BE INSPIRED

S55/56/57

Performance with an ATTITUDE!

Our Innovation Shapes the Future

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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.

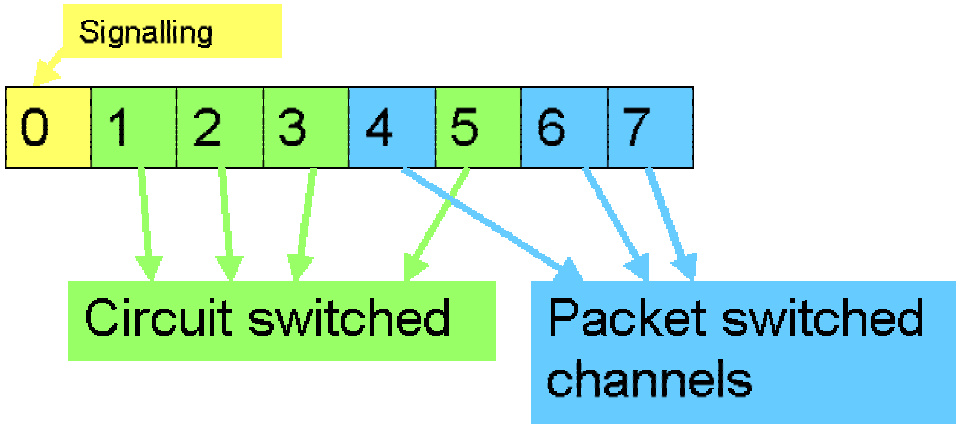


Figure1. Example of GPRS data transmission

Example: Cell with 1 Frequency channel:
1 physical channel for signalling, 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 (ie. program code and data) during application runtime: Minimum: 100 Kbyte (Has to be taken as working assumption for application development.) Goal: 145 Kbyte as SL45i (not committed)	yes
MIDP 1.0, CLDC 1.0	As SL45i, including performance optimizations from SL45i-Infusio.	yes
'OEM extensions'	Proprietary API extensions as SL45i. Including 'Siemens Game API'	yes
HTTP API over GPRS	SL45i: only over CSD	yes

3 MMS (Mulitmedia Messaging)

3.1 Standard compliance

- 3GPP TS23.140 R99
- WAP 205/ 206/ 209
- MMS Conformance Document V2.0.0

3.2 Bearer

- WAP 1.2.1 (incl. WAP-push and WTP SAR)

3.3 Display

- Resolution: 101 x 80 pixels
- Colour depth: 256 colours
- Technology: C-STN

3.4 Presentation

MMS SMIL presentation (slide show) according to MMS Conformance Document V2.0.0, MO and MT

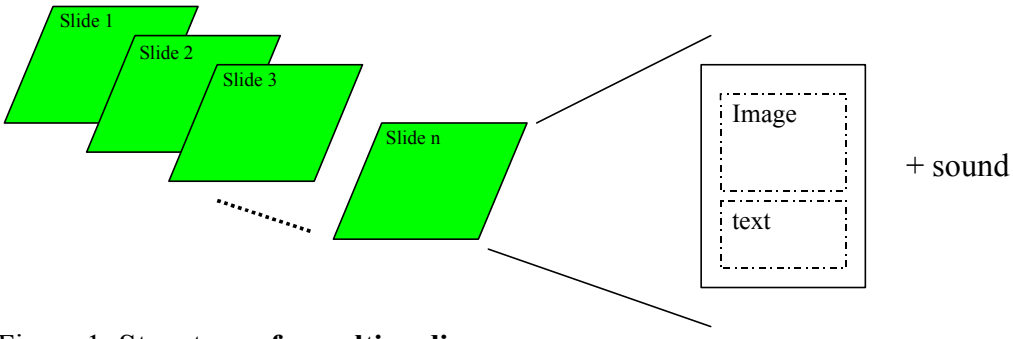


Figure 1: **Structure of a multimedia message**

According to the MMS Conformance Document V2.0.0 a presentation consists of one or more slides. Each slide can consist of one or all of the following elements:

- Image
- Text
- Sound

If other elements are used in a MM, these elements will not be shown in the presentation, but can be accessed via a separate start-screen, that will be displayed after the presentation stops.

If a MM contains a SMIL document and the MM is opened with the multi-event-icon the presentation starts automatically. After the presentation stops, the phone will display a separate start-screen. This screen will show the following elements:

- Sender
- CC
- Subject
- Availability of SMIL presentation
- List of MM elements **not** included in presentation

Out of this list you can select and store all elements provided in the list to the internal file system.

3.5 Supported media types and formats

- Image: (part of presentation)
- JPEG baseline with JFIF as exchange format
- GIF 87a and GIF89a (including animated GIF)
- WBMP
- BMP
- PNG

Interoperability for images is guaranteed only for resolutions not exceeding 160x120, while the device can handle images larger than this (exact boundary is given by memory, not resolution).

GIF, JPEG and PNG type images exceeding display resolution will be downscaled while maintaining aspect ratio. BMP and WBMP images exceeding display resolution will be clipped.

3.5.1 *Text: (part of presentation)*

- subset of unicode

3.5.2 *Audio: (part of presentation)*

- AMR NB (decoding only)
- General Midi 1.0 File format 0 and 1(.MID)

3.5.3 *PIM: (no part of presentation, will be available via the start-screen)*

- vCard V2.1
- vCalendar V1.0

3.6 Message size

A message size of 40 kBytes MO and MT will be guaranteed.

3.7 Not supported features

- AMR encoding
- Read reply report
- Delivery report
- BCC addressing
- MMS templates
- OTAP of MMS parameters

4 BLUETOOTH OVERVIEW

Bluetooth is a low-power, short-range wireless networking standard designed for local area voice and data communications. Mobile computers, mobile phones and headsets, PDAs and PCs, will all exchange information using the specification agreed to by the over 2,400 companies in the Bluetooth Special Interest Group (SIG). The SIG companies are working together to ensure interoperability between products and include some of the top brands in wireless; names like 3Com, Ericsson, IBM, Intel, Lucent, Microsoft, Nokia, Toshiba, and Motorola.

