

**NOKIA
N70**

RM-84



**NOKIA
N72**

RM-180



Transceiver characteristics:

- **Dual Band:** EGSM and WCDMA (N70 only)
 - GSM:** Tri-band phone for EGSM 900/1800/1900MHz
 - WCDMA:** 2100MHz (N70 only)
- **Camera:**
 - 1. **Camera:** 2 Mega pixel (1600x1200pixels), 20x digital zoom
 - 2. **Camera:** VGA (640x480pixels), 2x digital zoom (N70 only)
- **Flash LED**
- **Display:** TFT active matrix color display with 262.144 colors, resolution 176 x 208 pixel
- **Bluetooth**
- **FM radio:** Stereo
- **Vibra Alert:** Standard Vibra motor

Talk time		Standby		Note
EGSM	WCDMA (N70 only)	EGSM	WCDMA (N70 only)	
215 min	210 min	210 h	250 h	Depends on network parameters

- **Connector:** Pop Port Connector
- **MMC Reader**

Transceiver with BL-5C 970mAh Li-Ion battery pack

Environmental characteristics:

- Lead-free soldered

SERVICE MANUAL

Service Level 1&2

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CHANGE HISTORY

Status	Version No.	Date	Comments
Draft	0.1	01.07.2005	Initial draft
Approved	1.0	21.07.2005	Approval
Approved	2.0	19.08.2005	Disassembly instructions modified (picture Nr. 30)
Approved	3.0	24.Apr.2006	Nokia N72 (RM-180) added
Approved	4.0	02.Jan.2007	Exploded view / Spare Parts overview updated
Approved	5.0	07.Mrz.2007	Wrong component name on page 20 corrected (S4401) Chapter Battery Test and GONOGO Test removed
Approved	6.0	07.May.2007	Exploded view and Spare Parts overview updated
Approved	7.0	12.Sept.2007	Exploded view and Spare Parts overview updated

1. INTRODUCTION

The purpose of this document is to help NOKIA service levels 1 and 2 workshop technicians to service NOKIA products. This Service Manual must be used **only** by authorized NOKIA service suppliers. The content of it is **confidential**. Please note that NOKIA provides other guidance documents (e.g. Service Bulletins) for service suppliers. Follow these regularly and comply with the given instructions.

While every effort 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:

<mailto:cc-ts-rc.documentation@nokia.com>

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

Warnings and Cautions

Please refer to the phone's user guide for instructions relating to operation, care, and maintenance, which include 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 CELLULAR 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:

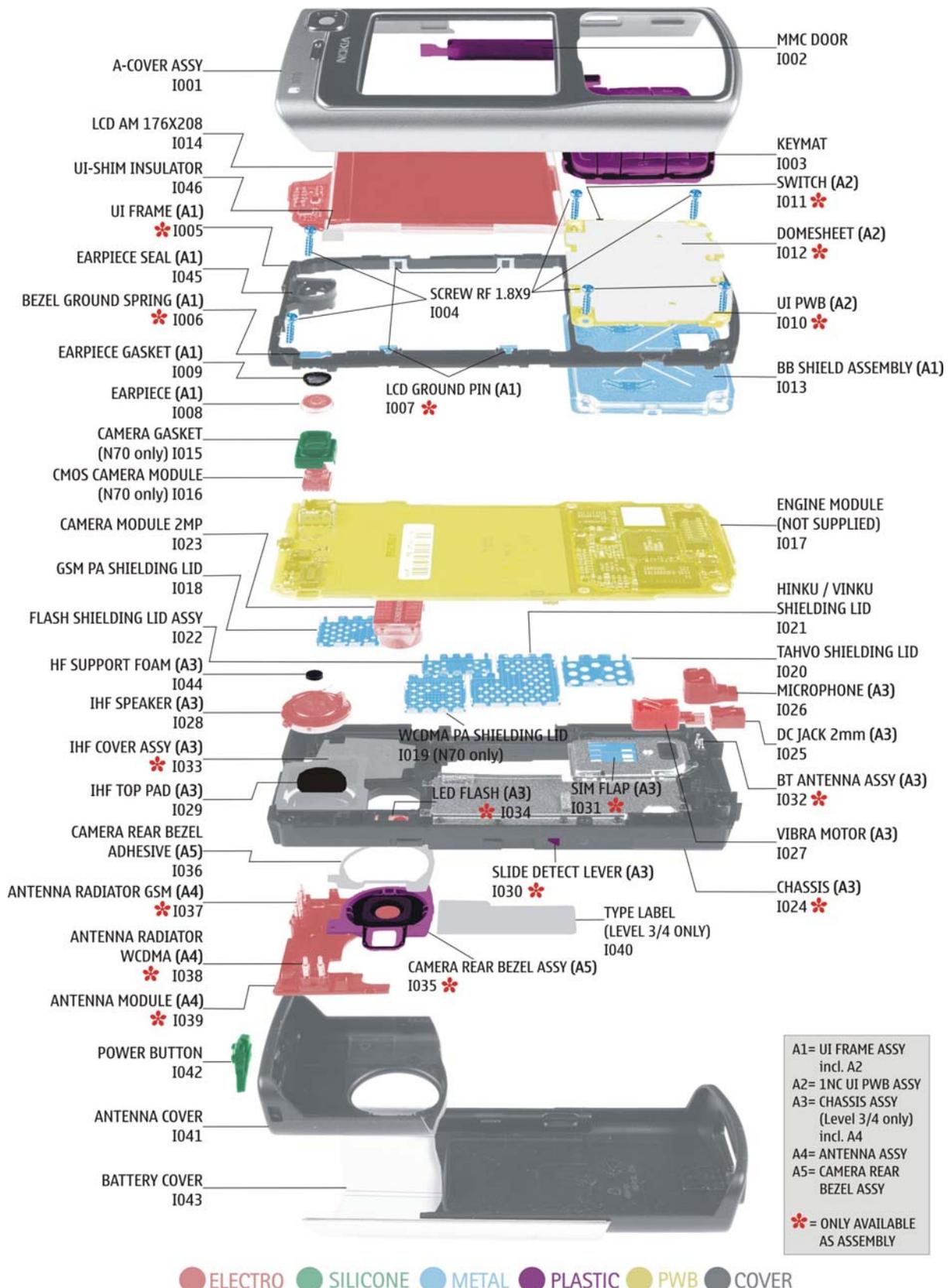
1. Servicing and alignment must be undertaken by qualified personnel only.
2. Ensure all work is carried out at an anti-static workstation and that an anti-static wrist strap is worn.
3. Use only approved components as specified in the parts list.
4. Ensure all components, modules screws and insulators are correctly re-fitted after servicing and alignment.
5. Ensure all cables and wires are repositioned correctly.



