

FCC Part 15E Compliance Test Report

Test Report no.:	FCC15E_RM-983_17.docx	Date of Report:	05-Aug-2014
Number of pages:	118	Customer's Contact person:	Victoria Abadilla
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FCC listing no.:	94436		
IC recognition no.:	661AK-1		
Tested devices/ accessories:	Phone RM-983 / Battery BV-L4A / Headset WH-208 / AC charger AC-60E / Data Cable CA-190CD		
FCC ID:	QMNRM-983	IC:	-
Supplement reports:	-		
Testing has been carried out in accordance with:	CFR 47, FCC rules Part 15 Subpart E, ANSI C63.4 (2003), DTS procedures KDB 789033 D01, 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 Microsoft.		
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:			

Sami Lehtonen, Specialist, EMC

1. Summary for FCC Part 15E Compliance Test Report

Date of receipt	25-Jun-2014
Testing completed	02-Jul-2014
The customer's contact person	Victoria Abadilla
Test Plan referred to	T:\Projects\RM-984\TestPlan\RS_TestPlan_RM-984.xlsm
Notes	5GHz functionality checked up to 40 GHz and there are no emission peaks 26.5GHz – 40GHz.
Document name	T:\Projects\RM-984\EMC\FCC15E_RM-984_21.docx

1.1. EUT and Accessory Information

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

Devices under tests

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-984	004402478222346	0200	-	02028.00000.14224.06001	43184
Phone	RM-984	004402478222536	0200	-	02028.00000.14224.06001	43187
Battery	BV-L4A	4181574243S11400027;0670727	3.0	1.0	-	43188
Battery	BV-L4A	4181574243S11400031;0670727	3.0	1.0	-	43185
Headset	WH-208	-	-	-	-	43186
AC charger	AC-60E	409093116580300242;0677566	-	-	-	43074
Data Cable	CA-190CD	-	-	-	-	43034

1.2. Summary of Test Results

5 GHz RLAN:

Section in CFR 47	Section in RSS-GEN or RSS-210	Name of the test	Result
15.407(a)	A9.2	Conducted peak output power	PASSED
15.407(b)	A9.2	Band edge compliance of RF emissions	PASSED
15.407(a)(6)	A9.2	Peak excursion	PASSED
15.407(b)	A9.2	Spurious radiated emissions	PASSED
15.407(b)(6)	A9.2	AC powerline conducted emissions	NP
-	A9.2	26dB(bandwidth)	PASSED
15.407(a)	A9.2	Power spectral density	PASSED

PASSED The EUT complies with the essential requirements in the standard.
 FAILED The EUT does not comply with the essential requirements in the standard.
 NP The test was not performed by the TCC Microsoft Laboratory.

The test results of QMNRM-984 are re-used for certification of the QMNRM-983.
 The table above indicates the results, which will be re-used.

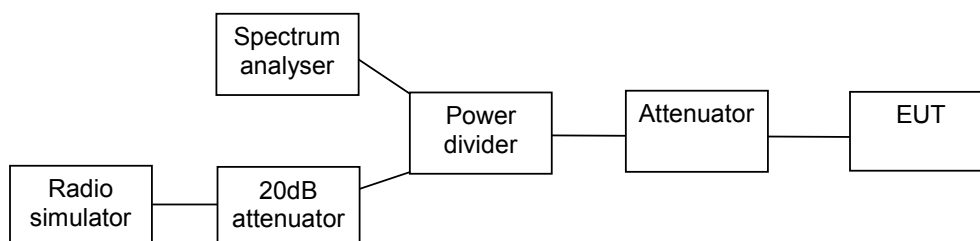
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2. Conducted peak output power (FCC §15.407(a), RSS-210 A9.2)

EUT with DUT number	RM-984, DUT 43187
Accessories with DUT numbers	BV-L4A, DUT 43188
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20-24 / 42-49 / 98.1-98.8
Date of measurements	02.. 04-Jul-2014
Measured by	Jari Jantunen

2.1. Test Setup



2.2. Test method and limit

The measurement is made according to Public Notice KDB 789033 D01 and IC standard RSS-210.

Limits for Maximum conducted output power measurements

Frequency range [MHz]	Limit [mW] / (dBm)	Limit [dBm]	Limit [dBm] for B=20 MHz
5150-5250	50 (17)	4+10 log B	17
5250-5350	250 (24)	11+10 log B	24
5470-5725	250 (24)	11+10 log B	24
5725-5825	1000 (30)	17+10 log B	30

2.3. Power results summary

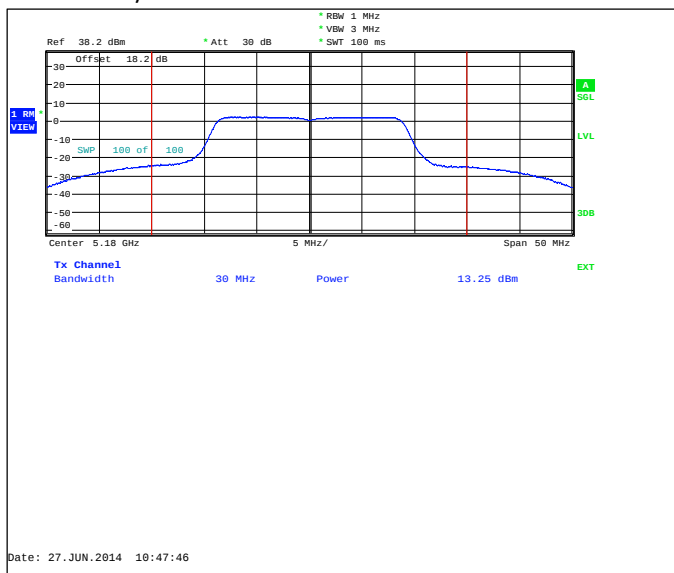
Channel / fC [MHz]	Mode	Modulation	Data rate	Level [dBm]
36 / 5180	802.11n	BPSK	6.5 / 7.25 Mbps	13.25
40 / 5200	802.11n	BPSK	6.5 / 7.25 Mbps	13.24
48 / 5240	802.11n	BPSK	6.5 / 7.25 Mbps	13.16
52 / 5260	802.11n	BPSK	6.5 / 7.25 Mbps	13.17
60 / 5300	802.11n	BPSK	6.5 / 7.25 Mbps	13
64 / 5320	802.11n	BPSK	6.5 / 7.25 Mbps	13.13
100 / 5500	802.11n	BPSK	6.5 / 7.25 Mbps	13.5
116 / 5580	802.11n	BPSK	6.5 / 7.25 Mbps	13.86
140 / 5700	802.11n	BPSK	6.5 / 7.25 Mbps	13.93
36 / 5180	802.11n	QPSK	19.5 / 21.7 Mbps	12.74
40 / 5200	802.11n	QPSK	19.5 / 21.7 Mbps	12.76
48 / 5240	802.11n	QPSK	19.5 / 21.7 Mbps	12.71
52 / 5260	802.11n	QPSK	19.5 / 21.7 Mbps	12.73
60 / 5300	802.11n	QPSK	19.5 / 21.7 Mbps	12.52
64 / 5320	802.11n	QPSK	19.5 / 21.7 Mbps	12.6
100 / 5500	802.11n	QPSK	19.5 / 21.7 Mbps	12.97
116 / 5580	802.11n	QPSK	19.5 / 21.7 Mbps	13.16
140 / 5700	802.11n	QPSK	19.5 / 21.7 Mbps	13.16
36+40 / 5190	802.11n	BPSK	13.5 / 15.0 Mbps	11.6
44+48 / 5230	802.11n	BPSK	13.5 / 15.0 Mbps	11.77
52+56 / 5270	802.11n	BPSK	13.5 / 15.0 Mbps	11.96
60+64 / 5310	802.11n	BPSK	13.5 / 15.0 Mbps	11.75
100+104 / 5510	802.11n	BPSK	13.5 / 15.0 Mbps	11.91
108+112 / 5550	802.11n	BPSK	13.5 / 15.0 Mbps	12.07
132+136 / 5670	802.11n	BPSK	13.5 / 15.0 Mbps	12.4
36+40 / 5190	802.11n	QPSK	27.0 / 30.0 Mbps	11.61
44+48 / 5230	802.11n	QPSK	27.0 / 30.0 Mbps	11.78
52+56 / 5270	802.11n	QPSK	27.0 / 30.0 Mbps	11.67
60+64 / 5310	802.11n	QPSK	27.0 / 30.0 Mbps	12.12
100+104 / 5510	802.11n	QPSK	27.0 / 30.0 Mbps	11.93
108+112 / 5550	802.11n	QPSK	27.0 / 30.0 Mbps	12.06
132+136 / 5670	802.11n	QPSK	27.0 / 30.0 Mbps	12.43

2.4. 5 GHz RLAN Test results

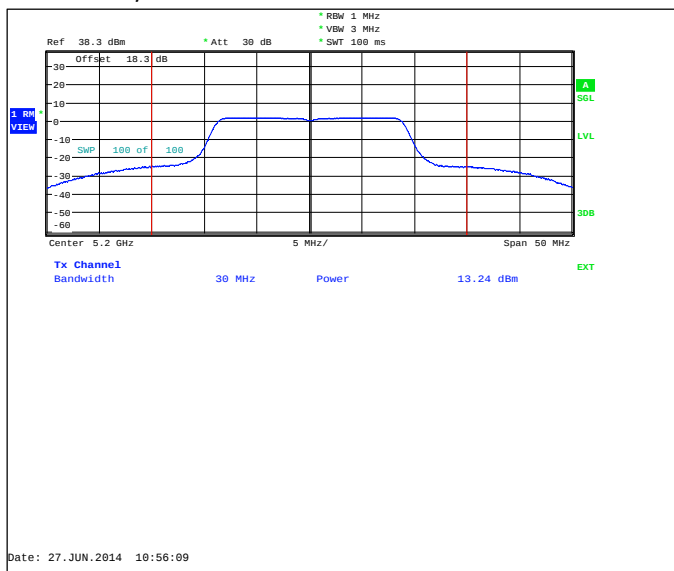
2.4.1 802.11n mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	13.25	21.135	PASSED
40 / 5200	13.24	21.086	PASSED
48 / 5240	13.16	20.701	PASSED
52 / 5260	13.17	20.749	PASSED
60 / 5300	13	19.953	PASSED
64 / 5320	13.13	20.559	PASSED
100 / 5500	13.5	22.387	PASSED
116 / 5580	13.86	24.322	PASSED
140 / 5700	13.93	24.717	PASSED

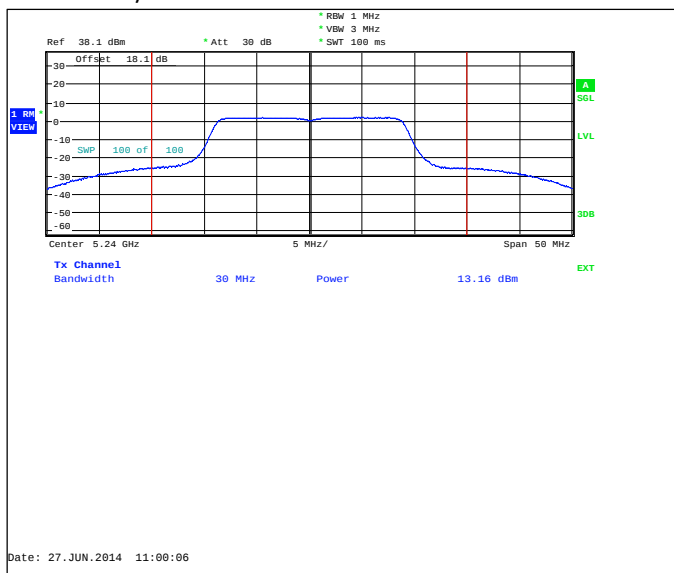
Channel 36 / 5180MHz



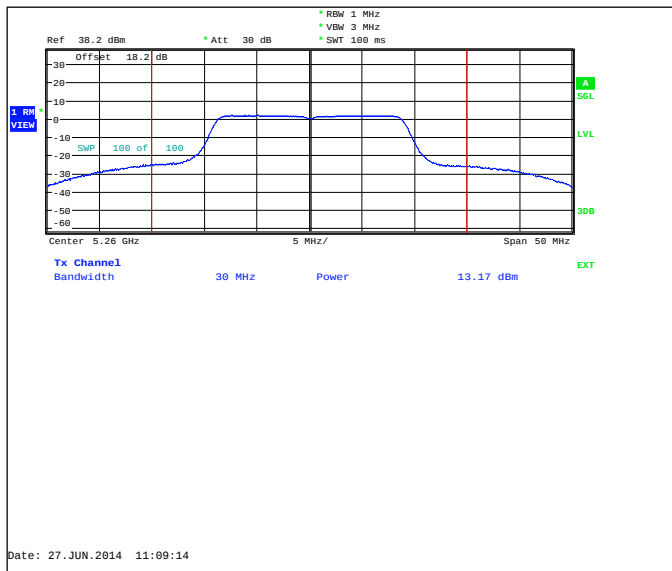
Channel 40 / 5200MHz



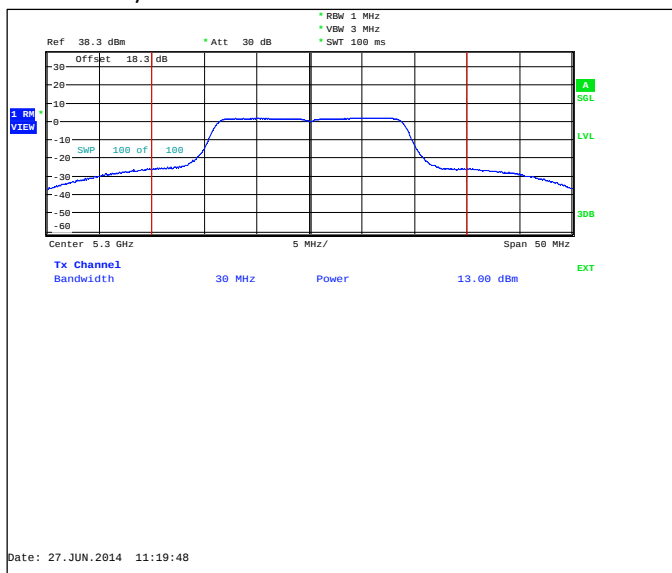
Channel 48 / 5240MHz



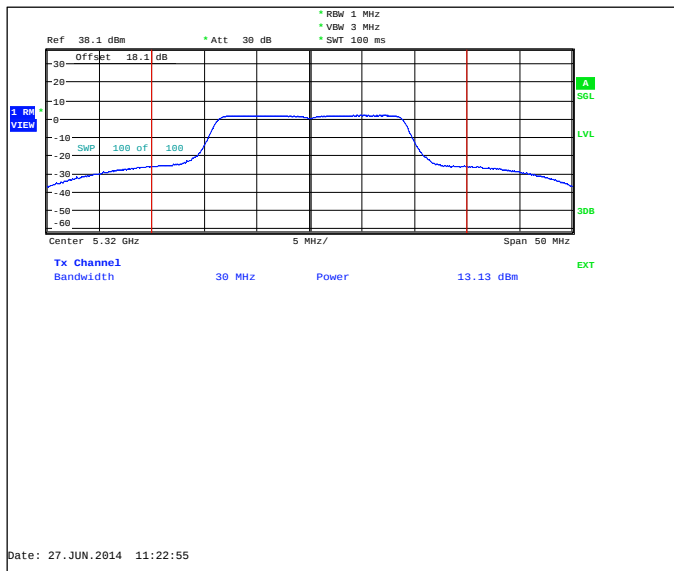
Channel 52 / 5260MHz



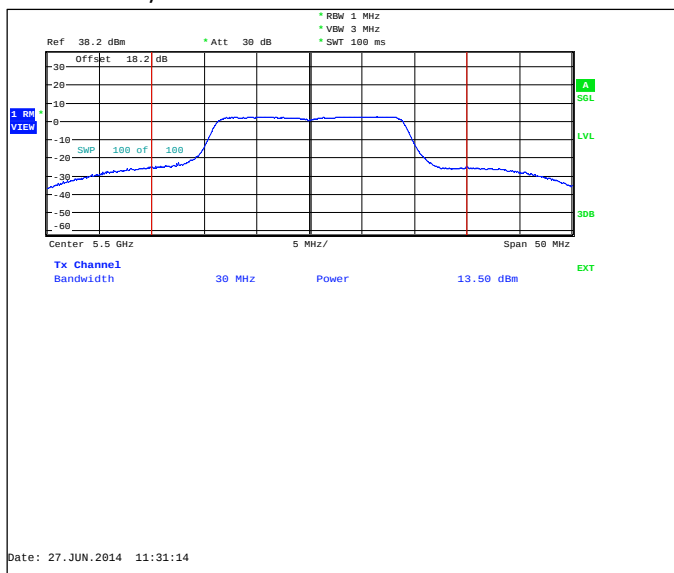
Channel 60 / 5300MHz



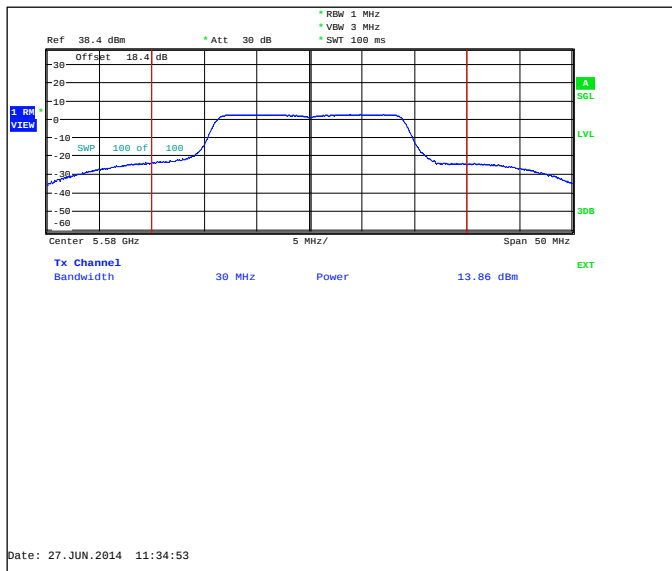
Channel 64 / 5320MHz



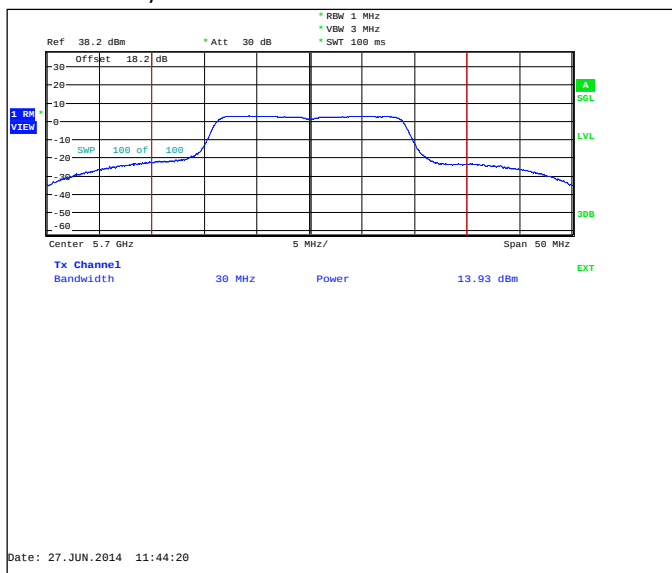
Channel 100 / 5500MHz



Channel 116 / 5580MHz



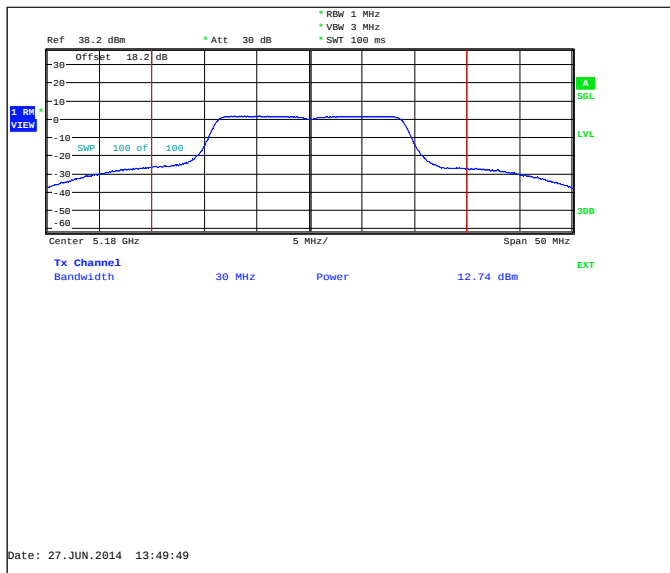
Channel 140 / 5700MHz



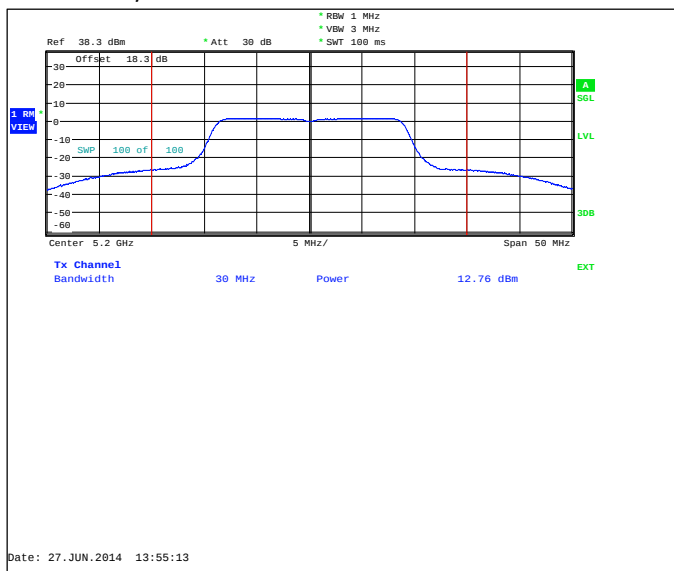
2.4.2 802.11n mode, QPSK modulation, 19.5 / 21.7 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	12.74	18.793	PASSED
40 / 5200	12.76	18.88	PASSED
48 / 5240	12.71	18.664	PASSED
52 / 5260	12.73	18.75	PASSED
60 / 5300	12.52	17.865	PASSED
64 / 5320	12.6	18.197	PASSED
100 / 5500	12.97	19.815	PASSED
116 / 5580	13.16	20.701	PASSED
140 / 5700	13.16	20.701	PASSED

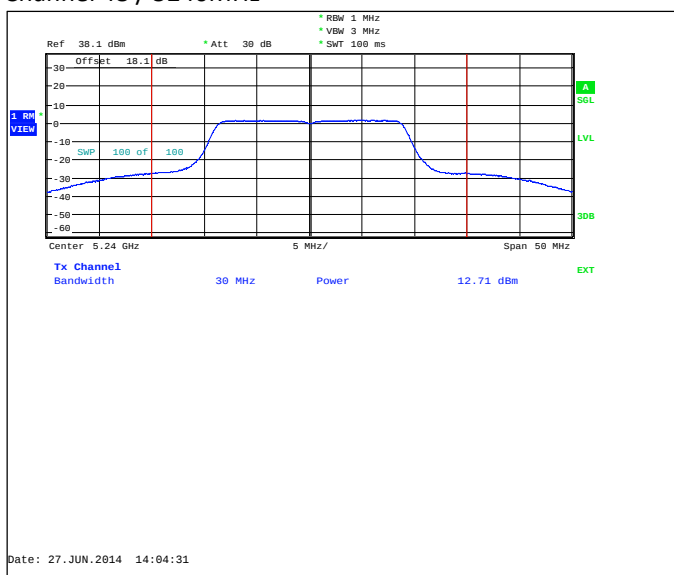
Channel 36 / 5180MHz



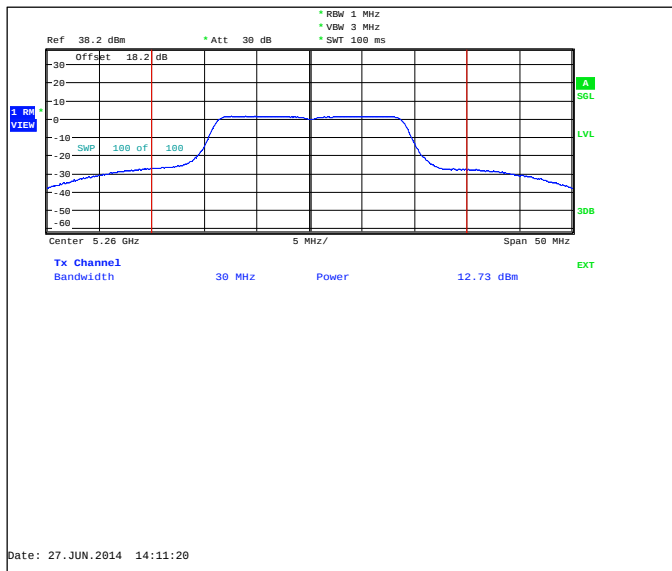
Channel 40 / 5200MHz



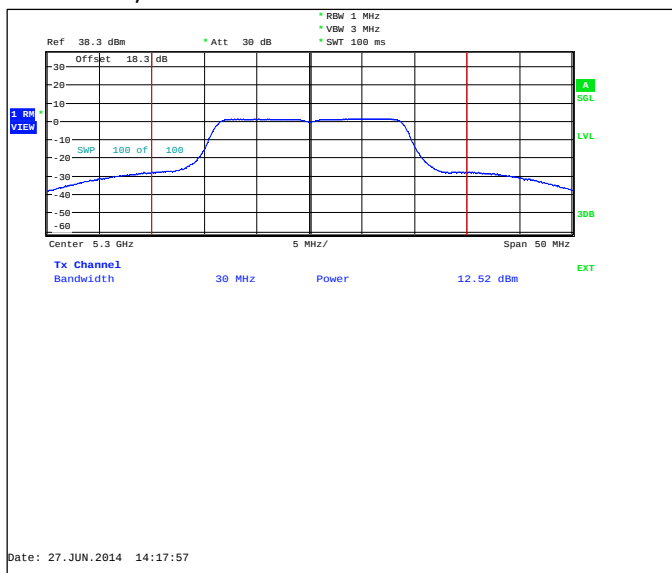
Channel 48 / 5240MHz



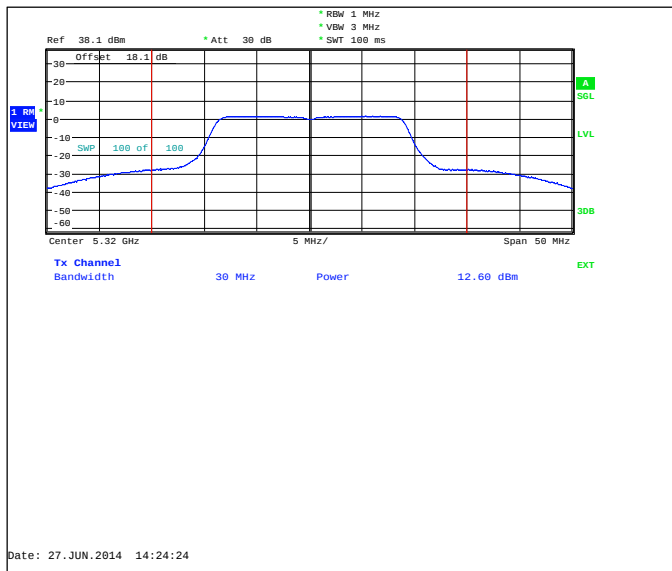
Channel 52 / 5260MHz



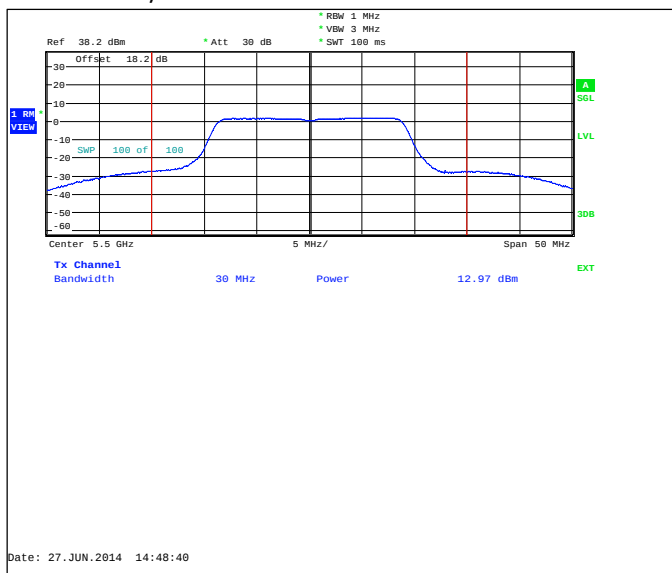
Channel 60 / 5300MHz



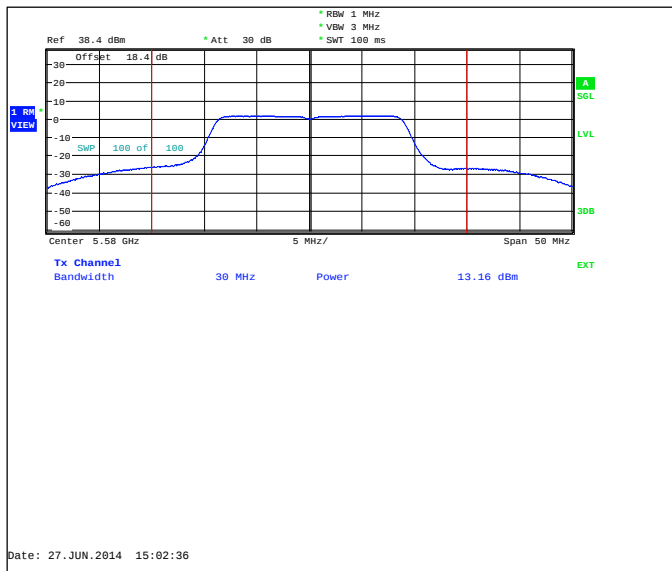
Channel 64 / 5320MHz



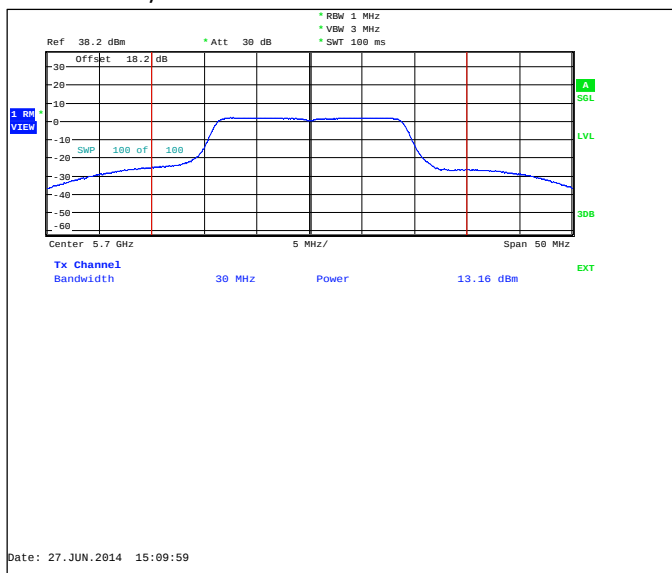
Channel 100 / 5500MHz



Channel 116 / 5580MHz



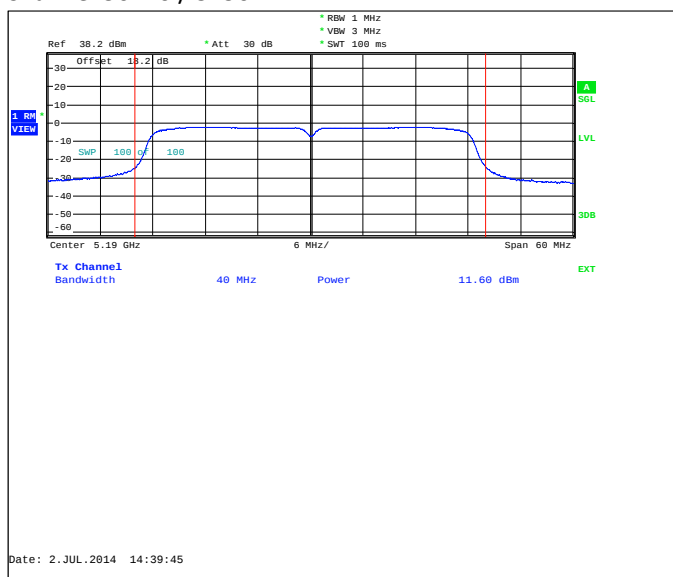
Channel 140 / 5700MHz



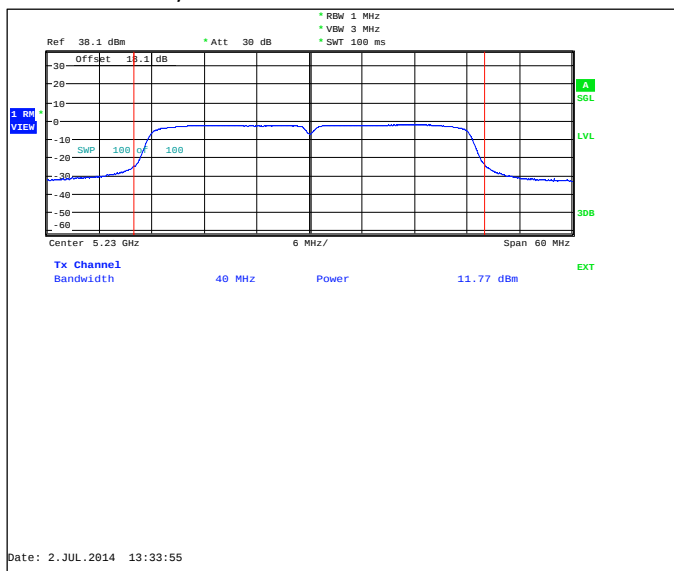
2.4.3 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
36+40 / 5190	11.6	14.454	PASSED
44+48 / 5230	11.77	15.031	PASSED
52+56 / 5270	11.96	15.704	PASSED
60+64 / 5310	11.75	14.962	PASSED
100+104 / 5510	11.91	15.524	PASSED
108+112 / 5550	12.07	16.106	PASSED
132+136 / 5670	12.4	17.378	PASSED

