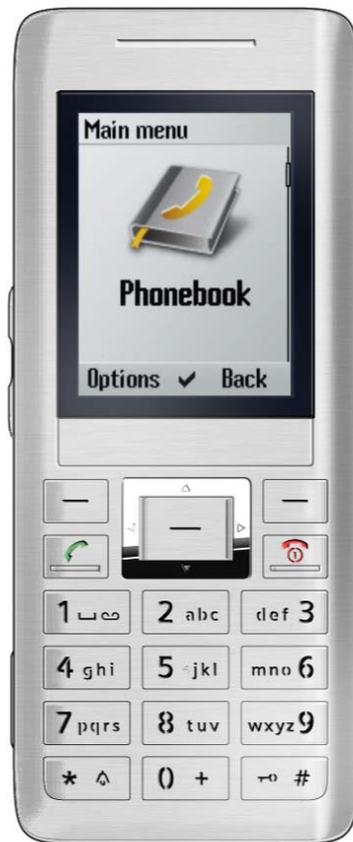


# Service Manual

## S68

### Level 1-3



Release	Date	Department	Notes to change
R 1.0	22.02.2006	BenQ Mobile S CC CES	New document

Technical Documentation	02/2006
TD_Repair_L2.5L_S68_R1.0.pdf	Page 1 of 47

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## 1 Key Feature

<b>Standard Systems</b>	Tri-band GSM 900/1800/1900 EGSM (GSM phase 2/phase 2+) GPRS class 10 Vocoders FR, HR, EFR, AMR
<b>Stand-by Time</b>	Up to 300 h (standard battery)
<b>Talk Time</b>	Up to 300 min (standard battery)
<b>Battery Technology</b> <b>Battery Capacity</b>	Battery: Li-Ion 660 mAh Charging time: Less than 2 h for 100%
<b>Weight</b>	78,5 g
<b>Volume</b>	44 cm <sup>3</sup>
<b>Length</b>	107 mm
<b>Width</b>	46 mm
<b>Thickness</b>	13,2 mm
<b>Storage</b>	8 MB user memory
<b>SIM Functionality / Security Controls</b>	SIM Application Toolkit (class 3) SIM lock, various levels PIN 1 & 2 control Ciphering A5.1, A5.2 and A5.3 SIM plug-in (3/1.8 V), SAT class 3
<b>Antenna</b>	Integrated
<b>Data Services</b>	Mobile Internet access (WAP 1.2.1 plus parts of 2.0) Data download OTA via SMS or WAP MMS release 98 EMS rel. 4.3 Data services (CSD) at 9.6 Kbps and GPRS (up to 53.6 Kbps) E-mail client
<b>Display / Display Illumination</b>	132 x 176 pixels, 262,144 colors, enhanced TFT, transfective, high-end flat window PMMA
<b>Camera</b>	n / a
<b>Connectivity</b>	USB cable / Bluetooth®
<b>Features</b>	Basic organizer (including day, week, and month) with Outlook® and Lotus Notes® synchronization, PIM SMS, voice messaging (via MMS) EMS and MMS, e-mail client Pop3 MMS supporting text, still images, voice and animations SyncML 1.2.1 (or higher via OBEX and OTA) Handsfree operation Dual-speaker system for outstanding sound quality 64-chord polyphonic ringtones, MIDI Very slim appearance Real metal keypad and housing (brushed aluminum) WAP 2.0 stack Java MIDP 2.x Wide range of headset and car kit solutions with Bluetooth® technology

## 2 S68 Interface to Accessories

### Original Accessories

#### Fashion & Carry

- Leather Case FCL-720

#### Energy

- Li-Ion Battery 660 mAh EBA-120
- Travel Charger (EU & UK) ETC-100/110
- Car Charger Plus ECC-100
- Desk Top Stand EDS-100

#### Handsfree Portable

- Headset Basic HHS-100
- Headset HHS-110
- Headset Purestyle HHS-120
- Headset Bluetooth® HHB-100
- Headset Bluetooth® Clip HHB-130/131
- Headset Bluetooth® Comfort HHB-160/161
- Headset Bluetooth® HHB-700/710
- Charger Adapter ECA-500 (for HS BT HHB-700/710)
- Charger Adapter ECA-100 (for HS BT HHB-130/131/160/161)

#### Car Solutions

- Car Kit Bluetooth® Easy HKW-100
- Car Kit Bluetooth® Portable HKW-700
- Car Kit Bluetooth® HKW-710 (successor of HKW-600)
- Car Kit Bluetooth® SIM HKW-720
- Car Kit Portable HKP-100
- Mobile Holder HMM-100

#### Office

- Data Cable DCA-100 (RS232)
- Data Cable USB DCA-140
- Sync Station DSC-100

### 3 Unit Description of S68

Highly attractive premium design: very slim phone (13 mm) with real metal (brushed aluminum) surface and keypad.

Focusing on the core and most convenient business functions, PIM, Bluetooth®, Fax and Document Viewer, and other business applications that enrich professional life.

New simplified and intuitive menu structure.

Fast Dialing™ key, voice messaging (via MMS), dictaphone, and e-mail client.

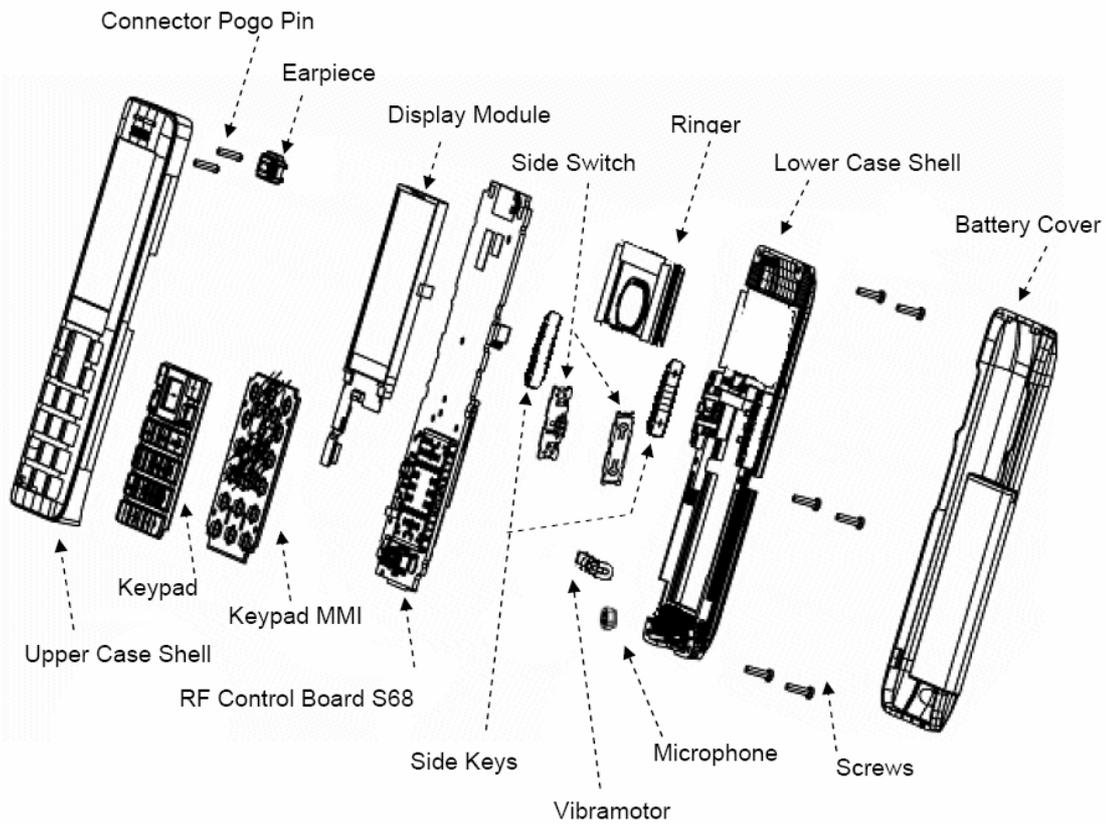
Excellent overall ergonomics.

Superb sound quality (including handsfree talking).

Optimal visibility of content display under all lighting conditions.



## 4 Exploded View of S68



**Without illustration:**

- Shielding Cover RF
- Shielding Cover BB Top
- Shielding Cover BB BOT
- Shielding Cover BT

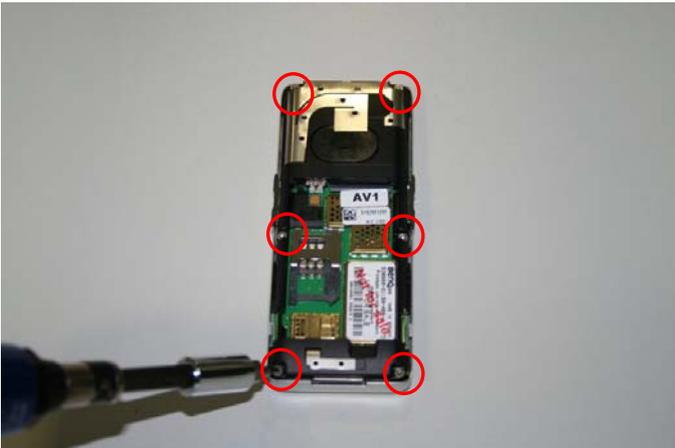
## Disassembly of S68

All repairs as well as disassembling and assembling have to be carried out in an ESD protected environment and with ESD protected equipment/tools. For all activities the international ESD regulations have to be considered.

For more details please check information in c – market

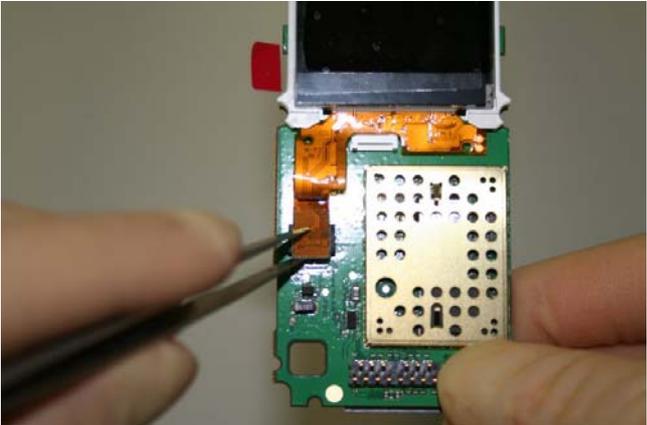
<https://market.benqmobile.com/SO/welcome.lookup.asp>

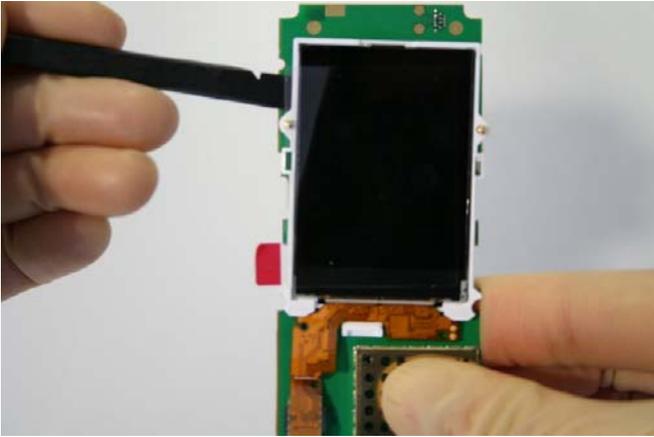
There you can find the document “ESD Guideline”.