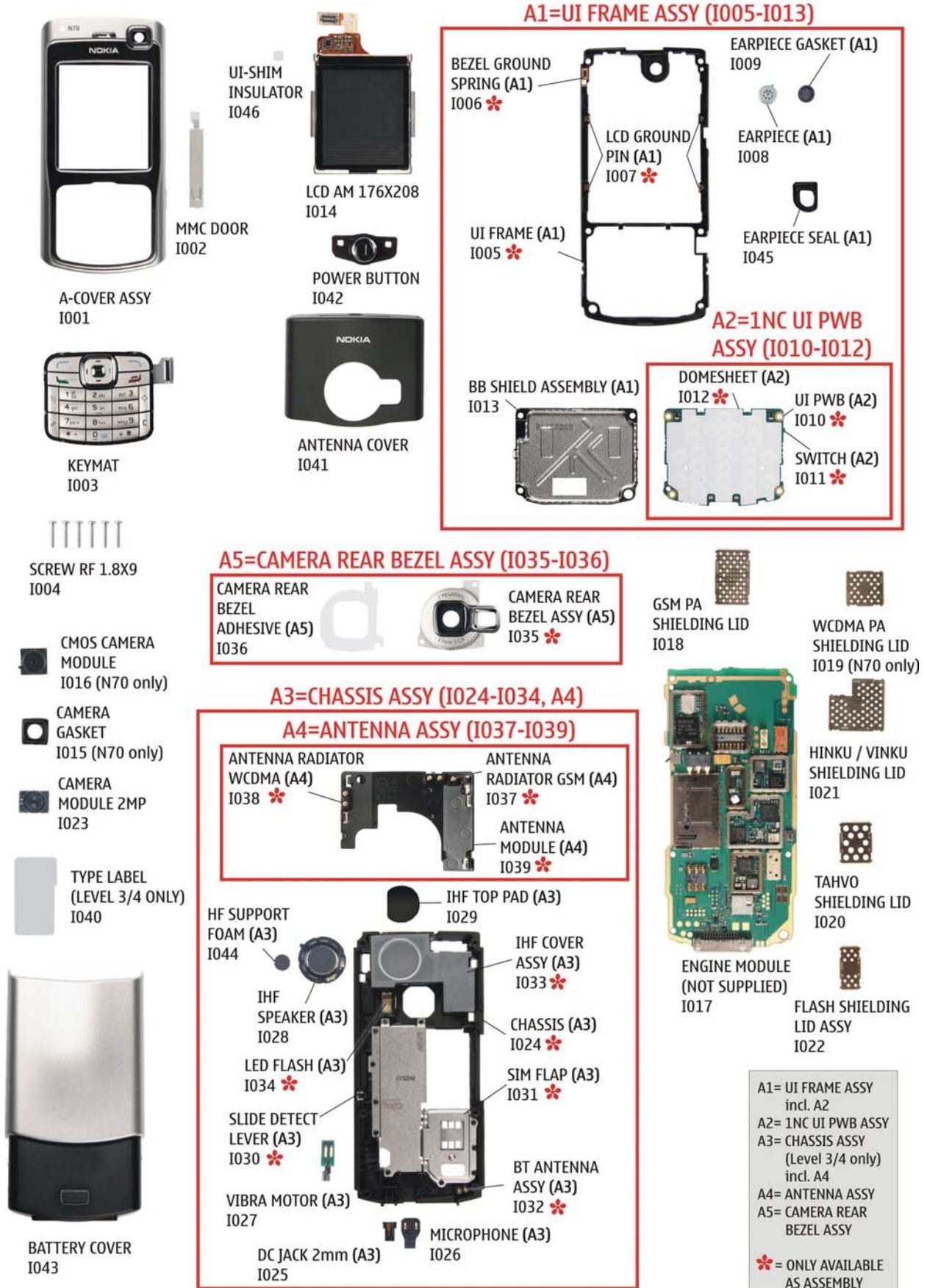
Electrostatic discharge can easily damage the sensitive components of electronic products. Therefore, every Service Supplier must observe the precautions, mentioned in the appropriate "Service Partner Requirements", available on NOKIA Online. Also see ESD Protection Requirements in this Service Manual.

