

FCC Part 15C Compliance Test Report

Test Report no.:	FCC15CWLAN_RX-114_01.docx	Date of Report:	19-Sep-2013
Number of pages:	140	Customer's Contact person:	Jamie Lee
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FCC listing no.:	533467		
IC recognition no.:	661V-1		
Tested devices/ accessories:	Device RX-114 / Headset WH-208		
FCC ID:	QMNA	IC:	661X-A
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:			

Kalle Hannila, System Manager, EMC

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	06-Aug-2013
Testing completed	11-Sep-2013
The customer's contact person	Jamie Lee
Test Plan referred to	T:\Projects\RX-114\TestPlan\RS_testplan_RX-114.xlsm
Notes	-
Document name	T:\Projects\RX-114\EMC\FCC15CWLAN_RX-114_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
Device	RX-114	004402473515447004402473515447	0108	-	9471 1032 1322 v1.2.2	17629
Headset	WH-208	2332271	-	-	-	17355

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	-
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	-
15.247(a)(2)	A8(0.1(1))	6dB(bandwidth)	PASSED
15.247(e)	A8(0.1(2))	Power spectral density	PASSED

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	-
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.

CONTENTS

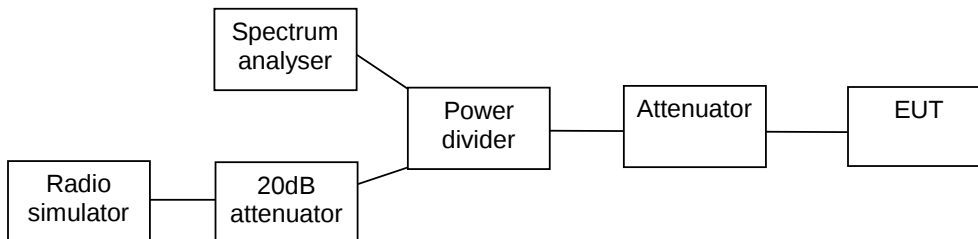
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2. Conducted peak output power (15.247(b)(1), RSS-210 A8.4 (4))

EUT with DUT number	RX-114, DUT 17629
Accessories with DUT numbers	WH-208, DUT 17355
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	19 / 65 / 101.4
Date of measurements	26-Aug-2013
Measured by	Jari Keto

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. Combined values have been calculated according to KDB 662911; Section e2ii was used in MIMO mode and section f2ii in SISO mode.

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, Main antenna

Channel / f _c [MHz]	Mode	Modulation	Data rate	Level [dBm]
6 / 2437	802.11b	BPSK	1 Mbps	16.1
6 / 2437	802.11b	QPSK	2 Mbps	16.32
6 / 2437	802.11b	QPSK	5.5 Mbps	17.68
6 / 2437	802.11b	QPSK	11 Mbps	18.89
6 / 2437	802.11g	BPSK	6 Mbps	18.46
6 / 2437	802.11g	BPSK	9 Mbps	18.6
6 / 2437	802.11g	QPSK	12 Mbps	18.51
6 / 2437	802.11g	QPSK	18 Mbps	17.99
6 / 2437	802.11g	16QAM	24 Mbps	19.25
6 / 2437	802.11g	16QAM	36 Mbps	19.17
6 / 2437	802.11g	64QAM	48 Mbps	19.15
6 / 2437	802.11g	64QAM	54 Mbps	18.73
6 / 2437	802.11n	BPSK	6.5 / 7.25 Mbps	17.49
6 / 2437	802.11n	QPSK	13.0 / 14.4 Mbps	14.44
6 / 2437	802.11n	QPSK	19.5 / 21.7 Mbps	14.53
6 / 2437	802.11n	16QAM	26.0 / 28.9 Mbps	16.12
6 / 2437	802.11n	16QAM	39.0 / 43.3 Mbps	16.25
6 / 2437	802.11n	64QAM	52.0 / 57.8 Mbps	16.12
6 / 2437	802.11n	64QAM	58.5 / 65.0 Mbps	16.38
6 / 2437	802.11n	64QAM	65.0 / 72.2 Mbps	14.18
4-8 / 2437	802.11n	BPSK	13.5 / 15.0 Mbps	16.03
4-8 / 2437	802.11n	QPSK	27.0 / 30.0 Mbps	14.32
4-8 / 2437	802.11n	QPSK	40.5 / 45.0 Mbps	14.36
4-8 / 2437	802.11n	16QAM	54.0 / 60.0 Mbps	14.53
4-8 / 2437	802.11n	16QAM	81.0 / 90.0 Mbps	14.59
4-8 / 2437	802.11n	64QAM	108.0 / 120.0 Mbps	14.78
4-8 / 2437	802.11n	64QAM	121.5 / 135.0 Mbps	14.75
4-8 / 2437	802.11n	64QAM	135.0 / 150.0 Mbps	11.62
1 / 2412	802.11g	BPSK	9 Mbps	16.74
6 / 2437	802.11g	BPSK	9 Mbps	18.51
1 / 2412	802.11g	16QAM	24 Mbps	17.31
6 / 2437	802.11g	16QAM	24 Mbps	19.59
149 / 5745	802.11a	BPSK	6 Mbps	17.47
157 / 5785	802.11a	BPSK	6 Mbps	18.11
165 / 5825	802.11a	BPSK	6 Mbps	18
149 / 5745	802.11n	64QAM	52.0 / 57.8 Mbps	16.88
157 / 5785	802.11n	64QAM	52.0 / 57.8 Mbps	17.61
165 / 5825	802.11n	64QAM	52.0 / 57.8 Mbps	18.16
149+153 / 5755	802.11n	BPSK	13.5 / 15.0 Mbps	17.22
157+161 / 5795	802.11n	BPSK	13.5 / 15.0 Mbps	17.92
149+153 / 5755	802.11n	QPSK	40.5 / 45.0 Mbps	15.12
157+161 / 5795	802.11n	QPSK	40.5 / 45.0 Mbps	15.86
1-5 / 2422	802.11n	BPSK	13.5 / 15.0 Mbps	15.34
4-8 / 2437	802.11n	BPSK	13.5 / 15.0 Mbps	16.57
7-11 / 2452	802.11n	BPSK	13.5 / 15.0 Mbps	16.22
1-5 / 2422	802.11n	64QAM	108.0 / 120.0 Mbps	14.07
4-8 / 2437	802.11n	64QAM	108.0 / 120.0 Mbps	15.39
7-11 / 2452	802.11n	64QAM	108.0 / 120.0 Mbps	15.01
11 / 2462	802.11g	BPSK	9 Mbps	17.01

11 / 2462	802.11g	16QAM	24 Mbps	17.76
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2.4. Power results summary, Aux antenna

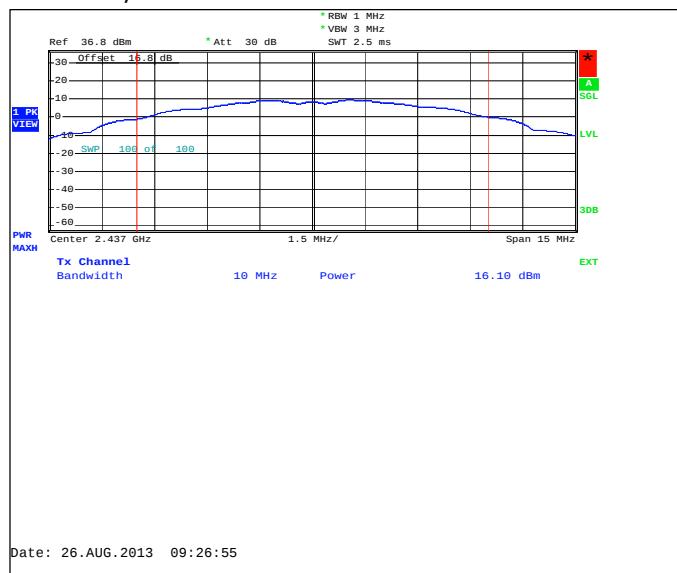
Channel / f _c [MHz]	Mode	Modulation	Data rate	Level [dBm]
6 / 2437	802.11b	BPSK	1 Mbps	15.42
6 / 2437	802.11b	QPSK	2 Mbps	15.67
6 / 2437	802.11b	QPSK	5.5 Mbps	17.03
6 / 2437	802.11b	QPSK	11 Mbps	18.3
6 / 2437	802.11g	BPSK	6 Mbps	17.91
6 / 2437	802.11g	BPSK	9 Mbps	18.07
6 / 2437	802.11g	QPSK	12 Mbps	18.15
6 / 2437	802.11g	QPSK	18 Mbps	17.82
6 / 2437	802.11g	16QAM	24 Mbps	18.72
6 / 2437	802.11g	16QAM	36 Mbps	18.75
6 / 2437	802.11g	64QAM	48 Mbps	18.84
6 / 2437	802.11g	64QAM	54 Mbps	18.53
6 / 2437	802.11n	BPSK	6.5 / 7.25 Mbps	17.21
6 / 2437	802.11n	QPSK	13.0 / 14.4 Mbps	15.38
6 / 2437	802.11n	QPSK	19.5 / 21.7 Mbps	15.49
6 / 2437	802.11n	16QAM	26.0 / 28.9 Mbps	16.14
6 / 2437	802.11n	16QAM	39.0 / 43.3 Mbps	16.17
6 / 2437	802.11n	64QAM	52.0 / 57.8 Mbps	16.26
6 / 2437	802.11n	64QAM	58.5 / 65.0 Mbps	16.43
6 / 2437	802.11n	64QAM	65.0 / 72.2 Mbps	14.18
4-8 / 2437	802.11n	BPSK	13.5 / 15.0 Mbps	16.95
4-8 / 2437	802.11n	QPSK	27.0 / 30.0 Mbps	15.14
4-8 / 2437	802.11n	QPSK	40.5 / 45.0 Mbps	15.37
4-8 / 2437	802.11n	16QAM	54.0 / 60.0 Mbps	14.66
4-8 / 2437	802.11n	16QAM	81.0 / 90.0 Mbps	14.63
4-8 / 2437	802.11n	64QAM	108.0 / 120.0 Mbps	15.01
4-8 / 2437	802.11n	64QAM	121.5 / 135.0 Mbps	14.79
4-8 / 2437	802.11n	64QAM	135.0 / 150.0 Mbps	12.51
1 / 2412	802.11g	BPSK	9 Mbps	17.43
1 / 2412	802.11g	64QAM	48 Mbps	17.83
149 / 5745	802.11n	BPSK	6.5 / 7.25 Mbps	14.6
157 / 5785	802.11n	BPSK	6.5 / 7.25 Mbps	14.85
165 / 5825	802.11n	BPSK	6.5 / 7.25 Mbps	14.74
149 / 5745	802.11n	64QAM	52.0 / 57.8 Mbps	14.37
157 / 5785	802.11n	64QAM	52.0 / 57.8 Mbps	14.51
165 / 5825	802.11n	64QAM	52.0 / 57.8 Mbps	15
149+153 / 5755	802.11n	BPSK	13.5 / 15.0 Mbps	15.39
157+161 / 5795	802.11n	BPSK	13.5 / 15.0 Mbps	14.5
149+153 / 5755	802.11n	QPSK	40.5 / 45.0 Mbps	12.47
157+161 / 5795	802.11n	QPSK	40.5 / 45.0 Mbps	12.39
1-5 / 2422	802.11n	BPSK	13.5 / 15.0 Mbps	16.35
4-8 / 2437	802.11n	BPSK	13.5 / 15.0 Mbps	17.23
7-11 / 2452	802.11n	BPSK	13.5 / 15.0 Mbps	16.98
1-5 / 2422	802.11n	QPSK	40.5 / 45.0 Mbps	13.84
4-8 / 2437	802.11n	QPSK	40.5 / 45.0 Mbps	15.43
7-11 / 2452	802.11n	QPSK	40.5 / 45.0 Mbps	15.39
11 / 2462	802.11g	BPSK	9 Mbps	16.66
11 / 2462	802.11g	64QAM	48 Mbps	17.28

2.5. WLAN Test results, Main Antenna

2.5.1 802.11b mode, BPSK modulation, 1 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	16.1	40.738	PASSED

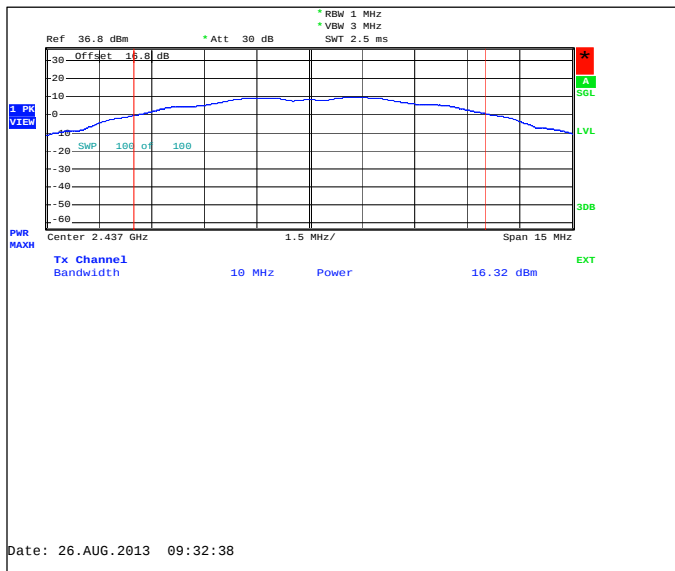
Channel 6 / 2437 MHz



2.5.2 802.11b mode, QPSK modulation, 2 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	16.32	42.855	PASSED

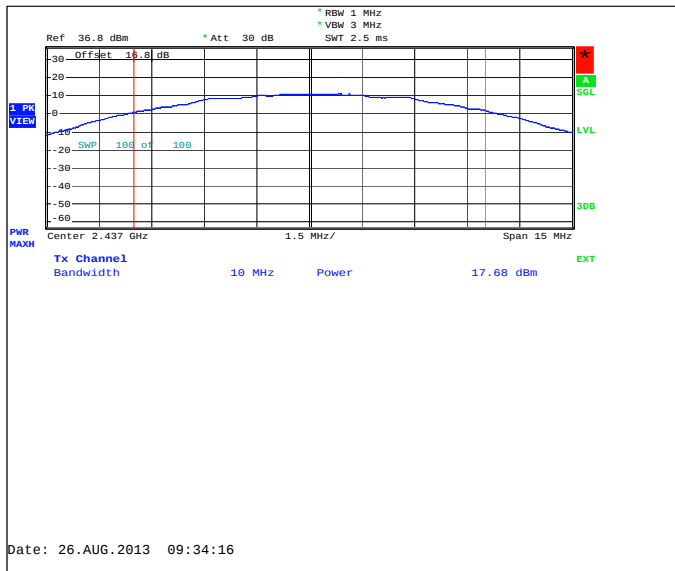
Channel 6 / 2437 MHz



2.5.3 802.11b mode, QPSK modulation, 5.5 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	17.68	58.614	PASSED

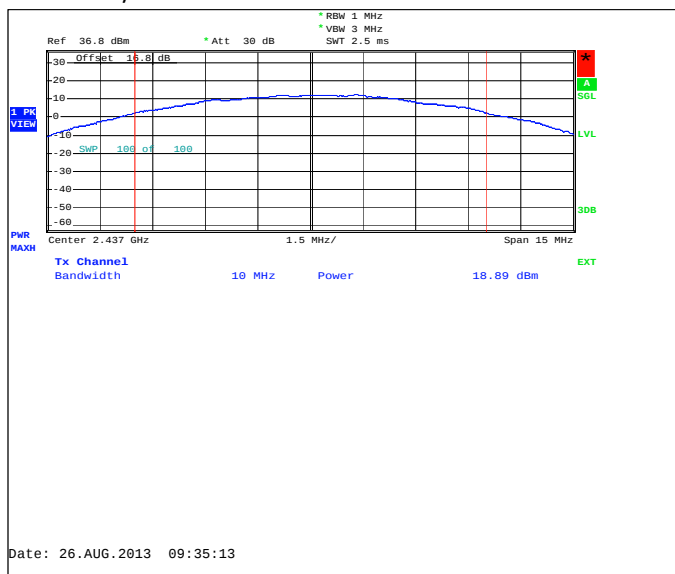
Channel 6 / 2437 MHz



2.5.4 802.11b mode, QPSK modulation, 11 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	18.89	77.446	PASSED

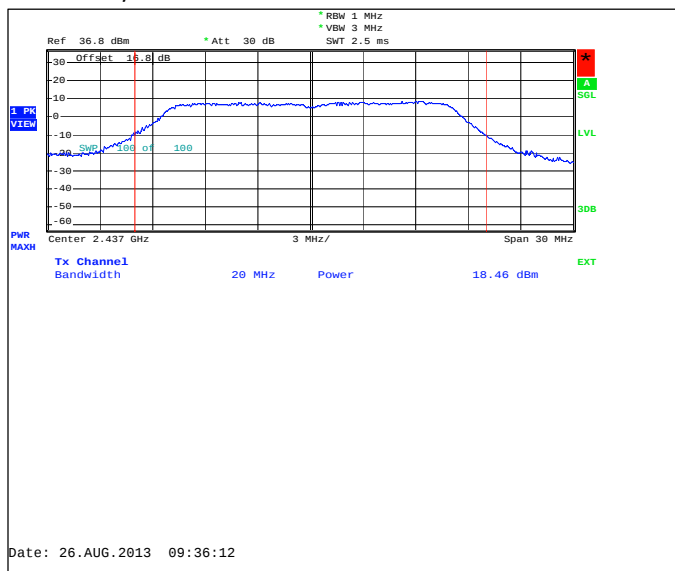
Channel 6 / 2437 MHz



2.5.5 802.11g mode, BPSK modulation, 6 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	18.46	70.146	PASSED

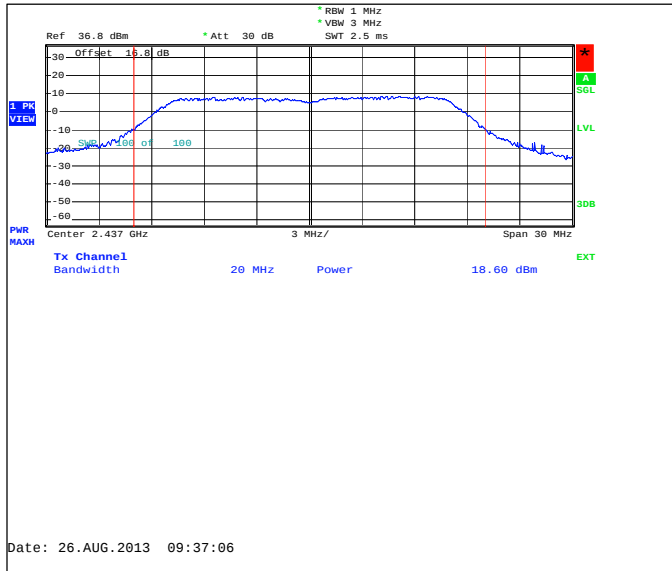
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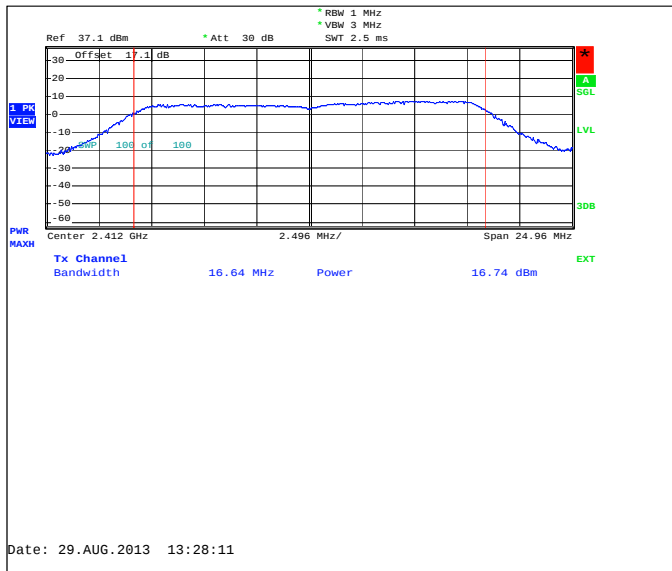
2.5.6 802.11g mode, BPSK modulation, 9 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	18.6	72.444	PASSED
1 / 2412	16.74	47.206	PASSED
6 / 2437	18.51	70.958	PASSED
11 / 2462	17.01	50.234	PASSED

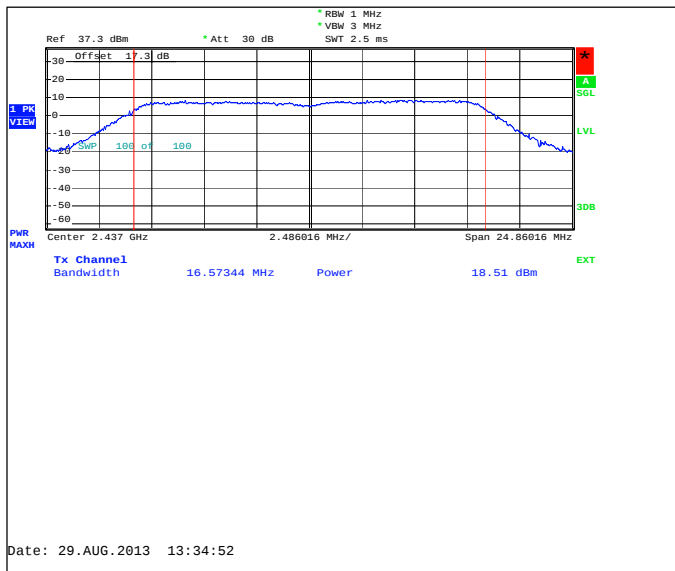
Channel 6 / 2437 MHz



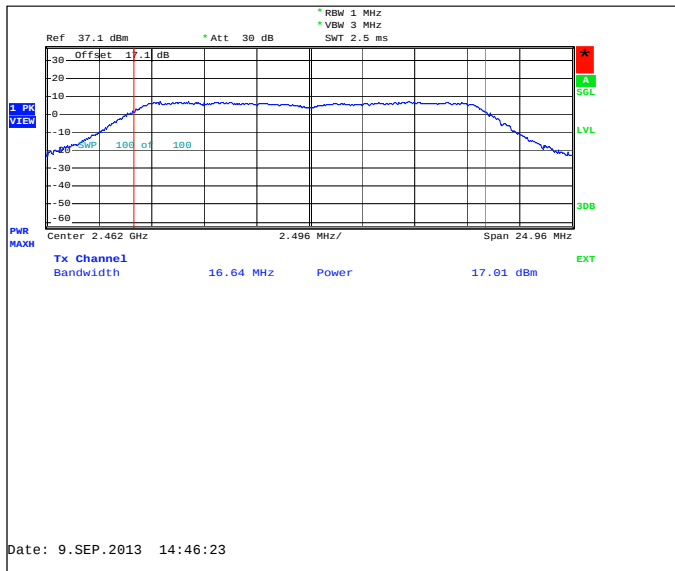
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



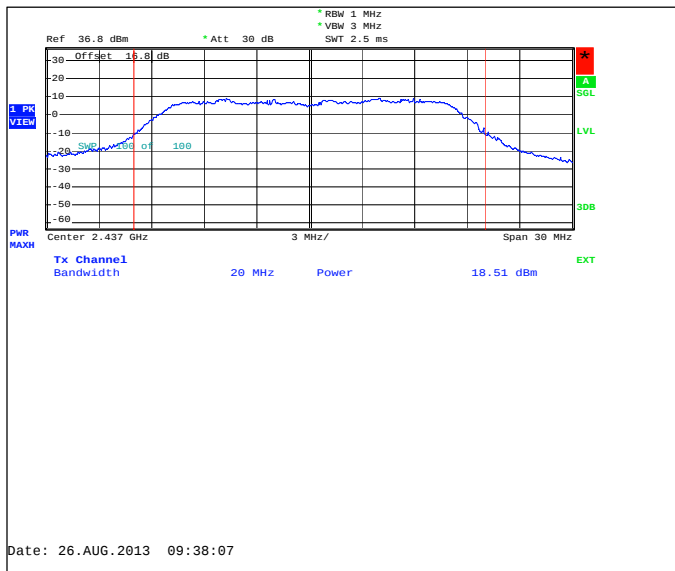
Channel 11 / 2462 MHz



2.5.7 802.11g mode, QPSK modulation, 12 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	18.51	70.958	PASSED

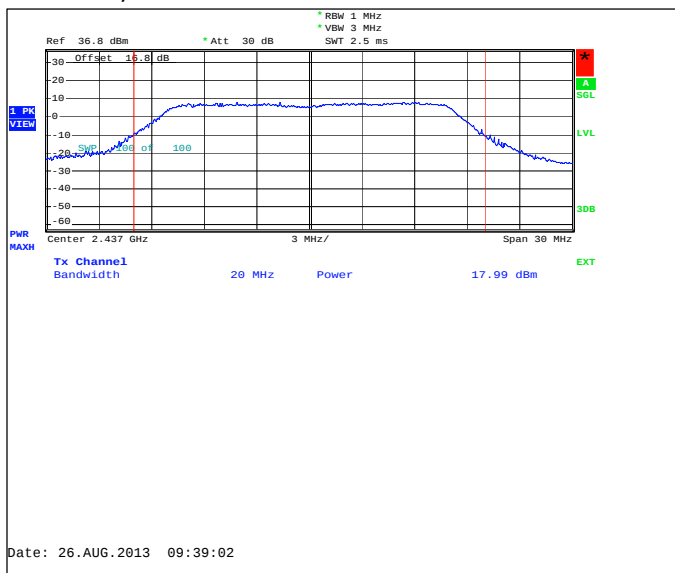
Channel 6 / 2437 MHz



2.5.8 802.11g mode, QPSK modulation, 18 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	17.99	62.951	PASSED

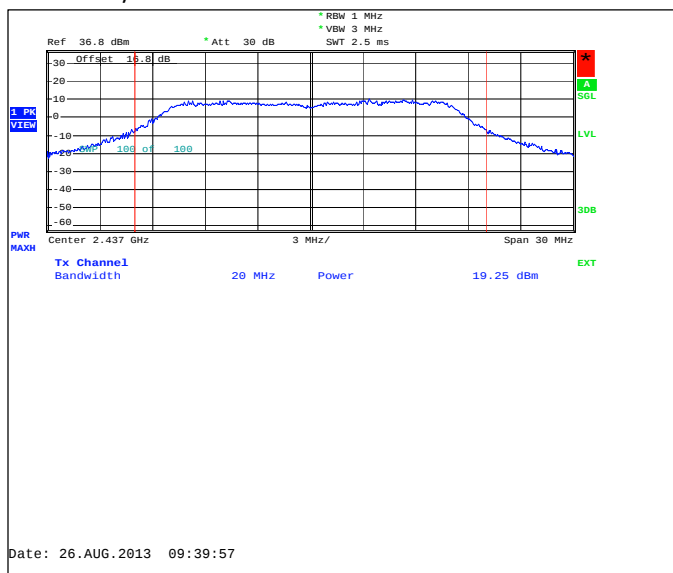
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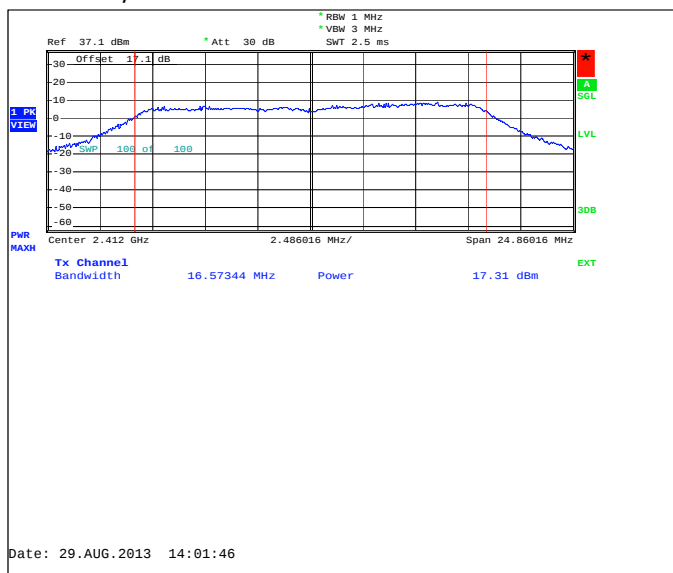
2.5.9 802.11g mode, 16QAM modulation, 24 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
1 / 2412	17.31	53.827	PASSED
6 / 2437	19.59	90.991	PASSED
11 / 2462	17.76	59.704	PASSED

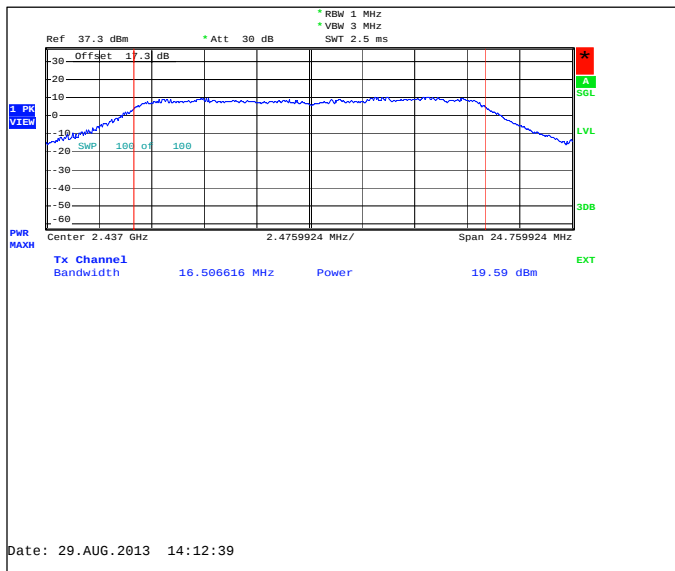
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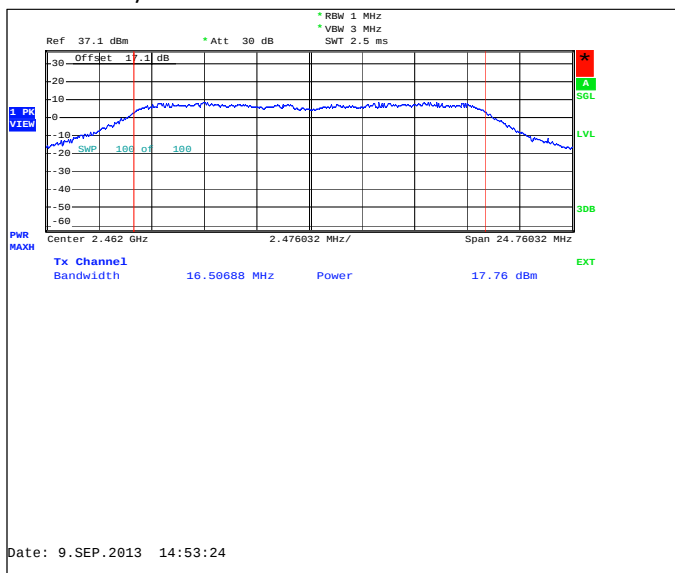
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Channel 6 / 2437 MHz



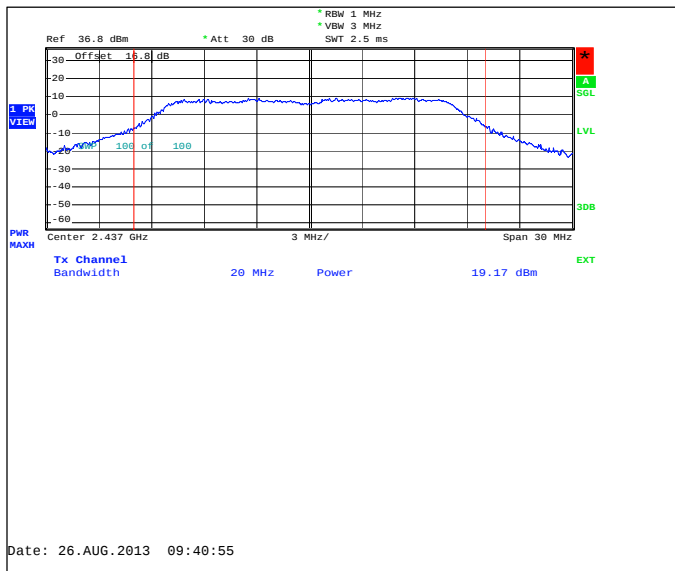
Channel 11 / 2462 MHz



2.5.10 802.11g mode, 16QAM modulation, 36 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	19.17	82.604	PASSED

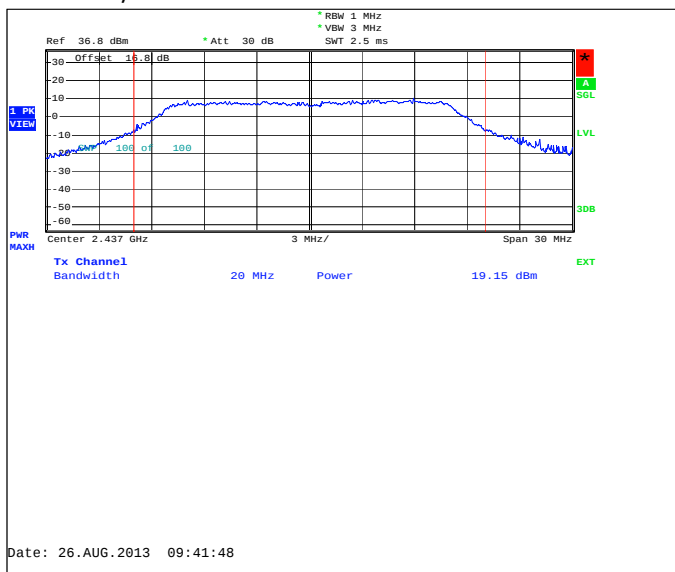
Channel 6 / 2437 MHz



2.5.11 802.11g mode, 64QAM modulation, 48 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	19.15	82.224	PASSED

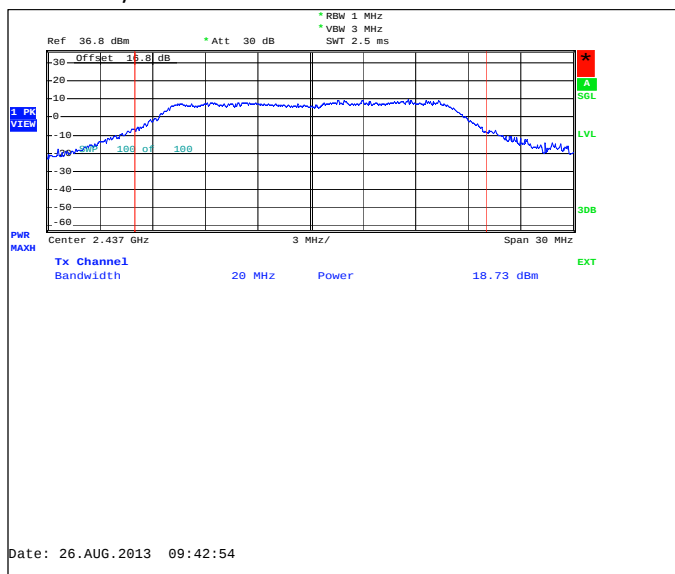
Channel 6 / 2437 MHz



2.5.12 802.11g mode, 64QAM modulation, 54 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	18.73	74.645	PASSED

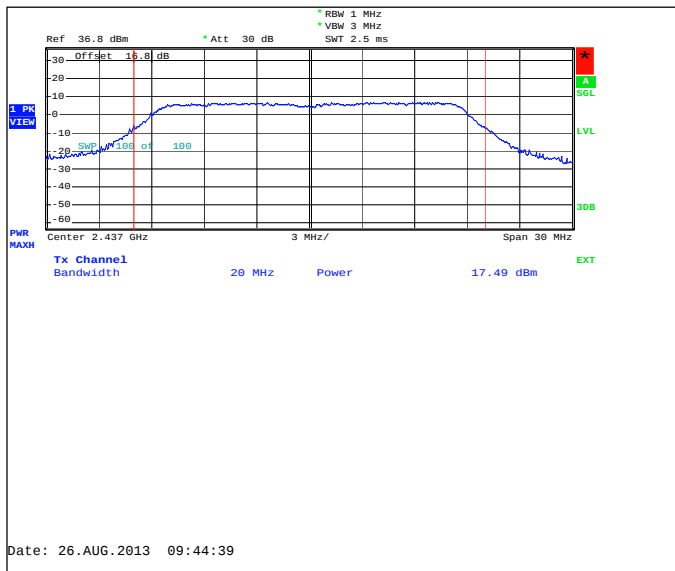
Channel 6 / 2437 MHz



2.5.13 802.11n mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	17.49	56.105	PASSED

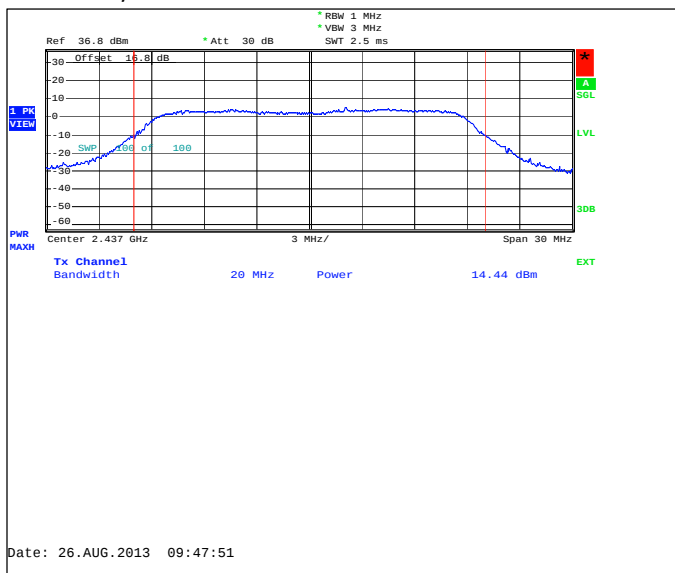
Channel 6 / 2437 MHz



2.5.14 802.11n mode, QPSK modulation, 13.0 / 14.4 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	14.44	27.797	PASSED

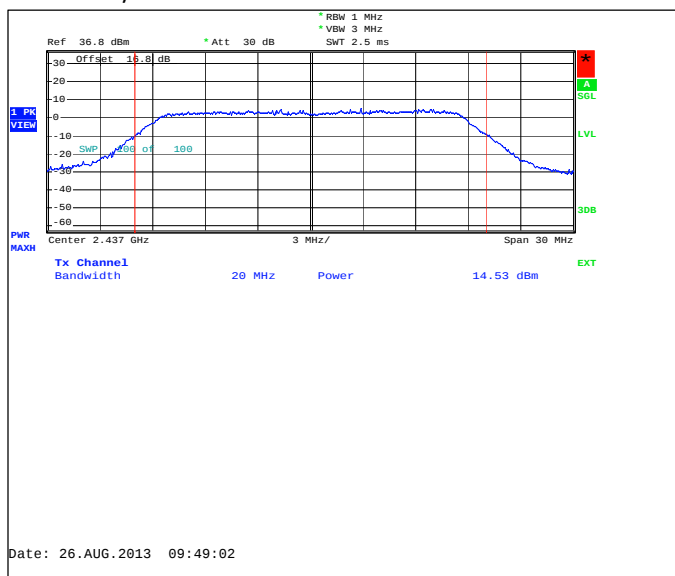
Channel 6 / 2437 MHz



2.5.15 802.11n mode, QPSK modulation, 19.5 / 21.7 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	14.53	28.379	PASSED

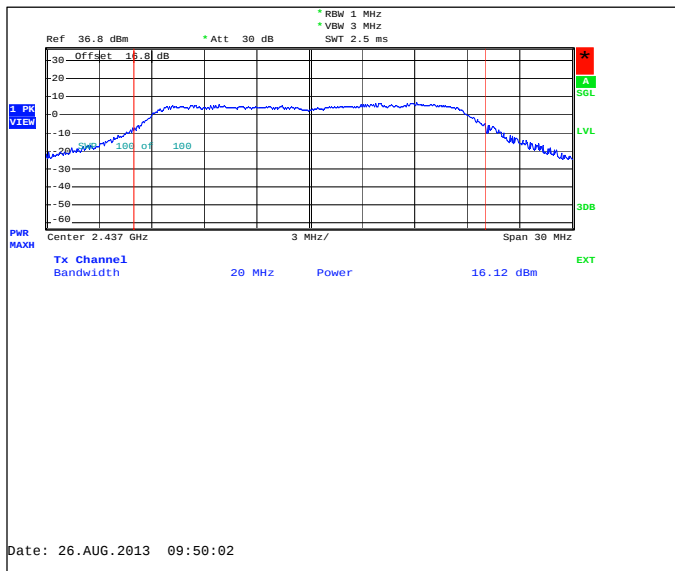
Channel 6 / 2437 MHz



2.5.16 802.11n mode, 16QAM modulation, 26.0 / 28.9 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	16.12	40.926	PASSED

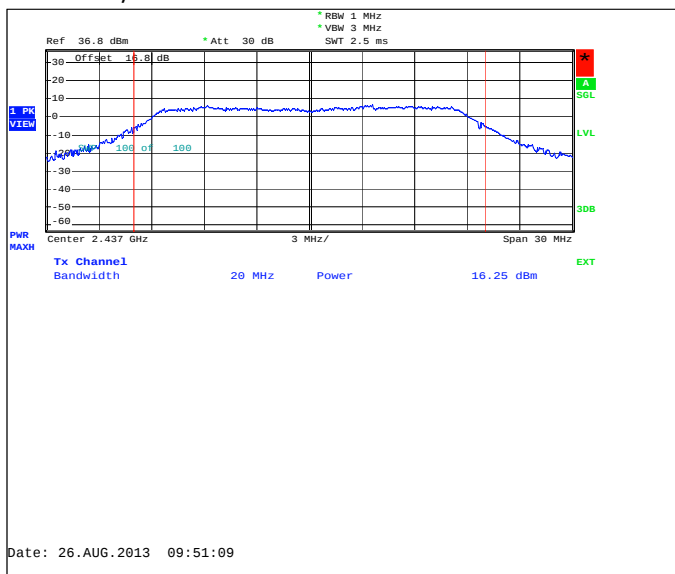
Channel 6 / 2437 MHz



2.5.17 802.11n mode, 16QAM modulation, 39.0 / 43.3 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	16.25	42.17	PASSED

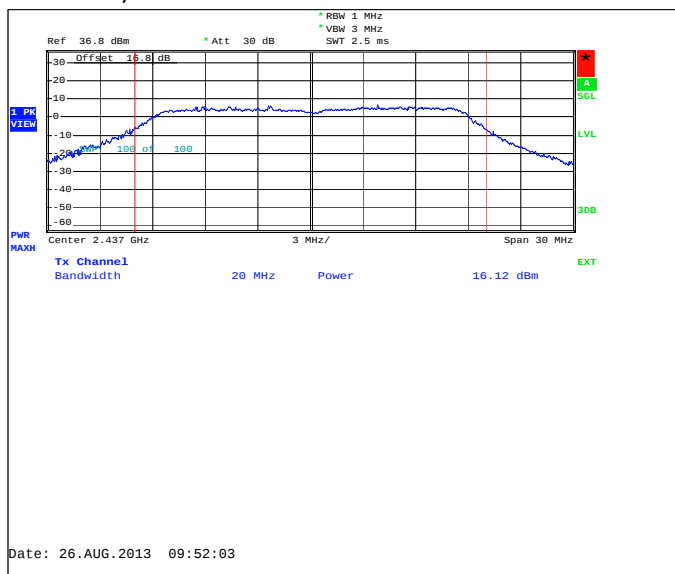
Channel 6 / 2437 MHz



2.5.18 802.11n mode, 64QAM modulation, 52.0 / 57.8 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	16.12	40.926	PASSED

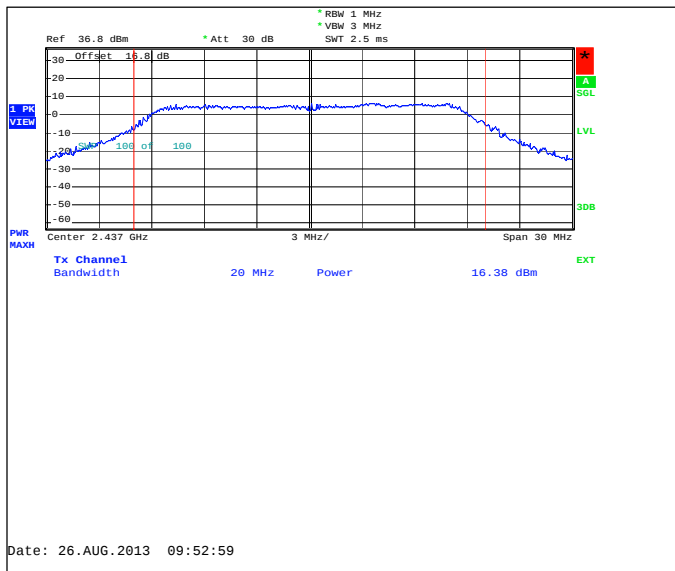
Channel 6 / 2437 MHz



2.5.19 802.11n mode, 64QAM modulation, 58.5 / 65.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	16.38	43.451	PASSED

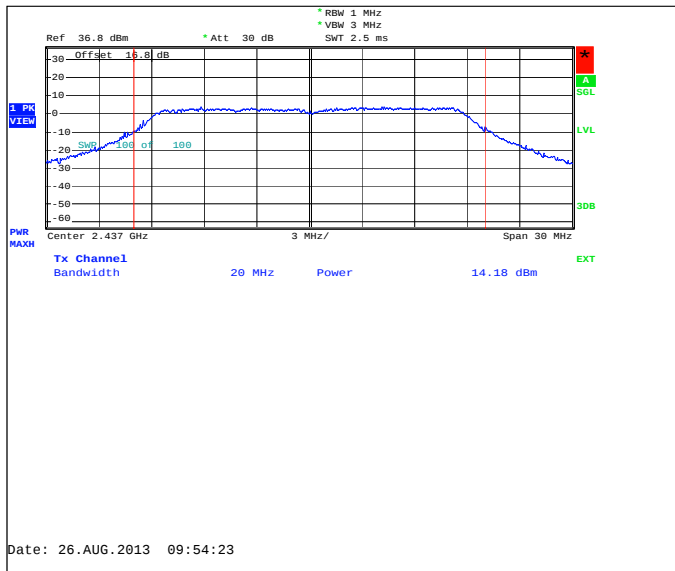
Channel 6 / 2437 MHz



2.5.20 802.11n mode, 64QAM modulation, 65.0 / 72.2 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	14.18	26.182	PASSED

