

FCC Part 15C Compliance Test Report

Test Report no.:	FCC15CWLAN_RM-889_07.docx	Date of Report:	14-Sep-2012
Number of pages:	44	Customer's Contact person:	Hu Helen
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FCC listing no.:	975940		
IC recognition no.:	661AH-1		
Tested devices/ accessories:	Phone RM-889 / Battery BP-3L / AC-Charger AC-20E / Headset WH-108		
FCC ID:	QTLRM-889	IC:	661AB-RM889
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	07-Aug-2012
Testing completed	14-Sep-2012
The customer's contact person	Hu Helen
Test Plan referred to	T:\Projects\RM-898\TestPlan\RS_testplan_RM-898.xlsm
Notes	-
Document name	FCC15CWLAN_RM-889_07.docx

1.1. EUT and Accessory Information

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

Devices under tests

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-898	353661050000365;059Q0X2	2000	-	1102.0000.8779.12290	52820
Battery	BP-3L	4955402172050108160;0670635	-	-	-	52821
AC-Charger	AC-20E	4868672244120505801;0675628	-	-	-	52827
Headset	WH-108	2265171	0.1	0.2	-	52825
Phone	RM-898	35361050000654; 059Q0X2	2000	-	1102.0000.8779.12290	52817
Battery	BP-3L	4955402172050108160;0670635	-	-	-	52821
AC-Charger	AC-20E	4868672244120505801;0675628	-	-	-	52827
Headset	WH-108	2265171	0.1	0.2	-	52825
Phone	RM-898	353661050000381;059Q0X2	2000	-	1102.0000.8779.12290	52816

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(0.4(4))	Conducted peak output power	PASSED
15.247(d), 15.205(b)	A8(0.5)	Band edge compliance of RF emissions	PASSED
15.247(d)	A8(0.5)	Spurious RF conducted emissions	PASSED
15.247(d), 15.209	A8(0.5)	Spurious radiated emissions	PASSED
15.207	7.2.2	AC powerline conducted emissions	PASSED
15.247(a)(2)	A8(0.1(1))	6dB(bandwidth)	PASSED
15.247(e)	A8(0.1(2))	Power spectral density	PASSED

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.

The test results of QTLRM-898 are re-used for certification of the QTLRM-889. The table above indicates the results, which will be re-used.

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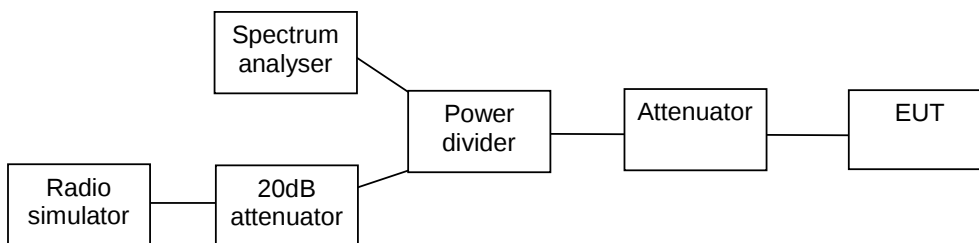
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2. Conducted peak output power (15.247(b)(1), RSS-210 A8.4 (4))

EUT with DUT number	RM-898, DUT 52820
Accessories with DUT numbers	BP-3L, DUT 52821 ; AC-20E, DUT 52827 ; WH-108, DUT 52825
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/46/101.5
Date of measurements	13-Sep-2012 to 14-Sep-2012
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

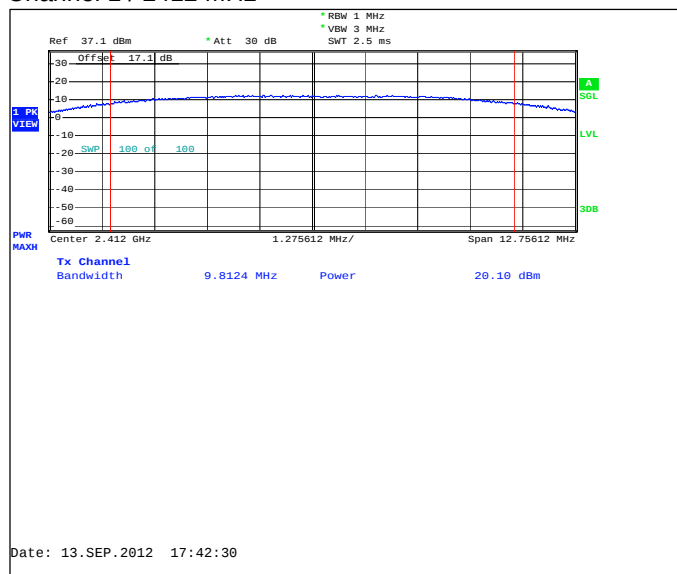
2.3. WLAN Test results

WLAN 2.4 GHz, peak output power [dBm]	
Mode & data speed	Ch 6
b-mode WLAN DSSS 1 Mbps	17.04
b-mode WLAN DSSS 2 Mbps	17.34
b-mode WLAN DSSS 5.5 Mbps	18.67
b-mode WLAN DSSS 11 Mbps	20.00
g-mode WLAN OFDM 6 Mbps	19.98
g-mode WLAN OFDM 9 Mbps	19.92
g-mode WLAN OFDM 12 Mbps	19.61
g-mode WLAN OFDM 18 Mbps	19.60
g-mode WLAN OFDM 24 Mbps	19.61
g-mode WLAN OFDM 36 Mbps	19.70
g-mode WLAN OFDM 48 Mbps	19.55
g-mode WLAN OFDM 54 Mbps	19.51

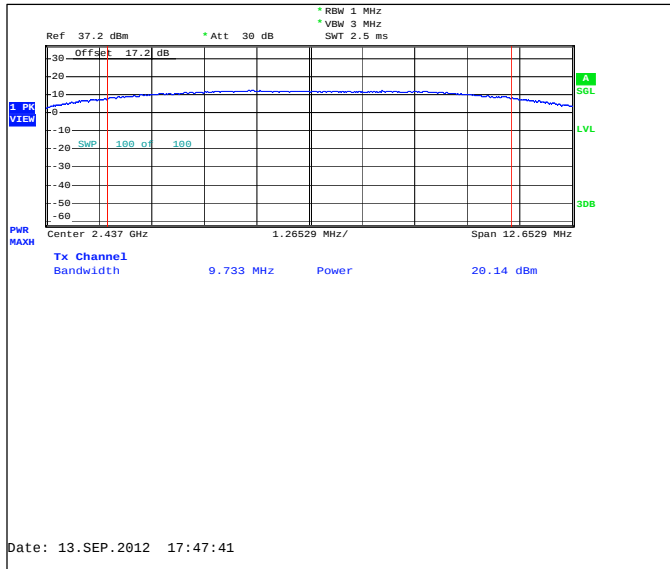
2.3.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
1 / 2412	20.1	102.329	PASSED
6 / 2437	20.14	103.276	PASSED
11 / 2462	20.64	115.878	PASSED

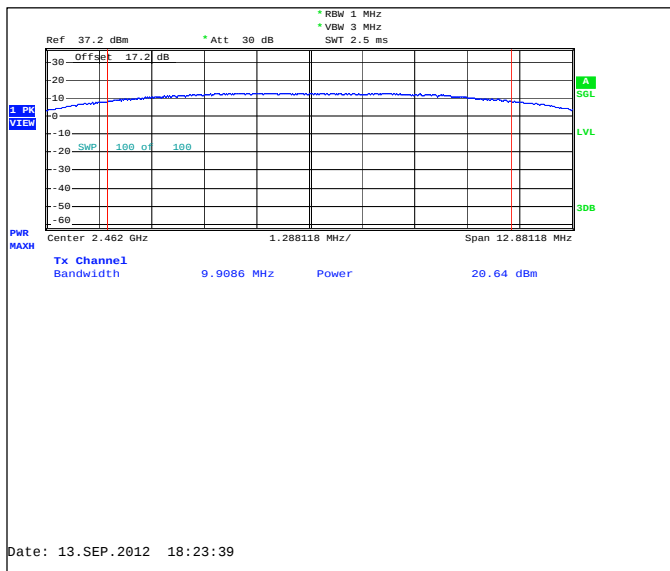
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



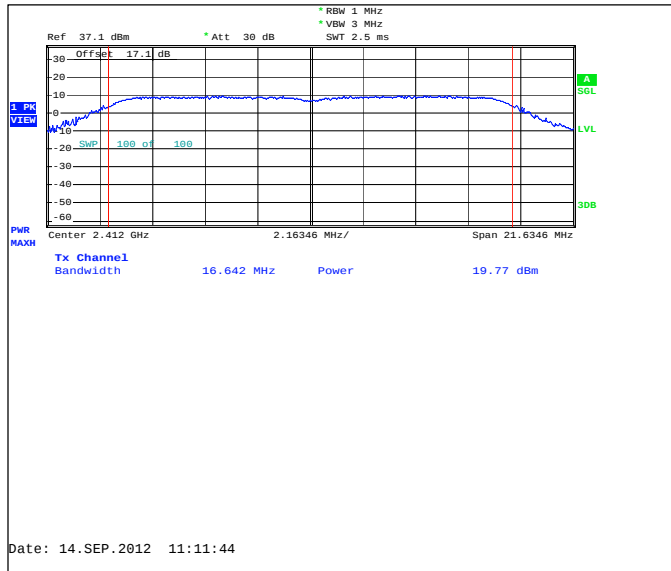
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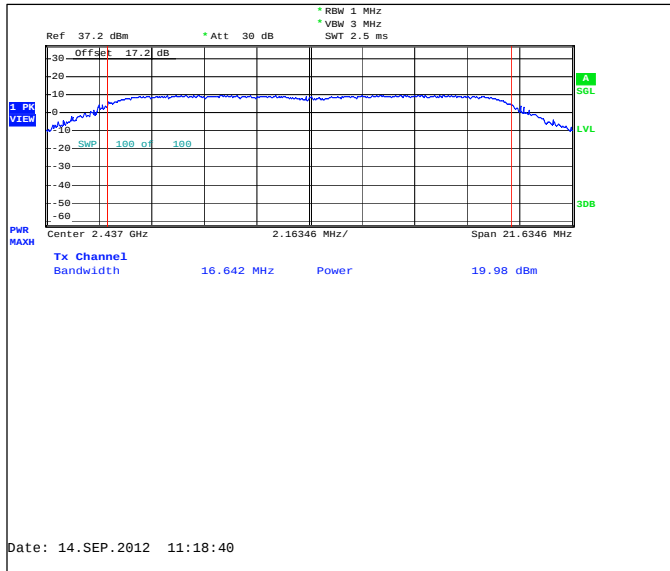
2.3.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
1 / 2412	19.77	94.842	PASSED
6 / 2437	19.98	99.541	PASSED
11 / 2462	20.45	110.917	PASSED

