



Service Manual

Nokia 5510

NPM-5

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 5510. 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.

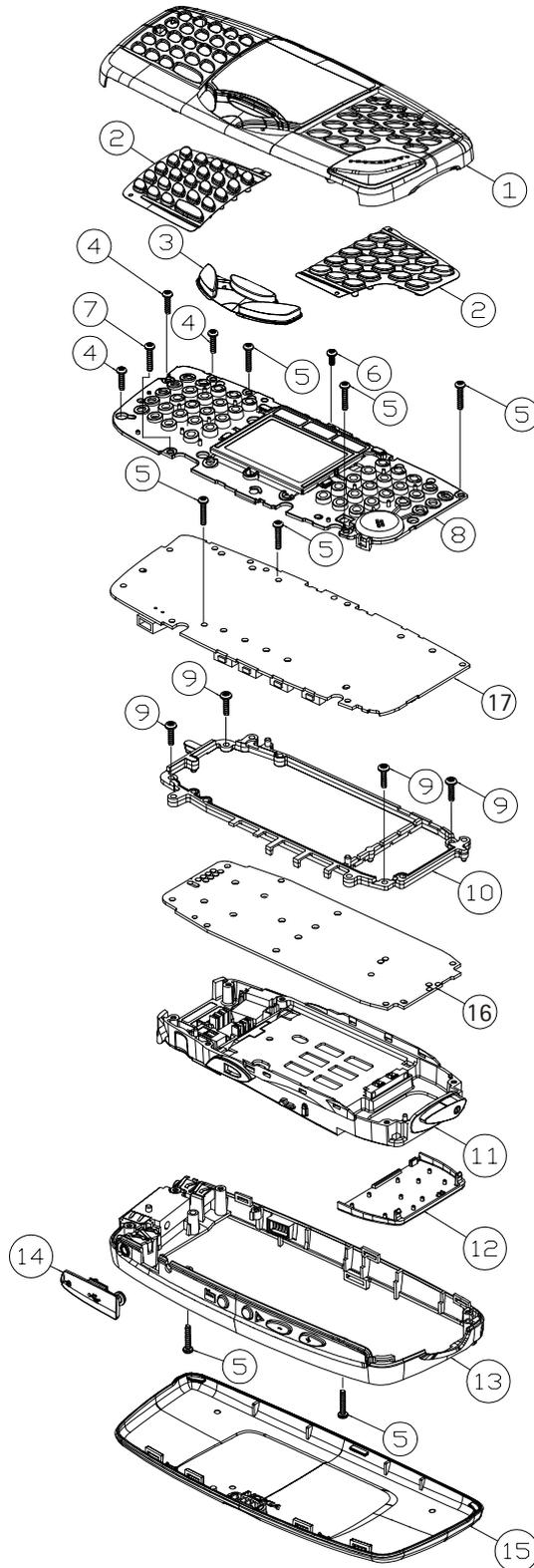
Cautions:

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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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	USED BEFORE
I013	1	9490478	B-COVER ASSEMBLY	NEW
I015	1	9490480	C-COVER ASSY NPM-5	NEW
I010	1	9460442	SPACER FRAME	NEW
X200	1	5460039	SYS CONN ASSY SPR. 5AF+5DC+MIC	3310/3330
IXXX	1	XXXXXXX	MIC+BOOT ASSY	3310/3330
J601-J602	2	5400121	SM JACK 2.5MM+SW ST 3V100MA 90DEG	3310/3330
I014	1	9452286	PORT COVER-DMD07716 NPM-5	NEW
IXXX	1	9790575	POWERKEY NPM-5	NEW
IXXX	2	5400171	ANTENNA POGO PIN DMS02722 SPR	3310/3330
X203	1	5409153	SM BATT CONN 4POL SPR 200V 2A	3310/3330
X400	1	5400169	SIM READER	3310/3330
IXXX	1	5140191	BUZZER ASSEMBLY DMC02718	3310/3330
M400	1	6800049	VIB MOT. ASSEMBLY 1.3V 115MA 9500RPM	3310/3330
IXXX	1	9460355	BATTERY LOCK DMD05789	3310/3330
I012	1	0660237	INT.PIFA EGSM/PCN NPM-5	NEW
I008	1	4850219	LCD ASSEMBLY DMC04095 NPM-5	NEW
IXXX	1	5140067	SPEAKER+SPRING 103+-3DB 32R D13.2	3310/3330
IXXX	1	9480588	SPEAKER GASKET DMD05446-EN	3310/3330
I007	1	6290135	SCREW 1.8X8 T6+ REMFORM	NEW
I005	7	6290109	SCREW 1.8X9 T6+ REMFORM	NEW
I004	3	6290107	SCREW 1.8X7.0 FE T6+	3310/3330
I006	1	6190023	SCREW 1.6X4 T6	RAE3
I009	4	6290133	SCREW 1.8X7 T6+ REMFORM	NEW
D301-D308	8	4864471	LED SML810MT YELGRN>11.5MCD 1305	3310/3330
S753-S756	4	5200029	SM SW TACT 1POL 12VDC 50MA 90DEG	NEW
S419	1	5209001	SM SW TACT SPST 12V 50MA SIDE KEY	3310/3330
F200	1	5119019	SM FUSE F 1.5A 32V	3310/3330
I017	1	0770407	MU4NPM-5 UI-SPARE MODULE AFTERSA	NEW

VARIANT PARTS				
I003	1	9790592	KEYMAT MIDDLE PRINTED DMC04521 MAVERICK	NEW
I002	1	9790596	KEYMAT L&R PRINTED CZECH	NEW
I002	1	9790599	KEYMAT L&R PRINTED FRENCH	NEW
I002	1	9790602	KEYMAT L&R PRINTED GERMAN	NEW
I002	1	9790605	KEYMAT L&R PRINTED GREEK	NEW
I002	1	9790608	KEYMAT L&R PRINTED HUNGARIAN	NEW
I002	1	9790611	KEYMAT L&R PRINTED POLISH	NEW
I002	1	9790614	KEYMAT L&R PRINTED RUSSIAN	NEW
I002	1	9790617	KEYMAT L&R PRINTED SCANDINAVIAN	NEW
I002	1	9790620	KEYMAT L&R PRINTED SPANISH-PORTUGUESE-ITALIAN	NEW
I002	1	9790623	KEYMAT L&R PRINTED TURKISH	NEW
I002	1	9790626	KEYMAT L&R PRINTED SLOVENE-CROATIAN-SERBIAN	NEW
I002	1	9790593	KEYMAT L&R PRINTED COMMON ENGLISH	NEW
I001	1	9458349	A-COVER ASSEMBLY TILE RED	NEW
I001	1	9458350	A-COVER ASSEMBLY RETRO BLUE	NEW

SWAP UNITS

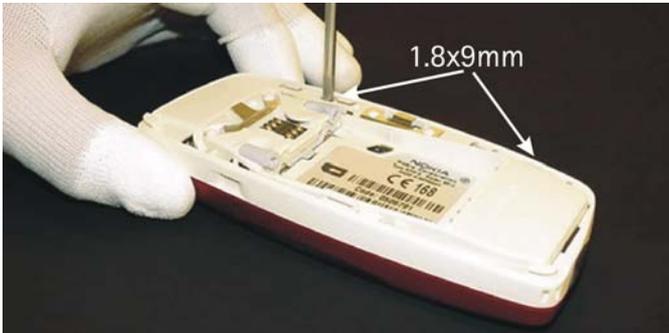
	QTY	PART NO	PART NAME	
	1	0073081	SWAP ENGINE EUROPE	
	1	0073082	SWAP ENGINE POLAND	
	1	0073083	SWAP ENGINE CIS	
	1	0073084	SWAP ENGINE TURKEY	
	1	0073085	SWAP ENGINE FRANCE	
	1	0073226	SWAP ENGINE CS-SK	

SERVICE TOOLS

PART NO	PART NAME	USED BEFORE
0271738	BLC-2 BATTERY BLOCK LI-IO 950 MAH	NEW
0694105	HDD-2 STEREO HEADSET	NEW
0630463	ADA-2 AUDIO ADAPTER	NEW
0630464	ADE-2 AUDIO CABLE	NEW
0630465	DKE-2 USB CABLE	NEW
0840065	NOKIA AUDIO MANAGER CD-ROM (ALREADY INCL. IN SALES PACKAGES)	NEW
0272169	AC TRAVEL CHARGER ACP-8E (EUR)	VARIOUS
0272172	AC TRAVEL CHARGER ACP-8X (UK)	VARIOUS
0730174	XMS-3 SERVICE CABLE	VARIOUS
0630262	FLP-2 POINT OF SALES FLASH ADAPTER (INCL. DC SEVICE CABLE)	ALL DCT-3
0081311	Flash adapter FLS-2D (EU/A SALES PACKAGE INCL AXS-4U)	ALL DCT-3
0081483	Flash adapter FLS-4 (EU/A SALES PACKAGE)	ALL DCT-3&4
0770413	WinTesla SW CD ROM	NEW

3. DISASSEMBLY INSTRUCTIONS

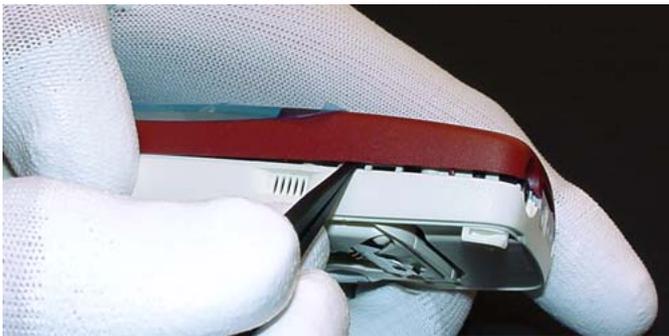
Attention: Before starting this procedure you must take care of ESD precautions like being in your ESD-area and connecting your arm wrist. For more information please look at chapter 6.



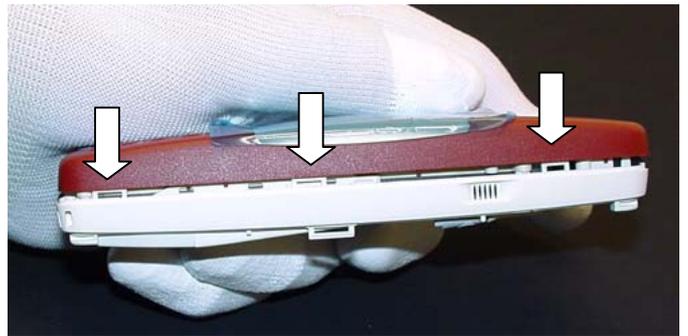
Before opening the unit the display should be protected with a foil. Then open the 2 upper screws from the B-Cover. Please note, that the unit has 16 screws which aren't equal in length and thread.



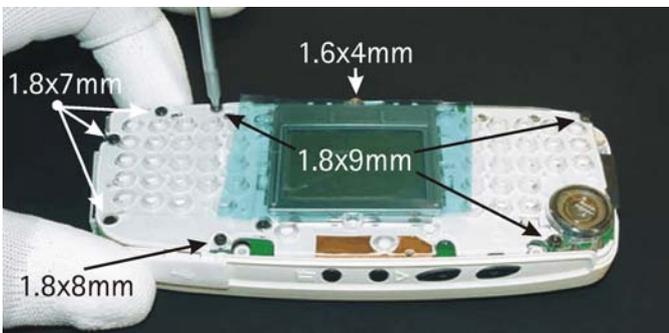
The A-Cover can be released from the lower right side on. Place the plastic tweezers between the cover clip and the power button. Same has to be done at the left side just near the Port Cover.



Turn around the phone release the other side from A-Cover. To avoid damages, plastic tweezers should be preferred. Where the clips are located can be seen in the right picture.



