

SERVICE MANUAL
Level 1&2
NOKIA
5220
XPRESSMUSIC



Transceiver characteristics

Band:

RM-410: EGSM 900/1800/1900

RM-411: EGSM 850/1800/1900

Display:

QVGA display supporting up to 256 k colours

Camera:

2.0 Mpix with 4x digital zoom

Operating System:

Series 40 5th Edition

Connections:

Micro USB, 3,5 mm AV, Bluetooth supporting BT standard 2.0 & stereo audio

Transceiver with battery pack

Talk time	Standby	Note
Up to 4 hours	Up to 428 hours	Depends on network parameters and phone settings

1.	Change history	3
2.	Copyright	4
3.	Warnings and cautions	5
3.1	Warnings	5
3.2	Cautions	5
4.	ESD protection	6
5.	Care and maintenance	7
6.	Battery information	8
7.	Exploded view	9
8.	Service devices	10
8.1	Common service tools	10
9.	SW-update	11
10.	Disassembly instruction	12
11.	Assembly hints	17
12.	Solder components	18

1. CHANGE HISTORY

Status	Version No.	Date	Comments
Draft	0.1	17.6.2008	Initial draft
Approved	1.0	1.7.2008	Approved.
Updated	2.0	12.8.2008	Replaced spare parts overview with exploded view.

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:

CMO Operation & Logistics
Training and Vendor Development
Multimedia Creation & Support
<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.

2. COPYRIGHT

Copyright © 2008 Nokia. All rights reserved.

Reproduction, transfer, distribution or storage of part or all of the contents in this document in any form without the prior written permission of Nokia is prohibited.

Nokia, Nokia Connecting People, and Nokia X and Y are trademarks or registered trademarks of Nokia Corporation. Other product and company names mentioned herein may be trademarks or tradenames of their respective owners.

Nokia operates a policy of continuous development. Nokia reserves the right to make changes and improvements to any of the products described in this document without prior notice.

Under no circumstances shall Nokia be responsible for any loss of data or income or any special, incidental, consequential or indirect damages howsoever caused.

The contents of this document are provided "as is". Except as required by applicable law, no warranties of any kind, either express or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose, are made in relation to the accuracy, reliability or contents of this document. Nokia reserves the right to revise this document or withdraw it at any time without prior notice.

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. Short-circuiting 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.