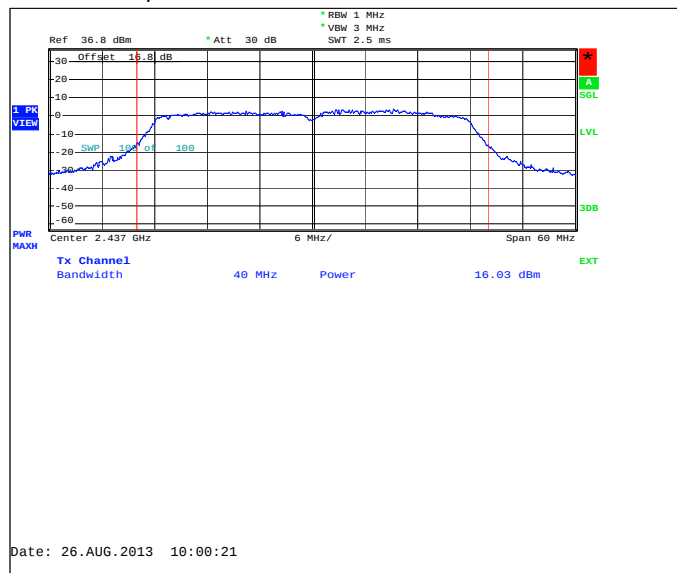
Channel 6 / 2437 MHz



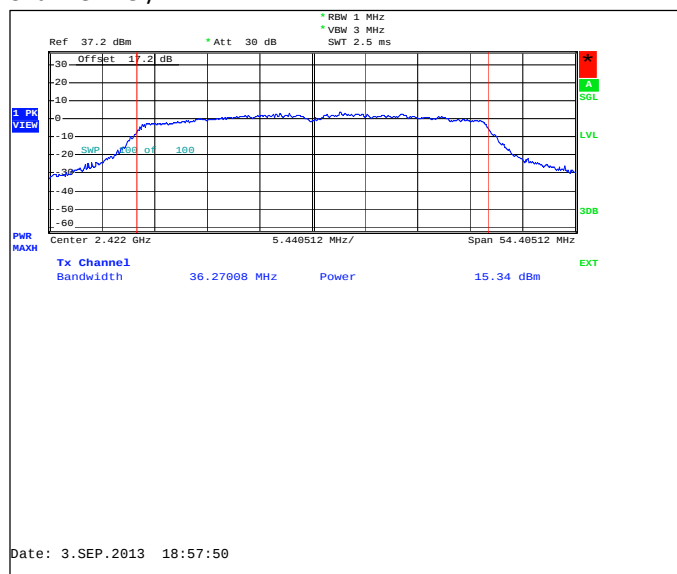
2.5.21 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
1-5 / 2422	15.34	34.198	PASSED
4-8 / 2437	16.57	45.394	PASSED
7-11 / 2452	16.22	41.879	PASSED

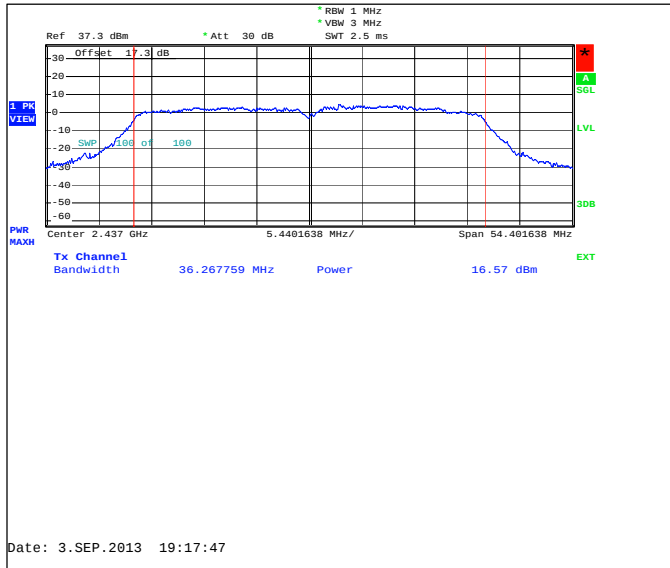
Channel 4-8 / 2437 MHz



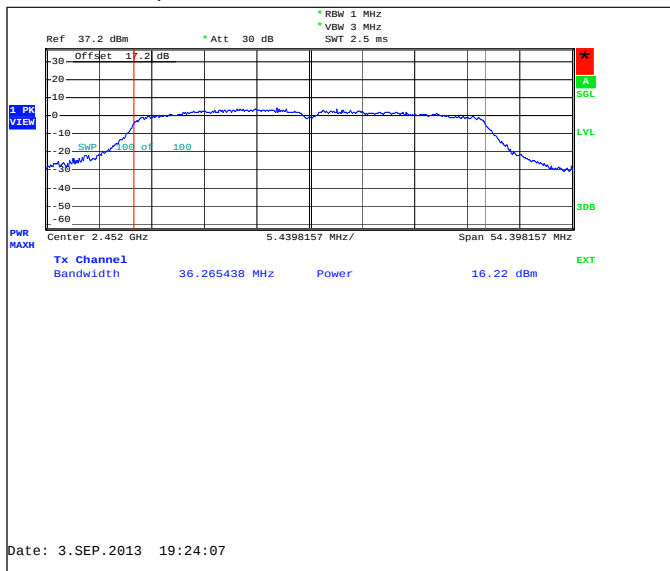
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



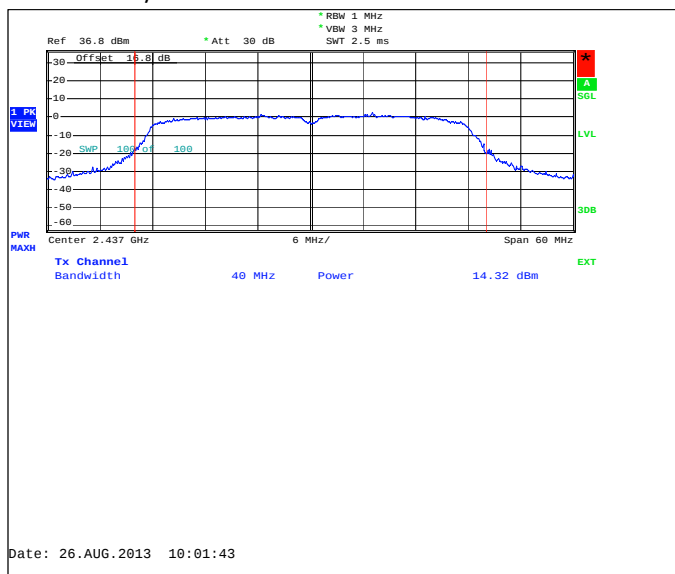
Channel 7-11 / 2452 MHz



2.5.22 802.11n mode, QPSK modulation, 27.0 / 30.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
4-8 / 2437	14.32	27.04	PASSED

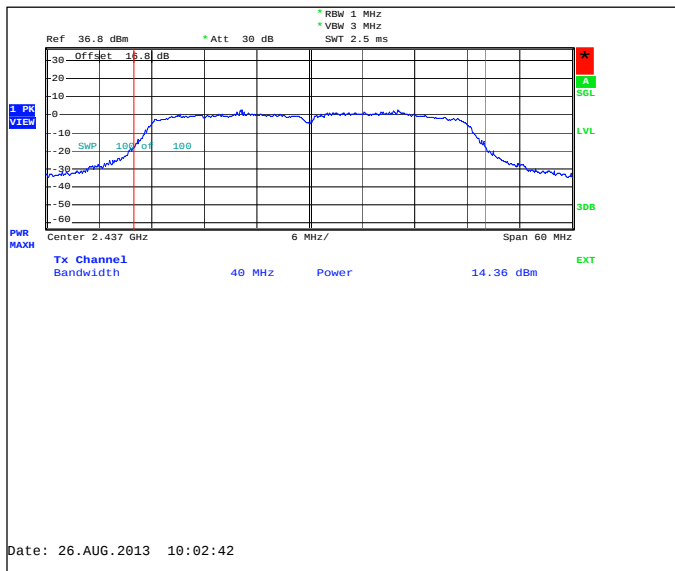
Channel 4-8 / 2437 MHz



2.5.23 802.11n mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
4-8 / 2437	14.36	27.29	PASSED

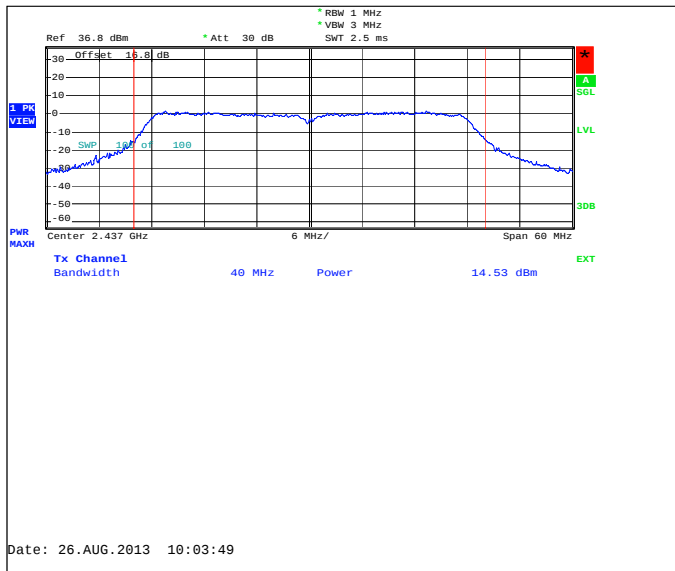
Channel 4-8 / 2437 MHz



2.5.24 802.11n mode, 16QAM modulation, 54.0 / 60.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
4-8 / 2437	14.53	28.379	PASSED

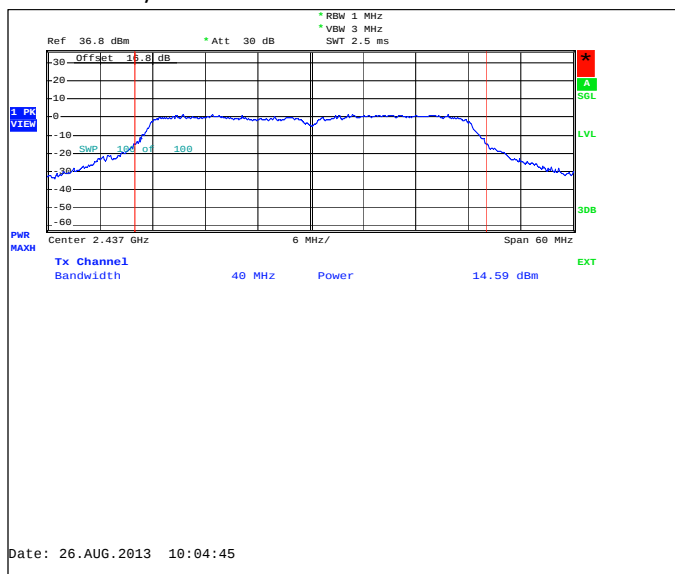
Channel 4-8 / 2437 MHz



2.5.25 802.11n mode, 16QAM modulation, 81.0 / 90.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
4-8 / 2437	14.59	28.774	PASSED

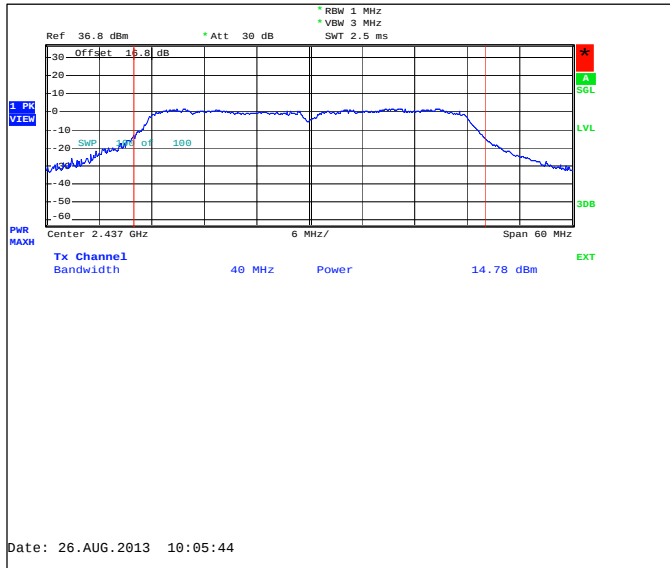
Channel 4-8 / 2437 MHz



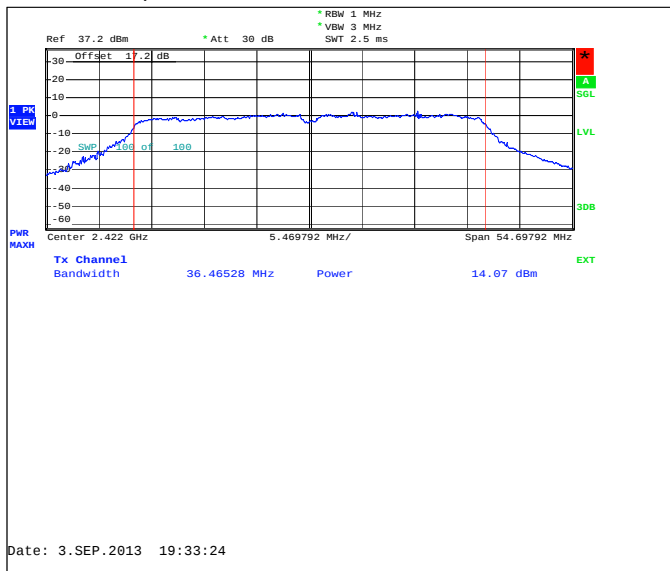
2.5.26 802.11n mode, 64QAM modulation, 108.0 / 120.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
1-5 / 2422	14.07	25.527	PASSED
4-8 / 2437	15.39	34.594	PASSED
7-11 / 2452	15.01	31.696	PASSED

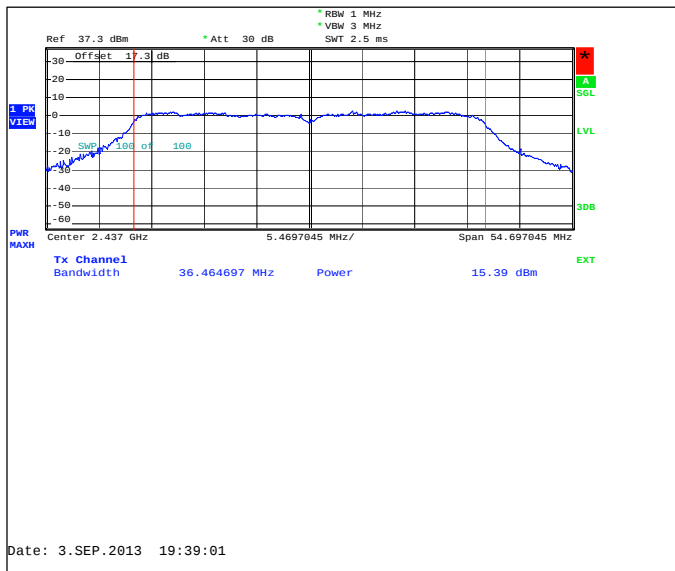
Channel 4-8 / 2437 MHz



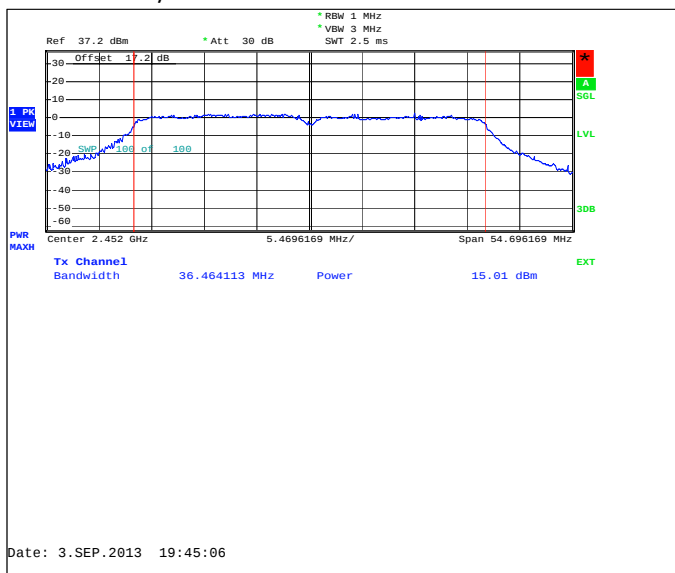
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



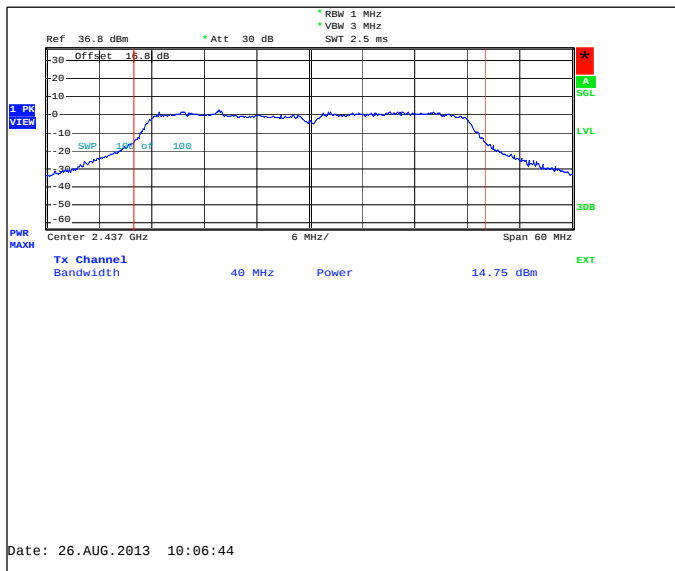
Channel 7-11 / 2452 MHz



2.5.27 802.11n mode, 64QAM modulation, 121.5 / 135.0 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
4-8 / 2437	14.75	29.854	PASSED

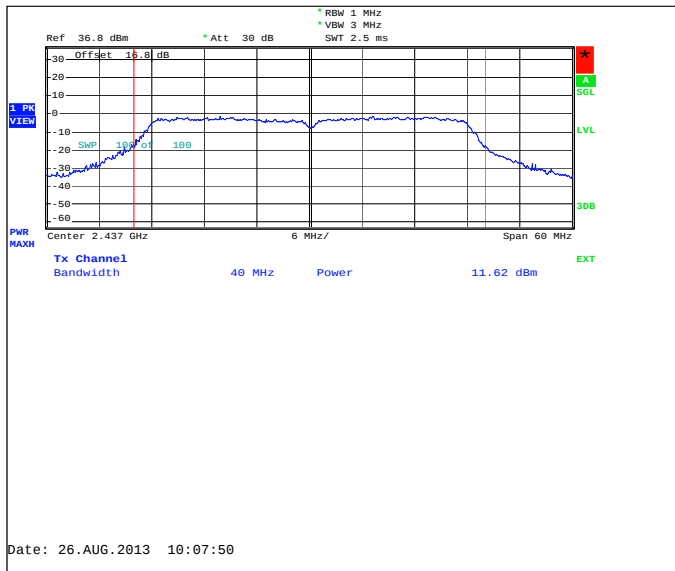
Channel 4-8 / 2437 MHz



2.5.28 802.11n mode, 64QAM modulation, 135.0 / 150.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
4-8 / 2437	11.62	14.521	PASSED

Channel 4-8 / 2437 MHz

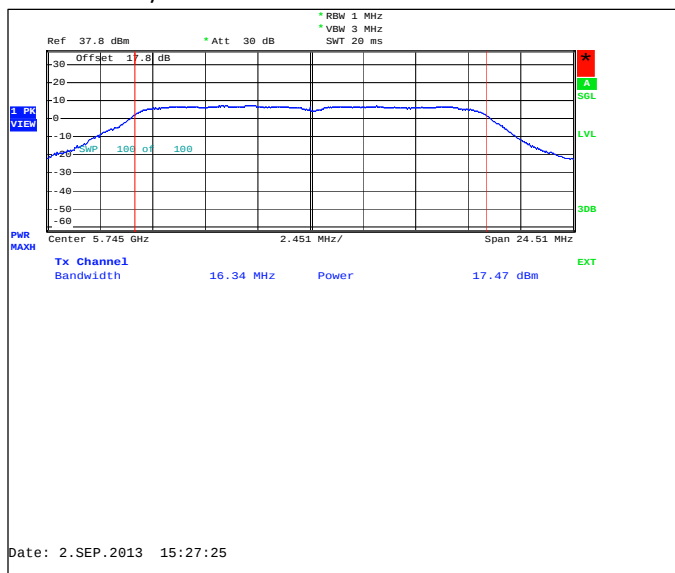


2.6. 5 GHz RLAN Test results

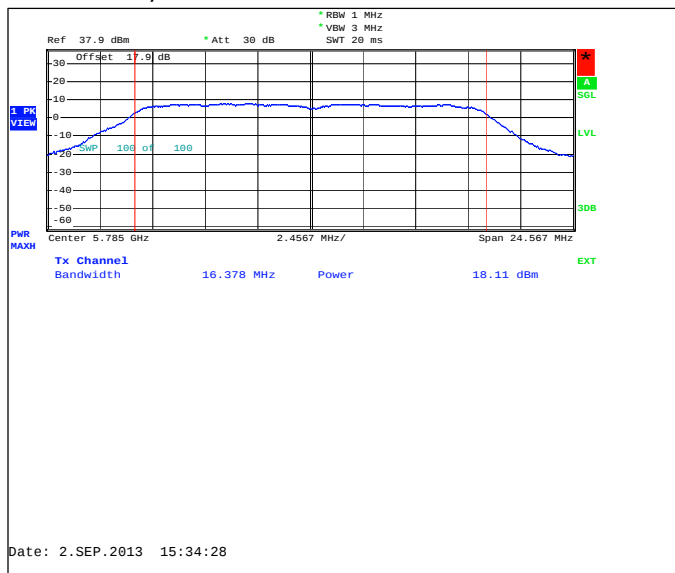
2.6.1 802.11a mode, BPSK modulation, 6 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
149 / 5745	17.47	55.847	PASSED
157 / 5785	18.11	64.714	PASSED
165 / 5825	18	63.096	PASSED

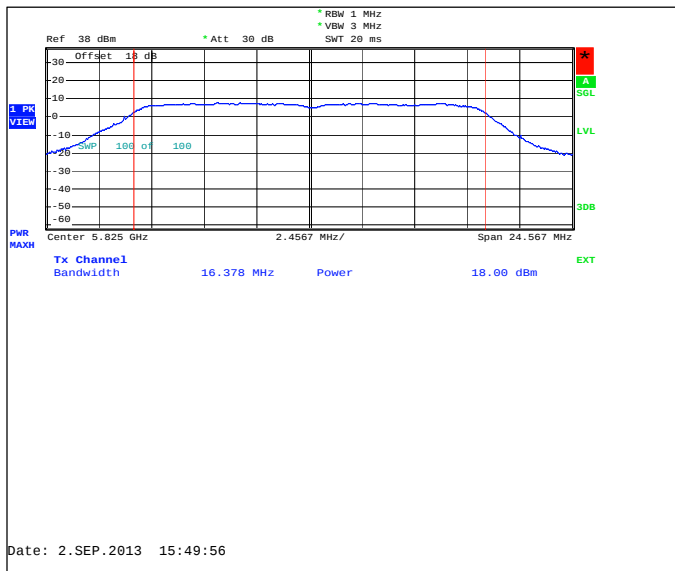
Channel 149 / 5745MHz



Channel 157 / 5785MHz



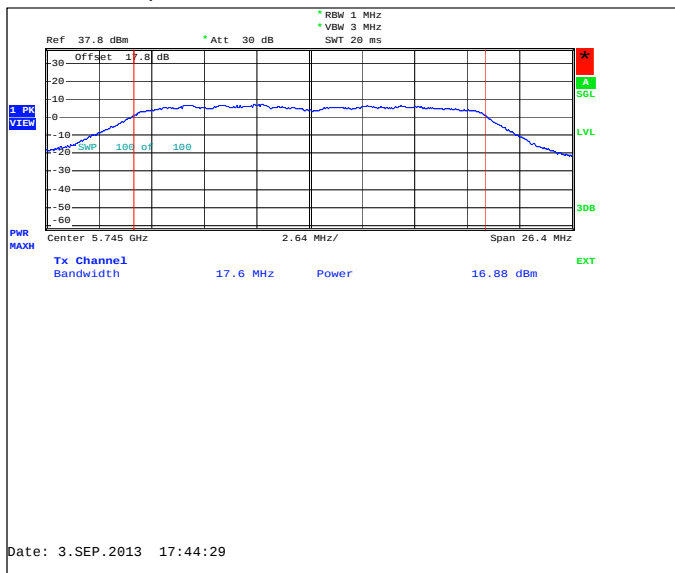
Channel 165 / 5825MHz



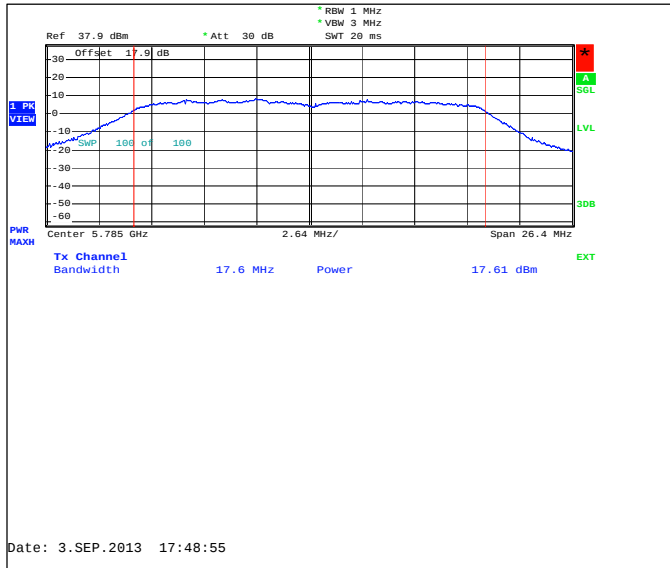
2.6.2 802.11n mode, 64QAM modulation, 52.0 / 57.8 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
149 / 5745	16.88	48.753	PASSED
157 / 5785	17.61	57.677	PASSED
165 / 5825	18.16	65.464	PASSED

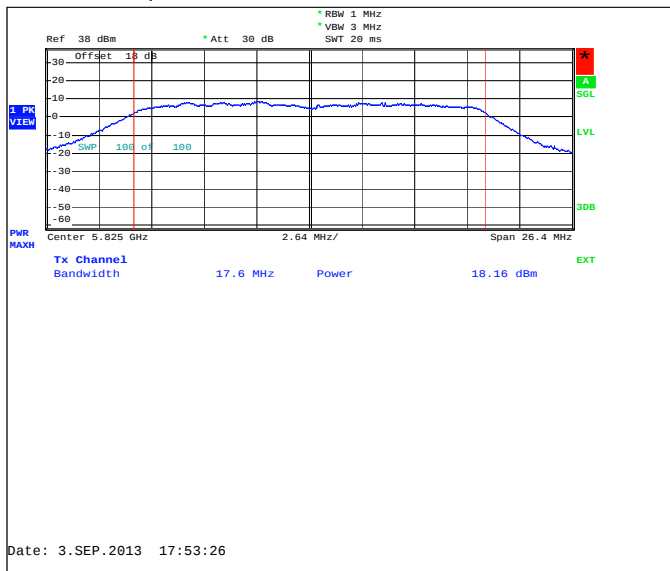
Channel 149 / 5745MHz



Channel 157 / 5785MHz



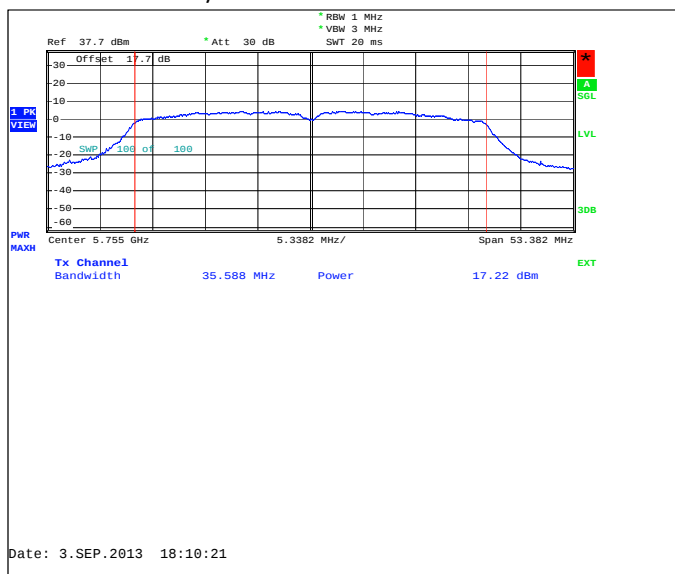
Channel 165 / 5825MHz



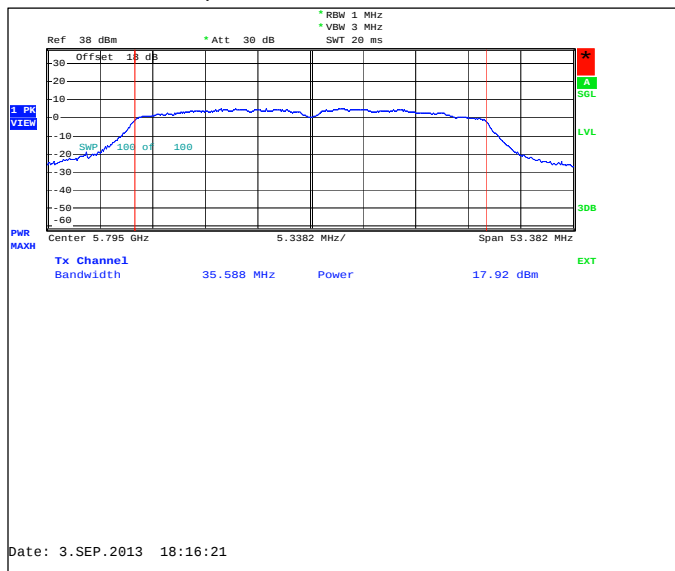
2.6.3 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
149+153 / 5755	17.22	52.723	PASSED
157+161 / 5795	17.92	61.944	PASSED

Channel 149+153 / 5755MHz



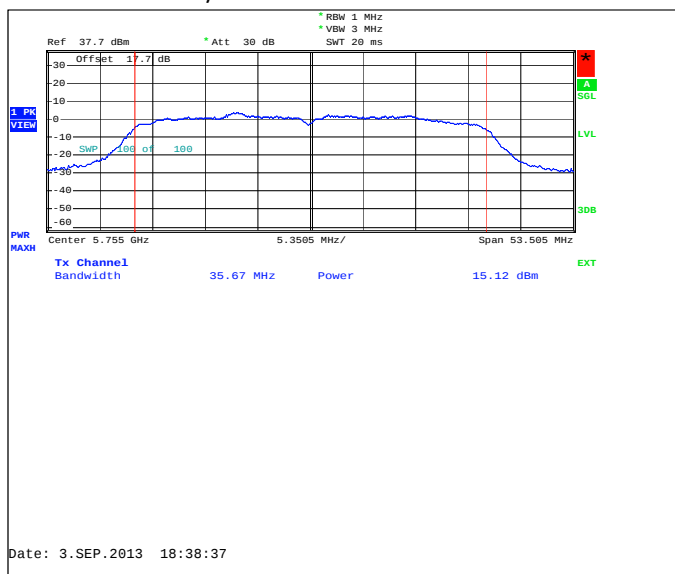
Channel 157+161 / 5795MHz



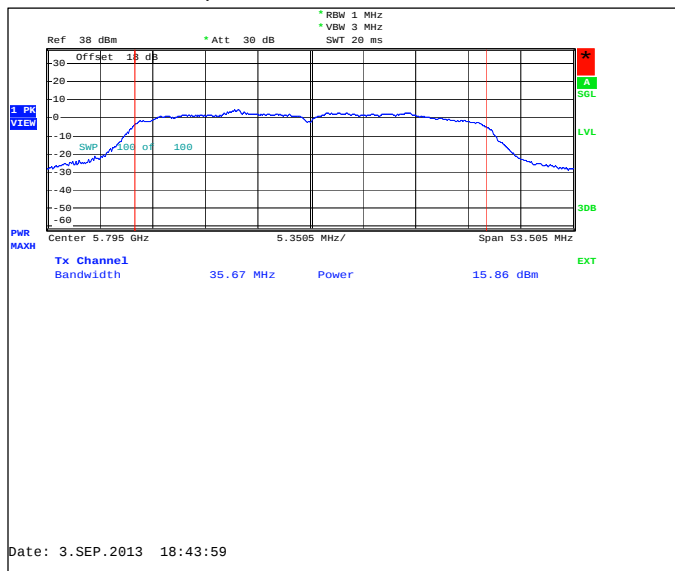
2.6.4 802.11n mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
149+153 / 5755	15.12	32.509	PASSED
157+161 / 5795	15.86	38.548	PASSED

Channel 149+153 / 5755MHz



Channel 157+161 / 5795MHz

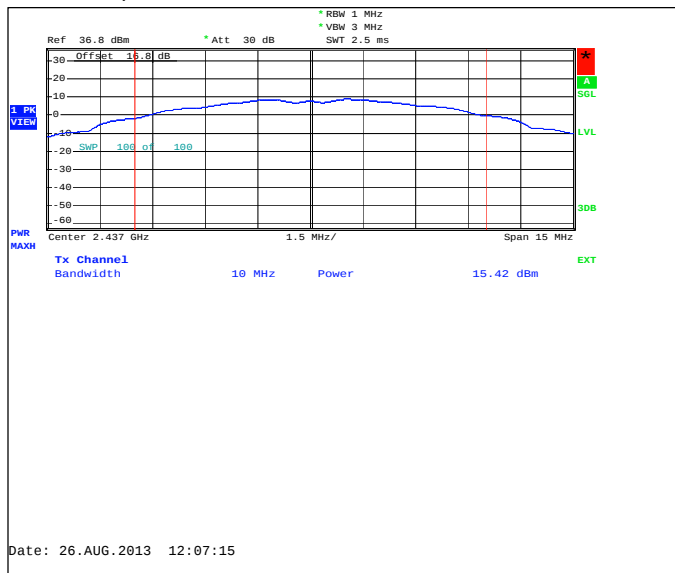


2.7. WLAN Test results aux antenna

2.7.1 802.11b mode, BPSK modulation, 1 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	15.42	34.834	PASSED

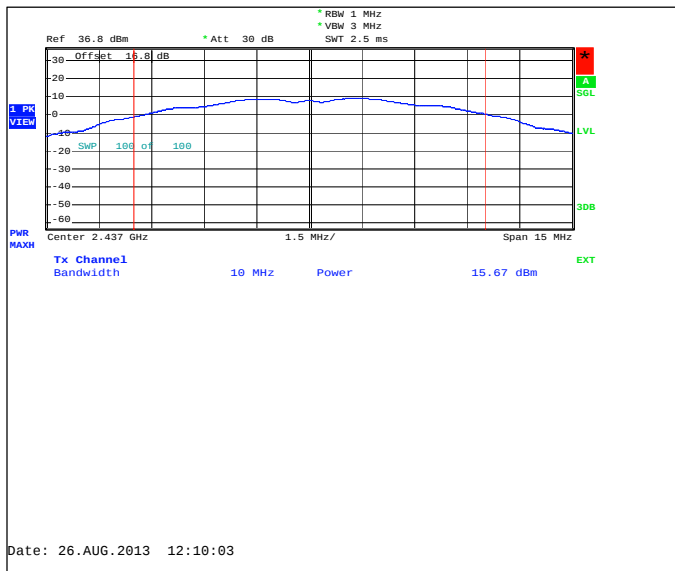
Channel 6 / 2437 MHz



2.7.2 802.11b mode, QPSK modulation, 2 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	15.67	36.898	PASSED

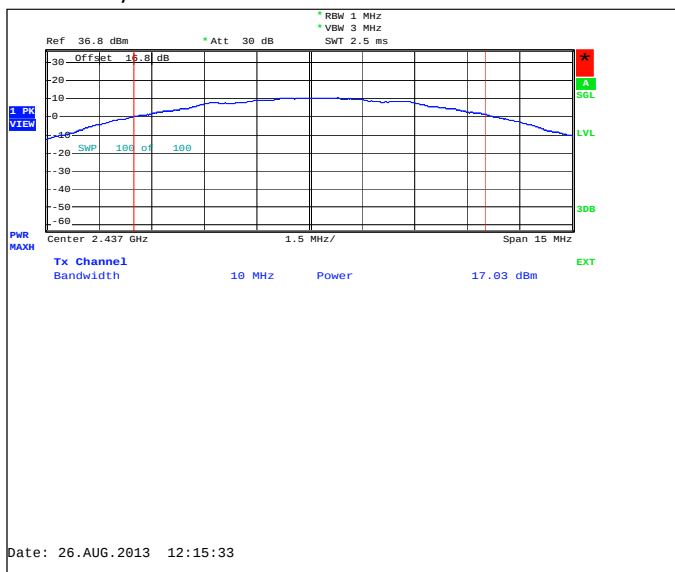
Channel 6 / 2437 MHz



2.7.3 802.11b mode, QPSK modulation, 5.5 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	17.03	50.466	PASSED

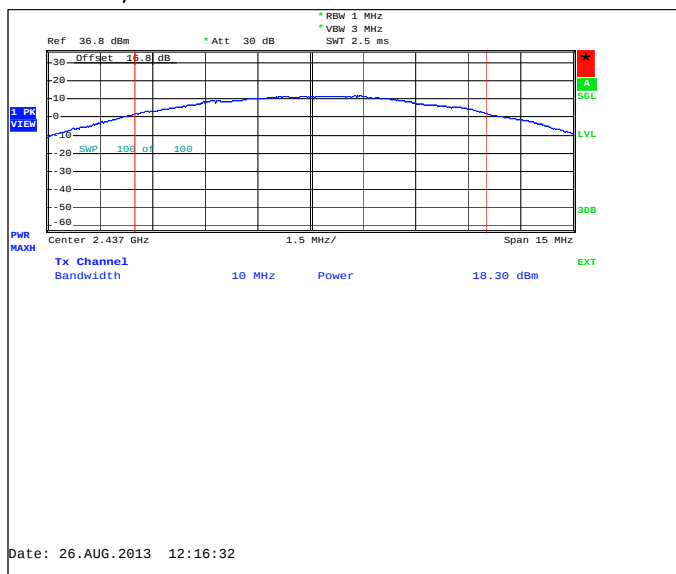
Channel 6 / 2437 MHz



2.7.4 802.11b mode, QPSK modulation, 11 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	18.3	67.608	PASSED

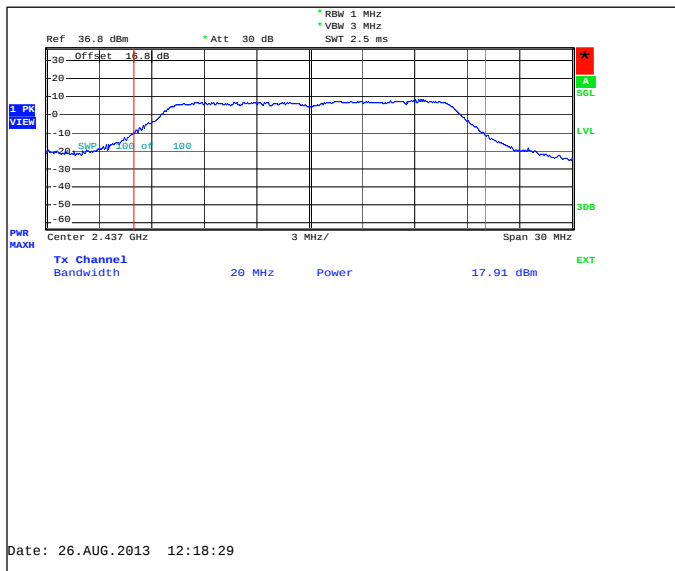
Channel 6 / 2437 MHz



2.7.5 802.11g mode, BPSK modulation, 6 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	17.91	61.802	PASSED

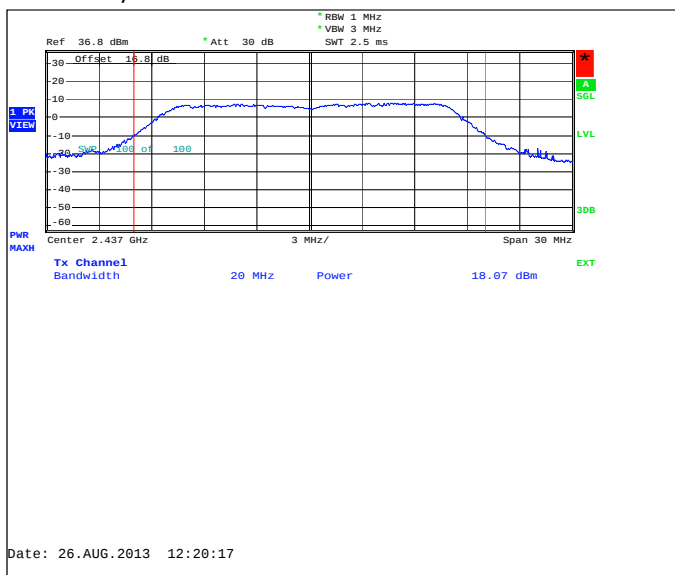
Channel 6 / 2437 MHz



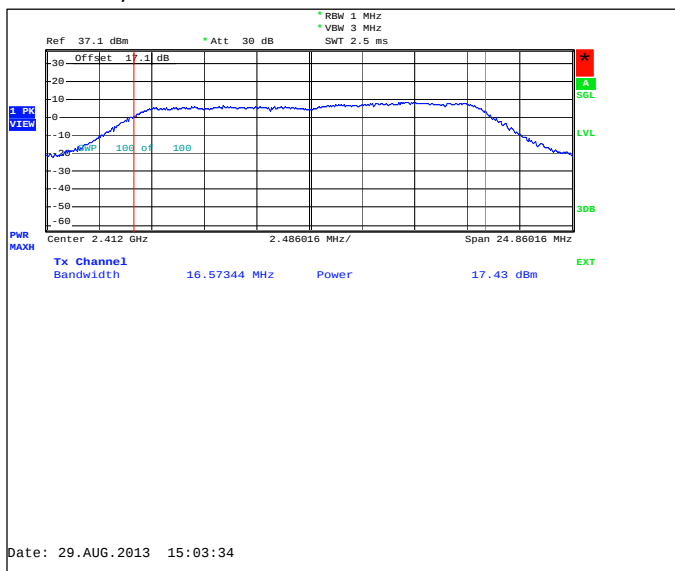
2.7.6 802.11g mode, BPSK modulation, 9 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	18.07	64.121	PASSED
1 / 2412	17.43	55.335	PASSED
11 / 2462	16.66	46.345	PASSED

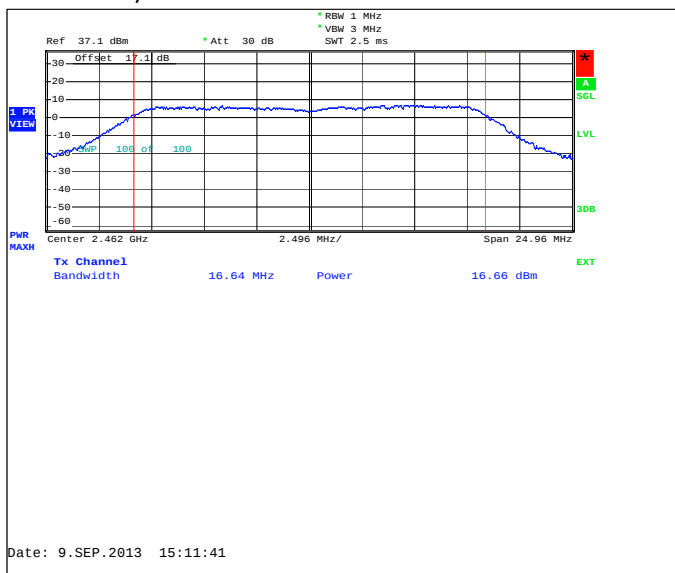
Channel 6 / 2437 MHz



Channel 1 / 2412 MHz



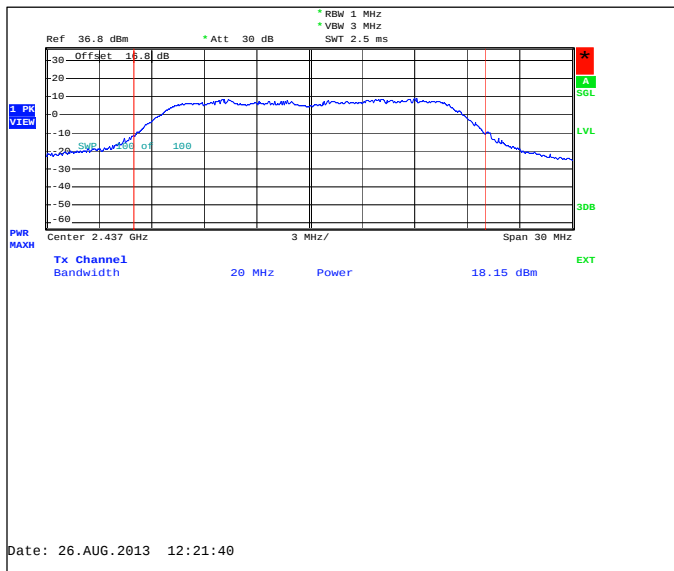
Channel 11 / 2462 MHz



2.7.7 802.11g mode, QPSK modulation, 12 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	18.15	65.313	PASSED

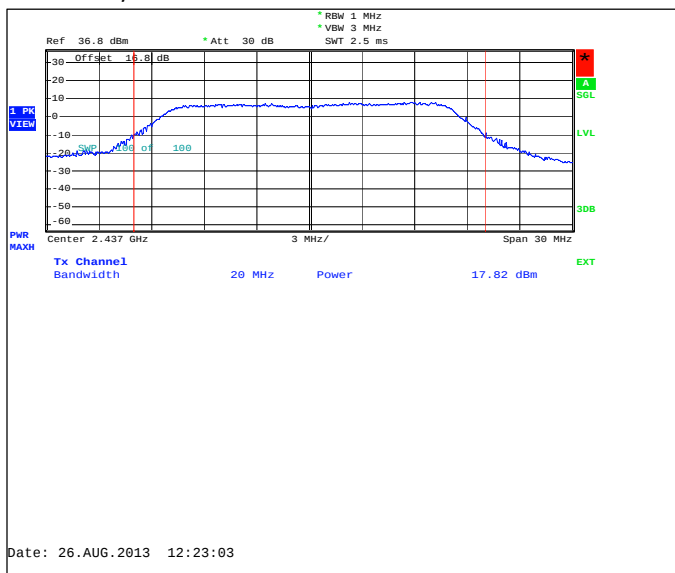
Channel 6 / 2437 MHz



2.7.8 802.11g mode, QPSK modulation, 18 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	17.82	60.534	PASSED

