FCC Part 15C Compliance Test Report

Test Report no.:	FCC15CWLAN_RM-1018_06.docx	**Date of Report:**	05-May-2014
Number of pages:	38	**Customer's Contact person:**	Tero Huhtala
Testing laboratory:	TCC Microsoft Tampere Laboratory P.O.Box 403 Visiokatu 3 FIN-33101 TAMPERE, FINLAND Tel. +358 71 800 8000 Fax. +358 71 804 6880	**Customer:**	Microsoft Tampere P.O.Box 403 Visiokatu 4 FIN-33720 TAMPERE, FINLAND Tel. +358 (0) 7180 46800 Fax. +358 (0) 7180 46880
FCC listing no.: **IC recognition no.:**	94436 661AK-1		
Tested devices/ accessories:	**Phone RM-1018 / Battery BL-5J / AC Charger AC-18E / Headset WH-108 / Dummy Battery SD-130**		
FCC ID:	PDNRM-1018	**IC:**	661R-RM1018
Supplement reports:	-		
Testing has been carried out in accordance with:	**CFR 47, FCC rules Part 15 Subpart C, ANSI C63.4 (2003), DTS procedures KDB 558074, IC standards. Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".**		
Documentation:	The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 15 years at TCC 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:	Hannu Söderholm 2014.06.05 09:13:34 +03'00'		

Hannu Söderholm, Specialist, EMC

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1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	12-May-2014
Testing completed	28-May-2014
The customer's contact person	Tero Huhtala
Test Plan referred to	T:\Projects\RM-1018\TestPlan\RS_testplan_RM-1018.xlsm
Notes	-
Document name	T:\Projects\RM-1018\EMC\FCC15CWLAN_RM-1018_06.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-1018	004402478273679	1500	-	01068.00004.14182.20000	43170
Phone	RM-1018	004402478273562	1500	-	01068.00004.14182.04000	43175
Phone	RM-1018	004402478273406	1500	-	01068.00004.14182.04000	43179
Dummy battery	SD-130	06.05.2014/03618	V.1	-	-	43176
Battery	BL-5J	4175354134B12507230;0670573	-	-	-	43173
AC Charger	AC-18E	4090493442750400944;0675695	-	-	-	43172
Headset	WH-108	2376171	-	-	-	43142

1.2. Summary of Test Results

WLAN:

Section in CFR 47	Section in RSS-GEN or RSS-210	Name of the test	Result
15.247(b)(1)	A8(0.4(4))	Conducted peak output power	PASSED
15.247(d), 15.205(b)	A8(0.5)	Band edge compliance of RF emissions	PASSED
15.247(d)	A8(0.5)	Spurious RF conducted emissions	PASSED
15.247(d), 15.209	A8(0.5)	Spurious radiated emissions	PASSED
15.207	7.2.2	AC powerline conducted emissions	PASSED
15.247(a)(2)	A8(0.1(1))	6dB(bandwidth)	PASSED
15.247(e)	A8(0.1(2))	Power spectral density	PASSED

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

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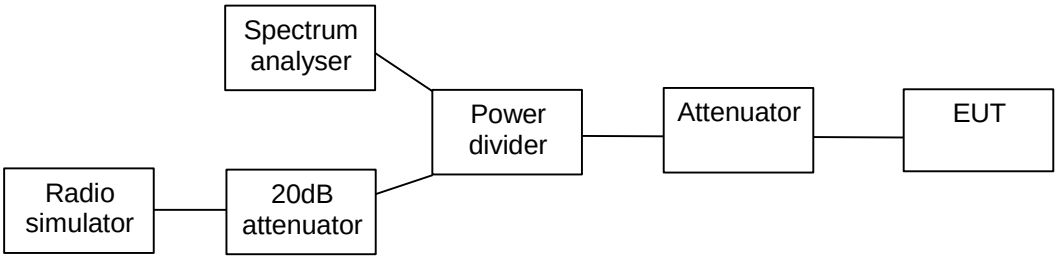
2. Conducted peak output power
(FCC §15.247(b)(1), RSS-210 A8(0.4(4)))

EUT with DUT number	RM-1018, DUT 43175
Accessories with DUT numbers	SD-130, DUT 43176
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [ºC] / Humidity [%RH] / Air Pressure [kPa]	22 / 42 / 99.8
Date of measurements	20-May-2014
Measured by	Jari Jantunen

2.1. Test Setup



2.2. Test method and limit

The measurement is made according to DTS procedures KDB 558074 and IC standard RSS-210.

Limits for conducted peak output power measurements

Frequency range [MHz]	Limit [W]	Limit [dBm]
2400 – 2483.5 5725 - 5850	<= 1	<= 30

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2.3. Power results summary

Channel / f_C [MHz]	Mode	Modulation	Data rate	Level [dBm]
1 / 2412	802.11n	BPSK	6.5 / 7.25 Mbps	19.88
6 / 2437	802.11n	BPSK	6.5 / 7.25 Mbps	24.81
11 / 2462	802.11n	BPSK	6.5 / 7.25 Mbps	20.42
1 / 2412	802.11n	16QAM	26.0 / 28.9 Mbps	20.7
6 / 2437	802.11n	16QAM	26.0 / 28.9 Mbps	24.68
11 / 2462	802.11n	16QAM	26.0 / 28.9 Mbps	20.22

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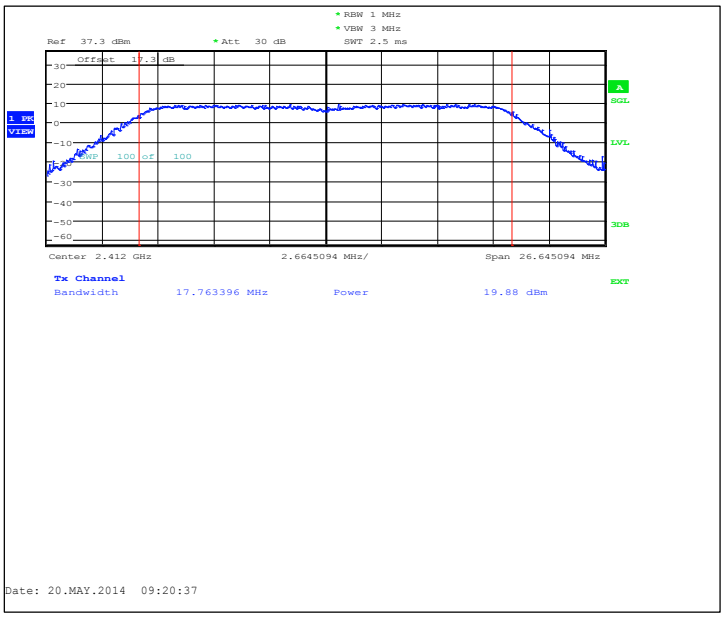
2.4. WLAN Test results

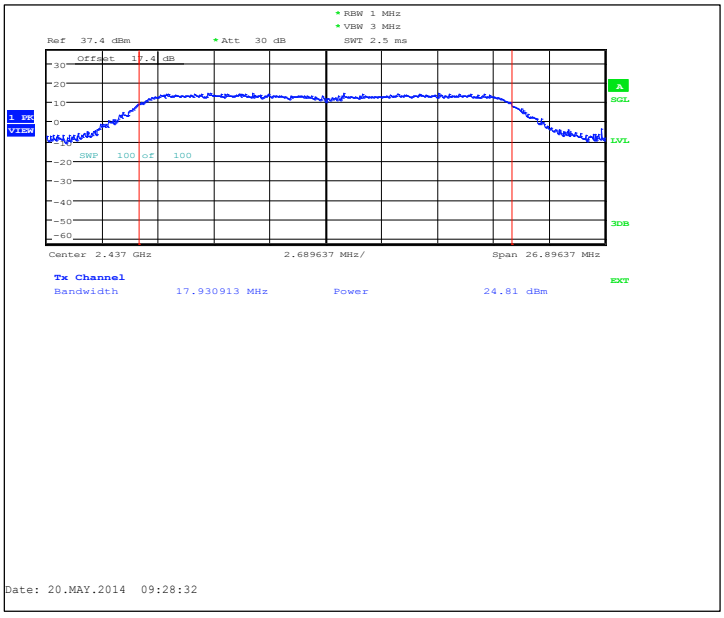
2.4.1 802.11n mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

Channel / f_C [MHz]	P [dBm]	P [mW]	Result
1 / 2412	19.88	97.275	PASSED
6 / 2437	24.81	302.691	PASSED
11 / 2462	20.42	110.154	PASSED

Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



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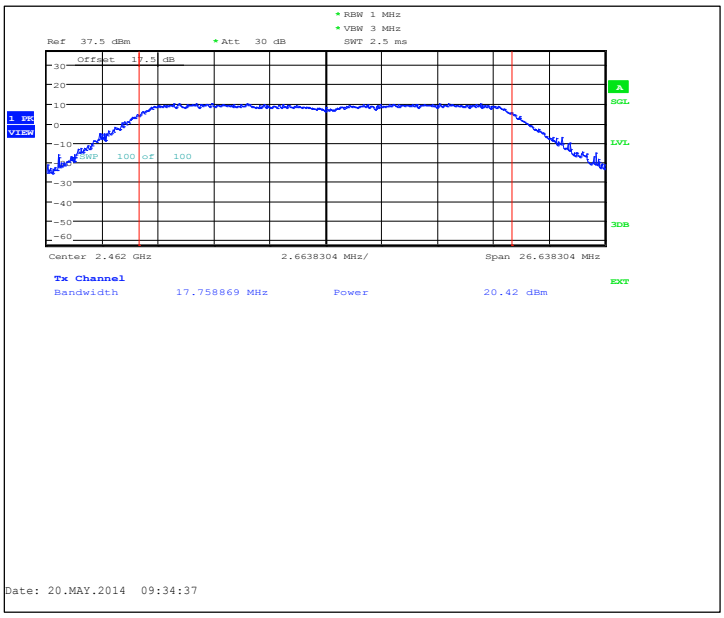
Channel 11 / 2462 MHz



