



Working Instruction, Electrical

Applicable for T700

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1 Moisture Sensitivity and Component Baking

CAUTION!

THE T700 BOARD (ROA) ITSELF MUST BE BAKED PRIOR TO ANY REPAIRS ARE PERFORMED ON THE BOARD. THE BOARD SHOULD BE BAKED IN 125 DEGREES CELCIUS FOR 4 HOURS.

Some components in this product are moisture sensitive and must be baked prior to use if they have been exposed to air. These components and their moisture sensitivity levels are specified in the Electrical Component Placing document. Below is a brief description of moisture sensitivity levels, but repair centers should visit the JEDEC website for more details before reworking moisture sensitive components. Search for the most recent version of the IPC/JEDEC J-STD-033A standard online at <http://www.jedec.org/>

LEVEL 1	UNLIMITED FLOOR LIFE; does not require dry pack or re-baking.
LEVEL 2	1 YEAR FLOOR LIFE; $\leq 30^{\circ}\text{C}$; 60% relative humidity (rh); shipped in dry pack; must be re-baked after being opened if floor life is exceeded.
LEVEL 2A	4 WEEKS FLOOR LIFE; $\leq 30^{\circ}\text{C}$; 60% rh; shipped in dry pack; must be re-baked after being opened if floor life is exceeded.
LEVEL 3	168 HOURS FLOOR LIFE; $\leq 30^{\circ}\text{C}$; 60% rh; shipped in dry pack; must be re-baked after being opened if floor life is exceeded.
LEVEL 4	72 HOURS FLOOR LIFE; $\leq 30^{\circ}\text{C}$; 60% rh; shipped in dry pack; must be re-baked after being opened if floor life is exceeded.

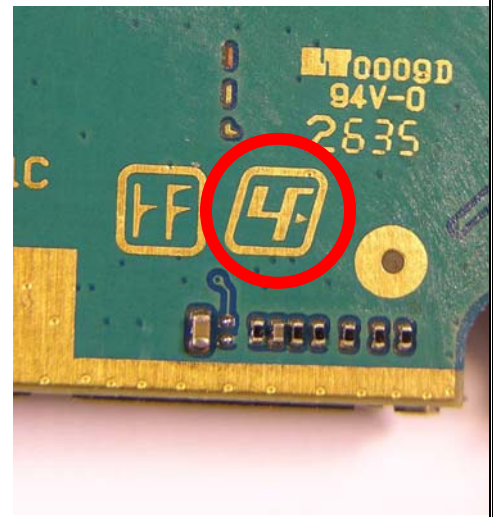
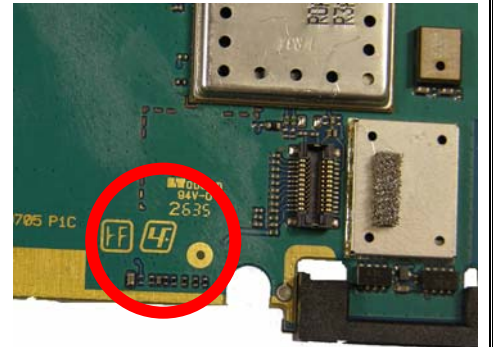
Parts shipped from the Sony Ericsson Parts Warehouse are most likely NOT shipped in dry pack. This means the time elapsed between placing the order and receiving the parts must be considered as time exposed to the environment.

Different moisture sensitivity levels and exposure times create the need for different baking temperatures and times. More detailed information may be found in the most recent version of the IPC/JEDEC J-STD-033A standard. The standard is available online at <http://www.jedec.org/>.

2 Lead-free soldering

2.1 Lead-free Symbol

- **NOTE!**
- ***This is a lead-free product!***
- ***All solder wire or paste used with this product must be lead-free.***
- ***All rework tools that directly contact the solder must remain lead-free. They must only be used for lead-free repairs.***



2.2 Hot air gun temperature requirements

The air temperature shall not exceed 360°C. The temperature shall be measured 5 mm from the nozzle outlet.

If it's not possible to remove and/ or solder with 360°C a BGA Rework Station or another repair process shall be considered to ensure high process control.

Too high temperature can cause damage and cracks due to thermal stress on sensitive components, e.g. ceramic components like capacitors.

2.3 Soldering tip temperature requirements

The soldering tip temperature shall be minimum 310°C and maximum 360°C.

Too high temperature can cause damage and cracks due to thermal stress on sensitive components, e.g. ceramic components like capacitors.

2.4 Bottom Heat


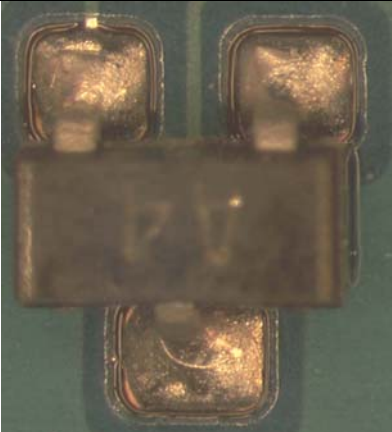
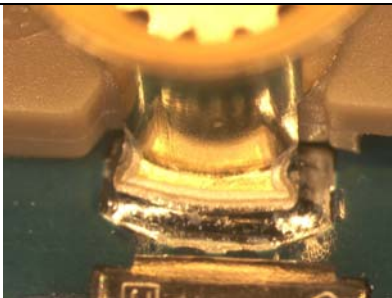

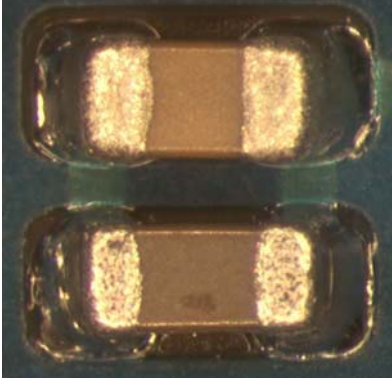
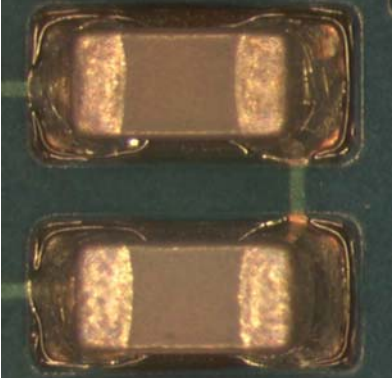
Because of the higher temperature required for lead-free solder, bottom heat is strongly recommended for rework of all ASICs. This does not include small transistors or chips, but it does include fine pitch components and BGA type components.

