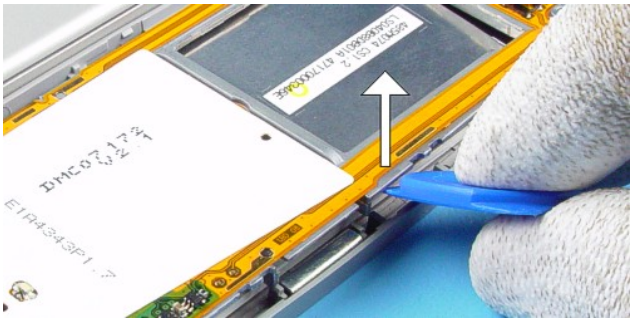


14.) Open the LCD connector carefully.



15.) Lift and remove the **LCD Module.**

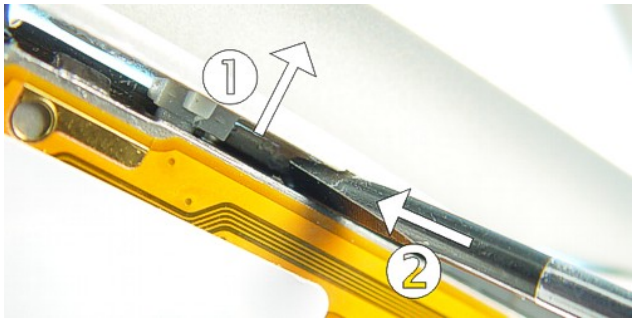
16.) From shown side only, open the UI Module connector carefully.



17.) Use the SRT-6 as a lever to lift the **Shield**.

18.) Hold the unit as shown in the picture.

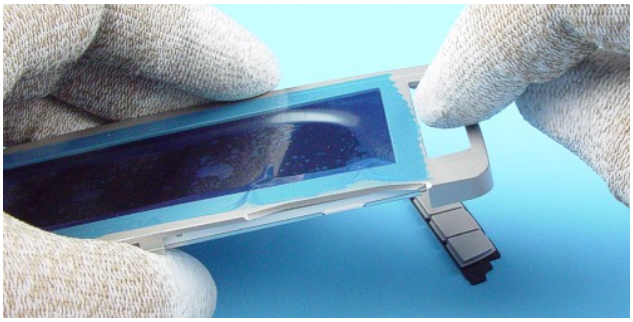
19.) Use a slotted screwdriver to unlock the snap.



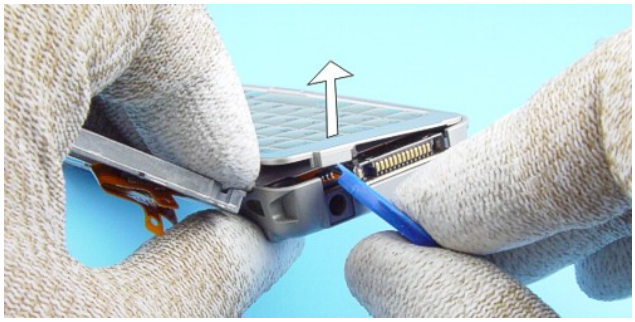
20.) The snap of the C-Cover is locked to the Shield. Bend the snap a bit in the shown direction and push it out carefully.

21.) Press out the **C-Cover Assy** carefully.

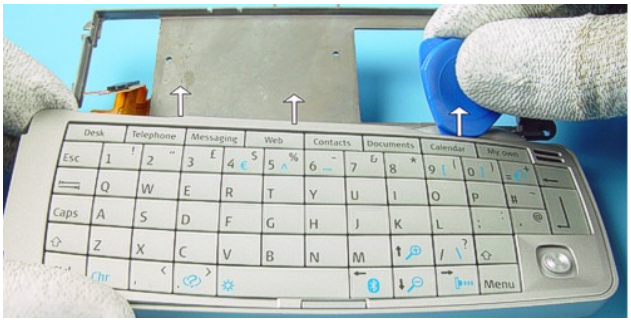
22.) Take away the **C-Cover Assy.**



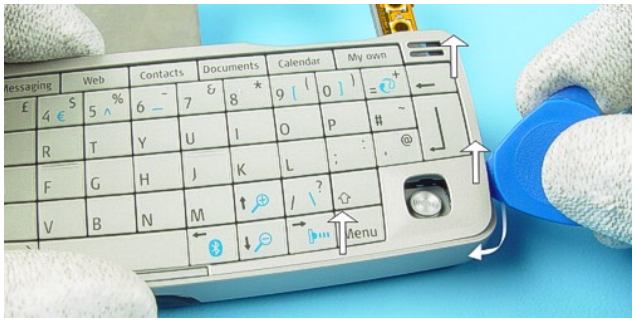
23.) The **Command Buttons** drop out by pushing them out.



