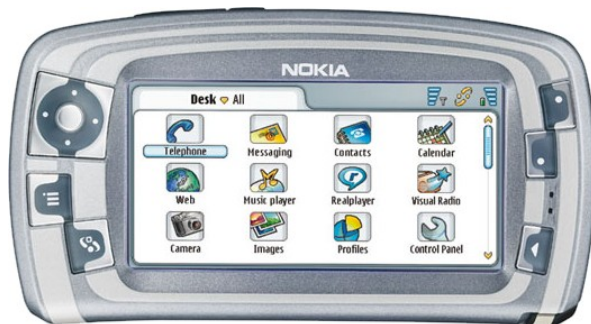


NOKIA
7710

RM-12

**Transceiver characteristics:**

- Touch screen
- Connect to the Internet with EGPRS or HSCSD
- Internet browser supports HTML/XHTML and Macromedia Flash 6
- High-resolution LCD display 65,536 color wide screen
- Megapixel camera (1152x864) 2x digital zoom
- Email (SMTP, POP3, IMAP4)
- Integrated handsfree & voice recorder
- Bluetooth technology (including audio)
- Word, Sheet, and Presentation Viewers; Word & Sheet converter
- MP3 player with stereo audio
- GSM 900/1800/1900
- supports MP3, AAC, RealAudio 7 and 8, WAV, MIDI, and AMR file types.
- 90 MB RAM available for contacts, messages, ringing tones, images, video clips, PIM, and applications
- 128 MB Multi Media Card (MMC) provided in the sales package
- Device supports up to 512 MB MMC.
- Flight mode: all radio-related activities turned off
- Pop-Port™ interface
- Over-the-air ringing tones, settings, and messages (for web access point, web bookmarks, and SyncML)
- Remote OTA synchronization with SyncML; local synchronization with PC using PC Suite
- HTML and xHTML browser; supports Macromedia Flash 6 and SMS Tags
- OMA DRM - forward lock for content protection
- TCP/IP*

*Note that these services require network support.

For details see Nokia.com

Transceiver with BP-5L 1300mAh Li-Polymer battery pack

Talk time	Standby	Note
Up to 3,5h-12h	7days –9 days	Depends on network parameters

Environmental characteristics:

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

SERVICE MANUAL**Service Level 1&2**

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CHANGE HISTORY

Status	Version No.	Date	Comments
Draft	0.1	19.10.2004	Initial draft
Approved	1.0	13.12.2004	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 <http://www.nokia.com/> -->Support--> Phones Support, 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...


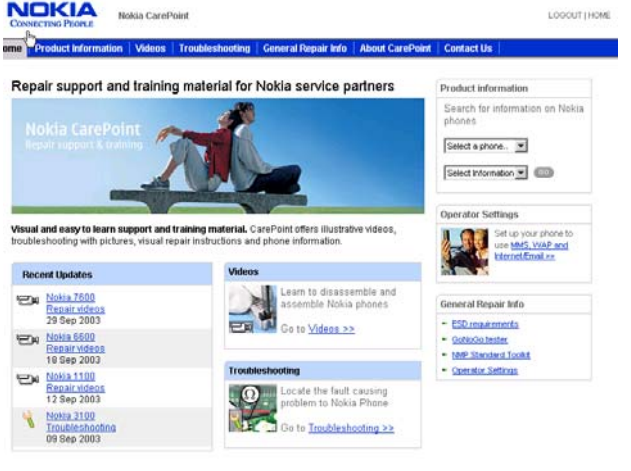
Use General SB-217 as a reference or overview.

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

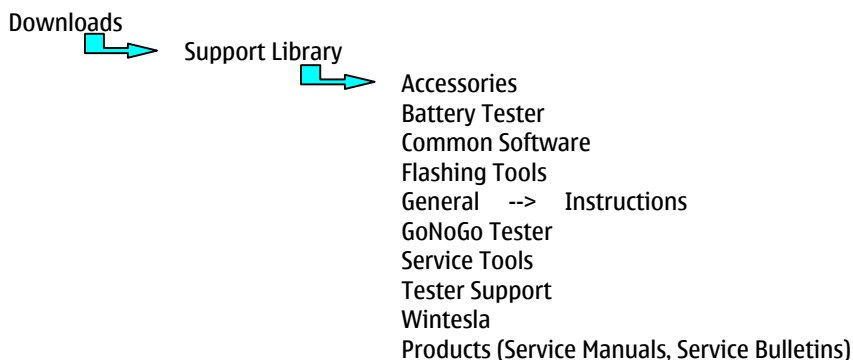
In addition to the information in this Service Manual, there are several instructions and information, which have to be followed.

Main documentation database is Nokia [Partner Website](#) / [Nokia Online](#), which refers also to [Nokia Care Point](#) with the purpose of serving different multimedia content, like video clips or interactive tutorials.

Nokia Partner Web Site	Nokia Care Point (access through Partner Web Site)
<p>Nokia Partner Web Site for EMEA region is the most important document database for all service suppliers (level 1-4). All service relevant information like e.g. Service Manuals, Service Bulletins or general instructions are available. Content is restricted according your access level. To be kept up-to-date also concerning newest software updates, a daily check of "latest updates in support library" is needed.</p>	<p>Nokia Care Point is repair support and training channel for Nokia service suppliers (mainly for service levels 1 and 2). By providing visual and easy to learn support and training material, such as illustrative repair videos, troubleshooting with pictures, product information and general repair information, Nokia Care Point offers user-friendly channel for service suppliers to learn technical issues.</p>
	

