



Working Instructions, Electrical

Applicable for Z1010

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1 Replacement of parts

1.1 Antenna Switch, Pos W1003, RPT 799 08

Process Tools

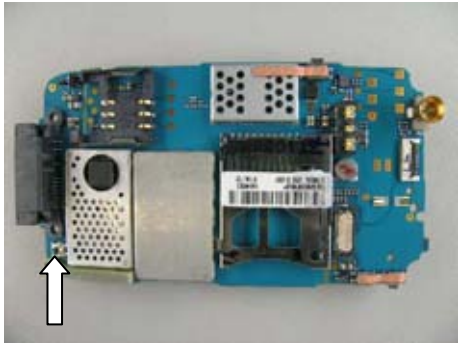
- BGA replacement equipment
- Pair of tweezers
- Solder cleaning wiper (Tin wick)
- Solder paste
- Solder paste dispenser
- Gel flux

Equipment

- ESD-gloves (cotton gloves)
- ESD-wristband

Instructions

- Disassemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (1 Disassembly upper & lower cabinets, step 1-31).

#	Figure	Instruction	Note
1	 <p style="text-align: center;"><i>fig.1</i></p>	<p>Remove the component with BGA replacement equipment.</p> <p>Put solder-paste with solder-paste dispenser on the pads for the connector (The PCB must be room temperature before you put solder-paste on the pads).</p> <p>Use BGA replacement equipment to solder the component.</p> <p>(fig.1)</p>	<p>The guideline is a recommendation. The reflow profile is strongly depending on the replacement equipment.</p>

- Assemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (2 Reassembly upper & lower cabinets, step 1-28).

1.2 Battery connector, Pos X2200, RPV 799 19

Process Tools

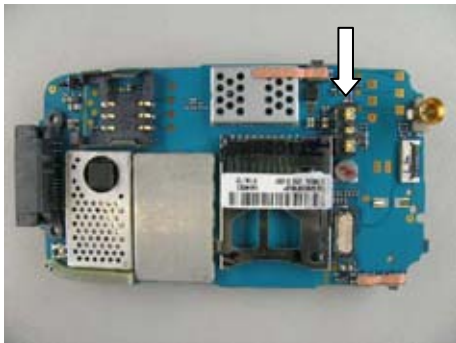
- BGA replacement equipment
- Pair of tweezers
- Solder cleaning wiper (Tin wick)
- Solder paste
- Solder paste dispenser
- Gel flux

Equipment

- ESD-gloves (cotton gloves)
- ESD-wristband

Instructions

- Disassemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (1 Disassembly upper & lower cabinets, step 1-31).

#	Figure	Instruction	Note
1	 <p><i>fig.1</i></p>	<p>Remove the component with BGA replacement equipment.</p> <p>Put solder paste with solder-paste dispenser on the pads for the connector (The PCB must be room temperature before you put solder-paste on the pads).</p> <p>Use BGA replacement equipment to solder the component.</p> <p>(It is possible to solder the connector with a solder pen).</p> <p>(fig.1)</p>	<p>The guideline is a recommendation. The reflow profile is strongly depending on the replacement equipment.</p>

- Assemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (2 Reassembly upper & lower cabinets, step 1-28).



1.3 Connector, Pos X2604, RNV 799 20

Process Tools

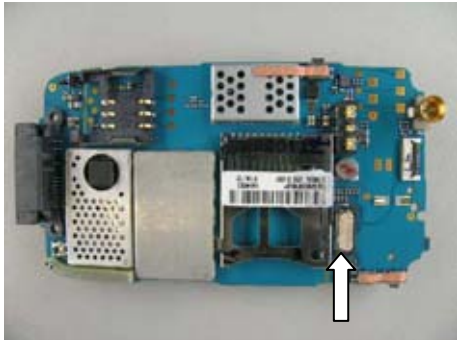
- BGA replacement equipment
- Pair of tweezers
- Solder cleaning wiper (Tin wick)
- Solder paste dispenser
- Solder paste
- Gel flux

Equipment

- ESD-gloves (cotton gloves)
- ESD-wristband

Instructions

- Disassemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (1 Disassembly upper & lower cabinets, step 1-31).

#	Figure	Instruction	Note
1	 <i>fig.1</i>	<p>Remove the component with BGA replacement equipment or hot air soldering station</p> <p>Put solder paste with solder paste dispenser on the pads for the connector. (The PCB must be room temperature before you put solder-paste on the pads.)</p> <p>Use BGA replacement equipment to solder the component.</p> <p>After soldering check for solder bridges between solder joints.</p> <p>(fig.1)</p>	<p>The guideline is a recommendation. The reflow profile is strongly depending on the replacement equipment</p>

- Assemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (2 Reassembly upper & lower cabinets, step 1-28).



