Service Manual
SXG 75
Level 1 - 3

Release	Date	Department	Notes to change
R 1.0	29.11.2005	BenQ Mobile CC S CES	New document
R 1.1	22.02.2006	BenQ Mobile CC S CES	SWU Process modified
R 1.2	24.05.2006	BenQ Mobile CC S CES	Chapter 5 Step 4-5 modified

Table of Content

1 Key Features

Battery	• Li – Ion Battery Pack • Nominal Capacity: 1000 mAh • GSM Capacity: 980 mAh
Stand – by Time	• Up to 420h
Talk Time	• GSM: Up to 3,6hr • WCDMA: Up to 3,1hr
SIM Card	• Small (“Plug In”) 1,8 V or 3 V -SIM card (Phase II)
Speech Coder	• Half Rate, Full Rate, Enhanced Full Rate and Adaptive Multi Rate speech coders are available as standard
Temperature Range	• -10°C to + 55°C (Normal operation) • -30°C to + 85°C (Storage capability)
Display	• Type: Full graphic • Resolution: 240 x 320 Pixel • Technology: TFT (Epson) • No of colours: 256k • Frame Rate: 15 frames/sec • Pixel size / mm: 0.141 mm x 0.141 mm • Active area / mm: 33,84 mm x 45.12 mm • Illumination: White (4LEDs in series integrated)
3x4 Block Keypad	• Front side decorated • Partly bridgeless keypad (i.e. horizontally bridgeless) • 12 – key – block (o-9,#,*) • tactile finder on key “5” • colour adapted to u-shaped aluminium brushed sheet metal piece • Four blue LED’s for keypad
Function block with Operator key	• Five – way Navikey • Chrome plated navi key ring with center push button, operator logo can be printed on the button which is clipped on the navi key. • Four keys, functions: Back, Web access, Left & right soft key • All keys except navi have front side decoration • Four blue LED’s for Navikey
Edge Keys	• ON/OFF key combined with the END key; the symbol ⏼ (I inside O) is used as a symbol for ON/OFF. • Viedeo telephony key • Task key • Two LED’s for edge keys, one red, one green • Front side decorated
Side keys	• No illumination • Three side keys, functions: PoC, Volume, Camera • Side keys galvanized

Acoustics	• Combined handsfree/ringer speaker at rear side of phone, next to camera • Dedicated ear piece speaker, allowing small dimensions as not needed as handfree speaker • Uni - directional microphone • Poliphonic ringer tones (parallel to GPRS data transfer: 16 voices; all other Use Cases: 40 voices) • Hands free mode • Different selectable volume levels for handsfree, handset and ringer mode (for the amount see SW product description)
Antenna	• Integrated Quad band antenna
Receiver Sensitivity	• Compliant with 3GPP specification TS34.121, Rel.99
Transmitter Power	• Compliant with 3GPP specification TS34.121, Rel.99 The transmitter output power is compliant to following Power classes: UMTS: nominal 0,25W -> power class 4 GSM 900: nominal 2W -> power class 4 GSM 1800/GSM 1900: nominal 1W -> power class 1

2 SXG75 Interface to Accessories

The phone has the following compatible interfaces to accessories:

- electrically by the Lumberg I/O connector (Lumberg slim)
- antenna connection by courtesy of RF connector
- IR and Bluetooth interface is implemented
- Slot wit reader for additional reduced size MultiMediaCard (exchangeable) is available
- car holder interface is implemented

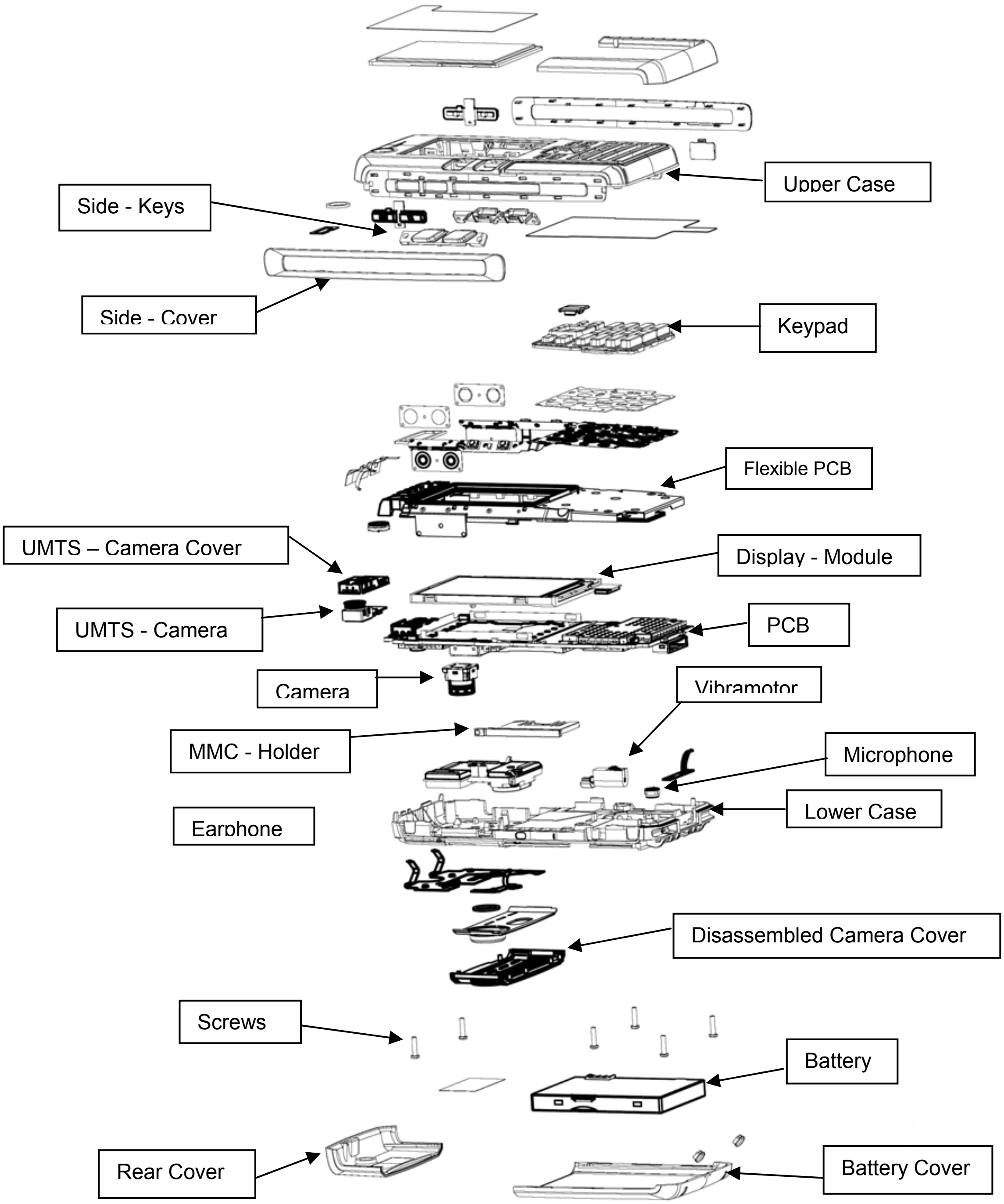
3 Unit Description of SXG75

The SXG75 is a brick phone with 2 integrated cameras for video telephony and photo applications. The phone has two different acoustic modules one for receiver mode on the topside and one for sound ringer and hands free mode with separate hole on the bottom side. Additional speciality is a slot for exchangeable RS MultiMediaCard at the side of the phone.

The keypad is new for a Siemens brick phone and has beside the usual navigation and number key block beneath the display and the 2 side keys on both side surfaces further 4 edge keys (2 on each side) beside the LCD module for extended UMTS related functionality. Special design element on the rear side is a prominent area with a grid of holes for the loudspeaker.

There will be one colour variant, white/silver.

4 Exploded View of SXG75

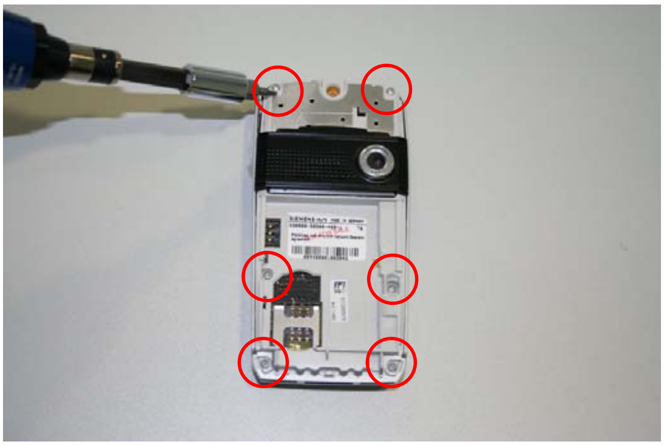


5 Disassembly of SXG75

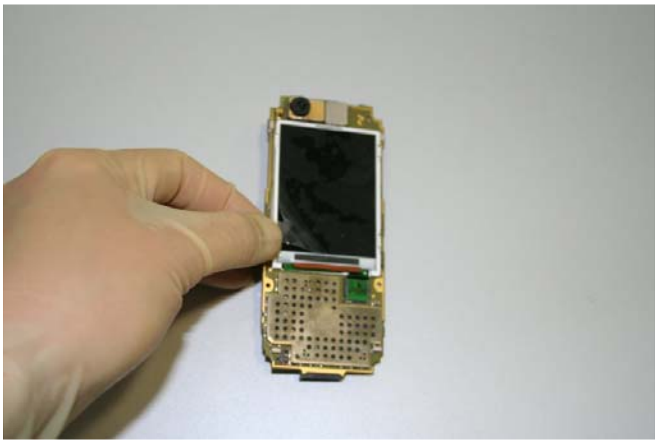
All repairs as well as disassembling and assembling have to be carried out in an ESD protected environment and with ESD protected equipment/tools. For all activities the international ESD regulations have to be considered.

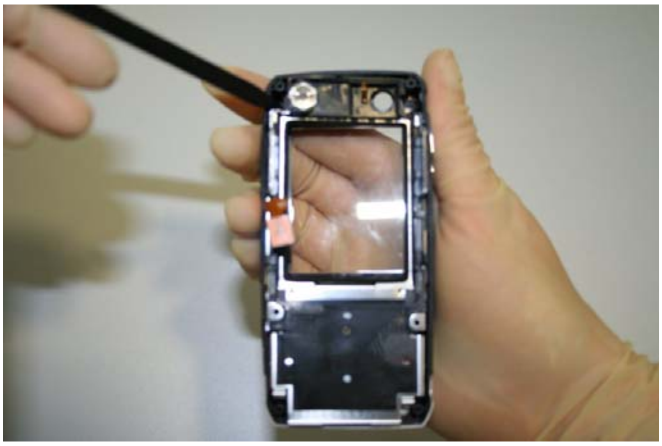
For more details please check information in c – market
https://market.benqmobile.com/SO/welcome.lookup.asp
There you can find the document “ESD Guideline”.

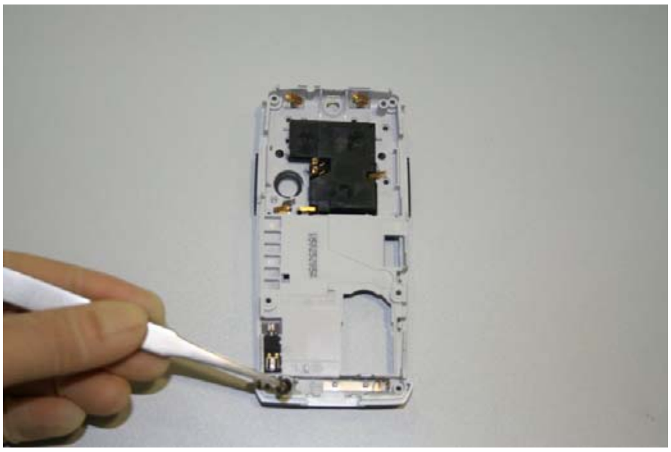
Step 1 	Remove Battery Cover and Battery.

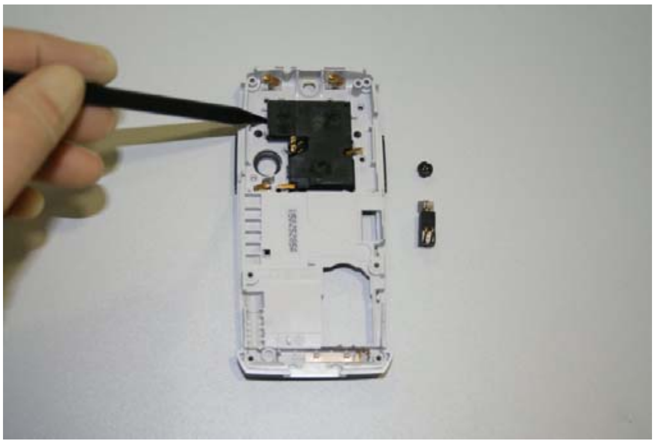
Step 2  	Remove Rear Cover by pushing it with both thumbs forwards.
Step 3 	Remove screws with Torque - Screwdriver. Screws size: T5+
Step 4 	Remove Upper Case by using Alternative Opening Tool carefully.

