



SPORTON International Inc.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
Ph: 886-3-327-3456 / FAX: 886-3-327-0973 / www.sporton.com.tw

FCC RADIO TEST REPORT

Applicant's company	Broadcom Corporation
Applicant Address	190 Mathilda Place Sunnyvale CA 94086 U.S.A.
FCC ID	QDS-BRCM1090
Manufacturer's company	Broadcom Corporation
Manufacturer Address	190 Mathilda Place Sunnyvale CA 94086 U.S.A.

Product Name	Broadcom 802.11a/b/g/n/ac WLAN + Bluetooth PCI-E/SDIO NGFF 2230 Card
Brand Name	Broadcom
Model No.	BCM94371ZAE
Part No.	BCM94371ZAE, BCM94371Z
Test Rule	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz
Received Date	Jul. 31, 2014
Final Test Date	Jan. 07, 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 v03r04 and KDB 662911 D01 v02r01.

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



Table of Contents

1. VERIFICATION OF COMPLIANCE	1
2. SUMMARY OF THE TEST RESULT	2
3. GENERAL INFORMATION	3
3.1. Product Details.....	3
3.2. Accessories.....	4
3.3. Table for Filed Antenna.....	5
3.4. Table for Carrier Frequencies	6
3.5. Table for Test Modes	7
3.6. Table for Testing Locations.....	9
3.7. Table for Multiple Listing.....	9
3.8. Table for Supporting Units	10
3.9. Table for Parameters of Test Software Setting	11
3.10. EUT Operation during Test	11
3.11. Duty Cycle	11
3.12. Test Configurations	12
4. TEST RESULT	15
4.1. AC Power Line Conducted Emissions Measurement.....	15
4.2. Maximum Conducted Output Power Measurement.....	19
4.3. Power Spectral Density Measurement	22
4.4. 6dB Spectrum Bandwidth Measurement	30
4.5. Radiated Emissions Measurement	37
4.6. Emissions Measurement	84
4.7. Antenna Requirements	146
5. LIST OF MEASURING EQUIPMENTS	147
6. MEASUREMENT UNCERTAINTY.....	149
APPENDIX A. TEST PHOTOS	A1 ~ A8
APPENDIX B. RADIATED EMISSION CO-LOCATION REPORT.....	B1 ~ B5

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR473142-07AA	Rev. 01	Initial issue of report	Jan. 12, 2016

1. VERIFICATION OF COMPLIANCE

Product Name : Broadcom 802.11a/b/g/n/ac WLAN + Bluetooth PCI-E/SDIO NGFF 2230 Card
Brand Name : Broadcom
Model No. : BCM94371ZAE
Part No. : BCM94371ZAE, BCM94371Z
Applicant : Broadcom 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 Jul. 31, 2014 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	12.12 dB
4.2	15.247(b)(3)	Maximum Conducted Output Power	Complies	6.45 dB
4.3	15.247(e)	Power Spectral Density	Complies	6.48 dB
4.4	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
4.5	15.247(d)	Radiated Emissions	Complies	3.04 dB
4.6	15.247(d)	Band Edge Emissions	Complies	0.06 dB
4.7	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

IEEE 802.11n

Items	Description
Product Type	WLAN (2TX, 2RX)
Radio Type	Intentional Transceiver
Power Type	From host system
Modulation	see the below table for IEEE 802.11n
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	see the below table for IEEE 802.11n
Frequency Range	2400 ~ 2483.5MHz
Channel Number	13 for 20MHz bandwidth ; 9 for 40MHz bandwidth
Channel Band Width (99%)	MCS0 (HT20): 17.92 MHz ; MCS0 (HT40): 36.48 MHz
Maximum Conducted Output Power	MCS0 (HT20): 22.19 dBm ; MCS0 (HT40): 15.91 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

IEEE 802.11b/g

Items	Description
Product Type	WLAN (2TX, 2RX)
Radio Type	Intentional Transceiver
Power Type	From host system
Modulation	DSSS for IEEE 802.11b ; OFDM for IEEE 802.11g
Data Modulation	DSSS (BPSK / QPSK / CCK) ; OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	DSSS (1/ 2/ 5.5/11) ; OFDM (6/9/12/18/24/36/48/54)
Frequency Range	2400 ~ 2483.5MHz
Channel Number	13
Channel Band Width (99%)	11b: 12.48 MHz ; 11g: 16.72 MHz
Maximum Conducted Output Power	11b: 23.55 dBm ; 11g: 22.25 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Items	Description	
Beamforming Function	☒ With beamforming	☐ Without beamforming
STBC Function	☒ With STBC	☐ Without STBC

Note: 1. The EUT has beamforming function for 802.11n/ac in 5GHz band 1~4.

2. The EUT has STBC function for 802.11n/ac in 5GHz band 1~4.

3. The MIMO transmission mode is correlated.

Antenna and Band width

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

IEEE 11n Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	2	MCS 0-15
802.11n (HT40)	2	MCS 0-15

Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput).

Then EUT support HT20 and HT40.

Note 2: Modulation modes consist of below configuration: HT20/HT40: IEEE 802.11n

3.2. Accessories

N/A

3.3. Table for Filed Antenna

Set	Ant.	Brand	Part No.	Antenna Type	Connector	Gain (dBi)				
						2.4G/ BT	5G B1	5G B2	5G B3	5G B4
1	1	MAG.LAYERS	PCA-4077-25GC1-A1-RT	WLAN/BT antenna	I-PEX A13	3.33	5.85	5.85	6.21	6.21
	2	MAG.LAYERS	PCA-4077-25GC1-A1-RT	WLAN/BT antenna	I-PEX A13	3.33	5.85	5.85	6.21	6.21

Note: The EUT has one set of antenna, and each set contains two antennas.

Chain 1: Connect to Ant. 1, Chain 2: Connect to Ant. 2.

For 2.4 GHz WLAN function (2TX/2RX):

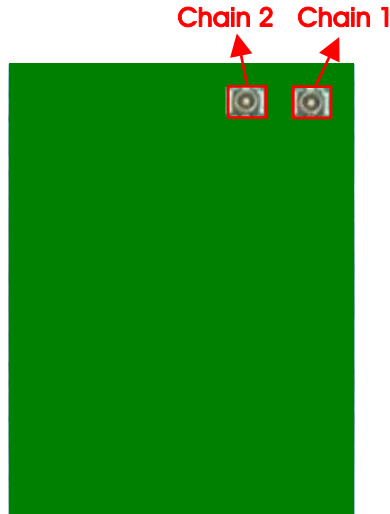
Chain 1 and Chain 2 could transmit/receive simultaneously.

For Bluetooth function (1TX/1RX):

Only Chain 1 could transmit/receive simultaneously.

For 5 GHz WLAN function (2TX/2RX):

Chain 1 and Chain 2 could transmit/receive simultaneously.



3.4. Table for Carrier Frequencies

There are two bandwidth systems.

For 20MHz bandwidth systems, use Channel 1~Channel 13.

For 40MHz bandwidth systems, use Channel 3~Channel 11.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400~2483.5MHz	1	2412 MHz	8	2447 MHz
	2	2417 MHz	9	2452 MHz
	3	2422 MHz	10	2457 MHz
	4	2427 MHz	11	2462 MHz
	5	2432 MHz	12	2467 MHz
	6	2437 MHz	13	2472 MHz
	7	2442 MHz	-	-

3.5. Table for Test Modes

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

Test Items	Mode	Data Rate	Channel	Chain
AC Power Line Conducted Emissions	Normal Link	-	-	-
Maximum Conducted Output Power	802.11n HT20	MCS0	1/6/11/12/13	1+2
	802.11n HT40	MCS0	3/6/9/10/11	1+2
	11b/BPSK	1 Mbps	1/6/11/12/13	1+2
	11g/BPSK	6 Mbps	1/6/11/12/13	1+2
Power Spectral Density	802.11n HT20	MCS0	1/6/11/12/13	1+2
	802.11n HT40	MCS0	3/6/9/10/11	1+2
	11b/BPSK	1 Mbps	1/6/11/12/13	1+2
	11g/BPSK	6 Mbps	1/6/11/12/13	1+2
6dB Spectrum Bandwidth	802.11n HT20	MCS0	1/6/11/12/13	1+2
	802.11n HT40	MCS0	3/6/9/10/11	1+2
	11b/BPSK	1 Mbps	1/6/11/12/13	1+2
	11g/BPSK	6 Mbps	1/6/11/12/13	1+2
Radiated Emissions 9kHz~1GHz	Normal Link	-	-	-
Radiated Emissions 1GHz~10 th Harmonic	802.11n HT20	MCS0	1/6/11/12/13	1+2
	802.11n HT40	MCS0	3/6/9/10/11	1+2
	11b/BPSK	1 Mbps	1/6/11/12/13	1+2
	11g/BPSK	6 Mbps	1/6/11/12/13	1+2
Band Edge Emissions	802.11n HT20	MCS0	1/6/11/12/13	1+2
	802.11n HT40	MCS0	3/6/9/10/11	1+2
	11b/BPSK	1 Mbps	1/6/11/12/13	1+2
	11g/BPSK	6 Mbps	1/6/11/12/13	1+2

The following test modes were performed for all tests:

For AC Power Line Conducted Emissions test:

Mode 1. EUT 1 + 2.4GHz WLAN function + Bluetooth function

Mode 2. EUT 1 + 5GHz WLAN function + Bluetooth function

Mode 3. EUT 2 + 2.4GHz WLAN function

Mode 4. EUT 2 + 5GHz WLAN function

Mode 5. EUT 2 + Bluetooth function

Mode 5 is the worst case, so it was selected to record in this test report.

For Radiated Emissions 9kHz~1GHz test:

Mode 1. Place EUT 1 in X axis + 2.4GHz WLAN function + Bluetooth function

Mode 2. Place EUT 1 in Y axis + 2.4GHz WLAN function + Bluetooth function

Mode 3. Place EUT 1 in Z axis + 2.4GHz WLAN function + Bluetooth function

Mode 4. Place EUT 1 in X axis + 5GHz WLAN function + Bluetooth function

Mode 5. Place EUT 1 in Y axis + 5GHz WLAN function + Bluetooth function

Mode 6. Place EUT 1 in Z axis + 5GHz WLAN function + Bluetooth function

Mode 7. Place EUT 2 in X axis + 2.4GHz WLAN function

Mode 8. Place EUT 2 in Y axis + 2.4GHz WLAN function

Mode 9. Place EUT 2 in Z axis + 2.4GHz WLAN function

Mode 10. Place EUT 2 in X axis + 5GHz WLAN function

Mode 11. Place EUT 2 in Y axis + 5GHz WLAN function

Mode 12. Place EUT 2 in Z axis + 5GHz WLAN function

Mode 9 has been evaluated to be the worst case among Mode 7~9, thus measurement for Mode 13 will follow this same test mode.

Mode 13. Place EUT 2 in Z axis + Bluetooth function

Mode 9 is the worst case, so it was selected to record in this test report.

For Radiated Emissions above 1GHz test:

Radiated Emissions above 1GHz test was performed at its 3-axis (X-axis, Y-axis and Z-axis). Z-axis was the worst case, so it's recorded 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 FA473142-07AA) 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.

Mode 1. EUT 1 + 2.4GHz WLAN function + Bluetooth function

Mode 2. EUT 1 + 5GHz WLAN function + Bluetooth function

3.6. Table for Testing Locations

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

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

3.7. Table for Multiple Listing

The EUT has three part numbers which are identical to each other in all aspects except for the following table:

EUT	Model No.	Part No.	Description
EUT 1	BCM94371ZAE	BCM94371Z	M.2 E Key connector which support PCIe/USB interface.
EUT 2		BCM94371Z	M.2 E Key connector which support SDIO/UART/Pcie/USB interface.
EUT 3		BCM94371ZAE	M.2 A key + E Key connector which support PCIe/USB interface.

From the above models, part number: EUT 1 and EUT 2 were selected as representative models for AC Power Line Conducted Emissions and Radiated Emissions <below 1GHz> tests and EUT 1 was selected as representative model for other tests.

3.8. Table for Supporting Units

For Test Site No: CO01-CB

Support Unit	Brand	Model	FCC ID
NB	DELL	E6430	DoC
Fixture*2	Broadcom	BCM9MC2EC_1	N/A
Mouse	Logitech	M-U0026	N/A
Earphone	SHYARO CHI	MIC-04	N/A
NB	DELL	E4300	N/A
Broadcom 802.11a/b/g/n/ac WLAN + Bluetooth PCI-E NGFF 2230 Card (Device)	Broadcom	BCM94371ZAE	QDS-BRCM1090

For Test Site No: 03CH01-CB (below 1GHz)

Support Unit	Brand	Model	FCC ID
NB	DELL	E4300	DoC
Wireless ac AP	Netgear	R6300V2	PY313200227
Fixture	Broadcom	BCM9MC2EC_1	N/A
Mouse	Logitech	M-U0026	DoC
Earphone	SHYARO CHI	MIC-04	N/A
Adapter	Moso	MSA-C2000IC5	N/A

For Test Site No: 03CH01-CB (above 1GHz)

Support Unit	Brand	Model	FCC ID
NB	DELL	E4300	RSE-TG233
Test fixture	Broadcom	BCM9NGFF2EC_1	N/A

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
NB	DELL	E6430	DoC
Test fixture	Broadcom	BCM9NGFF2EC_1	N/A

3.9. Table for Parameters of Test Software Setting

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

Power Parameters of IEEE 802.11n

Test Software Version	Manual Tool version: 2.0.2.1				
Frequency	2412 MHz	2437 MHz	2462 MHz	2467 MHz	2472 MHz
MCS0 HT20	57	77	53	45	45
Frequency	2422 MHz	2437 MHz	2452 MHz	2457 MHz	2462 MHz
MCS0 HT40	44	52	51	46	45

Power Parameters of IEEE 802.11b/g

Test Software Version	Manual Tool version: 2.0.2.1				
Frequency	2412 MHz	2437 MHz	2462 MHz	2467 MHz	2472 MHz
IEEE 802.11b	68	80	70	66	46
IEEE 802.11g	55	77	54	53	48

3.10. EUT Operation during Test

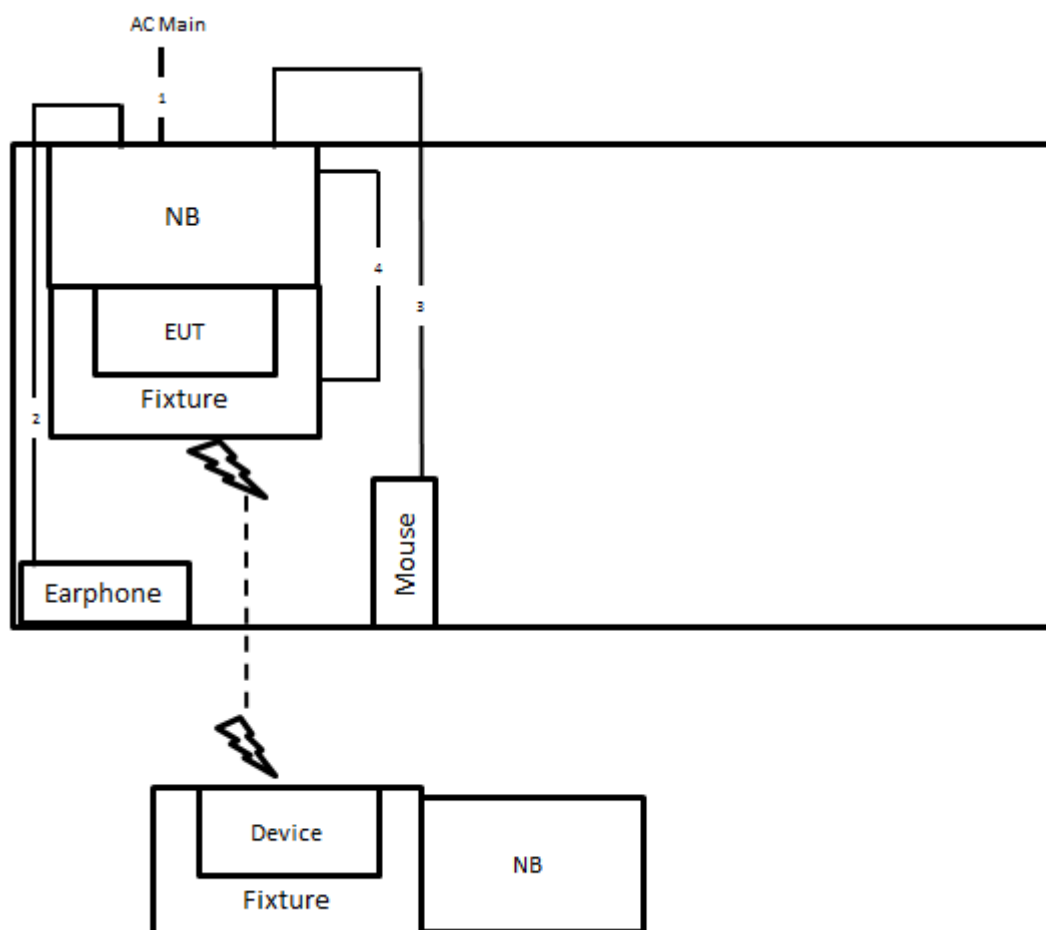
The EUT was programmed to be in continuously transmitting mode.

3.11. Duty Cycle

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11n MCS0 HT20	12.44	13.04	95.40	0.20	0.08
802.11n MCS0 HT40	2.06	2.16	95.37	0.21	0.49
802.11b	1.92	2.01	95.52	0.20	0.52
802.11g	0.93	1.03	90.29	0.44	1.08

3.12. Test Configurations

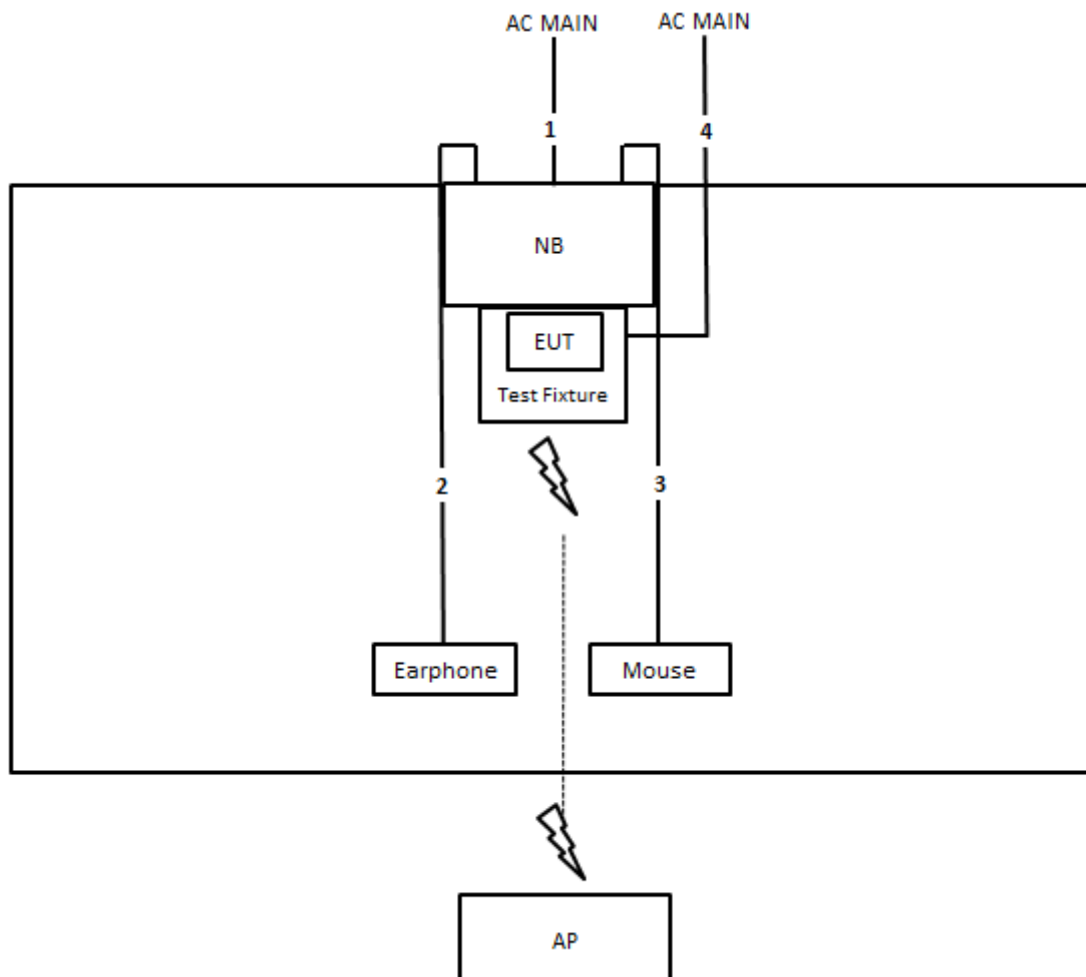
3.12.1. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	Audio cable	No	1.1m
3	USB cable	Yes	1.8m
4	USB cable	Yes	1.2m

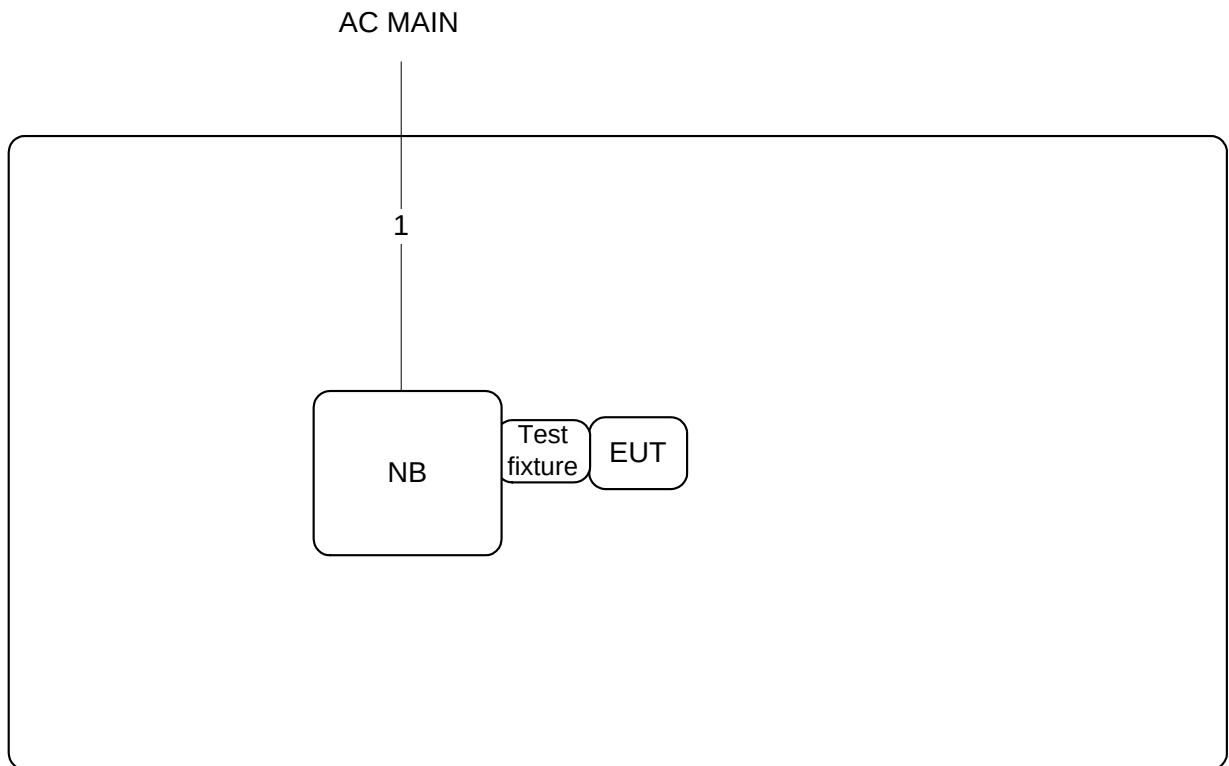
3.12.2. Radiation Emissions Test Configuration

Test Configuration: 30MHz~1GHz



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

Test Configuration: above 1GHz



Item	Connection	Shielded	Length
1	Power cable	No	1.8m

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

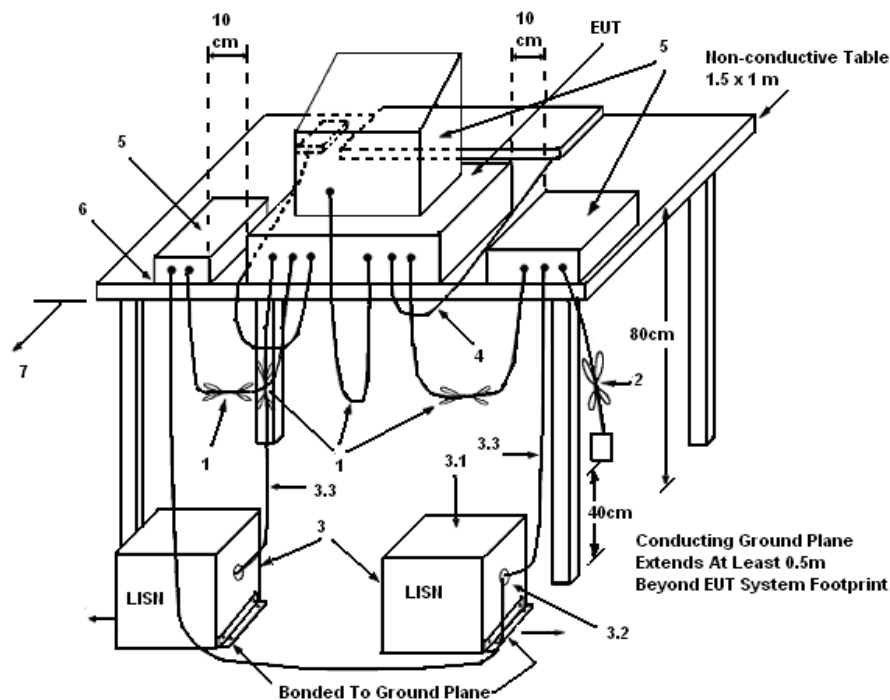
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

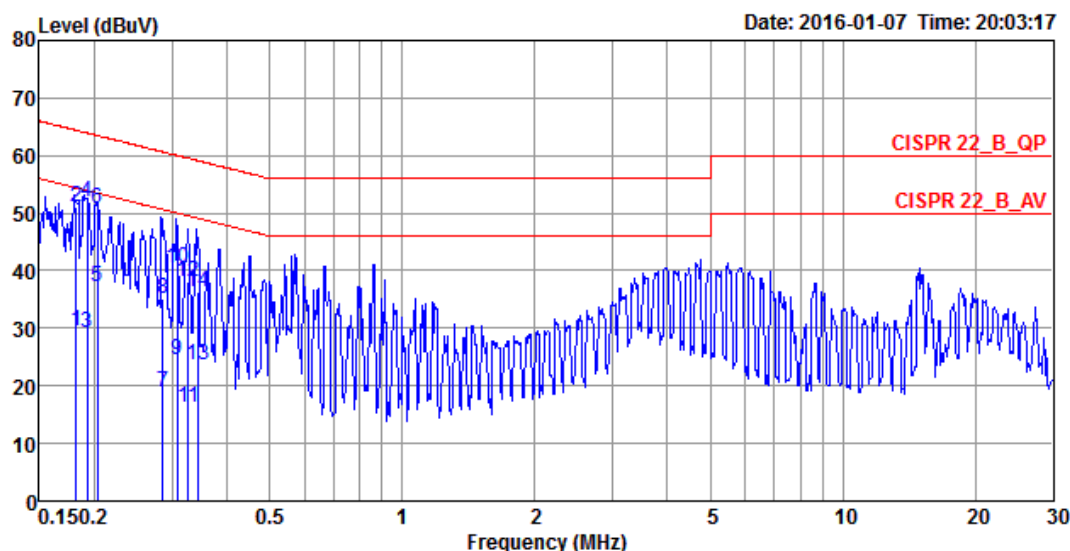
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

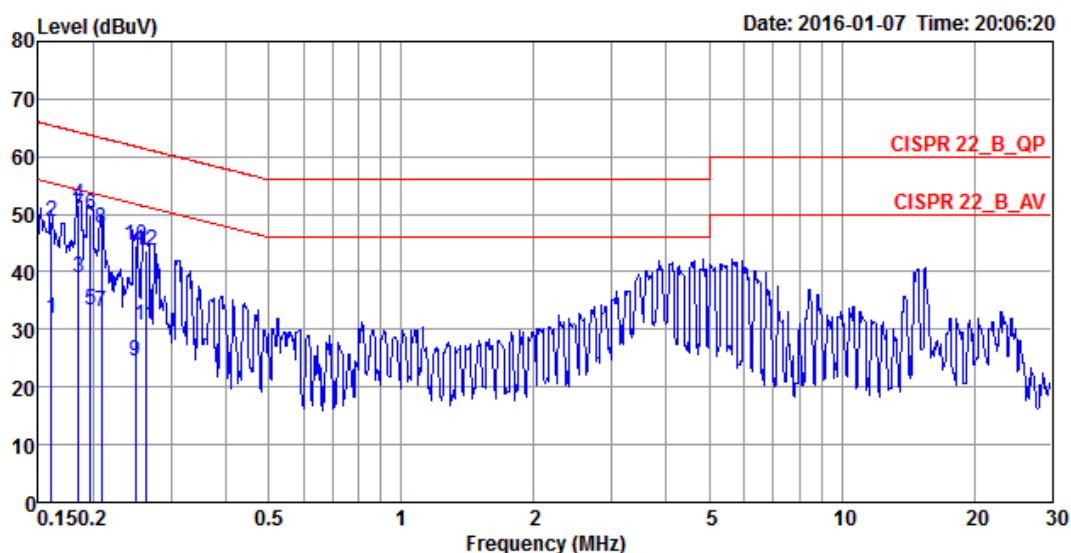
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	25°C	Humidity	62%
Test Engineer	Kane Liu	Phase	Line
Configuration	Normal Link	Test Mode	Mode 5



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1815	29.48	-24.94	54.42	19.53	9.93	0.02	LINE	Average
2	0.1815	50.94	-13.48	64.42	40.99	9.93	0.02	LINE	QP
3	0.1924	29.14	-24.79	53.93	19.19	9.93	0.02	LINE	Average
4	0.1924	51.81	-12.12	63.93	41.86	9.93	0.02	LINE	QP
5	0.2029	37.31	-16.18	53.49	27.36	9.93	0.02	LINE	Average
6	0.2029	50.65	-12.84	63.49	40.70	9.93	0.02	LINE	QP
7	0.2863	18.97	-31.66	50.63	9.00	9.93	0.04	LINE	Average
8	0.2863	35.00	-25.63	60.63	25.03	9.93	0.04	LINE	QP
9	0.3083	24.54	-25.48	50.02	14.57	9.93	0.04	LINE	Average
10	0.3083	40.39	-19.63	60.02	30.42	9.93	0.04	LINE	QP
11	0.3268	16.17	-33.36	49.53	6.20	9.93	0.04	LINE	Average
12	0.3268	38.13	-21.40	59.53	28.16	9.93	0.04	LINE	QP
13	0.3428	23.59	-25.54	49.13	13.62	9.93	0.04	LINE	Average
14	0.3428	36.30	-22.83	59.13	26.33	9.93	0.04	LINE	QP

Temperature	25°C	Humidity	62%
Test Engineer	Kane Liu	Phase	Neutral
Configuration	Normal Link	Test Mode	Mode 5



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1607	31.76	-23.67	55.43	21.96	9.78	0.02	NEUTRAL	Average
2	0.1607	48.74	-16.69	65.43	38.94	9.78	0.02	NEUTRAL	QP
3	0.1854	38.93	-15.31	54.24	29.12	9.79	0.02	NEUTRAL	Average
4	0.1854	51.52	-12.72	64.24	41.71	9.79	0.02	NEUTRAL	QP
5	0.1965	33.34	-20.42	53.76	23.53	9.79	0.02	NEUTRAL	Average
6	0.1965	49.79	-13.97	63.76	39.98	9.79	0.02	NEUTRAL	QP
7	0.2083	33.19	-20.08	53.27	23.38	9.79	0.02	NEUTRAL	Average
8	0.2083	47.39	-15.88	63.27	37.58	9.79	0.02	NEUTRAL	QP
9	0.2495	24.40	-27.38	51.78	14.58	9.79	0.03	NEUTRAL	Average
10	0.2495	44.48	-17.30	61.78	34.66	9.79	0.03	NEUTRAL	QP
11	0.2630	30.57	-20.77	51.34	20.75	9.79	0.03	NEUTRAL	Average
12	0.2630	43.56	-17.78	61.34	33.74	9.79	0.03	NEUTRAL	QP

Note:

Level = Read Level + LISN Factor + Cable Loss.

4.2. Maximum Conducted Output Power Measurement

4.2.1. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for output power is 30dBm. The limited has to be reduced by the amount in dB that the gain of the antenna exceed 6dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

4.2.2. Measuring Instruments and Setting

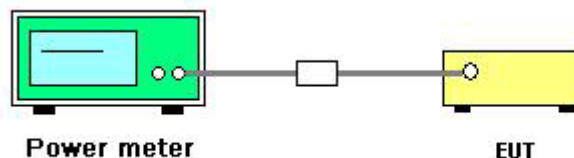
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

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 v03r04 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	20°C	Humidity	52%
Test Engineer	Robert Chang / James Chou	Configurations	IEEE 802.11n
Test Date	Sep. 10, 2014 / Dec. 24, 2014		

Configuration IEEE 802.11n MCS0 HT20

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
1	2412 MHz	14.28	14.06	17.18	30.00	Complies
6	2437 MHz	19.34	19.01	22.19	30.00	Complies
11	2462 MHz	13.23	13.15	16.20	30.00	Complies
12	2467 MHz	11.45	11.12	14.30	30.00	Complies
13	2472 MHz	10.74	9.97	13.38	30.00	Complies

Configuration IEEE 802.11n MCS0 HT20 / Power table for SAR only

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
1	2412 MHz	14.28	14.06	17.18	30.00	Complies
6	2437 MHz	14.36	14.09	17.24	30.00	Complies
11	2462 MHz	13.23	13.15	16.20	30.00	Complies
12	2467 MHz	11.45	11.12	14.30	30.00	Complies

Configuration IEEE 802.11n MCS0 HT40

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
3	2422 MHz	10.94	10.53	13.75	30.00	Complies
6	2437 MHz	12.91	12.88	15.91	30.00	Complies
9	2452 MHz	12.67	12.62	15.66	30.00	Complies
10	2457 MHz	11.55	11.21	14.39	30.00	Complies
11	2462 MHz	10.51	9.48	13.04	30.00	Complies

Configuration IEEE 802.11n MCS0 HT40 / Power table for SAR only

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
3	2422 MHz	10.94	10.53	13.75	30.00	Complies
6	2437 MHz	12.91	12.88	15.91	30.00	Complies
9	2452 MHz	12.67	12.62	15.66	30.00	Complies
10	2457 MHz	11.55	11.21	14.39	30.00	Complies

Temperature	20°C	Humidity	52%
Test Engineer	Robert Chang / James Chou	Configurations	IEEE 802.11b/g
Test Date	Sep. 10, 2014 / Dec. 24, 2014		

Configuration IEEE 802.11b

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
1	2412 MHz	17.31	17.18	20.26	30.00	Complies
6	2437 MHz	20.45	20.63	23.55	30.00	Complies
11	2462 MHz	18.05	17.75	20.91	30.00	Complies
12	2467 MHz	16.89	16.74	19.83	30.00	Complies
13	2472 MHz	11.46	10.81	14.16	30.00	Complies

Configuration IEEE 802.11b / Power table for SAR only

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
1	2412 MHz	14.28	14.03	17.17	30.00	Complies
6	2437 MHz	14.32	14.06	17.20	30.00	Complies
11	2462 MHz	14.29	14.07	17.19	30.00	Complies
12	2467 MHz	14.31	14.02	17.18	30.00	Complies

Configuration IEEE 802.11g

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
1	2412 MHz	13.87	13.76	16.83	30.00	Complies
6	2437 MHz	19.41	19.07	22.25	30.00	Complies
11	2462 MHz	13.45	13.36	16.42	30.00	Complies
12	2467 MHz	13.23	13.25	16.25	30.00	Complies
13	2472 MHz	11.44	11.16	14.31	30.00	Complies

Configuration IEEE 802.11g / Power table for SAR only

Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
1	2412 MHz	13.87	13.76	16.83	30.00	Complies
6	2437 MHz	14.37	14.05	17.22	30.00	Complies
11	2462 MHz	13.45	13.36	16.42	30.00	Complies
12	2467 MHz	13.23	13.25	16.25	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

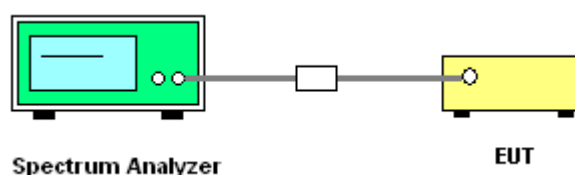
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Set the span to 1.5 times the DTS channel bandwidth.
RBW	$3 \text{ kHz} \leq \text{RBW} \leq 100\text{kHz}$
VBW	$\geq 3 \times \text{RBW}$
Detector	Peak
Trace	Max Hold
Sweep Time	Auto couple

4.3.3. Test Procedures

1. Test was performed in accordance with KDB558074 D01 v03r04 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 $\geq 2 \times \text{span/RBW}$ (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 $\leq 8 \text{ dBm}$.

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	20°C	Humidity	52%
Test Engineer	Robert Chang / James Chou	Configurations	IEEE 802.11n

Configuration IEEE 802.11n MCS0 HT20

Channel	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
1	2412 MHz	-11.82	-12.52	-9.15	7.66	Complies
6	2437 MHz	-6.34	-7.43	-3.84	7.66	Complies
11	2462 MHz	-11.60	-13.03	-9.25	7.66	Complies
12	2467 MHz	-14.39	-13.99	-11.18	7.66	Complies
13	2472 MHz	-13.87	-14.38	-11.11	7.66	Complies

Note: Directional gain = $10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 6.34 \text{dBi} > 6 \text{dBi}$, so limit = $8 - (6.34 - 6) = 7.66 \text{dBm/3kHz}$.

Configuration IEEE 802.11n MCS0 HT40

Channel	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
3	2422 MHz	-16.85	-18.02	-14.39	7.66	Complies
6	2437 MHz	-15.56	-15.46	-12.50	7.66	Complies
9	2452 MHz	-15.33	-15.36	-12.33	7.66	Complies
10	2457 MHz	-16.71	-17.60	-14.12	7.66	Complies
11	2462 MHz	-15.98	-17.90	-13.82	7.66	Complies

Note: Directional gain = $10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 6.34 \text{dBi} > 6 \text{dBi}$, so limit = $8 - (6.34 - 6) = 7.66 \text{dBm/3kHz}$.

Temperature	20°C	Humidity	52%
Test Engineer	Robert Chang / James Chou	Configurations	IEEE 802.11b/g

Configuration IEEE 802.11b

Channel	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
1	2412 MHz	-4.92	-6.08	-2.45	7.66	Complies
6	2437 MHz	-1.50	-2.19	1.18	7.66	Complies
11	2462 MHz	-4.78	-4.99	-1.87	7.66	Complies
12	2467 MHz	-4.75	-5.27	-1.99	7.66	Complies
13	2472 MHz	-8.42	-11.40	-6.65	7.66	Complies

Note: Directional gain = $10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 6.34 \text{dBi} > 6 \text{dBi}$, so limit = $8 - (6.34 - 6) = 7.66 \text{dBm/3kHz}$.

Configuration IEEE 802.11g

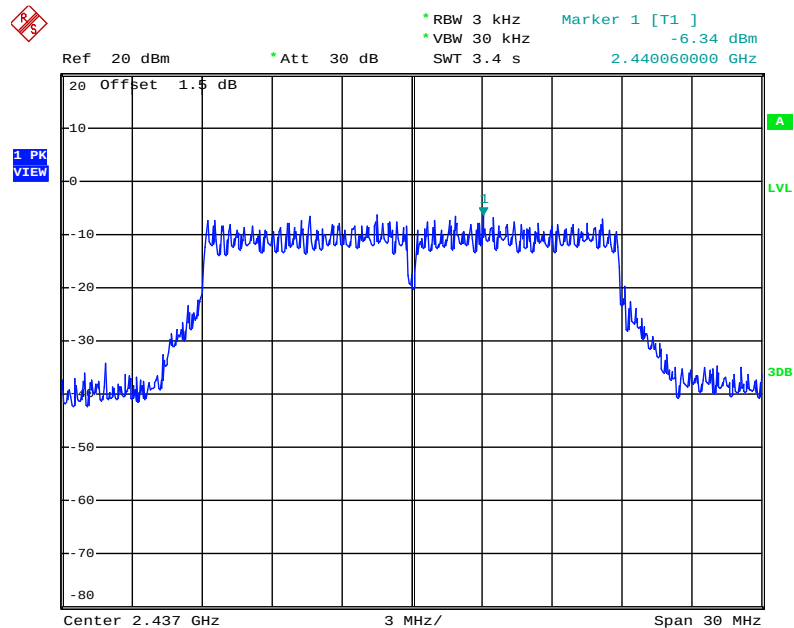
Channel	Frequency	Power Density (dBm/3kHz)			Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Total		
1	2412 MHz	-10.62	-10.97	-7.78	7.66	Complies
6	2437 MHz	-5.20	-6.61	-2.84	7.66	Complies
11	2462 MHz	-10.83	-11.60	-8.19	7.66	Complies
12	2467 MHz	-11.31	-12.14	-8.69	7.66	Complies
13	2472 MHz	-12.89	-12.93	-9.90	7.66	Complies

Note: Directional gain = $10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 6.34 \text{dBi} > 6 \text{dBi}$, so limit = $8 - (6.34 - 6) = 7.66 \text{dBm/3kHz}$.

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

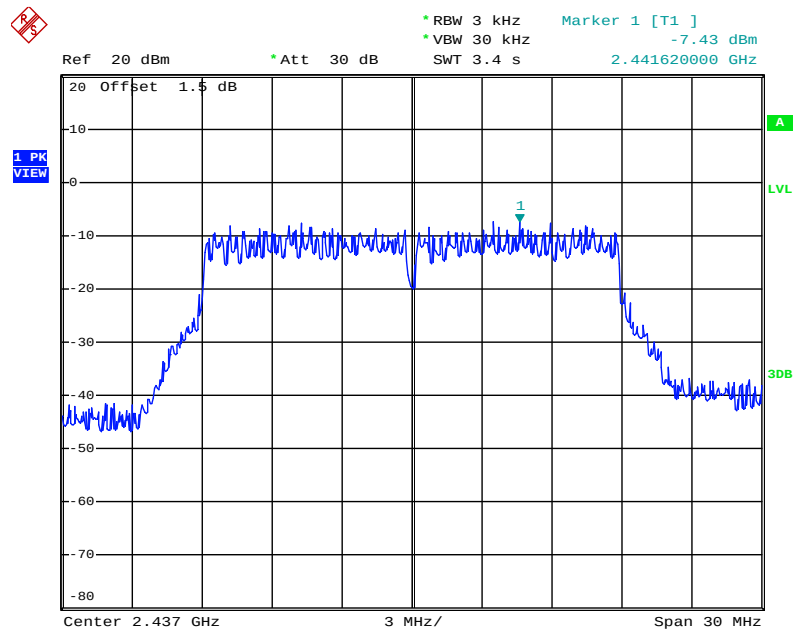
For plots, only the channel with worse result was shown.

