



# Service Manual

## Nokia 6310

### NPE-4

#### Service Level 2

Copyright © Nokia Mobile Phones. This material, including documentation and any related computer programs, is protected by copyright controlled by Nokia Mobile Phones. All rights are reserved. Copying, including reproducing, storing, adapting or translating, any or all of this material requires the prior written consent of Nokia Mobile Phones. This material also contains confidential information, which may not be disclosed to others without the prior written consent of Nokia Mobile Phones.

## Introduction

The purpose of this document is to give Nokia service level 2 workshops aids to carry out service for 6310. 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".

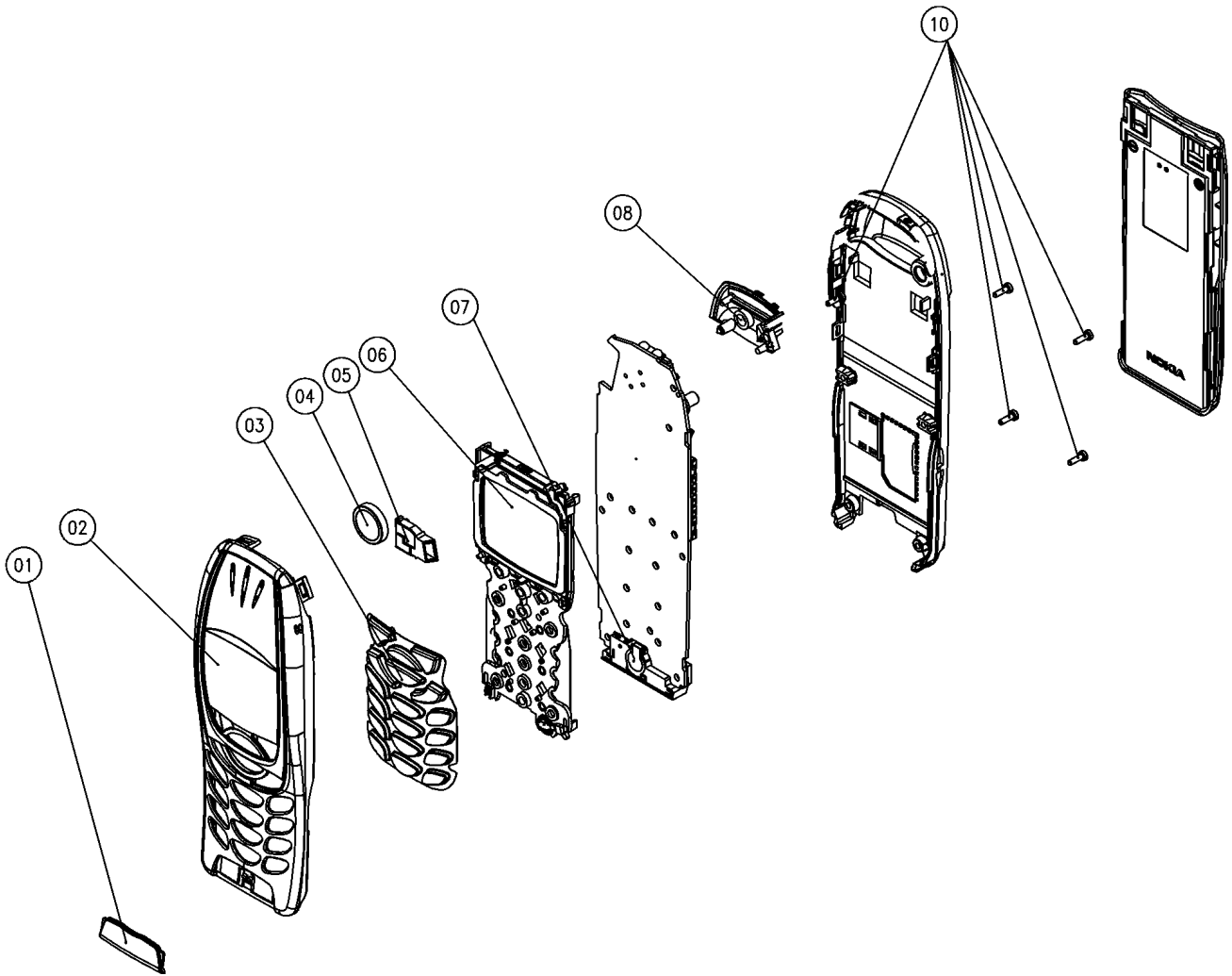
## Table of content

<b>1. EXPLODED VIEW.....</b>	<b>5</b>
<b>2. BILL OF REPAIR.....</b>	<b>6</b>
<b>3. DISASSEMBLY INSTRUCTIONS .....</b>	<b>8</b>
<b>4. SW-UPDATE .....</b>	<b>10</b>
<b>5. GENERAL REPAIR INFORMATION .....</b>	<b>11</b>
<b>6. MAIN PARTS.....</b>	<b>12</b>
<b>7. QUICK TROUBLE SHOOTER PART1 .....</b>	<b>13</b>
<b>8. QUICK TROUBLE SHOOTER PART2 .....</b>	<b>14</b>
<b>9. ESD PROTECTION REQUIREMENTS.....</b>	<b>15</b>
<b>10. SERVICE NOTES.....</b>	<b>16</b>
<b>11. GONOGO TESTER.....</b>	<b>17</b>
<b>12. BATTERYTESTER.....</b>	<b>17</b>

### Change History

Originator	Status	Version No.	Date	Comments
MWy	Draft	0.1	18.12.2001	Initial draft
MWy	Approved	1.0	15.01.2002	new Quick Trouble Shooter

