



Sony Ericsson

Test Instructions

- mechanical -



Mix, WT13i



CONTENTS

1	Pre-Test Preparations	3
1.1	Hardware.....	3
1.1.1	Liquid Intrusion Indicator inspection.....	3
1.2	Software.....	4
1.2.1	Software update.....	4
1.2.2	Phone lock reset.....	4
2	Tests	5
2.1	Service Test Mode.....	5
2.2	Service Tests.....	6
2.2.1	Main display	6
2.2.2	Touchscreen	6
2.2.3	Proximity	6
2.2.4	LED	7
2.2.5	Keyboard	7
2.2.6	Speaker.....	7
2.2.7	Earphone.....	8
2.2.8	Microphone	8
2.2.9	Vibrator.....	8
2.2.10	Camera	9
2.2.11	Memory card	9
2.2.12	FM radio.....	9
2.2.13	Real time clock	10
2.2.14	Total call time.....	10
2.2.15	Accelerometer.....	10
2.2.16	WiFi.....	11
2.2.17	Bluetooth.....	12
2.2.18	Battery	12
2.3	Manual Tests	14
2.3.1	SIM	14
2.3.2	Battery charging	14
2.4	Network Test.....	16
2.4.1	On-the-air call to mobile (no UMTS network available).....	16
2.4.2	On-the-air call to mobile (UMTS network available)	16
3	Revision History	17

**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 is located as shown in this picture after having the battery cover removed.



The other indicator is located as shown in this picture after having the battery cover and Rear Cover Assy removed.

If not affected by liquid, proceed to the 'Pre-Test Preparations' below.

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





Pre-Test Preparations

1.2 Software

1.2.1 Software update

1.2.1.1 Software version verification

Check the software versions of the phone to establish whether a software version update is needed:

- start up the phone and press Menu icon of the screen lower left corner, and input the order:
##7378423##
- 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 EC700 Micro 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 "Home" key down on the phone, connect the phone to the USB cable and when the USB icon appears in the Emma window, release the "Home" key
- select the appropriate protocol and follow the on-screen instructions

1.2.2 Phone lock reset

- Not Applicable




2 Tests

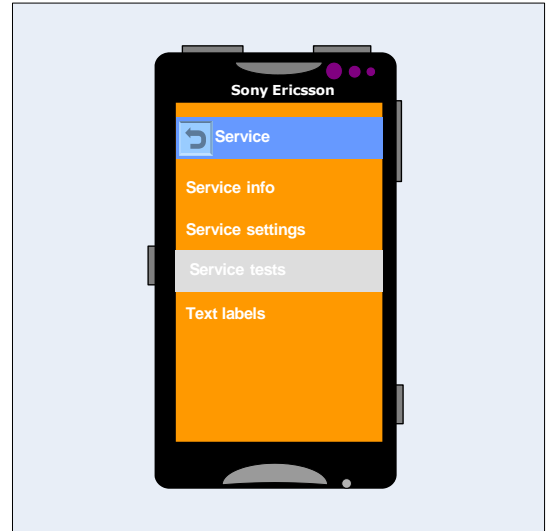
2.1 Service Test Mode

All service tests can be carried out without a SIM card!

Start up the phone and enter the service menus:

- Press Menu icon of the screen lower left corner
- Input the order "***#7378423#**"
- 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  icon.