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



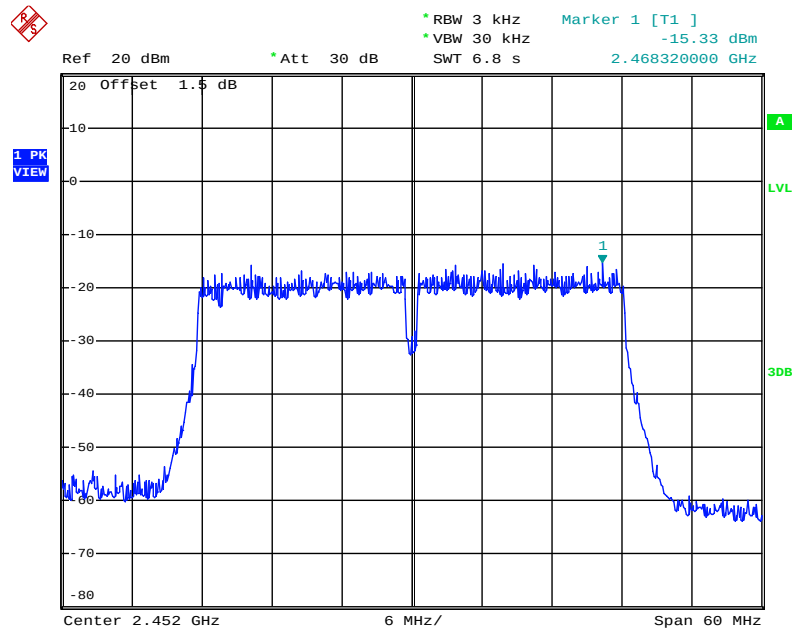
Date: 10.SEP.2014 20:16:44

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



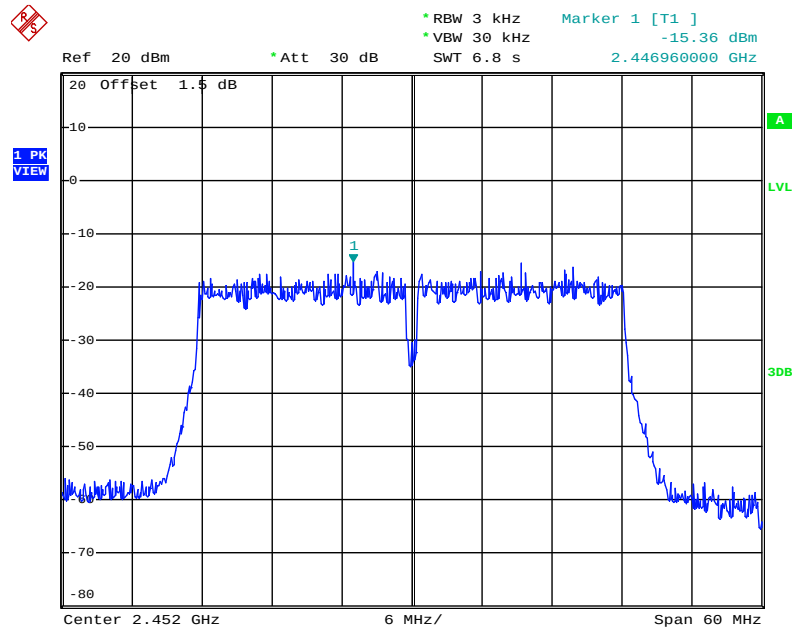
Date: 10.SEP.2014 20:11:13

Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / 2452 MHz / Chain 1



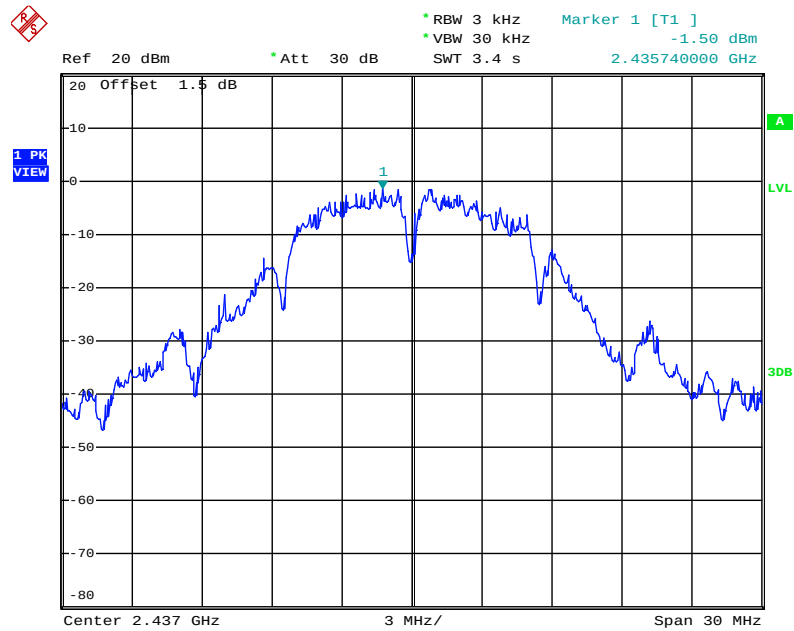
Date: 10.SEP.2014 20:22:26

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



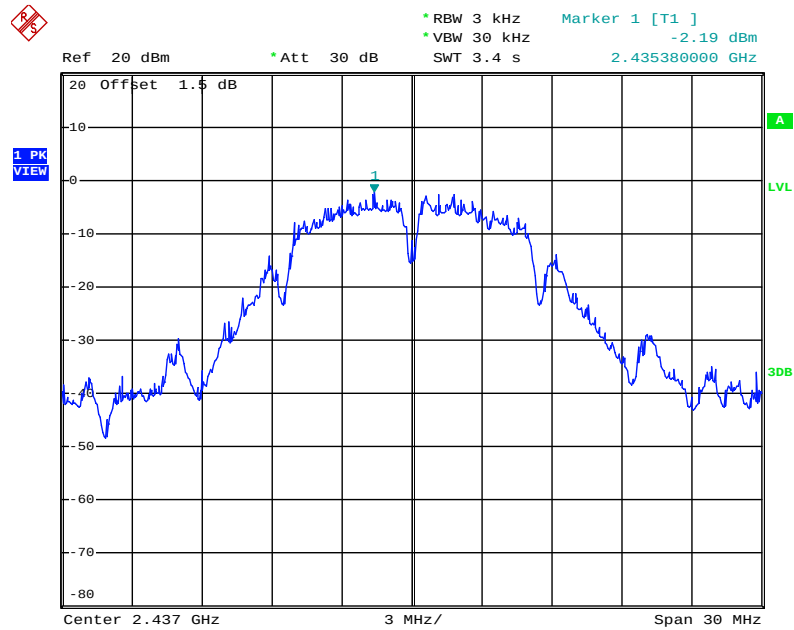
Date: 10.SEP.2014 20:25:47

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



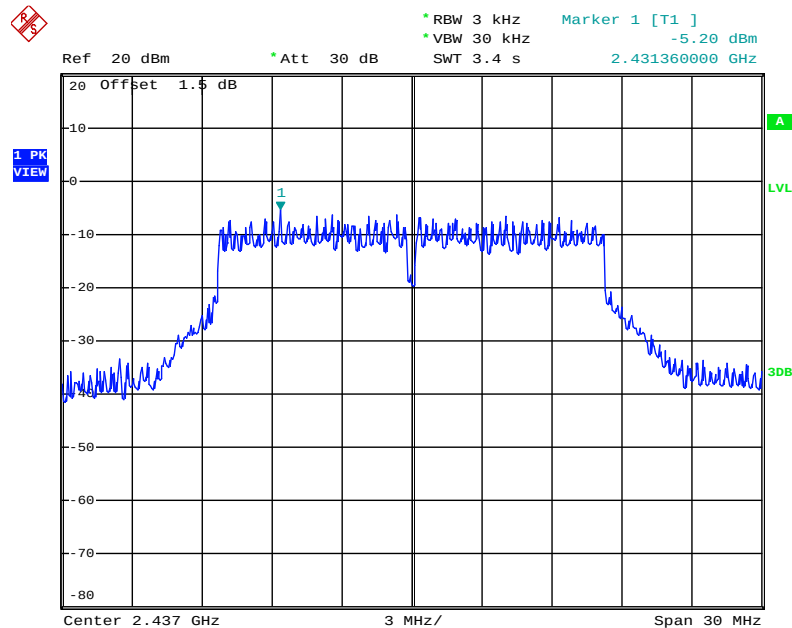
Date: 10.SEP.2014 19:57:00

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



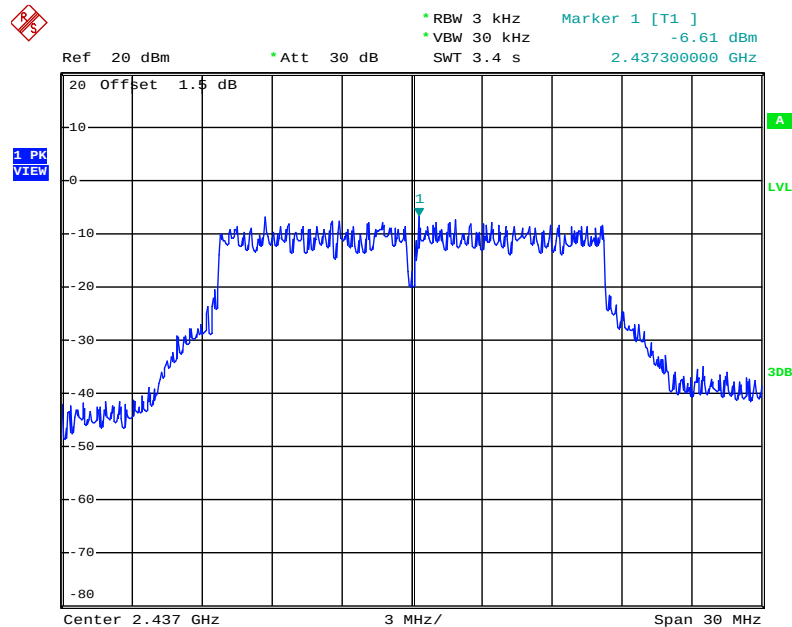
Date: 10.SEP.2014 19:50:42

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



Date: 10.SEP.2014 20:00:06

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



Date: 10.SEP.2014 20:06:34

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.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RBW	100kHz
VBW	$\geq 3 \times \text{RBW}$
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.4.3. Test Procedures

1. The transmitter was conducted to the spectrum analyzer in peak hold mode.
2. Test was performed in accordance with KDB 558074 D01 v03r02 for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 8.0 DTS 6-dB signal bandwidth 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. Measurement perform conducted of each port.
5. Measured the spectrum width with power higher than 6dB below carrier.

4.4.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.3.4.

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	20°C	Humidity	52%
Test Engineer	Robert Chang	Configurations	IEEE 802.11n

Configuration IEEE 802.11n MCS0 HT20

Channel	Frequency	6dB Bandwidth (MHz)		99% Occupied Bandwidth (MHz)		Min. Limit (kHz)	Test Result
		Chain 1	Chain 2	Chain 1	Chain 2		
1	2412 MHz	17.60	17.60	17.84	17.76	500	Complies
6	2437 MHz	17.52	17.60	17.92	17.84	500	Complies
11	2462 MHz	17.60	17.60	17.76	17.84	500	Complies
12	2467 MHz	17.60	17.60	17.84	17.84	500	Complies
13	2472 MHz	17.12	17.12	17.52	17.44	500	Complies

Configuration IEEE 802.11n MCS0 HT40

Channel	Frequency	6dB Bandwidth (MHz)		99% Occupied Bandwidth (MHz)		Min. Limit (kHz)	Test Result
		Chain 1	Chain 2	Chain 1	Chain 2		
3	2422 MHz	36.32	36.32	36.32	36.32	500	Complies
6	2437 MHz	36.48	36.48	36.32	36.32	500	Complies
9	2452 MHz	36.32	36.32	36.32	36.32	500	Complies
10	2457 MHz	36.32	36.48	36.32	36.48	500	Complies
11	2462 MHz	36.32	36.32	36.48	36.32	500	Complies

Temperature	20°C	Humidity	52%
Test Engineer	Robert Chang	Configurations	IEEE 802.11b/g

Configuration IEEE 802.11b

Channel	Frequency	6dB Bandwidth (MHz)		99% Occupied Bandwidth (MHz)		Min. Limit (kHz)	Test Result
		Chain 1	Chain 2	Chain 1	Chain 2		
1	2412 MHz	8.00	8.56	11.84	11.76	500	Complies
6	2437 MHz	8.96	8.64	12.48	12.32	500	Complies
11	2462 MHz	9.04	8.00	11.84	11.84	500	Complies
12	2467 MHz	8.56	8.48	11.60	11.76	500	Complies
13	2472 MHz	8.56	8.08	11.52	11.44	500	Complies

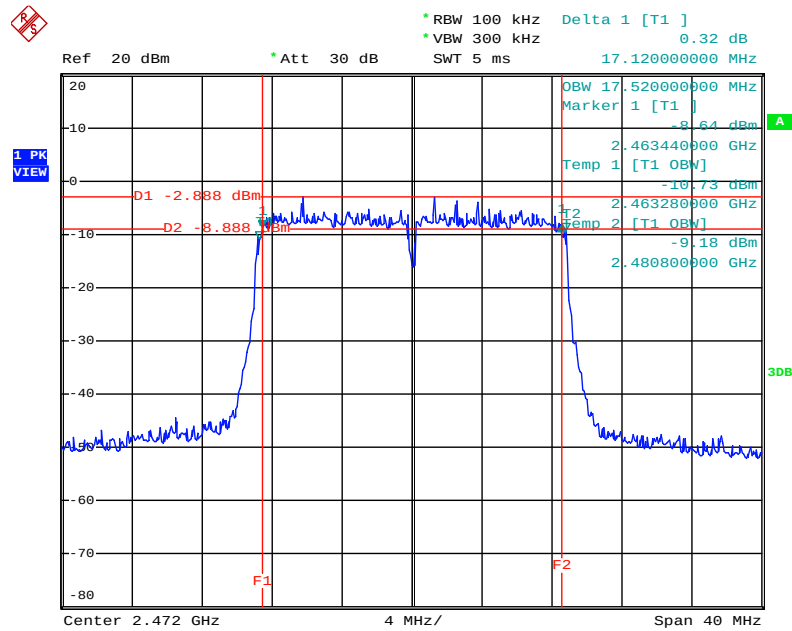
Configuration IEEE 802.11g

Channel	Frequency	6dB Bandwidth (MHz)		99% Occupied Bandwidth (MHz)		Min. Limit (kHz)	Test Result
		Chain 1	Chain 2	Chain 1	Chain 2		
1	2412 MHz	16.40	16.40	16.64	16.64	500	Complies
6	2437 MHz	16.32	16.32	16.72	16.64	500	Complies
11	2462 MHz	16.40	16.40	16.56	16.64	500	Complies
12	2467 MHz	16.48	16.48	16.64	16.64	500	Complies
13	2472 MHz	16.40	16.32	16.64	16.48	500	Complies

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

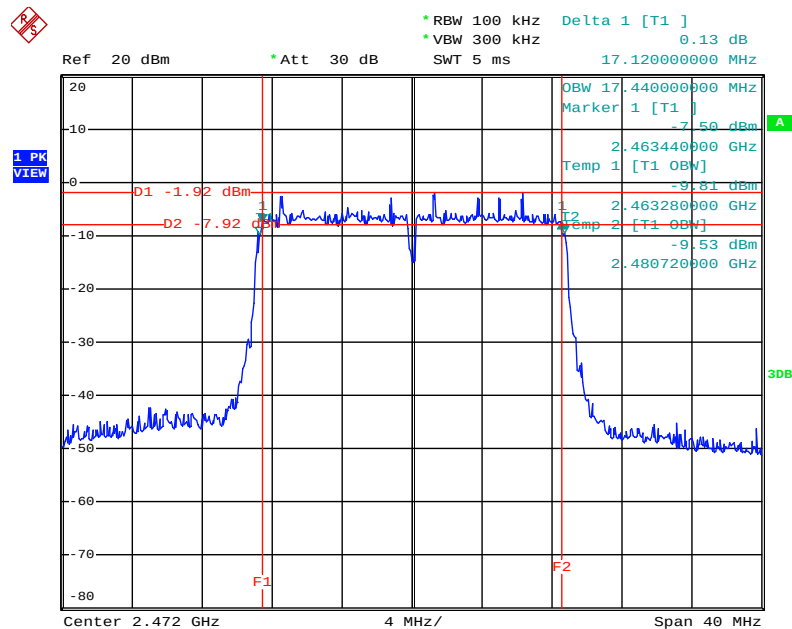
For plots, only the channel with worse result was shown.

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2472 MHz / Chain 1



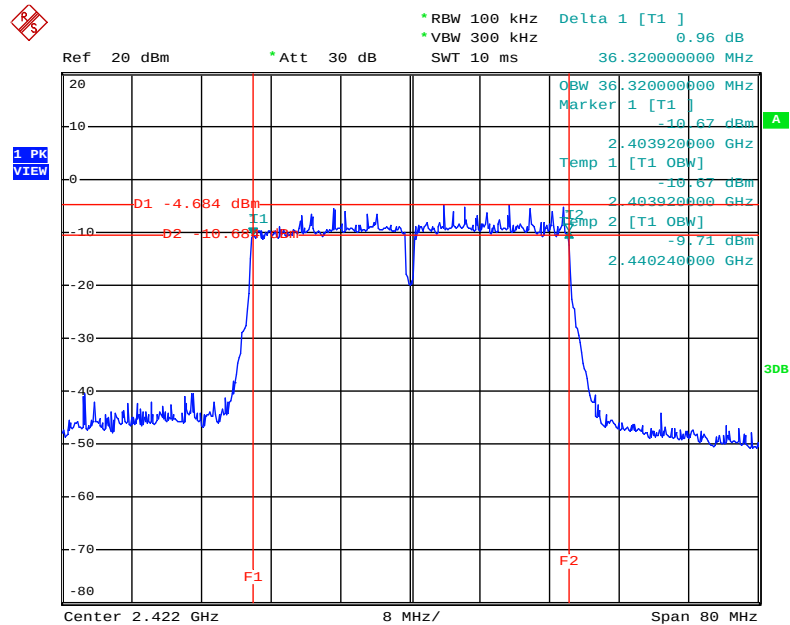
Date: 20.DEC.2014 10:18:34

6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / 2472 MHz / Chain 2



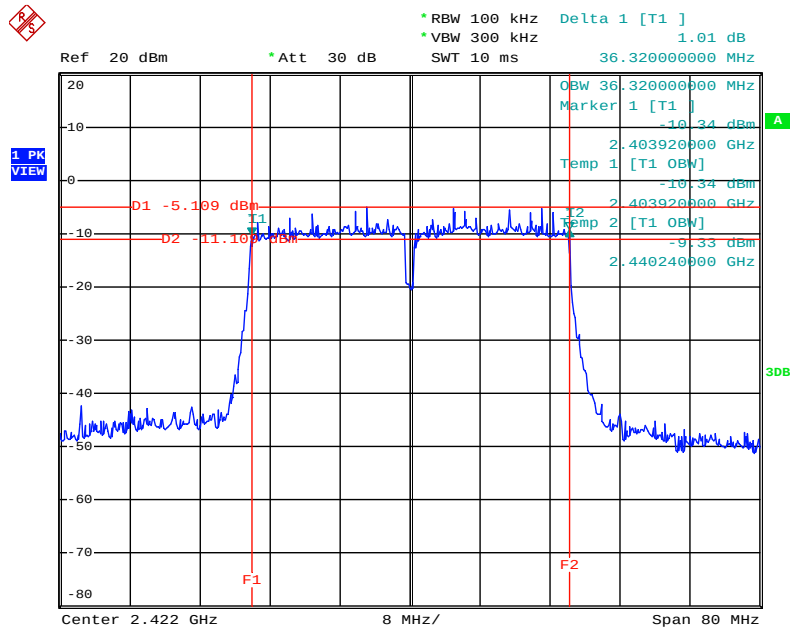
Date: 20.DEC.2014 10:19:22

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



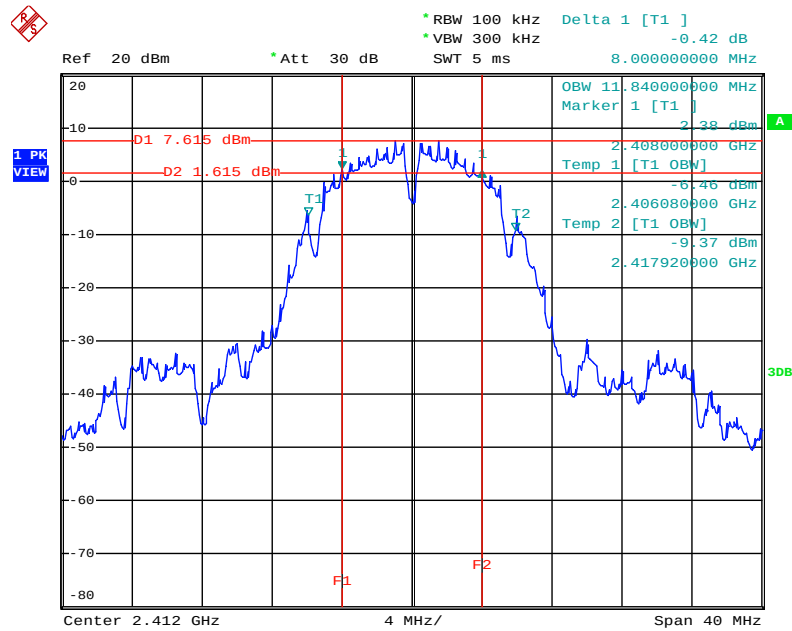
Date: 16.SEP.2014 16:40:11

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



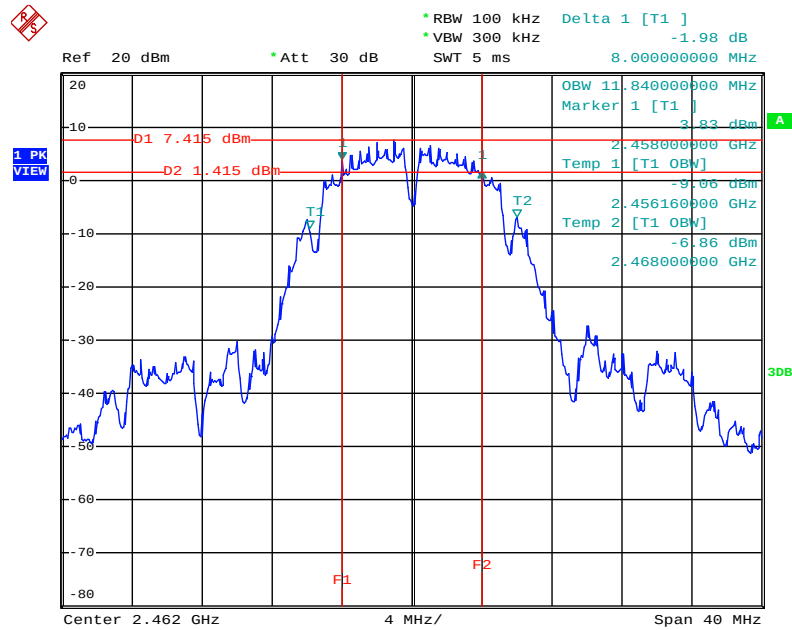
Date: 16.SEP.2014 16:40:57

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



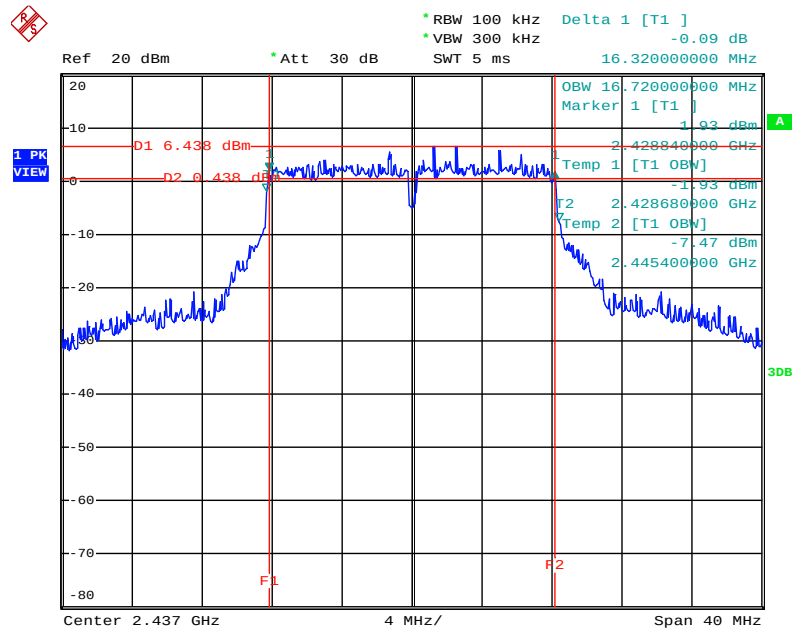
Date: 16.SEP.2014 15:20:56

6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2462 MHz / Chain 2



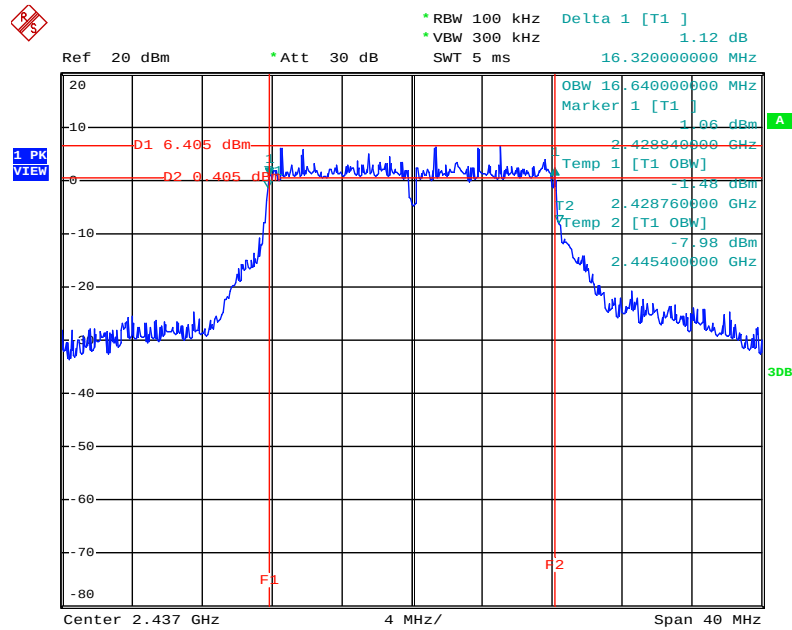
Date: 16.SEP.2014 15:24:18

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



Date: 16.SEP.2014 15:33:05

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



Date: 16.SEP.2014 15:34:49

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 (micovolts/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

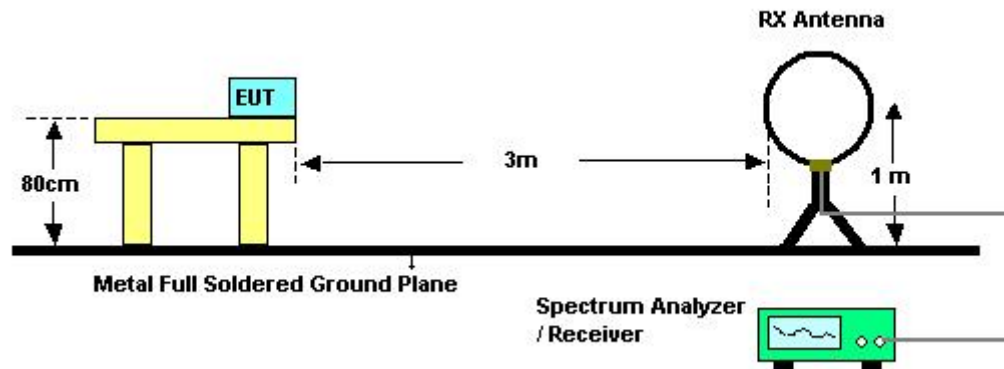
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RBW 120kHz for QP

4.5.3. Test Procedures

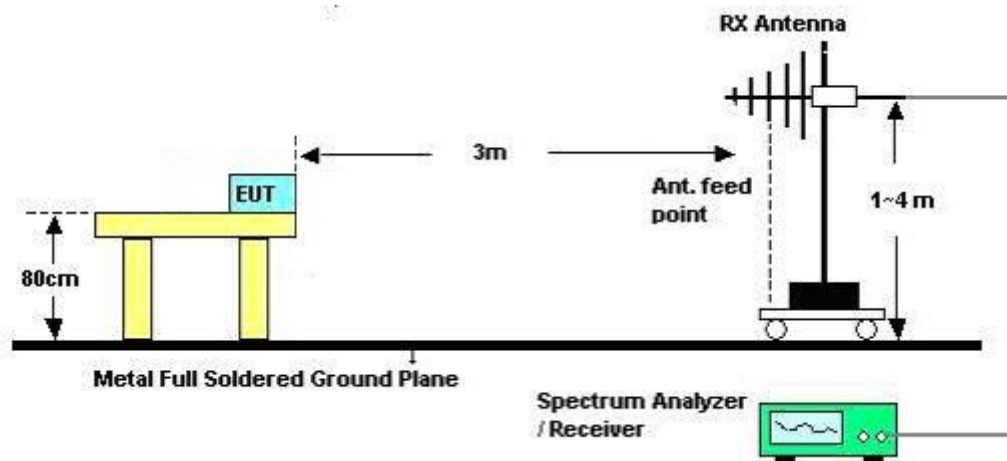
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting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

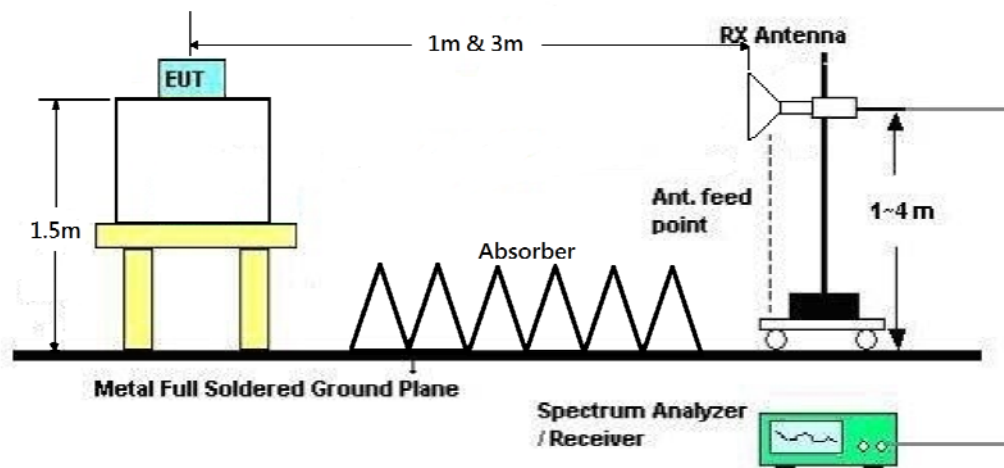
For Radiated Emissions: 9kHz ~30MHz



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	24°C	Humidity	52%
Test Engineer	Luke Hsieh / Stim Song	Configurations	Normal Link
Test Date	Jan. 07, 2016	Test Mode	Mode 9

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.

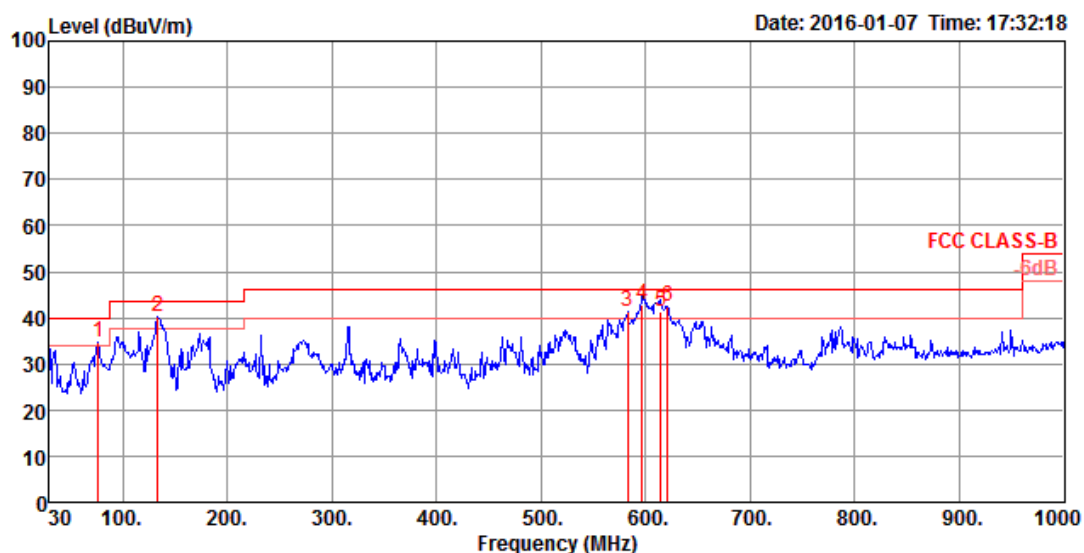
Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB);

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

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

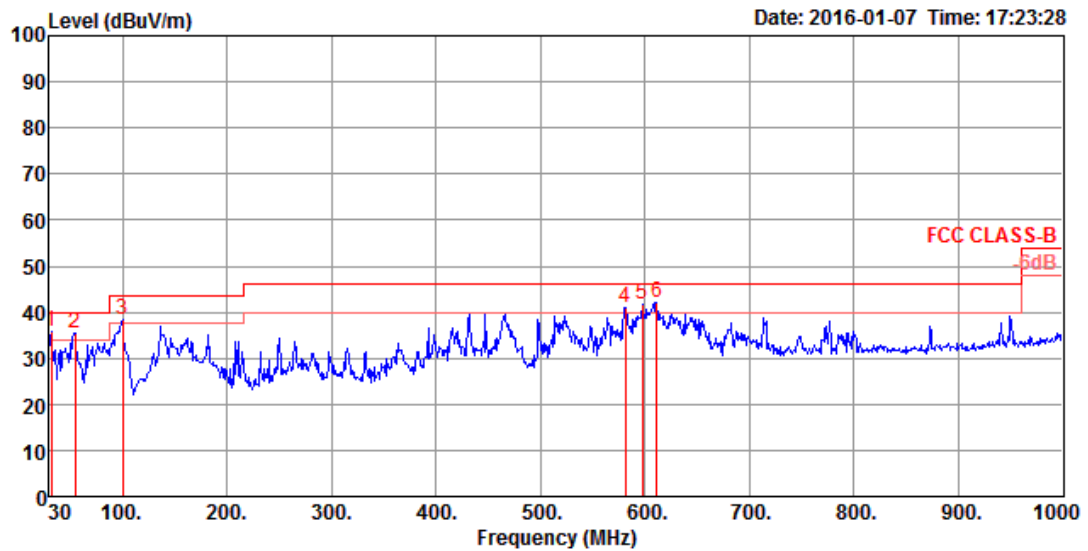
Temperature	24°C	Humidity	52%
Test Engineer	Luke Hsieh / Stim Song	Configurations	Normal Link
Test Mode	Mode 9		

Horizontal



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	76.56	34.65	40.00	-5.35	52.93	0.76	13.36	32.40	125	169 Peak	HORIZONTAL
2	133.79	40.16	43.50	-3.34	52.96	0.99	18.57	32.36	125	292 Peak	HORIZONTAL
3	582.90	41.20	46.00	-4.80	46.31	2.09	25.20	32.40	100	304 Peak	HORIZONTAL
4	596.48	42.96	46.00	-3.04	47.87	2.12	25.38	32.41	114	174 QP	HORIZONTAL
5	614.91	41.24	46.00	-4.76	45.89	2.14	25.61	32.40	123	166 QP	HORIZONTAL
6	620.73	42.39	46.00	-3.61	46.94	2.15	25.70	32.40	100	319 Peak	HORIZONTAL

Vertical



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	31.94	35.78	40.00	-4.22	43.02	0.50	24.66	32.40	100	266 Peak	VERTICAL
2	54.25	35.49	40.00	-4.51	52.89	0.64	14.37	32.41	100	234 Peak	VERTICAL
3	99.84	38.33	43.50	-5.17	52.26	0.86	17.60	32.39	100	3 Peak	VERTICAL
4	580.96	41.07	46.00	-4.93	46.21	2.09	25.17	32.40	125	291 Peak	VERTICAL
5	597.45	41.60	46.00	-4.40	46.51	2.12	25.38	32.41	100	164 Peak	VERTICAL
6	611.03	42.18	46.00	-3.82	46.86	2.14	25.58	32.40	100	164 Peak	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.

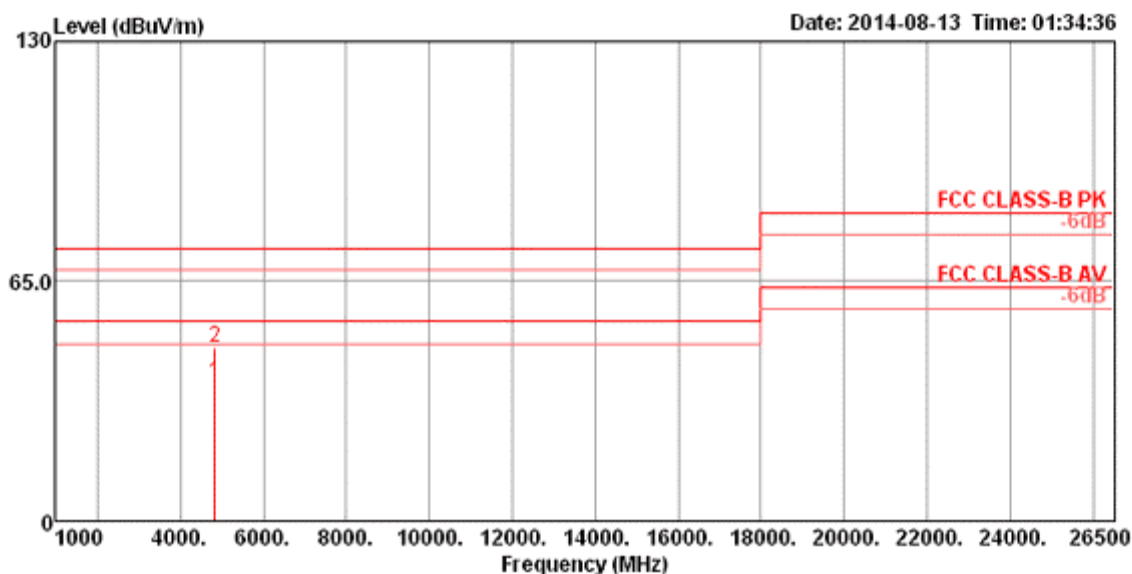
Emission level (dBuV/m) = 20 log Emission level (uV/m).

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

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

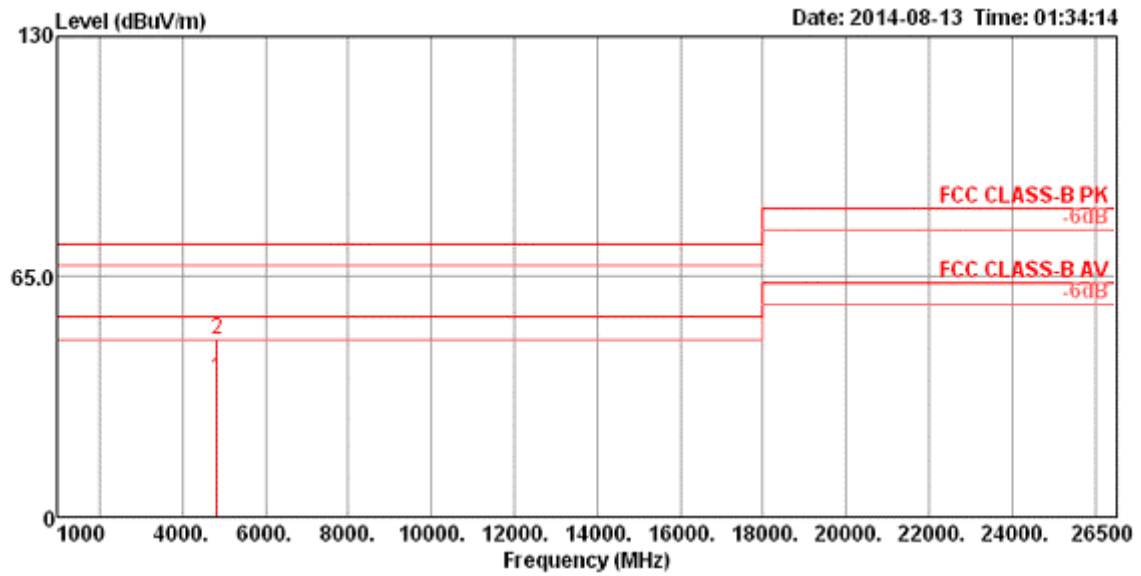
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT20 CH 1 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4826.04	37.43	54.00	-16.57	34.27	5.69	32.77	35.30	150	111	HORIZONTAL	Average
2	4826.29	46.90	74.00	-27.10	43.74	5.69	32.77	35.30	150	111	HORIZONTAL	Peak

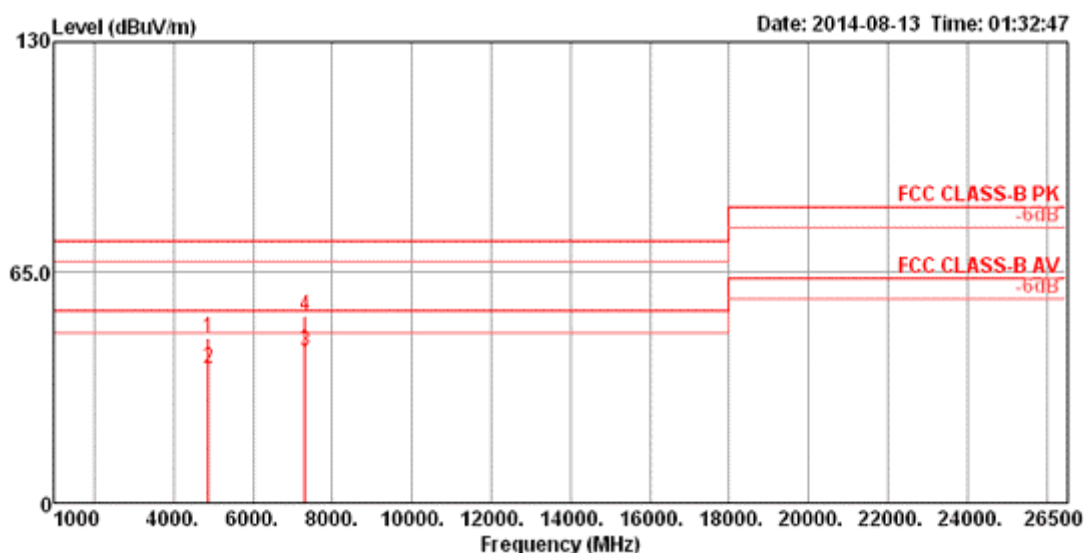
Vertical



	Freq	Level	Limit	Over	Read	CableAntenna Preamp			A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4820.47	37.36	54.00	-16.64	34.22	5.68	32.76	35.30	150	58	VERTICAL	Average
2	4827.11	47.83	74.00	-26.17	44.67	5.69	32.77	35.30	150	58	VERTICAL	Peak

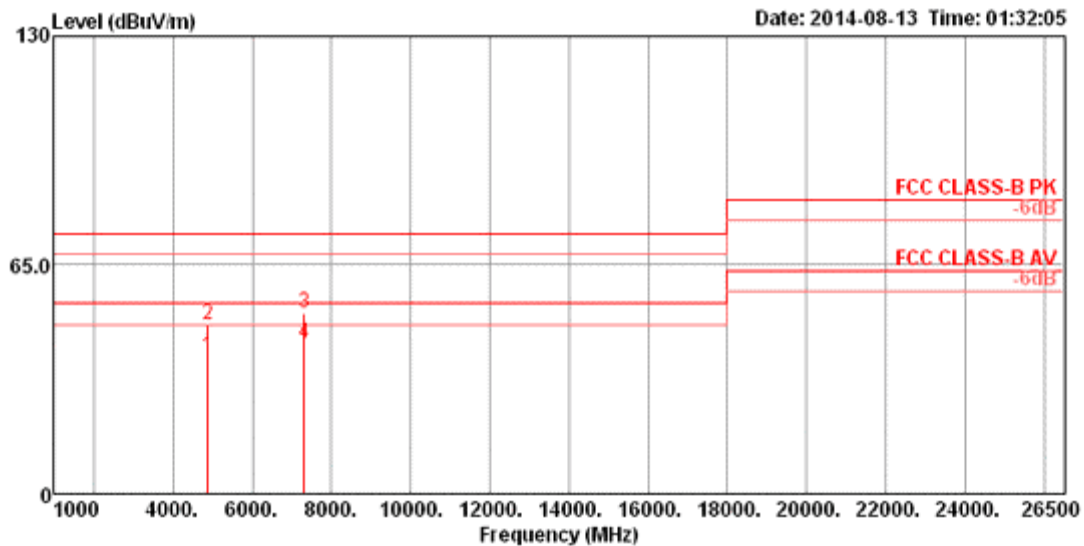
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT20 CH 6 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4872.70	46.68	74.00	-27.32	43.44	5.75	32.80	35.31	150	163	HORIZONTAL Peak
2	4877.16	37.86	54.00	-16.14	34.63	5.75	32.80	35.32	150	163	HORIZONTAL Average
3	7311.65	42.72	54.00	-11.28	33.90	7.06	37.12	35.36	150	235	HORIZONTAL Average
4	7315.53	52.72	74.00	-21.28	43.90	7.06	37.12	35.36	150	235	HORIZONTAL Peak

