

Local Service Organization Service Manual

BE INSPIRED

S 65 / SP 65



V 1.2

Version	Date	Department	Notes to change
1.0	14 July 2004	ICM MP CCQ SLI RHQ	New Document
1.1	08.09.2004	ICM MP CCQ GRM T	SW update section changed, other minor changes
1.2	04.04.2005	ICM MP CCQ GRM T	SP65 included

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1 GPRS (General Packet Radio Service)

GPRS is a new non-voice value added services that allows information to be sent and received across a GSM mobile telephone network. It supplements today's Circuit Switched Data (CSD) and Short Message Services (SMS). GPRS involves overlaying a packet based air interface on the existing circuit switched GSM network. This gives the option to use a packet-based data service. The information is split into separated but related "packets" before being transmitted and reassembled at the receiving end. Theoretically, maximum speeds of up to 171.2 kilobits per second (kbps) are achievable with GPRS using all eight timeslots at the same time. This is about 3 times as fast as the data transmission speed possible over today's fixed telecommunications networks and 10 times as fast as current Circuit Switched Data services on GSM networks.

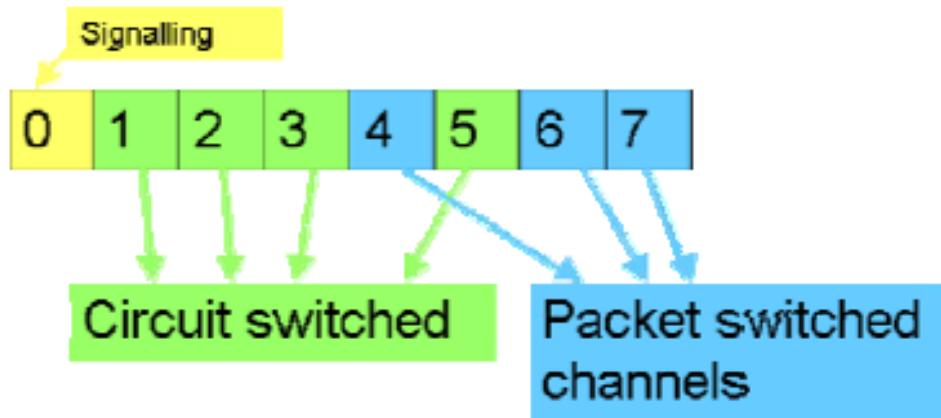


Figure1. Example of GPRS data transmission

Example: Cell with 1 Frequency channel:

1 physical channel for signaling, 4 physical channels for Circuit switched and 3 physical channels for Packet switched.

2 K-Java Application

Java-based game system		
Java Application Manager (JAM)	Application launcher and download manager. Supports HTTP-based OTA download of applications over GPRS and CSD.	yes
RAM for Java applications	Available RAM for Java applications (i.e. Program code and data) during application runtime: Minimum 100 Kbytes (Has to be taken as working assumption for application development). Goal: 145 Kbytes as SL45i (not committed)	yes
MIDP 1.0, CLDC 1.0	As SL45i, including performance optimizations from SL45i-Infusio.	yes
'OEM extensions'	Proprietary API extension as SL45i. Including 'Siemens Game API'	yes
HTTP API over GPRS	SL45i: only CSD	yes

3 Key Features

Bands	<ul style="list-style-type: none"> • Triple Band E-GSM 900 / GSM 1800 / GSM 1900 • GPRS Multi Class 10
Battery	<ul style="list-style-type: none"> • Li-Ion Battery Pack • Nominal Voltage : 3.7V • Nominal Capacity : 780 mAh • GSM Capacity : 750 mAh • Power Input : 2.0A (0.6 ms) / 0.25A (4 ms) • Cut-off Threshold : 3.2V
Stand-by Time	≥ Approx. 250 h / Li-Ion
Talk Time	≥ 5 hrs (approx. 150 mA for lowest Tx power level)
SIM Card	<ul style="list-style-type: none"> • Small ("Plug In") 1.8 or 3V SIM card (Phase II) • To insert the SIM card, the battery pack must be removed.
Speech Codec	<ul style="list-style-type: none"> • Triple Rate (HR/FR/EFR) and Adaptive Multi Rate are available as standard
Temperature Range	<ul style="list-style-type: none"> • -10⁰C to +55⁰C (Normal operation) • -30⁰C to +85⁰C (Storage capability)
Display	<ul style="list-style-type: none"> • Type: Full Graphic • Resolution: 132 x 176 Pixel • Color depth: 65K • Technology: TFT (Sharp) and TFD (Epson) • Active area / mm: 31.284 x 41.712 • Illumination: White LED • Contrast: Adjustable • Frame rate: maximum 15 frames/seconds • Pixel size per mm: 0.079mm x 0.237mm (1 pixel consist of 3 sub pixels in red, green and blue)

Keypad	<ul style="list-style-type: none">• Hard caps back side printed• Bridgeless• 12-digit block (0-9, #, *) and two function keys (SEND, END) in one block with small letters.• ON/OFF key combined with the END key; the symbol _ (I inside O) is used as a symbol for ON/OFF.• 2 soft keys• 5 way joystick with design cap• Illumination color : White LED• 6 amber LEDs for keypad• tactile finder on key "5"• Operator key
Acoustics	<ul style="list-style-type: none">• 3 in 1 earpiece for Handset, Hands-free, and Ring tones• Omni-directional microphone• Loud signal emitter (sound ringer) (>100 dBA) SPL @ 5cm (Hong Kong spec)• Polyphonic ring tone• Hands-free mode• Different selectable volume levels for Handset, Hands-free, and Ringer mode
Camera	<ul style="list-style-type: none">• Integrated 1.3 Mega pixel
External Memory	<ul style="list-style-type: none">• Reduced Size (RS) MMC
Multimedia	<ul style="list-style-type: none">• Video recording and encoding
Wireless Connectivity	<ul style="list-style-type: none">• Bluetooth• Infrared

