

NOKIA
N-GAGE
NEM-4



Transceiver Features

- High-performance mobile 3D gaming
- Gaming-optimized design and functionality
- Bluetooth wireless technology
- Digital music player and recorder
- Illuminated high-contrast, full-graphics color display (size 176 x 208 pixels)
- Stereo FM radio
- Multimedia messaging
- Full email support (IMAP4, POP3, SMTP, MIME2)
- Content with XHTML browser
- Tri-band EGSM 900/GSM1800/GSM 1900 phone
- Series 60 UI enabling application multitasking
- MP3, AAC, MIDI, and WAV ringing tones
- WAP over GPRS

Transceiver with BL-5C Li-ion battery pack

Talk time	Standby	Note
2-4 hours	150-200 hours	Depends on network parameters
Music	Radio	Games
Up to 8 hours	Up to 20 hours	3-6 hours

SERVICE MANUAL

Service Level 1&2

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CHANGE HISTORY

Status	Version No.	Date	Comments
Draft	0.1	09.10.2003	Initial draft
Approved	1.0	20.10.2003	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 N-GAGE. 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.
6. All PC's used with NMP Service Software for this produce must be bios and operating system "Year 2000 Compliant".



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 N-GAGE read the tutorials or user guide on www.nokia.com -->Support--> Phones, by selecting the Phone Model.
- Before starting the repair you must take care of ESD precautions like being in your ESD Protected Area and connecting your wristband.
- Use gloves to avoid corrosion and fingerprints.
- Protect windows and displays with a film to avoid dust and scratches.
- When cleaning the 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.

These mention Service Bulletins have to be followed:

General

- SB-027: Original Nokia Accessories
- SB-089: Don't try to repair prototypes (indicated on Type Label).
- SB-107: Be sure that you have minimum hardware requirements in place.
- SB-115: Handling of liquid damages.
- SB-121: Return the defective part, if one of your service tools causes malfunction.
- SB-124: Service Policy for packaging serviced products
- SB-131: Check these guidelines when refurbishing products.
- SB-148: Improvements to Faultlog Reporting Tool
- SB-156: Packing Material
- SB-161: New structure of General Bulletins
- SB-163: Service handling of PWBs and PCBs during repair process
- SB-164: New barcode for future products
- SB-165: NMP Global Symptom Codes
- SB-167: NMP Global Fault Codes (Level 1&2)

Service Tools

- SB-011: NMP Standard Toolkit

Spare Parts

- SB-004: New swap phone cartons

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.

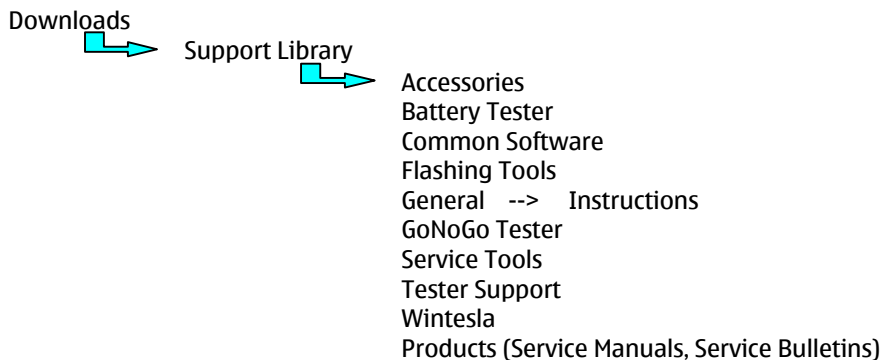
Main documentation database is [Nokia Partner Website](#), which refers also to [Nokia Care Point](#) with the purpose of serving different multimedia content, like video clips or interactive tutorials.

Nokia Partner Web Site	Nokia Care Point
<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 you 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 to different headlines respectively tools

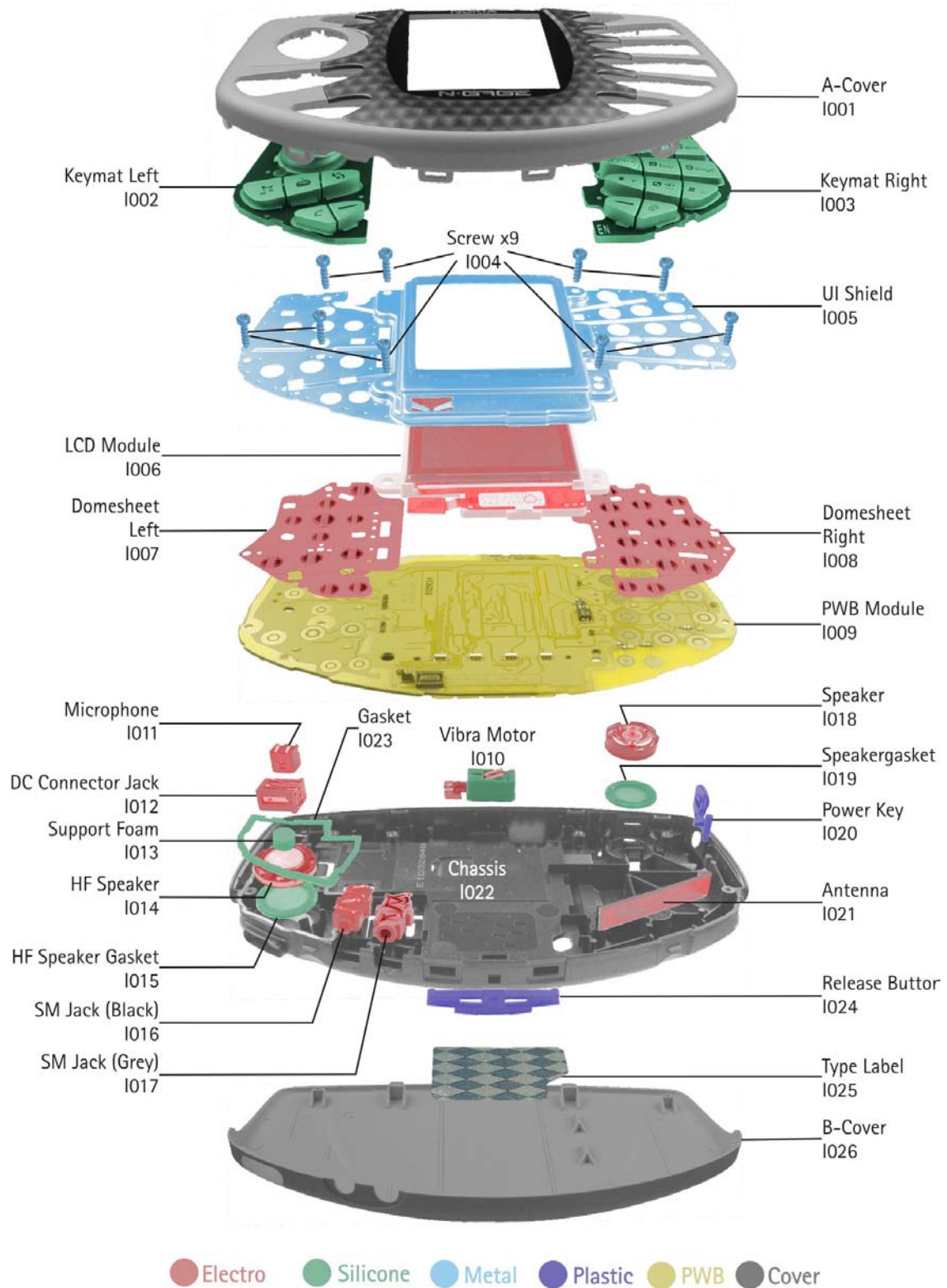
like:



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 ASSY
	1	XXXXXXX	KEYMAT ASSY LEFT&REIGHT
I002	1	-	KEYMAT LEFT
I003	1	-	KEYMAT RIGHT
I004	9	6290107	SCREWS 1.8X7 T6 PLUS
I005	1	9517211	UI SHIELD ASSY
I006	1	4850325	LCD MODULE
	1	9790740	DOMESHEET LEFT&RIGHT
I007	1	-	DOMESHEET LEFT
I008	1	-	DOMESHEET RIGHT
I009	1	-	PWB MODULE
I010	1	6800057	VIBRA MOTOR
I011	1	5140277	MICROPHONE
I012	1	5400243	DC CONNECTOR JACK
I013	1	9470430	SUPPORT FOAM
I014	1	5140253	HF SPEAKER
I015	1	9470297	HF SPEAKER GASKET
I016	1	5400121	SM JACK (COLOUR IS BLACK)
I017	1	5400305	SM JACK (COLOUR IS GREY)
I018	1	5140233	SPEAKER&SPRING
I019	1	9470298	SPEAKER GASKET
I020	1	9790729	POWER KEY
I021	1	0660299	ANTENNA
	1	-	CHASSIS & GASKET
I022	1	-	CHASSIS
I023	1	9470472	GASKET
I024	1	9452569	RELEASE BUTTON
I025	1	-	TYPE LABEL
I026	1	XXXXXXX	B-COVER

SOLDERING COMPONENTS ONLY FOR LEVEL 2

ITEM/ CIRCUIT REF.	QTY	PART NO	PART NAME
G190	1	4700131	CELL CAPACITOR 3V3
F381	1	5119019	SM FUSE F 1.5A 32V 0603
S130	1	5209001	SM SW TACT SPST 12V 50MA SIDE KEY
V140	1	4864331	LED CL191TD3CDT 605NM >83MCD 0603
V143	1	4864331	LED CL191TD3CDT 605NM >83MCD 0603
V144	1	4864331	LED CL191TD3CDT 605NM >83MCD 0603
V145	1	4864331	LED CL191TD3CDT 605NM >83MCD 0603
V146	1	4864331	LED CL191TD3CDT 605NM >83MCD 0603
V147	1	4864331	LED CL191TD3CDT 605NM >83MCD 0603
V148	1	4864331	LED CL191TD3CDT 605NM >83MCD 0603
V149	1	4864331	LED CL191TD3CDT 605NM >83MCD 0603
V151	1	4864427	LED CL270SYG GRN>20MCD 90DEG 0603
V153	1	4864331	LED CL191TD3CDT 605NM >83MCD 0603
V160	1	4860501	LED CL430SWD ** RESERVED R0919 **
V161	1	4860501	LED CL430SWD ** RESERVED R0919 **
V162	1	4860501	LED CL430SWD ** RESERVED R0919 **
V163	1	4860501	LED CL430SWD ** RESERVED R0919 **

VARIANT PARTS

ITEM/ CIRCUIT REF.	QTY	PART NO	PART NAME
I001	1	9458550	A-COVER ASSY SILVER
I001	1	9459014	A-COVER ASSY GREY
-	1	9791219	KEYMAT ASSEMBLY LEFT&RIGHT LATIN
-	1	9791220	KEYMAT ASSEMBLY LEFT&RIGHT GREEK
-	1	9791221	KEYMAT ASSEMBLY LEFT&RIGHT RUSSIAN
I026	1	9452571	B-COVER PAINTED SILVER
I026	1	9453121	B-COVER PAINTED N.GREEN

SWAP UNITS

	QTY	PART NO	PART NAME
		0050484	NEM-4 N-GAGE SWAP UNIT RUSSIA
		0050485	NEM-4 N-GAGE SWAP UNIT UKRAINE
		0050478	NEM-4 N-GAGE SWAP UNIT FRANCE
		0050480	NEM-4 N-GAGE SWAP UNIT TURKEY
		0050481	NEM-4 N-GAGE SWAP UNIT POLAND
		0050477	NEM-4 N-GAGE SWAP UNIT EUROPE&AFRICA
		0050482	NEM-4 N-GAGE SWAP UNIT CZECH
		0050483	NEM-4 N-GAGE SWAP UNIT SOUTH AFRICA

SERVICE TOOLS

TYPE	QTY	PART NO	PART NAME
		0080541	FLS-4S SALES PACK E&A (INCLUSIVE 0680032)
		0680032	UNIV. POWERSUPPLY ACF-8
ACCESSORY		0273558	BL-5C BATTERY PACK
ACCESSORY		0272169	AC TRAVEL CHARGER ACP-8E (EURO)
ACCESSORY		0272172	AC TRAVEL CHARGER ACP-8X (UK)
ACCESSORY		0271467	HDC-5 HEADSET
ACCESSORY		0630465	DKE-2 MINI-B USB CABLE
ACCESSORY		0630464	ADE-2 AUDIO LINE IN CABLE
ACCESSORY		0630463	ADA-2 AUDIO ADAPTER CABLE
		0770565	FLA-41 POS FLASH ADAPTER
		0770773	SS-17 DOMESHEET ASSEMBLY JIG
		0730218	XCS-1 SERVICE CABLE
LEVEL 2 ONLY		0770542	RJ-10 SOLDERING JIG
		0772040	STANDARD TOOLKIT
		0770450	FLA-41 TESTPINS (10 PCS)

6. SERVICE TOOLS



ACF-8
Universal Power Supply is used to power FLS-45.

FLS-45 incl. Driver and User Guide
is a dongle and flash device incorporated into one package, developed specifically for POS use.



XCS-1
Service Cable is used to connect FLS-45 to FLA-41.



Internal Battery BL-5C
Inserted under the back cover, this Li-ion battery provides power in a lightweight package.



Travel Charger ACP-8E/ACP-8X
Lightweight multi-voltage charger for charging your phone battery.