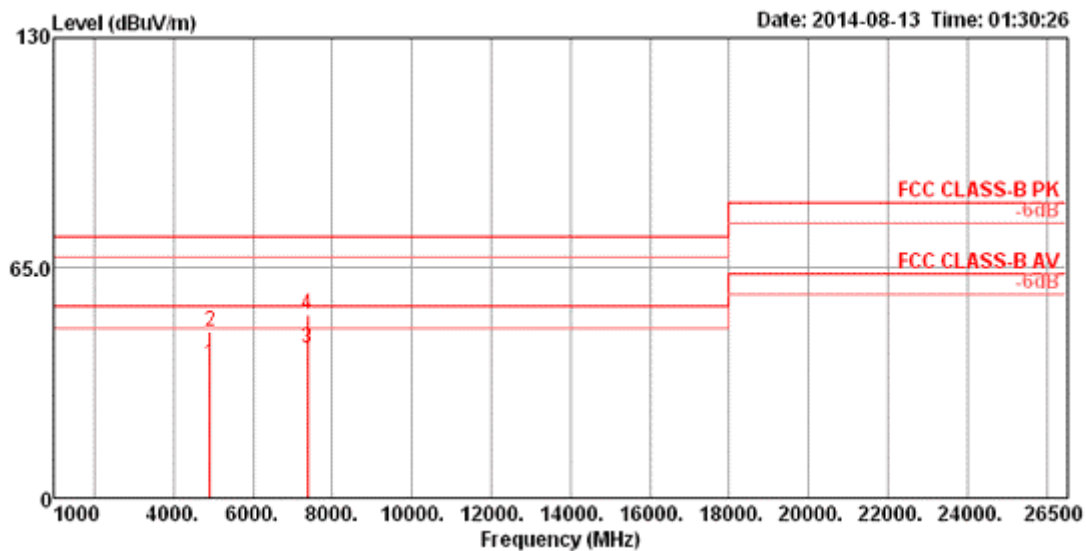
Vertical



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4872.71	39.00	54.00	-15.00	35.76	5.75	32.80	35.31	150	116	VERTICAL Average
2	4876.00	48.10	74.00	-25.90	44.87	5.75	32.80	35.32	150	116	VERTICAL Peak
3	7310.86	51.38	74.00	-22.62	42.56	7.06	37.12	35.36	150	184	VERTICAL Peak
4	7311.40	42.82	54.00	-11.18	34.00	7.06	37.12	35.36	150	184	VERTICAL Average

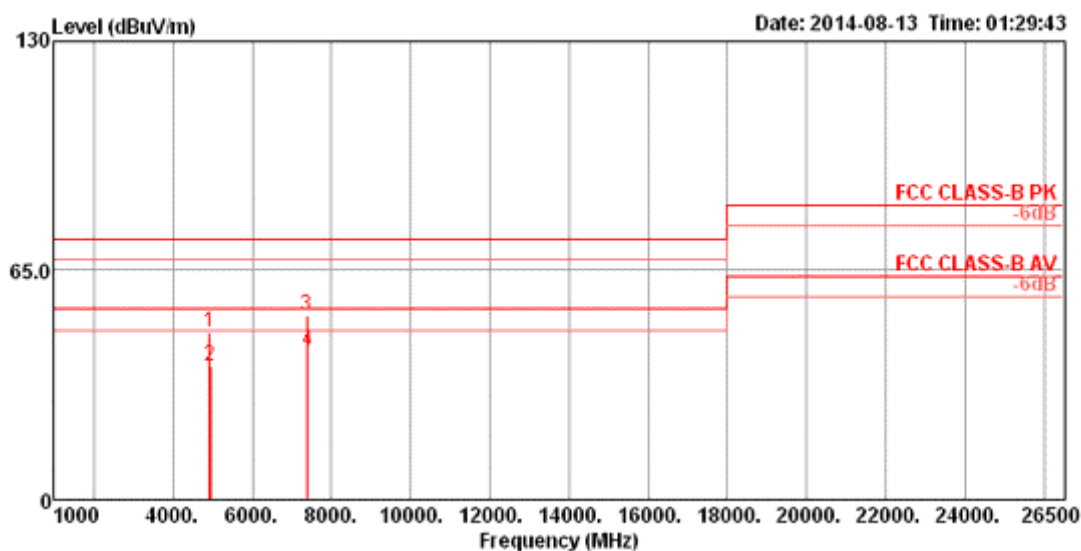
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT20 CH 11 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4923.55	38.04	54.00	-15.96	34.73	5.81	32.83	35.33	150	173	HORIZONTAL Average
2	4923.58	47.21	74.00	-26.79	43.90	5.81	32.83	35.33	150	173	HORIZONTAL Peak
3	7381.60	42.41	54.00	-11.59	33.49	7.08	37.16	35.32	150	241	HORIZONTAL Average
4	7383.42	51.77	74.00	-22.23	42.85	7.08	37.16	35.32	150	241	HORIZONTAL Peak

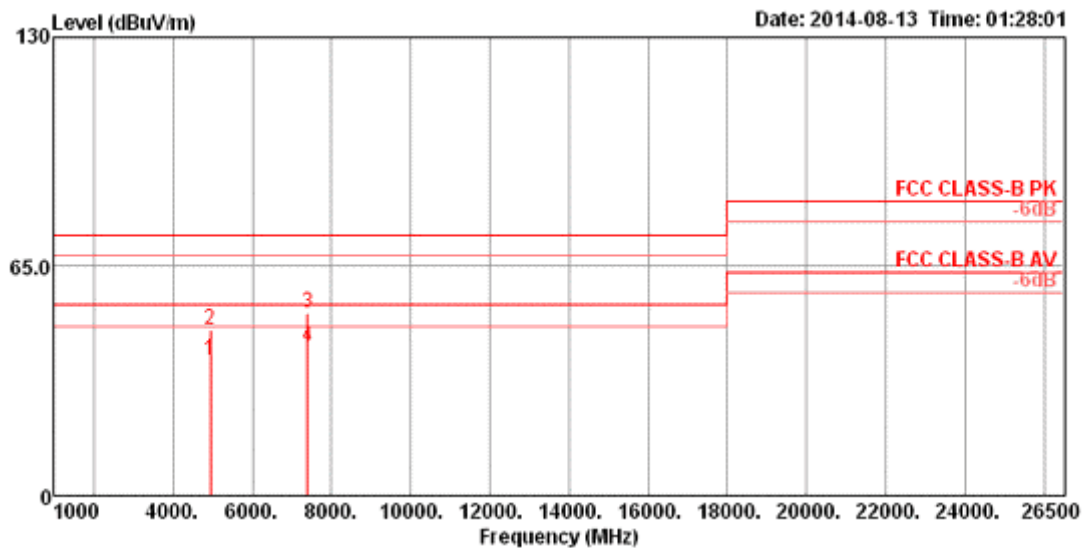
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4921.11	47.59	74.00	-26.41	44.29	5.80	32.83	35.33	150	117	VERTICAL Peak
2	4927.49	38.14	54.00	-15.86	34.82	5.81	32.84	35.33	150	117	VERTICAL Average
3	7381.97	52.34	74.00	-21.66	43.42	7.08	37.16	35.32	150	188	VERTICAL Peak
4	7383.86	42.44	54.00	-11.56	33.52	7.08	37.16	35.32	150	188	VERTICAL Average

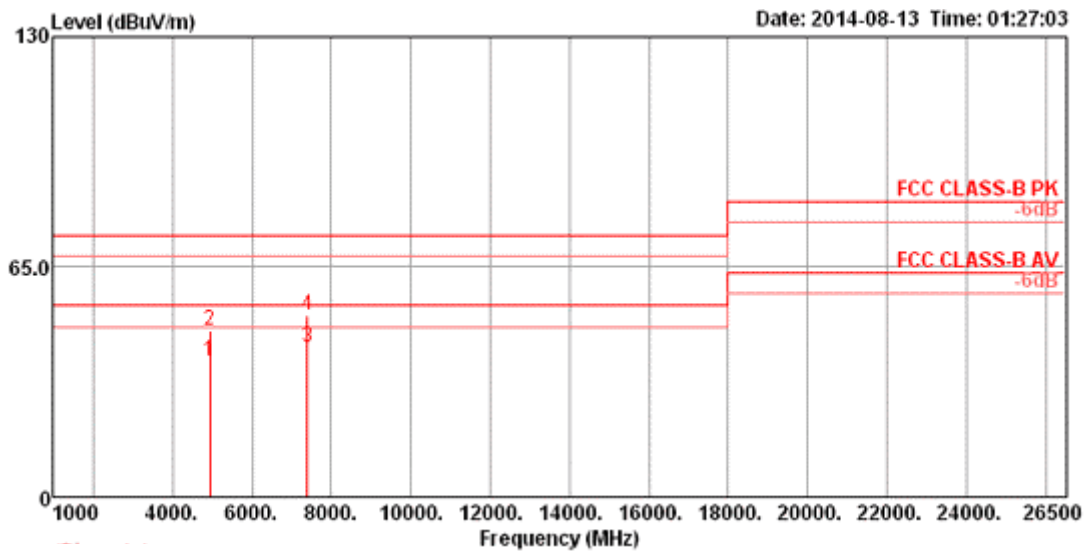
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT20 CH 12 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4931.15	38.16	54.00	-15.84	34.84	5.82	32.84	35.34	150	182	HORIZONTAL	Average
2	4934.88	46.95	74.00	-27.05	43.63	5.82	32.84	35.34	150	182	HORIZONTAL	Peak
3	7399.41	51.61	74.00	-22.39	42.67	7.09	37.16	35.31	150	106	HORIZONTAL	Peak
4	7400.22	42.23	54.00	-11.77	33.29	7.09	37.16	35.31	150	106	HORIZONTAL	Average

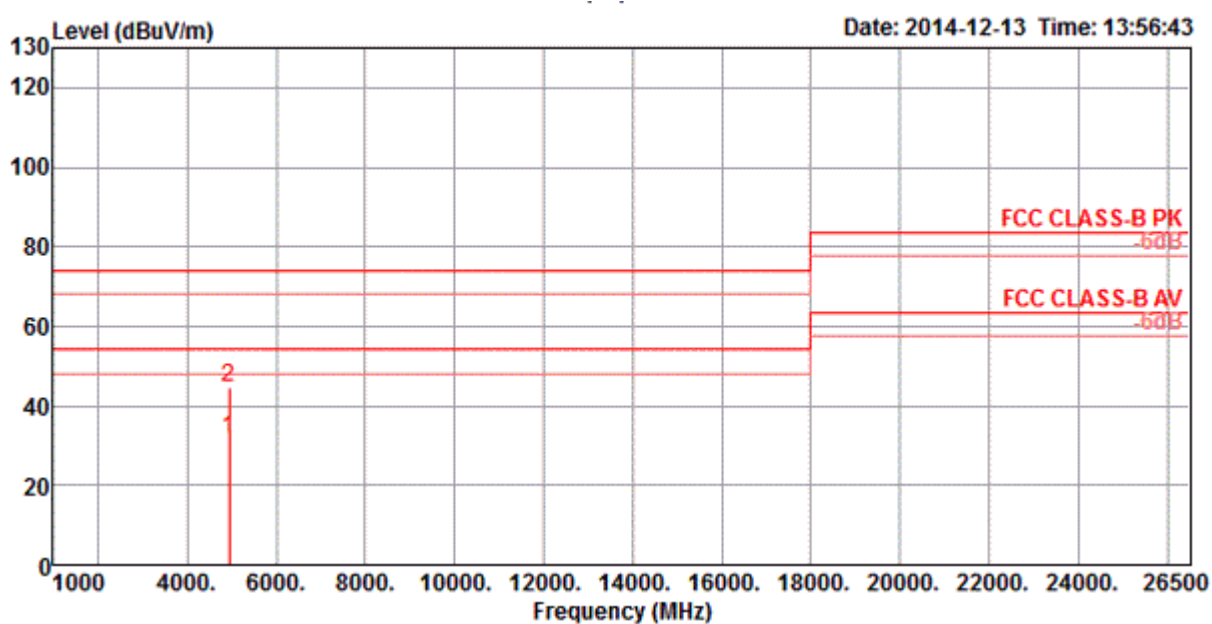
Vertical



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4931.26	38.18	54.00	-15.82	34.86	5.82	32.84	35.34	150	241	VERTICAL Average
2	4932.63	46.79	74.00	-27.21	43.47	5.82	32.84	35.34	150	241	VERTICAL Peak
3	7398.82	42.24	54.00	-11.76	33.30	7.09	37.16	35.31	150	152	VERTICAL Average
4	7398.97	51.51	74.00	-22.49	42.57	7.09	37.16	35.31	150	152	VERTICAL Peak

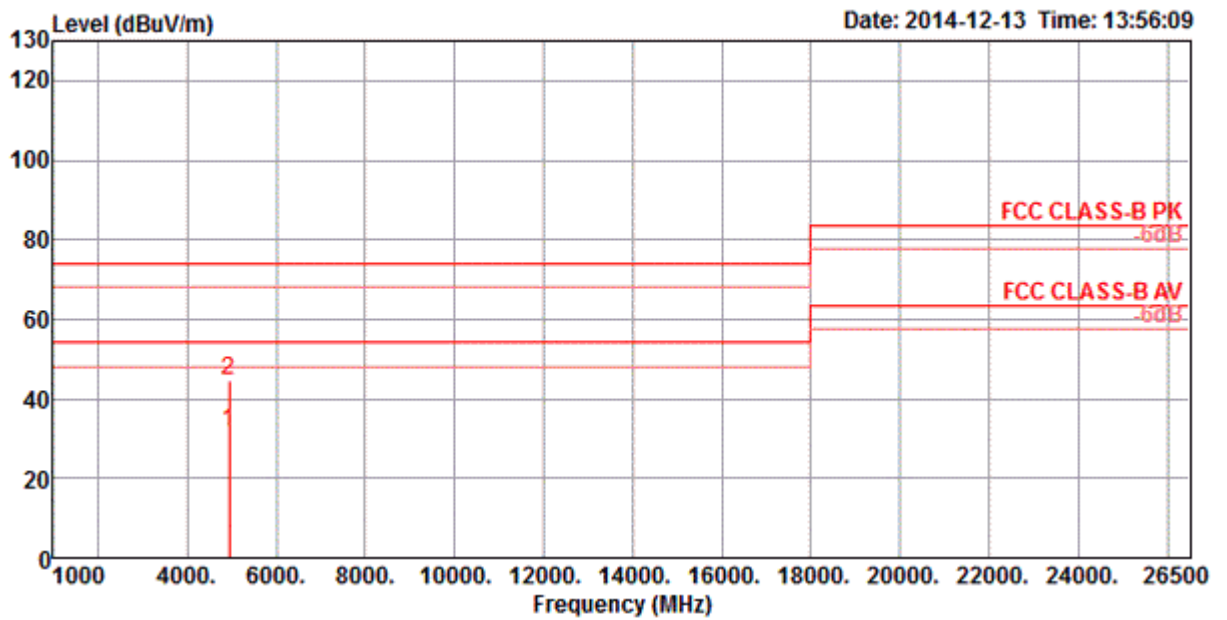
Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11n MCS0 HT20 CH 13 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	Limit	Level	Loss	Factor	Factor	Pol/Phase	deg	cm	
1	4943.11	31.46	54.00	-22.54	28.02	5.80	33.66	31.30	HORIZONTAL	198	118	Average
2	4943.93	44.58	74.00	-29.42	41.14	5.80	33.66	31.30	HORIZONTAL	198	118	Peak

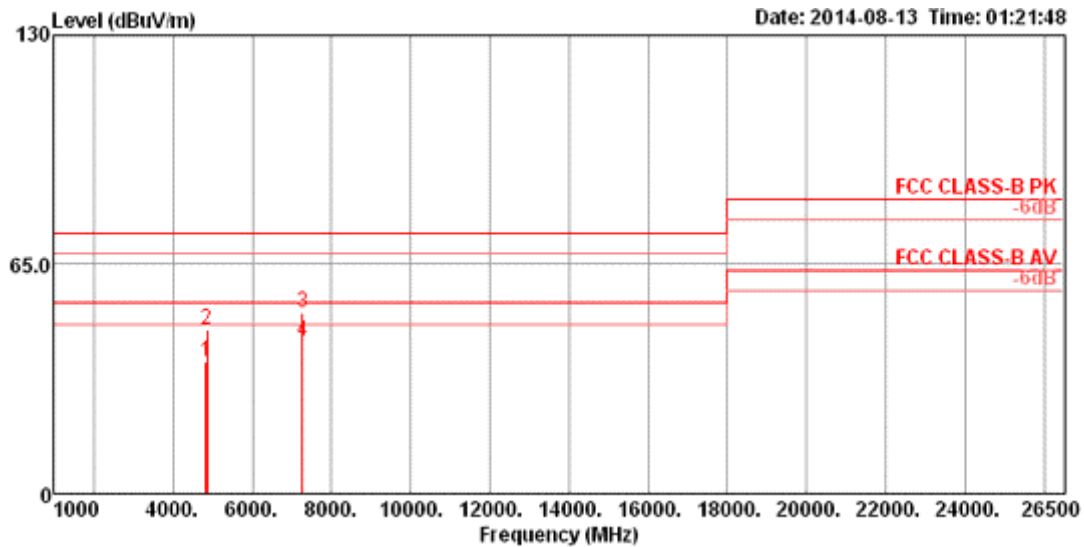
Vertical



	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	Limit	Level	Loss	Factor	Factor	Pol/Phase	deg	cm	
1	4944.37	31.54	54.00	-22.46	28.10	5.80	33.66	31.30	VERTICAL	161	121	Average
2	4944.86	44.44	74.00	-29.56	41.00	5.80	33.66	31.30	VERTICAL	161	121	Peak

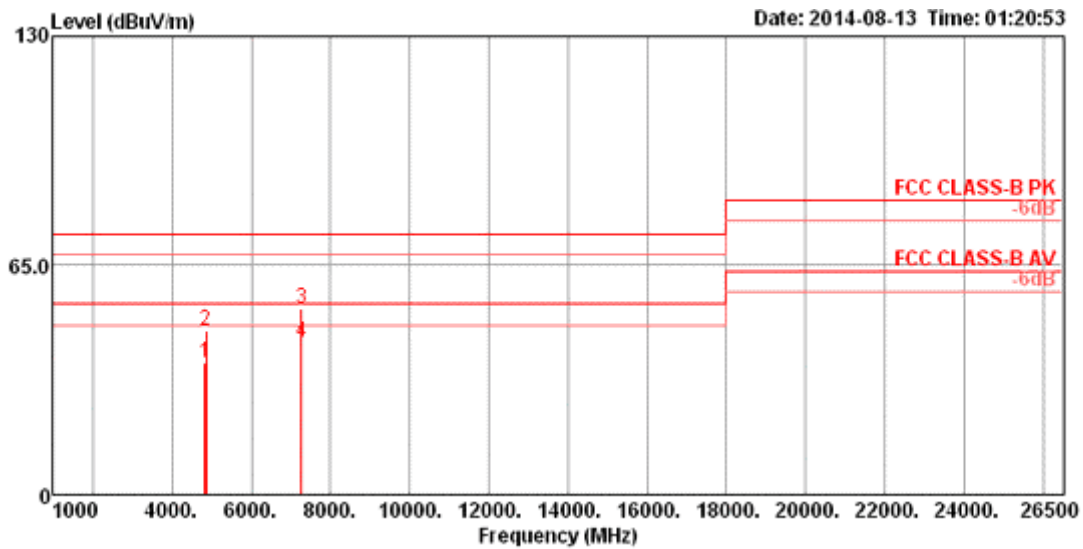
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT40 CH 3 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4839.08	37.30	54.00	-16.70	34.12	5.70	32.78	35.30	150	298	HORIZONTAL Average
2	4847.22	46.39	74.00	-27.61	43.21	5.71	32.78	35.31	150	298	HORIZONTAL Peak
3	7264.08	51.42	74.00	-22.58	42.66	7.04	37.11	35.39	150	158	HORIZONTAL Peak
4	7269.19	42.97	54.00	-11.03	34.20	7.04	37.11	35.38	150	158	HORIZONTAL Average

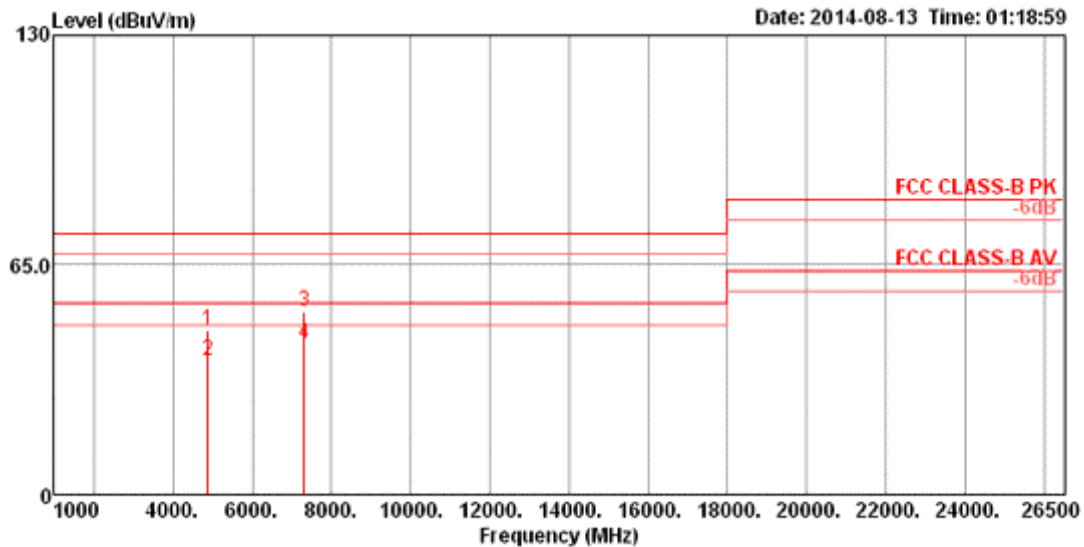
Vertical



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4840.02	37.45	74.00	-36.55	34.26	5.71	32.78	35.30	150	209 VERTICAL	Peak
2	4847.86	46.74	54.00	-7.26	43.55	5.72	32.78	35.31	150	209 VERTICAL	Average
3	7262.15	52.81	74.00	-21.19	44.05	7.04	37.11	35.39	150	92 VERTICAL	Peak
4	7263.76	42.94	54.00	-11.06	34.18	7.04	37.11	35.39	150	92 VERTICAL	Average

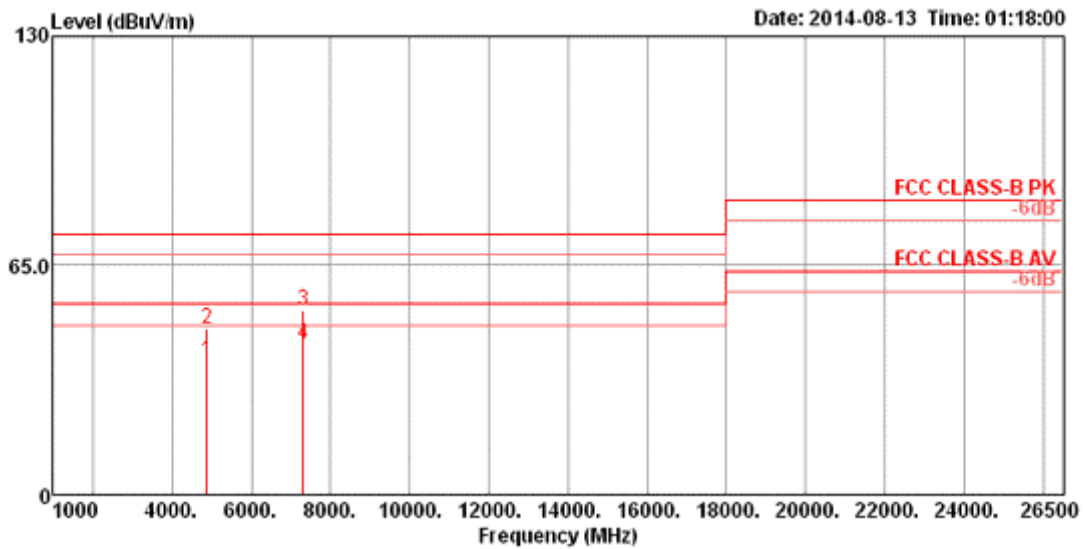
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT40 CH 6 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4871.70	46.58	74.00	-27.42	43.35	5.74	32.80	35.31	150	293	HORIZONTAL Peak
2	4876.90	37.99	54.00	-16.01	34.76	5.75	32.80	35.32	150	293	HORIZONTAL Average
3	7312.19	51.65	74.00	-22.35	42.83	7.06	37.12	35.36	150	167	HORIZONTAL Peak
4	7314.90	42.92	54.00	-11.08	34.10	7.06	37.12	35.36	150	167	HORIZONTAL Average

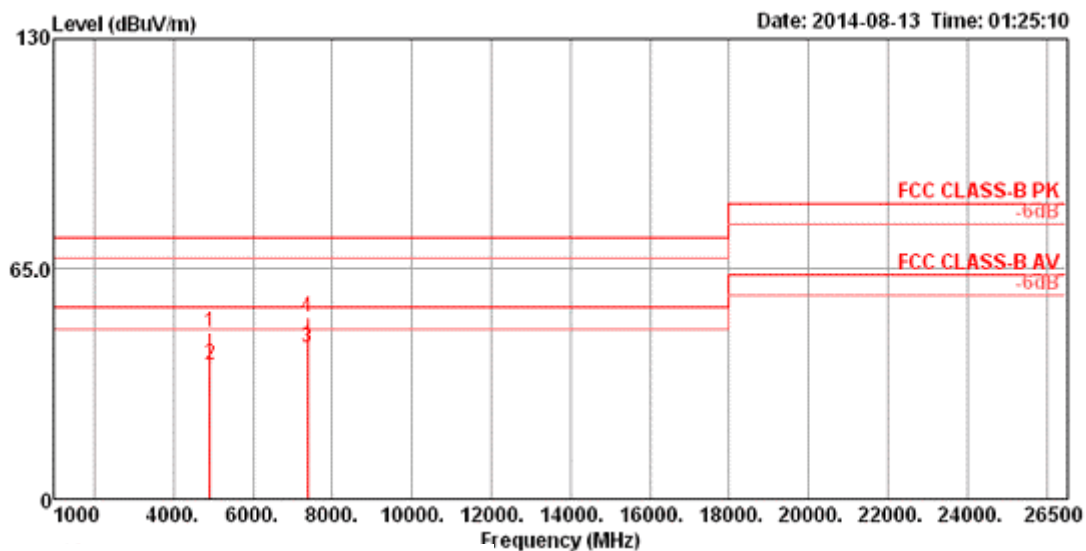
Vertical



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4874.64	38.07	54.00	-15.93	34.83	5.75	32.80	35.31	150	58 VERTICAL	Average
2	4875.87	47.24	74.00	-26.76	44.01	5.75	32.80	35.32	150	58 VERTICAL	Peak
3	7309.43	52.14	74.00	-21.86	43.32	7.06	37.12	35.36	150	197 VERTICAL	Peak
4	7315.28	42.85	54.00	-11.15	34.03	7.06	37.12	35.36	150	197 VERTICAL	Average

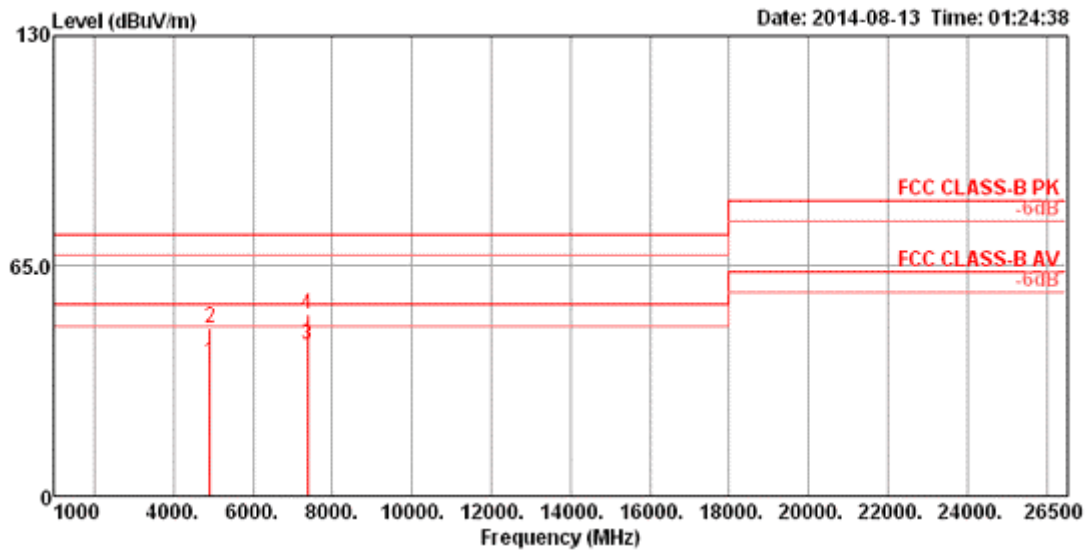
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT40 CH 9 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4910.84	46.90	74.00	-27.10	43.61	5.79	32.83	35.33	150	127	HORIZONTAL Peak
2	4910.90	37.90	54.00	-16.10	34.61	5.79	32.83	35.33	150	127	HORIZONTAL Average
3	7365.06	42.60	54.00	-11.40	33.70	7.08	37.15	35.33	150	320	HORIZONTAL Average
4	7365.48	51.33	74.00	-22.67	42.43	7.08	37.15	35.33	150	320	HORIZONTAL Peak

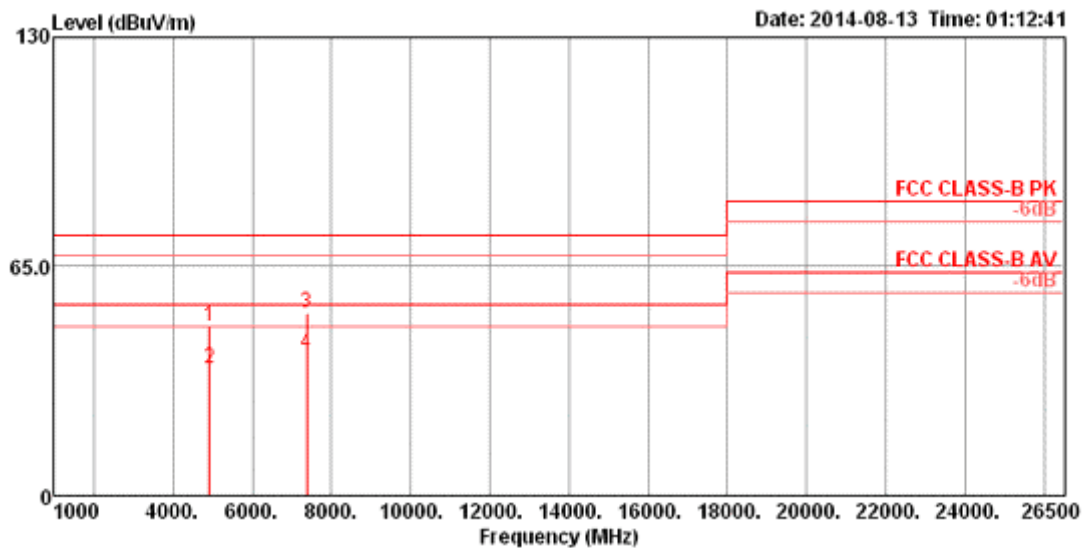
Vertical



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4910.08	37.94	54.00	-16.06	34.65	5.79	32.83	35.33	150	140	VERTICAL Average
2	4910.50	47.33	74.00	-26.67	44.04	5.79	32.83	35.33	150	140	VERTICAL Peak
3	7365.04	42.71	54.00	-11.29	33.81	7.08	37.15	35.33	150	234	VERTICAL Average
4	7365.76	51.30	74.00	-22.70	42.40	7.08	37.15	35.33	150	234	VERTICAL Peak

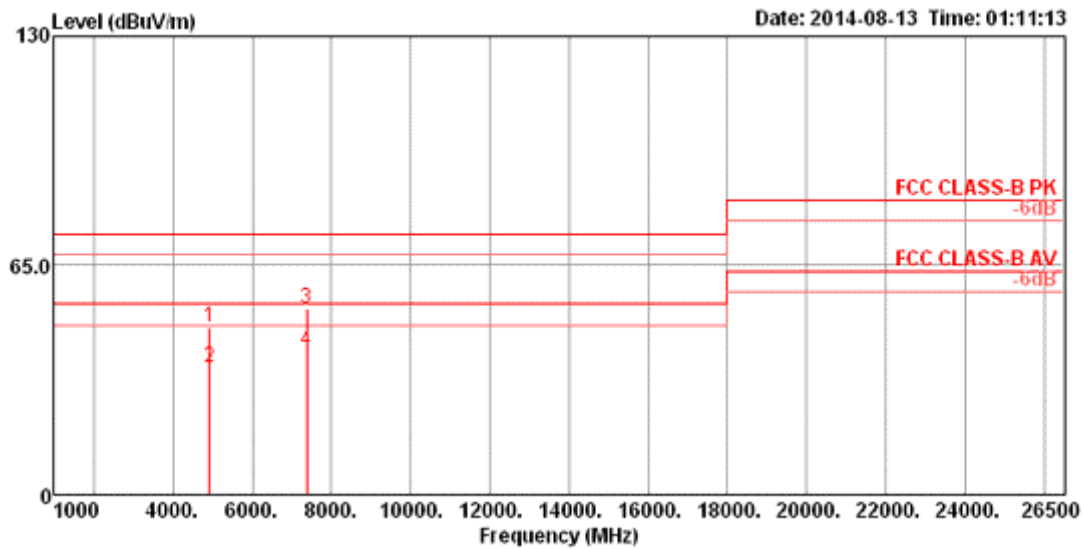
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT40 CH 10 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4913.82	47.80	74.00	-26.20	44.50	5.80	32.83	35.33	150	332	HORIZONTAL	Peak
2	4923.78	35.86	54.00	-18.14	32.54	5.81	32.84	35.33	150	332	HORIZONTAL	Average
3	7369.98	52.03	74.00	-21.97	43.13	7.08	37.15	35.33	150	274	HORIZONTAL	Peak
4	7380.30	40.51	54.00	-13.49	31.59	7.08	37.16	35.32	150	274	HORIZONTAL	Average

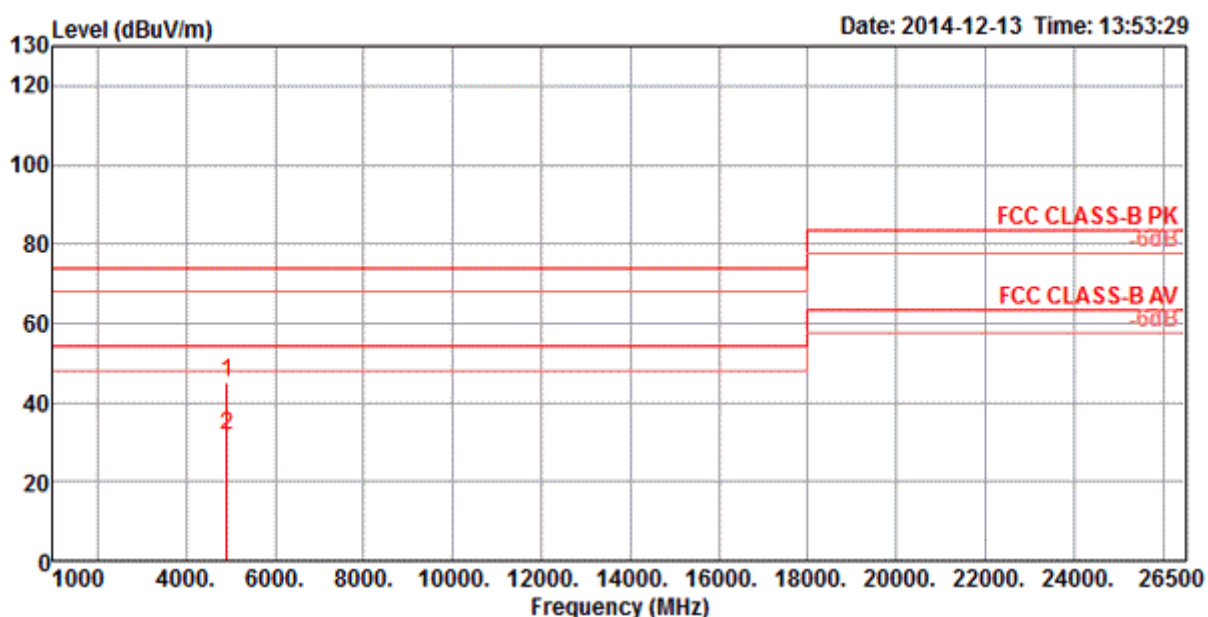
Vertical



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4919.64	47.29	74.00	-26.71	43.99	5.80	32.83	35.33	100	261	VERTICAL Peak
2	4921.62	35.88	54.00	-18.12	32.57	5.81	32.83	35.33	100	261	VERTICAL Average
3	7364.50	52.54	74.00	-21.46	43.64	7.08	37.15	35.33	100	199	VERTICAL Peak
4	7368.48	40.55	54.00	-13.45	31.65	7.08	37.15	35.33	100	199	VERTICAL Average

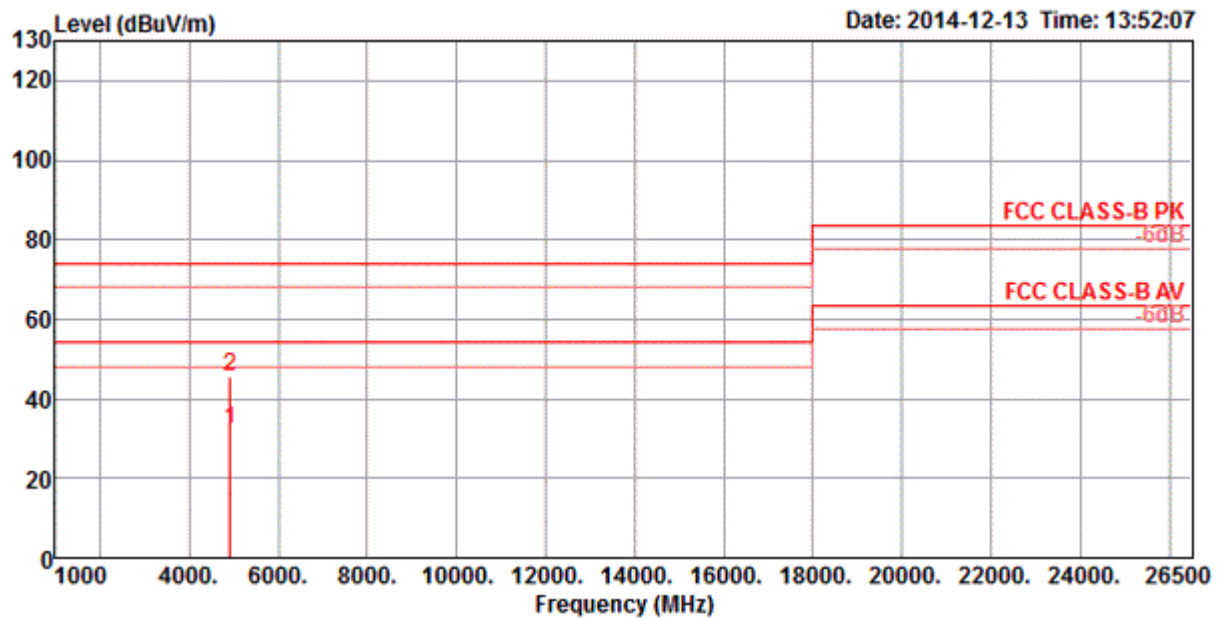
Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	EEE 802.11n MCS0 HT40 CH 11 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	4923.74	44.95	74.00	-29.05	41.56	5.79	33.67	31.27	HORIZONTAL	250	104	Peak
2	4924.30	31.86	54.00	-22.14	28.47	5.79	33.67	31.27	HORIZONTAL	250	104	Average

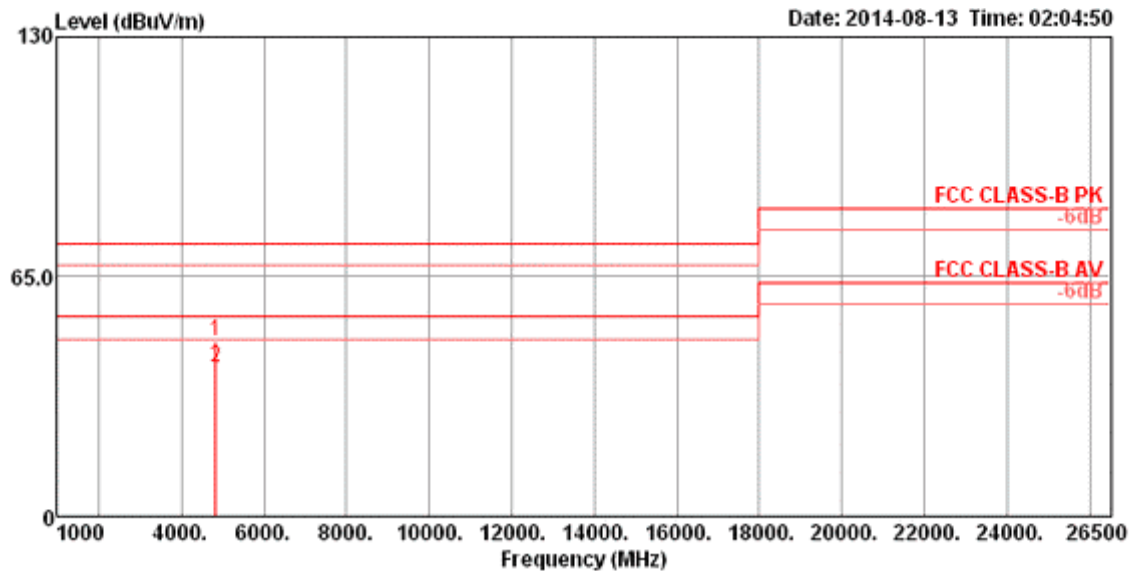
Vertical



	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	Limit	Level	Loss	Factor	Factor	Pol/Phase	deg	cm	
1	4923.95	32.01	54.00	-21.99	28.61	5.79	33.67	31.28	VERTICAL	0	100	Average
2	4924.39	45.72	74.00	-28.28	42.32	5.79	33.67	31.28	VERTICAL	0	100	Peak

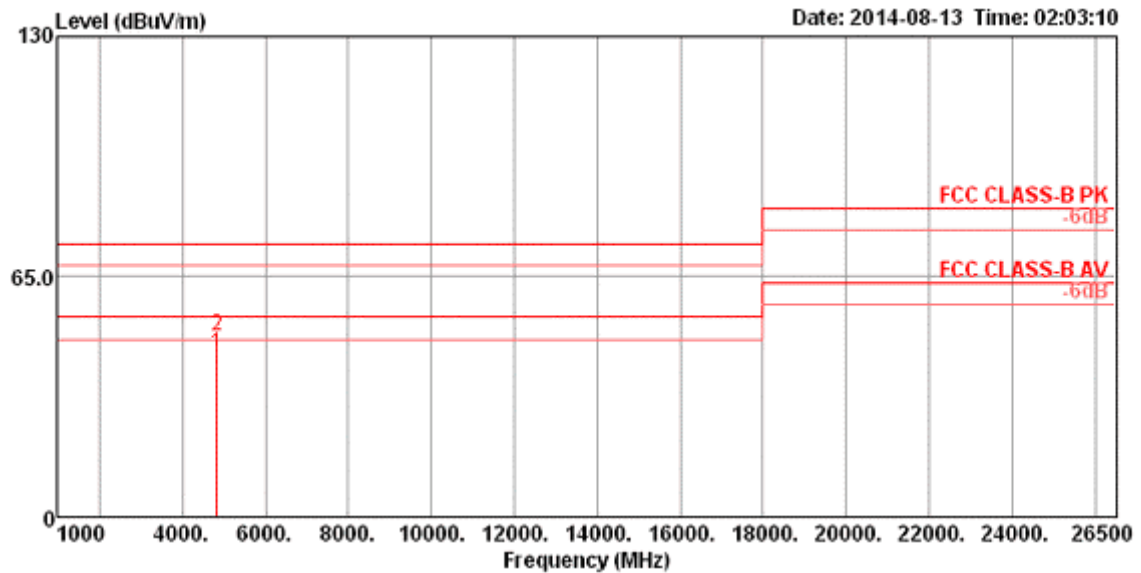
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11b CH 1 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4823.86	47.45	74.00	-26.55	44.30	5.69	32.76	35.30	132	105	HORIZONTAL Peak
2	4824.05	40.53	54.00	-13.47	37.38	5.69	32.76	35.30	132	105	HORIZONTAL Average

