

SERVICE MANUAL
Level 1&2

NOKIA
X3

RM-540



Transceiver characteristics

Band:

GSM Quadband 850/900/1800/1900 Mhz

Display:

2.2" Active TFT, 262K colors, 240x320 pixel resolution

Camera:

3.2 MPix CMOS, 4x zoom, Extended depth of field (EDOF)

Operating System:

S40 6th Edition

Connections:

USB 2.0 (micro USB), Bluetooth 2.1 + EDR + A2DP + AVRCP, 3.5mm stereo headphone plug

Transceiver with BL-4CT battery pack

Talk time	Standby
GSM: Up to 7.5 hours	GSM: Up to 380 hours

Note:

Talk times are dependant on network parameters and phone settings

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1. CHANGE HISTORY

Status	Version No.	Date	Comments
Approved	1.0	9.10.2009	First approved version

The purpose of this document is to help Nokia service levels 1 and 2 workshop technicians to carry out service to Nokia products. This Service Manual is to be used only by authorized Nokia service suppliers, and the content of it is confidential. Please note that Nokia provides also other guidance documents (e.g. Service Bulletins) for service suppliers, 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:

Nokia Care Academy
<mailto:Service.Manuals@Nokia.com>

Please keep in mind also that this documentation is continuously being updated and modified, so watch always out for the newest version.

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The availability of particular products may vary by region.

IMPORTANT

This document is intended for use by qualified service personnel only.

3. 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:

3.1 Warnings

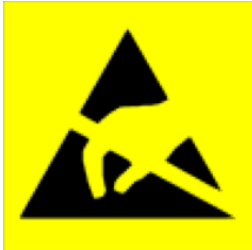
1. CARE MUST BE TAKEN ON INSTALLATION IN VEHICLES FITTED WITH ELECTRONIC ENGINE MANAGEMENT SYSTEMS AND ANTI-SKID BRAKING SYSTEMS. UNDER CERTAIN FAULT CONDITIONS, EMITTED RF ENERGY CAN AFFECT THEIR OPERATION. IF NECESSARY, CONSULT THE VEHICLE DEALER/MANUFACTURER TO DETERMINE THE IMMUNITY OF VEHICLE ELECTRONIC 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.

3.2 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. Use only approved components as specified in the parts list.
4. Ensure all components, modules screws and insulators are correctly re-fitted after servicing and alignment.
5. Ensure all cables and wires are repositioned correctly

4. ESD PROTECTION

Nokia requires that service points have sufficient ESD protection (against static electricity) when servicing the phone.



Any product of which the covers are removed must be handled with ESD protection. The SIM card can be replaced without ESD protection if the product is otherwise ready for use.

To replace the covers ESD protection must be applied.

All electronic parts of the product are susceptible to ESD. Resistors, too, can be damaged by static electricity discharge.

All ESD sensitive parts must be packed in metallized protective bags during shipping and handling outside any ESD Protected Area (EPA).

Every repair action involving opening the product or handling the product components must be done under ESD protection.

ESD protected spare part packages **MUST NOT** be opened/closed out of an ESD Protected Area.

For more information and local requirements about ESD protection and ESD Protected Area, contact your local Nokia After Market Services representative.

5. CARE AND MAINTENANCE

This product is of superior design and craftsmanship and should be treated with care. The suggestions below will help you to fulfil any warranty obligations and to enjoy this product for many years.

- Keep the phone and all its parts and accessories out of the reach of small children.
- Keep the phone dry. Precipitation, humidity and all types of liquids or moisture can contain minerals that will corrode electronic circuits.
- Do not use or store the phone in dusty, dirty areas. Its moving parts can be damaged.
- Do not store the phone in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store the phone in cold areas. When it warms up (to its normal temperature), moisture can form inside, which may damage electronic circuit boards.
- Do not drop, knock or shake the phone. Rough handling can break internal circuit boards.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the phone.
- Do not paint the phone. Paint can clog the moving parts and prevent proper operation.
- Use only the supplied or an approved replacement antenna. Unauthorised antennas, modifications or attachments could damage the phone and may violate regulations governing radio devices.

All of the above suggestions apply equally to the product, battery, charger or any accessory.

6. BATTERY INFORMATION

Note: A new battery's full performance is achieved only after two or three complete charge and discharge cycles! The battery can be charged and discharged hundreds of times but it will eventually wear out.

When the operating time (talk-time and standby time) is noticeably shorter than normal, it is time to buy a new battery. Use only batteries approved by the phone manufacturer and recharge the battery only with the chargers approved by the manufacturer.

Unplug the charger when not in use. Do not leave the battery connected to a charger for longer than a week, since overcharging may shorten its lifetime.

If left unused a fully charged battery will discharge itself over time. Temperature extremes can affect the ability of your battery to charge.

For good operation times with Ni-Cd/NiMH batteries, discharge the battery from time to time by leaving the product switched on until it turns itself off (or by using the battery discharge facility of any approved accessory available for the product).

Do not attempt to discharge the battery by any other means. Use the battery only for its intended purpose.

Never use any charger or battery which is damaged.

Do not short-circuit the battery. Accidental short-circuiting can occur when a metallic object (coin, clip or pen) causes direct connection of the + and - terminals of the battery (metal strips on the battery) for example when you carry a spare battery in your pocket or purse. Shortcircuiting the terminals may damage the battery or the connecting object.