## 1. EXPLODED VIEW



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

**2. BILL OF REPAIR**

**SPARE PARTS**

ITEM/ CIRCUIT REF.	QTY	PART NO	PART NAME	UNIT
I001	1	9430274	LOGO BADGE	PC
I002	1	9451928	A-COVER ASSY JET BLACK	PC
I003	1	9790490	KEYMAT PRINTED GOLD DMC03671	PC
I004	1	5140233	SPEAKER+SPRING 26+-3DB 32R D13	PC
I005	1	5140209	BUZZER+GASKET 99DB 2500HZ 3.6V	PC
I006	1	4850163	LCD/UI ASSY DMC03546-EN	PC
I007	1	5140225	MICROPHONE+BOOT ASSY DMC00955	PC
I008	1	0660231	ANTENNA INTERNAL PLATED EGSM/DCS	PC
I010	5	6150025	SCREW M1.6X5.5 T6 FEZN BLK COATED	PC
A004	1	9517081	BB SHIELD LID DMD06601	PC
F100	1	5119019	SM FUSE F 1.5A 32V 0603	PC
S300	1	5209001	SM SW TACT SPST 12V 50MA SIDE KEY	PC
S301	1	5209001	SM SW TACT SPST 12V 50MA SIDE KEY	PC
S302	1	5209001	SM SW TACT SPST 12V 50MA SIDE KEY	PC
V304	1	4864471	LED CL260YGBF YELGRN>11.5MCD 1305	PC
V305	1	4864471	LED CL260YGBF YELGRN>11.5MCD 1305	PC
V306	1	4864471	LED CL260YGBF YELGRN>11.5MCD 1305	PC
V307	1	4864471	LED CL260YGBF YELGRN>11.5MCD 1305	PC
X800	1	9510434	SPRING CLIP M3E14601	PC
X801	1	9510434	SPRING CLIP M3E14601	PC
Ixxx	1	9451139	DUST CAP DMD02859	PC

**VARIANT PARTS**

I002	1	9451928	A-COVER ASSY JET BLACK	PC
I002	1	9452190	A-COVER ASSY MISTRAL BEIGE	PC
I002	1	9452191	A-COVER ASSY SIROCCO BRONZE	PC
I003	1	9790490	KEYMAT PRINTED LATIN GOLD	PC
I003	1	9790567	KEYMAT PRINTED LATIN GREY	PC
I003	1	9790646	KEYMAT PRINTED CYRILLIC GOLD	PC
I003	1	9790648	KEYMAT PRINTED HEBREW GOLD	PC
I003	1	9790649	KEYMAT PRINTED ARABIC GOLD	PC
I003	1	9790650	KEYMAT PRINTED ARABIC GREY	PC

