



# Service Manual

# Nokia 3510

## NHM-8

### Service Level 2

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## Introduction

The purpose of this document is to give Nokia service level 2 workshops aids to carry out service for 3510. The use of this Service Manual is only for Nokia authorized service partners additionally to other service documentation like Service Bulletins.

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, Nokia should be notified. 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".

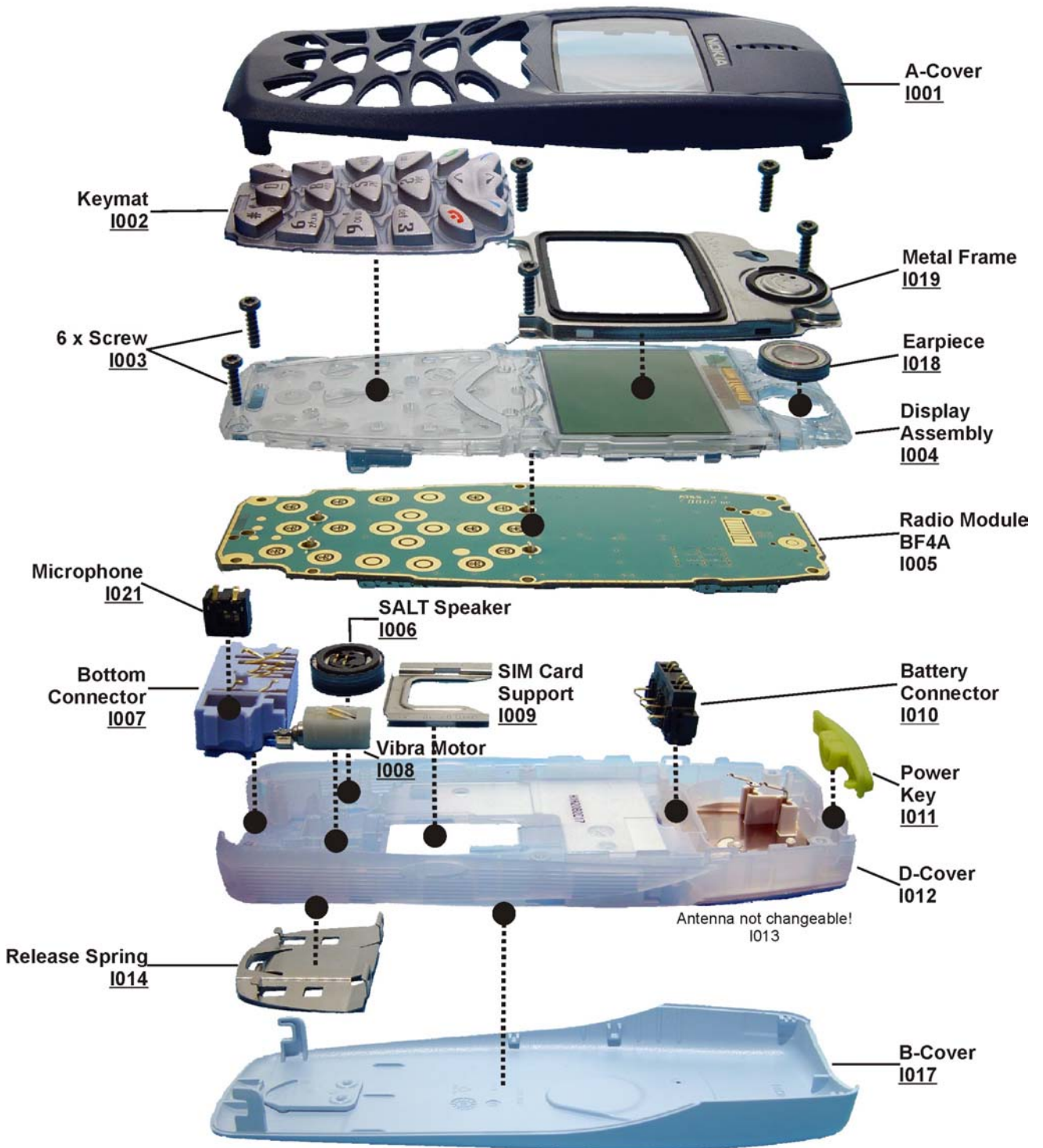
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### Change History