3 BGA rework specifications

For all components that is required to be replaced by using BGA Rework Station follow Technical Requirement document, Space ID:1207-2949

3.1 Inspection

Lead-free solder joints are more difficult to inspect because they do not have shiny surfaces like leaded solder joints. Also, lead-free solder does not flow as well as leaded solder, so some of the solder pad area may remain exposed.

Good Leaded Solder Joints		Good Lead-free Solder Joints	
			
			
			

4 Replacement of components

EQUIPMENT

- Dentist hook
- ESD-gloves (cotton gloves)
- ESD-wristband
- Soldering tool
- Hot air soldering station
- BGA replacement equipment
- Pair of tweezers
- Solder cleaning wiper (tin wick)
- Solder paste lead-free (SN 96% Ag 3.5% Cu 0.5%).
- Flux, RMA no-clean flux
- Cutting pliers
- Shield fence pliers NTZ 112 537

MECHANICAL INSTRUCTIONS

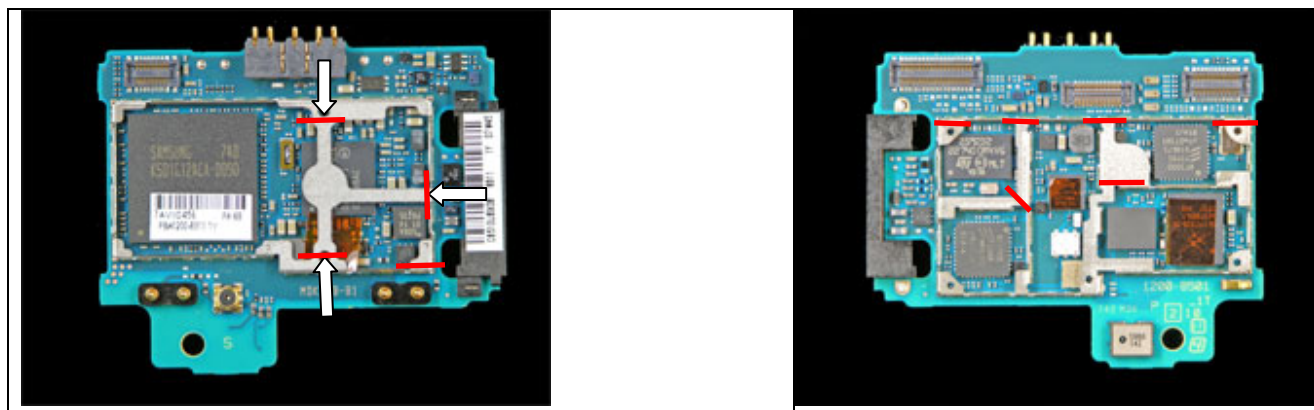
For all the following part replacements, disassemble and assemble the phone as described in *Working Instruction 3/00021-1/FEA 209 544/123*.

SHIELD CAN FENCE MODIFICATION

The arrows and the red lines show where the frame should be cut to enable rework.

After rework the **height of the frame should not be affected**.

On a reworked unit when the lid is mounted, it **should not be visible that rework has been performed** on the shield frame.

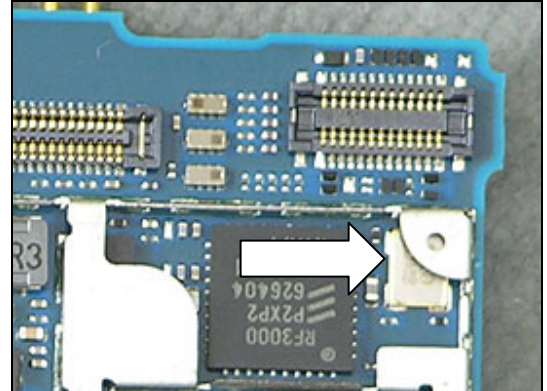




4.1 B1260

Crystal 26.0 MHz 3225

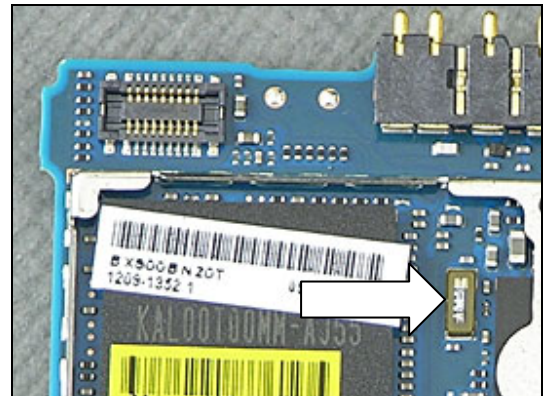
Use Hot air soldering station to replace component



4.2 B2100

Crystal 32768Hz

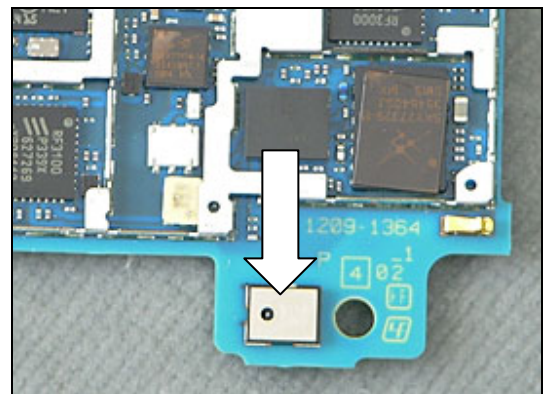
Use Hot air soldering station to replace component



