

FCC Part 15E Compliance Test Report

Test Report no.:	FCC15E_RM-821_13	Date of Report:	12-Sep-2012
Number of pages:	94	Customer's Contact person:	Vaattovaara Lasse
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FCC listing no.:	533467		
IC recognition no.:	661V-1		
Tested devices/ accessories:	Phone RM-821 / AC-Charger AC-50U / Headset WH-208		
FCC ID:	PYARM-821	IC:	661V-RM821
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, RSS-210 (Issue 8, December 2010). Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		
Documentation:	The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.		
Test Results:	The EUT complies with the requirements in respect of all parameters subject to the test. The test results relate only to devices specified in this document		
Date and signature for the contents:			

Hannu Söderholm, Senior Engineer, EMC

1. Summary for FCC Part 15E Compliance Test Report

Date of receipt	19-Jun-2012
Testing completed	07-Jul-2012
The customer's contact person	Vaattovaara Lasse
Test Plan referred to	T:\Projects\RM-820\TestPlan\RS_testplan_RM-820_EMC_FCC_SAR_HAC.xls
Notes	-
Document name	T:\Projects\RM-821\EMC\FCC15E_RM-821_13.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-820	004402138706233	2003	-	1121	16489
AC-Charger	AC-50U	4090432185270513678;0675620	-	-	-	16341
Headset	WH-208	-	-	-	-	16345
Phone	RM-820	004402138708700	2003	-	1121.0003.8297.9657.112	16487
Battery	BP-4GW	-	-	-	-	16488
AC-Charger	AC-50U	4090432185270513671;0675620	-	-	-	16340
Headset	WH-208	-	-	-	-	16344

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	PASSED
-	A9.2	26dB(bandwidth)	PASSED
15.407(a)	A9.2	Power spectral density	PASSED

PASSED
FAILED
NP

The EUT complies with the essential requirements in the standard.
The EUT does not comply with the essential requirements in the standard.
The test was not performed by the TCC Nokia Laboratory.

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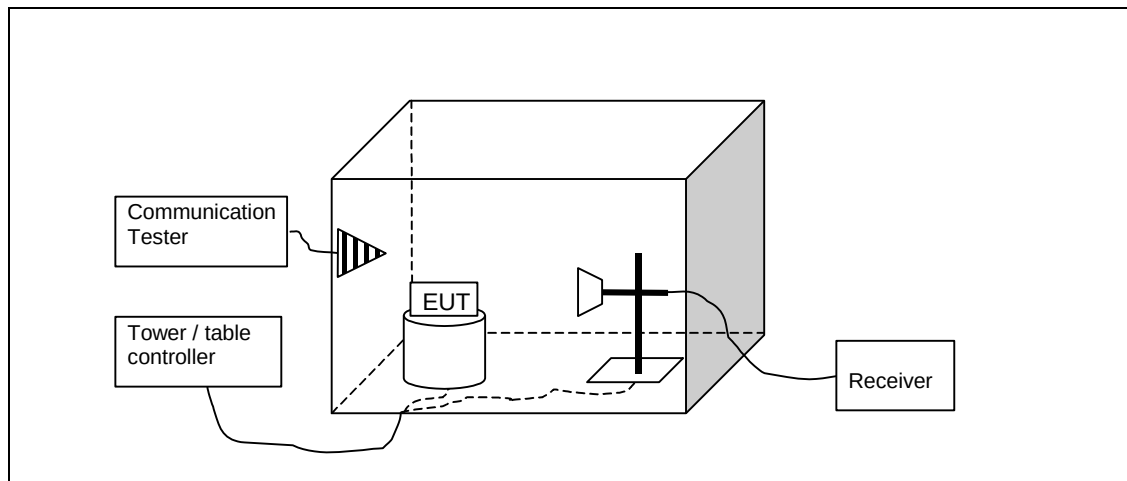
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2. Band edge compliance of RF emissions (FCC §15.407 (b), RSS-210 A9.2)

EUT with DUT number	RM-820, DUT 16489
Accessories with DUT numbers	AC-50U , DUT 16341 ; WH-208, DUT 16345
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 37 / 101
Date of measurements	04-Jul-2012
Measured by	Kalle Hannila / Jari Keto

2.1.1 Test Setup



2.2. 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.

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

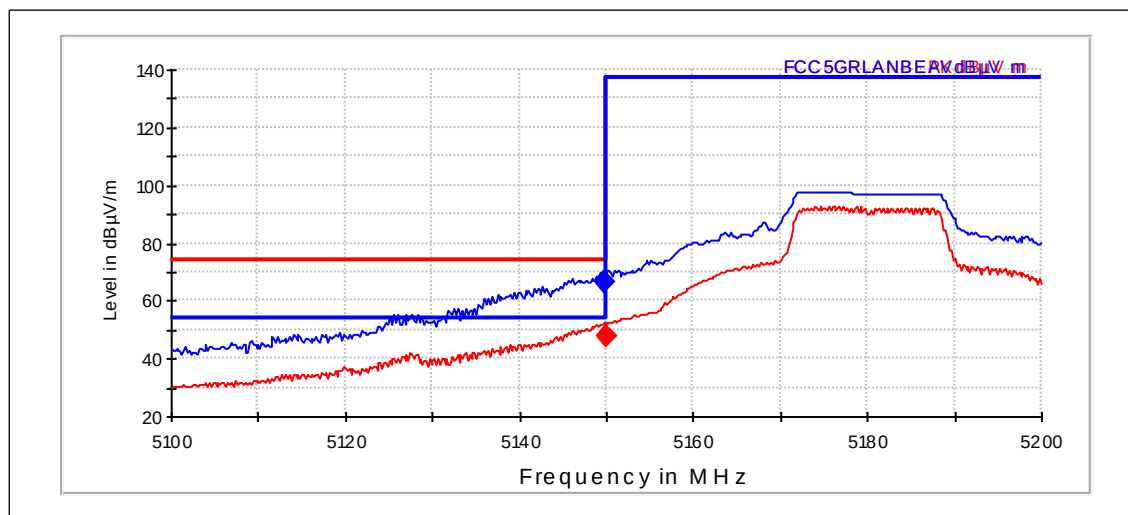
$$E [dB\mu V/m] = 20 * \text{LOG} ((\text{square root } (30 * P [W])) / 3 \text{ m}) * 1000000)$$

Frequency range [MHz]	Limit [dBm / MHz]	Limit dBuV/m @ 3m
5150 - 5250	≤ 5.150 GHz: 54 dBuV/m (avg), 74 dBuV/m (pk)	68.23
5250 - 5350	≥ 5.350 GHz: 54 dBuV/m (avg), 74 dBuV/m (pk)	68.23
5470 - 5725	≤ 5.460 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

2.3. 5 GHz RLAN Test results

2.3.1 RLAN in 802.11a-mode, 18Mbps data rate.

Channel 36 / 5180MHz



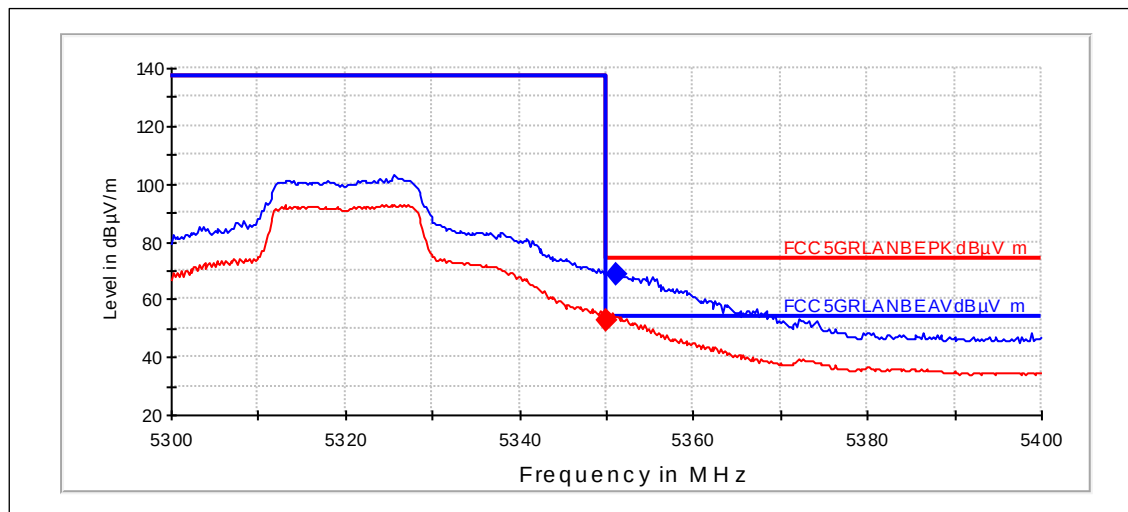
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5149.699	66.68	2158.49	70.2	-3.52	7.3	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5149.9	47.61	240.021	51.13	-3.52	6.4	54	PASSED

Channel 64 / 5320MHz



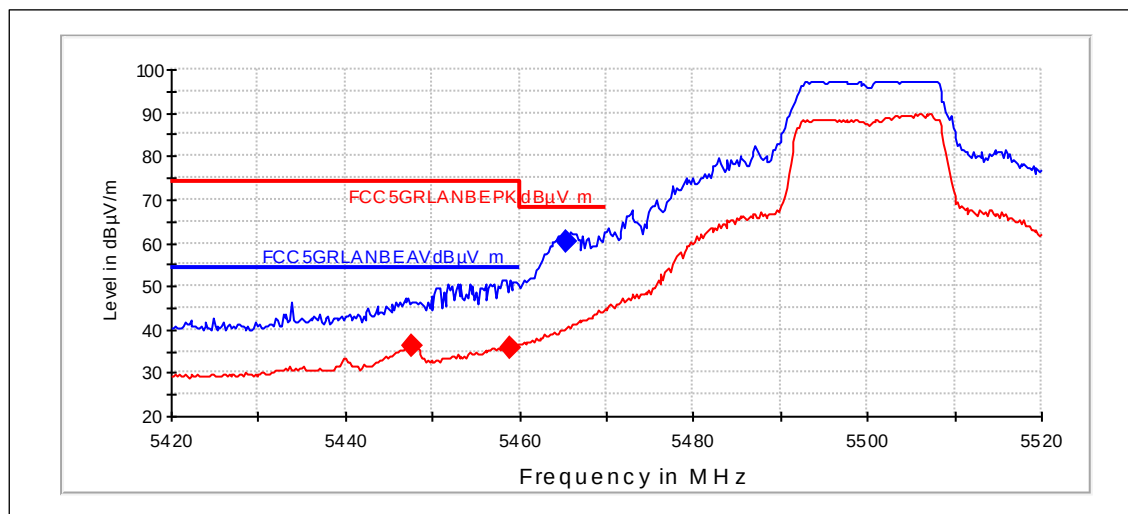
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5351.102	68.46	2649.72	72.28	-3.82	5.5	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5350	52.48	420.824	56.3	-3.82	1.5	54	PASSED

Channel 100 / 5500MHz



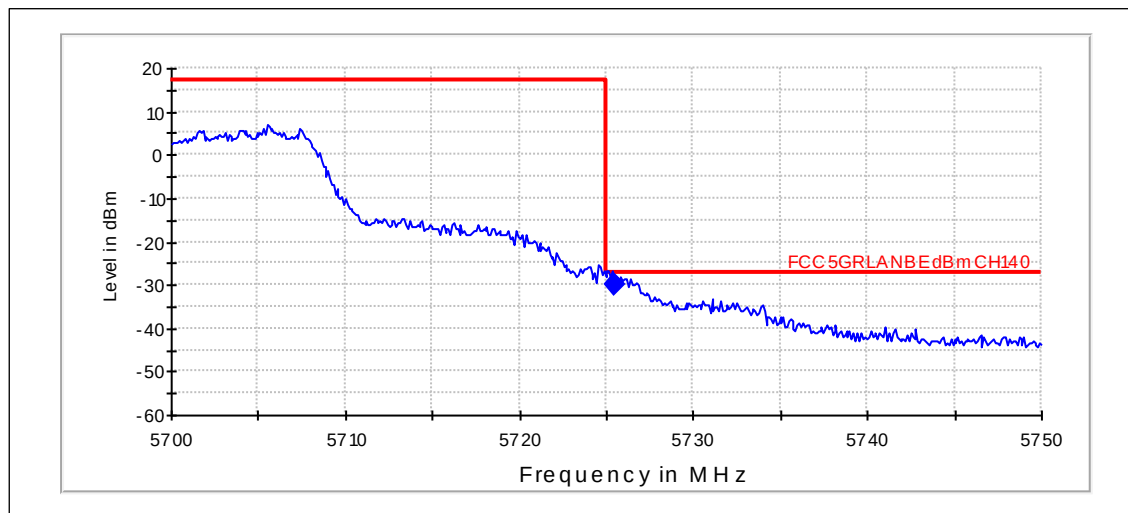
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5465.391	60.38	1044.359	64.12	-3.74	7.8	68.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5447.756	36.34	65.63	40	-3.66	17.7	54	PASSED
5458.828	35.85	62.044	39.55	-3.7	18.1	54	PASSED

Channel 140 / 5700MHz

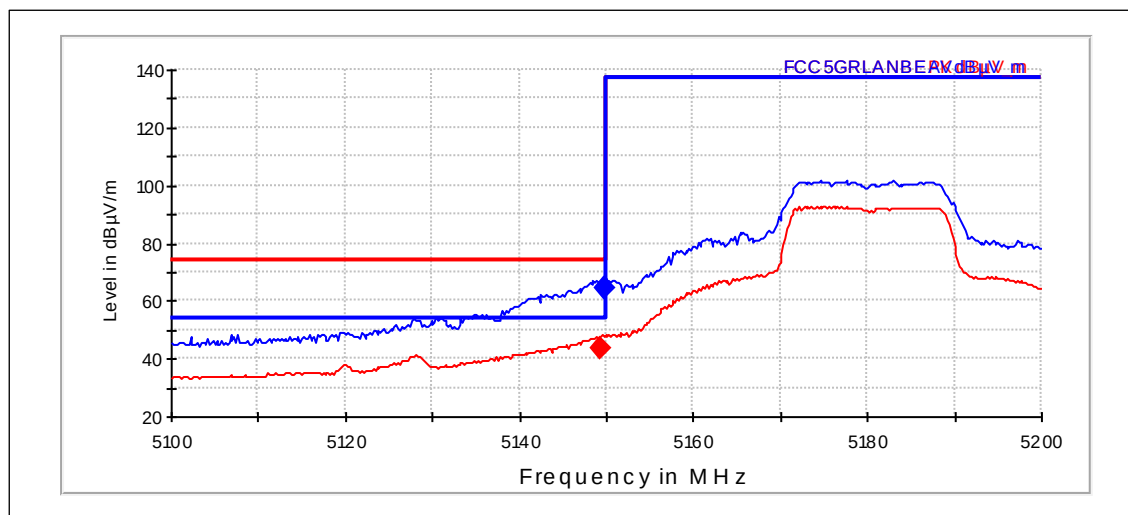


Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	P [dBm]	P [μ W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Margin	Limit [dBm]	Results
5725.405	-30.03	0.99403	-45.39	15.36	3	-27	PASSED

2.3.2 WLAN in 802.11n-mode, 20 MHz CBW, 16-QAM modulation, 19.5 / 21.7 Mbps data rate.

Channel 36 / 5180MHz



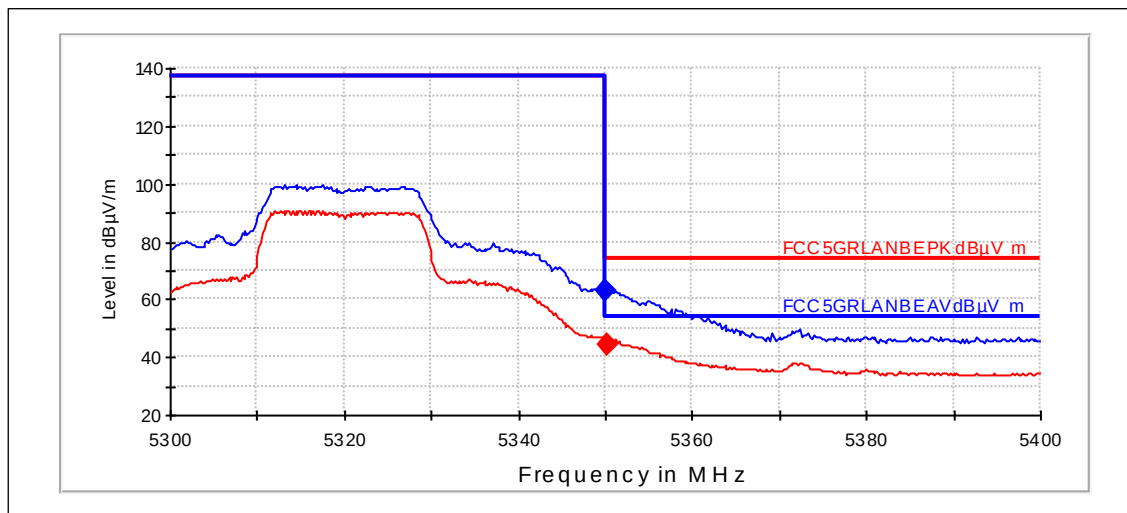
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5149.699	64.51	1681.319	68.03	-3.52	9.5	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5149.399	43.79	154.721	47.3	-3.51	10.2	54	PASSED

Channel 64 / 5320MHz



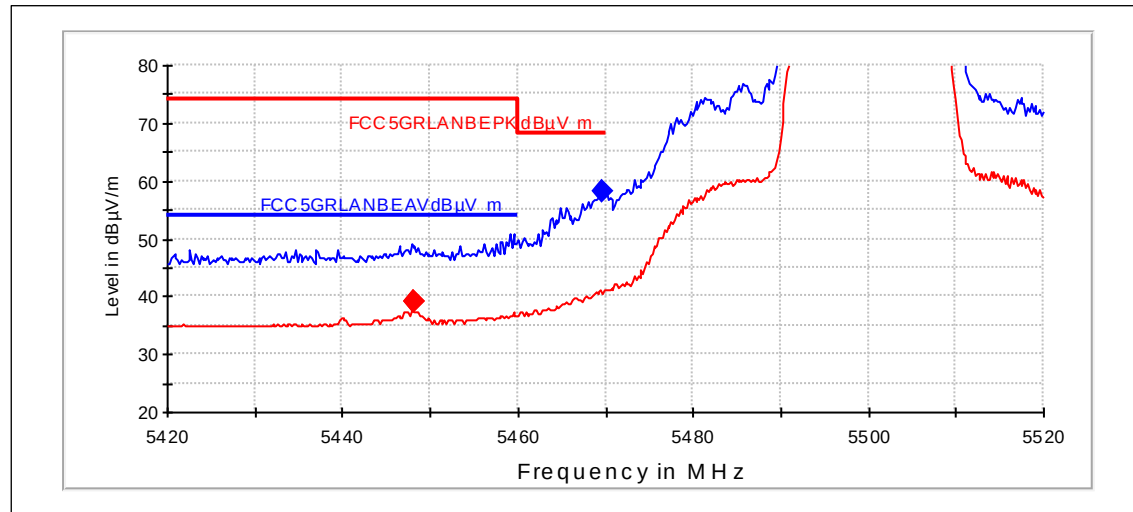
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5350.1	62.9	1396.529	66.72	-3.82	11.1	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5350.301	44.24	162.911	48.06	-3.82	9.8	54	PASSED

Channel 100 / 5500MHz



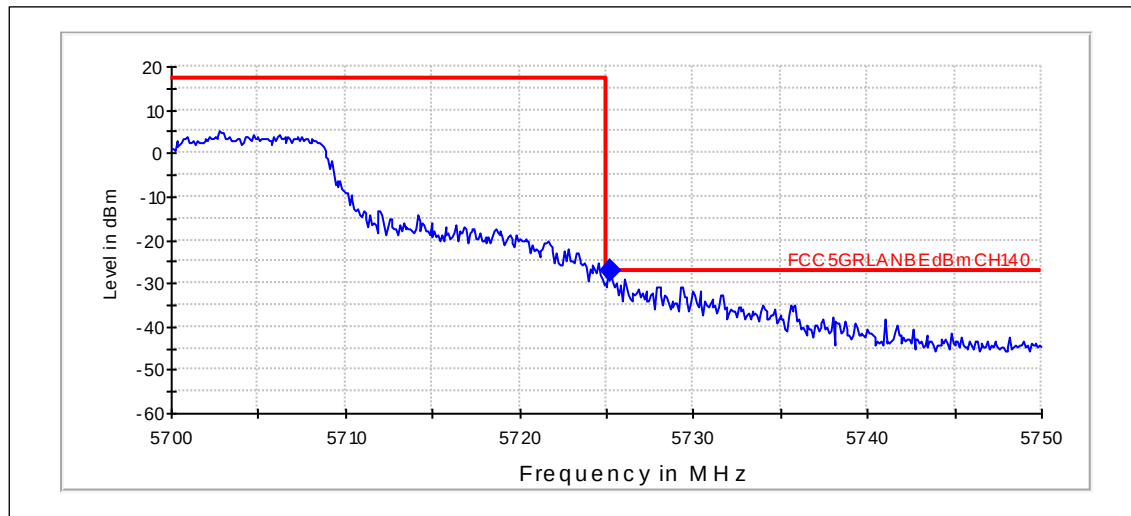
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5469.599	58.07	800.479	61.83	-3.76	10.1	68.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5448.206	39.08	89.95	42.73	-3.65	14.9	54	PASSED
5448.257	39.08	89.96	42.73	-3.65	14.9	54	PASSED

Channel 140 / 5700MHz

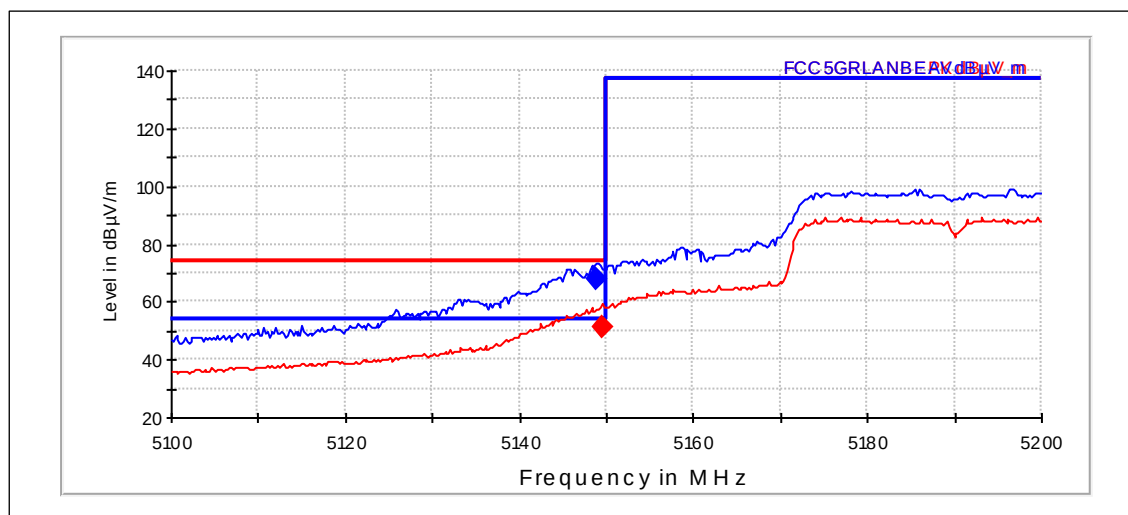


Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	P [dBm]	P [μ W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Margin	Limit [dBm]	Results
5725.204	-27.25	1.88322	-42.6	15.35	0.3	-27	PASSED

2.3.3 WLAN in 802.11n-mode, 40 MHz CBW, 16-QAM modulation, 19.5 / 21.7 Mbps data rate.

Channel 36+40 / 5190MHz



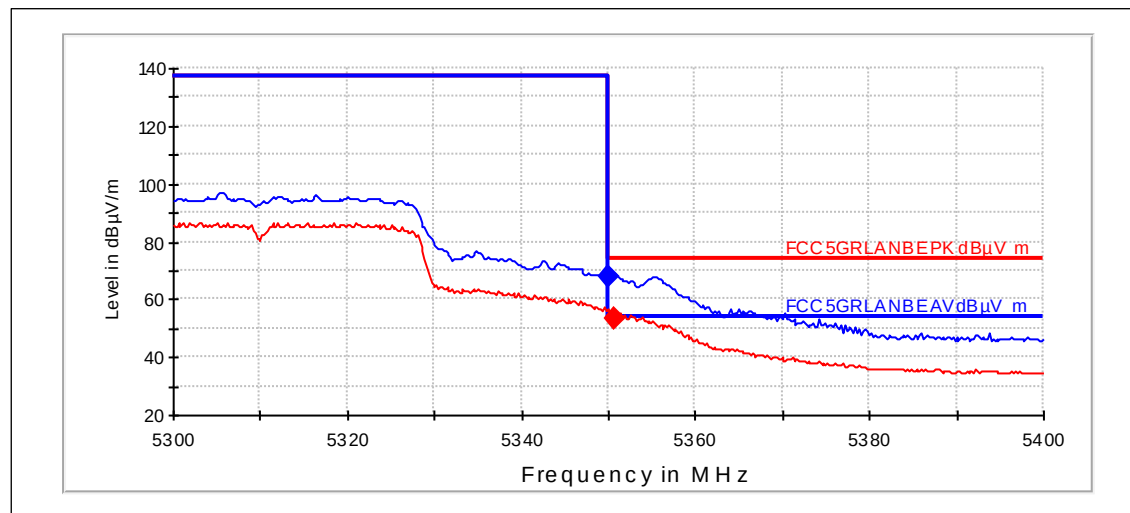
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5148.798	67.82	2459.235	71.33	-3.51	6.2	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5149.599	51.34	369.105	54.86	-3.52	2.7	54	PASSED

Channel 60+64 / 5310MHz



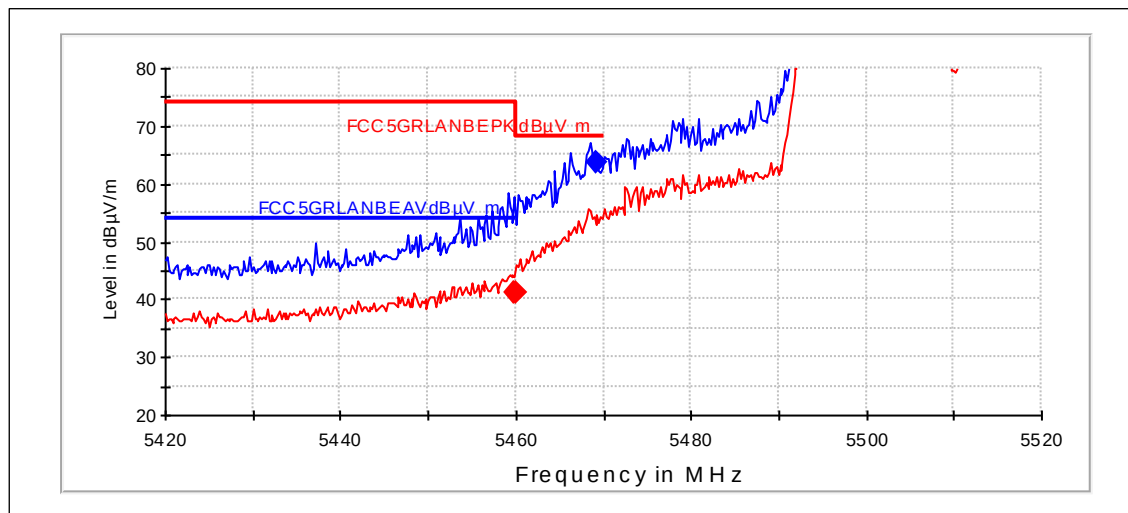
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5350.1	68.13	2548.297	71.95	-3.82	5.9	74	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5350.601	53.47	471.737	57.29	-3.82	0.5	54	PASSED