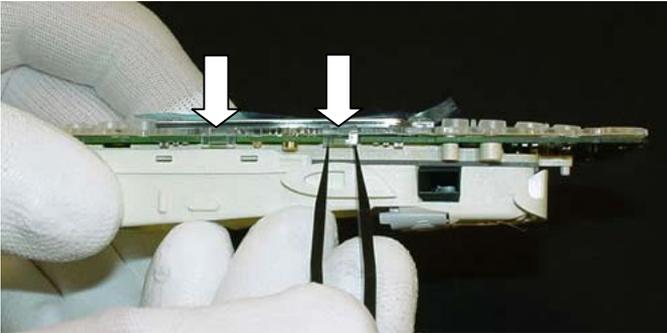
The cover is fixed with 3 plastic clips, which have to be released carefully. After that the cover can be removed together with the keymats.



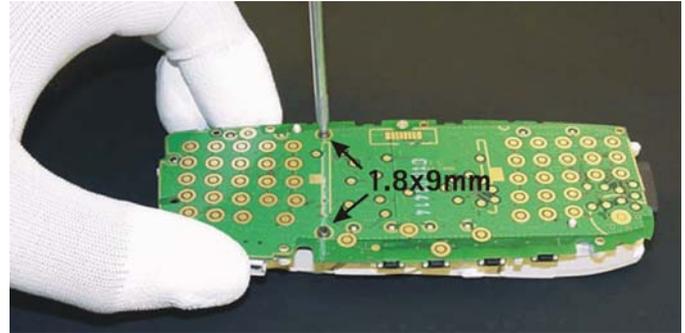
Unscrew the 8 screws from the Light Guide of UI module.



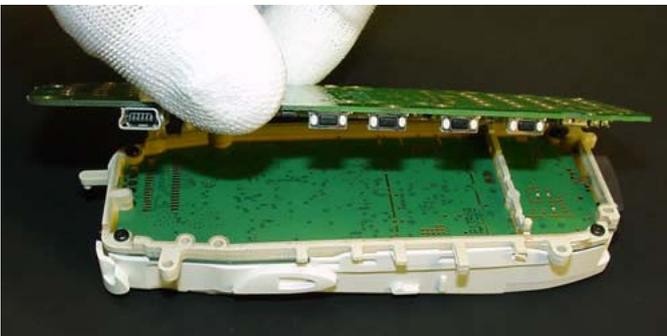
Take away unit of Light Guide, UI module, CMT module and D-Cover.



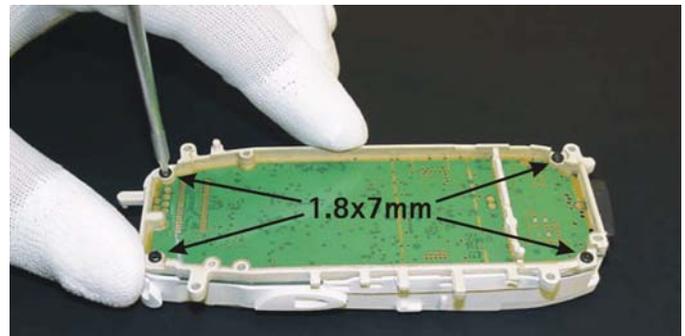
There are 3 clear plastic clips to release, which hold the Light Guide onto the UI module MU4. Two clips are on this shown side in the picture and one at the backside in the near of the speaker.



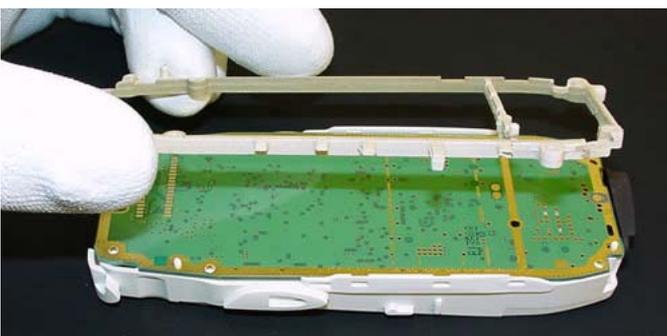
To remove the UI module MU4, 2 further screws have to be opened.



Lift up now the UI module and avoid touching the connector pads and keypad pads. The best way is, to use gloves.



The Spacer Frame is fixed with 4 screws of the same size.



After removing the Spacer Frame, the CMT module is accessible.



Now you can lift up the CMT module MA4 from the D-Cover. The Buzzer, SIM Card Reader, Vibra, Battery Connector, Pogo Pins, Power Button and the Battery Lock are only squeezed into the D-Cover and can be changed easily.

When assembling the phone, screws must be tightend with a torque of 17 Ncm !

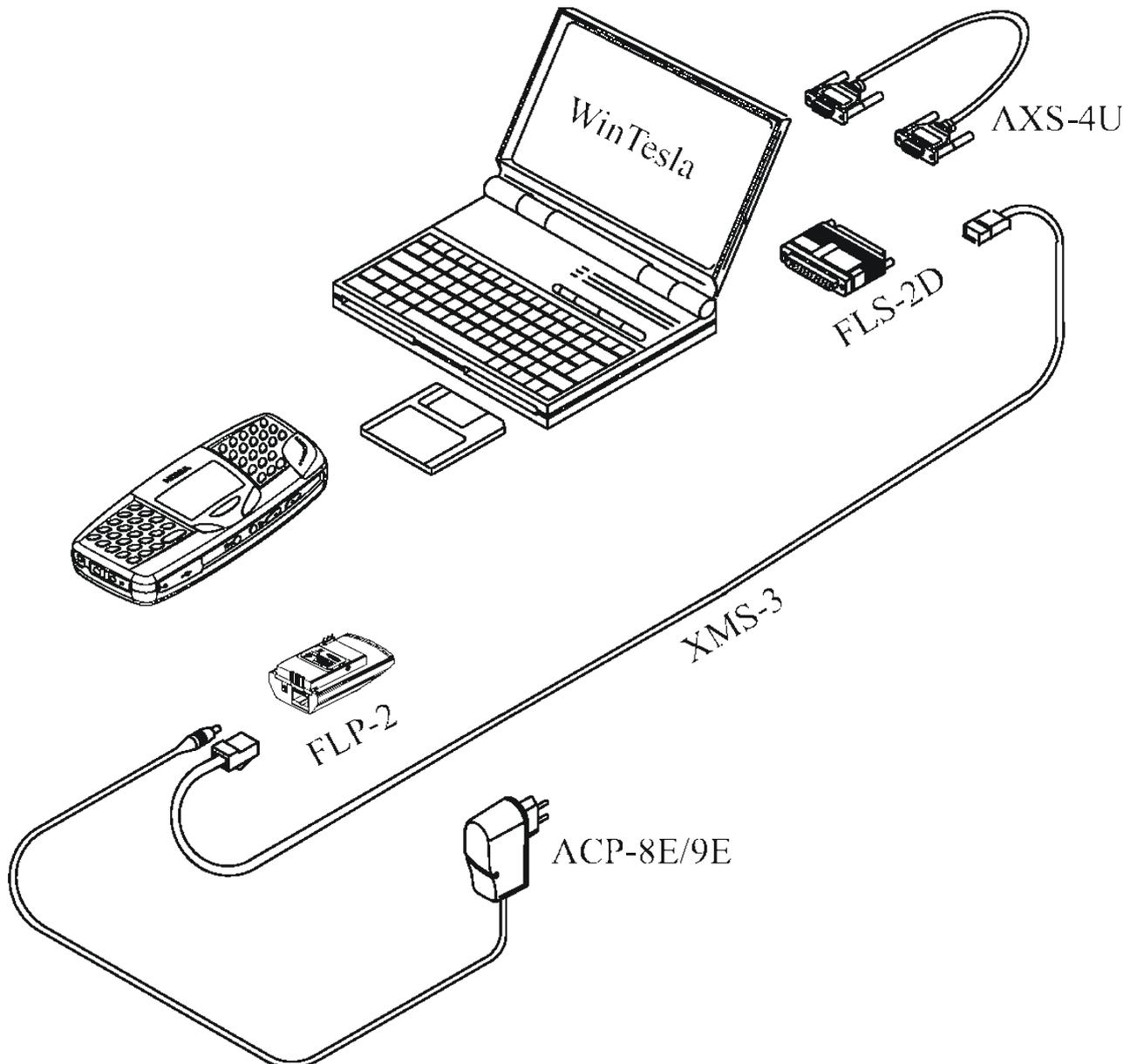
The final GoNoGo test verifies that the electrical specifications will be fulfilled.



4. SW-UPDATE

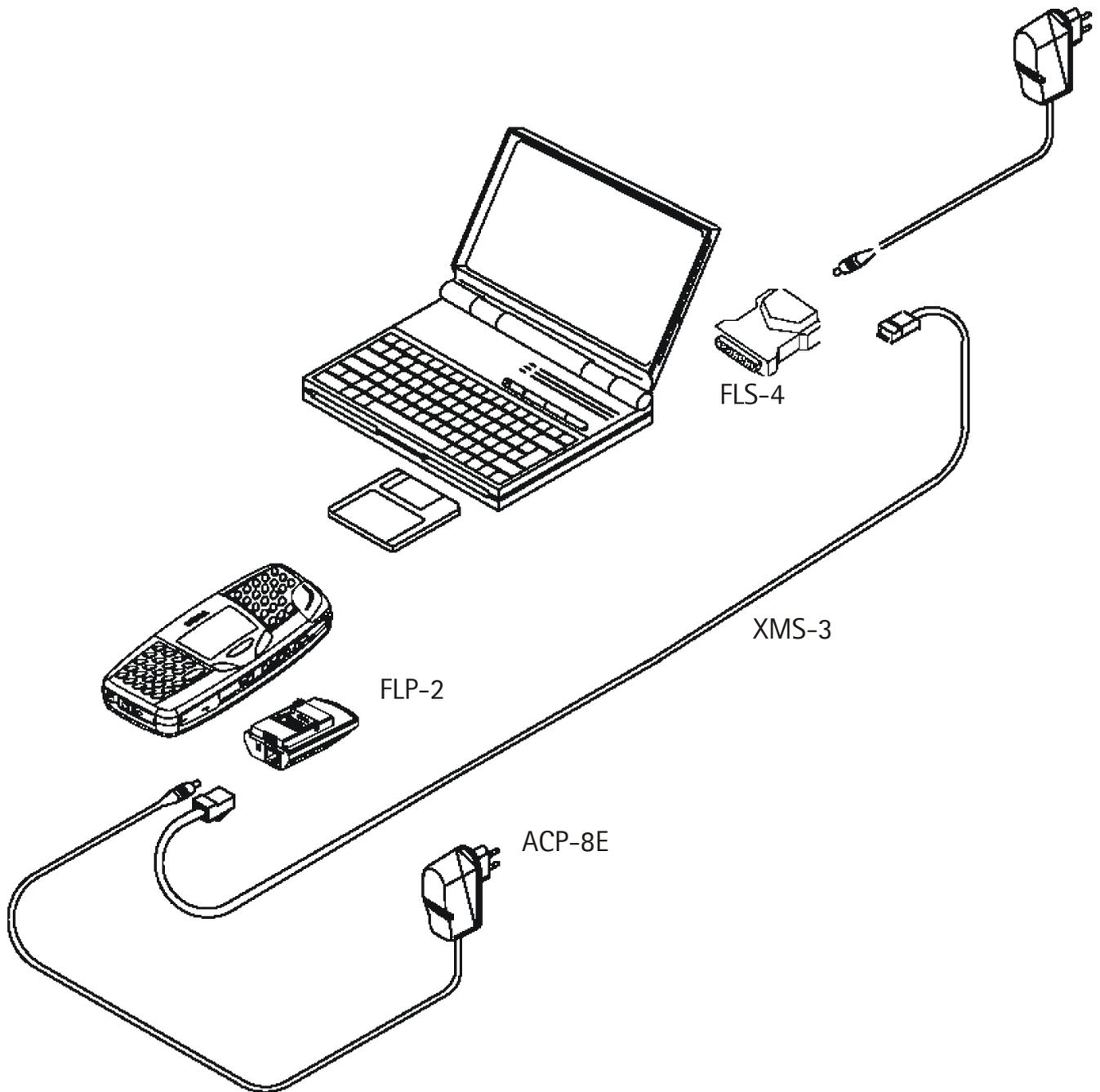
To use FLS-2 Flash Dongle you have to follow the instructions of the user guide inside the sales package. Please check always the latest version, which is available on Partner Pages/PWS.