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

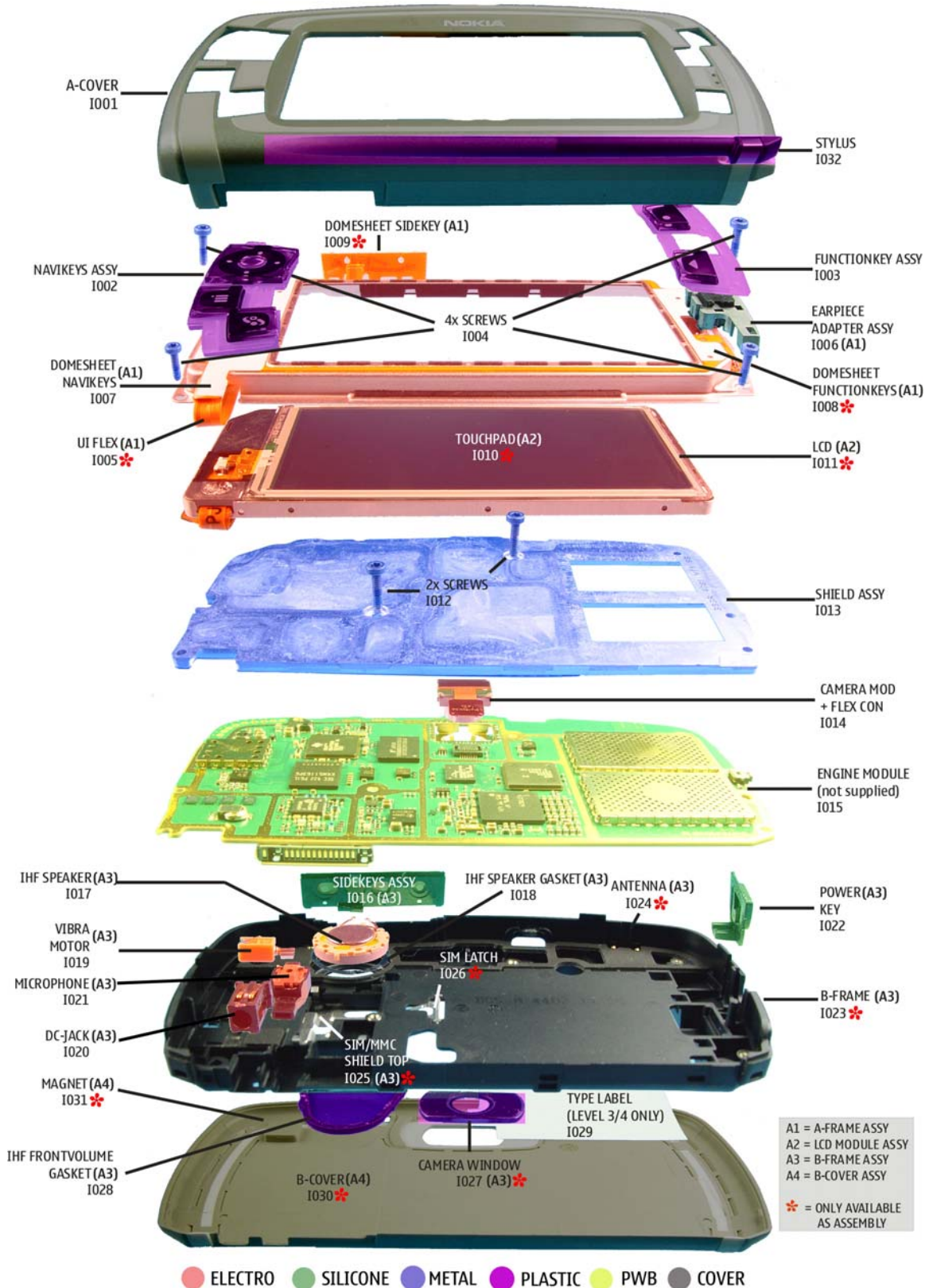
When logged into PWS you can also find needed information in different folder like:



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

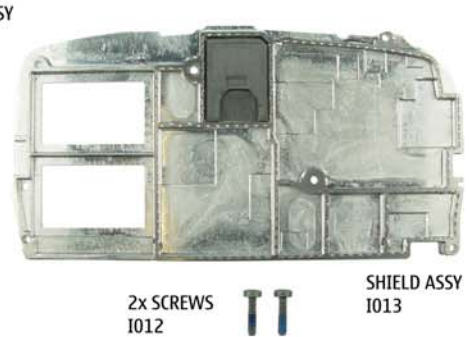
Recommendation for the ecologically friendly disposal of components. Colorized components show the different categories. See corresponding ITEM/CIRCUIT REF in the Spare Parts Service Bulletins on PWS/NOL.



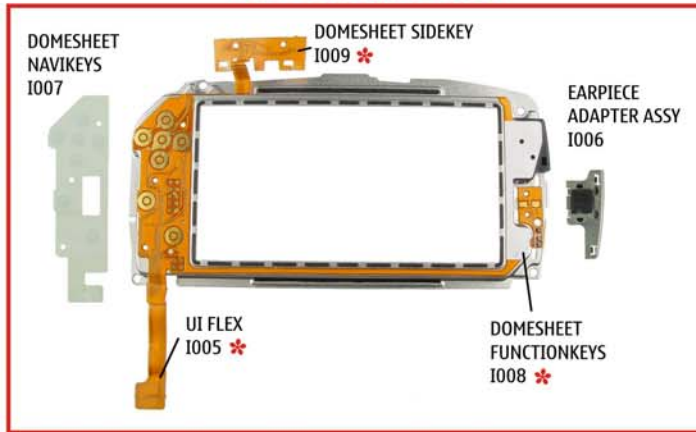
5. SPARE PARTS OVERVIEW



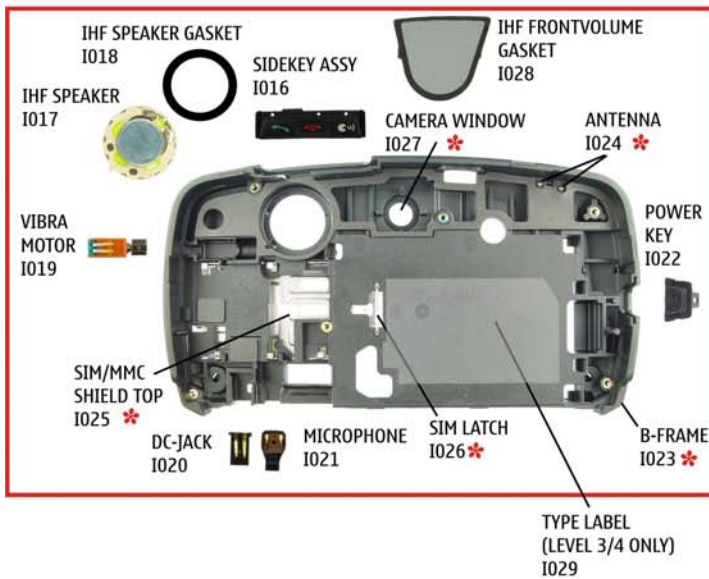
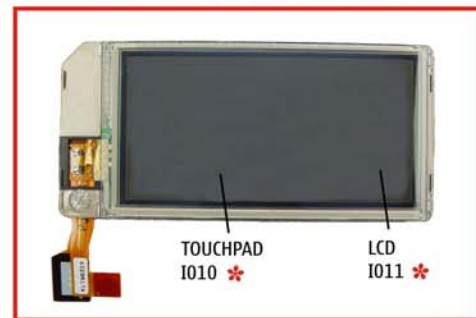
A1 = A-FRAME ASSY