4.3 B3100

MICROPHONE/CHARLOTTE

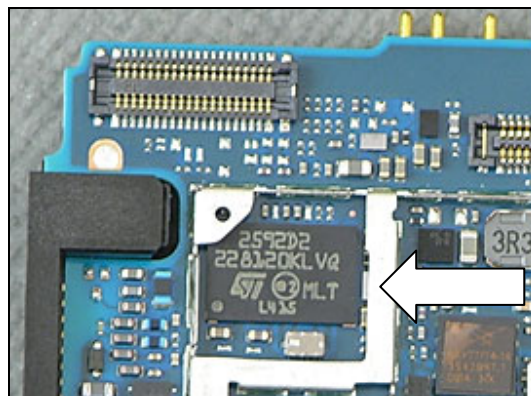
BGA replacement equipment



4.4 D2105

IC Single bus buffer gate

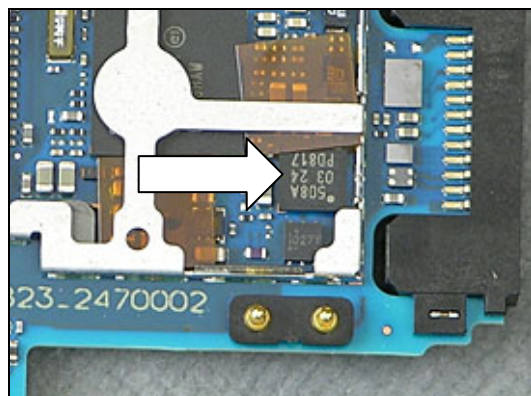
Use Hot air soldering station to replace component



4.5 D2400

IC IF ISP1508 ES3

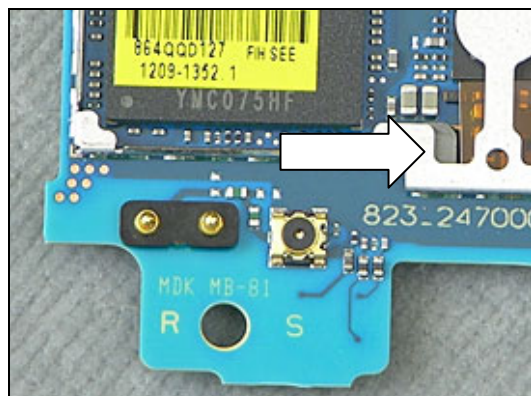
Use Hot air soldering station to replace component



4.6 L2200

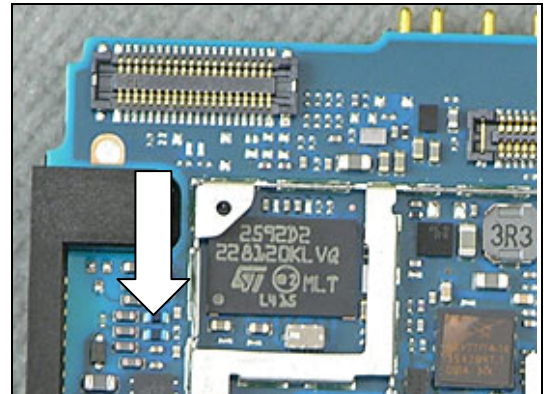
Ind WW 4.7 uH K3012

Use Hot air soldering station to replace component

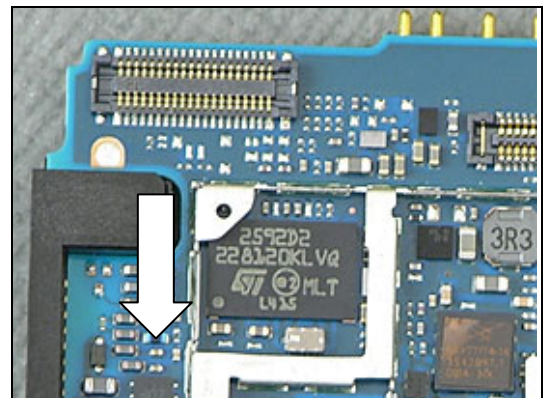


4.7 L2401**Inductor 120nH 5% 0402 0.11A**

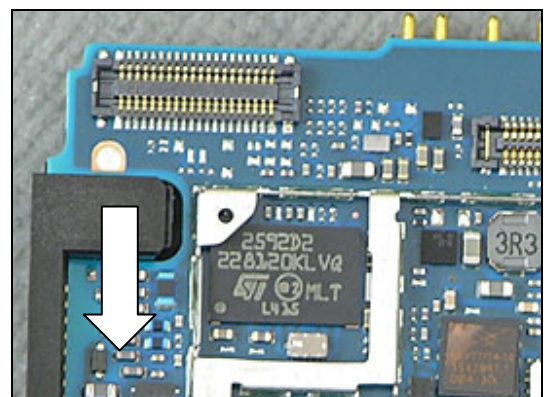
Use Hot air soldering station to remove component
Use Soldering tool to mount the new component

**4.8 L2402****Inductor 120nH 5% 0402 0.11A**

Use Hot air soldering station to remove component
Use Soldering tool to mount the new component

**4.9 L2403****Filter 0.0 Hz 0402**

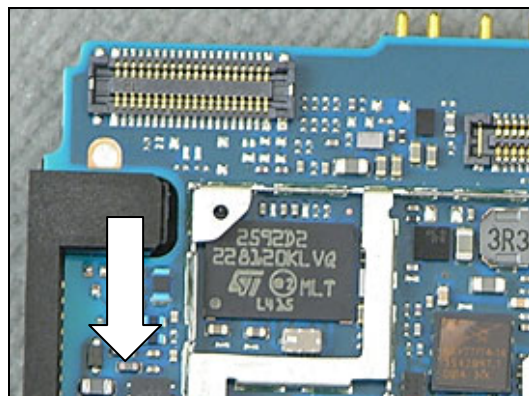
Use Hot air soldering station to remove component
Use Soldering tool to mount the new component



