



Service Manual

Nokia 6310i

NPL-1

Service Level 2

Copyright © Nokia Corporation. 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 6310i. 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

1. EXPLODED VIEW..... 5

2. BILL OF REPAIR..... 6

3. SIMPLE INFRARED TEST 9

4. SW-UPDATE 9

5. GENERAL REPAIR INFORMATION 10

6. DISASSEMBLY INSTRUCTIONS 11

7. MAIN PARTS..... 13

8. QUICK TROUBLE SHOOTER PART1 14

9. QUICK TROUBLE SHOOTER PART2 15

10. ESD PROTECTION REQUIREMENTS..... 16

11. SERVICE NOTES..... 17

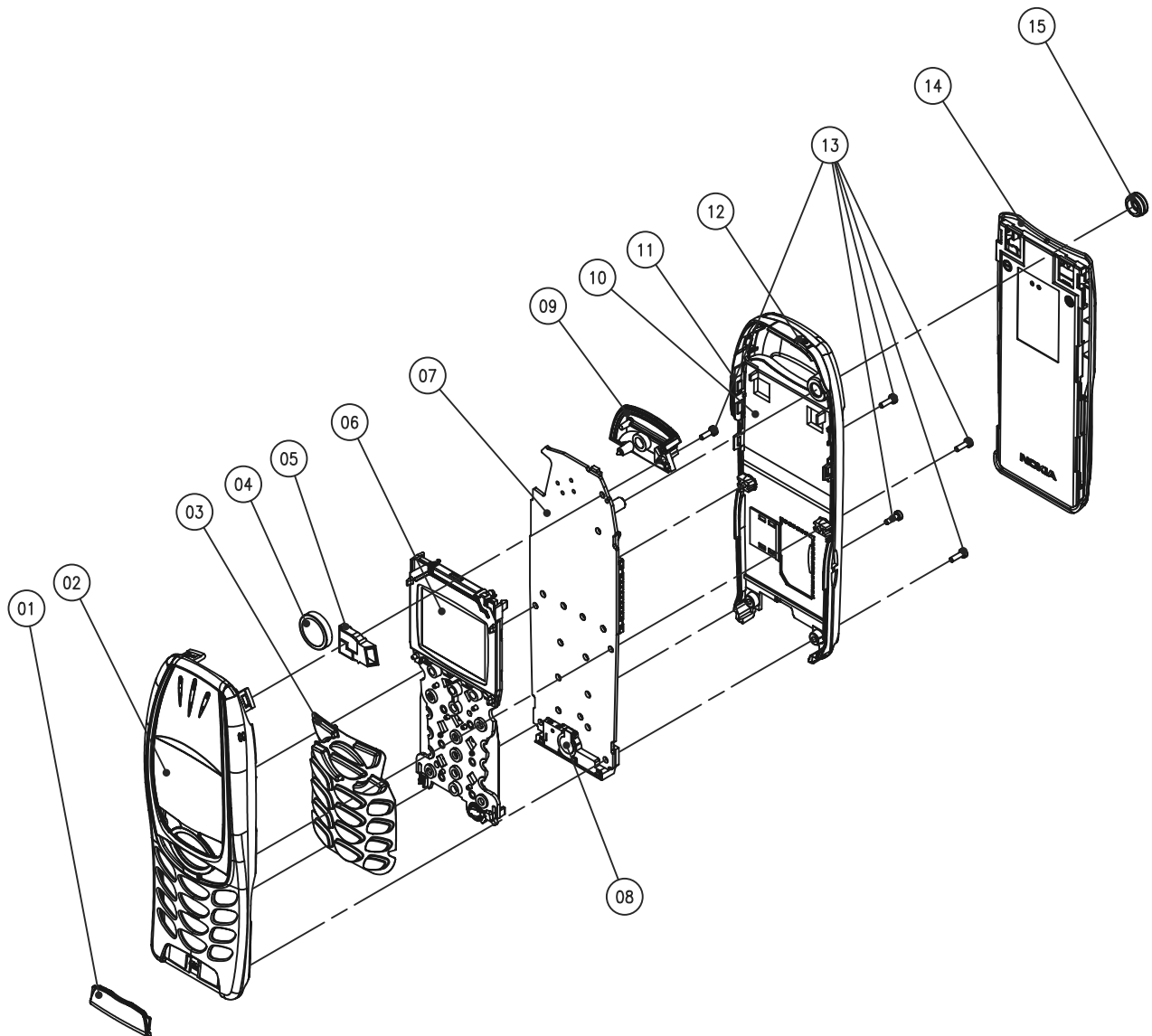
12. GONOGO TESTER..... 18

13. BATTERYTESTER..... 18

Change History

Originator	Status	Version No.	Date	Comments
MWy	Draft	0.1	04.04.2002	Initial draft
MWy	Approved	1.0	15.04.2002	approval

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
I001	1	9430274	LOGO BADGE
I004	1	5140233	SPEAKER+SPRING 26+-3DB 32R D13
I005	1	5140209	BUZZER+GASKET 99DB 2500HZ 3.6V
I006	1	4850163	LCD/UI ASSY
I008	1	5140225	MICROPHONE+BOOT ASSY
I009	1	0660251	ANTENNA INTERNAL PLATED
I013	5	6150025	SCREW M1.6X5.5 T6 FEZN BLK COATED
I015	1	9451139	DUST CAP
F100	1	5119019	SM FUSE F 1.5A 32V 0603
S300	1	5209001	SM SW TACT SPST 12V 50MA SIDE KEY
S301	1	5209001	SM SW TACT SPST 12V 50MA SIDE KEY
S302	1	5209001	SM SW TACT SPST 12V 50MA SIDE KEY
X600	1	9510946	SPRING CLIP M3E14601
X601	1	9510946	SPRING CLIP M3E14601
	1	0772029	SPARE PART KIT

VARIANT PARTS

I002	1	9451928	A-COVER ASSY JET BLACK
I002	1	9452190	A-COVER ASSY MISTRAL BEIGE
I002	1	9452222	A-COVER ASSY LIGHTENING SILVER
I003	1	9790664	KEYMAT PRINTED LATIN GOLD
