

# NOKIA 2300

RM-4



## Transceiver Features

- FM radio and antenna headset
- Internal handsfree (IHF) speaker
- Changeable Nokia Xpress-on™ covers
- Changeable keymat
- Polyphonic ringing tones (built-in)
- 3 built-in games
- Navi™ key with 4-way scroll for easy messaging and gaming
- Distribution list for group messaging
- SMS counter
- Junk SMS and call screening
- Shortcut to favorite menu
- Timed profile

Transceiver with BL-5C Li-ion 850mAh battery pack

Talk time	Standby	Radio	Note
2h-4.5h	100h-400h	Headset: 7h-36h IHF: up to 20h	Depends on network parameters

# SERVICE MANUAL

## Service Level 1&2

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**TABLE OF CONTENT**

	<b>PAGE</b>
<b>1. INTRODUCTION.....</b>	<b>3</b>
<b>2. GENERAL REPAIR INFORMATION.....</b>	<b>4</b>
<b>3. PATHFINDER FOR WORKSHOP STAFF .....</b>	<b>5</b>
<b>4. EXPLODED VIEW AND COMPONENT DISPOSAL .....</b>	<b>6</b>
<b>5. SPARE PARTS LIST .....</b>	<b>7</b>
<b>6. SERVICE TOOLS .....</b>	<b>9</b>
<b>7. SW-UPDATE.....</b>	<b>11</b>
<b>8. DISASSEMBLY INSTRUCTIONS (ALSO SEE THE VIDEO CLIPS ON CARE POINT) .....</b>	<b>12</b>
<b>9. DOMESHEET EXCHANGE INSTRUCTIONS .....</b>	<b>14</b>
<b>10. LEGEND FOR QUICK TROUBLE SHOOTER .....</b>	<b>15</b>
<b>11. QUICK TROUBLE SHOOTER PART 1.....</b>	<b>16</b>
<b>12. QUICK TROUBLE SHOOTER PART 2.....</b>	<b>17</b>
<b>13. GONOGO TEST .....</b>	<b>18</b>
<b>14. BATTERY TEST .....</b>	<b>18</b>
<b>15. SERVICE NOTES .....</b>	<b>19</b>
<b>16. FORWARDING OF REPAIRS TO SERVICE LEVEL 3 OR 4 SUPPLIERS.....</b>	<b>20</b>
<b>17. ESD PROTECTION REQUIREMENTS.....</b>	<b>21</b>

**CHANGE HISTORY**

Status	Version No.	Date	Comments
Draft	0.1	17.11.2003	Initial draft
Approved	1.0	22.01.2004	Approval/Section 2 General Repair Information modified

## 1. INTRODUCTION

The purpose of this document is to help Nokia service levels 1 and 2 workshop technicians to carry out service to Nokia 2300. This Service Manual is to be used **only** by authorized Nokia service partners, and the content of it is **confidential**. Please note that Nokia provides also other guidance documents (e.g. Service Bulletins) for service partners, 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. Ensure solder, wire, or foreign matter does not enter the telephone as damage may result.
4. Use only approved components as specified in the parts list.
5. 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. 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 2300 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 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), 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.
- Use always 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).
- 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 Faultlogger 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 Service Bulletins, which have to be followed:*

First, take care for the latest content pages of Service Bulletins, which are always available on Nokia Partner Web Site. This is also important to recognize, if existing Bulletins have become invalid.

The service level indicator at the bottom of each document tells the appropriate destination.

#### **Downloads > Support Library >**


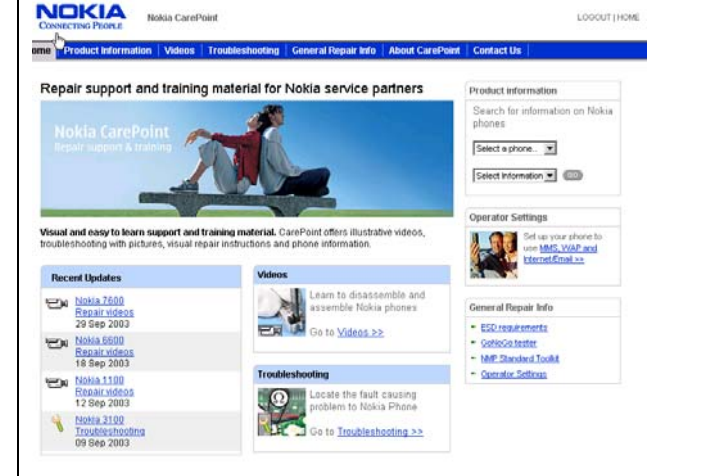
- **General Service Bulletins**
- **Service Tools Service Bulletins**
- **Spare Part Service Bulletins**
- **Common Softwares Service Bulletins**
- **Instructions**
- **etc,...**

**Please check Nokia Partner Web Site (PWS) 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](#), 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 partners 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.

