



Sony Ericsson

Test Instructions

- mechanical -



Zyl0

W20, W20i

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**For general information about test procedures, refer to
1220-1333: Generic Repair Manual - mechanical**

1 Pre-Test Preparations

1.1 Hardware

1.1.1 Liquid Intrusion indicator inspection

Before starting any tests the liquid intrusion indicator has to be checked.

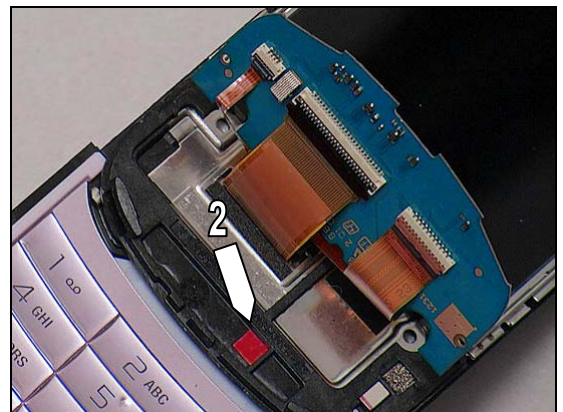
The indicator (1) is located as shown in this picture after the battery cover and battery are removed.



The indicator (2) is located as shown in this picture after the Upper Front Cover and sub keyboard are removed.

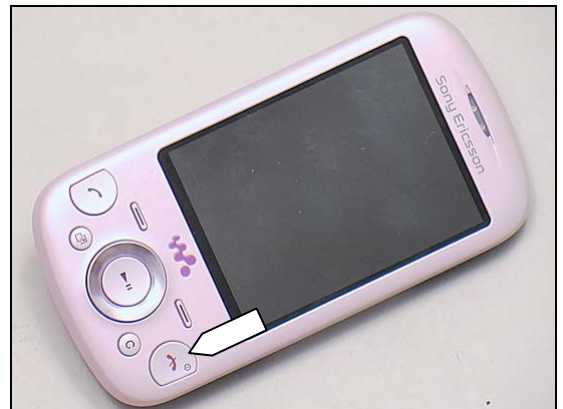
If affected (red color) - handle the phone according to your local directives.

If not affected by liquid, proceed to the 'Slider performance test' below.



1.1.2 Slider performance test

1. Start up the phone with a fully charged battery and check that the display operates normally.
2. If the display never gets illuminated or no text is displayed, refer to 1240-7785: Zylø W20 Troubleshooting Guide



3. When the display gets illuminated with text shown, wait until the light goes off and then open or close the slider as shown in the picture.
4. The display should now be reactivated.
5. If not, this indicates a problem with the slider sensor on the Main Keyboard FPC or the magnet in the hinge.
6. Replace the magnet or the Main Keyboard FPC. If the problem continues send the phone to higher level of repair.



Pre-Test Preparations

1.2 Software

1.2.1 Software update

1.2.1.1 Software version verification

Check the software version of the phone for fault verification, you can find the latest improvements on the support web pages under the support news

<http://www.sonyericsson.com/cws/marketingurlportal?pageid=key.SupportZone.Overview>

Start up the phone and press the Navigation Keypad and Keyboard keys as follows:

⇒ * ⇐ ⇐ * ⇐ *

select 'Service info'

select 'Software info'

check the software file revisions and, if needed, update as described below

For more information, refer to 1220-1333: Generic Repair Manual - mechanical

1.2.1.2 Software version update

Use the DCU-65 USB cable for this purpose!

Do not use the SEPI equipment!

Install a fully charged battery, ensure the phone is powered off and proceed as follows:

Open the Emma application and log in

Press and keep the "C" key down on the phone, connect the phone to the USB cable and when USB icon appears in the Emma window, release the "C" key.

Select the appropriate service and follow the on-screen instructions.

1.2.2 Phone lock reset

Insert a fully charged battery, ensure the phone is powered off and proceed as follows:

Open the Emma application and log in

Press and keep the "C" key down on the phone, connect the phone to the USB cable and when USB icon appears in the Emma window, release the "C" key.

