

Local Service Organization Service Manual

BE INSPIRED

M55/56



V1.0

Our innovation shapes the future

Table of Contents

1	GPRS (GENERAL PACKET RADIO SERVICE)	2
2	K-JAVA APPLICATION	3
3	KEY FEATURES	4
4	COMPARISON WITH PREVIOUS PRODUCT	7
5	ACCESSORIES.....	8
6	UNIT DESCRIPTION M55	9
6	UNIT DESCRIPTION M55	10
7	DISASSEMBLY OF M55	12
8	REASSEMBLY OF M55	15
9	MOBILE SOFTWARE PROGRAMMING.....	16
10	SIEMENS SERVICE EQUIPMENT USER MANUAL.....	20
11	PICS INTERNET.....	21
12	INTERNATIONAL MOBILE EQUIPMENT IDENTITY, IMEI	26
13	GENERAL TESTING INFORMATION.....	27
	ANNEX 1	32
	ANNEX 2	33

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.

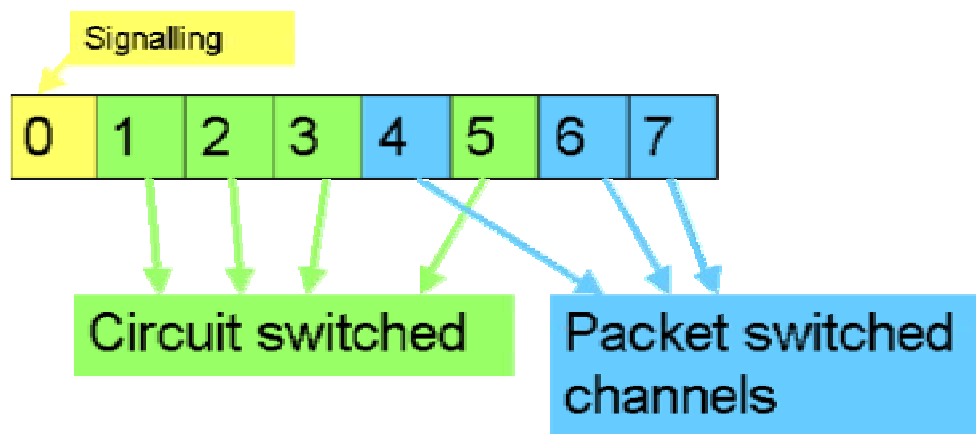


Figure1. Example of GPRS data transmission

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)	<p>Application launcher and download manager.</p> <p>Supports HTTP-based OTA download of applications over GPRS and CSD.</p>	yes
RAM for Java applications	<p>Available RAM for Java applications (ie. program code and data) during application runtime:</p> <p>Minimum: 100 Kbyte (Has to be taken as working assumption for application development.)</p> <p>Goal: 145 Kbyte as SL45i (not committed)</p>	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 Key Features

Bands	<ul style="list-style-type: none"> GSM/GPRS 900/1800/1900 MHz (GPRS CL.8)
Battery	<ul style="list-style-type: none"> LI-Ion Battery Pack Nominal Voltage : 3.6V Nominal Capacity : 750 mAh GSM Capacity : 700 mAh Power Input : 1.8A (0.6ms) / 0.2A (4ms) Cut-off Threshold : 3.2V
Stand-by Time	<ul style="list-style-type: none"> Approx. 250 h / Li-Ion (measured at BSPAMFRMS = 9; number of neighbouring cells = 0)
Talk Time	<ul style="list-style-type: none"> Best case approx. : 5 hours (lowest output level with DTX) Worst case approx. : 2.0 hours (highest output level with DTX) <p>Condition for DTX : 40% user talk time</p>
SIM Card	<ul style="list-style-type: none"> Small (= "Plug In") 3V SIM card (Phase II) To insert the SIM card, the battery pack must be removed.
GSM Antenna	<ul style="list-style-type: none"> A triple band PIFA antenna will be an integral part of the mobile phone.
Receiver Sensitivity	<ul style="list-style-type: none"> EGSM: -102 dBm (-104dBm-15.2) (Specification; static & with fading) PCN : -102 dBm (Specification; static & with fading) <p>The reception sensitivity must comply with the corresponding GSM recommendations in all operating conditions (temperature, battery level ...).</p> <ul style="list-style-type: none"> EGSM: measurements according typical sensitivity are not yet available. PCN: measurements according typical sensitivity are not yet available <p>Measurement values are referred to the external antenna</p>