1.4 Connector, Pos X2601, RNV 799 27 Connector, Pos X2600, X2607, RNV 799 26

Process Tools

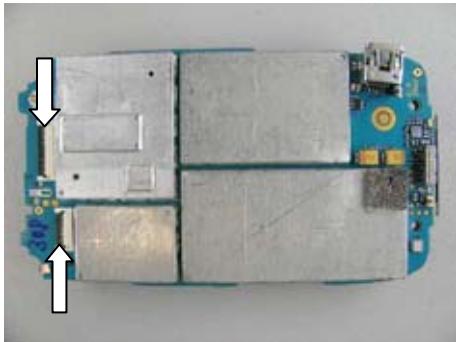
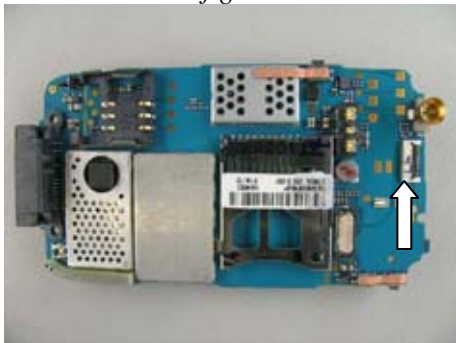
- BGA replacement equipment
- Pair of tweezers
- Solder cleaning wiper (Tin wick)
- Solder paste dispenser
- Solder paste
- Gel flux

Equipment

- ESD-gloves (cotton gloves)
- ESD-wristband

Instructions

- Disassemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (1 Disassembly upper & lower cabinets, step 1-31).

#	Figure	Instruction	Note
1	 <i>fig.1</i>  <i>fig.2</i>	<p>Remove the component with BGA replacement equipment or hot air soldering station</p> <p>Put solder paste with solder paste dispenser on the pads for the connector (The PCB must be room temperature before you put solder-paste on the pads).</p> <p>Use BGA replacement equipment to solder the component.</p> <p>After soldering check for solder bridges between the solder joints. (<i>fig.1, fig.2</i>)</p>	<p>The guideline is a recommendation. The reflow profile is strongly depending on the replacement equipment</p>

- Assemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (2 Reassembly upper & lower cabinets, step 1-28).



1.5 Camera switch, Pos S2600, RMD 101 22 Push-button switch, Pos S2601, S2602, RMD 799 23

Process Tools

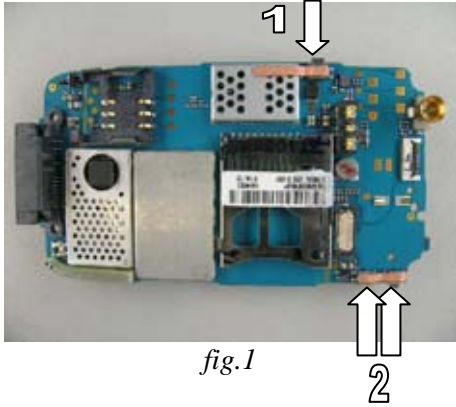
- Pair of tweezers
- Solder cleaning wiper (Tin wick)
- Ordinary soldering station (pen)
- Hot air soldering station.
- Solder paste, Solder wire
- Gel flux

Equipment

- ESD-gloves (cotton gloves)
- ESD-wristband

Instructions

- Disassemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (1 Disassembly upper & lower cabinets, step 1-2, 6-9, 22, 27-28).

#	Figure	Instruction	Note
1	 <i>fig.1</i>	<p>Remove the copper tape</p> <p>Replace the component with soldering station / hot air.</p> <p>Put a new copper ESD foil on the PCB. The copper tape should be centred on the switch.</p> <p>The Copper tape (2) should cover both Push-button switches and be folded to the other side of the PCB.</p> <p>(fig.1)</p>	<p>Note the location of copper tape before removal.</p>

- Assemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (2 Reassembly upper & lower cabinets, step 14, 20-23, 27-28).



1.6 ASIC Knatte 2, Pos N2300, ROP 101 3037/1

Process Tools

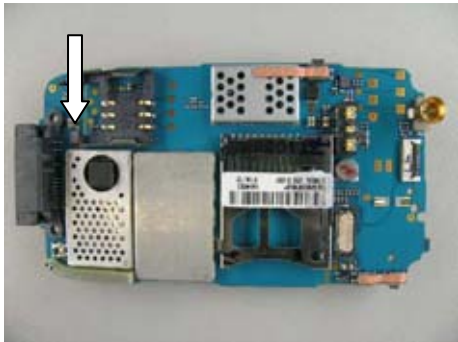
- BGA replacement equipment
- Pair of tweezers
- Solder cleaning wiper (Tin wick)
- Solder paste dispenser
- Solder paste
- Gel flux

Equipment

- ESD-gloves (cotton gloves)
- ESD-wristband

Instructions

- Disassemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (1 Disassembly upper & lower cabinets, step 1-31).

