

FCC Part 15C Compliance Test Report

Test Report no.:	FCC15CWLAN_RM-1127_12.docx	Date of Report:	02-Oct-2015
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FCC listing no.:	975940		
IC recognition no.:	661AH-1		
Tested devices/ accessories:	Phone RM-1127 / Cover CC-3097 / Battery Samsung BL-T5A / AC-Charger AC-18U / Headset WH-108		
FCC ID:	PYARM-1127	IC:	-
Supplement reports:	-		
Testing has been carried out in accordance with:	CFR 47, FCC rules Part 15 Subpart C, ANSI C63.4 (2014), DTS procedures KDB 558074, IC standards, RSS-210 (Issue 8, December 2010). Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		
Documentation:	The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 15 years at TCC 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:			

Jia Dongsheng, Manager

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	15-Jun-2015
Testing completed	26-Aug-2015
The customer's contact person	Tero Huhtala
Test Plan referred to	T:\Projects\RM-1128\TestPlan\RS_testplan_RM-1128.xlsm
Notes	-
Document name	FCC15CWLAN_RM-1127_12.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-1128	004402742351913	1510	-	01065.00000.15265.37000	500110
Cover	CC-3097	-	-	-	-	500128
Battery	Samsung BL-T5A	5241525213V10205754;0670778	PWB Ver.1.1	-	-	500117
AC-Charger	AC-18U	4818715115100100661;0675735	-	-	-	500124
Headset	WH-108	-	-	-	-	500103

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)	A8.4(4)	Conducted peak output power	PASSED
15.247(d), 15.205(b)	A8.5	Band edge compliance of RF emissions	PASSED
15.247(d)	A8.5	Spurious RF conducted emissions	PASSED
15.247(d), 15.209	A8.5	Spurious radiated emissions	PASSED
15.207	7.2.4	AC powerline conducted emissions	NP
15.247(a)(2)	A8.2(a)	6dB(bandwidth)	PASSED
15.247(e)	A8.2(b)	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 Microsoft Laboratory.

The test results of PYARM-1128 are re-used for certification of the PYARM-1127. The table above indicates the results, which will be re-used.

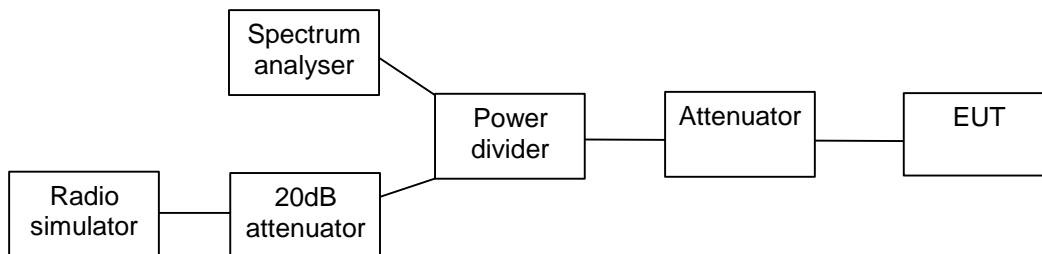
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2. Conducted peak output power (FCC §15.247(b)(1), RSS-210 A8.4(4))

EUT with DUT number	RM-1128, DUT 500110
Accessories with DUT numbers	CC-3097, DUT 500128; Samsung BL-T5A, DUT 500117; AC-18U, DUT 500124; WH-108, DUT 500103
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	Test was done in conducted RF2 system.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 67 / 100.2; 23 / 60 / 100.6
Date of measurements	12-Aug-2015; 20-Aug-2015
Measured by	Dou Rubo

2.1. Test Setup



2.2. 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

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

Limits for conducted peak output power measurements

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

2.3. Power results summary

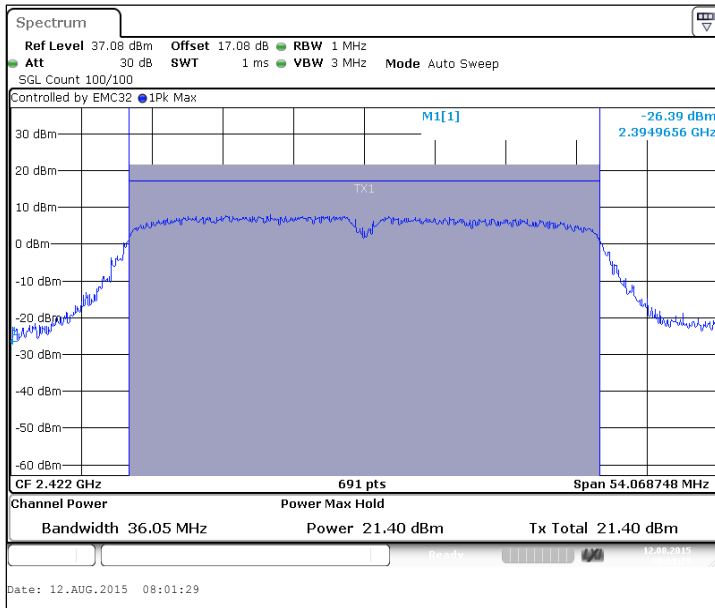
Channel / f _c [MHz]	Mode	Modulation	Data rate	Level [dBm]
1-5 / 2422	802.11n	BPSK	13.5 / 15.0 Mbps	21.4
4-8 / 2437	802.11n	BPSK	13.5 / 15.0 Mbps	22.97
7-11 / 2452	802.11n	BPSK	13.5 / 15.0 Mbps	22.09
1-5 / 2422	802.11n	16QAM	54.0 / 60.0 Mbps	21.78
4-8 / 2437	802.11n	16QAM	54.0 / 60.0 Mbps	23
7-11 / 2452	802.11n	16QAM	54.0 / 60.0 Mbps	22.25

2.4. WLAN Test results

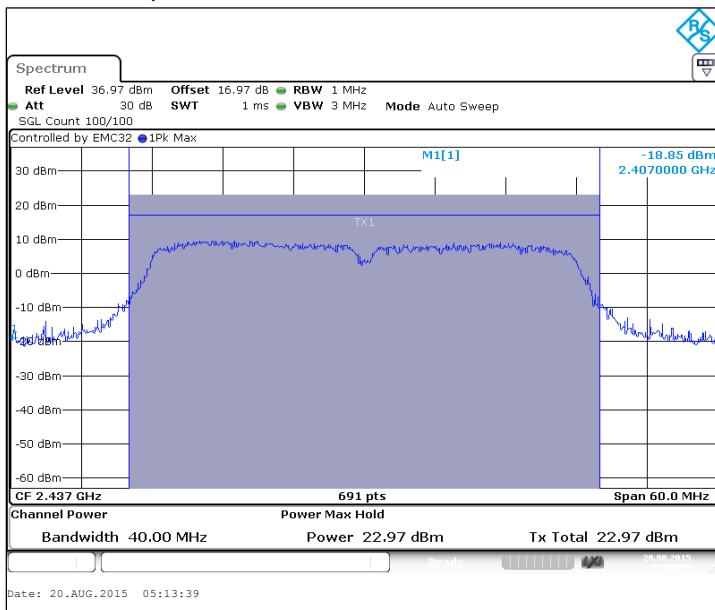
2.4.1 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / fc [MHz]	P [dBm]	P [mW]	Result
1-5 / 2422	21.4	138.038	PASSED
4-8 / 2437	22.97	198.153	PASSED
7-11 / 2452	22.09	161.808	PASSED

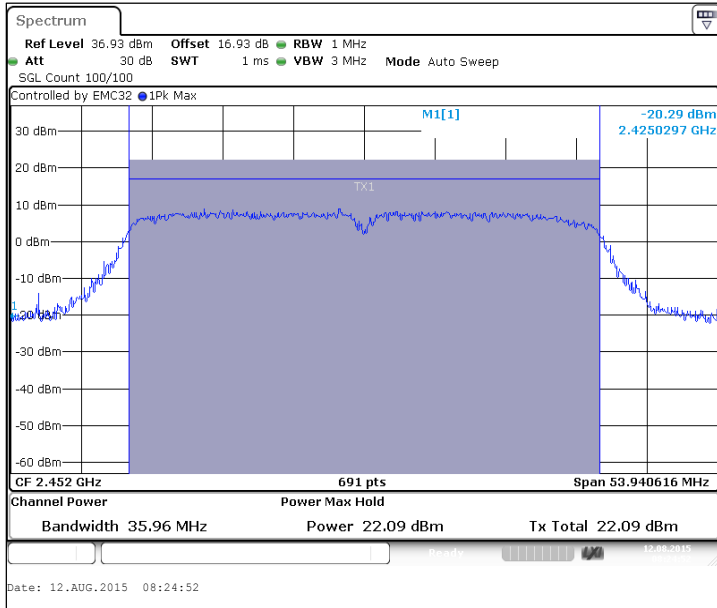
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



