

FCC Part 15C Compliance Test Report

Test Report no.:	FCC15C_RM-675_33.docx	Date of Report:	08-Oct-2010
Number of pages:	35	Customer's Contact person:	Alison Lenaghan
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FCC listing no.:	99059		
IC recognition no.:	661AL-1		
Tested devices/ accessories:	Phone RM-675 / Battery BL-5K / AC Charger AC-15x / Headset WH-102		
FCC ID:	QFXRM-675X	IC:	661Z-RM675
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 RSS-GEN (Issue 2, June 2007) and 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".		
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:			

Christian Andersen, System Specialist, EMC

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	20-Sep-2010
Testing completed	dd-mmm-yyyy
The customer's contact person	Lenaghan Alison
Test Plan referred to	T:\Projects\RM-675\TestPlan\RS_testplan_RM-675_CR_BOB62.xls
Notes	-
Document name	C:\EMC32\Reports\FCC15C_RM-675_62.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 and FM transmitter. Bluetooth and WLAN are tested with maximum rated TX power.

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-675	353755/04/004732/8	6000	-	011.007	24028
Battery	BL-5K	4620400051K10101719;0670580	-	-	-	24042
AC-Charger	AC-15x	4090499495220800704;0675460	-	-	-	24037
Headset	WH-102	0694323939454109333	-	-	-	24039
Phone	RM-675	353755/04/004766/6	6000	-	011.007	24045
Battery	BL-5K	4620400051K10101717;0670580	-	-	-	24041
AC-Charger	AC-15x	4090499495220800691;0675460	-	-	-	24036
Headset	WH-102	0694323939454109386	-	-	-	24038

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	PASSED
15.247(d)	A8.5	Band edge compliance of RF emissions	PASSED
15.247(d)	A8.5	Spurious RF conducted emissions	PASSED
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)	6 dB bandwidth	NP
15.247(e)	A8.2 (b)	Power spectral density	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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2. Conducted peak output power (FCC §15.247(b)(1), RSS-210 A8.4 (4))

EUT with DUT number	RM-675 DUT 24045
Accessories with DUT numbers	BL-5K DUT 24041; AC-15X DUT 24036; WH-102 DUT 24038
Operation Voltage [V] / [Hz]	115V / 60 Hz
Result	PASSED
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24 / 47 / 102.0
Date of measurements	27/28-Sep-2010
Measured by	Ruben Hansen

2.1. Test method and limit

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

Limits for conducted peak output power measurements

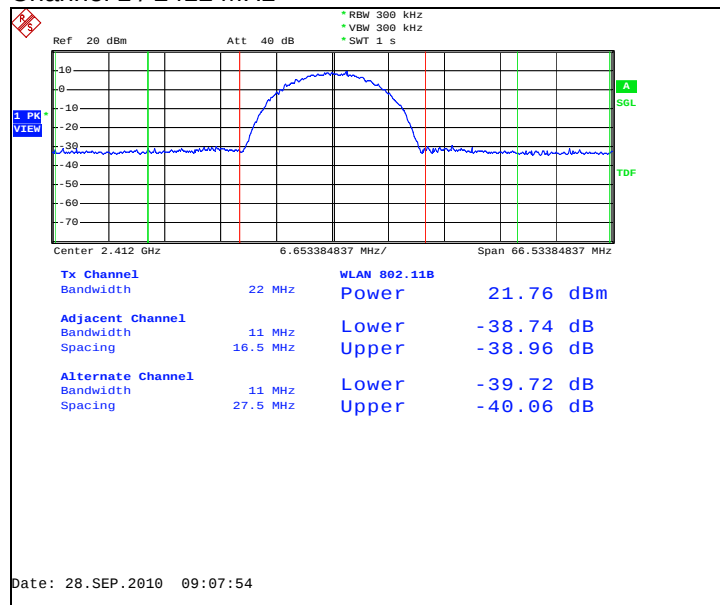
Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5	≤ 1	≤ 30

2.2. WLAN Test results

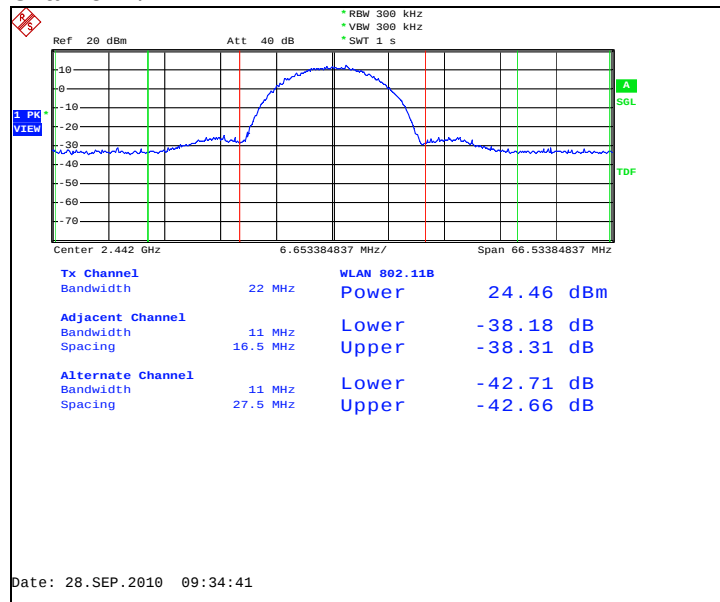
2.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [W]	Result
1 / 2412	21.76	0.150	PASSED
7 / 2442	24.46	0.279	PASSED
11 / 2462	21.37	0.137	PASSED

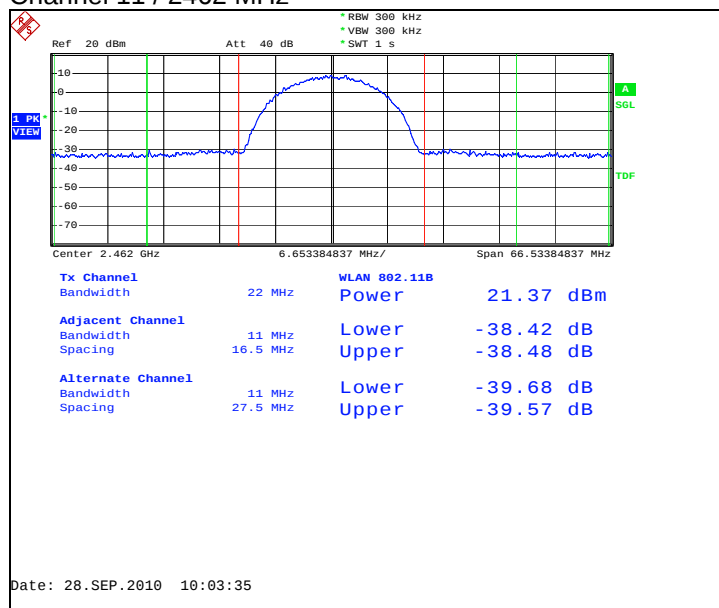
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