	connector.
Transmitter Power	<ul style="list-style-type: none"> • EGSM: nominal 2W (Specification: Class 4 Mobile phone) • PCN: nominal 1W (Specification: Class 1 Mobile phone) <p>Transmitter output characteristics is according to GSM 11.10 specification implying all specified operating conditions (temperature, battery level, ...).</p> <p>Transmitter setpoints will be specified for GSM and PCN when typical values and statistical values become available.</p>
Speech Coder	<ul style="list-style-type: none"> • Full Rate, Enhanced Full Rate, HR and AMR.
Temperature Range	<ul style="list-style-type: none"> • -10°C to +55°C (Normal operation) • -30°C to +85°C (Storage capability)
Display	<ul style="list-style-type: none"> • Type: Full Graphic • Resolution: 101 x 80 Pixel • Colour depth: 4096 • Technology: Colour STN • Active area / mm: 29.379 x 25.265 • Visible area / mm: max. 32.4 x 28.9 • Illumination: 2 White LED • Contrast: Adjustable
Keypad	<ul style="list-style-type: none"> • Partially 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. • Illumination colour : Red • Orientation at key "5"

Acoustics	<ul style="list-style-type: none">• Comfortable earpiece• Omni-directional microphone
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4 Comparison with Previous Product

Feature	S55	SL55	M 55
Supported Systems	Triple band E-GSM 900 /1800/1900	Triple band GSM 900 /1800/1900	Triple band GSM 900 /1800/1900
Stand-by Time	Up to 250 h	Up to 200h	Up to 250 h
Talk Time	Up to 6 h	Up to 3,5 h	Up to 5 h
Battery Type / Capacity	LI-Ion Battery Pack Nominal Cap.: 750 mAh	LI-Polymer Battery Pack Nominal Cap:xxxx	LI-Ion Battery Pack Nominal Cap.: 750 mAh
Weight	Approx. 95 g	Approx. 75 g	Approx. 95 g
Volume	Approx. 69 cm ³	Approx. 63 cm ³	Approx. 69 cm ³
Length	101 mm	81,6mm	100.8 mm
Width	42.0 ... 46.0 mm	44,5mm	45.6 mm
Thickness	17.5 ... 18.9 mm	21,9mm	20.9 mm
SIM	Plug-In 1.8V/3V	Plug-In 1.8V/3V	Plug-In 1.8V/3V
Antenna	Integrated	Integrated	Integrated
Antenna Perform. relative to C25	-0.4 dB @ 900 MHz -0,3 dB @ 1800 MHz -0,3 dB @ 1900 MHz compared to S40	Fugu 28,3dBm – GSM900 26,1dBm – GSM1800 25,2dBm – GSM1900 S40 29,6dBm – GSM900 25,3dBm – GSM1800 25,4dBm – GSM1900 T68 Ericsson 29,7dBm – GSM900 25,8dBm – GSM1800 24,6dBm – GSM1900 T66 Ericsson 27,4dBm – GSM900 23,5dBm – GSM1800 25,4dBm – GSM1900 Nokia8810 25,2dBm – GSM900 C55Tuna 29,2dBm – GSM900 27,2dBm – GSM1800 cw26– GSM1900 Measurement equipment done in MchG	-0.4 dB @ 900 MHz -0,3 dB @ 1800 MHz -0,3 dB @ 1900 MHz compared to S40
SAR related to 1 g	1.0 W/kg @ 900 MHz 0.8 W/kg @ 1800 MHz 0.8 W/kg @ 1900 MHz	0.8 W/kg @ 900 MHz 0.8 W/kg @ 1800 MHz 0.8 W/kg @ 1900 MHz	1.0 W/kg @ 900 MHz 0.8 W/kg @ 1800 MHz 0.8 W/kg @ 1900 MHz
Half Rate	Yes	Yes	Yes
Enhanced Full Rate	Yes	Yes	Yes
AMR	Yes	Yes	Yes
Fax/Data	Yes	Yes	Yes
GPRS	Yes, class 8 class 10 tbc until S2	Yes, class8	Yes, class8
Keypad Illum.	Yes, blue LED	Yes	yes
Display / Display	CSTN full dot matrix, 6 lines graphic + icons /	4K color STN full dot matrix, 6 lines grapic + icons	4K color STN full dot matrix, 6 lines grapic + icons
Illumination	white	white	white
Ringer volume level	Min. 95 dB(A) @ 5cm Typ. >100 dB(A) @ 5cm see comment below acoustics7.2.3		Min. 95 dB(A) @ 5cm Typ. >100 dB(A) @ 5cm see comment below acoustics7.2.3