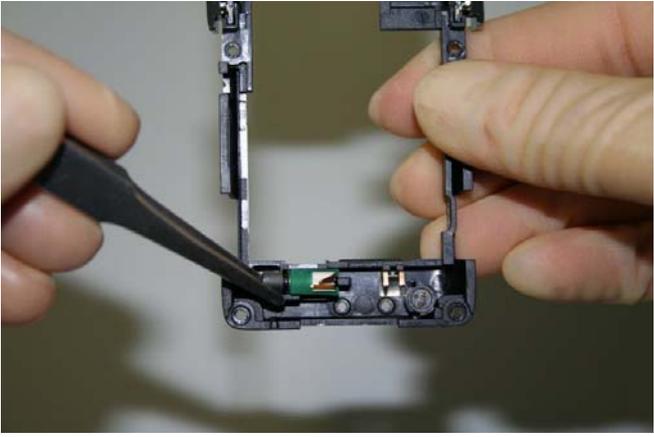
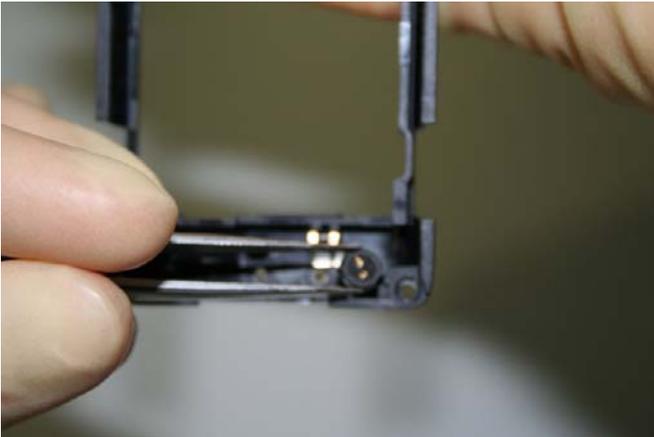
<p><b>Step 1</b></p> 	<p>Remove Battery Cover and Battery.</p>
<p><b>Step 2</b></p> 	<p>Remove screws with the Torque – Screwdriver. T5+</p>

<p><b>Step 3</b></p> 	<p>Disassemble Upper Case from Lower Case.</p>
<p><b>Step 4</b></p> 	
<p><b>Step 5</b></p> 	<p>To avoid scratches, it is mandatory to place a protection foil onto the display!</p>

<p><b>Step 6</b></p> 	<p>Remove Keypad MMI by using Tweezers carefully.</p>
<p><b>Step 7</b></p> 	<p>Remove Keypad by using Tweezers carefully.</p>
<p><b>Step 8</b></p> 	<p>Use Tweezers to remove Earpiece.</p>

<p><b>Step 9</b></p> 	<p>.Remove PCB from Lower Case.</p>
<p><b>Step 10</b></p> 	
<p><b>Step 11</b></p> 	<p>Disconnect Flex Cable from PCB socket by using Tweezers.</p>

<p><b>Step 12</b></p> 	<p>Loosen Display Module from PCB with Alternative Opening Tool.</p>
<p><b>Step 13</b></p> 	
<p><b>Step 14</b></p> 	<p>Remove Ringer.</p>

<p><b>Step 15</b></p> 	<p>Remove Vibramotor by using Tweezers.</p>
<p><b>Step 16</b></p> 	<p>Use Tweezers to remove Microphone.</p>
<p><b>Step 17</b></p> 	<p>Use Tweezers to remove Side Keys and Side Keys MMI.</p>

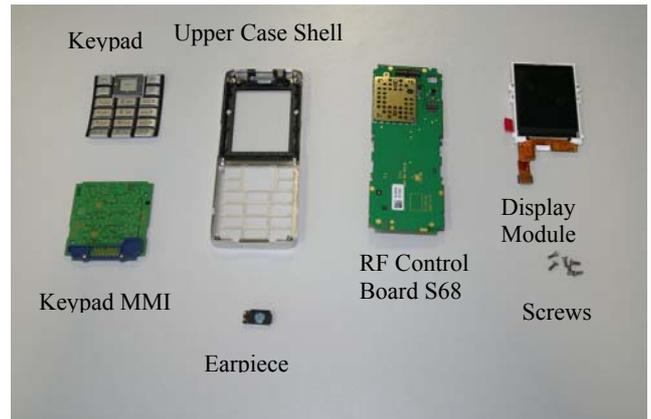
**Step 18**



**Overview Lower Parts**



**Overview Upper Parts**



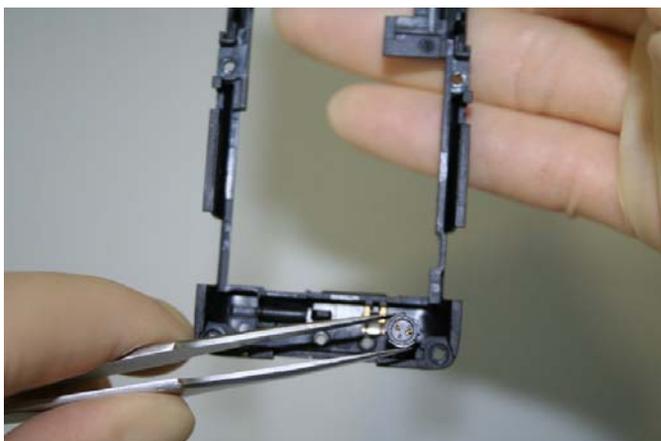
## 6 Assembly of S68

### Step 1



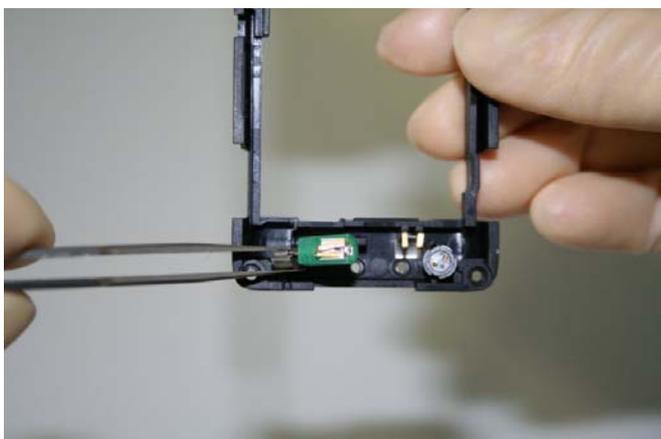
Assemble Ringer by using Tweezers.

### Step 2

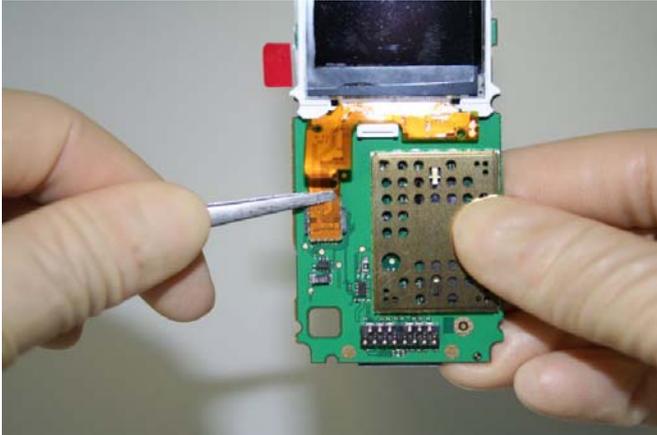


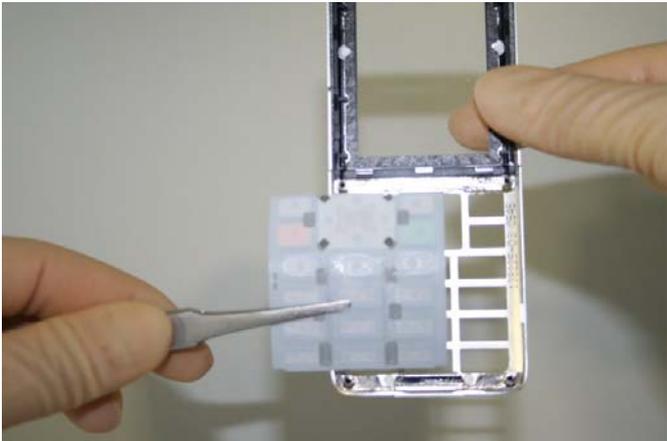
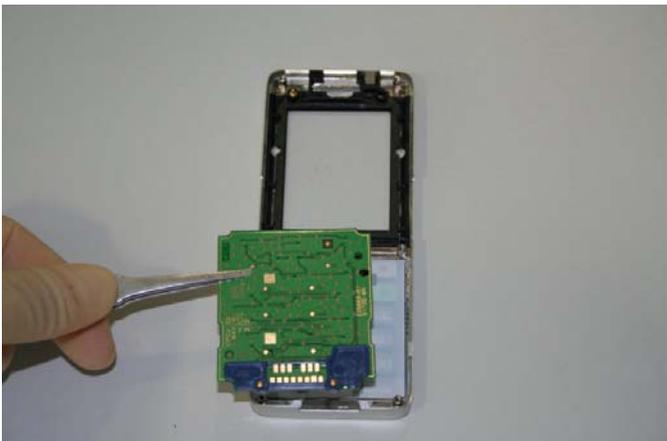
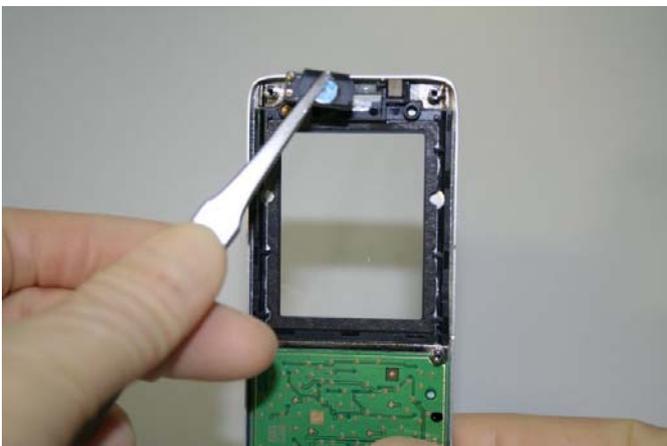
Assemble Microphone by using Tweezers

### Step 3

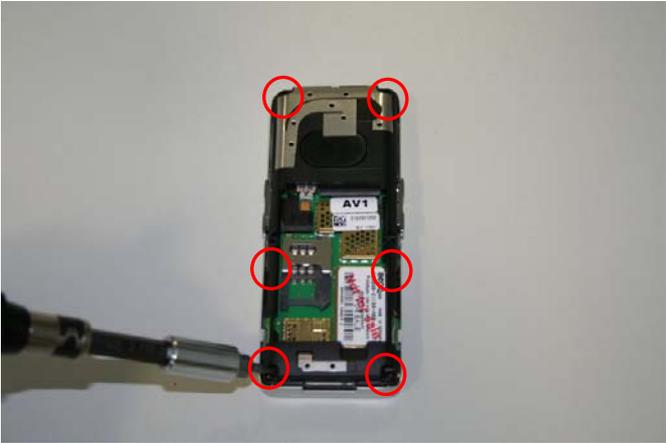


Assemble Vibramotor by using Tweezers.

