

## FCC Part 15C Compliance Test Report

|                                                         |                                                                                                                                                                                                                                                                                                             |                                   |                                                                                                                                                                                       |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Report no.:</b>                                 | FCC15C_RM-697_17.docx                                                                                                                                                                                                                                                                                       | <b>Date of Report:</b>            | 17-Sep-2010                                                                                                                                                                           |
| <b>Number of pages:</b>                                 | 8                                                                                                                                                                                                                                                                                                           | <b>Customer's Contact person:</b> | Mohammad El-Haj                                                                                                                                                                       |
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| <b>FCC listing no.:</b>                                 | 99059                                                                                                                                                                                                                                                                                                       |                                   |                                                                                                                                                                                       |
| <b>IC recognition no.:</b>                              | 661AL-1                                                                                                                                                                                                                                                                                                     |                                   |                                                                                                                                                                                       |
| <b>Tested devices/ accessories:</b>                     | <b>Phone RM-697 / Battery BL-4U / AC-Charger AC-8E / Headset WH-102</b>                                                                                                                                                                                                                                     |                                   |                                                                                                                                                                                       |
| <b>FCC ID:</b>                                          | QTKRM-697                                                                                                                                                                                                                                                                                                   | <b>IC:</b>                        |                                                                                                                                                                                       |
| <b>Supplement reports:</b>                              | -                                                                                                                                                                                                                                                                                                           |                                   |                                                                                                                                                                                       |
| <b>Testing has been carried out in accordance with:</b> | <b>CFR 47, FCC rules Part 15 Subpart C, ANSI C63.4 (2003), Public Notice DA 00-705, DTS procedures KDB 558074, IC standards, RSS-210 (Issue 7, June 2007). Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".</b> |                                   |                                                                                                                                                                                       |
| <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>             |                                                                                                                                                                                                                                                                                                             |                                   |                                                                                                                                                                                       |

**Ruben Hansen, System Manager, EMC**

## 1. Summary for FCC Part 15C Compliance Test Report

|                               |                                                                 |
|-------------------------------|-----------------------------------------------------------------|
| Date of receipt               | 31-Aug-2010                                                     |
| Testing completed             | 17-Sep-2010                                                     |
| The customer's contact person | 09-Oct-10                                                       |
| Test Plan referred to         | T:\Projects\RM-697\TestPlan\RS_testplan_RM-697_EMC_FCC_SAR.xls  |
| Notes                         | -                                                               |
| Document name                 | \\satcc01nmp\tcc_salo\Projects\RM-697\EMC\FCC15C_RM-697_17.docx |

### 1.1. EUT and Accessory Information

The EUT is a 7-band (GSM850/900/1800/1900) and WCDMA Band (I/II(1900)/VIII) mobile phone with GPRS, EGPRS, HSDPA, HSUPA and WLAN and Bluetooth. Bluetooth and WLAN are tested with maximum rated TX power.

| Product    | Type   | SN                          | HW   | MV | SW      | DUT   |
|------------|--------|-----------------------------|------|----|---------|-------|
| Phone      | RM-697 | 004402/13/108361/4          | 2200 | -  | 0.0.109 | 24092 |
| Battery    | BL-4U  | 4955400203010405902;0670560 | -    | -  | -       | 24084 |
| AC-Charger | AC-8E  | 4868670162510602628;0675387 | -    | -  | -       | 24078 |
| Headset    | WH-102 |                             |      |    |         | 24079 |

### 1.2. Summary of Test Results

#### WLAN:

| Section in CFR 47 | Section in RSS-GEN or RSS-210 | Name of the test                     | Result |
|-------------------|-------------------------------|--------------------------------------|--------|
| 15.247(b)(1)      | A8(0.4(4))                    | Conducted peak output power          | NP     |
| 15.247(d)         | A8(0.5)                       | Band edge compliance of RF emissions | PASSED |
| 15.247(d)         | A8(0.5)                       | Spurious RF conducted emissions      | NP     |
| 15.247(d), 15.209 | A8(0.5)                       | Spurious radiated emissions          | NP     |
| 15.207            | 7.2.2                         | AC powerline conducted emissions     | NP     |
| 15.247(a)(2)      | A8(0.1(1))                    | 6dB(bandwidth)                       | NP     |
|                   |                               | Power spectral density               | NP     |

PASSED  
FAILED  
NP

The EUT complies with the essential requirements in the standard.  
The EUT does not comply with the essential requirements in the standard.  
The test was not performed by the TCC Nokia Laboratory.

