

CONFIDENTIAL

# SERVICE MANUAL

## Level 1&2

**NOKIA**  
**6288**

RM-78

RM-268

**Transceiver characteristics:****Band:**

-RM-268: Tri-band phone for GSM 900/1800/1900MHz

-RM-78: Dual Mode Tri-band phone for GSM 900/1800/1900MHz;  
WCDMA 2100**Camera:** Back camera 2 Megapixel with 8x digital zoom

- RM-78 only: Frontside VGA camera

**Display:** Active matrix color display with 262.144 colors,  
resolution 320 x 240 pixel**Bluetooth****IRDA****Visual radio****Connector:** Pop-Port™ Connector**Transceiver with BP-6m Li-Ion battery pack**

Talk time	Standby	Note
up to 4.5h	up to 11 days	Depents on network parameters

**Environmental characteristics:**

- Lead-free soldered

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**CHANGE HISTORY**

Status	Version No.	Date	Comments
Draft	0.1	8.Feb.2007	Initial draft
Approved	1.0	26.Feb.2007	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
2. THE IMMUNITY OF VEHICLE ELECTRONIC SYSTEMS TO RF ENERGY.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.
5. Ensure all cables and wires are repositioned correctly.



Electrostatic discharge can easily damage the sensitive components of electronic products. Therefore every Service Supplier has to take care of all precautions, which are mentioned in the service level related "Service Partner Requirements", available on NOKIA Online. Also see ESD Protection Requirements in this Service Manual.

## 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 NOL, which have to be followed:
  - 
  - First, take care for the latest content pages of Service Bulletins, which are always available for each folder on NOKIA Online. This is also important to recognize, if existing documents have become invalid.
  - 
  - The service level indicator at the bottom of each document tells the appropriate destination.

Downloads > Support Library >

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

Use General SB-217 as a reference or overview.

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

### 3. PATHFINDER FOR WORKSHOP STAFF

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

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

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

**Support Library**



- Service Manuals
- Service Bulletins
- Software
- Repair Information

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

Former NOKIA CarePoint content, such as	<ul style="list-style-type: none"> <li>• <b>Online Troubleshooting</b></li> <li>• <b>Product information</b></li> <li>• <b>Videos – Disassembly/Assembly</b></li> </ul>	<p>can be found on <b>NOKIA Online</b></p> <p><a href="#">NOKIA Online</a></p> <p>↓</p> <p><b>Care Services</b></p> <p>↓</p> <p><b>Training</b></p> <p>↓</p> <p><b>Phone Models</b></p>

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

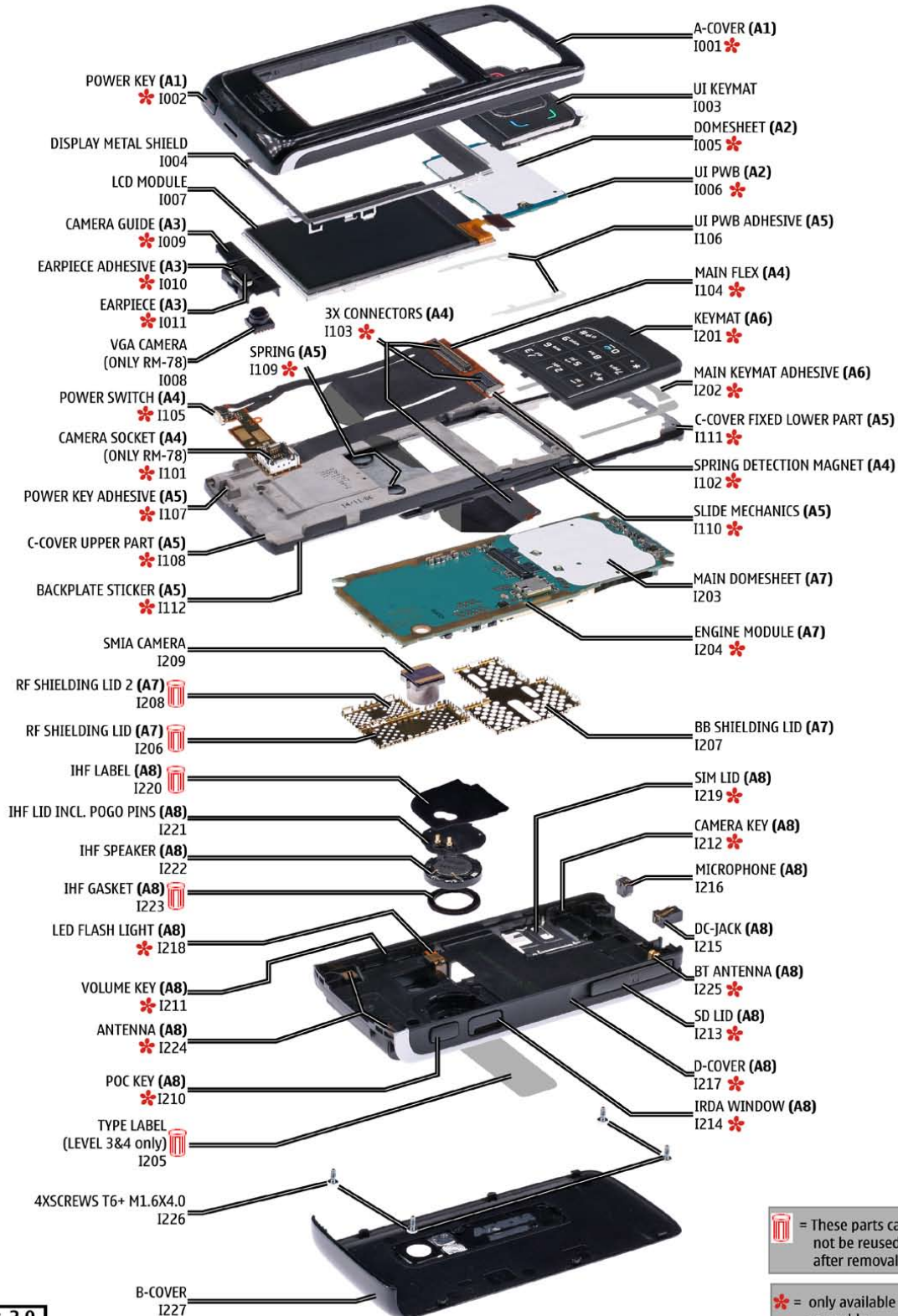
<p><b>Overview &amp; Guides</b> Basic information about the phone, features and technologies</p>	<p><b>Disassembly &amp; Assembly</b> Instructions how to disassemble and assemble the phone</p>	<p><b>Troubleshooting</b> Step-by-step instructions on how to locate and repair the most common problems with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