Bluetooth is a global de facto standard for wireless connectivity. Based on a low-cost, short-range radio link, Bluetooth cuts the cords that used to tie up digital devices.

When two Bluetooth equipped devices come within 10 meters range of each other, they can establish a connection together. And because Bluetooth utilizes a radio-based link, it doesn't require a line-of-sight connection in order to communicate. Your laptop could send information to a printer in the next room, or your microwave could send a message to your mobile phone telling you that your meal is ready.

In the future, Bluetooth is likely to be standard in tens of millions of mobile phones, PCs, laptops and a whole range of other electronic devices. As a result, the market is going to demand new innovative applications, value-added services, end-to-end solutions and much more. The possibilities opened up really are limitless, and because the radio frequency used is globally available, Bluetooth can offer fast and secure access to wireless connectivity all over the world. With potential like that, it's no wonder that Bluetooth is set to become the fastest adopted technology in history.

5 KEY FEATURES

General:	• Hands free • Flash file system • New sound concept with polyphonic ringing tones • Kjava (identical to K45-Manta) • MMS • ***Bluetooth (S55 only)*** • Colour LCD display
Battery:	• Nominal Capacity 750mAh • LiIon Battery Pack 700 mAh • Power Input: 1.8 A (0.6 ms) / 0.2 A (4 ms) • Cut-off Threshold 3.2 V
Stand-by Time:	• approx. 250 h measured at BSPAMFRMS = 9; number of neighbouring cells = 0
Talk Time:	• Best case approx. 5 hours (lowest output level with DTX) • Worst case approx. 2.5 hours (highest output level without DTX) • Conditions for DTX: 40% user talk time
SIM Card:	• Small (=”Plug In“) 1.8 V or 3 V-SIM card (Phase II). • To insert the SIM the battery pack must be removed. • The SIM reader coding will be realized by lower case.
GSM Antenna:	• A triple band PIFA antenna will be an integral part of the mobile phone.
Bluetooth-Antenna:	• A PCB antenna (Material FR4, SMD component, thickness 4 mm) will be soldered on the main-PCB. Operating range: Approx. 10 m
Receiver Sensitivity:	• EGSM: -102 dBm (Specification; static and with fading) • PCN: -102 dBm (Specification; static and with fading) The reception sensitivity must comply with the corresponding GSM recommendations in all operating conditions (temperature, battery level…). • EGSM: measurements according typical sensitivity are not yet available • PCN: measurements according typical sensitivity are not yet available Measurement values are referred to the external antenna connector.
Speech Coder:	• Full Rate, Enhanced Full Rate, Adaptive Multi Rate and Half Rate speech coders are available as standard.

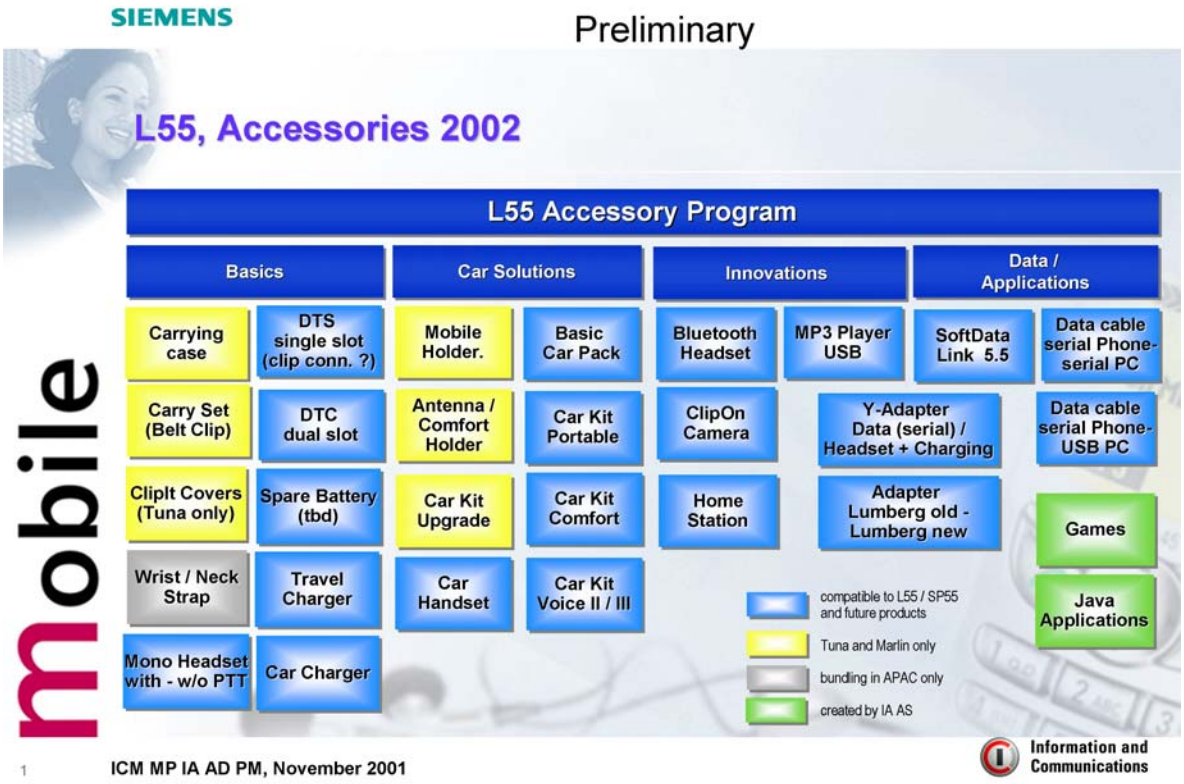
Display:	• Type: Full Graphic • Resolution: 101 X 80 Pixel • Illumination: 2 White LED • Active area/mm: 29.379 x 25.265 • Visible area/mm: max. 32.4 x 28.9 • Technology: Colour STN • Contrast: Adjustable
Transmitter Power:	• EGSM: nominal 2W (Specification: Class 4 Mobile phone) • PCN: nominal 1W (Specification: Class 1 Mobile phone) Transmitter output characteristics is according to GSM 11.10 specification implying all specified operating conditions (temperature, battery level…). Transmitter setpoints will be specified for GSM and PCN when typical values and statistical values become available.
Keypad:	• 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 • 4-way navigation key designed as centred rocker type • white as illumination colour • printed lettering in three colours • orientation at key “5“
Acoustics:	• comfortable earpiece with optimal acoustics • omni-directional microphone • loud signal emitter (>95 dBa at 5cm distance) • x different call melodies + y melodies either with internal melody composer • all melodies and sounds with increasing volume because of the possible handsfree mode • four different and one increasing volume level

