

FCC Part 15C Compliance Test Report

Test Report no.:	FCC15CWLAN_RM-824_01	Date of Report:	22-Aug-2012
Number of pages:	71	Customer's Contact person:	Melava Tia
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FCC listing no.:	94436		
IC recognition no.:	661AK-1		
Tested devices/ accessories:	Phone RM-824 / Battery BP-5T / Charger AC-50E / Data Cable CA-190CD / Headset WH-208		
FCC ID:	PYARM-824	IC:	661V-RM824
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, RSS-210 (Issue 8, December 2010). Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		
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:			

Jari Jantunen, System Manager, EMC

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	29-Jun-2012
Testing completed	04-Jul-2012
The customer's contact person	Melava Tia
Test Plan referred to	T:\Projects\RM-824\TestPlan\RS_testplan_RM-824.xls
Notes	-
Document name	T:\Projects\RM-824\EMC\FCC15CWLAN_RM-824_01.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-824	004402139761484	2210	-	1121.0002.8297.9657.110	42842
Battery	BP-5T	3932132224140100128;0670665	-	-	-	42845
Phone	RM-824	004402139761476	2210	-	1121.0002.8297.9657.110	42843
Battery	BP-5T	3932132224140100129;0670665	-	-	-	42844
Charger	AC-50E	4090492023260400312;0675619	0.5	0.4	-	42776
Data Cable	CA-190CD	-	-	-	-	42778
Headset	WH-208	-	-	-	-	42831

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

5 GHz RLAN:

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	-
15.247(d)	A8(0.5)	Spurious RF conducted emissions	PASSED
15.247(d), 15.209	A8(0.5)	Spurious radiated emissions	-
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

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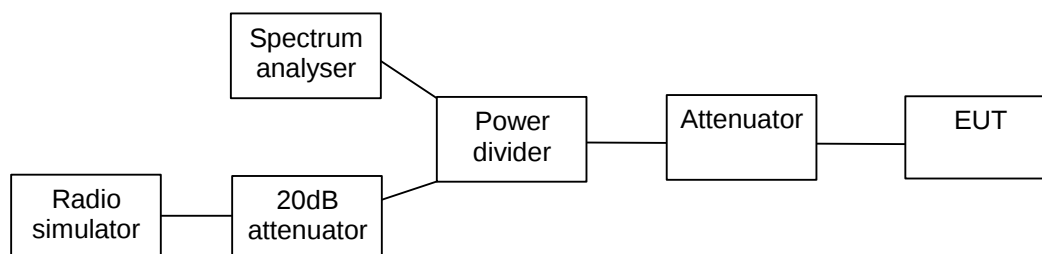
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2. Conducted peak output power (15.247(b)(1), RSS-210 A8.4 (4))

EUT with DUT number	RM-824, DUT 42842
Accessories with DUT numbers	BP-5T, DUT 42845
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 51 / 100
Date of measurements	04-Jul-2012
Measured by	Hannu Söderholm

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

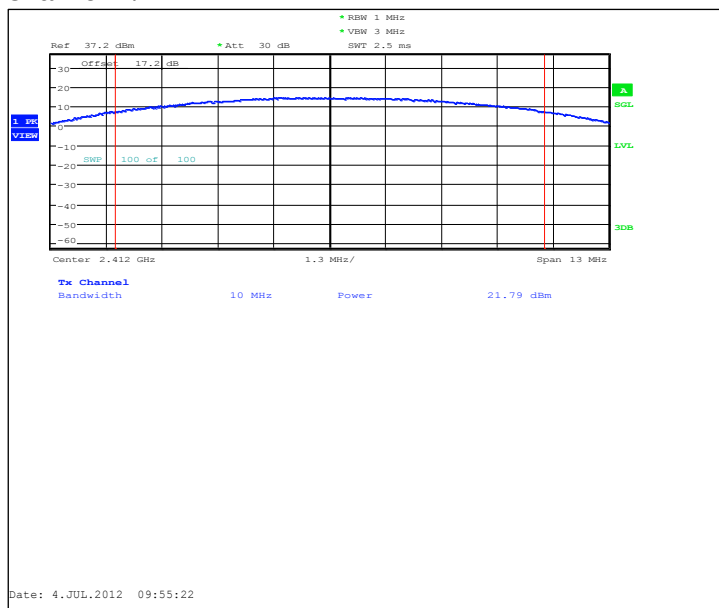
2.3. WLAN Test results

WLAN 2.4 GHz, peak output power [dBm]	
Mode & data speed	Ch 6
b-mode WLAN DSSS 1 Mbps	18.89
b-mode WLAN DSSS 2 Mbps	19.03
b-mode WLAN DSSS 5.5 Mbps	20.49
b-mode WLAN DSSS 11 Mbps	21.75
g-mode WLAN OFDM 6 Mbps	20.07
g-mode WLAN OFDM 9 Mbps	20.09
g-mode WLAN OFDM 12 Mbps	19.84
g-mode WLAN OFDM 18 Mbps	19.85
g-mode WLAN OFDM 24 Mbps	20.24
g-mode WLAN OFDM 36 Mbps	20.26
g-mode WLAN OFDM 48 Mbps	19.26
g-mode WLAN OFDM 54 Mbps	19.27
n-mode MCS 0: OFDM 6.5 / 7.25 Mbps	20.95
n-mode MCS 1: OFDM 13.0 / 14.4 Mbps	20.64
n-mode MCS 2: OFDM 19.5 / 21.7 Mbps	19.78
n-mode MCS 3: OFDM 26.0 / 28.9 Mbps	20.25
n-mode MCS 4: OFDM 39.0 / 43.3 Mbps	19.23
n-mode MCS 5: OFDM 52.0 / 57.8 Mbps	18.26
n-mode MCS 6: OFDM 58.5 / 65.0 Mbps	18.27
n-mode MCS 7: OFDM 65.0 / 72.2 Mbps	18.3
n-mode MCS 0: OFDM 13.5 / 15.0 Mbps	20.99
n-mode MCS 1: OFDM 27.0 / 30.0 Mbps	20.74
n-mode MCS 2: OFDM 40.5 / 45.0 Mbps	19.8
n-mode MCS 3: OFDM 54.0 / 60.0 Mbps	20.14
n-mode MCS 4: OFDM 81.0 / 90.0 Mbps	19.03
n-mode MCS 5: OFDM 108.0 / 120.0 Mbps	18.1
n-mode MCS 6: OFDM 121.5 / 135.0 Mbps	18.17
n-mode MCS 7: OFDM 135.0 / 150.0 Mbps	18.23

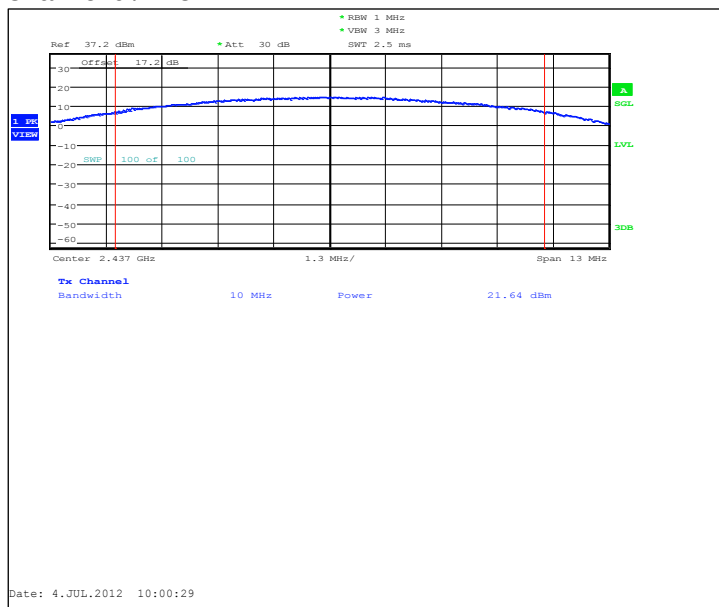
2.3.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
1 / 2412	21.79	151.008	PASSED
6 / 2437	21.64	145.881	PASSED
11 / 2462	20.95	124.451	PASSED

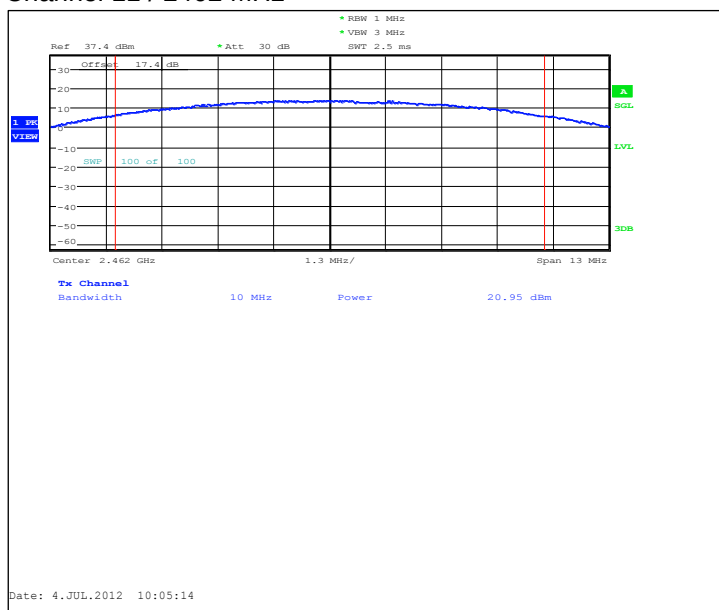
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



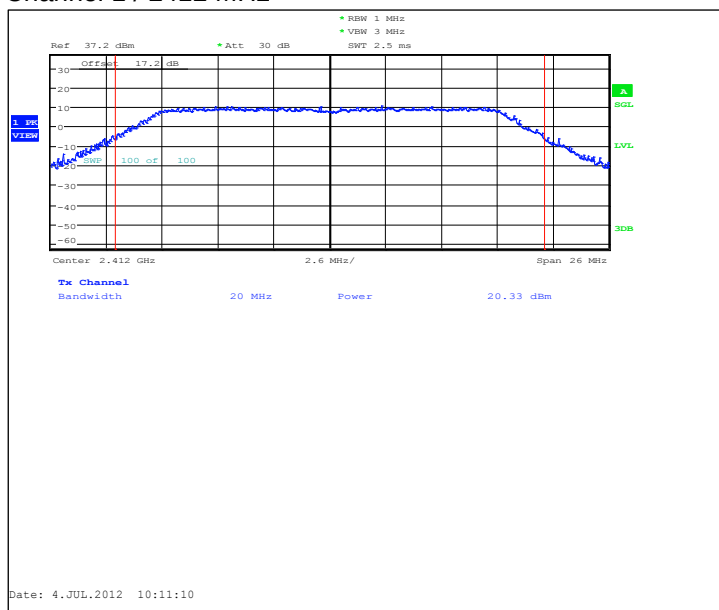
Channel 11 / 2462 MHz



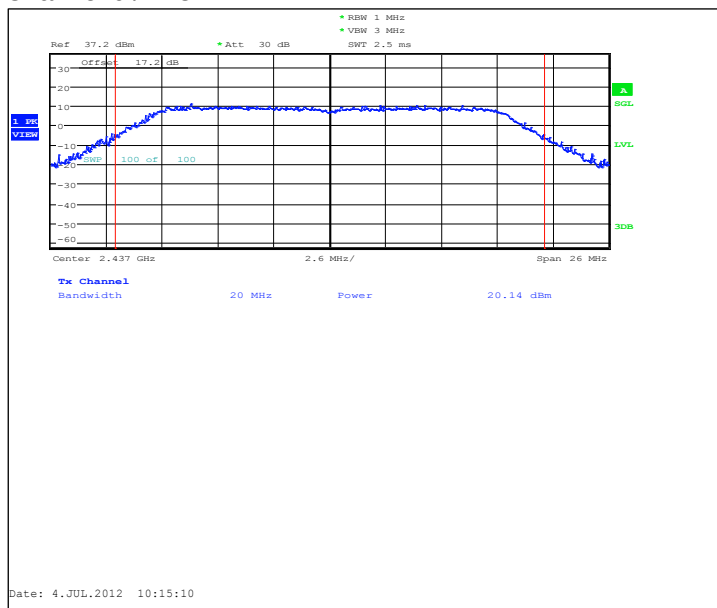
2.3.2 OFDM mode, BPSK modulation, 36 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
1 / 2412	20.33	107.895	PASSED
6 / 2437	20.14	103.276	PASSED
11 / 2462	19.6	91.201	PASSED

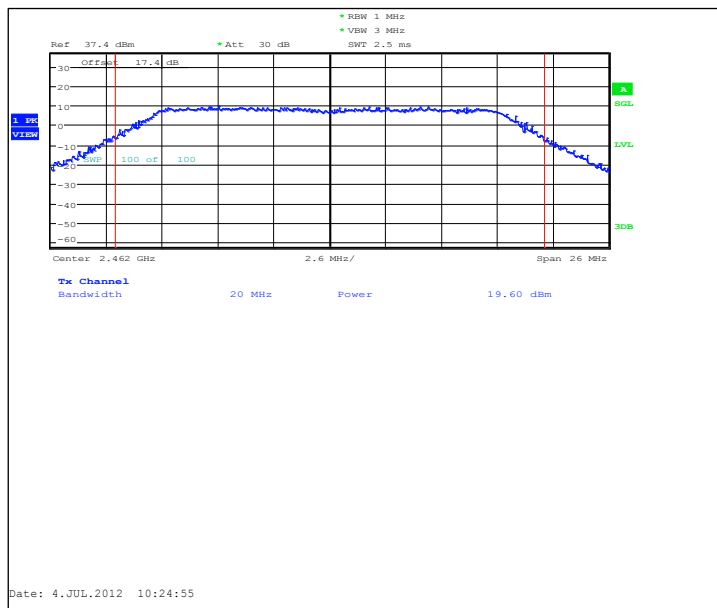
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



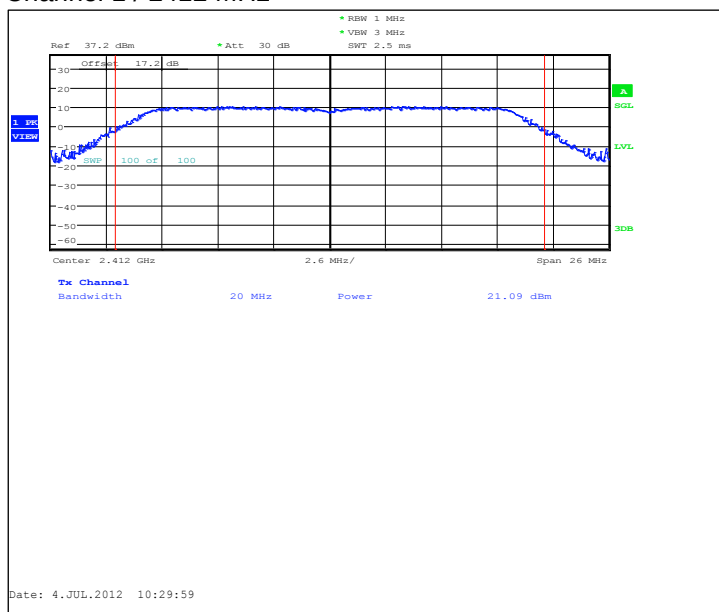
Channel 11 / 2462 MHz



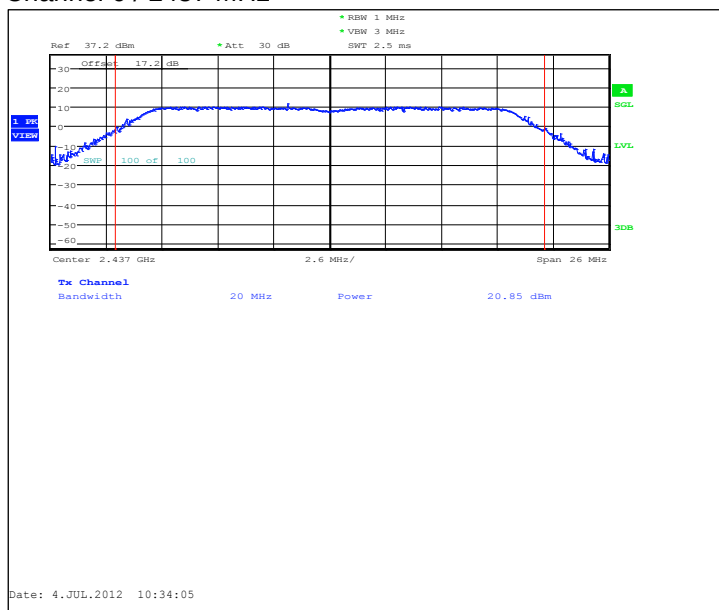
2.3.3 802.11n HT20 MCS0, 20 MHz CBW mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
1 / 2412	21.09	128.529	PASSED
6 / 2437	20.85	121.619	PASSED
11 / 2462	20.3	107.152	PASSED

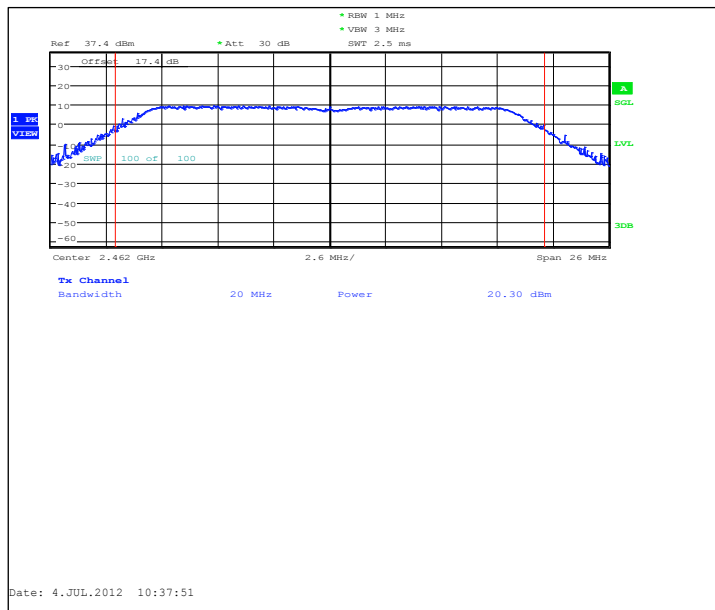
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



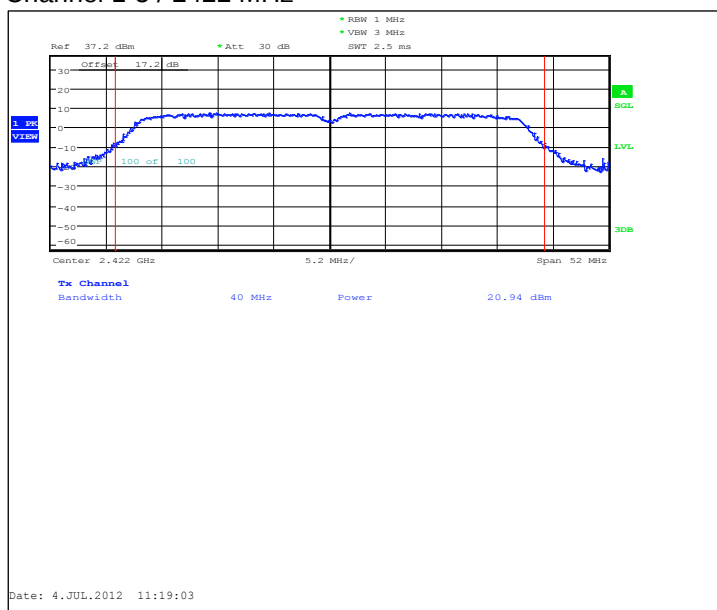
Channel 11 / 2462 MHz



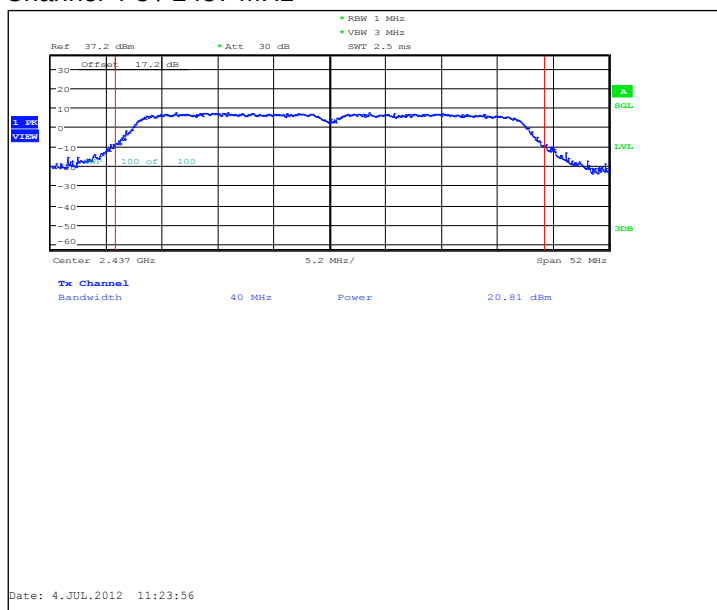
2.3.4 802.11n HT40 MCS0, 40 MHz CBW mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
1-5 / 2422	20.94	124.165	PASSED
4-8 / 2437	20.81	120.504	PASSED
7-11 / 2452	20.64	115.878	PASSED

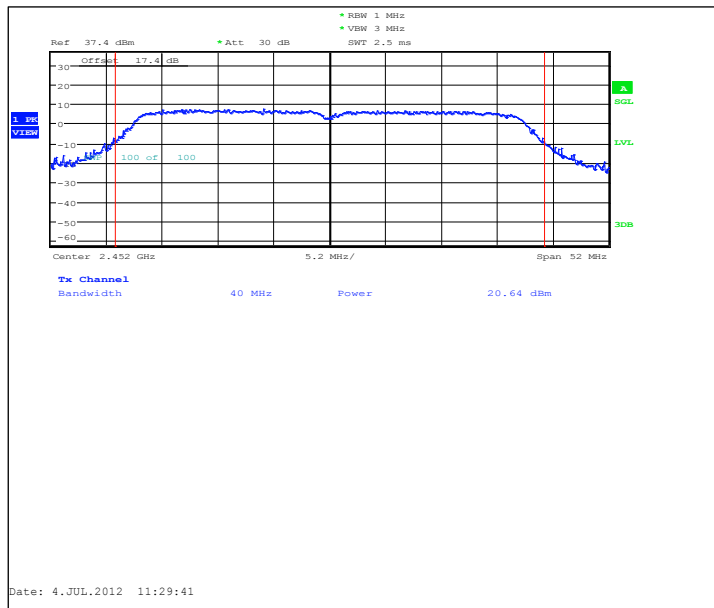
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