Originator	Status	Version No.	Date	Comments
MWy	Draft	0.1	04.04.2002	Initial draft
MWy	Approved	1.0	22.05.2002	approval

# 1. EXPLODED VIEW



Description: See corresponding ITEM/CIRCUIT REF of the BOR (Bill Of Repair)

**2. BILL OF REPAIR**

ITEM/ CIRCUIT REF.	QTY	PART NO	PART NAME
I003	6	6290107	SCREW 1.8X7.0 FE T6+
I004	1	4850247	DISPLAY ASSEMBLY
A901	1	9517120	BB SHIELD LID
I019	1	9517121	METAL FRAME ASSY
I018	1	5140067	SPEAKER+SPRING 103+-3DB 32R D13.2 (EARPIECE)
I006	1	5140243	SALT SPEAKER
I007	1	5409159	BOTTOM CONNECTOR (WITHOUT MICROPHONE)
I021	1	5140201	MICROPHONE -42dB +-3dB
I008	1	6800053	VIBRA MOT ASSY 1.3V 115MA 9500RPM
I009	1	9517122	SIM CARD SUPPORT
I010	1	5400253	BATTERY CONNECTOR
I014	1	9510854	RELEASE SPRING CLOSED
F100	1	5119019	SM FUSE F 1.5A 32V 0603 1.5A
S300	1	5209001	SM SW TACT SPST 12V 50MA SIDE KEY
V301	1	4860401	LED LNJ322W830NK 575NM 90DEG TBSF
V302	1	4860401	LED LNJ322W830NK 575NM 90DEG TBSF
V308	1	4860401	LED LNJ322W830NK 575NM 90DEG TBSF
V309	1	4860401	LED LNJ322W830NK 575NM 90DEG TBSF

**VARIANT PARTS**

ITEM/ CIRCUIT REF.	QTY	PART NO	PART NAME
I001	1	9490588	A-COVER Assembly DARK BLUE
I001	1	9490590	A-COVER Assembly BURGUNDY
I001	1	9490589	A-COVER Assembly WHITE
I002	1	9794055	KEYMAT LATIN
I002	1	9794104	KEYMAT ARABIC
I002	1	9794107	KEYMAT CYRILIC
I002	1	9794105	KEYMAT GREEK
I002	1	9794106	KEYMAT HEBREW
I011	1	9790514	POWER KEY LIME GREEN
I017	1	9490585	B-COVER ASSEMBLY LIGHT BLUE
I017	1	9490587	B-COVER ASSEMBLY BURGUNDY
I017	1	9490586	B-COVER ASSEMBLY GREEN

## SWAP UNITS

	QTY	PART NO	PART NAME
		0074112	NHM-8NX N3510 SWAP ENGINE EUROPE
		0074113	NHM-8NX N3510 SWAP ENGINE RUSSIA
		0074114	NHM-8NX N3510 SWAP ENGINE TURKEY
		0074115	NHM-8NX N3510 SWAP ENGINE CS-SK
		0074116	NHM-8NX N3510 SWAP ENGINE FRANCE
		0074117	NHM-8NX N3510 SWAP ENGINE POLAND