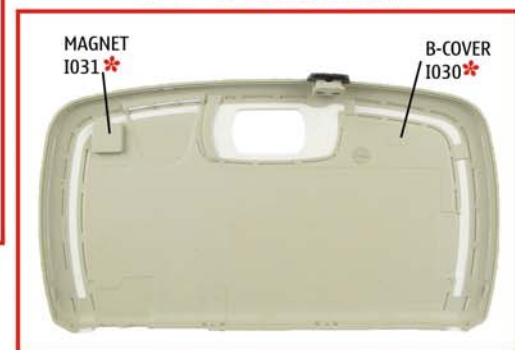
A2 = LCD MODULE ASSY



A3 = B-FRAME ASSY



A4 = B-COVER ASSY



A1 = A-FRAME ASSY
A2 = LCD MODULE ASSY
A3 = B-FRAME ASSY
A4 = B-COVER ASSY
* = ONLY AVAILABLE AS ASSEMBLY



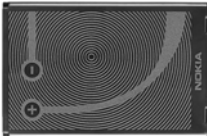




6. SPARE PARTS LIST







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

 	<p>FLS-4S incl. ACF-8, Driver and User Guide Dongle and flash device incorporated into one package, developed specifically for POS use.</p>
	<p>Internal Battery BP-5L Inserted under the back cover, this Li-Polymer 1300 mAh battery.</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-34 Flex Opening Tool.</p>
	<p>XCS-1 Service Cable is used to connect FLS-4S to FLA-46 .</p>

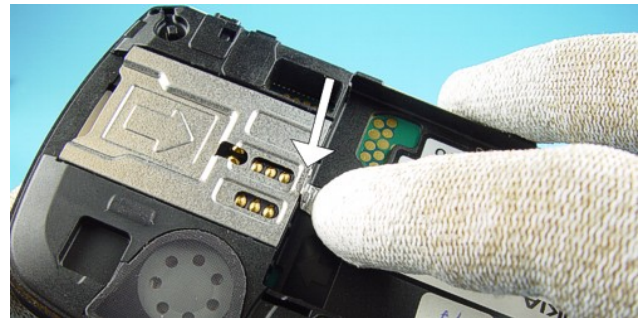
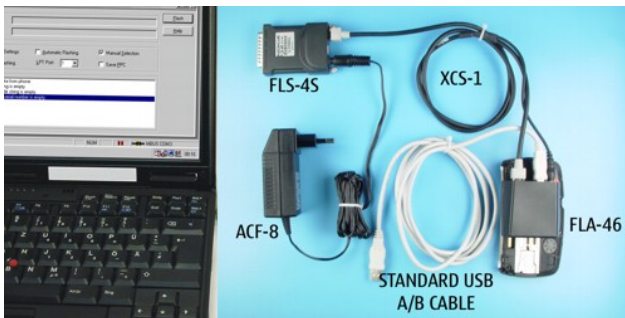
	<p>FLA-46 POS Flash Adapter is used in POS (Point of Sales) environment for software updating. It provides controlled supply voltage and necessary connections between the phone and the Flash Device. It substitutes for the phone's standard battery during the software update.</p>
	<p>Test Pins For Flash Adapter FLA-46</p>
	<p>Standard USB A-B Cable For Flash concept.</p>
	<p>RJ-37 Soldering Jig</p>
	<p>Lead-free Solder Wire Mandatory for lead-free products (Level 2 only).</p>
 <p>Standard Toolkit</p> <p>Labels in image: Gloves, Micro Fibre Cloth, Airbrush, Side Cutter, SRT-6, ESD Brush, Scissors, Bits, Torque Driver, T5, T6, Slot, Dental Tool, Goggles, Tweezers, 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</p>	<p>0772040 NMP Standard Toolkit</p> <ul style="list-style-type: none"> ▪ 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.



Close **SIM Latch** before insert the Flash Adapter.



Insert the Flash Adapter like a battery, start at the Battery Connector side.



Now, push down the phone carefully.

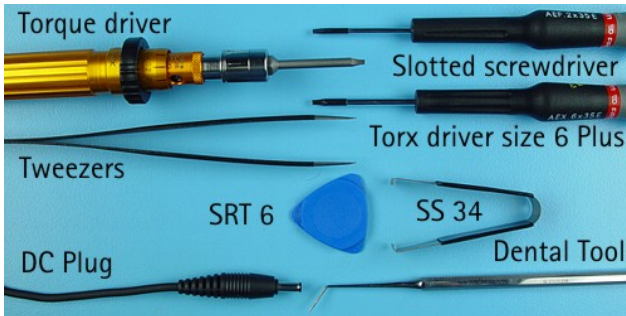


Remove the phone as shown in the picture.



Take away the unit now.

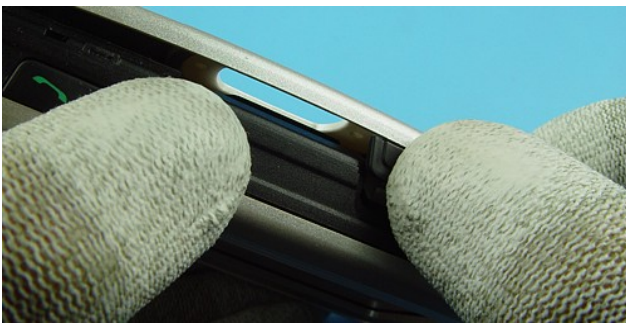
9. DISASSEMBLY INSTRUCTIONS (ALSO SEE THE VIDEO CLIPS ON CARE POINT)



1.) Needed tools for disassembly/assembly.



2.) Remove the **Stylus**.



3.) Unlock and lift the **B-Cover Assy**.



4.) Push the **B-Cover Assy** in shown direction.



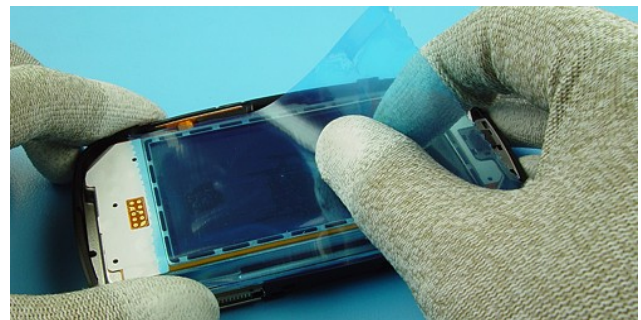
5.) Protect the **Camera Window** with a film.



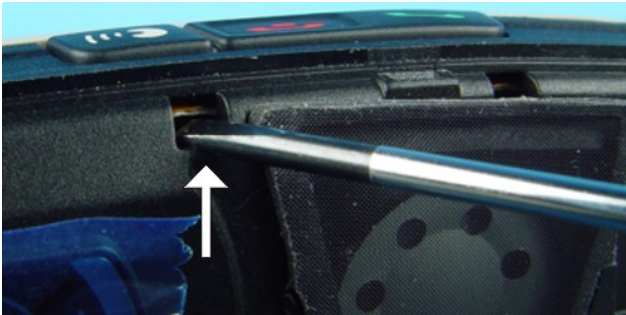
6.) Unlock the clips of the **A-Cover** with the SRT-6.