2. EXPLODED VIEW AND COMPONENT DISPOSAL

Recommendation for the ecologically friendly disposal of components. Colorized components show the various categories. See the corresponding ITEM/CIRCUIT REF in the Spare Parts Service Bulletins on NOL.



3. SPARE PARTS OVERVIEW



4. SERVICE DEVICES

  	<p>FLS-4S incl. ACF-8, Driver and User Guide Dongle and flash device, package, developed specifically for POS use.</p>
	<p>Internal Battery BL-5C Inserted under the back cover, this Li-Ion 850 mAh battery provides power in a lightweight package.</p>
	<p>DKU-2 USB flash cable</p>
	<p>Travel Charger ACP-12 Small and lightweight charger for fast charging of your phone battery.</p>
	<p>Headset HDS-3 Small and lightweight stereo headset for handsfree functionality and listening to FM radio.</p>
	<p>SS-15 Camera removal tool for Camera Module 2MP. One side is for disassembly, the other side for assembly.</p>



SS-51
 Camera Removal Tool for CMOS Camera (N70 only)



SS-34
 Flex Opening Tool



RJ-94
 Soldering Jig



Lead-free Solder Wire
 Mandatory for lead-free products (Level 2 only).

0772040 NMP Standard Toolkit



- NOKIA opening tool SRT-6 NOKIA No. 0770431
- Tonichi torque driver NOKIA No. 6901525
- [Hoya](#) micro fiber cloth MX304
- [Dastex](#) gloves S, M, XL
- [Artlux](#) goggles AH166
- [Wera](#) bit T5 867/4TX 5x50
- Wera 867/4 6IP; 50mm (Torx 6 PLUS®)
- Wera bit T6 867/4TX 6x50
- Wera 867/1 5IP; 25mm (Torx 5 PLUS®)
- Wera bit T6 PLUS® 867/4TX 6IP
- [Facom](#) side cutter 416E
- Facom T5 driver SP.14032
- Facom T6 driver SP.14033
- Facom slot screwdriver AEF. 2x35.E
- [Wetec](#) tweezers 7abb SA-ESD
- Wetec tweezers 22 SA-ESD
- Wetec tweezers 13 SA-SMD ESD
- Wetec tweezers PSF SA-ESD
- Wetec ESD brush E1211
- [Kaiser](#) Fototechnik airbrush 6315
- Wetec dental tool DEM83266/0
- [RS Components](#) Scissors 323-5732

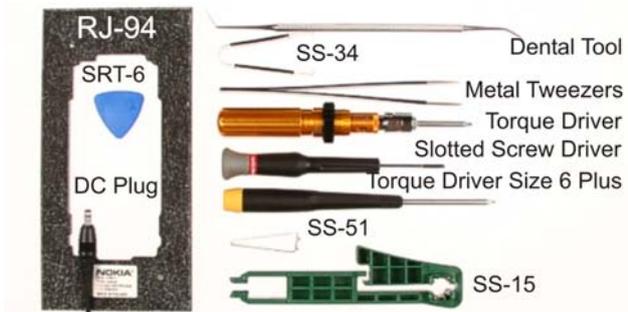
5. SW-UPDATE

Flash Concept – (Point of Sales)

To use the FLS-4S Flash Dongle you should have to follow the user's guide inside the sales package. Always check for the latest version of flash software, which is available on [NOKIA Online](#).



6. DISASSEMBLY INSTRUCTIONS



1.) You need the following tools.



2.) Always protect the window with a plastic film.



3.) Remove the **Battery Cover**.



4.) Place the SRT-6 between the **A-Cover** and **Chassis Assy**. Release the 4 plastic clips beginning from the bottom side as shown.



5.) Remove the **Keymat**



6.) Protect the **LCD** with a plastic film.



7.) Also protect the inner side window with a film



8.) Remove the **MMC Door** from **A-Cover**.



9.) Insert the SRT-6 between the **Antenna Cover** and **Chassis Assy**. Additional force may be required while opening the **Antenna Cover** clips.



10.) Remove the **Power Button** with tweezers.