Channel 7-11 / 2452 MHz



2.4. 5 GHz RLAN Test results

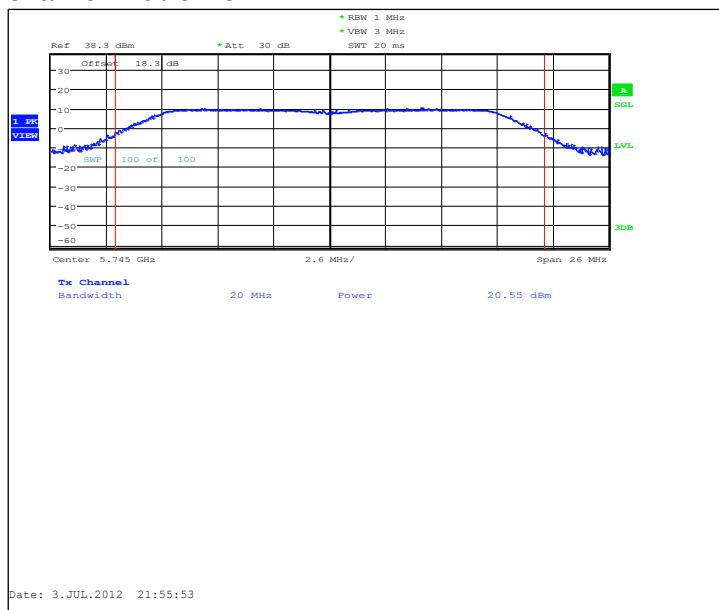
RLAN 5 GHz, peak output power [dBm]	
Mode & data speed	Ch 157
g-mode WLAN OFDM 6 Mbps	21.79
g-mode WLAN OFDM 9 Mbps	20.83
g-mode WLAN OFDM 12 Mbps	20.75
g-mode WLAN OFDM 18 Mbps	20.64
g-mode WLAN OFDM 24 Mbps	19.92
g-mode WLAN OFDM 36 Mbps	20.05
g-mode WLAN OFDM 48 Mbps	19.05
g-mode WLAN OFDM 54 Mbps	18.97
n-mode MCS 0: OFDM 6.5 / 7.25 Mbps	20.55
n-mode MCS 1: OFDM 13.0 / 14.4 Mbps	20.58
n-mode MCS 2: OFDM 19.5 / 21.7 Mbps	19.64
n-mode MCS 3: OFDM 26.0 / 28.9 Mbps	20.07
n-mode MCS 4: OFDM 39.0 / 43.3 Mbps	19.05
n-mode MCS 5: OFDM 52.0 / 57.8 Mbps	19.19
n-mode MCS 6: OFDM 58.5 / 65.0 Mbps	18.23
n-mode MCS 7: OFDM 65.0 / 72.2 Mbps	18.29

RLAN 5 GHz, peak output power [dBm]	
Mode & data speed	Ch 151
n-mode MCS 0: OFDM 13.5 / 15.0 Mbps	21.12
n-mode MCS 1: OFDM 27.0 / 30.0 Mbps	21.12
n-mode MCS 2: OFDM 40.5 / 45.0 Mbps	21.12
n-mode MCS 3: OFDM 54.0 / 60.0 Mbps	21.48
n-mode MCS 4: OFDM 81.0 / 90.0 Mbps	21.49
n-mode MCS 5: OFDM 108.0 / 120.0 Mbps	21.58
n-mode MCS 6: OFDM 121.5 / 135.0 Mbps	21.53
n-mode MCS 7: OFDM 135.0 / 150.0 Mbps	21.53

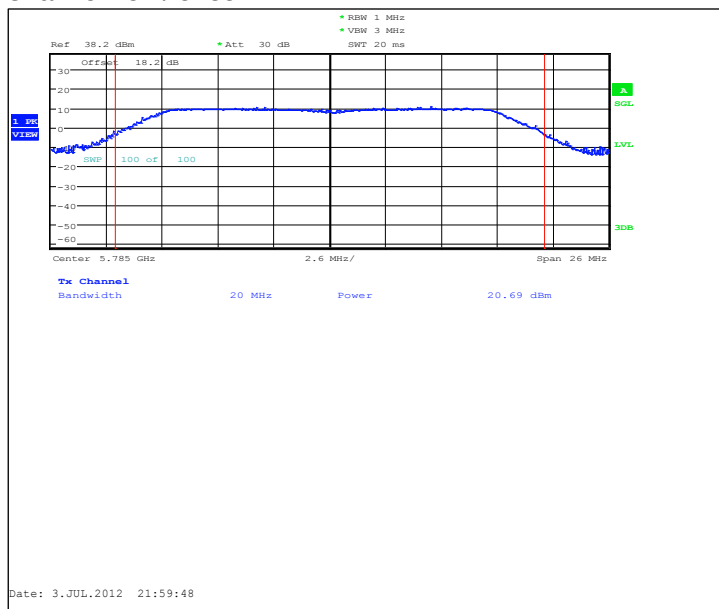
2.4.1 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
149 / 5745	20.55	113.501	PASSED
157 / 5785	20.69	117.22	PASSED
165 / 5825	20.63	115.611	PASSED

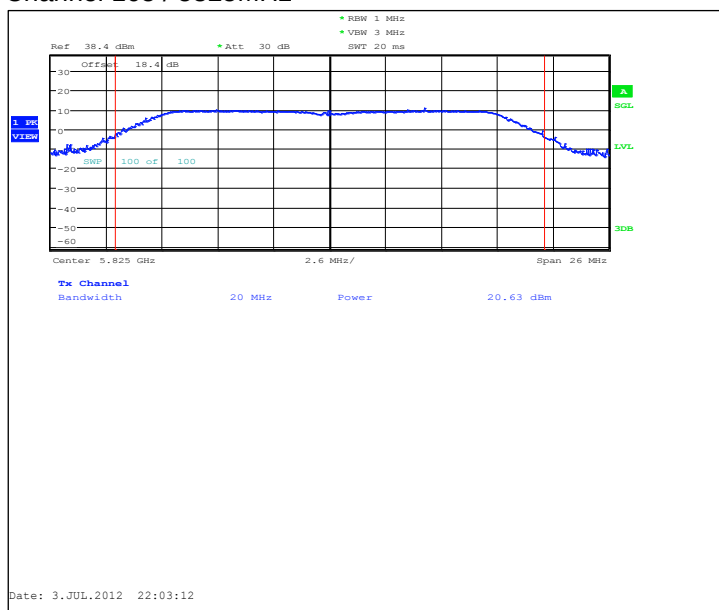
Channel 149 / 5745MHz



Channel 157 / 5785MHz



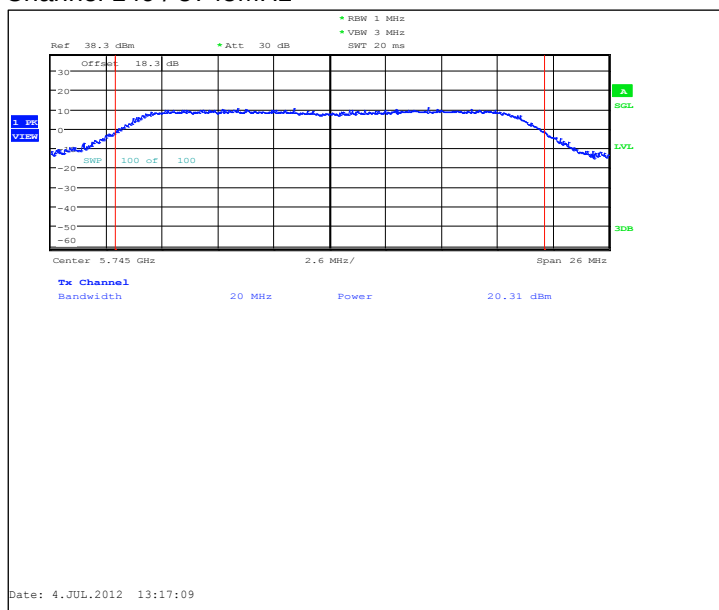
Channel 165 / 5825MHz



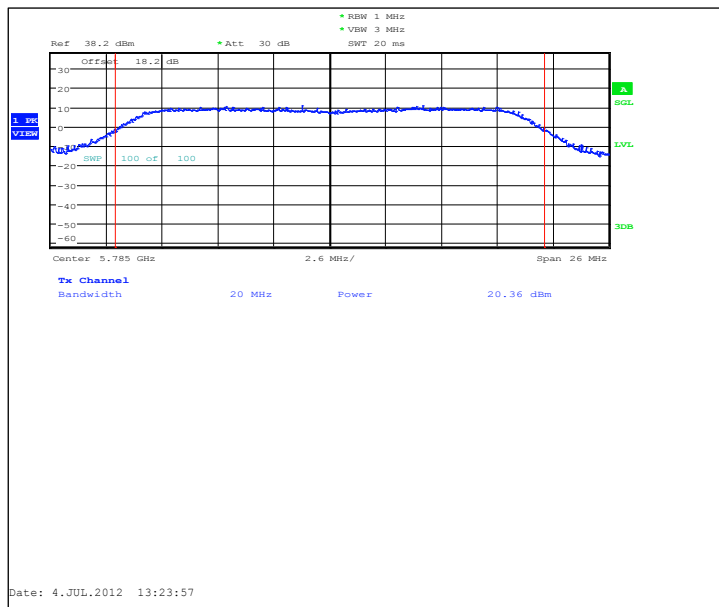
2.4.2 802.11n HT20 MCS1, 20 MHz CBW mode, BPSK modulation, 13.0 / 14.4 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
149 / 5745	20.31	107.399	PASSED
157 / 5785	20.36	108.643	PASSED
165 / 5825	20.21	104.954	PASSED

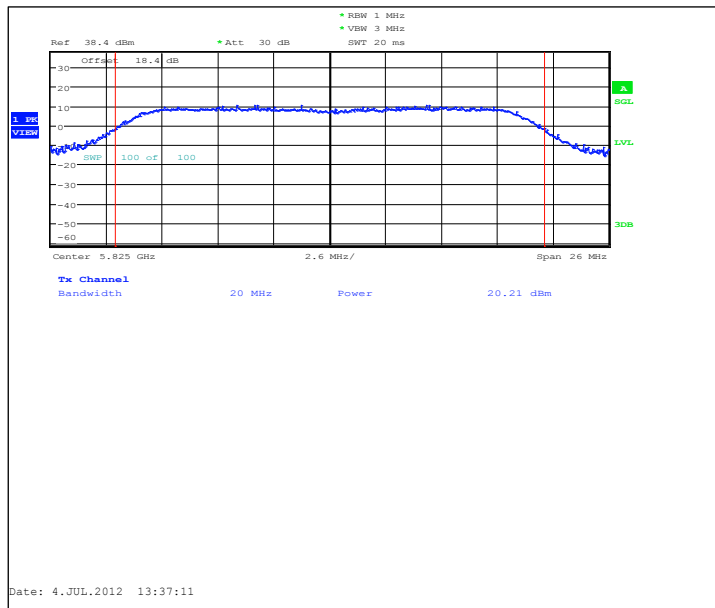
Channel 149 / 5745MHz



Channel 157 / 5785MHz



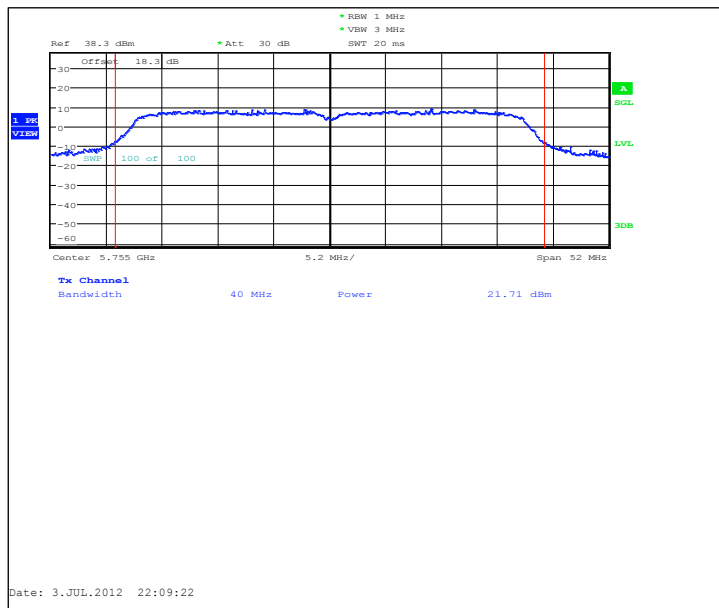
Channel 165 / 5825MHz



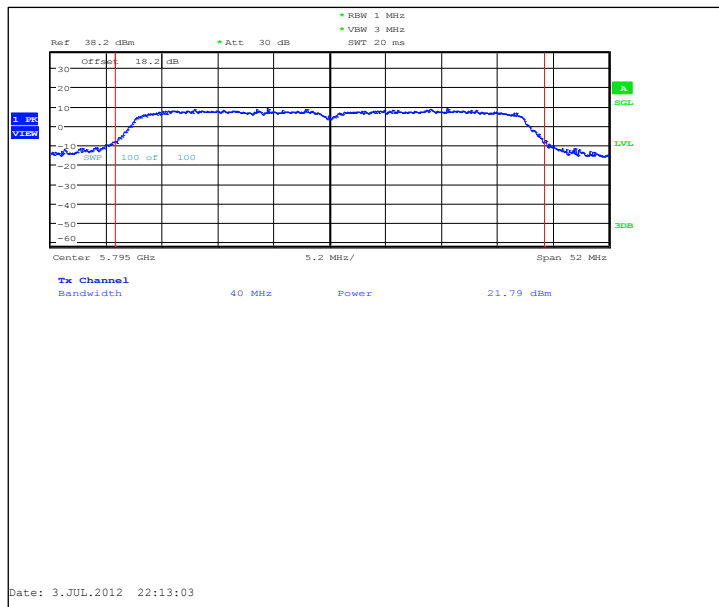
2.4.3 802.11n HT40 MCS5, 40 MHz CBW mode, BPSK modulation, 108.0 / 120.0 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
149+153 / 5755	21.71	148.252	PASSED
157+161 / 5795	21.79	151.008	PASSED

Channel 149+153 / 5755MHz



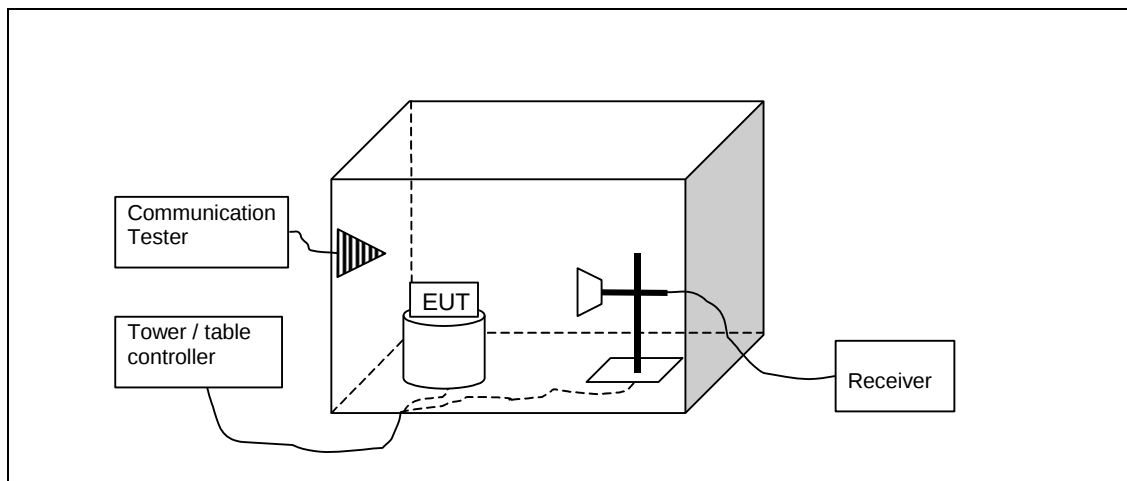
Channel 157+161 / 5795MHz



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

EUT with DUT number	RM-824, DUT 42843
Accessories with DUT numbers	BP-5T, DUT 42844 ; AC-50E, DUT 42776 ; CA-190CD, DUT 42778 ; WH-208, DUT 42831
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 51 / 99.9
Date of measurements	09-Jul-2012
Measured by	Timo Raiskio

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:

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

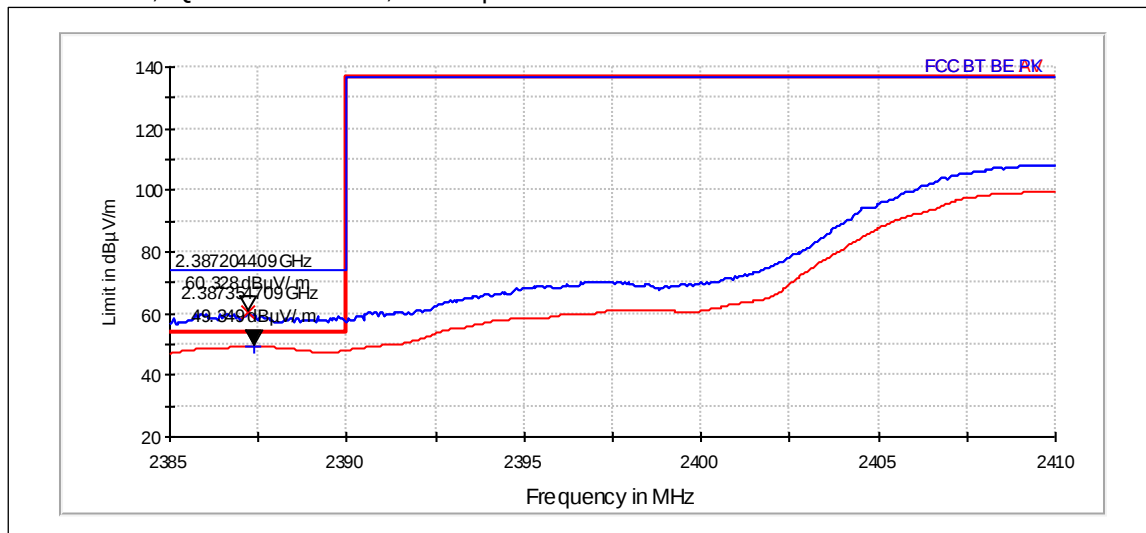
Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable loss, antenna factor and preamplifier gain ($A_{TOT} = L_{CABLES} + A_F - G_{PREAMP}$).

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

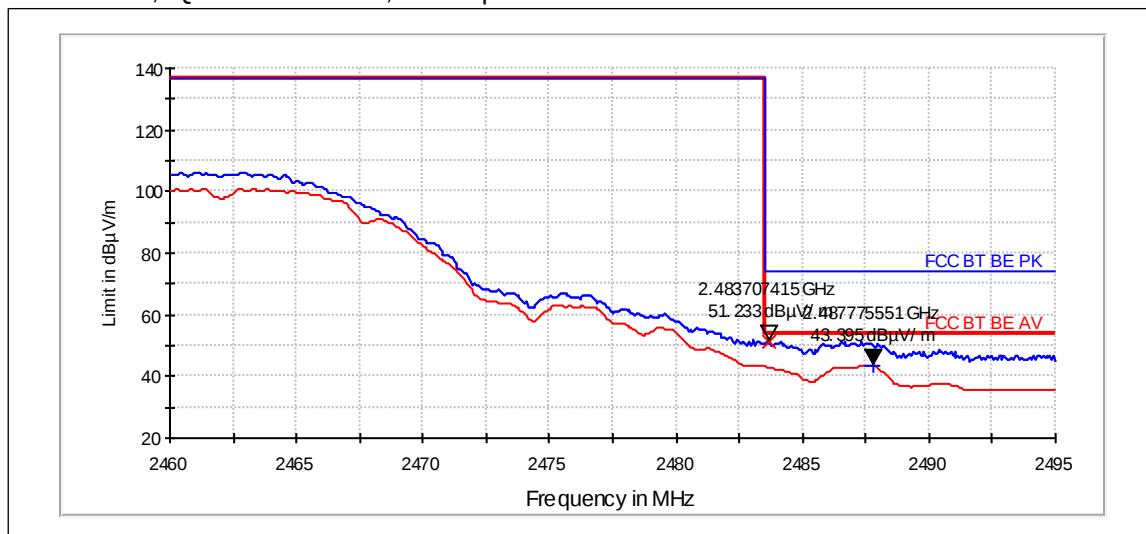
Frequency range [MHz]	Limit Average [dBμV/m]	Limit Peak [dBμV/m]
Below 2390 and above 2483.5	<=54	<=74

3.3. WLAN Test results

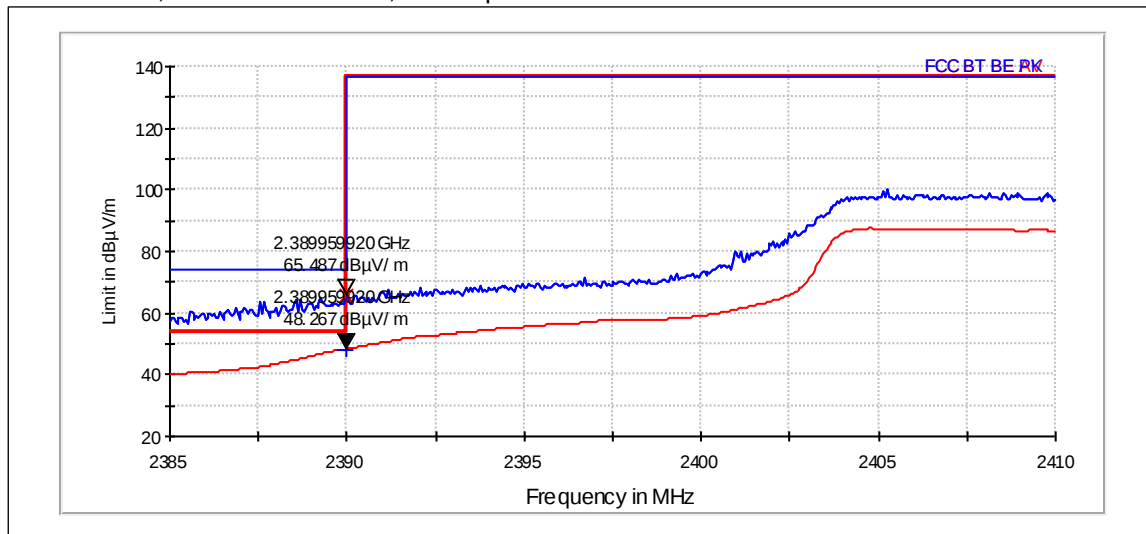
DSSS mode, QPSK modulation, 11 Mbps data rate. Channel 1 / 2412 MHz



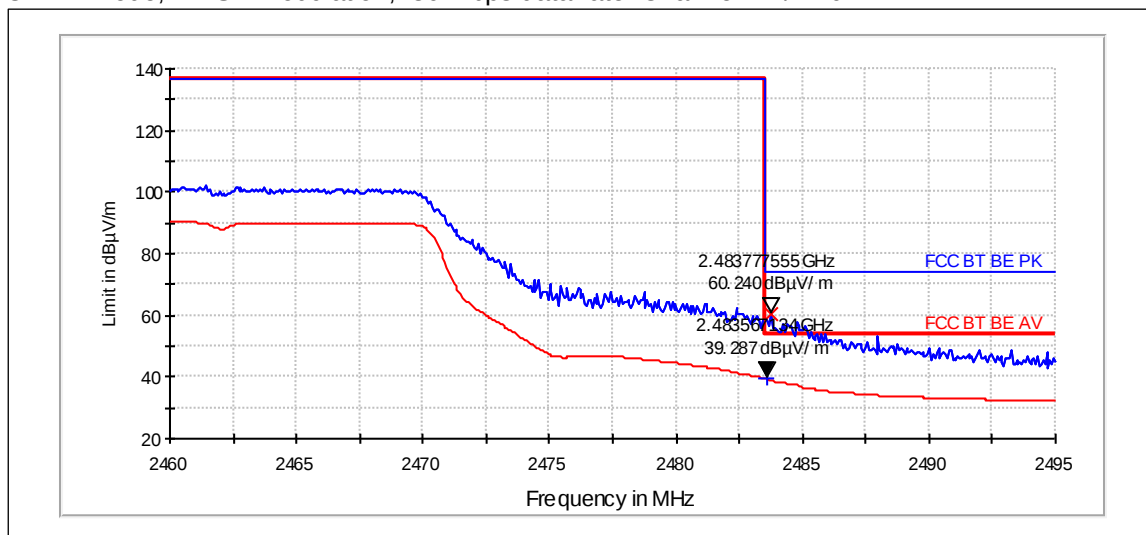
DSSS mode, QPSK modulation, 11 Mbps data rate. Channel 11 / 2462 MHz