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

### 6288 RM-78/RM-268 Exploded view



 = These parts can not be reused after removal.  
 = only available as assembly

Ver. 2.0

## 5. SPARE PARTS OVERVIEW

### 6288 RM-78/RM-268 Spare Parts overview

**A1=A-COVER ASSY (I001-I002)**

POWER KEY (A1) \* I002

A-COVER (A1) I001 \*

**A2=UI PWB ASSY (I005-I006)**

DOMESHEET (A2) I005 \*

UI PWB (A2) I006 \*

**A3=CAMERA GUIDE ASSY (I009-I011)**

CAMERA GUIDE (A3) \* I009

EARPIECE ADHESIVE (A3) \* I010

EARPIECE (A3) \* I011

**A4=MAIN FLEX ASSY (I101-I105)**

3X CONNECTORS (A4) I103 \*

POWER SWITCH (A4) \* I105

SPRING DETECTION MAGNET (A4) I102 \*

MAIN FLEX (A4) I104 \*

CAMERA SOCKET (A4) (ONLY RM-78) \* I101

**A5=C-COVER ASSY (I106-I112)**

C-COVER FIXED LOWER PART (A5) I111 \*

POWER KEY ADHESIVE (A5) \* I107

SPRING (A5) I109 \*

SLIDE MECHANICS (A5) I110 \*

BACKPLATE STICKER (A5) \* I112

C-COVER UPPER PART (A5) \* I108

**A6=KEYMAT ASSY (I201-I202)**

KEYMAT (A6) I201 \*

MAIN KEYMAT ADHESIVE (A6) I202 \*

**A7=LIGHT SWAP PACKAGE (I203-I208)**  
**(NOT AVAILABLE!!!)**

MAIN DOMESHEET (A7) I203

ENGINE MODULE (A7) I204 \*

RF SHIELDING LID 2 (A7) I208

RF SHIELDING LID (A7) I206

BB SHIELDING LID (A7) I207

**A8=D-COVER ASSY (I210-I225)**  
**(LEVEL 3&4 ONLY)**

IHF LABEL (A8) I220

IHF LID INCL. POGO PINS (A8) I221

IHF SPEAKER (A8) I222

IHF GASKET (A8) I223

LED FLASH LIGHT (A8) \* I218

VOLUME KEY (A8) \* I211

ANTENNA (A8) \* I224

POC KEY (A8) \* I210

SIM LID (A8) I219 \*

CAMERA KEY (A8) I212 \*

MICROPHONE (A8) I216

DC-JACK (A8) I215

BT ANTENNA (A8) I225 \*

SD LID (A8) I213 \*

D-COVER (A8) I217 \*

IRDA WINDOW (A8) I214 \*

DISPLAY METAL SHIELD I004

LCD MODULE I007

UI PWB ADHESIVE (A5) I106

TYPE LABEL (LEVEL 3&4 only) I205

UI KEYMAT I003

VGA CAMERA (ONLY RM-78) I008

SMIA CAMERA I209

4XSCREWS T6+ M1.6X4.0 I226

B-COVER I227

**Ver. 2.0**

= These parts can not be reused after removal.

