



Working Instruction, Electrical

Applicable for W302 and S302

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Read this first!

CAUTION

Keep all contact surfaces clean, no dirt or hand grease!

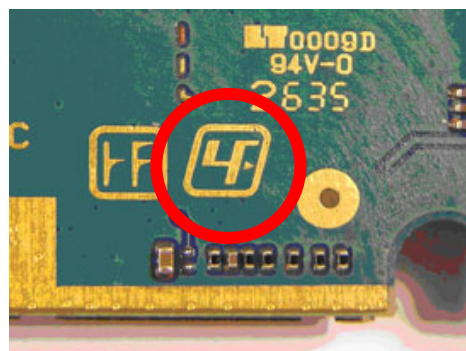
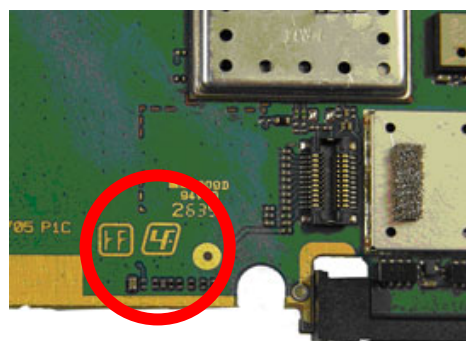
Protect the phone from ESD damages whenever it has been opened by using:

- ESD-wristband
- ESD-gloves

Lead-free soldering

1.1 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.*





1.2 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.

1.3 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.

1.4 Bottom Heat


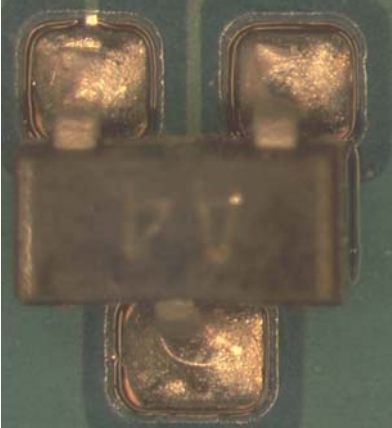
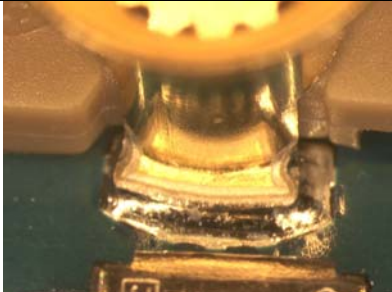

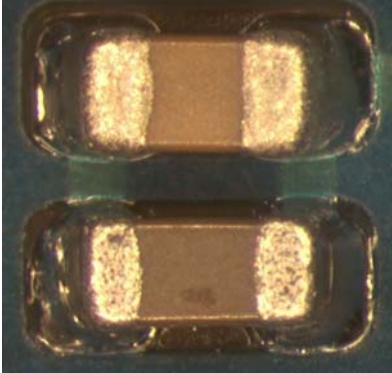
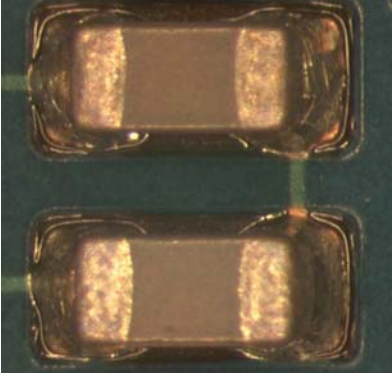
Because of the higher temperature required for lead-free solder, bottom heat is strongly recommended for rework of all ASICs. This does not include small transistors or chips, but it does include fine pitch components and BGA type components.

2 BGA rework specifications

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

2.1 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	
			
			
			

