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FCC RADIO TEST REPORT

Applicant's company	**Lite-On Technology Corp.**
Applicant Address	Bldg. C, 90, Chien 1 Road, Chung Ho, New Taipei City 23585, Taiwan, R.O.C
FCC ID	**PPQ-WCBN4506R**
Manufacturer's company	**LITE-ON TECHNOLOGY (Changzhou) CO., LTD**
Manufacturer Address	A9 Building, No.88 Yanghu Road, Wujin Hi-Tech Industrial Development Zone, Changzhou City, Jiangsu Province 213100 China

Product Name	WLAN + BT Combo Module
Brand Name	LITE-ON
Model No.	WCBN4506R
Test Rule	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz
Received Date	Sep. 08, 2015
Final Test Date	Oct. 08, 2015
Submission Type	Original Equipment

Statement

Test result included in this report is for the IEEE 802.11n and IEEE 802.11b/g of the product.

The test result in this report refers exclusively to the presented test model / sample.

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The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.10-2013**, **47 CFR FCC Part 15 Subpart C**, **KDB558074 D01 v03r03** and **KDB 662911 D01 v02r01**.

The test equipment used to perform the test is calibrated and traceable to NML/ROC.

TAF
Testing Laboratory
1190

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR590501AA	Rev. 01	Initial issue of report	Nov. 04, 2015

1. VERIFICATION OF COMPLIANCE

Product Name	:	WLAN + BT Combo Module
Brand Name	:	LITE-ON
Model No.	:	WCBN4506R
Applicant	:	Lite-On Technology Corp.
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart C § 15.247

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Sep. 08, 2015 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Sam Chen

SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.207	AC Power Line Conducted Emissions	Complies	15.35 dB
4.2	15.247(b)(3)	Maximum Conducted Output Power	Complies	2.75 dB
4.3	15.247(e)	Power Spectral Density	Complies	9.34 dB
4.4	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
4.5	15.247(d)	Radiated Emissions	Complies	0.06 dB
4.6	15.247(d)	Band Edge Emissions	Complies	0.02 dB
4.7	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

Items	Description
Product Type	WLAN (2TX, 2RX)
Radio Type	Intentional Transceiver
Power Type	From host system
Modulation	IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n: see the below table
Data Modulation	IEEE 802.11b: DSSS (BPSK / QPSK / CCK) IEEE 802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	IEEE 802.11b: DSSS (1/ 2/ 5.5/11) IEEE 802.11g: OFDM (6/9/12/18/24/36/48/54) IEEE 802.11n: see the below table
Frequency Range	2400 ~ 2483.5MHz
Channel Number	11 for 20MHz bandwidth
Channel Band Width (99%)	For Mode 1: IEEE 802.11b: 12.85 MHz IEEE 802.11g: 20.58 MHz IEEE 802.11n MCS0 (HT20): 18.23 MHz For Mode 2: IEEE 802.11b: 12.24 MHz IEEE 802.11g: 20.58 MHz IEEE 802.11n MCS0 (HT20): 18.67 MHz
Maximum Conducted Output Power	For Mode 1: IEEE 802.11b: 18.36 dBm IEEE 802.11g: 23.71 dBm IEEE 802.11n MCS0 (HT20): 23.87 dBm For Mode 2: IEEE 802.11b: 17.72 dBm IEEE 802.11g: 27.25 dBm IEEE 802.11n MCS0 (HT20): 23.48 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Items	Description	
Beamforming Function	☐ With beamforming	☒ Without beamforming

Antenna and Band width

Antenna	Two (TX)
Band width Mode	20 MHz
IEEE 802.11b	V
IEEE 802.11g	V
IEEE 802.11n	V

IEEE 11n Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	2	MCS 0-15
Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput). Then EUT supports HT20. Note 2: Modulation modes consist of below configuration: HT20/HT40: IEEE 802.11n		

3.2. Accessories

N/A

3.3. Table for Filed Antenna

Set	Ant.	Brand Holder	Model Name	Antenna Type	Connector	Remark
1	1	SONY corporation	WCBN4506R	PIFA Antenna	N/A	Only for EUT 2 WiFi use
	2	SONY corporation	WCBN4506R	PIFA Antenna	N/A	Only for EUT 2 WiFi use
2	3	SONY corporation	WCBN4506R	Dipole Antenna	I-PEX	For EUT 1 WiFi and BT use For EUT 2 BT use
	4	SONY corporation	WCBN4506R	Dipole Antenna	I-PEX	For EUT 1 WiFi and BT use For EUT 2 BT use
3	5	Waka manufacturing Co.,Ltd.	01S1072-00	Dipole Antenna	I-PEX	Only for EUT 1 WiFi use
	6	Waka manufacturing Co.,Ltd.	01S1072-00	Dipole Antenna	I-PEX	Only for EUT 1 WiFi use

Set	Ant.	Gain (dBi)						
		BT-2.4GHz	WiFi-2.4GHz	WiFi-5GHz Band 1	WiFi-5GHz Band 2	WiFi-5GHz Band 3	WiFi-5GHz Band 4	Cable Length [mm]
1	1	-	0.71	1.81	1.81	2.14	1.8	N/A
	2	-	0.13	0.72	1.78	2.12	1.67	N/A
2 Note1	3	1.61	1.61	2.13	2.13	2.31	2.68	100-910mm Note2
	4	1.61	1.61	2.13	2.13	2.31	2.68	100-910mm Note2
3 Note1	5	-	2.06	2.41	2.87	1.89	2.7	90mm
	6	-	2.06	2.41	2.87	1.89	2.7	90mm

Note:

1. Gain with cable loss

2. Table for Cable loss Information

I-PEX Plug : Normal Type

Cable No.	Model Cable Color : Black	Cable No.	Model Cable Color : Gray	Cable No.	Model Cable Color : White	Brand	Cable Length [mm]	Phi [mm]	Connector Type	Cable Loss					
										2.4 GHz	2.45 GHz	2.5 GHz	5.15 GHz	5.5 GHz	5.85 GHz
1	822EKQ1000000001H1	83	822EKR1000000001H1	165	822EKP1000000001H1	I-PEX	100	1.13	MHF	0.51	0.51	0.52	0.79	0.80	0.82
2	822EKQ1100000001H1	84	822EKR1100000001H1	166	822EKP1100000001H1	I-PEX	110	1.13	MHF	0.54	0.54	0.55	0.84	0.85	0.87
3	822EKQ1200000001H1	85	822EKR1200000001H1	167	822EKP1200000001H1	I-PEX	120	1.13	MHF	0.57	0.57	0.58	0.88	0.90	0.92
4	822EKQ1300000001H1	86	822EKR1300000001H1	168	822EKP1300000001H1	I-PEX	130	1.13	MHF	0.60	0.60	0.62	0.93	0.94	0.97
5	822EKQ1400000001H1	87	822EKR1400000001H1	169	822EKP1400000001H1	I-PEX	140	1.13	MHF	0.63	0.64	0.65	0.98	0.99	1.02
6	822EKQ1500000001H1	88	822EKR1500000001H1	170	822EKP1500000001H1	I-PEX	150	1.13	MHF	0.67	0.67	0.68	1.02	1.04	1.07
7	822EKQ1600000001H1	89	822EKR1600000001H1	171	822EKP1600000001H1	I-PEX	160	1.13	MHF	0.70	0.70	0.71	1.07	1.09	1.12
8	822EKQ1700000001H1	90	822EKR1700000001H1	172	822EKP1700000001H1	I-PEX	170	1.13	MHF	0.73	0.73	0.74	1.11	1.14	1.17
9	822EKQ1800000001H1	91	822EKR1800000001H1	173	822EKP1800000001H1	I-PEX	180	1.13	MHF	0.76	0.76	0.77	1.16	1.18	1.22
10	822EKQ1900000001H1	92	822EKR1900000001H1	174	822EKP1900000001H1	I-PEX	190	1.13	MHF	0.79	0.79	0.81	1.21	1.23	1.27
11	822EKQ2000000001H1	93	822EKR2000000001H1	175	822EKP2000000001H1	I-PEX	200	1.13	MHF	0.82	0.83	0.84	1.25	1.28	1.32
12	822EKQ2100000001H1	94	822EKR2100000001H1	176	822EKP2100000001H1	I-PEX	210	1.13	MHF	0.85	0.86	0.87	1.30	1.33	1.37
13	822EKQ2200000001H1	95	822EKR2200000001H1	177	822EKP2200000001H1	I-PEX	220	1.13	MHF	0.88	0.89	0.90	1.35	1.37	1.42
14	822EKQ2300000001H1	96	822EKR2300000001H1	178	822EKP2300000001H1	I-PEX	230	1.13	MHF	0.91	0.92	0.93	1.39	1.42	1.47
15	822EKQ2400000001H1	97	822EKR2400000001H1	179	822EKP2400000001H1	I-PEX	240	1.13	MHF	0.95	0.95	0.96	1.44	1.47	1.52
16	822EKQ2500000001H1	98	822EKR2500000001H1	180	822EKP2500000001H1	I-PEX	250	1.13	MHF	0.98	0.98	1.00	1.48	1.52	1.57
17	822EKQ2600000001H1	99	822EKR2600000001H1	181	822EKP2600000001H1	I-PEX	260	1.13	MHF	1.01	1.02	1.03	1.53	1.57	1.62
18	822EKQ2700000001H1	100	822EKR2700000001H1	182	822EKP2700000001H1	I-PEX	270	1.13	MHF	1.04	1.05	1.06	1.58	1.61	1.67
19	822EKQ2800000001H1	101	822EKR2800000001H1	183	822EKP2800000001H1	I-PEX	280	1.13	MHF	1.07	1.08	1.09	1.62	1.66	1.72
20	822EKQ2900000001H1	102	822EKR2900000001H1	184	822EKP2900000001H1	I-PEX	290	1.13	MHF	1.10	1.11	1.12	1.67	1.71	1.77
21	822EKQ3000000001H1	103	822EKR3000000001H1	185	822EKP3000000001H1	I-PEX	300	1.13	MHF	1.13	1.14	1.15	1.72	1.76	1.82
22	822EKQ3100000001H1	104	822EKR3100000001H1	186	822EKP3100000001H1	I-PEX	310	1.13	MHF	1.16	1.17	1.19	1.76	1.81	1.87
23	822EKQ3200000001H1	105	822EKR3200000001H1	187	822EKP3200000001H1	I-PEX	320	1.13	MHF	1.19	1.21	1.22	1.81	1.85	1.92
24	822EKQ3300000001H1	106	822EKR3300000001H1	188	822EKP3300000001H1	I-PEX	330	1.13	MHF	1.23	1.24	1.25	1.85	1.90	1.97
25	822EKQ3400000001H1	107	822EKR3400000001H1	189	822EKP3400000001H1	I-PEX	340	1.13	MHF	1.26	1.27	1.28	1.90	1.95	2.02
26	822EKQ3500000001H1	108	822EKR3500000001H1	190	822EKP3500000001H1	I-PEX	350	1.13	MHF	1.29	1.30	1.31	1.95	2.00	2.07
27	822EKQ3600000001H1	109	822EKR3600000001H1	191	822EKP3600000001H1	I-PEX	360	1.13	MHF	1.32	1.33	1.34	1.99	2.05	2.12
28	822EKQ3700000001H1	110	822EKR3700000001H1	192	822EKP3700000001H1	I-PEX	370	1.13	MHF	1.35	1.36	1.38	2.04	2.09	2.17
29	822EKQ3800000001H1	111	822EKR3800000001H1	193	822EKP3800000001H1	I-PEX	380	1.13	MHF	1.38	1.39	1.41	2.09	2.14	2.22
30	822EKQ3900000001H1	112	822EKR3900000001H1	194	822EKP3900000001H1	I-PEX	390	1.13	MHF	1.41	1.43	1.44	2.13	2.19	2.27
31	822EKQ4000000001H1	113	822EKR4000000001H1	195	822EKP4000000001H1	I-PEX	400	1.13	MHF	1.44	1.46	1.47	2.18	2.24	2.32
32	822EKQ4100000001H1	114	822EKR4100000001H1	196	822EKP4100000001H1	I-PEX	410	1.13	MHF	1.47	1.49	1.50	2.23	2.28	2.37
33	822EKQ4200000001H1	115	822EKR4200000001H1	197	822EKP4200000001H1	I-PEX	420	1.13	MHF	1.51	1.52	1.53	2.27	2.33	2.42
34	822EKQ4300000001H1	116	822EKR4300000001H1	198	822EKP4300000001H1	I-PEX	430	1.13	MHF	1.54	1.55	1.57	2.32	2.38	2.47
35	822EKQ4400000001H1	117	822EKR4400000001H1	199	822EKP4400000001H1	I-PEX	440	1.13	MHF	1.57	1.58	1.60	2.36	2.43	2.52
36	822EKQ4500000001H1	118	822EKR4500000001H1	200	822EKP4500000001H1	I-PEX	450	1.13	MHF	1.60	1.62	1.63	2.41	2.48	2.57
37	822EKQ4600000001H1	119	822EKR4600000001H1	201	822EKP4600000001H1	I-PEX	460	1.13	MHF	1.63	1.65	1.66	2.46	2.52	2.62
38	822EKQ4700000001H1	120	822EKR4700000001H1	202	822EKP4700000001H1	I-PEX	470	1.13	MHF	1.66	1.68	1.69	2.50	2.57	2.67
39	822EKQ4800000001H1	121	822EKR4800000001H1	203	822EKP4800000001H1	I-PEX	480	1.13	MHF	1.69	1.71	1.72	2.55	2.62	2.72
40	822EKQ4900000001H1	122	822EKR4900000001H1	204	822EKP4900000001H1	I-PEX	490	1.13	MHF	1.72	1.74	1.76	2.60	2.67	2.77
41	822EKQ5000000001H1	123	822EKR5000000001H1	205	822EKP5000000001H1	I-PEX	500	1.13	MHF	1.75	1.77	1.79	2.64	2.72	2.82
42	822EKQ5100000001H1	124	822EKR5100000001H1	206	822EKP5100000001H1	I-PEX	510	1.13	MHF	1.79	1.81	1.82	2.69	2.76	2.87
43	822EKQ5200000001H1	125	822EKR5200000001H1	207	822EKP5200000001H1	I-PEX	520	1.13	MHF	1.82	1.84	1.85	2.73	2.81	2.92
44	822EKQ5300000001H1	126	822EKR5300000001H1	208	822EKP5300000001H1	I-PEX	530	1.13	MHF	1.85	1.87	1.88	2.78	2.86	2.97
45	822EKQ5400000001H1	127	822EKR5400000001H1	209	822EKP5400000001H1	I-PEX	540	1.13	MHF	1.88	1.90	1.91	2.83	2.91	3.02
46	822EKQ5500000001H1	128	822EKR5500000001H1	210	822EKP5500000001H1	I-PEX	550	1.13	MHF	1.91	1.93	1.95	2.87	2.96	3.07
47	822EKQ5600000001H1	129	822EKR5600000001H1	211	822EKP5600000001H1	I-PEX	560	1.13	MHF	1.94	1.96	1.98	2.92	3.00	3.12
48	822EKQ5700000001H1	130	822EKR5700000001H1	212	822EKP5700000001H1	I-PEX	570	1.13	MHF	1.97	2.00	2.01	2.97	3.05	3.17
49	822EKQ5800000001H1	131	822EKR5800000001H1	213	822EKP5800000001H1	I-PEX	580	1.13	MHF	2.00	2.03	2.04	3.01	3.10	3.22
50	822EKQ5900000001H1	132	822EKR5900000001H1	214	822EKP5900000001H1	I-PEX	590	1.13	MHF	2.03	2.06	2.07	3.06	3.15	3.27
51	822EKQ6000000001H1	133	822EKR6000000001H1	215	822EKP6000000001H1	I-PEX	600	1.13	MHF	2.07	2.09	2.11	3.11	3.20	3.32
52	822EKQ6100000001H1	134	822EKR6100000001H1	216	822EKP6100000001H1	I-PEX	610	1.13	MHF	2.10	2.12	2.14	3.15	3.24	3.36
53	822EKQ6200000001H1	135	822EKR6200000001H1	217	822EKP6200000001H1	I-PEX	620	1.13	MHF	2.13	2.15	2.17	3.20	3.29	3.41
54	822EKQ6300000001H1	136	822EKR6300000001H1	218	822EKP6300000001H1	I-PEX	630	1.13	MHF	2.16	2.18	2.20	3.24	3.34	3.46
55	822EKQ6400000001H1	137	822EKR6400000001H1	219	822EKP6400000001H1	I-PEX	640	1.13	MHF	2.19	2.22	2.23	3.29	3.39	3.51
56	822EKQ6500000001H1	138	822EKR6500000001H1	220	822EKP6500000001H1	I-PEX	650	1.13	MHF	2.22	2.25	2.26	3.34	3.43	3.56
57	822EKQ6600000001H1	139	822EKR6600000001H1	221	822EKP6600000001H1	I-PEX	660	1.13	MHF	2.25	2.28	2.30	3.38	3.48	3.61
58	822EKQ6700000001H1	140	822EKR6700000001H1	222	822EKP6700000001H1	I-PEX	670	1.13	MHF	2.28	2.31	2.33	3.43	3.53	3.66
59	822EKQ6800000001H1	141	822EKR6800000001H1	223	822EKP6800000001H1	I-PEX	680	1.13	MHF	2.31	2.34	2.36	3.48	3.58	3.71
60	822EKQ6900000001H1	142	822EKR6900000001H1	224	822EKP6900000001H1	I-PEX	690	1.13	MHF	2.34	2.37	2.39	3.52	3.63	3.76
61	822EKQ7000000001H1	143	822EKR7000000001H1	225	822EKP7000000001H1	I-PEX	700	1.13	MHF	2.38	2.41	2.42	3.57	3.67	3.81
62	822EKQ7100000001H1	144	822EKR7100000001H1	226	822EKP7100000001H1	I-PEX	710	1.13	MHF	2.41	2.44	2.45	3.61	3.72	3.86
63	822EKQ7200000001H1	145	822EKR7200000001H1	227	822EKP7200000001H1	I-PEX	720	1.13	MHF	2.44	2.47	2.49	3.66	3.77	3.91
64	822EKQ7300000001H1	146	822EKR7300000001H1	228	822EKP7300000001H1	I-PEX	730	1.13	MHF	2.47	2.50	2.52	3.71	3.82	3.96
65	822EKQ7400000001H1	147	822EKR7400000001H1	229	822EKP7400000001H1	I-PEX	740	1.13	MHF	2.50	2.53	2.55	3.75	3.87	4.01
66	822EKQ7500000001H1	148	822EKR7500000001H1	230	822EKP7500000001H1	I-PEX	750	1.13	MHF	2.53	2.56	2.58	3.80	3.91	4.06
67	822EKQ7600000001H1	149	822EKR7600000001H1	231	822EKP7600000001H1	I-PEX	760	1.13	MHF	2.56	2.60	2.61	3.85	3.96	4.11
68	822EKQ7700000001H1	150	822EKR7700000001H1	232	822EKP7700000001H1	I-PEX	770	1.13	MHF	2.59	2.63	2.64	3.89	4.01	4.16
69	822EKQ7800000001H1	151	822EKR7800000001H1	233	822EKP7800000001H1	I-PEX	780	1.13	MHF	2.62	2.66	2.68	3.94	4.06	4.21
70	822EKQ7900000001H1	152	822EKR7900000001H1	234	822EKP7900000001H1	I-PEX	790	1.13	MHF	2.66	2.69	2.71	3.98	4.11	4.26
71	822EKQ8000000001H1	153	822EKR8000000001H1	235	822EKP8000000001H1	I-PEX	800	1.13	MHF	2.69	2.72	2.74	4.03	4.15	4.31
72	822EKQ8100000001H1	154	822EKR8100000001H1	236	822EKP8100000001H1	I-PEX	810	1.13	MHF	2.72	2.75	2.77	4.08	4.20	4.36
73	822EKQ8200000001H1	155	822EKR8200000001H1	237	822EKP8200000001H1	I-PEX	820	1.13	MHF	2.75	2.79	2.80	4.12	4.25	4.41
74	822EKQ8300000001H1	156	822EKR8300000001H1	238	822EKP8300000001H1	I-PEX	830	1.13	MHF	2.78	2.82	2.83	4.17	4.30	4.46
75	822EKQ8400000001H1	157	822EKR8400000001H1	239	822EKP8400000001H1	I-PEX	840	1.13	MHF	2.81	2.85	2.87	4.22	4.34	4.51
76	822EKQ8500000001H1	158	822EKR8500000001H1	240	822EKP8500000001H1	I-PEX	850	1.13	MHF	2.84	2.88	2.90	4.26	4.39	4.56
77	822EKQ8600000001H1	159	822EKR8600000001H1	241	822EKP8600000001H1	I-PEX	860	1.13	MHF	2.87	2.91	2.93	4.31	4.44	4.61
78	822EKQ8700000001H1	160	822EKR8700000001H1	242	822EKP8700000001H1	I-PEX	870	1.13	MHF	2.90	2.94	2.96	4.36	4.49	4.66
79	822EKQ8800000001H1	161	822EKR8800000001H1	243	822EKP8800000001H1	I-PEX	880	1.13	MHF	2.94	2.97	2.99	4.40	4.54	4.71
80	822EKQ8900000001H1	162	822EKR8900000001H1	244	822EKP8900000001H1	I-PEX	890	1.13	MHF	2.97	3.01	3.02	4.45	4.58	4.76
81	822EKQ9000000001H1	163	822EKR9000000001H1	245	822EKP9000000001H1	I-PEX	900	1.13	MHF	3.00	3.04	3.06	4.49	4.63	4.81
82	822EKQ9100000001H1	164	822EKR9100000001H1	246	822EKP9100000001H1	I-PEX	910	1.13	MHF	3.03	3.07	3.09	4.54	4.68	4.86