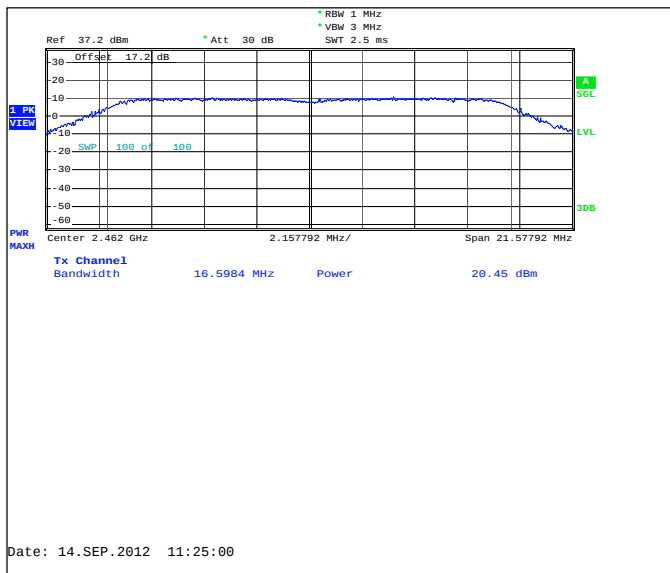
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



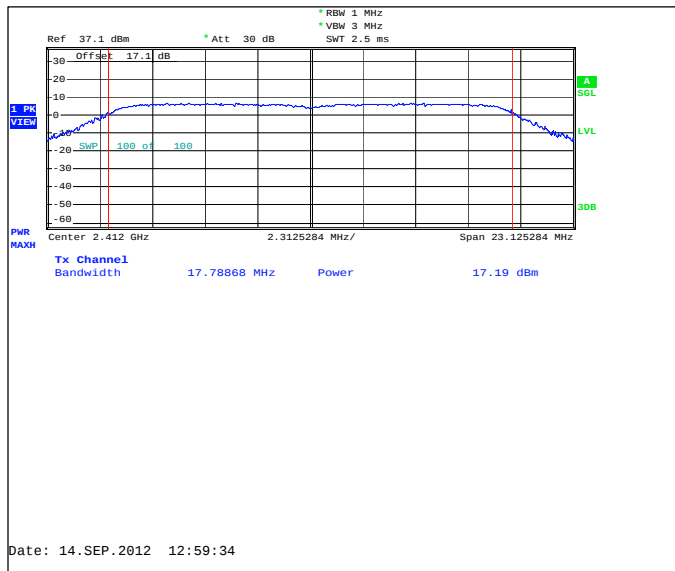
Channel 11 / 2462 MHz



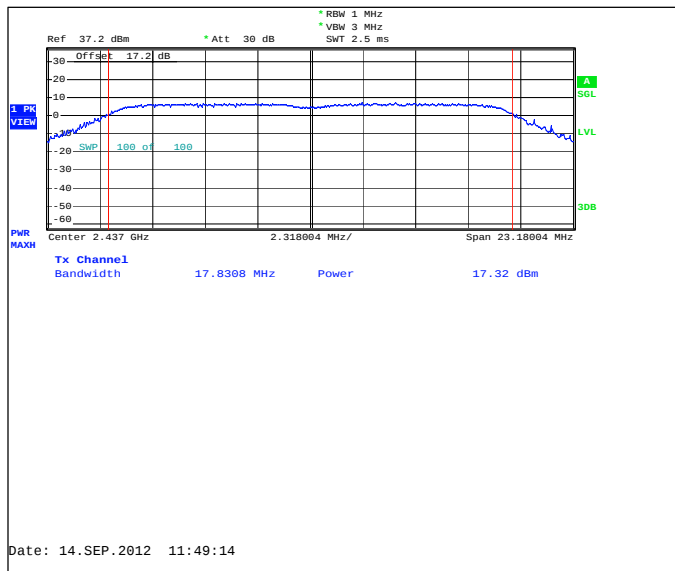
2.3.3 802.11n-mode, HT20, BPSK modulation, MCS0

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
1 / 2412	17.19	52.36	PASSED
6 / 2437	17.32	53.951	PASSED
11 / 2462	17.8	60.256	PASSED

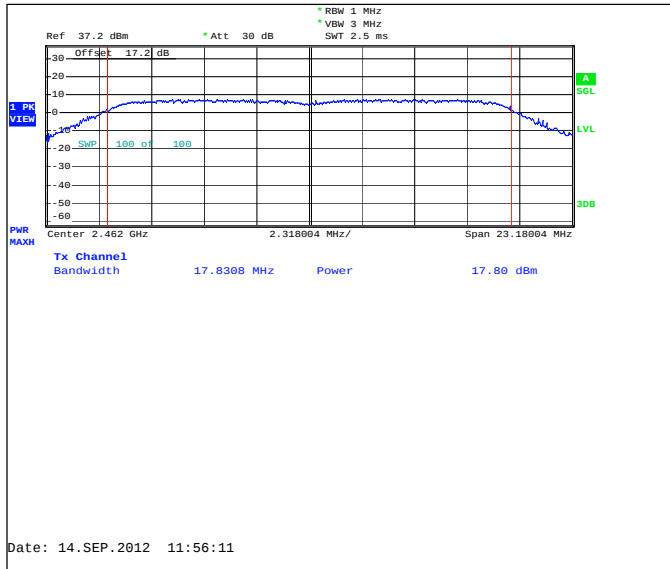
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



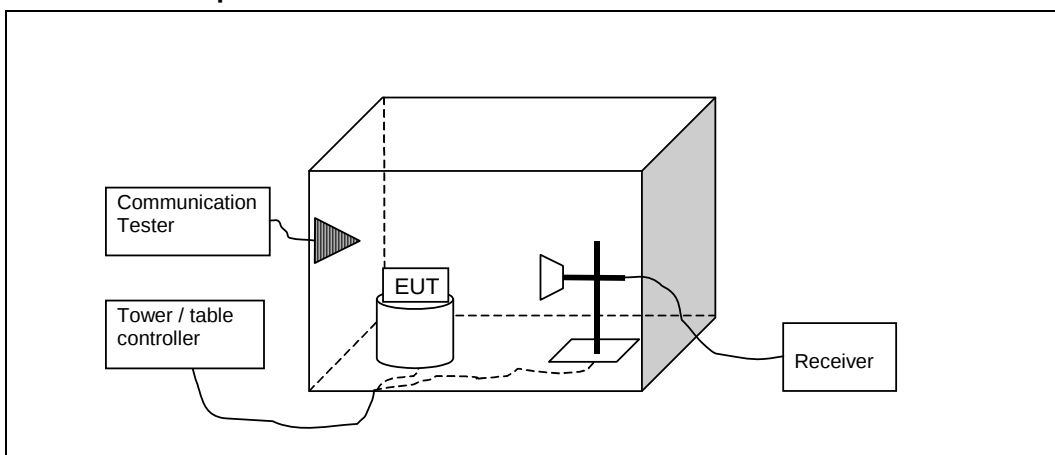
Channel 11 / 2462 MHz



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

EUT with DUT number	RM-898, DUT 52816
Accessories with DUT numbers	BP-3L, DUT 52823 ; AC-20E, DUT 52810 ; WH-108, DUT 52811
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 61 / 100.2
Date of measurements	10-Aug-2012
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 ($A_{TOT} = L_{CABLES} + A_F - G_{PREAMP}$).

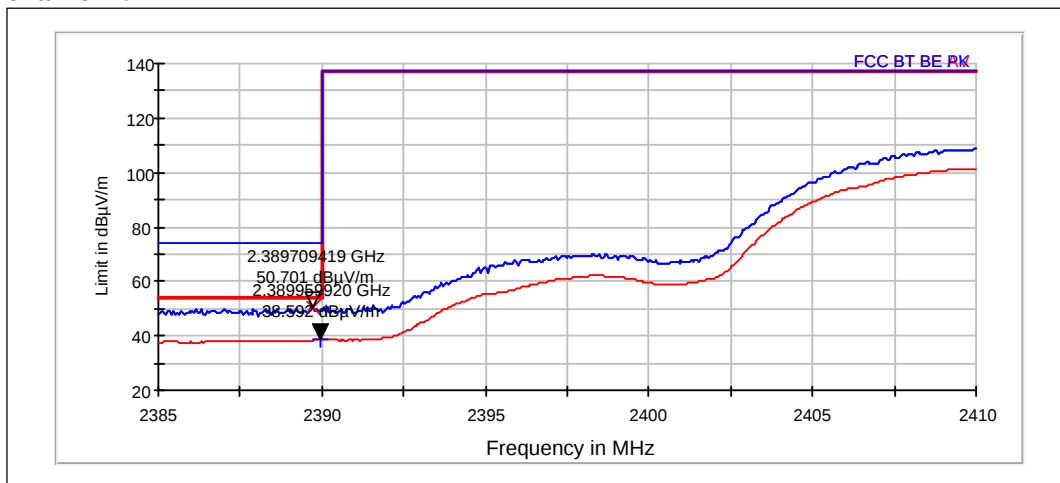
Limits for band edge compliance of RF emissions measurements (3 m measurement distance)

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



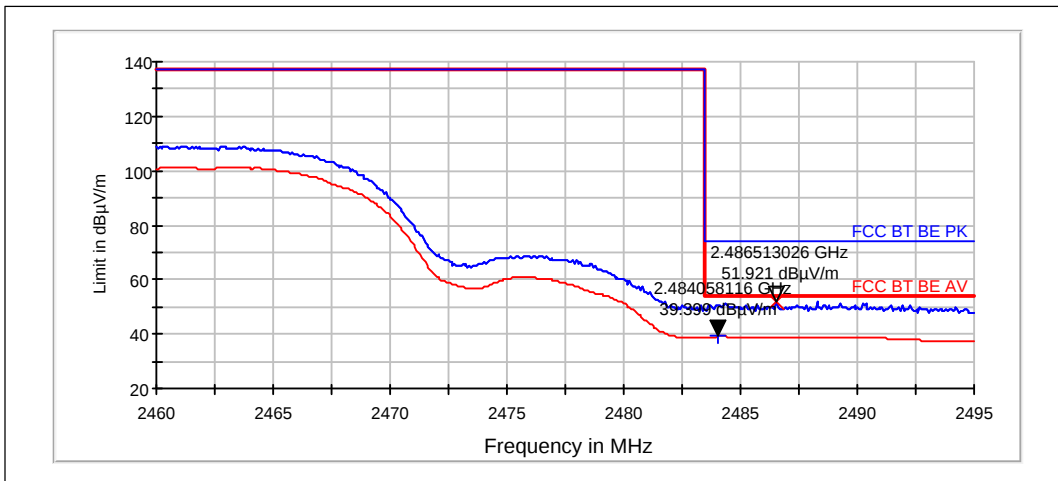
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2389.709	50.7	342.807	49.48	1.22	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2389.96	38.59	85.035	37.37	1.22	PASSED