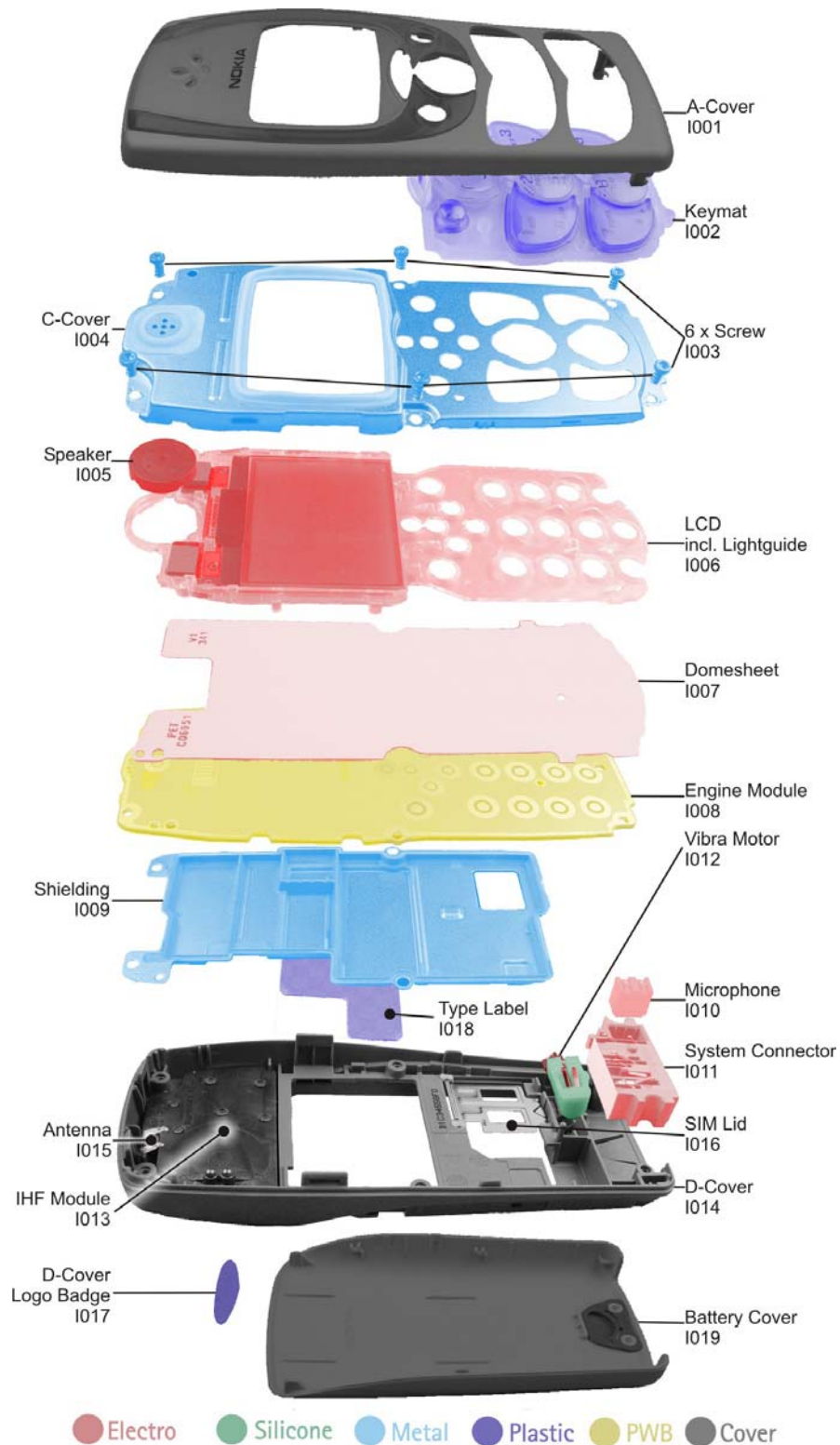
When logged into PWS you can also find needed information in different folder like:

- 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 spare server bandwidth 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.



Description: See corresponding ITEM/CIRCUIT REF of the SPL (Spare Parts List)

**5. SPARE PARTS LIST**

**MECHANICAL PARTS**

ITEM/ CIRCUIT REF.	QTY	PART NO	PART NAME
I001	1	XXXXXXX	A-COVER SUB ASSY
I002	1	XXXXXXX	KEYMAT
I003	6	6290083	SCREW 1.8X5.3 T6+
	<b>1</b>	<b>4850365</b>	<b>LCD ASSY</b>
I004	1	-	C-COVER
I005	1	5140233	SPEAKER
I006	1	-	LCD INCL. LIGHTGUIDE
I007	<b>1</b>	<b>9795147</b>	<b>DOME SHEET</b>
I008	1	-	ENGINE MODULE
I009	1	-	SHIELDING
I010	1	5140201	MICROPHONE
I011	1	5460119	SYSTEM CONNECTOR
I012	1	6800053	VIBRA MOTOR
	<b>1</b>	<b>9492069</b>	<b>D-COVER ASSY</b>
I013	1	-	IHF MODULE
I014	1	-	D-COVER
I015	1	-	ANTENNA
I016	1	-	SIM LID
I017	1	-	D-COVER LOGO BADGE
I018	1	-	TYPE LABEL
I019	1	XXXXXXX	BATTERY-COVER

**SOLDERING COMPONENTS ONLY FOR LEVEL 2**

ITEM/ CIRCUIT REF.	QTY	PART NO	PART NAME
F100	1	5119019	SM FUSE F 1.5A 32V

## VARIANT PARTS

ITEM/ CIRCUIT REF.	QTY	PART NO	PART NAME
I001		9459290	A-COVER SUB ASSY - LIGHT GREY FEMME
I001		9491855	A-COVER SUB ASSY - GRAPHITE HOMME
I002		9791118	KEYMAT FEMME - LATIN
I002		9792001	KEYMAT HOMME - LATIN
I002		9792008	KEYMAT FEMME - CYRILIC
I002		9792007	KEYMAT HOMME - CYRILIC
I002		9792012	KEYMAT FEMME - HEBREW
I002		9792011	KEYMAT HOMME - HEBREW
I002		9792010	KEYMAT FEMME - GREEK
I002		9792006	KEYMAT HOMME - GREEK
I002		9792009	KEYMAT FEMME - ARABIC
I002		9792005	KEYMAT HOMME - ARABIC
I002		9792020	KEYMAT FEMME - FARSI
I002		9792019	KEYMAT HOMME - FARSI
I002		9792018	KEYMAT FEMME - URDU
I002		9792017	KEYMAT HOMME - URDU
I019		9470534	B-COVER LIGHT GREY FEMME
I019		9491857	B-COVER GRAPHITE HOMME