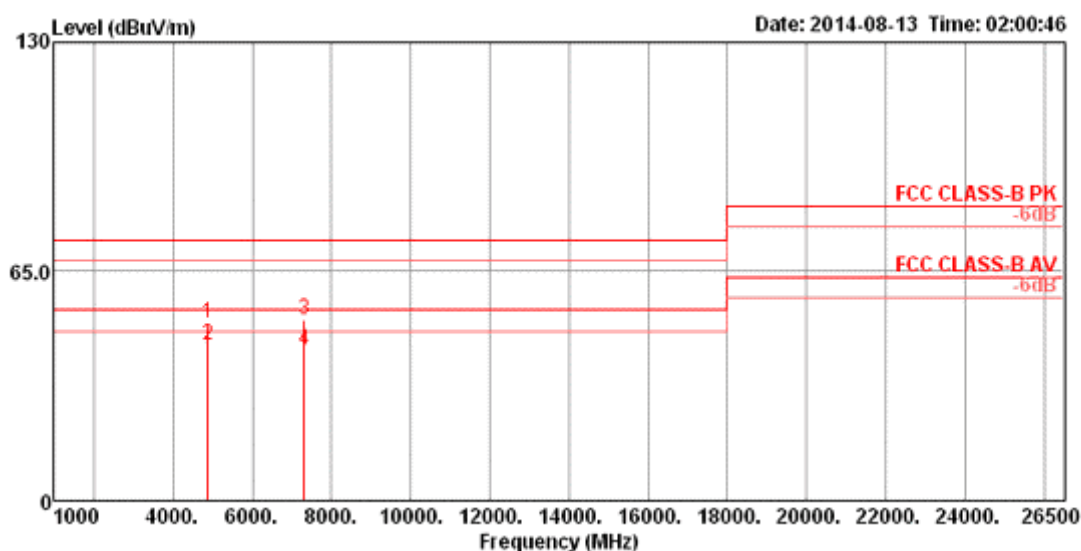
Vertical



	Freq	Level	Limit	Over	Read	CableAntenna Preamp			A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg		
1	4824.02	43.91	54.00	-10.09	40.76	5.69	32.76	35.30	170	229	VERTICAL	Average
2	4824.20	48.82	74.00	-25.18	45.67	5.69	32.76	35.30	170	229	VERTICAL	Peak

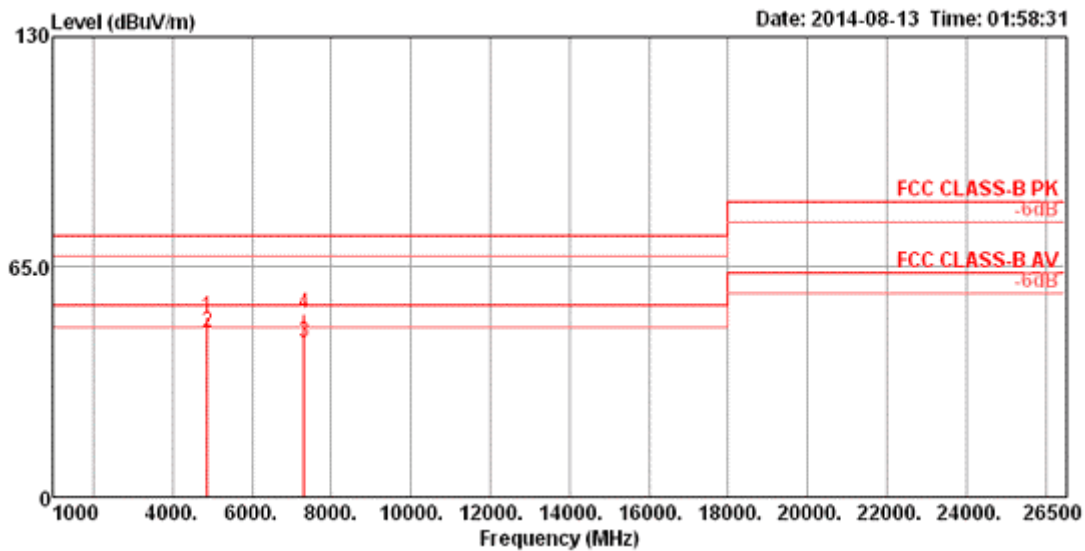
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11b CH 6 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4873.72	50.46	74.00	-23.54	47.22	5.75	32.80	35.31	111	105	HORIZONTAL Peak
2	4874.08	44.20	54.00	-9.80	40.96	5.75	32.80	35.31	111	105	HORIZONTAL Average
3	7311.72	51.20	74.00	-22.80	42.38	7.06	37.12	35.36	167	91	HORIZONTAL Peak
4	7312.45	42.49	54.00	-11.51	33.67	7.06	37.12	35.36	167	91	HORIZONTAL Average

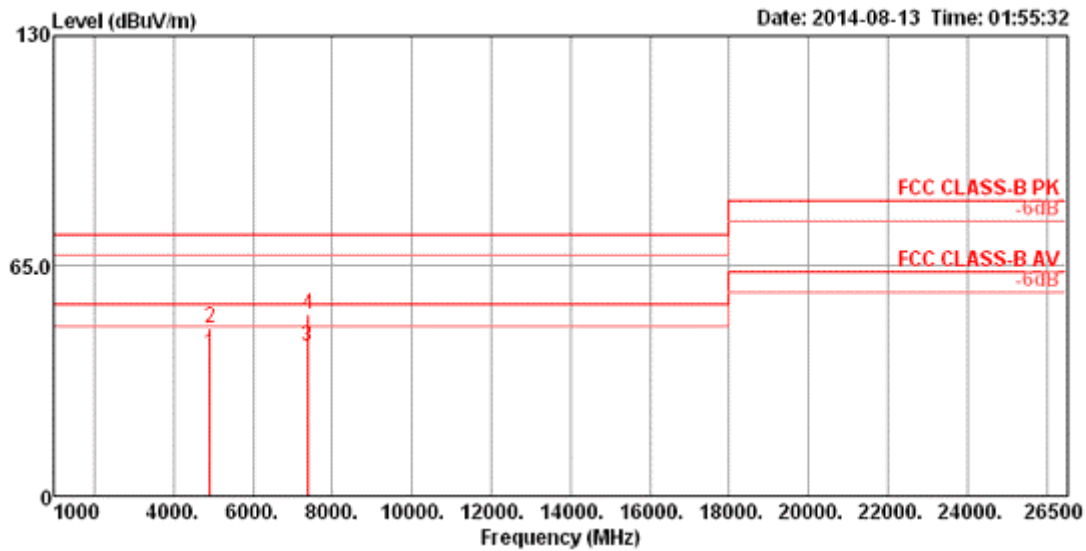
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4873.74	50.87	74.00	-23.13	47.63	5.75	32.80	35.31	167	230	VERTICAL Peak
2	4874.01	46.30	54.00	-7.70	43.06	5.75	32.80	35.31	167	230	VERTICAL Average
3	7309.80	43.56	54.00	-10.44	34.74	7.06	37.12	35.36	167	140	VERTICAL Average
4	7313.18	52.04	74.00	-21.96	43.22	7.06	37.12	35.36	167	140	VERTICAL Peak

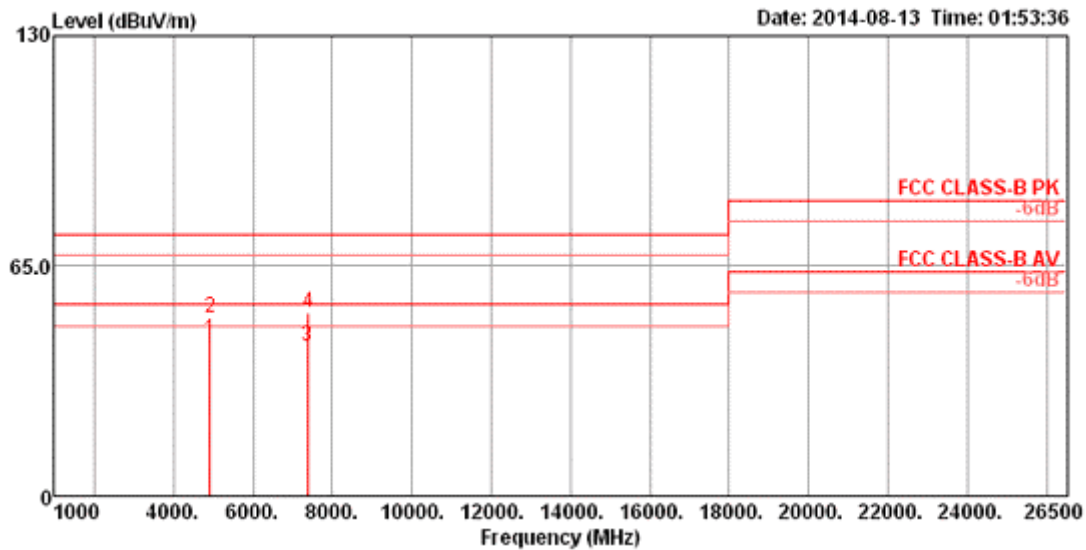
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11b CH 11 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4923.82	40.15	54.00	-13.85	36.83	5.81	32.84	35.33	126	103	HORIZONTAL Average
2	4924.04	47.49	74.00	-26.51	44.17	5.81	32.84	35.33	126	103	HORIZONTAL Peak
3	7381.87	42.20	54.00	-11.80	33.28	7.08	37.16	35.32	156	118	HORIZONTAL Average
4	7385.23	51.52	74.00	-22.48	42.59	7.09	37.16	35.32	156	118	HORIZONTAL Peak

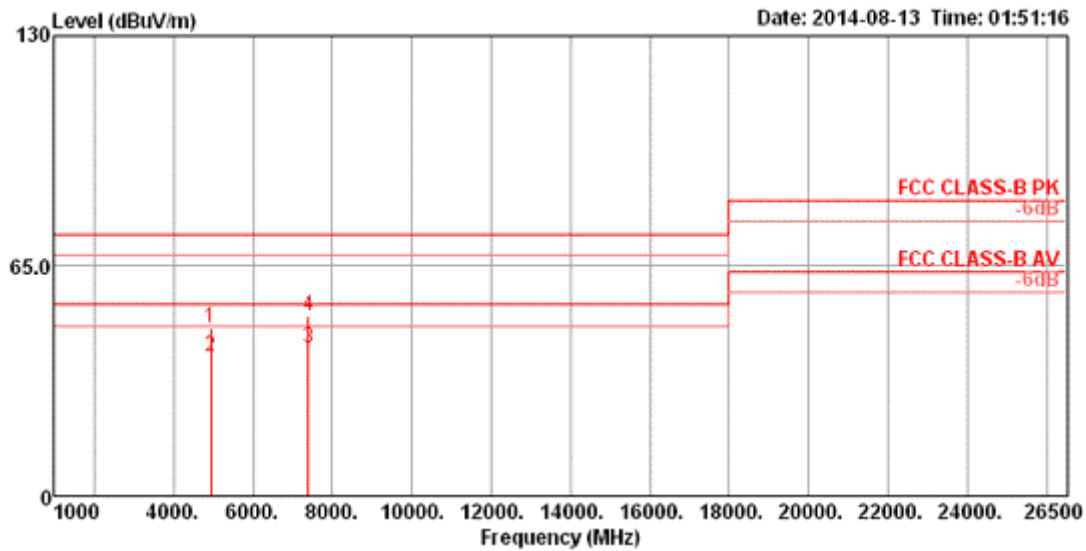
Vertical



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4923.93	44.06	54.00	-9.94	40.74	5.81	32.84	35.33	218	236	VERTICAL Average
2	4924.15	50.42	74.00	-23.58	47.10	5.81	32.84	35.33	218	236	VERTICAL Peak
3	7381.42	42.41	54.00	-11.59	33.49	7.08	37.16	35.32	156	166	VERTICAL Average
4	7389.93	51.89	74.00	-22.11	42.95	7.09	37.16	35.31	156	166	VERTICAL Peak

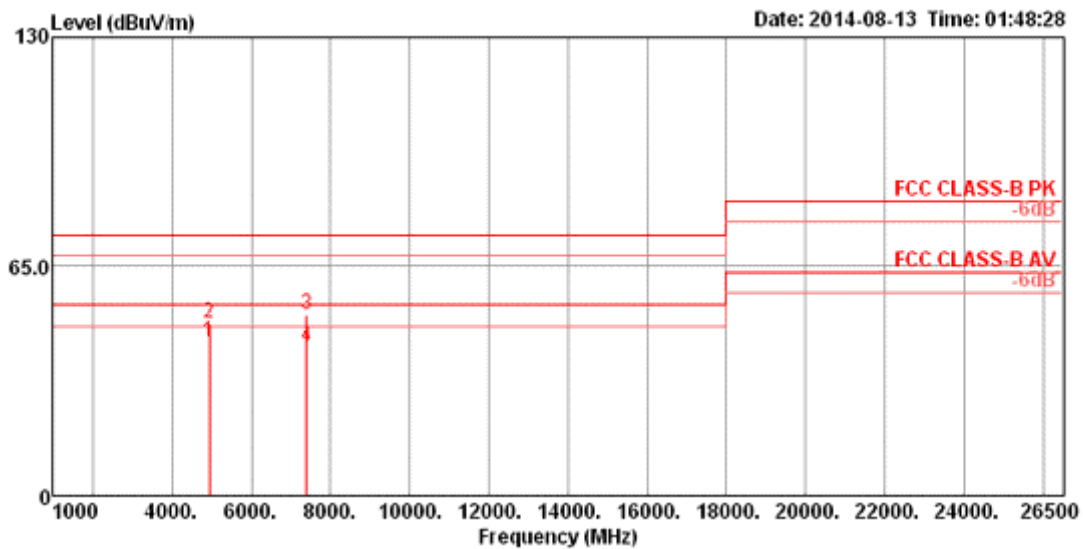
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11b CH 12 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4933.92	47.33	74.00	-26.67	44.01	5.82	32.84	35.34	100	121	HORIZONTAL Peak
2	4933.94	39.40	54.00	-14.60	36.08	5.82	32.84	35.34	100	121	HORIZONTAL Average
3	7396.74	41.95	54.00	-12.05	33.01	7.09	37.16	35.31	103	139	HORIZONTAL Average
4	7401.94	50.67	74.00	-23.33	41.72	7.09	37.17	35.31	103	139	HORIZONTAL Peak

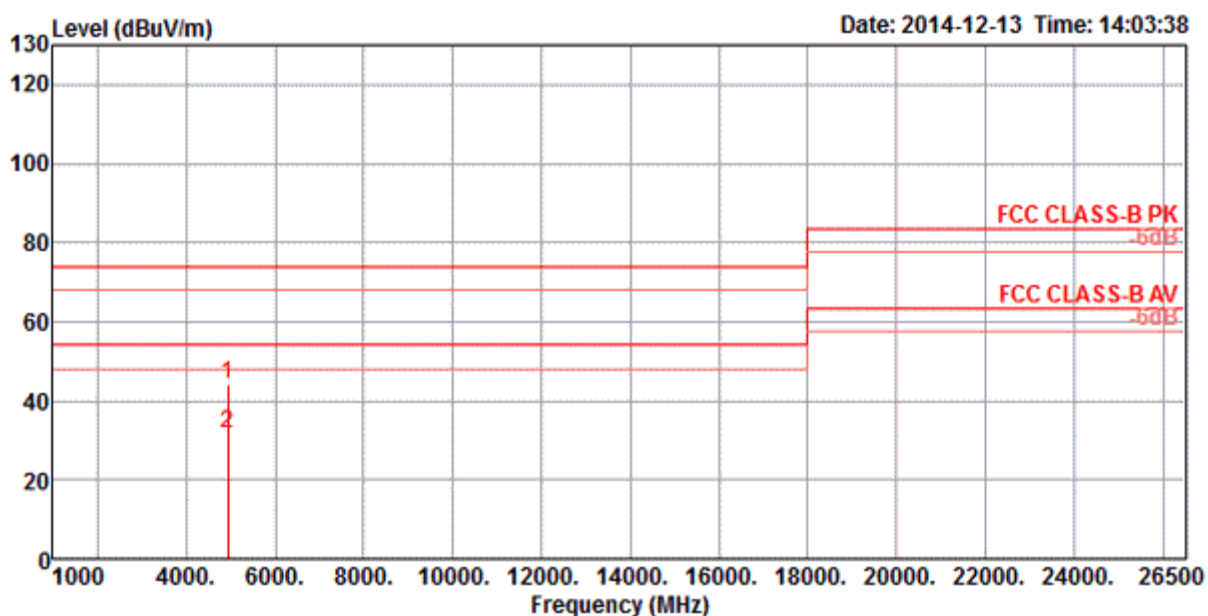
Vertical



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4933.95	43.55	54.00	-10.45	40.23	5.82	32.84	35.34	182	169	VERTICAL Average
2	4934.02	48.75	74.00	-25.25	45.43	5.82	32.84	35.34	182	169	VERTICAL Peak
3	7400.19	51.20	74.00	-22.80	42.26	7.09	37.16	35.31	103	107	VERTICAL Peak
4	7403.87	42.14	54.00	-11.86	33.19	7.09	37.17	35.31	103	107	VERTICAL Average

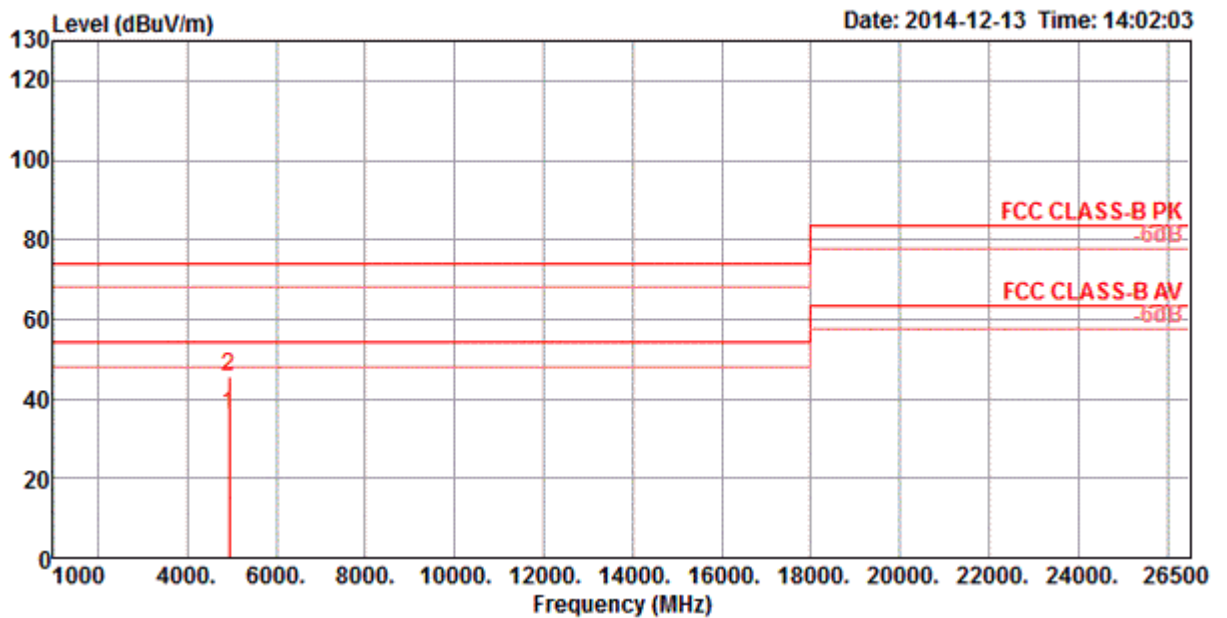
Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11b CH 13 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	Pol/Phase	deg	cm	
1	4943.93	44.23	74.00	-29.77	40.79	5.80	33.66	31.30	HORIZONTAL	290	154	Peak
2	4944.04	31.64	54.00	-22.36	28.20	5.80	33.66	31.30	HORIZONTAL	290	154	Average

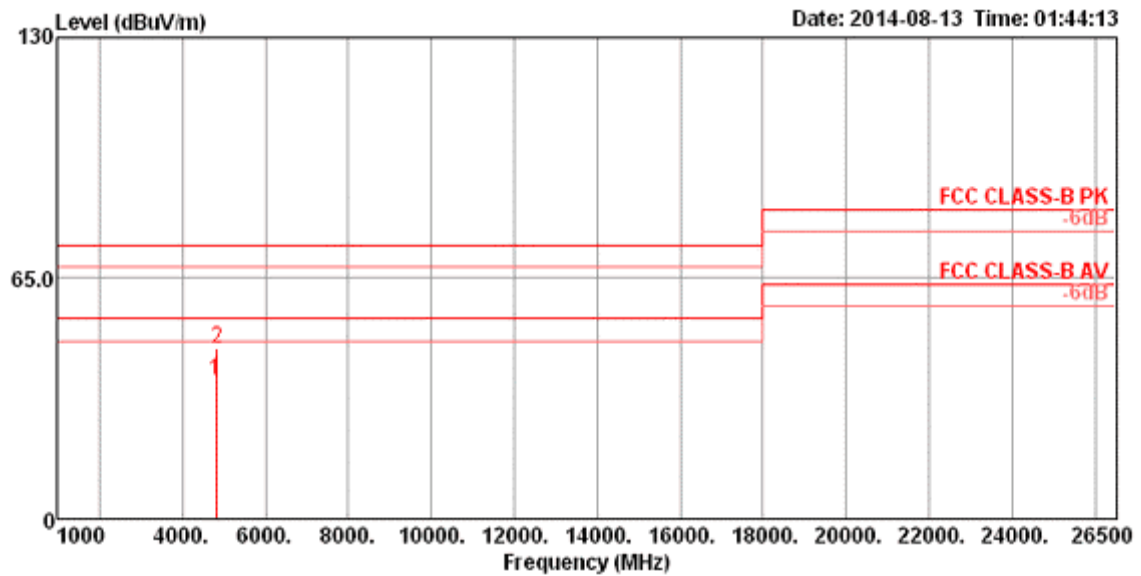
Vertical



	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	4943.92	35.94	54.00	-18.06	32.50	5.80	33.66	31.30	VERTICAL	233	188	Average
2	4944.10	45.57	74.00	-28.43	42.13	5.80	33.66	31.30	VERTICAL	233	188	Peak

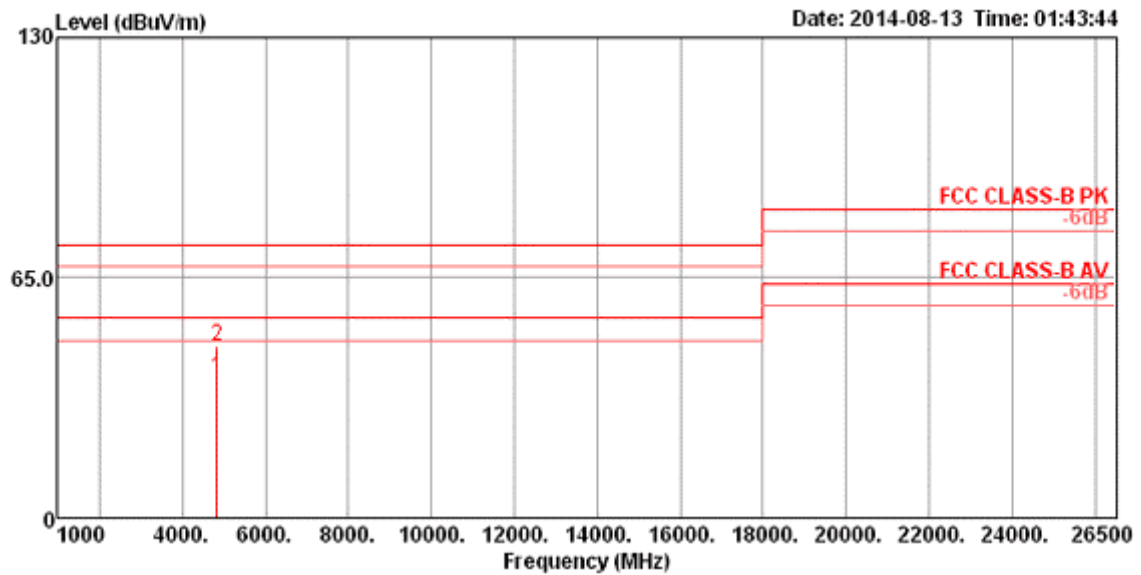
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11g CH 1 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4819.79	37.49	54.00	-16.51	34.35	5.68	32.76	35.30	150	197	HORIZONTAL	Average
2	4825.79	46.25	74.00	-27.75	43.09	5.69	32.77	35.30	150	197	HORIZONTAL	Peak

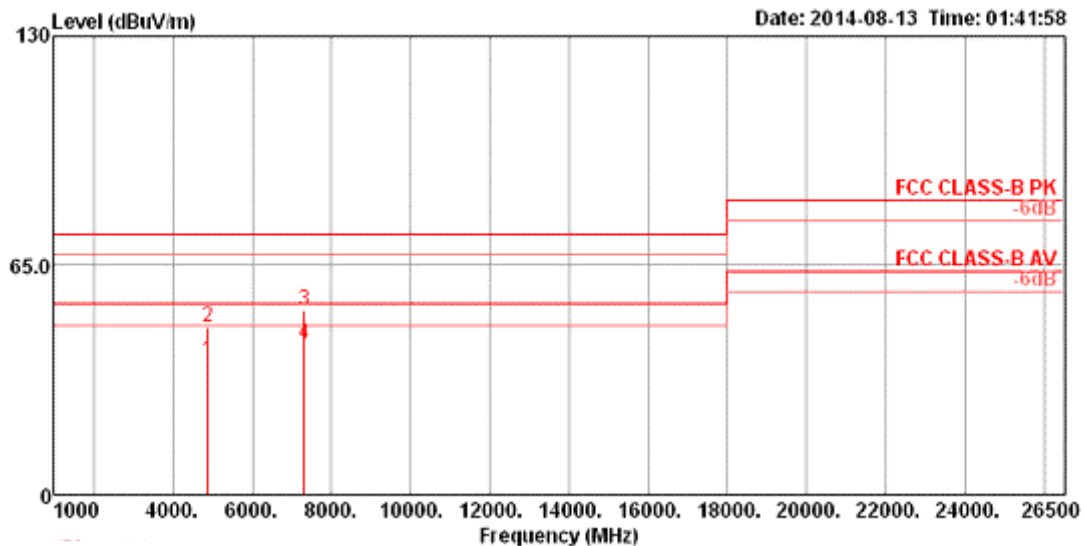
Vertical



	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4826.23	37.71	54.00	-16.29	34.55	5.69	32.77	35.30	150	107	VERTICAL	Average
2	4826.75	46.57	74.00	-27.43	43.41	5.69	32.77	35.30	150	107	VERTICAL	Peak

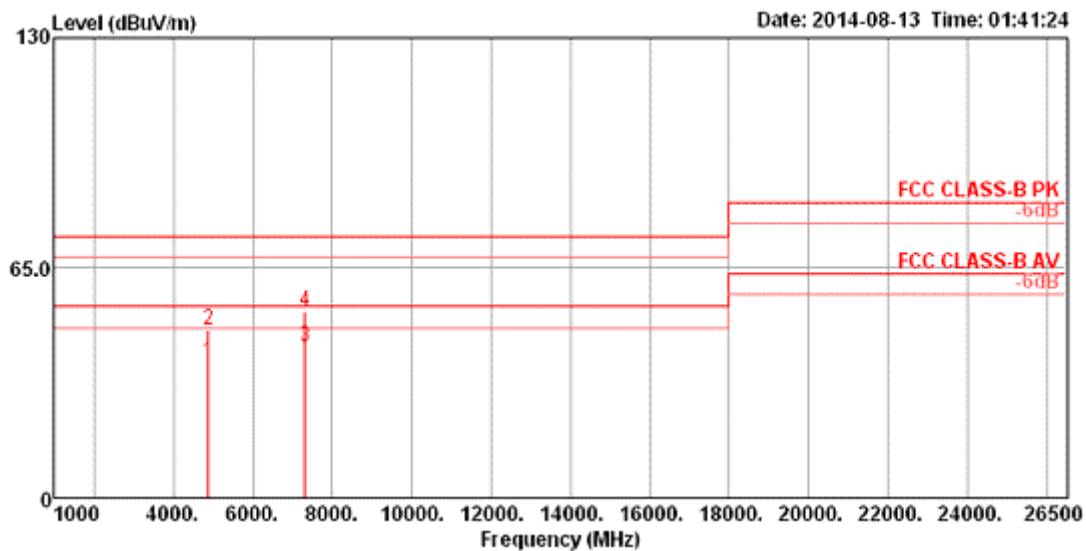
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11g CH 6 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4871.82	37.69	54.00	-16.31	34.46	5.74	32.80	35.31	150	168	HORIZONTAL Average
2	4877.94	47.71	74.00	-26.29	44.48	5.75	32.80	35.32	150	168	HORIZONTAL Peak
3	7314.16	52.05	74.00	-21.95	43.23	7.06	37.12	35.36	150	257	HORIZONTAL Peak
4	7314.35	42.57	54.00	-11.43	33.75	7.06	37.12	35.36	150	257	HORIZONTAL Average

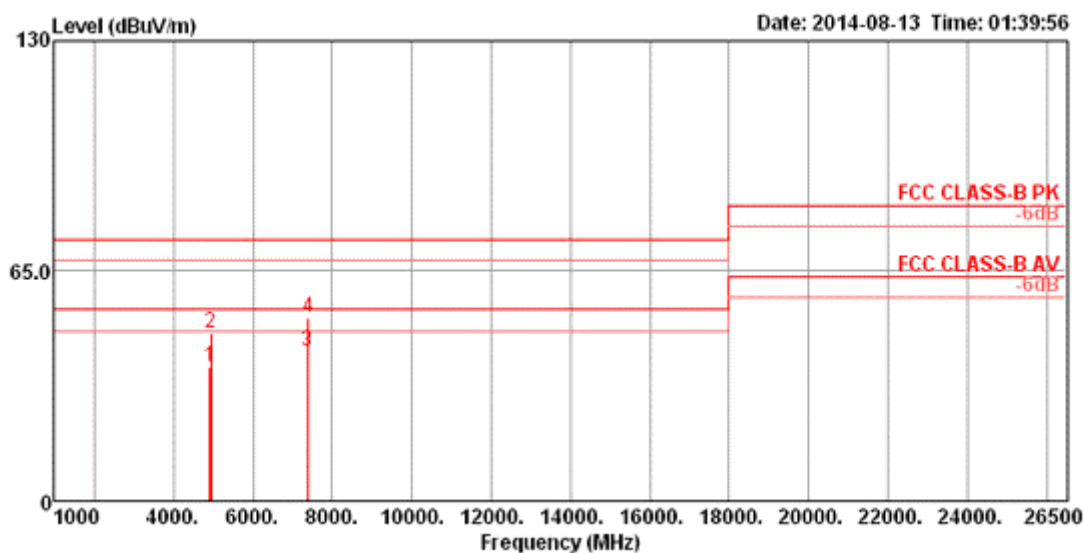
Vertical



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4872.78	38.24	54.00	-15.76	35.00	5.75	32.80	35.31	150	104	VERTICAL Average
2	4873.02	47.38	74.00	-26.62	44.14	5.75	32.80	35.31	150	104	VERTICAL Peak
3	7312.82	42.74	54.00	-11.26	33.92	7.06	37.12	35.36	150	205	VERTICAL Average
4	7314.86	52.79	74.00	-21.21	43.97	7.06	37.12	35.36	150	205	VERTICAL Peak

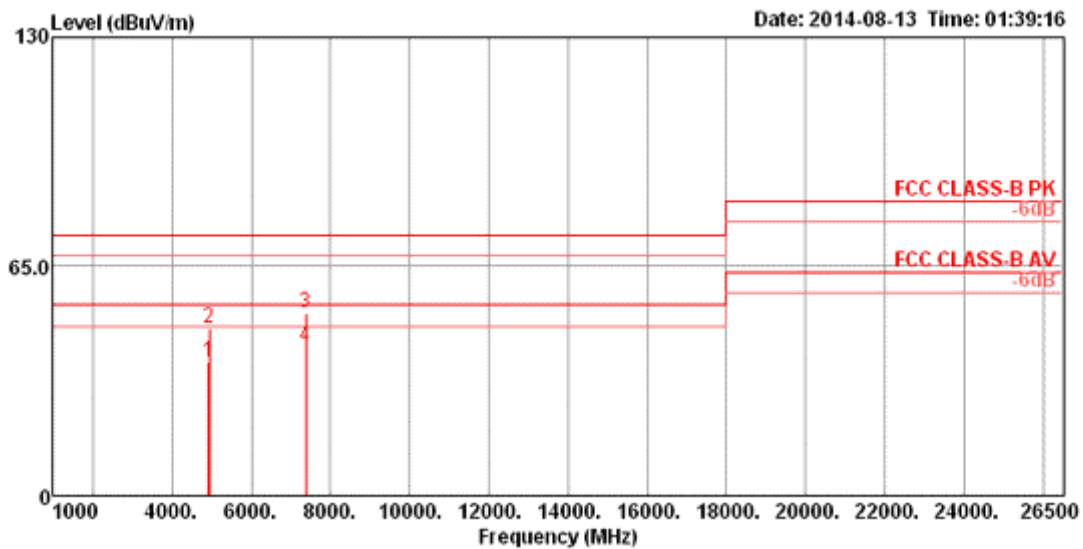
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11g CH 11 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4924.54	37.87	54.00	-16.13	34.55	5.81	32.84	35.33	150	151	HORIZONTAL	Average
2	4929.00	47.72	74.00	-26.28	44.40	5.81	32.84	35.33	150	151	HORIZONTAL	Peak
3	7381.16	42.34	54.00	-11.66	33.42	7.08	37.16	35.32	150	228	HORIZONTAL	Average
4	7387.58	51.58	74.00	-22.42	42.65	7.09	37.16	35.32	150	228	HORIZONTAL	Peak

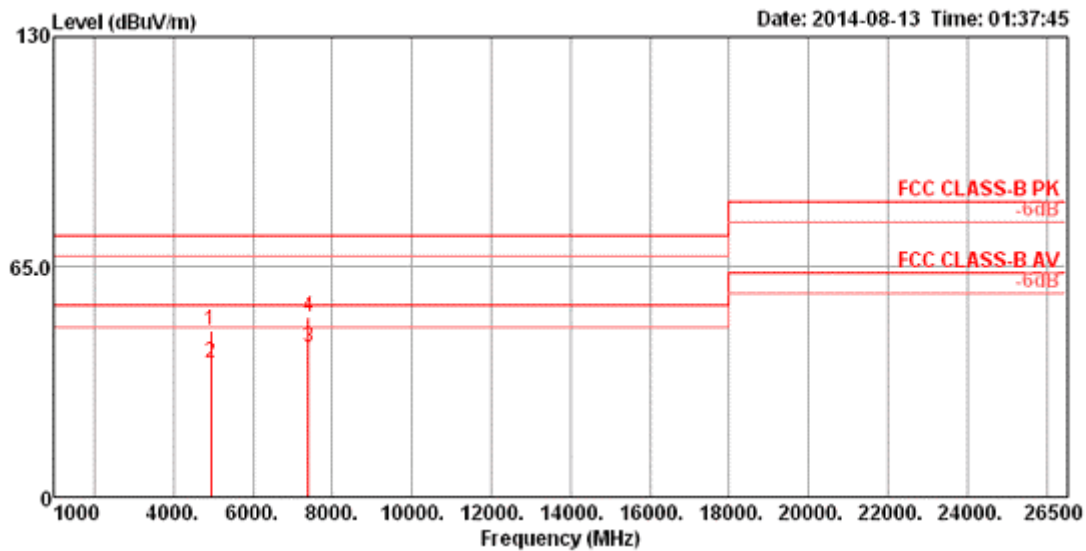
Vertical



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4921.69	38.02	54.00	-15.98	34.71	5.81	32.83	35.33	150	139 VERTICAL	Average
2	4927.88	47.70	74.00	-26.30	44.38	5.81	32.84	35.33	150	139 VERTICAL	Peak
3	7381.96	51.67	74.00	-22.33	42.75	7.08	37.16	35.32	150	268 VERTICAL	Peak
4	7383.05	42.43	54.00	-11.57	33.51	7.08	37.16	35.32	150	268 VERTICAL	Average

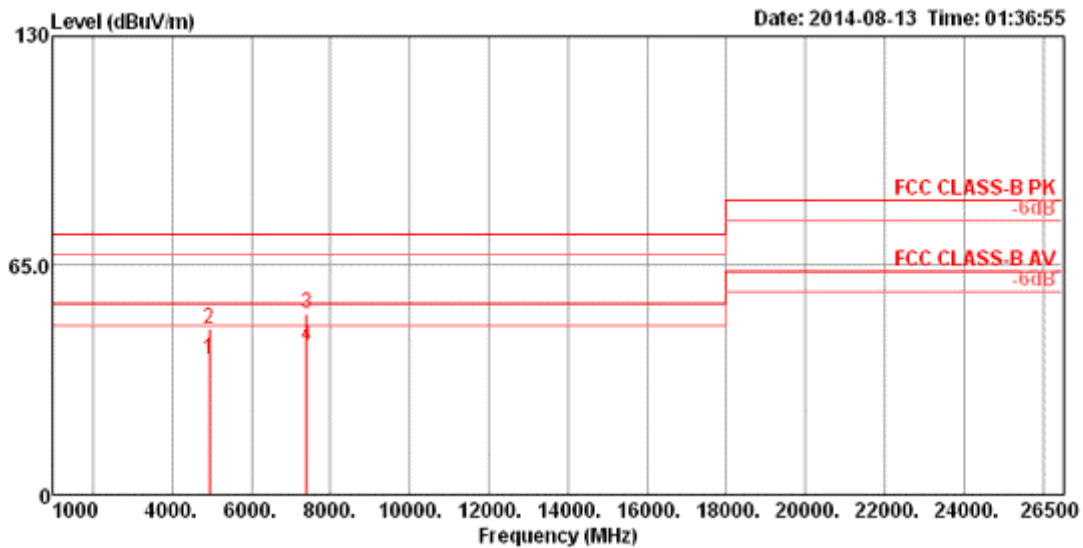
Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11g CH 12 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4936.83	47.10	74.00	-26.90	43.78	5.82	32.84	35.34	150	134	HORIZONTAL	Peak
2	4937.16	38.02	54.00	-15.98	34.70	5.82	32.84	35.34	150	134	HORIZONTAL	Average
3	7401.71	42.15	54.00	-11.85	33.20	7.09	37.17	35.31	150	233	HORIZONTAL	Average
4	7404.17	50.71	74.00	-23.29	41.76	7.09	37.17	35.31	150	233	HORIZONTAL	Peak

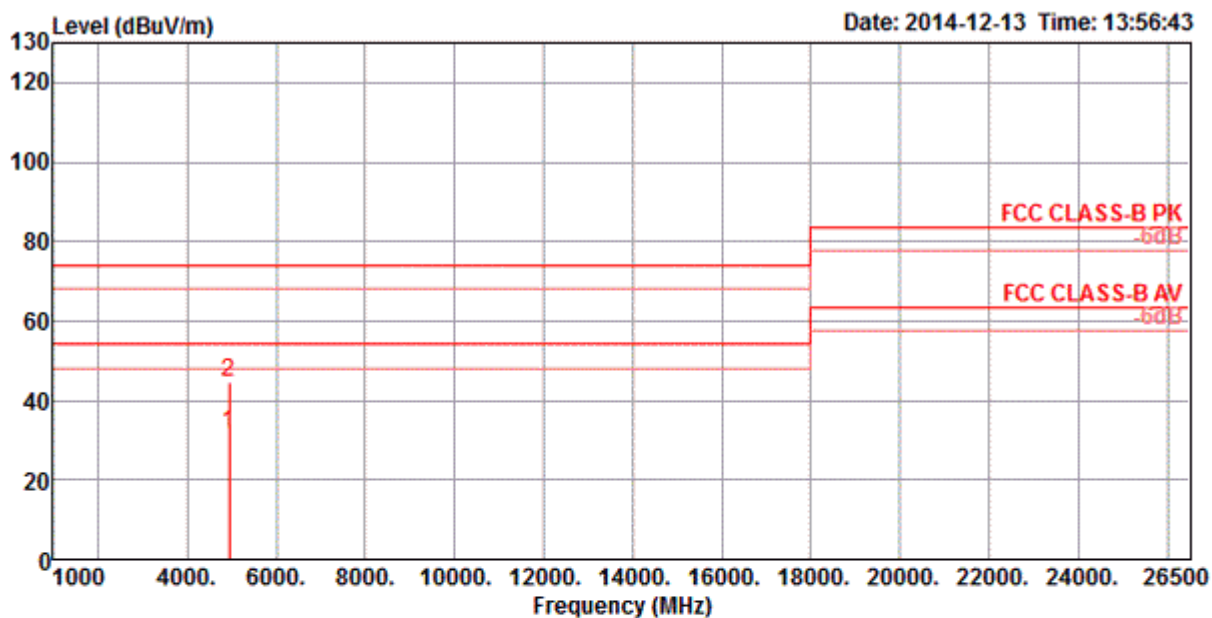
Vertical



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4933.35	38.19	54.00	-15.81	34.87	5.82	32.84	35.34	150	160	VERTICAL Average
2	4933.76	47.18	74.00	-26.82	43.86	5.82	32.84	35.34	150	160	VERTICAL Peak
3	7399.66	51.38	74.00	-22.62	42.44	7.09	37.16	35.31	150	88	VERTICAL Peak
4	7404.92	42.17	54.00	-11.83	33.22	7.09	37.17	35.31	150	88	VERTICAL Average

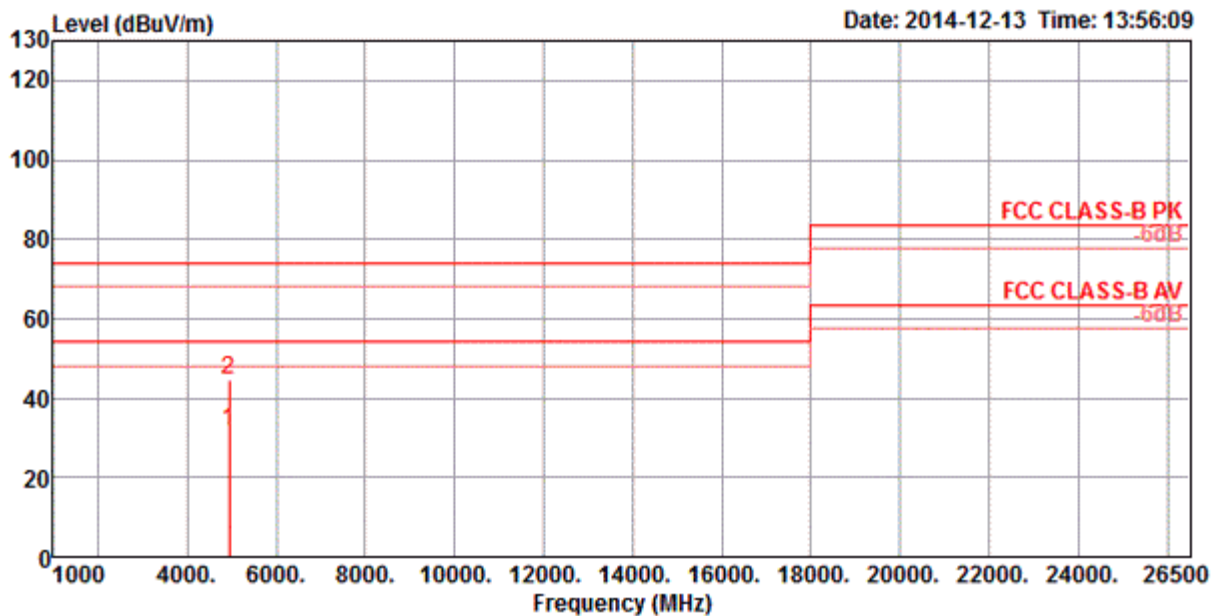
Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11g CH 13 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	4943.11	31.46	54.00	-22.54	28.02	5.80	33.66	31.30	HORIZONTAL	198	118	Average
2	4943.93	44.58	74.00	-29.42	41.14	5.80	33.66	31.30	HORIZONTAL	198	118	Peak

Vertical



	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	Limit	Level	Loss	Factor	Factor	Pol/Phase	deg	cm	
1	4944.37	31.54	54.00	-22.46	28.10	5.80	33.66	31.30	VERTICAL	161	121	Average
2	4944.86	44.44	74.00	-29.56	41.00	5.80	33.66	31.30	VERTICAL	161	121	Peak

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:

- The test procedure is the same as section 4.5.3, only the frequency range investigated is limited to 100MHz around band edges.

For Radiated Out of Band Emission Measurement:

- Test was performed in accordance with KDB558074 D01 v03r04 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.
- The radiated emission test is performed on each TX port of operating mode without summing or adding 10log (N) since the limit is relative emission limit.
Only worst data of each operating mode is presented.

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.