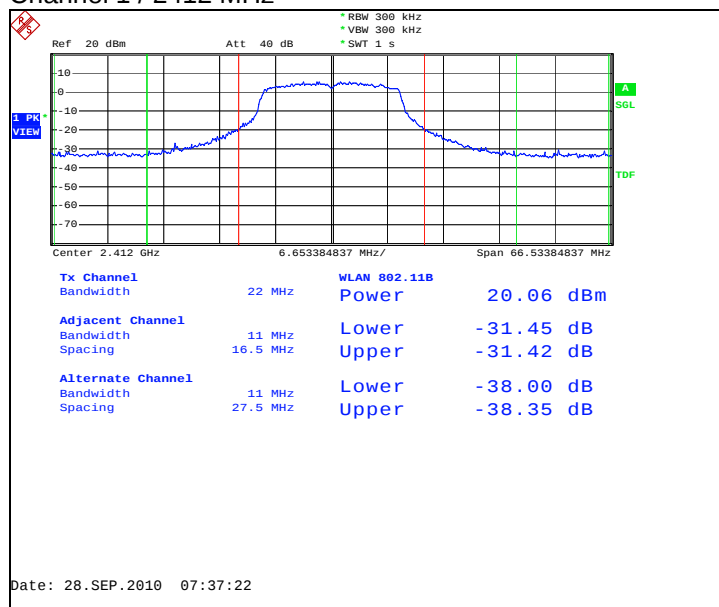
Channel 11 / 2462 MHz



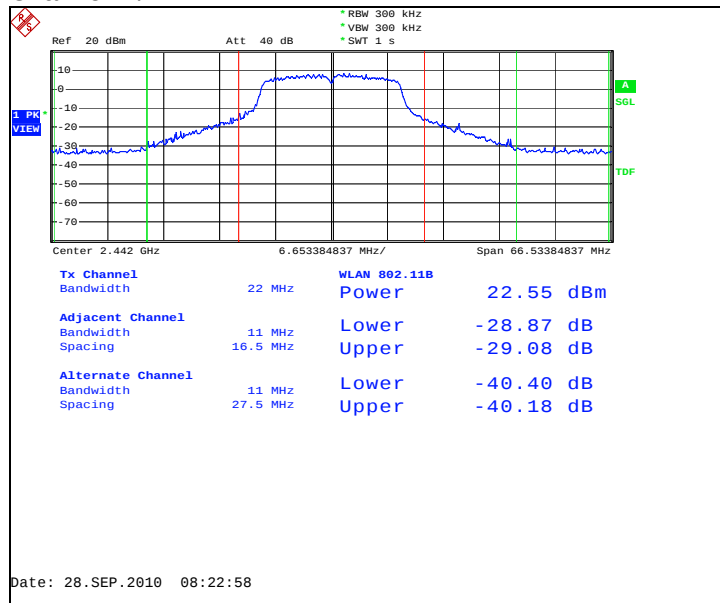
2.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [W]	Result
1 / 2412	20.06	0.101	PASSED
7 / 2442	22.55	0.180	PASSED
11 / 2462	19.85	0.097	PASSED

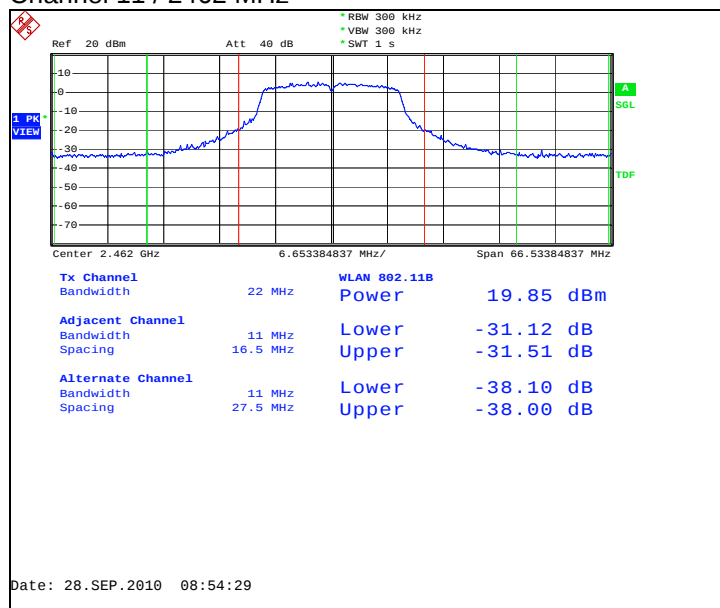
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



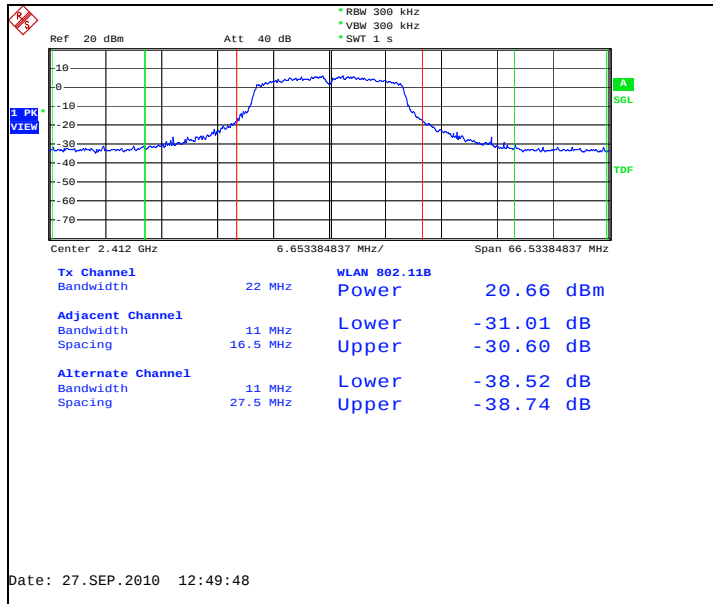
Channel 11 / 2462 MHz



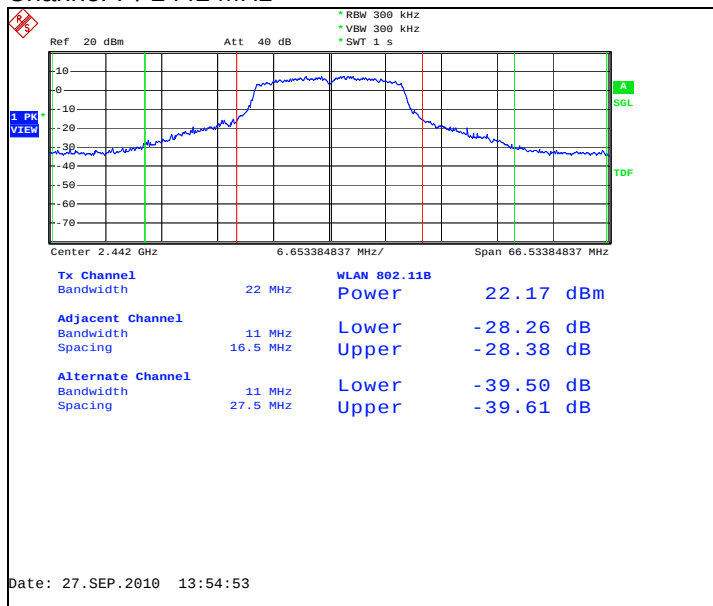
2.2.3 802.11n MCS 0 mode

Channel / f_c [MHz]	P [dBm]	P [W]	Result
1 / 2412	20.66	0.116	PASSED
7 / 2442	22.17	0.165	PASSED
11 / 2462	19.75	0.094	PASSED

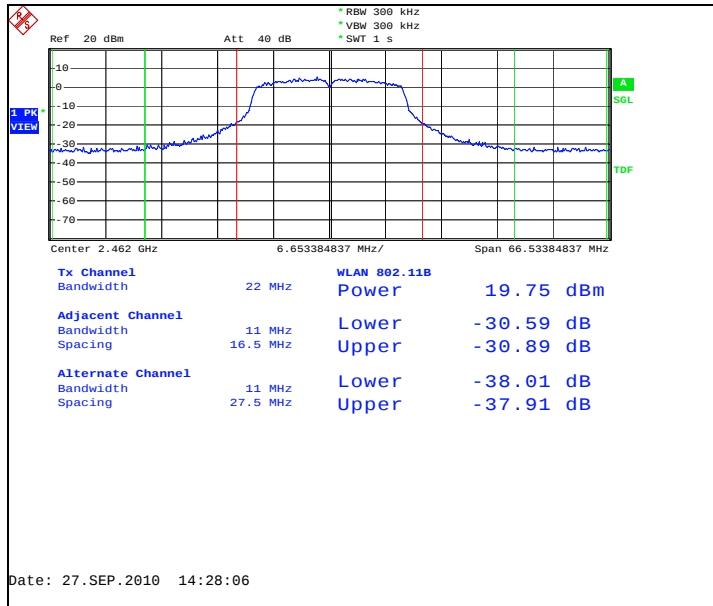
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



