



# Test Instruction, Electrical

Applicable for G900

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# 1 General

This document describes the process for functionally testing a mobile at the Electrical repair level. Mobiles repaired at the Electrical repair level must have all Mechanical and Electrical level tests performed and must pass without error to be considered a functional unit. If there are any failures, repair the mobile according to the Mechanical and the Electrical Troubleshooting Guides.

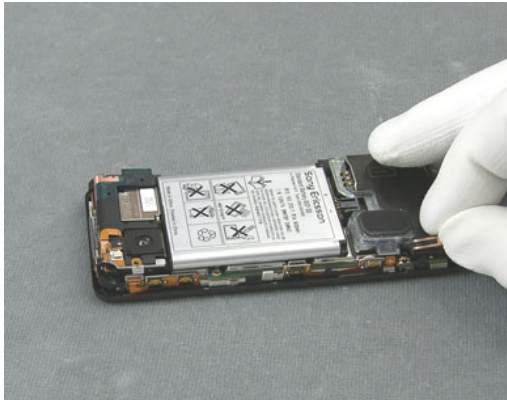
## 2 Test Preparations

### 2.1 RF Test Fixture (Conducted Test Method)

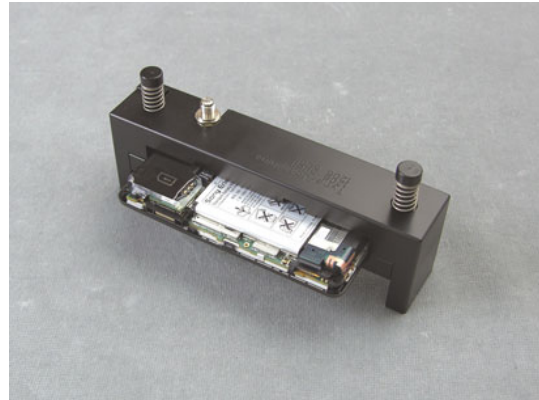
1. Remove the stylus, battery cover, camera cover and frame according to the Working Instructions, Mechanical.
2. Peel down the antenna carefully according to pic 1.
3. Insert a test SIM, install a fully charged standard battery to the phone and start the phone.

**NOTE!** A Battery Eliminator (Dummy Battery) may be used in place of a standard fully charged battery if you use a power supply that meets the requirements that are documented in the Electrical Equipment List.

4. Attach the RF Probe to the mobile according to the pic 2.



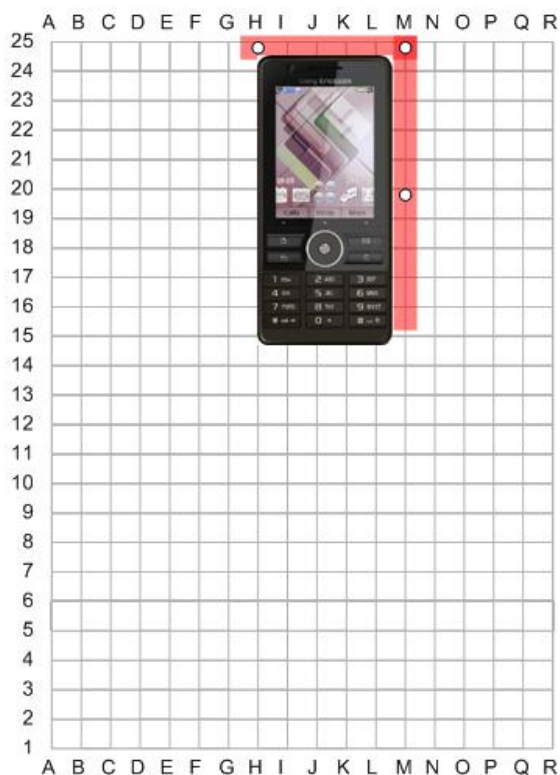
Pic 1



Pic 2

## 2.2 RF Coupler (Radiated Test Method)

1. Insert a test SIM 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 plat as shown with reference point at M25. 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

## 3 Go/No Go Test

This test verifies that the radio parameters of a mobile fulfil the GSM and WCDMA specifications. A mobile is considered good if all measurements pass. All results will be presented on the screen and can be printed out if a printer is available.

### 3.1 SERP GNG

**NOTE!** For complete and detailed user instructions, see the SERP Users Manual 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 “**cable**” (or the **coupler**) settings are selected under the “**RF Connection-GoNogo**” Drop down window. 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 either the “**GSM Calibration**” or “**WCDMA Calibration**” box that applies.

**NOTE!** Due to the sensitivity of the phone from outside interference during WCDMA calibration, a Shield box and Service Tool Test Interface setup are required for WCDMA Calibration. These can be also used for GSM Calibration.

## 4 Calibration

**NOTE!** A Test Program must be loaded in the handset before performing the calibration routine. After calibration the handsets must be re-customized with signalling SW.

### 4.1 Flashing the Test Program (ITP) into the Mobile

**NOTE!** Flashing instructions may vary depending on the interface used.

Flash the Test Program software into the mobile by doing the following:

1. Attach a fully charged battery to the mobile.
2. Open the EMMA III application and log in.
3. Ensure the mobile is powered off.
4. While holding the “C” button connect the mobile to the USB Flash cable.
5. Select the “G900 ITP ” protocol and follow the on screen instructions.

**NOTE!** Under most circumstances the display on the mobile will be blank when the Test Program is installed.

### 4.2 Calibration Instructions

**NOTE!** For complete and detailed user instructions, see the SERP Users Manual 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 the “**Settings**” button in the SERP Window to verify the test instrument, GPIB address and the COM Port matches the SERP settings. Click on “**Apply**” and then the “**OK**” button.
3. Enter (or scan) the IMEI number of the mobile to be calibrated into the “**Enter IMEI**” box of the SERP Window and click on the “**Load**” button.
4. In the SERP window, check the “**Calibration**” box only.
5. Connect the mobile to the test instrument using the RF fixture (refer to section 6.1.1).
6. Connect the Sony Ericsson Programming Interface Cable to the mobile’s system connector.
7. Click on the “**Start Test**” button in the SERP window to start the Calibration routine (mobile will automatically turn on).
8. Monitor the progress of the calibration routine by viewing the information presented in the “**Test Manager**” window.
9. If a calibration routine fails, troubleshoot according to the G900 Electrical Troubleshooting Guide.



10. After successful calibration, reinstall the antenna cover plug. Refer to the Working Instruction, Mechanical.

### **4.3 Flash LED Calibration**

Install ITP in the phone and connect the phone with the Service Tool Test Interface 1206-9888, turn the phone on and place it in the Flash LED Calibration Box with the flash and camera in the middle square according to picture the close the lid.



Go to CSPN/Repair Instructions/Electrical/G900 and click on the Trouble shooting Application 1207-0712. Install the “Urquell Fault Trace” software on your computer.

Open “Urquell Fault Trace”- Open File – Calibration G900, choose COM x and Start calibration.

### **4.4 Updating the Commercial Software into the Mobile after Calibration**

To be able to use the handset after calibration requires going through the Customization process which reloads the appropriate signalling code for the desired operator. Refer to the G900 Build Swap Customization Instruction document for further details on the Customization process.

## 5 Revision History

Rev.	Date	Changes / Comments
Rev 1	2008-05-08	Initial Release
Rev 2	2008-06-18	Added picture to chapter 2.2 RF Coupler
Rev 3	2008-10-02	Updated In Flash LED Calibration
Rev 4	2008-11-18	Updated ic chapter 4.3