

**NOKIA
N70**

RM-84



**NOKIA
N72**

RM-180



Transceiver characteristics:

- **Dual Band:** EGSM and WCDMA (N70 only)
 - GSM:** Tri-band phone for EGSM 900/1800/1900MHz
 - WCDMA:** 2100MHz (N70 only)
- **Camera:**
 - 1. Camera:** 2 Mega pixel (1600x1200pixels), 20x digital zoom
 - 2. Camera:** VGA (640x480pixels), 2x digital zoom (N70 only)
- **Flash LED**
- **Display:** TFT active matrix color display with 262.144 colors, resolution 176 x 208 pixel
- **Bluetooth**
- **FM radio:** Stereo
- **Vibra Alert:** Standard Vibra motor

Talk time		Standby		Note
EGSM	WCDMA (N70 only)	EGSM	WCDMA (N70 only)	
215 min	210 min	210 h	250 h	Depends on network parameters

- **Connector:** Pop Port Connector
- **MMC Reader**

Transceiver with BL-5C 970mAh Li-Ion battery pack

Environmental characteristics:

- Lead-free soldered

SERVICE MANUAL

Service Level 1&2

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CHANGE HISTORY

Status	Version No.	Date	Comments
Draft	0.1	01.07.2005	Initial draft
Approved	1.0	21.07.2005	Approval
Approved	2.0	19.08.2005	Disassembly instructions modified (picture Nr. 30)
Approved	3.0	24.Apr.2006	Nokia N72 (RM-180) added

1. INTRODUCTION

The purpose of this document is to help NOKIA service levels 1 and 2 workshop technicians to service NOKIA products. This Service Manual must be used **only** by authorized NOKIA service suppliers. The content of it is **confidential**. Please note that NOKIA provides other guidance documents (e.g. Service Bulletins) for service suppliers. Follow these regularly and comply with the given instructions.

While every effort 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 always watch out for the newest version.

Warnings and Cautions

Please refer to the phone's user guide for instructions relating to operation, care, and maintenance, which include 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 CELLULAR 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 must observe the precautions, mentioned in the appropriate "Service Partner Requirements", available on NOKIA Online. Also see ESD Protection Requirements in this Service Manual.

2. GENERAL REPAIR INFORMATION

This section provides useful repair information 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 repairs you must observe ESD precautions such as 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.
 - Use a lint-free cloth (e.g.....) to clean the LCD(e.g. Micro-Fibre cloth).
 - When cleaning the pads use a soft cloth/ESD brush and Isopropanol. Do not use a glass fiber pencil this scratches the surface and will cause corrosion.
 - Non faulty Mechanical parts (except shielding lids and bent or soldered components), may 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 affect the device.
 - Always use original NOKIA spare parts.
 - Check the soldering joints of the parts, concerned which regard to the fault symptom (e.g. soldered connectors or switches) and resolder them if necessary (Level 2 only).
 - Remove excess soldering flux after repair.
 - Observe the torque requirements when assembling the unit.
 - Preferably use your own equipment for testing. E.g. if the customer complains about charger function, please test the phone with your own charger to determine 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 of the part that caused the malfunction. Also fill in the appropriate part code from the assembly if needed.
 - Please be aware that some malfunctions may be software related and solved by an update.
-
- There are several documents available on NOL, which have to be followed:
 - First pay attention to the latest content pages of Service Bulletins, which are always available for each folder on NOKIA Online. Make sure your documentation is up to date.
 - The service level indicator at the bottom of each document displays the appropriate target group.

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

In addition to the information in this Service Manual, there are other instructions and data, which must be observed. 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**”). New information must be processed and implemented as soon as possible.

When logged into NOL you can also find needed information in different folders 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"> • Online Troubleshooting • Product information • Videos – Disassembly/Assembly 	can be found on NOKIA Online
<p>NOKIA Online</p> <p>↓</p> <p>Care Services</p> <p>↓</p> <p>Training</p> <p>↓</p> <p>Phone Models</p>		