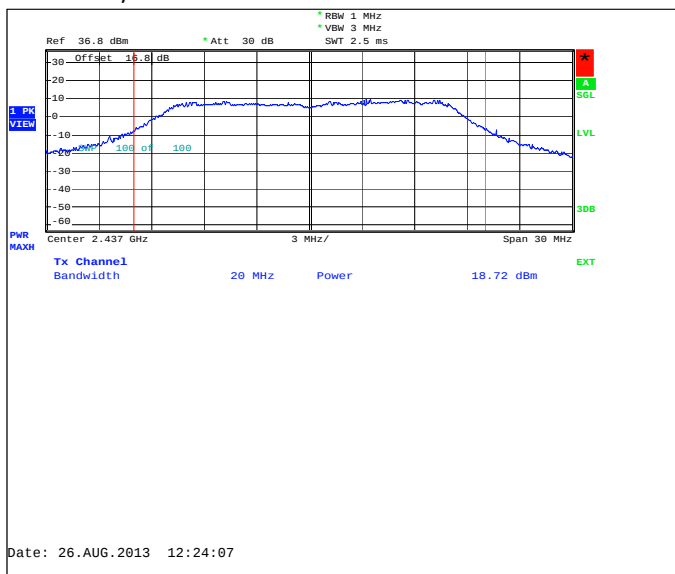
Channel 6 / 2437 MHz



2.7.9 802.11g mode, 16QAM modulation, 24 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	18.72	74.473	PASSED

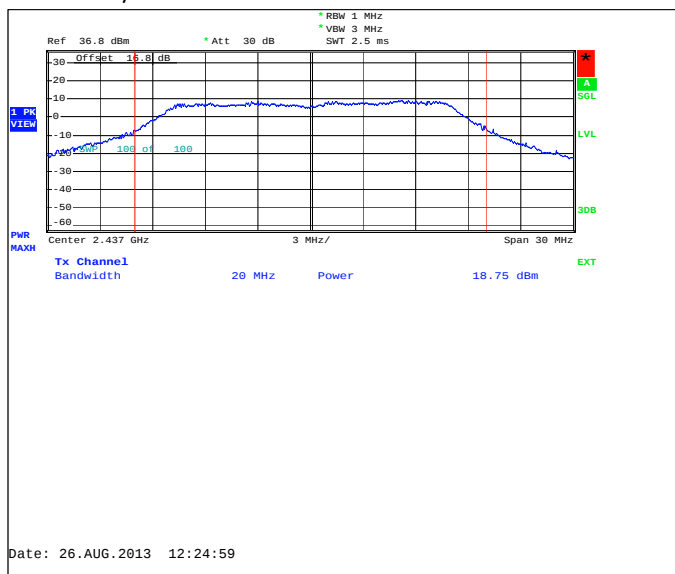
Channel 6 / 2437 MHz



2.7.10 802.11g mode, 16QAM modulation, 36 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	18.75	74.989	PASSED

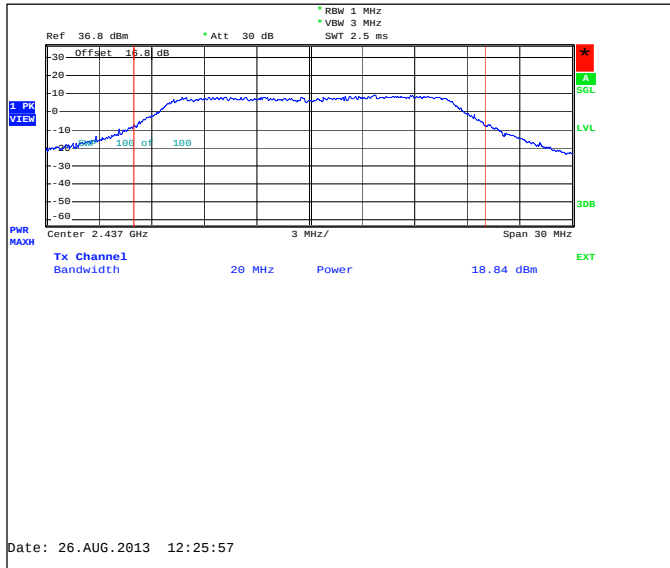
Channel 6 / 2437 MHz



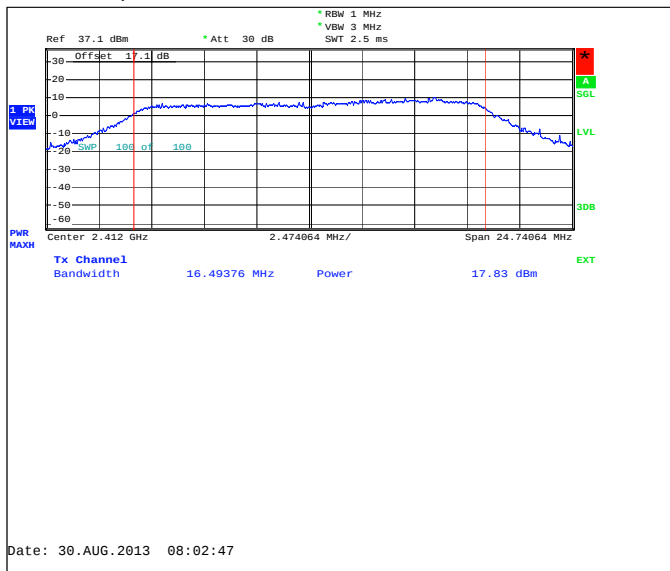
2.7.11 802.11g mode, 64QAM modulation, 48 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	18.84	76.56	PASSED
1 / 2412	17.83	60.674	PASSED
11 / 2462	17.28	53.456	PASSED

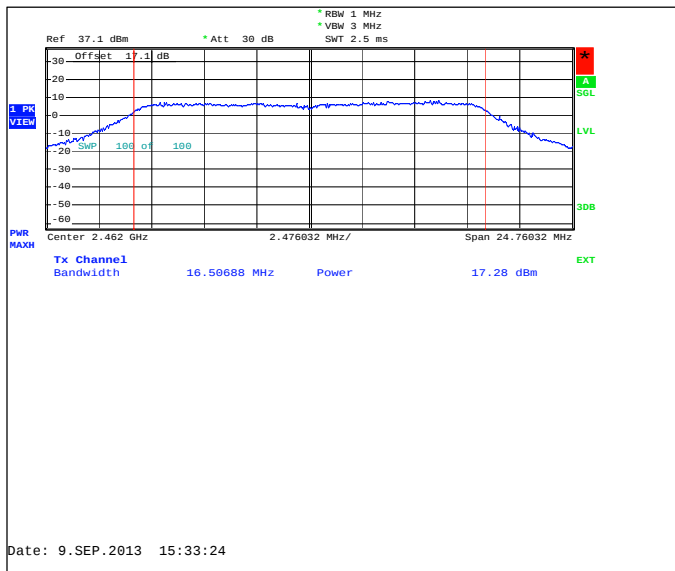
Channel 6 / 2437 MHz



Channel 1 / 2412 MHz



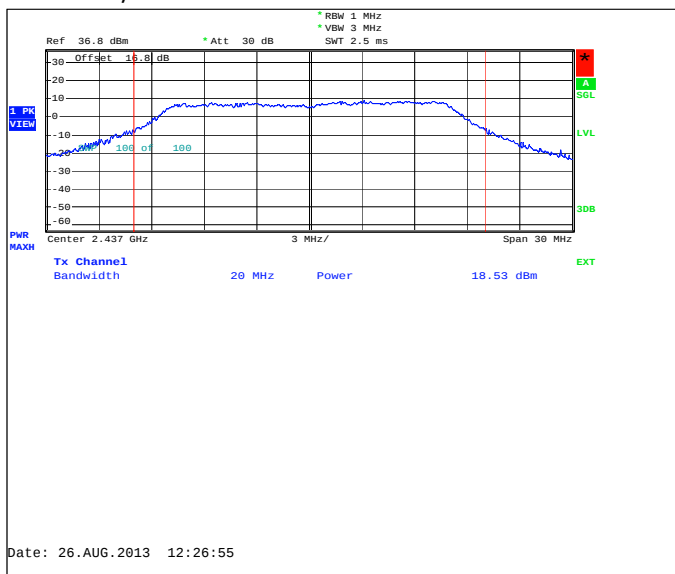
Channel 11 / 2462 MHz



2.7.12 802.11g mode, 64QAM modulation, 54 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	18.53	71.285	PASSED

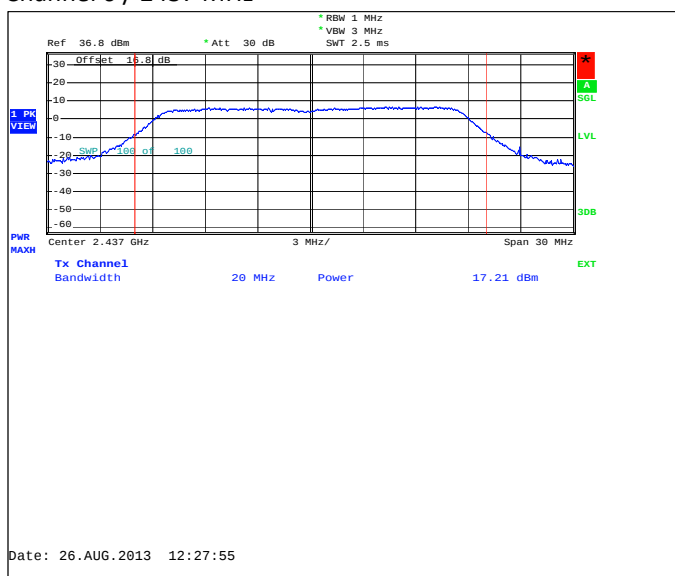
Channel 6 / 2437 MHz



2.7.13 802.11n mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	17.21	52.602	PASSED

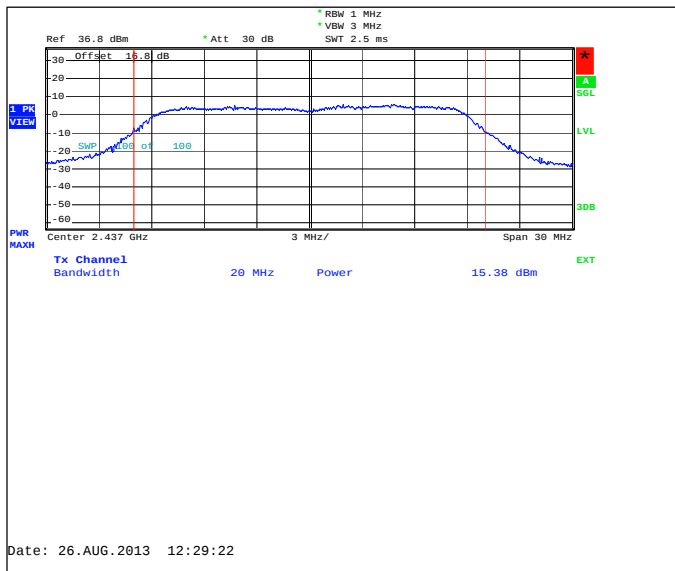
Channel 6 / 2437 MHz



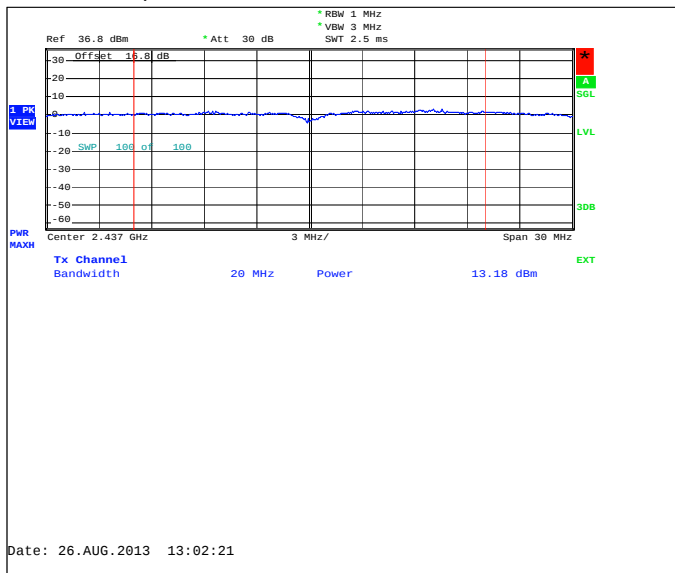
2.7.14 802.11n mode, QPSK modulation, 13.0 / 14.4 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	15.38	34.514	PASSED
4-8 / 2437	13.18	20.797	PASSED

Channel 6 / 2437 MHz



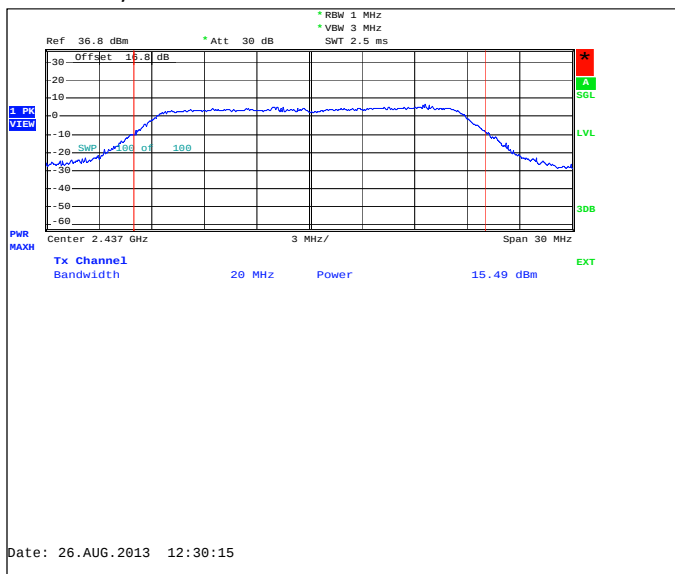
Channel 4-8 / 2437 MHz



2.7.15 802.11n mode, QPSK modulation, 19.5 / 21.7 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	15.49	35.4	PASSED

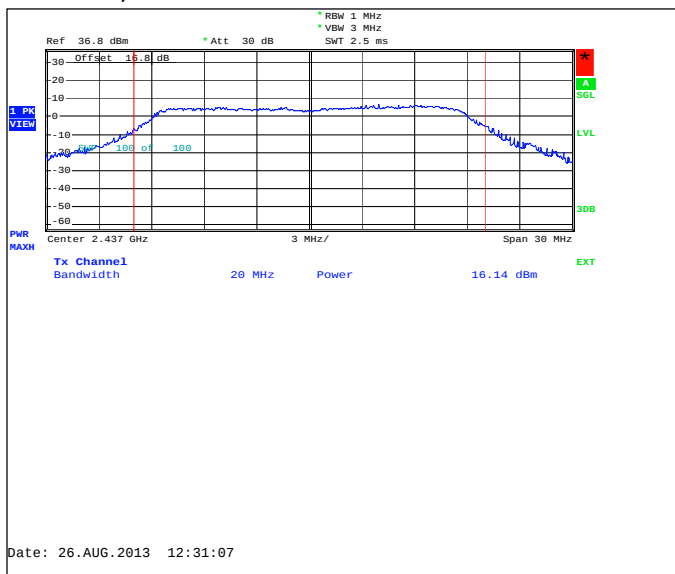
Channel 6 / 2437 MHz



2.7.16 802.11n mode, 16QAM modulation, 26.0 / 28.9 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	16.14	41.115	PASSED

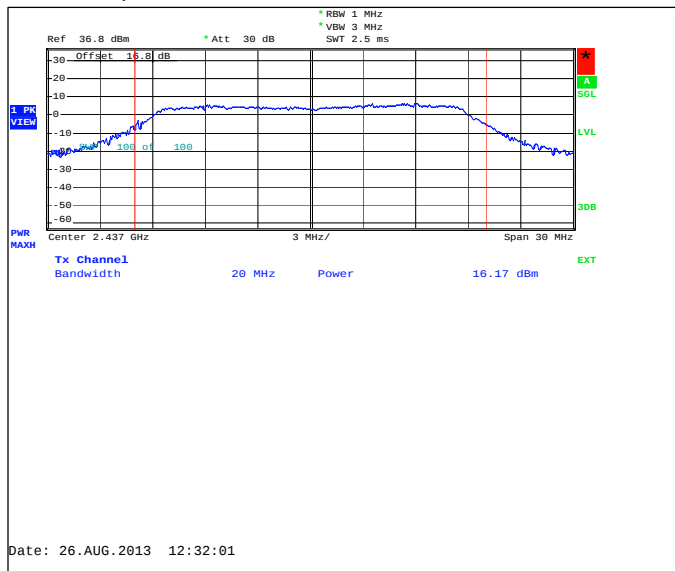
Channel 6 / 2437 MHz



2.7.17 802.11n mode, 16QAM modulation, 39.0 / 43.3 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	16.17	41.4	PASSED

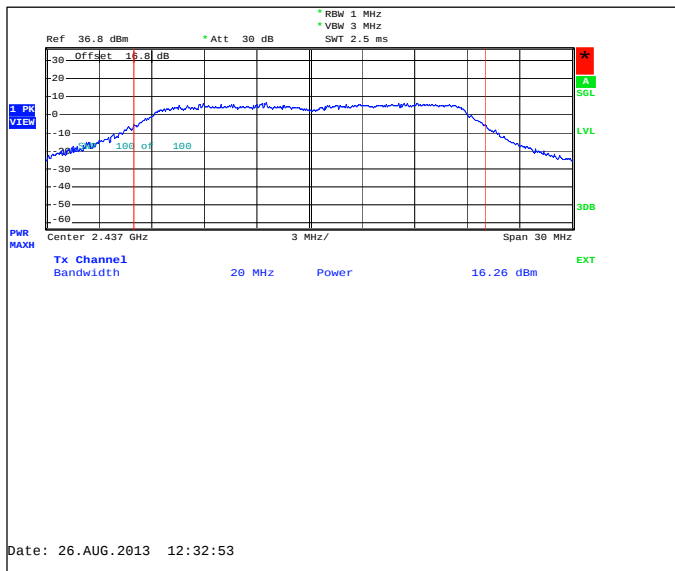
Channel 6 / 2437 MHz



2.7.18 802.11n mode, 64QAM modulation, 52.0 / 57.8 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	16.26	42.267	PASSED

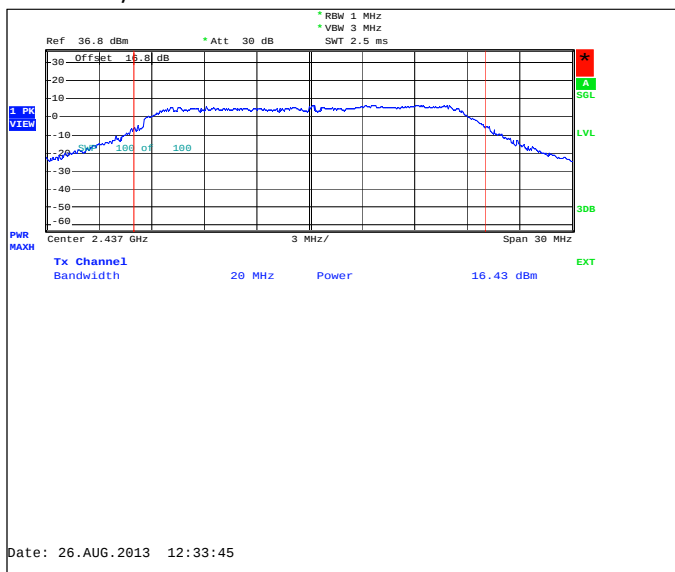
Channel 6 / 2437 MHz



2.7.19 802.11n mode, 64QAM modulation, 58.5 / 65.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	16.43	43.954	PASSED

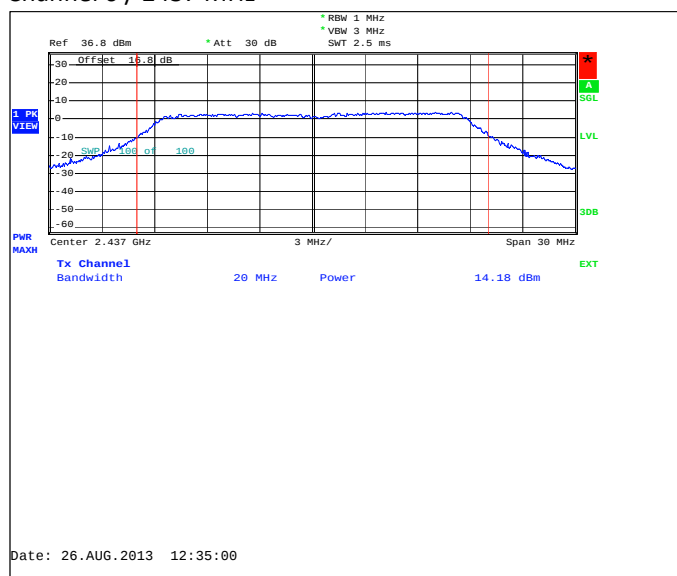
Channel 6 / 2437 MHz



2.7.20 802.11n mode, 64QAM modulation, 65.0 / 72.2 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
6 / 2437	14.18	26.182	PASSED

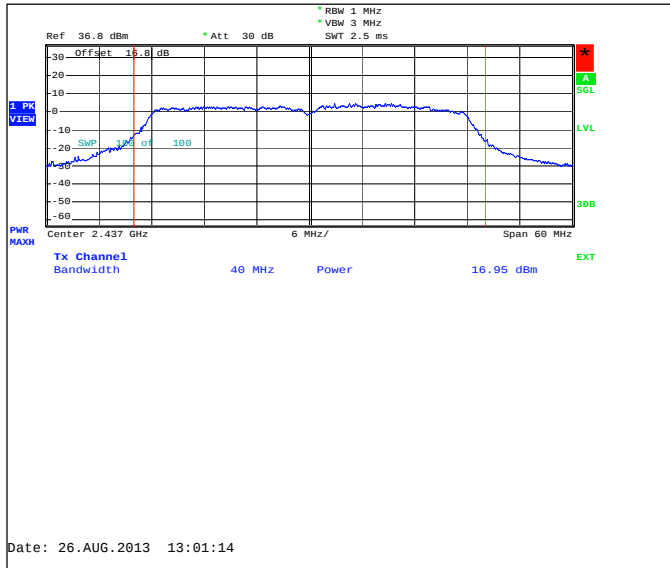
Channel 6 / 2437 MHz



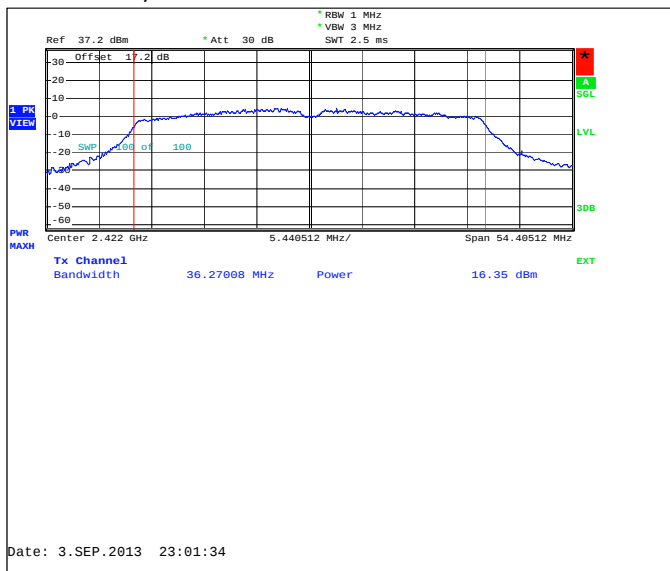
2.7.21 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
1-5 / 2422	16.35	43.152	PASSED
4-8 / 2437	17.23	52.845	PASSED
7-11 / 2452	16.98	49.888	PASSED

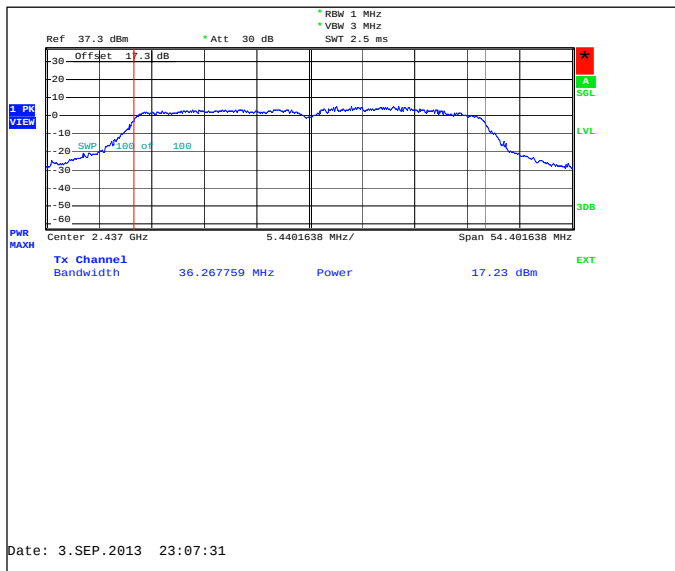
Channel 4-8 / 2437 MHz



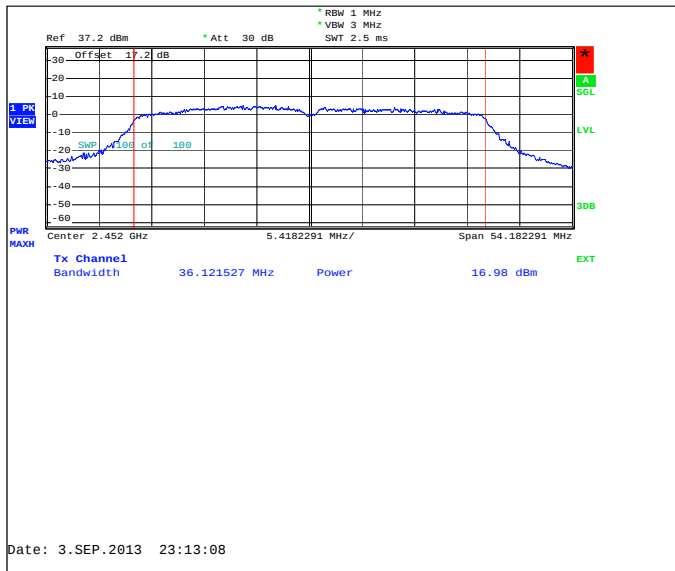
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



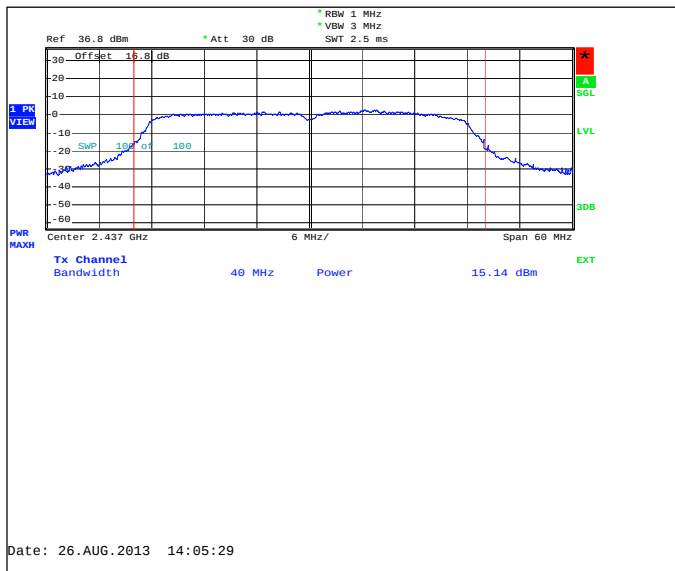
Channel 7-11 / 2452 MHz



2.7.22 802.11n mode, QPSK modulation, 27.0 / 30.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
4-8 / 2437	15.14	32.659	PASSED

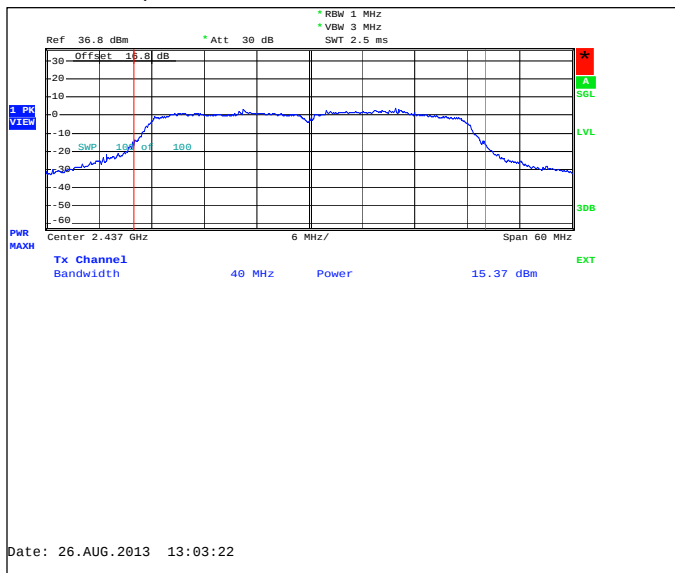
Channel 4-8 / 2437 MHz



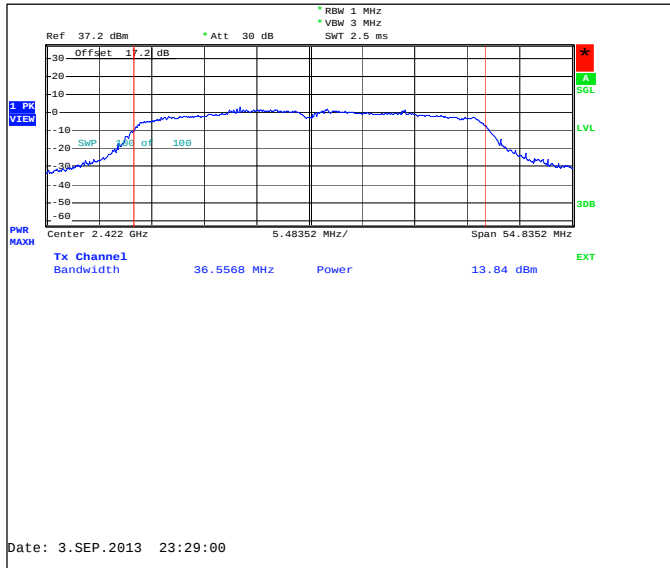
2.7.23 802.11n mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
4-8 / 2437	15.37	34.435	PASSED
1-5 / 2422	13.84	24.21	PASSED
4-8 / 2437	15.43	34.914	PASSED
7-11 / 2452	15.39	34.594	PASSED

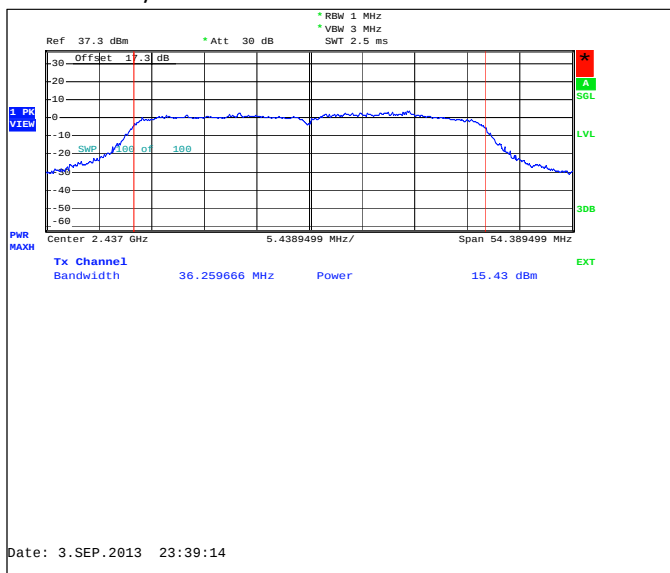
Channel 4-8 / 2437 MHz



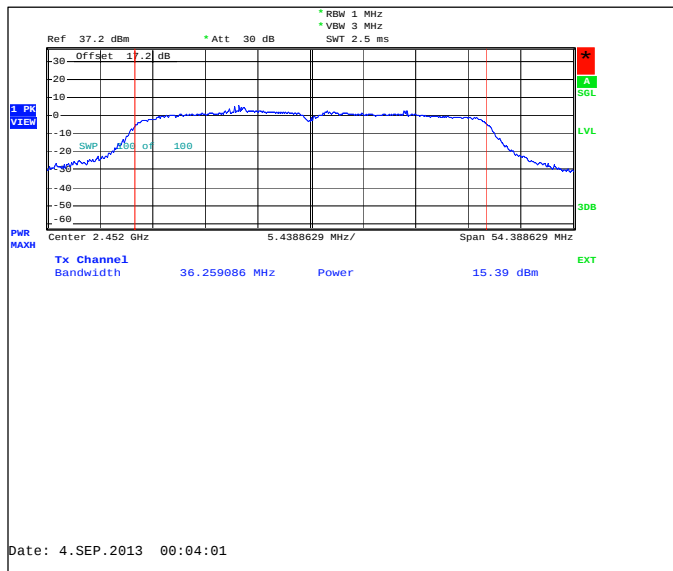
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



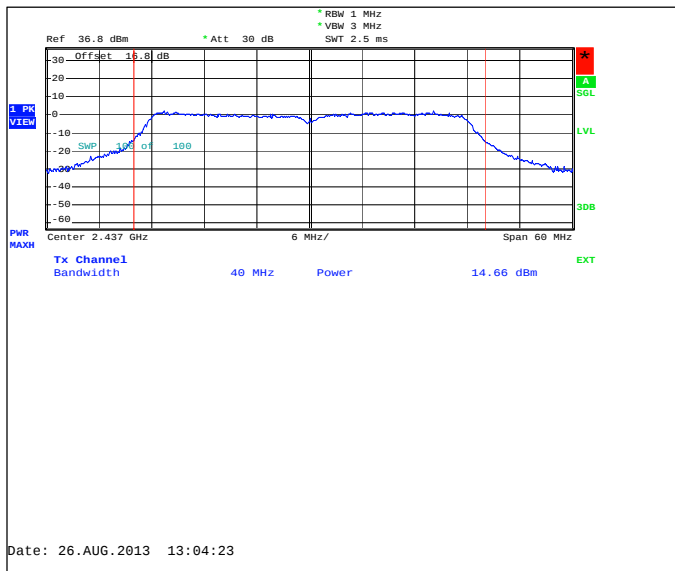
Channel 7-11 / 2452 MHz



2.7.24 802.11n mode, 16QAM modulation, 54.0 / 60.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
4-8 / 2437	14.66	29.242	PASSED

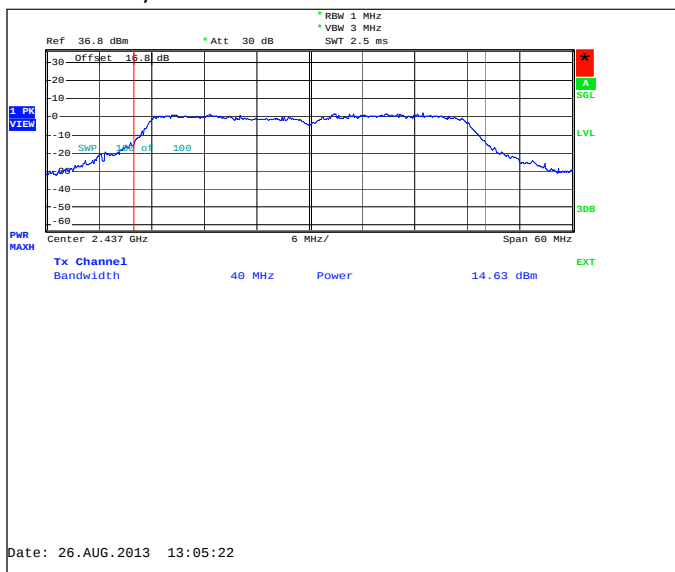
Channel 4-8 / 2437 MHz



2.7.25 802.11n mode, 16QAM modulation, 81.0 / 90.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
4-8 / 2437	14.63	29.04	PASSED

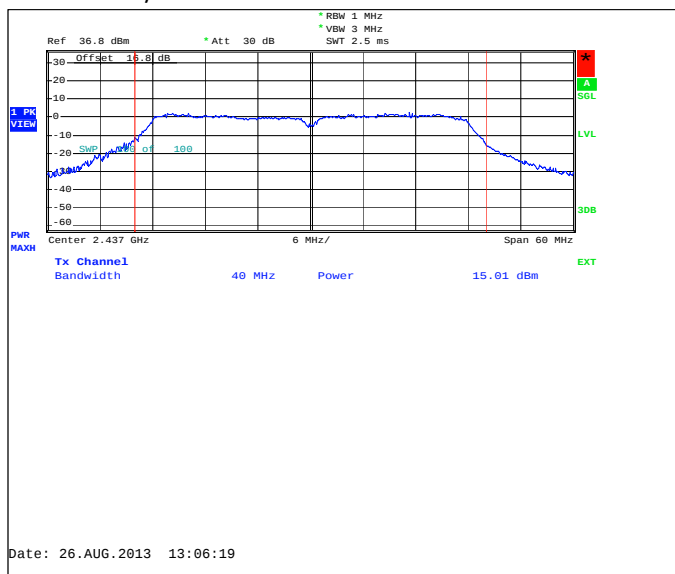
Channel 4-8 / 2437 MHz



2.7.26 802.11n mode, 64QAM modulation, 108.0 / 120.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
4-8 / 2437	15.01	31.696	PASSED

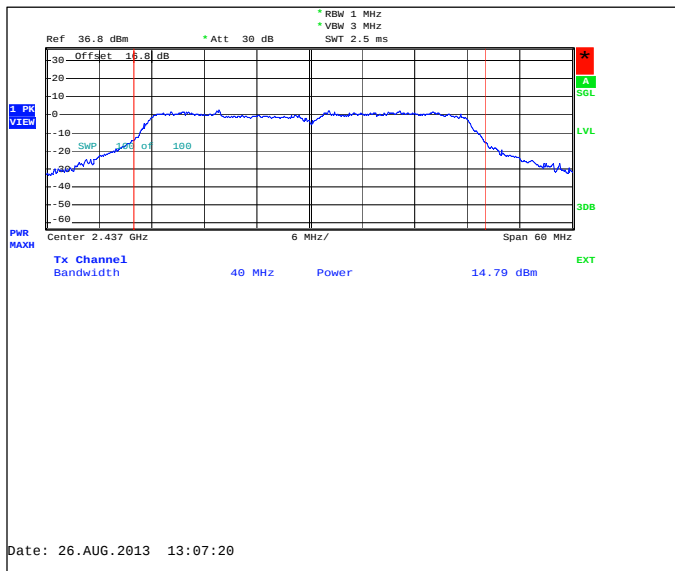
Channel 4-8 / 2437 MHz



2.7.27 802.11n mode, 64QAM modulation, 121.5 / 135.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
4-8 / 2437	14.79	30.13	PASSED

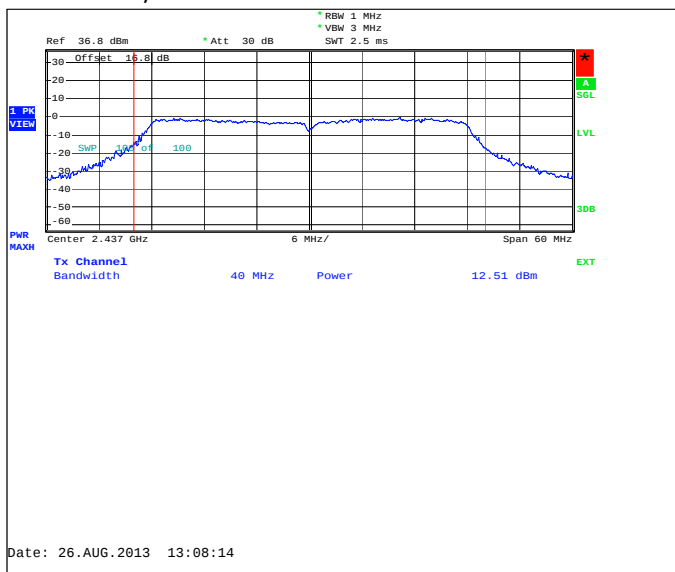
Channel 4-8 / 2437 MHz



2.7.28 802.11n mode, 64QAM modulation, 135.0 / 150.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
4-8 / 2437	12.51	17.824	PASSED

Channel 4-8 / 2437 MHz

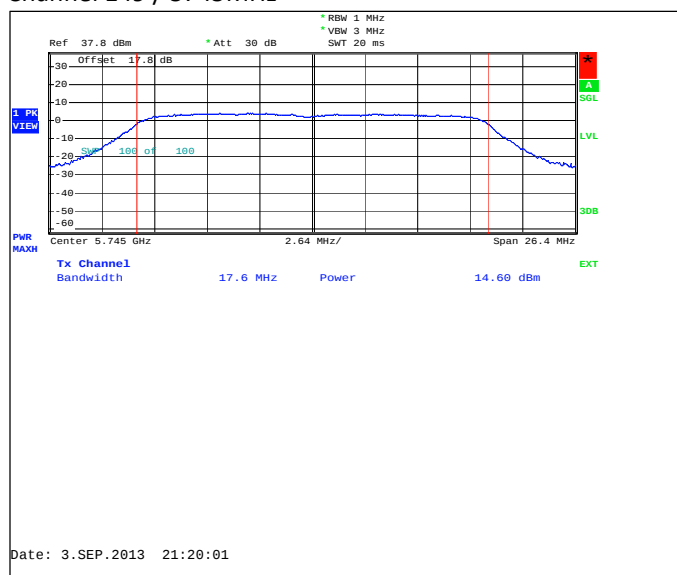


2.8. 5 GHz RLAN Test results

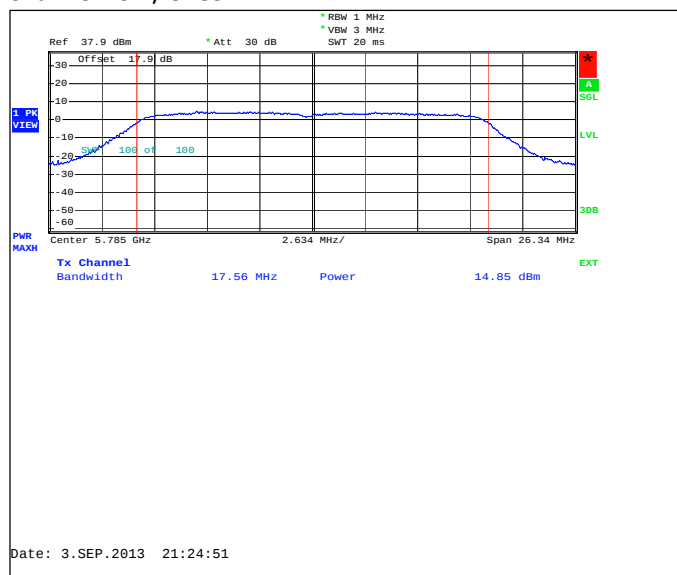
2.8.1 802.11n mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
149 / 5745	14.6	28.84	PASSED
157 / 5785	14.85	30.549	PASSED
165 / 5825	14.74	29.785	PASSED

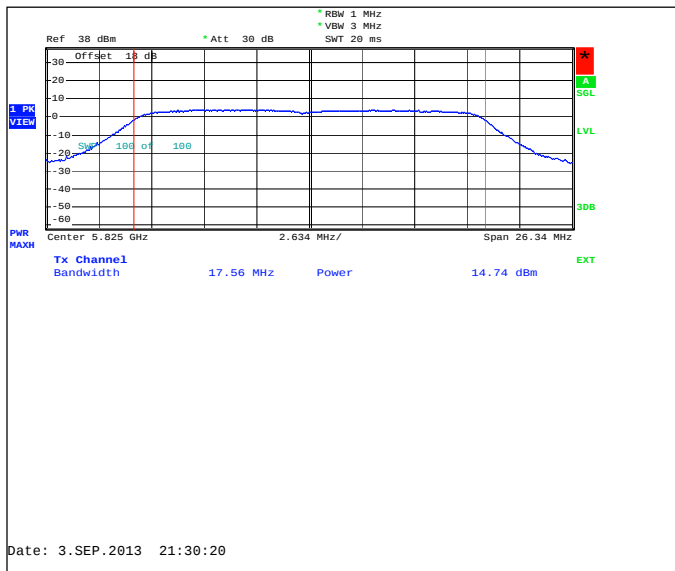
Channel 149 / 5745MHz



Channel 157 / 5785MHz



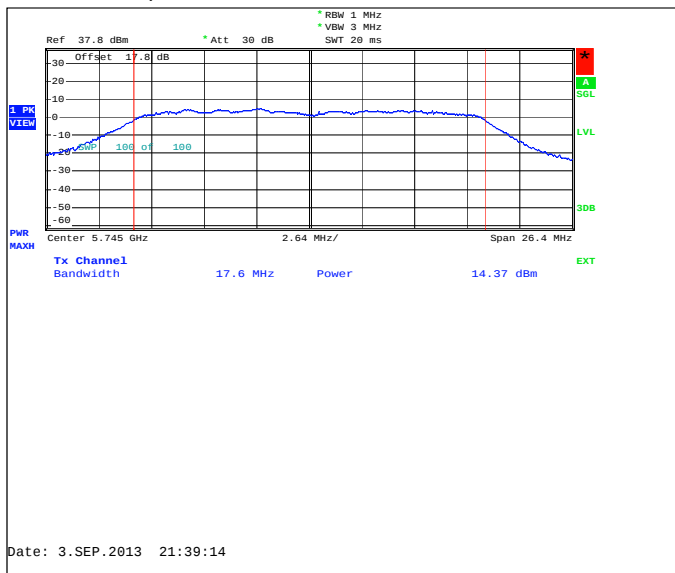
Channel 165 / 5825MHz



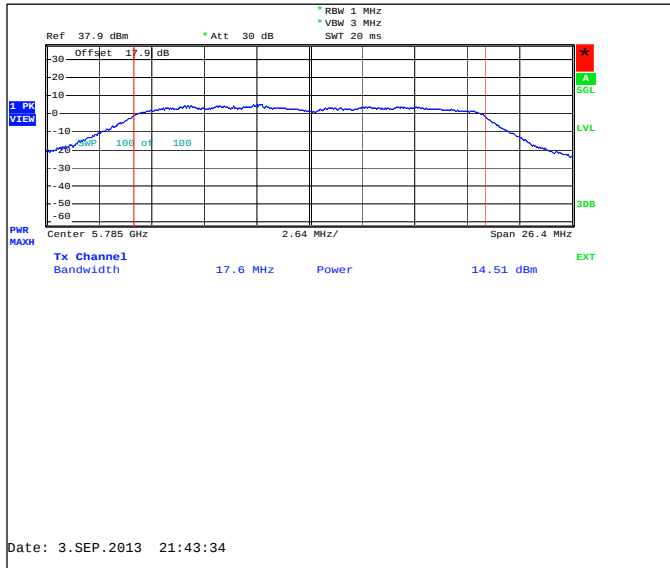
2.8.2 802.11n mode, 64QAM modulation, 52.0 / 57.8 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
149 / 5745	14.37	27.353	PASSED
157 / 5785	14.51	28.249	PASSED
165 / 5825	15	31.623	PASSED