4.10 L2404

Filter 0.0 Hz 0402

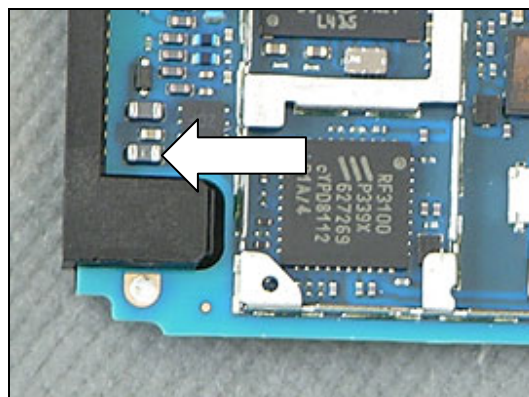
Use Hot air soldering station to remove component
Use Soldering tool to mount the new component



4.11 L2405

Filter 220ohm 0603 2A 0.05ohm Bead

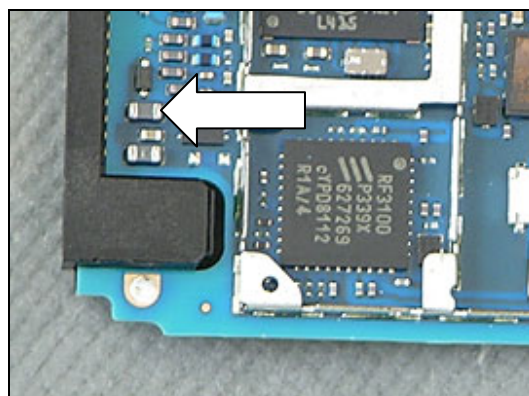
Use Hot air soldering station to replace component



4.12 L2406

Filter 220ohm 0603 2A 0.05ohm Bead

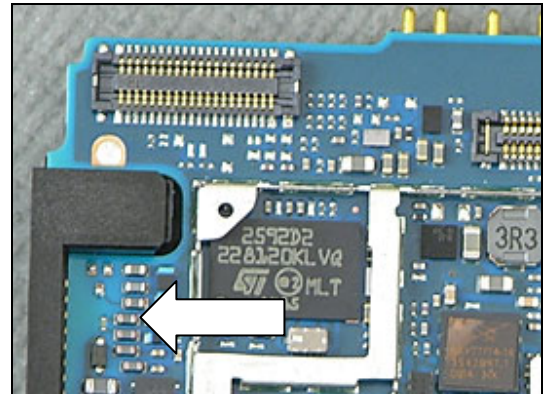
Use Hot air soldering station to remove component
Use Soldering tool to mount the new component



4.13 L2407

Filter 0.0 Hz 0402

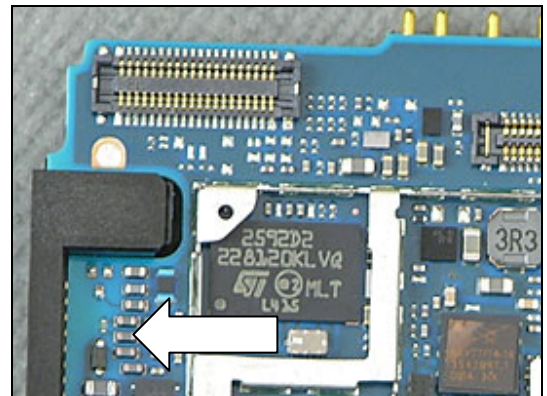
Use Hot air soldering station to remove component
Use Soldering tool to mount the new component



4.14 L2408

Filter 0.0 Hz 0402

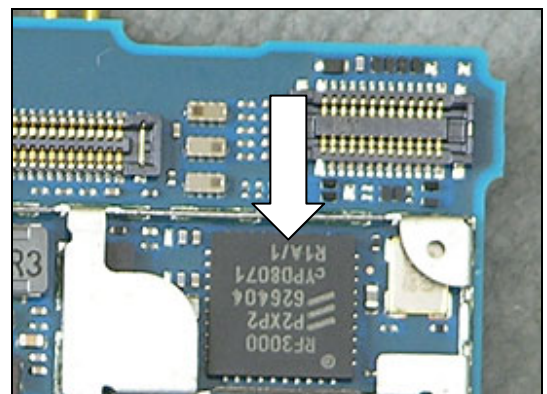
Use Hot air soldering station to remove component
Use Soldering tool to mount the new component