Headset HDC-5
For easy and simple operation this headset is provided with a remote control.



FLA-41
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.



SS-17
Domesheet Assembly Jig indispensable for Domesheet exchange.



DKE -2
Mini-B USB Cable necessary for flashing the phone.



RJ-10
Soldering Jig (for level 2 or higher service Level supplier)



New Test Pins
for POS Flash Adapter FLA-41

NMP code 0772040



Content

- Nokia opening tool SRT-6 Nokia No. 0770431
- Tonichi torque driver Nokia No. 6901525
- [Hova](#) 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)

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



Note: before updating the device remove the MMC card.



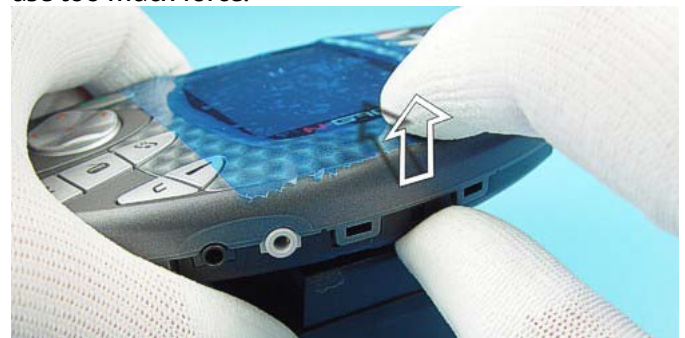
Insert the Flash Adapter FLA-41 like a battery, start at the Battery Connector side.



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



The N-GAGE has to be connected via USB using the DKE-2 cable.

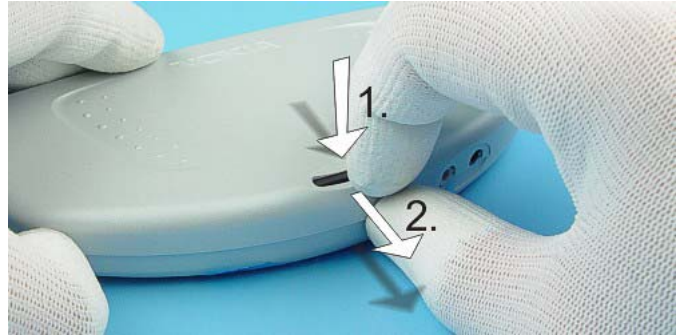


When removing the Flash Adapter, always start from the bottom side of the unit.

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



Check the window for dust and scratches before disassembling.



Press the Release Button before removing the C-Cover.



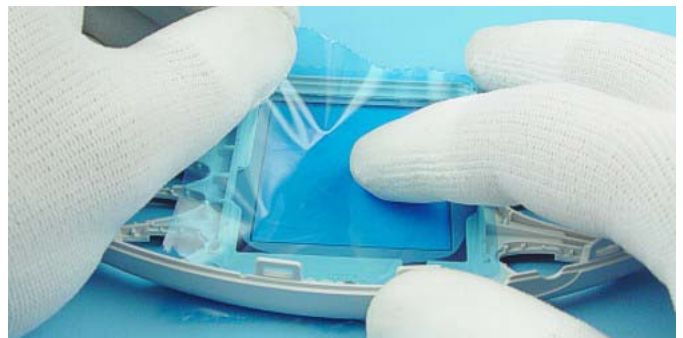
A-Cover is attached with two main clips to the Chassis. Open the clips with SRT-6 only.



The same procedure for the second clip.



Both Keymats drop out when turning A-Cover.



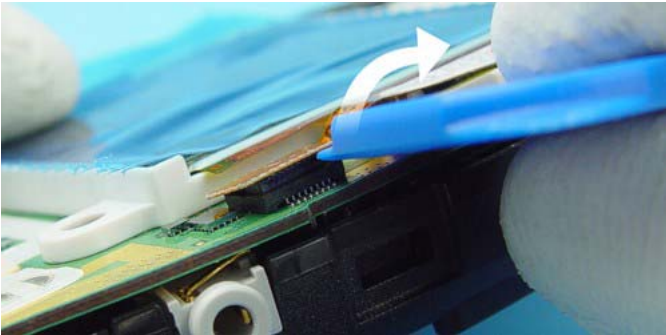
Protect the inner side of the Window with a film against dust and scratches.



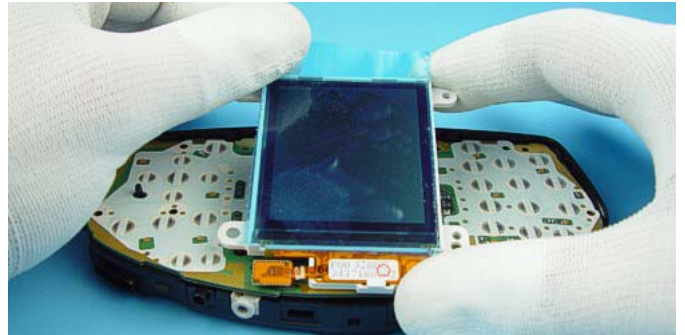
Unscrew the nine Torx Plus® size 6 screws using the order shown. **For assembly, the reverse order and a Torx Plus® driver with a torque of 26Ncm have to be used.**



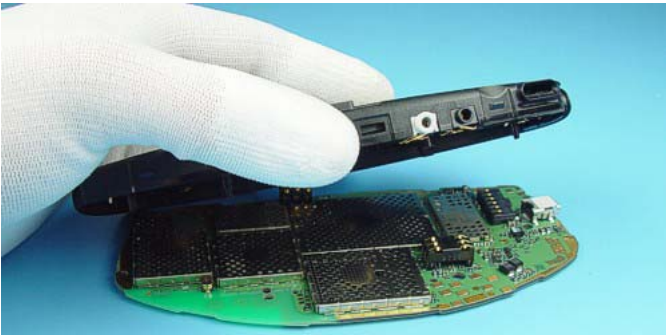
Now, the UI-Shield can be taken away. Protect the LCD Module with a film to avoid dust und scratches.



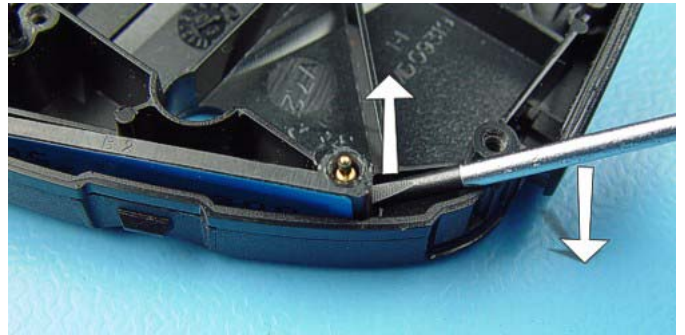
To open the LCD connector, place the SRT-6 between the plug and jack and twist it carefully as shown in the picture.



