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FCC RADIO TEST REPORT

Applicant's company	**MitraStar Technology Corporation**
Applicant Address	No. 6, Innovation Rd II, Science-Based Industrial, Hsin-Chu, Taiwan
FCC ID	**ZMYAM525**
Manufacturer's company (1)	**MitraStar Technology Corporation**
Manufacturer Address	No. 6, Innovation Rd II, Hsinchu Science Park, Hsinchu 30076, Taiwan
Manufacturer's company (2)	**WuXi MitraStar Technology Co. Ltd**
Manufacturer Address	60#-E, Minshan Road, Wuxi New district Jangsu, P.R.C.

Product Name	MoCA to Wireless / Ethernet bridge
Brand Name	Pace
Model No.	AM525
Test Rule	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz
Received Date	Nov. 30, 2015
Final Test Date	Jan. 11, 2016
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.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

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.

Testing Laboratory
1190

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR5O2010AA	Rev. 01	Initial issue of report	Feb. 05, 2016

1. VERIFICATION OF COMPLIANCE

Product Name	:	MoCA to Wireless / Ethernet bridge
Brand Name	:	Pace
Model No.	:	AM525
Applicant	:	MitraStar Technology Corporation
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 Nov. 30, 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	7.48 dB
4.2	15.247(b)(3)	Maximum Conducted Output Power	Complies	4.13 dB
4.3	15.247(e)	Power Spectral Density	Complies	17.36 dB
4.4	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
4.5	15.247(d)	Radiated Emissions	Complies	0.22 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	IEEE 802.11b: WLAN (1TX, 1RX) IEEE 802.11g: WLAN (1TX, 1RX) IEEE 802.11n: WLAN (1TX, 1RX / 2TX, 2RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter
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 ; 7 for 40MHz bandwidth
Channel Band Width (99%)	IEEE 802.11b / Chain 1: 15.63 MHz IEEE 802.11g / Chain 1: 22.05 MHz IEEE 802.11n MCS0 (HT20) / Chain 1: 24.66 MHz IEEE 802.11n MCS0 (HT40) / Chain 1: 36.90 MHz IEEE 802.11n MCS0 (HT20) / Chain 2: 18.15 MHz IEEE 802.11n MCS0 (HT40) / Chain 2: 36.90 MHz IEEE 802.11n MCS8 (HT20) / Chain 1 + Chain 2: 19.10 MHz IEEE 802.11n MCS8 (HT40) / Chain 1 + Chain 2: 36.76 MHz
Maximum Conducted Output Power	IEEE 802.11b / Chain 1: 23.56 dBm IEEE 802.11g / Chain 1: 23.82 dBm IEEE 802.11n MCS0 (HT20) / Chain 1: 23.68 dBm IEEE 802.11n MCS0 (HT40) / Chain 1: 17.65 dBm IEEE 802.11n MCS0 (HT20) / Chain 2: 21.65 dBm IEEE 802.11n MCS0 (HT40) / Chain 2: 17.03 dBm IEEE 802.11n MCS8 (HT20) / Chain 1 + Chain 2: 25.87 dBm IEEE 802.11n MCS8 (HT40) / Chain 1 + Chain 2: 22.05 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3
Note: The EUT supports Master in 2.4GHz, 5GHz band 1, band 4 / Client without radar detection in 5GHz band 1~band 4 / Repeater in 2.4GHz, 5GHz band 1~band 4.	

Items	Description	
Beamforming Function	☒ With beamforming	☐ Without beamforming
	The product has beamforming function for 802.11n/ac in 5GHz.	

Antenna and Band width

Antenna	Single (TX)		Two (TX)	
Band width Mode	20 MHz	40 MHz	20 MHz	40 MHz
IEEE 802.11b	V	X	X	X
IEEE 802.11g	V	X	X	X
IEEE 802.11n	V	V	V	V

IEEE 11n Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	1	MCS 0-7
802.11n (HT40)	1	MCS 0-7
802.11n (HT20)	2	MCS 8-15
802.11n (HT40)	2	MCS 8-15
Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput). Then EUT supports HT20 and HT40. Note 2: Modulation modes consist of below configuration: HT20/HT40: IEEE 802.11n		

3.2. Accessories

Power	Brand	Model No.	Rating
Adapter	PI	AD2027310	Input: 100-120Vac, 50/60Hz, 680mA Output: 12Vdc, 1.5A
Others			
LAN cable	1.8 meter, non-shielded, w/o ferrite core		

3.3. Table for Filed Antenna

Ant.	Brand	Model No.	Type	Connector	Gain (dBi)				
					2.4GHz	5GHz B1	5GHz B2	5GHz B3	5GHz B4
1	Whayu	C1597-510063-A	Dipole	N/A	1.8	-	-	-	-
2	Whayu	C1597-510064-A	Dipole	N/A	2.0	-	-	-	-
3	Whayu	C1597-510065-A	Dipole	I-PEX	-	1.70	1.67	1.59	1.42
4	Whayu	C1597-510066-A	Dipole	I-PEX	-	1.70	1.67	1.59	1.42
5	Whayu	C1597-510067-A	Dipole	I-PEX	-	1.70	1.67	1.59	1.42
6	Whayu	C1597-510068-A	Dipole	I-PEX	-	1.70	1.67	1.59	1.42

Note: The EUT has six antennas.

Ant. 1 and Ant. 2 for 2.4GHz WLAN function use, Ant. 3~Ant. 6 for 5GHz WLAN function use.

For 2.4GHz WLAN function:

For IEEE 802.11b/g mode (1TX, 1RX):

Only Chain 1 can be used as transmitting/receiving functions.

For IEEE 802.11n mode (1TX, 1RX / 2TX, 2RX):

The EUT can support both 1TX and 2TX functions.

For 1TX function:

Both Chain 1 and Chain 2 support transmit and receive functions, but only one of them will be used at one time.

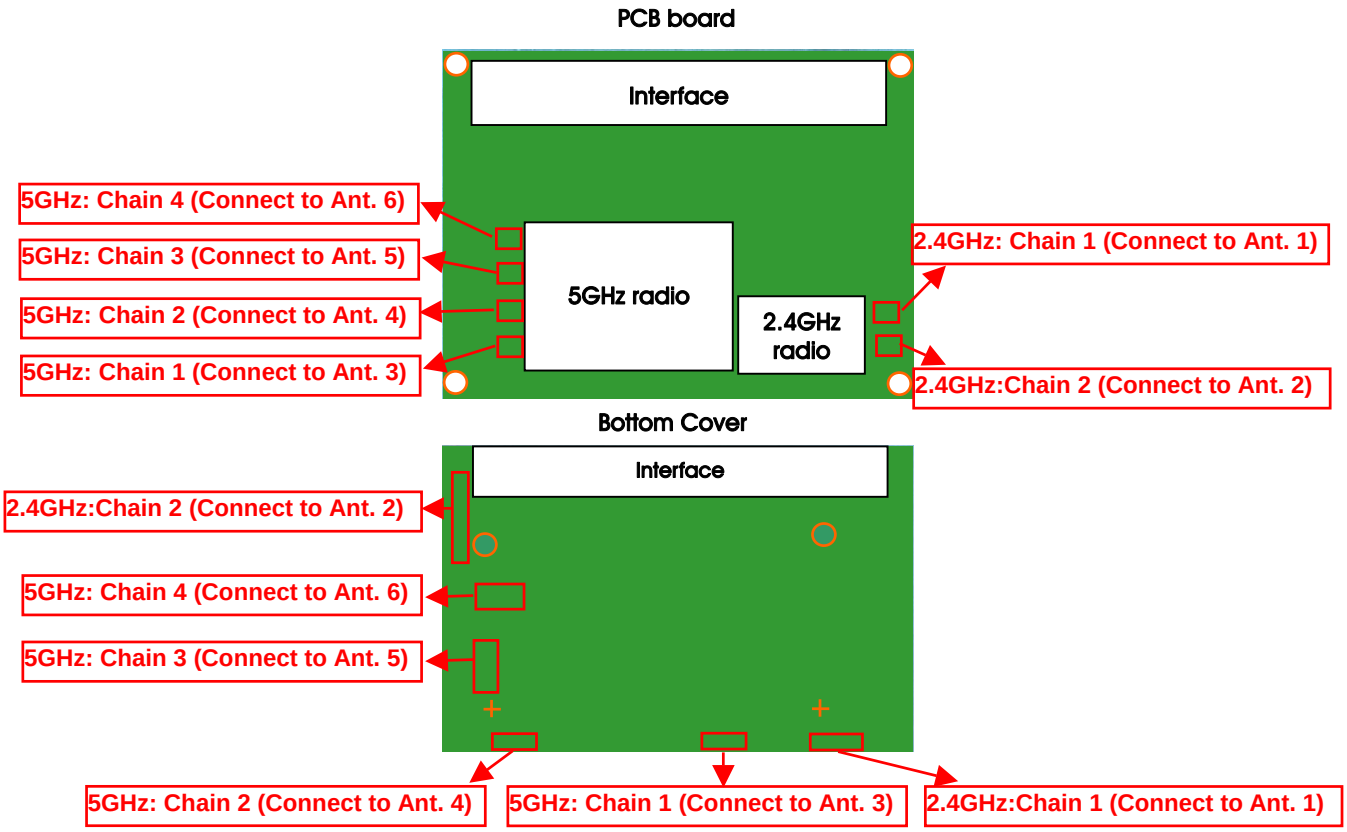
For 2TX function:

Chain 1 and Chain 2 could transmit/receive simultaneously.

For 5GHz WLAN function:

For IEEE 802.11a/n/ac mode (4TX, 4RX):

Chain 1, Chain 2, Chain 3 and Chain 4 could transmit/receive simultaneously.



3.4. Table for Carrier Frequencies

There are two bandwidth systems.

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

For 40MHz bandwidth systems, use Channel 3~Channel 9.

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	CTX	-	-	-
Maximum Conducted Output Power	11b/CCK	1 Mbps	1/6/11	1
	11g/BPSK	6 Mbps	1/6/11	1
	11n HT20	MCS0	1/6/11	1
	11n HT40	MCS0	3/6/9	1
	11n HT20	MCS0	1/6/11	2
	11n HT40	MCS0	3/6/9	2
	11n HT20	MCS8	1/6/11	1+2
	11n HT40	MCS8	3/6/9	1+2
Power Spectral Density	11b/CCK	1 Mbps	1/6/11	1
	11g/BPSK	6 Mbps	1/6/11	1
	11n HT20	MCS0	1/6/11	1
	11n HT40	MCS0	3/6/9	1
	11n HT20	MCS0	1/6/11	2
	11n HT40	MCS0	3/6/9	2
	11n HT20	MCS8	1/6/11	1+2
	11n HT40	MCS8	3/6/9	1+2
6dB Spectrum Bandwidth	11b/CCK	1 Mbps	1/6/11	1
	11g/BPSK	6 Mbps	1/6/11	1
	11n HT20	MCS0	1/6/11	1
	11n HT40	MCS0	3/6/9	1
	11n HT20	MCS0	1/6/11	2
	11n HT40	MCS0	3/6/9	2
	11n HT20	MCS8	1/6/11	1+2
	11n HT40	MCS8	3/6/9	1+2
Radiated Emissions 9kHz~1GHz	CTX	-	-	-

Radiated Emissions 1GHz~10th Harmonic	11b/CCK	1 Mbps	1/6/11	1
	11g/BPSK	6 Mbps	1/6/11	1
	11n HT20	MCS0	1/6/11	1
	11n HT40	MCS0	3/6/9	1
	11n HT20	MCS0	1/6/11	2
	11n HT40	MCS0	3/6/9	2
	11n HT20	MCS8	1/6/11	1+2
	11n HT40	MCS8	3/6/9	1+2
Band Edge Emissions	11b/CCK	1 Mbps	1/6/11	1
	11g/BPSK	6 Mbps	1/6/11	1
	11n HT20	MCS0	1/6/11	1
	11n HT40	MCS0	3/6/9	1
	11n HT20	MCS0	1/6/11	2
	11n HT40	MCS0	3/6/9	2
	11n HT20	MCS8	1/6/11	1+2
	11n HT40	MCS8	3/6/9	1+2

Note: The EUT can only be used at Y axis position.

The following test modes were performed for all tests:

For AC Power Line Conducted Emissions test:

Mode 1. 2.4GHz WLAN function

Mode 2. 5GHz WLAN function

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

For Radiated Emission below 1GHz test:

Mode 1. 2.4GHz WLAN function

Mode 2. 5GHz WLAN function

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

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

The EUT could be applied with 2.4GHz WLAN function and 5GHz WLAN function; therefore Co-location Maximum Permissible Exposure (Please refer to FA5O2010) and Radiated Emission Co-location (please refer to Appendix B) tests are added for simultaneously transmit between 2.4GHz WLAN function and 5GHz WLAN 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 Supporting Units

For Test Site No: 03CH01-CB and TH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC

For Test Site No: CO01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E6430	DoC

3.8. 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.

Test Software Version	RTL819x 3.0-2014/06/13					
Mode	Test Frequency (MHz)					
	NCB: 20MHz			NCB: 40MHz		
	2412 MHz	2437 MHz	2462 MHz	2422 MHz	2437 MHz	2452 MHz
802.11b / Chain 1	53	53	51	-	-	-
802.11g / Chain 1	49	63	51	-	-	-
802.11n MCS0 HT20 / Chain 1	48	63	45	-	-	-
802.11n MCS0 HT40 / Chain 1	-	-	-	48	49	47
802.11n MCS0 HT20 / Chain 2	45	56	45	-	-	-
802.11n MCS0 HT40 / Chain 2	-	-	-	45	47	47
802.11n MCS8 HT20 / Chain 1 + Chain 2	46/45	61/60	46/45	-	-	-
802.11n MCS8 HT40 / Chain 1 + Chain 2	-	-	-	47/47	50/50	48/47

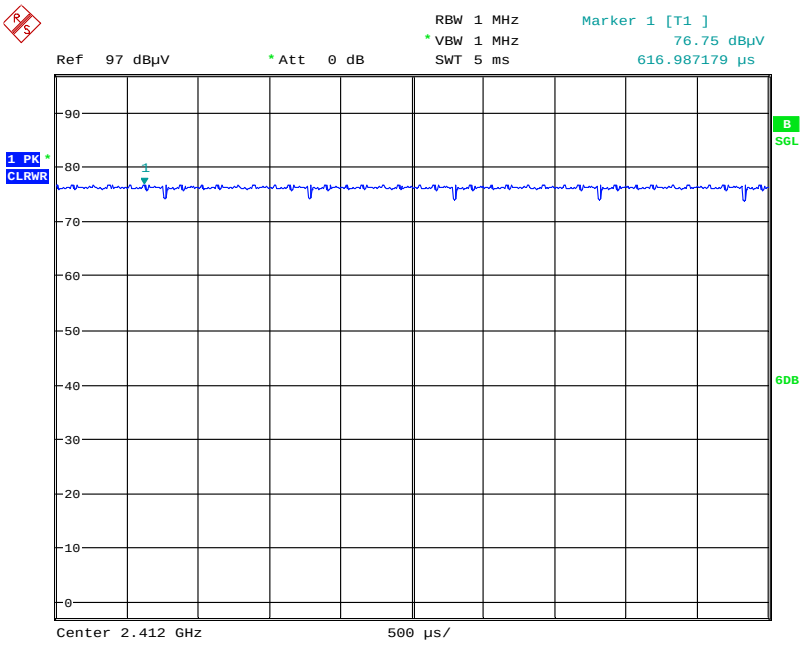
3.9. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.10. Duty Cycle

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	1.000	1.000	100.00	0.00	0.01
802.11n MCS0 HT20	1.000	1.000	100.00	0.00	0.01
802.11n MCS0 HT40	1.000	1.000	100.00	0.00	0.01
802.11n MCS8 HT20	1.000	1.000	100.00	0.00	0.01
802.11n MCS8 HT40	1.000	1.000	100.00	0.00	0.01

IEEE 802.11b



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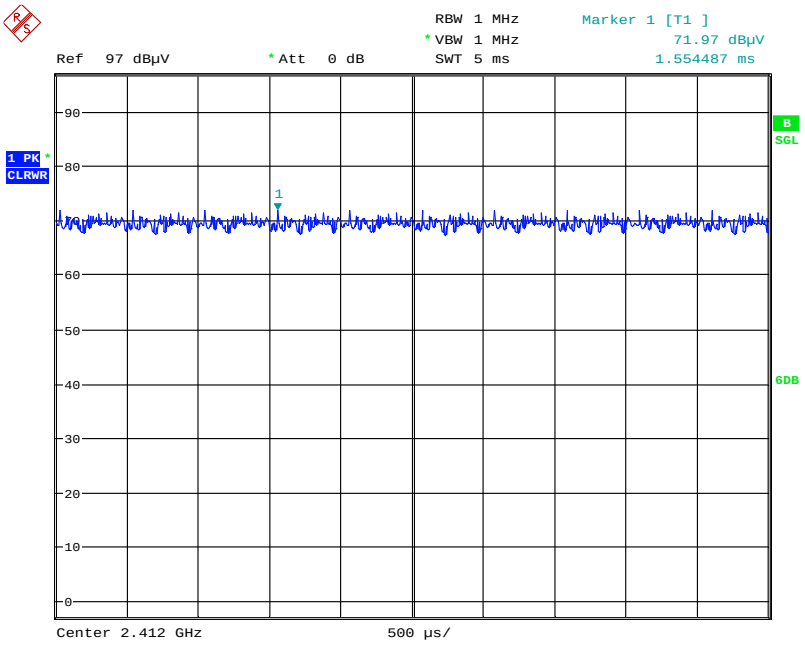
IEEE 802.11g



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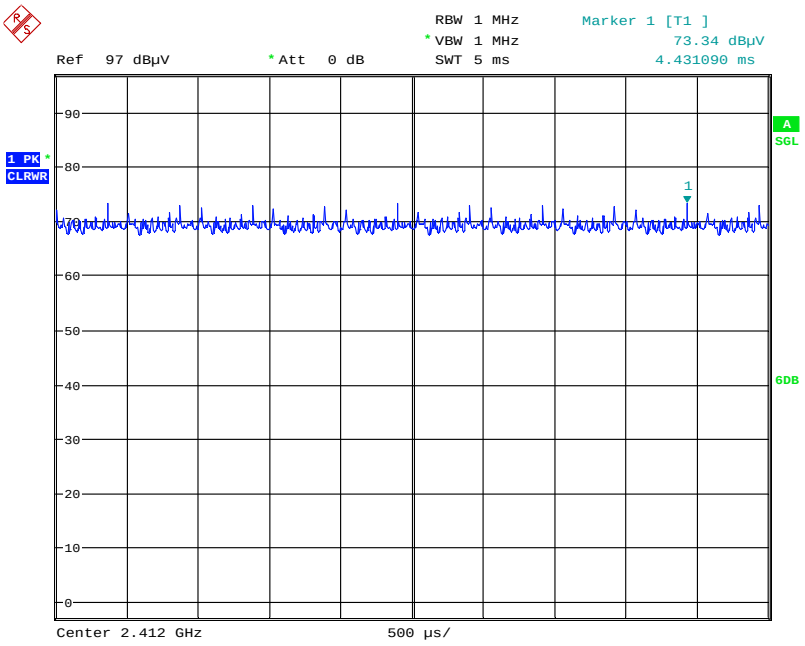
IEEE 802.11n MCS0 HT20



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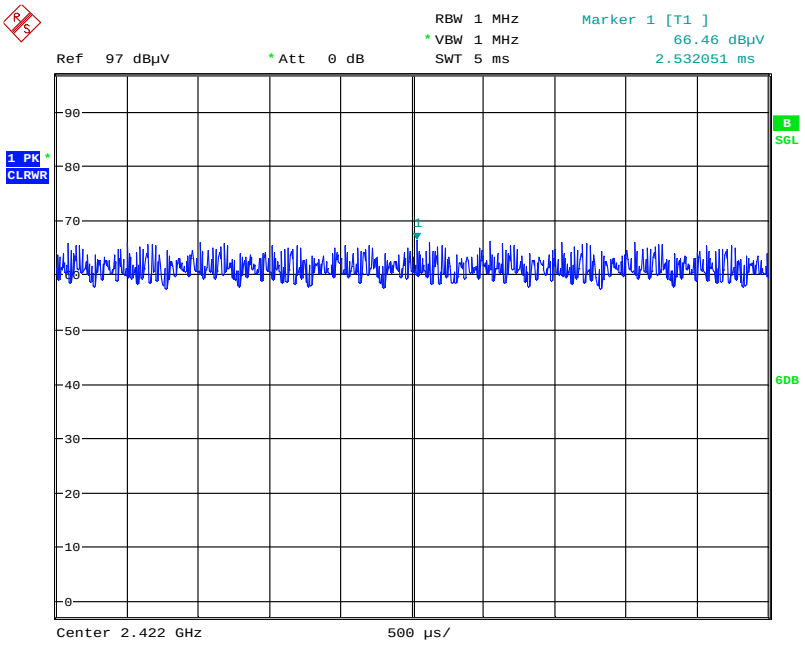
IEEE 802.11n MCS0 HT40



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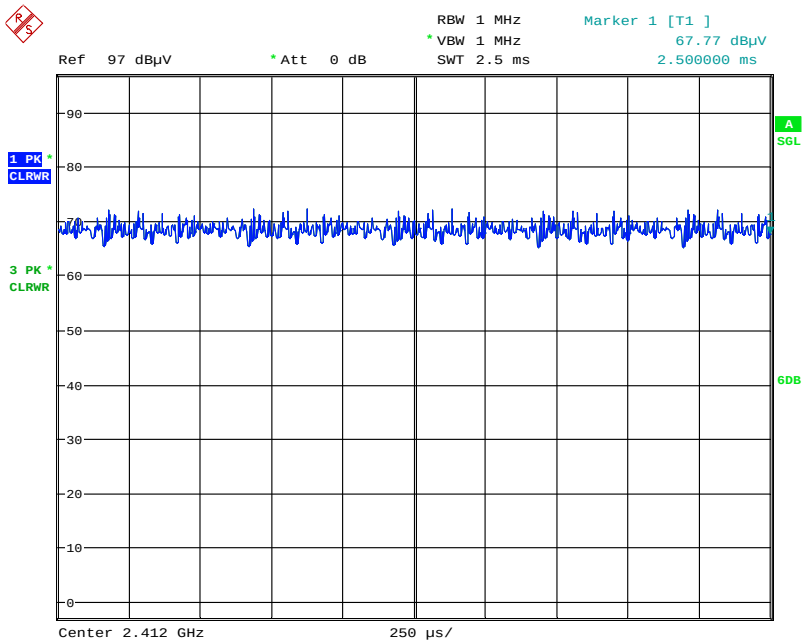
IEEE 802.11n MCS8 HT20



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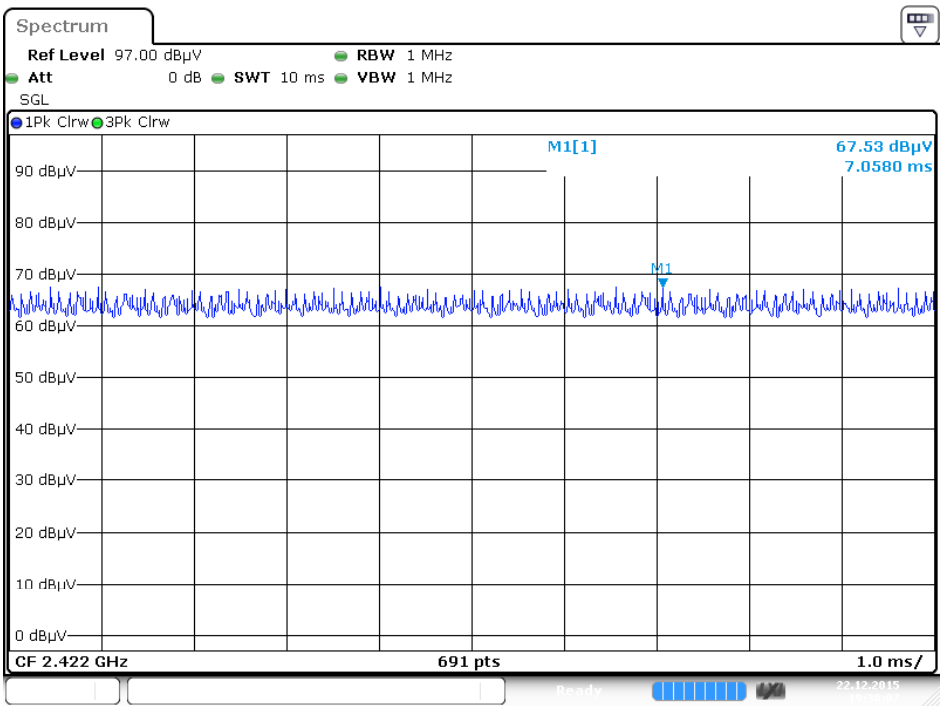
IEEE 802.11n MCS8 HT40