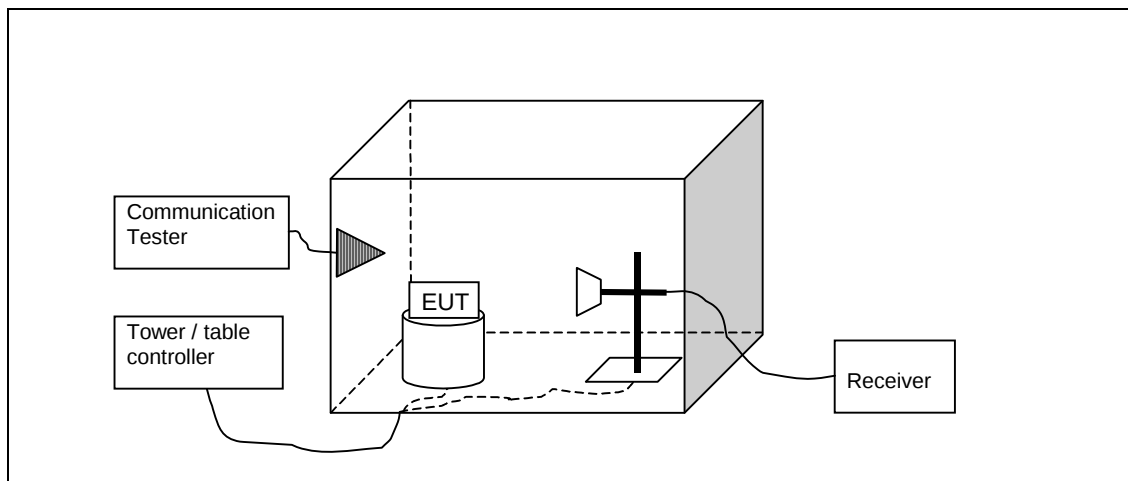
Channel 11 / 2462 MHz



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

EUT with DUT number	RM-675 , DUT 24028
Accessories with DUT numbers	BL-5K, DUT 24042 ; AC-15x, DUT 24037 ; WH-102, DUT 24039
Operation Voltage [V] / [Hz]	115 / 60
Results	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 48 / 99.8
Date of measurements	04-Oct-2010
Measured by	Christian Andersen

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.

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

3.3. WLAN Test results

3.3.1 OFDM mode, BPSK modulation, 6 Mbps data rate

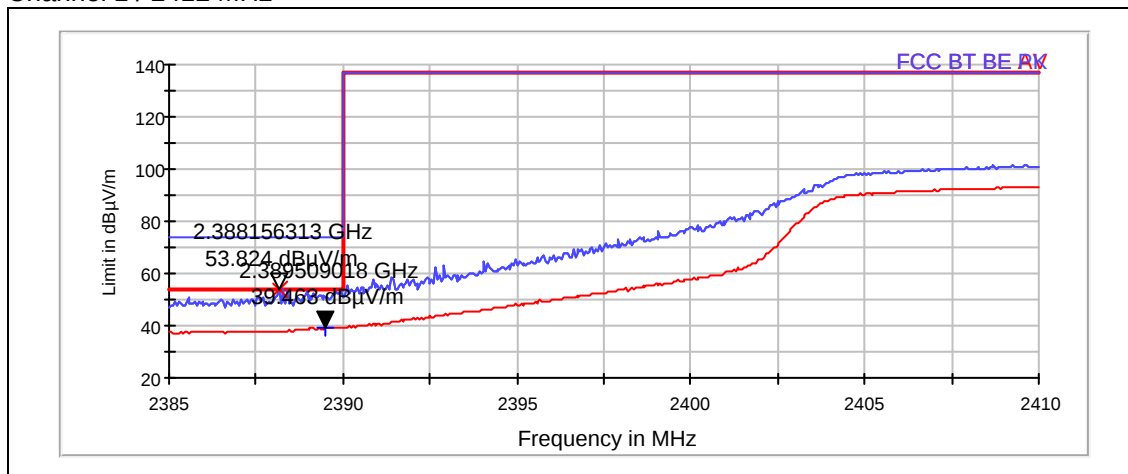
Average (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
1 / 2412	39.46	Passed

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

Channel / f_c [MHz]	E [dB μ V/m]	Result
1 / 2412	53.82	Passed

Channel 1 / 2412 MHz



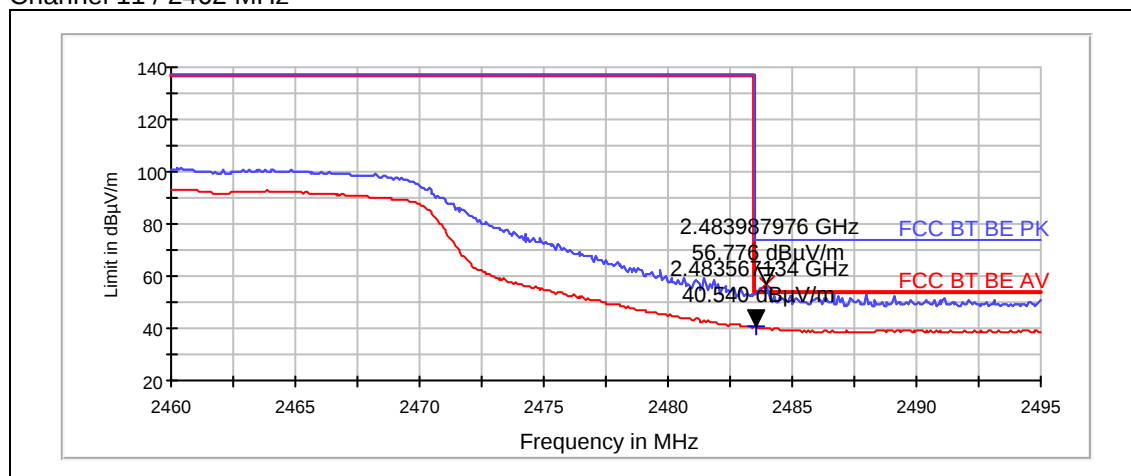
Average (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
11 / 2462	40.54	Passed

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

Channel / f_c [MHz]	E [dB μ V/m]	Result
11 / 2462	56.78	Passed

Channel 11 / 2462 MHz



3.3.2 DSSS mode, QPSK modulation, 11 Mbps data rate

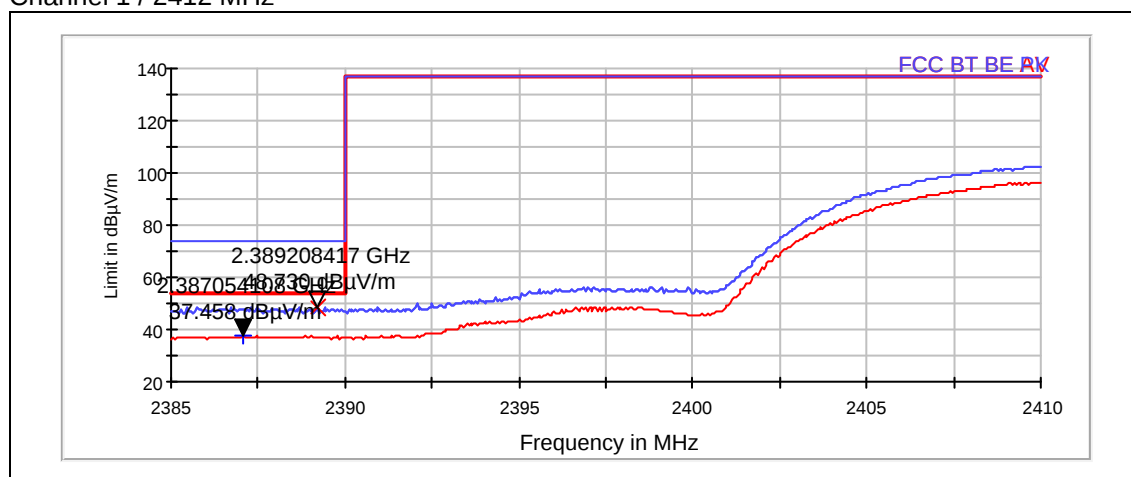
Average (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dBμV/m]	Result
1 / 2412	37.46	Passed

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

Channel / f_c [MHz]	E [dBμV/m]	Result
1 / 2412	48.73	Passed

Channel 1 / 2412 MHz



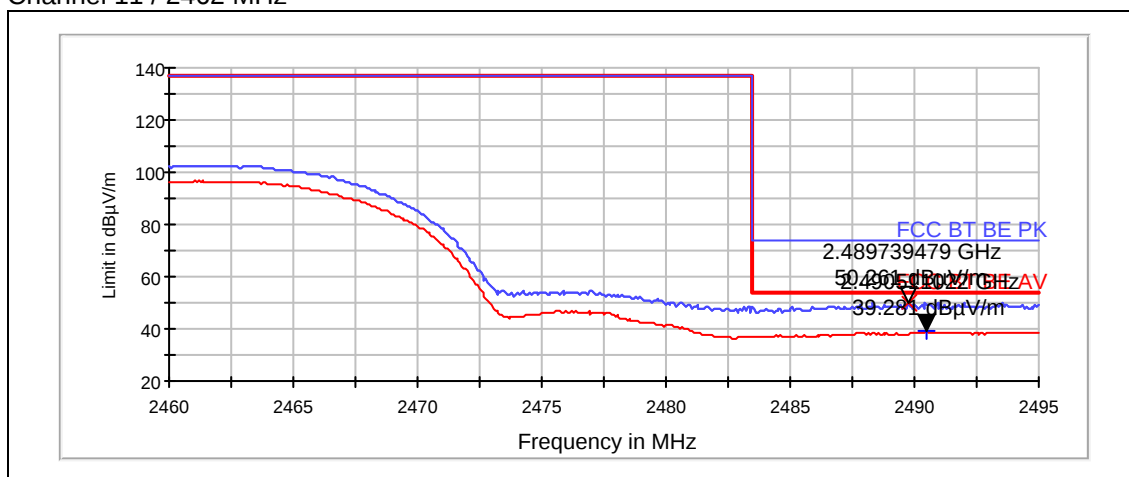
Average (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
11 / 2462	39.28	Passed