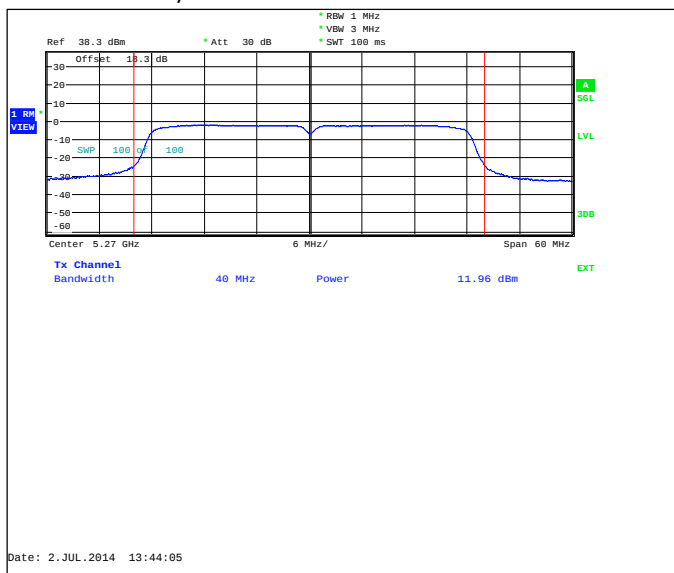
Channel 36+40 / 5190MHz



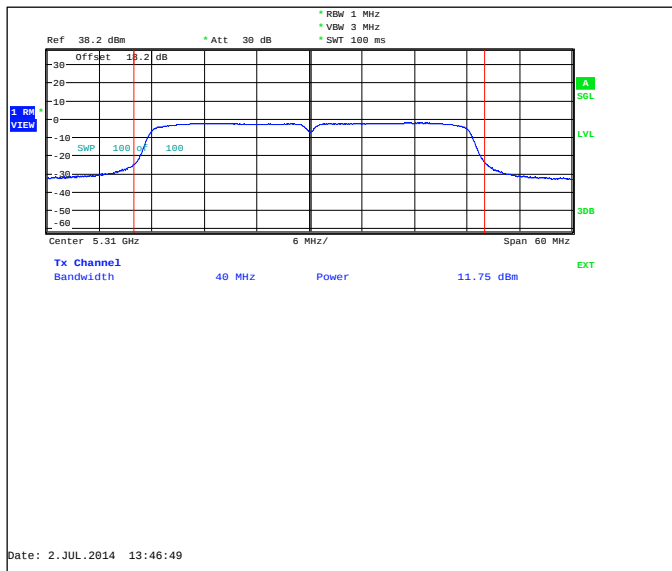
Channel 44+48 / 5230MHz



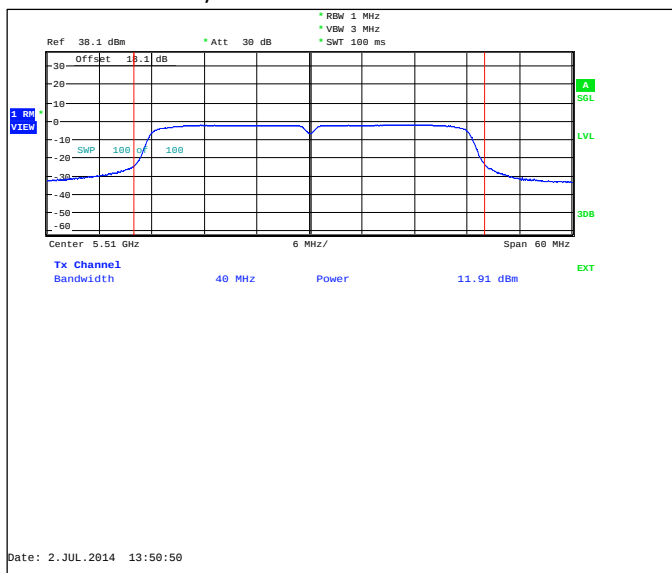
Channel 52+56 / 5270MHz



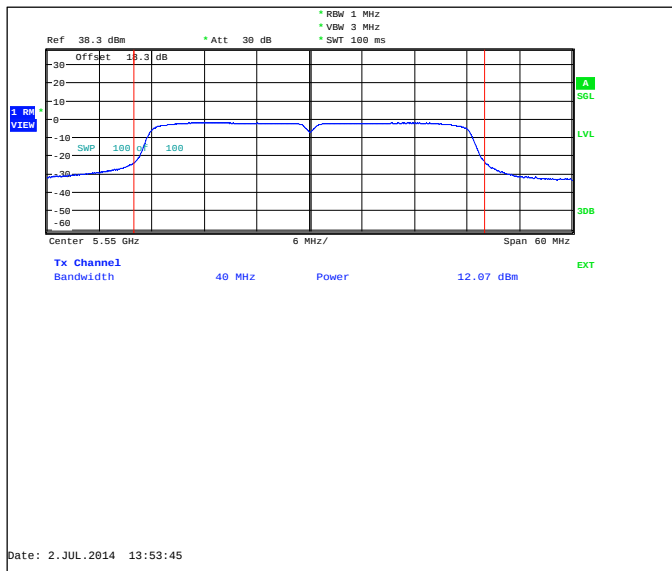
Channel 60+64 / 5310MHz



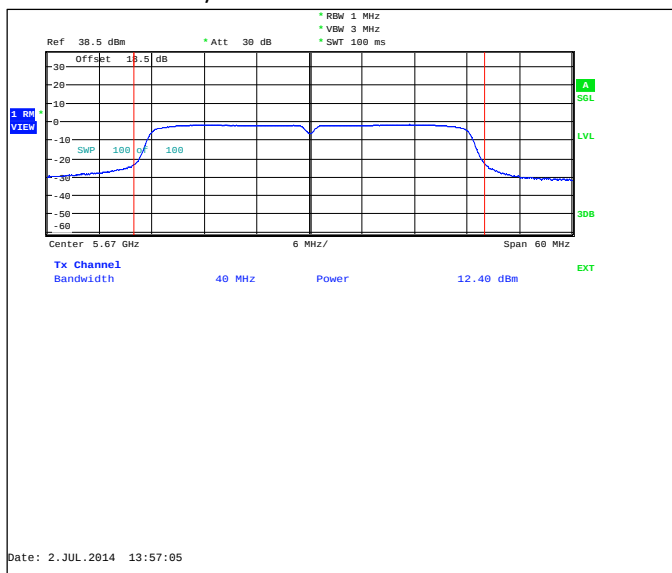
Channel 100+104 / 5510MHz



Channel 108+112 / 5550MHz



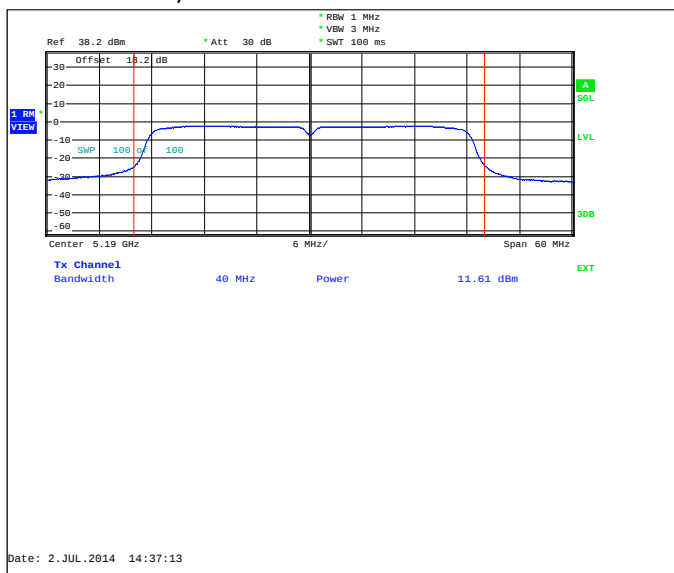
Channel 132+136 / 5670MHz



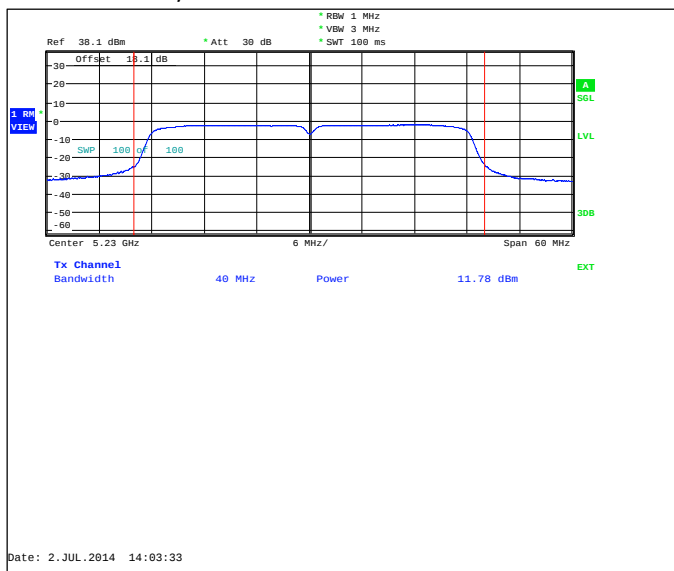
2.4.4 802.11n mode, QPSK modulation, 27.0 / 30.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
36+40 / 5190	11.61	14.488	PASSED
44+48 / 5230	11.78	15.066	PASSED
52+56 / 5270	11.67	14.689	PASSED
60+64 / 5310	12.12	16.293	PASSED
100+104 / 5510	11.93	15.596	PASSED
108+112 / 5550	12.06	16.069	PASSED
132+136 / 5670	12.43	17.498	PASSED

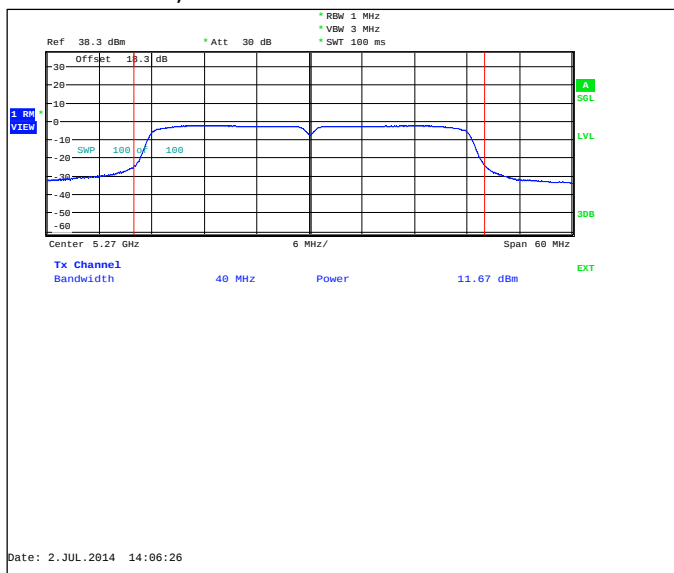
Channel 36+40 / 5190MHz



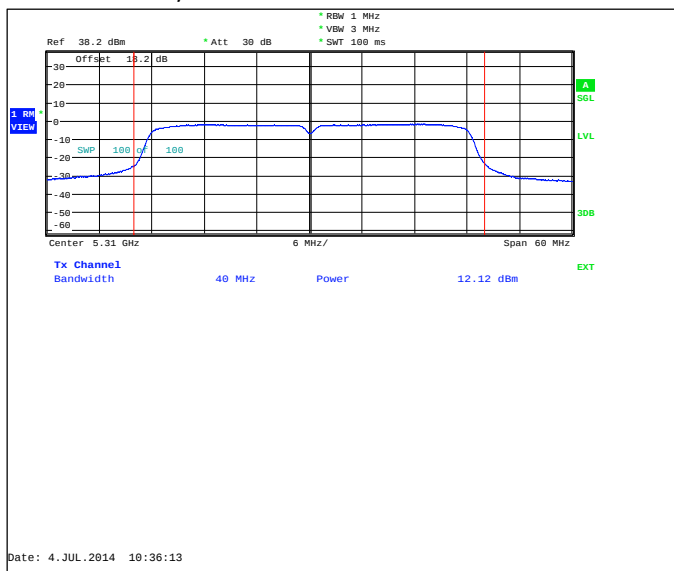
Channel 44+48 / 5230MHz



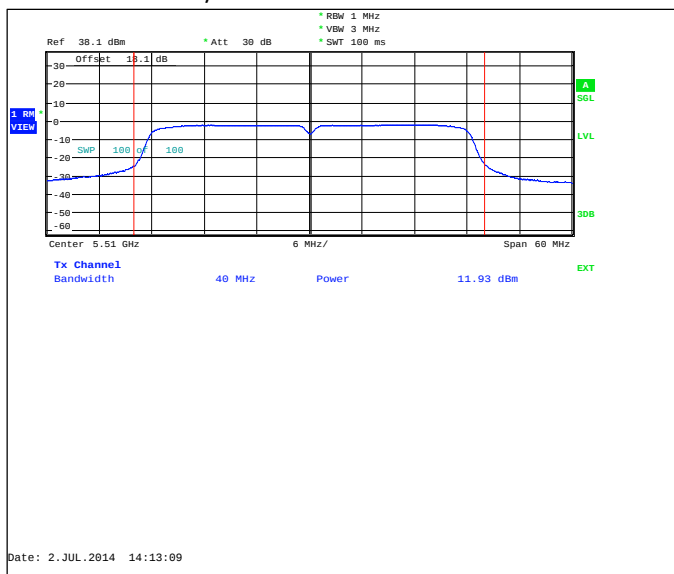
Channel 52+56 / 5270MHz



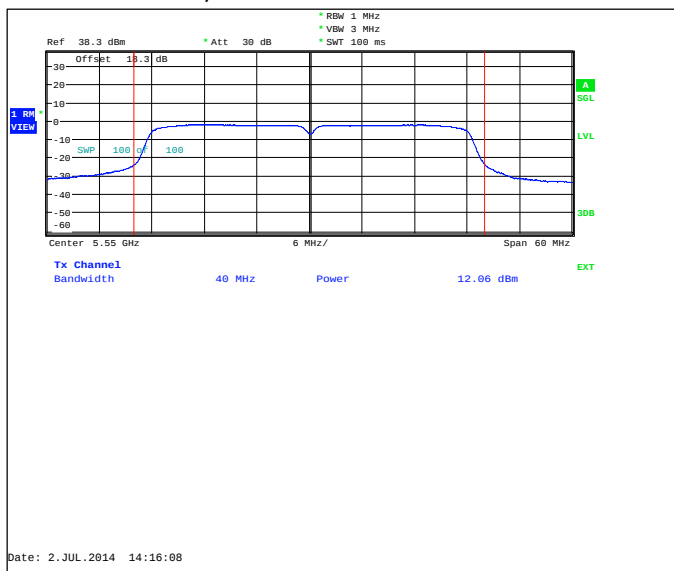
Channel 60+64 / 5310MHz



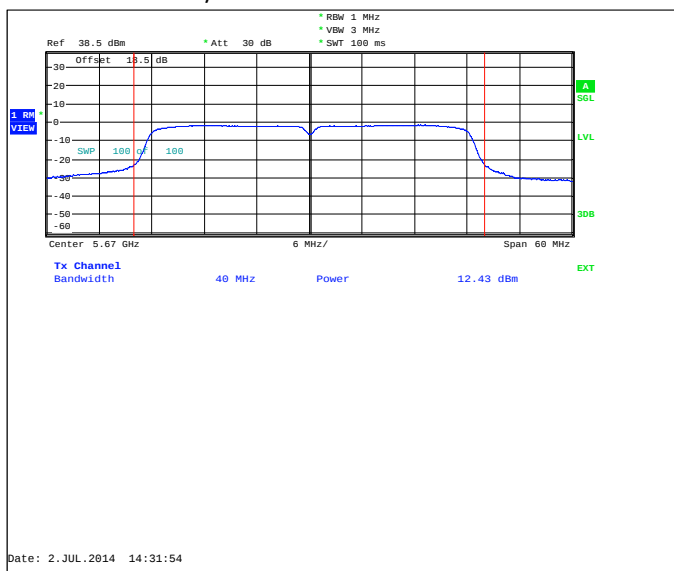
Channel 100+104 / 5510MHz



Channel 108+112 / 5550MHz



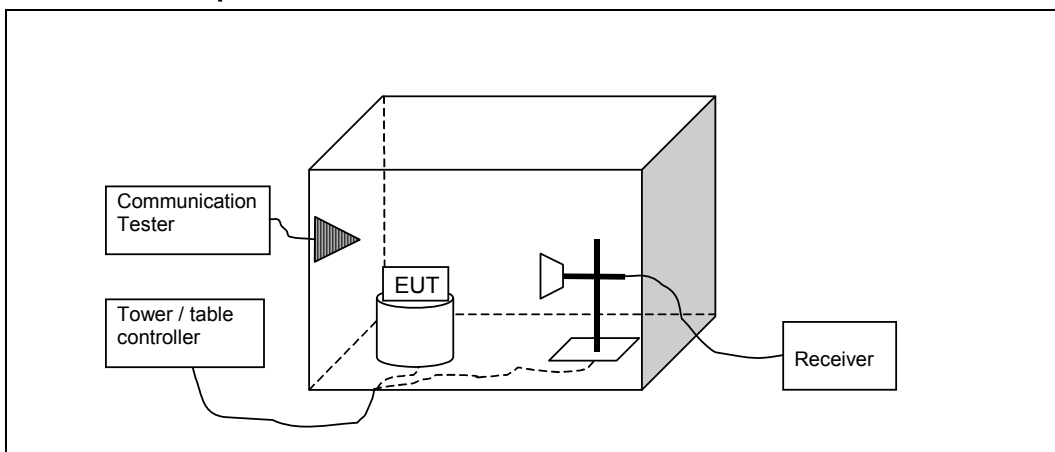
Channel 132+136 / 5670MHz



3. Band edge compliance of RF emissions (FCC 15.407(b), RSS-210 A9.2)

EUT with DUT number	RM-984, DUT 43184
Accessories with DUT numbers	BV-L4A, DUT 43185 ; WH-208, DUT 43186 ; AC-60E, DUT 43074 ; CA-190CD, DUT 43034
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	19 / 37 / 98.2
Date of measurements	01-Jul-2014
Measured by	Jari Jantunen

3.1.1 Test setup



3.2. Test method and limit

The measurement is made according to KDB 789033 and IC standard RSS-210.
The measurement results are obtained as described below:

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

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

The limits in the table below are listed for the 100 MHz span around the band edges.

$$P [W] = (10 \text{ to power } (P [dBm / 10]) / 1000.$$

$$E [dB\mu V/m] = 20 * \text{LOG} ((\text{square root } (30 * P [W]) / 3 \text{ m}) * 1000000)$$

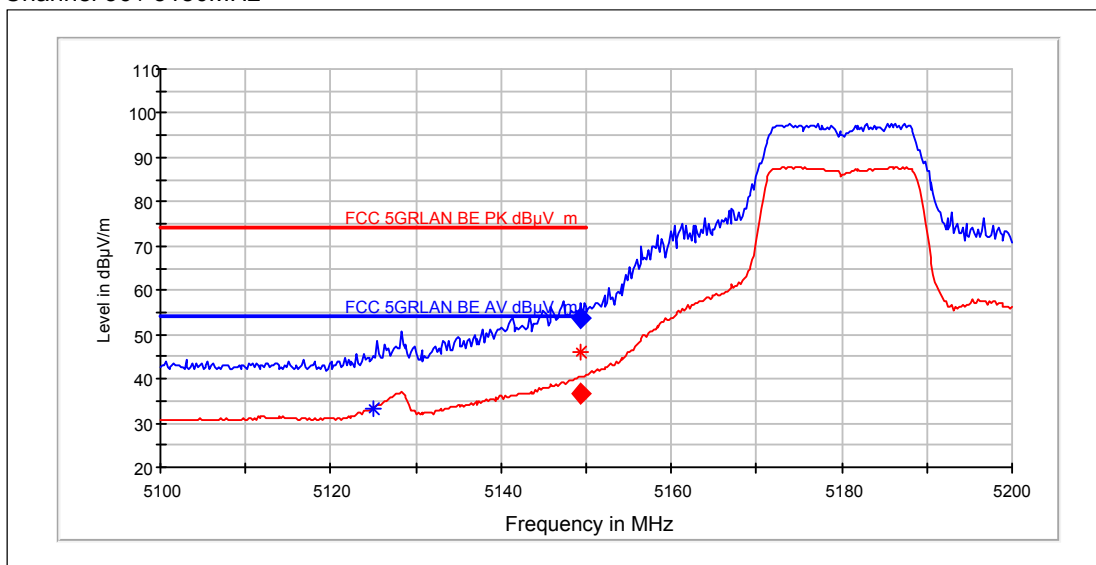
Frequency range [MHz]	Limit [dBm / MHz]	Limit dBuV/m @ 3m
5150 - 5250	$\leq 5.150 \text{ GHz}$ and ≥ 5.350 : 54 dBuV/m (avg), 74 dBuV/m (pk)	68.23
5250 - 5350	$\leq 5.150 \text{ GHz}$ and $\geq 5.350 \text{ GHz}$: 54 dBuV/m (avg), 74 dBuV/m (pk)	68.23
5470 - 5725	$\leq 5.460 \text{ GHz}$: 54 dBuV/m (avg), 74 dBuV/m (pk) 5.460 – 5.470 GHz: -27 dBm/MHz (pk)	68.23

5725 - 5825	5.825 – 5.835 GHz: -17 dBm/MHz (pk) ≥ 5.835 GHz: -27 dBm/MHz (pk)	68.23 78.23
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3.3. 5 GHz RLAN test results

3.3.1 802.11n, BPSK modulation, 6.5 / 7.25 Mbps data rate.

Channel 36 / 5180MHz



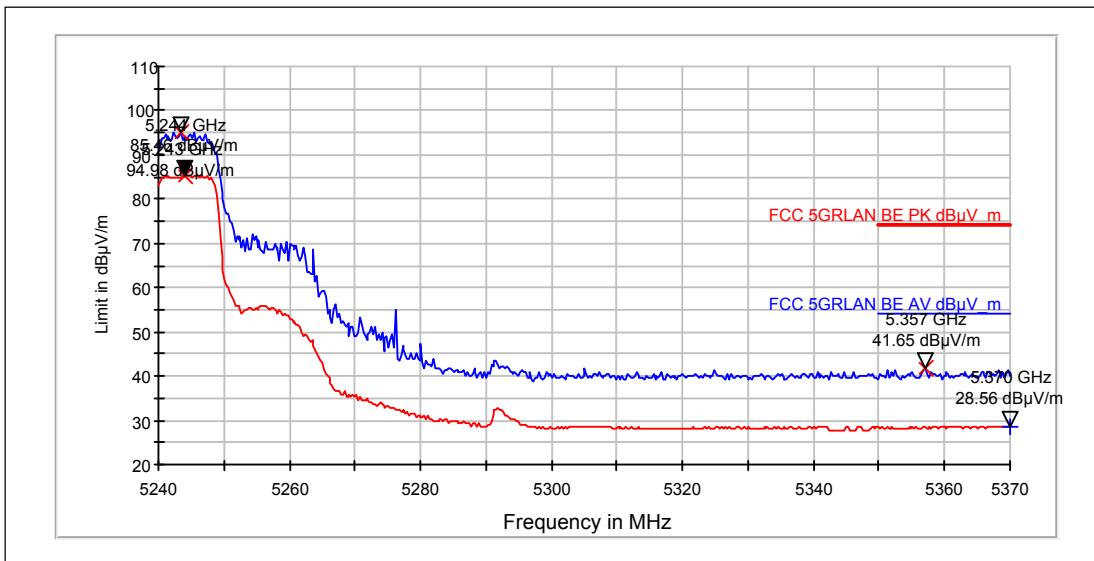
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5149.299	53.87	74	20.13	170	V	22	0	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5149.299	36.58	54	17.42	170	V	22	0	PASSED

Channel 48 / 5240MHz



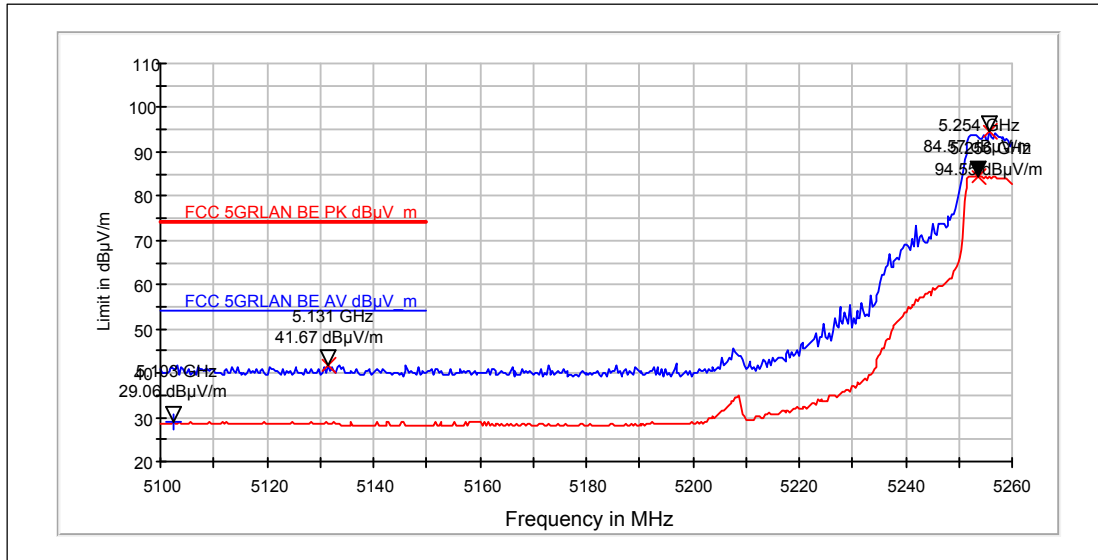
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5356.974	41.65	74	32.35	170	V	315	0	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5370.000	28.56	54	25.44	170	V	90	0	PASSED

Channel 52 / 5260MHz



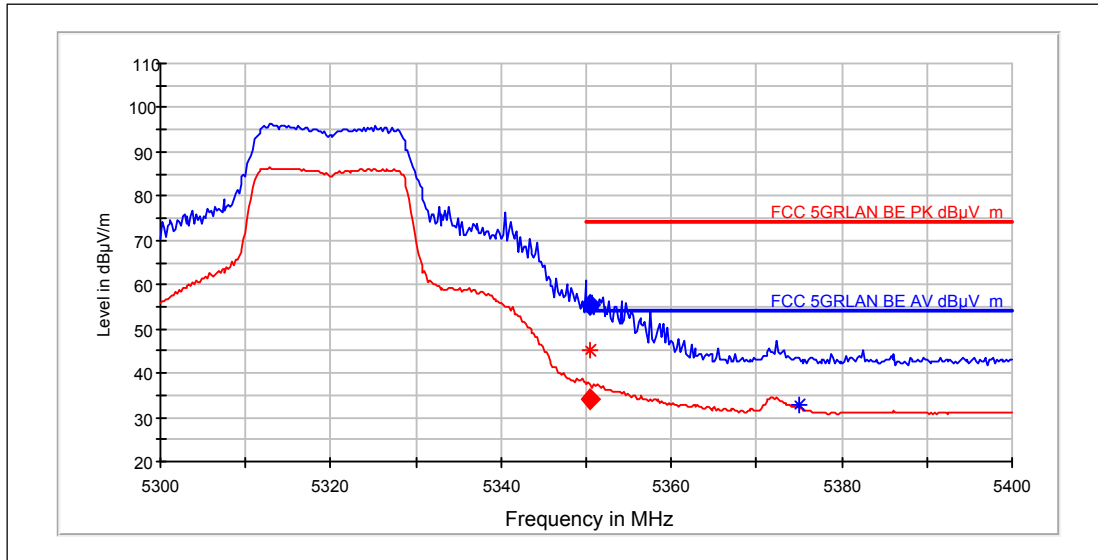
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5131.423	41.67	74	32.33	170	V	45	90	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5102.565	29.06	54	24.94	170	V	270	0	PASSED

Channel 64 / 5320MHz



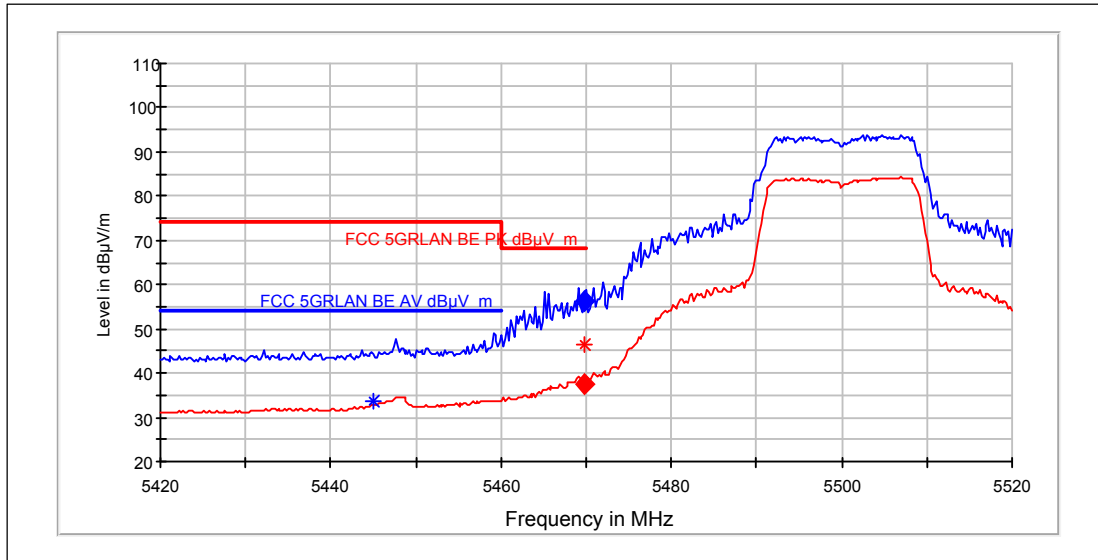
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5350.501	55.5	74	18.5	170	V	16	0.5	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5350.501	34.27	54	19.73	170	V	16	0.5	PASSED

Channel 100 / 5500MHz



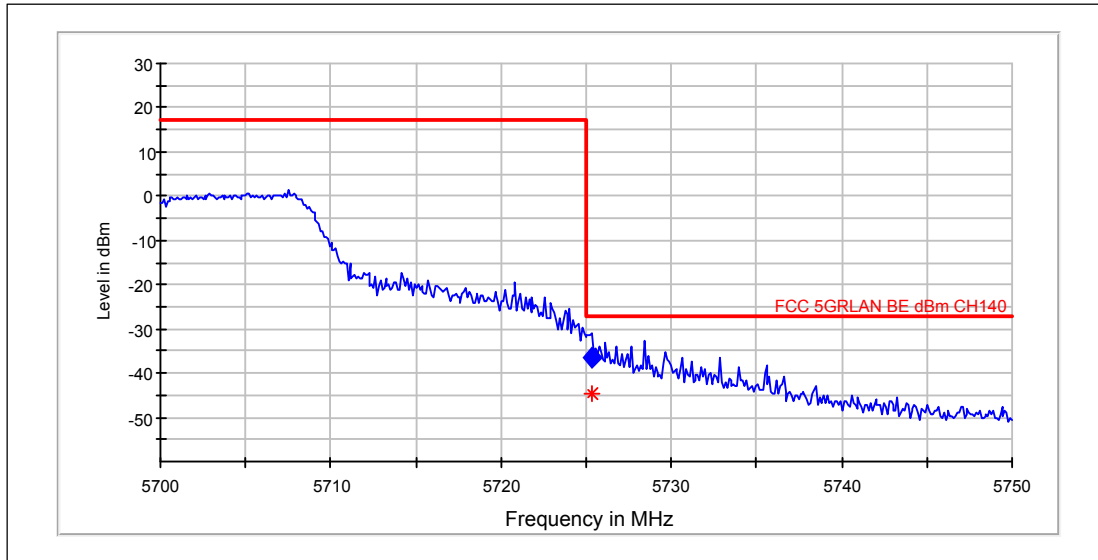
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5469.699	56.34	68.2	11.86	170	H	2	0.5	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5469.699	37.42	---	---	170	H	2	0.5	PASSED

Channel 140 / 5700MHz

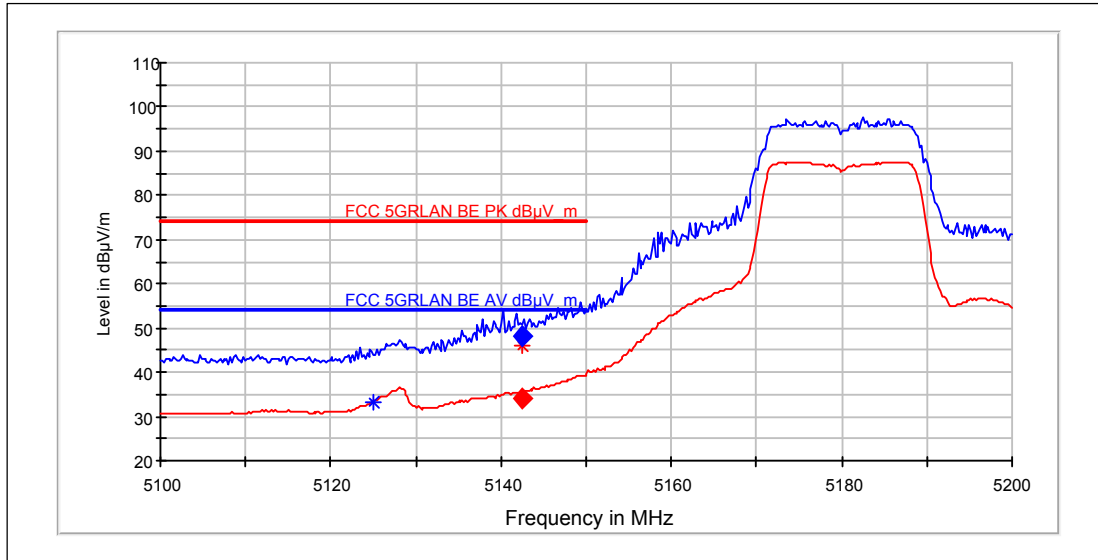


Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5725.305	-36.49	-27	9.49	170	V	5	0	PASSED

3.3.2 802.11n, QPSK modulation, 19.5 / 21.7 Mbps data rate.