**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!



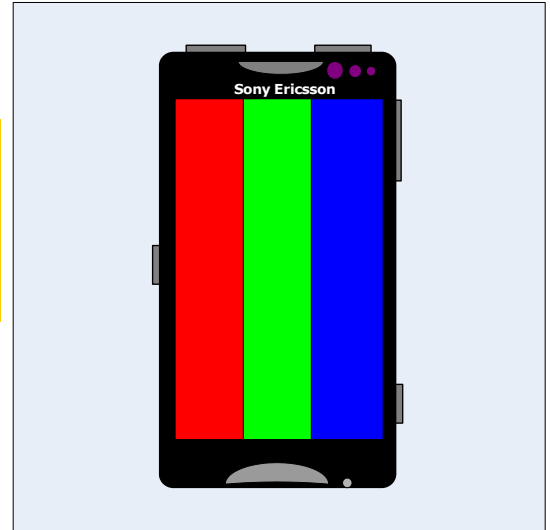
Tests

2.2 Service Tests

2.2.1 Main display

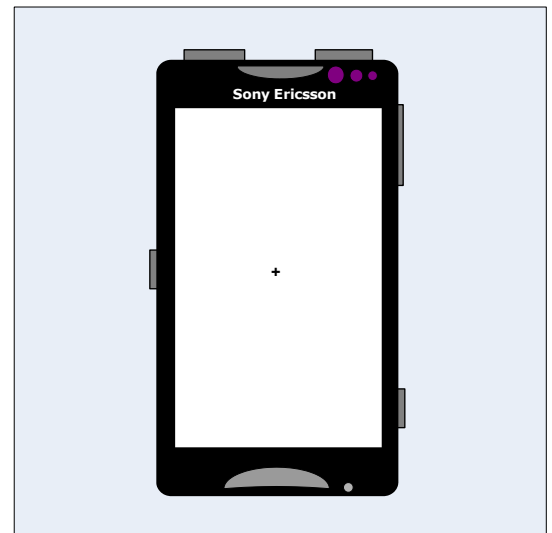
**Minor variations in display brightness and color may occur between phones.
There may be tiny bright dots on the display, so called defective pixels and occur when individual dots have malfunctioned and can not be adjusted.
Two defective pixels are considered to be acceptable.**

The display will show several test patterns.
Make sure that there are no missing segments and that the colors and contrast are OK.
Touch the screen to return to Service Test Menu.




2.2.2 Touchscreen

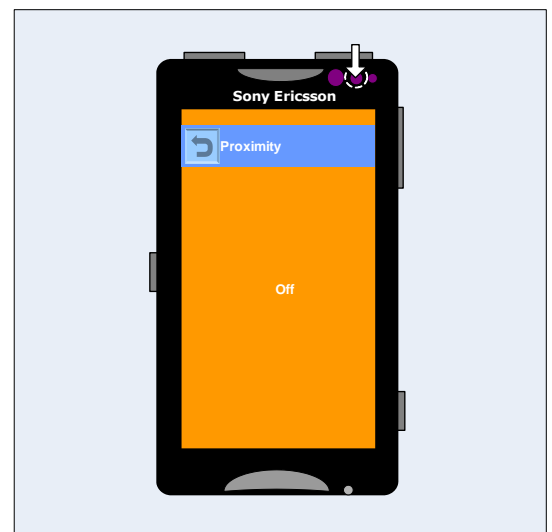
Move your finger across the display, the "+" icon is moved with your finger on the screen.
After finished the test, it will be return to Service Test Menu automatically.



2.2.3 Proximity

When entering into the test, the screen shows "Proximity switch OFF".
Once your finger cover the proximity switch area (on the right side of the receiver), the screen will show "Proximity switch ON".

Press  Icon return to Service Test Menu.




Tests: Service Tests

2.2.4 LED

Check that the:

- LEDs under the ZAP Key and the Walkman key are turned on and off
- LED under the Home Key is turned on and off
- Display backlight is switched off for a short time.

Press  Icon return to Service Test Menu.

LEDs under the ZAP Key and Walkman key only can be powered on one time in RTL SW(R3AD013), the LEDs can be powered on/off automatically after RTL SW!



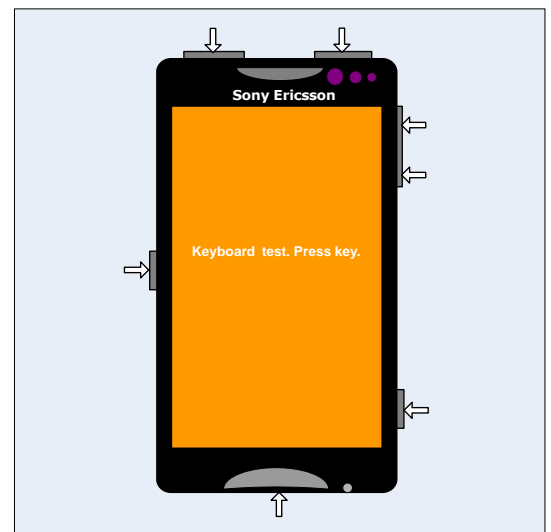
2.2.5 Keyboard

Press all keys on the:

- Power key
- Home key
- Camera key
- Volume up key
- Volume down key
- ZAP key
- Music key

Check that each pressure is confirmed in the display.

After finished the test, it will be return to Service Test Menu automatically.