4 Comparison with Previous Product

Feature	S55 Marlin	S65 / SP65 PENELOPE	Delta
Supported Systems	Triple band EGSM 900/GSM1800/GSM1900	Triple Band EGSM 900/GSM1800/GSM1900 (EMEA, APAC)	No GSM 850
Stand-by Time	Up to 250 h	≥ 250h (approx. 3mA quiescent current)	
Talk Time	Up to 6 h	≥ 5 h (approx. 150mA average current for lowest TX-power level)	
Battery Technology Battery Capacity	Li-Ion Battery Pack Nominal Cap.: 750 mAh	Li-Ion Battery Pack Nominal Cap.: 780 mAh	
Weight	Approx. 83 g	Approx. 90 g	
Volume	Approx. 76 cm ³	Approx. 89 cm ³	+18% volume increase
Length	101 mm	108,9 mm	8 mm longer
Width	46 mm	48 mm	2 mm wider
Thickness	18 mm	19 mm	1 mm thicker
SIM	Plug-In 1.8V/3V	Plug-In 1.8V/3V	
Antenna	Integrated	Integrated	
Antenna performance in comparison	29 dB @ 900 MHz 25,5 dB @ 1800 MHz 26 dB @ 1900 MHz (3-Band-Antenna)	~28 dB @ 900 MHz ~24,5 dB @ 1800 MHz ~23,5 dB @ 1900 MHz (2,7-Band-Antenna)	-1db @ 900 MHz -1db @ 1800 MHz -2,5db @ 1900 MHz
Half Rate	Yes	Yes	
Enhanced Full Rate	Yes	Yes	
AMR	Yes	Yes	
Fax/Data	Yes	Yes	
GPRS	Class 10	Class 10	
Keypad Illumination	White LED	White LED	

Display / Display Illumination	CSTN full dot matrix, 6 lines graphic + icons / white (256 colour)	TFT/TFD 132 x 176 Pixel 65k colour	Higher Resolution Colour
Exchangeable Memory	No	Yes (RS-MMC Card)	Higher Memory
Camera Not for SP65	VGA (clip on)	Mega pixel camera (integrated)	Higher Resolution NEW feature
Ringer volume level	Min. 95 dB(A) @ 5cm Typ. >100 dB(A) @ 5cm Max. 125 dB(A) @ human ear	Min. 95 dB(A) @ 5cm Typ. ≥98dB(A) @ 5cm (for dedicated Siemens-standard melodies) Min. 100dB(A) @ 5cm (only for rectangular sound signals)	

5 Accessories

For S65 / SP65, the following accessories will be available.

Description	Part number
Belt Case FCL-600	L36880-N7101-A120
Car Charger Plus ECC-600	L36880-N7101-A109
Car Kit Bluetooth HKW-600	L36880-N6551-A100
Car Kit Comfort Data HKC-675	L36880-N7401-A121
Car Kit Comfort HKC-670	L36880-N7401-A116
Car Kit Easy HKP-600	L36880-N7101-A100
Car Kit Portable HKP-500	L36880-N5601-A109
Car Kit Upgrade HKO-650	L36880-N7401-A120
Charger Adapter ECA-500	L36880-N7401-A104
Data Cable DCA-500	L36880-N5601-A110
Data Cable USB DCA-510	L36880-N5601-A111
Data Cable USB DCA-540	L36880-N6501-A102
Flash IFL-600	L36880-N7101-A400
Headset Bluetooth™ AUS HHB-620	L36880-N7401-A102
Headset Bluetooth™ EU HHB-600	L36880-N7401-A100
Headset Bluetooth™ UK HHB-610	L36880-N7401-A101
Headset HHS-500	L36880-N5601-A107
Headset PTT HHS-510	L36880-N5601-A108
Headset Purestyle HHS-610	L36880-N7101-A500
Leather Case FCL-610	L36880-N7101-A121
Li-Ion Battery 750mAh EBA-660	L36880-N7101-A111
Mobile Holder Antenna HMH-670	L36880-N7401-A115
Tour Case FCT-650	L36880-N5601-A149
Travel Charger ETC-500 EU	L36880-N5601-A104
Travel Charger ETC-510 UK	L36880-N5601-A105
Upgrade Kit HKO-620	L36880-N7101-A103

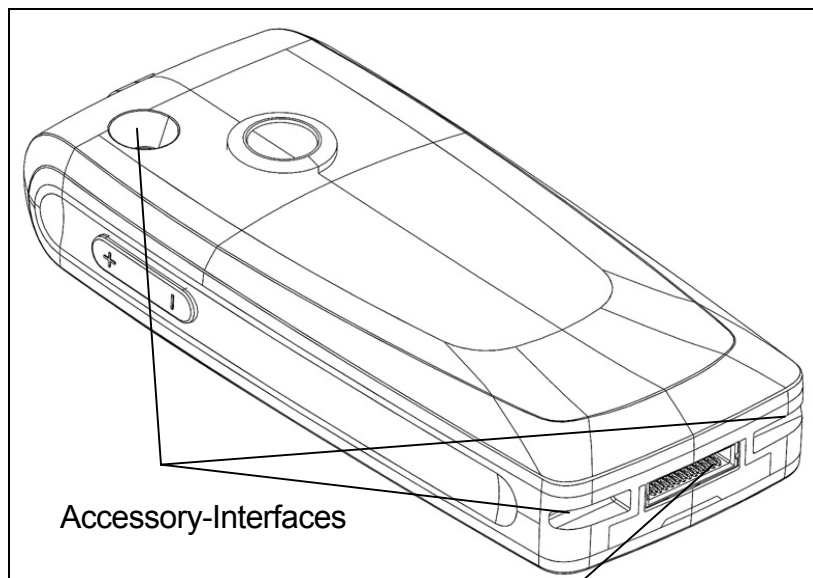
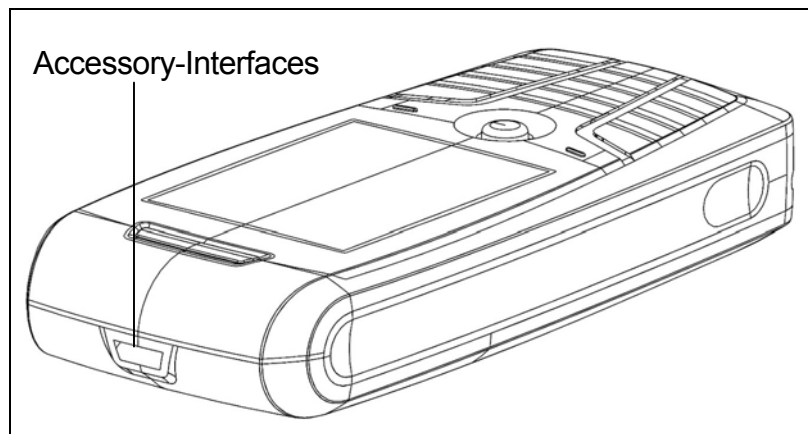
Note: Visit the Communication Market for updated accessories:

<https://communication-market.siemens.de/>

5.1 S65 / SP65 Interface to accessories

The phone has got a full compatible interface to accessories. The I/O-Connector (Lumberg-(slim)-connector) and RF-Connector is in the same position as in the R65 Ulysses (and also R65 X-Cite). Because of the Penelope design it's not possible to use the same car holder as R65 Ulysses.

All shown interfaces are for car-cradle. Interfaces for Belt-Clip will not be necessary



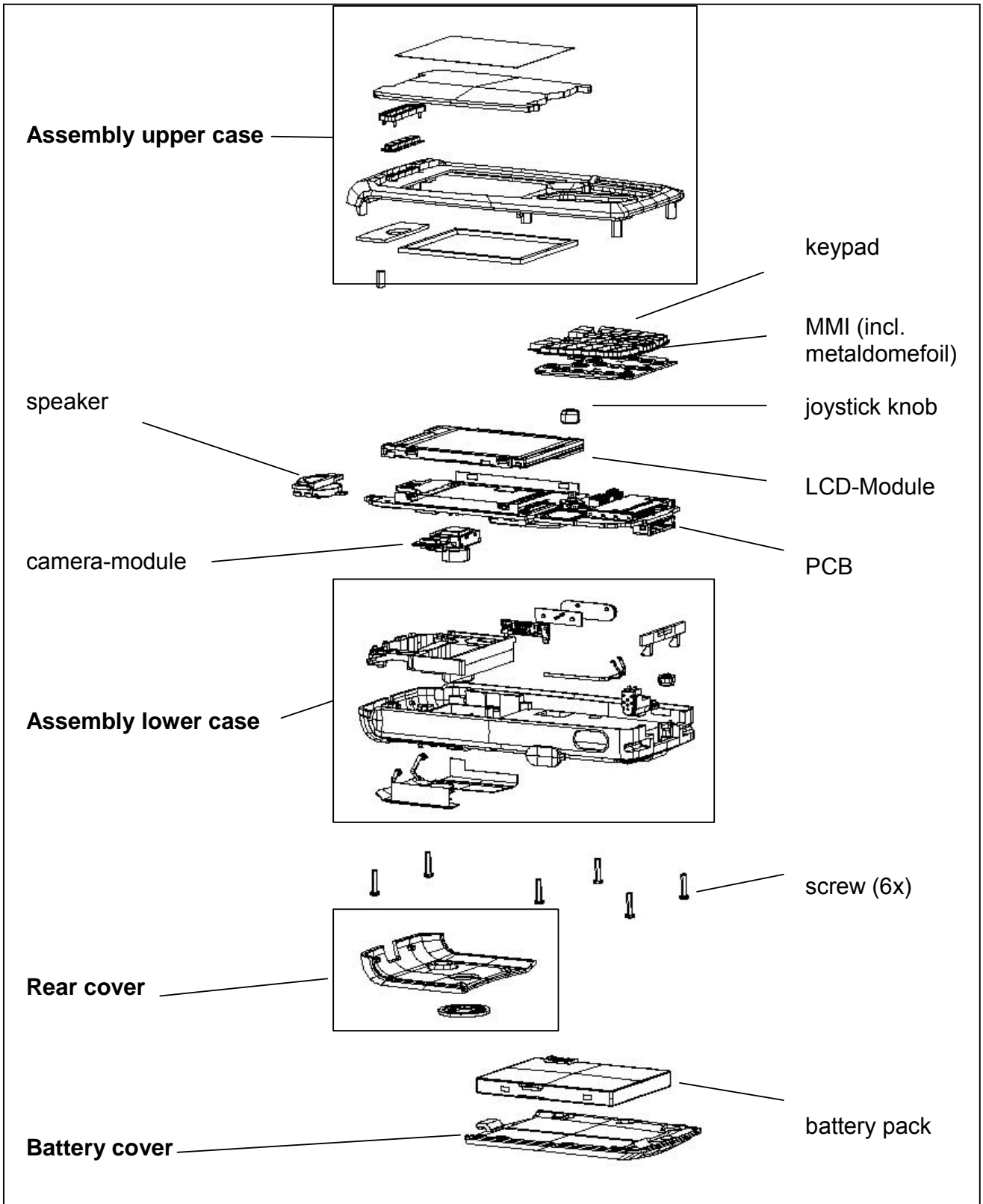
Slim Lumberg I/O Connector

6 Unit Description of S65 / SP65

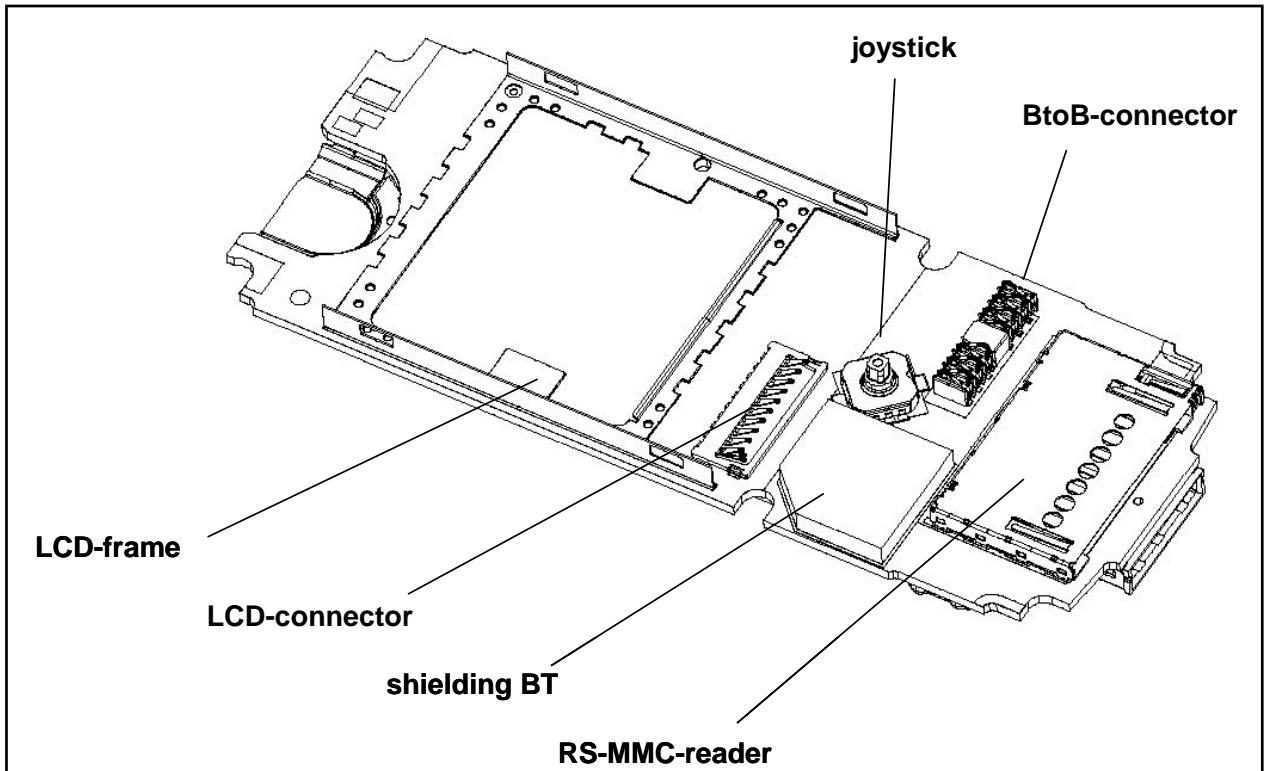
