

## FCC Part 15B Compliance Test Report

|                                                         |                                                                                                                                                                                                                                                             |                                   |                                                                                                                              |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Report no.:</b>                                 | FCC15B_RM-808_17.docx                                                                                                                                                                                                                                       | <b>Date of Report:</b>            | 20-Dec-2011                                                                                                                  |
| <b>Number of pages:</b>                                 | 9                                                                                                                                                                                                                                                           | <b>Customer's Contact person:</b> | Sonja Länkinen                                                                                                               |
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| <b>FCC listing no.:</b>                                 | 533467                                                                                                                                                                                                                                                      |                                   |                                                                                                                              |
| <b>IC recognition no.:</b>                              | 661V-1                                                                                                                                                                                                                                                      |                                   |                                                                                                                              |
| <b>Tested devices/ accessories:</b>                     | <b>Phone RM-808 / Headset WH-902, AC-Charger AC-16U, USB-Cable CA-101V / Laptop IBM T41 2373 / Camera IXUS 70</b>                                                                                                                                           |                                   |                                                                                                                              |
| <b>FCC ID:</b>                                          | QMNRM-808                                                                                                                                                                                                                                                   | <b>IC:</b>                        | 661X-RM808                                                                                                                   |
| <b>Supplement reports:</b>                              | -                                                                                                                                                                                                                                                           |                                   |                                                                                                                              |
| <b>Testing has been carried out in accordance with:</b> | CFR 47, FCC rules Part 15 Subpart B, ANSI C63.4 (2003), ICES-003, CISPR 22, RSS-132 (Issue 2, September 2005). 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>             |                                                                                                                                                                                                                                                             |                                   |                                                                                                                              |

Kalle Hannila, Engineer, EMC

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

|                               |                                                    |
|-------------------------------|----------------------------------------------------|
| Date of receipt               | 17-Oct-2011                                        |
| Testing completed             | 19-Oct-2011                                        |
| The customer's contact person | Sonja Länkinen                                     |
| Test Plan referred to         | T:\Projects\RM-808\TestPlan\RS_testplan_RM-808.xls |
| Notes                         | -                                                  |
| Document name                 | T:\Projects\RM-808\EMC\FCC15B_RM-808_17.docx       |

### 1.1. EUT and Accessory Information

The EUT is a 12-band mobile phone:

GSM850/900/1800/1900/GPRS/EGPRS/Monopole without GND reflector (GSM/WCDMA)

WCDMA I/II(1900)/IV(1700)/V(850)/HSDPA/HSUPA/Monopole without GND reflector (GSM/WCDMA)

LTE 1700/700 Lower

WLAN/Bluetooth

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-808       | 004402136830878     | 0150 | -  | 2130.0000.8<br>070.11390 | 16008 |
| Headset    | WH-902       | 1245B2R             | -    | -  | -                        | 16019 |
| AC-Charger | AC-16U       | -                   | -    | -  | -                        | 16021 |
| USB-Cable  | CA-101V      | 0730642935501300268 | -    | -  | -                        | 14865 |
| Laptop     | IBM T41 2373 | 99Y11G2             | -    | -  | -                        | 15031 |
| Camera     | IXUS 70      | -                   | -    | -  | -                        | 13919 |

### 1.2. Summary of Test Results

#### Bluetooth:

| Section in CFR 47 | Section in ICES-003 | Name of the test                 | Result |
|-------------------|---------------------|----------------------------------|--------|
| 15.107, a         | 5.3                 | AC powerline conducted emissions | NP     |
| 15.109, a         | 5.5                 | Radiated emissions               | PASSED |

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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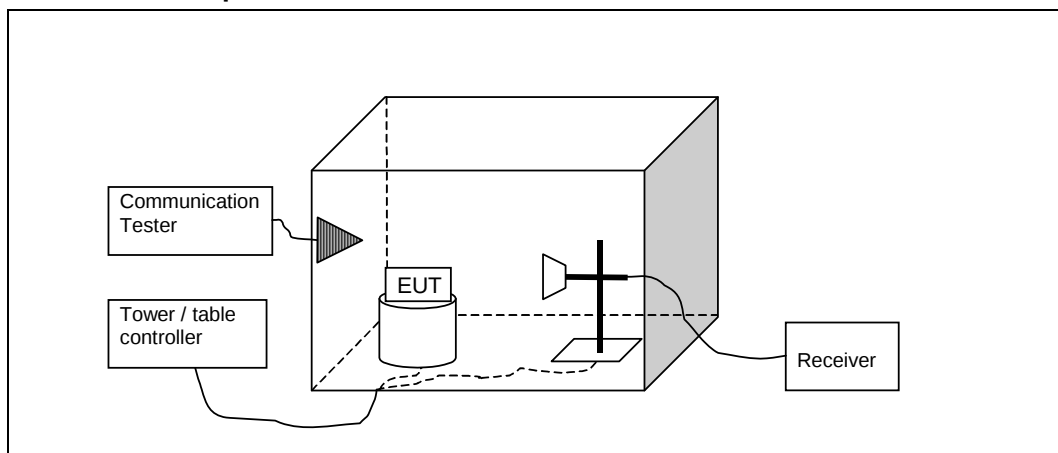
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## 2. Radiated emissions