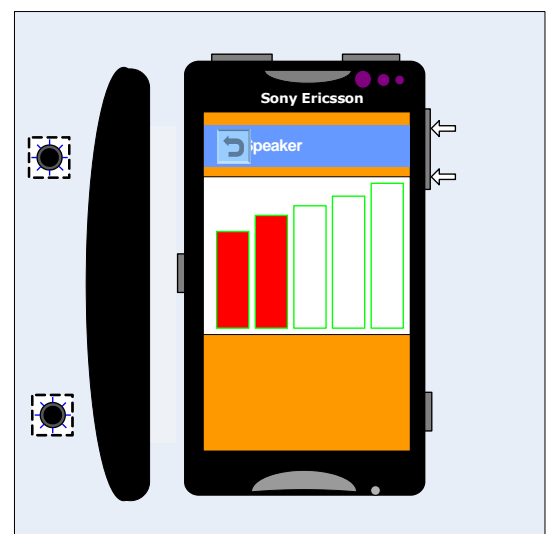
2.2.6 Speaker

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 and that the test include maximum volume.

Press Volume up/down key to adjust speaker volume.

Press  Icon return to Service Test Menu.




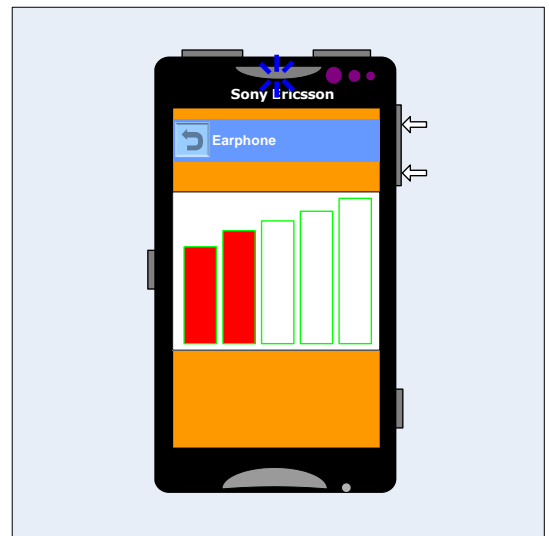
Tests: Service Tests

2.2.7 Earphone

Make sure that the sound from the speaker port on the top of the phone is emitted loud and clear and that the test include maximum volume.

Press Volume up/down key to adjust earphone volume.

Press  Icon return to Service Test Menu.



2.2.8 Microphone

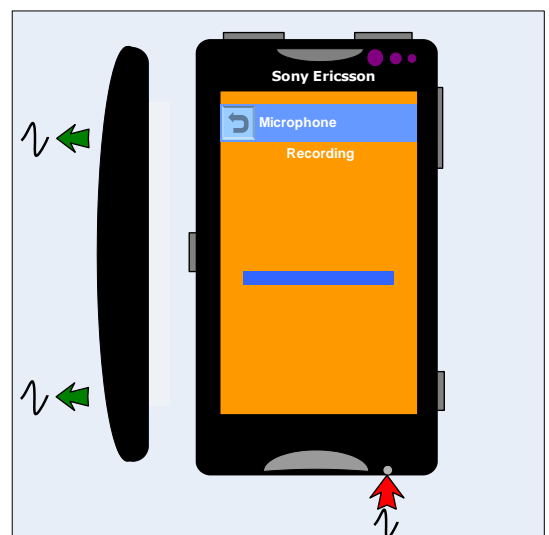
The previous test, 'Speaker *', should have been successfully carried out before doing this test!

The phone will start to record and after approximately seven seconds the sound is played back in the Speaker.

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


Check the quality by listening to the recording from the speaker during the 'Microphone Playback' phase.

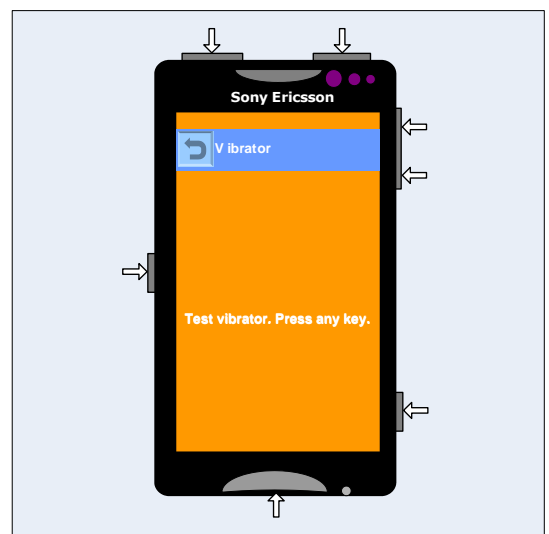
After finished the test, it will be return to Service Test Menu automatically.