6 COMPARISON WITH PREVIOUS PRODUCTS

Feature	P35 M / S	U35	K45(88) ME45/S45	L55 Marlin
Supported Systems	Dual Band E-GSM 900 / GSM 1800	Dual Band E-GSM 900 / GSM 1800	Dual Band E-GSM 900 / GSM 1800	Triple band E-GSM 900 /1800/1900
Stand-by Time	approx. 200 h (150 h)	Up to 200 h	Up to 270 h	Up to 250 h
Talk Time	5 hours	Up to 4 h	Up to 5 h	Up to 6 h
Battery Type / Capacity	Li-Ion 600 mAh	LI-Thin 540 mAh	LI-Ion Battery Pack Nominal Cap. :840 mAh	LI-Ion Battery Pack Nominal Cap.: 750 mAh
Weight	approx. 116 g (M35) approx. 106 g (S35)	approx. 85 g	approx. 99 g (ME45) approx. 93 g (S45)	Approx. 95 g
Volume	approx. 90 cm^3 (M35) approx. 99 cm^3 (S35)	approx. 69 cm^3	approx. 76 cm^3 (ME45) approx. 69 cm^3 (S45)	Approx. 69 cm^3
Length	117.9 mm (M35) 117.9 mm (S35)	105 mm (without external antenna)	108,9 mm (ME45) 108,9 mm (S45)	101 mm
Width	44.0 ... 45.8 mm (M35) 45.0 ... 46.9 mm (S35)	42 ... 46 mm	42.5 ... 45.5 mm (ME45) 42.0 ... 45.9 mm (S45)	42.0 ... 46.0 mm
Thickness	approx. 21.3 mm (M35) approx. 22.6 mm (S35)	Approx. 17 mm	19.5 ... 20.5 mm (ME45) 18.4 ... 19.5 mm (S45)	17.5 … 18.9 mm
SIM	Plug-In 1.8V/3V	Plug-In 1.8V/3V	Plug-In 1.8V/3V	Plug-In 1.8V/3V
Antenna	Integrated	Fixed PCB	Integrated	Integrated
Antenna Perform. relative to C25	0 dB @ 900 MHz -0,3 dB @ 1800 MHz	-0,4 dB @ 900 MHz -0,3 dB @ 1800 MHz (painted upper case)	-0,4 dB @ 900 MHz -0,5 dB @ 1800 MHz	-0.4 dB @ 900 MHz -0,3 dB @ 1800 MHz -0,3 dB @ 1900 MHz compared to S40
SAR related to 1 g	-	-	1.5 W/kg @ 900 MHz 0.8 W/kg @ 1800 MHz	1.0 W/kg @ 900 MHz 0.8 W/kg @ 1800 MHz 0.8 W/kg @ 1900 MHz
Half Rate	Yes	Yes	Yes	Yes
Enhanced Full Rate	Yes	Yes	Yes	Yes
AMR	No	No	No	Yes
Fax/Data	Yes	Yes	Yes	Yes
GPRS	No	No	Yes, class 8	Yes, class 8 **class 10 tbc until S2**
Keypad Illum.	Yes	Yes	Yes	Yes, blue LED
Display / Display Illumination	FSTN full dot matrix, 6 lines graphic + icons / amber	FSTN full dot matrix, 6 lines graphic + icons / amber	FSTN full dot matrix, 6 lines graphic + icons / amber	CSTN full dot matrix, 6 lines graphic + icons / white
Ringer volume level	Min. 95 dB(A) @ 5cm Typ. >100 dB(A) @ 5cm	min. 95 dB(A) @ 5 cm	Min. 95 dB(A) @ 5cm Typ. >100 dB(A) @ 5cm	Min. 95 dB(A) @ 5cm Typ. >100 dB(A) @ 5cm Max. 125 dB(A) @ human ear

7 ACCESSORIES

Due to changes on the connector from "Lumberg" to "Slim Lumberg", accessories using the old "Lumberg" connector will not be able to be used on the new "Slim Lumberg" platform.



Note: PS note that this is only a Preliminary specification, for the actual specification, PS refer to the E-commerce.

7.1 Accessories Part Number

Accessories Part Number

Note: For ALL ACCESSORIES PART NUMBERS, PS refer to the E-Commerce for the latest updated copy.