Channel 11 / 2462 MHz



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

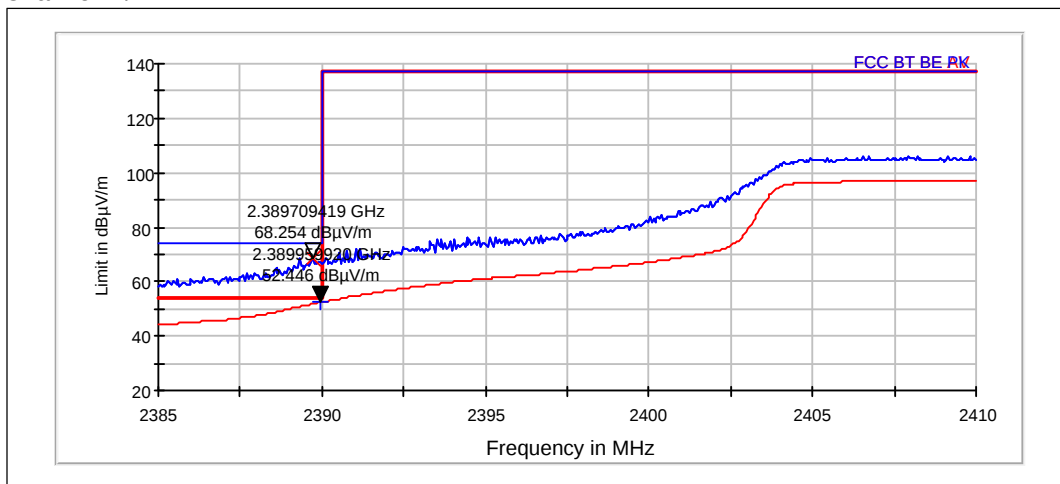
Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2486.513	51.92	394.503	50.55	1.37	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2484.058	39.4	93.315	38.03	1.37	PASSED

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

Channel 1 / 2412 MHz



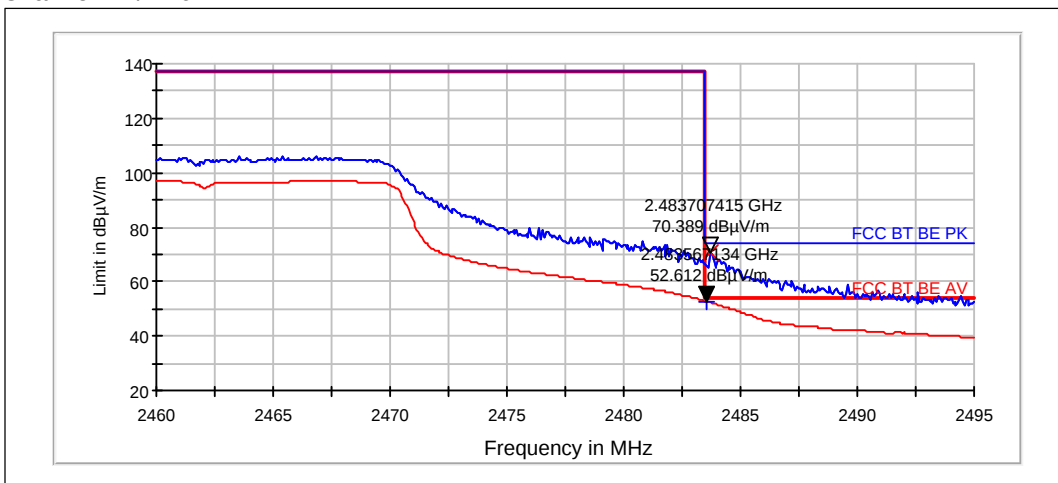
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2389.709	68.25	2586.426	67.03	1.22	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2389.96	52.45	419.083	51.23	1.22	PASSED

Channel 11 / 2462 MHz



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

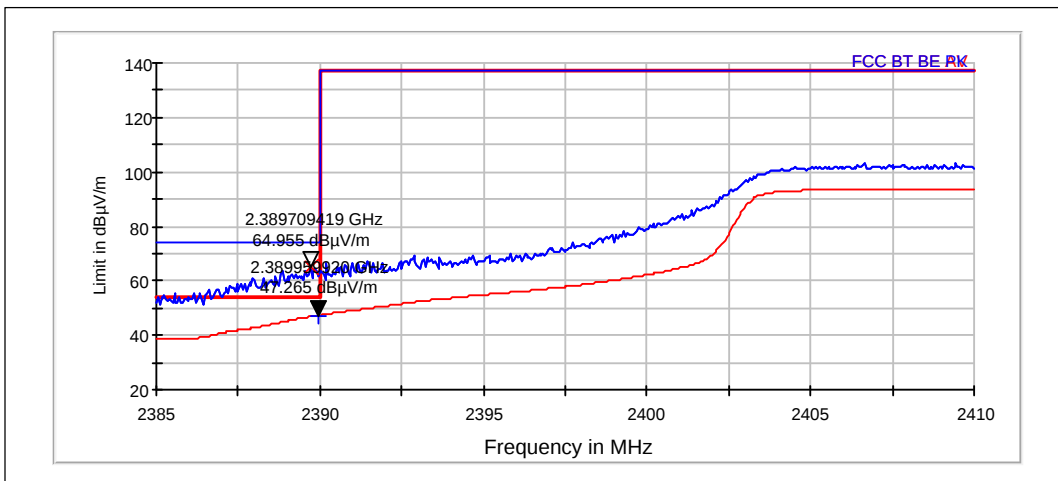
Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2483.707	70.39	3307.12	69.02	1.37	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2483.567	52.61	427.169	51.24	1.37	PASSED

3.3.3 802.11n-mode, HT20, BPSK modulation, MCS0

Channel 1 / 2412 MHz



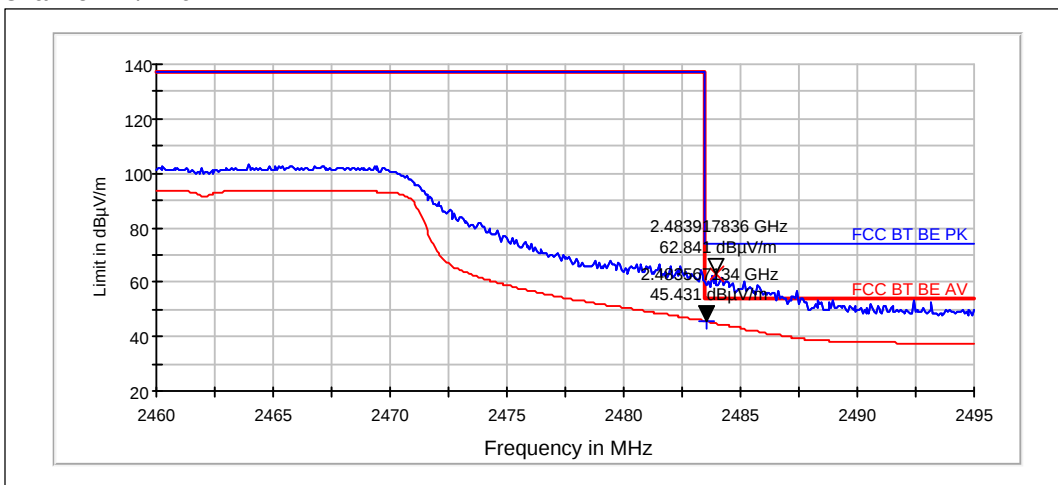
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2389.709	64.96	1769.09	63.74	1.22	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2389.96	47.27	230.808	46.05	1.22	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]	Results
2483.918	62.84	1386.915	61.47	1.37	PASSED

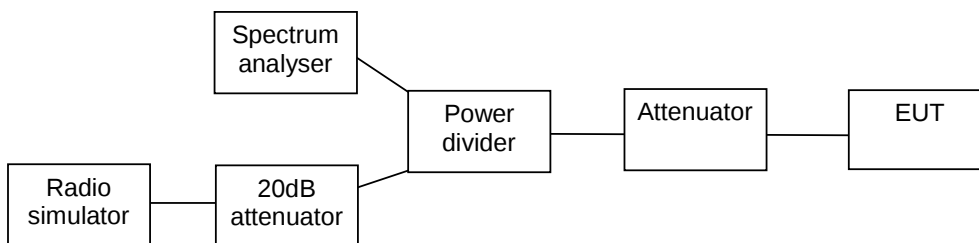
Average (RBW: 1 MHz, VBW: 10 Hz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2483.567	45.43	186.874	44.06	1.37	PASSED

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

EUT with DUT number	RM-898, DUT 52820
Accessories with DUT numbers	BP-3L, DUT 52821 ; AC-20E, DUT 52827 ; WH-108, DUT 52825
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/46/101.5
Date of measurements	13-Sep-2012 to 14-Sep-2012
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.