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

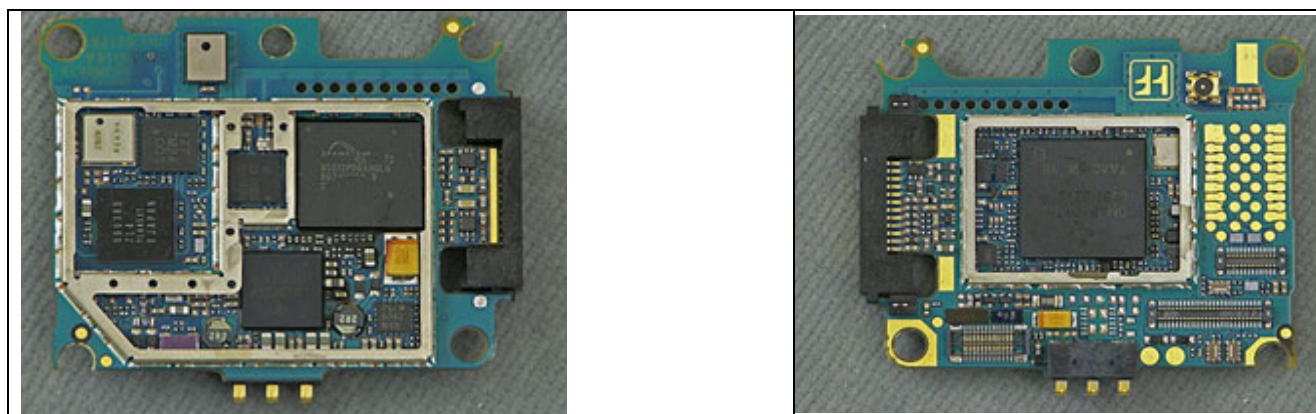
MECHANICAL INSTRUCTIONS

For all the following part replacements, disassemble and assemble the phone as described in *Working Instruction 1213-2168*.

SHIELD CAN FENCE MODIFICATION

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

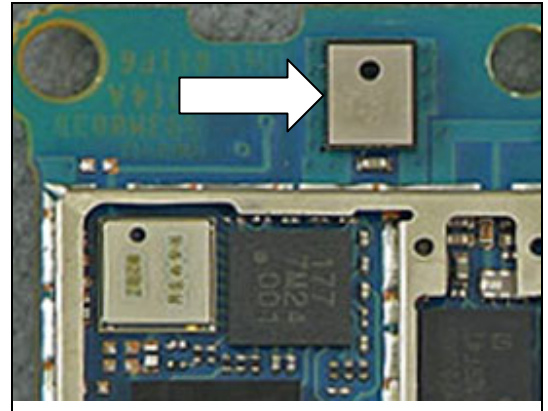
On a reworked unit when the lid is mounted, it **should not be visible that rework has been performed** on the shield frame.





2.2 PC950 Microphone

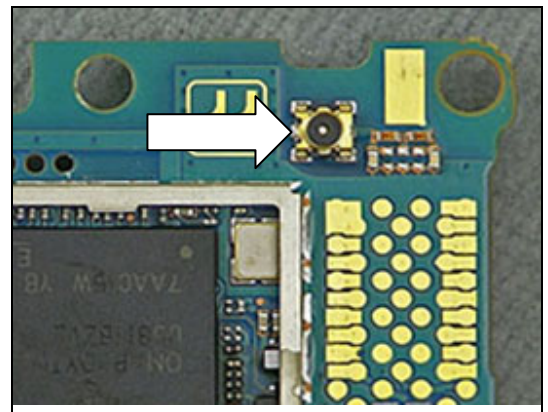
Use BGA soldering station to replace the Microphone



2.3 B2100 SMD Coax connector

Use Hot air soldering station to remove SMD Coax Connector

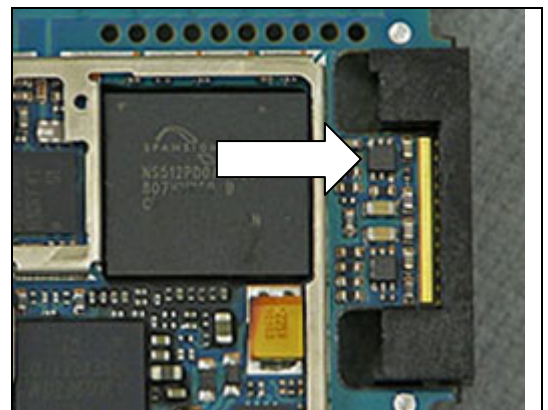
Use soldering iron to mount the SMD Coax Connector