The S65 / SP65 Penelope is designed as a two-PCB phone with exchangeable battery cover. The upper-case is a galvanized 2-shot-molded part (1 colour, partial high polished). The lower case, rear cover and battery cover are plastic-parts (1-shot-molding; 1 colour). The lower case is partial high polished without lacquering. Rear cover and battery cover lacquered



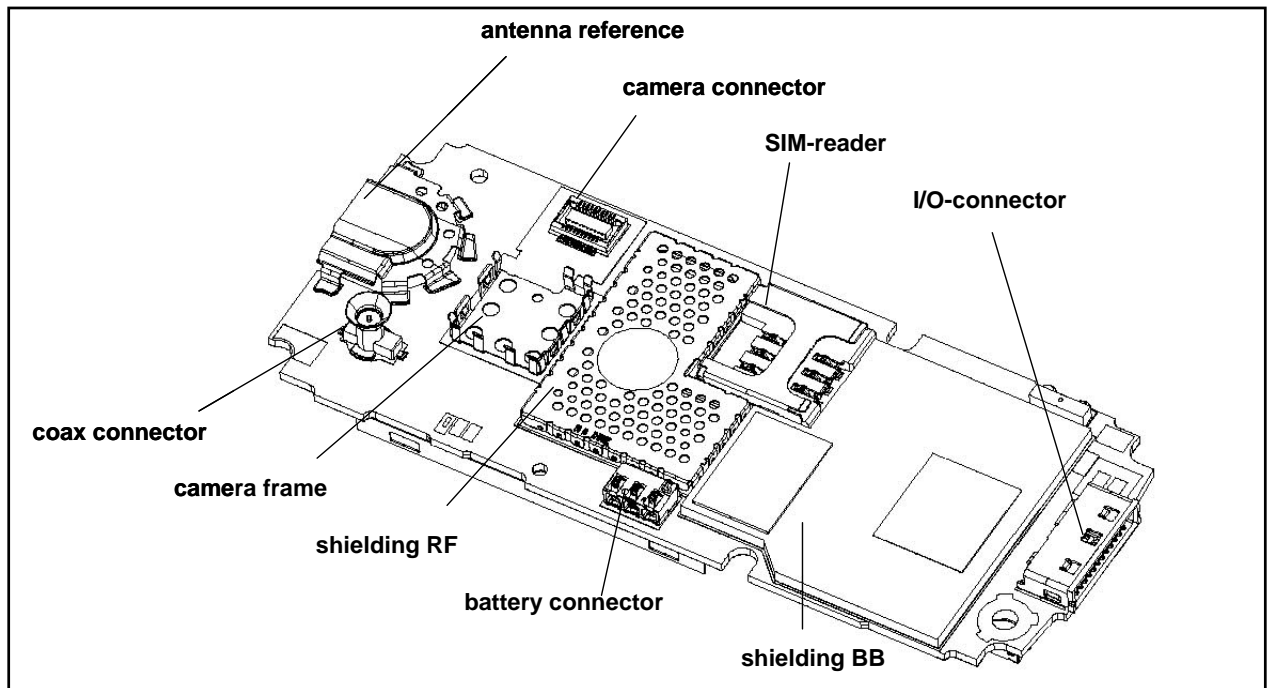
6.1 Exploded View of S65 / SP65 (exclusive camera)



PCB Top Side



PCB Bottom Side



7 Disassembly of S65 / SP65





Note: ESD concept; the internal circuits will be more susceptible to ESD because of the use of exchangeable housing. The construction of the internal block must be/is designed, in the best possible way, to protect the circuit against sparks.