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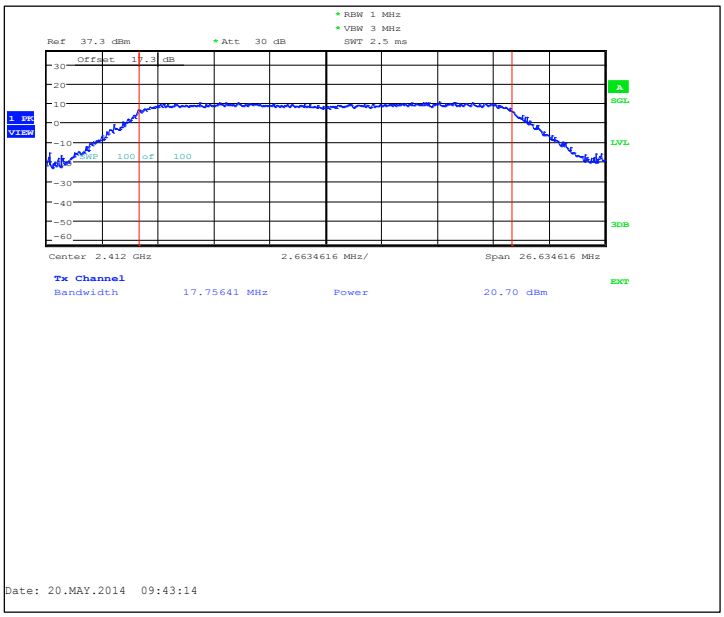
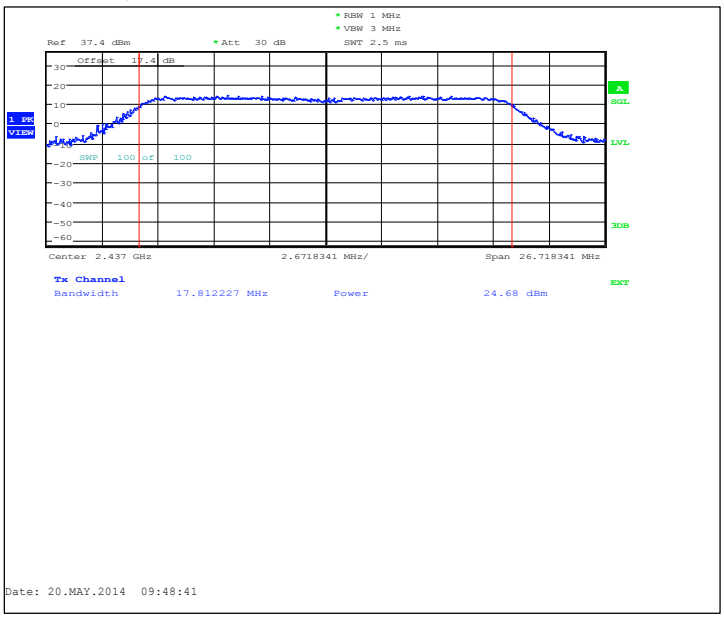
2.4.2 802.11n mode, 16QAM modulation, 26.0 / 28.9 Mbps data rate

Channel / f_C [MHz]	P [dBm]	P [mW]	Result
1 / 2412	20.7	117.49	PASSED
6 / 2437	24.68	293.765	PASSED
11 / 2462	20.22	105.196	PASSED

Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



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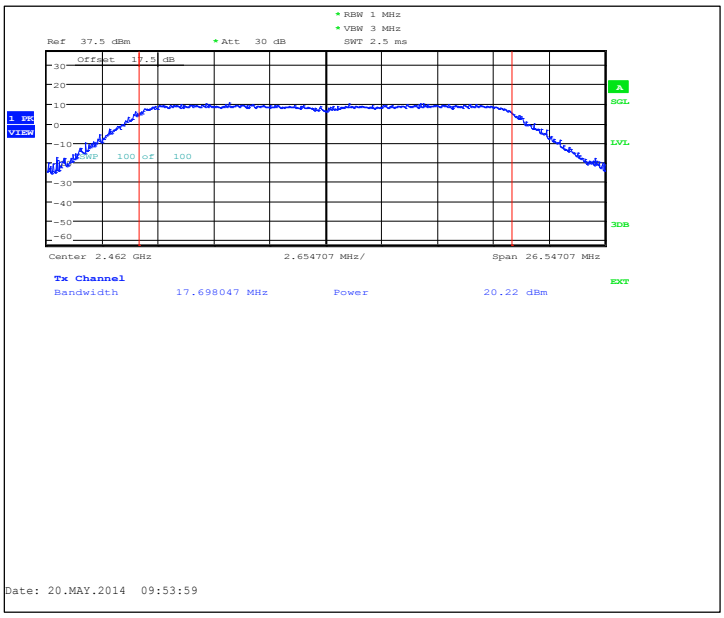
Channel 11 / 2462 MHz



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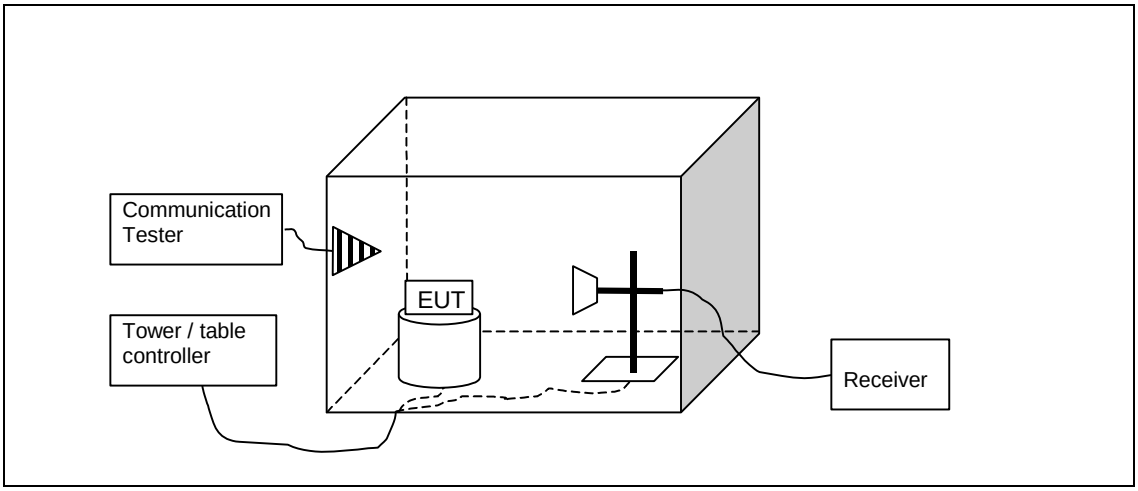
3. Band edge compliance of RF emissions
(FCC 15.247(d), 15.205(b), RSS-210 A8(0.5))

EUT with DUT number	RM-1018, DUT 43179
Accessories with DUT numbers	BL-5J, DUT 43173 ; AC-18E, DUT 43172 ; WH-108, DUT 43142
Operation Voltage [V] / [Hz]	116 / 60
Results	PASSED
Remarks	-
Temp [ºC] / Humidity [%RH] / Air Pressure [kPa]	24 / 46 / 99.7
Date of measurements	28-May-2014
Measured by	Jari Jantunen

3.1.1 Test setup



3.2. Test method and limit

The measurement is made according to DTS procedures KDB 558074 and IC standard RSS-210.

The measurement results are obtained as described below:

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

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

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

Frequency range [MHz]	Limit
Below 2390 and above 2483.5	54 dBuV/m (avg) and 74 dBuV/m (pk)

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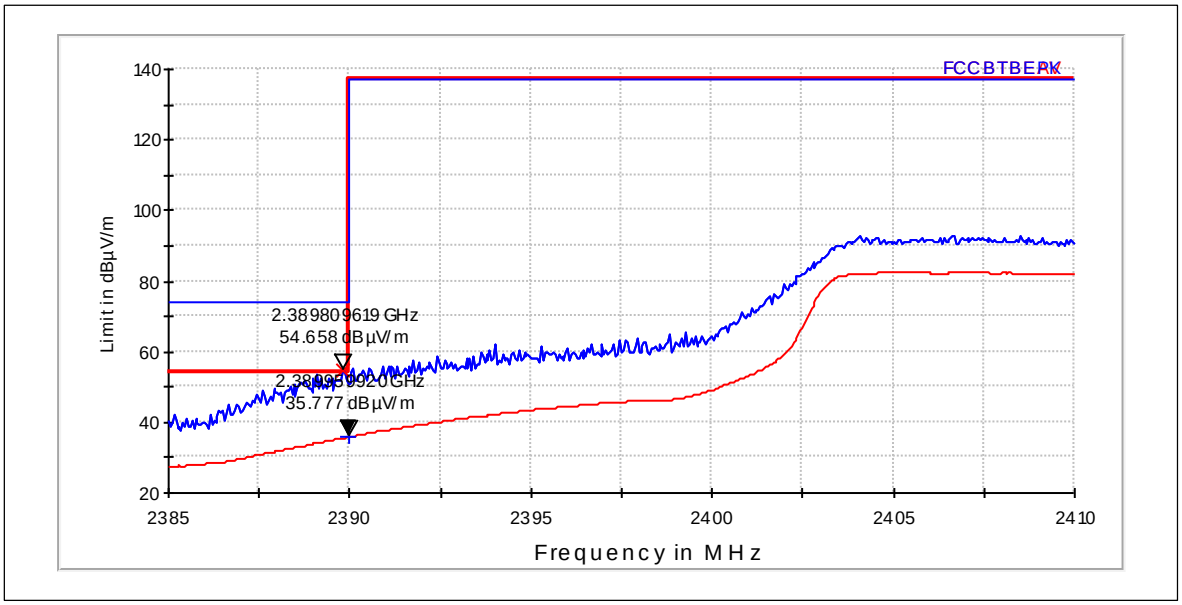
3.3. WLAN test results