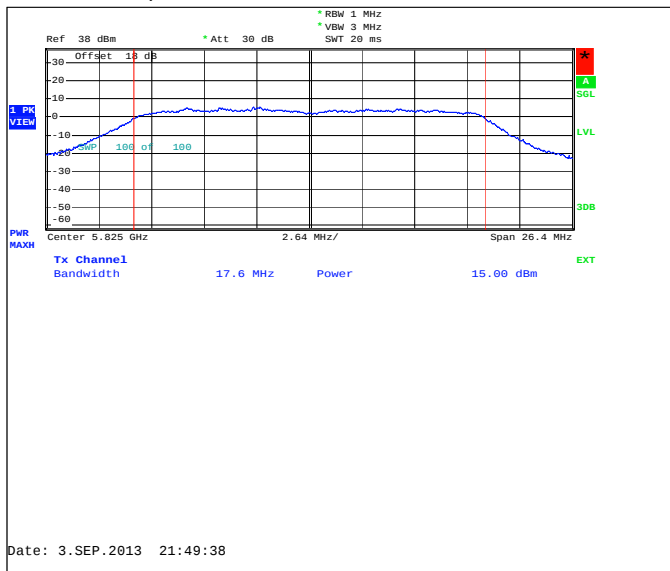
Channel 149 / 5745MHz



Channel 157 / 5785MHz



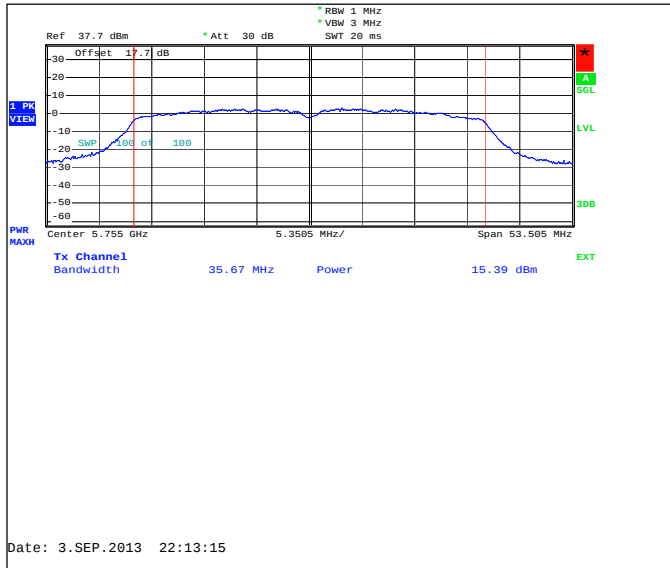
Channel 165 / 5825MHz



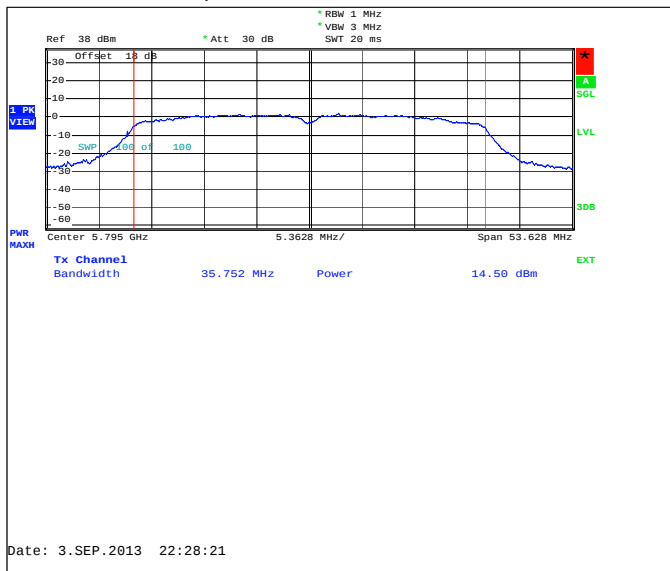
2.8.3 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
149+153 / 5755	15.39	34.594	PASSED
157+161 / 5795	14.5	28.184	PASSED

Channel 149+153 / 5755MHz



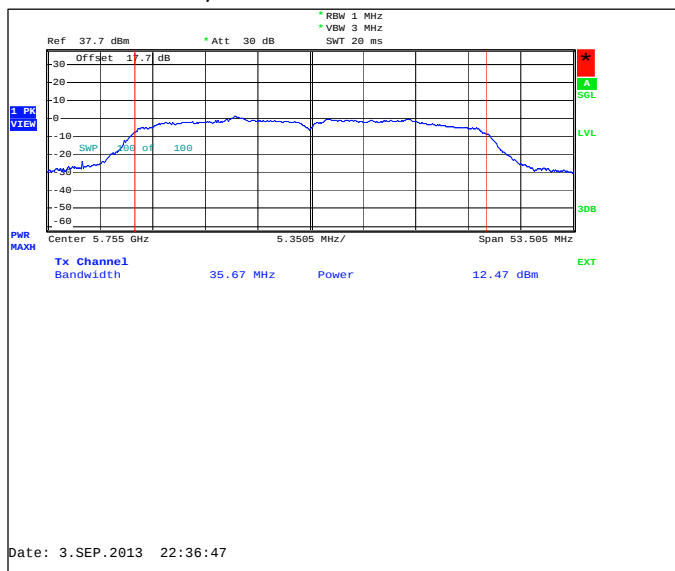
Channel 157+161 / 5795MHz



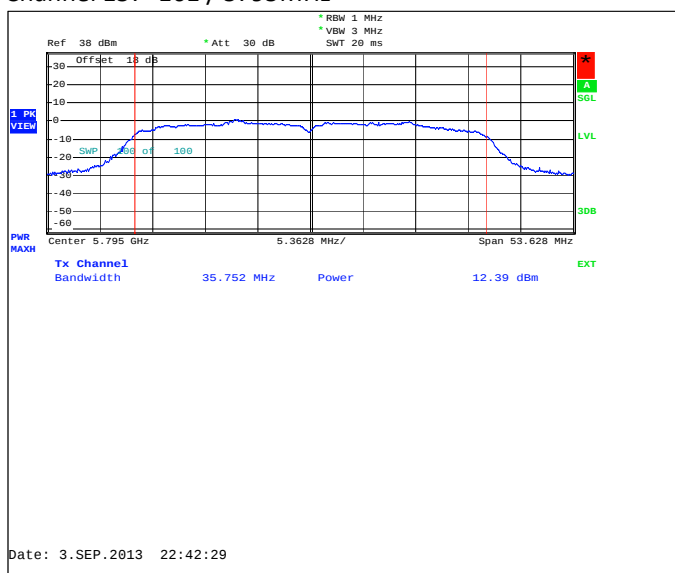
2.8.4 802.11n mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
149+153 / 5755	12.47	17.66	PASSED
157+161 / 5795	12.39	17.338	PASSED

Channel 149+153 / 5755MHz



Channel 157+161 / 5795MHz



2.9. Combined WLAN Test results

2.9.1 802.11g mode, BPSK modulation, 9 Mbps data rate

	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		Directional Gain [dBi]	SUM+ DIRgain	Results
Channel / f _c [MHz]	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux			
6 / 2437	18.6	72.444	18.07	64.12 ₁	21.353	136.565	-3.3	-4.11	-3.3	18.053	PASSED
1 / 2412	16.74	47.206	17.43	55.33 ₅	20.109	102.541	-3.3	-4.11	-3.3	16.809	PASSED
11 / 2462	17.01	50.234	16.66	46.34 ₅	19.849	96.579	-3.3	-4.11	-3.3	16.549	PASSED

2.9.2 802.11g mode, 16QAM modulation, 24 Mbps data rate

	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		Directional Gain [dBi]	SUM+ DIRgain	Results
Channel / f _c [MHz]	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux			
6 / 2437	17.31	53.827	17.95	62.37 ₃	20.652	116.2	-3.3	-4.11	-3.3	17.352	PASSED
1 / 2412	19.59	90.991	18.94	78.34 ₃	22.287	169.33 ₄	-3.3	-4.11	-3.3	18.987	PASSED
11 / 2462	17.76	59.704	18.33	68.07 ₇	21.065	127.78 ₁	-3.3	-4.11	-3.3	17.765	PASSED

2.9.3 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		Directional Gain [dBi]	SUM+ DIRgain	Results
Channel / f _c [MHz]	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux			
1-5 / 2422	15.34	34.198	16.35	43.15 ₂	18.885	77.35	-3.3	-4.11	-3.3	15.585	PASSED
4-8 / 2437	16.57	45.394	17.23	52.84 ₅	19.923	98.239	-3.3	-4.11	-3.3	16.623	PASSED
7-11 / 2452	16.22	41.879	16.98	49.88 ₈	19.627	91.767	-3.3	-4.11	-3.3	16.327	PASSED

2.9.4 802.11n mode, 64QAM modulation, 108.0 / 120.0 Mbps data rate

Chann el / f _C [MHz]	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		Directional Gain [dBi]	SUM+D IRgain	Results
	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux			
1-5 / 2422	14.07	25.527	13.94	24.77	17.016	50.301	-3.3	-4.11	-3.3	13.7158	PASSED
4-8 / 2437	15.39	34.594	15.08	32.21	18.248	66.805	-3.3	-4.11	-3.3	14.948	PASSED
7-11 / 2452	15.01	31.696	14.79	30.13	17.911	61.826	-3.3	-4.11	-3.3	14.612	PASSED

2.9.5 802.11a mode, BPSK modulation, 6 Mbps data rate

Chann el / f _C [MHz]	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		Directional Gain [dBi]	SUM+D IRgain	Results
	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux			
149 / 5745	17.47	55.847	14.52	28.31	19.251	84.161	3.55	3.97	3.97	23.2211	PASSED
157 / 5785	18.11	64.714	15.1	32.35	19.871	97.073	3.55	3.97	3.97	23.841	PASSED
165 / 5825	18	63.096	14.92	31.04	19.738	94.142	3.55	3.97	3.97	23.708	PASSED

2.9.6 802.11n mode, 64QAM modulation, 52.0 / 57.8 Mbps data rate

Chann el / f _C [MHz]	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		Directional Gain [dBi]	SUM+D IRgain	Results
	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux			
149 / 5745	16.88	48.753	14.37	27.35	18.814	76.106	3.55	3.97	3.97	22.784	PASSED
157 / 5785	17.61	57.677	14.51	28.25	19.341	85.926	3.55	3.97	3.97	23.311	PASSED
165 / 5825	18.16	65.464	15	31.62	19.872	97.087	3.55	3.97	3.97	23.842	PASSED

2.9.7 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		Directional Gain [dBi]	SUM+D IRgain	Results
Channel / f _c [MHz]	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux			
149+153 / 5755	17.22	52.723	15.39	34.59	19.411	87.317	3.55	3.97	3.97	23.381	PASSED
157+161 / 5795	17.92	61.944	14.5	28.18	19.549	90.128	3.55	3.97	3.97	23.519	PASSED

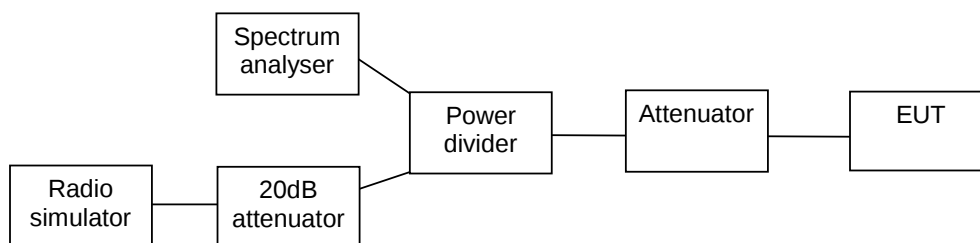
2.9.8 802.11n mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		Directional Gain [dBi]	SUM+D IRgain	Results
Channel / f _c [MHz]	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux			
149+153 / 5755	15.12	32.509	12.47	17.66	17.004	50.169	3.55	3.97	3.97	20.974	PASSED
157+161 / 5795	15.86	38.548	12.39	17.34	17.473	55.886	3.55	3.97	3.97	21.443	PASSED

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

EUT with DUT number	RX-114, DUT 17629
Accessories with DUT numbers	WH-208, DUT 17355
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	18 / 65 / 101.4
Date of measurements	29-Aug-2013
Measured by	Jari Keto

3.1. Test Setup



3.2. 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 11.2 of the KDB 558074, using span of 1.5 times the OBW.

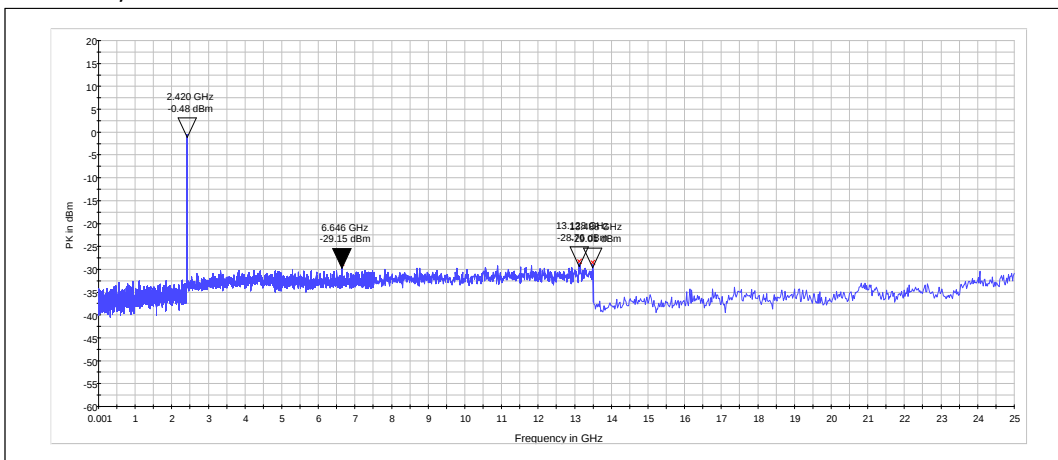
Limits for spurious RF conducted emissions measurements

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

3.3. WLAN Test results, Main Antenna

3.3.1 802.11g mode, BPSK modulation, 9 Mbps data rate

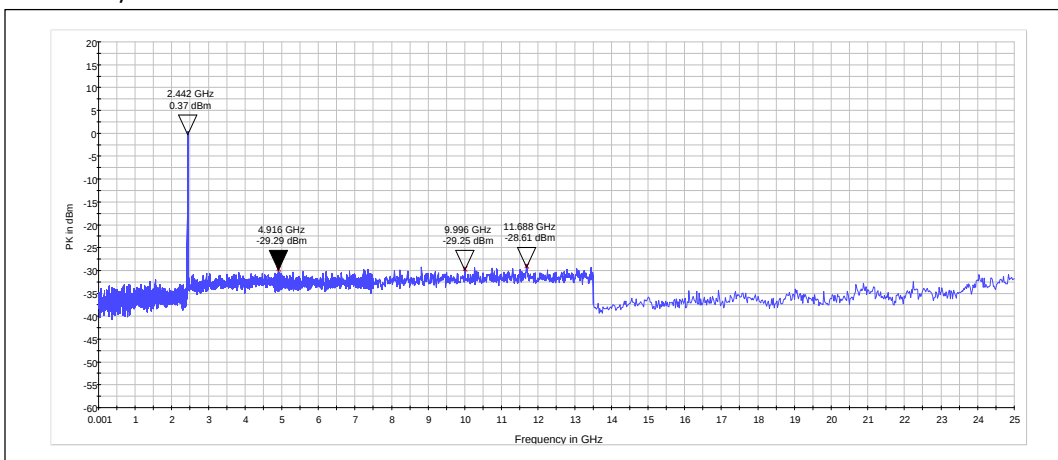
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
13128.000	-28.29	PASSED
13488.000	-28.54	PASSED
6645.600	-28.67	PASSED

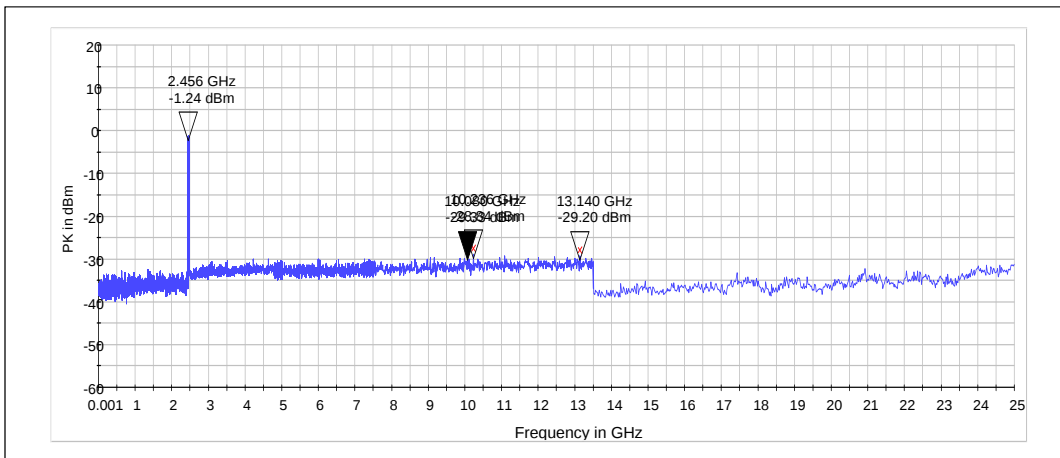
Channel 6 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
11688.000	-28.97	PASSED
9996.000	-29.62	PASSED
4915.600	-29.66	PASSED

Channel 11 / 2462 MHz

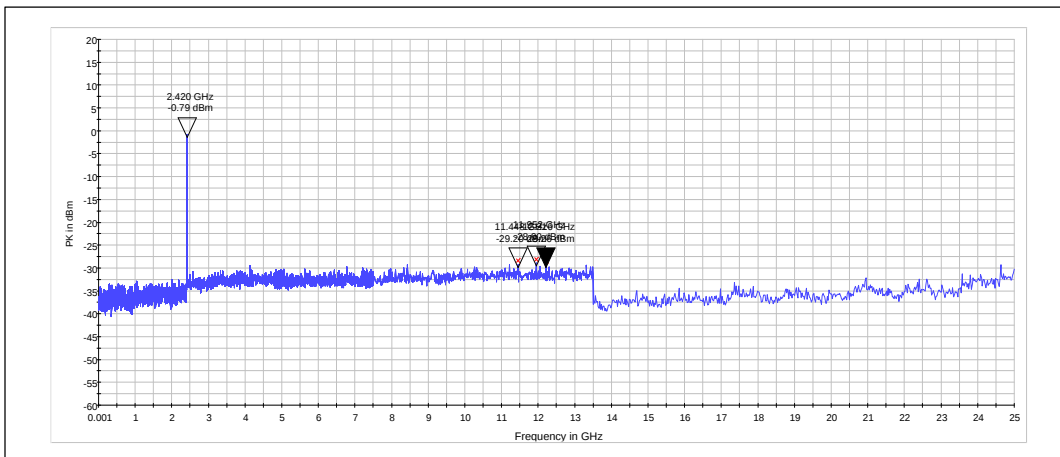


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
10236.000	-27.60	PASSED
13140.000	-27.96	PASSED
10080.000	-28.09	PASSED

3.3.2 802.11g mode, 16QAM modulation, 24 Mbps data rate

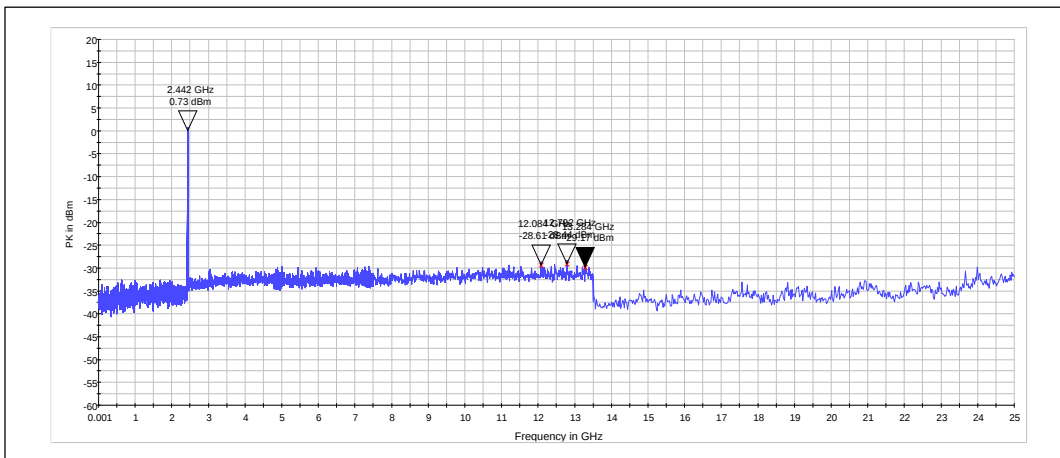
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
11952.000	-28.11	PASSED
11448.000	-28.41	PASSED
12216.000	-28.47	PASSED

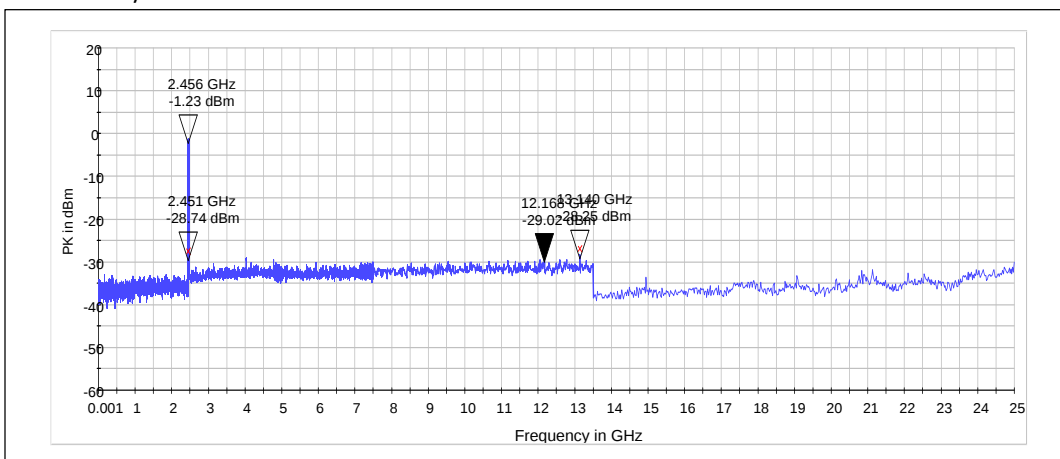
Channel 6 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
12792.000	-29.16	PASSED
12084.000	-29.33	PASSED
13284.000	-29.89	PASSED

Channel 11 / 2462 MHz



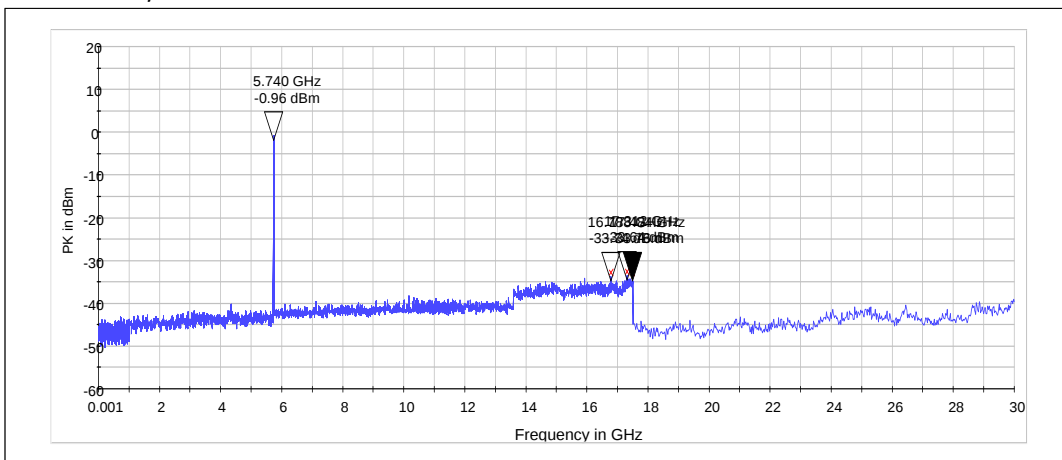
Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
13140.000	-27.02	PASSED
2451.092	-27.50	PASSED
12168.000	-27.79	PASSED

3.4. 5 GHz RLAN Test results, Main Antenna

3.4.1 802.11a mode, BPSK modulation, 6 Mbps data rate

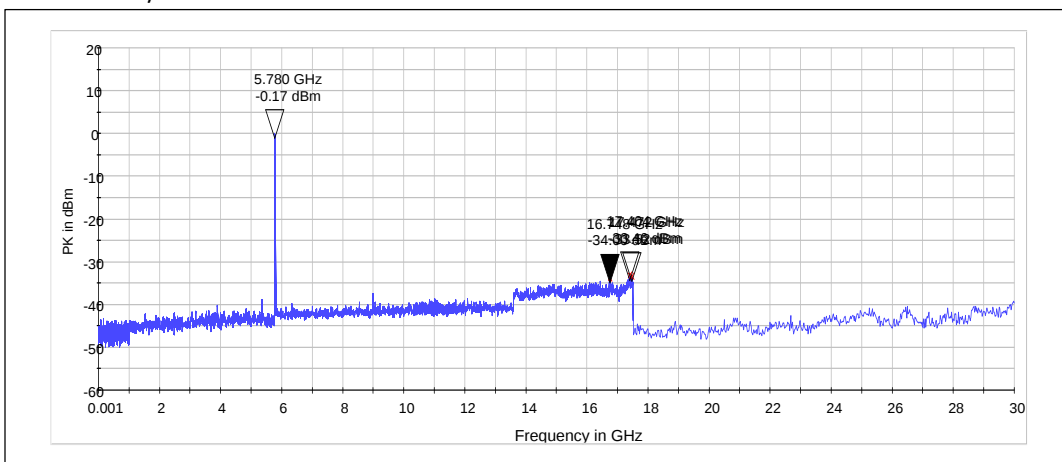
Channel 149 / 5745MHz



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

Frequency [MHz]	P [dBc]	Result
17312.000	-32.68	PASSED
16788.000	-32.78	PASSED
17484.000	-32.80	PASSED

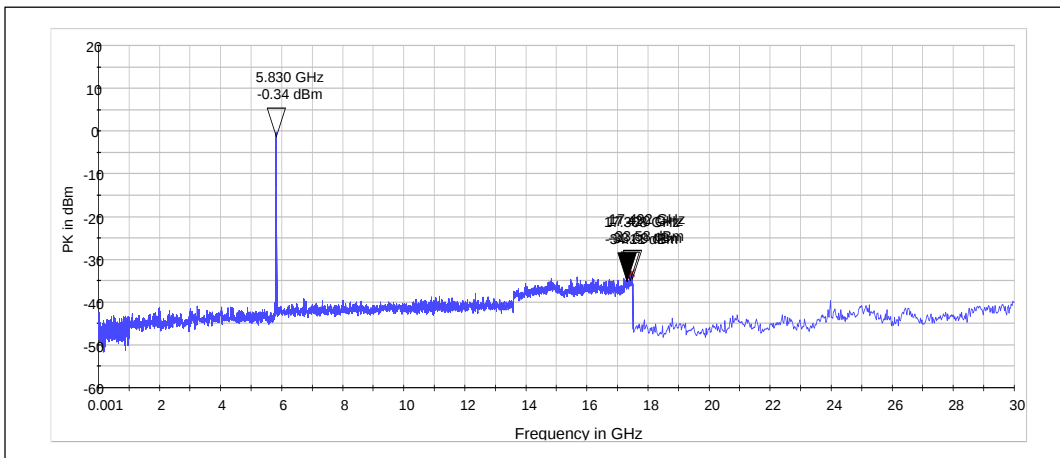
Channel 157 / 5785MHz



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

Frequency [MHz]	P [dBc]	Result
17404.000	-33.29	PASSED
17472.000	-33.35	PASSED
16748.000	-33.83	PASSED

Channel 165 / 5825MHz

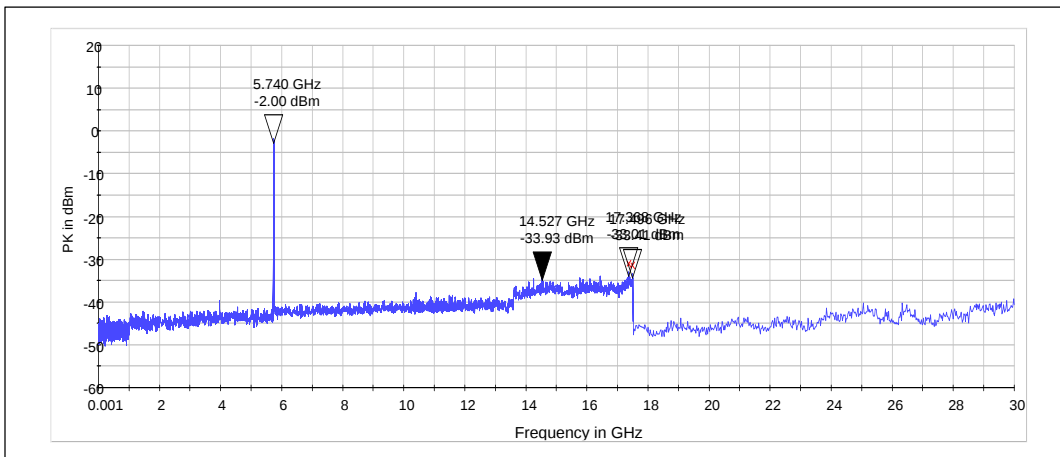


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
17492.000	-33.23	PASSED
17420.000	-33.55	PASSED
17308.000	-33.77	PASSED

3.4.2 802.11n mode, 64QAM modulation, 52.0 / 57.8 Mbps data rate

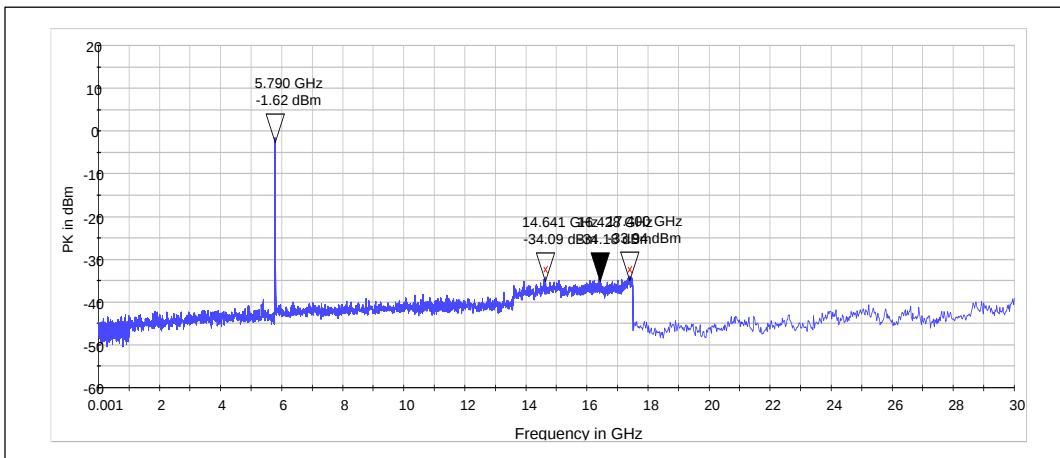
Channel 149 / 5745MHz



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

Frequency [MHz]	P [dBc]	Result
17368.000	-31.00	PASSED
17496.000	-31.41	PASSED
14527.200	-31.93	PASSED

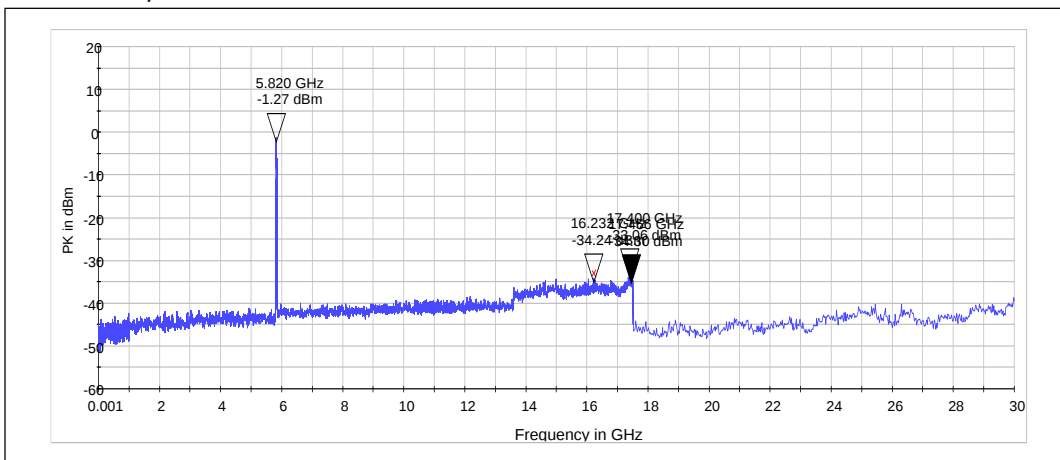
Channel 157 / 5785MHz



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

Frequency [MHz]	P [dBc]	Result
17400.000	-32.32	PASSED
14641.200	-32.47	PASSED
16428.000	-32.57	PASSED

Channel 165 / 5825MHz

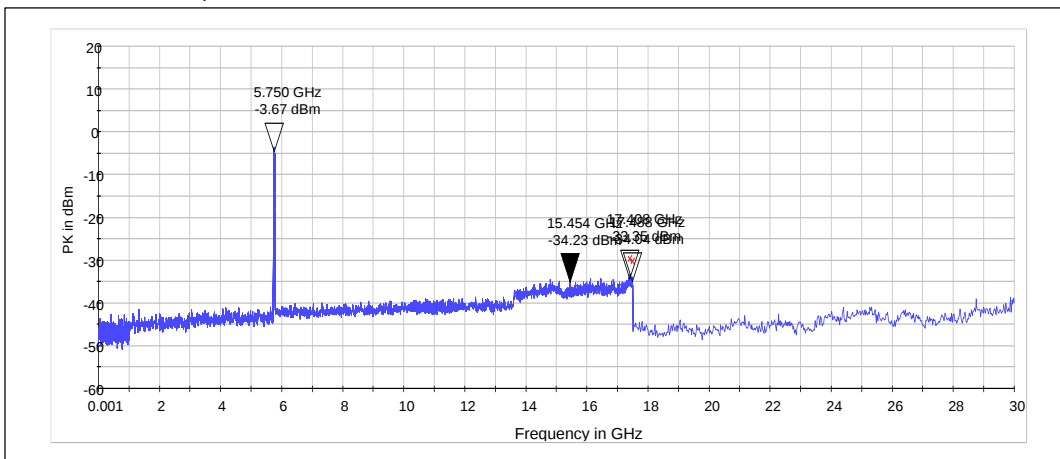


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
17400.000	-31.79	PASSED
16232.000	-32.97	PASSED
17456.000	-33.02	PASSED

3.4.3 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

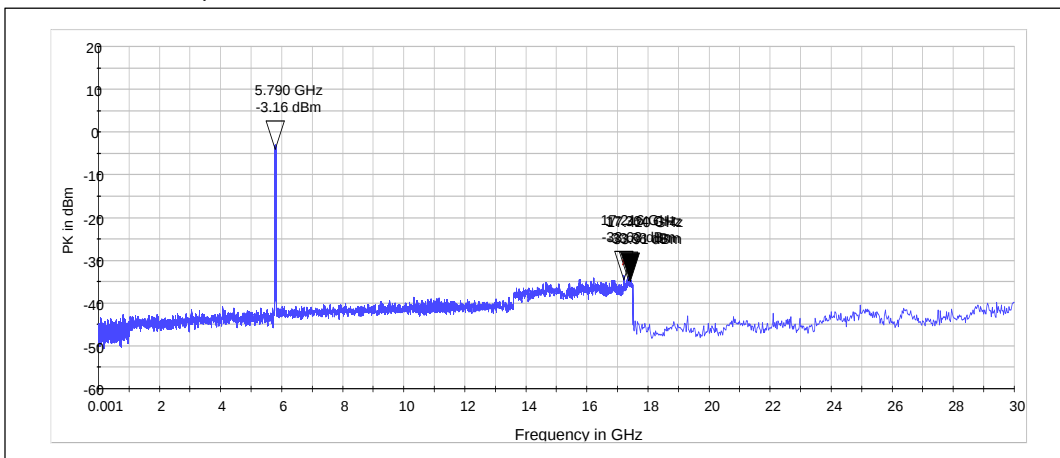
Channel 149+153 / 5755MHz



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

Frequency [MHz]	P [dBc]	Result
17408.000	-29.68	PASSED
17488.000	-30.37	PASSED
15454.400	-30.56	PASSED

Channel 157+161 / 5795MHz

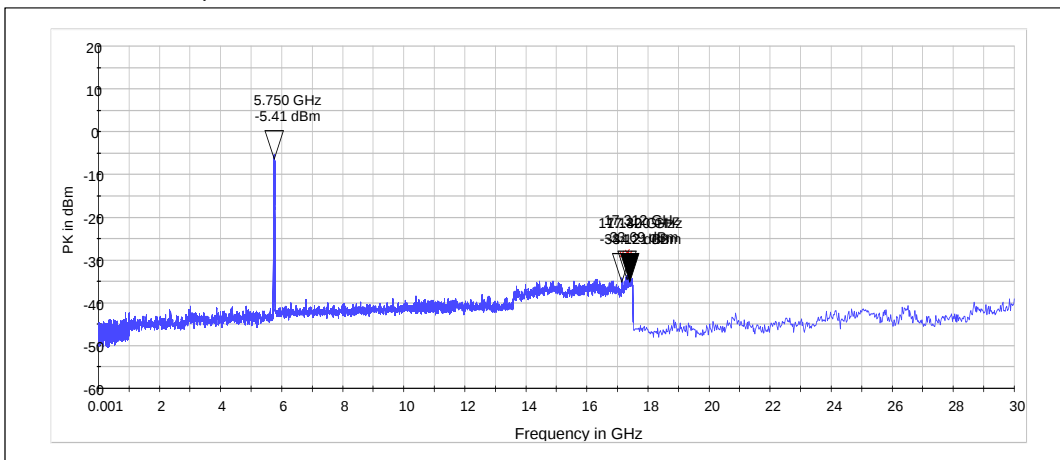


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
17216.000	-30.47	PASSED
17364.000	-30.72	PASSED
17420.000	-30.75	PASSED

3.4.4 802.11n mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

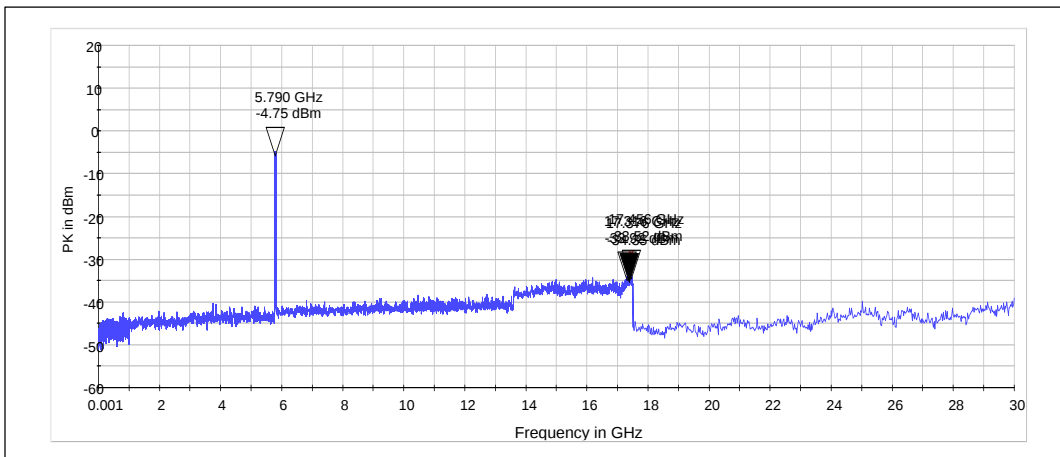
Channel 149+153 / 5755MHz



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

Frequency [MHz]	P [dBc]	Result
17312.000	-28.28	PASSED
17132.000	-28.71	PASSED
17400.000	-28.80	PASSED

Channel 157+161 / 5795MHz

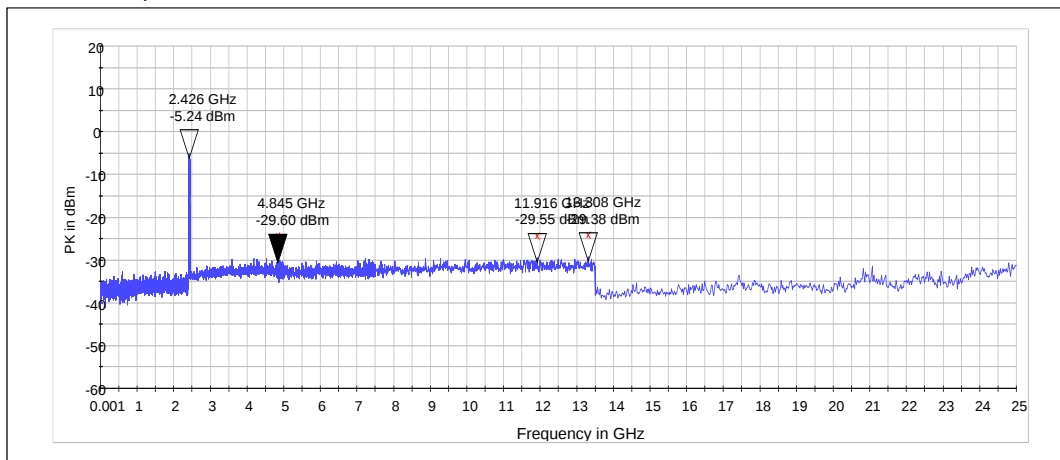


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
17456.000	-28.77	PASSED
17316.000	-29.17	PASSED
17376.000	-29.60	PASSED

3.4.5 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

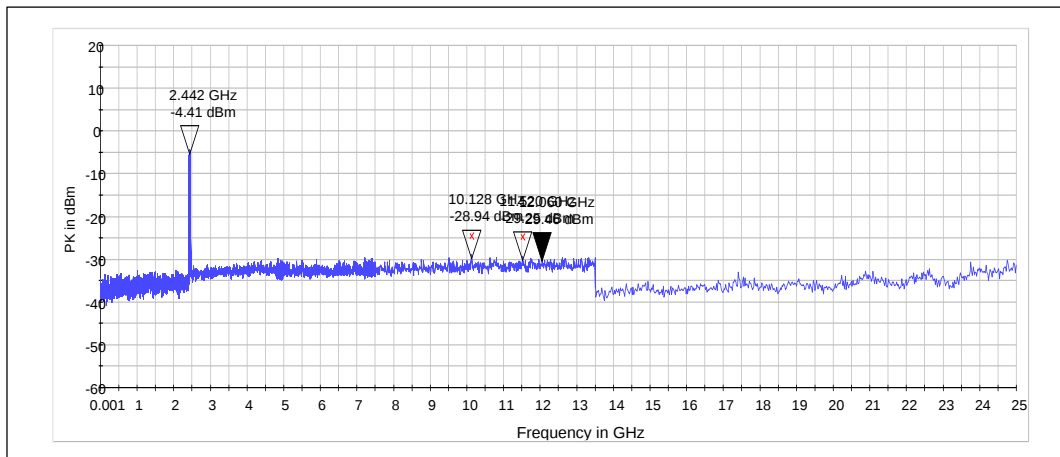
Channel 1-5 / 2422 MHz



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

Frequency [MHz]	P [dBc]	Result
13308.000	-24.13	PASSED
11916.000	-24.31	PASSED
4845.200	-24.35	PASSED

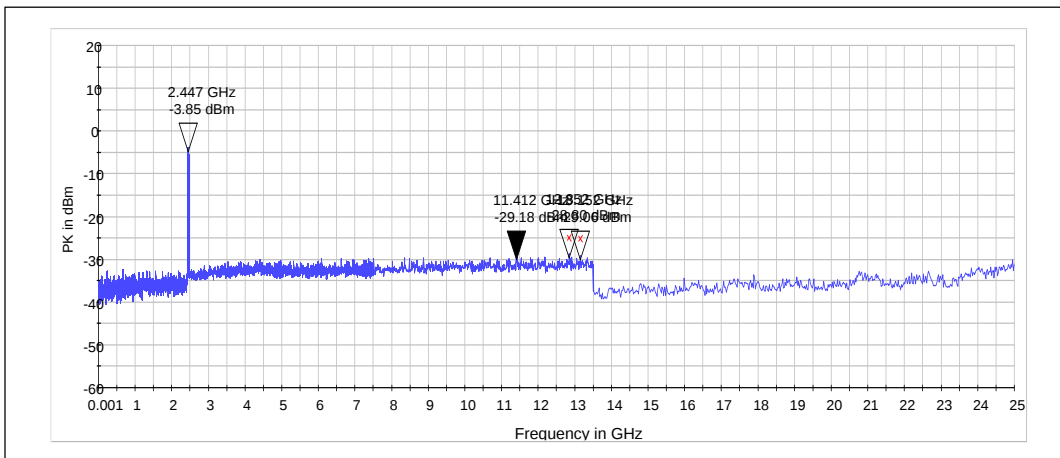
Channel 4-8 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
10128.000	-24.53	PASSED
11520.000	-24.83	PASSED
12060.000	-25.04	PASSED

Channel 7-11 / 2452 MHz

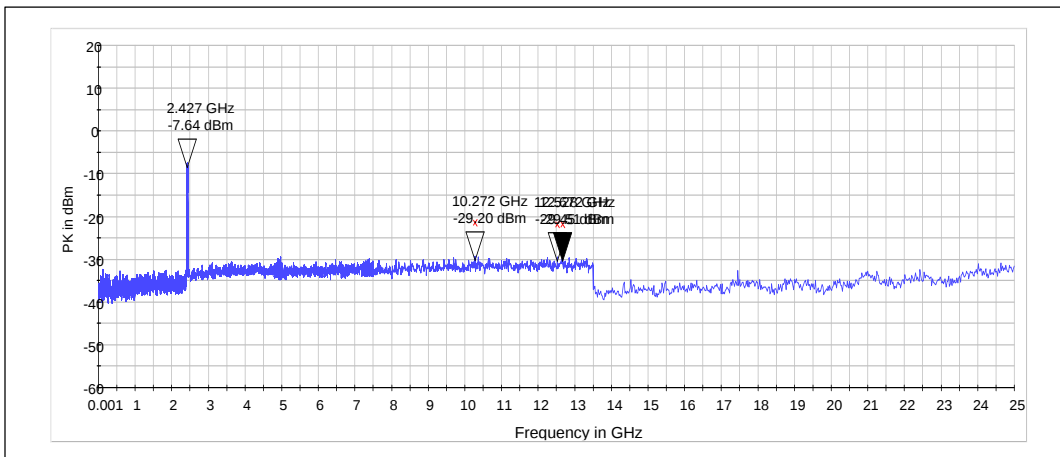


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
12852.000	-24.95	PASSED
13152.000	-25.21	PASSED
11412.000	-25.34	PASSED

