

## FCC Part 22/24/27 Compliance Test Report

|                                                         |                                                                                                                                                                                                                                                                                                                                                             |                                   |                                                                                                               |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>Test Report no.:</b>                                 | FCC22&24&27_RM-670_02.docx                                                                                                                                                                                                                                                                                                                                  | <b>Date of Report:</b>            | 05-May-2011                                                                                                   |
| <b>Number of pages:</b>                                 | 15                                                                                                                                                                                                                                                                                                                                                          | <b>Customer's Contact person:</b> | Mohammad El-Haj                                                                                               |
| <b>Testing laboratory:</b>                              | TCC Nokia Tampere Laboratory<br>P.O. Box 68<br>Sinitaival 5<br>FIN-33720 TAMPERE, FINLAND<br>Tel. +358 (0) 7180 46800<br>Fax. +358 (0) 7180 46880                                                                                                                                                                                                           | <b>Customer:</b>                  | Nokia Corporation<br>Frederikskaj<br>1790 COPENHAGEN V<br>DENMARK<br>Tel. +45 33 292929<br>Fax. +45 33 292934 |
| <b>FCC listing no.:</b>                                 | 94436                                                                                                                                                                                                                                                                                                                                                       |                                   |                                                                                                               |
| <b>IC recognition no.:</b>                              | 661AK-1                                                                                                                                                                                                                                                                                                                                                     |                                   |                                                                                                               |
| <b>Tested devices/ accessories:</b>                     | <b>Phone RM-670 / Battery BP-5Z, AC charger AC-15E, Headset WH-207, Dummy battery SD-87</b>                                                                                                                                                                                                                                                                 |                                   |                                                                                                               |
| <b>FCC ID:</b>                                          | QTKRM-670                                                                                                                                                                                                                                                                                                                                                   | <b>IC:</b>                        | 661AD-RM670                                                                                                   |
| <b>Supplement reports:</b>                              | -                                                                                                                                                                                                                                                                                                                                                           |                                   |                                                                                                               |
| <b>Testing has been carried out in accordance with:</b> | CFR 47, FCC rules Parts 22, 24 and 27, TIA-603-C-2004 and IC standards RSS-GEN (Issue 2, June 2007), RSS-132 (Issue 2, September 2005), RSS-133 (Issue 5, February 2009) and RSS-139 (Issue 2, February 2009). Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit". |                                   |                                                                                                               |
| <b>Documentation:</b>                                   | The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.                                                                                                        |                                   |                                                                                                               |
| <b>Test Results:</b>                                    | <b>The EUT complies with the requirements in respect of all parameters subject to the test.</b><br>The test results relate only to devices specified in this document.                                                                                                                                                                                      |                                   |                                                                                                               |
| <b>Date and signature for the contents:</b>             |                                                                                                                                                                                                                                                                                                                                                             |                                   |                                                                                                               |

Jari Jantunen, System Manager, EMC

## 1. Summary for FCC Part 22/24/27 Compliance Test Report

|                               |                                                                |
|-------------------------------|----------------------------------------------------------------|
| Date of receipt               | 02-May-2011                                                    |
| Testing completed             | 05-May-2011                                                    |
| The customer's contact person | Mohammad El-Haj                                                |
| Test Plan referred to         | T:\Projects\RM-670\TestPlan\RS_testplan_RM-670_EMC_FCC_SAR.xls |
| Notes                         | -                                                              |
| Document name                 | FCC22&24&27_RM-670_02.docx                                     |

### 1.1. EUT and Accessory Information

The EUT is a 9-band (GSM850/900/1800/1900 and WCDMA Band I/II(1900)/IV(1700)/V(850)/VIII) mobile phone with GPRS, EGPRS, Bluetooth and WLAN. The EUT is tested with maximum rated TX power, modulated with pseudo random bit sequence (PRBS9).

| Product       | Type   | SN                          | HW   | MV | SW           | DUT   |
|---------------|--------|-----------------------------|------|----|--------------|-------|
| Phone         | RM-670 | 004402134474562             | 0250 | -  | 111.001.0206 | 42553 |
| Battery       | BP-5Z  | 3932130524140101823;0670638 | -    | -  | -            | 42555 |
| AC charger    | AC-15E | 4090491015121215591;0675463 | -    | -  | -            | 42556 |
| Headset       | WH-207 | 06949371126A1R31714         | -    | -  | -            | 42557 |
| Dummy battery | SD-87  | JR4107484K20778             | -    | -  | -            | 42558 |