<p><b>Step 4</b></p> 	<p>Assemble Side Keys and Side Keys MMI</p>
<p><b>Step 5</b></p> 	<p>Assemble Display Module on PCB.</p>
<p><b>Step 6</b></p> 	<p>Connect Flex Cable with PCB socket.</p>

<p><b>Step 7</b></p> 	<p>Assemble Keypad.</p>
<p><b>Step 8</b></p> 	<p>Assemble Keypad MMI.</p>
<p><b>Step 9</b></p> 	<p>Assemble Earpiece.</p>

<p><b>Step 10</b></p> 	<p>Attention! Before assembling the Display Module it is mandatory to remove the Display Foil!</p>
<p><b>Step 11</b></p> 	<p>Place PCB with assembled Display in the Upper Case.</p>
<p><b>Step 12</b></p> 	<p>Assemble Lower Case onto the Upper Case.</p>

<p><b>Step 13</b></p> 	<p>Place screws with the Torque – Screwdriver. T5+</p>
<p><b>Step 14</b></p> 	<p>Assemble Battery.</p>
<p><b>Step 15</b></p> 	<p>Assemble Battery Cover.</p>

## 7 BenQ Service Equipment User Manual

### Introduction

Every LSO repairing BenQ handset must ensure that the quality standards are observed. BenQ has developed an automatic testing system that will perform all necessary measurements. This testing system is known as:

### BenQ Mobile Service Equipment

- For disassembling / assembling

	<p style="text-align: center;"><b>Torque – Screwdriver</b> Part Number: F 30032 – P 228 – A1</p>
	<p style="text-align: center;"><b>Opening tool</b> (Case opening without destroying) Part Number: F 30032 – P 38 – A1</p>
	<p style="text-align: center;"><b>Alternative Opening tool</b> Part Number: F30032 – P583 – A1</p>
	<p style="text-align: center;"><b>Tweezers</b></p>

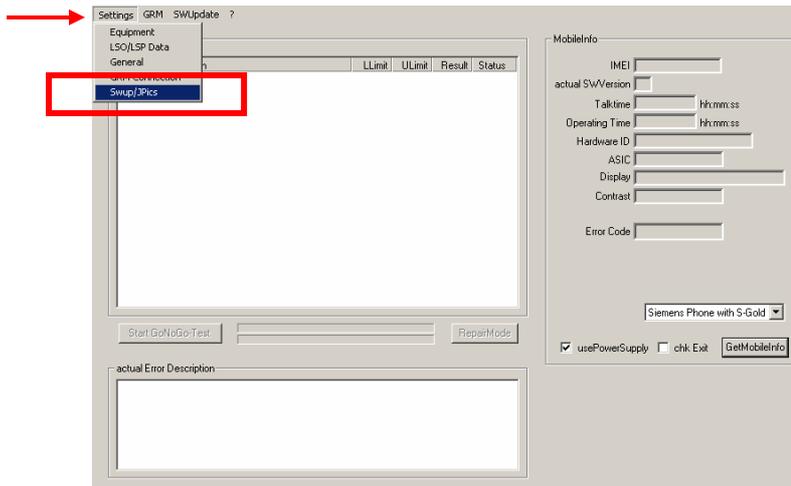
- For testing

**All mobile phones have to be tested with the GRT – Software. The service partner is responsible to ensure that all required hardware is available.**

For additional Software and Hardware options as well as the supported GRT equipment, please check the GRT User manual.

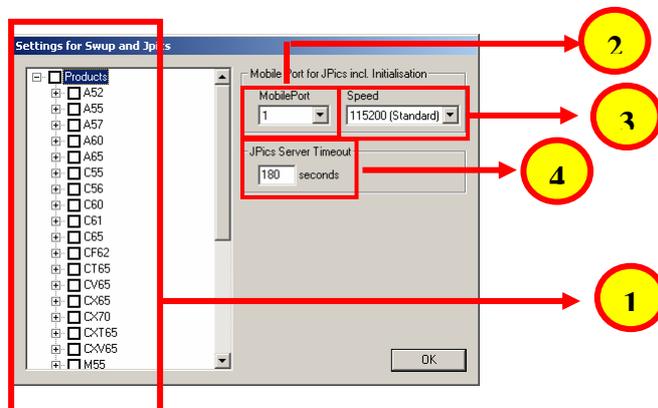
## 8 GRT Software: Functionality Configuration

**Sep 1:** Select „Settings >> SWUP / JPICS”



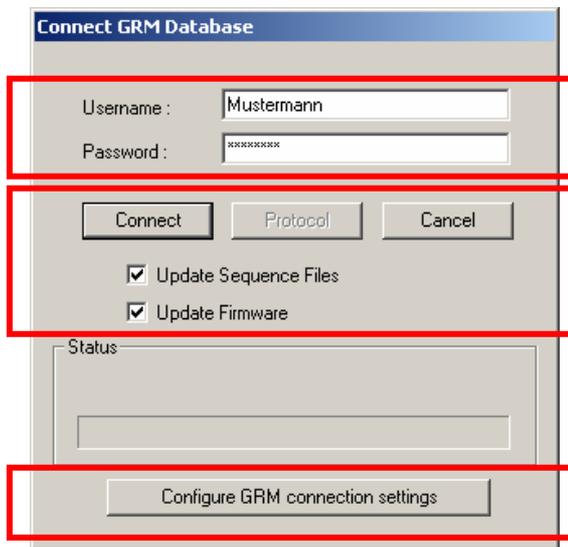
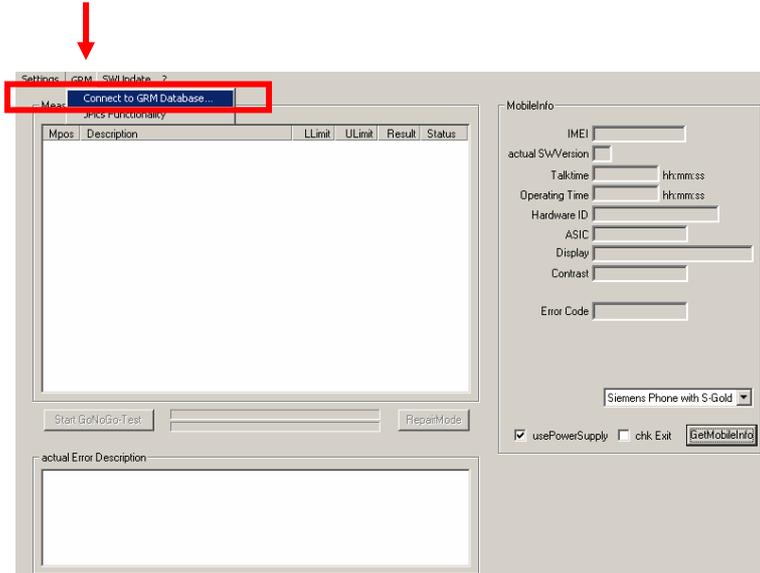
**Step 2:** Proceed as follows:

- Select all required Variants you need to repair (click onto the “+” in front of the product name.
- Check Com-Port setting. If necessary change it
- Check speed setting. Select always the lowest speed if your PC does not have a fast serial card
- Enter the value for “JPICS Server Timeout”. Be careful, this value defines how long GRT tries to reach the server until you get an error message. Do not select a very long time



**Step 3: Connect to GRM Server**

- Choose in the section „GRM“ the „Connect to GRM Database“ functionality



1 Enter your GRT-Username and Password into this fields

2 Activate always both boxes if you connect to the database. Start with "Connect"

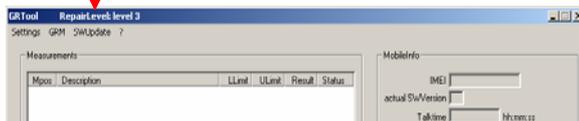
3 If you IT infrastructure parameter have changed, use this button to move to the configuration mask

- End the connection with a click onto the „Exit button“ (appearing after successful data exchange)

**GRT Software has now finished all required settings and configuration tasks. All files have been down- and uploaded. In dependency of the selected number of mobile phones and variants the volume of transferred date could be (~100MB)**

## 9 GRT Software: Regular Usage

**Step 1:** Select the section SWUpdate



**Step 2:** Choose the area you want to work with



- **Personal Repair**  
Personal Repair is always accessible. Basis for the decision if a SW-Update is authorised by Siemens is the so called Service Release-Table.

**Example:** Mobile Phone has already SW50. Service -Release-Table shows SW50

In this case SW-Update is not necessary and therefore not authorised

In any case customer data can be erased on request. (xfs and mapping have to be activated) Of course **JPICS** hardware and authorisation have to be available.

- **Operator SWAP**  
This area is only accessible if you are released by the service management to perform SW-Updates for Net-Operators. Basis for the decision if a SW-Update is authorised by Siemens is the so called Master-Table.

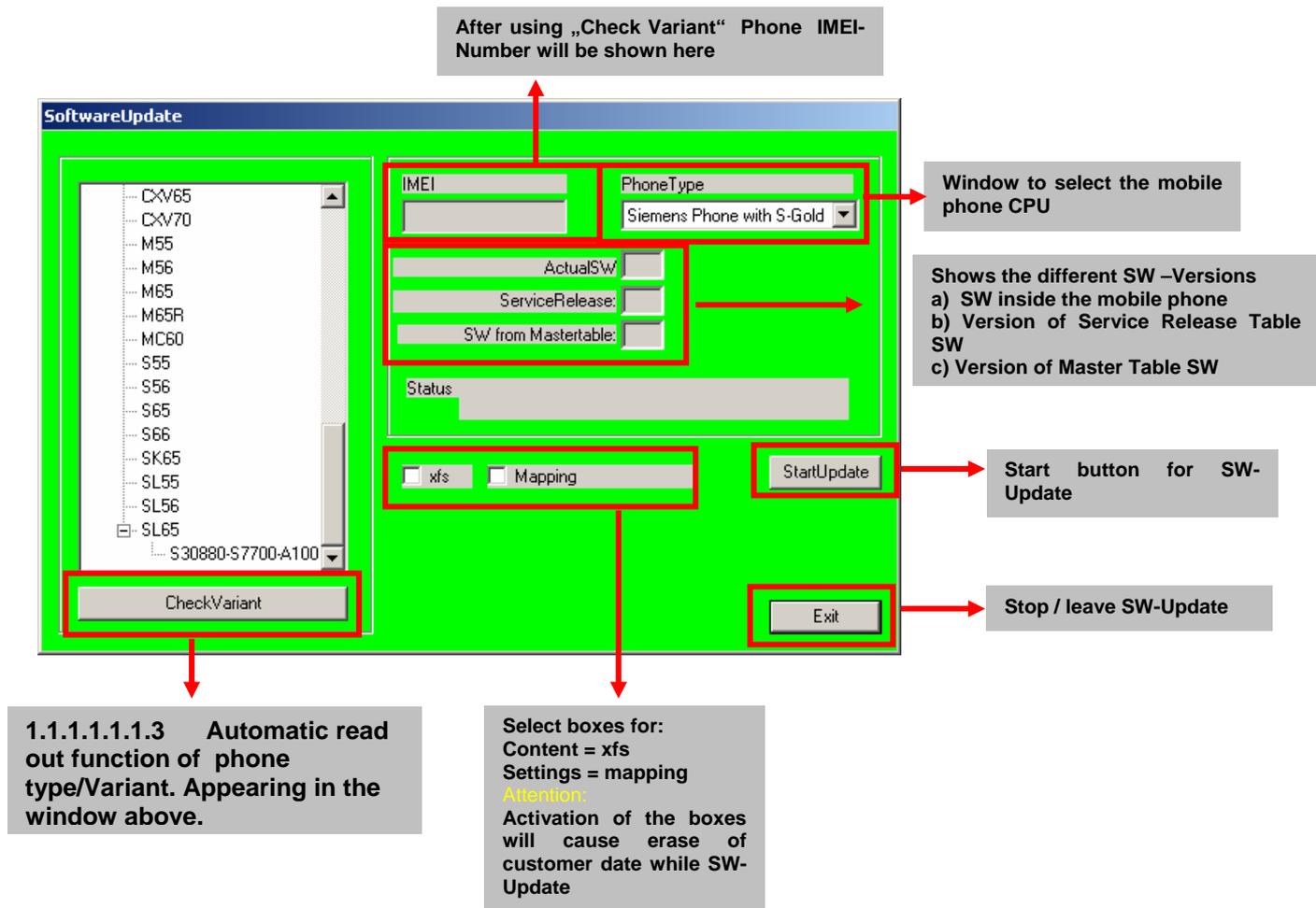
Customer data will be erased without any exception and any chance to influence by the user. **JPICS** hardware and authorisation have to be available.

- **Operator SWUpdate**  
This area is only accessible if you are released by the service management to perform SW-Updates for Net-Operators. Basis for the decision if a SW-Update is authorised by Siemens is the so called Master-Table.

Like in "Personal Repair" customer data can be erased on request. (xfs and mapping have to be activated) Of course **JPICS** hardware and authorisation have to be available.

### 9.1 Window explanation

This general explanation is valid for all SW-Update channels (Personal Repair, Operator SWAP, Operator SWUpdate)



**Remarks:**

**In case of malfunction please check**

- Is the correct phone type selected
- Is the correct COM-Port selected
- If a variant is missing, move back to Settings select the missing variant and connct the GRM Server. Then continue with SW-Update.

## 9.2 Case 1: Personal Repair (green)

**Step 1:** Carry out step 1 – 4 to start SW-Update.

The screenshot shows the 'SoftwareUpdate' dialog box. It features a list of software variants on the left, including C-V65, C-V70, M55, M56, M65, M65R, MC60, S55, S56, S65, S66, SK65, SL55, SL56, and SL65. Below the list is a 'CheckVariant' button. On the right, there are input fields for 'IMEI', 'ActualSW', 'ServiceRelease', and 'SW from MasterTable'. A 'PhoneType' dropdown menu is set to 'Siemens Phone with S-Gold'. Below these are 'xfs' and 'Mapping' checkboxes, a 'StartUpdate' button, and an 'Exit' button. A 'Status' field is also present. Four numbered callouts (1, 2, 3, 4) point to the PhoneType dropdown, the CheckVariant button, the xfs and Mapping checkboxes, and the StartUpdate button, respectively.