Channel 100+104 / 5510MHz



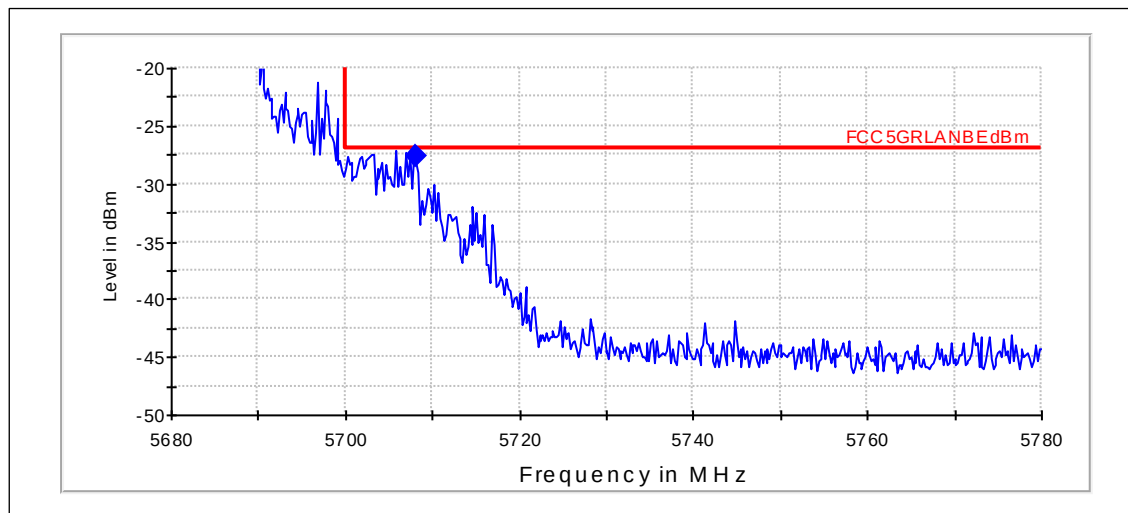
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5469.198	63.72	1534.087	67.48	-3.76	4.5	68.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5459.729	41.01	112.331	44.71	-3.7	13	54	PASSED
5459.98	41.1	113.527	44.81	-3.71	12.9	54	PASSED

Channel 132+136 / 5670MHz



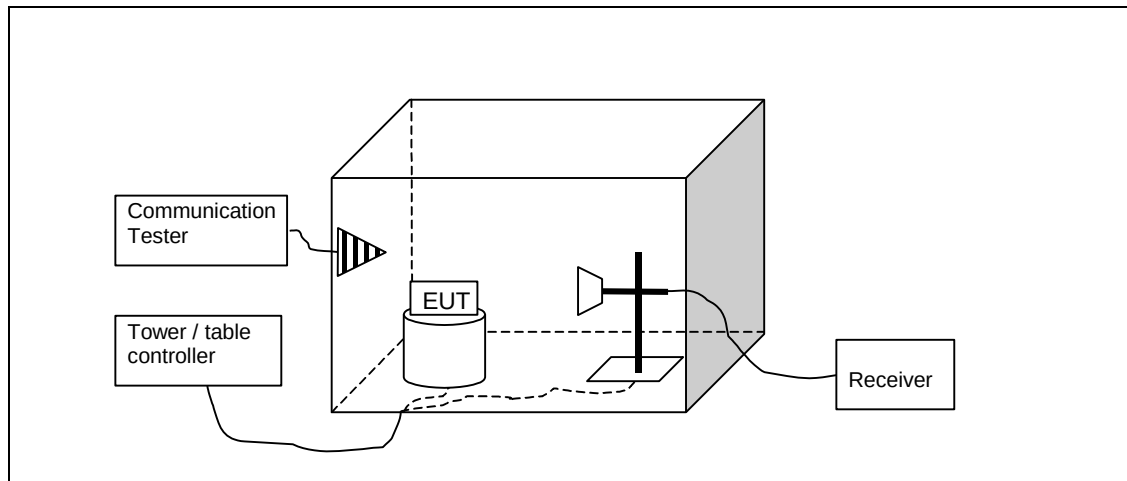
Peak (RBW: 1 MHz, VBW: 3 MHz)

Frequency [MHz]	P [dBm]	P [μ W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Margin	Limit [dBm]	Results
5708.11	-27.63	1.72703	-43.14	15.51	0.6	-27	PASSED

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

EUT with DUT number	RM-820, DUT 16489
Accessories with DUT numbers	AC-50U , DUT 16341 ; WH-208, DUT 16345
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 35 / 101.4
Date of measurements	04-Jul-2012
Measured by	Kalle Hannila / Jari Keto

3.1.1 Test Setup



3.2. 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

3.3. 5 GHz RLAN Test results

3.3.1 a-mode, 20 MHz CBW, OFDM modulation, 18 Mbps data rate.

Channel 36 / 5180MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
10360.2	51.52	376.53	42.8	8.72	26.7	78.2	PASSED
10845.591	53.53	474.624	43.71	9.82	24.7	78.2	PASSED
15538.6	63.51	1497.442	41.93	21.58	14.7	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
41.973	24.5	16.796	35.68	-11.18	15.5	40	PASSED
940.403	45.14	180.738	48.98	-3.84	0.9	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
10360.2	37.89	78.46	29.17	8.72	---	---	PASSED
10845.591	39.61	95.62	29.79	9.82	14.4	54	PASSED
15538.6	50.68	341.94	29.1	21.58	3.3	54	PASSED

Channel 48 / 5124MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5209.9	60.58	1069.178	64.28	-3.7	13.4	74	PASSED
10481.6	63.65	1521.949	54.42	9.23	14.6	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
940.403	45.2	181.907	49.04	-3.84	0.8	46	PASSED
949.049	42.31	130.467	46.33	-4.02	3.7	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5209.9	42.29	130.197	45.99	-3.7	---	---	PASSED
10481.6	51.4	371.492	42.17	9.23	---	---	PASSED

Channel 52 / 5260MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5229.7	59.64	958.849	63.33	-3.69	14.4	74	PASSED
10519.8	62.75	1372.777	53.58	9.17	15.4	78.2	PASSED
15778.8	66.28	2061.104	45.41	20.87	11.9	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
940.343	44.76	173.041	48.6	-3.84	1.2	46	PASSED
949.079	43.78	154.472	47.8	-4.02	2.2	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5229.7	41.45	118.114	45.14	-3.69	---	---	PASSED
10519.8	50.96	353.265	41.79	9.17	---	---	PASSED
15778.8	52.64	428.598	31.77	20.87	1.4	54	PASSED

Channel 64 / 5320MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5352	51.99	397.832	55.81	-3.82	16.2	68.2	PASSED
10641.6	58.1	803.804	49.07	9.03	20.1	78.2	PASSED
15959.1	61.93	1249.396	41.43	20.5	16.3	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
940.403	44.7	171.732	48.54	-3.84	1.3	46	PASSED
949.049	41.92	124.695	45.94	-4.02	4.1	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5352	34.23	51.47	38.05	-3.82	19.8	54	PASSED
10641.6	45.41	186.445	36.38	9.03	8.6	54	PASSED
15959.1	48.78	274.821	28.28	20.5	5.2	54	PASSED

Channel 100 / 5500MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5469.316	48.62	269.867	52.38	-3.76	19.6	68.2	PASSED
11000.1	54.28	517.488	44.5	9.78	23.9	78.2	PASSED
16498.1	62.97	1407.505	40.82	22.15	15.2	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
940.403	44.67	171.199	48.51	-3.84	1.3	46	PASSED
949.079	44.28	163.587	48.3	-4.02	1.7	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5469.316	32.81	43.687	36.57	-3.76	---	---	PASSED
11000.1	42.34	130.933	32.56	9.78	11.7	54	PASSED
16498.1	50.2	323.482	28.05	22.15	---	---	PASSED

Channel 116 / 5580MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
10640.083	53.53	475.007	44.49	9.04	24.7	78.2	PASSED
11159	51.95	395.685	42.68	9.27	26.3	78.2	PASSED
16741.9	63.56	1506.26	41.31	22.25	14.6	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
940.343	44.12	160.713	47.96	-3.84	1.9	46	PASSED
949.079	44.51	167.996	48.53	-4.02	1.5	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
10640.083	41.46	118.331	32.42	9.04	12.5	54	PASSED
11159	39.09	90.033	29.82	9.27	14.9	54	PASSED
16741.9	50.88	350.026	28.63	22.25	---	---	PASSED

Channel 140 / 5700MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5672	55.45	591.902	59.07	-3.62	18.6	74	PASSED
11400	55.56	599.515	46.32	9.24	22.6	78.2	PASSED
17100.1	64.29	1639.268	41.31	22.98	13.9	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
42.033	24.97	17.724	36.19	-11.22	15	40	PASSED
940.403	44.85	174.723	48.69	-3.84	1.2	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
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5672	39.33	92.598	42.95	-3.62	---	---	PASSED
11400	43.03	141.759	33.79	9.24	11	54	PASSED
17100.1	51.23	364.125	28.25	22.98	---	---	PASSED

3.3.2 N-mode, 20 MHz CBW, OFDM modulation, 19.5 Mbps data rate.

Channel 36 / 5180MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5149.999	59.67	962.609	63.19	-3.52	8.5	68.2	PASSED
10359.5	60.83	1100.145	52.12	8.71	17.4	78.2	PASSED
15529.962	67.49	2367.282	45.81	21.68	10.7	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
904.159	23.51	14.981	27.48	-3.97	22.5	46	PASSED
940.343	43.14	143.565	46.98	-3.84	2.9	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5149.999	40.02	100.219	43.54	-3.52	14	54	PASSED
10359.5	47.62	240.409	38.91	8.71	---	---	PASSED
15529.962	52.74	433.361	31.06	21.68	1.3	54	PASSED

Channel 48 / 5124MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5210.3	62.74	1371.197	66.44	-3.7	11.3	74	PASSED
10479.2	63.76	1541.523	54.56	9.2	14.4	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
30.18	28.96	28.064	33.83	-4.87	11	40	PASSED
940.343	45.29	183.844	49.13	-3.84	0.7	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5210.3	44.38	165.558	48.08	-3.7	---	---	PASSED
10479.2	51.52	376.834	42.32	9.2	---	---	PASSED

Channel 52 / 5260MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5230.2	63.64	1520.548	67.34	-3.7	10.4	74	PASSED
10519.1	64.3	1640.59	55.13	9.18	13.9	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
904.789	23.53	15.005	27.49	-3.96	22.5	46	PASSED
948.929	42.27	129.793	46.29	-4.02	3.7	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5230.2	45.43	186.788	49.13	-3.7	---	---	PASSED
10519.1	51.75	386.768	42.58	9.18	---	---	PASSED

Channel 64 / 5320MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5350.1	57.84	779.92	61.66	-3.82	10.4	68.2	PASSED
10639.4	59.91	989.806	50.87	9.04	18.3	78.2	PASSED
15960.8	64.35	1649.681	43.84	20.51	13.9	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
940.403	44.62	170.235	48.46	-3.84	1.4	46	PASSED
949.019	39.87	98.492	43.89	-4.02	6.1	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5350.1	41.51	119.042	45.33	-3.82	12.5	54	PASSED
10639.4	46.82	219.18	37.78	9.04	7.2	54	PASSED
15960.8	50.8	346.577	30.29	20.51	3.2	54	PASSED

Channel 100 / 5500MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
11000.1	52.08	401.976	42.3	9.78	26.1	78.2	PASSED
11710.019	51.9	393.55	43.44	8.46	26.3	78.2	PASSED
16500.3	63.88	1563.688	41.68	22.2	14.3	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
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940.373	41.58	119.881	45.42	-3.84	4.4	46	PASSED
949.049	43.42	148.303	47.44	-4.02	2.6	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
11000.1	39.29	92.13	29.51	9.78	14.7	54	PASSED
11710.019	38.44	83.541	29.98	8.46	15.6	54	PASSED
16500.3	50.25	325.274	28.05	22.2	---	---	PASSED

Channel 116 / 5580MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5549.9	55.56	599.722	59.35	-3.79	18.4	74	PASSED
11160.2	54.67	541.44	45.41	9.26	23.5	78.2	PASSED
16741.5	63.8	1548.638	41.56	22.24	14.4	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
940.343	42.5	133.291	46.34	-3.84	3.5	46	PASSED
948.929	44.2	162.218	48.22	-4.02	1.8	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5549.9	36.2	64.58	39.99	-3.79	---	---	PASSED
11160.2	42.49	133.214	33.23	9.26	11.5	54	PASSED
16741.5	51.05	356.821	28.81	22.24	---	---	PASSED

Channel 140 / 5700MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5669.9	57.78	774.64	61.4	-3.62	16.2	74	PASSED
11399.2	55.67	607.715	46.44	9.23	22.5	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
940.343	41.89	124.28	45.73	-3.84	4.1	46	PASSED
949.049	40.99	112.008	45.01	-4.02	5	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5669.9	40.01	100.092	43.63	-3.62	---	---	PASSED
11399.2	42.96	140.589	33.73	9.23	11	54	PASSED

3.4. 5 GHz RLAN Test results

3.4.1 n-mode, 40 MHz CBW, OFDM modulation, 45 Mbps data rate.

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]	Margin	Limit [dBμV/m]	Results
10456.6	60.11	1012.745	51.12	8.99	18.1	78.2	PASSED
10456.814	60.99	1120.082	52	8.99	17.2	78.2	PASSED
15571.6	63.05	1420.365	41.81	21.24	15.2	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
906.989	23.38	14.762	27.35	-3.97	22.6	46	PASSED
940.323	41.17	114.433	45.01	-3.84	4.8	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
10456.6	45.29	183.865	36.3	8.99	---	---	PASSED
10456.814	46.43	209.652	37.44	8.99	---	---	PASSED
15571.6	50.24	325.125	29	21.24	3.8	54	PASSED

Channel 36+40 / 5190MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
10376.8	57.79	775.265	48.94	8.85	20.4	78.2	PASSED
10386.874	56.79	690.796	47.83	8.96	21.4	78.2	PASSED
15567.3	64.09	1600.848	42.8	21.29	14.1	78.2	PASSED
15568.842	63.82	1552.923	42.55	21.27	14.4	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
832.732	22.45	13.26	27.42	-4.97	23.5	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
10376.8	43.55	150.401	34.7	8.85	---	---	PASSED
10386.874	42.93	140.088	33.97	8.96	---	---	PASSED
15567.3	51.36	369.999	30.07	21.29	2.6	54	PASSED
15568.842	50.84	348.217	29.57	21.27	3.2	54	PASSED

Channel 52+56 / 5270MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
10536.378	54.33	520.595	45.28	9.05	23.9	78.2	PASSED
10538.9	56.6	676.161	47.58	9.03	21.6	78.2	PASSED
15812.9	62.62	1351.606	41.81	20.81	15.6	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
30.06	28.46	26.488	33.25	-4.79	11.5	40	PASSED
940.323	40.78	109.396	44.62	-3.84	5.2	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
10536.378	40.62	107.387	31.57	9.05	---	---	PASSED
10538.9	43.02	141.53	34	9.03	---	---	PASSED
15812.9	49.73	306.584	28.92	20.81	4.3	54	PASSED

Channel 60+64 / 5310MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5366.9	49.5	298.641	53.3	-3.8	18.7	68.2	PASSED
10616.7	56.4	660.465	47.21	9.2	21.8	78.2	PASSED
15930	61.15	1141.3	40.94	20.21	17.1	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
940.383	41.7	121.605	45.54	-3.84	4.3	46	PASSED
949.059	41.61	120.393	45.63	-4.02	4.4	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5366.9	34.92	55.719	38.72	-3.8	19.1	54	PASSED
10616.7	42.05	126.605	32.86	9.2	12	54	PASSED
15930	48.58	268.504	28.37	20.21	5.4	54	PASSED

Channel 100+104 / 5510MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5453.9	50.32	328.209	53.99	-3.67	17.9	68.2	PASSED
11016.6	54.76	546.953	45.15	9.61	23.4	78.2	PASSED
16526.7	63.32	1465.21	41.93	21.39	14.9	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
940.323	43.12	143.153	46.96	-3.84	2.9	46	PASSED
949.059	41.16	114.314	45.18	-4.02	4.8	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
5453.9	36.2	64.595	39.87	-3.67	17.8	54	PASSED
11016.6	41.04	112.668	31.43	9.61	13	54	PASSED
16526.7	50.08	319.044	28.69	21.39	---	---	PASSED

Channel 108+112 / 5550MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
11096.5	54.51	531.618	45.41	9.1	23.7	78.2	PASSED
11107.012	53.4	467.897	44.36	9.04	24.8	78.2	PASSED
16647.6	62.99	1410.263	41.19	21.8	15.2	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
940.413	43.41	148.081	48.41	-5	2.6	46	PASSED
948.939	40.82	109.951	44.84	-4.02	5.2	46	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
11096.5	40.63	107.547	31.53	9.1	13.4	54	PASSED
11107.012	40.32	103.765	31.28	9.04	13.7	54	PASSED
16647.6	50.49	334.464	28.69	21.8	---	---	PASSED

Channel 132+136 / 5670MHz

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
11336.773	54.5	531.068	45.67	8.83	23.7	78.2	PASSED
11338.8	54.65	540.132	45.81	8.84	23.6	78.2	PASSED
17007.5	63.17	1439.627	40.33	22.85	15	78.2	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
940.323	40.88	110.624	45.88	-5	5.1	46	PASSED
948.939	42.06	126.736	46.08	-4.02	3.9	46	PASSED

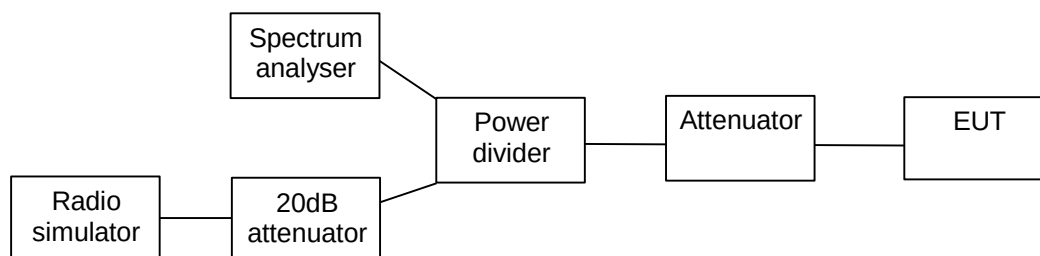
Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Margin	Limit [dBμV/m]	Results
11336.773	40.3	103.526	31.47	8.83	13.7	54	PASSED
11338.8	40.74	108.868	31.9	8.84	13.3	54	PASSED
17007.5	50.57	337.598	27.73	22.85	---	---	PASSED

4. Maximum conducted output power (FCC §15.407 (a), RSS-210 A9.2)

EUT with DUT number	RM-820, DUT 16487
Accessories with DUT numbers	BP-4GW, DUT 16488; AC-50U, DUT 16340 ; WH-208, DUT 16344
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 45 / 101
Date of measurements	21-Jun-2012
Measured by	Tomi Lipponen

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 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

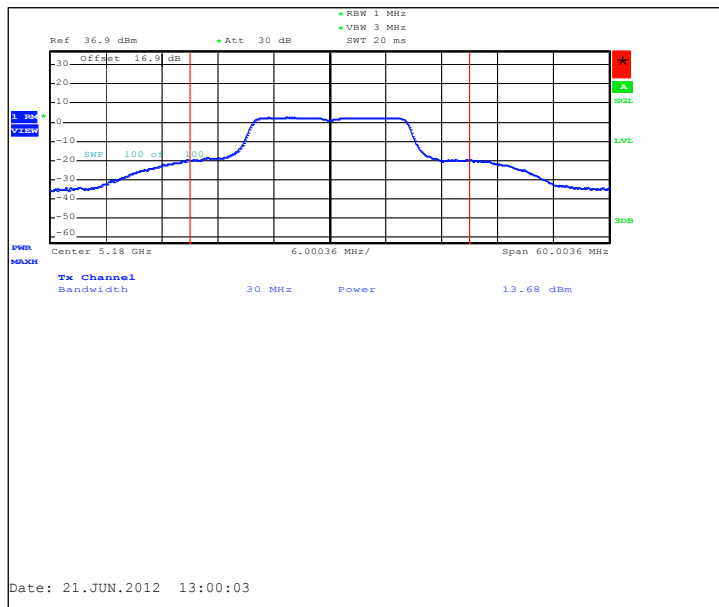
4.3. 5 GHz RLAN Test results

RLAN 5 GHz, RMS output power [dBm]	
Mode & data speed	Ch 36
g-mode WLAN OFDM 6 Mbps	13.68
g-mode WLAN OFDM 9 Mbps	13.55
g-mode WLAN OFDM 12 Mbps	13.95
g-mode WLAN OFDM 18 Mbps	14.22
g-mode WLAN OFDM 24 Mbps	12.16
g-mode WLAN OFDM 36 Mbps	12.29
g-mode WLAN OFDM 48 Mbps	11.33
g-mode WLAN OFDM 54 Mbps	11.27
n-mode MCS 0: OFDM 6.5 / 7.25 Mbps	14.26
n-mode MCS 1: OFDM 13.0 / 14.4 Mbps	14.14
n-mode MCS 2: OFDM 19.5 / 21.7 Mbps	14.27
n-mode MCS 3: OFDM 26.0 / 28.9 Mbps	12.35
n-mode MCS 4: OFDM 39.0 / 43.3 Mbps	12.21
n-mode MCS 5: OFDM 52.0 / 57.8 Mbps	11.23
n-mode MCS 6: OFDM 58.5 / 65.0 Mbps	11.31
n-mode MCS 7: OFDM 65.0 / 72.2 Mbps	10.34
n-mode MCS 0: OFDM 13.5 / 15.0 Mbps	12.18
n-mode MCS 1: OFDM 27.0 / 30.0 Mbps	11.04
n-mode MCS 2: OFDM 40.5 / 45.0 Mbps	11.04
n-mode MCS 3: OFDM 54.0 / 60.0 Mbps	10.59
n-mode MCS 4: OFDM 81.0 / 90.0 Mbps	10.7
n-mode MCS 5: OFDM 108.0 / 120.0 Mbps	10.87
n-mode MCS 6: OFDM 121.5 / 135.0 Mbps	10.99
n-mode MCS 7: OFDM 135.0 / 150.0 Mbps	10.95

4.3.1 OFDM mode, BPSK modulation, 6 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	13.68	23.335	PASSED

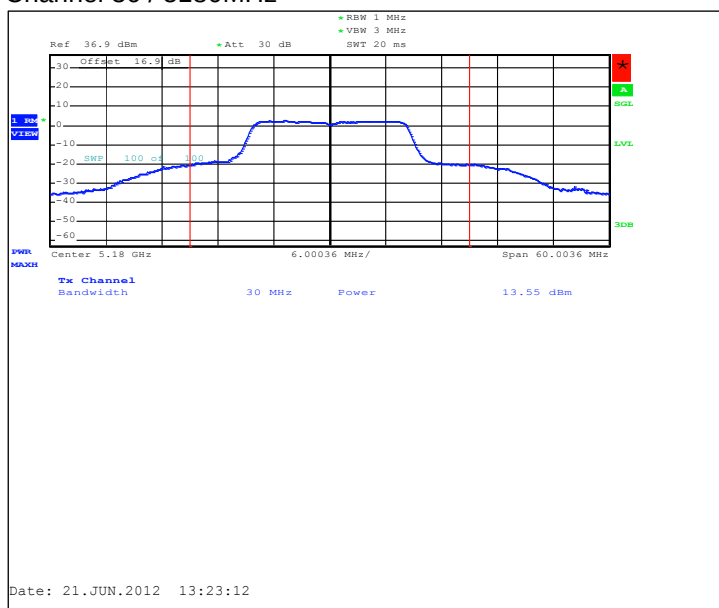
Channel 36 / 5180MHz



4.3.2 OFDM mode, BPSK modulation, 9 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	13.55	22.646	PASSED

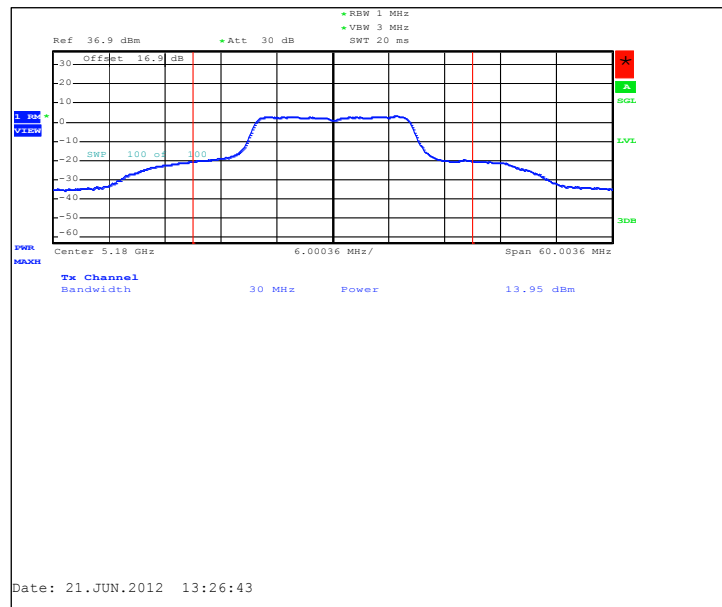
Channel 36 / 5180MHz



4.3.3 OFDM mode, BPSK modulation, 12 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	13.95	24.831	PASSED

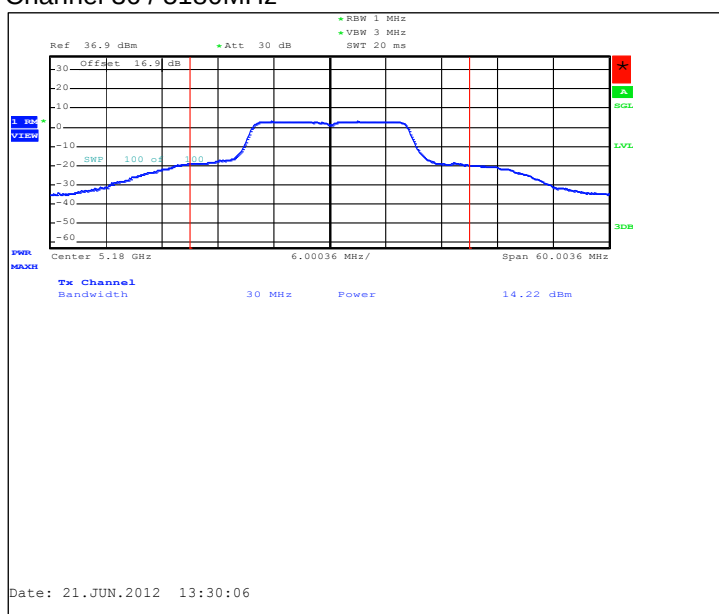
36 / 5180



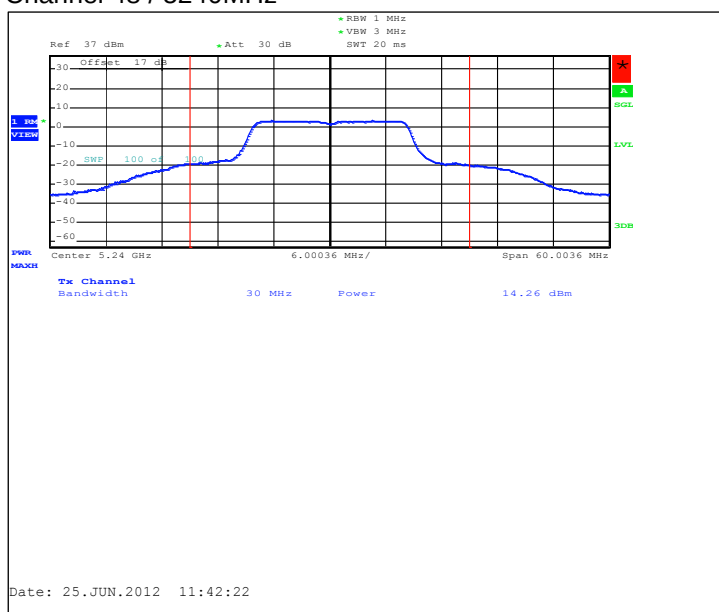
4.3.4 OFDM mode, BPSK modulation, 18 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	14.22	26.424	PASSED
48 / 5240	14.26	26.669	PASSED
52 / 5260	14.23	26.485	PASSED
64 / 5320	14.3	26.915	PASSED
100 / 5500	14.06	25.468	PASSED
116 / 5580	13.99	25.061	PASSED
140 / 5700	14.02	25.235	PASSED