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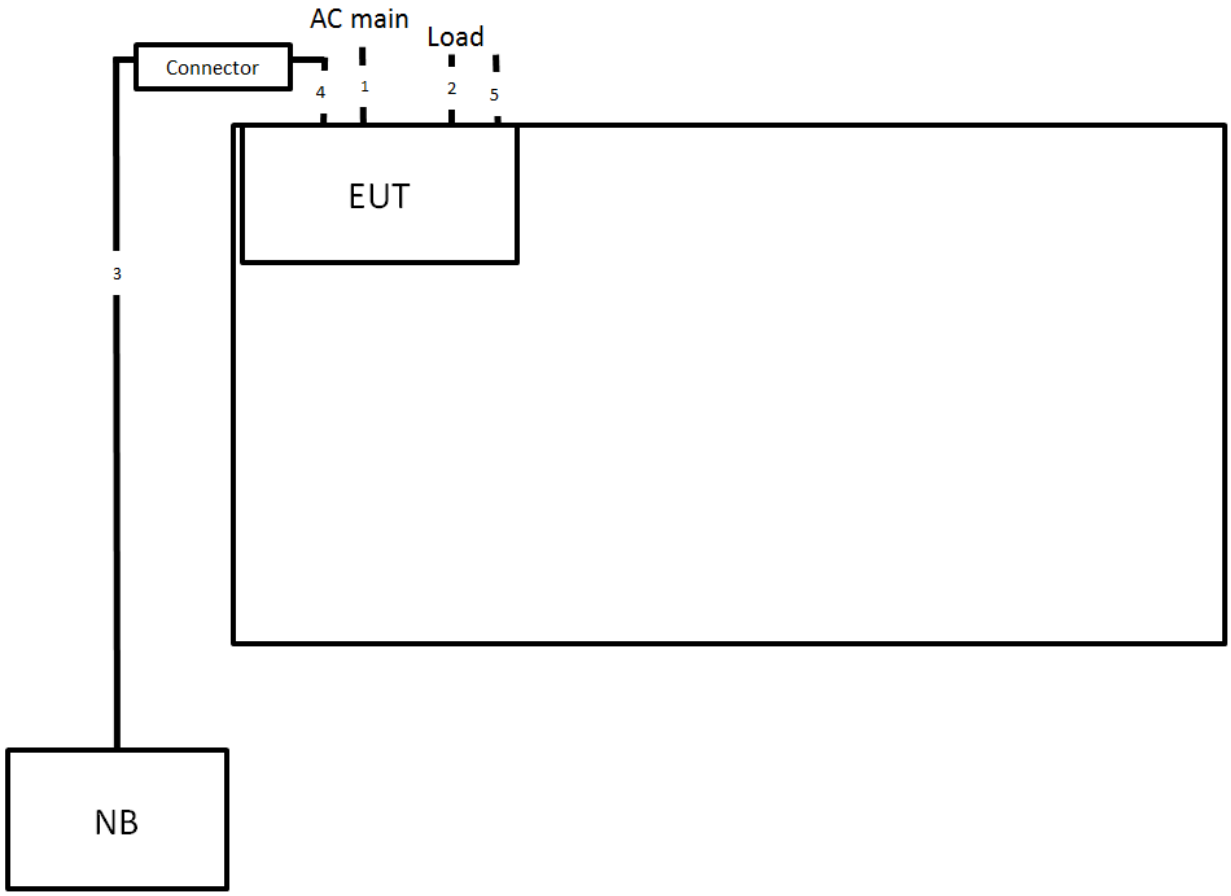
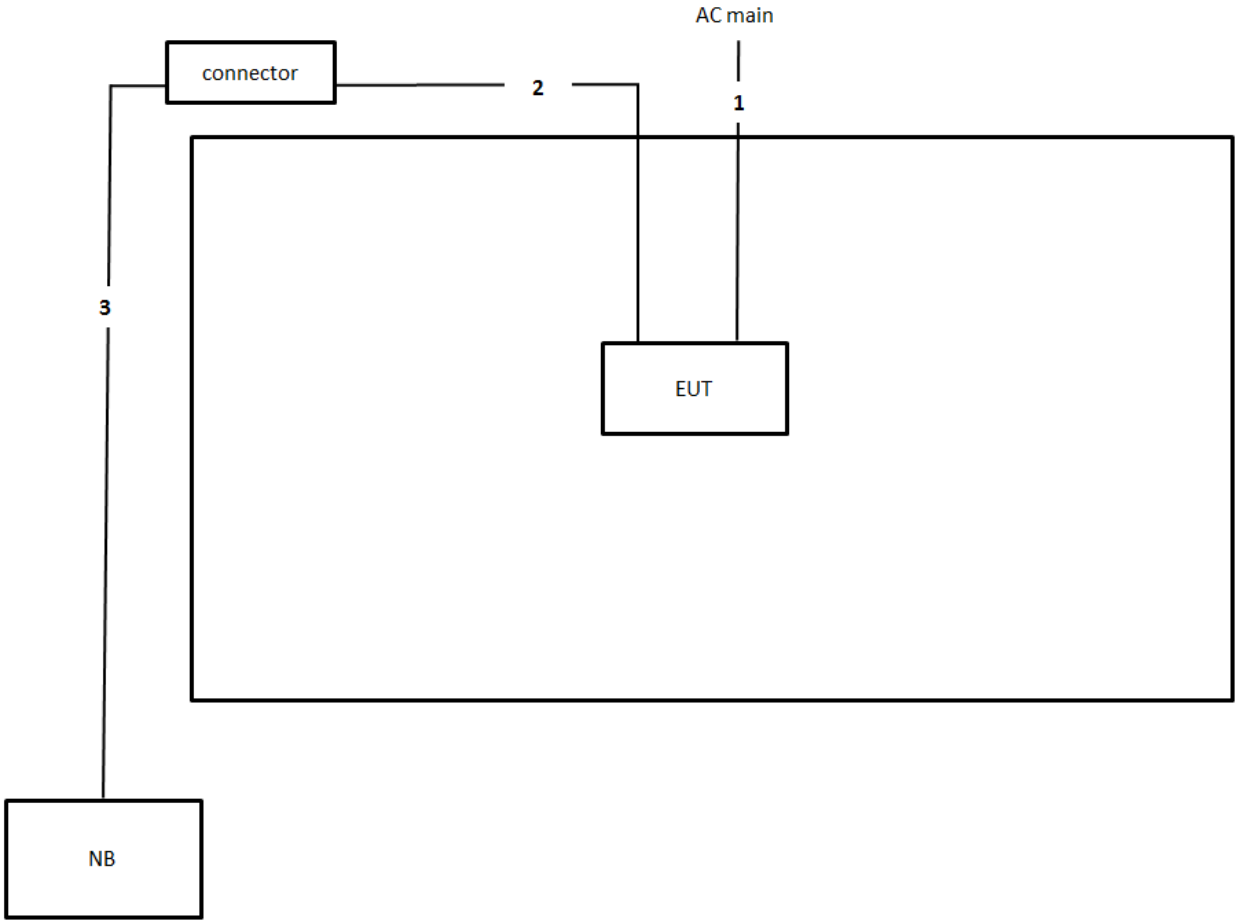
3.11. Test Configurations

3.11.1. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	1.5m
3	RJ-45 cable	No	10m
4	LAN cable	No	1.8m
5	Coaxial cable	Yes	1.5m

3.11.2. Radiation Emissions Test Configuration



Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	LAN cable	No	1.8m
3	RJ-45 cable	No	10m

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

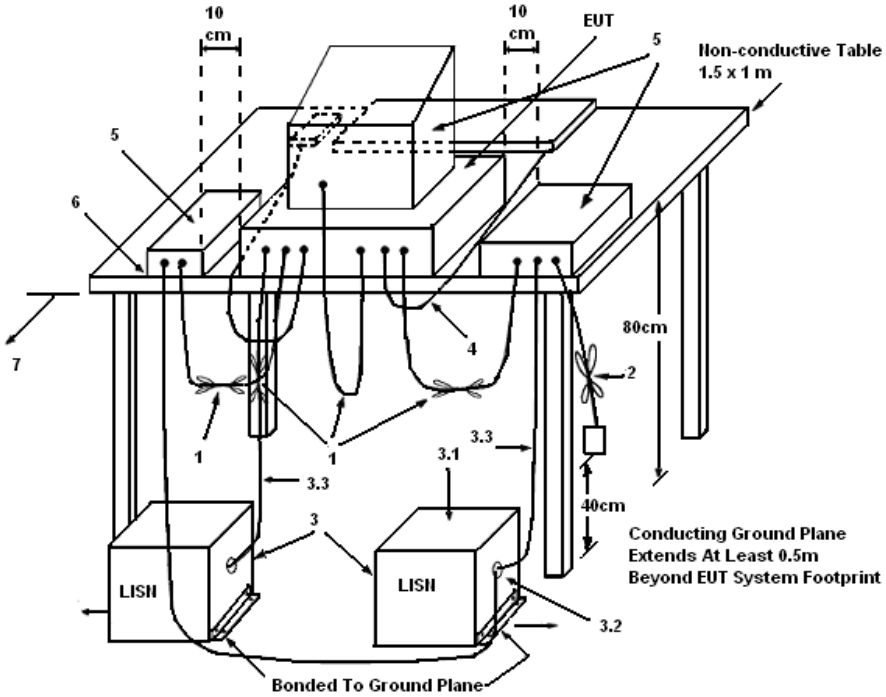
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

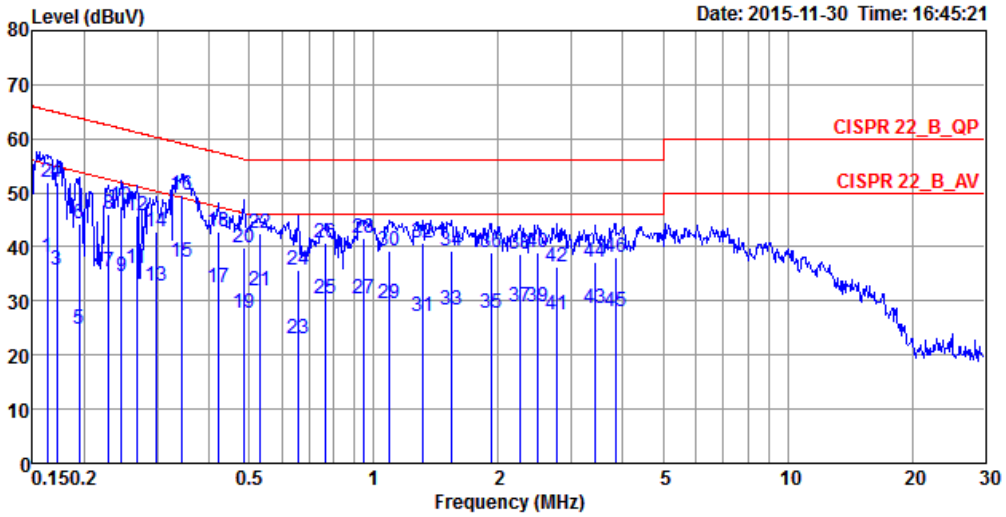
There is no deviation with the original standard.

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

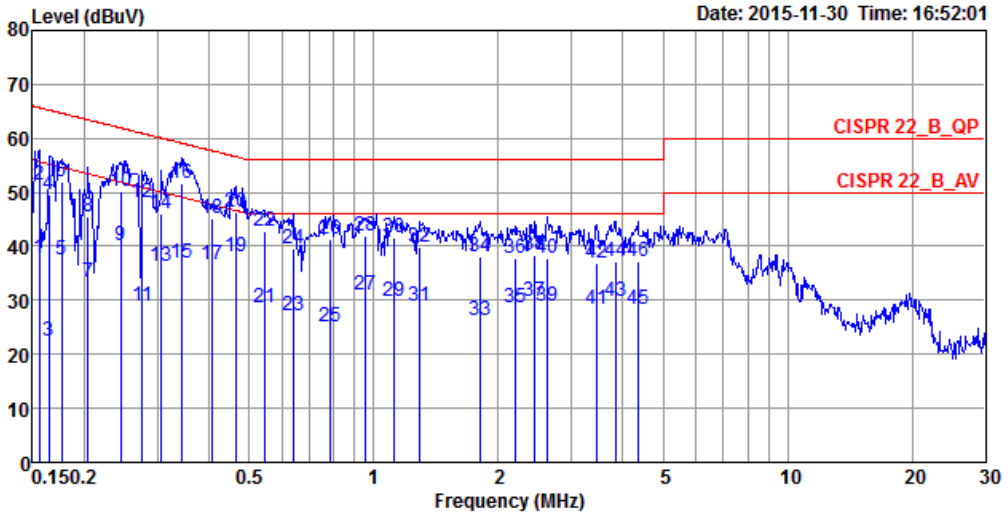
Temperature	25°C	Humidity	58%
Test Engineer	Parody Lin	Phase	Line
Configuration	CTX	Test Mode	Mode 1



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1624	38.04	-17.30	55.34	28.09	9.93	0.02	LINE	Average
2	0.1624	51.87	-13.47	65.34	41.92	9.93	0.02	LINE	QP
3	0.1712	35.70	-19.20	54.90	25.75	9.93	0.02	LINE	Average
4	0.1712	51.92	-12.98	64.90	41.97	9.93	0.02	LINE	QP
5	0.1945	24.87	-28.97	53.84	14.92	9.93	0.02	LINE	Average
6	0.1945	44.38	-19.46	63.84	34.43	9.93	0.02	LINE	QP
7	0.2292	35.35	-17.13	52.48	25.39	9.93	0.03	LINE	Average
8	0.2292	45.97	-16.51	62.48	36.01	9.93	0.03	LINE	QP
9	0.2455	34.55	-17.36	51.91	24.59	9.93	0.03	LINE	Average
10	0.2455	47.63	-14.28	61.91	37.67	9.93	0.03	LINE	QP
11	0.2672	36.14	-15.06	51.20	26.18	9.93	0.03	LINE	Average
12	0.2672	45.80	-15.40	61.20	35.84	9.93	0.03	LINE	QP
13	0.2987	32.64	-17.64	50.28	22.67	9.93	0.04	LINE	Average
14	0.2987	42.68	-17.60	60.28	32.71	9.93	0.04	LINE	QP
15	0.3428	37.10	-12.03	49.13	27.13	9.93	0.04	LINE	Average
16	0.3428	49.69	-9.44	59.13	39.72	9.93	0.04	LINE	QP
17	0.4215	32.56	-14.86	47.42	22.59	9.93	0.04	LINE	Average

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
18	0.4215	42.72	-14.70	57.42	32.75	9.93	0.04	LINE	QP
19	0.4863	27.61	-18.62	46.23	17.63	9.94	0.04	LINE	Average
20	0.4863	39.85	-16.38	56.23	29.87	9.94	0.04	LINE	QP
21	0.5293	31.81	-14.19	46.00	21.83	9.94	0.04	LINE	Average
22	0.5293	42.47	-13.53	56.00	32.49	9.94	0.04	LINE	QP
23	0.6578	23.04	-22.96	46.00	13.05	9.95	0.04	LINE	Average
24	0.6578	35.68	-20.32	56.00	25.69	9.95	0.04	LINE	QP
25	0.7670	30.40	-15.60	46.00	20.42	9.95	0.03	LINE	Average
26	0.7670	40.82	-15.18	56.00	30.84	9.95	0.03	LINE	QP
27	0.9431	30.54	-15.46	46.00	20.53	9.96	0.05	LINE	Average
28	0.9431	41.71	-14.29	56.00	31.70	9.96	0.05	LINE	QP
29	1.0939	29.66	-16.34	46.00	19.65	9.96	0.05	LINE	Average
30	1.0939	39.38	-16.62	56.00	29.37	9.96	0.05	LINE	QP
31	1.3168	27.08	-18.92	46.00	17.06	9.97	0.05	LINE	Average
32	1.3168	40.61	-15.39	56.00	30.59	9.97	0.05	LINE	QP
33	1.5436	28.41	-17.59	46.00	18.37	9.98	0.06	LINE	Average
34	1.5436	39.14	-16.86	56.00	29.10	9.98	0.06	LINE	QP
35	1.9182	27.67	-18.33	46.00	17.62	9.99	0.06	LINE	Average
36	1.9182	38.99	-17.01	56.00	28.94	9.99	0.06	LINE	QP
37	2.2606	28.85	-17.15	46.00	18.79	10.00	0.06	LINE	Average
38	2.2606	38.65	-17.35	56.00	28.59	10.00	0.06	LINE	QP
39	2.4868	28.93	-17.07	46.00	18.88	10.00	0.05	LINE	Average
40	2.4868	38.85	-17.15	56.00	28.80	10.00	0.05	LINE	QP
41	2.7794	27.35	-18.65	46.00	17.30	10.00	0.05	LINE	Average
42	2.7794	36.44	-19.56	56.00	26.39	10.00	0.05	LINE	QP
43	3.4356	28.57	-17.43	46.00	18.50	10.01	0.06	LINE	Average
44	3.4356	37.16	-18.84	56.00	27.09	10.01	0.06	LINE	QP
45	3.8399	28.17	-17.83	46.00	18.08	10.02	0.07	LINE	Average
46	3.8399	38.17	-17.83	56.00	28.08	10.02	0.07	LINE	QP

Temperature	25°C	Humidity	58%
Test Engineer	Parody Lin	Phase	Neutral
Configuration	CTX	Test Mode	Mode 1



	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	37.64	-18.05	55.69	27.84	9.78	0.02	NEUTRAL	Average
2	0.1557	51.43	-14.26	65.69	41.63	9.78	0.02	NEUTRAL	QP
3	0.1641	22.53	-32.72	55.25	12.73	9.78	0.02	NEUTRAL	Average
4	0.1641	49.60	-15.65	65.25	39.80	9.78	0.02	NEUTRAL	QP
5	0.1758	37.47	-17.21	54.68	27.66	9.79	0.02	NEUTRAL	Average
6	0.1758	51.91	-12.77	64.68	42.10	9.79	0.02	NEUTRAL	QP
7	0.2040	33.38	-20.07	53.45	23.57	9.79	0.02	NEUTRAL	Average
8	0.2040	45.43	-18.02	63.45	35.62	9.79	0.02	NEUTRAL	QP
9	0.2442	40.28	-11.67	51.95	30.46	9.79	0.03	NEUTRAL	Average
10	0.2442	50.19	-11.76	61.95	40.37	9.79	0.03	NEUTRAL	QP
11	0.2759	28.92	-22.02	50.94	19.09	9.79	0.04	NEUTRAL	Average
12	0.2759	48.18	-12.76	60.94	38.35	9.79	0.04	NEUTRAL	QP
13	0.3067	36.20	-13.86	50.06	26.37	9.79	0.04	NEUTRAL	Average
14	0.3067	45.98	-14.08	60.06	36.15	9.79	0.04	NEUTRAL	QP
15	0.3428	36.88	-12.25	49.13	27.05	9.79	0.04	NEUTRAL	Average
16	0.3428	51.65	-7.48	59.13	41.82	9.79	0.04	NEUTRAL	QP
17	0.4083	36.70	-10.98	47.68	26.87	9.79	0.04	NEUTRAL	Average

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
18	0.4083	45.17	-12.51	57.68	35.34	9.79	0.04	NEUTRAL	QP
19	0.4637	38.15	-8.48	46.63	28.32	9.79	0.04	NEUTRAL	Average
20	0.4637	46.34	-10.29	56.63	36.51	9.79	0.04	NEUTRAL	QP
21	0.5436	28.63	-17.37	46.00	18.79	9.80	0.04	NEUTRAL	Average
22	0.5436	42.79	-13.21	56.00	32.95	9.80	0.04	NEUTRAL	QP
23	0.6372	27.11	-18.89	46.00	17.27	9.80	0.04	NEUTRAL	Average
24	0.6372	39.58	-16.42	56.00	29.74	9.80	0.04	NEUTRAL	QP
25	0.7876	25.03	-20.97	46.00	15.20	9.80	0.03	NEUTRAL	Average
26	0.7876	41.32	-14.68	56.00	31.49	9.80	0.03	NEUTRAL	QP
27	0.9531	31.06	-14.94	46.00	21.20	9.81	0.05	NEUTRAL	Average
28	0.9531	41.78	-14.22	56.00	31.92	9.81	0.05	NEUTRAL	QP
29	1.1173	29.95	-16.05	46.00	20.09	9.81	0.05	NEUTRAL	Average
30	1.1173	41.57	-14.43	56.00	31.71	9.81	0.05	NEUTRAL	QP
31	1.2960	28.84	-17.16	46.00	18.97	9.82	0.05	NEUTRAL	Average
32	1.2960	39.90	-16.10	56.00	30.03	9.82	0.05	NEUTRAL	QP
33	1.8096	26.17	-19.83	46.00	16.27	9.84	0.06	NEUTRAL	Average
34	1.8096	38.21	-17.79	56.00	28.31	9.84	0.06	NEUTRAL	QP
35	2.2015	28.57	-17.43	46.00	18.67	9.84	0.06	NEUTRAL	Average
36	2.2015	37.75	-18.25	56.00	27.85	9.84	0.06	NEUTRAL	QP
37	2.4476	29.84	-16.16	46.00	19.94	9.85	0.05	NEUTRAL	Average
38	2.4476	38.32	-17.68	56.00	28.42	9.85	0.05	NEUTRAL	QP
39	2.6360	29.05	-16.95	46.00	19.15	9.85	0.05	NEUTRAL	Average
40	2.6360	37.91	-18.09	56.00	28.01	9.85	0.05	NEUTRAL	QP
41	3.4538	28.28	-17.72	46.00	18.36	9.86	0.06	NEUTRAL	Average
42	3.4538	36.94	-19.06	56.00	27.02	9.86	0.06	NEUTRAL	QP
43	3.8399	29.76	-16.24	46.00	19.82	9.87	0.07	NEUTRAL	Average
44	3.8399	37.10	-18.90	56.00	27.16	9.87	0.07	NEUTRAL	QP
45	4.3376	28.27	-17.73	46.00	18.31	9.88	0.08	NEUTRAL	Average
46	4.3376	37.16	-18.84	56.00	27.20	9.88	0.08	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

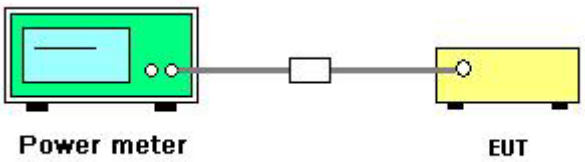
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

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	21°C	Humidity	46%
Test Engineer	Lucas Huang	Test Date	Dec. 30, 2015

Mode	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Chain 1		
802.11b	2412 MHz	23.53	30.00	Complies
	2437 MHz	23.56	30.00	Complies
	2462 MHz	22.58	30.00	Complies
802.11g	2412 MHz	18.54	30.00	Complies
	2437 MHz	23.82	30.00	Complies
	2462 MHz	19.21	30.00	Complies
802.11n MCS0 HT20	2412 MHz	18.45	30.00	Complies
	2437 MHz	23.68	30.00	Complies
	2462 MHz	16.54	30.00	Complies
802.11n MCS0 HT40	2422 MHz	17.62	30.00	Complies
	2437 MHz	17.65	30.00	Complies
	2452 MHz	16.55	30.00	Complies
Mode	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Chain 2		
802.11n MCS0 HT20	2412 MHz	17.08	30.00	Complies
	2437 MHz	21.65	30.00	Complies
	2462 MHz	17.15	30.00	Complies
802.11n MCS0 HT40	2422 MHz	16.03	30.00	Complies
	2437 MHz	17.03	30.00	Complies
	2452 MHz	17.01	30.00	Complies

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11n MCS8 HT20	2412 MHz	18.12	17.23	20.71	30.00	Complies
	2437 MHz	22.82	22.90	25.87	30.00	Complies
	2462 MHz	17.84	17.21	20.55	30.00	Complies
802.11n MCS8 HT40	2422 MHz	17.04	16.87	19.97	30.00	Complies
	2437 MHz	18.91	19.16	22.05	30.00	Complies
	2452 MHz	17.73	17.51	20.63	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

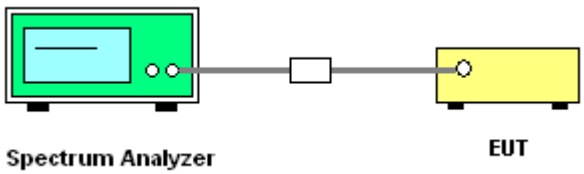
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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	21°C	Humidity	46%
Test Engineer	Lucas Huang		

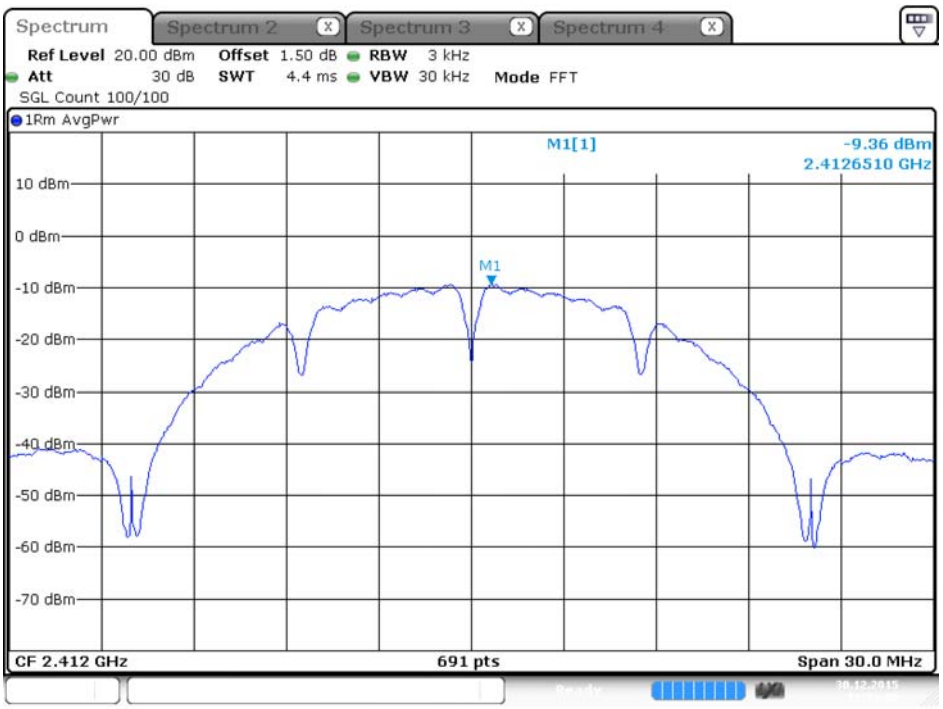
Mode	Frequency	Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)	Result
		Chain 1		
802.11b	2412 MHz	-9.36	8.00	Complies
	2437 MHz	-10.08	8.00	Complies
	2462 MHz	-10.86	8.00	Complies
802.11g	2412 MHz	-17.12	8.00	Complies
	2437 MHz	-11.61	8.00	Complies
	2462 MHz	-16.06	8.00	Complies
802.11n MCS0 HT20	2412 MHz	-17.59	8.00	Complies
	2437 MHz	-12.03	8.00	Complies
	2462 MHz	-18.99	8.00	Complies
802.11n MCS0 HT40	2422 MHz	-20.91	8.00	Complies
	2437 MHz	-20.89	8.00	Complies
	2452 MHz	-22.17	8.00	Complies
Mode	Frequency	Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)	Result
		Chain 2		
802.11n MCS0 HT20	2412 MHz	-18.80	8.00	Complies
	2437 MHz	-14.08	8.00	Complies
	2462 MHz	-18.55	8.00	Complies
802.11n MCS0 HT40	2422 MHz	-22.75	8.00	Complies
	2437 MHz	-21.93	8.00	Complies
	2452 MHz	-21.86	8.00	Complies

Mode	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
802.11n MCS8 HT20	2412 MHz	-17.89	-18.75	-15.29	8.00	Complies
	2437 MHz	-12.88	-12.56	-9.71	8.00	Complies
	2462 MHz	-18.00	-18.46	-15.21	8.00	Complies
802.11n MCS8 HT40	2422 MHz	-22.01	-21.07	-18.50	8.00	Complies
	2437 MHz	-19.99	-20.12	-17.04	8.00	Complies
	2452 MHz	-21.71	-21.01	-18.34	8.00	Complies