(FCC §15.109, ICES-003 section 5.5, RSS-132 4.6, RSS-133 6.6, RSS-139 6.6)

|                                                        |                                                                                                  |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>EUT with DUT number</b>                             | RM-808, DUT 16008                                                                                |
| <b>Accessories with DUT numbers</b>                    | WH-902, DUT 16019; AC-16U, DUT 16021; CA-101V, DUT 14865; IBM T41, DUT 15031; IXUS 70, DUT 13919 |
| <b>Operation Voltage [V] / [Hz]</b>                    | 115 / 60                                                                                         |
| <b>Results</b>                                         | PASSED                                                                                           |
| <b>Remarks</b>                                         | Continuous data transfer was active between the phone and the computer during the test.          |
| <b>Temp [°C] / Humidity [%RH] / Air Pressure [kPa]</b> | 21 / 39 / 100                                                                                    |
| <b>Date of measurements</b>                            | 19-Oct-2011                                                                                      |
| <b>Measured by</b>                                     | Kalle Hannila                                                                                    |

### 2.1.1 Test Setup



### 2.2. Test method and limit

The measurement is made according to ANSI C63.4-2003as follows:

The measurement is performed in the Semi-Anechoic Chamber with conducting metal floor.

The measurement distance is 3 m.

The EUT is placed on a nonconductive plate at 80 cm height.

For each suspected frequency, the turntable is rotated 360 degrees and antenna is scanned from 1 to 4 m. This is repeated for both horizontal and vertical receive antenna polarizations.

The emissions less than 20 dB below the permissible value are reported.

CISPR 22 and FCC Part 15 Class B limits (3 m measurement distance)

| Frequency range [MHz] | Quasi peak limit [dB $\mu$ V/m] | Average limit [dB $\mu$ V/m] | Peak limit [dB $\mu$ V/m] |
|-----------------------|---------------------------------|------------------------------|---------------------------|
| 30 - 230              | 40                              | -                            | -                         |
| 230 – 1000            | 47                              | -                            | -                         |
| Above 1000            | -                               | 54                           | 74                        |

## 2.3. Bluetooth Test results

### 2.3.1 GFSK modulation, PRBS packet type

TX mode, Channel 78 / 2480 MHz

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

| Frequency [MHz] | E [dBμV/m] | E [μV/m] | U <sub>RX</sub> [dBμV] | A <sub>TOT</sub> [dB] | Polarisation | Result |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4960.3          | 40.12      | 101.403  | 44.88                  | -4.76                 | VERTICAL     | PASSED |
| 7437.9          | 44.74      | 172.564  | 43.83                  | 0.91                  | VERTICAL     | PASSED |

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

| Frequency [MHz] | E [dBμV/m] | E [μV/m] | U <sub>RX</sub> [dBμV] | A <sub>TOT</sub> [dB] | Polarisation | Result |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4960.3          | 26.84      | 21.966   | 31.6                   | -4.76                 | VERTICAL     | PASSED |
| 7437.9          | 32.21      | 40.766   | 31.3                   | 0.91                  | VERTICAL     | PASSED |

TX mode, Channel 40 / 2442 MHz

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

| Frequency [MHz] | E [dBμV/m] | E [μV/m] | U <sub>RX</sub> [dBμV] | A <sub>TOT</sub> [dB] | Polarisation | Result |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 7058.617        | 44.46      | 167.109  | 44.61                  | -0.15                 | VERTICAL     | PASSED |
| 7819.037        | 45.96      | 198.609  | 44.48                  | 1.48                  | VERTICAL     | PASSED |
| 7828.059        | 45.4       | 186.23   | 43.82                  | 1.58                  | VERTICAL     | PASSED |
| 7829.858        | 45.66      | 191.889  | 44.09                  | 1.57                  | VERTICAL     | PASSED |