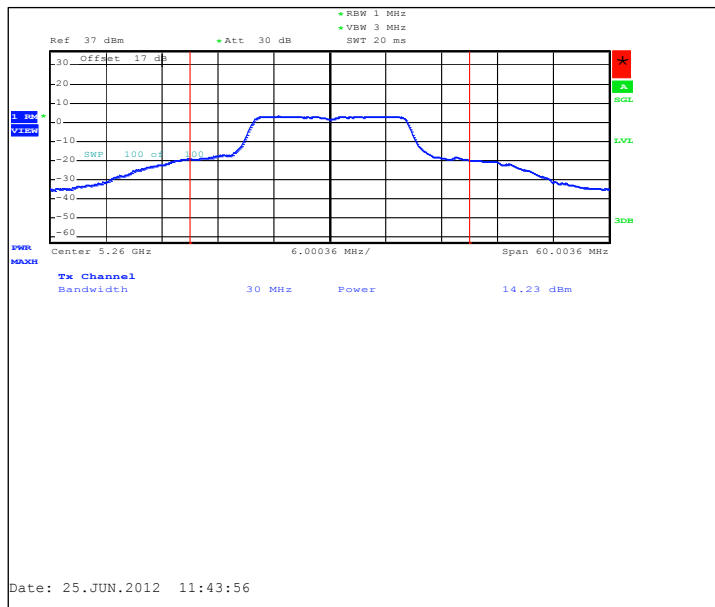
Channel 36 / 5180MHz



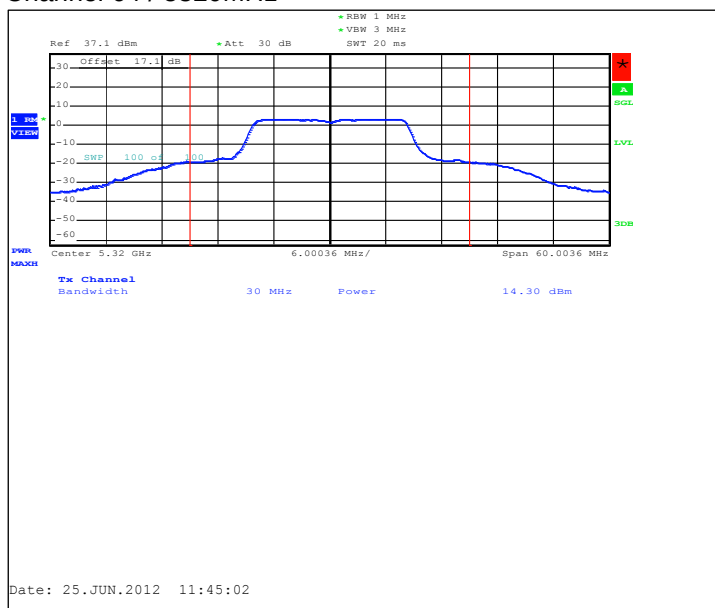
Channel 48 / 5240MHz



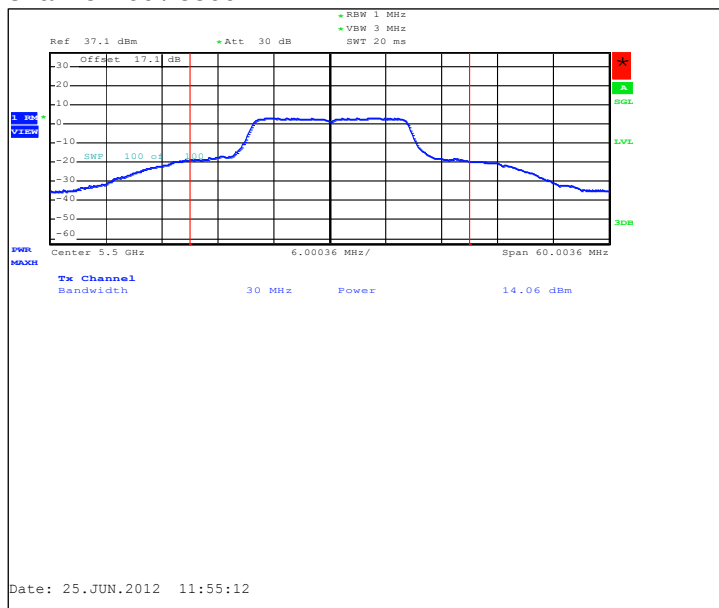
Channel 52 / 5260MHz



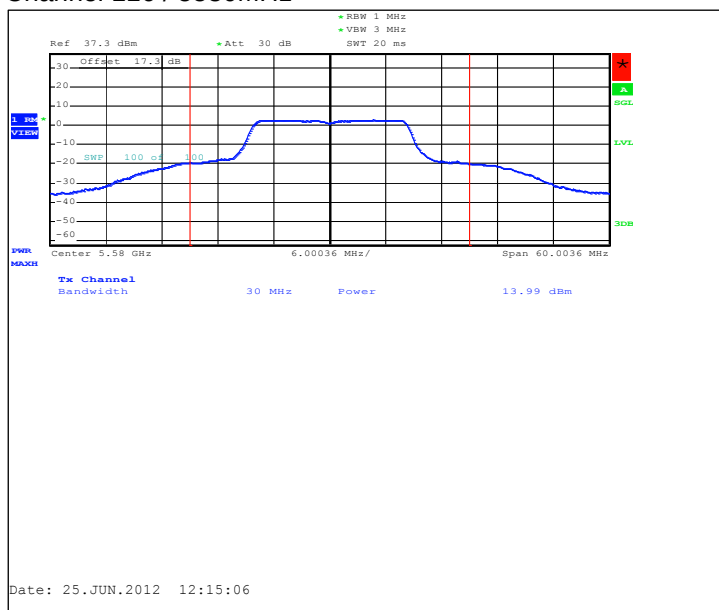
Channel 64 / 5320MHz



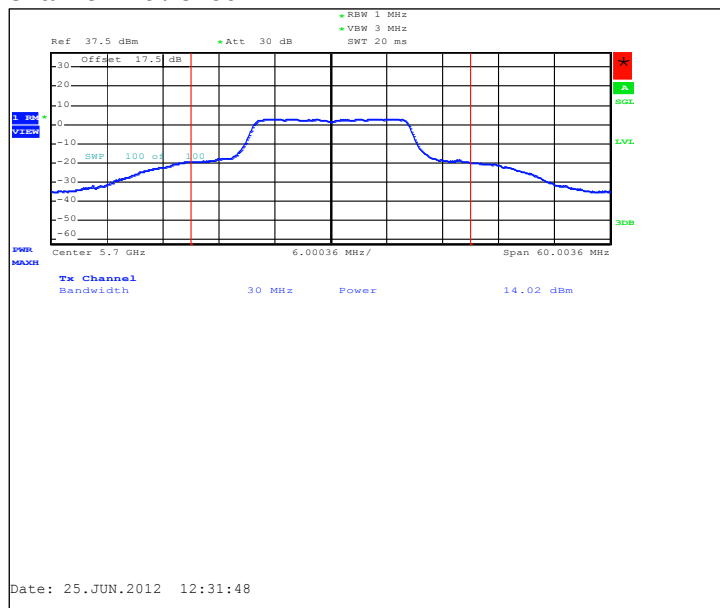
Channel 100 / 5500MHz



Channel 116 / 5580MHz



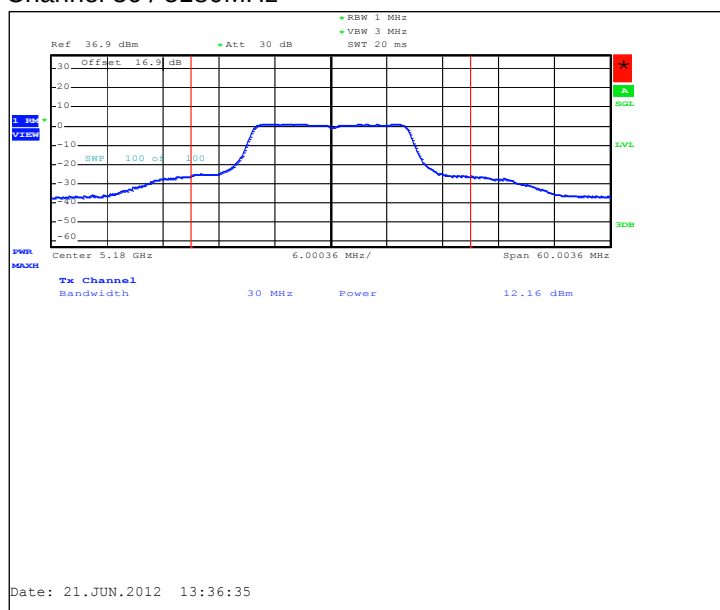
Channel 140 / 5700MHz



4.3.5 OFDM mode, BPSK modulation, 24 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	12.16	16.444	PASSED

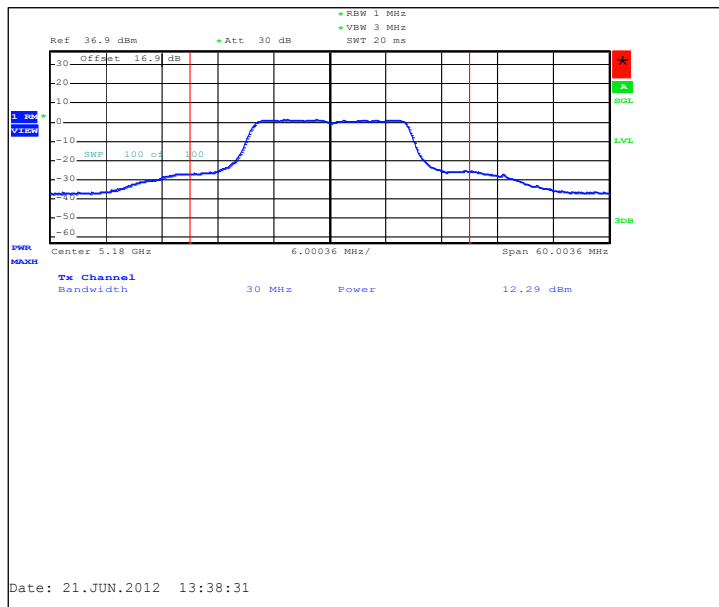
Channel 36 / 5180MHz



4.3.6 OFDM mode, BPSK modulation, 36 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	12.29	16.943	PASSED

Channel 36 / 5180MHz



4.3.7 OFDM mode, BPSK modulation, 48 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	11.33	13.583	PASSED

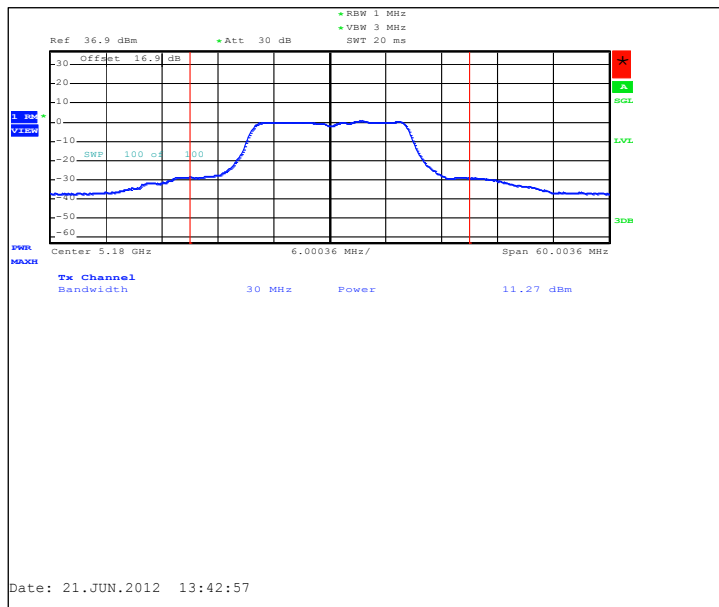
Channel 36 / 5180MHz



4.3.8 OFDM mode, BPSK modulation, 54.0 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	11.27	13.397	PASSED

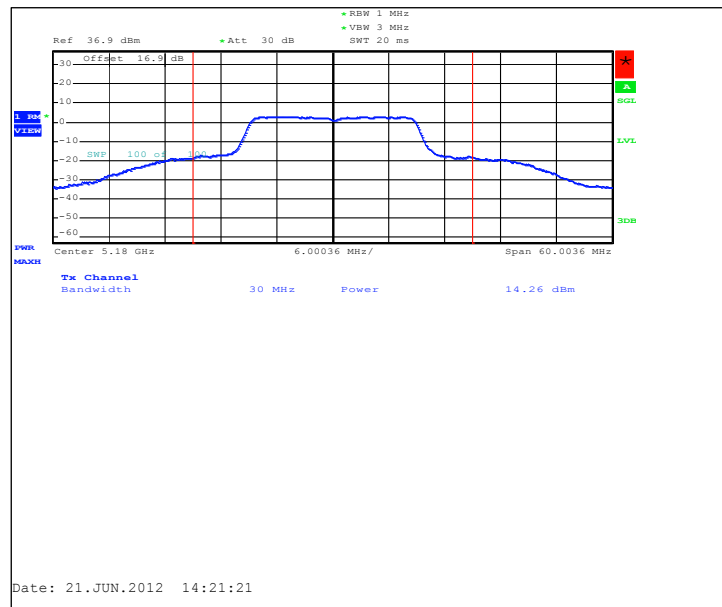
Channel 36 / 5180MHz



4.3.9 n-mode 20 CBW mode, BPSK modulation, 6.5 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	14.26	26.669	PASSED

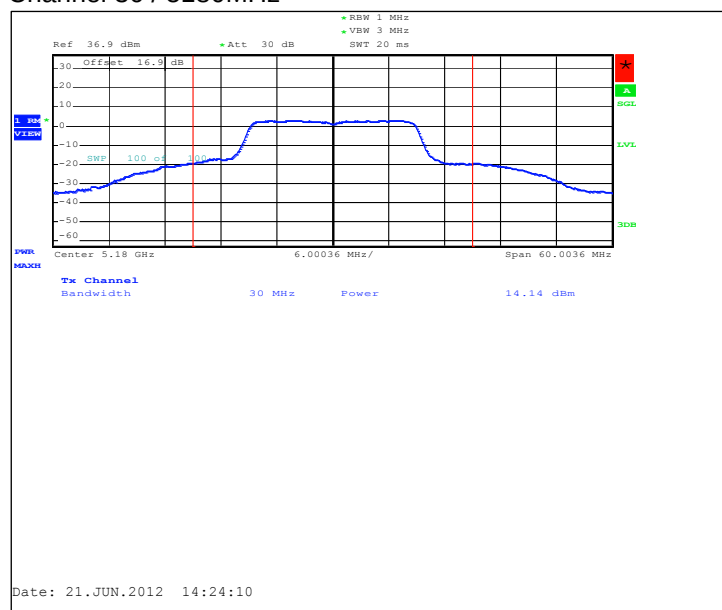
Channel 36 / 5180MHz



4.3.10 n-mode 20 CBW mode, QPSK modulation, 13.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	14.14	25.942	PASSED

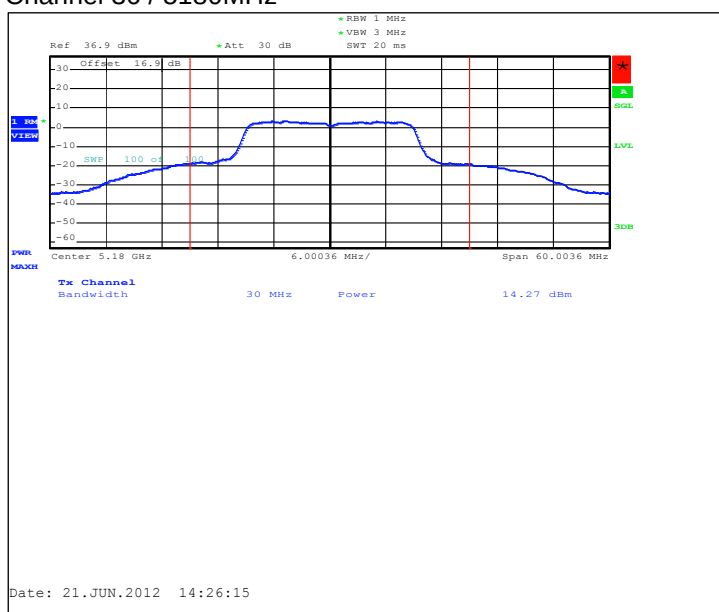
Channel 36 / 5180MHz



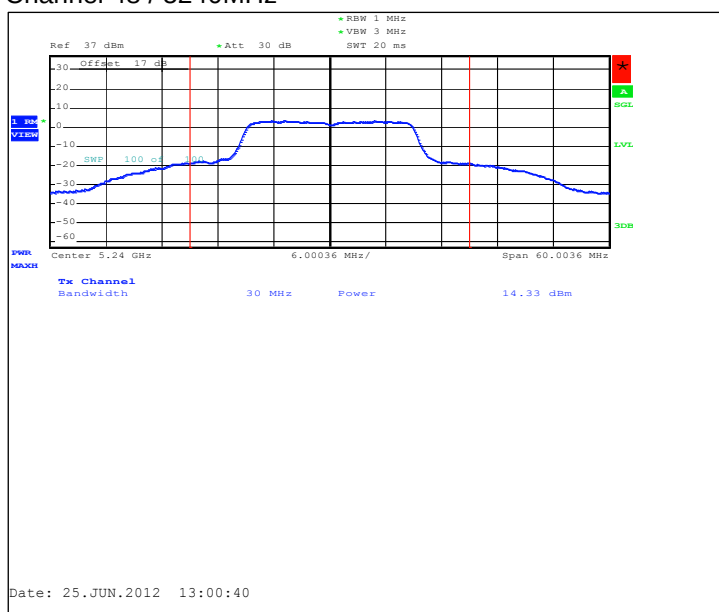
4.3.11 n-mode 20 CBW mode, QPSK modulation, 19.5 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	14.27	26.73	PASSED
48 / 5240	14.33	27.102	PASSED
52 / 5260	13.91	24.604	PASSED
64 / 5320	14.14	25.942	PASSED
100 / 5500	14.19	26.242	PASSED
116 / 5580	14.18	26.182	PASSED
140 / 5700	13.63	23.067	PASSED

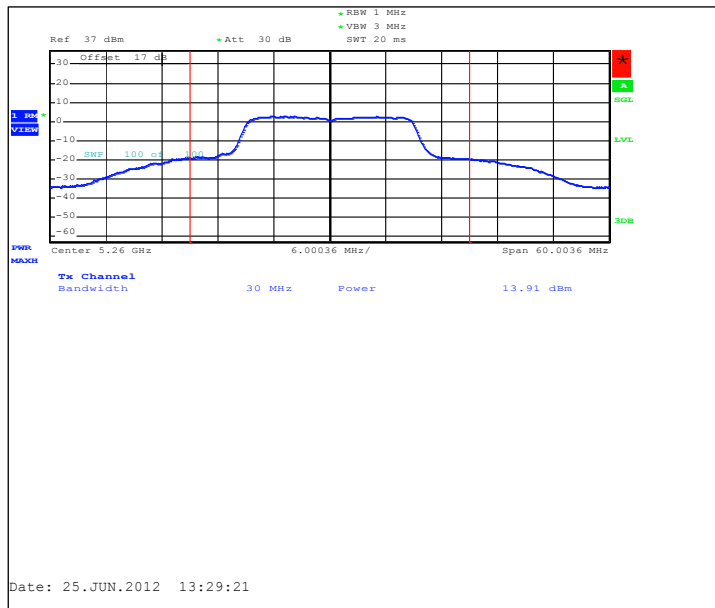
Channel 36 / 5180MHz



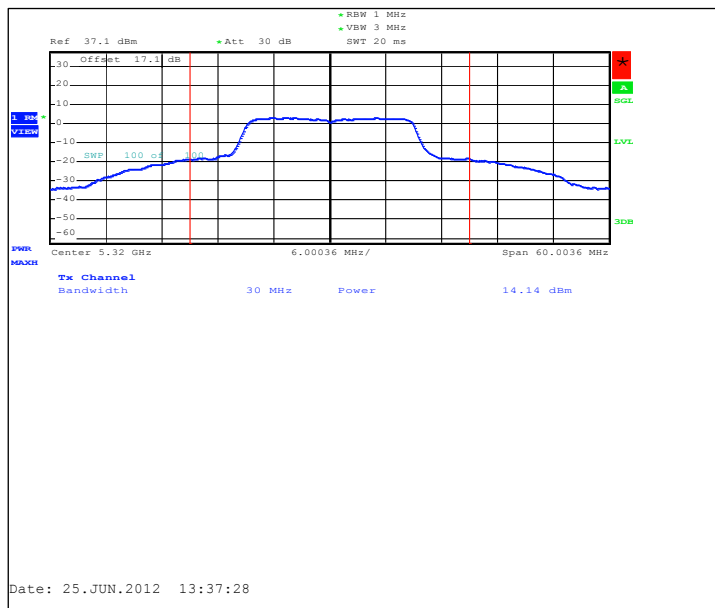
Channel 48 / 5240MHz



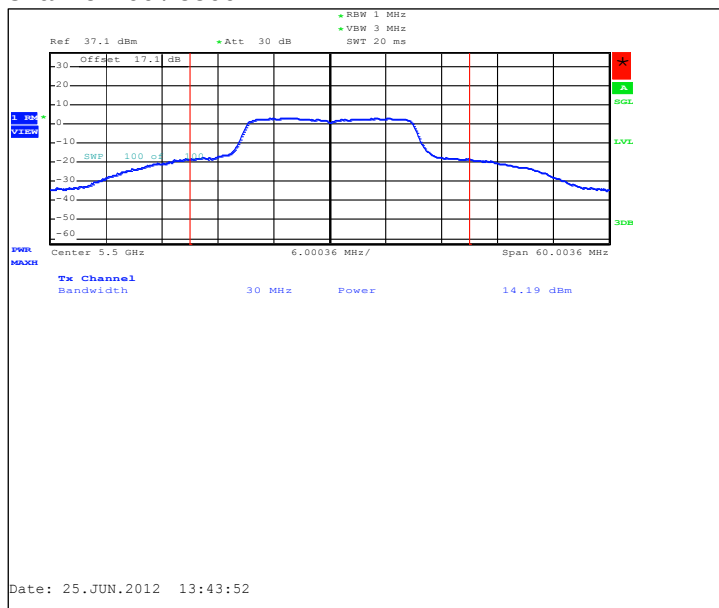
Channel 52 / 5260MHz



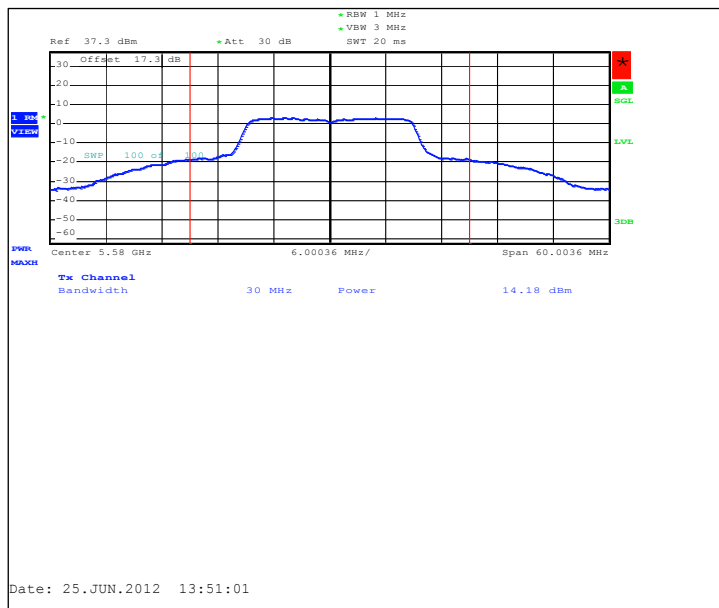
Channel 64 / 5320MHz



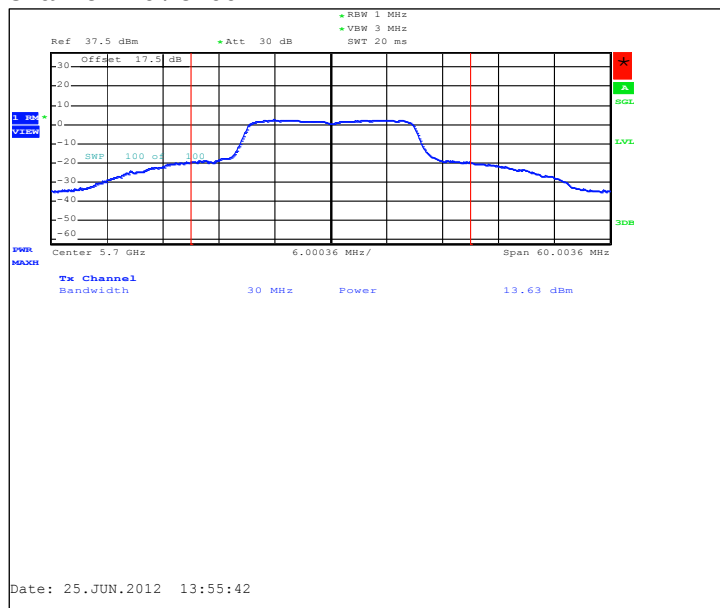
Channel 100 / 5500MHz



Channel 116 / 5580MHz



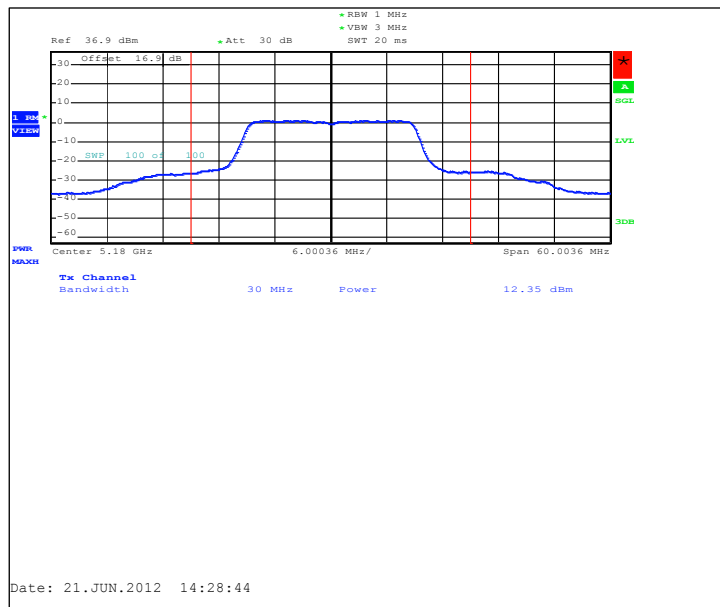
Channel 140 / 5700MHz



4.3.12 n-mode 20 CBW mode, 16-QAM modulation, 26.0 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	12.35	17.179	PASSED

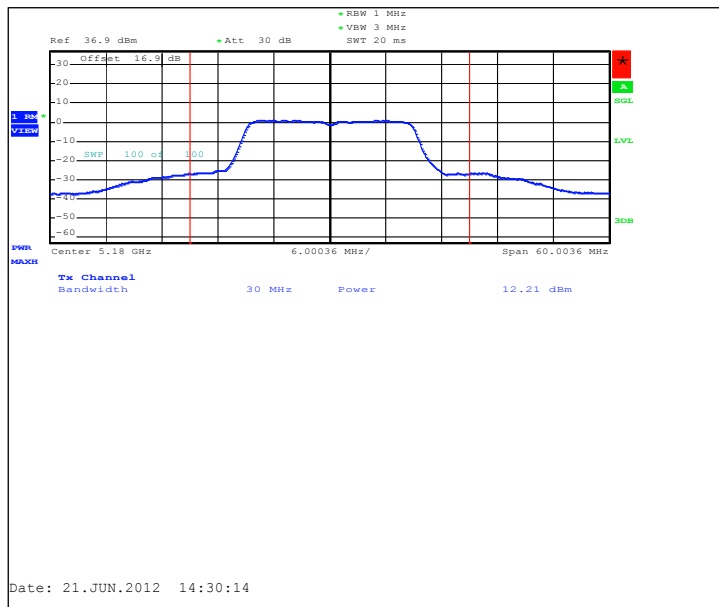
Channel 36 / 5180MHz



4.3.13 n-mode 20 CBW mode, 16-QAM modulation, 39.0 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	12.21	16.634	PASSED