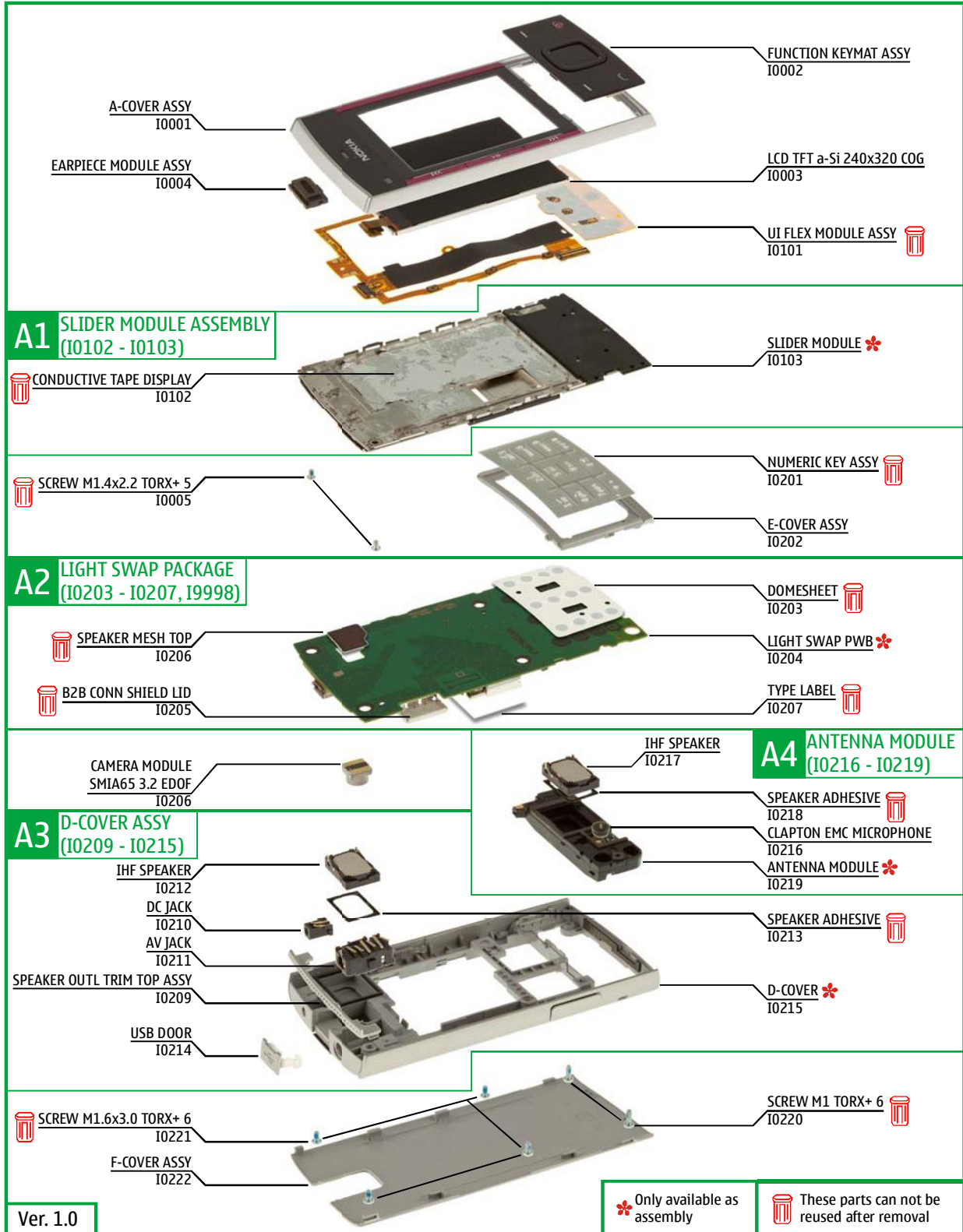
Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. Always try to keep the battery between 15°C and 25°C (59°F and 77°F).

A phone with a hot or cold battery may temporarily not work, even when the battery is fully charged. Batteries' performance is particularly limited in temperatures well below freezing.

Do not dispose of batteries in a fire! Dispose of batteries according to local regulations (e.g. recycling).

Do not dispose as household waste.

7. EXPLODED VIEW



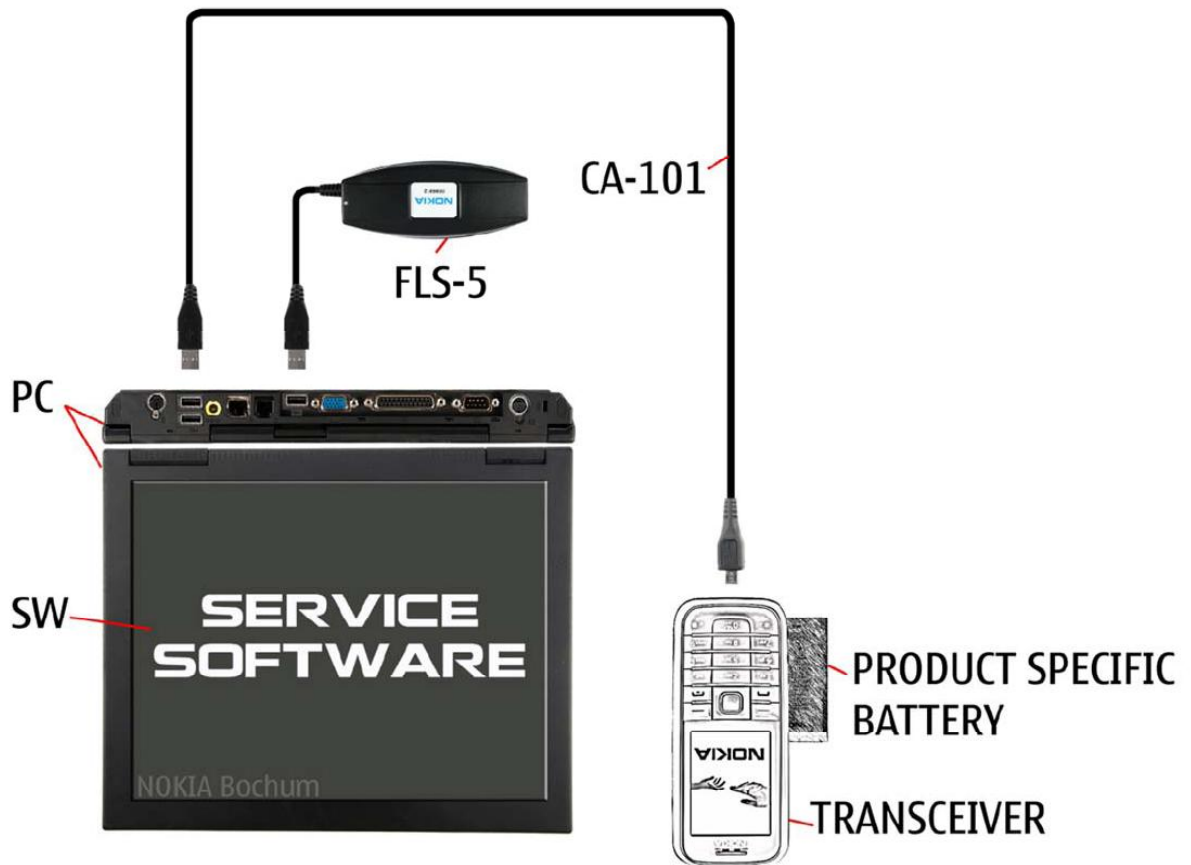
8. SERVICE DEVICES

 <p>FLS-5</p> <p>FLS-5 Flash Device</p>	 <p>CA-101 100cm</p> <p>CA-101 Service Cable</p>	 <p>SS-88 Camera Removal tool</p>
 <p>AC-8 Travel Charger</p>	 <p>BL-4CT NOKIA</p> <p>BL-4CT Battery</p>	 <p>NOKIA Standard Toolkit V2</p> <p>NMP standard toolkit (v2) For more information, refer to the Service Bulletin (SB-011) on Nokia Online. Supplier or manufacturer contacts for tool re-order can be found in "Recommended service equipment" document on Nokia Online.</p>

9. SOFTWARE UPDATE

Flash concept – Point of Sale (POS)

To use the FLS-5 Flash Dongle, follow the user guide inside the sales package.
Please check always for the latest version of flash software available on Nokia Online (NOL).



10. DISASSEMBLY INSTRUCTIONS



1) Nokia X3 disassembly.