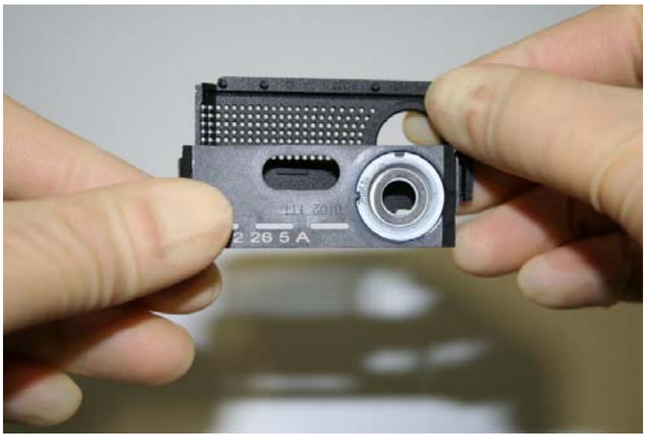
Step 5 	
Step 6 	
Step 7 	Disconnect Flex Cable from PCB by using Tweezers carefully.

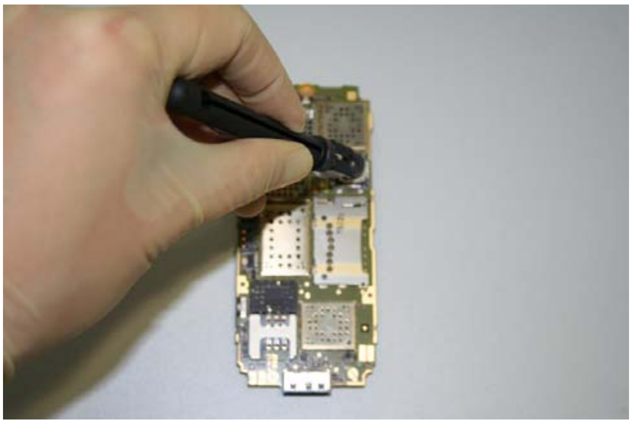
Step 8 	Remove MMC Holder by pushing it with Alternative Opening Tool outside the frame.
Step 9 	Use Alternative Opening Tool to remove PCB from Lower Case carefully.
Step 10 	To avoid scratches it is mandatory to place a Protection Foil onto the Display.

Step 11 	Remove Flexible PCB with Alternative Opening Tool carefully. The Loudspeaker is not removable.
Step 12 	
Step 13 	Remove Side keys by using Tweezers.

Step 14 	
Step 15 	Use Tweezers to remove Keypad.
Step 16 	Remove Microphone by using Tweezers carefully. Be careful with the spring contacts of the Microphone!

Step 17 	Remove Vibramotor by using Tweezers carefully.
Step 18 	Remove Earphone by using Tweezers carefully.
Step 19 	Use Alternative Opening Tool to remove Camera Cover carefully.

Step 20  	
Step 21 	
Step 22 	Disconnect Flex Cable from PCB with Tweezers.

Step 23 	Remove Display from PCB by using Alternative Opening Tool very carefully.
Step 24 	Put the Camera Ejector Jig professional through the four edges between the Camera and the Camera Connector. Now push the Ejector Jig and pull out the Camera carefully.
Step 25 	Remove UMTS Camera Cover by using Tweezers carefully.

Step 26

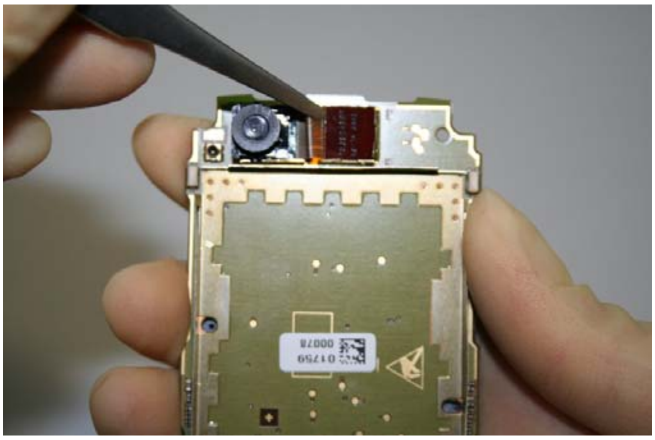
Step 27

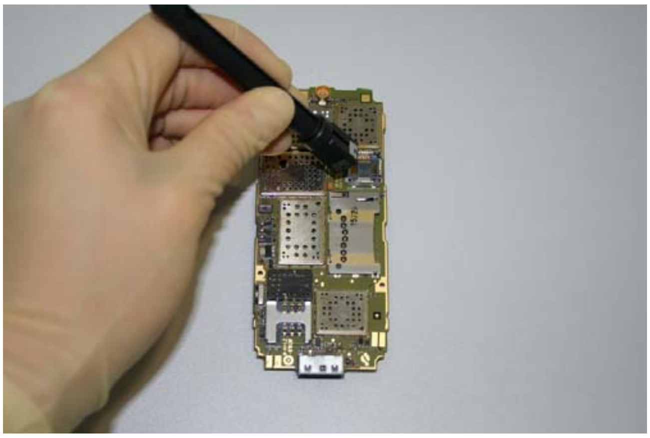
Remove UMTS Camera with Alternative Opening Tool very carefully.

Overview Lower Parts

Overview Upper Parts

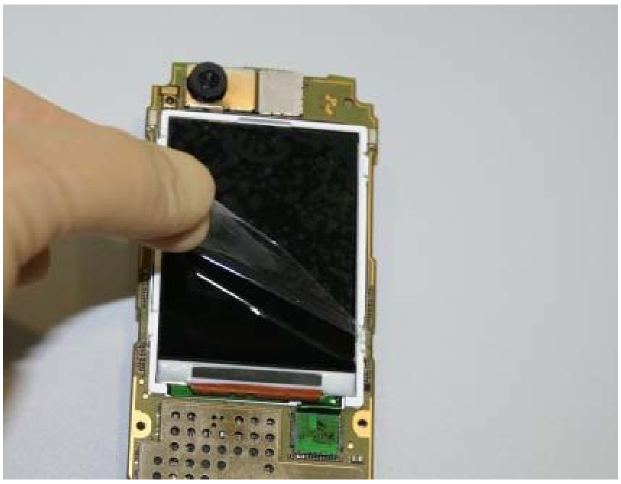
6 Assembly of SXG75

Step 1 	Assemble UMTS - Camera by using Tweezers.
Step 2 	Connect the UMTS – Camera with PCB by using Tweezers.
Step 3 	Use Tweezers to assemble Camera Cover.

Step 4 	Assemble Camera by using Camera Ejector Jig.
Step 5 	Assemble Display by fixing it in the given frame. Take care of the Display!
Step 6 	Assemble Camera Cover.

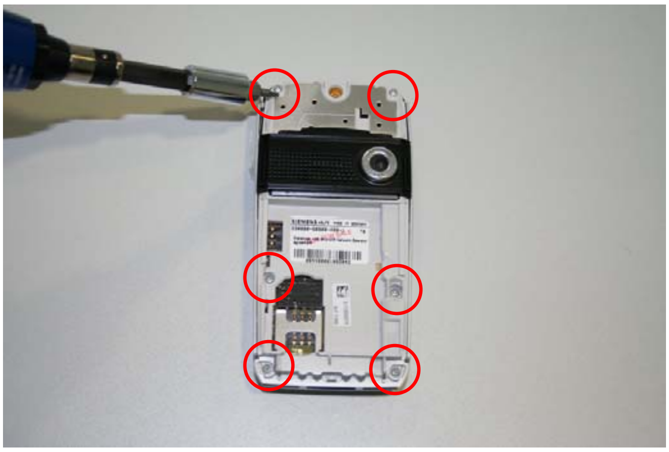
Step 7 	
Step 8 	Assemble Earphone by using Tweezers carefully.
Step 9 	Assemble Vibramotor by using Tweezers carefully.

Step 10 	Assemble Microphone by using Tweezers. Be careful with the spring contacts of the Microphone!
Step 11 	Assemble Side keys with Tweezers.
Step 12 	

<table>
<tr><td>Step 13
</td><td>Use Tweezers to assemble Keypad.</td></tr>
<tr><td>Step 14
</td><td>Assemble Flexible PCB by using Tweezers.
Push it carefully with both thumbs in the Upper Case.</td></tr>
<tr><td>Step 15
</td><td>Before assembling PCB in the Upper Case, remove Display Foil!!!</td></tr>
</table>

Step 16 	
Step 17 	Assemble PCB by fixing it in the Upper Case.
Step 18 	To assemble PCB connect it with Flex Cable.

Step 19 	Assemble MMC holder by pushing it in the given frame.
Step 20 	Fix the Upper Case on the before assembled Lower Case and PCB.
Step 21 	

Step 22 	Place screws by using Torque – Screwdriver. **Top screw (Antenna):** Screw size: T5+ Torque: 17 cNm **Centre/ Bottom screws:** Screw size: T5+ Torque: 20 cNm
Step 23 	Assemble Rear Cover.
Step 24 	Assemble Battery.

Step 25 	Assemble Battery Cover.

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**

	**Torque – Screwdriver** **Part Number: F 30032 – P 228 – A1**
	**Opening tool** **(Case opening without destroying)** **Part Number: F 30032 – P 38 – A1**
	**Alternative Opening tool** **Part Number: F30032 – P583 – A1**
	**Tweezers**
	**Camera Ejector Tool Professional** **Part Number: F30032 – P514 – A1**

- **For testing**

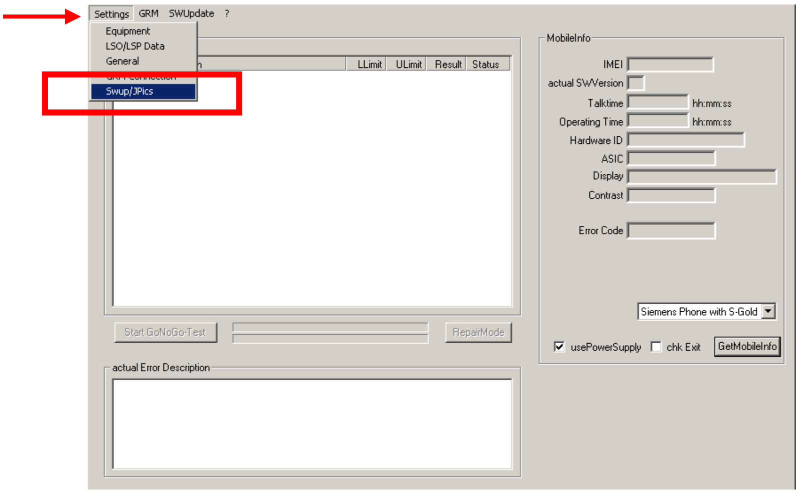
All mobile phones have to be tested with the GRT – Software. The service partner is responsible to ensure that all required hardware is available.

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

8 GRT Software: Functionality Configuration

Note: Not implemented in GRT Version 3.x. For Software Update please use the tool 3GSWUP_FU. Manual and Software are available in the Technical Support section of the C-market.

