

## FCC Part 15C Compliance Test Report

|                                                         |                                                                                                                                                                                                                                                                                                          |                                   |                                                                                                                                                   |
|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Report no.:</b>                                 | FCC15CWLAN_RM-819_11.docx                                                                                                                                                                                                                                                                                | <b>Date of Report:</b>            | 14-Dec-2011                                                                                                                                       |
| <b>Number of pages:</b>                                 | 15                                                                                                                                                                                                                                                                                                       | <b>Customer's Contact person:</b> | Koskela Kari.O                                                                                                                                    |
| <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>P.O.Box(86)<br>Joensuunkatu 7H / Kiila 1B<br>FIN-24101 SALO, FINLAND<br>Tel. +358 (0) 7180 08000<br>Fax. +358 (0) 7180 45220 |
| <b>FCC listing no.:</b>                                 | 94436                                                                                                                                                                                                                                                                                                    |                                   |                                                                                                                                                   |
| <b>IC recognition no.:</b>                              | 661AK-1                                                                                                                                                                                                                                                                                                  |                                   |                                                                                                                                                   |
| <b>Tested devices/ accessories:</b>                     | <b>Phone RM-819 / Battery BV-5JW / AC charger AC-16E / Data cable CA-185 / Headset WH-902</b>                                                                                                                                                                                                            |                                   |                                                                                                                                                   |
| <b>FCC ID:</b>                                          | LJPA                                                                                                                                                                                                                                                                                                     | <b>IC:</b>                        | 661E-A                                                                                                                                            |
| <b>Supplement reports:</b>                              | -                                                                                                                                                                                                                                                                                                        |                                   |                                                                                                                                                   |
| <b>Testing has been carried out in accordance with:</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 8, December 2010). 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 15C Compliance Test Report

|                               |                                                    |
|-------------------------------|----------------------------------------------------|
| Date of receipt               | 24-Aug-2011                                        |
| Testing completed             | 06-Sep-2011                                        |
| The customer's contact person | Koskela Kari.O                                     |
| Test Plan referred to         | T:\Projects\RM-801\TestPlan\RS_testplan_RM-801.xls |
| Notes                         | -                                                  |
| Document name                 | T:\Projects\RM-801\EMC\FCC15CWLAN_RM-801_16.docx   |

### 1.1. EUT and Accessory Information

The EUT is a 7-band mobile phone:

GSM850/900/1800/1900/GPRS/EGPRS

WCDMA I/II(1900)/V(850)/HSDPA/HSUPA

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-801 | 00440213552705              | 1100 | -  | 1600.1800.7<br>720.11300 | 42669 |
| Battery    | BV-5JW | -                           | -    | -  | -                        | -     |
| AC charger | AC-16E | 4090491233240501551;0675491 | -    | -  | -                        | 42660 |
| Data cable | CA-185 | -                           | -    | -  | -                        | 42661 |
| Headset    | WH-902 | -                           | -    | -  | -                        | 42663 |

### 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)      | A8.4 (4)                      | Conducted peak output power          | NP     |
| 15.247(d)         | A8.5                          | Band edge compliance of RF emissions | PASSED |
| 15.247(d)         | A8.5                          | Spurious RF conducted emissions      | NP     |
| 15.247(d), 15.209 | A8.5                          | Spurious radiated emissions          | PASSED |
| 15.207            | 7.2.2                         | AC powerline conducted emissions     | NP     |
| 15.247(a)(2)      | A8.2 (a)                      | 6dB(bandwidth)                       | NP     |
| 15.247(e)         | A8.2 (b)                      | 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.