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

| Frequency [MHz] | E [dBμV/m] | E [μV/m] | U <sub>RX</sub> [dBμV] | A <sub>TOT</sub> [dB] | Polarisation | Result |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 7058.617        | 31.87      | 39.237   | 32.02                  | -0.15                 | VERTICAL     | PASSED |
| 7819.037        | 32.62      | 42.737   | 31.14                  | 1.48                  | VERTICAL     | PASSED |
| 7828.059        | 32.62      | 42.732   | 31.04                  | 1.58                  | VERTICAL     | PASSED |
| 7829.858        | 32.67      | 43.018   | 31.1                   | 1.57                  | VERTICAL     | PASSED |

TX mode, Channel 40 / 2442 MHz

Quasi peak (RBW: 120 kHz, VBW: 300 kHz)

| Frequency [MHz] | E [dBμV/m] | E [μV/m] | U <sub>RX</sub> [dBμV] | A <sub>TOT</sub> [dB] | Polarisation | Result |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 87.463          | 34.77      | 54.777   | 62.25                  | -27.48                | VERTICAL     | PASSED |
| 199.72          | 34.04      | 50.373   | 63.85                  | -29.81                | VERTICAL     | PASSED |
| 497.064         | 26.02      | 19.992   | 49.29                  | -23.27                | VERTICAL     | PASSED |
| 499.308         | 28.89      | 27.839   | 52.09                  | -23.2                 | VERTICAL     | PASSED |
| 499.669         | 27.56      | 23.87    | 50.75                  | -23.19                | VERTICAL     | PASSED |
| 499.716         | 31.33      | 36.872   | 54.52                  | -23.19                | VERTICAL     | PASSED |
| 819.446         | 26.94      | 22.241   | 43.27                  | -16.33                | HORIZONTAL   | PASSED |
| 834.333         | 31.71      | 38.521   | 48.44                  | -16.73                | HORIZONTAL   | PASSED |

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

| Frequency [MHz] | E [dBμV/m] | E [μV/m] | U <sub>RX</sub> [dBμV] | A <sub>TOT</sub> [dB] | Polarisation | Result |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 1161.426        | 53.79      | 488.99   | 66.77                  | -12.98                | VERTICAL     | PASSED |
| 1920.355        | 40.92      | 111.148  | 47.56                  | -6.64                 | VERTICAL     | PASSED |

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

| Frequency [MHz] | E [dBμV/m] | E [μV/m] | U <sub>RX</sub> [dBμV] | A <sub>TOT</sub> [dB] | Polarisation | Result |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 1161.426        | 23.54      | 15.031   | 36.52                  | -12.98                | VERTICAL     | PASSED |
| 1920.355        | 27.83      | 24.621   | 34.47                  | -6.64                 | VERTICAL     | PASSED |

TX mode, Channel 0 / 2402 MHz

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

| Frequency [MHz] | E [dBμV/m] | E [μV/m] | U <sub>RX</sub> [dBμV] | A <sub>TOT</sub> [dB] | Polarisation | Result |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4803.4          | 38.74      | 86.517   | 43.43                  | -4.69                 | HORIZONTAL   | PASSED |
| 7207.1          | 44.26      | 163.211  | 44.23                  | 0.03                  | HORIZONTAL   | PASSED |

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

| Frequency [MHz] | E [dBμV/m] | E [μV/m] | U <sub>RX</sub> [dBμV] | A <sub>TOT</sub> [dB] | Polarisation | Result |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4803.4          | 26.05      | 20.059   | 30.74                  | -4.69                 | HORIZONTAL   | PASSED |
| 7207.1          | 31.64      | 38.194   | 31.61                  | 0.03                  | HORIZONTAL   | PASSED |