I-PEX Plug : Smooth Insert Type

Cable No.	Model Cable Color : Black	Cable No.	Model Cable Color : Gray	Cable No.	Model Cable Color : White	Brand	Cable Length [mm]	Phi [mm]	Connector Type	Cable Loss					
										2.4 GHz	2.45 GHz	2.5 GHz	5.15 GHz	5.5 GHz	5.85 GHz
247	822EKQ1000000001H3	329	822EKR1000000001H3	411	822EKP1000000001H3	I-PEX	100	1.13	MHF	0.51	0.51	0.52	0.79	0.80	0.82
248	822EKQ1100000001H3	330	822EKR1100000001H3	412	822EKP1100000001H3	I-PEX	110	1.13	MHF	0.54	0.54	0.55	0.84	0.85	0.87
249	822EKQ1200000001H3	331	822EKR1200000001H3	413	822EKP1200000001H3	I-PEX	120	1.13	MHF	0.57	0.57	0.58	0.88	0.90	0.92
250	822EKQ1300000001H3	332	822EKR1300000001H3	414	822EKP1300000001H3	I-PEX	130	1.13	MHF	0.60	0.60	0.62	0.93	0.94	0.97
251	822EKQ1400000001H3	333	822EKR1400000001H3	415	822EKP1400000001H3	I-PEX	140	1.13	MHF	0.63	0.64	0.65	0.98	0.99	1.02
252	822EKQ1500000001H3	334	822EKR1500000001H3	416	822EKP1500000001H3	I-PEX	150	1.13	MHF	0.67	0.67	0.68	1.02	1.04	1.07
253	822EKQ1600000001H3	335	822EKR1600000001H3	417	822EKP1600000001H3	I-PEX	160	1.13	MHF	0.70	0.70	0.71	1.07	1.09	1.12
254	822EKQ1700000001H3	336	822EKR1700000001H3	418	822EKP1700000001H3	I-PEX	170	1.13	MHF	0.73	0.73	0.74	1.11	1.14	1.17
255	822EKQ1800000001H3	337	822EKR1800000001H3	419	822EKP1800000001H3	I-PEX	180	1.13	MHF	0.76	0.76	0.77	1.16	1.18	1.22
256	822EKQ1900000001H3	338	822EKR1900000001H3	420	822EKP1900000001H3	I-PEX	190	1.13	MHF	0.79	0.79	0.81	1.21	1.23	1.27
257	822EKQ2000000001H3	339	822EKR2000000001H3	421	822EKP2000000001H3	I-PEX	200	1.13	MHF	0.82	0.83	0.84	1.25	1.28	1.32
258	822EKQ2100000001H3	340	822EKR2100000001H3	422	822EKP2100000001H3	I-PEX	210	1.13	MHF	0.85	0.86	0.87	1.30	1.33	1.37
259	822EKQ2200000001H3	341	822EKR2200000001H3	423	822EKP2200000001H3	I-PEX	220	1.13	MHF	0.88	0.89	0.90	1.35	1.37	1.42
260	822EKQ2300000001H3	342	822EKR2300000001H3	424	822EKP2300000001H3	I-PEX	230	1.13	MHF	0.91	0.92	0.93	1.39	1.42	1.47
261	822EKQ2400000001H3	343	822EKR2400000001H3	425	822EKP2400000001H3	I-PEX	240	1.13	MHF	0.95	0.95	0.96	1.44	1.47	1.52
262	822EKQ2500000001H3	344	822EKR2500000001H3	426	822EKP2500000001H3	I-PEX	250	1.13	MHF	0.98	0.98	1.00	1.48	1.52	1.57
263	822EKQ2600000001H3	345	822EKR2600000001H3	427	822EKP2600000001H3	I-PEX	260	1.13	MHF	1.01	1.02	1.03	1.53	1.57	1.62
264	822EKQ2700000001H3	346	822EKR2700000001H3	428	822EKP2700000001H3	I-PEX	270	1.13	MHF	1.04	1.05	1.06	1.58	1.61	1.67
265	822EKQ2800000001H3	347	822EKR2800000001H3	429	822EKP2800000001H3	I-PEX	280	1.13	MHF	1.07	1.08	1.09	1.62	1.66	1.72
266	822EKQ2900000001H3	348	822EKR2900000001H3	430	822EKP2900000001H3	I-PEX	290	1.13	MHF	1.10	1.11	1.12	1.67	1.71	1.77
267	822EKQ3000000001H3	349	822EKR3000000001H3	431	822EKP3000000001H3	I-PEX	300	1.13	MHF	1.13	1.14	1.15	1.72	1.76	1.82
268	822EKQ3100000001H3	350	822EKR3100000001H3	432	822EKP3100000001H3	I-PEX	310	1.13	MHF	1.16	1.17	1.19	1.76	1.81	1.87
269	822EKQ3200000001H3	351	822EKR3200000001H3	433	822EKP3200000001H3	I-PEX	320	1.13	MHF	1.19	1.21	1.22	1.81	1.85	1.92
270	822EKQ3300000001H3	352	822EKR3300000001H3	434	822EKP3300000001H3	I-PEX	330	1.13	MHF	1.23	1.24	1.25	1.85	1.90	1.97
271	822EKQ3400000001H3	353	822EKR3400000001H3	435	822EKP3400000001H3	I-PEX	340	1.13	MHF	1.26	1.27	1.28	1.90	1.95	2.02
272	822EKQ3500000001H3	354	822EKR3500000001H3	436	822EKP3500000001H3	I-PEX	350	1.13	MHF	1.29	1.30	1.31	1.95	2.00	2.07
273	822EKQ3600000001H3	355	822EKR3600000001H3	437	822EKP3600000001H3	I-PEX	360	1.13	MHF	1.32	1.33	1.34	1.99	2.05	2.12
274	822EKQ3700000001H3	356	822EKR3700000001H3	438	822EKP3700000001H3	I-PEX	370	1.13	MHF	1.35	1.36	1.38	2.04	2.09	2.17
275	822EKQ3800000001H3	357	822EKR3800000001H3	439	822EKP3800000001H3	I-PEX	380	1.13	MHF	1.38	1.39	1.41	2.09	2.14	2.22
276	822EKQ3900000001H3	358	822EKR3900000001H3	440	822EKP3900000001H3	I-PEX	390	1.13	MHF	1.41	1.43	1.44	2.13	2.19	2.27
277	822EKQ4000000001H3	359	822EKR4000000001H3	441	822EKP4000000001H3	I-PEX	400	1.13	MHF	1.44	1.46	1.47	2.18	2.24	2.32
278	822EKQ4100000001H3	360	822EKR4100000001H3	442	822EKP4100000001H3	I-PEX	410	1.13	MHF	1.47	1.49	1.50	2.23	2.28	2.37
279	822EKQ4200000001H3	361	822EKR4200000001H3	443	822EKP4200000001H3	I-PEX	420	1.13	MHF	1.51	1.52	1.53	2.27	2.33	2.42
280	822EKQ4300000001H3	362	822EKR4300000001H3	444	822EKP4300000001H3	I-PEX	430	1.13	MHF	1.54	1.55	1.57	2.32	2.38	2.47
281	822EKQ4400000001H3	363	822EKR4400000001H3	445	822EKP4400000001H3	I-PEX	440	1.13	MHF	1.57	1.58	1.60	2.36	2.43	2.52
282	822EKQ4500000001H3	364	822EKR4500000001H3	446	822EKP4500000001H3	I-PEX	450	1.13	MHF	1.60	1.62	1.63	2.41	2.48	2.57
283	822EKQ4600000001H3	365	822EKR4600000001H3	447	822EKP4600000001H3	I-PEX	460	1.13	MHF	1.63	1.65	1.66	2.46	2.52	2.62
284	822EKQ4700000001H3	366	822EKR4700000001H3	448	822EKP4700000001H3	I-PEX	470	1.13	MHF	1.66	1.68	1.69	2.50	2.57	2.67
285	822EKQ4800000001H3	367	822EKR4800000001H3	449	822EKP4800000001H3	I-PEX	480	1.13	MHF	1.69	1.71	1.72	2.55	2.62	2.72
286	822EKQ4900000001H3	368	822EKR4900000001H3	450	822EKP4900000001H3	I-PEX	490	1.13	MHF	1.72	1.74	1.76	2.60	2.67	2.77
287	822EKQ5000000001H3	369	822EKR5000000001H3	451	822EKP5000000001H3	I-PEX	500	1.13	MHF	1.75	1.77	1.79	2.64	2.72	2.82
288	822EKQ5100000001H3	370	822EKR5100000001H3	452	822EKP5100000001H3	I-PEX	510	1.13	MHF	1.79	1.81	1.82	2.69	2.76	2.87
289	822EKQ5200000001H3	371	822EKR5200000001H3	453	822EKP5200000001H3	I-PEX	520	1.13	MHF	1.82	1.84	1.85	2.73	2.81	2.92
290	822EKQ5300000001H3	372	822EKR5300000001H3	454	822EKP5300000001H3	I-PEX	530	1.13	MHF	1.85	1.87	1.88	2.78	2.86	2.97
291	822EKQ5400000001H3	373	822EKR5400000001H3	455	822EKP5400000001H3	I-PEX	540	1.13	MHF	1.88	1.90	1.91	2.83	2.91	3.02
292	822EKQ5500000001H3	374	822EKR5500000001H3	456	822EKP5500000001H3	I-PEX	550	1.13	MHF	1.91	1.93	1.95	2.87	2.96	3.07
293	822EKQ5600000001H3	375	822EKR5600000001H3	457	822EKP5600000001H3	I-PEX	560	1.13	MHF	1.94	1.96	1.98	2.92	3.00	3.12
294	822EKQ5700000001H3	376	822EKR5700000001H3	458	822EKP5700000001H3	I-PEX	570	1.13	MHF	1.97	2.00	2.01	2.97	3.05	3.17
295	822EKQ5800000001H3	377	822EKR5800000001H3	459	822EKP5800000001H3	I-PEX	580	1.13	MHF	2.00	2.03	2.04	3.01	3.10	3.22
296	822EKQ5900000001H3	378	822EKR5900000001H3	460	822EKP5900000001H3	I-PEX	590	1.13	MHF	2.03	2.06	2.07	3.06	3.15	3.27
297	822EKQ6000000001H3	379	822EKR6000000001H3	461	822EKP6000000001H3	I-PEX	600	1.13	MHF	2.07	2.09	2.11	3.11	3.20	3.32
298	822EKQ6100000001H3	380	822EKR6100000001H3	462	822EKP6100000001H3	I-PEX	610	1.13	MHF	2.10	2.12	2.14	3.15	3.24	3.36
299	822EKQ6200000001H3	381	822EKR6200000001H3	463	822EKP6200000001H3	I-PEX	620	1.13	MHF	2.13	2.15	2.17	3.20	3.29	3.41
300	822EKQ6300000001H3	382	822EKR6300000001H3	464	822EKP6300000001H3	I-PEX	630	1.13	MHF	2.16	2.18	2.20	3.24	3.34	3.46
301	822EKQ6400000001H3	383	822EKR6400000001H3	465	822EKP6400000001H3	I-PEX	640	1.13	MHF	2.19	2.22	2.23	3.29	3.39	3.51
302	822EKQ6500000001H3	384	822EKR6500000001H3	466	822EKP6500000001H3	I-PEX	650	1.13	MHF	2.22	2.25	2.26	3.34	3.43	3.56
303	822EKQ6600000001H3	385	822EKR6600000001H3	467	822EKP6600000001H3	I-PEX	660	1.13	MHF	2.25	2.28	2.30	3.38	3.48	3.61
304	822EKQ6700000001H3	386	822EKR6700000001H3	468	822EKP6700000001H3	I-PEX	670	1.13	MHF	2.28	2.31	2.33	3.43	3.53	3.66
305	822EKQ6800000001H3	387	822EKR6800000001H3	469	822EKP6800000001H3	I-PEX	680	1.13	MHF	2.31	2.34	2.36	3.48	3.58	3.71
306	822EKQ6900000001H3	388	822EKR6900000001H3	470	822EKP6900000001H3	I-PEX	690	1.13	MHF	2.34	2.37	2.39	3.52	3.63	3.76
307	822EKQ7000000001H3	389	822EKR7000000001H3	471	822EKP7000000001H3	I-PEX	700	1.13	MHF	2.38	2.41	2.42	3.57	3.67	3.81
308	822EKQ7100000001H3	390	822EKR7100000001H3	472	822EKP7100000001H3	I-PEX	710	1.13	MHF	2.41	2.44	2.45	3.61	3.72	3.86
309	822EKQ7200000001H3	391	822EKR7200000001H3	473	822EKP7200000001H3	I-PEX	720	1.13	MHF	2.44	2.47	2.49	3.66	3.77	3.91
310	822EKQ7300000001H3	392	822EKR7300000001H3	474	822EKP7300000001H3	I-PEX	730	1.13	MHF	2.47	2.50	2.52	3.71	3.82	3.96
311	822EKQ7400000001H3	393	822EKR7400000001H3	475	822EKP7400000001H3	I-PEX	740	1.13	MHF	2.50	2.53	2.55	3.75	3.87	4.01
312	822EKQ7500000001H3	394	822EKR7500000001H3	476	822EKP7500000001H3	I-PEX	750	1.13	MHF	2.53	2.56	2.58	3.80	3.91	4.06
313	822EKQ7600000001H3	395	822EKR7600000001H3	477	822EKP7600000001H3	I-PEX	760	1.13	MHF	2.56	2.60	2.61	3.85	3.96	4.11
314	822EKQ7700000001H3	396	822EKR7700000001H3	478	822EKP7700000001H3	I-PEX	770	1.13	MHF	2.59	2.63	2.64	3.89	4.01	4.16
315	822EKQ7800000001H3	397	822EKR7800000001H3	479	822EKP7800000001H3	I-PEX	780	1.13	MHF	2.62	2.66	2.68	3.94	4.06	4.21
316	822EKQ7900000001H3	398	822EKR7900000001H3	480	822EKP7900000001H3	I-PEX	790	1.13	MHF	2.66	2.69	2.71	3.98	4.11	4.26
317	822EKQ8000000001H3	399	822EKR8000000001H3	481	822EKP8000000001H3	I-PEX	800	1.13	MHF	2.69	2.72	2.74	4.03	4.15	4.31
318	822EKQ8100000001H3	400	822EKR8100000001H3	482	822EKP8100000001H3	I-PEX	810	1.13	MHF	2.72	2.75	2.77	4.08	4.20	4.36
319	822EKQ8200000001H3	401	822EKR8200000001H3	483	822EKP8200000001H3	I-PEX	820	1.13	MHF	2.75	2.79	2.80	4.12	4.25	4.41
320	822EKQ8300000001H3	402	822EKR8300000001H3	484	822EKP8300000001H3	I-PEX	830	1.13	MHF	2.78	2.82	2.83	4.17	4.30	4.46
321	822EKQ8400000001H3	403	822EKR8400000001H3	485	822EKP8400000001H3	I-PEX	840	1.13	MHF	2.81	2.85	2.87	4.22	4.34	4.51
322	822EKQ8500000001H3	404	822EKR8500000001H3	486	822EKP8500000001H3	I-PEX	850	1.13	MHF	2.84	2.88	2.90	4.26	4.39	4.56
323	822EKQ8600000001H3	405	822EKR8600000001H3	487	822EKP8600000001H3	I-PEX	860	1.13	MHF	2.87	2.91	2.93	4.31	4.44	4.61
324	822EKQ8700000001H3	406	822EKR8700000001H3	488	822EKP8700000001H3	I-PEX	870	1.13	MHF	2.90	2.94	2.96	4.36	4.49	4.66
325	822EKQ8800000001H3	407	822EKR8800000001H3	489	822EKP8800000001H3	I-PEX	880	1.13	MHF	2.94	2.97	2.99	4.40	4.54	4.71
326	822EKQ8900000001H3	408	822EKR8900000001H3	490	822EKP8900000001H3	I-PEX	890	1.13	MHF	2.97	3.01	3.02	4.45	4.58	4.76
327	822EKQ9000000001H3	409	822EKR9000000001H3	491	822EKP9000000001H3	I-PEX	900	1.13	MHF	3.00	3.04	3.06	4.49	4.63	4.81
328	822EKQ9100000001H3	410	822EKR9100000001H3	492	822EKP9100000001H3	I-PEX	910	1.13	MHF	3.03	3.07	3.09	4.54	4.68	4.86

3. The EUT has three sets of antennas and there are two antennas for each set.
4. Set 2~3 are the same type antenna. Only the highest gain antenna (Set 2 for Bluetooth, 5G Band3, Set 3 for 2.4G, 5G Band 1, 2, 4) was selected to test and record in this report.

For 2.4GHz function:

For IEEE 802.11b/g/n mode (2TX/2RX)

Chain 1 and Chain 2 can be used as transmitting/receiving antenna.

Chain 1 and Chain 2 could transmit/receive simultaneously.

For 5GHz function:

For IEEE 802.11a/n mode (2TX/2RX)

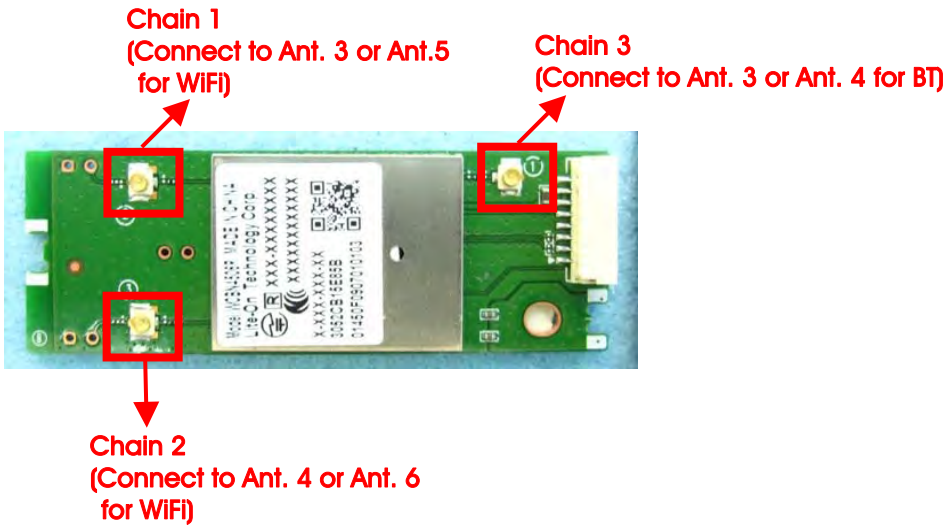
Chain 1 and Chain 2 can be used as transmitting/receiving antenna.

Chain 1 and Chain 2 could transmit/receive simultaneously.

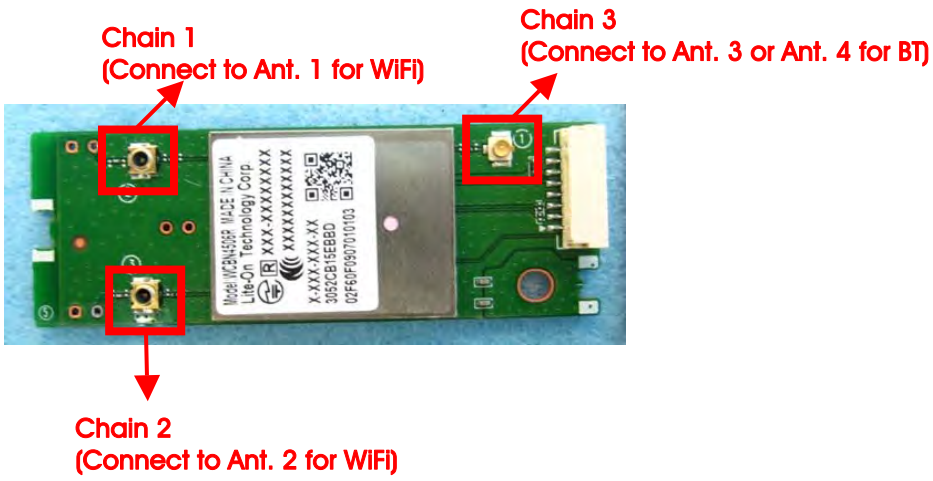
For Bluetooth function: (1TX/1RX)

Only Chain 3 can be used as transmitting/receiving antenna.

For EUT 1:



For EUT 2:



3.4. Table for Carrier Frequencies

There is one bandwidth systems.

For 20MHz bandwidth systems, use Channel 1~Channel 11.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400~2483.5MHz	1	2412 MHz	7	2442 MHz
	2	2417 MHz	8	2447 MHz
	3	2422 MHz	9	2452 MHz
	4	2427 MHz	10	2457 MHz
	5	2432 MHz	11	2462 MHz
	6	2437 MHz	-	-

3.5. Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate	Channel	Chain
AC Power Line Conducted Emissions	Normal Link	-	-	-
Maximum Conducted Output Power	11b/CCK	1 Mbps	1/6/11	1+2
	11g/BPSK	6 Mbps	1/6/11	1+2
	11n HT20	MCS0	1/6/11	1+2
Power Spectral Density	11b/CCK	1 Mbps	1/6/11	1+2
	11g/BPSK	6 Mbps	1/6/11	1+2
	11n HT20	MCS0	1/6/11	1+2
6dB Spectrum Bandwidth	11b/CCK	1 Mbps	1/6/11	1+2
	11g/BPSK	6 Mbps	1/6/11	1+2
	11n HT20	MCS0	1/6/11	1+2
Radiated Emissions 9kHz~1GHz	Normal Link	-	-	-
Radiated Emissions 1GHz~10th Harmonic	11b/CCK	1 Mbps	1/6/11	1+2
	11g/BPSK	6 Mbps	1/6/11	1+2
	11n HT20	MCS0	1/6/11	1+2
Band Edge Emissions	11b/CCK	1 Mbps	1/6/11	1+2
	11g/BPSK	6 Mbps	1/6/11	1+2
	11n HT20	MCS0	1/6/11	1+2

The following test modes were performed for all tests:

For Conducted Emission test:

Mode 1. Place EUT 1 in Z axis + Set 3 antenna (2.4GHz function) + Set 2 antenna (BT function)

Mode 2. Place EUT 1 in Z axis + Set 3 antenna (5GHz function) + Set 2 antenna (BT function)

Mode 3. Place EUT 2 in Z axis + Set 1 antenna (2.4GHz function) + Set 2 antenna (BT function)

Mode 4. Place EUT 2 in Z axis + Set 1 antenna (5GHz function) + Set 2 antenna (BT function)

Mode 2 is the worst case, so it was selected to record in this test report.

For Radiated Emission test below 1GHz:

Mode 1. Place EUT 1 in Z axis + Set 3 antenna (2.4GHz function) + Set 2 antenna (BT function)

Mode 2. Place EUT 1 in Z axis + Set 3 antenna (5GHz function) + Set 2 antenna (BT function)

Mode 3. Place EUT 2 in Z axis + Set 1 antenna (2.4GHz function) + Set 2 antenna (BT function)

Mode 4. Place EUT 2 in Z axis + Set 1 antenna (5GHz function) + Set 2 antenna (BT function)

Mode 1 is the worst case, so it was selected to record in this test report.

For Radiated Emission test above 1GHz:

The EUT 1 was performed at X axis, Y axis and Z axis position. The worst case was found at Y axis, so it was selected to perform test and its test result was written in the report.

Mode 1. Place EUT 1 in Y axis + Set 3 antenna

The EUT 2 was performed at X axis, Y axis and Z axis position. The worst case was found at Z axis, so it was selected to perform test and its test result was written in the report.

Mode 2. Place EUT 2 in Z axis + Set 1 antenna

For Radiated Emission Co-location test:

Place EUT 1 in Z axis generated the worst test result for Radiated emission below 1GHz test, thus the measurement for Radiated emission co-location test will follow this same test configuration.

Mode 1. Place EUT 1 in Z axis + Set 3 antenna (2.4GHz function) + Set 2 antenna (BT function)

Mode 2. Place EUT 1 in Z axis + Set 3 antenna (5GHz function) + Set 2 antenna (BT function).

For Co-location MPE and Radiated Emission Co-location Test:

The EUT could be applied with 2.4GHz WLAN function + BT function and 5GHz WLAN function + BT function; therefore Co-location Maximum Permissible Exposure (Please refer to FA590501) and Radiated Emission Co-location (please refer to Appendix B) tests are added for simultaneously transmit between 2.4GHz WLAN function + BT function and 5GHz WLAN function + BT function.

3.6. Table for Testing Locations

Test Site Location				
Address:	No.8, Lane 724, Bo-ai St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C.			
TEL:	886-3-656-9065			
FAX:	886-3-656-9085			
Test Site No.	**Site Category**	**Location**	**FCC Reg. No.**	**IC File No.**
03CH01-CB	SAC	Hsin Chu	262045	IC 4086D
CO01-CB	Conduction	Hsin Chu	262045	IC 4086D
TH01-CB	OVEN Room	Hsin Chu	-	-

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC).

3.7. Table for Multiple Listing

The brand/model names in the following table are all refer to the identical product.

EUT	Model Name	WiFi Antenna (Internal)	WiFi Antenna (External)	BT Antenna (External)
1	WCBN4506R	X	V	V
2		V	X	V

3.8. Table for Supporting Units

For Test Site No: 03CH01-CB

For Radiated Emission test below 1GHz

Support Unit	Brand	Model	FCC ID
NB	DELL	E6300	DoC
CBT Bluetooth tester	Anritsu	MT8852B	N/A
Mouse	HP	FM100	DoC
Earphone	SHYARO CHI	MIC-04	N/A
Wireless ac AP	Netgear	R6300V2	PY313200227
Fixtute	Liteon	TB006	N/A

For Radiated Emission test above 1GHz

Support Unit	Brand	Model	FCC ID
NB	DELL	E6300	DoC
Fixtute	Liteon	TB006	N/A

For Test Site No: CO01-CB

Support Unit	Brand	Model	FCC ID
AP Router	Planex	GW-AP54SGX	KA220030603014-1
NB	DELL	E6430	DoC
CBT Bluetooth tester	Anritsu	MT8852B	N/A
Fixture	Liteon	TB006	N/A
Mouse	HP	FM100	DoC
Earphone	e-Power	S90W	N/A

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
NB	DELL	E6300	DoC
Fixture	Liteon	TB006	N/A

3.9. Table for Parameters of Test Software Setting

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

For Mode 1:

Test Software Version	MT7662QA V1.0.3.14		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	2412 MHz	2437 MHz	2462 MHz
802.11b	1A/18	1C/1A	1B/19
802.11g	1D/1C	2C/2B	1E/1D
802.11n MCS0 HT20	1B/19	2C/2B	1E/1D

For Mode 2:

Test Software Version	MT7662QA V1.0.3.14		
Mode	Test Frequency (MHz)		
	NCB: 20MHz		
	2412 MHz	2437 MHz	2462 MHz
802.11b	1B/1A	1B/1A	1B/1A
802.11g	1E/1D	2C/29	1F/1D
802.11n MCS0 HT20	1C/1B	2C/27	1E/1D

3.10. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.11. Duty Cycle

For Mode 1:

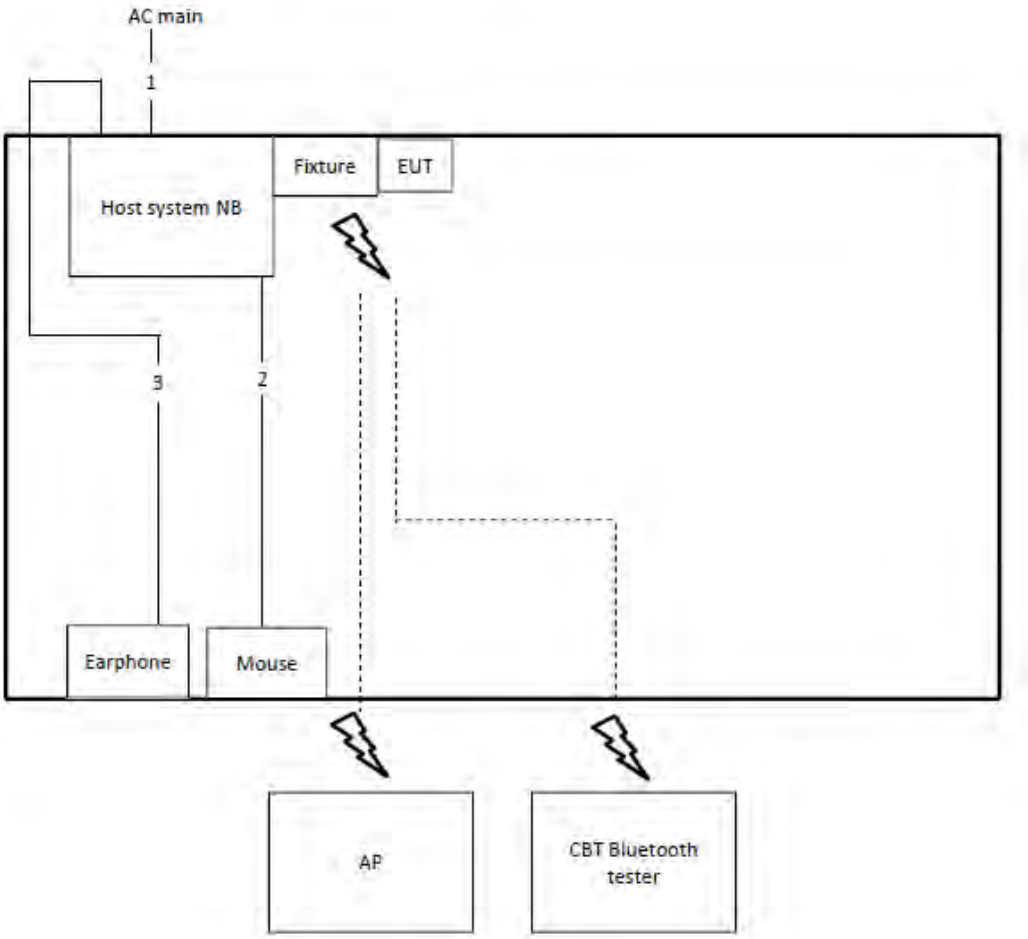
Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11b	1.000	1.000	100.00%	0.00	0.01
802.11g	1.430	1.640	87.20%	0.60	0.70
802.11n MCS0 HT20	1.330	1.550	85.81%	0.66	0.75

For Mode 2:

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11b	8.691	8.898	97.67%	0.10	0.12
802.11g	1.434	1.649	86.97%	0.61	0.70
802.11n MCS0 HT20	1.330	1.549	85.86%	0.66	0.75

3.12. Test Configurations

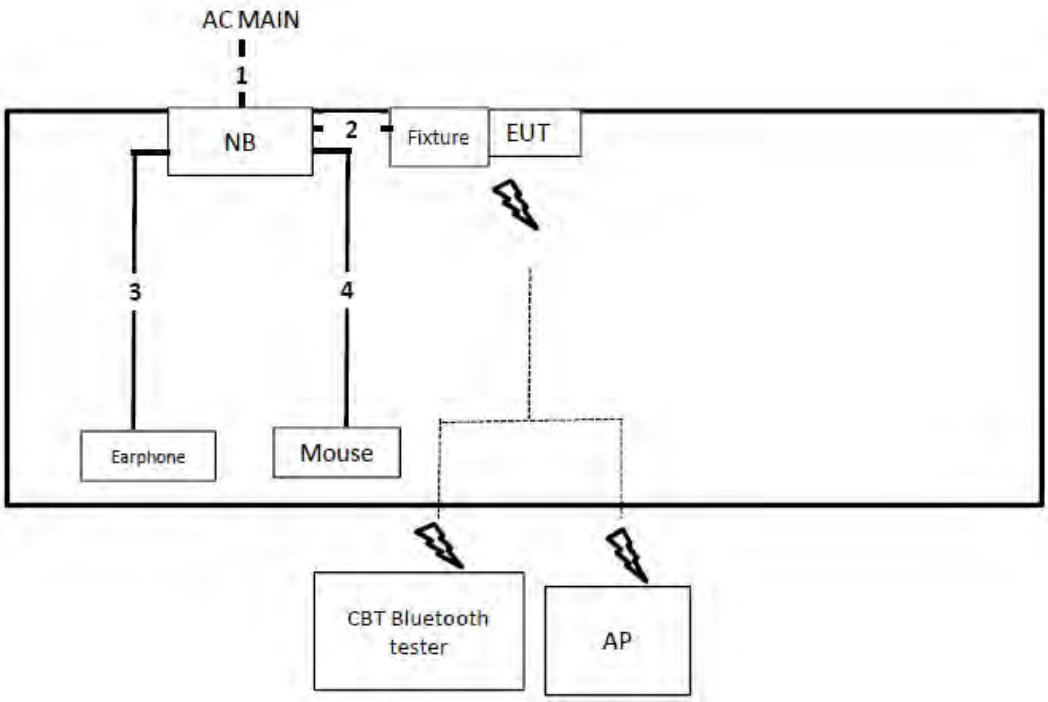
3.12.1. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	USB cable	No	1.8m
3	Audio cable	No	1.1m

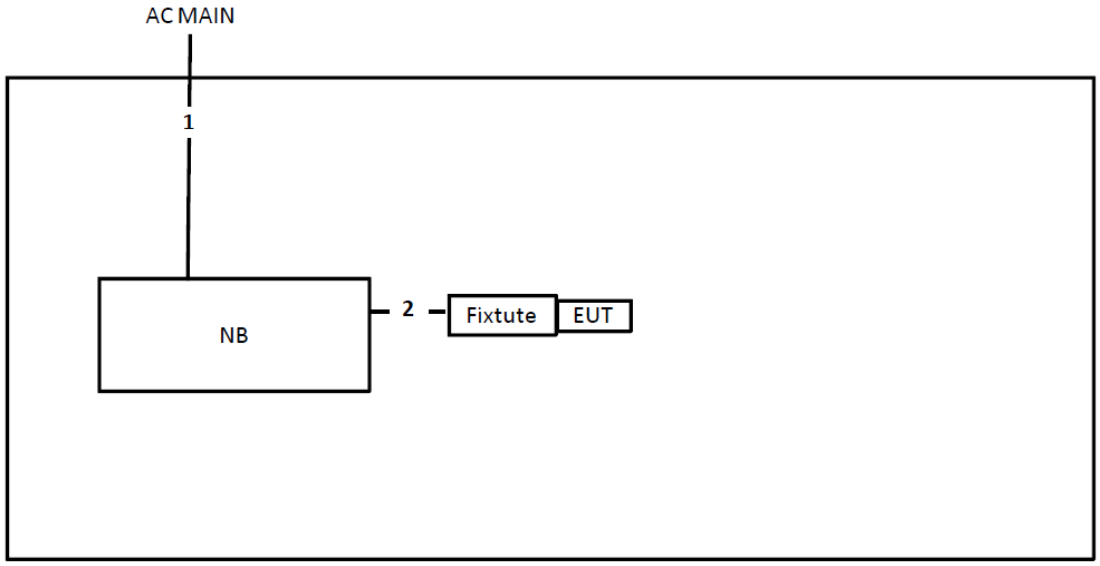
3.12.2. Radiation Emissions Test Configuration

Test Configuration: 30MHz~1GHz



Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	USB cable	No	0.1m
3	Audio cable	No	1.1m
4	USB cable	No	1.8m

Test Configuration: above 1GHz



Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	USB cable	No	0.1m

4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For this product which is designed to be connected to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

4.1.2. Measuring Instruments and Setting

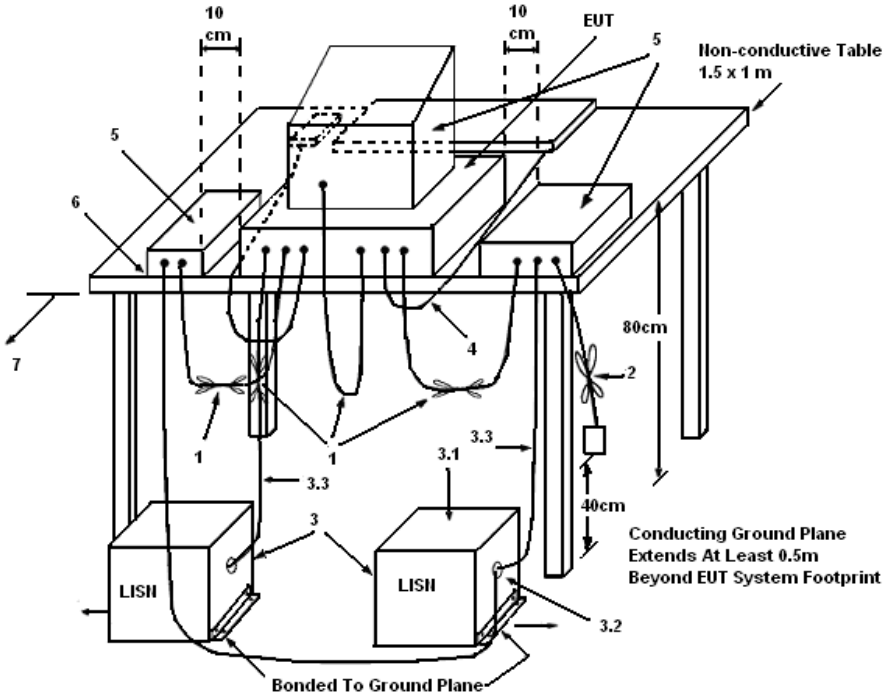
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 kHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

4.1.4. Test Setup Layout



LEGEND:

(1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

(2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

(3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.