Channel 36 / 5180MHz



4.3.14 n-mode 20 CBW mode, 64-QAM modulation, 52.0 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	11.23	13.274	PASSED

Channel 36 / 5180MHz



4.3.15 n-mode 20 CBW mode, 64-QAM modulation, 58.5 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	11.31	13.521	PASSED

Channel 36 / 5180MHz



4.3.16 n-mode 20 CBW mode, 64-QAM modulation, 65.0 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36 / 5180	10.34	10.814	PASSED

Channel 36 / 5180MHz



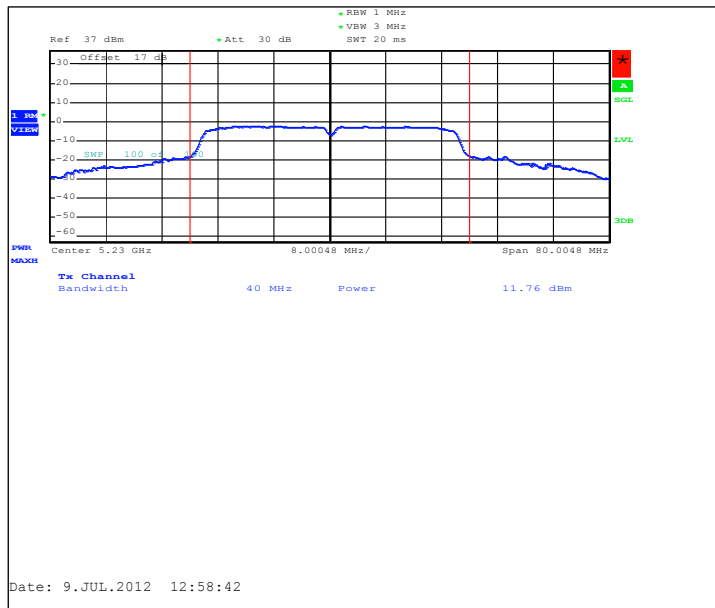
4.3.17 n-mode, 40 MHz CBW mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
36+40 / 5190	12.18	16.52	PASSED
44+48 / 5230	11.76	14.997	PASSED
52+56 / 5270	9.9	9.772	PASSED
60+64 / 5310	12.14	16.368	PASSED
100+104 / 5510	12.01	15.885	PASSED
108+112 / 5550	12.02	15.922	PASSED
132+136 / 5670	11.53	14.223	PASSED

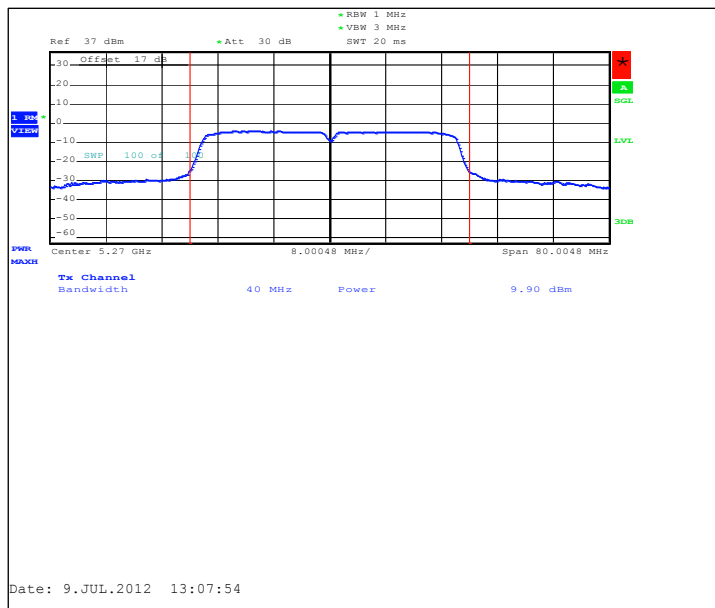
Channel 36+40 / 5190MHz



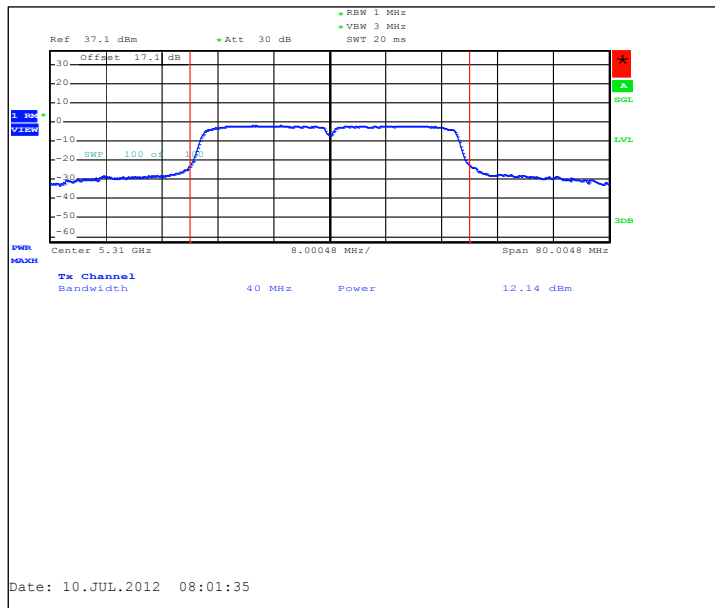
Channel 44+48 / 5230MHz



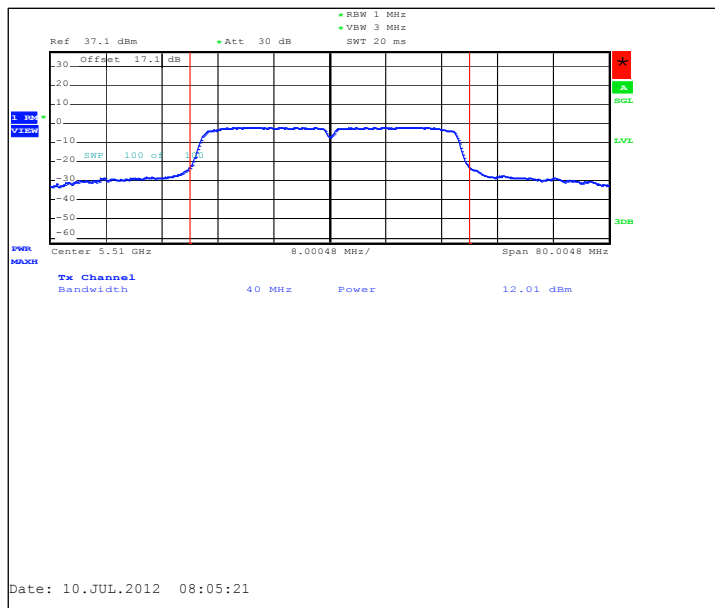
Channel 52+56 / 5270MHz



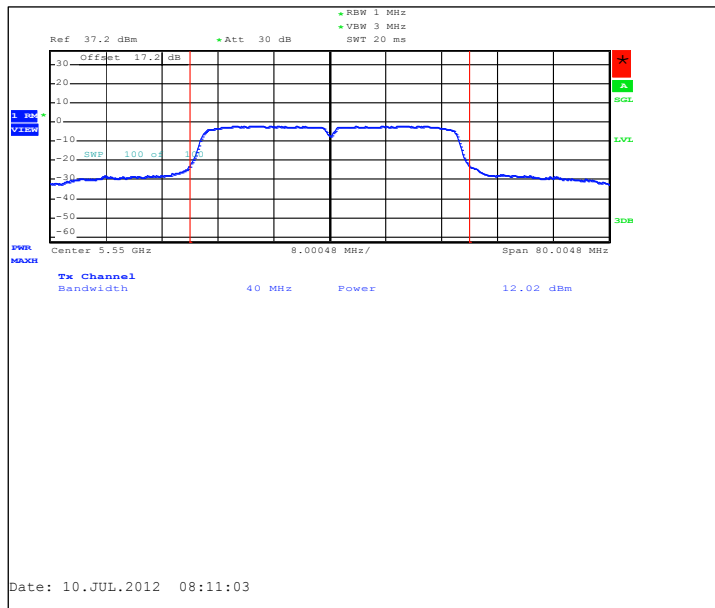
Channel 60+64 / 5310MHz



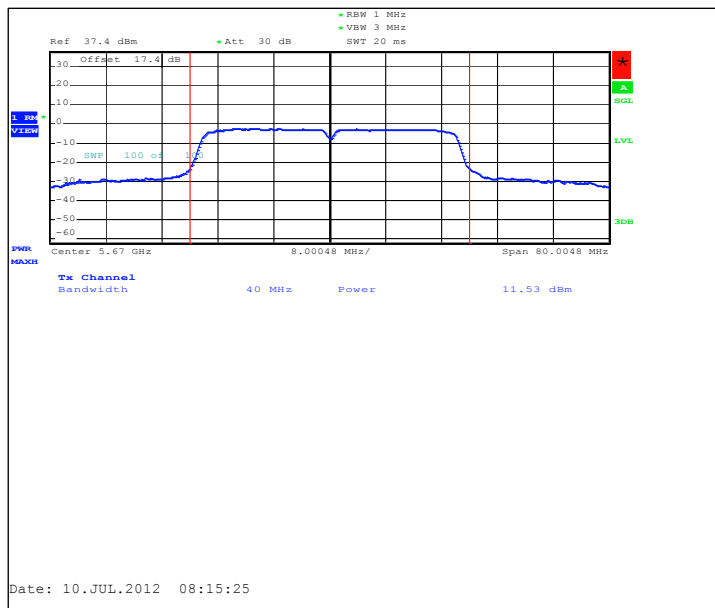
Channel 100+104 / 5510MHz



Channel 108+112 / 5550MHz



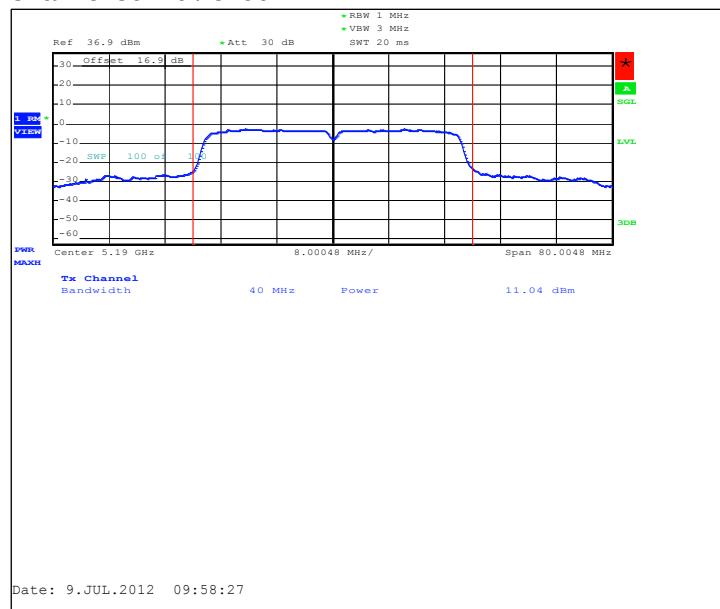
Channel 132+136 / 5670MHz



4.3.18 n-mode, 40 MHz CBW mode, QPSK modulation, 27.0 / 30.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
36+40 / 5190	11.04	12.706	PASSED

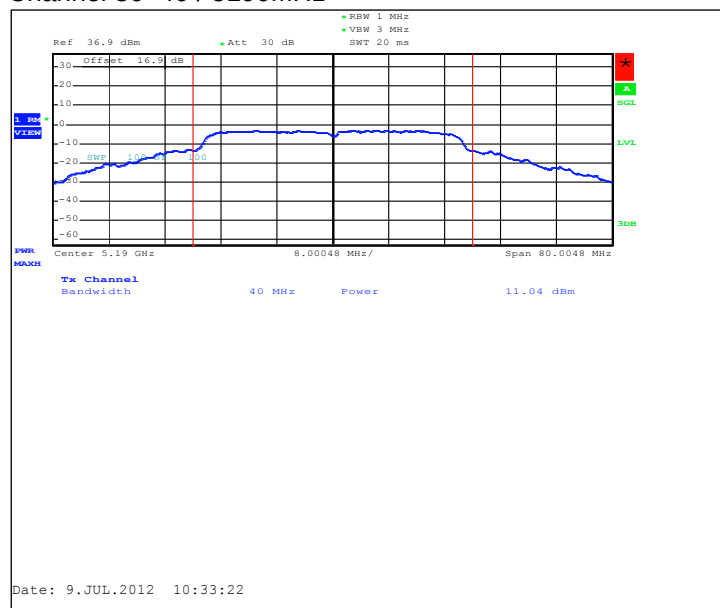
Channel 36+40 / 5190MHz



4.3.19 n-mode, 40 MHz CBW mode, QPSK modulation, 40.5 / 45.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
36+40 / 5190	11.04	12.706	PASSED

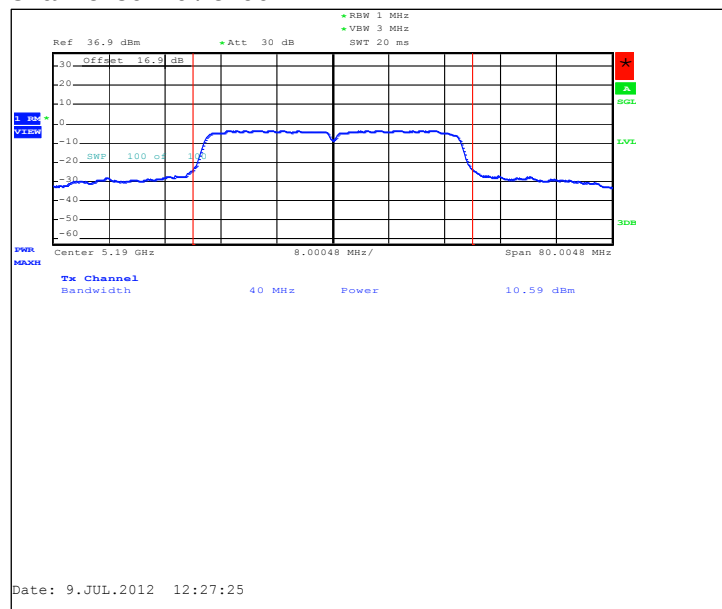
Channel 36+40 / 5190MHz



4.3.20 n-mode, 40 MHz CBW mode, 16-QAM modulation, 54.0 / 60.0 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36+40 / 5190	10.59	11.455	PASSED

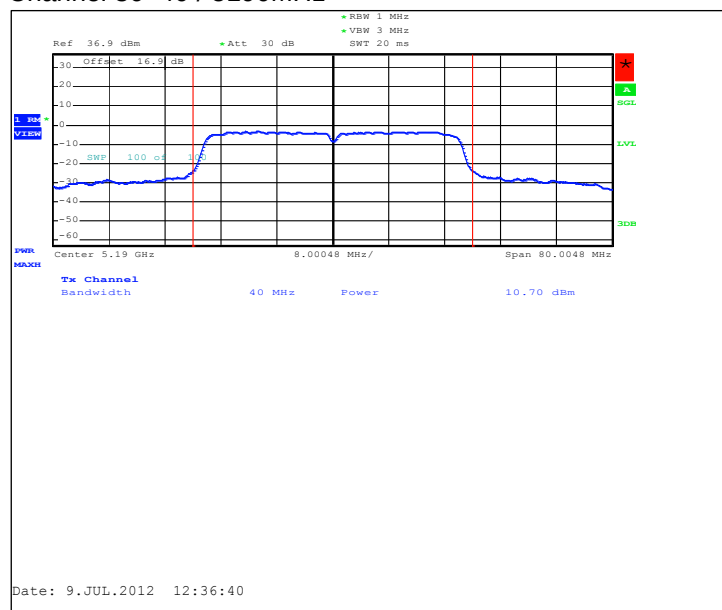
Channel 36+40 / 5190MHz



4.3.21 n-mode, 40 MHz CBW mode, 16-QAM modulation, 81.0 / 90.0 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36+40 / 5190	10.7	11.749	PASSED

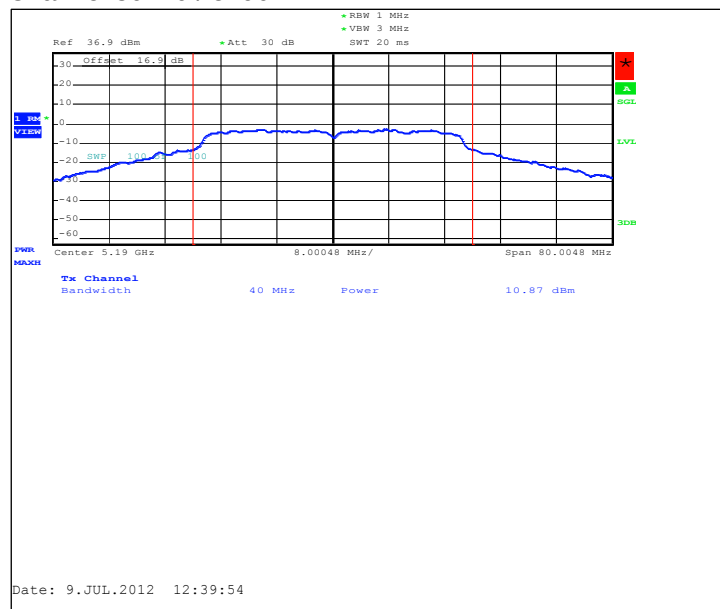
Channel 36+40 / 5190MHz



4.3.22 n-mode, 40 MHz CBW mode, 64-QAM modulation, 108.0 / 120.0 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36+40 / 5190	10.87	12.218	PASSED

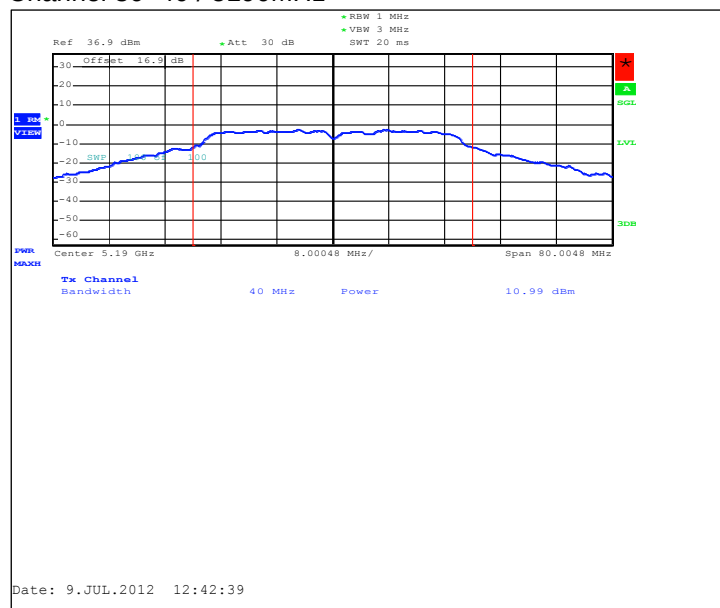
Channel 36+40 / 5190MHz



4.3.23 n-mode, 40 MHz CBW mode, 64-QAM modulation, 121.5 / 135.0 Mbps data rate

Channel / f_c [MHz]	P [dBm]	P [mW]	Result
36+40 / 5190	10.99	12.56	PASSED

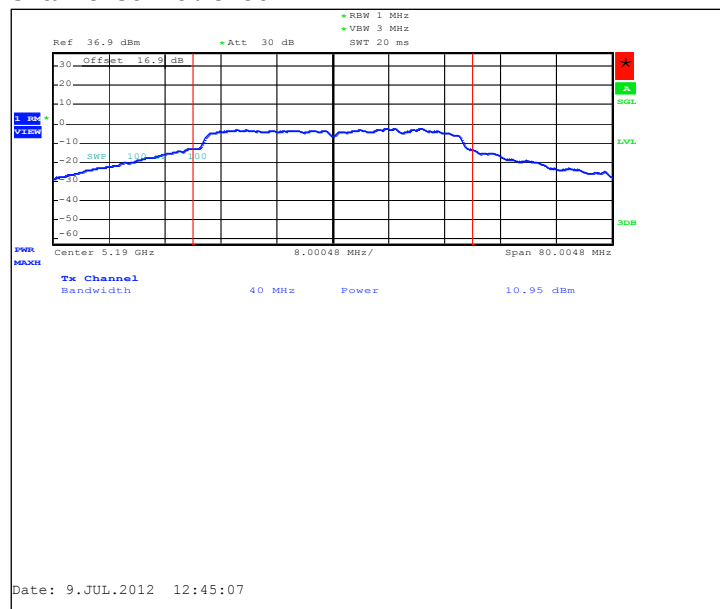
Channel 36+40 / 5190MHz



4.3.24 n-mode, 40 MHz CBW mode, 64-QAM modulation, 135.0 / 150.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
36+40 / 5190	10.95	12.445	PASSED

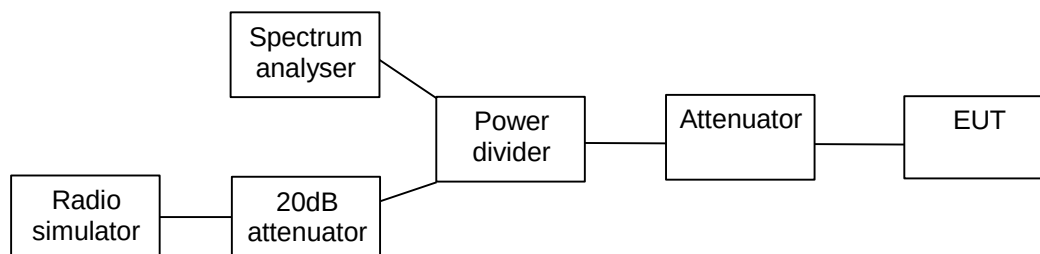
Channel 36+40 / 5190MHz



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

EUT with DUT number	RM-820, DUT 16487
Accessories with DUT numbers	BP-4GW, DUT 16488; AC-50U, DUT 16340 ; WH-208, DUT 16344
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 45 / 101
Date of measurements	21-Jun-2012
Measured by	Tomi Lipponen

5.1. Test Setup



5.2. 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

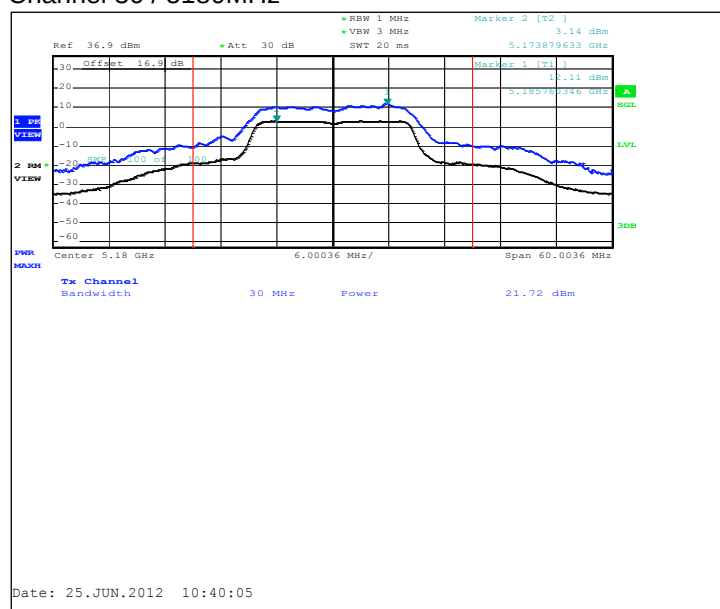
Limit [dB]
≤ 13

5.3. 5 GHz RLAN Test results

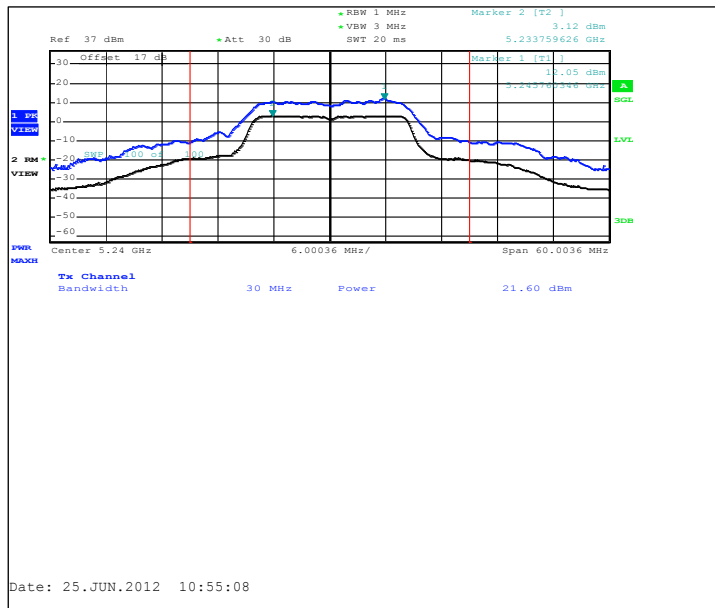
5.3.1 OFDM mode, BPSK modulation, 18 Mbps data rate

Channel / f _c [MHz]	Peak excursion [dB]	Result
36 / 5180	8.97	PASSED
48 / 5240	8.93	PASSED
52 / 5260	9	PASSED
64 / 5320	9.41	PASSED
100 / 5500	9.37	PASSED
116 / 5580	9.06	PASSED
140 / 5700	8.98	PASSED