*The test results of LJPRM-801 are re-used for certification of the LJPA. The table above indicates the results, which will be re-used*

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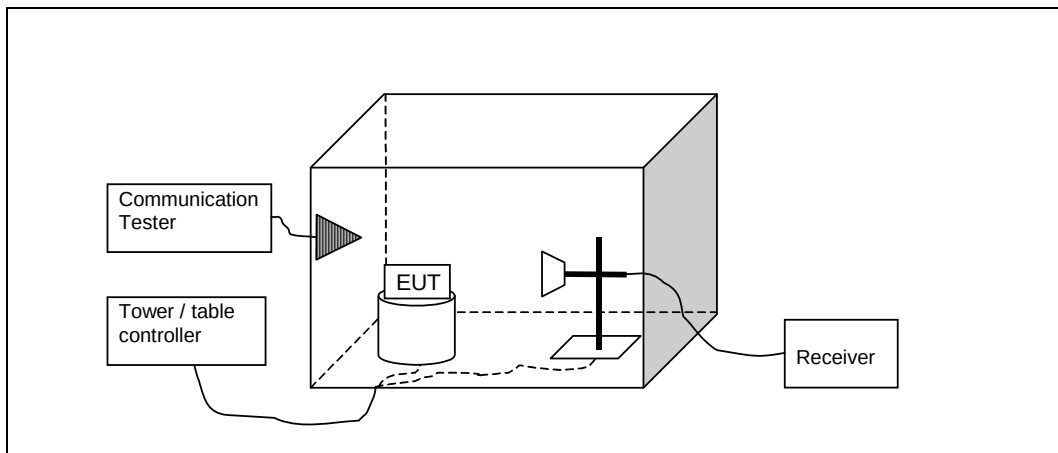
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## 2. Band edge compliance of RF emissions (FCC §15.247(d), RSS-210 A8.5)

|                                                        |                                                     |
|--------------------------------------------------------|-----------------------------------------------------|
| <b>EUT with DUT number</b>                             | RM-801, DUT 42669                                   |
| <b>Accessories with DUT numbers</b>                    | BV-5JW DUT -                                        |
| <b>Operation Voltage [V] / [Hz]</b>                    | Nominal                                             |
| <b>Results</b>                                         | PASSED                                              |
| <b>Remarks</b>                                         | Power level 150 for b-mode and 120 for g and n-mode |
| <b>Temp [°C] / Humidity [%RH] / Air Pressure [kPa]</b> | 22 / 51 / 99.7                                      |
| <b>Date of measurements</b>                            | 06-Sep-2011                                         |
| <b>Measured by</b>                                     | Jari Jantunen                                       |

### 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

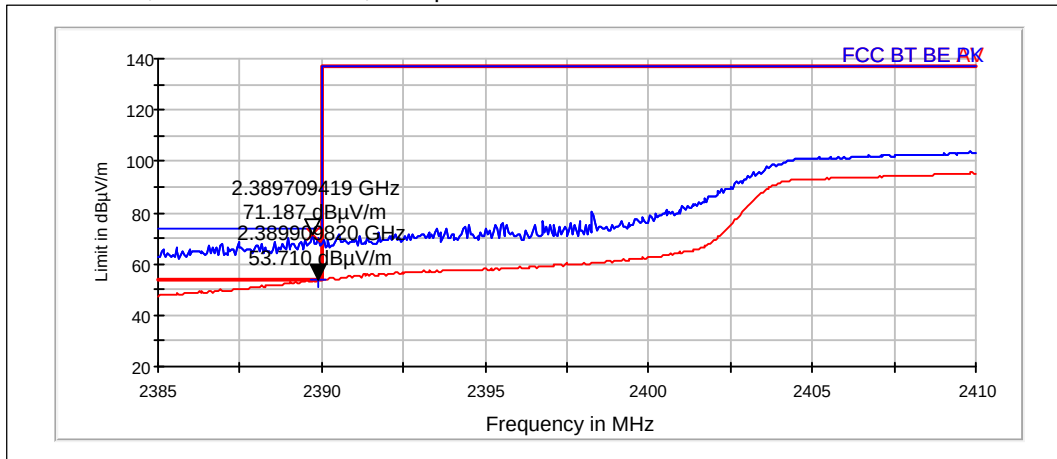
Average (RBW: 1 MHz, VBW: 1 MHz)

| Channel / $f_c$ [MHz]         | E [dB $\mu$ V/m] | Result |
|-------------------------------|------------------|--------|
| 1 / 2412 (OFDM, BPSK,6)       | 53.71            | PASSED |
| 11 / 2462 (OFDM, BPSK, 6)     | 50.26            | PASSED |
| 1 / 2412 (DSSS, QPSK, 11)     | 51.47            | PASSED |
| 11 / 2462 (DSSS, QPSK, 11)    | 45.9             | PASSED |
| 1 / 2412 (802.11n HT20 MCS0)  | 53.58            | PASSED |
| 11 / 2462 (802.11n HT20 MCS0) | 51.29            | PASSED |