Flash Concept – (Point of Sale)



c

To use FLS-4 Flash Dongle you have to follow the instructions of the user guide inside the sales package. Please check always the latest version, which is available on Partner Pages/PWS.



5. TROUBLESHOOTING

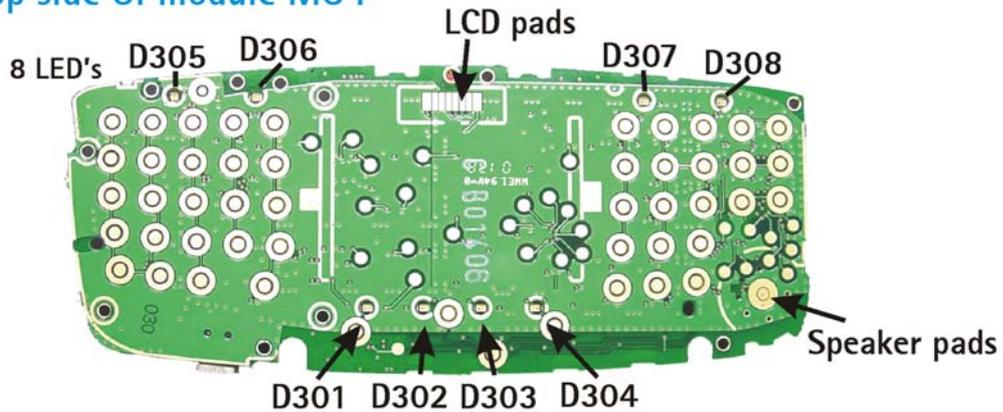
In this section you will get some general hints how to carry out repairs:

- 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 μ BGA components and μ Via technology.**
- 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 which appears first, when the product is opened.
- Please check Partner Websites (PWS) for latest news on a regular basis

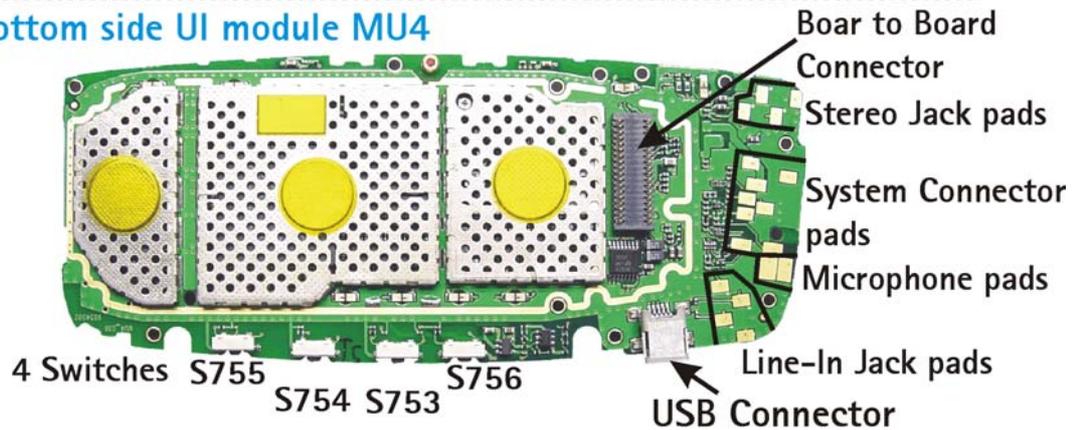
Legend for flow charts			
			
Start/End Point:	Beginning or close of an action, process or workflow		
Action:	Activity, part of a process		
Decision:	Different possibilities to proceed		
Connection Point:	Flow chart continues at different point, e.g. on the next page		

5.1 Layouts and Parts

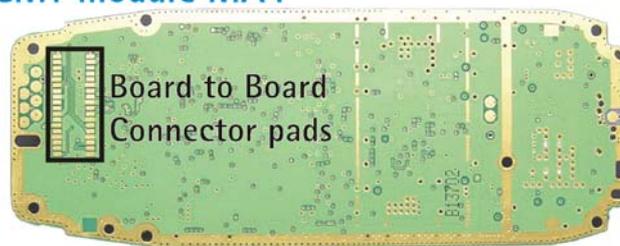
Top side UI module MU4



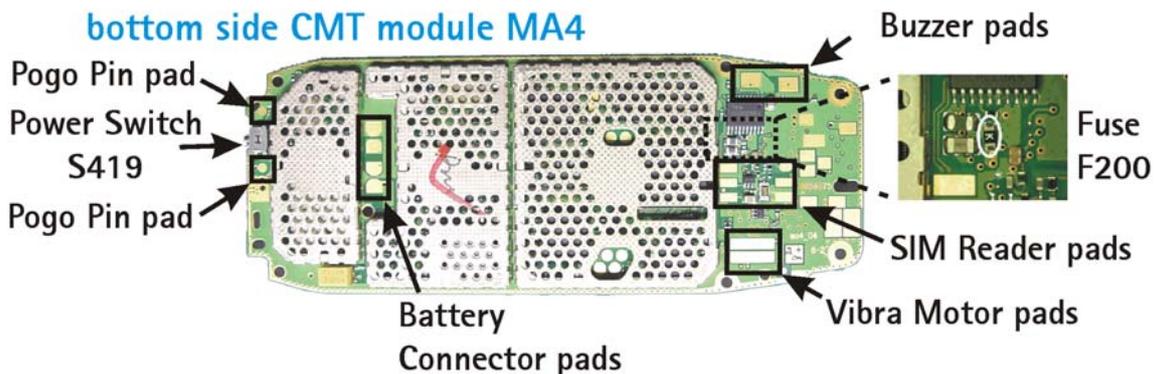
Bottom side UI module MU4

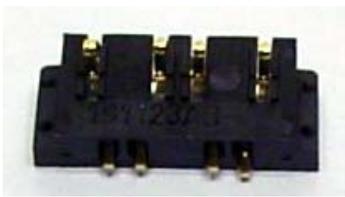
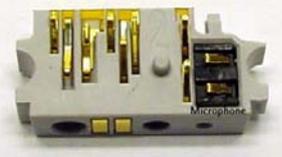
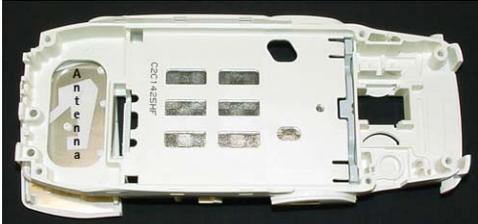