24.) Place the SRT-6 between **Qwerty Keypad** and the **DC-Jack** and lift the **Qwerty Keypad** carefully.



25.) Open the hooks carefully by using the SRT-6 as a lever.



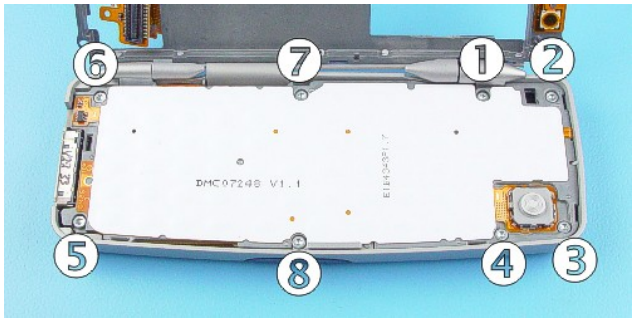
26.) Unlock the hooks along the edge of the **Qwerty Keypad** as shown.

27.) The same procedure on the shown side.

28.) Now, the **Qwerty Keypad** can be removed.

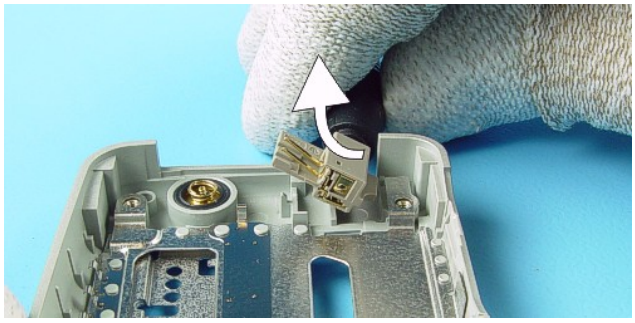
For assembly only!

Always use a new **Adhesive Qwerty Keypad** when re-assembling!

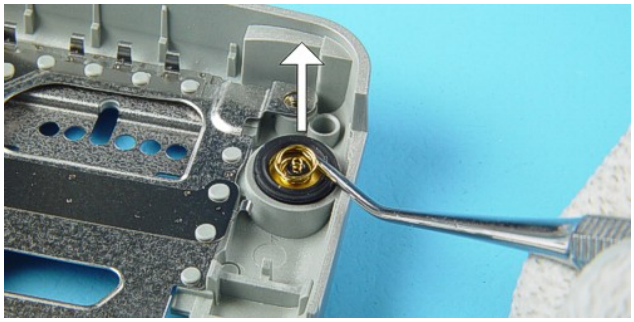


29.) Unscrew the eight, Torx Plus® size 6 screws in the order shown. Always use new screws when re-assembling! For assembly, reverse the order and use a Torx Plus® size 6 driver with a torque setting of 25Ncm.

30.) Remove the **Chassis Assy**. Always start from the antenna side.

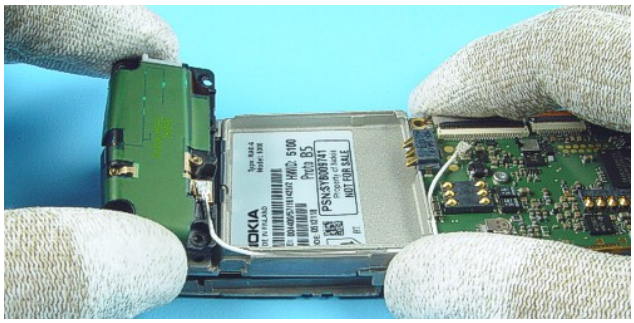


31.) Remove the **DC-Jack** by using the DC-plug.