When prompted, select the 'Phone Lock Reset' service.

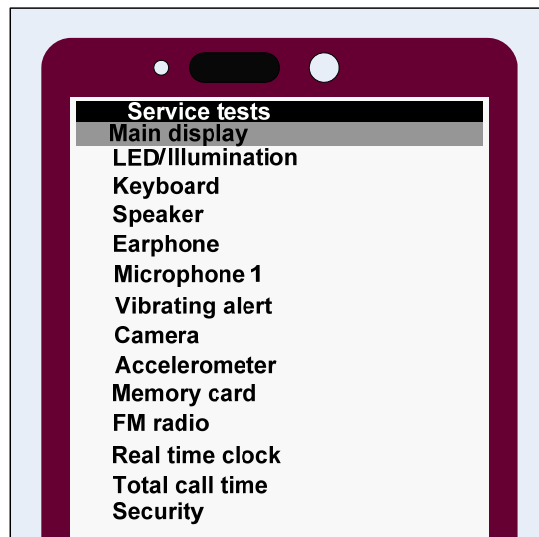
'Success' will be displayed on the USB icon when the phone lock code has been reset to '0000'.

2 Tests

2.1 Service Test Mode

Start up the phone and enter the service menus:
 press the Navigation Keypad and Keyboard keys in the following order: ⇨ * ⇨ ⇨ * ⇨ *
 select 'Service tests'
 select one of the tests and follow the test instructions as described below
 to stop the test and return to the 'Service tests' menu, press the Back key

**For more information, refer to
 1220-1333: Generic Repair Manual - mechanical**



The pictures to follow will show a simplified basic phone for a general visualization of the service tests!

Tests

2.2 Service Tests

2.2.1 Main Display

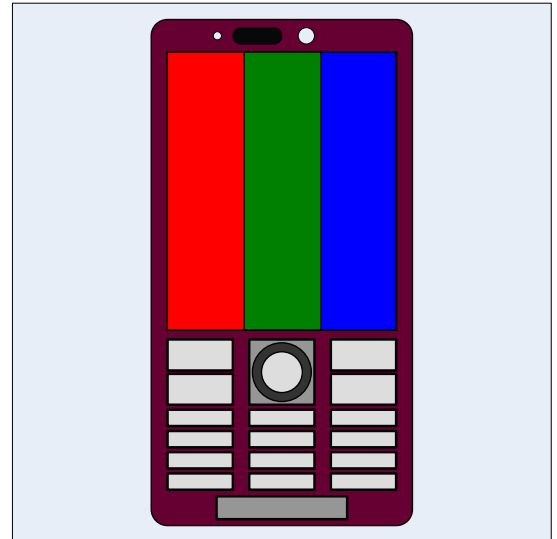
Minor variations in display brightness and color may occur between phones.

There may be tiny bright dots on the display, so called defective pixels and occur when individual dots have malfunctioned and can not be adjusted.

Two defective pixels are considered to be acceptable.

The display will show five test patterns.
Make sure that there are no missing segments and that the colors and contrast are OK.

Press OK key to return to Service Test Menu.



2.2.2 LED/Illumination

Check that the:

- LEDs under the Keyboard are turned on and off.
- LEDs under the Navigation Keypad are turned on and off.

Press OK key to return to Service Test Menu.

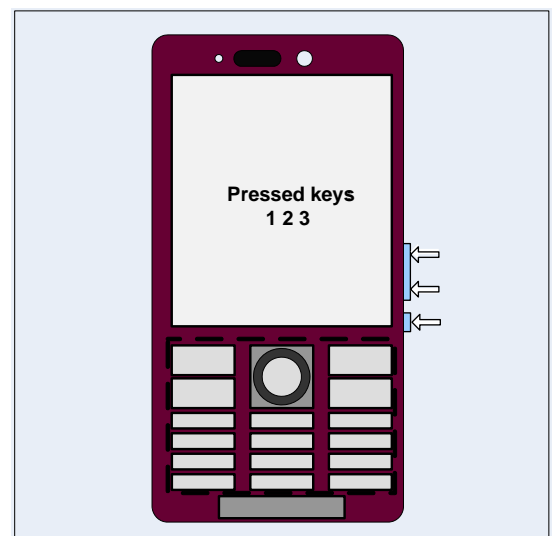


2.2.3 Keyboard

Press all keys on the:

- Main Keypad
- Sub Keypad
- Volume Key and Camera Key

Check that each pressure is confirmed in the display.