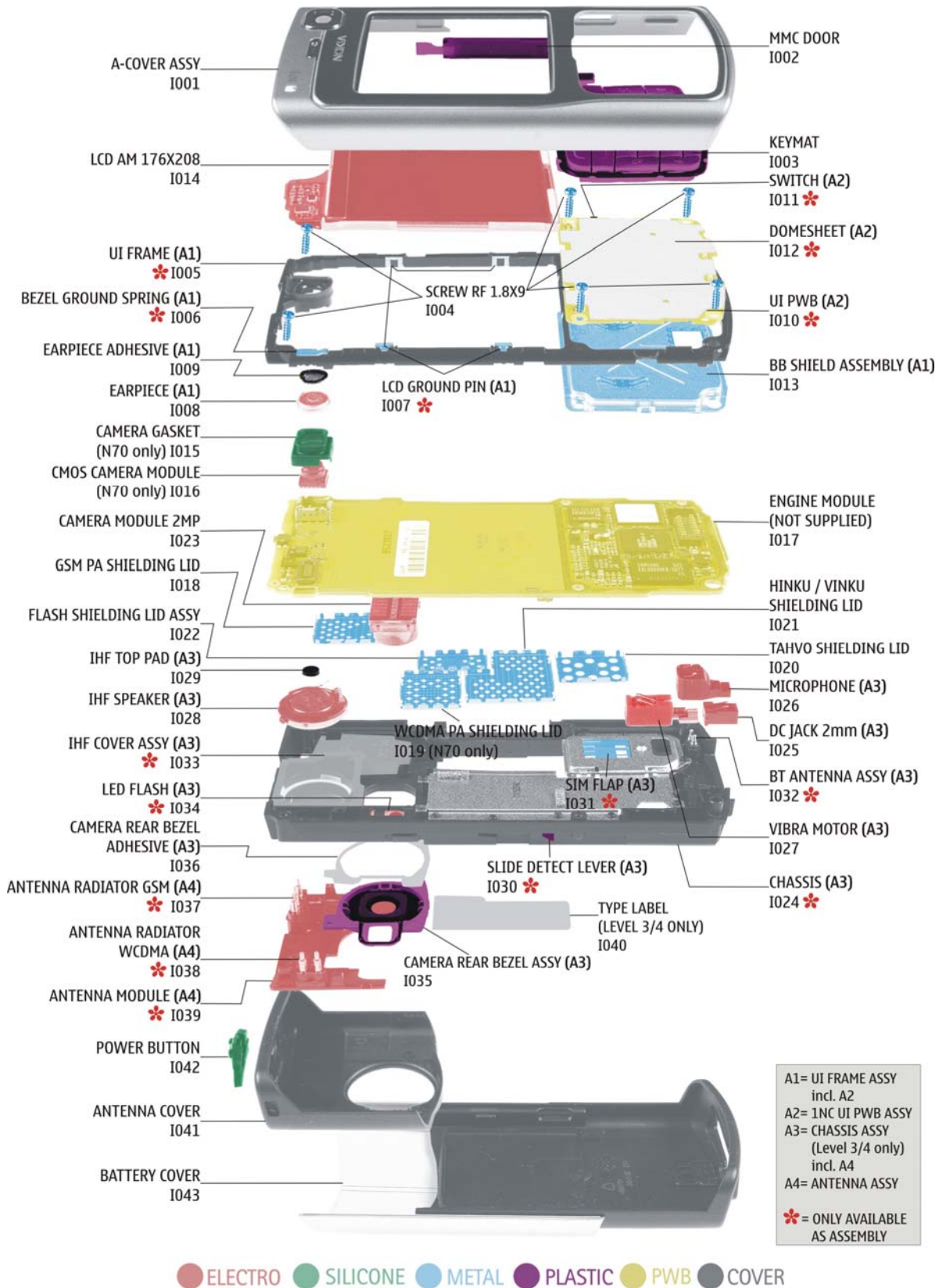
Level 1&2 e-learning courses offer a quick overview of the NOKIA phone and support on repair and testing:

<p>Overview & Guides</p> <p>Basic information about the phone, features, and technologies</p>	<p>Disassembly & Assembly</p> <p>Instructions on disassembling and assembling the phone</p>	<p>Troubleshooting</p> <p>Step-by-step instructions on locating and testing the most common problems with the phone</p>
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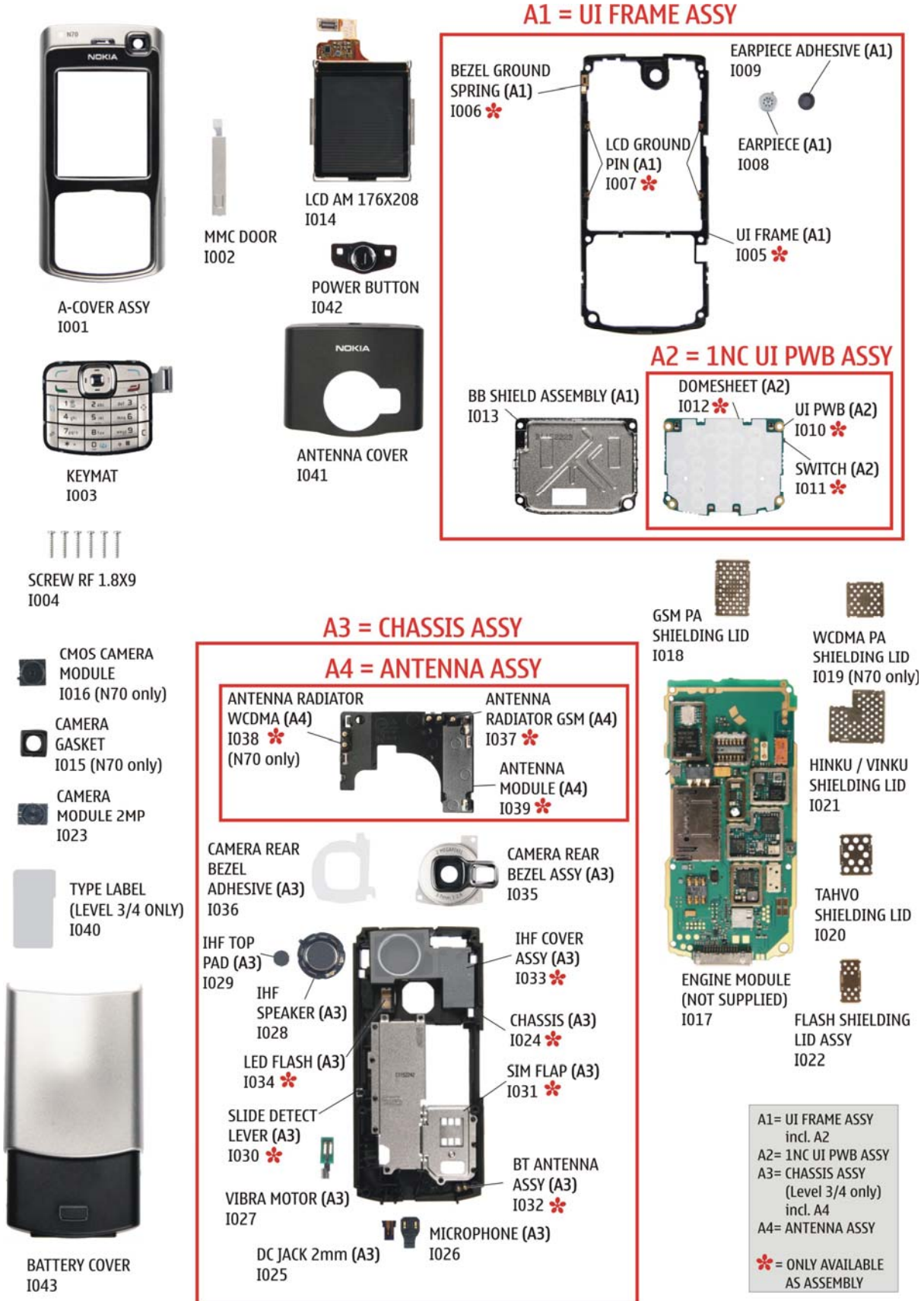
To reduce the server traffic we recommend downloading newest version of large files like videos, Phoenix packages, or Service Manuals only once to distribute it internally for further use.

4. EXPLODED VIEW AND COMPONENT DISPOSAL

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



5. SPARE PARTS OVERVIEW




6. SPARE PARTS LIST

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

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

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



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- xxxxxxxxxxxxxxxxxxxxxxxx
- xxxxxxxxxxxxxxxxxxxxxxxx
- xxxxxxxxxxxxxxxxxxxxxxxx

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7. SERVICE TOOLS

  	<p>FLS-4S incl. ACF-8, Driver and User Guide Dongle and flash device, package, developed specifically for POS use.</p>
	<p>Internal Battery BL-5C Inserted under the back cover, this Li-Ion 850 mAh battery provides power in a lightweight package.</p>
	<p>DKU-2 USB flash cable</p>
	<p>Travel Charger ACP-12 Small and lightweight charger for fast charging of your phone battery.</p>
	<p>Headset HDS-3 Small and lightweight stereo headset for handsfree functionality and listening to FM radio.</p>
	<p>SS-15 Camera removal tool for Camera Module 2MP. One side is for disassembly, the other side for assembly.</p>



SS-51
 Camera Removal Tool for CMOS Camera (N70 only)



SS-34
 Flex Opening Tool



RJ-94
 Soldering Jig



Lead-free Solder Wire
 Mandatory for lead-free products (Level 2 only).