Note: All described procedures exclusive camera replacement are valid for S65 and SP65. Therefore from this line onwards the name S65 includes SP65 too.

The keypad must be completely closed to prevent any occurrence of an ESD disruptive discharge.

The SIM contacts may be open, thus reachable for ESD contact discharge. This could lead to damage or destruction of the S-Gold pins.

It is a requirement for the service personnel to observe ESD protection rules while performing servicing the S65 / SP65.

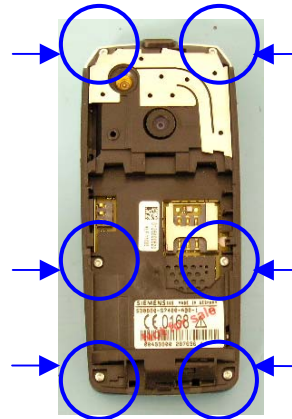
<p>Step 1</p>  <p>Front view of the S65 / SP65</p>	<p>Step 2</p>  <p>Back View of the S65 / SP65</p>
<p>Step 3</p>  <p>To remove the battery, lift the battery tab using your thumb as shown.</p>	<p>Step 4</p>  <p>Remove the SIM card by sliding it downwards as indicated by the arrow.</p>

Step 5



Remove the rear cover using a case opening tool as shown.

Step 6



Unscrew the 6 T5 plus screws using a Torque screw driver

Step 7



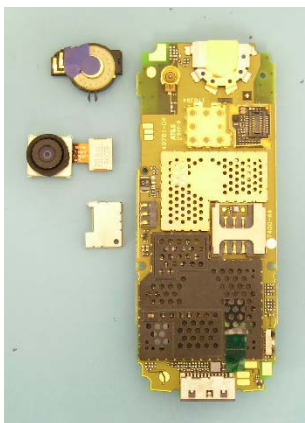
The Lower case assembly, PCB, and Upper case assembly can now be separated

Step 8



Remove TFT/TFD display and joystick knob from the PCB

Step 9



Remove the Speaker, Camera shield, and Camera from the PCB

Step 10



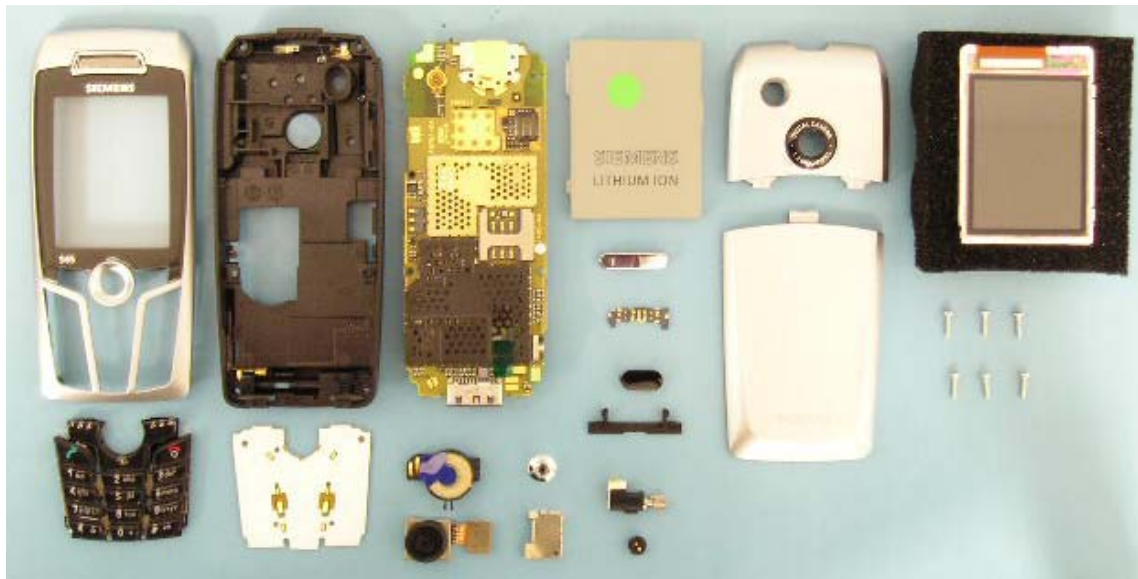
Remove MMI PCB (with Metal Dome Foil) and Keypad from the Upper case

Step 11



Remove the RS-MMC lid, VIBRA motor, MIC, IrDA lens, Side key, and Side key switch from the Lower case