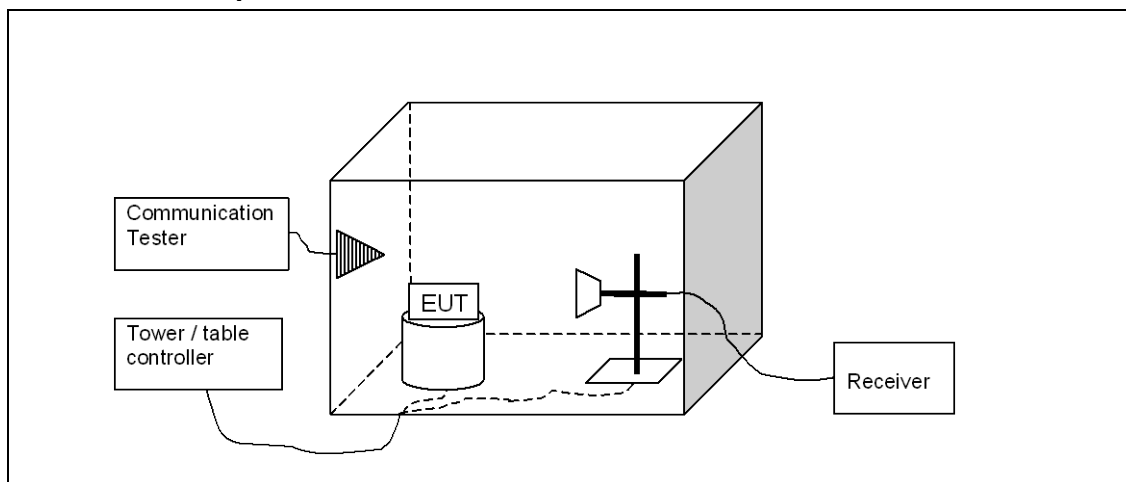
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## 2. Band edge compliance of RF emissions (FCC §15.247(d), RSS-210 A8.5)

|                                                        |                                                       |
|--------------------------------------------------------|-------------------------------------------------------|
| <b>EUT with DUT number</b>                             | RM-697, DUT 24092                                     |
| <b>Accessories with DUT numbers</b>                    | BL-4U, DUT 24084 ; AC-8E, DUT 24078 ;WH-102 DUT 24079 |
| <b>Operation Voltage [V] / [Hz]</b>                    | 115V / 60Hz                                           |
| <b>Results</b>                                         | PASSED                                                |
| <b>Remarks</b>                                         | None                                                  |
| <b>Temp [°C] / Humidity [%RH] / Air Pressure [kPa]</b> | 23 / 42 / 1018                                        |
| <b>Date of measurements</b>                            | 17-Sep-2010                                           |
| <b>Measured by</b>                                     | Ruben Hansen                                          |

### 2.1.1 Test Setup



## 2.2. Test method and limit

The measurement is made according to DTS procedures KDB 558074 and IC standard RSS-210.