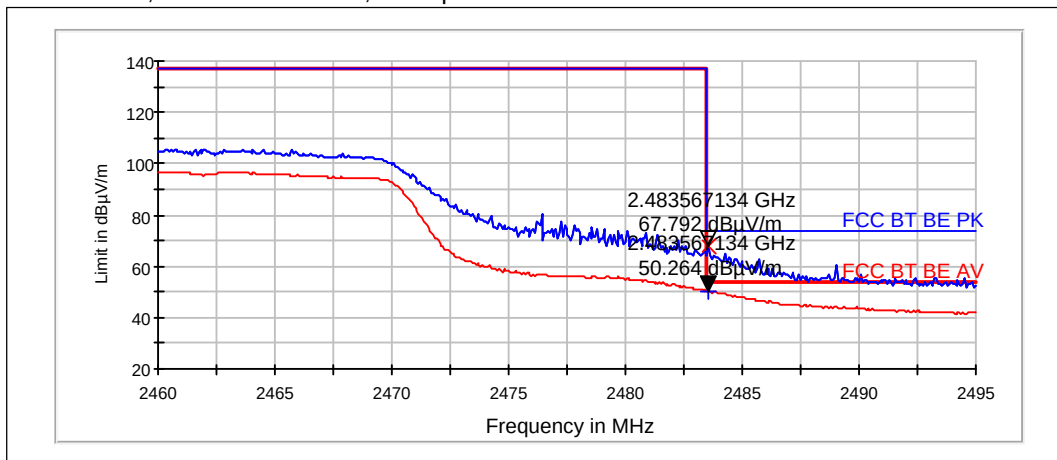
Peak (RBW: 1 MHz, VBW: 1 MHz)

| Channel / $f_c$ [MHz]         | E [dB $\mu$ V/m] | Result |
|-------------------------------|------------------|--------|
| 1 / 2412 (OFDM, BPSK,6)       | 71.19            | PASSED |
| 11 / 2462 (OFDM, BPSK, 6)     | 67.79            | PASSED |
| 1 / 2412 (DSSS, QPSK, 11)     | 58.1             | PASSED |
| 11 / 2462 (DSSS, QPSK, 11)    | 54.3             | PASSED |
| 1 / 2412 (802.11n HT20 MCS0)  | 70.74            | PASSED |
| 11 / 2462 (802.11n HT20 MCS0) | 66.05            | PASSED |

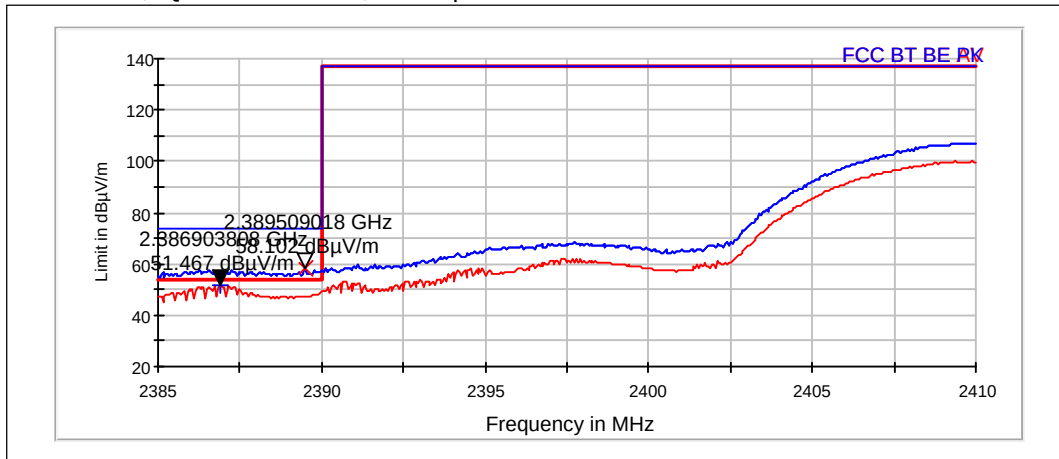
OFDM mode, BPSK modulation, 6 Mbps data rate. Channel 1 / 2412 MHz