## SERVICE TOOLS

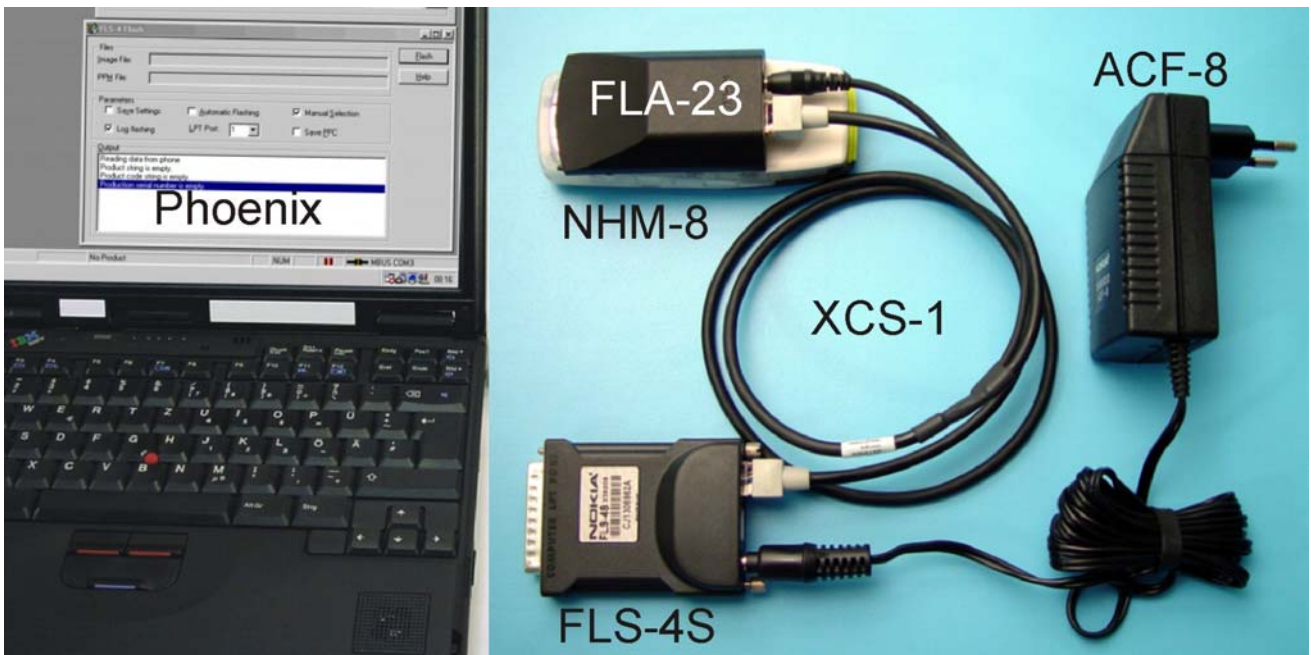
TYPE	QTY	PART NO	PART NAME
		0670403	BLC-2 BATTERY PACK
		0271582	DCV-10 DESKTOP STAND
		0272169	AC TRAVEL CHARGER ACP-8E (Euro)
		0272172	AC TRAVEL CHARGER ACP-8X (UK)
		0271467	HDC-5 HEADSET
		0775304	FLA-23 POS FLASH LOADING ADAPTER
		0730218	XCS-1 SERVICE CABLE
		0080541	FLS-4S POS FLASH DONGLE
		0775311	SERVICE SOFTWARE PHOENIX
		0770431	SRT-6 OPENING TOOL

### 3. 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 Partner Website.

#### Flash Concept – (Point of Sales)

**Note that ACF-8 charger is inside FLS-4S sales pack and cannot be ordered separately.**



Description: See corresponding ITEM/CIRCUIT REF of the BOR (Bill Of Repair)



## 4. GENERAL REPAIR INFORMATION

In this section you will get some general hints how to carry out repairs:

- Before starting the repair you must take care of ESD precautions like being in your ESD-area and connecting your wristband.
- Use gloves to avoid corrosion and fingerprints.
- Protect windows and displays with a foil to avoid dust and scratches.
- When cleaning the pads you have to use a soft cloth 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, which didn't repair the failure, can be reused, if they are not soldered.
- Use always original Nokia parts or accessories.
- Meet the torque requirements when assembling the unit (see also the document "torques for transceiver assembly" on Partner Websites).
- 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.





*Following General Service Bulletins have to be followed:*

- SB-055 Common notice for good ventilation
- SB-089: Don't try to repair prototypes (indicated on Typelabel).
- SB-107: Be sure that you have minimum hardware requirements in place.
- SB-115: Handling of liquid damages.
- SB-121: If one of your service tools cause malfunction, return the defective part.
- SB-122: Soldering with manual hot air gun is totally forbidden because of the very sensitive  $\mu$ BGA components and  $\mu$ Via technology.**
- SB-124 Service Policy for packaging serviced products
- SB-131: Check these guidelines when refurbishing products.
- SB-132: You need a **Golden Phone** for inspecting your measuring equipment.