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



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

Frequency [MHz]	Peak [dBµV/m]	Mode []	Channel number []	Channel frequency [MHz]	Results
2389.81	54.658	Mode	1	2412	PASSED

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

Frequency [MHz]	Average [dBµV/m]	Mode []	Channel number []	Channel frequency [MHz]	Results
2389.96	35.777	Mode	1	2412	PASSED

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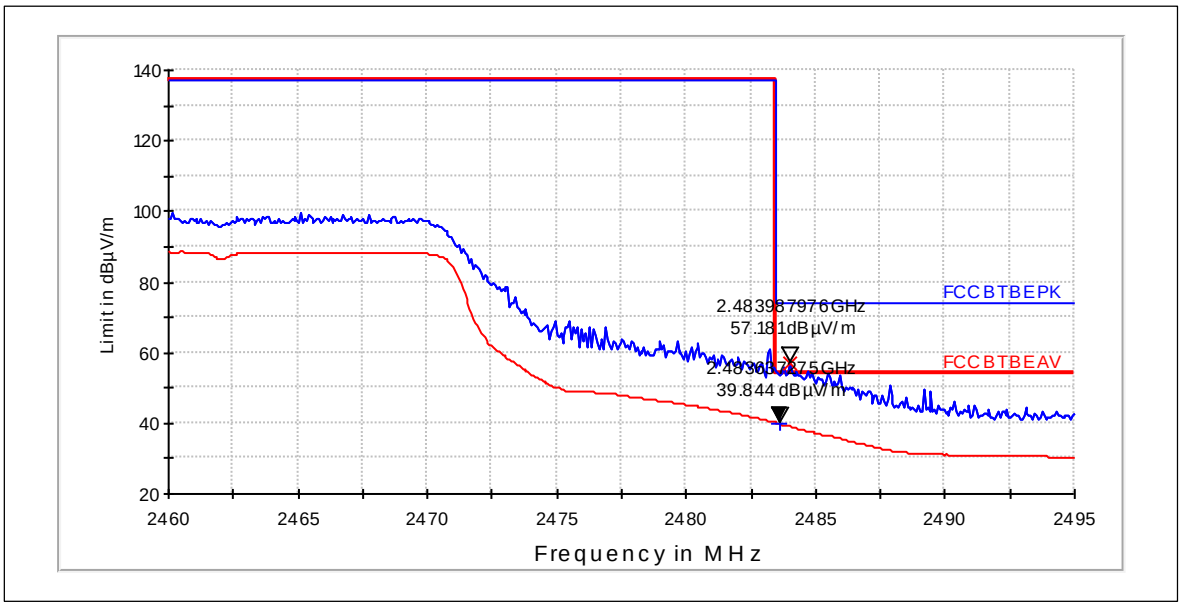

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	Peak [dBµV/m]	Mode []	Channel number []	Channel frequency [MHz]	Results
2483.988	57.181	Mode	11	2462	PASSED

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

Frequency [MHz]	Average [dBµV/m]	Mode []	Channel number []	Channel frequency [MHz]	Results
2483.637	39.844	Mode	11	2462	PASSED

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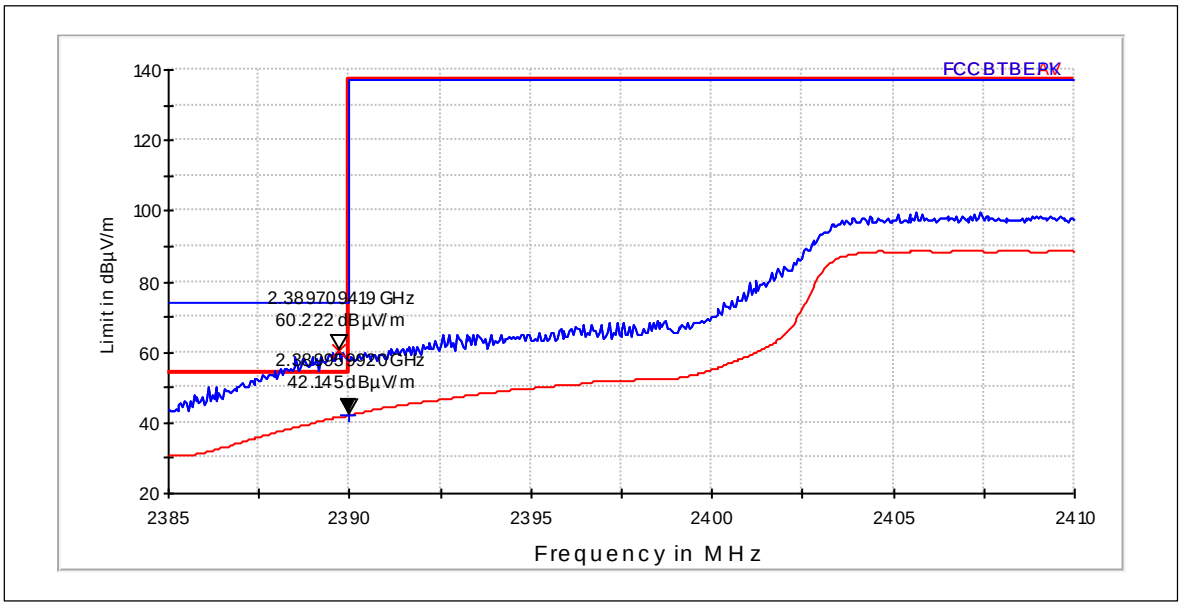
3.3.2 802.11n mode, 16QAM modulation, 26.0 / 28.9 Mbps data rate.



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

Frequency [MHz]	Peak [dBµV/m]	Mode []	Channel number []	Channel frequency [MHz]	Results
2389.709	60.222	Mode	1	2412	PASSED

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

Frequency [MHz]	Average [dBµV/m]	Mode []	Channel number []	Channel frequency [MHz]	Results
2389.96	42.145	Mode	1	2412	PASSED

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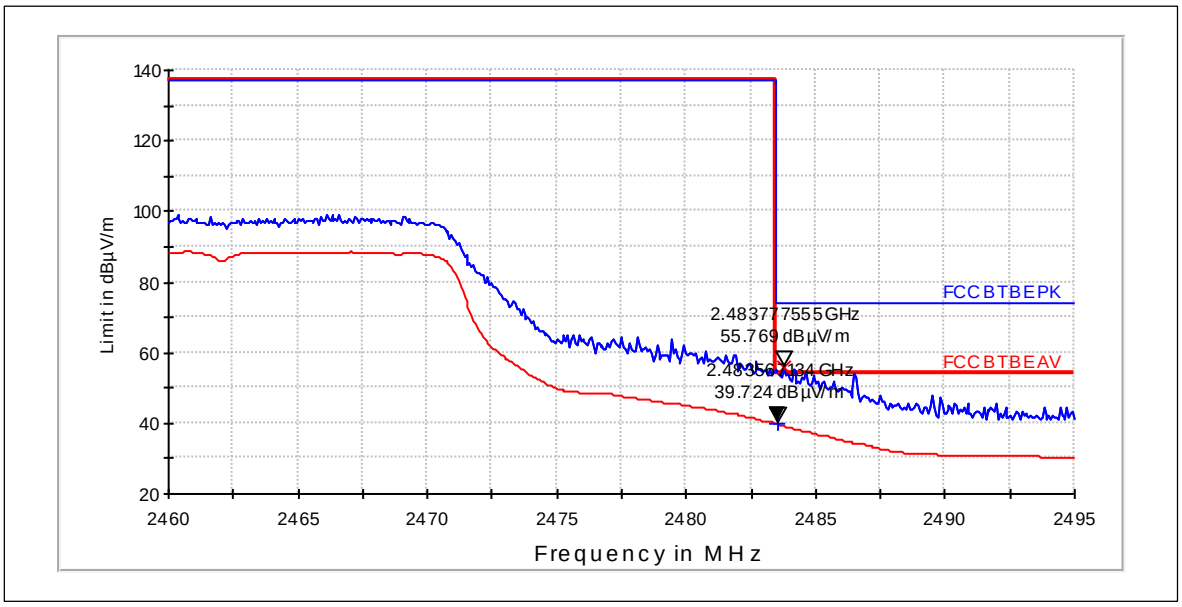