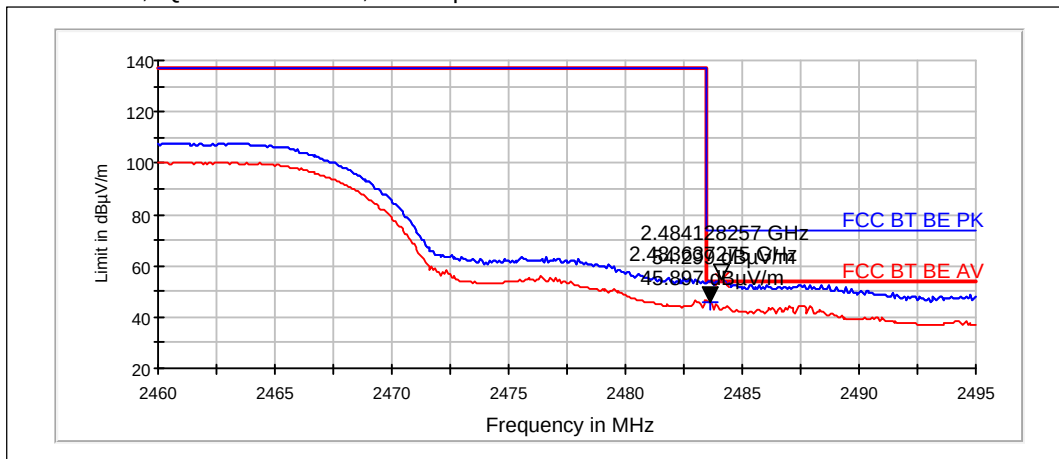
OFDM mode, BPSK modulation, 6 Mbps data rate. Channel 11 / 2462 MHz



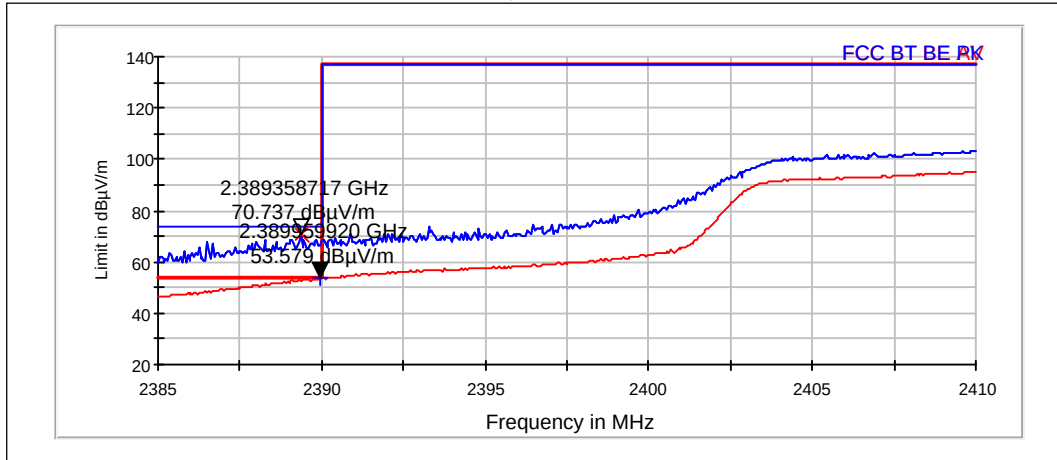
DSSS mode, QPSK modulation, 11 Mbps data rate. Channel 1 / 2412 MHz