Now, remove the LCD Module.



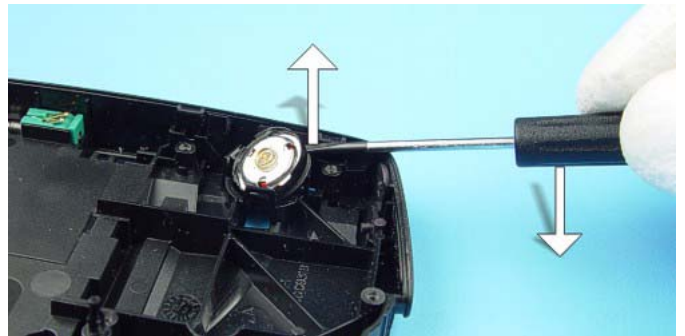
Turn around the unit and lift up the Chassis carefully to separate the PWB Module.



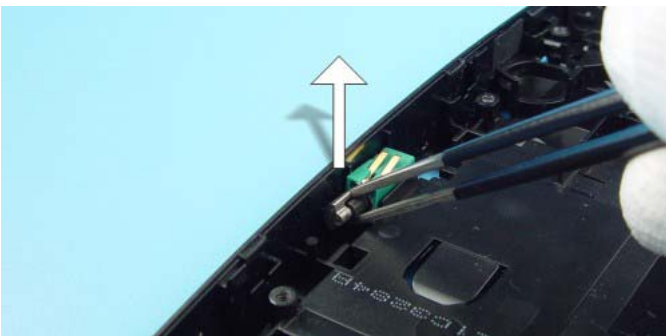
Lever out the Antenna from its guidance by using a slotted screwdriver.



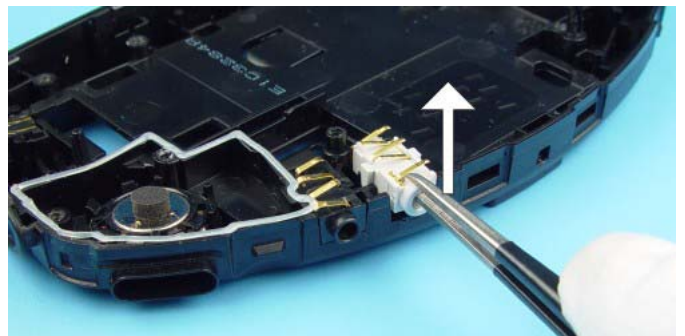
Now, the Antenna can be removed easily.



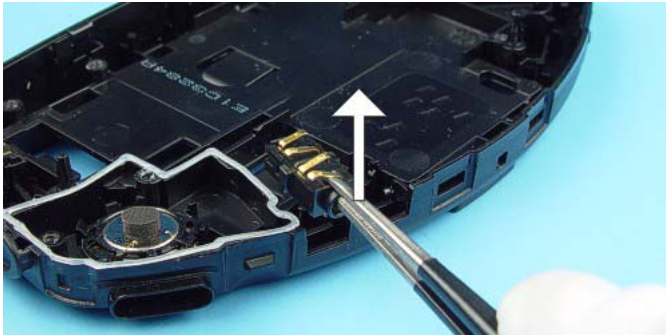
A slotted screwdriver can be used as a lever, too to lift the Speaker from its guidance.



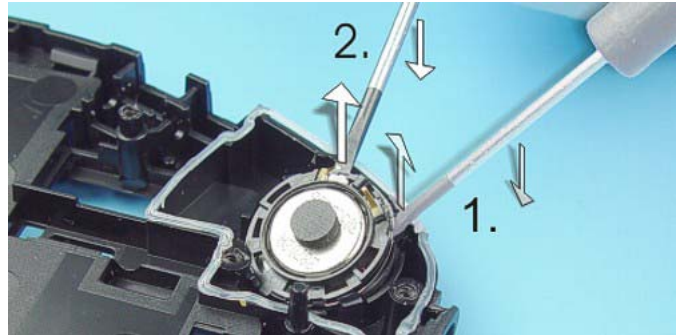
Remove the Vibra Motor.



Avoid damaging the spring contacts when removing the grey SM Jack and...



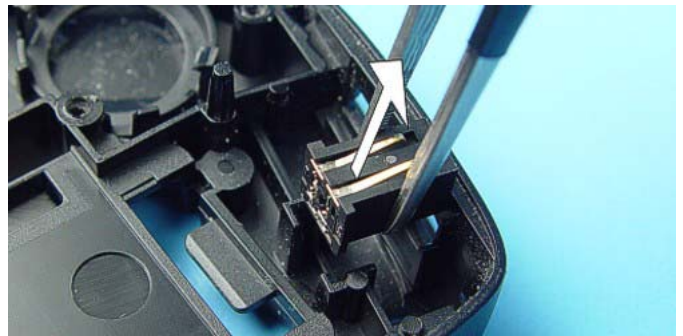
... the black SM Jack.



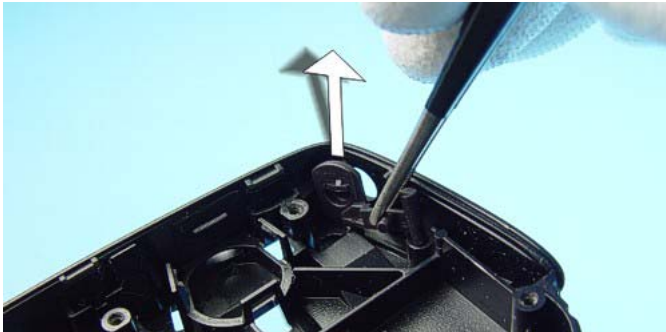
Lever out the HF Speaker from its guidance. Always start at first step as shown in the picture.



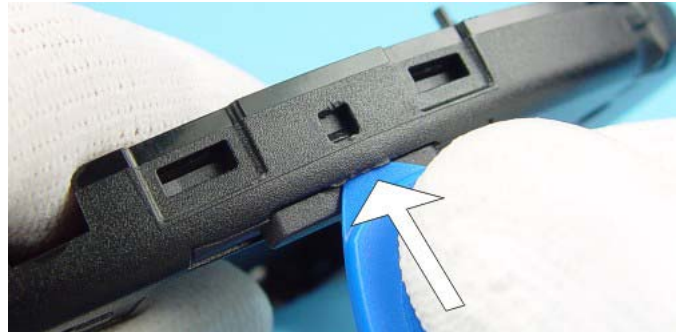
Remove Microphone by pushing a Torx driver through this opening.