(3.1) All other equipment powered from additional LISN(s).

(3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.

(3.3) LISN at least 80 cm from nearest part of EUT chassis.

(4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.

(5) Non-EUT components of EUT system being tested.

(6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.

(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

4.1.5. Test Deviation

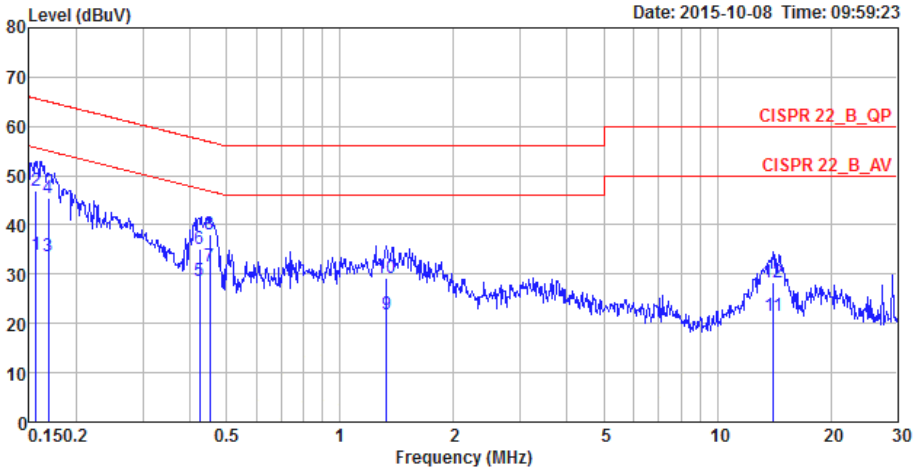
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

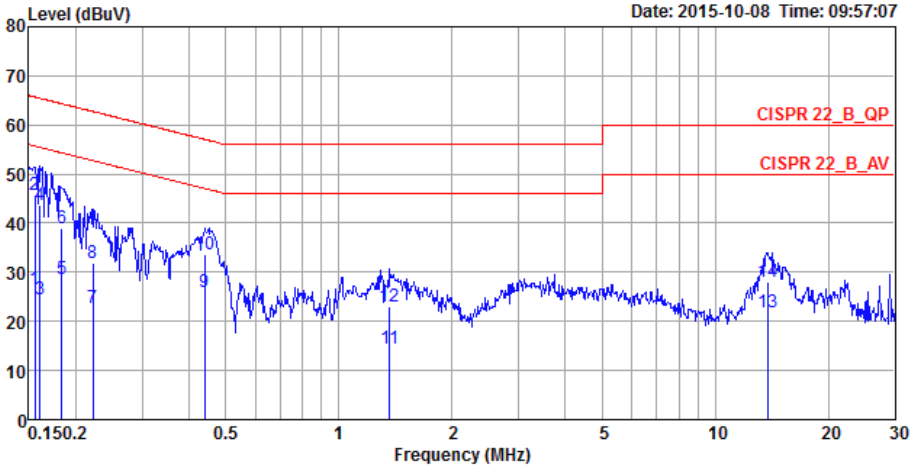
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	24°C	Humidity	59%
Test Engineer	Ryo Fan	Phase	Line
Configuration	Normal Link	Test Mode	Mode 2



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1565	34.08	-21.57	55.65	24.13	9.93	0.02	LINE	Average
2	0.1565	47.08	-18.57	65.65	37.13	9.93	0.02	LINE	QP
3	0.1685	33.53	-21.50	55.03	23.58	9.93	0.02	LINE	Average
4	0.1685	45.56	-19.47	65.03	35.61	9.93	0.02	LINE	QP
5	0.4237	28.66	-18.71	47.37	18.69	9.93	0.04	LINE	Average
6	0.4237	35.04	-22.33	57.37	25.07	9.93	0.04	LINE	QP
7	0.4516	31.50	-15.35	46.85	21.53	9.93	0.04	LINE	Average
8	0.4516	38.14	-18.71	56.85	28.17	9.93	0.04	LINE	QP
9	1.3308	21.99	-24.01	46.00	11.97	9.97	0.05	LINE	Average
10	1.3308	29.12	-26.88	56.00	19.10	9.97	0.05	LINE	QP
11	14.0629	21.68	-28.32	50.00	11.12	10.31	0.25	LINE	Average
12	14.0629	28.21	-31.79	60.00	17.65	10.31	0.25	LINE	QP

Temperature	24°C	Humidity	59%
Test Engineer	Ryo Fan	Phase	Neutral
Configuration	Normal Link	Test Mode	Mode 2



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1557	26.49	-29.20	55.69	16.69	9.78	0.02	NEUTRAL	Average
2	0.1557	45.69	-20.00	65.69	35.89	9.78	0.02	NEUTRAL	QP
3	0.1607	24.53	-30.90	55.43	14.73	9.78	0.02	NEUTRAL	Average
4	0.1607	43.63	-21.80	65.43	33.83	9.78	0.02	NEUTRAL	QP
5	0.1835	28.75	-25.58	54.33	18.94	9.79	0.02	NEUTRAL	Average
6	0.1835	38.90	-25.43	64.33	29.09	9.79	0.02	NEUTRAL	QP
7	0.2220	22.82	-29.92	52.74	13.00	9.79	0.03	NEUTRAL	Average
8	0.2220	31.80	-30.94	62.74	21.98	9.79	0.03	NEUTRAL	QP
9	0.4397	25.85	-21.22	47.07	16.02	9.79	0.04	NEUTRAL	Average
10	0.4397	33.58	-23.49	57.07	23.75	9.79	0.04	NEUTRAL	QP
11	1.3665	14.45	-31.55	46.00	4.58	9.82	0.05	NEUTRAL	Average
12	1.3665	22.93	-33.07	56.00	13.06	9.82	0.05	NEUTRAL	QP
13	13.7680	21.77	-28.23	50.00	11.43	10.09	0.25	NEUTRAL	Average
14	13.7680	28.01	-31.99	60.00	17.67	10.09	0.25	NEUTRAL	QP

Note:

Level = Read Level + LISN Factor + Cable Loss.

4.2. Maximum Conducted Output Power Measurement

4.2.1. Limit

The limit for output power is 30dBm.

4.2.2. Measuring Instruments and Setting

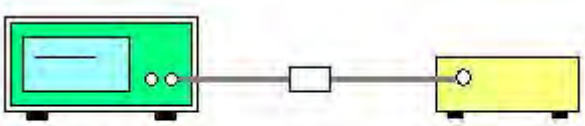
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

Power Meter Parameter	Setting
Bandwidth	50MHz bandwidth is greater than the EUT emission bandwidth
Detector	Average

4.2.3. Test Procedures

1. Test procedures refer KDB558074 D01 v03r03 section 9.2.3.2 Measurement using a power meter (PM).
2. Multiple antenna systems was performed in accordance with KDB 662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
3. This procedure provides an alternative for determining the RMS output power using a broadband RF average power meter with a thermocouple detector.

4.2.4. Test Setup Layout



4.2.5. Test Deviation

There is no deviation with the original standard.

4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.2.7. Test Result of Maximum Conducted Output Power

Temperature	24°C	Humidity	65%
Test Engineer	Clemens Fang & Andy Tsai & Lucas Huang	Test Date	Oct. 02, 2015

For Mode 1:

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	14.61	14.35	17.49	30.00	Complies
	2437 MHz	15.48	15.21	18.36	30.00	Complies
	2462 MHz	14.89	14.65	17.78	30.00	Complies
802.11g	2412 MHz	15.26	15.51	18.40	30.00	Complies
	2437 MHz	20.63	20.76	23.71	30.00	Complies
	2462 MHz	15.84	15.86	18.86	30.00	Complies
802.11n MCS0 HT20	2412 MHz	13.67	13.23	16.47	30.00	Complies
	2437 MHz	20.62	21.08	23.87	30.00	Complies
	2462 MHz	15.78	15.81	18.81	30.00	Complies

For Mode 2:

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	14.67	14.65	17.67	30.00	Complies
	2437 MHz	14.82	14.58	17.71	30.00	Complies
	2462 MHz	14.64	14.78	17.72	30.00	Complies
802.11g	2412 MHz	15.64	15.36	18.51	30.00	Complies
	2437 MHz	24.26	24.22	27.25	30.00	Complies
	2462 MHz	15.94	15.86	18.91	30.00	Complies
802.11n MCS0 HT20	2412 MHz	14.42	14.22	17.33	30.00	Complies
	2437 MHz	20.52	20.41	23.48	30.00	Complies
	2462 MHz	15.56	15.52	18.55	30.00	Complies

4.3. Power Spectral Density Measurement

4.3.1. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

4.3.2. Measuring Instruments and Setting

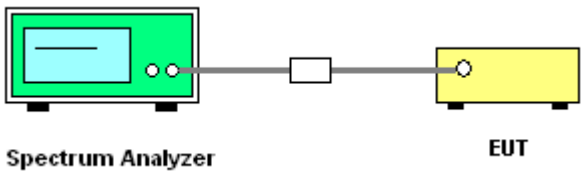
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Set the span to 1.5 times the DTS channel bandwidth.
RBW	3 kHz ≤ RBW ≤ 100kHz
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto couple

4.3.3. Test Procedures

1. Test was performed in accordance with KDB558074 D01 v03r03 for Performing Compliance Measurements on Digital Transmission Systems (DTS) - section 10.2 Method PKPSD (peak PSD) and KDB 662911 D01 v02r01 section In-Band Power Spectral Density (PSD) Measurements option (b) Measure and sum spectral maximal across the outputs.
2. Use this procedure when the maximum conducted output power in the fundamental emission is used to demonstrate compliance. The EUT must be configured to transmit continuously at full power over the measurement duration.
3. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW (use of a greater number of measurement points than this minimum requirement is recommended).
4. Use the peak marker function to determine the maximum level in any 3 kHz band segment within the fundamental EBW.
5. The resulting PSD level must be ≤ 8 dBm.

4.3.4. Test Setup Layout



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of Power Spectral Density

Temperature	24°C	Humidity	65%
Test Engineer	Clemens Fang & Andy Tsai & Lucas Huang		

For Mode 1:

Mode	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	-10.05	-9.53	-6.77	8.00	Complies
	2437 MHz	-8.16	-7.61	-4.87	8.00	Complies
	2462 MHz	-8.91	-9.42	-6.15	8.00	Complies
802.11g	2412 MHz	-10.13	-8.50	-6.23	8.00	Complies
	2437 MHz	-5.80	-3.98	-1.79	8.00	Complies
	2462 MHz	-9.77	-8.63	-6.15	8.00	Complies
802.11n MCS0 HT20	2412 MHz	-11.01	-11.79	-8.37	8.00	Complies
	2437 MHz	-5.00	-5.68	-2.32	8.00	Complies
	2462 MHz	-9.05	-10.00	-6.49	8.00	Complies

Note:

2.4GHz = $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{sth}}\left\{\sum_{k=1}^{N_{ANT}} g_{jk}\right\}^2}{N_{ANT}}\right]$ =5.07dBi <6dBi, so the limit doesn't reduce.

For Mode 2:

Mode	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
802.11b	2412 MHz	-9.53	-7.60	-5.45	8.00	Complies
	2437 MHz	-8.79	-8.79	-5.78	8.00	Complies
	2462 MHz	-9.37	-8.43	-5.86	8.00	Complies
802.11g	2412 MHz	-9.82	-9.69	-6.74	8.00	Complies
	2437 MHz	-3.30	-5.74	-1.34	8.00	Complies
	2462 MHz	-9.42	-7.21	-5.17	8.00	Complies
802.11n MCS0 HT20	2412 MHz	-11.36	-11.48	-8.41	8.00	Complies
	2437 MHz	-6.65	-3.67	-1.90	8.00	Complies
	2462 MHz	-9.55	-9.77	-6.65	8.00	Complies

Note:

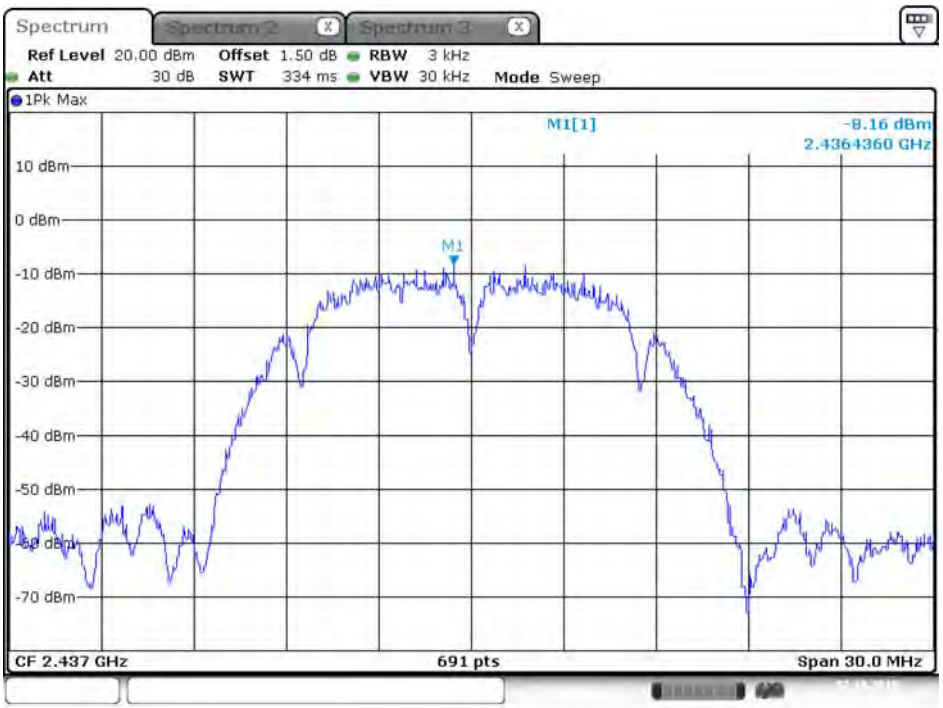
2.4GHz = $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{sh}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =3.44dBi <6dBi, so the limit doesn't reduce.

Note: All the test values were listed in the report.

For plots, only the channel with worse result was shown.

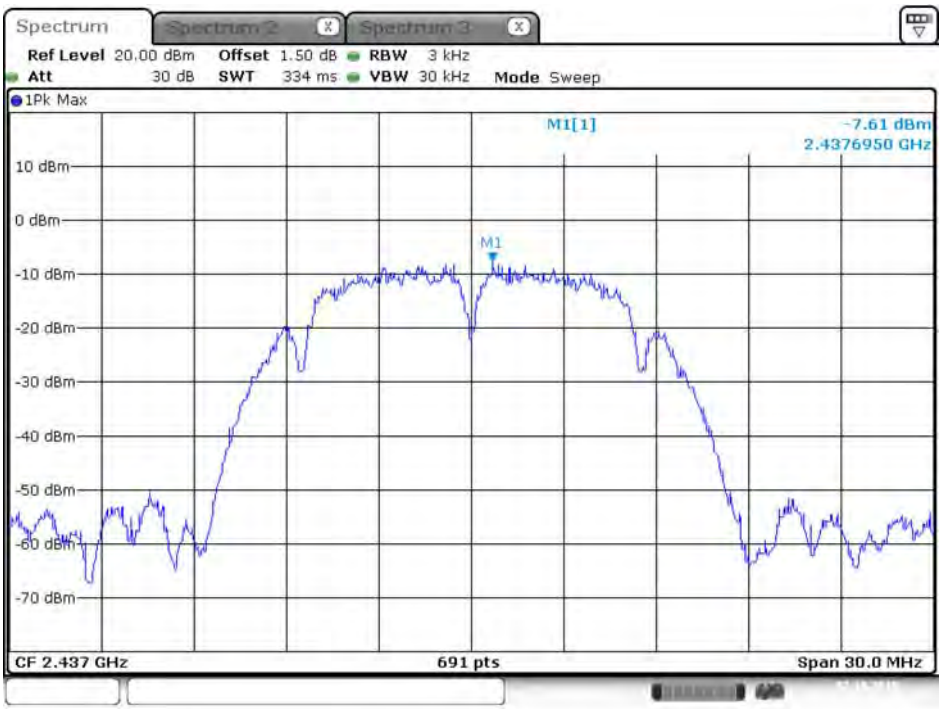
For Mode 1:

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1



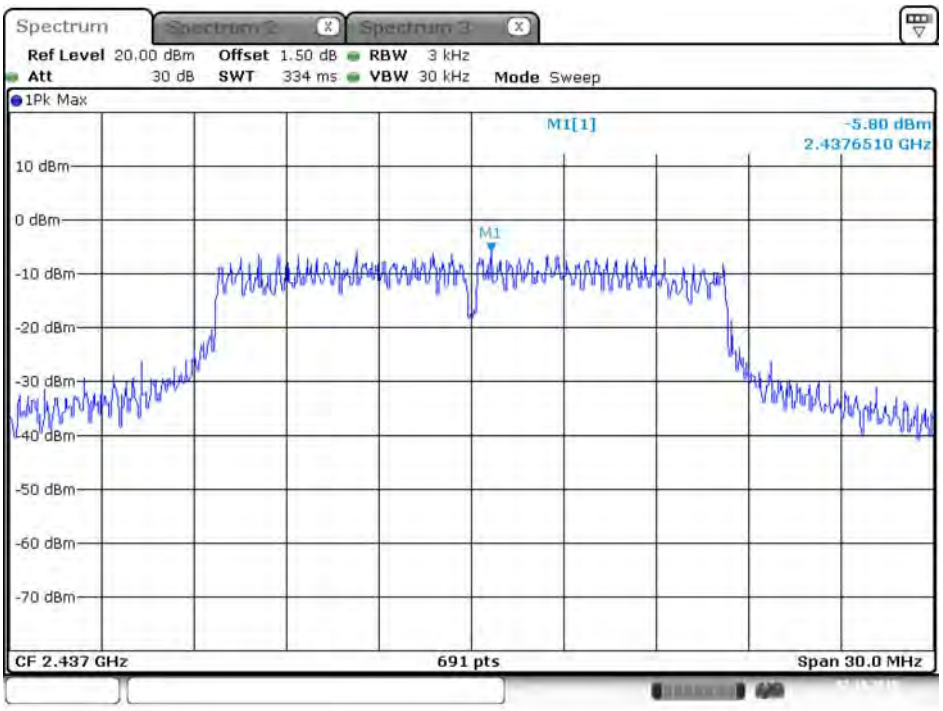
Date: 2.OCT.2015 17:12:31

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 2



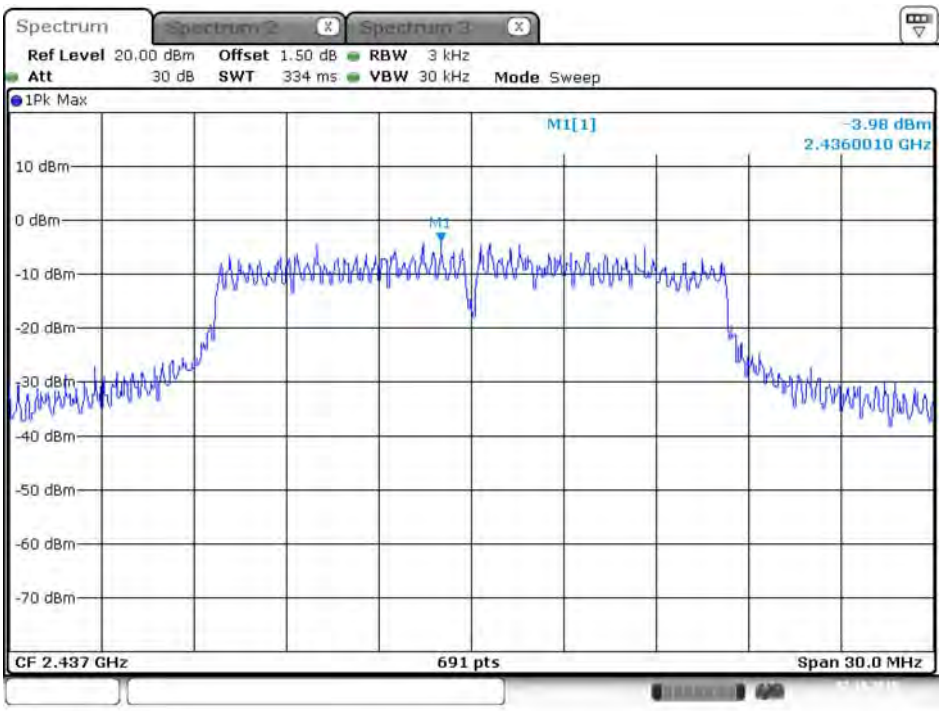
Date: 2.OCT.2015 17:12:53

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1



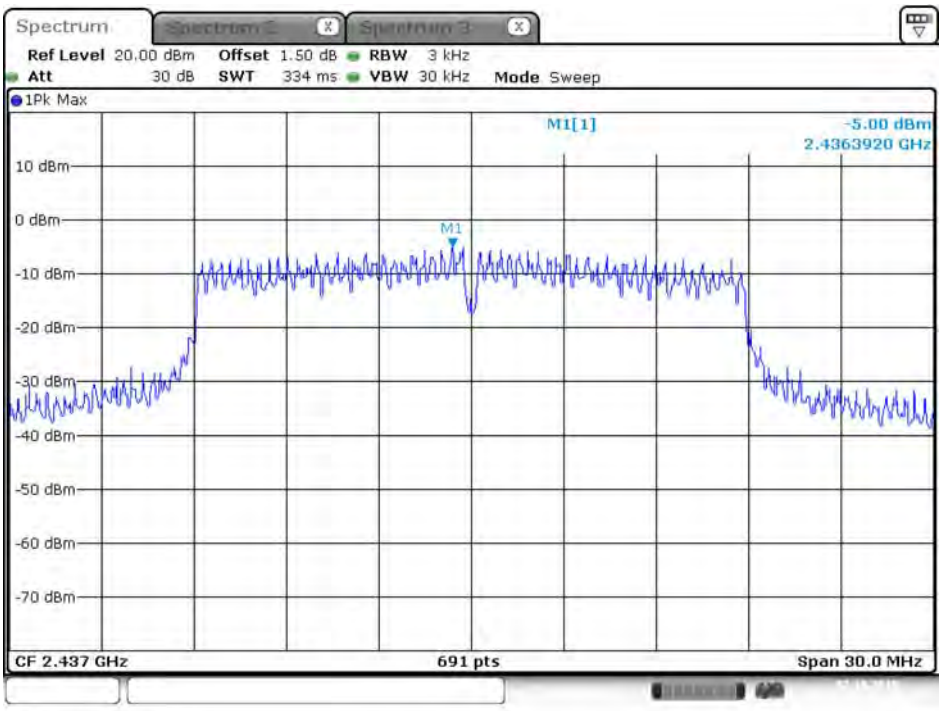
Date: 2.OCT.2015 17:15:24

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 2



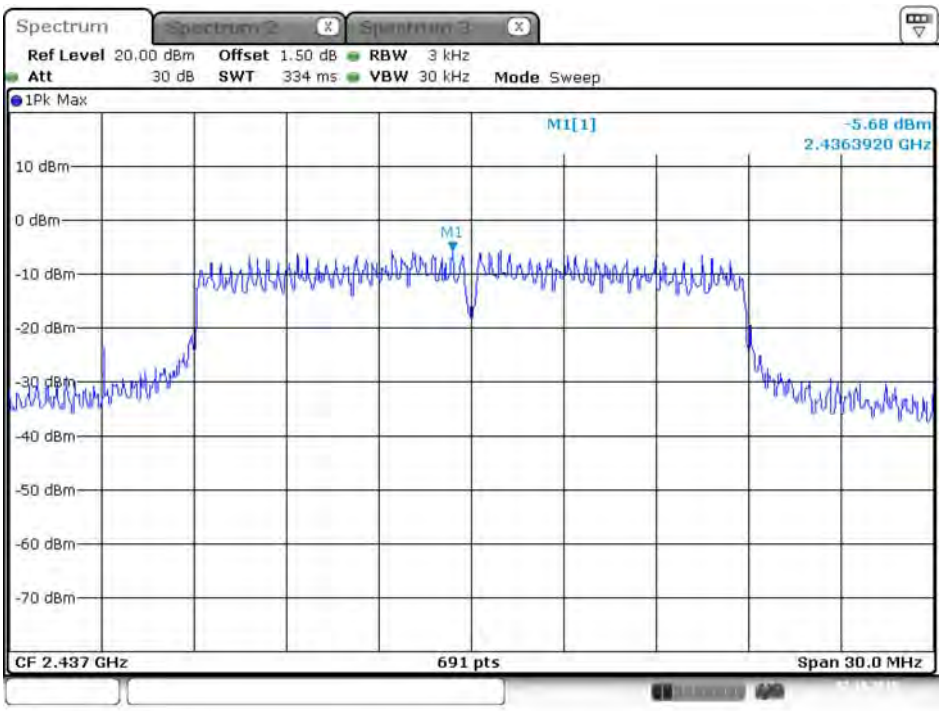
Date: 2.OCT.2015 17:15:48

Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1



Date: 2.OCT.2015 17:18:43

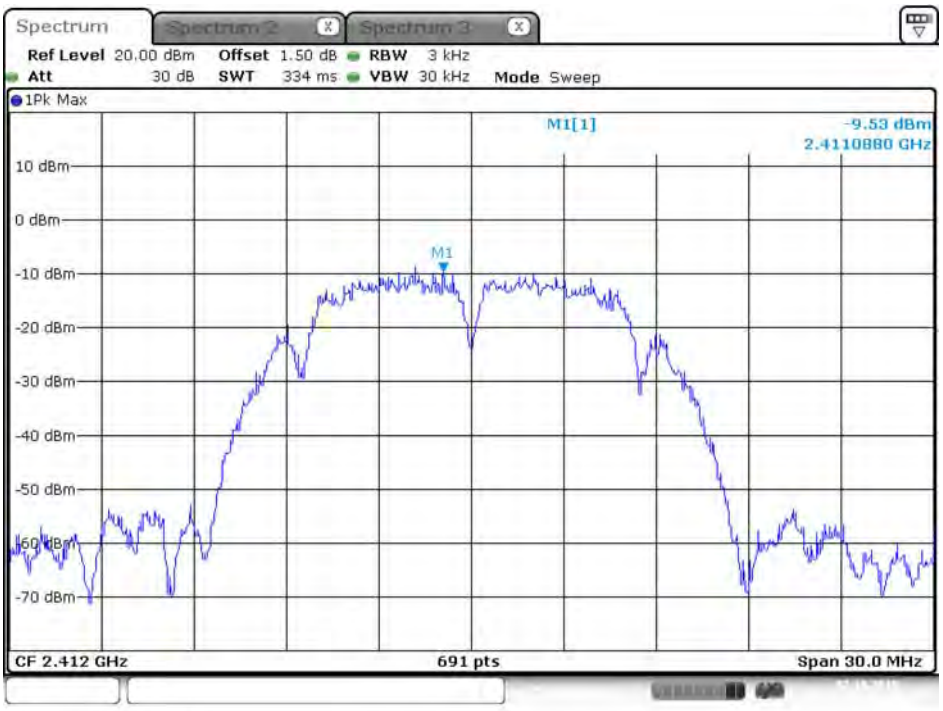
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 2