Channel 36 / 5180MHz



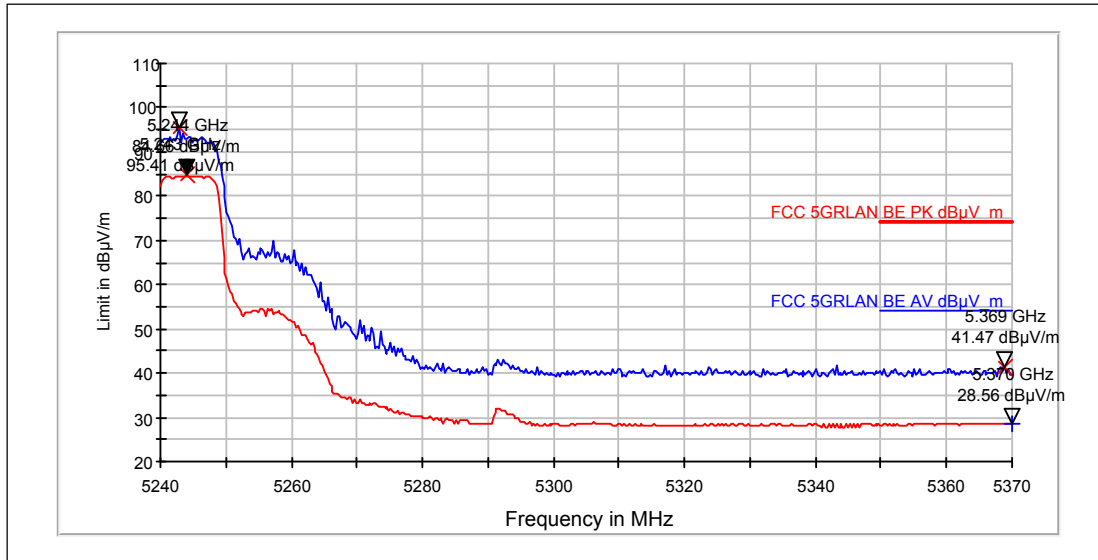
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5142.585	48.08	74	25.92	170	V	22	0.5	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5142.585	34.24	54	19.76	170	V	22	0.5	PASSED

Channel 48 / 5240MHz



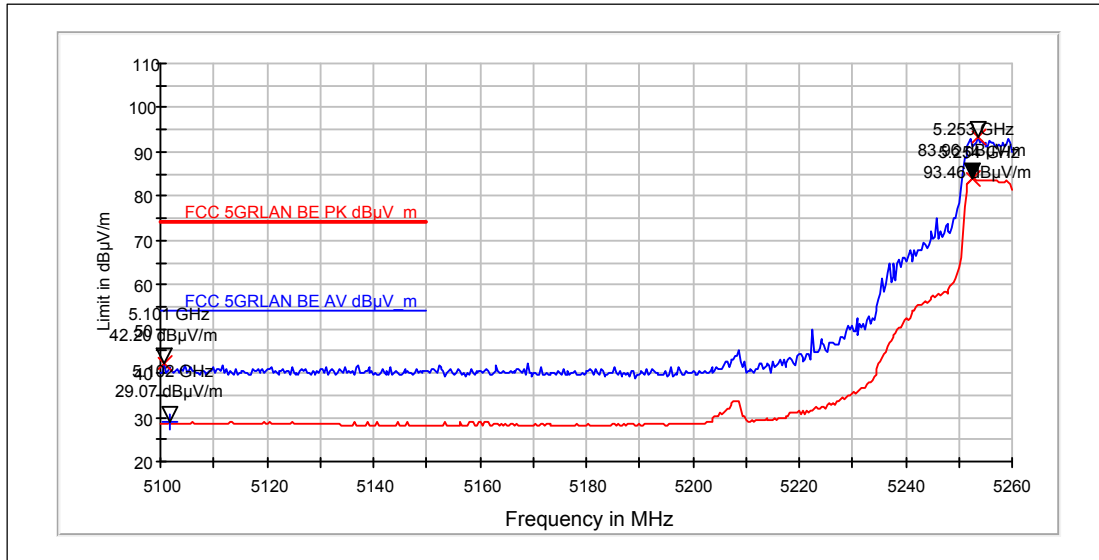
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5368.958	41.47	74	32.53	170	H	0	90	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5370.000	28.56	54	25.44	170	V	225	0	PASSED

Channel 52 / 5260MHz



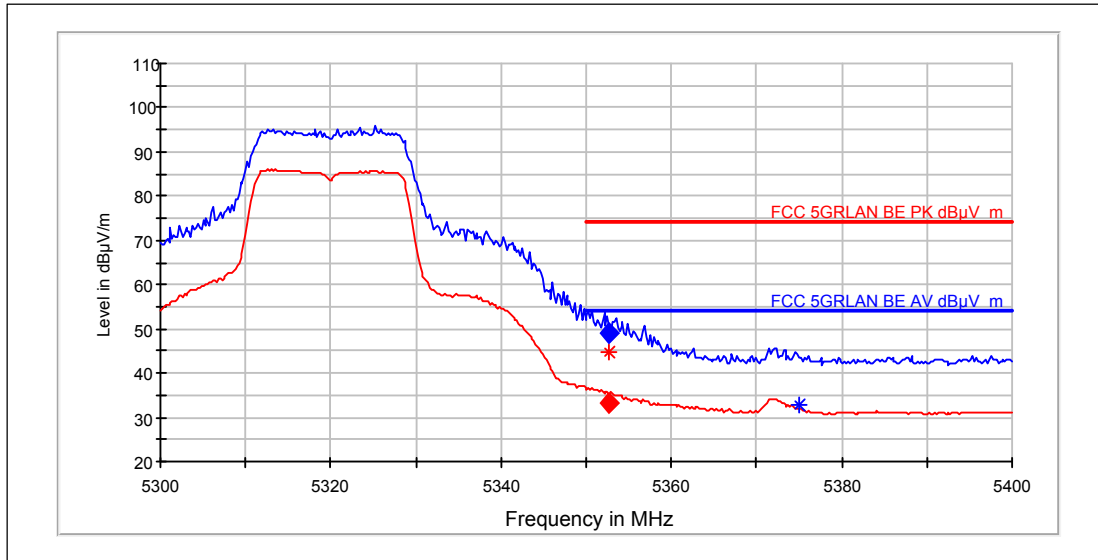
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5100.641	42.20	74	31.80	170	V	270	90	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5101.603	29.07	54	24.93	170	H	270	90	PASSED

Channel 64 / 5320MHz



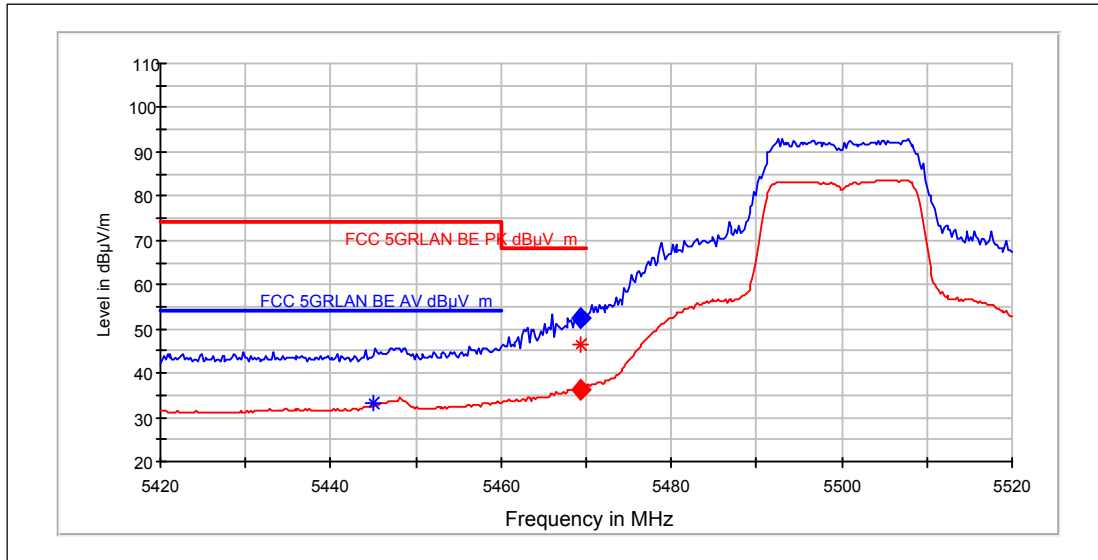
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5352.605	48.89	74	25.11	170	H	11	0.5	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5352.605	33.33	54	20.67	170	H	11	0.5	PASSED

Channel 100 / 5500MHz



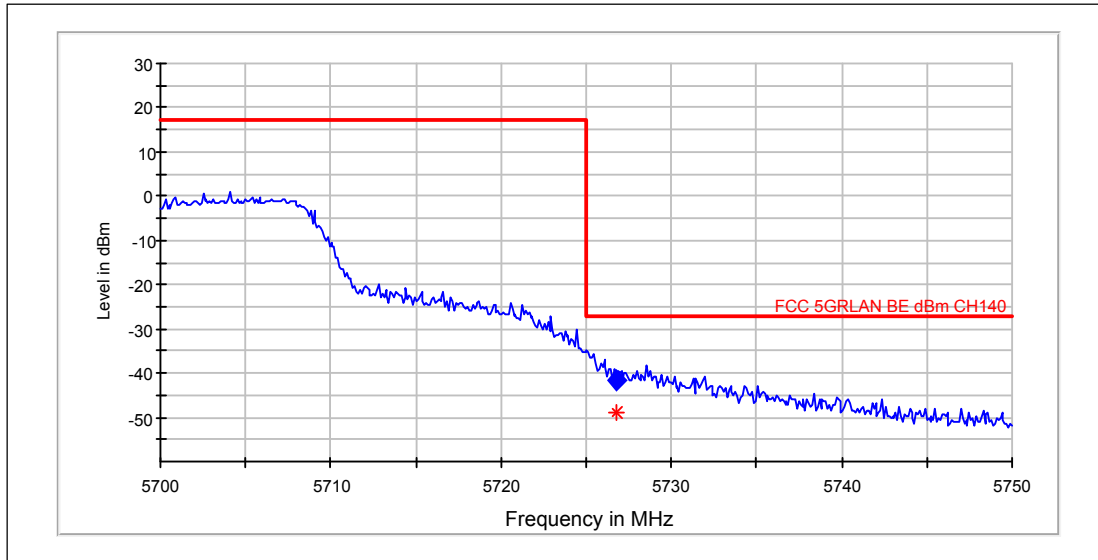
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5469.299	52.48	68.2	15.72	170	V	3	0	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5469.299	36.05	---	---	170	V	3	0	PASSED

Channel 140 / 5700MHz

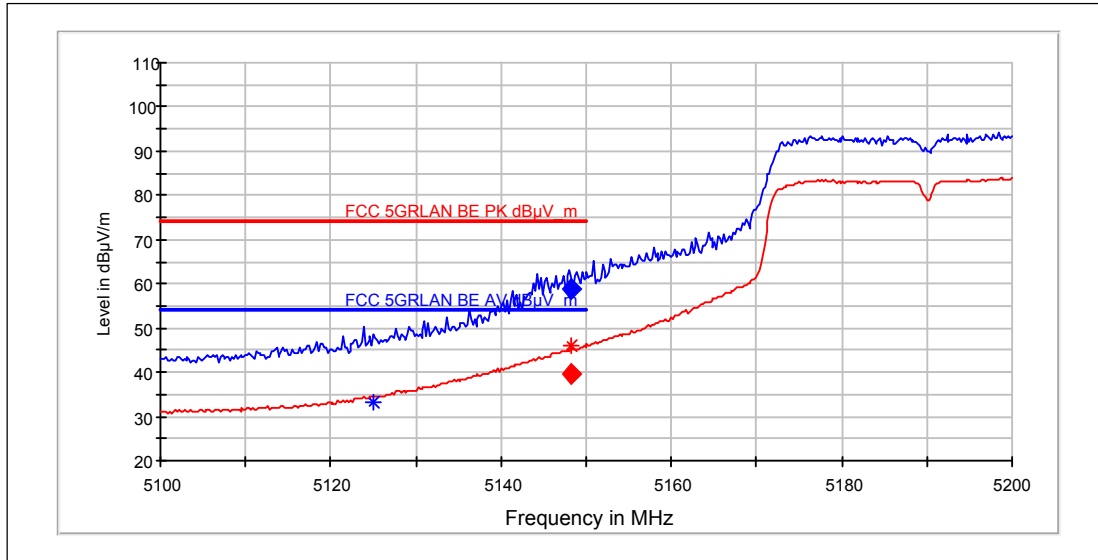


Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5726.758	-41.78	-27	14.78	170	V	5	0.5	PASSED

3.3.3 802.11n, BPSK modulation, 13.5 / 15.0 Mbps data rate.

Channel 36+40 / 5190MHz



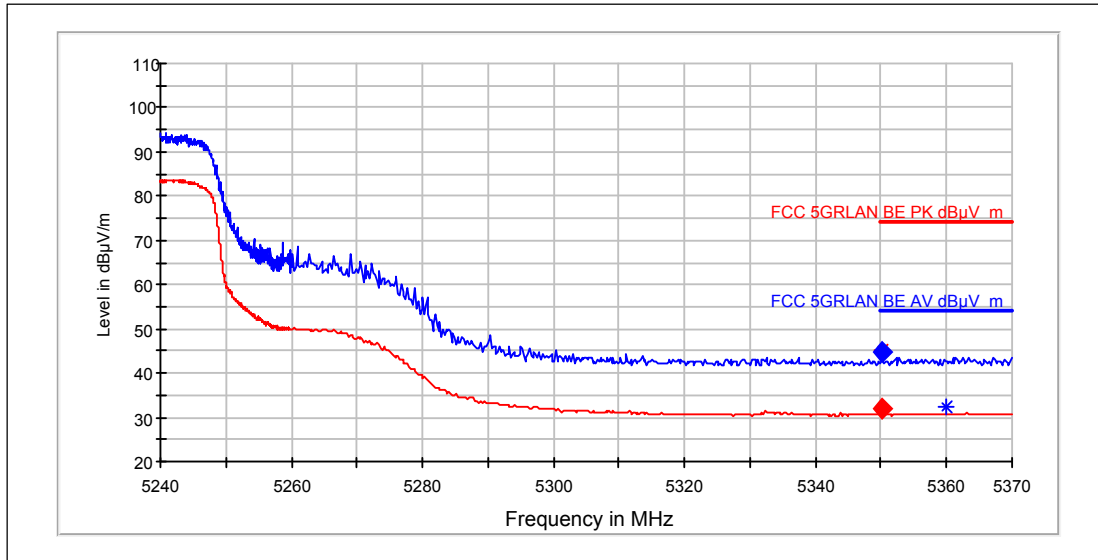
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5148.297	58.83	74	15.17	170	V	18	0	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5148.297	39.75	54	14.25	170	V	18	0	PASSED

Channel 44+48 / 5230MHz



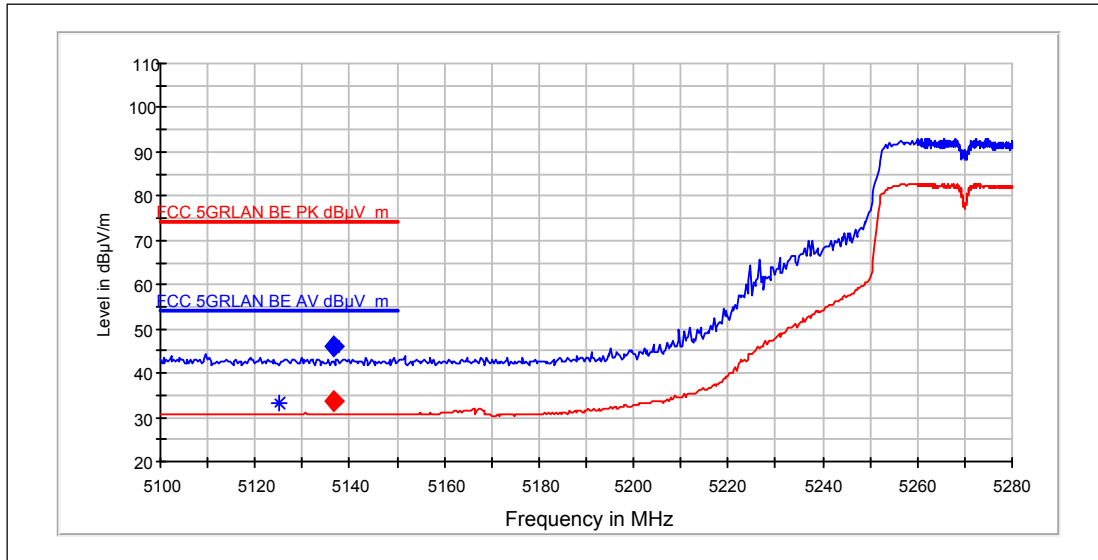
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5350.08	44.85	74	29.15	170	V	-19	0	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5350.08	31.87	54	22.13	170	V	-19	0	PASSED

Channel 52+56 / 5270MHz



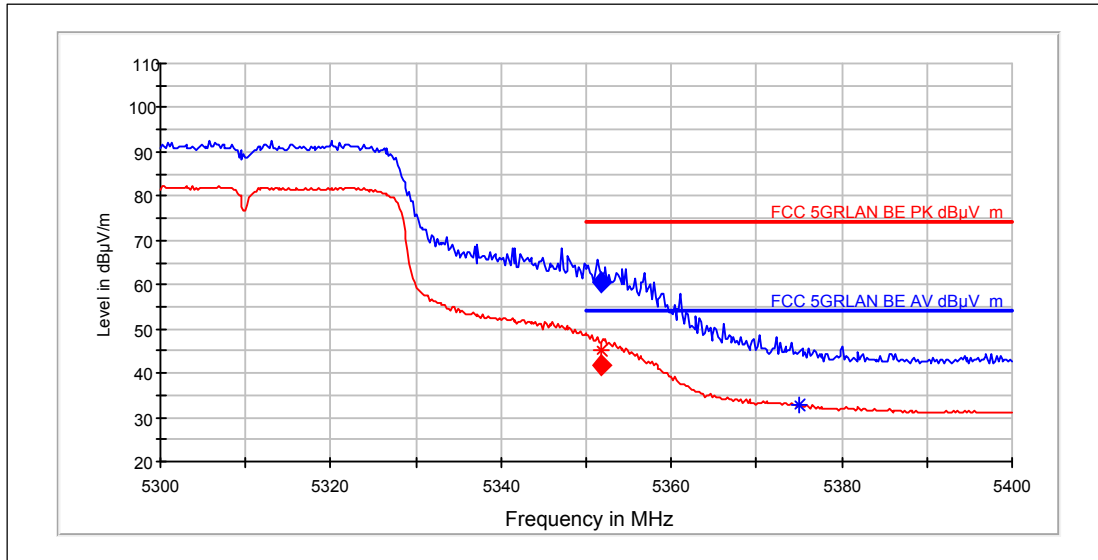
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5136.548	46.04	74	27.96	170	V	0	0	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5136.548	33.55	54	20.45	170	V	0	0	PASSED

Channel 60+64 / 5310MHz



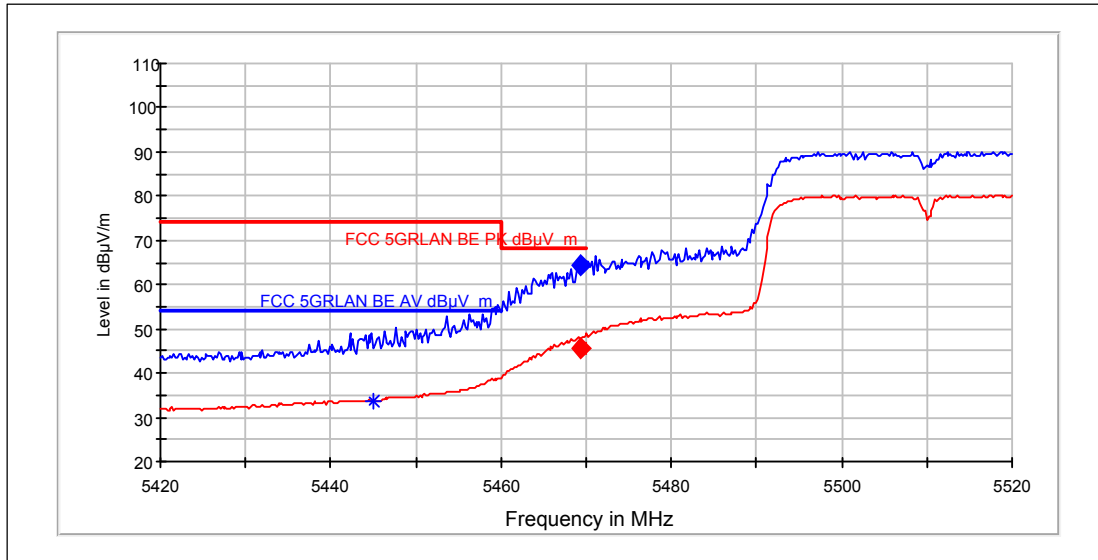
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5351.804	60.53	74	13.47	170	H	15	0	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5351.804	41.68	54	12.32	170	H	15	0	PASSED

Channel 100+104 / 5510MHz



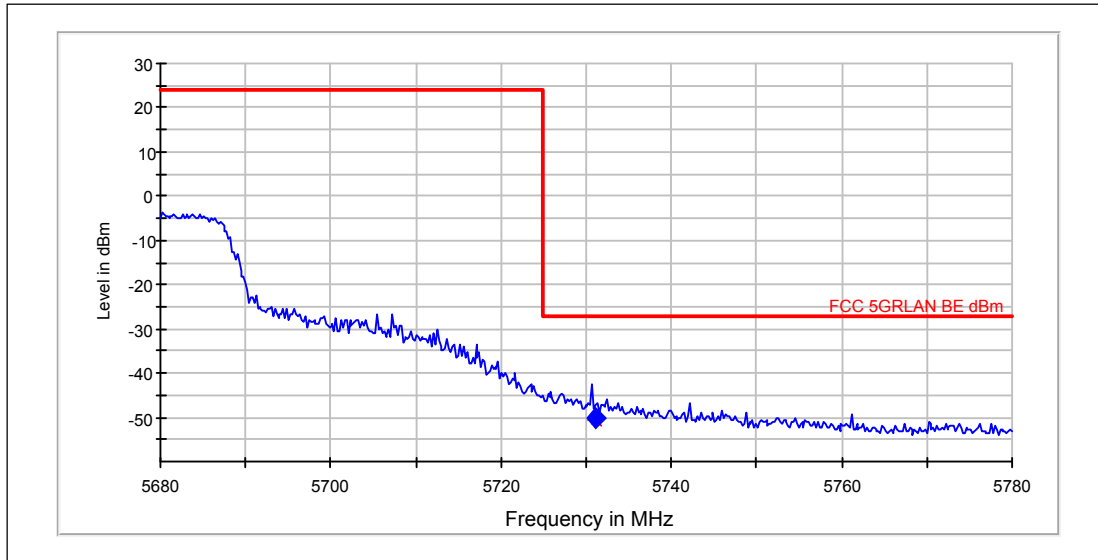
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5469.399	64.35	68.2	3.85	170	V	4	0	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5469.399	45.42	---	---	170	V	4	0	PASSED

Channel 132+136 / 5670MHz

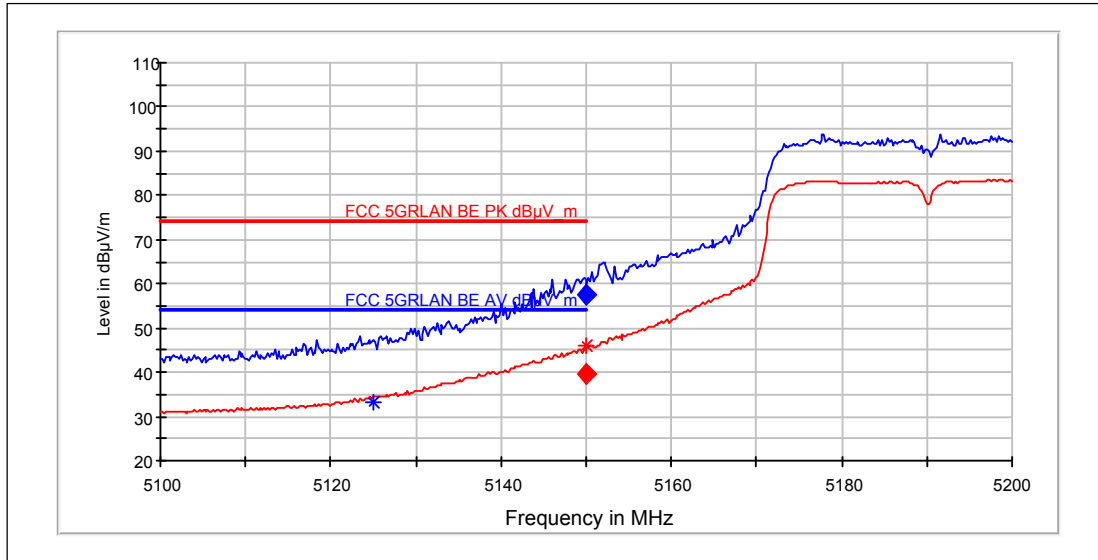


Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5731.166	-50.09	-27	23.09	170	H	7	0	PASSED

3.3.4 802.11n, QPSK modulation, 27.0 / 30.0 Mbps data rate.

Channel 36+40 / 5190MHz



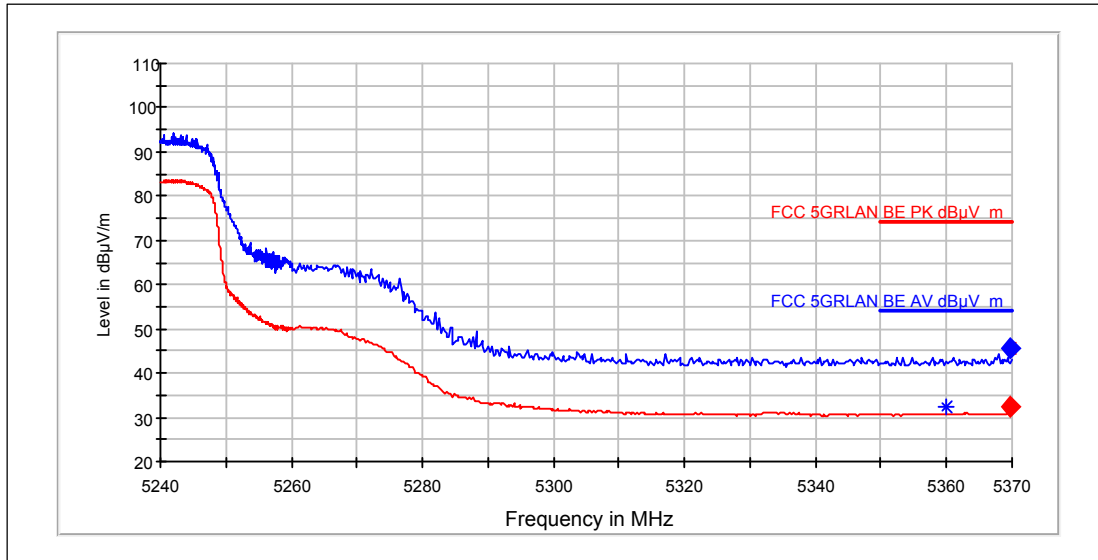
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5150	57.33	74	16.67	170	V	22	0	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5150	39.75	54	14.25	170	V	22	0	PASSED

Channel 44+48 / 5230MHz



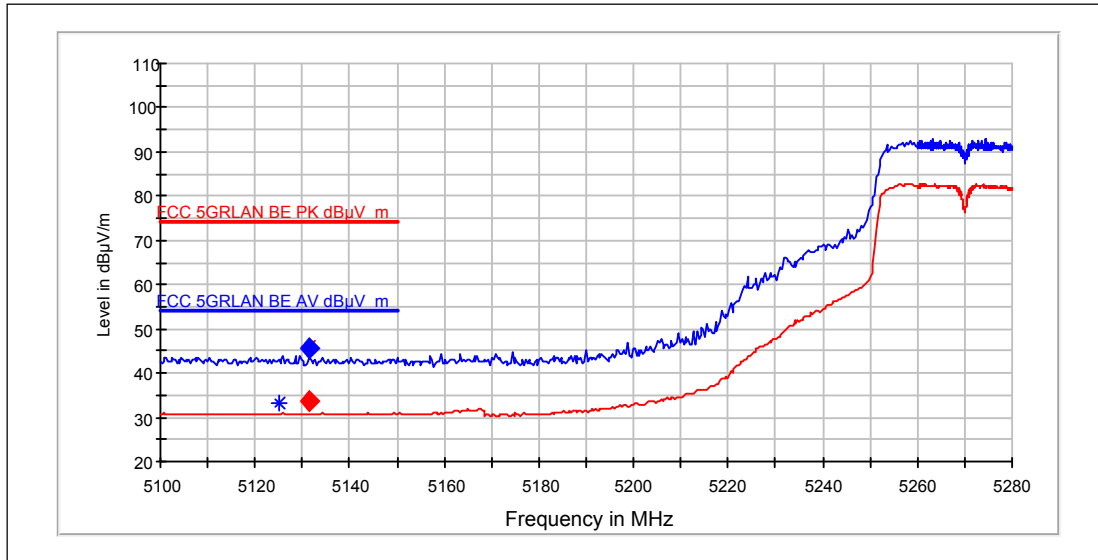
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5369.84	45.38	74	28.62	170	H	-9	0	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5369.84	32.27	54	21.73	170	H	-9	0	PASSED

Channel 52+56 / 5270MHz



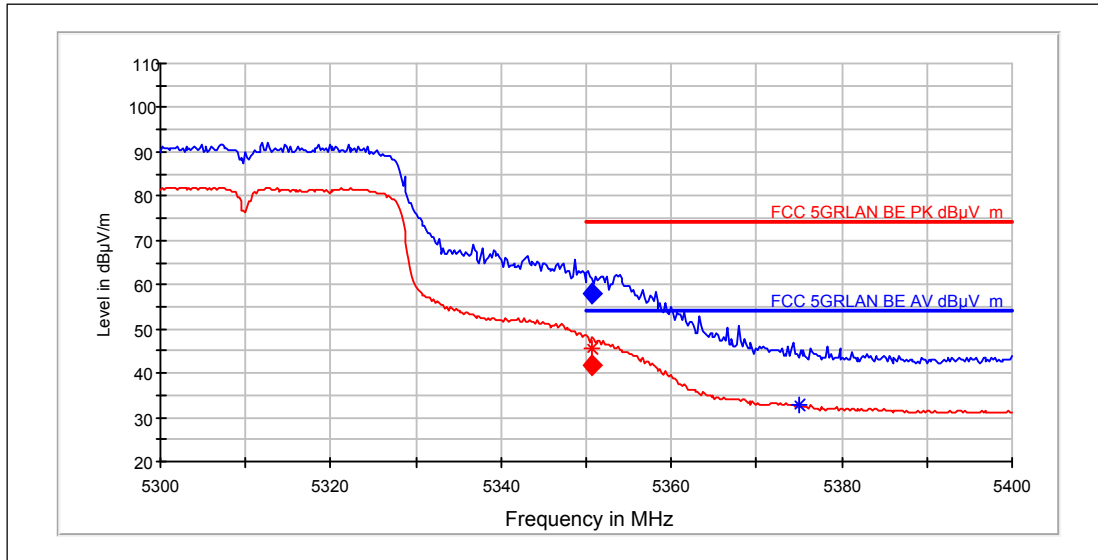
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5131.338	45.66	74	28.34	170	H	14	0.5	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5131.338	33.71	54	20.29	170	H	14	0.5	PASSED

Channel 60+64 / 5310MHz



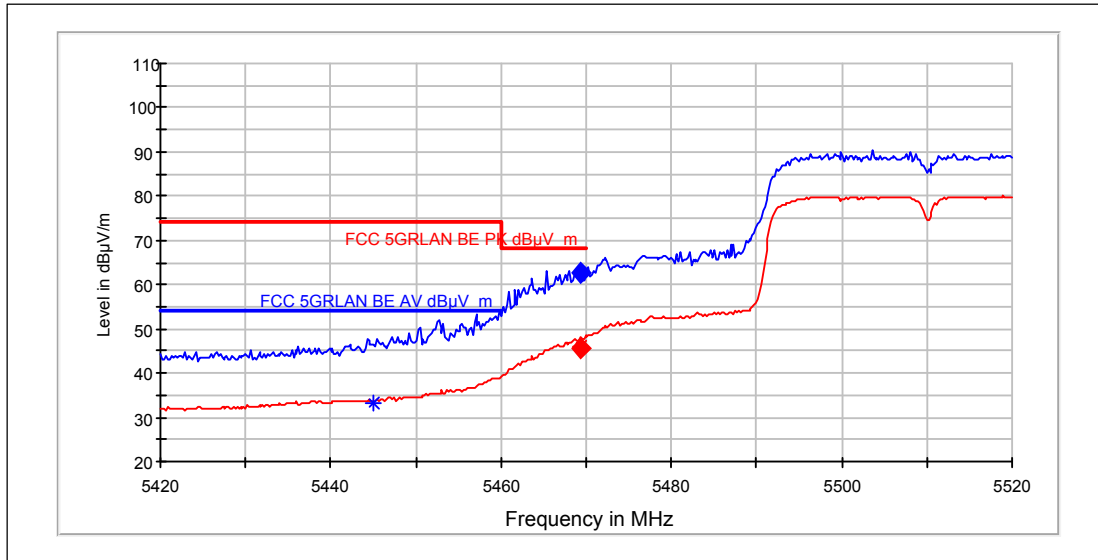
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5350.601	58.11	74	15.89	170	H	10	0	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5350.601	41.55	54	12.45	170	H	10	0	PASSED

Channel 100+104 / 5510MHz



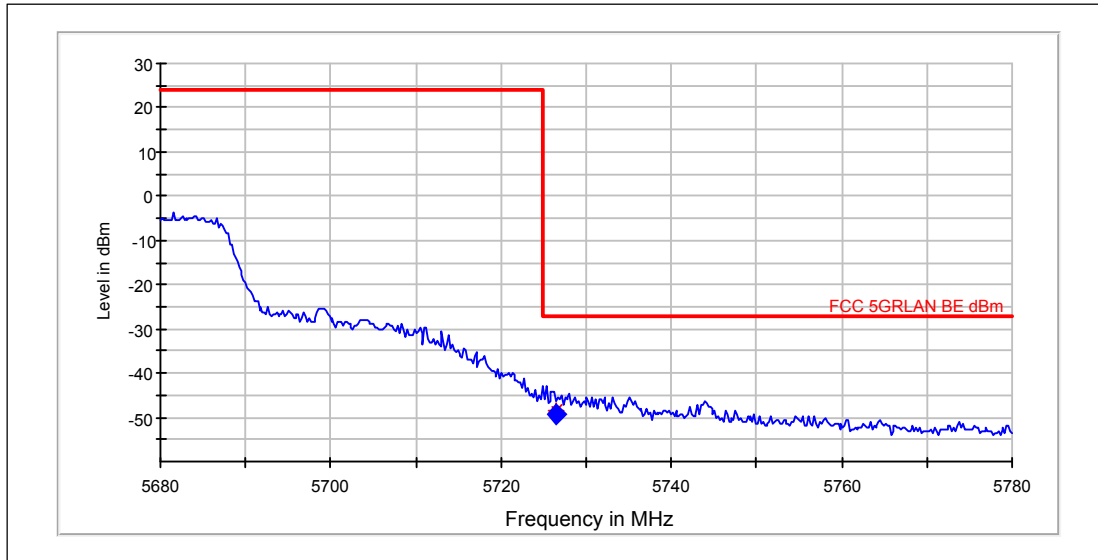
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5469.299	62.56	68.2	5.64	170	V	3	0.5	PASSED

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

Frequency [MHz]	Average [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5469.299	45.42	---	---	170	V	3	0.5	PASSED

Channel 132+136 / 5670MHz



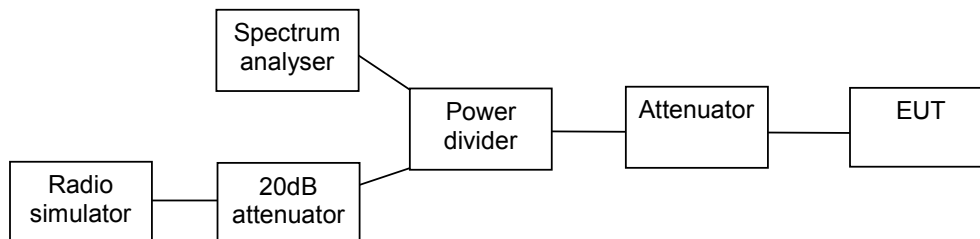
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	MaxPeak [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Elevation [deg]	Results
5726.507	-49.2	-27	22.2	170	V	6	0.5	PASSED

4. Peak excursion (FCC §15.407(a)(6), RSS-210 A9.2)

EUT with DUT number	RM-984, DUT 43187
Accessories with DUT numbers	BV-L4A, DUT 43188
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20-24 / 42-49 / 98.1-98.8
Date of measurements	27-Jun.. 04-Jul-2014
Measured by	Jari Jantunen

4.1. Test Setup



4.2. Test method and limit

The measurement is made according to Public Notice KDB 789033 D01 and IC standard RSS-210.