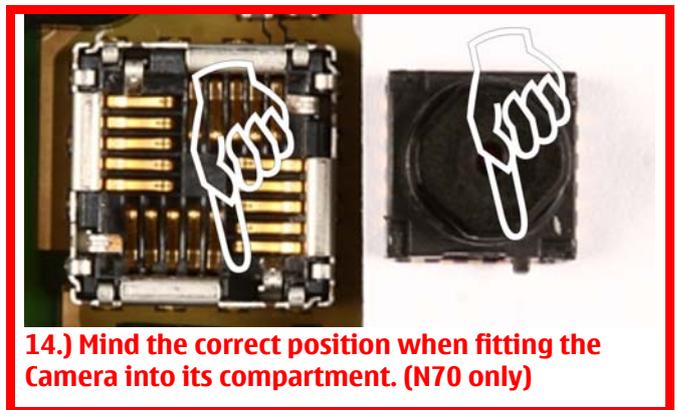
11.) Protect the **Camera Rear Bezel Assy** with a plastic film before turning the unit.



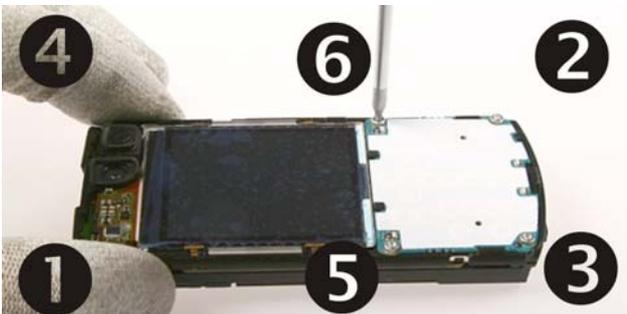
12.) Remove the **Camera gasket** (N70 only).



13.) Unlock and remove the **VGA Camera** with the **SS-51** camera removal tool. (N70 only)



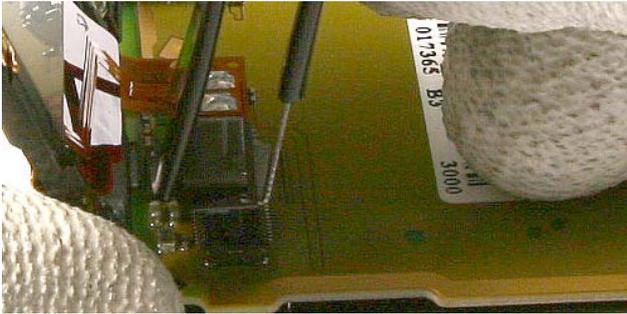
14.) **Mind the correct position when fitting the Camera into its compartment. (N70 only)**



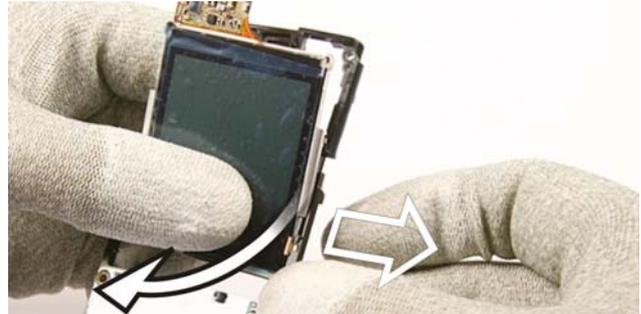
15.) Unscrew the 6 Torx size 6 plus screws in the shown order. **For Assembly use the reverse order and the torque of 25 Ncm.**



16.) Lift the **UI-frame Assy** from **Chassis Assy**. Mind the still connected flex foil of the **LCD**.



17.) Open the flex connector with the SS-34 flex connector-opening tool. Mind the surrounding components while placing the tool. Now the **UI-Frame Assy** can be removed.



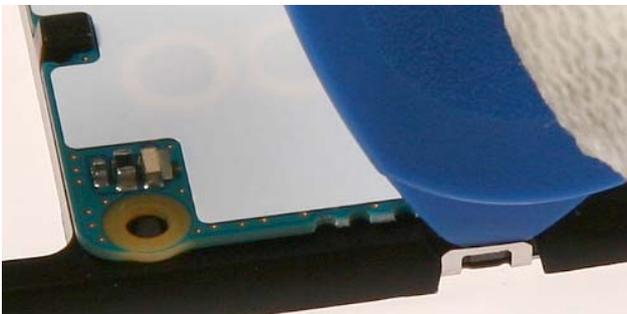
18.) Unlatch each clip of the **LCD** from the **UI Frame Assy** carefully by pulling the **UI Frame Assy** sideward while pushing the **LCD** forward.