Sep 1: Select „Settings >> SWUP / JPICS"

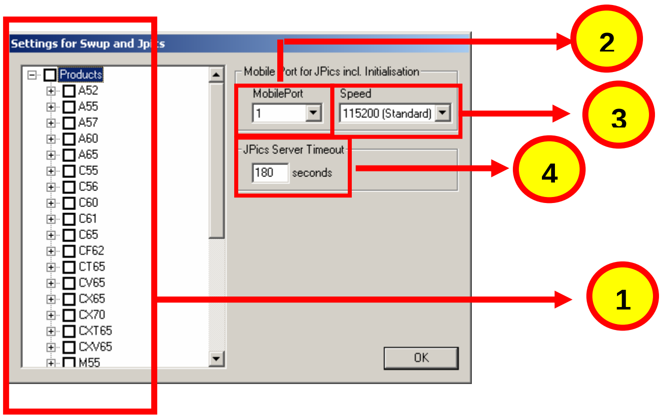


Siemens Phone with S-Gold

☑ usePowerSupply ☐ chk Exit

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



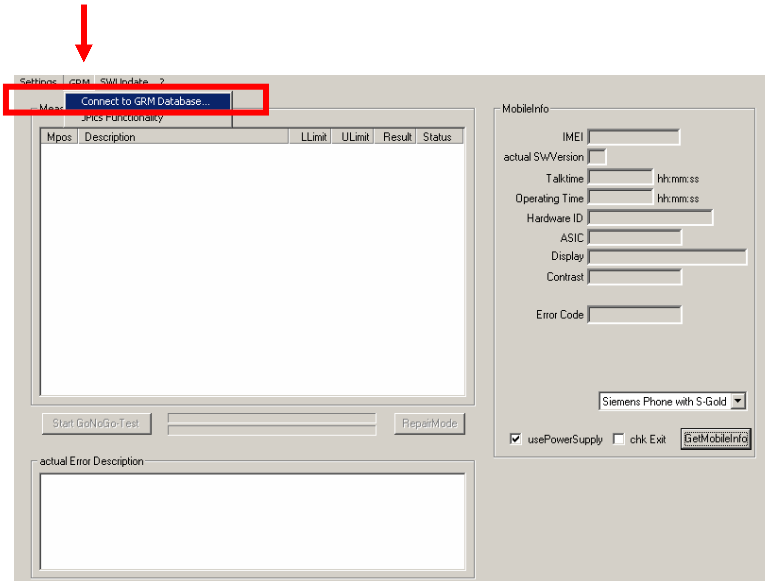
MobilePort: 1

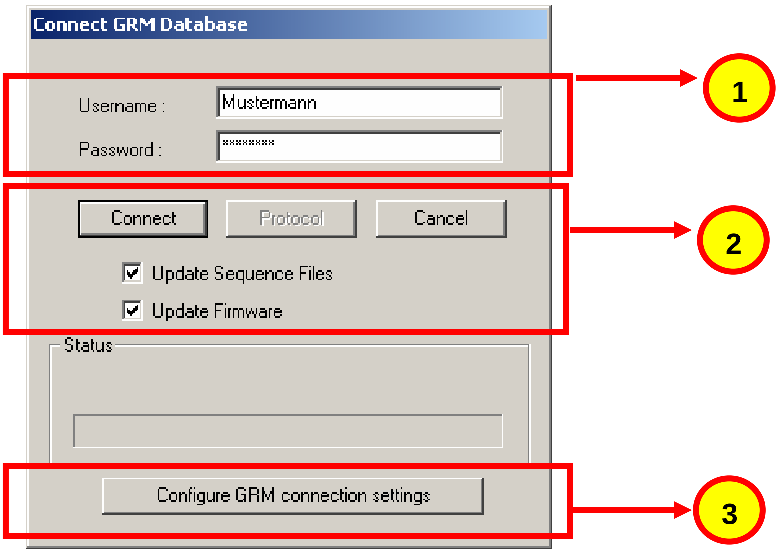
Speed: 115200 (Standard)

JPics Server Timeout: 180 seconds

Step 3: Connect to GRM Server

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





Username : Mustermann
Password : ********

☑ Update Sequence Files
☑ Update Firmware

1 Enter your GRT-Username and Password into this fields

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

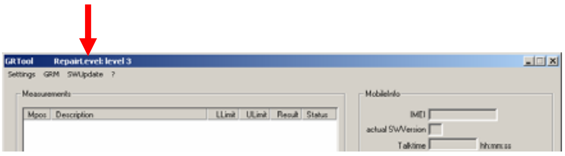
3 It you IT infrastructure parameter have changed, use this button to move to the configuration mask

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

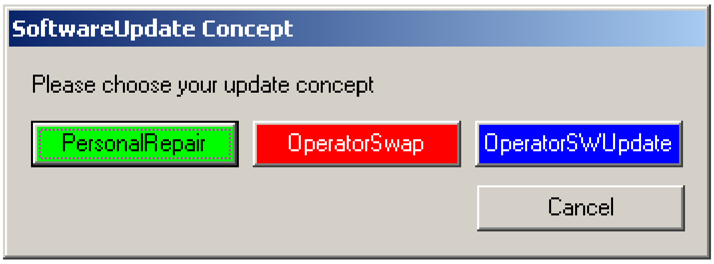
GRT Software has now finished all required settings and configuration tasks. All files have been down- and uploaded.
In dependency of the selected number of mobile phones and variants the volume of transferred date could be (~100MB)

9 GRT Software: Regular Usage

Step 1: Select the section SWUpdate



Step 2: Choose the area you want to work with



Please choose your update concept

- **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.

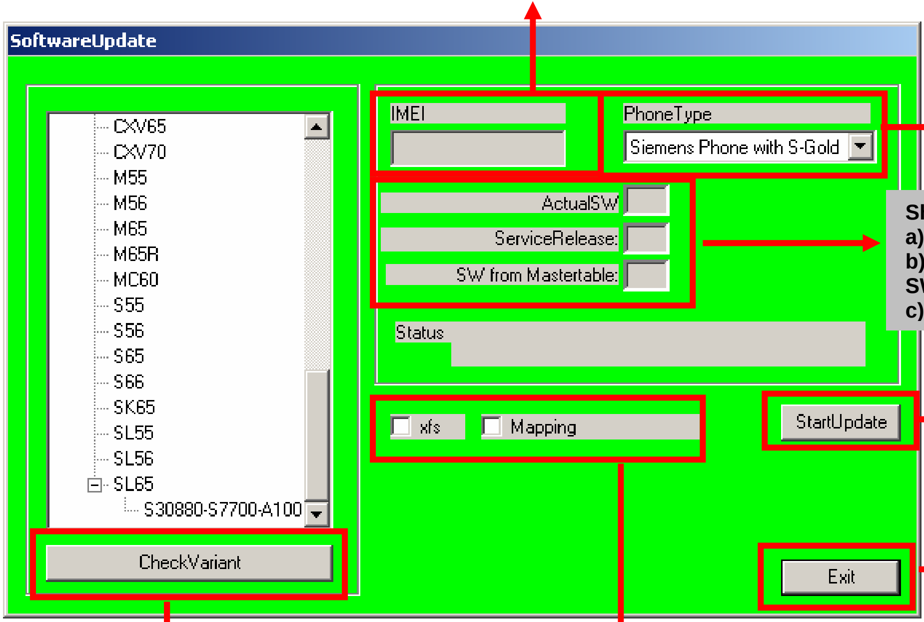
- **Operator SWUpdate**
  This area is only accessible if you are released by the service management to perform SW-Updates for Net-Operators. Basis for the decision if a SW-Update is authorised by Siemens is the so called Master-Table .

  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)

After using „Check Variant“ Phone IMEI-Number will be shown here



Window to select the mobile phone CPU

Shows the different SW –Versions
a) SW inside the mobile phone
b) Version of Service Release Table SW
c) Version of Master Table SW

Start button for SW-Update

Stop / leave SW-Update

1.1.1.1.1.1.3 Automatic read out function of phone type/Variant. Appearing in the window above.

Select boxes for:
Content = xfs
Settings = mapping
Attention:
Activation of the boxes will cause erase of customer date while SW-Update

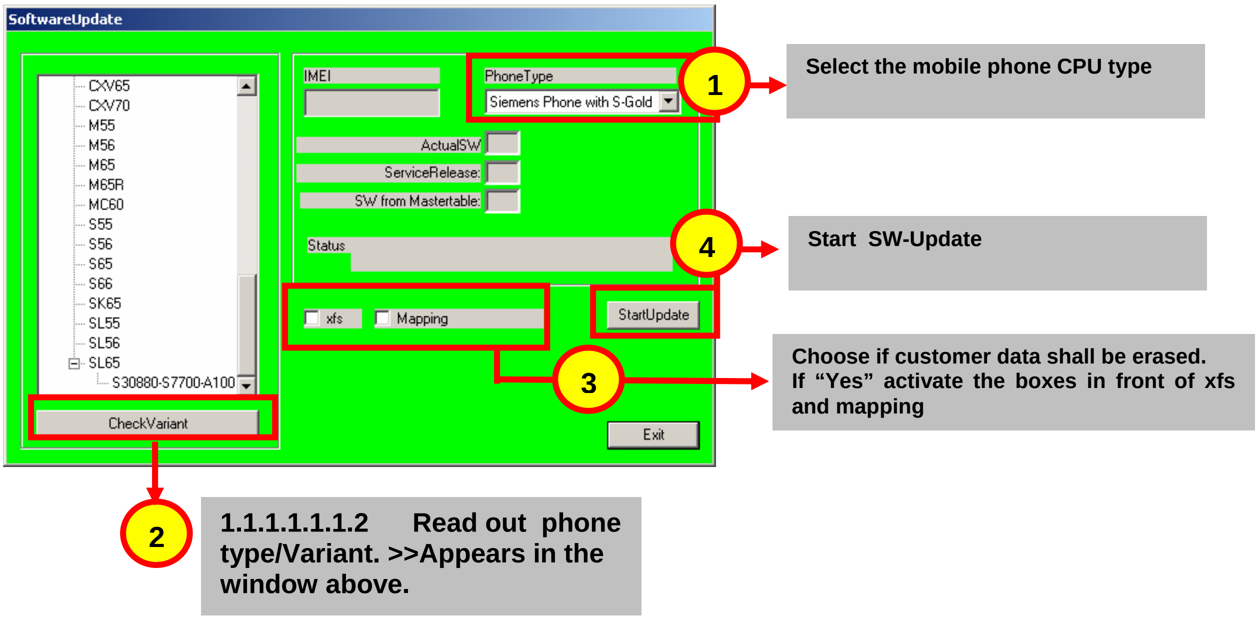
Remarks:

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 conncet 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.



PhoneType: Siemens Phone with S-Gold

☐ xfs ☐ Mapping

1 **Select the mobile phone CPU type**

4 **Start SW-Update**

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

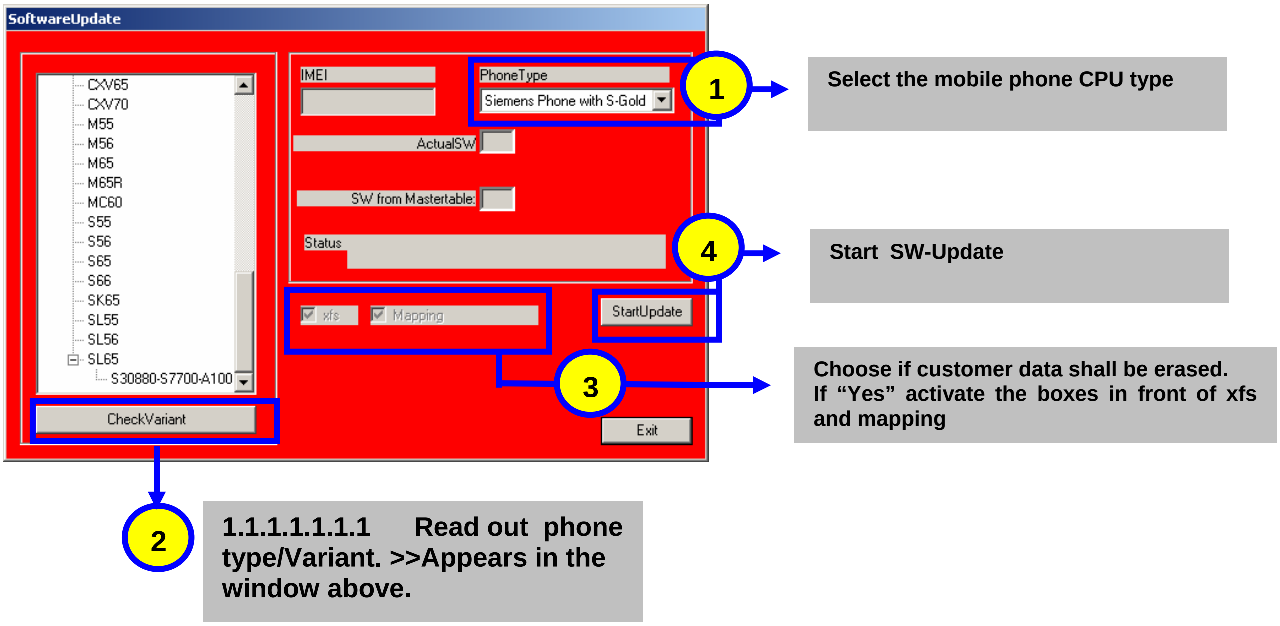
2 **1.1.1.1.1.1.2 Read out phone type/Variant. >>Appears in the window above.**

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.