2.4 Q551 Transistor Pmos 20V

PROTECT THE SYSTEM CONNECTOR WITH CAPTON TAPE

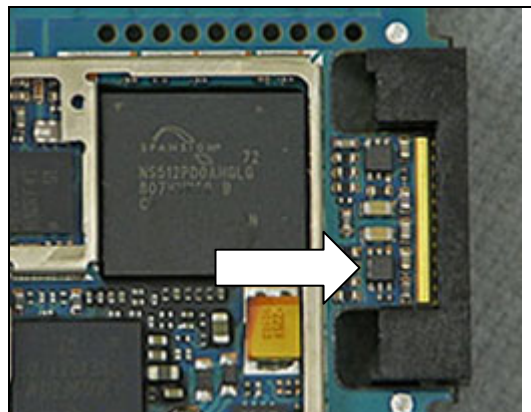
Use Hot air soldering station to replace component



2.5 Q553 Transistor Pmos 20V

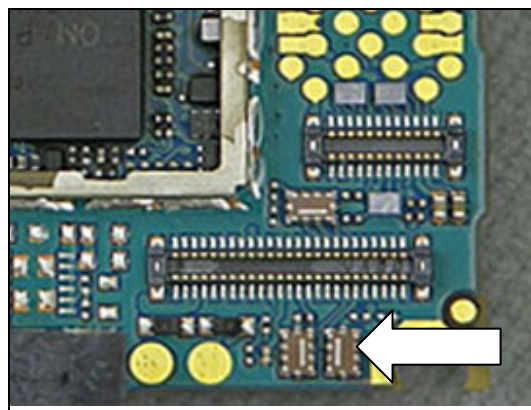
PROTECT THE SYSTEM CONNECTOR WITH CAPTON TAPE

Use Hot air soldering station to replace component



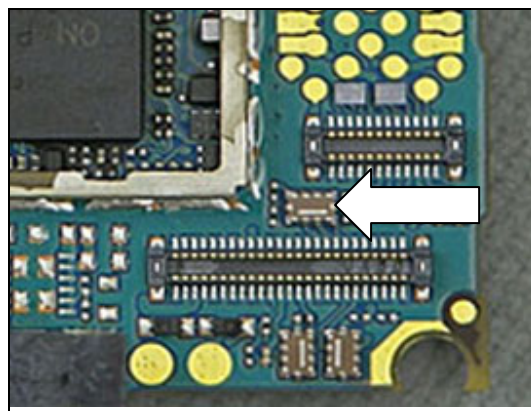
2.6 LR700 Varistor 0402

Use Hot air soldering station to replace the Component



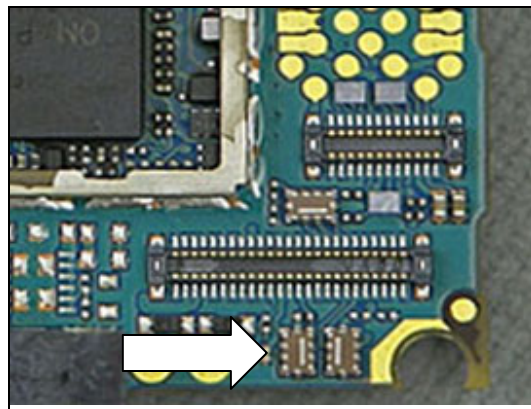
2.7 LR701 Varistor 0402

Use Hot air soldering station to replace component



2.8 LR702 Varistor 0402

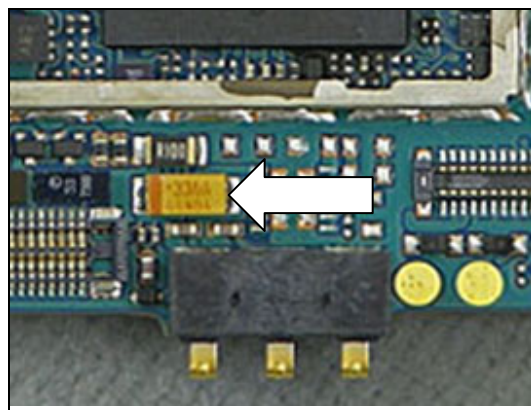
Use Hot air soldering station to replace component