I003	1	9790666	KEYMAT PRINTED LATIN GREY
I003	1	9790667	KEYMAT PRINTED CYRILLIC GOLD
I003	1	9790718	KEYMAT PRINTED CYRILLIC GREY
I003	1	9790669	KEYMAT PRINTED HEBREW GOLD
I003	1	9790668	KEYMAT PRINTED ARABIC GOLD
I003	1	9790679	KEYMAT PRINTED ARABIC GREY
I003	1	9790672	KEYMAT PRINTED GREEK GOLD
I003	1	9790671	KEYMAT PRINTED GREEK GREY

SWAP UNITS

	QTY	PART NO	PART NAME
		0073942	NPL-1 N6310I SWAP ENGINE FR BLACK
		0073943	NPL-1 N6310I SWAP ENGINE FR SILVER
		0073944	NPL-1 N6310I SWAP ENGINE FR BEIGE
		0073945	NPL-1 N6310I SWAP ENGINE PL BLACK
		0073946	NPL-1 N6310I SWAP ENGINE PL SILVER
		0073947	NPL-1 N6310I SWAP ENGINE PL BEIGE
		0073948	NPL-1 N6310I SWAP ENGINE TR BLACK
		0073949	NPL-1 N6310I SWAP ENGINE TR SILVER
		0073950	NPL-1 N6310I SWAP ENGINE TR BEIGE
		0073951	NPL-1 N6310I SWAP CS-SK SILVER
		0073952	NPL-1 N6310I SWAP CS-SK BEIGE
		0073956	NPL-1 N6310I SWAP CS-SK BLACK
		0073953	NPL-1 N6310I SWAP EN-AR BLACK
		0073954	NPL-1 N6310I SWAP EN-AR SILVER
		0073955	NPL-1 N6310I SWAP EN-AR BEIGE
		0073958	NPL-1 N6310I SWAP ENGINE BG BLACK
		0073959	NPL-1 N6310I SWAP ENGINE E&A BLACK
		0073960	NPL-1 N6310I SWAP ENGINE E&A BEIGE
		0073961	NPL-1 N6310I SWAP ENGINE E&A SILVER
		0073962	NPL-1 N6310I SWAP ENGINE GR BLACK
		0073963	NPL-1 N6310I SWAP ENGINE GR SILVER
		0073964	NPL-1 N6310I SWAP ENGINE GR BEIGE
		0073957	NPL-1 N6310I SWAP ENGINE RU BLACK
		0074055	NPL-1 N6310I SWAP ENGINE RU SILVER
		0074056	NPL-1 N6310I SWAP ENGINE BG BEIGE
		0074057	NPL-1 N6310I SWAP ENGINE BG SILVER
		0074058	NPL-1 N6310I SWAP ENGINE RU BEIGE