#	Figure	Instruction	Note
1	 <i>fig.1</i>	<p>Remove the component with BGA replacement equipment.</p> <p>Put solder paste with solder-paste dispenser on the pads for the connector (The PCB must be room temperature before you put solder-paste on the pads).</p> <p>Use BGA replacement equipment to solder the component.</p> <p>(fig.1)</p>	

- Assemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (2 Reassembly upper & lower cabinets, step 1-28).



1.7 Speaker

Process Tools


- Soldering iron
- Pair of tweezers
- Dentist hook

Equipment


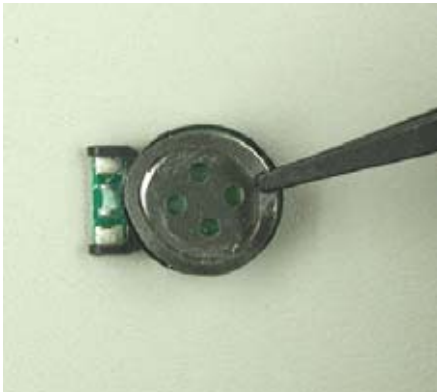


- ESD-gloves (cotton gloves)
- ESD-wristband

Instructions


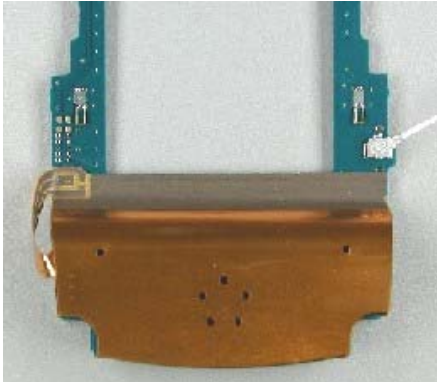
- Disassemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (1 Disassembly upper & lower cabinets, step 4, 5, 11-17).

#	Figure	Instruction	Note
8	 <i>fig.1</i>	<p>Lift up the speaker holder carefully (according to the picture).</p> <p>Remove the speaker with a dentist hook</p> <p>(fig.1)</p>	<p>Do not open the speaker holder more then 90 degrees to avoid damage on the antenna film.</p>



#	Figure	Instruction	Note
9	 <i>fig.2</i>	Use a soldering iron at the two soldering points (connectors) to remove the speaker from the speaker film. <i>(fig.2)</i>	Maximum tip soldering temperature 310 degrees Celsius.
10	 <i>fig.3</i>	Place a new Speaker gasket on the new speaker. <i>(fig.3)</i>	
11	 <i>fig.4</i>	Hold the Speaker film with a pair of tweezers and solder carefully the Speaker film to the speaker. <i>(fig.4)</i>	
12	 <i>fig..5</i>	Place the Speaker in the speaker holder and press down gentle with your fingers. <i>(fig.5)</i>	



#	Figure	Instruction	Note
13	 <i>fig.6</i>	Place a new Speaker Pad on the speaker. Use a pair of tweezers or your fingers. <i>(fig.6)</i>	
14	 <i>fig.7</i>	Fold down the Speaker holder on the Sub PCB and turn the board around. <i>(fig.7)</i>	

- Assemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (2 Reassembly upper & lower cabinets, step 16-19, 24-26).

1.8 PA GSM

Process Tools

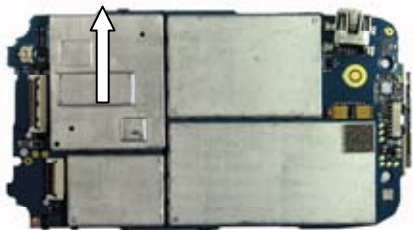
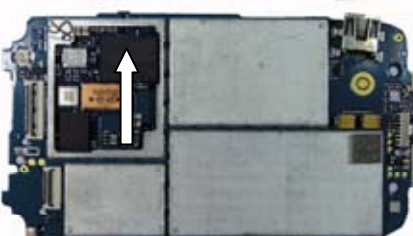
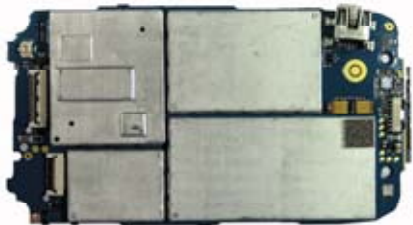
- BGA Equipment
- Pair of tweezers
- Dentist hook

Equipment

- ESD-gloves (cotton gloves)
- ESD-wristband

Instructions

- Disassemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (1 Disassembly upper & lower cabinets, step 4, 5, 11-17).
- **NOTE! Replacement of this Component requires RF-Calibration (SERP). Repair can only be done by authorized Service Centers**