PhoneType: Siemens Phone with S-Gold

Select the mobile phone CPU type

Start SW-Update

Choose if customer data shall be erased. If “Yes” activate the boxes in front of xfs and mapping

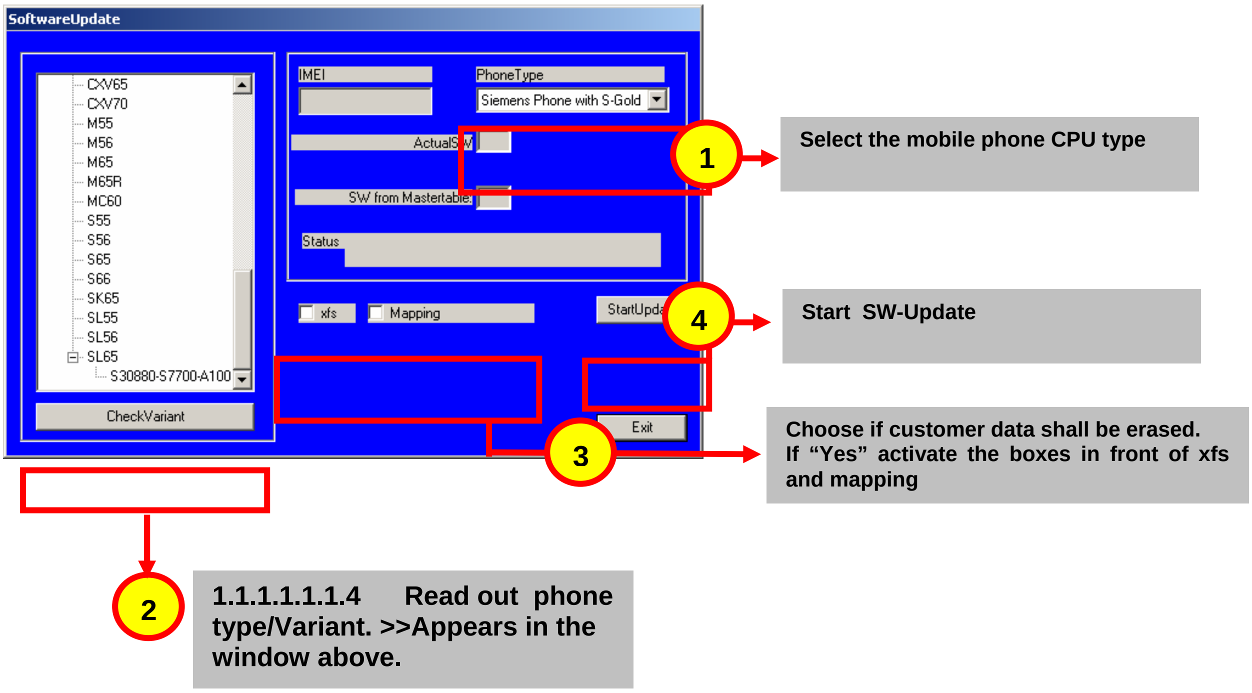
1.1.1.1.1.1.1 Read out phone type/Variant. >>Appears in the window above.

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.



PhoneType: Siemens Phone with S-Gold

Select the mobile phone CPU type

Start SW-Update

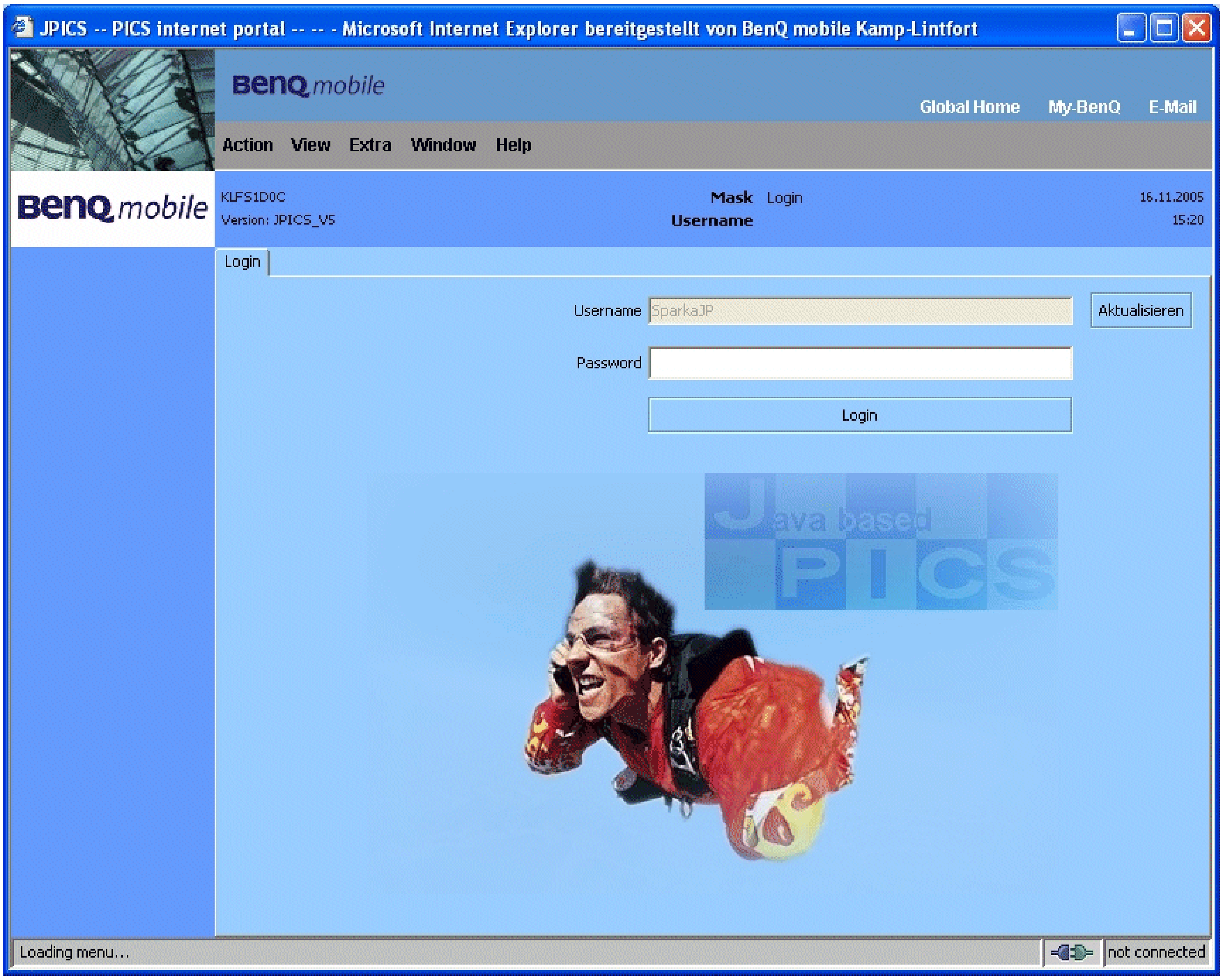
Choose if customer data shall be erased. If “Yes” activate the boxes in front of xfs and mapping

1.1.1.1.1.1.4 Read out phone type/Variant. >>Appears in the window above.

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)



JPICS -- PICS internet portal -- -- - Microsoft Internet Explorer bereitgestellt von BenQ mobile Kamp-Lintfort

KLFS1D0C
Version: JPICS_V5

Mask Login
Username

16.11.2005
15:20

Username: SparkaJP

Password:

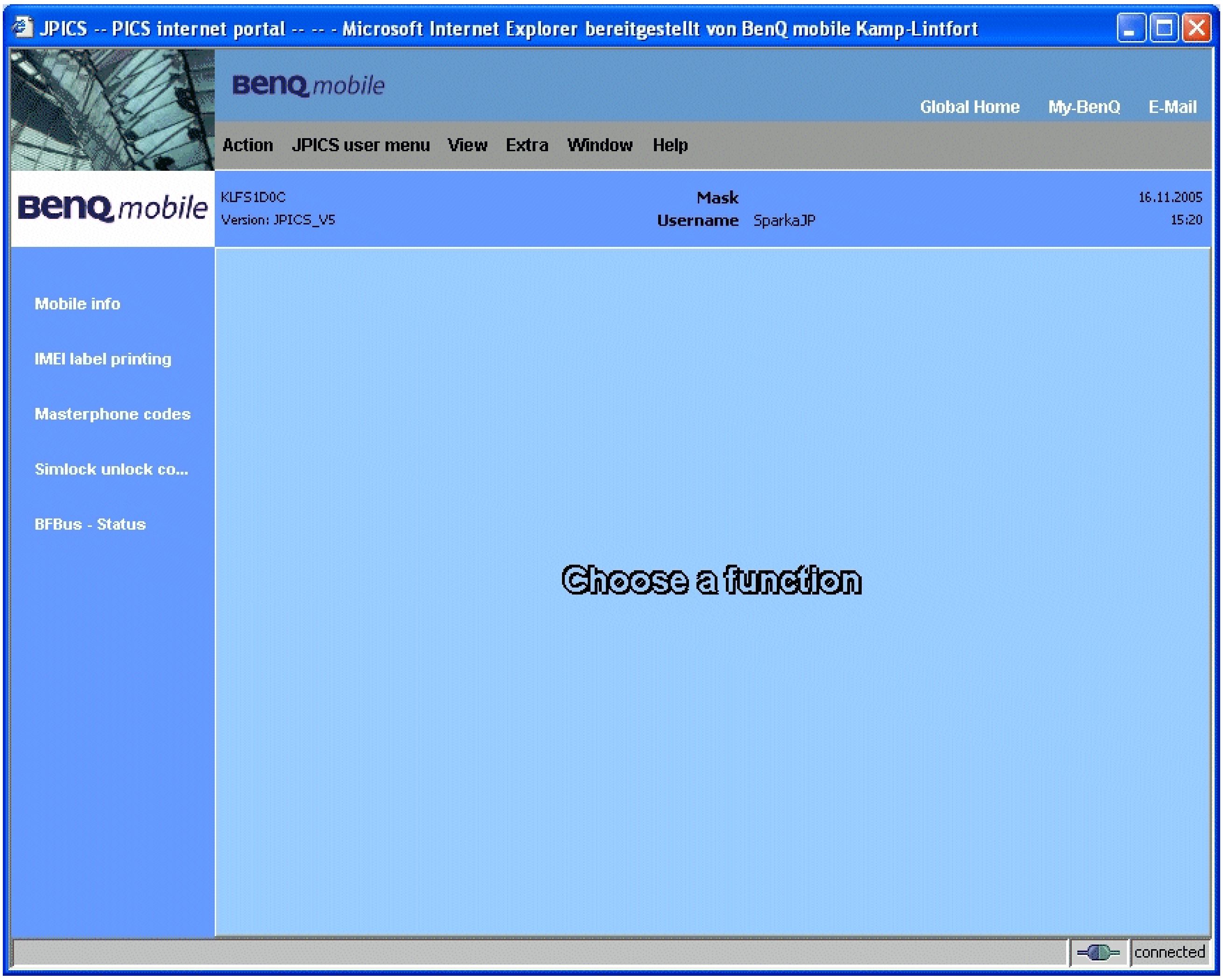
Loading menu...

not connected

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



KLFS1D0C
Version: JPICS_V5
Username SparkaJP
16.11.2005
15:20

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.

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
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!!!

Generate Codes

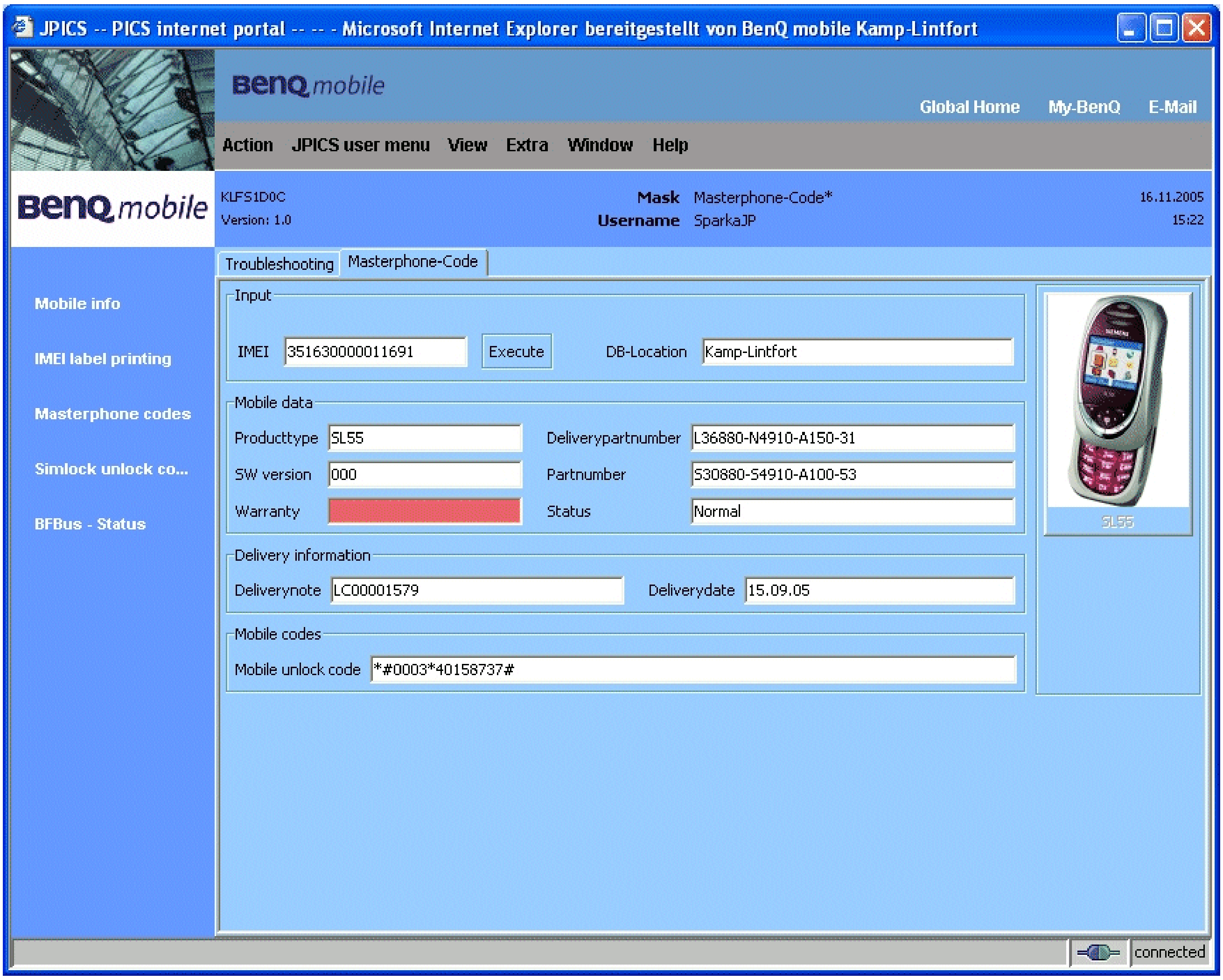
In the JPICS application you can choose to generate:

- **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.