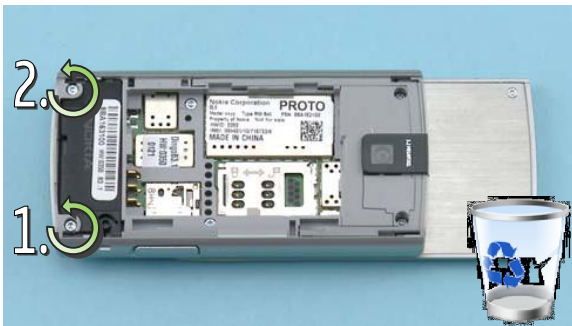
2) For disassembling you need the Nokia Standard Tool kit version 2 plus the camera removal tool SS-88. You will also need a DC and an AV plug.



3) Slide the phone open and release the battery cover.



4) Remove the battery cover. If there is a battery inserted, remove it also.



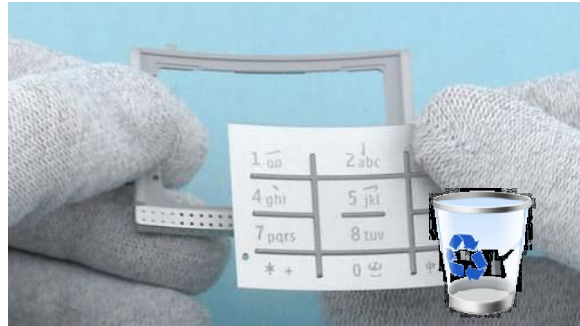
4) Unscrew the two TORX+ size 6 screws in the order shown. Do not use them again. Discard them.



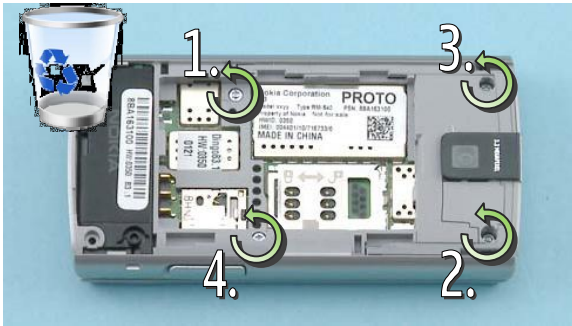
6) Use the SRT-6 to release the NUMERIC KEYMAT ASSY and the E-COVER ASSY.



7) Remove the NUMERIC KEYMAT ASSY and the E-COVER ASSY as shown.



8) Then separate the NUMERIC KEYMAT ASSY from the E-COVER ASSY. The NUMERIC KEYMAT ASSY must always be renewed.



9) Unscrew the four TORX+ size 6 screws in the order shown. Do not use them again. Discard them.



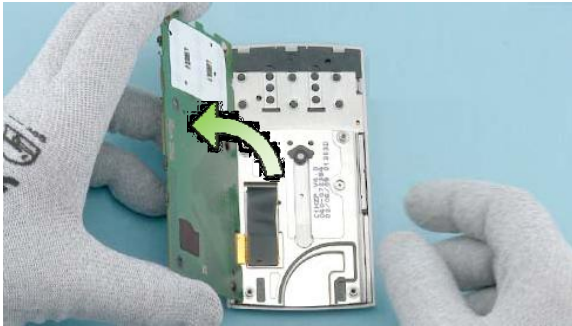
10) Before removing the D-COVER ASSY, open the USB DOOR.



11) Release the D-COVER ASSY as shown.



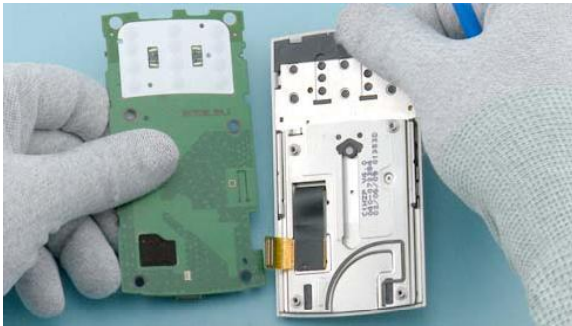
12) Use the SS-93 to carefully lift up the board to board connector SHIELD LID. The board to board connector SHIELD LID has to be always renewed.



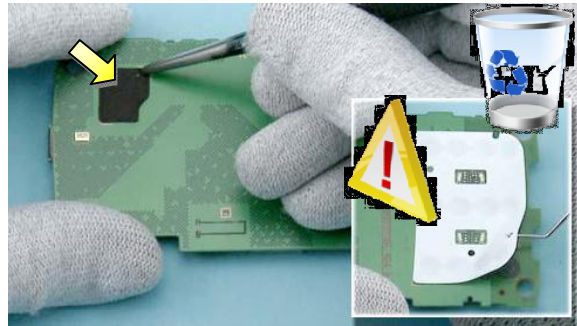
13) Turn over the engine board.



14) Disconnect the UI FLEX connector with the SS-93. Be careful not to damage the connector or any nearby components.



15) The engine board and the SLIDE MODULE can be now separated.



16) Use the tweezers to peel off the SPEAKER MESH. Detach the corner of the DOMESHEET with the dental tool and then peel off the DOMESHEET. Be aware of the sharp point of the dental tool - be careful not to injure yourself. Do not use the SPEAKER MESH and DOMESHEET again.



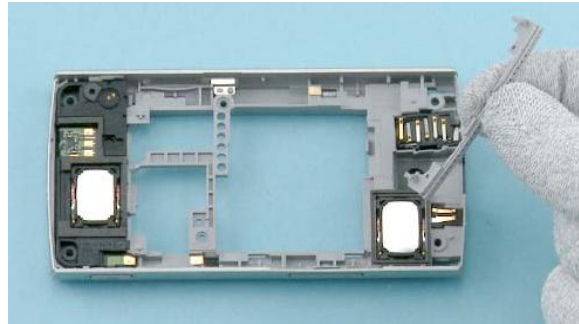
17) Use the camera removal tool SS-88 to detach the CAMERA.



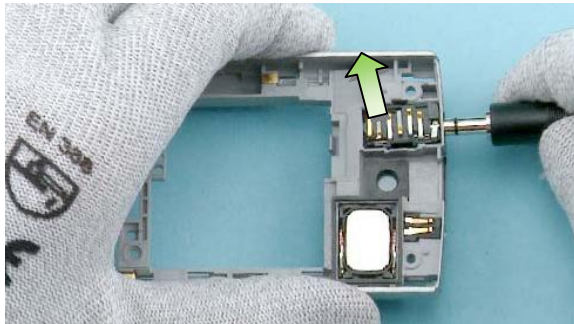
18) Pull out the USB DOOR.



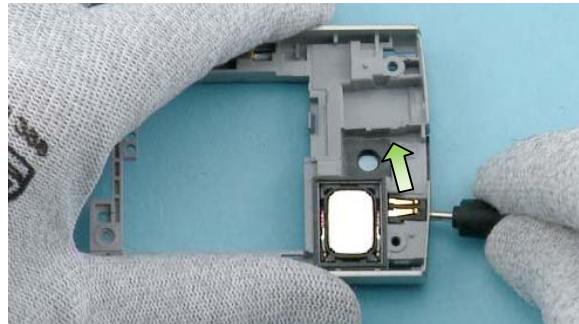
19) Use the tweezers to carefully release the clip holding the SPEAKER OUTL TRIM TOP ASSY.