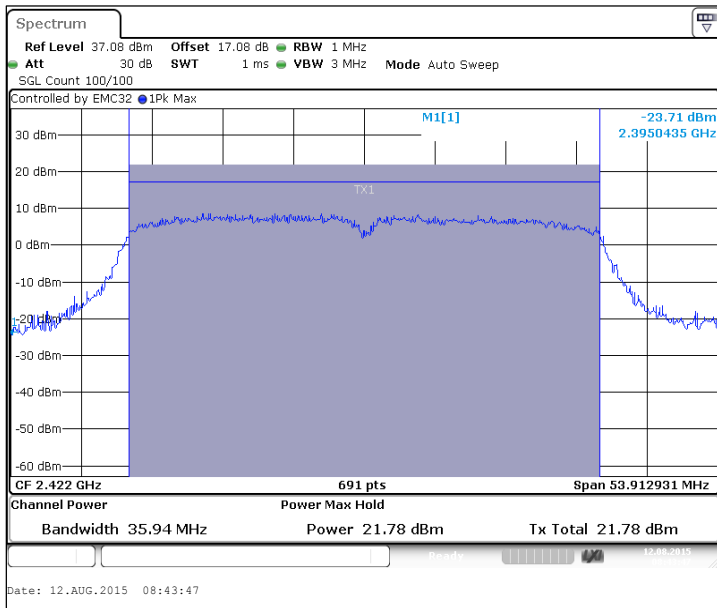
Channel 7-11 / 2452 MHz



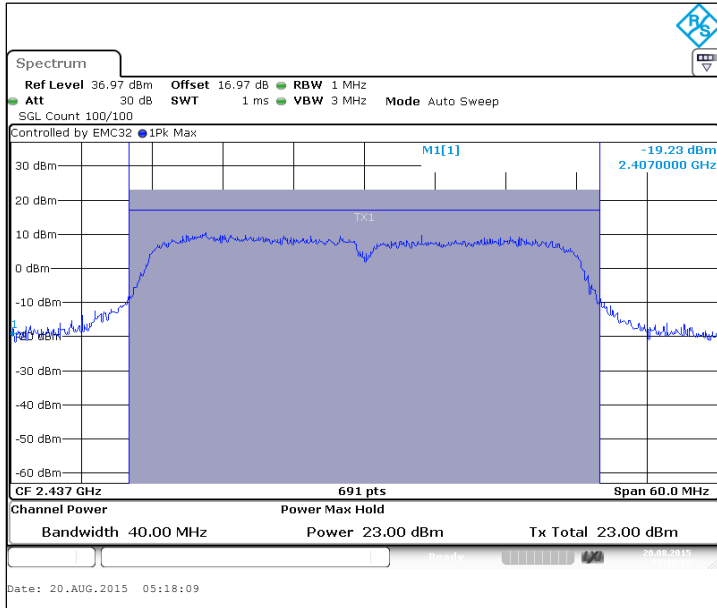
2.4.2 802.11n mode, 16QAM modulation, 54.0 / 60.0 Mbps data rate

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
1-5 / 2422	21.78	150.661	PASSED
4-8 / 2437	23	199.526	PASSED
7-11 / 2452	22.25	167.88	PASSED

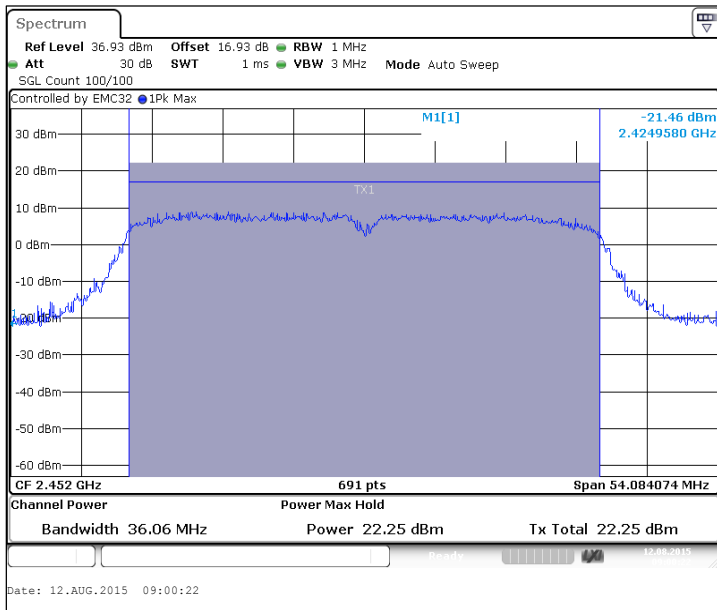
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



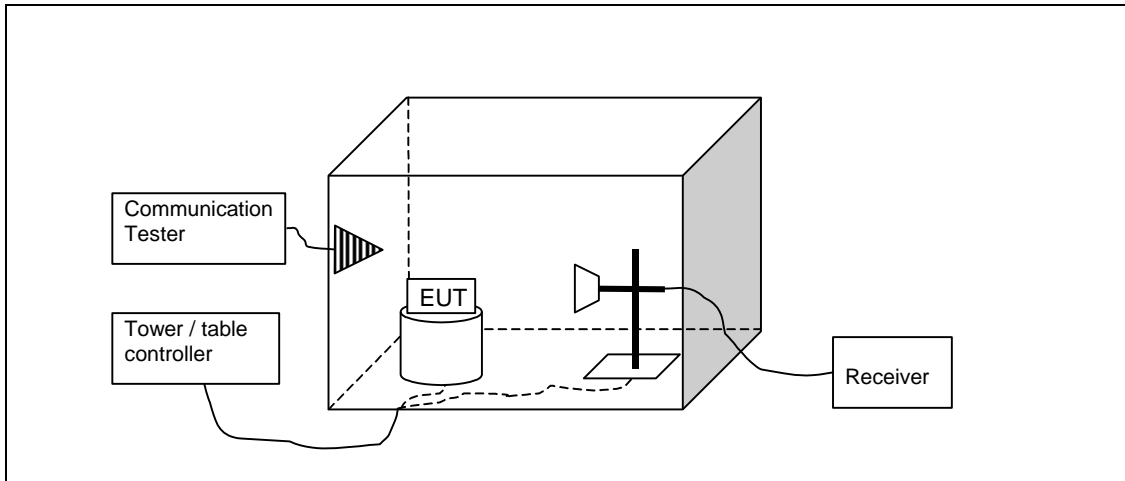
Channel 7-11 / 2452 MHz



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

EUT with DUT number	RM-1128, DUT 500100
Accessories with DUT numbers	CC-3097, DUT 500127 ; Samsung BL-T5A, DUT 500101; AC-18U, DUT 500124; WH-108, DUT 500121
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21/55/100.2
Date of measurements	15-Jul-2015
Measured by	Dou Rubo

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 ($A_{TOT} = L_{CABLES} + A_F - G_{PREAMP}$).

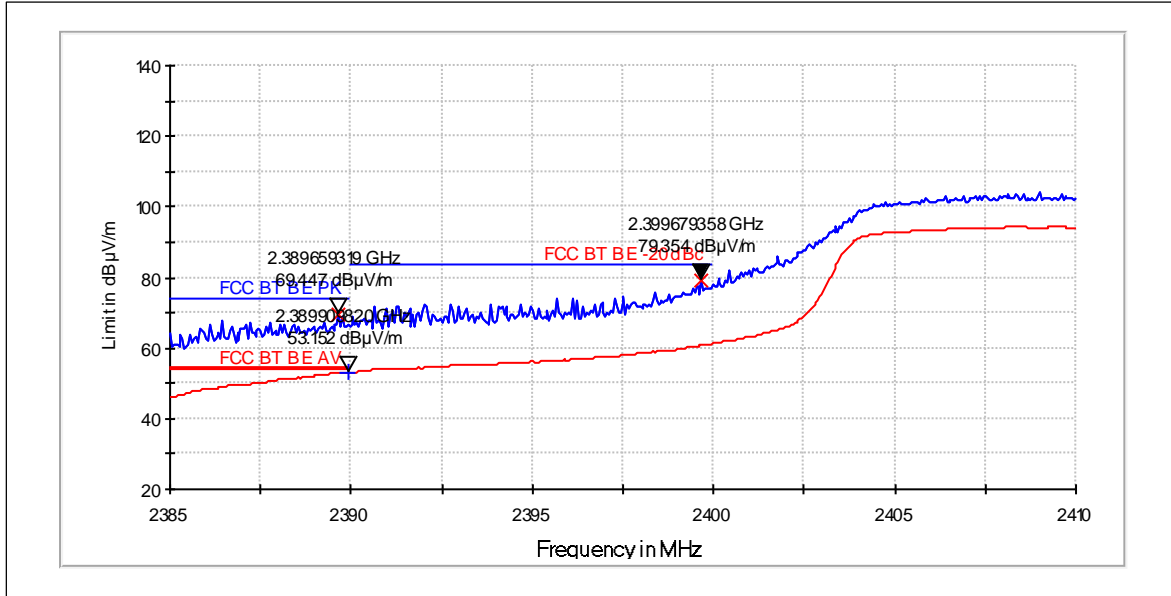
Limits for band edge compliance of RF emissions measurements (3 m measurement distance)

Frequency range [MHz]	Limit
Below 2390 and above 2483.5	54 dBuV/m (avg) and 74 dBuV/m (pk)
2390 - 2400	-20 dBc (pk)

3.3. WLAN test results

3.3.1 802.11n, BPSK modulation, 13.5 / 15.0 Mbps data rate.

Channel 1-5 / 2422MHz



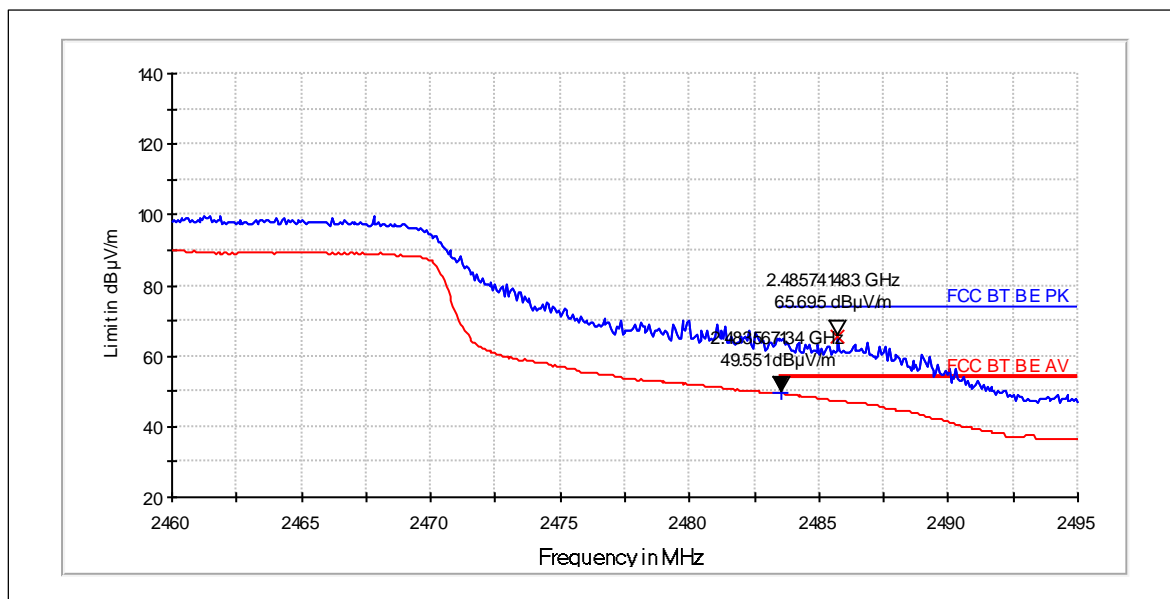
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U _{RX} [dBµV]	A _{TOT} [dB]	Results
2390	69.45	2967.222	68.65	0.8	PASSED
2400	79.35	9283.249	78.55	0.8	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U _{RX} [dBµV]	A _{TOT} [dB]	Results
2390	53.15	454.569	52.35	0.8	PASSED