3.4.6 802.11n mode, 64QAM modulation, 108.0 / 120.0 Mbps data rate

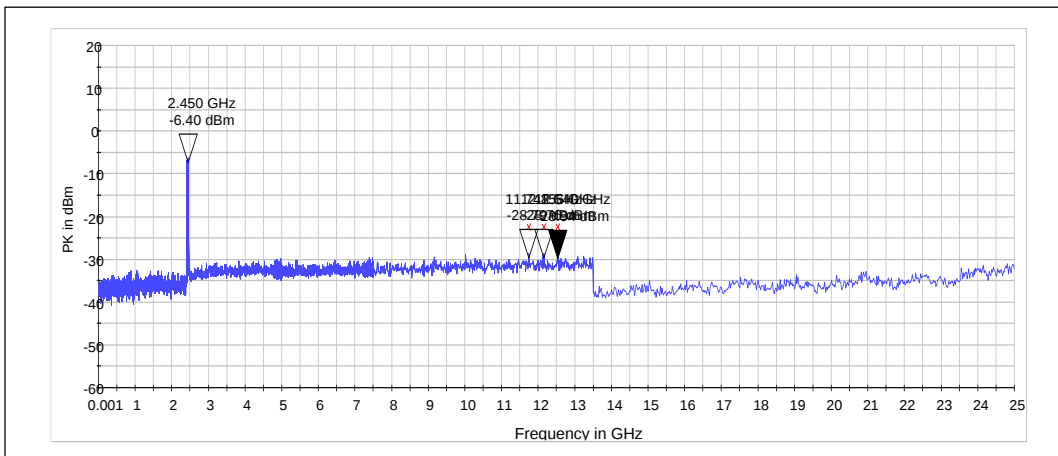
Channel 1-5 / 2422 MHz



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

Frequency [MHz]	P [dBc]	Result
10272.000	-21.55	PASSED
12528.000	-21.80	PASSED
12672.000	-21.87	PASSED

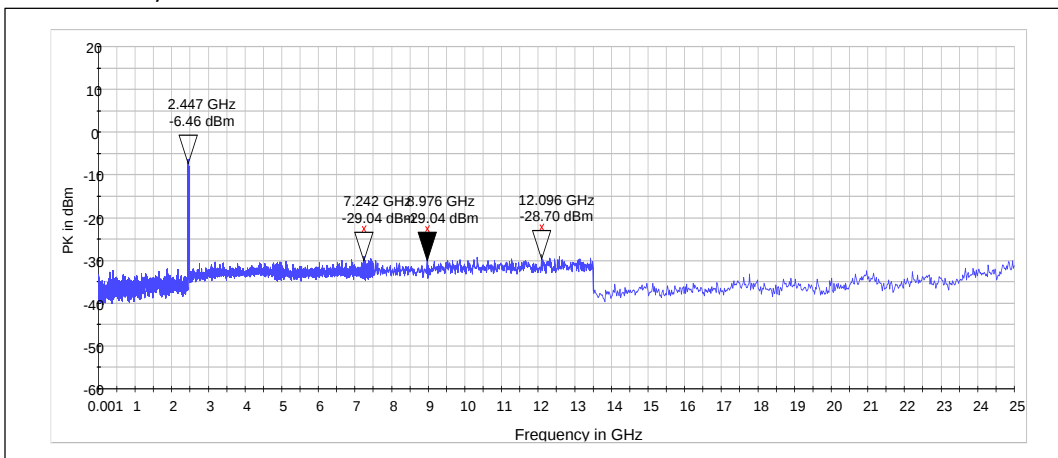
Channel 4-8 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
12156.000	-22.36	PASSED
11748.000	-22.39	PASSED
12540.000	-22.53	PASSED

Channel 7-11 / 2452 MHz



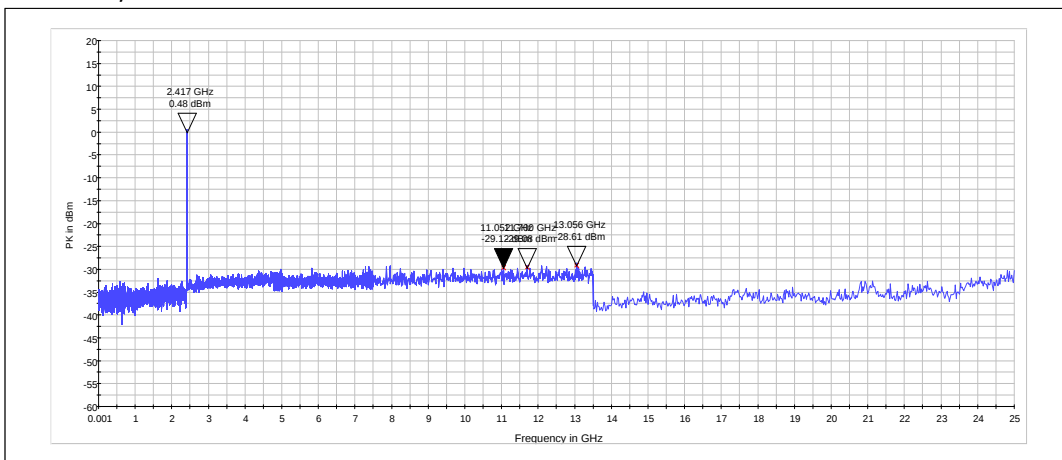
Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
12096.000	-22.25	PASSED
7242.000	-22.58	PASSED
8976.000	-22.58	PASSED

3.5. WLAN Test results, Aux Antenna

3.5.1 802.11g mode, BPSK modulation, 9 Mbps data rate

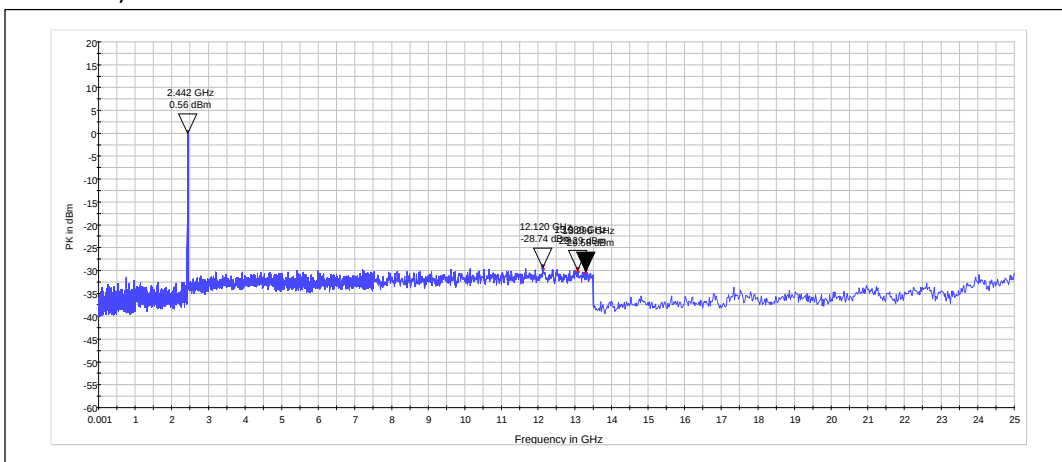
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
13056.000	-29.10	PASSED
11700.000	-29.57	PASSED
11052.000	-29.61	PASSED

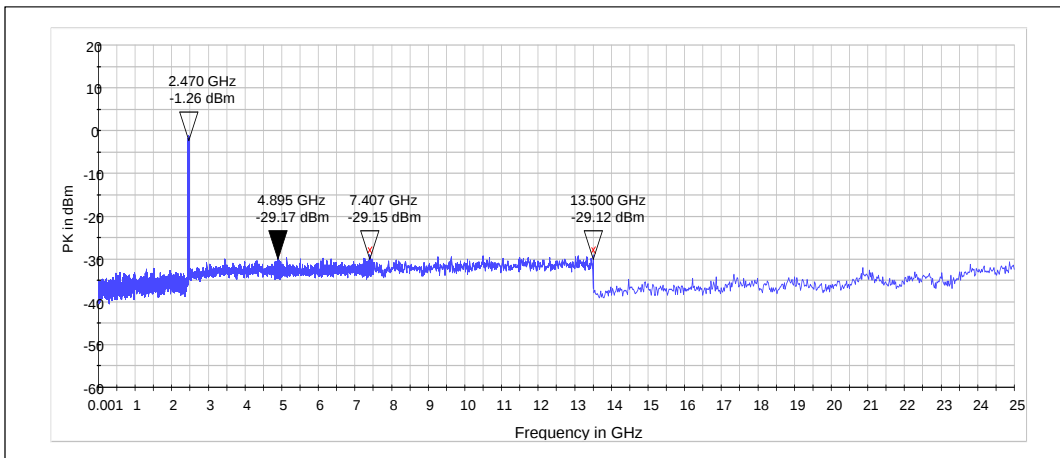
Channel 6 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
12120.000	-29.30	PASSED
13080.000	-29.86	PASSED
13296.000	-30.14	PASSED

Channel 11 / 2462 MHz

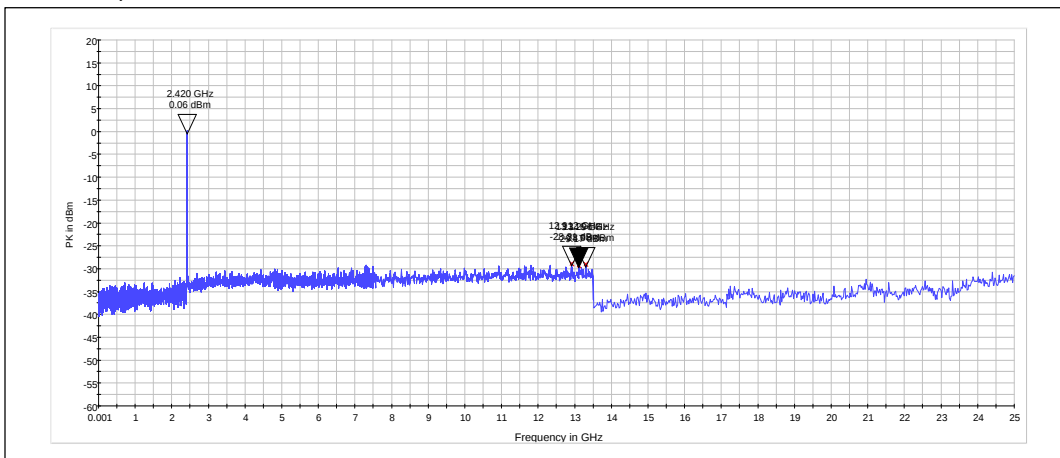


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
13500.000	-27.85	PASSED
7407.000	-27.88	PASSED
4894.800	-27.91	PASSED

3.5.2 802.11g mode, 64QAM modulation, 48 Mbps data rate

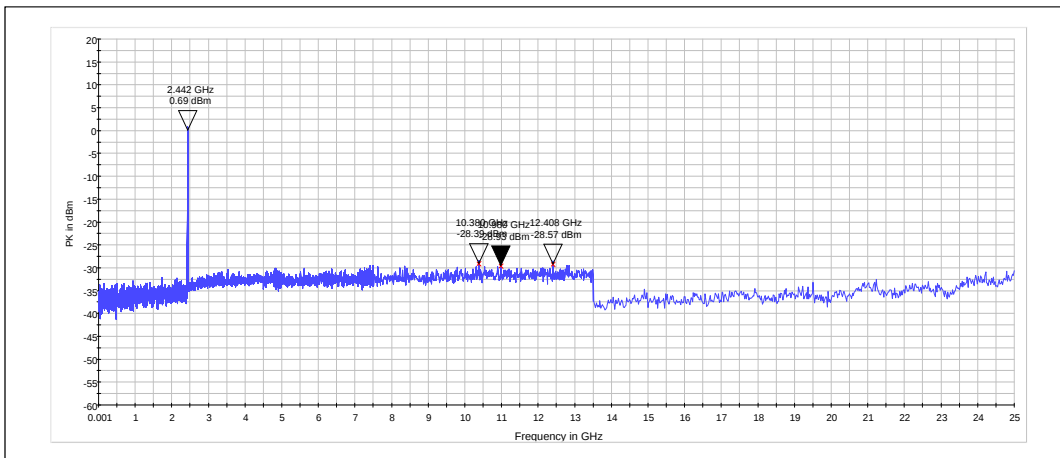
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
12912.000	-28.86	PASSED
13296.000	-29.04	PASSED
13116.000	-29.23	PASSED

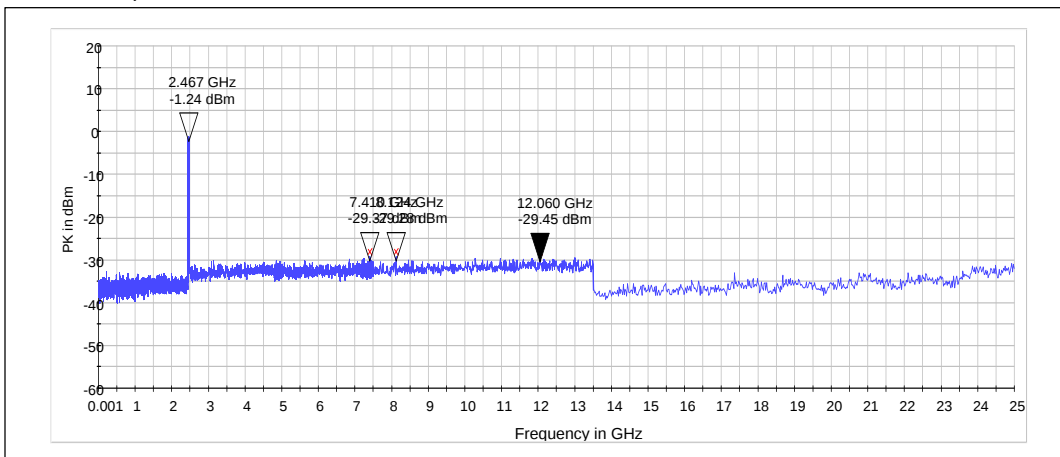
Channel 6 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
10380.000	-29.08	PASSED
12408.000	-29.25	PASSED
10980.000	-29.61	PASSED

Channel 11 / 2462 MHz



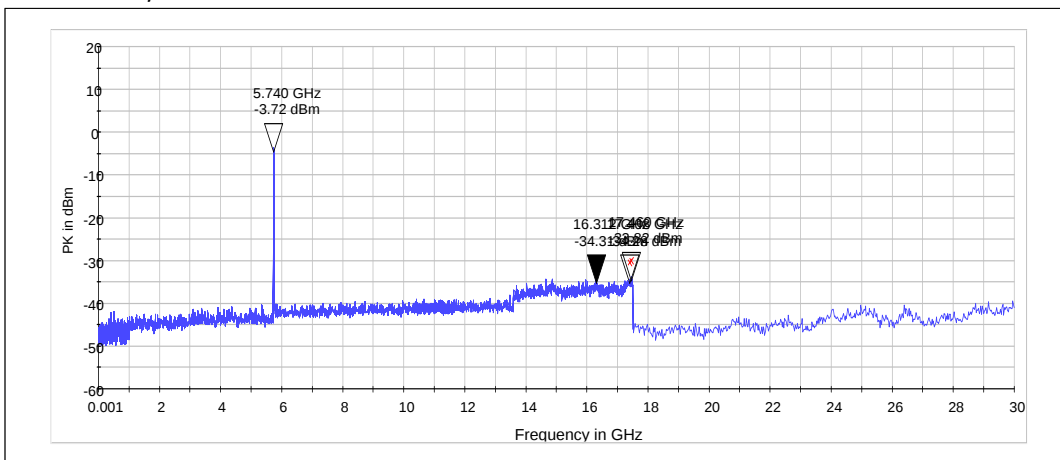
Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
8124.000	-28.04	PASSED
7410.000	-28.13	PASSED
12060.000	-28.21	PASSED

3.6. 5 GHz RLAN Test results, Aux Antenna

3.6.1 802.11n mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

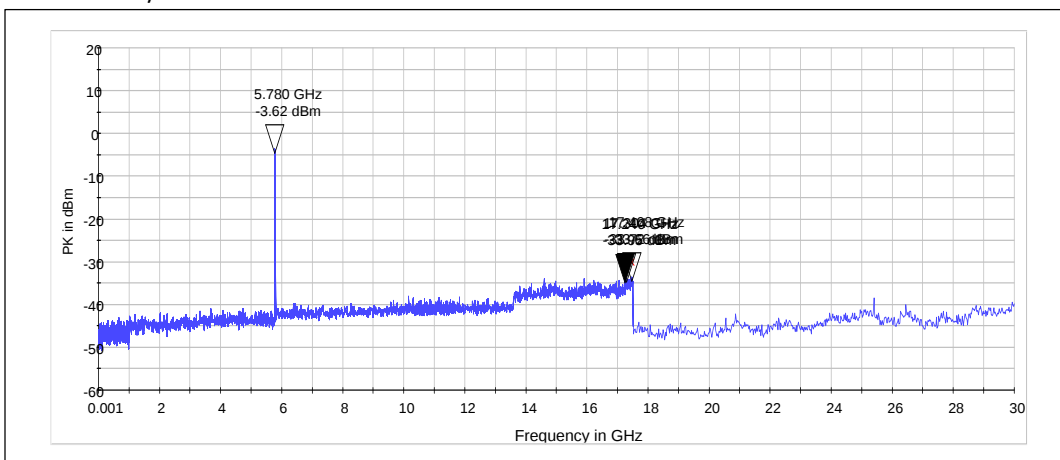
Channel 149 / 5745MHz



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

Frequency [MHz]	P [dBc]	Result
17460.000	-30.10	PASSED
17408.000	-30.56	PASSED
16312.000	-30.59	PASSED

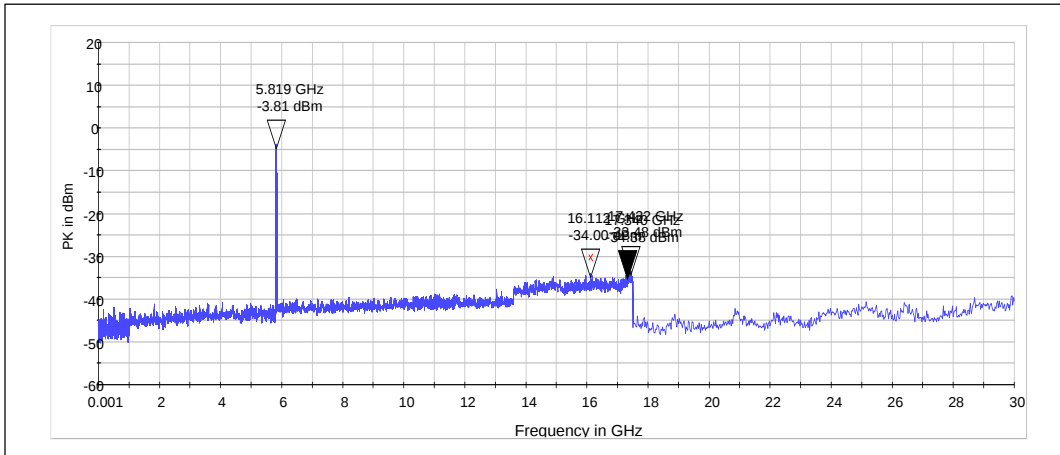
Channel 157 / 5785MHz



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

Frequency [MHz]	P [dBc]	Result
17468.000	-30.04	PASSED
17304.000	-30.10	PASSED
17240.000	-30.32	PASSED

Channel 165 / 5825MHz

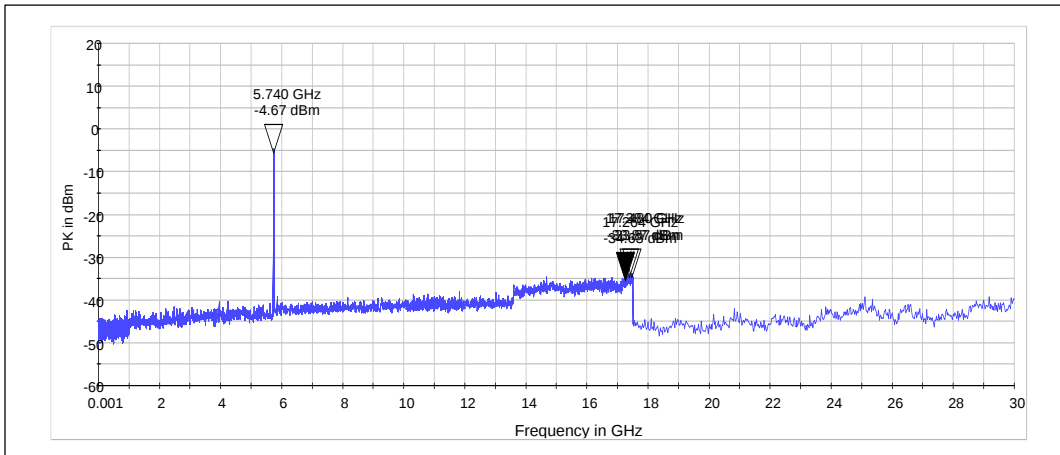


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
17432.000	-29.67	PASSED
16112.000	-30.19	PASSED
17340.000	-30.57	PASSED

3.6.2 802.11n mode, 64QAM modulation, 52.0 / 57.8 Mbps data rate

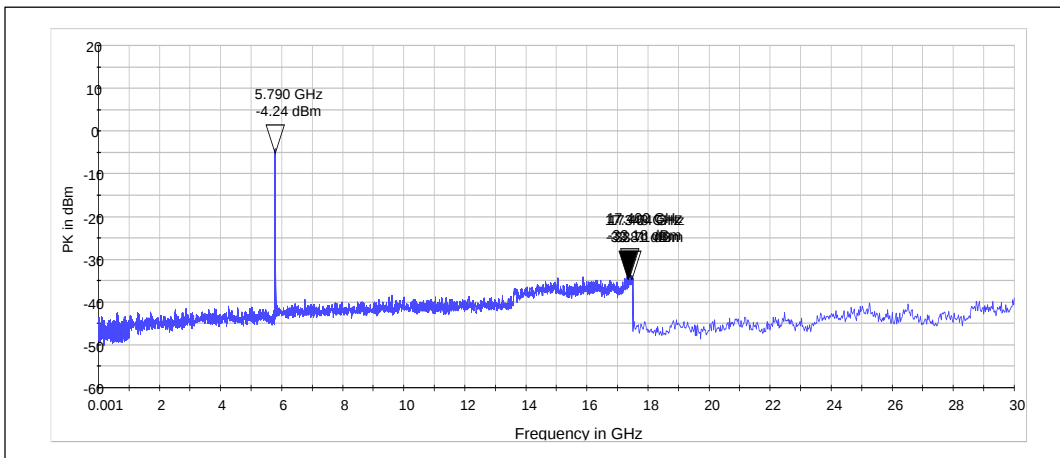
Channel 149 / 5745MHz



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

Frequency [MHz]	P [dBc]	Result
17480.000	-29.20	PASSED
17384.000	-29.20	PASSED
17264.000	-29.96	PASSED

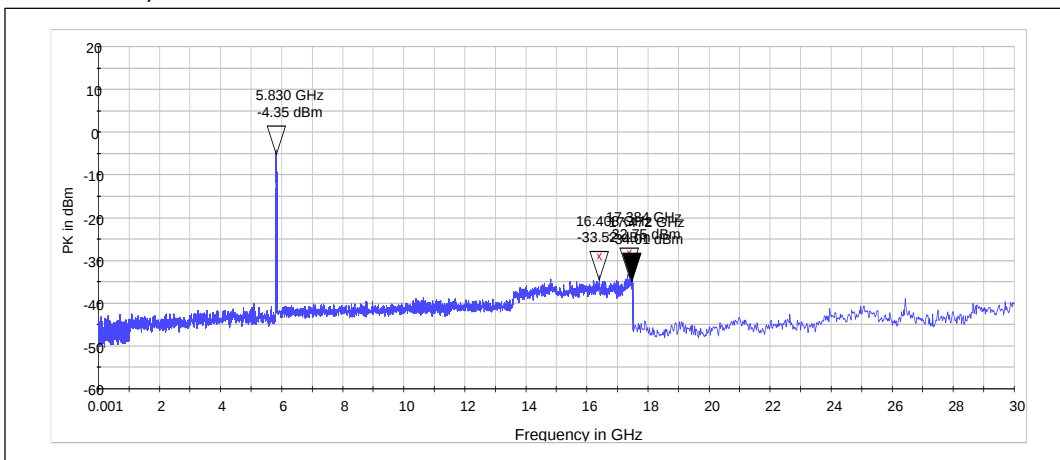
Channel 157 / 5785MHz



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

Frequency [MHz]	P [dBc]	Result
17400.000	-28.93	PASSED
17464.000	-29.47	PASSED
17348.000	-29.57	PASSED

Channel 165 / 5825MHz

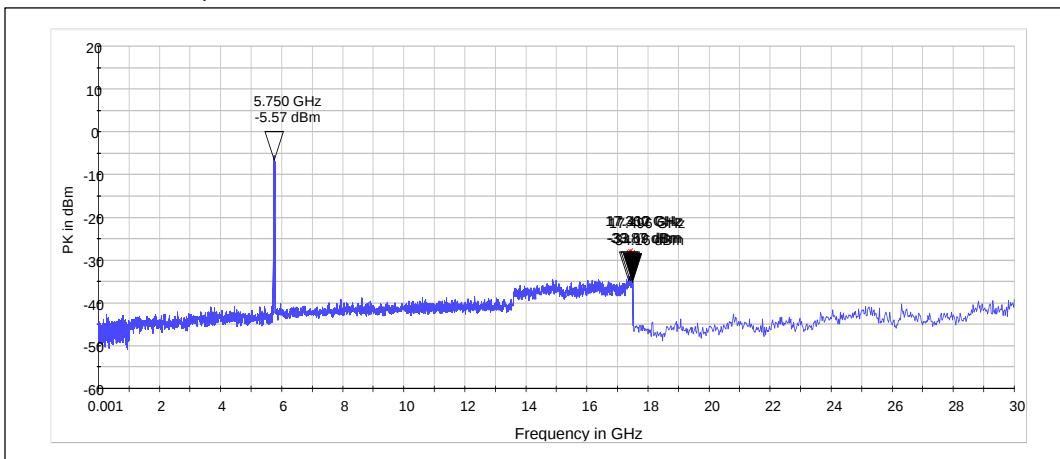


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
17384.000	-28.40	PASSED
16408.000	-29.17	PASSED
17472.000	-29.66	PASSED

3.6.3 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

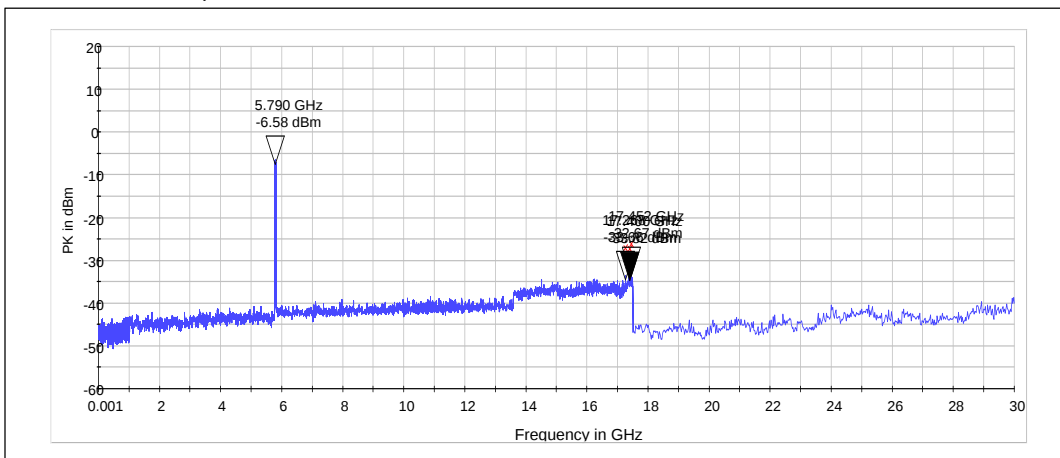
Channel 149+153 / 5755MHz



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

Frequency [MHz]	P [dBc]	Result
17412.000	-28.12	PASSED
17360.000	-28.30	PASSED
17496.000	-28.59	PASSED

Channel 157+161 / 5795MHz

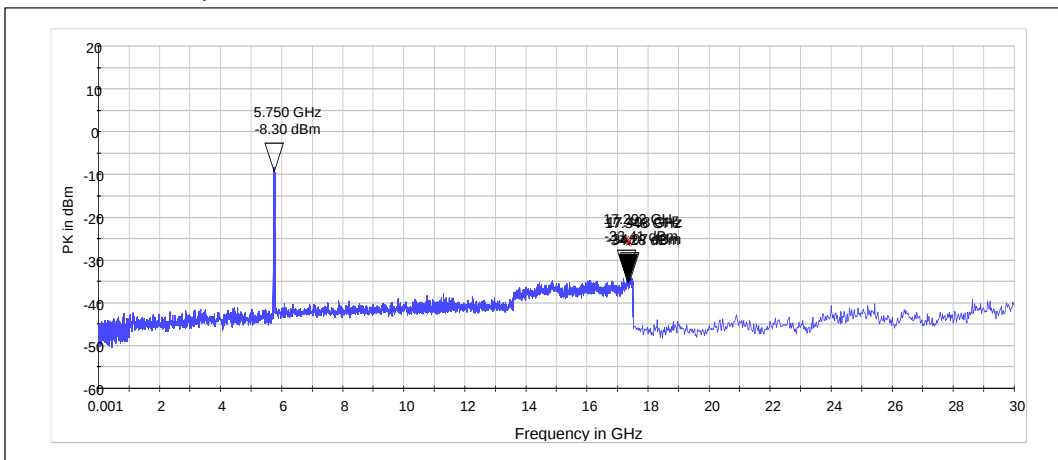


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
17452.000	-26.08	PASSED
17268.000	-27.08	PASSED
17400.000	-27.24	PASSED

3.6.4 802.11n mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

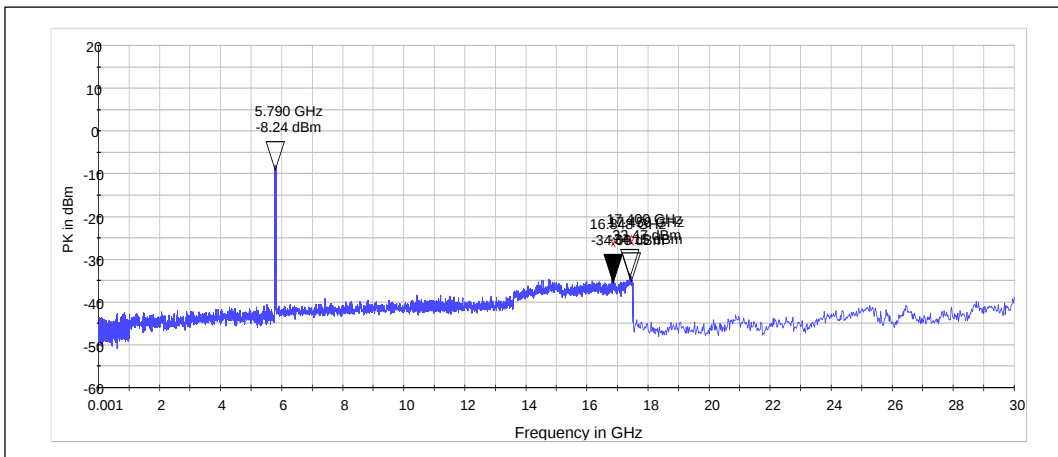
Channel 149+153 / 5755MHz



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

Frequency [MHz]	P [dBc]	Result
17292.000	-25.11	PASSED
17408.000	-25.77	PASSED
17348.000	-25.99	PASSED

Channel 157+161 / 5795MHz

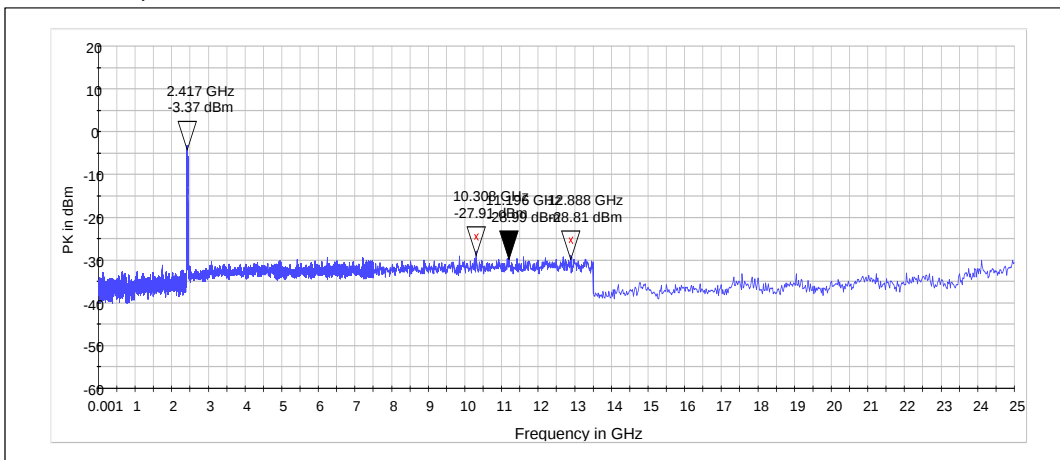


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
17400.000	-25.22	PASSED
17456.000	-25.91	PASSED
16848.000	-26.42	PASSED

3.6.5 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

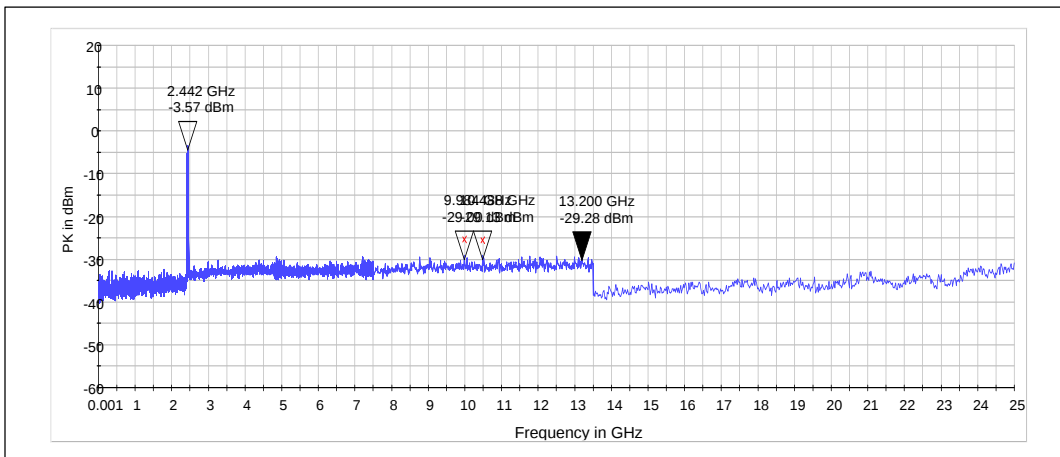
Channel 1-5 / 2422 MHz



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

Frequency [MHz]	P [dBc]	Result
10308.000	-24.55	PASSED
12888.000	-25.45	PASSED
11196.000	-25.62	PASSED

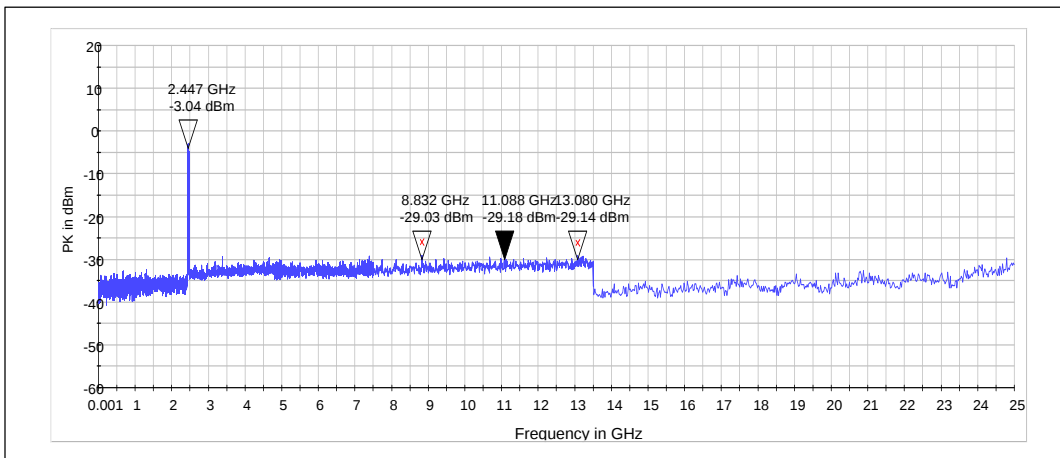
Channel 4-8 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
9984.000	-25.43	PASSED
10488.000	-25.56	PASSED
13200.000	-25.71	PASSED

Channel 7-11 / 2452 MHz

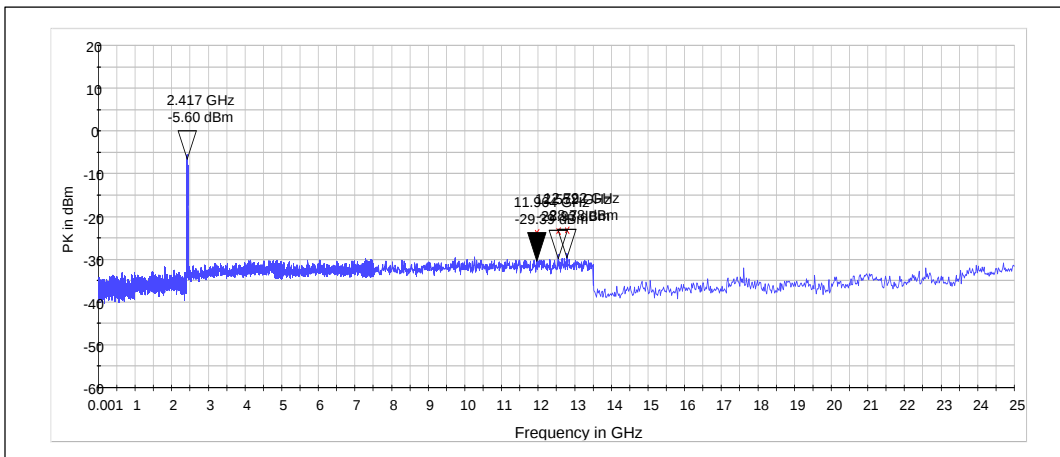


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
8832.000	-25.99	PASSED
13080.000	-26.10	PASSED
11088.000	-26.14	PASSED

3.6.6 802.11n mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

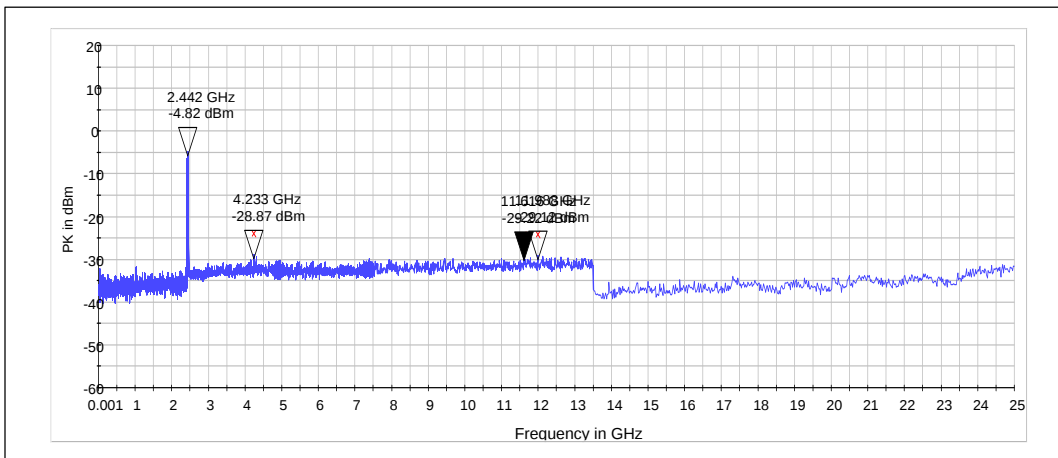
Channel 1-5 / 2422 MHz



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

Frequency [MHz]	P [dBc]	Result
12792.000	-23.18	PASSED
12552.000	-23.33	PASSED
11964.000	-23.79	PASSED

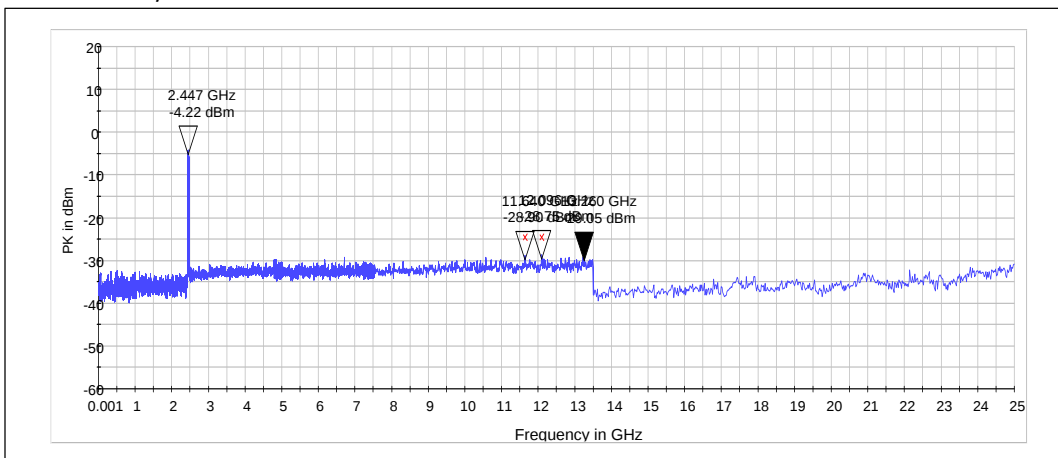
Channel 4-8 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
4232.510	-24.05	PASSED
11988.000	-24.30	PASSED
11616.000	-24.40	PASSED

Channel 7-11 / 2452 MHz



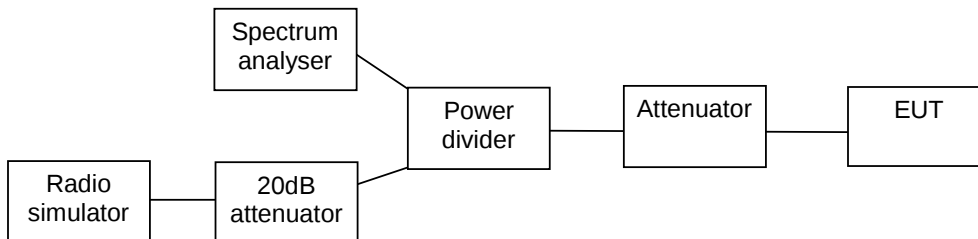
Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
12096.000	-24.53	PASSED
11640.000	-24.68	PASSED
13260.000	-24.83	PASSED

4. 6 dB bandwidth (FCC §15.247(a)(2), RSS-210 A8.2 (1))

EUT with DUT number	RX-114, DUT 17629
Accessories with DUT numbers	WH-208, DUT 17355
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	19 / 65 / 101.4
Date of measurements	29-Aug-2013
Measured by	Jari Keto

4.1. Test Setup



4.2. 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

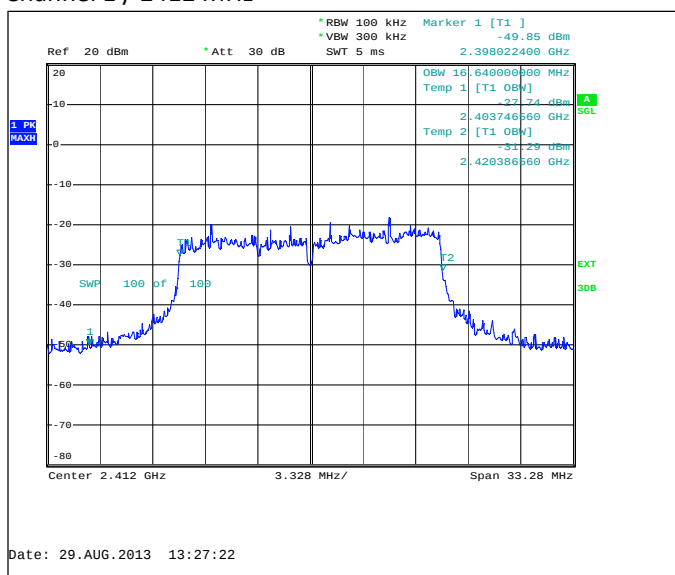
Limit [kHz]
>= 500

4.3. WLAN Test results, Main Antenna

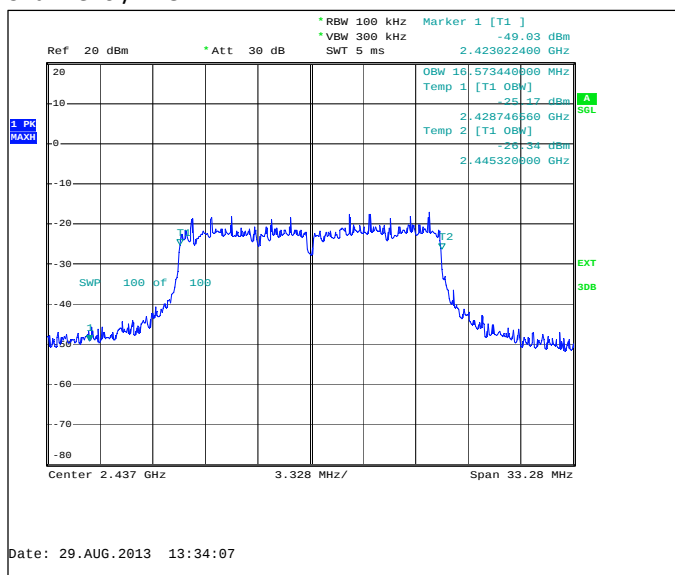
4.3.1 802.11g mode, BPSK modulation, 9 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	16640	PASSED
6 / 2437	16573.4	PASSED
11 / 2462	16640	PASSED

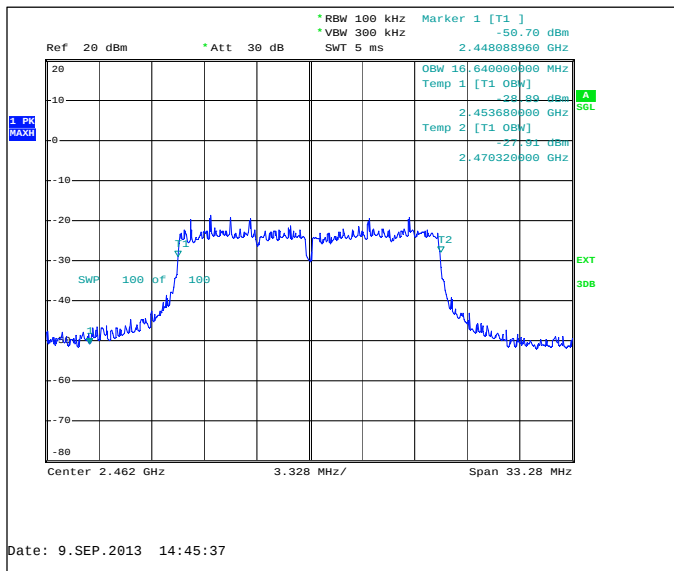
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