KLFS1D0C
Version: 1.0

Mask Masterphone-Code*
Username SparkaJP

16.11.2005
15:22

Input
IMEI 351630000011691
DB-Location Kamp-Lintfort

Mobile data
Producttype SL55
Deliverypartnumber L36880-N4910-A150-31
SW version 000
Partnumber S30880-S4910-A100-53
Warranty 🟥
Status Normal

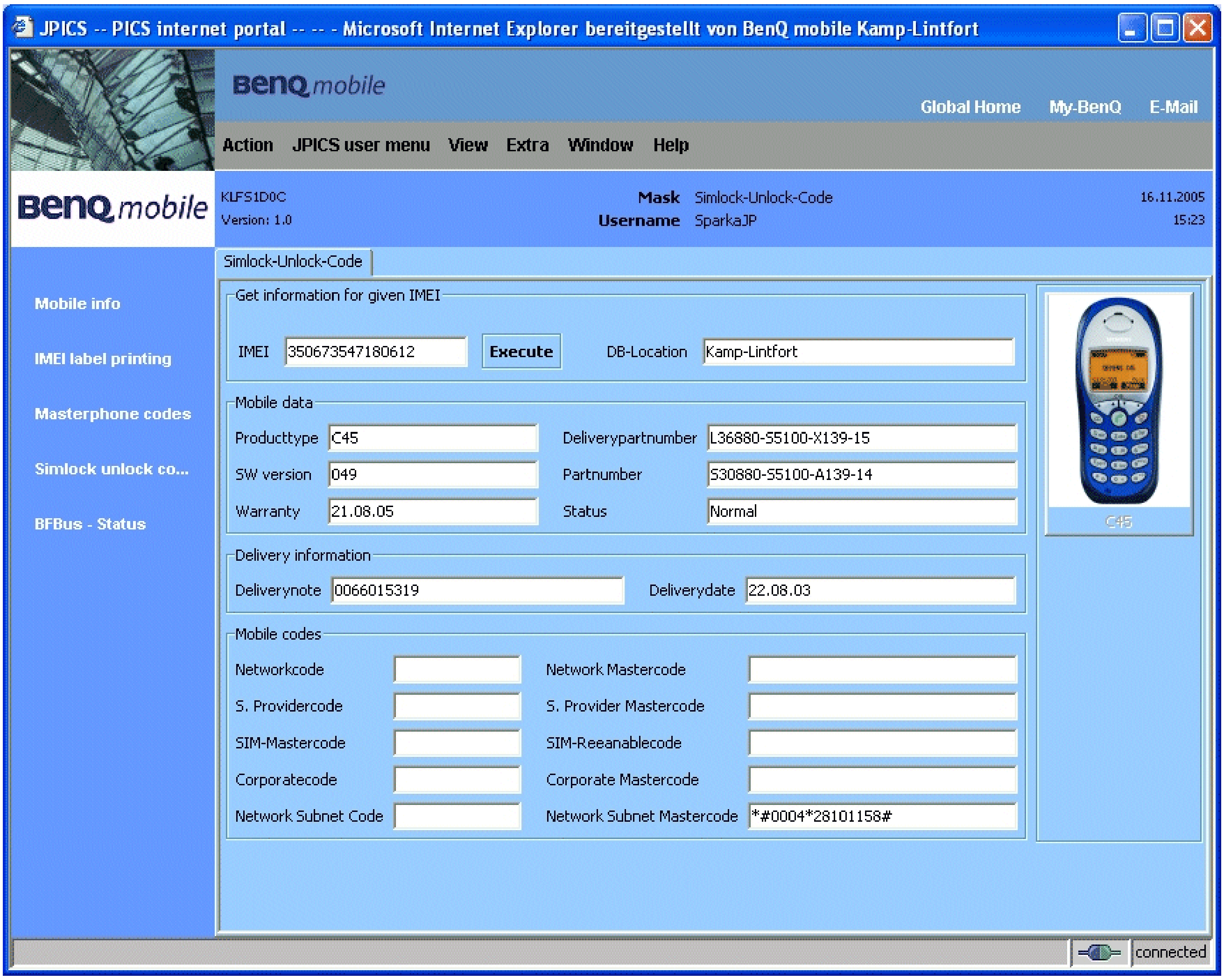
Delivery information
Deliverynote LC00001579
Deliverydate 15.09.05

Mobile codes
Mobile unlock code *#0003*40158737#

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.



KLFS1D0C
Version: 1.0
Mask Simlock-Unlock-Code
Username SparkaJP
16.11.2005
15:23

IMEI 350673547180612
DB-Location Kamp-Lintfort

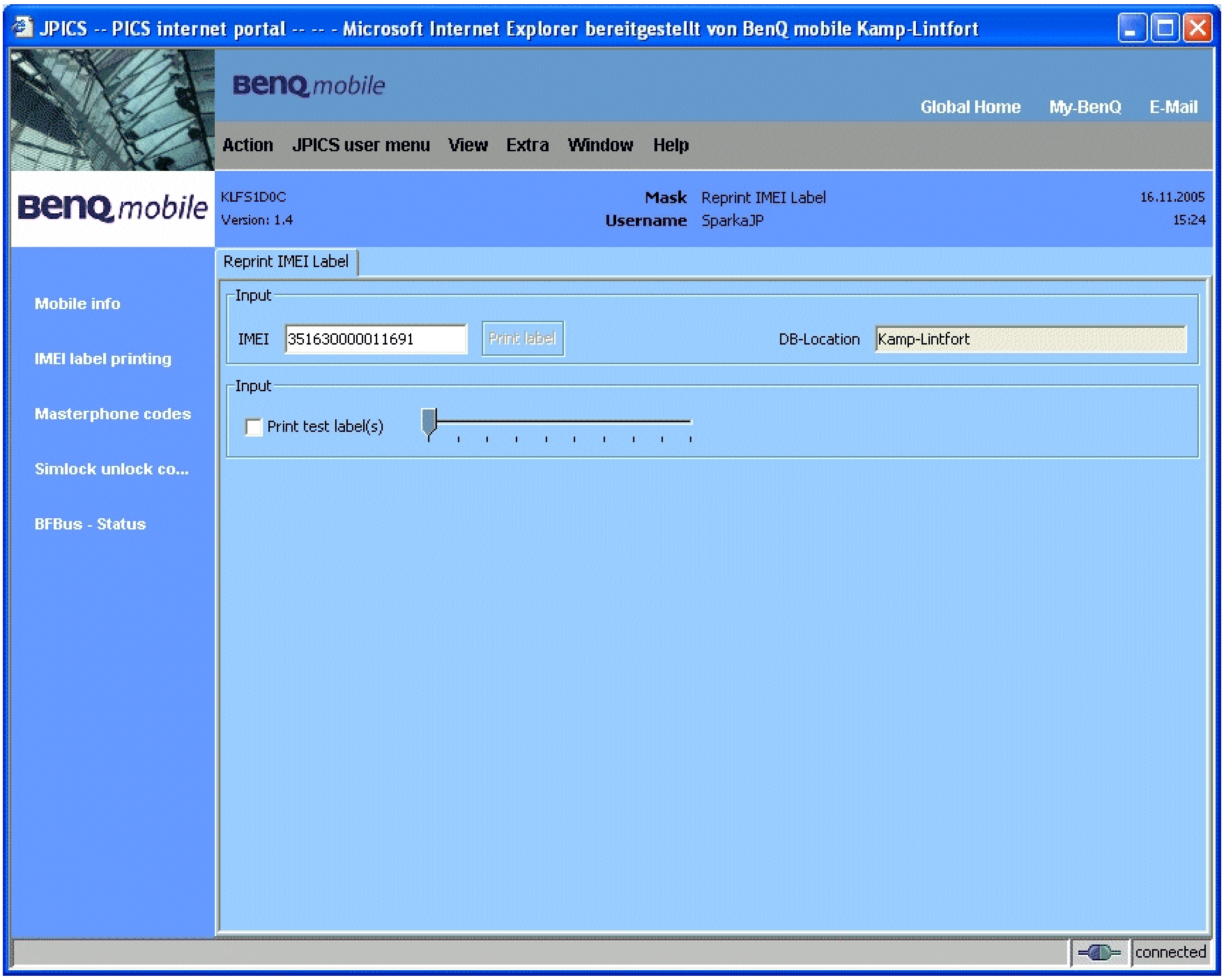
Producttype C45
Deliverypartnumber L36880-S5100-X139-15
SW version 049
Partnumber S30880-S5100-A139-14
Warranty 21.08.05
Status Normal

Deliverynote 0066015319
Deliverydate 22.08.03

Network Subnet Mastercode *#0004*28101158#

Printing IMEI label

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



JPICS -- PICS internet portal -- -- - Microsoft Internet Explorer bereitgestellt von BenQ mobile Kamp-Lintfort

KLFS1D0C
Version: 1.4
Mask Reprint IMEI Label
Username SparkaJP
16.11.2005
15:24

Reprint IMEI Label

Input
IMEI 351630000011691
DB-Location Kamp-Lintfort

Input
☐ Print test label(s)

connected

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 SXG75 is S30880-8900-#xxx where the last for letters specify the housing and software variant.

SXG75 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 includes 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
S	2004	MAY	5
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	• GSM Band 1 • BS Power = -55 dBm • middle BCCH	• Display check	• individual check
2	Call from BS	• low TCH • highest PCL • BS Power = -75 dBm • middle BCCH	• Ringer/Loudspeaker check	• individual check
3	TX GSM Band 1	• low TCH • highest PCL • BS Power = -75 dBm • middle BCCH	• Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template	• GSM Spec.
4	Handover to GSM Band 2 Including Handover Check			
5	TX GSM Band 2	• low TCH • highest PCL0 • BS Power = -75 dBm • middle BCCH	• Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template	• GSM Spec.
6	Call relaese from BS			

External Antenna				
7	Call from MS	• GSM900 • high TCH • second highest PCL • BS Power = -75 dBm • middle BCCH	• Keyboard check	• individual check
8	TX GSM Band 1	• high TCH • second highest PCL • BS Power = -75 dBm • middle BCCH	• Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template	• GSM Spec.
9	RX GSM Band 1	• high TCH • BS Power = -102 dBm • 50 Frames • middle BCCH	• RX Level • RX Qual • BER Class Ib • BER Class II • BER Erased Frames	• GSM Spec.
10	Handover to GSM Band 2 Including Handover Check			
11	TX GSM Band 2	• high TCH • second highest PCL • BS Power = -75 dBm • middle BCCH	• Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template	• GSM Spec.
12	RX GSM Band2	• high TCH • BS Power = -102 dBm • 50 Frames • middle BCCH	• RX Level • RX Qual • BER Class Ib • BER Class II • BER Erased Frames	• GSM Spec.
13	Call relaese 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.