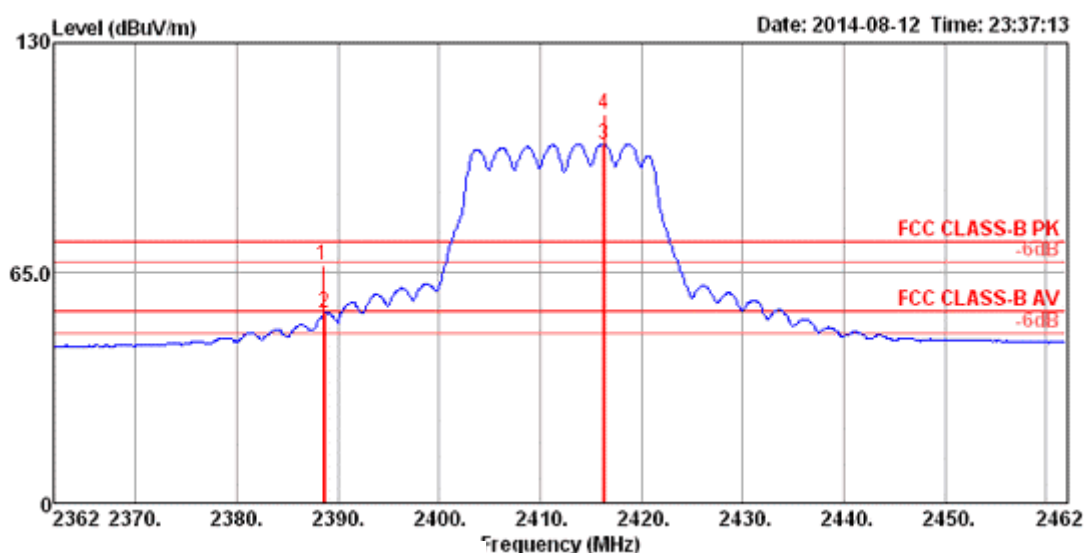
4.6.6. EUT Operation during Test

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	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT20 CH 1, 6, 11 / Chain 1 + Chain 2

Channel 1

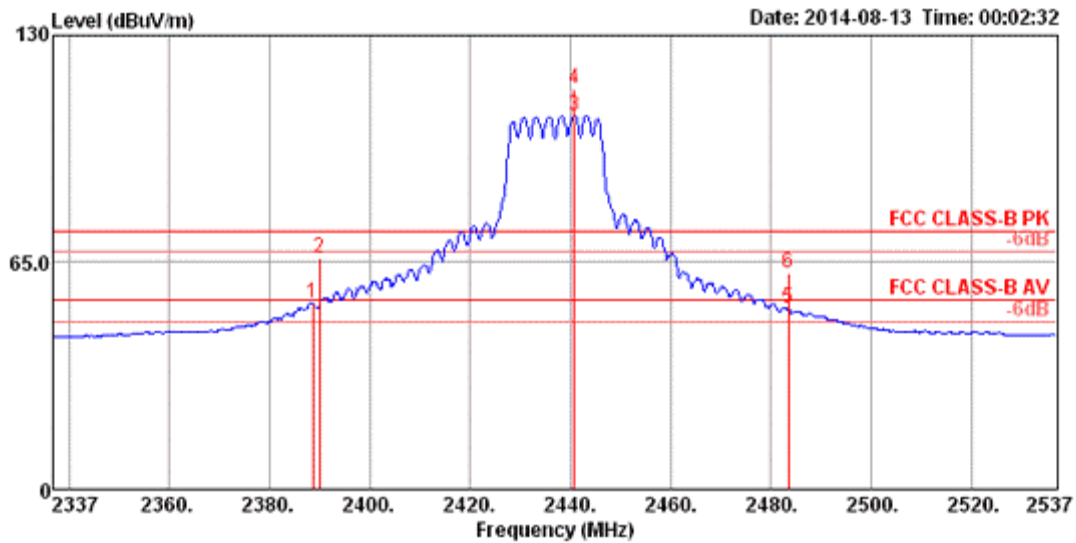


	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2388.50	67.38	74.00	-6.62	35.80	3.68	27.90	0.00	100	245 VERTICAL	Peak
2	2388.70	53.52	54.00	-0.48	21.94	3.68	27.90	0.00	100	245 VERTICAL	Average
3	2416.20	101.43			69.84	3.69	27.90	0.00	100	245 VERTICAL	Average
4	2416.30	109.69			78.10	3.69	27.90	0.00	100	245 VERTICAL	Peak

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

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report.

Channel 6

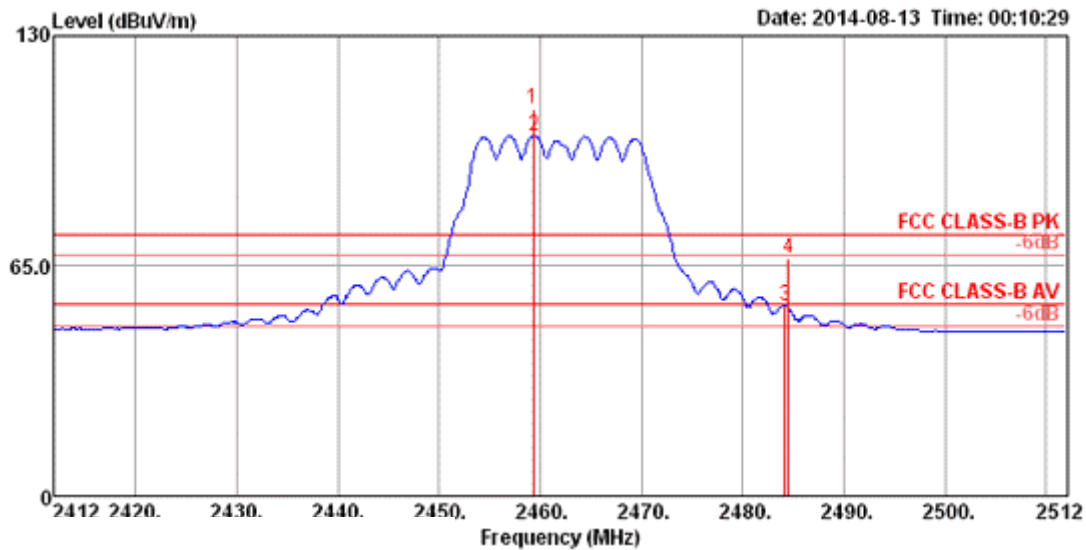


	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2388.60	53.25	54.00	-0.75	21.67	3.68	27.90	0.00	152	127 VERTICAL	Average
2	2390.00	66.41	74.00	-7.59	34.83	3.68	27.90	0.00	152	127 VERTICAL	Peak
3	2440.80	107.12			75.51	3.71	27.90	0.00	152	127 VERTICAL	Average
4	2440.80	114.67			83.06	3.71	27.90	0.00	152	127 VERTICAL	Peak
5	2483.50	51.57	54.00	-2.43	19.94	3.73	27.90	0.00	152	127 VERTICAL	Average
6	2483.50	61.90	74.00	-12.10	30.27	3.73	27.90	0.00	152	127 VERTICAL	Peak

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

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report.

Channel 11



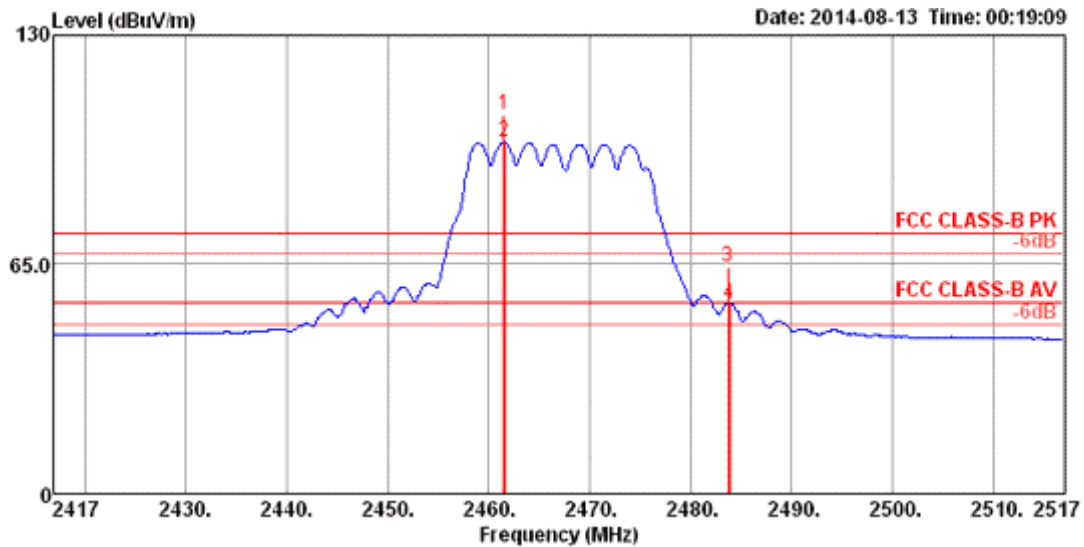
	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2459.30	109.18			77.56	3.72	27.90	0.00	182	256	VERTICAL	Peak
2	2459.40	101.85			70.23	3.72	27.90	0.00	182	256	VERTICAL	Average
3	2484.20	53.63	54.00	-0.37	22.00	3.73	27.90	0.00	182	256	VERTICAL	Average
4	2484.50	67.02	74.00	-6.98	35.39	3.73	27.90	0.00	182	256	VERTICAL	Peak

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

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report.

Temperature	23°C	Humidity	61%
Test Engineer	YC Chen / James Chou	Configurations	IEEE 802.11n MCS0 HT20 CH 12, 13 Chain 1 + Chain 2

Channel 12

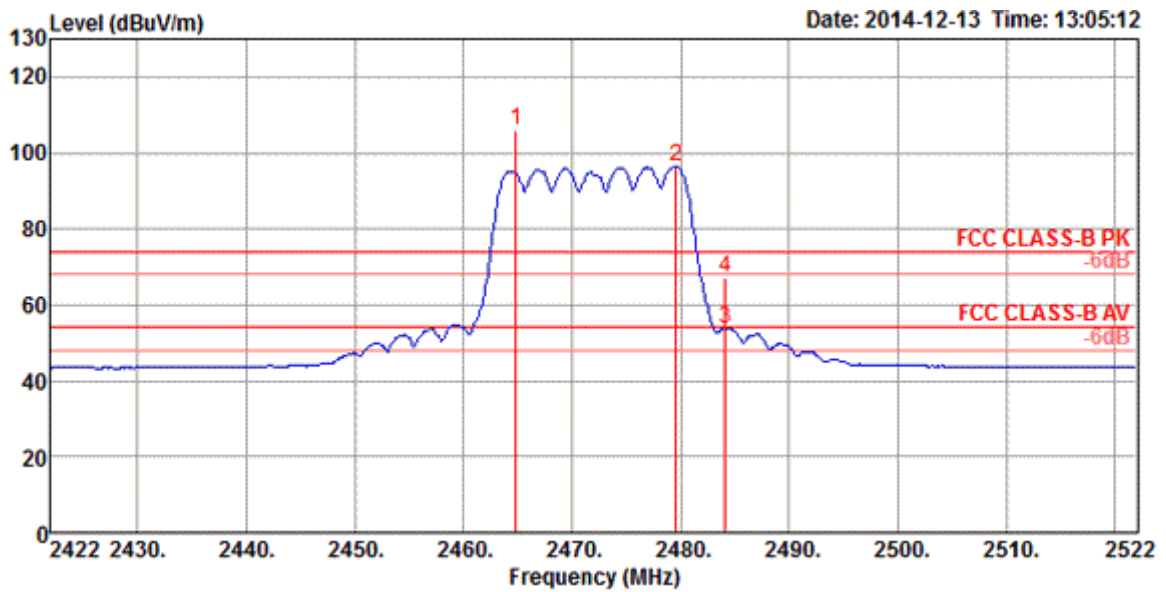


	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2461.50	107.32			75.70	3.72	27.90	0.00	181	248	VERTICAL	Peak
2	2461.60	99.69			68.07	3.72	27.90	0.00	181	248	VERTICAL	Average
3	2483.70	64.48	74.00	-9.52	32.85	3.73	27.90	0.00	181	248	VERTICAL	Peak
4	2483.90	53.85	54.00	-0.15	22.22	3.73	27.90	0.00	181	248	VERTICAL	Average

Item 1, 2 are the fundamental frequency at 2467 MHz.

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report

Channel 13



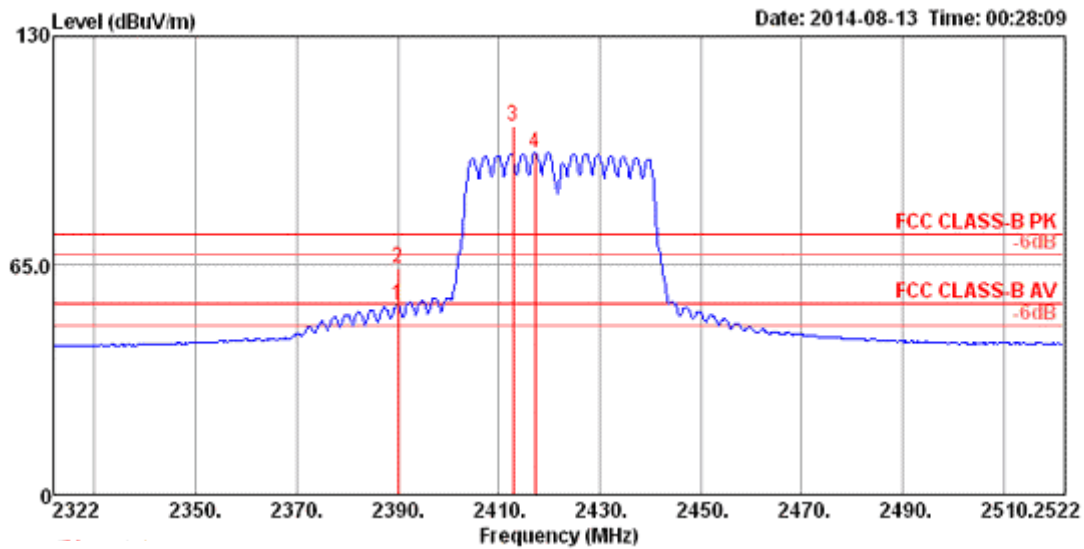
	Freq	Level	Limit	Over	Head	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	2464.80	105.78			74.51	4.05	0.00	27.22	VERTICAL	262	184	Peak
2	2479.60	96.55			65.23	4.07	0.00	27.25	VERTICAL	262	184	Average
3	2484.10	53.94	54.00	-0.06	22.60	4.07	0.00	27.27	VERTICAL	262	184	Average
4	2484.10	67.28	74.00	-6.72	35.94	4.07	0.00	27.27	VERTICAL	262	184	Peak

Item 1, 2 are the fundamental frequency at 2472 MHz.

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report

Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT40 CH 3, 6, 9 / Chain 1 + Chain 2

Channel 3

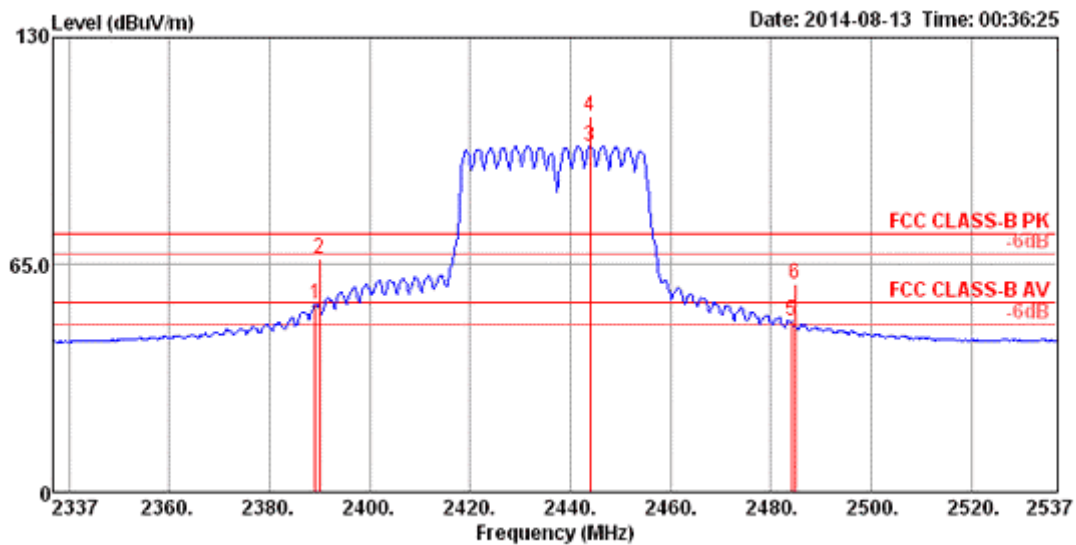


	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2390.00	53.91	54.00	-0.09	22.33	3.68	27.90	0.00	175	265	VERTICAL	Average
2	2390.00	64.30	74.00	-9.70	32.72	3.68	27.90	0.00	175	265	VERTICAL	Peak
3	2412.80	104.81			73.22	3.69	27.90	0.00	175	265	VERTICAL	Peak
4	2417.20	96.86			65.27	3.69	27.90	0.00	175	265	VERTICAL	Average

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

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report

Channel 6

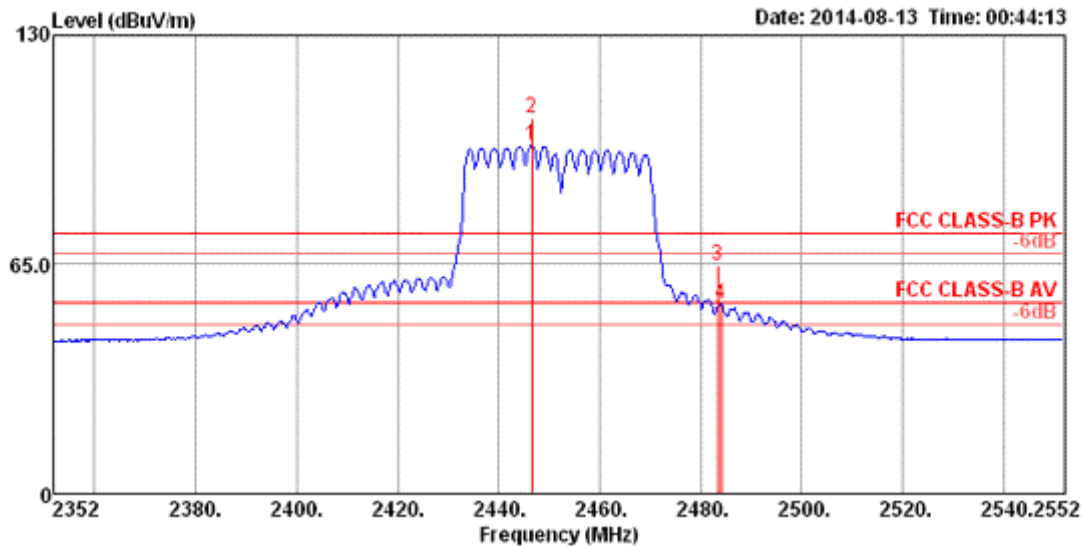


	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	cm	deg	
1	2389.20	53.52	54.00	-0.48	21.94	3.68	27.90	0.00	185	249 VERTICAL	Average
2	2390.00	66.90	74.00	-7.10	35.32	3.68	27.90	0.00	185	249 VERTICAL	Peak
3	2444.00	99.05			67.44	3.71	27.90	0.00	185	249 VERTICAL	Average
4	2444.00	107.23			75.62	3.71	27.90	0.00	185	249 VERTICAL	Peak
5	2484.10	49.01	54.00	-4.99	17.38	3.73	27.90	0.00	185	249 VERTICAL	Average
6	2484.90	59.61	74.00	-14.39	27.98	3.73	27.90	0.00	185	249 VERTICAL	Peak

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

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report

Channel 9



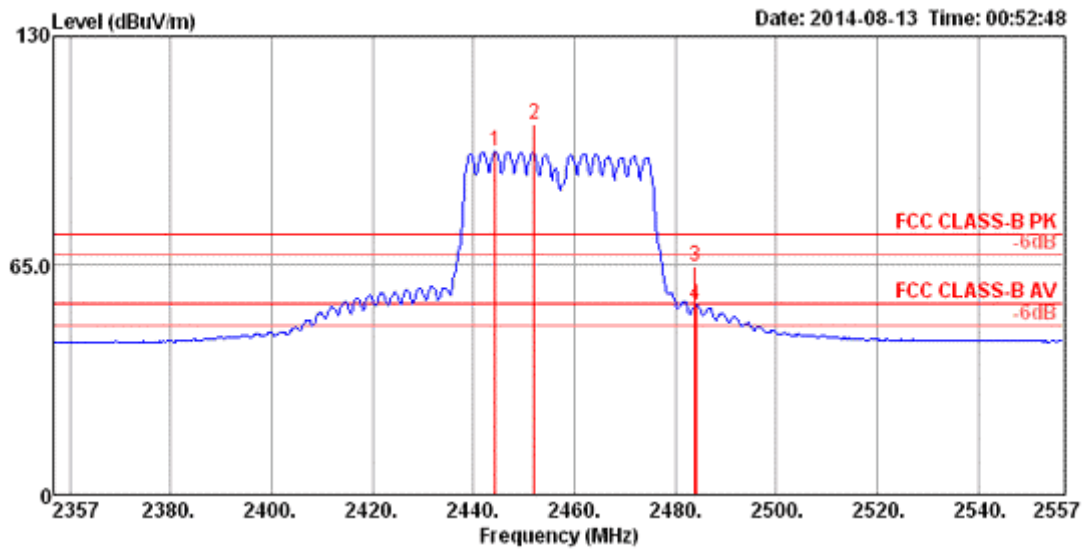
	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2446.60	98.81			67.20	3.71	27.90	0.00	192	250	VERTICAL	Average
2	2446.60	106.28			74.67	3.71	27.90	0.00	192	250	VERTICAL	Peak
3	2483.50	64.56	74.00	-9.44	32.93	3.73	27.90	0.00	192	250	VERTICAL	Peak
4	2484.10	53.60	54.00	-0.40	21.97	3.73	27.90	0.00	192	250	VERTICAL	Average

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

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report

Temperature	23°C	Humidity	61%
Test Engineer	YC Chen / James Chou	Configurations	IEEE 802.11n MCS0 HT40 CH 10, 11 / Chain 1 + Chain 2

Channel 10

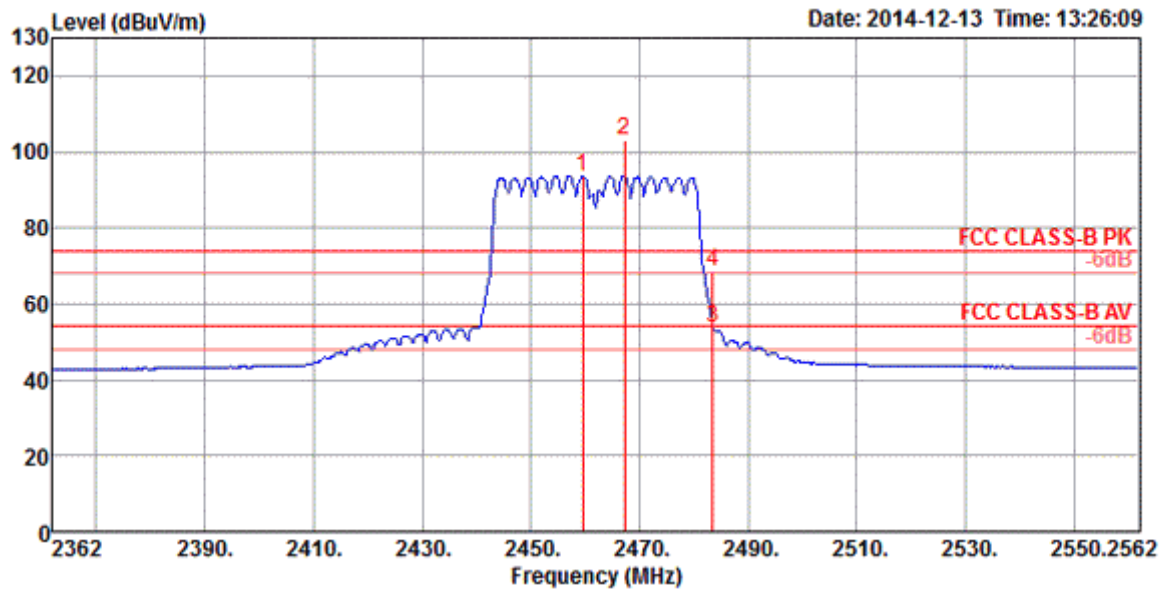


	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2444.40	97.18			65.57	3.71	27.90	0.00	192	254 VERTICAL	Average
2	2452.00	105.12			73.51	3.71	27.90	0.00	192	254 VERTICAL	Peak
3	2483.90	64.58	74.00	-9.42	32.95	3.73	27.90	0.00	192	254 VERTICAL	Peak
4	2484.10	53.69	54.00	-0.31	22.06	3.73	27.90	0.00	192	254 VERTICAL	Average

Item 1, 2 are the fundamental frequency at 2457 MHz.

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report

Channel 11



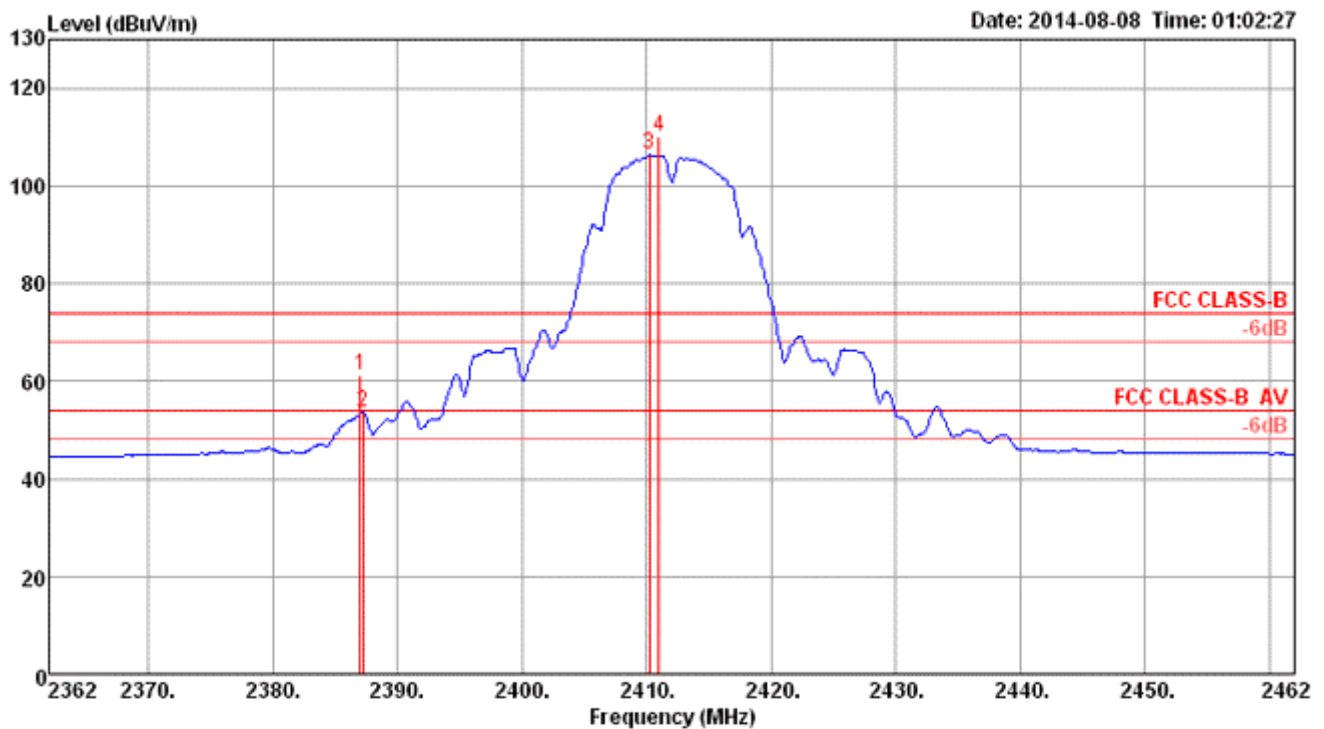
	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	2459.60	93.70			62.45	4.05	0.00	27.20	VERTICAL	266	189	Average
2	2467.20	103.32			72.05	4.05	0.00	27.22	VERTICAL	266	189	Peak
3	2483.50	53.64	54.00	-0.36	22.30	4.07	0.00	27.27	VERTICAL	266	189	Average
4	2483.50	68.74	74.00	-5.26	37.40	4.07	0.00	27.27	VERTICAL	266	189	Peak

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

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report

Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11b CH 1, 6, 11 / Chain 1 + Chain 2

Channel 1

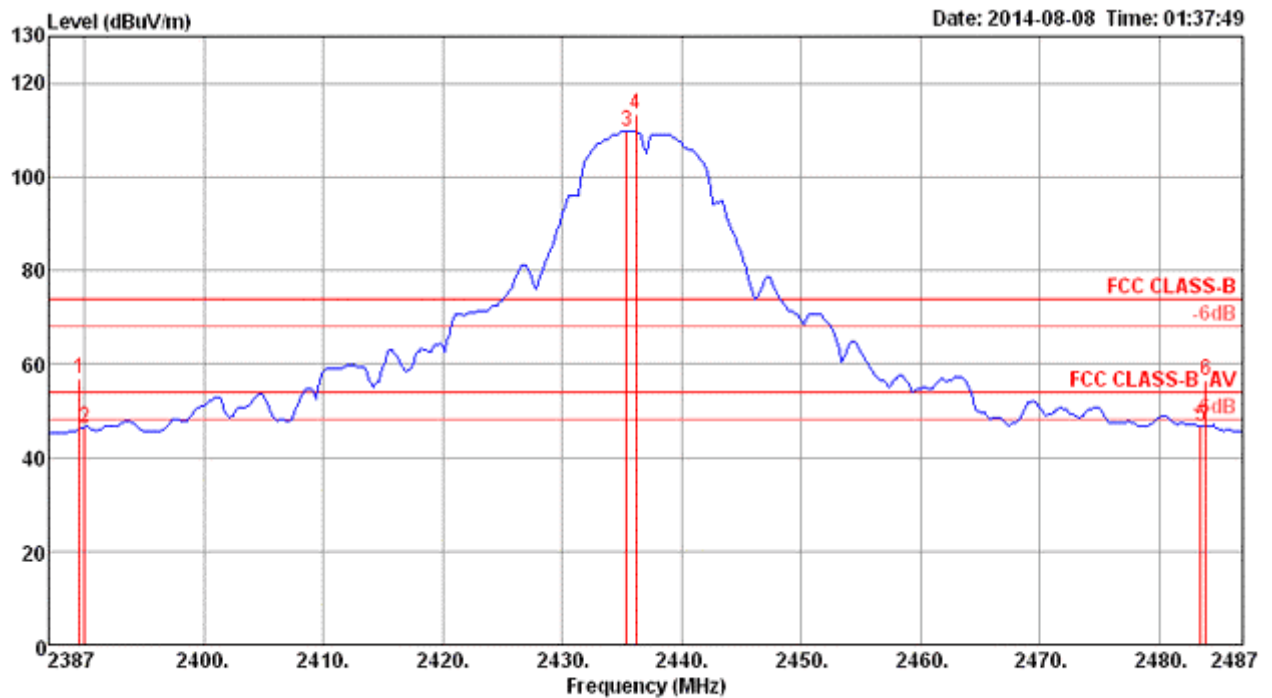


	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	2387.00	61.32	74.00	-12.68	29.18	4.09	28.05	0.00	Peak	108	61	VERTICAL
2	2387.20	53.53	54.00	-0.47	21.39	4.09	28.05	0.00	Average	108	61	VERTICAL
3	2410.20	106.29			74.09	4.11	28.09	0.00	Average	108	61	VERTICAL
4	2411.00	110.22			78.02	4.11	28.09	0.00	Peak	108	61	VERTICAL

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

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report

Channel 6

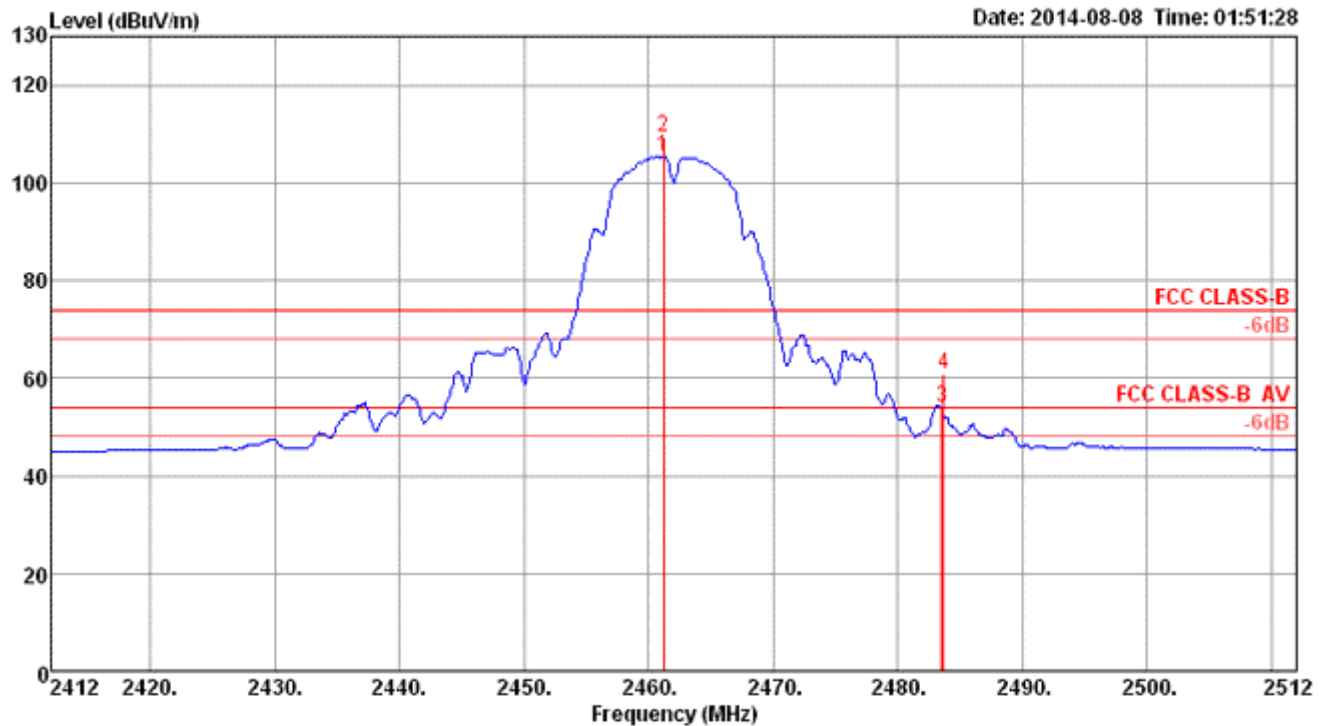


	Freq	Level	Limit	Over	Read	CableAntenna	Preamp			A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	2389.60	56.83	74.00	-17.17	24.69	4.09	28.05	0.00	Peak	145	57	VERTICAL
2	2390.00	46.51	54.00	-7.49	14.37	4.09	28.05	0.00	Average	145	57	VERTICAL
3	2435.40	109.74			77.44	4.12	28.18	0.00	Average	145	57	VERTICAL
4	2436.20	113.38			81.08	4.12	28.18	0.00	Peak	145	57	VERTICAL
5	2483.50	46.75	54.00	-7.25	14.33	4.16	28.26	0.00	Average	145	57	VERTICAL
6	2483.90	56.60	74.00	-17.40	24.18	4.16	28.26	0.00	Peak	145	57	VERTICAL

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

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report

Channel 11

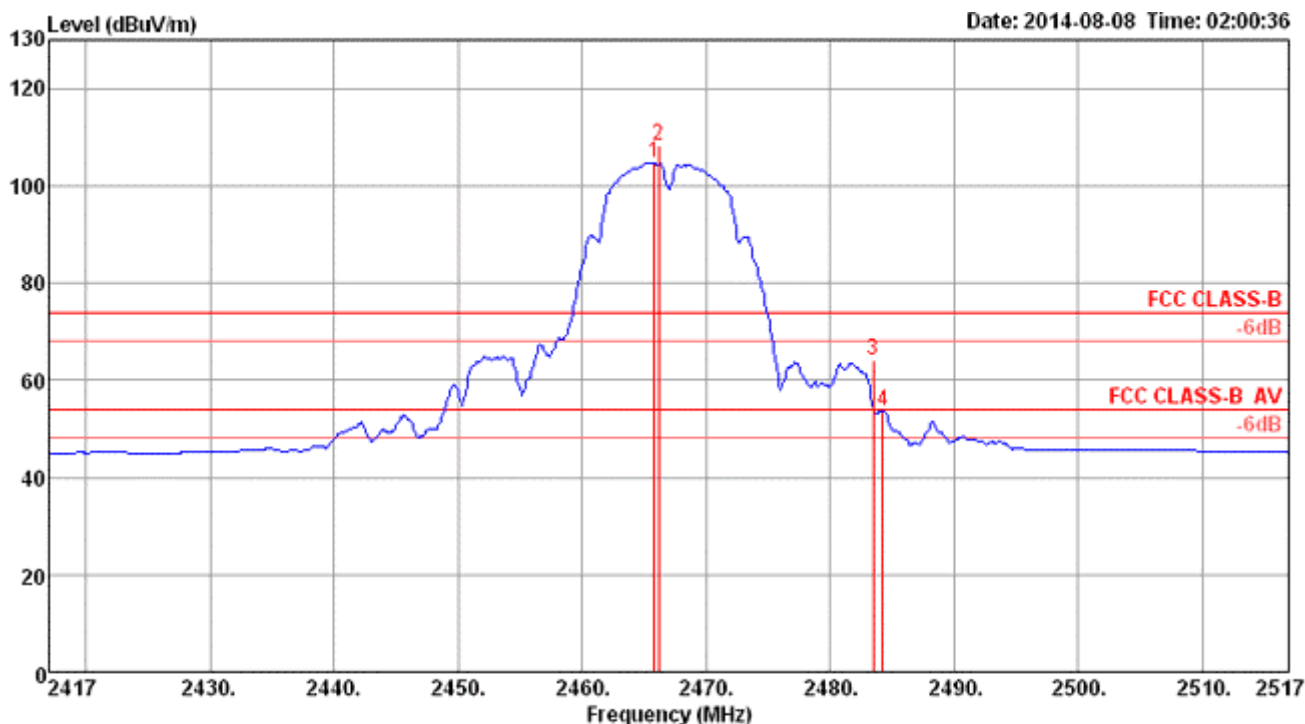


	Freq	Level	Limit	Over	Read	CableAntenna	Preampl	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2461.20	105.46			73.10	4.14	28.22	0.00 Average	100	62	VERTICAL
2	2461.20	109.37			77.01	4.14	28.22	0.00 Peak	100	62	VERTICAL
3	2483.50	53.87	54.00	-0.13	21.45	4.16	28.26	0.00 Average	100	62	VERTICAL
4	2483.70	60.81	74.00	-13.19	28.39	4.16	28.26	0.00 Peak	100	62	VERTICAL

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

Temperature	23°C	Humidity	61%
Test Engineer	YC Chen / James Chou	Configurations	IEEE 802.11b CH 12, 13 / Chain 1 + Chain 2

Channel 12

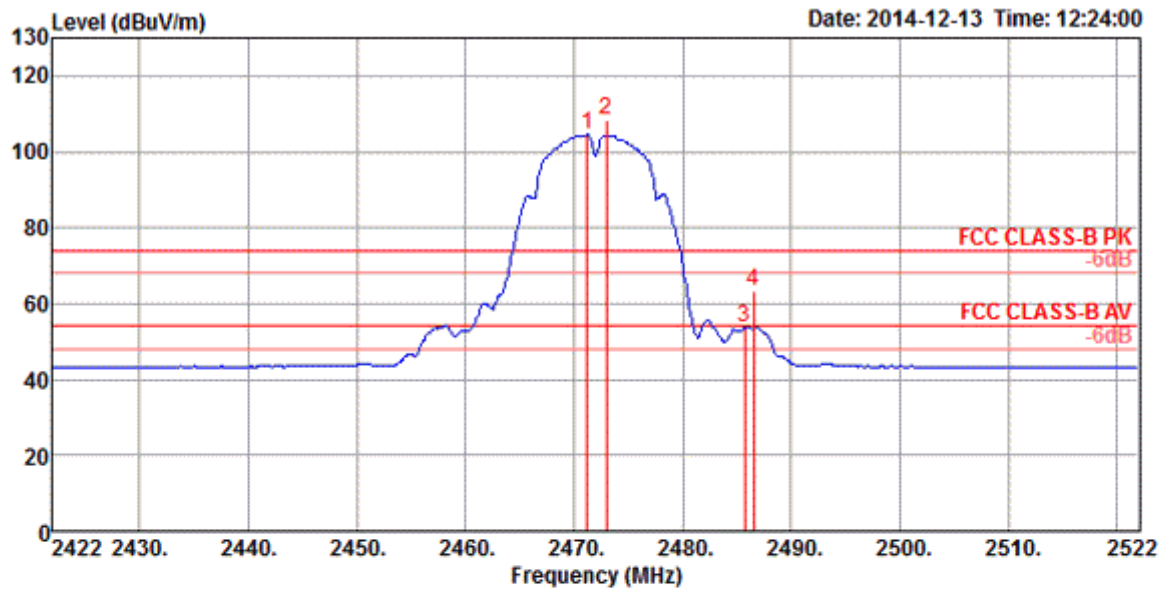


	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2465.80	104.74			72.38	4.14	28.22	0.00 Average	100	62	VERTICAL
2	2466.20	108.44			76.08	4.14	28.22	0.00 Peak	100	62	VERTICAL
3	2483.50	64.10	74.00	-9.90	31.68	4.16	28.26	0.00 Peak	100	62	VERTICAL
4	2484.30	53.54	54.00	-0.46	21.12	4.16	28.26	0.00 Average	100	62	VERTICAL

Item 1, 2 are the fundamental frequency at 2467 MHz.

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report

Channel 13



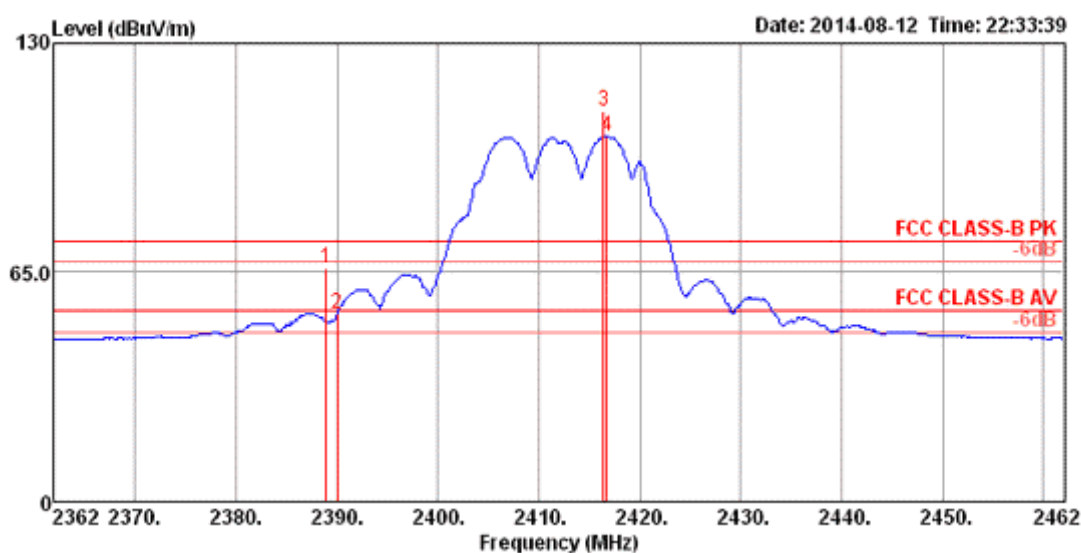
	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	2471.20	104.38			73.08	4.07	0.00	27.23	VERTICAL	263	194	Average
2	2473.00	108.31			77.01	4.07	0.00	27.23	VERTICAL	263	194	Peak
3	2485.70	53.92	54.00	-0.08	22.57	4.08	0.00	27.27	VERTICAL	263	194	Average
4	2486.50	63.25	74.00	-10.75	31.90	4.08	0.00	27.27	VERTICAL	263	194	Peak

Item 1, 2 are the fundamental frequency at 2472 MHz.

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report.