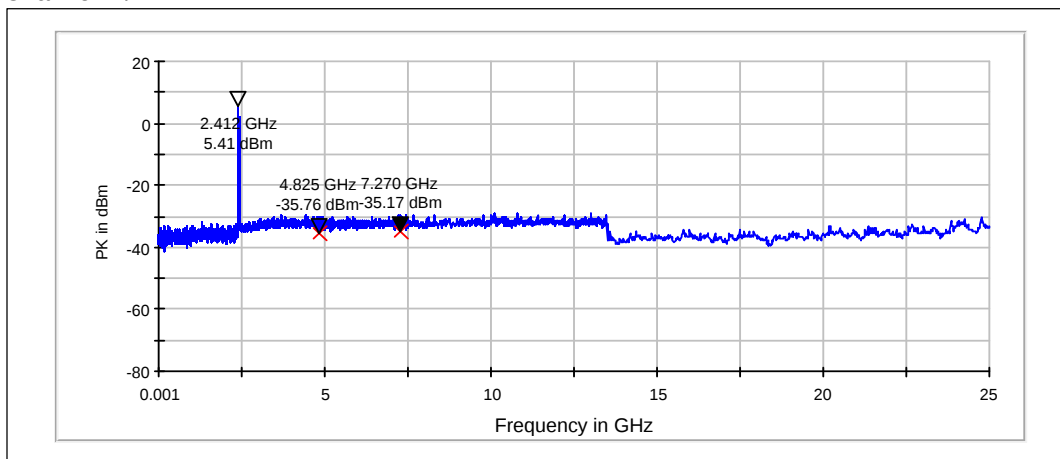
Limits for spurious RF conducted emissions measurements

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

4.3. WLAN Test results

4.3.1 DSSS mode, QPSK modulation, 11 Mbps data rate

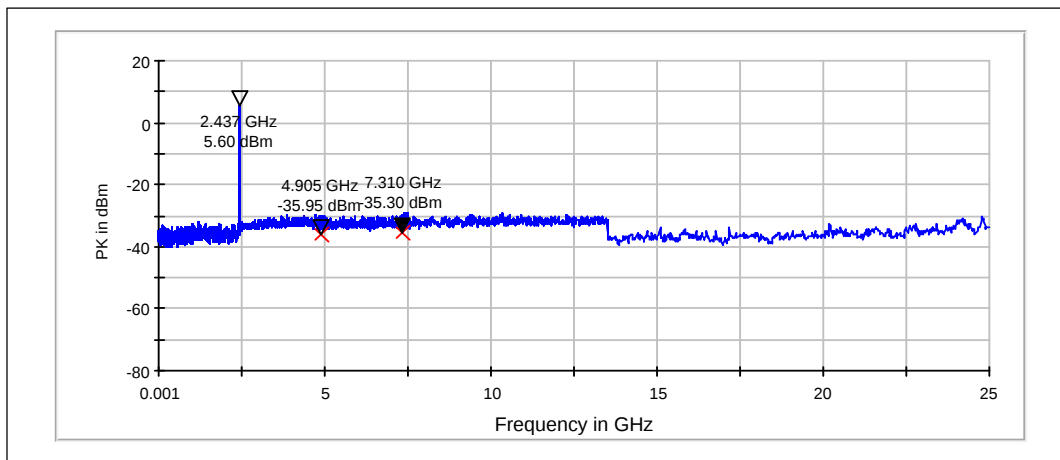
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
4824.8	-35.76	PASSED
7270.2	-35.17	PASSED

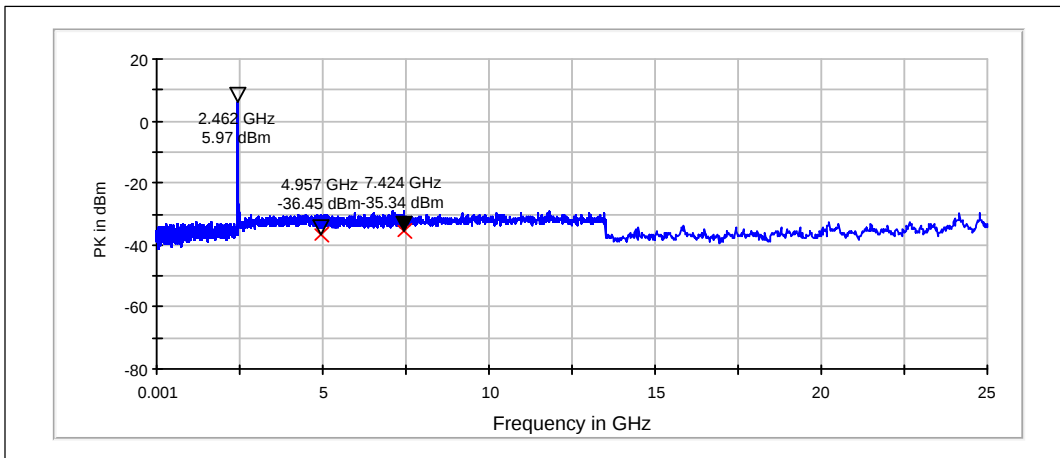
Channel 6 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
4905.2	-35.95	PASSED
7309.8	-35.3	PASSED

Channel 11 / 2462 MHz

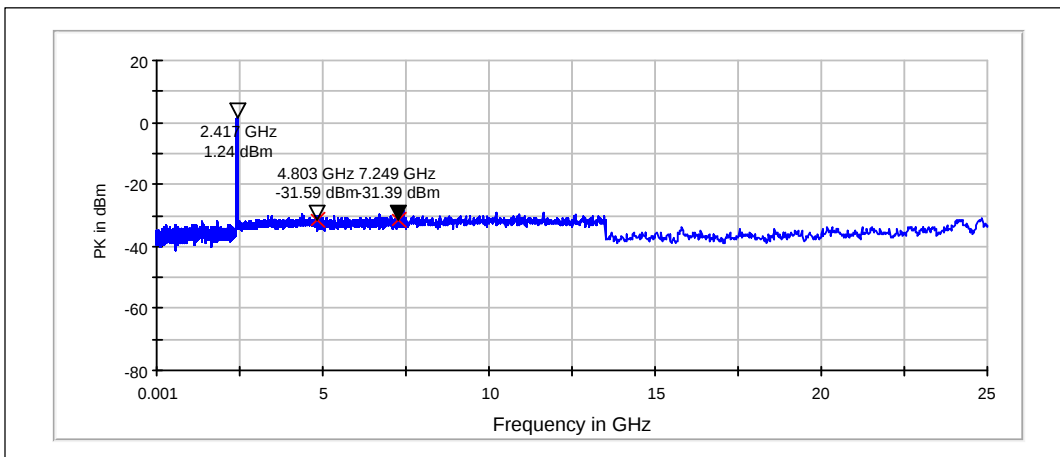


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4957.2	-36.45	PASSED
7423.8	-35.34	PASSED

4.3.2 OFDM mode, BPSK modulation, 6 Mbps data rate

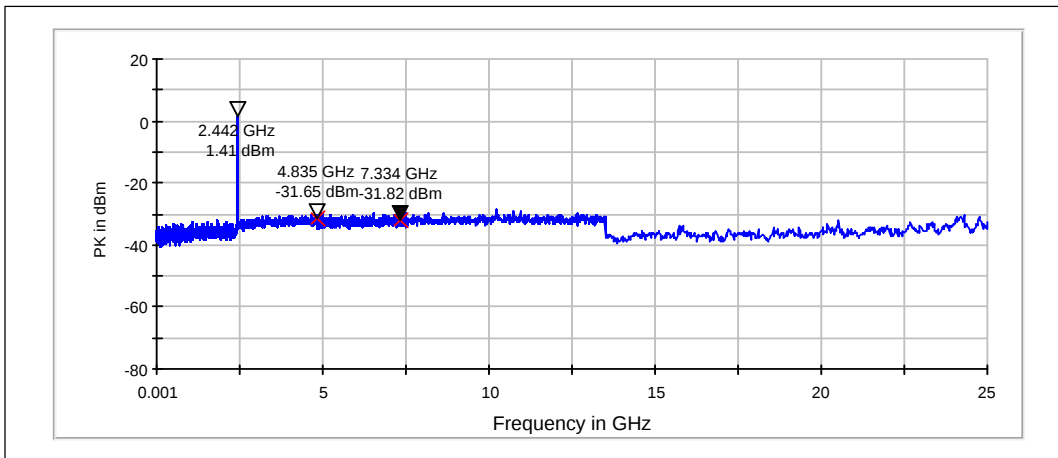
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
4803.2	-31.59	PASSED
7249.2	-31.39	PASSED

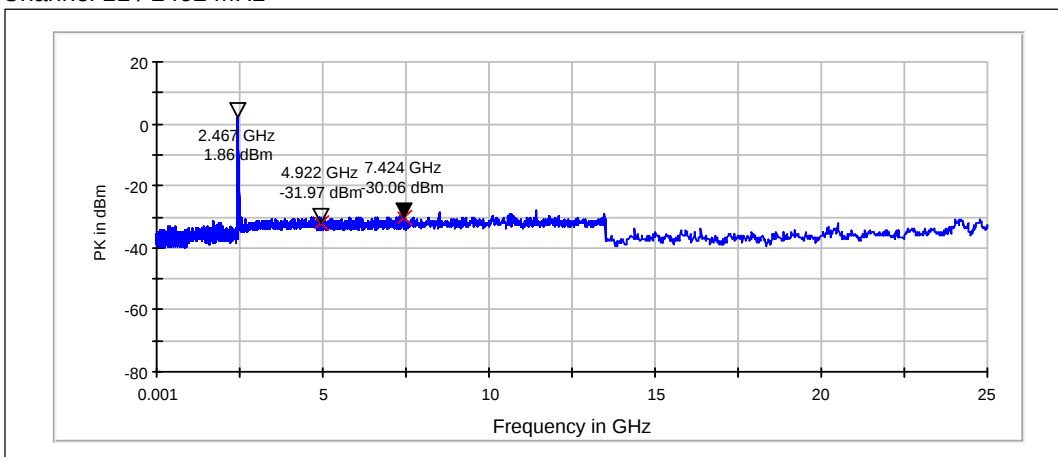
Channel 6 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
4834.8	-31.65	PASSED
7334.4	-31.82	PASSED

Channel 11 / 2462 MHz

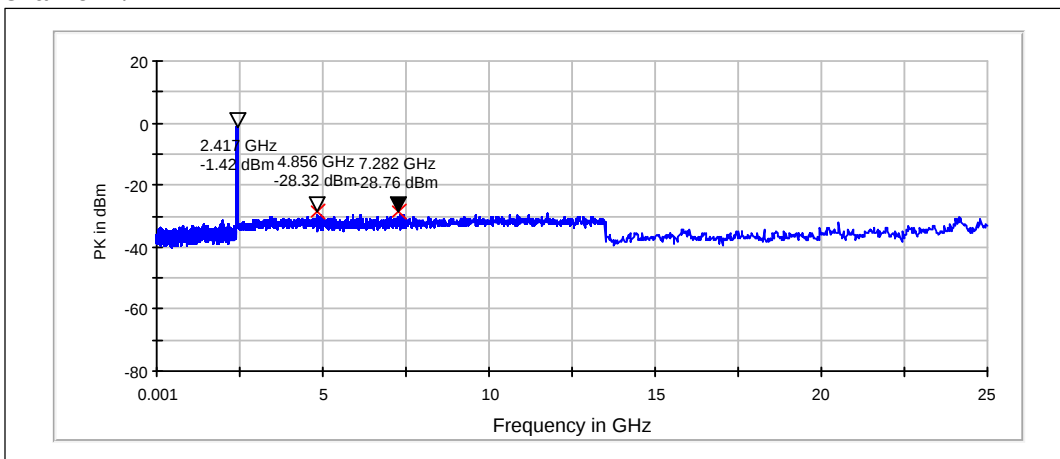


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4921.6	-31.97	PASSED
7423.8	-30.06	PASSED