Limits for band edge compliance of RF emissions measurements (3 m measurement distance)

| Frequency range [MHz]       | Limit Average [dBμV/m] | Limit Peak [dBμV/m] |
|-----------------------------|------------------------|---------------------|
| Below 2390 and above 2483.5 | <=54                   | <=74                |

## 2.3. WLAN Test results

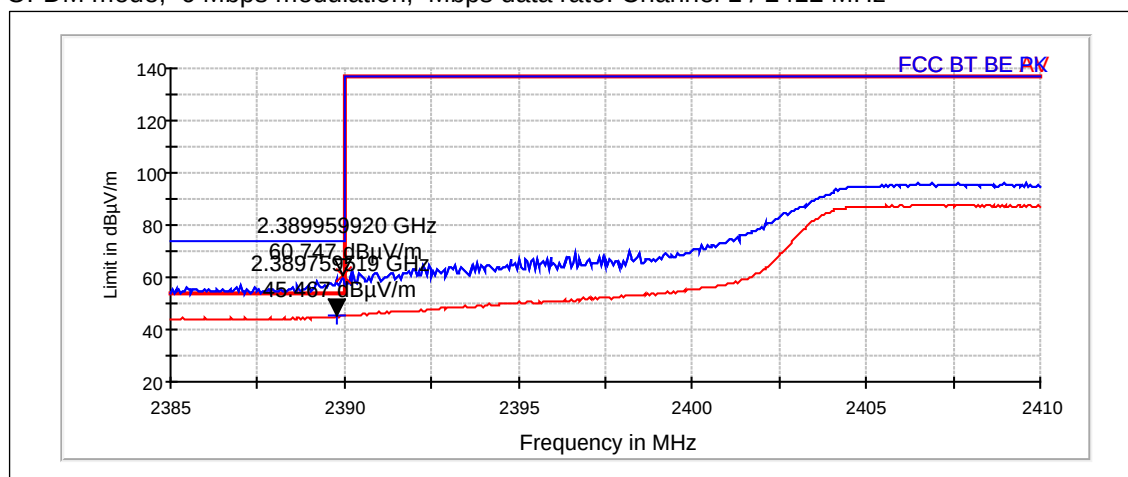
Average (RBW: 1 MHz, VBW: 1 MHz)

| Channel / $f_c$ [MHz]     | E [dB $\mu$ V/m] | Result |
|---------------------------|------------------|--------|
| 1 / 2412 (OFDM, 6 Mbps)   | 45.47            | PASSED |
| 11 / 2462 (OFDM, 6 Mbps)  | 45.26            | PASSED |
| 11 / 2462 (DSSS, 11 Mbps) | 45.26            | PASSED |
| 1 / 2412 (DSSS, 11 Mbps)  | 44.8             | PASSED |

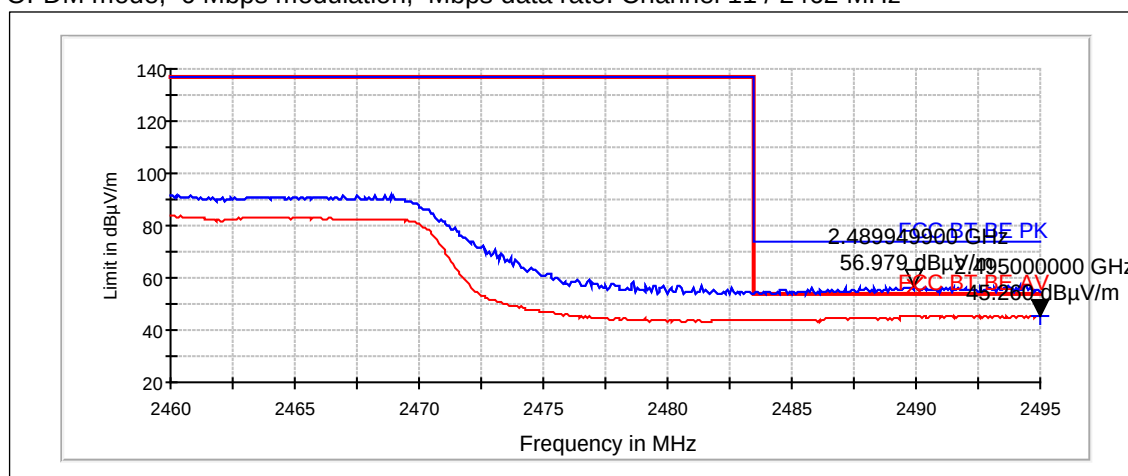
Peak (RBW: 1 MHz, VBW: 1 MHz)