2.2.9 Vibrator

Press any key and the vibrator gets activated three times.

Press  Icon return to Service Test Menu.



Tests: Service Tests

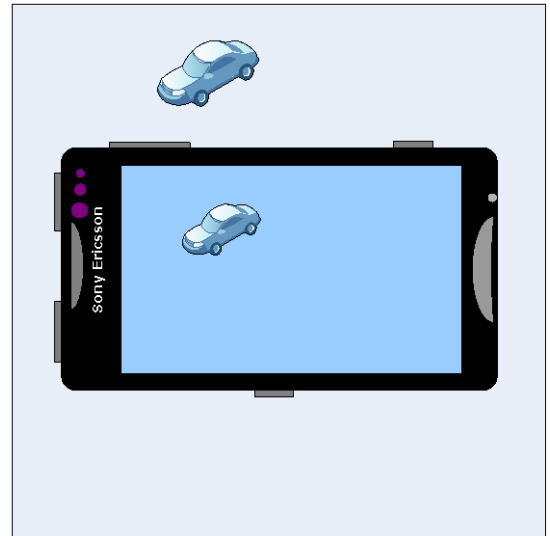
2.2.10 Camera

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.

Touch the screen to return to Service Test Menu.


Photos cannot be taken during this test!

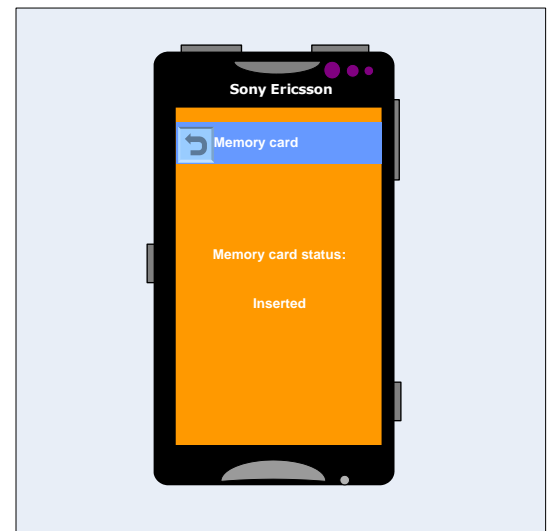


2.2.11 Memory card

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

The phone should detect that the memory card is inserted

Press  Icon return to Service Test Menu.




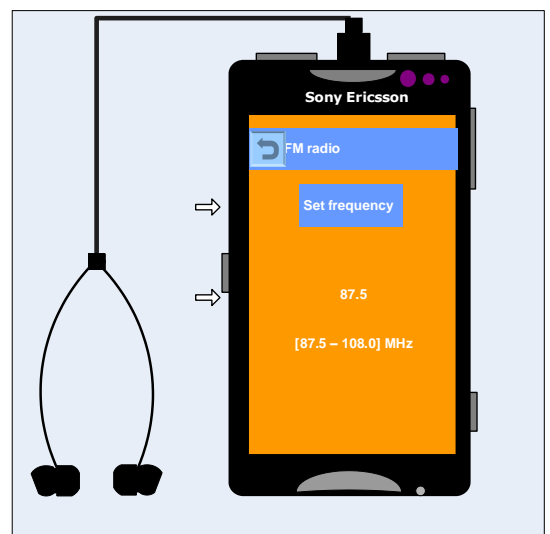
2.2.12 FM radio

A Portable Hands-Free (PHF) has to be connected to the Conn Audio Jack prior to this test!

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  Icon return to Service Test Menu.