Temperature	23°C	Humidity	61%
Test Engineer	YC Chen	Configurations	IEEE 802.11g CH 1, 6, 11 / Chain 1 + Chain 2

Channel 1

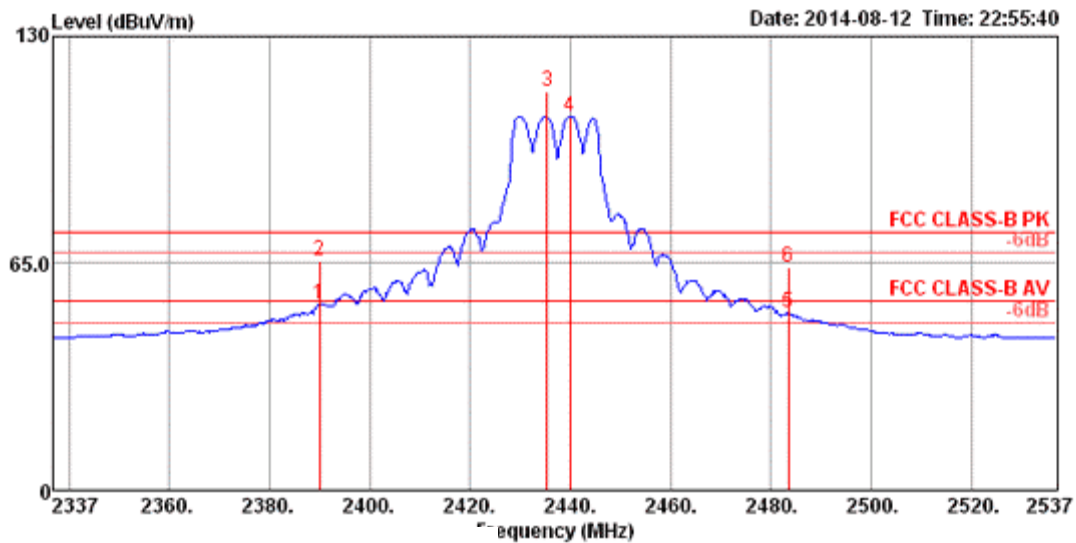


	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2388.90	66.39	74.00	-7.61	34.81	3.68	27.90	0.00	187	256 VERTICAL	Peak
2	2390.00	53.48	54.00	-0.52	21.90	3.68	27.90	0.00	187	256 VERTICAL	Average
3	2416.40	110.78			79.19	3.69	27.90	0.00	187	256 VERTICAL	Peak
4	2416.70	103.46			71.87	3.69	27.90	0.00	187	256 VERTICAL	Average

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

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report

Channel 6

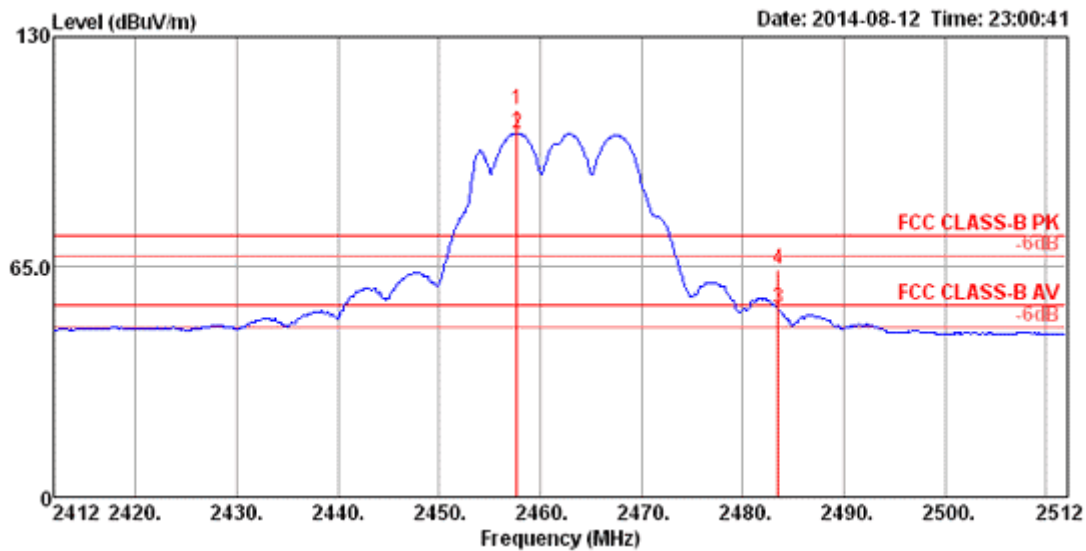


	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2390.00	53.22	54.00	-0.78	21.64	3.68	27.90	0.00	134	120	VERTICAL	Average
2	2390.00	65.63	74.00	-8.37	34.05	3.68	27.90	0.00	134	120	VERTICAL	Peak
3	2435.40	114.20			82.60	3.70	27.90	0.00	134	120	VERTICAL	Peak
4	2440.00	107.16			75.55	3.71	27.90	0.00	134	120	VERTICAL	Average
5	2483.50	50.83	54.00	-3.17	19.20	3.73	27.90	0.00	134	120	VERTICAL	Average
6	2483.50	63.63	74.00	-10.37	32.00	3.73	27.90	0.00	134	120	VERTICAL	Peak

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

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report

Channel 11



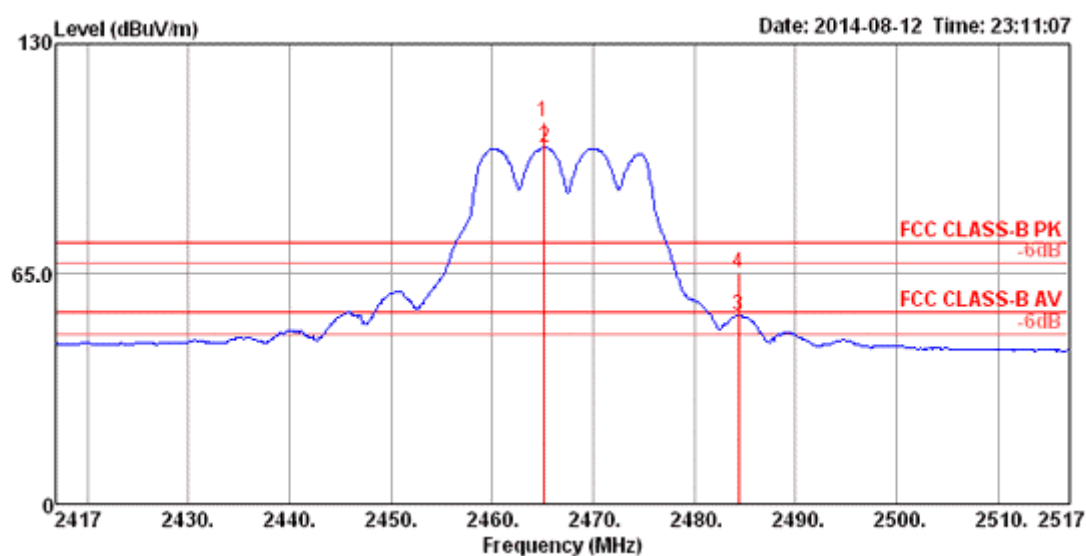
	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2457.68	109.20			77.58	3.72	27.90	0.00	183	265	VERTICAL	Peak
2	2457.70	102.69			71.07	3.72	27.90	0.00	183	265	VERTICAL	Average
3	2483.50	53.40	54.00	-0.60	21.77	3.73	27.90	0.00	183	265	VERTICAL	Average
4	2483.50	64.20	74.00	-9.80	32.57	3.73	27.90	0.00	183	265	VERTICAL	Peak

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

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report

Temperature	23°C	Humidity	61%
Test Engineer	YC Chen / James Chou	Configurations	IEEE 802.11g CH 12, 13 / Chain 1 + Chain 2

Channel 12

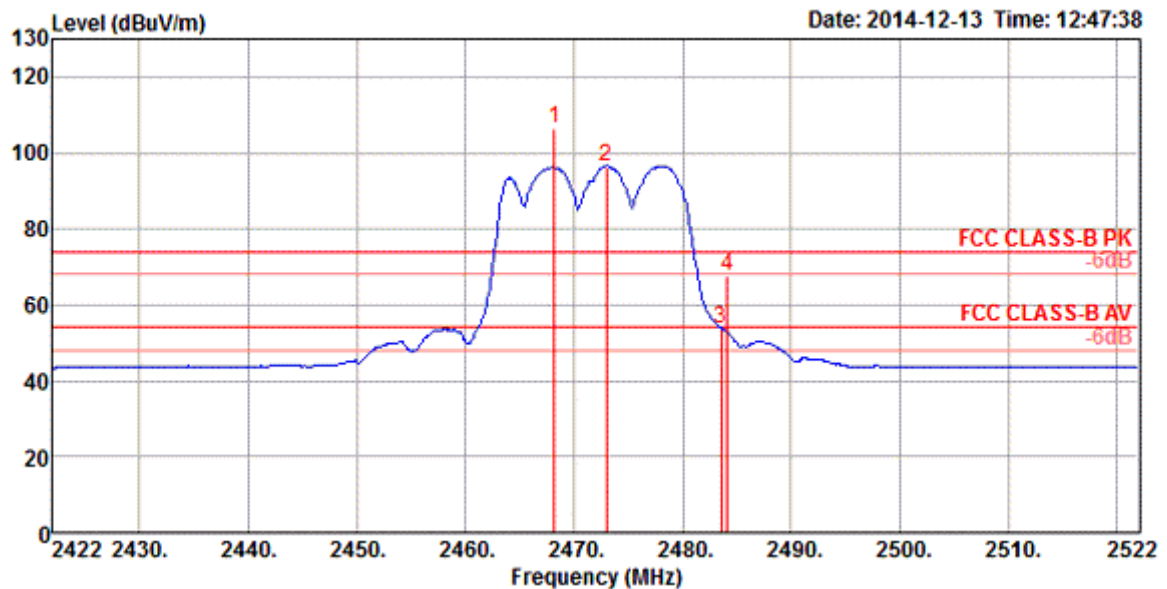


	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2465.10	107.81			76.19	3.72	27.90	0.00	100	118	VERTICAL	Peak
2	2465.20	100.67			69.05	3.72	27.90	0.00	100	118	VERTICAL	Average
3	2484.40	53.18	54.00	-0.82	21.55	3.73	27.90	0.00	100	118	VERTICAL	Average
4	2484.40	65.34	74.00	-8.66	33.71	3.73	27.90	0.00	100	118	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 2467 MHz.

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report

Channel 13



	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	deg	cm	
1	2468.20	106.44			75.16	4.05	0.00	27.23	VERTICAL	84	198	Peak
2	2473.00	96.65			65.35	4.07	0.00	27.23	VERTICAL	84	198	Average
3	2483.50	53.87	54.00	-0.13	22.53	4.07	0.00	27.27	VERTICAL	84	198	Average
4	2484.10	67.45	74.00	-6.55	36.11	4.07	0.00	27.27	VERTICAL	84	198	Peak

Item 1, 2 are the fundamental frequency at 2472 MHz.

Note: Both antenna polarizations have been tested and only the worst case was recorded in test report.

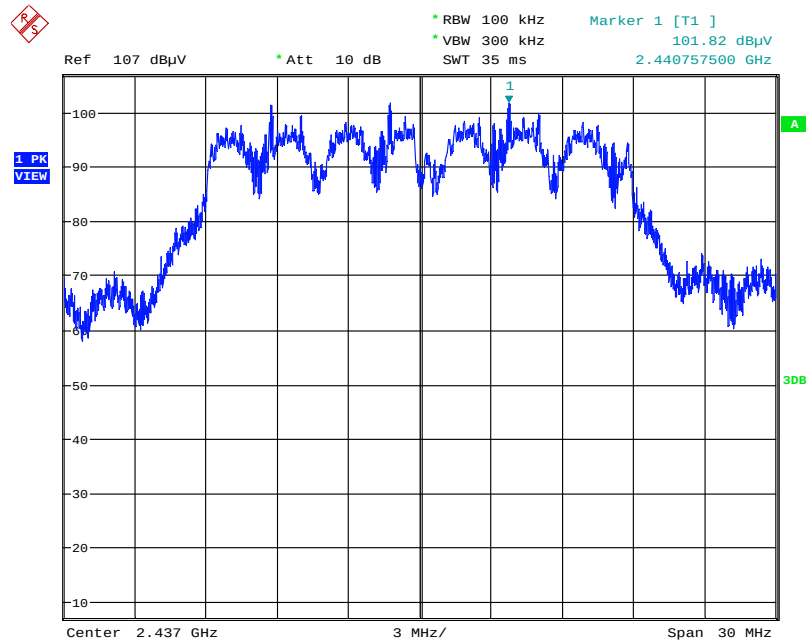
Note:

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

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

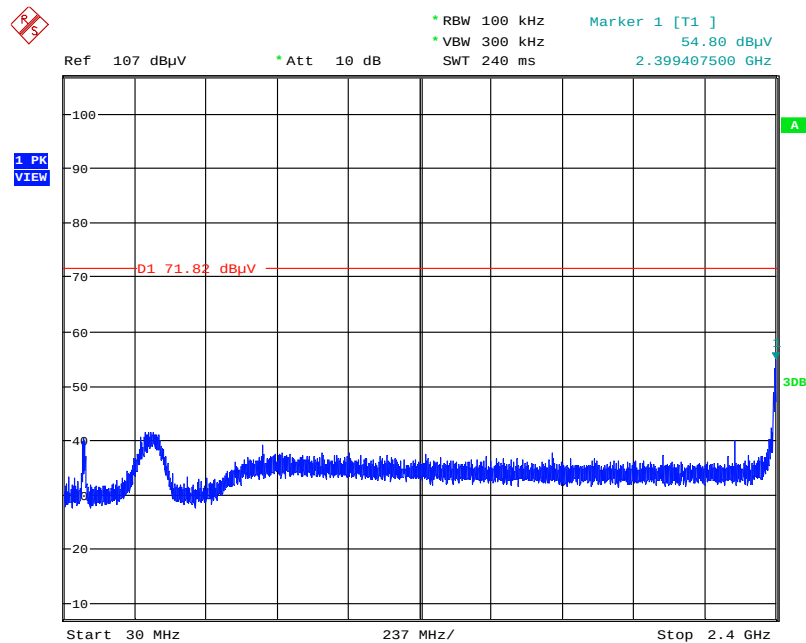
For Emission not in Restricted Band

Plot on Configuration IEEE 802.11n MCS0 HT20 / Reference Level (Horizontal)



Date: 14.SEP.2014 11:20:20

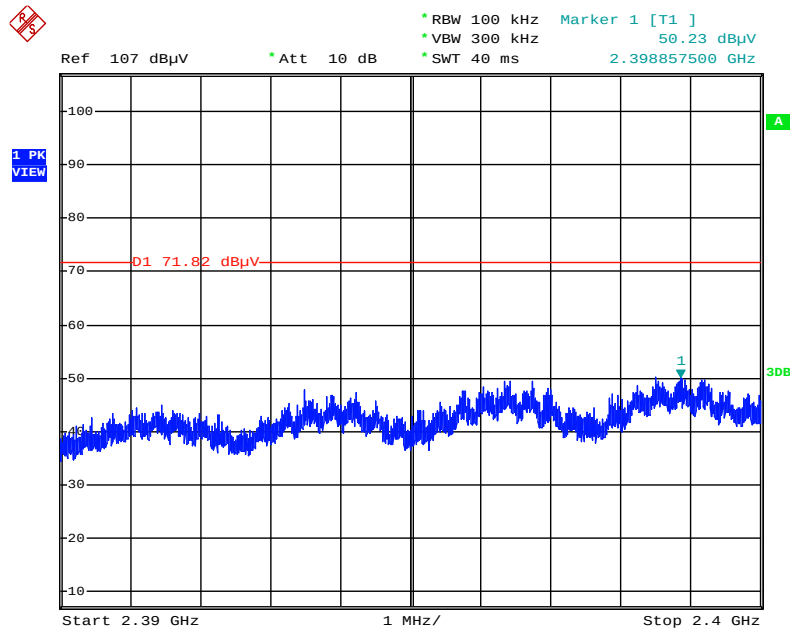
Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 1 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:21:01

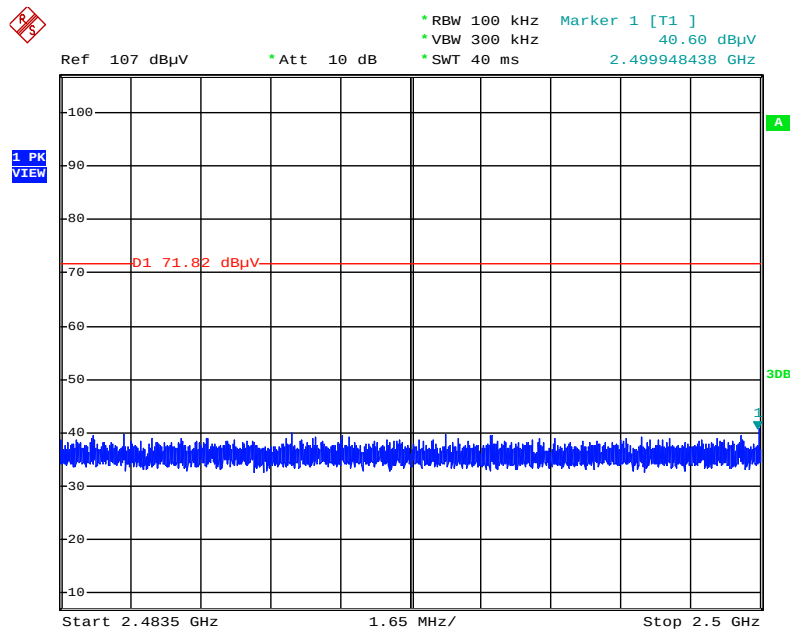
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 1 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:32:56

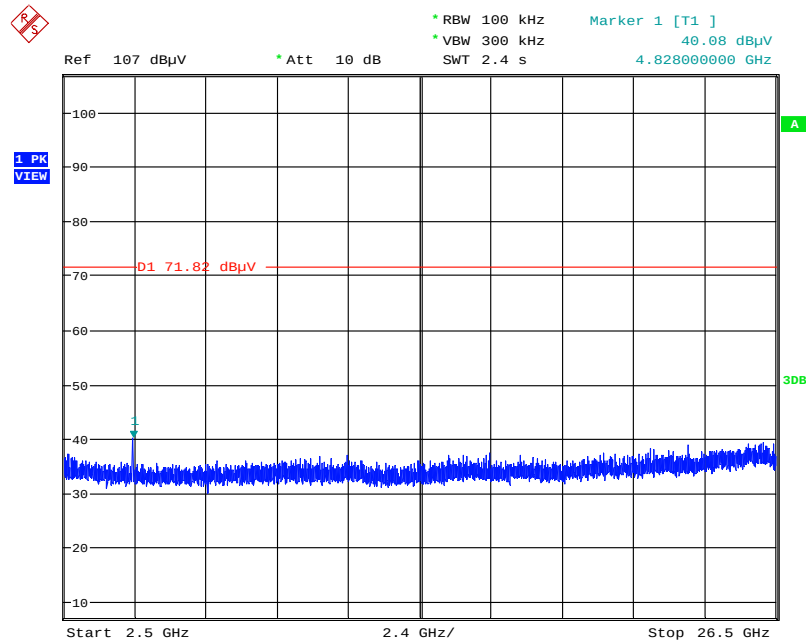
Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 1 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:33:26

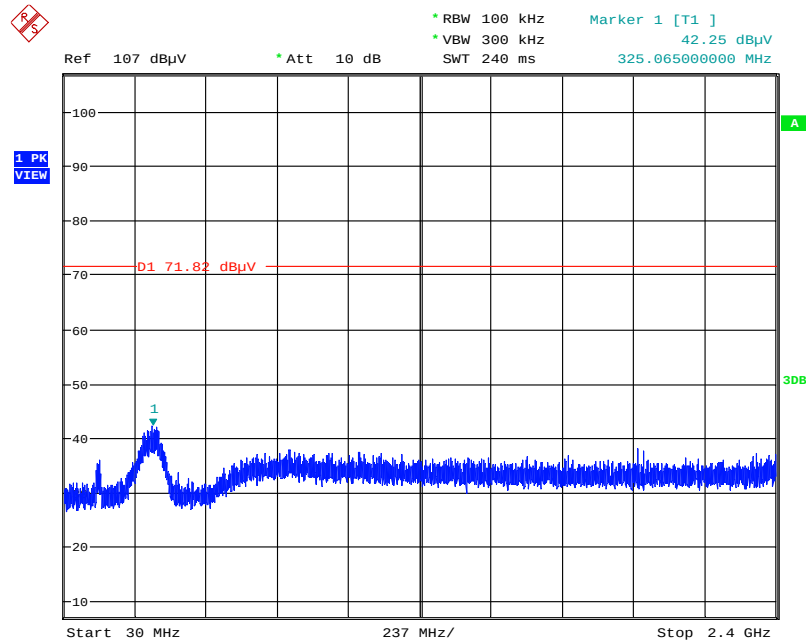
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

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



Date: 14.SEP.2014 11:21:24

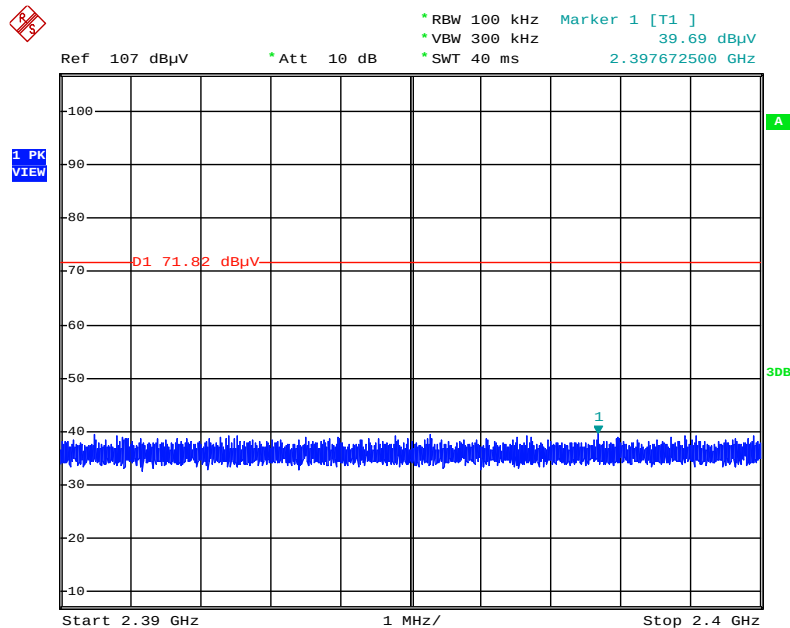
Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 11 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:21:49

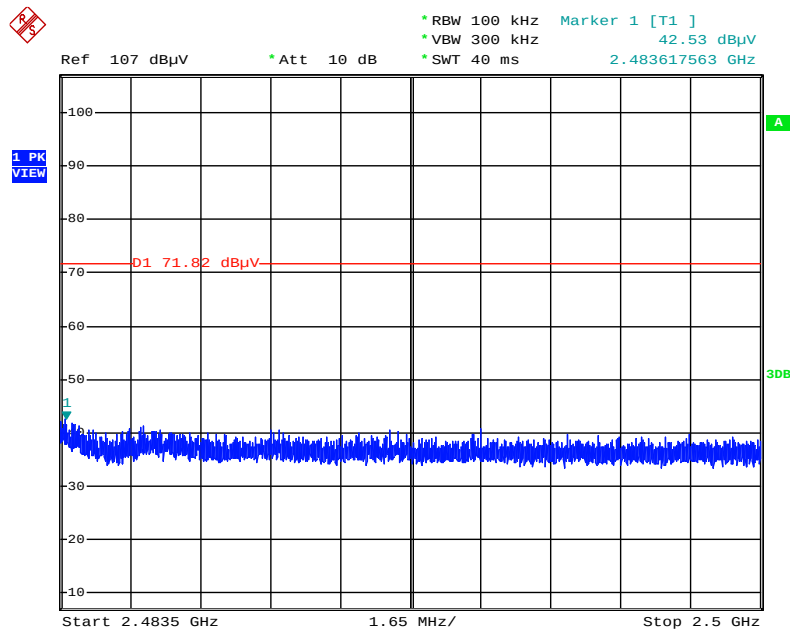
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 11 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:35:08

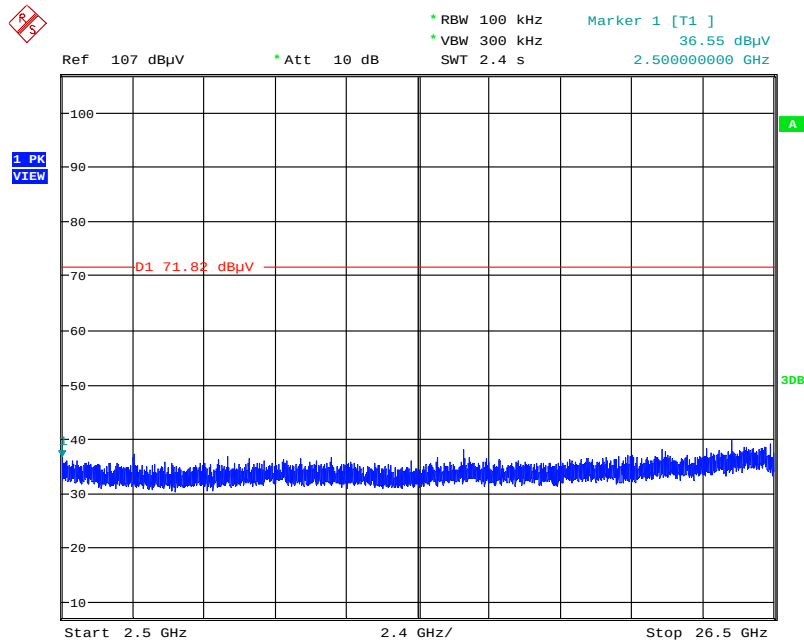
Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 11 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:34:36

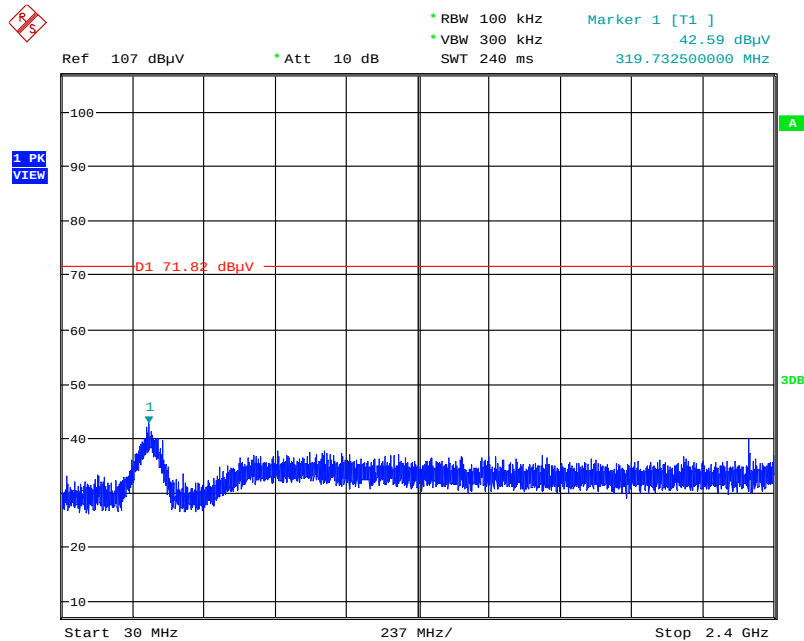
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

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



Date: 14.SEP.2014 11:22:07

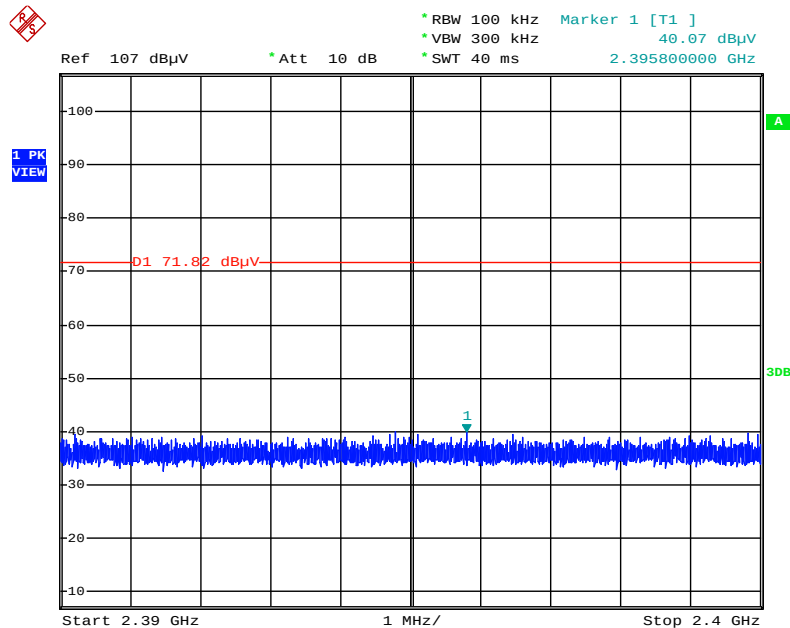
Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 12 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:22:33

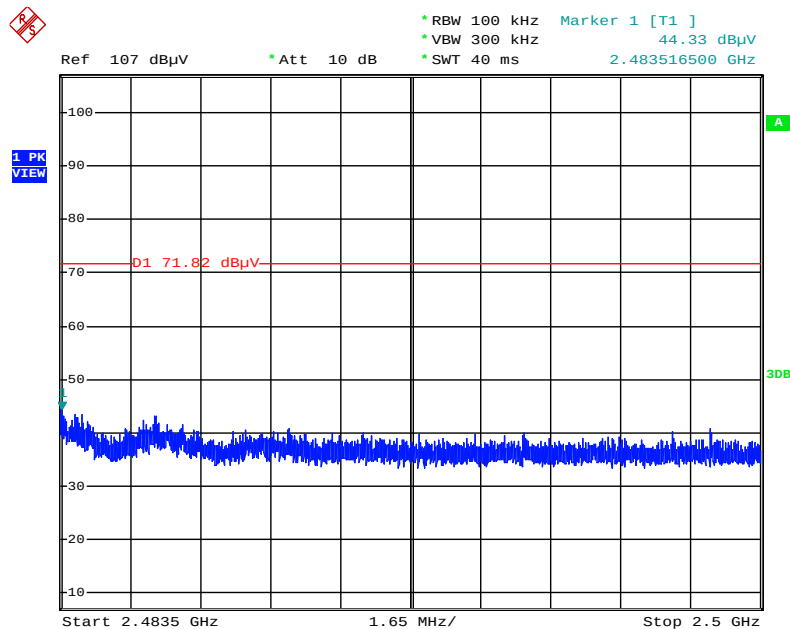
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 12 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:35:47

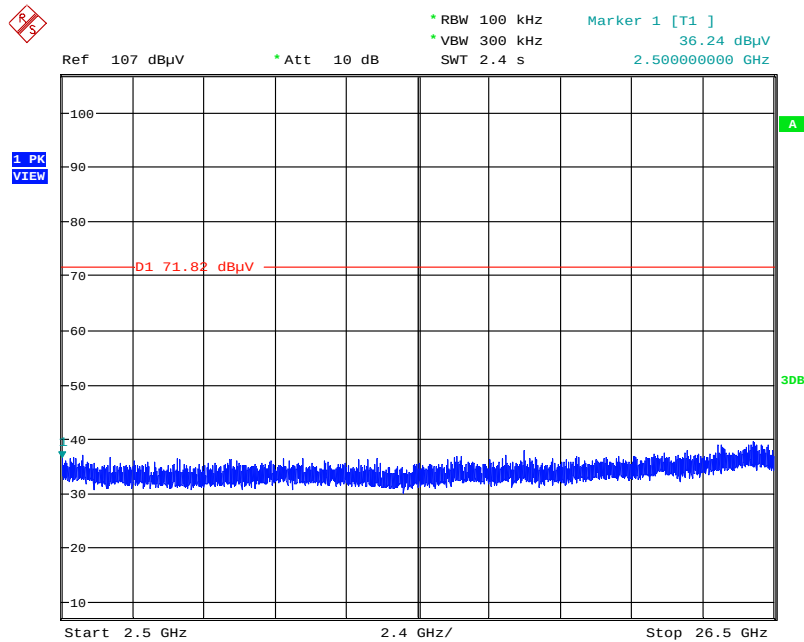
Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 12 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:36:19

Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

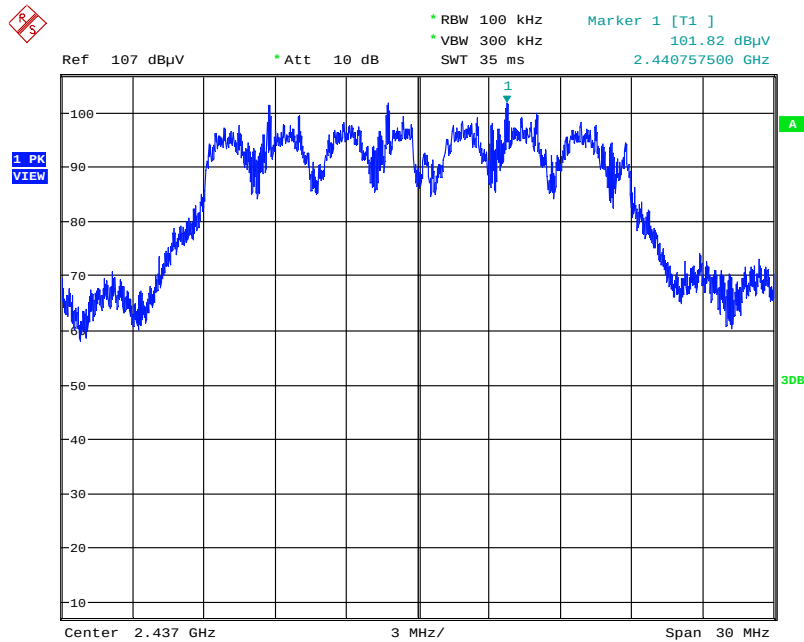
Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 12 / 2500MHz~26500MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:22:55

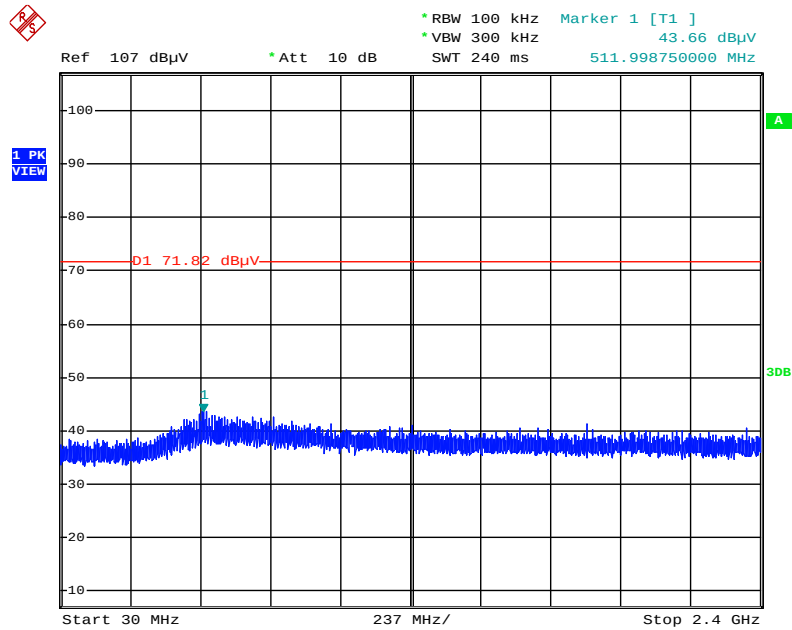
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11n MCS0 HT20 / Reference Level (Horizontal)



Date: 14.SEP.2014 11:20:20

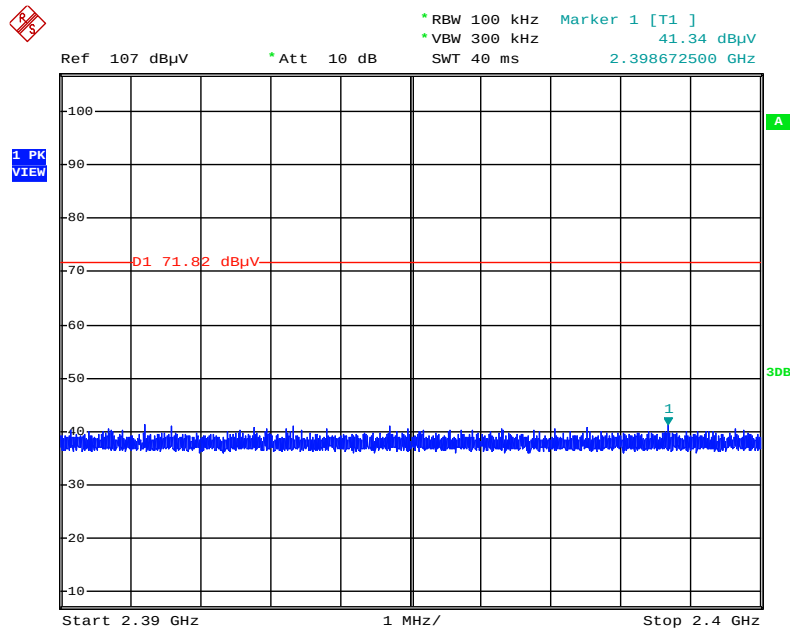
Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 13 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 13.DEC.2014 13:29:53

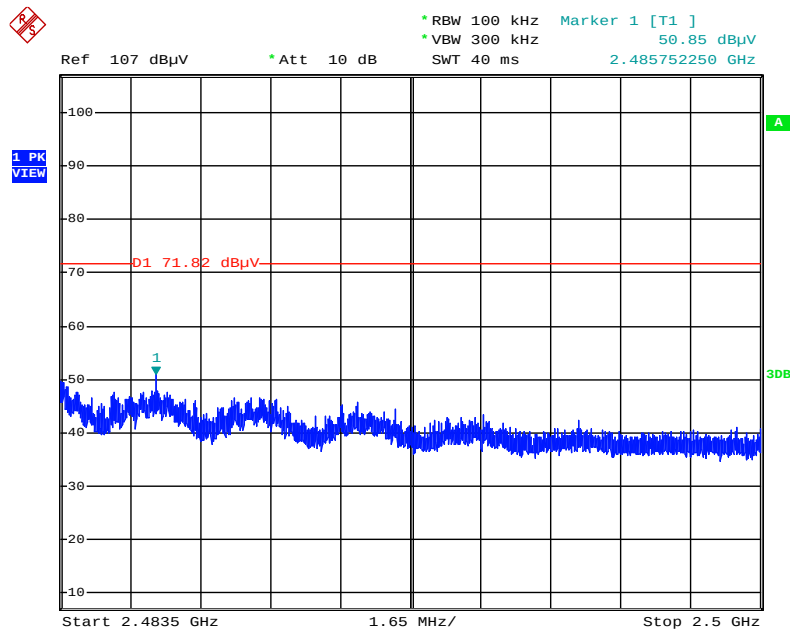
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 13 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 30.DEC.2014 12:23:59

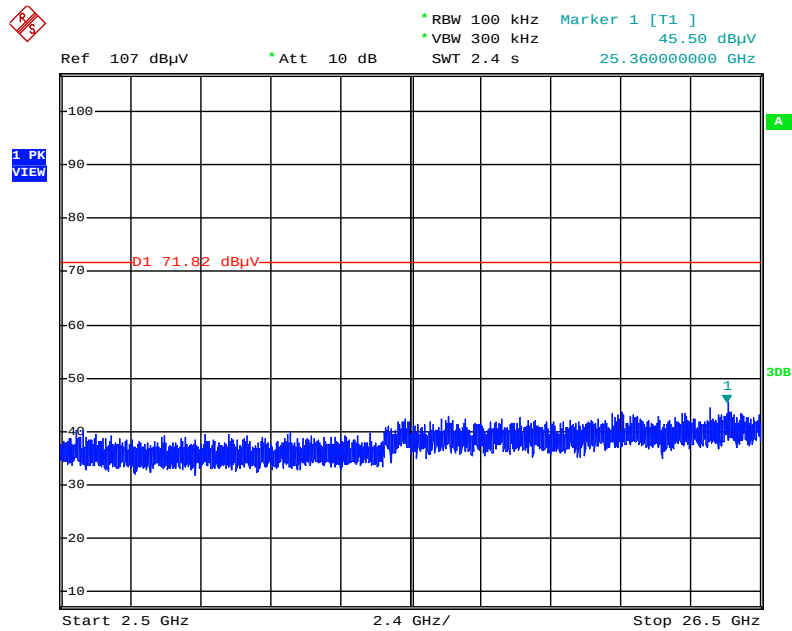
Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 13 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 30.DEC.2014 12:22:23

Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

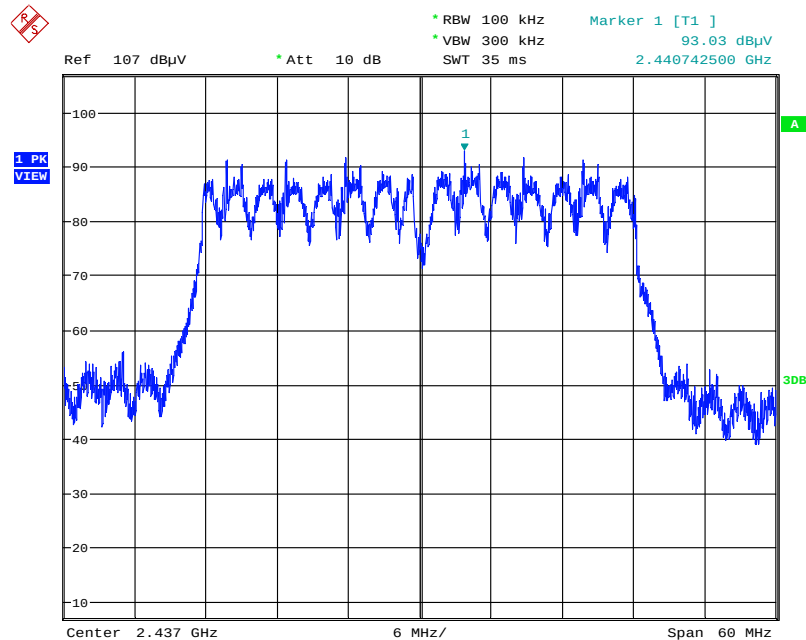
Plot on Configuration IEEE 802.11n MCS0 HT20 / CH 13 / 2500MHz~26500MHz (down 30dBc) (Horizontal)



Date: 13.DEC.2014 13:30:23

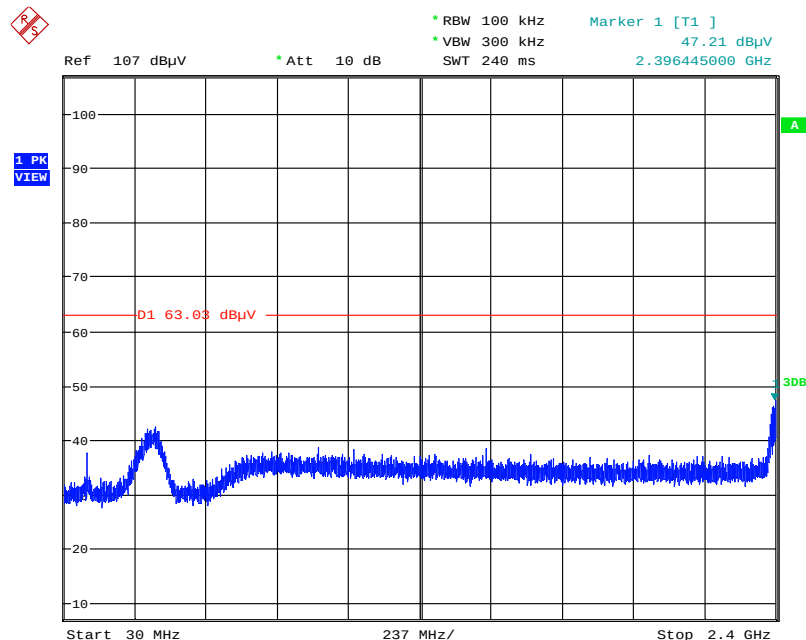
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11n MCS0 HT40 / Reference Level (Horizontal)



Date: 14.SEP.2014 11:24:11

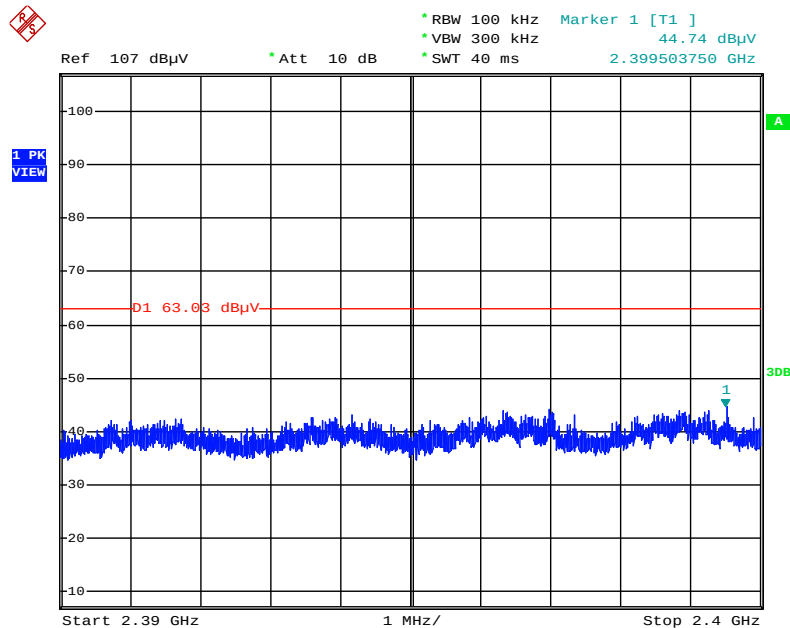
Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 3 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:24:55