| Channel / $f_c$ [MHz]     | E [dB $\mu$ V/m] | Result |
|---------------------------|------------------|--------|
| 1 / 2412 (OFDM, 6 Mbps)   | 60.75            | PASSED |
| 11 / 2462 (OFDM, 6 Mbps)  | 56.98            | PASSED |
| 11 / 2462 (DSSS, 11 Mbps) | 57.43            | PASSED |
| 1 / 2412 (DSSS, 11 Mbps)  | 57.6             | PASSED |

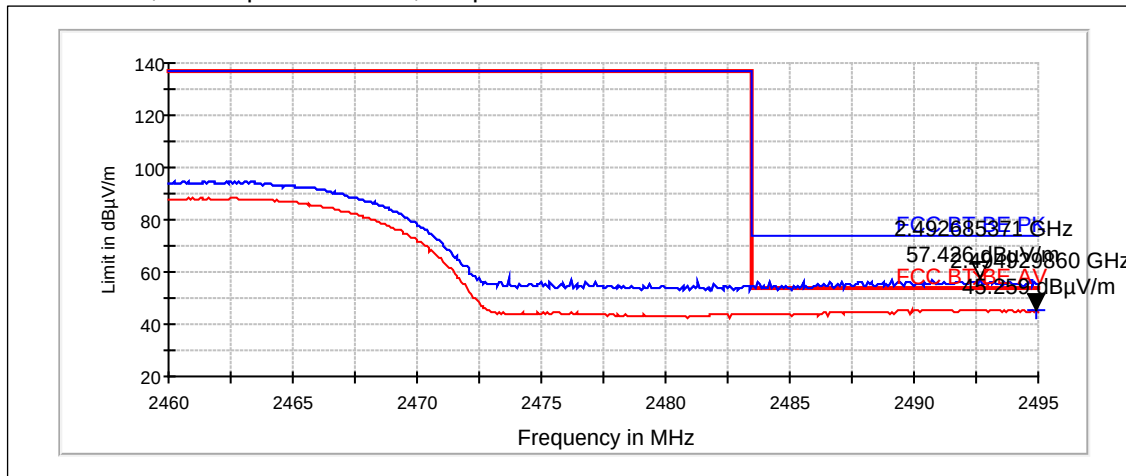
OFDM mode, 6 Mbps modulation, Mbps data rate. Channel 1 / 2412 MHz



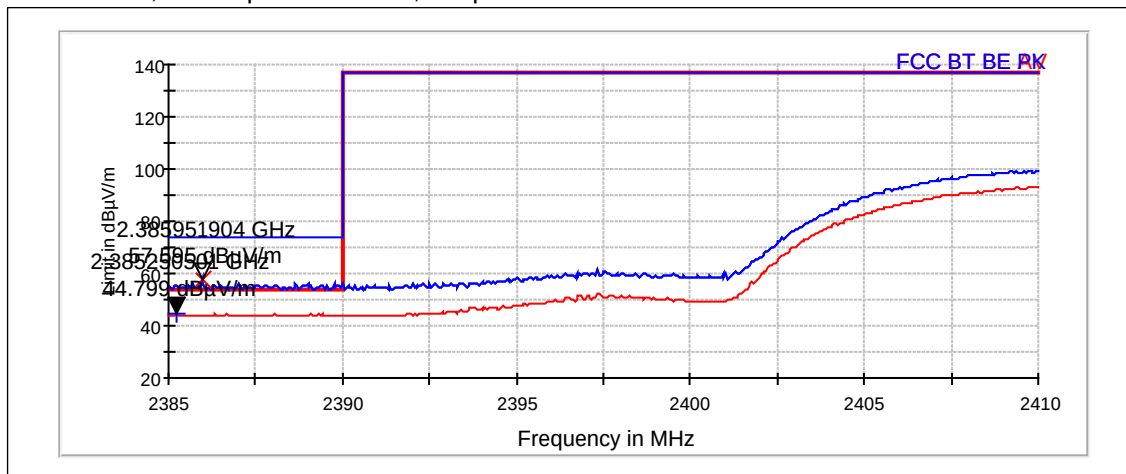
OFDM mode, 6 Mbps modulation, Mbps data rate. Channel 11 / 2462 MHz