**SWAP UNITS**

	QTY	PART NO	PART NAME	UNIT
		0073164	SWAP ENGINE E&A LATIN SIROCCO BRONZE	PC
		0073163	SWAP ENGINE E&A LATIN MISTRAL BEIGE	PC
		0073162	SWAP ENGINE E&A LATIN JET BLACK	PC
		0073166	SWAP ENGINE FRENCH SIROCCO BRONZE	PC
		0073165	SWAP ENGINE FRENCH MISTRAL BEIGE	PC
		0073167	SWAP ENGINE FRENCH JET BLACK	PC
		0073168	SWAP ENGINE POLAND SIROCCO BRONZE	PC
		0073169	SWAP ENGINE POLAND MISTRAL BEIGE	PC
		0073170	SWAP ENGINE POLAND JET BLACK	PC
		0073172	SWAP ENGINE TURKEY SIROCCO BRONZE	PC
		0073171	SWAP ENGINE TURKEY MISTRAL BEIGE	PC
		0073173	SWAP ENGINE TURKEY JET BLACK	PC
		0073355	SWAP ENGINE CZHECH SIROCCO BRONZE	PC
		0073354	SWAP ENGINE CZHECH MISTRAL BEIGE	PC
		0073353	SWAP ENGINE CZHECH JET BLACK	PC
		0073178	SWAP ENGINE EN-AR ARABIC SIROCCO BRONZE	PC
		0073174	SWAP ENGINE EN-AR ARABIC MISTRAL BEIGE	PC
		0073177	SWAP ENGINE EN-AR ARABIC JET BLACK	PC
		0073176	SWAP ENGINE RUSSIAN CYRILLIC	PC
		0073175	SWAP ENGINE BG BLA CYRILLIC E&A	PC

**SERVICE TOOLS**

	QTY	PART NO	PART NAME	UNIT
		0271054	DCH-9 DESKTOP STAND	PC
		0272348	HEADSET HDC-9P	PC
		0271454	BMS-2S BATTERY PACK 900 MAH NIMH	PC
		0081483	POS FLASH DONGLE FLS-4	PC
		0272169	AC TRAVEL CHARGER ACP-8E (EUR)	PC
		0272172	AC TRAVEL CHARGER ACP-8X (UK)	PC
		0730218	XCS-1 POS SERVICE CABLE	PC
		0775299	FLA-22 POS FLASH ADAPTER	PC
		0775311	SERVICE SW PHOENIX	PC

## 3. DISASSEMBLY INSTRUCTIONS

*Attention:* Before starting this procedure you must take care of ESD precautions like being in your ESD-area and connecting your arm wrist. For more information please look at chapter 6.



Take care that your workbench is always clean and protect the Window with a foil against dust and scratches.



To open the unit, four T6 screws have to be opened. Do not use your torque driver for this, because torque drivers are mostly designed for fastening and not for opening screws.



Hold the unit with the Volume Key against the table. Hold the A-Cover with your left hand and then grab the B-Cover to unlock the side snaps in the bottom area.



Before loosening the upper snaps of the cover be sure that you press the module against the A-Cover. The module is still fixed with the A-Cover with one hidden screw in the antenna area.

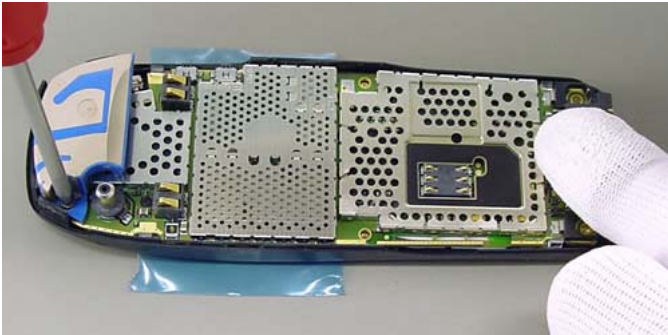


There are three clips, which have to be released. Be careful when pulling the covers apart in the antenna area. It is easier if you wobble the covers carefully against each other.