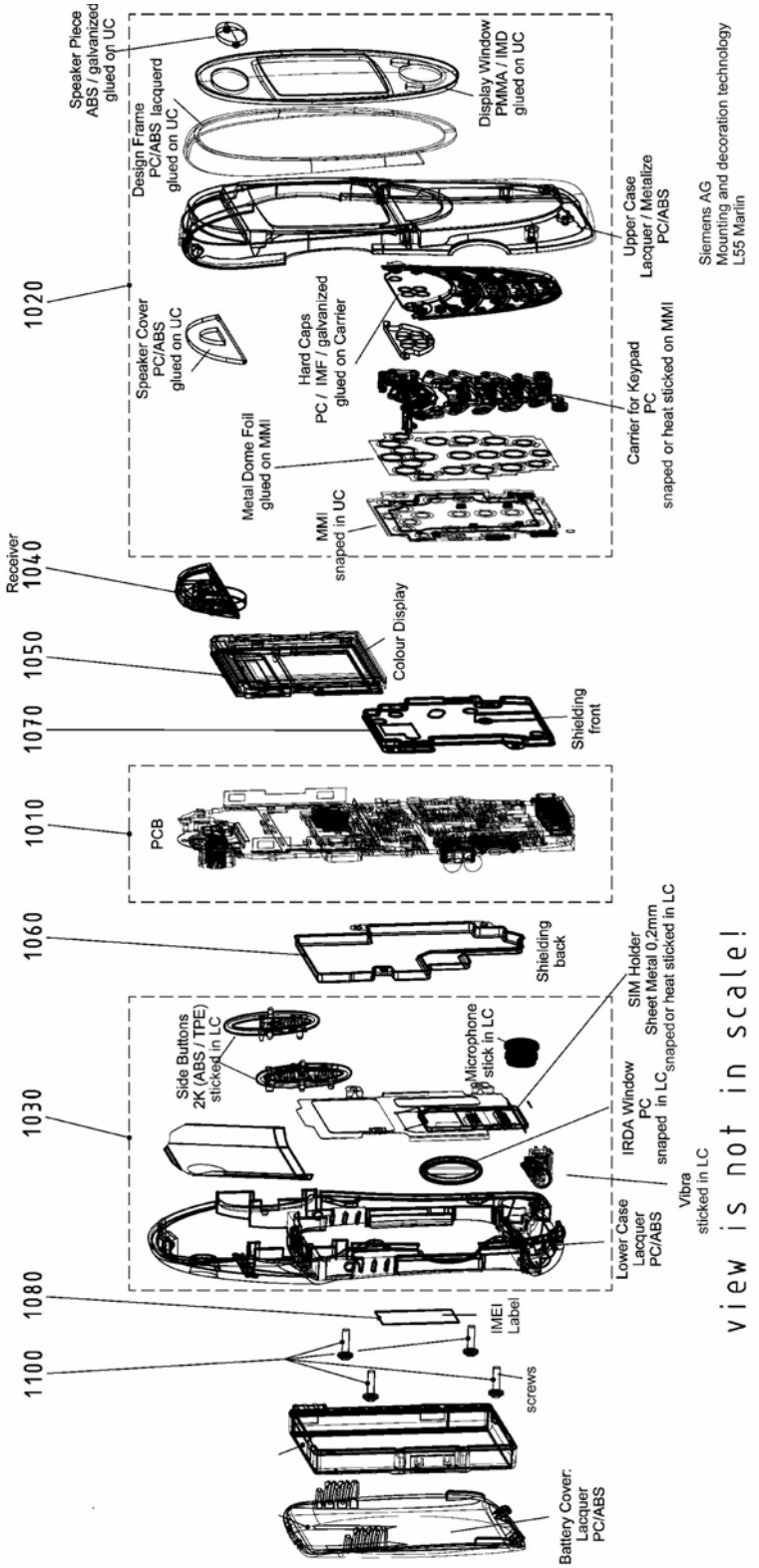
8 UNIT DESCRIPTION L55 MARLIN

Marlin is designed as a single PCB-phone with a bridgeless keypad unit and colour display. The mechanical design has been conceived to allow general use of most of the electromechanical parts from K45 or L55 Tuna.

Full attention has been given to create a high sophisticated design showing galvanized side-buttons, softkeys, navikey and earpiece cover. In a addition the display lens with chrome ring. An additional design frame around the dsiplay lens is introduced to realize a second colour without complicated spray and masking process. The display lens is decorated from outside with IMD and anti scratch protection.

L55 Marlin / © designafairs GmbH / 14. Dezember 2001

8.1 S55/56/57 Mechanical Diagram



9 DISASSEMBLY OF S55/56/57

Step 1

Front view of the S55/56/57

Step 2

Back view of the S55/56/57

Step 3

Remove the battery by lifting it upwards.

Step 4

Remove the battery by releasing the catching & lifting it up sideway simultaneously.

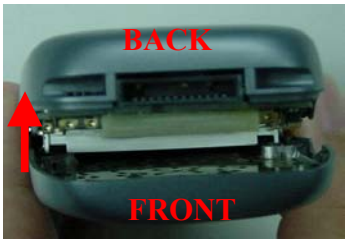
Step 5

Remove the SIM card by sliding it upwards in the direction shown.

Step 6

Remove the four screws on the back of the phone as indicated by the red circles.

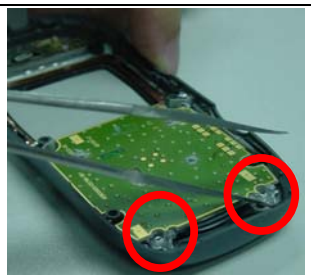
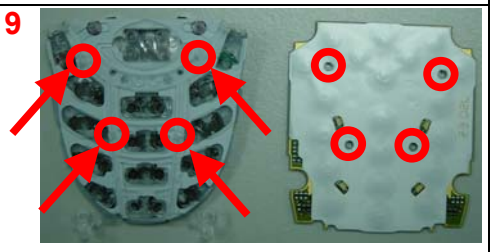
Step 7



Separate the front & back casing by lifting the back casing upwards. Always ensure that it is opened back first, or the front casing might be damaged.

Step 8

The separated S55/56/S57

Step 9  The keypad can be further seperated from the front casing using a tweezer as per diagram.	**Step 10**  The separated front housing & keypad module.
Step 9  The keypad module can be further seperated by releasing the hinges with a tweezer as indicated.	**Step 9**  When separating the keypad from the PCB, ensure that the hinges are not broken, otherwise, the keypad might not work properly.
Step 9  Separate the RF board from the back casing.	**Step 10**  The LCD display could be further seperated from the main board by releasing the catch in the direction shown.
Step 11  The separated LCD & the RF board.	**Step 12**  Fully disassembled S55/56/57

10 REASSEMBLY OF S55/56/57

For the reassembly of the S55/56/57, simply reverse the disassembly procedures from Step 12 to Step 1.

11 SPARE PARTS & PART NUMBERS

Swap Unit
Spare Parts Level 1
Spare Parts Level 2
Spare Parts Level 2,5
Spare Parts Level 2,5e
Documentation and Software

Note: For ALL SPARE PARTS & PART NUMBERS, PS refer to the E-Commerce for the latest updated copy.