Date: 2.OCT.2015 17:19:10

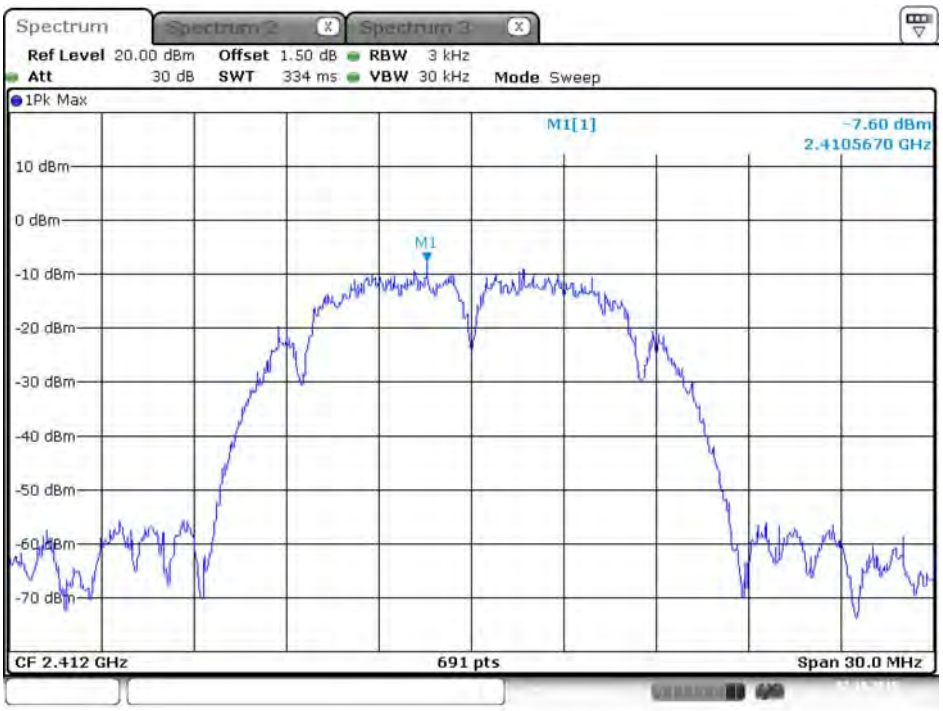
For Mode 2:

Power Density Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1



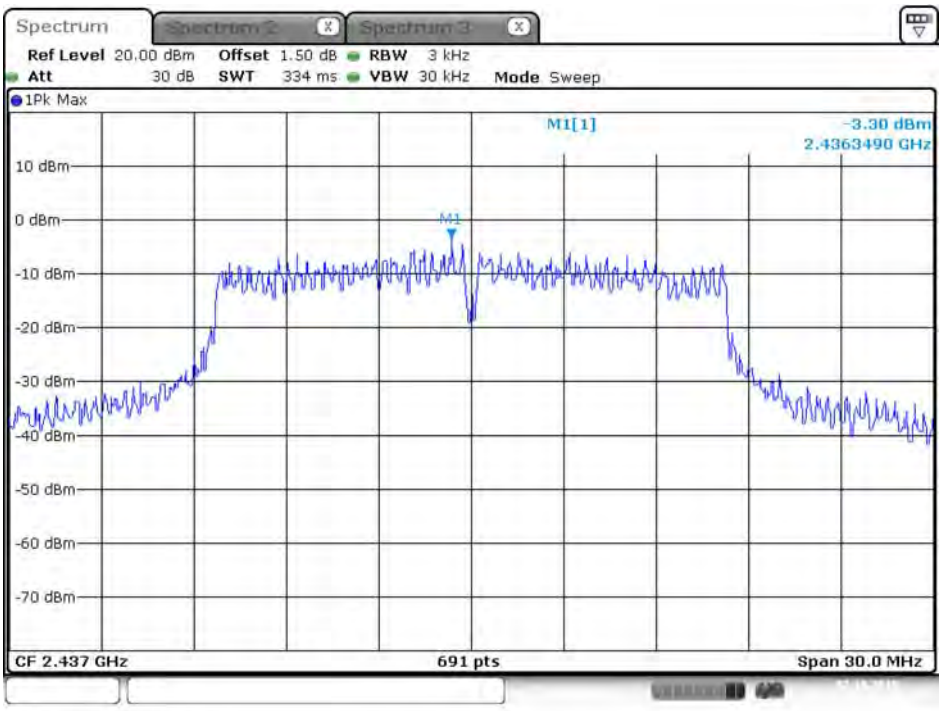
Date: 2.OCT.2015 17:21:25

Power Density Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 2



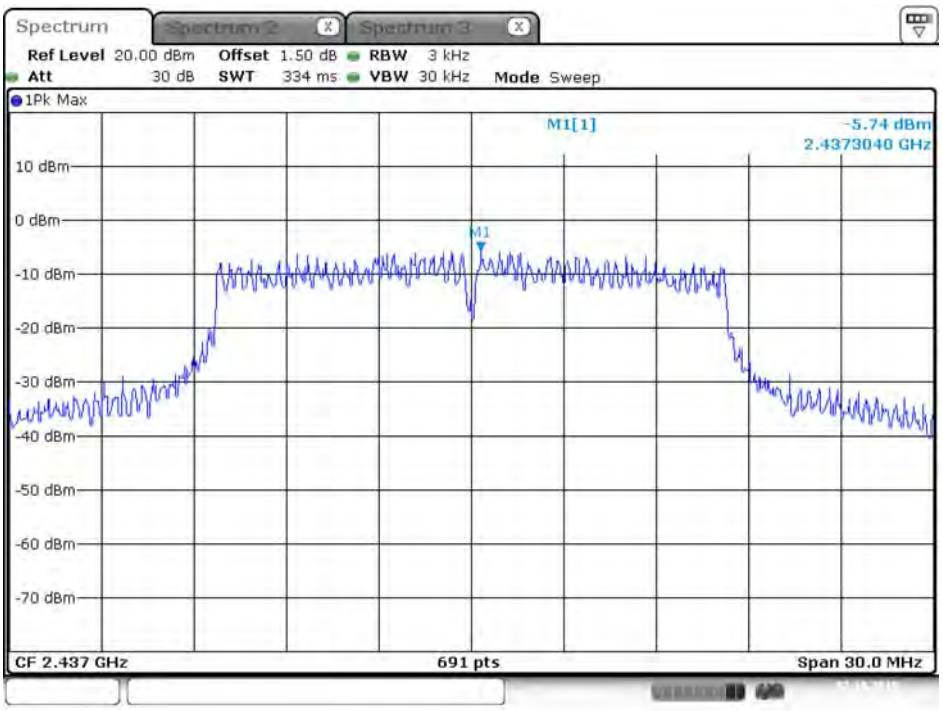
Date: 2.OCT.2015 17:21:46

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1



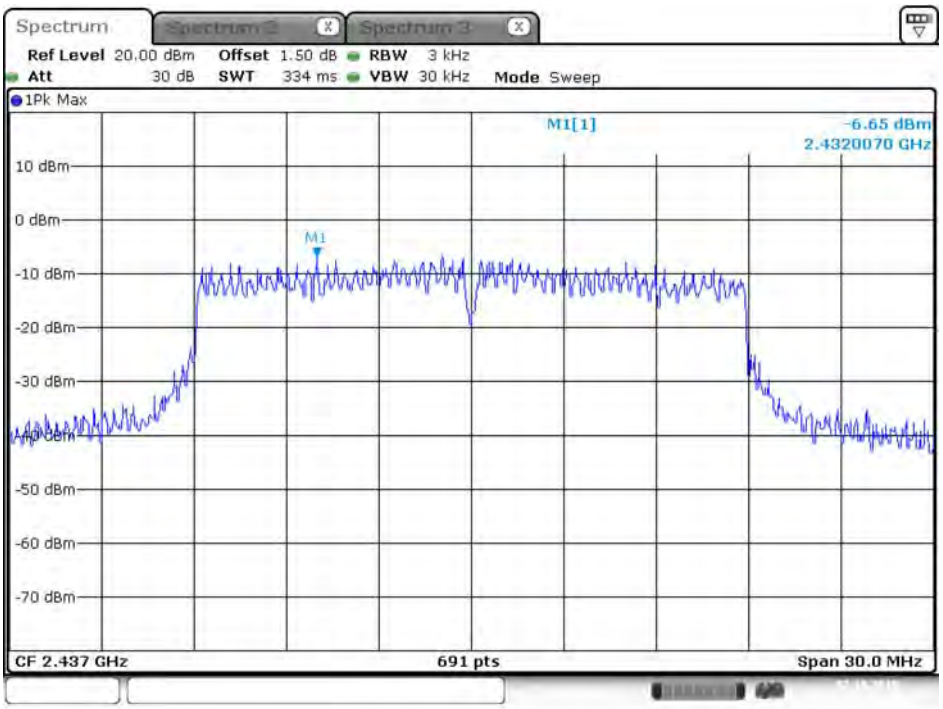
Date: 2.OCT.2015 17:25:11

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 2



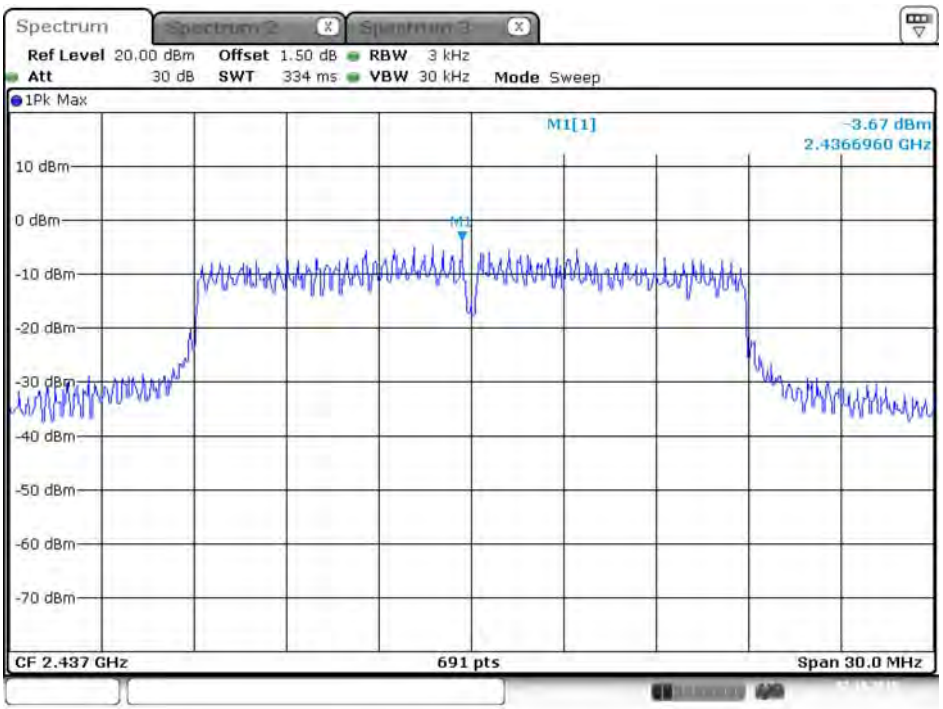
Date: 2.OCT.2015 17:25:34

Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1



Date: 2.OCT.2015 17:28:35

Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 2



Date: 2.OCT.2015 17:28:56

4.4. 6dB Spectrum Bandwidth Measurement

4.4.1. Limit

For digital modulation systems, the minimum 6 dB bandwidth shall be at least 500 kHz.

4.4.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the Spectrum Analyzer.

6dB Spectrum Bandwidth	
Spectrum Parameters	**Setting**
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RBW	100kHz
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto
99% Occupied Bandwidth	
Spectrum Parameters	**Setting**
Span	1.5 times to 5.0 times the OBW
RBW	1 % to 5 % of the OBW
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold

4.4.3. Test Procedures

For Radiated 6dB Bandwidth Measurement:

1. The transmitter was radiated to the spectrum analyzer in peak hold mode.
2. Test was performed in accordance with KDB558074 D01 v03r03 for Performing Compliance Measurements on Digital Transmission Systems (DTS) - section 8.0 DTS bandwidth=> 8.1 Option 1.
3. Multiple antenna system was performed in accordance with KDB 662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. Measured the spectrum width with power higher than 6dB below carrier.

4.4.4. Test Setup Layout

For Radiated 6dB Bandwidth Measurement:

This test setup layout is the same as that shown in section 4.5.4.

4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.4.7. Test Result of 6dB Spectrum Bandwidth

Temperature	24°C	Humidity	65%
Test Engineer	Clemens Fang & Andy Tsai & Lucas Huang		

For Mode 1:

Chain 1 + Chain 2

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	9.97	12.85	500	Complies
	2437 MHz	10.03	12.24	500	Complies
	2462 MHz	10.09	12.85	500	Complies
802.11g	2412 MHz	16.35	16.93	500	Complies
	2437 MHz	16.35	20.58	500	Complies
	2462 MHz	16.35	17.02	500	Complies
802.11n MCS0 HT20	2412 MHz	17.57	17.80	500	Complies
	2437 MHz	16.93	18.23	500	Complies
	2462 MHz	17.57	18.06	500	Complies

For Mode 2:

Chain 1 + Chain 2

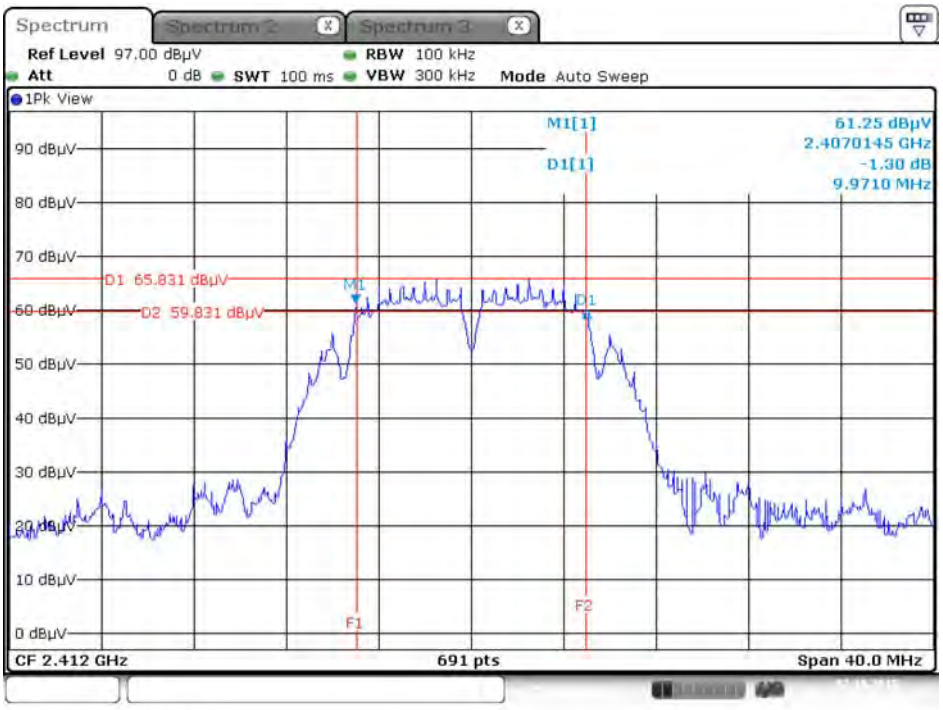
Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b	2412 MHz	9.57	12.24	500	Complies
	2437 MHz	10.03	12.24	500	Complies
	2462 MHz	10.03	12.24	500	Complies
802.11g	2412 MHz	16.29	16.85	500	Complies
	2437 MHz	16.29	20.58	500	Complies
	2462 MHz	16.12	16.85	500	Complies
802.11n MCS0 HT20	2412 MHz	17.57	17.89	500	Complies
	2437 MHz	16.70	18.67	500	Complies
	2462 MHz	17.57	18.06	500	Complies

Note: All the test values were listed in the report.

For plots, only the channel with worse result was shown.

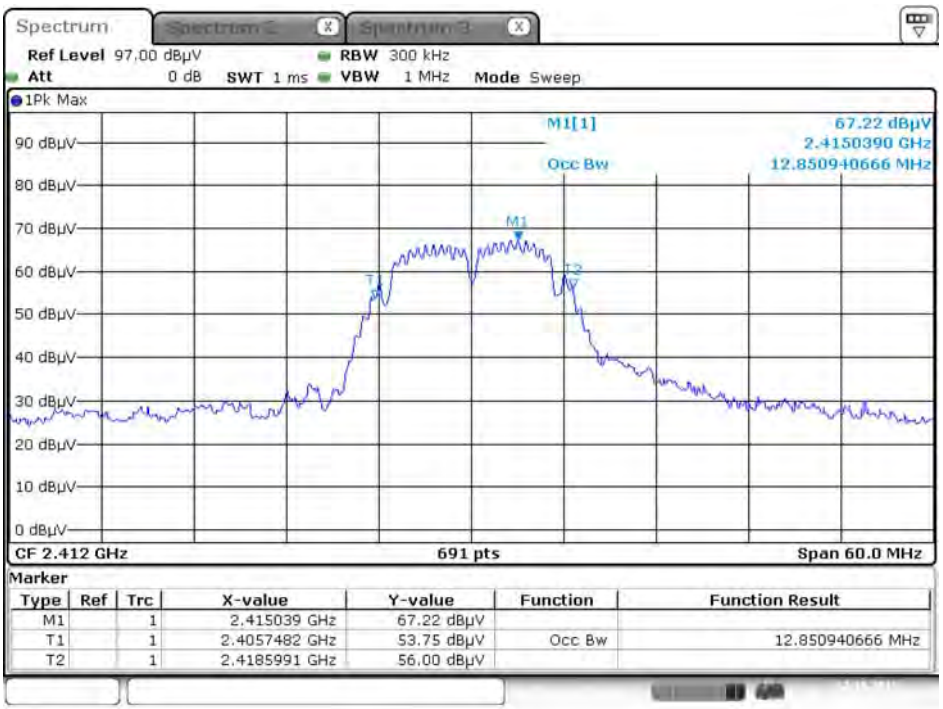
For Mode 1:

6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1 + Chain 2



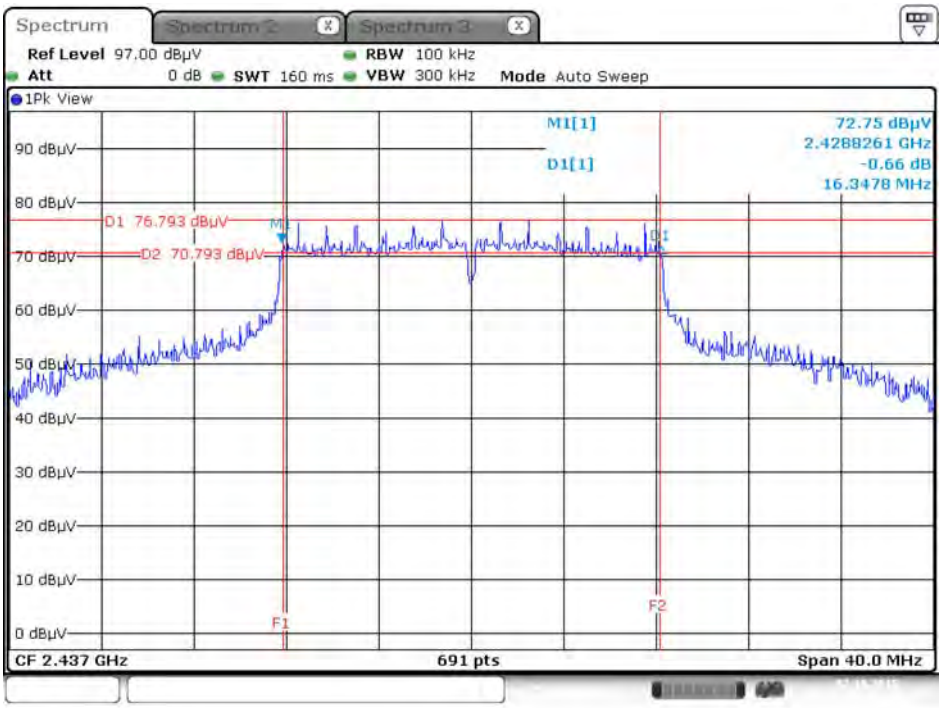
Date: 2.OCT.2015 17:38:12

99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1 + Chain 2



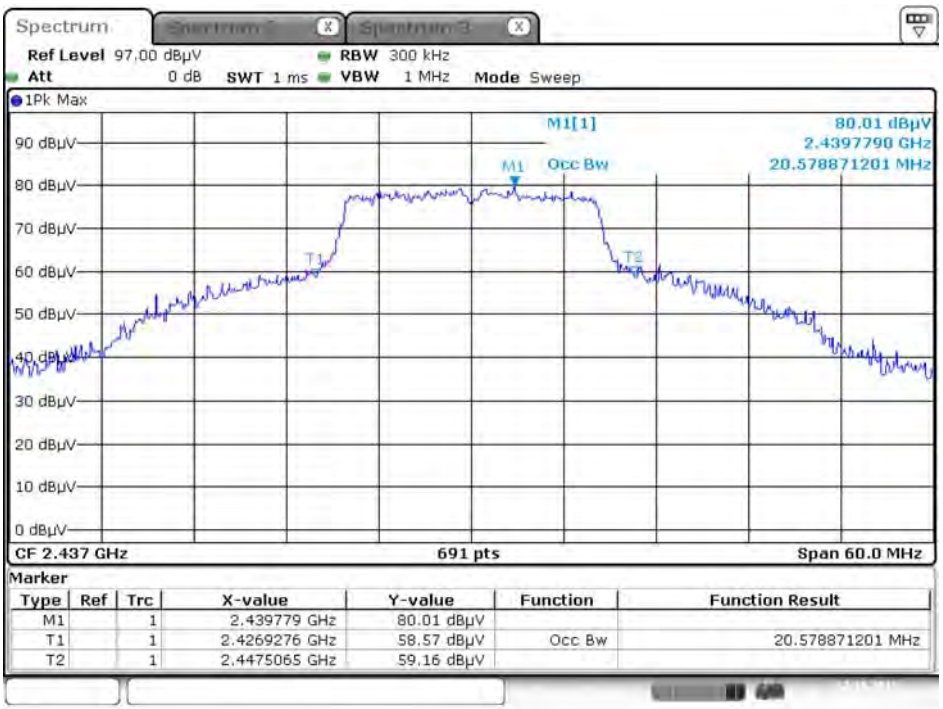
Date: 2.OCT.2015 17:35:59

6 dB Bandwidth Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1 + Chain 2



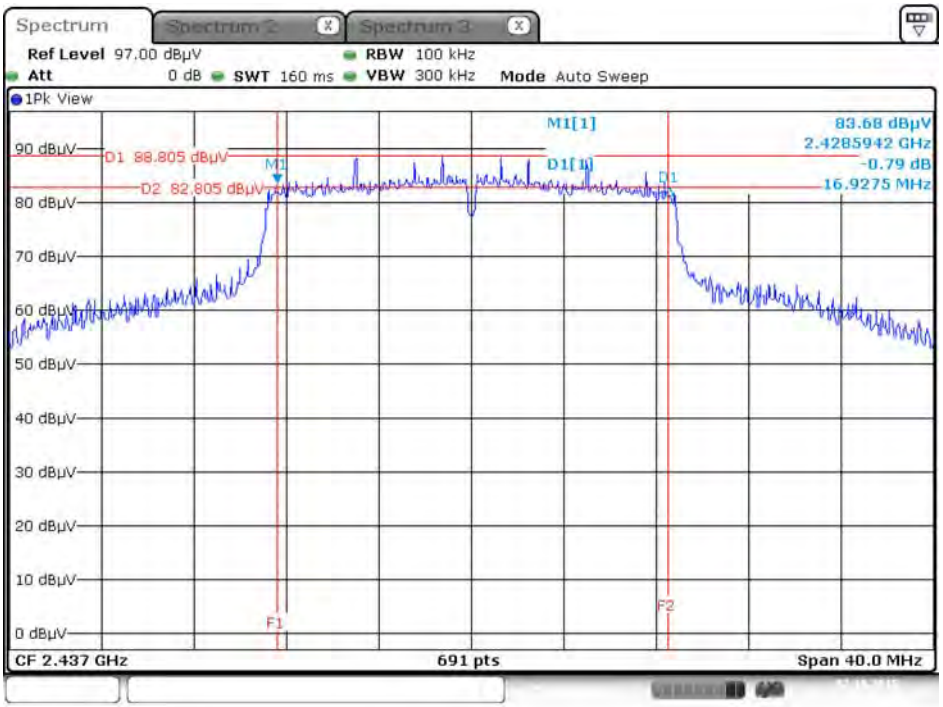
Date: 2.OCT.2015 17:48:11

99% Occupied Bandwidth Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1 + Chain 2



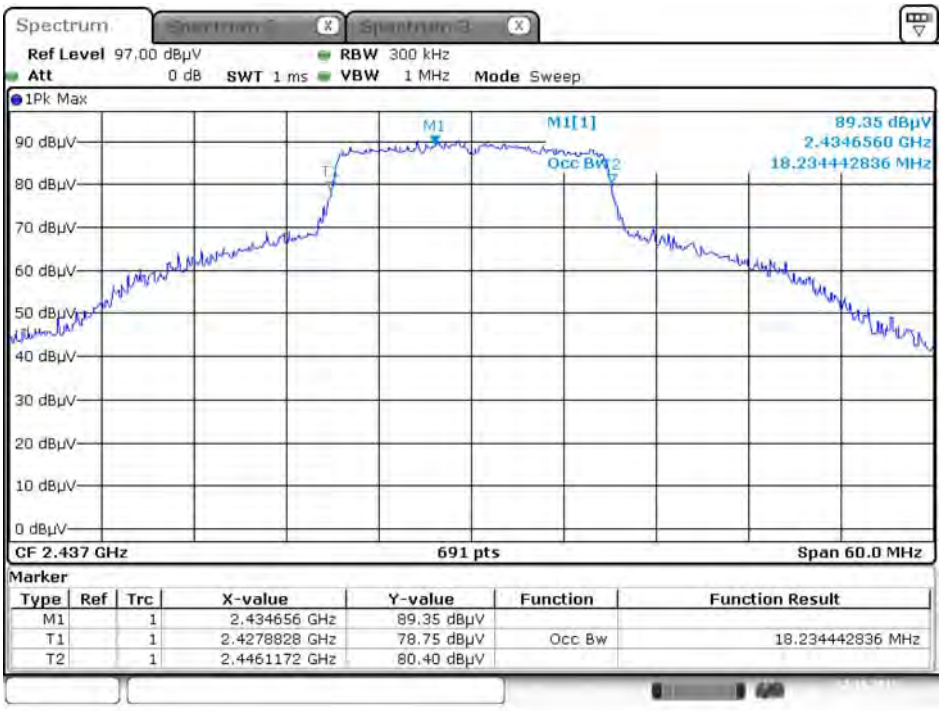
Date: 2.OCT.2015 17:47:39

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1 + Chain 2



Date: 2.OCT.2015 17:55:24

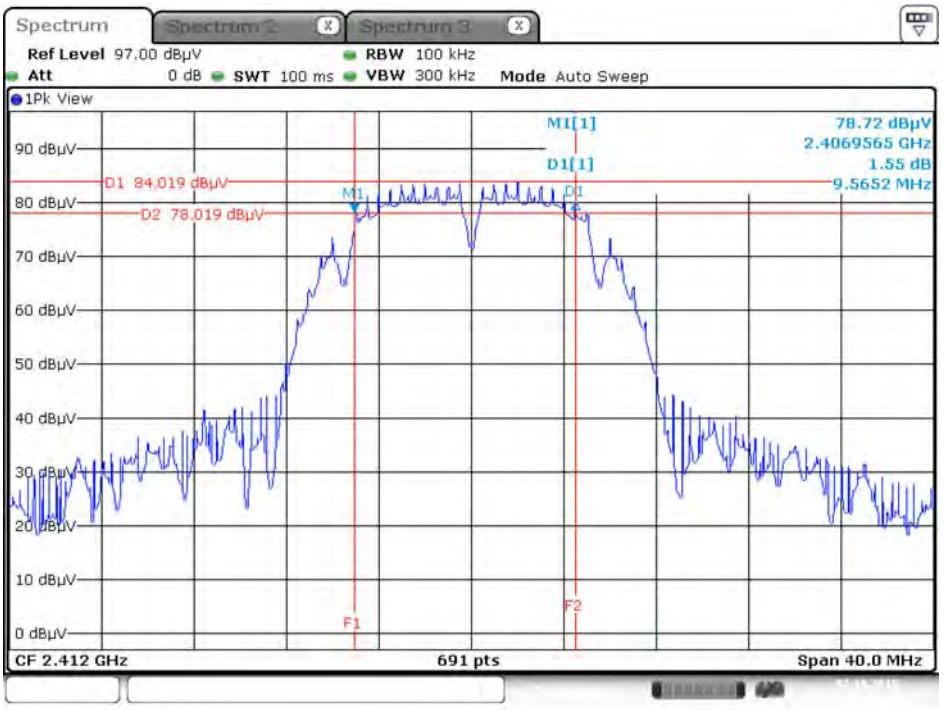
99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1 + Chain 2