**Please check Partner Websites (PWS) for latest news and files on a regular basis.**

### 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>I007</u> ) can be changed.	
	Follow the arrows step by step
	Pads or contacts: Check optical and mechanical condition as well as corrosion. Clean if necessary.
	Measure component for electrical functionality and change, if needed.
	No more action possible, send product to the appropriate service partner with higher service level.
<sup>4, 5</sup>	Superscript numbers are for additional comments or instructions

## 5. DISASSEMBLY INSTRUCTIONS



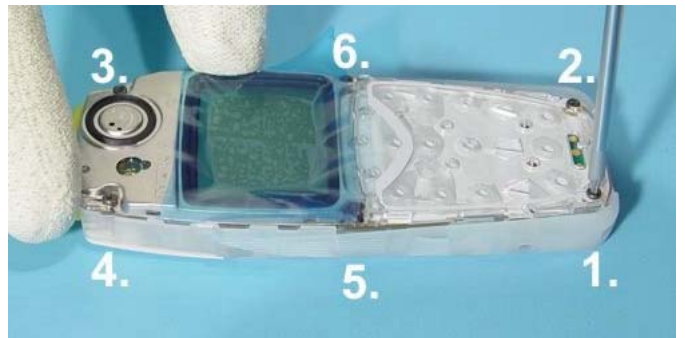
Release the A-Cover from the bottom side of the unit.



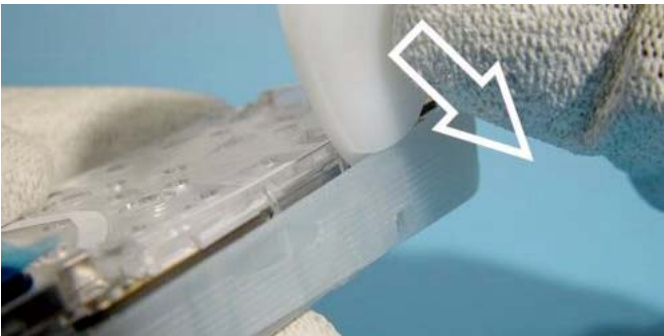
Take away the A-Cover.



Also, protect the inner part of the window with a foil. The Keymat is loose inside the A-Cover.



Open the six screws in the predefined order with a Torx 6 driver. **When re-assembling, the reverse order has to be taken with a torque of 28 Ncm.**



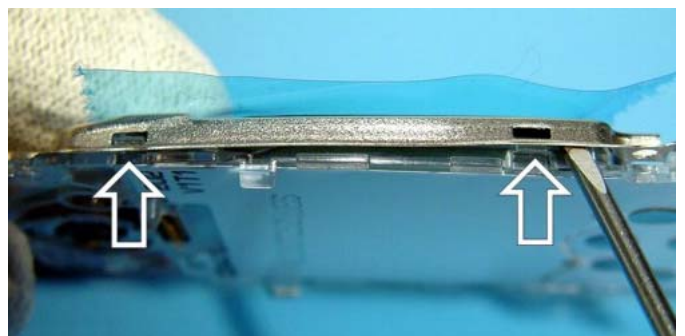
When releasing the side clips of the D-Cover you can use the SRT-6.



This is the second clip.



Take away the Display Assembly (UI module) and avoid touching the pads with your fingers.

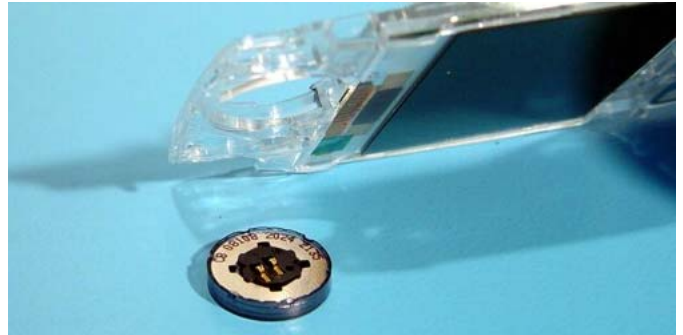


There are two snaps on each side of the Metal Frame.