### 1.2. Summary of Test Results

#### GSM 850:

| Section in CFR 47     | Section in RSS-GEN or RSS-132 | Name of the test                           | Result |
|-----------------------|-------------------------------|--------------------------------------------|--------|
| §2.1046(a), 22.913(a) | 4.4                           | Conducted RF output power                  | NP     |
| §22.913(a)            | 4.4                           | Radiated RF output power                   | NP     |
| §2.1049(h)            | 4.6.1                         | 99 % occupied bandwidth                    | PASSED |
| §22.917(a)            | 4.5                           | Band edge compliance                       | NP     |
| §22.917(a), §2.1051   | 4.5                           | Spurious emissions at antenna terminals    | NP     |
| §22.917(a), §2.1053   | 4.5                           | Spurious radiated emissions                | NP     |
| §2.1055(a)            | 4.3                           | Frequency stability, temperature variation | PASSED |
| §2.1055(d)            | 4.3                           | Frequency stability, voltage variation     | PASSED |

#### GSM 1900:

| Section in CFR 47   | Section in RSS-GEN or RSS-133 | Name of the test                           | Result |
|---------------------|-------------------------------|--------------------------------------------|--------|
| §2.1046(a)          | 6.4                           | Conducted RF output power                  | NP     |
| §24.232(b)          | 6.4                           | Radiated RF output power                   | NP     |
| §2.1049(h)          | 4.6.1                         | 99 % occupied bandwidth                    | PASSED |
| §24.238(a)          | 6.5                           | Band edge compliance                       | NP     |
| §24.238(a), §2.1051 | 6.5                           | Spurious emissions at antenna terminals    | NP     |
| §24.238(a), §2.1053 | 6.5                           | Spurious radiated emissions                | NP     |
| §2.1055(a)          | 6.3                           | Frequency stability, temperature variation | PASSED |
| §2.1055(d)          | 6.3                           | Frequency stability, voltage variation     | PASSED |

**WCDMA 850 (Band V):**

| Section in CFR 47     | Section in <i>RSS-GEN</i> or <i>RSS-132</i> | Name of the test                           | Result |
|-----------------------|---------------------------------------------|--------------------------------------------|--------|
| §2.1046(a), 22.913(a) | 4.4                                         | Conducted RF output power                  | NP     |
| §22.913(a)            | 4.4                                         | Radiated RF output power                   | NP     |
| §2.1049(h)            | 4.6.1                                       | 99 % occupied bandwidth                    | PASSED |
| §22.917(a)            | 4.5                                         | Band edge compliance                       | NP     |
| §22.917(a), §2.1051   | 4.5                                         | Spurious emissions at antenna terminals    | NP     |
| §22.917(a), §2.1053   | 4.5                                         | Spurious radiated emissions                | NP     |
| §2.1055(a)            | 4.3                                         | Frequency stability, temperature variation | NP     |
| §2.1055(d)            | 4.3                                         | Frequency stability, voltage variation     | NP     |

**WCDMA 1700 (Band IV):**

| Section in CFR 47  | Section in <i>RSS-GEN</i> or <i>RSS-139</i> | Name of the test                           | Result |
|--------------------|---------------------------------------------|--------------------------------------------|--------|
| §2.1046(a)         | 6.4                                         | Conducted RF output power                  | NP     |
| §27.50(d)(2)       | 6.4                                         | Radiated RF output power                   | NP     |
| §2.1049(h)         | 4.6.1                                       | 99 % occupied bandwidth                    | PASSED |
| §27.53(g)          | 6.5                                         | Band edge compliance                       | NP     |
| §27.53(g), §2.1051 | 6.5                                         | Spurious emissions at antenna terminals    | NP     |
| §27.53(g), §2.1053 | 6.5                                         | Spurious radiated emissions                | NP     |
| §2.1055(a)         | 6.3                                         | Frequency stability, temperature variation | PASSED |
| §2.1055(d)         | 6.3                                         | Frequency stability, voltage variation     | PASSED |

**WCDMA 1900 (Band II):**

| Section in CFR 47   | Section in <i>RSS-GEN</i> or <i>RSS-133</i> | Name of the test                           | Result |
|---------------------|---------------------------------------------|--------------------------------------------|--------|
| §2.1046(a)          | 6.4                                         | Conducted RF output power                  | NP     |
| §24.232(b)          | 6.4                                         | Radiated RF output power                   | NP     |
| §2.1049(h)          | 4.6.1                                       | 99 % occupied bandwidth                    | PASSED |
| §24.238(a)          | 6.5                                         | Band edge compliance                       | NP     |
| §24.238(a), §2.1051 | 6.5                                         | Spurious emissions at antenna terminals    | NP     |
| §24.238(a), §2.1053 | 6.5                                         | Spurious radiated emissions                | NP     |
| §2.1055(a)          | 6.3                                         | Frequency stability, temperature variation | NP     |
| §2.1055(d)          | 6.3                                         | Frequency stability, voltage variation     | NP     |

PASSED

The EUT complies with the essential requirements in the standard.