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	Peak [dBµV/m]	Mode []	Channel number []	Channel frequency [MHz]	Results
2483.778	55.769	Mode	11	2462	PASSED

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

Frequency [MHz]	Average [dBµV/m]	Mode []	Channel number []	Channel frequency [MHz]	Results
2483.567	39.724	Mode	11	2462	PASSED

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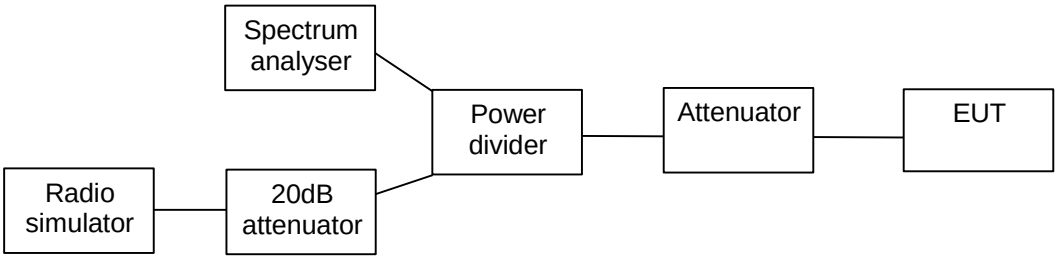
4. Spurious RF conducted emissions
(FCC §15.247(d), RSS-210 A8(0.5))

EUT with DUT number	RM-1018, DUT 43175
Accessories with DUT numbers	SD-130, DUT 43176
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [ºC] / Humidity [%RH] / Air Pressure [kPa]	22 / 42 / 99.8
Date of measurements	20-May-2014
Measured by	Jari Jantunen

4.1. Test Setup



4.2. Test method and limit

The measurement is made according to Public notice KDB 558 074 and IC standard RSS-210.

The reference level for the -20 dBc measurement was obtained as instructed in section 11.2 of the KDB 558074, using span of 1.5 times the OBW.

Limits for spurious RF conducted emissions measurements

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

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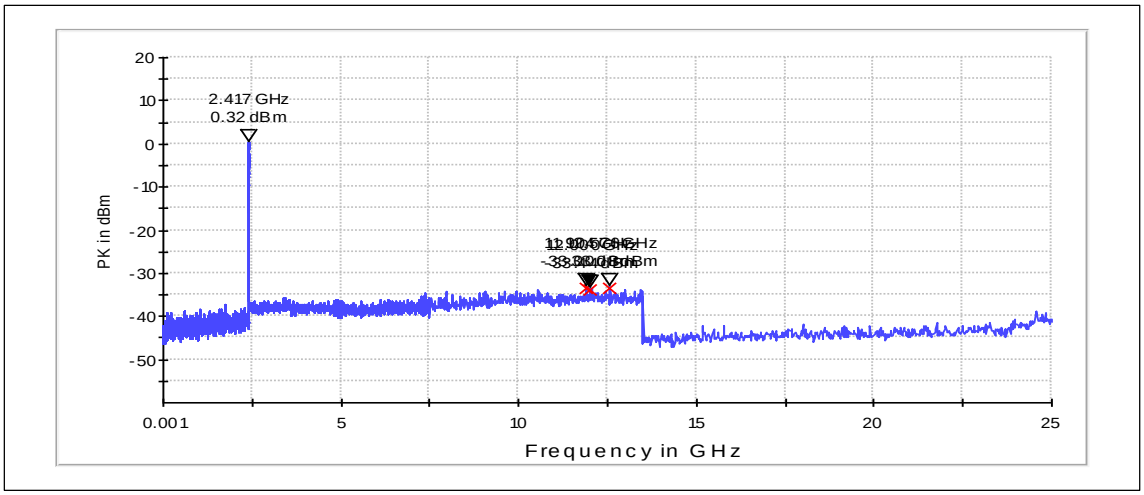
4.3. WLAN Test results

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

Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
11904.000	-33.32	PASSED
12576.000	-33.41	PASSED
12000.000	-33.77	PASSED

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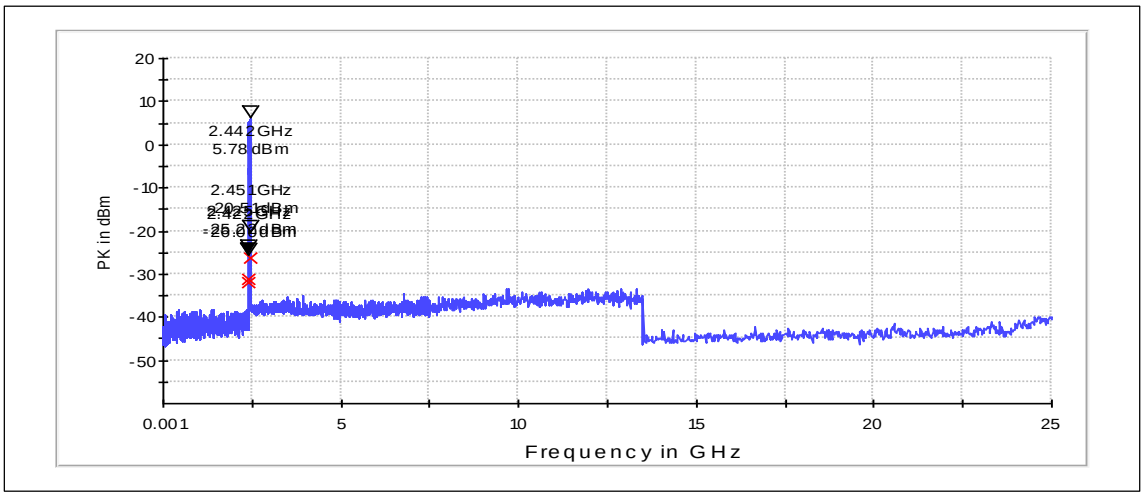
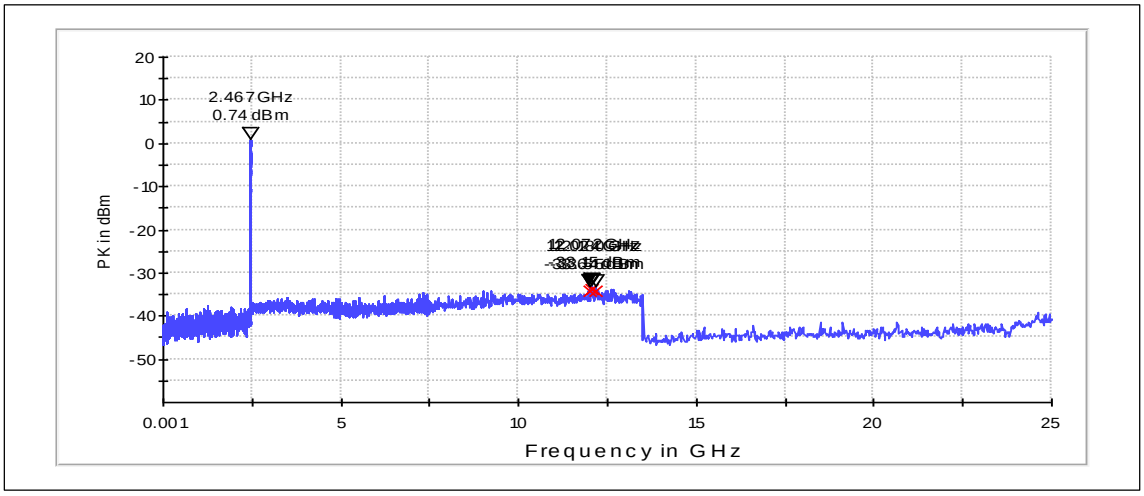
Channel 6 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
2450.708	-26.29	PASSED
2425.144	-31.00	PASSED
2422.288	-31.79	PASSED

Channel 11 / 2462 MHz



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

Frequency [MHz]	P [dBc]	Result
12072.000	-33.89	PASSED
12180.000	-34.29	PASSED
12024.000	-34.39	PASSED

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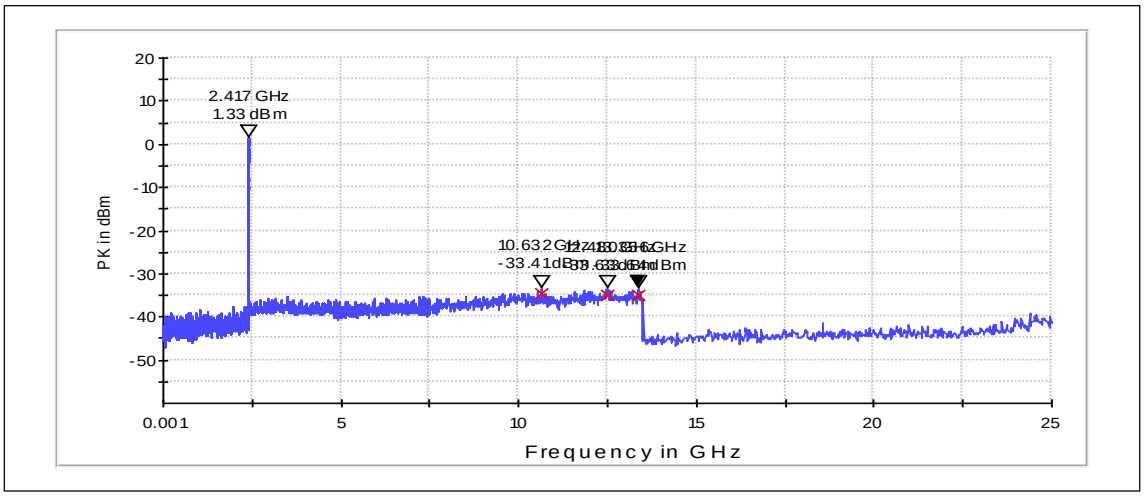
4.3.2 802.11n mode, 16QAM modulation, 26.0 / 28.9 Mbps data rate