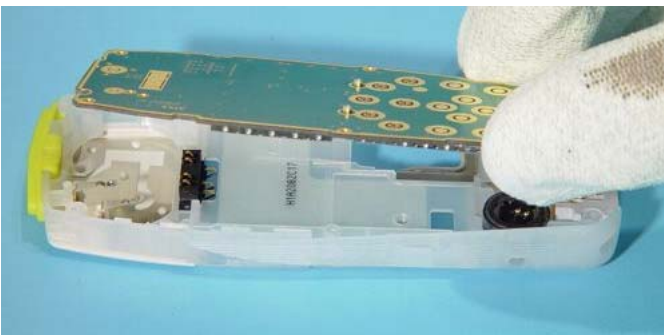




Remove the Metal Frame.



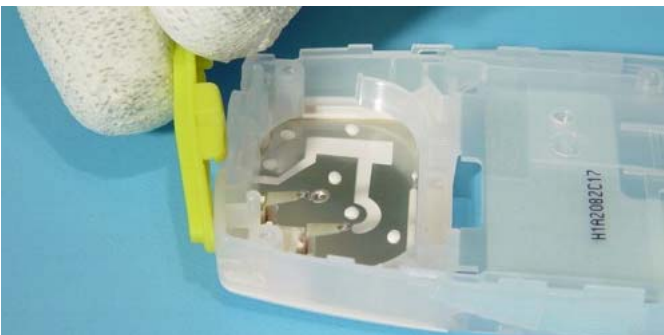
If you hold the UI module upside down, the Speaker drops out of its hollow.



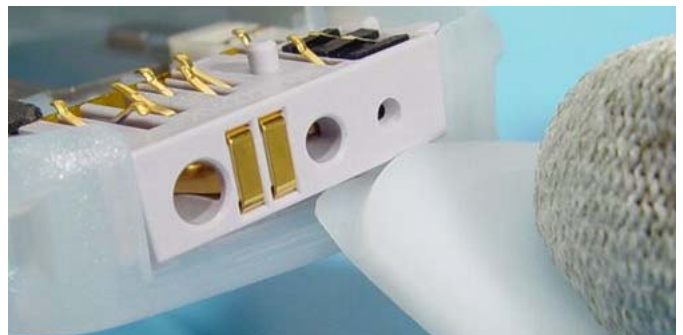
The next step is to take away the Radio Module BF4A.



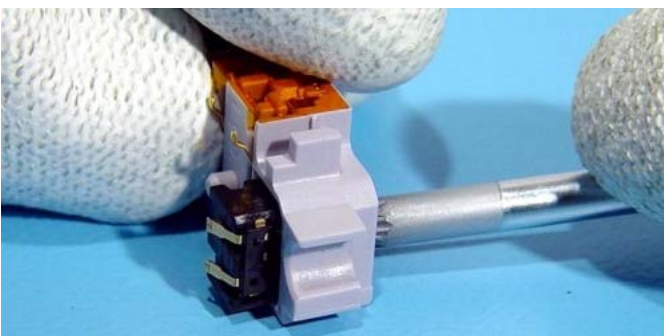
Lift up the Battery Connector with your fingers.



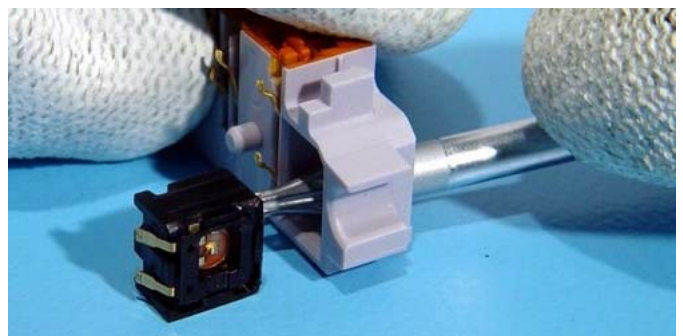
Remove the Power Key.