Date: 2.OCT.2015 17:54:49

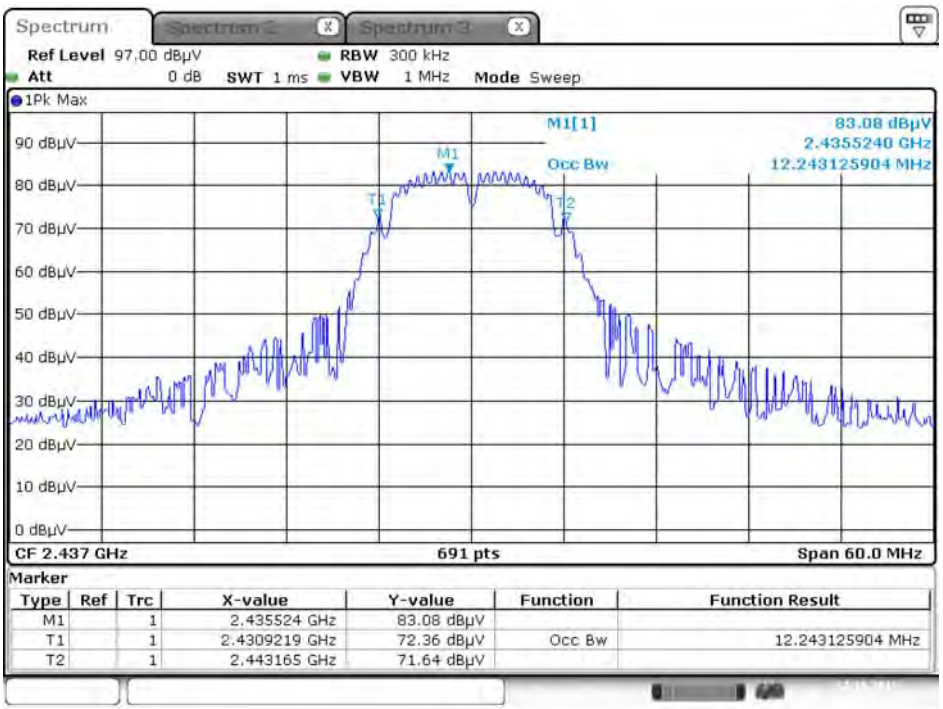
For Mode 2:

6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1 + Chain 2



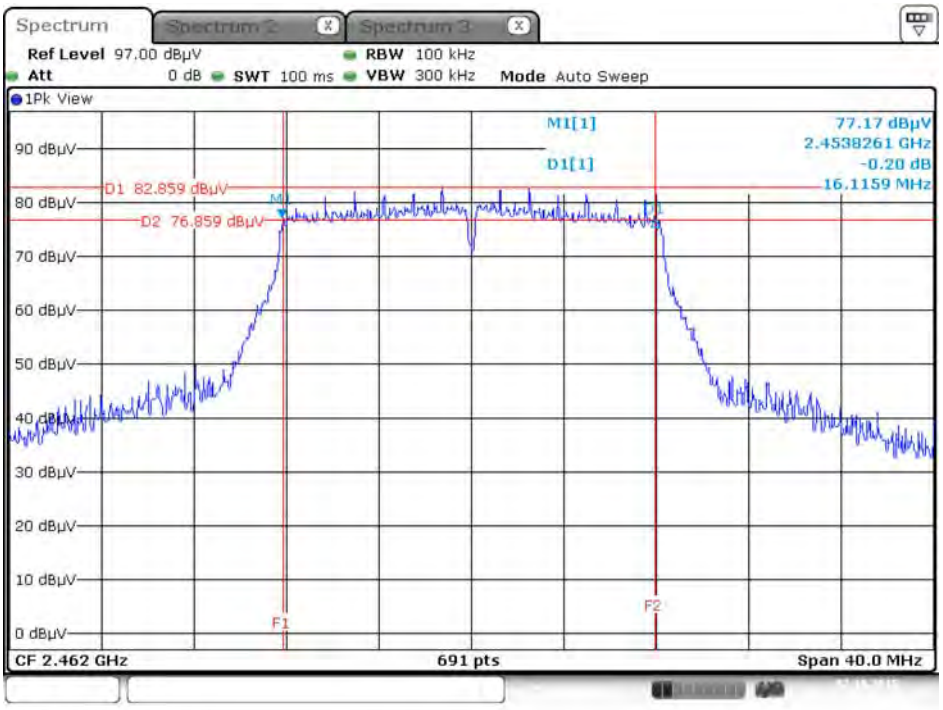
Date: 2.OCT.2015 17:43:46

99% Occupied Bandwidth Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1 + Chain 2



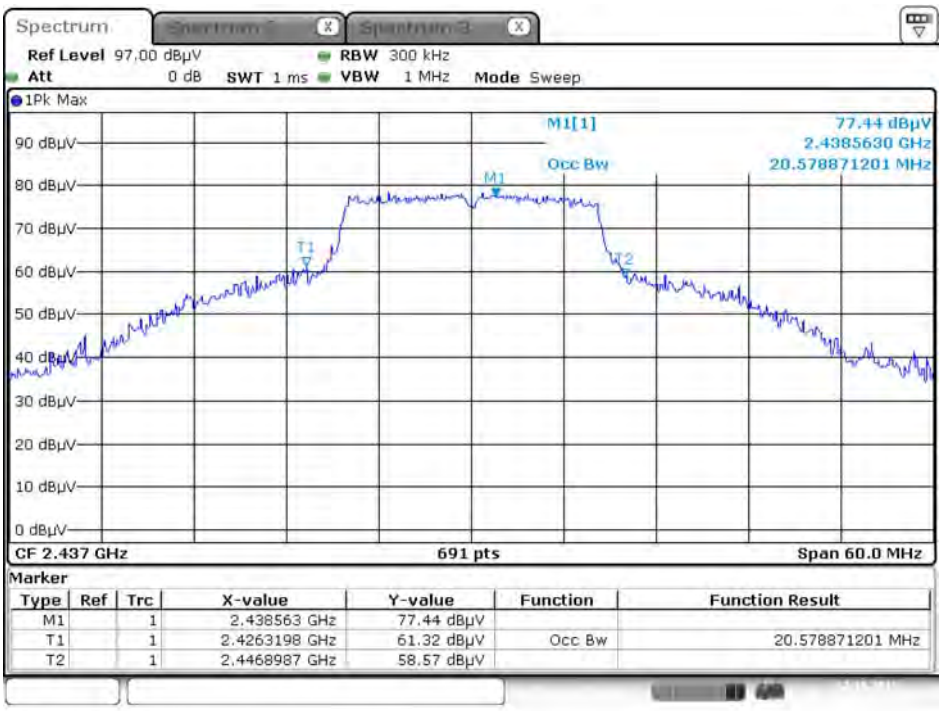
Date: 2.OCT.2015 17:39:41

6 dB Bandwidth Plot on Configuration IEEE 802.11g / 2462 MHz / Chain 1 + Chain 2



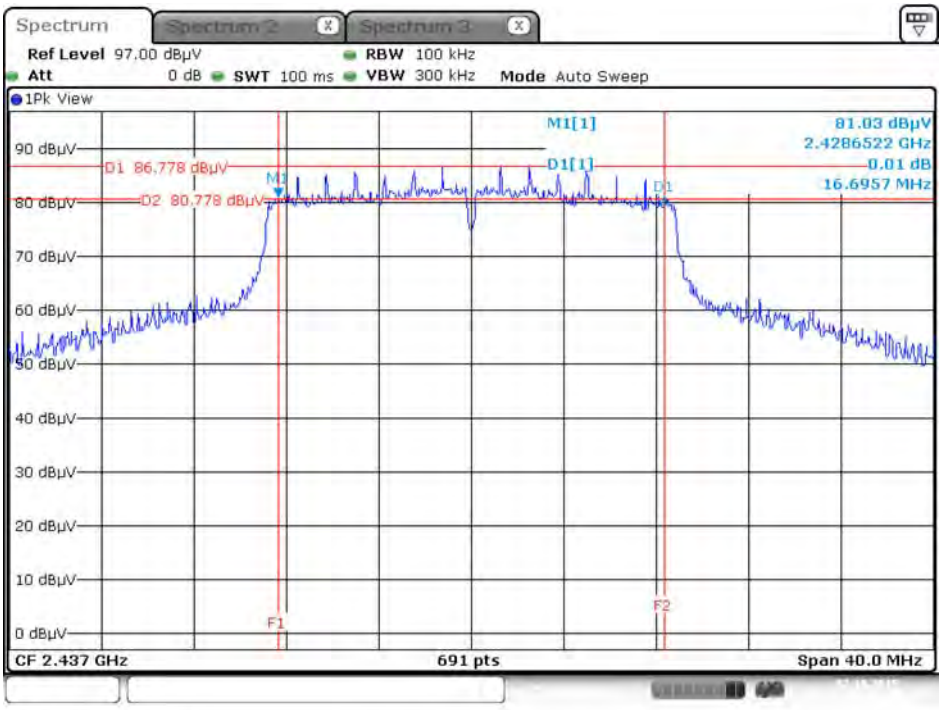
Date: 2.OCT.2015 17:50:56

99% Occupied Bandwidth Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1 + Chain 2



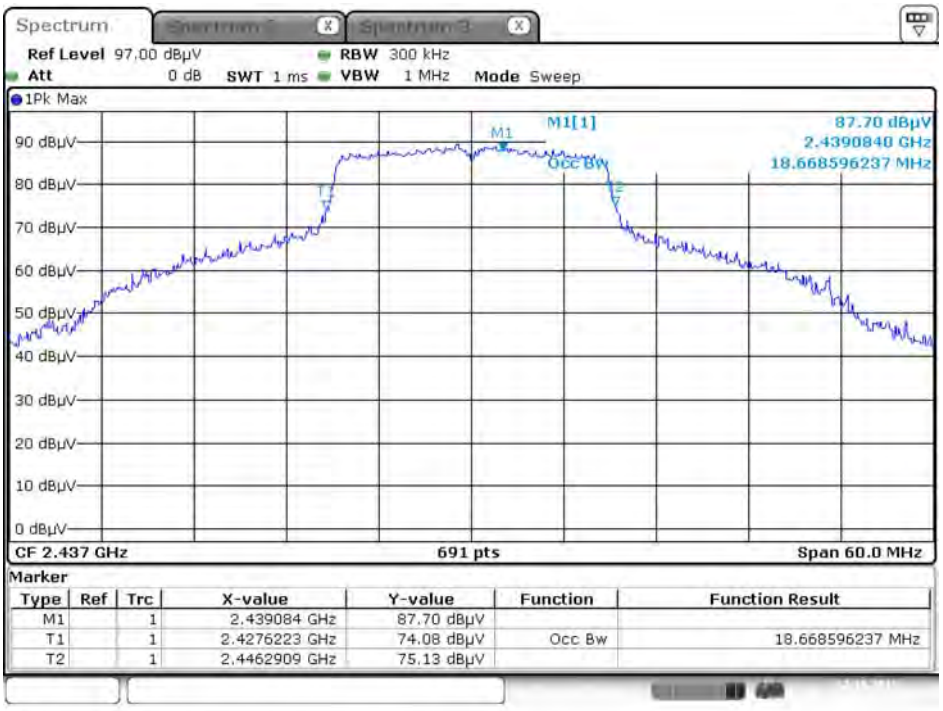
Date: 2.OCT.2015 17:48:58

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1 + Chain 2



Date: 2.OCT.2015 17:55:55

99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2437 MHz / Chain 1 + Chain 2



Date: 2.OCT.2015 17:56:31

4.5. Radiated Emissions Measurement

4.5.1. Limit

30dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

4.5.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average
RBW / VBW (Emission in non-restricted band)	100kHz / 300kHz for peak

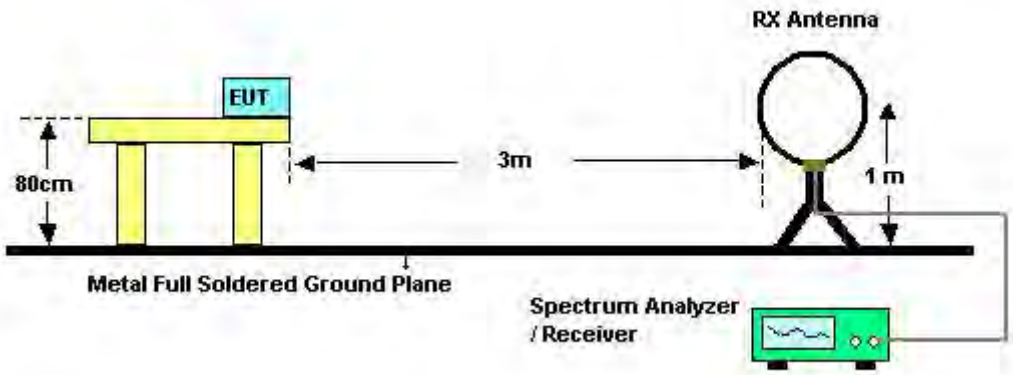
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RBW 120kHz for QP

4.5.3. Test Procedures

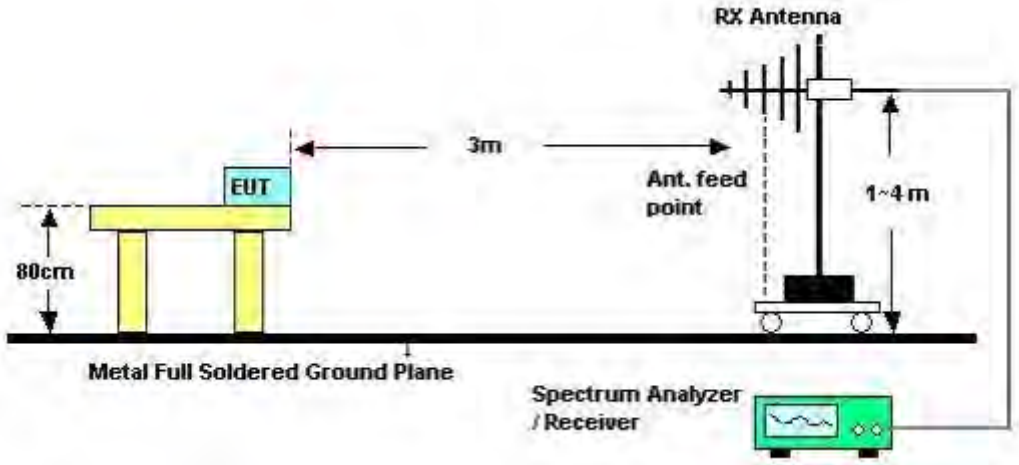
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 1m & 3m far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 m to 4 m) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and 3MHz RBW for peak reading. Then 1MHz RBW and 1/T VBW for average reading in spectrum analyzer.
7. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
8. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
9. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

4.5.4. Test Setup Layout

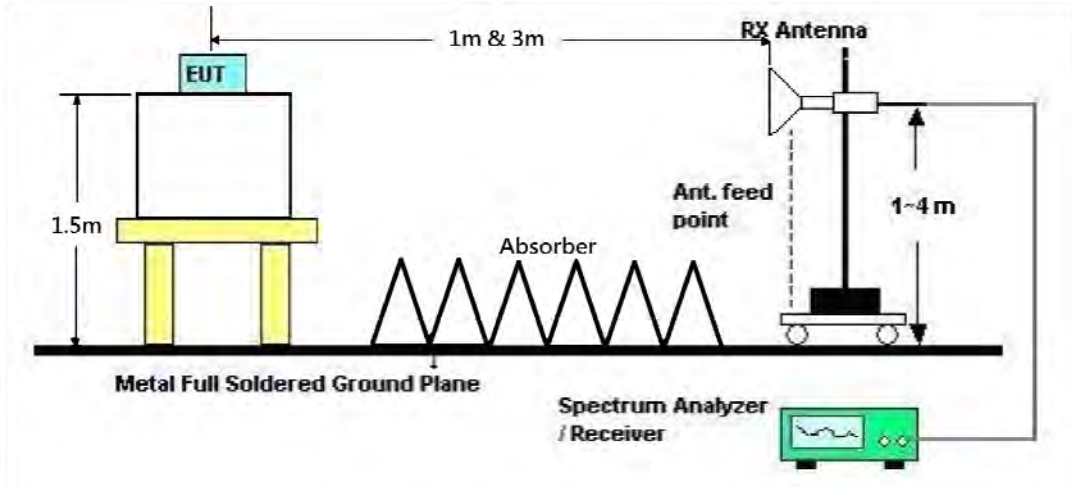
For Radiated Emissions: 9kHz ~30MHz



For Radiated Emissions: 30MHz~1GHz



For Radiated Emissions: Above 1GHz



4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.5.7. Results of Radiated Emissions (9kHz~30MHz)

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	Normal Link
Test Date	Sep. 16, 2015	Test Mode	Mode 1

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

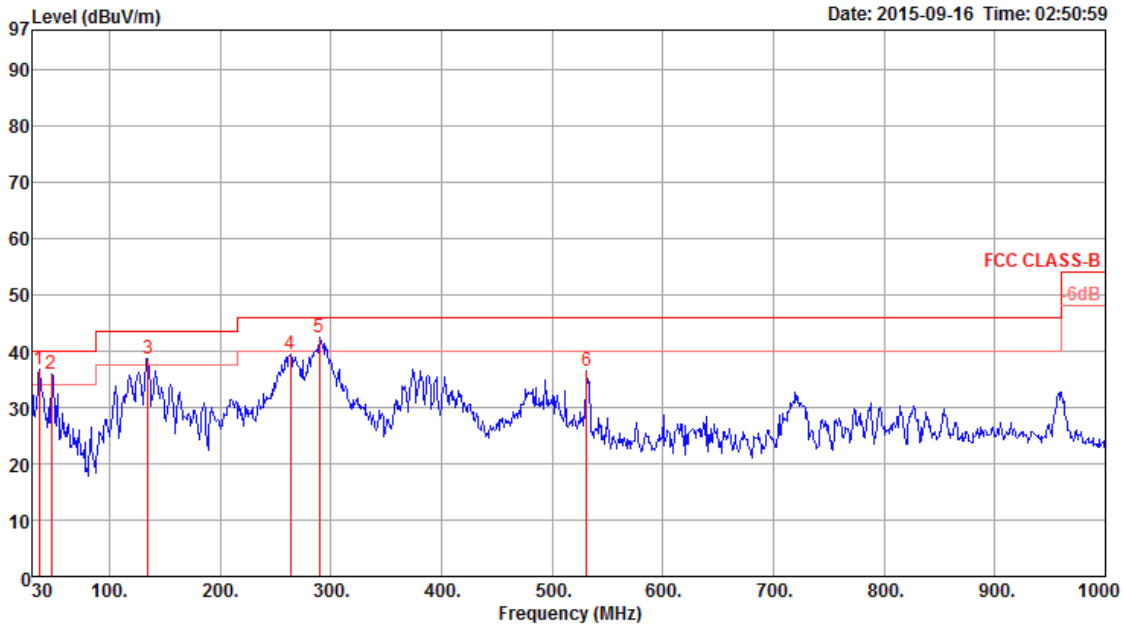
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

4.5.8. Results of Radiated Emissions (30MHz~1GHz)

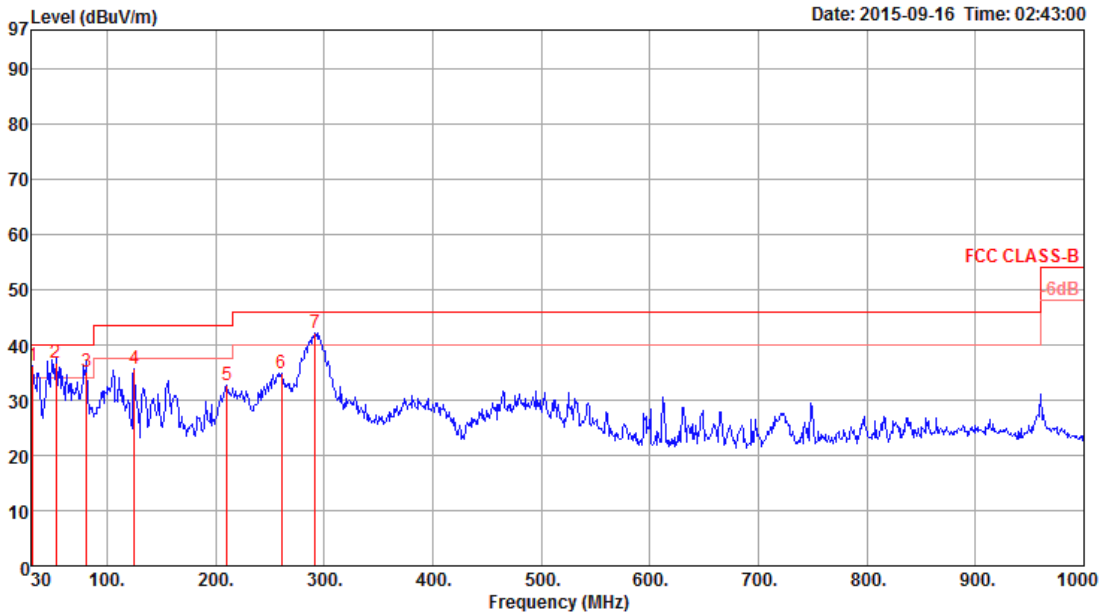
Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	Normal Link
Test Mode	Mode 1		

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	36.79	36.77	40.00	-3.23	47.57	0.68	16.04	27.52	Peak	100	0	HORIZONTAL
2	47.46	35.92	40.00	-4.08	53.05	0.80	10.35	28.28	Peak	100	0	HORIZONTAL
3	134.76	38.61	43.50	-4.89	53.05	1.40	12.25	28.09	Peak	100	0	HORIZONTAL
4	263.77	39.49	46.00	-6.51	51.31	1.85	13.90	27.57	Peak	100	0	HORIZONTAL
5	289.96	42.30	46.00	-3.70	54.12	1.98	13.70	27.50	Peak	100	0	HORIZONTAL
6	531.49	36.56	46.00	-9.44	44.08	2.74	18.43	28.69	Peak	100	0	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	31.94	36.16	40.00	-3.84	43.72	0.65	18.94	27.15	Peak	400	0	VERTICAL
2	53.28	36.61	40.00	-3.39	55.71	0.85	8.51	28.46	QP	198	261	VERTICAL
3	81.41	35.15	40.00	-4.85	54.74	1.00	7.77	28.36	QP	158	203	VERTICAL
4	125.06	35.60	43.50	-7.90	49.87	1.33	12.55	28.15	Peak	400	0	VERTICAL
5	210.42	32.59	43.50	-10.91	47.80	1.69	10.80	27.70	Peak	400	0	VERTICAL
6	260.86	34.81	46.00	-11.19	46.51	1.83	14.05	27.58	Peak	400	0	VERTICAL
7	291.90	42.15	46.00	-3.85	53.92	1.99	13.74	27.50	Peak	400	0	VERTICAL

Note:

The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.5.9. Results for Radiated Emissions (1GHz~10th Harmonic)

For Mode 1:

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11b CH 1 / Chain 1 + Chain 2
Test Date	Sep. 15, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.85	56.25	74.00	-17.75	52.71	5.38	32.55	34.39	100	0	HORIZONTAL	Peak
2	4823.97	53.92	54.00	-0.08	50.38	5.38	32.55	34.39	100	0	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4823.94	55.73	74.00	-18.27	52.19	5.38	32.55	34.39	100	53	VERTICAL	Peak
2	4823.99	52.98	54.00	-1.02	49.44	5.38	32.55	34.39	100	53	VERTICAL	Average

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11b CH 6 / Chain 1 + Chain 2
Test Date	Sep. 15, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.90	56.65	74.00	-17.35	52.97	5.40	32.66	34.38	100	360	HORIZONTAL	Peak
2	4873.97	53.82	54.00	-0.18	50.14	5.40	32.66	34.38	100	360	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Limit	Level	Loss	Factor	Factor	/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.95	51.06	54.00	-2.94	47.38	5.40	32.66	34.38	100	56	VERTICAL	Average
2	4874.02	54.48	74.00	-19.52	50.80	5.40	32.66	34.38	100	56	VERTICAL	Peak

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11b CH 11 / Chain 1 + Chain 2
Test Date	Sep. 15, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.98	53.94	54.00	-0.06	50.13	5.42	32.76	34.37	123	360	HORIZONTAL	Average
2	4924.10	57.62	74.00	-16.38	53.81	5.42	32.76	34.37	123	360	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.95	55.92	74.00	-18.08	52.11	5.42	32.76	34.37	100	119	VERTICAL	Peak
2	4923.97	53.37	54.00	-0.63	49.56	5.42	32.76	34.37	100	119	VERTICAL	Average

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11g CH 1 / Chain 1 + Chain 2
Test Date	Sep. 11, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4817.95	49.11	74.00	-24.89	45.57	5.38	32.55	34.39	150	307	HORIZONTAL	Peak
2	4822.73	40.05	54.00	-13.95	36.51	5.38	32.55	34.39	150	307	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4822.81	39.79	54.00	-14.21	36.25	5.38	32.55	34.39	150	263	VERTICAL	Average
2	4826.98	53.50	74.00	-20.50	49.93	5.38	32.58	34.39	150	263	VERTICAL	Peak

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11g CH 6 / Chain 1 + Chain 2
Test Date	Sep. 11, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4870.64	60.80	74.00	-13.20	57.12	5.40	32.66	34.38	100	42	HORIZONTAL	Peak
2	4872.23	46.79	54.00	-7.21	43.11	5.40	32.66	34.38	100	42	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4868.47	55.31	74.00	-18.69	51.63	5.40	32.66	34.38	150	160	VERTICAL	Peak
2	4873.25	42.79	54.00	-11.21	39.11	5.40	32.66	34.38	150	160	VERTICAL	Average

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11g CH 11 / Chain 1 + Chain 2
Test Date	Sep. 11, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4928.20	54.96	74.00	-19.04	51.15	5.42	32.76	34.37	101	36	HORIZONTAL	Peak
2	4928.63	40.13	54.00	-13.87	36.32	5.42	32.76	34.37	101	36	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4925.68	39.15	54.00	-14.85	35.34	5.42	32.76	34.37	150	70	VERTICAL	Average
2	4929.50	53.37	74.00	-20.63	49.56	5.42	32.76	34.37	150	70	VERTICAL	Peak

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11n MCS0 HT20 CH 1 / Chain 1 + Chain 2
Test Date	Sep. 11, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4821.66	54.97	74.00	-19.03	51.43	5.38	32.55	34.39	106	42	HORIZONTAL	Peak
2	4824.09	41.96	54.00	-12.04	38.42	5.38	32.55	34.39	106	42	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4819.60	50.97	74.00	-23.03	47.43	5.38	32.55	34.39	161	357	VERTICAL	Peak
2	4822.41	39.39	54.00	-14.61	35.85	5.38	32.55	34.39	161	357	VERTICAL	Average

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11n MCS0 HT20 CH 6 / Chain 1 + Chain 2
Test Date	Sep. 11, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4874.41	48.43	54.00	-5.57	44.75	5.40	32.66	34.38	105	44	HORIZONTAL	Average
2	4875.80	62.99	74.00	-11.01	59.31	5.40	32.66	34.38	105	44	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4874.49	44.81	54.00	-9.19	41.13	5.40	32.66	34.38	137	63	VERTICAL	Average
2	4878.34	58.69	74.00	-15.31	55.01	5.40	32.66	34.38	137	63	VERTICAL	Peak

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11n MCS0 HT20 CH 11 / Chain 1 + Chain 2
Test Date	Sep. 11, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4922.76	55.05	74.00	-18.95	51.26	5.42	32.74	34.37	100	43	HORIZONTAL	Peak
2	4923.86	40.88	54.00	-13.12	37.07	5.42	32.76	34.37	100	43	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4925.74	40.29	54.00	-13.71	36.48	5.42	32.76	34.37	100	219	VERTICAL	Average
2	4926.98	52.67	74.00	-21.33	48.86	5.42	32.76	34.37	100	219	VERTICAL	Peak

For Mode 2:

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11b CH 1 / Chain 1 + Chain 2
Test Date	Sep. 30, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4824.06	53.51	54.00	-0.49	48.41	7.05	33.03	31.08	HORIZONTAL	100	189	Average
2	4824.13	56.34	74.00	-17.66	51.24	7.05	33.03	31.08	HORIZONTAL	100	189	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4824.07	44.51	54.00	-9.49	39.41	7.05	33.03	31.08	VERTICAL	109	299	Average
2	4824.15	50.42	74.00	-23.58	45.32	7.05	33.03	31.08	VERTICAL	109	299	Peak

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11b CH 6 / Chain 1 + Chain 2
Test Date	Sep. 30, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4873.97	53.88	74.00	-20.12	48.62	7.09	33.01	31.18	HORIZONTAL	102	216	Peak
2	4874.08	49.94	54.00	-4.06	44.68	7.09	33.01	31.18	HORIZONTAL	102	216	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4874.06	52.16	74.00	-21.84	46.90	7.09	33.01	31.18	VERTICAL	209	168	Peak
2	4874.07	47.16	54.00	-6.84	41.90	7.09	33.01	31.18	VERTICAL	209	168	Average

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11b CH 11 / Chain 1 + Chain 2
Test Date	Sep. 30, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4924.04	52.89	54.00	-1.11	47.47	7.13	32.99	31.28	HORIZONTAL	101	187	Average
2	4924.04	56.14	74.00	-17.86	50.72	7.13	32.99	31.28	HORIZONTAL	101	187	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4923.95	52.17	74.00	-21.83	46.75	7.13	32.99	31.28	VERTICAL	171	215	Peak
2	4924.05	47.74	54.00	-6.26	42.32	7.13	32.99	31.28	VERTICAL	171	215	Average