SERVICE TOOLS

	QTY	PART NO	PART NAME
		0271054	DCH-9 DESKTOP STAND
		0272348	HEADSET HDC-9P
		0271454	BMS-2S BATTERY PACK 900 MAH NIMH
		0081483	POS FLASH DONGLE FLS-4
		0272169	AC TRAVEL CHARGER ACP-8E (EUR)
		0272172	AC TRAVEL CHARGER ACP-8X (UK)
		0730218	XCS-1 POS SERVICE CABLE
		0775299	FLA-22 POS FLASH ADAPTER
		0775322	SERVICE SW PHOENIX

3. SIMPLE INFRARED TEST

You need another NOKIA infrared device when testing infrared via sending a business card. The infrared windows of the devices must be directed to each other and should have a distance of approx. 15cm.

Make sure that infrared is activated in receiver device (e. g. 6310).

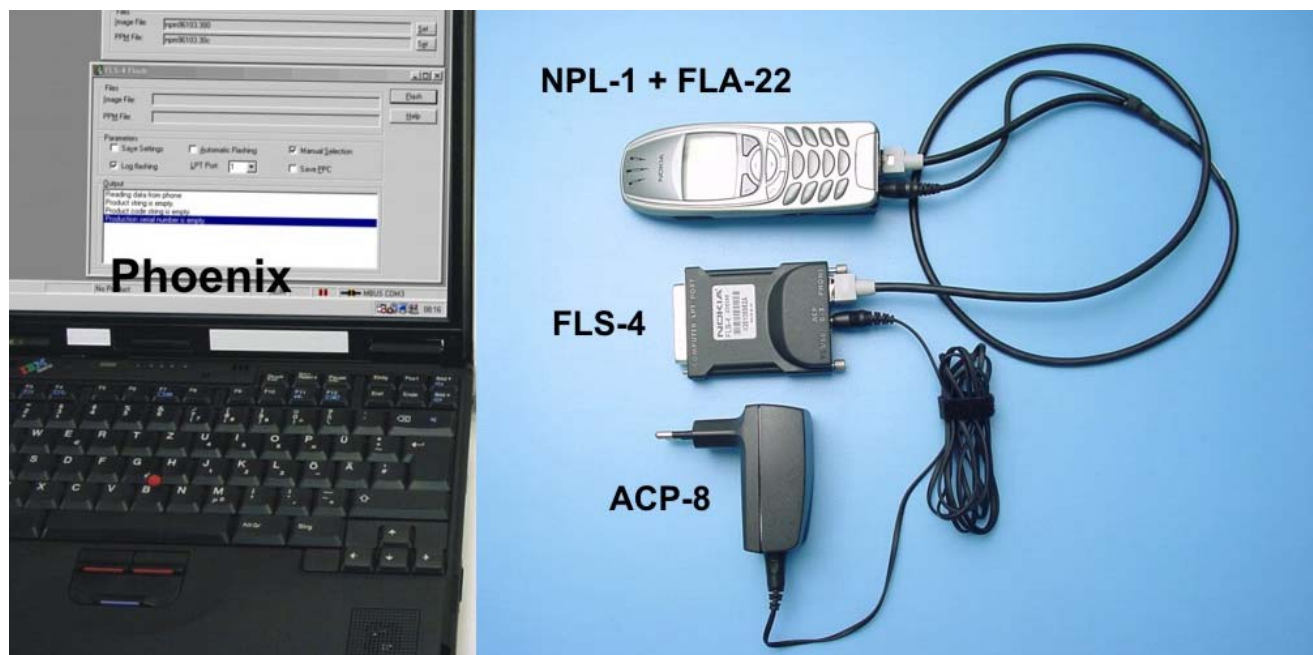
1. From Home Menu, select "**Names**"
2. Select "**Search**"
3. Select "**List**"
4. Select "**Details**" from one phonebook entry
5. Select "**Options**"
6. Select "**Send bus.card**"
7. Select "**Send via IR**"
8. Press red receiver button for Home Menu