## SWAP UNITS

	QTY	PART NO	PART NAME
		0052283	RH-4 N2300 SWAP ENGINE EUROPE & AFRICA
		0052195	RH-4 N2300 SWAP ENGINE POLAND
		0052190	RH-4 N2300 SWAP ENGINE TURKEY
		0052189	RH-4 N2300 SWAP ENGINE FRANCE
		0052194	RH-4 N2300 SWAP ENGINE CZECH
		0052193	RH-4 N2300 SWAP ENGINE SOUTH AFRICA
		0052192	RH-4 N2300 SWAP ENGINE RUSSIA
		0052191	RH-4 N2300 SWAP ENGINE UKRAINE



## 6. SERVICE TOOLS

	<p><b>0080541 FLS-45 incl. Driver and User Guide</b>  is a dongle and flash device incorporated into one package, developed specifically for POS use.</p>
	<p><b>0680032 ACF-8</b>  Universal Power Supply is used to power FLS-4S.</p>
	<p><b>0273558 Internal Battery BL-5C</b>  Inserted under the back cover, this Li-ion battery provides power in a lightweight package.</p>
	<p><b>0271467 Headset HDC-5</b>  An easy and convenient handsfree solution with remote control.</p>
	<p><b>0272169 Travel Charger ACP-8E</b>  <b>0272172 Travel Charger ACP-8X</b>  Lightweight multi-voltage charger for charging your phone battery.</p>
	<p><b>0730218 XCS-1</b>  Service Cable is used to connect FLS-4S to SF-10.</p>
	<p><b>0770748 SF-10</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>0770740 RJ-12</b>  Soldering Jig (for Level 2 or higher service level supplier)</p>



**0770442 Test pins**  
for POS Flash Adapter SF-10



**0772040 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 the latest version of flash software, which is available on Nokia Partner Web Site.

### Flash Concept – (Point of Sales)

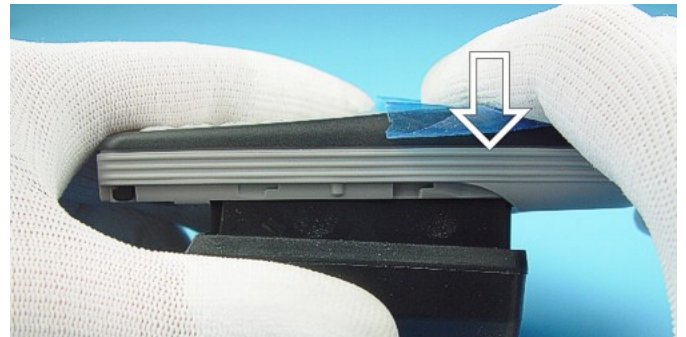
(Following pictures taken from Nokia 1100 SW-Update)



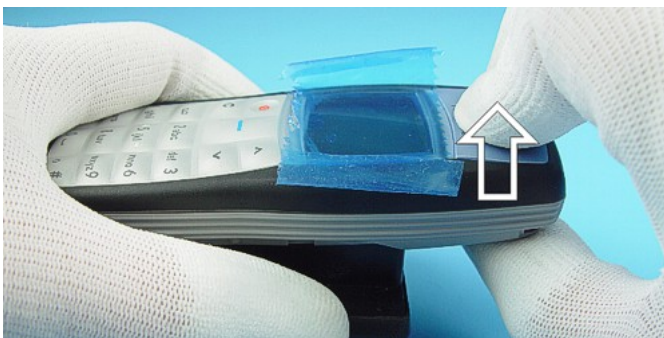
It is very important to follow this insertion and removal procedure, otherwise the contact pins of Flash Adapter will be damaged. Also it has to make sure that all contacts are clean and in proper condition.



**Note:** the Battery Connector in comparison with other products is located on the bottom side of the phone. Before starting the flash process, be sure that SIM Lid is closed. Insert the Flash Adapter SF-10 like a battery, start at the Battery Connector side.



Now, push down the top side of the Phone, do not use too much force.

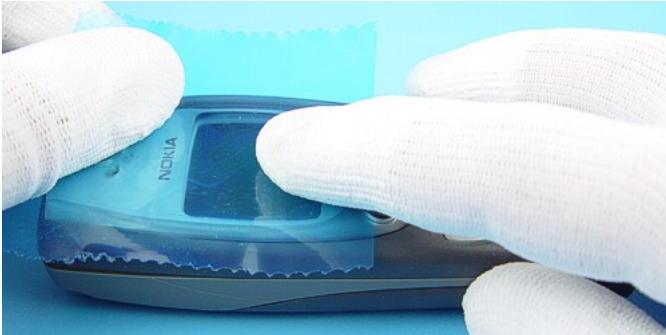


When removing the Flash Adapter always start from the top side.

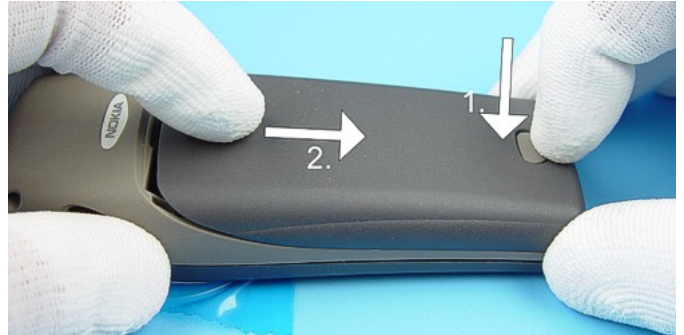


Now, take away the unit.