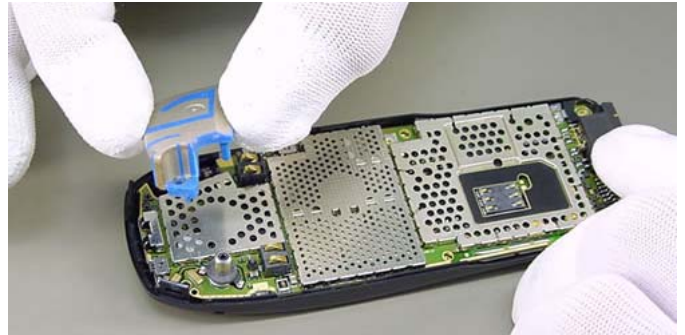


Now you can take away the B-Cover. Be careful not to damage the antenna, which can break if you try to rotate the cover against each other.

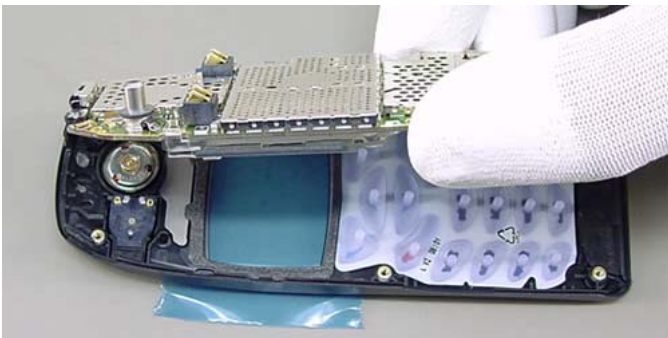




This is the screw, which fixes the Antenna and holds the module inside the A-Cover.



Don't touch the Antenna with your fingers. The fingerprints would cause corrosion to this sensitive material.



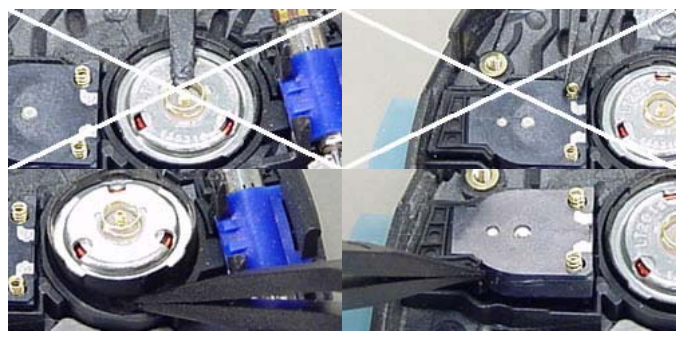
Lifting up the CMT module is very easy now. Protect the display with a foil.



Four clear plastic clips hold the UI module on the CMT module. Unlock these clips when you need to remove the UI module.



Please keep in mind always not to touch the pads with your finger to avoid corrosion.



If you want to remove Speaker or Buzzer do not grab the items at the spring contacts.