#	Figure	Instruction	Note
	 <p><i>fig.1</i></p>	Remove the Shield Can Lid PA, by using a Dentist hook, Insert the Dentist hook under the edge of the Shielding Can Lid, according to the arrow in fig.1, and unsnap it.	Be careful not damage any components during this procedure
	 <p><i>fig.2</i></p>	<p>The Component GSM PA is located according to the arrow in fig.2</p> <p>Use BGA equipment to remove the Component GSM PA.</p> <p>Use BGA equipment to replace the Component GSM PA.</p>	Do not reuse or resolder components, always use new ones.
	 <p><i>fig.3</i></p>	After replacement of the Component, snap on a new Shield Can Lid PA	Do not reuse old Shield Can Lid, always use new ones.



1.9 Replacement of standard electrical components

Process Tools

- Pair of tweezers
- Solder cleaning wiper (Tin wick)
- Solder paste
- Gel flux
- Hot air soldering station
- Ordinary Soldering station (pen)
- Ref: Equipment list 131 30-2/FEA 209 544/77

Equipment

- ESD-gloves (cotton gloves)
- ESD-wristband

Instructions

- Disassemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (1 Disassembly upper & lower cabinets).
- Change the actual component. Ref *Part list Electrical 131 22-2/FEA 209 544/77*
- Use the soldering equipment above.
- Assemble the phone as described in *Working Instructions 3/00021-1/FEA 209 544/77* (2 Reassembly upper & lower cabinets).

NOTE

Be careful not to damage components that are close to the actual component that is to be changed



2 Reflow profiles

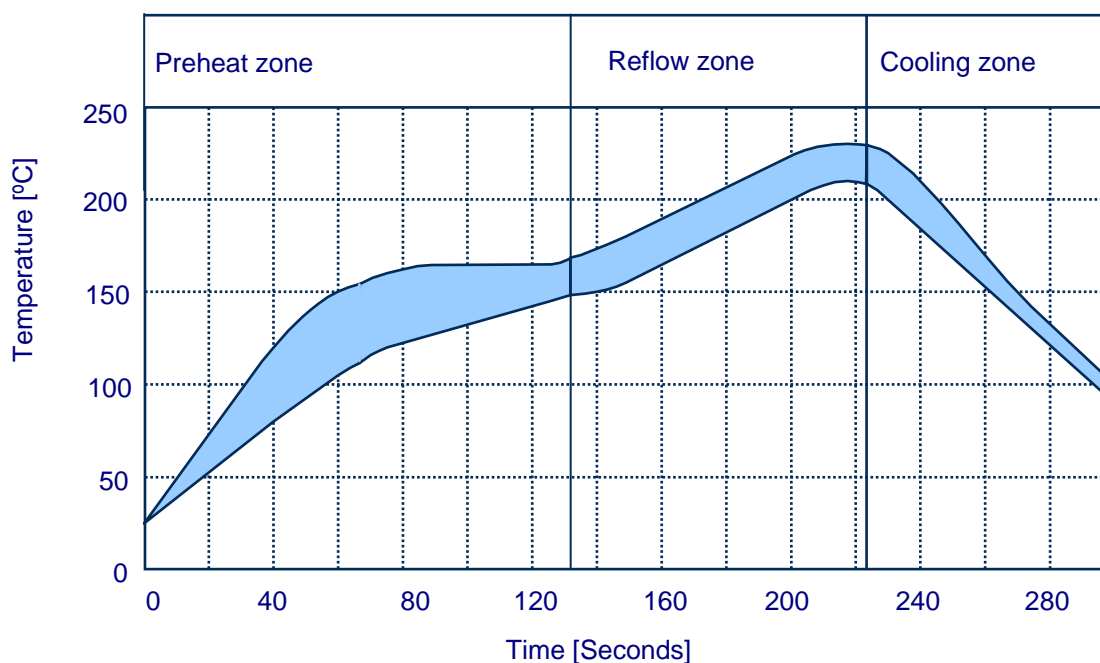
These values are strongly depending on the BGA replacement equipment.

Nozzle type will be chosen after the outer size of the actual component. Make sure the nozzle does not affect any near placed components.

NOTE:

These values are recommendations and may have to be changed depending on the type of equipment.

General reflow profile sn/pb



Ramp rate	< 3°C/sec
Ramp rate cooling zone	< 6°C/sec
Time above liquidus	60-150 sec
Minimum temperature	215°C
Maximum temperature	225°C or 235°C for 10-20 sec
Total time	Appr. 4-7 min

- The higher temperature in case the board has extremely high ΔT .



3 Revision History

Rev.	Date	Changes / Comments
A	2004-06-21	First release
B	2005-07-20	Added chapter 1.7 PA GSM
C	2005-11-14	Added chapter 1.6 ASIC Knatte 2