FAILED

The EUT does not comply with the essential requirements in the standard.

NP

The test was not performed by the TCC Nokia Tampere Laboratory.

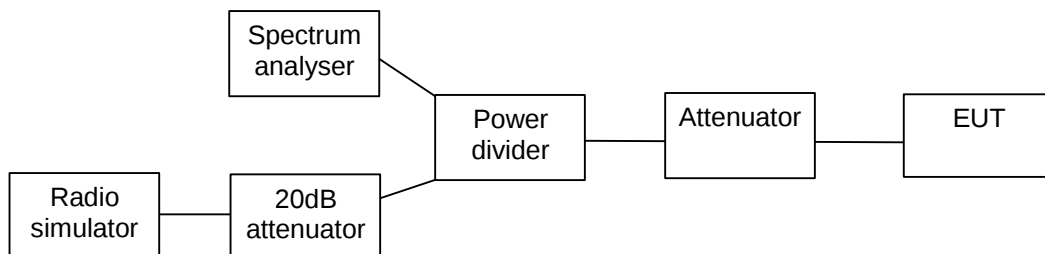
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### 3. 99 % occupied bandwidth (FCC §2.1049(h), RSS-GEN 4.6.1)

|                                                 |                  |
|-------------------------------------------------|------------------|
| EUT with DUT number                             | RM-670 DUT 42553 |
| Accessories with DUT numbers                    | BP-5Z DUT 42555  |
| Operation Voltage [V] / [Hz]                    | Nominal          |
| Result                                          | PASSED           |
| Remarks                                         | -                |
| Temp [°C] / Humidity [%RH] / Air Pressure [kPa] | 22 / 62 / 99.8   |
| Date of measurements                            | 04-May-2011      |
| Measured by                                     | Jari Jantunen    |

#### 3.1. Test setup



#### 3.2. Test method and limit

The measurement is made according to FCC rules parts 22, 24 and 27 and IC standard RSS-GEN.

| Operation mode (TX on) | 99% occupied bandwidth [kHz] |
|------------------------|------------------------------|
| GSM                    | 240.385                      |
| EGPRS                  | 246.795                      |

RBW 3 kHz  
 VBW 3 kHz  
 SWT 200 ms

Marker 1 [T1]  
 24.21 dBm  
 836.582371795 MHz

Ref 30 dBm  
 Att 50 dB

30  
 20  
 10  
 0  
 -10  
 -20  
 -30  
 -40  
 -50  
 -60  
 -70

836.582371795 MHz  
 836.479804692 MHz  
 836.720192308 MHz

ORW240.38461385 kHz  
 Temp 1 [T1 ORW]  
 4.71 dBm  
 Temp 2 [T1 ORW]  
 4.33 dBm

SWP 100 dB 100

Center 836.6 MHz  
 100 kHz/  
 Span 1 MHz

Ref 30 dBm Att 50 dB RBW 3 kHz VBW 3 kHz SWT 200 ms Marker 1 [T1] 15.03 dBm 836.604807692 MHz

30  
20  
10  
0  
-10  
-20  
-30  
-40  
-50  
-60  
-70

836.46794874795 kHz  
Temp 1 [T1 ORW] -5.97 dBm  
836.476602564 MHz  
Temp 2 [T1 ORW] -5.97 dBm  
836.723397436 MHz