= only available as assembly

**6. GENERAL RECYCLING RECOMMENDATION**

**NOKIA**

CMO Operations & Logistics  
 Training and Vendor Development  
 Multimedia Creation & Support

Confidential

13.11.2006  
 MGR

**General Recycling recommendation**

**100% - only one Material**  
 (Example components)

**METAL**

**PLASTIC**

**Mixed components**  
 (Example components)

**ELECTRO-MIX**

**ELECTRO-MIX: Most components made of Glass, Ceramics, Glassfiberreinforced epoxy.**  
**ALL fractions containing any copper should be send to ELECTRO-MIX!!!**

**METAL - MIX**

**METAL-MIX: Most components made of Metal**

**BATTERY**

**BATTERY: Chemicals, Plastic and Ceramics**

**PLASTIC-MIX**

**PLASTIC-MIX: Most components made of Plastic**

Some of these options can be utilized directly and some need pretreatment as for instance dismantling, grinding, milling, etc.  
 For sorting the waste into fractions for recycling, your recycler will offer you more specific information, but a **GENERAL RULE** is:

**Electronic Equipment:** There are recyclers that can process this "multimaterial" for high recycling yields.

**Metals:** Fractions containing metals must always be collected and sent for (metal) material recycling.

**Plastics:** Pure plastics fractions (i.e. covers) can be sent for (plastics) materials recycling.

**Mixed Plastic/Metals:** A metal fraction contaminated with plastics does not represent a problem for metal recycling/recovery whereas recycling/recovery of plastics is generally sensitive for contamination by other materials.

● ELECTRO ● METAL ● PLASTIC ● BATTERY

Ver. 3.0

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## 7. NOKIA ONLINE (NOL)

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

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

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

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**NOKIA**  
CONNECTING PEOPLE

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### Support Library

Latest files  
⇒ Browse files

#### Browse files

Select category:

Select subcategory:

Select subcategory:

---

Date range from:  /  /

                  until:  /  /

Search:

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**Files for Service level 2** Date:03.02.2005