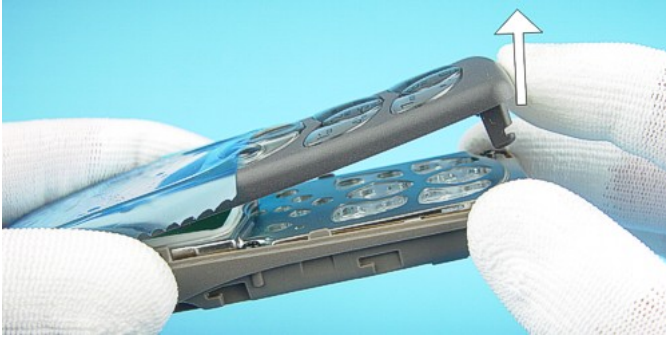
## 8. DISASSEMBLY INSTRUCTIONS (ALSO SEE THE VIDEO CLIPS ON CARE POINT)



If not already done protect Window with a film to avoid dust and scratches.



Press the Release Button before removing the Battery Cover.



Open A-Cover from bottom side on.



Now, Keymat can be taken away easily.



Unscrew the six Torx Plus® size 6 screws. **For assembly, the reverse order and a Torx Plus® driver with a torque of 21Ncm have to be used.**



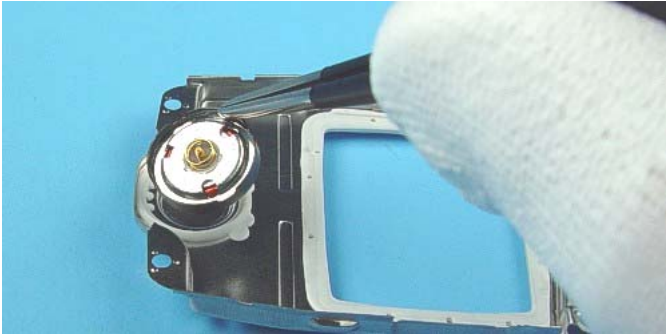
Take LCD Assy from Engine Module.



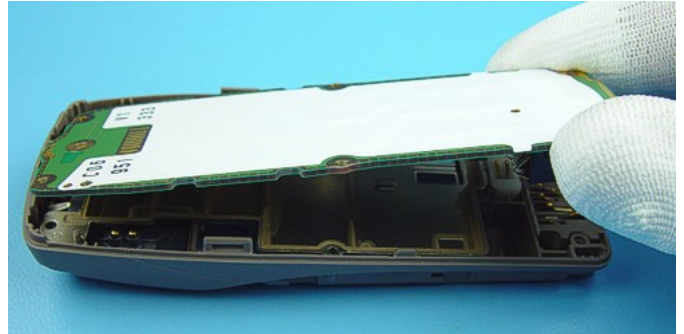
Unlock LCD snaps of the LCD Light guide on the bottom side.



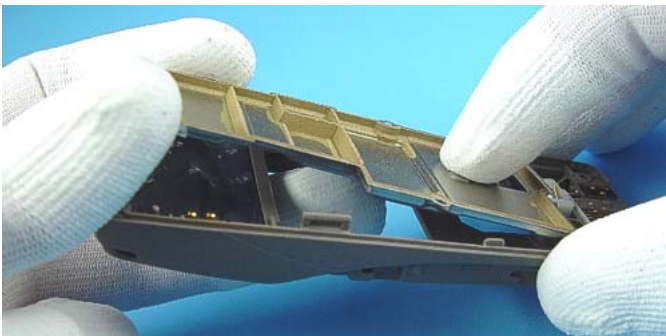
Unlock LCD snaps of the LCD Light guide on the top side.



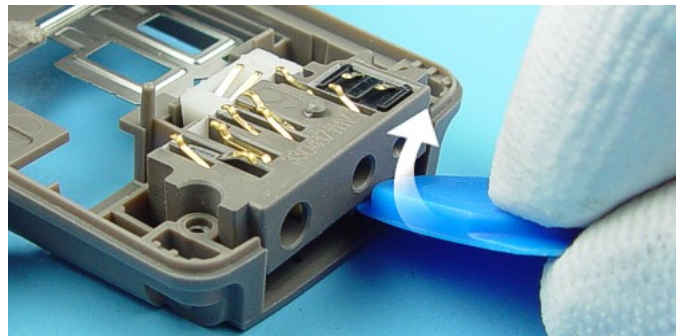
Use tweezers when removing the Speaker.



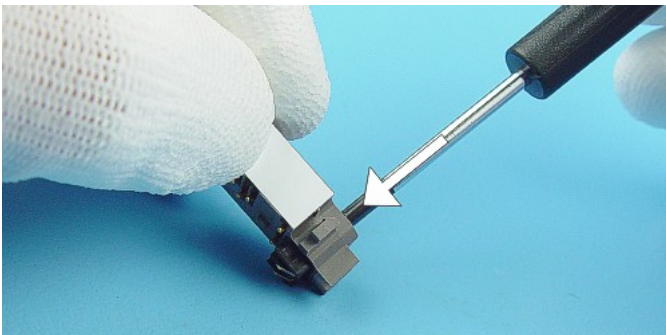
Take Engine Module from D-Cover.



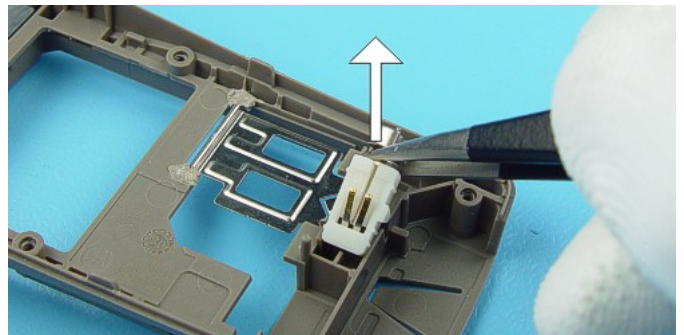
Lever out Shielding.



If System Connector is tight in the D-Cover, SRT-6 should be used to loosen it.