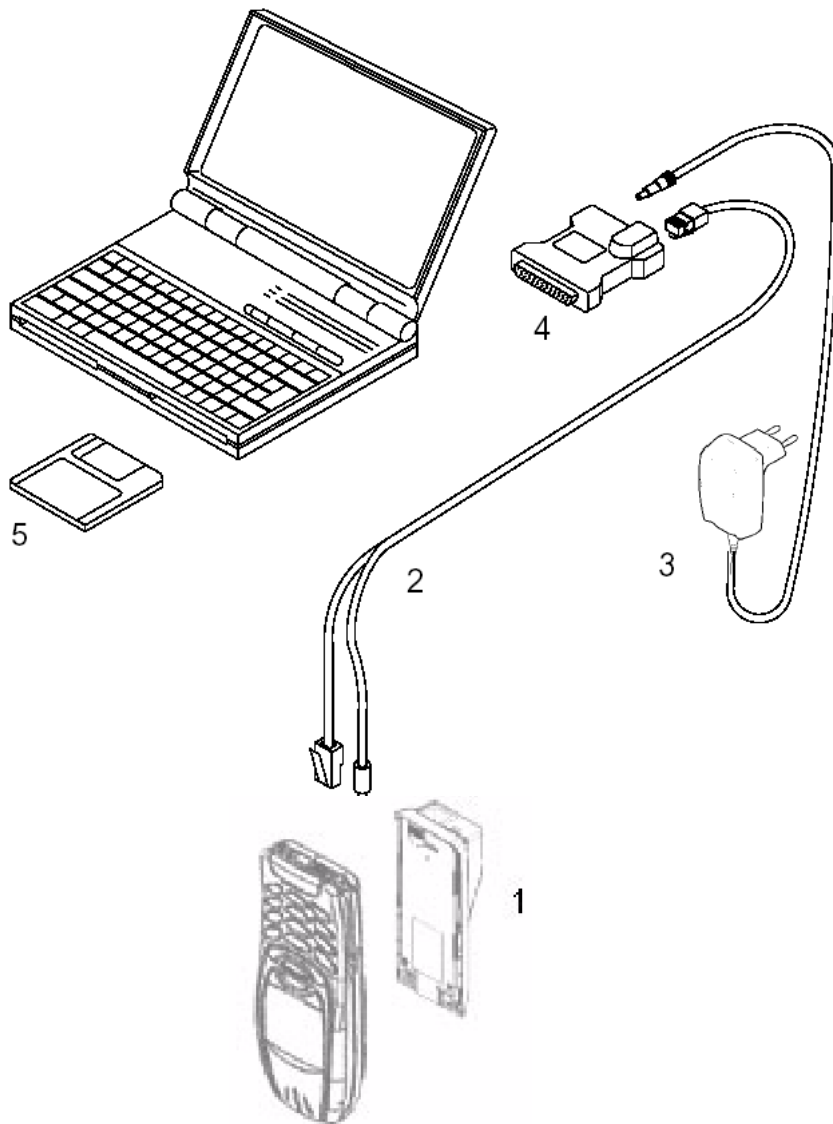
**New screws have a special locking compound on the thread. Never take used screws a second time! When assembling the phone, screws must be tightend with a torque of 17 Ncm ! The final GoNoGo test verifies that the electrical specifications will be fulfilled.**



### 4. SW-UPDATE

To use FLS-4 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)



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

## 5. GENERAL REPAIR INFORMATION

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

- 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.
- **Soldering with hot air gun is totally forbidden because of the very sensitive  $\mu$ BGA components and  $\mu$ Via technology. Please check general Service Bulletin-122.**
- Mechanical parts, which didn't repair the failure, can be reused, if they are not soldered.
- Use always original Nokia parts or accessories.
- Don't try to repair liquid damages.
- Meet the torque requirements when assembling the unit.
- 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.
- The top side of a module is the side where the part no. of the pcb is seen.
- Please check Partner Websites (PWS) for latest news on a regular basis

Bluetooth GoNoGo test:

You need another Bluetooth device to do a GoNoGo test.

Make sure that Bluetooth is activated in receiver device (e. g.: another 6310).

Explanation:

In Quotation marks = push button

**Bold** = choose text

- "Names"
- **Search**, "Select"
- "List"
- "Details"
- "Options"
- Push 7 times "Arrow down"
- **Send bus. card**, "Select"
- Push 2 times "Arrow down"
- **Via Bluetooth**, "Select"
- choose the receiver device "Select"

If the business card is not sent/received make sure that receiver device is within reach (aprox. 5 m).  
After successful sending push 3 times "Back" and then "Exit".