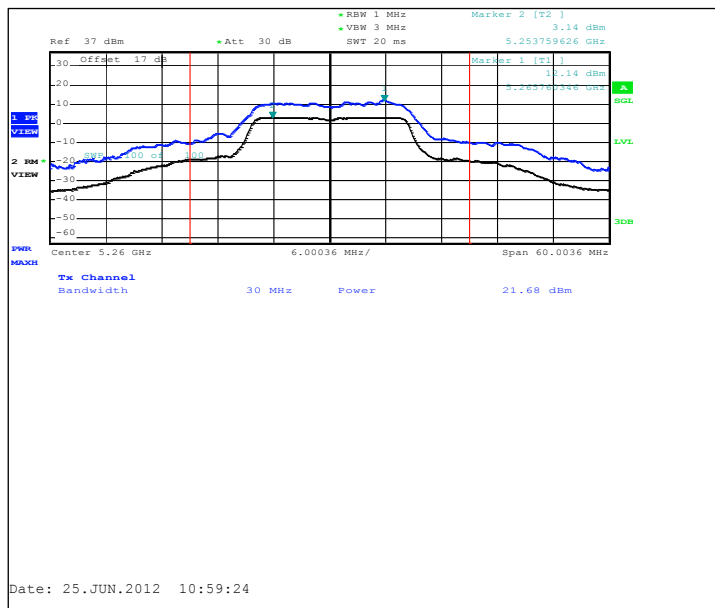
Channel 36 / 5180MHz



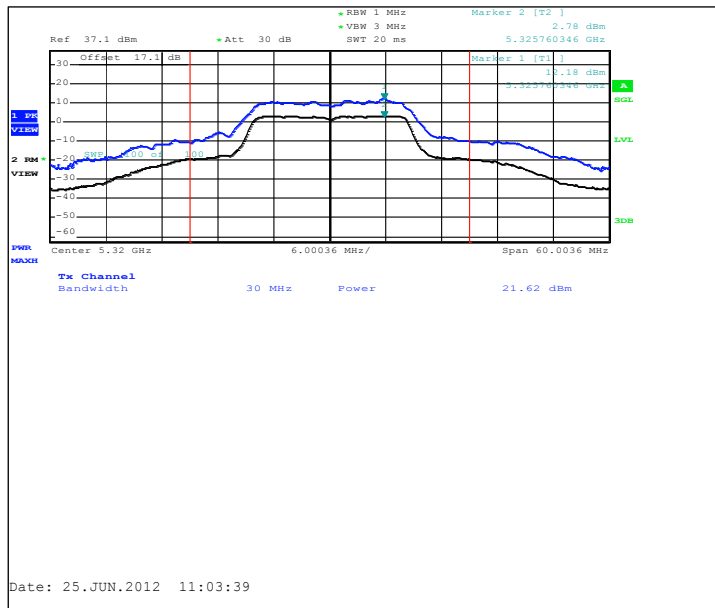
Channel 48 / 5240MHz



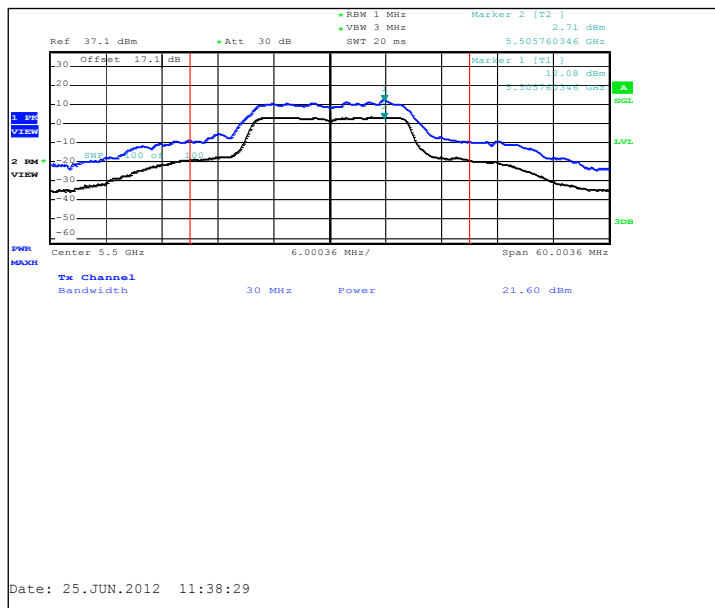
Channel 52 / 5260MHz



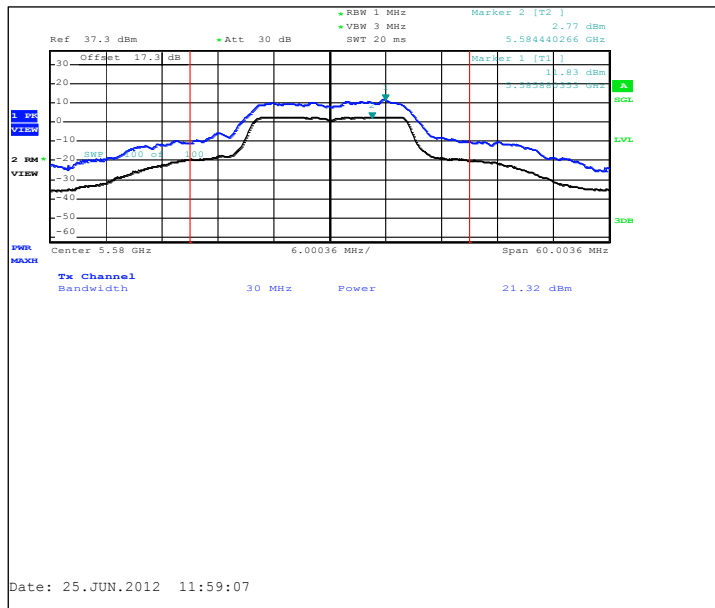
Channel 64 / 5320MHz



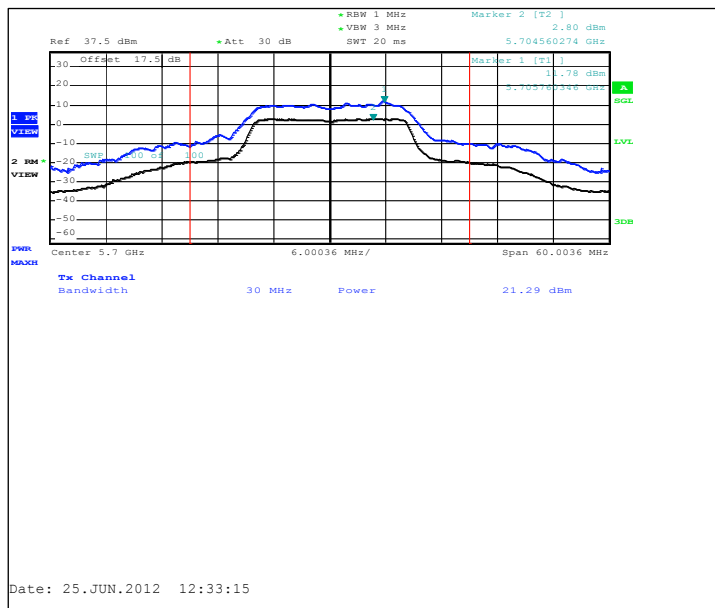
Channel 100 / 5500MHz



Channel 116 / 5580MHz



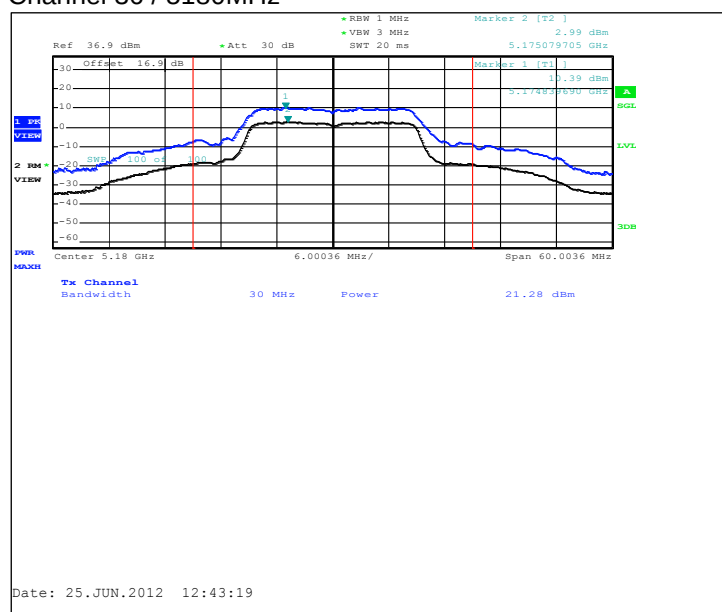
Channel 140 / 5700MHz



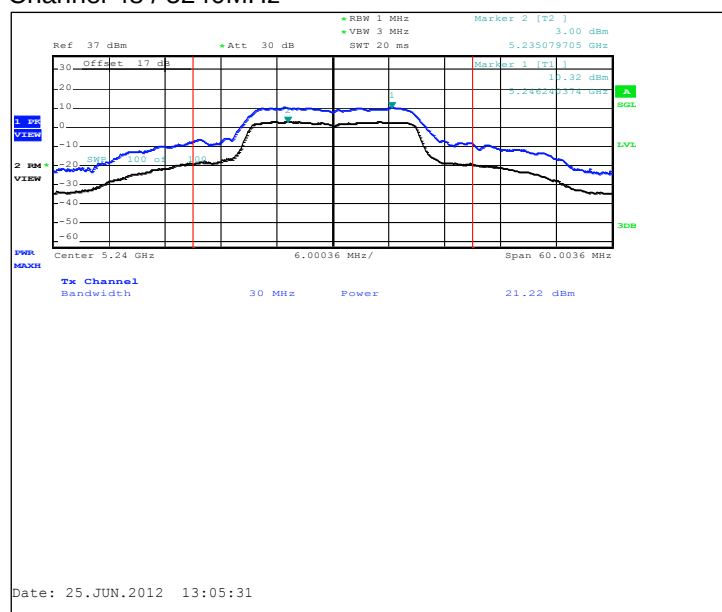
5.3.2 n-mode, 20 MHz CBW mode, QPSK modulation, 19.5 / 21.7 Mbps data rate

Channel / f _c [MHz]	Peak excursion [dB]	Result
36 / 5180	7.4	PASSED
48 / 5240	7.32	PASSED
52 / 5260	7.38	PASSED
64 / 5320	7.44	PASSED
100 / 5500	7.47	PASSED
116 / 5580	7.47	PASSED
140 / 5700	7.33	PASSED

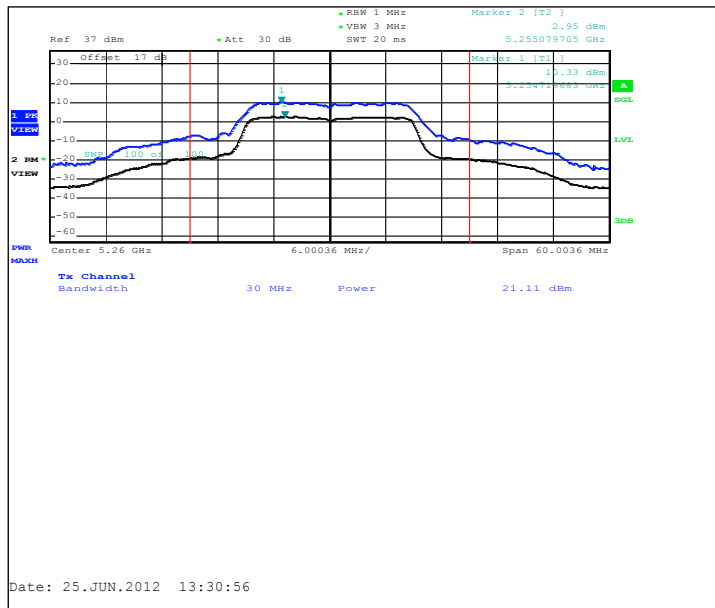
Channel 36 / 5180MHz



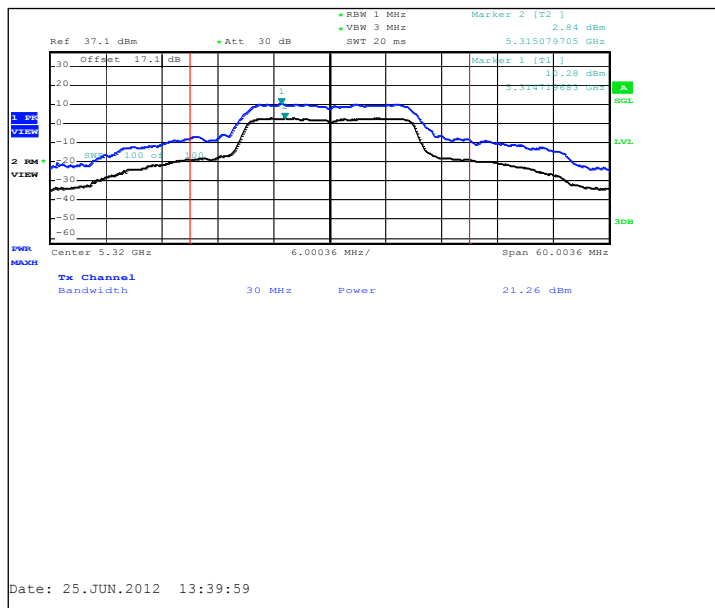
Channel 48 / 5240MHz



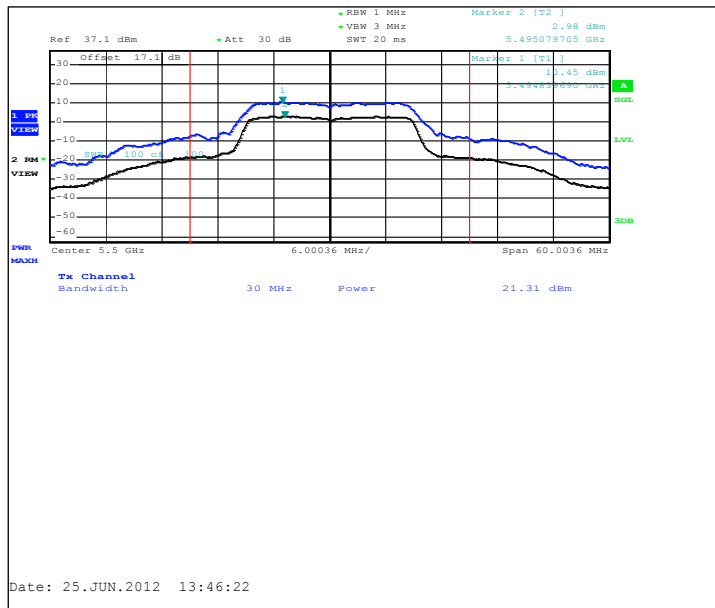
Channel 52 / 5260MHz



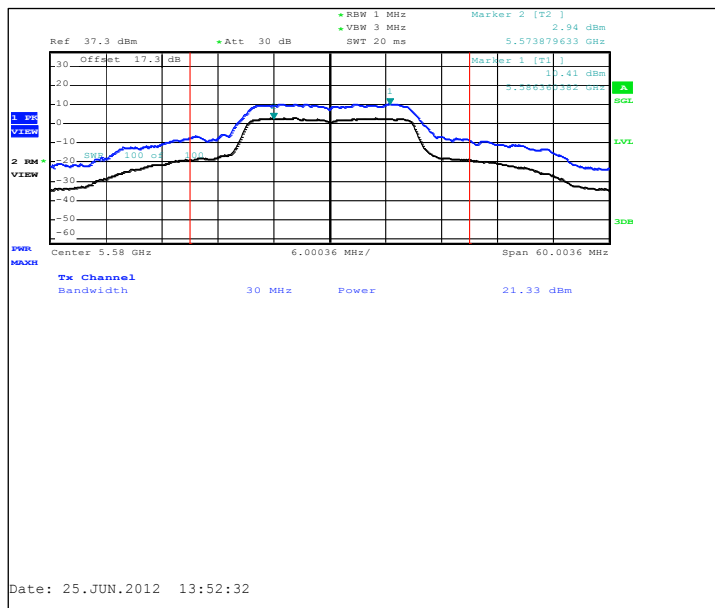
Channel 64 / 5320MHz



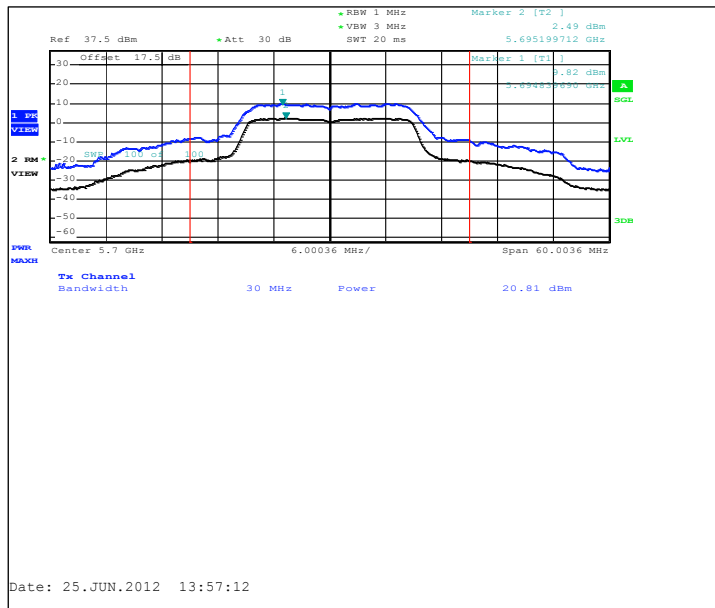
Channel 100 / 5500MHz



Channel 116 / 5580MHz



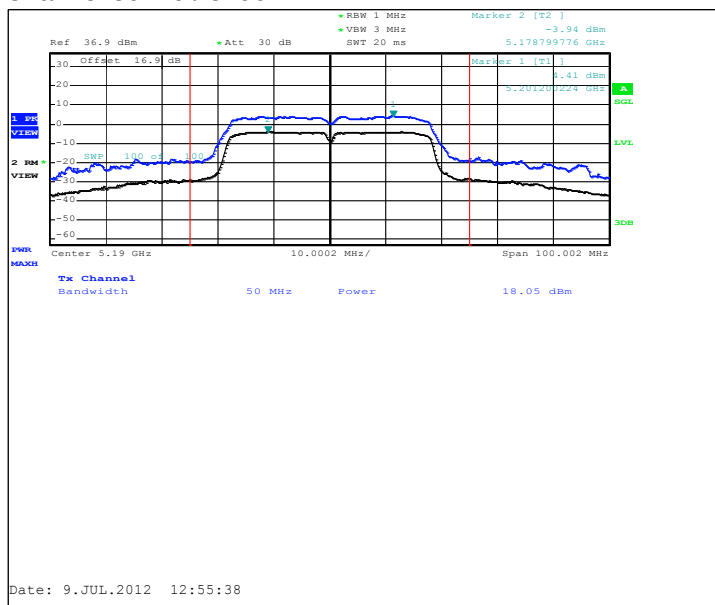
Channel 140 / 5700MHz



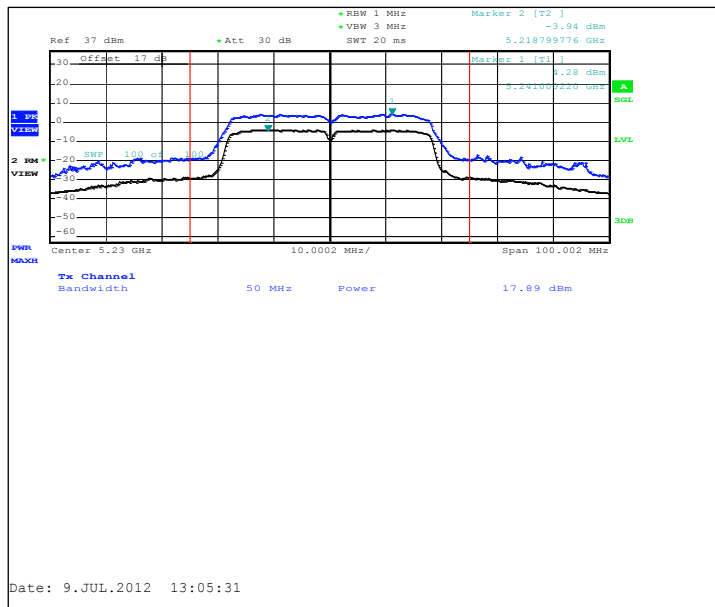
5.3.3 n-mode, 40 MHz CBW mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f_c [MHz]	Peak excursion [dB]	Result
36+40 / 5190	8.35	PASSED
44+48 / 5230	8.22	PASSED
52+56 / 5270	8.29	PASSED
60+64 / 5310	8.51	PASSED
100+104 / 5510	8.47	PASSED
108+112 / 5550	8.31	PASSED
132+136 / 5670	8.18	PASSED

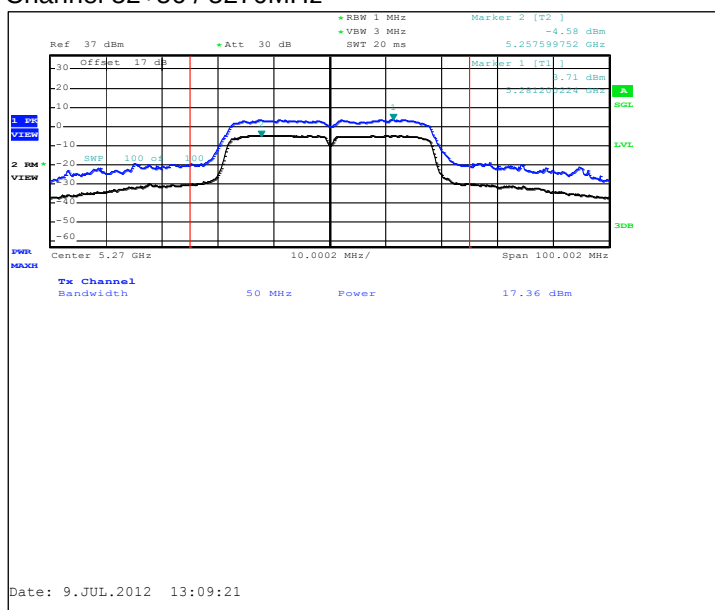
Channel 36+40 / 5190MHz



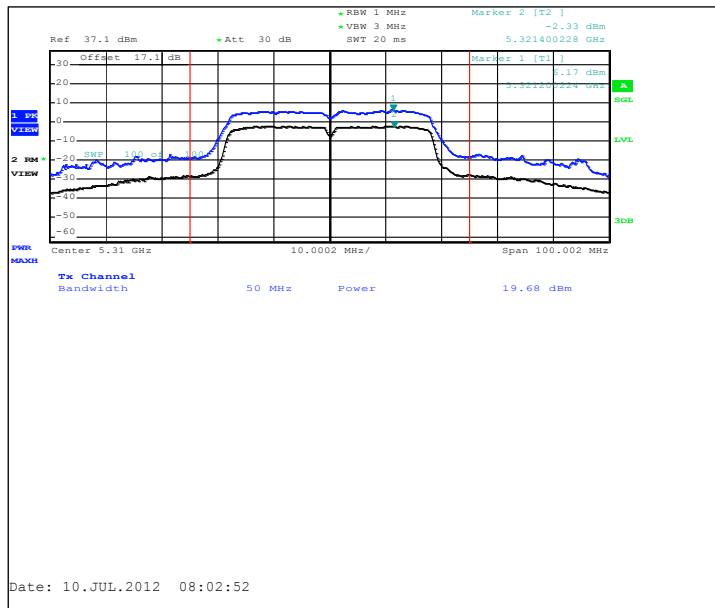
Channel 44+48 / 5230MHz



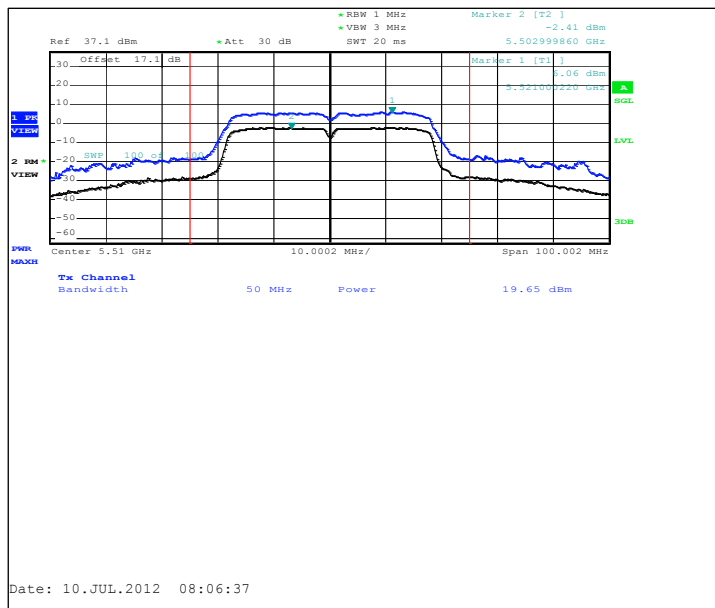
Channel 52+56 / 5270MHz



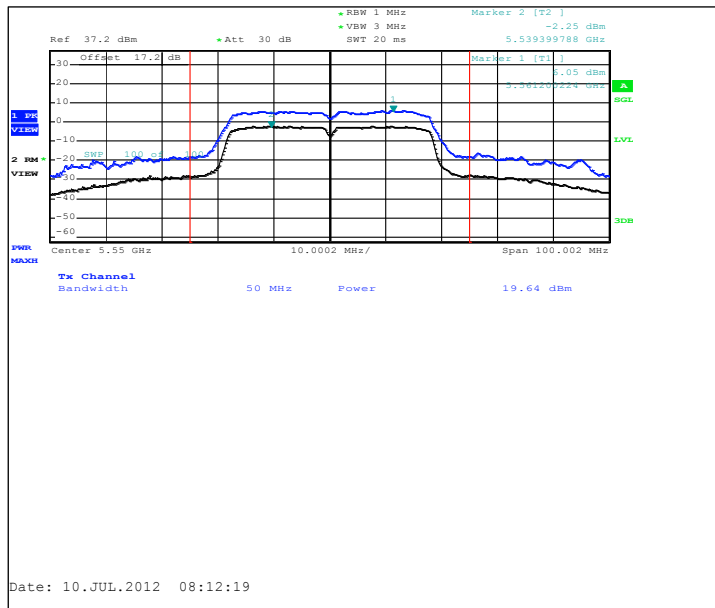
Channel 60+64 / 5310MHz



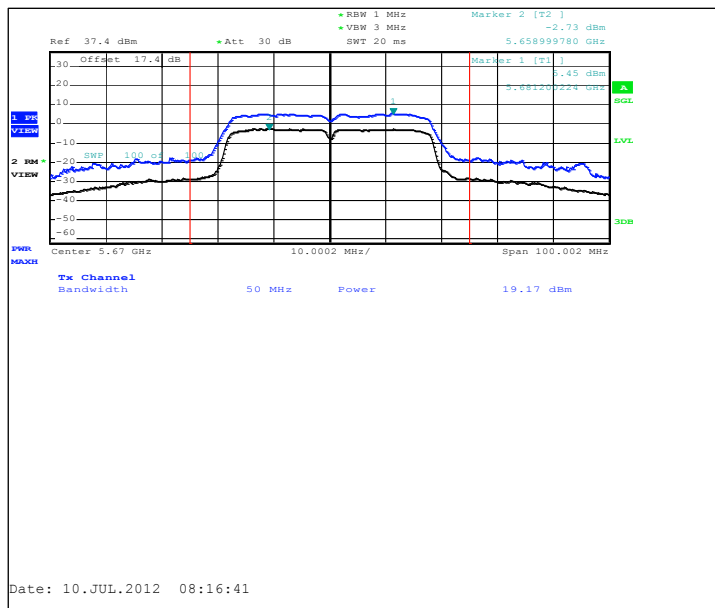
Channel 100+104 / 5510MHz



Channel 108+112 / 5550MHz



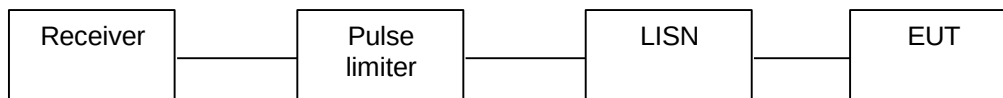
Channel 132+136 / 5670MHz



6. AC powerline conducted emissions (FCC §15.407 (b) (6), RSS-210 A9.2)

EUT with DUT number	RM-820, DUT 16489
Accessories with DUT numbers	BP-4GW, DUT 16488; AC-50U, DUT 16340 ; WH-208, DUT 16344
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 45 / 101
Date of measurements	21-Jun-2012
Measured by	Tomi Lipponen

6.1. Test Setup



6.2. Test method and limit

The measurement is made as follows:

The EUT is placed on a wooden table 80 cm above the reference groundplane.

The EUT is connected via LISN to a test power supply.

The measurement results are obtained as described below:

$$U [dB\mu V] = U_{RX} + A_{TOT}$$

Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable and pulse limiter attenuations.