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

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

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



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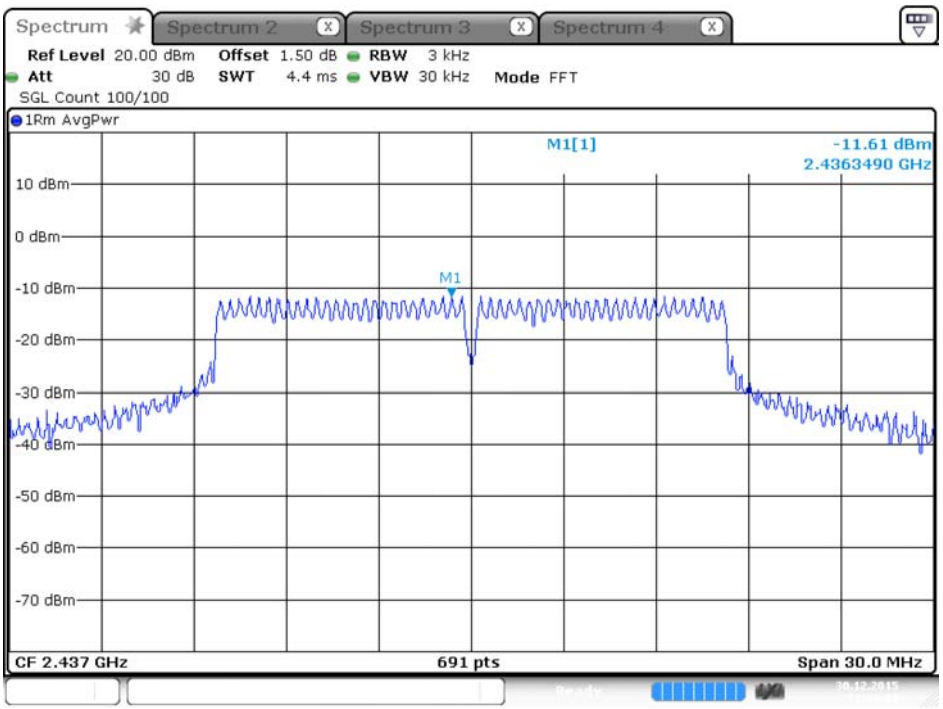
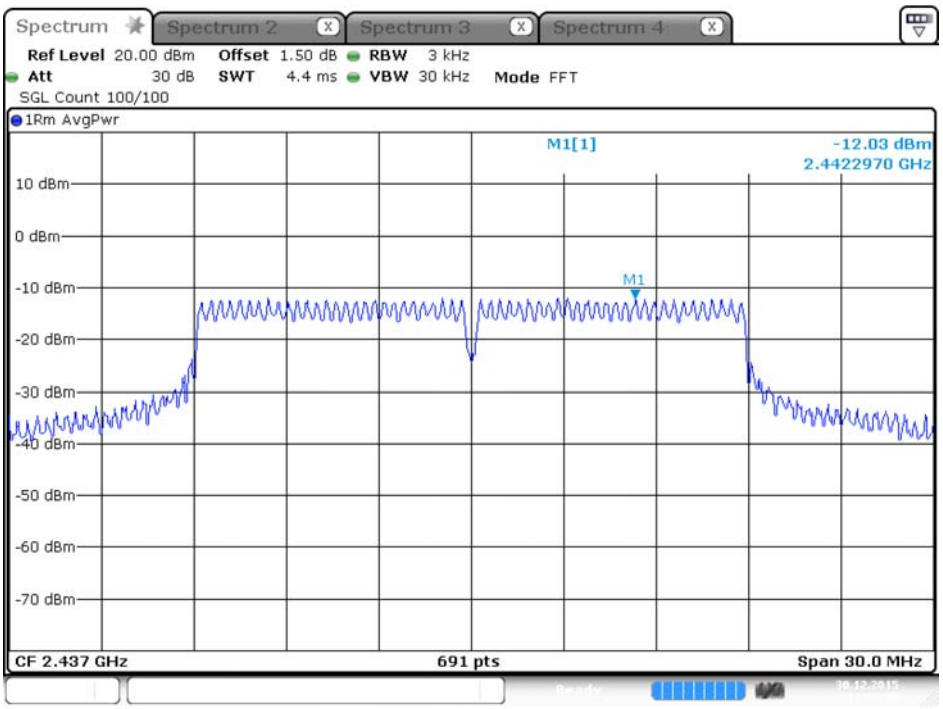
Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1



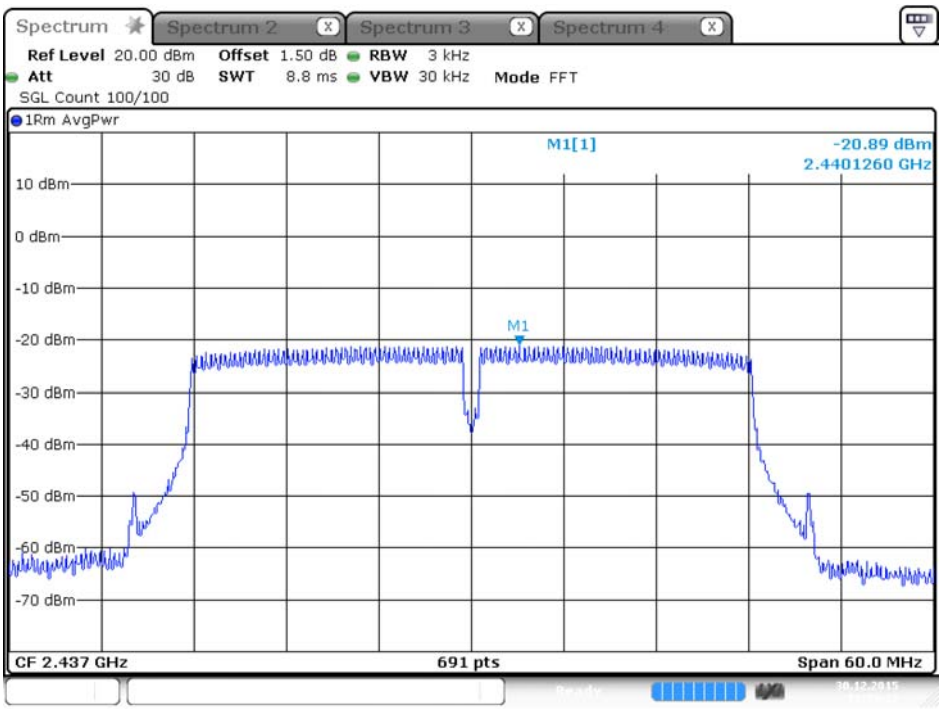
Date: 30.DEC.2015 13:44:38

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



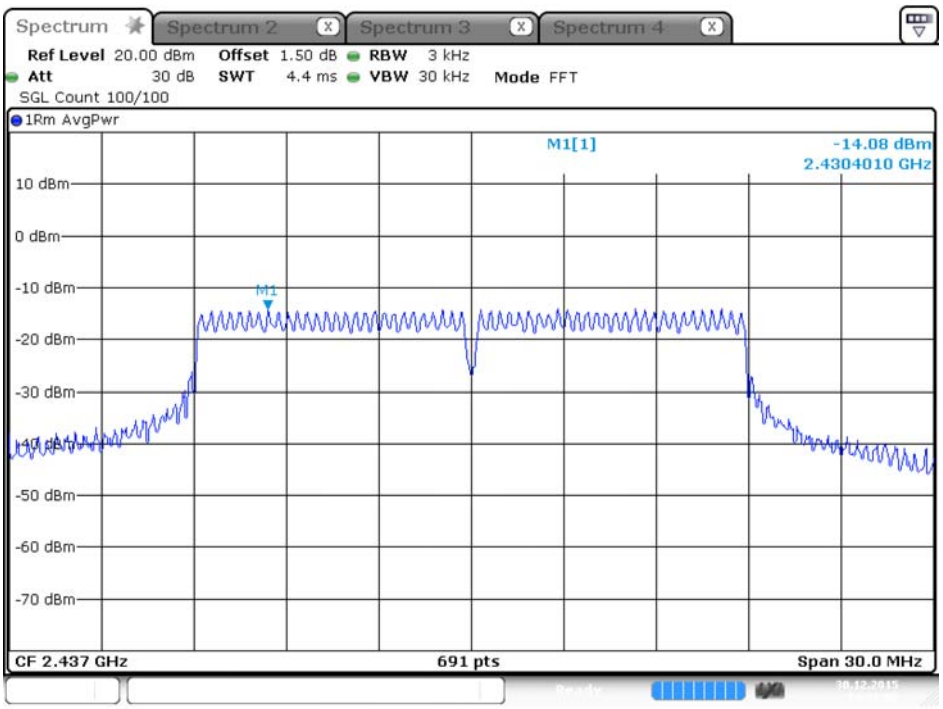
Date: 30.DEC.2015 13:50:59

Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 1



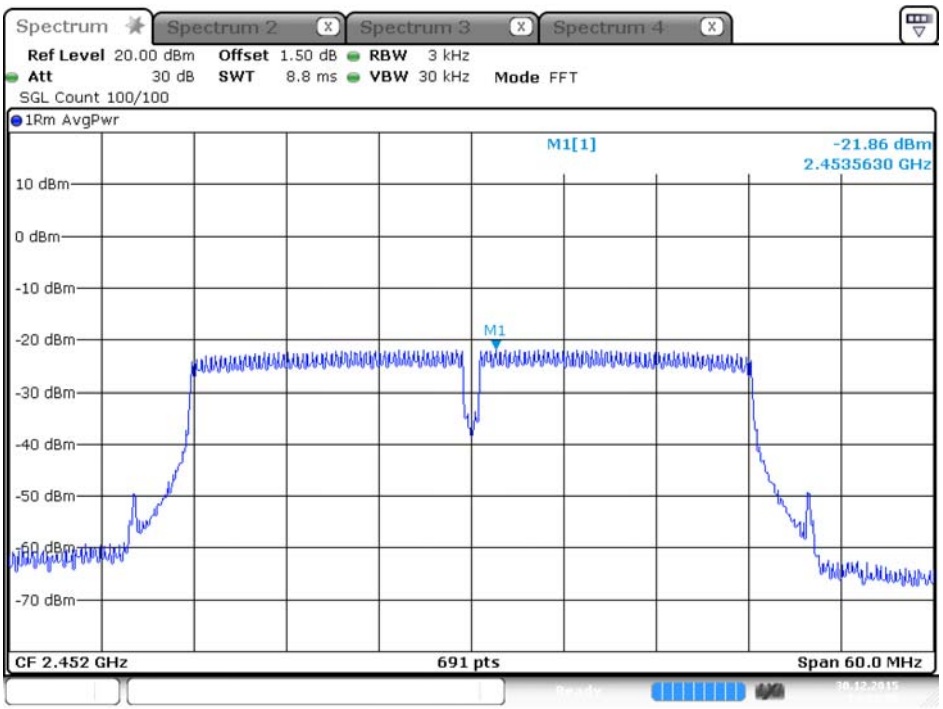
Date: 30.DEC.2015 13:54:22

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



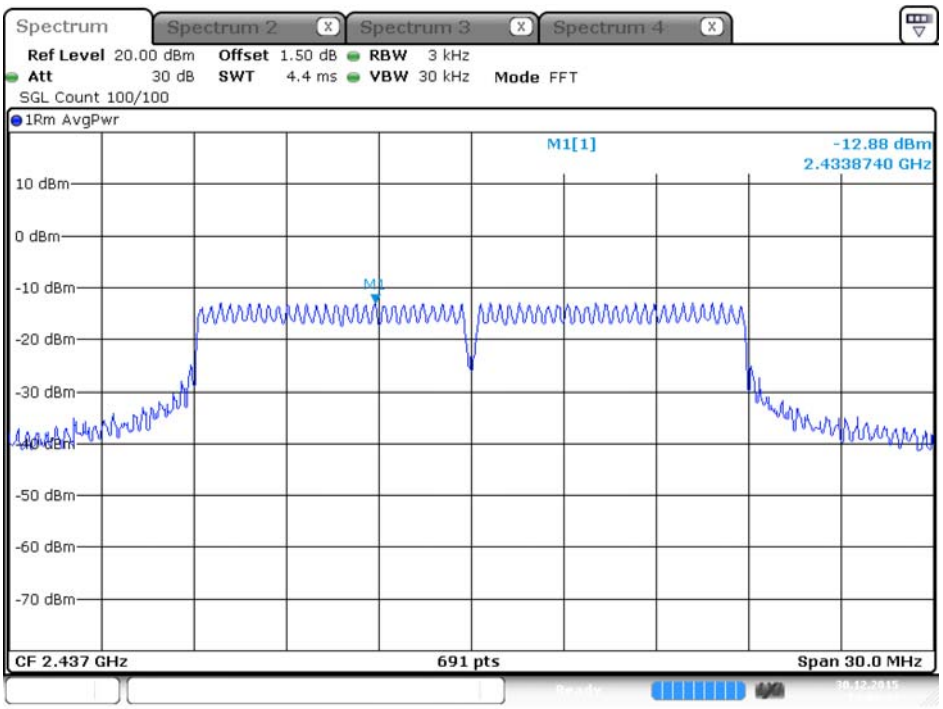
Date: 30.DEC.2015 14:01:02

Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2452 MHz / Chain 2



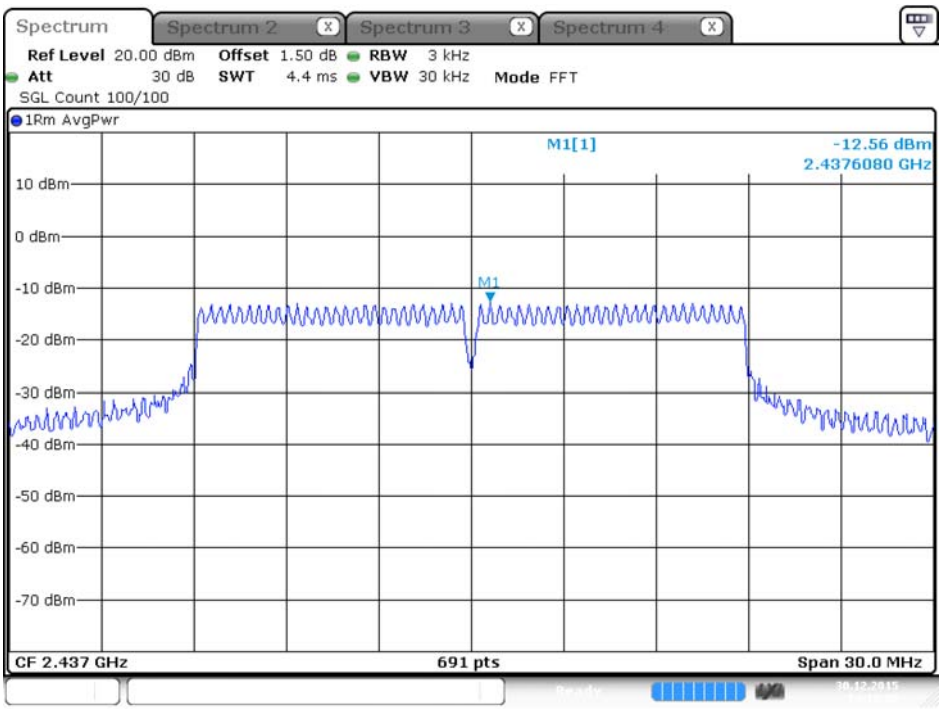
Date: 30.DEC.2015 14:03:06

Power Density Plot on Configuration IEEE 802.11n MCS8 HT20 / 2437 MHz / Chain 1



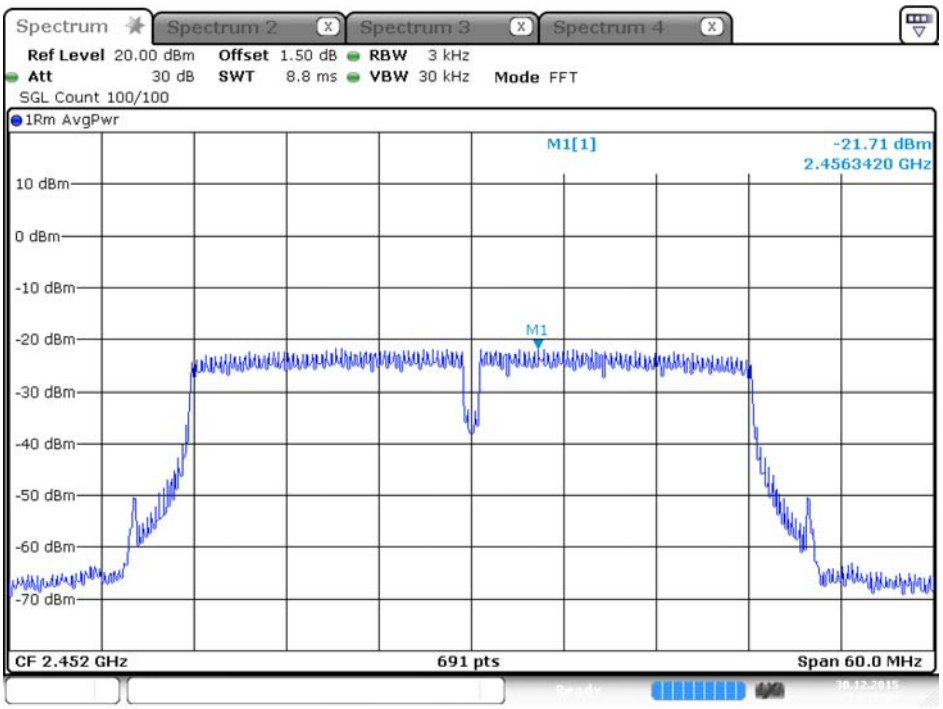
Date: 30.DEC.2015 14:09:44

Power Density Plot on Configuration IEEE 802.11n MCS8 HT20 / 2437 MHz / Chain 2



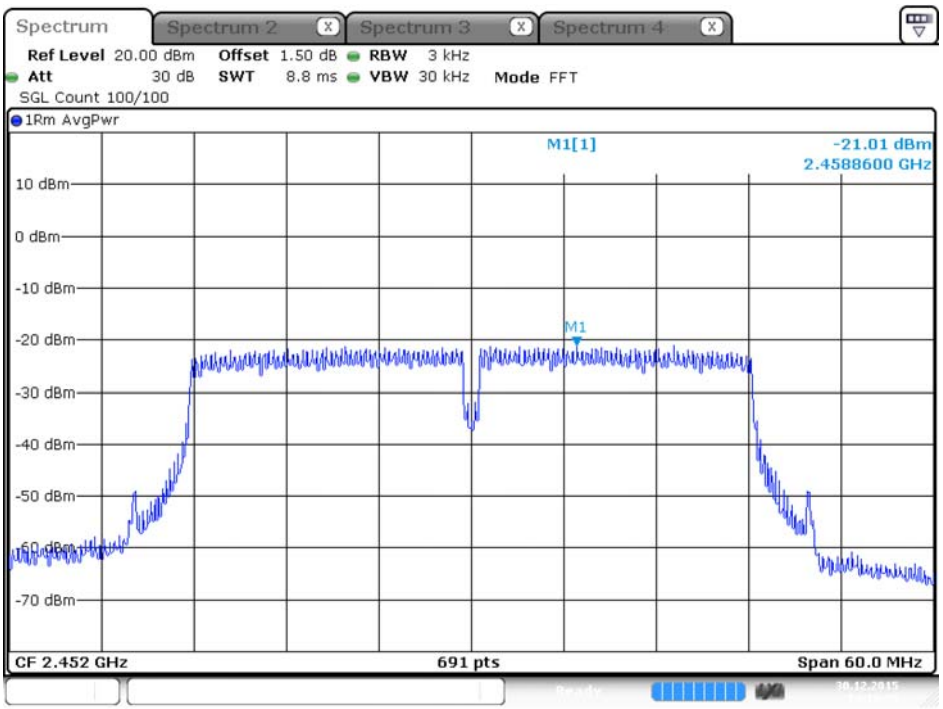
Date: 30.DEC.2015 14:10:29

Power Density Plot on Configuration IEEE 802.11n MCS8 HT40 / 2452 MHz / Chain 1



Date: 30.DEC.2015 14:18:50

Power Density Plot on Configuration IEEE 802.11n MCS8 HT40 / 2452 MHz / Chain 2



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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

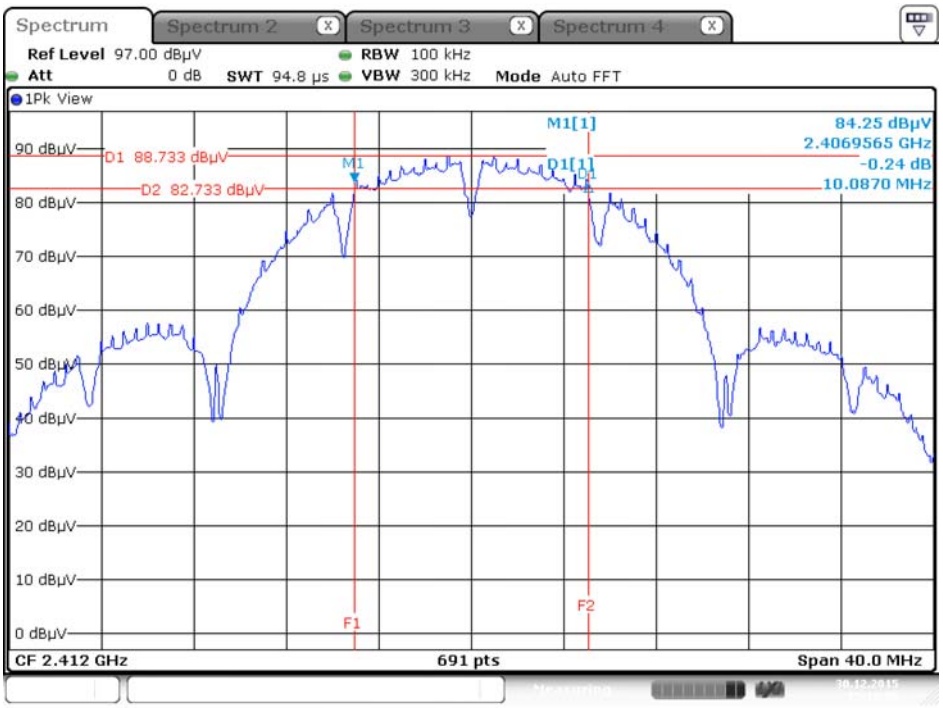
Temperature	21°C	Humidity	46%
Test Engineer	Lucas Huang		

Mode	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11b / Chain 1	2412 MHz	10.09	15.63	500	Complies
	2437 MHz	10.09	15.37	500	Complies
	2462 MHz	10.09	15.28	500	Complies
802.11g / Chain 1	2412 MHz	16.58	17.02	500	Complies
	2437 MHz	16.58	22.05	500	Complies
	2462 MHz	16.64	17.02	500	Complies
802.11n MCS0 HT20 / Chain 1	2412 MHz	17.80	18.06	500	Complies
	2437 MHz	17.86	24.66	500	Complies
	2462 MHz	17.86	18.06	500	Complies
802.11n MCS0 HT40 / Chain 1	2422 MHz	36.41	36.76	500	Complies
	2437 MHz	36.41	36.90	500	Complies
	2452 MHz	36.41	36.90	500	Complies
802.11n MCS0 HT20 / Chain 2	2412 MHz	17.86	18.06	500	Complies
	2437 MHz	17.86	18.06	500	Complies
	2462 MHz	17.86	18.15	500	Complies
802.11n MCS0 HT40 / Chain 2	2422 MHz	36.52	36.76	500	Complies
	2437 MHz	36.41	36.76	500	Complies
	2452 MHz	36.41	36.90	500	Complies
802.11n MCS8 HT20 / Chain 1 + Chain 2	2412 MHz	17.74	17.89	500	Complies
	2437 MHz	17.80	19.10	500	Complies
	2462 MHz	17.74	17.89	500	Complies
802.11n MCS8 HT40 / Chain 1 + Chain 2	2422 MHz	36.52	36.76	500	Complies
	2437 MHz	36.52	36.61	500	Complies
	2452 MHz	36.52	36.76	500	Complies

