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FCC RADIO TEST REPORT

Applicant's company	**Cisco Systems, Inc.**
Applicant Address	170 West Tasman Drive, San Jose, CA 95134 USA
FCC ID	**UDX-60047015**
Manufacturer's company	**Cisco Systems, Inc.**
Manufacturer Address	170 West Tasman Drive, San Jose, CA 95134 USA

Product Name	802.11a/b/g/n/ac Wireless Router
Brand Name	CISCO
Model No.	MX65W-HW
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5150 ~ 5250 MHz / 5725 ~ 5850 MHz
Test Freq. Range	Oct. 21, 2015
Final Test Date	Dec. 23, 2015
Submission Type	Original Equipment

Statement

Test result included is for the IEEE 802.11n and IEEE 802.11a/ac 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 E, KDB789033 D02 v01r01, KDB662911 D01 v02r01.**

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

Testing Laboratory
1190

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR5O1504AB	Rev. 01	Initial issue of report	Jan. 08, 2016

1. VERIFICATION OF COMPLIANCE

Product Name	:	802.11a/b/g/n/ac Wireless Router
Brand Name	:	CISCO
Model No.	:	MX65W-HW
Applicant	:	Cisco Systems, Inc.
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart E § 15.407

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Oct. 21, 2015 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Sam Chen
SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart E				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.207	AC Power Line Conducted Emissions	Complies	10.84 dB
4.2	15.407(a)	26dB Spectrum Bandwidth and 99% Occupied Bandwidth	Complies	-
4.3	15.407(e)	6dB Spectrum Bandwidth	Complies	-
4.4	15.407(a)	Maximum Conducted Output Power	Complies	8.07 dB
4.5	15.407(a)	Power Spectral Density	Complies	7.78 dB
4.6	15.407(b)	Radiated Emissions	Complies	3.29 dB
4.7	15.407(b)	Band Edge Emissions	Complies	0.03 dB
4.8	15.407(g)	Frequency Stability	Complies	-
4.9	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

Items	Description
Product Type	WLAN (1TX/2TX, 1RX/2RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter
Modulation	IEEE 802.11a: OFDM IEEE 802.11n/ac: see the below table
Data Modulation	IEEE 802.11a/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Data Rate (Mbps)	IEEE 802.11a: OFDM (6/9/12/18/24/36/48/54) IEEE 802.11n/ac: see the below table
Frequency Range	5150 ~ 5250 MHz / 5725 ~ 5850 MHz
Channel Number	9 for 20MHz bandwidth ; 4 for 40MHz bandwidth 2 for 80MHz bandwidth
Channel Band Width (99%)	**<For 1TX>** Band 1: IEEE 802.11a: 17.02 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.90 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz Band 4: IEEE 802.11a: 17.11 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.05 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz. **<For 2TX>** Band 1: IEEE 802.11a: 17.18 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.90 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz Band 4: IEEE 802.11a: 17.01 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz.

Maximum Conducted Output Power	**<For 1TX>** Band 1: IEEE 802.11a: 18.88 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 18.92 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.89 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.96 dBm Band 4: IEEE 802.11a: 18.85 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 18.88 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 18.91 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.48 dBm **<For 2TX>** Band 1: IEEE 802.11a: 21.93 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.69 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 21.41 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.49 dBm Band 4: IEEE 802.11a: 21.70 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.72 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 21.77 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.85 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Note: The MIMO transmission mode is correlated.

Items	Description	
Communication Mode	☒ IP Based (Load Based)	☐ Frame Based
Beamforming Function	☐ With beamforming	☒ Without beamforming

Antenna and Band width

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

IEEE 11n/ac Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	1, 2	MCS0-7, MCS0-15
802.11n (HT40)	1, 2	MCS0-7, MCS0-15
802.11ac (VHT20)	1, 2	MCS 0-9/Nss1, MCS 0-9/Nss1-2
802.11ac (VHT40)	1, 2	MCS 0-9/Nss1, MCS 0-9/Nss1-2
802.11ac (VHT80)	1, 2	MCS 0-9/Nss1, MCS 0-9/Nss1-2

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

Note 2: IEEE Std. 802.11ac modulation consists of VHT20, VHT40, VHT80 and VHT160 (VHT: Very High Throughput). Then EUT supports VHT20, VHT40, VHT80 in 5GHz.

