

FCC Part 15C Compliance Test Report

Test Report no.:	FCC15CWLAN_RM-900_06.docx	Date of Report:	17-Jan-2013
Number of pages:	42	Customer's Contact person:	Zhang Wei (davizhan)
Testing laboratory:	TCC Nokia Beijing Laboratory Beijing Economic and Technological Development Area No.5 Donghuan Zhonglu Beijing PRC China 100176 Tel. +86 10 8711 8888 Fax. +86 10 8711 4550	Customer:	Nokia Corporation Beijing Economic and Technological Development Area No.5 Donghuan Zhonglu Beijing PRC China 100176 Tel. +86 10 8711 8888 Fax. +86 10 8711 4550
FCC listing no.:	975940		
IC recognition no.:	661AH-1		
Tested devices/ accessories:	Phone RM-900 / Battery BL-4U / AC-Charger AC-11E / Headset WH-108		
FCC ID:	QTLRM-900	IC:	661AB-RM900
Supplement reports:	-		
Testing has been carried out in accordance with:	CFR 47, FCC rules Part 15 Subpart C, ANSI C63.4 (2003), 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:			

Gao Sherina, Engineer, EMC

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	30-Dec-2012
Testing completed	06-Jan-2013
The customer's contact person	Zhang Wei (davizhan)
Test Plan referred to	T:\Projects\RM-900\TestPlan\RS_Testplan_RM-900.xlsm
Notes	-
Document name	FCC15CWLAN_RM-900_06.docx

1.1. EUT and Accessory Information

The EUT is a mobile phone with following features:
GSM/WLAN/Bluetooth
The EUT is tested with maximum rated TX power.

Devices under tests

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-900	004402471286413	0204	-	aqsl2w49	53086
Battery	BL-4U	4955402283061411385;0670560	-	-	-	53071
AC-Charger	AC-11E	4090492276170602902;0675479	-	-	-	53068
Headset	WH-108	243513R	-	-	-	53078
Phone	RM-900	004402471286470	0204	-	aqsl2w49	53083
Battery	BL-4U	4955402283061411371;0670560	-	-	-	53073
AC-Charger	AC-11E	4090492276170602904;0675479	-	-	-	53070
Headset	WH-108	243513R	-	-	-	53077
Phone	RM-900	004402471286264	0204	-	aqsl2w49	53085

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), 15.205(b)	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	PASSED
15.247(a)(2)	A8.2 (a)	6dB(bandwidth)	PASSED
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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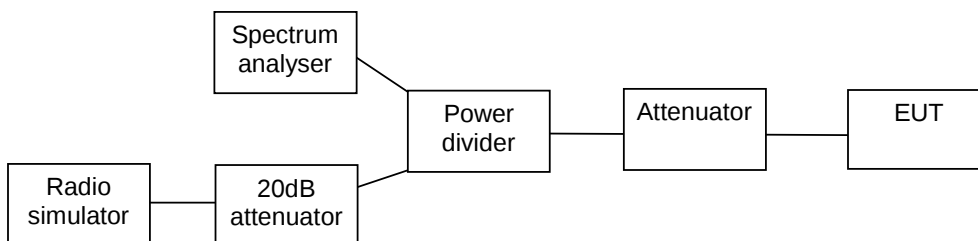
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2. Conducted peak output power (15.247(b)(1), RSS-210 A8.4 (4))

EUT with DUT number	RM-900, DUT 53083
Accessories with DUT numbers	BL-4U, DUT 53073 ; AC-11E, DUT 53070 ; WH-108, DUT 53077
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	18/23/102.7
Date of measurements	05-Jan-2013
Measured by	Gao Sherina

2.1. 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 conducted peak output power measurements

Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5 5725 - 5850	≤ 1	≤ 30

2.3. Power results summary

Channel / f_c [MHz]	Mode	Modulation	Data rate	Level [dBm]
1 / 2412	DSSS	QPSK	11 Mbps	22.05
6 / 2437	DSSS	QPSK	11 Mbps	22.19
11 / 2462	DSSS	QPSK	11 Mbps	22.23
1 / 2412	OFDM	BPSK	6 Mbps	19.93
6 / 2437	OFDM	BPSK	6 Mbps	23.56
11 / 2462	OFDM	BPSK	6 Mbps	21.55
1 / 2412	n-mode, 20 MHz CBW	BPSK	6.5 / 7.25 Mbps	19.87
6 / 2437	n-mode, 20 MHz CBW	BPSK	6.5 / 7.25 Mbps	21.93
11 / 2462	n-mode, 20 MHz CBW	BPSK	6.5 / 7.25 Mbps	21.4

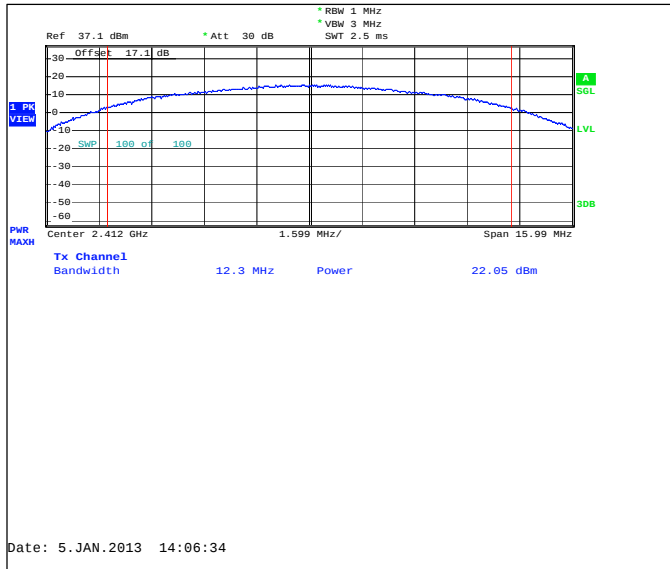
2.4. WLAN Test results

WLAN 2.4 GHz, peak output power [dBm]	
Mode & data speed	Ch 6
b-mode WLAN DSSS 1 Mbps	19.61
b-mode WLAN DSSS 2 Mbps	19.83
b-mode WLAN DSSS 5.5 Mbps	21.36
b-mode WLAN DSSS 11 Mbps	22.22
g-mode WLAN OFDM 6 Mbps	23.72
g-mode WLAN OFDM 9 Mbps	23.68
g-mode WLAN OFDM 12 Mbps	23.35
g-mode WLAN OFDM 18 Mbps	23.27
g-mode WLAN OFDM 24 Mbps	23.69
g-mode WLAN OFDM 36 Mbps	23.65
g-mode WLAN OFDM 48 Mbps	22.17
g-mode WLAN OFDM 54 Mbps	22.21

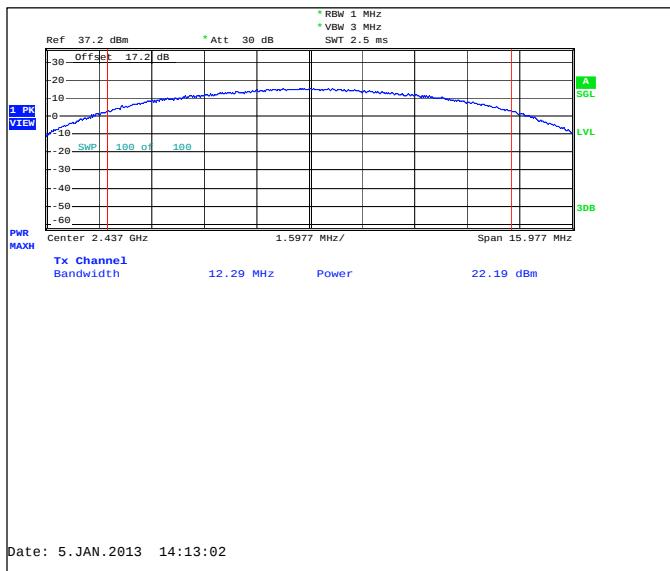
2.4.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
1 / 2412	22.05	160.325	PASSED
6 / 2437	22.19	165.577	PASSED
11 / 2462	22.23	167.109	PASSED

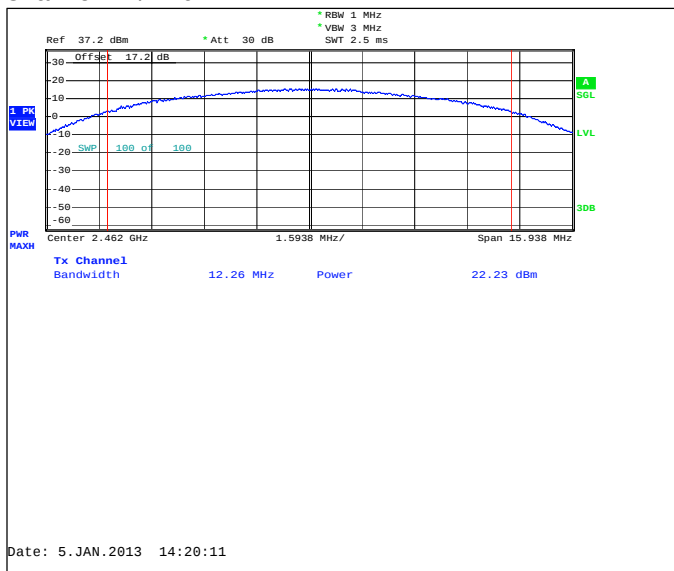
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



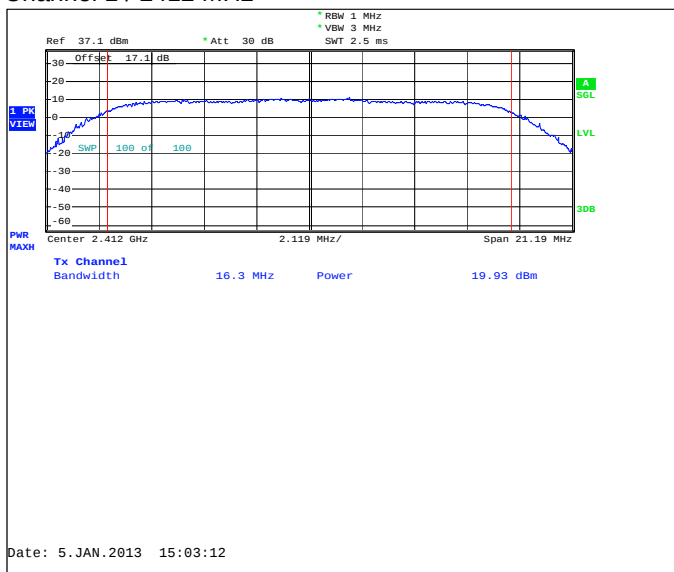
Channel 11 / 2462 MHz



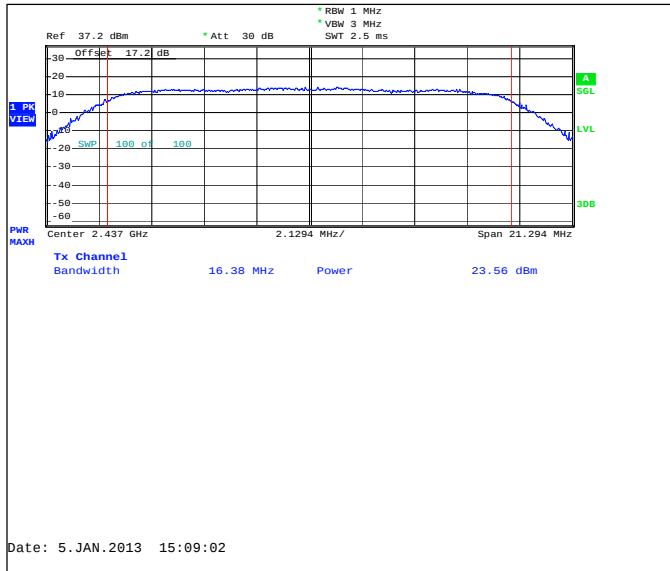
2.4.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
1 / 2412	19.93	98.401	PASSED
6 / 2437	23.56	226.986	PASSED
11 / 2462	21.55	142.889	PASSED

