FCC Part 15C Compliance Test Report

Test Report no.:	FCC15CWLAN_RM-670_12.docx	**Date of Report:**	26-May-2011
Number of pages:	17	**Customer's Contact person:**	El-Haj Mohammad
Testing laboratory:	TCC Nokia Tampere Laboratory P.O. Box 68 Sinitaival 5 FIN-33720 TAMPERE, FINLAND Tel. +358 (0) 7180 46800 Fax. +358 (0) 7180 46880	**Customer:**	Nokia Corporation Frederikskaj 1790 COPENHAGEN V DENMARK Tel. +45 33 292929 Fax. +45 33 292934
FCC listing no.: **IC recognition no.:**	94436 661AK-1		
Tested devices/ accessories:	**Phone RM-670 / Battery BP-5Z / AC charger AC-15E / Headset WH-207**		
FCC ID:	QTKRM-670	**IC:**	661AD-RM670
Supplement reports:	-		
Testing has been carried out in accordance with:	**CFR 47, FCC rules Part 15 Subpart C, ANSI C63.4 (2003), Public Notice DA 00-705, DTS procedures KDB 558074, IC standards. Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".**		
Documentation:	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.		
Test Results:	**The EUT complies with the requirements in respect of all parameters subject to the test.** The test results relate only to devices specified in this document		
Date and signature for the contents:	 Digitally signed by soderhol DN: cn=soderhol Date: 2011.05.26 09:44:19 +03'00'		

Hannu Soderholm, Senior Engineer, EMC

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	02-May-2011
Testing completed	16-May-2011
The customer's contact person	El-Haj Mohammad
Test Plan referred to	T:\Projects\RM-670\TestPlan\RS_testplan_RM-670_EMC_FCC_SAR.xls
Notes	-
Document name	T:\Projects\RM-670\EMC\FCC15CWLAN_RM-670_12.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, 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-670	004402134474430; 059C402; A8E0188662E7	0250	-	111.001.020 6.01.01	42552
Battery	BP-5Z	3932130524140101823;0670638	Prot o2	-	-	42555
AC charger	AC-15E	4090491015121215591;0675463	-	-	-	42556
Headset	WH-207	06949371126A1R31714	-	-	-	42557

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	-
15.247(d)	A8.5	Band edge compliance of RF emissions	PASSED
15.247(d)	A8.5	Spurious RF conducted emissions	-
15.247(d), 15.209	A8.5	Spurious radiated emissions	PASSED
15.207	7.2.2	AC powerline conducted emissions	PASSED
15.247(a)(2)	A8.2 (a)	6dB(bandwidth)	-
15.247(e)	A8.2 (b)	Power spectral density	-

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 Laboratory.

TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880

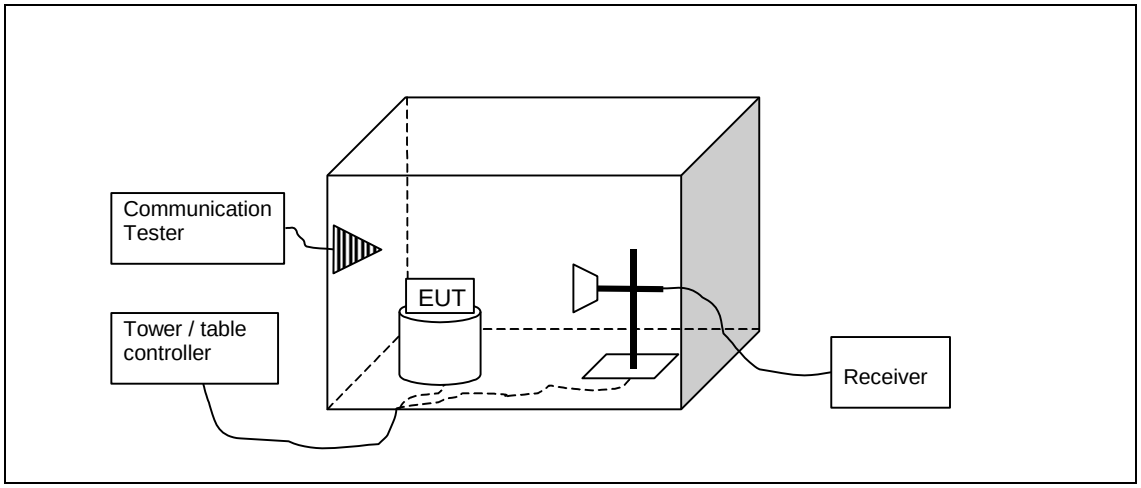
CONTENTS

TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880

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

EUT with DUT number	RM-670, DUT 42552
Accessories with DUT numbers	BP-5Z, DUT 42555 ; AC-15E, DUT 42556 ; WH-207, DUT 42557
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24 / 45 / 101.4
Date of measurements	12-May-2011
Measured by	Hannu Söderholm

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

TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880

2.3. WLAN Test results

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

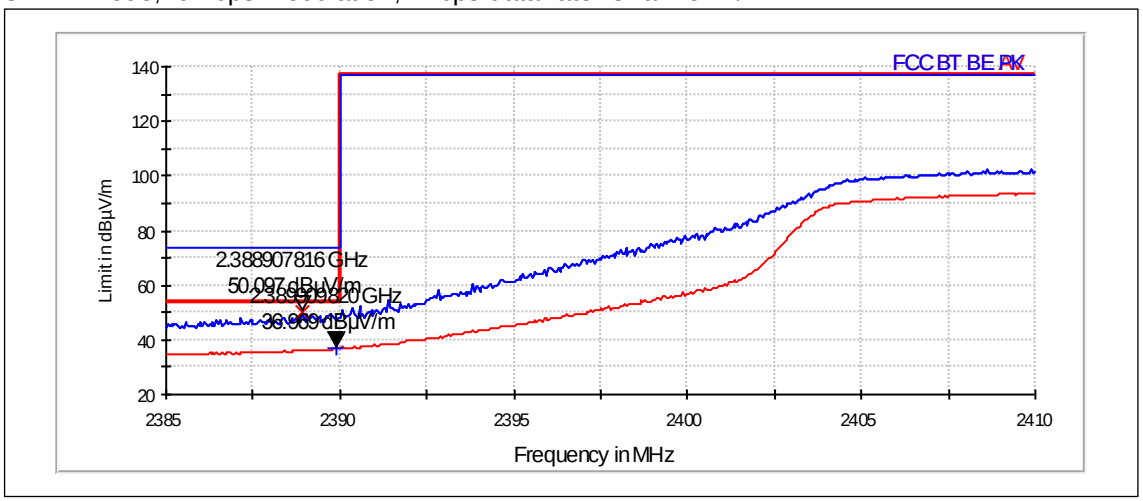
Channel / f_C [MHz]	E [dBµV/m]	Result
1 / 2412 (OFDM, 6Mbps)	36.97	PASSED
11 / 2462 (OFDM, 6Mbps)	39.96	PASSED
1 / 2412 (DSSS, 11Mbps)	37.61	PASSED
11 / 2462 (DSSS, 11Mbps)	38.97	PASSED
1 / 2412 (802.11n HT20 MCS 0)	38.02	PASSED
11 / 2462 (802.11n HT20 MCS 0)	41.94	PASSED