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

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

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

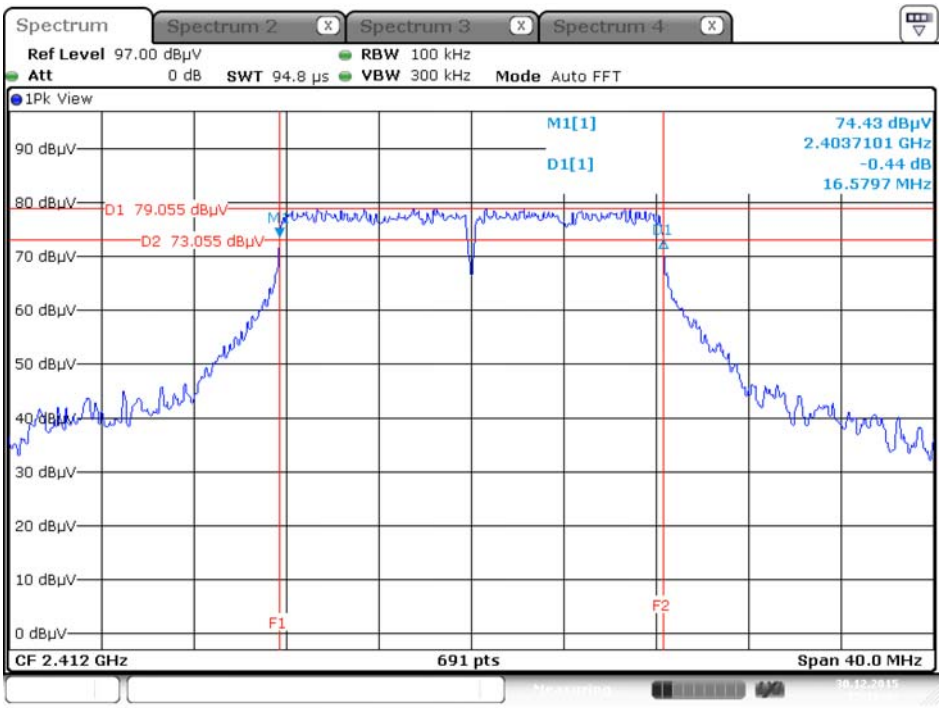


Date: 30.DEC.2015 15:13:55

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

Date: 30.DEC.2015 14:26:23

6 dB Bandwidth Plot on Configuration IEEE 802.11g / 2412 MHz / Chain 1

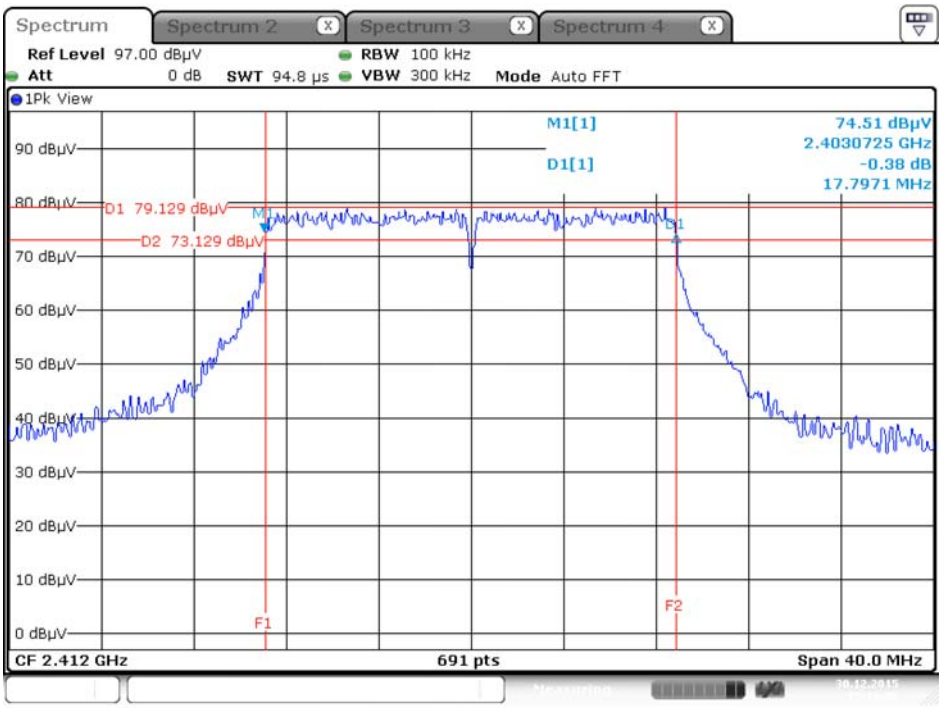


Date: 30.DEC.2015 15:16:42

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

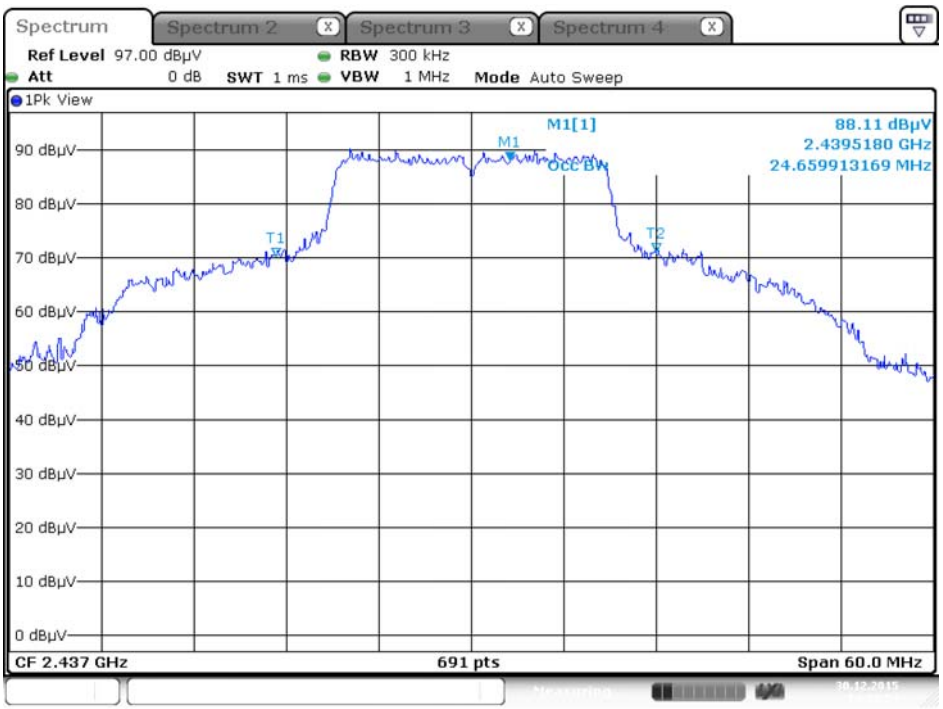
Date: 30.DEC.2015 14:31:35

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2412 MHz / Chain 1



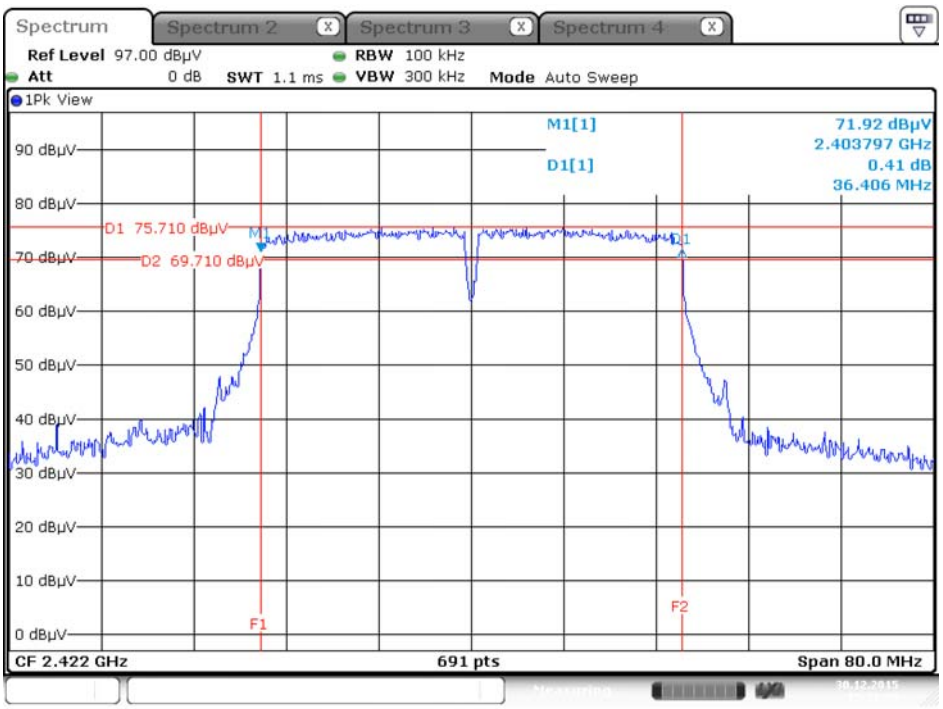
Date: 30.DEC.2015 15:19:26

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



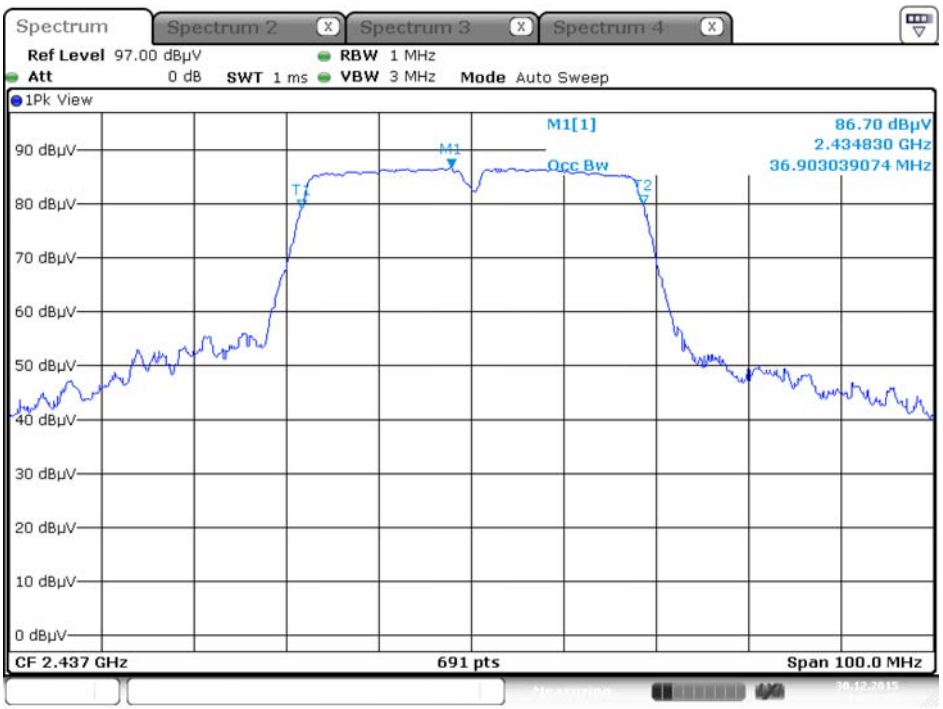
Date: 30.DEC.2015 14:33:54

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2422 MHz / Chain 1



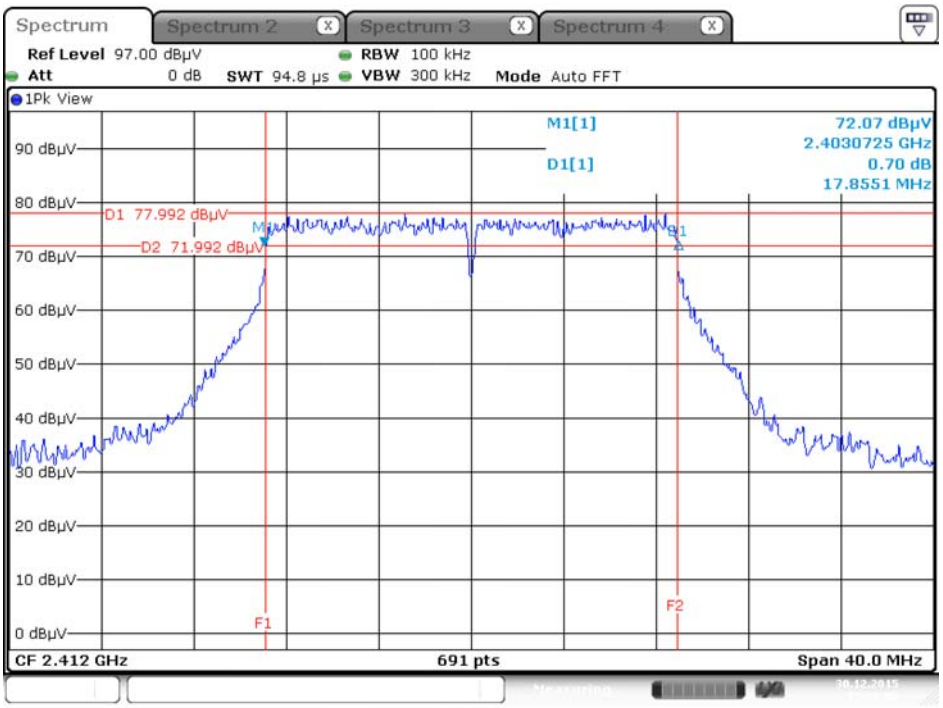
Date: 30.DEC.2015 15:21:29

99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 1



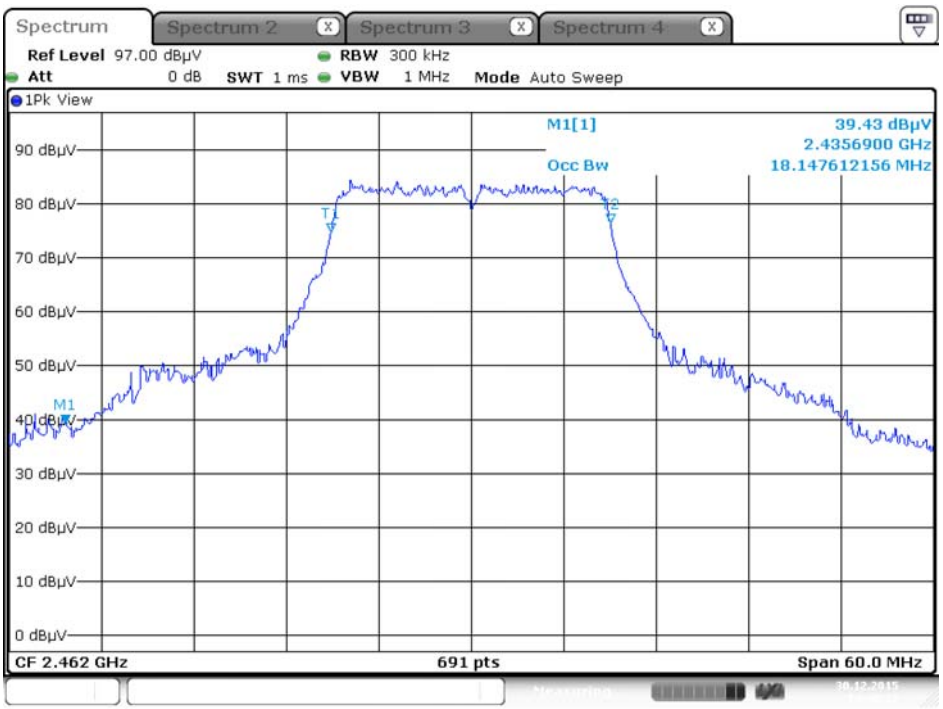
Date: 30.DEC.2015 14:38:25

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2412 MHz / Chain 2



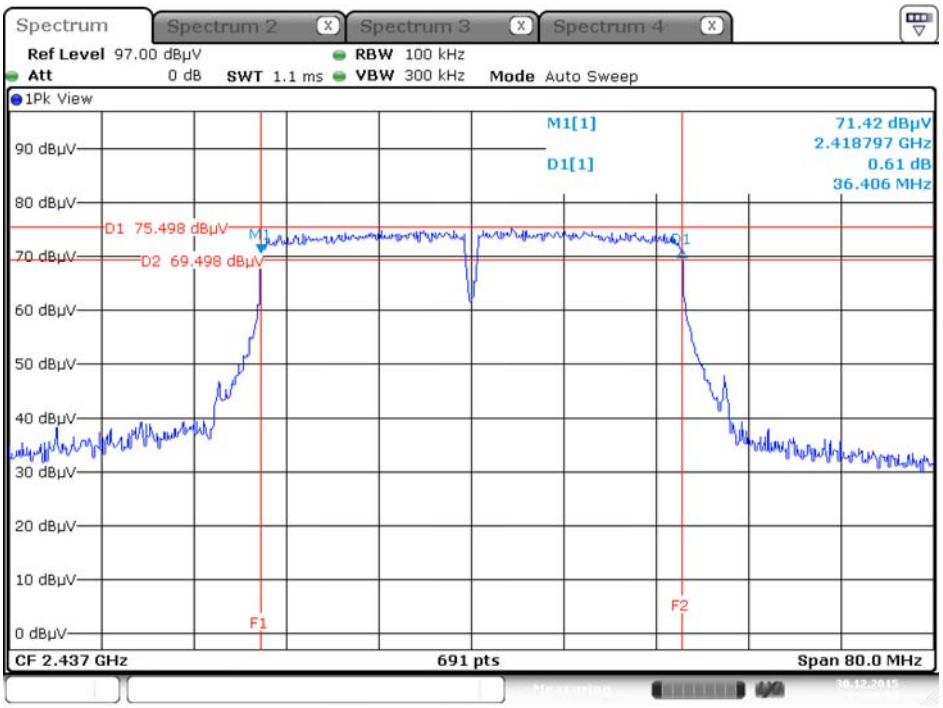
Date: 30.DEC.2015 15:28:02

99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2462 MHz / Chain 2



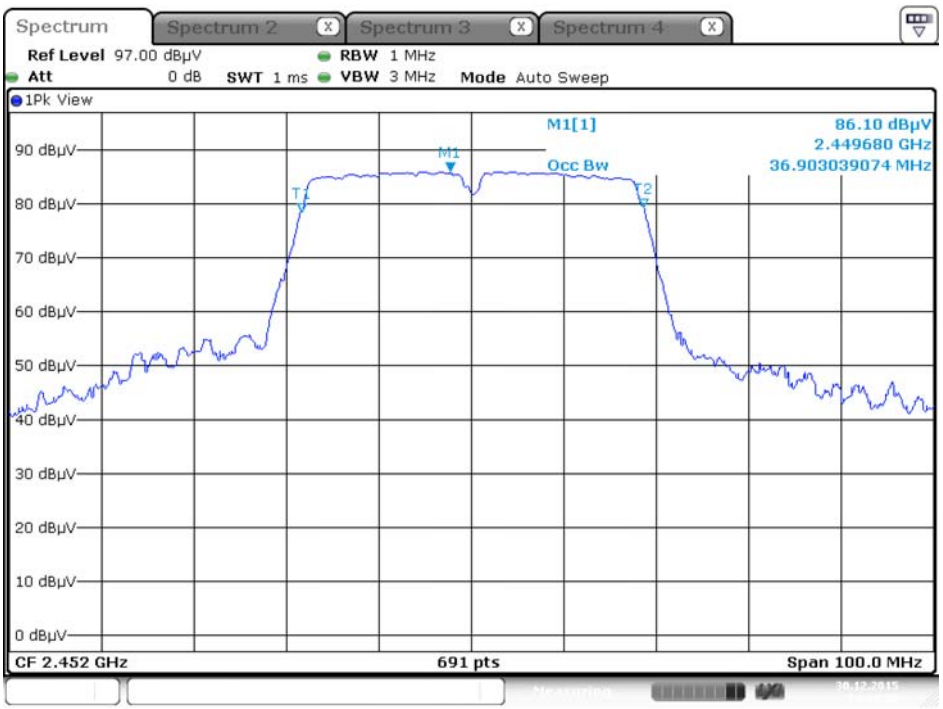
Date: 30.DEC.2015 14:45:32

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2437 MHz / Chain 2



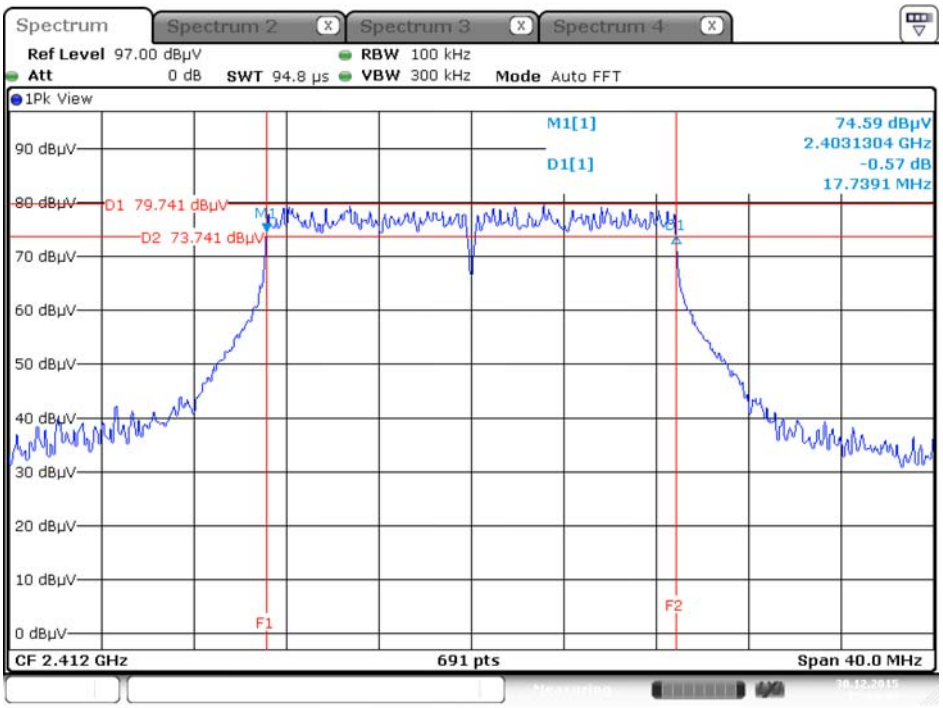
Date: 30.DEC.2015 15:30:05

99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2452 MHz / Chain 2



Date: 30.DEC.2015 14:43:30

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2412 MHz / Chain 1 + Chain 2

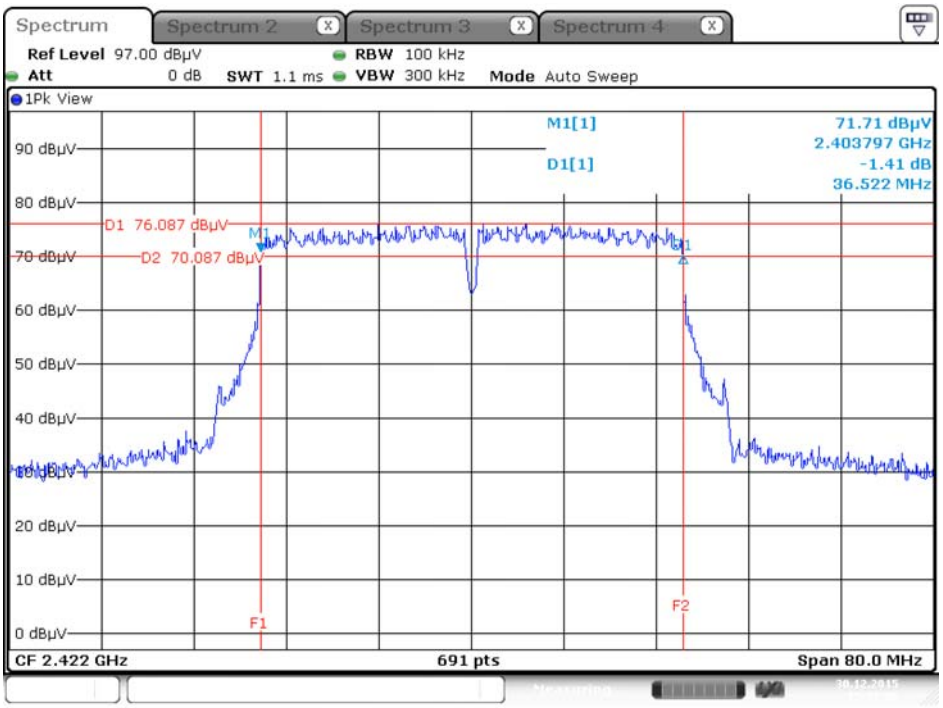


Date: 30.DEC.2015 15:34:50

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

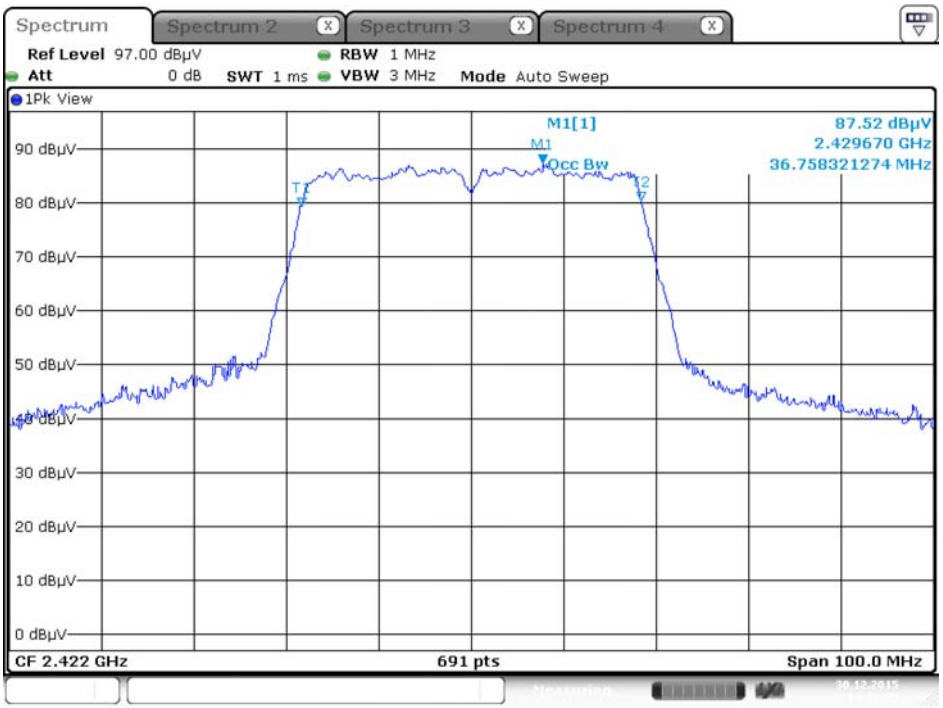
Date: 30.DEC.2015 14:51:27

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2422 MHz / Chain 1 + Chain 2



Date: 30.DEC.2015 15:37:06

99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / 2422 MHz / Chain 1 + Chain 2



Date: 30.DEC.2015 14:53:45

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

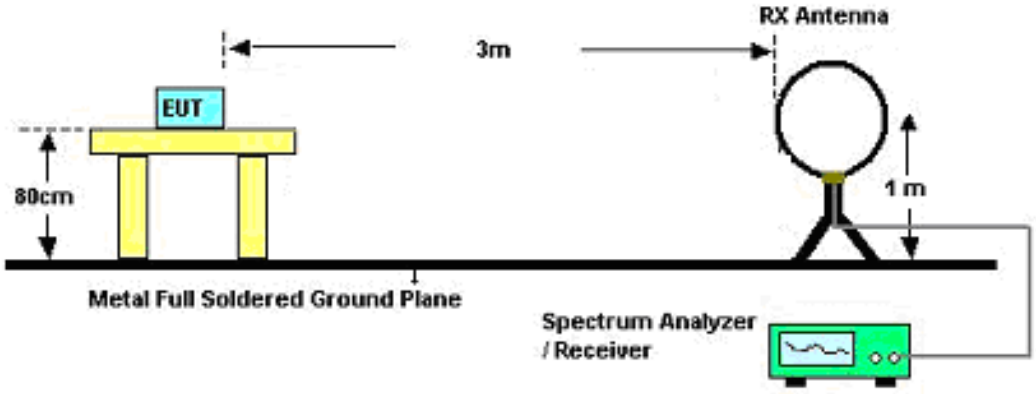
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RBW 120kHz for QP

4.5.3. Test Procedures

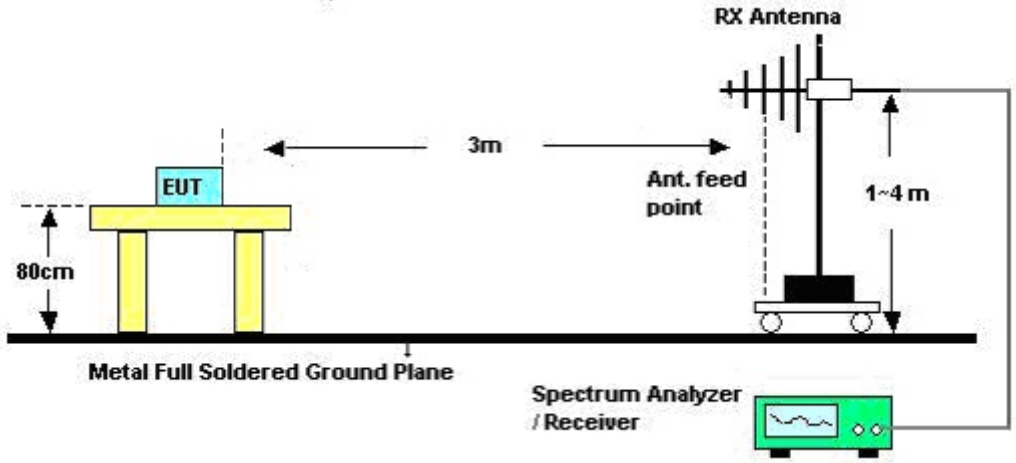
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 1m & 3m far away from the turntable.
2. Power on the EUT and all the supporting 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

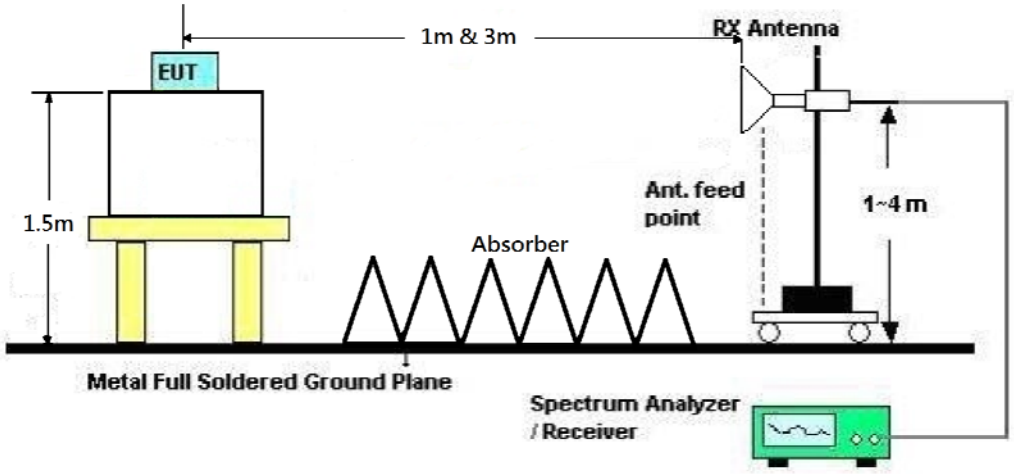
For Radiated Emissions: 9kHz ~30MHz



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	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	CTX
Test Date	Jan. 02, 2016	Test Mode	Mode 2

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.