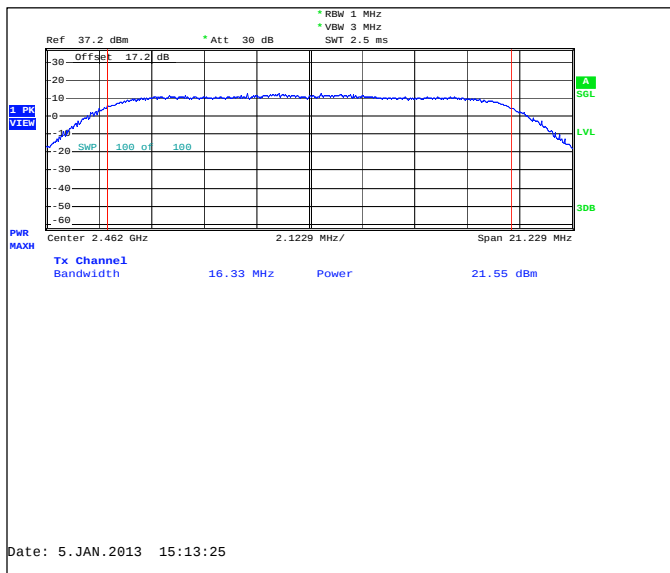
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



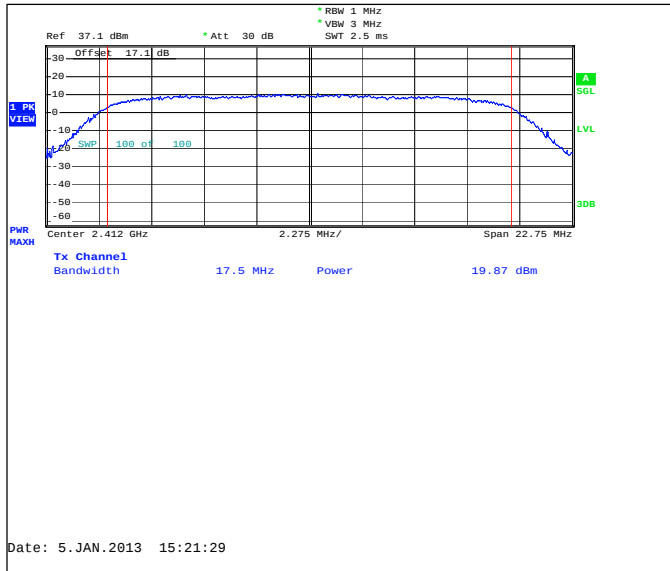
Channel 11 / 2462 MHz



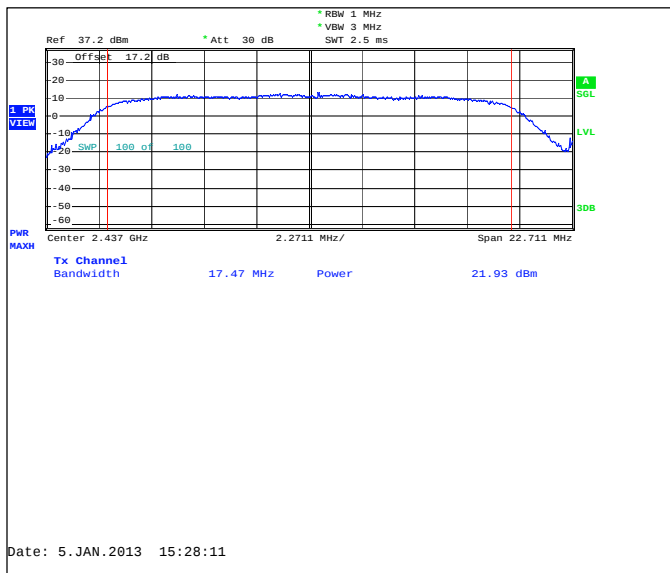
2.4.3 N-mode, 20 MHz CBW mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
1 / 2412	19.87	97.051	PASSED
6 / 2437	21.93	155.955	PASSED
11 / 2462	21.4	138.038	PASSED

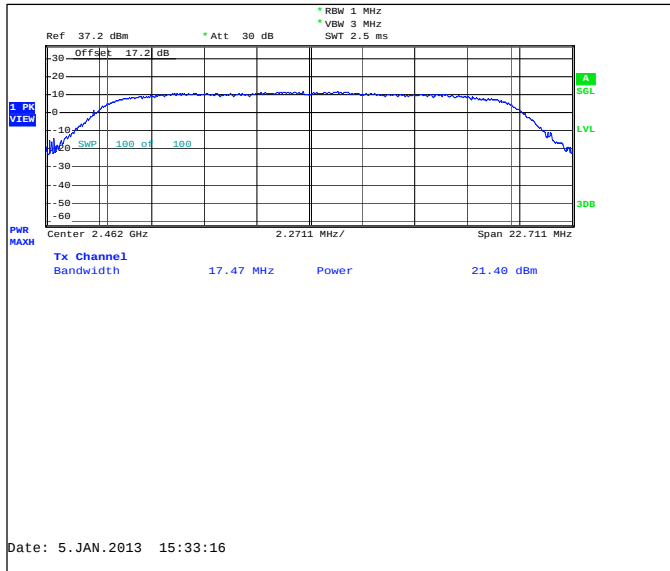
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



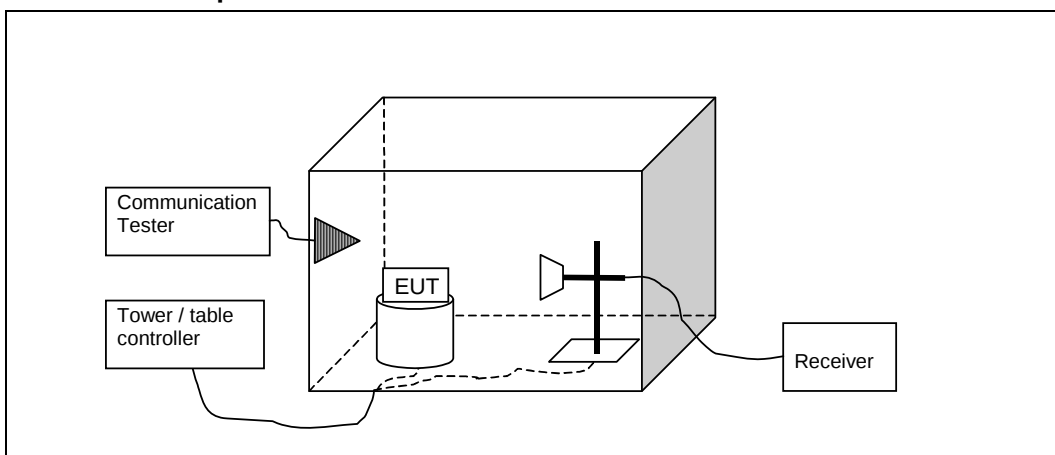
Channel 11 / 2462 MHz



3. Band edge compliance of RF emissions (FCC §15.247(d), 15.205(b), RSS-210 A8.5)

EUT with DUT number	RM-900, DUT 53086
Accessories with DUT numbers	BL-4U, DUT 53071 ; AC-11E, DUT 53068 ; WH-108, DUT 53078
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21/30/102.7
Date of measurements	05-Jan-2013
Measured by	Zou Ming

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.

The measurement results are obtained as described below:

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

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

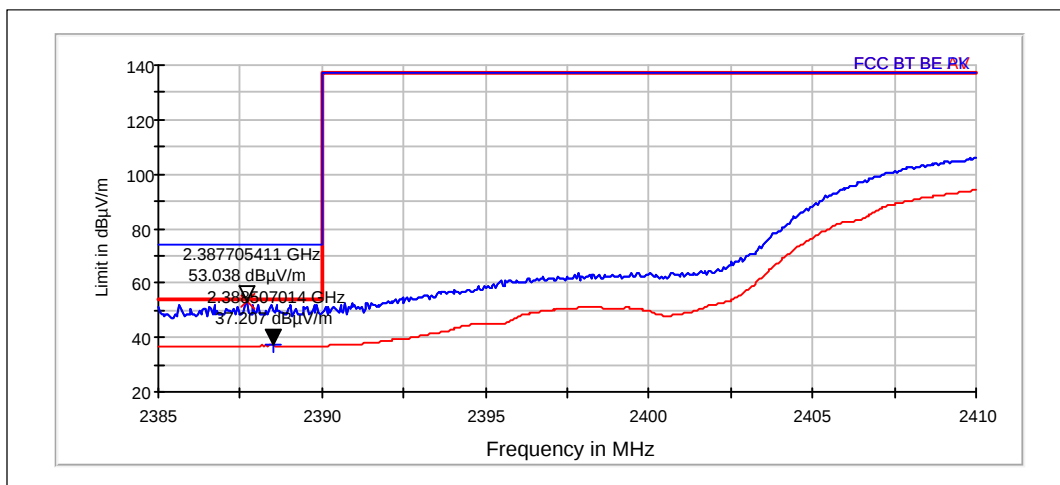
Limits for band edge compliance of RF emissions measurements (3 m measurement distance)

Frequency range [MHz]	Limit
Below 2390 and above 2483.5	54 dBuV/m (avg) and 74 dBuV/m (pk)

3.3. WLAN test results

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

Channel 1 / 2412 MHz



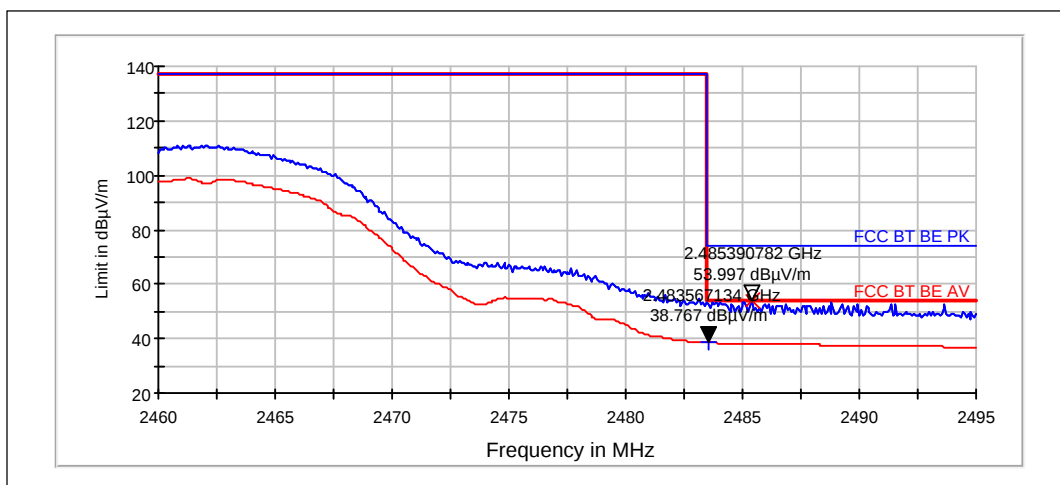
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	Peak [dBμV/m]	Mode	Channel number	Channel frequency [Hz]	Correction [dB]	Results
2387.705	53.038	DSSS,QPSK	1	2412000000	1.217	PASSED