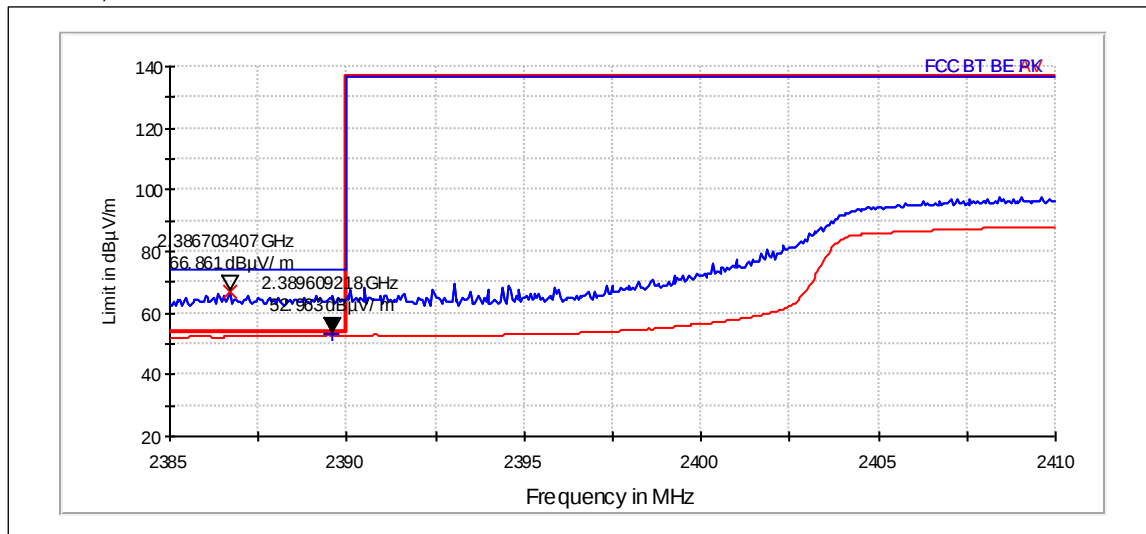
OFDM mode, BPSK modulation, 36 Mbps data rate. Channel 1 / 2412 MHz



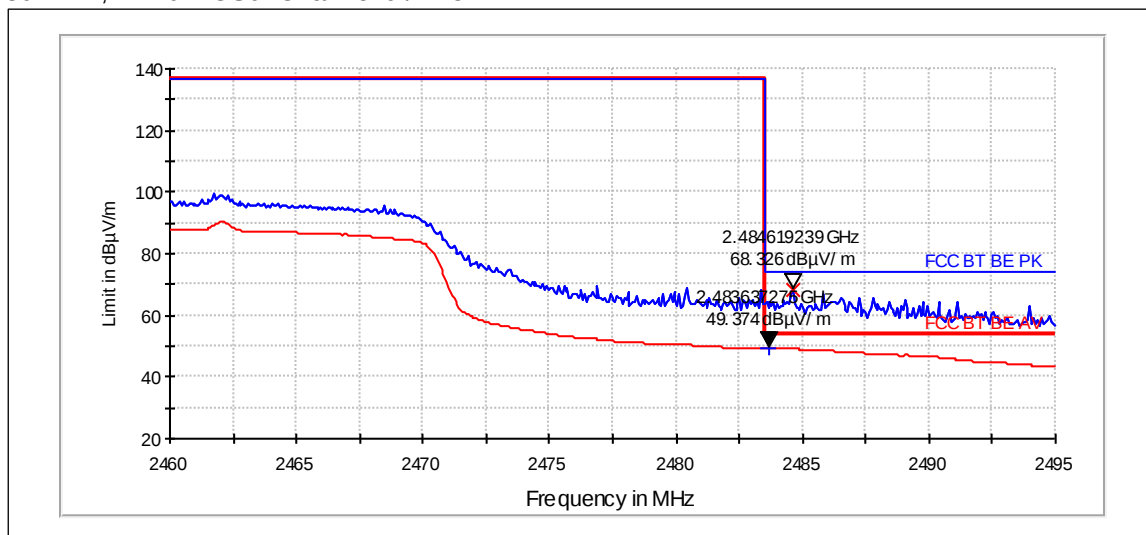
OFDM mode, BPSK modulation, 36 Mbps data rate. Channel 11 / 2462 MHz



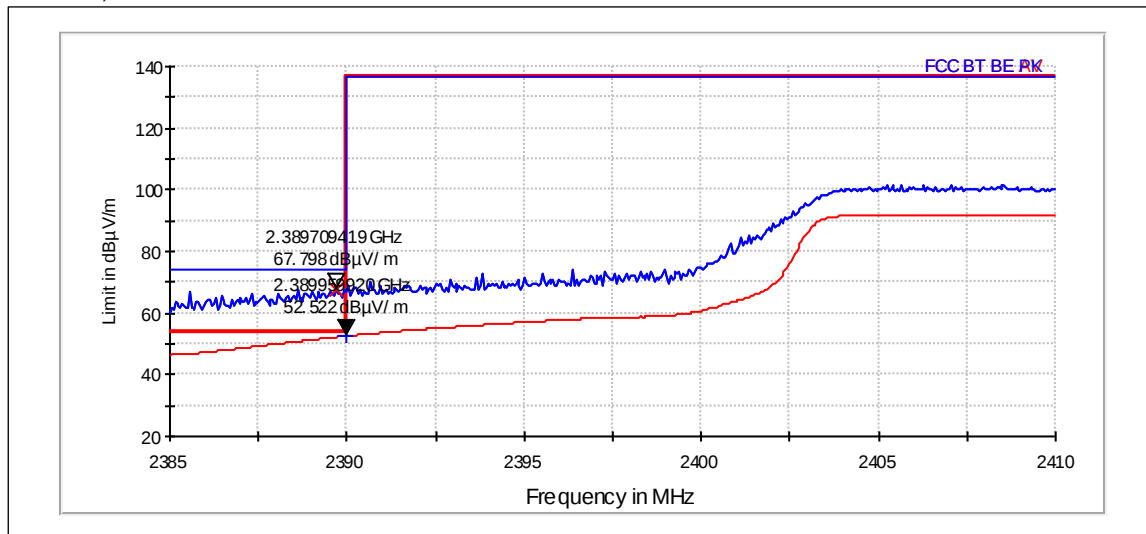
802.11n, HT40 MCS0. Channel 3 / 2422 MHz



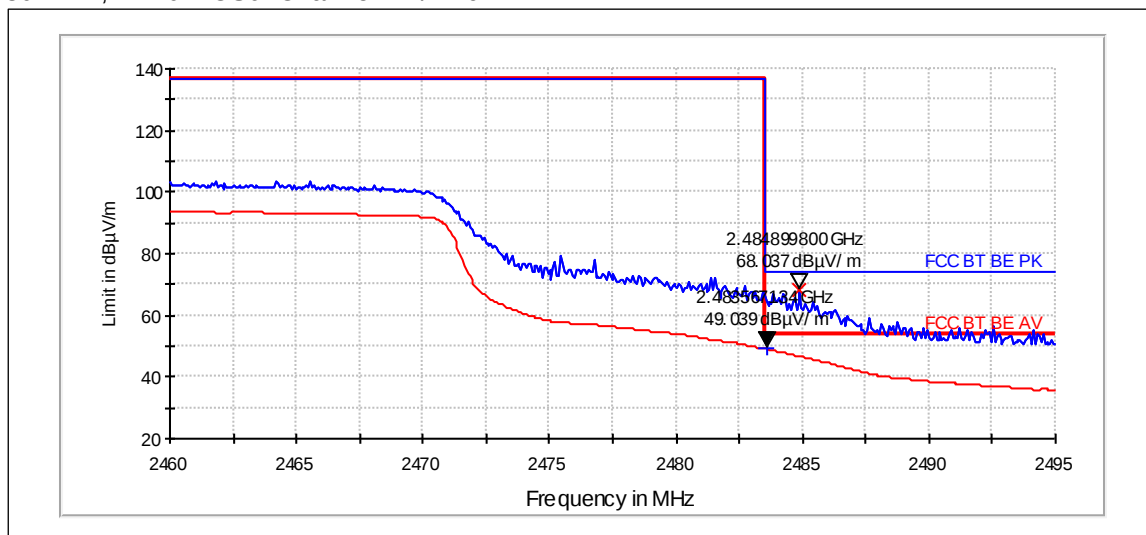
802.11n, HT40 MCS0. Channel 9 / 2452 MHz



802.11n, HT20 MCS0. Channel 1 / 2412 MHz



802.11n, HT20 MCS0. Channel 11 / 2462 MHz



3.4. WLAN Test results

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

Channel / f_c [MHz]	E [dB μ V/m]	Result
1 / 2412 (DSSS, QPSK, 11)	49.35	PASSED
11 / 2462 (DSSS, QPSK, 11)	43.39	PASSED
1 / 2412 (OFDM, BPSK, 36)	48.27	PASSED
11 / 2462 (OFDM, BPSK, 36)	39.29	PASSED
3 / 2422 (802.11n HT40 MCS0)	52.96	PASSED
9 / 2452 (802.11n HT40 MCS0)	49.37	PASSED
1 / 2412 (802.11n HT20 MCS0)	52.52	PASSED
11 / 2462 (802.11n HT20 MCS0)	49.04	PASSED

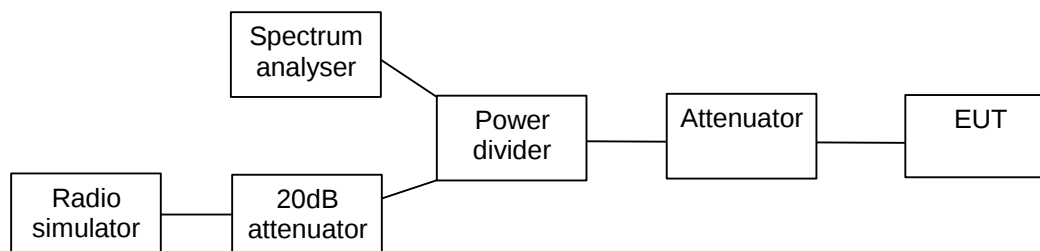
Peak (RBW: 1 MHz, VBW: 1 MHz)

Channel / f_c [MHz]	E [dB μ V/m]	Result
1 / 2412 (DSSS, QPSK, 11)	60.33	PASSED
11 / 2462 (DSSS, QPSK, 11)	51.23	PASSED
1 / 2412 (OFDM, BPSK, 36)	65.49	PASSED
11 / 2462 (OFDM, BPSK, 36)	60.24	PASSED
3 / 2422 (802.11n HT40 MCS0)	66.86	PASSED
9 / 2452 (802.11n HT40 MCS0)	68.33	PASSED
1 / 2412 (802.11n HT20 MCS0)	67.8	PASSED
11 / 2462 (802.11n HT20 MCS0)	68.04	PASSED

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

EUT with DUT number	RM-824, DUT 42842
Accessories with DUT numbers	BP-5T, DUT 42845
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 51 / 100
Date of measurements	04-Jul-2012
Measured by	Hannu Söderholm

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.

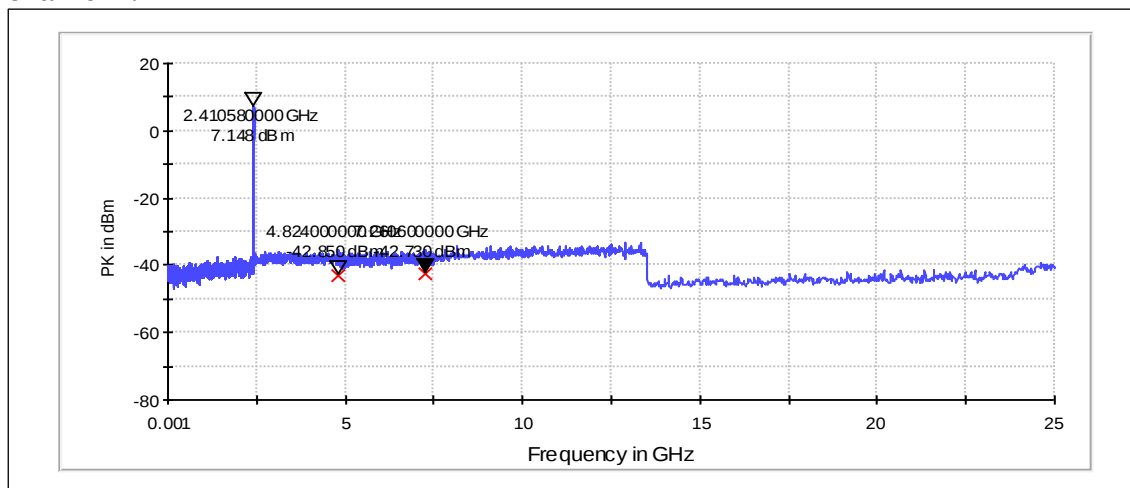
Limits for spurious RF conducted emissions measurements

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

4.3. WLAN Test results

4.3.1 DSSS mode, QPSK modulation, 11 Mbps data rate

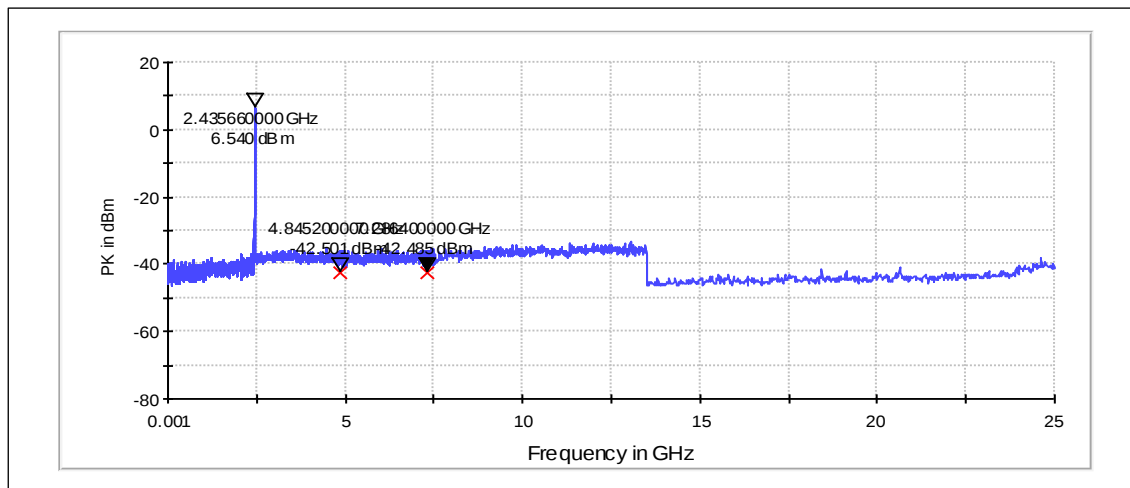
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
4824	-42.85	PASSED
7260.6	-42.73	PASSED

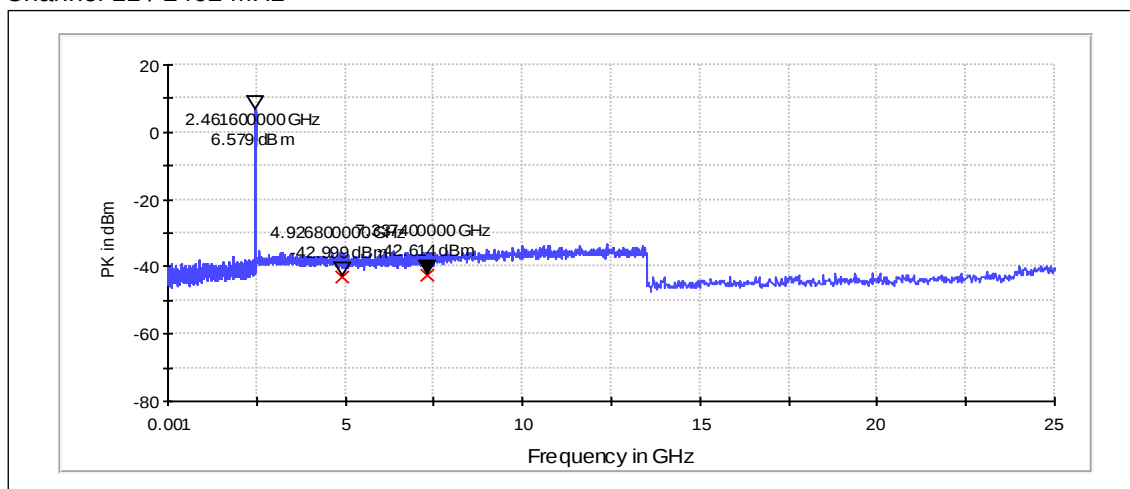
Channel 6 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
4845.2	-42.5	PASSED
7286.4	-42.48	PASSED

Channel 11 / 2462 MHz

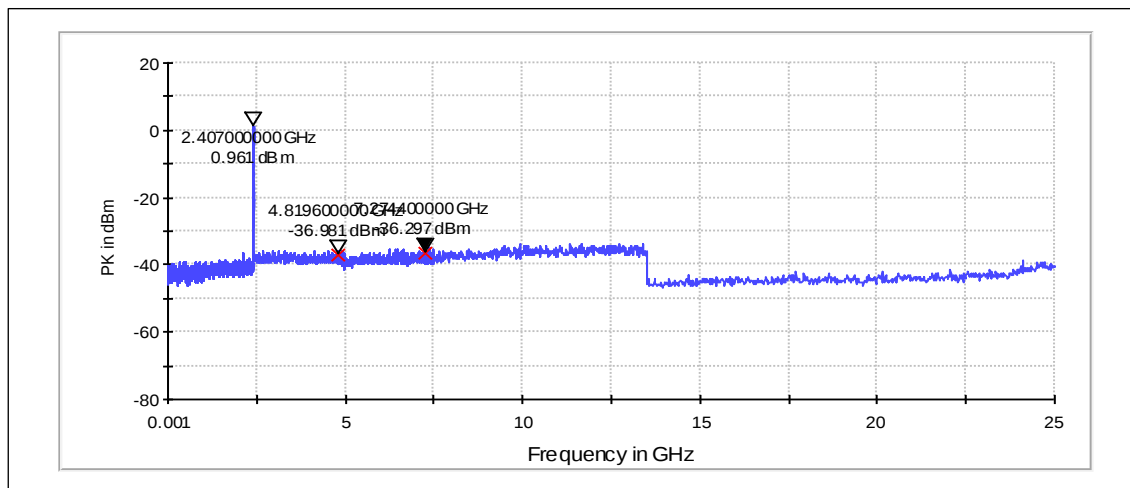


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4926.8	-43	PASSED
7337.4	-42.61	PASSED

4.3.2 OFDM mode, BPSK modulation, 36 Mbps data rate

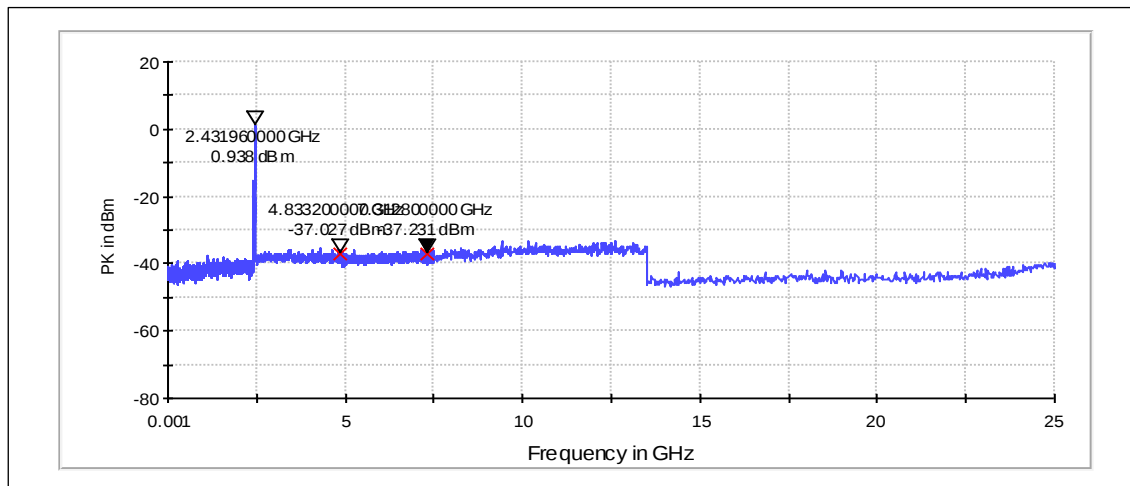
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
4819.6	-36.98	PASSED
7274.4	-36.3	PASSED

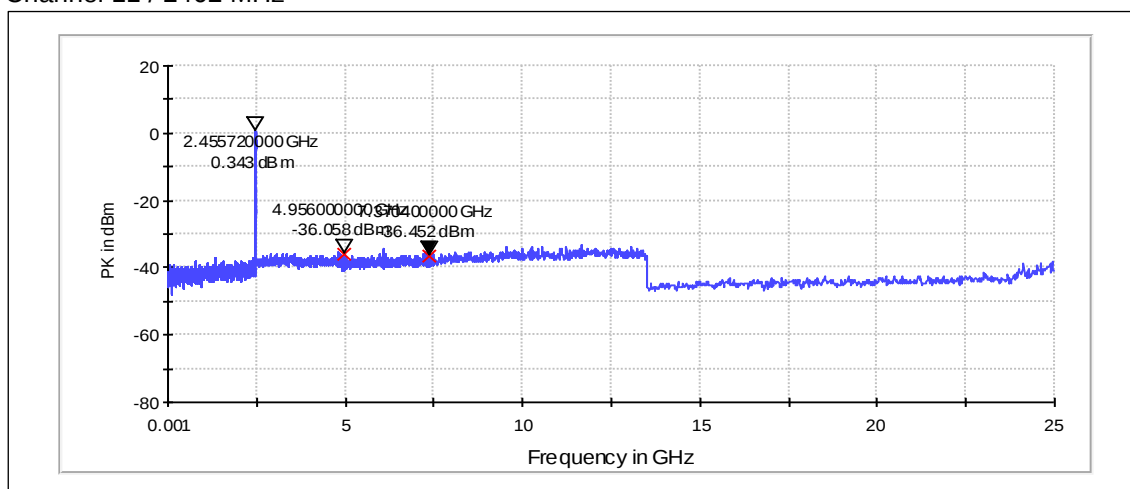
Channel 6 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
4833.2	-37.03	PASSED
7312.8	-37.23	PASSED