**1** → Select the mobile phone CPU type

**2** → CheckVariant

**3** → Choose if customer data shall be erased. If "Yes" activate the boxes in front of xfs and mapping

**4** → Start SW-Update

### Remarks:

- The decision about a Siemens authorised SW-Update depends only on the Service Release-Table.
- The SW which is booted by GRT can be below the SW mentioned in the Service Release Table, if this SW is not released for the Net-Operator
- If **xfs** and **mapping** are activated, GRT will erase in any case the customer data even if the action is cancelled.
- If the user wants to download an other variant then the automatically identified one, he has simply to select an other variant from the list. Afterwards he has to start the SW-Update

### 9.3 Case 2: Operator SWAP (red)

**Step 1:** Carry out step 1 – 4 to start SW-Update.

**1** Select the mobile phone CPU type

**2** 1.1.1.1.1.1.1 Read out phone type/Variant. >>Appears in the window above.

**3** Choose if customer data shall be erased. If "Yes" activate the boxes in front of xfs and mapping

**4** Start SW-Update

#### Remarks:

- The decision about a Siemens authorised SW-Update depends only on the Master-Table.
- The user has no chance to influence the decision
- **Xfs** and **mapping** are always activated there is no chance to deactivate them. GRT will erase in any case the customer data even if the action is cancelled.
- If the user wants to download an other variant then the automatically identified one, he has simply to select an other variant from the list. Afterwards he has to start the SW-Update

## 9.4 Case 3 Operator SWUpdate (blue)

**Step 1:** Carry out step 1 – 4 to start SW-Update.

The screenshot shows the 'SoftwareUpdate' dialog box. It features a list of phone variants on the left, including CXV65, CXV70, M55, M56, M65, M65R, MC60, S55, S56, S65, S66, SK65, SL55, SL56, and SL65. Below the list is a 'CheckVariant' button. To the right, there are fields for 'IMEI', 'PhoneType' (set to 'Siemens Phone with S-Gold'), 'ActualSW', 'SW from Mastertable', and 'Status'. At the bottom, there are checkboxes for 'xfs' and 'Mapping', a 'StartUpdate' button, and an 'Exit' button. Four numbered callouts are present: 1 points to the 'PhoneType' dropdown, 2 points to the 'CheckVariant' button, 3 points to the 'xfs' and 'Mapping' checkboxes, and 4 points to the 'StartUpdate' button.

**1** Select the mobile phone CPU type

**2** 1.1.1.1.1.4 Read out phone type/Variant. >>Appears in the window above.

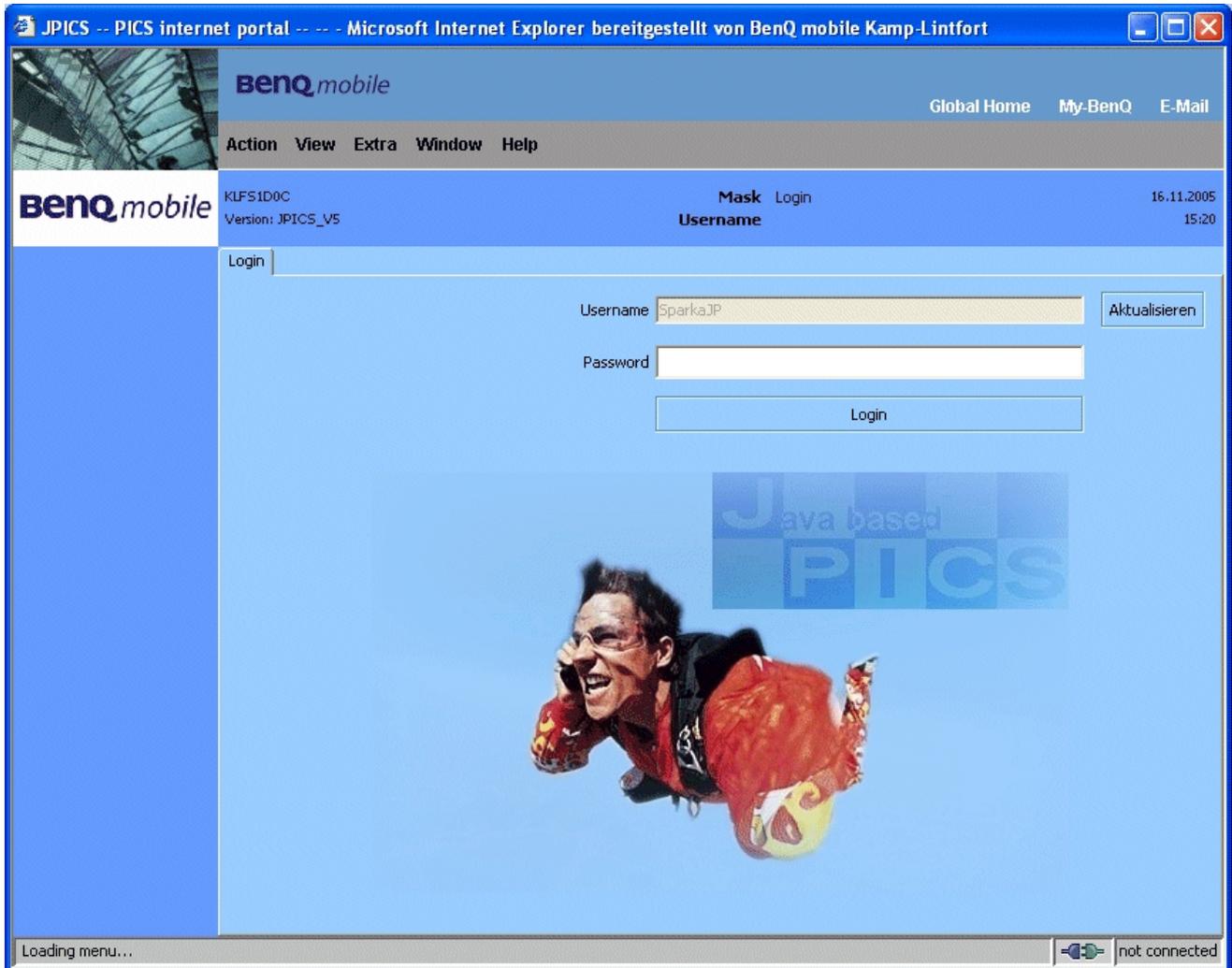
**3** Choose if customer data shall be erased. If "Yes" activate the boxes in front of xfs and mapping

**4** Start SW-Update

### Remarks:

- The decision about a Siemens authorised SW-Update depends only on the Master-Table .
- The user has no chance to influence the decision
- **Xfs** and **mapping** can be activated on demand. GRT will erase in any case the customer data even if the action is cancelled.
- If the user wants to download an other variant then the automatically identified one, he has simply to select an other variant from the list. Afterwards he has to start the SW-Update

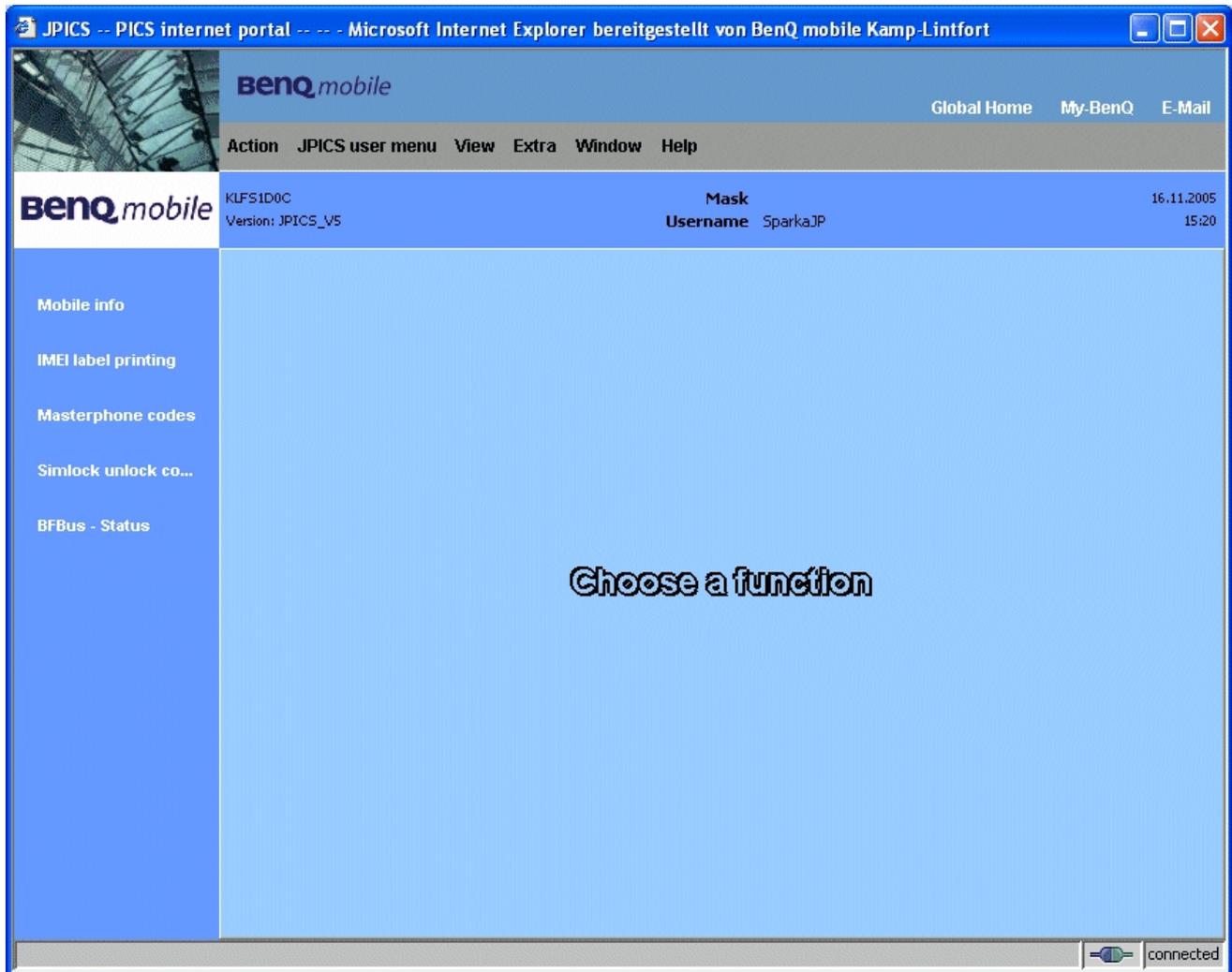
## 10 JPICS (Java based Product Information Controlling System)



### 10.1. Overview

The following functions are available for the LSO:

- General mobile information
- Generate PINCODE
- Generate SIMLOCK – UNLOCK – Code
- Print IMEI labels
- Lock, Unlock and Test the BF – Bus



The access to the JPICS server which is located in Kamp – Lintfort is protected by chip card and in addition using secure socket layer (SSL) connection.

The JPICS server is only available for authorized users with a specially coded smart card. These smart cards and the administration of the JPICS web server and the PICS database – server can only be provided by the JPICS – TRUST – Center of the responsible department in Kamp – Lintfort.

In case of any questions or requests concerning smart cards or administration of the databases please ask your responsible BenQ Customer Care Manager.

## 10.2. Installation overview

The following installation description assumes that a web browser is already installed.

JPICS is tested with the following browsers:

1. Internet Explorer Version 5.5 and higher
2. Netscape Version 6 and higher

For further information regarding supported browsers, browser version and supported operating systems, see the Sun FAQ's.