Average (RBW: 1 MHz, VBW: 10 Hz)

Frequency [MHz]	Average [dBμV/m]	Mode	Channel number	Channel frequency [Hz]	Correction [dB]	Results
2388.507	37.207	DSSS,QPSK	1	2412000000	1.217	PASSED

Channel 11 / 2462 MHz



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

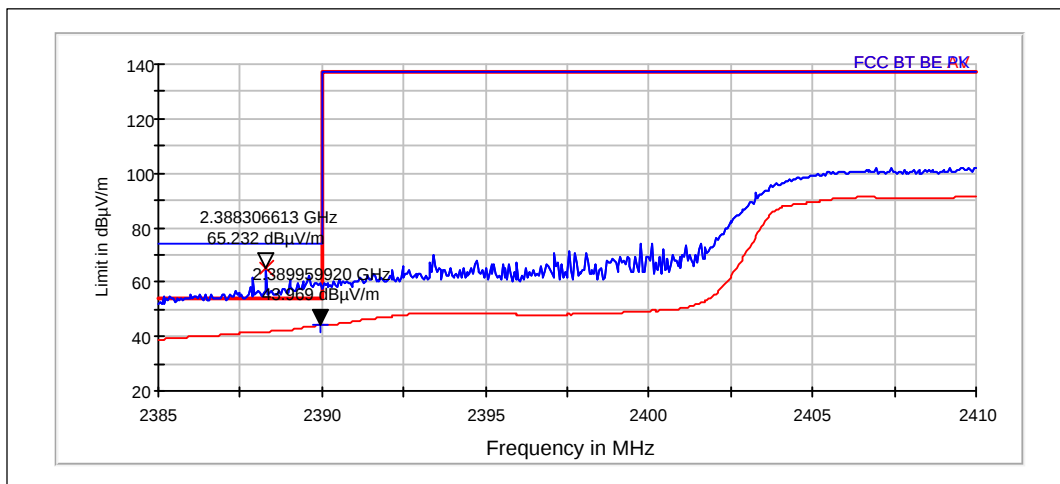
Frequency [MHz]	Peak [dB μ V/m]	Mode	Channel number	Channel frequency [Hz]	Correction [dB]	Results
2387.705	53.997	DSSS,QPSK	11	2462000000	1.372	PASSED

Average (RBW: 1 MHz, VBW: 10 Hz)

Frequency [MHz]	Average [dB μ V/m]	Mode	Channel number	Channel frequency [Hz]	Correction [dB]	Results
2388.507	38.767	DSSS,QPSK	11	2462000000	1.372	PASSED

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

Channel 1 / 2412 MHz



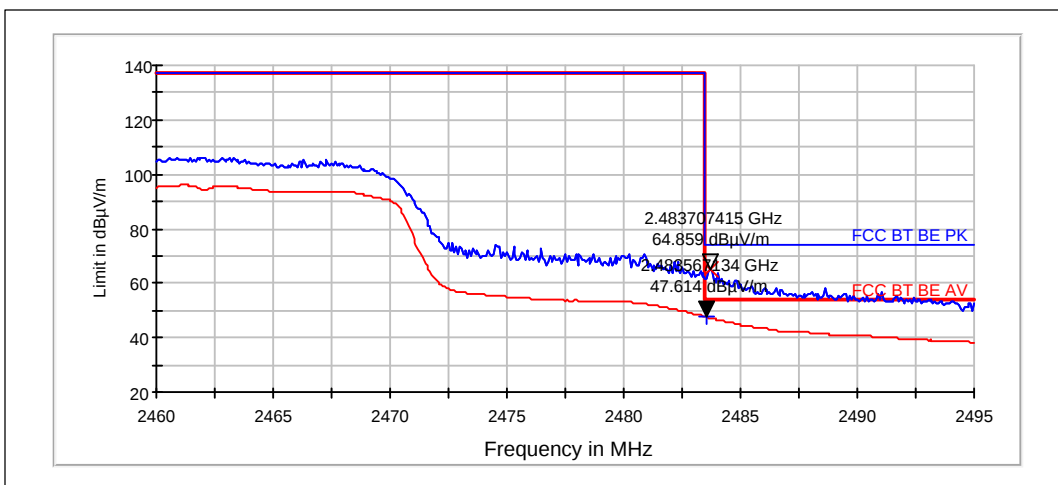
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	Peak [dB μ V/m]	Mode	Channel number	Channel frequency [Hz]	Correction [dB]	Results
2388.307	65.232	OFDM,BPSK	1	2412000000	1.217	PASSED

Average (RBW: 1 MHz, VBW: 10 Hz)

Frequency	Average	Mode	Channel	Channel frequency	Correction	Results
2389.96	43.969	OFDM,BPSK	1	2412000000	1.217	PASSED

Channel 11 / 2462 MHz



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

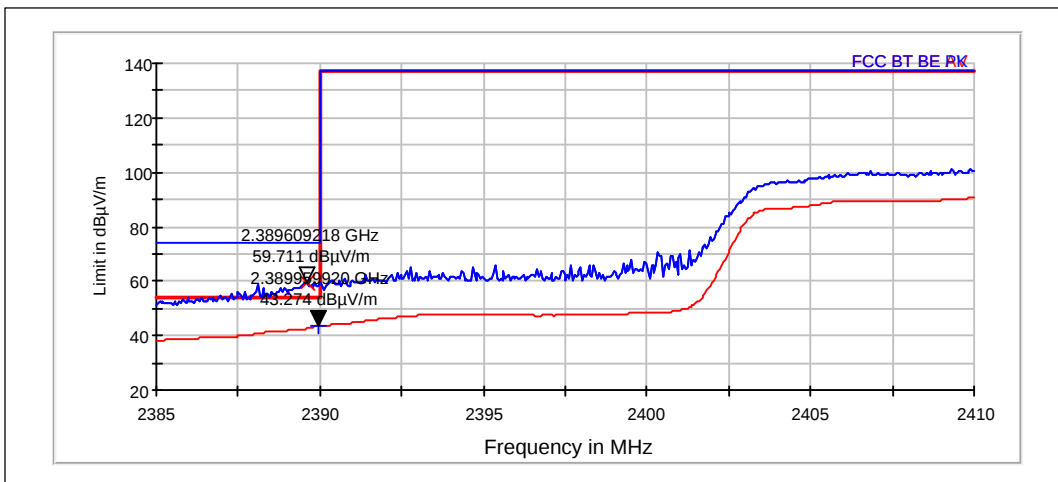
Frequency [MHz]	Peak [dBμV/m]	Mode	Channel number	Channel frequency [Hz]	Correction [dB]	Results
2483.707	64.859	OFDM,BPSK	11	2462000000	1.372	PASSED

Average (RBW: 1 MHz, VBW: 10 Hz)

Frequency [MHz]	Average [dBμV/m]	Mode	Channel number	Channel frequency [Hz]	Correction [dB]	Results
2483.567	47.614	OFDM,BPSK	11	2462000000	1.372	PASSED

3.3.3 N-mode, 20 MHz CBW, BPSK modulation, 6.5 / 7.25 Mbps data rate.

Channel 1 / 2412 MHz



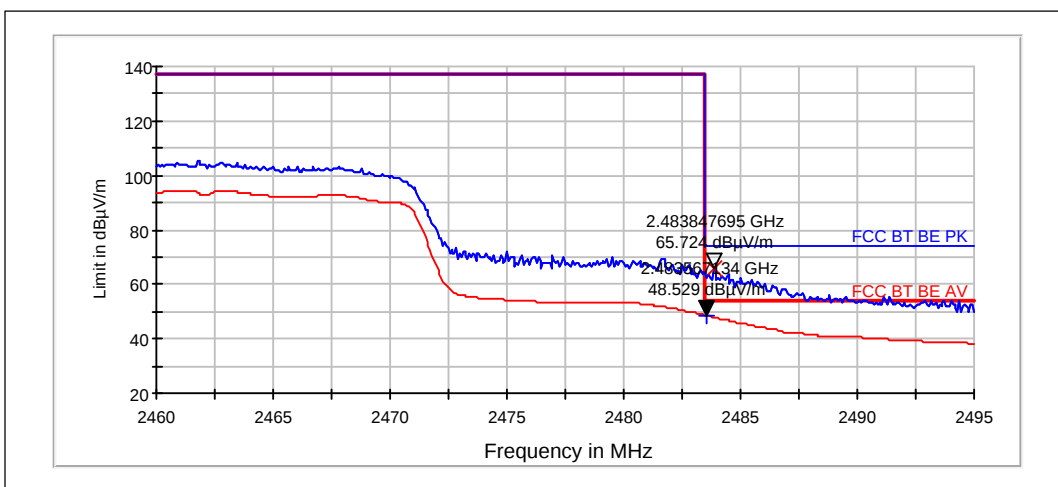
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	Peak [dBμV/m]	Mode	Channel number	Channel frequency [Hz]	Correction [dB]	Results
2389.609	59.711	N-mode,BPSK	1	2412000000	1.217	PASSED

Average (RBW: 1 MHz, VBW: 10 Hz)

Frequency [MHz]	Average [dBμV/m]	Mode	Channel number	Channel frequency [Hz]	Correction [dB]	Results
2389.96	43.274	N-mode,BPSK	1	2412000000	1.217	PASSED

Channel 11 / 2462 MHz



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

Frequency [MHz]	Peak [dBμV/m]	Mode	Channel number	Channel frequency [Hz]	Correction [dB]	Results
2483.848	65.724	N-mode,BPSK	11	2462000000	1.372	PASSED

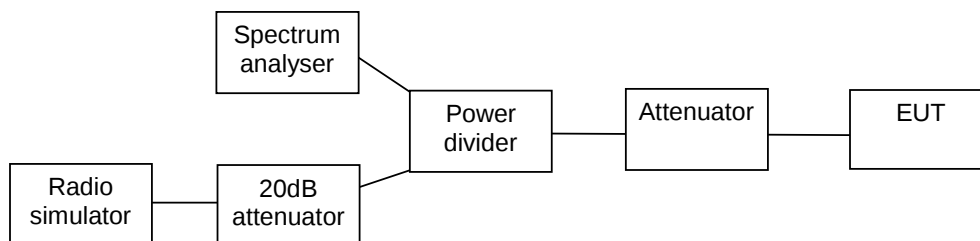
Average (RBW: 1 MHz, VBW: 10 Hz)

Frequency [MHz]	Average [dBμV/m]	Mode	Channel number	Channel frequency [Hz]	Correction [dB]	Results
2483.567	48.529	N-mode,BPSK	11	2462000000	1.372	PASSED

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

EUT with DUT number	RM-900, DUT 53083
Accessories with DUT numbers	BL-4U, DUT 53073 ; AC-11E, DUT 53070 ; WH-108, DUT 53077
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	18/23/102.7
Date of measurements	05-Jan-2013
Measured by	Gao Sherina

4.1. Test Setup



4.2. Test method and limit

The measurement is made according to Public notice KDB 558 074 and IC standard RSS-210.

The reference level for the -20 dBc measurement was obtained as instructed in section 5.4.1.1 of the KDB 558074, using 5-30 % wider span than the EBW.