4.3.3 802.11n-mode, HT20, BPSK modulation, MCS0

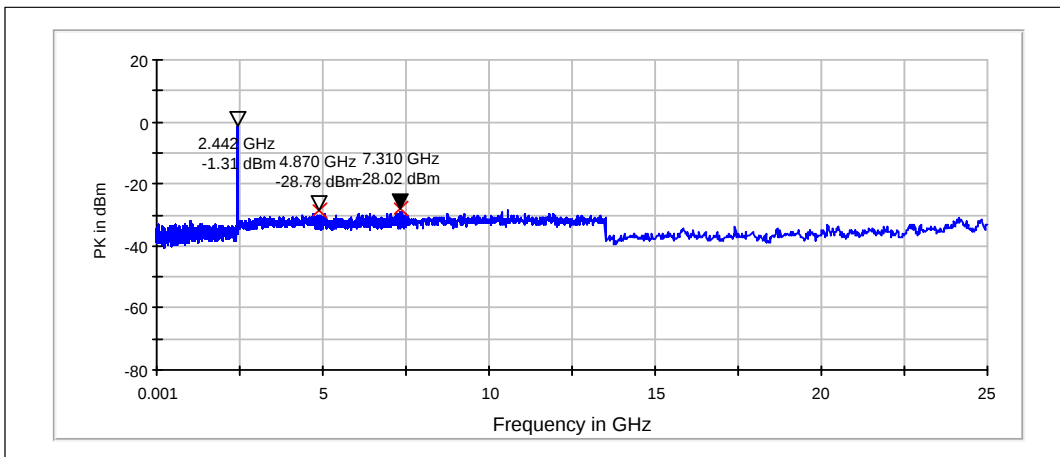
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
4855.6	-28.32	PASSED
7282.2	-28.76	PASSED

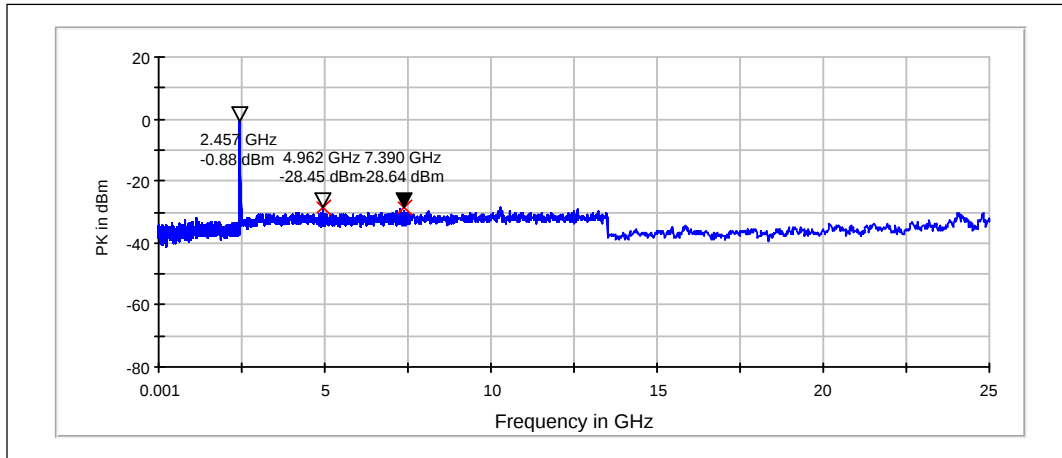
Channel 6 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
4870.4	-28.78	PASSED
7309.8	-28.02	PASSED

Channel 11 / 2462 MHz



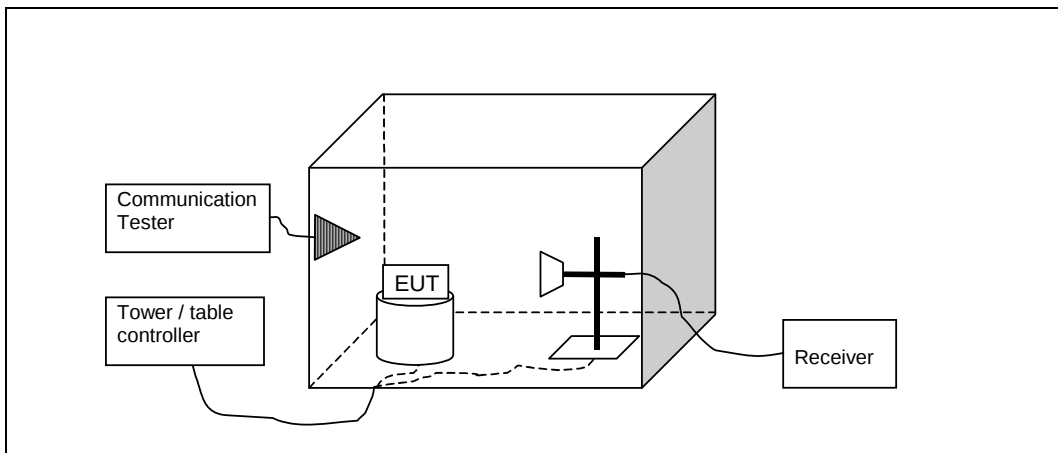
Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4962	-28.45	PASSED
7389.6	-28.64	PASSED

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

EUT with DUT number	RM-898, DUT 52816
Accessories with DUT numbers	BP-3L, DUT 52823 ; AC-20E, DUT 52810 ; WH-108, DUT 52811
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 61 / 100.2
Date of measurements	10-Aug-2012
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. WLAN test results

5.3.1 Dsss mode, BPSK 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	43.11	143.054	43	0.11	30.9	74	PASSED
7237.7	46	199.595	40.76	5.24	28	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	29.93	31.376	29.82	0.11	24	54	PASSED
7237.7	33.55	47.572	28.31	5.24	20.5	54	PASSED

Channel 6 / 2437 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
4880.8	43.48	149.211	43.14	0.34	30.5	74	PASSED
7321.9	46.35	207.778	41.02	5.33	27.6	74	PASSED
16412.622	58.01	795.06	41.02	16.99	67.2	74	PASSED

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	31.17	36.178	34.7	-3.53	8.8	40	PASSED
32.04	30.89	35.027	34.57	-3.68	9.1	40	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
4880.8	30.76	34.495	30.42	0.34	23.2	54	PASSED
7321.9	33.65	48.112	28.32	5.33	20.3	54	PASSED
16412.622	44.5	167.861	27.51	16.99	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
4925.1	45.98	199.113	45.62	0.36	28	74	PASSED
7387.5	46.5	211.349	41.28	5.22	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
4925.1	32.86	43.934	32.5	0.36	21.1	54	PASSED
7387.5	33.49	47.239	28.27	5.22	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
4824.9	45.33	184.65	45.22	0.11	28.7	74	PASSED
7236.5	46	199.457	40.76	5.24	79.2	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
4824.9	31.61	38.045	31.5	0.11	22.4	54	PASSED
7236.5	33.63	48.034	28.39	5.24	20.4	54	PASSED

Channel 6 / 2437 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
4878.9	43.74	153.745	43.41	0.33	30.2	74	PASSED
7322	46.87	220.496	41.54	5.33	27.1	74	PASSED
14248.894	54.05	504.255	41.15	12.9	71.2	74	PASSED

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
31.89	31.02	35.563	34.59	-3.57	9	40	PASSED
31.89	28.89	27.832	32.46	-3.57	11.1	40	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
4878.9	30.7	34.261	30.37	0.33	23.3	54	PASSED
7322	33.51	47.386	28.18	5.33	20.5	54	PASSED
14248.894	40.65	107.758	27.75	12.9	13.4	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
4922.9	45.59	190.414	45.21	0.38	28.4	74	PASSED
7386.9	46.11	202.116	40.89	5.22	27.9	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
4922.9	32.87	44	32.49	0.38	21.1	54	PASSED
7386.9	33.46	47.087	28.24	5.22	20.5	54	PASSED

5.3.3 802.11n-mode, HT20, BPSK modulation, MCS0

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	44.06	159.57	43.95	0.12	29.9	74	PASSED
7235.6	46.51	211.519	41.28	5.23	78.7	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
4825.1	31.6	38.01	31.49	0.12	22.4	54	PASSED
7235.6	33.53	47.479	28.3	5.23	20.5	54	PASSED

Channel 6 / 2437 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
4881.1	43.35	146.977	43.01	0.34	30.6	74	PASSED
7318.9	46.76	217.646	41.41	5.35	27.2	74	PASSED
17998.7	59.23	914.956	39.61	19.62	14.8	74	PASSED

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
31.74	30.54	33.643	34.01	-3.47	9.5	40	PASSED
31.95	28.85	27.698	32.46	-3.61	11.2	40	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
4881.1	30.73	34.387	30.39	0.34	23.3	54	PASSED
7318.9	33.7	48.395	28.35	5.35	20.3	54	PASSED
17998.7	46.15	203.095	26.53	19.62	7.8	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
4922.3	45.86	196.359	45.49	0.37	28.1	74	PASSED
7385.3	45.99	199.32	40.76	5.23	28	74	PASSED

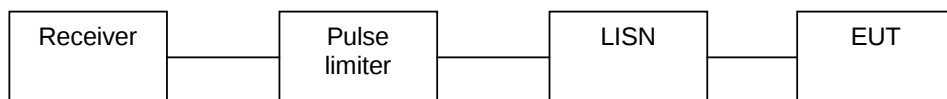
Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
4922.3	32.89	44.081	32.52	0.37	21.1	54	PASSED
7385.3	33.46	47.071	28.23	5.23	20.5	54	PASSED

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

EUT with DUT number	RM-898, DUT 52817
Accessories with DUT numbers	BP-3L, DUT 52821 ; AC-20E, DUT 52827 ; WH-108, DUT 52825
Operation Voltage [V] / [Hz]	115/60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/67/100.5
Date of measurements	09-Aug-2012
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.