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

Channel / f_c [MHz]	E [dB μ V/m]	Result
11 / 2462	50.26	Passed

Channel 11 / 2462 MHz



3.3.3 802.11n MCS 0 mode

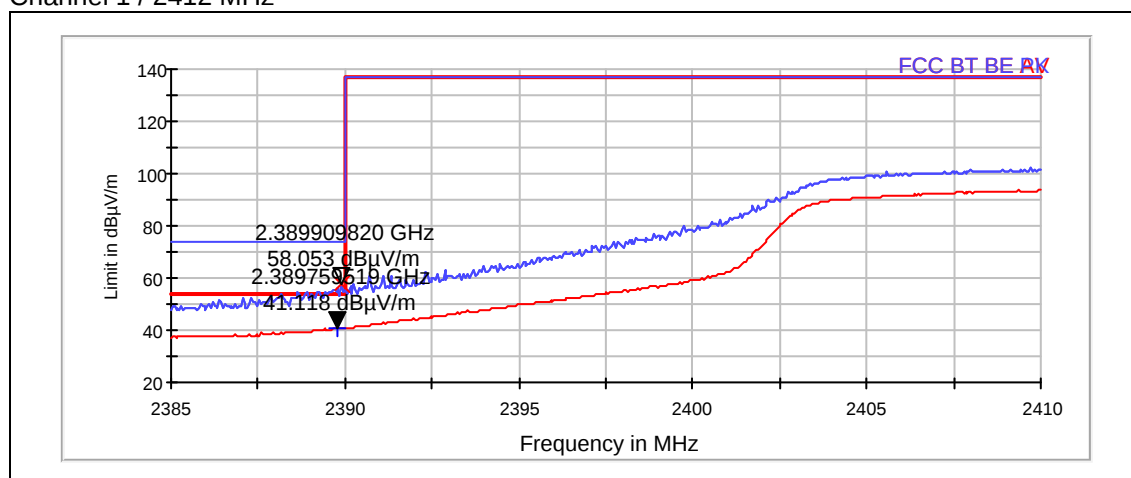
Average (RBW: 1 MHz, VBW: 1 MHz)

Channel / f _c [MHz]	E [dBμV/m]	Result
1 / 2412	41.12	Passed

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

Channel / f _c [MHz]	E [dBμV/m]	Result
1 / 2412	58.05	Passed

Channel 1 / 2412 MHz



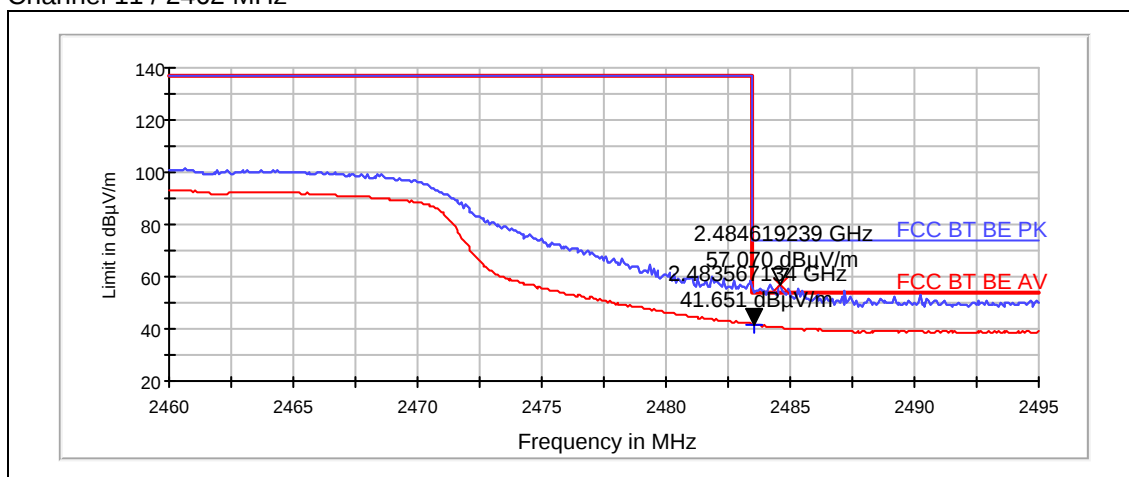
Average (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
11 / 2462	41.65	Passed

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

Channel / f_c [MHz]	E [dB μ V/m]	Result
11 / 2462	57.07	Passed

Channel 11 / 2462 MHz



4. Spurious RF conducted emissions (FCC §15.247(d), RSS-210 A8.5)

EUT with DUT number	RM-675 DUT 24045
Accessories with DUT numbers	BL-5K DUT 24041; AC-15X DUT 24036; WH-102 DUT 24038
Operation Voltage [V] / [Hz]	115V / 60 Hz
Result	PASSED
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24 / 47 / 102.0
Date of measurements	27/28-Sep-2010
Measured by	Ruben Hansen

4.1. Test method and limit

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

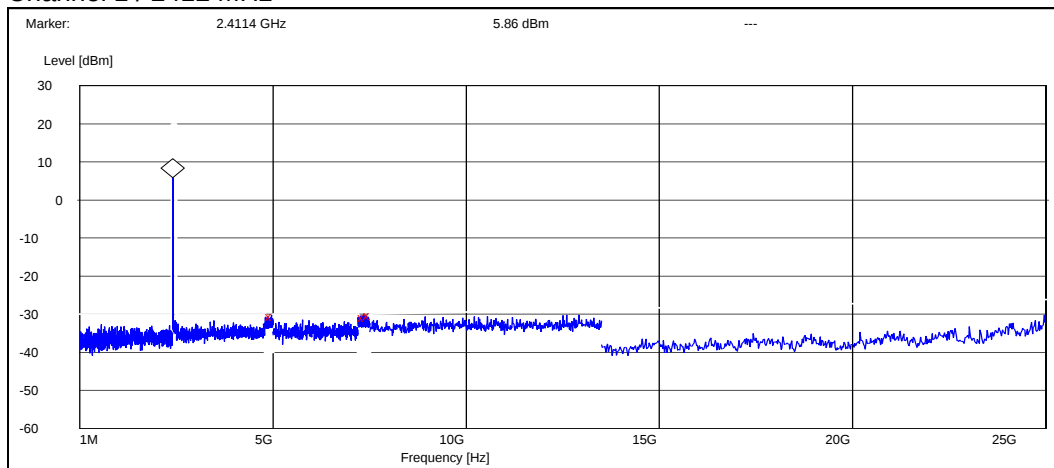
Limits for spurious RF conducted emissions measurements

Frequency range [MHz]	Limit [dBc]
1 – 25000	≤ -20

4.2. WLAN Test results

4.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

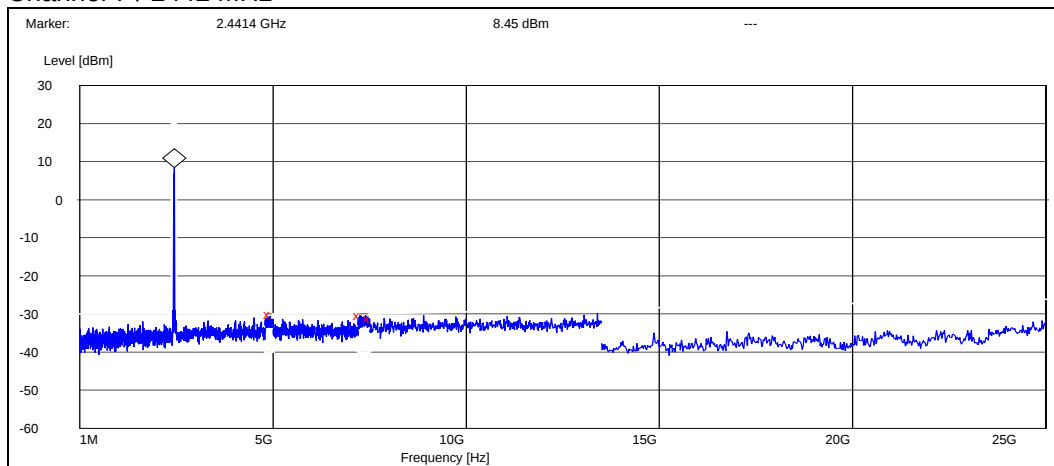
Channel 1 / 2412 MHz



Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4966.400000	-36.355263	PASSED
7350.600000	-36.755263	PASSED
7500.000000	-36.055263	PASSED