Tests: Service Tests

2.2.4 Speaker

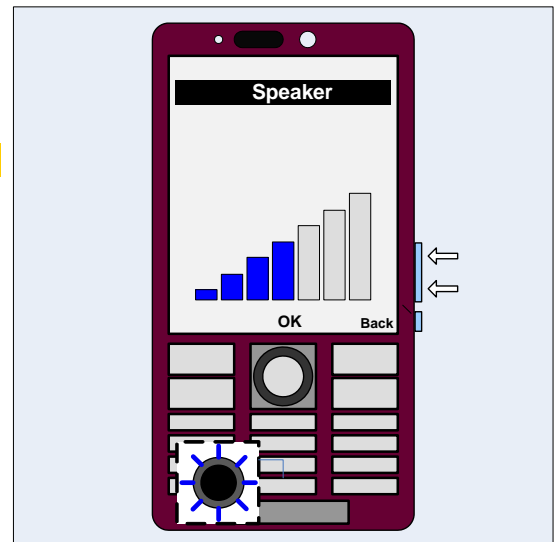
Do not hold the phone close to your ear during this test!

Make sure that the sound from the speaker port on the back of the phone is emitted loud and clear.

Press Volume up/Volume down key to adjust speaker volume.

Check that there is not any distortion for the highest volume

Press OK key to return to Service Test Menu.



2.2.5 Earphone

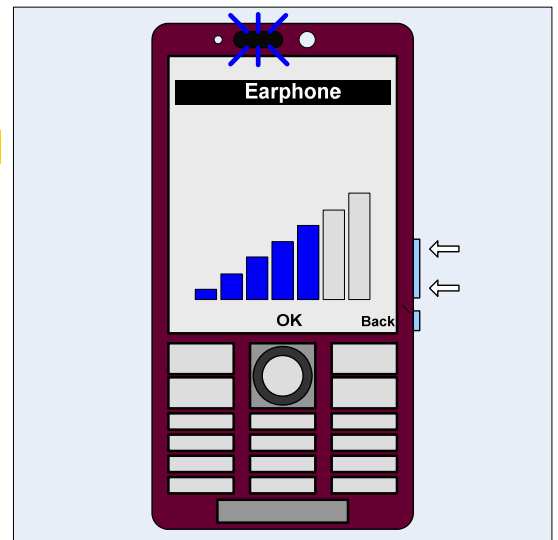
Do not hold the phone close to your ear during this test!

Make sure that the sound from the Earphone port on the top of the phone is emitted loud and clear, this test includes maximum volume.

Press Volume up/Volume down key to adjust earphone volume.

Check that there is no any distortion for the highest volume

Press OK key to return to Service Test Menu.



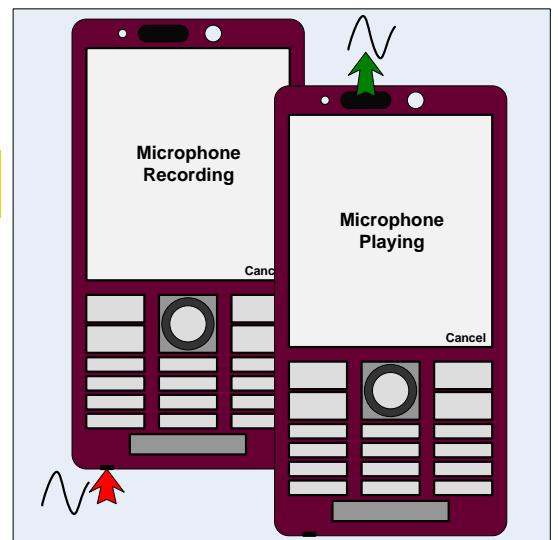
2.2.6 Microphone

The previous test 'Earphone' should have been successfully carried out before doing this test!