WCDMA 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 WCDMA tester
>Use a Test USIM

Internal Antenna				
Test case		Parameter	Measurements	Limits
1	Location Update	• Band 1		
2	Call from NodeB			
3	WCDMA TX Test	• UARFCN 10750 • ULTA -30	• Peak Power (dBm) • Magnitude Error RMS • EVM RMS • Phase Error RMS • Frequence Error Average	• WCDMA Spec.
4	Call relaese from NodeB			
External Antenna				
5	Call from UE			
6	Audio Test		• Audio Loop	• Individual check
7	WCDMA TX Min Power		• Peak Power (dBm) • Magnitude Error RMS • EVM RMS • Phase Error RMS • Frequence Error Average	• WCDMA Spec
8	WCDMA TX Max Power		• Peak Power (dBm) • Magnitude Error RMS • EVM RMS • Phase Error RMS • Frequence Error Average	• WCDMA Spec
9	Call relaese from NodeB			
10	Test RX BER	• UARFCN 10750 • ULTA -30	• Bit Error Rate • Block Error Rate	• WCDMA Spec

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

Varta

Date code example → N 9 A VA

Year (N:2001, O:2002...)
Month (1:Jan, 2:Feb,…9:Sep, O:Oct, N:Nov, D:Dec)
Revision Letter (A, B,…)
Supplier Code
(Maker's marking)

Hitachi / Maxwell

Date code example → N 9 A MX

Year (N:2001, O:2002...)
Month (1:Jan, 2:Feb,…9:Sep, O:Oct, N:Nov, D:Dec)
Revision Letter (A, B,…)
Supplier Code
(Maker's marking)

Sanyo

Date code example → N 9 A SY

Year (N:2001, O:2002...)
Month (1:Jan, 2:Feb,…9:Sep, O:Oct, N:Nov, D:Dec)
Revision Letter (A, B,…)
Supplier Code
(Maker's marking)

NEC

Date code example → N 8 A NT

Year (N:2001, O:2002...)
Month (1:Jan, 2:Feb,…9:Sep, O:Oct, N:Nov, D:Dec)
Revision Letter (A, B,…)
Supplier Code
(Maker's marking)

Panasonic

Date code example → O N A PAN

Year (N:2001, O:2002...)
Month (1:Jan, 2:Feb,…9:Sep, O:Oct, N:Nov, D:Dec)
Revision Letter (A, B,…)
Supplier Code
(Maker's marking)

Sony

Date code example → P N A SO

Year (O:2002, P:2003...)
Month (1:Jan, 2:Feb,…9:Sep, O:Oct, N:Nov, D:Dec)
Revision Letter (A, B,…)
Supplier Code
(Maker's marking)

13 Introduction of Service Repair Documentation Level 3 – SXG75

13.1 Purpose

This Service Repair Documentation is intended to support Service partners to carry out repairs on BenQ repair level 3. The described failures shall only be repaired in BenQ authorized local workshops.

The level 3 (former Level 2.5light) partners are obliged to repair level 3 classified boards, up to their repair level, under consideration of this repair instruction.

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 CF110 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 CF110 related Customer Care Information

SXG75	Partnumber on IMEI label:	S30880-S8900-#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.

13.2 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 2.5 light.

13.3 Terms and Abbreviations

14 List of available level 3 (basic) parts

(according to Component Matrix V1.19 - check C-market for updates)

Product	ID	Order Number	Description CM
SXG75	V2100	L36197-F5008-F492	IRDA 115.2 KBIT
SXG75	X100	L36334-Z93-C303	IO-JACK SLIM 12-POL
SXG75	X1100	L36334-Z97-C213	CONNECTOR BATTERY 3-POL
SXG75	X1400	L50634-Z97-C348	CONNECTOR RS-MMC-READER X75
SXG75	X1500	L36334-Z97-C337	CONNECTOR SIM CARD READER K1
SXG75	X1900	L36197-F5008-F341	CONNECTOR BOARD TO BOARD 20-POL
SXG75	X1901	L50634-Z97-C379	CONNECTOR CAMERA-SOCKET
SXG75	X200	L36334-Z93-C297	CONNECTOR ANTENNA 6mm
SXG75	X2000	L50697-F5008-F288	BOARD TO BOARD 16-POL 0,5MM
SXG75	X2201	L50634-Z97-C340	BOARD TO BOARD 30-POL

15 Hardware requirements

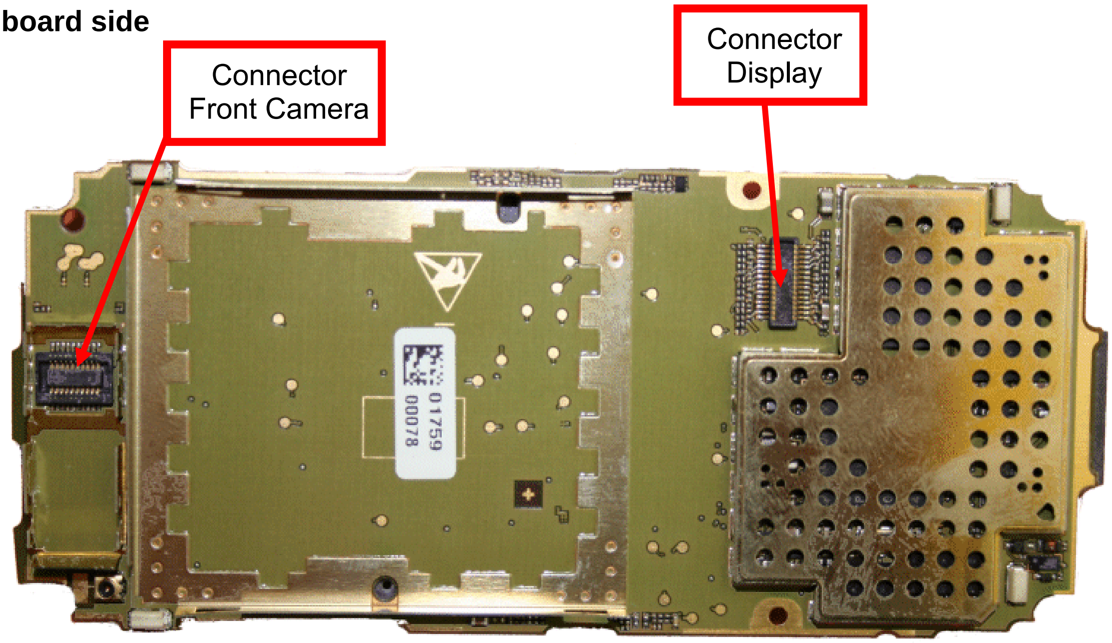
(according to General soldering information V1.3 - check C-market for updates)

Jigs, Tools and working materials for all described repairs:

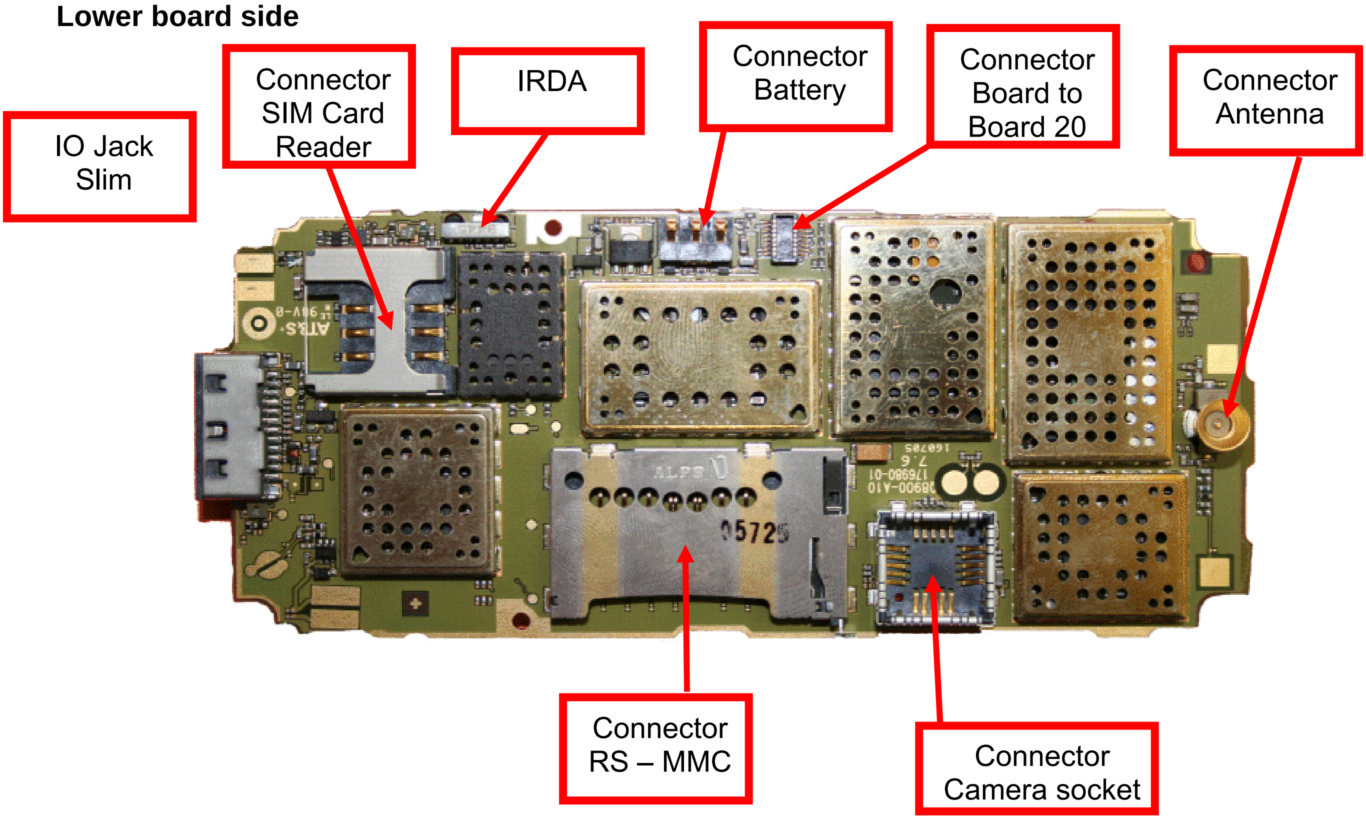
- hot air blower
- soldering gun
- tweezers
- flux
- solder
- SXG75 dome sheet jig