top side CMT module MA4

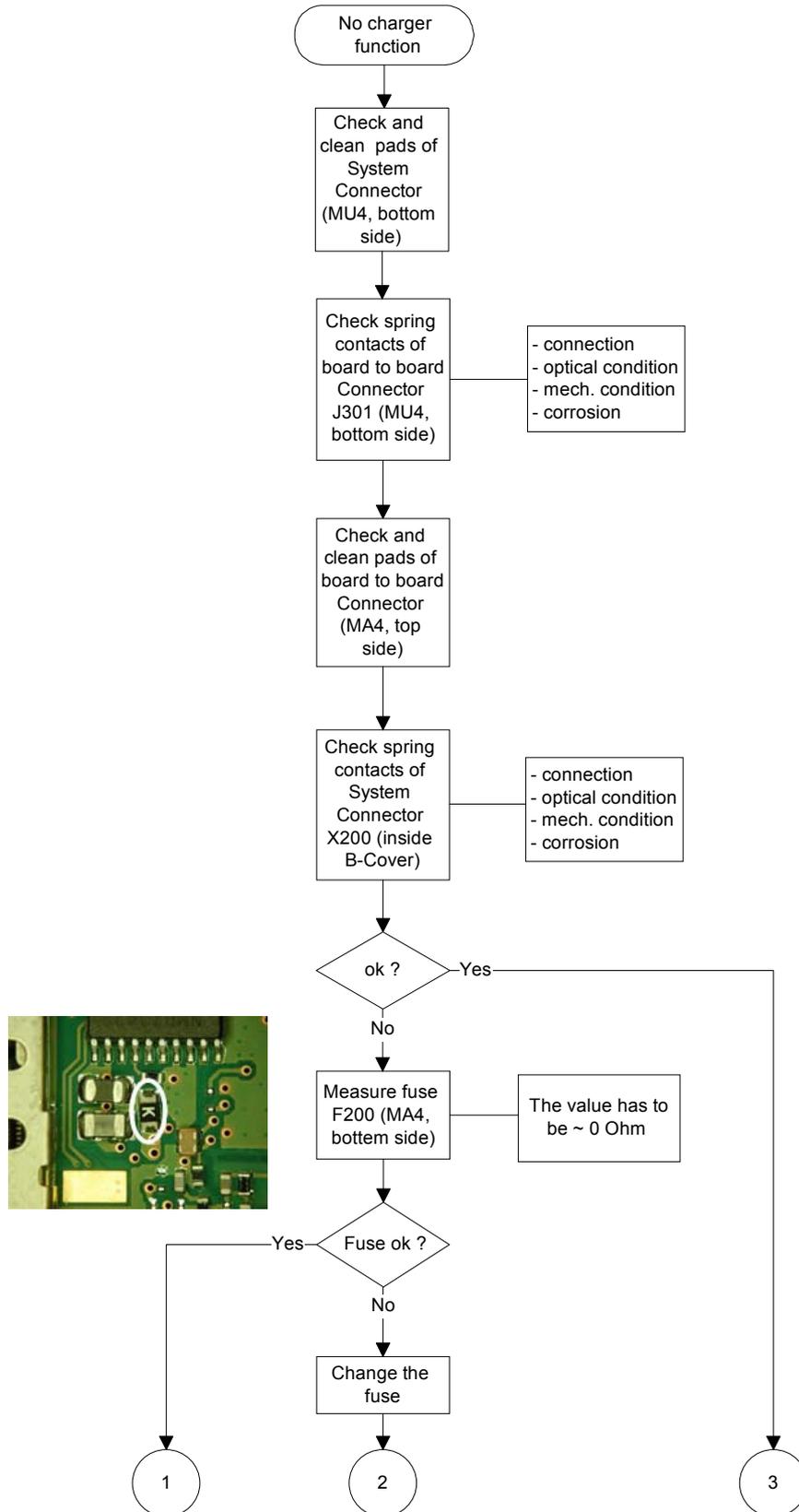


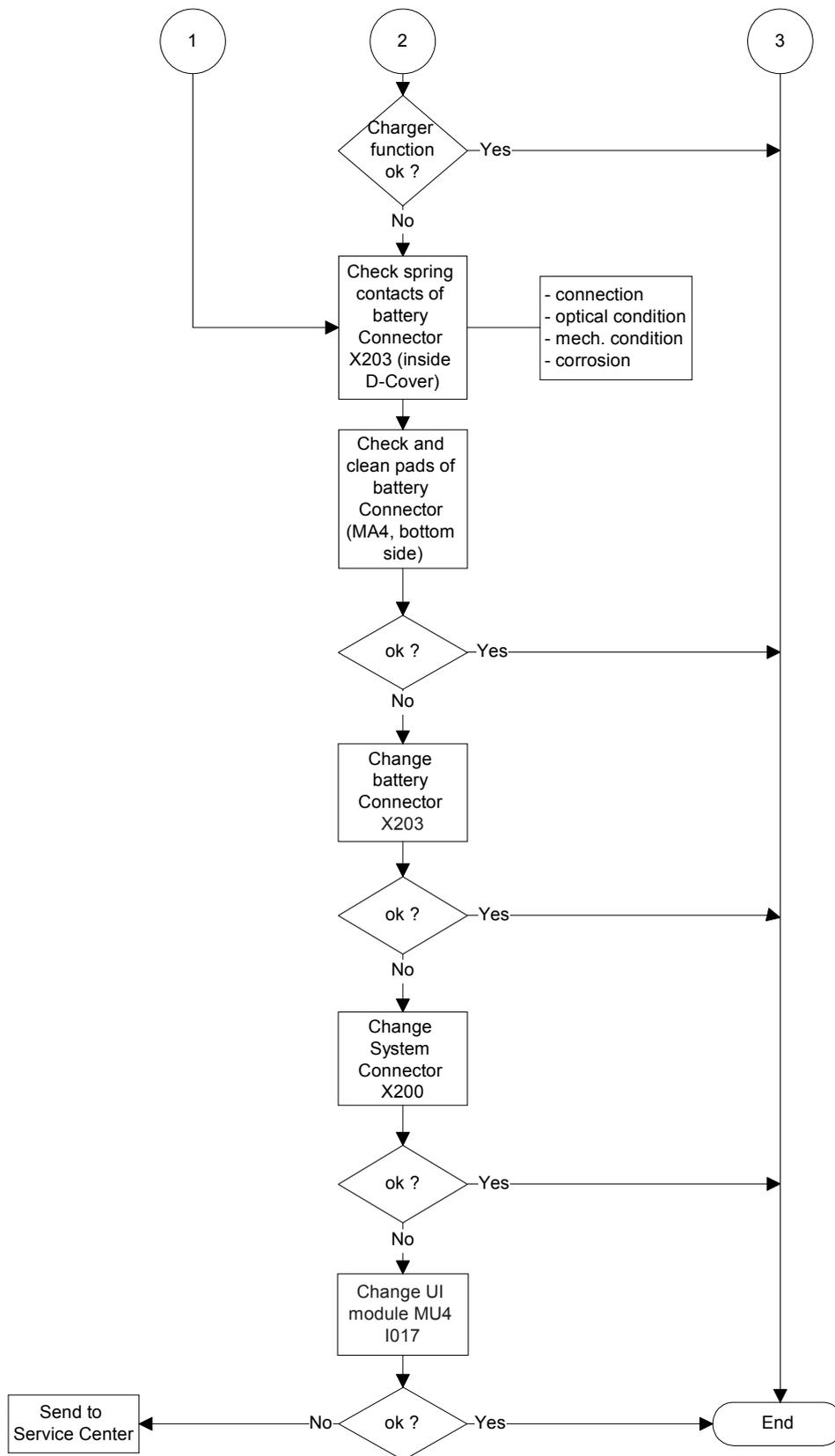
bottom side CMT module MA4



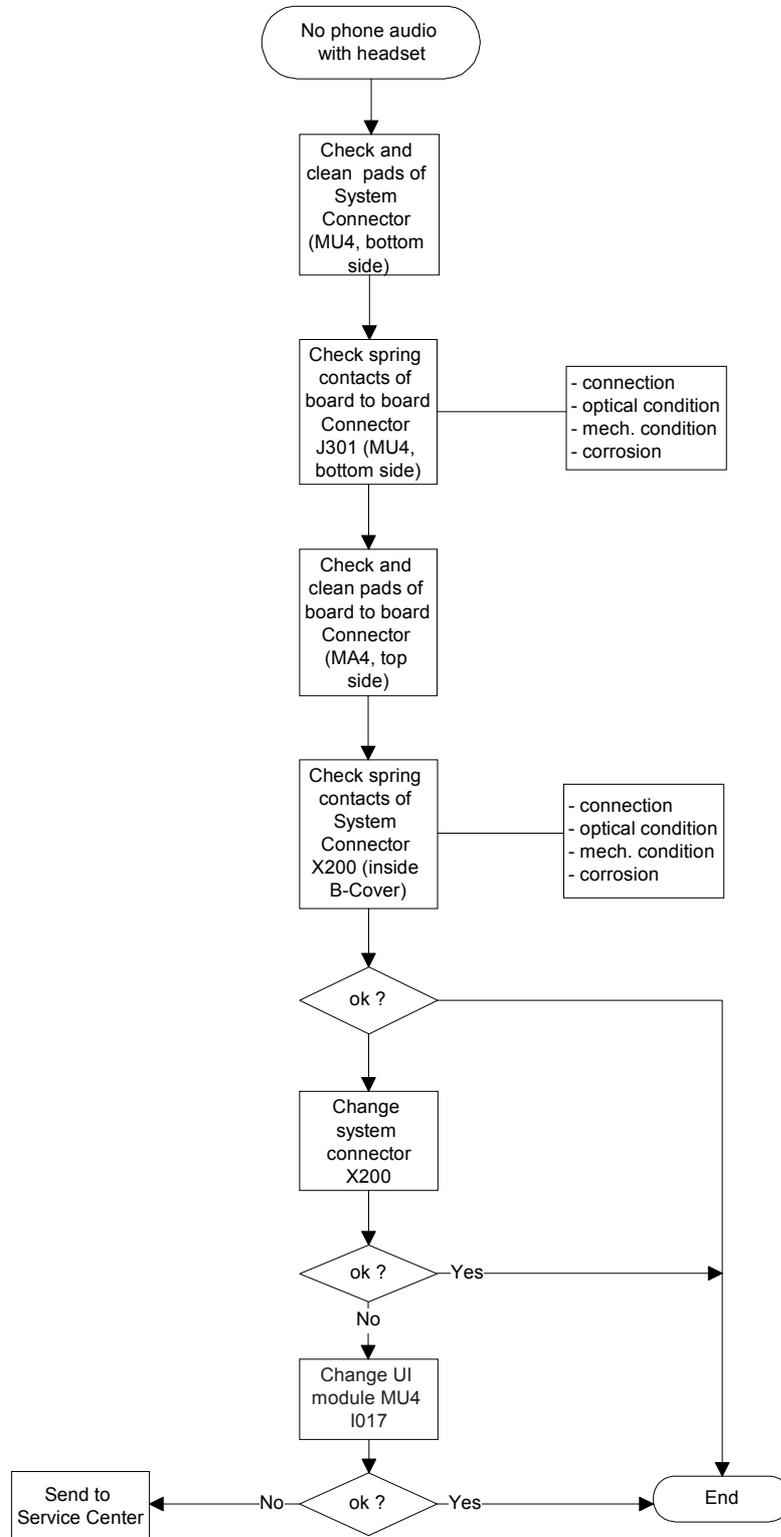
			
Antenna Pogo Pins	Battery Connector X203	SIM Reader X400	Vibra Motor N400
			
Buzzer	Power Key	Line-In Jack J601	Stereo Jack J602
			
Speaker	Battery Lock	System Connector X200	Port Cover I014
			
A-Cover I001		C-Cover I015	
			
B-Cover I013		Spacer Frame I010	
			
Keymat Left I002 ; Middle I003 ; Right I002		D-Cover, not changeable because of Typelabel	