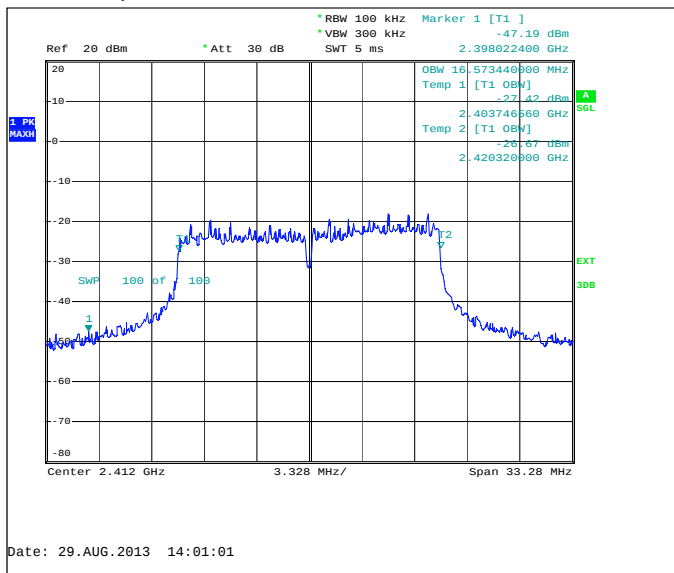
Channel 11 / 2462 MHz



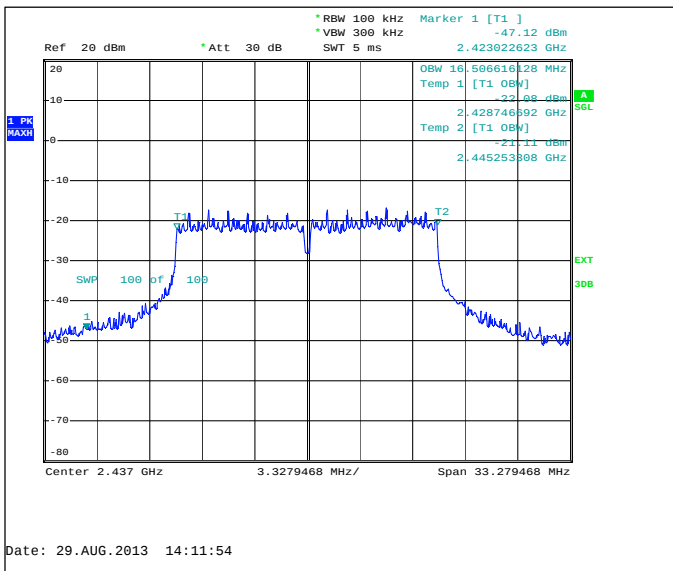
4.3.2 802.11g mode, 16QAM modulation, 24 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	16573.4	PASSED
6 / 2437	16506.6	PASSED
11 / 2462	16506.9	PASSED

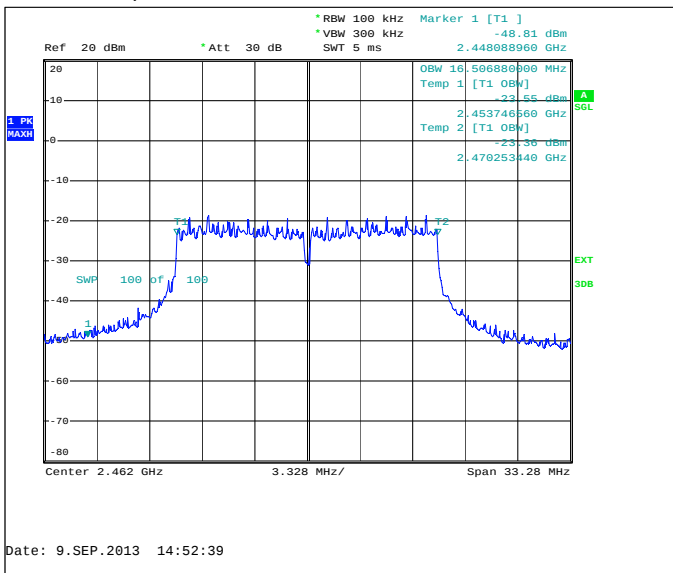
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



Channel 11 / 2462 MHz

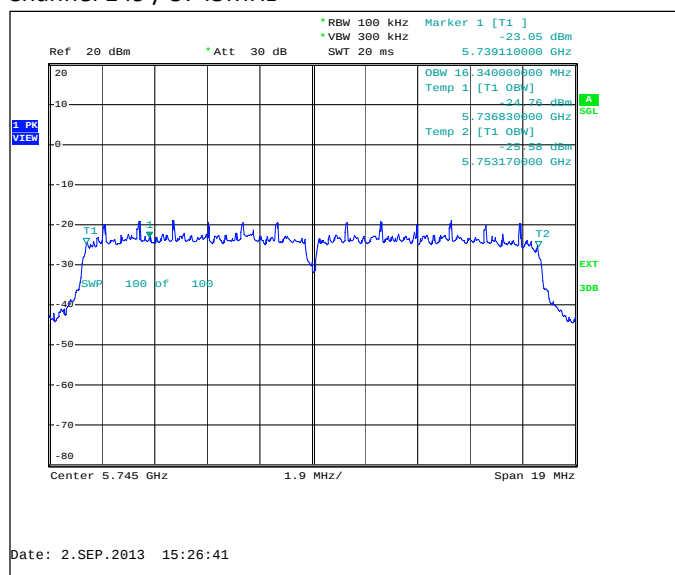


4.4. 5 GHz RLAN Test results, Main Antenna

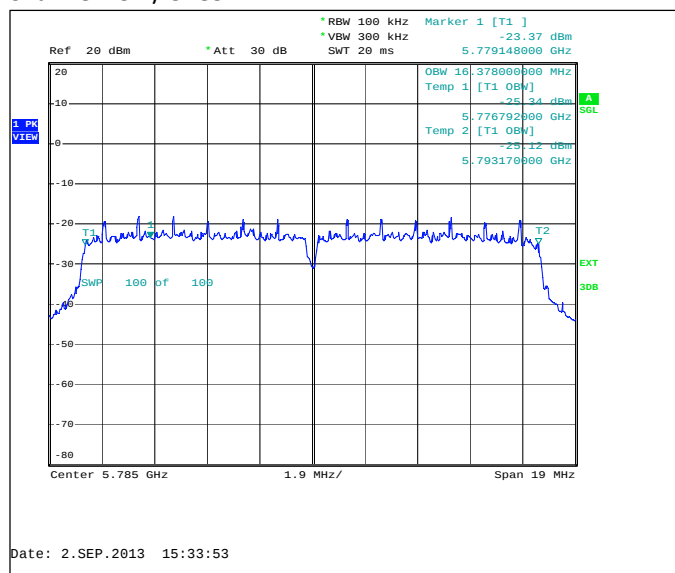
4.4.1 802.11a mode, BPSK modulation, 6 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
149 / 5745	16340	PASSED
157 / 5785	16378	PASSED
165 / 5825	16378	PASSED

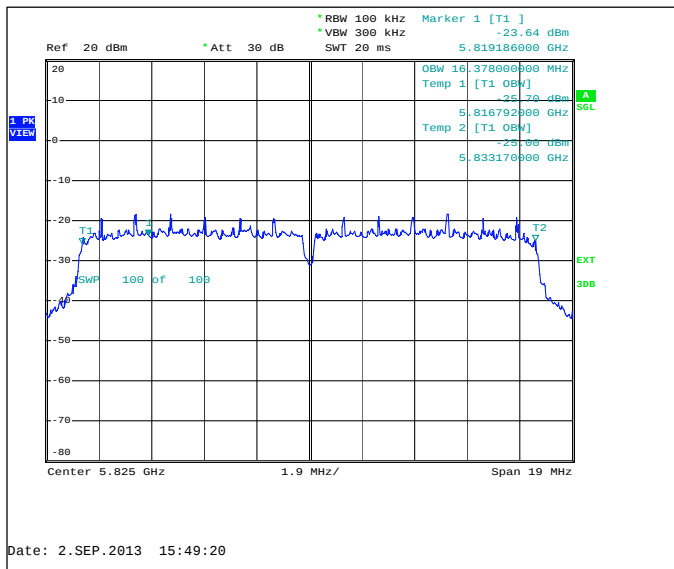
Channel 149 / 5745MHz



Channel 157 / 5785MHz



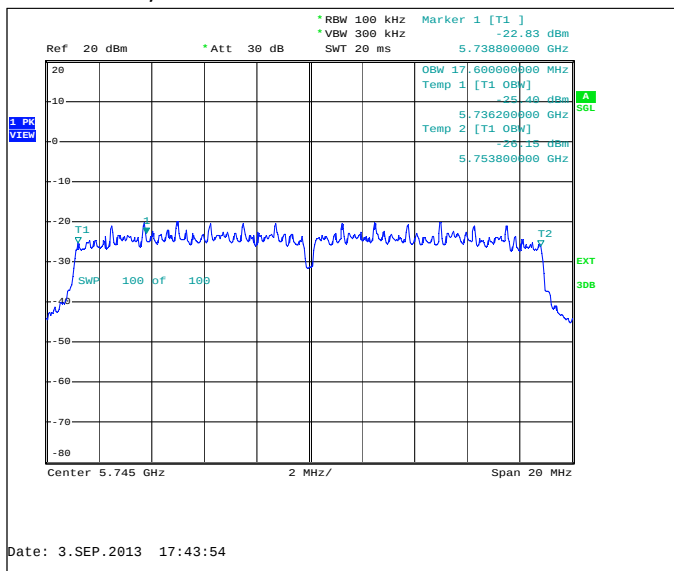
Channel 165 / 5825MHz



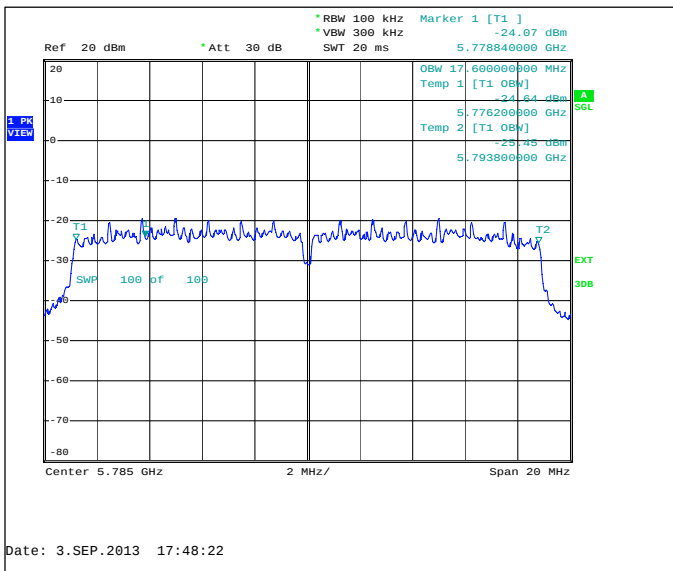
4.4.2 802.11n mode, 64QAM modulation, 52.0 / 57.8 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
149 / 5745	17600	PASSED
157 / 5785	17600	PASSED
165 / 5825	17600	PASSED

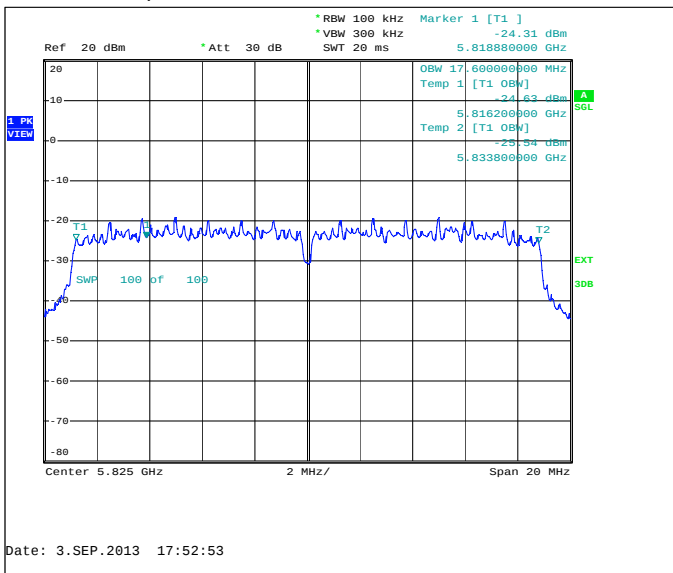
Channel 149 / 5745MHz



Channel 157 / 5785MHz



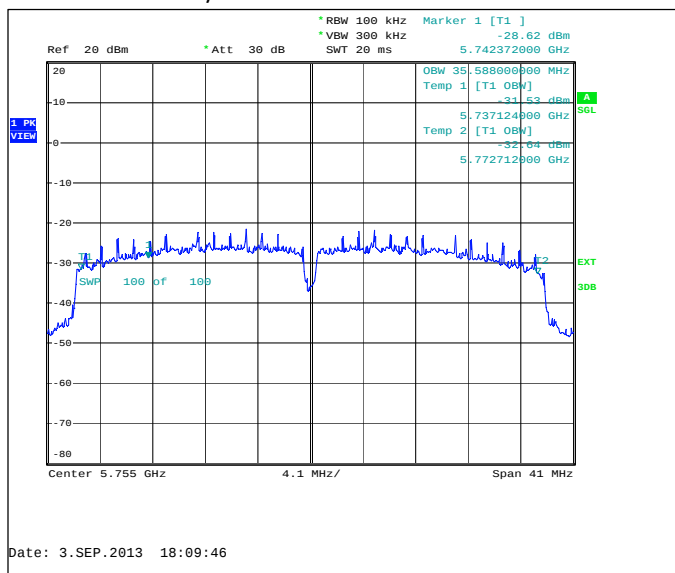
Channel 165 / 5825MHz



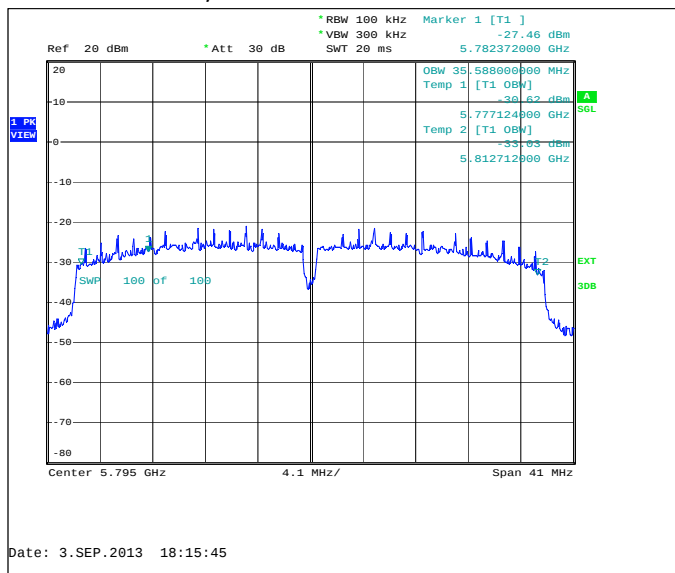
4.4.3 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
149+153 / 5755	35588	PASSED
157+161 / 5795	35588	PASSED

Channel 149+153 / 5755MHz



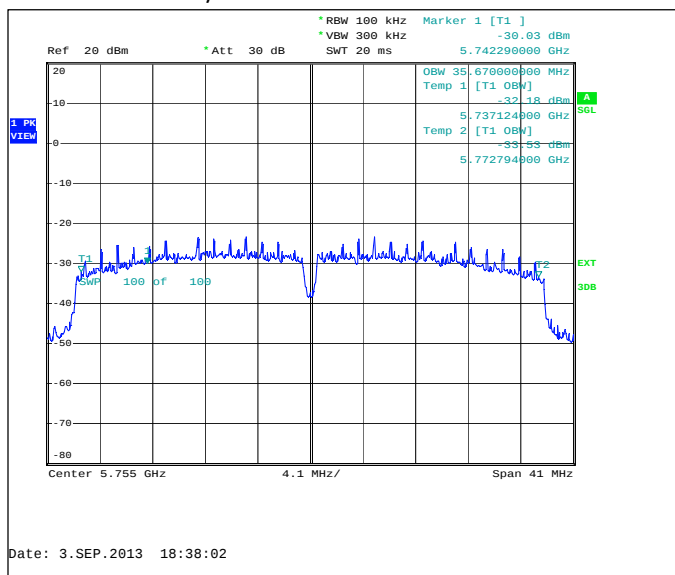
Channel 157+161 / 5795MHz



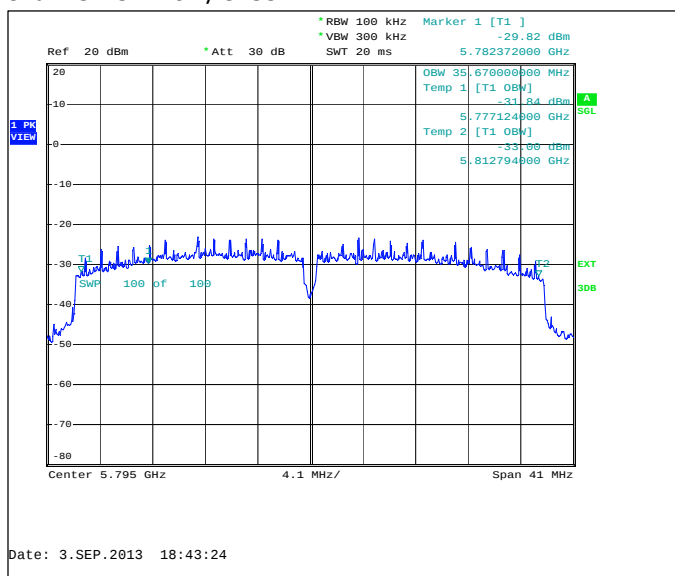
4.4.4 802.11n mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
149+153 / 5755	35670	PASSED
157+161 / 5795	35670	PASSED

Channel 149+153 / 5755MHz



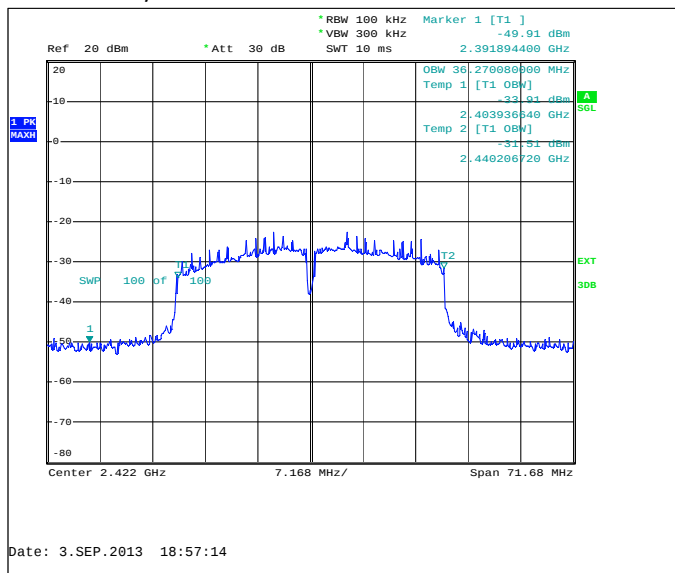
Channel 157+161 / 5795MHz



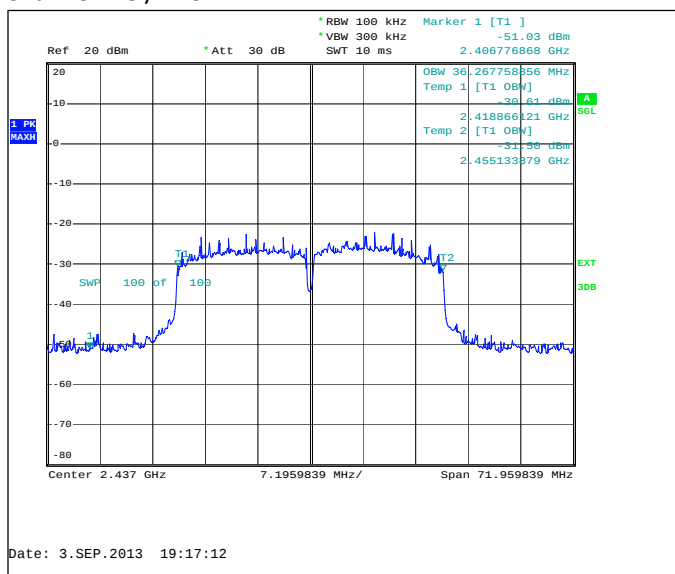
4.4.5 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1-5 / 2422	36270.1	PASSED
4-8 / 2437	36267.8	PASSED
7-11 / 2452	36265.4	PASSED

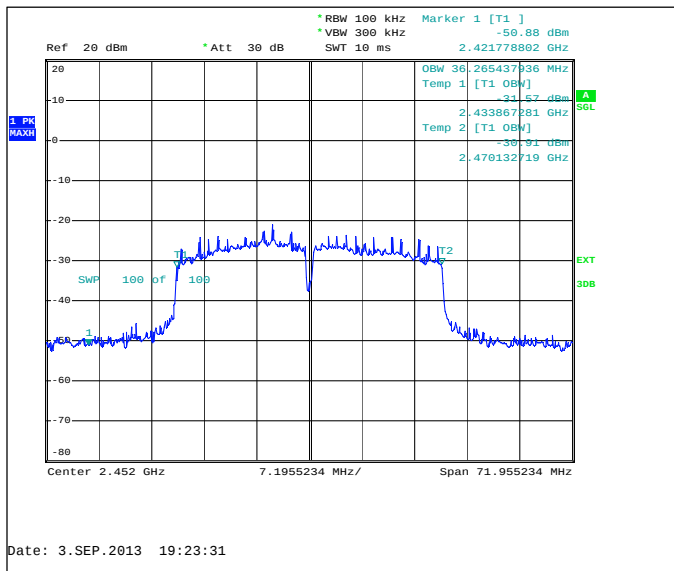
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



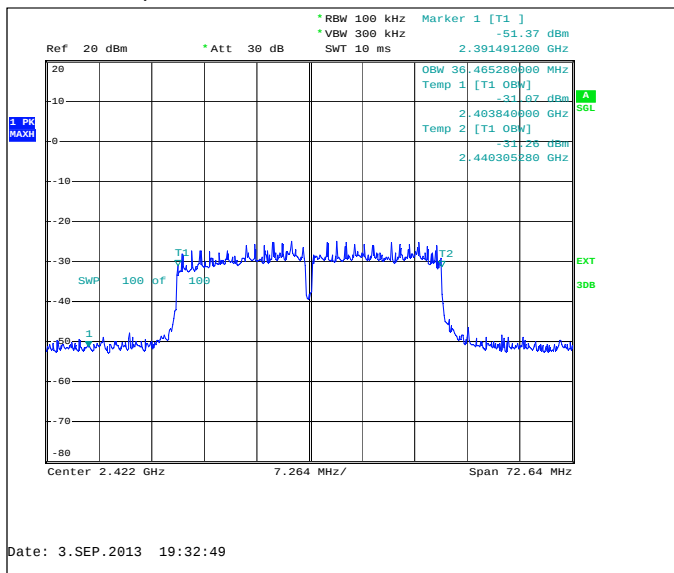
Channel 7-11 / 2452 MHz



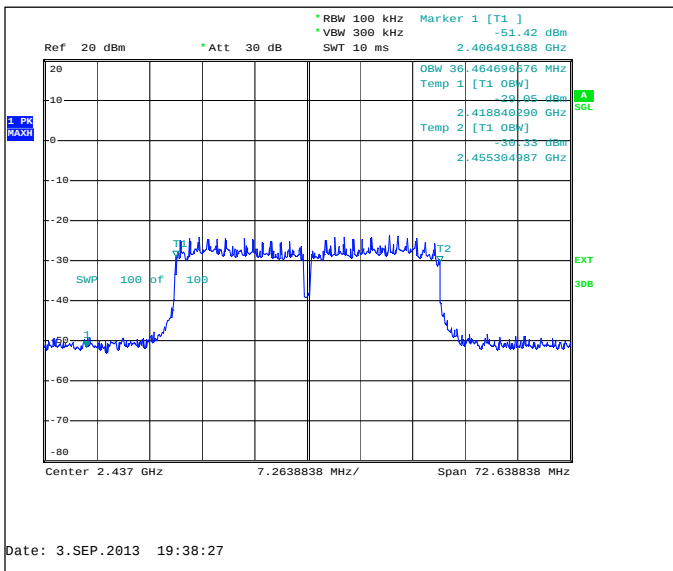
4.4.6 802.11n mode, 64QAM modulation, 108.0 / 120.0 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1-5 / 2422	36465.3	PASSED
4-8 / 2437	36464.7	PASSED
7-11 / 2452	36464.1	PASSED

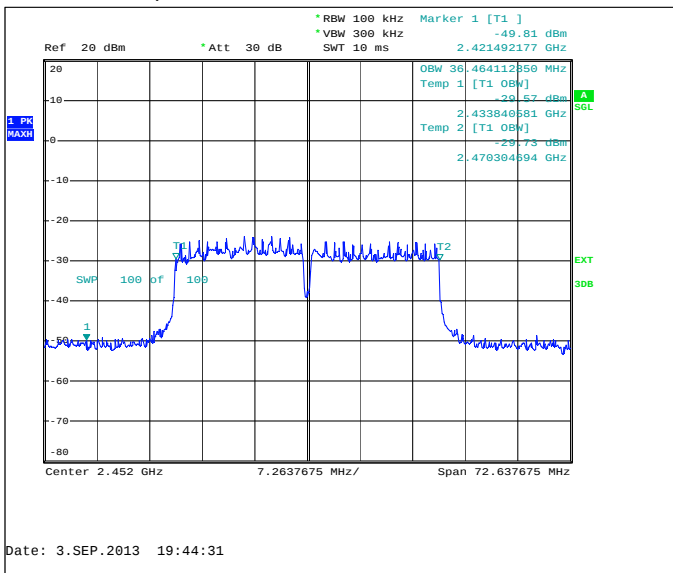
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



Channel 7-11 / 2452 MHz

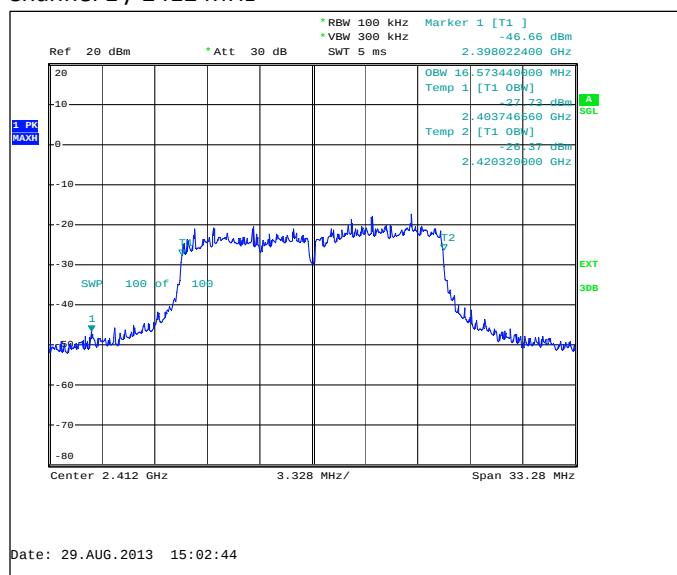


4.5. WLAN Test results, AUX Antenna

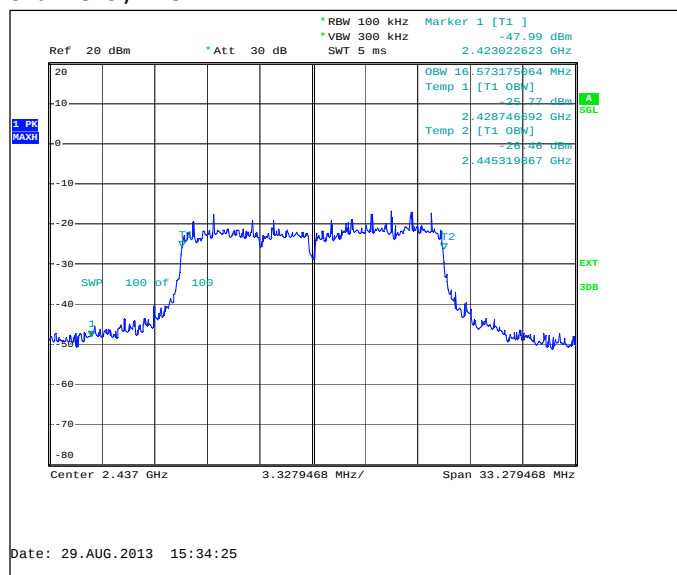
4.5.1 802.11g mode, BPSK modulation, 9 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	16573.4	PASSED
6 / 2437	16573.2	PASSED
11 / 2462	16640	PASSED

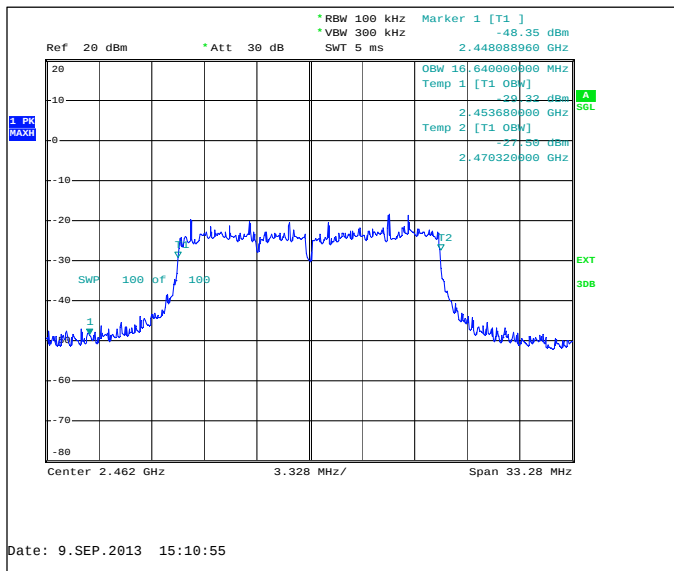
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



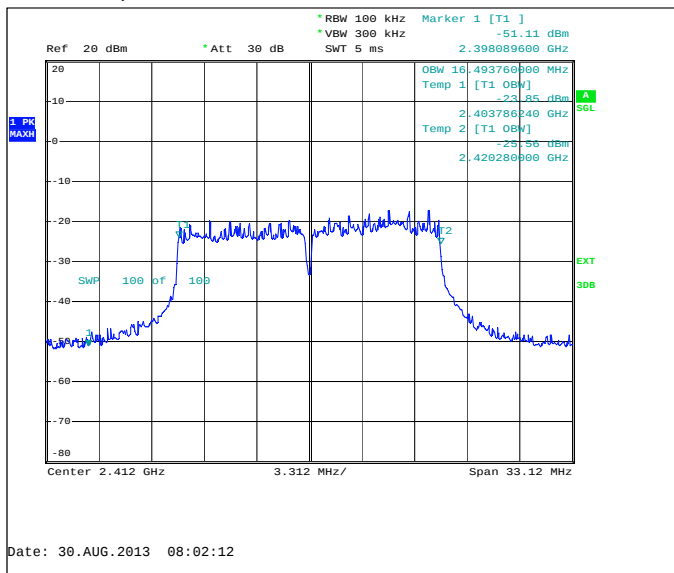
Channel 11 / 2462 MHz



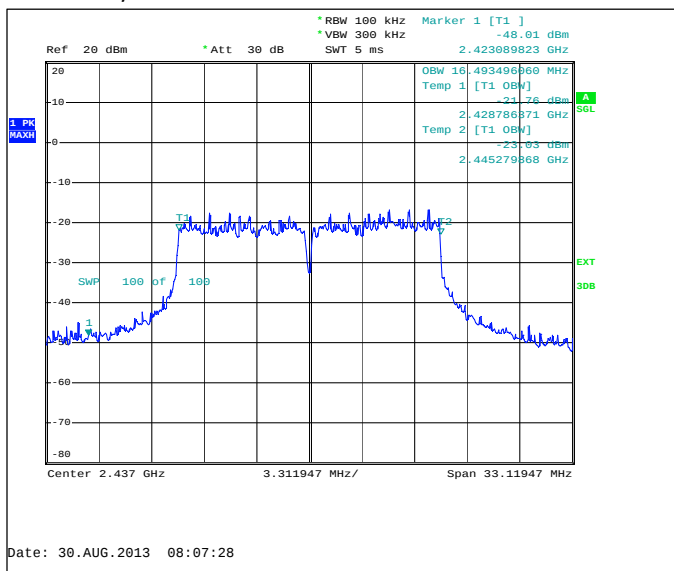
4.5.2 802.11g mode, 64QAM modulation, 48 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	16493.8	PASSED
6 / 2437	16493.5	PASSED
11 / 2462	16506.9	PASSED

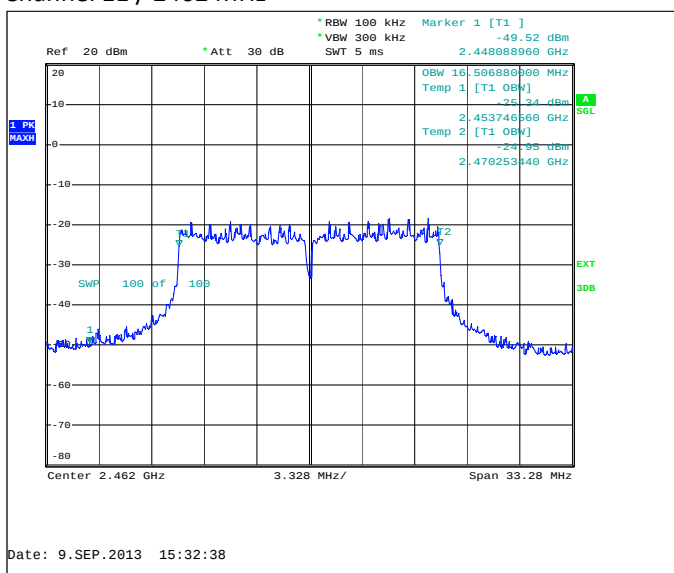
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



Channel 11 / 2462 MHz



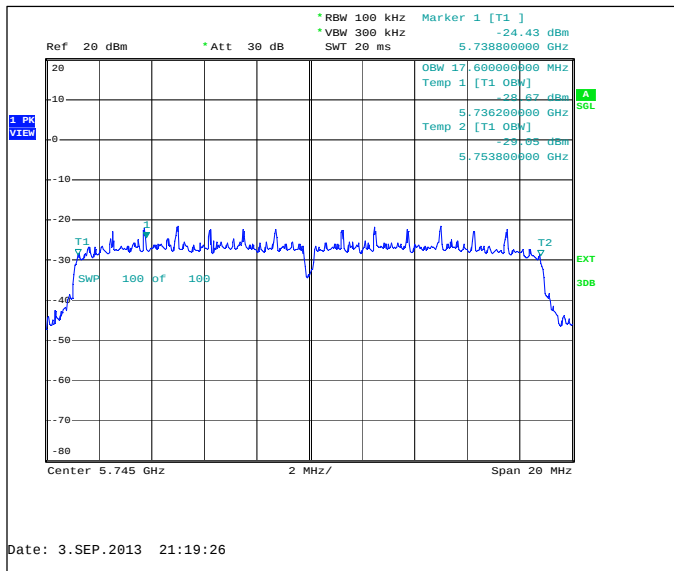
4.6. 5 GHz RLAN Test results, Aux Antenna

4.6.1 802.11n mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

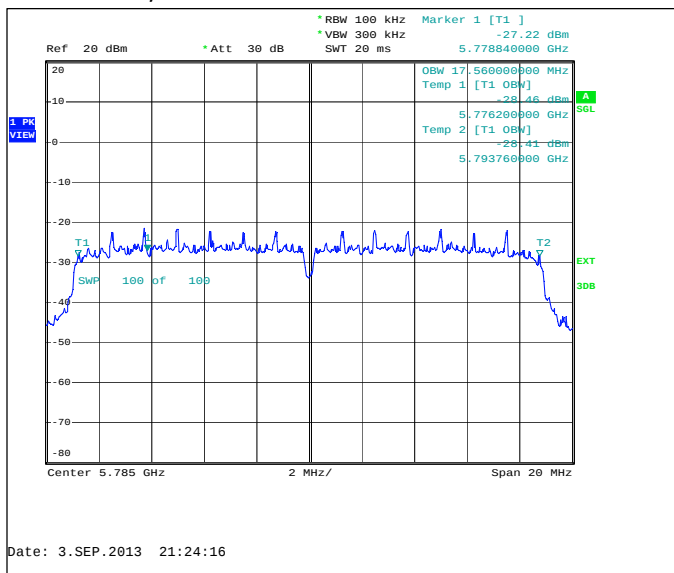
Channel / f_c [MHz]	6 dB bandwidth [kHz]	Result
149 / 5745	17600	PASSED
157 / 5785	17560	PASSED

165 / 5825	17560	PASSED
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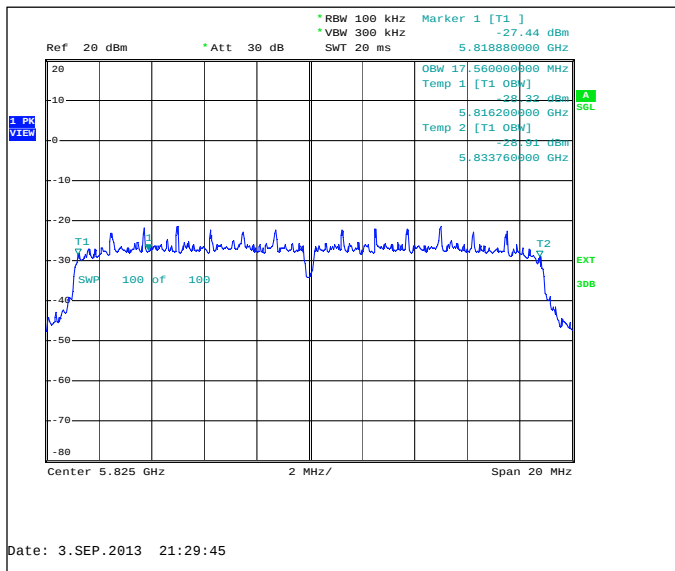
Channel 149 / 5745MHz



Channel 157 / 5785MHz



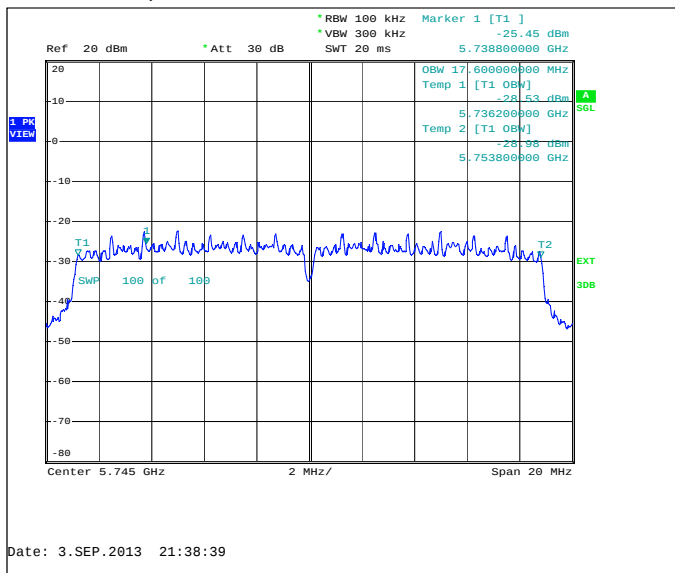
Channel 165 / 5825MHz



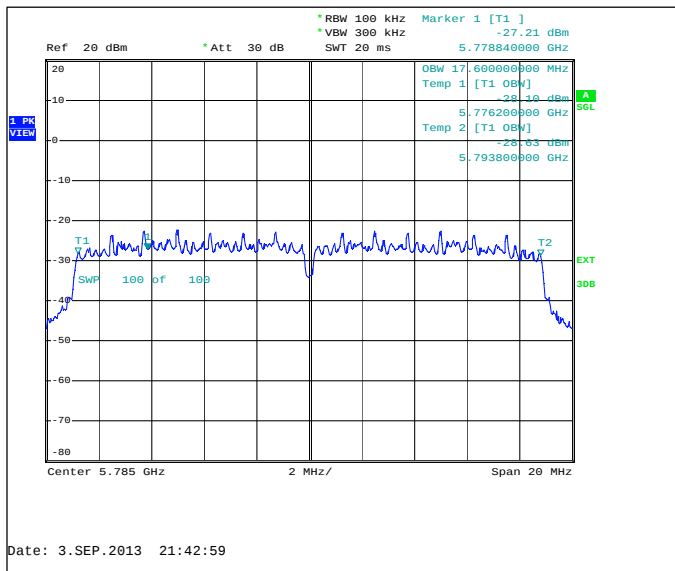
4.6.2 802.11n mode, 64QAM modulation, 52.0 / 57.8 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
149 / 5745	17600	PASSED
157 / 5785	17600	PASSED
165 / 5825	17600	PASSED

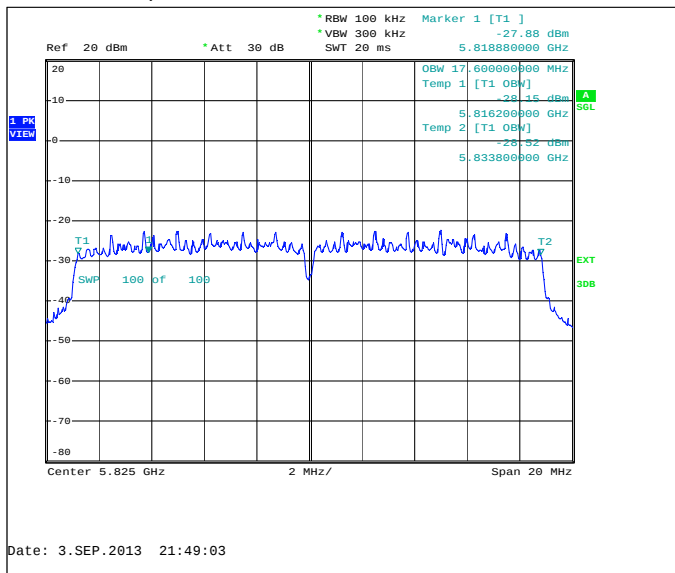
Channel 149 / 5745MHz



Channel 157 / 5785MHz



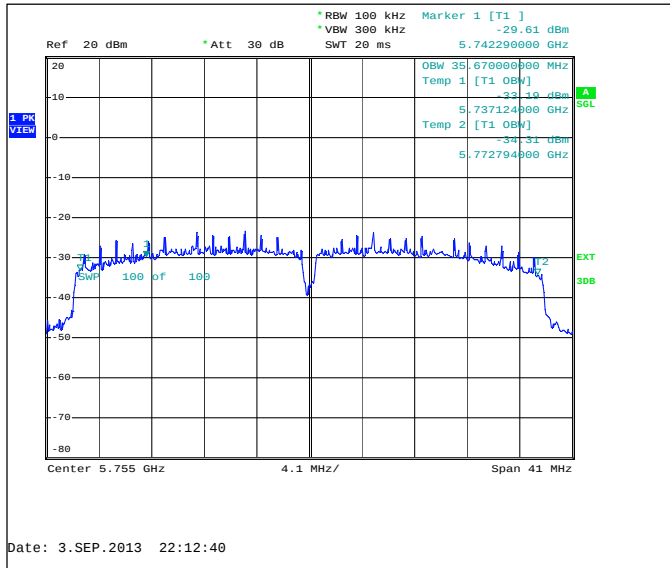
Channel 165 / 5825MHz



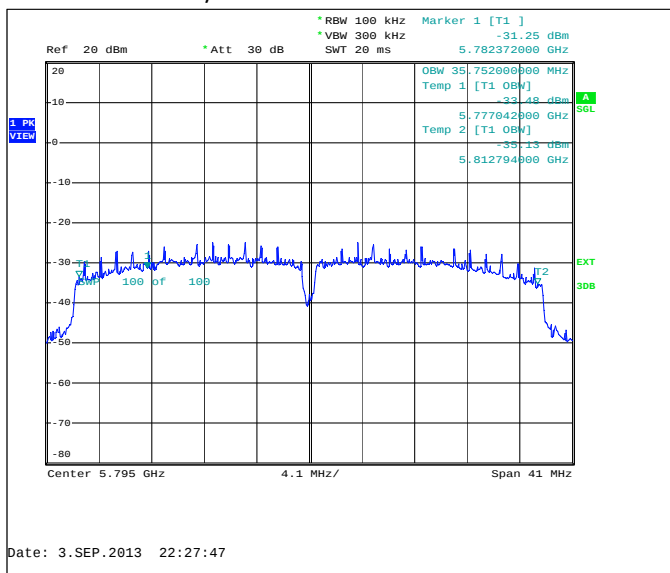
4.6.3 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
149+153 / 5755	35670	PASSED
157+161 / 5795	35752	PASSED

Channel 149+153 / 5755MHz



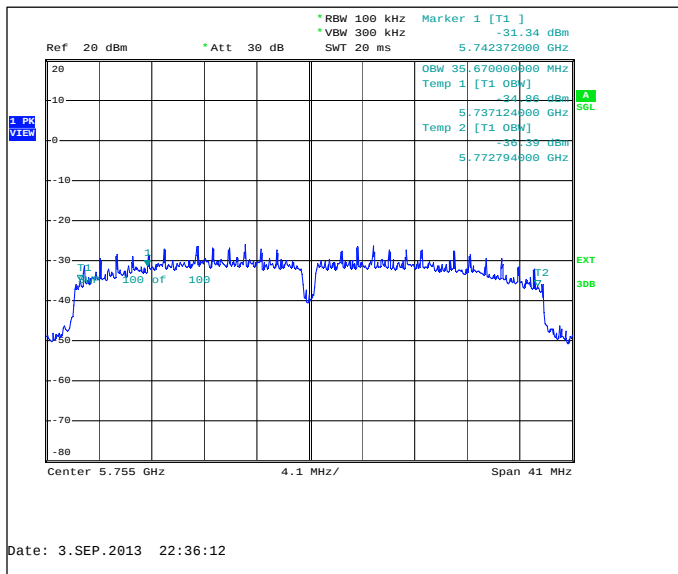
Channel 157+161 / 5795MHz



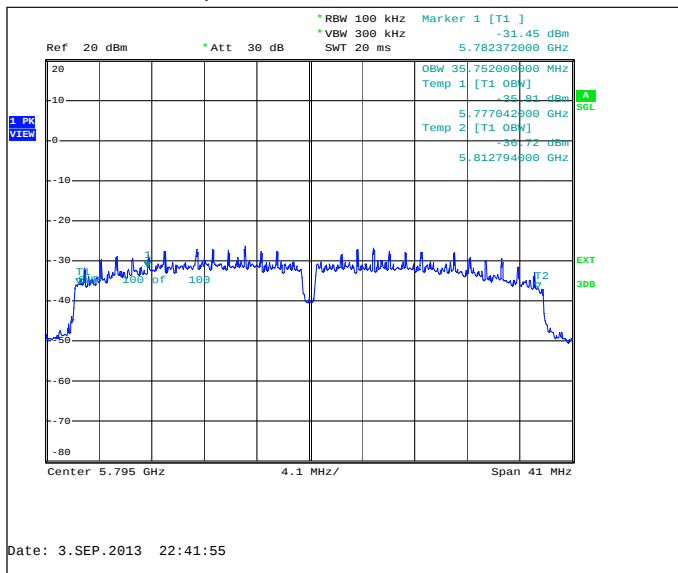
4.6.4 802.11n mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
149+153 / 5755	35670	PASSED
157+161 / 5795	35752	PASSED