12 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, short dial list etc., required by the operator(s) or service provider(s). Therefore, it is not uncommon 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 fulfill 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

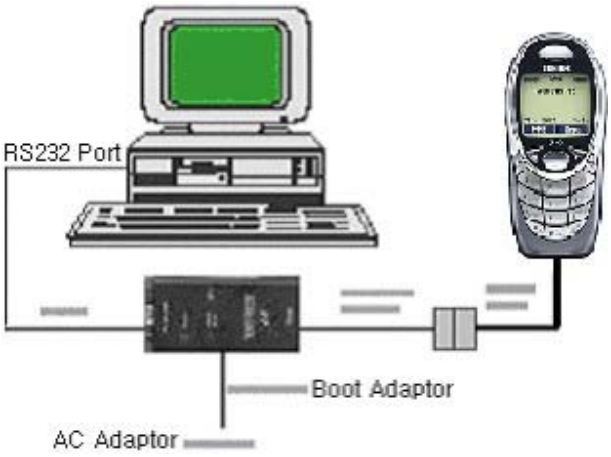


FIGURE 2.24 55 SERIES SOFTWARE PROGRAMMING SETUP

12.1 MOBILE SOFTWARE UPDATING

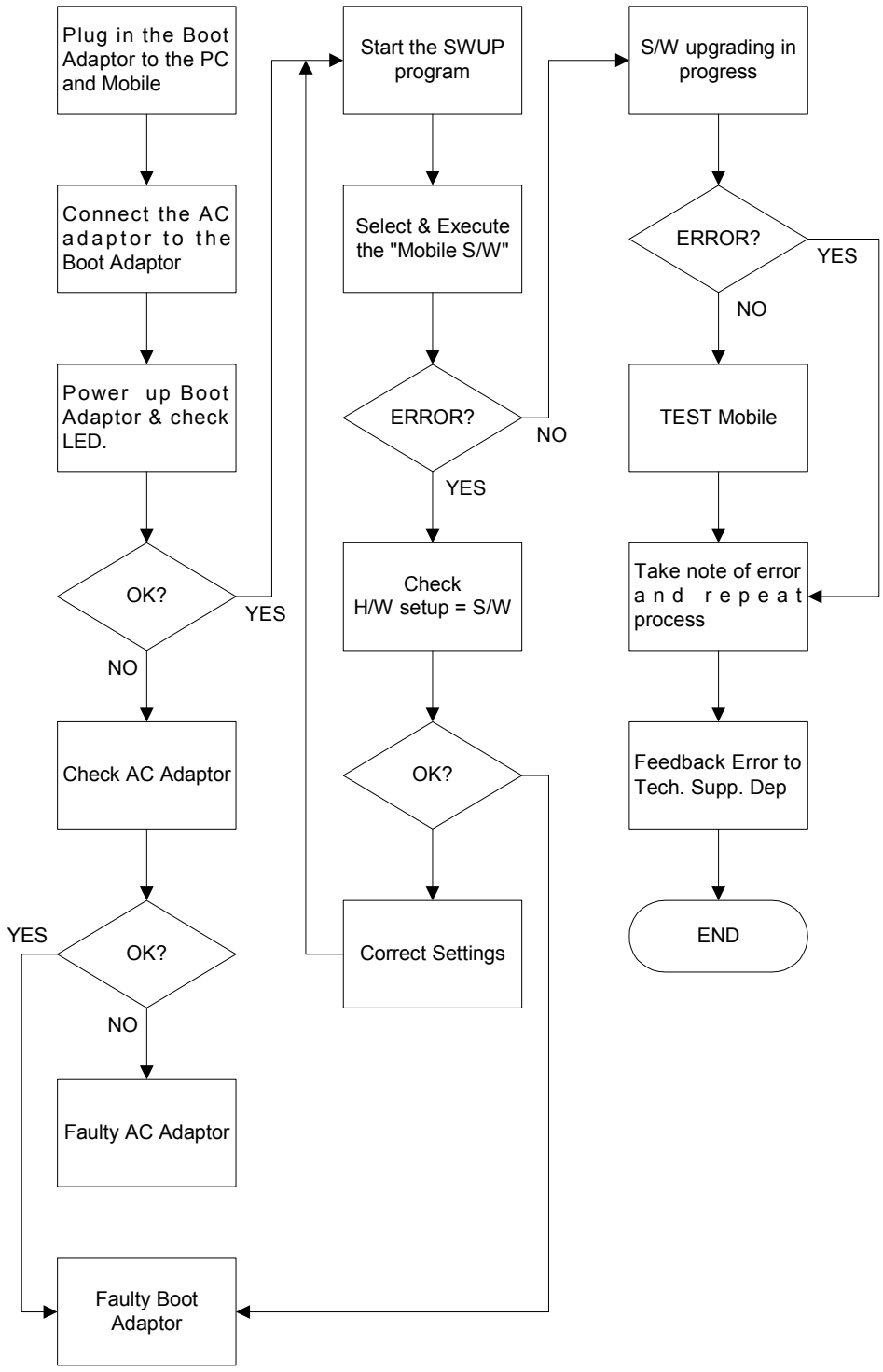
The software of the mobile, L55 series, is loaded from a PC directly. Hardware interconnection between the mobile and the PC is shown in Figure 2.24 Because of the new type of external connector used in L55 series (Slim-Lumberg type) an additional adaptor cable between mobile and boot adaptor is required. Table 2.1 listed all the hardware requirements

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	F30032-P226-A1

TABLE 2.1 EQUIPMENT LIST FOR SOFTWARE PROGRAMMING.

12.2 Flow chart for S/W upgrading



FLOW CHART FOR S/W PROGRAMMING PROCESS

13 SIEMENS SERVICE EQUIPMENT USER MANUAL

13.1 Introduction

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

13.2 Siemens Mobile Service Equipment

Using this system vastly simplifies the repair of the phones and will make sure that:

1. All possible faults are detected
2. Sets, which pass the test, will be good enough to return to customer.

Starting from the P35 Series, Siemens will introduce a simpler and faster testing platform for testing a repaired Siemens mobile phone. The testing platforms are either base on R&S CMD 53/55, CMU200 or CTS55/30 GSM test set.