Step 12



Fully disassembled S65 / SP65

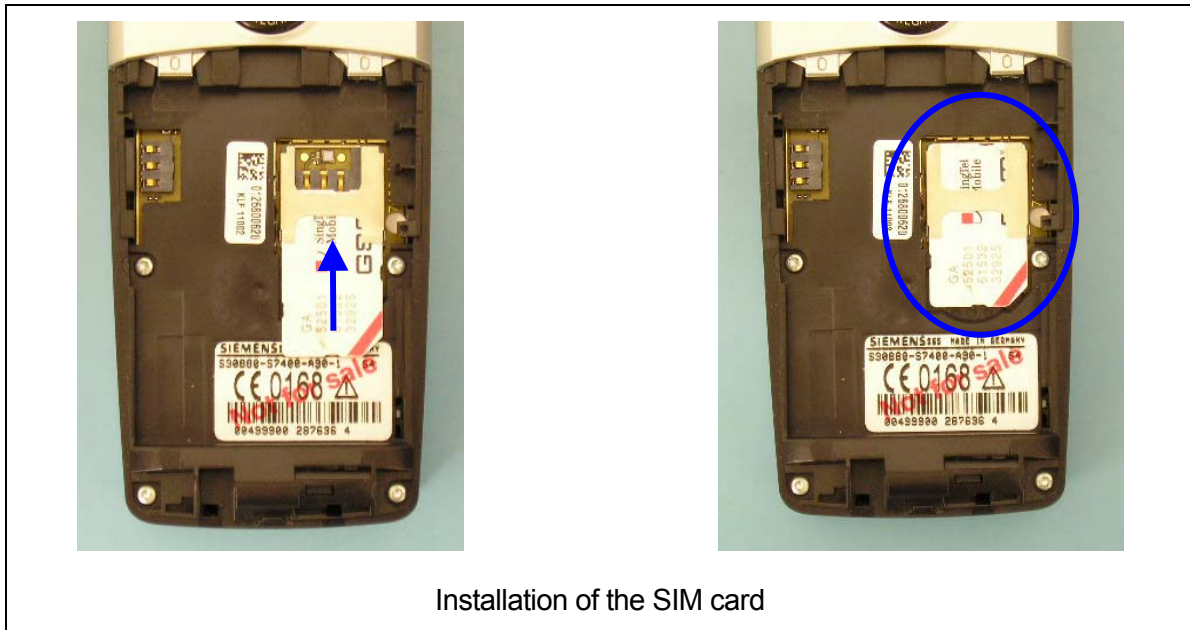


Tools used for Disassembly

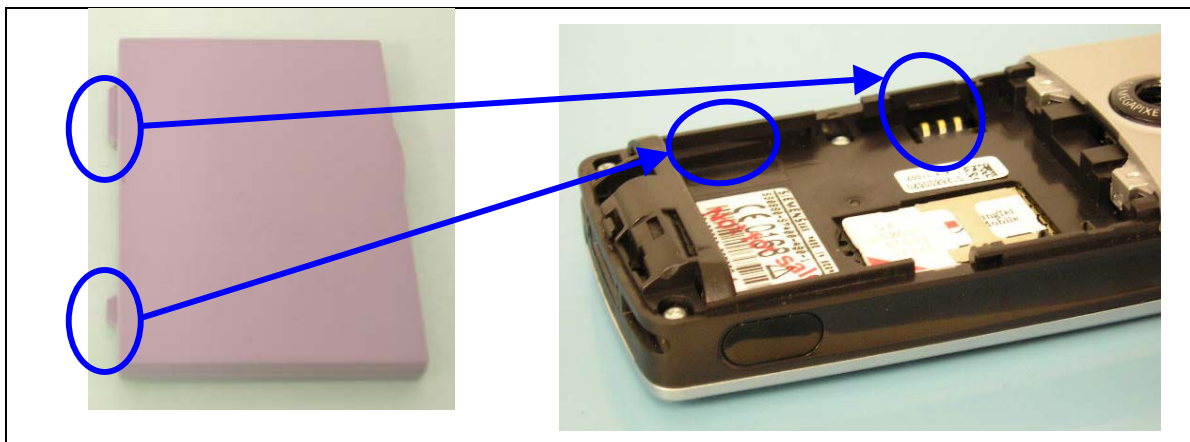
8 Reassembly of S65 / SP65

For the reassembly of the S65 / SP65, reverse the disassembly procedures from Step 11 to Step 1. However there are some areas to be taken note of during reassembling of the phone.

During the installation of the SIM card, make sure that the SIM card is inserted properly and that the golden contact area is facing downwards. Insert the SIM card downwards to lock the SIM card into position.



During the installation of the battery, make sure that the hinges are properly in place (See picture below). Otherwise the battery will not be able to fit into the phone properly.



9 Mobile Software Programming

The common mobile software available is divided into language groups. However, this software does not contain the specific settings, such as ringing tones, greeting text, and short dial list etc., required by the operator or service provider. Therefore, it is common to have some menu item(s) differ in different variants or are not visible at all. These settings are stored in different memory area of the mobile and will be activated depending on the customer specific model or variant of the phone by a separate test step during the production process.

Due to this separation of common mobile software and customer specific initialization, it is possible to fulfil the demands of the market requiring customization and flexibility. As a consequence the software programming process in the LSO is divided into two different steps as followed:

- Software update to actual version and appropriate language group
- Programming of CUSTOMER SPECIFIC INITIALIZATION



Figure 1. S65 / SP65 Software Programming Setup

9.1 Mobile Software Updating

The software of the mobile, R65 series is loaded from a PC directly. Hardware interconnection between the mobile and the PC is shown in Figure 1. Because of the new type of external connector used in X55 series (Slim-Lumberg type) an additional adaptor cable between mobile and boot adaptor is required. In Table 1 the hardware requirements are listed.

If you use the battery dummy, make sure that the power supply voltage is correctly adjusted.

Description	Part No.
Bootadapter 2000 incl. AC-Adapter, serial cable and mobile connection cable	L36880-N9241-A200
IBM Compatible PC – Pentium	-
Adapter cable – Slim Lumberg to Old	F30032-P226-A1
Dongle (for mapping only)	F30032-P28-A1

TABLE 1. EQUIPMENT LIST FOR SOFTWARE PROGRAMMING

Click tack to see presentation for SW update concept

10 Siemens Service Equipment User Manual

Introduction

Each LSO, repairing Siemens handsets, must ensure that the quality standards are observed. Siemens has developed an automatic testing system which performs all necessary measurements. This testing system is known as:

Siemens Mobile Service Equipment

Each mobile phone has to be tested with the GRT-Software. The Service Partner is responsible to ensure that every required hardware is available.