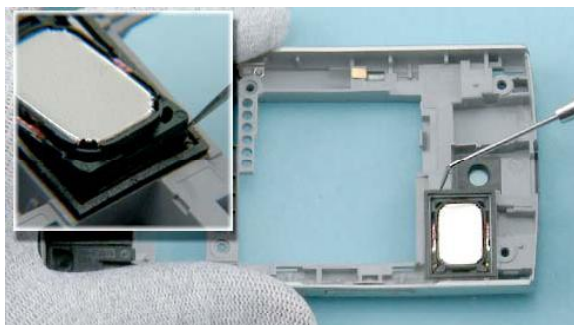
20) Detach the SPEAKER OUTL TRIM TOP ASSY.



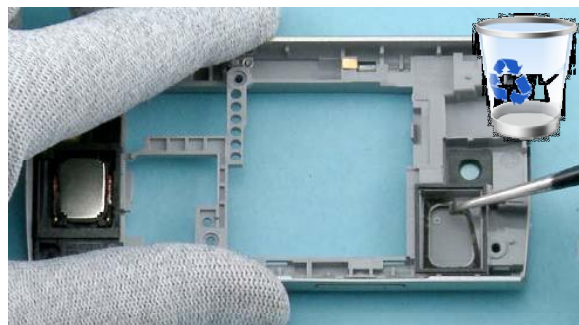
21) Lift up the AV jack with an AV plug and remove the AV jack with the tweezers.



22) Release the DC jack with a DC plug. Use the tweezers to remove the DC jack.



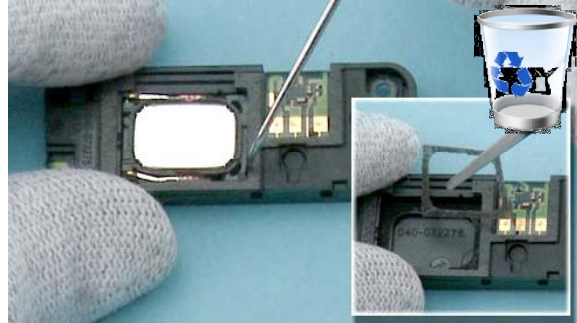
23) Lift up the IHF SPEAKER with the dental tool and remove the speaker with the tweezers.



24) Remove the SPEAKER ADHESIVE with the tweezers. Do not use the adhesive again. Discard it.



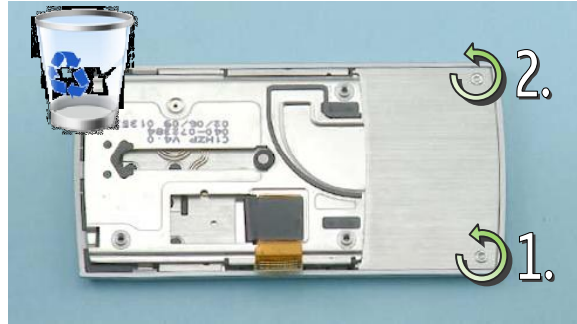
25) Use the SS-93 to release the ANTENNA MODULE. Press the ANTENNA MODULE lightly through the D-COVER.



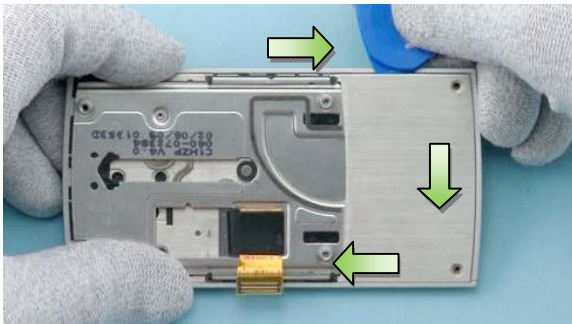
26) Lift up the IHF SPEAKER with the dental tool and remove the speaker with the tweezers. Remove the SPEAKER ADHESIVE with the tweezers. Do not use the adhesive again. Discard it.



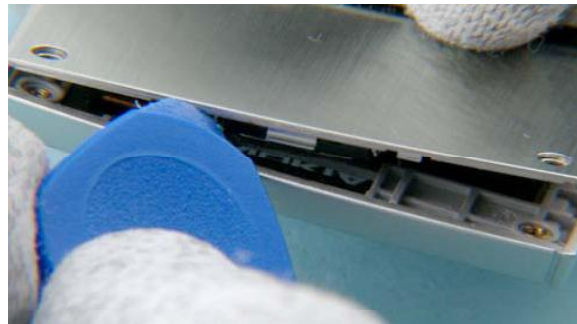
27) Use the dental tool to carefully lift up the MICROPHONE.



28) Make sure the slide is positioned as shown in the picture. Unscrew the two TORX+ size 5 screws in the order shown. Do not use them again. Discard them.



29) Insert the SRT-6 between the A-COVER ASSY, and the SLIDE MODULE ASSEMBLY. Slide the SRT-6 along the edges to release the clips holding the A-COVER ASSY.



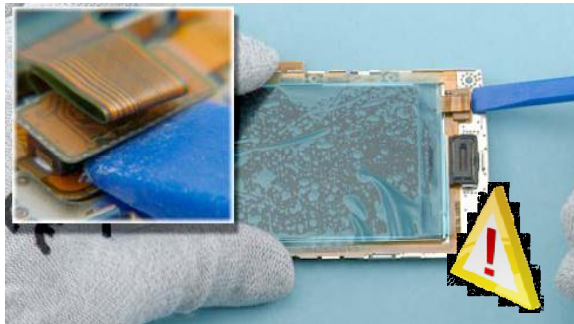
30) Make sure all the clips are released.



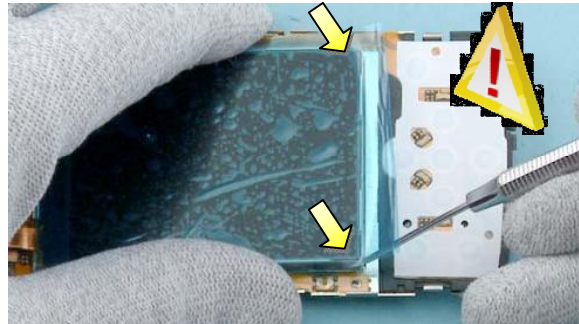
31) Remove the SLIDE MODULE ASSEMBLY in the direction shown.



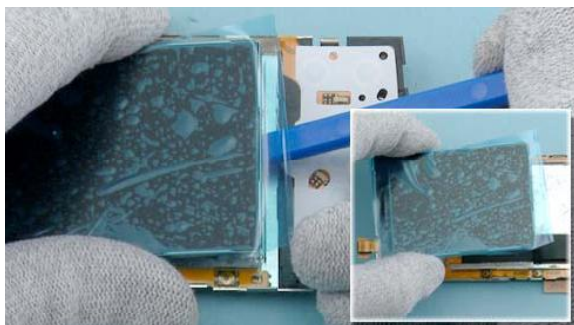
32) Protect the LCD with protective film.