There is also test software under development for testing with the Willtek 4400S, 4201/2S and the 4107 GSM test set.

THE LSO WILL HAVE TO PURCHASE THE SYSTEM, CHOOSING BETWEEN THE COMPLETE PACKAGE OR SUB-SET OF IT.

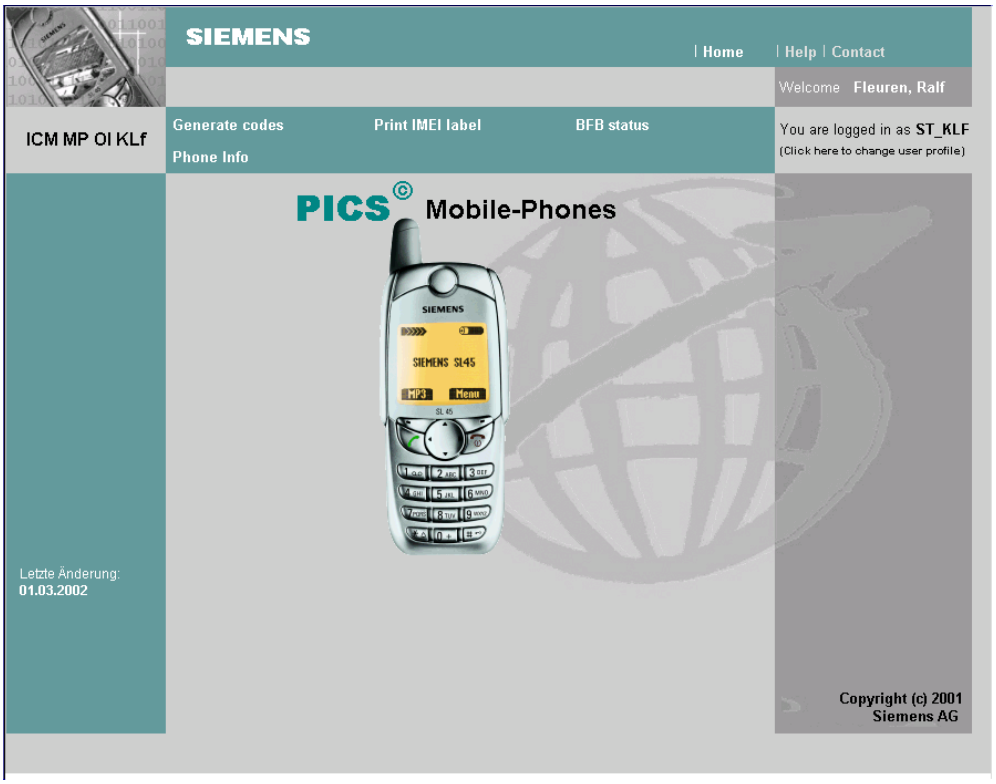
A FULLY AUTOMATIC TEST PROCEDURE IS ONLY POSSIBLE IF THE COMPLETE SYSTEM IS INSTALLED.

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.

Please refer to the technical support webpage in the ecommerce website for test equipment related information.

14 PICS

PICS Internet



Overview

The following functions are available for the LSO

- Generate **PINCODE**
- Generate **SIMLOCK-UNLOCK-Code**
- **Print IMEI labels**

The access to the server which is located in Kamp-Lintfort is protected and will only be granted to authorized users being supplied with a special coded chipcard.

Chipcards and the administration services of the PICS database are provided by *PICS- TRUST- Center* at department **ICP MP OI Kamp-Lintfort**.

In case of any questions or requests concerning chipcards or administration of the database please ask your responsible Siemens Customer Care Manager.

Installation for Windows 95 / 98 / NT / 2000

Requirements

In order to use the PICS-Internet websites you need a fully configured internet access with a 32bit NETSCAPE-Browser.

Remark:

Microsoft Internet Explorer and Netscape versions above 4.7x cannot be used!

There is a 90-day-trial-version of Netscapes Navigator 4.6 in english or german available on the PICS installation CD provided by Siemens.

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

For installation and further access you need the following:

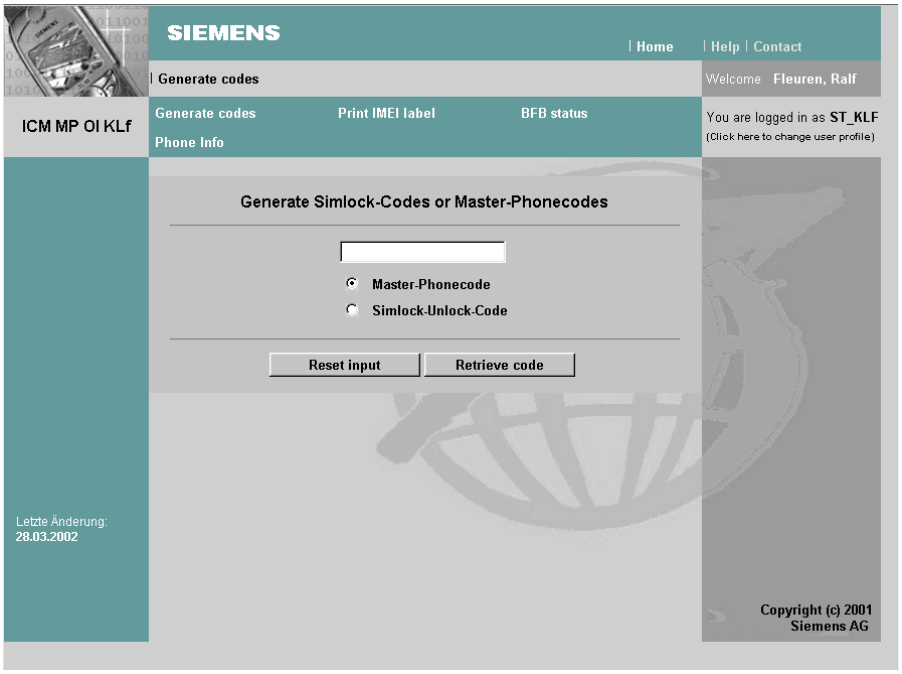
1. The Installation-CD which contains:
   - the SETUP programm for the InterSEC plugin
   - the **trial version** of Netscape Navigator 4.6 (german / english)
   - the german / english documentation
2. A chipcard which is authorised by ICP MP OI KLF in order to decode the protected PICS Websites (and a password which gives you access to your chipcard). Chipcards can be ordered via your responsible Customer Care Manager within Siemens.
3. A supported chipcard reader (Smarty or Siemens B1) in order to access your chipcard.