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11g CH 1 / Chain 1 + Chain 2
Test Date	Sep. 30, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4823.16	37.33	54.00	-16.67	32.23	7.05	33.03	31.08	HORIZONTAL	252	214	Average
2	4823.33	50.38	74.00	-23.62	45.28	7.05	33.03	31.08	HORIZONTAL	252	214	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4821.61	34.32	54.00	-19.68	29.22	7.05	33.03	31.08	VERTICAL	213	30	Average
2	4835.58	47.40	74.00	-26.60	42.25	7.06	33.02	31.11	VERTICAL	213	30	Peak

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11g CH 6 / Chain 1 + Chain 2
Test Date	Sep. 30, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4874.72	43.72	54.00	-10.28	38.46	7.09	33.01	31.18	HORIZONTAL	287	213	Average
2	4880.87	57.18	74.00	-16.82	51.90	7.10	33.00	31.18	HORIZONTAL	287	213	Peak
3	7322.65	53.67	74.00	-20.33	42.90	8.87	34.20	36.10	HORIZONTAL	276	326	Peak
4	7335.10	40.50	54.00	-13.50	29.72	8.88	34.20	36.10	HORIZONTAL	276	326	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4875.38	35.87	54.00	-18.13	30.61	7.09	33.01	31.18	VERTICAL	147	297	Average
2	4886.52	48.36	74.00	-25.64	43.05	7.10	33.00	31.21	VERTICAL	147	297	Peak
3	7322.51	53.24	74.00	-20.76	42.47	8.87	34.20	36.10	VERTICAL	180	190	Peak
4	7335.31	40.26	54.00	-13.74	29.48	8.88	34.20	36.10	VERTICAL	180	190	Average

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11g CH 11 / Chain 1 + Chain 2
Test Date	Sep. 30, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4925.16	43.96	54.00	-10.04	38.53	7.13	32.98	31.28	HORIZONTAL	137	213	Average
2	4927.18	57.99	74.00	-16.01	52.56	7.13	32.98	31.28	HORIZONTAL	137	213	Peak
3	7405.83	53.91	74.00	-20.09	42.95	8.94	34.28	36.30	HORIZONTAL	191	180	Peak
4	7407.71	40.78	54.00	-13.22	29.82	8.94	34.28	36.30	HORIZONTAL	191	180	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4925.52	37.14	54.00	-16.86	31.71	7.13	32.98	31.28	VERTICAL	143	137	Average
2	4931.67	49.47	74.00	-24.53	44.04	7.13	32.98	31.28	VERTICAL	143	137	Peak
3	7361.11	54.01	74.00	-19.99	43.14	8.90	34.23	36.20	VERTICAL	162	184	Peak
4	7410.82	40.73	54.00	-13.27	29.77	8.94	34.28	36.30	VERTICAL	162	184	Average

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11n MCS0 HT20 CH 1 / Chain 1 + Chain 2
Test Date	Sep. 30, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4820.82	51.11	74.00	-22.89	46.01	7.05	33.03	31.08	HORIZONTAL	138	325	Peak
2	4824.51	38.25	54.00	-15.75	33.15	7.05	33.03	31.08	HORIZONTAL	138	325	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4820.45	48.67	74.00	-25.33	43.57	7.05	33.03	31.08	VERTICAL	153	227	Peak
2	4823.71	35.49	54.00	-18.51	30.39	7.05	33.03	31.08	VERTICAL	153	227	Average

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11n MCS0 HT20 CH 6 / Chain 1 + Chain 2
Test Date	Sep. 30, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4874.72	52.28	54.00	-1.72	47.02	7.09	33.01	31.18	HORIZONTAL	106	208	Average
2	4875.59	65.40	74.00	-8.60	60.14	7.09	33.01	31.18	HORIZONTAL	106	208	Peak
3	7326.34	52.93	74.00	-21.07	42.16	8.87	34.20	36.10	HORIZONTAL	156	251	Peak
4	7328.44	40.01	54.00	-13.99	29.23	8.88	34.20	36.10	HORIZONTAL	156	251	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4873.13	42.06	54.00	-11.94	36.80	7.09	33.01	31.18	VERTICAL	119	231	Average
2	4874.80	55.00	74.00	-19.00	49.74	7.09	33.01	31.18	VERTICAL	119	231	Peak
3	7306.51	53.07	74.00	-20.93	42.34	8.86	34.18	36.05	VERTICAL	179	232	Peak
4	7329.02	39.95	54.00	-14.05	29.17	8.88	34.20	36.10	VERTICAL	179	232	Average

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11n MCS0 HT20 CH 11 / Chain 1 + Chain 2
Test Date	Sep. 30, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4919.37	57.40	74.00	-16.60	52.02	7.12	32.99	31.25	HORIZONTAL	138	209	Peak
2	4924.15	43.46	54.00	-10.54	38.04	7.13	32.99	31.28	HORIZONTAL	138	209	Average
3	7384.55	53.10	74.00	-20.90	42.18	8.92	34.25	36.25	HORIZONTAL	177	222	Peak
4	7410.39	40.38	54.00	-13.62	29.42	8.94	34.28	36.30	HORIZONTAL	177	222	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	4921.54	38.08	54.00	-15.92	32.70	7.12	32.99	31.25	VERTICAL	143	226	Average
2	4923.57	51.95	74.00	-22.05	46.56	7.13	32.99	31.25	VERTICAL	143	226	Peak
3	7400.83	53.38	74.00	-20.62	42.43	8.93	34.28	36.30	VERTICAL	217	164	Peak
4	7405.10	40.58	54.00	-13.42	29.62	8.94	34.28	36.30	VERTICAL	217	164	Average

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.6. Emissions Measurement

4.6.1. Limit

30dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

4.6.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average
RBW / VBW (30dBc in any 100 kHz bandwidth emission)	100 kHz / 300 kHz for Peak

4.6.3. Test Procedures

For Radiated band edges Measurement:

1. The test procedure is the same as section 4.5.3.

For Radiated Out of Band Emission Measurement:

1. Test was performed in accordance with KDB558074 D01 v03r03 for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 10.1 Unwanted Emissions into Non-Restricted Frequency Bands Measurement Procedure.

4.6.4. Test Setup Layout

For Radiated band edges Measurement:

This test setup layout is the same as that shown in section 4.5.4.

For Radiated Out of Band Emission Measurement:

This test setup layout is the same as that shown in section 4.5.4.

4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.6.7. Test Result of Band Edge and Fundamental Emissions

For Mode 1:

Temperature	25°C	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11b CH 1, 6, 11 / Chain 1 + Chain 2
Test Date	Sep. 15, 2015		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2387.11	48.99	54.00	-5.01	17.34	3.73	27.92	0.00	108	354	VERTICAL	Average
2	2390.00	66.05	74.00	-7.95	34.40	3.73	27.92	0.00	108	354	VERTICAL	Peak
* 3	2413.59	111.36			79.72	3.75	27.89	0.00	108	354	VERTICAL	Peak
* 4	2413.74	108.04			76.40	3.75	27.89	0.00	108	354	VERTICAL	Average

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2348.43	60.99	74.00	-13.01	29.32	3.70	27.97	0.00	100	356	VERTICAL	Peak
2	2349.88	47.34	54.00	-6.66	15.68	3.70	27.96	0.00	100	356	VERTICAL	Average
* 3	2435.26	108.35			76.71	3.77	27.87	0.00	100	356	VERTICAL	Average
* 4	2435.84	111.30			79.66	3.77	27.87	0.00	100	356	VERTICAL	Peak
5	2483.79	59.87	74.00	-14.13	28.23	3.82	27.82	0.00	100	356	VERTICAL	Peak
6	2486.10	47.24	54.00	-6.76	15.60	3.82	27.82	0.00	100	356	VERTICAL	Average

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
* 1	2460.26	107.40			75.76	3.79	27.85	0.00	119	355	VERTICAL	Average
* 2	2463.45	110.81			79.17	3.80	27.84	0.00	119	355	VERTICAL	Peak
3	2485.88	66.51	74.00	-7.49	34.87	3.82	27.82	0.00	119	355	VERTICAL	Peak
4	2486.89	49.25	54.00	-4.75	17.61	3.82	27.82	0.00	119	355	VERTICAL	Average

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	25℃	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11g CH 1, 6, 11 / Chain 1 + Chain 2
Test Date	Sep. 15, 2015		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.86	70.80	74.00	-3.20	39.15	3.73	27.92	0.00	105	350	VERTICAL	Peak
2	2390.00	53.90	54.00	-0.10	22.25	3.73	27.92	0.00	105	350	VERTICAL	Average
* 3	2412.00	115.66			84.02	3.75	27.89	0.00	105	350	VERTICAL	Peak
* 4	2413.16	105.27			73.63	3.75	27.89	0.00	105	350	VERTICAL	Average

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2385.19	67.53	74.00	-6.47	35.88	3.73	27.92	0.00	100	360	VERTICAL	Peak
2	2389.53	50.91	54.00	-3.09	19.26	3.73	27.92	0.00	100	360	VERTICAL	Average
* 3	2435.26	119.41			87.77	3.77	27.87	0.00	100	360	VERTICAL	Peak
* 4	2436.13	110.22			78.58	3.77	27.87	0.00	100	360	VERTICAL	Average
5	2483.50	50.80	54.00	-3.20	19.16	3.82	27.82	0.00	100	360	VERTICAL	Average
6	2488.81	65.87	74.00	-8.13	34.23	3.82	27.82	0.00	100	360	VERTICAL	Peak

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
* 1	2461.28	115.65			84.02	3.79	27.84	0.00	118	9	VERTICAL	Peak
* 2	2462.72	105.15			73.52	3.79	27.84	0.00	118	9	VERTICAL	Average
3	2483.50	53.92	54.00	-0.08	22.28	3.82	27.82	0.00	118	9	VERTICAL	Average
4	2483.50	73.03	74.00	-0.97	41.39	3.82	27.82	0.00	118	9	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	25℃	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11n MCS0 HT20 CH 1, 6, 11 / Chain 1 + Chain 2
Test Date	Sep. 15, 2015		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.71	73.47	74.00	-0.53	41.82	3.73	27.92	0.00	100	152	VERTICAL	Peak
2	2389.86	53.65	54.00	-0.35	22.00	3.73	27.92	0.00	100	152	VERTICAL	Average
* 3	2413.01	101.17			69.53	3.75	27.89	0.00	100	152	VERTICAL	Average
* 4	2414.75	111.45			79.81	3.75	27.89	0.00	100	152	VERTICAL	Peak

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.82	70.82	74.00	-3.18	39.17	3.73	27.92	0.00	237	12	VERTICAL	Peak
2	2390.00	53.39	54.00	-0.61	21.74	3.73	27.92	0.00	237	12	VERTICAL	Average
* 3	2435.55	110.17			78.53	3.77	27.87	0.00	237	12	VERTICAL	Average
* 4	2438.74	119.58			87.94	3.77	27.87	0.00	237	12	VERTICAL	Peak
5	2483.50	50.29	54.00	-3.71	18.65	3.82	27.82	0.00	237	12	VERTICAL	Average
6	2485.91	67.42	74.00	-6.58	35.78	3.82	27.82	0.00	237	12	VERTICAL	Peak

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
* 1	2459.68	115.05			83.41	3.79	27.85	0.00	145	356	VERTICAL	Peak
* 2	2462.72	104.13			72.50	3.79	27.84	0.00	145	356	VERTICAL	Average
3	2483.50	72.81	74.00	-1.19	41.17	3.82	27.82	0.00	145	356	VERTICAL	Peak
4	2483.71	53.98	54.00	-0.02	22.34	3.82	27.82	0.00	145	356	VERTICAL	Average

Item 1, 2 are the fundamental frequency at 2462 MHz.

For Mode 2:

Temperature	25℃	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11b CH 1, 6, 11 / Chain 1 + Chain 2
Test Date	Sep. 30, 2015		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	2387.11	48.65	54.00	-5.35	16.71	4.91	0.00	27.03	VERTICAL	267	159	Average
2	2390.00	61.46	74.00	-12.54	29.51	4.92	0.00	27.03	VERTICAL	267	159	Peak
* 3	2410.55	104.67			72.65	4.94	0.00	27.08	VERTICAL	267	159	Peak
* 4	2413.88	101.61			69.57	4.94	0.00	27.10	VERTICAL	267	159	Average

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	2388.55	58.05	74.00	-15.95	26.11	4.91	0.00	27.03	HORIZONTAL	162	223	Peak
2	2389.42	45.89	54.00	-8.11	13.95	4.91	0.00	27.03	HORIZONTAL	162	223	Average
* 3	2438.45	103.63			71.51	4.97	0.00	27.15	HORIZONTAL	162	223	Peak
* 4	2438.74	100.36			68.24	4.97	0.00	27.15	HORIZONTAL	162	223	Average
5	2483.50	59.45	74.00	-14.55	27.17	5.01	0.00	27.27	HORIZONTAL	162	223	Peak
6	2483.79	47.20	54.00	-6.80	14.92	5.01	0.00	27.27	HORIZONTAL	162	223	Average

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
* 1	2463.59	104.90			72.69	4.99	0.00	27.22	HORIZONTAL	113	220	Peak
* 2	2463.74	101.49			69.28	4.99	0.00	27.22	HORIZONTAL	113	220	Average
3	2484.80	48.11	54.00	-5.89	15.83	5.01	0.00	27.27	HORIZONTAL	113	220	Average
4	2485.24	64.23	74.00	-9.77	31.95	5.01	0.00	27.27	HORIZONTAL	113	220	Peak

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	25℃	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11g CH 1, 6, 11 / Chain 1 + Chain 2
Test Date	Sep. 30, 2015		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	2389.71	70.05	74.00	-3.95	38.11	4.91	0.00	27.03	VERTICAL	254	160	Peak
2	2390.00	53.96	54.00	-0.04	22.01	4.92	0.00	27.03	VERTICAL	254	160	Average
* 3	2412.72	97.31			65.27	4.94	0.00	27.10	VERTICAL	254	160	Average
* 4	2413.88	106.96			74.92	4.94	0.00	27.10	VERTICAL	254	160	Peak

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	2390.00	52.17	54.00	-1.83	20.22	4.92	0.00	27.03	HORIZONTAL	120	192	Average
2	2390.00	68.80	74.00	-5.20	36.85	4.92	0.00	27.03	HORIZONTAL	120	192	Peak
* 3	2436.42	114.39			82.28	4.96	0.00	27.15	HORIZONTAL	120	192	Peak
* 4	2437.87	104.18			72.06	4.97	0.00	27.15	HORIZONTAL	120	192	Average
5	2483.50	52.64	54.00	-1.36	20.36	5.01	0.00	27.27	HORIZONTAL	120	192	Average
6	2484.66	71.77	74.00	-2.23	39.49	5.01	0.00	27.27	HORIZONTAL	120	192	Peak

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
* 1	2462.29	106.26			74.05	4.99	0.00	27.22	HORIZONTAL	147	116	Peak
* 2	2462.72	95.92			63.71	4.99	0.00	27.22	HORIZONTAL	147	116	Average
3	2483.50	53.69	54.00	-0.31	21.41	5.01	0.00	27.27	HORIZONTAL	147	116	Average
4	2483.64	72.24	74.00	-1.76	39.96	5.01	0.00	27.27	HORIZONTAL	147	116	Peak

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	25℃	Humidity	69%
Test Engineer	Paul Chen & Peter Wu	Configurations	IEEE 802.11n MCS0 HT20 CH 1, 6, 11 / Chain 1 + Chain 2
Test Date	Sep. 30, 2015		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	2389.42	71.26	74.00	-2.74	39.32	4.91	0.00	27.03	VERTICAL	266	157	Peak
2	2390.00	53.52	54.00	-0.48	21.57	4.92	0.00	27.03	VERTICAL	266	157	Average
* 3	2413.16	96.71			64.67	4.94	0.00	27.10	VERTICAL	266	157	Average
* 4	2413.74	106.37			74.33	4.94	0.00	27.10	VERTICAL	266	157	Peak

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	2390.00	52.61	54.00	-1.39	20.66	4.92	0.00	27.03	HORIZONTAL	129	113	Average
2	2390.00	70.76	74.00	-3.24	38.81	4.92	0.00	27.03	HORIZONTAL	129	113	Peak
* 3	2436.13	113.27			81.16	4.96	0.00	27.15	HORIZONTAL	129	113	Peak
* 4	2437.87	103.83			71.71	4.97	0.00	27.15	HORIZONTAL	129	113	Average
5	2483.50	53.52	54.00	-0.48	21.24	5.01	0.00	27.27	HORIZONTAL	129	113	Average
6	2483.50	69.63	74.00	-4.37	37.35	5.01	0.00	27.27	HORIZONTAL	129	113	Peak

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
* 1	2459.83	107.55			75.36	4.99	0.00	27.20	HORIZONTAL	116	217	Peak
* 2	2463.16	98.02			65.81	4.99	0.00	27.22	HORIZONTAL	116	217	Average
3	2483.50	53.96	54.00	-0.04	21.68	5.01	0.00	27.27	HORIZONTAL	116	217	Average
4	2483.50	73.41	74.00	-0.59	41.13	5.01	0.00	27.27	HORIZONTAL	116	217	Peak

Item 1, 2 are the fundamental frequency at 2462 MHz.

Note:

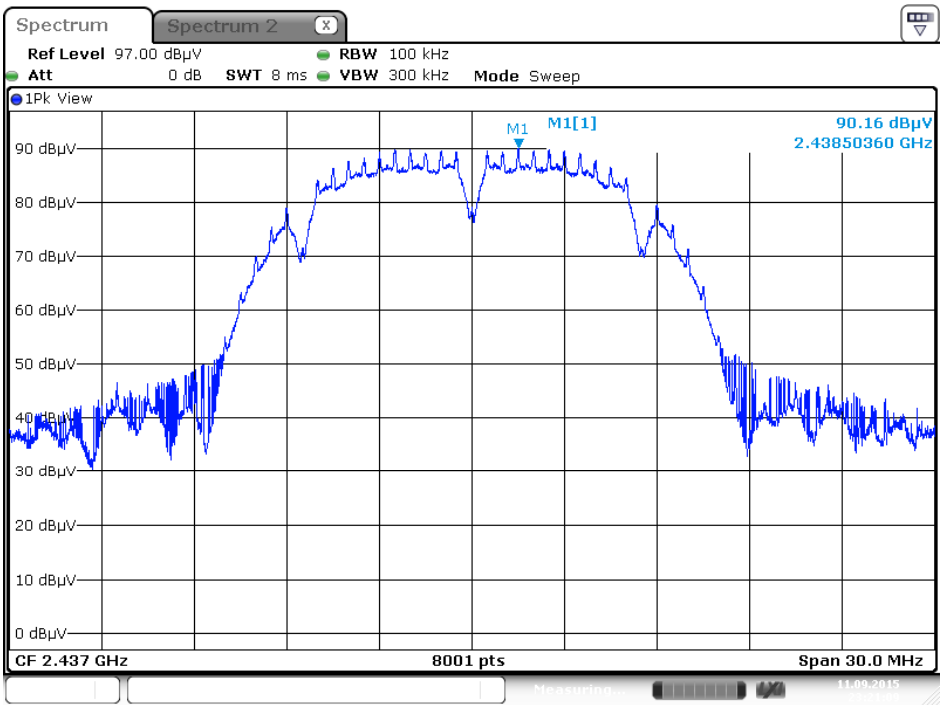
Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

For Emission not in Restricted Band

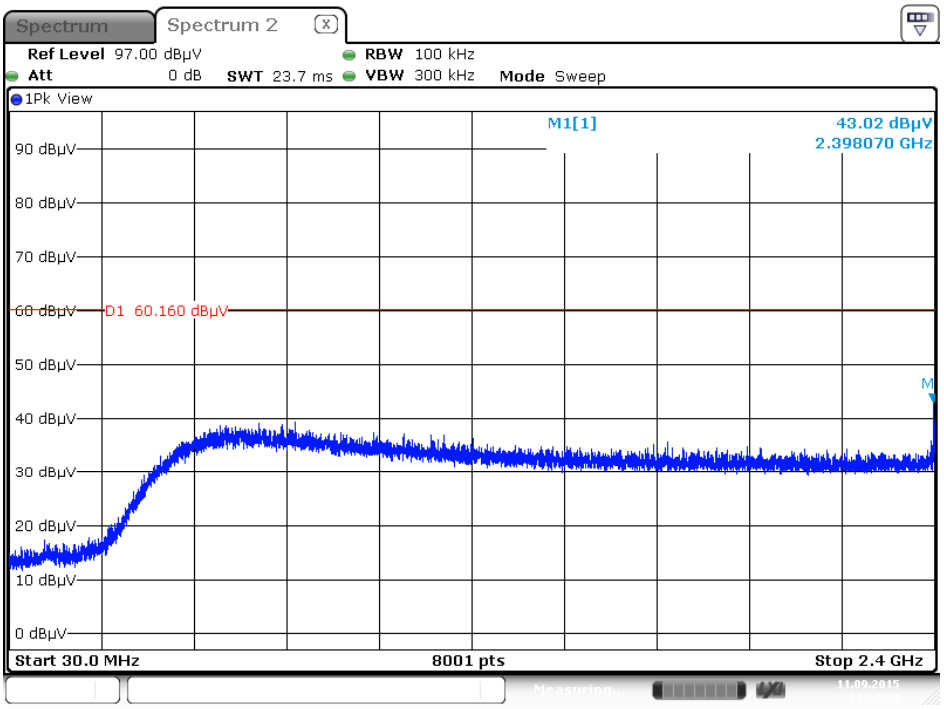
For Mode 1:

Plot on Configuration IEEE 802.11b / Reference Level



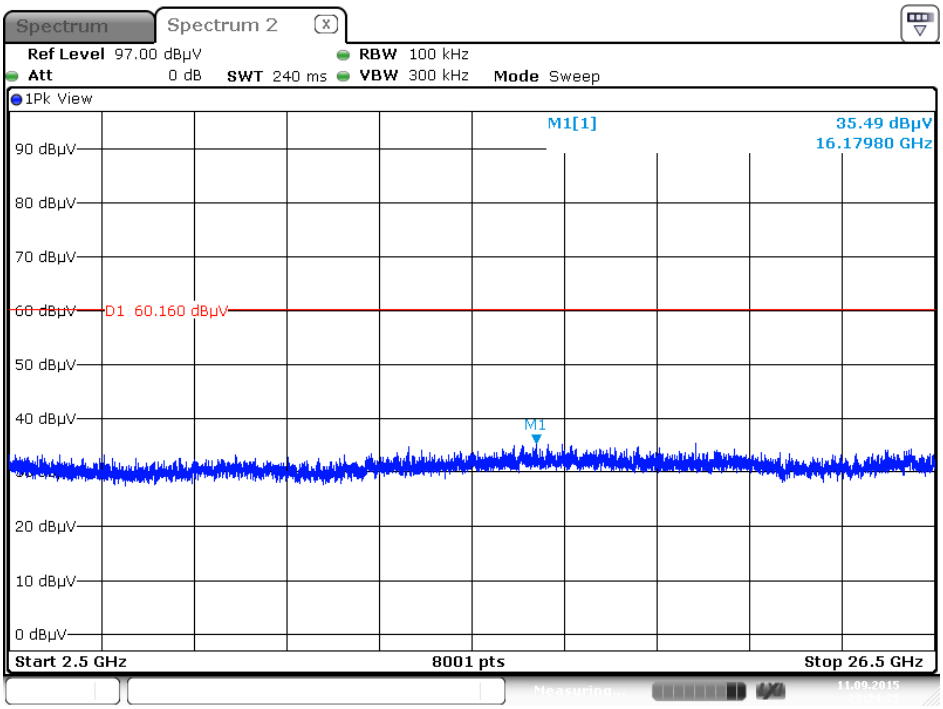
Date: 11.SEP.2015 23:21:09

Plot on Configuration IEEE 802.11b / CH 1 / 30MHz~2400MHz (down 30dBc)



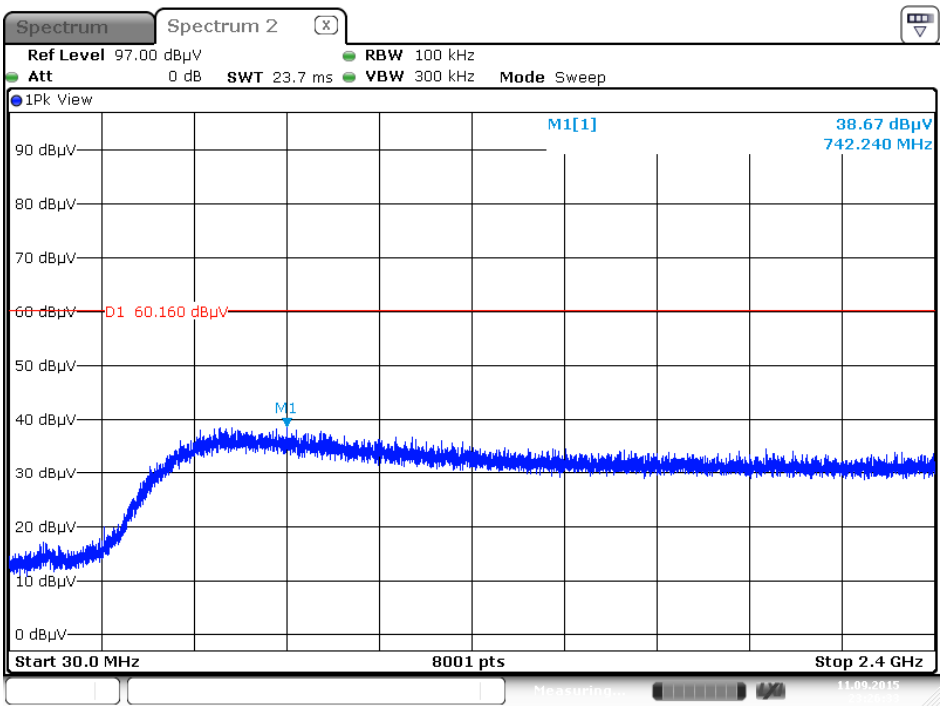
Date: 11.SEP.2015 23:23:39

Plot on Configuration IEEE 802.11b / CH 1 / 2500MHz~26500MHz (down 30dBc)



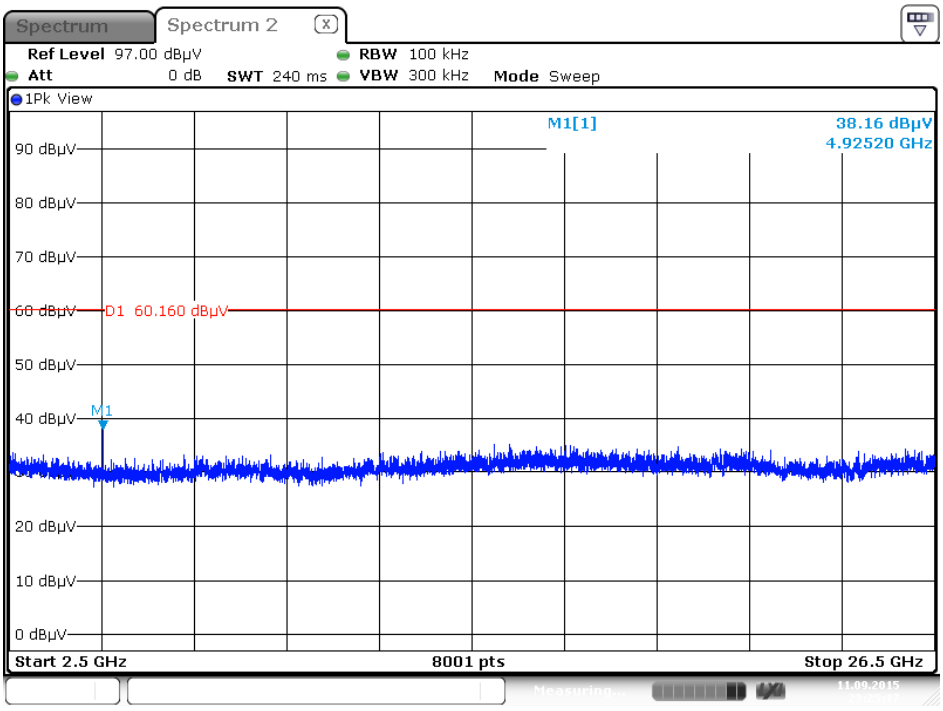
Date: 11.SEP.2015 23:24:25

Plot on Configuration IEEE 802.11b / CH 11 / 30MHz~2400MHz (down 30dBc)