5 Accessories

For the M55, the following accessories will be available.

Description	Product Code	Part number
Li-Ion Battery 700 mAh	EBA-510	L36880-N5601-A100
Car Charger	ECC-500	L36880-N5601-A106
Travel Charger (Euro)	ETC-500	L36880-N5601-A104
Travel Charger (UK)	ETC-510	L36880-N5601-A105
Desk Top Charger (dual slot)	EDC-510	L36880-N5601-A101
Carry Set	FCS-520	L36880-N6301-A113
Leather Case	FCL-500	L36880-N5601-A136
Leather Holster	FCL-510	L36880-N5601-A137
Belt Case	FCL-520	L36880-N5601-A138
Loop Case	FCT-500	L36880-N5601-A139
Tour Case	FCT-550	L36880-N5601-A140
Headset with PTT	HHS-510	L36880-N5601-A108
Basic Car Pack (Headset, Car Charger, Y-Adapter)	HKB-500	L36880-N5601-A118
Car Kit Portable	HKP-500	L36880-N5601-A109
Mobile Holder	HMH-540	L36880-N6301-A104
Mobile Holder Antenna	HMH-550	L36880-N6301-A105
Car Kit Comfort	HKC-540	L36880-N6301-A106
Car Kit Professional Voice II (D)	HKV-560	L36880-N6301-A108
Car Kit Professional Voice II (E)	HKV-570	L36880-N6301-A109
Car Kit Upgrade Comfort/Voice	HKO-505	L36880-N6301-A111
Car Kit Upgrade Voice II	HKO-515	L36880-N6301-A112
Car Data Adapter (for CK Prof. Voice II)	HKO-530	L36880-N5701-A108

Car Handset	HKO-550	L36880-N3015-A123
Adapter Cable VDA for Car Kit Comfort	HKO-560	L36880-N4001-A121
Push To Talk Key (for CK Prof. Voice II)	HKO-520	L36880-N3015-A137
Phone-In-Adapter	HKO-570	L36880-N3015-A137
Data Link Cable	DCA-500	L36880-N5601-A110
Data Link Cable USB	DCA-510	L36880-N5601-A111
Sync Station	DSC-500	L36880-N5601-A103
Quick Pic	IQP-530	L36880-N6301-A102

5.1 Interface M55 to accessories

The I/O Connector of M55 is the slim Lumberg (identical to SL55, S55/57, C55/2128 and A55).

It is the only electrical interface to the Accessories (no RF – connector). Also it has only one mechanical interface which is integrated in the design parts.