Limits for peak excursion measurements

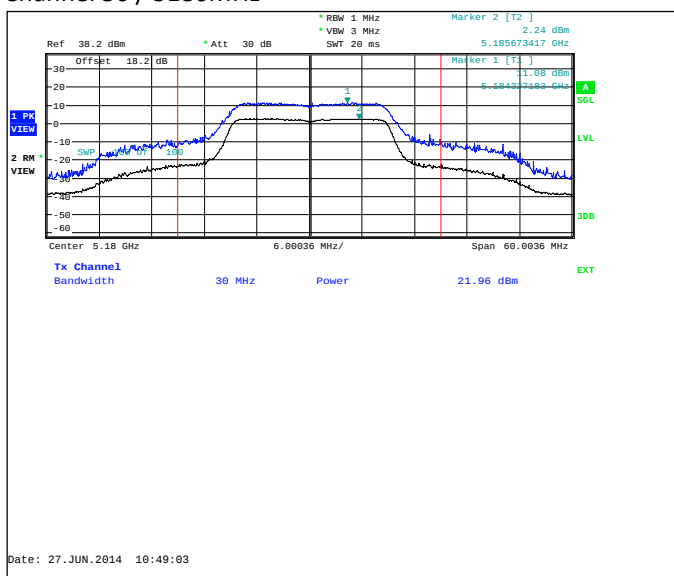
Limit [dB]
<= 13

4.3. 5 GHz RLAN Test results

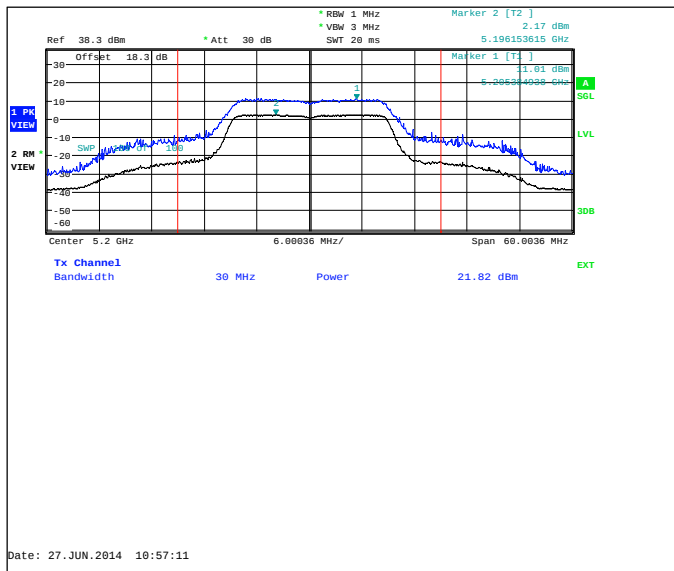
4.3.1 802.11n mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

Channel / f _c [MHz]	Peak excursion [dB]	Result
36 / 5180	8.84	PASSED
40 / 5200	8.84	PASSED
48 / 5240	8.74	PASSED
52 / 5260	8.64	PASSED
60 / 5300	8.75	PASSED
64 / 5320	8.69	PASSED
100 / 5500	8.9	PASSED
116 / 5580	8.64	PASSED
140 / 5700	8.71	PASSED

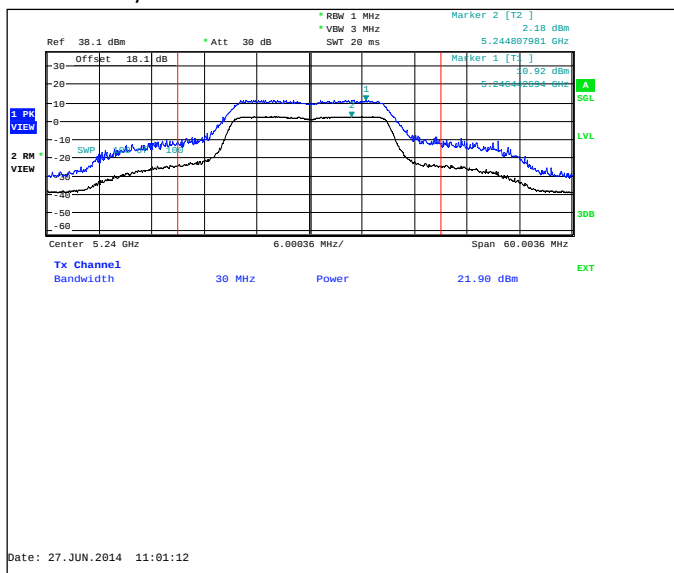
Channel 36 / 5180MHz



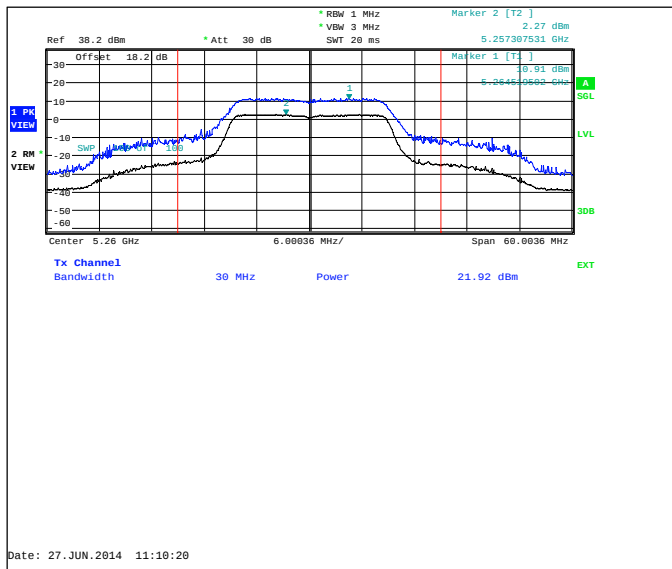
Channel 40 / 5200MHz



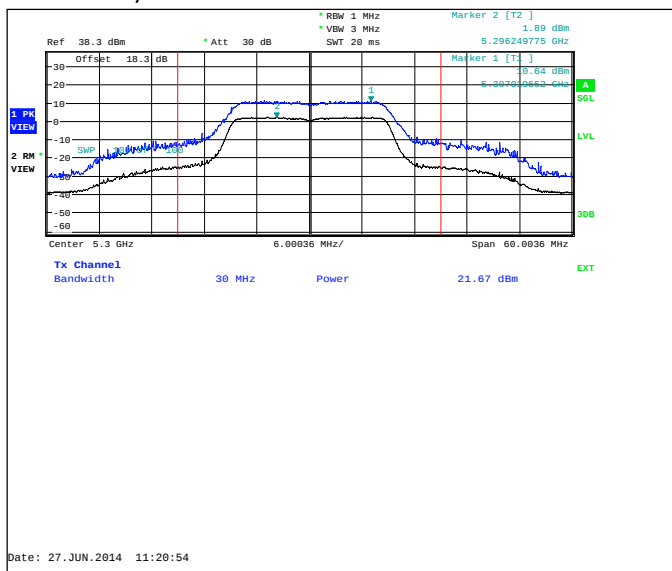
Channel 48 / 5240MHz



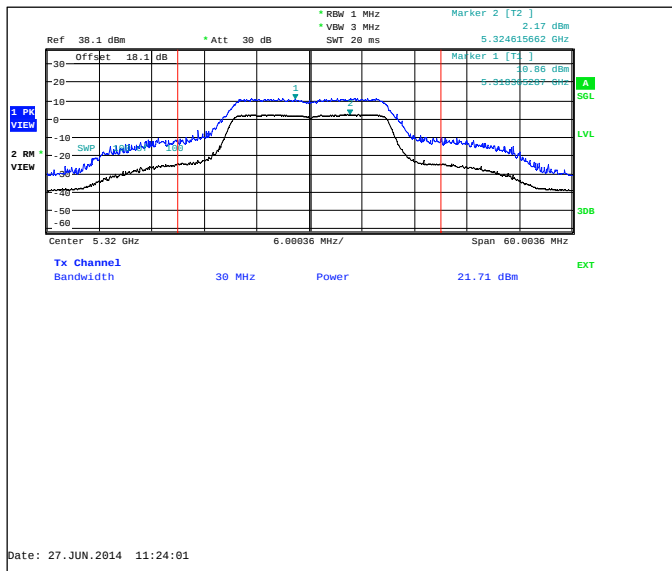
Channel 52 / 5260MHz



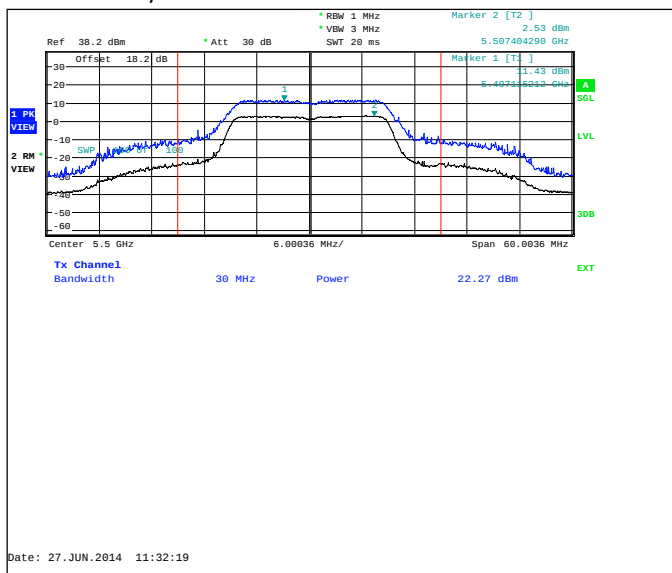
Channel 60 / 5300MHz



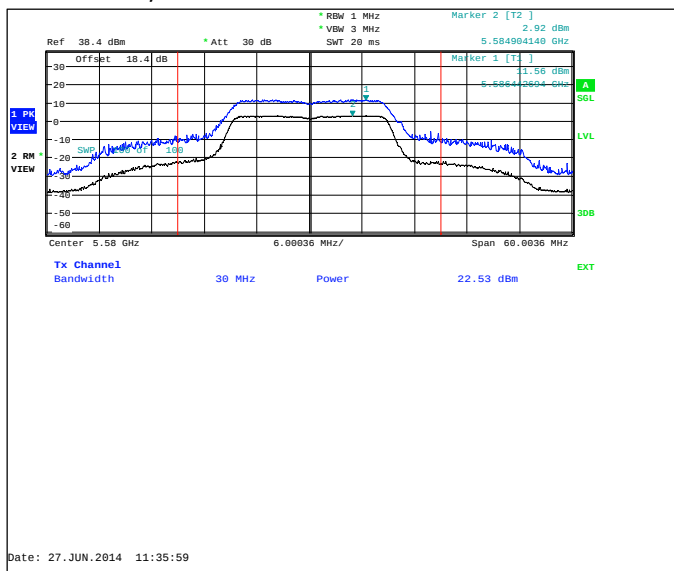
Channel 64 / 5320MHz



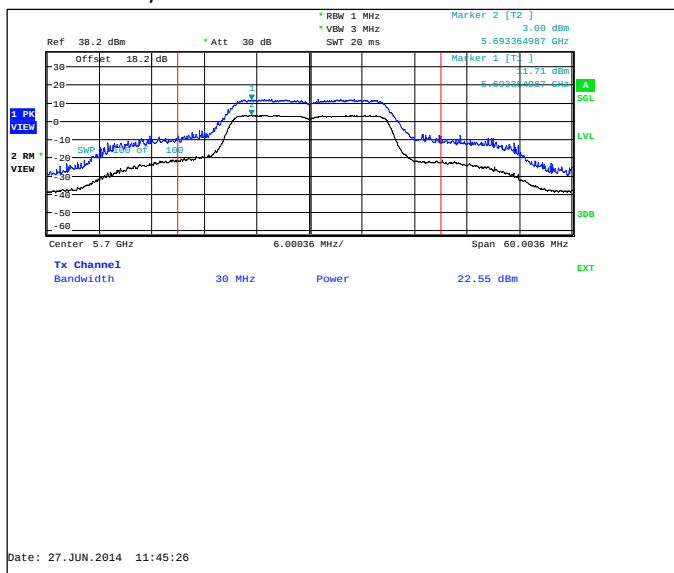
Channel 100 / 5500MHz



Channel 116 / 5580MHz



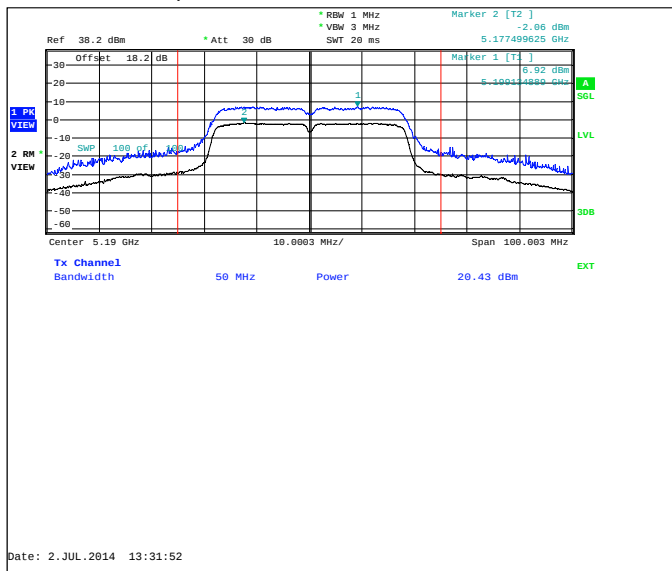
Channel 140 / 5700MHz



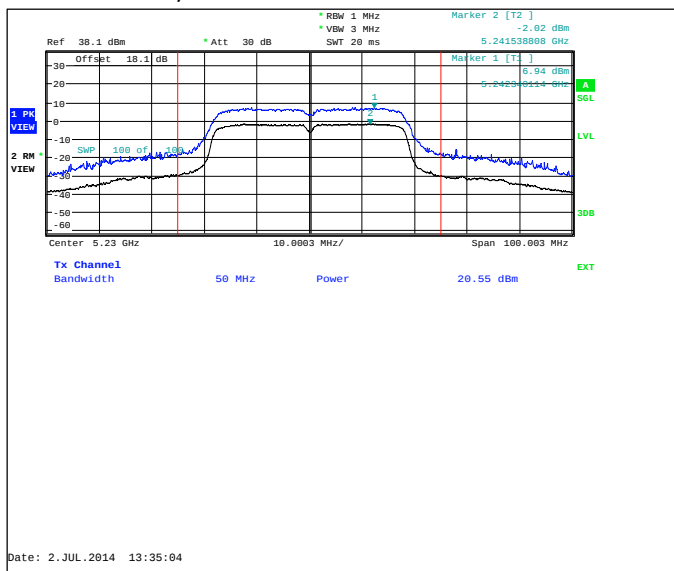
4.3.2 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f _c [MHz]	Peak excursion [dB]	Result
36+40 / 5190	8.98	PASSED
44+48 / 5230	8.96	PASSED
52+56 / 5270	8.5	PASSED
60+64 / 5310	9.22	PASSED
100+104 / 5510	9.07	PASSED
108+112 / 5550	9.36	PASSED
132+136 / 5670	9.06	PASSED

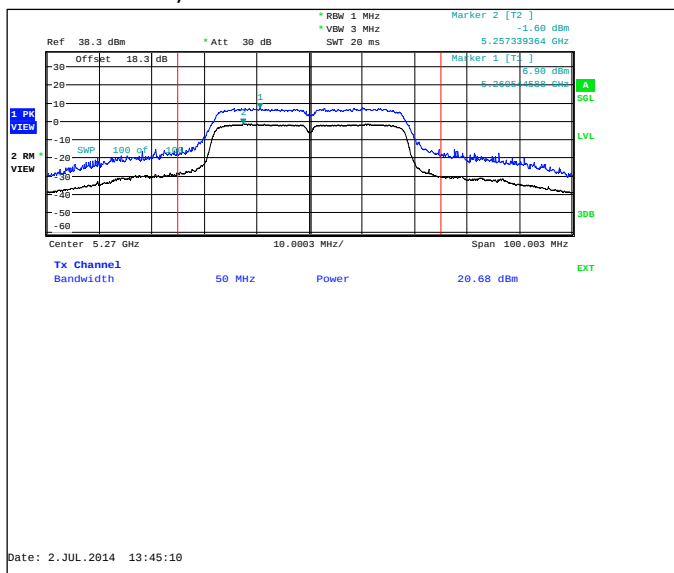
Channel 36+40 / 5190MHz



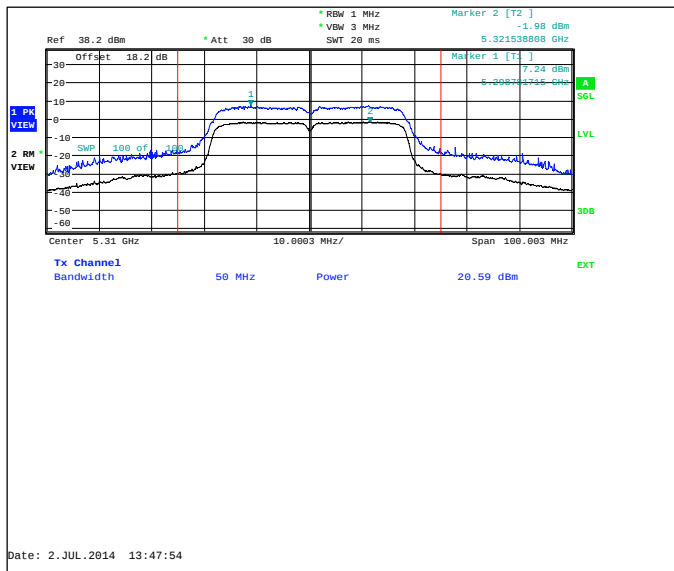
Channel 44+48 / 5230MHz



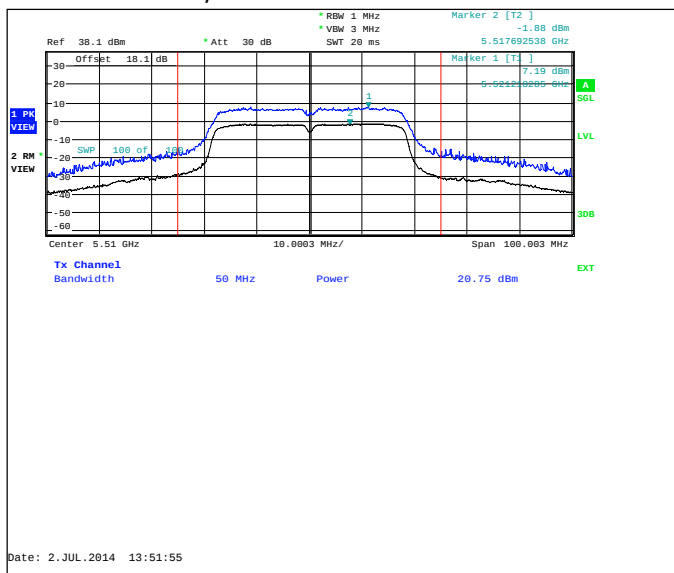
Channel 52+56 / 5270MHz



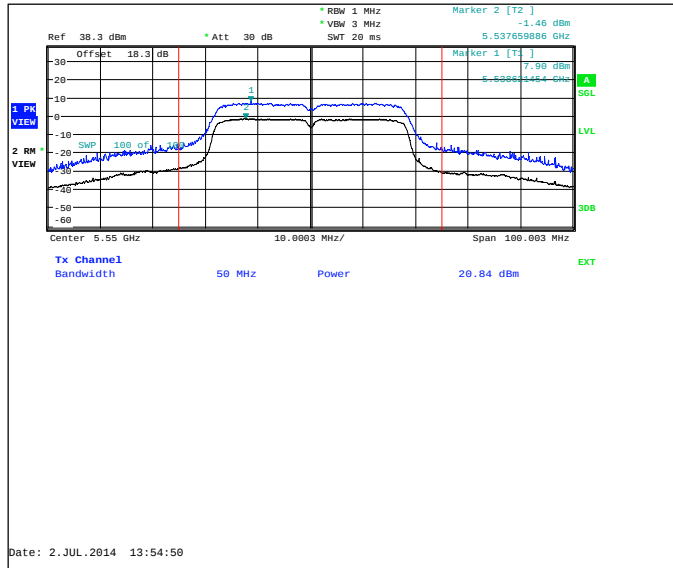
Channel 60+64 / 5310MHz



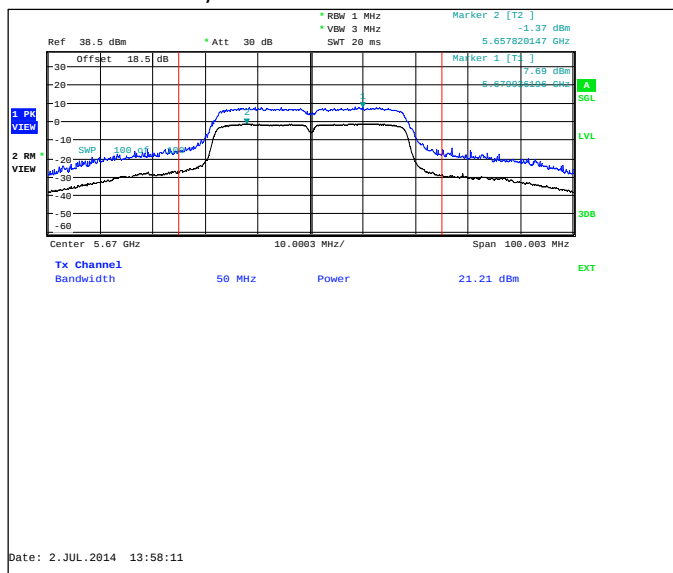
Channel 100+104 / 5510MHz



Channel 108+112 / 5550MHz



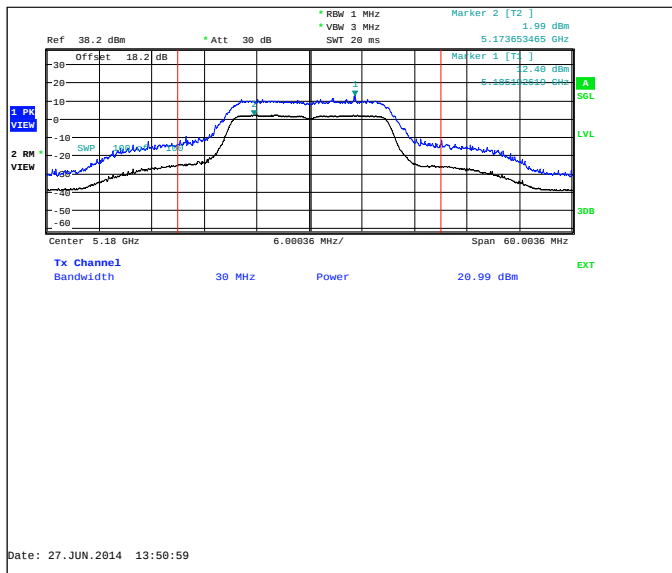
Channel 132+136 / 5670MHz



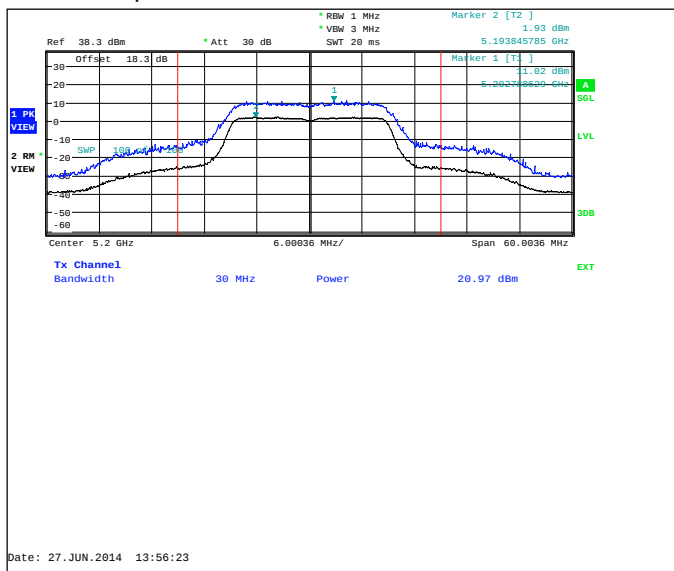
4.3.3 802.11n mode, QPSK modulation, 19.5 / 21.7 Mbps data rate

Channel / f _c [MHz]	Peak excursion [dB]	Result
36 / 5180	10.41	PASSED
40 / 5200	9.09	PASSED
48 / 5240	9.57	PASSED
52 / 5260	9.86	PASSED
60 / 5300	9.98	PASSED
64 / 5320	9.27	PASSED
100 / 5500	8.99	PASSED
116 / 5580	10.71	PASSED
140 / 5700	9.31	PASSED

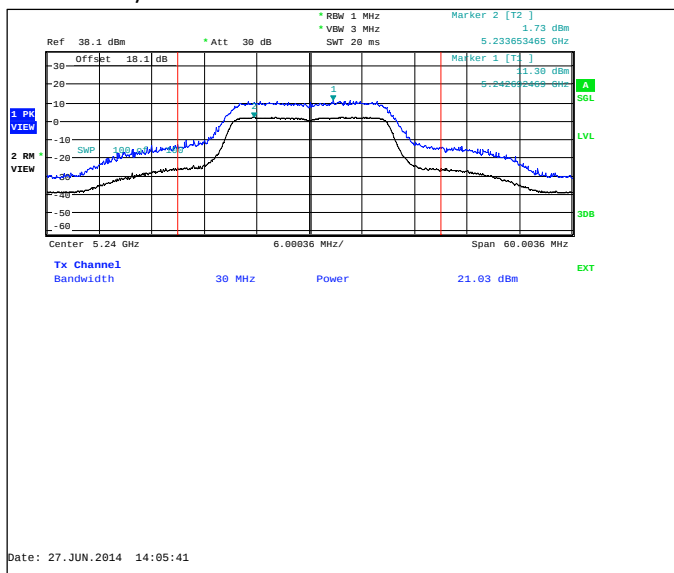
Channel 36 / 5180MHz



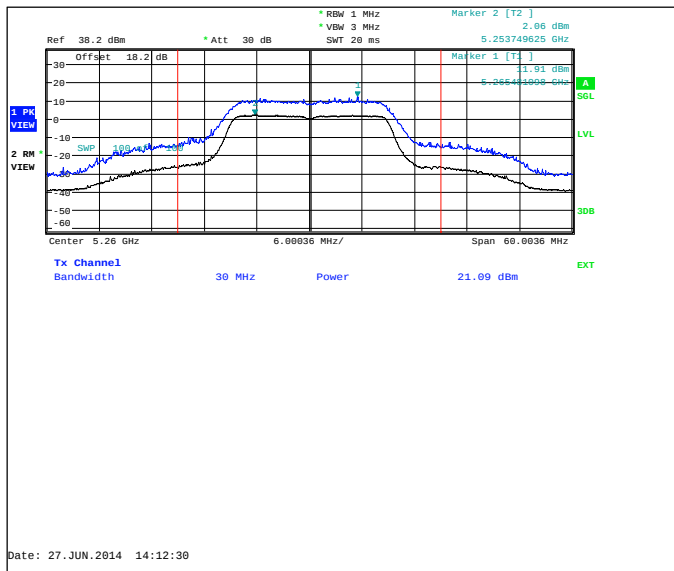
Channel 40 / 5200MHz



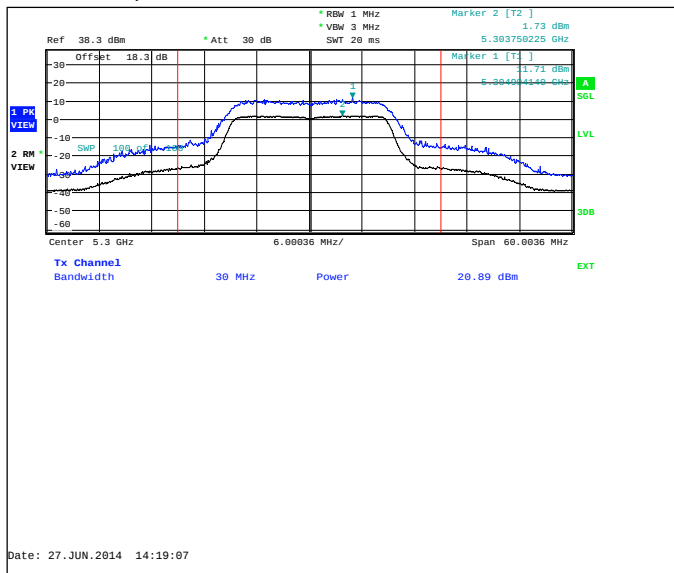
Channel 48 / 5240MHz



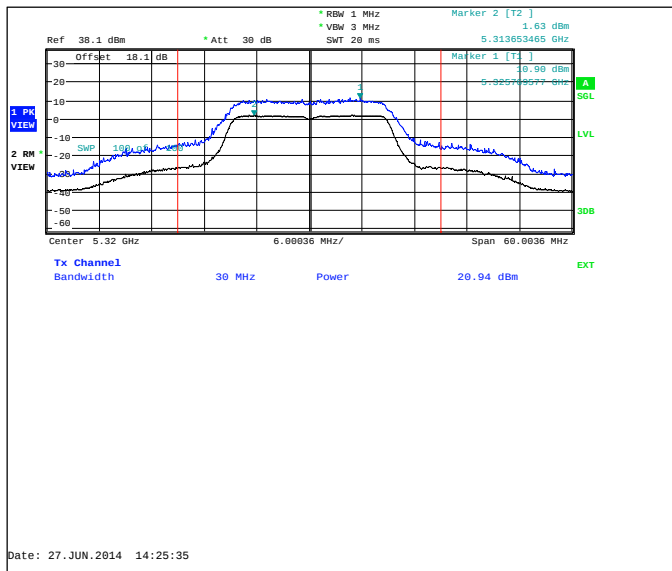
Channel 52 / 5260MHz



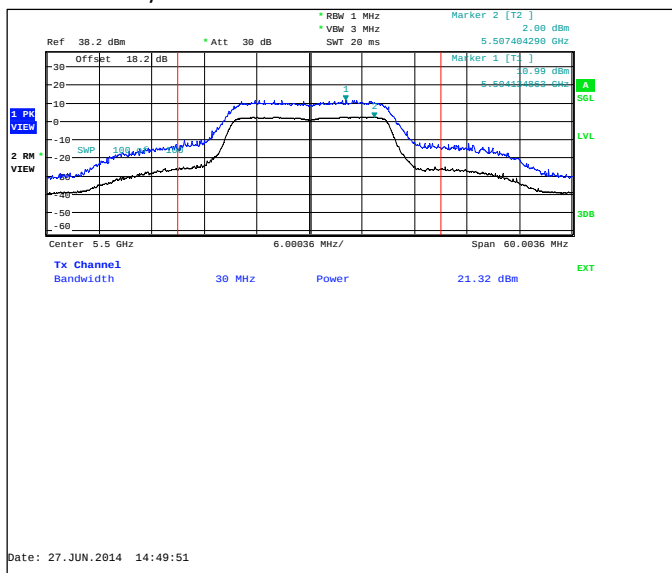
Channel 60 / 5300MHz



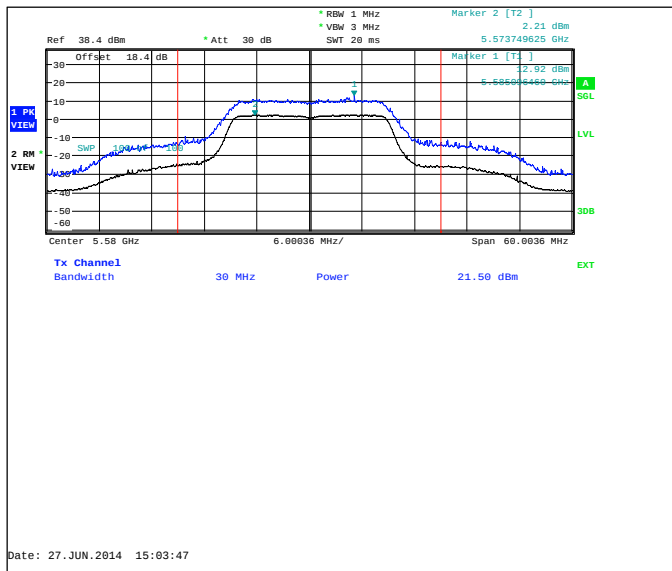
Channel 64 / 5320MHz



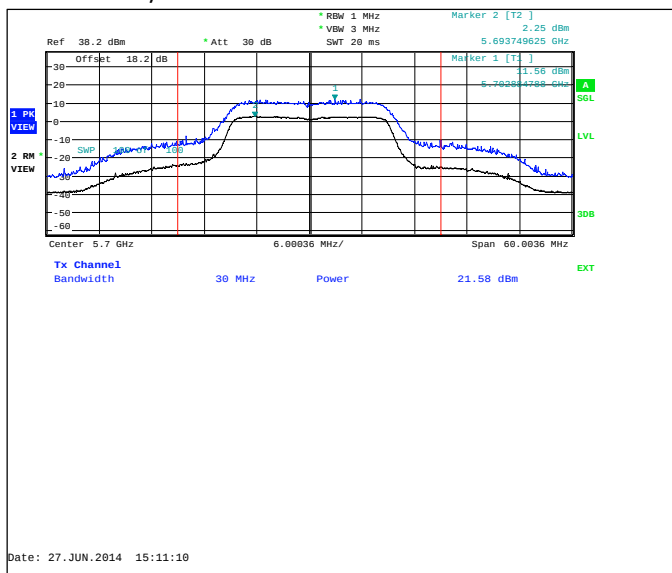
Channel 100 / 5500MHz



Channel 116 / 5580MHz



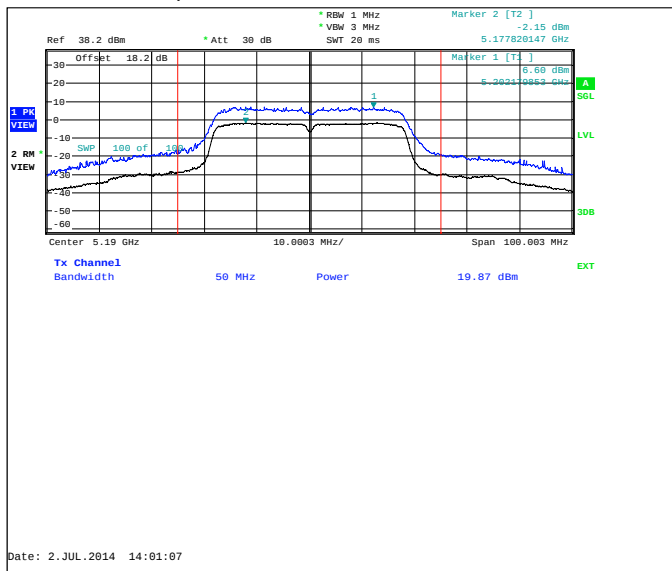
Channel 140 / 5700MHz



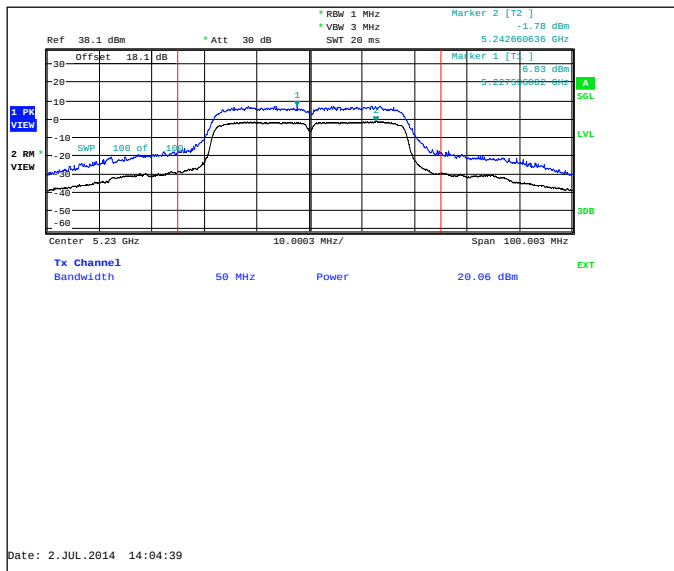
4.3.4 802.11n mode, QPSK modulation, 27.0 / 30.0 Mbps data rate