33) Use the SS-93 to open the LCD CONNECTOR. While opening the connector be careful not to damage it.



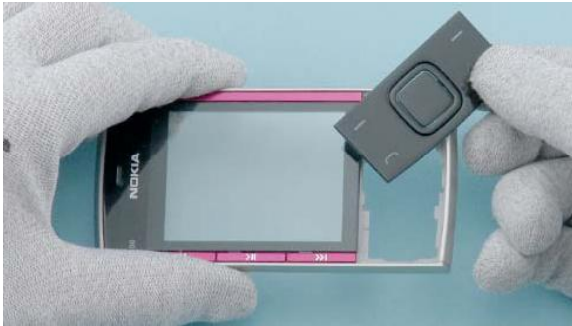
34) Use the dental tool to slightly lift up the LCD. Be very careful not to break the LCD!



35) Use the SS-93 to loosen the adhesive underneath the LCD. Then lift up the LCD.



36) Use the sharp end of the SS-93 to release the EARPIECE. Remove the EARPIECE with the tweezers.



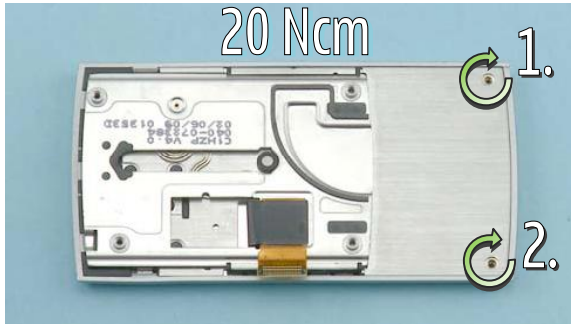
37) Separate the FUNCTION KEYMAT ASSY from the A-COVER ASSY.



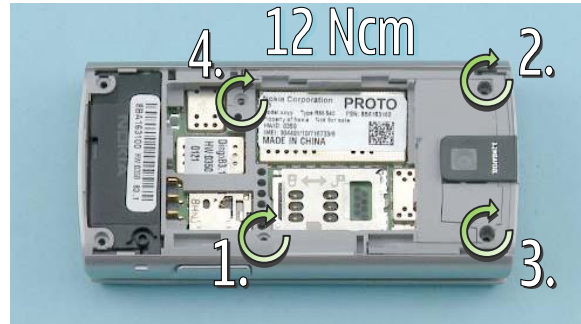
38) Nokia X6 disassembly is now complete.

- END OF DISASSEMBLY-

11. ASSEMBLY HINTS



1) Tighten the two TORX+ size 5 screws to the torque of 20 Ncm in the order shown.

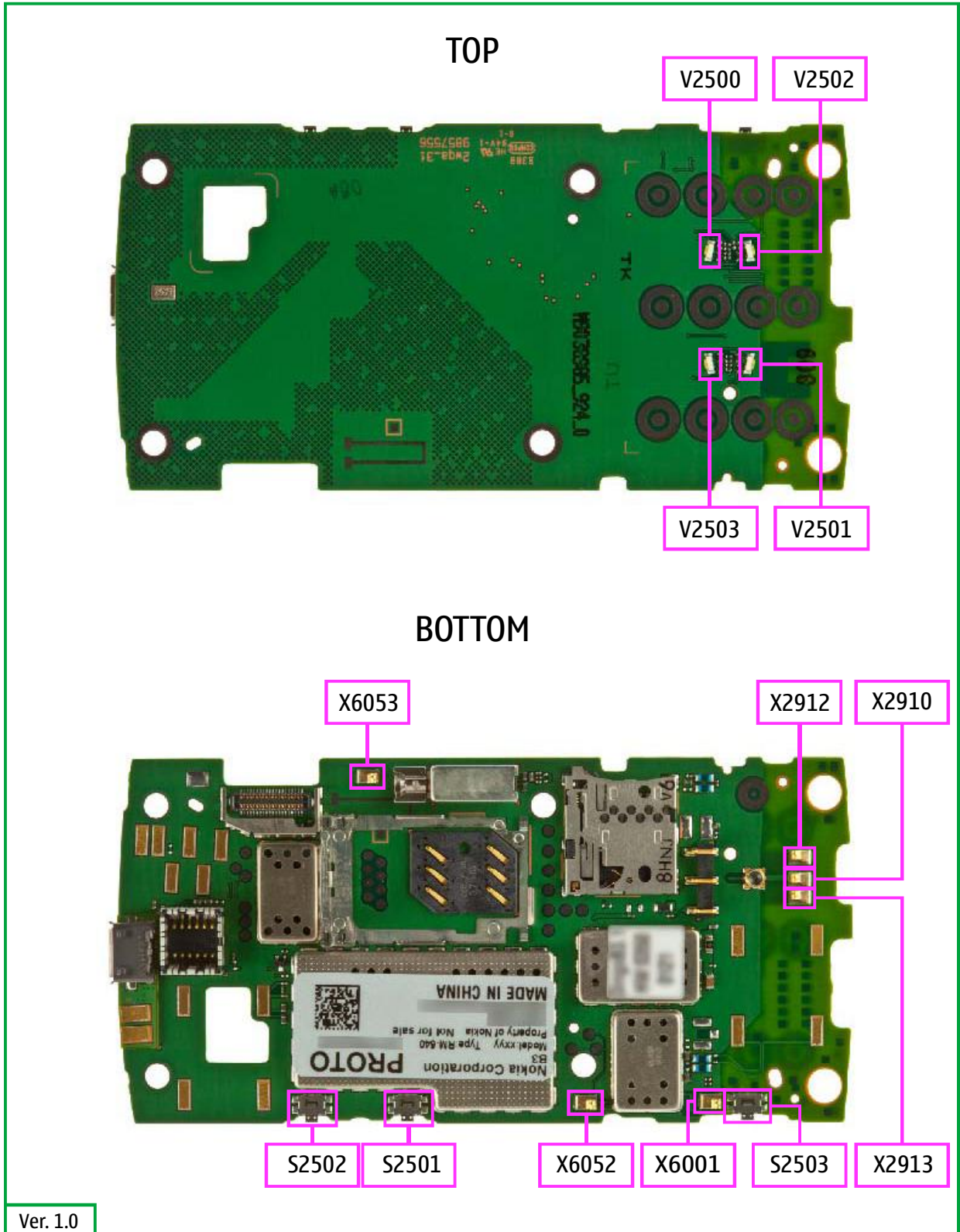


2) Tighten the four TORX+ size 6 screws to the torque of 12 Ncm in the order shown.



3) Tighten the two TORX+ size 6 screws to the torque of 18 Ncm in the order shown.

12. SOLDER COMPONENTS



Service Schematics



Introduction

RM-540



IMPORTANT:

This document is intended for use by authorized NOKIA service centers only.

“Service Schematics” was created with focus on customer care. The purpose of this document is to provide further technical repair information for NOKIA mobile phones on Level 3/4 service activities. It contains additional information such as e.g. “Component finder”.

Saving process time and improving the repair quality is the aim of this document. It is to be used additionally to the service manual and other training or service information such as Service Bulletins.