4.15 N1200

ASIC GIMLI

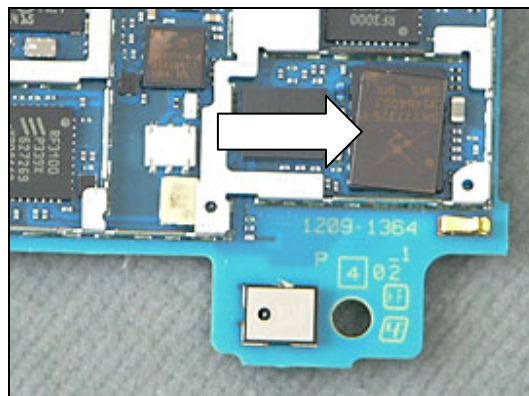
BGA replacement equipment



4.16 N1230

PA Module 22 TERMINAL LGA

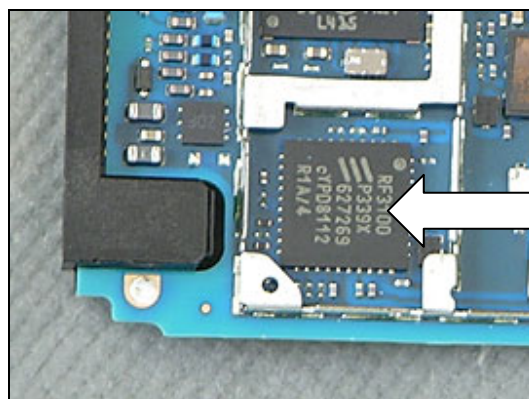
BGA replacement equipment



4.17 N1300

ASIC YLVA

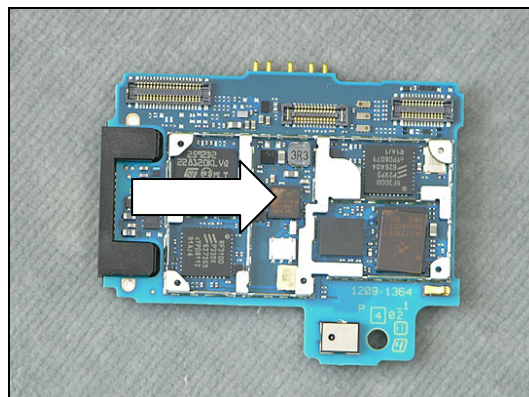
BGA replacement equipment



4.18 N1380

Module PA WLAN 4040

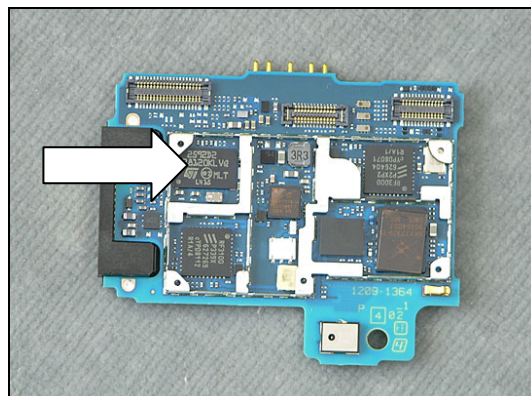
Use Hot air soldering station to replace component



4.19 N1400

Module Bluetooth + FM STLC2592

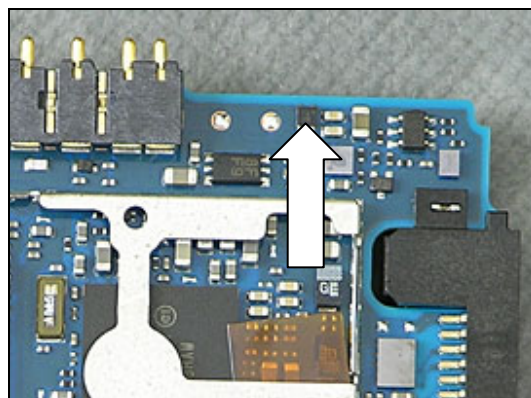
BGA replacement equipment



4.20 N2201

IC Vreg PLP1010-4

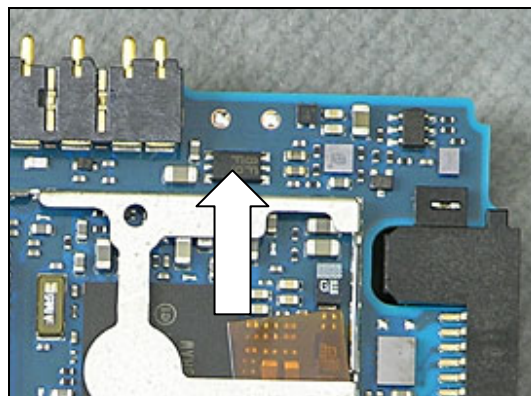
Use Hot air soldering station to replace component



4.21 N2202

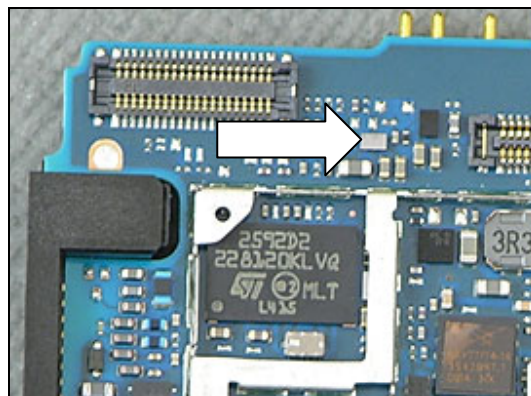
IC Vreg SON-6

Use Hot air soldering station to replace component



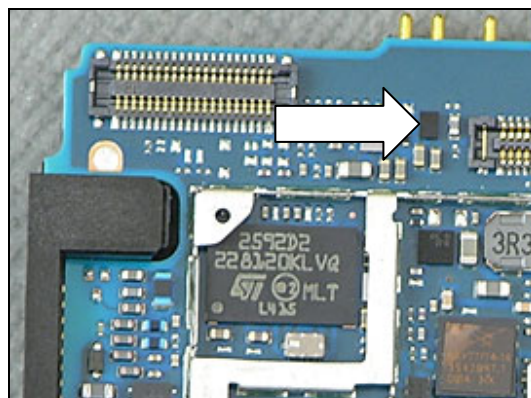
4.22 N2203 2ch-LDO, Vout1=2.8V, Vout2=1.8V, WL-CSP6

Use Hot air soldering station to replace component



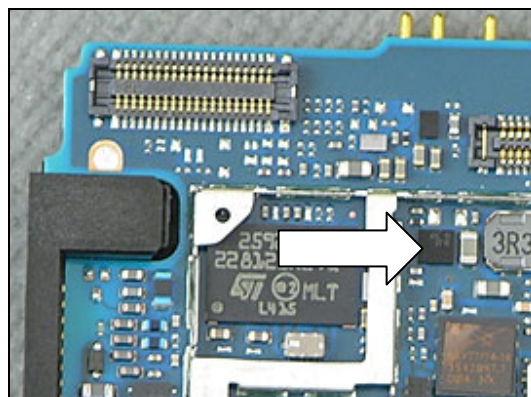
4.23 N2204 LDO1.8 V, 200mA, low noise, CS-5

Use Hot air soldering station to replace component



4.24 N2205 DC/DC Converter

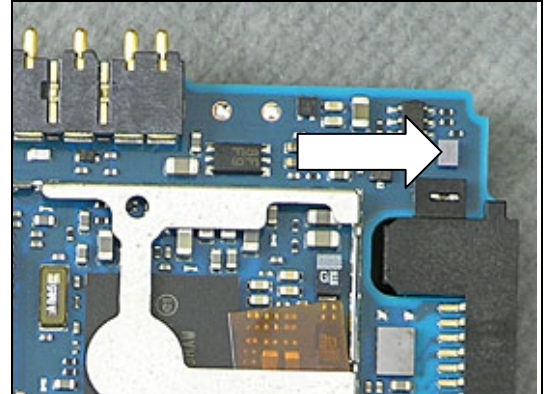
Use Hot air soldering station to replace component