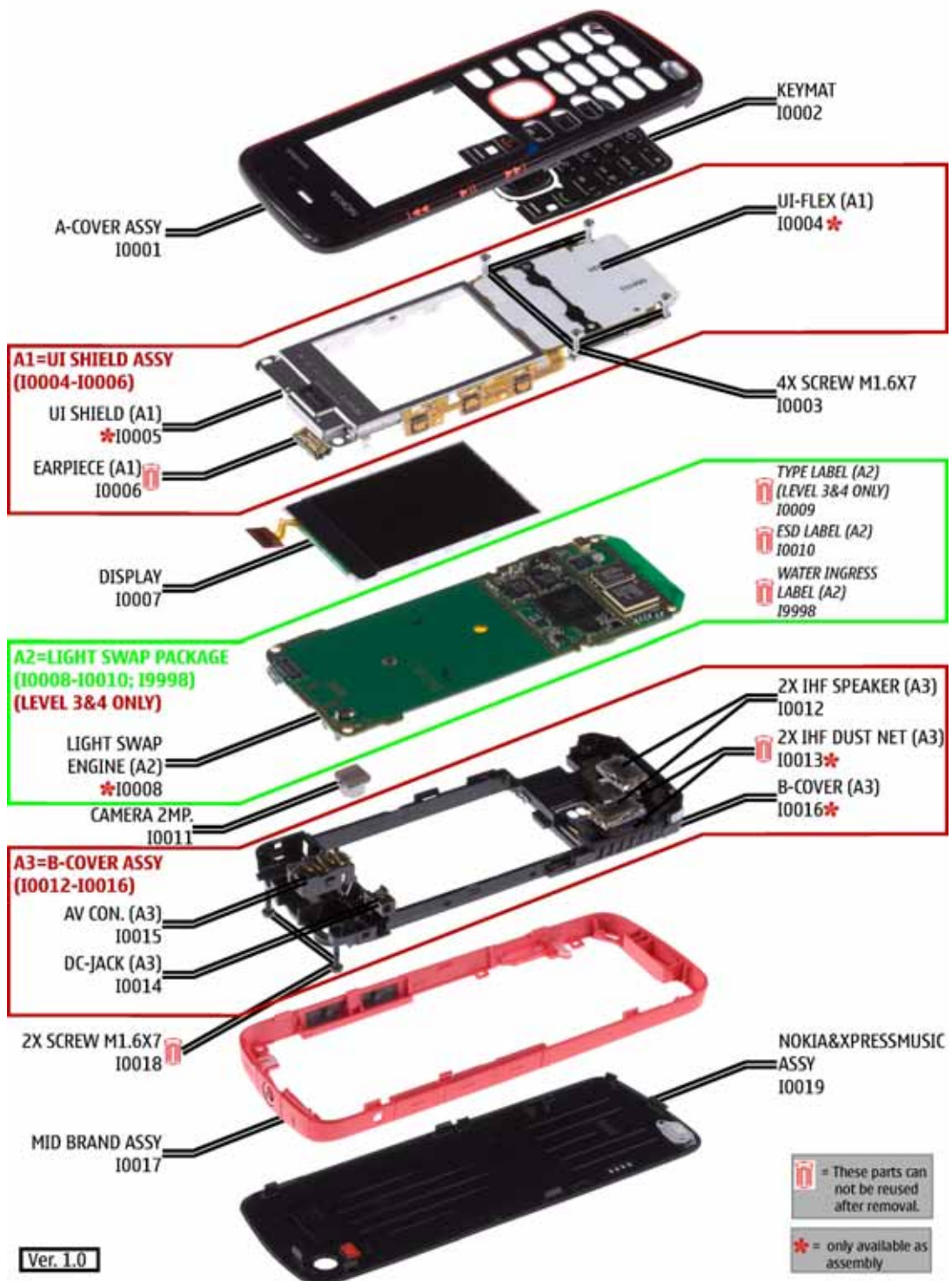
Do not dispose batteries in a fire! Dispose of batteries according to local regulations (e.g. recycling).

Do not dispose as household waste.