The phone will start to record and after approximately ten seconds the sound is played back through the earphone.

Speak into the microphone during the 'Microphone Recording' phase.

Check the quality by listening to the recording from the Earphone during the 'Microphone Playing' phase.



Tests: Service Tests

2.2.7 Vibrating alert

Press any key and the vibrator gets activated three times.

Press OK key to return to Service Test Menu.



2.2.8 Camera

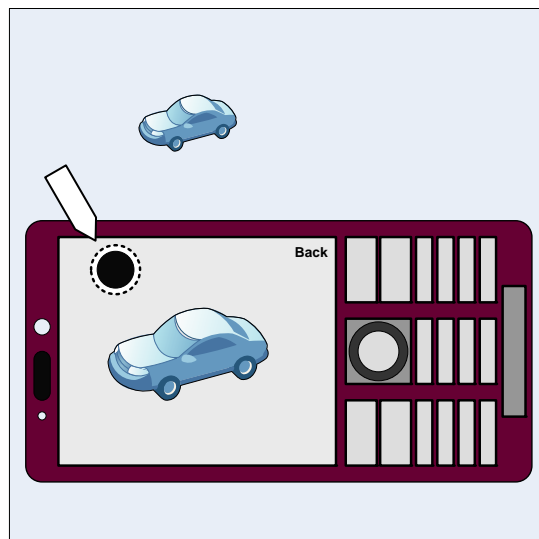
Minor variations in image appearance may occur between phones, but is not uncommon and should not be regarded as an indication of a defective camera module!

Aim the camera (located back of the phone) at an object and check the quality of the image shown in the display.

Press the camera key to preview the photo's quality about auto focus.

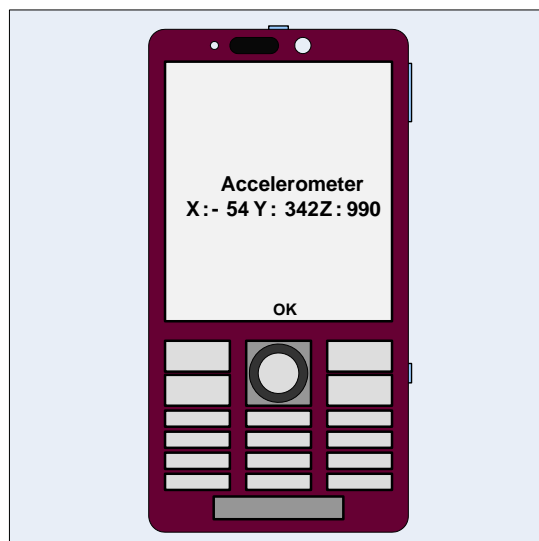
Photos is taken but not saved during this test!

Press Back key to return to Service Test Menu.



2.2.9 Accelerometer

The accelerometer test displays the actual position of the phone as a 3D coordinate X: Y: Z.

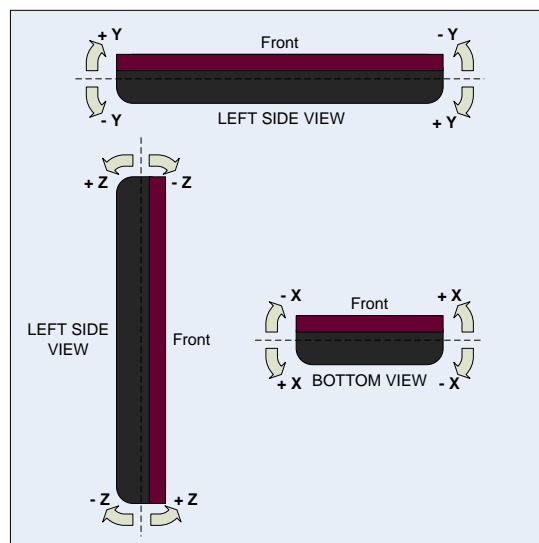


Tests: Service Tests

By tilting the phone in various directions, the X: Y: Z values will change in size and polarity depending on angle and direction as shown in the adjacent picture.