To loosen the System Connector you can use SRT-6 opening tool. Take care not to scratch the D-Cover or the connector housing.



The Microphone can be changed separately. To remove it from the connector housing, you have to push it with e.g. Torx Driver.



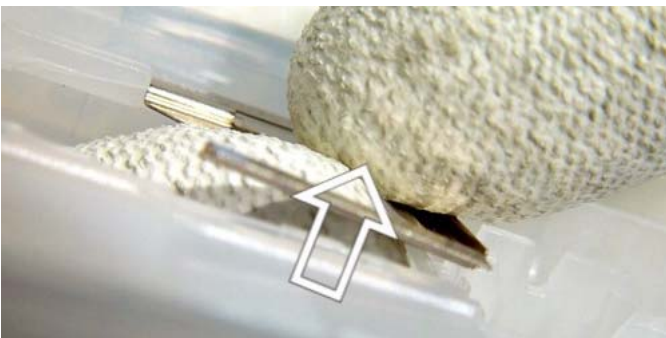
When re-assembling the Microphone remember the right direction. The hole of the Microphone has to point to the hole of the connector housing.



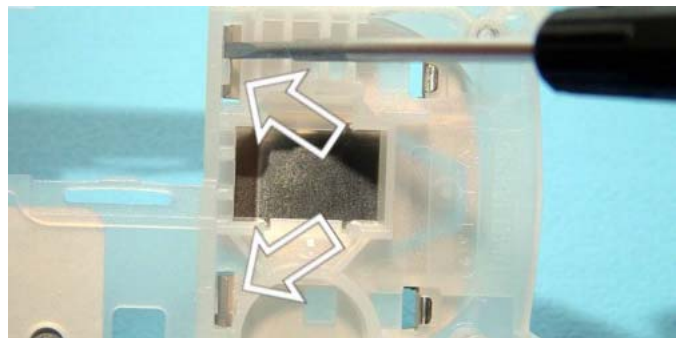
The SALT Speaker is taped to the D-Cover and can be removed with a straight bladed screwdriver.



If you need to change the Vibra Motor, strong tweezers or pliers can be taken.



Remove the SIM Card Support using this way.



The Release Spring is locked on two sides. Use a screwdriver to unlock the two snaps.



After releasing the two hooks, you can remove the Release Spring easily.