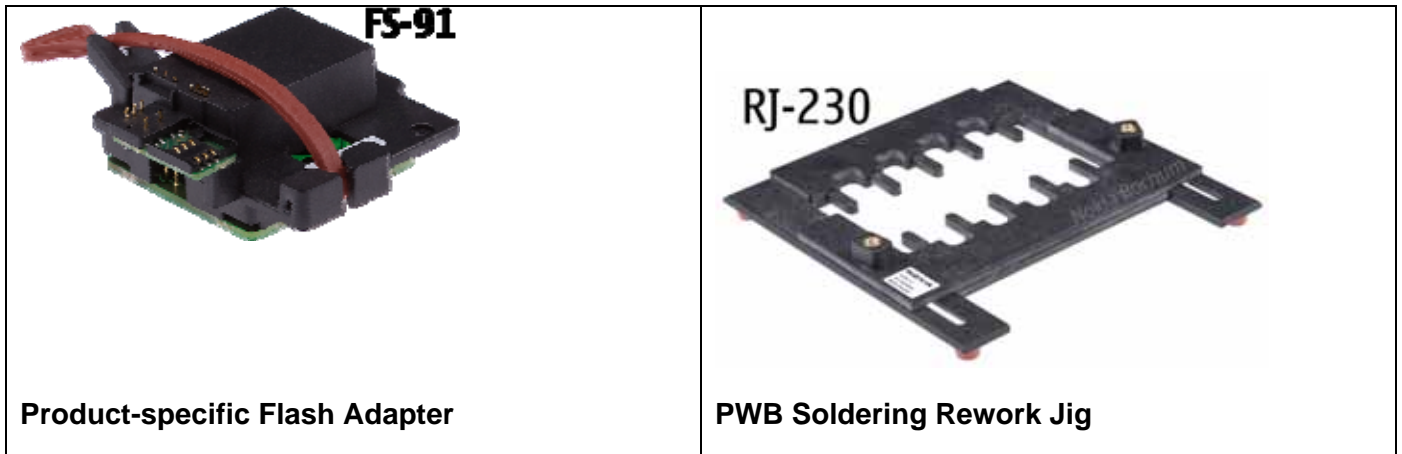
7. EXPLODED VIEW

See corresponding ITEM/CIRCUIT REF in the Spare Parts Service Bulletins on NOL.