Check by tilting the phone that the X: Y: Z values shown in the display are in accordance with the tilting shown in the picture.

Press OK key to return to Service Test Menu.



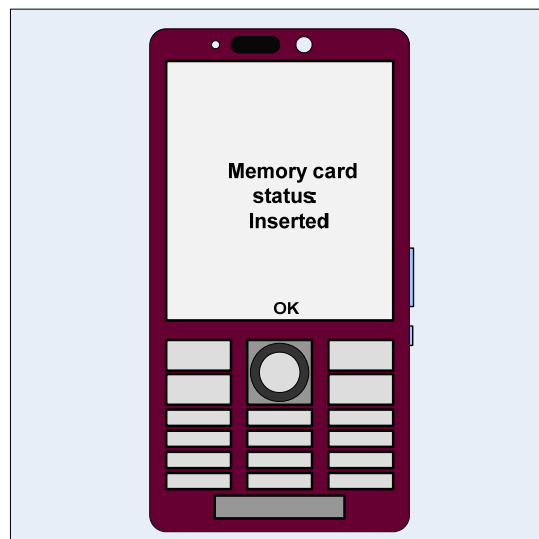
2.2.10 Memory card

A memory card should be inserted in the phone before the start of this test!

The memory card holder is accessible after having the battery cover removed!

The phone should detect that the memory card is inserted.

Press OK key to return to Service Test Menu.



2.2.11 FM radio

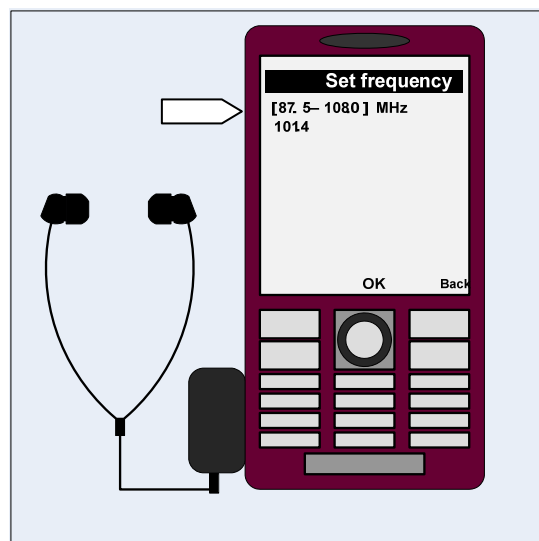
A Portable Hands-Free (PHF) has to be connected to the system connector prior to this test!

SIM card is needed to be inserted prior to this test!

Use the keyboard to enter the frequency of an FM station known to be good regarding reception.

Listen to the FM station and verify that the sound quality is as good as can be expected.

Press OK key to return to Service Test Menu.



Tests: Service Tests

2.2.12 Real time clock

During the actual test the text 'Real time clock test, please wait' is displayed, then followed by a message stating whether the test was OK or not.

Press OK key to return to Service Test Menu.



2.2.13 Total call time

The total call time is displayed in the format HH:MM:SS (hours: minutes: seconds).

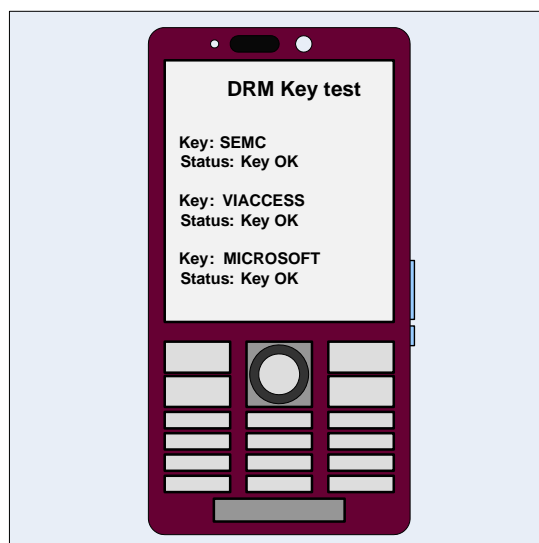
Press OK key to return to Service Test Menu.