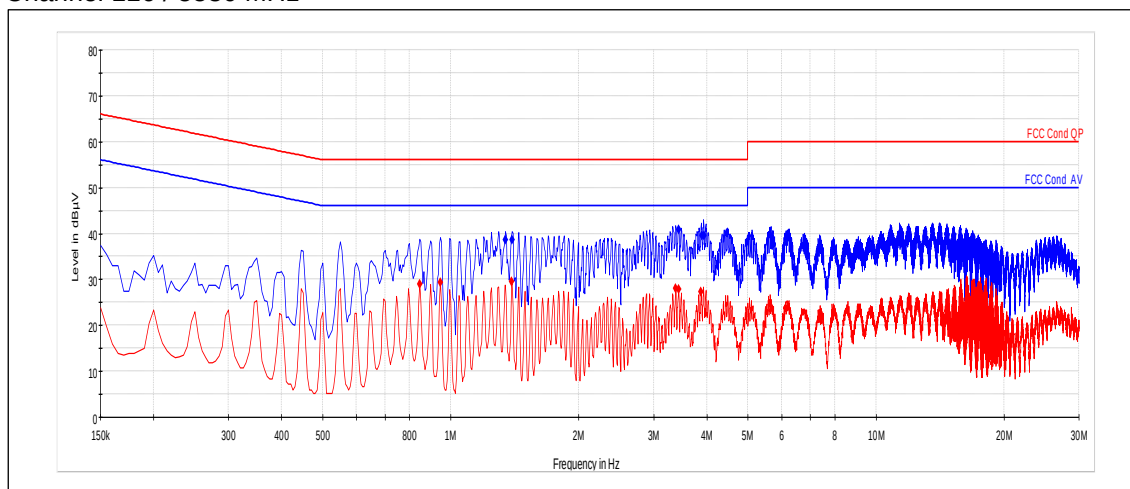
CISPR 22 Class B limits

Frequency range [MHz]	Quasi peak limit [dBμV]	Average limit [dBμV]
0.15 - 0.5	66 - 56	56 - 46
0.5 - 5	56	46
5 - 30	60	50

6.3. 5 GHz RLAN Test results

6.3.1 OFDM mode, BPSK modulation, 18 Mbps data rate

Channel 116 / 5580 MHz



QuasiPeak (RBW: 9 kHz)

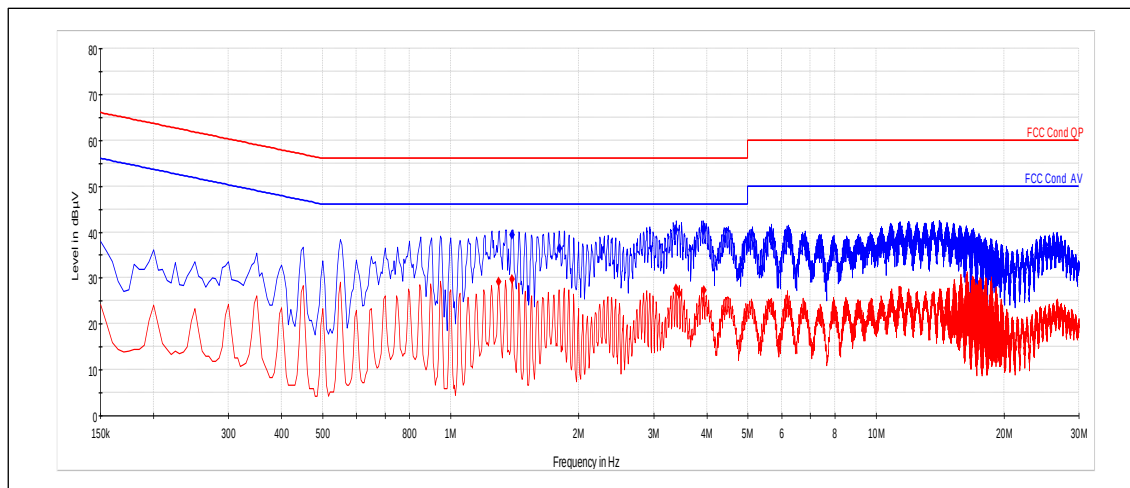
Frequency [MHz]	U [dBµV]	Line	Result
1.345	38.59	N	PASSED
1.395	38.65	N	PASSED
3.43	40.78	N	PASSED
3.89	39.59	N	PASSED
3.94	39.59	N	PASSED

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBµV]	Line	Result
0.845	28.96	N	PASSED
0.945	29.36	N	PASSED
1.39	29.57	N	PASSED
3.375	27.94	N	PASSED
3.43	27.77	N	PASSED
3.875	27.28	N	PASSED

6.3.2 n-mode mode, 20 MHz CBW mode, QPSK modulation, 19.5 / 21.7 Mbps data rate

Channel 116 / 5580 MHz



QuasiPeak (RBW: 9 kHz)

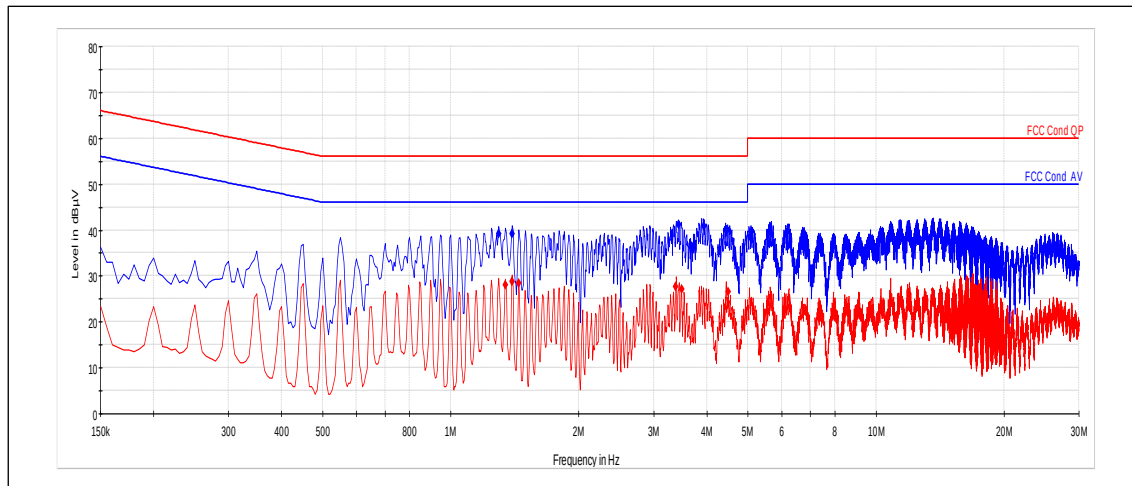
Frequency [MHz]	U [dBμV]	Line	Result
1.395	39.32	N	PASSED
1.8	36.34	N	PASSED
3.38	40.53	N	PASSED
3.93	40.35	N	PASSED
3.94	40.87	N	PASSED

Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
1.295	29.09	N	PASSED
1.395	29.77	N	PASSED
3.385	27.68	N	PASSED
3.44	26.47	N	PASSED
3.935	27.25	N	PASSED

6.3.3 n-mode mode, 40 MHz CBW mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel 108+112 / 5510 MHz



QuasiPeak (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
1.295	39.22	N	PASSED
1.395	39.19	N	PASSED
3.43	41.24	N	PASSED
3.94	40.9	N	PASSED

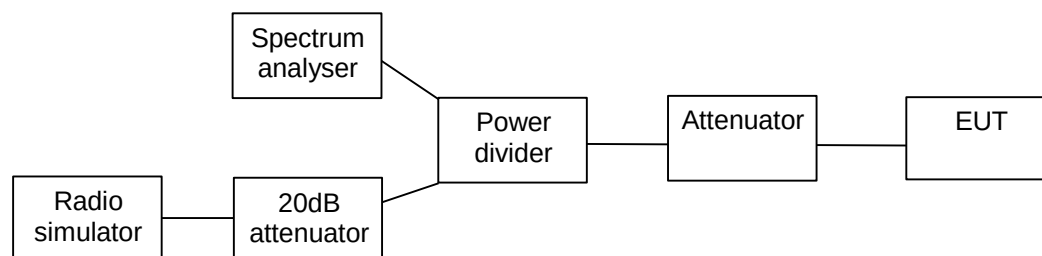
Average (RBW: 9 kHz)

Frequency [MHz]	U [dBμV]	Line	Result
1.345	27.99	N	PASSED
1.395	28.7	N	PASSED
1.445	28.33	N	PASSED
3.38	27.58	N	PASSED
3.49	27.05	N	PASSED
4.485	26.63	N	PASSED

7. 26 dB bandwidth

EUT with DUT number	RM-820, DUT 16487
Accessories with DUT numbers	BP-4GW, DUT 16488; AC-50U, DUT 16340 ; WH-208, DUT 16344
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 45 / 101
Date of measurements	21-Jun-2012
Measured by	Tomi Lipponen

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 26 dB bandwidth measurements

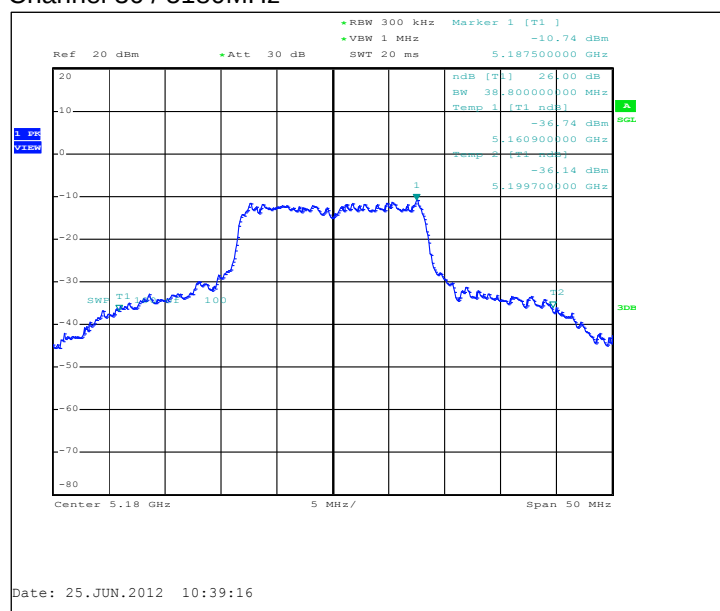
Limit [kHz]
No limit

7.3. 5 GHz RLAN Test results

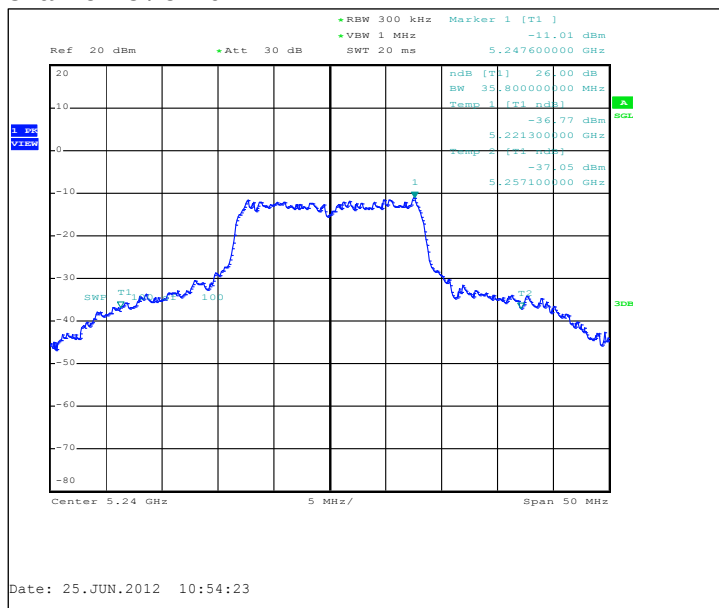
7.3.1 OFDM mode, BPSK modulation, 18 Mbps data rate

Channel / f _C [MHz]	26 dB bandwidth [kHz]	Result
36 / 5180	38800	PASSED
48 / 5240	35800	PASSED
52 / 5260	38900	PASSED
64 / 5320	37400	PASSED
100 / 5500	39100	PASSED
116 / 5580	38900	PASSED
140 / 5700	38400	PASSED

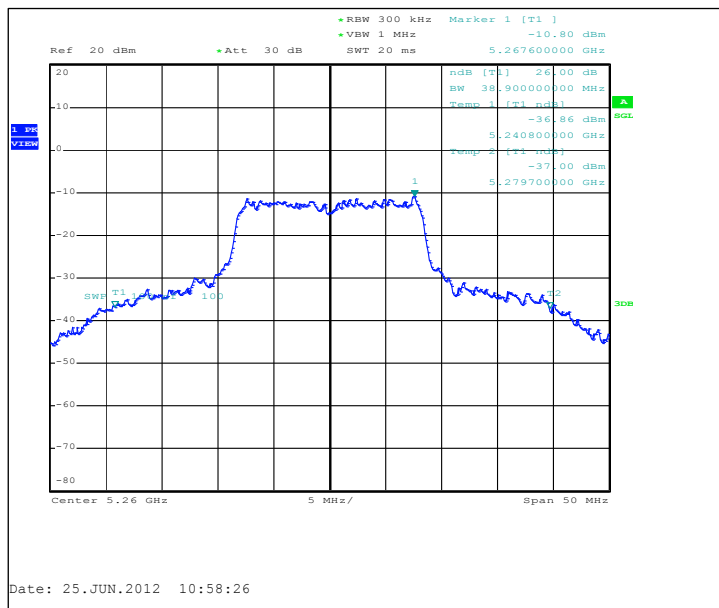
Channel 36 / 5180MHz



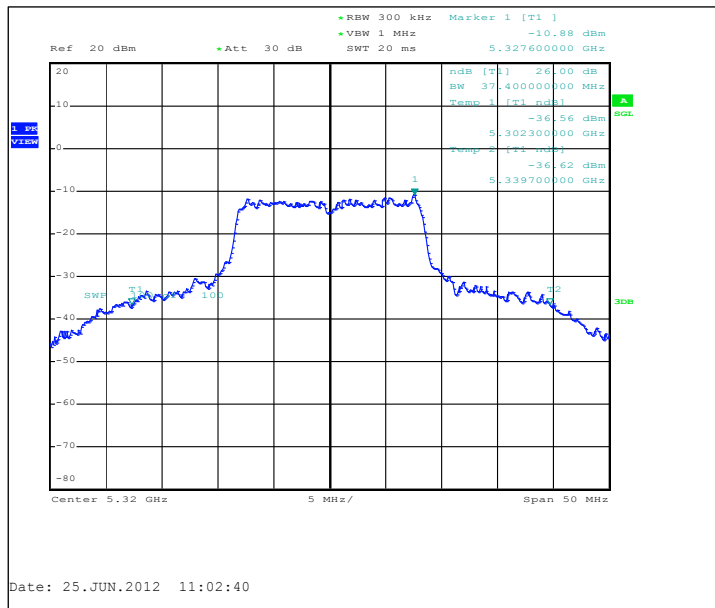
Channel 48 / 5240MHz



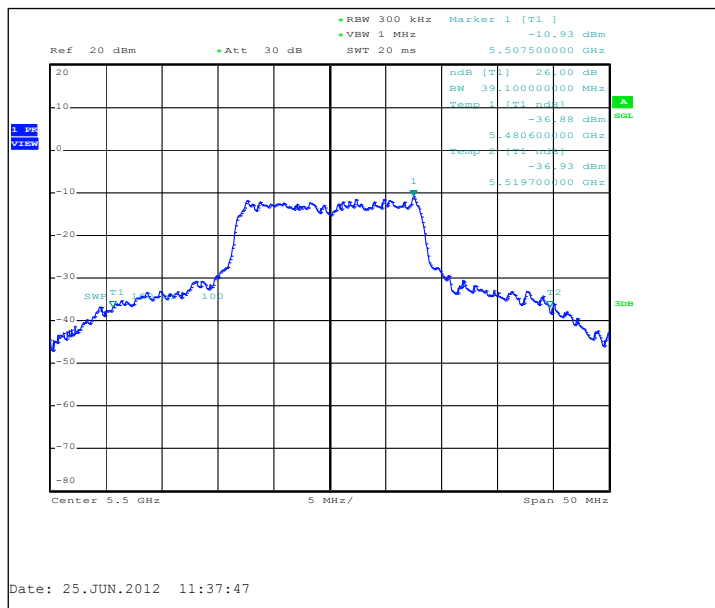
Channel 52 / 5260MHz



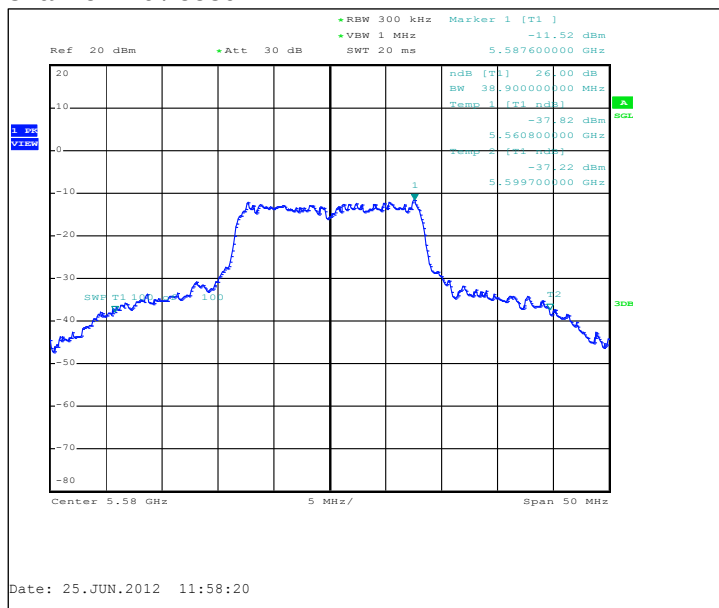
Channel 64 / 5320MHz



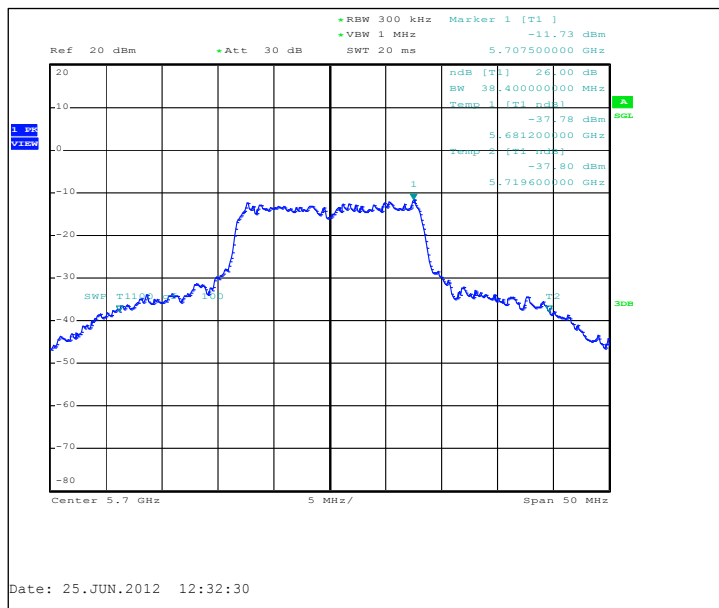
Channel 100 / 5500MHz



Channel 116 / 5580MHz



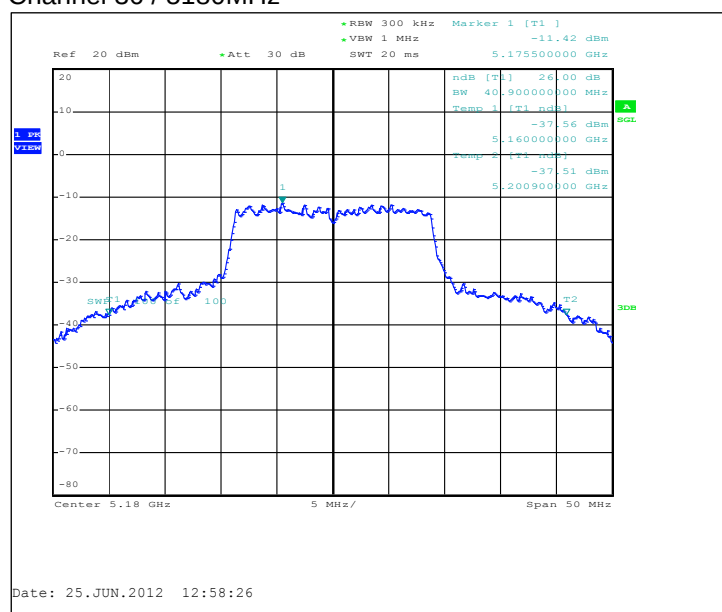
Channel 140 / 5700MHz



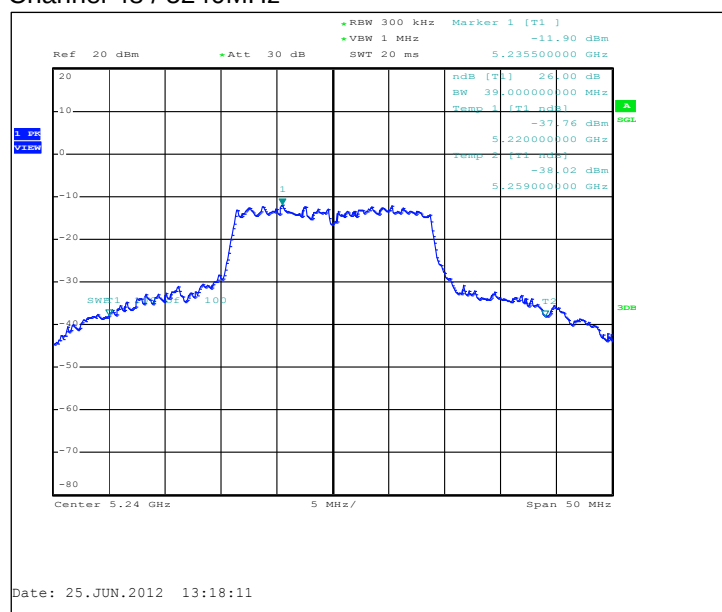
7.3.2 n-mode, 20 MHz CBW mode, QPSK modulation, 19.5 / 21.7 Mbps data rate

Channel / f _c [MHz]	26 dB bandwidth [kHz]	Result
36 / 5180	40900	PASSED
48 / 5240	39000	PASSED
52 / 5260	38600	PASSED
64 / 5320	41300	PASSED
100 / 5500	41500	PASSED
116 / 5580	41300	PASSED
140 / 5700	38500	PASSED

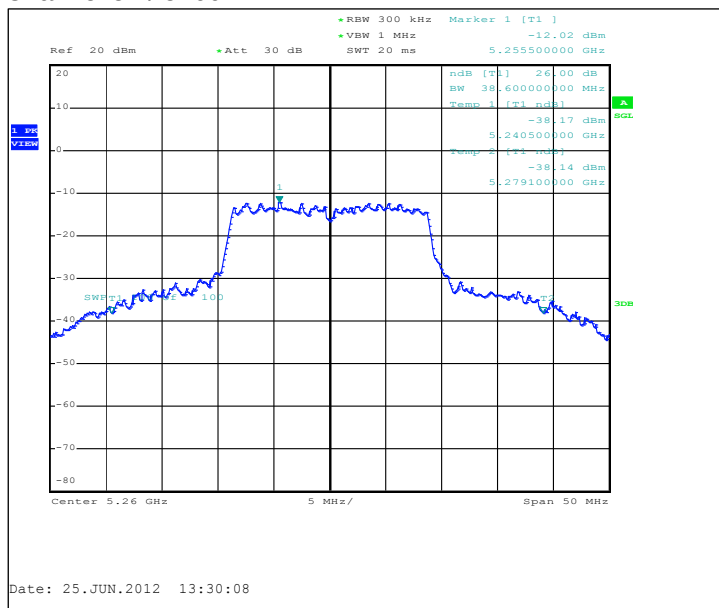
Channel 36 / 5180MHz



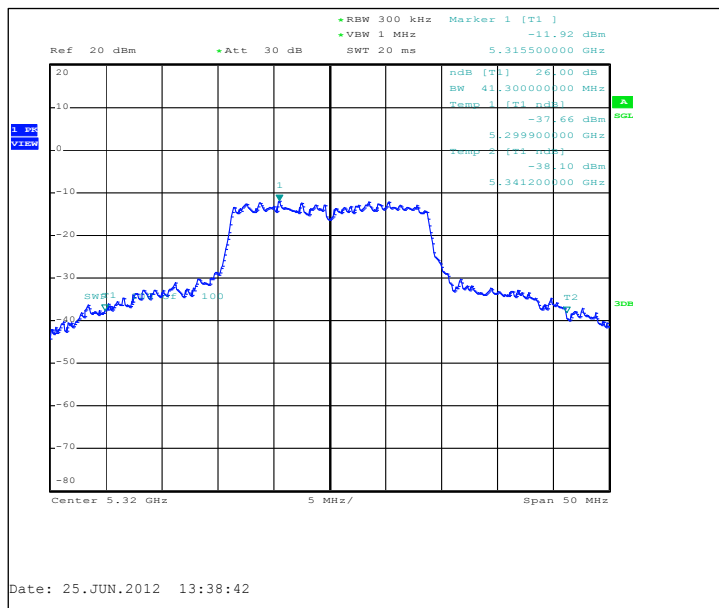
Channel 48 / 5240MHz



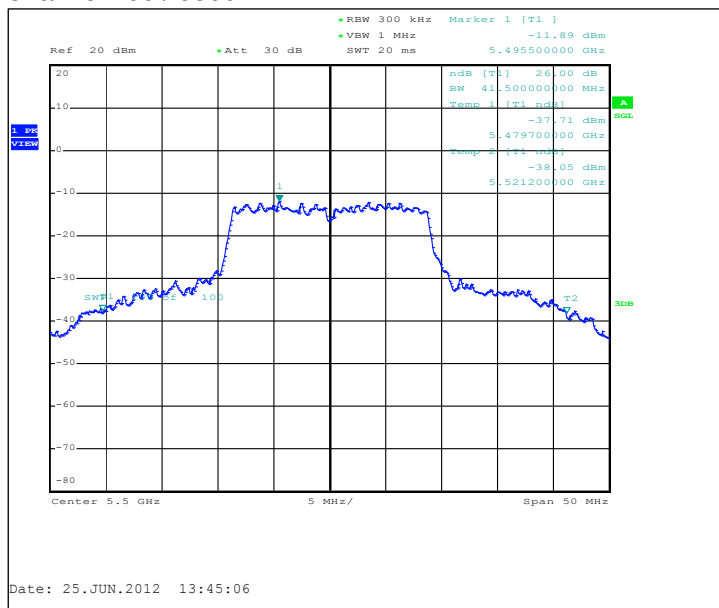
Channel 52 / 5260MHz



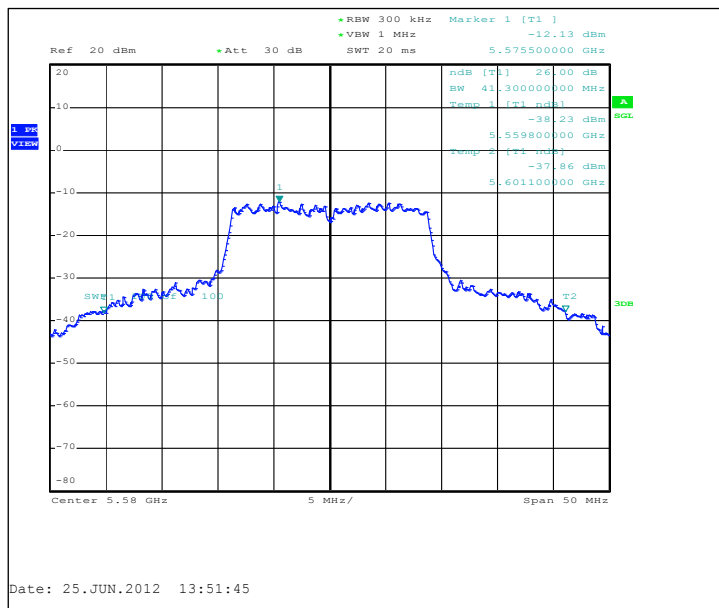
Channel 64 / 5320MHz



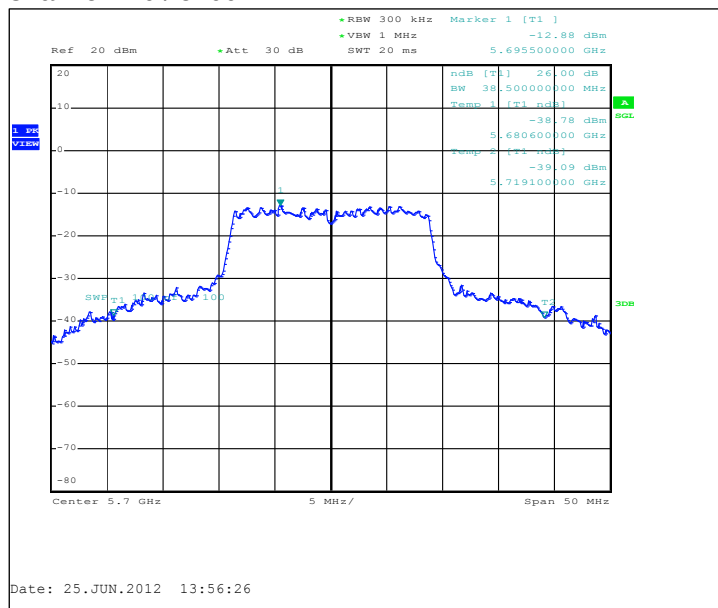
Channel 100 / 5500MHz



Channel 116 / 5580MHz



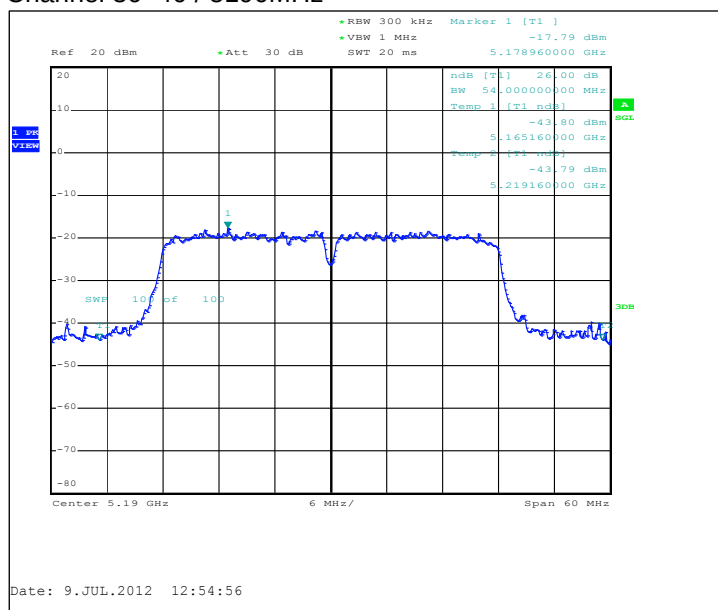
Channel 140 / 5700MHz



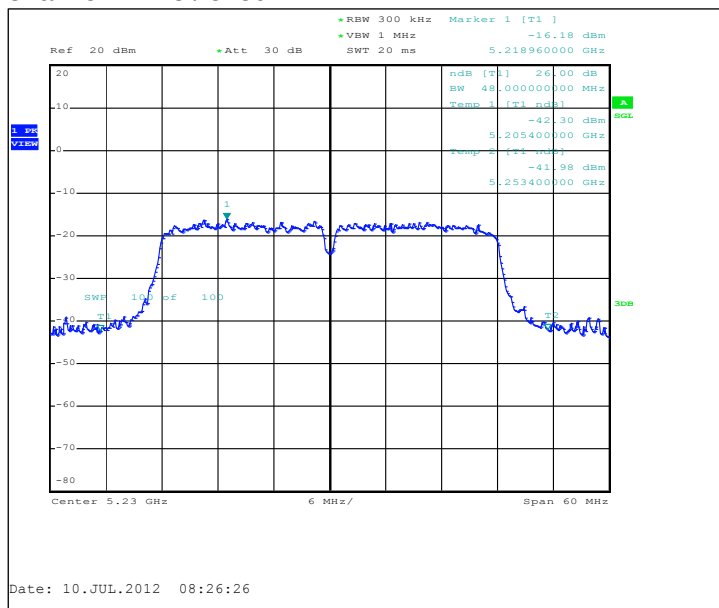
7.3.3 n-mode, 40 MHz CBW mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / f _c [MHz]	26 dB bandwidth [kHz]	Result
36+40 / 5190	54000	PASSED
44+48 / 5230	48000	PASSED
52+56 / 5270	53760	PASSED
60+64 / 5310	48960	PASSED
100+104 / 5510	47160	PASSED
108+112 / 5550	47880	PASSED
132+136 / 5670	48000	PASSED