5220 Xpress Music RM-410/411 EXPLODED VIEW



8. SERVICE DEVICES



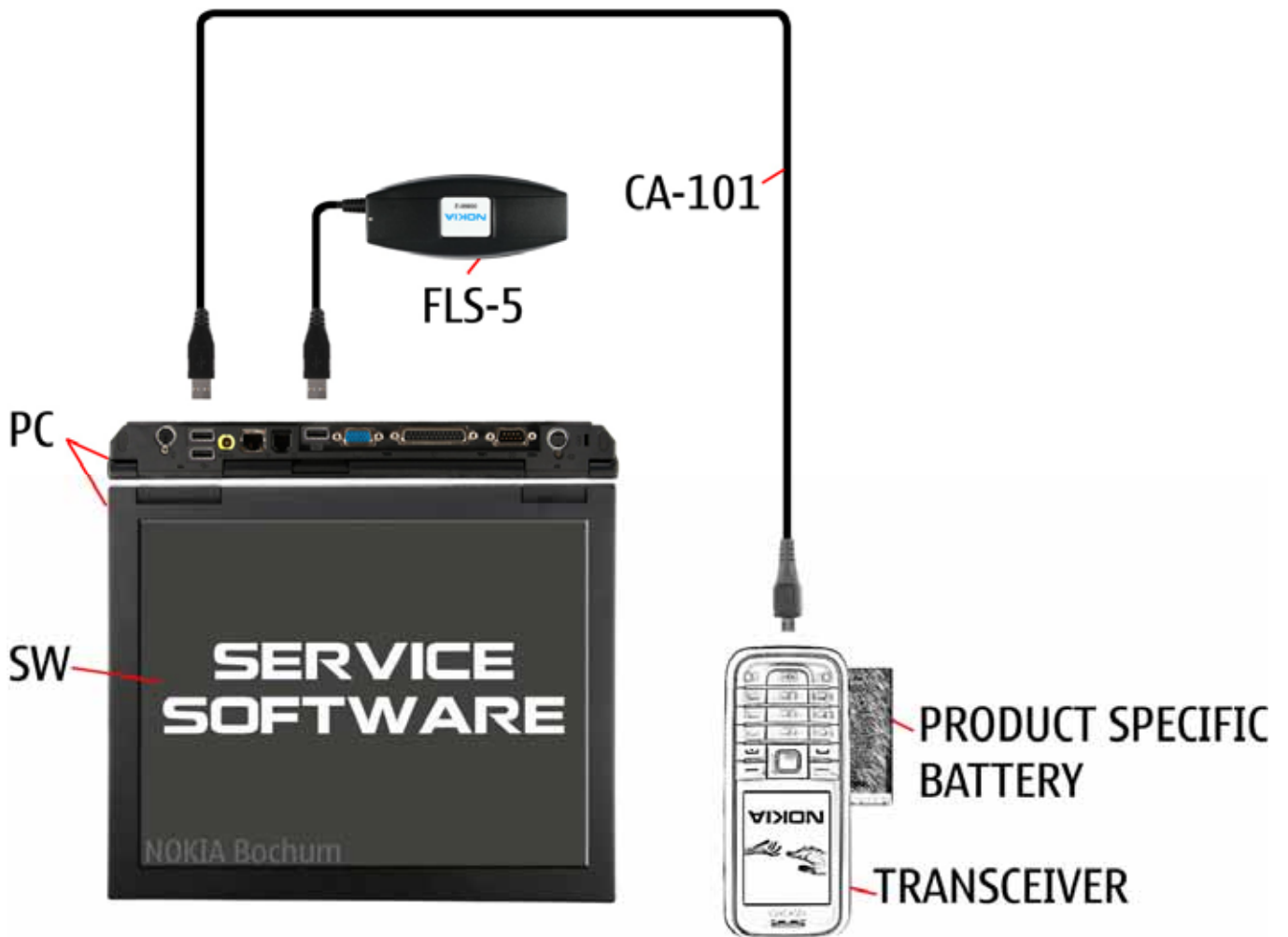
8.1 Common service tools

Code	Tool name
0770831	CU-4 BB5 CONTROL UNIT
0780510	SS-46 BB5 INTERFACE ADAPTER
0730634	CA-101 DATA CONNECTIVITY CABLE EN
0086189	FPS-10 PROMMER SALES PACKAGE
0086812	FLS-5 FLASH DEVICE
0750018	PKD-1 SOFTWARE PROTECTION KEY
0780570	PK-1 SOFTWARE PROTECTION KEY - USB
0730322	CA-31D TYPE A TO TYPE B USB CABLE 2.0M
0730012	PCS-1 POWER SUPPLY CABLE
0730178	XCS-4 DATA SERVICE CABLE
0730231	XRS-6 RF SERVICE CABLE
0730327	CA-35S POWER SERVICE CABLE
0780392	SX-4 SMART CARD
0780727	SS-93 OPENING TOOL - BLUE STICK
0780524	SS-45 CAMERA REMOVAL TOOL

9. SW-UPDATE

Flash concept – (Point of Sales)

To use the FLS-5 Flash Dongle, you have to follow the user guide inside the sales package.
Please check always for the latest version of flash software, which is available on Nokia Online.



10. DISASSEMBLY INSTRUCTION



1) Press the battery release button to remove the C-COVER ASSY.



2) Use T5+ to remove the screws.



2.1) Screw order for C-COVER



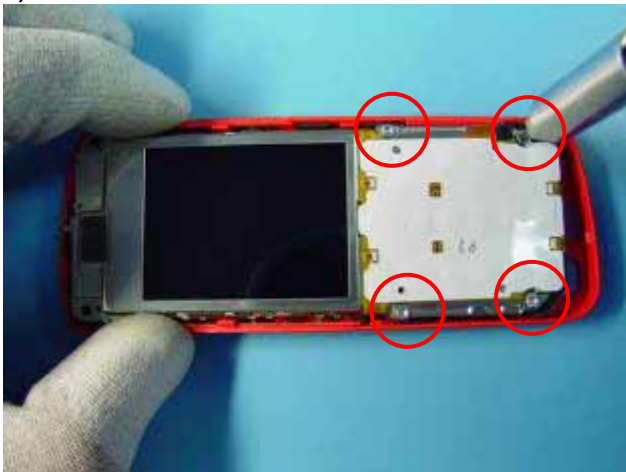
3) Detach the snaps of A-COVER ASSY with SRT-6 by sliding from top to bottom side. Do the same on the opposite side.