Channel 11 / 2462 MHz

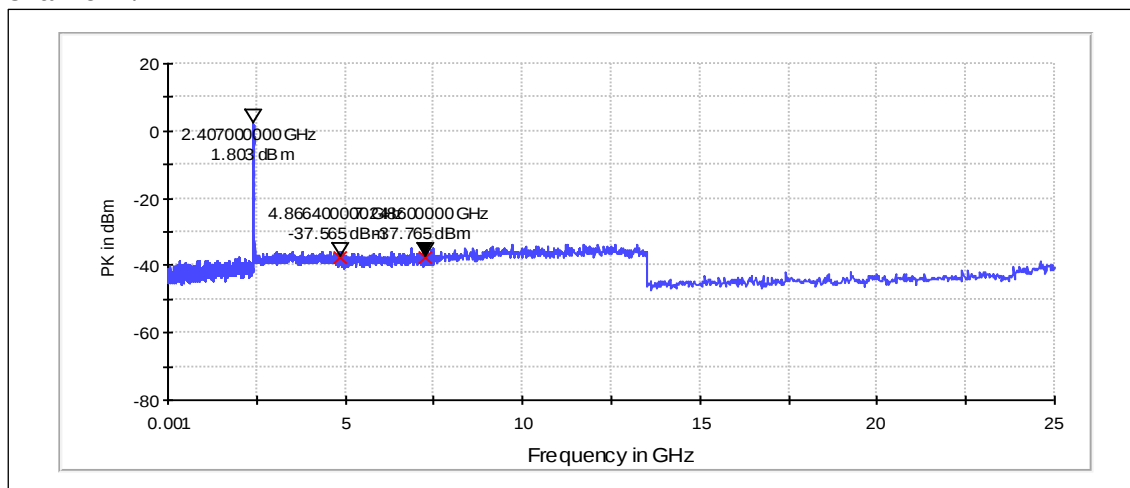


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4956	-36.06	PASSED
7370.4	-36.45	PASSED

4.3.3 802.11n HT20 MCS0, 20 MHz CBW mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

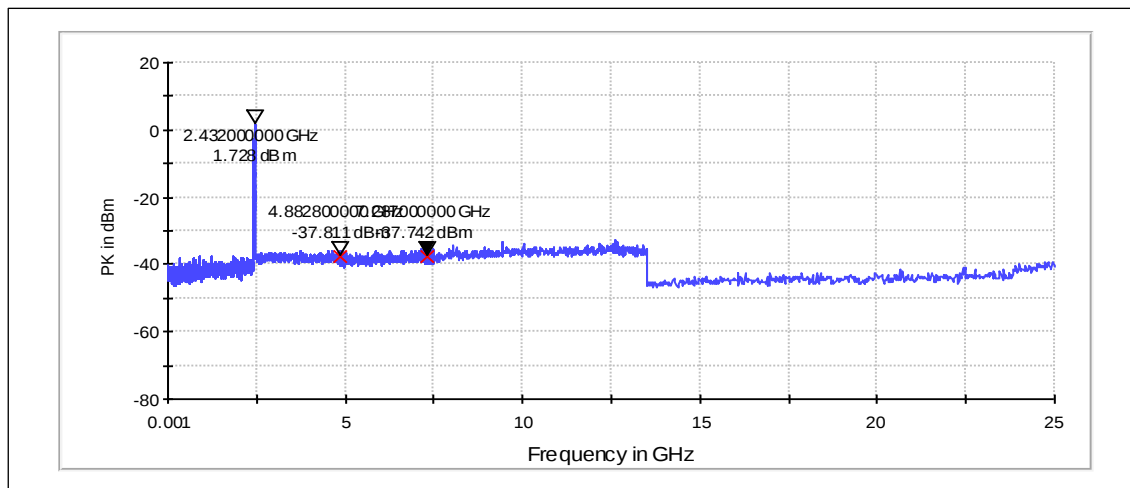
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
4866.4	-37.56	PASSED
7248.6	-37.76	PASSED

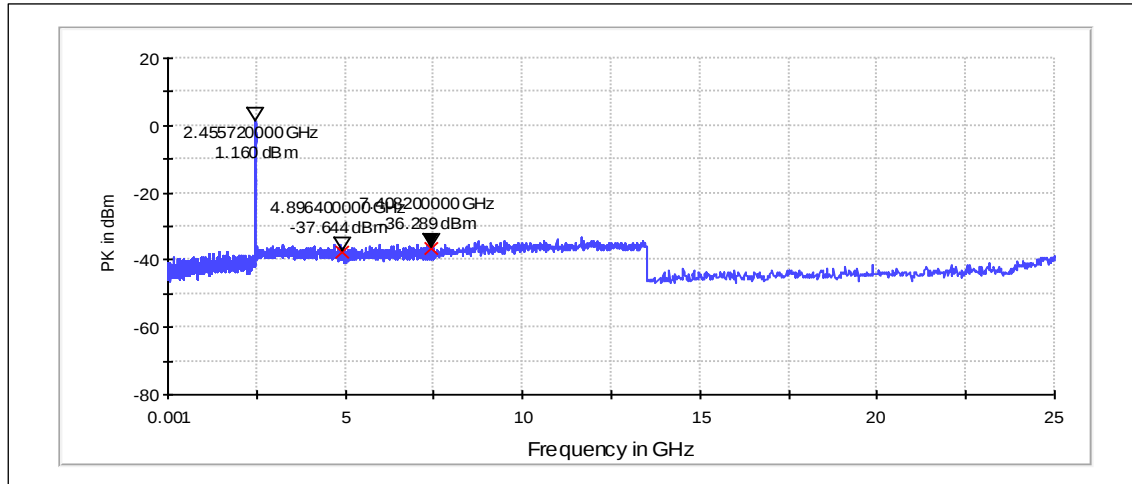
Channel 6 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
4882.8	-37.81	PASSED
7287	-37.74	PASSED

Channel 11 / 2462 MHz

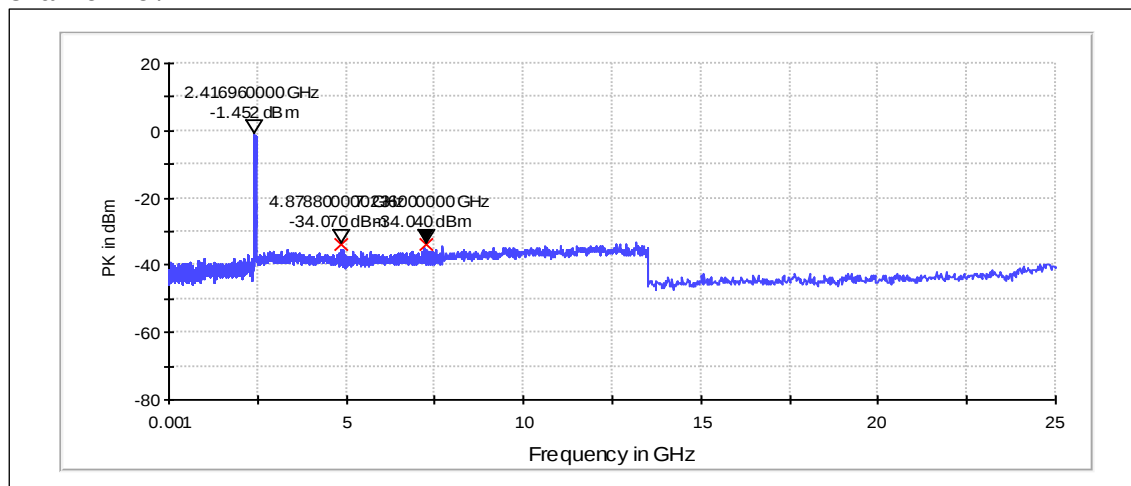


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4896.4	-37.64	PASSED
7408.2	-36.29	PASSED

4.3.4 802.11n HT40 MCS0, 40 MHz CBW mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

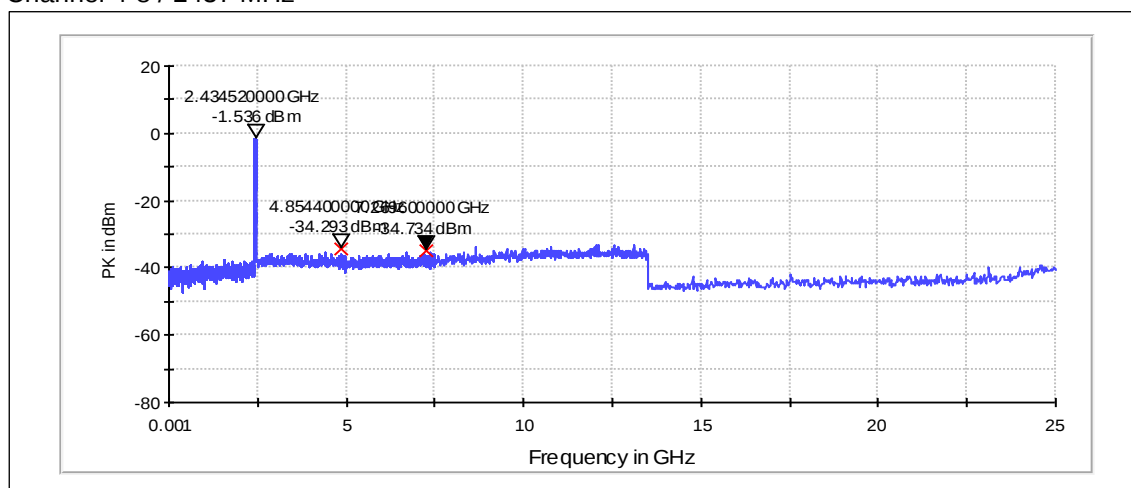
Channel 1-5 / 2422 MHz



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

Frequency [MHz]	P [dBc]	Result
4878.8	-34.07	PASSED
7236	-34.04	PASSED

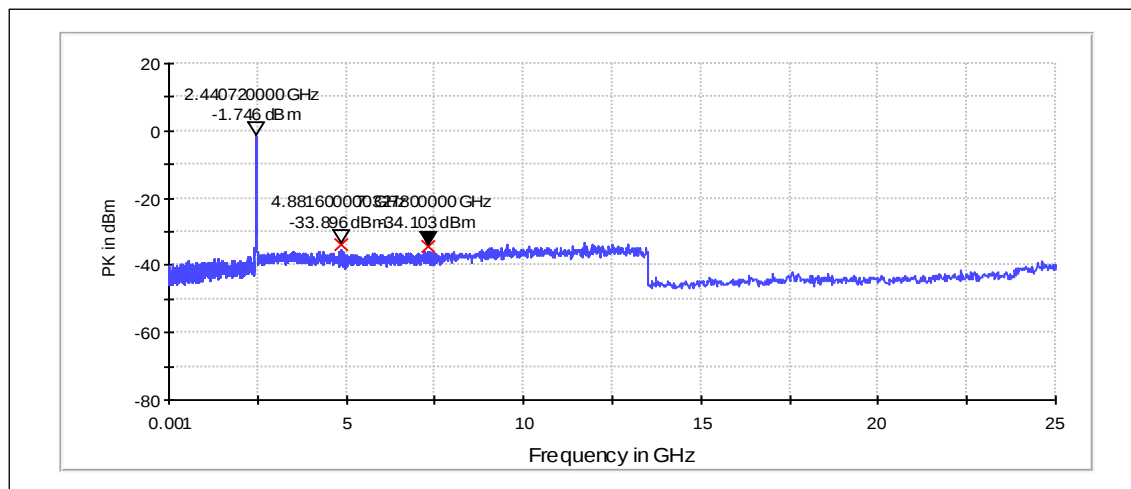
Channel 4-8 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
4854.4	-34.29	PASSED
7269.6	-34.73	PASSED

Channel 7-11 / 2452 MHz



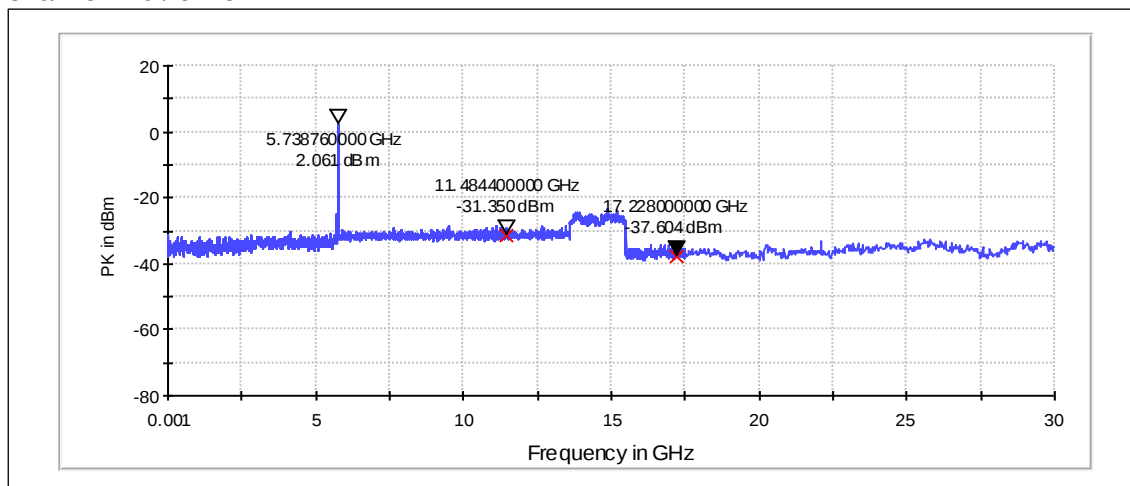
Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4881.6	-33.9	PASSED
7327.8	-34.1	PASSED

4.4. 5 GHz RLAN Test results

4.4.1 OFDM mode, BPSK modulation, 6 Mbps data rate

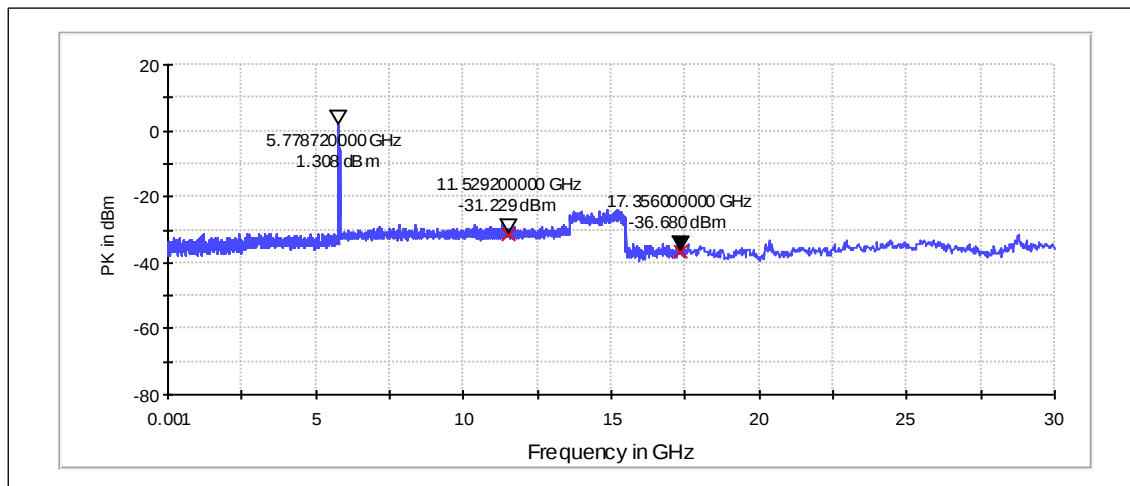
Channel 149 / 5745MHz



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

Frequency [MHz]	P [dBc]	Result
11484.4	-31.35	PASSED
17228	-37.6	PASSED

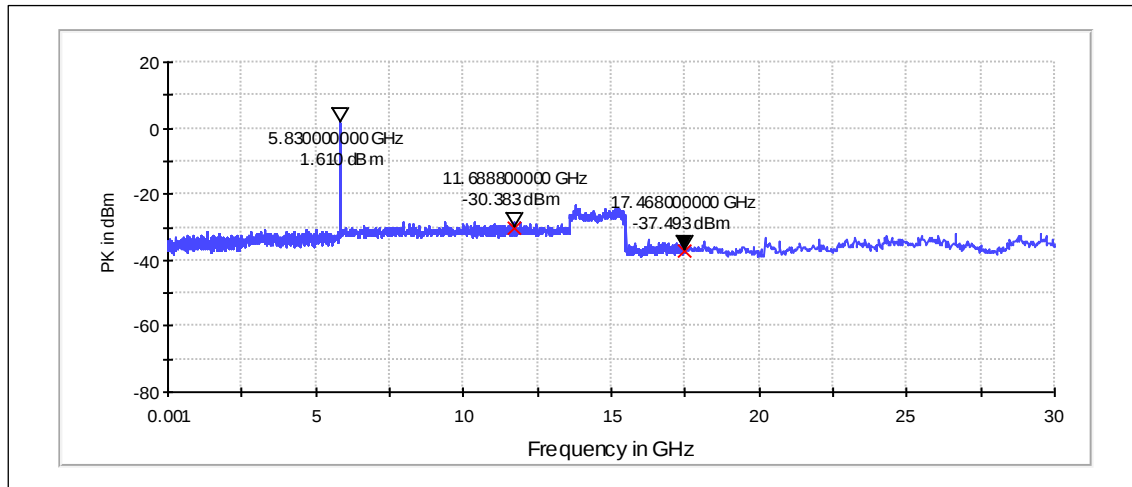
Channel 157 / 5785MHz



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

Frequency [MHz]	P [dBc]	Result
11529.2	-31.23	PASSED
17356	-36.68	PASSED

Channel 165 / 5825MHz

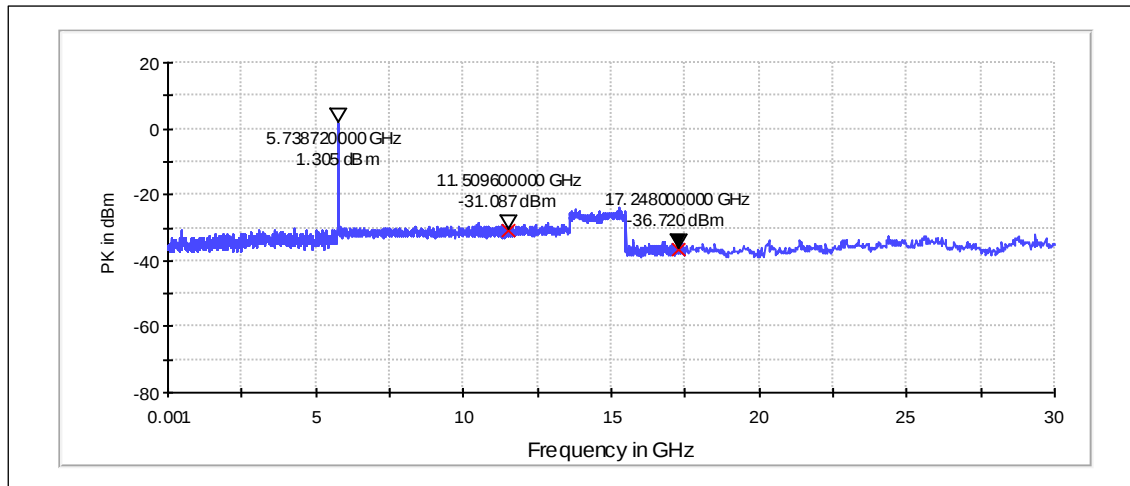


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
11688.8	-30.38	PASSED
17468	-37.49	PASSED

4.4.2 802.11n HT20 MCS1, 20 MHz CBW mode, BPSK modulation, 13.0 / 14.4 Mbps data rate

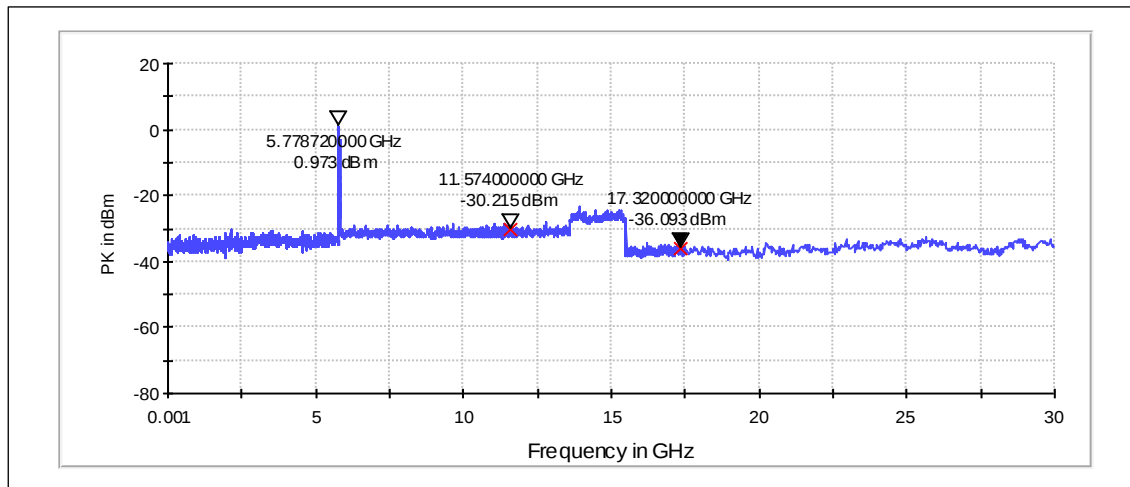
Channel 149 / 5745MHz



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

Frequency [MHz]	P [dBc]	Result
11509.6	-31.09	PASSED
17248	-36.72	PASSED

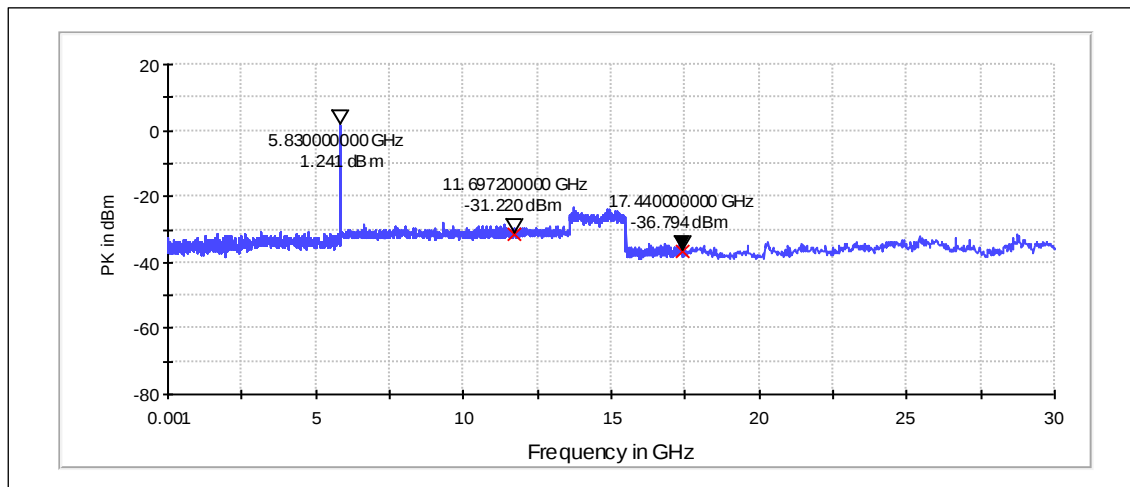
Channel 157 / 5785MHz



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

Frequency [MHz]	P [dBc]	Result
11574	-30.21	PASSED
17320	-36.09	PASSED

Channel 165 / 5825MHz

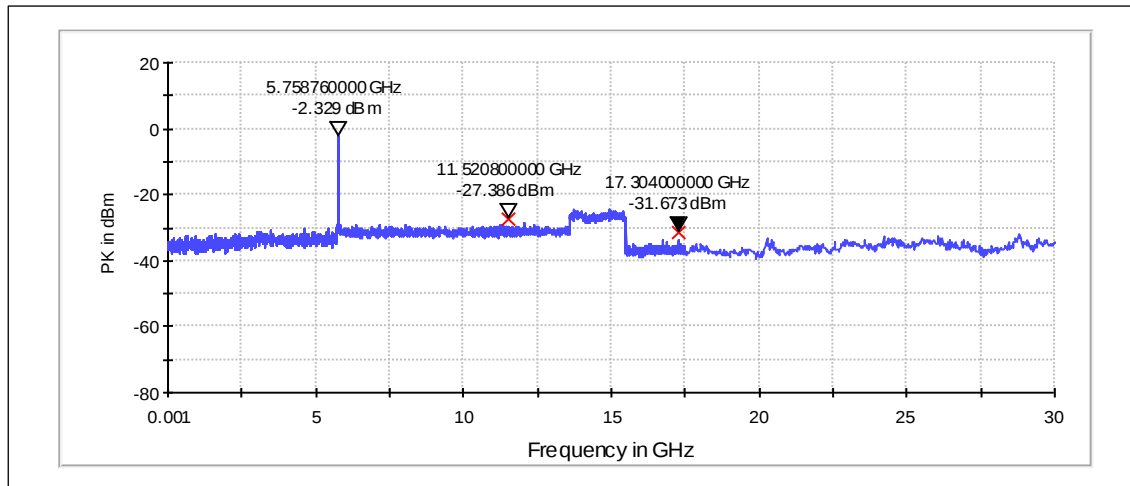


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
11697.2	-31.22	PASSED
17440	-36.79	PASSED

