



# Test Instruction, Electrical

Applicable for J110 and J120

## Contents

<b>1</b>	<b>Abstract.....</b>	<b>2</b>
<b>2</b>	<b>Test Procedure .....</b>	<b>2</b>
	2.1 Test flow .....	2
<b>3</b>	<b>Pre-Test Preparations .....</b>	<b>2</b>
	3.1.1 Software Update.....	2
	3.1.2 Verify Software Version .....	2
	3.1.3 Update Software Version .....	3
<b>4</b>	<b>Go/No Go Test .....</b>	<b>3</b>
	4.1.1 RF Probe (Conducted Test Method) .....	3
	4.2 SERP GNG .....	5
	4.3 Stand alone GNG .....	5
<b>5</b>	<b>Service Tests .....</b>	<b>6</b>
	5.1 Main Display Test.....	6
	5.2 LED/Illumination Test .....	6
	5.3 Keyboard Test .....	7
	5.4 Speaker Test.....	7
	5.5 Earphone Test.....	7
	5.6 Microphone Test.....	7
	5.7 Vibrator Test.....	7
	5.8 Total Call Time Test .....	7
<b>6</b>	<b>Manual Tests.....</b>	<b>8</b>
	6.1 SIM Test.....	8
	6.2 System Connector Test.....	8
	6.2.1 Battery Charger .....	8
	6.2.2 FM Radio Test (only applicable for J120).....	8
	6.3 On The Air Call to Mobile .....	9
<b>7</b>	<b>Revision History .....</b>	<b>10</b>

# 1 Abstract

This document describes the process used for flashing software upgrades and how to functionally test the mobile phone.

If there are any failures, the mobile must be repaired according to the troubleshooting guide or sent to a higher repair level.

# 2 Test Procedure

To verify all components within Mechanical repair package all tests must be performed.

## 2.1 Test flow

It's OK to return the phone to the customer if the unit is passing these steps of testing without any failures. If there are any failures, the phone must be repaired according to the troubleshooting guide or sent to higher repair level.

# 3 Pre-Test Preparations

## 3.1.1 Software Update

Update to the latest signalling software using Emma III.

## 3.1.2 Verify Software Version

To verify if the mobile needs new software, you have to check the Software Version in the mobile. Current Software Versions are checked using the following steps:

1. Start the phone.
2. Press the following Navigation key and keypad sequence: → \* ← ← \* ← \*
3. Select "Service Info".
4. Select "Software info".
5. Check the software file revisions on the display. (Contact your line supervisor to determine what the latest SW revision is.)
6. Press "OK" to return to the "Service Info" menu.

### 3.1.3 Update Software Version

Update the software in the mobile by doing the following:

1. Make sure that the phone's battery is fully charged or use a Dummy battery and a power supply. Connect correct flash cable and interface according to the Installation instruction.
2. Connect to the Emma III server, follow the instruction and update to latest software.

## 4 Go/No Go Test

### 4.1.1 RF Probe (Conducted Test Method)

1. Remove the Battery Cover according to Working Instructions, Mechanical.
2. Insert a test SIM that is compatible with your Test Instrument and install a fully charged standard battery to the mobile.
3. Install the RF Probe to the RF Cable and attach to the mobile.



### RF Coupler (Radiated Test Method)

1. Insert a test SIM that is compatible with your Test Instrument and a fully charged standard battery. It is very important that a standard fully charged battery is used; otherwise, there is a risk for wrong test results.
2. Position the handset on the Grid Positioning plate in the coupler as shown with the Reference point at C8. Additional information on the Grid Positioning plate and other supported SEMC handsets that utilize the Grid Positioning plate, is available in "SERPINFO.htm - R&S Grid plate for SERP" which is located on the windows desktop after SERP is installed.



Rohde & Schwarz Shield Box and Coupler (C8)

## 4.2 SERP GNG

**NOTE!** *For complete and detailed user instructions, see the **SERP Users Manual** located in the **SERPINFO.htm** that gets placed on the Desktop after **SERP** is installed.*

1. On a PC with SERP installed, start the SERP program by double clicking on the **"RepairManager.exe"** icon on the desktop.
2. Click on **"Settings"** in the SERP Window and verify that the test instrument and the GPIB address correspond.
3. Click on the **"Station Setup"** tab and verify that the setting in the **"RF Connection-GoNogo"** Drop down window is correct. Click on **"Apply"** and then the **"OK"** button.
4. Enter (or scan) the IMEI number of the mobile to be tested into the **"Enter IMEI"** box in the SERP Window and click on the **"Load"** button. The appropriate phone model will be displayed.
5. In the SERP window, check the **"Final GoNogo Test"** box only. Click on the **"Start Test"** button and follow the instructions. (Power on the phone when the **"Call Connection"** dialog box appears.)

## 4.3 Stand alone GNG

A Stand alone GNG test script must be written in accordance with the GO/NO GO Test Script Specification, Electrical (1222-1929) located on CSPN.