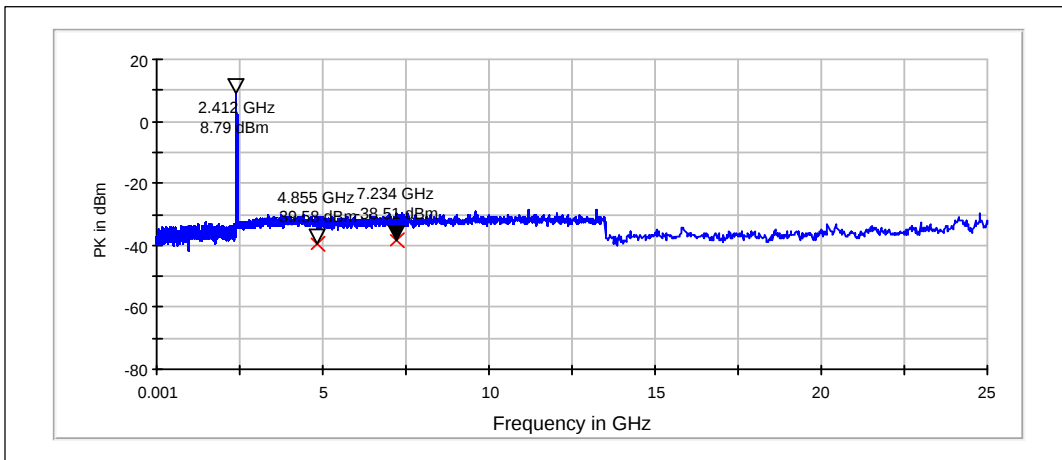
Limits for spurious RF conducted emissions measurements

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

4.3. WLAN Test results

4.3.1 DSSS mode, QPSK modulation, 11 Mbps data rate

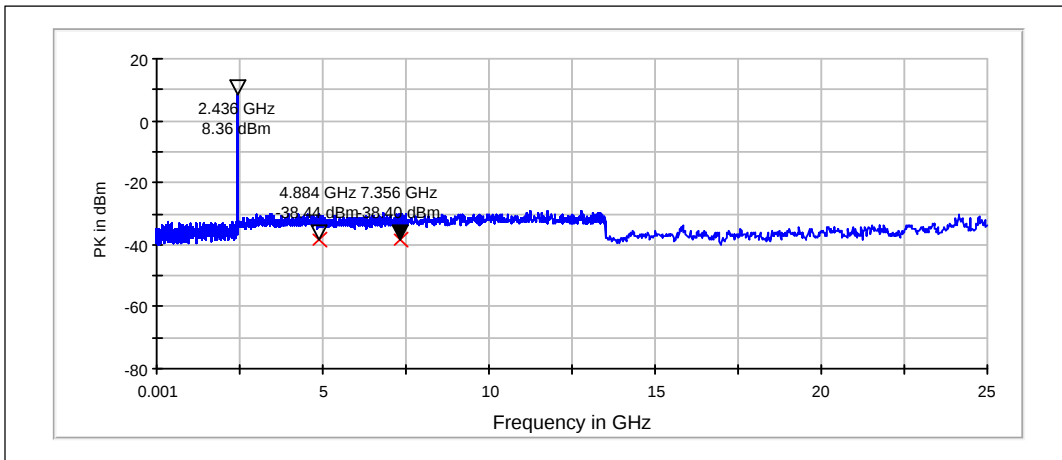
Channel 1 / 2412 MHz



Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4855.2	-39.58	PASSED
7233.6	-38.51	PASSED

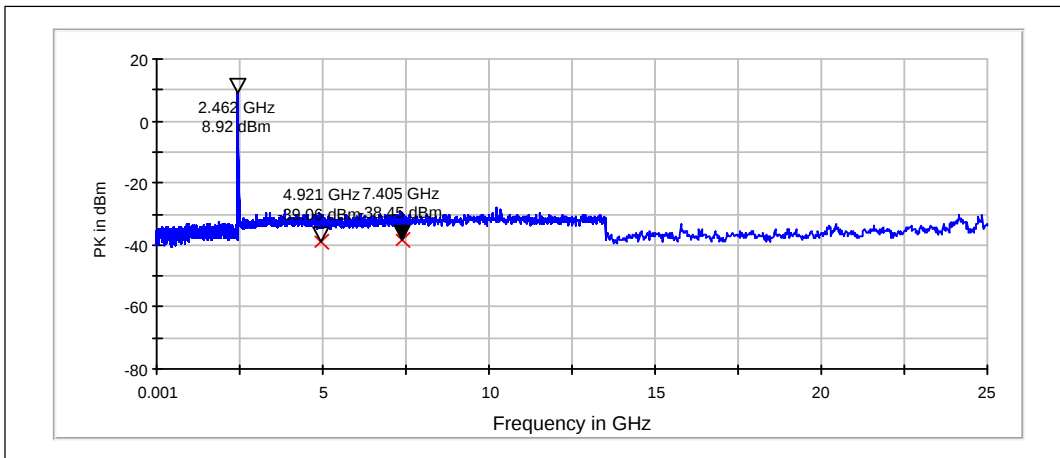
Channel 6 / 2437 MHz



Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4884.4	-38.44	PASSED
7356	-38.4	PASSED

Channel 11 / 2462 MHz

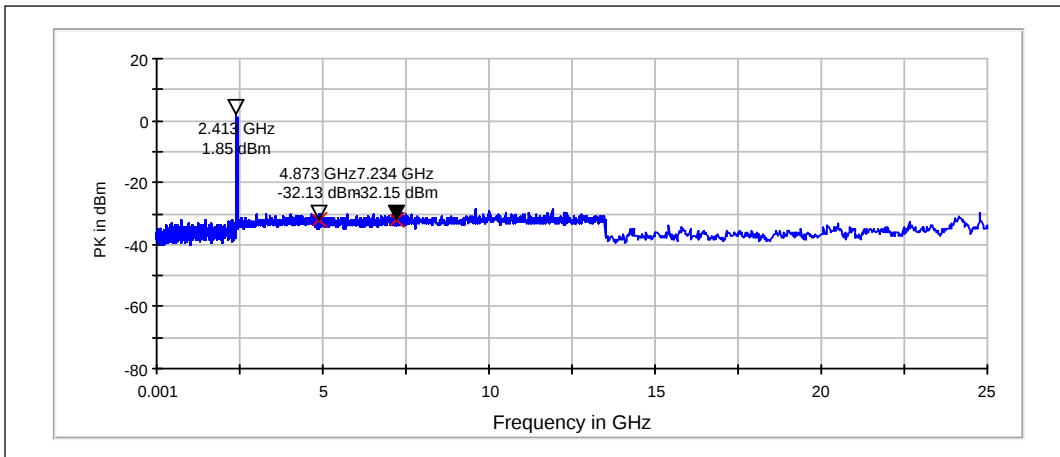


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4921.2	-39.06	PASSED
7404.6	-38.45	PASSED

4.3.2 OFDM mode, BPSK modulation, 6 Mbps data rate

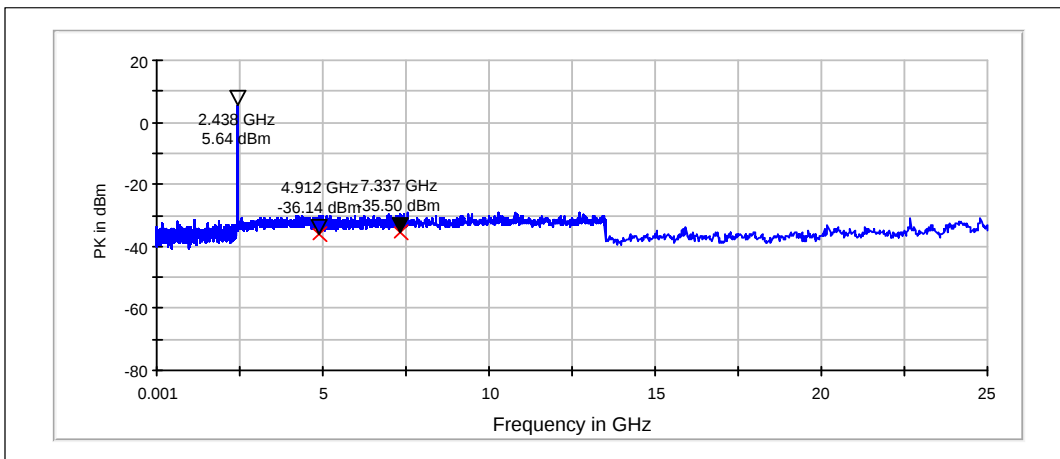
Channel 1 / 2412 MHz



Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4872.8	-32.13	PASSED
7233.6	-32.15	PASSED

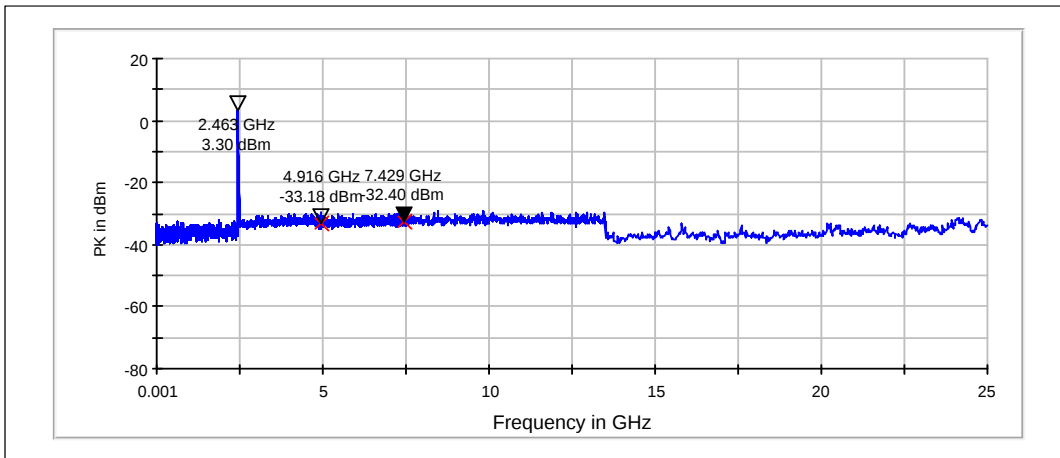
Channel 6 / 2437 MHz



Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4911.6	-36.14	PASSED
7336.8	-35.5	PASSED

Channel 11 / 2462 MHz

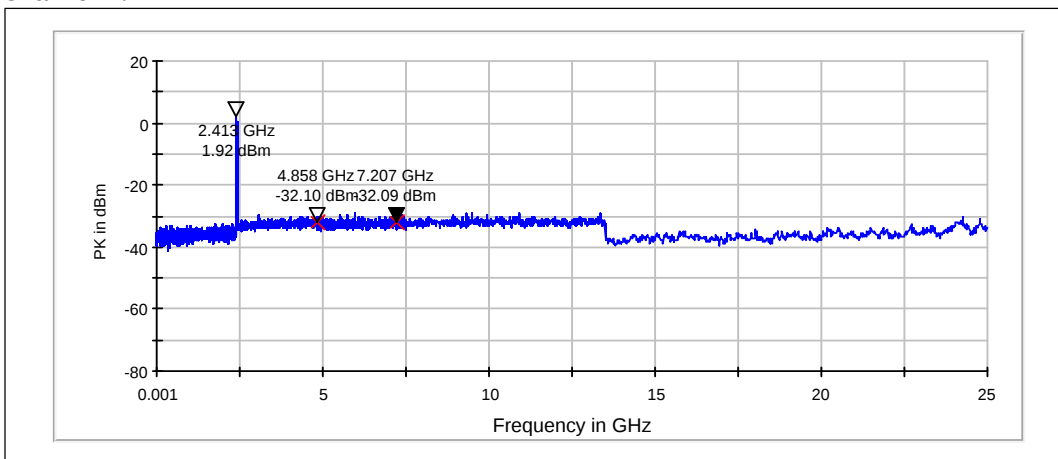


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4916	-33.18	PASSED
7429.2	-32.4	PASSED