### 3. Test Equipment

#### 3.1. Conducted measurements

| Eq. No | Equipment                | Type              | Manufacturer        | Used in            |
|--------|--------------------------|-------------------|---------------------|--------------------|
| 1759   | LISN 50 µH               | ESH3-Z5           | R&S                 | 15C, 15B           |
| 1916   | Communication Tester     | CMTA84            | R&S                 | 15B                |
| 1986   | GPS Antenna              | AMHP10-15R/390    | European Antenna    | 15C, 15B           |
| 1992   | Signal Generator         | 83630B            | Agilent             | 15C, 15B           |
| 2039   | Power Supply             | PL330QMD          | Thurlby             | 15C, 15B           |
| 2060   | LISN 50 µH               | ESH3-Z5           | R&S                 | 15C, 15B           |
| 2068   | CDN                      | S1                | NMP                 | 15C, 15B           |
| 2097   | Pulse Limiter            | ESH3-Z2           | R&S                 | 15C, 15B           |
| 2156   | Communication Tester     | CMU200            | R&S                 | 22/24/27, 15C, 15B |
| 2180   | Communication Tester     | CMU200            | R&S                 | 22/24/27, 15C, 15B |
| 2206   | Signal Generator         | SMX               | R&S                 | 15C, 15B           |
| 2347   | Communication Tester     | CMU200            | R&S                 | 22/24/27, 15C, 15B |
| 2352   | Spectrum Analyzer        | FSP-30            | R&S                 | 22/24/27, 15C      |
| 2359   | Temperature Test Chamber | VT4002            | Vötsch              | 22/24/27           |
| 2360   | Serial Bus Converter     | Serial 488A       | IO Tech             | 22/24/27           |
| 2362   | Power Supply             | NGPX 70/5         | R&S                 | 22/24/27           |
| 2388   | Bluetooth Tester         | CBT               | R&S                 | 15B                |
| 2389   | Signal Generator         | SMJ 100A          | R&S                 | 15B                |
| 2390   | Directional Coupler      | DC2600            | AR                  | -                  |
| 6009   | GPS Antenna              | SA-700            | Chronos             | 15C                |
| 6010   | GPS Network amplifier    | NLA20FPDC         | GPS Networking, Inc | 15C                |
| 6011   | GPS signal Splitter      | LDCBS1x4          | GPS Networking, Inc | 15C                |
| 6012   | CDN                      | CDN USB/c         | Teseq               | -                  |
| 6015   | Receiver                 | ESI               | R&S                 | 22/24, 15C, 15B    |
| 6016   | ESD gun                  | PESD 1610         | HAEFELY             | -                  |
| -      | BT / WLAN Antenna        | SPA 2400/75/9/0/V | Huber-Suhner        | 15C, 15B           |
| -      | BT / WLAN Antenna        | SPA 2400/75/9/0/V | Huber-Suhner        | 15C, 15B           |
| -      | RF Emission Software     | ES-K1 v.1.71      | R&S                 | 22/24/27, 15C, 15B |
| 6036   | Data Logger              | 175-H2            | Testo               | 22/24/27, 15C, 15B |
| 6038   | Data Logger              | Testo 580         | Testo               | 22/24/27, 15C, 15B |
| 6039   | USB Interface            | 5541765           | Testo               | 22/24/27, 15C, 15B |
| 2059   | V-network                | ESH3-Z6           | R&S                 | -                  |
| 6044   | V-network                | ESH3-Z6           | R&S                 | -                  |
| 6045   | Power splitter           | 11667B            | Agilent             | 22/24/27, 15C      |
| 6046   | Attenuator 10dB          | 8493C             | Agilent             | 22/24/27, 15C      |
| 6047   | Attenuator 20dB          | 8493C             | Agilent             | 22/24/27, 15C      |