While every endeavour has been made to ensure the accuracy of this document, some errors may exist. If the reader finds any errors, NOKIA shall be notified in writing.

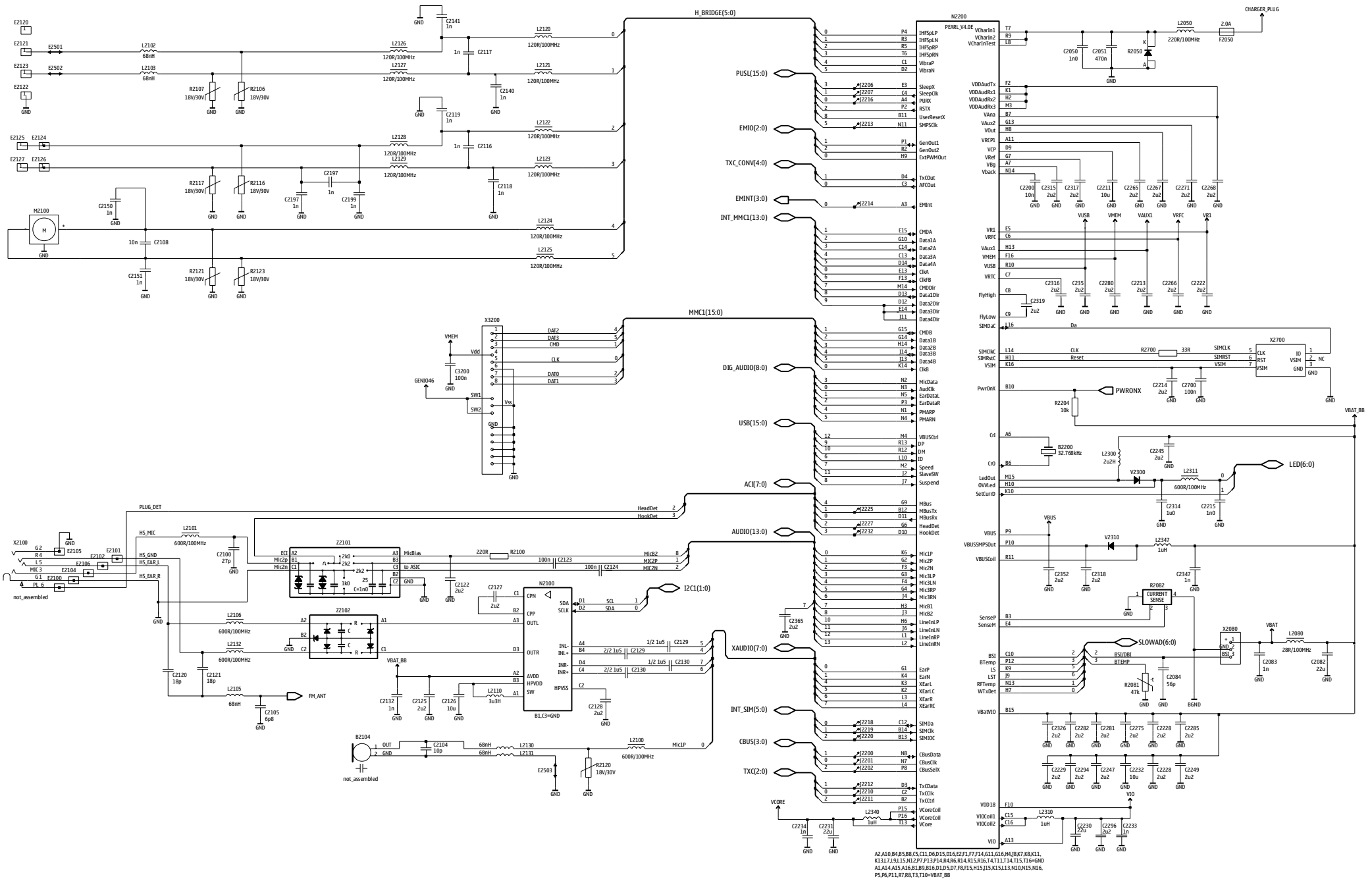
Please send E-Mail to: TrainingAndVendor.Development@nokia.com