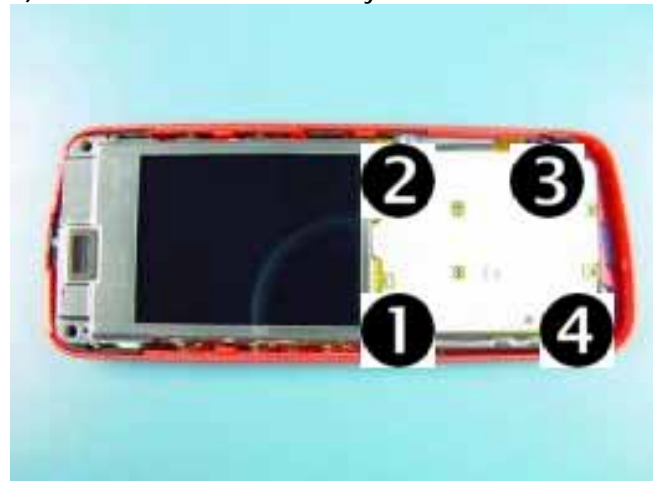
4) Remove the A-COVER ASSY inclusive KEYMAT.



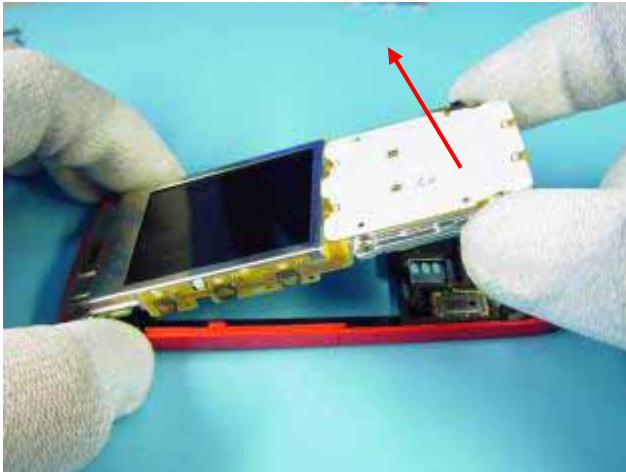
5) KEYMAT can be taken away with tweezers.



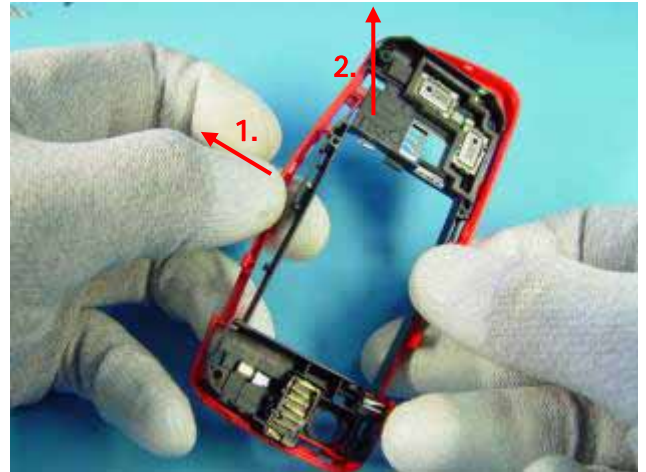
6) Use T6+ to remove the screws.



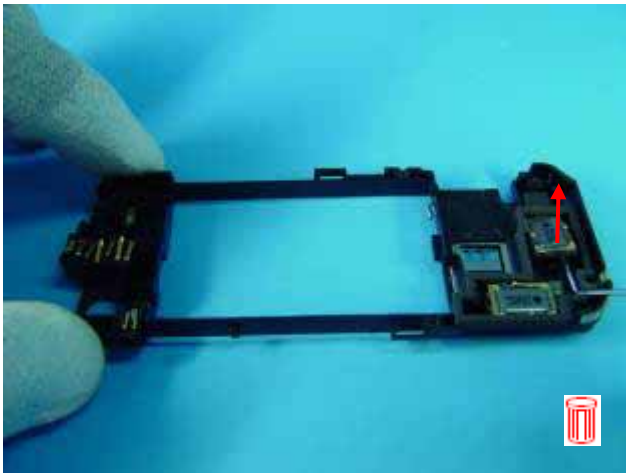
6.1) Screw order



7) Separate the UI SHIELD ASSY inclusive DISPLAY and PWB from the B-COVER SUB ASSY.