7.) Remove the **Key mats**.



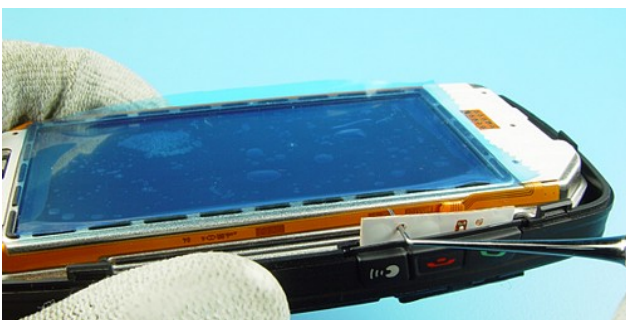
8.) Protect the **LCD** with a film.



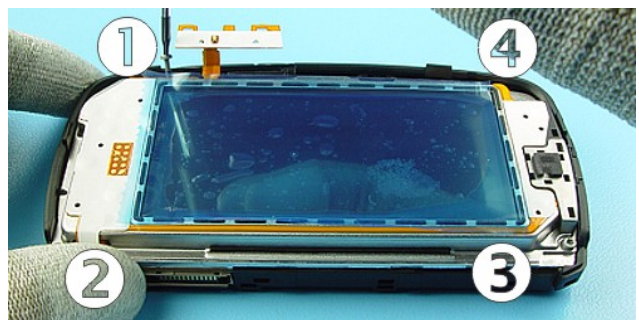
9.) Unlock the **Domesheet Sidekey** on both sides carefully.



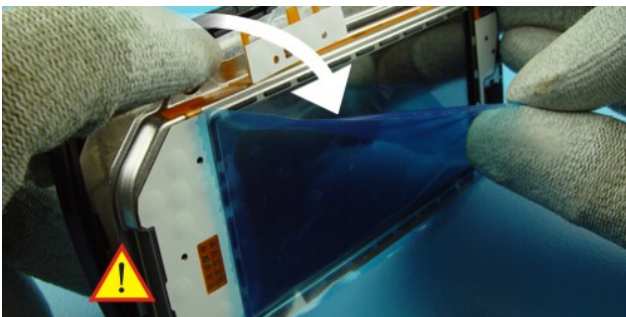
10.) Prevent damaging the **IHF Frontvolume Gasket** when releasing the second sidekey clip.



11.) Lift up the **Domesheet Sidekey** with the dental tool, beginning from the left side.



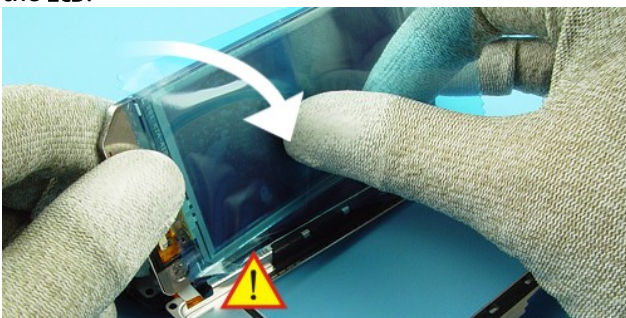
12.) Unscrew and remove the screws in the shown order, **for assembly use the reverse order, always use new screws and a torque of 21 Ncm.**



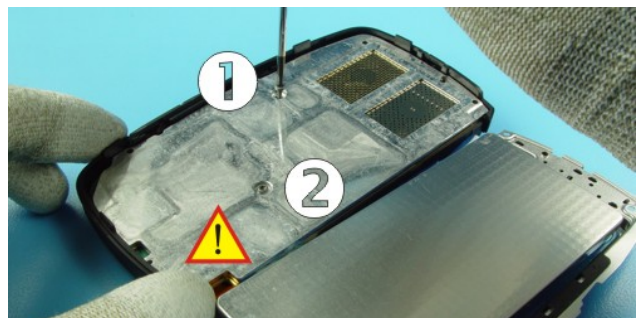
13.) Carefully separate the **A-Frame Assy** with the LCD, take great care of the flex foil. Remove the film from the LCD.



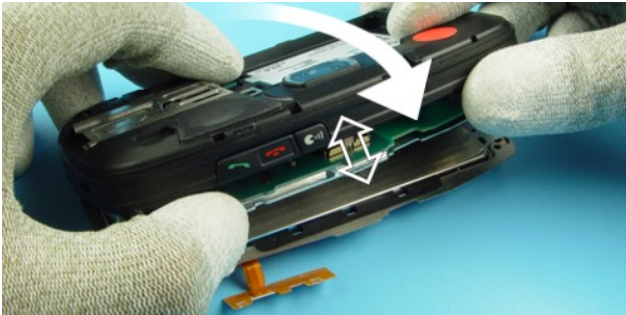
14.) Push out the **LCD** with a clean piece of cloth carefully.



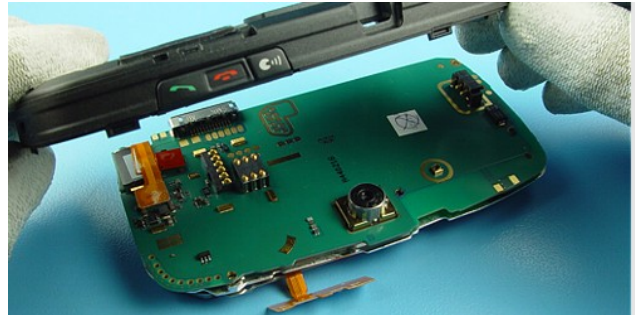
15.) Protect the **LCD** with a film. Put it onto the **A-Frame Assy**, mind the flex foil.



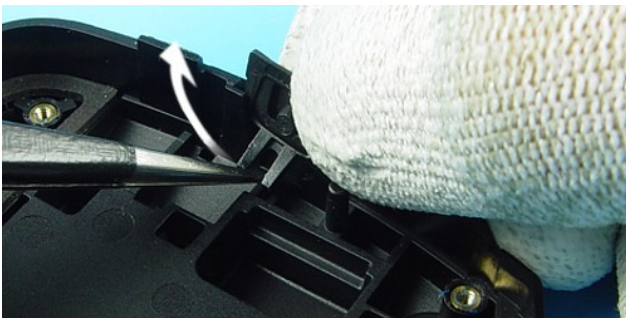
16.) Unscrew the two screws in the shown order, mind the flex foil. **For assembly use the reverse order, always use new screws and a torque of 21 Ncm.**



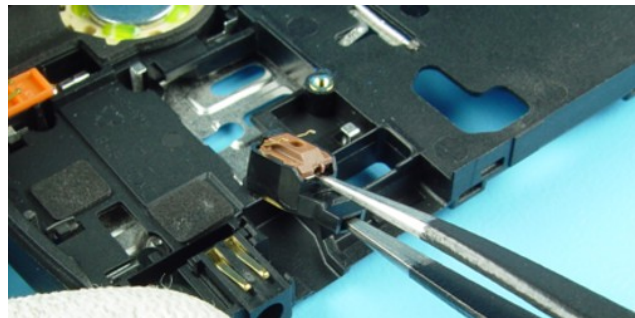
17.) Turn over the **B-Frame Assy** carefully first.