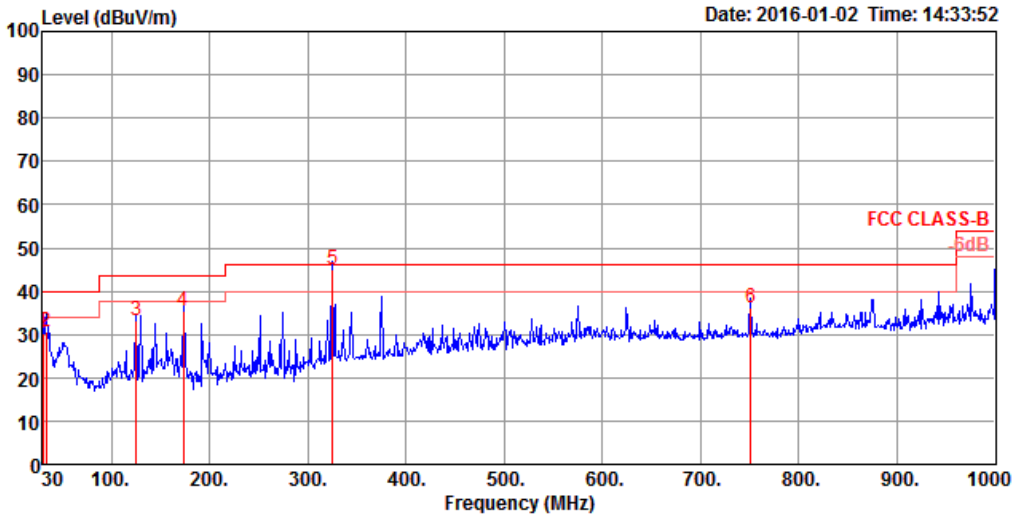
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

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

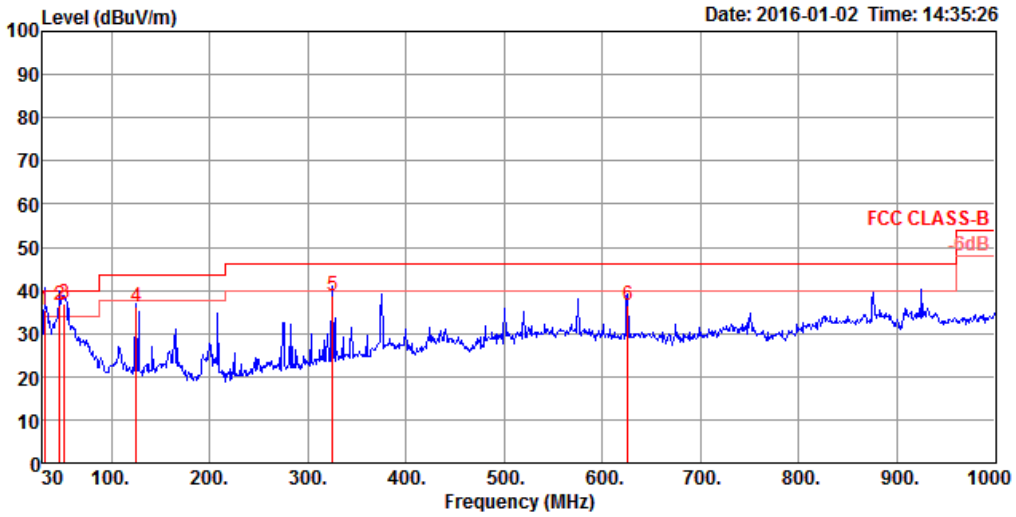
Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	CTX
Test Date	Jan. 02, 2016	Test Mode	Mode 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	30.00	30.14	40.00	-9.86	36.45	0.49	25.60	32.40	100	162	QP	HORIZONTAL
2	33.88	30.66	40.00	-9.34	38.78	0.51	23.77	32.40	150	121	QP	HORIZONTAL
3	125.06	33.37	43.50	-10.13	45.83	0.97	18.94	32.37	300	103	QP	HORIZONTAL
4	173.56	35.32	43.50	-8.18	50.11	1.14	16.41	32.34	150	125	QP	HORIZONTAL
5	324.88	45.16	46.00	-0.84	55.20	1.55	20.70	32.29	100	132	QP	HORIZONTAL
6	750.71	35.99	46.00	-10.01	39.52	2.37	26.40	32.30	100	51	QP	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	31.94	35.39	40.00	-4.61	42.63	0.50	24.66	32.40	100	123	QP	VERTICAL
2	47.46	36.68	40.00	-3.32	52.48	0.61	16.00	32.41	100	171	QP	VERTICAL
3	52.31	36.95	40.00	-3.05	54.13	0.63	14.60	32.41	100	145	QP	VERTICAL
4	125.06	36.07	43.50	-7.43	48.53	0.97	18.94	32.37	100	135	QP	VERTICAL
5	324.88	38.71	46.00	-7.29	48.75	1.55	20.70	32.29	150	124	QP	VERTICAL
6	625.58	36.69	46.00	-9.31	41.16	2.16	25.77	32.40	100	126	QP	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)

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11b CH 1 / Chain 1
Test Date	Dec. 24, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4823.98	52.66	54.00	-1.34	47.07	7.50	33.03	31.12	HORIZONTAL	162	100	Average
2	4823.99	54.87	74.00	-19.13	49.28	7.50	33.03	31.12	HORIZONTAL	162	100	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4823.92	53.78	54.00	-0.22	48.19	7.50	33.03	31.12	VERTICAL	108	100	Average
2	4824.01	56.66	74.00	-17.34	51.07	7.50	33.03	31.12	VERTICAL	104	101	Peak

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11b CH 6 / Chain 1
Test Date	Dec. 24, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4873.98	51.41	54.00	-2.59	45.62	7.59	33.01	31.21	HORIZONTAL	162	100	Average
2	4874.01	54.54	74.00	-19.46	48.75	7.59	33.01	31.21	HORIZONTAL	162	100	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4873.92	55.27	74.00	-18.73	49.48	7.59	33.01	31.21	VERTICAL	107	101	Peak
2	4873.96	53.33	54.00	-0.67	47.54	7.59	33.01	31.21	VERTICAL	107	101	Average

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11b CH 11 / Chain 1
Test Date	Dec. 24, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4923.95	55.62	74.00	-18.38	49.65	7.67	32.99	31.29	HORIZONTAL	143	100	Peak
2	4923.97	52.11	54.00	-1.89	46.14	7.67	32.99	31.29	HORIZONTAL	143	100	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4923.96	52.00	54.00	-2.00	46.03	7.67	32.99	31.29	VERTICAL	107	100	Average
2	4923.97	55.42	74.00	-18.58	49.45	7.67	32.99	31.29	VERTICAL	107	100	Peak

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11g CH 1 / Chain 1
Test Date	Dec. 24, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4824.32	35.18	54.00	-18.82	29.59	7.50	33.03	31.12	HORIZONTAL	168	100	Average
2	4824.42	49.34	74.00	-24.66	43.75	7.50	33.03	31.12	HORIZONTAL	168	100	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4820.31	49.45	74.00	-24.55	43.86	7.50	33.03	31.12	VERTICAL	104	100	Peak
2	4824.06	36.53	54.00	-17.47	30.94	7.50	33.03	31.12	VERTICAL	104	100	Average

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11g CH 6 / Chain 1
Test Date	Dec. 24, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4870.25	53.92	74.00	-20.08	48.13	7.59	33.01	31.21	HORIZONTAL	169	100	Peak
2	4874.19	40.58	54.00	-13.42	34.79	7.59	33.01	31.21	HORIZONTAL	169	100	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4874.03	41.49	54.00	-12.51	35.70	7.59	33.01	31.21	VERTICAL	104	100	Average
2	4874.58	54.59	74.00	-19.41	48.80	7.59	33.01	31.21	VERTICAL	104	100	Peak

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11g CH 11 / Chain 1
Test Date	Dec. 24, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4924.00	36.80	54.00	-17.20	30.83	7.67	32.99	31.29	HORIZONTAL	160	100	Average
2	4924.42	49.79	74.00	-24.21	43.82	7.67	32.99	31.29	HORIZONTAL	160	100	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	4923.46	47.91	74.00	-26.09	41.98	7.65	32.99	31.27	VERTICAL	131	100	Peak
2	4923.83	36.72	54.00	-17.28	30.75	7.67	32.99	31.29	VERTICAL	131	100	Average

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT20 CH 1 / Chain 1
Test Date	Dec. 28, 2015		

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	4824.51	50.15	74.00	-23.85	44.65	7.10	33.41	35.01	Peak	126	140	HORIZONTAL
2	4827.37	36.71	54.00	-17.29	31.17	7.11	33.44	35.01	Average	126	140	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	4822.05	50.50	74.00	-23.50	45.00	7.10	33.41	35.01	Peak	150	0	VERTICAL
2	4822.96	38.06	54.00	-15.94	32.56	7.10	33.41	35.01	Average	150	0	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT20 CH 6 / Chain 1
Test Date	Dec. 28, 2015		

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	4872.96	59.65	74.00	-14.35	54.01	7.12	33.53	35.01	Peak	262	86	HORIZONTAL
2	4873.68	45.76	54.00	-8.24	40.12	7.12	33.53	35.01	Average	262	86	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	4873.12	58.23	74.00	-15.77	52.59	7.12	33.53	35.01	Peak	102	113	VERTICAL
2	4873.52	43.59	54.00	-10.41	37.95	7.12	33.53	35.01	Average	102	113	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT20 CH 11 / Chain 1
Test Date	Dec. 28, 2015		

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	4922.24	52.69	74.00	-21.31	46.94	7.14	33.62	35.01	Peak	298	82	HORIZONTAL
2	4924.32	39.78	54.00	-14.22	34.00	7.14	33.65	35.01	Average	298	82	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	4919.99	39.00	54.00	-15.00	33.25	7.14	33.62	35.01	Average	215	94	VERTICAL
2	4921.76	49.42	74.00	-24.58	43.67	7.14	33.62	35.01	Peak	215	94	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT40 CH 3 / Chain 1
Test Date	Dec. 28, 2015		

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	4839.98	48.19	74.00	-25.81	42.62	7.11	33.47	35.01	Peak	177	52	HORIZONTAL
2	4843.95	36.52	54.00	-17.48	30.95	7.11	33.47	35.01	Average	177	52	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	4834.45	47.81	74.00	-26.19	42.27	7.11	33.44	35.01	Peak	150	348	VERTICAL
2	4837.53	37.50	54.00	-16.50	31.96	7.11	33.44	35.01	Average	150	348	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT40 CH 6 / Chain 1
Test Date	Dec. 28, 2015		

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	4874.69	47.43	74.00	-26.57	41.79	7.12	33.53	35.01	Peak	168	139	HORIZONTAL
2	4875.65	35.21	54.00	-18.79	29.57	7.12	33.53	35.01	Average	168	139	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	4873.65	36.49	54.00	-17.51	30.85	7.12	33.53	35.01	Average	145	198	VERTICAL
2	4876.69	49.42	74.00	-24.58	43.78	7.12	33.53	35.01	Peak	145	198	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT40 CH 9 / Chain 1
Test Date	Dec. 28, 2015		

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	4901.12	48.36	74.00	-25.64	42.65	7.13	33.59	35.01	Peak	160	136	HORIZONTAL
2	4903.90	36.56	54.00	-17.44	30.85	7.13	33.59	35.01	Average	160	136	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	4899.83	47.26	74.00	-26.74	41.55	7.13	33.59	35.01	Peak	173	309	VERTICAL
2	4909.32	36.17	54.00	-17.83	30.46	7.13	33.59	35.01	Average	173	309	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT20 CH 1 / Chain 2
Test Date	Dec. 28, 2015		

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	4828.73	34.09	54.00	-19.91	28.55	7.11	33.44	35.01	Average	150	128	HORIZONTAL
2	4839.87	45.55	74.00	-28.45	39.98	7.11	33.47	35.01	Peak	150	128	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	4799.96	36.74	54.00	-17.26	31.27	7.10	33.38	35.01	Average	150	91	VERTICAL
2	4839.95	48.01	74.00	-25.99	42.44	7.11	33.47	35.01	Peak	150	91	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT20 CH 6 / Chain 2
Test Date	Dec. 28, 2015		

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	4855.57	47.25	74.00	-26.75	41.64	7.12	33.50	35.01	Peak	150	182	HORIZONTAL
2	4866.79	35.13	54.00	-18.87	29.52	7.12	33.50	35.01	Average	150	182	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	4850.28	37.29	54.00	-16.71	31.72	7.11	33.47	35.01	Average	150	26	VERTICAL
2	4869.91	48.91	74.00	-25.09	43.27	7.12	33.53	35.01	Peak	150	26	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT20 CH 11 / Chain 2
Test Date	Dec. 28, 2015		

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	4920.64	47.30	74.00	-26.70	41.55	7.14	33.62	35.01	Peak	150	109	HORIZONTAL
2	4946.12	35.93	54.00	-18.07	30.12	7.14	33.68	35.01	Average	150	109	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	4901.40	36.73	54.00	-17.27	31.02	7.13	33.59	35.01	Average	150	57	VERTICAL
2	4939.31	46.05	74.00	-27.95	40.24	7.14	33.68	35.01	Peak	150	57	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT40 CH 3 / Chain 2
Test Date	Dec. 28, 2015		

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	4844.51	36.01	54.00	-17.99	30.44	7.11	33.47	35.01	Average	150	110	HORIZONTAL
2	4849.19	45.75	74.00	-28.25	40.18	7.11	33.47	35.01	Peak	150	110	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	4838.81	45.64	74.00	-28.36	40.10	7.11	33.44	35.01	Peak	150	92	VERTICAL
2	4839.83	37.24	54.00	-16.76	31.67	7.11	33.47	35.01	Average	150	92	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT40 CH 6 / Chain 2
Test Date	Dec. 28, 2015		

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	4871.72	35.53	54.00	-18.47	29.89	7.12	33.53	35.01	Average	150	184	HORIZONTAL
2	4881.79	45.97	74.00	-28.03	40.29	7.13	33.56	35.01	Peak	150	184	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	4880.03	37.75	54.00	-16.25	32.11	7.12	33.53	35.01	Average	150	36	VERTICAL
2	4880.47	47.59	74.00	-26.41	41.95	7.12	33.53	35.01	Peak	150	36	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT40 CH 9 / Chain 2
Test Date	Dec. 28, 2015		

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	4902.88	48.62	74.00	-25.38	42.91	7.13	33.59	35.01	Peak	150	164	HORIZONTAL
2	4906.12	36.73	54.00	-17.27	31.02	7.13	33.59	35.01	Average	150	164	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	4895.44	37.38	54.00	-16.62	31.67	7.13	33.59	35.01	Average	150	97	VERTICAL
2	4908.07	48.01	74.00	-25.99	42.30	7.13	33.59	35.01	Peak	150	97	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS8 HT20 CH 1 / Chain 1 + Chain 2
Test Date	Dec. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4823.00	48.47	74.00	-25.53	44.56	5.61	32.82	34.52	50	244	Peak	HORIZONTAL
2	4824.40	36.69	54.00	-17.31	32.78	5.61	32.82	34.52	50	244	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4822.80	47.48	74.00	-26.52	43.57	5.61	32.82	34.52	148	119	Peak	VERTICAL
2	4825.00	35.60	54.00	-18.40	31.68	5.60	32.84	34.52	148	119	Average	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS8 HT20 CH 6 / Chain 1 + Chain 2
Test Date	Dec. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4874.50	56.61	74.00	-17.39	52.62	5.59	32.91	34.51	154	100	Peak	HORIZONTAL
2	4874.60	44.18	54.00	-9.82	40.19	5.59	32.91	34.51	154	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4873.40	59.03	74.00	-14.97	55.04	5.59	32.91	34.51	99	101	Peak	VERTICAL
2	4874.50	46.31	54.00	-7.69	42.32	5.59	32.91	34.51	99	101	Average	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS8 HT20 CH 11 / Chain 1 + Chain 2
Test Date	Dec. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4924.60	38.78	54.00	-15.22	34.70	5.58	32.99	34.49	154	100	Average	HORIZONTAL
2	4924.68	52.19	74.00	-21.81	48.11	5.58	32.99	34.49	154	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4924.40	51.63	74.00	-22.37	47.55	5.58	32.99	34.49	98	115	Peak	VERTICAL
2	4924.50	38.99	54.00	-15.01	34.91	5.58	32.99	34.49	98	115	Average	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS8 HT40 CH 3 / Chain 1 + Chain 2
Test Date	Dec. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4842.94	46.90	74.00	-27.10	42.96	5.60	32.86	34.52	152	107	Peak	HORIZONTAL
2	4844.72	34.09	54.00	-19.91	30.15	5.60	32.86	34.52	152	107	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4845.84	47.90	74.00	-26.10	43.95	5.60	32.86	34.51	112	108	Peak	VERTICAL
2	4846.84	34.97	54.00	-19.03	31.02	5.60	32.86	34.51	112	108	Average	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS8 HT40 CH 6 / Chain 1 + Chain 2
Test Date	Dec. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4879.80	36.04	54.00	-17.96	32.04	5.59	32.91	34.50	150	118	Average	HORIZONTAL
2	4880.08	48.79	74.00	-25.21	44.79	5.59	32.91	34.50	150	118	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4880.96	37.40	54.00	-16.60	33.40	5.59	32.91	34.50	98	100	Average	VERTICAL
2	4882.04	50.37	74.00	-23.63	46.35	5.59	32.93	34.50	98	100	Peak	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS8 HT40 CH 9 / Chain 1 + Chain 2
Test Date	Dec. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4908.40	47.40	74.00	-26.60	43.36	5.59	32.95	34.50	149	128	Peak	HORIZONTAL
2	4915.20	35.47	54.00	-18.53	31.41	5.58	32.97	34.49	149	128	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4910.72	48.70	74.00	-25.30	44.64	5.58	32.97	34.49	97	100	Peak	VERTICAL
2	4910.80	36.64	54.00	-17.36	32.58	5.58	32.97	34.49	97	100	Average	VERTICAL

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

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11b CH 1, 6, 11 / Chain 1
Test Date	Dec. 24, 2015		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2386.04	53.07	54.00	-0.93	20.79	5.23	0.00	27.05	HORIZONTAL	71	226	Average
2	2386.52	63.14	74.00	-10.86	30.86	5.23	0.00	27.05	HORIZONTAL	71	226	Peak
3	2411.20	107.34			74.97	5.26	0.00	27.11	HORIZONTAL	71	226	Average
4	2412.96	111.22			78.85	5.26	0.00	27.11	HORIZONTAL	71	226	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	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2388.40	57.48	74.00	-16.52	25.20	5.23	0.00	27.05	VERTICAL	354	256	Peak
2	2390.00	47.40	54.00	-6.60	15.12	5.23	0.00	27.05	VERTICAL	354	256	Average
3	2437.64	102.62			70.18	5.28	0.00	27.16	VERTICAL	354	256	Average
4	2437.96	106.50			74.06	5.28	0.00	27.16	VERTICAL	354	256	Peak
5	2483.50	48.24	54.00	-5.76	15.64	5.33	0.00	27.27	VERTICAL	354	256	Average
6	2484.46	59.97	74.00	-14.03	27.37	5.33	0.00	27.27	VERTICAL	354	256	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	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2461.36	107.34			74.81	5.31	0.00	27.22	HORIZONTAL	73	229	Average
2	2462.96	111.06			78.53	5.31	0.00	27.22	HORIZONTAL	73	229	Peak
3	2483.50	61.63	74.00	-12.37	29.03	5.33	0.00	27.27	HORIZONTAL	73	229	Peak
4	2487.96	51.57	54.00	-2.43	18.97	5.33	0.00	27.27	HORIZONTAL	73	229	Average

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

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11g CH 1, 6, 11 / Chain 1
Test Date	Dec. 24, 2015		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2389.40	67.82	74.00	-6.18	35.54	5.23	0.00	27.05	HORIZONTAL	70	222	Peak
2	2390.00	52.63	54.00	-1.37	20.35	5.23	0.00	27.05	HORIZONTAL	70	222	Average
3	2419.37	97.82			65.42	5.27	0.00	27.13	HORIZONTAL	70	222	Average
4	2419.53	107.15			74.75	5.27	0.00	27.13	HORIZONTAL	70	222	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	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2387.96	63.78	74.00	-10.22	31.50	5.23	0.00	27.05	HORIZONTAL	70	244	Peak
2	2390.00	50.80	54.00	-3.20	18.52	5.23	0.00	27.05	HORIZONTAL	70	244	Average
3	2440.21	113.05			80.58	5.29	0.00	27.18	HORIZONTAL	70	244	Peak
4	2443.73	103.80			71.33	5.29	0.00	27.18	HORIZONTAL	70	244	Average
5	2483.40	51.48	54.00	-2.52	18.88	5.33	0.00	27.27	HORIZONTAL	70	244	Average
6	2483.40	63.48	74.00	-10.52	30.88	5.33	0.00	27.27	HORIZONTAL	70	244	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	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2464.08	98.96			66.43	5.31	0.00	27.22	HORIZONTAL	72	215	Average
2	2464.72	108.51			75.98	5.31	0.00	27.22	HORIZONTAL	72	215	Peak
3	2483.50	53.26	54.00	-0.74	20.66	5.33	0.00	27.27	HORIZONTAL	72	215	Average
4	2485.08	69.31	74.00	-4.69	36.71	5.33	0.00	27.27	HORIZONTAL	72	215	Peak

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

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT20 CH 1, 6, 11 / Chain 1
Test Date	Dec. 24, 2015 / Dec. 28, 2015		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2389.72	72.14	74.00	-1.86	39.86	5.23	0.00	27.05	HORIZONTAL	88	224	Peak
2	2390.00	53.04	54.00	-0.96	20.76	5.23	0.00	27.05	HORIZONTAL	88	224	Average
3	2419.21	107.19			74.79	5.27	0.00	27.13	HORIZONTAL	88	224	Peak
4	2420.01	97.49			65.09	5.27	0.00	27.13	HORIZONTAL	88	224	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	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2386.36	64.48	74.00	-9.52	32.20	5.23	0.00	27.05	HORIZONTAL	60	218	Peak
2	2390.00	50.87	54.00	-3.13	18.59	5.23	0.00	27.05	HORIZONTAL	60	218	Average
3	2429.95	102.85			70.43	5.28	0.00	27.14	HORIZONTAL	60	218	Average
4	2430.27	112.71			80.29	5.28	0.00	27.14	HORIZONTAL	60	218	Peak
5	2483.50	52.08	54.00	-1.92	19.48	5.33	0.00	27.27	HORIZONTAL	60	218	Average
6	2483.80	68.78	74.00	-5.22	36.18	5.33	0.00	27.27	HORIZONTAL	60	218	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	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2459.12	108.36			75.00	5.03	28.33	0.00	Peak	217	100	HORIZONTAL
2	2460.40	98.04			64.68	5.03	28.33	0.00	Average	217	100	HORIZONTAL
3	2483.50	52.57	54.00	-1.43	19.13	5.06	28.38	0.00	Average	217	100	HORIZONTAL
4	2483.80	66.96	74.00	-7.04	33.52	5.06	28.38	0.00	Peak	217	100	HORIZONTAL

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

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT40 CH 3, 6, 9 / Chain 1
Test Date	Dec. 24, 2015		

Channel 3

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2386.42	70.82	74.00	-3.18	38.54	5.23	0.00	27.05	HORIZONTAL	60	225	Peak
2	2390.00	53.28	54.00	-0.72	21.00	5.23	0.00	27.05	HORIZONTAL	60	225	Average
3	2420.08	94.37			61.97	5.27	0.00	27.13	HORIZONTAL	60	225	Average
4	2432.26	104.39			71.95	5.28	0.00	27.16	HORIZONTAL	60	225	Peak

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2388.92	65.41	74.00	-8.59	33.13	5.23	0.00	27.05	HORIZONTAL	56	219	Peak
2	2390.00	53.02	54.00	-0.98	20.74	5.23	0.00	27.05	HORIZONTAL	56	219	Average
3	2431.23	96.44			64.02	5.28	0.00	27.14	HORIZONTAL	56	219	Average
4	2435.08	106.59			74.15	5.28	0.00	27.16	HORIZONTAL	56	219	Peak
5	2483.50	53.32	54.00	-0.68	20.72	5.33	0.00	27.27	HORIZONTAL	56	219	Average
6	2485.08	66.70	74.00	-7.30	34.10	5.33	0.00	27.27	HORIZONTAL	56	219	Peak

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

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	2444.31	104.74			72.27	5.29	0.00	27.18	HORIZONTAL	63	221	Peak
2	2446.23	94.57			62.10	5.29	0.00	27.18	HORIZONTAL	63	221	Average
3	2483.50	53.71	54.00	-0.29	21.11	5.33	0.00	27.27	HORIZONTAL	63	221	Average
4	2483.73	69.01	74.00	-4.99	36.41	5.33	0.00	27.27	HORIZONTAL	63	221	Peak

Item 1, 2 are the fundamental frequency at 2452 MHz.