4.4.3 802.11n HT40 MCS5, 40 MHz CBW mode, BPSK modulation, 108.0 / 120.0 Mbps data rate

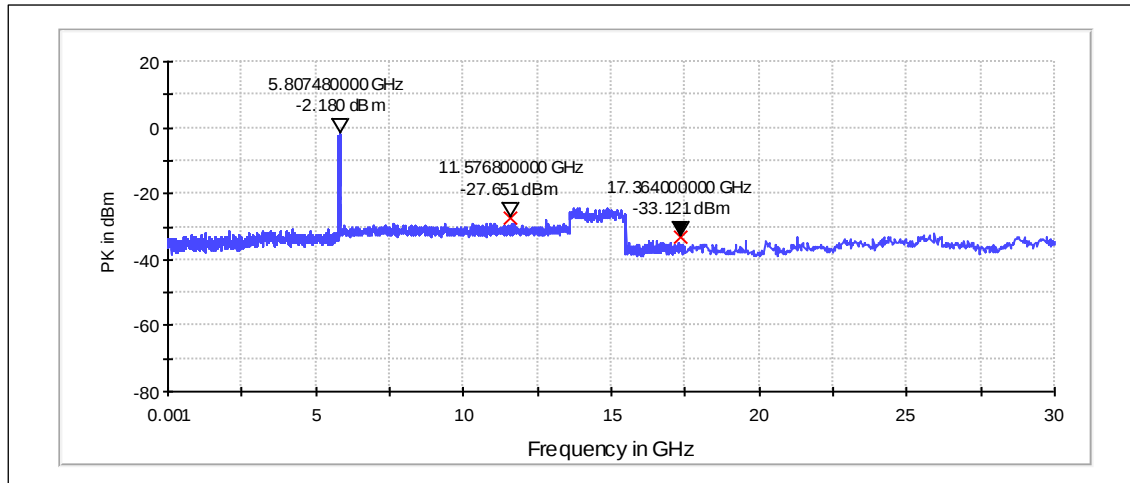
Channel 149+153 / 5755MHz



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

Frequency [MHz]	P [dBc]	Result
11520.8	-27.39	PASSED
17304	-31.67	PASSED

Channel 157+161 / 5795MHz



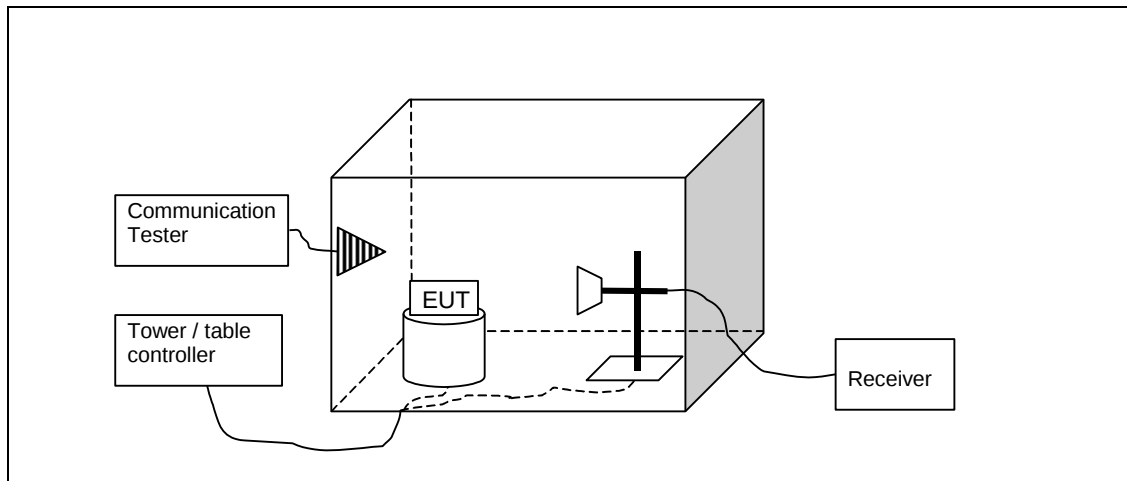
Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
11576.8	-27.65	PASSED
17364	-33.12	PASSED

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

EUT with DUT number	RM-824, DUT 42843
Accessories with DUT numbers	BP-5T, DUT 42844 ; AC-50E, DUT 42776 ; CA-190CD, DUT 42778 ; WH-208, DUT 42831
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 51 / 99.9
Date of measurements	09-Jul-2012
Measured by	Timo Raiskio

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, QPSK modulation, 11Mbps 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	55.02	563.313	57.2	-2.18	VERTICAL	PASSED
7237.8	47.32	232.274	45.66	1.66	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	44.82	174.08	47	-2.18	VERTICAL	PASSED
7237.8	34.18	51.18	32.52	1.66	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
30.06	19.72	9.681	39.23	-19.51	HORIZONTAL	PASSED
30.15	19.22	9.143	38.77	-19.55	HORIZONTAL	PASSED
104.587	16.1	6.383	43.59	-27.49	VERTICAL	PASSED
137.597	13.78	4.887	41.59	-27.81	VERTICAL	PASSED
144.021	13.8	4.897	41.76	-27.96	VERTICAL	PASSED
872.405	35.37	58.654	50.77	-15.4	HORIZONTAL	PASSED
956.002	33.1	45.175	47.74	-14.64	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4873.948	52.28	411.244	54.37	-2.09	HORIZONTAL	PASSED
4879.561	48.37	262.12	50.57	-2.2	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
4873.948	41.42	117.733	43.51	-2.09	HORIZONTAL	PASSED
4879.561	33	44.679	35.2	-2.2	HORIZONTAL	PASSED

Channel 11 / 2462 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4924	55.7	609.467	57.96	-2.26	VERTICAL	PASSED
7385.1	47.55	238.616	45.54	2.01	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
4924	45.76	194.044	48.02	-2.26	VERTICAL	PASSED
7385.1	35.27	58.036	33.26	2.01	VERTICAL	PASSED

5.3.2 OFDM mode, BPSK modulation, 6Mbps 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	
4824.6	45.7	192.73	47.9	-2.2	VERTICAL	PASSED
7235.2	44.22	162.499	42.53	1.69	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	
4824.6	32.06	40.087	34.26	-2.2	VERTICAL	PASSED
7235.2	31.6	38.015	29.91	1.69	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
30.03	19.98	9.979	39.47	-19.49	HORIZONTAL	PASSED
872.465	34.74	54.601	50.14	-15.4	HORIZONTAL	PASSED
912.002	23.13	14.335	37.8	-14.67	HORIZONTAL	PASSED
937.225	26.59	21.353	41	-14.41	HORIZONTAL	PASSED
946.072	28.76	27.419	43.33	-14.57	HORIZONTAL	PASSED
956.012	33.06	44.962	47.69	-14.63	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
2384.7	63.15	1437.474	71.48	-8.33	VERTICAL	PASSED
4875.748	41.79	122.899	43.85	-2.06	VERTICAL	PASSED
4879.361	50.78	345.82	52.97	-2.19	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
2384.7	50.63	340.134	58.96	-8.33	VERTICAL	PASSED
4875.748	28.83	27.638	30.89	-2.06	VERTICAL	PASSED
4879.361	36.24	64.856	38.43	-2.19	HORIZONTAL	PASSED

Channel 11 / 2462 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4925.5	46.2	204.221	48.52	-2.32	HORIZONTAL	PASSED
7386.6	44.17	161.547	42.15	2.02	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
4925.5	32.61	42.707	34.93	-2.32	HORIZONTAL	PASSED
7386.6	31.73	38.597	29.71	2.02	HORIZONTAL	PASSED

5.3.3 802.11n, HT20, MCS0

Channel 1 / 2412 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	
4823.9	41.26	115.664	43.44	-2.18	VERTICAL	PASSED
7234	43.93	157.181	42.28	1.65	VERTICAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	
4823.9	28.2	25.689	30.38	-2.18	VERTICAL	PASSED
7234	31.26	36.538	29.61	1.65	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
30.39	24.05	15.939	43.71	-19.66	HORIZONTAL	PASSED
30.42	23.39	14.771	43.07	-19.68	HORIZONTAL	PASSED
211.212	27.88	24.783	57.19	-29.31	HORIZONTAL	PASSED
872.427	35.62	60.388	51.02	-15.4	HORIZONTAL	PASSED
905.113	44.4	166.035	58.97	-14.57	HORIZONTAL	PASSED
946.025	29.48	29.789	44.05	-14.57	HORIZONTAL	PASSED
956.014	35.14	57.141	49.77	-14.63	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3905.911	39.64	95.918	42.92	-3.28	VERTICAL	PASSED
3939.583	40.49	105.803	43.58	-3.09	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
3905.911	26.8	21.885	30.08	-3.28	VERTICAL	PASSED
3939.583	27.05	22.506	30.14	-3.09	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
4922.1	43.17	143.979	45.42	-2.25	VERTICAL	PASSED
7387.6	44.82	174.161	42.79	2.03	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
4922.1	29.93	31.38	32.18	-2.25	VERTICAL	PASSED
7387.6	31.7	38.468	29.67	2.03	HORIZONTAL	PASSED

5.3.4 802.11n, HT40, MCS0

Channel 3 / 2422 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4824.7	40.71	108.505	42.92	-2.21	VERTICAL	PASSED
7234.9	43.83	155.489	42.14	1.69	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
4824.7	27.65	24.138	29.86	-2.21	VERTICAL	PASSED
7234.9	31.15	36.116	29.46	1.69	HORIZONTAL	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]	Polarisation	Result
31.38	23.64	15.205	45.66	-22.02	VERTICAL	PASSED
35.177	24.21	16.244	47.68	-23.47	VERTICAL	PASSED
35.187	24.09	16.012	47.56	-23.47	VERTICAL	PASSED
35.189	24.18	16.179	47.65	-23.47	VERTICAL	PASSED
35.2	26.85	22.001	50.33	-23.48	VERTICAL	PASSED
872.345	34.61	53.777	50.02	-15.41	HORIZONTAL	PASSED
956.002	33.42	46.876	48.06	-14.64	HORIZONTAL	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
3912.429	39.89	98.696	43.18	-3.29	VERTICAL	PASSED
3942.683	40	100.023	43.04	-3.04	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
3912.429	26.86	22.017	30.15	-3.29	VERTICAL	PASSED
3942.683	27.3	23.185	30.34	-3.04	VERTICAL	PASSED

Channel 9 / 2452 MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4925.6	42.46	132.755	44.78	-2.32	HORIZONTAL	PASSED
7384.6	44.41	166.188	42.4	2.01	VERTICAL	PASSED

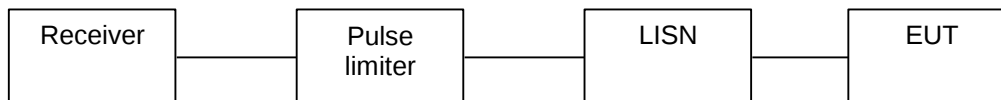
Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Polarisation	Result
4925.6	29.49	29.802	31.81	-2.32	HORIZONTAL	PASSED
7384.6	31.48	37.493	29.47	2.01	VERTICAL	PASSED

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

EUT with DUT number	RM-824, DUT 42843
Accessories with DUT numbers	BP-5T, DUT 42844 ; AC-50E, DUT 42776 ; CA-190CD, DUT 42778 ; WH-208, DUT 42831
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	24 / 49 / 98.5
Date of measurements	10-Jul-2012
Measured by	Jari Jantunen

6.1. Test Setup



6.2. Test method and limit

The measurement is made according to Public notice DA 00-705 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.

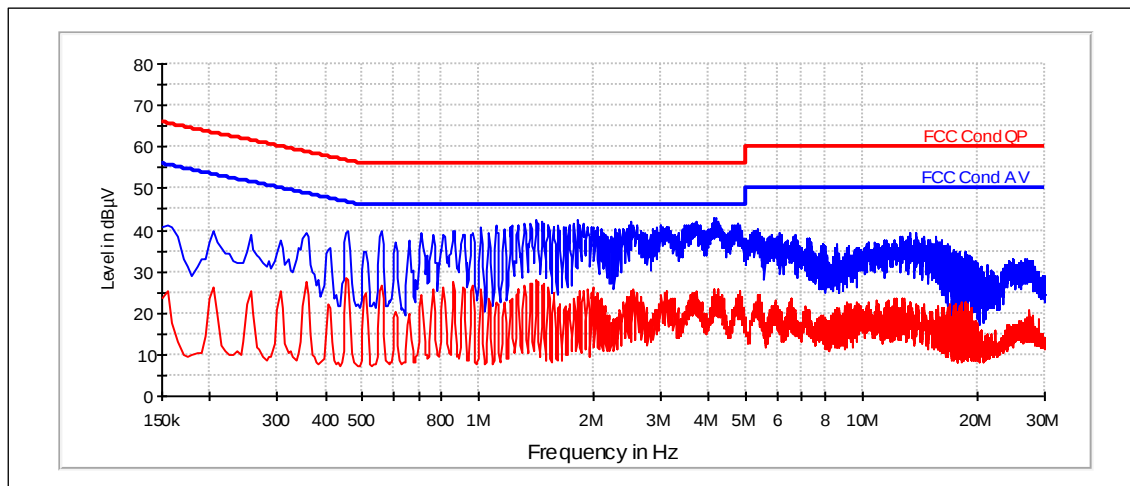
CISPR 22 Class B limits

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

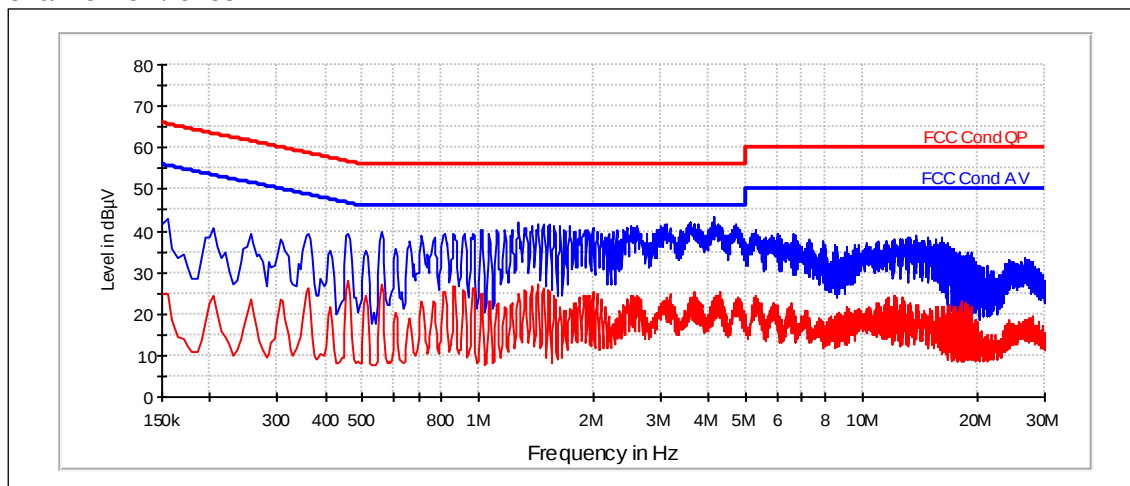
Channel 6 / 2437 MHz



6.4. 5 GHz RLAN Test results

6.4.1 OFDM mode, BPSK modulation, 6 Mbps data rate

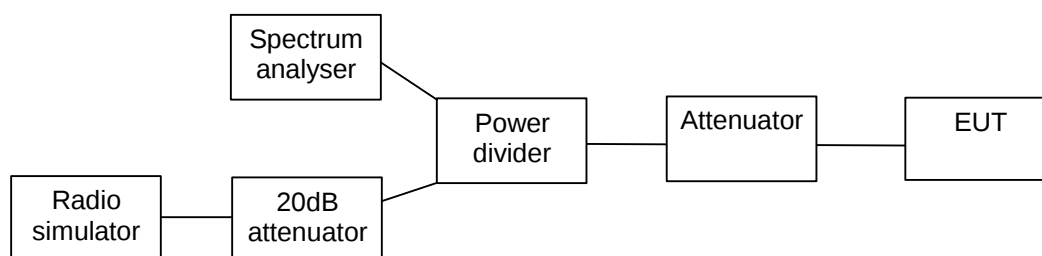
Channel 157 / 5785MHz



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

EUT with DUT number	RM-824, DUT 42842
Accessories with DUT numbers	BP-5T, DUT 42845
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 51 / 100
Date of measurements	04-Jul-2012
Measured by	Hannu Söderholm

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

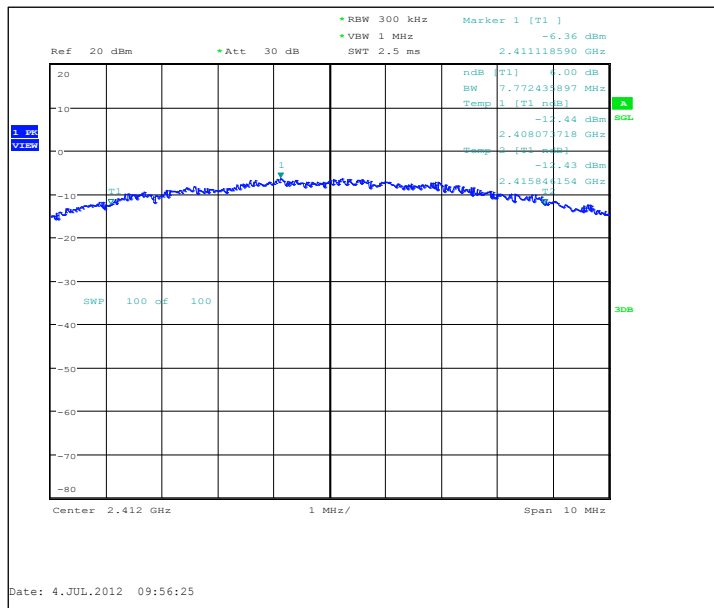
Limit [kHz]
≥ 500

7.3. WLAN Test results

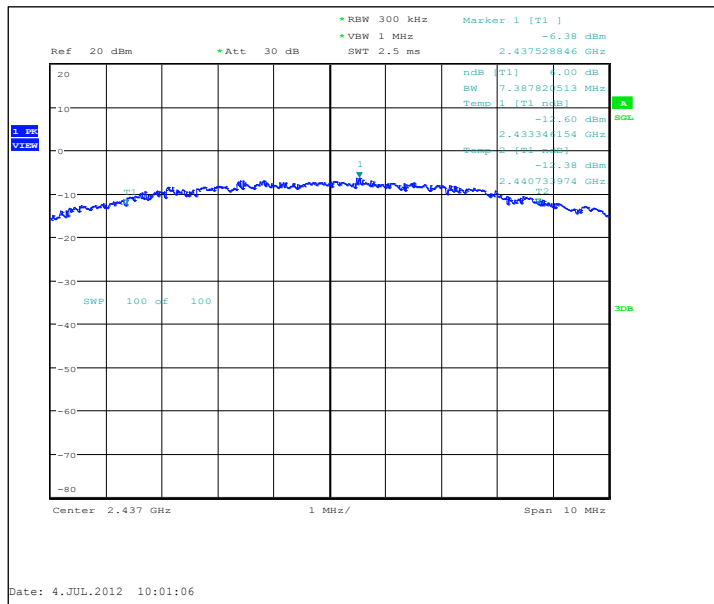
7.3.1 DSSS mode, QPSK modulation, 11 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	7772.4	PASSED
6 / 2437	7387.8	PASSED
11 / 2462	7612.2	PASSED

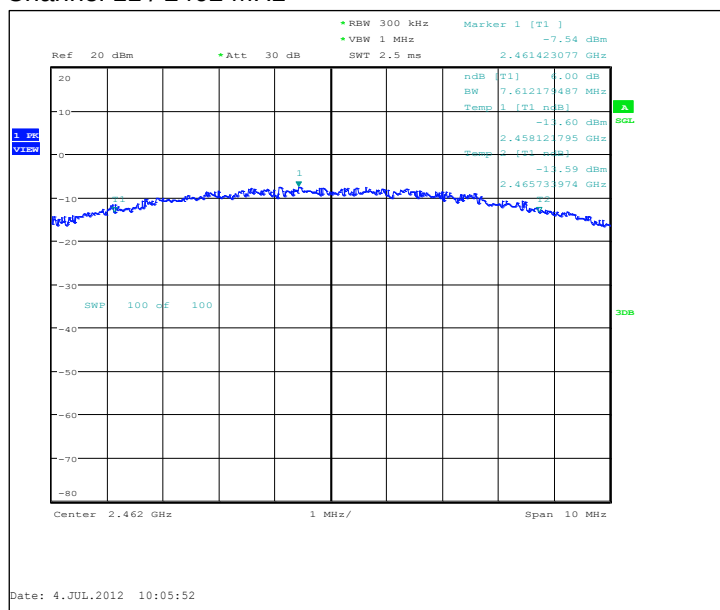
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