Channel / f _c [MHz]	Peak excursion [dB]	Result
36+40 / 5190	8.75	PASSED
44+48 / 5230	8.61	PASSED
52+56 / 5270	8.82	PASSED
60+64 / 5310	9.25	PASSED
100+104 / 5510	8.4	PASSED
108+112 / 5550	8.91	PASSED
132+136 / 5670	8.66	PASSED

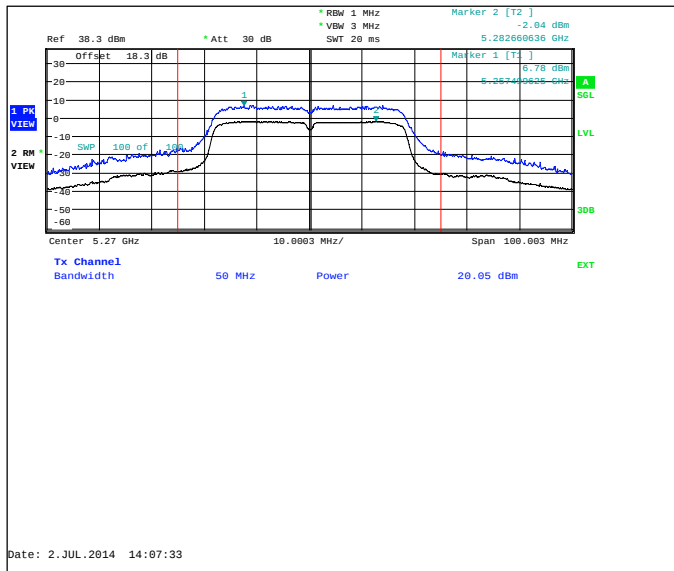
Channel 36+40 / 5190MHz



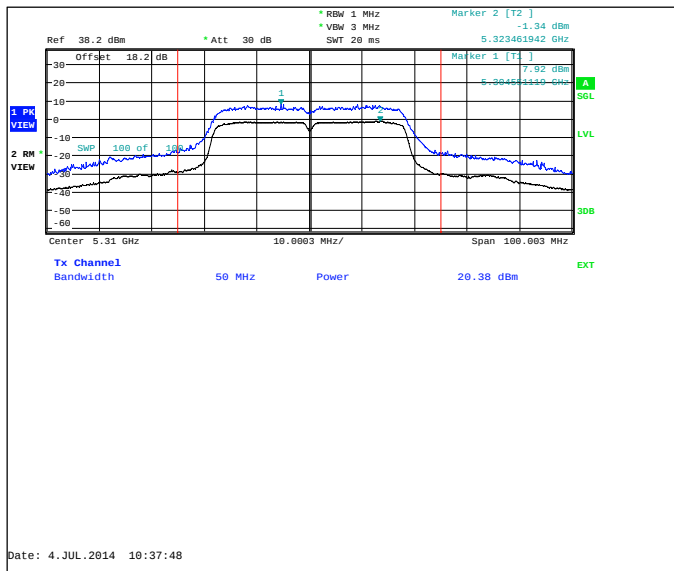
Channel 44+48 / 5230MHz



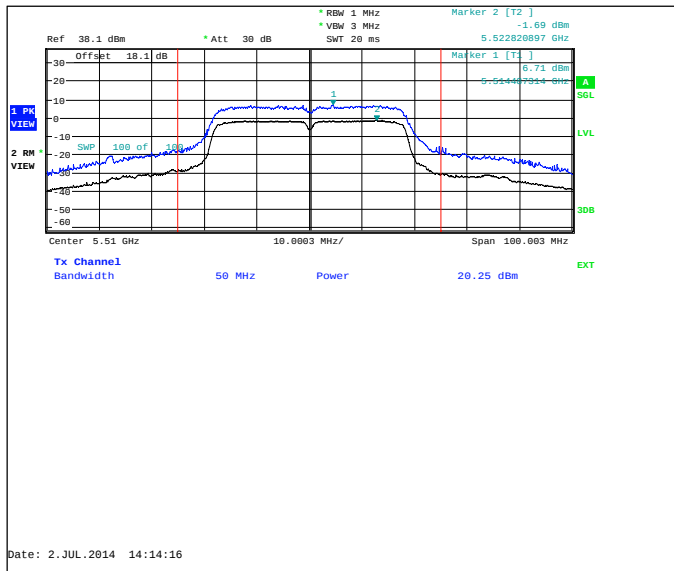
Channel 52+56 / 5270MHz



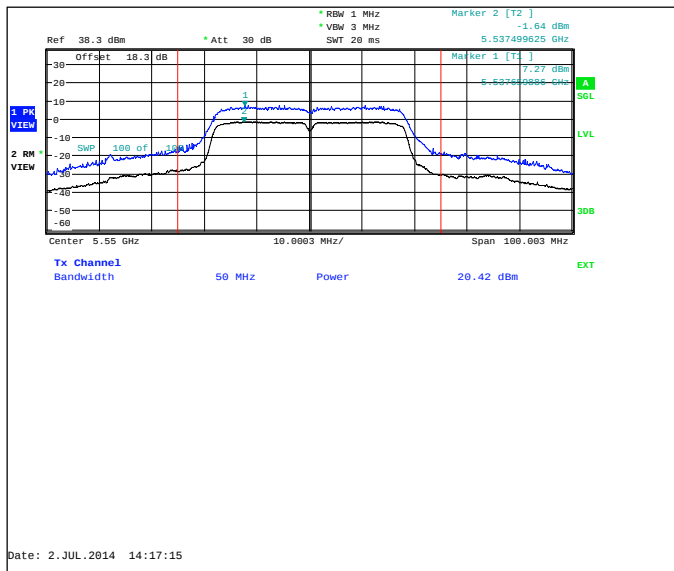
Channel 60+64 / 5310MHz



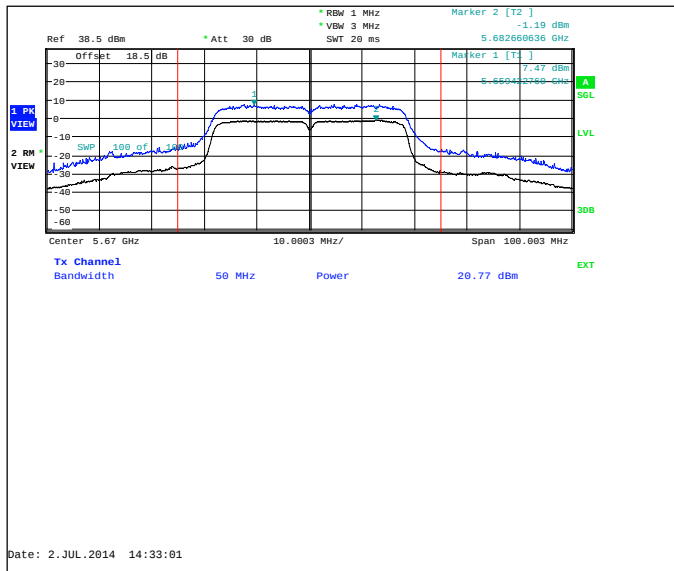
Channel 100+104 / 5510MHz



Channel 108+112 / 5550MHz



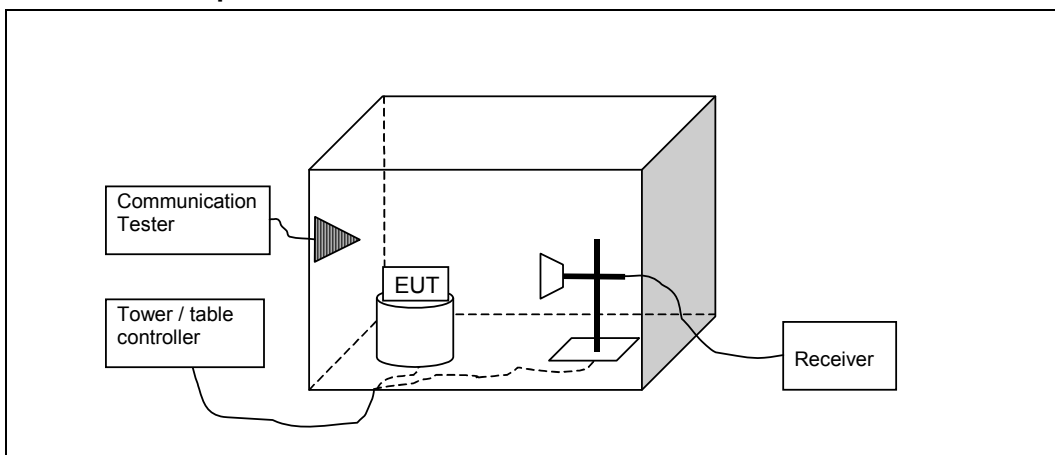
Channel 132+136 / 5670MHz



5. Spurious radiated emissions (FCC 15.407(b), RSS-210 A9.2)

EUT with DUT number	RM-984, DUT 43184
Accessories with DUT numbers	BV-L4A, DUT 43185 ; WH-208, DUT 43186 ; AC-60E, DUT 43074 ; CA-190CD, DUT 43034
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	19-20 / 35-37 / 98.2-98.4
Date of measurements	01..02-Jul-2014
Measured by	Jari Jantunen

5.1.1 Test setup



5.2. Test method and limit

The measurement is made the following way:

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with absorbers on the floor and measuring antenna at fixed height using 2-axis EUT position system.

The Final Measurement is performed in the Semi-Anechoic Chamber with conducting metal floor, if the Preliminary Measurement results are closer than 20 dB to the permissible value.

The EUT is placed at nonconductive plate at the turntable center.

For each suspected frequency, the turntable is rotated 360 degrees and antenna is scanned from 1 to 4 m. This is repeated for both horizontal and vertical receive antenna polarizations.

The emissions less than 20 dB below the permissible value are reported.

The measurement results are obtained as described below:

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

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

Limits for spurious radiated emissions measurements (3 m measurement distance)
There are 2 sets of limit lines. Part 15.209 limits apply below 1 GHz and on restricted bands above 1GHz. The other limits are described in the table below.

Frequency range [MHz]	Limit [dBm / MHz]
5150 - 5250	1 GHz – 5.15 GHz, 5.35 GHz – 40 GHz: -27
5250 - 5350	1 GHz – 5.25 GHz, 5.35 GHz – 40 GHz: -27
5470 - 5725	1 GHz – 5.47 GHz, 5.725 GHz – 40 GHz: -27
5725 - 5825	1 GHz – 5.715 GHz, 5.835 GHz – 40 GHz: -27 5.715 GHz – 5.725 GHz, 5.825 GHz – 5.835 GHz: -17

5.3. 5 GHz RLAN test results

5.3.1 802.11n, BPSK modulation, 6.5 / 7.25 Mbps data rate.

Channel 36 / 5180MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10362.1	49.15	286.748	42.95	6.2	68	19.08	PASSED
15532.7	44.25	163.117	41.55	2.7	74	29.73	PASSED
20724.4	46.02	199.986	40.32	5.7	74	27.96	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10362.1	36.31	65.388	30.11	6.2	---	---	PASSED
15532.7	30.97	35.359	28.27	2.7	54	23.03	PASSED
20724.4	33.33	46.398	27.63	5.7	54	20.67	PASSED

Channel 40 / 5200MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
5165.971	53.7	484.172	52.4	1.3	68	14.53	PASSED
5170.919	57.66	763.836	56.36	1.3	68	10.57	PASSED
5229.4	56.57	673.752	55.67	0.9	68	11.66	PASSED
10400.7	48.98	281.19	42.78	6.2	68	19.25	PASSED
15599.1	44.31	164.248	41.61	2.7	74	29.67	PASSED
20798.1	46.77	218.022	41.07	5.7	74	27.21	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
5165.971	34.91	55.654	33.61	1.3	---	---	PASSED
5170.919	37.05	71.203	35.75	1.3	---	---	PASSED
5229.4	36.05	63.46	35.15	0.9	---	---	PASSED
10400.7	36.09	63.753	29.89	6.2	---	---	PASSED
15599.1	31.59	37.975	28.89	2.7	54	22.41	PASSED
20798.1	33.47	47.152	27.77	5.7	54	20.53	PASSED

Channel 48 / 5240MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10489.9	49.17	287.409	42.47	6.7	68	19.06	PASSED
15724.3	48.53	266.993	46.03	2.5	74	25.45	PASSED
20954.2	46.82	219.28	41.32	5.5	74	27.16	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10489.9	36.32	65.464	29.62	6.7	---	---	PASSED
15724.3	34.28	51.761	31.78	2.5	54	19.72	PASSED
20954.2	33.67	48.25	28.17	5.5	54	20.33	PASSED

Channel 52 / 5260MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10522.7	50.06	318.42	43.26	6.8	68	18.17	PASSED
15771	44.08	159.956	41.48	2.6	74	29.9	PASSED
21048.1	46.79	218.524	41.09	5.7	74	27.19	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10522.7	36.9	69.984	30.1	6.8	---	---	PASSED
15771	31.34	36.898	28.74	2.6	54	22.66	PASSED
21048.1	33.83	49.147	28.13	5.7	54	20.17	PASSED

Channel 60 / 5300MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
33.952	18.23	8.156	40.03	-21.8	40	21.77	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
5265.33	50.1	319.89	49.4	0.7	68	18.13	PASSED
5269.977	51.49	375.405	50.89	0.6	68	16.74	PASSED
10598.7	49.8	309.03	42.9	6.9	68	18.43	PASSED
15900.5	44.21	162.368	41.61	2.6	74	29.77	PASSED
21198.3	46.05	200.678	40.35	5.7	74	27.93	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
5265.33	32	39.811	31.3	0.7	---	---	PASSED
5269.977	33.15	45.446	32.55	0.6	---	---	PASSED
10598.7	36.91	70.065	30.01	6.9	---	---	PASSED
15900.5	31.45	37.368	28.85	2.6	54	22.55	PASSED
21198.3	32.85	43.904	27.15	5.7	54	21.15	PASSED

Channel 64 / 5320MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10635.9	50.23	324.713	43.53	6.7	74	23.75	PASSED
15958.6	45.29	183.865	42.69	2.6	74	28.69	PASSED
21287	46.74	217.27	40.84	5.9	74	27.24	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10635.9	36.87	69.743	30.17	6.7	54	17.13	PASSED
15958.6	32.4	41.687	29.8	2.6	54	21.6	PASSED
21287	33.4	46.774	27.5	5.9	54	20.6	PASSED

Channel 100 / 5500MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10992.9	49.59	301.648	42.59	7	74	24.39	PASSED
16496.8	44.89	175.59	42.09	2.8	68	23.34	PASSED
22007.1	46.7	216.272	41.1	5.6	68	21.53	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10992.9	36.15	64.195	29.15	7	54	17.85	PASSED
16496.8	31.09	35.851	28.29	2.8	---	---	PASSED
22007.1	33.44	46.989	27.84	5.6	---	---	PASSED

Channel 116 / 5580MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
5608.9	54.62	538.27	54.12	0.5	68	13.61	PASSED
11159.9	49.79	308.674	42.59	7.2	74	24.19	PASSED
16739.7	44.38	165.577	41.88	2.5	68	23.85	PASSED
22319.9	46.35	207.73	40.85	5.5	74	27.63	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
5608.9	35.29	58.143	34.79	0.5	---	---	PASSED
11159.9	36.78	69.024	29.58	7.2	54	17.22	PASSED
16739.7	31.11	35.934	28.61	2.5	---	---	PASSED
22319.9	33.16	45.499	27.66	5.5	54	20.84	PASSED

Channel 140 / 5700MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
11400.9	49.24	289.734	42.54	6.7	74	24.74	PASSED
17108.5	44.97	177.215	41.67	3.3	68	23.26	PASSED
22800.5	47.01	224.13	40.61	6.4	74	26.97	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
11400.9	36.26	65.013	29.56	6.7	54	17.74	PASSED
17108.5	31.61	38.063	28.31	3.3	---	---	PASSED
22800.5	34.08	50.582	27.68	6.4	54	19.92	PASSED

5.3.2 802.11n, QPSK modulation, 19.5 / 21.7 Mbps data rate.

Channel 36 / 5180MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10359.7	50.09	319.521	43.89	6.2	68	18.14	PASSED
15539.9	46.45	210.136	43.75	2.7	74	27.53	PASSED
20717.2	46.03	200.217	40.33	5.7	74	27.95	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10359.7	37.36	73.79	31.16	6.2	---	---	PASSED
15539.9	32.68	43.053	29.98	2.7	54	21.32	PASSED
20717.2	33.28	46.132	27.58	5.7	54	20.72	PASSED

Channel 40 / 5200MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
56.841	24.88	17.539	57.88	-33	40	15.12	PASSED
57.074	24.91	17.599	58.01	-33.1	40	15.09	PASSED
57.578	24.99	17.762	58.19	-33.2	40	15.01	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10399.8	49.63	303.04	43.43	6.2	68	18.6	PASSED
15598.2	44.31	164.248	41.61	2.7	74	29.67	PASSED
20799.7	47.15	227.772	41.45	5.7	74	26.83	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10399.8	36.27	65.088	30.07	6.2	---	---	PASSED
15598.2	31.28	36.644	28.58	2.7	54	22.72	PASSED
20799.7	33.71	48.473	28.01	5.7	54	20.29	PASSED

Channel 48 / 5240MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10480.3	48.86	277.332	42.26	6.6	68	19.37	PASSED
15715	46.4	208.93	43.9	2.5	74	27.58	PASSED
20959.7	46.73	217.02	41.23	5.5	74	27.25	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10480.3	36.13	64.047	29.53	6.6	---	---	PASSED
15715	33.3	46.238	30.8	2.5	54	20.7	PASSED
20959.7	34.08	50.582	28.58	5.5	54	19.92	PASSED

Channel 52 / 5260MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10519	49.31	292.079	42.51	6.8	68	18.92	PASSED
15782.8	46.1	201.837	43.5	2.6	74	27.88	PASSED
21033.8	46.73	217.02	41.13	5.6	74	27.25	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10519	36.5	66.834	29.7	6.8	---	---	PASSED
15782.8	32.66	42.954	30.06	2.6	54	21.34	PASSED
21033.8	33.82	49.091	28.22	5.6	54	20.18	PASSED

Channel 60 / 5300MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
56.481	24.74	17.258	57.64	-32.9	40	15.26	PASSED
56.774	24.62	17.022	57.62	-33	40	15.38	PASSED
57.158	24.76	17.298	57.86	-33.1	40	15.24	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10598.4	49.8	309.03	42.9	6.9	68	18.43	PASSED
15901.4	44.08	159.956	41.48	2.6	74	29.9	PASSED
21200.7	45.64	191.426	39.94	5.7	74	28.34	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10598.4	36.59	67.531	29.69	6.9	---	---	PASSED
15901.4	31.3	36.728	28.7	2.6	54	22.7	PASSED
21200.7	32.89	44.106	27.19	5.7	54	21.11	PASSED

Channel 64 / 5320MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10635.3	49.83	310.099	43.13	6.7	74	24.15	PASSED
15956.6	44.92	176.198	42.32	2.6	74	29.06	PASSED
21282.3	47.5	237.137	41.6	5.9	74	26.48	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10635.3	36.85	69.582	30.15	6.7	54	17.15	PASSED
15956.6	31.46	37.411	28.86	2.6	54	22.54	PASSED
21282.3	33.34	46.452	27.44	5.9	54	20.66	PASSED

Channel 100 / 5500MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10995	48.69	271.957	41.69	7	74	25.29	PASSED
16503.6	43.83	155.418	41.13	2.7	68	24.4	PASSED
22002.7	46.17	203.47	40.57	5.6	68	22.06	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10995	36.05	63.46	29.05	7	54	17.95	PASSED
16503.6	31.15	36.099	28.45	2.7	---	---	PASSED
22002.7	33.42	46.881	27.82	5.6	---	---	PASSED

Channel 116 / 5580MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
57.284	24.79	17.358	57.89	-33.1	40	15.21	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
11161.3	49.29	291.407	42.09	7.2	74	24.69	PASSED
16738.7	44.12	160.694	41.62	2.5	68	24.11	PASSED
22321.5	45.86	196.336	40.36	5.5	74	28.12	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
11161.3	36.33	65.539	29.13	7.2	54	17.67	PASSED
16738.7	31.12	35.975	28.62	2.5	---	---	PASSED
22321.5	32.81	43.702	27.31	5.5	54	21.19	PASSED

Channel 140 / 5700MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
11392.7	49.12	285.759	42.32	6.8	74	24.86	PASSED
17101.1	44.33	164.627	41.13	3.2	68	23.9	PASSED
22794.7	46.79	218.524	40.49	6.3	74	27.19	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
11392.7	36.32	65.464	29.52	6.8	54	17.68	PASSED
17101.1	31.54	37.757	28.34	3.2	---	---	PASSED
22794.7	33.94	49.774	27.64	6.3	54	20.06	PASSED

5.3.3 802.11n, BPSK modulation, 13.5 / 15.0 Mbps data rate.

Channel 36+40 / 5190MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
55.921	23.58	15.101	56.38	-32.8	40	16.42	PASSED
56.634	24.16	16.144	57.16	-33	40	15.84	PASSED
56.658	24.04	15.922	57.04	-33	40	15.96	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10382.9	48.36	261.818	42.26	6.1	68	19.87	PASSED
15569.3	44.16	161.436	41.46	2.7	74	29.82	PASSED
20764	46.46	210.378	40.76	5.7	74	27.52	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10382.9	35.73	61.165	29.63	6.1	---	---	PASSED
15569.3	30.85	34.874	28.15	2.7	54	23.15	PASSED
20764	33.48	47.206	27.78	5.7	54	20.52	PASSED

Channel 44+48 / 5230MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10463.1	48.92	279.254	42.32	6.6	68	19.31	PASSED
15562.4	44.52	168.267	41.82	2.7	74	29.46	PASSED
20666.6	46.31	206.776	40.31	6	74	27.67	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10463.1	36	63.096	29.4	6.6	---	---	PASSED
15562.4	31.04	35.645	28.34	2.7	54	22.96	PASSED
20666.6	33.21	45.761	27.21	6	54	20.79	PASSED

Channel 52+56 / 5270MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
57.114	24.82	17.418	57.92	-33.1	40	15.18	PASSED
57.241	24.73	17.239	57.83	-33.1	40	15.27	PASSED
57.678	24.79	17.358	57.99	-33.2	40	15.21	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10536	50	316.228	43.1	6.9	68	18.23	PASSED
15811	44.11	160.509	41.51	2.6	74	29.87	PASSED
21079.8	46.63	214.536	40.83	5.8	74	27.35	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10536	36.6	67.608	29.7	6.9	---	---	PASSED
15811	30.95	35.278	28.35	2.6	54	23.05	PASSED
21079.8	33.81	49.034	28.01	5.8	54	20.19	PASSED

Channel 60+64 / 5310MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10600	49.65	303.739	42.75	6.9	68	18.58	PASSED
15947.2	44.18	161.808	41.58	2.6	74	29.8	PASSED
21221.9	45.47	187.715	39.67	5.8	74	28.51	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10600	36.58	67.453	29.68	6.9	54	17.42	PASSED
15947.2	31.61	38.063	29.01	2.6	54	22.39	PASSED
21221.9	32.95	44.412	27.15	5.8	54	21.05	PASSED

Channel 100+104 / 5510MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
11011.4	48.89	278.292	41.89	7	74	25.09	PASSED
16518.8	43.97	157.943	41.27	2.7	68	24.26	PASSED
22044.7	46.39	208.689	40.69	5.7	74	27.59	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
11011.4	35.89	62.302	28.89	7	54	18.11	PASSED
16518.8	30.92	35.156	28.22	2.7	---	---	PASSED
22044.7	33.35	46.505	27.65	5.7	54	20.65	PASSED

Channel 132+136 / 5670MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
11353.1	48.65	270.707	41.95	6.7	74	25.33	PASSED
17015.1	43.7	153.109	40.7	3	68	24.53	PASSED
22666.7	46.59	213.55	40.59	6	74	27.39	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
11353.1	36.2	64.565	29.5	6.7	54	17.8	PASSED
17015.1	30.64	34.041	27.64	3	---	---	PASSED
22666.7	33.7	48.417	27.7	6	54	20.3	PASSED

5.3.4 802.11n, QPSK modulation, 27.0 / 30.0 Mbps data rate.

Channel 36+40 / 5190MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
56.821	24.4	16.596	57.4	-33	40	15.6	PASSED
57.114	24.74	17.258	57.84	-33.1	40	15.26	PASSED
57.828	24.55	16.885	57.75	-33.2	40	15.45	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10376.9	48.31	260.315	42.21	6.1	68	19.92	PASSED
15569.3	43.51	149.796	40.81	2.7	74	30.47	PASSED
20764	46.71	216.521	41.01	5.7	74	27.27	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10376.9	35.64	60.534	29.54	6.1	---	---	PASSED
15569.3	30.71	34.316	28.01	2.7	54	23.29	PASSED
20764	33.48	47.206	27.78	5.7	54	20.52	PASSED

Channel 44+48 / 5230MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10459.8	49.65	303.739	43.15	6.5	68	18.58	PASSED
15563	43.75	153.993	41.05	2.7	74	30.23	PASSED
20692.4	45.85	196.11	40.05	5.8	74	28.13	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10459.8	37.06	71.285	30.56	6.5	---	---	PASSED
15563	31	35.481	28.3	2.7	54	23	PASSED
20692.4	33.15	45.446	27.35	5.8	54	20.85	PASSED

Channel 52+56 / 5270MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
56.521	24.46	16.711	57.36	-32.9	40	15.54	PASSED
56.964	24.38	16.558	57.38	-33	40	15.62	PASSED
57.318	24.91	17.599	58.01	-33.1	40	15.09	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10538.3	49.89	312.248	42.99	6.9	68	18.34	PASSED
15811.7	43.6	151.356	41	2.6	74	30.38	PASSED
21077.8	47.15	227.772	41.35	5.8	74	26.83	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10538.3	36.56	67.298	29.66	6.9	---	---	PASSED
15811.7	31.01	35.522	28.41	2.6	54	22.99	PASSED
21077.8	33.75	48.697	27.95	5.8	54	20.25	PASSED

Channel 60+64 / 5310MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10600	49.52	299.226	42.62	6.9	74	24.46	PASSED
15923.9	45.2	181.97	42.7	2.5	74	28.78	PASSED
21259.7	46.09	201.604	40.29	5.8	74	27.89	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10600	36.61	67.686	29.71	6.9	54	17.39	PASSED
15923.9	31.56	37.844	29.06	2.5	54	22.44	PASSED
21259.7	33.05	44.926	27.25	5.8	54	20.95	PASSED

Channel 60+64 / 5310MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10600	49.52	299.226	42.62	6.9	74	24.46	PASSED
15923.9	45.2	181.97	42.7	2.5	74	28.78	PASSED
21259.7	46.09	201.604	40.29	5.8	74	27.89	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
10600	36.61	67.686	29.71	6.9	54	17.39	PASSED
15923.9	31.56	37.844	29.06	2.5	54	22.44	PASSED
21259.7	33.05	44.926	27.25	5.8	54	20.95	PASSED

Channel 100+104 / 5510MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
11028.5	49.12	285.759	41.92	7.2	74	24.86	PASSED
16513.6	44.1	160.325	41.4	2.7	68	24.13	PASSED
22043.1	46.24	205.116	40.54	5.7	74	27.74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
11028.5	35.94	62.661	28.74	7.2	54	18.06	PASSED
16513.6	31.05	35.686	28.35	2.7	---	---	PASSED
22043.1	33.33	46.398	27.63	5.7	54	20.67	PASSED

Channel 132+136 / 5670MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
11344.3	49.07	284.119	42.37	6.7	74	24.91	PASSED
17024.6	43.21	144.71	40.21	3	68	25.02	PASSED
22688.2	47.23	229.879	41.23	6	74	26.75	PASSED

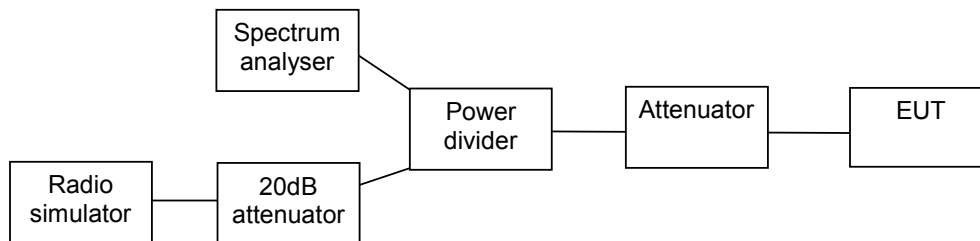
Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
11344.3	36.15	64.195	29.45	6.7	54	17.85	PASSED
17024.6	30.28	32.659	27.28	3	---	---	PASSED
22688.2	33.61	47.918	27.61	6	54	20.39	PASSED

6. 26dB(bandwidth)

EUT with DUT number	RM-984, DUT 43187
Accessories with DUT numbers	BV-L4A, DUT 43188
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20-24 / 42-49 / 98.1-98.8
Date of measurements	27-Jun.. 04-Jul-2014
Measured by	Jari Jantunen

6.1. Test Setup



6.2. Test method and limit

The measurement is made according to Public Notice KDB 789033 D01 and IC standard RSS-210.