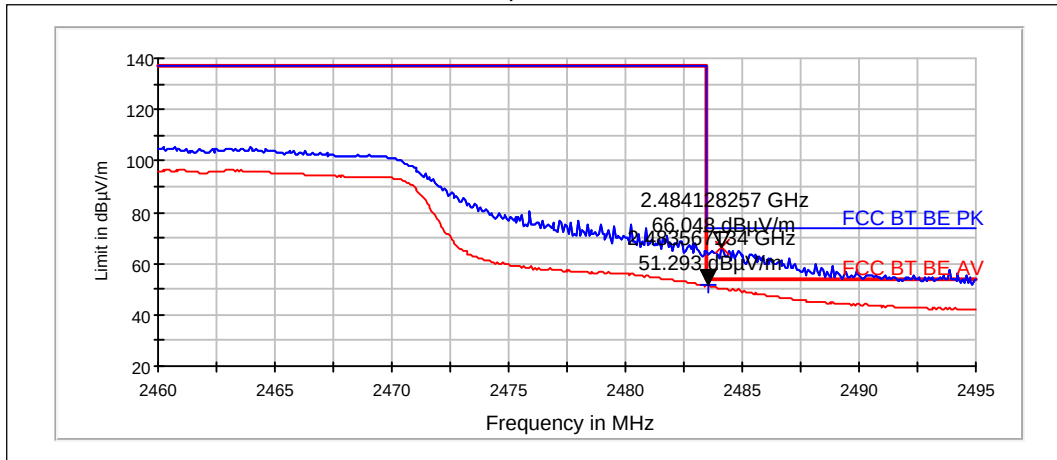
DSSS mode, QPSK modulation, 11 Mbps data rate. Channel 11 / 2462 MHz



802.11n HT20 MCS0 mode, modulation, Mbps data rate. Channel 1 / 2412 MHz



802.11n HT20 MCS0 mode, modulation, Mbps data rate. Channel 11 / 2462 MHz

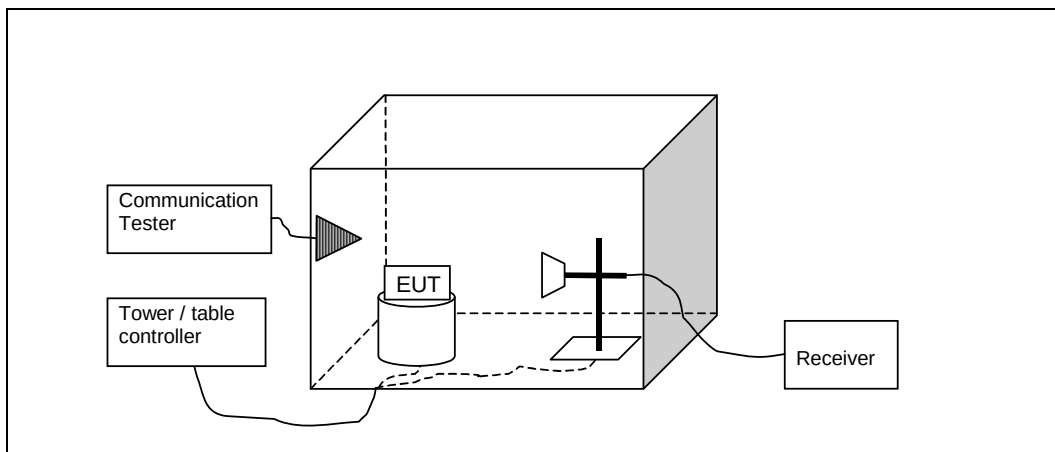




### 3. Spurious radiated emissions (FCC §15.247(d), §15.209, RSS-210 A8.5)

|                                                 |                                                                        |
|-------------------------------------------------|------------------------------------------------------------------------|
| EUT with DUT number                             | RM-801, DUT 42669                                                      |
| Accessories with DUT numbers                    | BV-5JW DUT-, AC-16E, DUT 42660 ; CA-185, DUT 42661 ; WH-902, DUT 42663 |
| Operation Voltage [V] / [Hz]                    | 115 / 60                                                               |
| Results                                         | PASSED                                                                 |
| Remarks                                         | -                                                                      |
| Temp [°C] / Humidity [%RH] / Air Pressure [kPa] | 21 / 50 / 99.8                                                         |
| Date of measurements                            | 29-Aug-2011                                                            |
| Measured by                                     | Jari Jantunen                                                          |