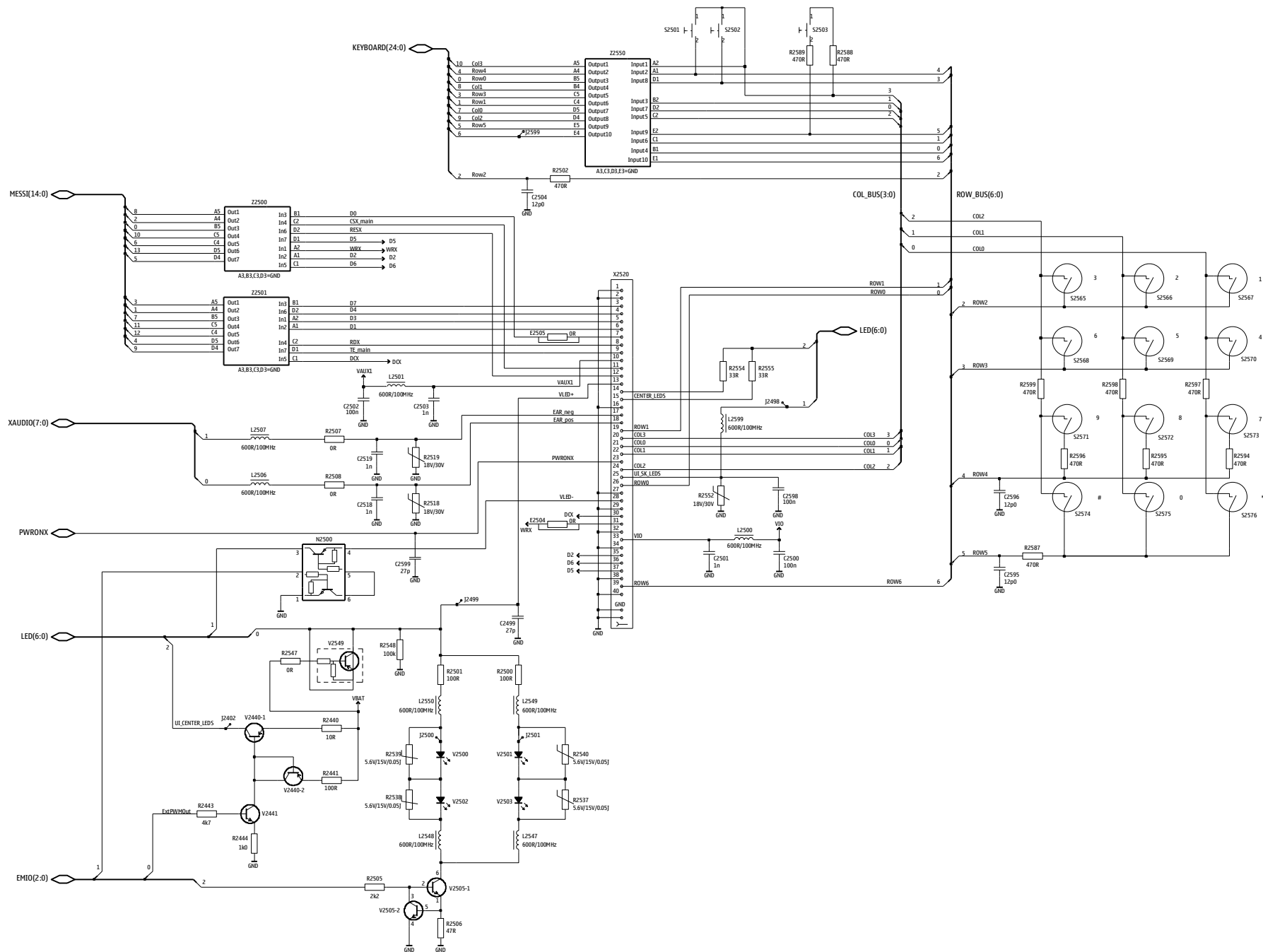
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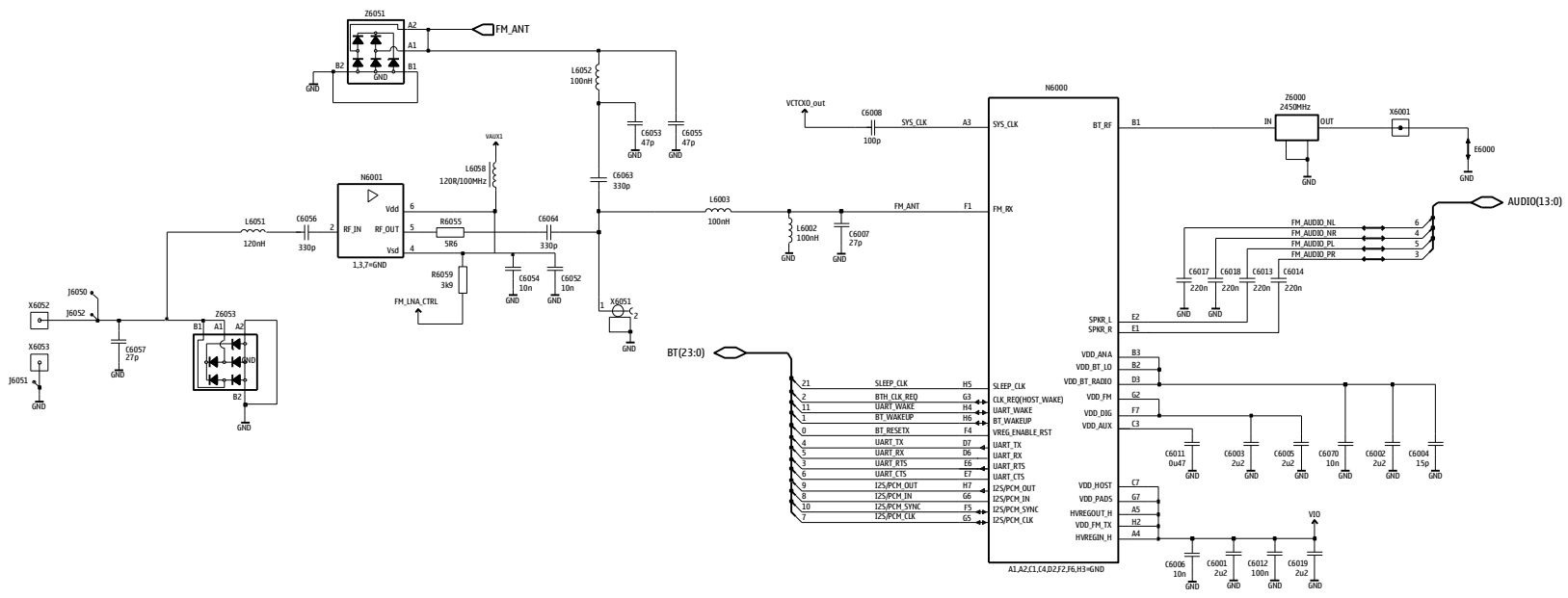
Front page	1
RAPS, HS USB, Sensors, User Interface	2
GAZOO, Audio, MMC, SIM, Battery	3
Keyboard I/F, Keyboard Backlighting	4
BTHFM	5
RF part	6
Component Finder	7