SWR 100 0.2 100

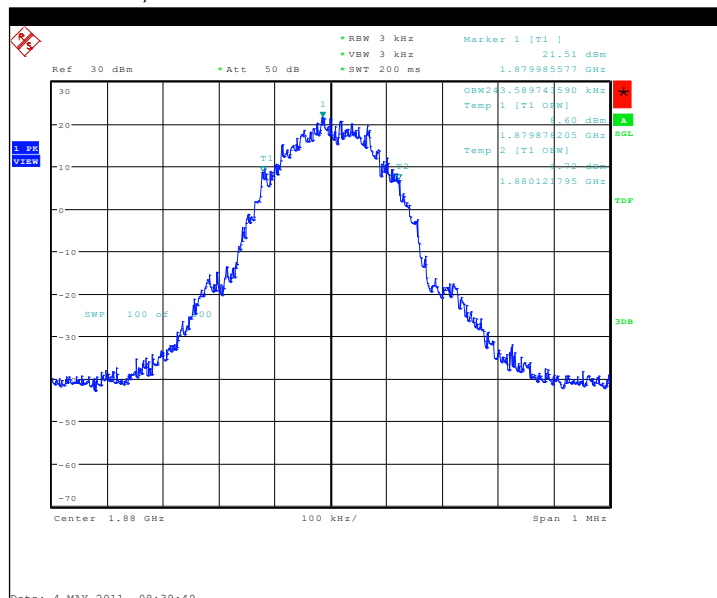
Center 836.6 MHz 100 kHz/ Span 1 MHz

Date: 4 MAY 2011 08:50:15

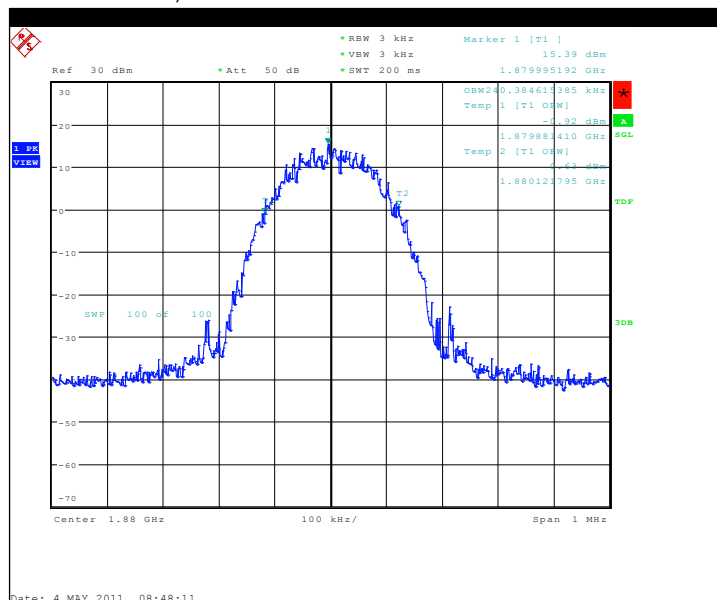
### 3.4. GSM 1900 Test results

| Operation mode (TX on) | 99% occupied bandwidth [kHz] |
|------------------------|------------------------------|
| GSM                    | 243.590                      |
| EGPRS                  | 240.385                      |

GSM mode, channel 661 / 1880.0 MHz



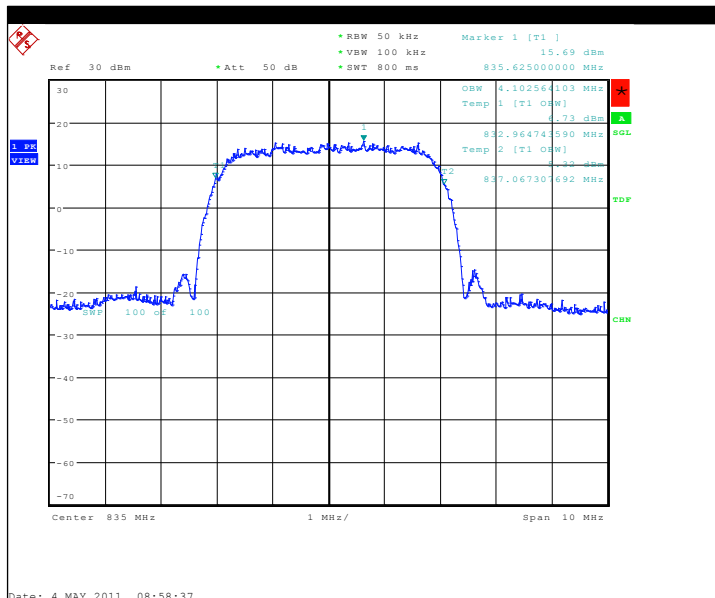
EGPRS mode, channel 661 / 1880.0 MHz



### 3.5. WCDMA 850 Test results

| Operation mode (TX on) | 99% occupied bandwidth [kHz] |
|------------------------|------------------------------|
| FDD                    | 4102.564                     |