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

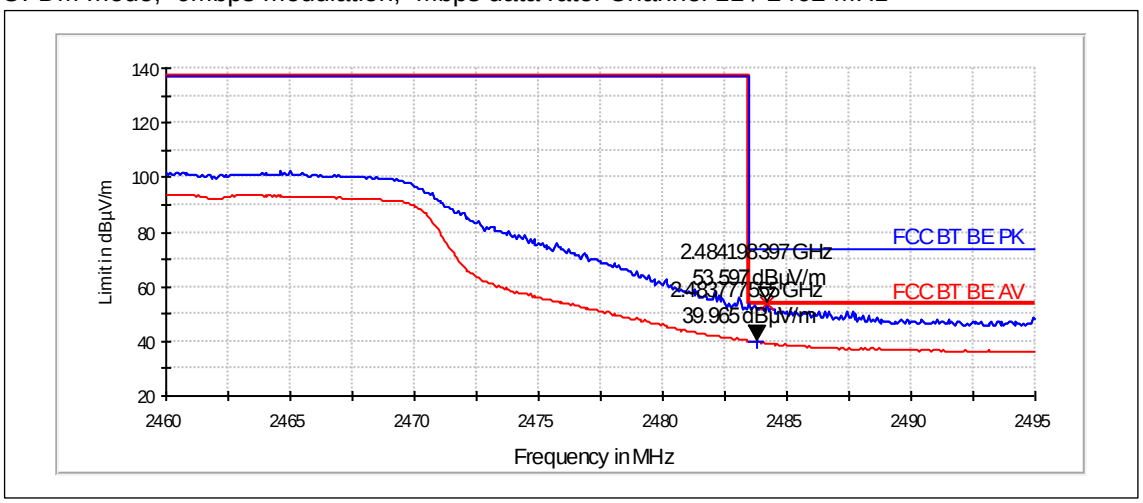
Channel / f_C [MHz]	E [dBµV/m]	Result
1 / 2412 (OFDM, 6Mbps)	50.1	PASSED
11 / 2462 (OFDM, 6Mbps)	53.6	PASSED
1 / 2412 (DSSS, 11Mbps)	48.94	PASSED
11 / 2462 (DSSS, 11Mbps)	49.99	PASSED
1 / 2412 (802.11n HT20 MCS 0)	50.38	PASSED
11 / 2462 (802.11n HT20 MCS 0)	55.84	PASSED

TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880

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

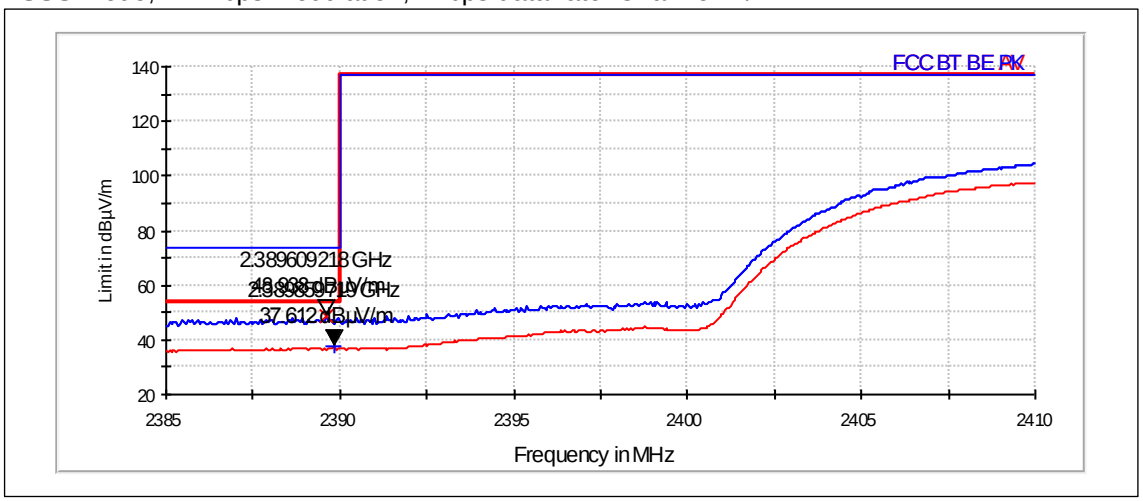


OFDM mode, 6Mbps modulation, Mbps data rate. Channel 11 / 2462 MHz

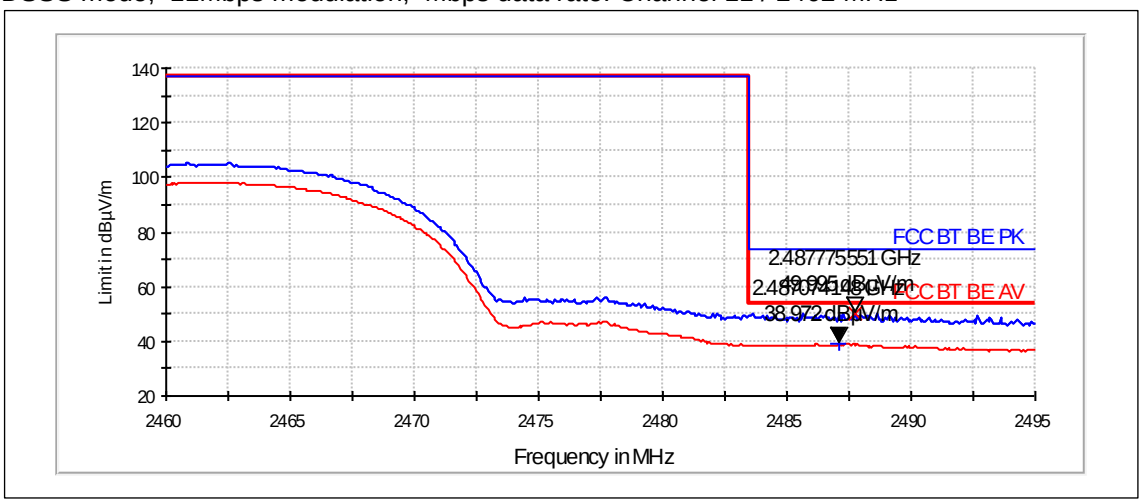


TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880

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

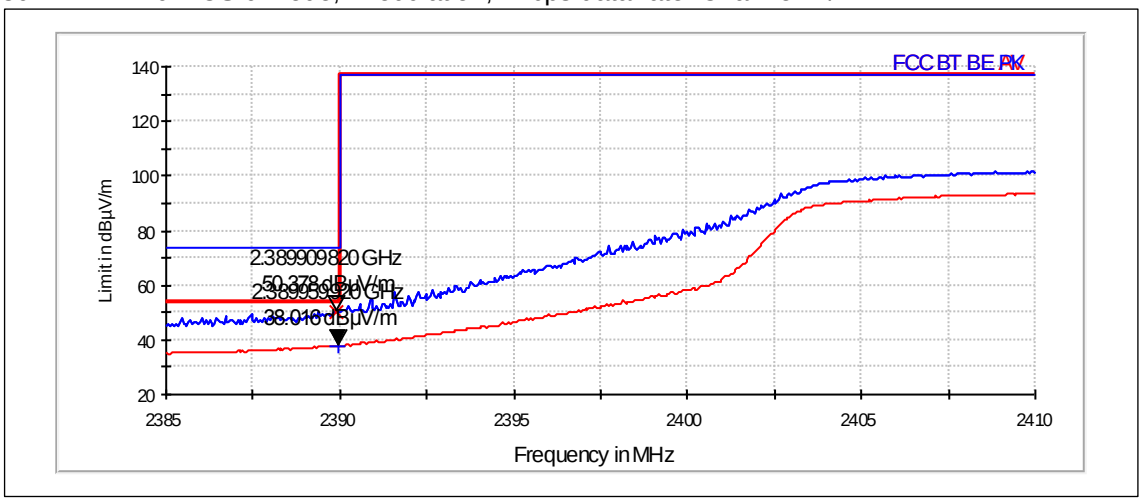


DSSS mode, 11Mbps modulation, Mbps data rate. Channel 11 / 2462 MHz

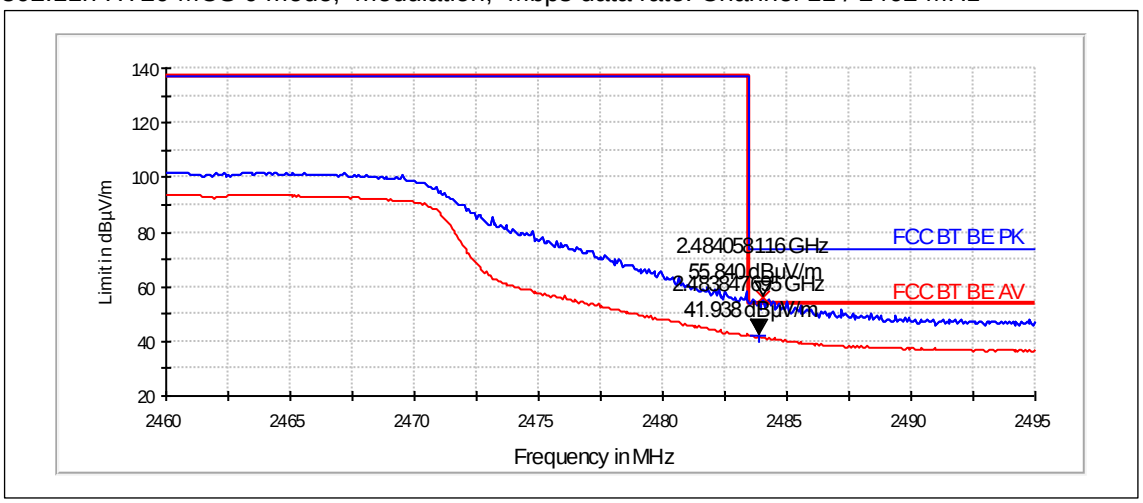


TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880

802.11n HT20 MCS 0 mode, modulation, Mbps data rate. Channel 1 / 2412 MHz



802.11n HT20 MCS 0 mode, modulation, Mbps data rate. Channel 11 / 2462 MHz

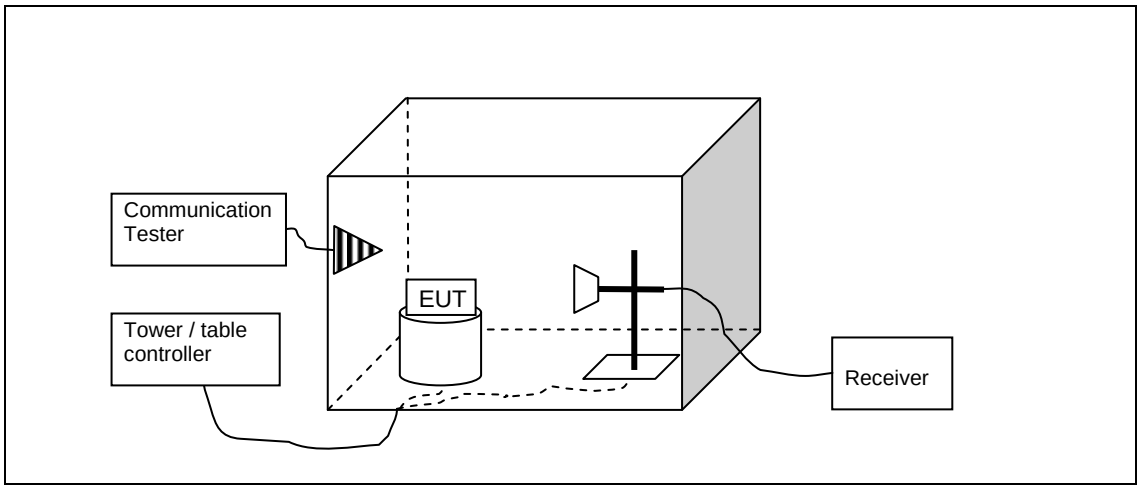


TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880

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

EUT with DUT number	RM-670, DUT 42552
Accessories with DUT numbers	BP-5Z, DUT 42555 ; AC-15E, DUT 42556 ; WH-207, DUT 42557
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24 / 45 / 101.4
Date of measurements	12-May-2011
Measured by	Hannu Söderholm

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.

TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880

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 [µV/m]	Limit [dBµV/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

TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880

3.3. WLAN Test results

3.3.1 OFDM, 6Mbps

Channel 1 / 2412 MHz
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4823	40.36	104.22	42.99	-2.63	VERTICAL	PASSED
7236.8	43.5	149.572	42.36	1.14	VERTICAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4823	27.5	23.706	30.13	-2.63	VERTICAL	PASSED
7236.8	30.94	35.237	29.8	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_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
35.01	32.3	41.2	55.66	-23.36	VERTICAL	PASSED
35.067	32.18	40.649	55.56	-23.38	VERTICAL	PASSED
35.151	22.83	13.853	46.25	-23.42	VERTICAL	PASSED
38.658	32.66	42.959	57.5	-24.84	VERTICAL	PASSED
38.667	21.5	11.881	46.34	-24.84	VERTICAL	PASSED
39.017	32.32	41.286	57.3	-24.98	VERTICAL	PASSED
42.205	31.81	38.958	58.14	-26.33	VERTICAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
3920.74	40.86	110.421	43.53	-2.67	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
3920.74	27.72	24.311	30.39	-2.67	HORIZONTAL	PASSED