#### 3.1.1 Test Setup



#### 3.2. Test method and limit

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

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with absorbers on the floor and measuring antenna at fixed height using 2-axis EUT position system.

The Final Measurement is performed in the Semi-Anechoic Chamber with conducting metal floor, if the Preliminary Measurement results are closer than 20 dB to the permissible value.

The EUT is placed at nonconductive plate at the turntable center.

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.

The measurement results are obtained as described below:

$$E [\mu V/m] = U_{RX} + A_{TOT}$$

Where  $U_{RX}$  is receiver reading and  $A_{TOT}$  is total correction factor including cable loss, antenna factor and preamplifier gain ( $A_{TOT} = L_{CABLES} + A_F - G_{PREAMP}$ ).

Limits for spurious radiated emissions measurements (3 m measurement distance)

| Frequency range [MHz] | Limit [ $\mu V/m$ ] | Limit [dB $\mu V/m$ ] | Detector   |
|-----------------------|---------------------|-----------------------|------------|
| 30 - 88               | 100                 | 40                    | Quasi peak |
| 88 – 216              | 150                 | 43.5                  | Quasi peak |
| 216 – 960             | 200                 | 46                    | Quasi peak |
| 960 – 1000            | 500                 | 54                    | Quasi peak |
| Above 1000            | 500                 | 54                    | Average    |
| Above 1000            | 5000                | 74                    | Peak       |

### 3.3. WLAN Test results

#### 3.3.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel 1 / 2412 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4825.3          | 44.54      | 168.597  | 47.29                  | -2.75                 | VERTICAL     | PASSED |
| 7237.5          | 47.3       | 231.713  | 46.16                  | 1.14                  | 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4825.3          | 31.05      | 35.682   | 33.8                   | -2.75                 | VERTICAL     | PASSED |
| 7237.5          | 33.49      | 47.266   | 32.35                  | 1.14                  | VERTICAL     | PASSED |

Channel 7 / 2442 MHz

Quasi peak (RBW: 100 kHz, VBW: 100 kHz)

| Frequency [MHz] | E [dBμV/m] | E [μV/m] | U <sub>RX</sub> [dBμV] | A <sub>TOT</sub> [dB] | Polarisation | Result |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 33.608          | 31.84      | 39.066   | 54.65                  | -22.81                | VERTICAL     | PASSED |
| 33.731          | 32.01      | 39.843   | 54.87                  | -22.86                | VERTICAL     | PASSED |
| 33.837          | 32.76      | 43.471   | 55.66                  | -22.9                 | VERTICAL     | PASSED |
| 34.852          | 32.65      | 42.909   | 55.95                  | -23.3                 | VERTICAL     | PASSED |
| 35.1            | 32.86      | 43.959   | 56.26                  | -23.4                 | VERTICAL     | PASSED |
| 35.658          | 32.62      | 42.771   | 56.24                  | -23.62                | VERTICAL     | PASSED |
| 35.732          | 32.88      | 44.061   | 56.53                  | -23.65                | VERTICAL     | 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 3900.298        | 40.63      | 107.461  | 43.3                   | -2.67                 | HORIZONTAL   | PASSED |
| 3941.681        | 40.08      | 100.925  | 42.77                  | -2.69                 | 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 3900.298        | 26.97      | 22.32    | 29.64                  | -2.67                 | HORIZONTAL   | PASSED |
| 3941.681        | 27         | 22.382   | 29.69                  | -2.69                 | VERTICAL     | PASSED |