2.9 C753 Capacitor 33uF

PROTECT THE BATTERY CONNECTOR WITH CAPTON TAPE

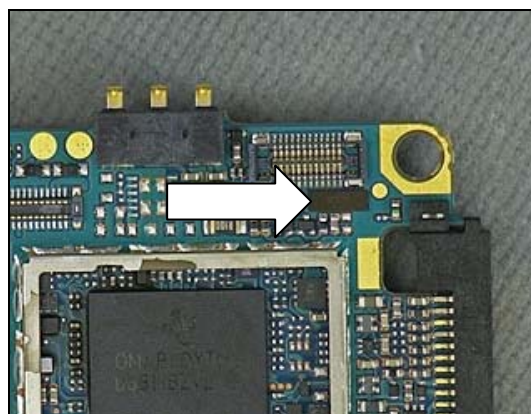
Use Hot air soldering station to replace the Capacitor



2.10 ESD700 EMI/ESD Filter

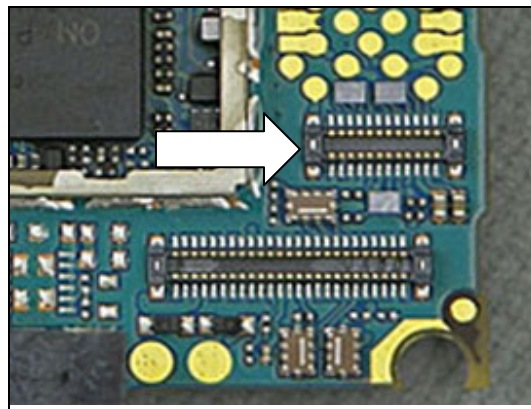
PROTECT THE BTB AND SYSTEM CONNECTOR WITH CAPTON TAPE

Use Hot air soldering station to remove the component



2.11 P500 Btb 24p M

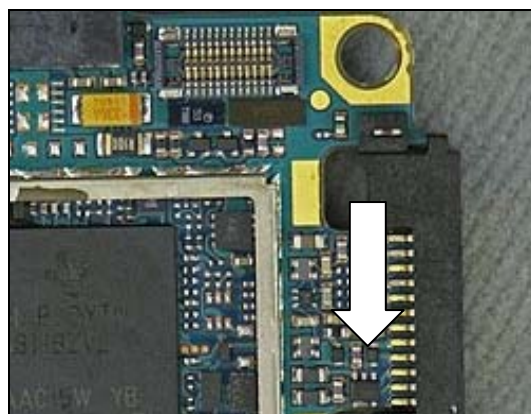
Use Hot air soldering station to remove component
Use BGA equipment to mount the new btb 24p M Connector.



2.12 ESD503 Diode ESD protection 12V

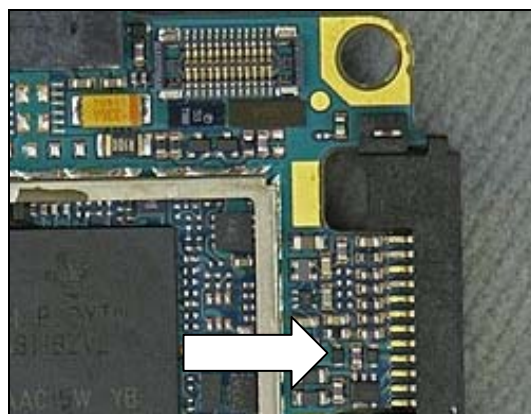
PROTECT THE SYSTEM CONNECTOR WITH CAPTON TAPE

Use Hot air soldering station to replace the component



2.13 ESD504 Diode ESD protection 12V

Use Hot air soldering station to replace the component



2.14 ESD650 Diode ESD protection 6.8V

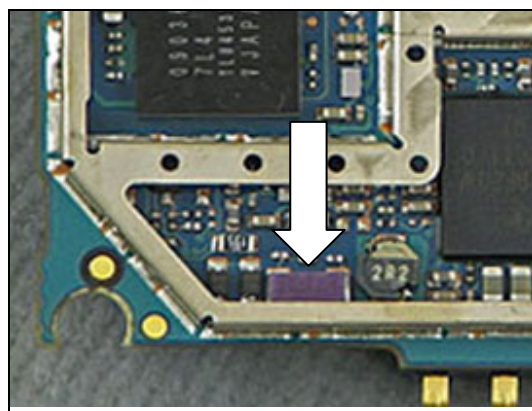
PROTECT THE SYSTEM CONNECTOR WITH CAPTON TAPE