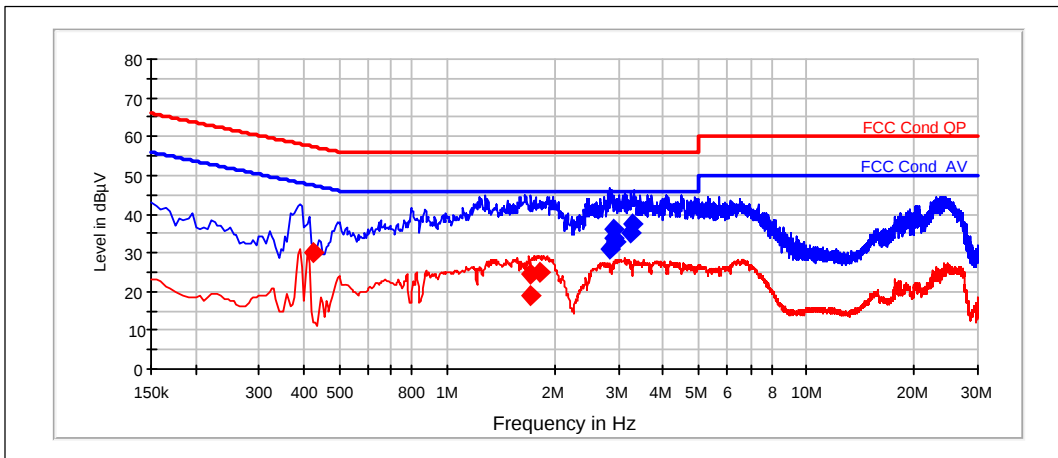
CISPR 22 Class B limits

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
2.83	30.81	N	PASSED
2.895	33.83	L1	PASSED
2.9	36.14	L1	PASSED
2.945	32.61	L1	PASSED
3.24	35.27	L1	PASSED
3.295	37.58	L1	PASSED

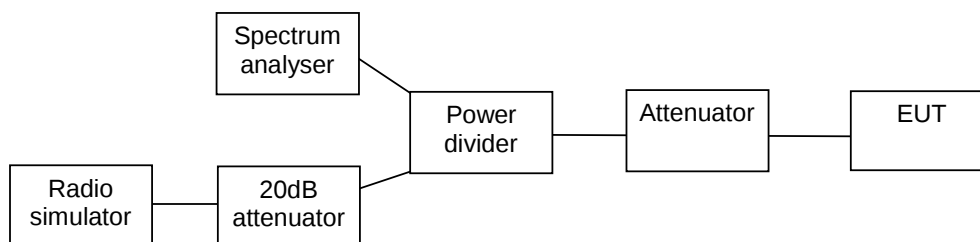
Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
0.425	30.17	L1	PASSED
1.7	19.18	N	PASSED
1.705	24.71	L1	PASSED
1.805	25.14	L1	PASSED

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

EUT with DUT number	RM-898, DUT 52820
Accessories with DUT numbers	BP-3L, DUT 52821 ; AC-20E, DUT 52827 ; WH-108, DUT 52825
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/46/101.5
Date of measurements	13-Sep-2012 to 14-Sep-2012
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

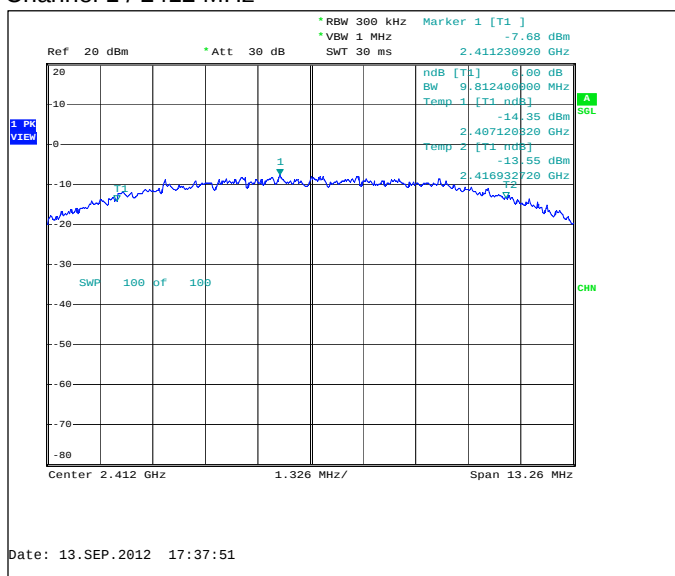
Limit [kHz]
>= 500

7.3. WLAN Test results

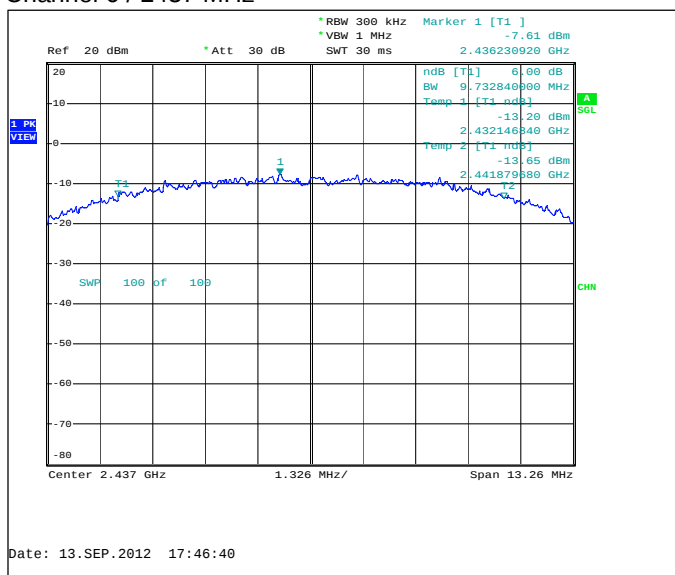
7.3.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	9812.4	PASSED
6 / 2437	9732.8	PASSED
11/2462	9908.6	PASSED

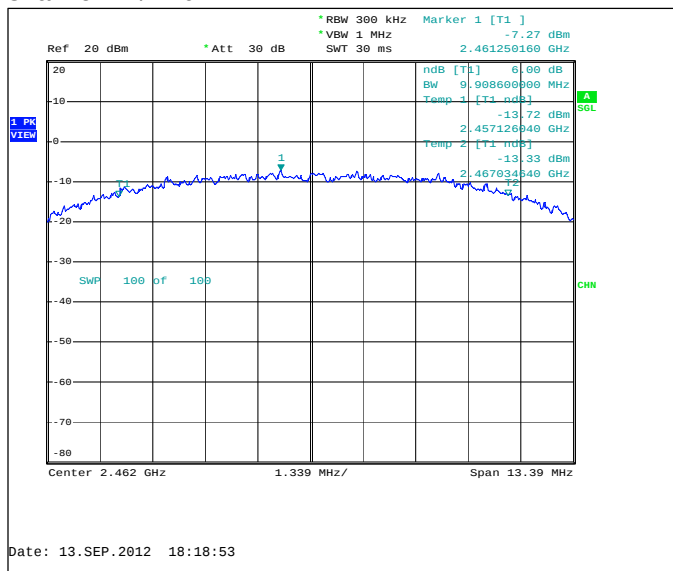
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



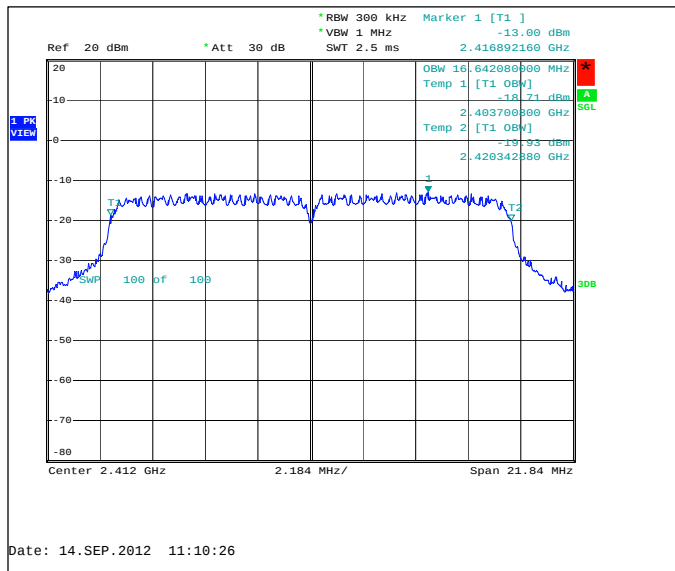
Channel 11 / 2462 MHz



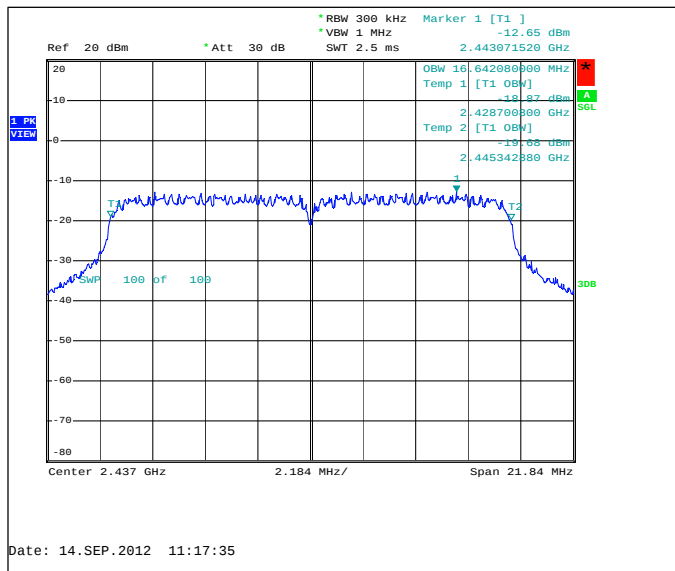
7.3.2 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f _C [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	16642.1	PASSED
6 / 2437	16642.1	PASSED
11/2462	16598.4	PASSED

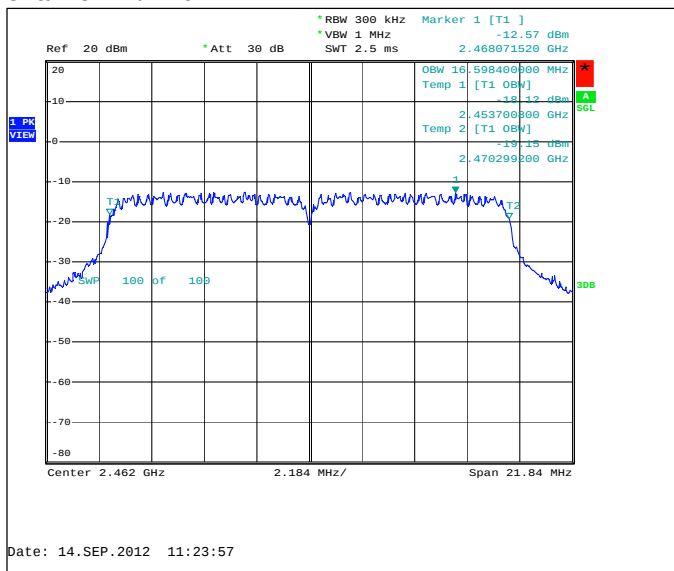
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