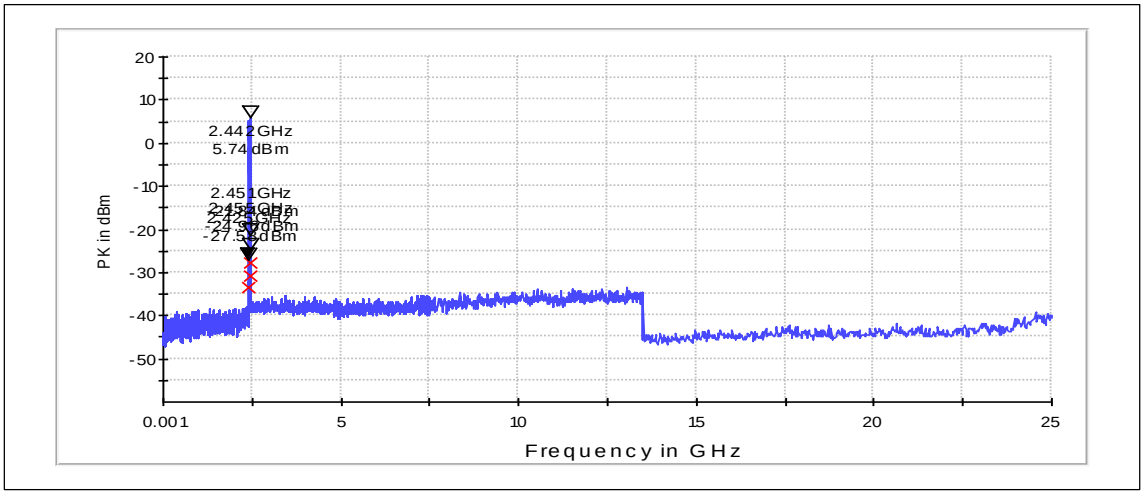
Channel 1 / 2412 MHz



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

Frequency [MHz]	P [dBc]	Result
10632.000	-34.75	PASSED
12480.000	-34.97	PASSED
13356.000	-34.97	PASSED

Channel 6 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
2450.708	-27.59	PASSED
2455.416	-30.71	PASSED
2425.144	-33.32	PASSED

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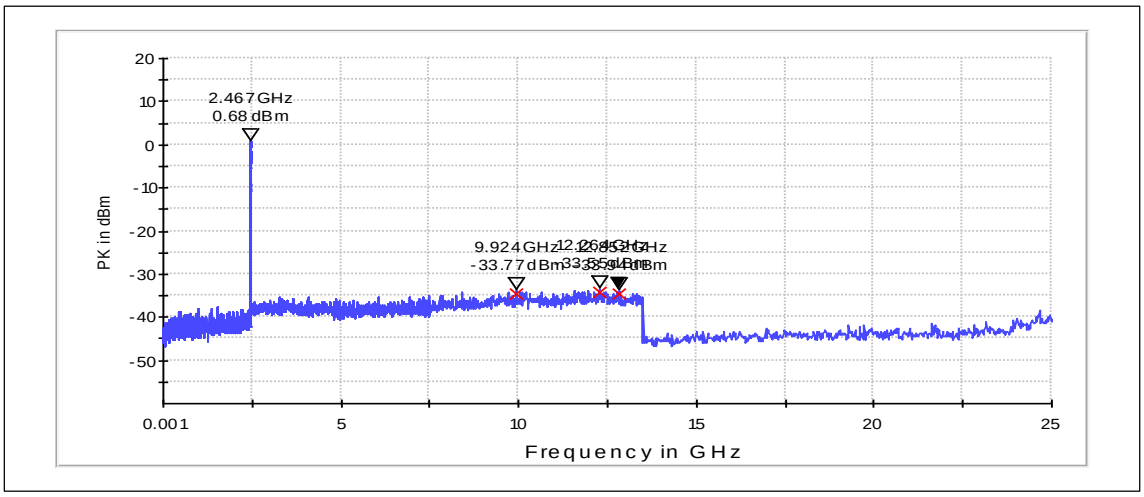
Channel 11 / 2462 MHz



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

Frequency [MHz]	P [dBc]	Result
12264.000	-34.23	PASSED
9924.000	-34.44	PASSED
12852.000	-34.61	PASSED

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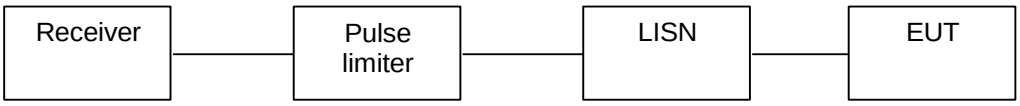
5. AC powerline conducted emissions
(FCC §15.207, a, RSS-GEN, section 7.2.2)

EUT with DUT number	RM-1018, DUT 43179
Accessories with DUT numbers	BL-5J, DUT 43173 ; BL-5J, DUT 43174 ; AC-18E, DUT 43177
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [ºC] / Humidity [%RH] / Air Pressure [kPa]	21 / 47 / 102.3
Date of measurements	27-May-2014
Measured by	Hannu Söderholm

5.1. Test Setup



5.2. Test method and limit

The measurement is made according to procedure KDB 558074 and IC standard RSS-GEN as follows:

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

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

The measurement results are obtained as described below:

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

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

CISPR 22 Class B limits

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

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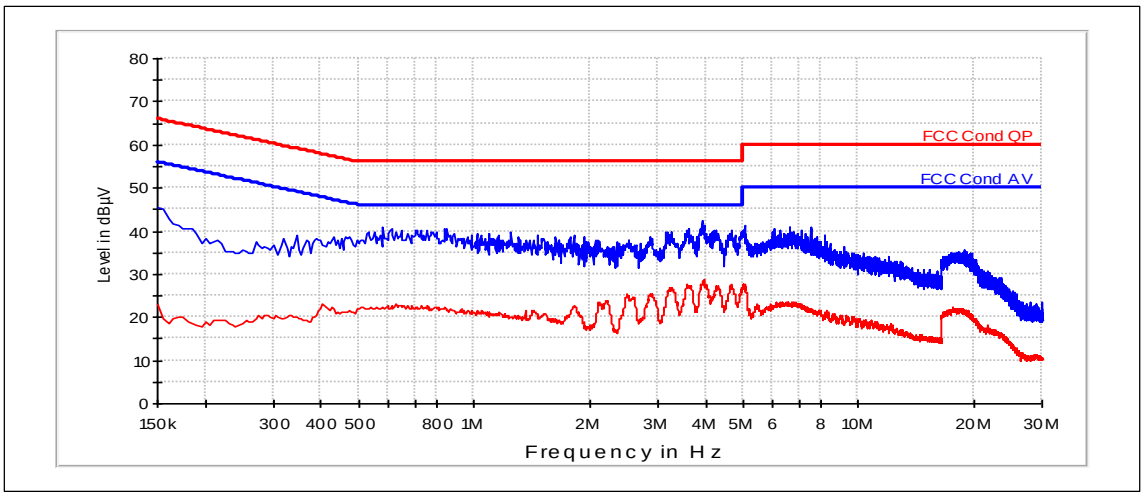
5.3. WLAN Test results

5.3.1 MCS0, 20 MHz CBW mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

Channel 6 / 2437 MHz



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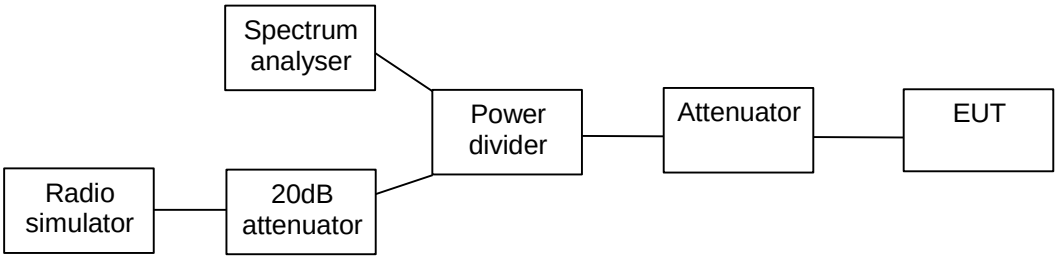
6. 6dB(bandwidth)

(FCC §15.247(a)(2), RSS-210 A8(0.1(1)))

EUT with DUT number	RM-1018, DUT 43175
Accessories with DUT numbers	SD-130, DUT 43176
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 42 / 99.8
Date of measurements	20-May-2014
Measured by	Jari Jantunen

6.1. Test Setup



6.2. Test method and limit

The measurement is made according to DTS procedures KDB 558074 and IC standard RSS-210.

