



# Test Instruction, Electrical

Applicable for J220 and J230

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# 1 Abstract

This document describes the test procedure for the Electrical repair package.

# 2 Test Procedure

To verify all components within the Electrical repair package, all tests must be performed.

# 3 Test flow

If the phone is passing these steps of testing without any failures, it is OK to return to the customer.

If there are any failures, repair the phone according to the Troubleshooting Guide.

## 3.1 Software Update

Update the latest signalling software and run on the service software from EMMA III.

### 3.1.1 Verify Software Version

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

1. Turn on the phone.
2. Press the following navigation-key and keyboard sequence: ⇨ \* ⇐ ⇐ \* ⇐ \*
3. Select Service info.
4. Select SW Information.
5. Check the file revisions on the display.
6. Press YES to return to the Service info menu.

### 3.1.2 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 Dummy battery.  
Connect correct flash cable and interface according to the Installation instruction.
2. Connect to the EMMA III server.



## 3.2 Go/No-Go Test

This test verifies that the radio parameters of the phone fulfil the GSM/GPRS 900/1800, GSM/GPRS 850/1900 specification. If all measurements are approved, it will be confirmed. If any faults are discovered, it will be presented either on the screen or printed out.

It is very important that a fully charged battery is used otherwise there is a risk for wrong test results.

### Antenna Coupler

- Insert a test-SIM and a fully charged standard battery. Position the phone in the coupler according to the pictures (Fig 1).

### RF Test Cable

- Insert a test-SIM and the battery eliminator or a fully charged standard battery. Connect the flexible RF test cable to the external antenna connector under the battery cover according to Fig 2. Connect the RF cable between the Test set and the RF test cable.



Fig. 1



Fig. 2



## 3.3 Service Tests

### NOTE!

It is not necessary to have a SIM card inserted.

Turn on the phone.

The Service Tests menu is entered using the following navigation-key and key sequence:  $\Rightarrow * \Leftarrow \Leftarrow * \Leftarrow *$  and select "Service tests".

### 3.3.1 Display Test

To verify the display:

1. Select "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 "YES" or "NO" key to go back to the service tests menu.

### 3.3.2 LED/Illumination Test

To verify that the backlight and the Top LED are OK:

1. Select "LED/illumination" from the "Service Tests" menu.
2. Check that the backlight on the LCD and the keyboard are toggling between on and off.
3. Press the "YES" or "NO" key to go back to the service tests menu.

### 3.3.3 Keyboard Test

To verify the keyboard, the navigation-key and the volume key are OK:

1. Select "Keyboard" from the "Service Tests".
2. Press all keys on the keypad. If all test 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 after 3 seconds.

### 3.3.4 Buzzer Test

To verify the Loudspeaker function:

1. Select "Buzzer" from the "Service Tests" menu.
2. Adjust the joystick and make sure that the Loudspeaker (back side) is working properly.
3. Press the "YES" or "NO" key to go back to the service tests menu.



### **3.3.5 Earphone Test**

To verify the Earphone function:

1. Select "Earphone" from the "Service Tests" menu.
2. Press any key and make sure that the Earphone (front side) is working properly.
3. Press the "YES" or "NO" key to go back to the service tests menu.

### **3.3.6 Microphone Test**

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

1. Select "Microphone" from the "Service Tests" menu.
2. Check that every sound that is going into the microphone can be instantly heard in the earphone.
3. Press the "YES" or "NO" key to go back to the service tests menu.

### **3.3.7 Vibrator Test**

To verify the vibrator function:

1. Select "Vibrator" from the "Service Tests" menu.
2. Press any key and the vibrator will start vibrating.
3. Press the "YES" or "NO" key to go back to the service tests menu.

### **3.3.8 Flip Counter Test**

This function will show you the total number of flips of the phone when it is turned on.

1. Select "Flip Counter" from the "Service Tests" menu and you will get information of the flip count.
2. Press the "YES" or "NO" key to go back to the service tests menu.

### **3.3.9 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. The phone will return to service menu after a second.



## **3.4 Manual Tests**

### **3.4.1 “On the Air Call” to the mobile**

To verify the function of the earphone, microphone, polyphonic ring signal, joystick button and GSM radio:

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. Adjust the joystick 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.

### **3.4.2 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.



## 4 Revision History

Rev.	Date	Changes / Comments
A	2006-03-08	First release
B	2006-06-21	GSM removed
C	2007-04-19	Chapter 3.2 added