### 3.2. Radiated measurements

| Eq. No | Equipment                       | Type                                   | Manufacturer        | Used in            |
|--------|---------------------------------|----------------------------------------|---------------------|--------------------|
| 1917   | Communication Tester            | CMTA84                                 | R&S                 | 15B                |
| 1984   | Antenna                         | BBHA 9120 D                            | Schwarzbeck         | 22/24/27, 15C, 15B |
| 1986   | GPS Antenna                     | AMHP10-15R/390                         | European Antenna    | 15C, 15B           |
| 1988   | Antenna                         | HL562                                  | R&S                 | 22/24/27, 15C, 15B |
| 1989   | Relay Switch Unit               | TS-RSP                                 | R&S                 | 22/24/27, 15C, 15B |
| 2009   | Signal Generator                | SMP 22                                 | R&S                 | 22/24/27, 15C, 15B |
| 2027   | CDN                             | M2 (modified) DC1                      | MEB                 | 22/24/27, 15C, 15B |
| 2028   | CDN                             | M3 (modified) DC2                      | MEB                 | 22/24/27, 15C, 15B |
| 2029   | Power Supply                    | PL330                                  | Thurlby             | 22/24/27, 15C      |
| 2043   | Band Reject Filter              | WRCA824/849-0,2-6SS                    | Wainwright          | 22                 |
| 2047   | Band Reject Filter              | WRCC1800/2000-0.2-10SS                 | Wainwright          | 24                 |
| 2051   | High Pass Filter                | 4HC1700-1-KK                           | R&S                 | 22                 |
| 2109   | Power Supply                    | PL330QMD                               | Thurlby             | 22/24/27, 15C, 15B |
| 2116   | Controller                      | EMCO 2090                              | ETS                 | 22/24/27, 15C, 15B |
| 2135   | CDN                             | CDN 801-M3                             | Lüthi               | 22/24/27, 15C, 15B |
| 2140   | Antenna                         | EMCO93110B                             | EMCO                | 22/24/27, 15C      |
| 2142   | Antenna                         | 3146                                   | EMCO                | 22/24/27, 15C      |
| 2150   | High Pass Filter                | F-15041                                | RLC                 | 22/24/27, 15C      |
| 2156   | Communication Tester            | CMU200                                 | R&S                 | 22/24/27, 15C, 15B |
| 2176   | CDN                             | CDN 801-M3                             | Lüthi               | 22/24/27, 15C, 15B |
| 2180   | Communication Tester            | CMU200                                 | R&S                 | 22/24/27, 15C, 15B |
| 2188   | Preamplifier                    | AFS4-00100300-20-23P-6                 | Miteq               | 22/24/27, 15C, 15B |
| 2347   | Communication Tester            | CMU200                                 | R&S                 | 22/24/27, 15C, 15B |
| 2348   | Controller                      | G-1000DXC                              | Yaesu               | 22/24/27, 15C, 15B |
| 2349   | Computer Controller             | GS-232B                                | Yaesu               | 22/24/27, 15C, 15B |
| 2350   | Preamplifier                    | AMF-6D-020180-29-20P                   | Miteq               | 22/24/27, 15C, 15B |
| 2353   | Receiver                        | ESIB26                                 | R&S                 | 22/24/27, 15C, 15B |
| 2357   | Band Reject Filter              | WRCG2400/2483-2390/2493-35/10SS        | Wainwright          | 15C                |
| 2361   | Anechoic Chamber                | 3 m Semi / Full Anechoic Chamber       | Euroshield          | 22/24/27, 15C, 15B |
| 2364   | Band Reject Filter              | WRCG1877/1883 - 1870/1890-40/6SS       | Wainwright          | 24                 |
| 2366   | Relay Switch Unit               | TS-RSP                                 | R&S                 | 22/24/27, 15C, 15B |
| 2384   | Band Reject Filter              | WRCG832/838-825/845-40/5SS             | Wainwright          | 22                 |
| 2388   | Bluetooth Tester                | CBT                                    | R&S                 | 15B                |
| 2389   | Signal Generator                | SMJ 100A                               | R&S                 | 15B                |
| 2391   | Band Reject Filter              | WRCG1729.4/1735.4-1722.4/1742.4-40/6SS | Wainwright          | 27                 |
| 6009   | GPS Antenna                     | SA-700                                 | Chronos             | 15C                |
| 6010   | GPS Network amplifier           | NLA20FPDC                              | GPS Networking, Inc | 15C                |
| 6011   | GPS signal Splitter             | LDCBS1x4                               | GPS Networking, Inc | 15C                |
| 6014   | Substitute Calibration Cable    | Sucoflex 104PB                         | Suhner              | -                  |
| 6017   | Antenna                         | SBA 9113                               | Schwarzbeck         | 22 / 24 / 27       |
| -      | BT / WLAN Antenna               | SPA 2400/75/9/0/V                      | Huber-Suhner        | 15C, 15B           |
| -      | BT / WLAN Antenna               | SPA 2400/75/9/0/V                      | Huber-Suhner        | 15C, 15B           |
| -      | RF Emission Software            | ES-K1 v.1.71                           | R&S                 | 22/24/27, 15C, 15B |
| -      | RF immunity / Emission Software | EMC32                                  | R&S                 | 22/24/27, 15C, 15B |
| 6037   | Data Logger                     | 175-H2                                 | Testo               | 22/24/27, 15C, 15B |
| 6038   | Data Logger                     | Testo 580                              | Testo               | 22/24/27, 15C, 15B |
| 6039   | USB Interface                   | 5541765                                | Testo               | 22/24/27, 15C, 15B |