Note 3: Modulation modes consist of below configuration:
HT20/HT40: IEEE 802.11n, VHT20/VHT40: IEEE 802.11ac

3.2. Accessories

Power	Brand	Model	Rating
Adapter	CISCO	MA-PWR-90WAC	INPUT: 100-240V~2A 50-60Hz OUTPUT: 54V, 1.67A

3.3. Table for Filed Antenna

Ant.	Brand	P/N	Antenna Type	Connector
1	Grand-Tek	1034G00000050	Dipole Ant.	Reversed-SMA
2	Grand-Tek	1034G00000050	Dipole Ant.	Reversed-SMA

TX Function	Antenna Gain (dBi)		Composite Gain (dBi)	
	2.4GHz	5GHz	2.4GHz	5GHz
1	2.6	3.3	-	-
2	-	-	2.0	3.3

Note: The EUT has two antennas.

<For 2.4GHz Band>

For IEEE 802.11b/g/n/ac mode<1TX/1RX>:

Only Chain 1 can be used as transmitting antenna and receiving antenna.

For IEEE 802.11b/g/n/ac mode<2TX/2RX>:

Chain 1 and Chain 2 will transmit/receive the same signal simultaneously.

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

<For 5GHz Band>

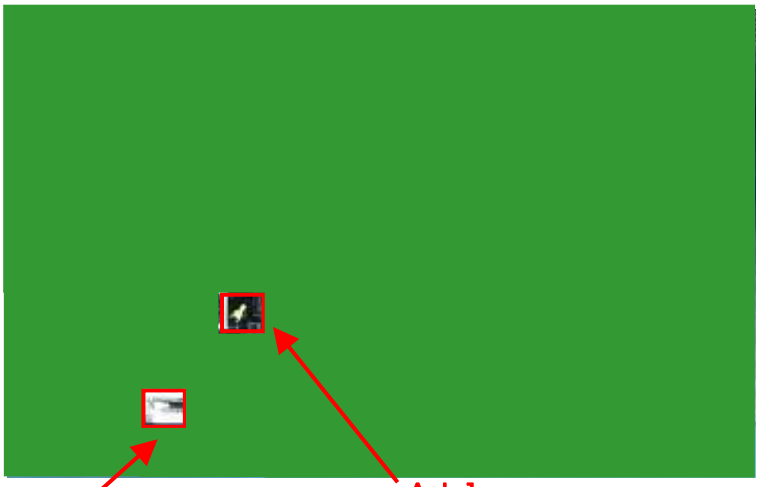
For IEEE 802.11a/n/ac mode <1TX/1RX>:

Only Chain 1 can be used as transmitting antenna and receiving antenna.

For IEEE 802.11a/n/ac mode <2TX/2RX>:

Chain 1 and Chain 2 will transmit/receive the same signal simultaneously.

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



3.4. Table for Carrier Frequencies

There are three bandwidth systems.

For 20MHz bandwidth systems, use Channel 36, 40, 44, 48, 149, 153, 157, 161, 165.

For 40MHz bandwidth systems, use Channel 38, 46, 151, 159.

For 80MHz bandwidth systems, use Channel 42, 155.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5150~5250 MHz Band 1	36	5180 MHz	44	5220 MHz
	38	5190 MHz	46	5230 MHz
	40	5200 MHz	48	5240 MHz
	42	5210 MHz	-	-
5725~5850 MHz Band 4	149	5745 MHz	157	5785 MHz
	151	5755 MHz	159	5795 MHz
	153	5765 MHz	161	5805 MHz
	155	5775 MHz	165	5825 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	TX	Chain
AC Power Conducted Emission	Normal Link		-	-	-	-
Max. Conducted Output Power	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	1	1
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	1	1
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1	1
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1	1
	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	2	1+2
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	2	1+2
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	2	1+2
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	2	1+2
Power Spectral Density	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	1	1
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	1	1
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1	1
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1	1
	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	2	1+2
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	2	1+2
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	2	1+2
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	2	1+2
26dB Spectrum Bandwidth & 99% Occupied Bandwidth Measurement	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	1	1
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	1	1
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1	1