19.) Remove the **Earpiece** with the dental tool



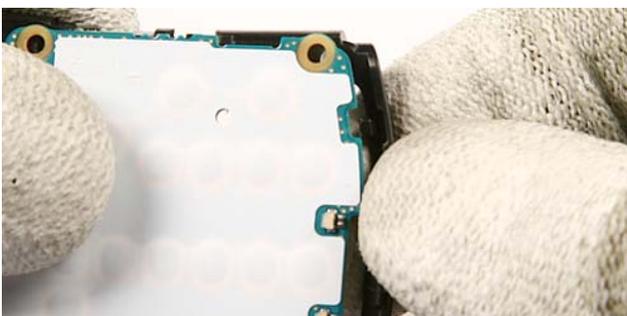
20.) Also remove the **Earpiece Gasket** from its compartment. **Always use a new gasket when reassembling.**



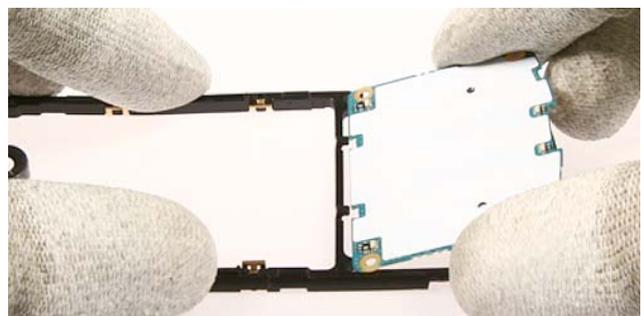
21.) Unlatch the **BB shield Assembly** first.



22.) Then push down and remove the **BB Shield Assembly**. The shield can't be reused again, always use a new one.



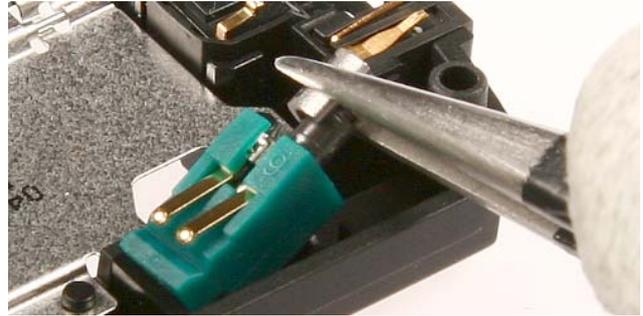
23.) Pull the **UI Frame Assy** slightly to unlock the **UI PWB**.



24.) Now the **UI PWB** can be removed easily.



25.) Remove the **Engine Module**. Place it into the RJ-94 jig immediately.



26.) Remove the **Vibra Motor** with tweezers.



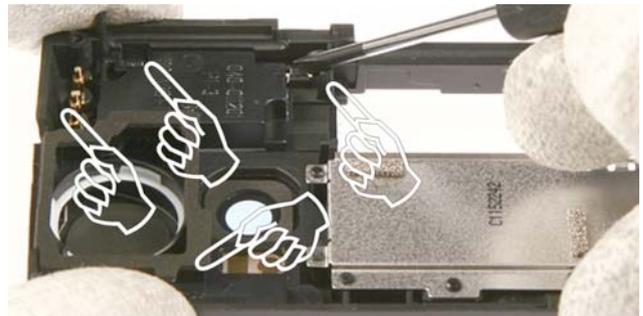
27.) Pull out the **Microphone** with tweezers.



28.) Use the DC plug to remove the **DC Jack**.



29.) Lever out the **IHF speaker**. **Mind the guide pin when reassembling.**



30.) Unlock the 4 plastic clips of the **Antenna Assy** in the area shown.



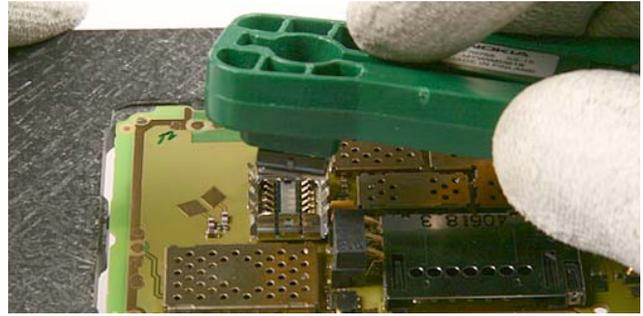
31.) Carefully separate the **Antenna Assy**.



32.) Lever out the **Camera Rear Bezel Assy**.

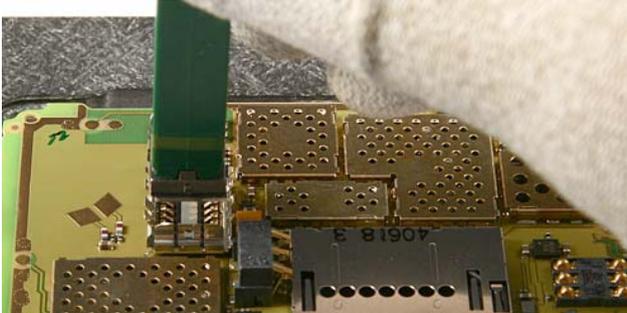


33.) Remove the residues of the **Camera Rear Bezel Assy Adhesive** completely with the SRT-6.
For assembly always use a new adhesive.