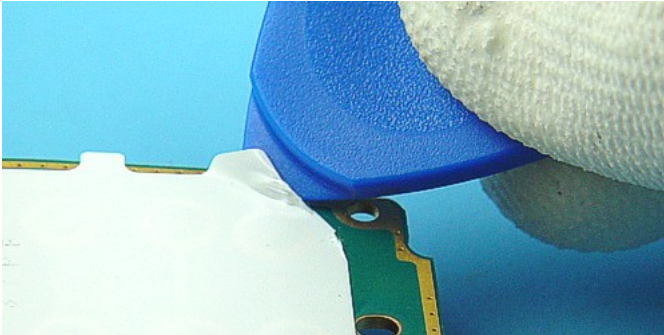


Note that Microphone fits very tight in its guidance. Carefully push out Microphone from System Connector. Moderate force is required for this action.

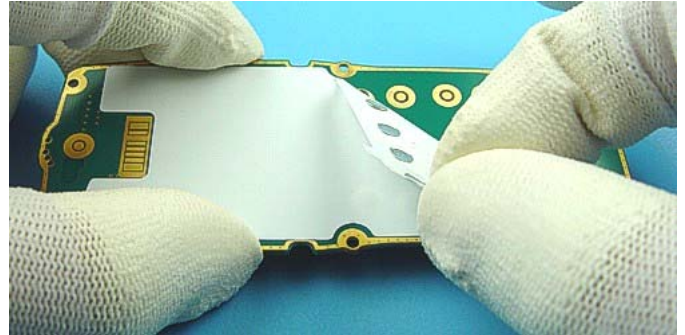


Lever out Vibra Motor with tweezers.

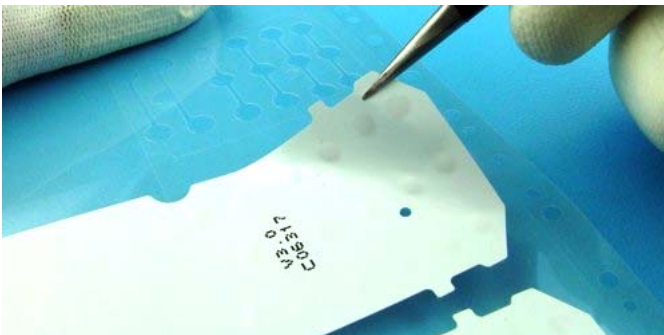
## 9. DOMESHEET EXCHANGE INSTRUCTIONS



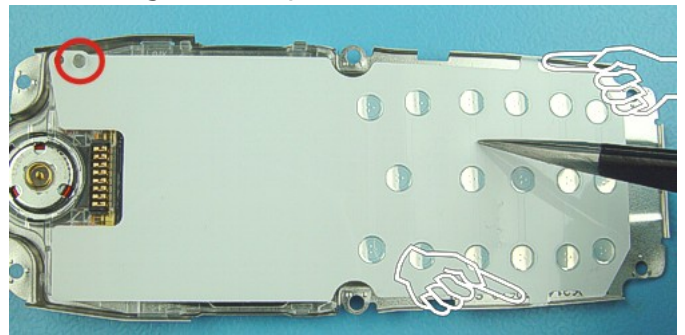
Use SRT-6 to loosen one corner of the Dome Sheet.



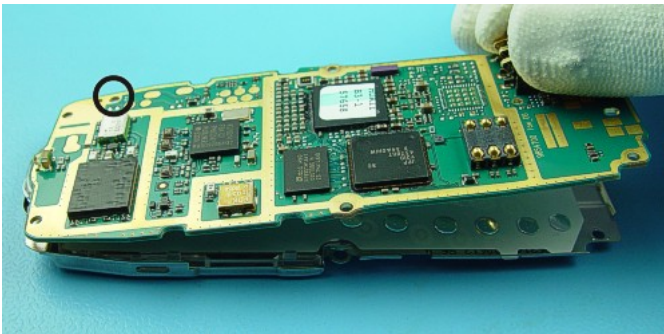
Tear off Dome Sheet in diagonal direction to avoid remains of glue. Check pads for cleanness.



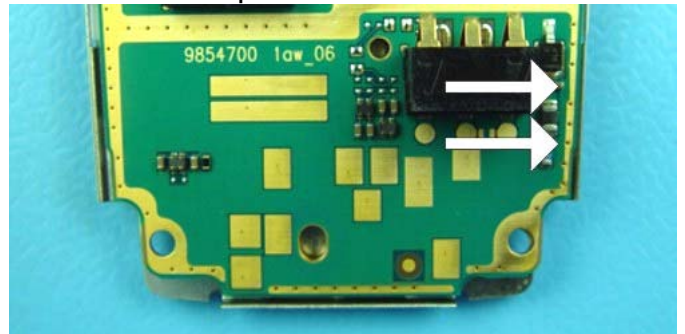
Take a new Dome Sheet from carrier film. Do not touch the Keydomes from adhesive side.



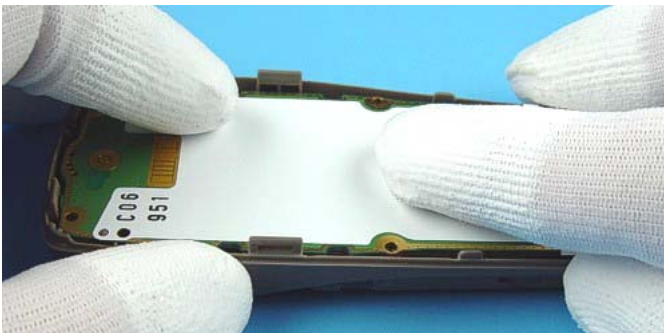
Use the guiding pin (red circle) and the C-Cover's edges as well as the two little assembly flags of the Dome Sheet as reference points.