4.3.3 N-mode, 20 MHz CBW mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

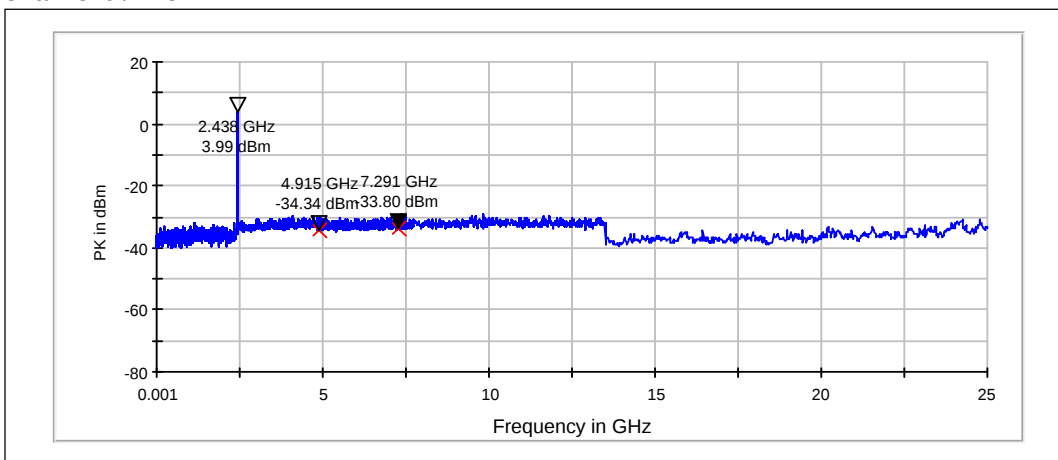
Channel 1 / 2412 MHz



Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4858	-32.1	PASSED
7207.2	-32.09	PASSED

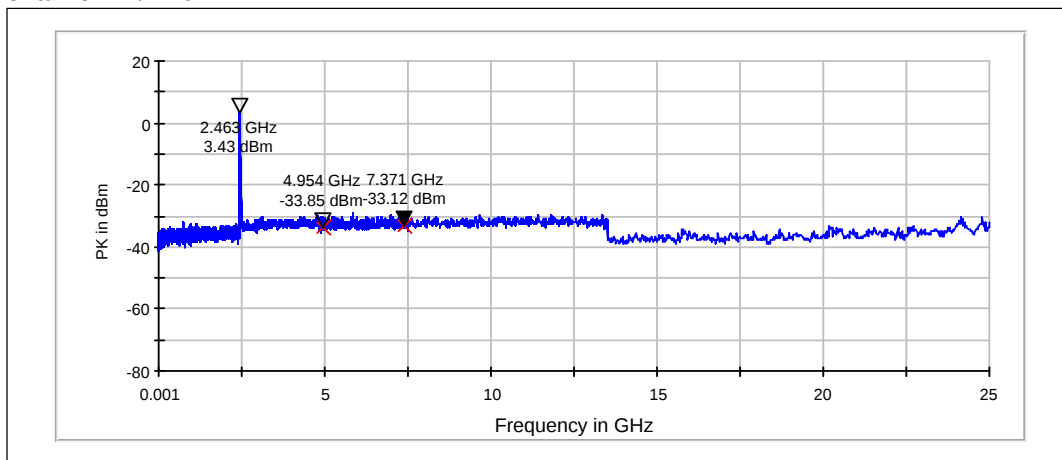
Channel 6 / 2437 MHz



Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4914.8	-34.34	PASSED
7291.2	-33.8	PASSED

Channel 11 / 2462 MHz



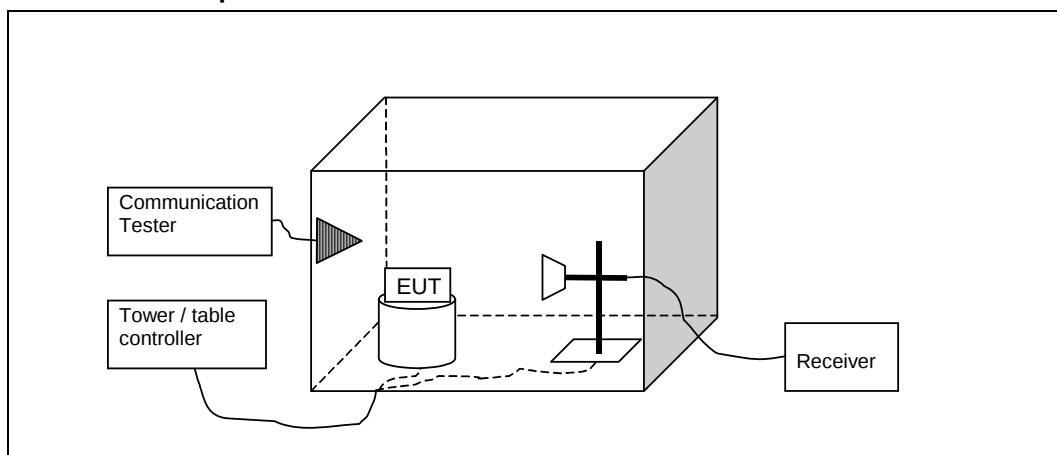
Peak (RBW: 100 kHz, VBW: 300 kHz)6

Frequency [MHz]	P [dBc]	Result
4953.6	-33.85	PASSED
7371	-33.12	PASSED

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

EUT with DUT number	RM-900, DUT 53086
Accessories with DUT numbers	BL-4U, DUT 53071 ; AC-11E, DUT 53068 ; WH-108, DUT 53078
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21/30/102.7
Date of measurements	05-Jan-2013
Measured by	Zou Ming

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:

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

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. WLANg test results

5.3.1 DSSS mode, QPSK modulation, 11 Mbps data rate.

Channel 1 / 2412 MHz

Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4825.1	43.49	149.434	43.38	0.12	30.5	74	PASSED
7235.9	51.79	388.687	46.56	5.24	22.2	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4825.1	30.44	33.27	30.33	0.12	23.5	54	PASSED
7235.9	37.32	73.418	32.09	5.24	16.7	54	PASSED

Channel 6 / 2437 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
31.95	32.69	43.087	36.3	-3.61	7.3	40	PASSED
908.827	25.51	18.86	27.66	-2.15	20.5	46	PASSED

Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4878.7	43.57	150.765	43.24	0.33	30.4	74	PASSED
7312.625	47.61	240.243	42.29	5.32	26.4	74	PASSED
7319.8	46.21	204.362	40.87	5.34	27.8	74	PASSED
16415.33	57.49	749.204	40.47	17.02	16.5	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4878.7	31.09	35.834	30.76	0.33	22.9	54	PASSED
7312.625	34.5	53.101	29.18	5.32	19.5	54	PASSED
7319.8	33.71	48.445	28.37	5.34	20.3	54	PASSED
16415.33	44.49	167.687	27.47	17.02	9.5	54	PASSED

Channel 11 / 2462 MHz

Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4923.3	44.02	158.891	43.64	0.38	30	74	PASSED
7385.2	46.62	214.166	41.39	5.23	27.4	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4923.3	31.54	37.775	31.16	0.38	22.4	54	PASSED
7385.2	33.5	47.304	28.27	5.23	20.5	54	PASSED

5.3.2 OFDM mode, BPSK modulation, 6 Mbps data rate.

Channel 1 / 2412 MHz

Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4824.4	42.52	133.629	42.43	0.09	31.5	74	PASSED
7235.5	46.48	210.863	41.25	5.23	27.5	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4824.4	30.32	32.81	30.23	0.09	23.7	54	PASSED
7235.5	33.86	49.34	28.63	5.23	20.1	54	PASSED

Channel 6 / 2437 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
31.83	30.5	33.512	34.03	-3.53	9.5	40	PASSED
31.95	30.62	33.963	34.23	-3.61	9.4	40	PASSED

Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4879.5	43.7	153.179	43.37	0.33	30.3	74	PASSED
7304.708	47.71	242.941	42.43	5.28	26.3	74	PASSED
7321.9	46.71	216.571	41.38	5.33	27.3	74	PASSED
16420.738	57.42	743.105	40.35	17.07	16.6	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4879.5	31.09	35.843	30.76	0.33	22.9	54	PASSED
7304.708	34.36	52.234	29.08	5.28	19.6	54	PASSED
7321.9	33.77	48.803	28.44	5.33	20.2	54	PASSED
16420.738	44.58	169.473	27.51	17.07	9.4	54	PASSED

Channel 11 / 2462 MHz

Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4923.6	44.02	158.91	43.64	0.38	30	74	PASSED
7385.5	47.12	226.986	41.89	5.23	26.9	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4923.6	31.58	37.936	31.2	0.38	22.4	54	PASSED
7385.5	34.13	50.886	28.9	5.23	19.8	54	PASSED

5.3.3 N-mode, 20 MHz CBW mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

Channel 1 / 2412 MHz

Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4823.8	42.91	139.814	42.83	0.08	31.1	74	PASSED
7236.2	48.48	265.399	43.24	5.24	25.5	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4823.8	30.28	32.655	30.2	0.08	23.7	54	PASSED
7236.2	34.41	52.511	29.17	5.24	19.6	54	PASSED

Channel 6 / 2437 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
904.369	29.85	31.081	32.18	-2.33	16.2	46	PASSED
911.371	24.72	17.213	26.78	-2.06	21.3	46	PASSED

Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4879	43.43	148.457	43.1	0.33	30.5	74	PASSED
7322	46.58	213.403	41.25	5.33	27.4	74	PASSED
17999.6	59.3	922.253	39.68	19.62	14.7	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4879	31.13	36.012	30.8	0.33	22.9	54	PASSED
7322	33.84	49.221	28.51	5.33	20.1	54	PASSED
17999.6	46.03	200.309	26.41	19.62	7.9	54	PASSED

Channel 11 / 2462 MHz

Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4925.3	44.14	161.027	43.78	0.36	29.8	74	PASSED
7386	46.61	213.969	41.39	5.23	27.4	74	PASSED

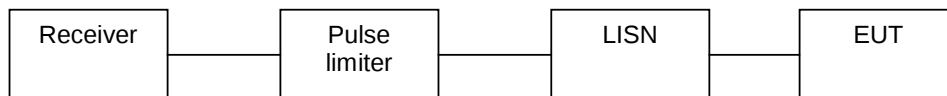
Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4925.3	31.52	37.653	31.16	0.36	22.5	54	PASSED
7386	33.64	48.078	28.42	5.23	20.3	54	PASSED

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

EUT with DUT number	RM-900, DUT 53085
Accessories with DUT numbers	BL-4U, DUT 53073 ; AC-11E, DUT 53070 ; WH-108, DUT 53077 ;
Operation Voltage [V] / [Hz]	115/60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20/23/103.4
Date of measurements	07-Jan-2013
Measured by	Gao Sherina

6.1. Test Setup



6.2. Test method and limit

The measurement is made according to procedure KDB 558074 D01 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.