Limits for 26 dB bandwidth measurements

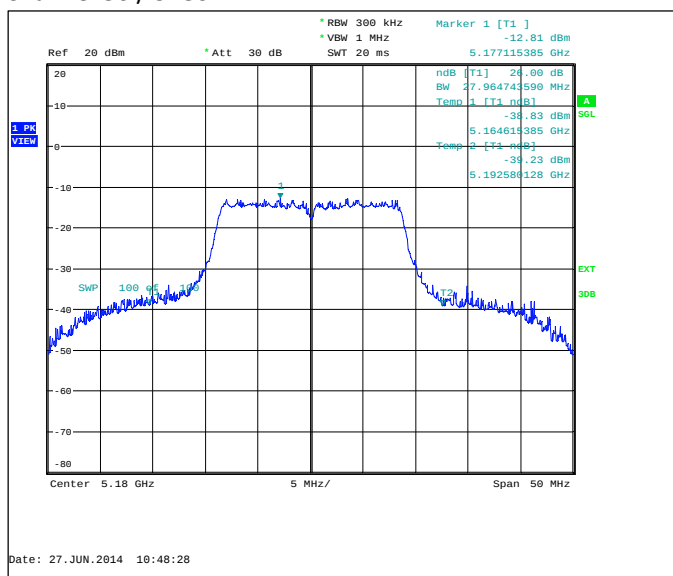
Limit [kHz]
No limit

6.3. 5 GHz RLAN Test results

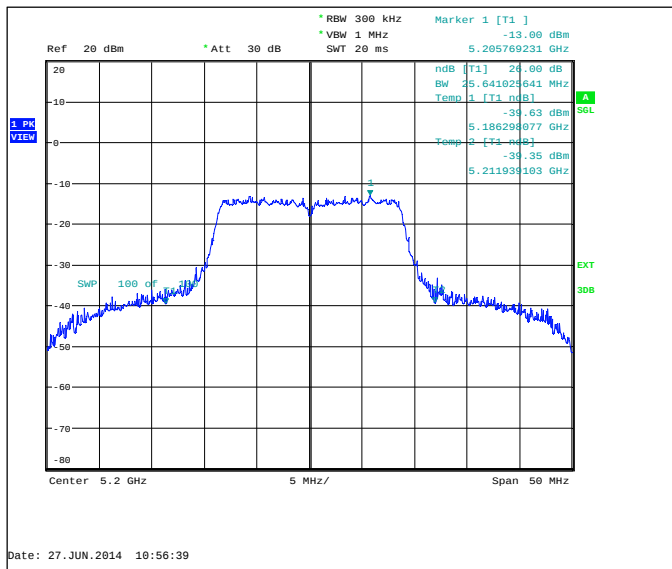
6.3.1 802.11n mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

Channel / f _c [MHz]	26 dB bandwidth [kHz]	Result
36 / 5180	27964.7	PASSED
40 / 5200	25641	PASSED
48 / 5240	24839.7	PASSED
52 / 5260	25721.2	PASSED
60 / 5300	24679.5	PASSED
64 / 5320	25801.3	PASSED
100 / 5500	27003.2	PASSED
116 / 5580	27644.2	PASSED
140 / 5700	31250	PASSED

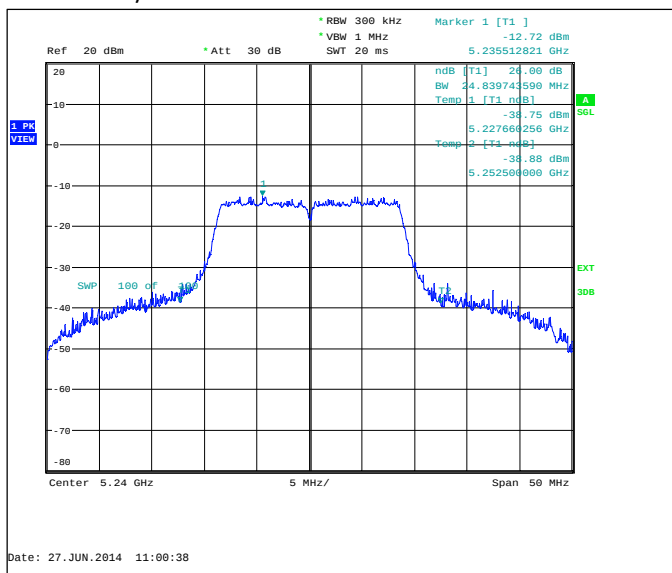
Channel 36 / 5180MHz



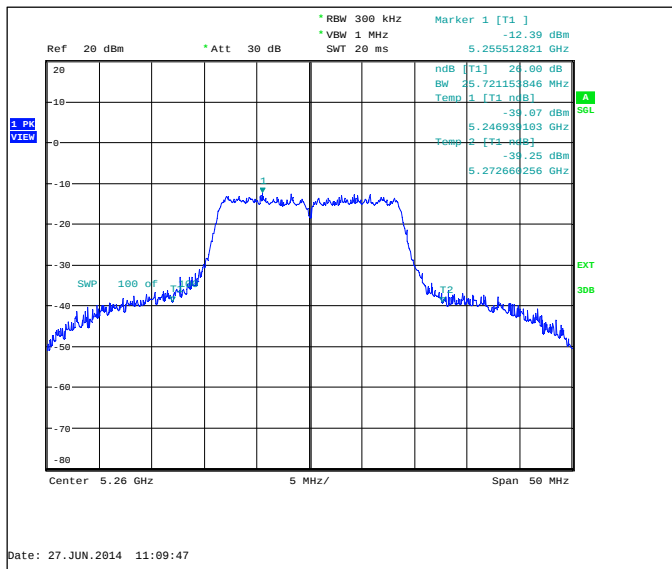
Channel 40 / 5200MHz



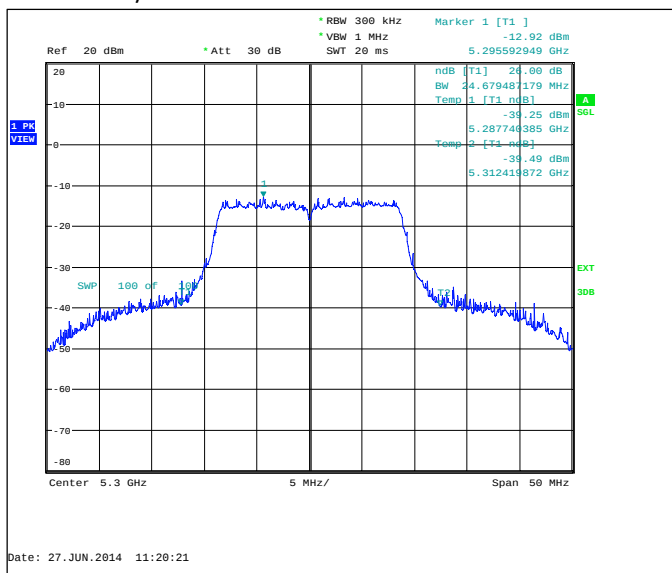
Channel 48 / 5240MHz



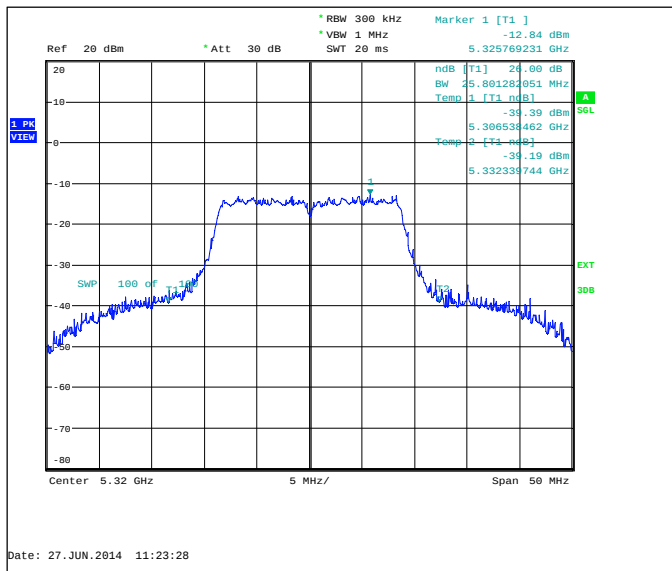
Channel 52 / 5260MHz



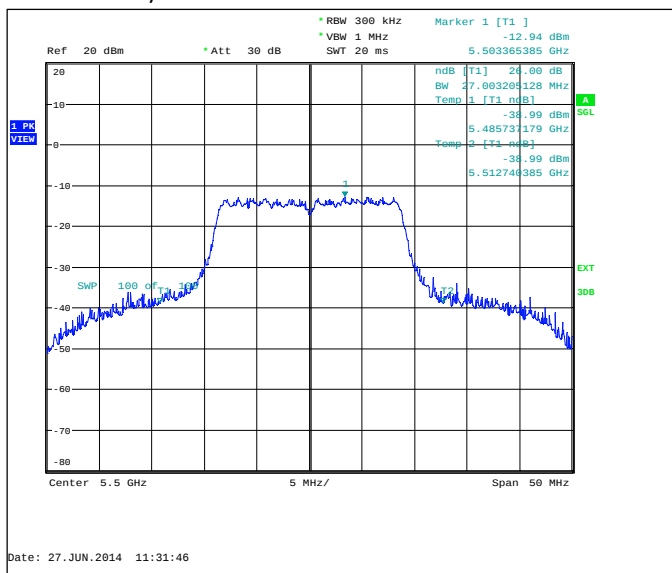
Channel 60 / 5300MHz



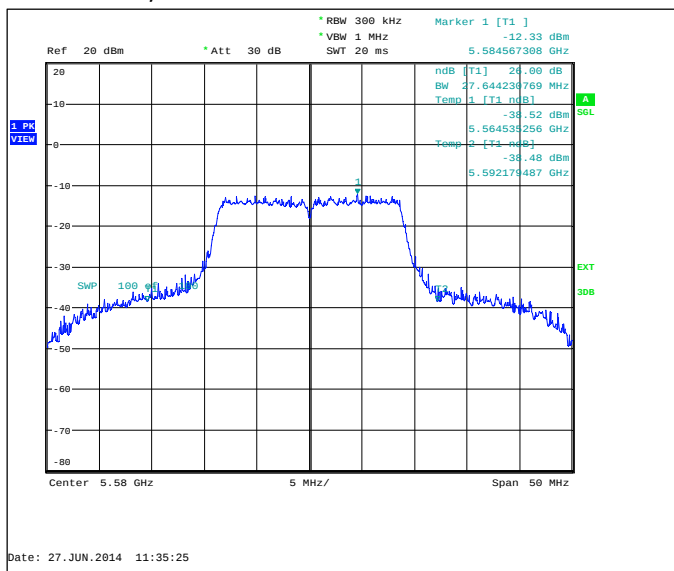
Channel 64 / 5320MHz



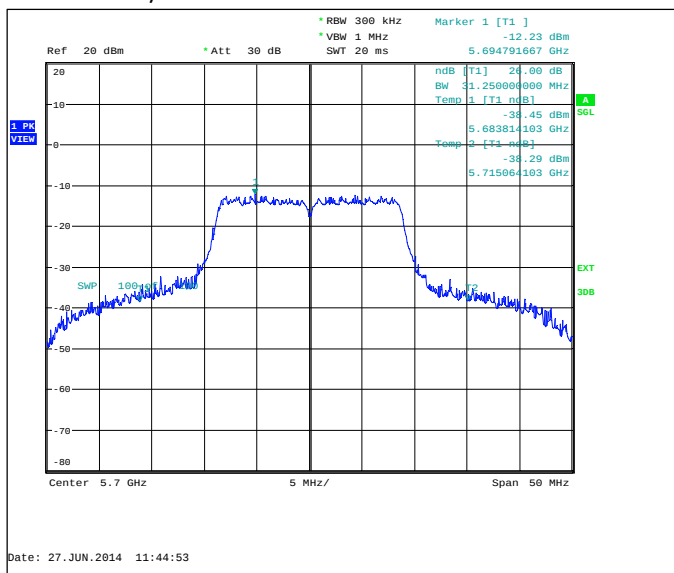
Channel 100 / 5500MHz



Channel 116 / 5580MHz



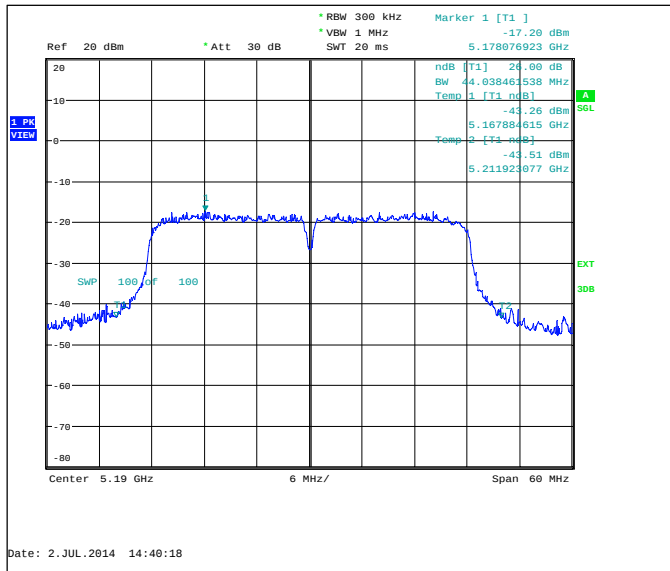
Channel 140 / 5700MHz



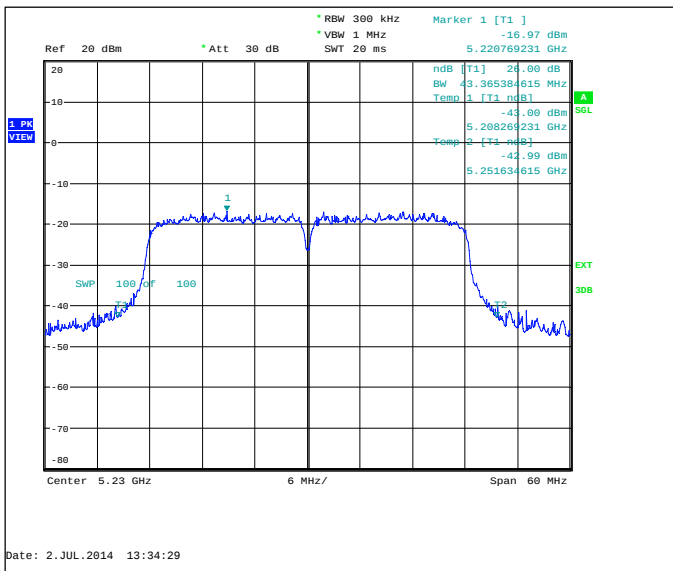
6.3.2 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f _c [MHz]	26 dB bandwidth [kHz]	Result
36+40 / 5190	44038.5	PASSED
44+48 / 5230	43365.4	PASSED
52+56 / 5270	42307.7	PASSED
60+64 / 5310	43653.8	PASSED
100+104 / 5510	43076.9	PASSED
108+112 / 5550	45384.6	PASSED
132+136 / 5670	45480.8	PASSED

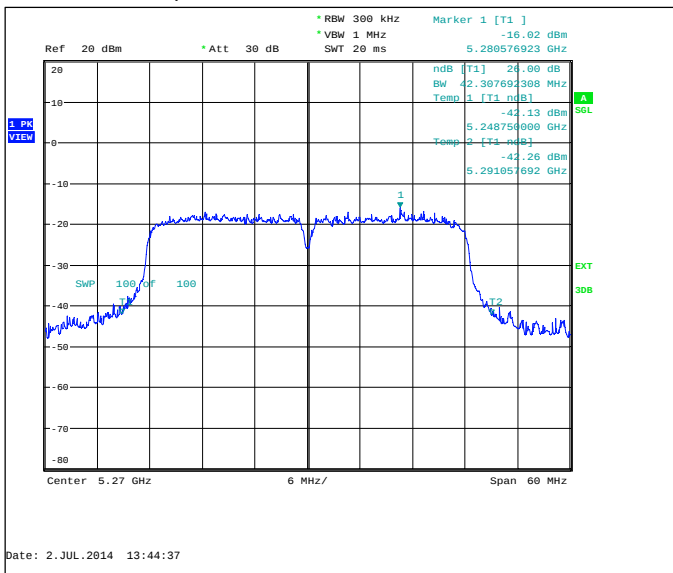
Channel 36+40 / 5190MHz



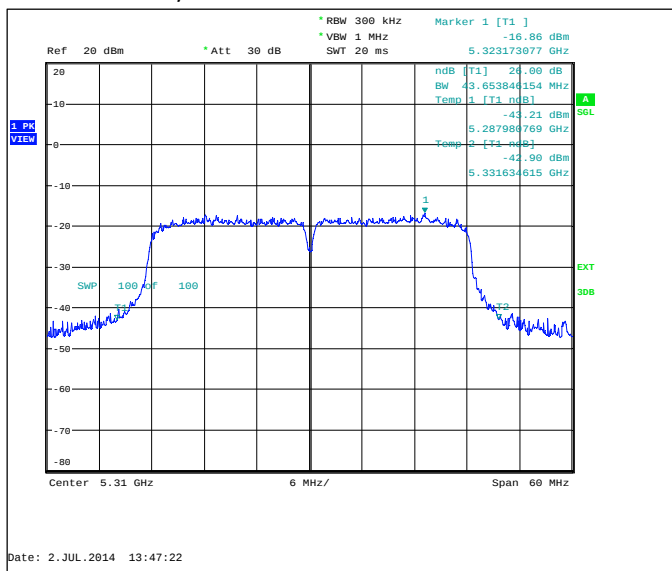
Channel 44+48 / 5230MHz



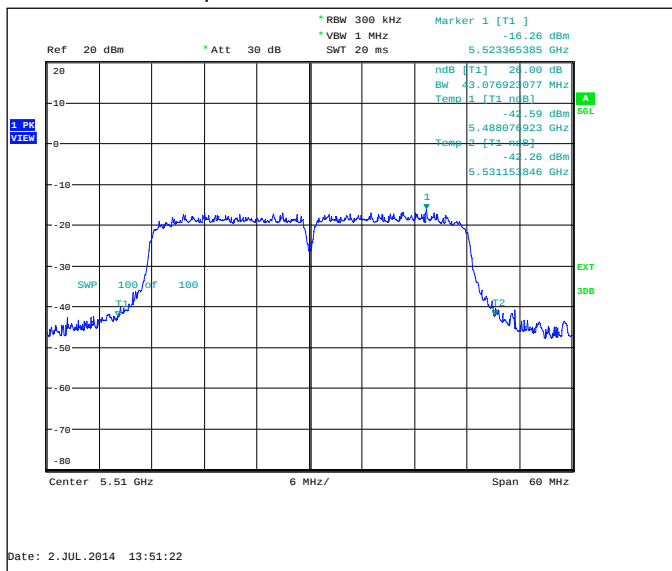
Channel 52+56 / 5270MHz



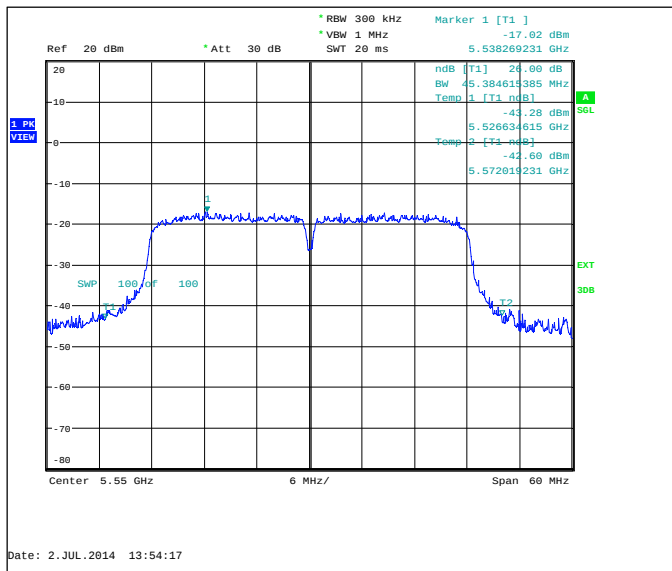
Channel 60+64 / 5310MHz



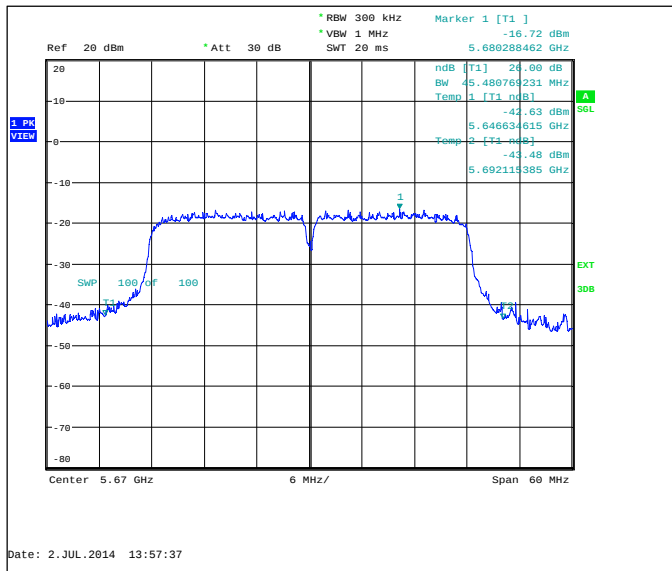
Channel 100+104 / 5510MHz



Channel 108+112 / 5550MHz



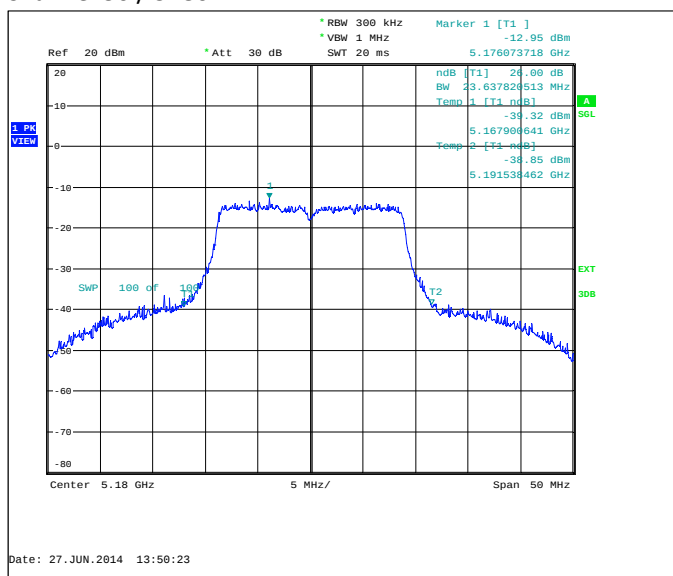
Channel 132+136 / 5670MHz



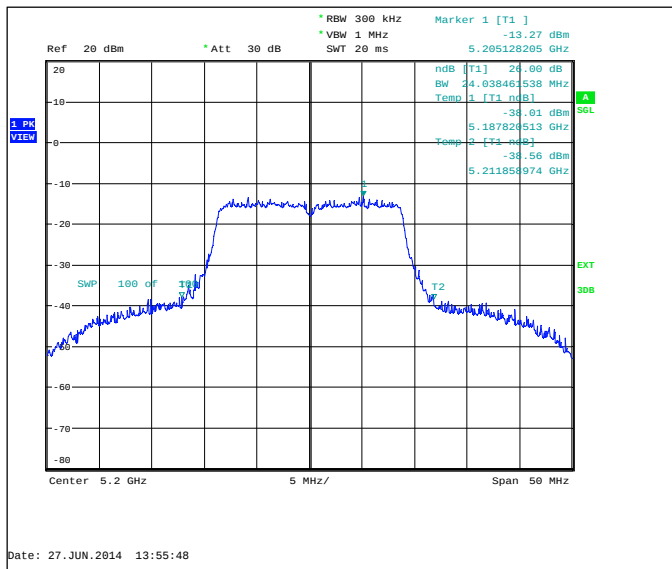
6.3.3 802.11n mode, QPSK modulation, 19.5 / 21.7 Mbps data rate

Channel / f _c [MHz]	26 dB bandwidth [kHz]	Result
36 / 5180	23637.8	PASSED
40 / 5200	24038.5	PASSED
48 / 5240	23557.7	PASSED
52 / 5260	23798.1	PASSED
60 / 5300	23958.3	PASSED
64 / 5320	23157.1	PASSED
100 / 5500	23477.6	PASSED
116 / 5580	23157.1	PASSED
140 / 5700	24839.7	PASSED

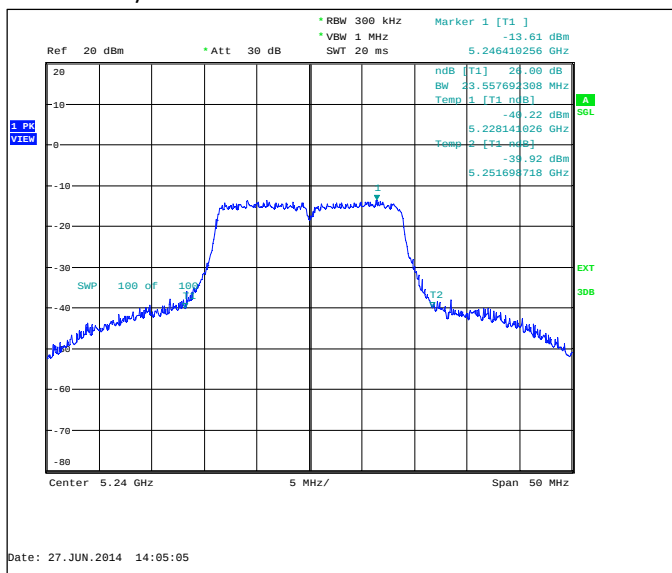
Channel 36 / 5180MHz



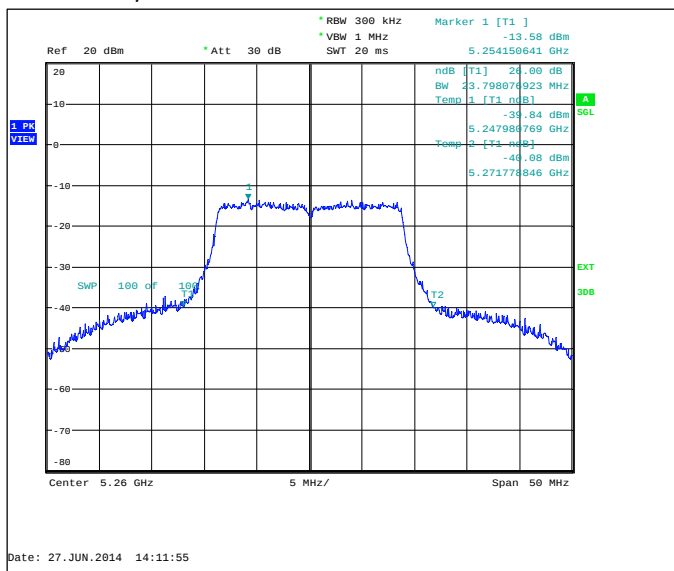
Channel 40 / 5200MHz



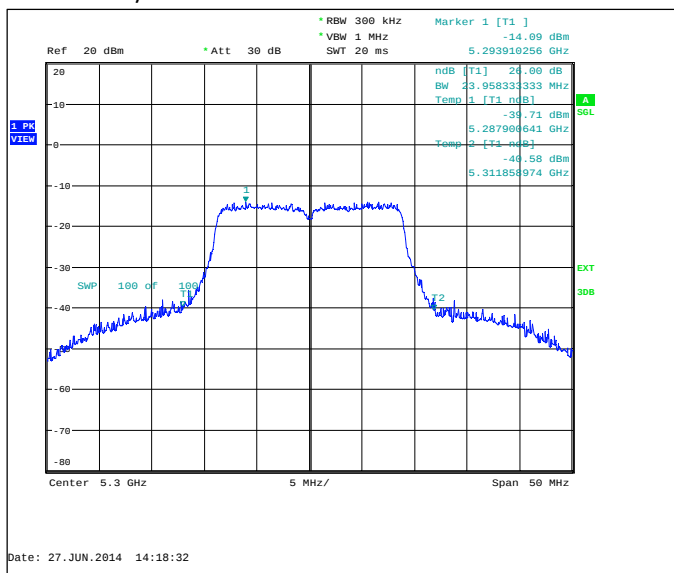
Channel 48 / 5240MHz



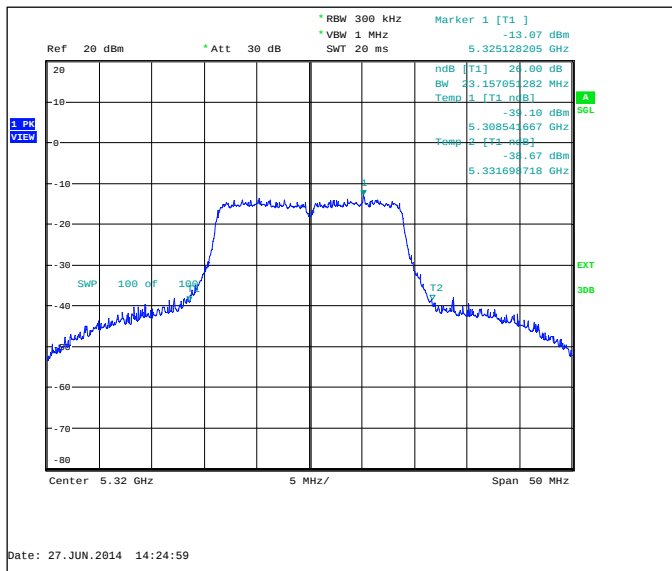
Channel 52 / 5260MHz



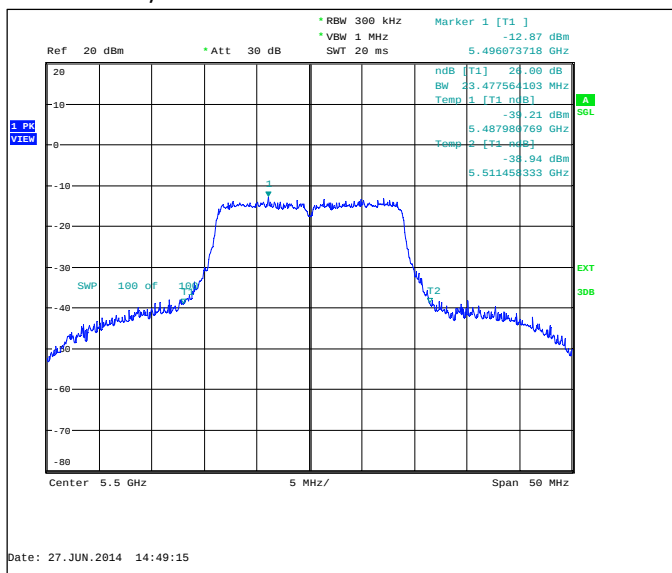
Channel 60 / 5300MHz



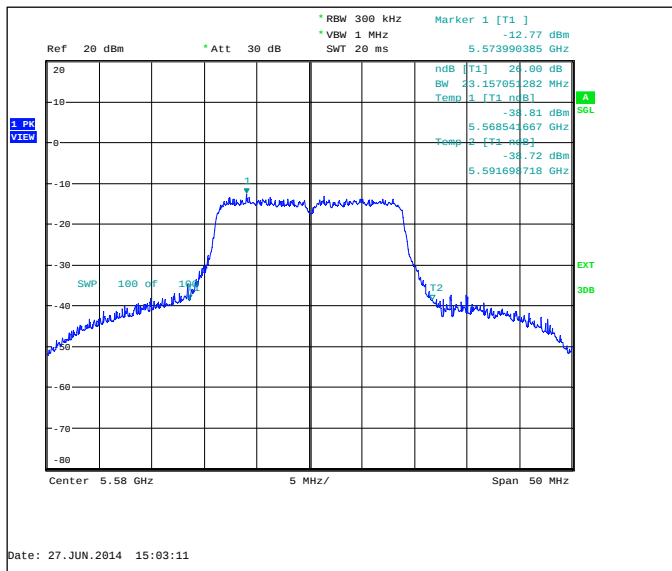
Channel 64 / 5320MHz



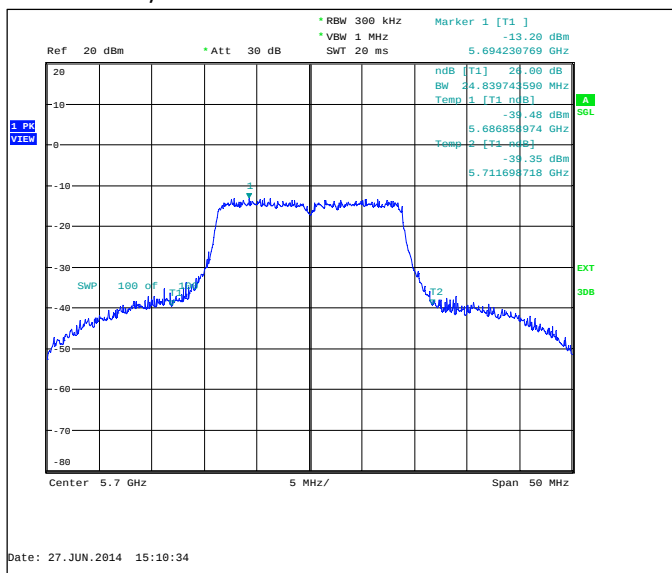
Channel 100 / 5500MHz



Channel 116 / 5580MHz



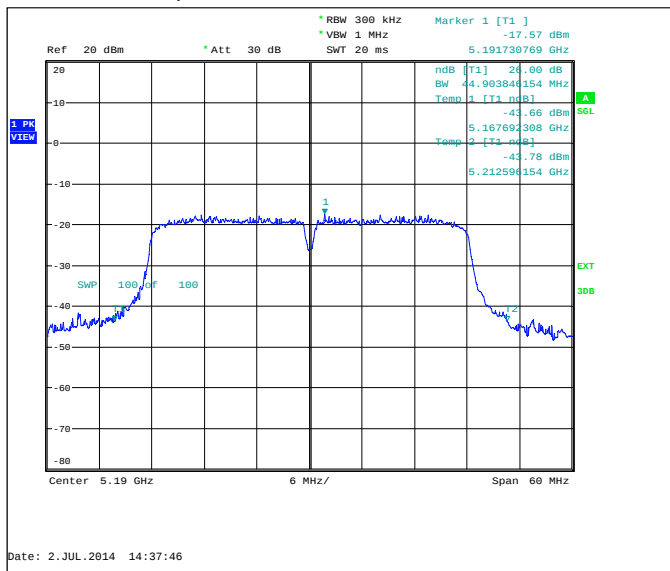
Channel 140 / 5700MHz



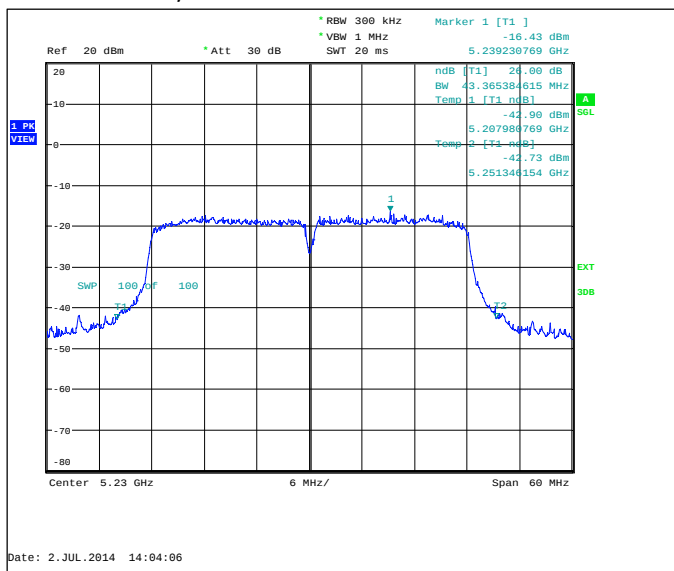
6.3.4 802.11n mode, QPSK modulation, 27.0 / 30.0 Mbps data rate