0772040 NMP Standard Toolkit



- NOKIA opening tool SRT-6 NOKIA No. 0770431
- Tonichi torque driver NOKIA No. 6901525
- [Hoya](#) micro fiber cloth MX304
- [Dastex](#) gloves S, M, XL
- [Artlux](#) goggles AH166
- [Wera](#) bit T5 867/4TX 5x50
- Wera 867/4 6IP; 50mm (Torx 6 PLUS®)
- Wera 867/1 5IP; 25mm (Torx 5 PLUS®)
- 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

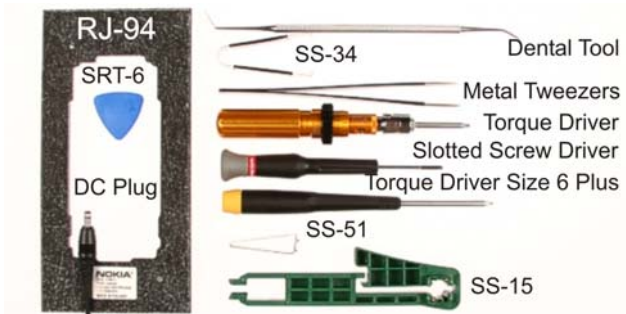
8. SW-UPDATE

Flash Concept – (Point of Sales)

To use the FLS-4S Flash Dongle you should have to follow the user's guide inside the sales package. Always check for the latest version of flash software, which is available on [NOKIA Online](#).



9. DISASSEMBLY INSTRUCTIONS



1.) You need the following tools.



2.) Always protect the window with a plastic film.



3.) Remove the **Battery Cover**.



4.) Place the SRT-6 between the **A-Cover** and **Chassis Assy**. Release the 4 plastic clips beginning from the bottom side as shown.



5.) Remove the **Keymat**



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



7.) Also protect the inner side window with a film



8.) Remove the **MMC Door** from **A-Cover**.



9.) Insert the SRT-6 between the **Antenna Cover** and **Chassis Assy**. Additional force may be required while opening the **Antenna Cover** clips.



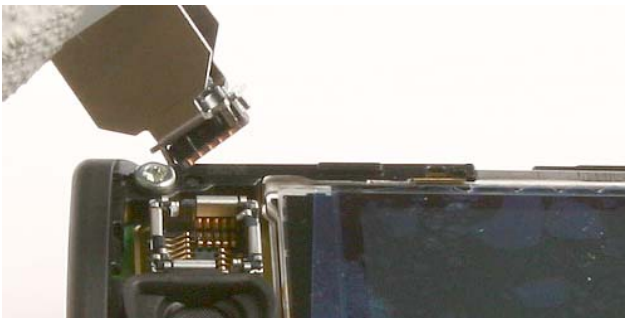
10.) Remove the **Power Button** with tweezers.



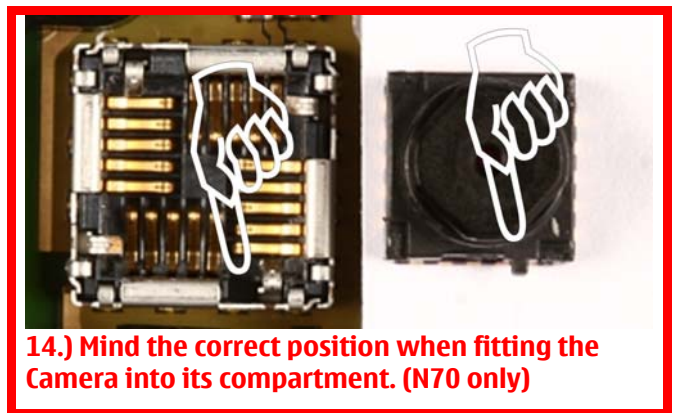
11.) Protect the **Camera Rear Bezel Assy** with a plastic film before turning the unit.



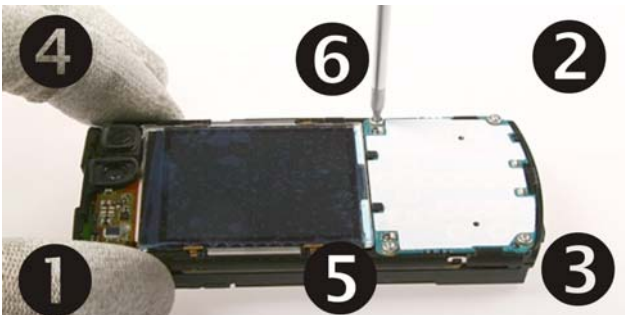
12.) Remove the **Camera gasket** (N70 only).