5.2 No charger function

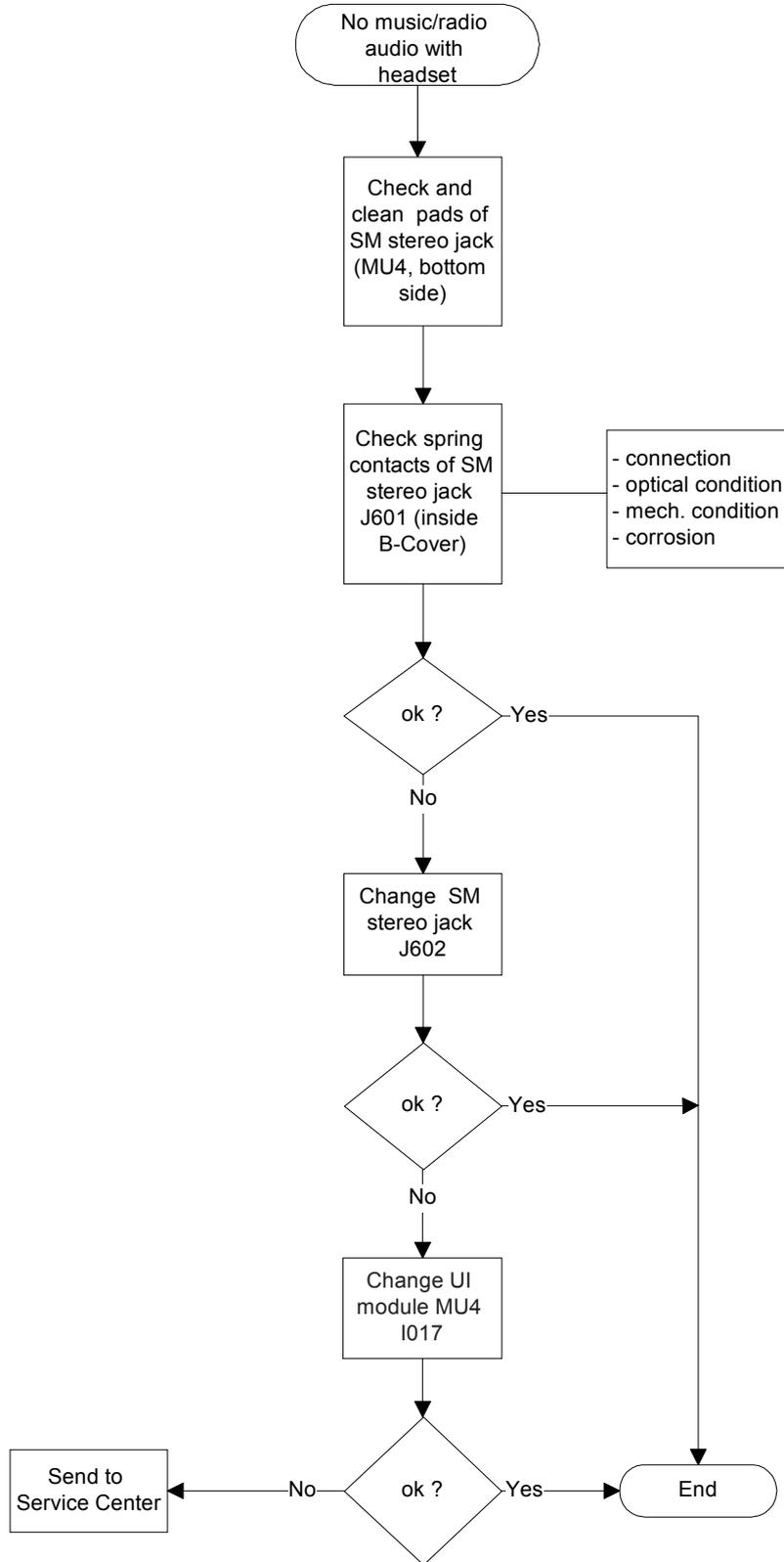




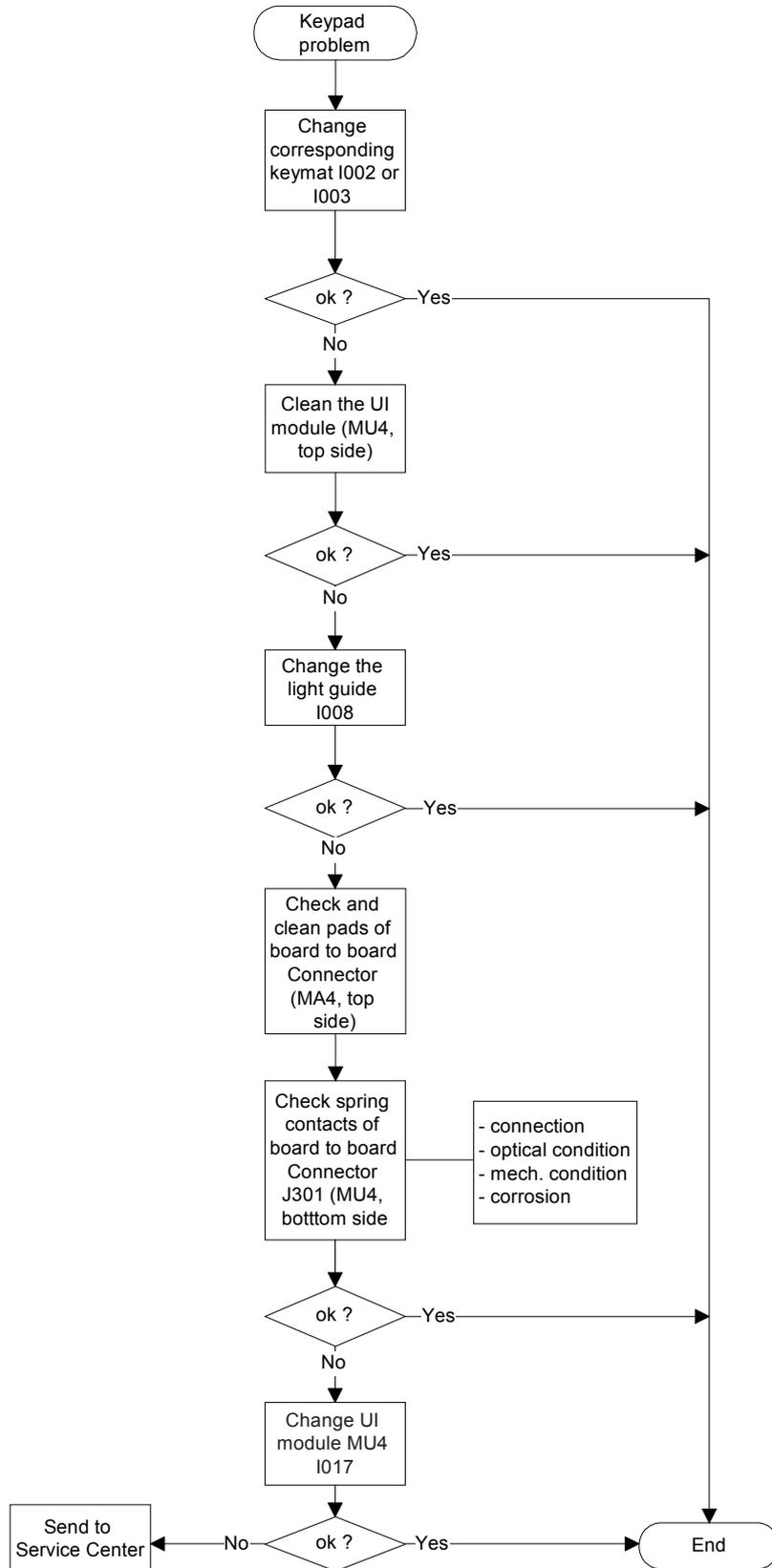
5.3 No phone audio with headset



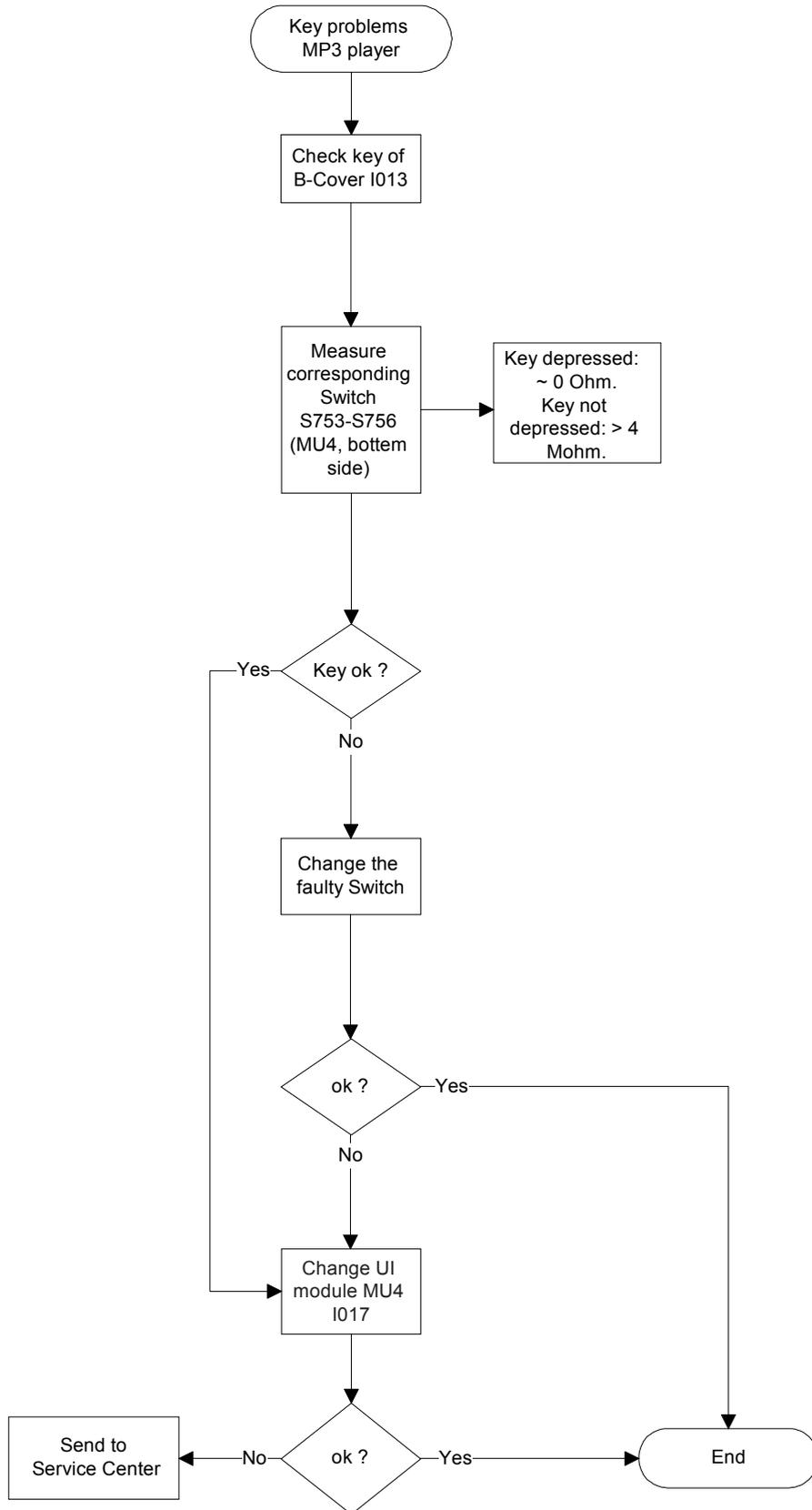
5.4 No music/radio audio with headset



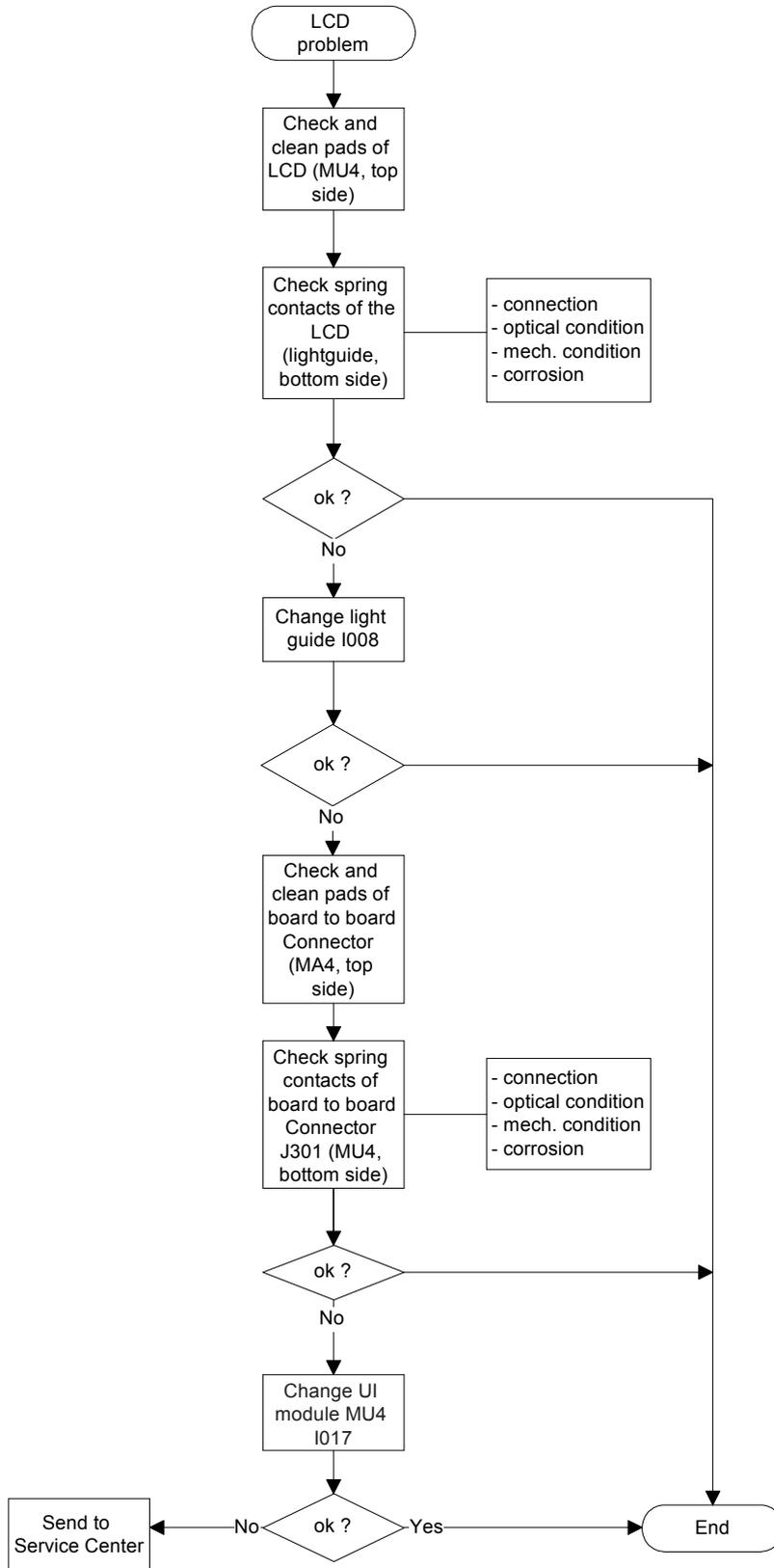
5.5 Keypad problems