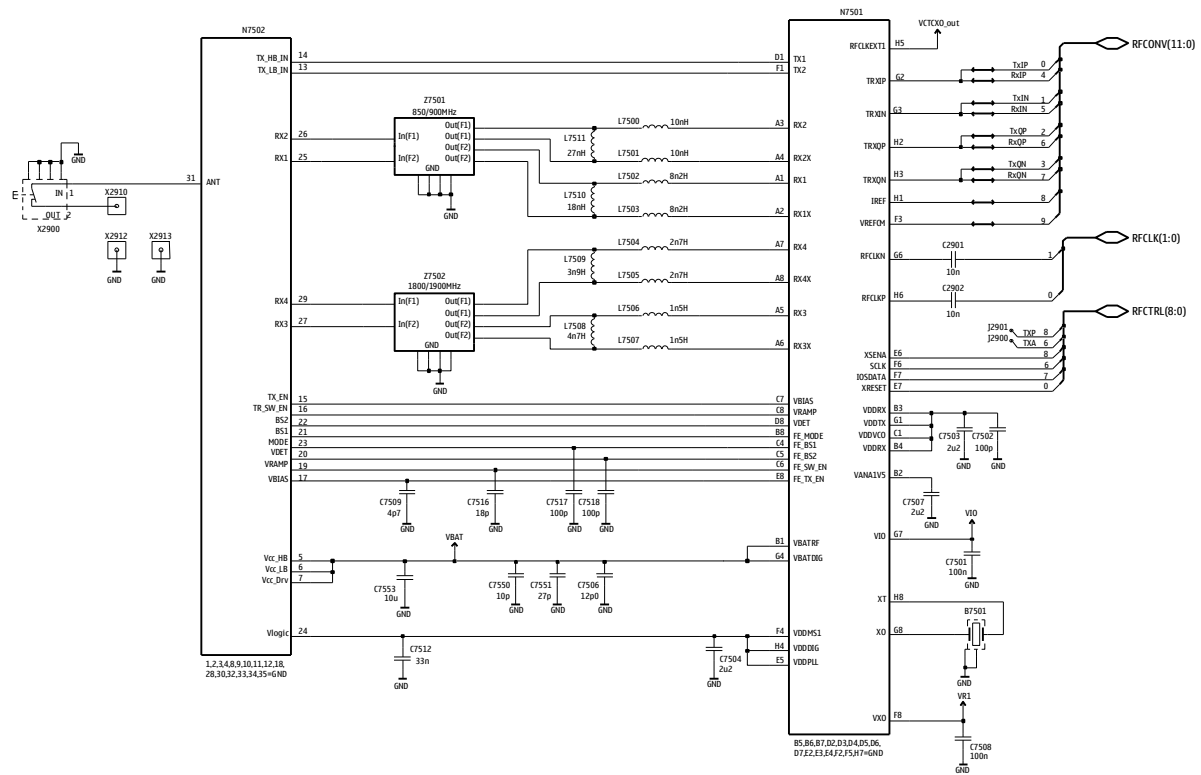
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A	C247	M3	C2821	I3	E2102	R8	L7507	G5	R2596	E4	
A2700	L7	C2249	N5	C2823	K2	E2104	R7	L7508	G5	R2597	BB
A7500	G5	C2265	M3	C2824	K2	E2105	S8	L7509	G5	R2598	E7
A7501	L4	C2266	M3	C2828	I3	E2106	S8	L7510	G5	R2599	E5
A7502	P9	C2267	L4	C2829	I3	E2120	G6	L7511	G5	R2700	M5
A7503	P7	C2268	M3	C2890	J2	E2121	F4	L7550	E6	R2803	I4
A7504	G3	C2271	N3	C2891	I2	E2122	F6	M	R2804	I4	
B	C2275	N5	C2901	I5	E2123	G4	M2100	K10	R2890	L4	
B2104	D10	C2280	N3	C2902	I5	E2124	R2	N	R2881	L4	
B2200	M3	C2281	N5	C3200	I10	E2125	P4	N2002	O7	R2882	L4
B7501	H5	C2282	N4	C3201	H7	E2126	P2	N2100	N5	R2883	L3
C	C2285	N3	C6001	G3	E2127	R4	N2200	M4	R2884	L4	
C2001	O7	C2294	L3	C6002	G3	F	N2460	K2	R2885	L4	
C2002	P6	C2296	N3	C6003	G3	F2001	P7	N2500	O8	R2886	L4
C2003	P7	C2314	N4	C6004	G3	F2050	O2	N6000	G3	R2887	L3
C2004	P7	C2315	N3	C6005	G4	L	N6001	G2	R2888	L4	
C2050	O3	C2316	M3	C6006	G4	L2001	P7	N7501	H5	R2890	J2
C2051	O3	C2317	M3	C6007	F4	L2050	O2	N7502	F5	R2891	I2
C2081	F9	C2318	O4	C6008	G3	L2080	I2	R	R6054	F3	
C2082	I2	C2319	N3	C6009	G3	L2100	F10	R2022	O6	R6055	F2
C2083	E9	C2326	N3	C6010	F3	L2101	P7	R2023	P6	R6059	F2
C2084	F7	C2347	O5	C6011	G3	L2102	E3	R2024	P7	S	
C2086	E9	C2352	M5	C6012	G4	L2103	F3	R2025	P6	S2501	M2
C2100	P7	C2353	M5	C6013	F4	L2105	P7	R2050	O3	S2502	O2
C2101	F10	C2365	L4	C6014	F3	L2106	N5	R2081	O7	S2503	D2
C2102	F3	C2460	K2	C6017	F4	L2110	N5	R2082	F7	V	
C2103	E3	C2480	O6	C6018	F4	L2120	K5	R2100	L4	V2300	N4
C2104	E10	C2481	R7	C6019	G3	L2121	K5	R2103	S8	V2310	N4
C2105	P7	C2482	S7	C6052	G2	L2122	L5	R2106	F3	V2440	J2
C2108	I10	C2485	R7	C6053	F2	L2123	L5	R2107	F2	V2441	J2
C2116	L5	C2499	P8	C6054	G2	L2124	O5	R2116	P4	V2500	E5
C2117	K5	C2500	O4	C6055	F2	L2125	O5	R2117	P4	V2501	D7
C2118	L5	C2501	O4	C6056	G2	L2126	J5	R2120	F10	V2502	D5
C2119	L5	C2502	O4	C6057	H2	L2127	J5	R2121	J10	V2503	E7
C2120	P7	C2503	O4	C6063	F2	L2128	L5	R2123	J10	V2505	O3
C2121	P7	C2504	K2	C6064	F2	L2129	L5	R2204	N8	V2549	P5
C2122	L4	C2505	L2	C6070	G4	L2130	F10	R2401	O5	X	
C2123	N5	C2506	L2	C7501	H5	L2131	F10	R2440	J2	X2003	I5
C2124	N5	C2507	K2	C7502	H6	L2132	N5	R2441	J2	X2080	E7
C2125	N5	C2508	K2	C7503	H6	L2300	O4	R2443	J2	X2100	S8
C2126	M5	C2509	K2	C7504	H6	L2310	O3	R2444	J2	X2401	R6
C2127	N5	C2510	K2	C7505	H5	L2311	P4	R2460	K2	X2520	P9
C2128	M5	C2518	P8	C7506	H6	L2340	O5	R2501	P8	X2700	K8
C2129	M5	C2519	P7	C7507	H6	L2347	O4	R2502	K2	X2900	D7
C2130	M5	C2595	F4	C7508	H5	L2400	O7	R2505	O3	X2910	C7
C2132	N5	C2596	F4	C7509	H5	L2500	O4	R2506	O4	X2912	O3
C2140	K5	C2598	P7	C7512	G6	L2501	O4	R2507	P8	X2913	C7
C2141	K5	C2599	O7	C7513	G6	L2506	P8	R2508	P8	X3200	G9
C2150	I10	C2700	L6	C7514	G6	L2507	P8	R2518	O9	X6001	E2
C2151	I10	C2800	K5	C7515	G6	L2547	E7	R2519	P9	X6051	E4
C2197	P5	C2801	L4	C7516	G6	L2548	E5	R2537	E7	X6052	H2
C2198	P5	C2804	L3	C7517	G6	L2549	D7	R2538	E5	X6053	N10
C2199	P5	C2805	I5	C7518	G6	L2550	F4	R2539	E5	Z	
C2200	N5	C2806	J2	C7519	G6	L2599	P8	R2540	D7	Z2101	N5
C2211	N3	C2807	J2	C7520	H5	L3200	I10	R2547	P6	Z2102	N5
C2213	N3	C2808	J5	C7550	E6	L6002	F4	R2548	P9	Z2500	O8
C2214	N4	C2809	J2	C7551	G7	L6003	F4	R2549	P5	Z2501	P8
C2215	P3	C2810	K5	C7552	G7	L6051	G2	R2550	P8	Z2550	K2
C2222	L4	C2811	L4	C7553	F5	L6052	F2	R2552	O9	Z6000	F3
C2226	L3	C2812	L3	C7554	F5	L6058	G2	R2553	P9	Z6051	Q2
C2229	N4	C2813	J2	D	L7500	G5	R2554	P9	Z6053	Q2	
C2230	N3	C2814	J2	D2800	K4	L7501	G5	R2555	P9	Z7501	G5
C2231	O5	C2816	L4	D3000	K4	L7502	G6	R2587	F4	Z7502	G5
C2232	L5	C2817	K5	E	L7503	G5	R2588	E2			
C2233	O4	C2818	J2	E1000	S6	L7504	G5	R2589	E2		
C2234	O5	C2819	L4	E2100	S8	L7505	G5	R2594	E7		
C2245	N4	C2820	L3	E2101	Q8	L7506	G5	R2595	E7		