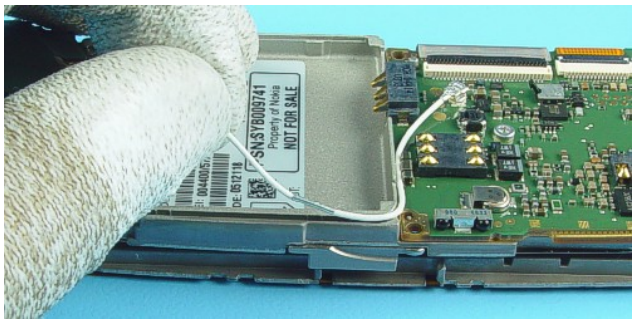


32.) Remove the **Microphone** by using the dental tool.

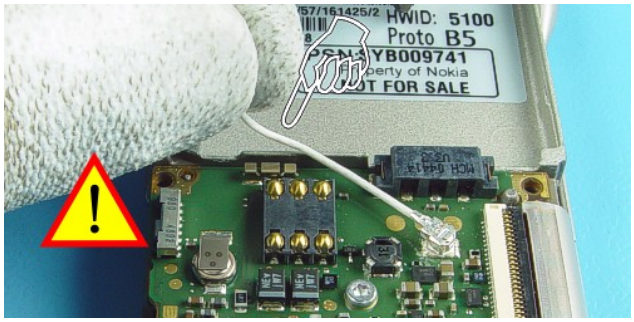
33.) Note the placement of the **RF Coax Cable** before continuing the disassembly.



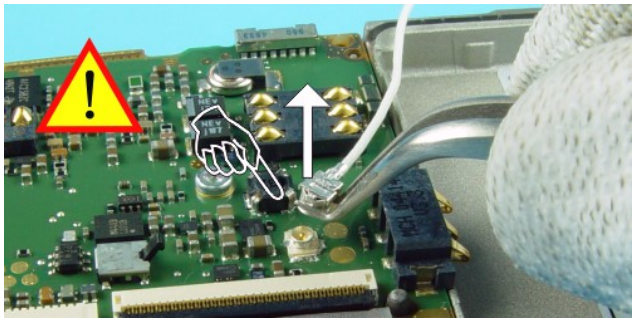
34.) First remove the **Antenna Assy.** **Do Not open the Antenna RF connector!**



35.) Remove the **RF Coax Cable** from its guidance.

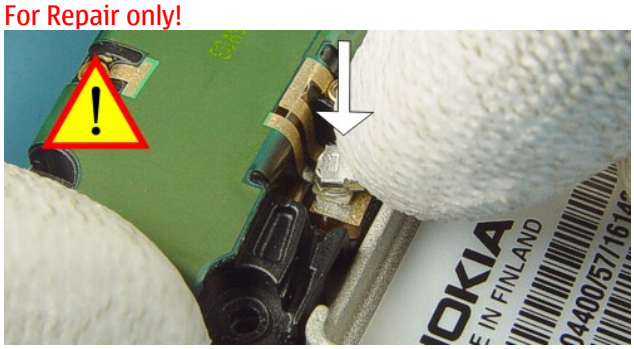


36.) Do not pull up on the cable.

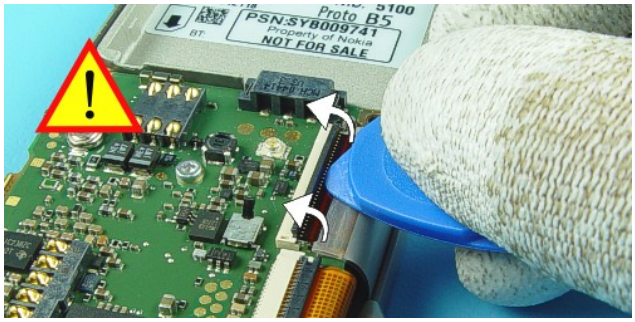


37.) Lift RF connector straight up by using angled tweezers, do not bend it sideways.

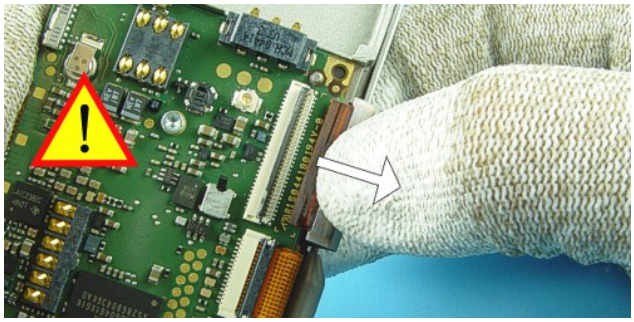
For Repair only!