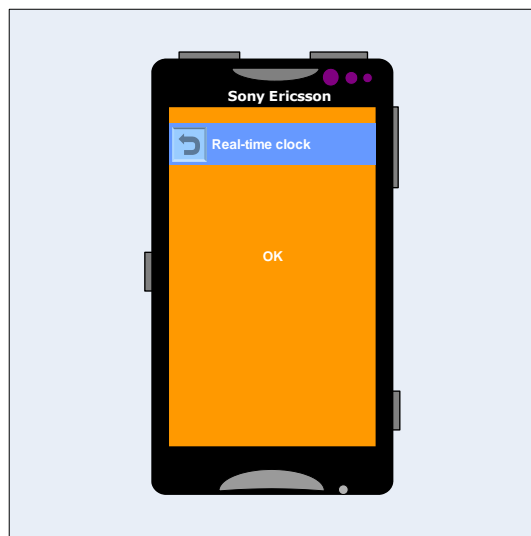


Tests: Service Tests

2.2.13 Real time clock


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

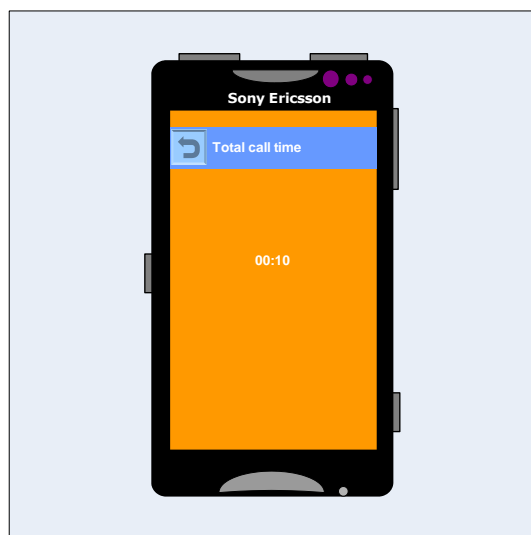
Press  Icon return to Service Test Menu.



2.2.14 Total call time


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

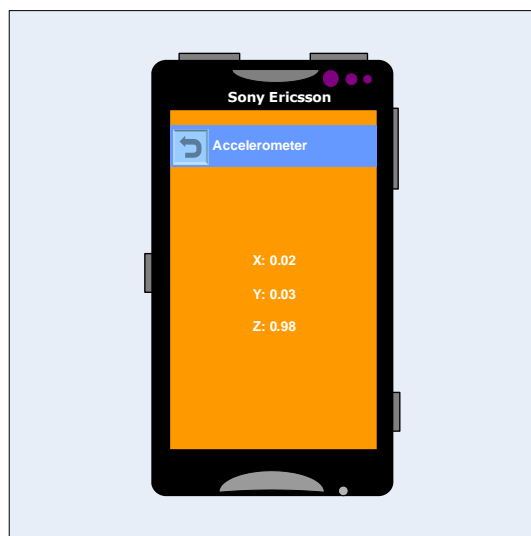
Press  Icon return to Service Test Menu.



2.2.15 Accelerometer

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


Press  Icon return to Service Test Menu.

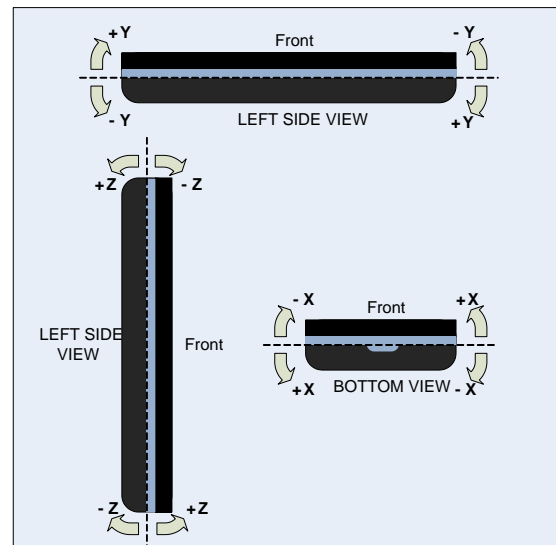


Tests: Service Tests

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  Icon return to Service Test Menu.



2.2.16 WiFi

Make sure there's WLAN network before performing this test.