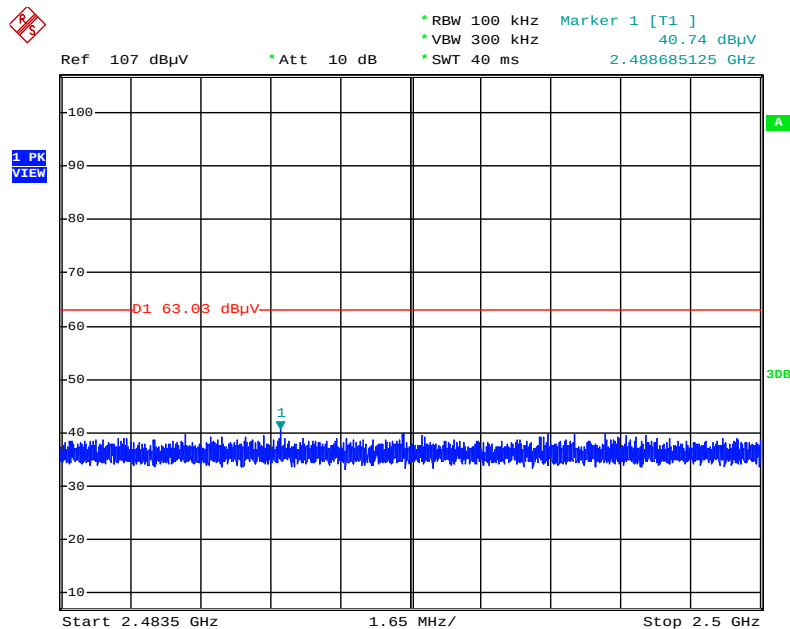
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 3 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:39:15

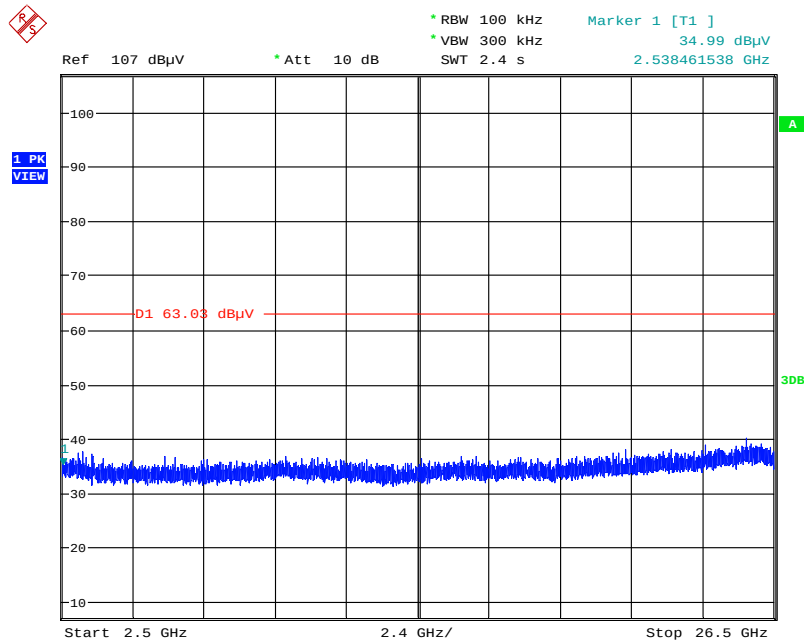
Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 3 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:38:25

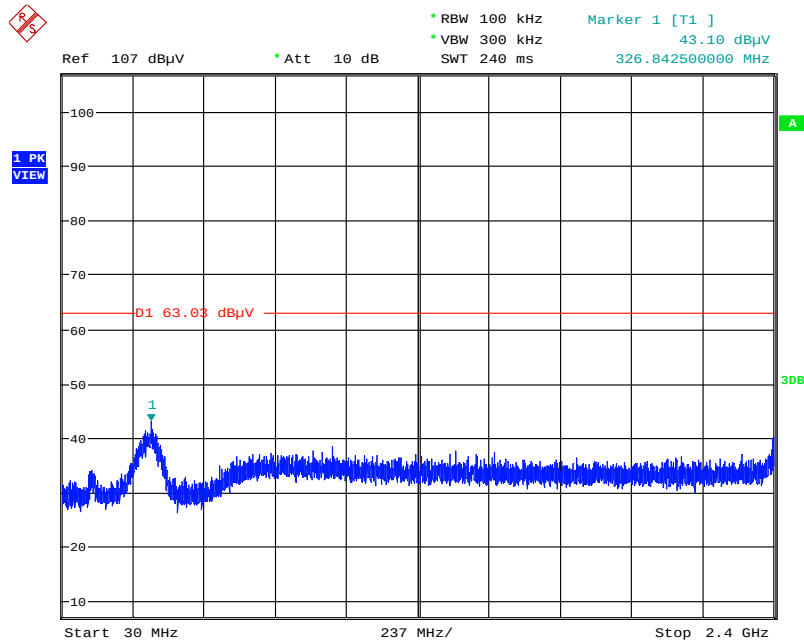
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

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



Date: 14.SEP.2014 11:25:25

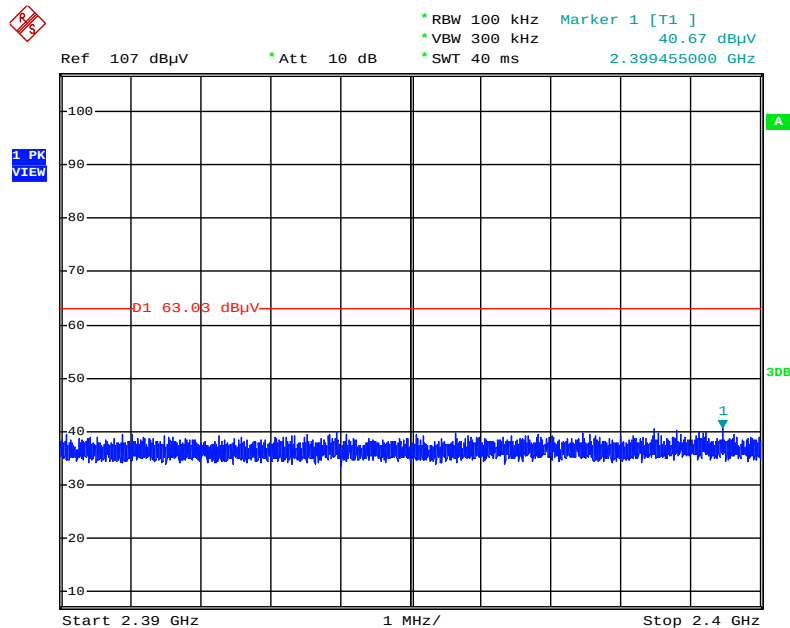
Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 9 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:25:56

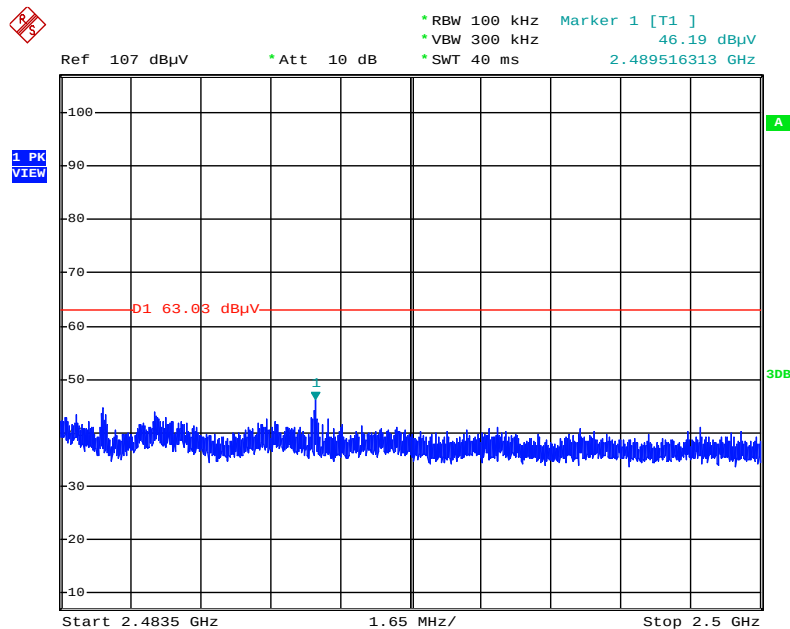
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 9 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:40:08

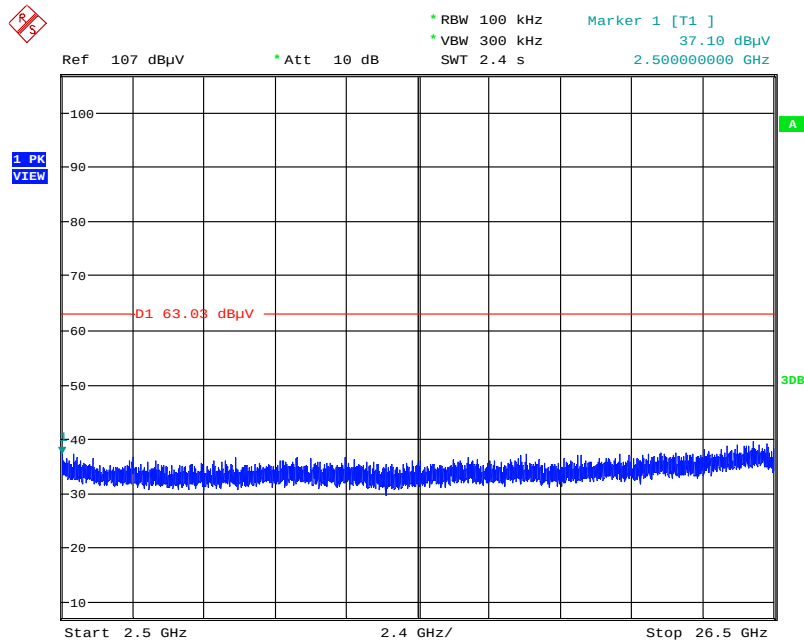
Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 9 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:40:39

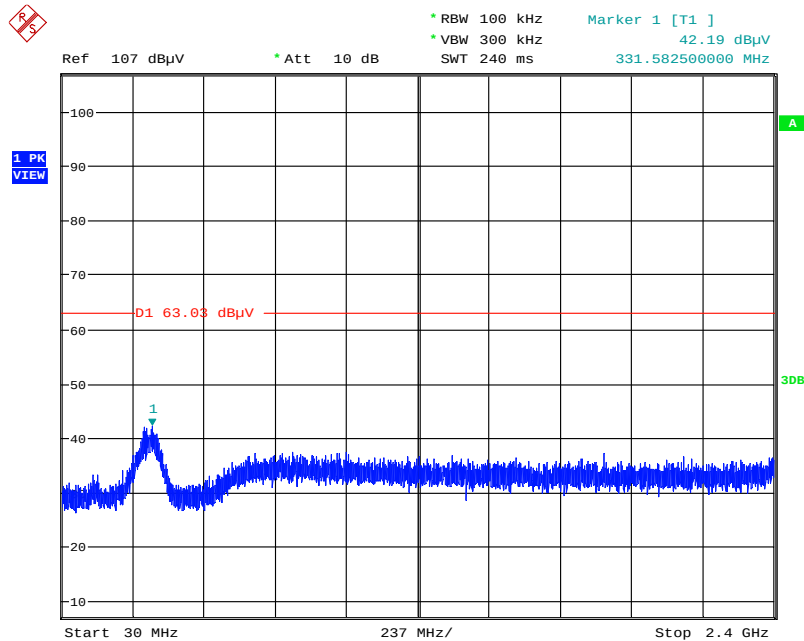
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

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



Date: 14.SEP.2014 11:26:19

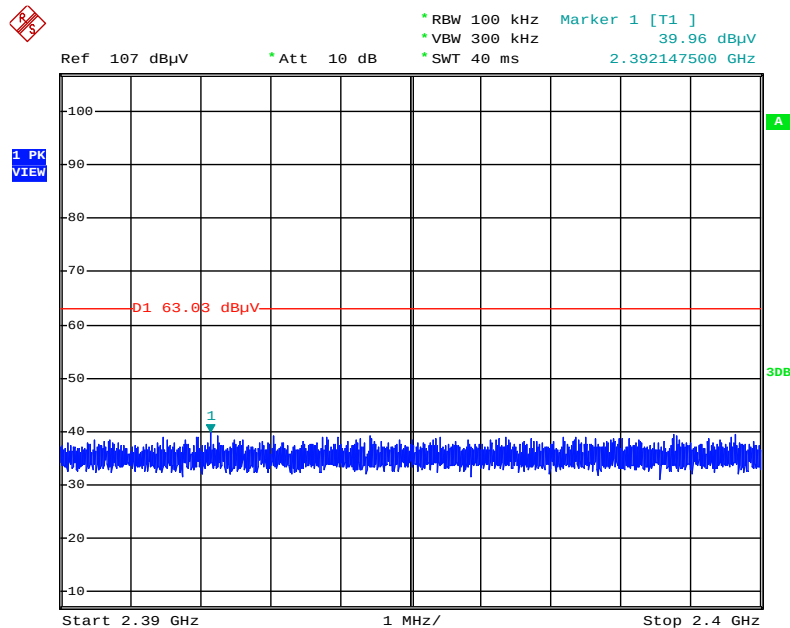
Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 10 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:27:01

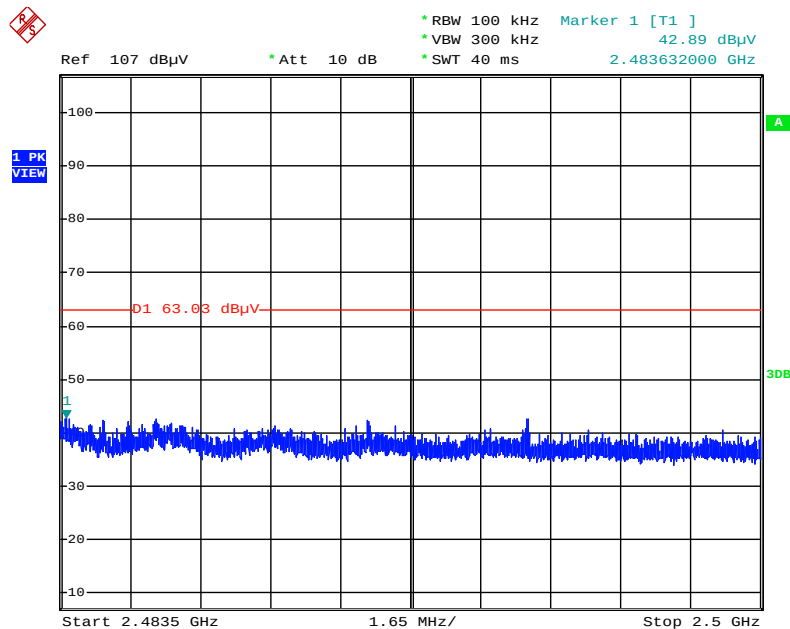
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 10 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:41:53

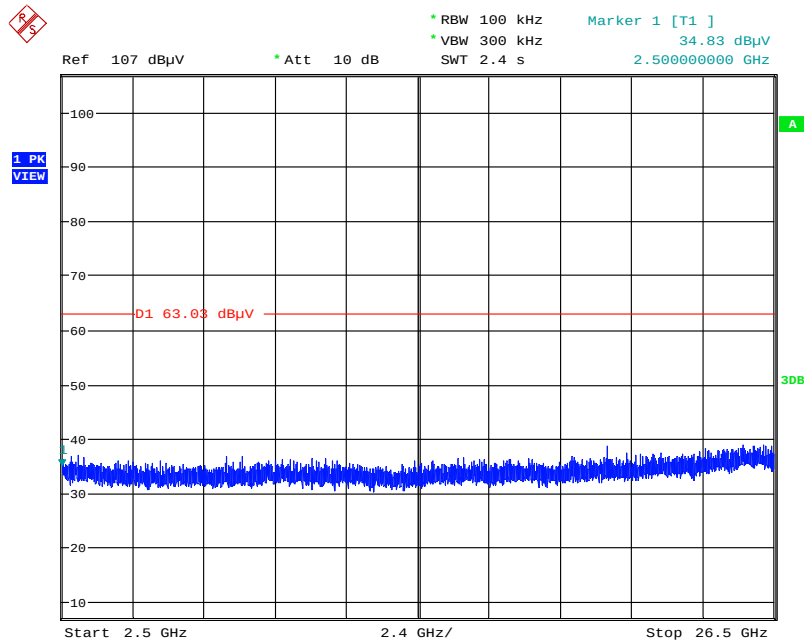
Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 10 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:41:32

Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

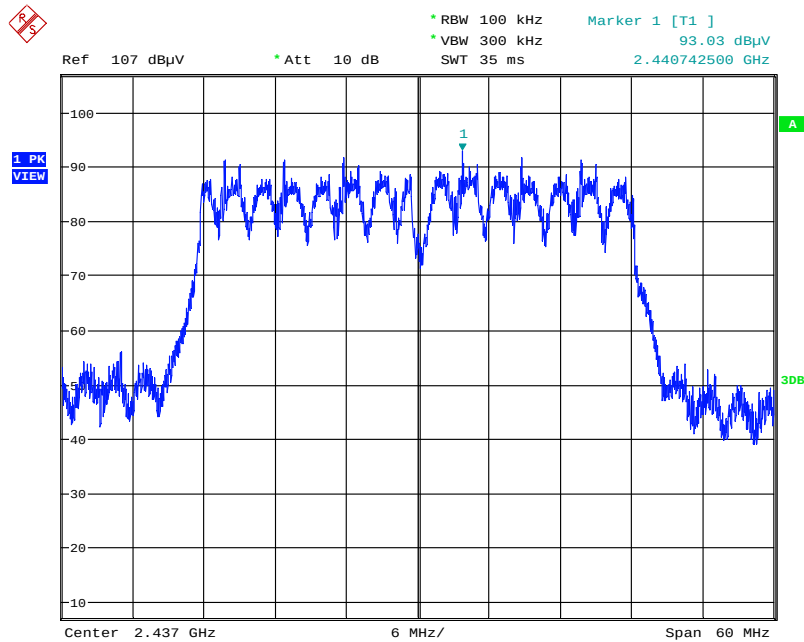
Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 10 / 2500MHz~26500MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:27:22

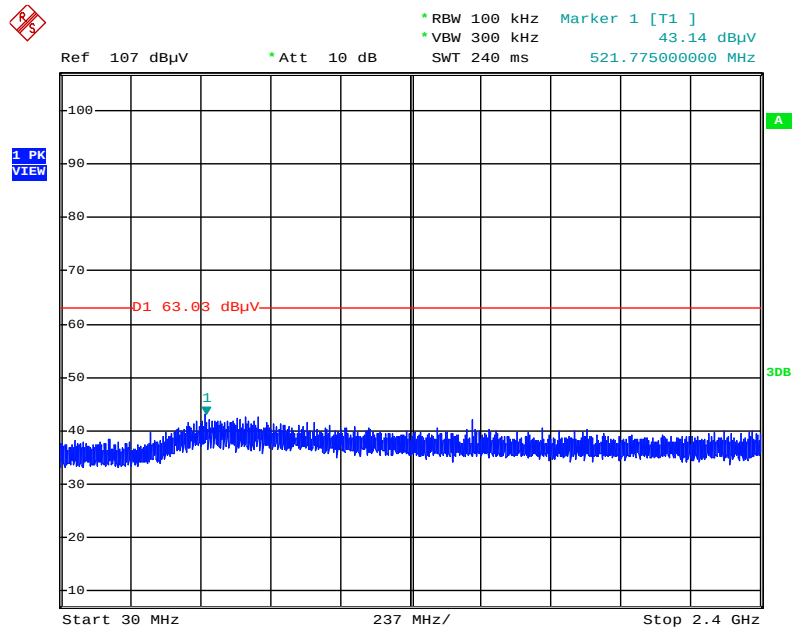
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11n MCS0 HT40 / Reference Level (Horizontal)



Date: 14.SEP.2014 11:24:11

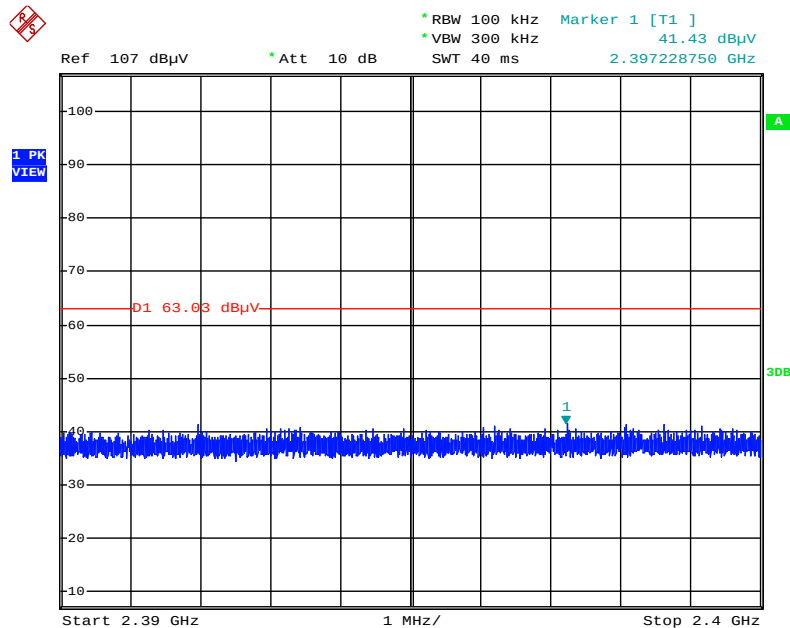
Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 11 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 13.DEC.2014 13:32:27

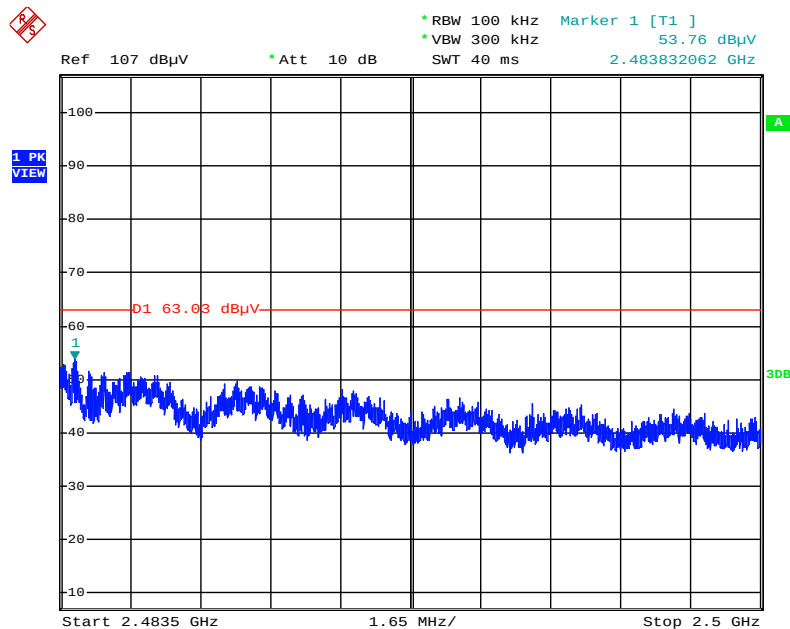
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 11 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 30.DEC.2014 12:08:34

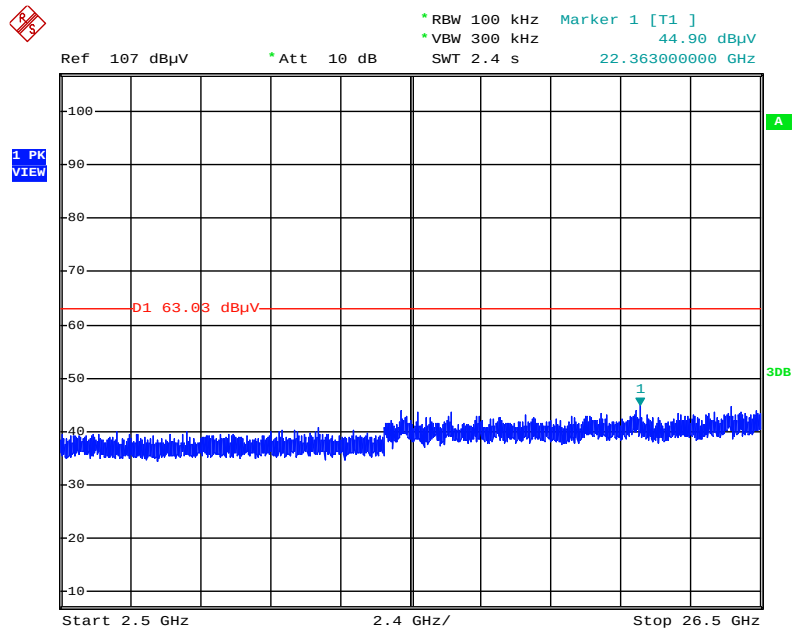
Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 11 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 30.DEC.2014 12:09:18

Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

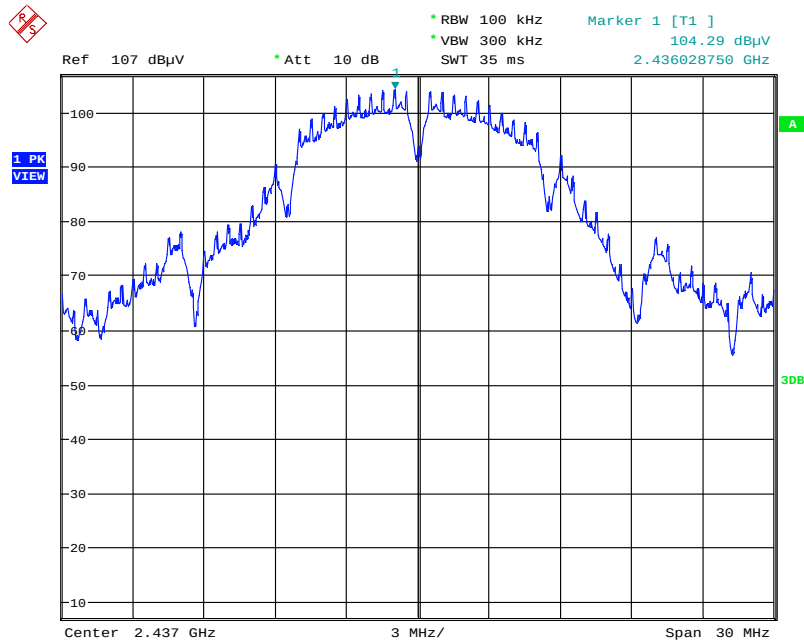
Plot on Configuration IEEE 802.11n MCS0 HT40 / CH 11 / 2500MHz~26500MHz (down 30dBc) (Horizontal)



Date: 13.DEC.2014 13:31:58

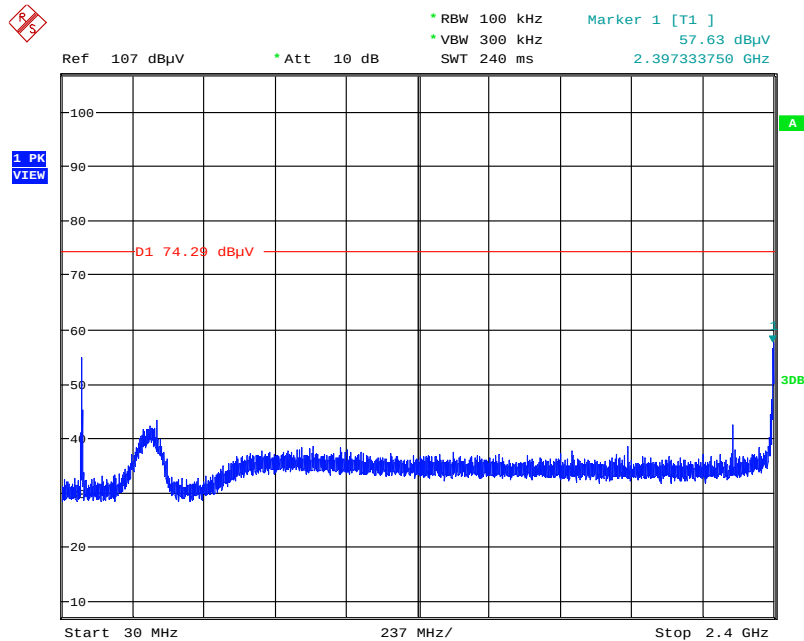
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11b / Reference Level (Horizontal)



Date: 14.SEP.2014 11:07:39

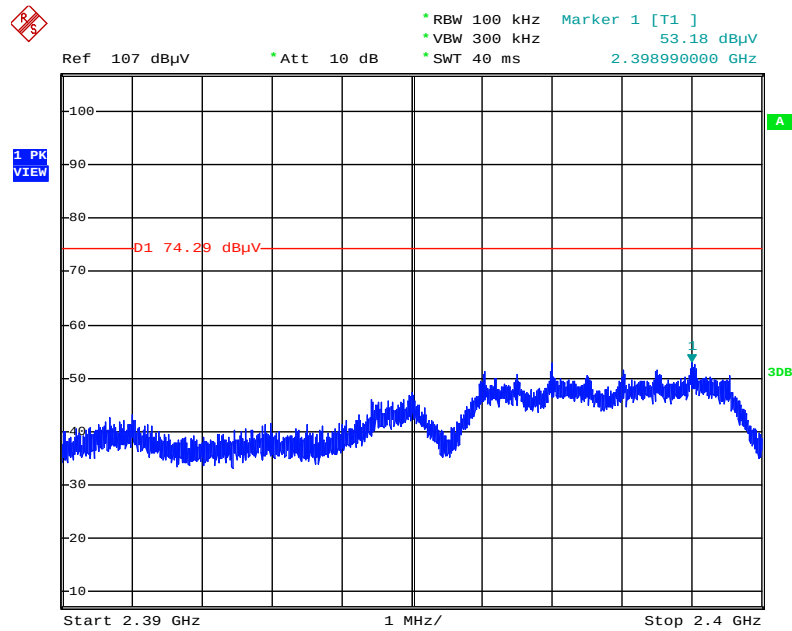
Plot on Configuration IEEE 802.11b / CH 1 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:09:05

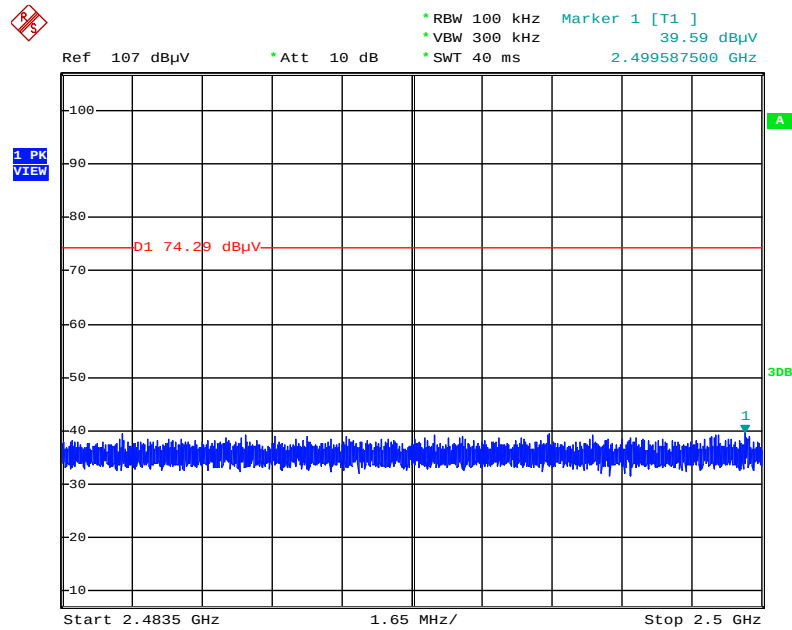
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11b / CH 1 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:23:27

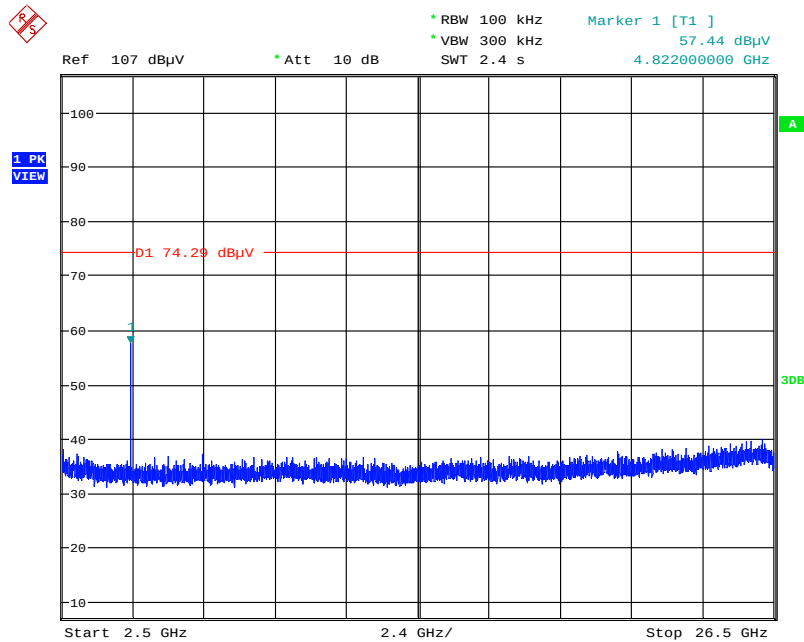
Plot on Configuration IEEE 802.11b / CH 1 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:23:58

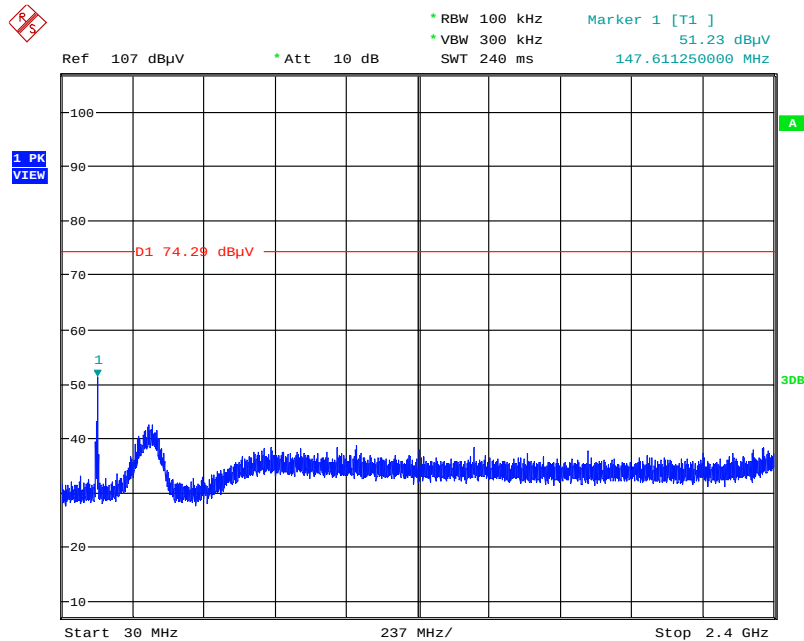
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

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



Date: 14.SEP.2014 11:09:36

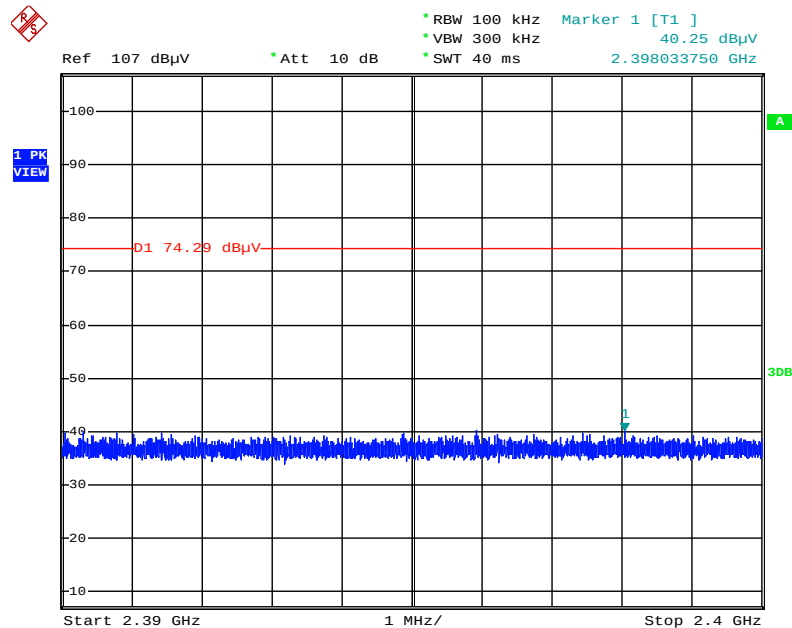
Plot on Configuration IEEE 802.11b / CH 11 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:10:13

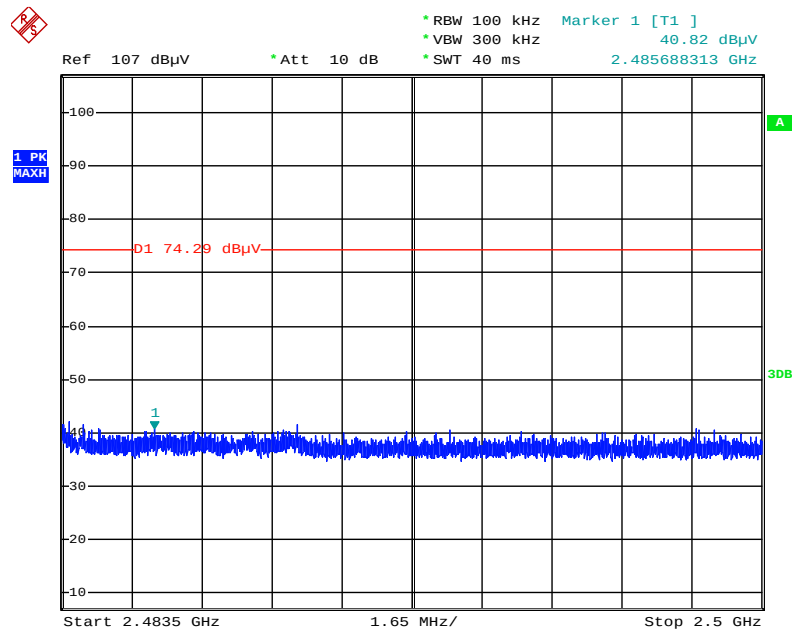
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11b / CH 11 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:18:15

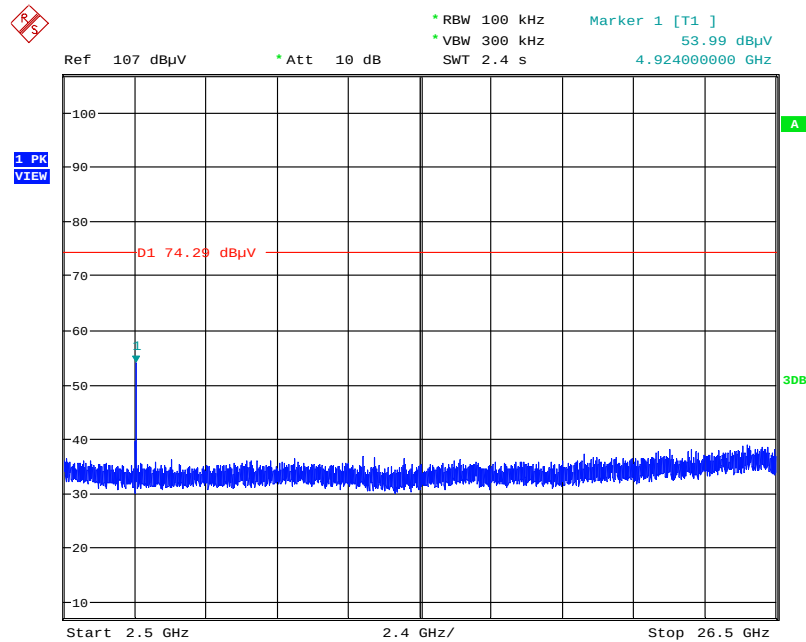
Plot on Configuration IEEE 802.11b / CH 11 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:22:16

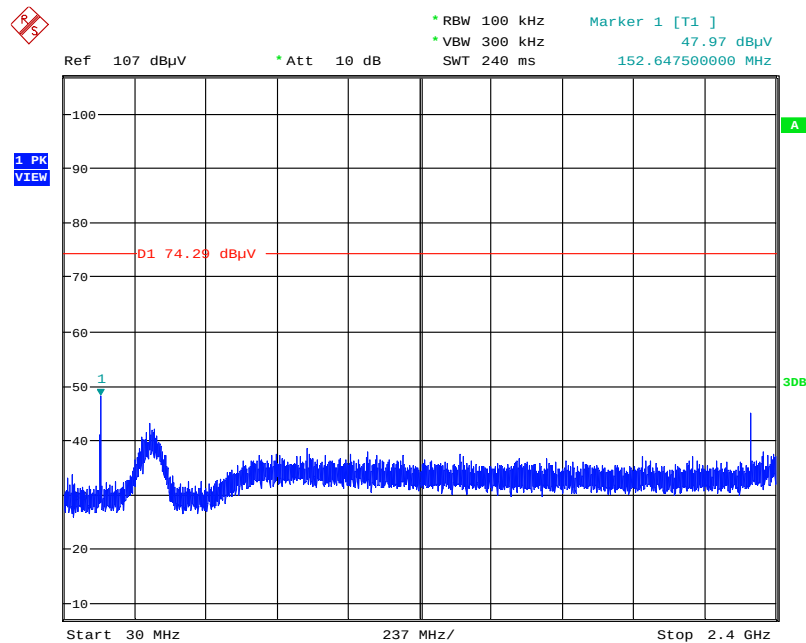
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

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



Date: 14.SEP.2014 11:10:28

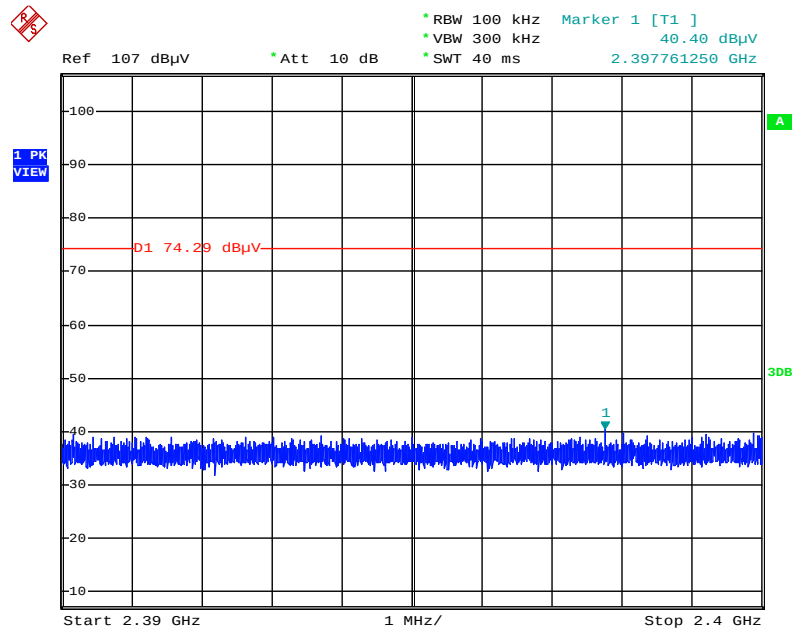
Plot on Configuration IEEE 802.11b / CH 12 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:10:57