RF Coax Cable cannot be disconnected from the **Antenna**. If **Antenna Assy** or **RF Coax Cable** is defect, us always a new **Antenna Assy** and a new **Coax Cable**. First place the **Antenna Assy** onto the **Shield** and than connect the **RF Coax Cable.**



38.) Unlock the flex connector with SRT-6 carefully.



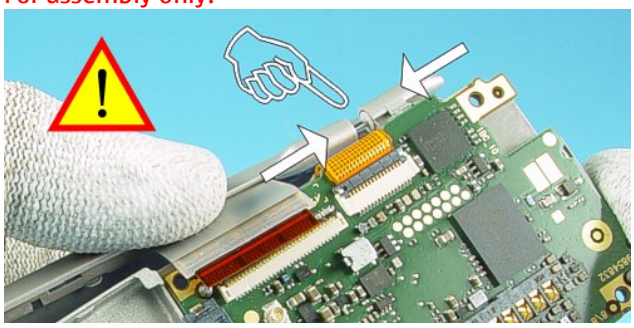
39.) Remove the flex from the connector carefully as shown in the picture. Do not fold the flex foil

40.) Unscrew the Torx Plus® size 6 screw.

41.) Separate the **Chassis** from the **Shield** carefully.

42.) Swap unit

For assembly only!



Assemble the **Chassis**. Be careful and do not damage the **Hinge Pin** and the flex.

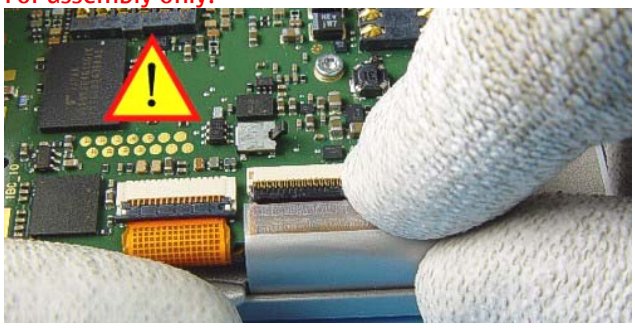
For assembly only!

For assembly use a Torx Plus® size 6 driver with a torque setting of 22Ncm.

For assembly only!

Place the flex into the connector carefully. Be sure that the contacts are clean when connecting the flex.

For assembly only!