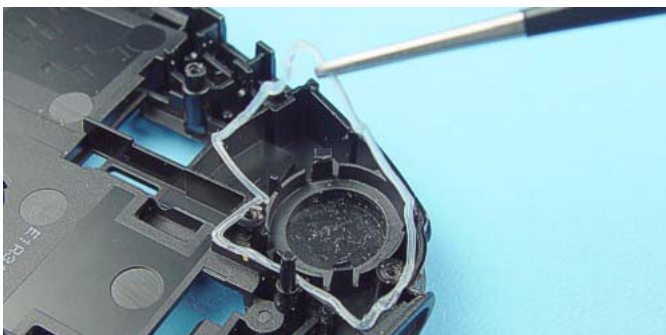
Corrugated tweezers should be used when removing DC Connector Jack



Unlock Power Key and remove it.



Unlock the Release Button's snap by using the SRT-6.

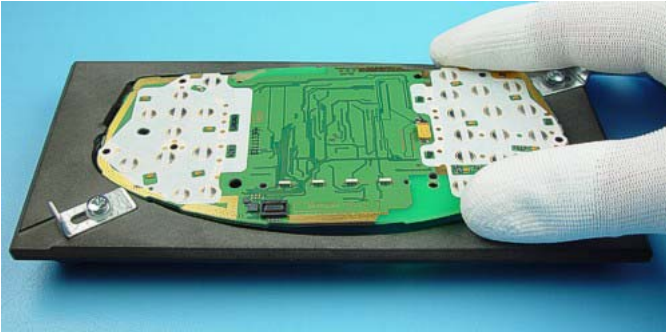


If the Silicone Gasket is loose somewhere or is damaged, remove it by using tweezers.

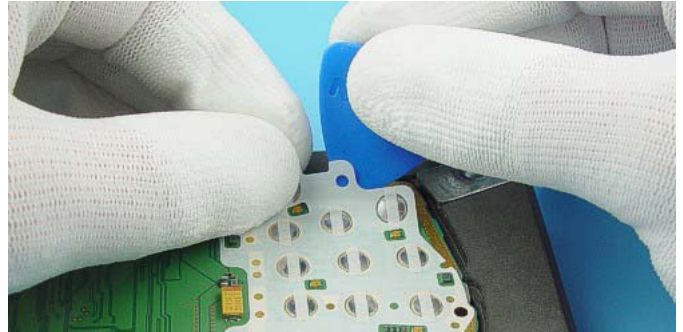


Replace the Silicone Gasket with a new one. Note the right position.

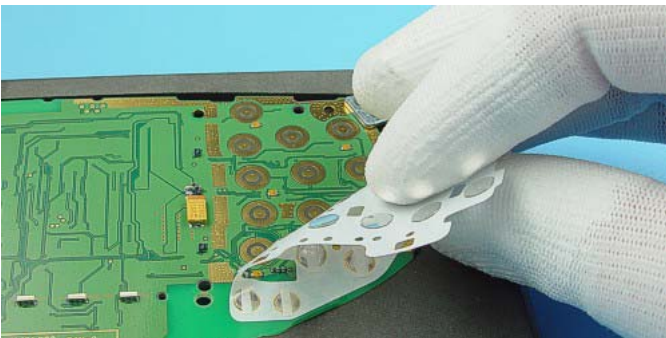
9. DOMESHEET EXCHANGE



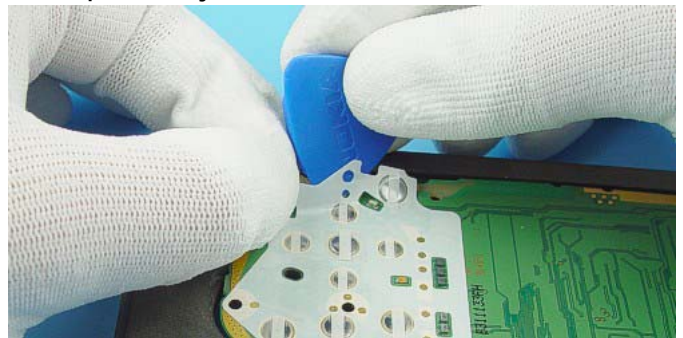
Put the PWB Module into the Soldering Jig.



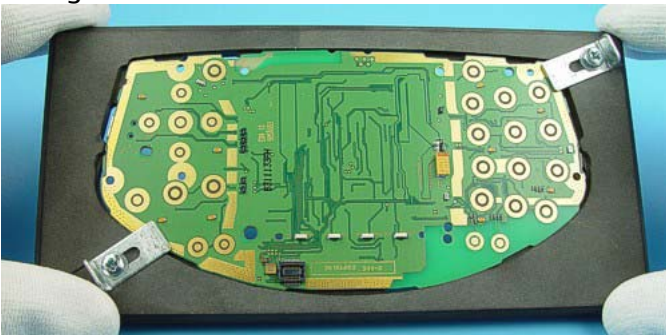
Use the SRT-6 to remove the faulty Dome Sheet. Place it under the Dome Sheet as shown in the picture and lift it up carefully from PWB Module.



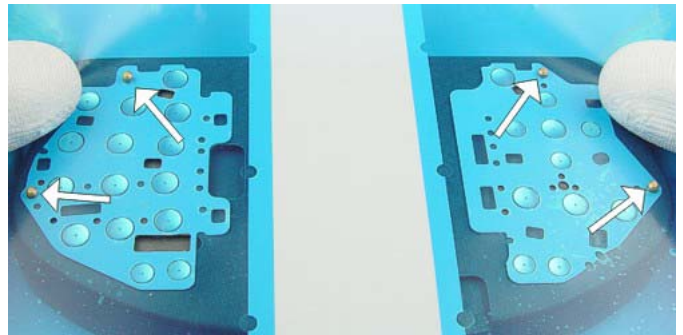
Take care about components on the PWB Module during removal of the Dome Sheet.



Use the same procedure also for the Dome Sheet Left.



Clean the pads on the PWB Module with a clean cloth if necessary. Be carefully not damage the components on the PWB.



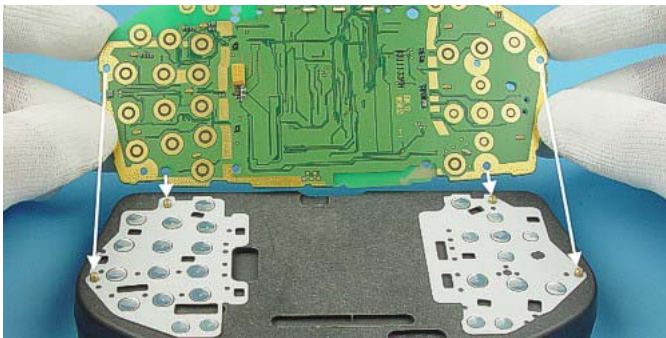
Put the new Dome Sheet onto the Dome Sheet Assembly Jig. Mind the guiding pins.