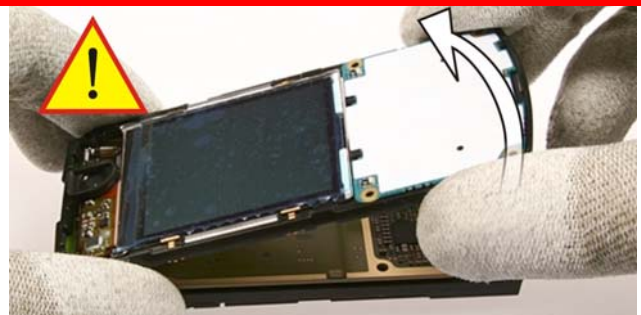
13.) Unlock and remove the **VGA Camera** with the SS-51 camera removal tool. (N70 only)



14.) Mind the correct position when fitting the **Camera** into its compartment. (N70 only)



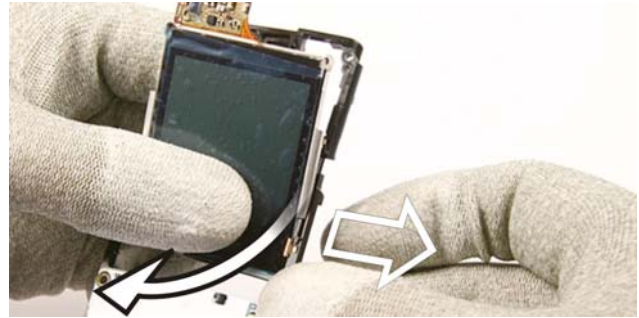
15.) Unscrew the 6 Torx size 6 plus screws in the shown order. **For Assembly use the reverse order and the torque of 25 Ncm.**



16.) Lift the **UI-frame Assy** from **Chassis Assy**. Mind the still connected flex foil of the LCD.



17.) Open the flex connector with the SS-34 flex connector-opening tool. Mind the surrounding components while placing the tool. Now the **UI-Frame Assy** can be removed.



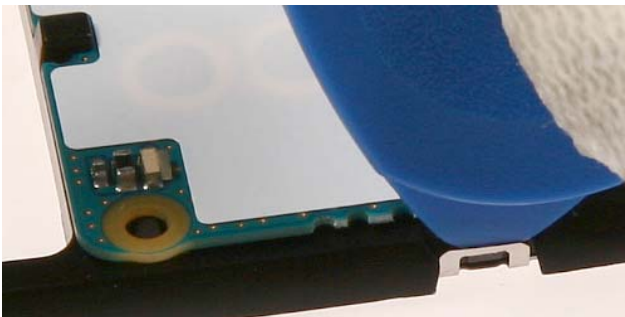
18.) Unlatch each clip of the **LCD** from the **UI Frame Assy** carefully by pulling the **UI Frame Assy** sideward while pushing the **LCD** forward.



19.) Remove the **Earpiece** with the dental tool



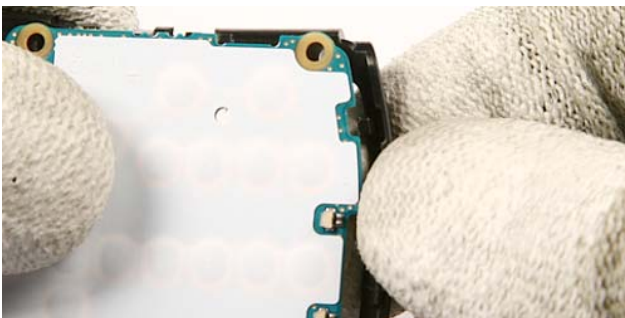
20.) Also remove the **Earpiece Gasket** from its compartment. **Always use a new gasket when reassembling.**



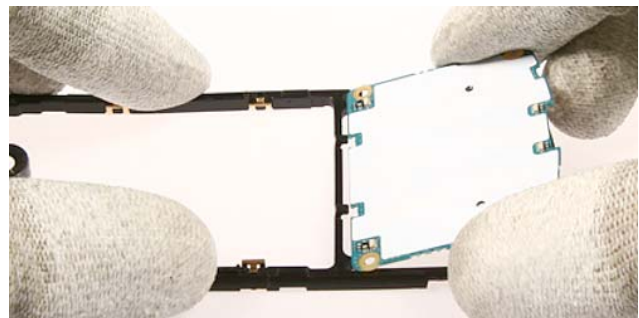
21.) Unlatch the **BB shield Assembly** first.



22.) Then push down and remove the **BB Shield Assembly**. The shield can't be reused again, always use a new one.



23.) Pull the **UI Frame Assy** slightly to unlock the **UI PWB**.