Channel 7-11 / 2452MHz



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

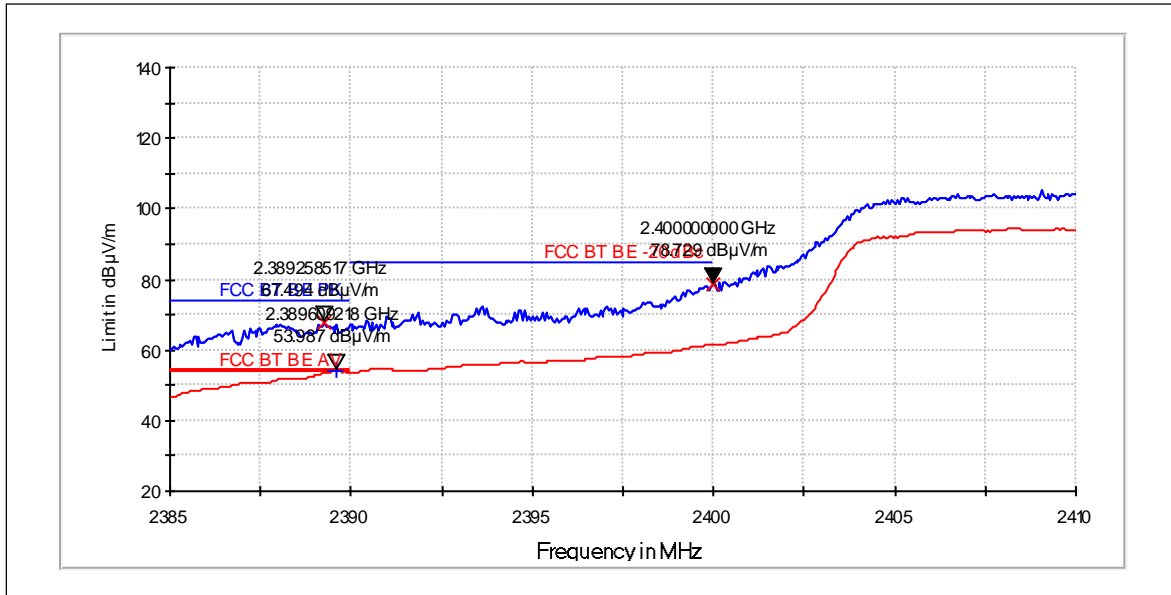
Frequency [MHz]	E [dBµV/m]	E [µV/m]	U _{RX} [dBµV]	A _{TOT} [dB]	Results
2486	65.7	1926.416	64.9	0.8	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U _{RX} [dBµV]	A _{TOT} [dB]	Results
2484	49.55	300.296	48.75	0.8	PASSED

3.3.2 802.11n, 16QAM modulation, 54.0 / 60.0 Mbps data rate.

Channel 1-5 / 2422MHz



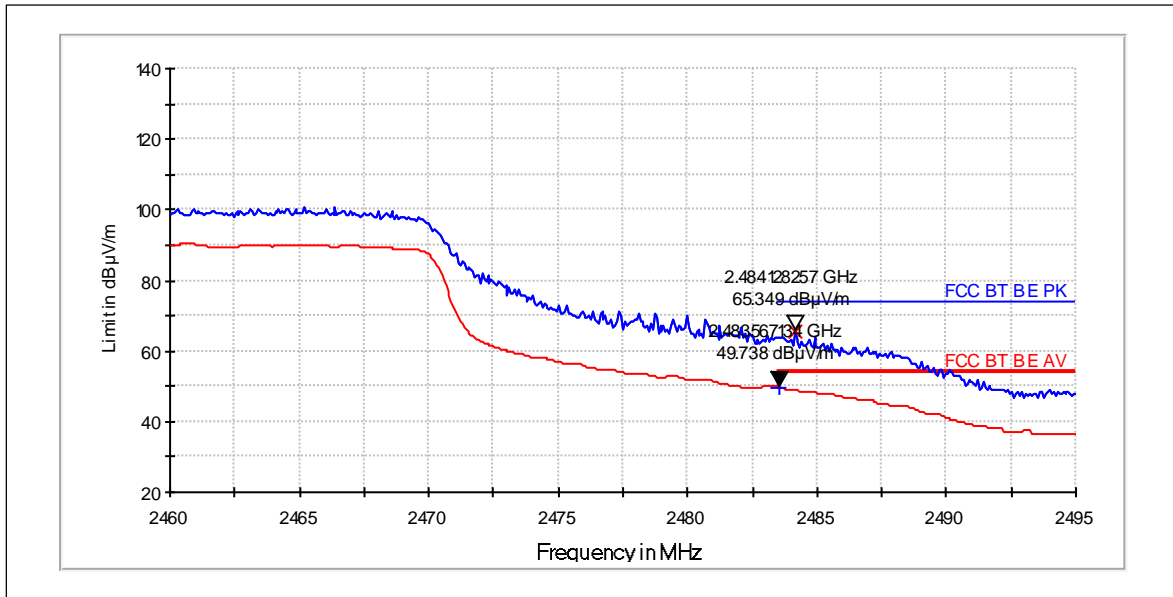
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U _{RX} [dBµV]	A _{TOT} [dB]	Results
2389	67.49	2369.736	66.69	0.8	PASSED
2400	78.73	8638.732	77.93	0.8	PASSED

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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U _{RX} [dBµV]	A _{TOT} [dB]	Results
2390	53.99	500.438	53.19	0.8	PASSED

Channel 7-11 / 2452MHz



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

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U _{RX} [dBµV]	A _{TOT} [dB]	Results
2484	65.35	1851.186	64.55	0.8	PASSED

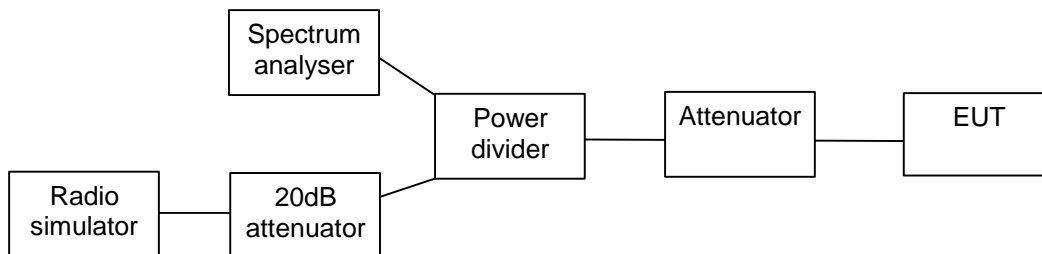
Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBµV/m]	E [µV/m]	U _{RX} [dBµV]	A _{TOT} [dB]	Results
2484	49.74	306.832	48.94	0.8	PASSED

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

EUT with DUT number	RM-1128, DUT 500110
Accessories with DUT numbers	CC-3097, DUT 500128; Samsung BL-T5A, DUT 500117; AC-18U, DUT 500124; WH-108, DUT 500103
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	Test was done in conducted RF2 system.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 67 / 100.2
Date of measurements	12-Aug-2015
Measured by	Dou Rubo

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.

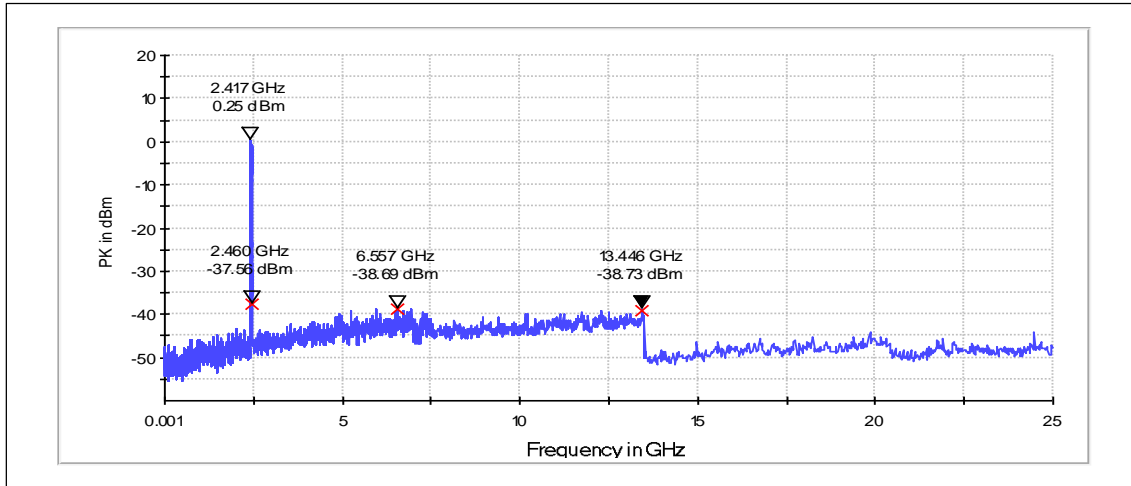
Limits for spurious RF conducted emissions measurements