Use Hot air soldering station to replace the component



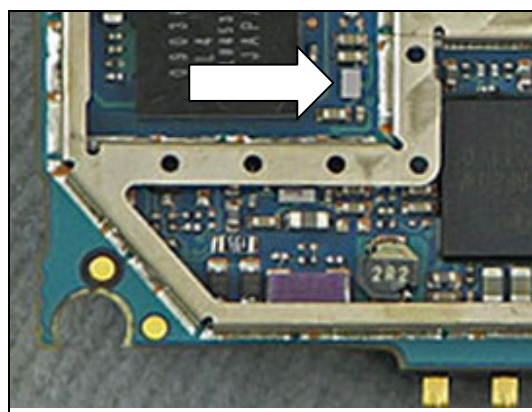
2.15 Y101 Crystal 32.768 kHz

Use Hot air soldering station to replace the component



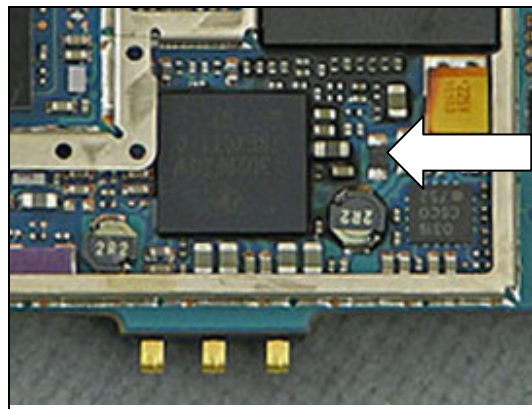
2.16 MN1004 IC reg 2V8

Use Hot air soldering station to replace the component



2.17 D150 Diode schot. 30V

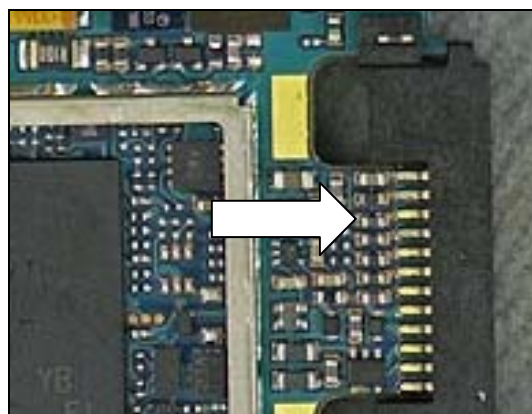
Use Hot air soldering station to replace the component



2.18 L603 Ferrite 0402

PROTECT THE SYSTEM CONNECTOR WITH CAPTON TAPE

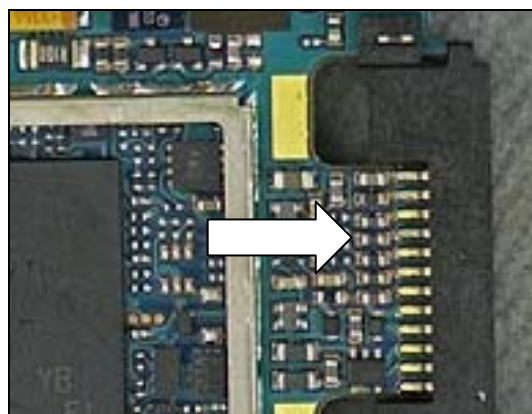
Use Hot air soldering station to replace the component



2.19 L604 Ferrite 0402

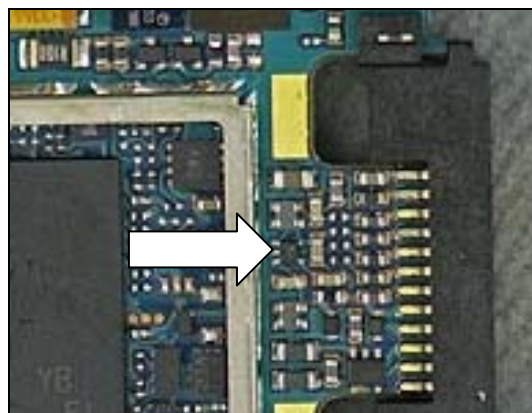
PROTECT THE SYSTEM CONNECTOR WITH CAPTON TAPE