Channel 11 / 2462 MHz
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4922	42.52	133.598	44.48	-1.96	VERTICAL	PASSED
7384.2	43.63	151.81	42.11	1.52	VERTICAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4922	29.18	28.764	31.14	-1.96	VERTICAL	PASSED
7384.2	30.83	34.802	29.31	1.52	VERTICAL	PASSED

TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880

3.4. WLAN Test results

3.4.1 DSSS, 11Mbps

Channel 1 / 2412 MHz
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4825	41.05	112.85	43.8	-2.75	HORIZONTAL	PASSED
7235	43.5	149.555	42.36	1.14	VERTICAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4825	27.05	22.511	29.8	-2.75	HORIZONTAL	PASSED
7235	30.82	34.738	29.68	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_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
35.06	23.17	14.41	46.55	-23.38	VERTICAL	PASSED
35.088	21.48	11.852	44.87	-23.39	VERTICAL	PASSED
35.107	32.42	41.769	55.82	-23.4	VERTICAL	PASSED
35.168	32.5	42.145	55.92	-23.42	VERTICAL	PASSED
36.787	20.8	10.97	44.88	-24.08	VERTICAL	PASSED
38.587	33.1	45.191	57.91	-24.81	VERTICAL	PASSED
38.728	33.17	45.562	58.04	-24.87	VERTICAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
3913.925	40.86	110.382	43.53	-2.67	VERTICAL	PASSED
3938.076	41.52	119.138	44.21	-2.69	VERTICAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
3913.925	27.57	23.914	30.24	-2.67	VERTICAL	PASSED
3938.076	27.59	23.958	30.28	-2.69	VERTICAL	PASSED

Channel 11 / 2462 MHz
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4923.1	42.26	129.733	44.21	-1.95	VERTICAL	PASSED
7387.5	43.77	154.419	42.23	1.54	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4923.1	29.14	28.655	31.09	-1.95	VERTICAL	PASSED
7387.5	30.99	35.42	29.45	1.54	HORIZONTAL	PASSED

TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880

3.5. WLAN Test results

3.5.1 802.11n HT20 MCS 0

Channel 1 / 2412 MHz
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4825.4	39.74	97.029	42.49	-2.75	HORIZONTAL	PASSED
7236.8	45.08	179.37	43.94	1.14	VERTICAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4825.4	27.04	22.485	29.79	-2.75	HORIZONTAL	PASSED
7236.8	30.72	34.372	29.58	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_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
35.027	32.38	41.586	55.75	-23.37	VERTICAL	PASSED
35.04	32.75	43.401	56.12	-23.37	VERTICAL	PASSED
35.091	23.02	14.151	46.41	-23.39	VERTICAL	PASSED
35.11	32.26	41.039	55.66	-23.4	VERTICAL	PASSED
35.137	32.68	43.072	56.09	-23.41	VERTICAL	PASSED
38.747	22.7	13.652	47.57	-24.87	VERTICAL	PASSED
38.787	32.55	42.408	57.44	-24.89	VERTICAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
3911.018	40.45	105.269	43.12	-2.67	VERTICAL	PASSED
3931.665	40.31	103.61	42.99	-2.68	VERTICAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
3911.018	27.4	23.429	30.07	-2.67	VERTICAL	PASSED
3931.665	27.55	23.848	30.23	-2.68	VERTICAL	PASSED

Channel 11 / 2462 MHz
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4924.1	42.28	129.987	44.21	-1.93	VERTICAL	PASSED
7385.1	43.51	149.744	41.99	1.52	VERTICAL	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Polarisation	Result
4924.1	29.01	28.213	30.94	-1.93	VERTICAL	PASSED
7385.1	30.76	34.514	29.24	1.52	VERTICAL	PASSED

TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880

4. AC powerline conducted emissions
(FCC §15.207, RSS-GEN 7.2.2)

EUT with DUT number	RM-670, DUT 42552
Accessories with DUT numbers	BP-5Z, DUT 42555 ; AC-15E, DUT 42556 ; WH-207, DUT 42557
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 50 / 99.1
Date of measurements	16-May-2011
Measured by	Jari Jantunen

4.1. Test method and limit

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

The EUT is placed on a wooden table 80 cm above the reference groundplane.