8) Release the B-COVER SUB ASSY from the MIDBAND ASSY as shown.



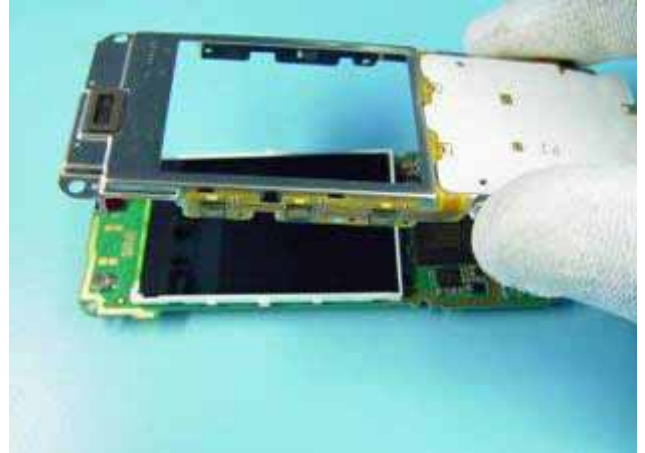
9) Use a dental tool to release the IHF SPEAKERS. IHF SPEAKERS has always to be renewed. DC-Jack and AV CONNECTOR can remove easily.



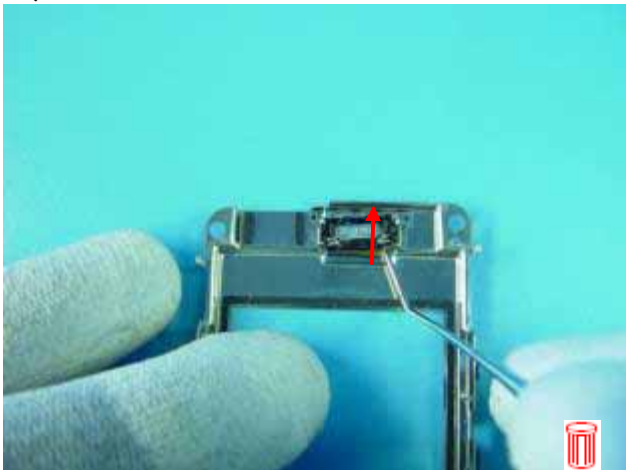
10) Disconnect the UI SHIELD ASSY with SS-93.



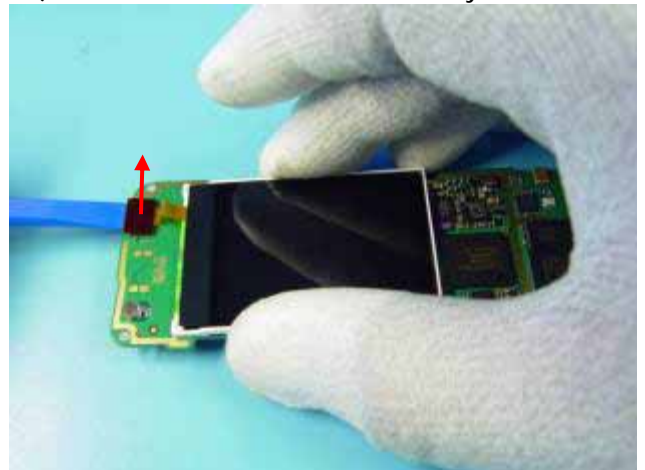
11) Detach the UI SHIELD ASSY from PWB.