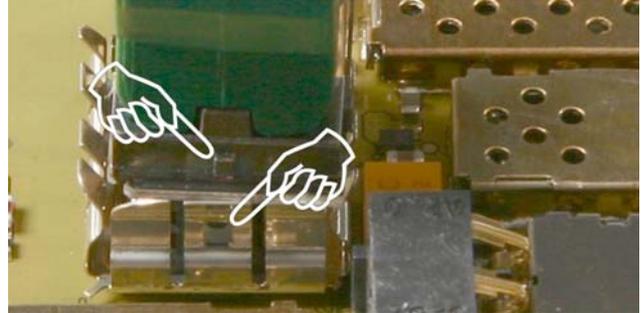
34.) Remove the **Camera Module 2MP** with the SS-15 camera removal tool. Always use the RJ-94 rework jig as support to prevent mechanical stress to the PWB.

For assembly only!



35.) Use the **Assembly side of the SS-15** for fitting the **Camera Module 2MP** into its compartment.

For assembly only!



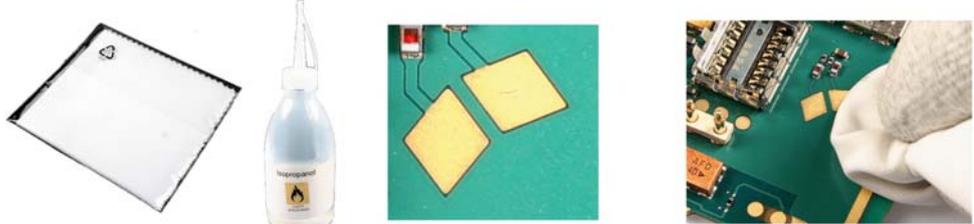
36.) **Mind the correct position of the camera while assembling.**

7. LEGEND FOR QUICK TROUBLE SHOOTER

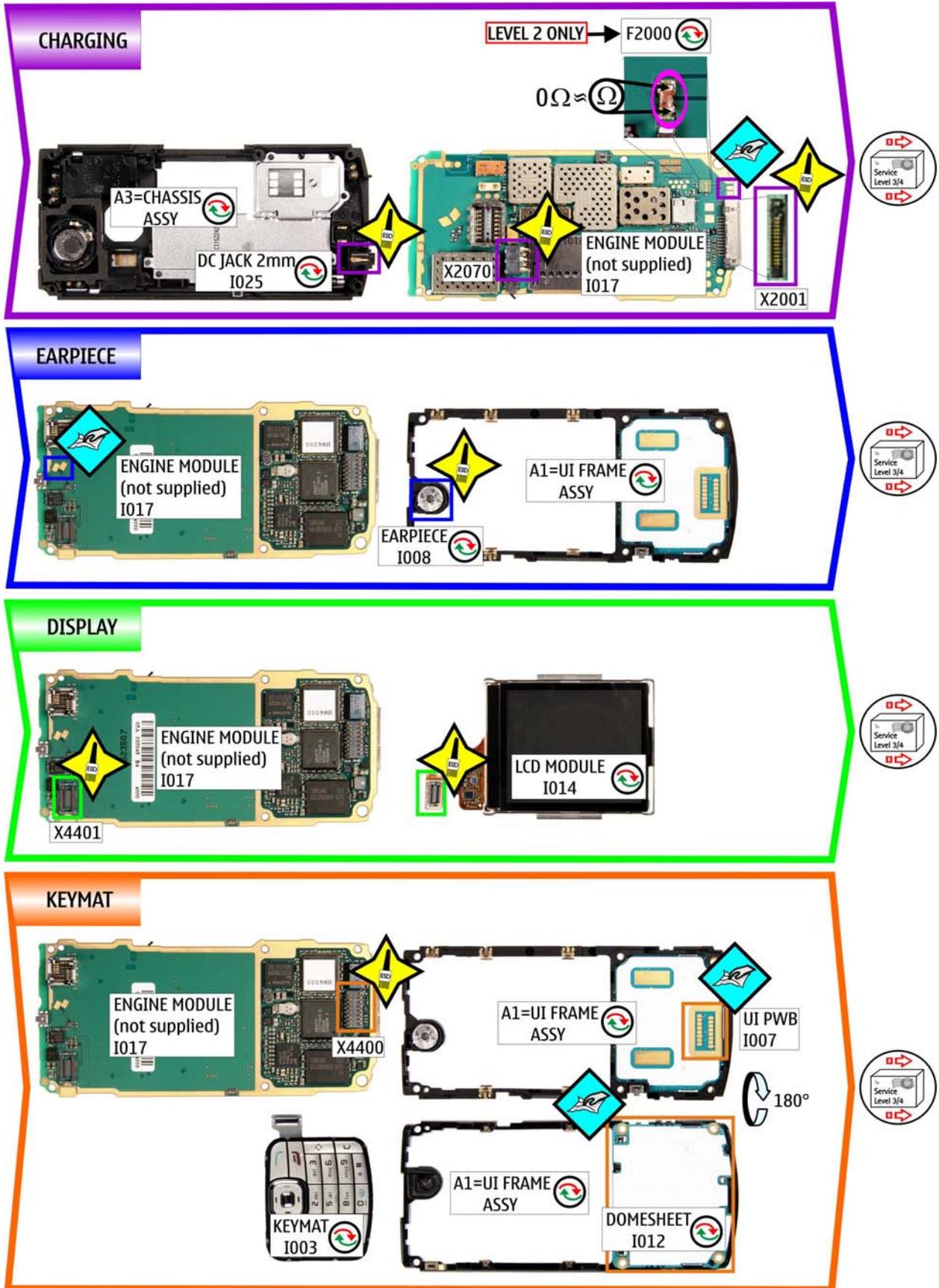
Legend for Quick Troubleshooter

This legend is valid for all parts of the Quick Troubleshooter

Follow the steps until the problem is solved. If this doesn't help, you are not authorized to go forward.