Channel / f _c [MHz]	26 dB bandwidth [kHz]	Result
36+40 / 5190	44903.8	PASSED
44+48 / 5230	43365.4	PASSED
52+56 / 5270	44711.5	PASSED
60+64 / 5310	44134.6	PASSED
100+104 / 5510	44807.7	PASSED
108+112 / 5550	44807.7	PASSED
132+136 / 5670	46153.8	PASSED

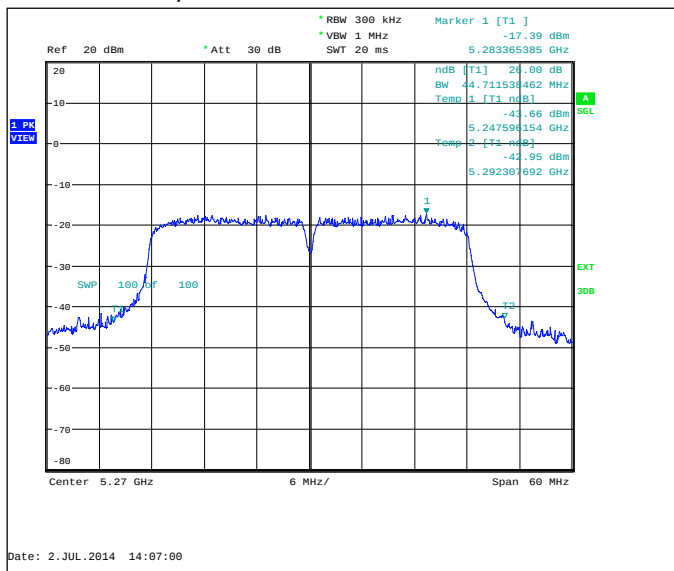
Channel 36+40 / 5190MHz



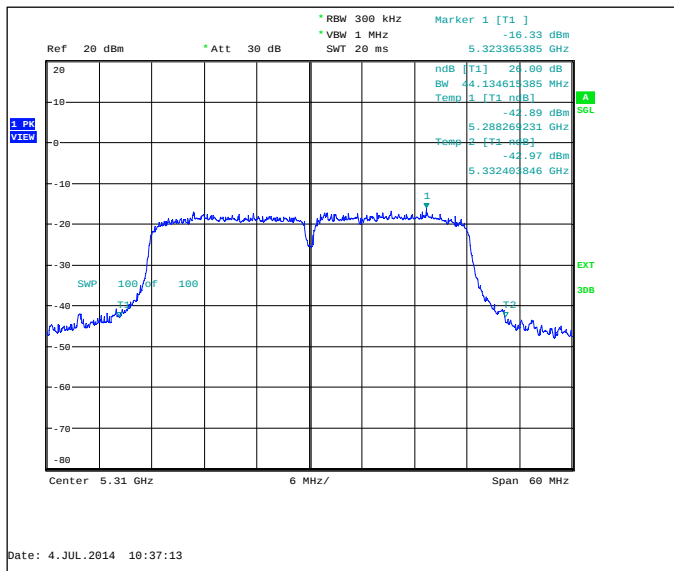
Channel 44+48 / 5230MHz



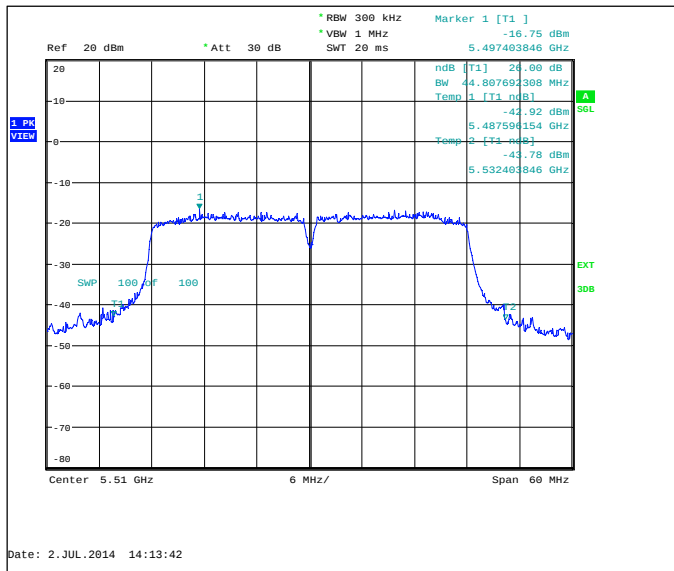
Channel 52+56 / 5270MHz



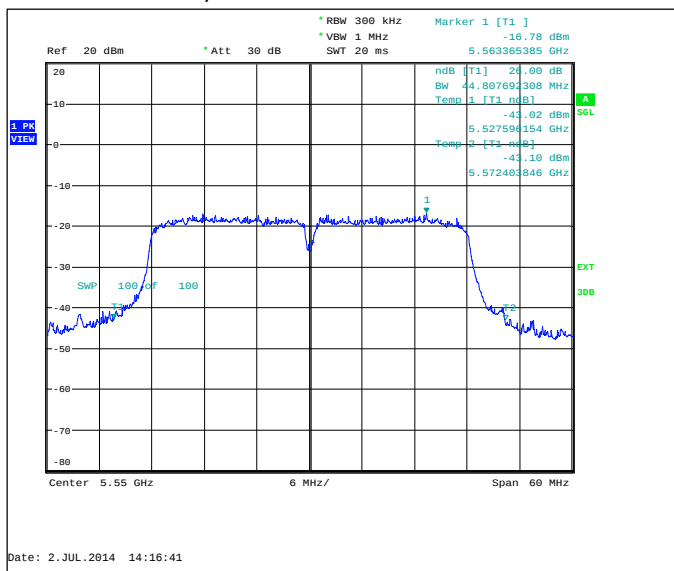
Channel 60+64 / 5310MHz



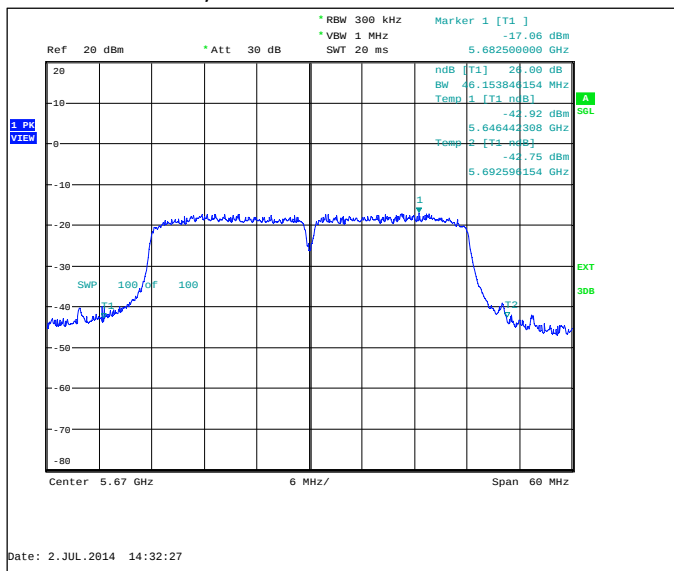
Channel 100+104 / 5510MHz



Channel 108+112 / 5550MHz



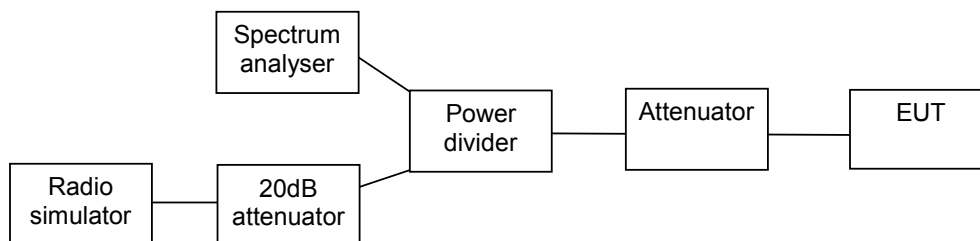
Channel 132+136 / 5670MHz



7. Power spectral density (FCC §15.407(a), RSS-210 A9.2)

EUT with DUT number	RM-984, DUT 43187
Accessories with DUT numbers	BV-L4A, DUT 43188
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20-24 / 42-49 / 98.1-98.8
Date of measurements	27-Jun.. 04-Jul-2014
Measured by	Jari Jantunen

7.1. Test Setup



7.2. Test method and limit

The measurement is made according to Public Notice KDB 789033 D01 and IC standard RSS-210.

Limits for power spectral density measurements

Frequency range [MHz]	Limit [dBm]
5150-5250	4
5250-5350	11
5470-5725	11
5725-5825	17

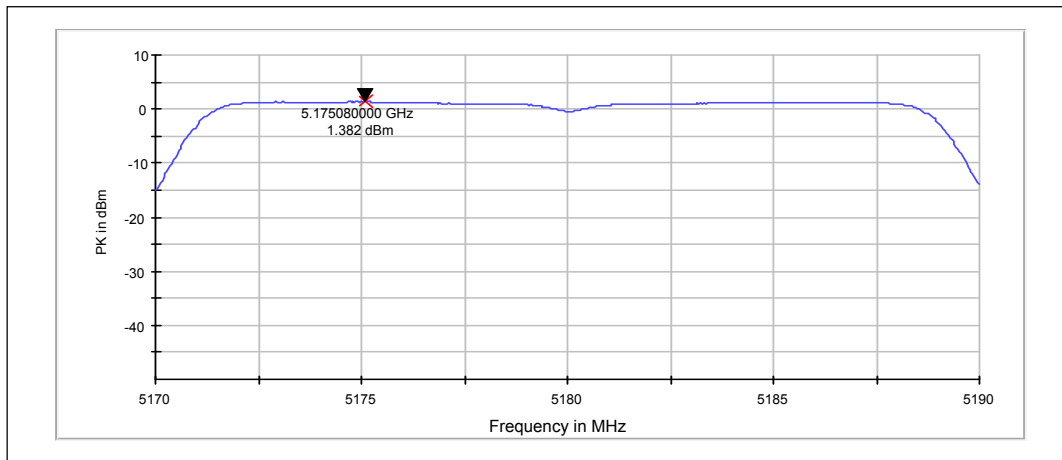
7.3. 5 GHz RLAN Test results

7.3.1 802.11n mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

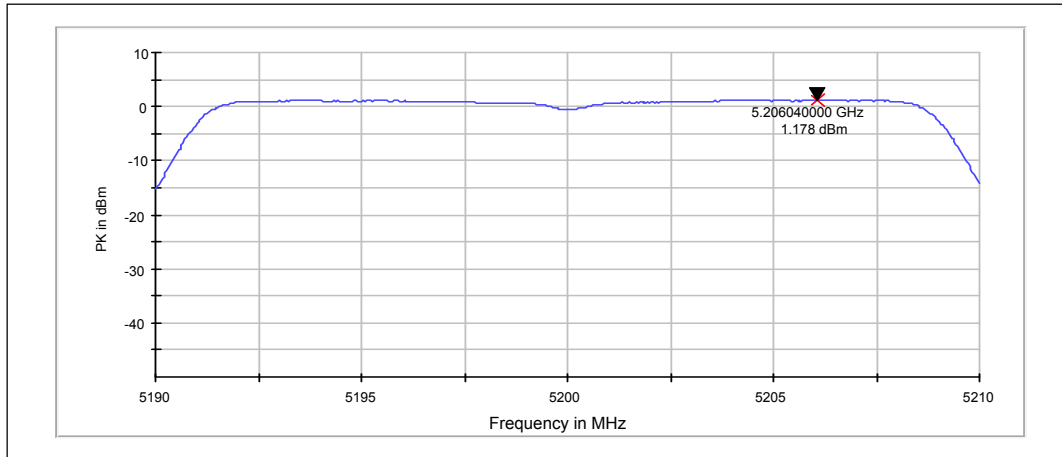
RMS detector (RBW: 1 MHz, VBW: 3 MHz, Video averaging)

Channel / f_c [MHz]	P [dBm]	Result
36 / 5180	1.38	PASSED
40 / 5200	1.18	PASSED
48 / 5240	1.34	PASSED
52 / 5260	1.3	PASSED
60 / 5300	1.11	PASSED
64 / 5320	1.23	PASSED
100 / 5500	1.63	PASSED
116 / 5580	1.92	PASSED
140 / 5700	1.93	PASSED

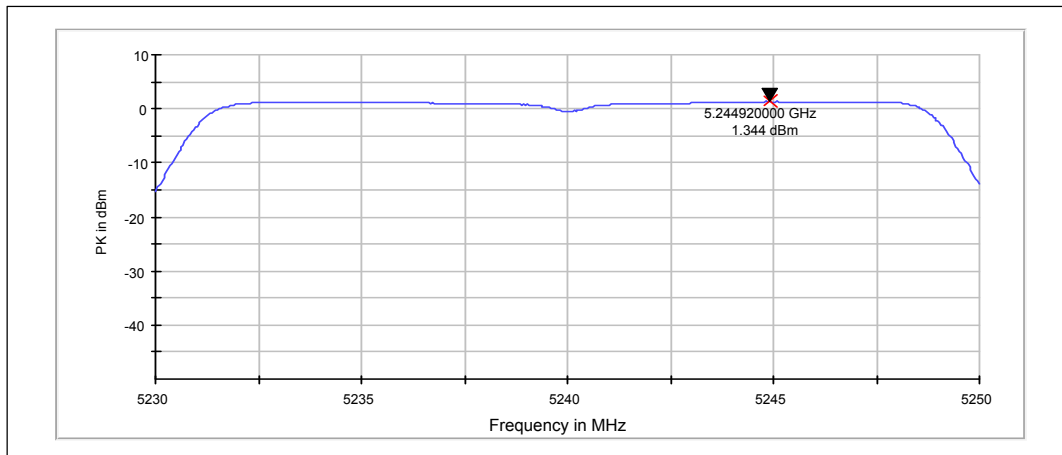
Channel 36 / 5180MHz



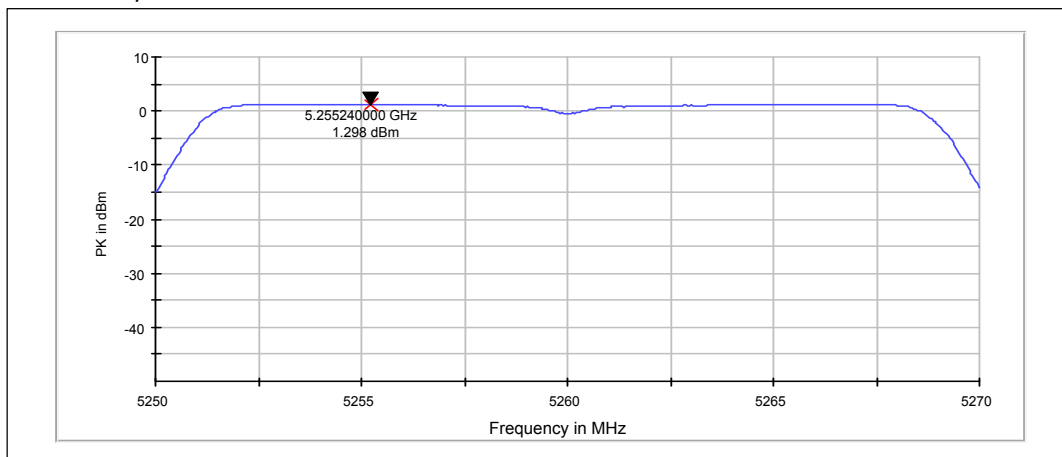
Channel 40 / 5200MHz



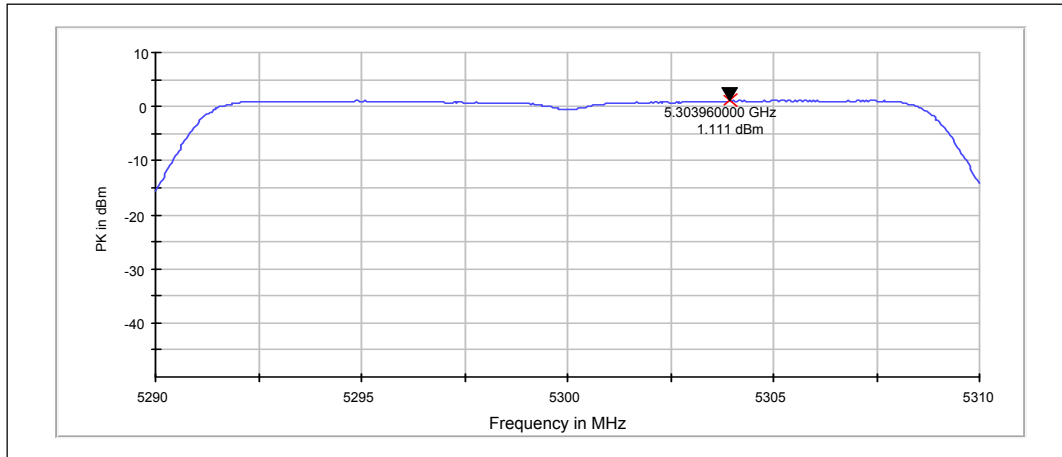
Channel 48 / 5240MHz



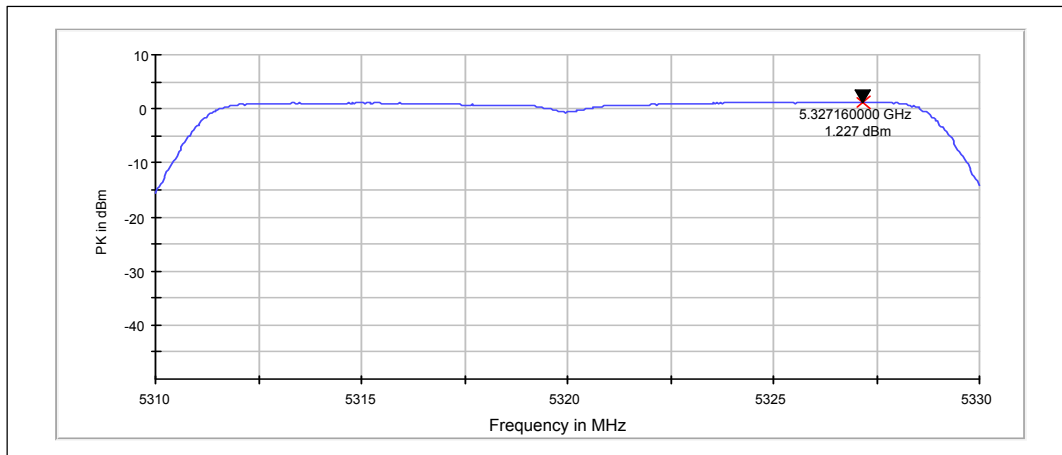
Channel 52 / 5260MHz



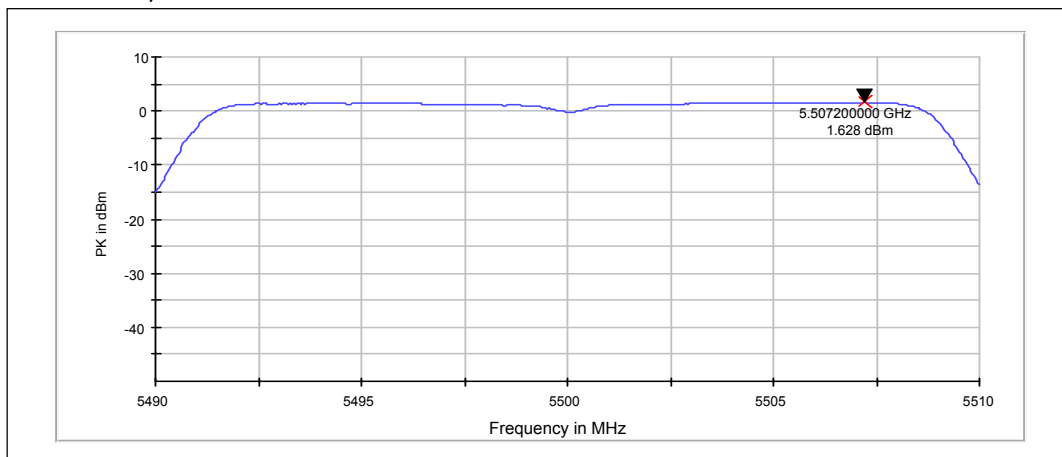
Channel 60 / 5300MHz



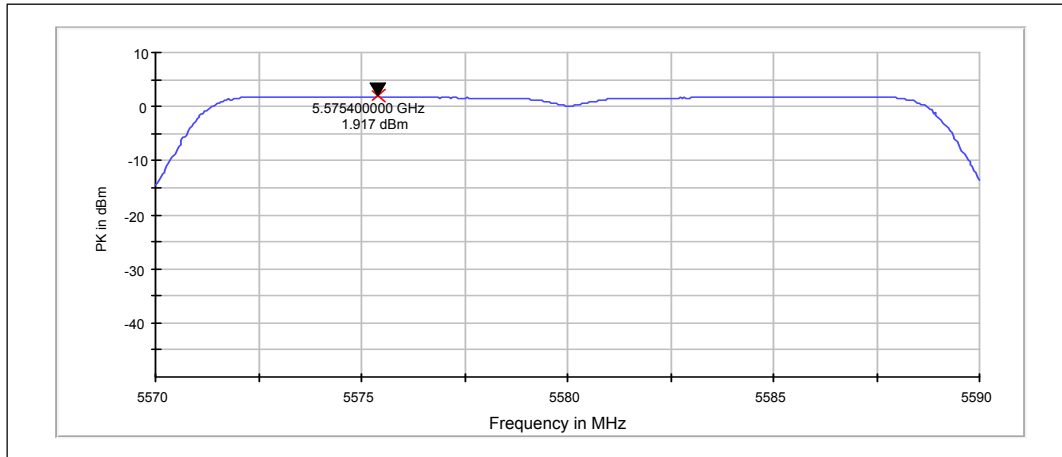
Channel 64 / 5320MHz



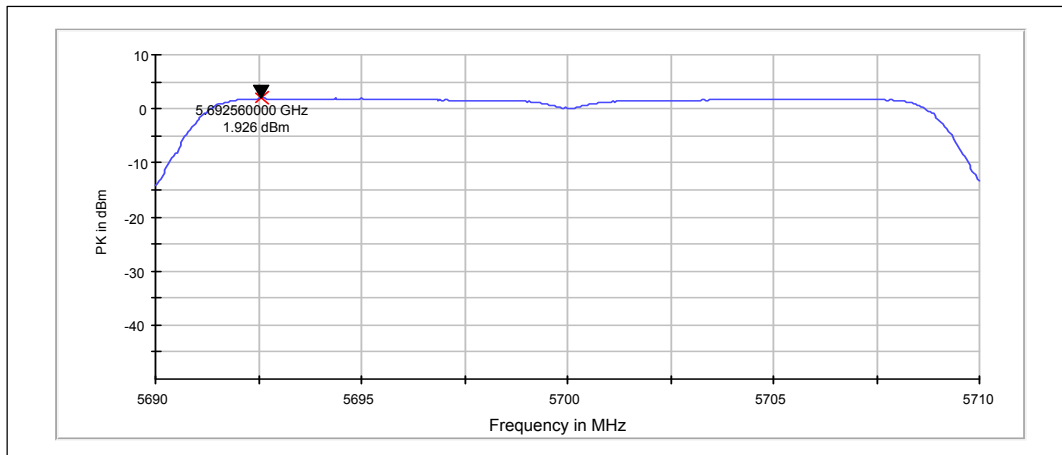
Channel 100 / 5500MHz



Channel 116 / 5580MHz



Channel 140 / 5700MHz

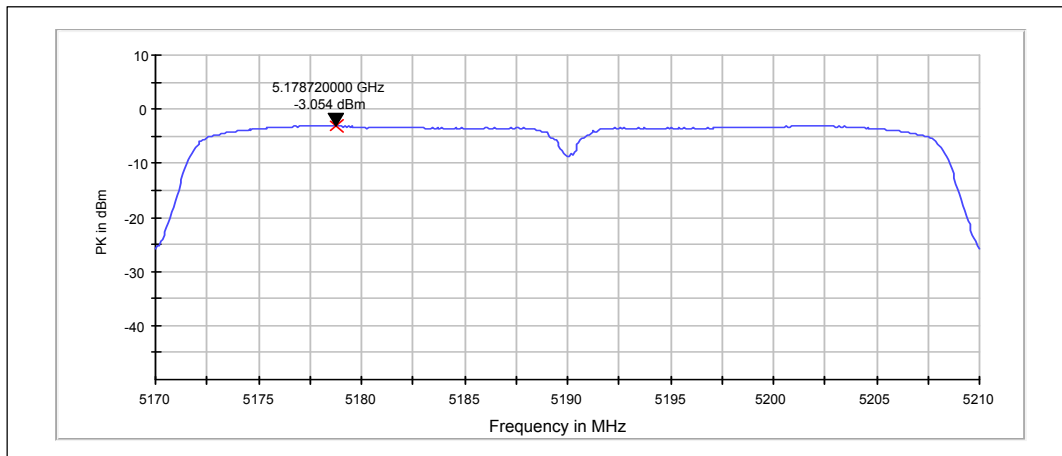


7.3.2 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

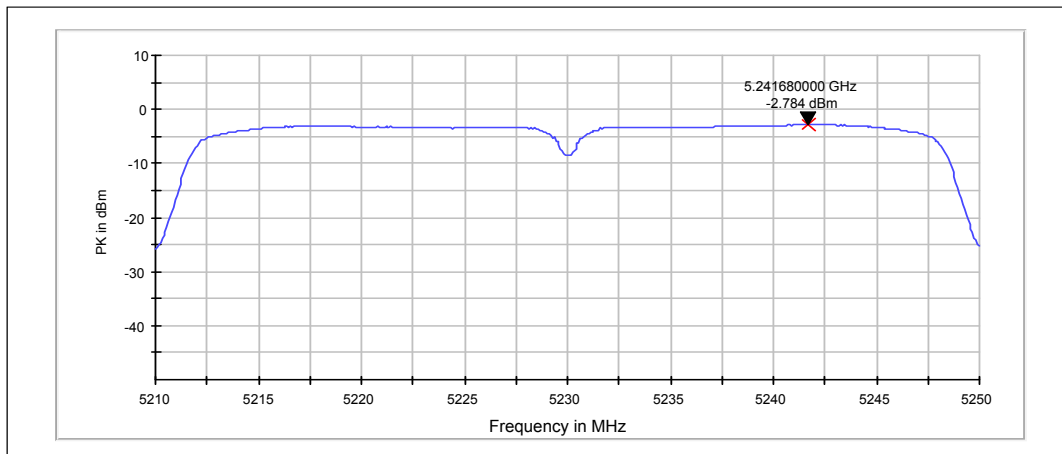
RMS detector (RBW: 1 MHz, VBW: 3 MHz, Video averaging)

Channel / f _c [MHz]	P [dBm]	Result
36+40 / 5190	-3.05	PASSED
44+48 / 5230	-2.78	PASSED
52+56 / 5270	-2.91	PASSED
60+64 / 5310	-2.94	PASSED
100+104 / 5510	-2.63	PASSED
108+112 / 5550	-2.6	PASSED
132+136 / 5670	-2.43	PASSED