For questions, please check the service information form Jan.04 or ask you Service Manager

Make sure that your CTS firmware is Version 3.01 or higher. For CMD 55 it must be Version 4.03 and higher. Please check with the Service Info SB_0500 for the CTS/CMD Hardware Options.

11 JPICS (Java based Product Information Controlling System)



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 chip card.

These chip 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 chip cards or administration of the databases please ask your responsible Siemens 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. [Card reader \(Omnikey\)](#)
2. [CardOS interface](#) (Siemens)
3. [JPICS Certificates](#)
4. [Java Plugin JVM/JRE](#) (Sun)
5. [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. A chip card. Chip cards can be ordered via your responsible Customer Care Manager within Siemens.
3. A supported chip card reader (Smarty or Siemens B1) in order to access your chip card.

Remark:

We recommend to use Siemens B1 reader. Similar device to B1 is Cardman 9010.

Generate Codes

In the module “**Generate Codes**“you can choose to generate:

- **Master – Phonecodes**
- **Simlock Unlock – Codes**

Master - Phonecodes

The **Master – Phonecode** is used to unlock blocked mobiles.

Master – Phonecodes can only be supplied for mobiles which has been delivered in a regular manner.

JPICS -- PICS internet portal -- PICSKLF-- Microsoft Internet Explorer

SIEMENS
Mobile

Global Home My-Siemens E-Mail

Action JPICS user menu View Extra Window Help

SIEMENS AG
Information and
Communication Mobile

ICMWSQ4C Mask Masterphone-Code Sep 4, 2003
Version: 1.0 Username Cho 11:12 AM

Masterphone-Code

Input

IMEI Execute DB-Location

Mobile data

Producttype Deliverypartnumber
SW version Partnumber
Warranty Status

Delivery information

Deliverynote Deliverydate

Mobile codes

Mobile unlock code

SL55

connected

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 displaying the Siemens Mobile website. The page title is "Simlock-Unlock-Code". The interface includes a navigation menu with "Action", "JPICS user menu", "View", "Extra", "Window", and "Help". The main content area is titled "Simlock-Unlock-Code" and contains several sections:

- Get information for given IMEI:** A form with an "IMEI" field containing "350673547180612" and an "Execute" button. The "DB-Location" is set to "Kamp-Lintfort".
- Mobile data:** A table of fields:

Producttype	C45	Deliverypartnumber	L36880-S5100-X139-15
SW version	049	Partnumber	S30880-S5100-A139-14
Warranty	21.08.05	Status	Normal
- Delivery information:** A table of fields:

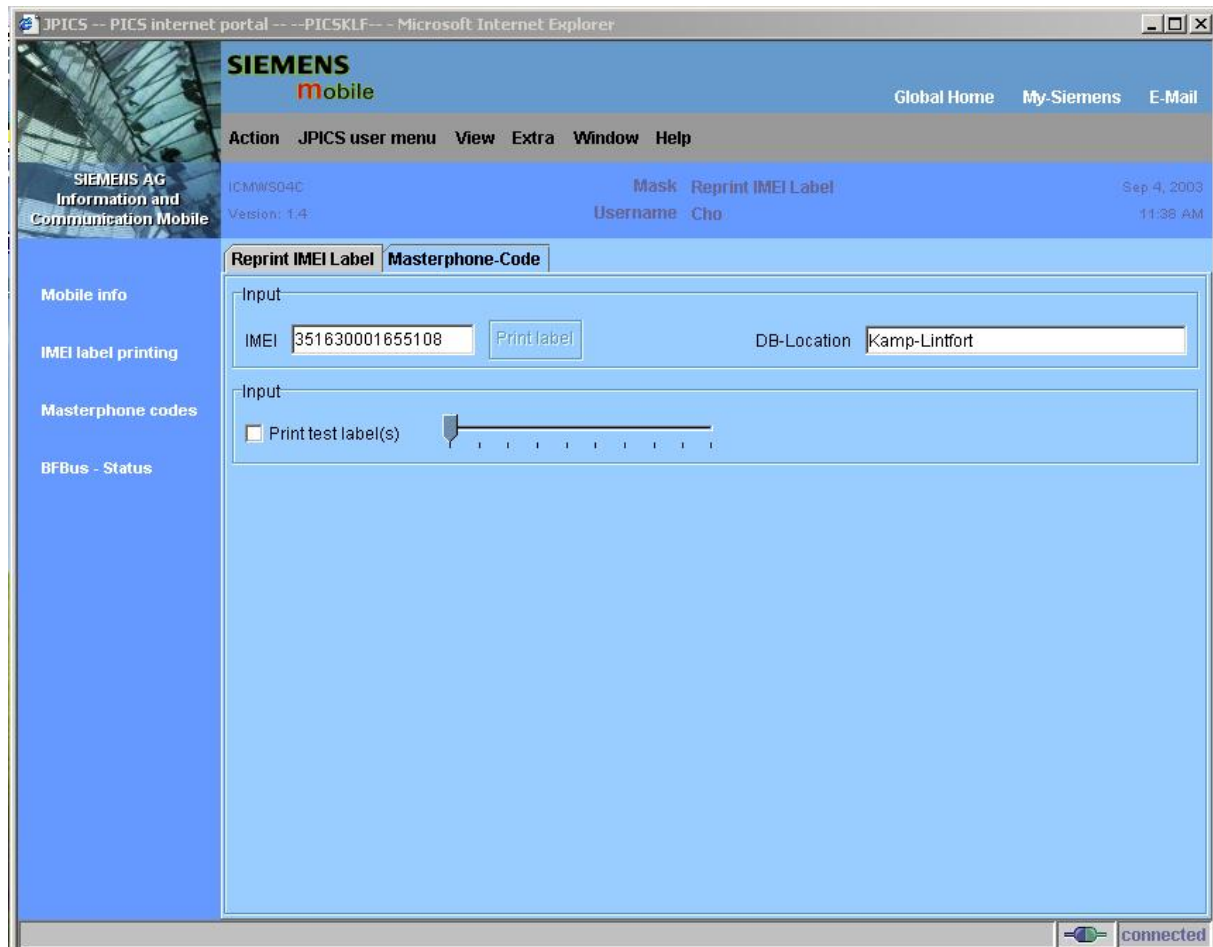
Deliverynote	0066015319	Deliverydate	22.08.03
--------------	------------	--------------	----------
- Mobile codes:** A table of fields:

Networkcode		Network Mastercode	
S. Providercode		S. Provider Mastercode	
SIM-Mastercode		SIM-Reeanablecode	
Corporatecode		Corporate Mastercode	
Network Subnet Code		Network Subnet Mastercode	*#0004*28101*150#

A small image of a Siemens mobile phone is visible on the right side of the page. The browser status bar at the bottom indicates "connected".

Printing IMEI label

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



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 as 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.

12 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 C65 is S30880-S7800-Axx-x where the last 4 letters specify the housing and software variant.

C65 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, Siemens has also included the date code for production or service, which conforms to the industrial standard DIN EN 60062. The date code comprises of 2 characters: first character denotes the Year and the second character denotes the Month.

For example: **M3**

CODE	YEAR	MONTH	CODE
M	2000	MARCH	3
N	2001	APRIL	4
P	2002	MAY	5
R	2003	JUNE	6
S	2004	JULY	7

TABLE 2 DIN EN 60062 DATE CODE

To display the IMEI number, exit code and SW/HW version, key: ***#06#**.

13 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 34.

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 has to be replaced all rules mentioned in dedicated manuals or additional information e.g. service information has to be considered.

GSM Test:

All tests has to be performed with GRT Test software

- Connect the mobile/board via internal antenna (antenna coupler) and external antenna (car cradle) to a GSM tester.
- Use a Test SIM.
- Skip GSM 900/GSM1800 or GSM1900 test cases if not performed by the mobile phone.

Internal Antenna			
Test case	Parameter	Measurements	Limits
1 Location Update	<ul style="list-style-type: none"> • GSM900 • BS Power = -55 dBm • middle BCCH 	<ul style="list-style-type: none"> • Display check 	<ul style="list-style-type: none"> • individual check
2 Call from BS	<ul style="list-style-type: none"> • low TCH • PCL 5 • BS Power = -55 dBm • middle BCCH 	<ul style="list-style-type: none"> • Ringer/Loudspeaker check 	<ul style="list-style-type: none"> • individual check
3 TX GSM900	<ul style="list-style-type: none"> • low TCH • PCL 5 • BS Power = -55 dBm • middle BCCH 	<ul style="list-style-type: none"> • Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template 	<ul style="list-style-type: none"> • GSM Spec.
4 Handover to GSM1800 Including Handover Check			
5 TX GSM1800	<ul style="list-style-type: none"> • low TCH • PCL 0 • BS Power = -55 dBm • middle BCCH 	<ul style="list-style-type: none"> • Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template 	<ul style="list-style-type: none"> • GSM Spec.
6 Handover to GSM1900 Including Handover Check			
7 TX GSM1900	<ul style="list-style-type: none"> • low TCH • PCL 0 • BS Power = -55 dBm • middle BCCH 	<ul style="list-style-type: none"> • Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template 	<ul style="list-style-type: none"> • GSM Spec.
8 Call release from BS			

External Antenna			
Test case	Parameter	Measurements	Limits
9 Call from MS	<ul style="list-style-type: none"> • GSM900 • high TCH • PCL 6 • BS Power = -55 dBm • middle BCCH 	<ul style="list-style-type: none"> • Keyboard check 	<ul style="list-style-type: none"> • individual check
10 TX GSM900	<ul style="list-style-type: none"> • high TCH • PCL 6 • BS Power = -55 dBm • middle BCCH 	<ul style="list-style-type: none"> • Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template 	<ul style="list-style-type: none"> • GSM Spec.
11 RX GSM900	<ul style="list-style-type: none"> • high TCH • BS Power = -102 dBm • 50 Frames • middle BCCH 	<ul style="list-style-type: none"> • RX Level • RX Qual • BER Class Ib • BER Class II • BER Erased Frames 	<ul style="list-style-type: none"> • GSM Spec.
12 Handover to GSM1800 Including Handover Check			
13 TX GSM1800	<ul style="list-style-type: none"> • high TCH • PCL 1 • BS Power = -55 dBm • middle BCCH 	<ul style="list-style-type: none"> • Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template 	<ul style="list-style-type: none"> • GSM Spec.
14 RX GSM1800	<ul style="list-style-type: none"> • high TCH • BS Power = -102 dBm • 50 Frames • middle BCCH 	<ul style="list-style-type: none"> • RX Level • RX Qual • BER Class Ib • BER Class II • BER Erased Frames 	<ul style="list-style-type: none"> • GSM Spec.
15 Call release from MS			

16 Handover to GSM1900 Including Handover Check			
17 TX GSM1900	<ul style="list-style-type: none">• high TCH• PCL 1• BS Power = -55 dBm• middle BCCH	<ul style="list-style-type: none">• Frequency Error• Phase Error RMS• Phase Error Peak• Average Power• Power Time Template	<ul style="list-style-type: none">• GSM Spec.
18 RX GSM1900	<ul style="list-style-type: none">• high TCH• BS Power = -102 dBm• 50 Frames• middle BCCH	<ul style="list-style-type: none">• RX Level• RX Qual• BER Class Ib• BER Class II• BER Erased Frames	<ul style="list-style-type: none">• GSM Spec.
19 Echo Test	<ul style="list-style-type: none">• high TCH• PCL 1• BS Power = -70 dBm• middle BCCH		<ul style="list-style-type: none">• individual check

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.

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