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT20 CH 1, 6, 11 / Chain 2
Test Date	Dec. 28, 2015 / Dec. 29, 2015		

Channel 1

	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	2390.00	53.08	54.00	-0.92	19.91	4.96	28.21	0.00	Average	107	38	VERTICAL
2	2390.00	73.31	74.00	-0.69	40.14	4.96	28.21	0.00	Peak	107	38	VERTICAL
3	2408.96	109.45			76.22	4.98	28.25	0.00	Peak	107	38	VERTICAL
4	2415.05	99.24			65.99	4.99	28.26	0.00	Average	107	38	VERTICAL

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	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2390.00	53.47	54.00	-0.53	20.30	4.96	28.21	0.00	Average	107	331	VERTICAL
2	2390.00	67.93	74.00	-6.07	34.76	4.96	28.21	0.00	Peak	107	331	VERTICAL
3	2431.23	101.94			68.65	5.01	28.28	0.00	Average	107	331	VERTICAL
4	2436.36	111.56			78.26	5.01	28.29	0.00	Peak	107	331	VERTICAL
5	2483.50	51.98	54.00	-2.02	18.54	5.06	28.38	0.00	Average	107	331	VERTICAL
6	2485.40	67.66	74.00	-6.34	34.22	5.06	28.38	0.00	Peak	107	331	VERTICAL

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	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2456.40	99.14			67.40	3.79	27.95	0.00	46	101	Average	VERTICAL
2	2458.80	108.82			77.08	3.79	27.95	0.00	46	101	Peak	VERTICAL
3	2483.50	52.81	54.00	-1.19	21.08	3.81	27.92	0.00	46	101	Average	VERTICAL
4	2484.00	68.58	74.00	-5.42	36.85	3.81	27.92	0.00	46	101	Peak	VERTICAL

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

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS0 HT40 CH 3, 6, 9 / Chain 2
Test Date	Dec. 28, 2015 / Dec. 29, 2015		

Channel 3

	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	2388.35	67.33	74.00	-6.67	34.16	4.96	28.21	0.00	Peak	104	28	VERTICAL
2	2390.00	51.56	54.00	-2.44	18.39	4.96	28.21	0.00	Average	104	28	VERTICAL
3	2414.31	105.11			71.86	4.99	28.26	0.00	Peak	104	28	VERTICAL
4	2414.95	94.80			61.55	4.99	28.26	0.00	Average	104	28	VERTICAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	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	2388.44	64.23	74.00	-9.77	31.06	4.96	28.21	0.00	Peak	110	51	VERTICAL
2	2390.00	51.70	54.00	-2.30	18.53	4.96	28.21	0.00	Average	110	51	VERTICAL
3	2438.92	97.00			63.70	5.01	28.29	0.00	Average	110	51	VERTICAL
4	2447.58	106.85			73.50	5.03	28.32	0.00	Peak	110	51	VERTICAL
5	2483.50	52.60	54.00	-1.40	19.16	5.06	28.38	0.00	Average	110	51	VERTICAL
6	2483.50	64.71	74.00	-9.29	31.27	5.06	28.38	0.00	Peak	110	51	VERTICAL

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

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2448.40	108.07			76.34	3.78	27.95	0.00	46	110	Peak	VERTICAL
2	2449.20	96.82			65.09	3.78	27.95	0.00	46	110	Average	VERTICAL
3	2484.00	53.46	54.00	-0.54	21.73	3.81	27.92	0.00	46	110	Average	VERTICAL
4	2485.60	67.67	74.00	-6.33	35.94	3.81	27.92	0.00	46	110	Peak	VERTICAL

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS8 HT20 CH 1, 6, 11 / Chain 1 + Chain 2
Test Date	Dec. 29, 2015		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2387.60	67.65	74.00	-6.35	35.90	3.73	28.02	0.00	57	192	Peak	HORIZONTAL
2	2390.00	53.74	54.00	-0.26	21.99	3.73	28.02	0.00	57	192	Average	HORIZONTAL
3	2418.80	110.18			78.43	3.76	27.99	0.00	57	192	Peak	HORIZONTAL
4	2419.20	100.01			68.26	3.76	27.99	0.00	57	192	Average	HORIZONTAL

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	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2386.00	70.67	74.00	-3.33	38.92	3.73	28.02	0.00	19	149	Peak	VERTICAL
2	2390.00	53.95	54.00	-0.05	22.20	3.73	28.02	0.00	19	149	Average	VERTICAL
3	2429.80	104.07			72.33	3.76	27.98	0.00	19	149	Average	VERTICAL
4	2440.20	115.74			84.00	3.78	27.96	0.00	19	149	Peak	VERTICAL
5	2483.50	52.18	54.00	-1.82	20.45	3.81	27.92	0.00	19	149	Average	VERTICAL
6	2485.50	66.49	74.00	-7.51	34.76	3.81	27.92	0.00	19	149	Peak	VERTICAL

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	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2454.00	110.14			78.40	3.79	27.95	0.00	45	104	Peak	VERTICAL
2	2454.80	98.99			67.25	3.79	27.95	0.00	45	104	Average	VERTICAL
3	2483.50	52.80	54.00	-1.20	21.07	3.81	27.92	0.00	45	104	Average	VERTICAL
4	2483.90	67.81	74.00	-6.19	36.08	3.81	27.92	0.00	45	104	Peak	VERTICAL

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

Temperature	23°C	Humidity	50%
Test Engineer	Owen Hsu	Configurations	IEEE 802.11n MCS8 HT40 CH 3, 6, 9 / Chain 1 + Chain 2
Test Date	Dec. 29, 2015		

Channel 3

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2388.40	66.31	74.00	-7.69	34.56	3.73	28.02	0.00	108	194	Peak	HORIZONTAL
2	2390.00	52.78	54.00	-1.22	21.03	3.73	28.02	0.00	108	194	Average	HORIZONTAL
3	2418.80	95.39			63.64	3.76	27.99	0.00	108	194	Average	HORIZONTAL
4	2426.00	105.99			74.25	3.76	27.98	0.00	108	194	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2389.60	70.90	74.00	-3.10	39.15	3.73	28.02	0.00	12	125	Peak	VERTICAL
2	2390.00	53.69	54.00	-0.31	21.94	3.73	28.02	0.00	12	125	Average	VERTICAL
3	2429.80	110.02			78.28	3.76	27.98	0.00	12	125	Peak	VERTICAL
4	2430.20	98.46			66.72	3.76	27.98	0.00	12	125	Average	VERTICAL
5	2483.50	52.36	54.00	-1.64	20.63	3.81	27.92	0.00	12	125	Average	VERTICAL
6	2483.90	68.74	74.00	-5.26	37.01	3.81	27.92	0.00	12	125	Peak	VERTICAL

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

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2441.20	107.79			76.05	3.78	27.96	0.00	113	210	Peak	HORIZONTAL
2	2442.40	96.61			64.87	3.78	27.96	0.00	113	210	Average	HORIZONTAL
3	2483.50	66.99	74.00	-7.01	35.26	3.81	27.92	0.00	113	210	Peak	HORIZONTAL
4	2483.50	53.98	54.00	-0.02	22.25	3.81	27.92	0.00	113	210	Average	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

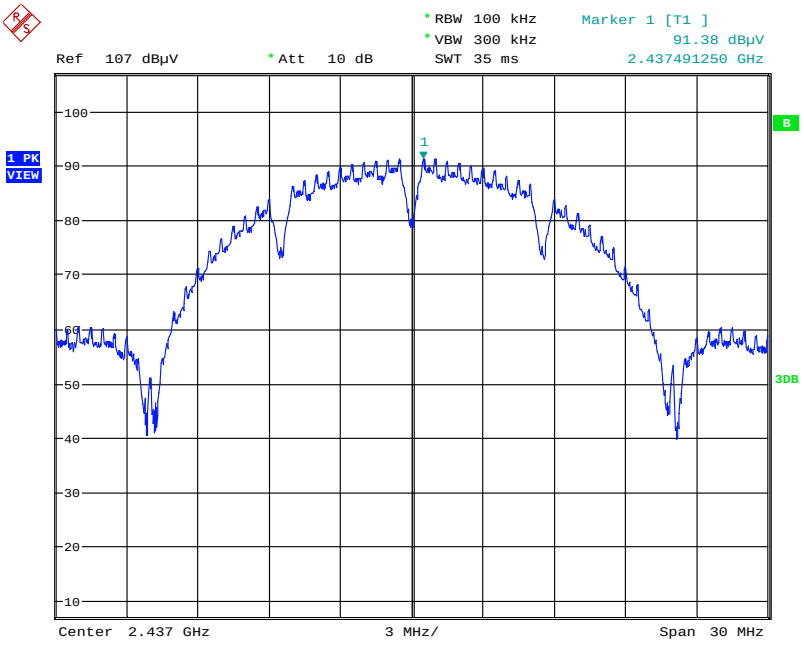
Note:

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

Plot on Configuration IEEE 802.11b / Reference Level / Chain 1



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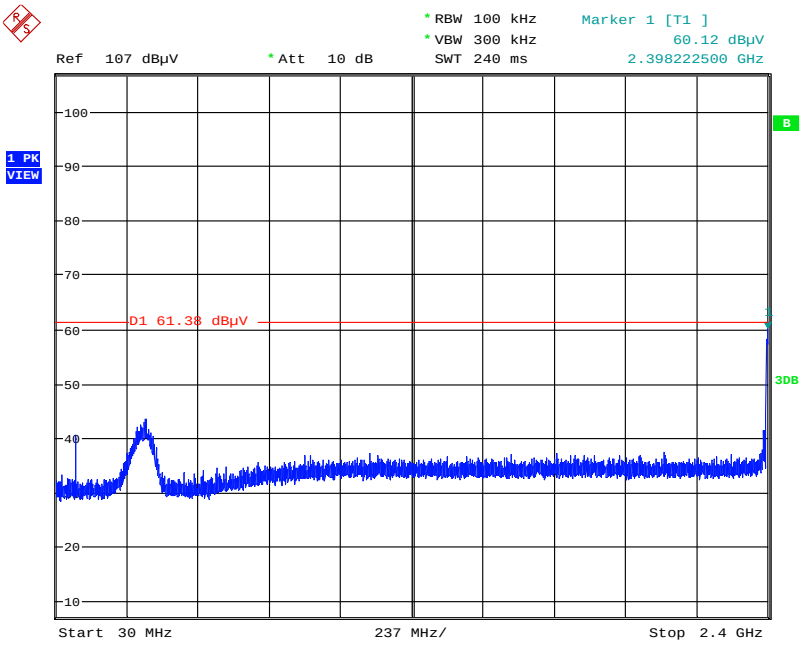
Plot on Configuration IEEE 802.11b / CH 1 / 30MHz~2400MHz (down 30dBc) / Chain 1



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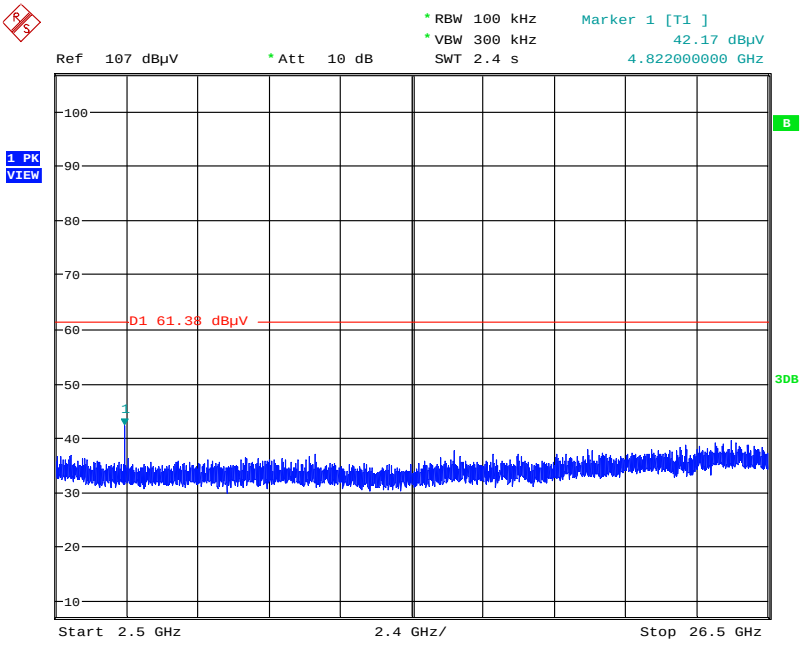
Plot on Configuration IEEE 802.11b / CH 1 / 2500MHz~26500MHz (down 30dBc) / Chain 1



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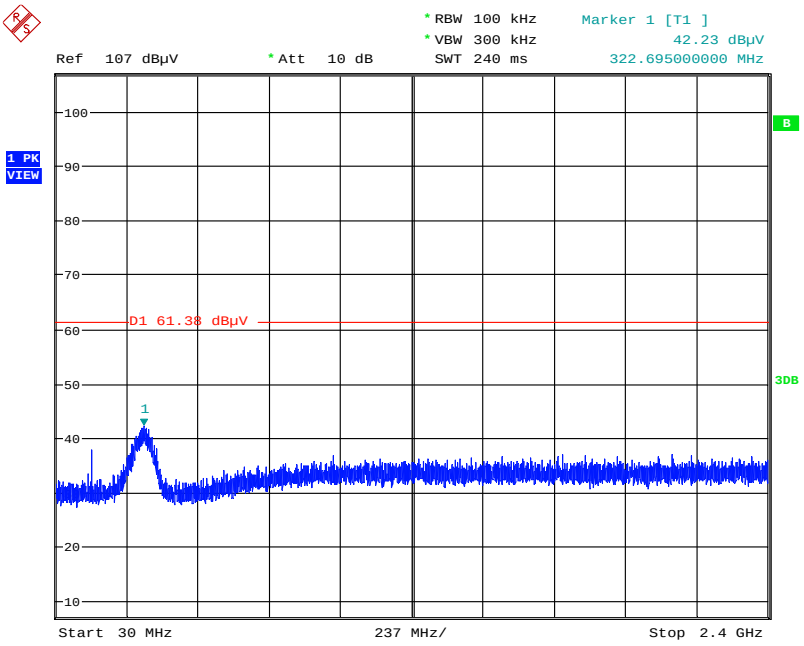
Plot on Configuration IEEE 802.11b / CH 11 / 30MHz~2400MHz (down 30dBc) / Chain 1



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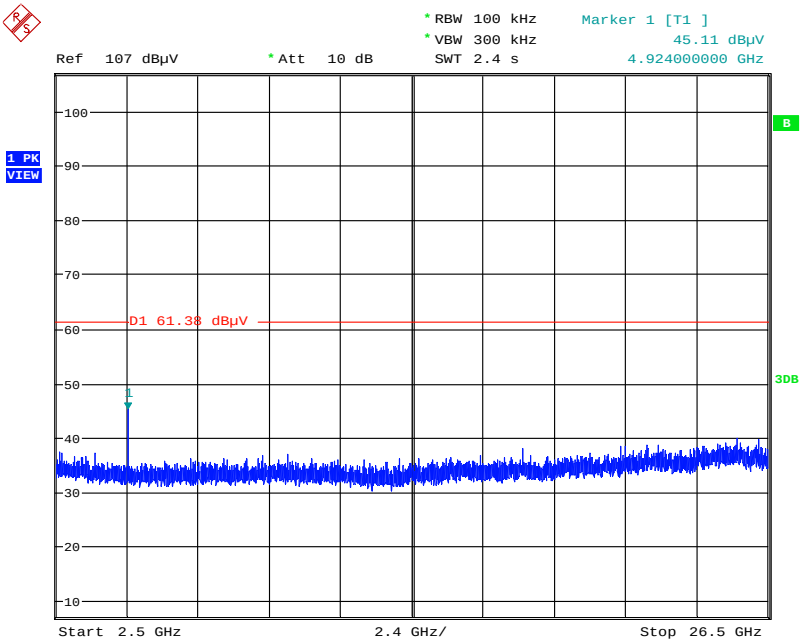
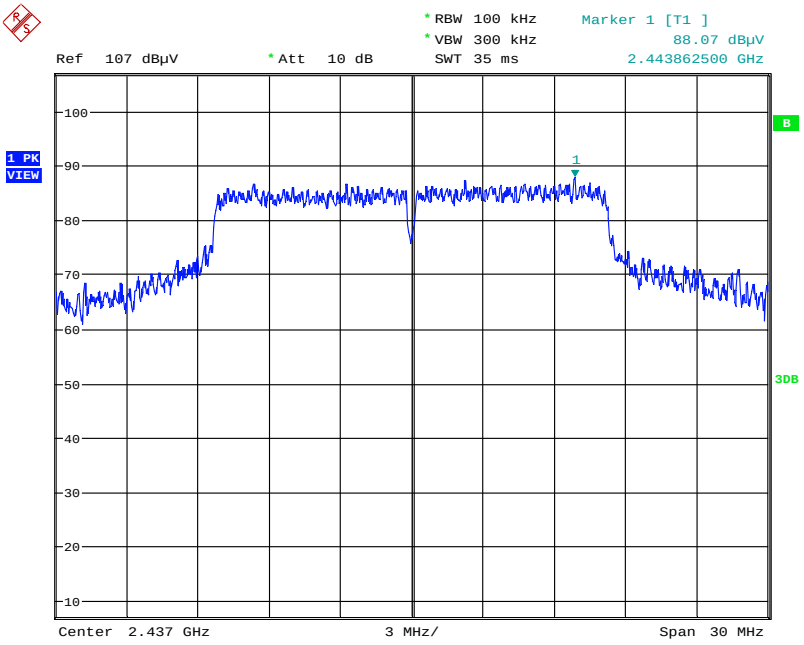
Plot on Configuration IEEE 802.11b / CH 11 / 2500MHz~26500MHz (down 30dBc) / Chain 1



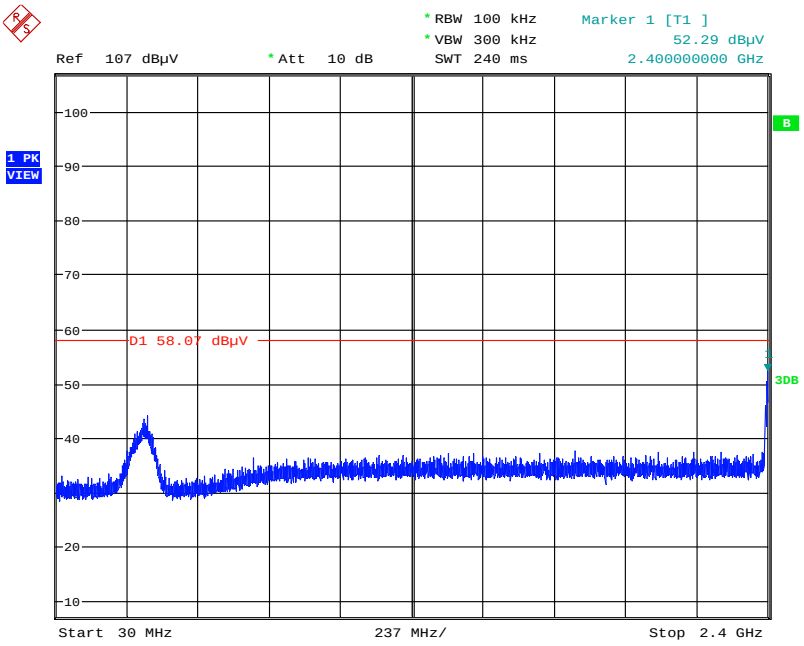
Date: 28.DEC.2015 11:52:30

Plot on Configuration IEEE 802.11g / Reference Level / Chain 1



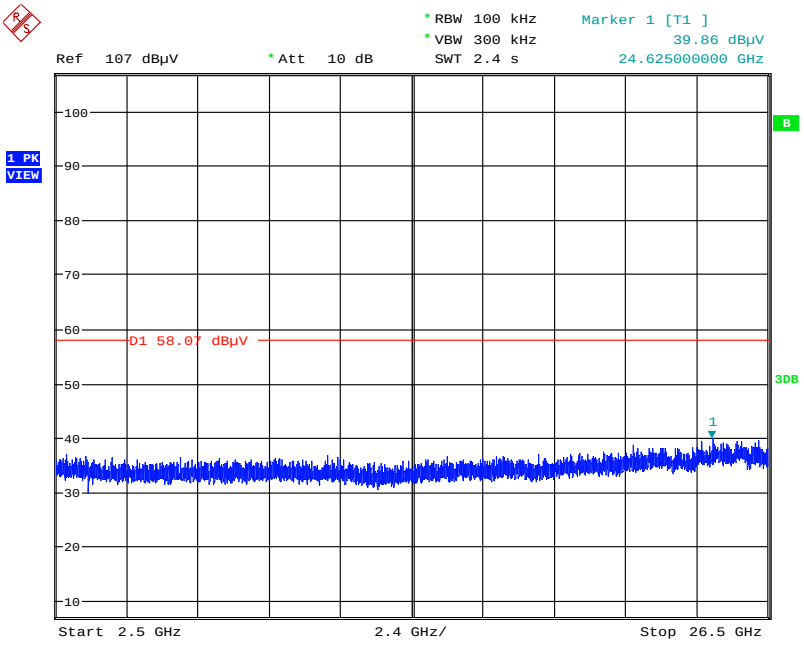
Date: 28.DEC.2015 14:02:45

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



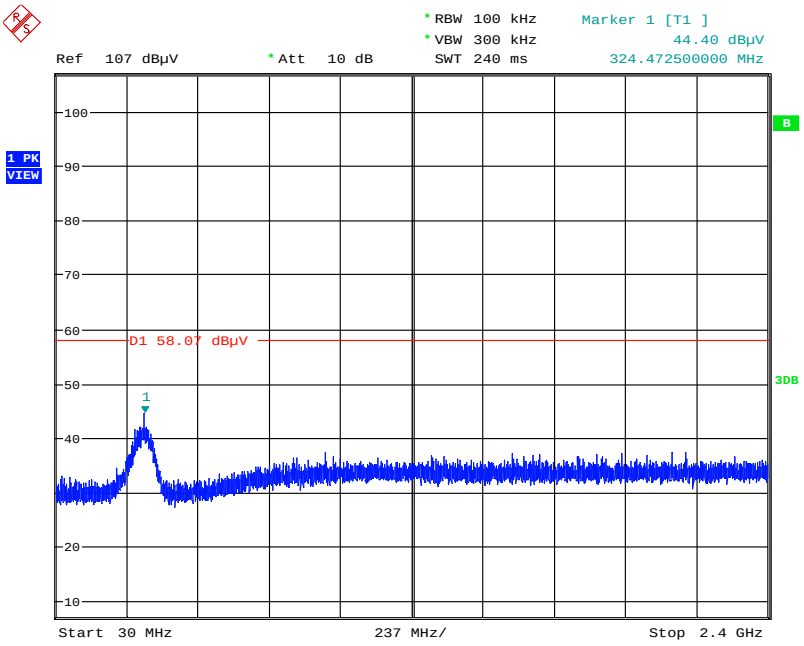
Date: 28.DEC.2015 14:04:55

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



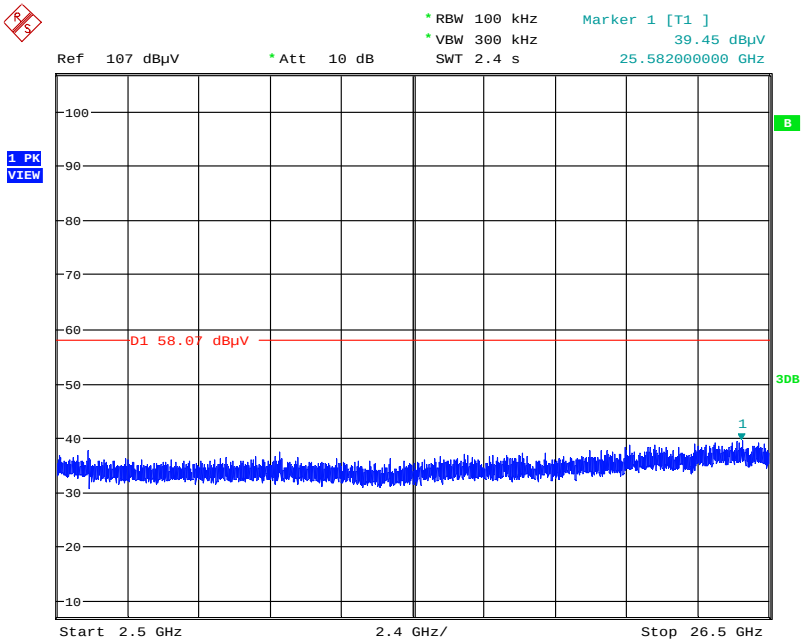
Date: 28.DEC.2015 14:05:30

Plot on Configuration IEEE 802.11g / CH 11 / 30MHz~2400MHz (down 30dBc) / Chain 1



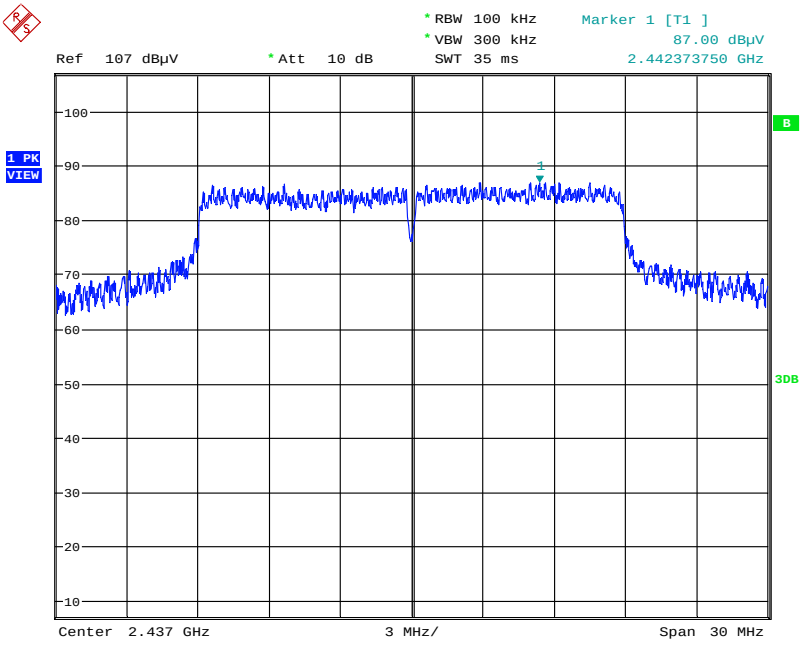
Date: 28.DEC.2015 14:07:55

Plot on Configuration IEEE 802.11g / CH 11 / 2500MHz~26500MHz (down 30dBc) / Chain 1