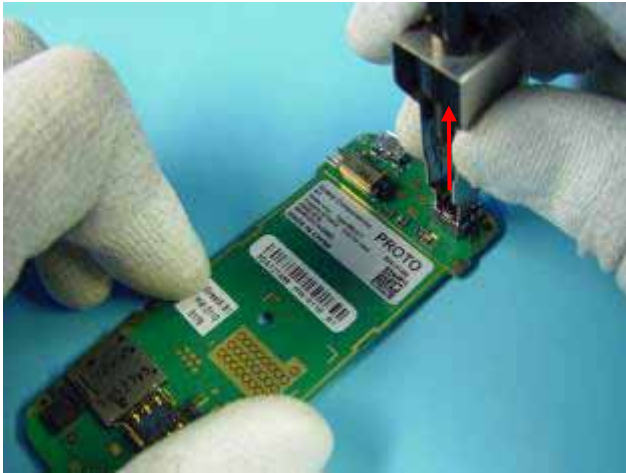
12) UI SHIELD ASSY can be taken away.



13) Lift up the EARPIECE with dental tool.

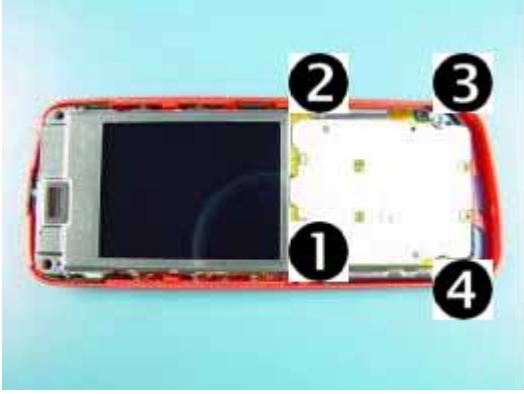



14) Disconnect the DISPLAY and take it away.



15) USE SS-88 to remove the SMIA65 CAMERA.

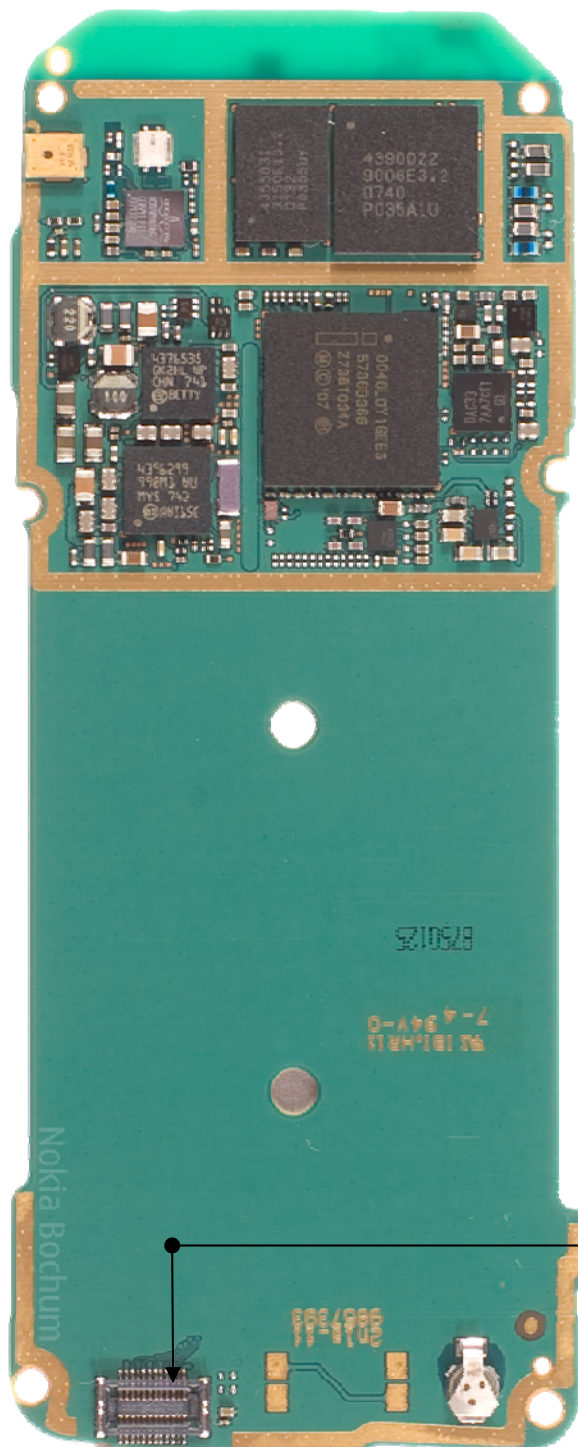
11. ASSEMBLY HINTS

	
<p>1) Tighten the screws to the torque of 21 Ncm in the order shown.</p>	<p>2) Tighten the screws to the torque of 21 Ncm in the order shown.</p>