Channel 149+153 / 5755MHz



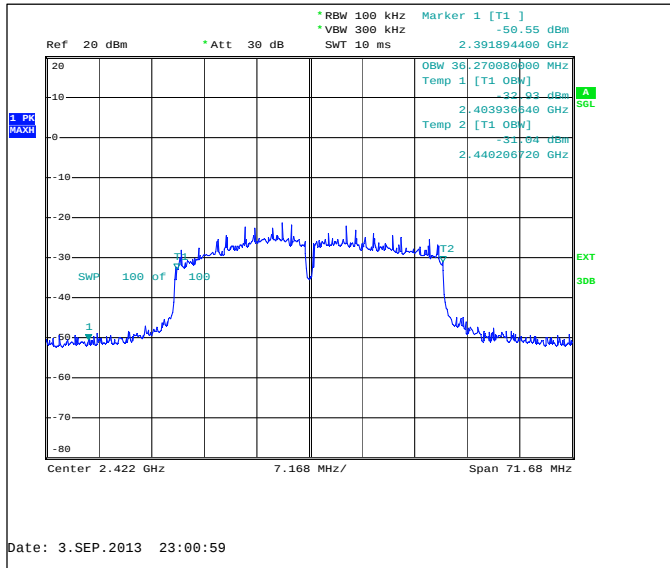
Channel 157+161 / 5795MHz



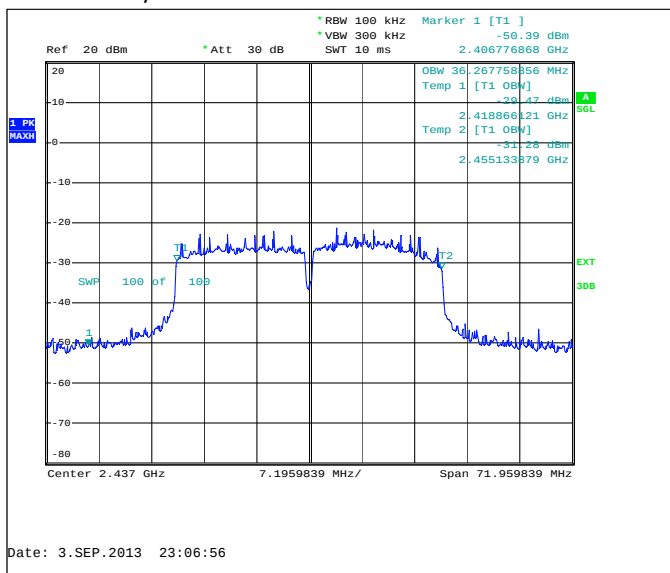
4.6.5 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1-5 / 2422	36270.1	PASSED
4-8 / 2437	36267.8	PASSED
7-11 / 2452	36121.5	PASSED

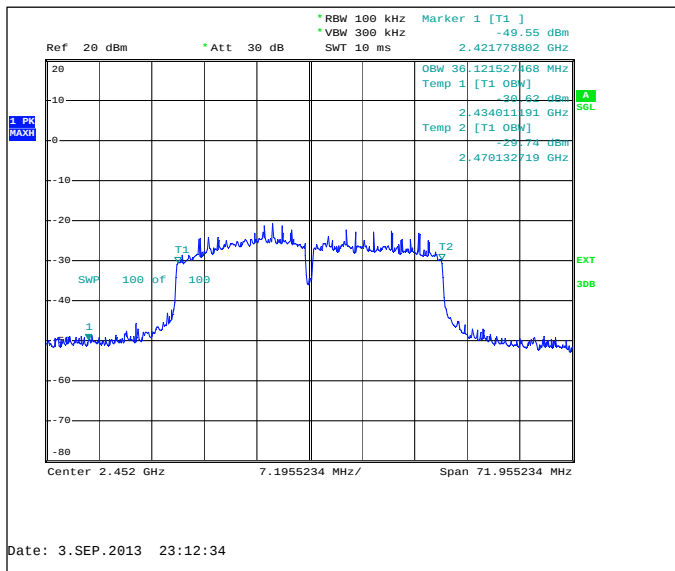
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



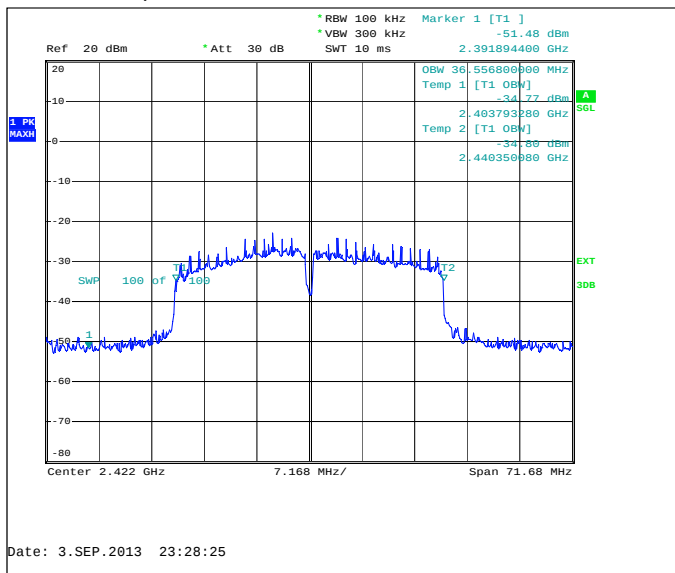
Channel 7-11 / 2452 MHz



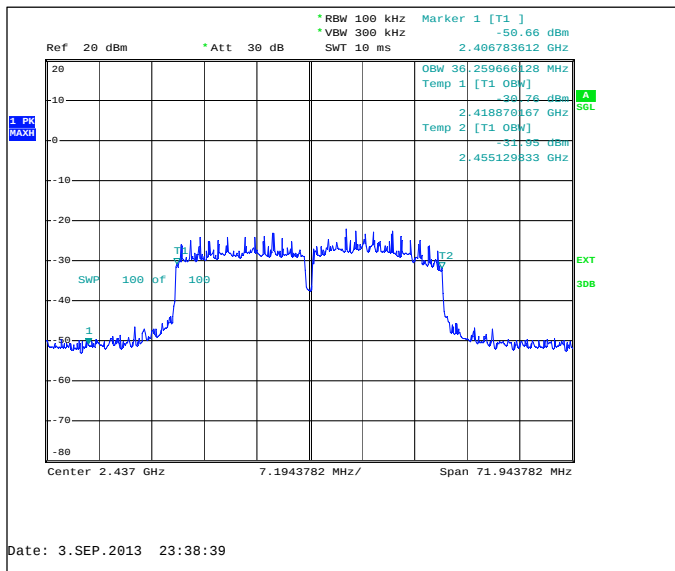
4.6.6 802.11n mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

Channel / f _c [MHz]	6 dB bandwidth [kHz]	Result
1-5 / 2422	36556.8	PASSED
4-8 / 2437	36259.7	PASSED
7-11 / 2452	36259.1	PASSED

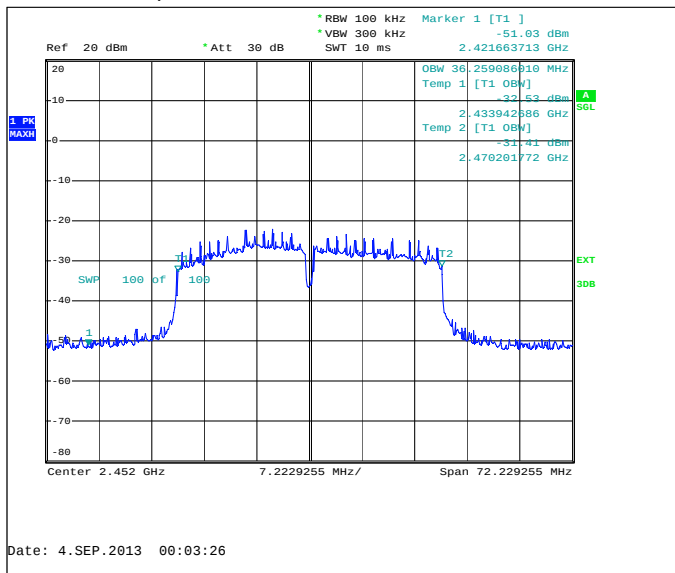
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



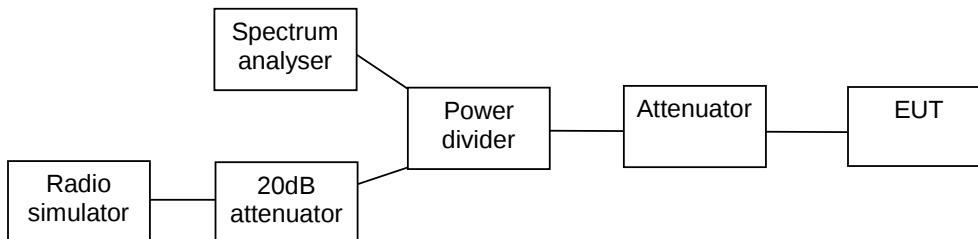
Channel 7-11 / 2452 MHz



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

EUT with DUT number	RX-114, DUT 17629
Accessories with DUT numbers	WH-208, DUT 17355
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	19 / 65 / 101.4
Date of measurements	29-Aug-2013
Measured by	Jari Keto

5.1. Test Setup



5.2. Test method and limit

The measurement is made according to DTS procedures KDB 558074 and IC standard RSS-210. Combined values have been calculated according to KDB 662911; Section e2ii was used in MIMO mode and section f2ii in SISO mode.

Limits for power spectral density measurements

Limit [dBm] @ 3 kHz
<= 8

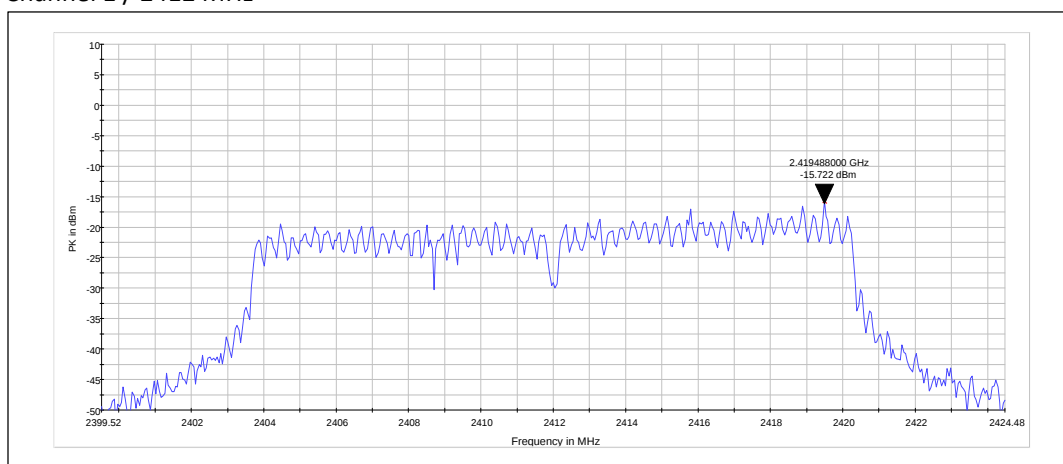
5.3. WLAN Test results, MAIN Antenna

5.3.1 802.11g mode, BPSK modulation, 9 Mbps data rate

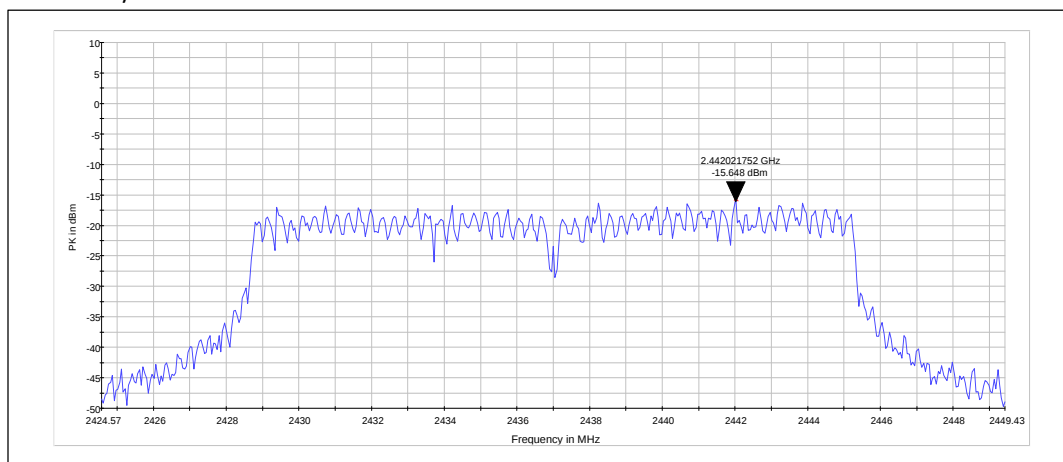
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f _c [MHz]	P [dBm]	Result
1 / 2412	-15.72	PASSED
6 / 2437	-15.65	PASSED
11 / 2462	-17.41	PASSED

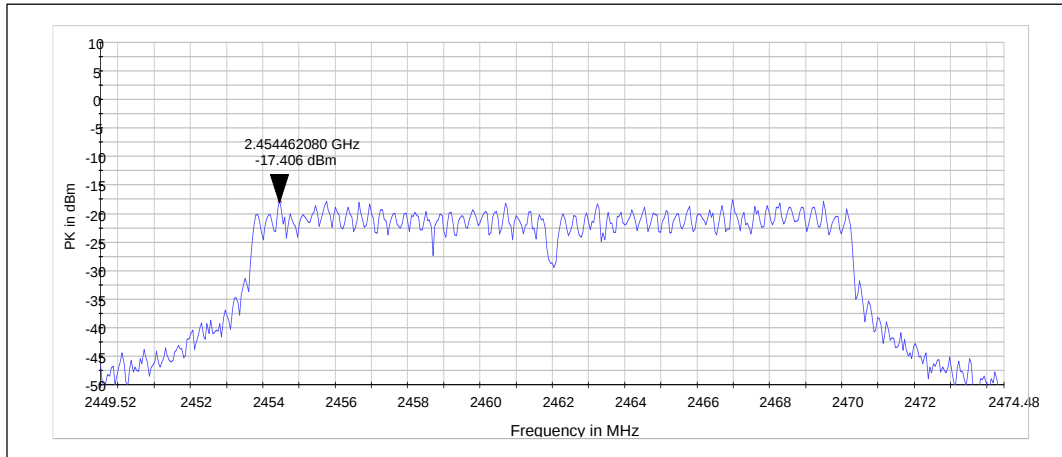
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



Channel 11 / 2462 MHz

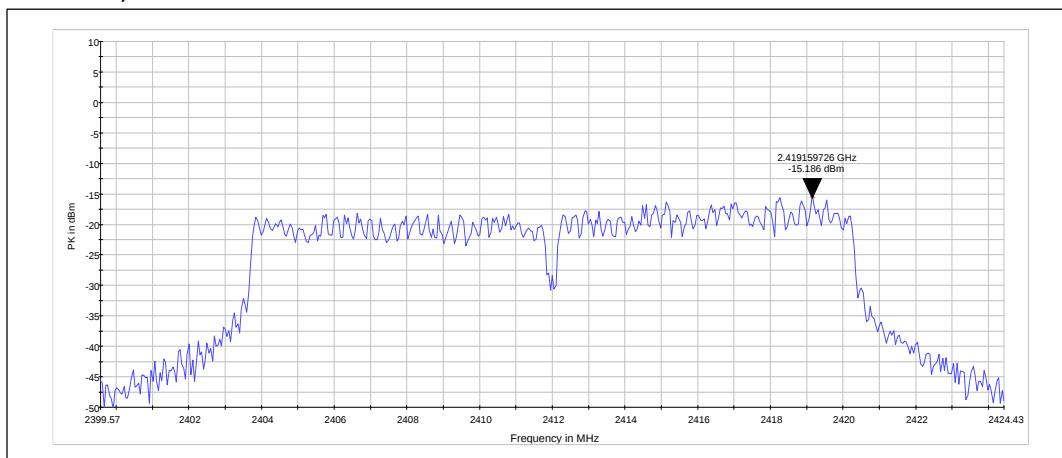


5.3.2 802.11g mode, 16QAM modulation, 24 Mbps data rate

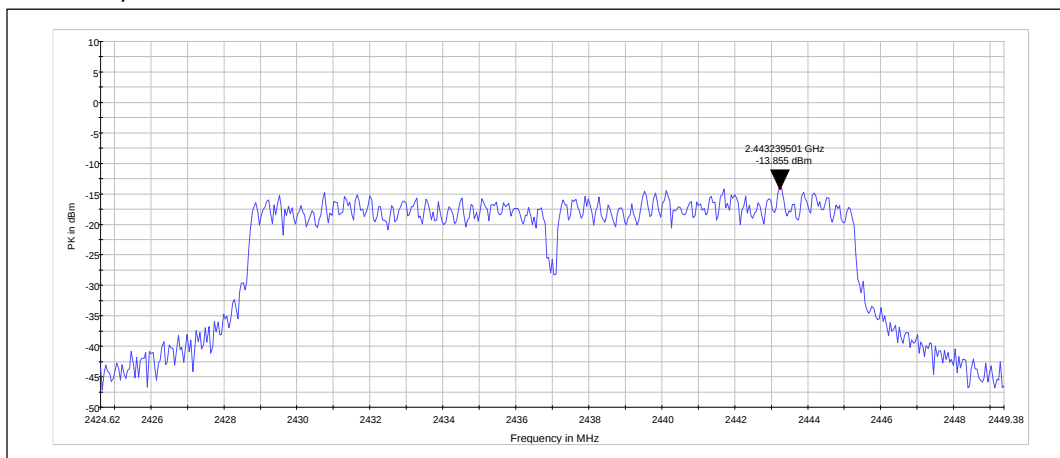
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
1 / 2412	-15.19	PASSED
6 / 2437	-13.86	PASSED
11 / 2462	-15.77	PASSED

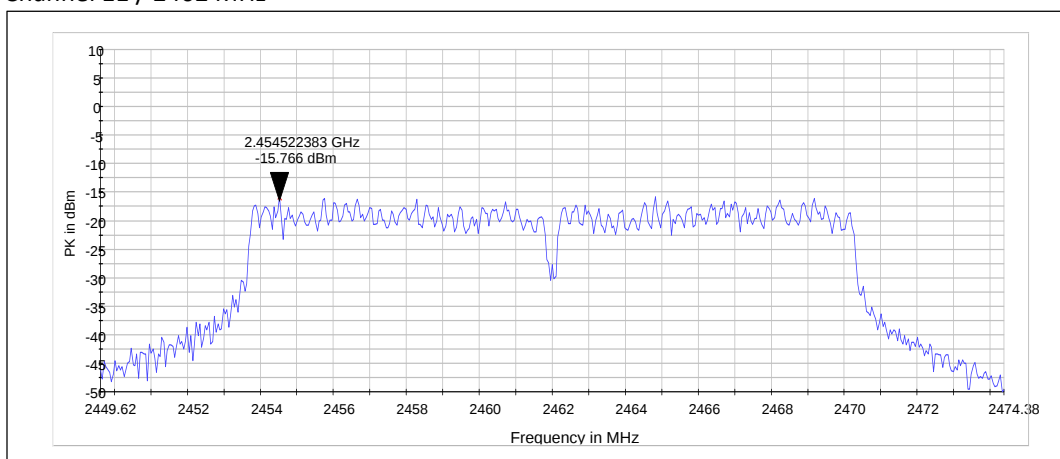
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



Channel 11 / 2462 MHz



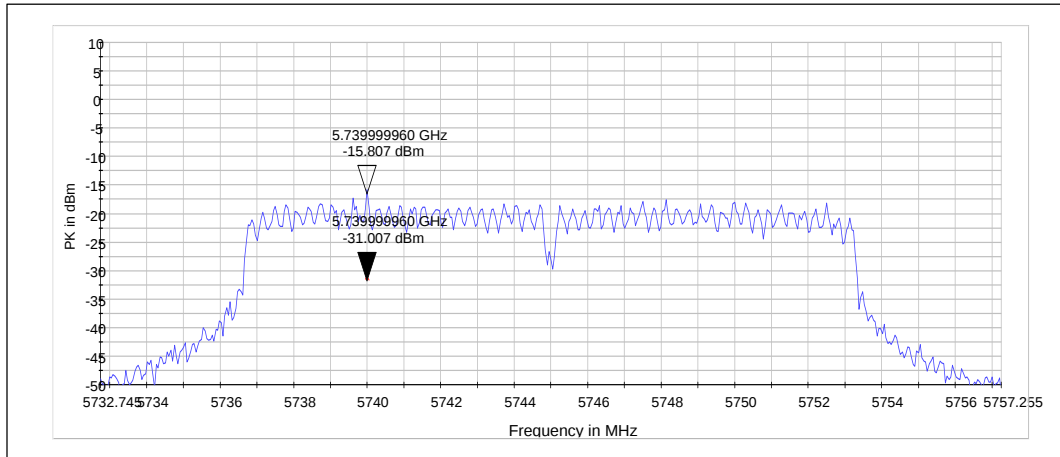
5.4. 5 GHz RLAN Test results

5.4.1 802.11a mode, BPSK modulation, 6 Mbps data rate

Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

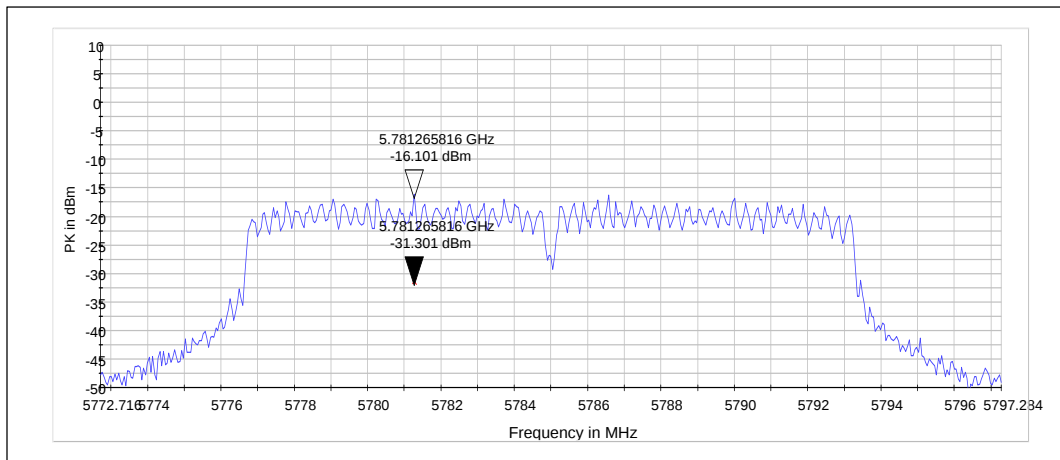
Channel / f_c [MHz]	P [dBm]	Result
149 / 5745	-31.01	PASSED
157 / 5785	-31.3	PASSED
165 / 5825	-32.17	PASSED

Channel 149 / 5745MHz

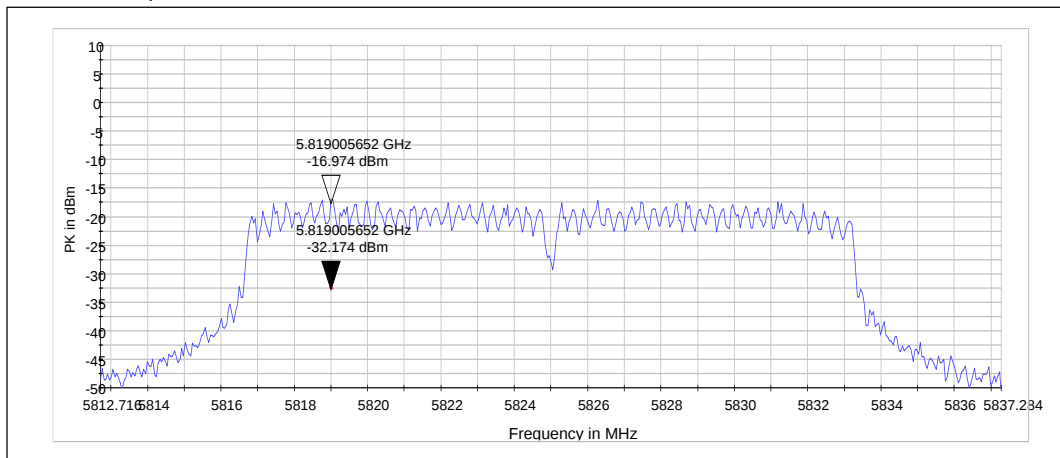


Channel

157 / 5785MHz



Channel 165 / 5825MHz

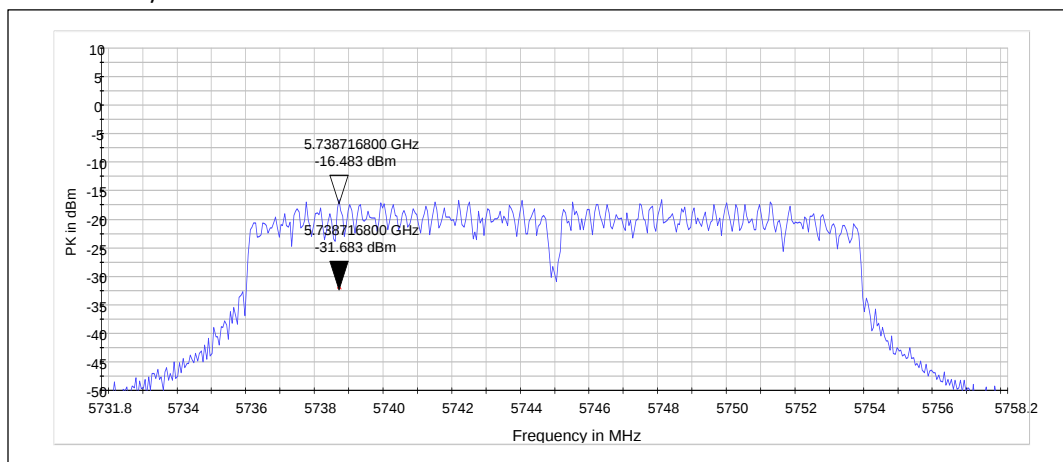


5.4.2 802.11n mode, 64QAM modulation, 52.0 / 57.8 Mbps data rate

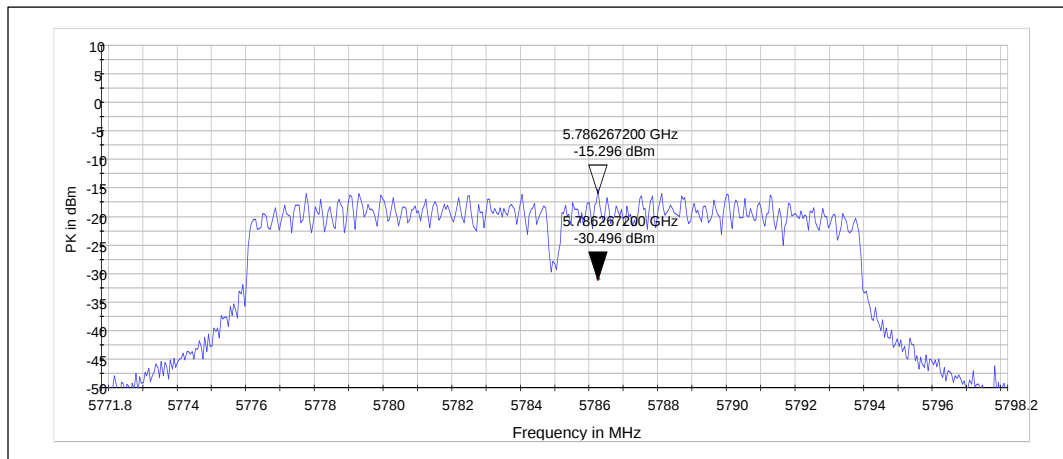
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f _c [MHz]	P [dBm]	Result
149 / 5745	-31.68	PASSED
157 / 5785	-30.5	PASSED
165 / 5825	-29.7	PASSED

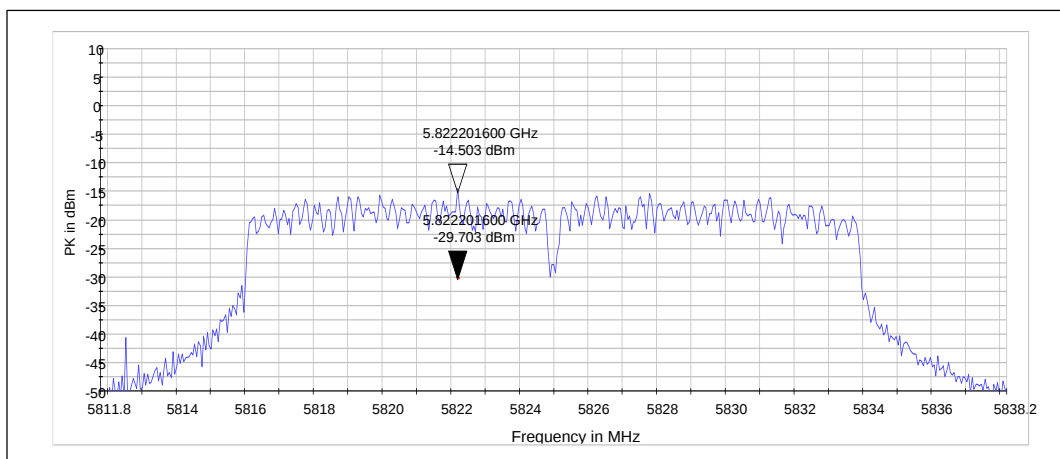
Channel 149 / 5745MHz



Channel 157 / 5785MHz



Channel 165 / 5825MHz

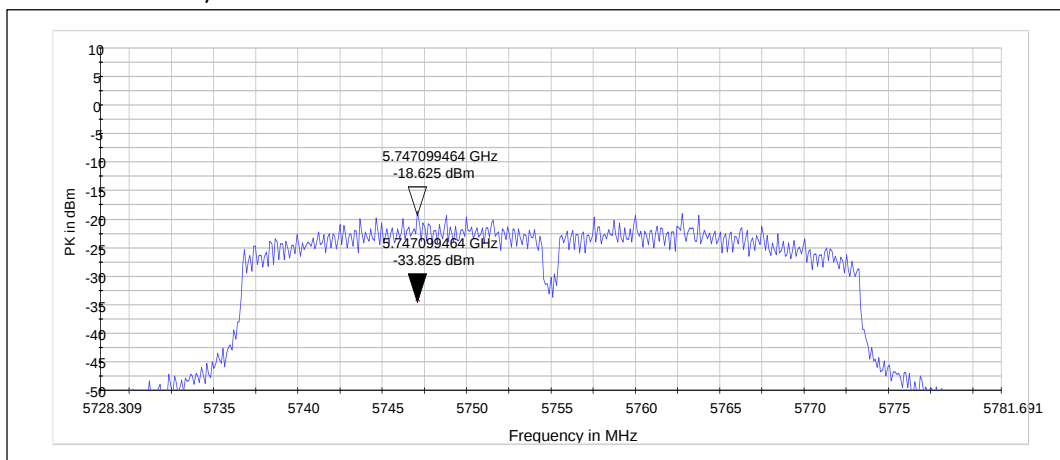


5.4.3 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

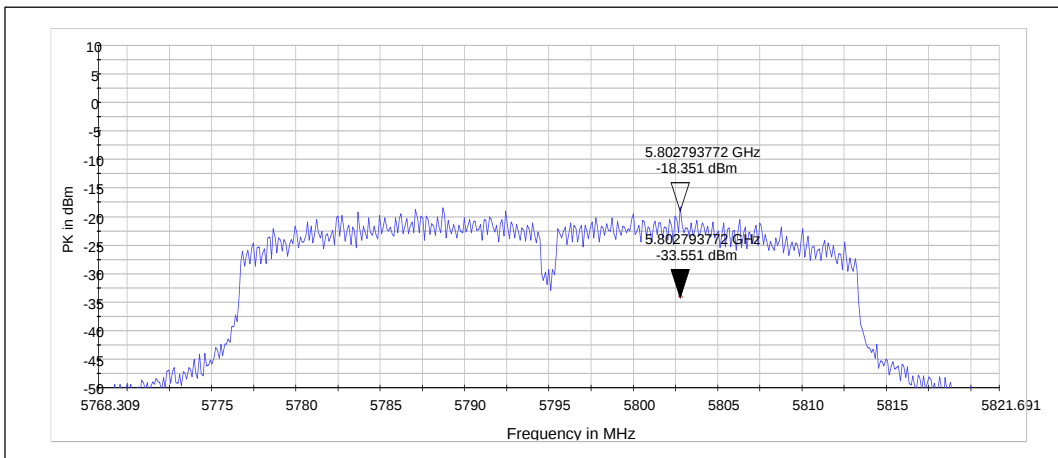
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
149+153 / 5755	-33.83	PASSED
157+161 / 5795	-33.55	PASSED

Channel 149+153 / 5755MHz



Channel 157+161 / 5795MHz

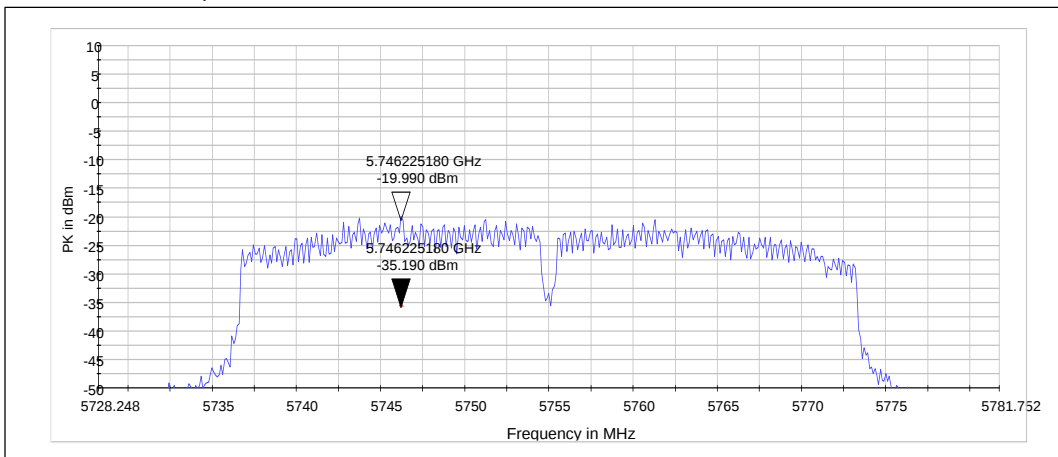


5.4.4 802.11n mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

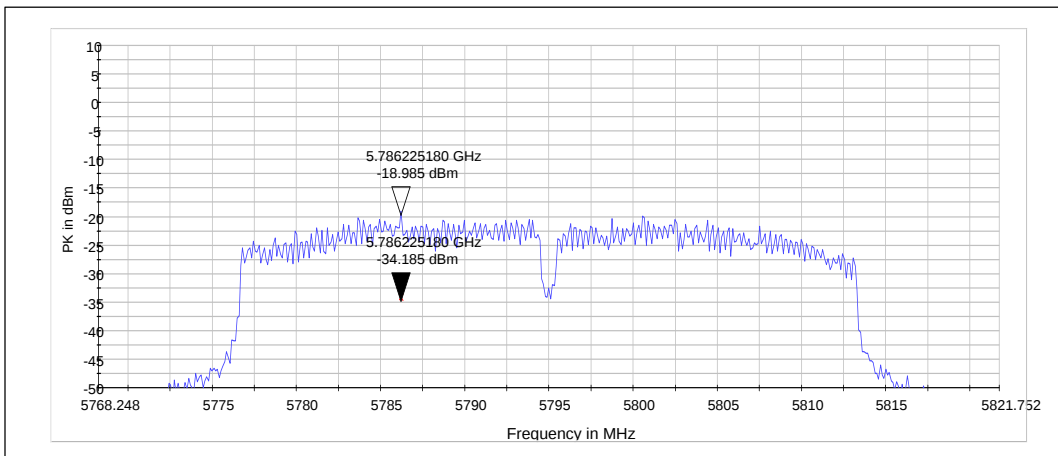
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
149+153 / 5755	-35.19	PASSED
157+161 / 5795	-34.19	PASSED

Channel 149+153 / 5755MHz



Channel 157+161 / 5795MHz

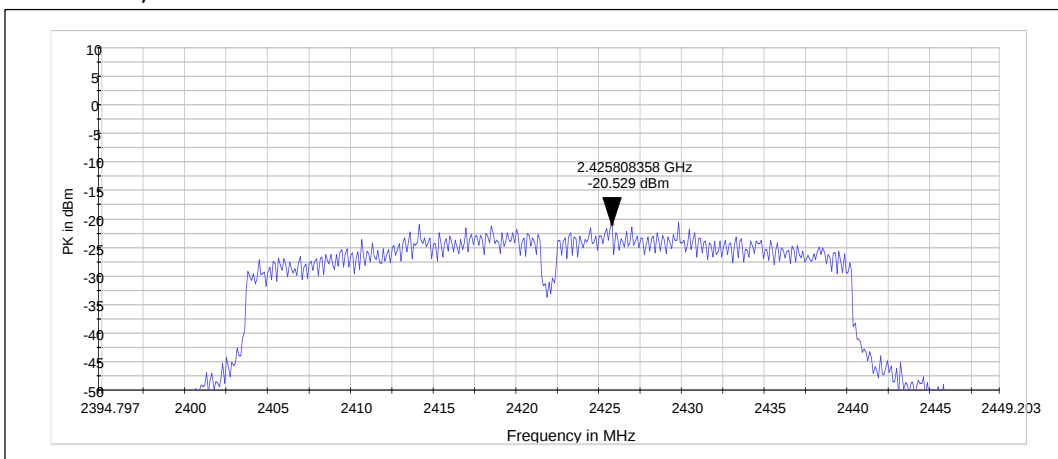


5.4.5 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

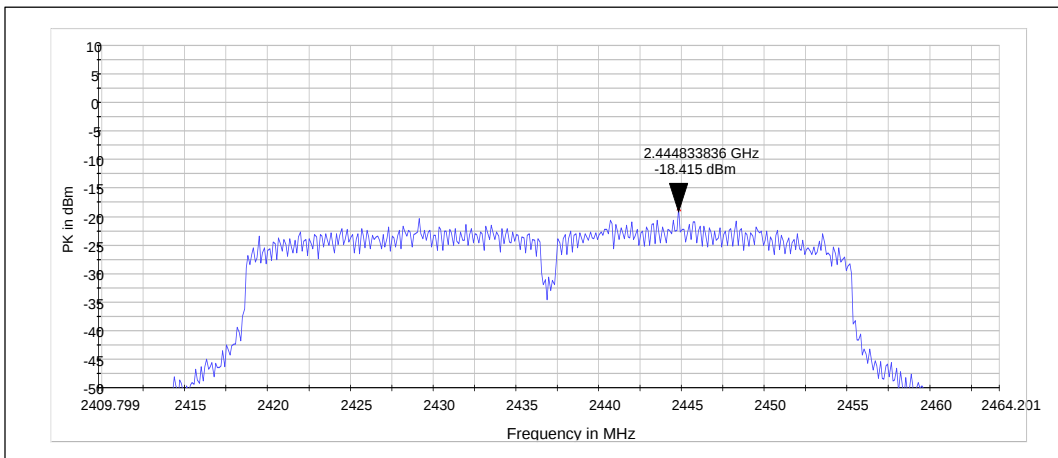
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
1-5 / 2422	-20.53	PASSED
4-8 / 2437	-18.41	PASSED
7-11 / 2452	-19.19	PASSED

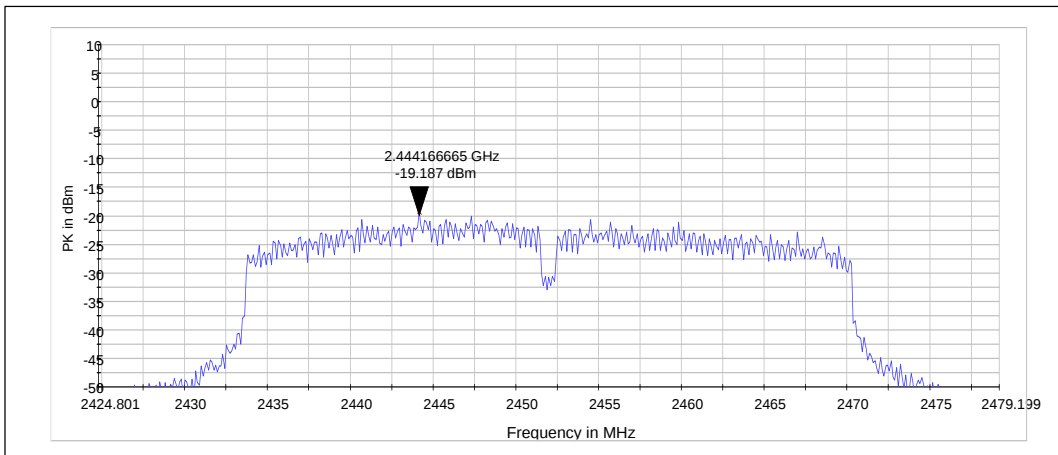
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



Channel 7-11 / 2452 MHz

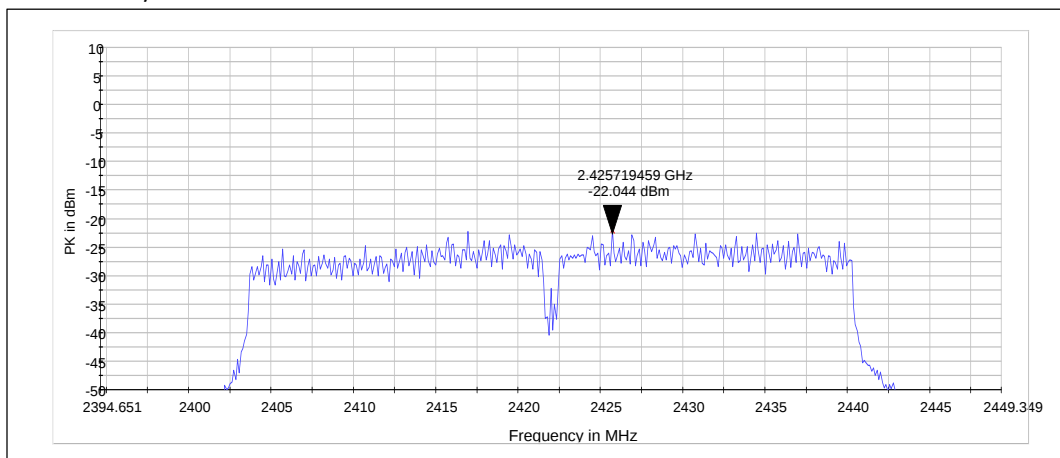


5.4.6 802.11n mode, 64QAM modulation, 108.0 / 120.0 Mbps data rate

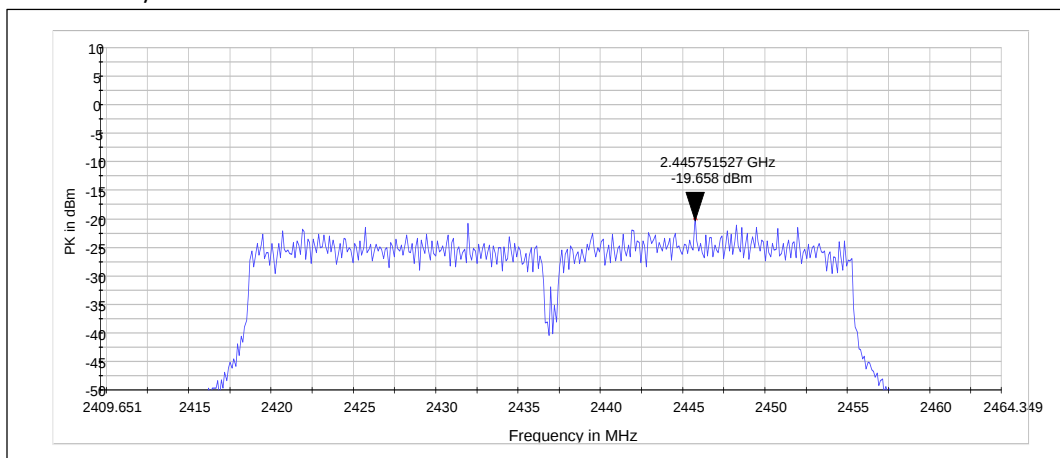
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f _c [MHz]	P [dBm]	Result
1-5 / 2422	-22.04	PASSED
4-8 / 2437	-19.66	PASSED
7-11 / 2452	-20.59	PASSED

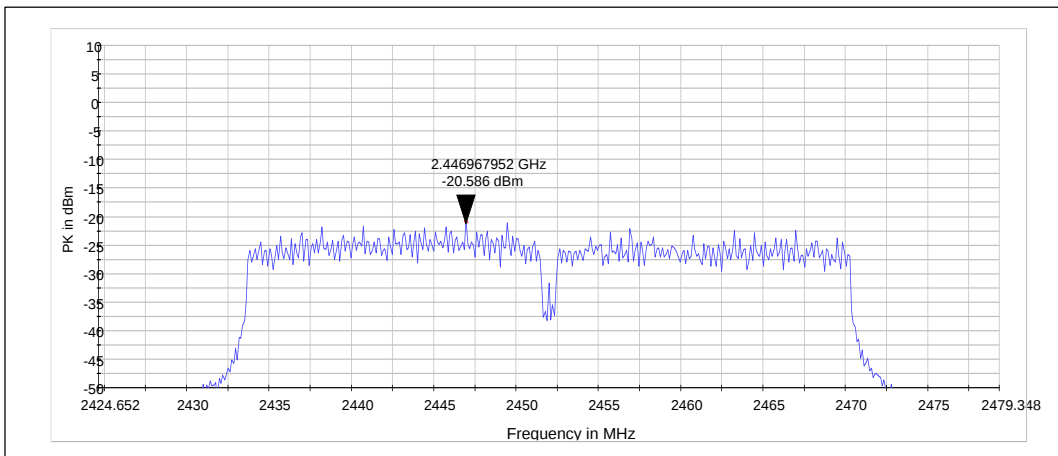
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