Here is a step by step instruction to install all the required components:

**It is necessary to follow this order!**

1. Smart Card Reader (Omnikey: Cardman 2020 USB or Cardman 3121 USB)
2. CardOS interface (Siemens Version 3.0 B)
3. Java Runtime Environment (Sun)
4. Java additional components

**Every user is responsible for a proper installation matching the license agreements.**

For installation and further access you need the following:

1. The JPICS Installation – CD
2. The Smart Card JPICS. These cards can be ordered via your responsible Customer Care Manager within Siemens or on [http://jpics.siemens.com/jpics/admin/request-new\\_jpics.jsp](http://jpics.siemens.com/jpics/admin/request-new_jpics.jsp)
3. A supported Smart Card Reader (Omnikey Cardman) in order to access your Smart Card.

Remark: We recommend using Cardman 2020 USB or Cardman 3121 USB. Serial card readers are not supported!!

### 10.3. Generate Codes

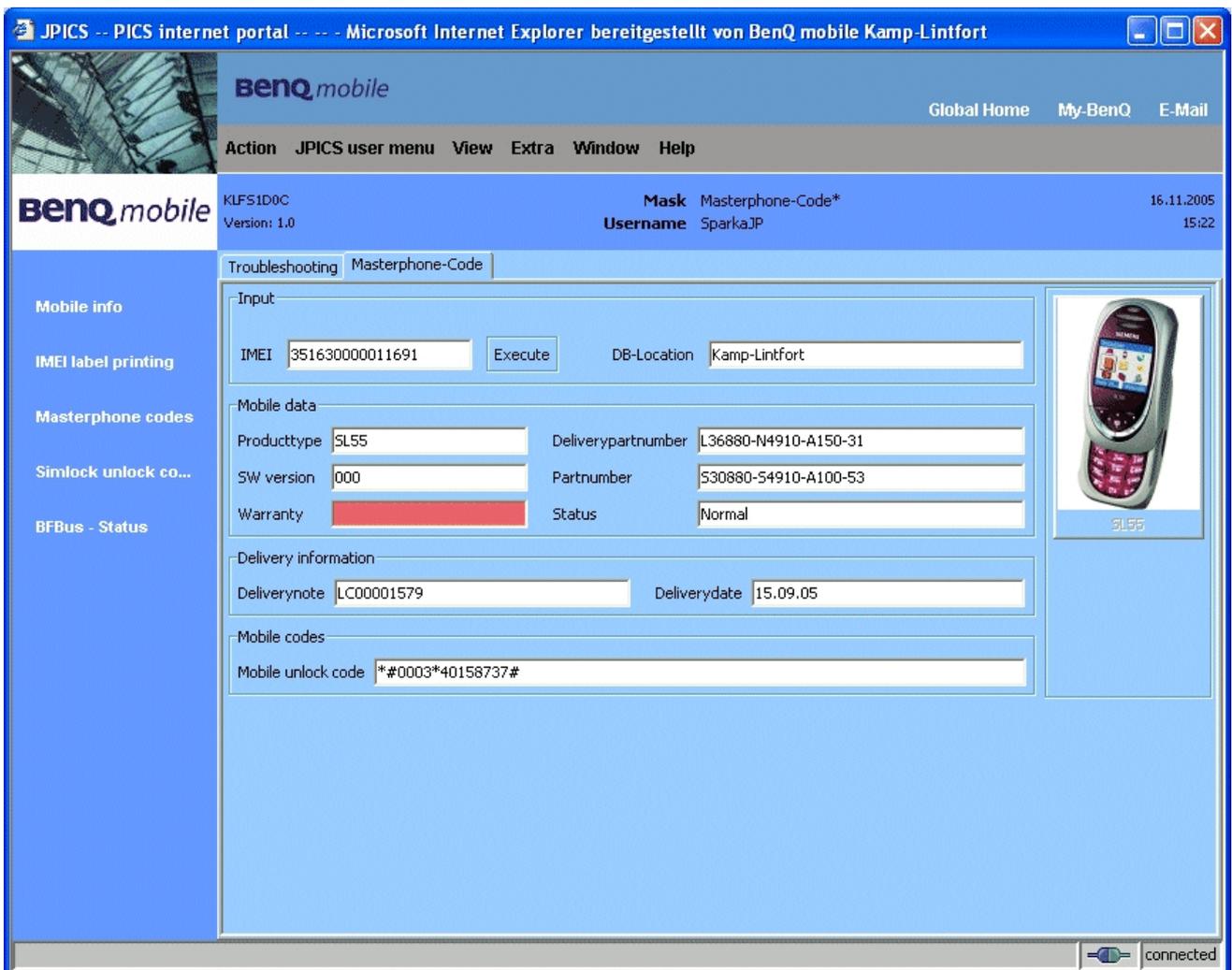
In the JPICS application you can choose to generate:

- Masterphone codes
- Simlock – Unlock – Codes

#### Masterphone codes

The **Masterphone code** is used to unlock blocked mobiles.

**Masterphone codes** can only be supplied for mobiles which have been delivered in a regular manner.



## Simlock – Unlock – Code

The **Simlock – Unlock – Codes** can only be generated if the following conditions are given:

- Mobile must have an active **Simlock** inside.
- The user must be given the authorization to obtain **Simlock – Unlock – Codes** for the variant of the operator to which the mobile was delivered last time.

The screenshot shows a web browser window titled "JPICS -- PICS internet portal -- -- - Microsoft Internet Explorer bereitgestellt von BenQ mobile Kamp-Lintfort". The page header features the BenQmobile logo and navigation links: "Global Home", "My-BenQ", and "E-Mail". Below the header is a menu bar with "Action", "JPICS user menu", "View", "Extra", "Window", and "Help".

The main content area is titled "Simlock-Unlock-Code" and includes the following sections:

- Mobile info:** A sidebar menu with options like "IMEI label printing", "Masterphone codes", "Simlock unlock co...", and "BFBus - Status".
- Get information for given IMEI:** A form with an "IMEI" field containing "350673547180612", an "Execute" button, and a "DB-Location" field containing "Kamp-Lintfort".
- Mobile data:** A table of fields:
 

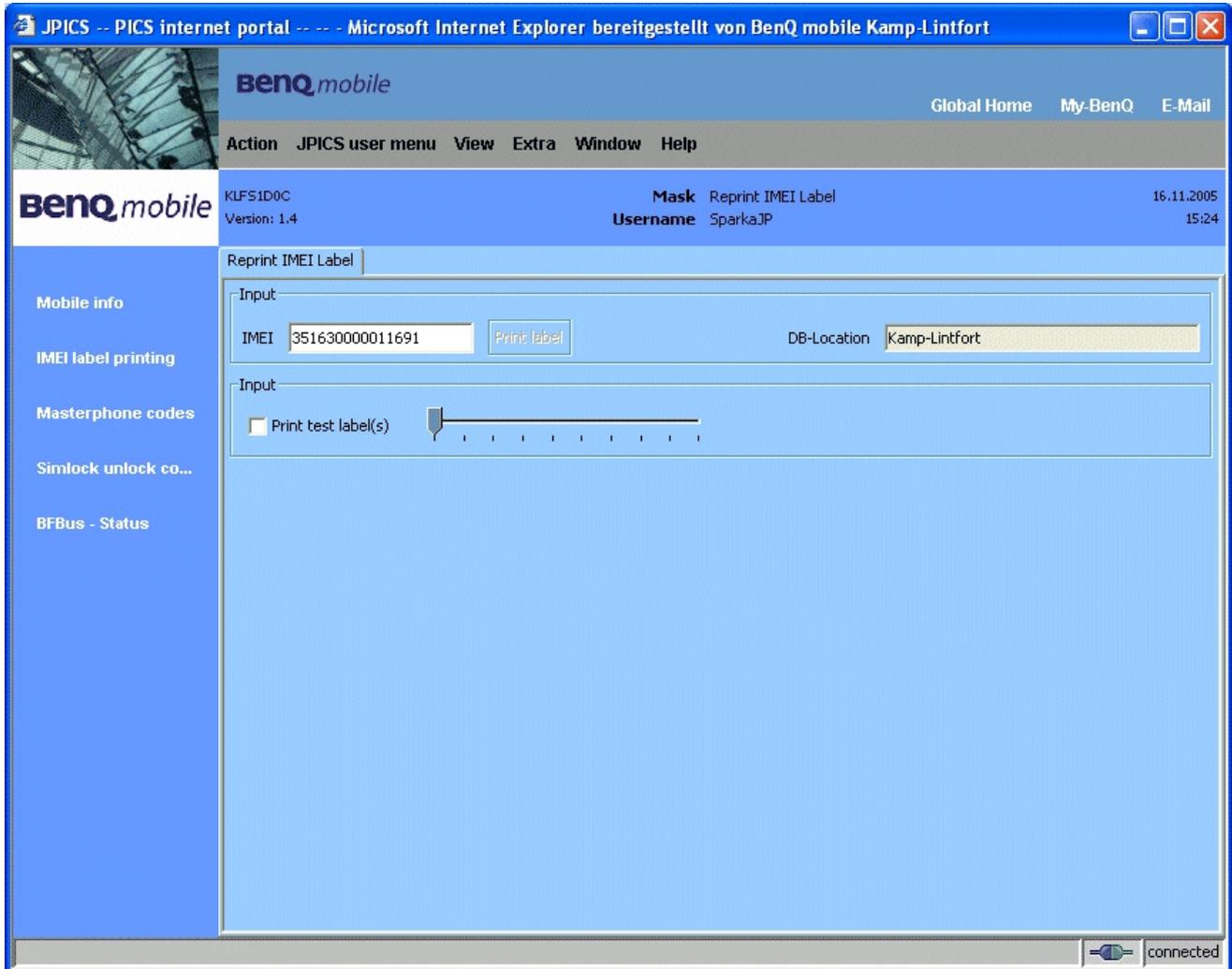
Producttype	C45	Deliverypartnumber	L36880-55100-X139-15
SW version	049	Partnumber	S30880-55100-A139-14
Warranty	21.08.05	Status	Normal
- Delivery information:** A form with "Deliverynote" (0066015319) and "Deliverydate" (22.08.03).
- Mobile codes:** A table of fields:
 

Networkcode		Network Mastercode	
S. Providercode		S. Provider Mastercode	
SIM-Mastercode		SIM-Reeanablecode	
Corporatecode		Corporate Mastercode	
Network Subnet Code		Network Subnet Mastercode	*#0004*28101158#

On the right side of the main content area, there is an image of a blue mobile phone labeled "C45". At the bottom right of the browser window, a status bar shows a "connected" icon.

## 10.4. Printing IMEI label

The module “printing IMEI label” offers the possibility to re-print IMEI labels for mobiles again.



You are able to print 1 label in just one step.

To prevent that misaligned labels are being printed, the setting “Print test labels = ✓” is activated by default. After having printed a well aligned test label you can uncheck the setting and print the correct label.

### Hint:

For correct printing of IMEI labels you must have a **Zebra – label printer** with special material that fits for label printing. This printer has to be connected to local LPT1 printer port (also see Installation of IMPRINT) and MUST feature a printing resolution of 300dpi.

## 11 International Mobile Equipment Identity, IMEI

The mobile equipment is uniquely identified by the International Mobile Equipment Identity, IMEI, which consists of 15 digits. Type approval granted to a type of mobile is allocated 6 digits. The final assembly code is used to identify the final assembly plant and is assigned with 2 digits. 6 digits have been allocated for the equipment serial number for manufacturer and the last digit is spare.

The part number for the S68 is S30880-S1150-#xxx where the last four letters specify the housing and software variant.

S68 series IMEI label is accessible by removing the battery.

Re – use of IMEI label is possible by using a hair – dryer to remove the IMEI label.

On this IMEI label, BenQ has also included the data code for production or service, which conforms to the industrial standard DIN EN 60062. The data code comprises of 2 characters: first character denotes the **year** and the second character denotes the **month**.

For example: **S5**

CODE	Year	Month	CODE
P	2002	MARCH	3
R	2003	APRIL	4
<b>S</b>	2004	MAY	<b>5</b>
T	2005	JUNE	6
U	2006	JULY	7

To display the IMEI number, exit code and SW/HW version, key: \* # 0 6 #

## 12 General Testing Information

### General Information

The technical instruction for testing GSM mobile phones is to ensure the best repair quality.

### Validity

This procedure is to apply for all from Siemens AG authorized level 2 up to 2.5e workshops.