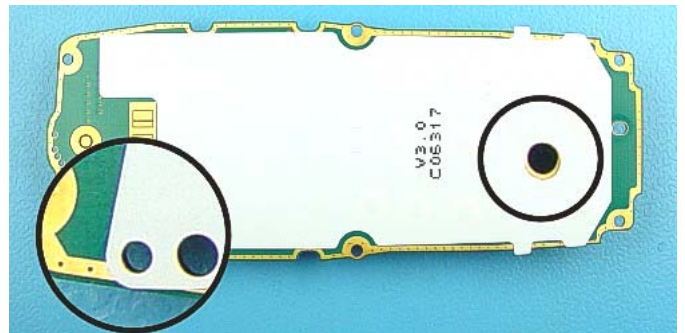
Carefully place Engine Module from topside on. Note the guiding pin.



Before sinking the Engine Module, make sure that it is also close to the same side of the shielding.



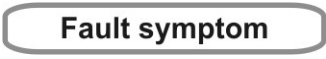





Place the Engine Module into the D-Cover. Carefully press-on the Dome sheet to the Engine Module to avoid bubbles.



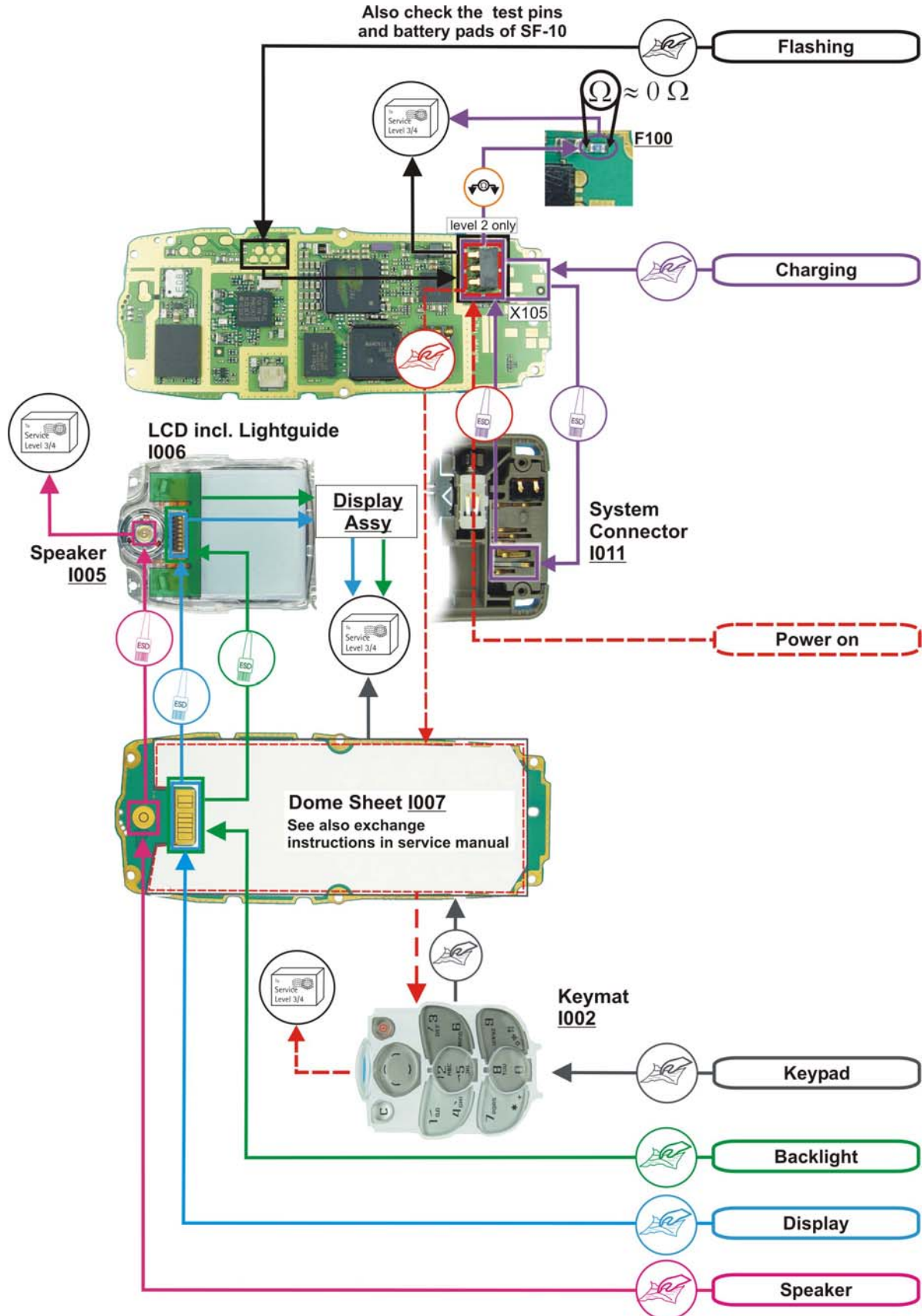
Finally check, if the holes of the Dome Sheet match exactly to the ones in the Engine Module. Otherwise change Dome Sheet again! Check Keyboard functionality.