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

4.3. WLAN Test results

4.3.1 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

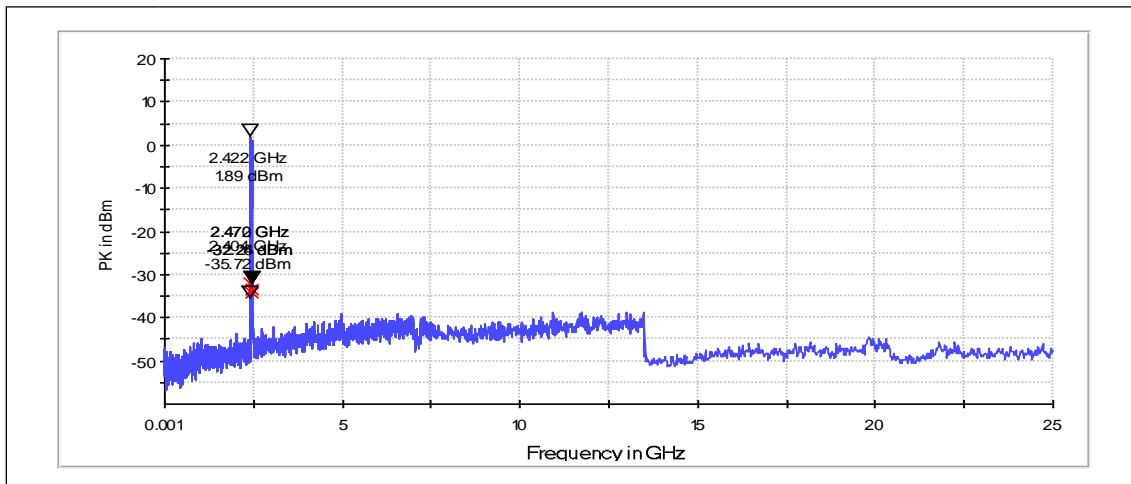
Channel 1-5 / 2422 MHz



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

Frequency [MHz]	P [dBc]	Result
2460.383	-37.81	PASSED
6556.687	-38.95	PASSED
13446.108	-38.98	PASSED

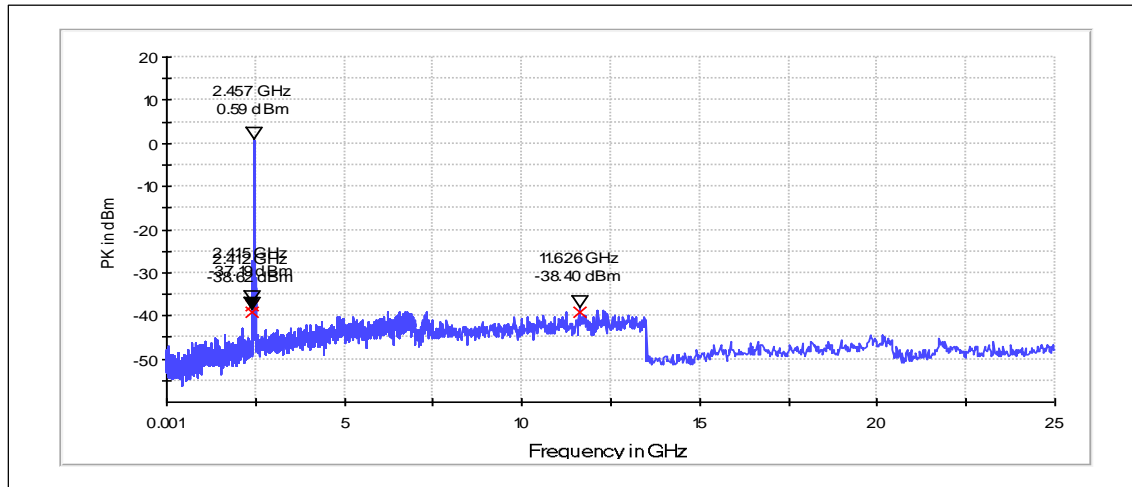
Channel 4-8 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
2404.004	-31.78	PASSED
2469.996	-33.41	PASSED
2472.321	-34.13	PASSED

Channel 7-11 / 2452 MHz

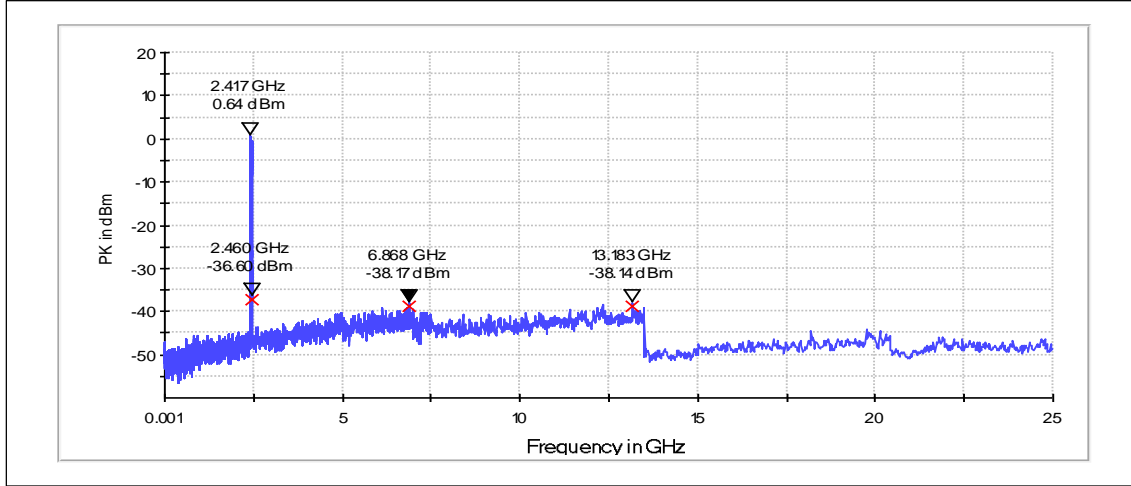


Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
2414.626	-37.78	PASSED
11625.749	-39.00	PASSED
2411.800	-39.21	PASSED

4.3.2 802.11n mode, 16QAM modulation, 54.0 / 60.0 Mbps data rate

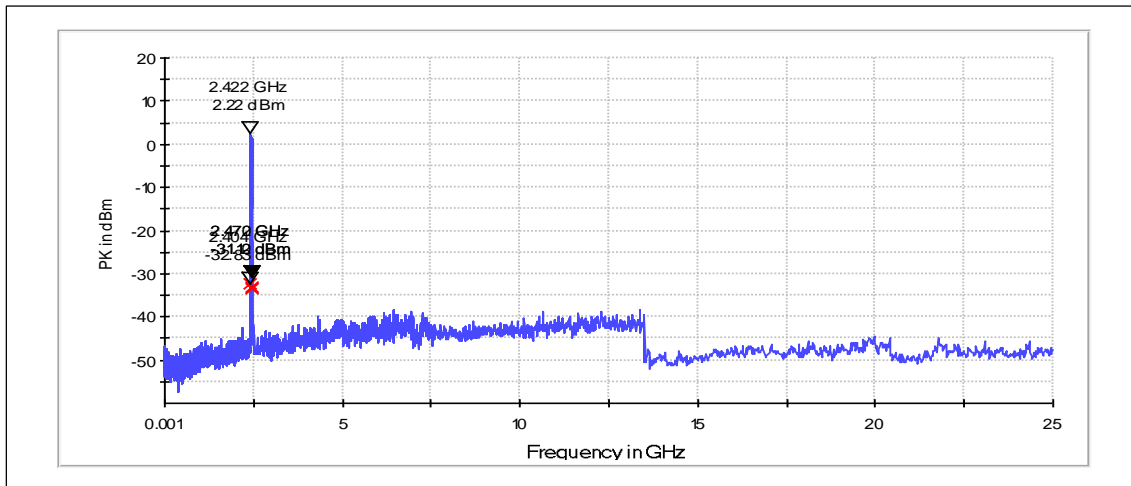
Channel 1-5 / 2422 MHz



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

Frequency [MHz]	P [dBc]	Result
2460.279	-37.25	PASSED
13182.635	-38.78	PASSED
6868.463	-38.81	PASSED

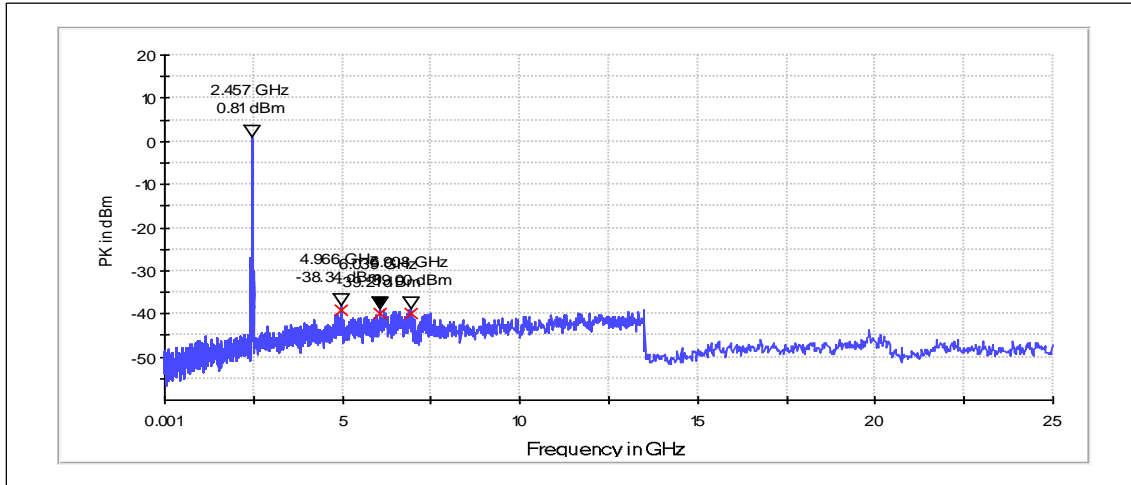
Channel 4-8 / 2437 MHz



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

Frequency [MHz]	P [dBc]	Result
2404.004	-32.31	PASSED
2469.996	-33.06	PASSED
2472.321	-33.32	PASSED