The EUT is connected via LISN to a test power supply.

The measurement results are obtained as described below:

$$U\ [dB\mu V] = U_{RX} + A_{TOT}$$

Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable and pulse limiter attenuations.

CISPR 22 Class B limits

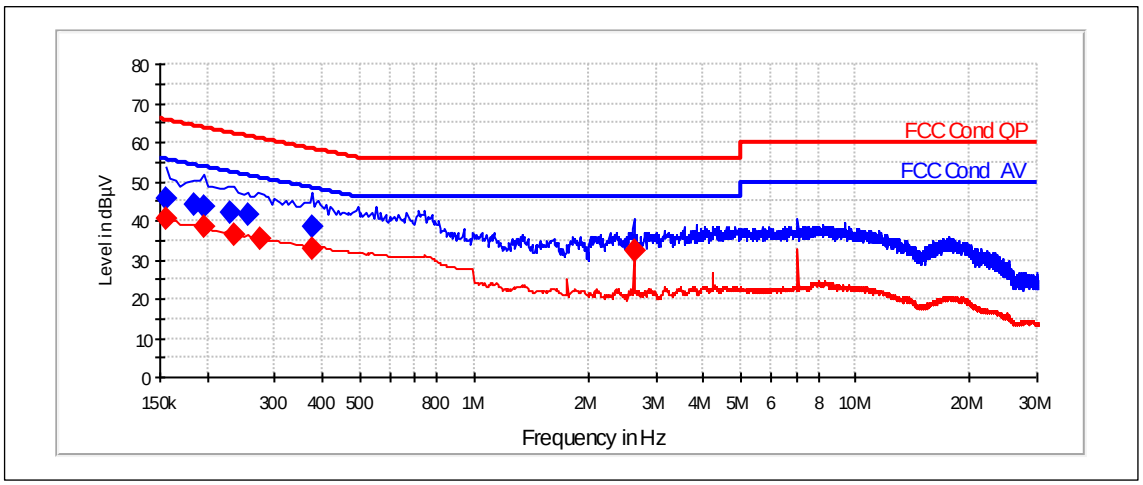
Frequency range [MHz]	Quasi peak limit [dBµV]	Average limit [dBµV]
0.15 - 0.5	66 - 56	56 - 46
0.5 - 5	56	46
5 - 30	60	50

TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880

4.2. WLAN Test results

4.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel 7 / 2442 MHz



Quasi peak

Frequency [MHz]	Level [dBµV]	IF-BW[kHz]	Line	Margin	Result
0.155	45.67	10	N	20.03	PASSED
0.185	44.09	10	N	20.16	PASSED
0.195	43.68	10	N	20.12	PASSED
0.23	42.24	10	L1	20.25	PASSED
0.255	41.47	10	N	20.09	PASSED
0.375	38.29	10	L1	20.09	PASSED

Average

Frequency [MHz]	Level [dBµV]	IF-BW[kHz]	Line	Margin	Result
0.155	40.39	10	L1	15.33	PASSED
0.195	38.23	10	L1	15.62	PASSED
0.235	36.59	10	N	15.67	PASSED
0.275	35.31	10	L1	15.67	PASSED
0.375	32.66	10	L1	15.69	PASSED
2.625	32.41	10	L1	13.6	PASSED

TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880

5. Test Equipment

5.1. 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

TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880

5.2. 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
-	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

TCC Nokia Tampere Laboratory
P.O. Box 68
Sinitaival 5
FIN-33720 TAMPERE, FINLAND
Tel. +358 (0) 7180 46800
Fax. +358 (0) 7180 46880