DSSS mode, 11 Mbps modulation, Mbps data rate. Channel 11 / 2462 MHz



DSSS mode, 11 Mbps modulation, Mbps data rate. Channel 1 / 2412 MHz



### 3. Test Equipment

#### 3.1. Conducted measurements

| Eq. No | Equipment                                      | Type         | Manufacturer    | Used in            |
|--------|------------------------------------------------|--------------|-----------------|--------------------|
| 20168  | Bluetooth Tester                               | CBT          | Rohde&Schwarz   | 22/24/27, 15C, 15B |
| 18772  | Shielded Chamber                               | RFD-100      | ETS-Lindgren    | 15C, 15B           |
| 13037  | Power Supply 0-15V 10A                         | EA3012       | LP Instruments  | 15C, 15B           |
| 13513  | Pulse Limiter                                  | ESH3Z2       | Rohde&Schwarz   | 15C, 15B           |
| 13666  | Receiver                                       | ESPC         | Rohde&Schwarz   | 15C, 15B           |
| 13935  | LISN                                           | ESH3-Z5      | Rohde&Schwarz   | 15C, 15B           |
| 16995  | Directional Coupler 20dB 0,5-2,0 GHz SMA Conn. | 1538RA-20    | Weinschel       | 15C, 15B           |
| 18772  | Shielded Chamber                               | RFD-100      | ETS-Lindgren    | 15C, 15B           |
| 19171  | Communication Tester                           | CMU200       | Rohde&Schwarz   | 15C, 15B           |
| 11386  | DC Power Supply                                | HP6632A      | Hewlett Packard | 22/24/27, 15C, 15B |
| 19678  | Spectrum Analyzer                              | FSP          | Rohde&Schwarz   | 22/24/27, 15C, 15B |
| 16601  | Communication Tester                           | CMU200       | Rohde&Schwarz   | 22/24/27, 15C, 15B |
| 19625  | Climatic Chamber                               | VT4002EMC    | Vötsch          | 22/24/27, 15C, 15B |
| 13357  | Signal Generator                               | SMP02        | Rohde&Schwarz   | 22/24/27, 15C, 15B |
| 19116  | Power splitter                                 | -            | various         | 22/24/27, 15C, 15B |
| 20544  | Transformer. 230/115V                          | -            | Nokia           | 22/24/27, 15C, 15B |
| 20543  | UPS. 700V/A 490W                               | PW 9120 700i | Powerware       | 22/24/27, 15C, 15B |