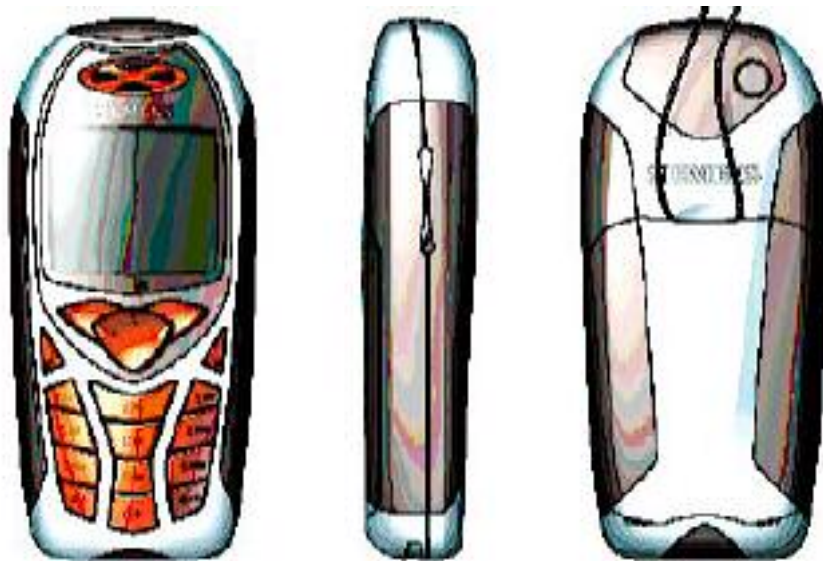


Slim Lumberg I/O Connector

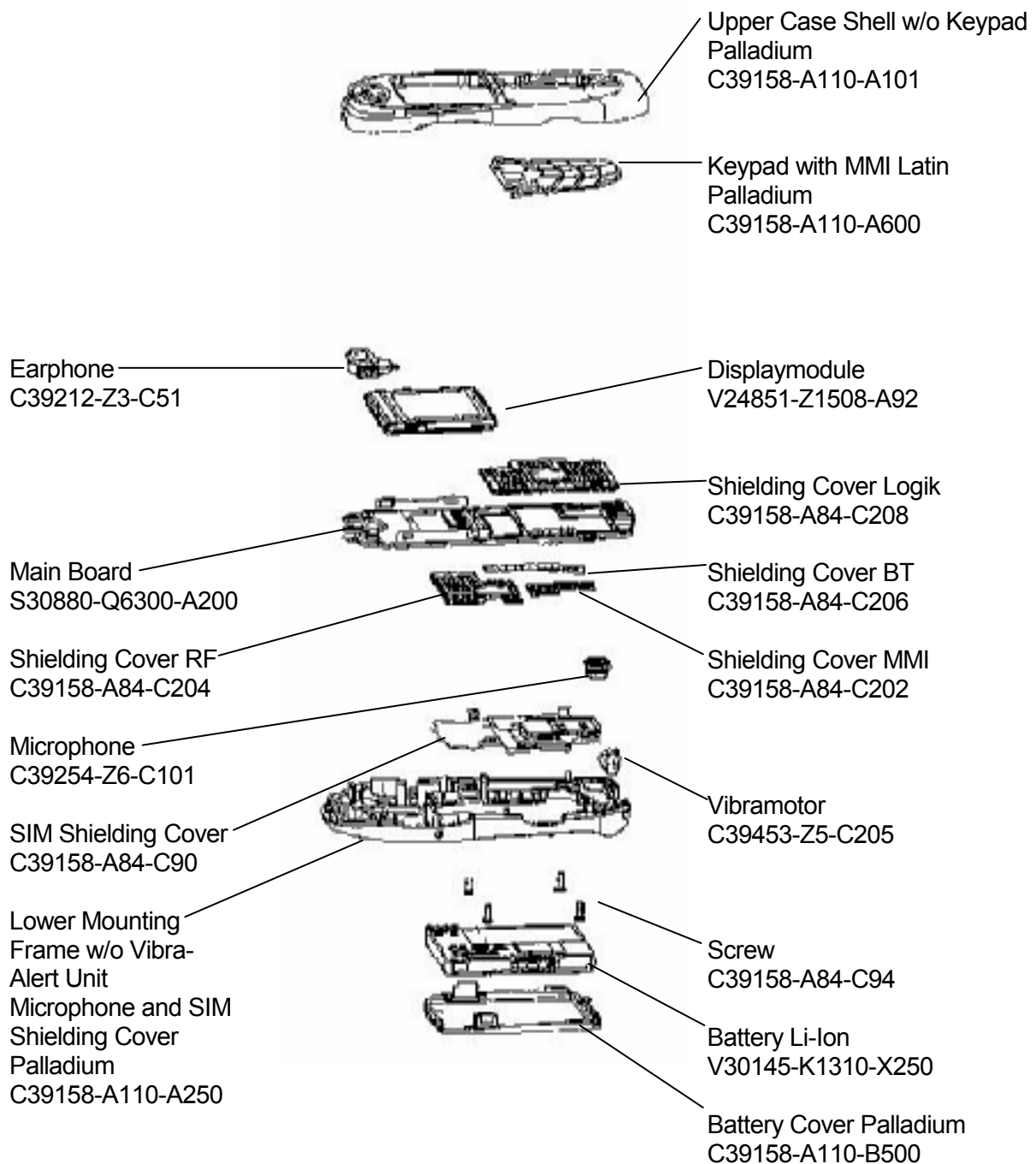
6 Unit Description M55

M55 is designed with a partly bridgeless keypad module and a color display. The mechanical design is built around the platform of S55. The housing is built up as a two-component plastic molding part so that the housing shows an “X-design” with two different colors. The complete housing is lacquered with a translucent effect varnish, which gives the housing a pearlescent look. Earpiece and keypad are decorated with IMF in the same color. Behind the earpiece is a metal mesh located, which is also the sound outlet of the receiver. The display lens is decorated from its outside with IMD and anti scratch protection.

M55 has the same PCB size as S55, which allows using the same carrier in production.



6.1 Exploded View of M55







7 Disassembly of M55

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.

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 EGold pins.

It is a requirement for the service personnel to observe ESD protection rules while performing servicing the M55.

<p>Step 1</p>  <p>Front view of the M55</p>	<p>Step 2</p>  <p>Back View of the M55</p>
<p>Step 3</p>  <p>Remove the Battery Cover by lifting it upwards.</p>	<p>Step 4</p>  <p>The Batterypack is secure within the Lowercase cavity. To remove the Batterypack, first release the catch (indicated by the circle) and next, lift it outwards.</p>

Step 5



Remove the SIM card from the SIM-holder by pushing it upwards.

Step 6



Unscrew the four screws with a Torx Plus 5IP tip screwdriver.

Step 7



Remove the Uppercase from the Lowercase with a case opener.

Step 8



Remove the MMI with keypad from the Uppercase.

Step 9



Remove the PCB from the Lowercase.

Step 10



Remove the Vibra and Microphone from the Lowercase with a pair of tweezers.

Step 11



Remove the Receiver from the PCB, and the Display-Module from the Display-Frame.