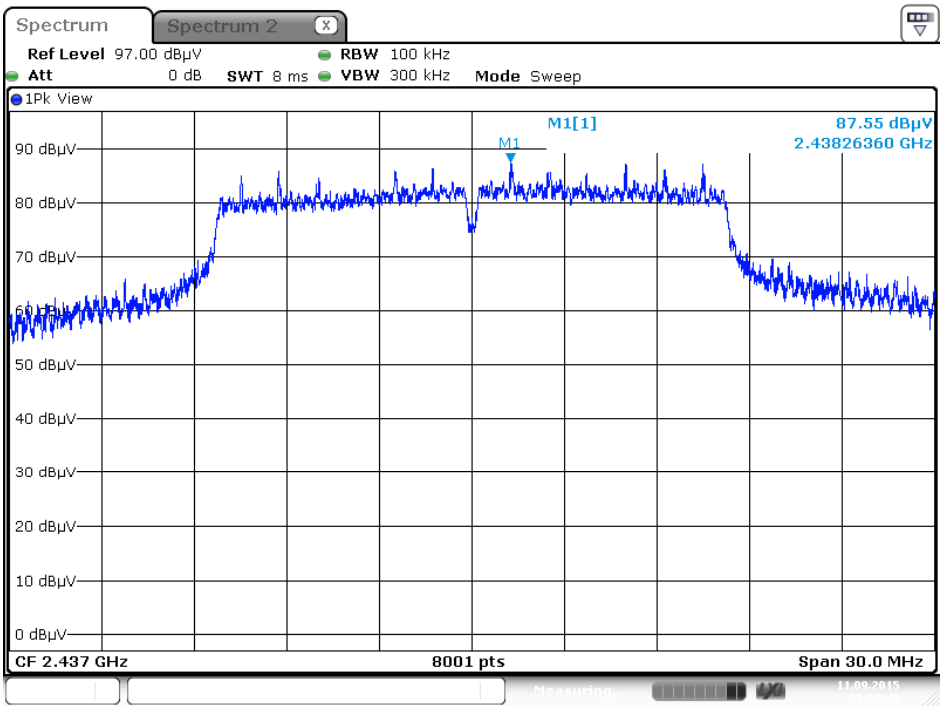
Date: 11.SEP.2015 23:26:34

Plot on Configuration IEEE 802.11b / CH 11 / 2500MHz~26500MHz (down 30dBc)



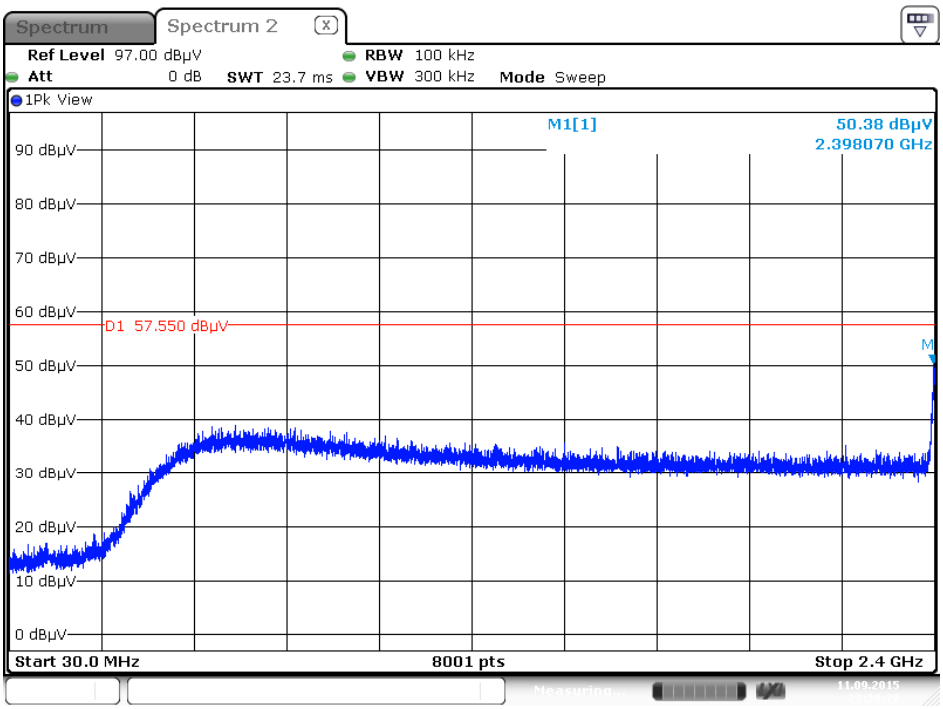
Date: 11.SEP.2015 23:25:18

Plot on Configuration IEEE 802.11g / Reference Level



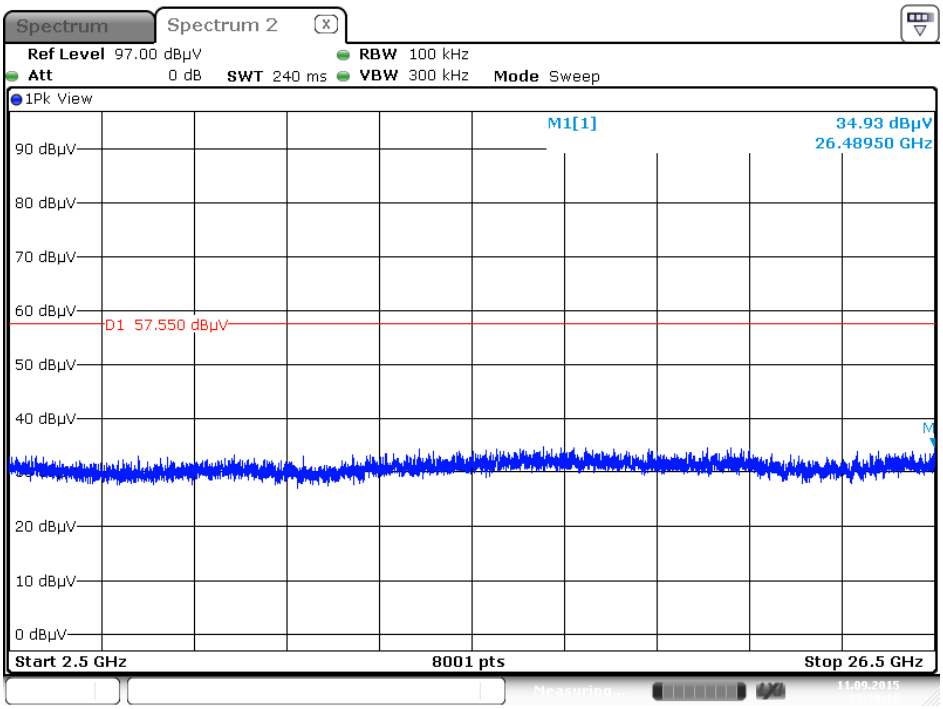
Date: 11.SEP.2015 23:27:42

Plot on Configuration IEEE 802.11g / CH 1 / 30MHz~2400MHz (down 30dBc)



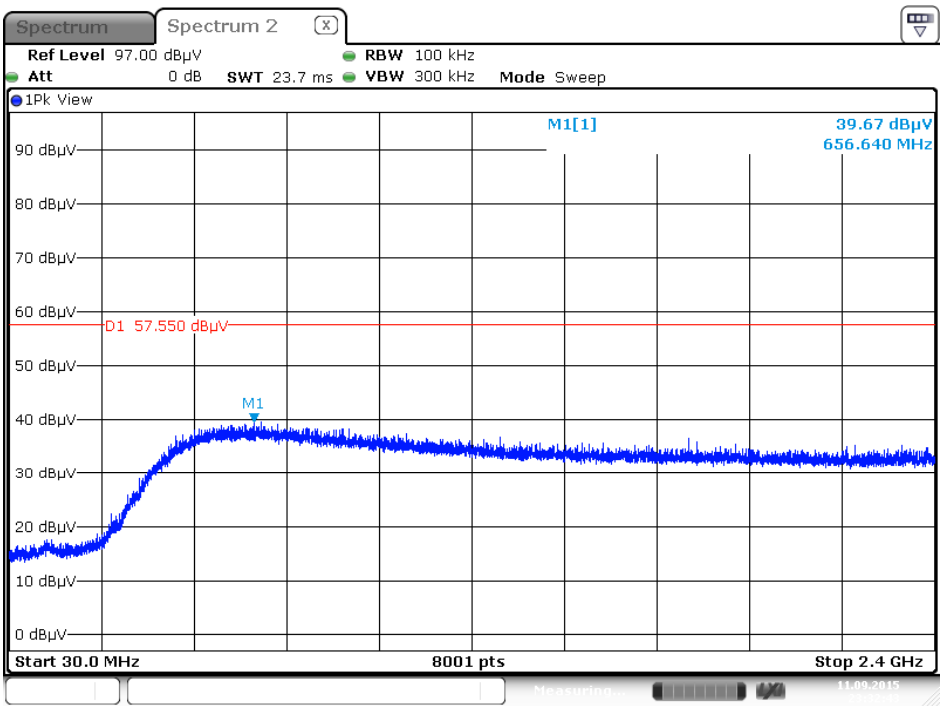
Date: 11.SEP.2015 23:28:28

Plot on Configuration IEEE 802.11g / CH 1 / 2500MHz~26500MHz (down 30dBc)



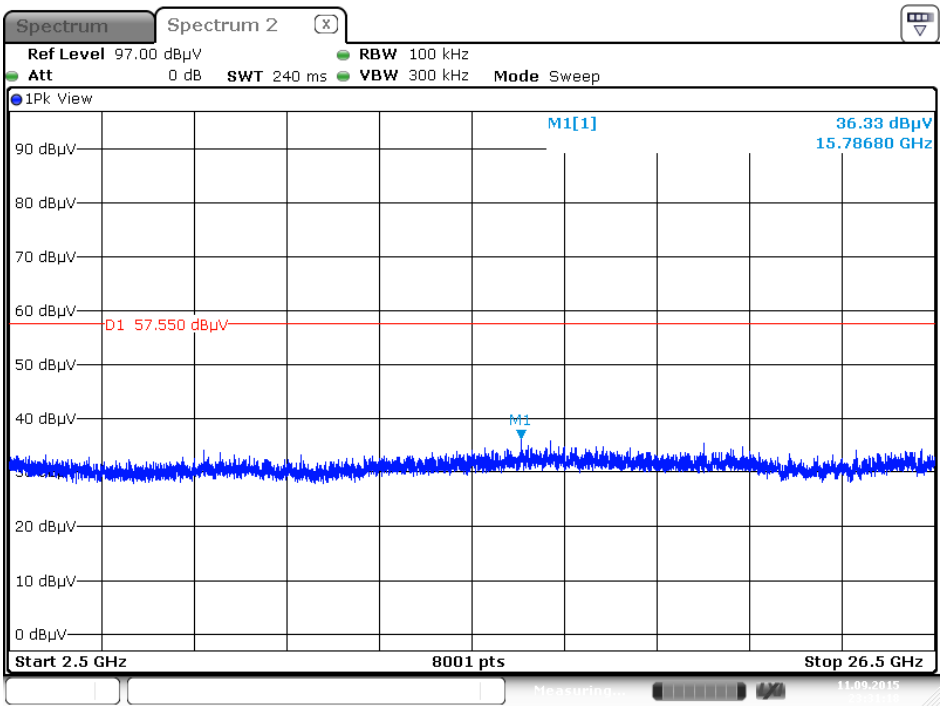
Date: 11.SEP.2015 23:29:16

Plot on Configuration IEEE 802.11g / CH 11 / 30MHz~2400MHz (down 30dBc)



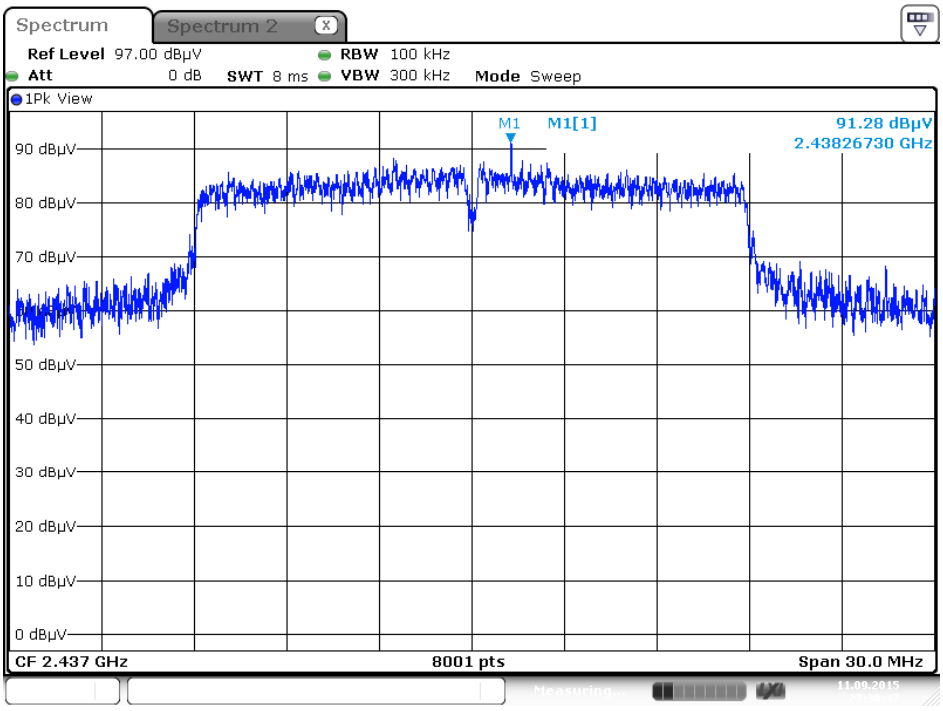
Date: 11.SEP.2015 23:32:44

Plot on Configuration IEEE 802.11g / CH 11 / 2500MHz~26500MHz (down 30dBc)



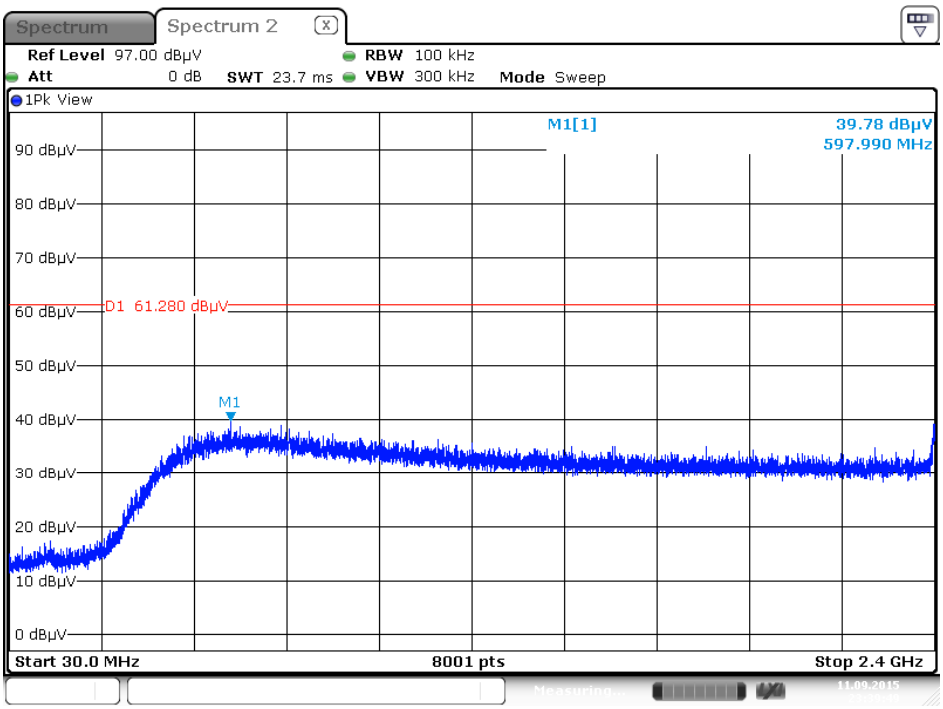
Date: 11.SEP.2015 23:31:18

Plot on Configuration IEEE 802.11n MCS0 HT20 / Reference Level



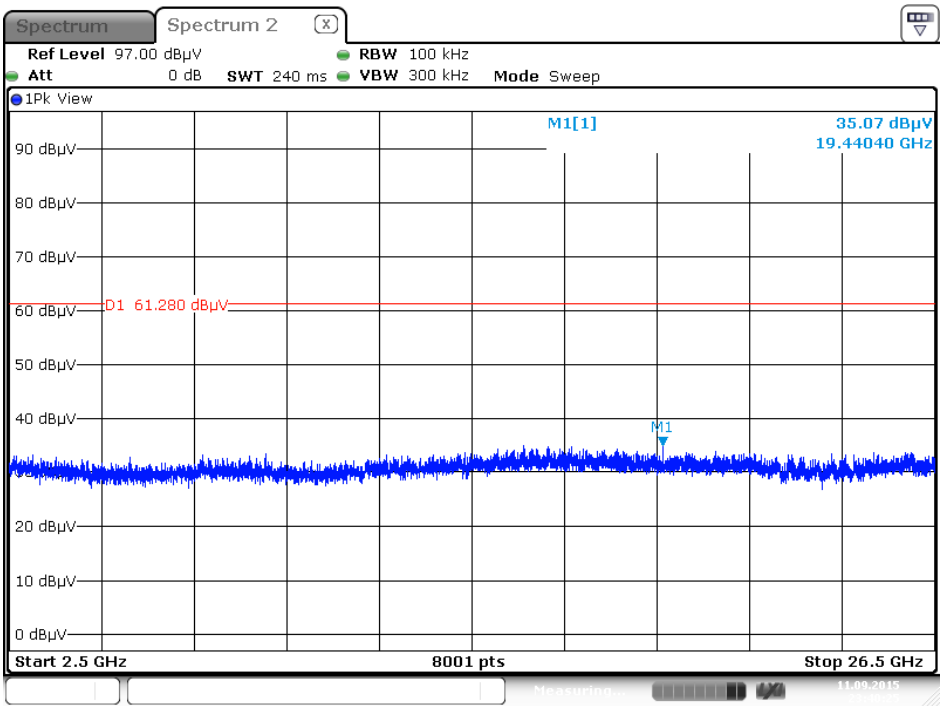
Date: 11.SEP.2015 23:38:48

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 1 / 30MHz~2400MHz (down 30dBc)



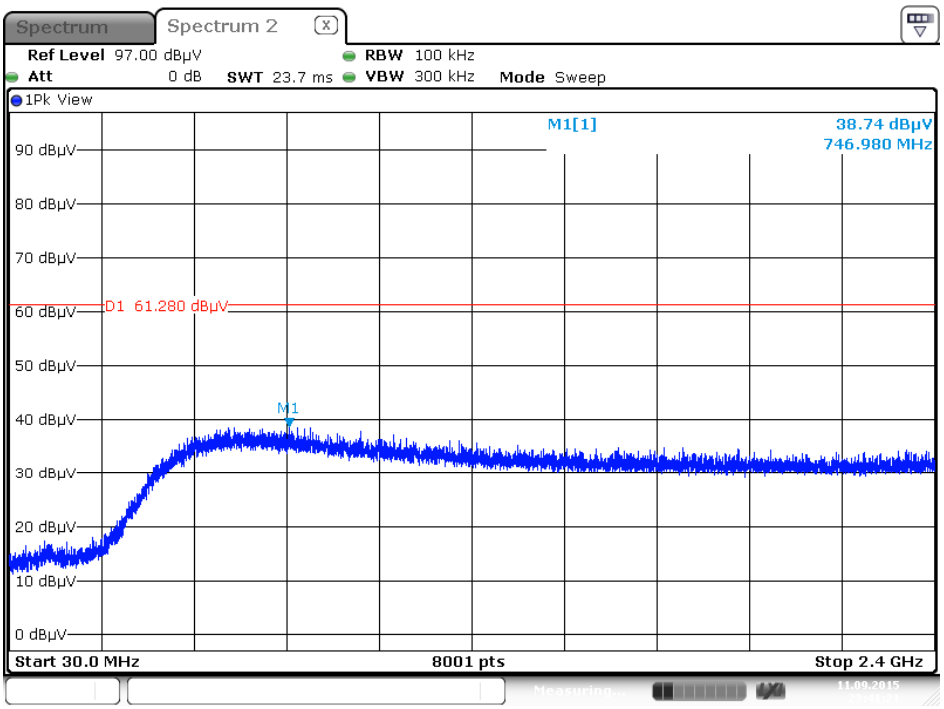
Date: 11.SEP.2015 23:39:49

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 1 / 2500MHz~26500MHz (down 30dBc)



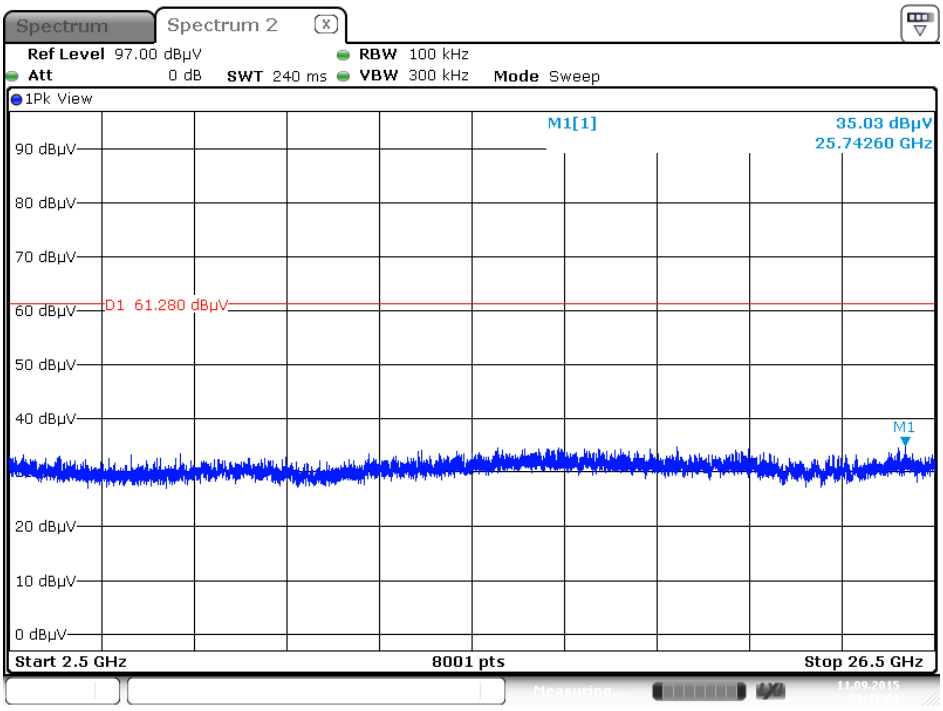
Date: 11.SEP.2015 23:40:25

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 11 / 30MHz~2400MHz (down 30dBc)



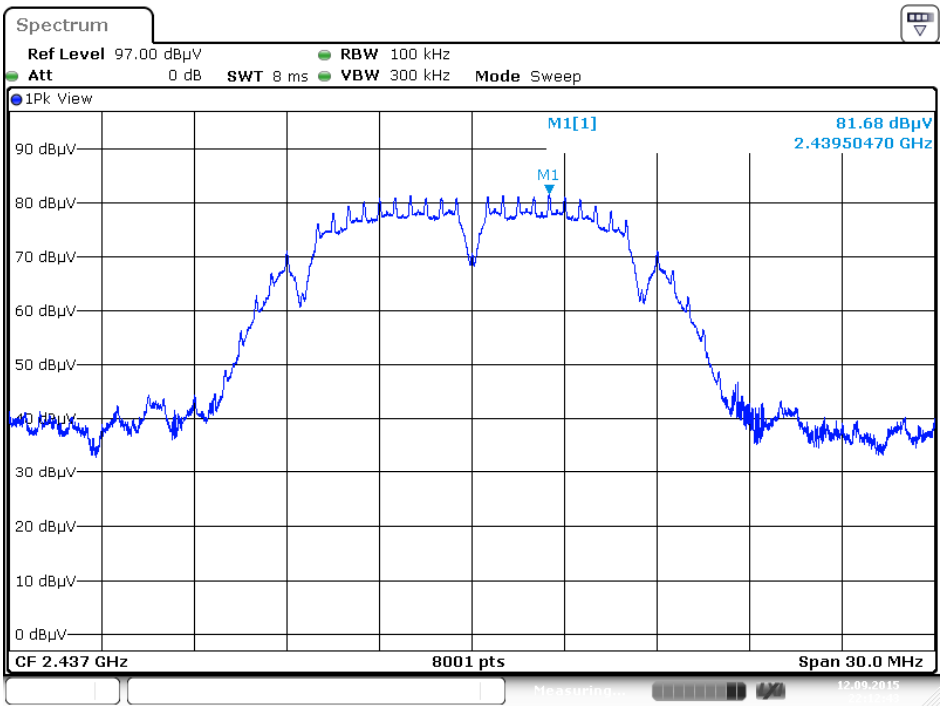
Date: 11.SEP.2015 23:41:21

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 11 / 2500MHz~26500MHz (down 30dBc)



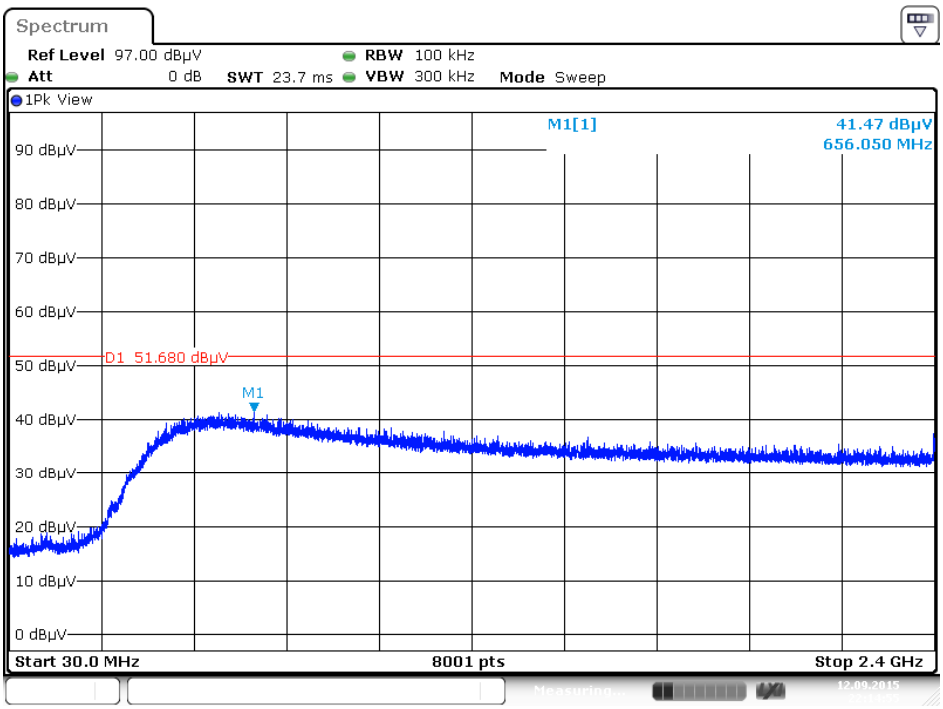
For Mode 2:

Plot on Configuration IEEE 802.11b / Reference Level



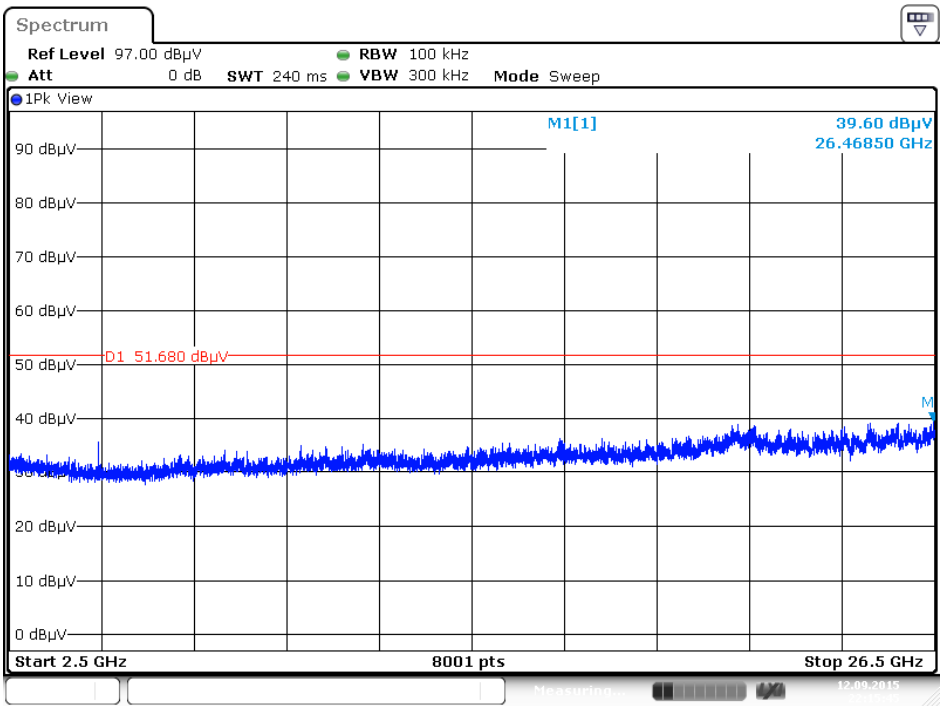
Date: 12.SEP.2015 22:12:43

Plot on Configuration IEEE 802.11b / CH 1 / 30MHz~2400MHz (down 30dBc)