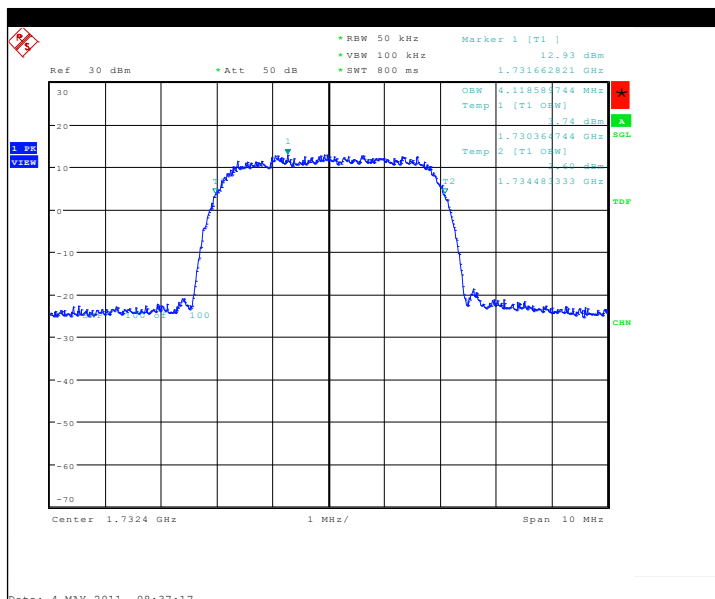
Channel 4175 / 835.0 MHz



### 3.6. WCDMA 1700 Test results

| Operation mode (TX on) | 99% occupied bandwidth [kHz] |
|------------------------|------------------------------|
| FDD                    | 4118.590                     |

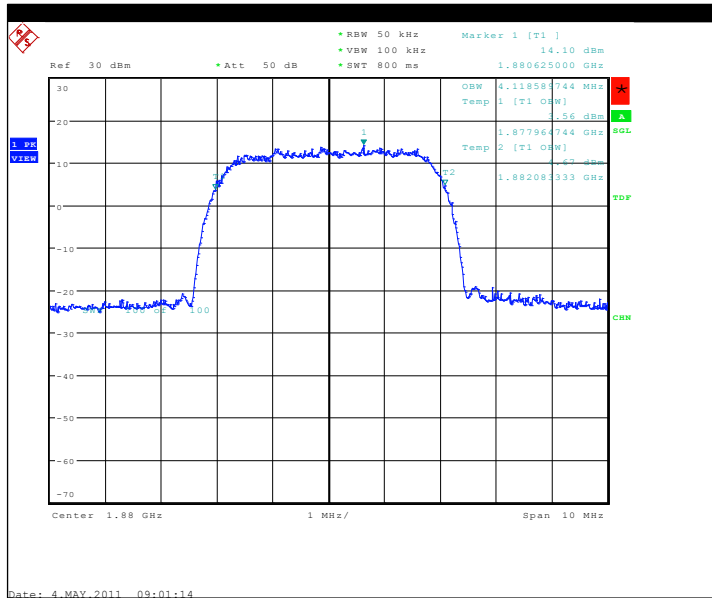
Channel 1412 / 1732.4 MHz



### 3.7. WCDMA 1900 Test results

| Operation mode (TX on) | 99% occupied bandwidth [kHz] |
|------------------------|------------------------------|
| FDD                    | 4118.590                     |