Step 12

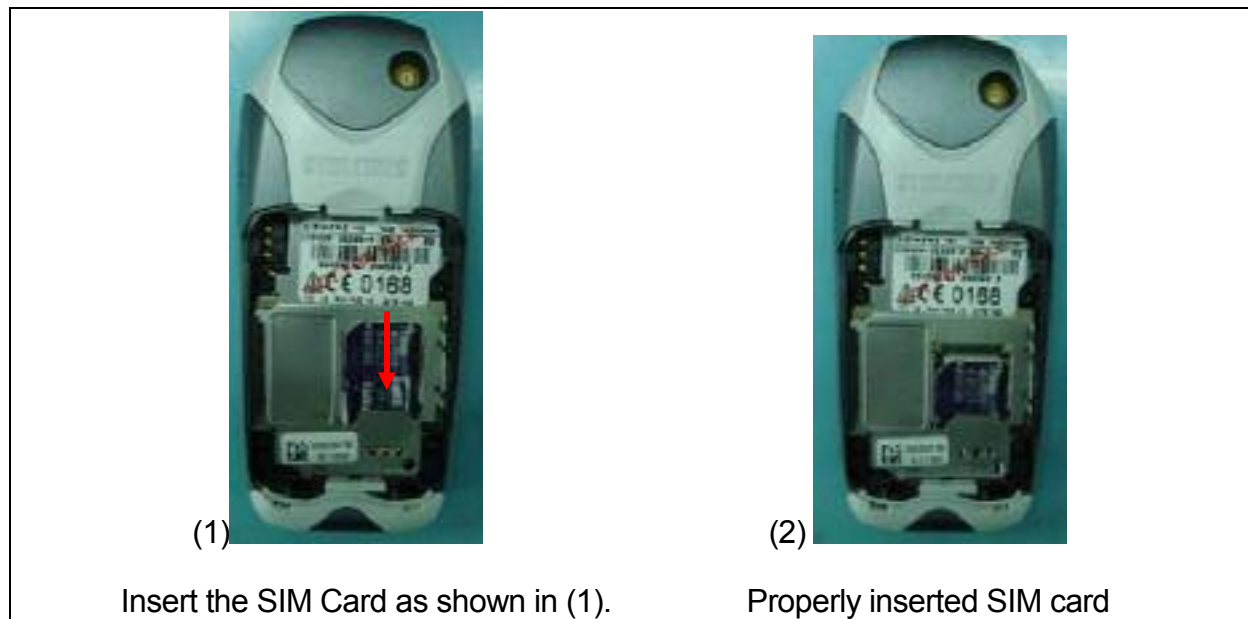


Fully disassembled M55.

8 Reassembly of M55

For the reassembly of the M55, simply reverse the disassembly procedures from Step 12 to Step 1. However there are some areas to be taken note during reassembling of the phone.

The torque for the screwdriver should be set at 12Ncm for the 5IP screws.



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, short dial list, etc. required by the operator(s) or service provider(s). 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.