Limits for 6 dB bandwidth measurements

Limit [kHz]
>= 500

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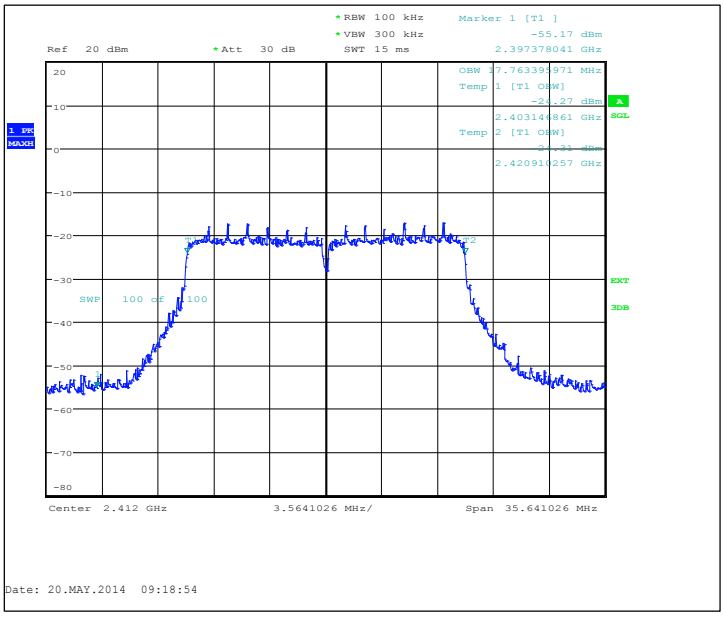
6.3. WLAN Test results

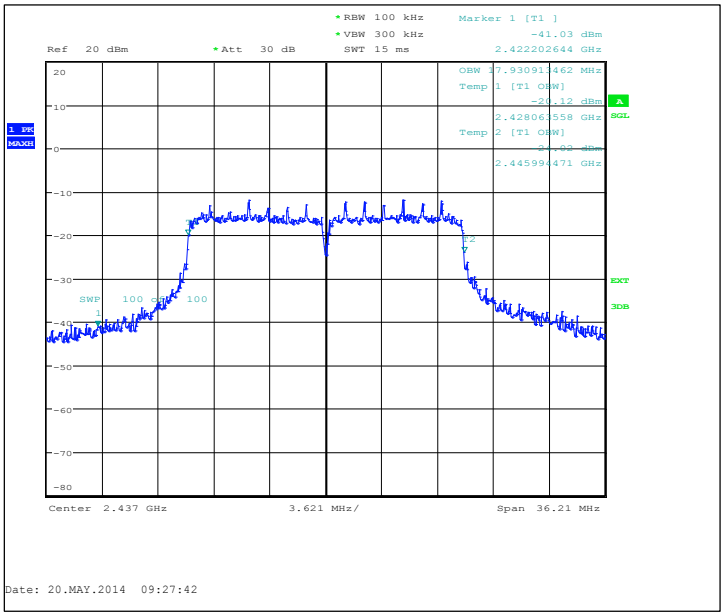
6.3.1 802.11n mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

Channel / f_C [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	17763.4	PASSED
6 / 2437	17930.9	PASSED
11 / 2462	17758.9	PASSED

Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



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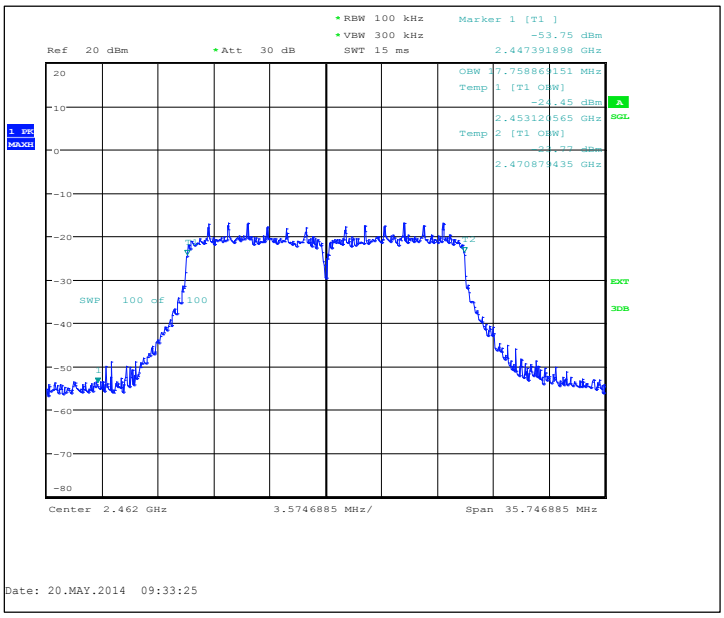
Channel 11 / 2462 MHz



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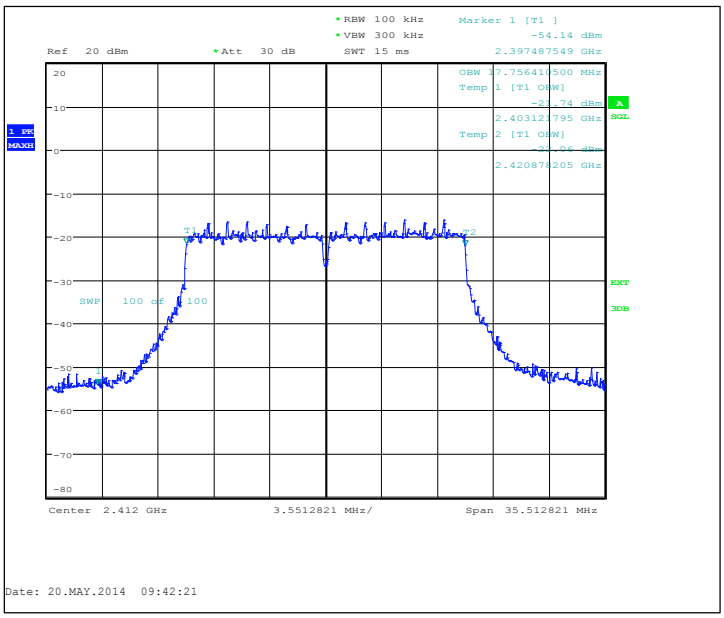
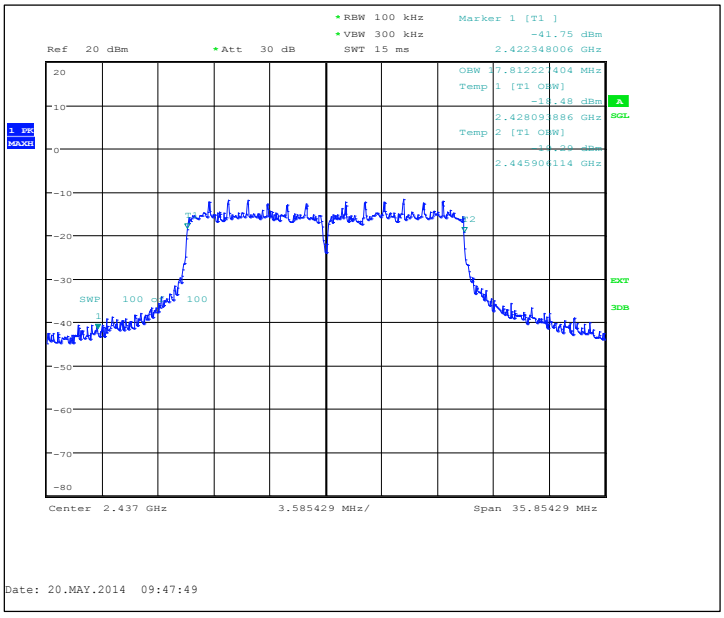
6.3.2 802.11n mode, 16QAM modulation, 26.0 / 28.9 Mbps data rate

Channel / f_C [MHz]	6 dB bandwidth [kHz]	Result
1 / 2412	17756.4	PASSED
6 / 2437	17812.2	PASSED
11 / 2462	17698	PASSED

Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



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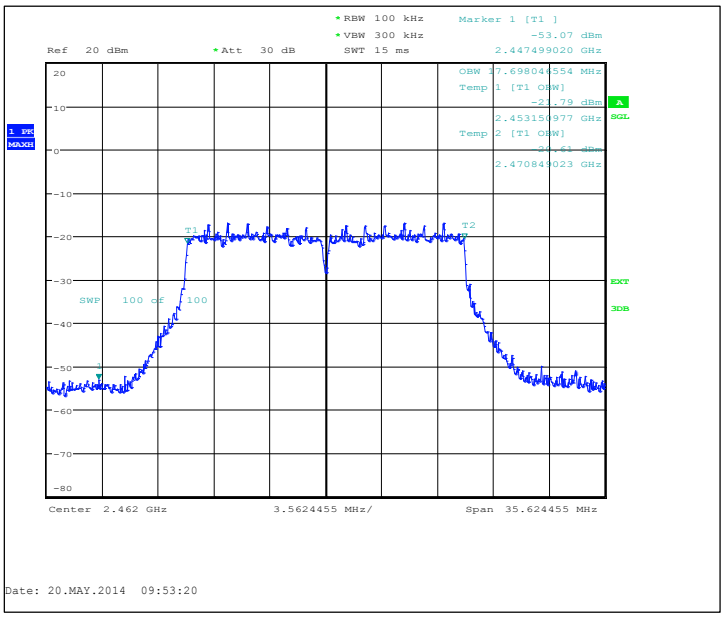
Channel 11 / 2462 MHz