### Procedure

All following checks and measurements have to be carried out in an ESD protected environment and with ESD protected equipment/tools. For all activities the international ESD regulations have to be considered.

Get delivery:

- Ensure that every required information like fault description, customer data a.s.o. is available.
- Ensure that the packing of the defective items is according to packing requirements.
- Ensure that there is a description available, how to unpack the defective items and what to do with them.

Enter data into your database:

(Depends on your application system)

- Ensure that every data, which is required for the IRIS-Reporting is available in your database.
- Ensure that there is a description available for the employees how to enter the data.

Incoming check and check after assembling:

### **!! Verify the customers fault description!!**

- After a successful verification pass the defective item to the responsible troubleshooting group.
- If the fault description can not be verified, perform additional tests to save time and to improve repair quality.

- Switch on the device and enter PIN code if necessary unblock phone.
- Check the function of all **keys** including **side keys**.
- Check the **display** for error in line and row, and for illumination.
- Check the **ringer/loudspeaker** acoustics by individual validation.
- Perform a **GSM Test** as described on page 36.

Check the storage capability:

- Check internal resistance and capacity of the battery.
- Check battery charging capability of the mobile phone.
- Check charging capability of the power supply.
- Check current consumption of the mobile phone in different mode.

Visual inspection:

- Check the entire board for liquid damages.
- Check the entire board for electrical damages.
- Check the housing of the mobile phone for damages.

SW update:

- Carry out a software update and data reset according to the master tables and operator/customer requirements.

### Repairs:

**The disassembling as well as the assembling of a mobile phone has to be carried out by considering the rules mentioned in the dedicated manuals. If special equipment is required the service partner has to use it and to ensure the correct function of the tools.**  
**If components and especially soldered components have to be replaced all rules mentioned in dedicated manuals or additional information e.g. service information have to be considered**

GSM Test:

**With the availability of the GRT Test /Alignment software, this tool has to be used to perform the outgoing test!**

>Connect the mobile/board via internal antenna (antenna coupler) and external antenna (Car cradle/universal antenna clip) to a GSM tester

>Use a Test SIM

For Triple Band phones use a separate test case, if the test software allows only one handover.

Skip the GSM Band test cases if not performed by the mobile phone

Example:                    1. Test file                    Band 1 = GSM900 / Band 2 = GSM1800  
                                   2. Test file                    Band 1 = GSM1900

Internal Antenna				
Test case		Parameter	Measurements	Limits
1	Location Update	<ul style="list-style-type: none"> <li>• GSM Band 1</li> <li>• BS Power = -55 dBm</li> <li>• middle BCCH</li> </ul>	<ul style="list-style-type: none"> <li>• Display check</li> </ul>	<ul style="list-style-type: none"> <li>• individual check</li> </ul>
2	Call from BS	<ul style="list-style-type: none"> <li>• low TCH</li> <li>• highest PCL</li> <li>• BS Power = -75 dBm</li> <li>• middle BCCH</li> </ul>	<ul style="list-style-type: none"> <li>• Ringer/Loudspeaker check</li> </ul>	<ul style="list-style-type: none"> <li>• individual check</li> </ul>
3	TX GSM Band 1	<ul style="list-style-type: none"> <li>• low TCH</li> <li>• highest PCL</li> <li>• BS Power = -75 dBm</li> <li>• middle BCCH</li> </ul>	<ul style="list-style-type: none"> <li>• Frequency Error</li> <li>• Phase Error RMS</li> <li>• Phase Error Peak</li> <li>• Average Power</li> <li>• Power Time Template</li> </ul>	<ul style="list-style-type: none"> <li>• GSM Spec.</li> </ul>
4	Handover to GSM Band 2 Including Handover Check			
5	TX GSM Band 2	<ul style="list-style-type: none"> <li>• low TCH</li> <li>• highest PCL0</li> <li>• BS Power = -75 dBm</li> <li>• middle BCCH</li> </ul>	<ul style="list-style-type: none"> <li>• Frequency Error</li> <li>• Phase Error RMS</li> <li>• Phase Error Peak</li> <li>• Average Power</li> <li>• Power Time Template</li> </ul>	<ul style="list-style-type: none"> <li>• GSM Spec.</li> </ul>
6	Call release from BS			

External Antenna				
7	Call from MS	<ul style="list-style-type: none"> <li>• GSM900</li> <li>• high TCH</li> <li>• second highest PCL</li> <li>• BS Power = -75 dBm</li> <li>• middle BCCH</li> </ul>	<ul style="list-style-type: none"> <li>• Keyboard check</li> </ul>	<ul style="list-style-type: none"> <li>• individual check</li> </ul>
8	TX GSM Band 1	<ul style="list-style-type: none"> <li>• high TCH</li> <li>• second highest PCL</li> <li>• BS Power = -75 dBm</li> <li>• middle BCCH</li> </ul>	<ul style="list-style-type: none"> <li>• Frequency Error</li> <li>• Phase Error RMS</li> <li>• Phase Error Peak</li> <li>• Average Power</li> <li>• Power Time Template</li> </ul>	<ul style="list-style-type: none"> <li>• GSM Spec.</li> </ul>
9	RX GSM Band 1	<ul style="list-style-type: none"> <li>• high TCH</li> <li>• BS Power = -102 dBm</li> <li>• 50 Frames</li> <li>• middle BCCH</li> </ul>	<ul style="list-style-type: none"> <li>• RX Level</li> <li>• RX Qual</li> <li>• BER Class Ib</li> <li>• BER Class II</li> <li>• BER Erased Frames</li> </ul>	<ul style="list-style-type: none"> <li>• GSM Spec.</li> </ul>
10	Handover to GSM Band 2 Including Handover Check			
11	TX GSM Band 2	<ul style="list-style-type: none"> <li>• high TCH</li> <li>• second highest PCL</li> <li>• BS Power = -75 dBm</li> <li>• middle BCCH</li> </ul>	<ul style="list-style-type: none"> <li>• Frequency Error</li> <li>• Phase Error RMS</li> <li>• Phase Error Peak</li> <li>• Average Power</li> <li>• Power Time Template</li> </ul>	<ul style="list-style-type: none"> <li>• GSM Spec.</li> </ul>
12	RX GSM Band2	<ul style="list-style-type: none"> <li>• high TCH</li> <li>• BS Power = -102 dBm</li> <li>• 50 Frames</li> <li>• middle BCCH</li> </ul>	<ul style="list-style-type: none"> <li>• RX Level</li> <li>• RX Qual</li> <li>• BER Class Ib</li> <li>• BER Class II</li> <li>• BER Erased Frames</li> </ul>	<ul style="list-style-type: none"> <li>• GSM Spec.</li> </ul>
13	Call release from MS			

### Final Inspection:

The final inspection contains:

- 1) A 100% network test (location update, and set up call).
- 2) Refer to point 3.3.
- 3) A random sample checks of:
  - Data reset (if required)
  - Optical appearance
  - complete function
- 4) check if PIN-Code is activated (delete the PIN-Code if necessary).

Basis is the international standard of **DIN ISO 2859**.

Use Normal Sample Plan Level II and the Quality Border 0, 4 for LSO.

**Remark:** All sample checks must be documented.

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## Annex 1

### Test SIM Card

There are two different “Test SIM Cards” in use:

1) Test SIM Card from the company “**ORGA**”

Pin 1 number:           0000  
PUK 1           :       12345678

Pin 2 number:           0000  
PUK 2           :       23456789

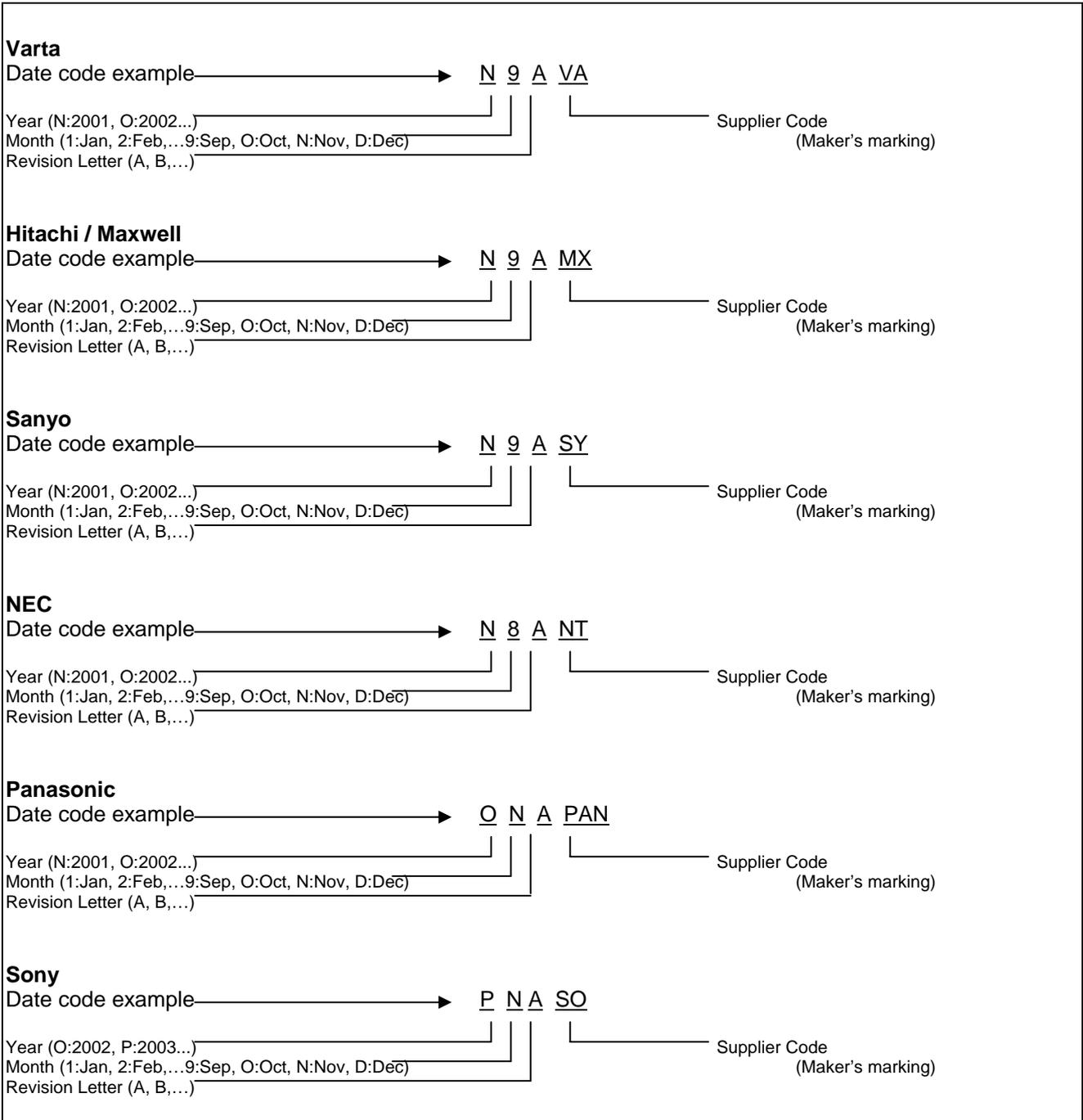
2) Test SIM Card from the company “**T-D1**”

Pin 1 number:           1234  
PUK            :       76543210

Pin 2 number:           5678  
PUK 2           :       98765432

## Annex 2

### Battery Date Code overview



## 13 Introduction of Service Repair Documentation for Level 3 Basic Repairs – S68

This part of Service Repair Documentation is intended to carry out repairs on BenQ Mobile repair level 3basic (only for workshops without level 3 equipment (special agreement required)).

The described failures shall be repaired in BenQ authorized local workshops only.

The level 3basic partners are obliged to send exchanged boards (SWAP) to the next higher Service Repair Partner.

All repairs have to be carried out in an ESD protected environment and with ESD protected equipment/tools. For all activities the international ESD regulations have to be considered.

Assembling/disassembling has to be done according to the latest S68 Level 1-2 repair documentation. It has to be ensured that every repaired mobile Phone is checked according to the latest released General Test Instruction document (both documents are available in the Technical Support section of the C-market).