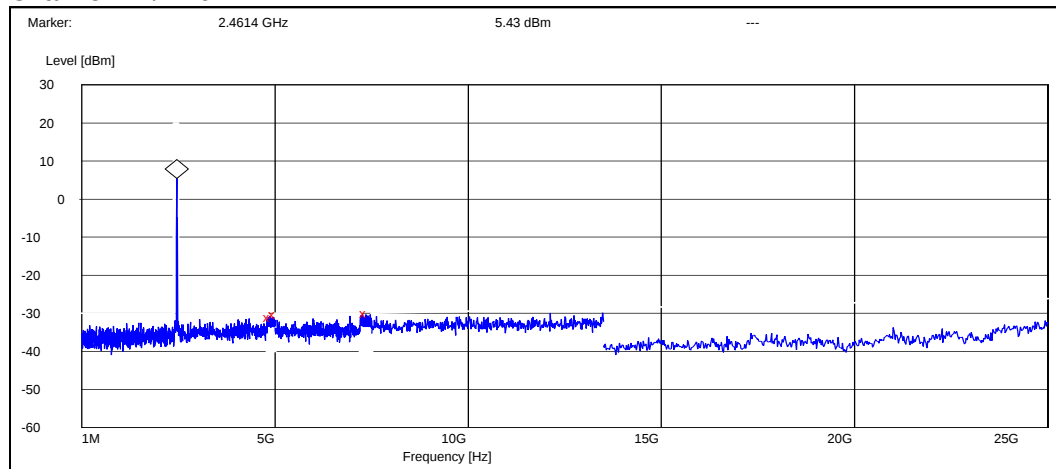
Channel 7 / 2442 MHz



Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4915.600000	-38.653552	PASSED
7249.800000	-38.853552	PASSED
7500.000000	-39.453552	PASSED

Channel 11 / 2462 MHz

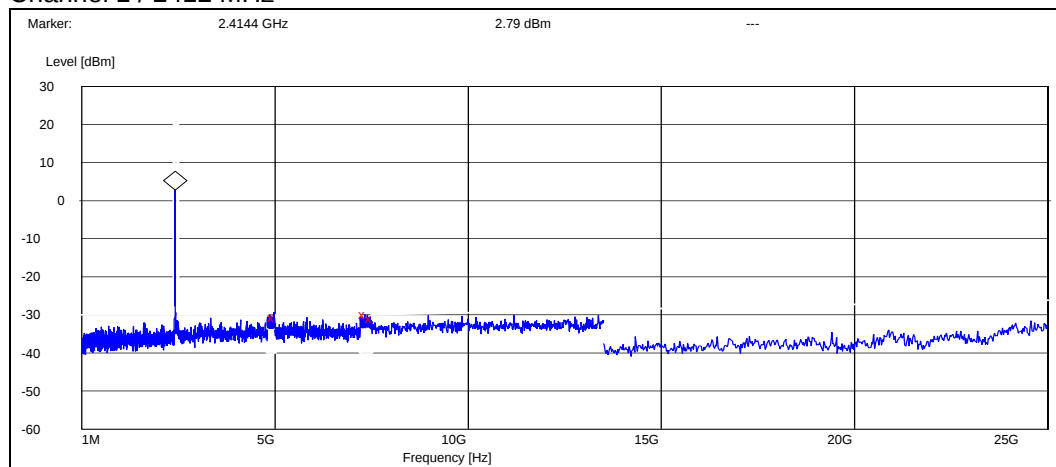


Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4863.200000	-36.429337	PASSED
5000.000000	-35.729337	PASSED
7360.200000	-35.529337	PASSED

4.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

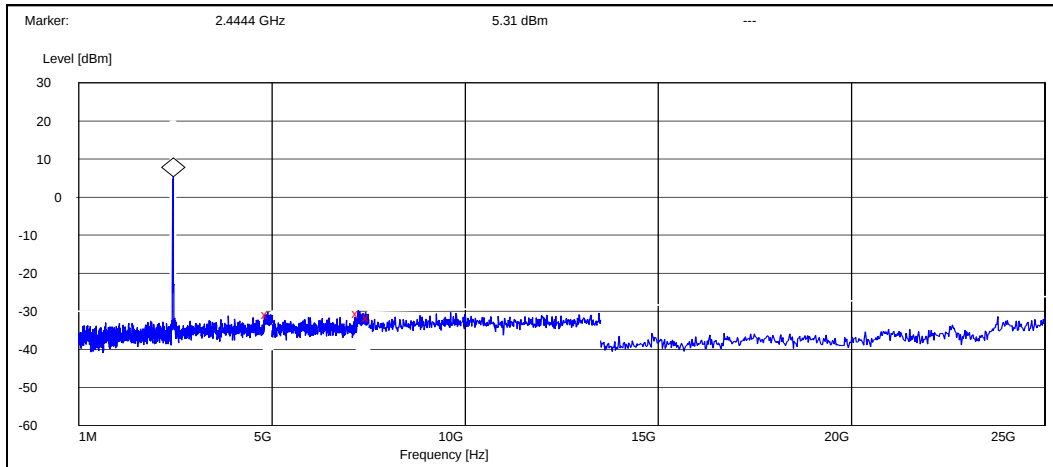
Channel 1 / 2412 MHz



Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4980.400000	-33.386514	PASSED
7324.200000	-32.686514	PASSED
7500.000000	-33.586514	PASSED

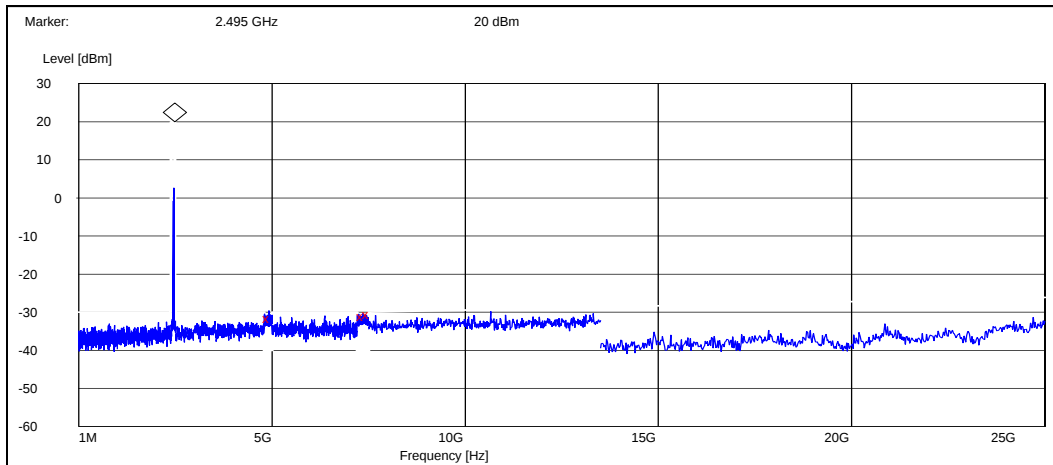
Channel 7 / 2442 MHz



Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4899.200000	-36.105428	PASSED
7225.200000	-35.805428	PASSED
7500.000000	-36.805428	PASSED