Date: 12.SEP.2015 22:14:56

Plot on Configuration IEEE 802.11b / CH 1 / 2500MHz~26500MHz (down 30dBc)



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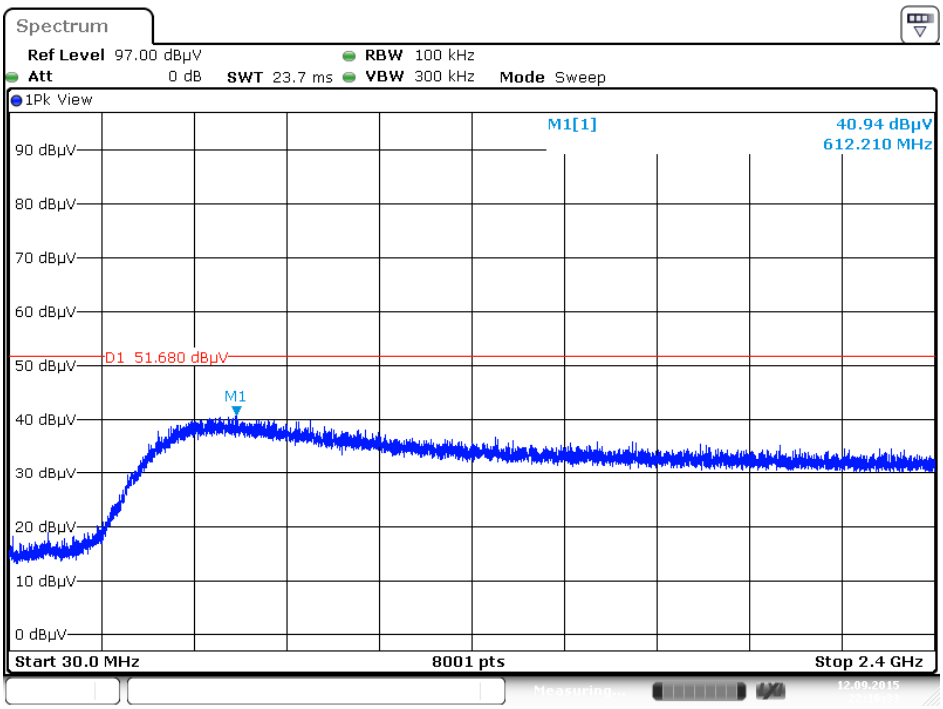
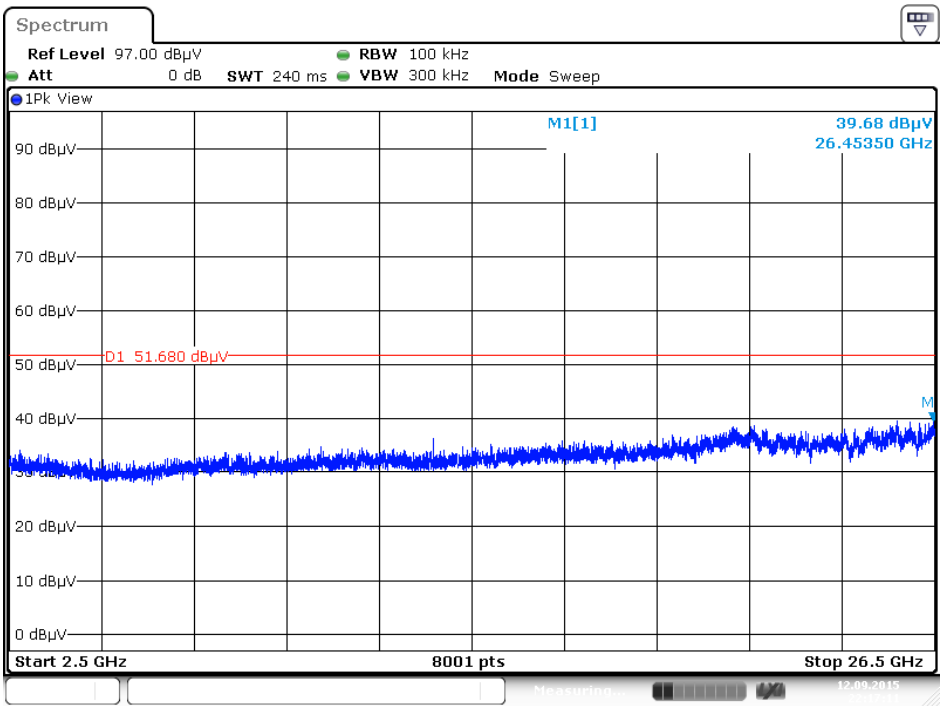
Plot on Configuration IEEE 802.11b / CH 11 / 30MHz~2400MHz (down 30dBc)



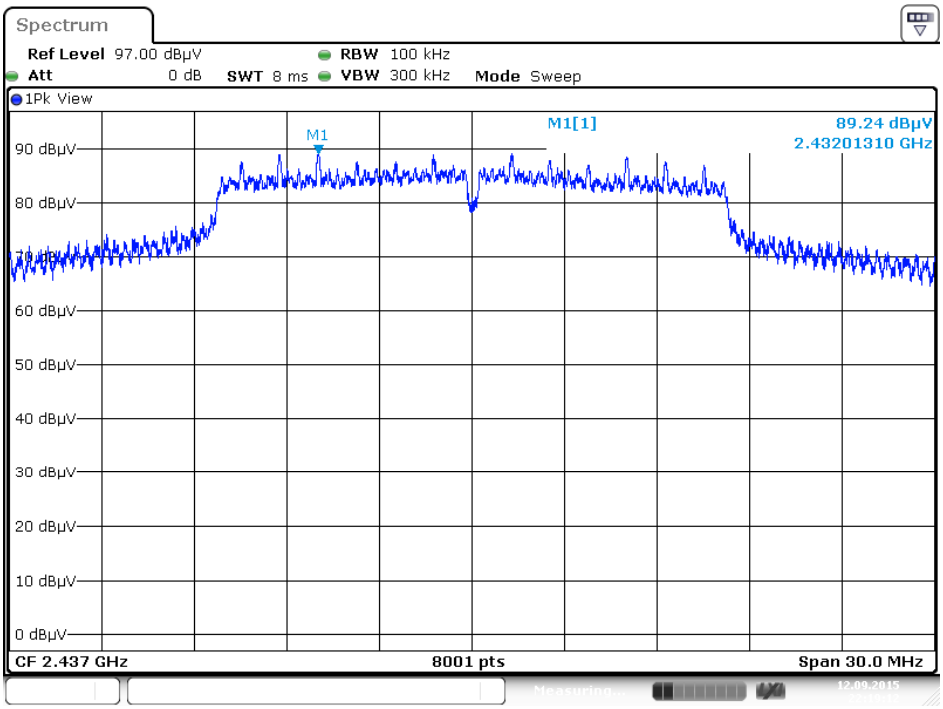
Date: 12.SEP.2015 22:16:34

Plot on Configuration IEEE 802.11b / CH 11 / 2500MHz~26500MHz (down 30dBc)



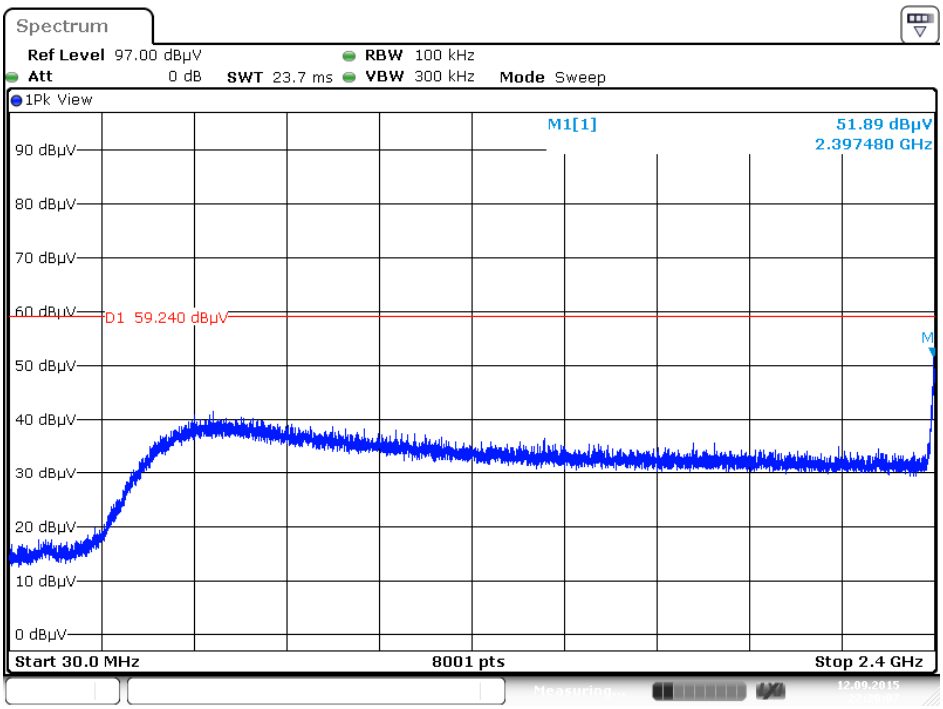
Date: 12.SEP.2015 22:17:11

Plot on Configuration IEEE 802.11g / Reference Level



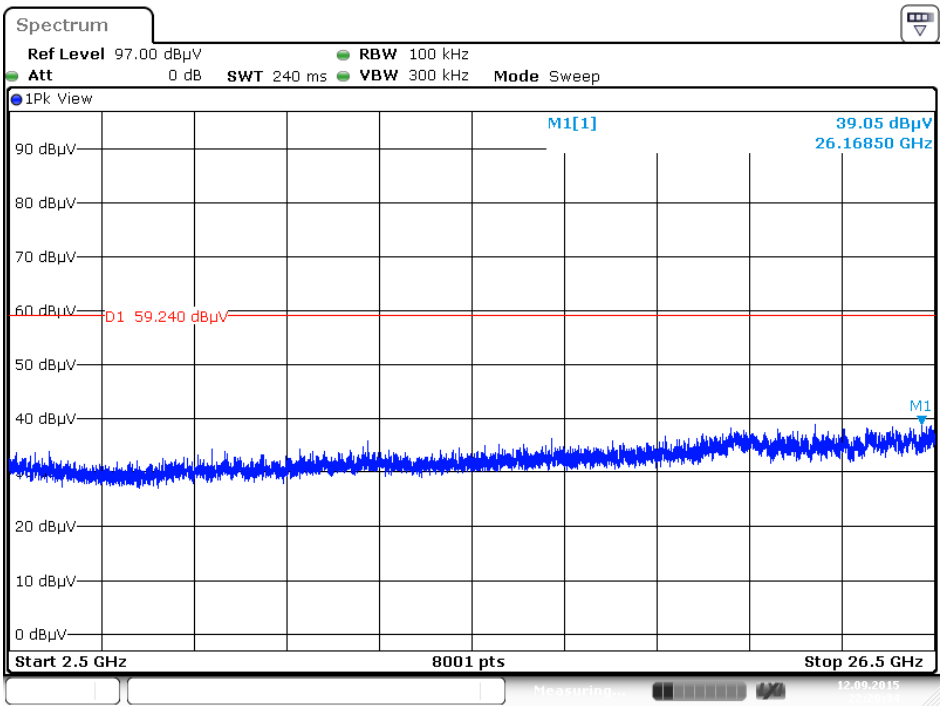
Date: 12.SEP.2015 22:19:12

Plot on Configuration IEEE 802.11g / CH 1 / 30MHz~2400MHz (down 30dBc)



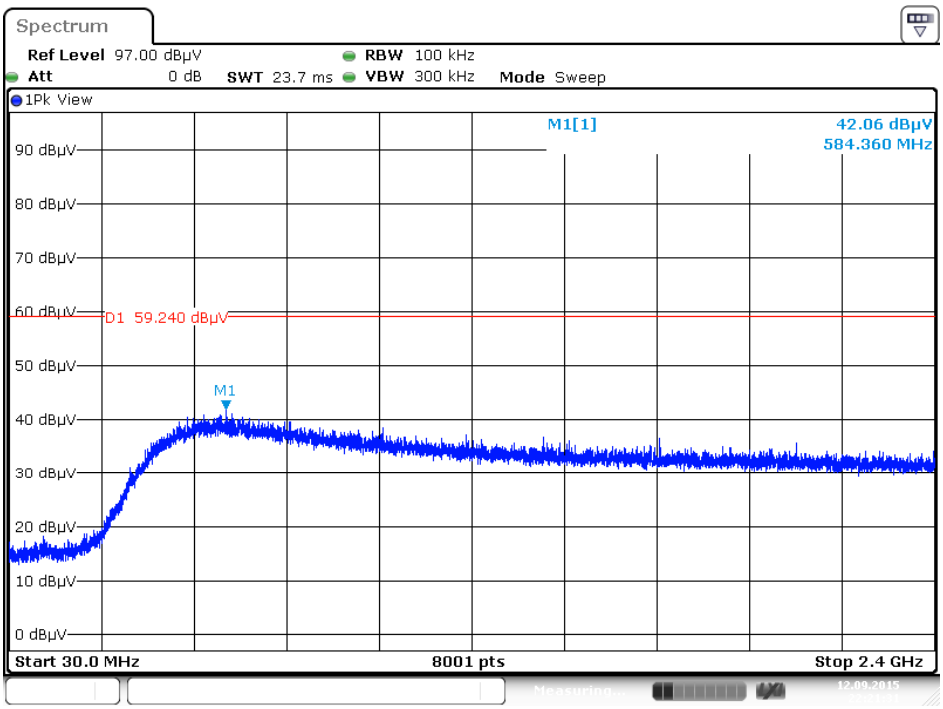
Date: 12.SEP.2015 22:20:08

Plot on Configuration IEEE 802.11g / CH 1 / 2500MHz~26500MHz (down 30dBc)



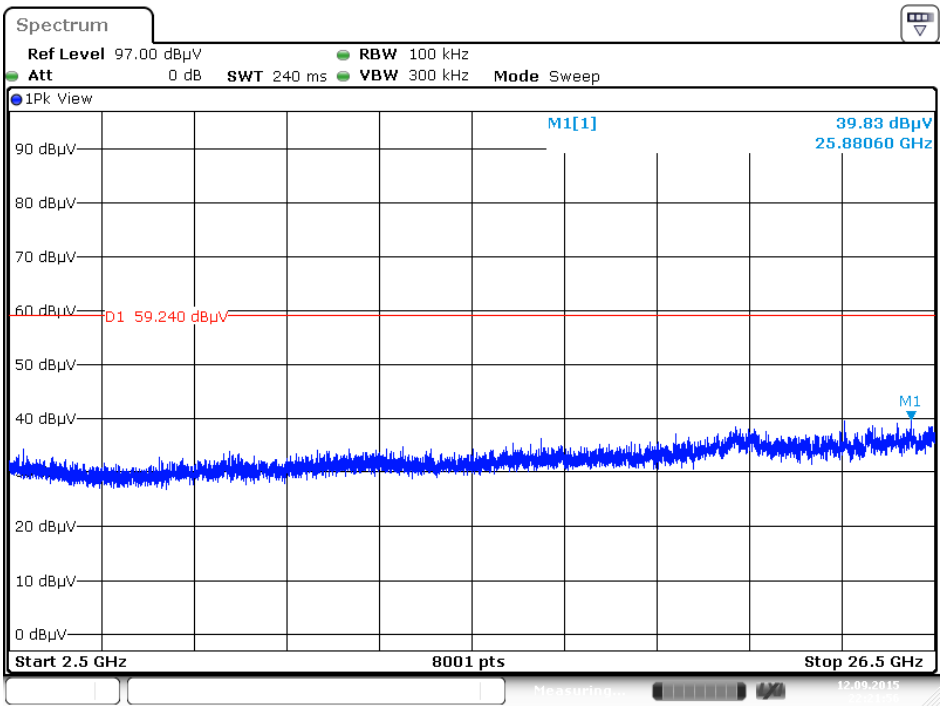
Date: 12.SEP.2015 22:20:34

Plot on Configuration IEEE 802.11g / CH 11 / 30MHz~2400MHz (down 30dBc)



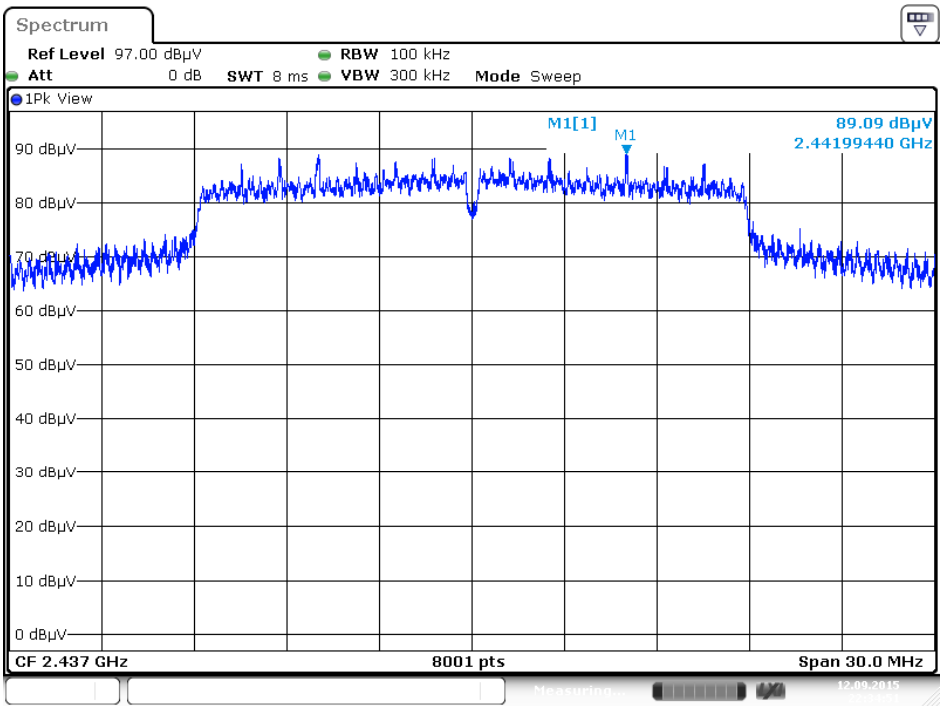
Date: 12.SEP.2015 22:21:31

Plot on Configuration IEEE 802.11g / CH 11 / 2500MHz~26500MHz (down 30dBc)



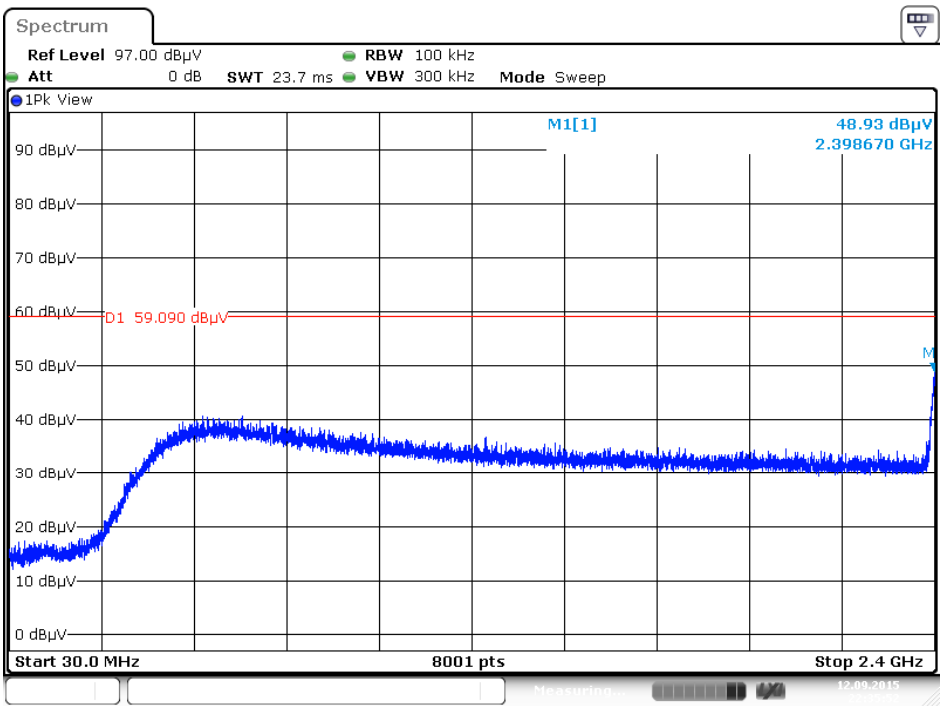
Date: 12.SEP.2015 22:21:56

Plot on Configuration IEEE 802.11n MCS0 HT20 / Reference Level



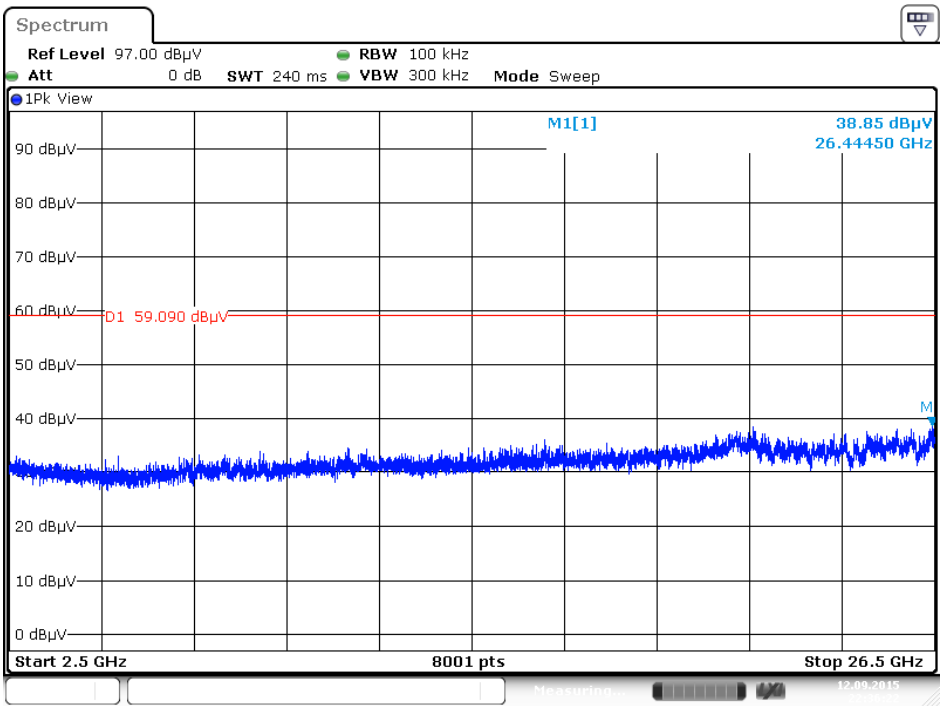
Date: 12.SEP.2015 22:34:51

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 1 / 30MHz~2400MHz (down 30dBc)



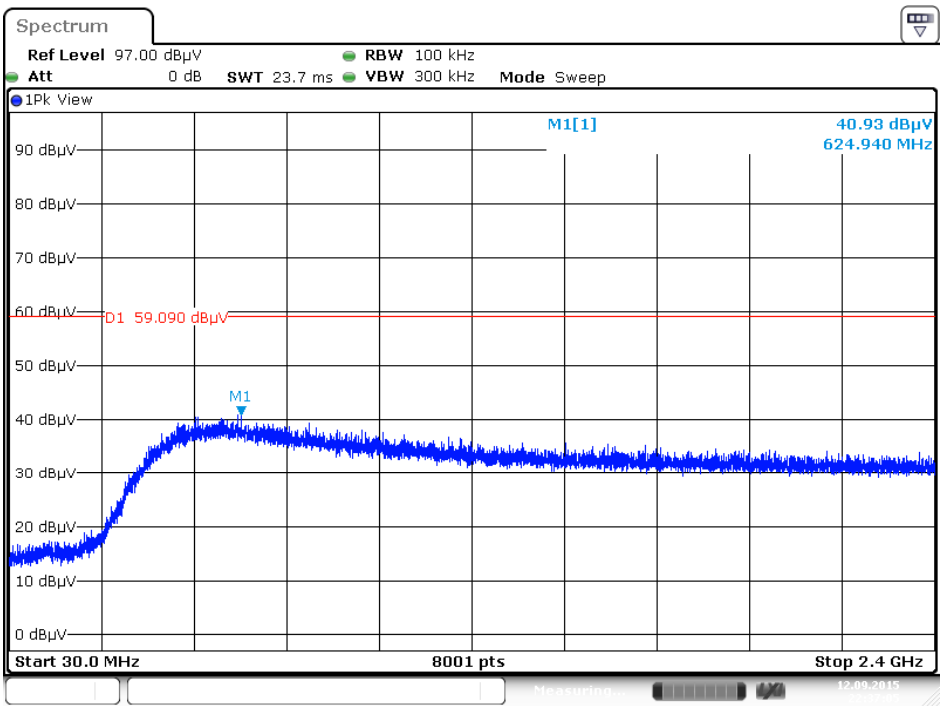
Date: 12.SEP.2015 22:35:53

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 1 / 2500MHz~26500MHz (down 30dBc)



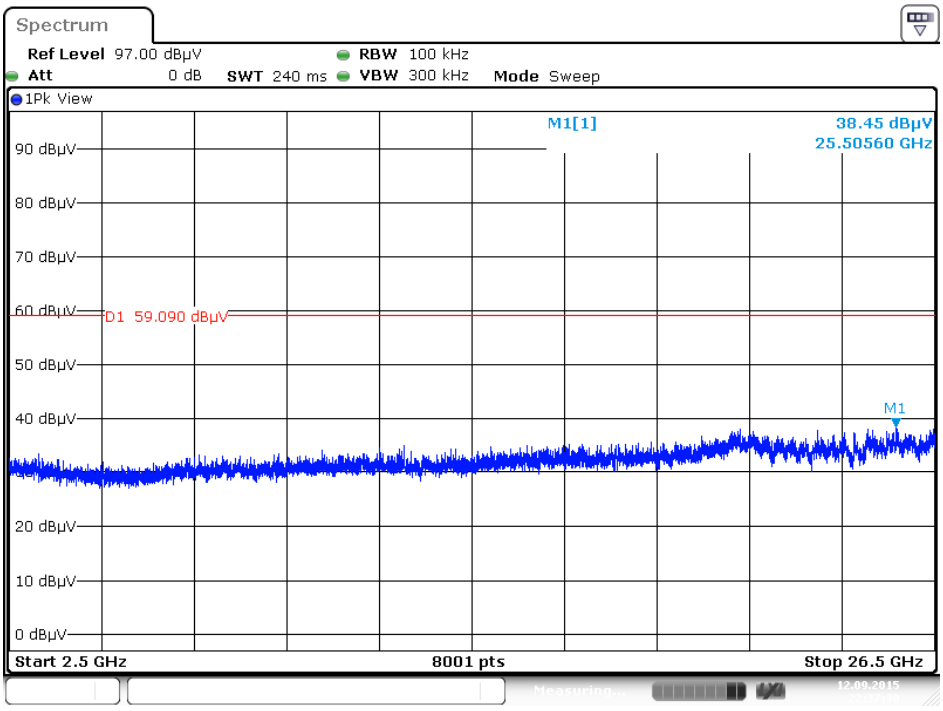
Date: 12.SEP.2015 22:36:22

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 11 / 30MHz~2400MHz (down 30dBc)



Date: 12.SEP.2015 22:37:05

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 11 / 2500MHz~26500MHz (down 30dBc)



Date: 12.SEP.2015 22:37:30

4.7. Antenna Requirements

4.7.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

4.7.2. Antenna Connector Construction

Please refer to section 3.3 in this test report; antenna connector complied with the requirements.

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Test Receiver	R&S	ESCS 30	100355	9kHz ~ 2.75GHz	Apr. 22, 2015	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 02, 2014	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 02, 2014	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	Dec. 03, 2014	Conduction (CO01-CB)
Software	Audix	E3	5.410e	-	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112D	22021	20MHz ~ 2GHz	May 06, 2015	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Oct. 28, 2014	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2015	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Feb. 24, 2015	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 12, 2015	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Nov. 25, 2014	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 06, 2014	Radiation (03CH01-CB)
EMI Receiver	Agilent	N9038A	MY52260123	9kHz ~ 8.4GHz	Jan. 21, 2015	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz ~ 1 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-1	N/A	1 GHz ~ 40 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-2	N/A	1 GHz ~ 40 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 12, 2015*	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP40	100979	9kHz~40GHz	Dec. 12, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 03, 2014	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.
"*" Calibration Interval of instruments listed above is two years.
N.C.R. means Non-Calibration required.

6. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%