4.25 N2400

1-Bit Level Translator

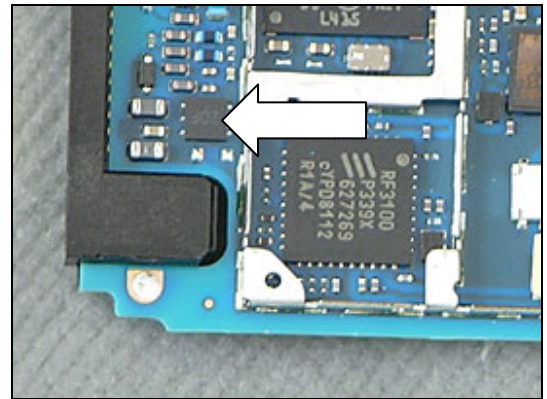
Use Hot air soldering station to replace component



4.26 N2402

IC ESD Prot UDFN 6 2x2 mm

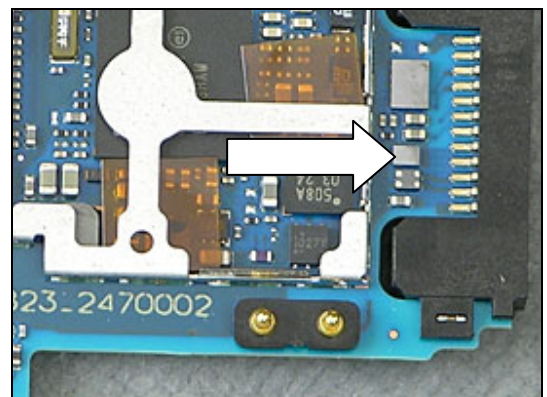
Use Hot air soldering station to replace component



4.27 N2424

ESD/EMI protection for USB

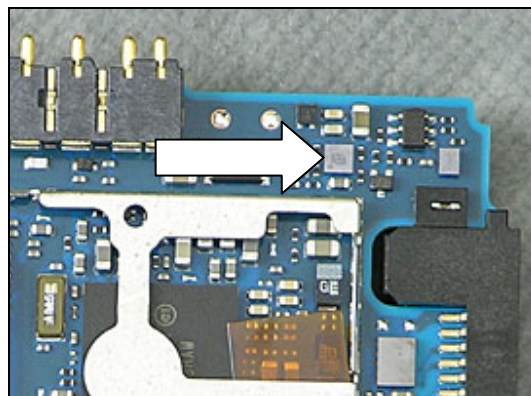
Use Hot air soldering station to replace component



4.28 N3100

OPAMP 1W Pb-Free

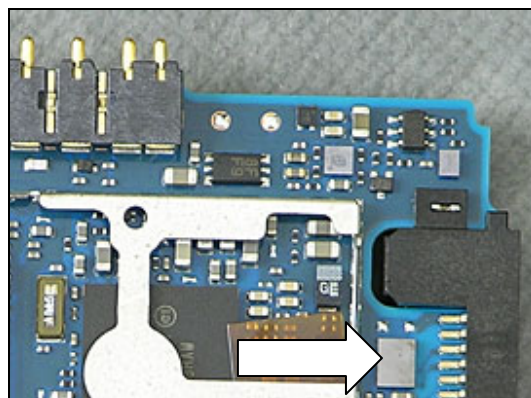
Use Hot air soldering station to replace component



4.29 N3101

ASIC Tjatte3 CSP20

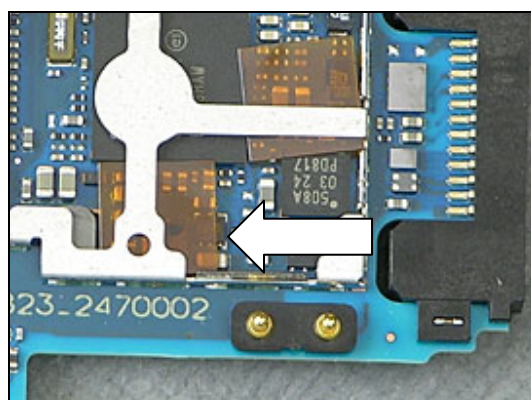
Use Hot air soldering station to replace component



4.30 N4201

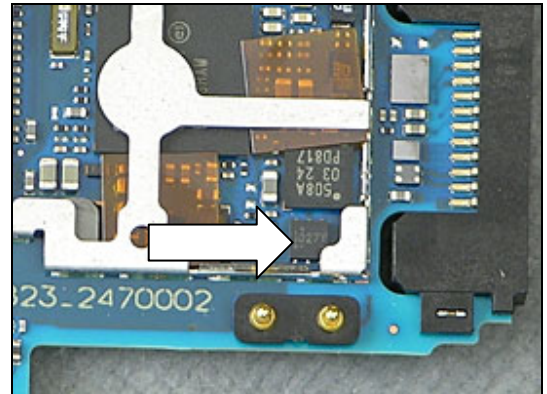
Trans N-ch FET

Use Hot air soldering station to replace component



4.31 V2202 TRANS V;DUAL_PMOSFET;BYX101603_A;REQ318

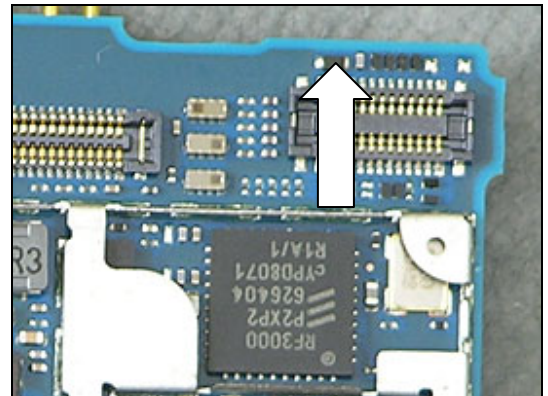
Use Hot air soldering station to replace component