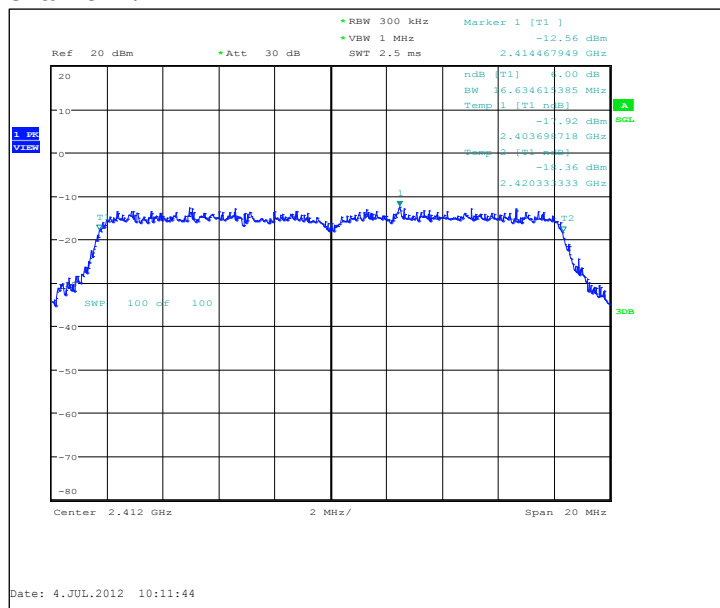
Channel 11 / 2462 MHz



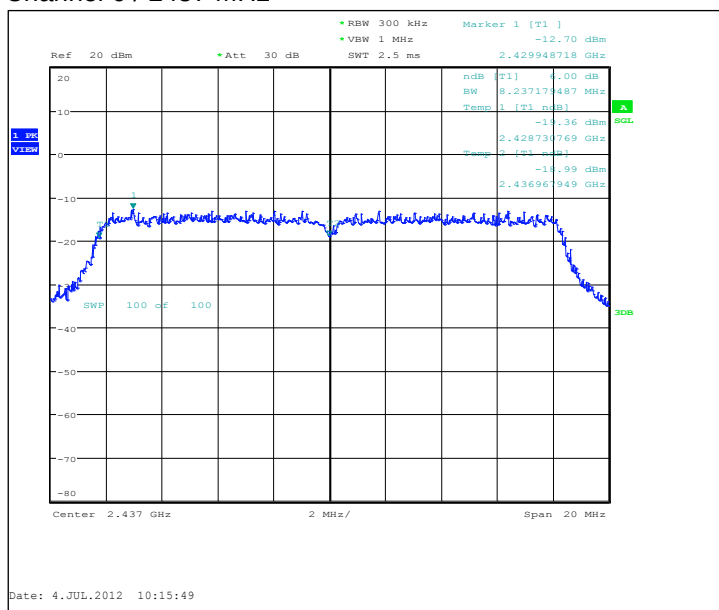
7.3.2 OFDM mode, BPSK modulation, 36 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	16634.6	PASSED
6 / 2437	8237.2	PASSED
11 / 2462	8237.2	PASSED

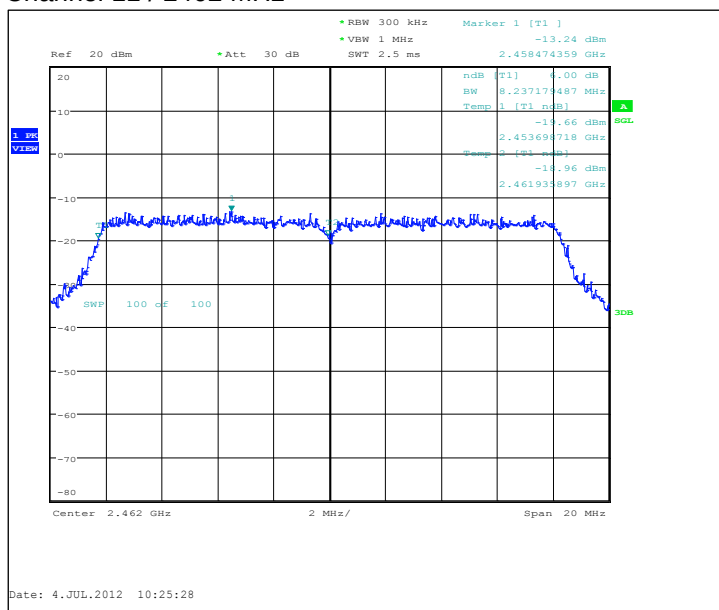
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



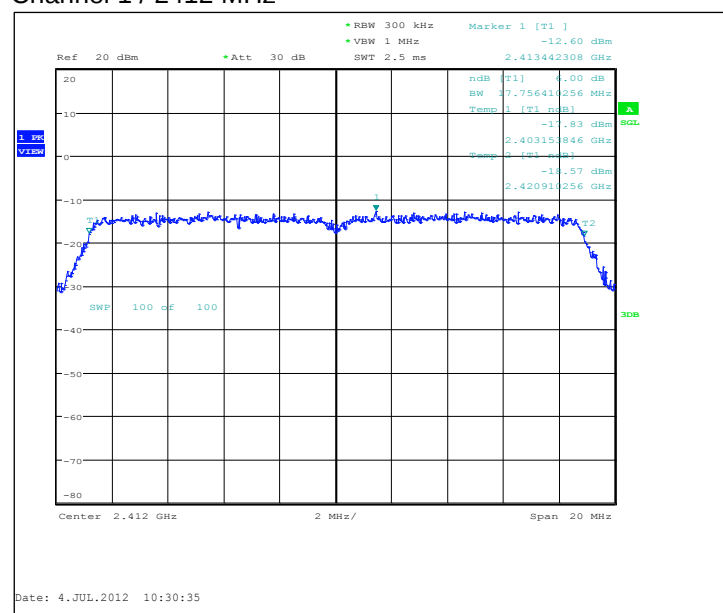
Channel 11 / 2462 MHz



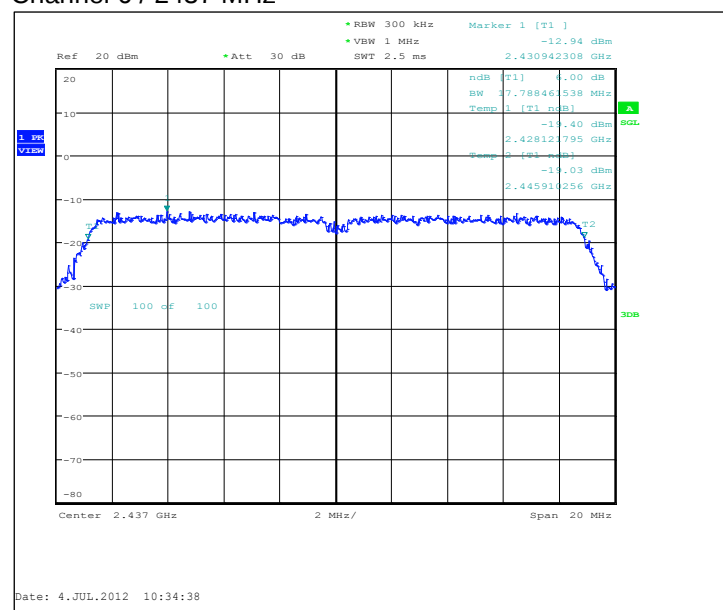
7.3.3 802.11n HT20 MCS0, 20 MHz CBW mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	17756.4	PASSED
6 / 2437	17788.5	PASSED
11 / 2462	17692.3	PASSED

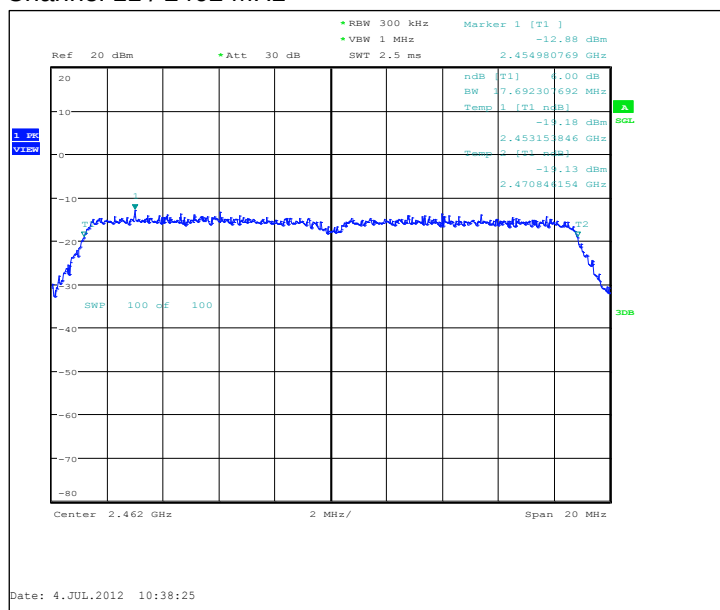
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



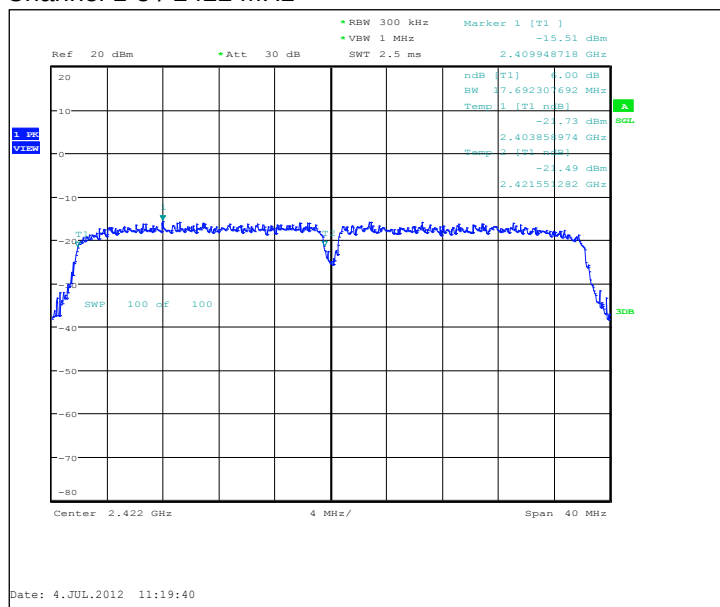
Channel 11 / 2462 MHz



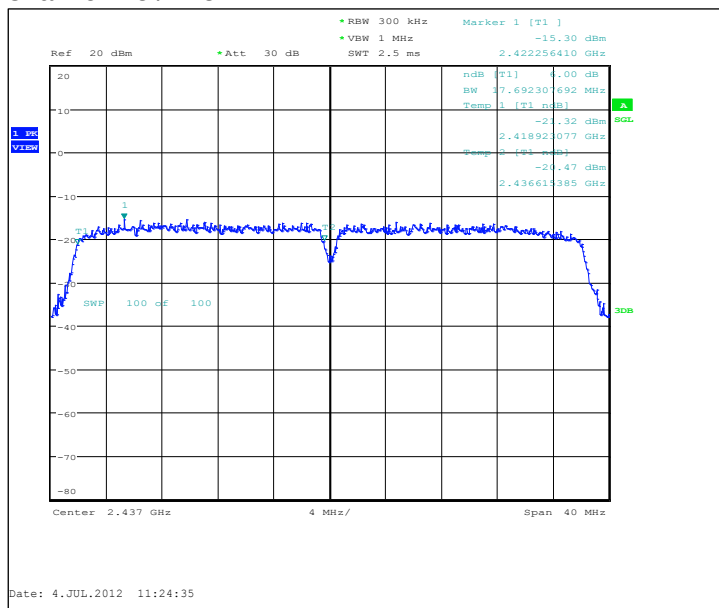
7.3.4 802.11n HT40 MCS0, 40 MHz CBW mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f_c [MHz]	6 dB bandwidth [kHz]	Result
1-5 / 2422	17692.3	PASSED
4-8 / 2437	17692.3	PASSED
7-11 / 2452	17820.5	PASSED

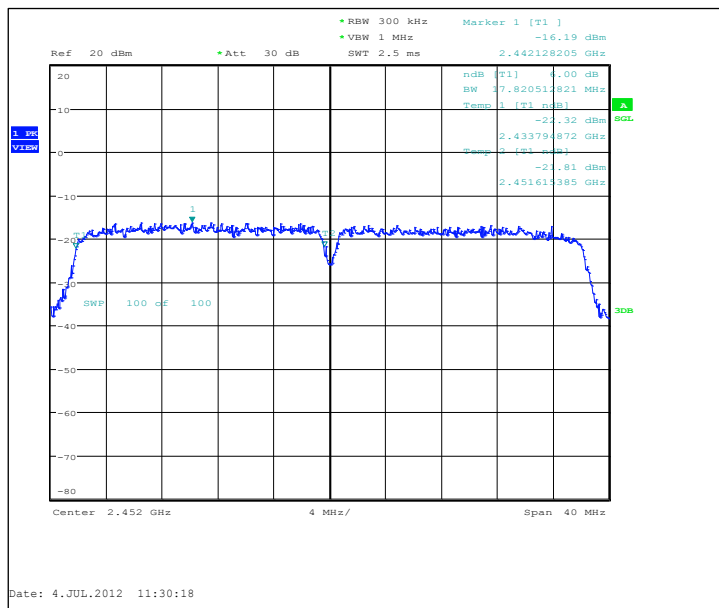
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



Channel 7-11 / 2452 MHz

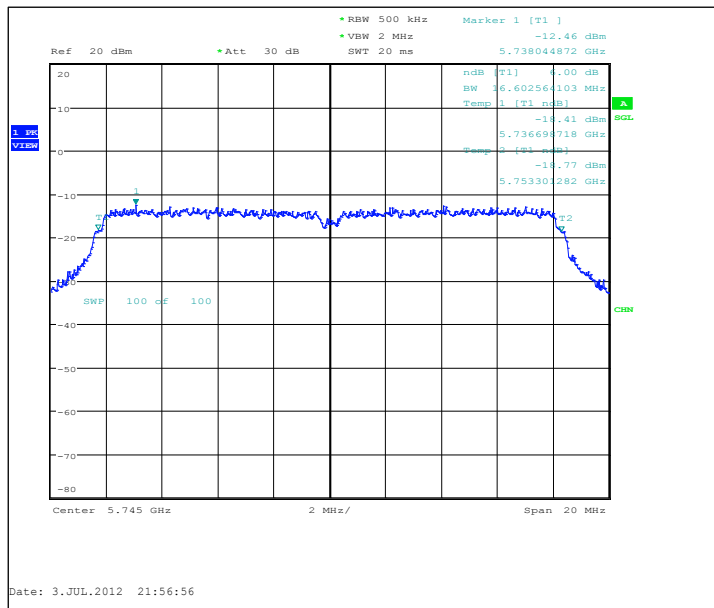


7.4. 5 GHz RLAN Test results

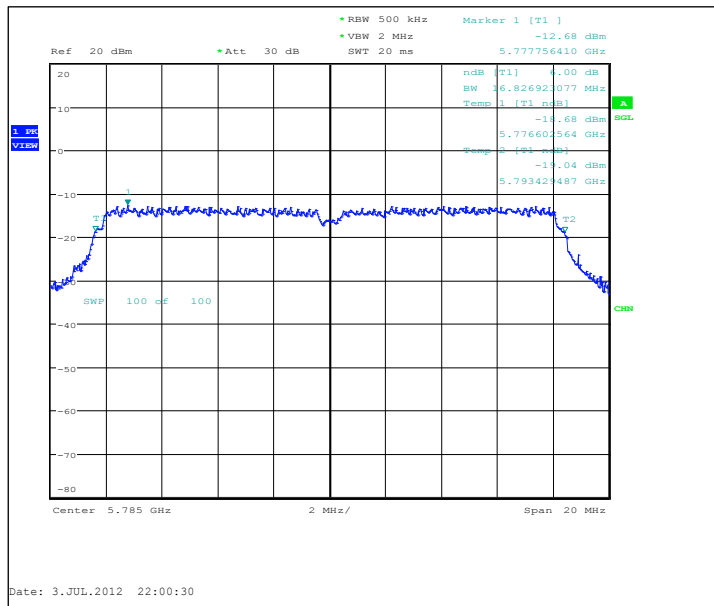
7.4.1 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
149 / 5745	16602.6	PASSED
157 / 5785	16826.9	PASSED
165 / 5825	16634.6	PASSED

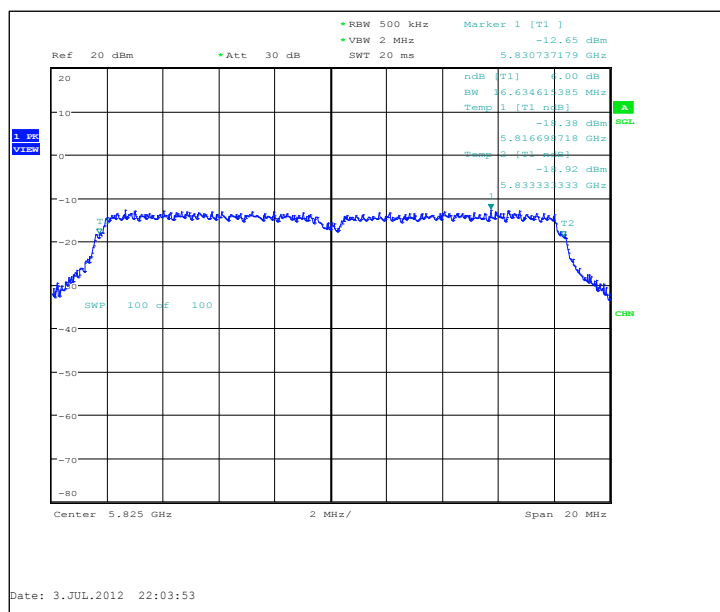
Channel 149 / 5745MHz



Channel 157 / 5785MHz



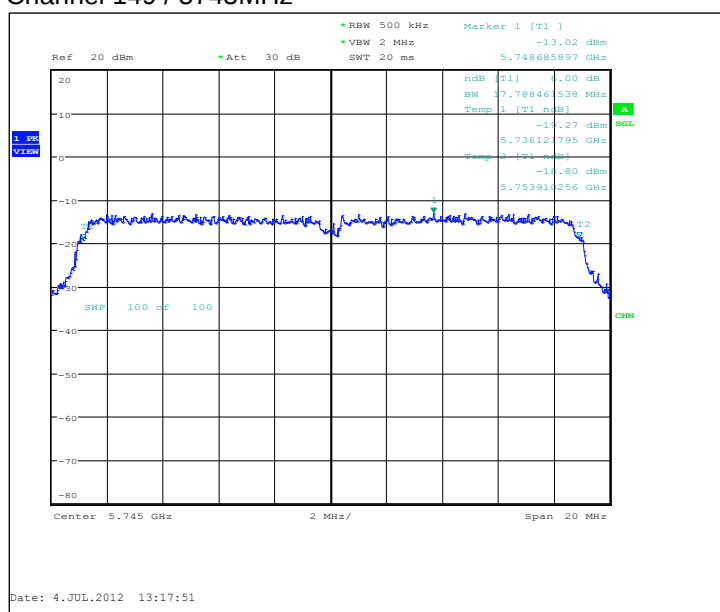
Channel 165 / 5825MHz



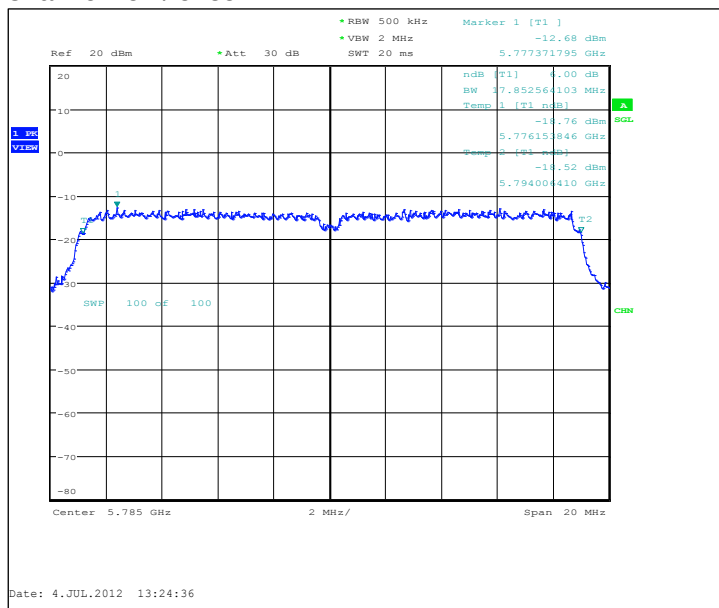
7.4.2 802.11n HT20 MCS1, 20 MHz CBW mode, BPSK modulation, 13.0 / 14.4 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
149 / 5745	17788.5	PASSED
157 / 5785	17852.6	PASSED
165 / 5825	17884.6	PASSED

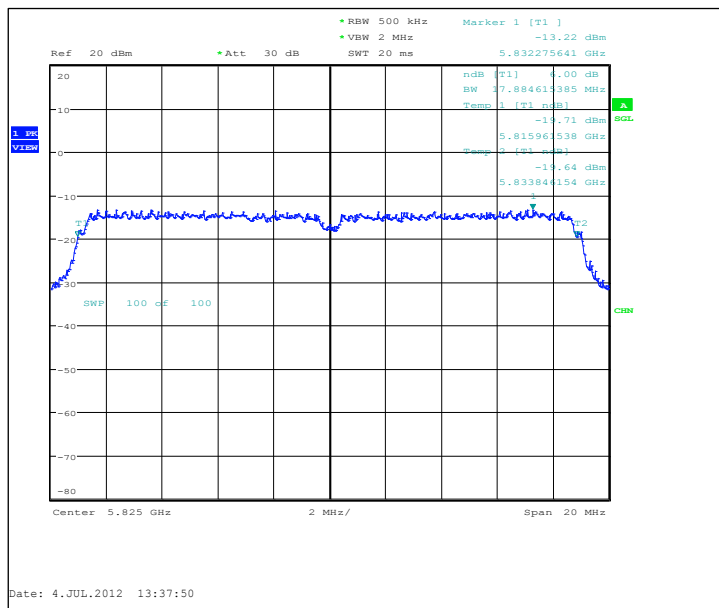
Channel 149 / 5745MHz



Channel 157 / 5785MHz



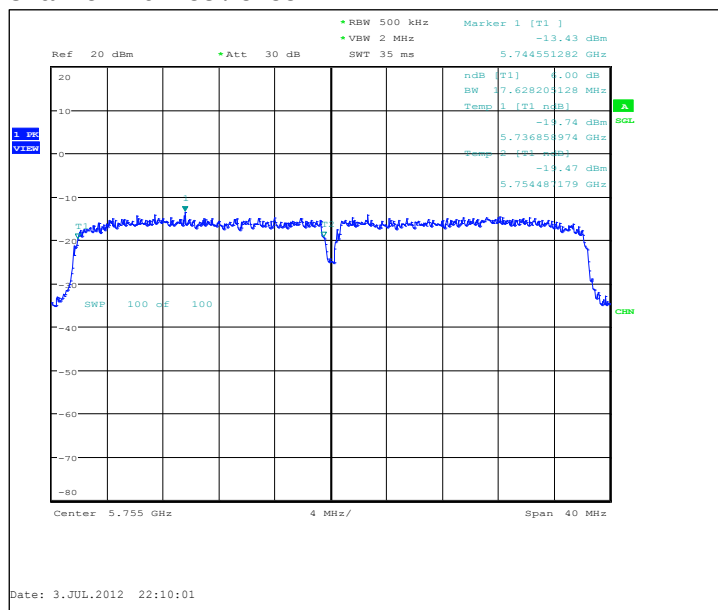
Channel 165 / 5825MHz



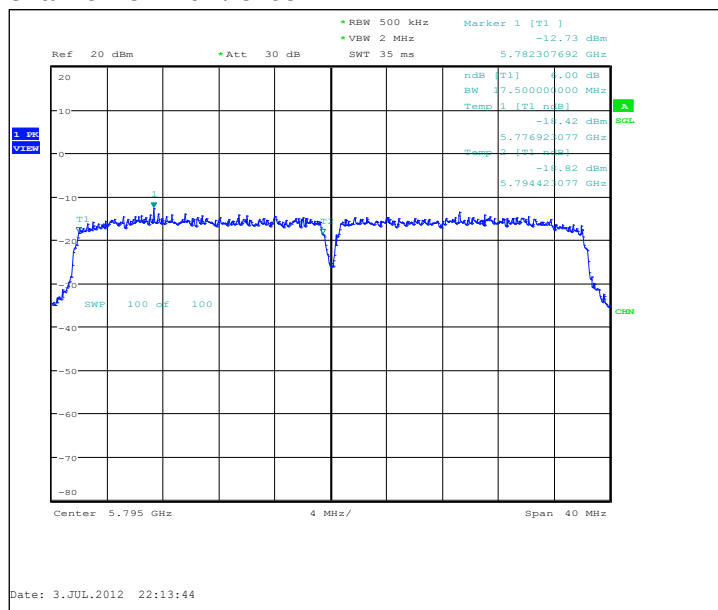
7.4.3 802.11n HT40 MCS5, 40 MHz CBW mode, BPSK modulation, 108.0 / 120.0 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
149+153 / 5755	17628.2	PASSED
157+161 / 5795	17500	PASSED