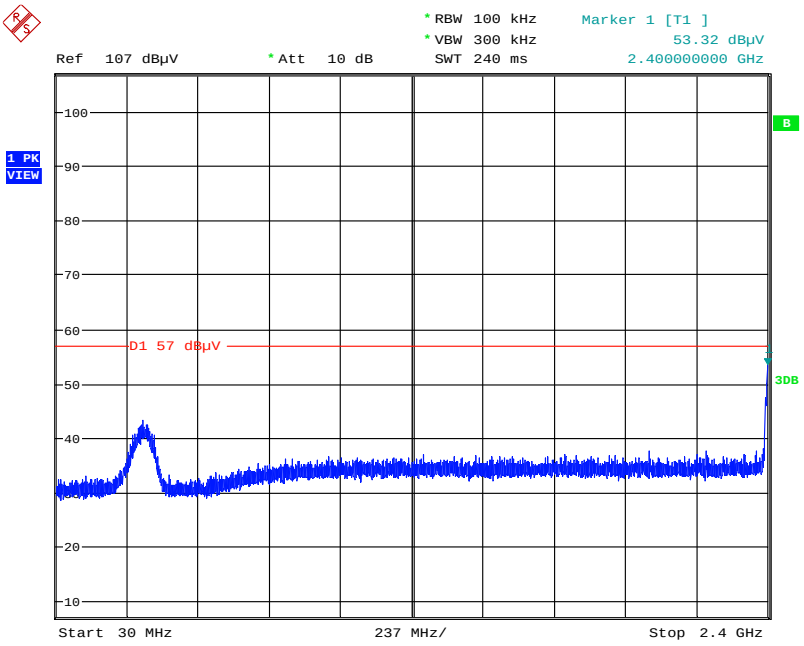
Date: 28.DEC.2015 14:07:24

Plot on Configuration IEEE 802.11n MCS0 HT20 / Reference Level / Chain 1



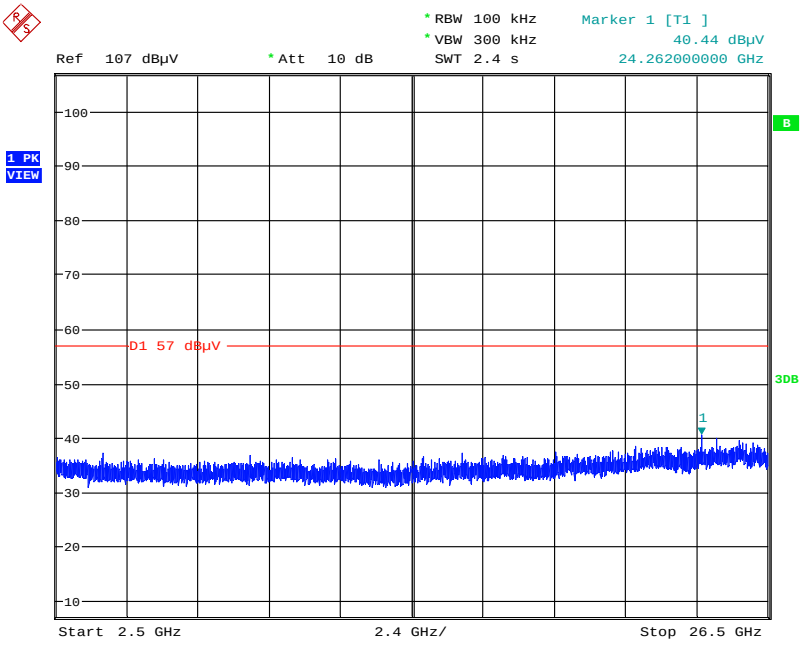
Date: 28.DEC.2015 14:22:37

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



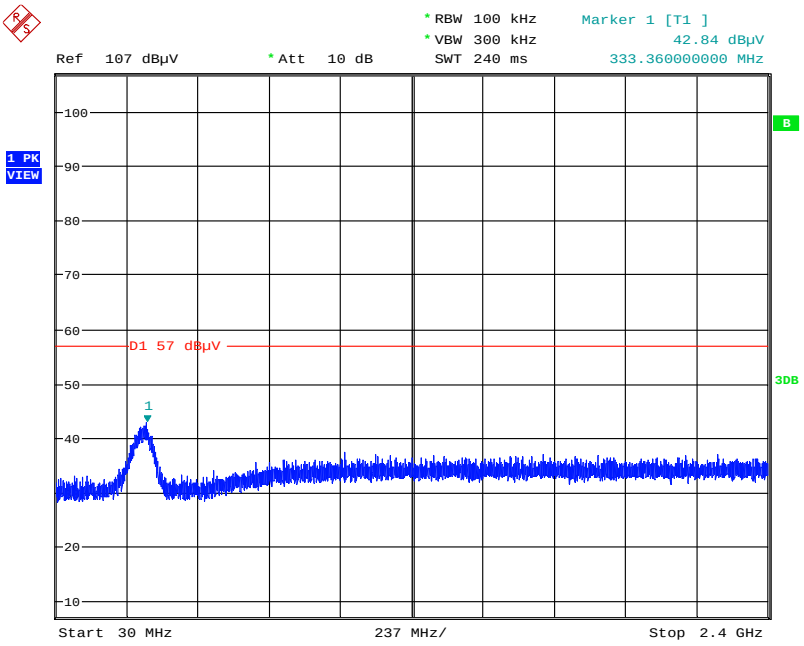
Date: 28.DEC.2015 14:24:07

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



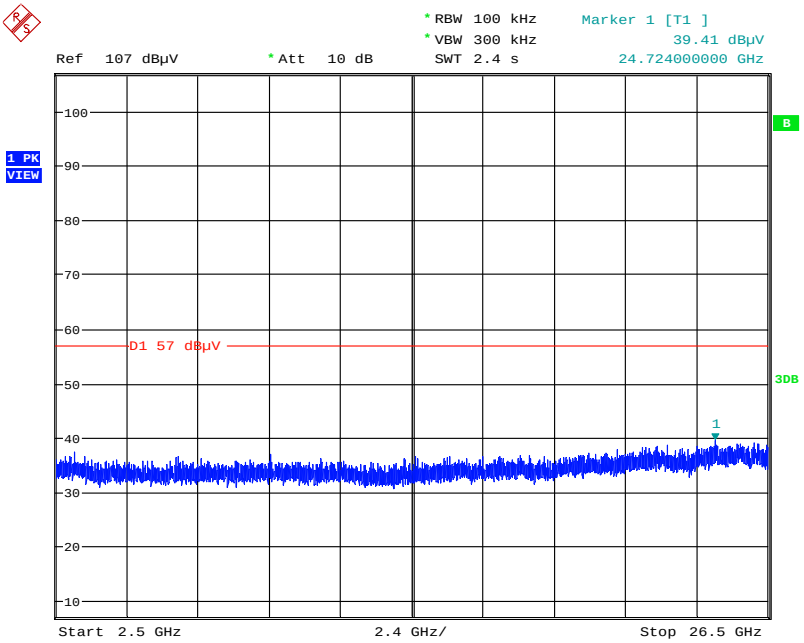
Date: 28.DEC.2015 14:24:56

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 11 / 30MHz~2400MHz (down 30dBc) / Chain 1



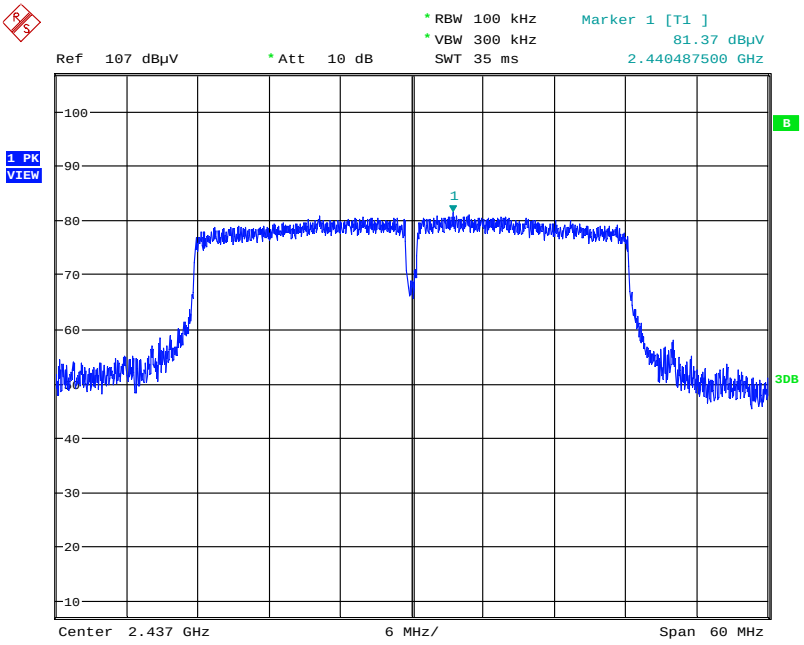
Date: 28.DEC.2015 14:26:35

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 11 / 2500MHz~26500MHz (down 30dBc) / Chain 1



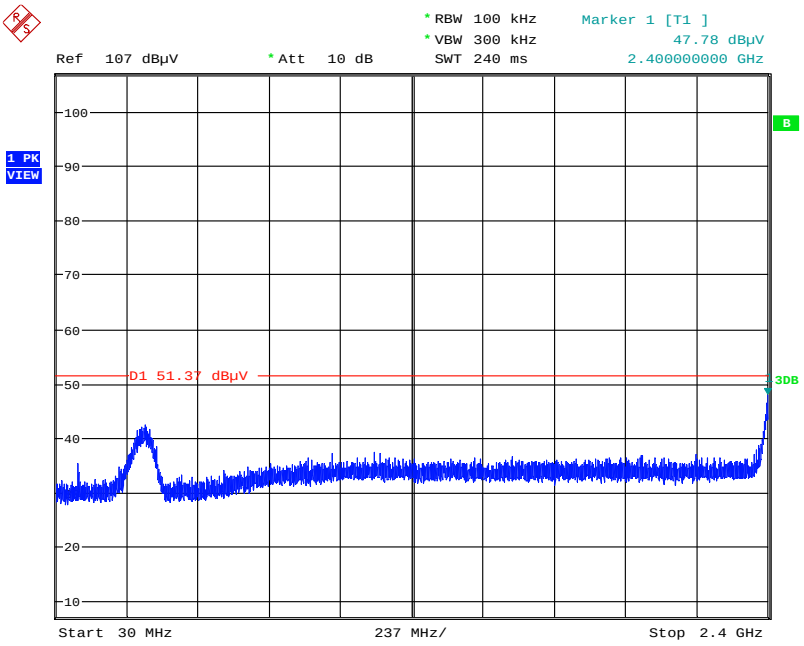
Date: 28.DEC.2015 14:25:43

Plot on Configuration IEEE 802.11n MCS0 HT40 / Reference Level / Chain 1



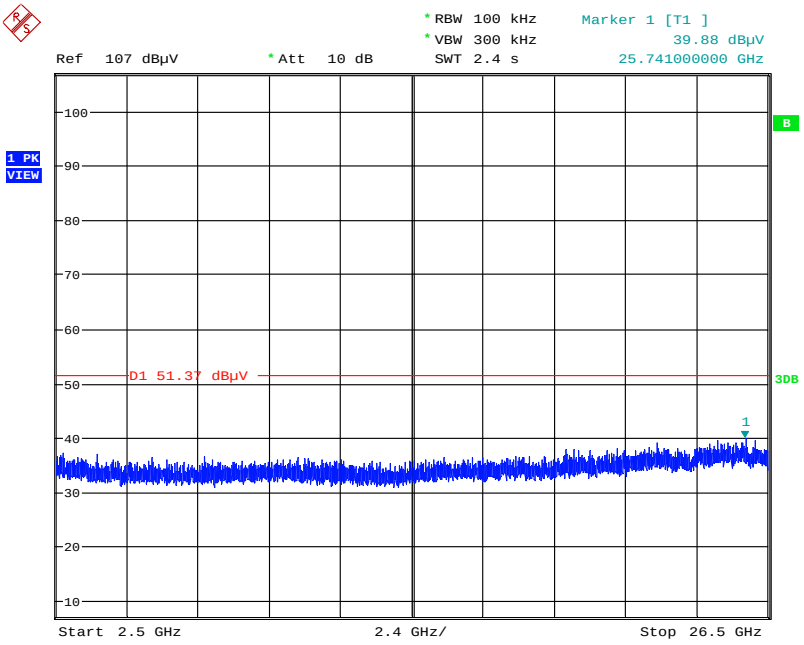
Date: 28.DEC.2015 14:13:22

Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 3 / 30MHz~2400MHz (down 30dBc) / Chain 1



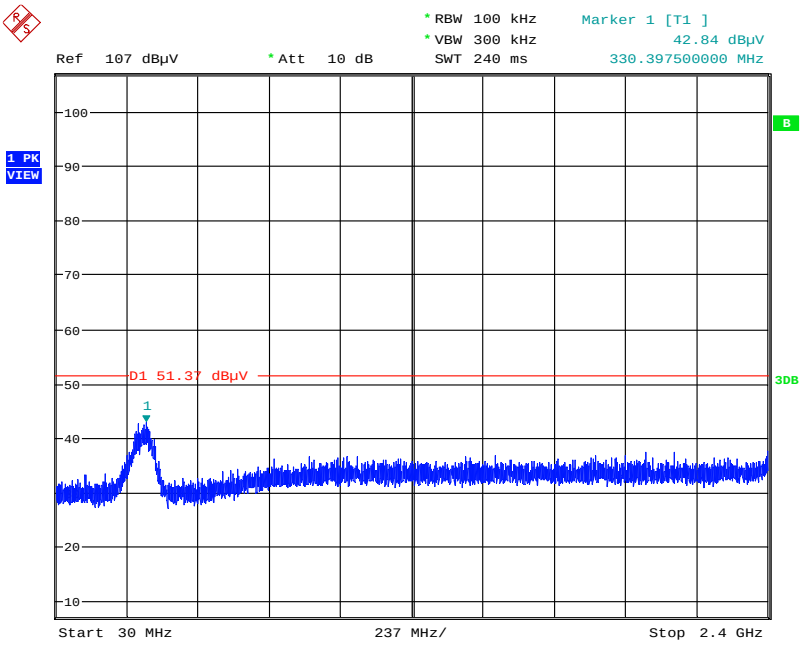
Date: 28.DEC.2015 14:14:58

Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 3 / 2500MHz~26500MHz (down 30dBc) / Chain 1



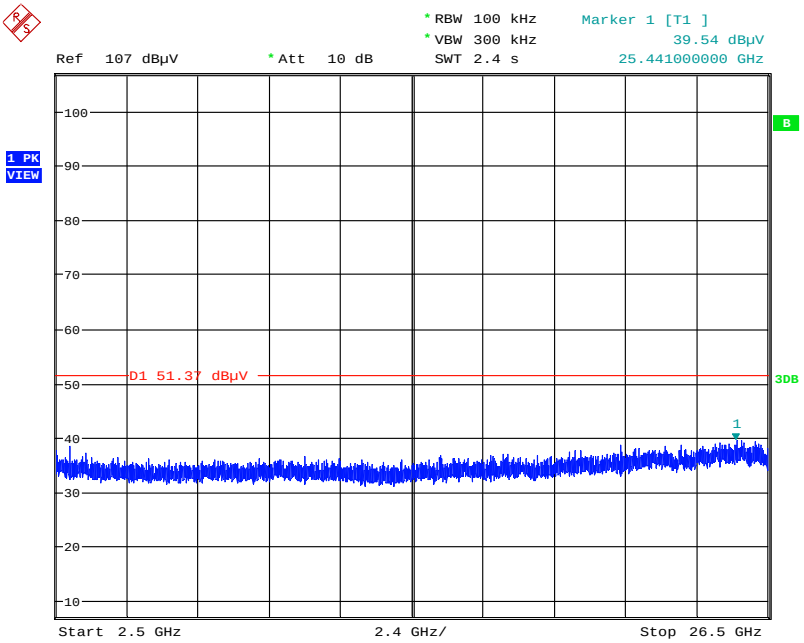
Date: 28.DEC.2015 14:15:31

Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 9 / 30MHz~2400MHz (down 30dBc) / Chain 1



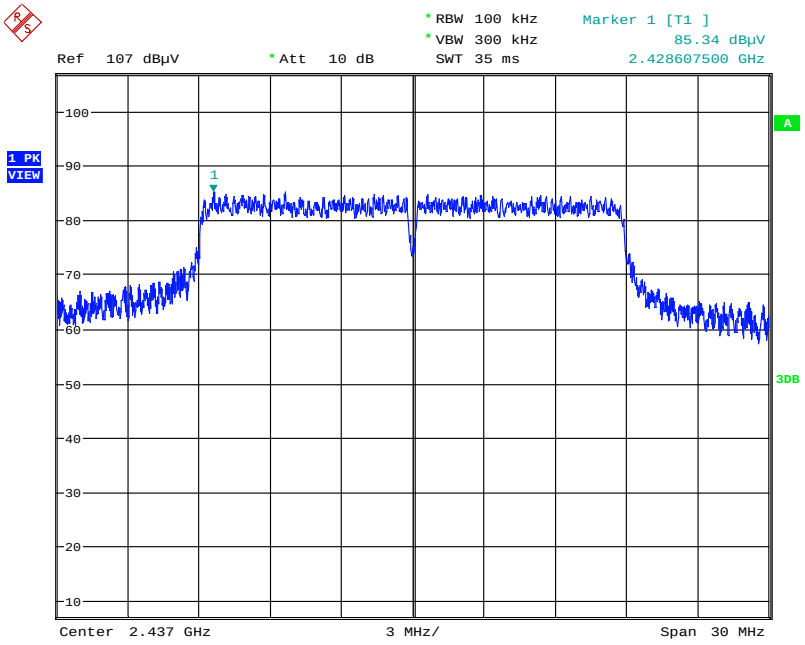
Date: 28.DEC.2015 14:17:45

Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 9 / 2500MHz~26500MHz (down 30dBc) / Chain 1



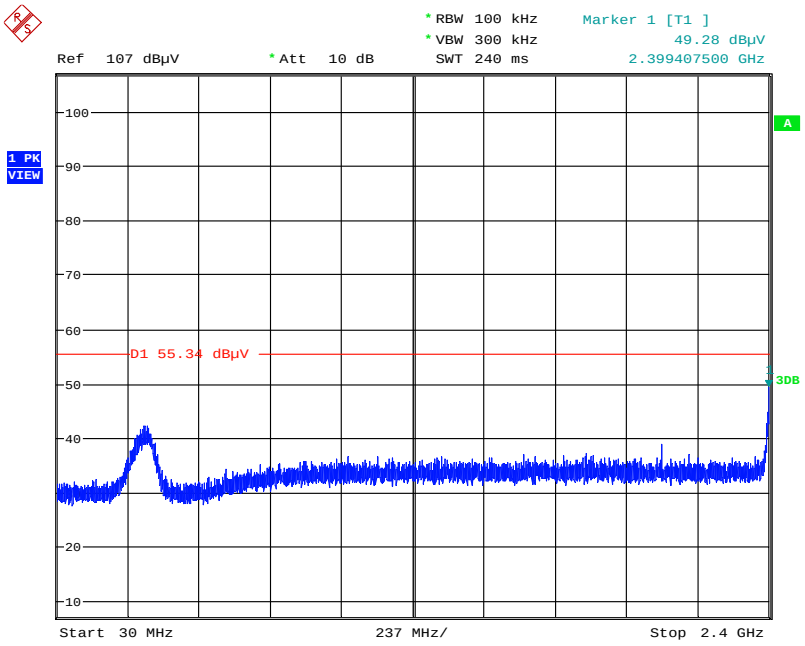
Date: 28.DEC.2015 14:17:09

Plot on Configuration IEEE 802.11n MCS0 HT20 / Reference Level / Chain 2



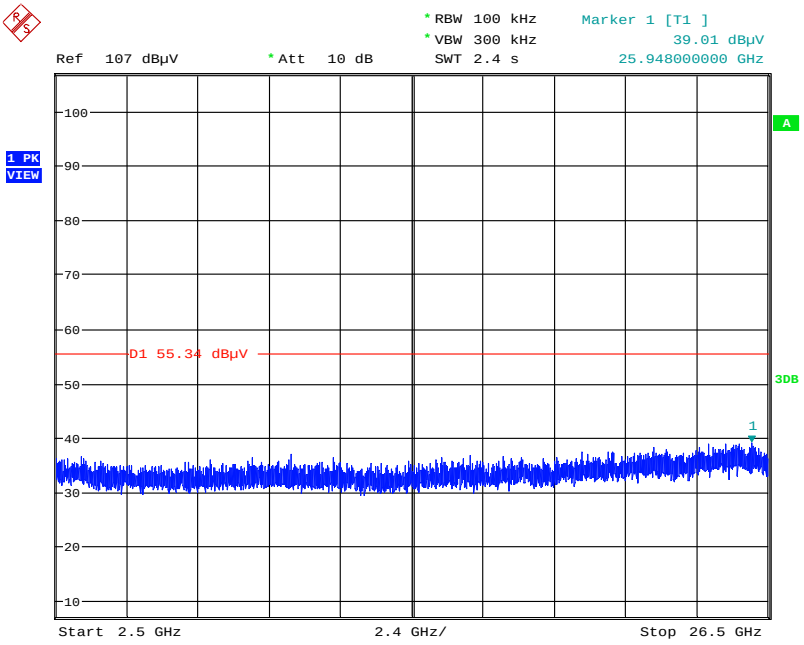
Date: 28.DEC.2015 16:46:18

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 1 / 30MHz~2400MHz (down 30dBc) / Chain 2



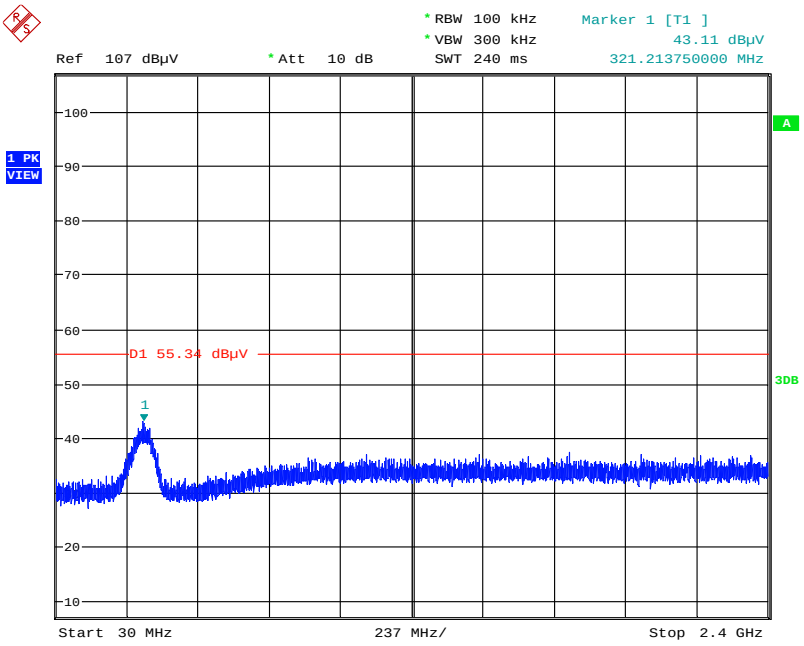
Date: 28.DEC.2015 16:47:28

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 1 / 2500MHz~26500MHz (down 30dBc) / Chain 2



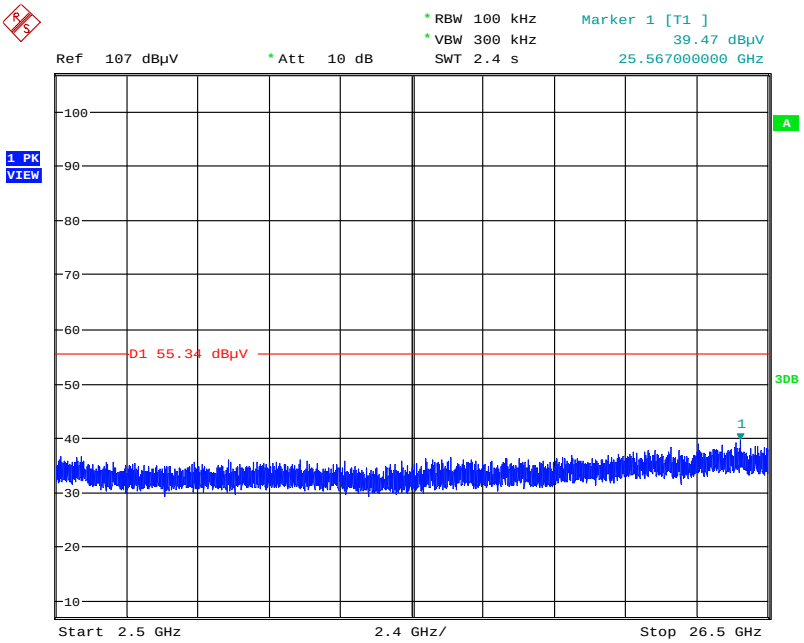
Date: 28.DEC.2015 16:47:50

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 11 / 30MHz~2400MHz (down 30dBc) / Chain 2

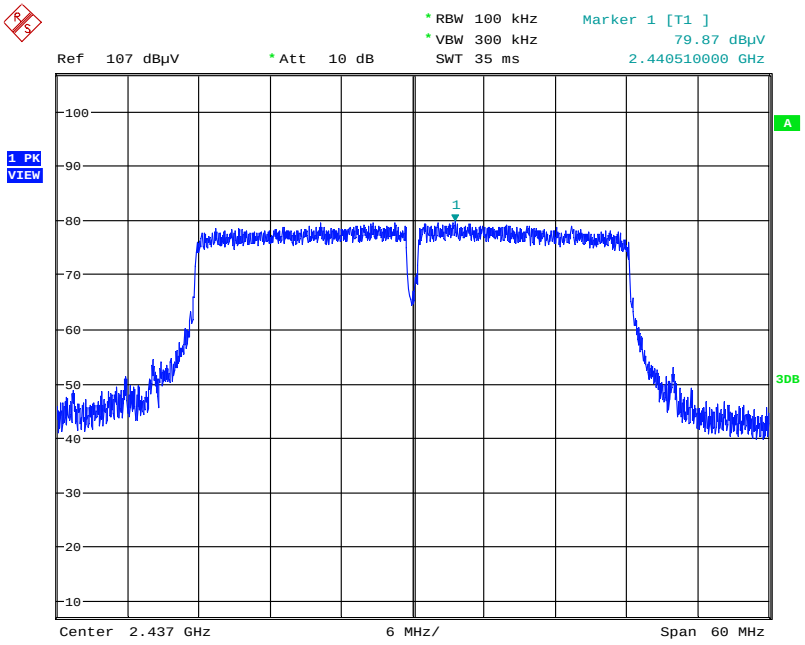


Date: 28.DEC.2015 16:48:49

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 11 / 2500MHz~26500MHz (down 30dBc) / Chain 2