4.32 V2402

Switching Diode

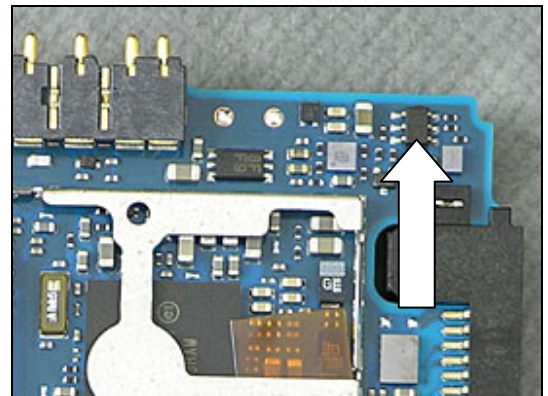
Use Hot air soldering station to replace component



4.33 V2405

MOSFET Complementary N P 20 V (D S)

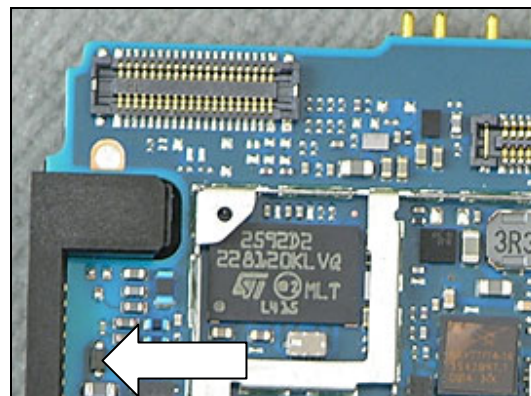
Use Hot air soldering station to replace component



4.34 V2420

Zener Diode voltage regulator 15V 5%

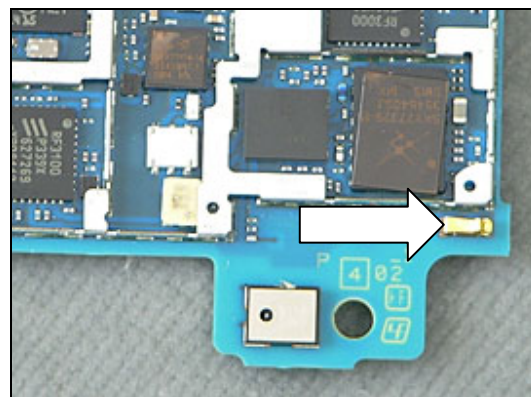
Use Hot air soldering station to remove component
Use Soldering tool to mount the new component



4.35 X1000

Conn Leaf Spring

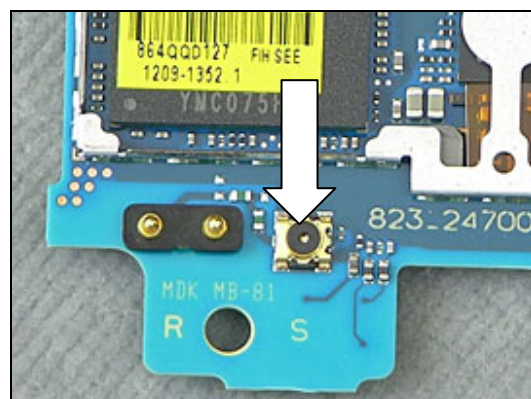
Use Hot air soldering station to replace component



4.36 X1100

Conn Antenna

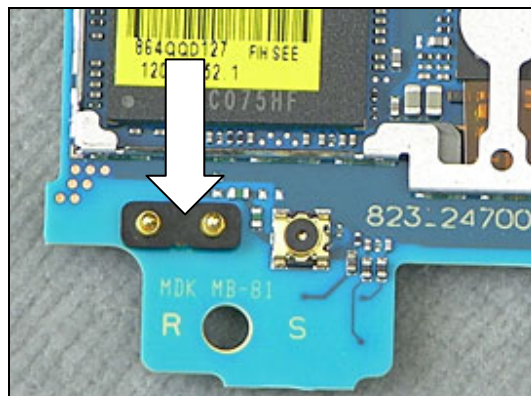
Use Hot air soldering station to remove component
Use Soldering tool to mount the new component



4.37 X1203

Conn Pogopin

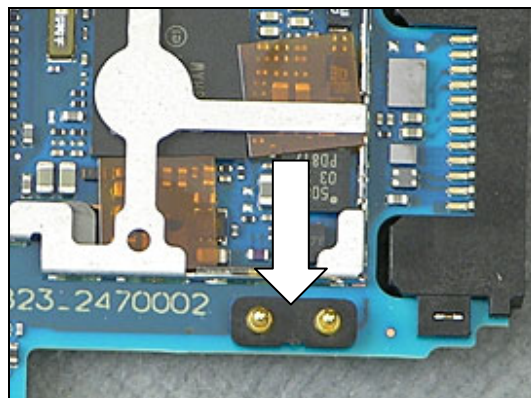
Use Hot air soldering station to replace component



4.38 X1400

Conn Pogopin

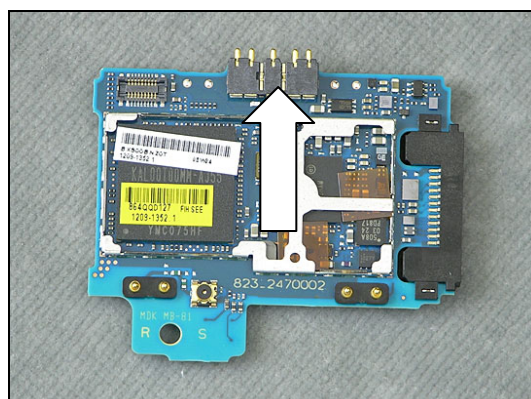
Use Hot air soldering station to replace component



4.39 X2200

Conn Pogopin 0p CSS5005-7L02E

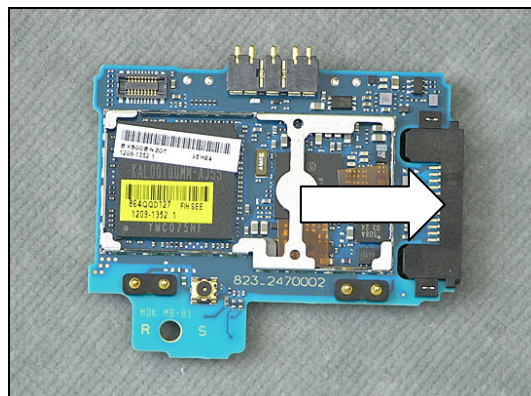
BGA replacement equipment



4.40 X2400

Use Hot air soldering station to remove component
Use Soldering tool to mount the new component