2.2.14 Security

To verify that the Device Key test is working:
 Select "Security" from the "Service Tests" menu.
 Select "DRM Key test" from the menu, and you will get information regarding DRM Key test, make sure the status is "Key ok".

Press OK key to return to Service Test Menu.



Tests

2.3 Manual Tests

2.3.1 SIM

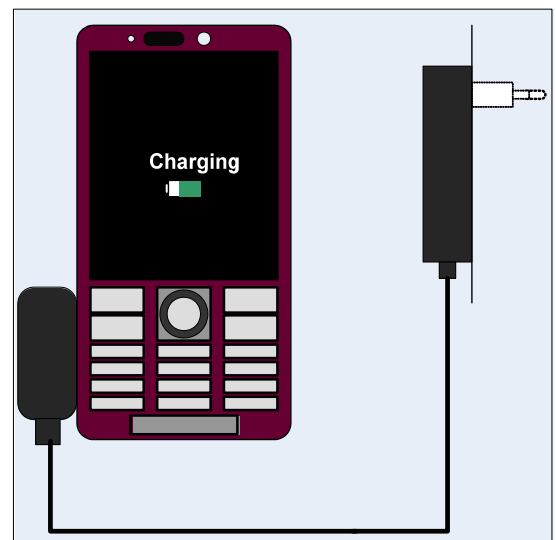
Verify that the phone can detect a SIM card:
 insert a SIM card, install a battery and start the phone
 If the SIM card is detected by the phone, the start-up procedure will continue.
 If not detected, the message 'Insert SIM card' will be displayed.



2.3.2 Battery charging

2.3.2.1 Charging by wall charger

Verify that the charging of the phone functions properly:
 Install a battery but do not start the phone
 connect a wall charger to the system connector
 verify that the display shows that the phone is being charged
 remove the charger from the system connector and verify that the display no longer indicates charging

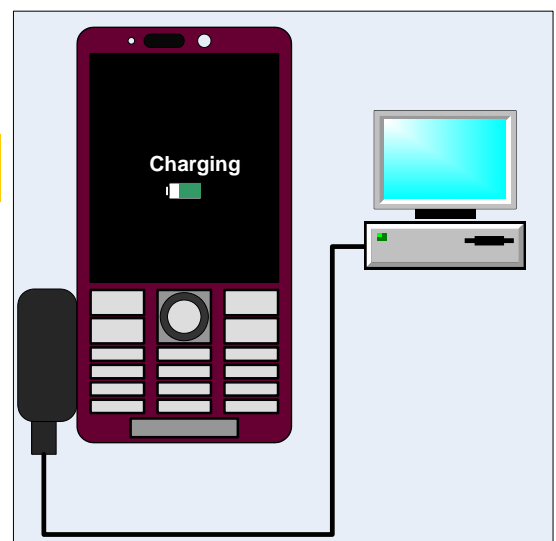


2.3.2.2 Charging via USB

Verify that the phone can charge the battery via a USB port:

Ensure that no computer application, such as PC Suite or Emma, is active!

Check and, if necessary, activate the USB charging by entering the Service menu: *Service settings* ⇒ *Charging on*
 install a battery but do not start the phone
 connect a USB cable from a computer to the system connector
 verify that the display shows that the phone is being charged
 remove the USB cable from the system connector and verify that the display no longer indicates charging.