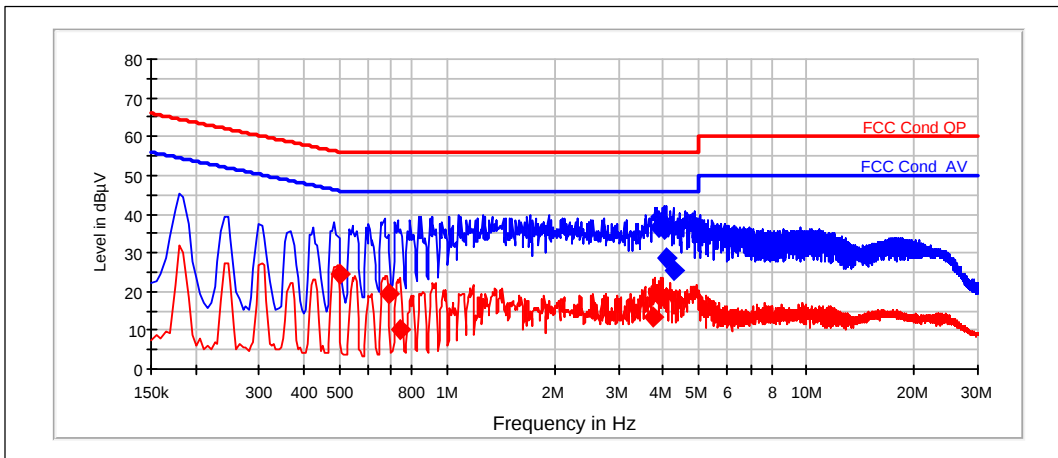
CISPR 22 Class B limits

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

6.3. WLAN Test results

6.3.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel 6 / 2437 MHz



QuasiPeak (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
3.865	36.55	N	PASSED
4.05	36.13	L1	PASSED
4.06	28.9	N	PASSED
4.295	25.25	L1	PASSED

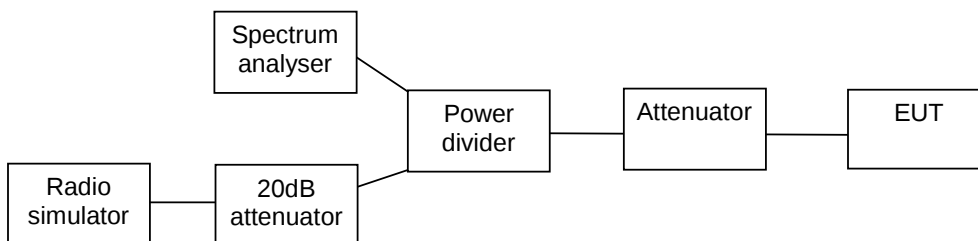
Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.5	24.72	N	PASSED
0.685	19.57	N	PASSED
0.74	10.16	N	PASSED
3.73	13.22	L1	PASSED
3.955	18.42	N	PASSED

7. 6 dB bandwidth (FCC §15.247(a)(2), RSS-210 A8.2 (1))

EUT with DUT number	RM-900, DUT 53083
Accessories with DUT numbers	BL-4U, DUT 53073 ; AC-11E, DUT 53070 ; WH-108, DUT 53077
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	18/23/102.7
Date of measurements	05-Jan-2013
Measured by	Gao Sherina

7.1. Test Setup



7.2. Test method and limit

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

Limits for 6 dB bandwidth measurements

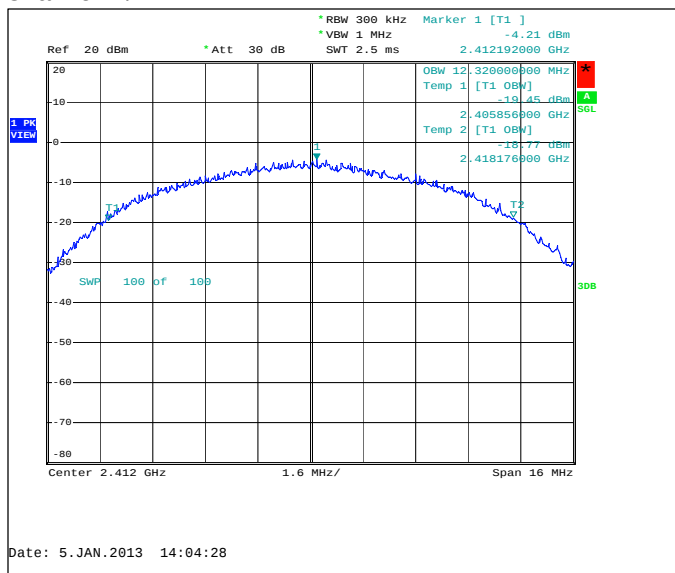
Limit [kHz]
>= 500

7.3. WLAN Test results

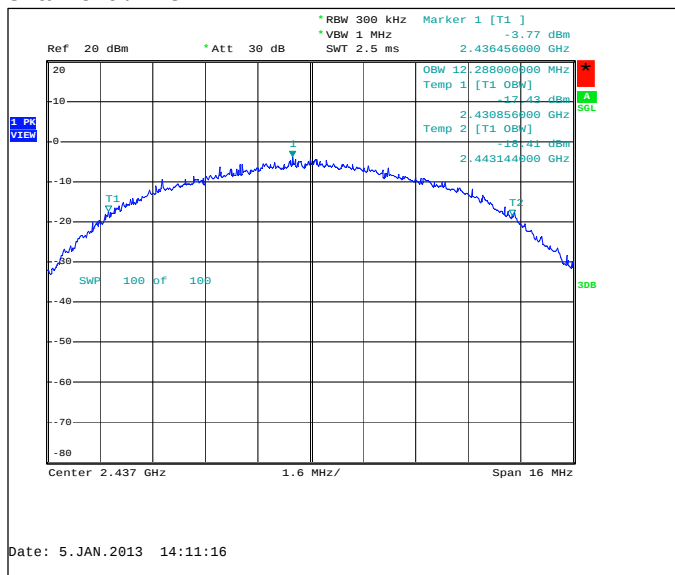
7.3.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f_c [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	12320	PASSED
6 / 2437	12288	PASSED
11 / 2462	12256	PASSED

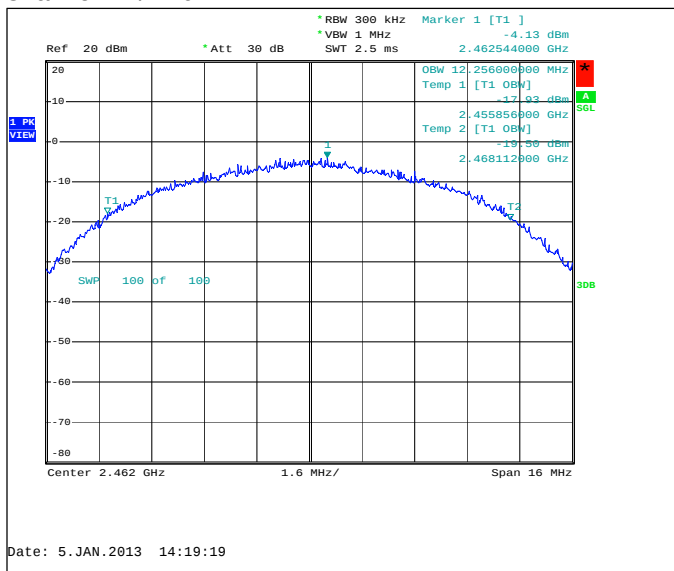
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



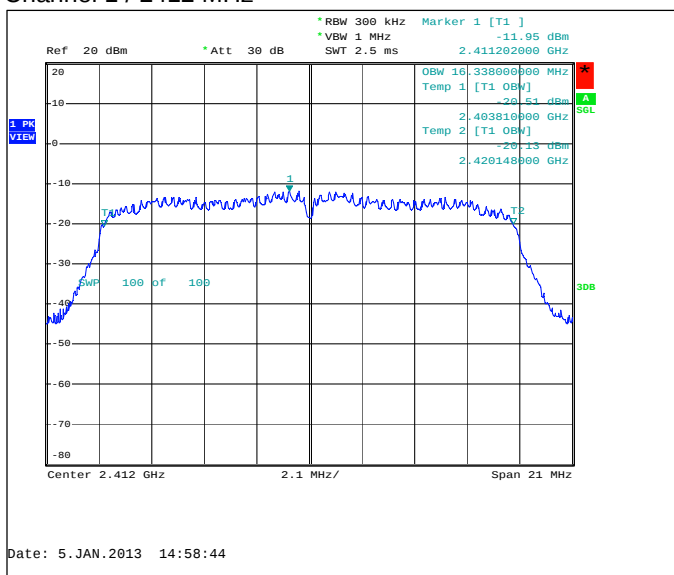
Channel 11 / 2462 MHz



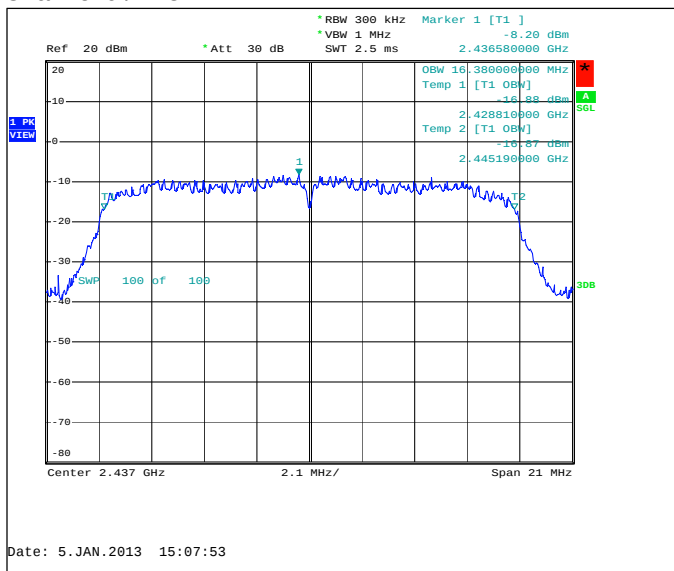
7.3.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f_c [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	16338	PASSED
6 / 2437	16380	PASSED
11 / 2462	16338	PASSED

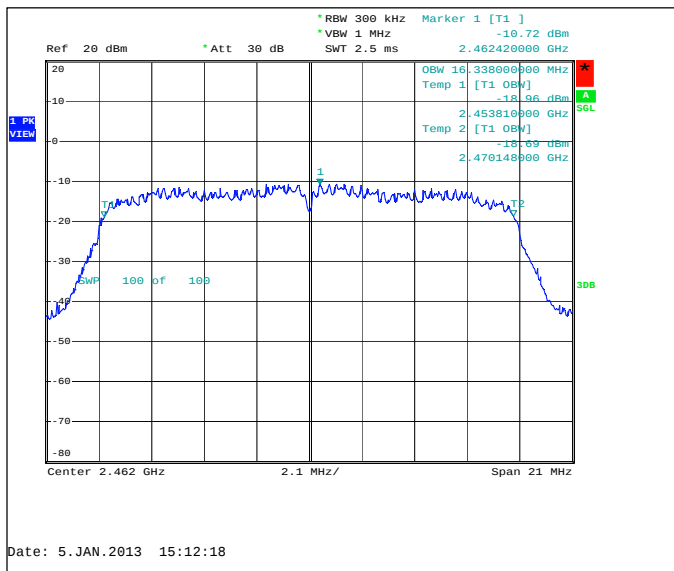
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