16 SXG75 Board layout

Upper board side

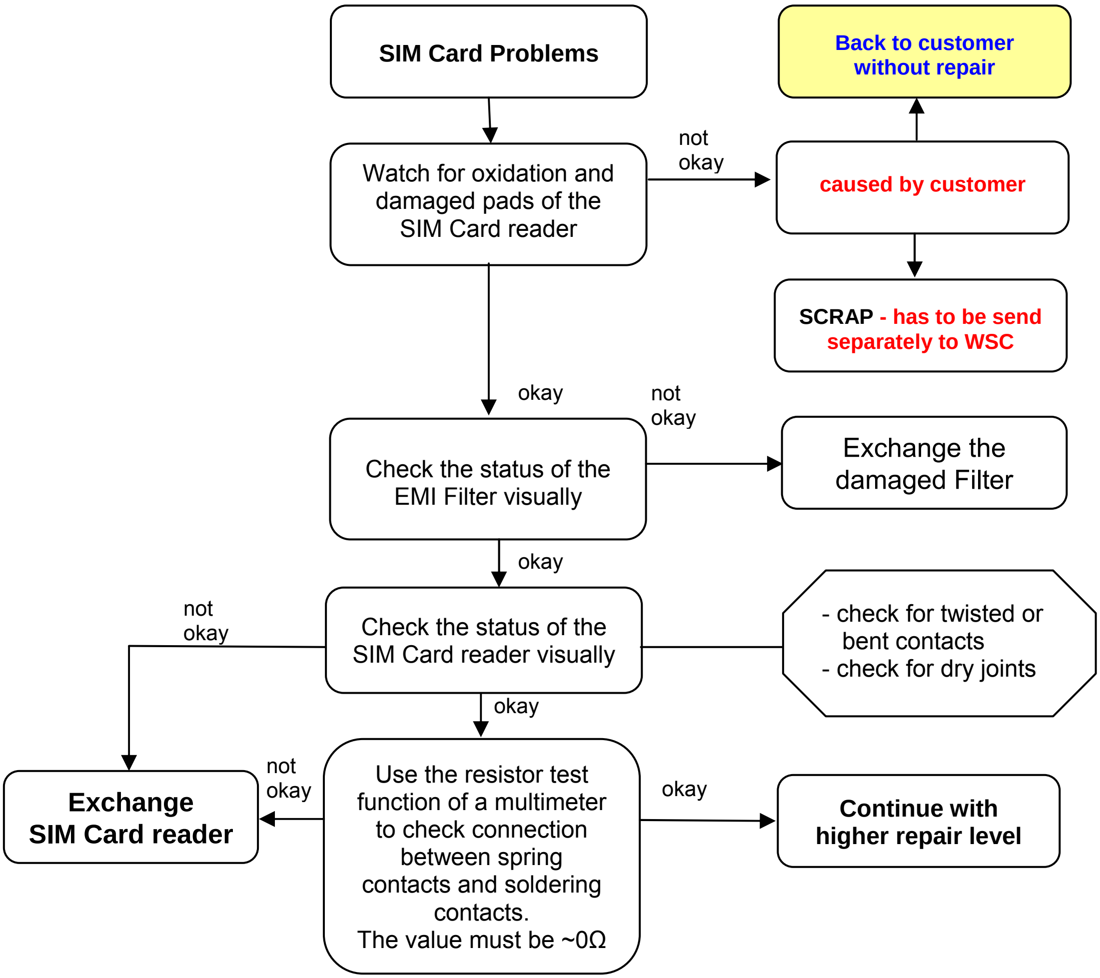


Lower board side



17 SIM Card Problems

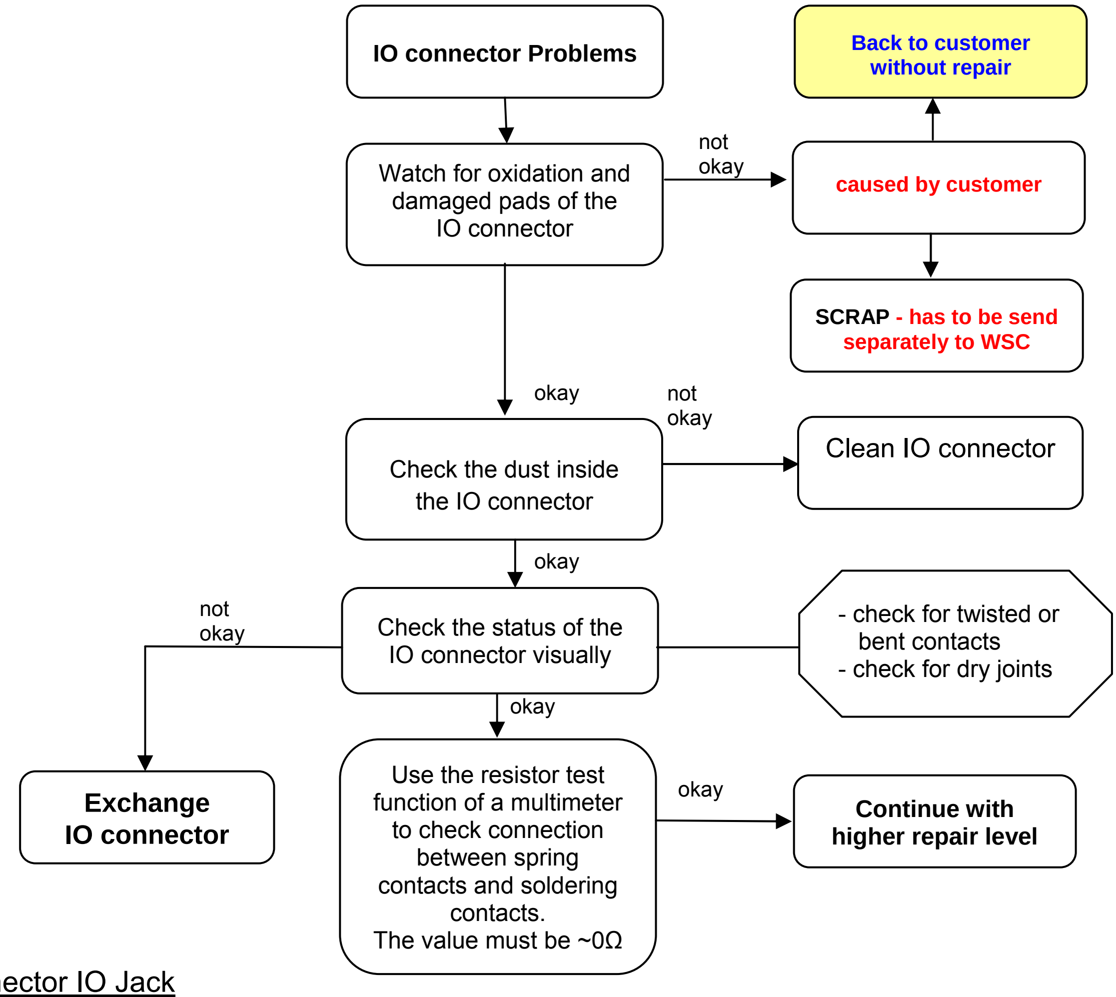
Fault Symptoms	
Customer: Handset does not accept SIM card	GRT: SIM Card Problems



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.

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:	L36334-Z93-C303
E-commerce order name:	IO-JACK SLIM 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

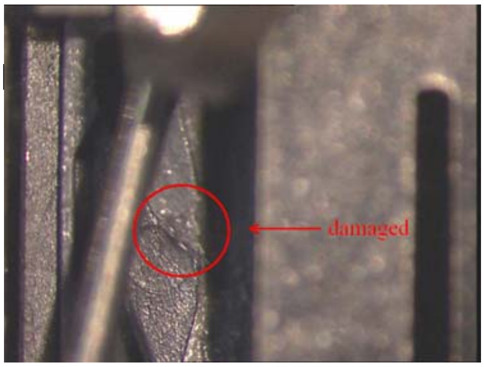
Important additional soldering hints

The MMC Reader is located on the opposite of the SLIM-Lumberg connector.
Therefore the risk to damage the plastic material of this MMC-Reader is potentially high if excessive heat is used while removal or soldering of the SLIM-Lumberg connector.

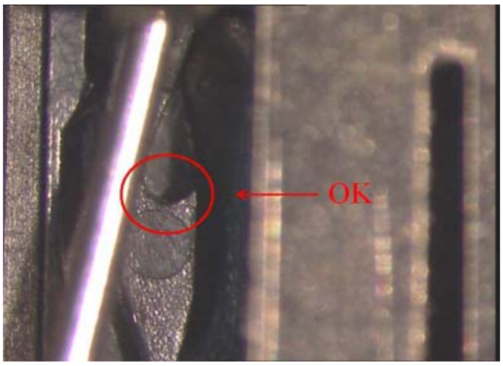
Please follow these instructions:

a) Remove the SLIM-Lumberg connector with a soldering iron and Desolder Wick
b) Clean the Pads afterwards
c) Solder the new connecter by using soldering iron under consideration of the max. allowed temperature range.

Samples of critical area:



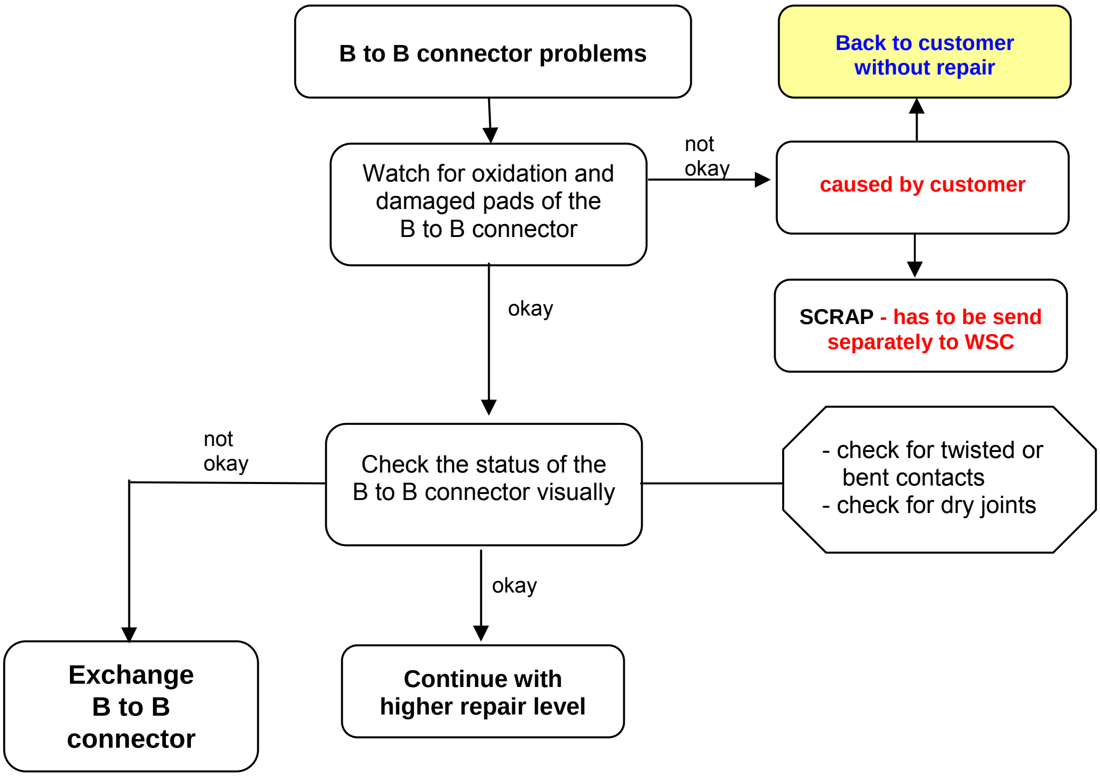
Lock mechanism damaged



Lock mechanism OK

19 B to B connector Problems

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



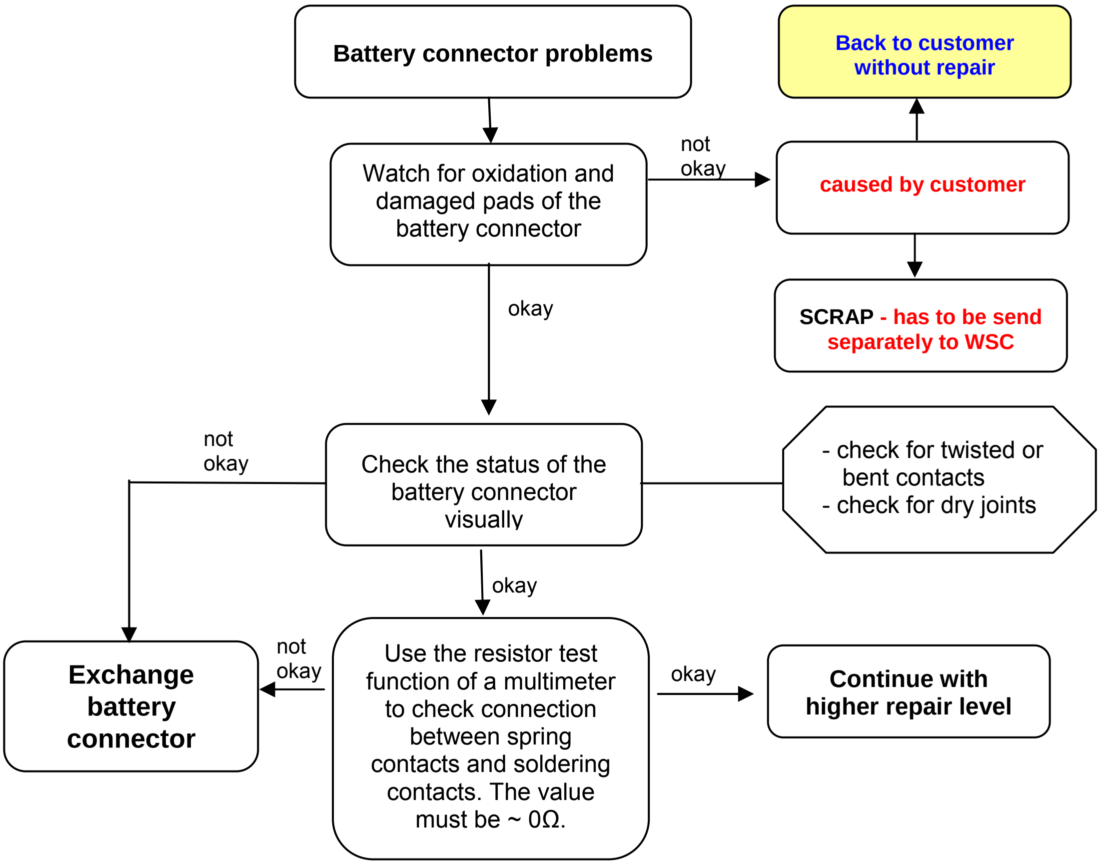
Connector Board to Board
Use hot air blower to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

E-commerce order number:	L50634-Z97-C340
E-commerce order name:	BOARD TO BOARD 30-POL
Soldering temperature:	~ 360°C TIP Temp.