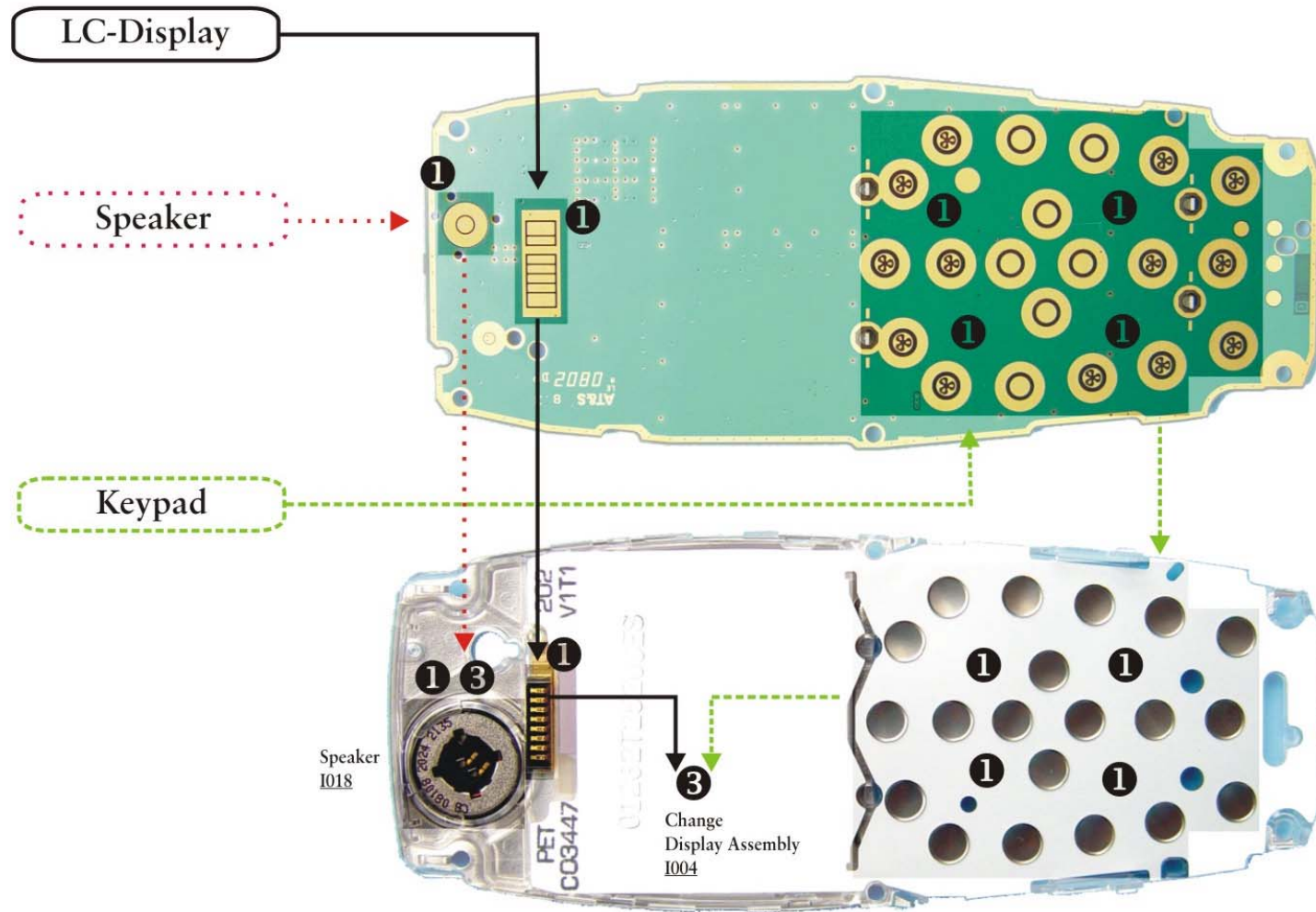
**When assembling the phone, screws must be tightened with a torque of 28 Ncm!  
The GoNoGo test verifies that the electrical specifications will be fulfilled.**