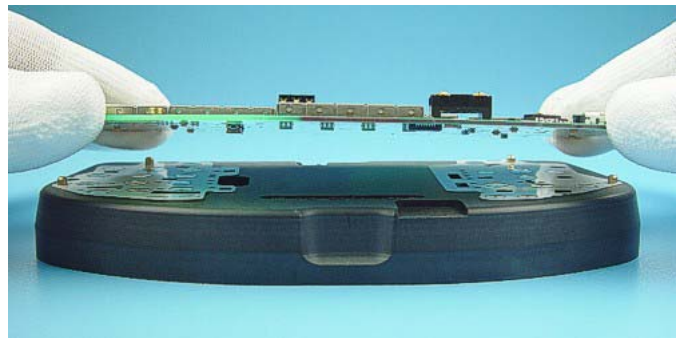
Remove the protection film. Tweezers can be used for retaining the Dome Sheet.



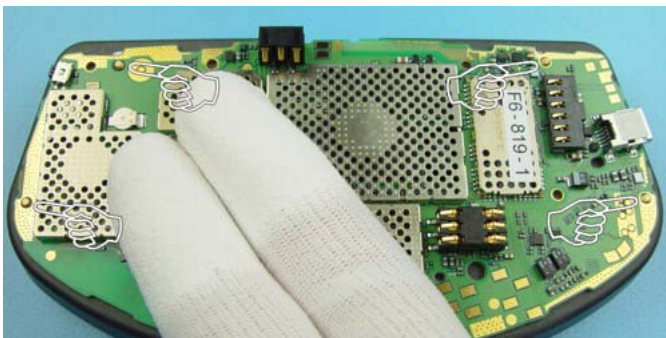
Use the same procedure also for the Dome Sheet Left.



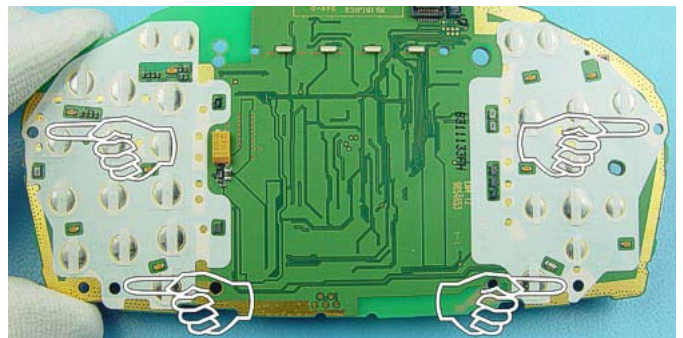
Arrows point to the right assembly position.



Put the PWB Module onto the Assembly Jig carefully.








Press on PWB Module after checking that all guiding pins are positioned correctly. Do not touch the spring contacts.



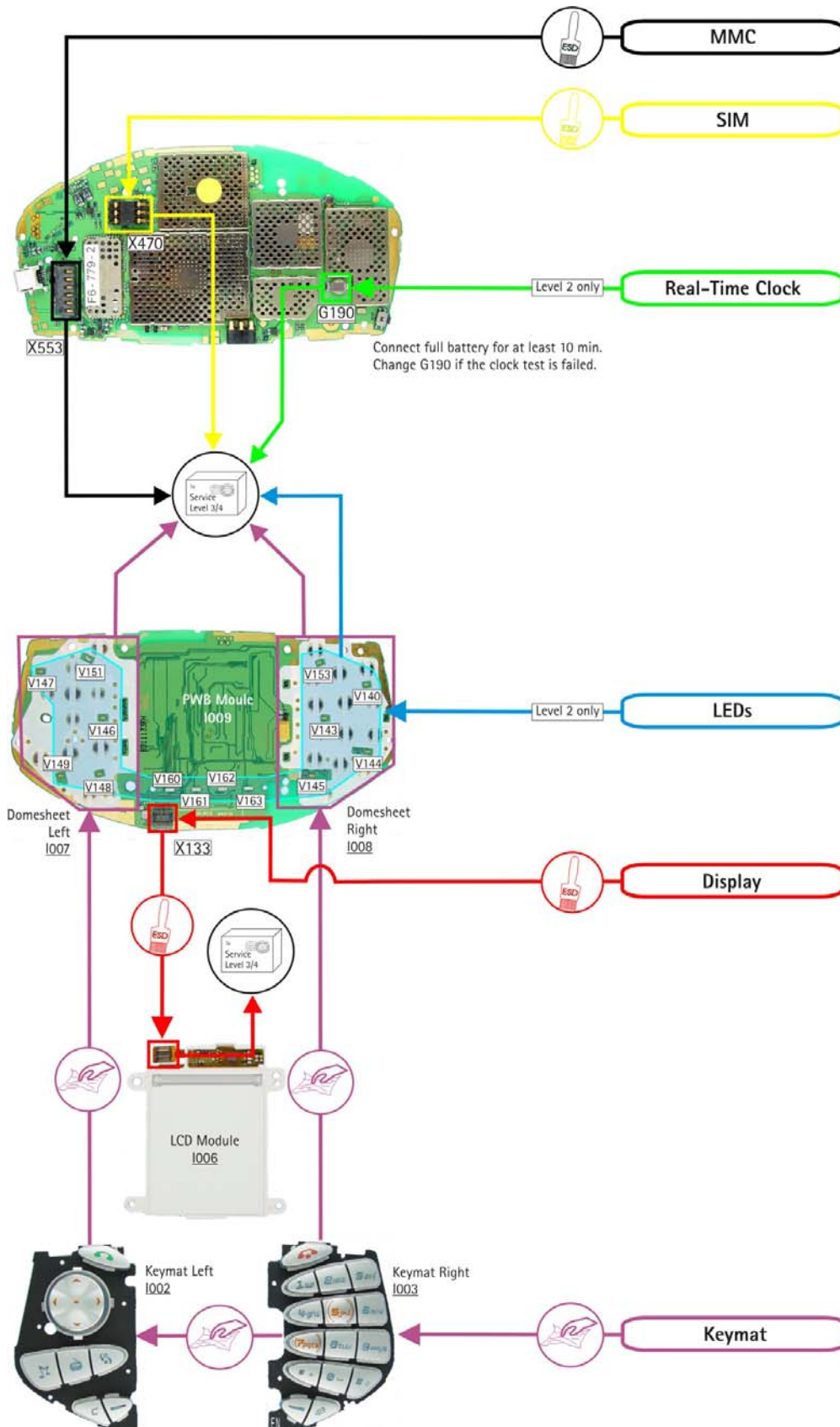
Finally check that the holes of Dome Sheet are centered to the PWB module holes. Ensure also, that there are no bubbles in Dome Sheet film.