IRIS Diagnose Code:	32100 Keys / Main / No Function 32200 Keys / Main / Reduced Functionality 36000 Keys / Illumination

20 Battery Connector Problems

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



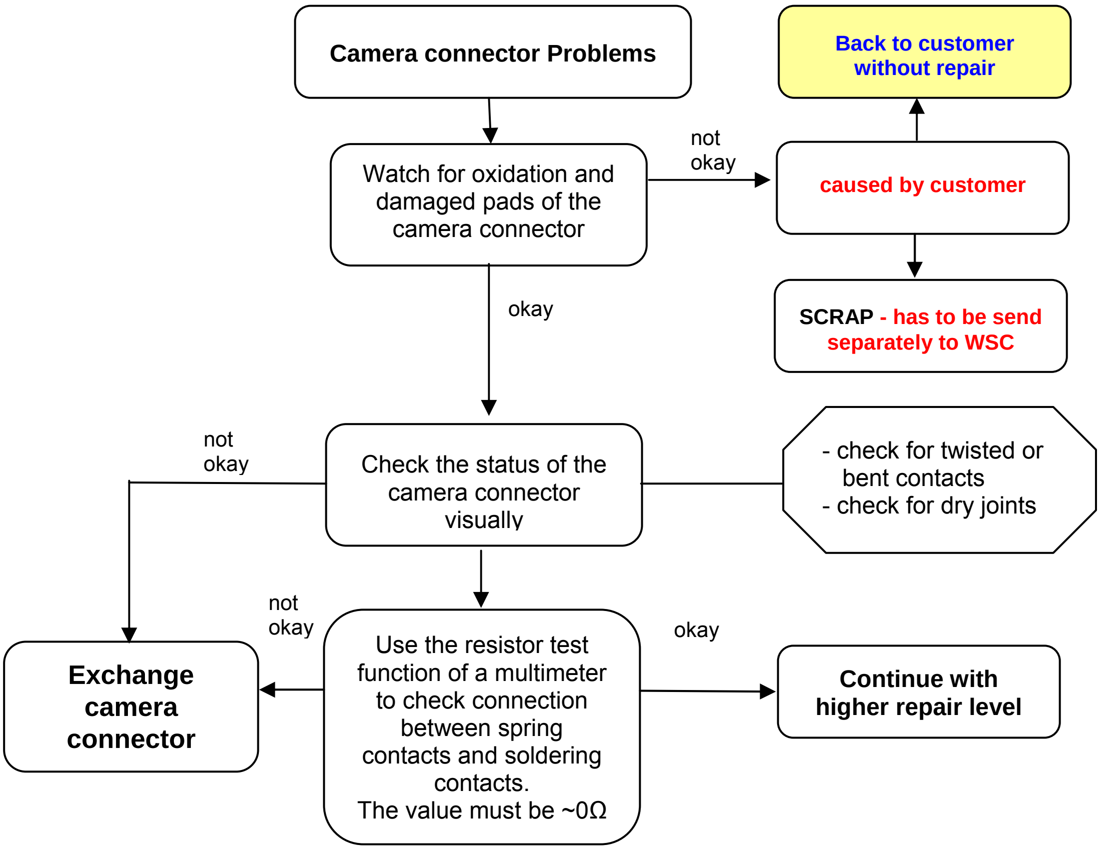
Connector BATTERY

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

E-commerce order number: L36334-Z97-C213
E-commerce order name: CONNECTOR BATTERY 3-POL
Soldering temperature: ~ 360°C TIP Temp.
IRIS Diagnose Code: 13000 Battery/Mechanical Damage

21 Camera Connector Problems

Fault Symptoms	
Customer: Camera malfunction	GRT: Tbd.

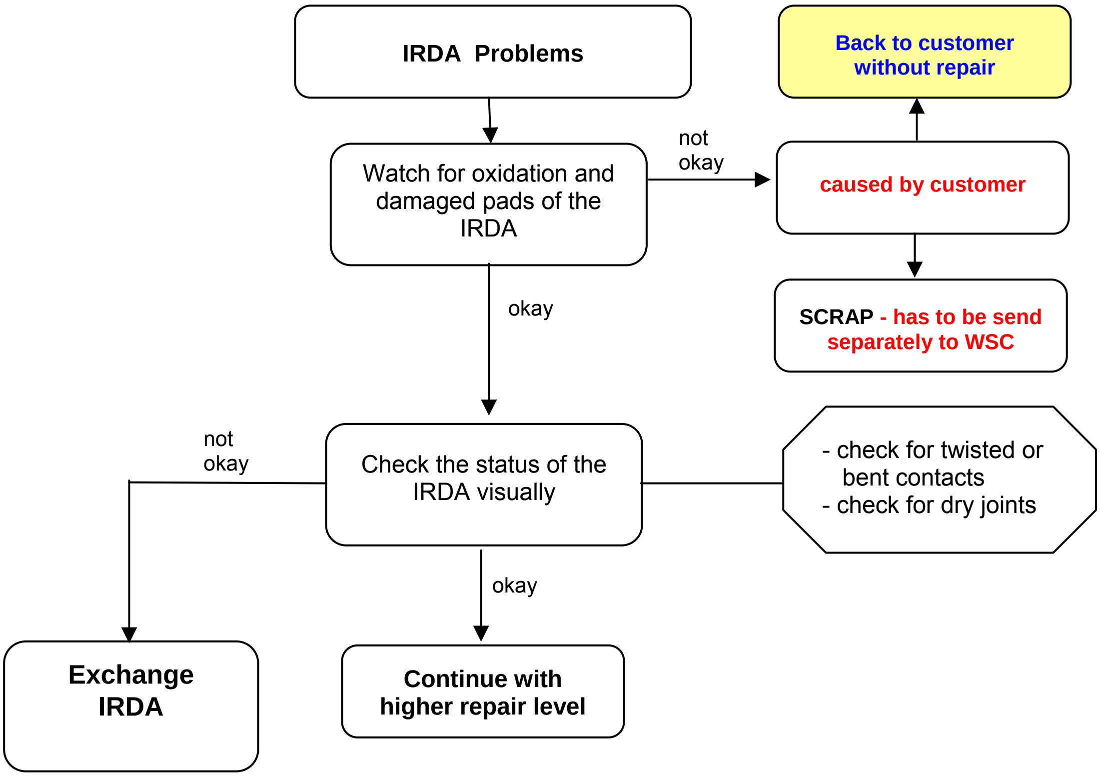


Connector CAMERA
Use hot air blower to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

E-commerce order number:	L50634-Z97-C379
E-commerce order name:	CONNECTOR CAMERA-SOCKET
Soldering temperature:	~ 360°C TIP Temp.
IRIS Diagnose Code:	BA000 Accessories / Camera

22 IRDA Problems

Fault Symptoms	
Customer: No infrared connection possible	GRT: Tbd.



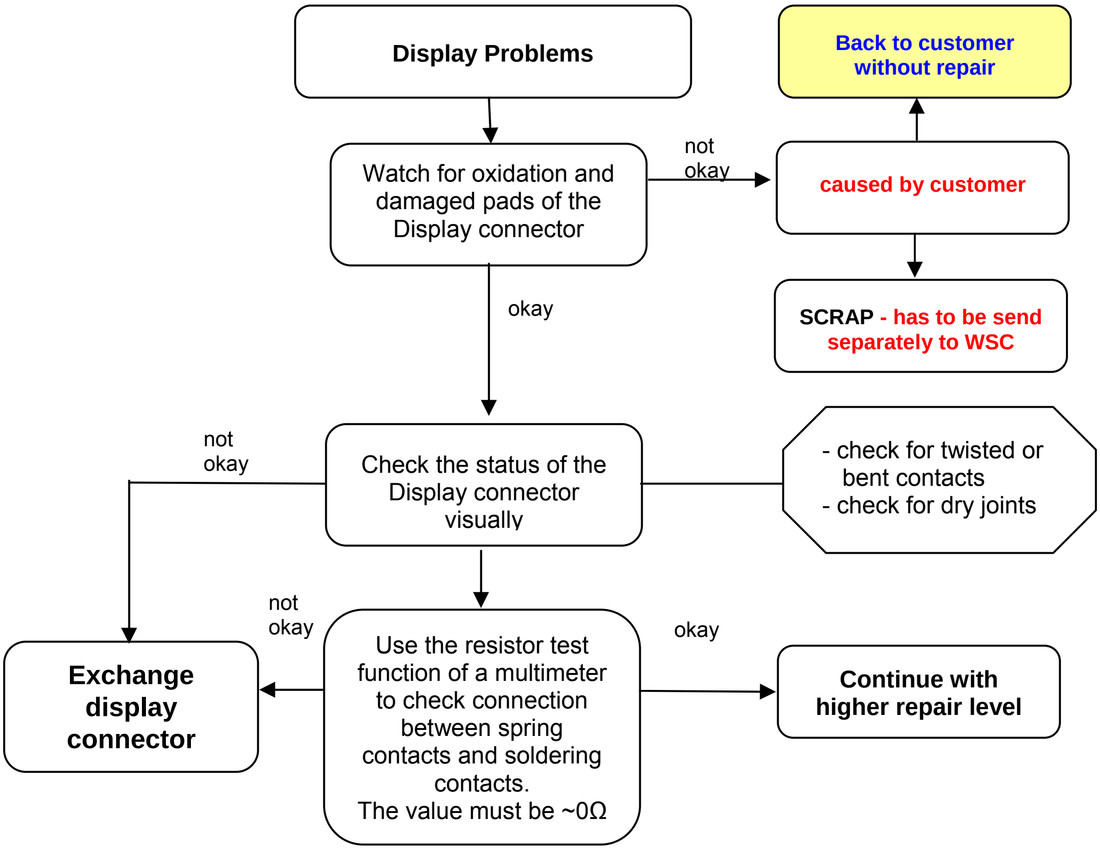
IRDA

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

E-commerce order number:	L36197-F5008-F492
E-commerce order name:	IRDA 115.2 KBIT
Soldering temperature:	~ 360°C TIP Temp.
IRIS Diagnose Code:	41100 Interfaces / IRDA / No Function 41300 Interfaces / IRDA / Mechanical Damage

23 Display Problems

Fault Symptoms	
Customer: Display problems	GRT: Current measured failed

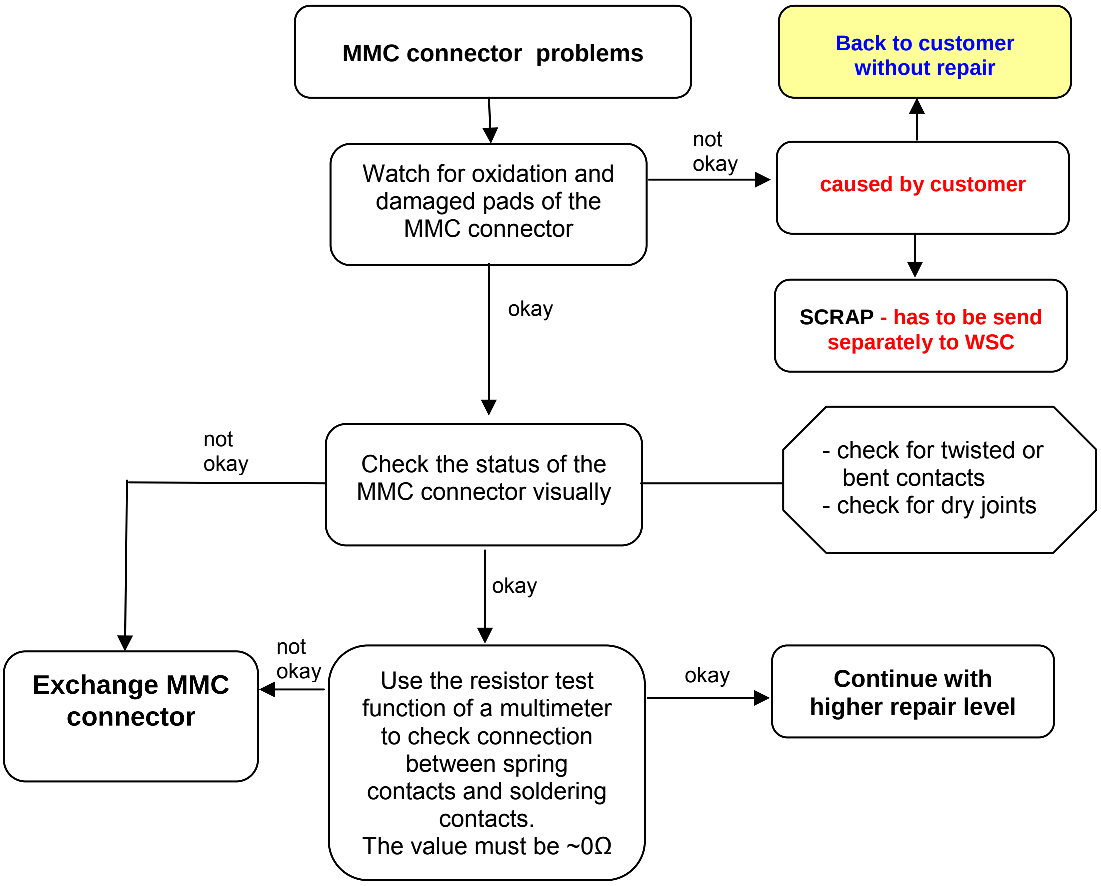


Connector DISPLAY
Use hot air blower to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

E-commerce order number:	L50634-Z97-C380
E-commerce order name:	CONNECTOR DISPLAY 20POL
Soldering temperature:	~ 360°C TIP Temp.
IRIS Diagnose Code:	21000 Display / Performance 22000 Display / Background Illumination

24 MMC Connector Problems

Fault Symptoms	
Customer: MMC malfunction	GRT: Tbd.



<u>Connector MMC</u>
Use soldering iron to remove defective component. Avoid excessive heat! Watch surrounding components! Resolder new component afterwards.

E-commerce order number: L50634-Z97-C415
E-commerce order name: CONNECTOR RS MMC X75; CONNECTOR RS MMC X75
Soldering temperature: ~ 360°C TIP Temp.
IRIS Diagnose Code: 4E000 Interfaces/ Memory Card Rerader

Attention: Avoid excessive heat in order not to damage the plastic material of the connector (see problem SLIM-Lumberg connector)