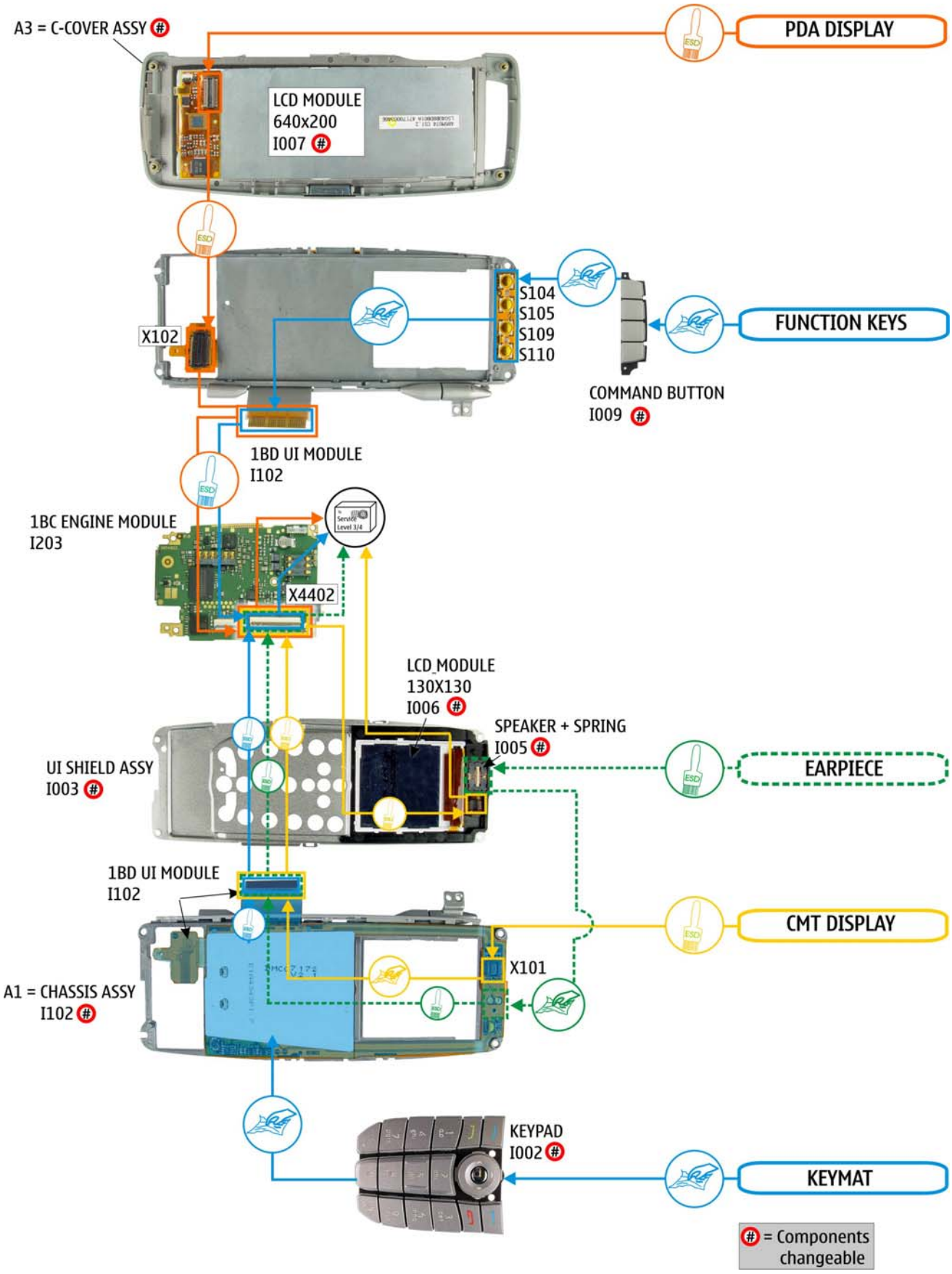
Close the connector carefully.

10. LEGEND FOR QUICK TROUBLE SHOOTER