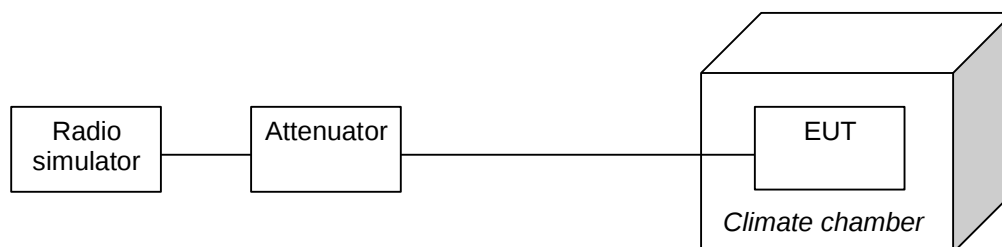
Channel 9400 / 1880.0 MHz



## 5. Frequency stability, temperature variation (FCC §2.1055(a), RSS-132 4.3, RSS-133 6.3, RSS-139 6.3)

|                                                 |                                                     |
|-------------------------------------------------|-----------------------------------------------------|
| EUT with DUT number                             | RM-670 DUT 42553                                    |
| Accessories with DUT numbers                    | BP-5Z DUT 42555, AC-15E DUT 42556, WH-207 DUT 42557 |
| Operation Voltage [V] / [Hz]                    | 230 / 50                                            |
| Result                                          | PASSED                                              |
| Remarks                                         | -                                                   |
| Temp [°C] / Humidity [%RH] / Air Pressure [kPa] | 21-22 / 60-62 / 99.7-99.9                           |
| Date of measurements                            | 02.. 04-May-2011                                    |
| Measured by                                     | Jari Jantunen                                       |

### 5.1. Test setup



### 5.2. Test method and limit

The measurement is made according to FCC rules parts 22, 24 and 27 and IC standards RSS-132, RSS-133 and RSS-139 as follows:

The climate chamber temperature is set to the maximum value and the temperature is allowed to stabilize. The EUT is placed in the chamber.

The EUT is set in idle mode for 15 minutes.

The EUT is set to transmit.

The transmit frequency error was measured immediately.

The steps c - e were repeated for each temperature.

Limits for frequency stability, temperature variation measurements

| Frequency deviation [ppm] |
|---------------------------|
| ± 2.5                     |

### 5.3. GSM 850 Test results

GSM mode, channel 190 / 836.6 MHz

| Temperature [°C] | Deviation [Hz] | Deviation [ppm] |
|------------------|----------------|-----------------|
| 50               | -25            | - 0.0299        |
| 40               | -14            | - 0.0167        |
| 30               | -18            | - 0.0215        |
| 20               | -18            | - 0.0215        |
| 10               | -21            | - 0.0251        |
| 0                | -16            | - 0.0191        |
| -10              | -24            | - 0.0287        |
| -20              | -42            | - 0.0502        |

\*Phone switched off at -22 °C

### 5.4. GSM 1900 Test results

GSM mode, channel 661 / 1880.0 MHz

| Temperature [°C] | Deviation [Hz] | Deviation [ppm] |
|------------------|----------------|-----------------|
| 50               | -20            | - 0.0106        |
| 40               | -22            | - 0.0117        |
| 30               | -21            | - 0.0112        |
| 20               | -32            | - 0.0170        |
| 10               | -26            | - 0.0138        |
| 0                | -31            | - 0.0165        |
| -10              | -47            | - 0.0250        |
| -20              | -48            | - 0.0255        |
| -22              | -65            | - 0.0346        |

\*Phone switched off at -24 °C

### 5.5. WCDMA 1700 Test results

Channel 1412 / 1732.4 MHz

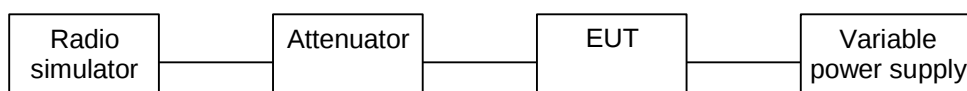
| Temperature [°C] | Deviation [Hz] | Deviation [ppm] |
|------------------|----------------|-----------------|
| 50               | -1             | - 0.0006        |
| 40               | 10             | 0.0058          |
| 30               | 6              | 0.0035          |
| 20               | -8             | - 0.0046        |
| 10               | -6             | - 0.0035        |
| 0                | -3             | - 0.0017        |
| -10              | 5              | 0.0029          |
| -20              | -13            | - 0.0075        |

\*Phone switched off at -22 °C

## 6. Frequency stability, voltage variation (FCC §2.1055(d), RSS-132 4.3, RSS-133 6.3, RSS-139 6.3)

|                                                 |                     |
|-------------------------------------------------|---------------------|
| EUT with DUT number                             | RM-670 DUT 42553    |
| Accessories with DUT numbers                    | SD-87 DUT 42558     |
| Operation Voltage [V] / [Hz]                    | 3.7 VDC and 3.5 VDC |
| Result                                          | PASSED              |
| Remarks                                         | -                   |
| Temp [°C] / Humidity [%RH] / Air Pressure [kPa] | 22 / 62 / 99.8      |
| Date of measurements                            | 04-May-2011         |
| Measured by                                     | Jari Jantunen       |

### 6.1. Test setup



### 6.2. Test method and limit

The measurement is made according to FCC rules parts 22, 24 and 27 and IC standards RSS-132, RSS-133 and RSS-139 as follows:

The EUT battery was replaced with an adjustable power supply. The frequency stability was measured at nominal voltage and at the battery cut-off point.