- XXXXXXXXXXXXXXXXXXXX





**Files for Service level 1** Date:16.02.2005

- XXXXXXXXXXXXXXXXXXXX
- XXXXXXXXXXXXXXXXXXXX
- XXXXXXXXXXXXXXXXXXXX

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**8. SERVICE TOOLS**

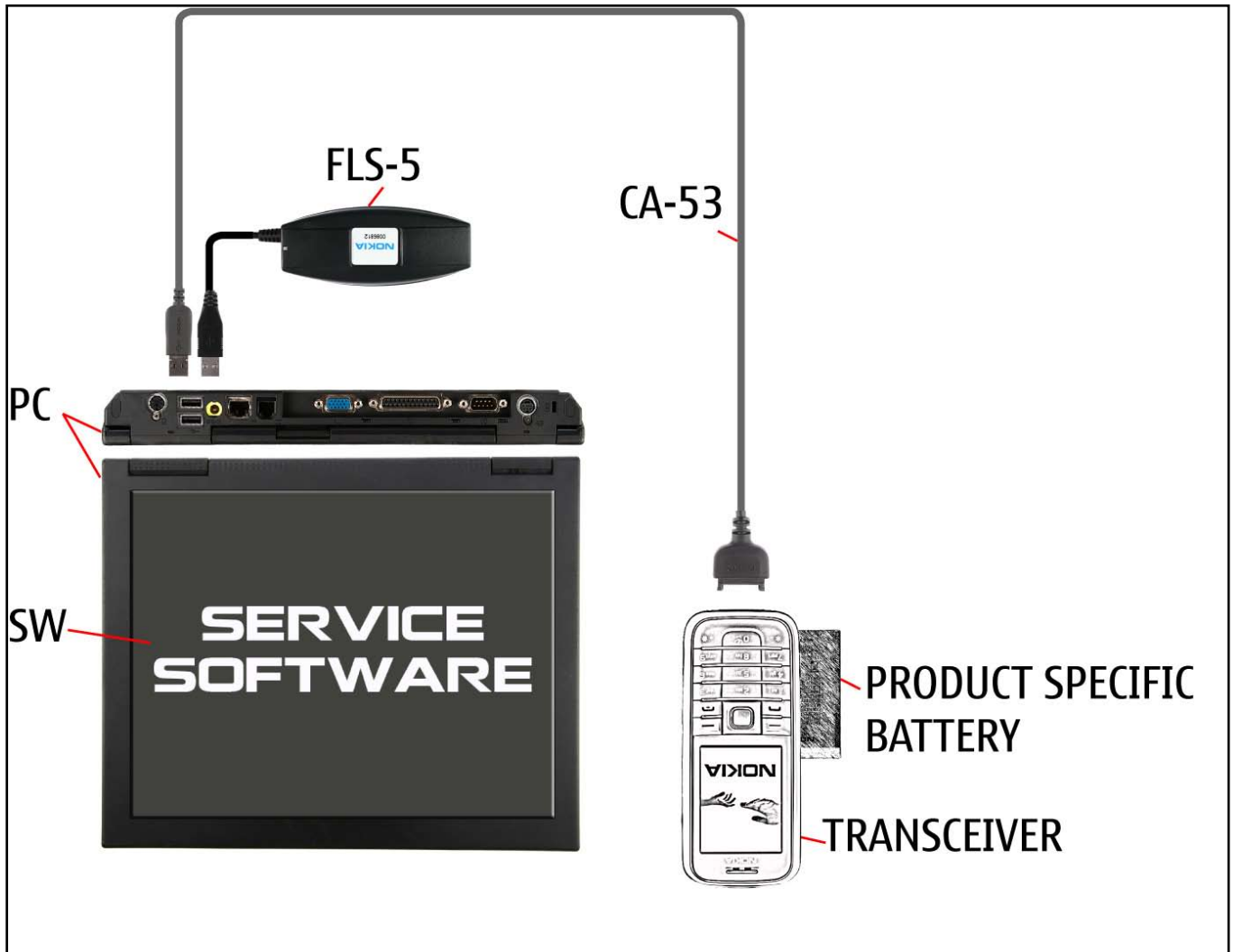
 <p>FLS-5</p>	<p><b>FLS-5 incl. ACF-8, Driver and User Guide</b>                  Dongle and flash device incorporated into one package, developed specifically for POS use.</p>
	<p><b>ACF-8</b>                  Universal Power Supply is used to power FLS-5.</p>
	<p><b>Travel Charger AC-4</b>                  Small and lightweight charger with smaller charging plug to charge your phone battery fast.</p>
	<p><b>Internal Battery BP-6M</b>                  Inserted under the back cover, this Li-Ion battery provides power in a lightweight package.</p>
	<p><b>Headset HS-23</b>                  Small and lightweight stereo headset with handsfree functionality, volume control, Push to talk support, and comfortable earpieces for listening to the FM radio or MP3 player in compatible phones.</p>
	<p><b>SS-51</b>                  Camera removal tool for VGA camera (Frontside)</p>
 <p>SS-45</p>	<p><b>SS-45</b>                  Camera removal tool for 2 Megapixel camera (Backside)</p>

	<p>CA-53                  Service Cable to connect the PC with the Pop-Port™ connector.</p>
<p>RJ-88</p> 	<p>RJ-88                  Soldering Jig</p>
	<p>Lead-free Solder Wire                  Mandatory for lead-free products (Level 2 only).</p>
	<p>0772040          NMP Standard Toolkit</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="#">Artlux</a> goggles AH166</li> <li>• <a href="#">Wera</a> bit T5 867/4TX 5x50</li> <li>• Wera 867/4 6IP; 50mm (Torx 6 PLUS®)</li> <li>• Wera 867/1 5IP; 25mm (Torx 5 PLUS®)</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>• <a href="#">Kaiser</a> Fototechnik airbrush 6315</li> <li>• Wetec dental tool DEM83266/0</li> <li>• <a href="#">RS</a> Components Scissors 323-5732</li> </ul>

## 9. SW-UPDATE

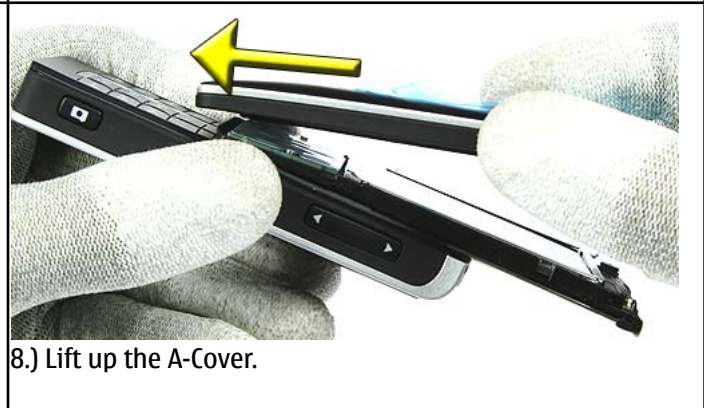
### Flash Concept – (Point of Sales)

To use FLS-5 Flash Dongle you have to follow the user guide inside the sales package. Please check always for the latest version of flash software, which is available on [NOKIA Online](#).