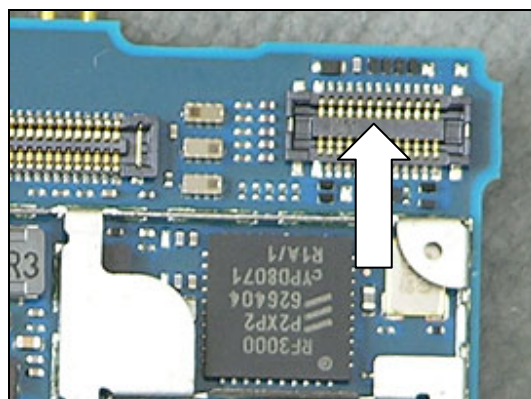
12p System Connector



4.41 X2401

Use Hot air soldering station to replace component

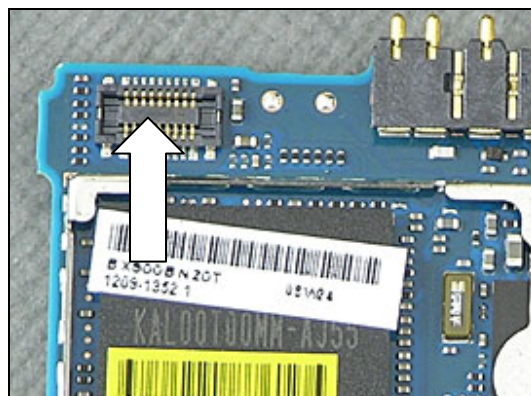
Conn BtB



4.42 X2402

Use Hot air soldering station to replace component

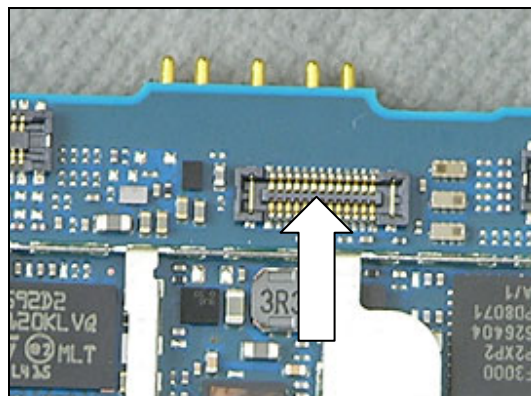
Conn BtB Receptacle 18p



4.43 X4201

Conn BtB Receptacle 26p

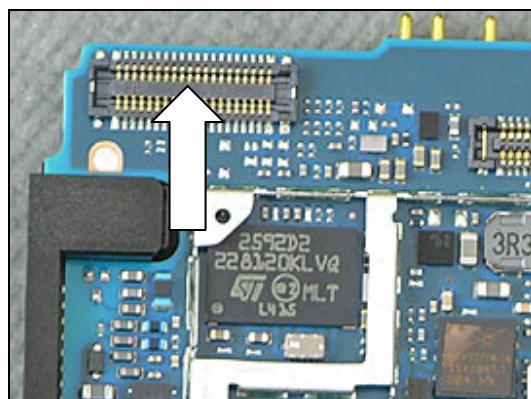
Use Hot air soldering station to replace component



4.44 X4300

Conn BtB

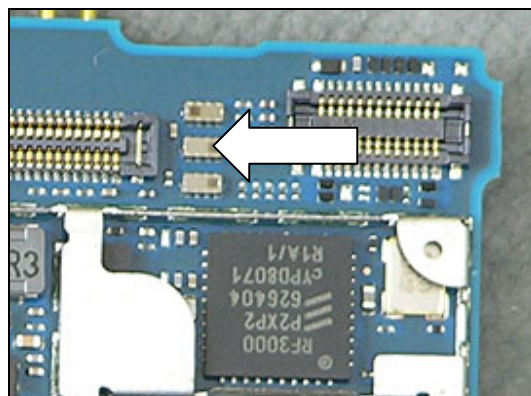
Use Hot air soldering station to replace component



4.45 Z4200

Filter 400.0 MHz KNA16400

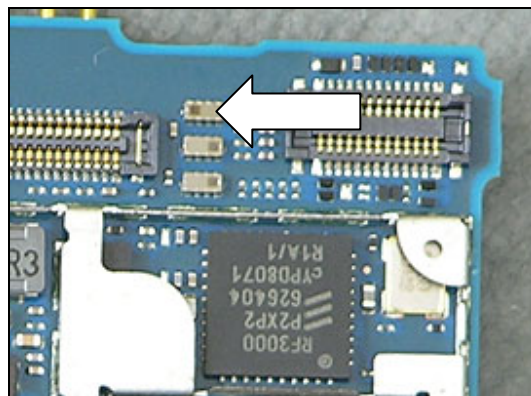
Use Hot air soldering station to replace component



4.46 Z4201

Filter 400.0 MHz KNA16400

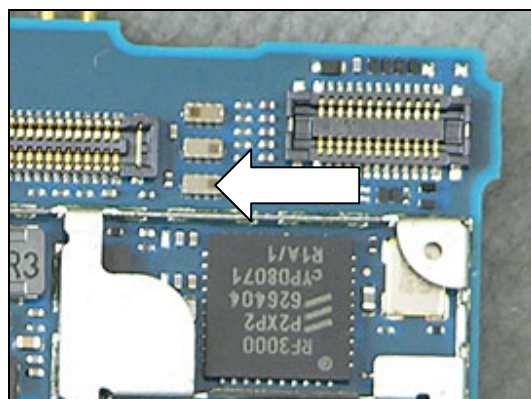
Use Hot air soldering station to replace component



4.47 Z4202

Filter 400.0 MHz KNA16400

Use Hot air soldering station to replace component



5 Revision history

Rev.	Date	Changes / Comments
1	2008-09-29	Initial release
2	2008-11-12	Changed baking time from 6 to 4 hours