Channel 7-11 / 2452 MHz



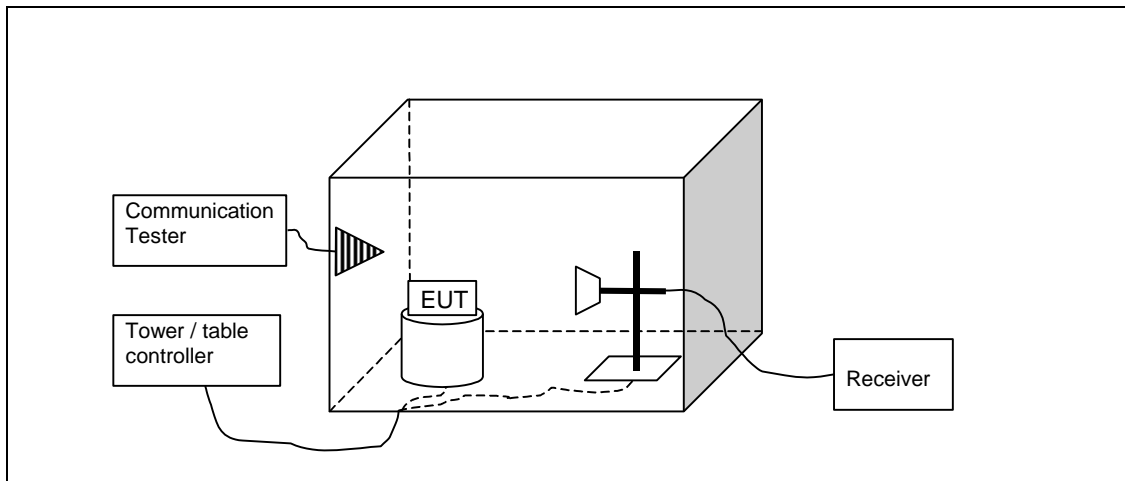
Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
4966.267	-39.15	PASSED
6907.984	-39.81	PASSED
6038.523	-40.01	PASSED

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

EUT with DUT number	RM-1128, DUT 500100
Accessories with DUT numbers	CC-3097, DUT 500127 ; Samsung BL-T5A, DUT 500101; AC-18U, DUT 500124; WH-108, DUT 500121
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21/55/100.2
Date of measurements	15-Jul-2015
Measured by	Gao Sherina

5.1.1 Test setup



5.2. Test method and limit

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

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

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

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

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

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

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

The measurement is made up to 10th harmonic of the EUT highest TX channel.

The measurement results are obtained as described below:

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

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

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

Frequency range [MHz]	Limit [$\mu V/m$]	Limit [dB $\mu V/m$]	Detector
30 - 88	100	40	Quasi peak
88 - 216	150	43.5	Quasi peak
216 - 960	200	46	Quasi peak
960 - 1000	500	54	Quasi peak
Above 1000	500	54	Average
Above 1000	5000	74	Peak

5.3. WLAN test results

5.3.1 802.11n, BPSK modulation, 13.5 / 15.0 Mbps data rate.

Channel 1-5 / 2422MHz

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
31.14	26.24	20.512	31.64	-5.4	40	13.76	PASSED
31.86	27.83	24.632	33.63	-5.8	40	12.17	PASSED
31.948	28.41	26.333	34.31	-5.9	40	11.59	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
4843.8	43.93	157.217	42.33	1.6	74	30.05	PASSED
7265.1	50.31	327.718	39.81	10.5	74	23.67	PASSED

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

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
4843.8	30.89	35.035	29.29	1.6	54	23.09	PASSED
7265.1	36.59	67.531	26.09	10.5	54	17.39	PASSED

Channel 4-8 / 2437MHz

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
31.26	20.63	10.752	26.13	-5.5	40	19.37	PASSED
31.32	20.8	10.965	26.3	-5.5	40	19.2	PASSED
904.759	24.66	17.1	26.06	-1.4	46	21.36	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
4880.7	44.52	168.267	42.72	1.8	74	29.46	PASSED
7321.6	50.16	322.107	39.36	10.8	74	23.82	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
4880.7	31.3	36.728	29.5	1.8	54	22.68	PASSED
7321.6	36.75	68.786	25.95	10.8	54	17.23	PASSED

Channel 7-11 / 2452MHz

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

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
31.86	27.77	24.462	33.57	-5.8	40	12.23	PASSED
31.95	27.92	24.889	33.82	-5.9	40	12.08	PASSED
908.563	40.5	105.925	41.7	-1.2	46	5.52	PASSED

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

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
4903.4	44.84	174.582	43.04	1.8	74	29.14	PASSED
7356.8	49.29	291.407	38.49	10.8	74	24.69	PASSED

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

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
4903.4	31.82	38.994	30.02	1.8	54	22.16	PASSED
7356.8	36.61	67.686	25.81	10.8	54	17.37	PASSED

5.3.2 802.11n, 16QAM modulation, 54.0 / 60.0 Mbps data rate.

Channel 1-5 / 2422MHz

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

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
31.98	20.09	10.104	25.99	-5.9	40	19.91	PASSED
32.128	19.08	8.995	25.08	-6	40	20.92	PASSED
906.349	24.79	17.358	26.09	-1.3	46	21.23	PASSED

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

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
4846	43.95	157.58	42.25	1.7	74	30.03	PASSED
7264.7	49.68	304.789	39.18	10.5	74	24.3	PASSED

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

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
4846	30.64	34.041	28.94	1.7	54	23.34	PASSED
7264.7	36.49	66.757	25.99	10.5	54	17.49	PASSED

Channel 4-8 / 2437MHz

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

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
31.95	27.98	25.061	33.88	-5.9	40	12.02	PASSED
32.158	27.76	24.434	33.76	-6	40	12.24	PASSED
899.132	29.51	29.888	31.11	-1.6	46	16.51	PASSED

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

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
4879.2	45.19	181.761	43.39	1.8	74	28.79	PASSED

7319.9	50.47	333.811	39.57	10.9	74	23.51	PASSED
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Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
4879.2	31.57	37.888	29.77	1.8	54	22.41	PASSED
7319.9	37.11	71.697	26.21	10.9	54	16.87	PASSED

Channel 7-11 / 2452MHz

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

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
30.66	20.49	10.58	25.59	-5.1	40	19.51	PASSED
31.77	20.44	10.52	26.24	-5.8	40	19.56	PASSED
900.188	24.56	16.904	26.06	-1.5	46	21.46	PASSED

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

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
4903.4	44.32	164.437	42.52	1.8	74	29.66	PASSED
7355.9	49.93	313.69	39.13	10.8	74	24.05	PASSED

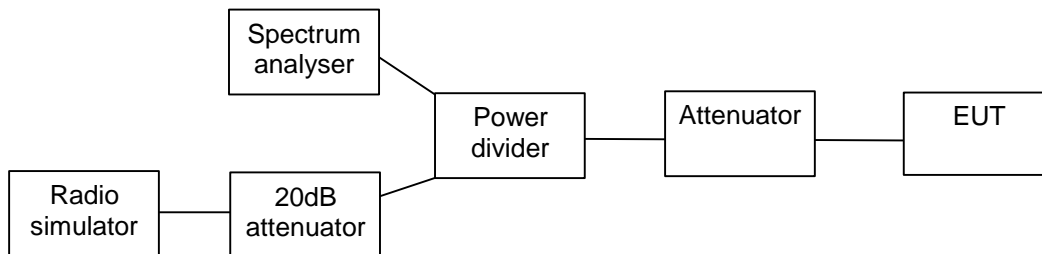
Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dB μ V/m]	E [μ V/m]	U _{RX} [dB μ V]	A _{TOT} [dB]	Limit [dB μ V/m]	Margin	Results
4903.4	31.2	36.308	29.4	1.8	54	22.78	PASSED
7355.9	36.81	69.263	26.01	10.8	54	17.17	PASSED

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

EUT with DUT number	RM-1128, DUT 500110
Accessories with DUT numbers	CC-3097, DUT 500128; Samsung BL-T5A, DUT 500117; AC-18U, DUT 500124; WH-108, DUT 500103
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	Test was done in conducted RF2 system.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 67 / 100.2 to 23 / 60 / 100.6
Date of measurements	12-Aug-2015 to 20-Aug-2014
Measured by	Dou Rubo