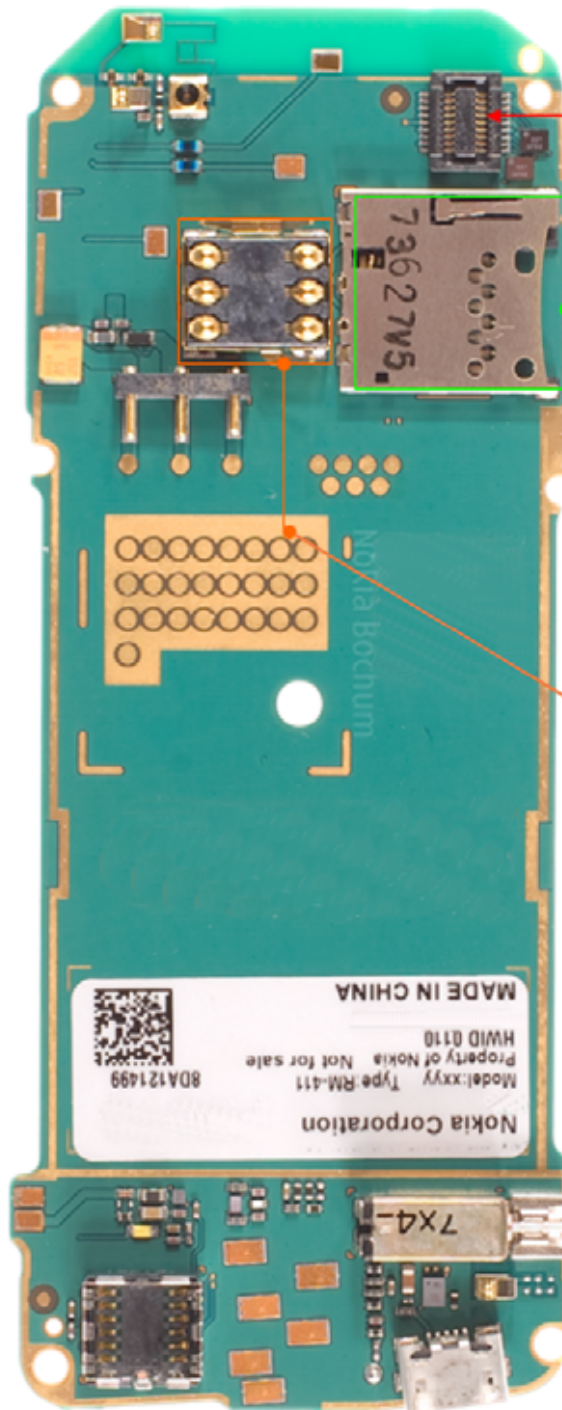
12. SOLDER COMPONENTS

5220 XpressMusic RM-410/RM-411 Components overview

Solder components only for Level 2



X1001 is reworkable. It can be removed with a semi automatic hot air gun and replaced with a solder iron; but of course in combination with a bottom heater device in both processes.



X1002: There is a higher risk of damaging these **ASIP Filter, Z2401 or Z2402** in the case that X1002 will be removed with a semi automatic hot air gun. However **X1002** has to be replaced with a solder iron; but of course in combination with under heater device in both processes.

X3200 these parts marked in **bright green** is **ONLY** with a solder machine reworkable. The solder paste can be dispensed manually.

- 1- Shielding around X2700
- 2- Components under X2700