10. LEGEND FOR QUICK TROUBLE SHOOTER

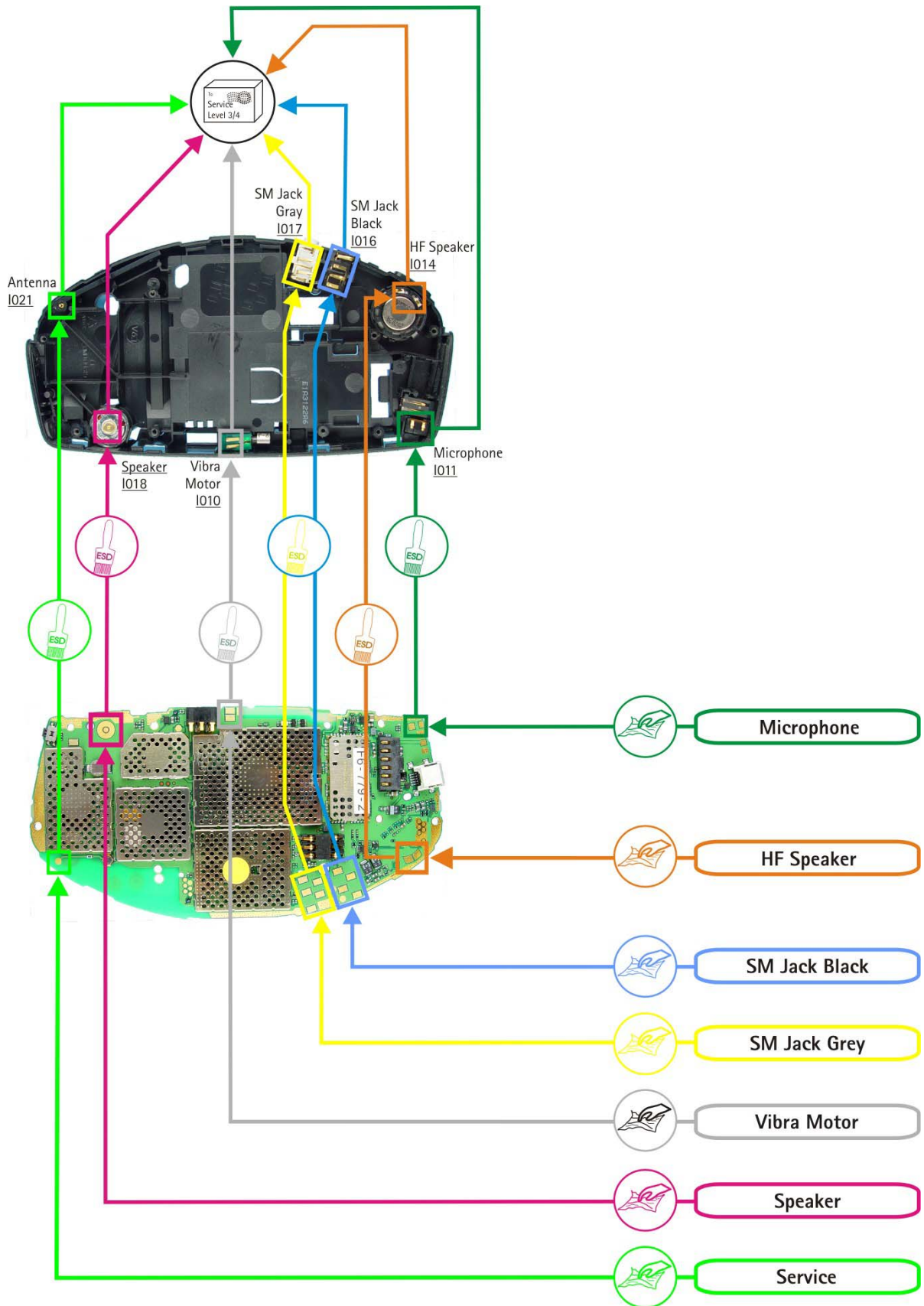
This legend is valid for all parts of the **Quick Trouble Shooter**

Follow the steps until the problem is solved. If this doesn't help, you are not authorized to go forward. Only underlined components (e.g. <u>I002</u>) can be changed.	
Fault symptom	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 partner with higher service level.