Channel 11 / 2462 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4922.4          | 45.45      | 187.284  | 47.41                  | -1.96                 | VERTICAL     | PASSED |
| 7384.5          | 46.93      | 221.998  | 45.41                  | 1.52                  | 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4922.4          | 31.41      | 37.209   | 33.37                  | -1.96                 | VERTICAL     | PASSED |
| 7384.5          | 32.99      | 44.596   | 31.47                  | 1.52                  | VERTICAL     | PASSED |

### 3.3.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel 1 / 2412 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4823.7          | 42.02      | 126.168  | 44.64                  | -2.62                 | VERTICAL     | PASSED |
| 7234.2          | 47.3       | 231.686  | 46.16                  | 1.14                  | 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4823.7          | 28.72      | 27.28    | 31.34                  | -2.62                 | VERTICAL     | PASSED |
| 7234.2          | 32.42      | 41.769   | 31.28                  | 1.14                  | VERTICAL     | PASSED |

Channel 7 / 2442 MHz

Quasi peak (RBW: 100 kHz, VBW: 100 kHz)

| Frequency [MHz] | E [dBμV/m] | E [μV/m] | U <sub>RX</sub> [dBμV] | A <sub>TOT</sub> [dB] | Polarisation | Result |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 32.49           | 38.41      | 83.301   | 60.78                  | -22.37                | VERTICAL     | PASSED |
| 32.67           | 37.8       | 77.616   | 60.24                  | -22.44                | VERTICAL     | PASSED |
| 32.82           | 37.95      | 78.959   | 60.45                  | -22.5                 | VERTICAL     | PASSED |
| 32.916          | 37.5       | 74.981   | 60.04                  | -22.54                | VERTICAL     | PASSED |
| 33.155          | 37.02      | 70.933   | 59.65                  | -22.63                | VERTICAL     | PASSED |
| 33.18           | 36.69      | 68.273   | 59.33                  | -22.64                | VERTICAL     | PASSED |
| 33.247          | 37.24      | 72.812   | 59.91                  | -22.67                | VERTICAL     | 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 3925.449        | 39.98      | 99.793   | 42.64                  | -2.66                 | 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 3925.449        | 27.34      | 23.27    | 30                     | -2.66                 | HORIZONTAL   | PASSED |

Channel 11 / 2462 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4922.6          | 45.08      | 179.535  | 47.03                  | -1.95                 | VERTICAL     | PASSED |
| 7384.1          | 45.22      | 182.432  | 43.7                   | 1.52                  | 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4922.6          | 31.22      | 36.4     | 33.17                  | -1.95                 | VERTICAL     | PASSED |
| 7384.1          | 31.9       | 39.341   | 30.38                  | 1.52                  | VERTICAL     | PASSED |

### 3.3.3 802.11n HT20 MCS0

Channel 1 / 2412 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4825.1          | 43.54      | 150.245  | 46.29                  | -2.75                 | VERTICAL     | PASSED |
| 7237.9          | 45.52      | 188.734  | 44.38                  | 1.14                  | 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4825.1          | 29.77      | 30.779   | 32.52                  | -2.75                 | VERTICAL     | PASSED |
| 7237.9          | 31.99      | 39.76    | 30.85                  | 1.14                  | VERTICAL     | PASSED |

Channel 7 / 2442 MHz

Quasi peak (RBW: 100 kHz, VBW: 100 kHz)

| Frequency [MHz] | E [dBμV/m] | E [μV/m] | U <sub>RX</sub> [dBμV] | A <sub>TOT</sub> [dB] | Polarisation | Result |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 32.73           | 39         | 89.135   | 61.46                  | -22.46                | VERTICAL     | PASSED |
| 32.886          | 38.82      | 87.257   | 61.34                  | -22.52                | VERTICAL     | PASSED |
| 32.97           | 39         | 89.146   | 61.56                  | -22.56                | VERTICAL     | PASSED |
| 32.997          | 38.7       | 86.07    | 61.27                  | -22.57                | VERTICAL     | PASSED |
| 33.015          | 38.68      | 85.872   | 61.25                  | -22.57                | VERTICAL     | PASSED |
| 33.146          | 38.52      | 84.295   | 61.15                  | -22.63                | VERTICAL     | PASSED |
| 33.317          | 38.18      | 81.133   | 60.87                  | -22.69                | VERTICAL     | 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 3932.367        | 40.49      | 105.779  | 43.17                  | -2.68                 | HORIZONTAL   | PASSED |
| 4885.068        | 41.79      | 122.928  | 43.97                  | -2.18                 | 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 3932.367        | 27.16      | 22.811   | 29.84                  | -2.68                 | HORIZONTAL   | PASSED |
| 4885.068        | 28.59      | 26.872   | 30.77                  | -2.18                 | VERTICAL     | PASSED |