6.1. Test Setup



6.2. 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

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

Limits for 6 dB bandwidth measurements

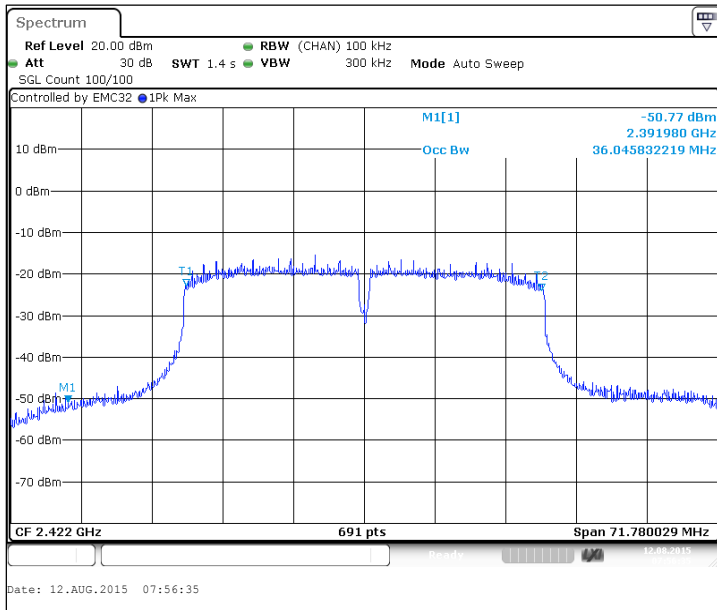
Limit [kHz]
>= 500

6.3. WLAN Test results

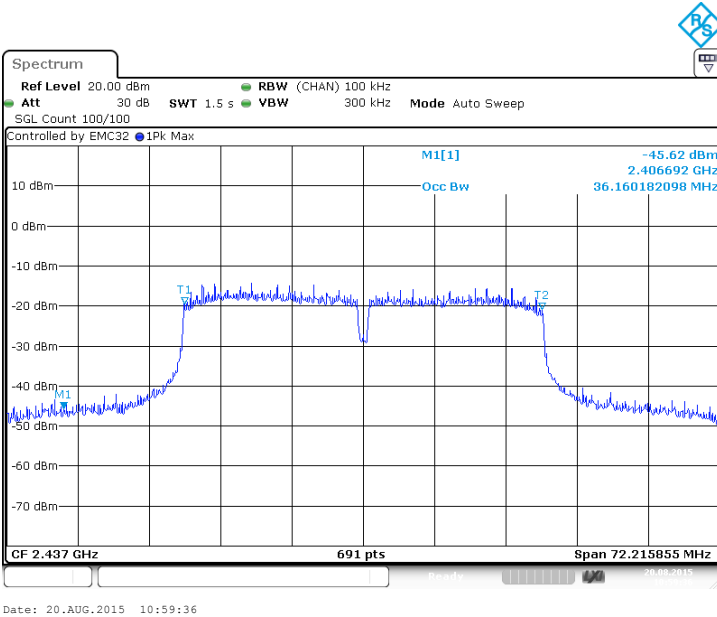
6.3.1 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

Channel / fc [MHz]	6 dB bandwidth [kHz]	Result
1-5 / 2422	36045.8	PASSED
4-8 / 2437	36160.2	PASSED
7-11 / 2452	35960.4	PASSED

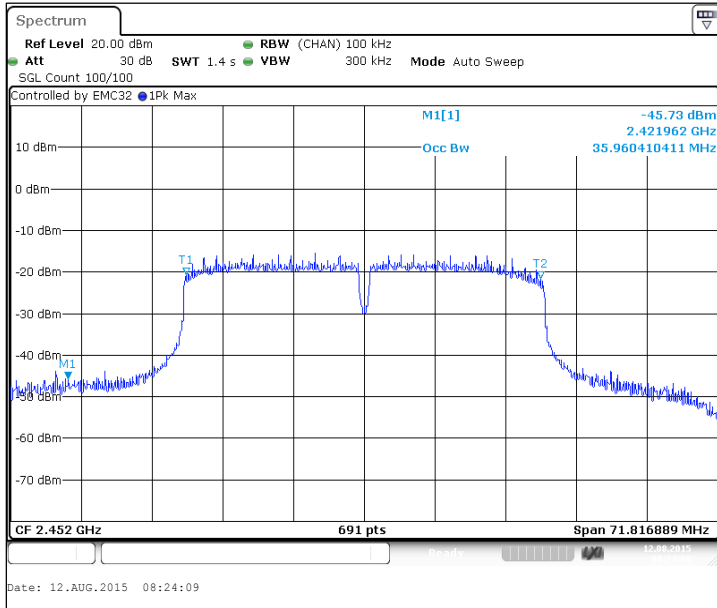
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



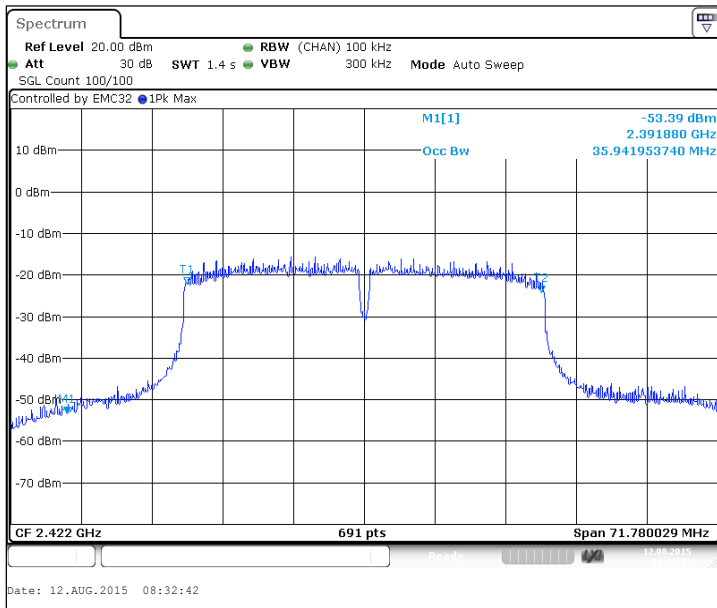
Channel 7-11 / 2452 MHz



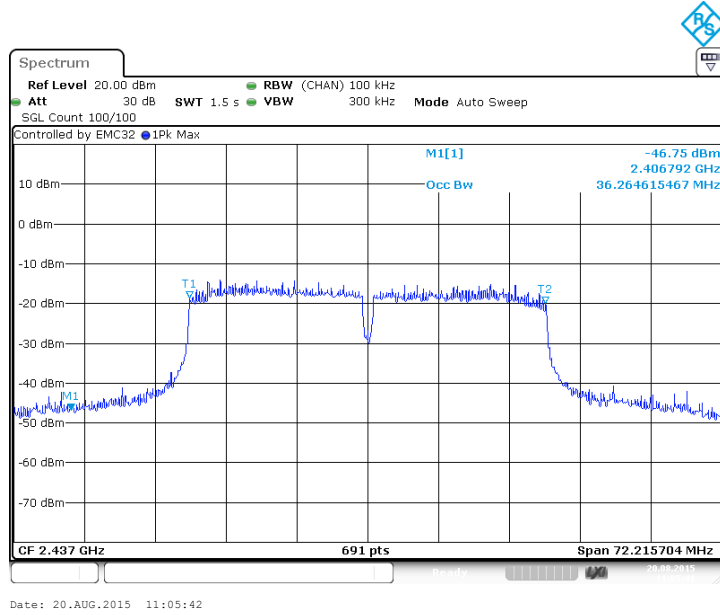
6.3.2 802.11n mode, 16QAM modulation, 54.0 / 60.0 Mbps data rate

Channel / fc [MHz]	6 dB bandwidth [kHz]	Result
1-5 / 2422	35942	PASSED
4-8 / 2437	36264.6	PASSED
7-11 / 2452	36056	PASSED

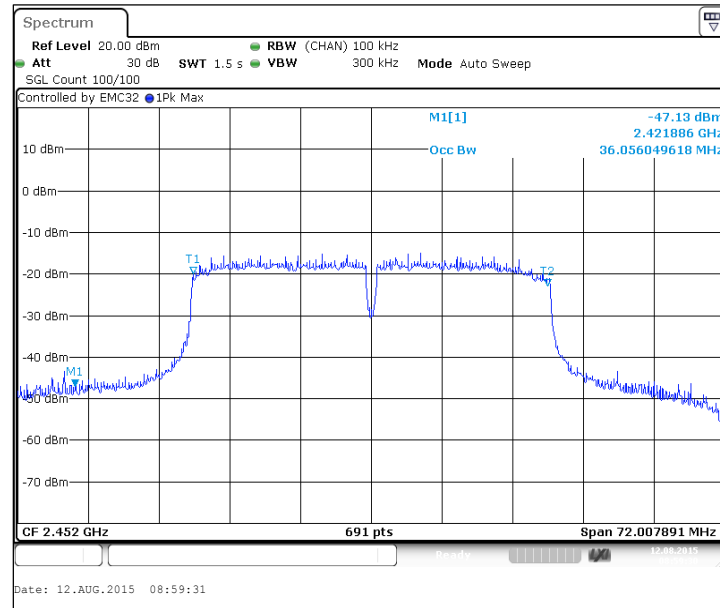
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



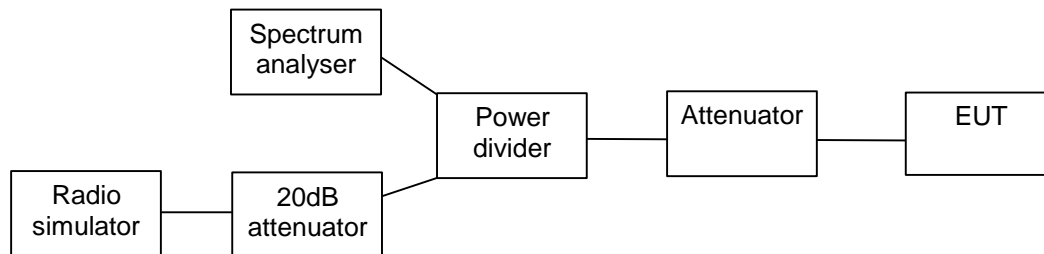
Channel 7-11 / 2452 MHz



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

EUT with DUT number	RM-1128, DUT 500110
Accessories with DUT numbers	CC-3097, DUT 500128; Samsung BL-T5A, DUT 500117; AC-18U, DUT 500124; WH-108, DUT 500103
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	Test was done in conducted RF2 system.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 67 / 100.2
Date of measurements	12-Aug-2015
Measured by	Dou Rubo