Use Hot air soldering station to replace the component



2.20 ESD602 Diode Res. Protection

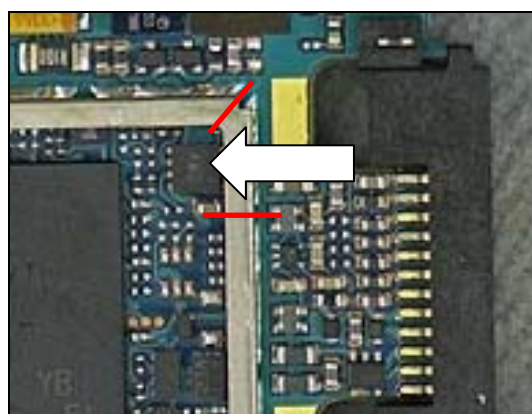
Use Hot air soldering station to replace the component



2.21 MA660 IC Charging

CUT THE FENCE ACCORDING TO MARKING IN PICTURE

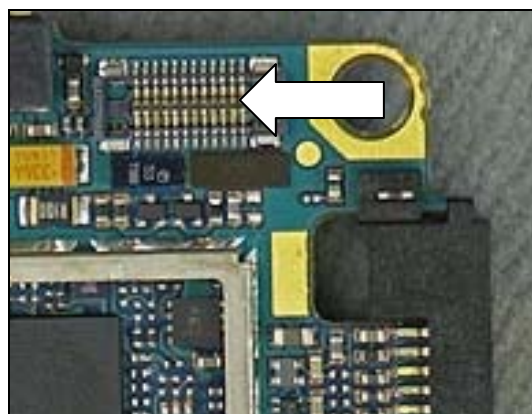
Use Hot air soldering station to replace the component



2.22 P702 Btb 24p F

Use Hot air soldering station to remove the btb connector

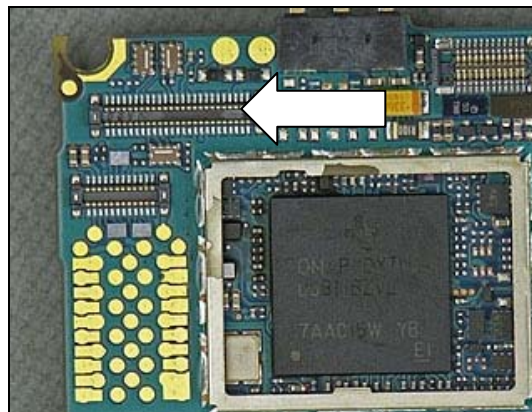
Use BGA soldering equipment to mount the new btb connector.



2.23 P701 Btb 50p F

Use Hot air soldering station to remove the btb connector

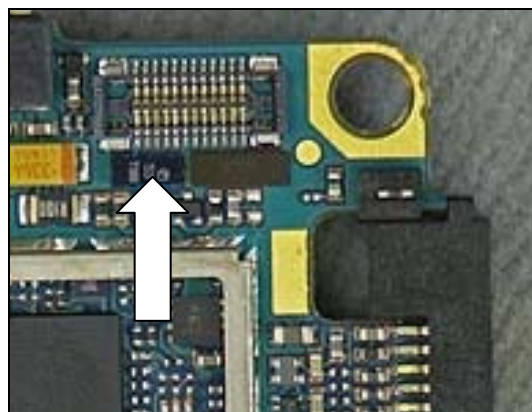
Use BGA soldering equipment to mount the new btb connector.



2.24 ESD701 EMI/RFI Filter

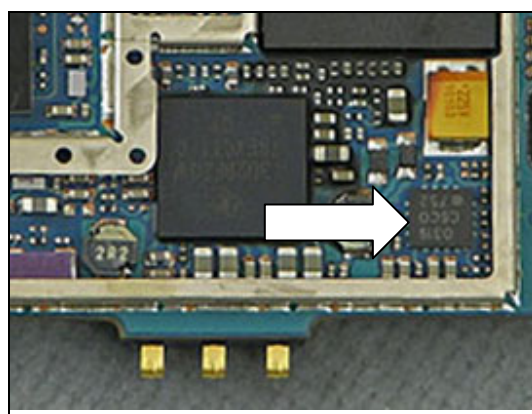
Protect the nearby btb connector with Capton tape