## 10. LEGEND FOR QUICK TROUBLE SHOOTER

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

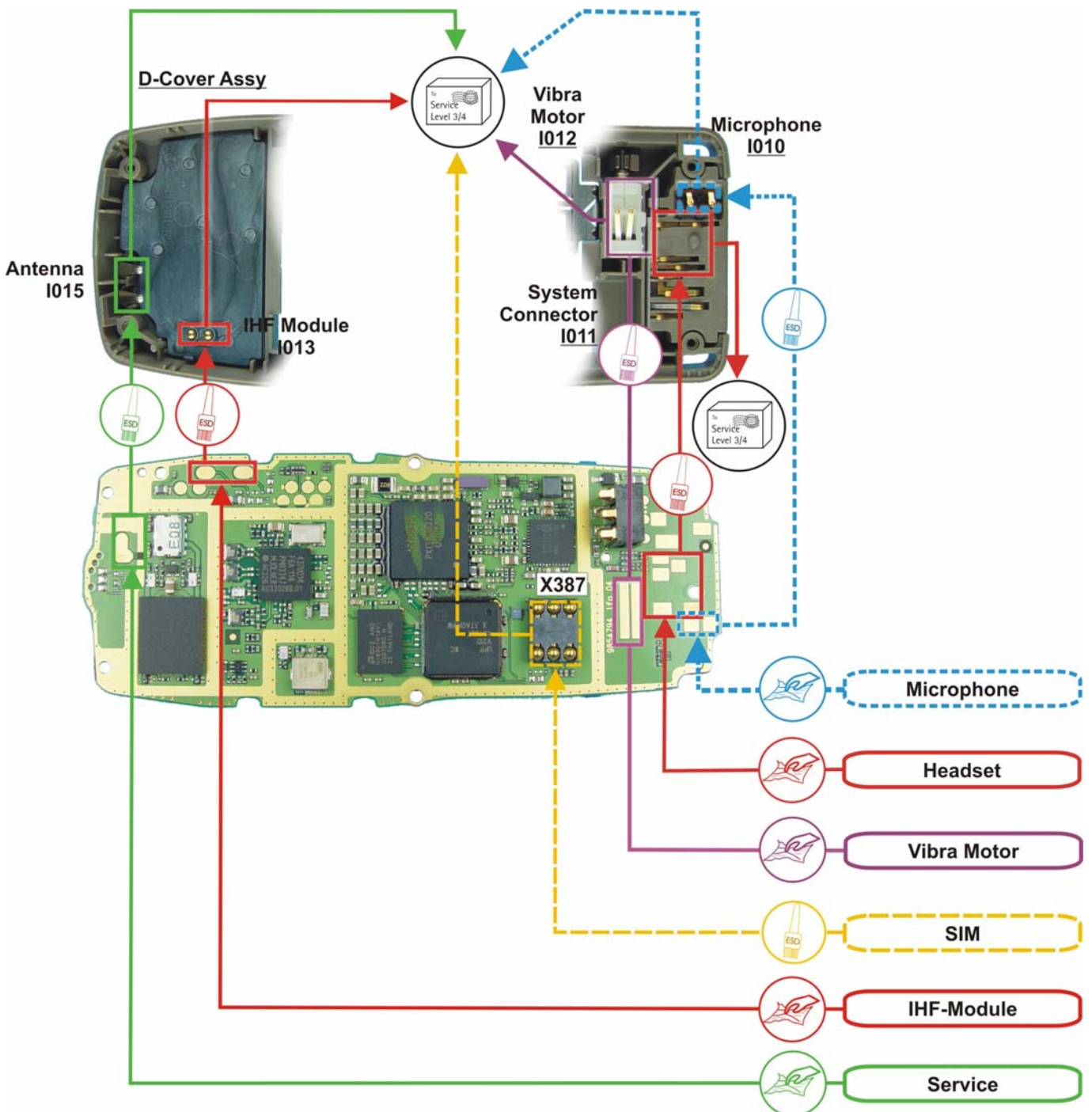
<p>Follow the steps until the problem is solved. If this doesn't help, you are not authorized to go forward. Only underlined components ( e.g. <b><u>I002</u></b>) can be changed.</p>	
	<p>The start point of repair activities regarding the appeared fault symptoms.</p>
	<p>Follow the arrows step by step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

11. QUICK TROUBLE SHOOTER PART 1





**12. QUICK TROUBLE SHOOTER PART 2**

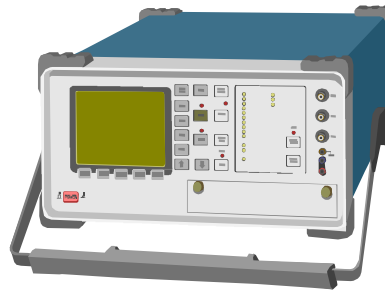


### 13. GONOGO TEST

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 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.**



Mobile Phone Tester

### 14. 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/>

## 15. SERVICE NOTES

We recommend using Service Notes when shipping phones to other Service Partners. It prevents the product from scratches, it is ESD-neutral and has the possibility to give valuable feedback of the fault symptom through a structured form. Please refer to the document [Service Notes for faulty Nokia transceiver](#) on Partner Web Site to get further information.

Sender <i>Repair Center</i>	Our Ref. <i>4711</i>
Handled by _____	Product Code <i>050381</i>
Serial n.o.: <i>449333/20/975406/2</i>	Date <i>10.07.01</i>
Yes <input checked="" type="checkbox"/> Warranty Case <input type="checkbox"/> No	Inst <input type="checkbox"/> Instant Service <input type="checkbox"/> DOA

Repair                       Repair and Refurbishment  
 Refurbishment only       Software update  
 Analysis                         Claim  
 24 h Service                   Special Request *Save User data*

**A) EXISTENCE OF FAULT**

1. <input checked="" type="checkbox"/> Continuous fault	2. <input type="checkbox"/> Intermittent fault	3. <input type="checkbox"/> Temperature
4. <input type="checkbox"/> By shock or vibration	5. <input type="checkbox"/> No clear fault	6. <input type="checkbox"/> Only as portable
7. <input type="checkbox"/> Only in a car	8. <input type="checkbox"/> Only in desktop	

**B) SYMPTOM OF THE FAULT ON CMT-PART - Symptom Code \_\_\_\_\_**


1. <input type="checkbox"/> Totally dead	2. <input type="checkbox"/> Selftest failure	3. <input type="checkbox"/> SIM Fail
4. <input checked="" type="checkbox"/> No service	5. <input type="checkbox"/> No calls in	6. <input type="checkbox"/> No calls out
7. <input type="checkbox"/> Keypad failure	8. <input type="checkbox"/> Display failure	9. <input type="checkbox"/> Audio failure
10. <input type="checkbox"/> Doesn't charge	11. <input type="checkbox"/> Overcharging	12. <input type="checkbox"/> Hand-free failure
13. <input type="checkbox"/> Burns fuses	14. <input type="checkbox"/> Accessory fail, which _____	
15. <input type="checkbox"/> Switches off	16. <input type="checkbox"/> Other _____	