### 10. DISASSEMBLY INSTRUCTION (UPPER PART)

1.) You need the following tools.





9.) Protect the inner side window with a plastic film. Remove the Keymat as shown.



10.) Protect the LCD with a plastic film.



11.) Shift together the unit. Lift up the glued UI PWB Assy carefully with the SRT-6.



12.) Lift the UI PWB together with the LCD Module.



13.) Carefully release the flex connector at one side first.



14.) Now release the other side of the flex connector.



15.) Take away the UI PWB Assy.



16.) Release the connector of the LCD Module carefully while fixing the flex foil. Remove the LCD Module now.



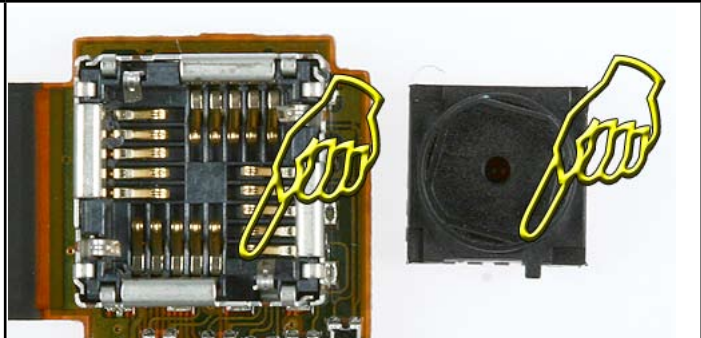
17.) Separate the LCD Module from the Display Metal Shield.



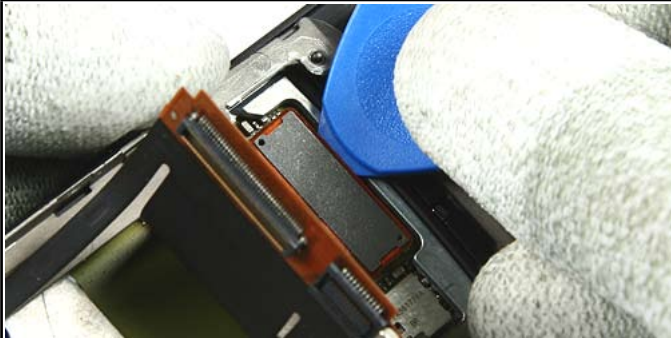
18.) Release the Camera Guide Assy with the SRT-6.



19.) (VGA Camera only RM-78): Release the VGA Camera with the SS-51. Hold the Main Flex near the Camera Socket while removing the camera.



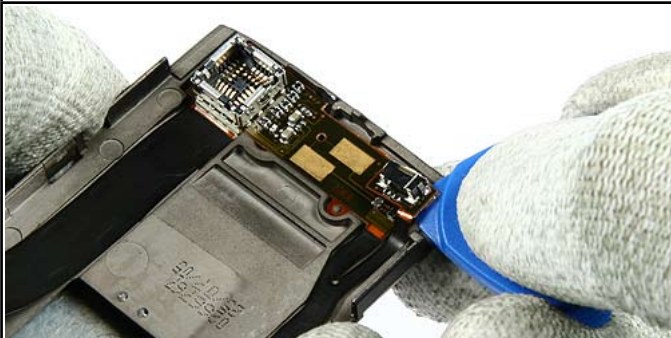
20.) (VGA Camera only RM-78): For Assembly: Mind the correct positioning of the VGA Camera.



21.) Shift the unit into mid position. Release the connector of the Main Flex Assy.



22.) Slot the flex connector through the C-Cover Assy carefully.



23.) Lift the glued Power Switch carefully.

### 11.DISASSEMBLY INSTRUCTION (LOWER PART)



1.) Open the B-Cover by pressing it from the bottom side.



2.) Ensure that no battery is inserted.



3.) Unscrew all Torx size 6 plus screws in the shown order. For Assembly use the reverse order and a torque of 25 Ncm.



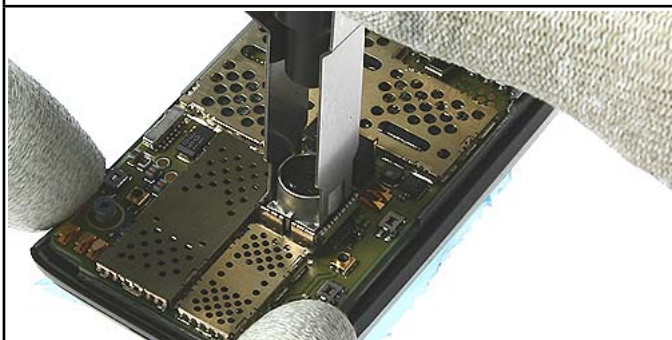
4.) Once removed, the screws can't be used again. Always use new screws for assembly.