18.) Then remove the **B-Frame assy**.



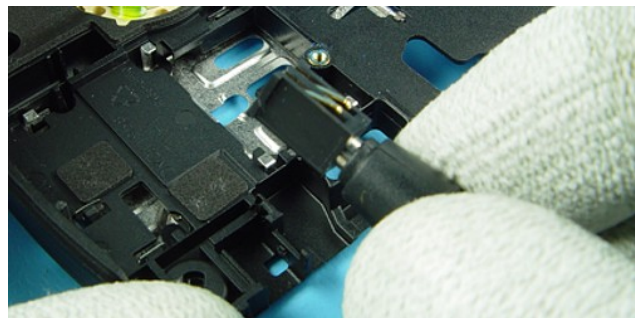
19.) Unlock and pull out the **Power Key**.



20.) Remove the **Microphone** with tweezers.



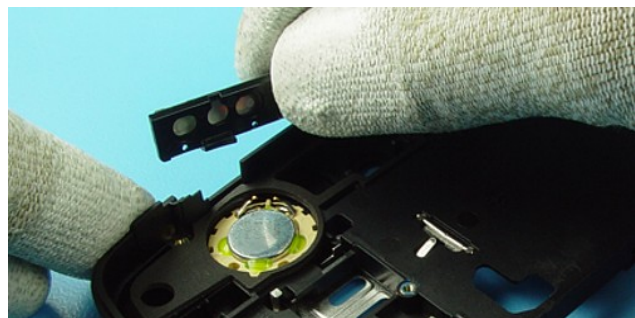
21.) Remove the **Vibra Motor**.



22.) Use the DC plug to remove the **DC Jack**. Additional force may be required.

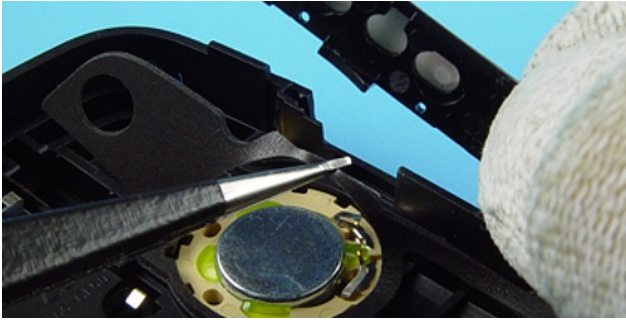


23.) For **Side Key Assy** removal lift up the IHF Backvolume Gasket first.

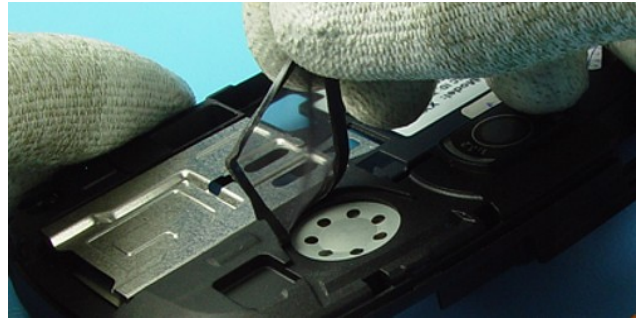


24.) Pull out the **Sidekey Assy**.

For assembly only!



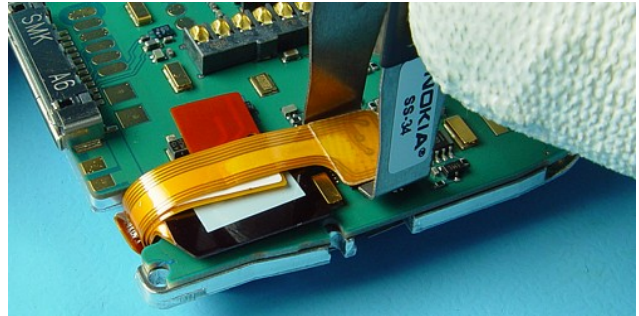
25.) For Assembly lift up the IHF Backvolume first, then place the Sidekey Assy.



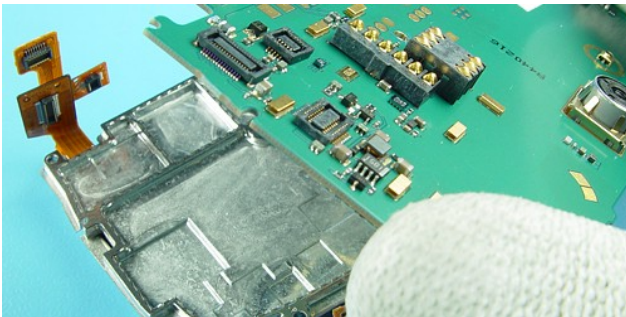
26.) Remove the IHF Frontvolume Gasket.



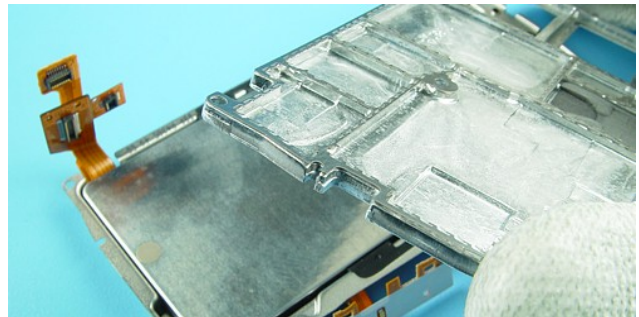
27.) Push out and take away the IHF Speaker.



28.) Disconnect the 3 Flex connectors with the SS-34.



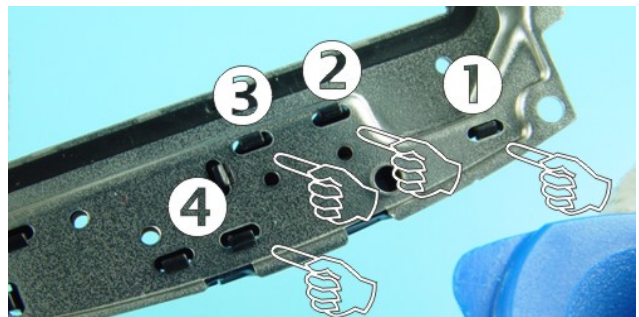
29.) Remove the Engine Module.