	<p>The start point of repair activities regarding the appeared fault symptoms.</p>
	<p>Only marked components (e.g. I002 ) can be replaced.</p>
	<p>Cloth usage: Check pads or contacts for optical and mechanical condition particularly regarding to corrosion. Clean it if necessary.</p> 
	<p>Measure component for electrical functionality and change, if needed. (Level 2 only)</p> 
	<p>ESD Brush usage: Check pads or contacts for optical and mechanical condition particularly regarding to corrosion. Clean it if necessary.</p> 
	<p>No more action possible - send product to the appropriate service supplier with higher service level.</p>

8. QUICK TROUBLE SHOOTER PART 1



9. QUICK TROUBLE SHOOTER PART 2

IHF SPEAKER

ENGINE MODULE (not supplied) I017

IHF SPEAKER I028

A3=CHASSIS ASSY

Service Level 3/4

SERVICE GSM

ENGINE MODULE (not supplied) I017

ANTENNA RADIATOR GSM I037

A4=ANTENNA ASSY

Service Level 3/4

SERVICE WCDMA (N70)

ENGINE MODULE (not supplied) I017

ANTENNA RADIATOR WCDMA I038

A4=ANTENNA ASSY

Service Level 3/4

HEADSET

ENGINE MODULE (not supplied) I017

X2001

Service Level 3/4

10. QUICK TROUBLE SHOOTER PART 3

VIBRA

ENGINE MODULE (not supplied) I017

A3=CHASSIS ASSY

VIBRA MOTOR I027

POWER

ENGINE MODULE (not supplied) I017

X2070

How to measure 4-pole switch (built-in)