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:

- 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.
- Soldering with **manual hot air gun** is totally forbidden because of the very sensitive μ BGA components and μ 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.
- 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.
- The bottom side of a module is the side where the part no. of the pcb is seen.
- **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.
	End Point
4, 5	Superscript numbers are for additional comments or instructions

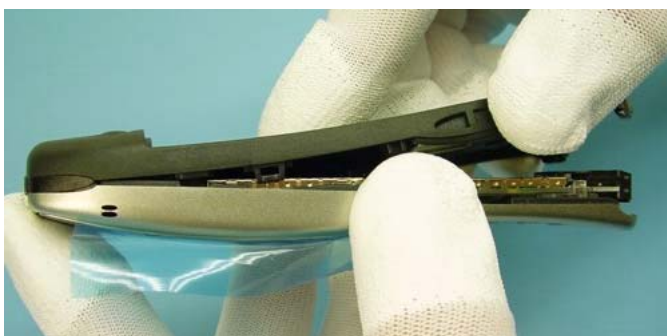
6. DISASSEMBLY INSTRUCTIONS



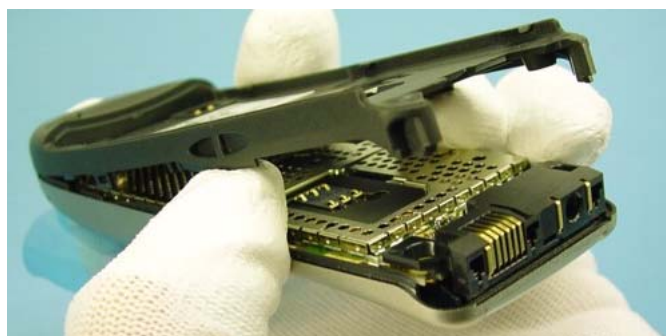
Take care that your workbench is always clean and protect the Window with a foil against dust and scratches.



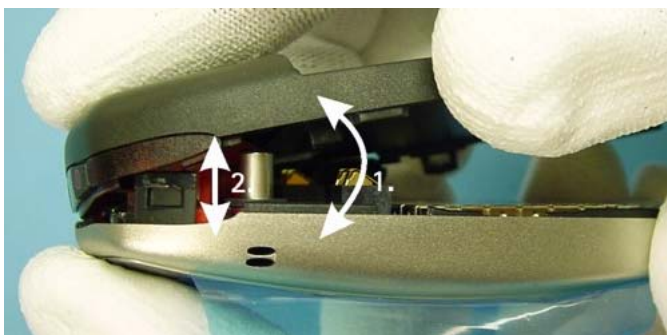
To open the unit, four T6 screws have to be opened. **Do not use your torque driver for this, because torque drivers are mostly designed for fastening and not for opening screws.**



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



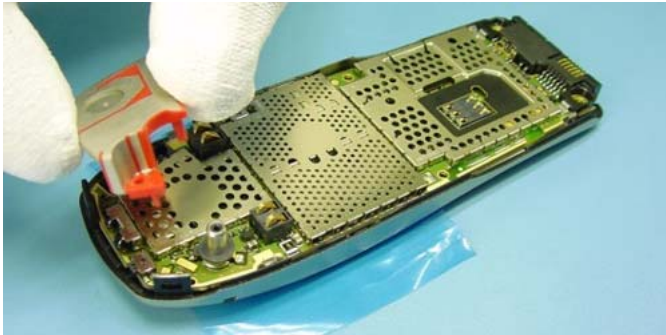
Before loosening the upper snaps of the cover be sure that you press the module against the A-Cover. The module is still fixed to the A-Cover with one hidden screw in the antenna area.