## 5 Service Tests

**NOTE!** It is **not** necessary to have a SIM card inserted for the Service Tests.

1. Press the "On/Off" button to start the mobile.
2. The Service menu is entered using the following Navigation key and keypad sequence: → \* ← ← \* ← \*
3. Select "Service Tests" then press the "Select" key.

**NOTE!** The "Back" key in this document refers to the upper right functional key

### 5.1 Main Display Test

To verify the display:

1. Select "Main Display" from the "Service Tests" menu and press the "Select" key.
2. The display toggles between different test patterns. Make sure that there are no missing segments and the colors/contrast are OK.
3. Press the "Back" key to return to the Service Tests menu.

### 5.2 LED/Illumination Test

To verify that the backlighting of the display and the keypad are OK:

1. Select "LED/illumination" from the "Service Tests" menu and press the "Select" key.
2. The words "LED Indicator" will be splashed on the screen.
3. Check that the backlight turns on and off and the LED's (blue and red) under the keypad light up from the top to the bottom of the Keypad. The red LED is located under the "Power" Key.
4. Press the "OK" key to end the test and return to the Service Tests menu.

## 5.3 Keyboard Test

To verify that the keyboard, the Navigation key and side keys are OK:

1. Select "Keyboard" from the "Service Tests" menu and press the "Select" key.
2. The phrase "Keyboard Test. Press any key." will be splashed on the screen.
3. Press all keys on the keypad and the side keys. If they are ok a text message will be displayed corresponding to the key pressed. All keys should be tested.
4. If you stop pressing keys the phone will return to the Service Tests menu after a few seconds.

## 5.4 Speaker Test

**WARNING! DO NOT HOLD THE PHONE TO YOUR EAR WHILE PERFORMING THIS TEST.**

To verify the Speaker functions:

1. Select "Speaker" from the "Service Tests" menu and press the "Select key.
2. Press the "OK" key to go back to the Service Tests menu.

## 5.5 Earphone Test

To verify the Earphone functions:

1. Select "Earphone" from the "Service Tests" menu and press the "Select" key.
2. Press the "OK" key to go back to the Service Tests menu.

## 5.6 Microphone Test

This test can only be performed by making an "On the Air Call to Mobile" test. See chapter 5.3

## 5.7 Vibrator Test

To verify that the vibrator functions:

1. Select "Vibrator" from the "Service Tests" menu and press the "Select" key.
2. Verify that the mobile vibrates multiple times.
3. Press the "Back" key to end the test and return to the Service Tests menu.

## 5.8 Total Call Time Test

This test is to check the total call time of the hand set.

1. Select "Total call time" from the "Service Tests" menu. The total call time of the hand set will now be displayed.
2. Press the "OK" key to go back to the service tests menu.



## 6 Manual Tests

### 6.1 SIM Test

To verify that the phone can detect a SIM:

1. Insert a SIM card, connect a battery and start the unit.
2. Press the "Select" key at the "Start phone" menu. If this menu does not appear proceed to step 3.
3. If the SIM is detected the phone will start "Searching" for a signal. If the SIM is not detected the phone will ask you to "Insert SIM card".

### 6.2 System Connector Test

#### 6.2.1 Battery Charger

To verify if the charging of the phone is properly working:

1. Connect a battery.
2. Connect the Charger to the system connector.
3. Verify that the main display shows that the phone is being charged.
4. Remove the Charger from the system connector and verify that the main display no longer shows the phone being charged.

#### 6.2.2 FM Radio Test (only applicable for J120)

1. Insert a SIM card, connect a battery and start the unit.
2. Connect a supported Portable Hands free to the System Connector

**NOTE!** Find supported PHF's on [Sony Ericsson webpage](#).

3. Click the "Up" button (also named "FM" on the phone)
4. Tune in a well-known FM Radio channel. Verify that it's possible to switch between different radio channels and that the sound is clear.



## 6.3 On The Air Call to Mobile

Use an On the Air Call to the mobile to test its network functionality.

**NOTE!** An “On the Air” test can only be performed if the mobile has an activated SIM card properly installed in the mobile and a network signal is available. This test cannot be performed with a Test SIM.

To verify the radio functions in the phone do the following:

1. Insert an operator SIM card and start phone.
2. Set up a call from a landline phone (PSTN) to the mobile.
3. Answer the phone call.
4. Check that the ringer is working and that the backlight switches on OK.
5. Check that the quality of sound both in the mobile and the landline phone (PSTN) are OK.
6. Adjust the volume up and down using the side volume key and check that the volume in the mobile is altered.
7. End the call. Check that the ending procedure is OK and that the talk time is displayed.

## 7 Revision History

Rev.	Date	Changes / Comments
1	2007-06-13	1 <sup>st</sup> release
2	2008-11-19	Added information for Go/No-Go testing