**C) OBSERVED OR MEASURED FAULT**

1. <input checked="" type="checkbox"/> TX Power
2. <input type="checkbox"/> TX Phase error
3. <input type="checkbox"/> Bit Error Rate
4. <input type="checkbox"/> Burst Template
5. <input type="checkbox"/> Ramping spectra
6. <input type="checkbox"/> RX Quality
7. <input type="checkbox"/> RSSI
8. <input type="checkbox"/> Other _____

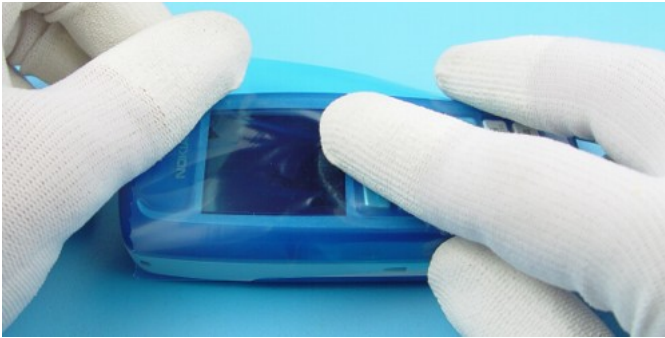
**D) SYMPTOM OF THE FAULT ON PDA-PART - Symptom Code \_\_\_\_\_**

1. <input type="checkbox"/> PDA doesn't start
2. <input type="checkbox"/> Internal error
3. <input type="checkbox"/> Keypad failure
4. <input type="checkbox"/> Display failure



## 16. FORWARDING OF REPAIRS TO SERVICE LEVEL 3 OR 4 SUPPLIERS

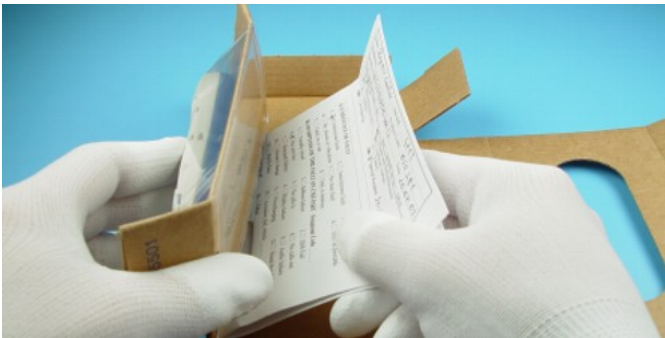
We recommend using the offered swap phone cartons as described in Spare Parts SB-004.



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.



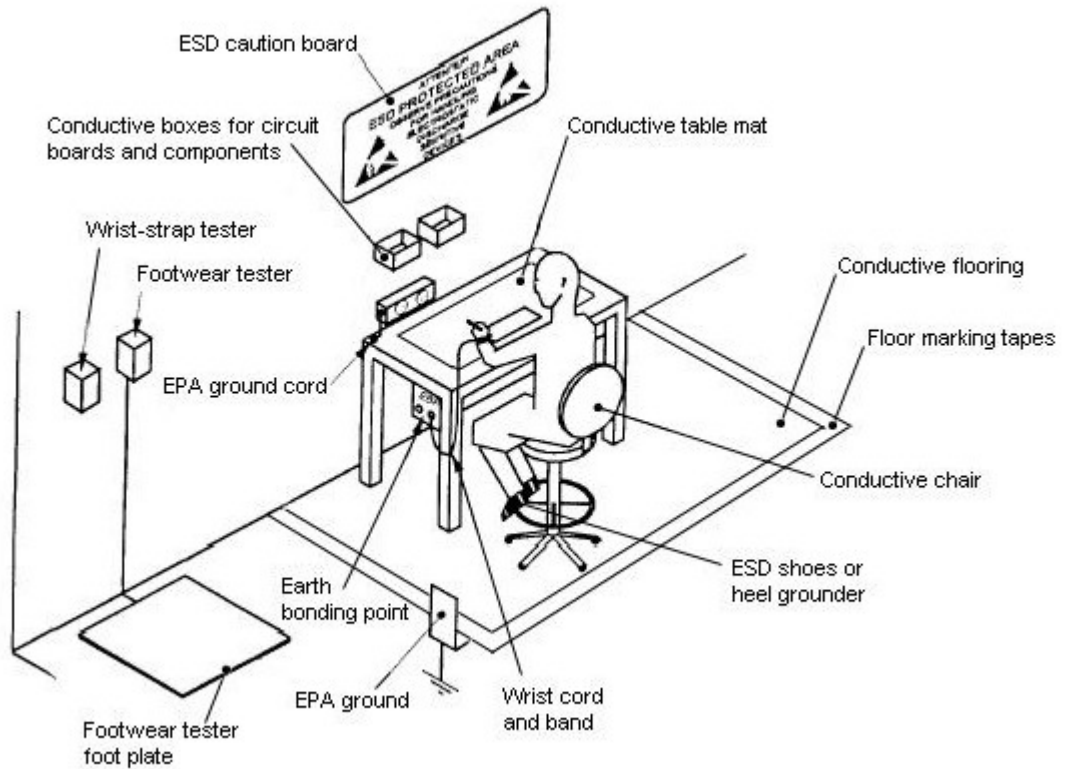
Fold the swap carton as shown in Spare Parts SB-004.



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

## 17. ESD PROTECTION REQUIREMENTS

Please refer to the Partner Web Site document [Service Partner 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