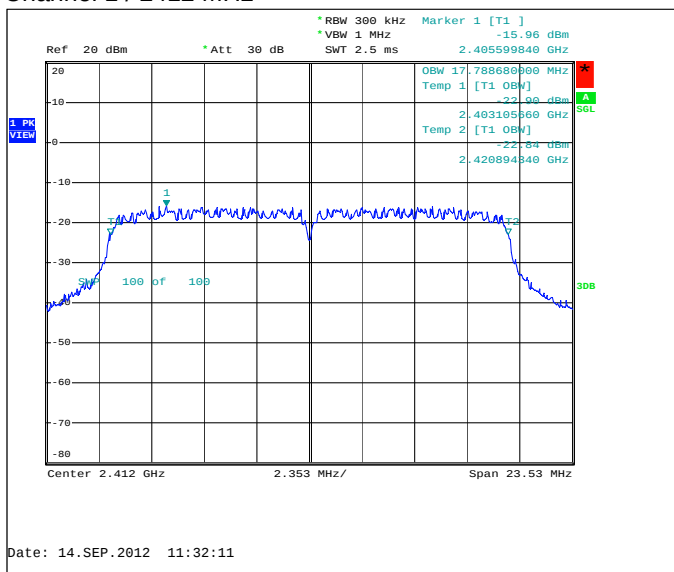
Channel 11 / 2462 MHz



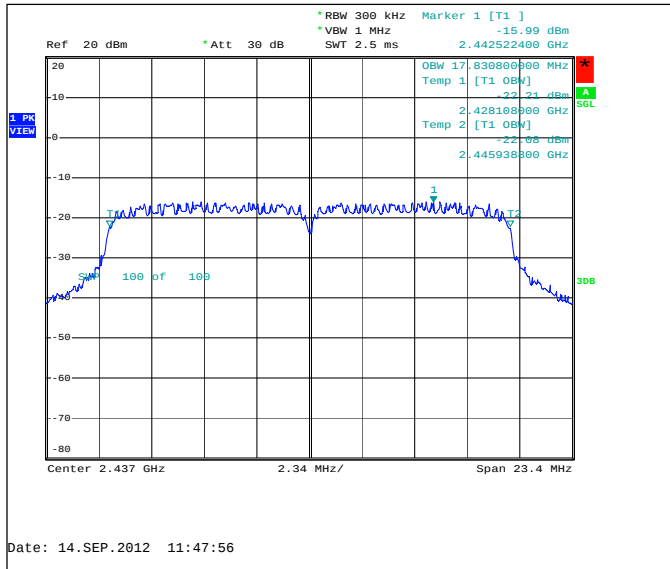
7.3.3 802.11n-mode, HT20, BPSK modulation, MCS0

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	17788.7	PASSED
6 / 2437	17830.8	PASSED
11 / 2462	17830.8	PASSED

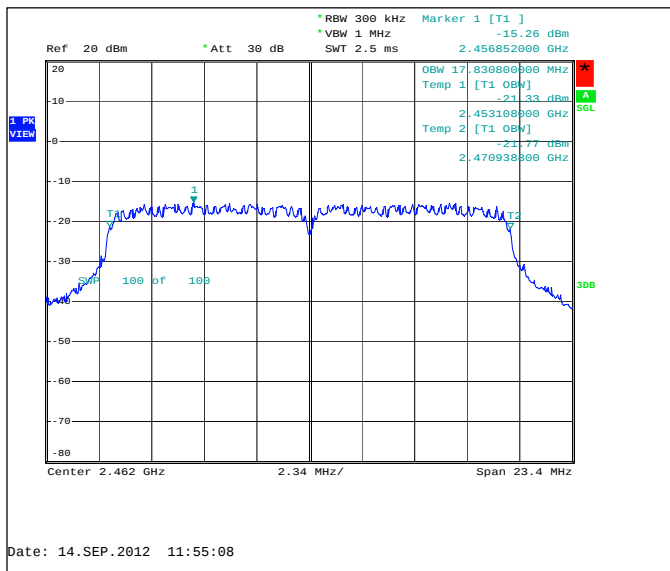
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



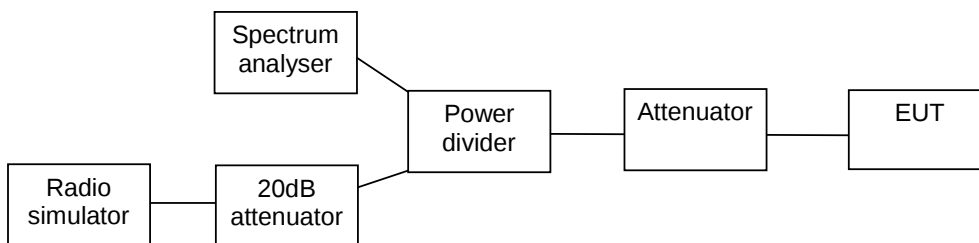
Channel 11 / 2462 MHz



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

EUT with DUT number	RM-898, DUT 52820
Accessories with DUT numbers	BP-3L, DUT 52821 ; AC-20E, DUT 52827 ; WH-108, DUT 52825
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/46/101.5
Date of measurements	13-Sep-2012 to 14-Sep-2012
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

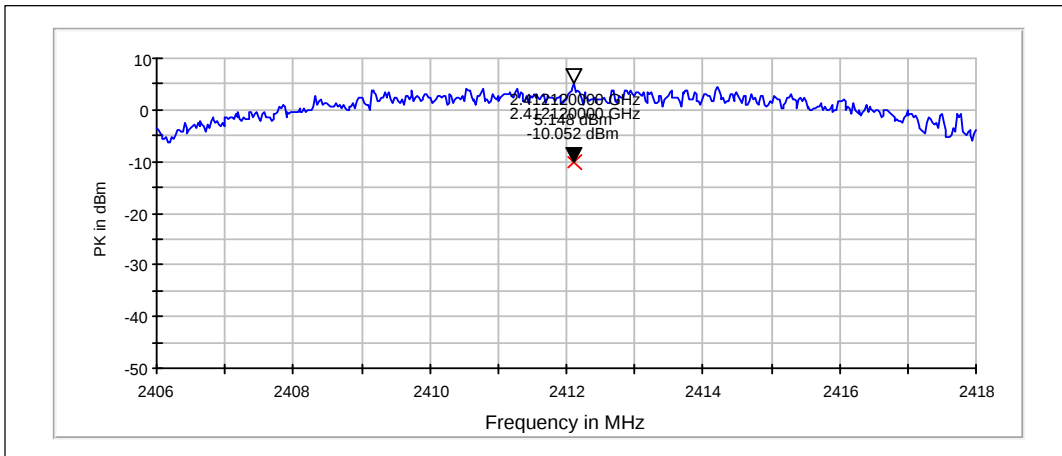
Limit [dBm] @ 3 kHz
≤ 8

8.2.1 DSSS mode, QPSK modulation, 11 Mbps data rate

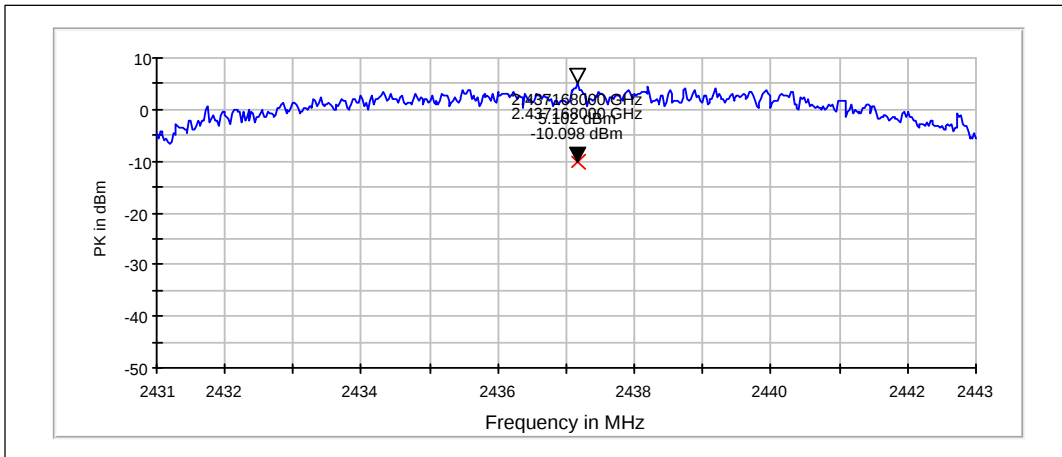
Peak (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-10.05	PASSED
6 / 2437	-10.1	PASSED
11 / 2462	-10.05	PASSED

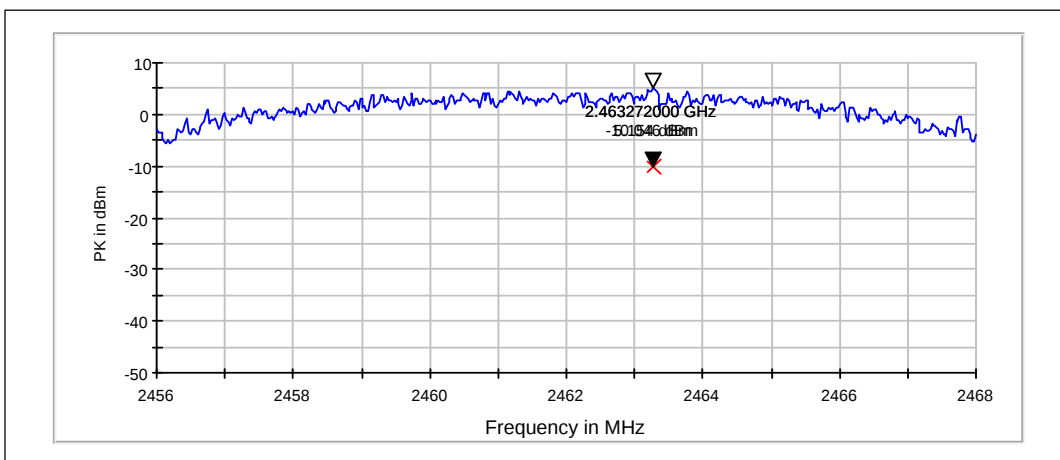
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