30.) Remove the Shield Assy.



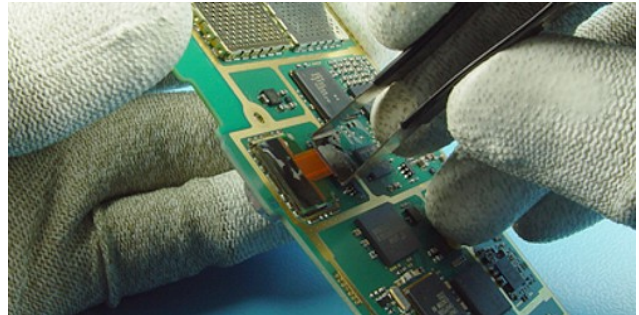
31.) Remove the LCD Module Assy.



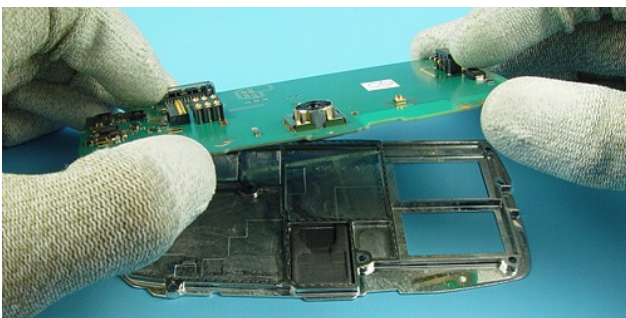
32.) Unlock the 4 clips of the Earpiece Adapter with the SRT-6.



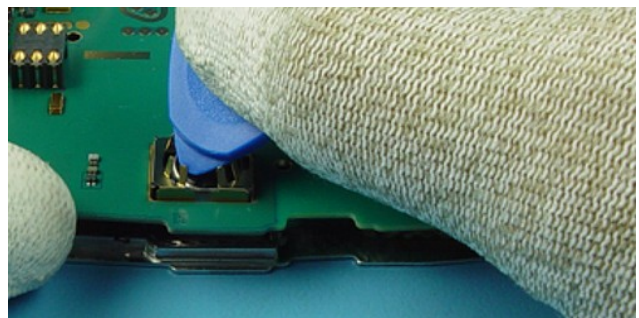
33.) Remove the **Earpiece Adapter Assy**, use the SRT-6 if necessary.



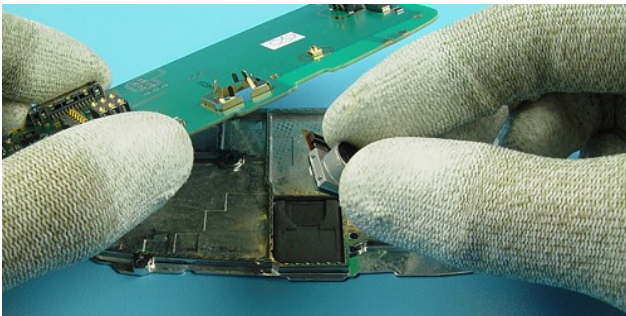
34.) Open the Flex connector of the **Camera Module** with the SS-34.



35.) Use the **Shield Assy** as support while removing the **Camera Module**.











36.) Push out the **Camera Module** with the SRT-6.



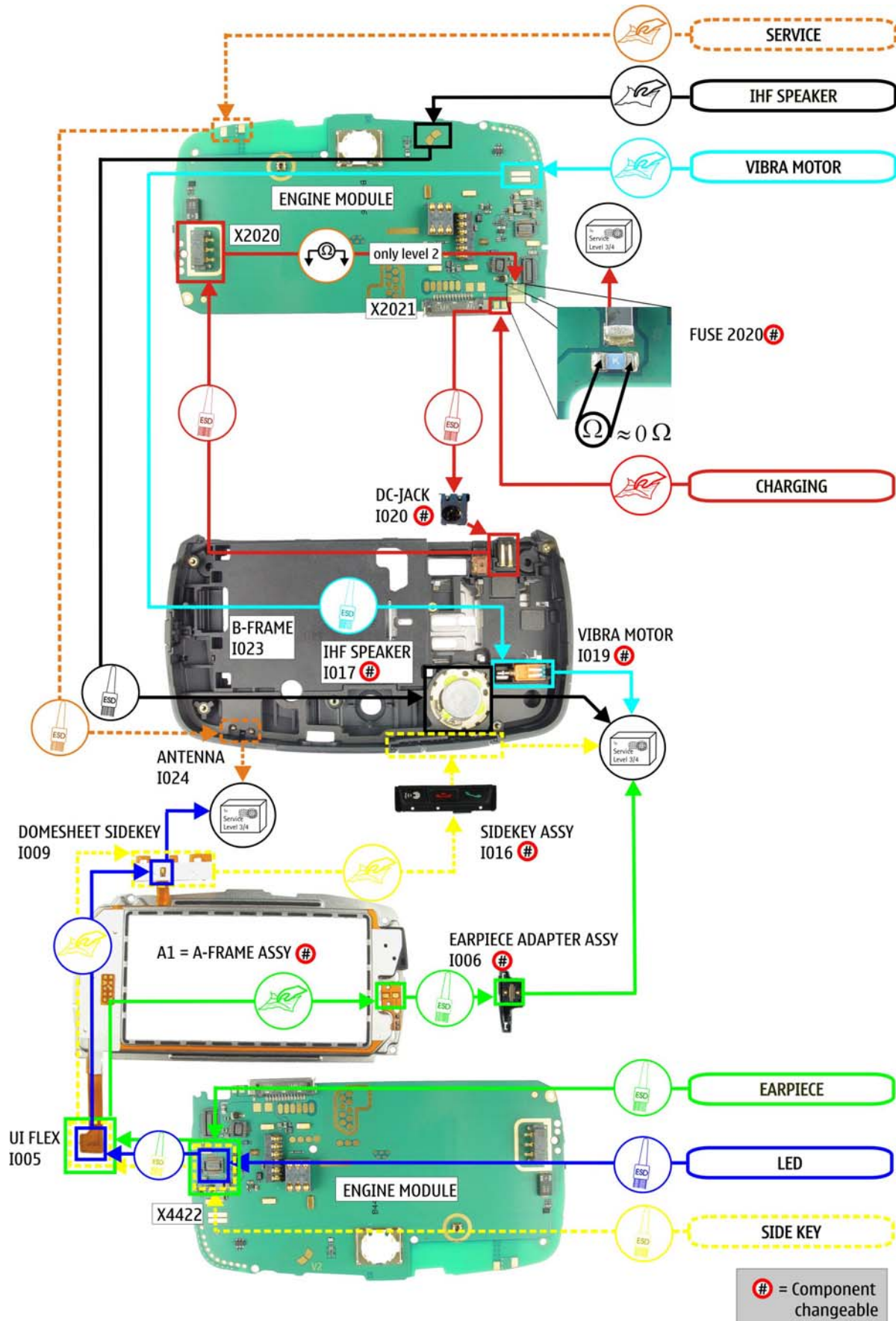
37.) Take away the **Camera Module**.