Channel 11 / 2462 MHz

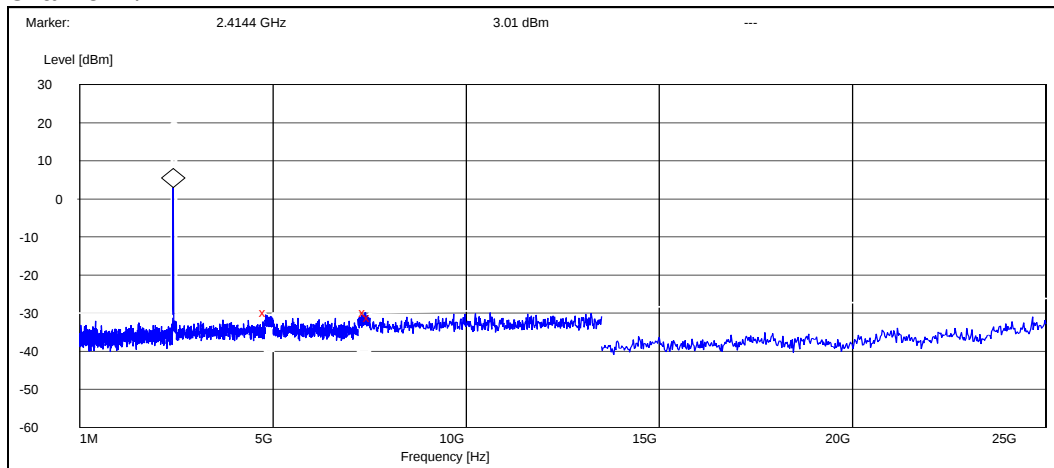


Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4917.600000	-34.101364	PASSED
7348.800000	-33.801364	PASSED
7500.000000	-33.101364	PASSED

4.2.3 802.11n MCS 0 mode

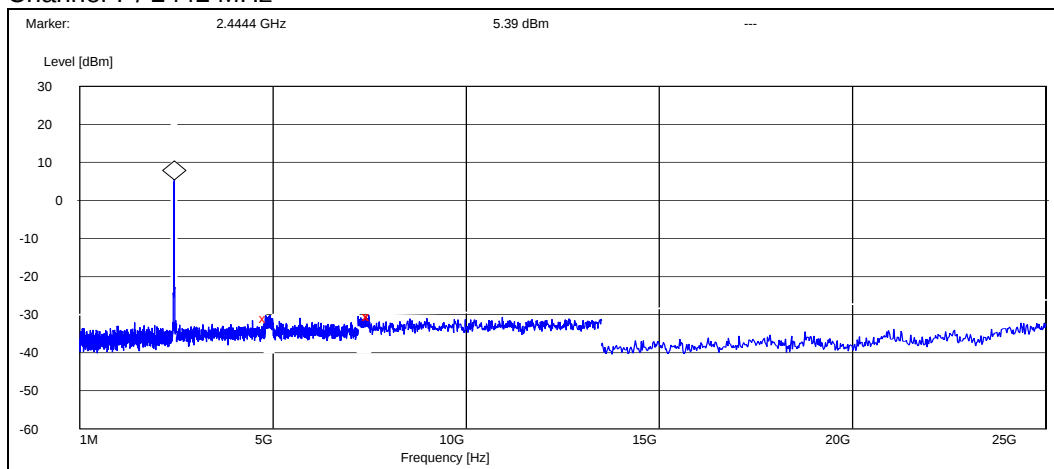
Channel 1 / 2412 MHz



Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4810.400000	-32.905257	PASSED
7399.800000	-32.705257	PASSED
7500.000000	-34.005257	PASSED

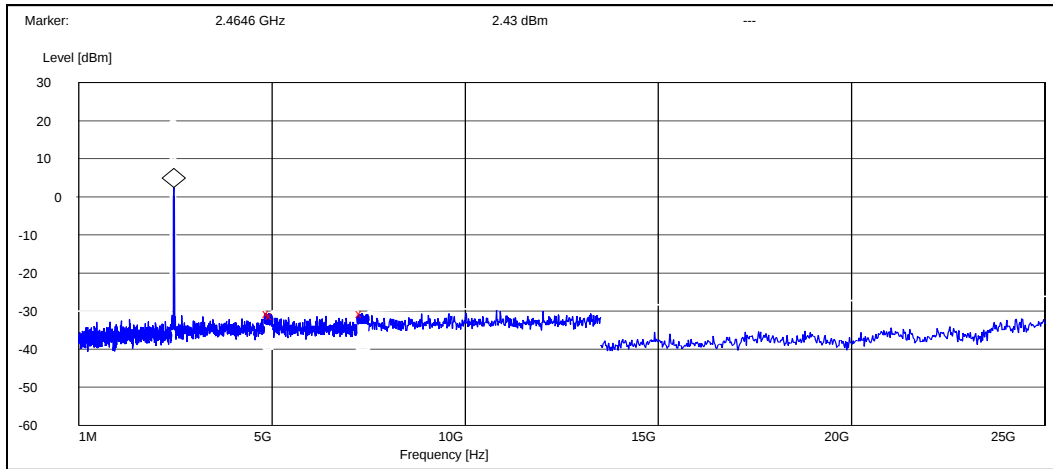
Channel 7 / 2442 MHz



Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4815.600000	-36.390686	PASSED
7480.800000	-35.890686	PASSED
7500.000000	-35.890686	PASSED

Channel 11 / 2462 MHz



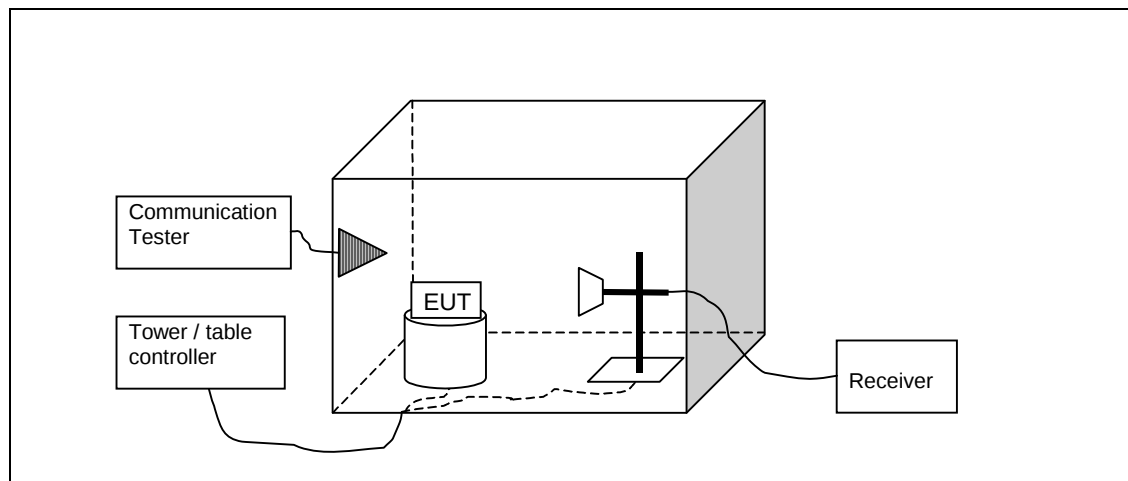
Peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	P [dBc]	Result
4923.200000	-32.930878	PASSED
5000.000000	-33.430878	PASSED
7327.800000	-33.030878	PASSED

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

EUT with DUT number	RM-675 , DUT 24049
Accessories with DUT numbers	BL-5K, DUT 24040 ; AC-15x, DUT 24037 ; WH-102, DUT 24039
Operation Voltage [V] / [Hz]	115 / 60
Results	Passed
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 48 / 99.8
Date of measurements	05-Oct-2010
Measured by	Bo Moltved Christiansen

5.1.1 Test Setup



5.2. 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

5.3. WLAN Test results

5.3.1 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 _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4824.9	41.57	119.798	40.01	1.56	HORIZONTAL	Passed
7237.4	47.13	227.117	37.2	9.93	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
4824.9	28.25	25.849	26.69	1.56	HORIZONTAL	Passed
7237.4	34.33	52.065	24.4	9.93	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
30.69	33.4	46.79	38.9	-5.5	VERTICAL	Passed
30.75	33.8	48.95	39.34	-5.54	VERTICAL	Passed
30.93	33.98	50.009	39.64	-5.66	VERTICAL	Passed
30.96	33.79	48.938	39.47	-5.68	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
3913.629	37.68	76.542	38.77	-1.09	VERTICAL	Passed
10686.375	55.36	585.801	37.07	18.29	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
3913.629	25.39	18.591	26.48	-1.09	VERTICAL	Passed
10686.375	42.35	131.099	24.06	18.29	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
4922.2	43.84	155.525	41.51	2.33	VERTICAL	Passed
7386.9	48.91	278.965	36.93	11.98	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
4922.2	30.4	33.121	28.07	2.33	VERTICAL	Passed
7386.9	36.18	64.424	24.2	11.98	VERTICAL	Passed