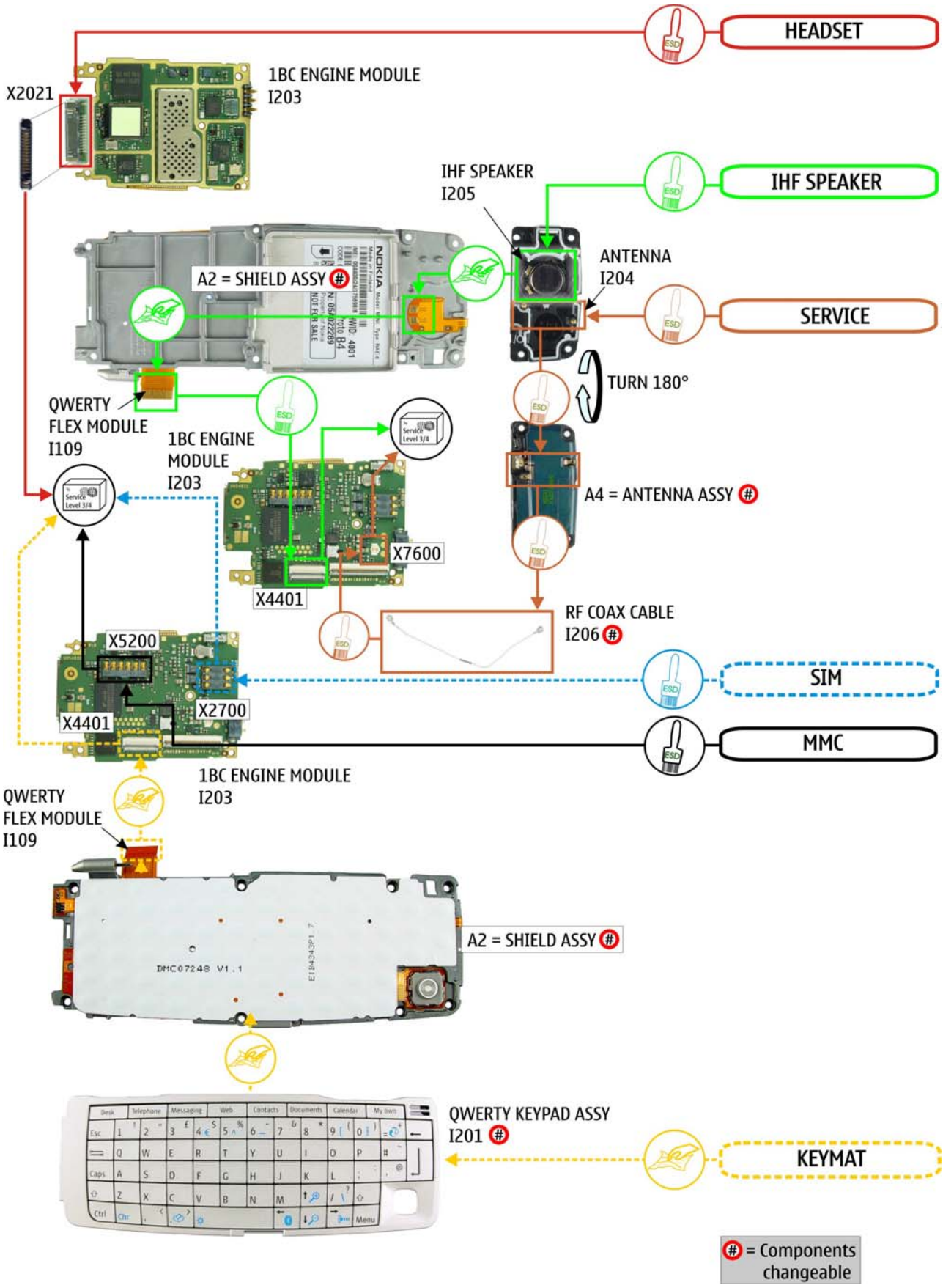
This legend is valid for all parts of the **Quick Trouble Shooter**