The Wi-Fi test will be done in following sequences:


Step 1: Drag  to the right until turn on Wi-Fi;


Step 2: Searching Wi-Fi networks;

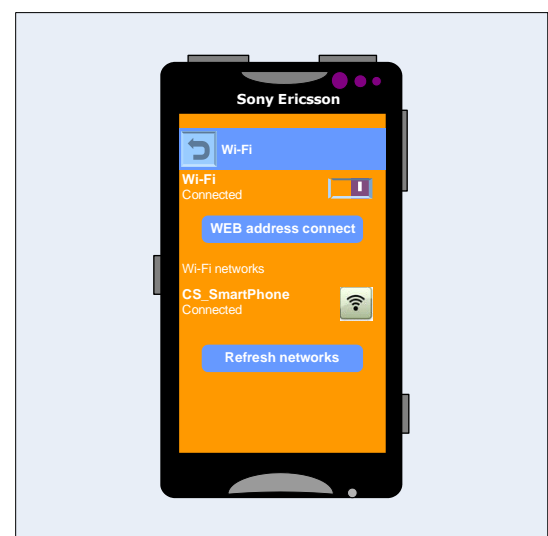
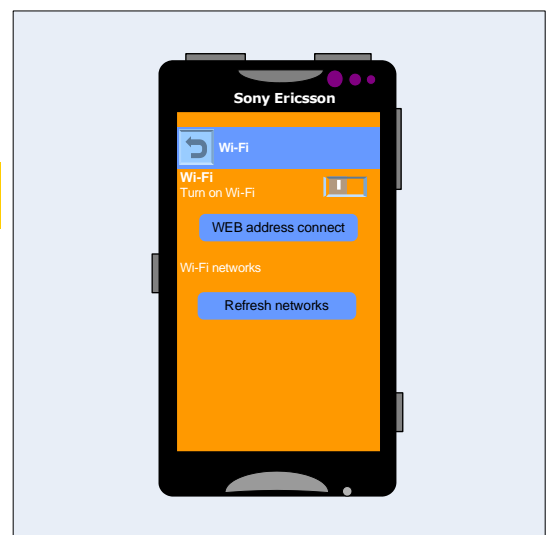
Step 3: Select the Target Wi-Fi network, and input Password to get connection;

Step 4: Enter a web address (ex. google.com);

Step 5: When Connection succeeded, the Wi-Fi function is ok;

Step 6: Drag  to the left until turn off Wi-Fi.

Press  Icon return to Service Test Menu.




Tests: Service Tests

2.2.17 Bluetooth

During this test, the distance between the phone and the target Bluetooth device must be 1.5 to 5 meters!
Make sure the target Bluetooth device is enabled and visible always!


The Bluetooth test will be done in following sequences:

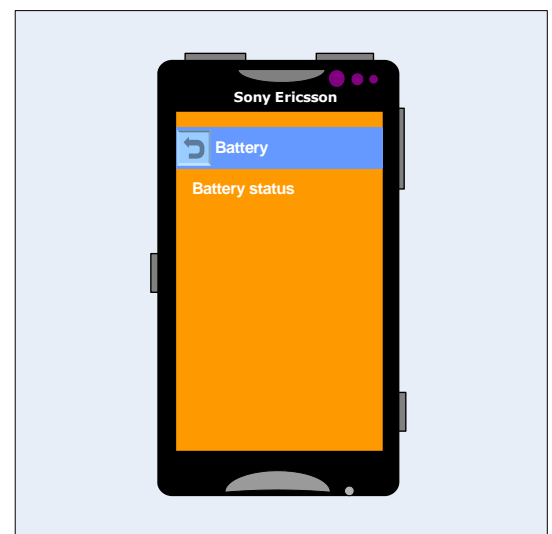
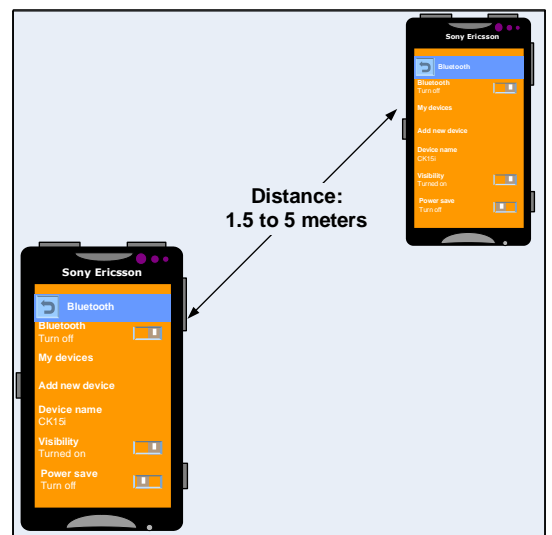
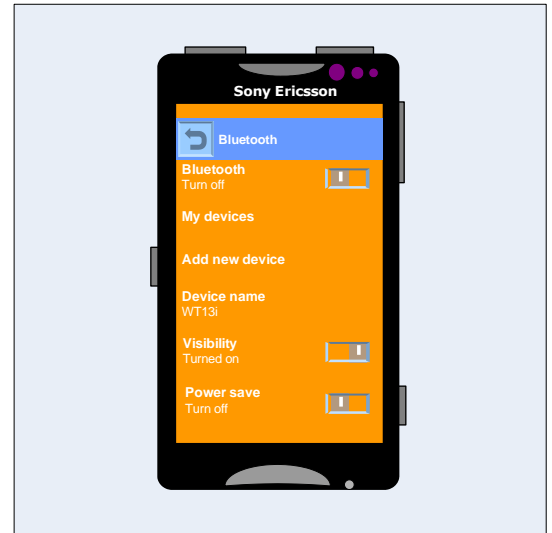
- Step 1: Drag  to the right until turn on Bluetooth;
- Step 2: Select "Add new device", searching devices ;
- Step 3: Select the Target Bluetooth Device, and input PIN code to Pair;