Check at least weekly C-market for updates and consider all S68 related Customer Care Information

S68 Part number on IMEI label: S30880-S1150-#xxx

, while # may be any letter (A-Z) and xxx may be any number from 100, 101, 102....

**Scrap Handling: All Scrap information given in this manual are related to the SCRAP-Rules and instructions.**

**Attention: Consider the new "LEAD-FREE" soldering rules (available in the communication market), avoid excessive heat.**

### 13.1 Scope

This document is the reference document for all BenQ mobile authorised Service Partners which are released to repair BenQ mobile phones up to level 3 basic.

### 13.2 Terms and Abbreviations

## 14 List of available Level 3 Basic Parts

(According to Component Matrix V1.09 - check C-market for updates)

Product	ID	Order Number	Description CM
S68	X1400	L50634-Z97-C467	CONNECTOR BATTERY 3-POL X85
S68	X1504	L50634-Z93-C364	IO-JACK NANO 12-POL
S68	X1605	L50634-Z97-C406	CONNECTOR SIM CARD READER R65 (B)
S68	X2201	L50697-F5008-F340	CONNECTOR BOARD TO BOARD 20-POL B
S68	X2705	L50634-Z97-C363	CONNECTOR BOARD TO BOARD 14-POL. X75
S68	Z1601	L50620-U6029-D670	FILTER EMI (Fi-Type6) PB Free

## 15 Hardware Requirements

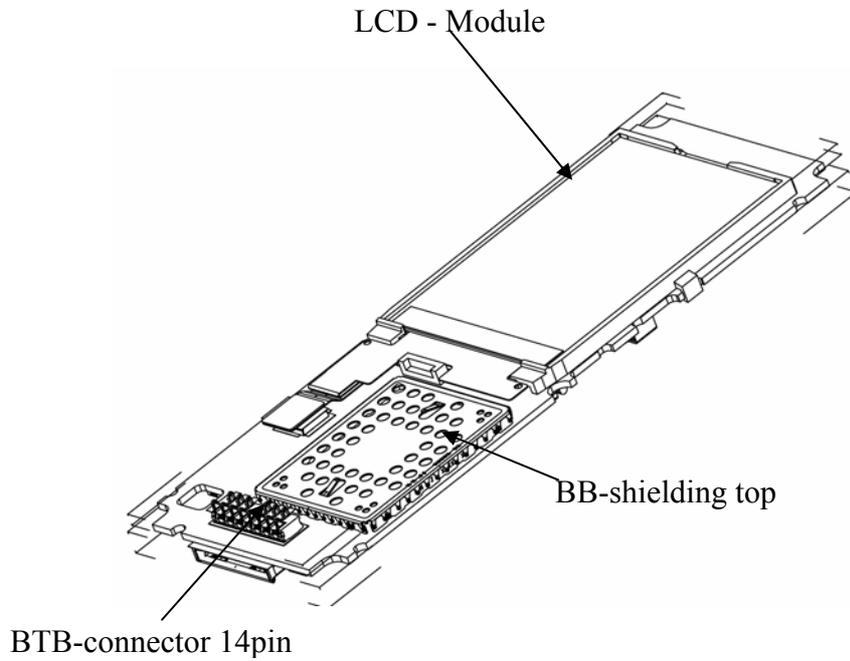
(According to L2.5L-L2.5 General soldering information V1.3 - check C-market for updates)

Jigs, Tools and working materials for all described repairs:

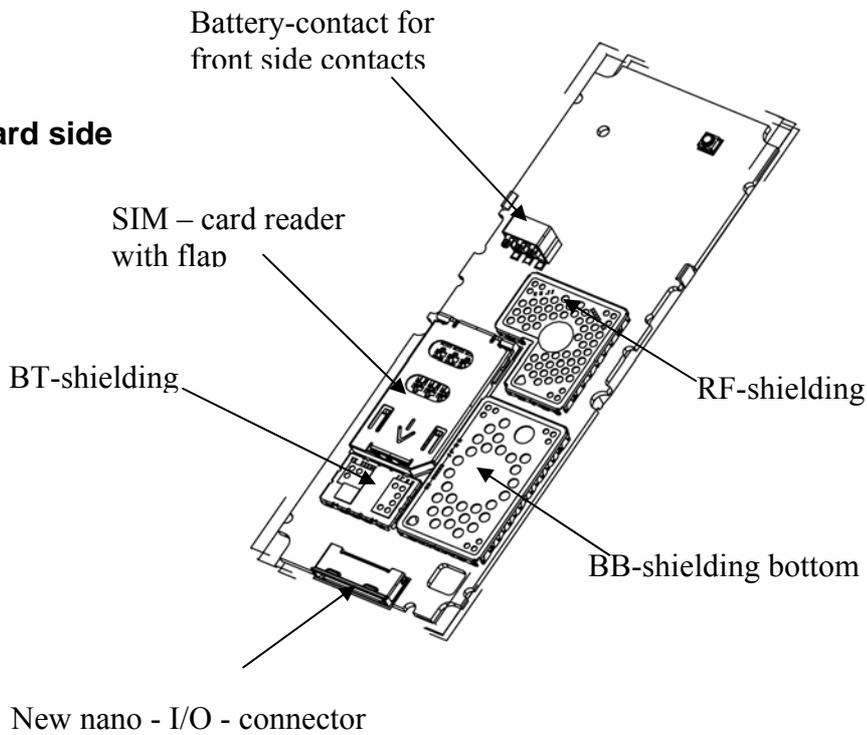
- hot air blower
- soldering gun
- tweezers
- flux
- solder

# 16 S68 Board Layout

## Upper board side

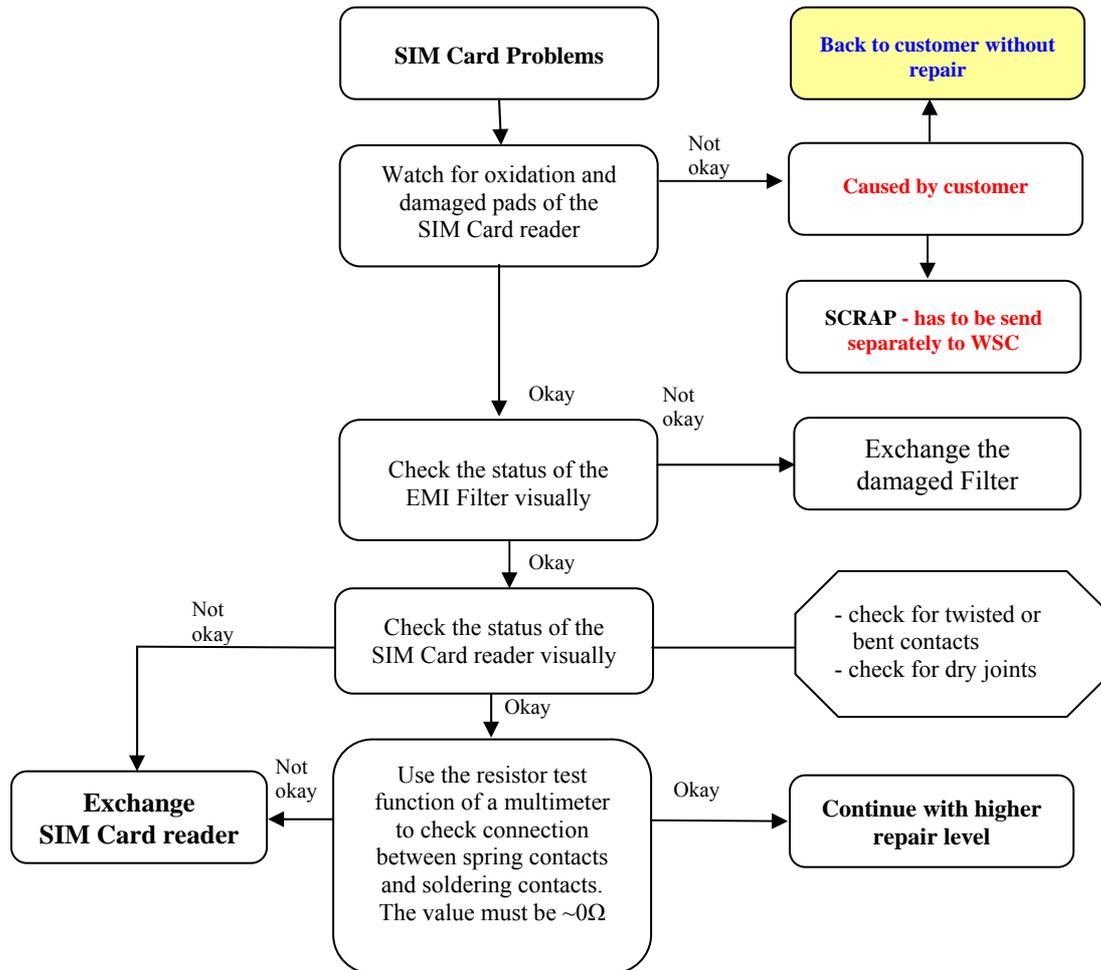


## Lower board side



## 17 SIM Card Problems

Fault Symptoms	
Customer: Handset does not accept SIM card	GRT: SIM Card Problems



### Connector SIM Card Reader

Use soldering iron to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

E-commerce order number: L50634-Z97-C406

E-commerce order name: CONNECTOR SIM CARD READER R65 (B)

Soldering temperature: ~ 360°C TIP Temp.

### EMI Filter

Use hot air blower to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

E-commerce order number: L50620-U6029-D670

E-commerce order name: FILTER EMI (Fi-Type6) PB Free

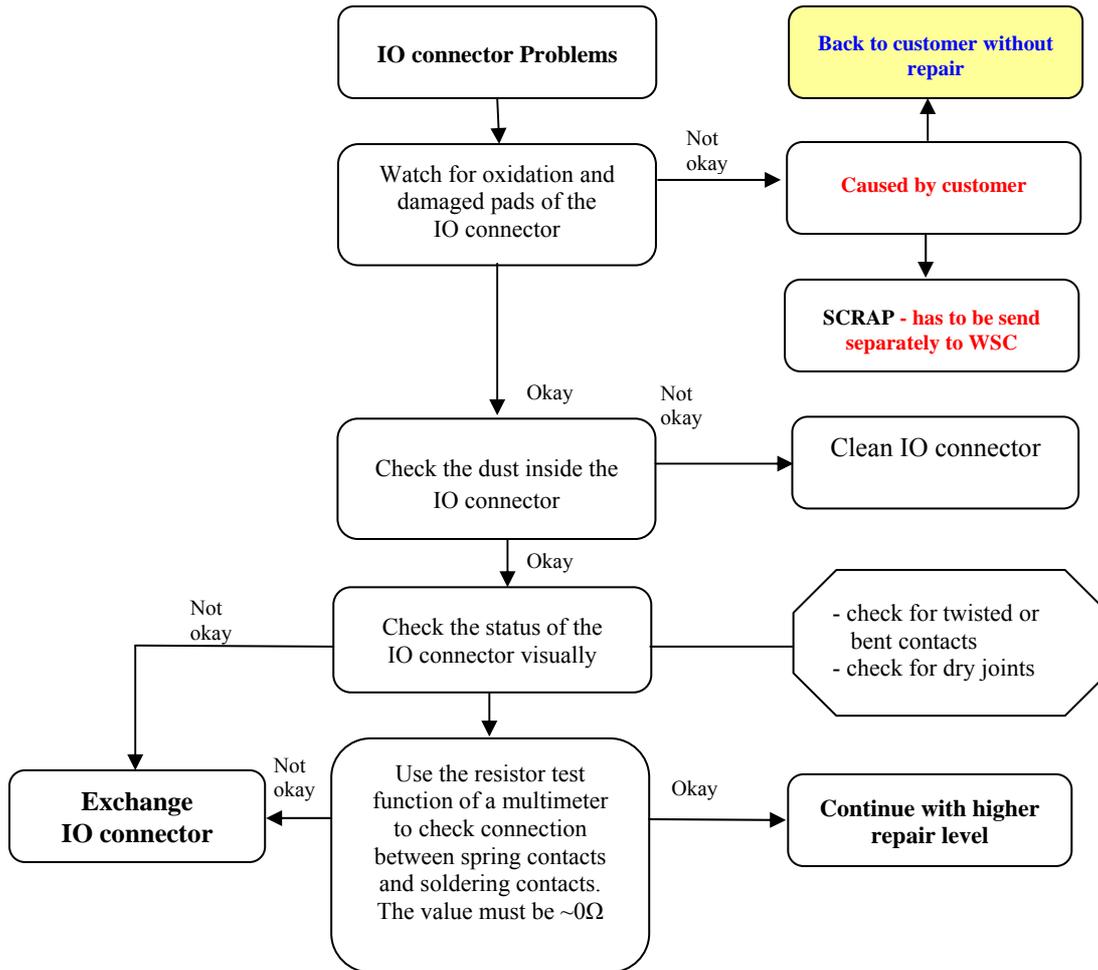
Soldering temperature: ~ 360°C TIP Temp

IRIS Diagnose Code: 43300 Interface/SIM Card reader/Mechanical Damage

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## 18 IO Connector Problems

Fault Symptoms	
Customer: Charging Problems Problems with external loudspeaker or microphone when using a car kit Problems with accessories connected at the IO connector	GRT: No connection to GRT