5.3.2 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 _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4826	41.09	113.384	39.52	1.57	HORIZONTAL	Passed
7236	47.06	225.528	37.19	9.87	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
4826	28.21	25.737	26.64	1.57	HORIZONTAL	Passed
7236	34.36	52.21	24.49	9.87	HORIZONTAL	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
30.63	21.25	11.552	26.71	-5.46	VERTICAL	Passed
30.69	32.81	43.692	38.31	-5.5	VERTICAL	Passed
30.78	32.66	42.954	38.22	-5.56	VERTICAL	Passed
30.81	21.96	12.531	27.54	-5.58	VERTICAL	Passed
30.99	32.21	40.79	37.91	-5.7	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
10744.889	55.14	571.742	37.32	17.82	HORIZONTAL	Passed
11475.752	56.08	636.429	37.46	18.62	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
10744.889	42.02	126.241	24.2	17.82	HORIZONTAL	Passed
11475.752	42.81	138.229	24.19	18.62	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	43.23	145.027	40.88	2.35	VERTICAL	Passed
7386.7	49.18	287.574	37.2	11.98	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
4923.1	30.4	33.102	28.05	2.35	VERTICAL	Passed
7386.7	36.13	64.032	24.15	11.98	VERTICAL	Passed

5.3.3 802.11n MCS 0 mode

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
4824.4	41.31	116.332	39.76	1.55	HORIZONTAL	Passed
7234.3	47.07	225.71	37.06	10.01	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
4824.4	28.22	25.775	26.67	1.55	HORIZONTAL	Passed
7234.3	34.28	51.767	24.27	10.01	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
30.57	33.01	44.725	38.43	-5.42	VERTICAL	Passed
30.75	22.36	13.117	27.9	-5.54	VERTICAL	Passed
30.78	32.19	40.668	37.75	-5.56	VERTICAL	Passed
30.81	32.5	42.15	38.08	-5.58	VERTICAL	Passed
30.9	32.25	40.987	37.89	-5.64	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
11293.189	55.91	624.381	37.59	18.32	VERTICAL	Passed
11501.604	55.68	607.995	37.06	18.62	VERTICAL	Passed

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

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
11293.189	42.06	126.751	23.74	18.32	VERTICAL	Passed
11501.604	42.68	136.176	24.06	18.62	VERTICAL	Passed

Channel 11 / 2462 MHz

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

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
4922.1	43.21	144.71	40.88	2.33	VERTICAL	Passed
7386.3	49.31	292.146	37.32	11.99	HORIZONTAL	Passed

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

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Polarisation	Result
4922.1	30.35	32.908	28.02	2.33	VERTICAL	Passed
7386.3	36.22	64.737	24.23	11.99	HORIZONTAL	Passed

6. Power spectral density (FCC §15.247(e), RSS-210 A8.2 (b))

EUT with DUT number	RM-675 DUT 24045
Accessories with DUT numbers	BL-5K DUT 24041; AC-15X DUT 24036; WH-102 DUT 24038
Operation Voltage [V] / [Hz]	115V / 60 Hz
Result	PASSED
Remarks	None
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24 / 47 / 102.0
Date of measurements	27/28-Sep-2010
Measured by	Ruben Hansen

6.1. Test method and limit

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

Limits for power spectral density measurements

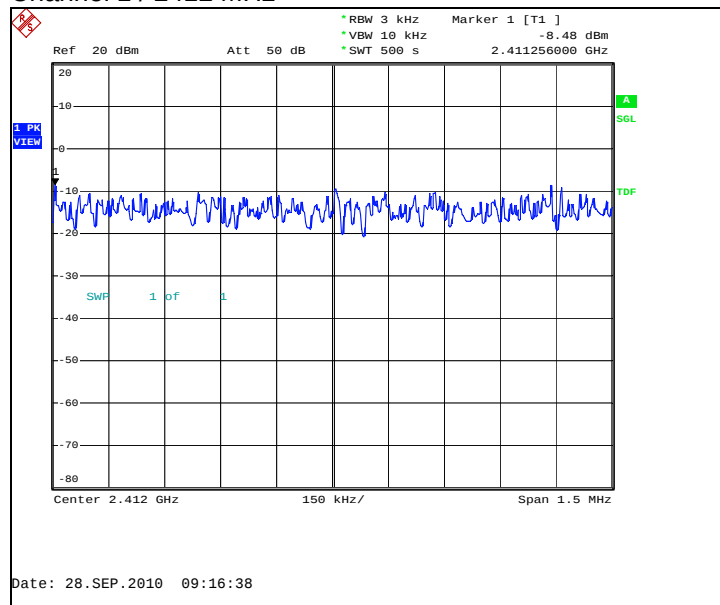
Limit [dBm] @ 3 kHz
≤ 8

6.2. WLAN test results

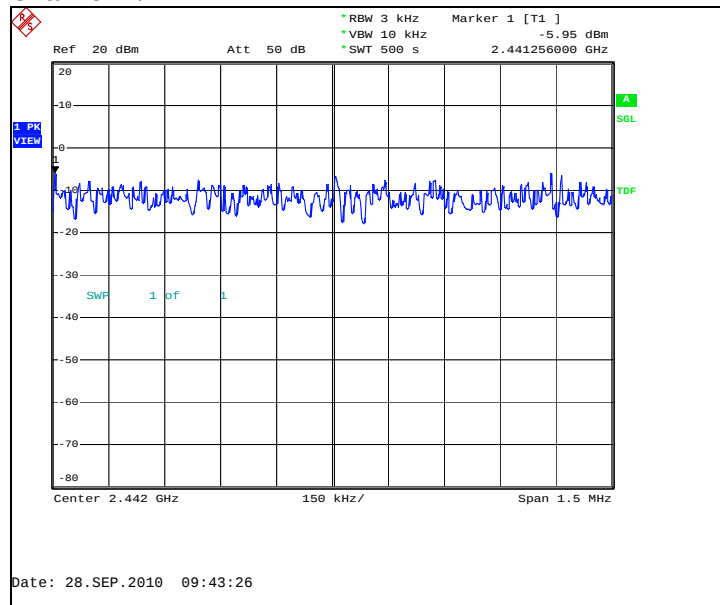
6.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-8.48	PASSED
7 / 2442	-5.95	PASSED
11 / 2462	-8.89	PASSED

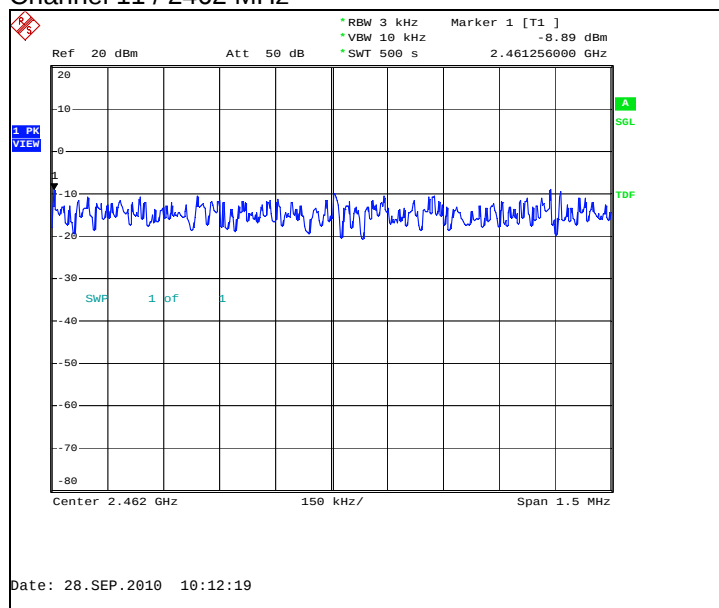
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