	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1	1
	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	2	1+2
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	2	1+2
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	2	1+2
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	2	1+2
6dB Spectrum Bandwidth Measurement	11a/BPSK	Band 4	6Mbps	149/157/165	1	1
	11ac VHT20	Band 4	MCS0/Nss1	149/157/165	1	1
	11ac VHT40	Band 4	MCS0/Nss1	151/159	1	1
	11ac VHT80	Band 4	MCS0/Nss1	155	1	1
	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	2	1+2
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	2	1+2
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	2	1+2
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	2	1+2
Radiated Emission Below 1GHz	Normal Link		-	-		-
Radiated Emission Above 1GHz	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	1	1
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	1	1
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1	1
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1	1
	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	2	1+2
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	2	1+2
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	2	1+2
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	2	1+2

Band Edge Emission	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	1	1
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	1	1
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1	1
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1	1
	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	2	1+2
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	2	1+2
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	2	1+2
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	2	1+2
Frequency Stability	20 MHz	Band 1&4	-	40/157	-	2
	40 MHz	Band 1&4	-	38/151	-	2
	80 MHz	Band 1&4	-	42/155	-	2

Note 1: VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.

Note 2: The test configuration and test modes written in this test report are designated by the applicant.

The following test modes were performed for all tests:

For Conducted Emission test:

Mode 1. Norman Link

For Radiated Emission test <Below 1GHz>:

Mode 1. Norman Link - Place EUT in Y axis

Mode 2. Norman Link - Place EUT in Z axis

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

For Radiated Emission test <Above 1GHz>:

The EUT can be placed in Y-axis and Z-axis. After evaluating, Z-axis were the worst cases, so they're recorded in this 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 FA5O1504AA) and Radiated Emission Co-location (please refer to Appendix B) tests are added for simultaneously transmit between 2.4GHz WLAN function and 5GHz WLAN function.

3.6. Table for Testing Locations

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

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

3.7. Table for Supporting Units

For Test Site No: CO01-CB

Support Unit	Brand	Model	FCC ID
NB*6	DELL	E6430	DoC
PoE PD Simulator (Terminal System)	N/A	PDS-16	N/A
Flash disk	Silicon	I-Series	DoC

For Test Site No: 03CH01-CB

Support Unit	Brand	Model	FCC ID
NB*5	DELL	E4300	DoC
NB	Apple	Mac Book	DoC
PoE PD Simulator (Terminal System)	N/A	PDS-16	N/A
Flash disk	Silicon	Touch 835	DoC

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
NB	DELL	E4300	DoC

3.8. Table for Parameters of Test Software Setting

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

<For 1TX>

Test Software Version	Mtool 2.0.1.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	74	74	74	74	75	75
802.11ac MCS0/Nss1 VHT20	74	74	73	74	74	75
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	5795 MHz
	75		76		77	78
Mode	NCB: 80MHz					
802.11ac MCS0/Nss1 VHT80	5210 MHz				5775 MHz	
	72				72	

<For 2TX>

Test Software Version	Mtool 2.0.1.0					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	73	73	73	72	73	74
802.11ac MCS0/Nss1 VHT20	72	72	72	69	74	74
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	5795 MHz
	69		74		70	78
Mode	NCB: 80MHz					
802.11ac MCS0/Nss1 VHT80	5210 MHz				5775 MHz	
	66				64	