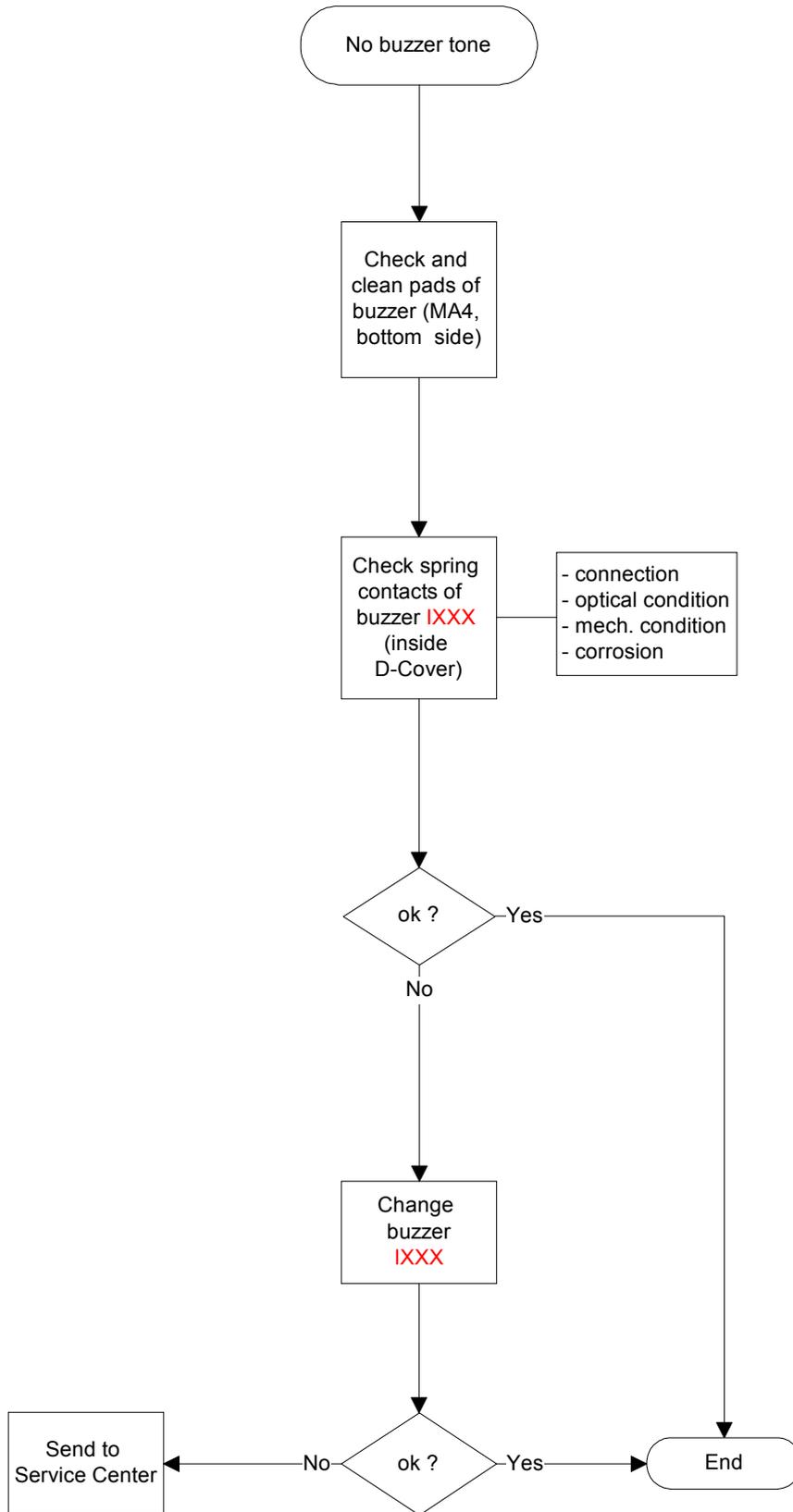
5.6 Keypad problems with MP3 player



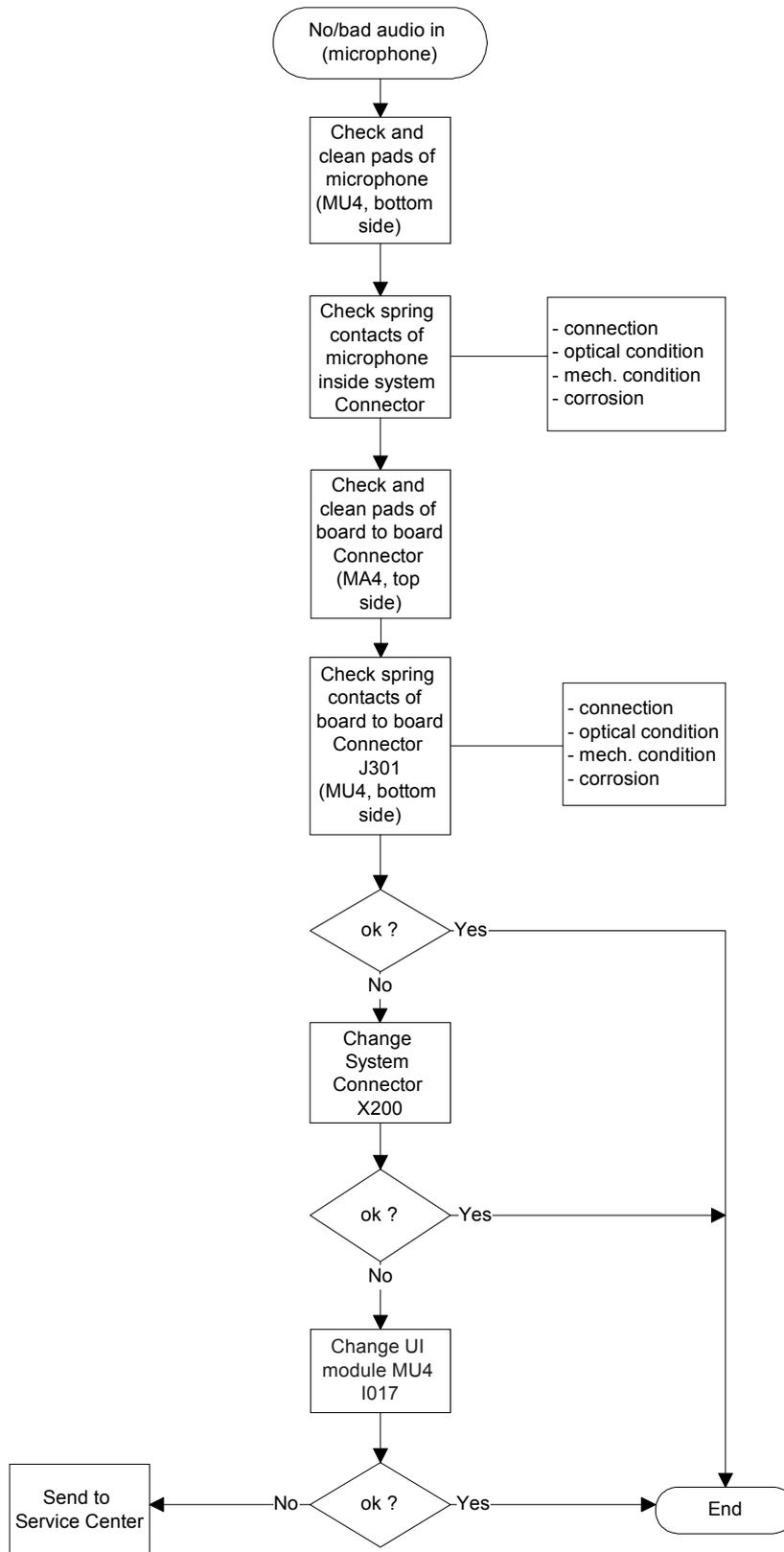
5.7 LCD problems



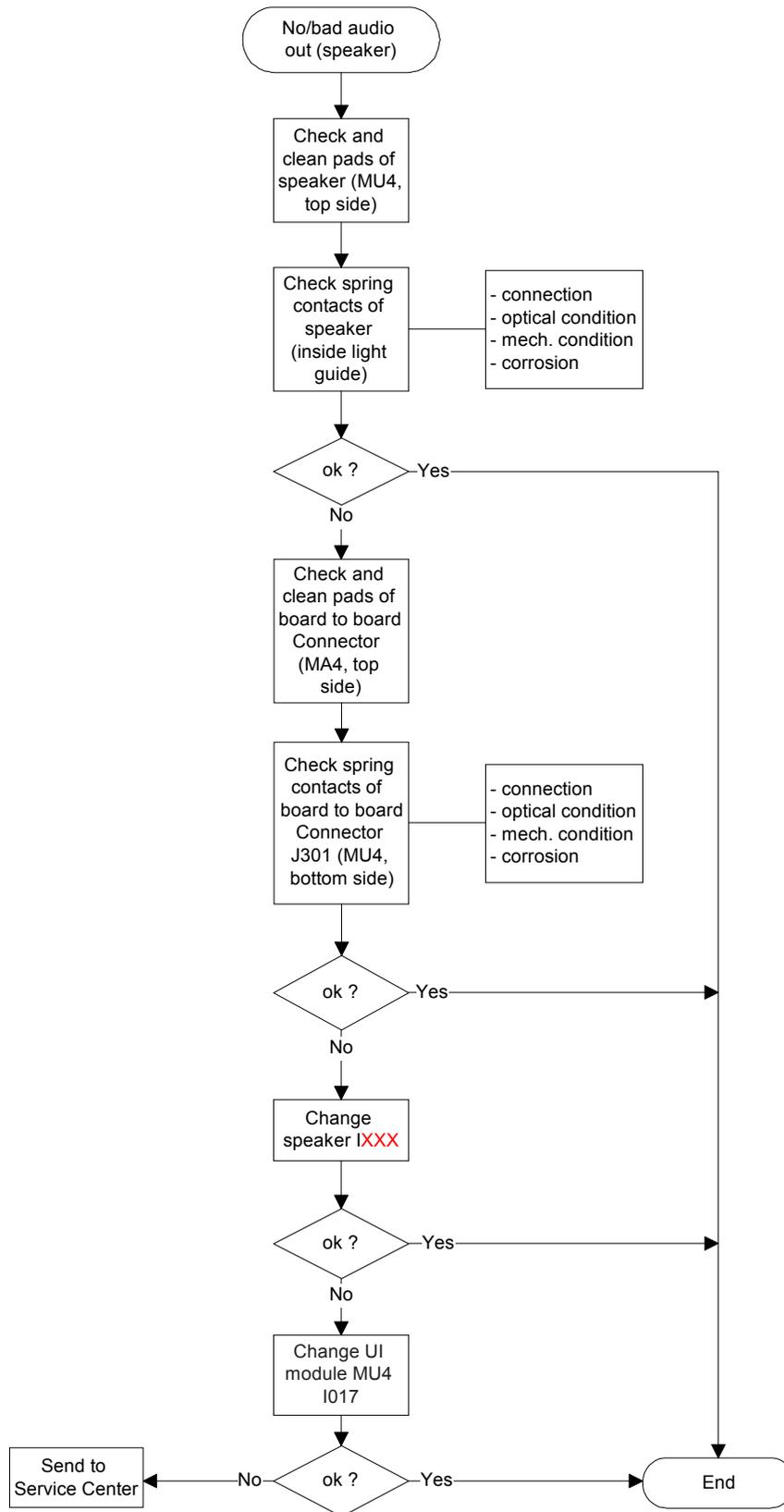
5.8 No Buzzer function



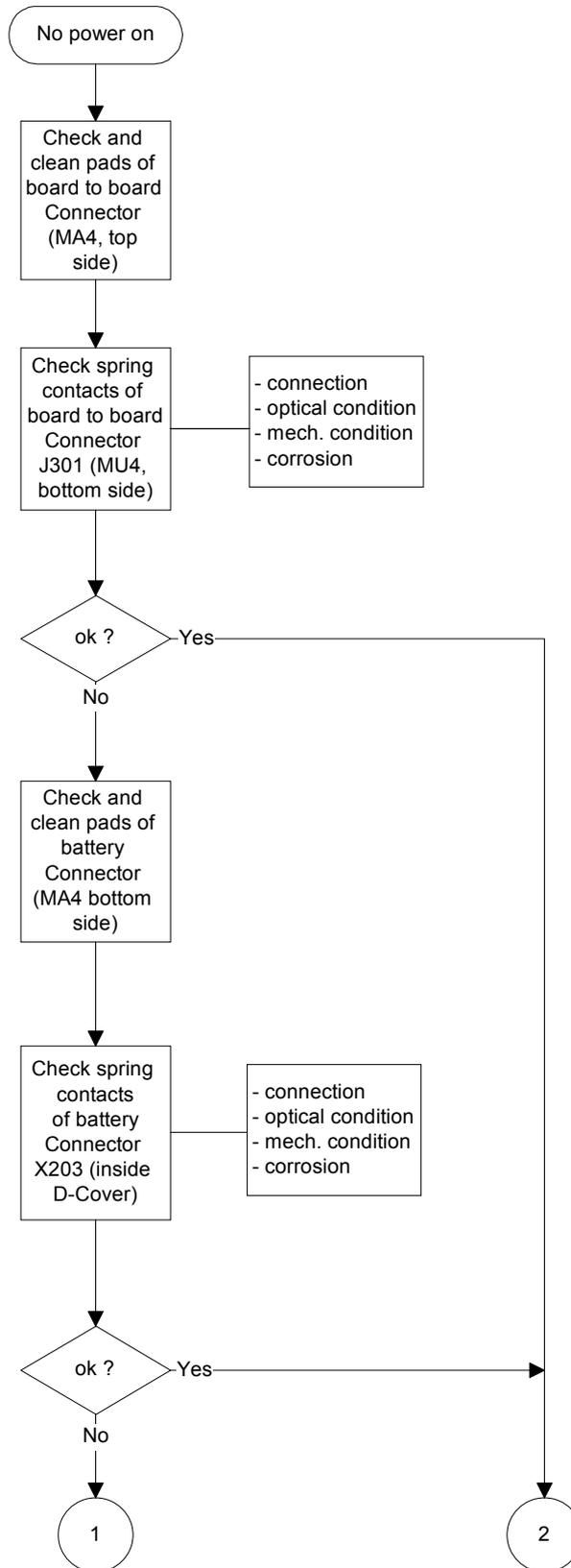
5.9 No audio in (Microphone)