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.



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



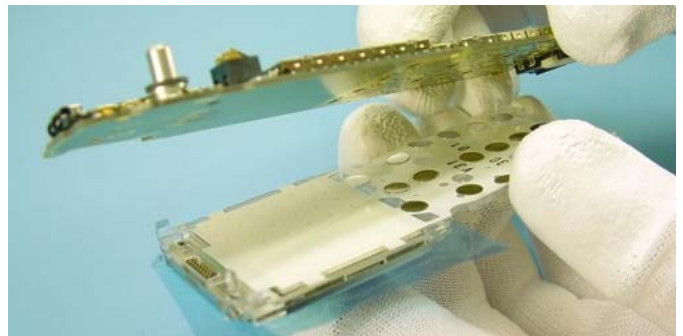
Don't touch the Antenna with your fingers. The fingerprints would cause corrosion to this sensitive material.



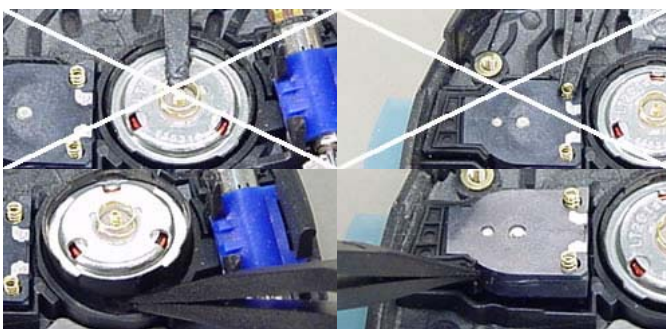
Lifting up the CMT module is very easy now. Protect the display with a foil.



Four transparent 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: Never the pads with your fingers to avoid corrosion.

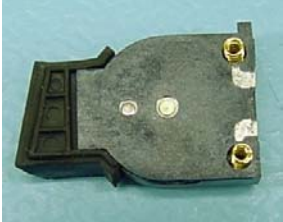










If you need to remove Speaker or Buzzer do not lift the items from the spring contacts.

New screws have a special locking compound on the thread. Unscrewed screws mustn't be reused! When assembling the phone, screws must be tightened with a torque of 17 Ncm! The GoNoGo test verifies that the electrical specifications will be fulfilled.