3.9. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.10. Duty Cycle

<For 1TX>

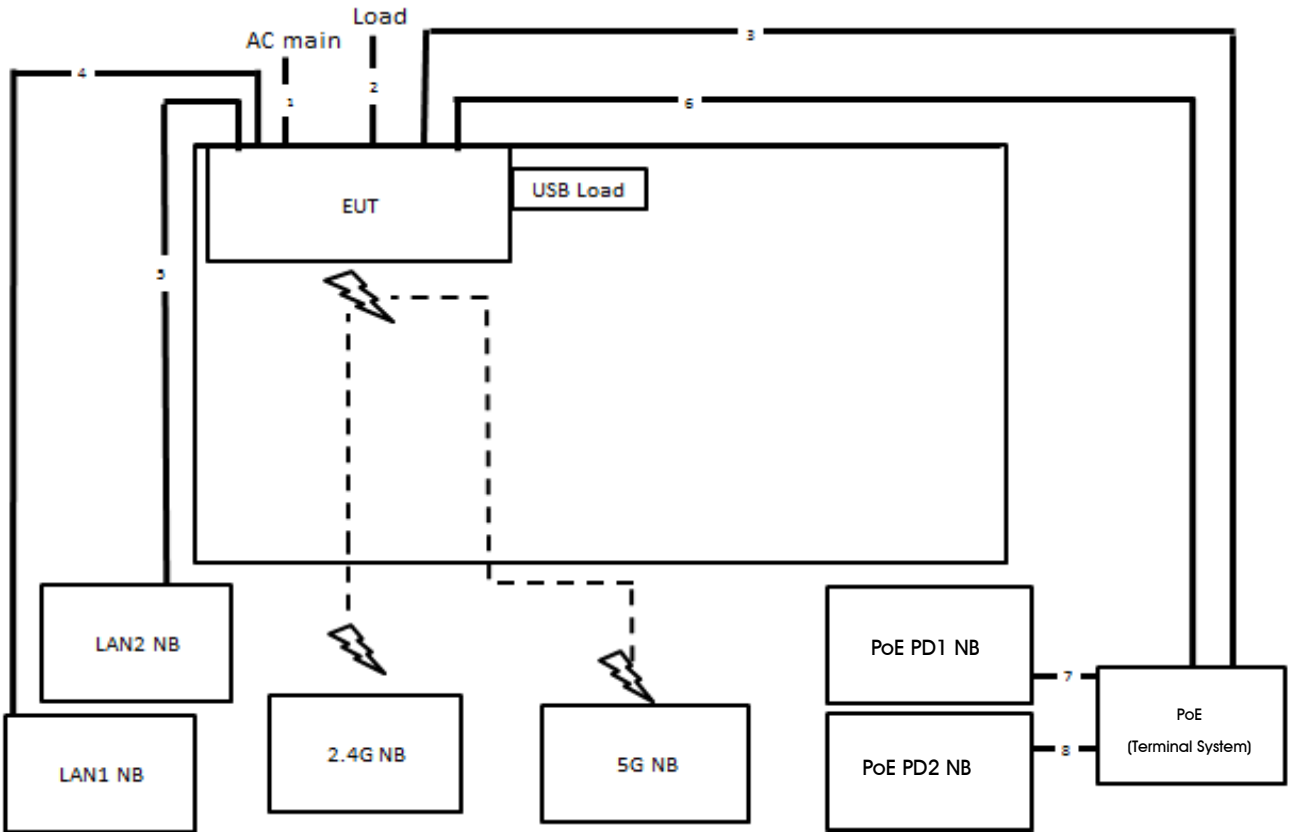
Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.040	2.090	97.61%	0.11	0.49
802.11ac MCS0/Nss1 VHT20	1.910	1.950	97.95%	0.09	0.52
802.11ac MCS0/Nss1 VHT40	0.906	0.966	93.79%	0.28	1.10
802.11ac MCS0/Nss1 VHT80	0.420	0.486	86.42%	0.63	2.38

<For 2TX>

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.100	2.140	98.13%	0.08	0.01
802.11ac MCS0/Nss1 VHT20	1.900	1.910	99.48%	0.02	0.01
802.11ac MCS0/Nss1 VHT40	0.912	0.972	93.83%	0.28	1.10
802.11ac MCS0/Nss1 VHT80	0.464	0.488	95.08%	0.22	2.16