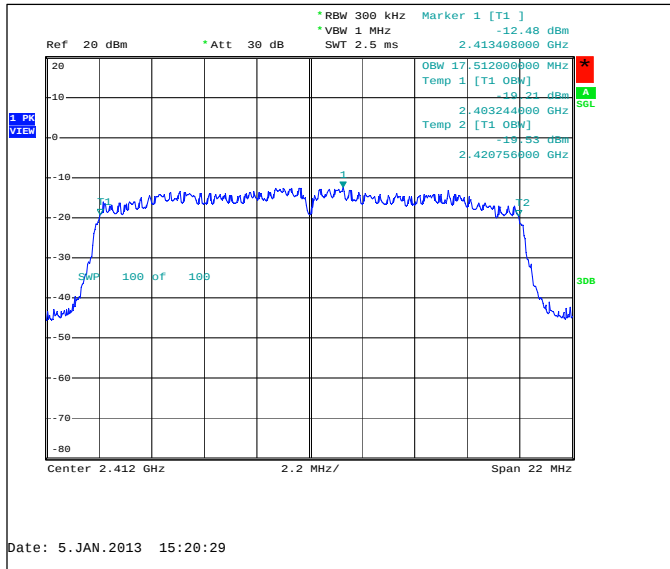
Channel 11 / 2462 MHz



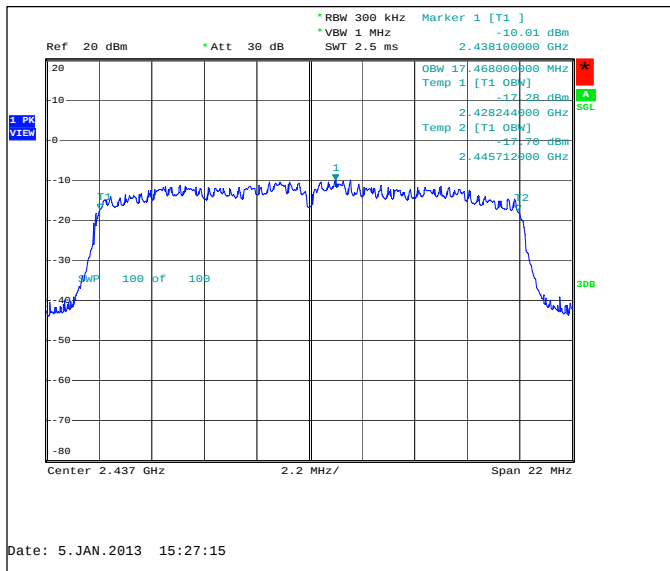
7.3.3 N-mode, 20 MHz CBW mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

Channel / f_c [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	17512	PASSED
6 / 2437	17468	PASSED
11 / 2462	17468	PASSED

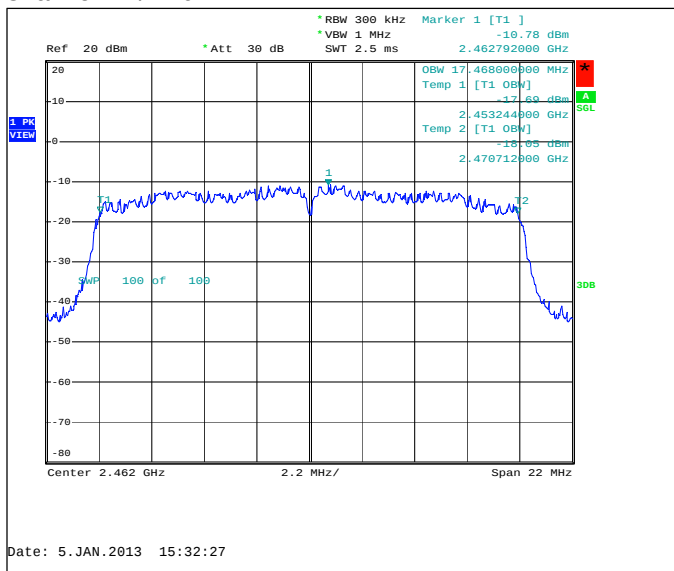
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



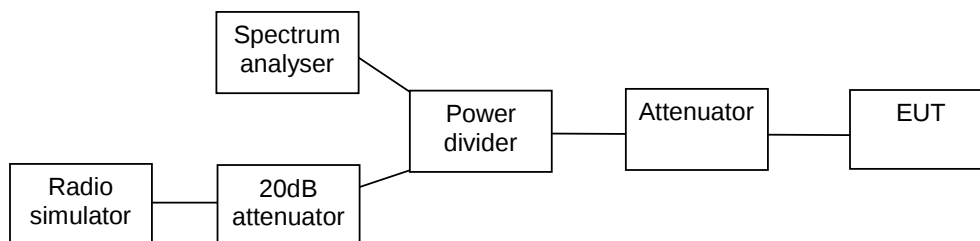
Channel 11 / 2462 MHz



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

EUT with DUT number	RM-900, DUT 53083
Accessories with DUT numbers	BL-4U, DUT 53073 ; AC-11E, DUT 53070 ; WH-108, DUT 53077
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	18/23/102.7
Date of measurements	05-Jan-2013
Measured by	Gao Sherina

8.1. Test Setup



8.2. Test method and limit

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

Result is corrected by bandwidth correction factor -15.2dB (BWCF = $10\log(3\text{ kHz}/100\text{ kHz}) = -15.2\text{ dB}$).

Limits for power spectral density measurements

Limit [dBm] @ 3 kHz
≤ 8

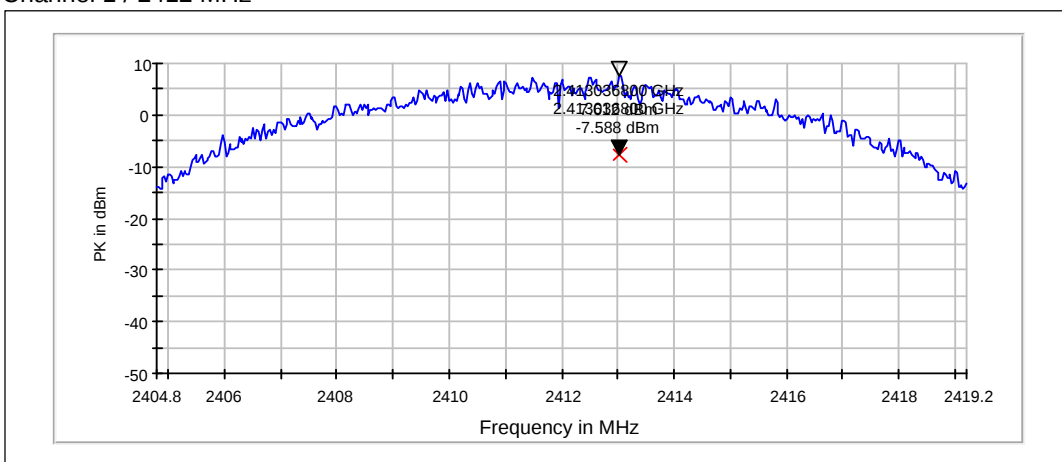
8.3. WLAN Test results

8.3.1 DSSS mode, QPSK modulation, 11 Mbps data rate

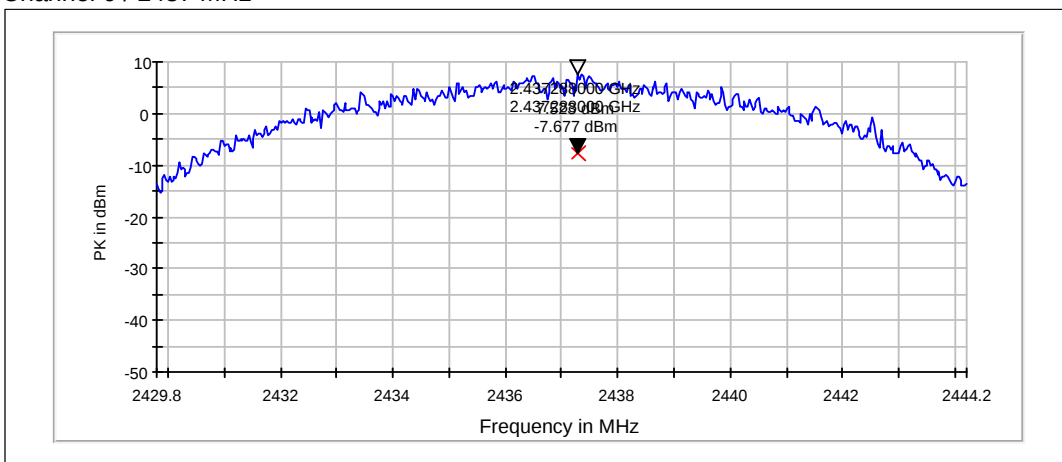
Peak (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-7.59	PASSED
6 / 2437	-7.68	PASSED
11 / 2462	-7.03	PASSED

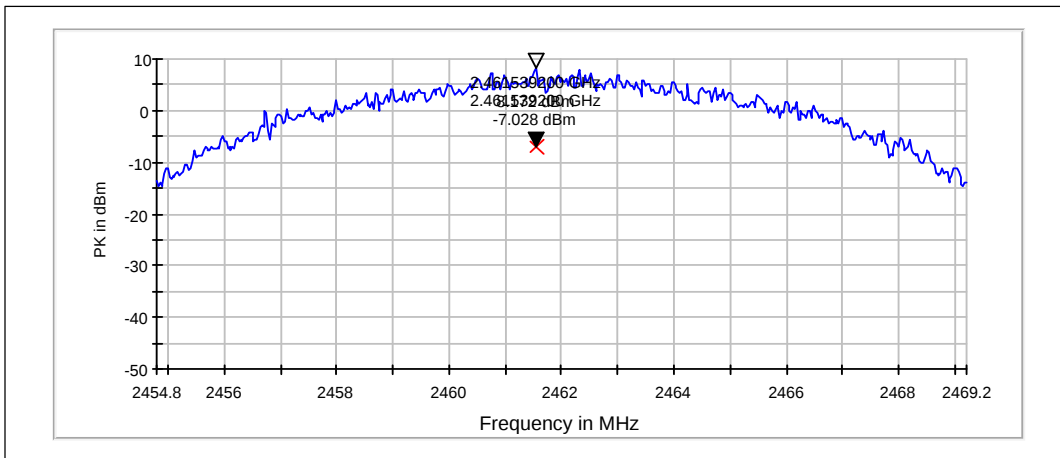
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



Channel 11 / 2462 MHz

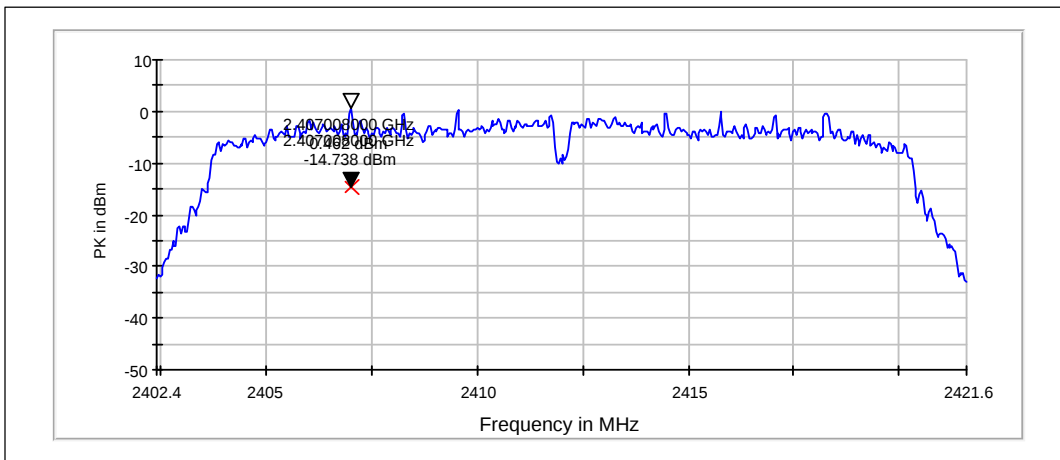


8.3.2 OFDM mode, BPSK modulation, 6 Mbps data rate

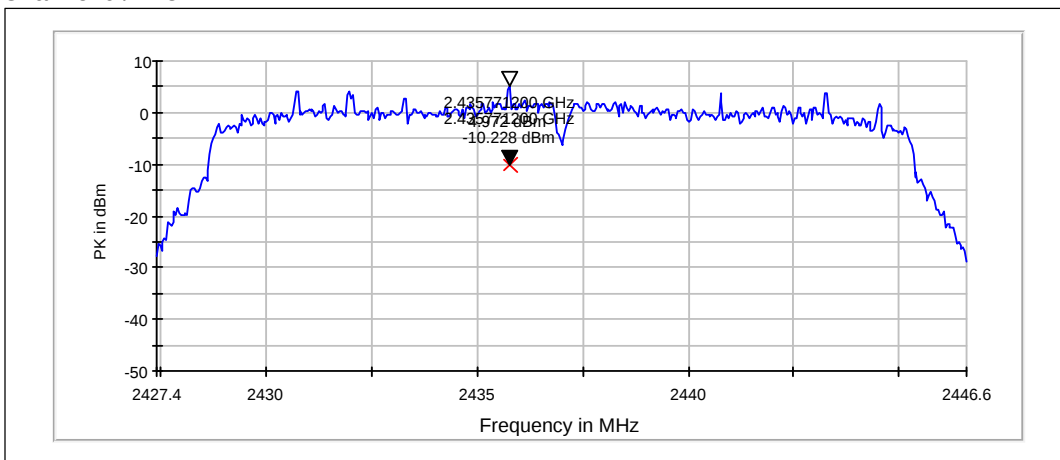
Peak (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-14.74	PASSED
6 / 2437	-10.23	PASSED
11 / 2462	-12.9	PASSED