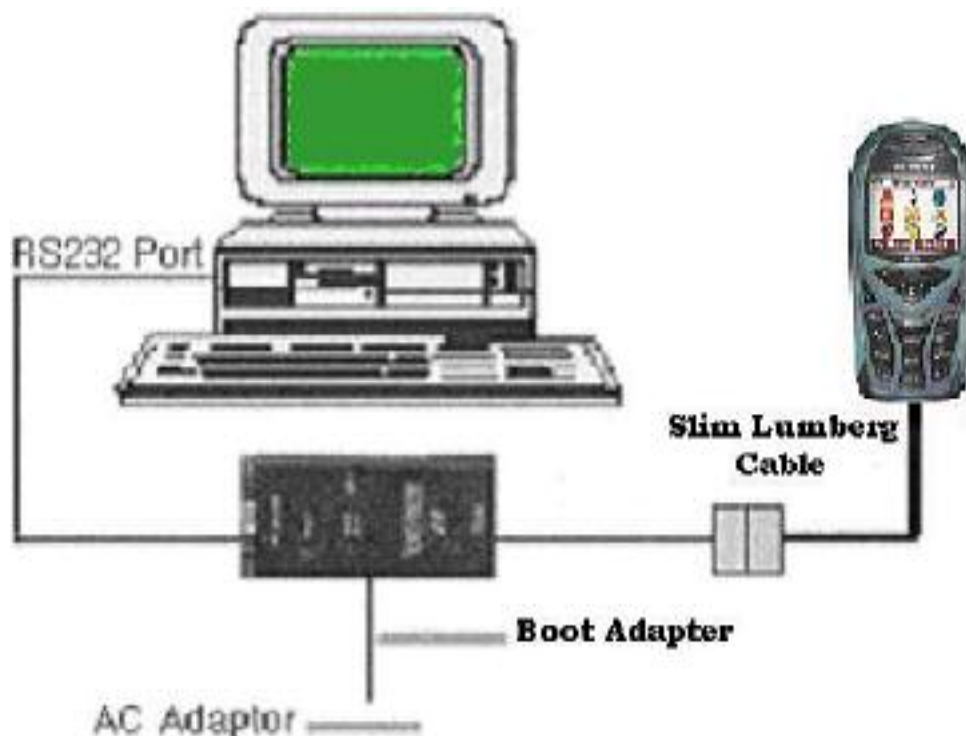


Figure 2. M55 Software Programming Setup

9.1 Mobile Software Updating

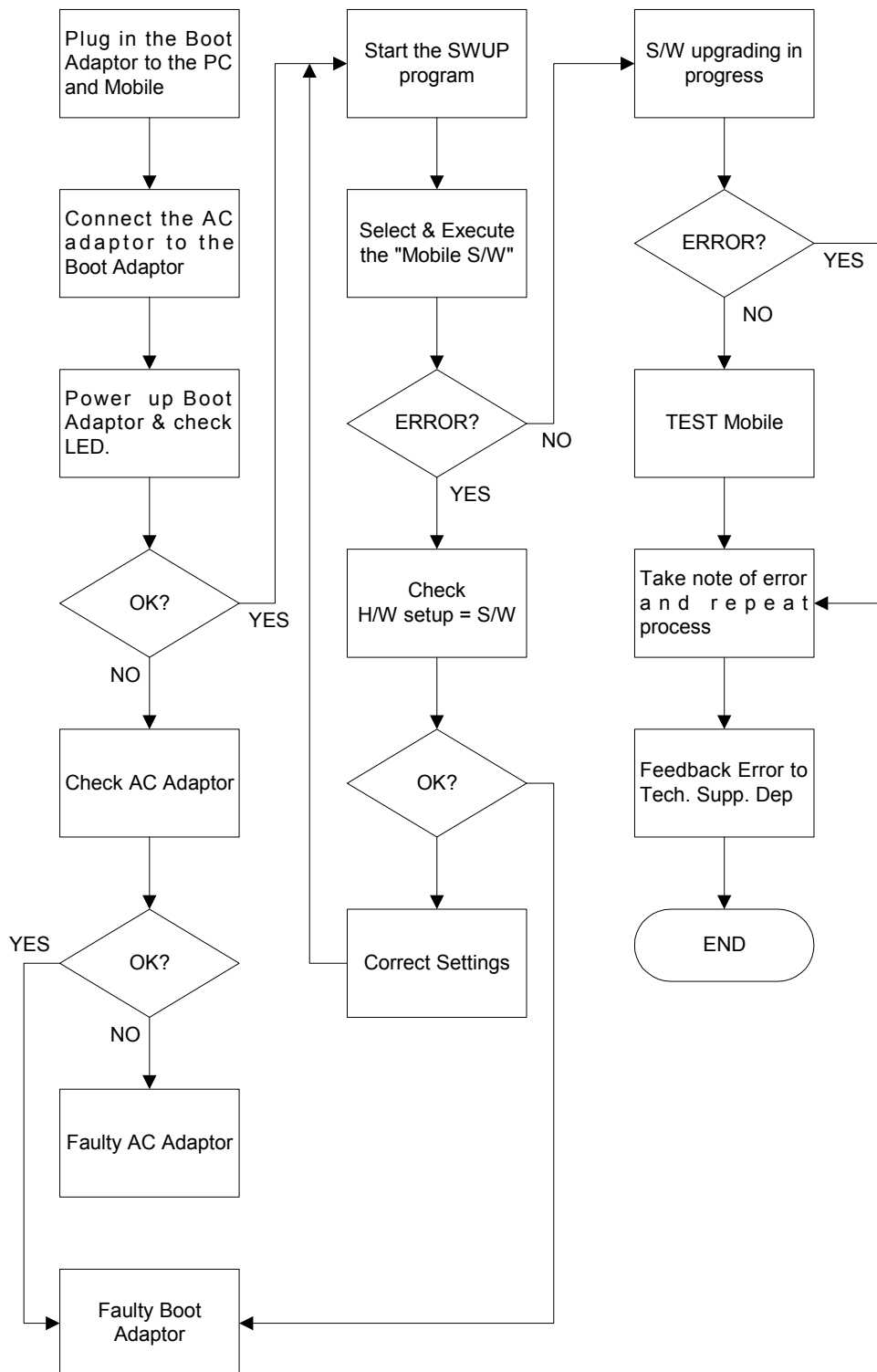
The software of the mobile, L55 series is loaded from a PC directly. Hardware interconnection between the mobile and the PC is shown in Figure 2.24. Because of the new type of external connector used in L55 series (Slim-Lumberg type) an additional adaptor cable between mobile and boot adaptor is required.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