3.11. Test Configurations

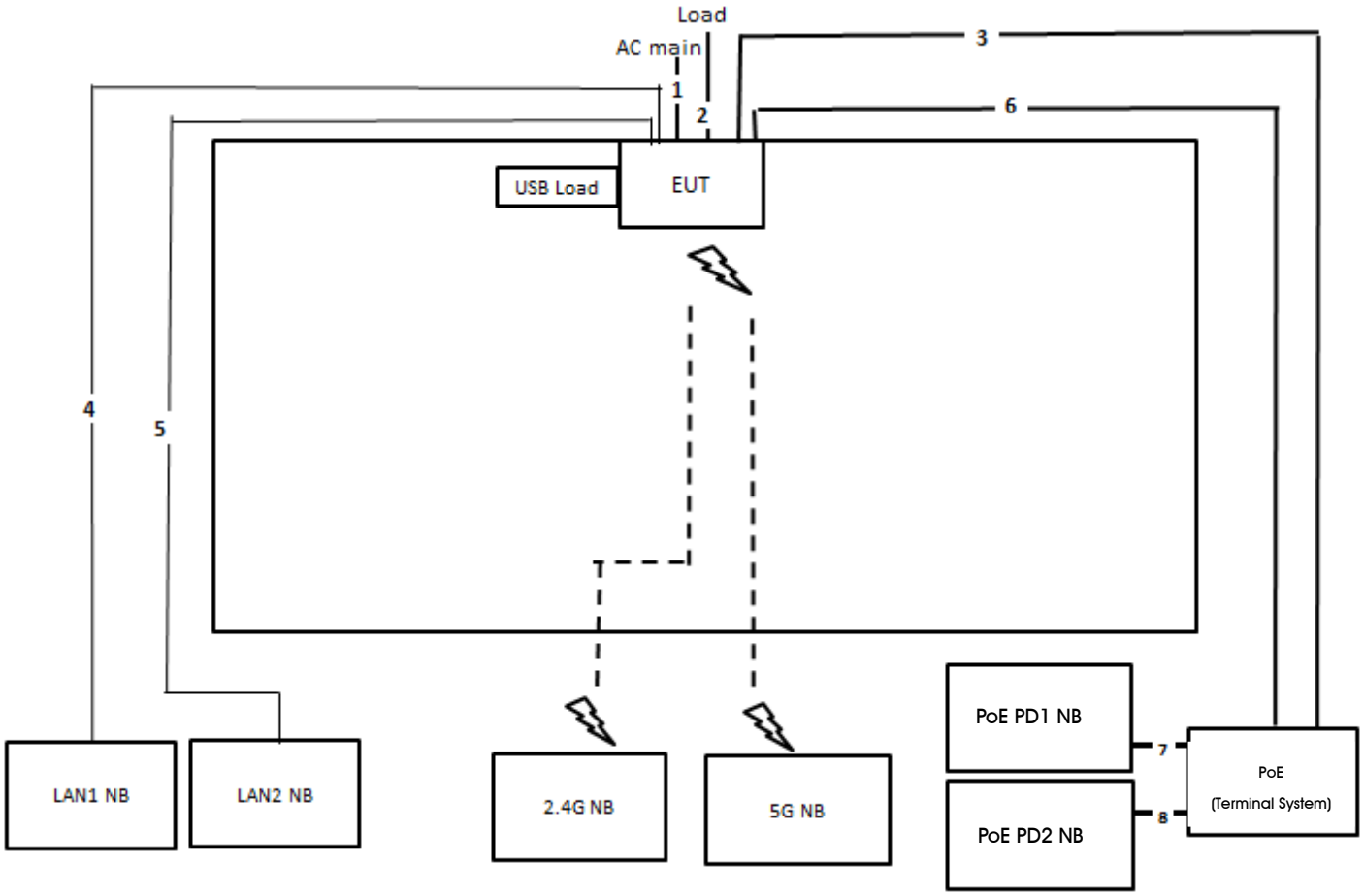
3.11.1. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shielded	Length
1	Power cable	No	3.8m
2	RJ-45 cable*8	No	1.5m
3	RJ-45 cable	No	10m
4	RJ-45 cable	No	10m
5	RJ-45 cable	No	10m
6	RJ-45 cable	No	10m
7	RJ-45 cable	No	1.5m
8	RJ-45 cable	No	1.5m