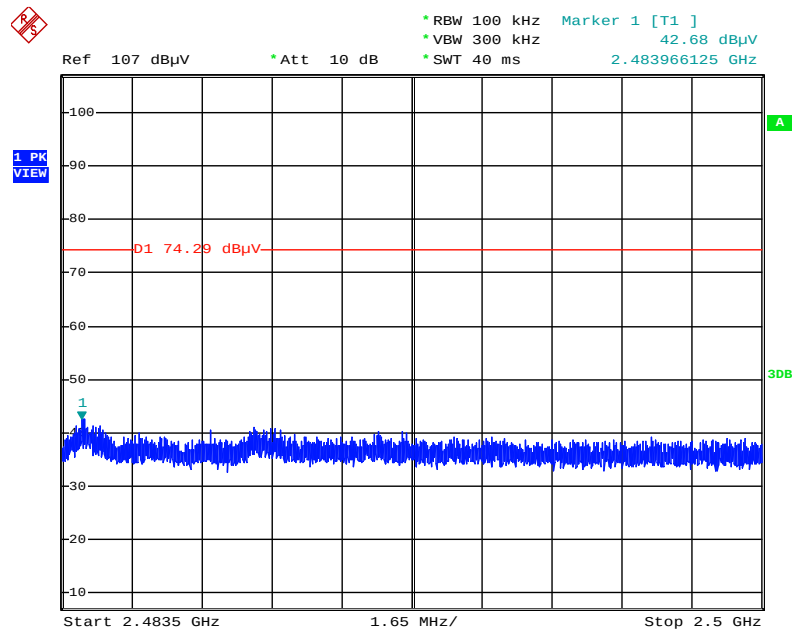
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11b / CH 12 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:24:50

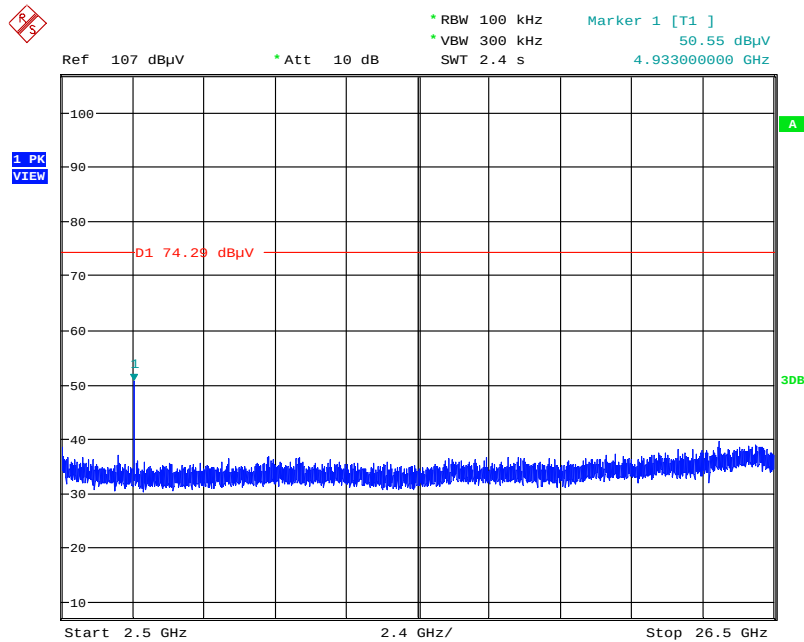
Plot on Configuration IEEE 802.11b / CH 12 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:25:18

Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

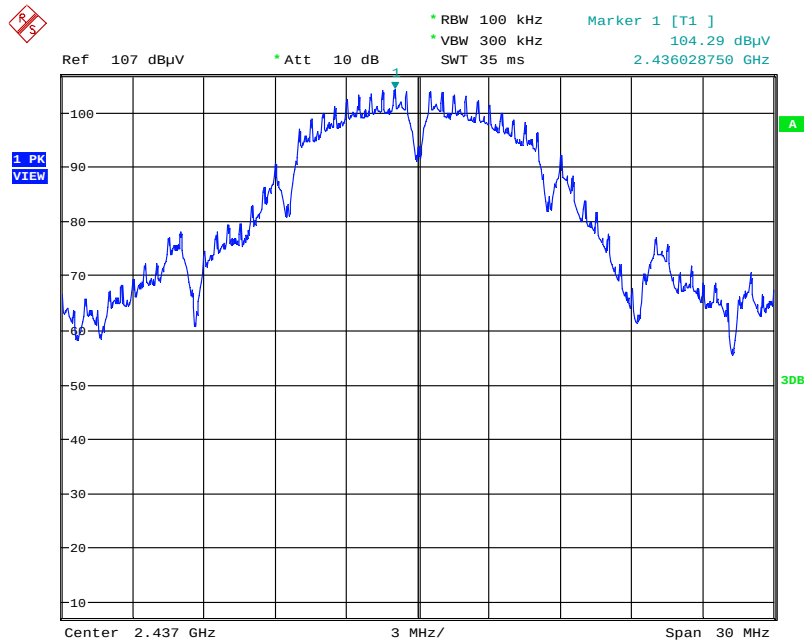
Plot on Configuration IEEE 802.11b / CH 12 / 2500MHz~26500MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:11:13

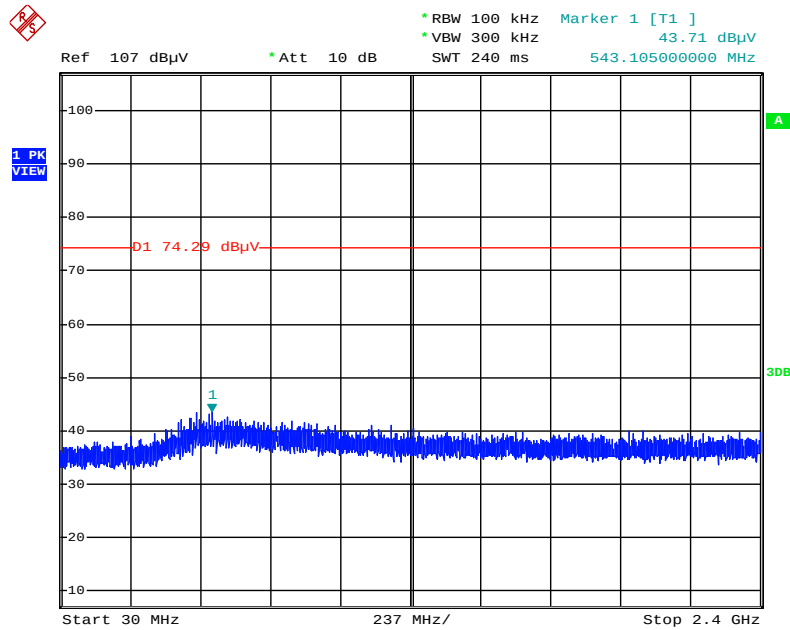
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11b / Reference Level (Horizontal)



Date: 14.SEP.2014 11:07:39

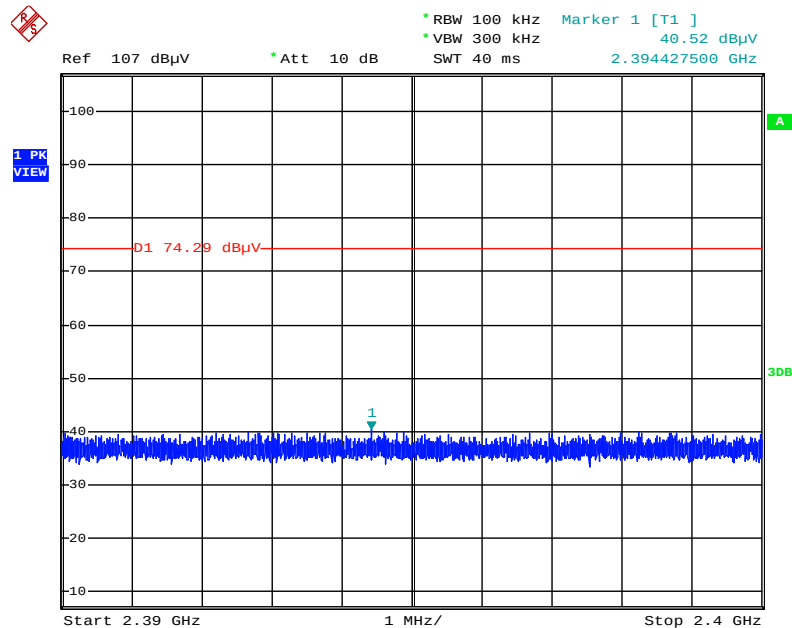
Plot on Configuration IEEE 802.11b / CH 13 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 13.DEC.2014 13:24:16

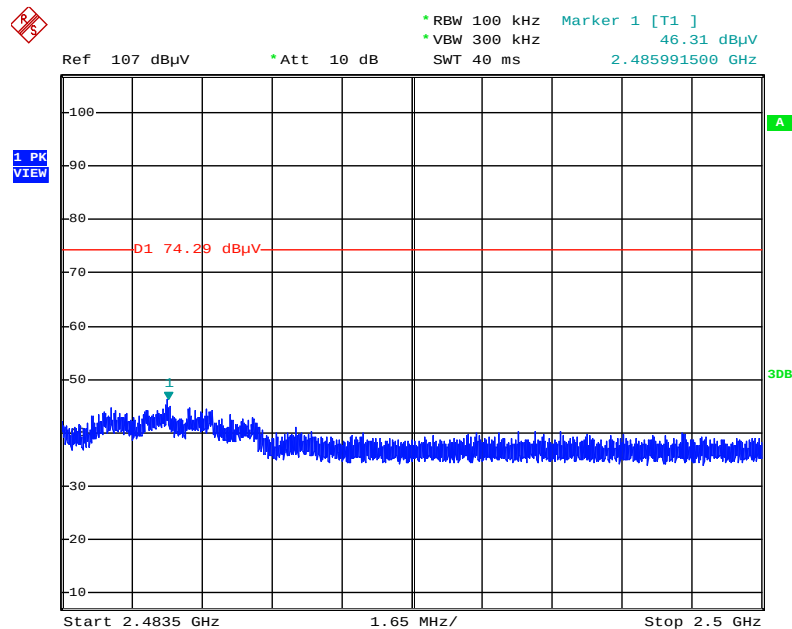
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11b / CH 13 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 30.DEC.2014 12:33:08

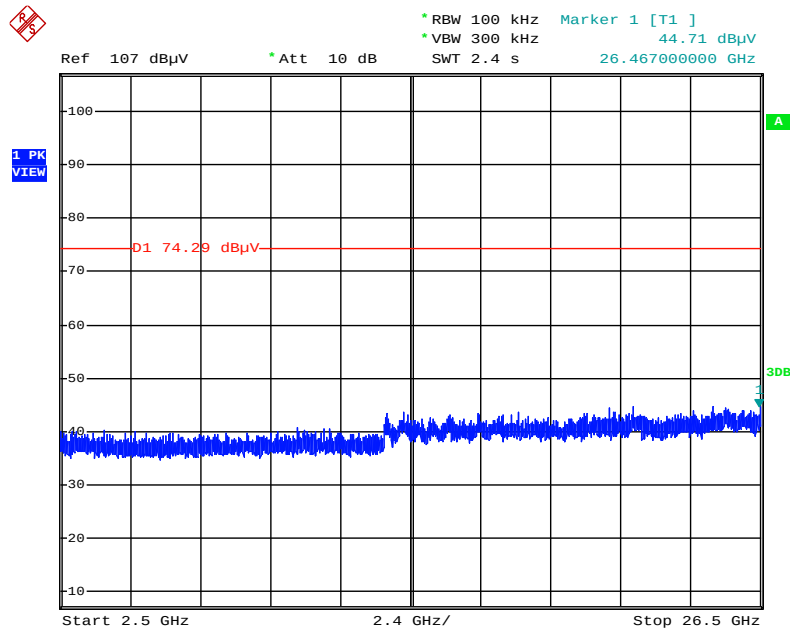
Plot on Configuration IEEE 802.11b / CH 13 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 30.DEC.2014 12:32:18

Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

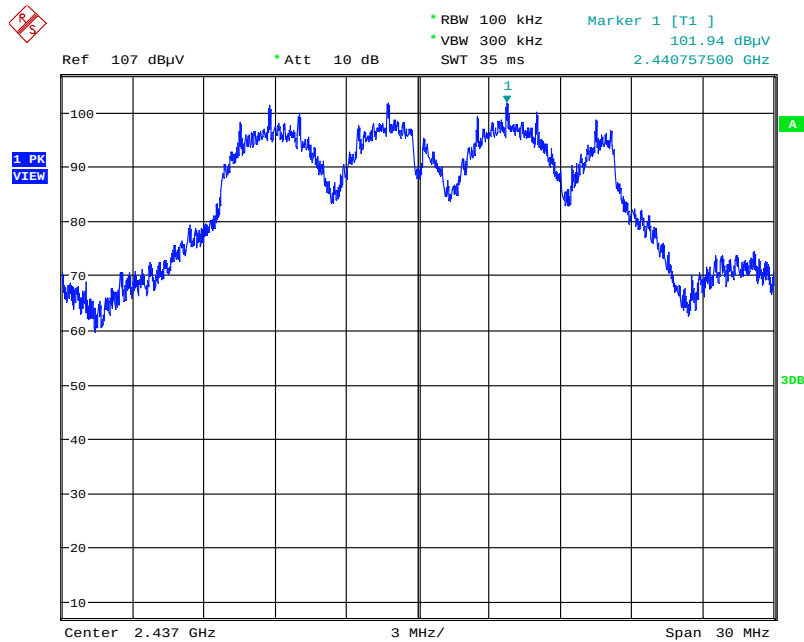
Plot on Configuration IEEE 802.11b / CH 13 / 2500MHz~26500MHz (down 30dBc) (Horizontal)



Date: 13.DEC.2014 13:25:07

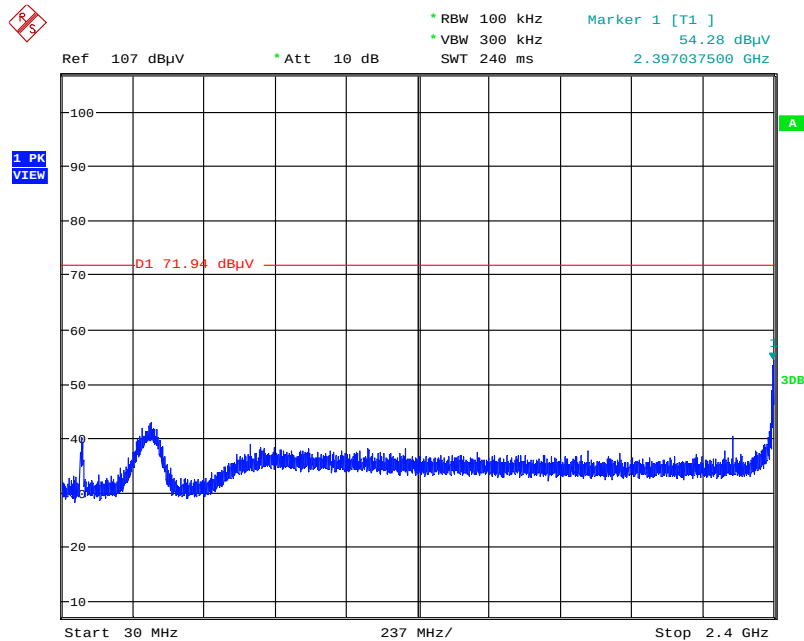
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11g / Reference Level (Horizontal)



Date: 14.SEP.2014 11:16:00

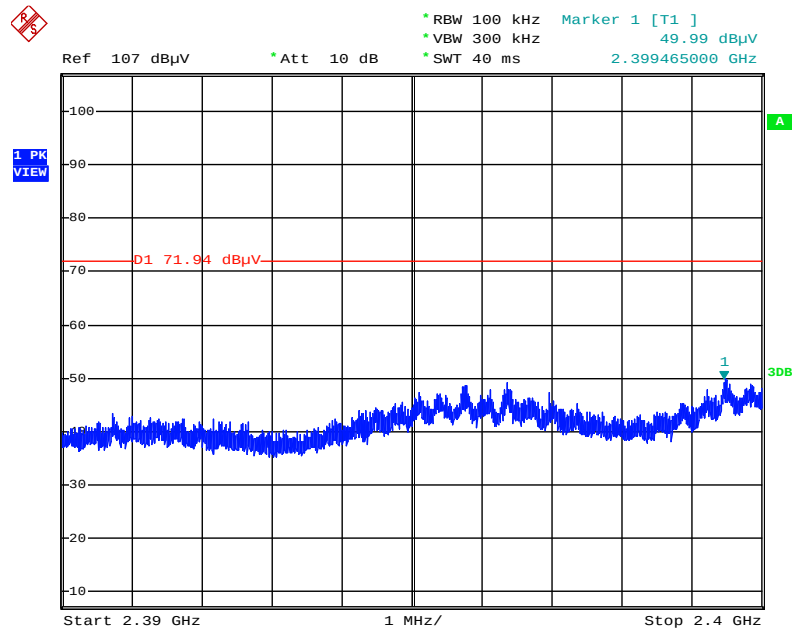
Plot on Configuration IEEE 802.11g / CH 1 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:16:58

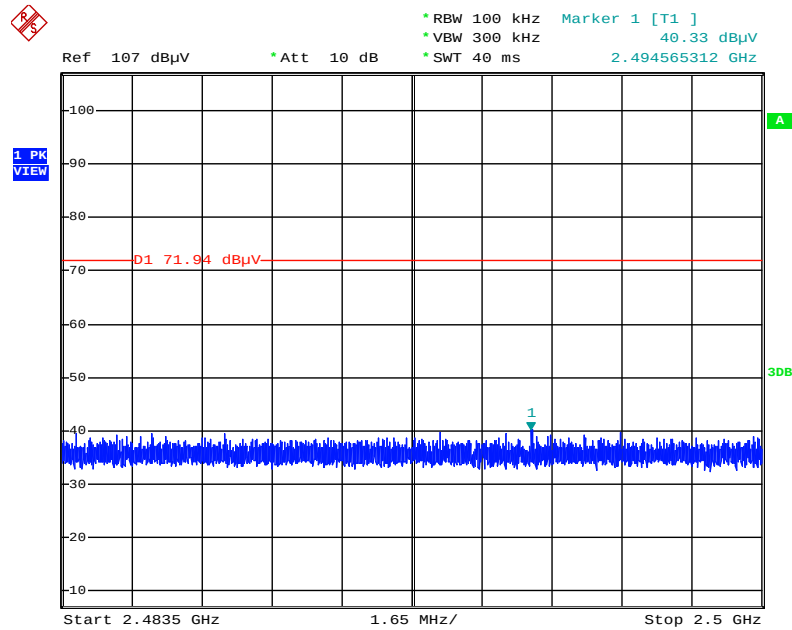
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11g / CH 1 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:27:46

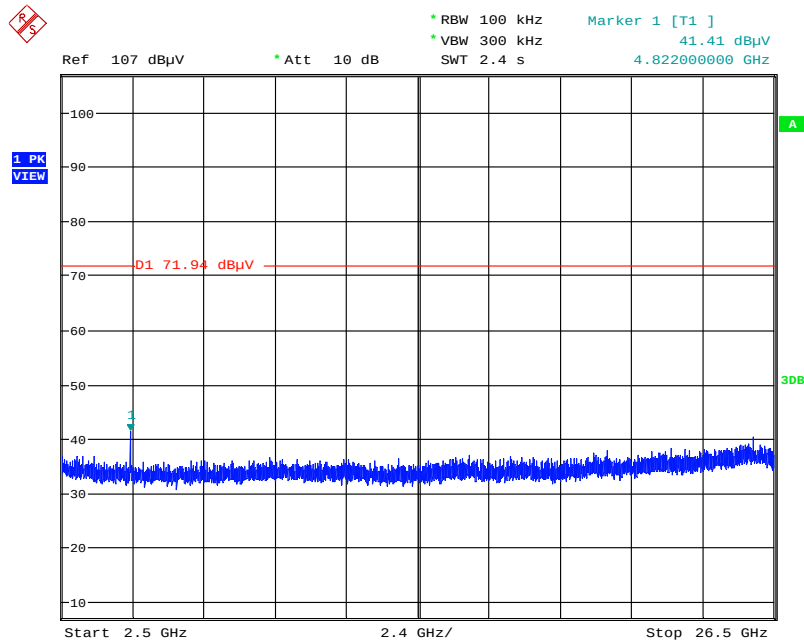
Plot on Configuration IEEE 802.11g / CH 1 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:28:19

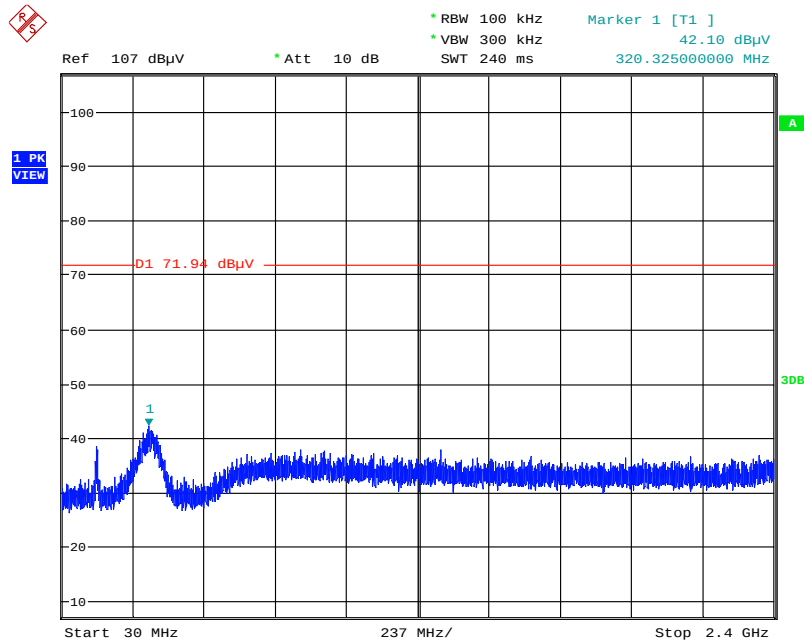
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

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



Date: 14.SEP.2014 11:17:26

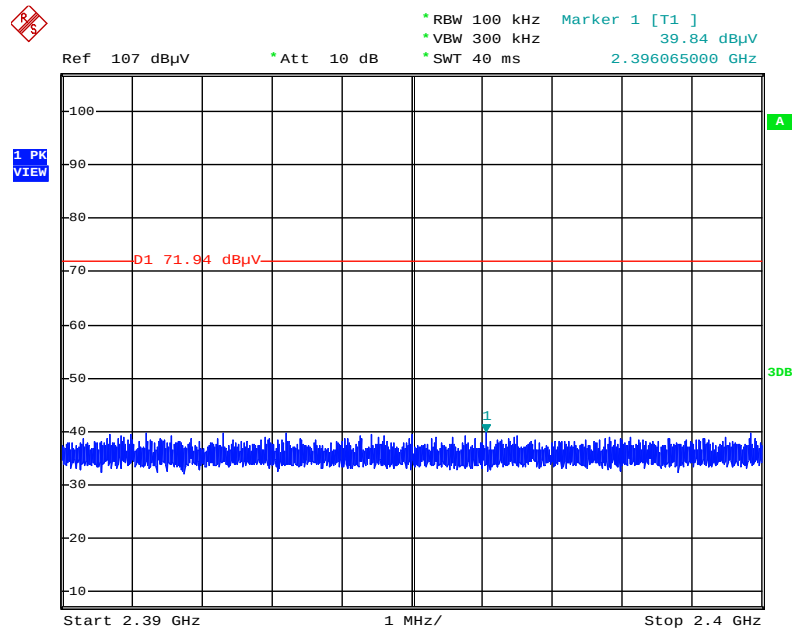
Plot on Configuration IEEE 802.11g / CH 11 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:17:53

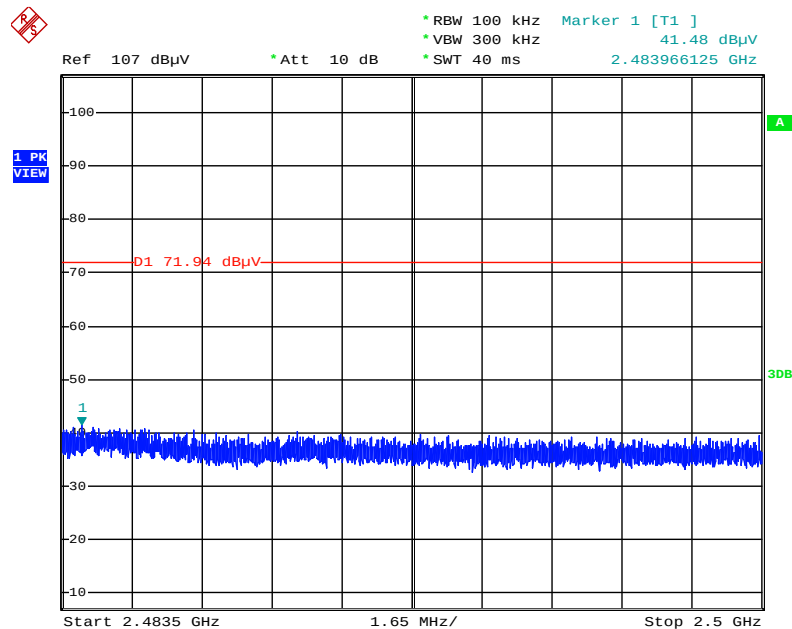
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11g / CH 11 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:29:56

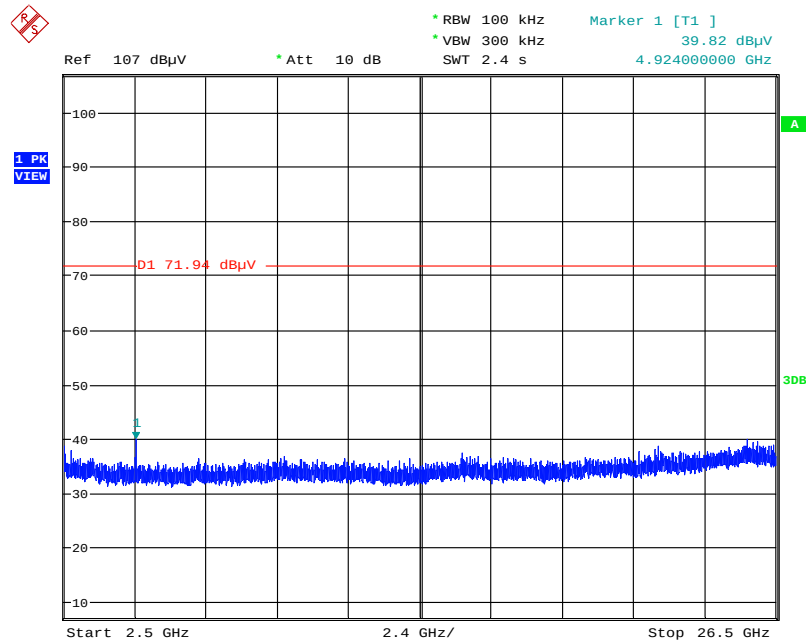
Plot on Configuration IEEE 802.11g / CH 11 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:29:18

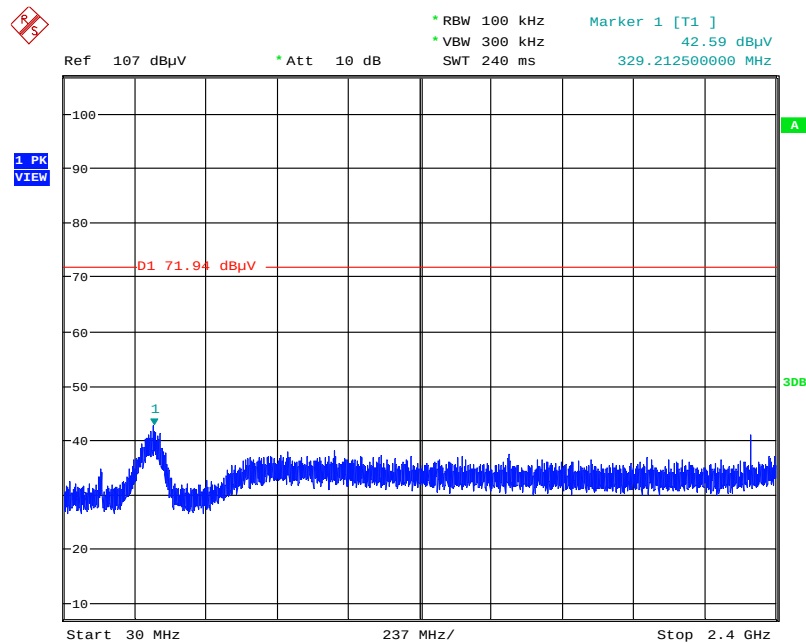
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

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



Date: 14.SEP.2014 11:18:18

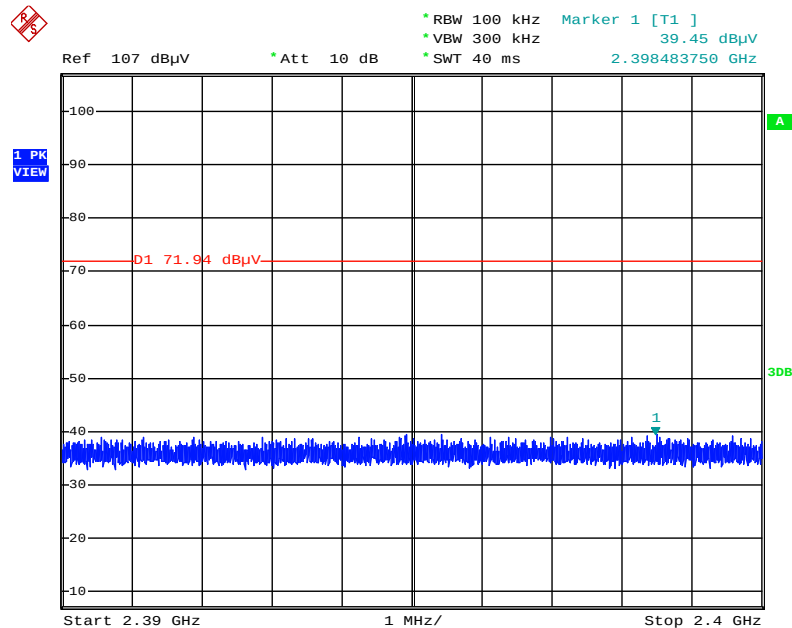
Plot on Configuration IEEE 802.11g / CH 12 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:18:43

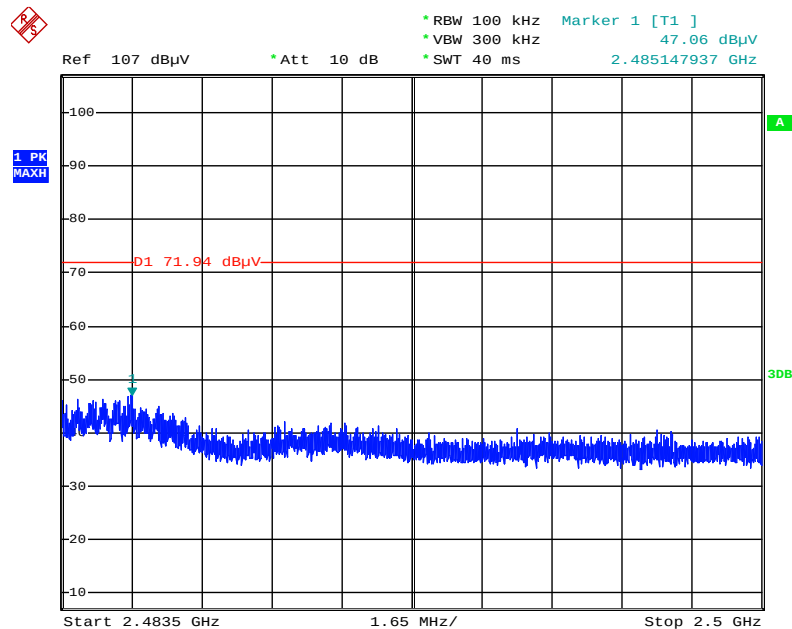
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11g / CH 12 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:30:31

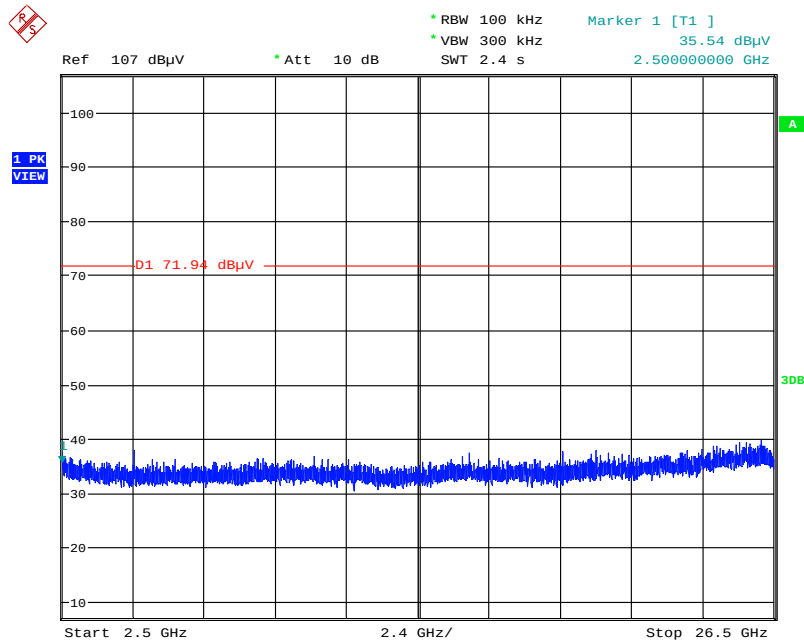
Plot on Configuration IEEE 802.11g / CH 12 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 15.SEP.2014 17:30:56

Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

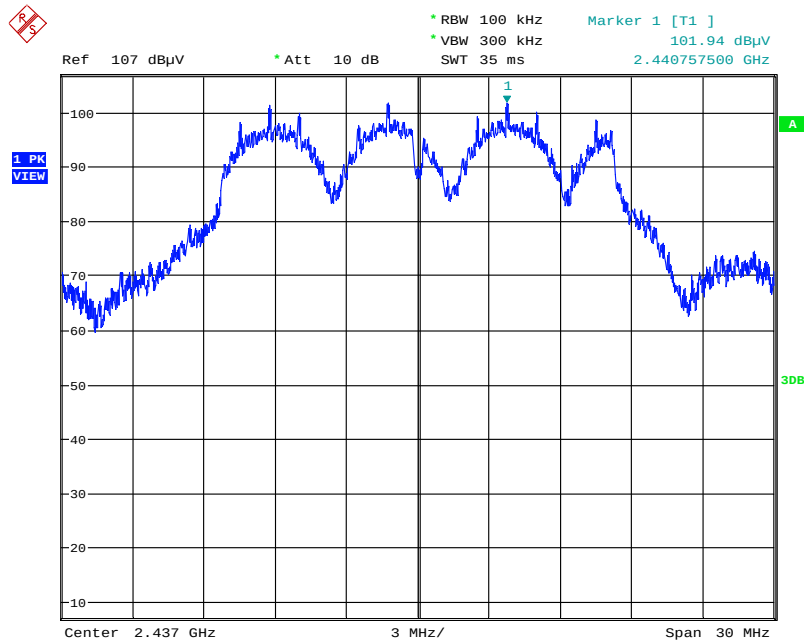
Plot on Configuration IEEE 802.11g / CH 12 / 2500MHz~26500MHz (down 30dBc) (Horizontal)



Date: 14.SEP.2014 11:19:19

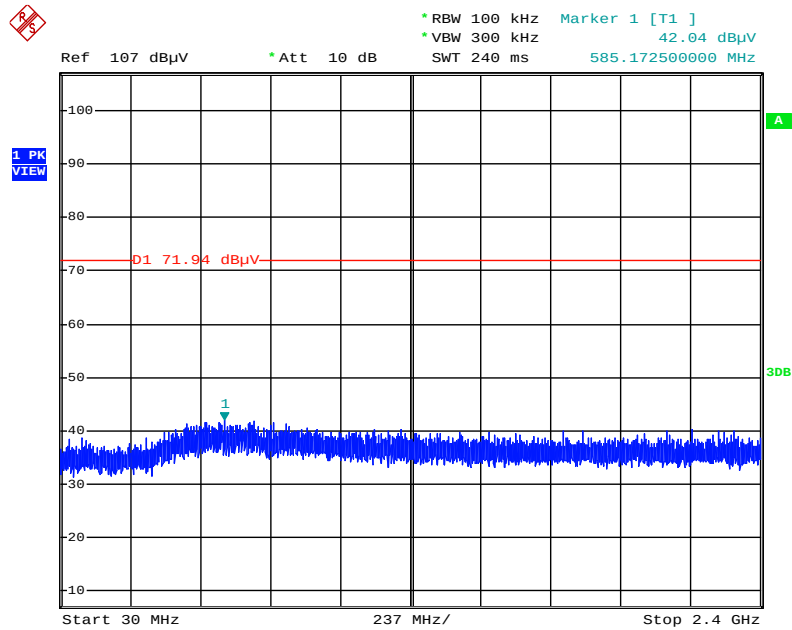
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11g / Reference Level (Horizontal)



Date: 14.SEP.2014 11:16:00

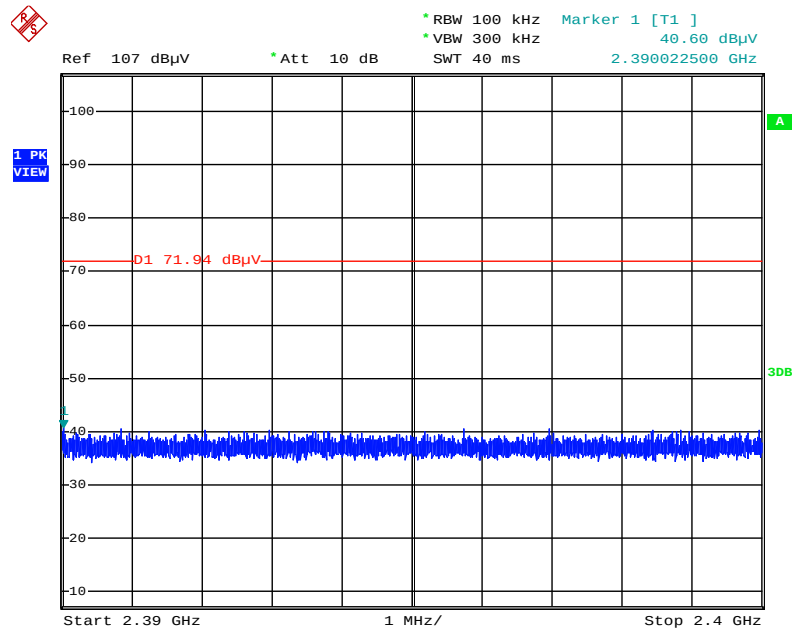
Plot on Configuration IEEE 802.11g / CH 13 / 30MHz~2400MHz (down 30dBc) (Horizontal)



Date: 13.DEC.2014 13:28:04

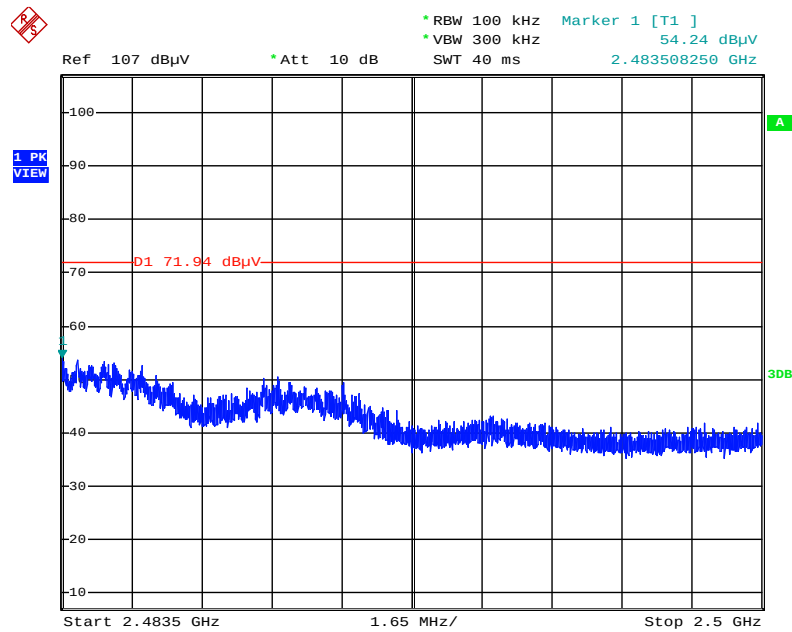
Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11g / CH 13 / 2390MHz~2400MHz (down 30dBc) (Horizontal)



Date: 30.DEC.2014 12:38:01

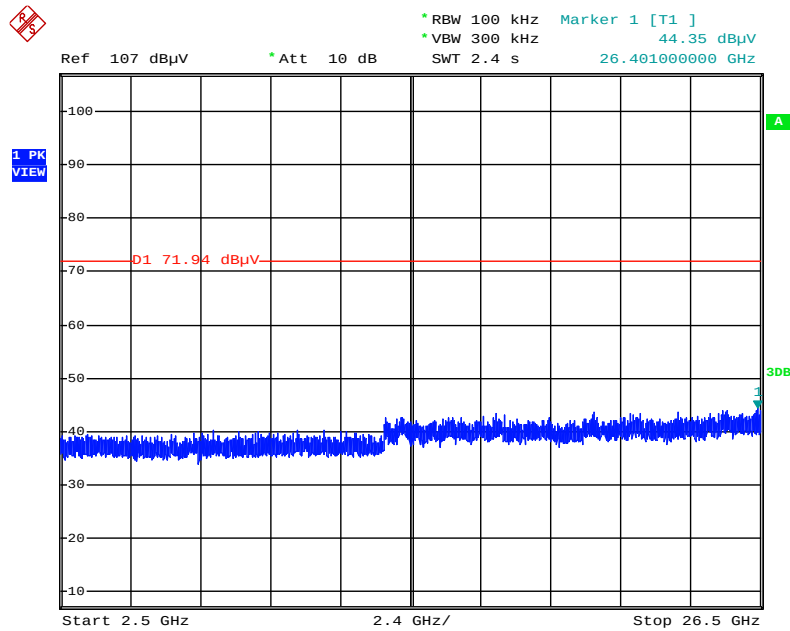
Plot on Configuration IEEE 802.11g / CH 13 / 2483.5MHz~2500MHz (down 30dBc) (Horizontal)



Date: 30.DEC.2014 12:38:33

Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

Plot on Configuration IEEE 802.11g / CH 13 / 2500MHz~26500MHz (down 30dBc) (Horizontal)



Date: 13.DEC.2014 13:27:36

Note: Only the worse polarization (Horizontal) is tested and recorded in test report.

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	9 kHz ~ 2.75 GHz	Apr. 23, 2014	Conduction (CO01-CB)
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	150 kHz ~ 100 MHz	Nov. 23, 2013	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	8127478	9kHz ~ 30MHz	Nov. 11, 2013	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 23, 2015	Conduction (CO01-CB)
Software	Audix	E3	5.410e	-	N.C.R.	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150 kHz ~ 30 MHz	Dec. 04, 2013	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)
Signal analyzer	R&S	FSV40	100979	9kHz~40GHz	Nov. 29, 2013	Conducted (TH01-CB)
Signal analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec.12, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-7	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-7	-	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-8	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-8	-	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-9	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-9	-	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-10	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-10	-	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-11	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-11	-	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
Power Sensor	Anritsu	MA2411B	0917223	300MHz~40GHz	Sep. 18, 2013	Conducted (TH01-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~40GHz	Oct. 06, 2014	Conducted (TH01-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Sep. 18, 2013	Conducted (TH01-CB)
Power Meter	Anritsu	ML2495A	1210004	300MHz~40GHz	Oct. 06, 2014	Conducted (TH01-CB)
BILOG ANTENNA	Schaffner	CBL6112D	37880	20MHz ~ 2GHz	Sep. 03, 2015	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 12, 2015*	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz~18GHz	Nov. 01, 2013	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz~18GHz	Oct. 28, 2014	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	9170-507	15GHz ~ 40GHz	Feb. 13, 2014	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Feb. 24, 2015	Radiation (03CH01-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Dec. 16, 2013	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02009	1GHz ~ 26.5GHz	Dec. 17, 2014	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Oct. 23, 2013	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Nov. 25, 2014	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP40	100019	9kHz~40GHz	Dec. 02, 2013	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)
Turn Table	INN CO	CO 2000	N/A	0 ~ 360 degree	N.C.R.	Radiation (03CH01-CB)
Antenna Mast	INN CO	CO2000	N/A	1 m - 4 m	N.C.R.	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-1	N/A	1 GHz ~ 26.5 GHz	Nov. 17, 2013	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-1	N/A	1 GHz ~ 26.5 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-2	N/A	1 GHz ~ 26.5 GHz	Nov. 17, 2013	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-2	N/A	1 GHz ~ 26.5 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-3	N/A	1 GHz - 40 GHz	Nov. 17, 2013	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-3	N/A	1 GHz - 40 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-4	N/A	1 GHz - 40 GHz	Nov. 17, 2013	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-4	N/A	1 GHz - 40 GHz	Nov. 15, 2014	Radiation (03CH01-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%