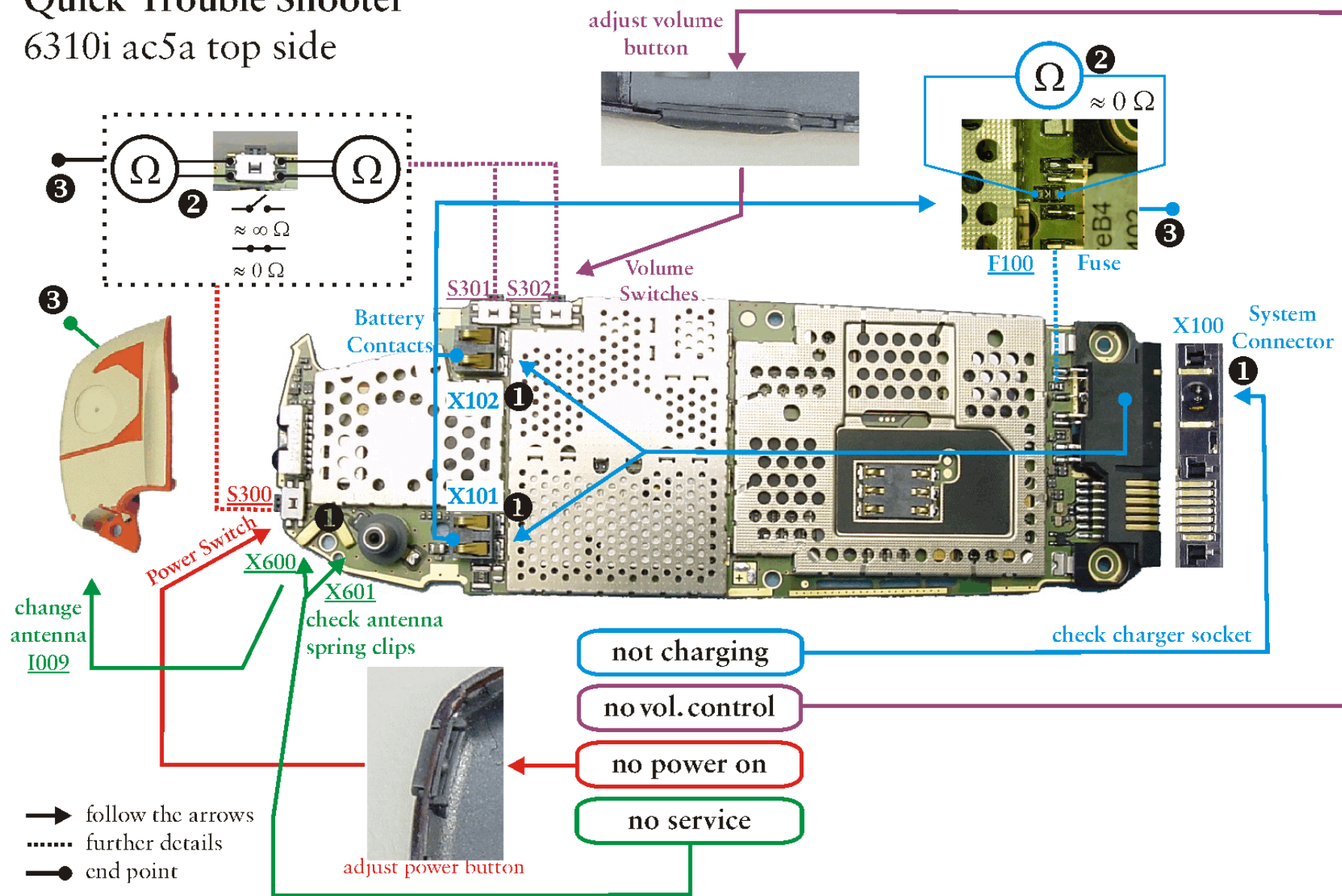


7. MAIN PARTS

		
Buzzer I005	Microphone I008	Speaker I004
		
Keymat I003	Antenna I009	Screw I013
		
A-Cover I002	B-Cover, not changeable	User Interface Module I006

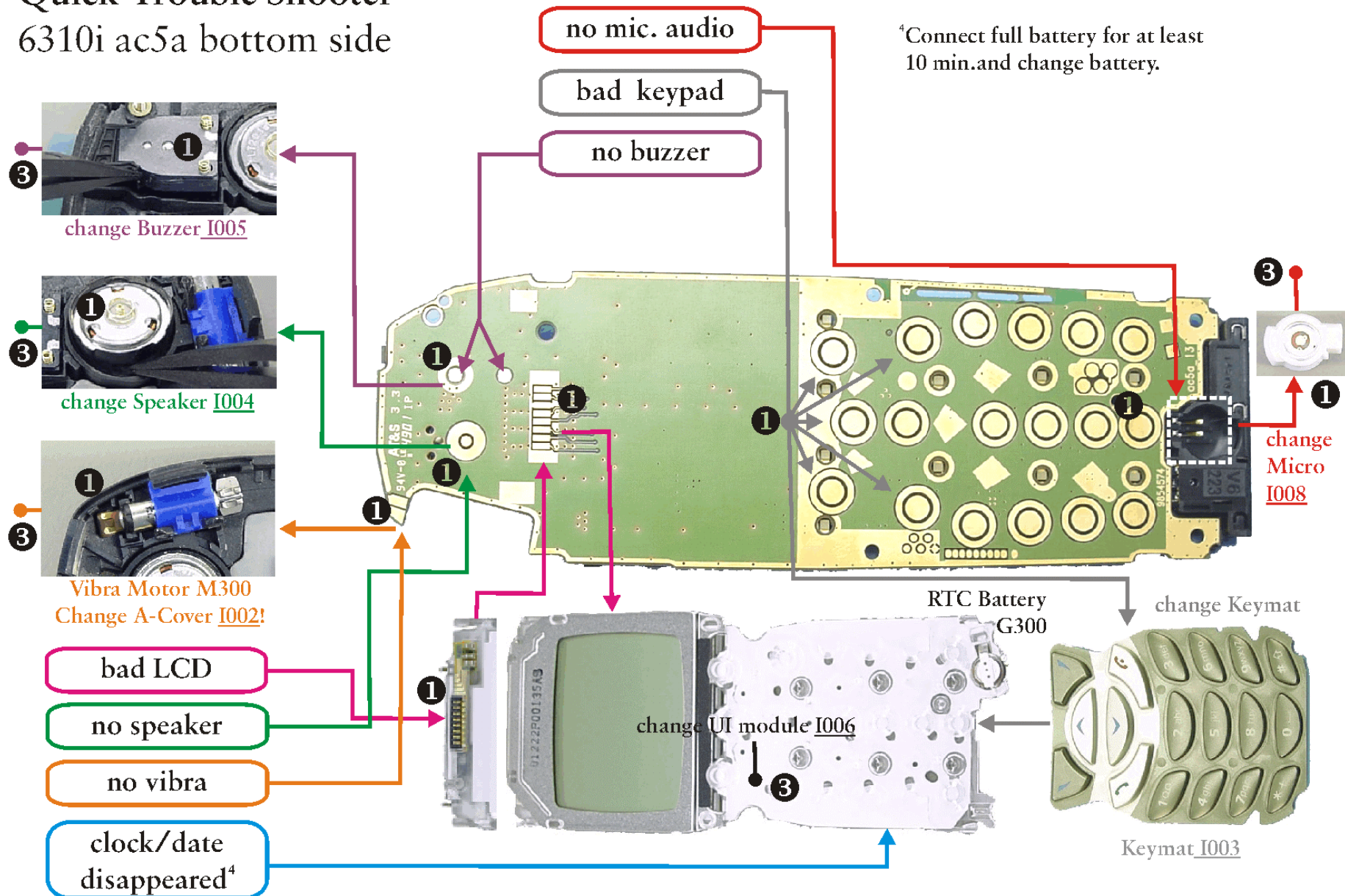
8. QUICK TROUBLE SHOOTER PART1

Quick Trouble Shooter



9. QUICK TROUBLE SHOOTER PART2

Quick Trouble Shooter 6310i ac5a bottom side



10. ESD PROTECTION REQUIREMENTS



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.

Please refer to the Partner Website document

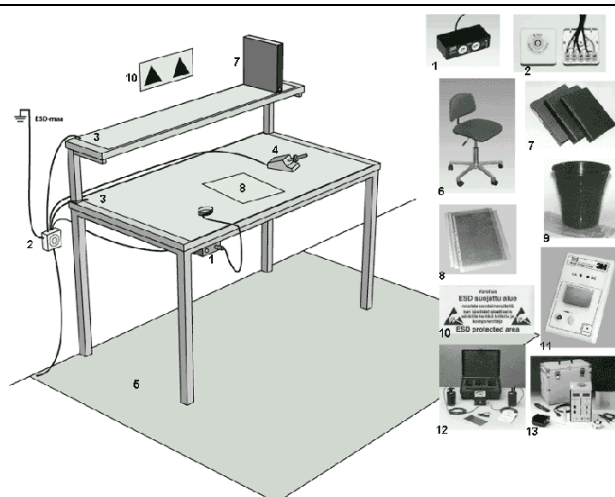
ESD protection requirements for NMP Service Level 1/2 Service Suppliers



example configuration of an epa-area
source: www.armeka.com



example configuration of a workbench
source: www.warmbier.com



example workbench and testers
source: <http://www.armekaengineering.com>

11. 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
R <input checked="" type="checkbox"/> Repair	RR <input type="checkbox"/> Repair and Refurbishment
RO <input type="checkbox"/> Refurbishment only	SW <input type="checkbox"/> Software update
A <input type="checkbox"/> Analysis	C <input type="checkbox"/> Claim
24h <input type="checkbox"/> 24 h Service	SR <input checked="" type="checkbox"/> 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



The image shows a Nokia mobile phone with a service label. The label contains the following information: 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. The phone is a black candy-bar style device.

12. 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.



13. 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.