Tests: Manual Tests

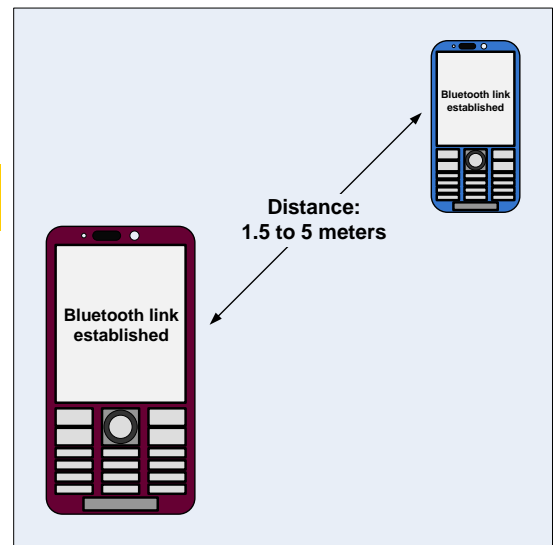
2.3.3 Bluetooth

Verify that the Bluetooth communication functions properly:

During this test, the distance between the phone and the other Bluetooth device must be 1.5 to 5 meters!

Insert a SIM card, install a battery and start the phone
activate the Bluetooth function via the phone menu: *Settings*
⇒ *Connectivity* ⇒ *Bluetooth* ⇒ select *Turn on*
set up a Bluetooth link between the phone and the other Bluetooth device.

If a link can be established, the Bluetooth function is regarded to be fully functional.



Tests

2.4 Network Test

This test can only be performed if the phone has got an activated SIM/USIM card (no Test SIM/USIM) and an available network signal!

There are two versions of the test depending on whether a UMTS network is available or not!

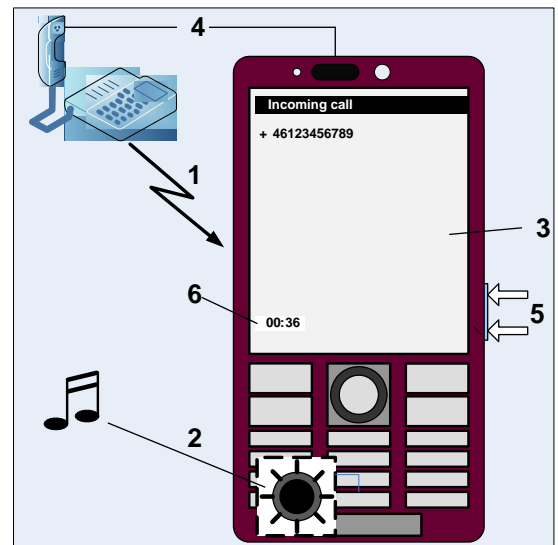
If a UMTS network is available, the network test has to be done separately for GSM and UMTS!

2.4.1 On-the-air call to mobile (no UMTS network available)

To verify the radio functions (GSM) of the phone, follow the '2.4.1.1 Procedure' below

2.4.1.1 Procedure

1. Set up a call from a landline phone (PSTN)
2. Check that the ring signal goes on
3. Check that the display backlight illuminates
4. Answer the call and check the sound quality in both phones
5. Adjust the volume up and down with the side key and verify that the sound level is altered
6. End the call and check that the elapsed time is displayed and that the termination is done in a proper way



2.4.2 On-the-air call to mobile (UMTS network available)

GSM

Go to the phone menu and set:

Settings ⇒ *Connectivity* ⇒ *Mobile networks* ⇒ *GSM/3G networks* ⇒ *GSM only*

To verify the radio functions (GSM) of the phone, follow the '2.4.1.1 Procedure' above.

UMTS

Go to the phone menu and set:

Settings ⇒ *Connectivity* ⇒ *Mobile networks* ⇒ *GSM/3G networks* ⇒ *GSM and 3G*

Switch off the phone and then start it up again to enable search for an available UMTS signal. Ensure that the UMTS/3G icon now is visible at the top of the display.

To verify the radio functions (UMTS) of the phone, follow the '2.4.1.1 Procedure' above.



3 Revision History

Rev.	Date	Changes / Comments
1	2010-June-21	Initial release
2	2010-08-18	Updated about FM radio test for SIM card is needed.