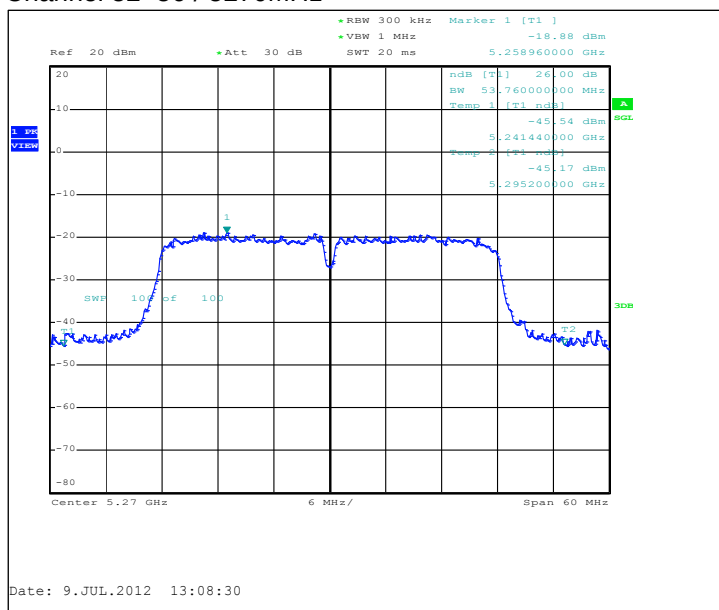
Channel 36+40 / 5190MHz



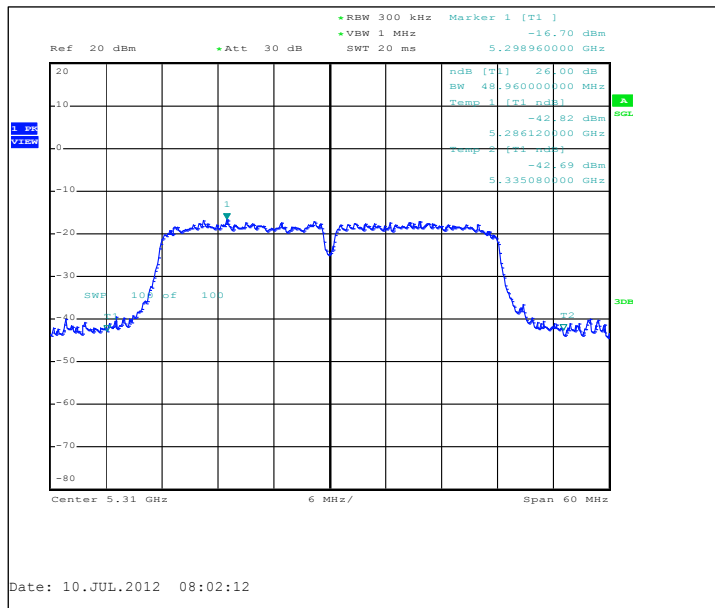
Channel 44+48 / 5230MHz



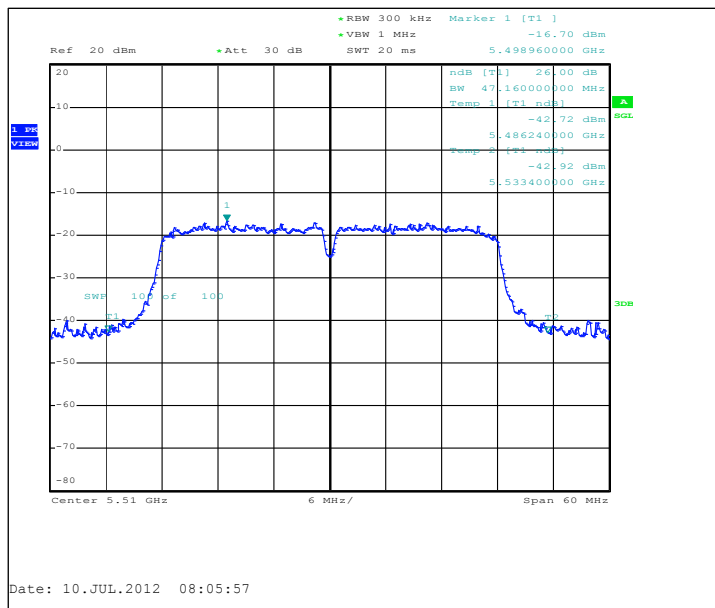
Channel 52+56 / 5270MHz



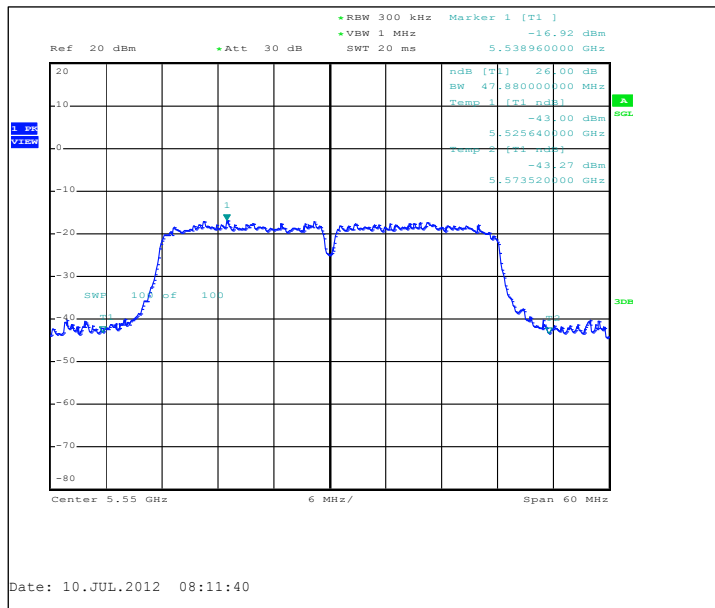
Channel 60+64 / 5310MHz



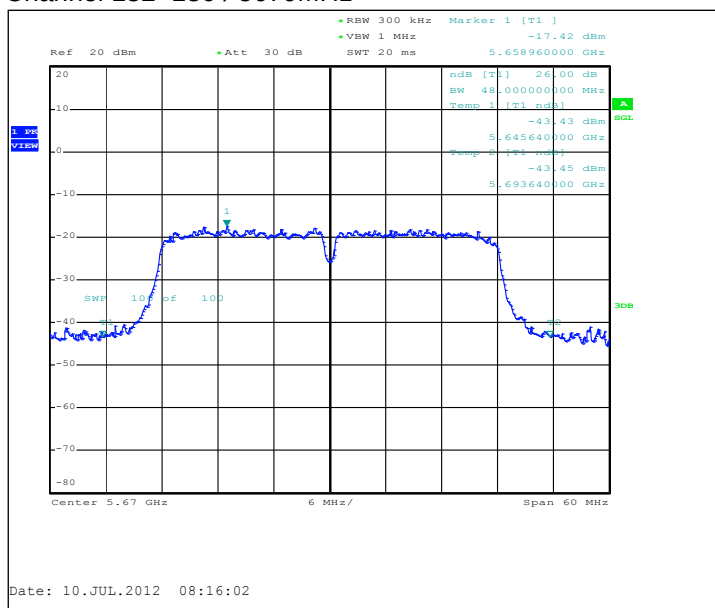
Channel 100+104 / 5510MHz



Channel 108+112 / 5550MHz



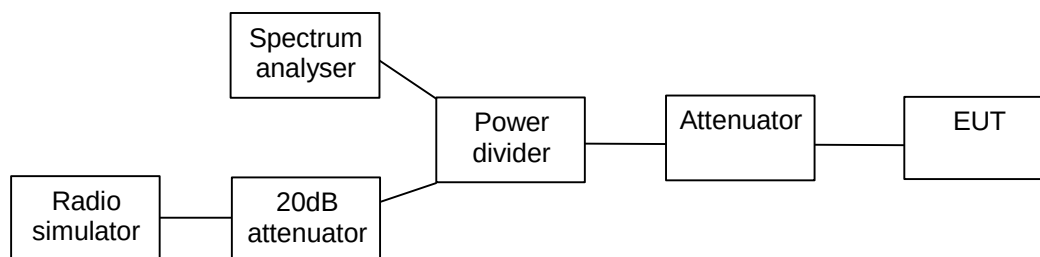
Channel 132+136 / 5670MHz



8. Peak power spectral density (FCC §15.407(a), RSS-210 A9.2)

EUT with DUT number	RM-820, DUT 16487
Accessories with DUT numbers	BP-4GW, DUT 16488; AC-50U, DUT 16340 ; WH-208, DUT 16344
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 45 / 101
Date of measurements	21-Jun-2012
Measured by	Tomi Lipponen

8.1. Test Setup



8.2. 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

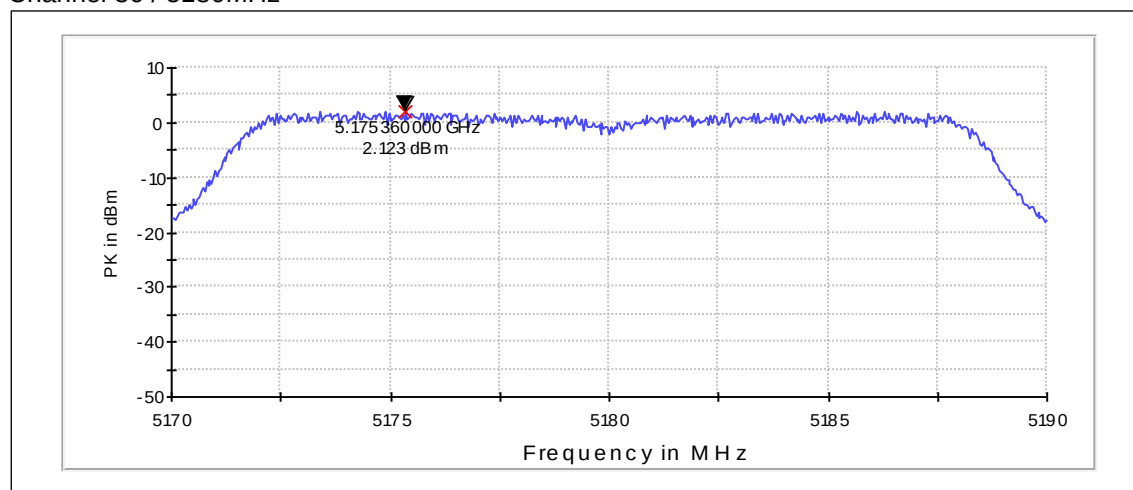
8.3. 5 GHz RLAN Test results

8.3.1 OFDM mode, BPSK modulation, 18 Mbps data rate

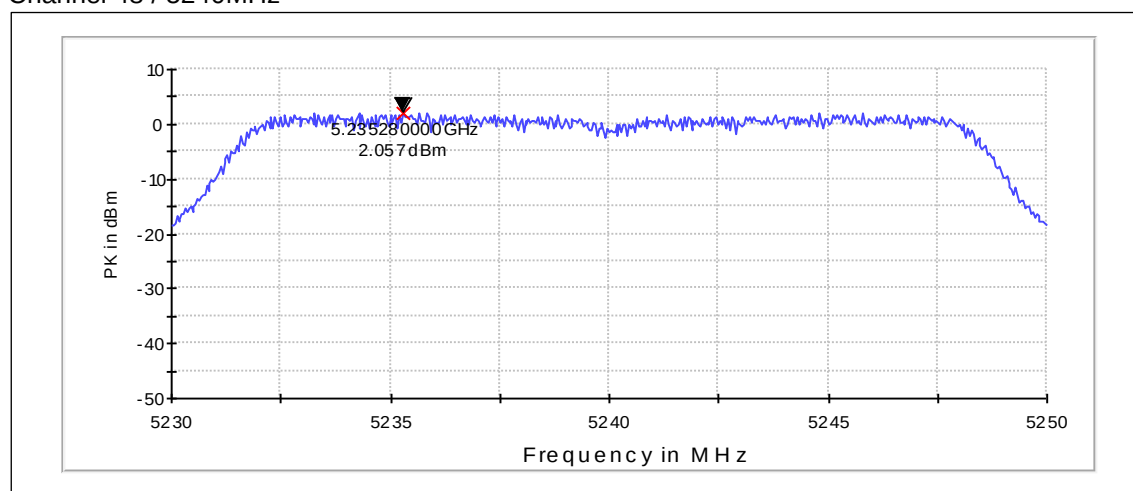
RMS detector (RBW: 1 MHz, VBW: 3 MHz, Video averaging)

Channel / f_c [MHz]	P [dBm]	Result
36 / 5180	2.12	PASSED
48 / 5240	2.06	PASSED
52 / 5260	2.03	PASSED
64 / 5320	1.85	PASSED
100 / 5500	1.86	PASSED
116 / 5580	1.47	PASSED
140 / 5700	1.43	PASSED

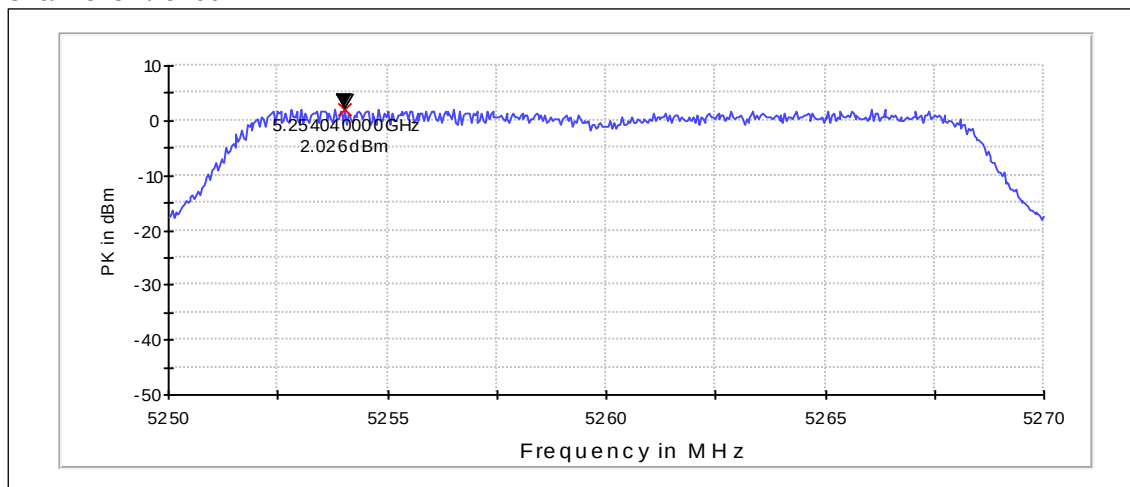
Channel 36 / 5180MHz



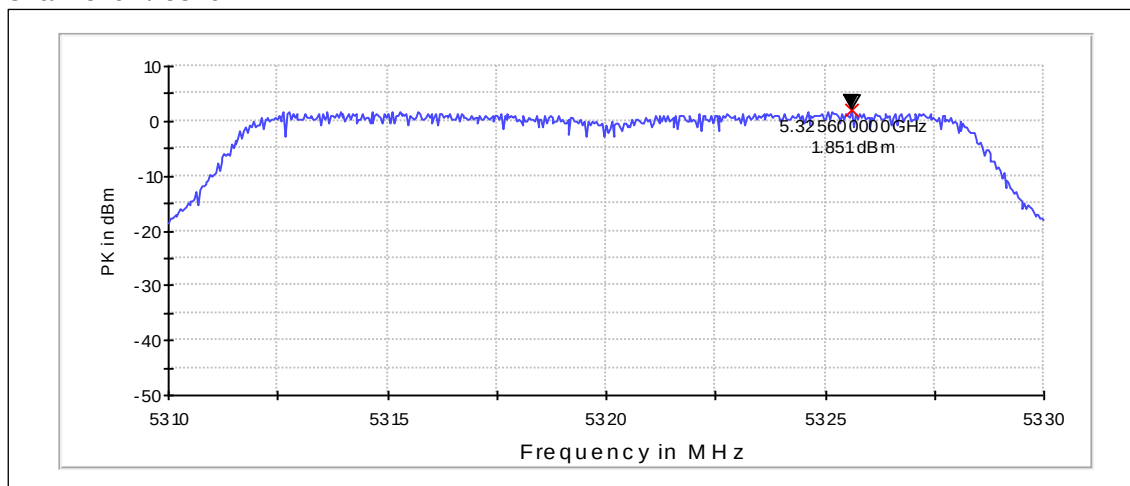
Channel 48 / 5240MHz



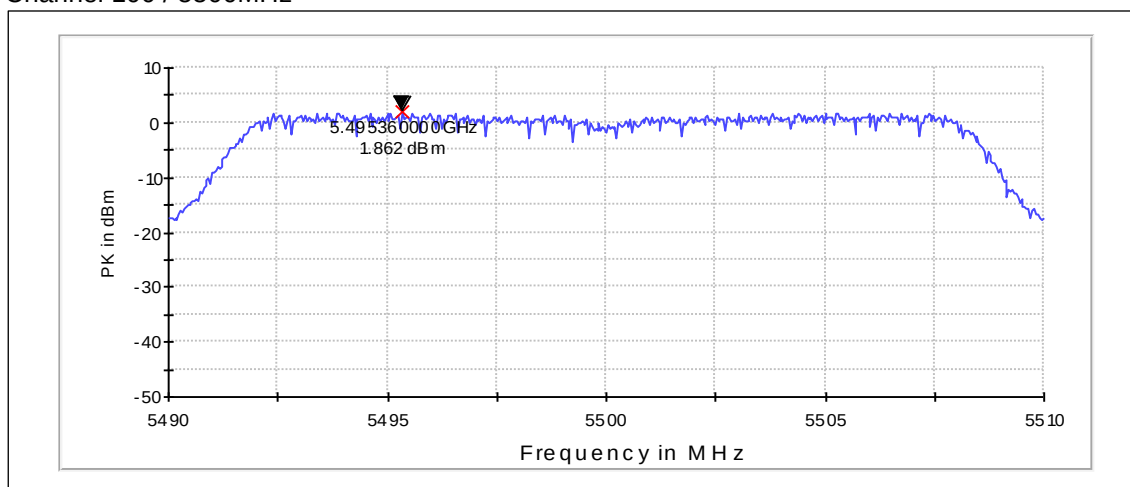
Channel 52 / 5260MHz



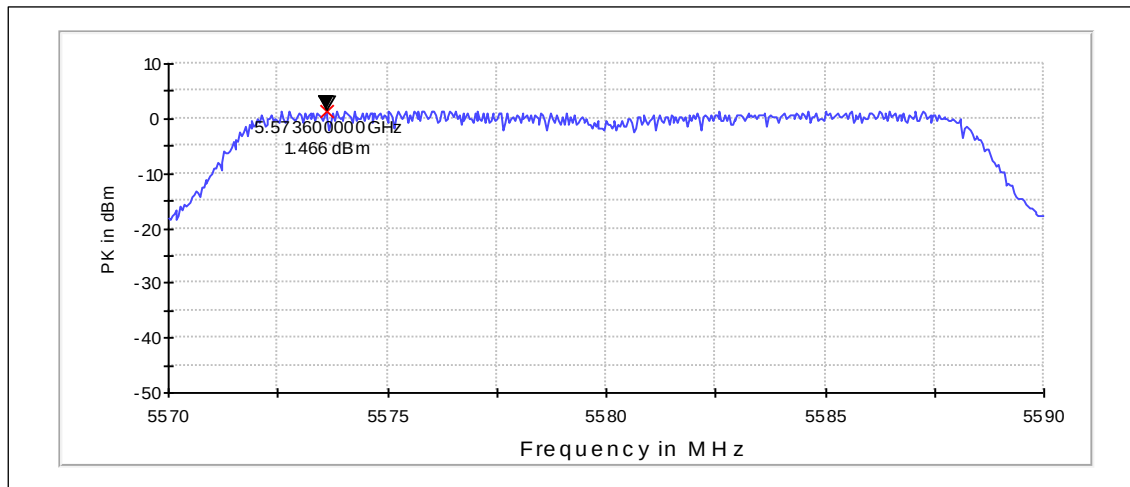
Channel 64 / 5320MHz



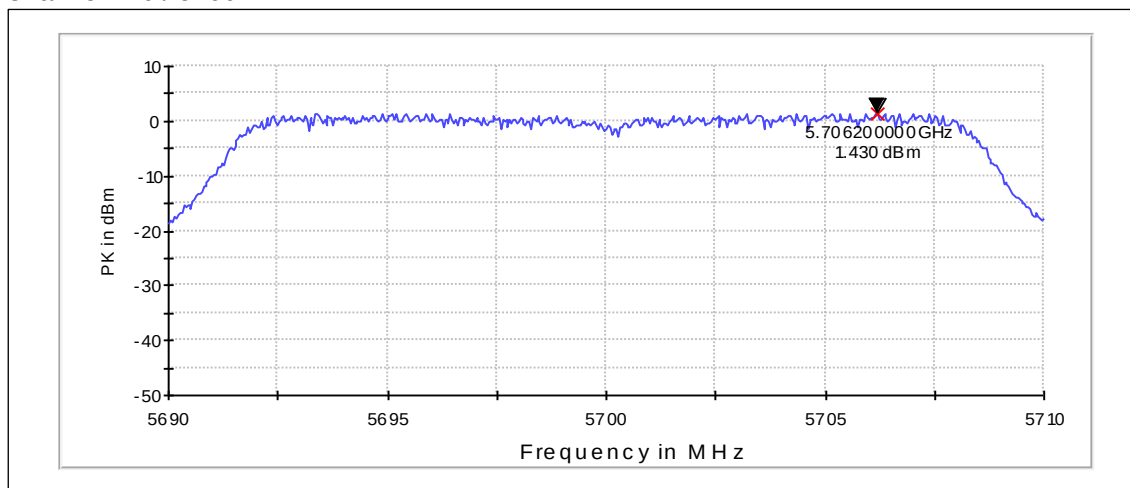
Channel 100 / 5500MHz



Channel 116 / 5580MHz



Channel 140 / 5700MHz

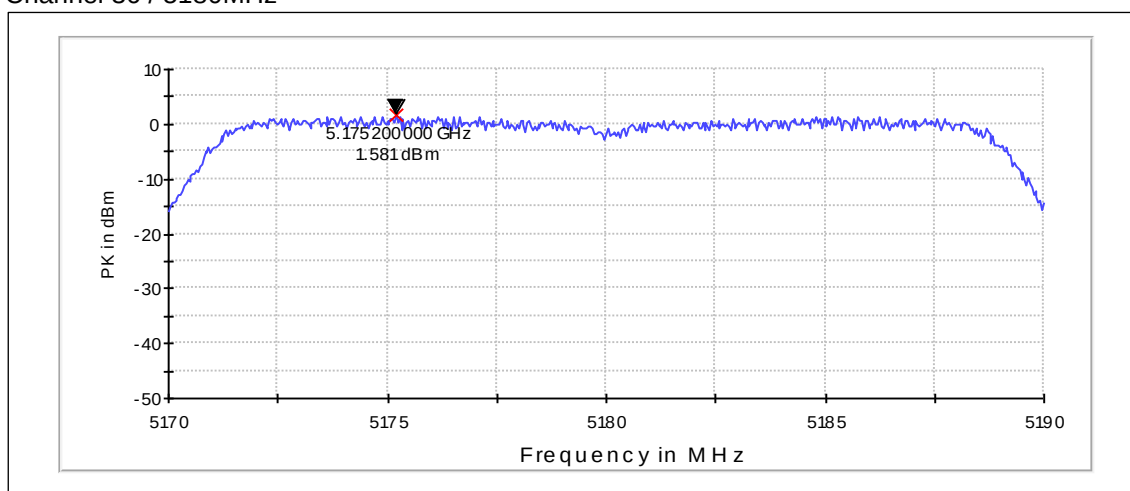


8.3.2 n-mode, 20 MHz CBW mode, QPSK modulation, 19.5 / 21.7 Mbps data rate

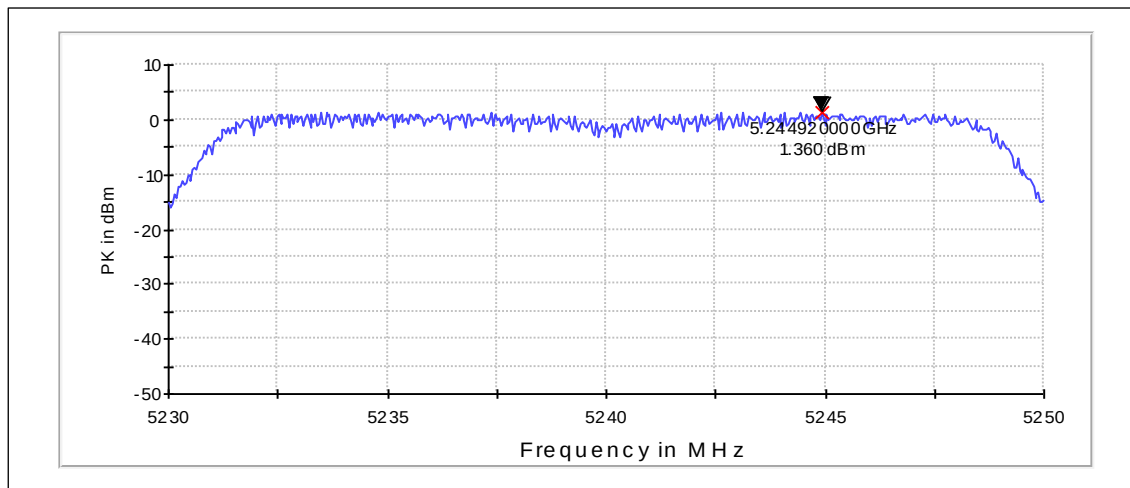
RMS detector (RBW: 1 MHz, VBW: 3 MHz, Video averaging)