Channel 149+153 / 5755MHz



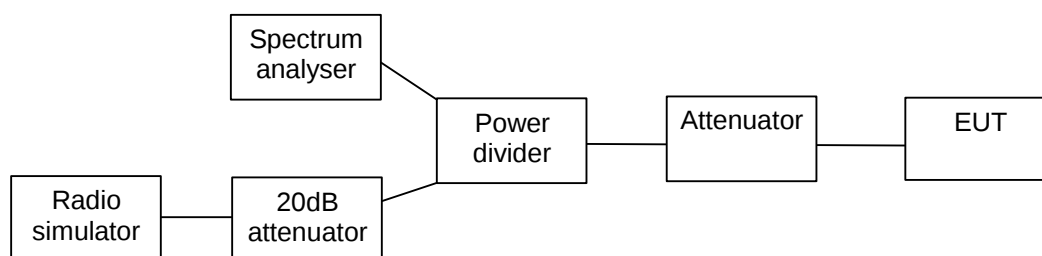
Channel 157+161 / 5795MHz



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

EUT with DUT number	RM-824, DUT 42842
Accessories with DUT numbers	BP-5T, DUT 42845
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 51 / 100
Date of measurements	04-Jul-2012
Measured by	Hannu Söderholm

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

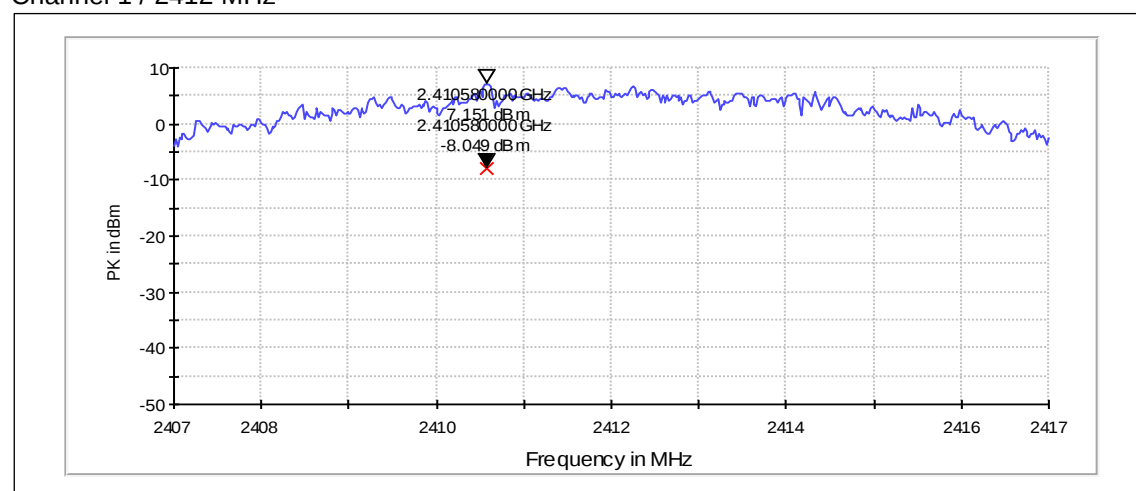
8.3. WLAN Test results

8.3.1 DSSS mode, QPSK modulation, 11 Mbps data rate

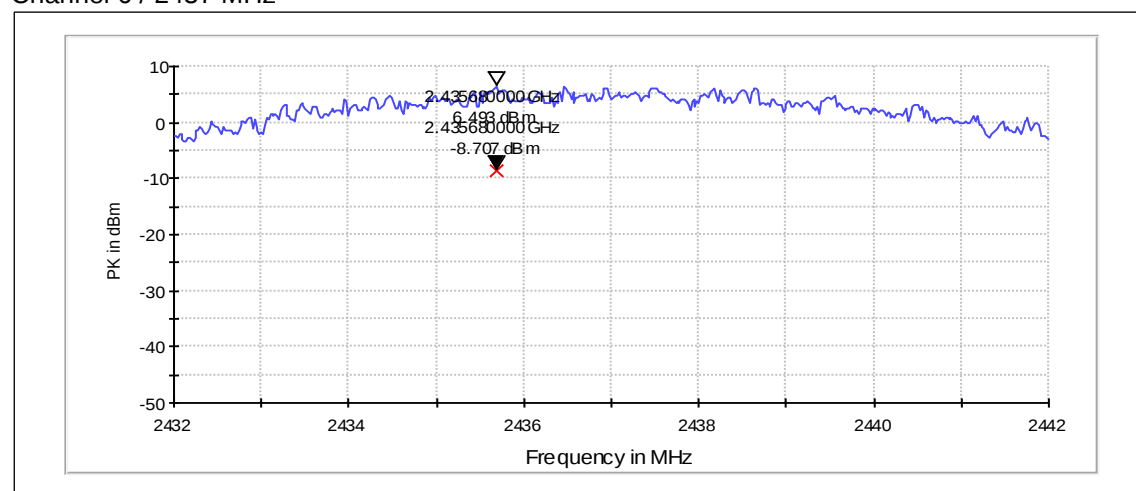
Peak (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Channel / f _c [MHz]	P [dBm]	Result
1 / 2412	-8.05	PASSED
6 / 2437	-8.71	PASSED
11 / 2462	-8.62	PASSED

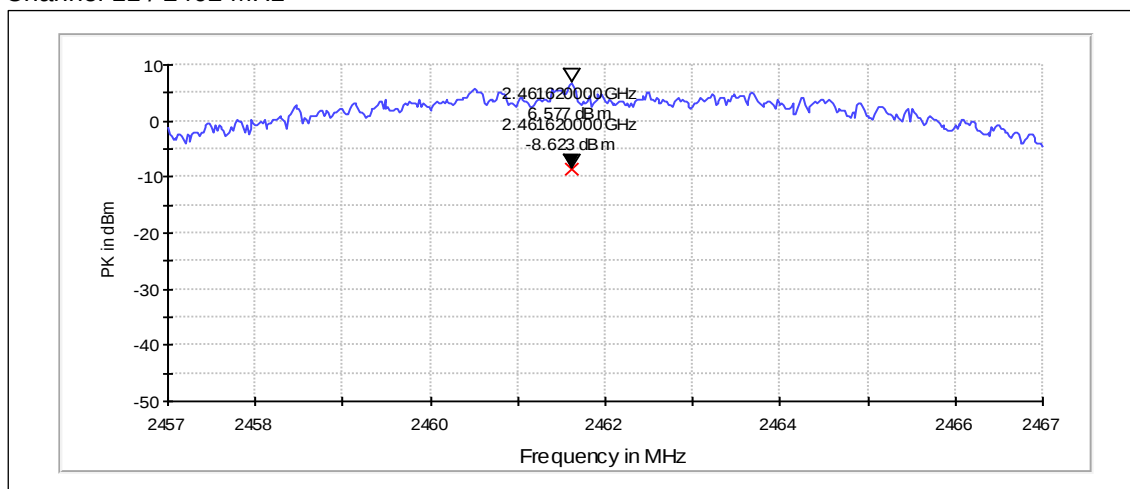
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



Channel 11 / 2462 MHz

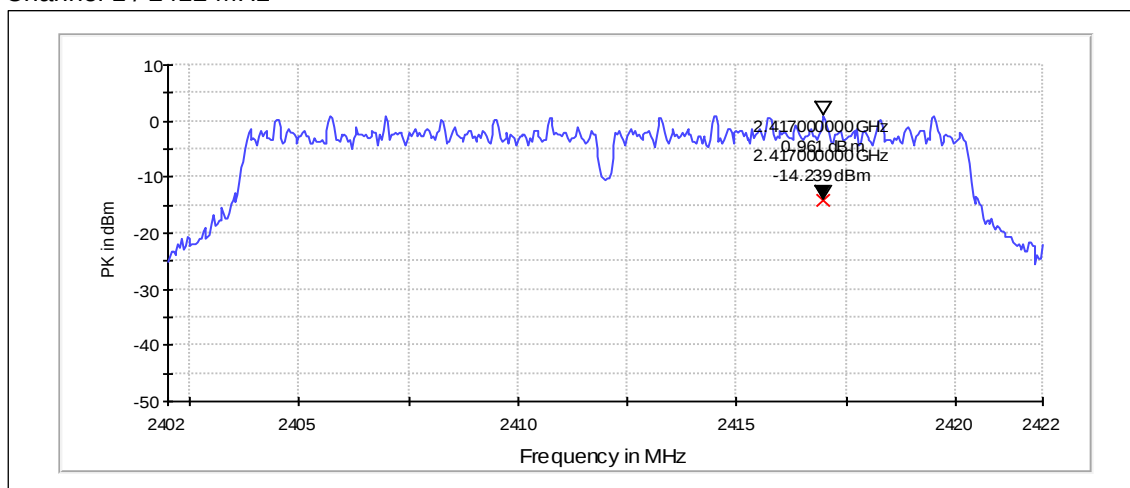


8.3.2 OFDM mode, BPSK modulation, 36 Mbps data rate

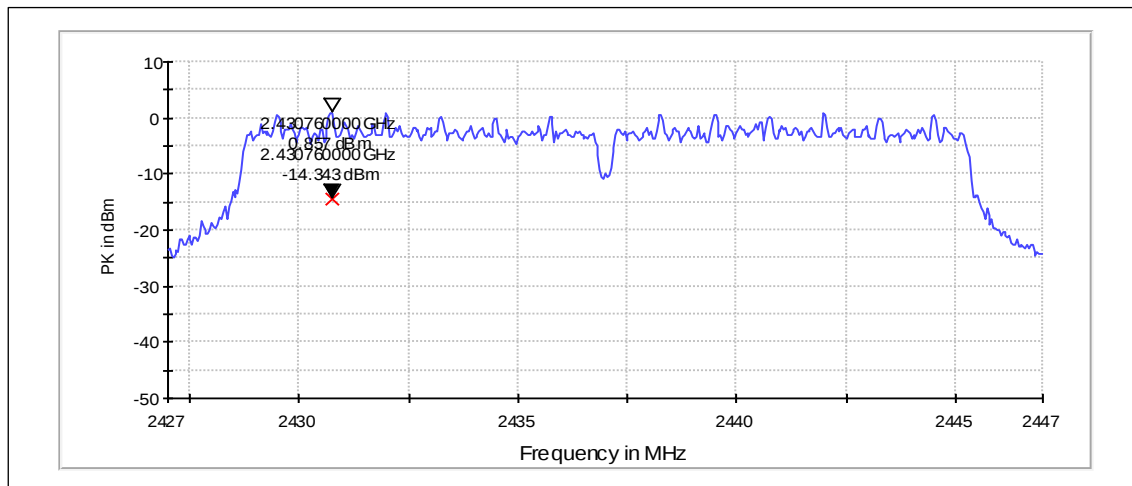
Peak (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Channel / f _c [MHz]	P [dBm]	Result
1 / 2412	-14.24	PASSED
6 / 2437	-14.34	PASSED
11 / 2462	-14.88	PASSED

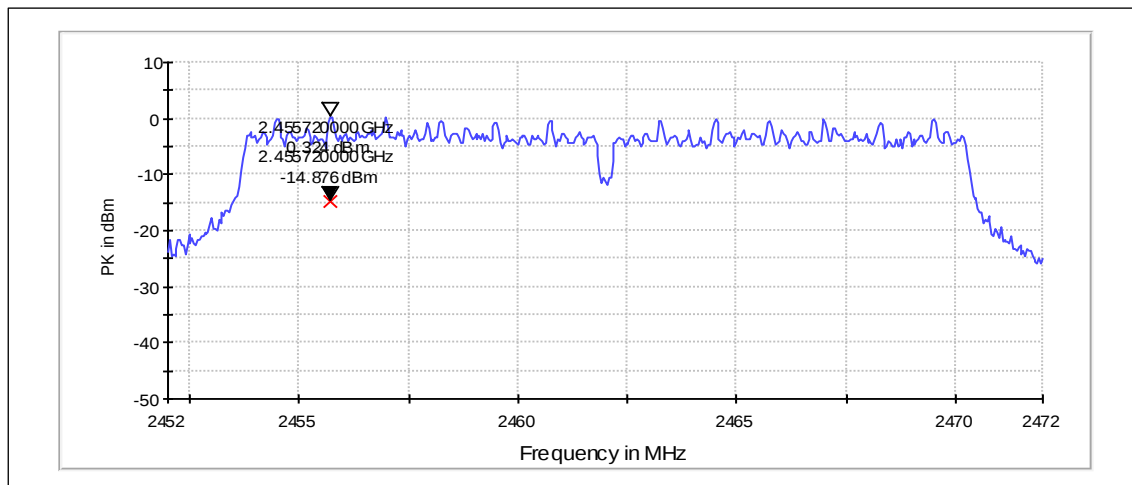
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



Channel 11 / 2462 MHz

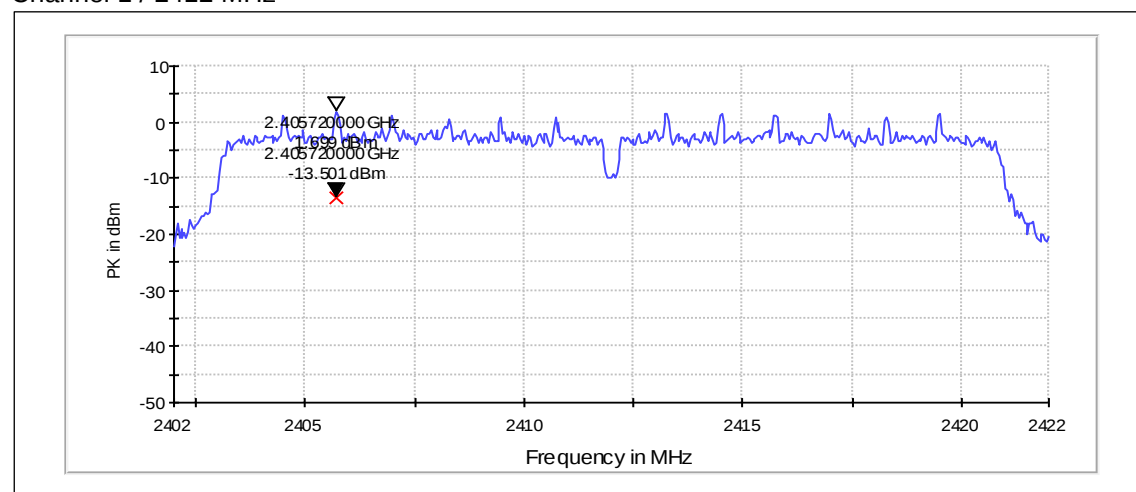


8.3.3 802.11n HT20 MCS0, 20 MHz CBW mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

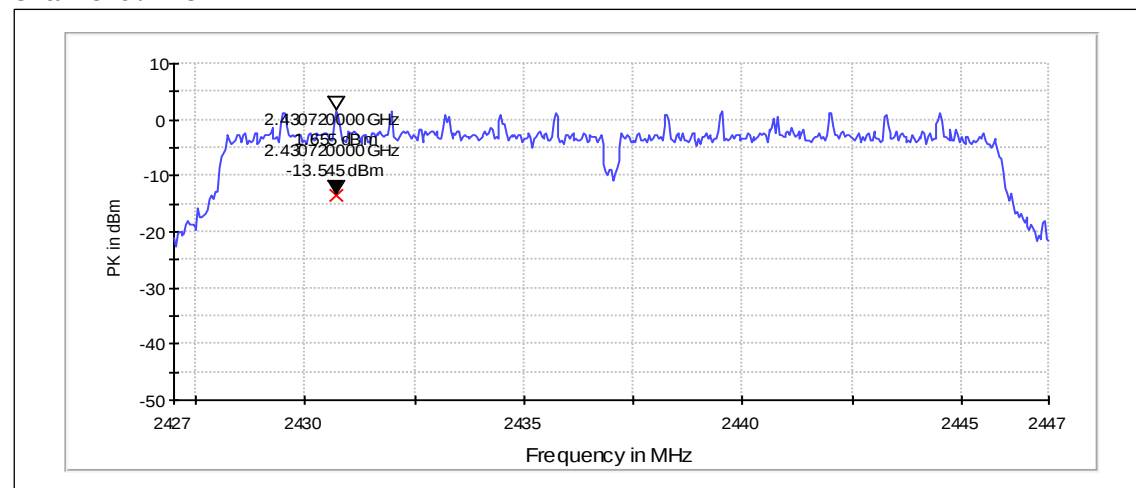
Peak (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-13.5	PASSED
6 / 2437	-13.54	PASSED
11 / 2462	-14.04	PASSED

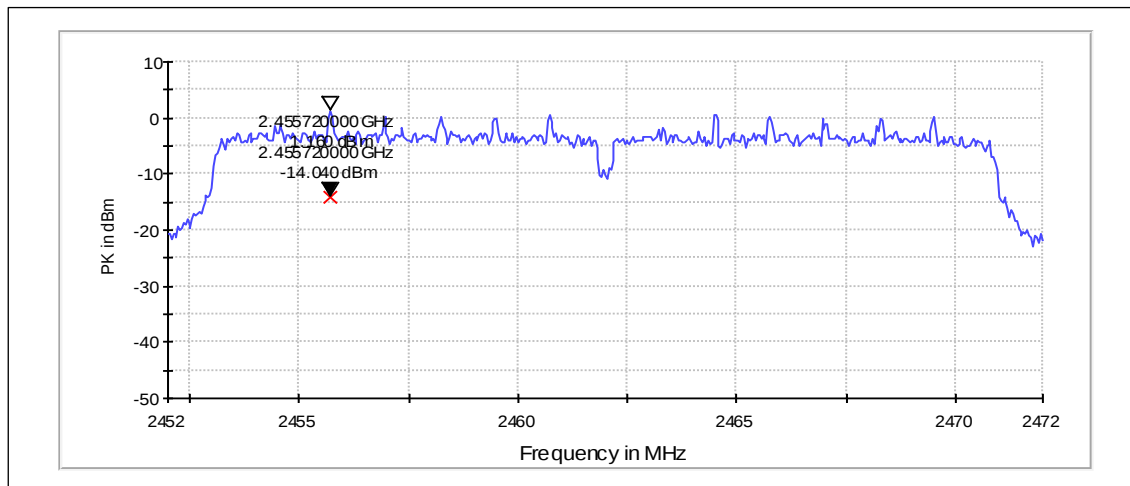
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



Channel 11 / 2462 MHz

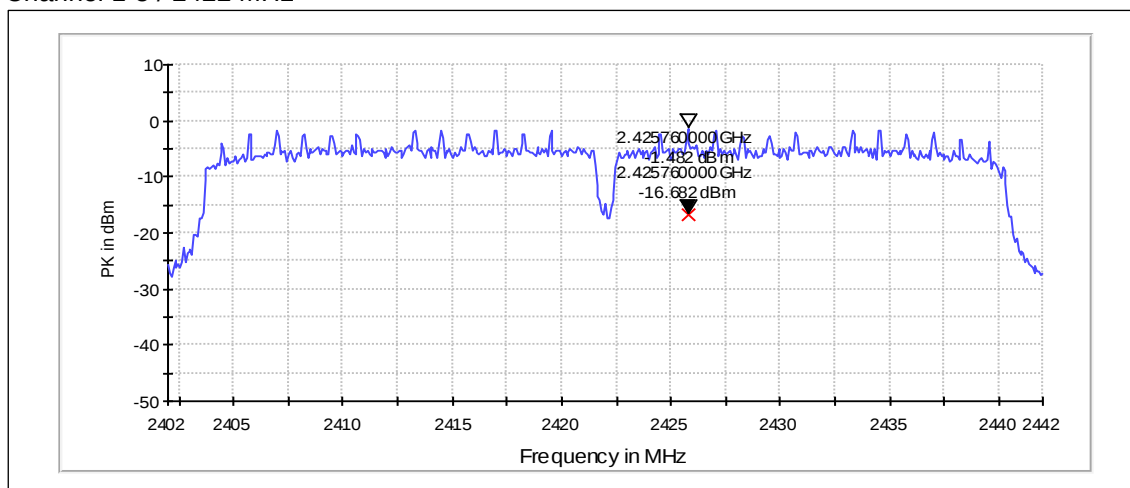


8.3.4 802.11n HT40 MCS0, 40 MHz CBW mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

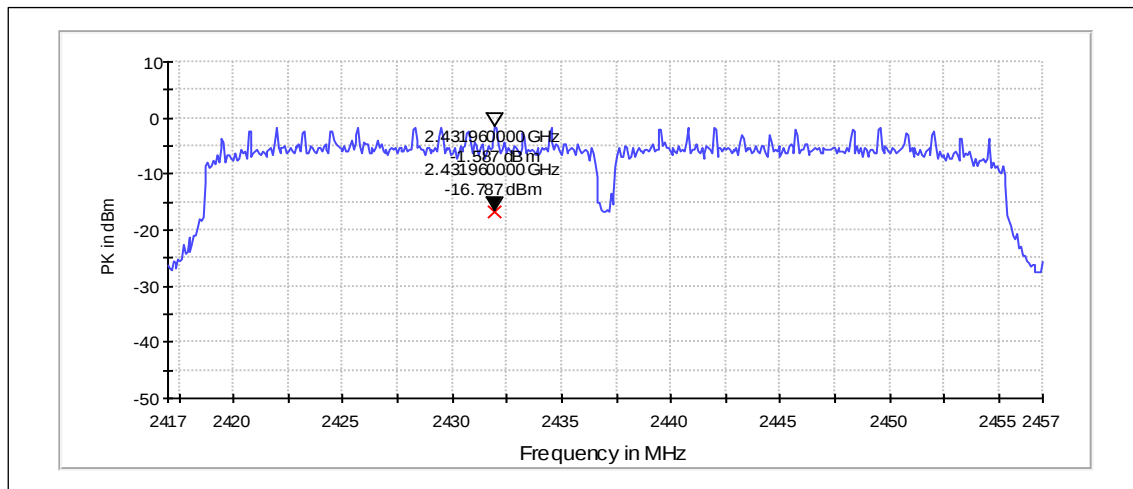
Peak (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
1-5 / 2422	-16.68	PASSED
4-8 / 2437	-16.79	PASSED
7-11 / 2452	-16.99	PASSED