$\approx \infty \Omega$ open

$\approx 0 \Omega$ pressed

MEASURE OPEN AND PRESSED STATE ON BOTH SIDES OF SWITCH

S4401

LEVEL 2 ONLY

POWER BUTTON I042

ANTENNA COVER I041

CAMERA 2MP

ENGINE MODULE (not supplied) I017

X1470

CAMERA MODULE 2MP I023

CMOS CAMERA

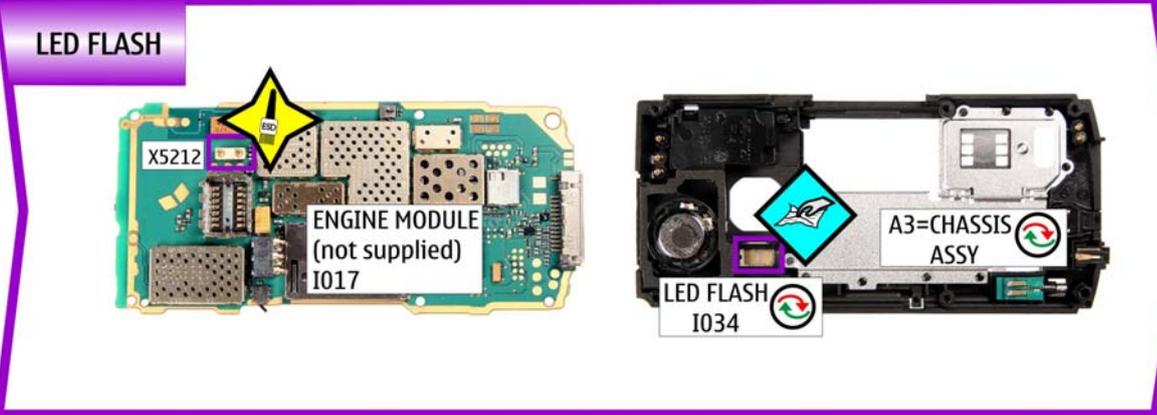
ENGINE MODULE (not supplied) I017

X1472

CAMERA MODULE VGA I015

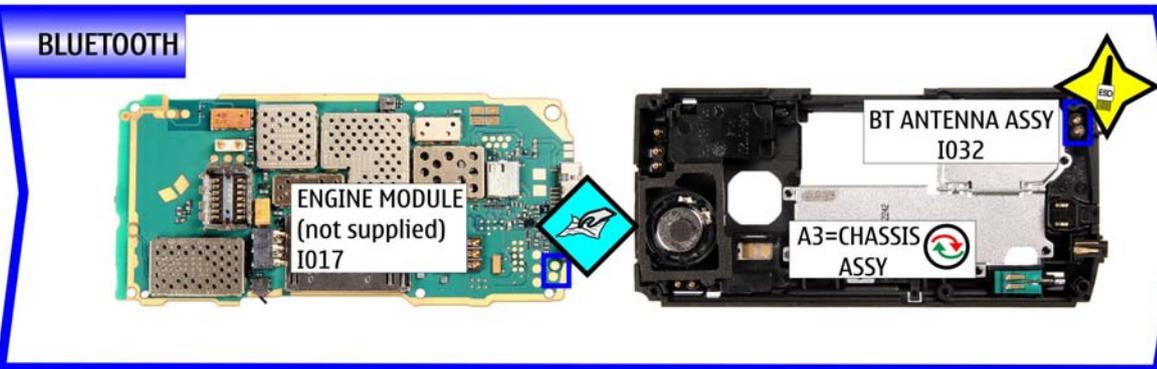
11. QUICK TROUBLE SHOOTER PART 4

LED FLASH



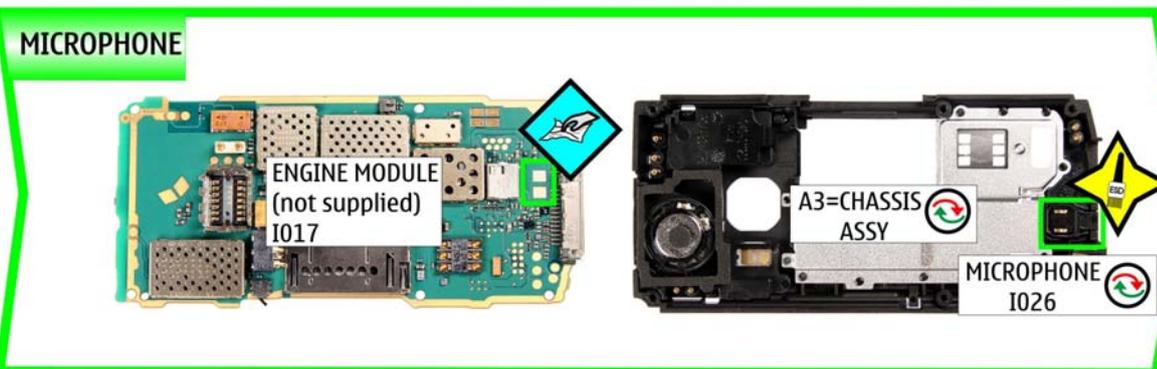
This diagram shows the LED flash troubleshooting process. On the left, the engine module (I017) is shown with a yellow starburst pointing to the X5212 component. On the right, the chassis assembly (A3=CHASSIS ASSY) is shown with a blue diamond pointing to the LED flash component (I034). A circular icon on the right indicates 'Service Level 3/4'.

BLUETOOTH



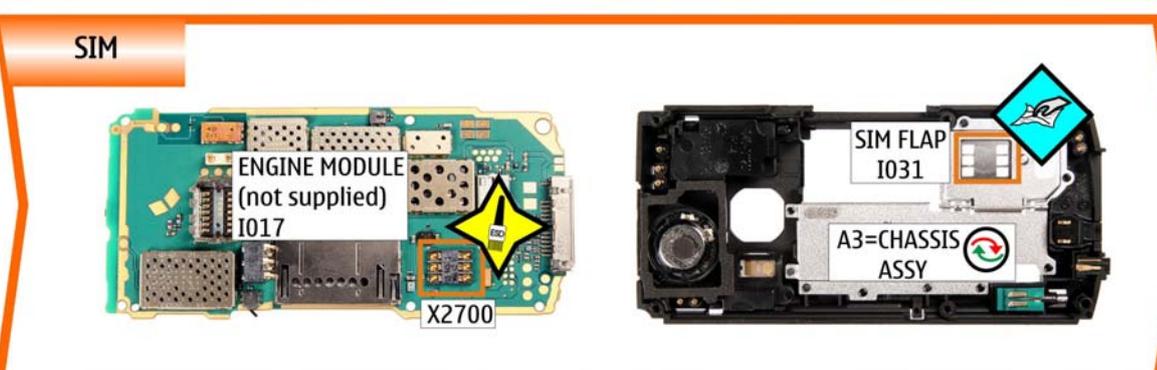
This diagram shows the Bluetooth troubleshooting process. On the left, the engine module (I017) is shown with a blue diamond pointing to the Bluetooth component. On the right, the chassis assembly (A3=CHASSIS ASSY) is shown with a yellow starburst pointing to the BT antenna assembly (I032). A circular icon on the right indicates 'Service Level 3/4'.

MICROPHONE



This diagram shows the microphone troubleshooting process. On the left, the engine module (I017) is shown with a blue diamond pointing to the microphone component. On the right, the chassis assembly (A3=CHASSIS ASSY) is shown with a yellow starburst pointing to the microphone component (I026). A circular icon on the right indicates 'Service Level 3/4'.

SIM



This diagram shows the SIM troubleshooting process. On the left, the engine module (I017) is shown with a yellow starburst pointing to the X2700 component. On the right, the chassis assembly (A3=CHASSIS ASSY) is shown with a blue diamond pointing to the SIM flap component (I031). A circular icon on the right indicates 'Service Level 3/4'.