10. LEGEND FOR QUICK TROUBLE SHOOTER

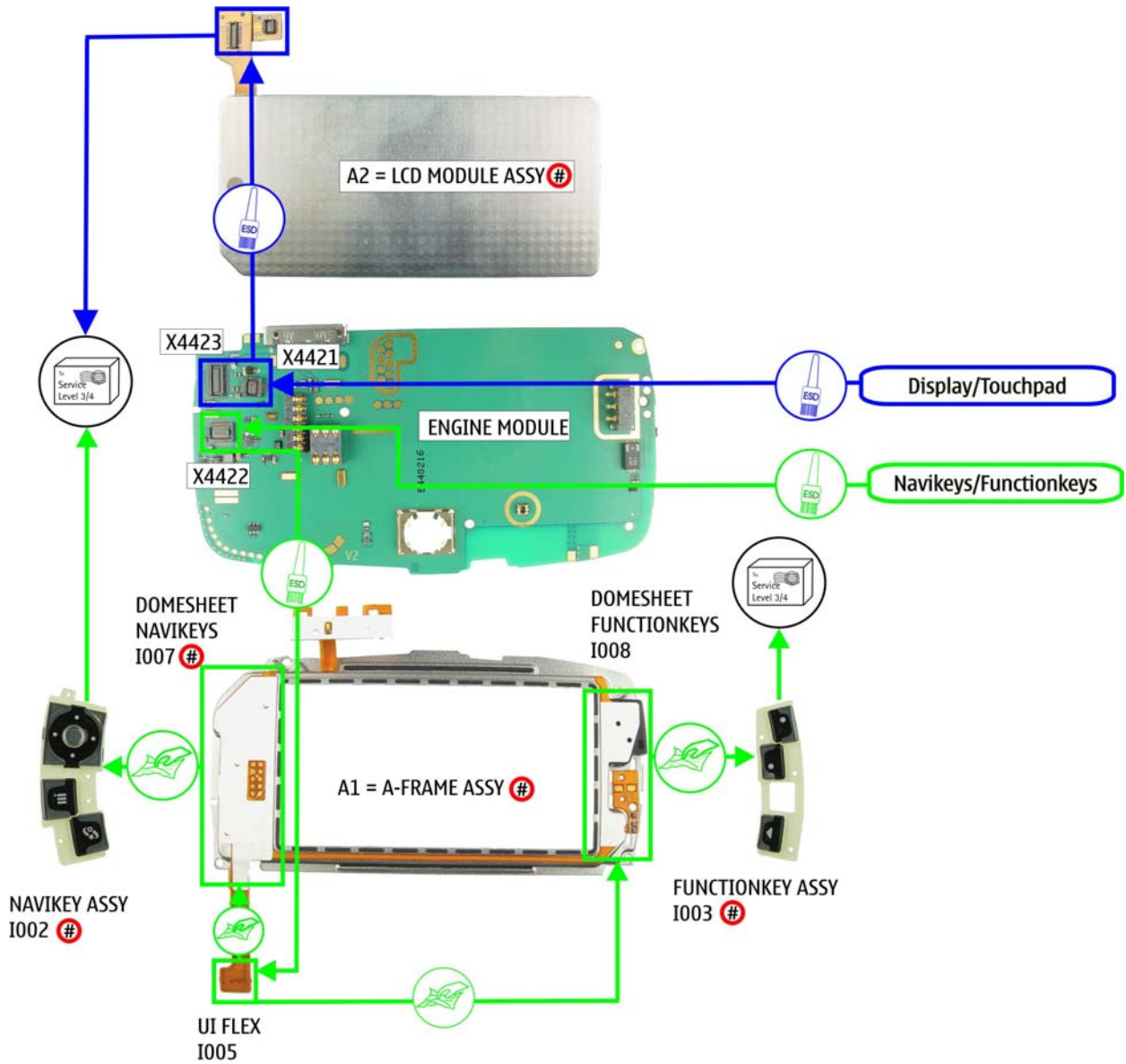
This legend is valid for all parts of the **Quick Trouble Shooter**