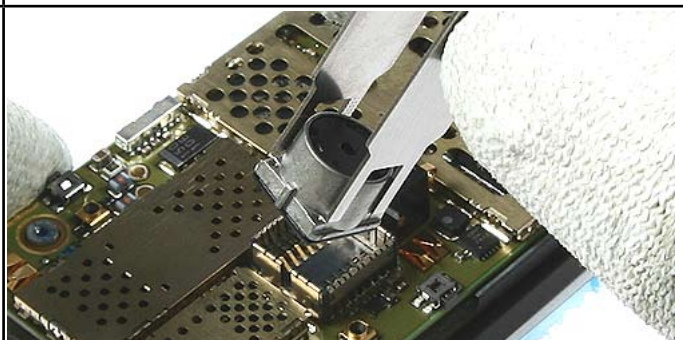
5.) Release the clips of the D-Cover.



6.) Remove the D-Cover.

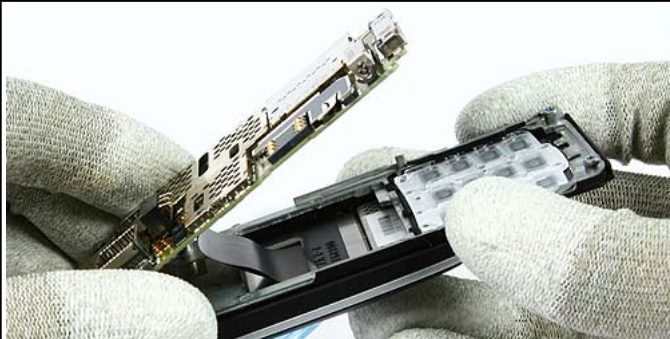


7.) Remove the SMIA Camera with the SS-45.



8.) Mind the correct position while assembling.





9.) Lift up the Engine Module, but bear in mind that the flex connector is still connected.



10.) Open the flex connector carefully.



11.) Lever out the glued Keypad Assy.



12.) Ensure that no residue of the adhesive remains. Always use new adhesive when reassemble.



13.) Remove the DC Jack with the DC Plug.



14.) Release the IHF Label with the SRT-6.



15.) Remove the IHF Lid.



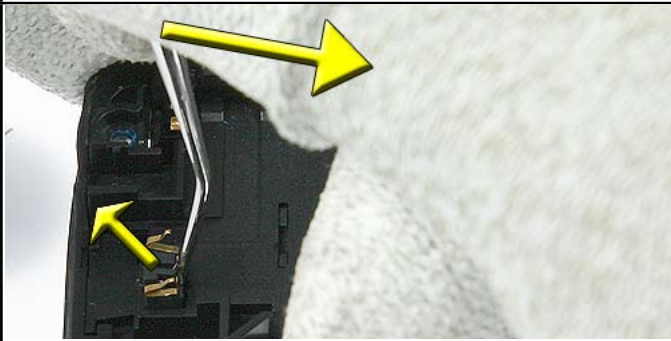
16.) Peel up the IHF Label completely. Always use a new one when reassembly. Ensure that no residues remain.



17.) Lever out the IHF Speaker.

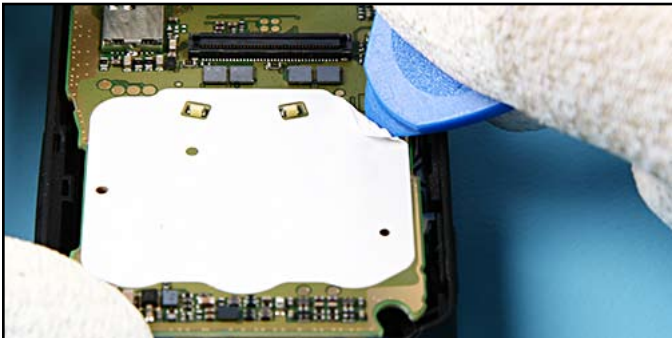


18.) Always remove the residues of the IHF Gasket. Use a new one when reassemble.



19.) Place the dental tool in the gap between Microphone and Cover. Ease out the Microphone as shown. Once removed, it can't be reused again.