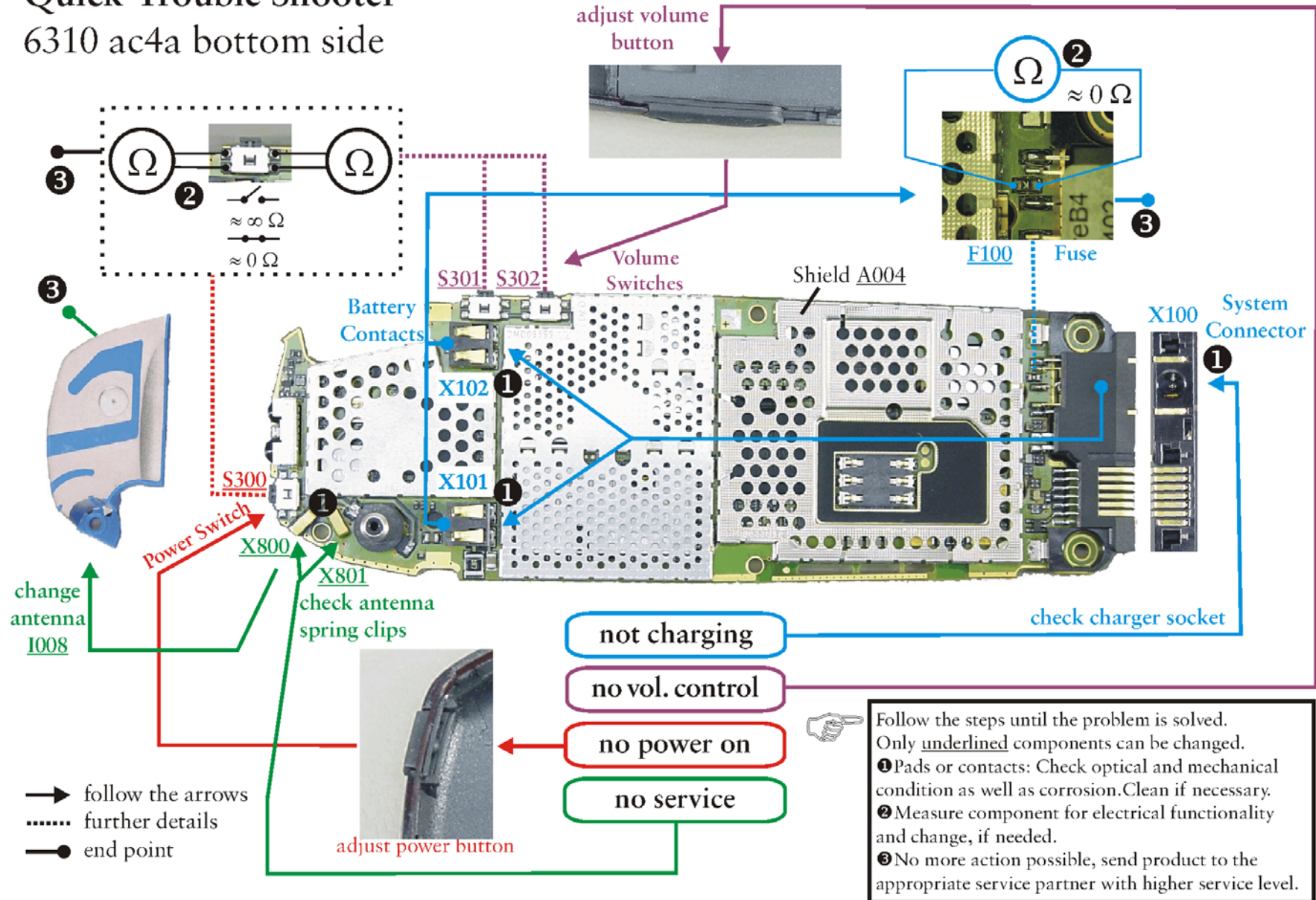
**6. MAIN PARTS**

		
Buzzer I005	Microphone I007	Speaker I004
		
Keymat I003	Antenna I008	Screws I010

		
A-Cover I002	B-Cover, not changeable	User Interface Module I006

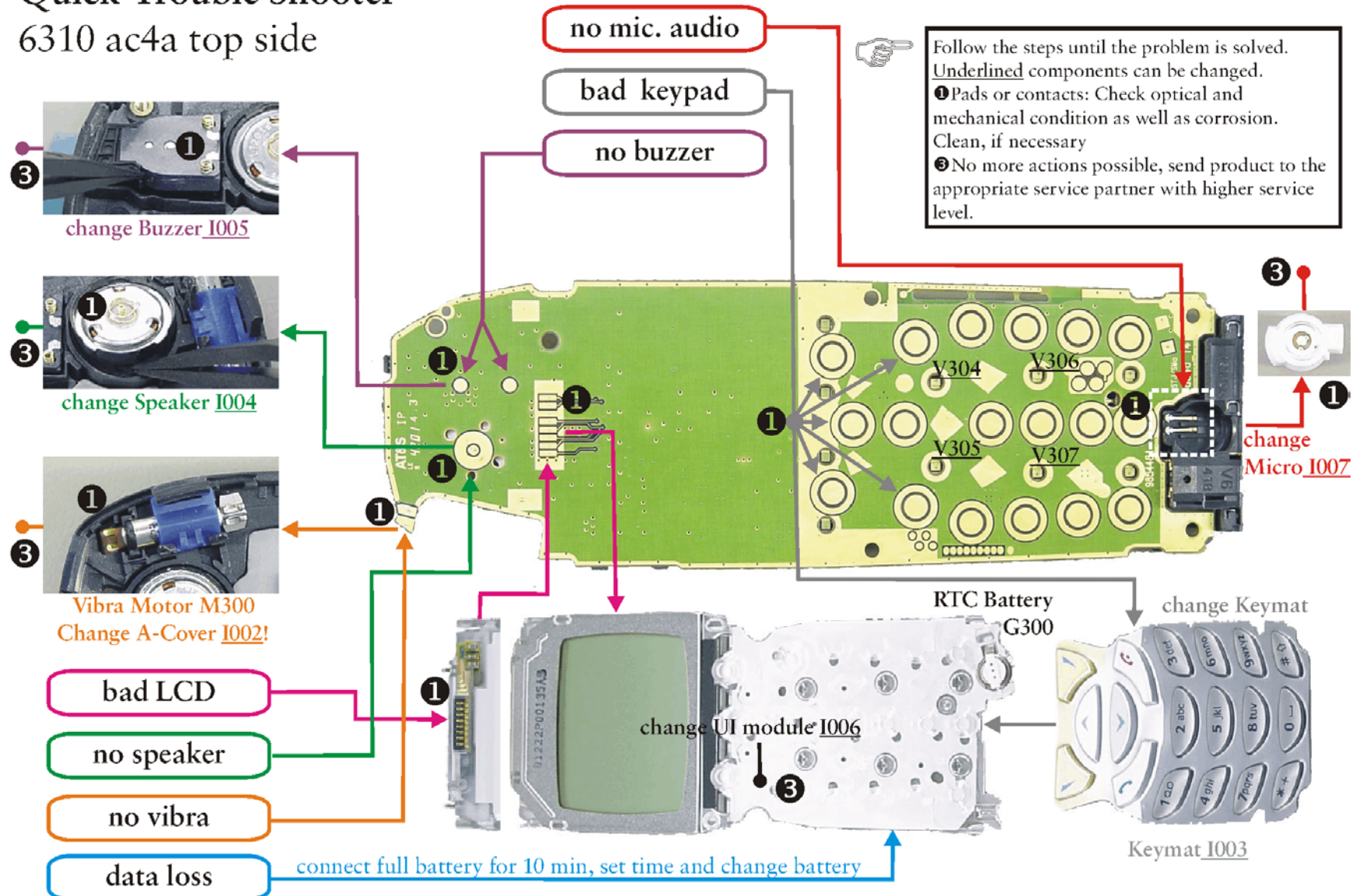
## 7. QUICK TROUBLE SHOOTER PART1

### Quick Trouble Shooter 6310 ac4a bottom side



## 8. QUICK TROUBLE SHOOTER PART2

### Quick Trouble Shooter 6310 ac4a top side



## 9. 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>
--	---

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>	

## 10. SERVICE NOTES

We recommend using Service Notes when shipping phones to other Service Partners. It prevents the product from scratches, it is ESD-proved 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



**11. GONOGO TESTER**

<p>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.</p> <p><b>Please refer to the actual information in the Nokia Care Point Extranet within the Partner Website.</b></p>	
--	---

**12. BATTERYTESTER**

<p>The Astratec battery tester lets you test the capacity of Nokia batteries.</p> <p><b>Please refer to the actual information in the Nokia Care Point Extranet within the Partner Website.</b></p>	
---	--