Follow the steps until the problem is solved...	
	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.

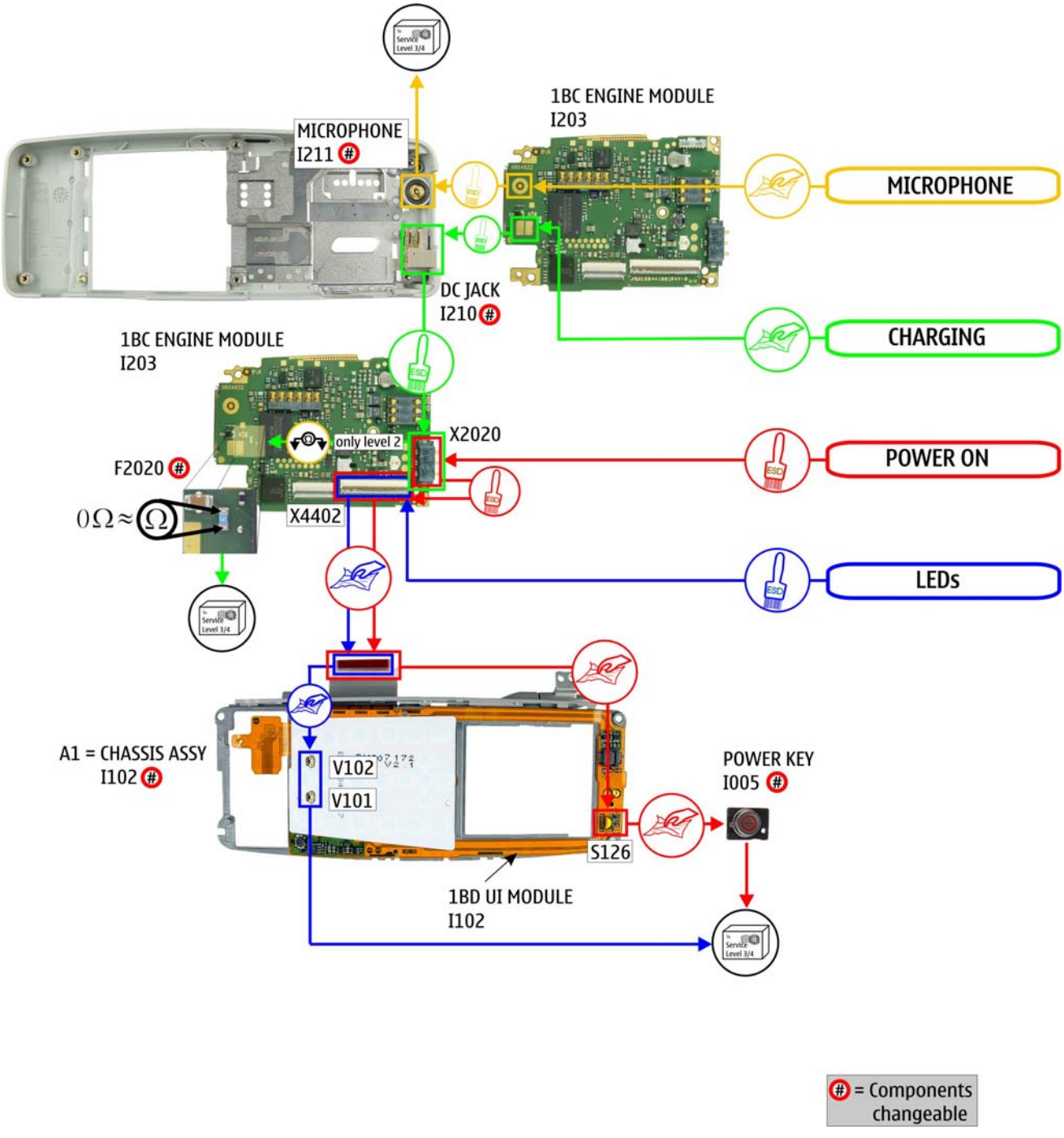
11. QUICK TROUBLE SHOOTER PART 1



12. QUICK TROUBLE SHOOTER PART 2



13. QUICK TROUBLE SHOOTER PART 3



14. 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.

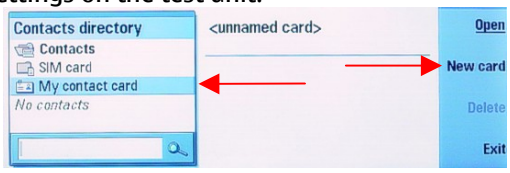
Infrared test
You need another infrared device (e.g. 6310i) to do a GoNoGo test. The infrared windows of the devices must be directed to each other and should have a distance of approximate 15 cm. Make sure that infrared is activated in receiver device.

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.

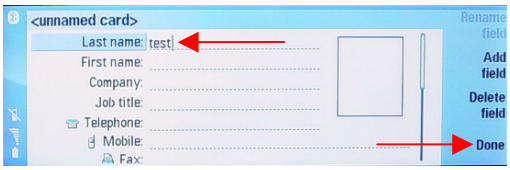
Reference unit, Bluetooth /infrared

activated Test unit

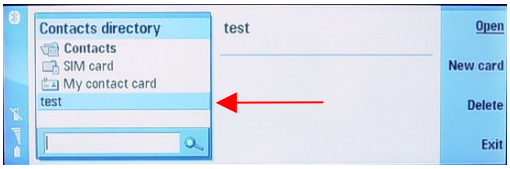
Settings on the test unit:



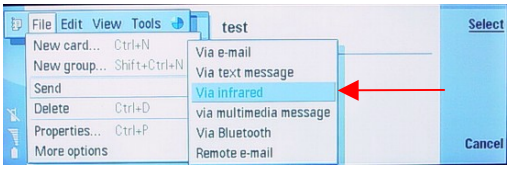
From Desk Menu select Contacts.
In **Contacts directory** select **My contacts card** and select **New card.**



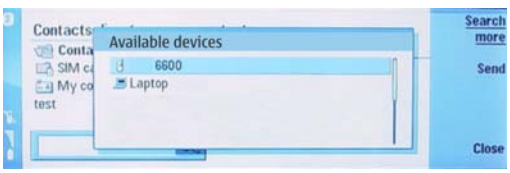
Create one new contact. Type for e.g. "test" and acknowledge it with **Done.**



Select your entry "test" and press the Menu key.



For infrared test: Select: **File-->Send-->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 a message on receiver device.

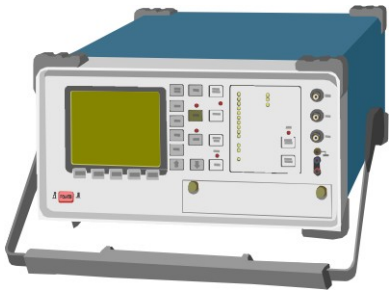


For Bluetooth test: Select: **File-->Send--> Via Bluetooth**
Activate Bluetooth if not already done.
Search window appears, if all Bluetooth devices in range will be displayed, the test is successful!
IF the Bluetooth is activated, switch it off!