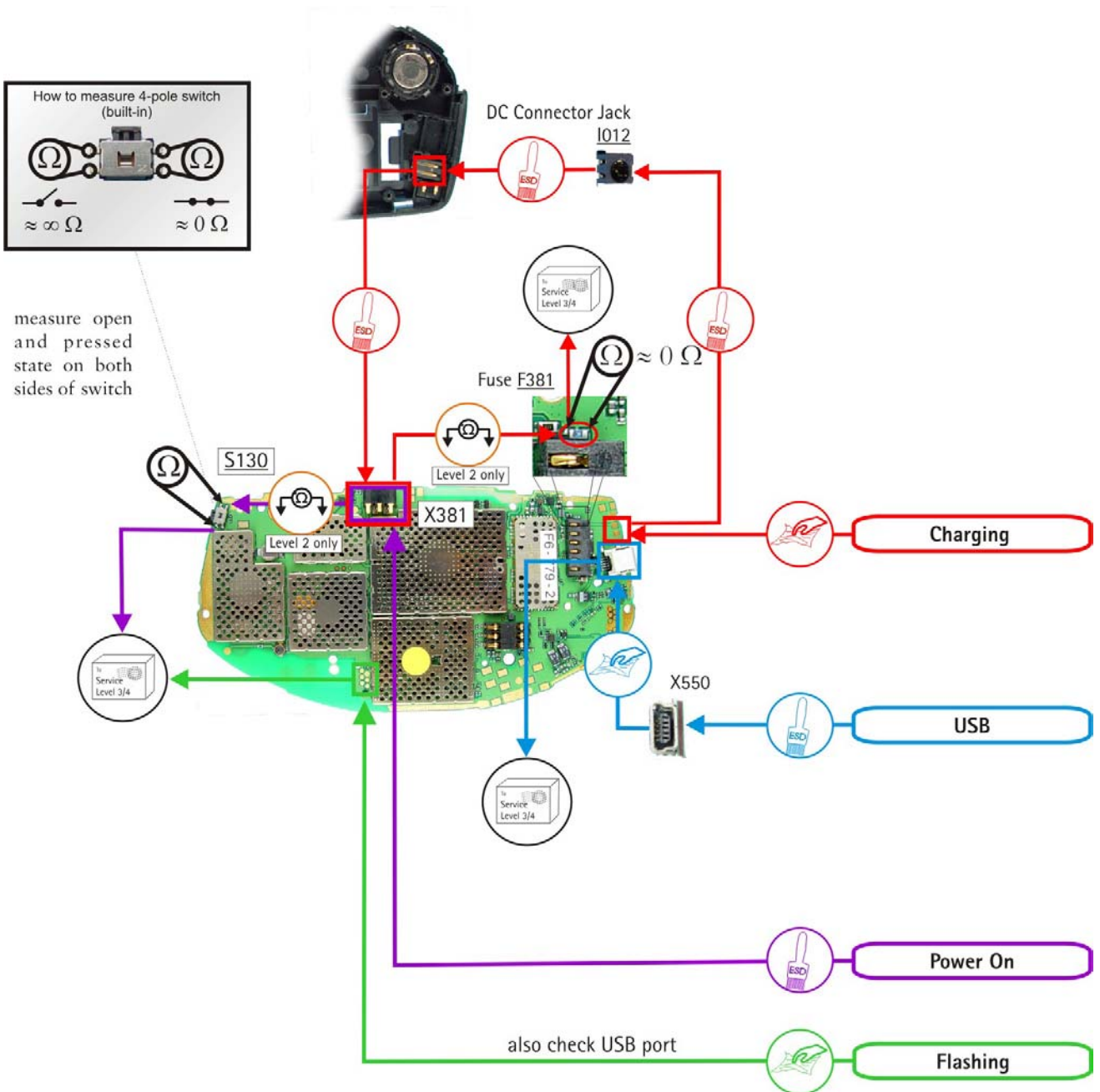
11. QUICK TROUBLE SHOOTER PART 1



12. QUICK TROUBLE SHOOTER PART 2



13. QUICK TROUBLE SHOOTER PART 3





14. BLUETOOTH GONOGO TEST

Bluetooth test

You need another Bluetooth device (e.g. 6310i) to do a GoNoGo test.

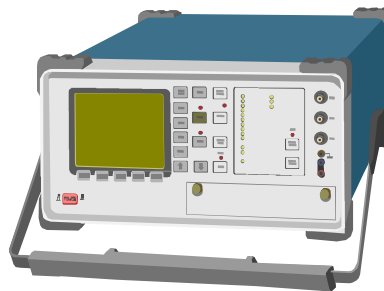
Make sure that Bluetooth is activated in the reference unit. The distance of the devices should be not more than 5m from each other.

	
Reference unit	Test unit
<p>Settings on the test unit:</p> <ul style="list-style-type: none">o Press the Menu Key and open the Contacts folder.o If phone and SIM memory is empty, create one new entry.o Choose one phonebook entry and select Options.o Select Send Select Via Bluetooth Search window appears, if all Bluetooth devices in range will be displayed, the test is successful!o Press red receiver button for Home Menu.	

15. GONOGO TEST (GSM ONLY)

After the optical check as 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 automatic tester support, 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

16. 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/>

17.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 NMP transceiver](#) on Partner Web Site to get further information.

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

<input checked="" type="checkbox"/> R Repair	<input type="checkbox"/> RR Repair and Refurbishment
<input type="checkbox"/> RO Refurbishment only	<input type="checkbox"/> SW Software update
<input type="checkbox"/> A Analysis	<input type="checkbox"/> C Claim
<input type="checkbox"/> 24h 24 h Service	<input checked="" type="checkbox"/> SR Special Request <u>Save User data</u>

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 _____

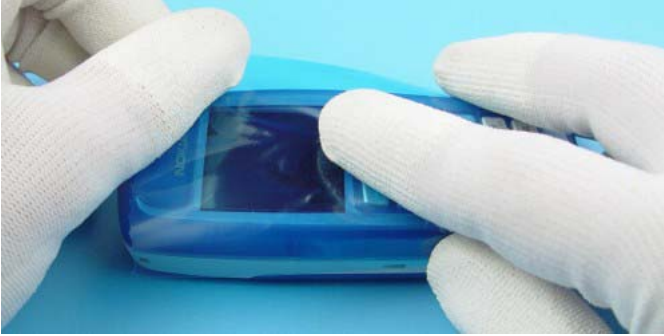
D) SYMPTOM OF THE FAULT ON PDA-PART - Symptom Code _____

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



18. FORWARDING OF REPAIRS TO SERVICE LEVEL 3 OR 4 SUPPLIERS

We recommend using the offered swap phone cartons as described in Spare Parts SB004.



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.



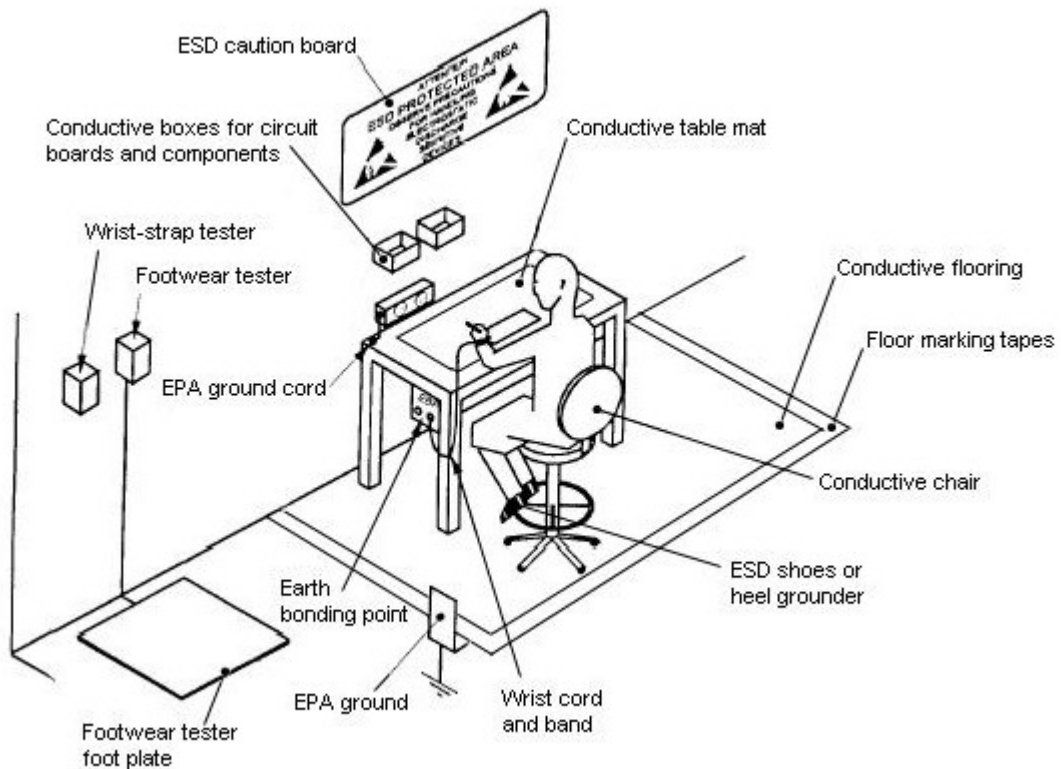
Fold the swap carton as shown in Spare Parts SB-004.



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

19.ESD PROTECTION REQUIREMENTS

Please refer to the Partner Web Site document
General instructions [Service Partner Requirements](#).



- 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