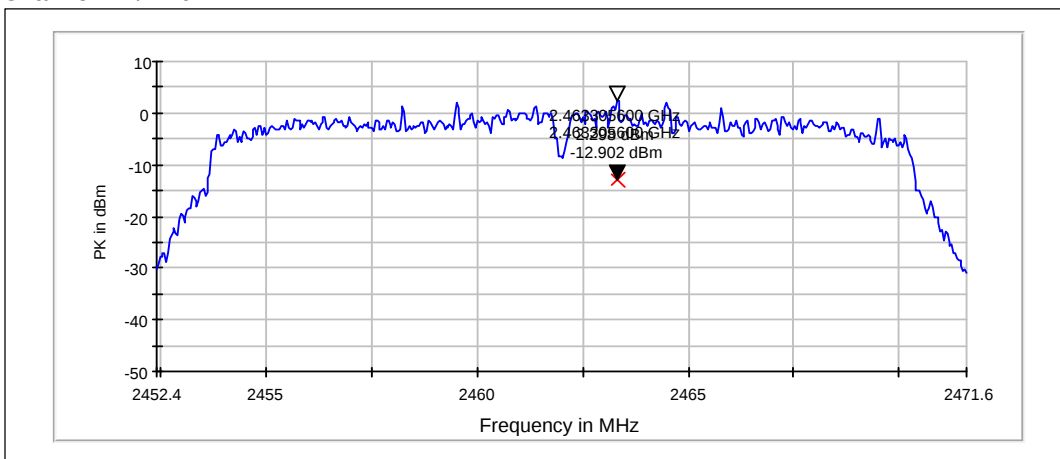
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



Channel 11 / 2462 MHz

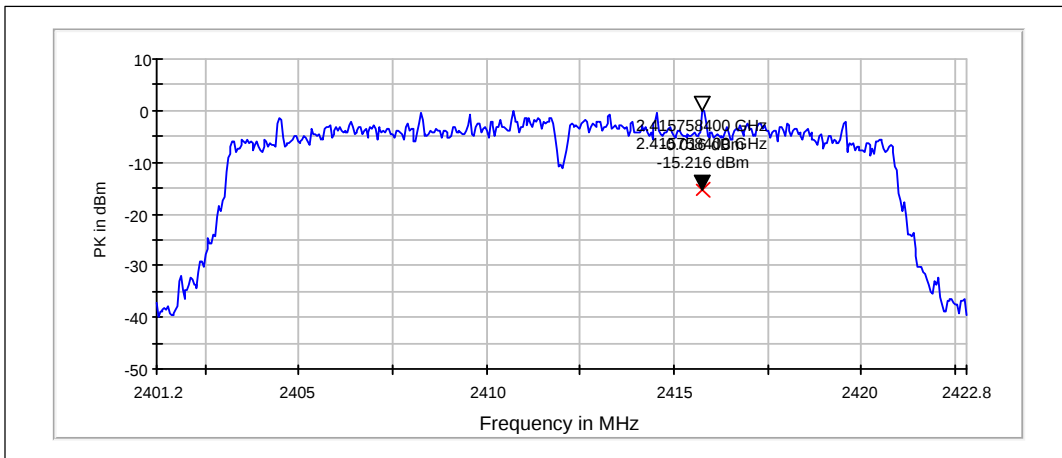


8.3.3 N-mode, 20 MHz CBW mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

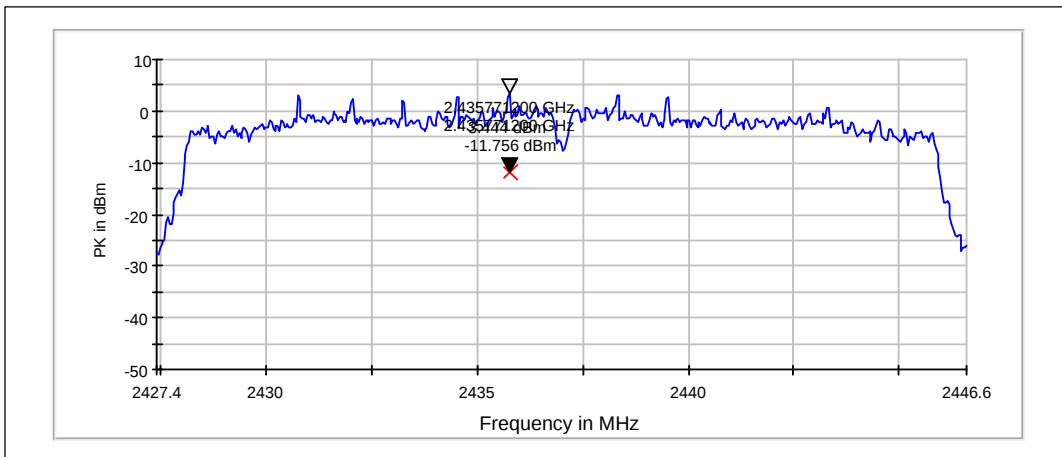
Peak (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-15.22	PASSED
6 / 2437	-11.76	PASSED
11 / 2462	-13.35	PASSED

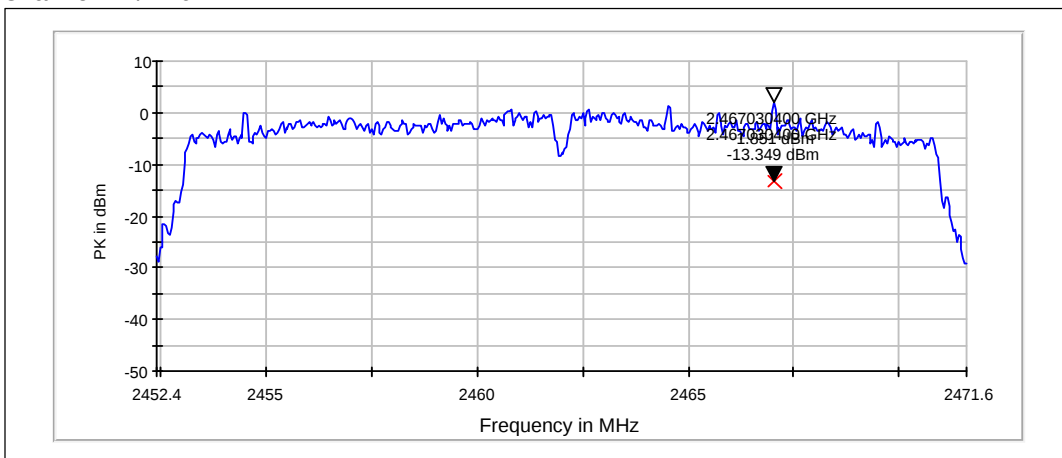
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



Channel 11 / 2462 MHz



9. Test Equipment

9.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	RF Emission Software	EMC32 Test Software	R&S	22/24/27, 15C, 15B
BJPCWH0020	DC Power supply	HP6632B	HP	22/24/27, 15C
BJPCPT0040	Receiver	ESCS30	R&S	15C, 15B
BJPCPT0069	LISN 50 μ H	ESH3-Z5	R&S	15C, 15B
BJPCPT0073	Signal Generator	SMR 20	R&S	22/24/27, 15C, 15B
BJPCPT0191	Pulse Limiter	ESH3-Z2	R&S	15C, 15B
BJPCTC0017	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0067	Bluetooth Tester	CBT	R&S	22/24/27, 15C
BJPCTC0089	Temperature Test chamber	VT4002	Votsch industrietechnik	22/24/27, 15C
BJPCTC0090	FSP spectrum analyzer	FSP30	R&S	22/24/27, 15C
BJPCTC0094	GPIO-RS232 convertor	GPIO-RS232	NI	22/24/27, 15C
BJPCTC0112	Power Splitter	11667B	Agilent	22/24/27, 15C
BJPCTC0114	Signal Generator	E8257C	Agilent	22/24/27, 15C
BJPCTC0115	Communication Tester	CMU200	R&S	22/24/27, 15B, 15C

9.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	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	EMC32 Test Software	R&S	22/24/27, 15C, 15B
BJPCPT0072	Receiver	ESI B26	R&S	22/24/27, 15C, 15B
BJPCPT0130	Relay Switch Unit	TS-RSP	R&S	22/24/27, 15C, 15B
BJPCPT0150	High Pass Filter	WHKS1200-10SS	Wainwright	22/24/27, 15C, 15B
BJPCPT0151	Band Reject Filter	WRCD1880/2000-0.2/40-5SSK	Wainwright	24, 15B
BJPCPT0154	Band Reject Filter	WRCT2402/2480-2400/2483.5-30-20SS	Wainwright	15C, 15B
BJPCPT0162	Antenna	HF906	R&S	22/24/27, 15C, 15B
BJPCTC0007	Antenna	HL562	R&S	22/24/27, 15C, 15B
BJPCTC0029	Antenna	HF906	R&S	22/24/27, 15C, 15B
BJPCTC0034	Band Reject Filter	WRCT 800/880-0.2/40-5SSK	Wainwright	22, 15B
BJPCTC0049	Preamplifier	Blma 0118-1A-Bt	Bonn	22/24/27, 15C, 15B
BJPCTC0055	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0058	Bluetooth Tester	CBT	R&S	15C, 15B
BJPCTC0064	Band Reject Filter	WRCG1877/1883-1870/1890-40/6SS	Wainwright	24, 15B
BJPCTC0065	Band Reject Filter	WRCG832/838-825/845-40/5SS	Wainwright	27, 15B
BJPCTC0071	Multi-Device Controller	2090	EMCO	22/24/27, 15C, 15B
BJPCTC0072	Anechoic Chamber	3 m Semi / Full Anechoic Chamber	ETS	22/24/27, 15C, 15B
BJPCTC0073	MAST	Model-TR/POL	ETS	22/24/27, 15C, 15B
BJPCTC0074	MAST	Model 2070-2	ETS	22/24/27, 15C, 15B
BJPCTC0075	Turntable	Model 2188	ETS-EMCO	22/24/27, 15C, 15B
BJPCTC0096	Preamplifier	AFS4-00100300-20-23P-6	Miteq	22/24/27, 15C, 15B
BJPCTC0113	Receiver	ESI B26	R&S	22/24/27, 15B, 15C
BJPCTC0115	Communication Tester	CMU200	R&S	22/24/27, 15B, 15C
BJPCTC0124	Attenuator	SA18N200W-40	Fairview Microwave	-