Channel 7-11 / 2452 MHz



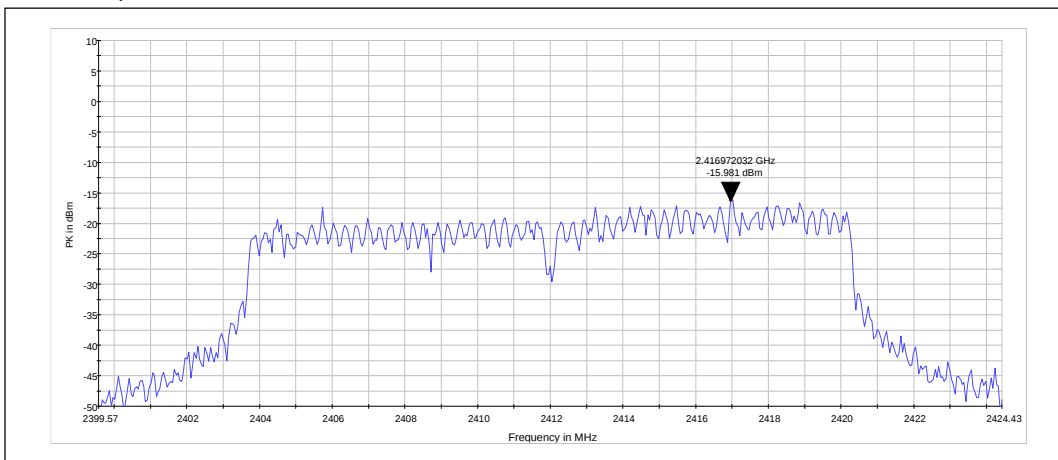
5.5. WLAN Test results, AUX Antenna

5.5.1 802.11g mode, BPSK modulation, 9 Mbps data rate

Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f _c [MHz]	P [dBm]	Result
1 / 2412	-15.98	PASSED
6 / 2437	-15.94	PASSED
11 / 2462	-17.24	PASSED

Channel 1 / 2412 MHz



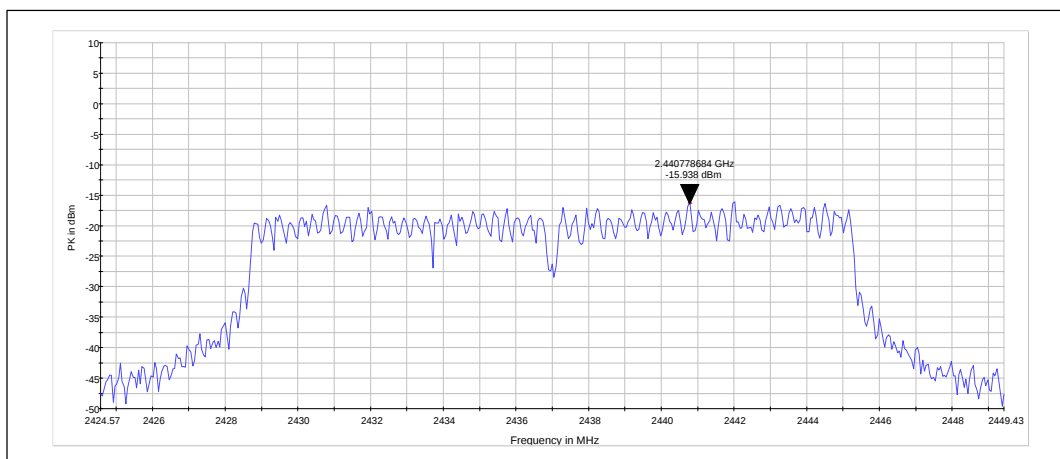
Channel 6 / 2437 MHz

FCC Part 15C Compliance Test Report
/ Template Version 15.0

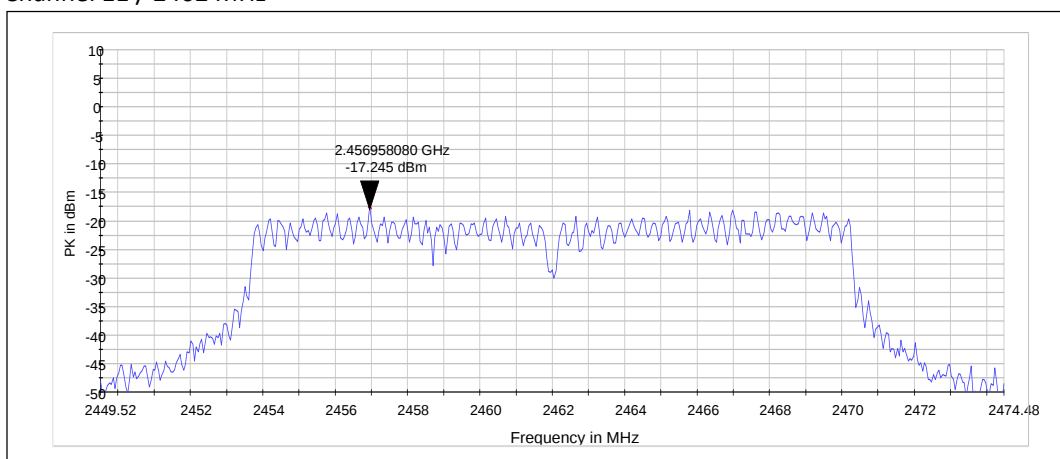
126 (140)

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Fax. +358 (0) 7180 45220



Channel 11 / 2462 MHz

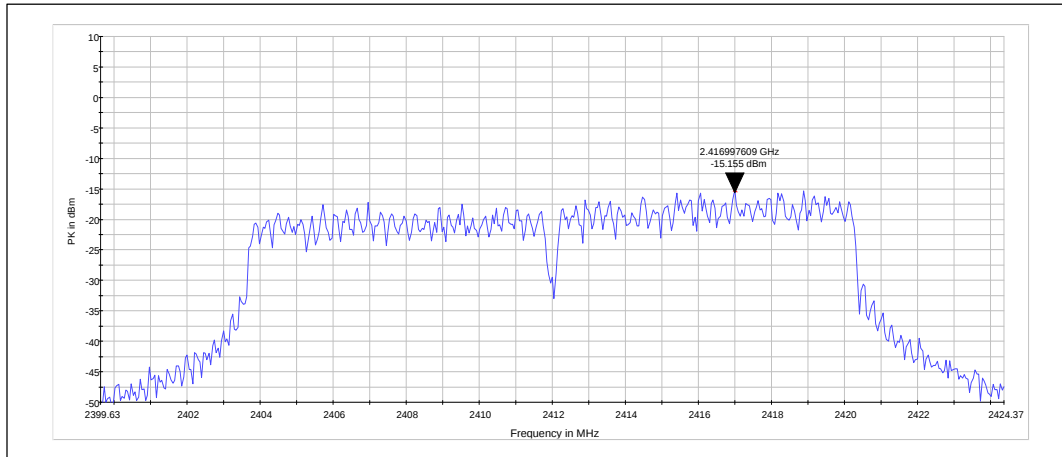


5.5.2 802.11g mode, 64QAM modulation, 48 Mbps data rate

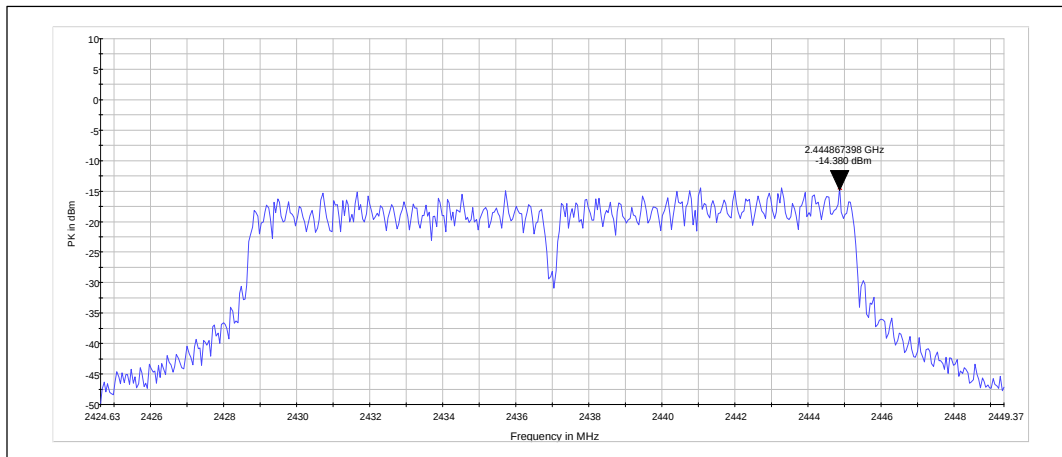
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f _c [MHz]	P [dBm]	Result
1 / 2412	-15.15	PASSED
6 / 2437	-14.38	PASSED
11 / 2462	-15.76	PASSED

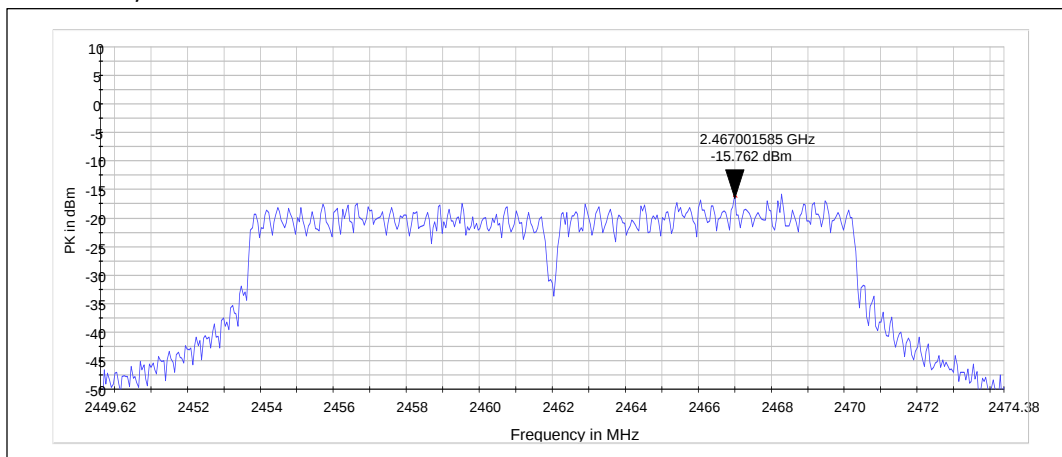
Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



Channel 11 / 2462 MHz



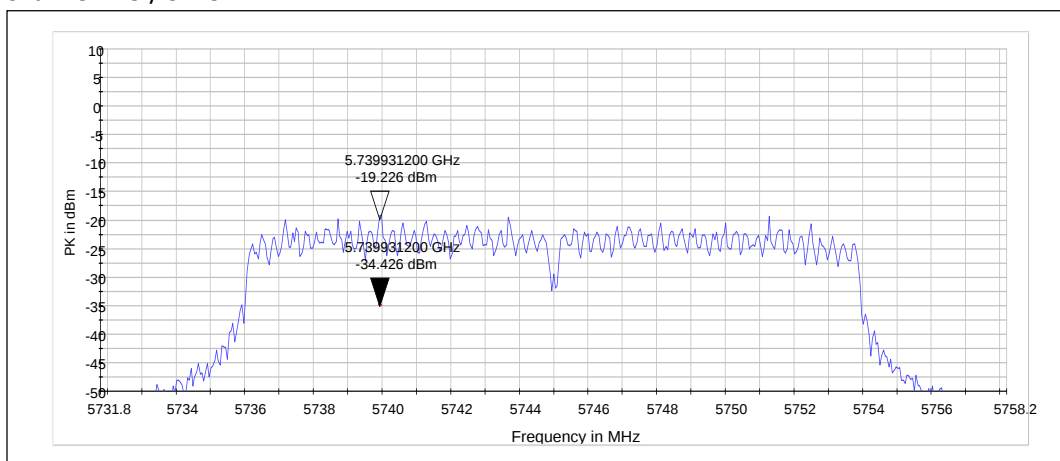
5.6. 5 GHz RLAN Test results

5.6.1 802.11n mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

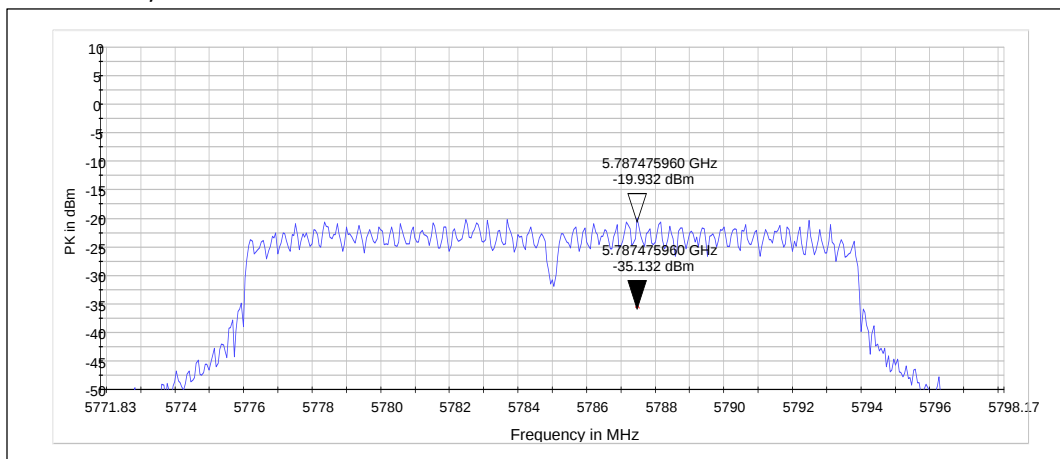
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f _c [MHz]	P [dBm]	Result
149 / 5745	-34.43	PASSED
157 / 5785	-35.13	PASSED
165 / 5825	-33.62	PASSED

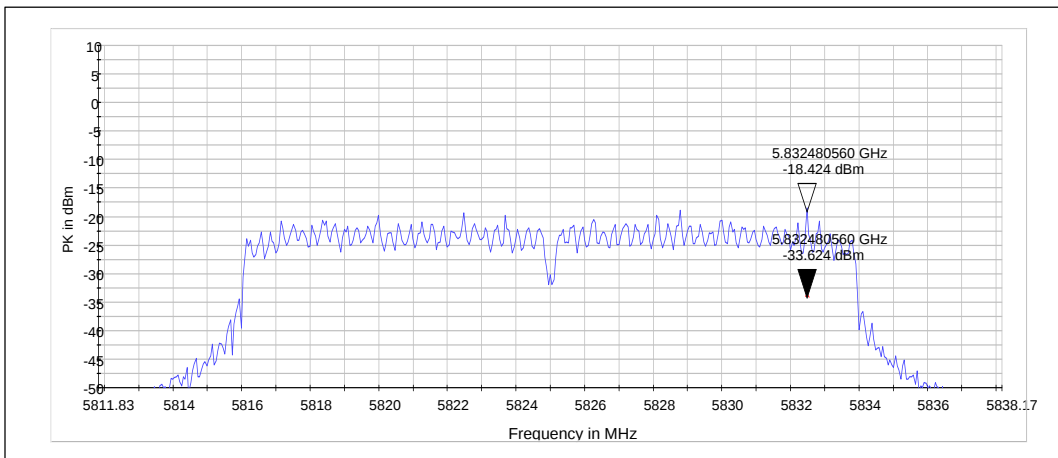
Channel 149 / 5745MHz



Channel 157 / 5785MHz



Channel 165 / 5825MHz

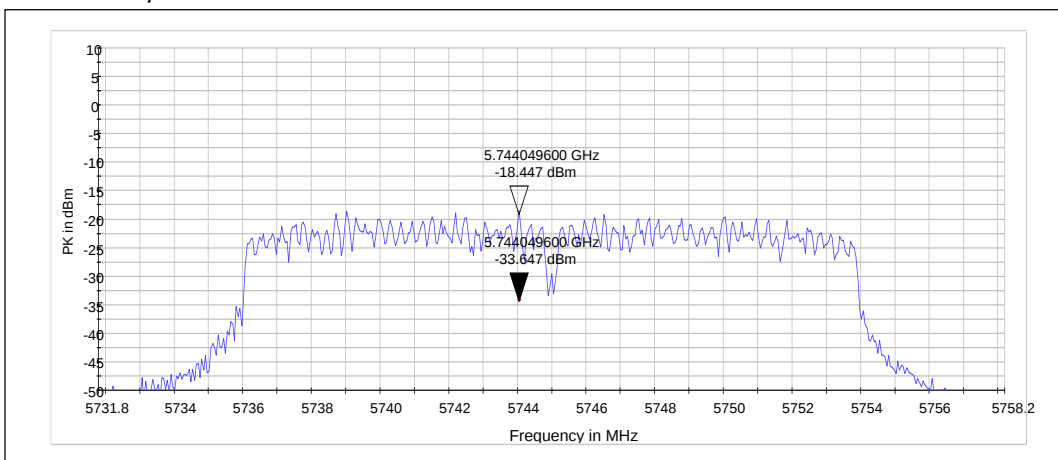


5.6.2 802.11n mode, 64QAM modulation, 52.0 / 57.8 Mbps data rate

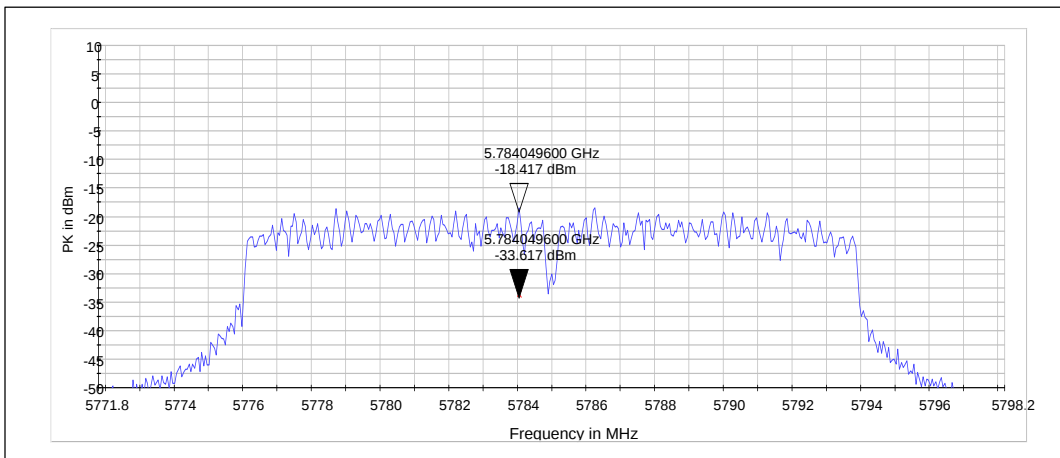
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
149 / 5745	-33.65	PASSED
157 / 5785	-33.62	PASSED
165 / 5825	-33.59	PASSED

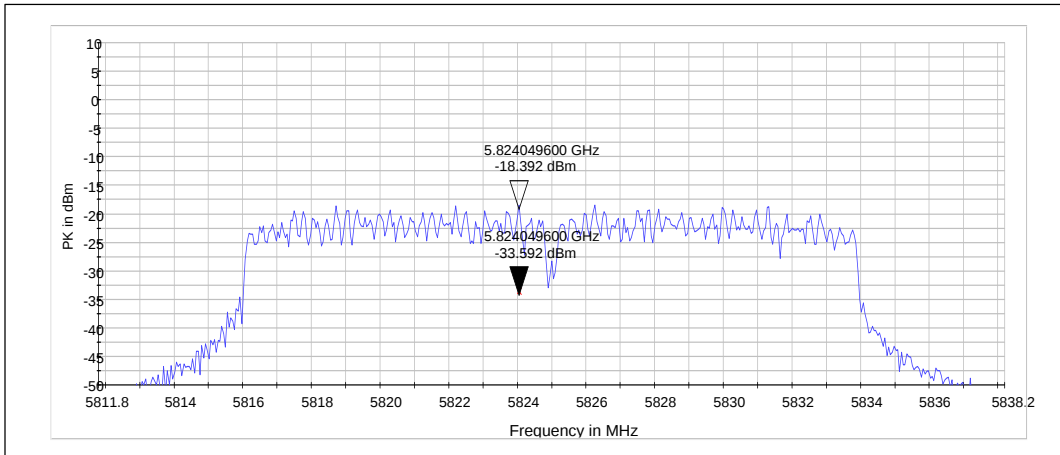
Channel 149 / 5745MHz



Channel 157 / 5785MHz



Channel 165 / 5825MHz

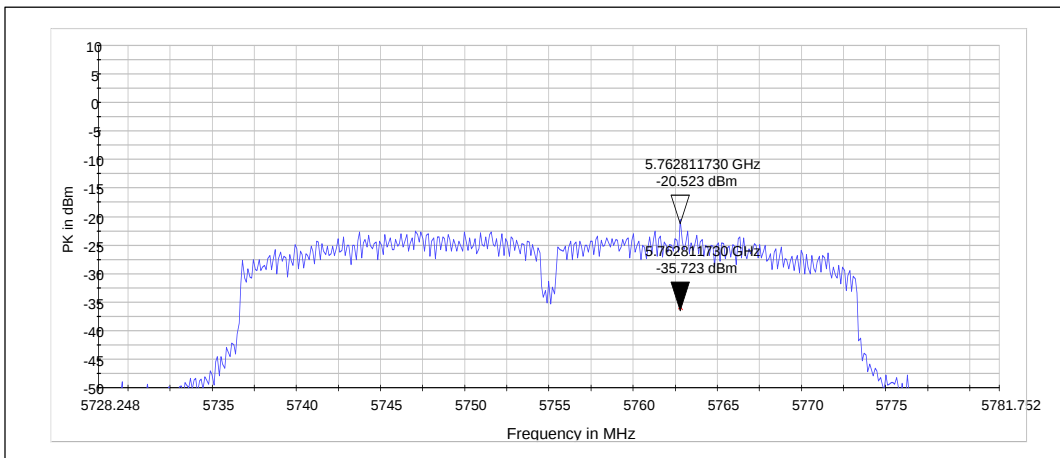


5.6.3 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

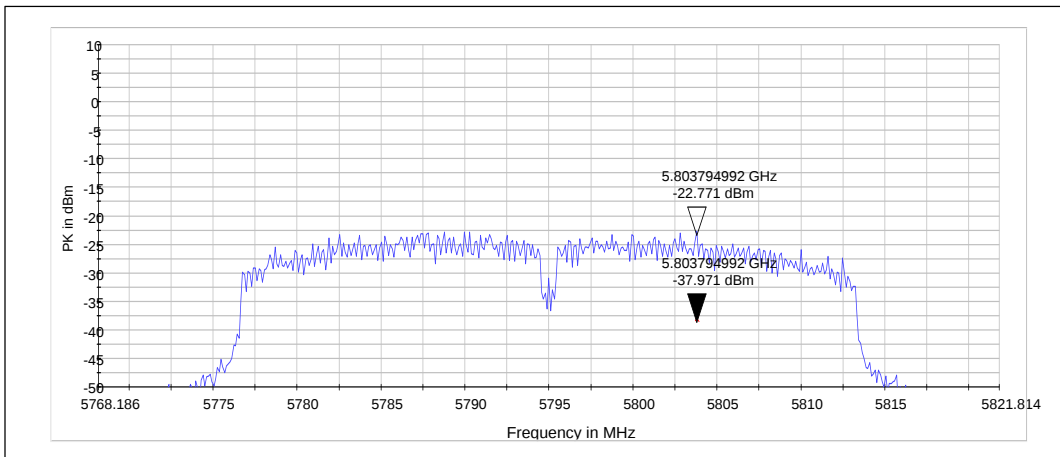
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f _c [MHz]	P [dBm]	Result
149+153 / 5755	-35.72	PASSED
157+161 / 5795	-37.97	PASSED

Channel 149+153 / 5755MHz



Channel 157+161 / 5795MHz

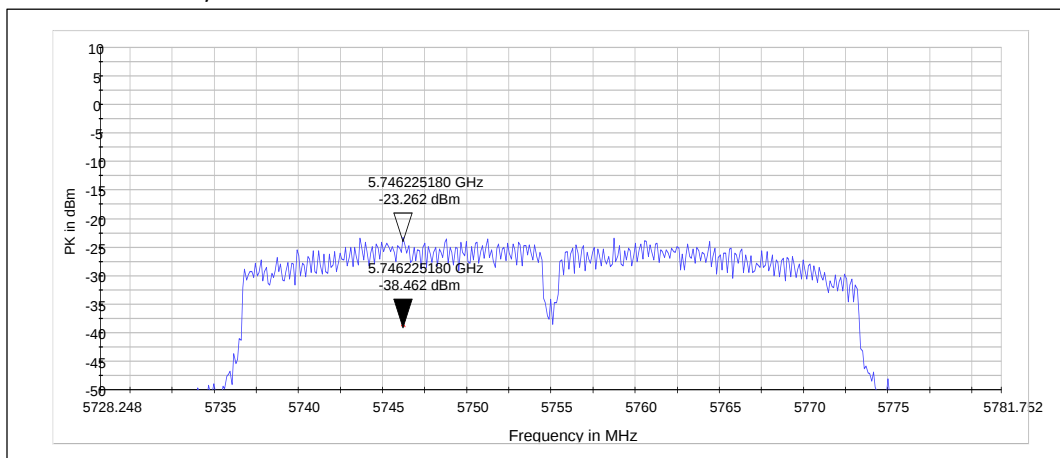


5.6.4 802.11n mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

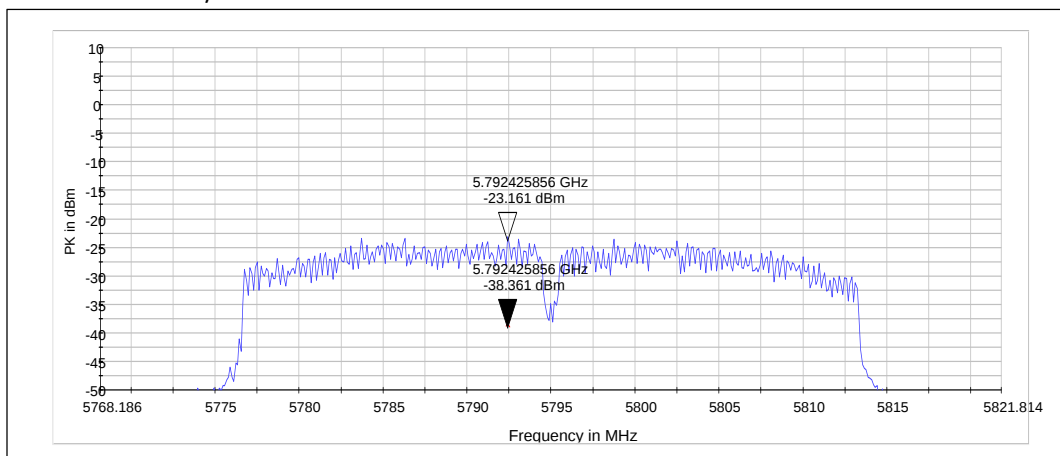
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
149+153 / 5755	-38.46	PASSED
157+161 / 5795	-38.36	PASSED

Channel 149+153 / 5755MHz



Channel 157+161 / 5795MHz

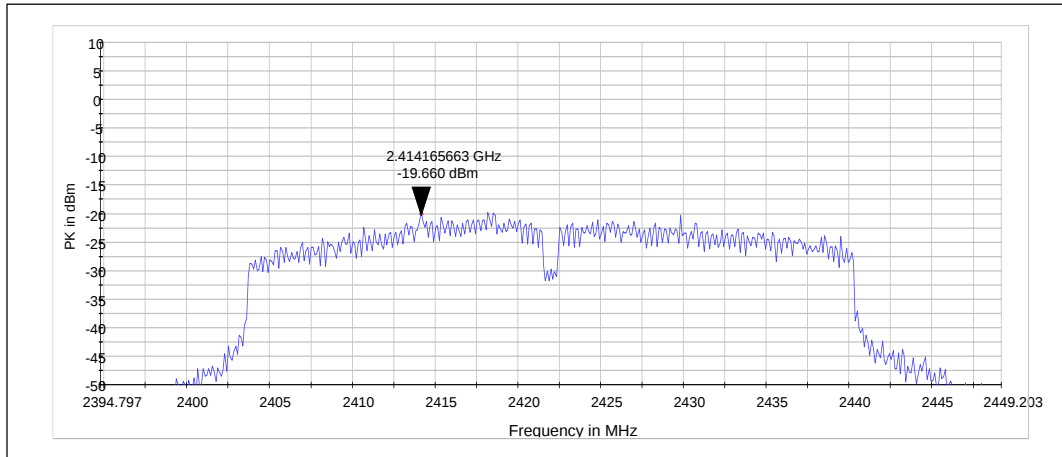


5.6.5 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

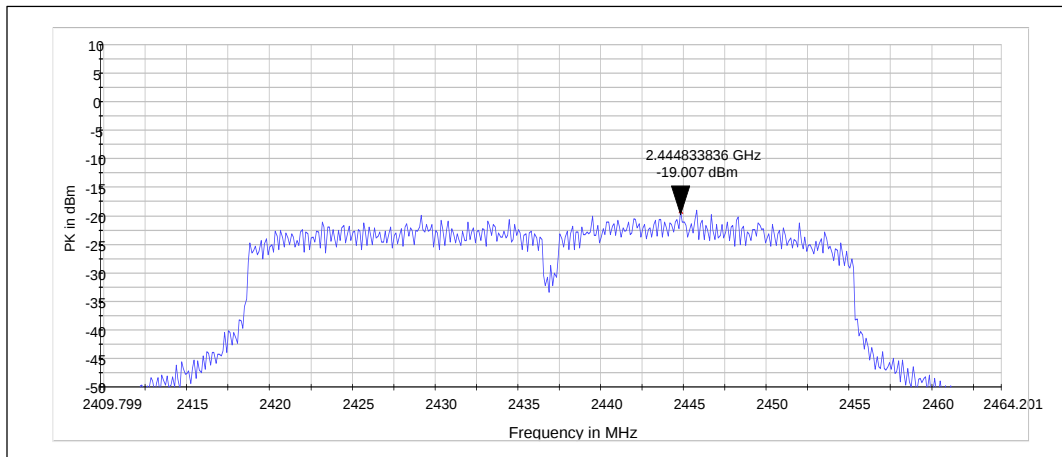
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f _c [MHz]	P [dBm]	Result
1-5 / 2422	-19.66	PASSED
4-8 / 2437	-19.01	PASSED
7-11 / 2452	-18.44	PASSED

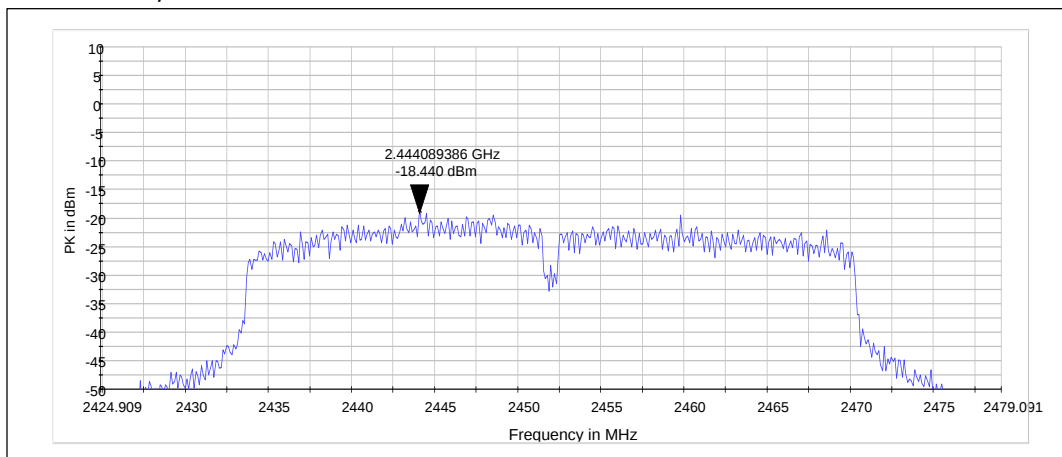
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



Channel 7-11 / 2452 MHz

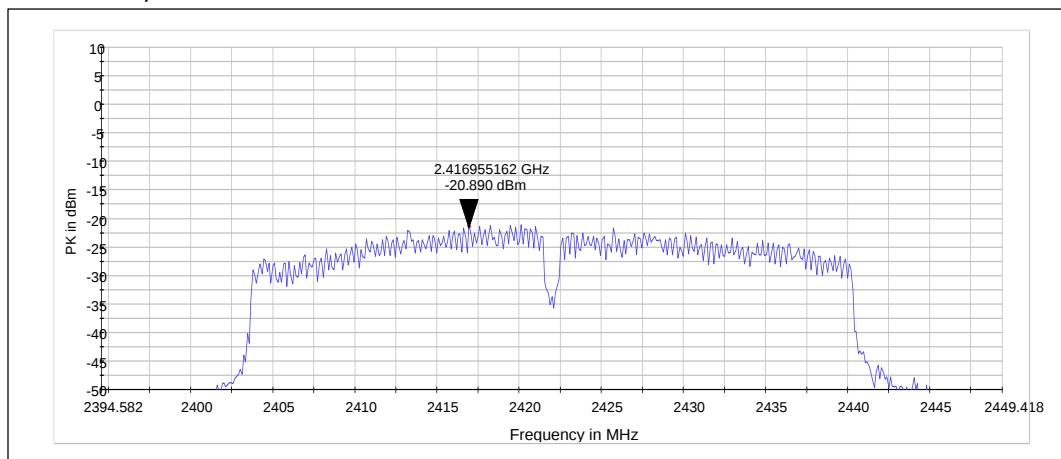


5.6.6 802.11n mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

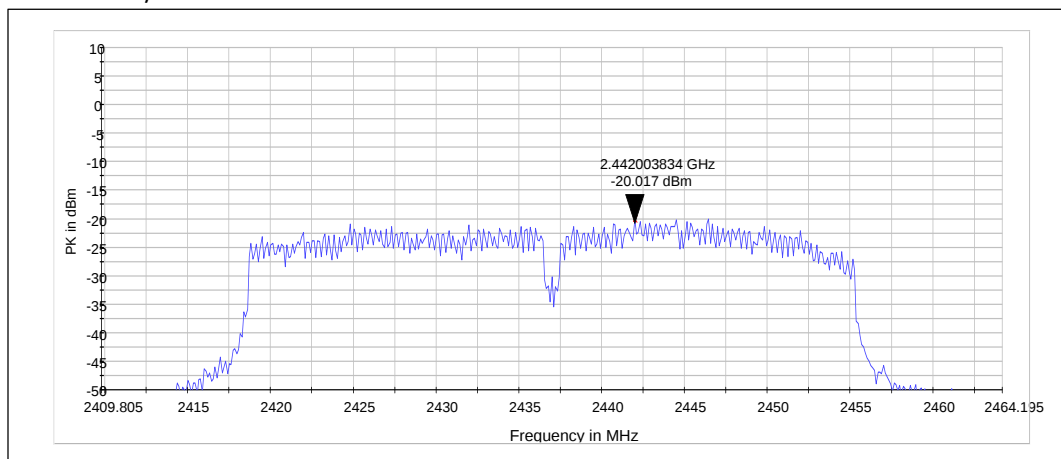
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f _c [MHz]	P [dBm]	Result
1-5 / 2422	-20.89	PASSED
4-8 / 2437	-20.02	PASSED
7-11 / 2452	-19.86	PASSED

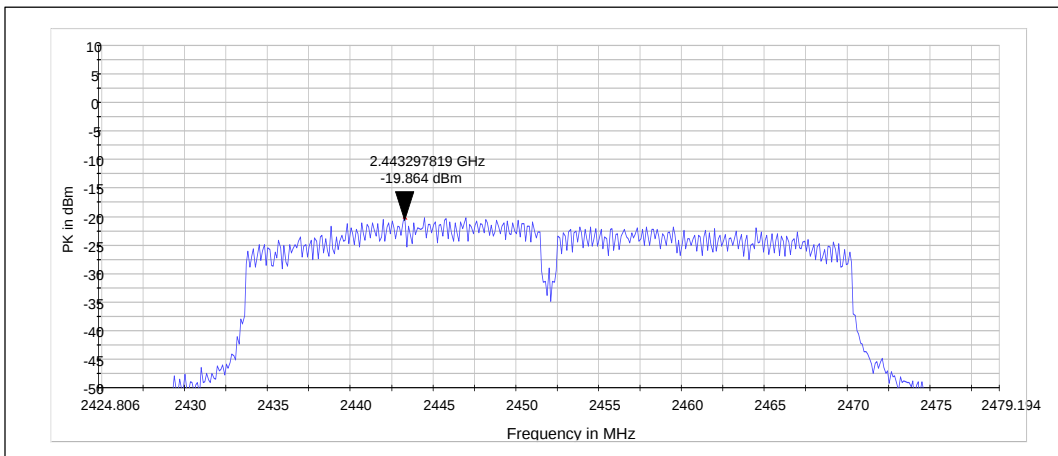
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



Channel 7-11 / 2452 MHz



5.7. Combined WLAN results

5.7.1 802.11g mode, BPSK modulation, 9 Mbps data rate

	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		Directional Gain [dBi]	SUM+DIRgain	Results
Channel / f _c [MHz]	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux			
1 / 2412	-15.72	0.027	-15.98	0.025	-12.838	0.052	-3.3	-4.11	-0.29	-13.13	PASSED
6 / 2437	-15.65	0.027	-15.94	0.025	-12.782	0.053	-3.3	-4.11	-0.29	-13.07	PASSED
11 / 2462	-17.41	0.018	-17.24	0.019	-14.314	0.037	-3.3	-4.11	-0.29	-14.60	PASSED

5.7.2 802.11g mode, 16QAM modulation, 24 Mbps data rate

	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		Directional Gain [dBi]	SUM+DIRgain	Results
Channel / f _c [MHz]	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux			
1 / 2412	-15.19	0.030	-13.97	0.040	-11.527	0.070	-3.3	-4.11	-0.29	-11.82	PASSED
6 / 2437	-13.86	0.041	-14.63	0.034	-11.218	0.076	-3.3	-4.11	-0.29	-11.51	PASSED
11 / 2462	-15.77	0.026	-15.02	0.031	-12.369	0.058	-3.3	-4.11	-0.29	-12.66	PASSED

5.7.3 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f _c [MHz]	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		SUM+DIRgain	Results
	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux		
1-5 / 2422	-20.53	0.009	-19.66	0.011	-17.063	0.020	-3.3	-4.11	-20.36	PASSED
4-8 / 2437	-18.41	0.014	-19.01	0.013	-15.689	0.027	-3.3	-4.11	-18.99	PASSED
7-11 / 2452	-19.19	0.012	-18.44	0.014	-15.789	0.026	-3.3	-4.11	-19.09	PASSED

5.7.4 802.11n mode, 64QAM modulation, 108.0 / 120.0 Mbps data rate

Channel / f _c [MHz]	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		SUM+DIRgain	Results
	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux		
1-5 / 2422	-22.04	0.006	-22.02	0.006	-19.020	0.013	-3.3	-4.11	-22.32	PASSED
4-8 / 2437	-19.66	0.011	-20.75	0.008	-17.161	0.019	-3.3	-4.11	-20.46	PASSED
7-11 / 2452	-20.59	0.009	-20.19	0.010	-17.375	0.018	-3.3	-4.11	-20.68	PASSED

5.7.5 802.11a mode, BPSK modulation, 6 Mbps data rate

Channel / f _c [MHz]	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		Directional Gain [dBi]	SUM+DIRgain	Results
	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux			
149 / 5745	-31.01	0.001	-35.11	0.001	-29.583	0.001	-3.3	-4.11	-0.29	-29.87	PASSED
157 / 5785	-31.3	0.001	-33.24	0.001	-29.152	0.001	-3.3	-4.11	-0.29	-29.44	PASSED
165 / 5825	-32.17	0.001	-34.25	0.001	-30.076	0.001	-3.3	-4.11	-0.29	-30.37	PASSED

5.7.6 802.11n mode, 64QAM modulation, 52.0 / 57.8 Mbps data rate

	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		SUM+DIRgain	Results
Channel / f _c [MHz]	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux		
149 / 5745	-31.68	0.000 67	-33.65	0.000 432	-29.544	0.0011	-3.3	-4.11	-32.84	PASSED
157 / 5785	-30.5	0.000 89	-33.62	0.000 435	-28.775	0.0013	-3.3	-4.11	-32.08	PASSED
165 / 5825	-29.7	0.001 07	-33.59	0.000 438	-28.213	0.0015	-3.3	-4.11	-31.51	PASSED

5.7.7 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		SUM+DIRgain	Results
Channel / f _c [MHz]	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux		
149+153 / 5755	-33.83	0.000 414	-35.72	0.000 268	-31.662	0.000 6819	-3.3	-4.11	-34.96	PASSED
157+161 / 5795	-33.55	0.000 441	-37.97	0.000 16	-32.210	0.000 6012	-3.3	-4.11	-35.51	PASSED

5.7.8 802.11n mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

	Main Antenna		Aux Antenna		Sum		Antenna Gain [dBi]		SUM+DIRgain	Results
Channel / f _c [MHz]	P [dBm]	P [mW]	P [dBm]	P [mW]	P [dBm]	P [mW]	Main	Aux		
149+153 / 5755	-35.19	0.000 303	-38.46	0.000 143	-33.514	0.000 4452	-3.3	-4.11	-36.81	PASSED
157+161 / 5795	-34.19	0.000 381	-38.36	0.000 146	-32.782	0.000 5270	-3.3	-4.11	-36.08	PASSED

6. Test Equipment

6.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
1759	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
1916	Communication Tester	CMTA84	R&S	15B
1992	Signal Generator	83630B	Agilent	15C, 15B
1999	Receiver	ESIB26	R&S	22/24/27, 15C, 15B
2039	Power Supply	PL330QMD	Thurlby	15C, 15B
2059	V-network	ESH3-Z6	R&S	-
2097	Pulse Limiter	ESH3-Z2	R&S	15C, 15B
2156	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2180	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2206	Signal Generator	SMX	R&S	15C, 15B
2347	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2352	Spectrum Analyzer	FSP-30	R&S	22/24/27, 15C
2359	Temperature Test Chamber	VT4002	Vötsch	22/24/27
2388	Bluetooth Tester	CBT	R&S	15B
2389	Signal Generator	SMJ 100A	R&S	15B
2390	Directional Coupler	DC2600	AR	-
6009	GPS Antenna	SA-700	Chronos	15C
6010	GPS Network amplifier	NLA20FPDC	GPS Networking, Inc	15C
6011	GPS signal Splitter	LDCBS1x4	GPS Networking, Inc	15C
6012	CDN	CDN USB/c	Teseq	-
6015	Receiver	ESI	R&S	22/24, 15C, 15B
6036	Data Logger	175-H2	Testo	22/24/27, 15C, 15B
6038	Data Logger	Testo 580	Testo	22/24/27, 15C, 15B
6039	USB Interface	5541765	Testo	22/24/27, 15C, 15B
6044	V-network	ESH3-Z6	R&S	-
6045	Power splitter	11667B	Agilent	22/24/27, 15C
6046	Attenuator 10dB	8493C	Agilent	22/24/27, 15C
6047	Attenuator 20dB	8493C	Agilent	22/24/27, 15C
6094	Communication Tester	CMW500	R&S	22/24/27, 15C, 15B
6096	EMC Analyzer	E7405A	HP	-
6098	Signal Generator	8648C	Agilent	-
6103	Bluetooth tester	CBT	R&S	15B
6113	Signal Generator	SMF100A	R&S	22/24/27, 15C 15B
6120	Thermal Chamber	WT 20/40	Weiss	22/24/27, 15C 15B
6121	Power Splitter	HP11667B	Agilent	22/24/27, 15C 15B
6122	Power Splitter	HP11667B	Agilent	22/24/27, 15C 15B
6134	Attenuator 10dB	BW-S10-2W263+	Mini-Circuits	22/24/27, 15C
6136	Attenuator 20dB	BW-S20-2W263+	Mini-Circuits	22/24/27, 15C
10479	Communication Tester	CMW500	R&S	22/24/27, 15C, 15B
-	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

6.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
1917	Communication Tester	CMTA84	R&S	15B
1984	Antenna	BBHA 9120 D	Schwarzbeck	22/24/27, 15C, 15B
2009	Signal Generator	SMP 22	R&S	22/24/27, 15C, 15B
2027	CDN	M2 (modified) DC1	MEB	22/24/27, 15C, 15B
2028	CDN	M3 (modified) DC2	MEB	22/24/27, 15C, 15B

Eq. No	Equipment	Type	Manufacturer	Used in
2029	Power Supply	PL330	Thurlby	22/24/27, 15C
2043	Band Reject Filter	WRCA824/849-0,2-6SS	Wainwright	22
2135	CDN	CDN 801-M3	Lüthi	22/24/27, 15C, 15B
2140	Antenna	EMCO93110B	EMCO	22/24/27, 15C
2142	Antenna	3146	EMCO	22/24/27, 15C
2156	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2176	CDN	CDN 801-M3	Lüthi	22/24/27, 15C, 15B
2180	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2347	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2353	Receiver	ESIB26	R&S	22/24/27, 15C, 15B
2357	Band Reject Filter	WRCG2400/2483-2390/2493-35/10SS	Wainwright	15C
2361	Anechoic Chamber	3 m Semi / Full Anechoic Chamber	Euroshield	22/24/27, 15C, 15B
2364	Band Reject Filter	WRCG1877/1883 - 1870/1890-40/6SS	Wainwright	24
2384	Band Reject Filter	WRCG832/838-825/845-40/5SS	Wainwright	22
2388	Bluetooth Tester	CBT	R&S	15B
2389	Signal Generator	SMJ 100A	R&S	15B
2391	Band Reject Filter	WRCG1729.4/1735.4-1722.4/1742.4-40/6SS	Wainwright	27
6009	GPS Antenna	SA-700	Chronos	15C
6010	GPS Network amplifier	NLA20FPDC	GPS Networking, Inc	15C
6011	GPS signal Splitter	LDCBS1x4	GPS Networking, Inc	15C
6014	Substitute Calibration Cable	Sucoflex 104PB	Suhner	-
6017	Antenna	SBA 9113	Schwarzbeck	22 / 24 / 27
6037	Data Logger	175-H2	Testo	22/24/27, 15C, 15B
6038	Data Logger	Testo 580	Testo	22/24/27, 15C, 15B
6039	USB Interface	5541765	Testo	22/24/27, 15C, 15B
6087	Antenna	BBHA 9120D	Scharzbeck	22/24/27, 15C
6088	Antenna	VUBA 9117	Scharzbeck	22/24/27, 15C
6089	Antenna	HFH2-Z2	R&S	15C, 15B
6094	Communication Tester	CMW500	R&S	22/24/27, 15C, 15B
6103	Bluetooth tester	CBT	R&S	15B
6113	Signal Generator	SMF100A	R&S	22/24/27, 15C 15B
6115	Open switch and control unit	OSP 130	R&S	22/24/27, 15C 15B
6116	Open switch and control unit	OSP 150	R&S	22/24/27, 15C 15B
6130	Notch Filter	WRCD1880-1.1.25/50-10SS	Wainwright	22/24/27
6131	Notch Filter	WRCT902.4-0.4/40-8SS	Wainwright	-
6135	Notch Filter	WRCJV2531/2539-2523/2547-60/12SS	Wainwright	22/24/27
10479	Communication Tester	CMW500	R&S	22/24/27, 15C, 15B
-	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 immunity / Emission Software	EMC32	R&S	22/24/27, 15C, 15B