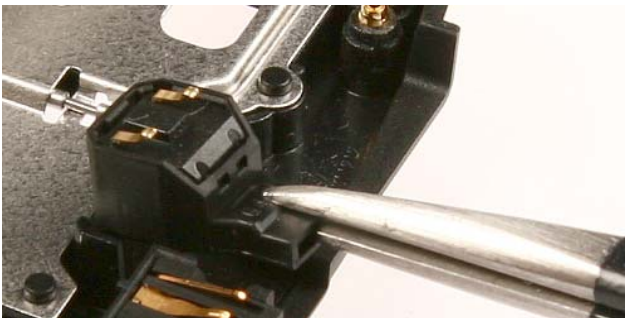
24.) Now the **UI PWB** can be removed easily.



25.) Remove the **Engine Module**. Place it into the RJ-94 jig immediately.



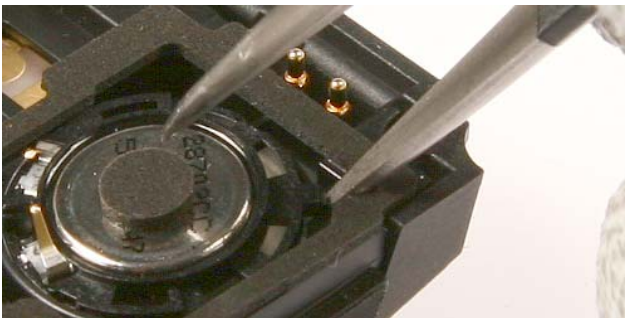
26.) Remove the **Vibra Motor** with tweezers.



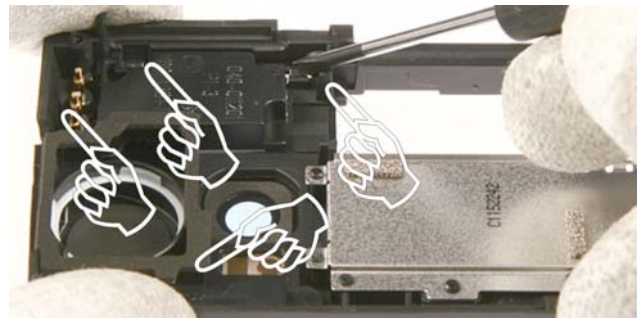
27.) Pull out the **Microphone** with tweezers.



28.) Use the DC plug to remove the **DC Jack**.



29.) Lever out the **IHF speaker**. **Mind the guide pin when reassembling.**



30.) Unlock the 4 plastic clips of the **Antenna Assy** in the area shown.



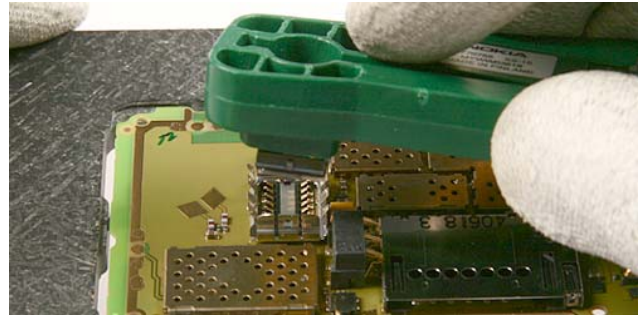
31.) Carefully separate the **Antenna Assy**.



32.) Lever out the **Camera Rear Bezel Assy**.

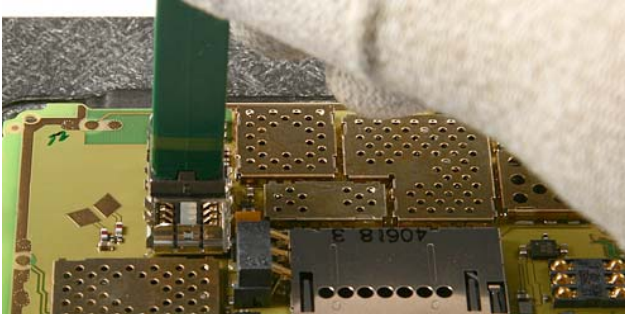


33.) Remove the residues of the **Camera Rear Bezel Assy Adhesive** completely with the SRT-6.
For assembly always use a new adhesive.