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

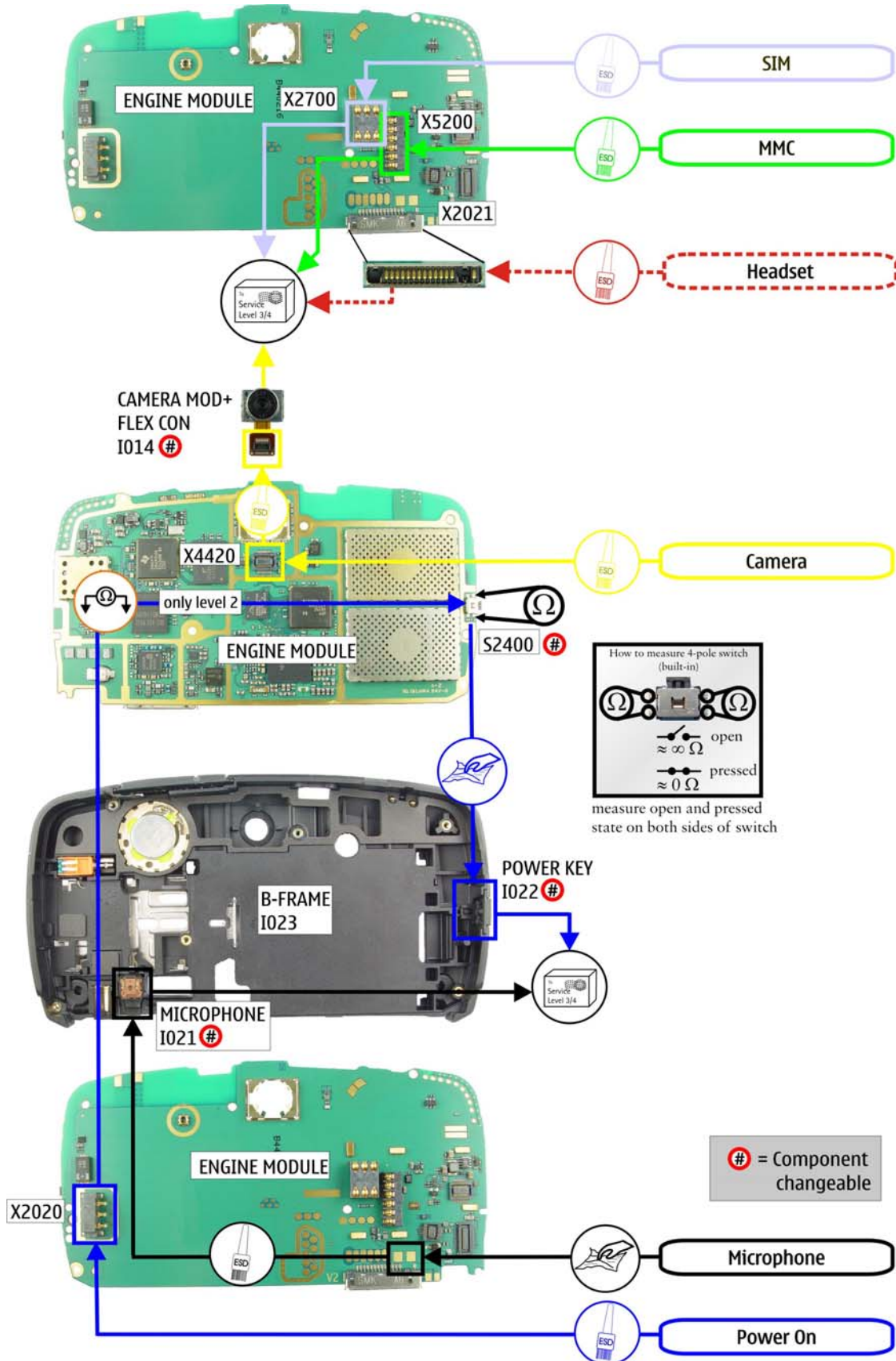


12. QUICK TROUBLE SHOOTER PART 2



= Component changeable

13. QUICK TROUBLE SHOOTER PART 3



14. CAMERA GONOGO TEST

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



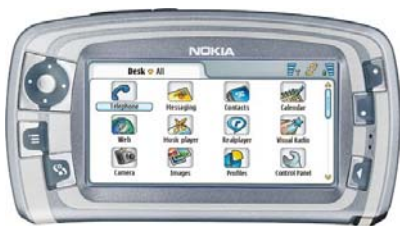
- From Desk (Home Menu) Select **Camera**
- Select **Capture** to take a photo
Test was successful, if the Image appears on your Display. The camera is ok.
- Select **Delete**
- Select **Menu Key** to reach the Desk (Home Menu)
If the test is failed see Quick Trouble Shooter.

15. BLUETOOTH 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.



Test unit



Reference unit, Bluetooth /infrared activated

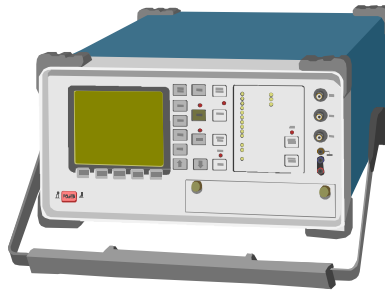
Settings on the test unit:

- From Desk (Home Menu) Select **Contacts**
- Select **My card**
- Select **Send**
- Select **Bluetooth**
- Select **OK**
 - If needed (for e.g. after a sw-update), enter a name for this device.
- If the Bluetooth is currently off, select **Switch on**
- select **New search**
 - If all Bluetooth devices in range will be displayed, the test is successful!
- Select **Cancel**
- Select **Menu key** to reach the Desk (Home Menu)
 - **Note: If the Bluetooth is activated, switch it off!**

16. 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 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

17. 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.



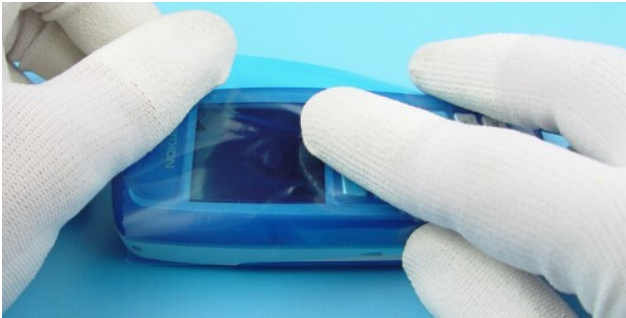
<http://www.astratec.co.uk/>



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

18. 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.



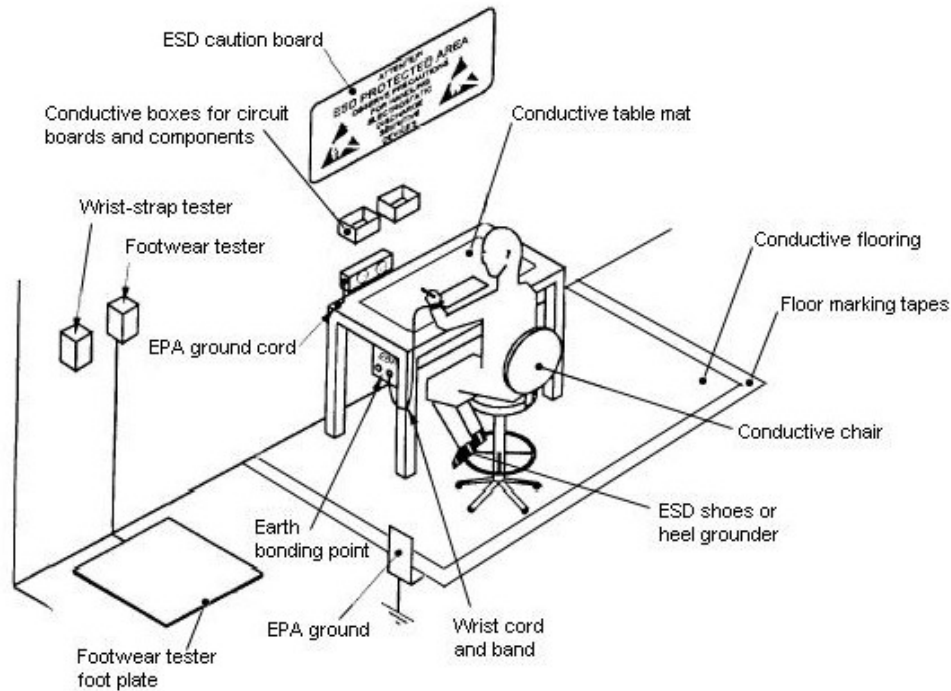
Add repair documentation e.g. filled-in service note into the swap carton.



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

19. 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