Step 4: Input the Pairing PIN code on Target Bluetooth Device also;

Step 5: if a link can be established, the Bluetooth function is regarded to be fully functional;

Step 6: Drag  to the left until turn off Bluetooth.

Press  Icon return to Service Test Menu.




2.2.18 Battery


Select 'Battery'

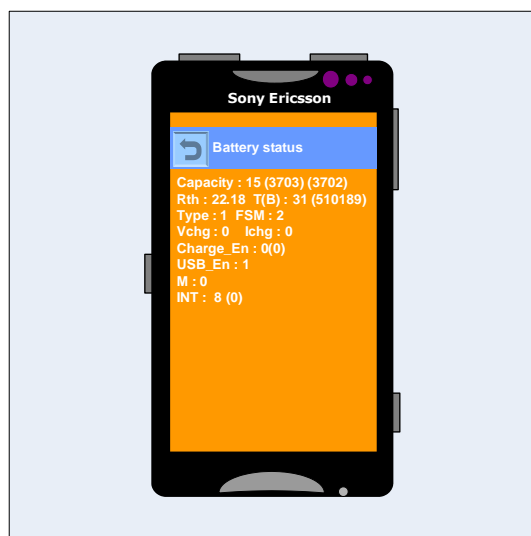
Select 'Battery status'

Tests: Service Tests

The display will show battery status.

Press  Icon return to Battery Test Menu.

Press  Icon return to Service Test Menu.





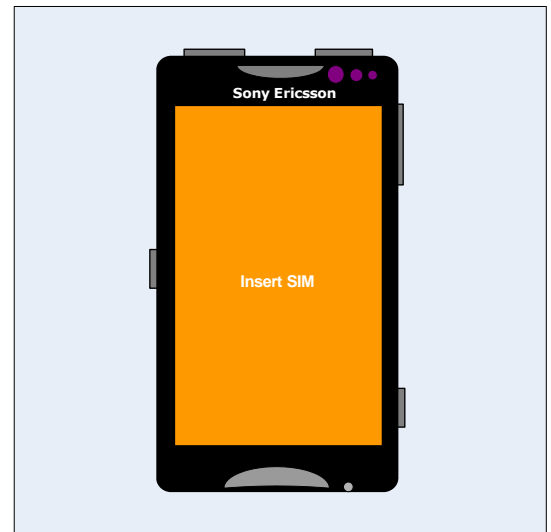
Tests

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

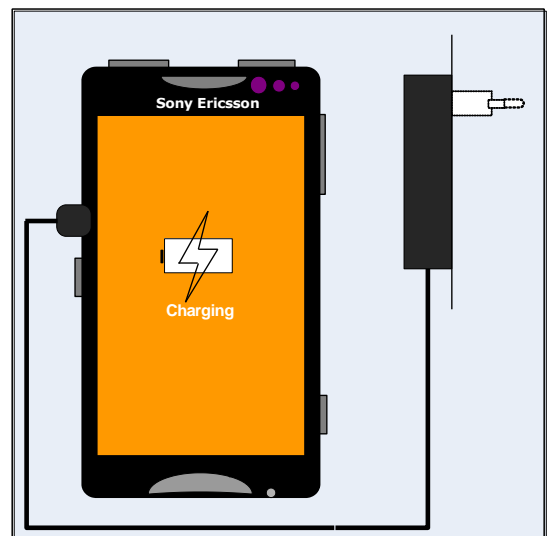


2.3.2 Battery charging

2.3.2.1 Charging by wall charger

Verify that charging of the phone functions properly:

- install a battery but do not start the phone
- connect a wall charger to the Micro USB Connector
- verify that the display shows that the phone is being charged
- remove the charger from the Micro USB Connector and verify that the display no longer indicates charging

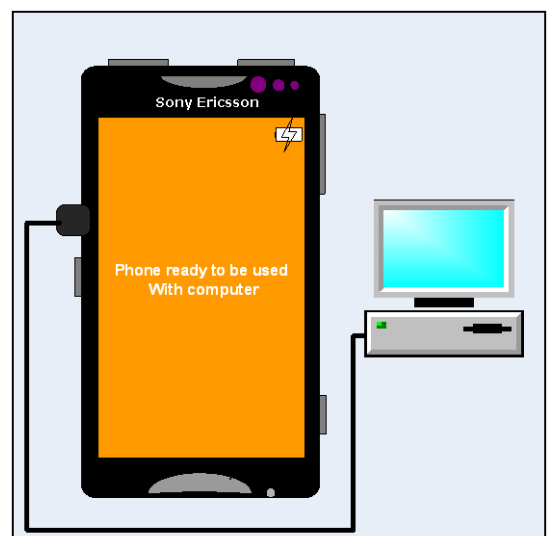


2.3.2.2 Charging via USB

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 ⇒ USB Charging on
- install a battery but do not start the phone
- connect a USB cable from a computer to the Micro USB Connector
- verify that the display shows that the phone is being charged
- remove the USB cable from the Micro USB Connector and verify that the display no longer indicates charging



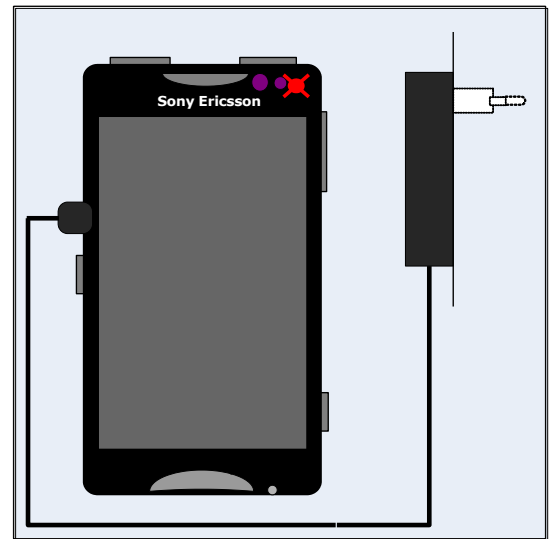


Tests: Manual Tests

2.3.2.3 Pre-Charging test

If the battery voltage becomes such low as below around 3.0v, the Pre-charge LED at upper left corner of the phone will flicker when the charger inserted, which shows the battery is being charged even though the display does not start up to indicate charging.

The Pre-charge LED will turn off once the battery voltage increase to start up the phone and the display indicate charging.



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!

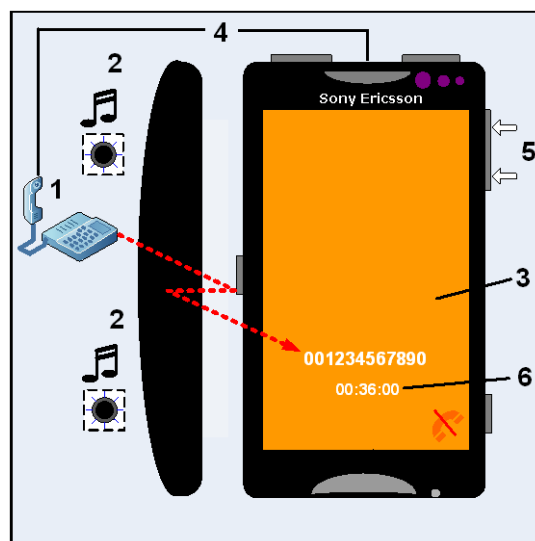
If a UMTS network is available, the network test has to be done separately for GSM and UMTS!

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)

Not Applicable



3 Revision History

Rev.	Date	Changes / Comments
1	2011-Aug-05	Initial release