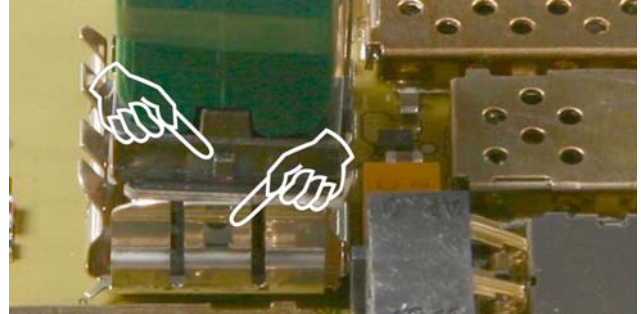
34.) Remove the **Camera Module 2MP** with the SS-15 camera removal tool. Always use the RJ-94 rework jig as support to prevent mechanical stress to the PWB.

For assembly only!



35.) Use the **Assembly side of the SS-15** for fitting the **Camera Module 2MP** into its compartment.

For assembly only!







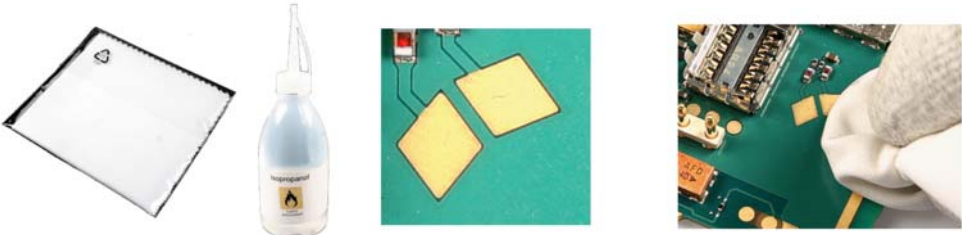





36.) **Mind the correct position of the camera while assembling.**

10.LEGEND FOR QUICK TROUBLE SHOOTER

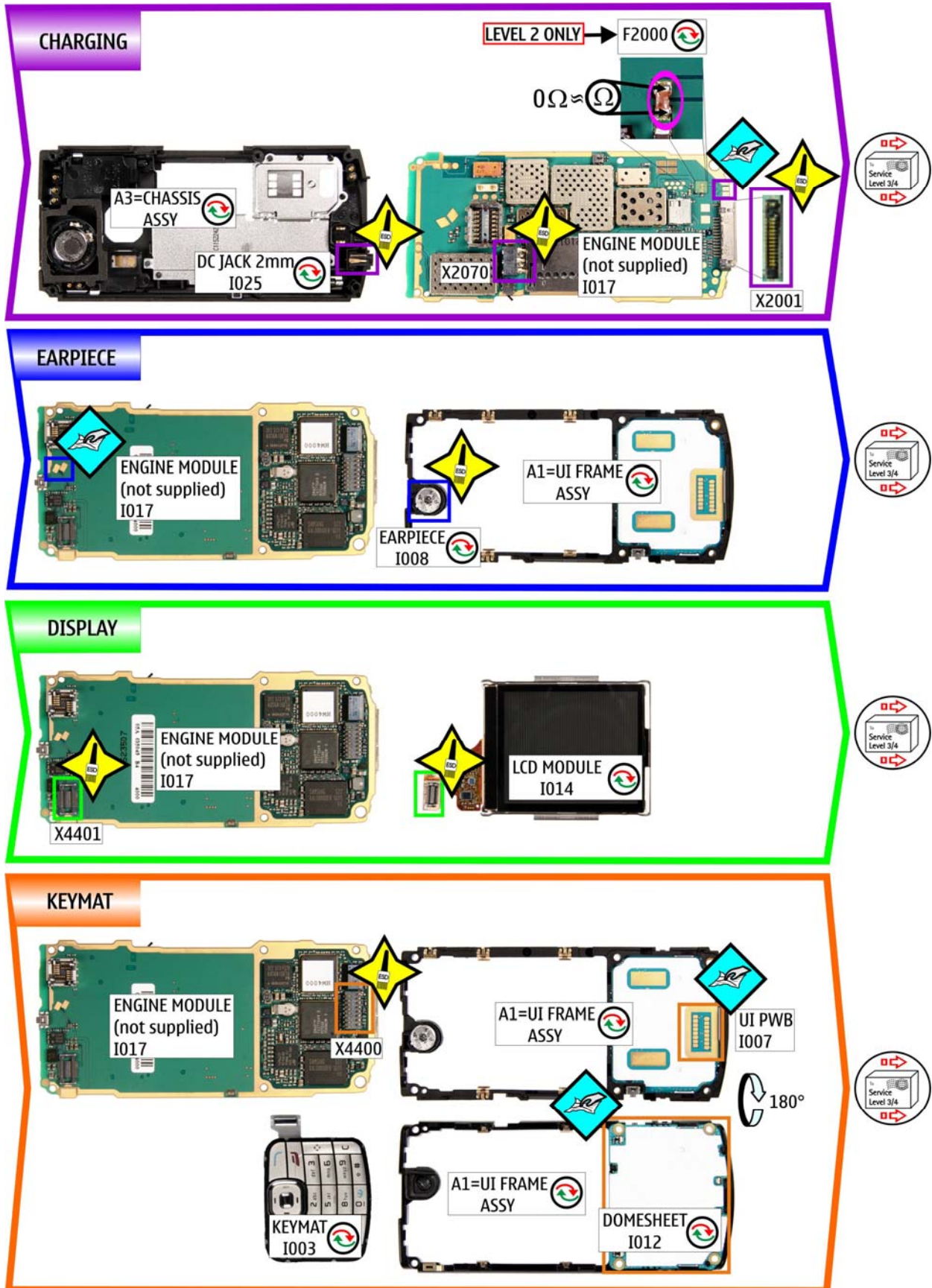
Legend for Quick Trouble Shooter

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.

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

11. QUICK TROUBLE SHOOTER PART 1



12. QUICK TROUBLE SHOOTER PART 2

IHF SPEAKER

ENGINE MODULE (not supplied) I017

IHF SPEAKER I028

A3=CHASSIS ASSY

Service Level 3/4

SERVICE GSM

ENGINE MODULE (not supplied) I017

ANTENNA RADIATOR GSM I037

A4=ANTENNA ASSY

Service Level 3/4

SERVICE WCDMA (N70)

ENGINE MODULE (not supplied) I017

ANTENNA RADIATOR WCDMA I038

A4=ANTENNA ASSY

Service Level 3/4

HEADSET

ENGINE MODULE (not supplied) I017

X2001

Service Level 3/4

13. QUICK TROUBLE SHOOTER PART 3

VIBRA

ENGINE MODULE (not supplied) I017

A3=CHASSIS ASSY

VIBRA MOTOR I027

Service Level 3/4

POWER

ENGINE MODULE (not supplied) I017

X2070

S2422

LEVEL 2 ONLY

POWER BUTTON I042

ANTENNA COVER I041

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