Channel 11 / 2462 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4924            | 43.47      | 149.159  | 45.4                   | -1.93                 | HORIZONTAL   | PASSED |
| 7387.2          | 44.06      | 159.533  | 42.52                  | 1.54                  | 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 |
|-----------------|------------|----------|------------------------|-----------------------|--------------|--------|
| 4924            | 29.63      | 30.294   | 31.56                  | -1.93                 | HORIZONTAL   | PASSED |
| 7387.2          | 30.97      | 35.371   | 29.43                  | 1.54                  | HORIZONTAL   | PASSED |

## 4. Test Equipment

### 4.1. 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 |
| OM06312 | 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 µH                          | ESH3-Z5     | R&S           | 15C, 15B           |
| TM26491 | LISN 50 µH                          | 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 µH                          | ENV216      | R&S           | 15C, 15B           |
| 2010    | LISN 50 µH                          | 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      |
| 2019    | Power splitter                      | ZN2PD-9G-S+ | Mini-Circuits | 15E                |
| 2020    | Power splitter                      | ZN2PD-9G-S+ | Mini-Circuits | 15E                |

### 4.2. 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 |
| -       | Turntable                       | 2188            | EMCO           | 22/24/27, 15C, 15B |
| -       | Turntable controller            | 2090            | EMCO           | 22/24/27, 15C, 15B |
| -       | RF system panel                 | TS-RSP          | R&S            | 22/24/27, 15C, 15B |
| -       | RF system panel                 | TS-RSP          | R&S            | 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 | Antenna mast controller         | 2090            | Emco           | 22/24/27, 15C, 15B |
| TM30643 | LISN 50 µH                      | LISN-5-20-2     | FCC            | 22/24/27, 15C, 15B |
| TM30644 | LISN 50 µH                      | LISN-5-20-2     | FCC            | 22/24/27, 15C, 15B |
| -       | Temperature and humidity logger | 175-H2          | Testo          | 22/24/27, 15C, 15B |

| Eq. No  | Equipment                           | Type                                   | Manufacturer | Used in            |
|---------|-------------------------------------|----------------------------------------|--------------|--------------------|
| -       | Air pressure and temperature logger | 635-2                                  | Testo        | 22/24/27, 15C, 15B |
| -       | 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 |
| 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                            | -            | 22/24/27, 15C, 15B |
| TM38066 | High pass filter                    | 4HC3000/18000-3-KK                     | Trilithic    | 22/24/27, 15C, 15B |
| -       | High pass filter                    | WHKX 1.6/15G-12SS                      | Wainwright   | 22/24/27, 15C, 15B |
| TM37545 | Tunable notch filter                | 800.0/960.0-0.2/40-8SSK                | Wainwright   | 22                 |
| TM26512 | Tunable notch filter                | WRCD1850/1910-0.2/40-10SSK             | Wainwright   | 24                 |
| -       | Band reject filter                  | WRCG1877/1883-1870/1890-40/6EE         | Wainwright   | 24                 |
| -       | 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   | 22                 |
| TM23892 | Controller                          | G-1000SDX                              | Yaesu        | 22/24/27           |
| 2001    | Bluetooth tester                    | CBT                                    | R&S          | 22/24/27, 15C, 15B |
| 6023    | Antenna                             | VUBA 9117                              | Schwarzbeck  | 22/24/27, 15C      |