Use Hot air soldering station to replace the component



2.25 MN1200 IC Lin

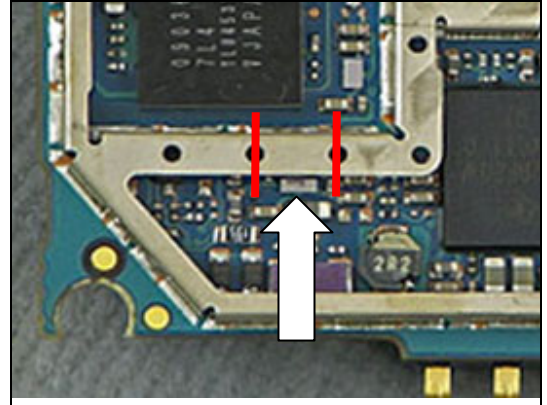
Use Hot air soldering station to replace the component



2.26 MA920 IC Audio amp

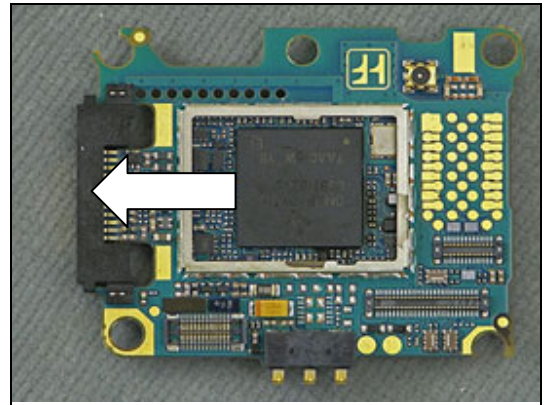
CUT THE FENCE ACCORDING TO MARKING IN PICTURE

Use Hot air soldering station to replace the component



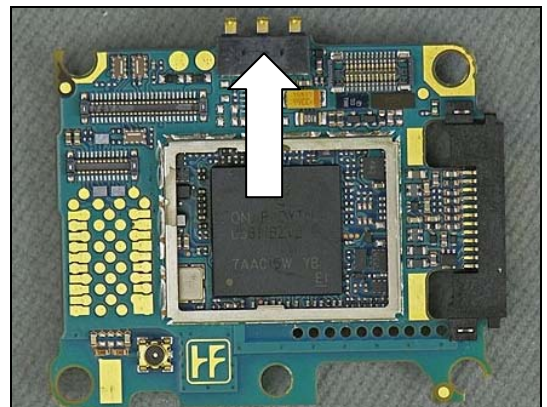
2.27 P520 System connector

Use Hot air soldering station to remove component
Use soldering iron to mount the new system connector



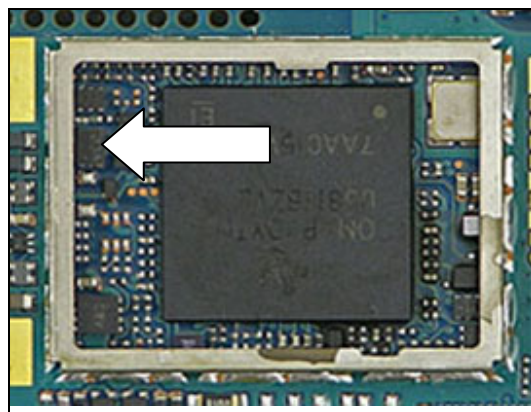
2.28 P750 Battery connector

Use Hot air soldering station to remove the Battery connector
Use BGA soldering equipment to mount the new Battery Connector



2.29 MA650 IC Transceiver

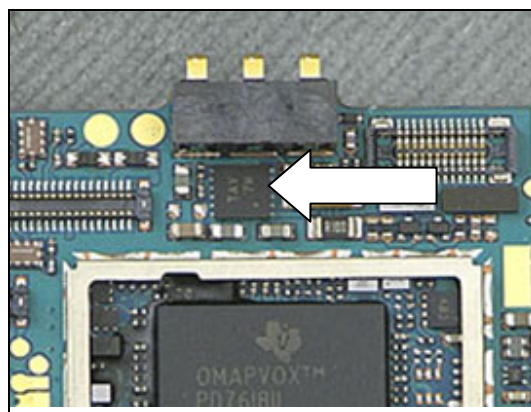
Use Hot air soldering station to replace the component



2.30 MA860 (An Only) IC Flash LED

Protect the nearby Battery and btb connectors with Capton tape

Use Hot air soldering station to replace the component



Revision history

Rev.	Date	Changes / Comments
1	2008-09-25	First release
2	2008-10-17	The document has been revised re MSL handling
3	2008-11-24	Changed description on MN1200 and MA660