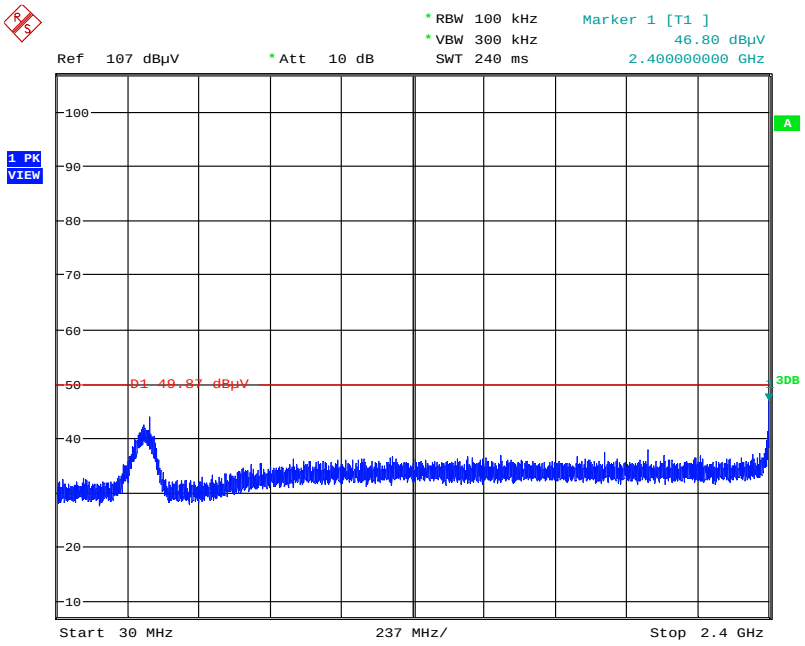


Plot on Configuration IEEE 802.11n MCS0 HT40 / Reference Level / Chain 2



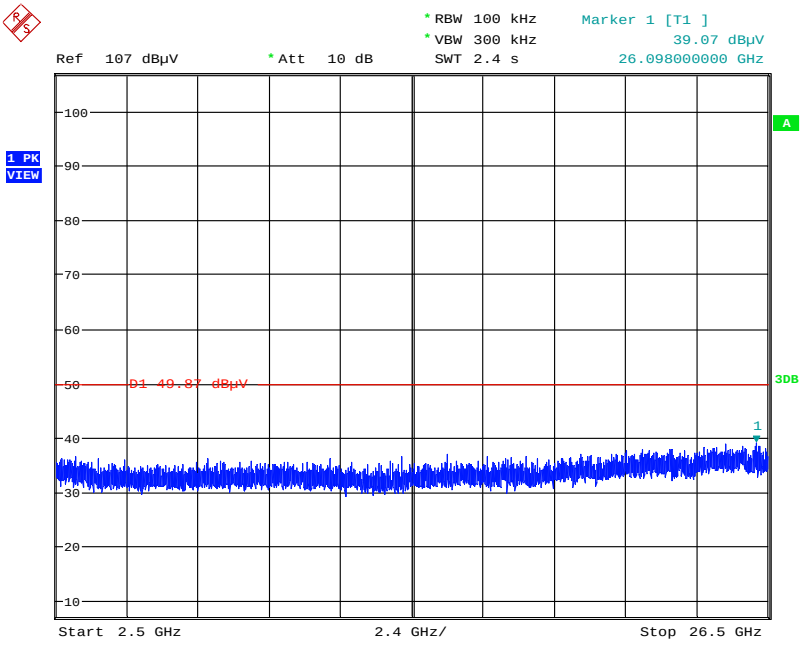
Date: 28.DEC.2015 16:50:28

Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 3 / 30MHz~2400MHz (down 30dBc) / Chain 2



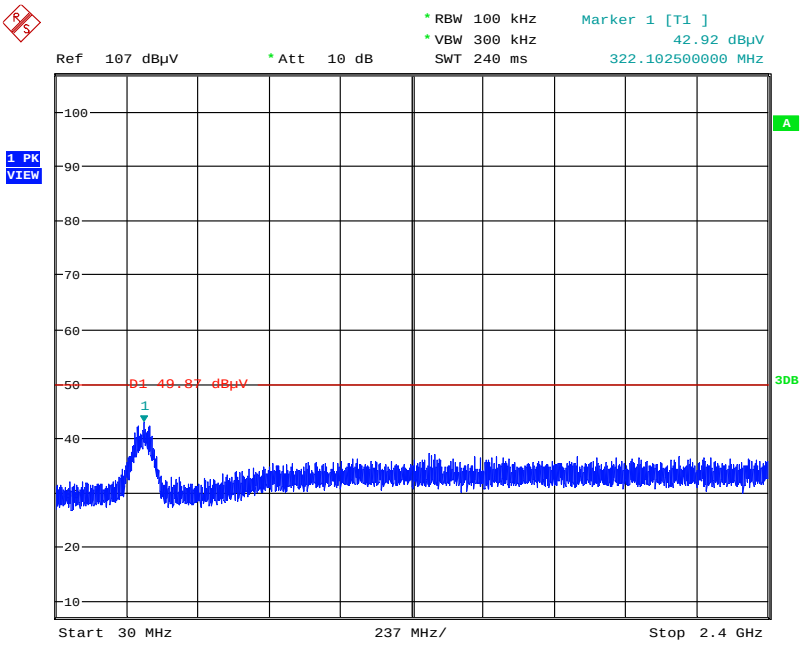
Date: 28.DEC.2015 16:51:23

Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 3 / 2500MHz~26500MHz (down 30dBc) / Chain 2



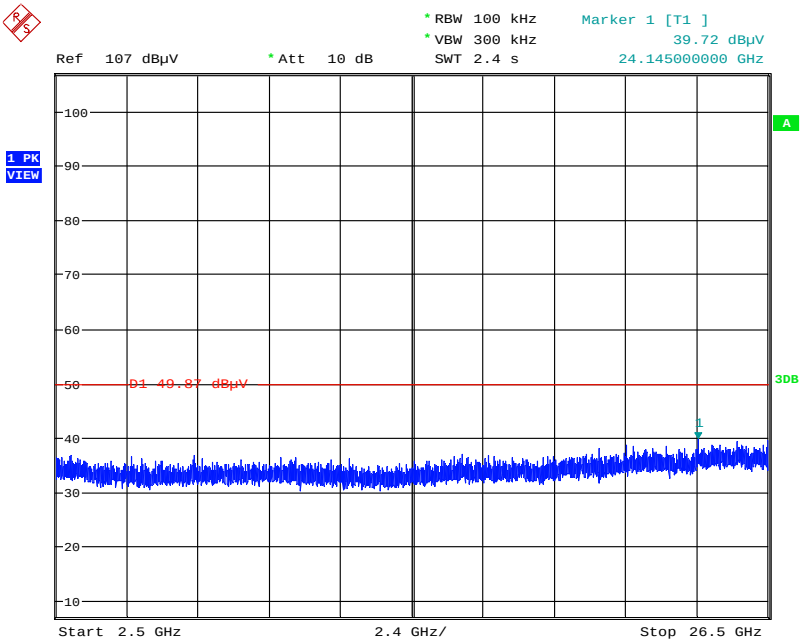
Date: 28.DEC.2015 16:51:37

Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 9 / 30MHz~2400MHz (down 30dBc) / Chain 2



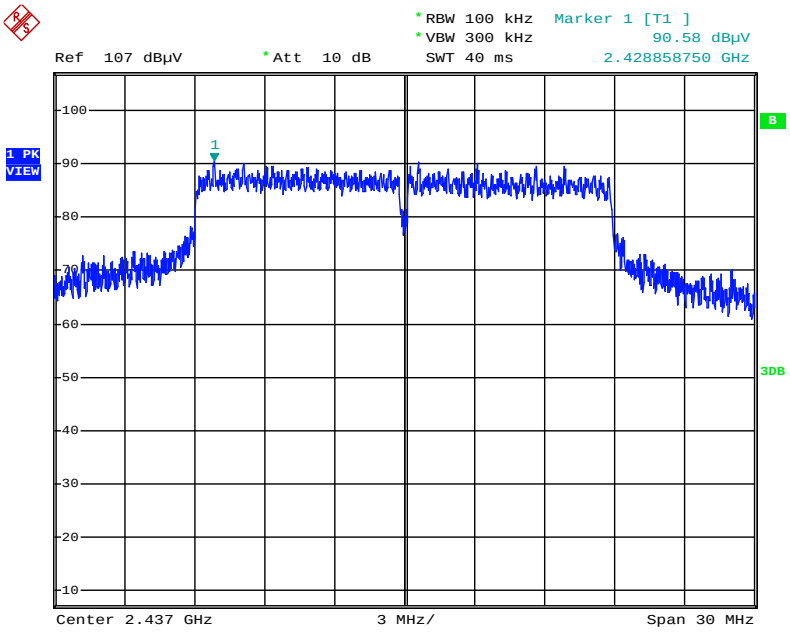
Date: 28.DEC.2015 16:52:32

Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 9 / 2500MHz~26500MHz (down 30dBc) / Chain 2



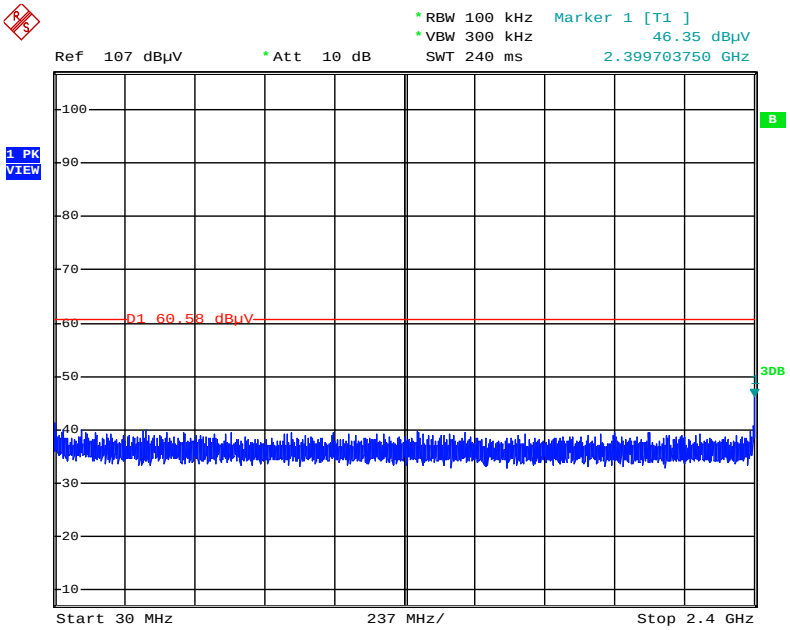
Date: 28.DEC.2015 16:52:16

Plot on Configuration IEEE 802.11n MCS8 HT20 / Reference Level / Chain 1 + Chain 2



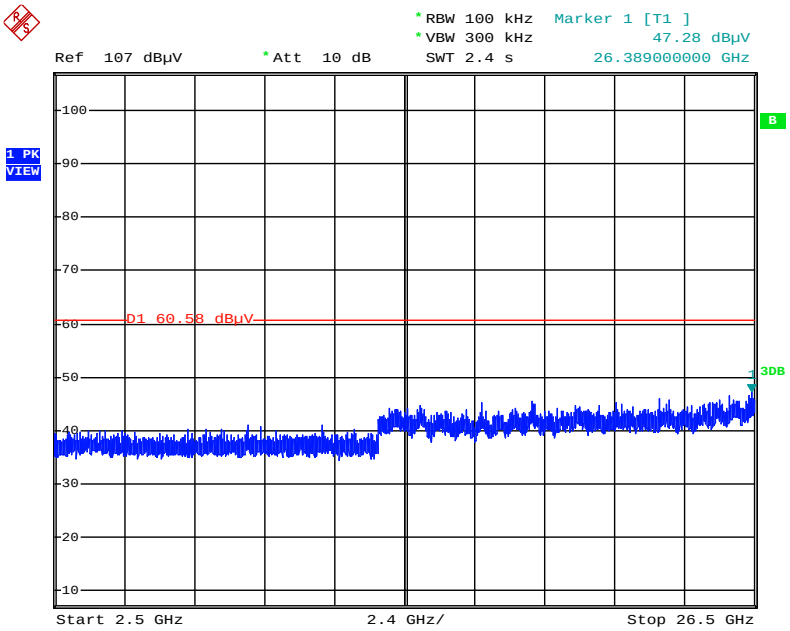
Date: 5.JAN.2016 02:42:58

Plot on Configuration IEEE 802.11n MCS8 HT20 / CH 1 / 30MHz~2400MHz (down 30dBc) / Chain 1 + Chain 2



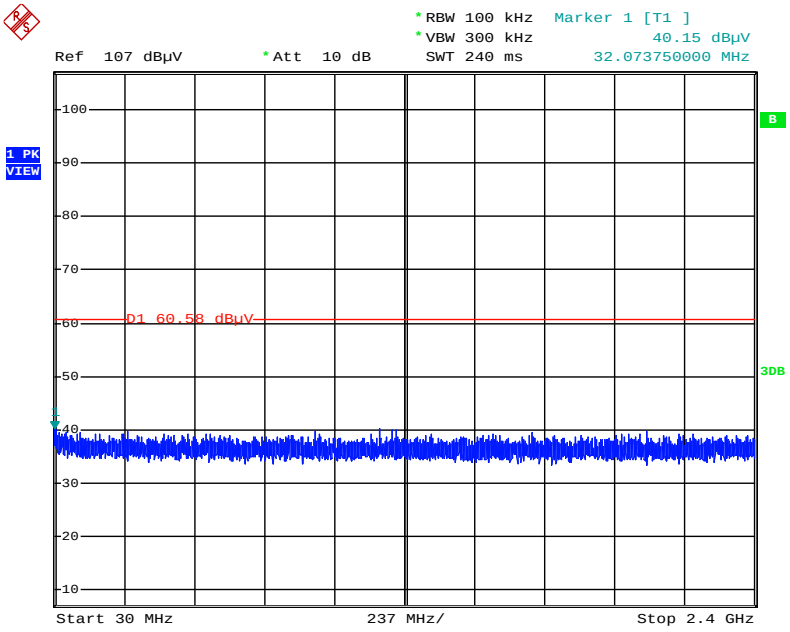
Date: 5.JAN.2016 02:45:15

Plot on Configuration IEEE 802.11n MCS8 HT20 / CH 1 / 2500MHz~26500MHz (down 30dBc) / Chain 1 + Chain 2



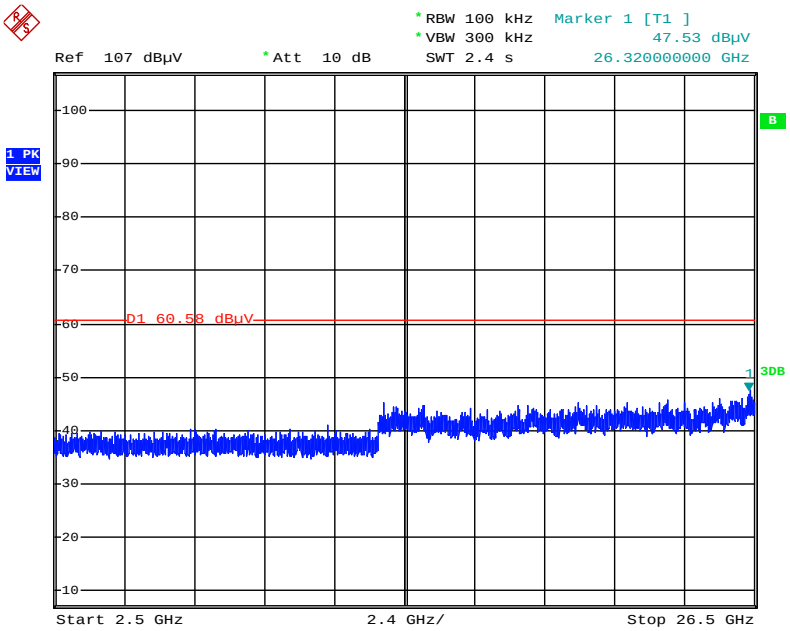
Date: 5.JAN.2016 02:45:56

Plot on Configuration IEEE 802.11n MCS8 HT20 / CH 11 / 30MHz~2400MHz (down 30dBc) / Chain 1 + Chain 2



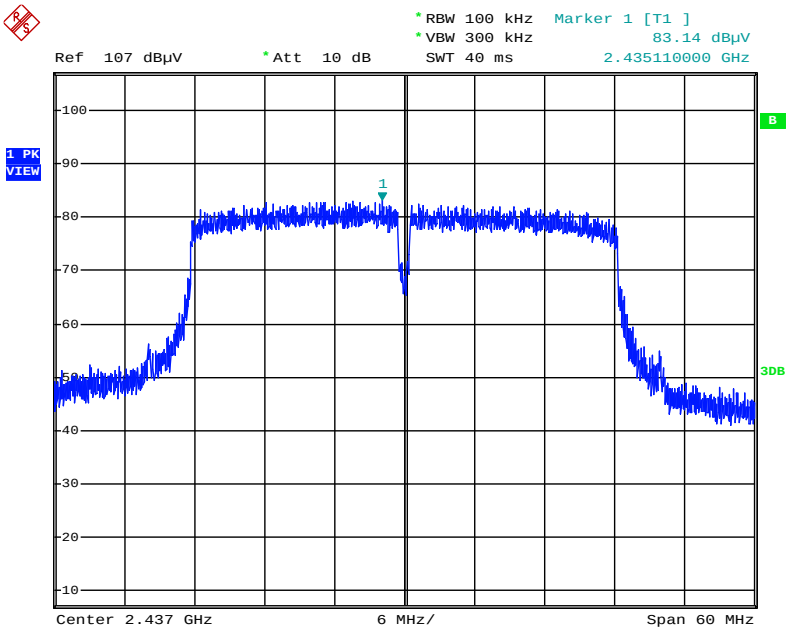
Date: 5.JAN.2016 02:47:24

Plot on Configuration IEEE 802.11n MCS8 HT20 / CH 11 / 2500MHz~26500MHz (down 30dBc) / Chain 1 + Chain 2



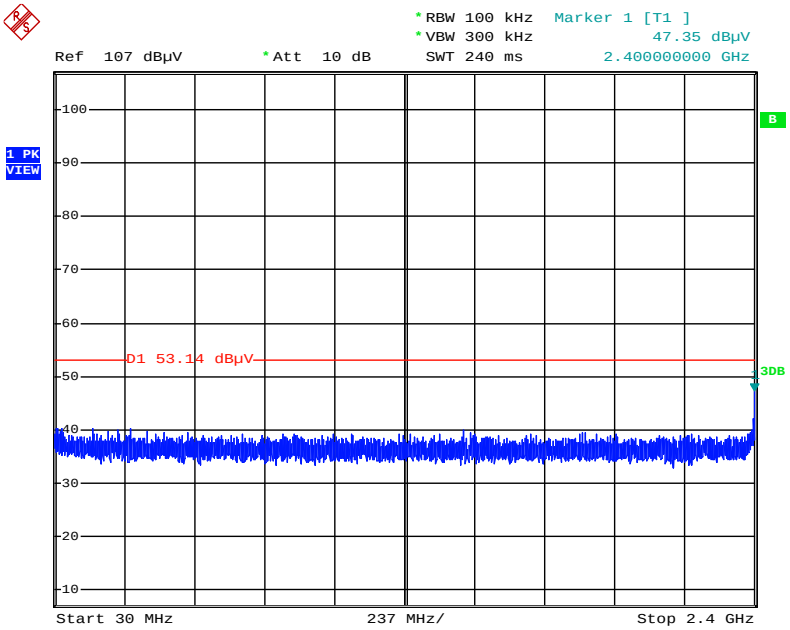
Date: 5.JAN.2016 02:46:51

Plot on Configuration IEEE 802.11n MCS8 HT40 / Reference Level / Chain 1 + Chain 2



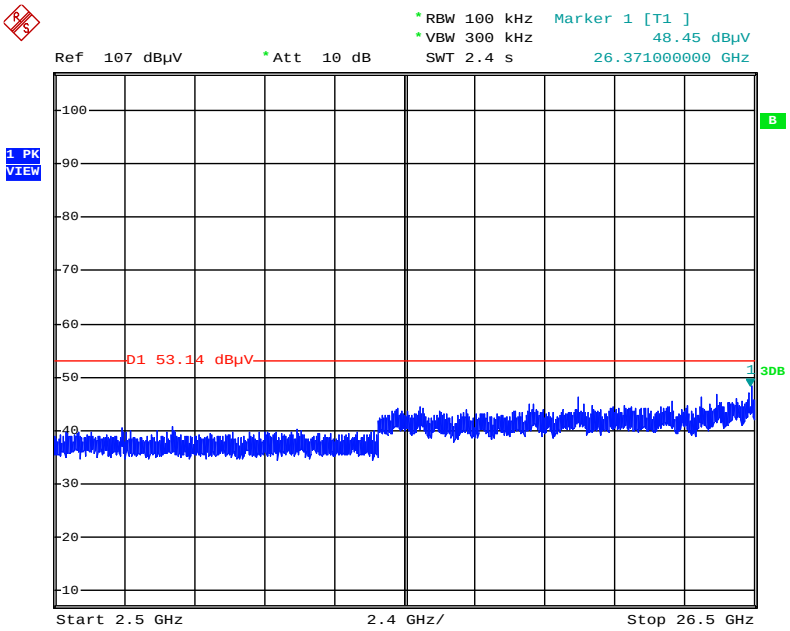
Date: 5.JAN.2016 02:51:13

Plot on Configuration IEEE 802.11n MCS8 HT40 / CH 3 / 30MHz~2400MHz (down 30dBc) / Chain 1 + Chain 2



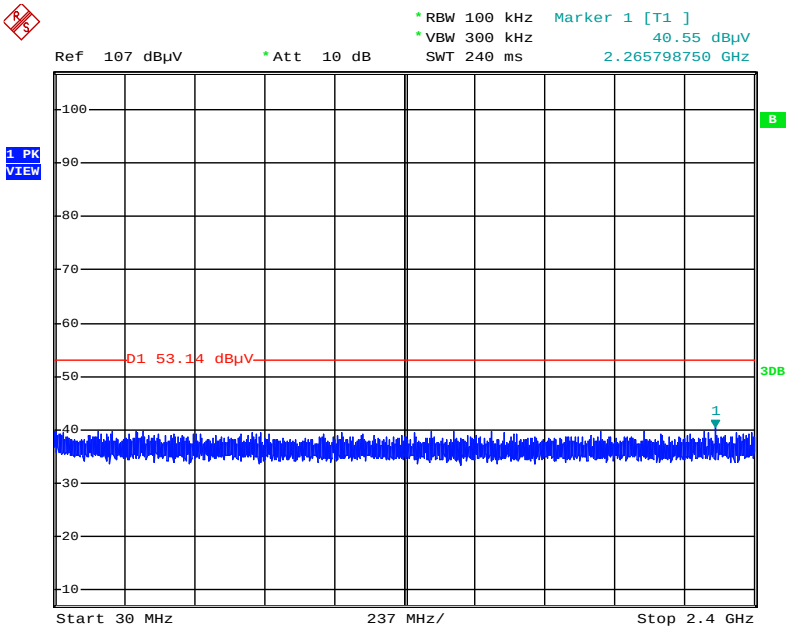
Date: 5.JAN.2016 02:52:17

Plot on Configuration IEEE 802.11n MCS8 HT40 / CH 3 / 2500MHz~26500MHz (down 30dBc) / Chain 1 + Chain 2



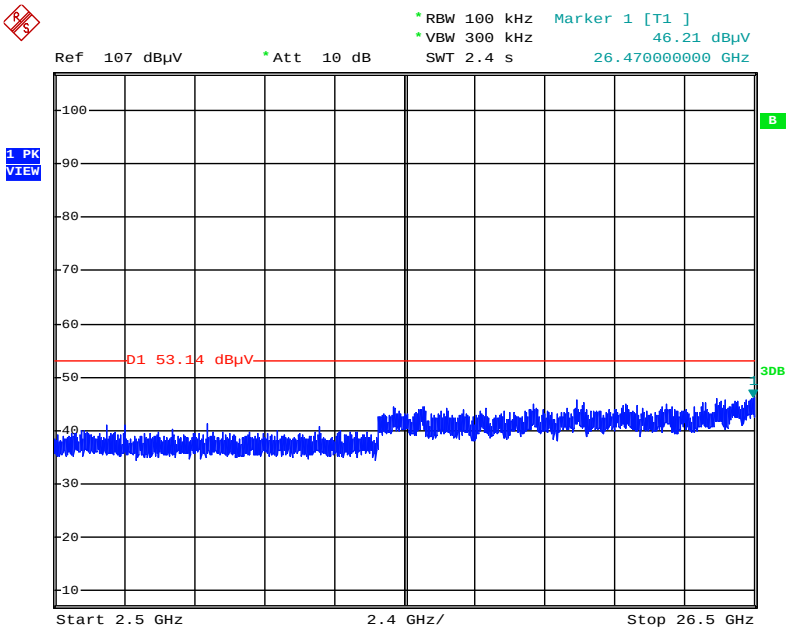
Date: 5.JAN.2016 02:53:00

Plot on Configuration IEEE 802.11n MCS8 HT40 / CH 9 / 30MHz~2400MHz (down 30dBc) / Chain 1 + Chain 2



Date: 5.JAN.2016 02:54:17

Plot on Configuration IEEE 802.11n MCS8 HT40 / CH 9 / 2500MHz~26500MHz (down 30dBc) / Chain 1 + Chain 2



Date: 5.JAN.2016 02:53:47

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	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 08, 2015	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 02, 2014	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 23, 2015	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 25, 2015	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112D	37880	20MHz ~ 2GHz	Sep. 03, 2015	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Oct. 22, 2015	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	Feb.10, 2015	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Oct. 27, 2015	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. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-17	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-1	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-2	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 12, 2015*	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 09, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 02, 2015	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%