### Connector IO Jack

Use soldering iron to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

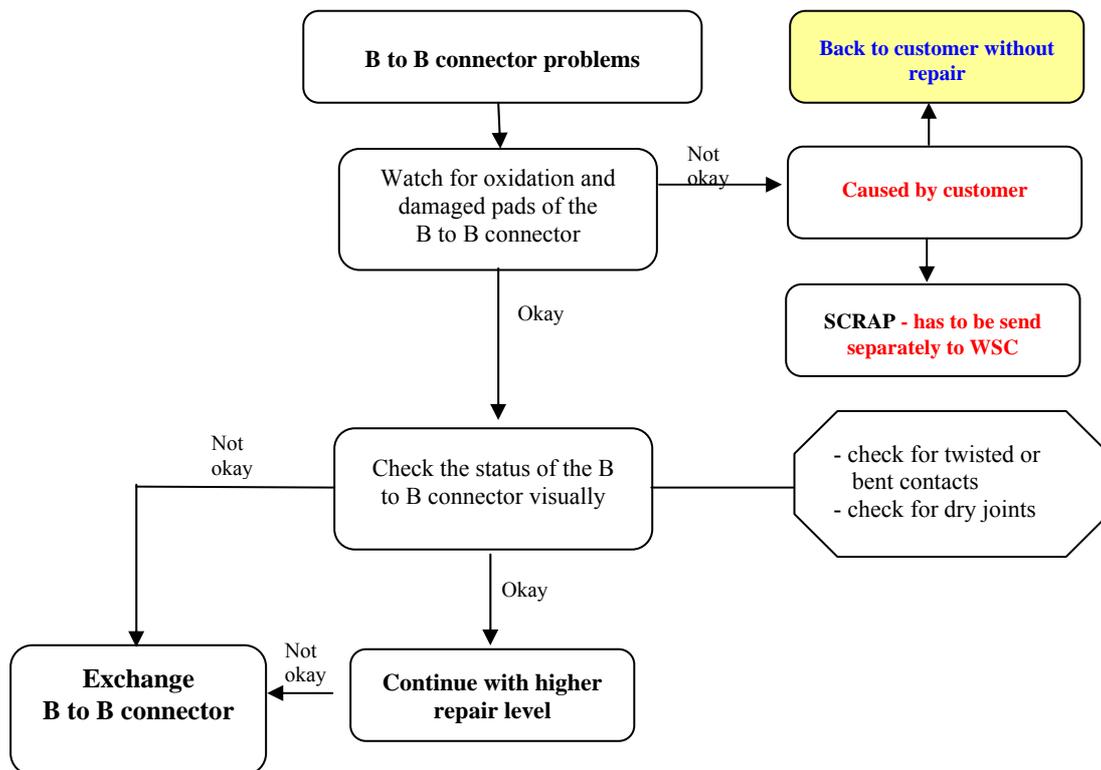
E-commerce order number: L50634-Z93-C364  
 E-commerce order name: IO-JACK NANO 12-POL  
 Soldering temperature: ~ 360°C TIP Temp.

IRIS Diagnose Code: 46100 Interface/Charging Connector/Mechanical Damage  
 47300 Interface/Data Interface/Mechanical Damage  
 4B100 Interface/Headset Connector/Mechanical Damage

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## 19 B to B Connector (upper slider part) Problems

Fault Symptoms	
Customer: Upper slider keyboard malfunction Upper slider keypad illumination does not work Display problems	GRT: Keyboard malfunction Current measured failed



### Connector Board to Board

Use hot air blower to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

E-commerce order number: L50697-F5008-F340  
L50634-Z97-C363

E-commerce order name: CONNECTOR BOARD TO BOARD 20-POL  
CONNECTOR BOARD TO BOARD 14-POL. X75

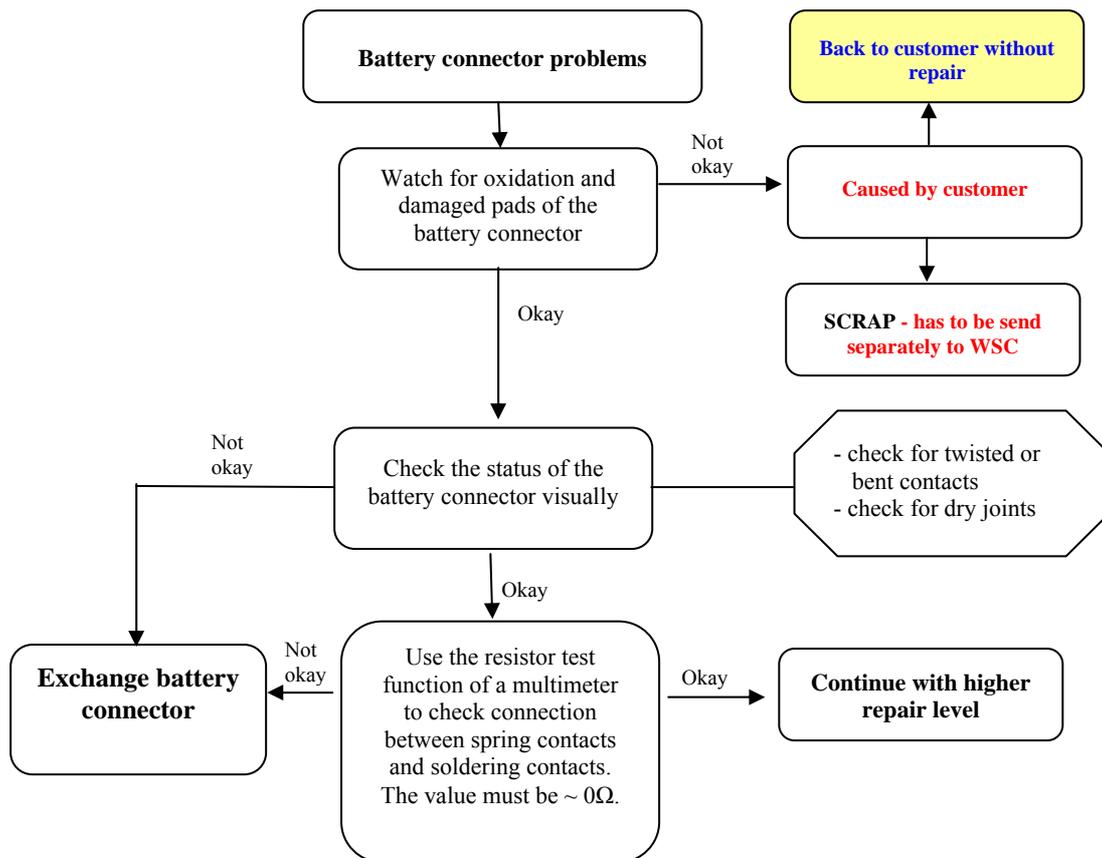
Soldering temperature: ~ 360°C TIP Temp.

IRIS Diagnose Code: 32200 Keys / Main / Reduced Functionality  
36000 Keys / Illumination D TO BOARD 30-POL

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## 20 Battery Connector Problems

Fault Symptoms	
Customer: Mobile does not switch on	GRT: No connection to GRT



### Connector BATTERY

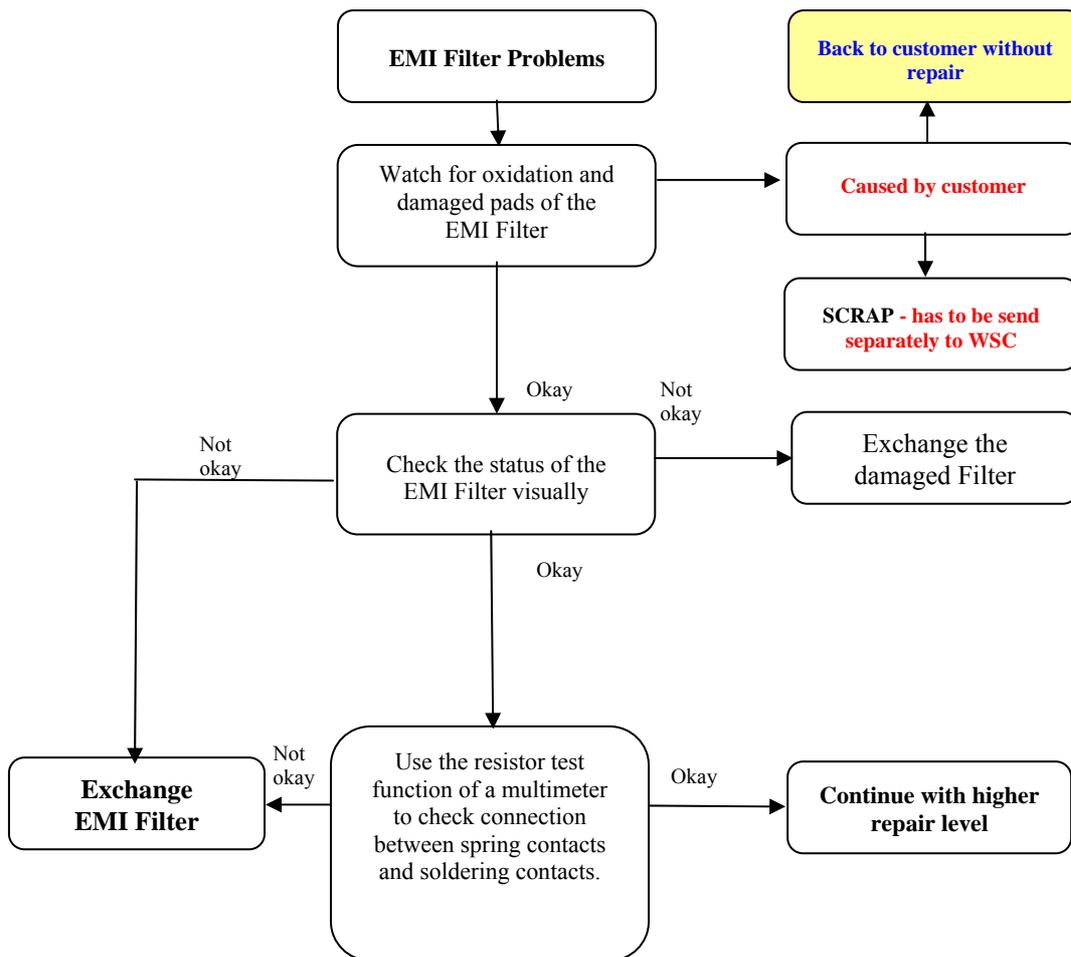
Use hot air blower to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

E-commerce order number: L50634-Z97-C467  
 E-Commerce name: CONNECTOR BATTERY 3-POL X85  
 Soldering temperature: 240 - 255°C  
 IRIS Diagnose Code: 13000 Battery/Mechanical Damage

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## 21 Filter EMI Problems

Fault Symptoms	
Customer: Handset does not allow data communication via I/O connector	GRT: No service mode possible No software update possible



### EMI Filter

Use hot air blower to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

E-commerce order number: L50620-U6029-D670  
 E-commerce order name: FILTER EMI (Fi-Type6) PB Free  
 Soldering temperature: ~ 360°C TIP Temp  
 IRIS Diagnose Code: 47000 Data connectivity

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