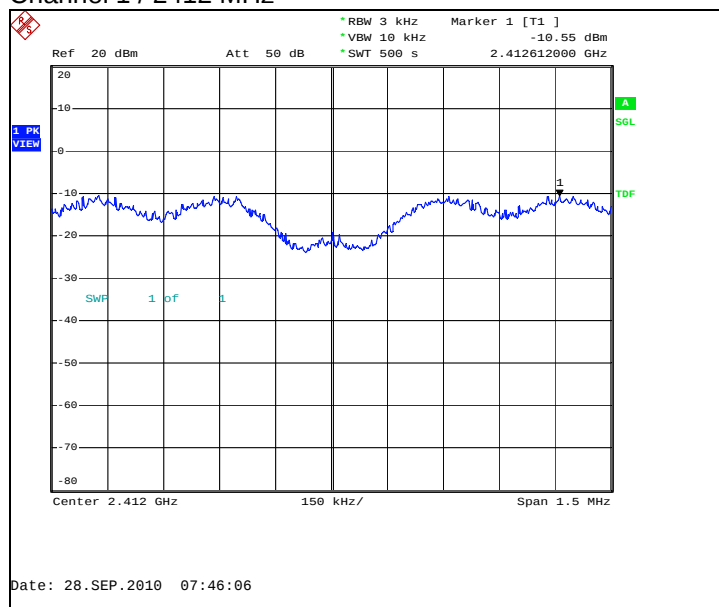
Channel 11 / 2462 MHz



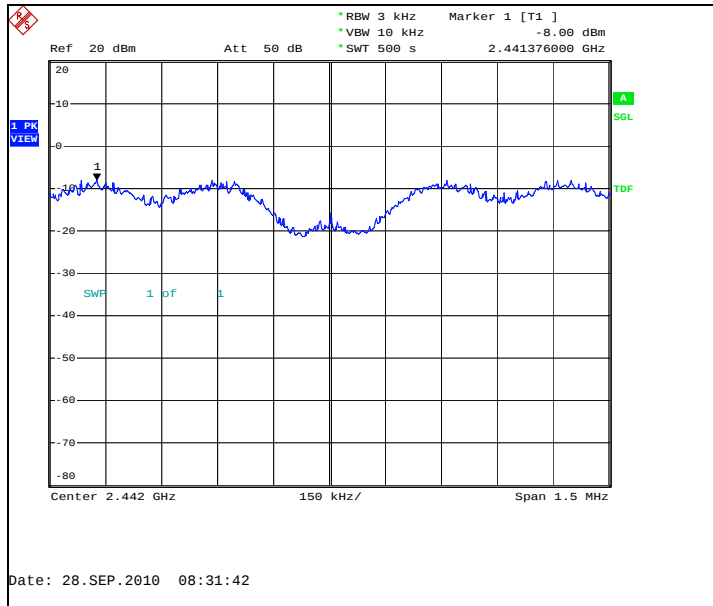
6.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-10.55	PASSED
7 / 2442	-8.00	PASSED
11 / 2462	-10.82	PASSED

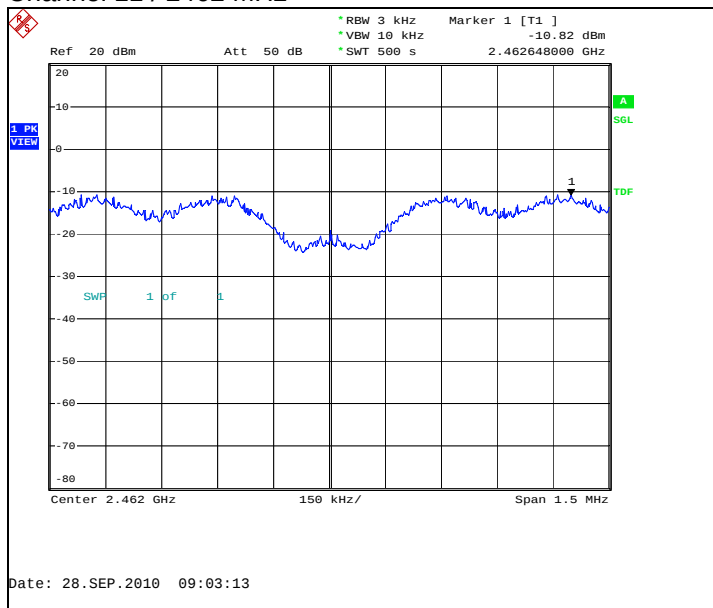
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



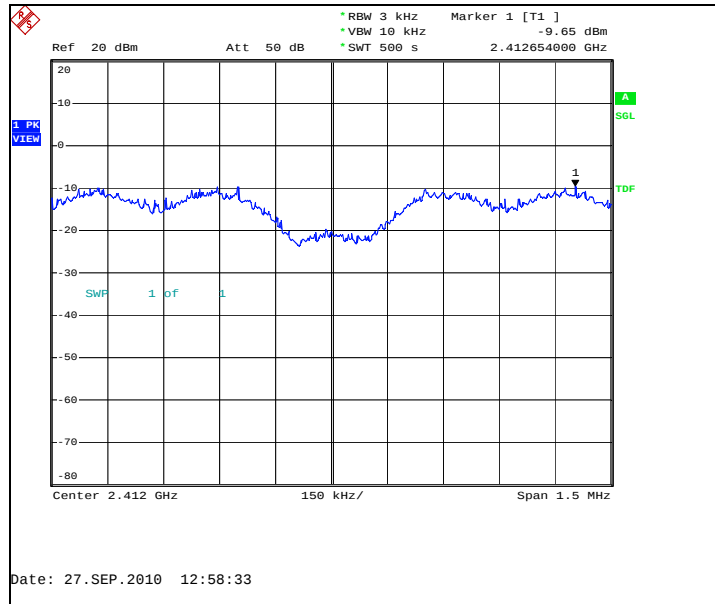
Channel 11 / 2462 MHz



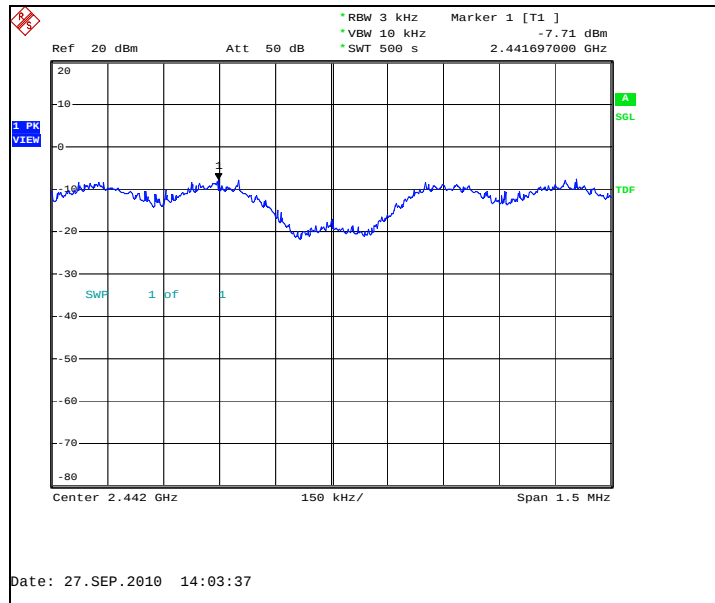
6.2.3 802.11n MCS 0 mode

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-9.65	PASSED
7 / 2442	-7.71	PASSED
11 / 2462	-10.45	PASSED

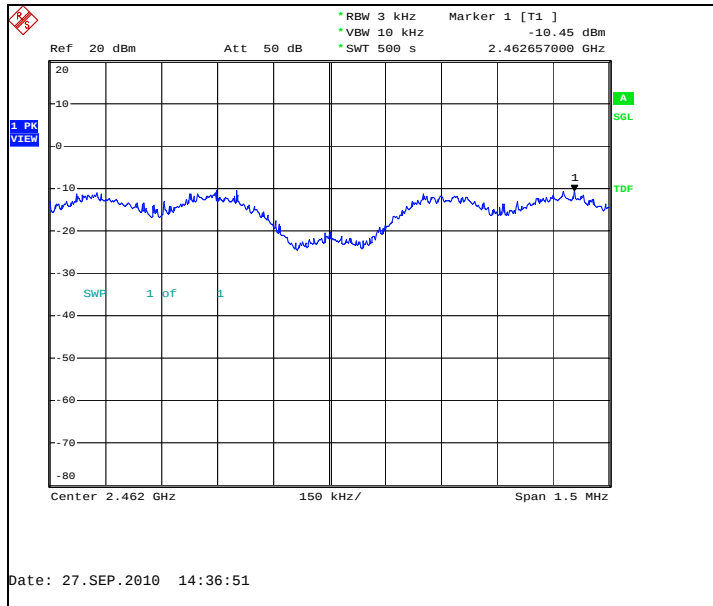
Channel 1 / 2412 MHz



Channel 7 / 2442 MHz



Channel 11 / 2462 MHz



7. Test Equipment

7.1. 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

7.2. 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 μ Wave Mux	10-785B-522	Pickering	22/24/27, 15C, 15B
14021	Relay Dual 6 Chnl μ Wave Mux	10-785-522	-	22/24/27, 15C, 15B
-	Relay Dual 6 Chnl μ 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