7.1. Test Setup



7.2. 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

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

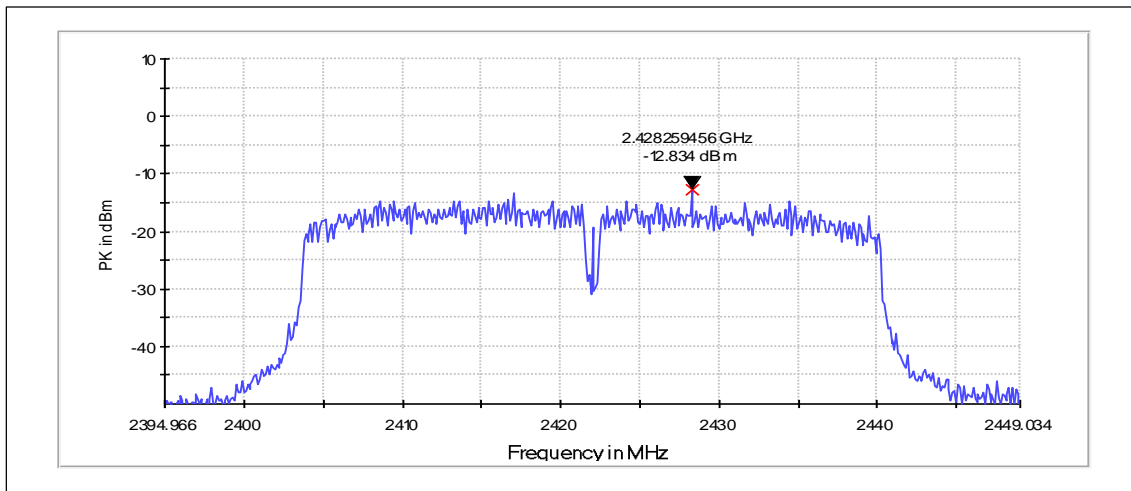
7.3. WLAN Test results

7.3.1 802.11n mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

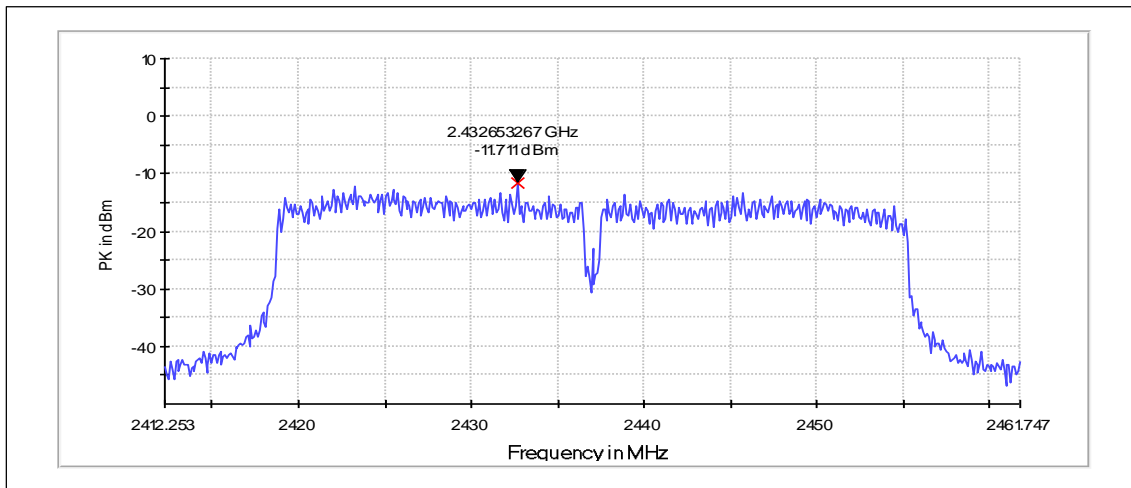
Peak (RBW: 500 kHz, VBW: 3 MHz, Max hold)

Channel / fc [MHz]	P [dBm]	Result
1-5 / 2422	-12.83	PASSED
4-8 / 2437	-11.71	PASSED
7-11 / 2452	-13.18	PASSED

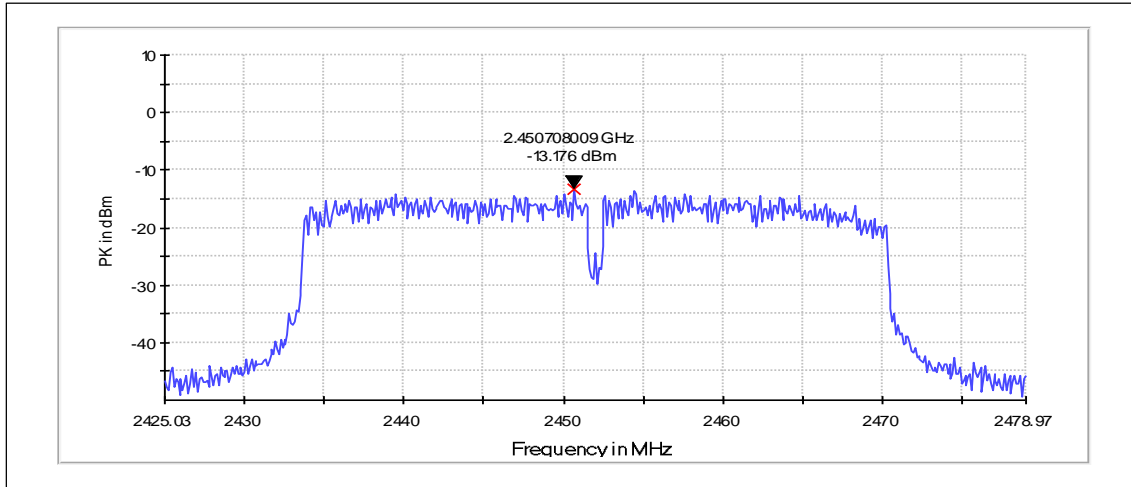
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



Channel 7-11 / 2452 MHz

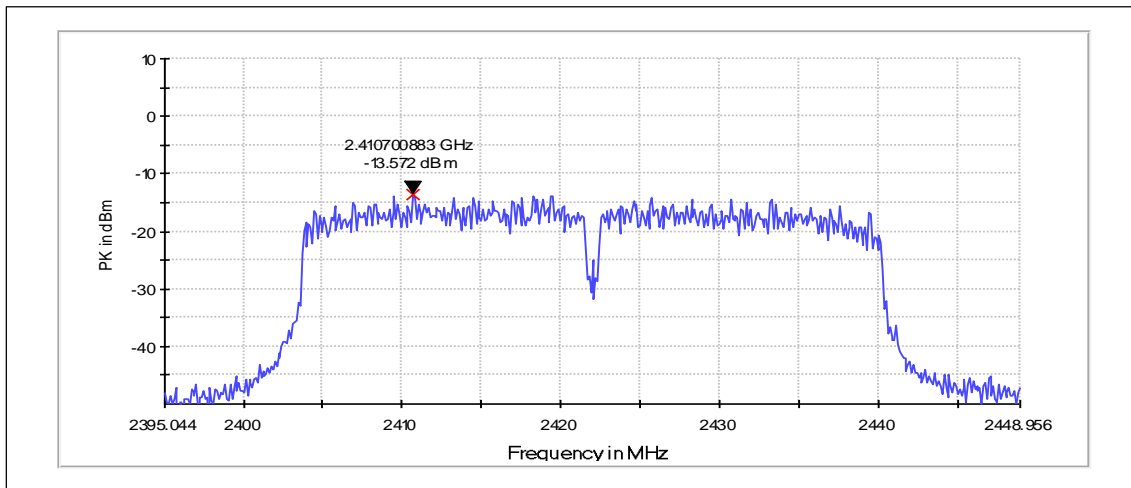


7.3.2 802.11n mode, 16QAM modulation, 54.0 / 60.0 Mbps data rate

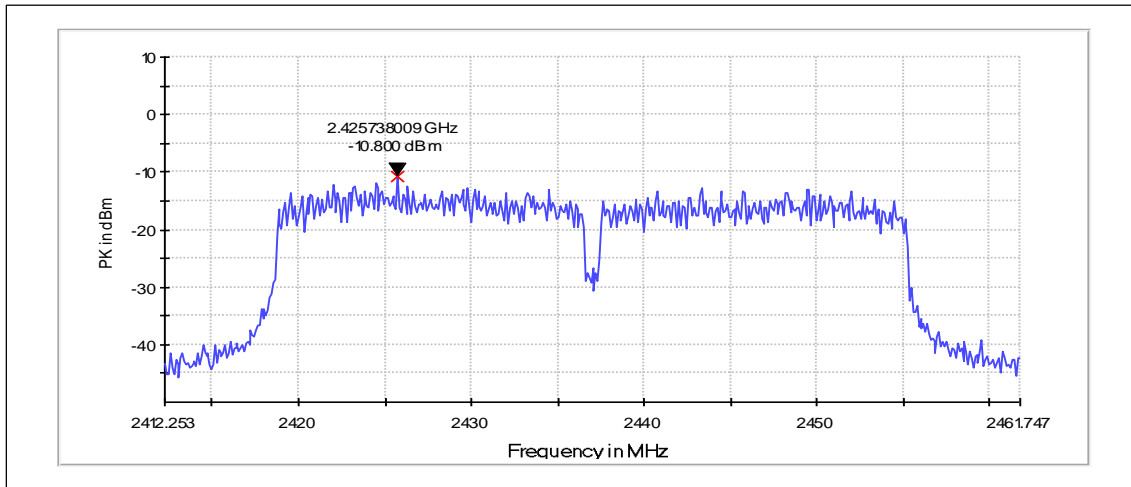
Peak (RBW: 500 kHz, VBW: 3 MHz, Max hold)

Channel / f _c [MHz]	P [dBm]	Result
1-5 / 2422	-13.57	PASSED
4-8 / 2437	-10.8	PASSED
7-11 / 2452	-12.4	PASSED