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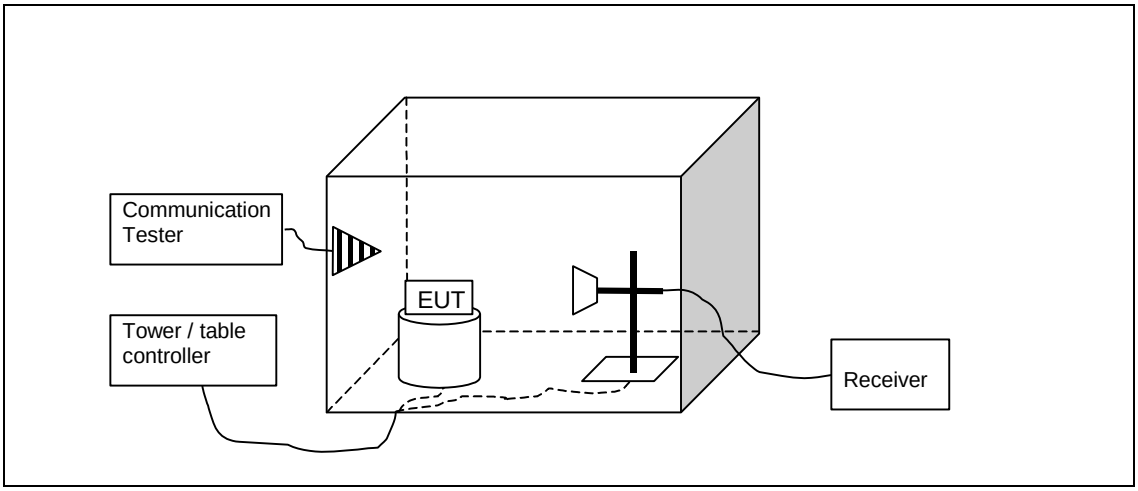
7. Radiated emissions
(FCC 15.247(d), 15.209, RSS-210 WLAN)

EUT with DUT number	RM-1018, DUT 43179
Accessories with DUT numbers	BL-5J, DUT 43173 ; AC-18E, DUT 43172 ; WH-108, DUT 43142
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [ºC] / Humidity [%RH] / Air Pressure [kPa]	22/47/102
Date of measurements	28-May-2014
Measured by	Jari Jantunen

7.1.1 Test setup



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7.2. Test method and limit

The measurement is made according to DTS procedures KDB 558074 and IC standard RSS-210 as follows:
The measurement is divided into the Preliminary Measurement and the Final Measurement.

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

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

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

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

The emissions less than 20 dB below the permissible value are reported.
The measurement results are obtained as described below:

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

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

Limits for spurious radiated emissions measurements (3 m measurement distance)

Frequency range [MHz]	Limit [µV/m]	Limit [dBµV/m]	Detector
30 - 88	100	40	Quasi peak
88 – 216	150	43.5	Quasi peak
216 – 960	200	46	Quasi peak
960 – 1000	500	54	Quasi peak
Above 1000	500	54	Average
Above 1000	5000	74	Peak

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7.3. WLAN test results

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

Channel 1 / 2412 MHz
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Limit [dBµV/m]	Margin	Results
4823	41.08	113.24	45.88	-4.8	74	32.9	PASSED
7234.7	45.04	178.649	44.14	0.9	95	50.19	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
4823	28.37	26.212	33.17	-4.8	54	25.61	PASSED
7234.7	31.67	38.327	30.77	0.9	---	---	PASSED

Channel 6 / 2437 MHz
Quasi peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Limit [dBµV/m]	Margin	Results
31.11	29.1	28.51	49.4	-20.3	40	10.9	PASSED
35.848	29.86	31.117	52.26	-22.4	40	10.14	PASSED

Peak (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
4879.8	42.56	134.276	47.06	-4.5	74	31.42	PASSED
7318.2	45.97	198.838	44.67	1.3	74	28.01	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
4879.8	28.55	26.761	33.05	-4.5	54	25.43	PASSED
7318.2	32.27	41.068	30.97	1.3	54	21.71	PASSED

Channel 11 / 2462 MHz
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Limit [dBµV/m]	Margin	Results
4924.3	47.33	232.541	51.73	-4.4	74	26.65	PASSED
7386.3	45	177.828	43.3	1.7	74	28.98	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
4924.3	32.71	43.202	37.11	-4.4	54	21.27	PASSED
7386.3	32.05	40.041	30.35	1.7	54	21.93	PASSED

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7.3.2 802.11n mode, 16QAM modulation, 26.0 / 28.9 Mbps data rate.

Channel 1 / 2412 MHz
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Limit [dBµV/m]	Margin	Results
4822.5	44.42	166.341	49.22	-4.8	74	29.56	PASSED
7236.2	44.52	168.267	43.62	0.9	95	50.71	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
4822.5	31.73	38.592	36.53	-4.8	54	22.25	PASSED
7236.2	31.82	38.994	30.92	0.9	---	---	PASSED

Channel 6 / 2437 MHz
Quasi peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Limit [dBµV/m]	Margin	Results
35.888	30.32	32.81	52.72	-22.4	40	9.68	PASSED

Peak (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
4878.2	41.54	119.399	46.04	-4.5	74	32.44	PASSED
7320.6	44.89	175.59	43.59	1.3	74	29.09	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
4878.2	28.49	26.577	32.99	-4.5	54	25.49	PASSED
7320.6	32.03	39.948	30.73	1.3	54	21.95	PASSED

Channel 11 / 2462 MHz
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U_{RX} [dBµV]	A_{TOT} [dB]	Limit [dBµV/m]	Margin	Results
4925.3	45.36	185.353	49.76	-4.4	74	28.62	PASSED
7384	45.92	197.697	44.32	1.6	74	28.06	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
4925.3	33	44.668	37.4	-4.4	54	20.98	PASSED
7384	32.27	41.068	30.67	1.6	54	21.71	PASSED

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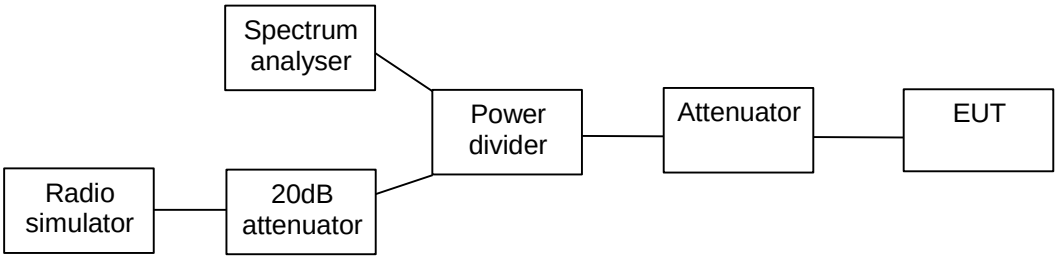
8. Power spectral density
(FCC §15.247(e), RSS-210 A8(0.1(2)))

EUT with DUT number	RM-1018, DUT 43175
Accessories with DUT numbers	SD-130, DUT 43176
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 42 / 99.8
Date of measurements	20-May-2014
Measured by	Jari Jantunen

8.1. Test Setup



8.2. Test method and limit

The measurement is made according to DTS procedures KDB 558074 and IC standard RSS-210.

Limits for power spectral density measurements

Limit [dBm] @ 3 kHz
<= 8

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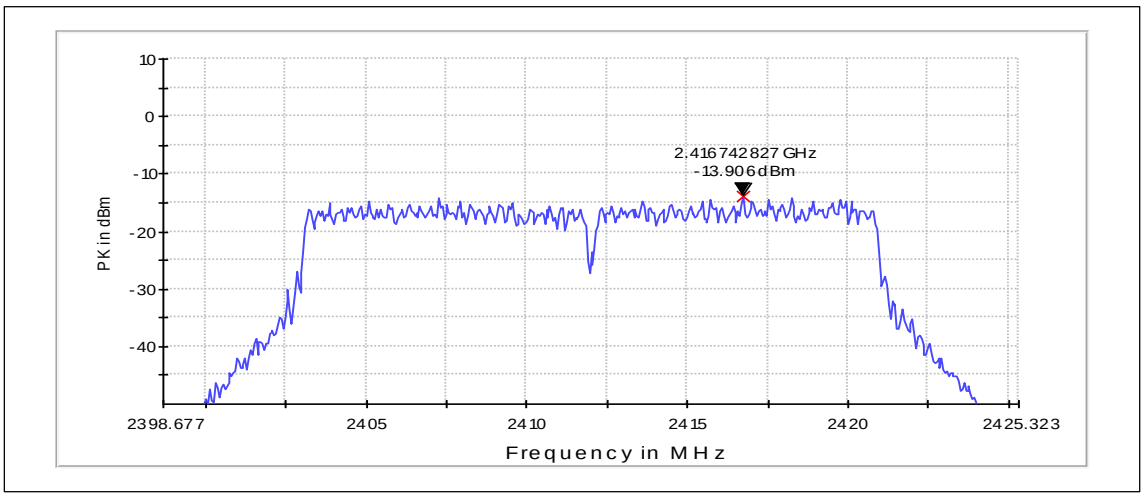
8.3. WLAN Test results