9.2 Flow Chart for Software Upgrading



FLOW CHART FOR S/W PROGRAMMING PROCESS

10 Siemens Service Equipment User Manual

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:

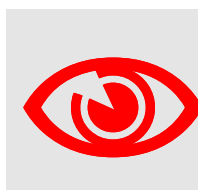
Siemens Mobile Service Equipment

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.

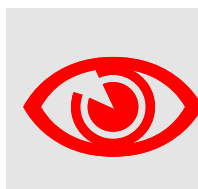
Starting from the P35 Series, Siemens will introduce a simpler and faster testing platform for testing a repaired Siemens mobile phone. The testing platforms are either base on R&S CMD 53/55 or CTS55 GSM test set or CMD200 with a software called (CTS, CMD, or CMU-GO).

There is also test software available for testing with the Willtec 4201S the 4107 and the 4400 GSM test set called (CATS 4200 or CATS4400).



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.

11 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 authorize 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 program for the InterSEC plugin
- the **trial version** of Netscape Navigator 4.6 (German / English)
- the German / English documentation

2. A chipcard which is authorized 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 using the 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.

Master-Phonecode		
	IMEI-No.:	449197520214
	Partnumber	S30880-S4100-A100-22
	Delivery Note	DA62178875
	Delivery Date (MM/DD/YYYY)	14.08.2000
	Software version	005
	Master Phonecode	*#0003*11564237#
<input type="button" value="New query"/>		

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.



Simlock-Unlock-Code

IMEI No.:	445229518498560
Partnumber	S24859-C2760-A20-10
Delivery Note	230.01670
Delivery Date (d/M/YY)	03.05.1996
Software version	4.0.0
Network-Code	19246230
Network Master-Code	10000*06944210#
Serv-Provider-Code	09092430
Serv-Provider-Master-Code	10000*199708340

New query

Hint:

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



Simlock-Unlock-Code

IMEI No.:	445229518498560
Info	Access denied

New query

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 – 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 A55 is S30880-S5750-Axxx where the last 4 letters specify the housing and software variant.

C45 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 includes 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, the IMEI above show date code **M3**.

Year	Date Code	Month	Date Code
1999	L	December	D
2000	M	January	1
2001	N	February	2

TABLE 2.3 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 31.

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	<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 	Keyboard check	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 	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 	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 	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 	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 	• 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 	• GSM Spec.
19 Echo Test	<ul style="list-style-type: none"> • 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 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 2 different “Test-SIM-Cards” in use

a) Test SIM from the company “**ORGA**”

Pin 1 No: 0000
PUK 1: 12345678

Pin 2 No: 0000
PUK 2: 23456789

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

Pin 1 No: 1234
PUK 1: 76543210

Pin 2 No: 5678
PUK 2: 98765432

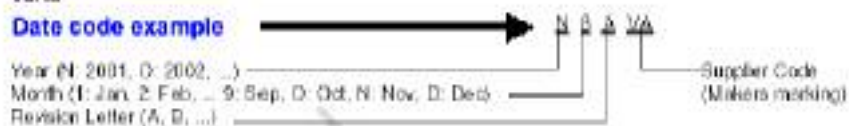
Annex 2

Battery – Date – Code overview

Date Code overview

Varta

Date code example



Hitachi / Maxell

Date code example



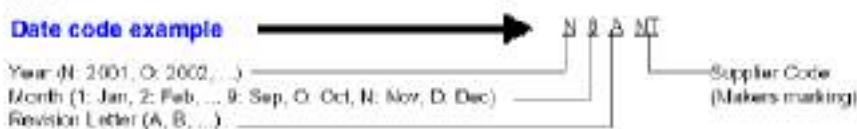
Sanyo

Date code example



NEG

Date code example



Panasonic

Date code example



Sony

Date code example