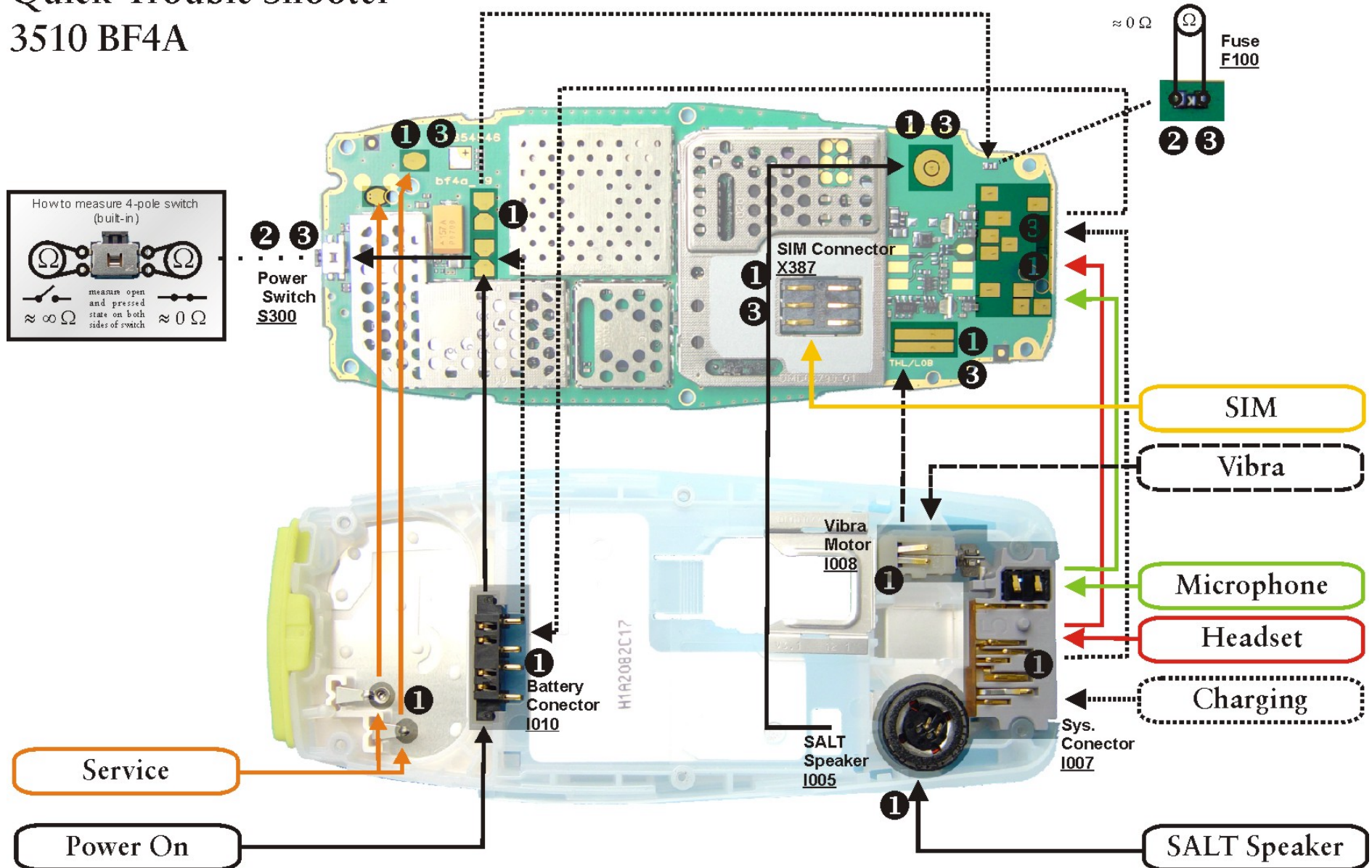
## 6. QUICK TROUBLE SHOOTER PART1

### Quick Troubleshooter 3510 BF4A




## 7. QUICK TROUBLE SHOOTER PART2

### Quick Trouble Shooter 3510 BF4A



## 8. ESD PROTECTION REQUIREMENTS

	<p>Electrostatic discharge can easily damage the sensitive components of electronic products. Therefore every Service Partner has to take care of at least some precautions like ESD restricted area, floor, table, covering, chair(s), shoes or arm wrist.</p>
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Please refer to the Partner Website document  
[ESD protection requirements for NMP Service Level 1/2 Service Suppliers](#)

	
<p>example configuration of an epa-area              source: <a href="http://www.armeka.com">www.armeka.com</a></p>	<p>example configuration of a workbench              source: <a href="http://www.warmbier.com">www.warmbier.com</a></p>
	
<p>example workbench and testers              source: <a href="http://www.armekaengineering.com">http://www.armekaengineering.com</a></p>	



**9. 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 Website to get further information.

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

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

**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

NOKIA MOBILE PHONES LTD.  
 Type: NPE-SNX Model: E210  
 MADE IN GERMANY

CE 0168 X

449333/20/975406/2  
 Code: 050381

Owner: R&D Bochum  
 TTA

Phone: 04041 NMP-ENG



## 10. GONOGO TESTER

The Acterna/Wavetek GoNoGo Tester has to be used to carry out the final test after your service action to guarantee the functionality of the phone.

**Please refer to the actual information in the Nokia Care Point Extranet within the Partner Website.**



## 11. BATTERYTESTER

The Astratec battery tester lets you test the capacity of Nokia batteries.

**Please refer to the actual information in the Nokia Care Point Extranet within the Partner Website.**