#### 3.2. Radiated measurements

| Eq. No | Equipment                                     | Type                               | Manufacturer           | Used in            |
|--------|-----------------------------------------------|------------------------------------|------------------------|--------------------|
| 18792  | Mast/turntable controller                     | 2090                               | ETS-EMCO               | 22/24/27, 15C, 15B |
| 18416  | Communication Tester                          | CMU200                             | Rohde&Schwarz          | 22/24/27, 15C, 15B |
| 20168  | Bluetooth Tester                              | CBT                                | Rohde&Schwarz          | 22/24/27, 15C, 15B |
| 13077  | Power Supply                                  | EA-3016                            | -                      | 22/24/27, 15C, 15B |
| 15742  | Programmable Relay Switching System           | -----                              | Pickering              | 22/24/27, 15C, 15B |
| 20078  | Relay 2x6 Chnl $\mu$ Wave Mux                 | 10-785B-522                        | Pickering              | 22/24/27, 15C, 15B |
| 14021  | Relay Dual 6 Chnl $\mu$ Wave Mux              | 10-785-522                         | -                      | 22/24/27, 15C, 15B |
| -      | Relay Dual 6 Chnl $\mu$ Wave Mux              | 10-785-522                         | -                      | 22/24/27, 15C, 15B |
| 17644  | Dual 6 Channel MUX Microwave Relay SMA 50 Ohm | 10-785-522                         | Pickering              | 22/24/27, 15C, 15B |
| 16948  | Dual 6 Channel MUX Microwave Relay SMA 50 Ohm | 10-785-522                         | Pickering              | 22/24/27, 15C, 15B |
| 16949  | Dual 6 Channel MUX Microwave Relay SMA 50 Ohm | 10-785-522                         | Pickering              | 22/24/27, 15C, 15B |
| 1999   | Receiver                                      | EMI Test Receiver 20Hz-26,5GHz ESI | Rohde&Schwarz          | 22/24/27, 15C, 15B |
| 18860  | Antenna                                       | HL562                              | Rohde&Schwarz          | 22/24/27, 15C, 15B |
| 18773  | Anechoic chamber                              | RFD-100                            | ETS-Lindgren           | 22/24/27, 15C, 15B |
| 18774  | Anechoic chamber                              | RFSD-F/A-100                       | ETS-Lindgren           | 22/24/27, 15C, 15B |
| 19151  | High Pass Filter                              | WHJS3000-10SS                      | Wainwright             | 22/24/27, 15C, 15B |
| 13937  | Band reject filter                            | WRCA902.4-0.2/40-6SS               | Wainwright Instruments | 22/24/27, 15C, 15B |
| 13936  | Band reject filter                            | WRCD1747.5-0.2/40-10SS             | Wainwright Instruments | 22/24/27, 15C, 15B |
| 14114  | Highpass Filter                               | WHK1000-12SS                       | Wainwright Instruments | 22/24/27, 15C, 15B |

| Eq. No | Equipment                | Type                            | Manufacturer  | Used in            |
|--------|--------------------------|---------------------------------|---------------|--------------------|
| 14188  | Band reject filter       | WRCA902.4-0.2/40-6SS            | Wainwright    | 22/24/27, 15C, 15B |
| 14187  | Band reject filter       | WRCD1747.5-0.2/40-10SS          | Wainwright    | 22/24/27, 15C, 15B |
| 16633  | Band reject filter       | WRCD1880.0-0.2/40-10SS          | Wainwright    | 22/24/27, 15C, 15B |
| 19587  | Band reject filter       | WRCG2400/2483-2390/2493-35/10SS | Wainwright    | 22/24/27, 15C, 15B |
| 20115  | Band reject filter       | -                               | Wainwright    | 22/24/27, 15C, 15B |
| 20114  | Band reject filter       | WRCG1737/1743-1733/1747-40/6SS  | Wainwright    | 22/24/27, 15C, 15B |
| 20116  | Band reject filter       | WRCG832/83/-825/845-40/5SS      | Wainwright    | 22/24/27, 15C, 15B |
| 20698  | Antenna                  | BBHA 9120 D                     | SCHWARZBECK   | 22/24/27, 15C, 15B |
| 19966  | Antenna                  | HFH2-Z2                         | Rohde&Schwarz | 15C, 15B           |
| 13799  | Signal Generator         | SMP02                           | Rohde&Schwarz | 22/24/27, 15C, 15B |
| 15191  | Turntable Contoller Unit | G-800SDX                        | YAESU         | 22/24/27, 15C, 15B |
| 14900  | Antenna Controller       | HD100                           | HD GmbH       | 22/24/27, 15C, 15B |
| 20544  | Transformer. 230/115V    | -                               | Nokia         | 22/24/27, 15C, 15B |
| 20543  | UPS. 700V/A 490W         | PW 9120 700i                    | Powerware     | 22/24/27, 15C, 15B |