8.3.1 802.11n mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

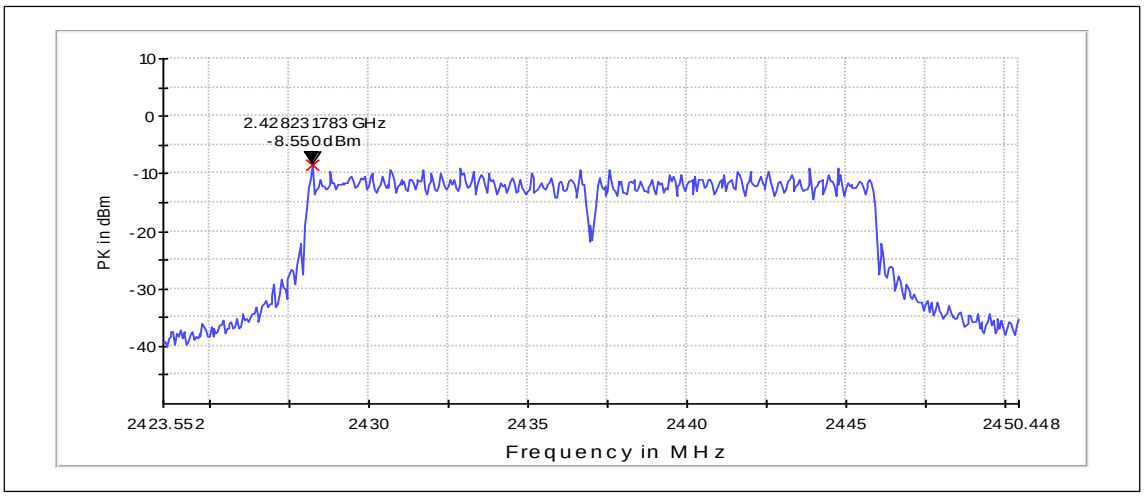
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f_C [MHz]	P [dBm]	Result
1 / 2412	-13.91	PASSED
6 / 2437	-8.55	PASSED
11 / 2462	-13.24	PASSED

Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



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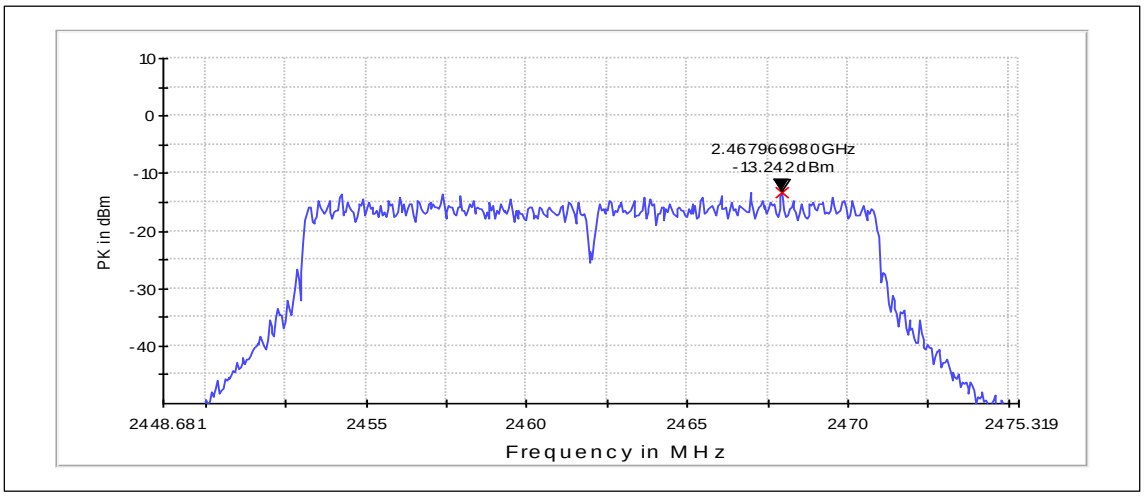
Channel 11 / 2462 MHz



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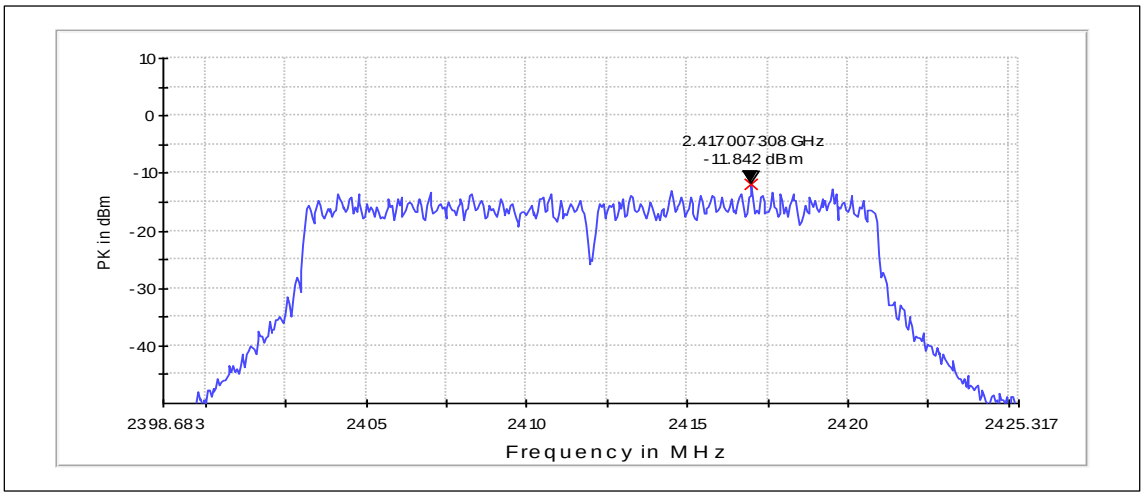
8.3.2 802.11n mode, 16QAM modulation, 26.0 / 28.9 Mbps data rate

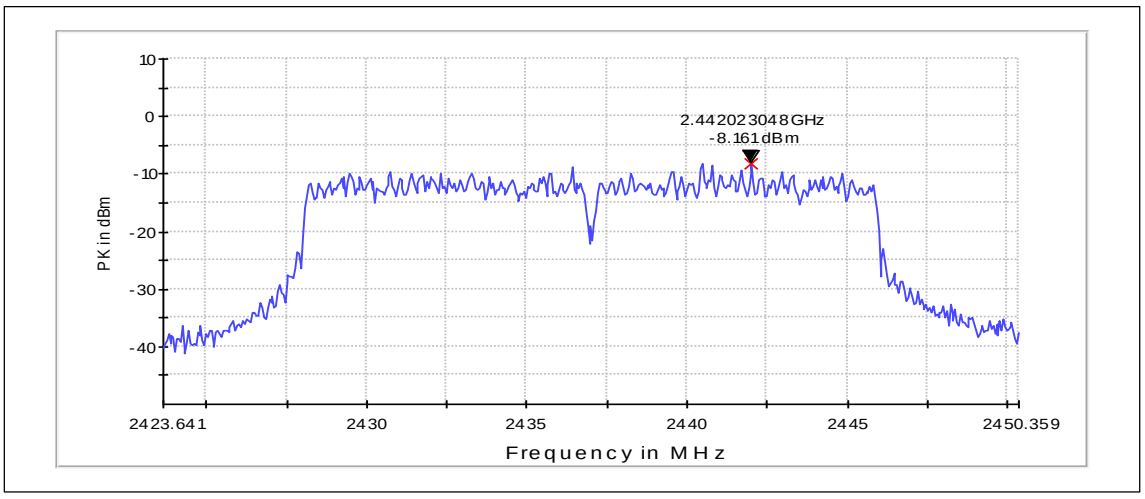
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f_C [MHz]	P [dBm]	Result
1 / 2412	-11.84	PASSED
6 / 2437	-8.16	PASSED
11 / 2462	-12.94	PASSED

Channel 1 / 2412 MHz



Channel 6 / 2437 MHz



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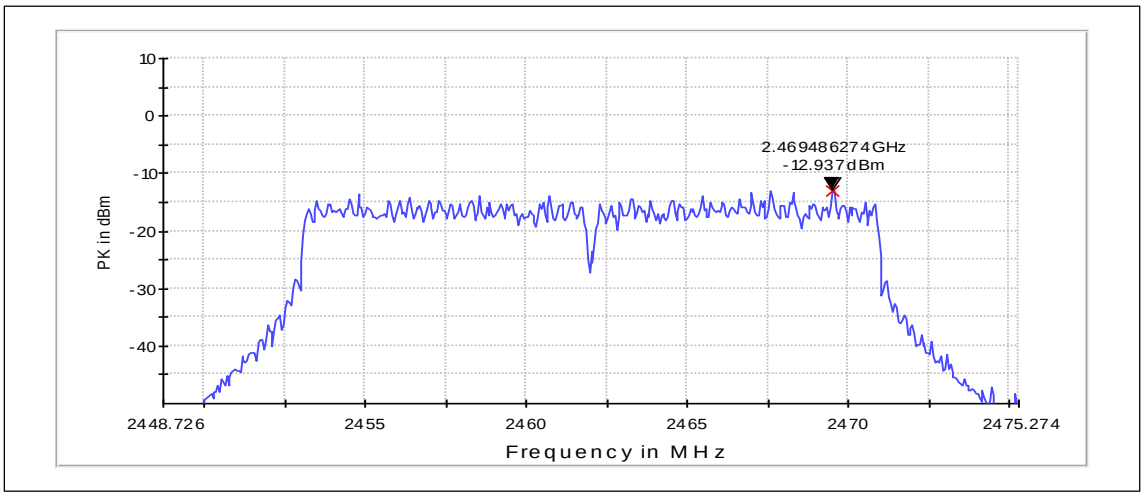
Channel 11 / 2462 MHz



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9. Test Equipment

9.1. 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

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9.2. 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
-	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

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