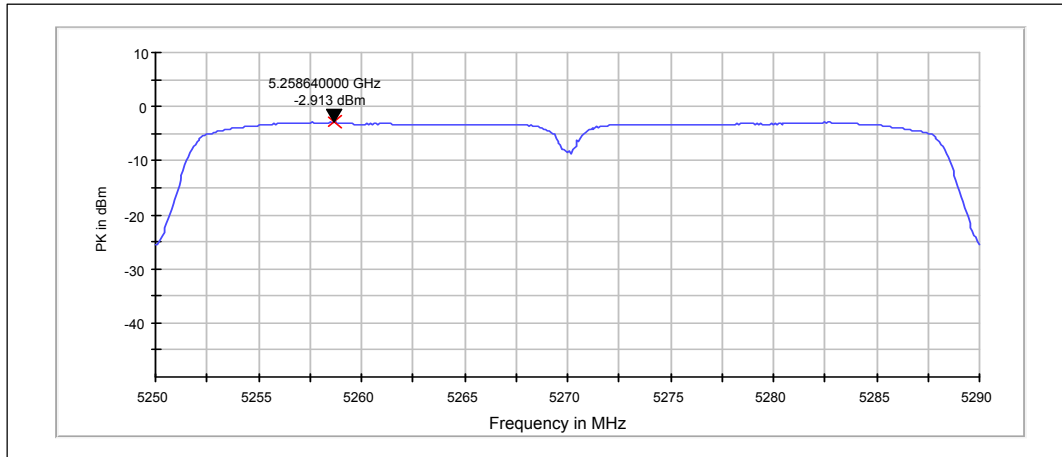
Channel 36+40 / 5190MHz



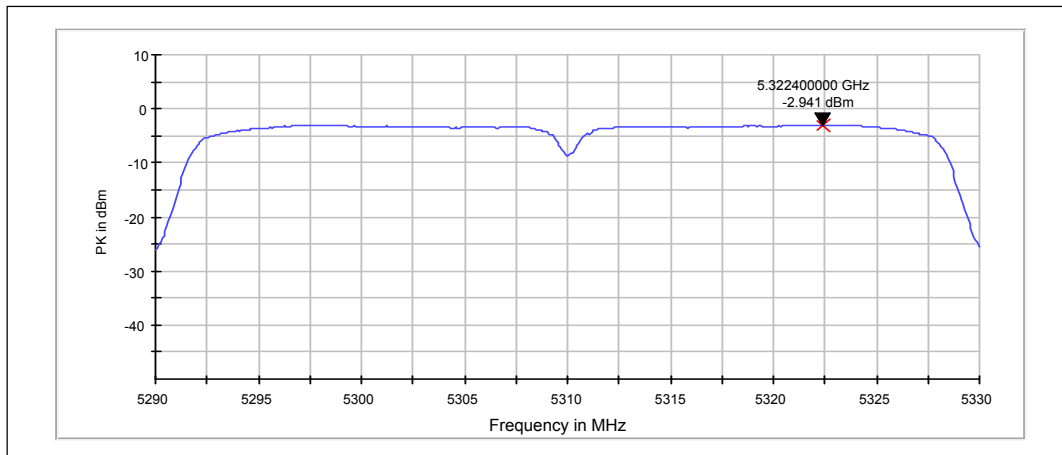
Channel 44+48 / 5230MHz



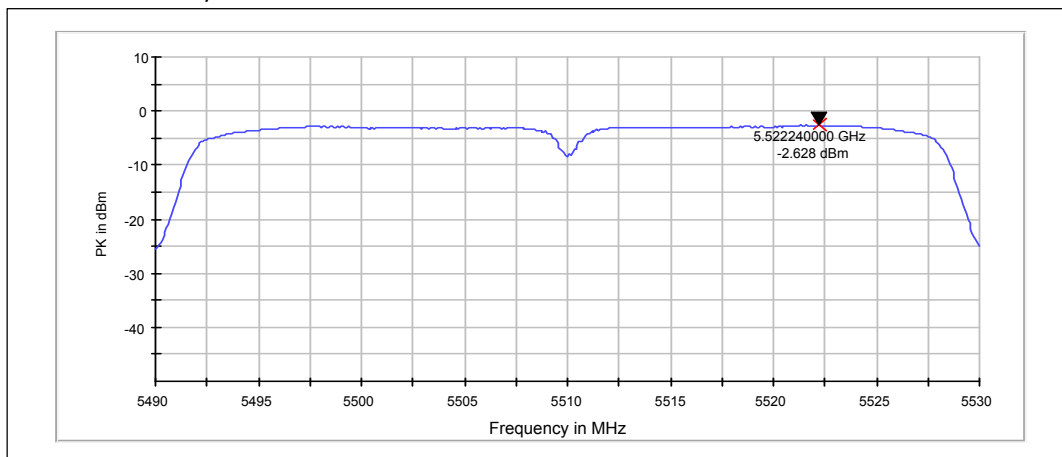
Channel 52+56 / 5270MHz



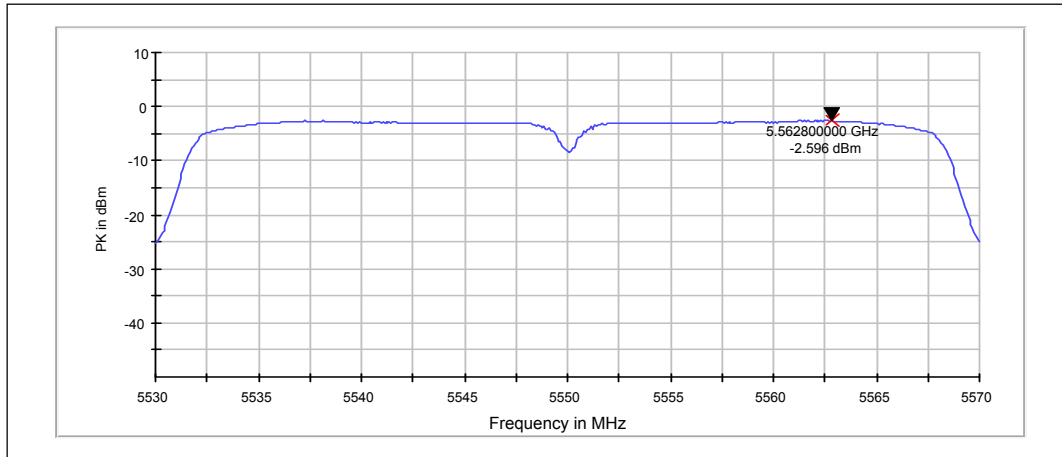
Channel 60+64 / 5310MHz



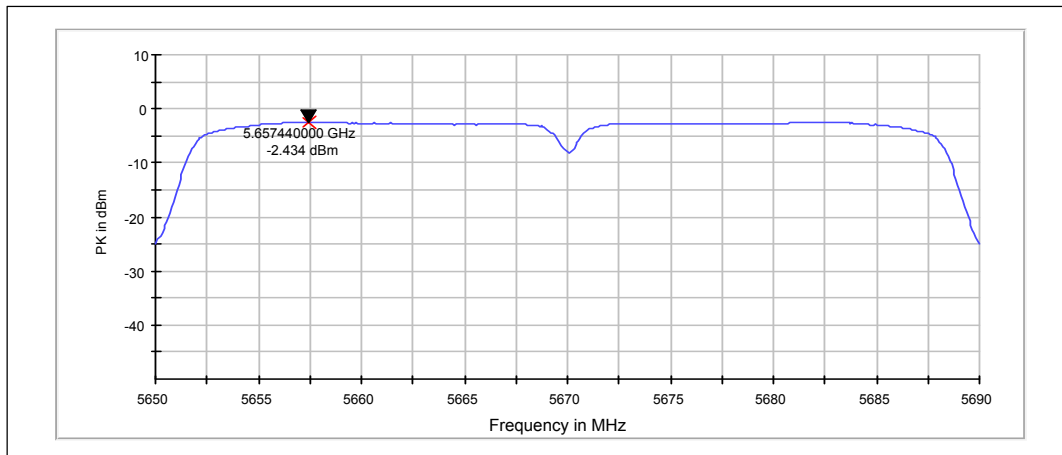
Channel 100+104 / 5510MHz



Channel 108+112 / 5550MHz



Channel 132+136 / 5670MHz

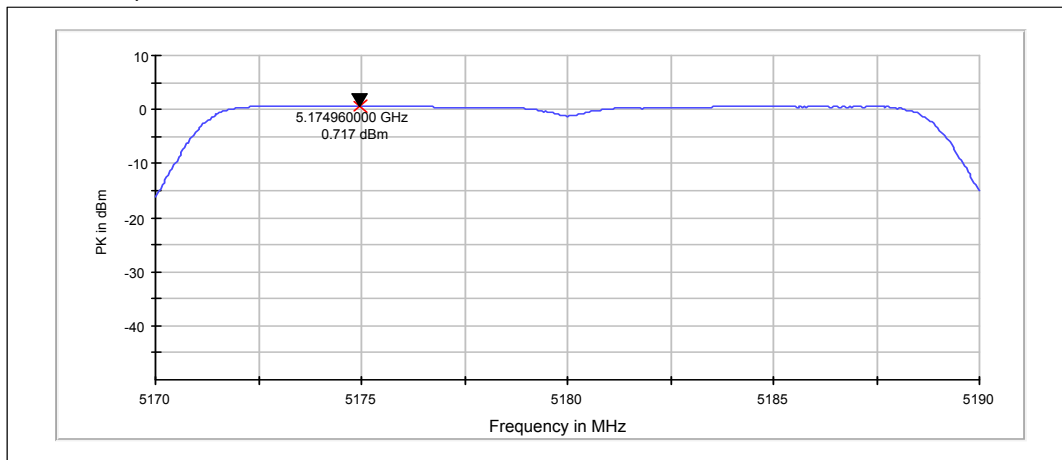


7.3.3 802.11n mode, QPSK modulation, 19.5 / 21.7 Mbps data rate

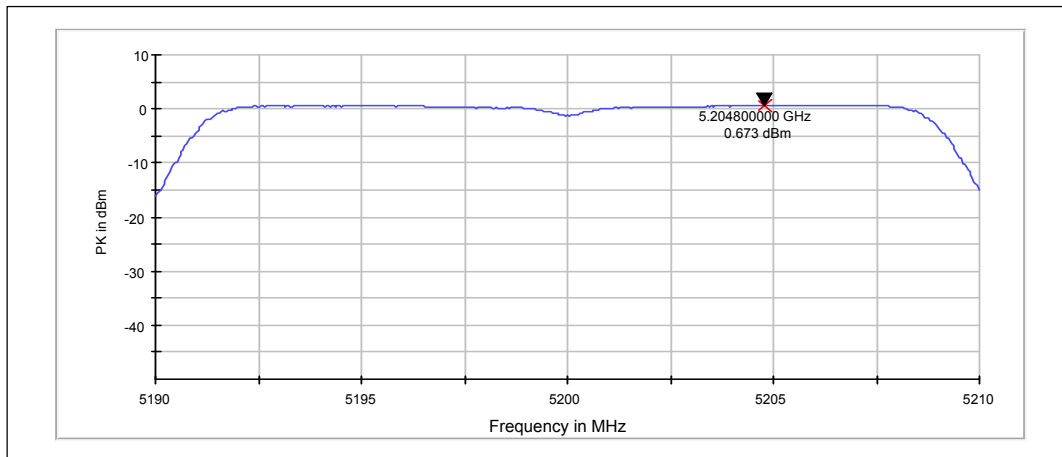
RMS detector (RBW: 1 MHz, VBW: 3 MHz, Video averaging)

Channel / f _c [MHz]	P [dBm]	Result
36 / 5180	0.72	PASSED
40 / 5200	0.67	PASSED
48 / 5240	0.89	PASSED
52 / 5260	0.86	PASSED
60 / 5300	0.64	PASSED
64 / 5320	0.74	PASSED
100 / 5500	1.13	PASSED
116 / 5580	1.26	PASSED
140 / 5700	1.32	PASSED

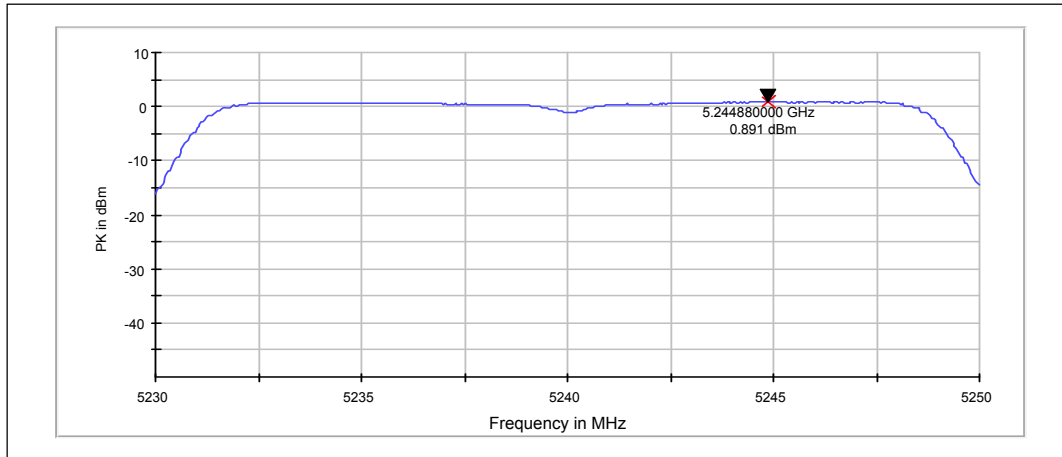
Channel 36 / 5180MHz



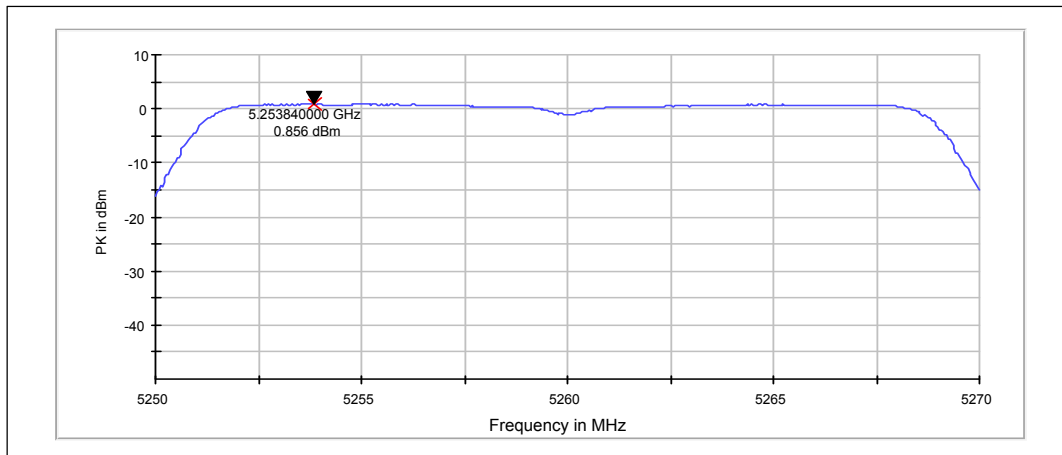
Channel 40 / 5200MHz



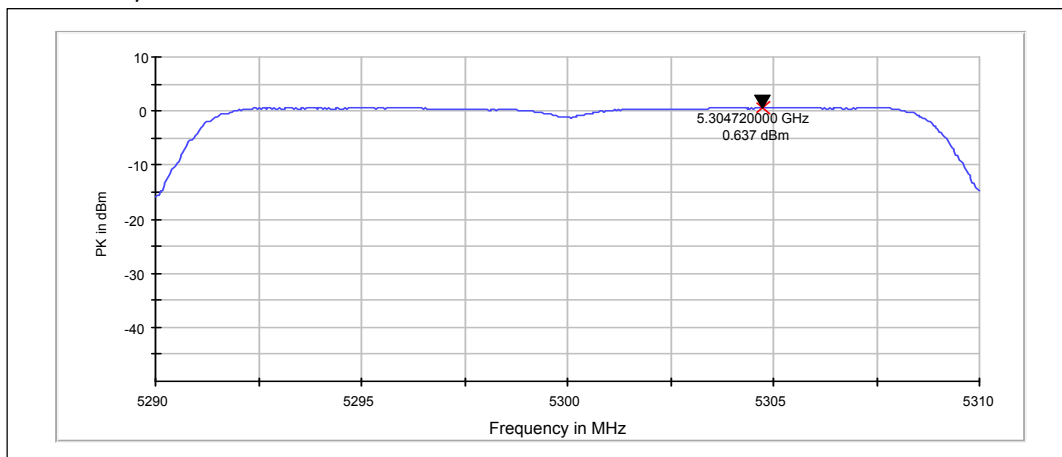
Channel 48 / 5240MHz



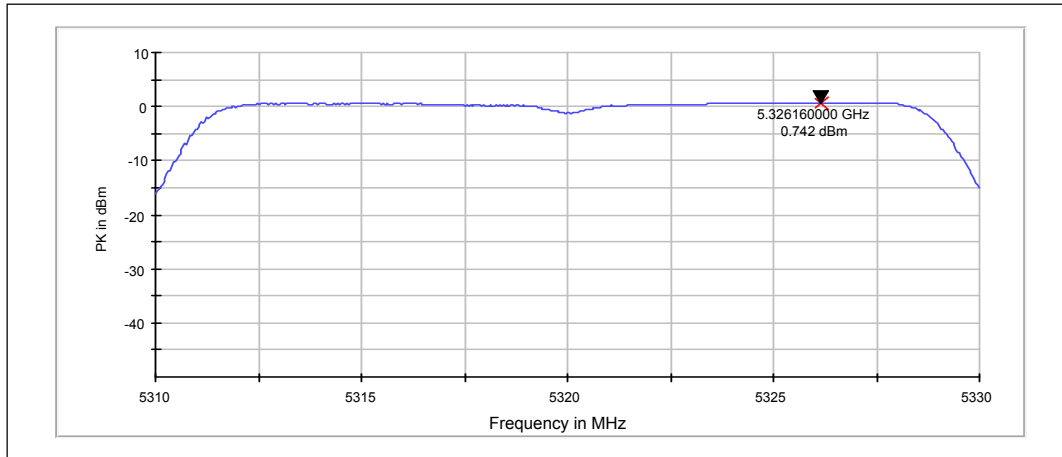
Channel 52 / 5260MHz



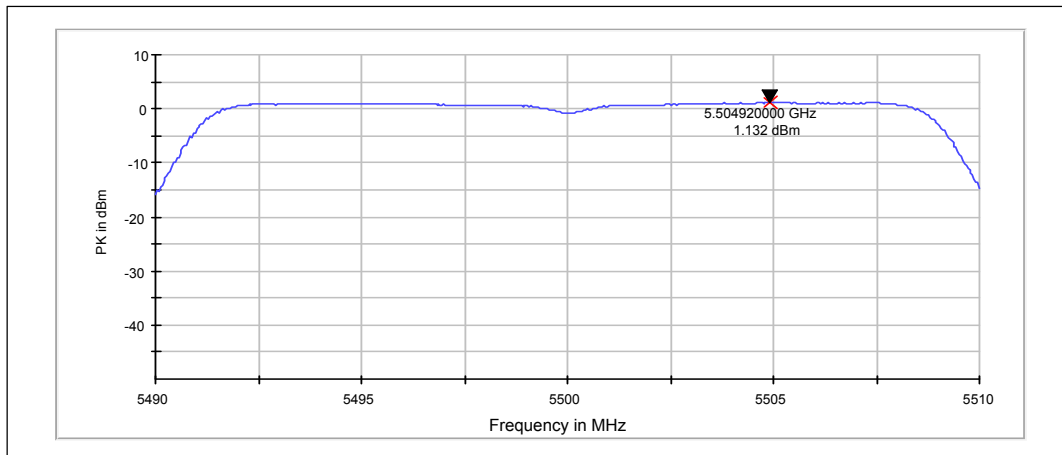
Channel 60 / 5300MHz



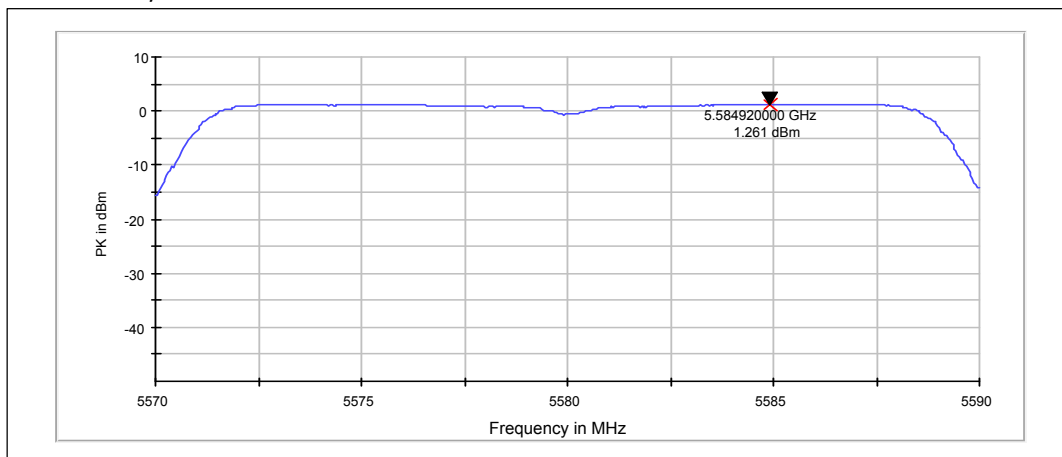
Channel 64 / 5320MHz



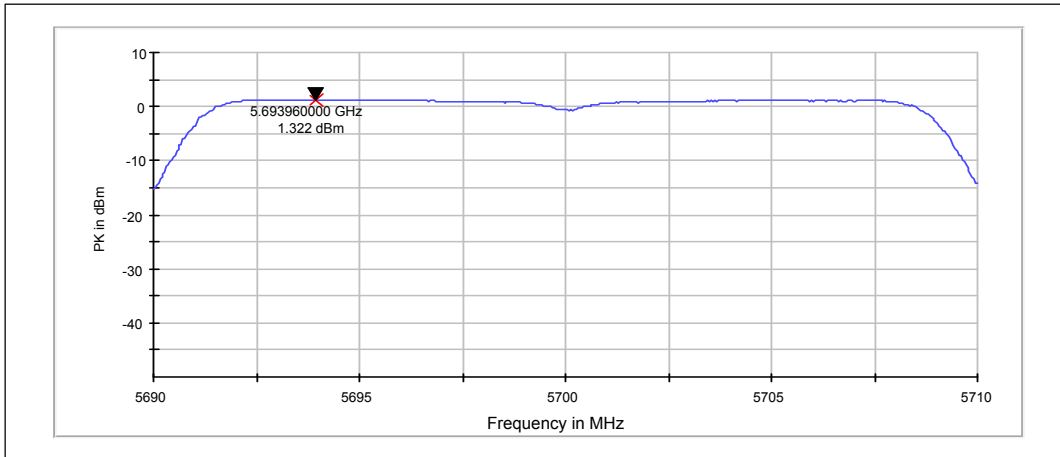
Channel 100 / 5500MHz



Channel 116 / 5580MHz



Channel 140 / 5700MHz

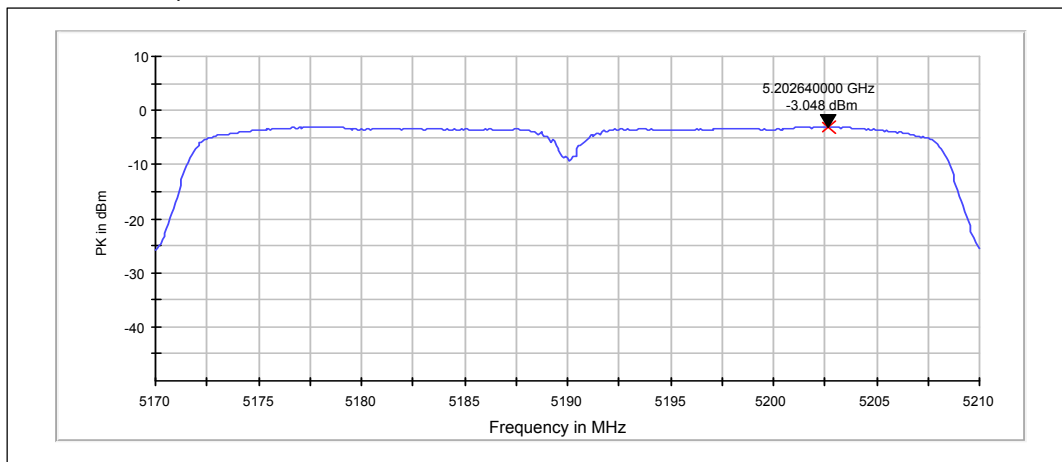


7.3.4 802.11n mode, QPSK modulation, 27.0 / 30.0 Mbps data rate

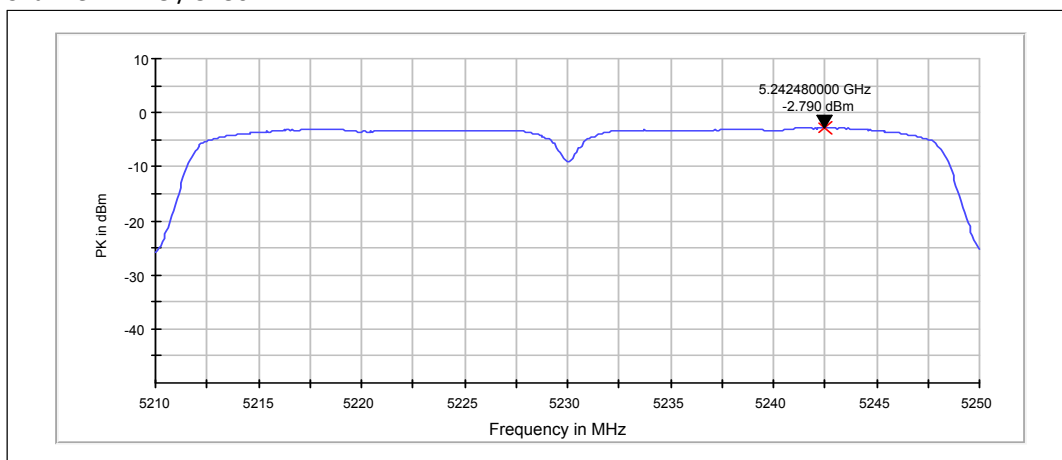
RMS detector (RBW: 1 MHz, VBW: 3 MHz, Video averaging)

Channel / f _c [MHz]	P [dBm]	Result
36+40 / 5190	-3.05	PASSED
44+48 / 5230	-2.79	PASSED
52+56 / 5270	-3.03	PASSED
60+64 / 5310	-2.6	PASSED
100+104 / 5510	-2.56	PASSED
108+112 / 5550	-2.58	PASSED
132+136 / 5670	-2.41	PASSED

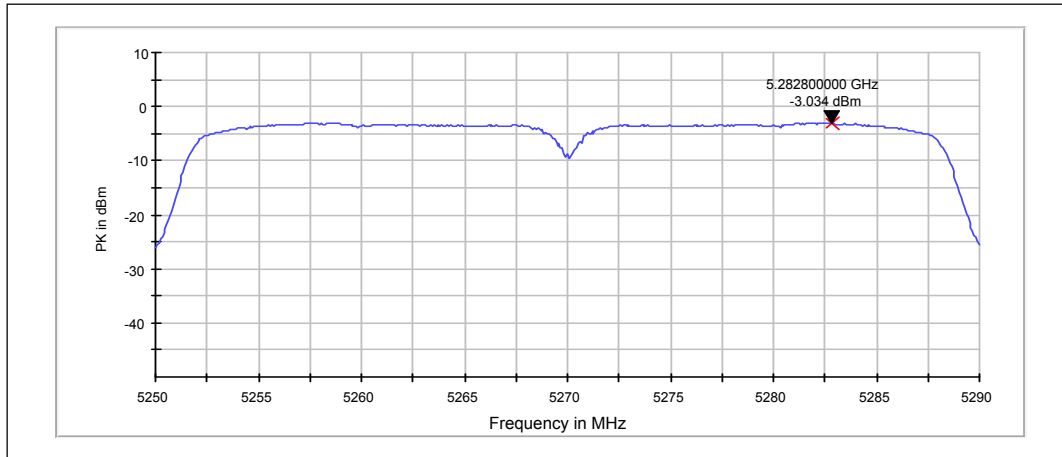
Channel 36+40 / 5190MHz



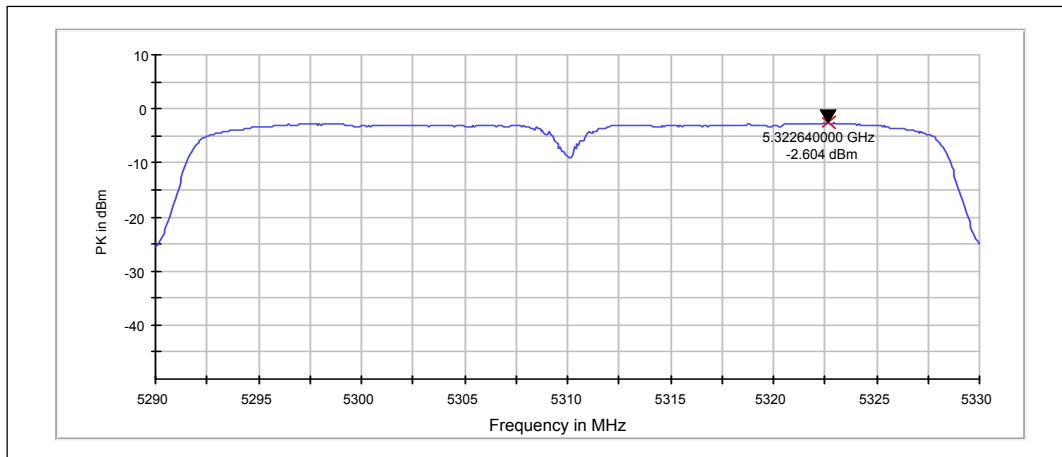
Channel 44+48 / 5230MHz



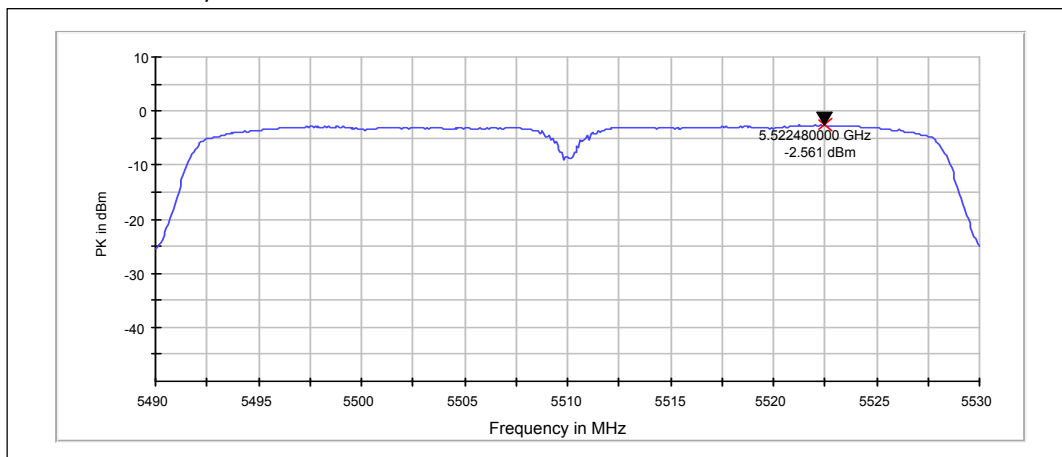
Channel 52+56 / 5270MHz



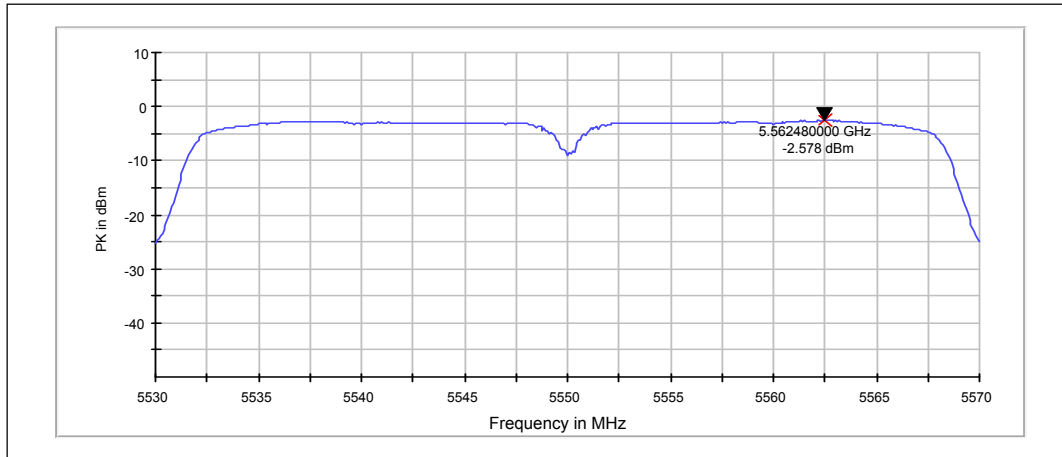
Channel 60+64 / 5310MHz



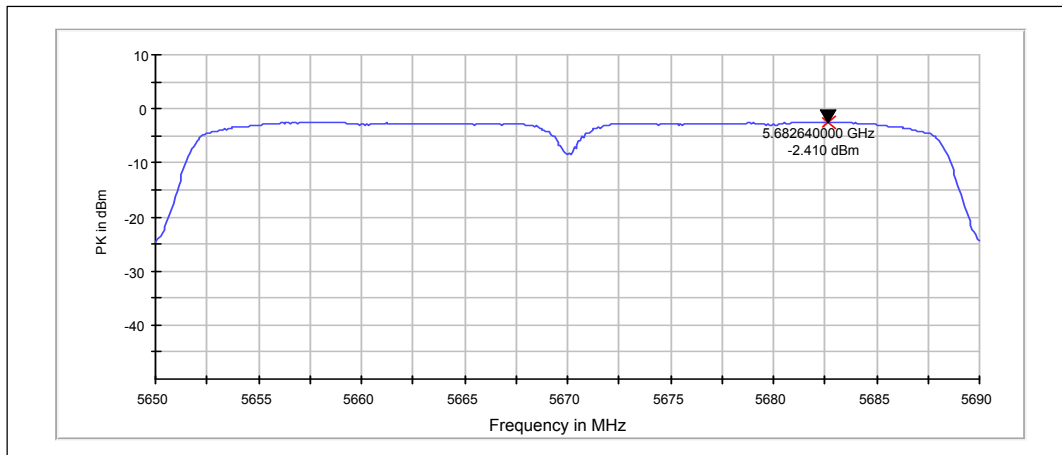
Channel 100+104 / 5510MHz



Channel 108+112 / 5550MHz



Channel 132+136 / 5670MHz



8. Test Equipment

8.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
TM38112	Power supply	6632A	Agilent	22/24/27, 15C, 15E
TM38114	Power supply	6632A	Agilent	22/24/27, 15C, 15E
TM37773	Communication Tester	CMU200	R&S	22/24/27, 15B
TM30600	Impulse limiter	ESH3-Z2	R&S	15C, 15B
TM26490	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
TM26491	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
TM37610	Spectrum Analyzer	FSU26	R&S	22/24/27, 15C, 15E
TM23007	Oscilloscope	TDS684B	Tektronix	15E
TM22806	Battery	BAT 20/E	Fiskars	15C, 15B
TM22805	UPS	PS 20/1.2	Fiskars	15C, 15B
-	Temperature and humidity logger	175-H2	Testo	15C, 15B
-	Temperature and humidity logger	175-H2	Testo	22/24/27, 15C
-	Air pressure and temperature logger	635-2	Testo	22/24/27, 15C, 15B
-	Air pressure sensor	0638-1835	Testo	22/24/27, 15C, 15B
-	Temperature test chamber	VT 4002	Vötsch	22/24/27
2001	Bluetooth tester	CBT	R&S	15C, 15B
2009	LISN 50 µH	ENV216	R&S	15C, 15B
2010	LISN 50 µH	ENV216	R&S	15C, 15B
2012	Power splitter	11667B	Agilent	22/24/27, 15C
2013	Attenuator	8493C	Agilent	22/24/27, 15C
2014	Attenuator	8493C	Agilent	22/24/27, 15C
2019	Power splitter	ZN2PD-9G-S+	Mini-Circuits	15E
2020	Power splitter	ZN2PD-9G-S+	Mini-Circuits	15E
2021	Communication Tester	CMW500	R&S	22/24/27
2022	Communication Tester	CMU200	R&S	22/24/27
2023	Spectrum Analyzer	ESMI-RF	R&S	15B/15C
2024	Analyzer display unit	ESAI-D	R&S	15B/15C
2026	Signal Generator	SMF 100A	R&S	22/24/27, 15C, 15E, 15B
-	Bluetooth tester	CBT	R&S	15C, 15B

8.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	Antenna	BBHA 9120 D	Schwarzbeck	22/24/27, 15C
TM37678	Communication Tester	CMU200	R&S	22/24/27, 15B
TM38845	Receiver	ESIB 26	R&S	22/24/27, 15C, 15E, 15B
-	Antenna	HL562	R&S	22/24/27, 15C, 15E, 15B
-	Turntable	2188	EMCO	22/24/27, 15C, 15E, 15B
-	Turntable controller	2090	EMCO	22/24/27, 15C, 15E, 15B
-	RF system panel	OSP130	R&S	22/24/27, 15C, 15E, 15B
-	Mini mast	2075-2	ETS Lindgren	22/24/27, 15C, 15B
TM38843	Mini mast	2075	Emco	22/24/27, 15C, 15B
TM38842	Antenna mast controller	2090	Emco	22/24/27, 15C, 15B
TM30643	LISN 50 µH	LISN-5-20-2	FCC	22/24/27, 15C, 15B
TM30644	LISN 50 µH	LISN-5-20-2	FCC	22/24/27, 15C, 15B

Eq. No	Equipment	Type	Manufacturer	Used in
-	Temperature and humidity logger	175-H2	Testo	22/24/27, 15C, 15B
-	Air pressure and temperature logger	635-2	Testo	22/24/27, 15C, 15B
-	Air pressure sensor	0638-1835	Testo	22/24/27, 15C, 15B
TM37523	Preamplifier	AMF-4D-10M-3G-25-20P	Miteq	22/24/27, 15C, 15B
TM37498	Preamplifier	AMF-5D-020180-26-10P	Miteq	22/24/27, 15C, 15B
TM30599	Semi anechoic chamber	UNKNOWN	TDK	22/24/27, 15C, 15B
TM22638	Power supply	OL63743-901	-	22/24/27, 15C, 15E, 15B
TM38066	High pass filter	WHKX3.0/18G-12SS	Wainwright	22/24/27, 15C, 15E, 15B
2028	High pass filter	WHKX 1.0/15G-12SS	Wainwright	22/24/27, 15C, 15E, 15B
TM37545	Tunable notch filter	800.0/960.0-0.2/40-8SSK	Wainwright	22
TM26512	Tunable notch filter	WRCD1850/1910-0.2/40-10SSK	Wainwright	24
-	Band reject filter	WRCG1877/1883-1870/1890-40/6EE	Wainwright	24
-	Band reject filter	WRCG1729.4/1735.4-1722.4/1742.4-40/6SS	Wainwright	27
TM23892	Controller	G-1000SDX	Yaesu	22/24/27, 15C, 15E
2001	Bluetooth tester	CBT	R&S	15C, 15B
6023	Antenna	VUBA 9117	Schwarzbeck	22/24/27
2021	Communication Tester	CMW500	R&S	22/24/27
2025	Antenna	HFH2-Z2	R&S	15C
2026	Signal Generator	SMF 100A	R&S	22/24/27, 15C, 15E, 15B
2052	Antenna	BBHA 9120 D	Schwarzbeck	22/24/27, 15C, 15B, 15E
-	Antenna	QSH18S20	Q-Par	22/24/27, 15C, 15B, 15E
-	Antenna	QSH20S20	Q-Par	22/24/27, 15C, 15B, 15E
-	Antenna	QSH20S20	Q-Par	22/24/27, 15C, 15B, 15E
-	Bluetooth tester	CBT	R&S	15C, 15B