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:

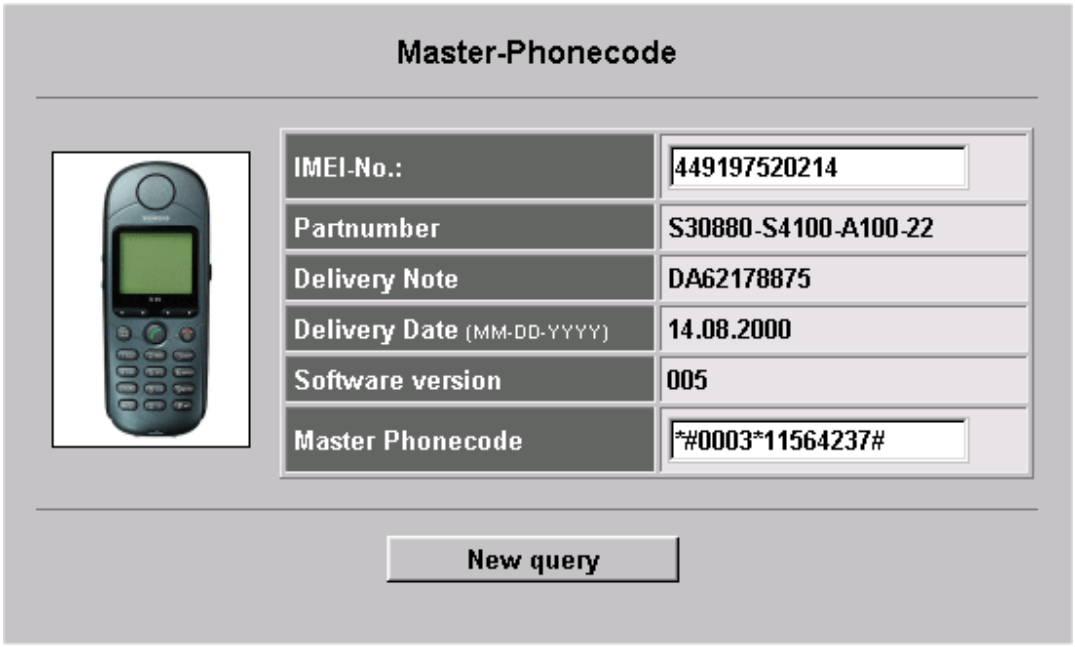
- **Master - Phonecodes**
- **Simlock Unlock - Codes**



Master - Phonecodes

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

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

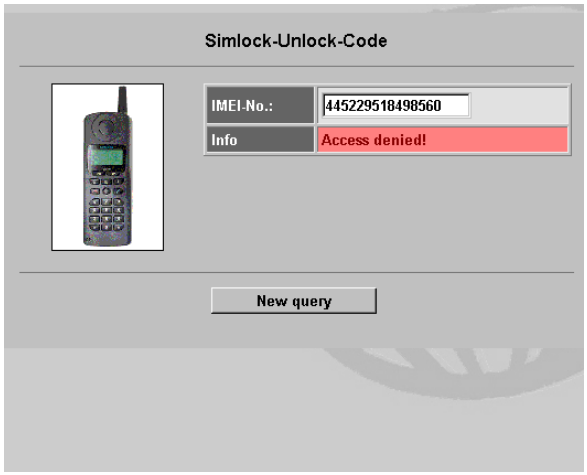


Simlock Unlock - Code

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.

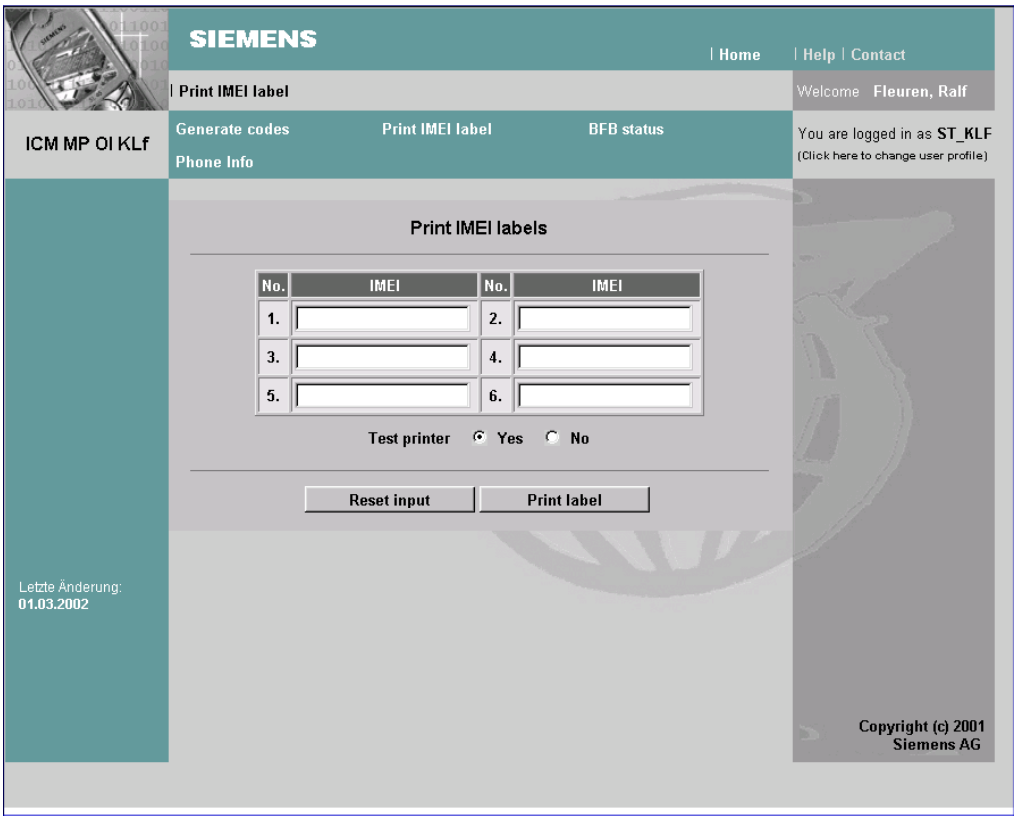
Hint:
If there's no such authorization you'll get the following screen:

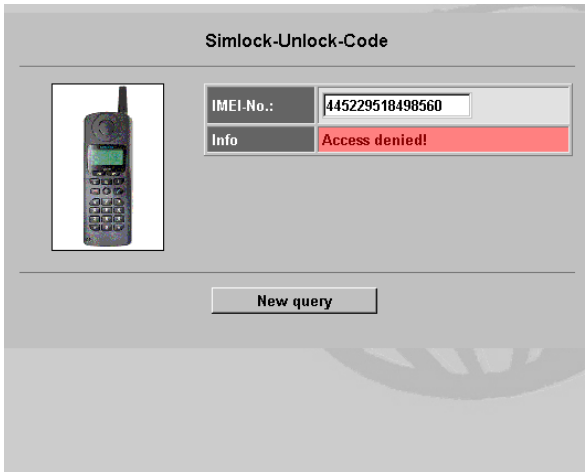


In this case please contact your responsible Siemens Customer Care Manager.

Printing IMEI label

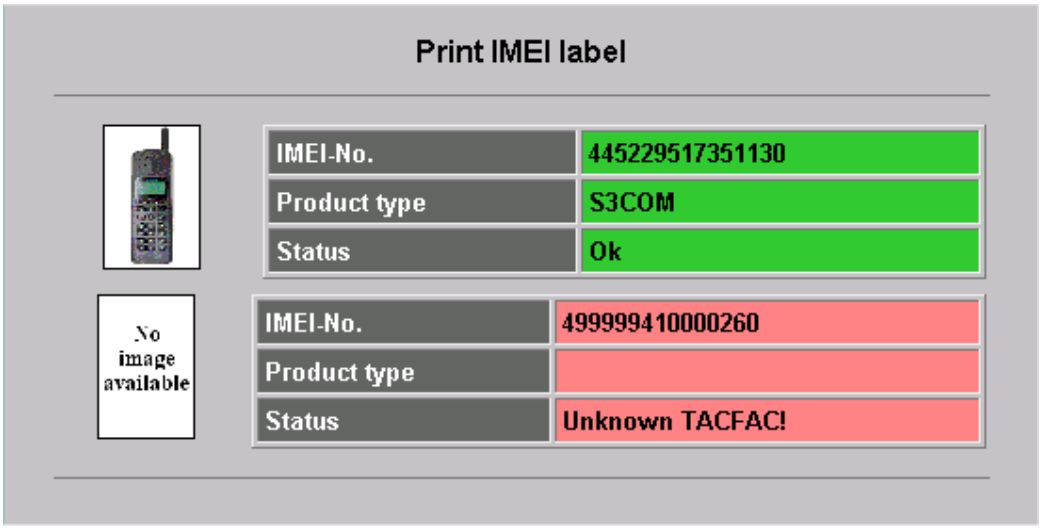
The module „**Print IMEI label**“ offers the possibility to print IMEI labels for mobiles again.





You are able to print up to six labels in just one step.

To prevent that misaligned labels are being printed, the setting "test printer = Yes" is activated as default. After having printed a well-aligned test label you can switch setting to "No" and print the correct label.



Hint:

For correct printing of IMEI labels you must have a **Zebra - labelprinter** 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.

15 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 an 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
  - Check the **IRDA Interface/Camera and Bluetooth**
  - Perform a **GSM Test** as described in chapter 3.7

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.

GSM Test:

- 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	• GSM900 • BS Power = -55 dBm • middle BCCH	• Display check	• individual check
2 Call from BS	• low TCH • PCL 5 • BS Power = -55 dBm • middle BCCH	• Ringer/Loudspeaker check	• individual check
3 TX GSM900	• low TCH • PCL 5 • BS Power = -55 dBm • middle BCCH	• Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template	• GSM Spec.
4 Handover to GSM1800 Including Handover Check			
5 TX GSM1800	• low TCH • PCL 0 • BS Power = -55 dBm • middle BCCH	• Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template	• GSM Spec.
6 Handover to GSM1900 Including Handover Check			
7 TX GSM1900	• low TCH • PCL 0 • BS Power = -55 dBm • middle BCCH	• Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template	• GSM Spec.
8 Call relaese from BS			

External Antenna			
Test case	**Parameter**	**Measurements**	**Limits**
9 Call from MS	• GSM900 • high TCH • PCL 6 • BS Power = -55 dBm • middle BCCH	• Keyboard check	• individual check
10 TX GSM900	• high TCH • PCL 6 • BS Power = -55 dBm • middle BCCH	• Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template	• GSM Spec.
11 RX GSM900	• 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.
12 Handover to GSM1800 Including Handover Check			
13 TX GSM1800	• high TCH • PCL 1 • BS Power = -55 dBm • middle BCCH	• Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template	• GSM Spec.
14 RX GSM1800	• 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.
15 Call relaese from MS			

16 Handover to GSM1900 Including Handover Check			
17 TX GSM1900	• high TCH • PCL 1 • BS Power = -55 dBm • middle BCCH	• Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template	• GSM Spec.
18 RX GSM1900	• 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.
19 Echo Test	• high TCH • PCL 1 • BS Power = -70 dBm • middle BCCH		• 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 check of :
- data reset (if required)
- optical appearance
- complete function

4) Check if PIN-Code is activated
delete 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.

Attachment


Sampling.xls