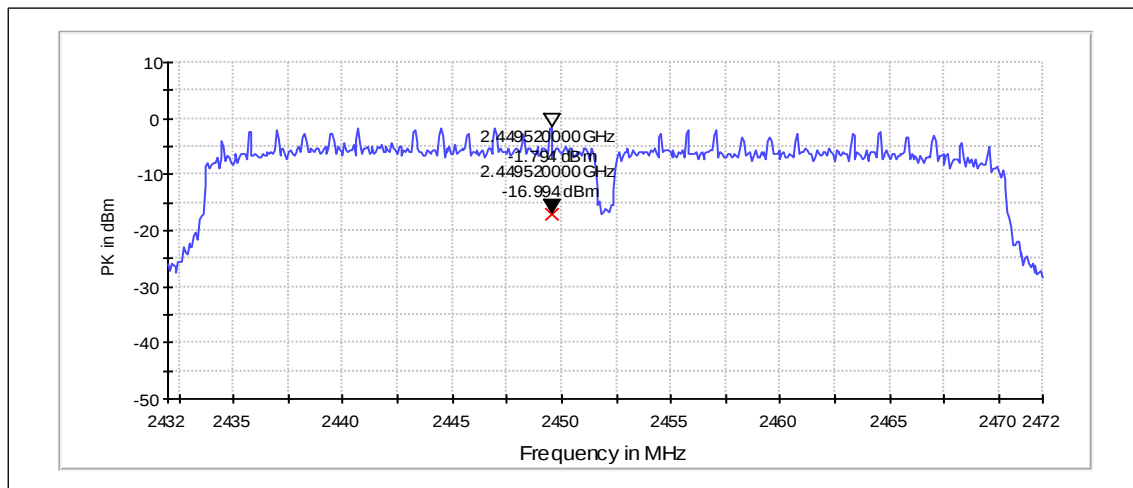
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



Channel 7-11 / 2452 MHz



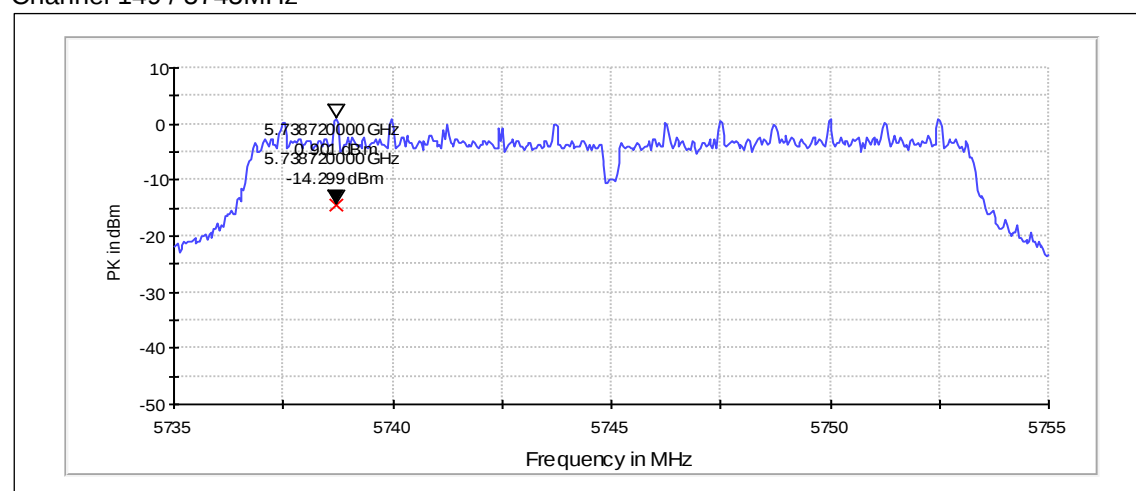
8.4. 5 GHz RLAN Test results

8.4.1 OFDM mode, BPSK modulation, 6 Mbps data rate

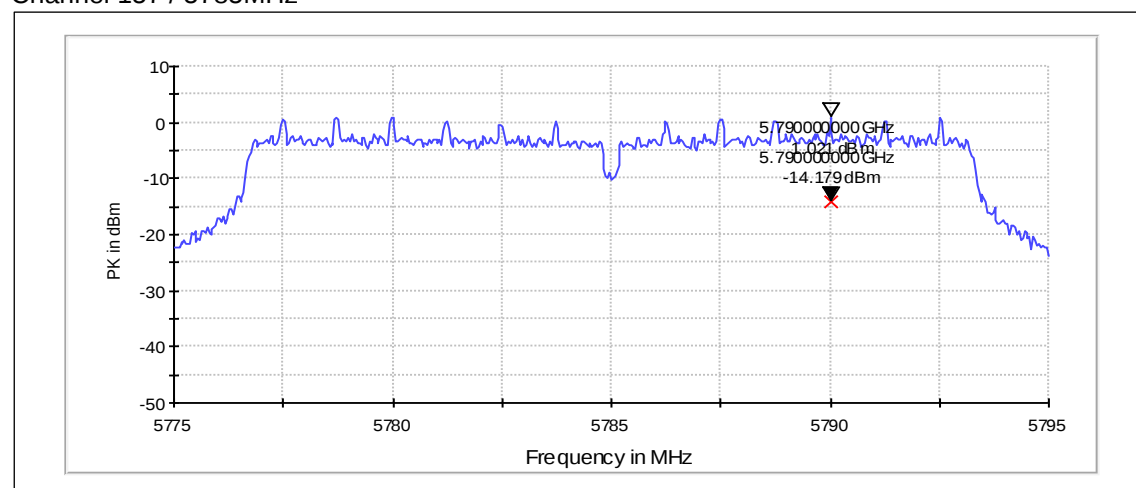
Peak (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
149 / 5745	-14.3	PASSED
157 / 5785	-14.18	PASSED
165 / 5825	-14.28	PASSED

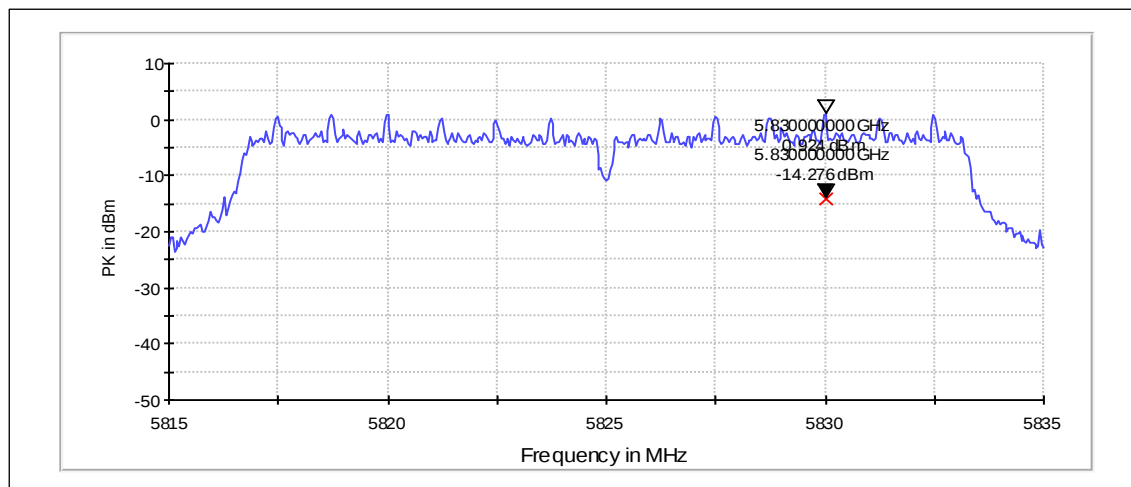
Channel 149 / 5745MHz



Channel 157 / 5785MHz



Channel 165 / 5825MHz

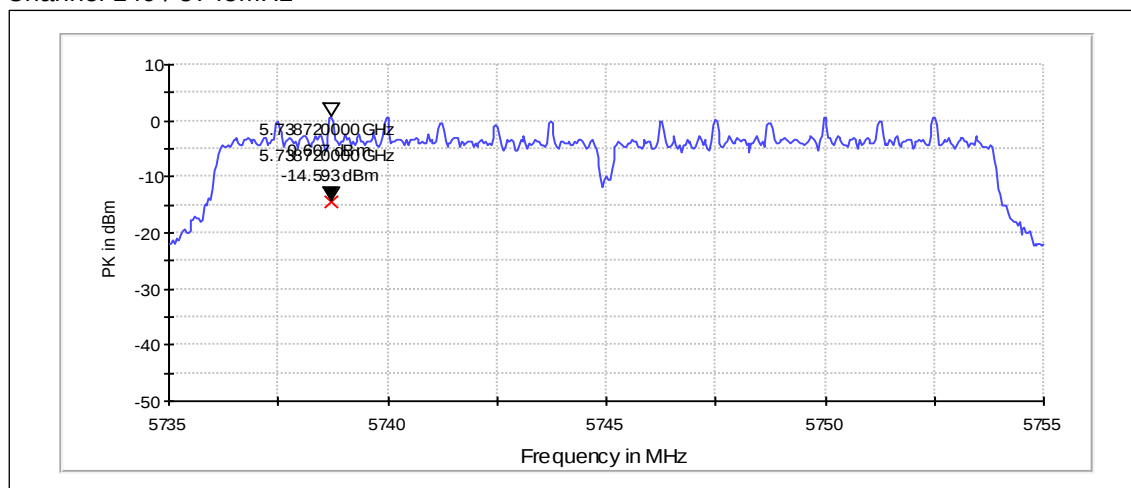


8.4.2 802.11n HT20 MCS1, 20 MHz CBW mode, BPSK modulation, 13.0 / 14.4 Mbps data rate

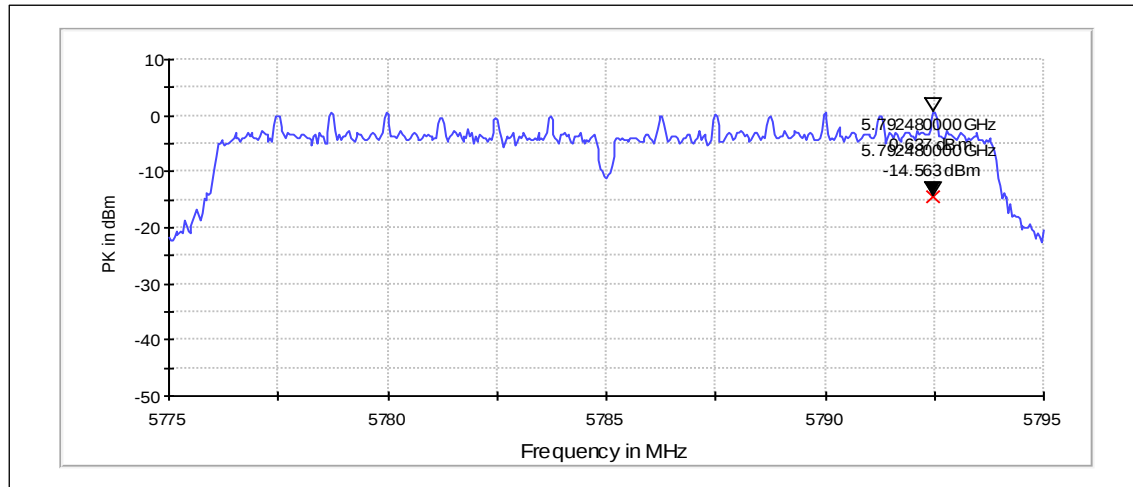
Peak (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Channel / f _c [MHz]	P [dBm]	Result
149 / 5745	-14.59	PASSED
157 / 5785	-14.56	PASSED
165 / 5825	-14.59	PASSED

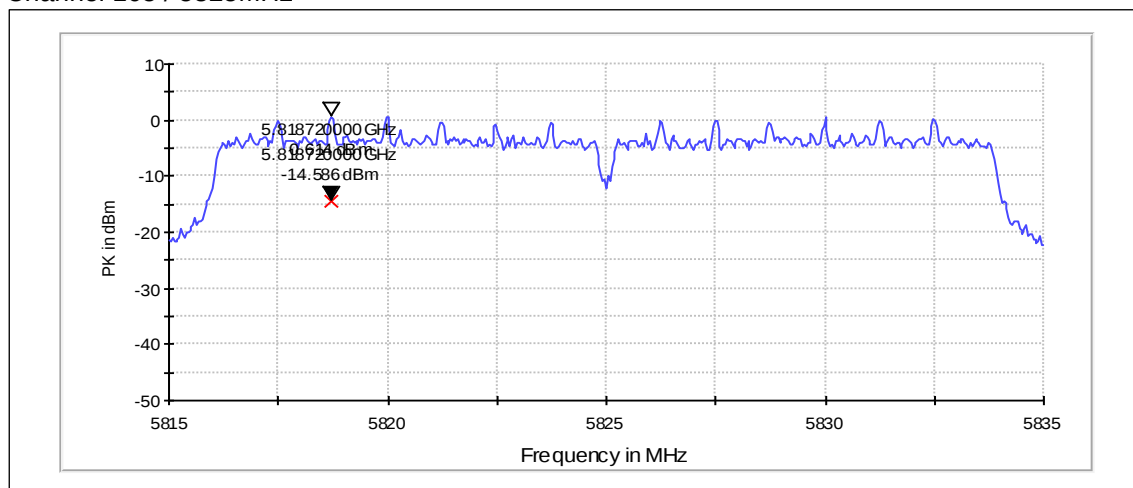
Channel 149 / 5745MHz



Channel 157 / 5785MHz



Channel 165 / 5825MHz

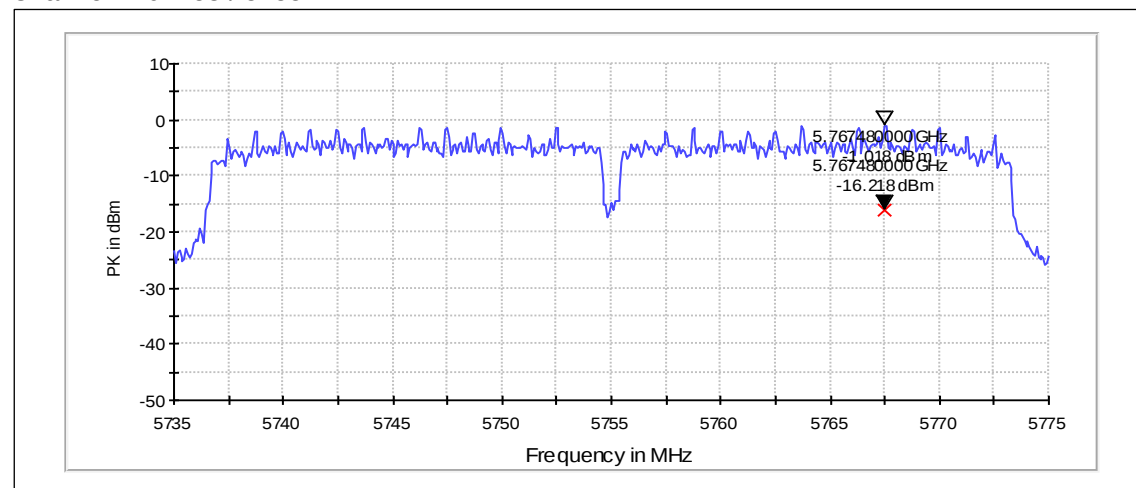


8.4.3 802.11n HT40 MCS5, 40 MHz CBW mode, BPSK modulation, 108.0 / 120.0 Mbps data rate

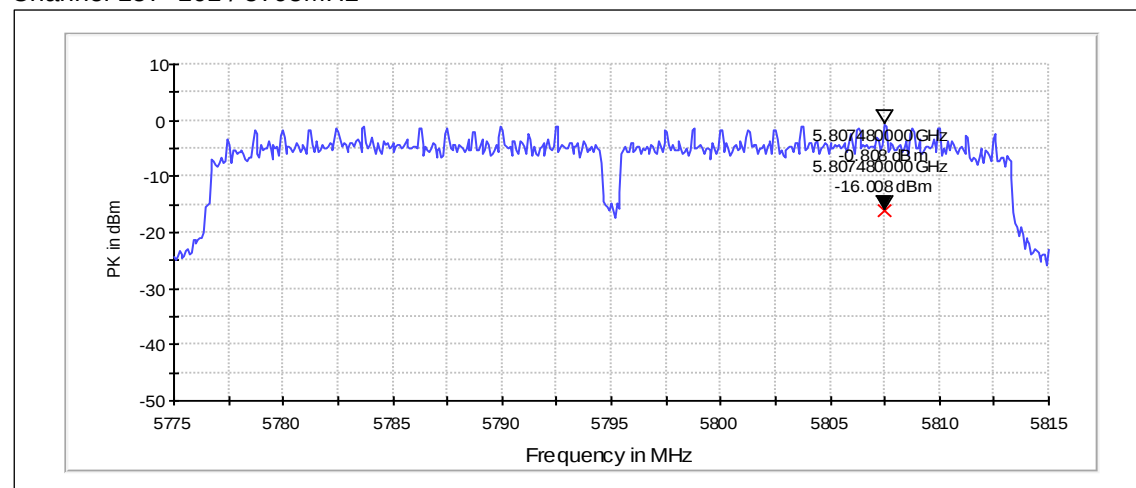
Peak (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Channel / f _c [MHz]	P [dBm]	Result
149+153 / 5755	-16.22	PASSED
157+161 / 5795	-16.01	PASSED

Channel 149+153 / 5755MHz



Channel 157+161 / 5795MHz



9. Test Equipment

9.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
TM38112	Power supply	6632A	Agilent	22/24/27, 15C
TM38631	Signal Generator	83640L	Agilent	22/24/27, 15C, 15B
OM06312	Signal Generator	E4422B	Agilent	22/24
TM37678	Communication Tester	CMU200	R&S	15C, 15B
TM30600	Impulse limiter	ESH3-Z2	R&S	15C, 15B
TM26490	LISN 50 μ H	ESH3-Z5	R&S	15C, 15B
TM26491	LISN 50 μ H	ESH3-Z5	R&S	15C, 15B
TM37610	Spectrum Analyzer	FSU26	R&S	22/24/27, 15C
TM22806	Battery	BAT 20/E	Fiskars	15C, 15B
TM22805	UPS	PS 20/1.2	Fiskars	15C, 15B
-	Temperature and humidity logger	175-H2	Testo	15C, 15B
-	Temperature and humidity logger	175-H2	Testo	22/24/27, 15C
-	Air pressure and temperature logger	635-2	Testo	22/24/27, 15C, 15B
-	Air pressure sensor	0638-1835	Testo	22/24/27, 15C, 15B
-	Temperature test chamber	VT 4002	Vötsch	22/24
2058	Receiver	ESPC	R&S	15C, 15B
2001	Bluetooth tester	CBT	R&S	22/24/27, 15C, 15B
2002	Communication Tester	CMU200	R&S	22/24/27, 15C
2009	LISN 50 μ H	ENV216	R&S	15C, 15B
2010	LISN 50 μ H	ENV216	R&S	15C, 15B
2012	Power splitter	11667B	Agilent	22/24/27, 15C
2013	Attenuator	8493C	Agilent	22/24/27, 15C
2014	Attenuator	8493C	Agilent	22/24/27, 15C
2019	Power splitter	ZN2PD-9G-S+	Mini-Circuits	15E
2020	Power splitter	ZN2PD-9G-S+	Mini-Circuits	15E
2023	Spectrum Analyzer	ESMI-RF	R&S	15B/15C
2024	Analyzer display unit	ESAI-D	R&S	15B/15C

9.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
TM38114	Power supply	6632A	Agilent	22/24/27, 15C, 15B
TM38631	Signal Generator	83640L	Agilent	22/24/27, 15C, 15B
TM38323	Preamplifier	PA-02 18-26 GHz	EMC Automation	22/24/27, 15C, 15B
-	Antenna	BBHA 9120 D	Schwarzbeck	22/24/27, 15C
TM26497	Antenna	3115	Emco	22/24/27, 15C, 15B
TM37773	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
TM38845	Receiver	ESIB 26	R&S	22/24/27, 15C, 15B
-	Antenna	HL562	R&S	22/24/27, 15C, 15B
-	Turntable	2188	EMCO	22/24/27, 15C, 15B
-	Turntable controller	2090	EMCO	22/24/27, 15C, 15B
-	RF system panel	TS-RSP	R&S	22/24/27, 15C, 15B
-	RF system panel	TS-RSP	R&S	22/24/27, 15C, 15B
-	Mini mast	2075-2	ETS Lindgren	22/24/27, 15C, 15B
TM38843	Mini mast	2075	Emco	22/24/27, 15C, 15B
TM38842	Antenna mast controller	2090	Emco	22/24/27, 15C, 15B
TM30643	LISN 50 μ H	LISN-5-20-2	FCC	22/24/27, 15C, 15B
TM30644	LISN 50 μ H	LISN-5-20-2	FCC	22/24/27, 15C, 15B
-	Temperature and humidity logger	175-H2	Testo	22/24/27, 15C, 15B
-	Air pressure and temperature logger	635-2	Testo	22/24/27, 15C, 15B
-	Air pressure sensor	0638-1835	Testo	22/24/27, 15C, 15B
TM39180	Laser distance meter	Disto Pro	Leica	22/24/27, 15C, 15B
TM37523	Preamplifier	AMF-4D-10M-3G-25-20P	Miteq	22/24/27, 15C, 15B
TM37498	Preamplifier	AMF-5D-020180-26-10P	Miteq	22/24/27, 15C, 15B
TM30599	Semi anechoic chambre	UNKNOWN	TDK	22/24/27, 15C, 15B
TM22638	Power supply	OL63743-901	-	22/24/27, 15C, 15B
TM38066	High pass filter	4HC3000/18000-3-KK	Trilithic	22/24/27, 15C, 15B
-	High pass filter	WHKX 1.6/15G-12SS	Wainwright	22/24/27, 15C, 15B
TM37545	Tunable notch filter	800.0/960.0-0.2/40-8SSK	Wainwright	22
TM26512	Tunable notch filter	WRCD1850/1910-0.2/40-10SSK	Wainwright	24
-	Band reject filter	WRCG1877/1883-1870/1890-40/6EE	Wainwright	24
-	Band reject filter	WRCG1729.4/1735.4-1722.4/1742.4-40/6SS	Wainwright	27
-	Band reject filter	WRCG832/838-825/848-40/5SS	Wainwright	22
TM23892	Controller	G-1000SDX	Yaesu	22/24/27
2001	Bluetooth tester	CBT	R&S	22/24/27, 15C, 15B
6023	Antenna	VUBA 9117	Schwarzbeck	22/24/27, 15C