Limits for frequency stability, voltage variation measurements

| Frequency deviation [ppm] |
|---------------------------|
| ± 2.5                     |

### 6.3. GSM 850 Test results

GSM mode, channel 190 / 836.6 MHz

| Voltage level [V]            | Deviation [Hz] | Deviation [ppm] |
|------------------------------|----------------|-----------------|
| Battery cut-off point / 3.50 | -15            | - 0.0179        |
| Nominal / 3.70               | -20            | - 0.0239        |

### 6.4. GSM 1900 Test results

GSM mode, channel 661 / 1880.0 MHz

| Voltage level [V]            | Deviation [Hz] | Deviation [ppm] |
|------------------------------|----------------|-----------------|
| Battery cut-off point / 3.50 | -27            | - 0.0144        |
| Nominal / 3.70               | -22            | - 0.0117        |

### 6.5. WCDMA 1700 Test results

Channel 1412 / 1732.4 MHz

| Voltage level [V]            | Deviation [Hz] | Deviation [ppm] |
|------------------------------|----------------|-----------------|
| Battery cut-off point / 3.50 | 12             | 0.0069          |
| Nominal / 3.70               | 11             | 0.0063          |

## 7. Test Equipment

### 7.1. Conducted measurements

| Eq. No      | Equipment                           | Type      | Manufacturer | Used in            |
|-------------|-------------------------------------|-----------|--------------|--------------------|
| TM38112     | Power supply                        | 6632A     | Agilent      | 22/24/27, 15C      |
| TM38631     | Signal Generator                    | 83640L    | Agilent      | 22/24/27, 15C, 15B |
| OM0631<br>2 | Signal Generator                    | E4422B    | Agilent      | 22/24              |
| TM37678     | Communication Tester                | CMU200    | R&S          | 22/24/27, 15C, 15B |
| TM37773     | Communication Tester                | CMU200    | R&S          | 22/24/27, 15C, 15B |
| TM30600     | Impulse limiter                     | ESH3-Z2   | R&S          | 15C, 15B           |
| TM26490     | LISN 50 $\mu$ H                     | ESH3-Z5   | R&S          | 15C, 15B           |
| TM26491     | LISN 50 $\mu$ H                     | ESH3-Z5   | R&S          | 15C, 15B           |
| TM37610     | Spectrum Analyzer                   | FSU26     | R&S          | 22/24/27, 15C      |
| TM22806     | Battery                             | BAT 20/E  | Fiskars      | 15C, 15B           |
| TM22805     | UPS                                 | PS 20/1.2 | Fiskars      | 15C, 15B           |
| -           | Temperature and humidity logger     | 175-H2    | Testo        | 15C, 15B           |
| -           | Temperature and humidity logger     | 175-H2    | Testo        | 22/24/27, 15C      |
| -           | Air pressure and temperature logger | 635-2     | Testo        | 22/24/27, 15C, 15B |
| -           | Air pressure sensor                 | 0638-1835 | Testo        | 22/24/27, 15C, 15B |
| -           | Temperature test chamber            | VT 4002   | Vötsch       | 22/24              |
| 2058        | Receiver                            | ESPC      | R&S          | 15C, 15B           |
| 2001        | Bluetooth tester                    | CBT       | R&S          | 22/24/27, 15C, 15B |
| 2002        | Communication Tester                | CMU200    | R&S          | 22/24/27           |
| 2009        | LISN 50 $\mu$ H                     | ENV216    | R&S          | 15C, 15B           |
| 2010        | LISN 50 $\mu$ H                     | ENV216    | R&S          | 15C, 15B           |
| 2012        | Power splitter                      | 11667B    | Agilent      | 22/24/27, 15C      |
| 2013        | Attenuator                          | 8493C     | Agilent      | 22/24/27, 15C      |
| 2014        | Attenuator                          | 8493C     | Agilent      | 22/24/27, 15C      |