open $\infty \Omega$

pressed $\approx 0 \Omega$

MEASURE OPEN AND PRESSED STATE ON BOTH SIDES OF SWITCH

Service Level 3/4

CAMERA 2MP

ENGINE MODULE (not supplied) I017

X1470

CAMERA MODULE 2MP I023

Service Level 3/4

CMOS CAMERA (N70)

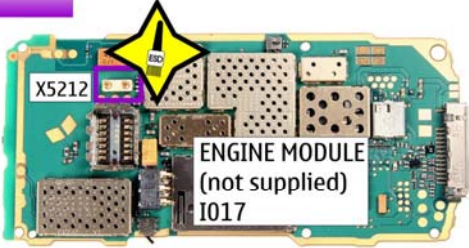
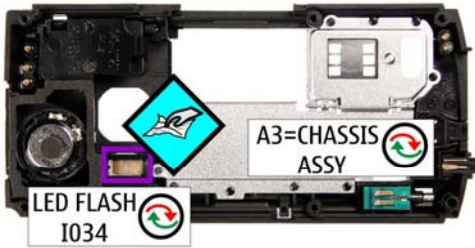








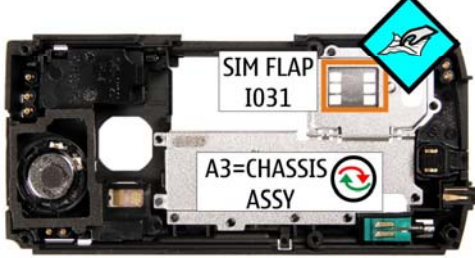

ENGINE MODULE (not supplied) I017

X1472

CAMERA MODULE VGA I015

Service Level 3/4

14. QUICK TROUBLE SHOOTER PART 4

Component	Engine Module (I017)	Chassis Assembly (A3)	Service Level
LED FLASH			
BLUETOOTH			
MICROPHONE			
SIM			

15. GONOGO TEST

For testing the Camera and Bluetooth functionality please refer to the product related User's guide available on www.nokia.com.

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



Camera Module 2MP



CMOS Camera (N70 only)

Bluetooth test

You need another Bluetooth device (e.g. 6230) to do a GoNoGo test.

Make sure that Bluetooth is activated in the reference unit. The distance between the devices should not be more than 5m.



Reference unit, Bluetooth activated



Test unit

If the test is failed see Quick Trouble Shooter.

16. BATTERY TEST

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

Please refer to the actual information on NOKIA Online.



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



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