Channel / f_c [MHz]	P [dBm]	Result
36 / 5180	1.58	PASSED
48 / 5240	1.36	PASSED
52 / 5260	1.41	PASSED
64 / 5320	1.45	PASSED
100 / 5500	1.45	PASSED
116 / 5580	1.42	PASSED
140 / 5700	1.16	PASSED

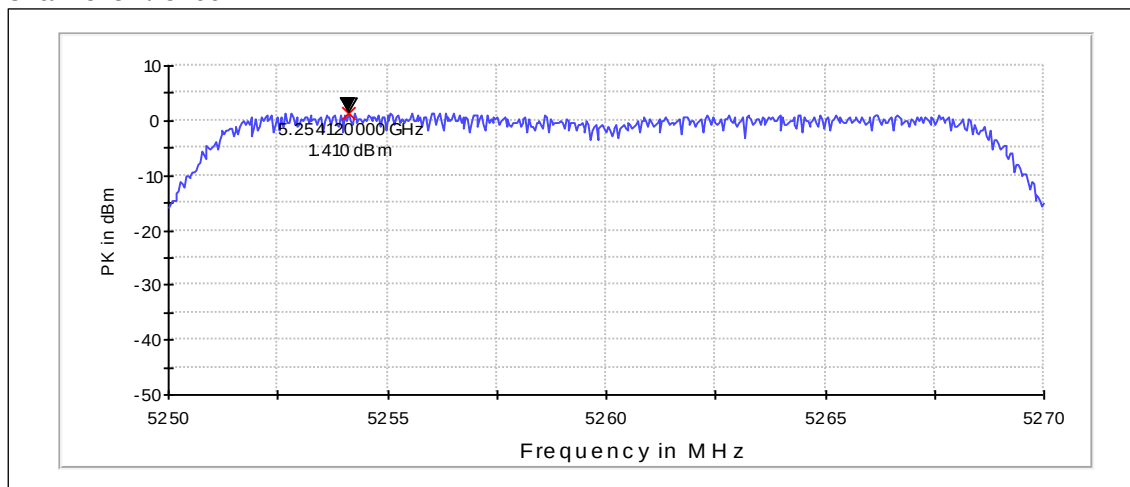
Channel 36 / 5180MHz



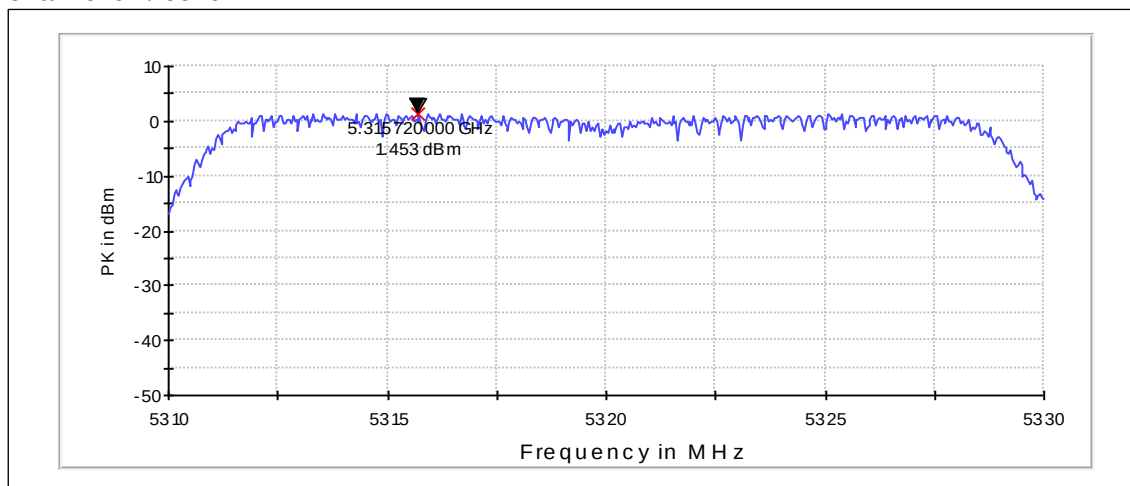
Channel 48 / 5240MHz



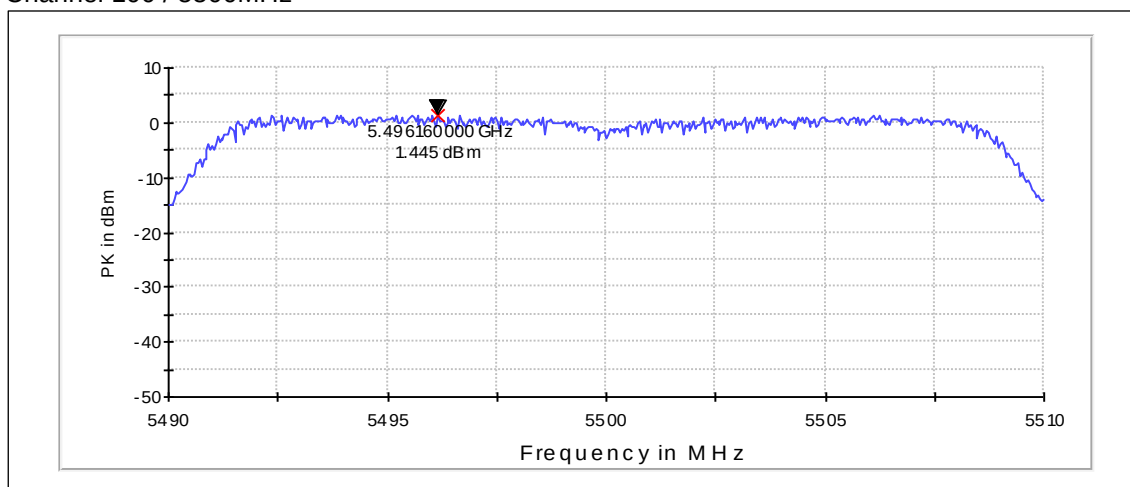
Channel 52 / 5260MHz



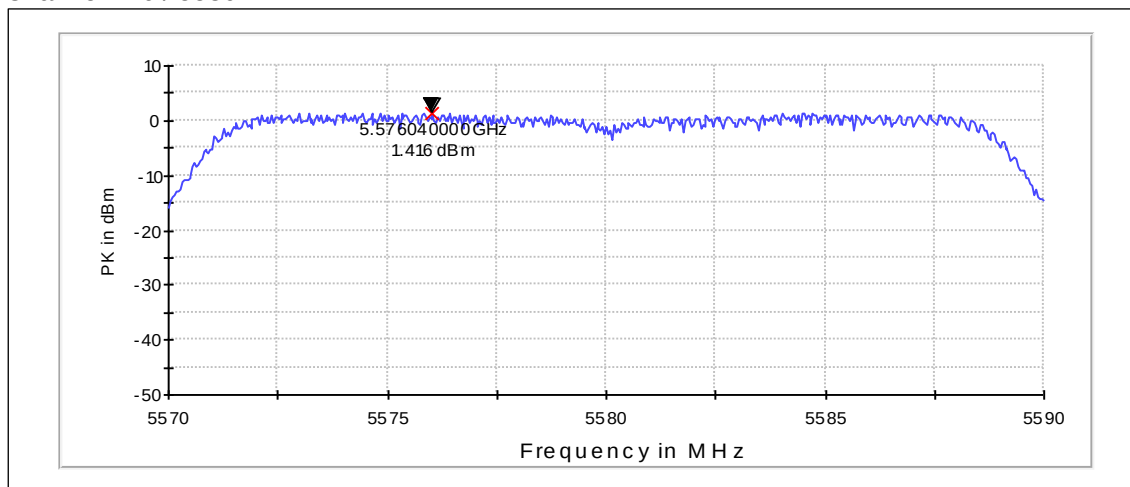
Channel 64 / 5320MHz



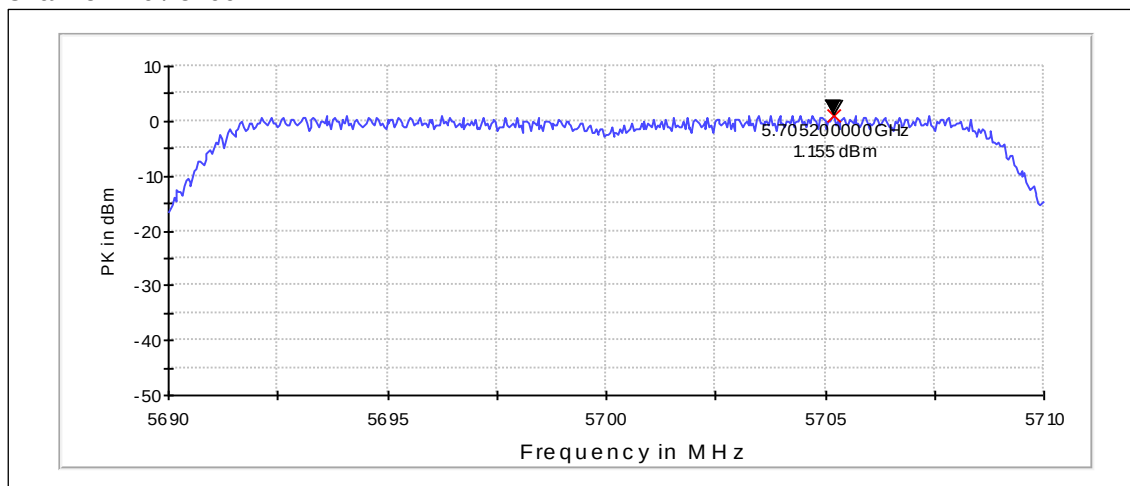
Channel 100 / 5500MHz



Channel 116 / 5580MHz



Channel 140 / 5700MHz

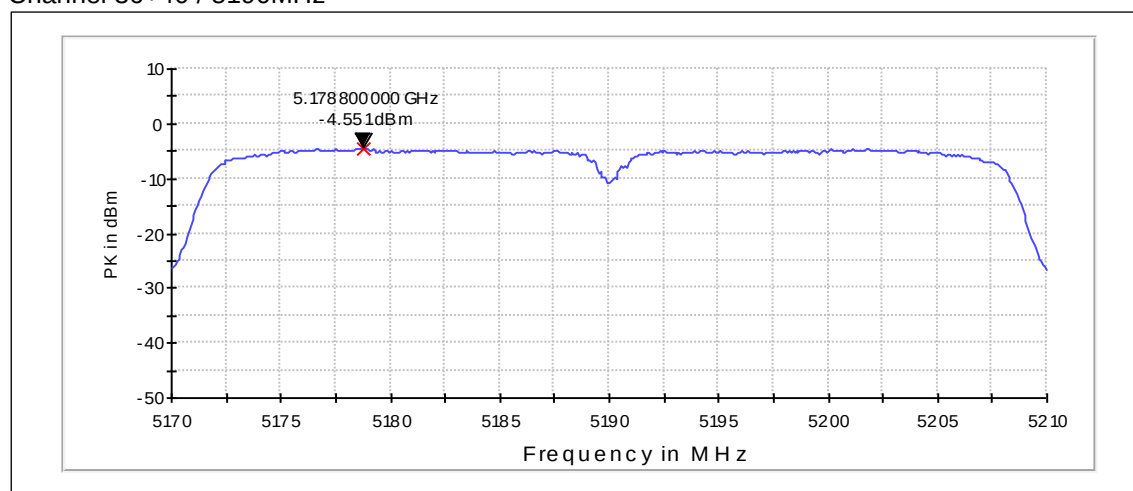


8.3.3 n-mode, 40 MHz CBW mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

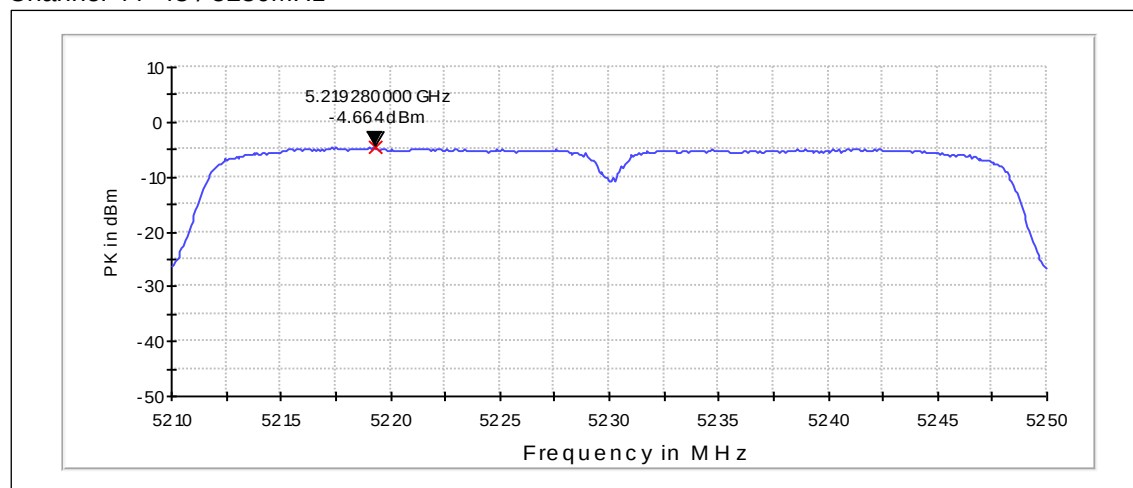
RMS detector (RBW: 1 MHz, VBW: 3 MHz, Video averaging)

Channel / f_c [MHz]	P [dBm]	Result
36+40 / 5190	-4.55	PASSED
44+48 / 5230	-4.66	PASSED
52+56 / 5270	-4.89	PASSED
60+64 / 5310	-3.04	PASSED
100+104 / 5510	-3.05	PASSED
108+112 / 5550	-3.08	PASSED
132+136 / 5670	-19.45	PASSED

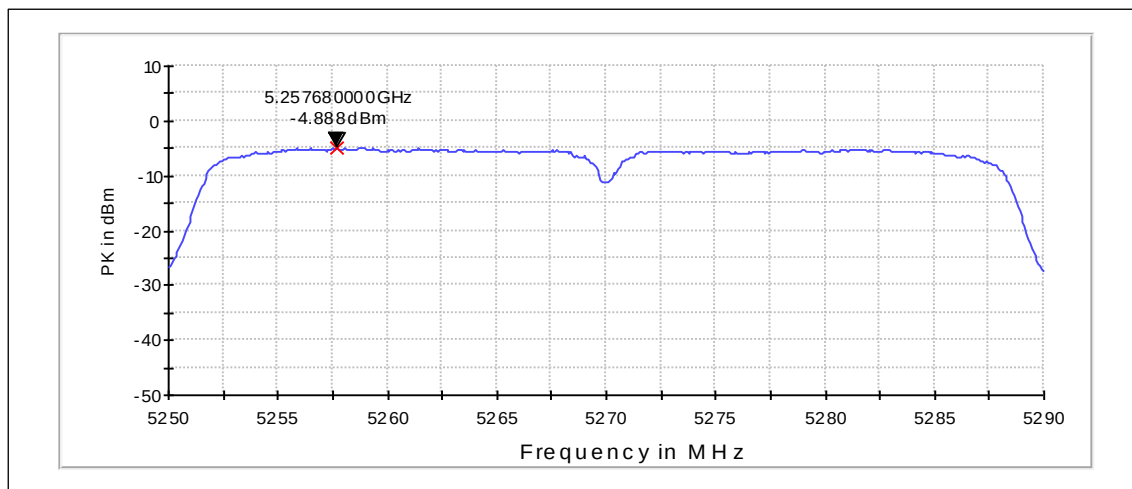
Channel 36+40 / 5190MHz



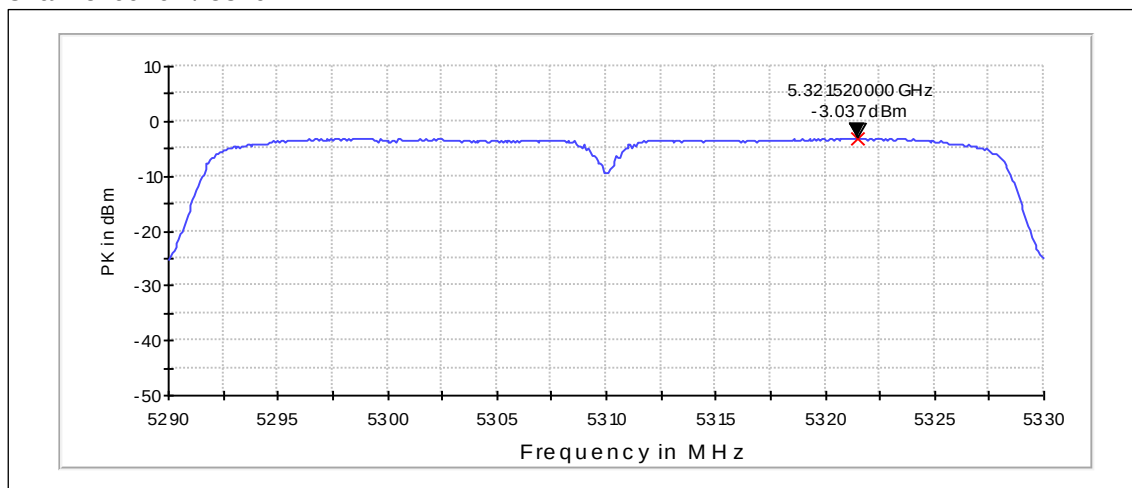
Channel 44+48 / 5230MHz



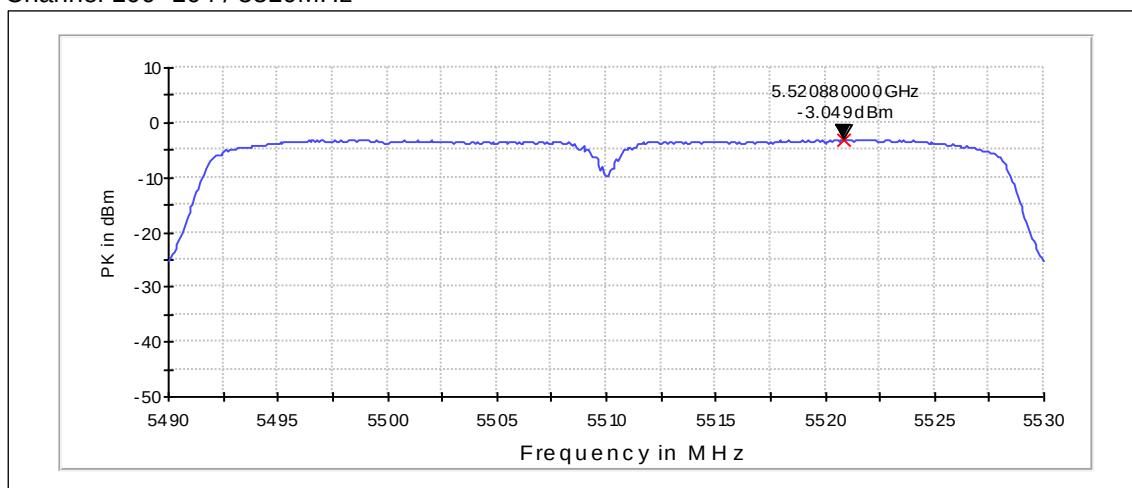
Channel 52+56 / 5270MHz



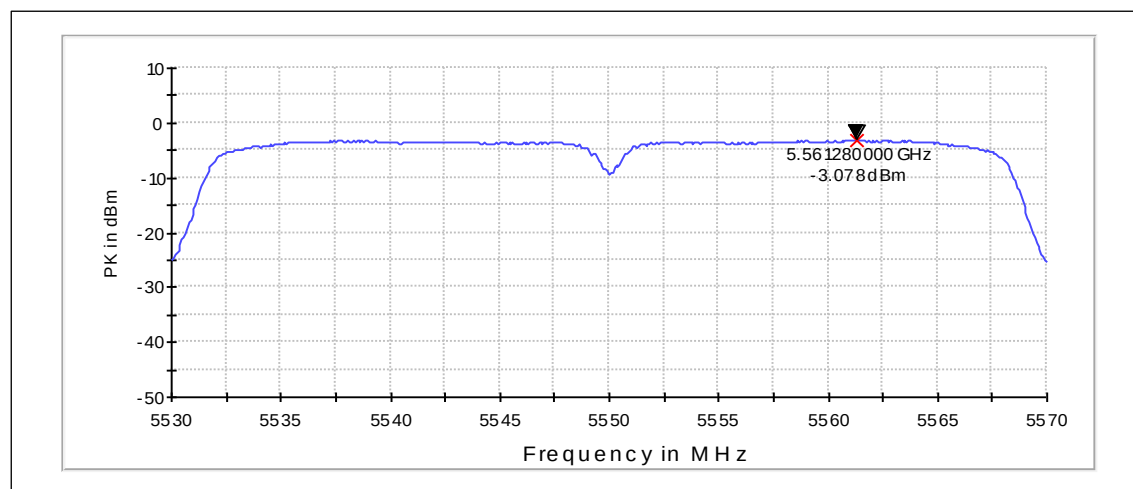
Channel 60+64 / 5310MHz



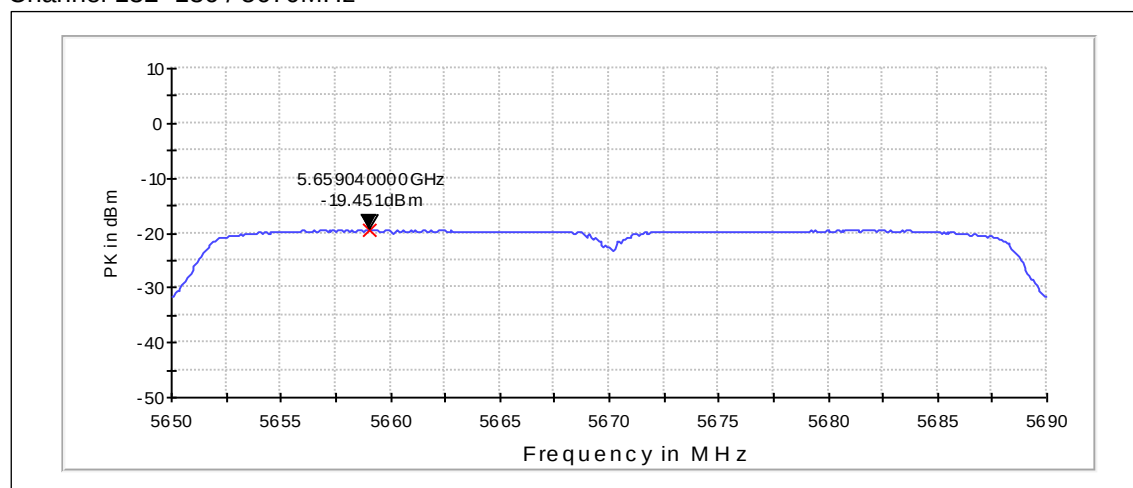
Channel 100+104 / 5510MHz



Channel 108+112 / 5550MHz



Channel 132+136 / 5670MHz



9. Test Equipment

9.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
6038	Data Logger	Testo 580	Testo	-
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	-
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	-
2389	Signal Generator	SMJ 100A	R&S	-
6009	GPS Antenna	SA-700	Chronos	-
6010	GPS Network amplifier	NLA20FPDC	GPS Networking, Inc	-
6011	GPS signal Splitter	LDCBS1x4	GPS Networking, Inc	-
6015	Receiver	ESI	R&S	-
2059	V-network	ESH3-Z6	R&S	-
6044	V-network	ESH3-Z6	R&S	-
1759	LISN 50 µH	ESH3-Z5	R&S	-
2390	Directional Coupler	DC2600	AR	-
1916	Communication Tester	CMTA84	R&S	-
6012	CDN	CDN USB/c	Teseq	-
2388	Bluetooth Tester	CBT	R&S	-
6046	Attenuator 10dB	8493C	Agilent	-
6047	Attenuator 20dB	8493C	Agilent	-
6036	Data Logger	175-H2	Testo	-
6045	Power splitter	11667B	Agilent	-
6039	USB Interface	5541765	Testo	-
10479	Communication Tester	CMW500	R&S	-
6094	Communication Tester	CMW500	R&S	-
6096	EMC Analyzer	E7405A	HP	-
6098	Signal Generator	8648C	Agilent	-
6103	Bluetooth tester	CBT	R&S	-
6113	Signal Generator	SMF100A	R&S	-
6120	Thermal Chamber	WT 20/40	Weiss	-
6121	Power Splitter	HP11667B	Agilent	-
6122	Power Splitter	HP11667B	Agilent	-
6134	Attenuator 10dB	BW-S10-2W263+	Mini-Circuits	-
6136	Attenuator 20dB	BW-S20-2W263+	Mini-Circuits	-
2359	Temperature Test Chamber	VT4002	Vötsch	-
2347	Communication Tester	CMU200	R&S	-
2180	Communication Tester	CMU200	R&S	-
2156	Communication Tester	CMU200	R&S	-
1999	Receiver	ESIB26	R&S	-
2352	Spectrum Analyzer	FSP-30	R&S	-
2097	Pulse Limiter	ESH3-Z2	R&S	-
2039	Power Supply	PL330QMD	Thurlby	-
1992	Signal Generator	83630B	Agilent	-
2206	Signal Generator	SMX	R&S	-

9.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
2391	Band Reject Filter	WRCG1729.4/1735.4-1722.4/1742.4-40/6SS	Wainwright	27
6038	Data Logger	Testo 580	Testo	-
6014	Substitute Calibration Cable	Sucoflex 104PB	Suhner	-
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	-

Eq. No	Equipment	Type	Manufacturer	Used in
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	-
2389	Signal Generator	SMJ 100A	R&S	-
6009	GPS Antenna	SA-700	Chronos	-
6010	GPS Network amplifier	NLA20FPDC	GPS Networking, Inc	-
6011	GPS signal Splitter	LDCBS1x4	GPS Networking, Inc	-
1988	Antenna	HL562	R&S	-
-	RF immunity / Emission Software	EMC32	R&S	-
1917	Communication Tester	CMTA84	R&S	-
2388	Bluetooth Tester	CBT	R&S	-
6037	Data Logger	175-H2	Testo	-
6039	USB Interface	5541765	Testo	-
6087	Antenna	BBHA 9120D	Scharzbeck	-
6088	Antenna	VUBA 9117	Scharzbeck	-
6089	Antenna	HFH2-Z2	R&S	-
10479	Communication Tester	CMW500	R&S	-
6094	Communication Tester	CMW500	R&S	-
6103	Bluetooth tester	CBT	R&S	-
6113	Signal Generator	SMF100A	R&S	-
6115	Open switch and control unit	OSP 130	R&S	-
6116	Open switch and control unit	OSP 150	R&S	-
6130	Notch Filter	WRCD1880-1.1.25/50-10SS	Wainwright	-
6131	Notch Filter	WRCT902.4-0.4/40-8SS	Wainwright	-
6135	Notch Filter	WRCJV2531/2539-2523/2547-60/12SS	Wainwright	-
2140	Antenna	EMCO93110B	EMCO	-
2142	Antenna	3146	EMCO	-
2357	Band Reject Filter	WRCG2400/2483-2390/2493-35/10SS	Wainwright	-
2364	Band Reject Filter	WRCG1877/1883 - 1870/1890-40/6SS	Wainwright	24
2043	Band Reject Filter	WRCA824/849-0,2-6SS	Wainwright	22
2347	Communication Tester	CMU200	R&S	-
2180	Communication Tester	CMU200	R&S	-
2156	Communication Tester	CMU200	R&S	-
2176	CDN	CDN 801-M3	Lüthi	-
2027	CDN	M2 (modified) DC1	MEB	-
2028	CDN	M3 (modified) DC2	MEB	-
1984	Antenna	BBHA 9120 D	Schwarzbeck	-
6017	Antenna	SBA 9113	Schwarzbeck	-
2009	Signal Generator	SMP 22	R&S	-
2029	Power Supply	PL330	Thurlby	-
2361	Anechoic Chamber	3 m Semi / Full Anechoic Chamber	Euroshield	-
2353	Receiver	ESIB26	R&S	-
2135	CDN	CDN 801-M3	Lüthi	-