### 7.2. Radiated measurements

| Eq. No  | Equipment                           | Type            | Manufacturer   | Used in            |
|---------|-------------------------------------|-----------------|----------------|--------------------|
| TM38114 | Power supply                        | 6632A           | Agilent        | 22/24/27, 15C, 15B |
| TM38631 | Signal Generator                    | 83640L          | Agilent        | 22/24/27, 15C, 15B |
| TM38323 | Preamplifier                        | PA-02 18-26 GHz | EMC Automation | 22/24/27, 15C, 15B |
| -       | Antenna                             | BBHA 9120 D     | Schwarzbeck    | 22/24/27, 15C      |
| TM26497 | Antenna                             | 3115            | Emco           | 22/24/27, 15C, 15B |
| TM37678 | Communication Tester                | CMU200          | R&S            | 22/24/27, 15C, 15B |
| TM37773 | Communication Tester                | CMU200          | R&S            | 22/24/27, 15C, 15B |
| TM38845 | Receiver                            | ESIB 26         | R&S            | 22/24/27, 15C, 15B |
| -       | Antenna                             | HL562           | R&S            | 22/24/27, 15C, 15B |
| TM26500 | Turntable                           | DS412           | Deisel         | 22/24/27, 15C, 15B |
| TM30642 | Mast/turntable controller           | HD-100          | Deisel         | 22/24/27, 15C, 15B |
| TM38990 | Remote switching module             | RSM1            | EMC Automation | 22/24/27, 15C, 15B |
| TM38341 | System interface                    | SI-300          | EMC Automation | 22/24/27, 15C, 15B |
| -       | Mini mast                           | 2075-2          | ETS Lindgren   | 22/24/27, 15C, 15B |
| TM38843 | Mini mast                           | 2075            | Emco           | 22/24/27, 15C, 15B |
| TM38842 | Controller                          | 2090            | Emco           | 22/24/27, 15C, 15B |
| TM39158 | Antenna                             | 3116            | Emco           | 22/24/27, 15C, 15B |
| TM30643 | LISN 50 $\mu$ H                     | LISN-5-20-2     | FCC            | 22/24/27, 15C, 15B |
| TM30644 | LISN 50 $\mu$ H                     | LISN-5-20-2     | FCC            | 22/24/27, 15C, 15B |
| -       | Temperature and humidity logger     | 175-H2          | Testo          | 22/24/27, 15C, 15B |
| -       | Air pressure and temperature logger | 635-2           | Testo          | 22/24/27, 15C, 15B |

| Eq. No  | Equipment             | Type                                   | Manufacturer    | Used in            |
|---------|-----------------------|----------------------------------------|-----------------|--------------------|
| -       | Air pressure sensor   | 0638-1835                              | Testo           | 22/24/27, 15C, 15B |
| TM39180 | Laser distance meter  | Disto Pro                              | Leica           | 22/24/27, 15C, 15B |
| TM37523 | Preamplifier          | AMF-4D-10M-3G-25-20P                   | Miteq           | 22/24/27, 15C, 15B |
| -       | Preamplifier          | AFS4-00100300-20-23P6                  | Miteq           | 15C                |
| TM37498 | Preamplifier          | AMF-5D-020180-26-10P                   | Miteq           | 22/24/27, 15C, 15B |
| TM30599 | Semi anechoic chambre | UNKNOWN                                | TDK             | 22/24/27, 15C, 15B |
| TM22638 | Power supply          | OL63743-901                            | Torqueleader    | 22/24/27, 15C, 15B |
| TM38066 | High pass filter      | 4HC3000/18000-3-KK                     | Trilithic       | 22/24/27, 15C, 15B |
| TM26511 | Tunable notch filter  | WRCA870/                               | Wainwright      | 27                 |
| TM38215 | Band reject filter    | WRCD 1920/1980-1918/1982-40/20         | Wainwright UMTS | 27                 |
| TM38214 | Band reject filter    | WRCT 2402/2480-2400/2483.5-30/         | Wainwright ISM  | 15C                |
| -       | Band reject filter    | WRCG1877/1883-1870/1890-40/6EE         | Wainwright      | 27                 |
| -       | Band reject filter    | WRCG1729.4/1735.4-1722.4/1742.4-40/6SS | Wainwright      | 27                 |
| -       | Band reject filter    | WRCG832/838-825/848-40/5SS             | Wainwright      | 27                 |
| TM23892 | Controller            | G-1000SDX                              | Yaesu           | 22/24/27           |
| 2001    | Bluetooth tester      | CBT                                    | R&S             | 22/24/27, 15C, 15B |
| -       | Antenna               | SBA 9113                               | Schwarzbeck     | 22/24/27           |
| 6023    | Antenna               | VUBA 9117                              | Schwarzbeck     | 22/24/27, 15C      |