



# Test Instruction, Mechanical

Applicable for G502

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# 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 latest signalling software and run the service activities software from EMMA.

## 3.1.2 Verify Software Version

**NOTE!** Remove the SIM-card before testing.

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

1. Start up the phone.
2. Enter the Service Tests Menu by pressing the sequence ➡\*⬅⬅\*⬅\* with the navigate buttons and the \* on the keypad.
3. Select Service info.
4. Select SW Information.
5. Check the file revisions on the display.
6. Press OK to return to the Service info menu.'



### **3.1.3 Update Software Version**

Update the software in the phone by doing the following steps:

1. Make sure that the phone's battery is fully charged or use a battery eliminator. Connect correct flash cable and interface according to the Installation instruction.
2. Logon to the EMMA server, and follow the instructions

### **3.1.4 Phone Lock Reset**

If the phone lock is on for this model, you must use the Phone Lock Reset tool in EMMA to automatically reset the 4 digit phone lock code to "0000".

1. Attach a fully charged battery to the mobile.
2. Open the EMMA application and log in.
3. Ensure the mobile is powered off.
4. While holding the "5" button, connect the mobile to the USB Flash Cable. (Once the USB Icon appears in the EMMA window you may release the "5" button.).
5. When prompted, select "Phone Lock Reset".
6. The program will display "Success" on the USB Icon when the Phone lock code has been reset to 4 zeros "0000".

## **4 Service Tests**

### **4.1 Main Display Test**

To verify the display:

1. Select "Main Display" from the "Service Tests" menu.
2. The display toggles between four different test patterns. Make sure that there are no dots missing and that the colours and contrast is OK.
3. Press the "centre navi" key to go back to the service tests menu.

### **4.2 LED/Illumination Test**

To verify that the backlight and the LEDS are OK:

1. Select "LED/illumination" from the "Service Tests" menu.
2. Check that the backlight in the display and the keyboard is toggle between on and off.
3. Press "centre navi" key to go back to the service tests menu.



### 4.3 Keyboard Test

To verify that all the keys are working:

1. Select "Keyboard" from the "Service Tests".
2. Press all keys on the keypads and the "Side Up" and "Side Down" keys on the right side and close Flip . If they are OK a text feedback is displayed showing the information which key was pressed. All keys should be tested.
3. If you stop pressing keys the phone will return to the service test menu.

### 4.4 Speaker Test

**Warning! Do NOT hold the phone to your ear while performing this test.**

To verify the Speaker function:

1. Select "Speaker" from the "Service Tests" menu.
2. Adjust the volume and make sure that the Speaker is working properly.
3. Press the "centre navi" key to go back to the service tests menu.

### 4.5 Earphone Test

To verify the Earphone function:

1. Select "Earphone" from the "Service Tests" menu.
2. Adjust the volume and make sure that the Earphone is working properly.
3. Press the "central navi" OK key to go back to the service tests menu.

### 4.6 Microphone Test

This test is intended to test the microphone. Therefore, the earphone should be tested before this test is entered.

1. Select "Microphone" from the "Service Tests" menu.
2. The phone will start to record and after that the sound is played in the speaker. Make sure that the record sounds have a loud and clear sound.
3. The phone will automatically return to the service tests menu when "Microphone Playing" is completed.

### 4.7 Vibrator alert Test

To verify the vibrator function:

1. Select "Vibrator" from the "Service Tests" menu.
2. Press any key and the vibrator will vibrate 3 times.
3. Press the "central navi" OK key to go back to the service tests menu.



## 4.8 Camera Test

To verify the camera functionality:

1. Select Camera from the "Service Tests" menu.
2. The camera function will now start and are visible in the display. Make sure that the contrast is OK.
3. Press the "right soft-Back" key to go back to the service tests menu

## 4.9 Memory stick Test

This test is to verify if the communication to the memory card is working.

1. Insert a memory card into the memory card holder located on the lower left side of the phone.
2. Select "Memory Card" from the "Service tests" menu.
3. Make sure that the phone will detect the memory card.
4. Remove the memory card from the holder.

Press the "central navi" OK key to go back to the service tests menu.

## 4.10 FM Radio Test

To verify the function of the FM radio:

1. Install a Portable Hands-Free (PHF) to the system connector.
2. Select "FM radio" from the "Service Tests" menu and press the "Select" key.
3. Using the keypad set the frequency to a known good FM station.
4. While listening to the FM station with the PHF ensure that the sound quality compares to a known good handset.
5. Remove the PHF and press the "central navi" OK key to end the test.

## 4.11 Real Time Clock Test

This test will check if the built in real time clock works.

1. Select "Real time clock" from the "Service Tests" menu.  
After approximately 5 seconds you will get information whether the clock is ok or not.
2. Press the "central navi" OK key to go back to the service tests menu.

## 4.12 Total call time Test

This test will show you the Total Call Time of the phone.

1. Select "Total Call Time" from the "Service Tests" menu  
and you will get information regarding the "Total Call Time" of this phone.



2. Press the “central navi” OK key to go back to the service tests menu.

### **4.13 Security Test**

To verify that the Device Key test is working:

1. Select “Security” from the “Service Tests” menu.
2. Select “Device Key test” from the menu, and you will get information regarding Device Key test, make sure the status is “Key ok”.
3. Press the “central navi” OK key and then press “right soft-back” key to go back to the service tests menu.

## **5 Manual Tests**

### **5.1 On The Air Call To Mobile**

To verify the function of the speaker, microphone, polyphonic ring signal and volumes button.

1. Insert an operator SIM card and start the phone.
2. Set up a call from another phone to the mobile phone.
3. Answer the phone call.
4. Check that the polyphonic ring signal is working and that the backlight switches on OK.
5. Also check that the quality of the sound both in the mobile phone and the other phone are OK.
6. Press the volume key up and down and check that the volume in the phone is altered.
7. End the call.
8. Check that the ending procedure is OK and that the speech time is displayed.

### **5.2 Bluetooth Test**

To verify that the Bluetooth communication is working:

1. Insert a SIM card, connect a battery and start the unit.
2. Activate the Bluetooth function by entering Connectivity/Bluetooth and turn it on.
3. Set up a link between the phone and another Bluetooth compatible device. If a connection can be established the Bluetooth module is considered working.



## **5.3 System Connector Test**

Hands free equipment and a charger are used in this test, to check the functionality of the System Connector.

1. Insert a SIM card, connect a battery and start the unit.
2. Connect the Hands free equipment to the system connector and set up a call and listen if you can speak/hear in the hands free set.
3. Connect the charger to the system connector and see if the phone starts to charge and if the charging is indicated in the display.

## **5.4 Camera video LED Test**

To verify that the camera video LED is working:

1. Insert a SIM card, connect a battery and start the unit.
2. Activate the Video function and take a Video.
3. If the camera video LED in the camera side turned red then considered it is working.



## 6 Revision History

Rev.	Date	Changes / Comments
1	2008-05-26	1 <sup>st</sup> release
2	2008-08-25	Update service test