15. 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

16. BATTERY TEST

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

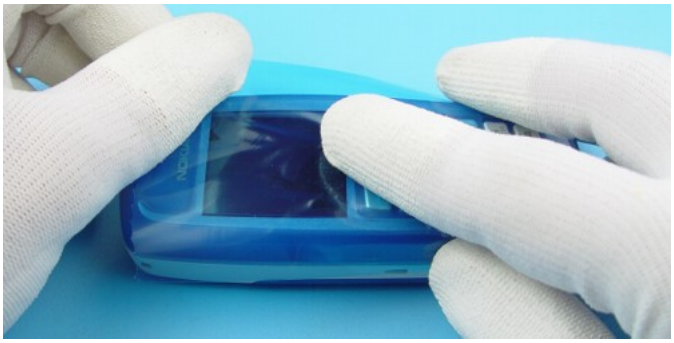
Please refer to the actual information on Partner Web Site/Nokia Online.

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

http://www.cadex.com/

17. 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.

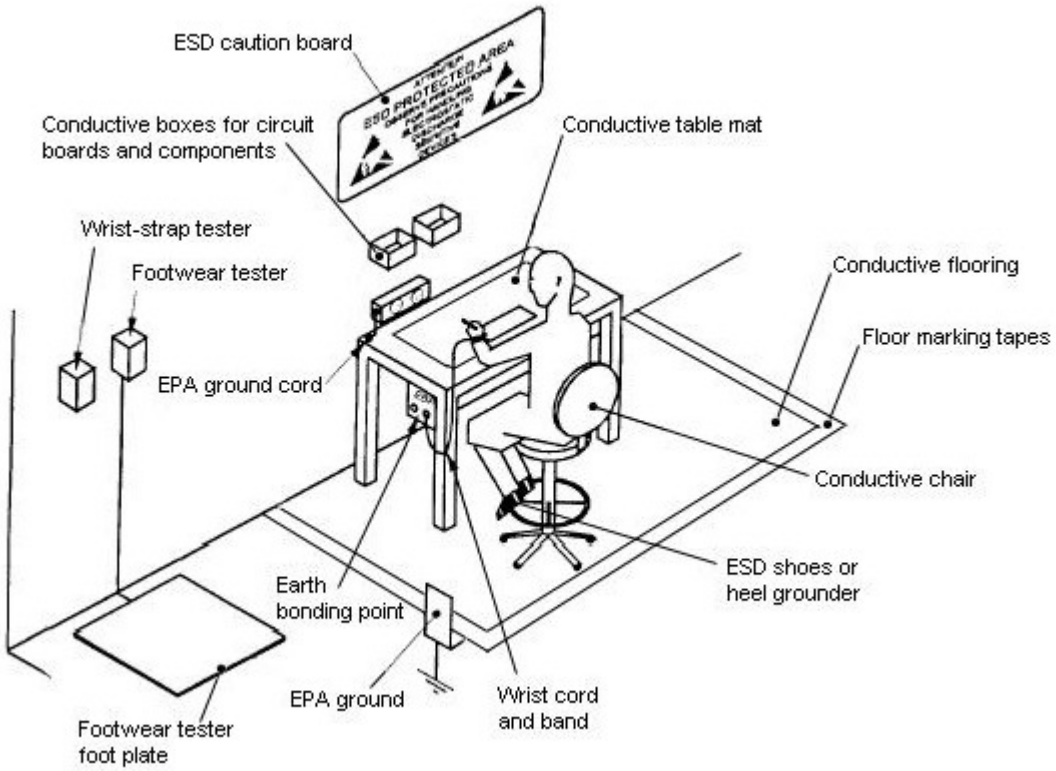
Add repair documentation e.g. filled-in service note into the swap carton.

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

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

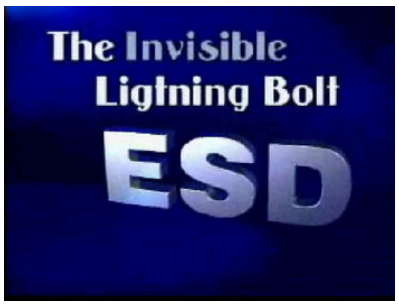
18. ESD PROTECTION REQUIREMENTS

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