## 12.MAIN DOMESHEET EXCHANGE INSTRUCTIONS



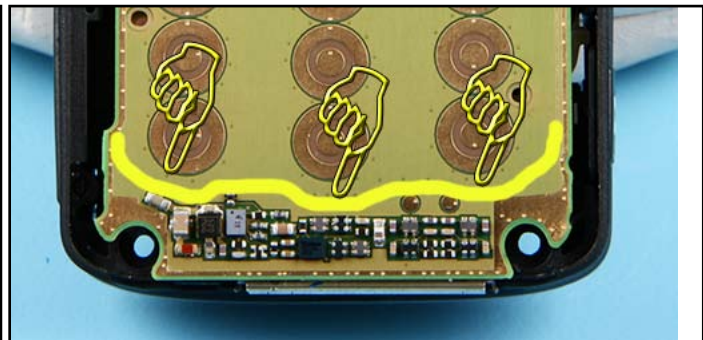
1. Carefully remove the MAIN DOMESHEET with SRT-6. Be careful not to damage surrounding components.



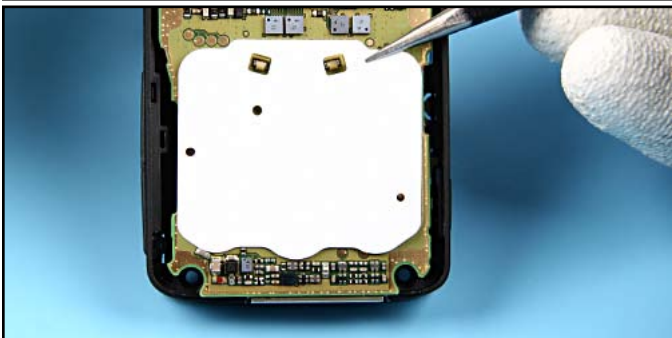
2. Remove the MAIN DOMESHEET slowly.



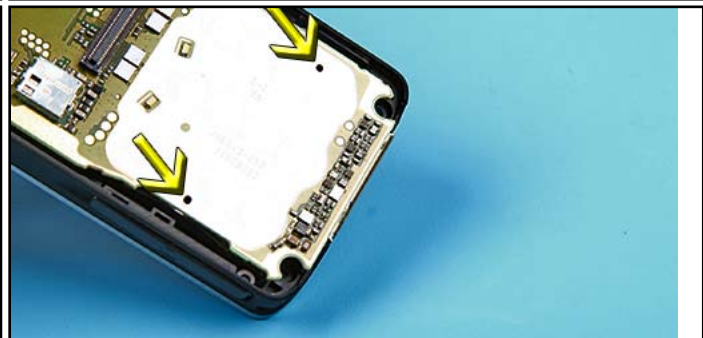
3. Take the new MAIN DOMESHEET from the carrier film.