Channel 11 / 2462 MHz

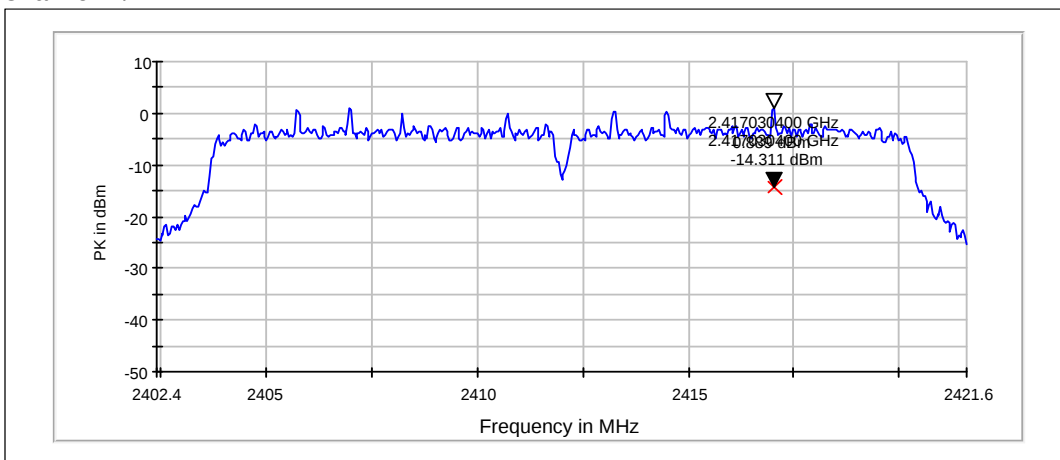


8.2.2 OFDM mode, BPSK modulation, 6 Mbps data rate

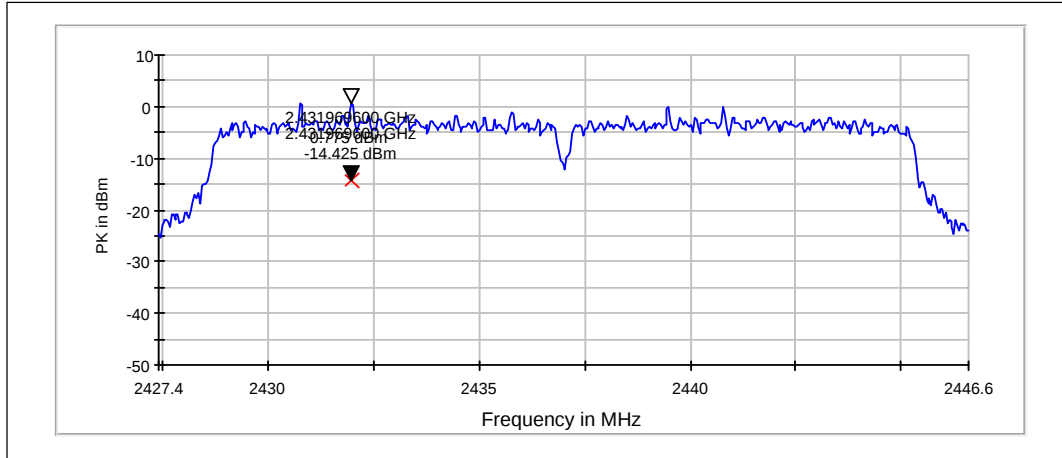
Peak (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-14.31	PASSED
6 / 2437	-14.43	PASSED
11 / 2462	-13.9	PASSED

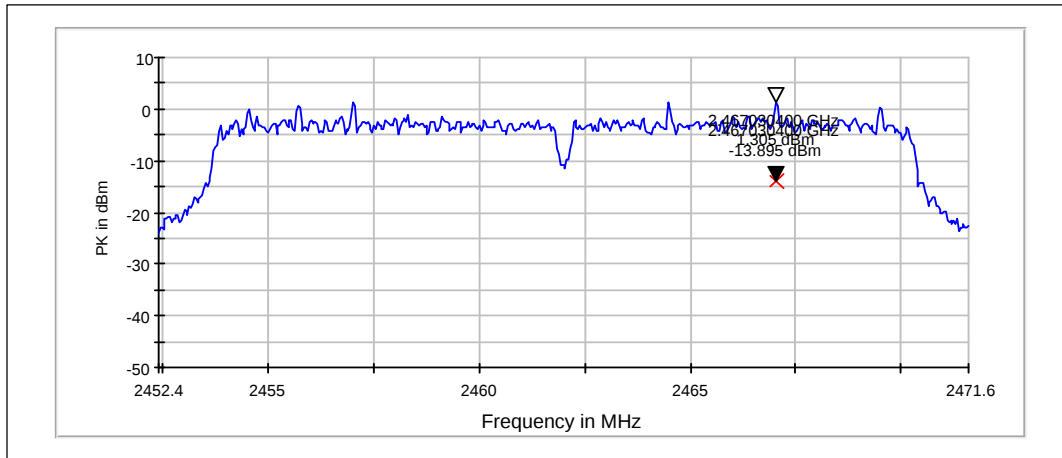
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



Channel 11 / 2462 MHz

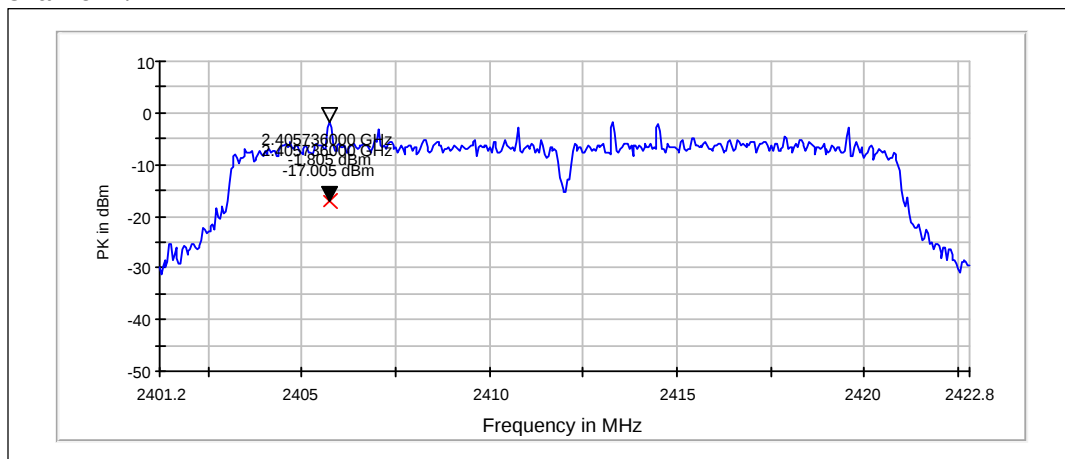


8.2.3 802.11n-mode, HT20, BPSK modulation, MCS0

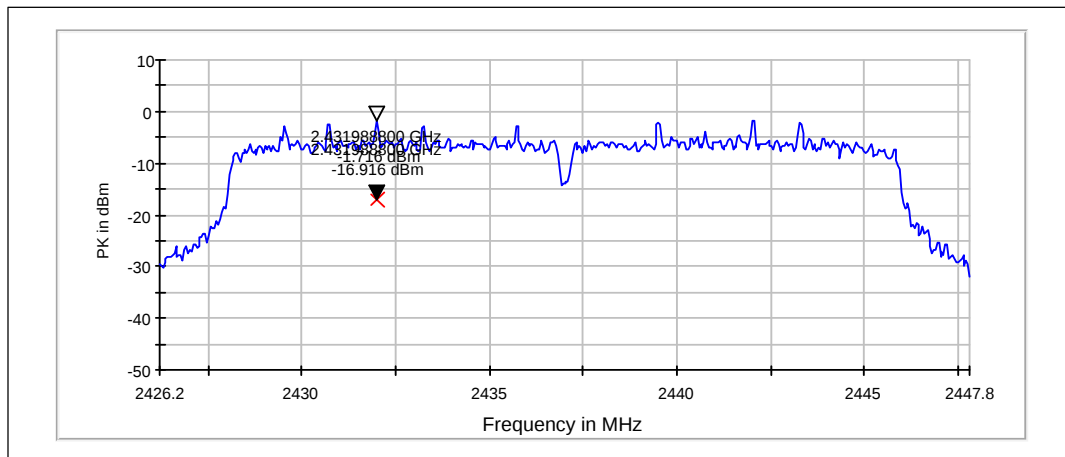
Peak (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-17.01	PASSED
6 / 2437	-16.92	PASSED
11 / 2462	-17.19	PASSED

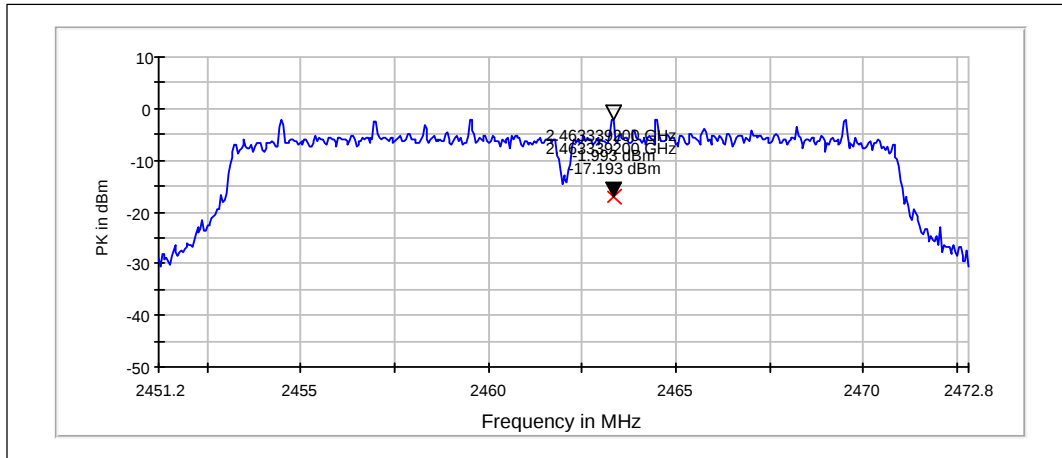
Channel 1 / 2412 MHz



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
BJPCHW0020	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	-