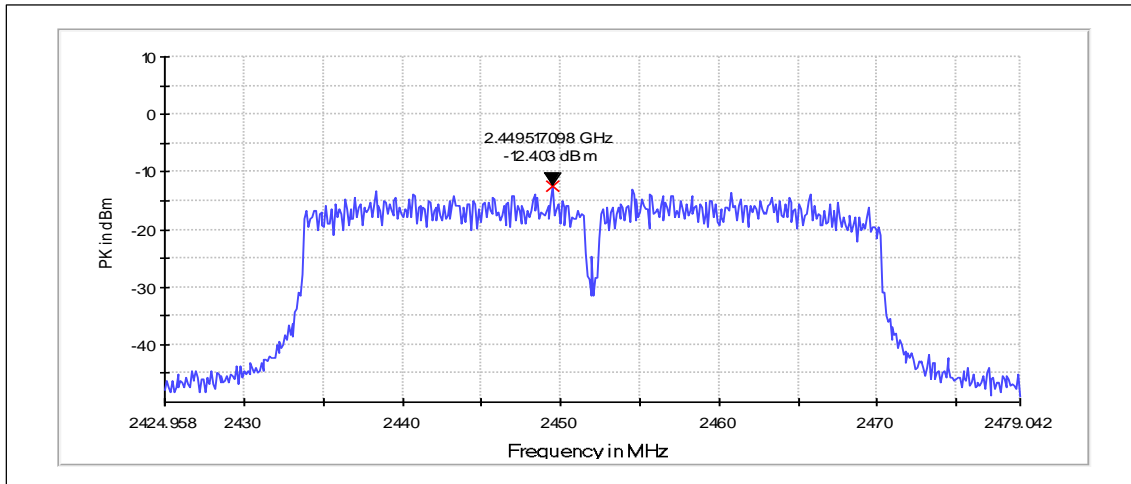
Channel 1-5 / 2422 MHz



Channel 4-8 / 2437 MHz



Channel 7-11 / 2452 MHz



8. Test Equipment

8.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	RF Emission Software	EMC32 Test Software	R&S	22/24/27, 15C, 15B
BJPCHW0020	DC Power supply	Hp6632B	HP	22/24/27, 15C
BJPCPT0040	Receiver	ESCS30	R&S	15C,15B
BJPCPT0069	LISN 50 μH	ESH3-Z5	R&S	15C,15B
BJPCTC0323	Signal Generator	SMR 27	R&S	22/24/27, 15C, 15B
BJPCPT0073	Signal Generator	SMR 20	R&S	22/24/27, 15C, 15B
BJPCPT0191	Pulse Limiter	ESH3-Z2	R&S	15C,15B
BJPCPT0208	UPS	PULSAR RX10	Merlin gerin	15C.15B
BJPCTC0001	DIGITAL CAMERA	PC1015	CANON	15C.15R
BJPCTC0017	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0062	AC Power source	6812B	Hp	15C.15B
BJPCTC0067	Bluetooth Tester	CBT	R&S	22/24/27, 15C
BJPCTC0082	Humidity and Temperature Sensor	175-H2	Testo	15B,15C
BJPCTC0088	Absolut pressure meter	testo 511	Testo	22/24/27, 15B,15C
BJPCTC0089	Tempreture Test chamber	VT4002	Votsch industrietechnik	22/24/27, 15C
BJPCTC0090	FSP spectrum analyzer	FSP30	R&S	22/24/27, 15C
BJPCTC0094	GPIB-RS232 convertor	GPIB-RS232	NI	22/24/27, 15C
BJPCTC0112	Power Splitter	11667B	Agilent	22/24/27, 15C
BJPCTC0127	AC Power source	SOYI-500VA	SOYI	15B 15C
BJPCTC0128	Communication antenna	JTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0129	Communication antenna	JTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0131	Communication tester	CMW500	R&S	22/24/27 15B 15C
BJPCTC0136	Communication antenna	JTXLB-880-NF	A-INFOMW	15B 15C
BJPCTC0306	Power Splitter	11667B	Agilent	22/24/27, 15C
BJPCTC0305	GPIB converter	GPIB-RS232	NI	22/24/27, 15C
BJPCTC0304	Spectrum Analyser	FSV30	R&S	22/24/27, 15C
BJPCTC0309	GPIB-RS232 convertor	RS232	NI	22/24/27, 15C
BJPCTC0307	Dual channel battery/charger simulator	2306	KEITHLEY	22/24/27, 15C
BJPCTC0308	Dual channel battery/charger simulator	2306	KEITHLEY	22/24/27, 15C
BJPCTC0352	Signal Generator 20GHz	MG3692B	Anritsu	22/24/27, 15C
BJBDATC0169	Tempreture Test chamber	VT4002	Votsch	22/24/27, 15C
BJPCTC0334	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0342	Communication Tester	CMU200	R&S	15B, 15C
BJPCTC0343	Power Splitter	1167A	Agilent	EN300328
BJPCTC0344	Power Splitter	1167A	Agilent	EN300328
BJPCTC0345	Power Splitter	1167A	Agilent	EN300328
BJPCTC0346	Attenuator	8496A	Agilent	EN300328
BJPCTC0347	Directional Coupler	4226-20	Narda	EN300328
BJPCTC0348	Signal generator	E4438C	Agilent	EN300328
BJPCTC0336	Signal Generator	SMP22	R&S	22/24/27, 15C
BJPCTC0357	Signal Generator	SMB100A	R&S	-

8.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	RF Emission Software	EMC32 Test Software	R&S	22/24/27, 15C, 15B
BJPCPT0072	Receiver	ESIB26	R&S	22/24/27, 15C, 15B

Eq. No	Equipment	Type	Manufacturer	Used in
BJPCPT0150	High Pass Filter	WHKS1200-10SS	Wainwright	22/24/27, 15C, 15B
BJPCPT0151	Band Reject Filter	WRCD1880/2000-0.2/40-5SSK	Wainwright	24, 15B
BJPCPT0154	Band Reject Filter	WRCT2402/2480-2400/2483.5-30-20SS	Wainwright	15C, 15B
BJPCPT0166	Antenna	VUBA 9117	Swarzbeck	22/24/27
BJPCPT0208	UPS	PULSAR RX10	Merlin gerin	15C.15B
BJPCTC0001	DIGITAL CAMERA	PC1015	CANON	15C.15R
BJPCTC0007	Antenna	HL562	R&S	22/24/27, 15C, 15B
BJPCTC0029	Antenna	HF906	R&S	22/24/27, 15C, 15B
BJPCTC0034	Band Reject Filter	WRCT 800/880-0.2/40-5SSK	Wainwright	22, 15B
BJPCTC0049	Preamplifier	Bima 0118-1A-Bt	Bonn	22/24/27, 15C, 15B
BJPCTC0055	Communication Tester	CMU200	R&S	22/24/27,15C,15B
BJPCTC0058	Bluetooth Tester	CBT	R&S	15C, 15B
BJPCTC0062	AC Power source	6812B	Hp	15C.15B
BJPCTC0064	Band Reject Filter	WRCG1877/1883-1870/1890-40/6SS	Wainwright	24, 15B
BJPCTC0071	Multi-Device Controller	2090	EMCO	22/24/27, 15C, 15B
BJPCTC0072	Anechoic Chamber	3 m Semi / Full Anechoic Chamber	ETS	22/24/27, 15C, 15B
BJPCTC0073	MAST	Model-TR/POL	ETS	22/24/27, 15C, 15B
BJPCTC0074	MAST	Model 2070-2	ETS	22/24/27, 15C, 15B
BJPCTC0075	Turntable	Model 2188	ETS-EMCO	22/24/27, 15C, 15B
BJPCTC0081	Humidity and Temperature Sensor	175-H2	Testo	15B, 15C
BJPCTC0088	Absolut pressure meter	testo 511	Testo	22/24/27, 15B,15C
BJPCTC0124	Attenuator	SA18N200W-40	Fairview Microwave	-
BJPCTC0125	Loop Antenna	HFH2-Z2	R&S	15C
BJPCTC0126	Tripod	FHU-Z	R&S	15C
BJPCTC0128	Communication antenna	JTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0129	Communication antenna	JTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0131	Communication tester	CMW500	R&S	22/24/27 15B 15C
BJPCTC0133	Open Swith and contril unit	OSP 150	R&S	15B,15C
BJPCTC0134	Open Swith and contril unit	OSP 150	R&S	15B,15C
BJPCTC0135	Open Swith and contril unit	OSP 130	R&S	15B,15C
BJPCTC0136	Communication antenna	JTXLB-880-NF	A-INFOMW	15B 15C
BJPCTC0171	Broad-band Horn Antenna	BBHA9120 D	SCHWARZBECK MESS - ELEKTRONIK	22/24/27, 15C, 15B
BJPCTC0310	Horn Antenna	QSH20SMA	Q-par	22/24/27, 15C, 15B
BJPCTC0311	Horn Antenna	QSH18SMA	Q-par	22/24/27, 15C, 15B
BJPCTC0312	Relay Switch Unit	-	-	22/24/27, 15C, 15B
BJPCTC0313	High Pass Filter	WHKX1.0/15G-12SS	Wainwright	22/24/27, 15C, 15B
BJPCTC0314	High Pass Filter	WHKX8.0/18G-88SS	Wainwright	22/24/27, 15C, 15B
BJPCTC0315	High Pass Filter	WHKX3.0/18G-12SS	Wainwright	22/24/27, 15C, 15B
BJPCTC0316	Preamplifier	AMT-5F-18002550-25-108	-	22/24/27, 15C, 15B
BJPCTC0317	Preamplifier	AMF-6D-02001800-29-20P	-	22/24/27, 15C, 15B
BJPCTC0350	Preamplifier	AMF-4D-01000800-30-29P	Miteq	22/24/27, 15C, 15B
BJPCTC0324	Preamplifier	AFS4-00100300-20-23P-6	Miteq	22/24/27, 15C, 15B
BJPCTC0329	Relay Switch Unit	-	-	22/24/27, 15C, 15B
BJPCTC0334	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0342	Communication Tester	CMU200	R&S	15B, 15C
BJPCTC0349	Preamplifier	AMF-4D-01000800-30-79P	Miteq	22/24/27, 15C, 15B

Eq. No	Equipment	Type	Manufacturer	Used in
BJPCTC0350	Preamplifier	AMF-4D-01000800-30-29P	Miteg	22/24/27, 15C, 15B
BJPCTC0351	Preamplifier	AFS4-00101800	-	22/24/27, 15C, 15B
BJPCTC0113	Receiver	ESI B26	R&S	22/24/27, 15B, 15C