4. There are outline markings which show the exact placement of the DOMESHEET.



5. Place the new MAIN DOMESHEET onto the ENGINE MODULE.



















6. The holes of the dome sheet must also match exactly to those in the module.

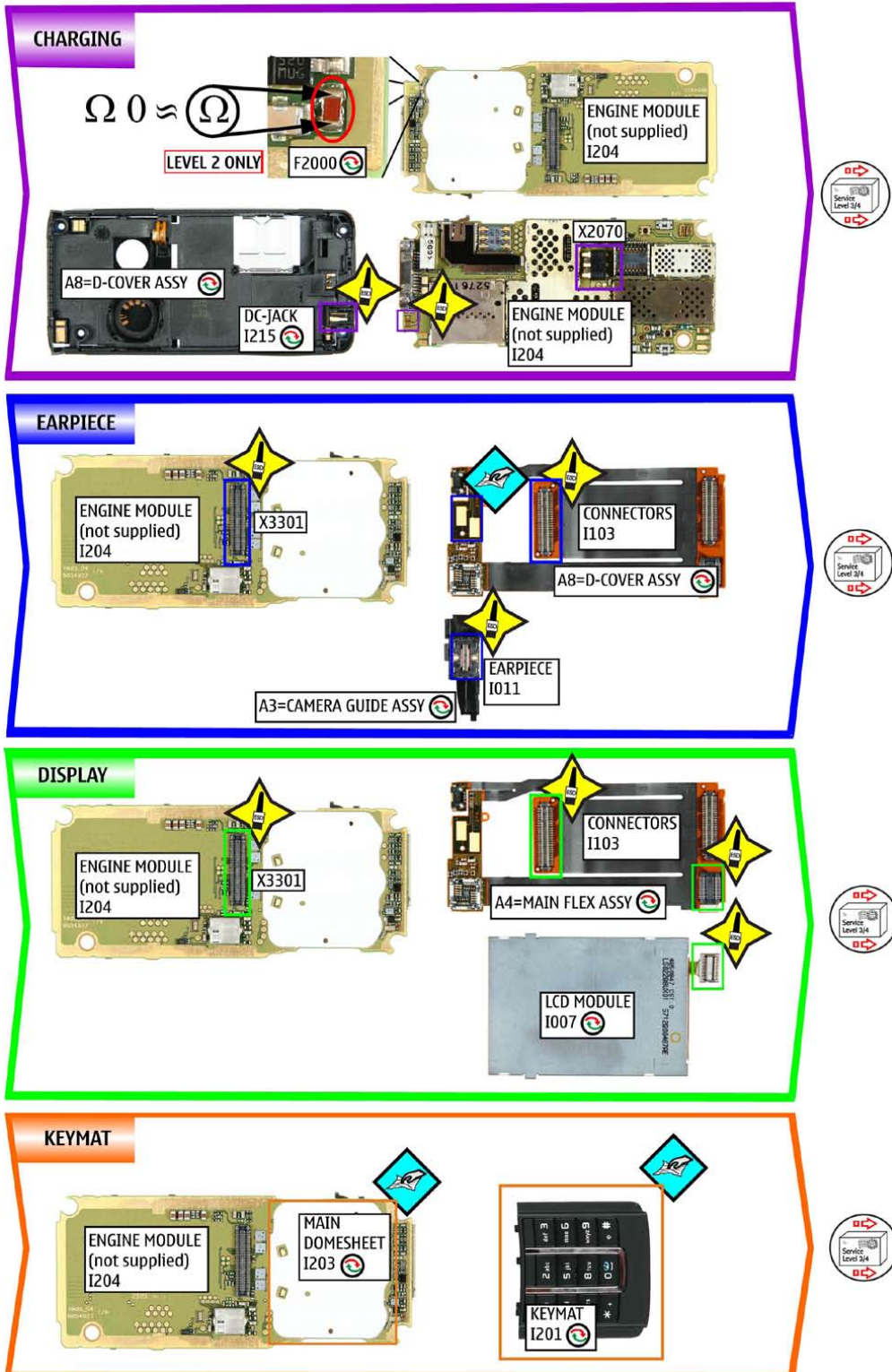


7. Finally, fix the MAIN DOMESHEET all-over.

**13.LEGEND FOR QUICK TROUBLE SHOOTER**

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.	
<b>Fault symptom</b>	The start point of repair activities regarding the appeared fault symptoms.
	Only marked components (e.g. I002  ) can be replaced.
	<p><u>Cloth usage:</u> Check pads or contacts for optical and mechanical condition particularly regarding to corrosion. Clean it if necessary.</p>    
	<p>Measure component for electrical functionality and change, if needed.                      (Level 2 only)</p>  
	<p><u>ESD Brush usage:</u> Check pads or contacts for optical and mechanical condition particularly regarding to corrosion. Clean it if necessary.</p>    
	No more action possible - send product to the appropriate service supplier with higher service level.

**14. QUICK TROUBLE SHOOTER PART 1**



**15. QUICK TROUBLE SHOOTER PART 2**

**IHF SPEAKER**

ENGINE MODULE (not supplied) I204

IHF SPEAKER I222

180°

**SERVICE GSM**

ENGINE MODULE (not supplied) I204

LEVEL 2 ONLY

X8001

X8002

X8006

A8=D-COVER ASSY

ANTENNA I224

**SERVICE WCDMA**

ENGINE MODULE (not supplied) I204

LEVEL 2 ONLY

X8004

X8005

RM-78 only!!!

A8=D-COVER ASSY

ANTENNA I224

**UI KEYMAT**

ENGINE MODULE (not supplied) I204

X3301

CONNECTORS I103

A4=MAIN FLEX ASSY

180°

A2=UI PWB ASSY

DOMESHEET I005

UI KEYMAT I003

Service Level 3/A

**16. QUICK TROUBLE SHOOTER PART 3**

**VOLUME**

**LEVEL 2 ONLY**

How to measure 4-pot switch (built-in)

- open  $\approx \infty \Omega$
- pressed  $\approx 0 \Omega$

MEASURE OPEN AND PRESSED STATE ON BOTH SIDES OF THE SWITCH

**POWER**

ENGINE MODULE (not supplied) I204

X2070

X3301

A4=MAIN FLEX ASSY

**SMIA CAMERA**

ENGINE MODULE (not supplied) I204

X1000

SMIA CAMERA I209

**VGA CAMERA**

ENGINE MODULE (not supplied) I204

X3301

VGA CAMERA I008

CONNECTORS I103

A4=MAIN FLEX ASSY

**17. QUICK TROUBLE SHOOTER PART 4**

<p><b>LED FLASH</b></p>			
<p><b>BLUETOOTH</b></p>			
<p><b>MICROPHONE</b></p>			
<p><b>SIM</b></p>			