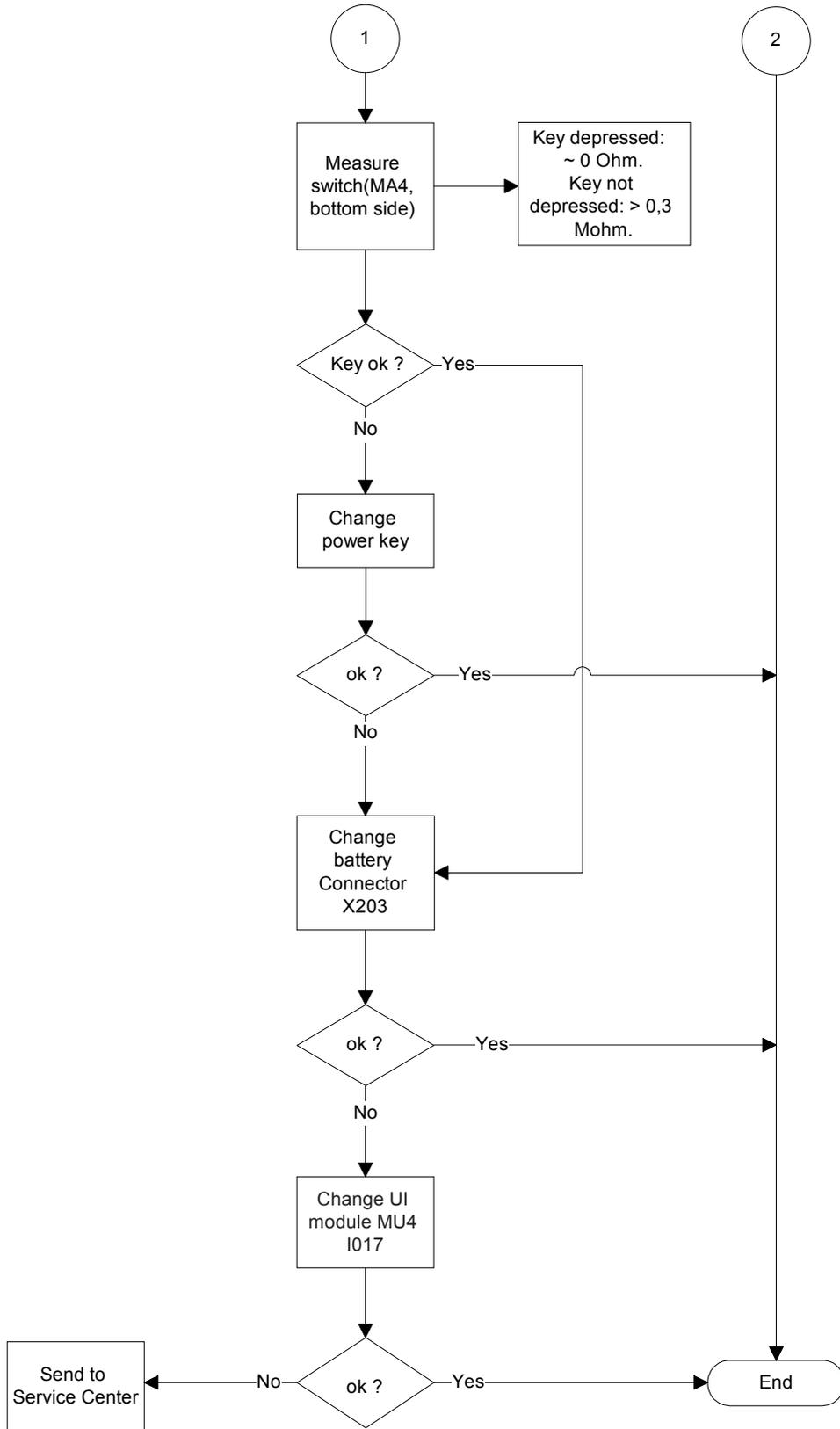


5.10 No audio out

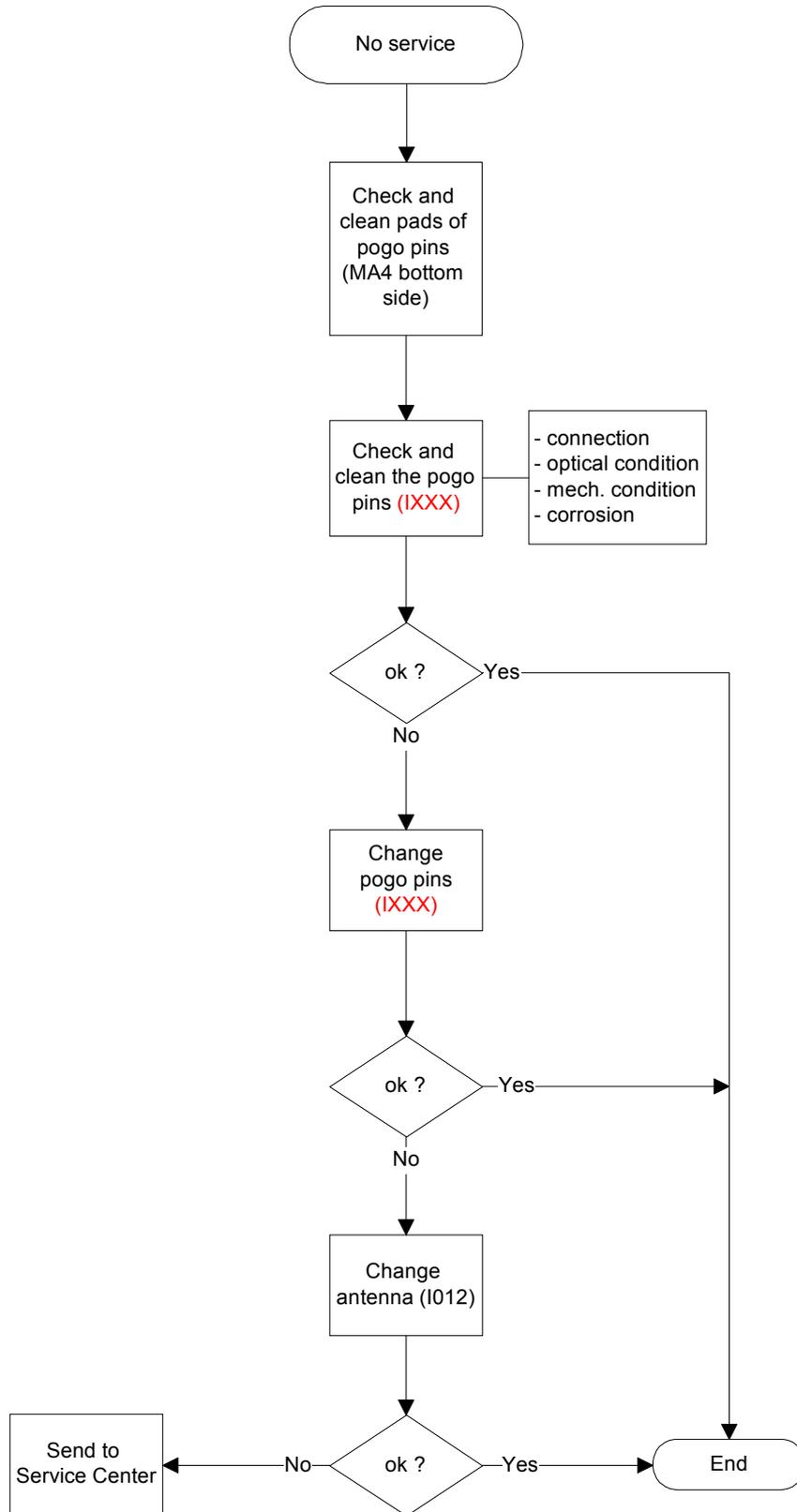


5.11 No power on

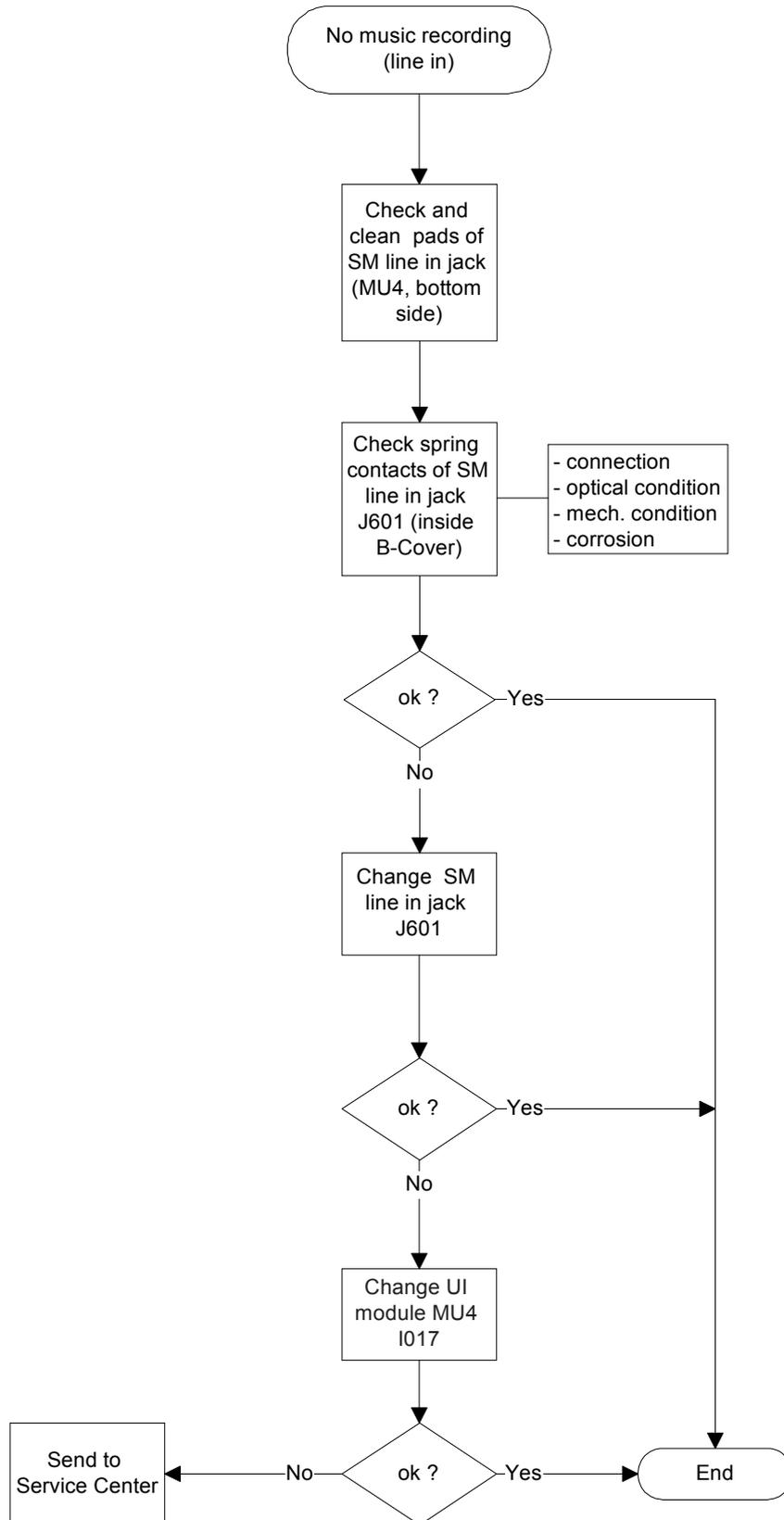




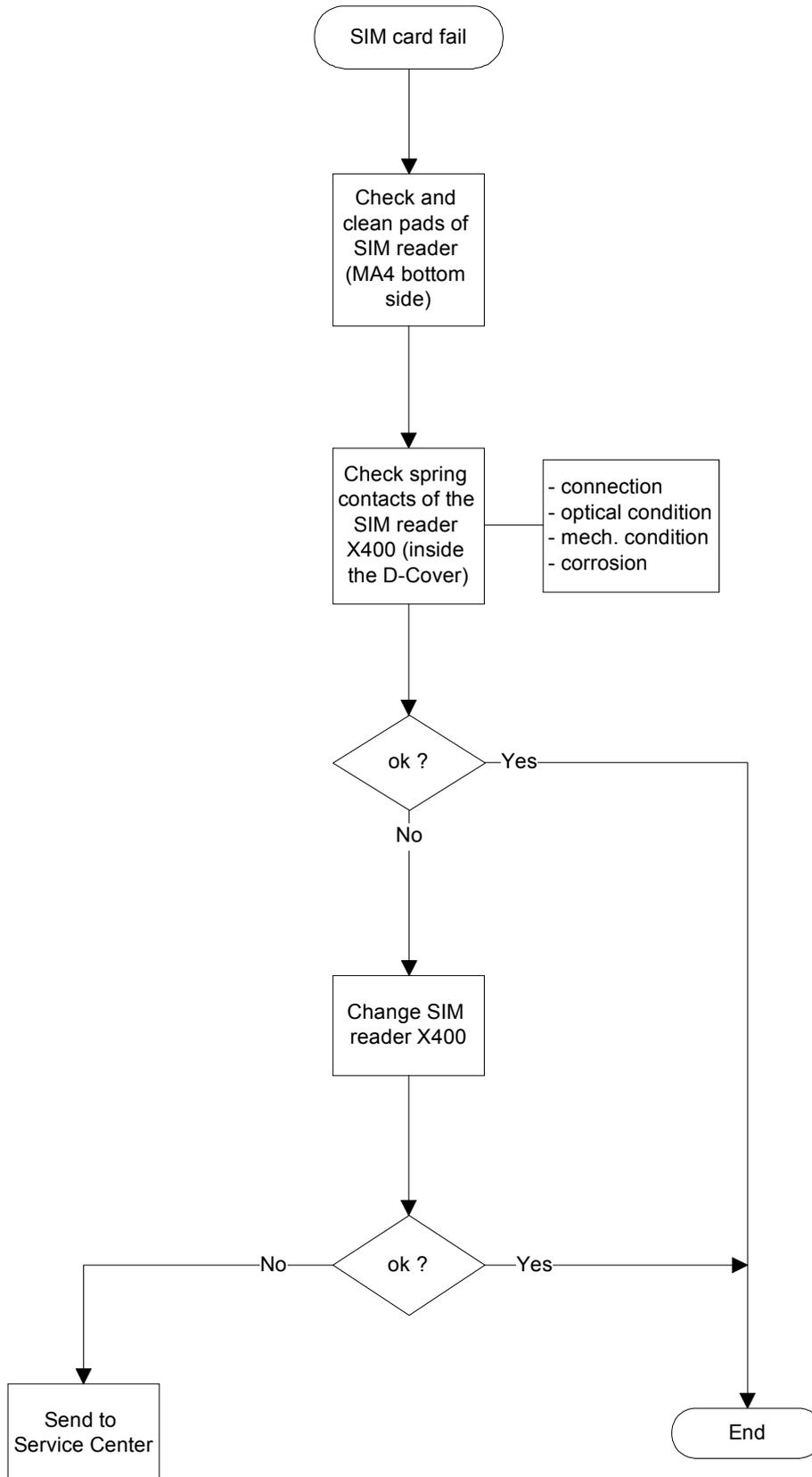
5.12 No service



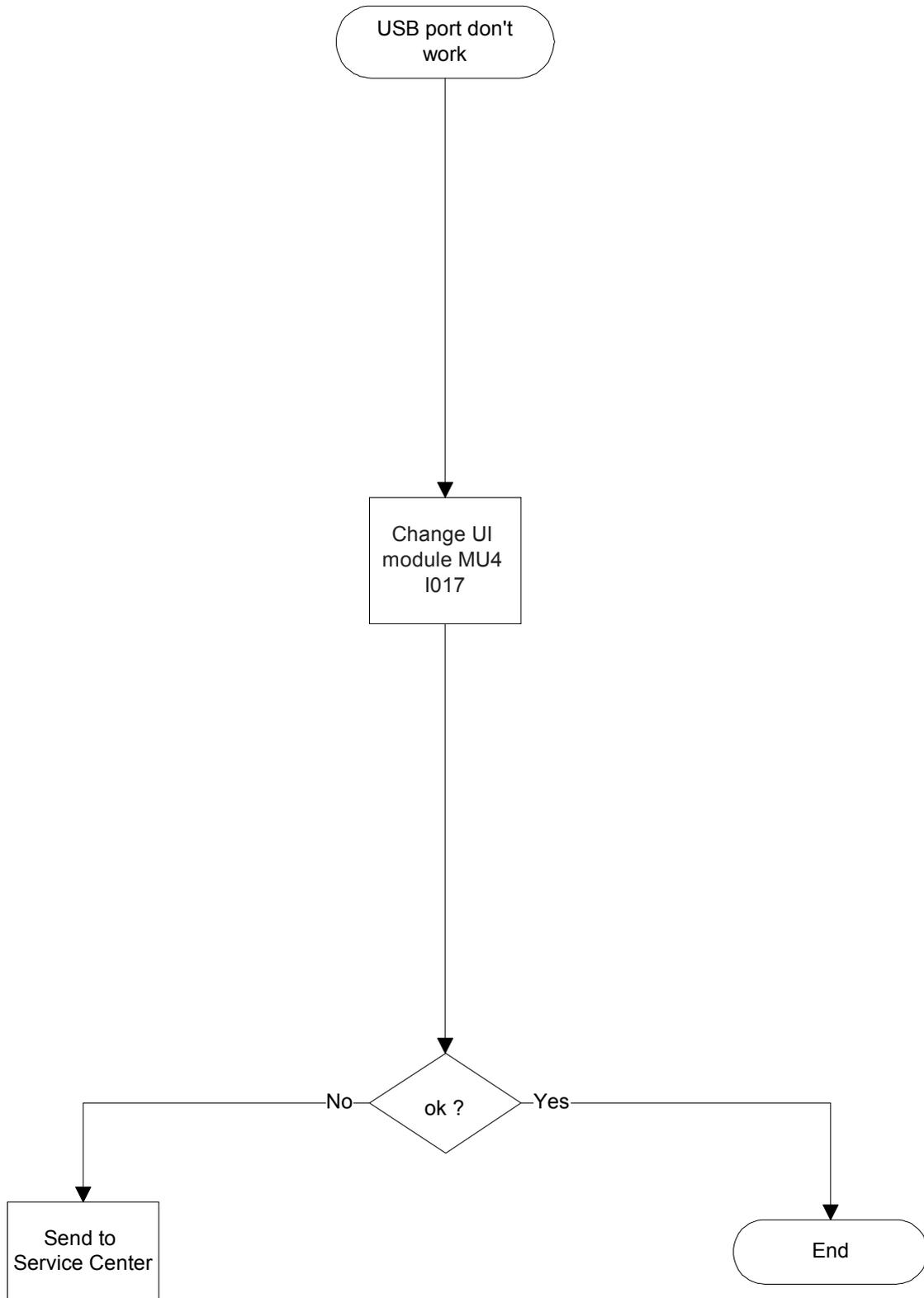
5.13 No music recording



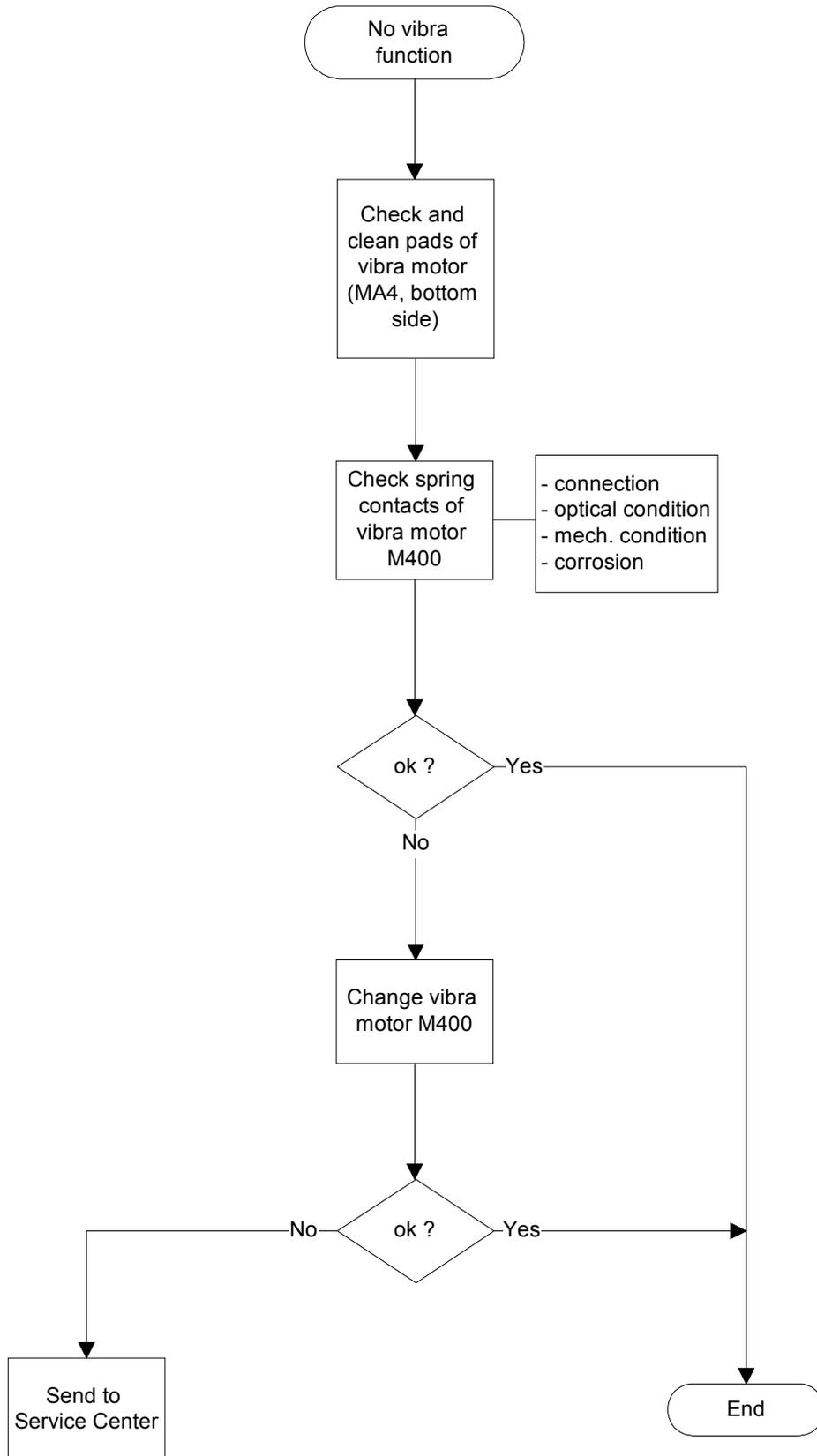
5.14 SIM card fail



5.15 USB port doesn't work



5.16 No Vibra function



6. 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 Pages document
ESD protection requirements for NMP Service Level 1/2 Service Suppliers

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

7. 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 Pages 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"/> 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 <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

8. 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 Pages/PWS.



9. 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 Pages/PWS.