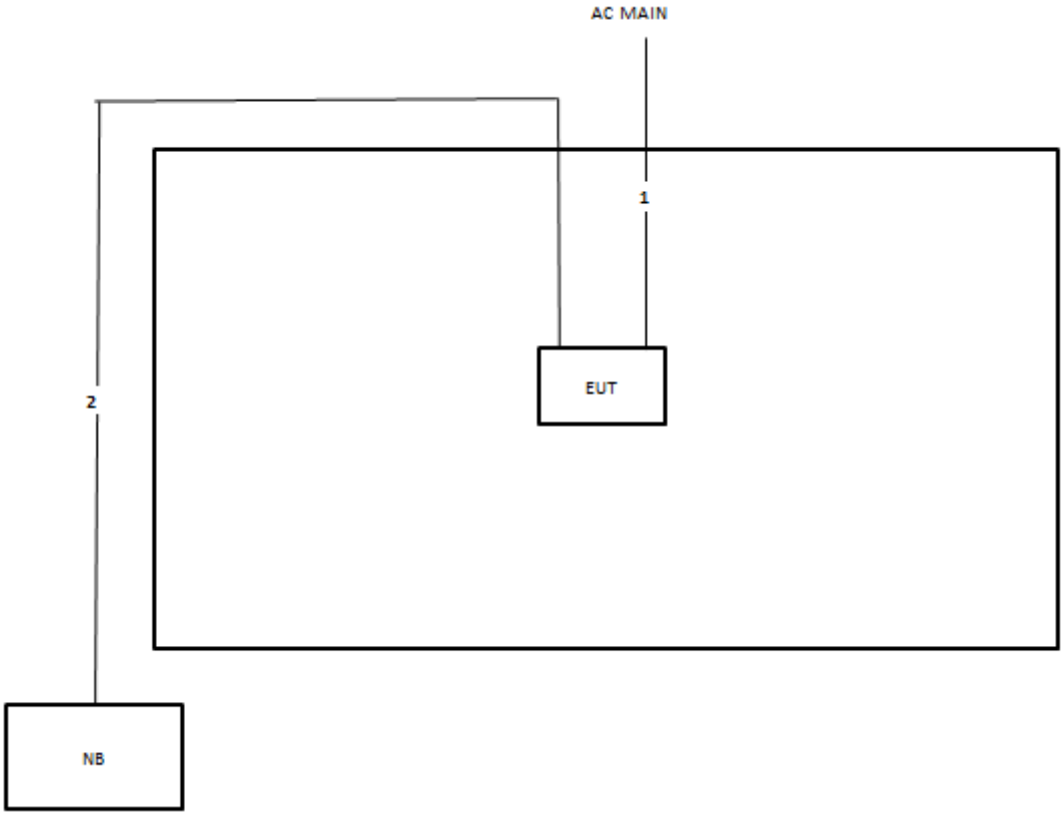
3.11.2. Radiation Emissions Test Configuration

Test Configuration: 30MHz~1GHz



Item	Connection	Shielded	Length
1	Power cable	No	3.8m
2	RJ-45 cable*8	No	1.5m
3	RJ-45 cable	No	10m
4	RJ-45 cable	No	10m
5	RJ-45 cable	No	1.5m
6	RJ-45 cable	No	1.5m
7	RJ-45 cable	No	1m
8	RJ-45 cable	No	1m

Test Configuration: above 1GHz



Item	Connection	Shielded	Length(m)
1	Power cable	No	3.8m
2	RJ-45 cable	No	10m

4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For this product that is designed to connect 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

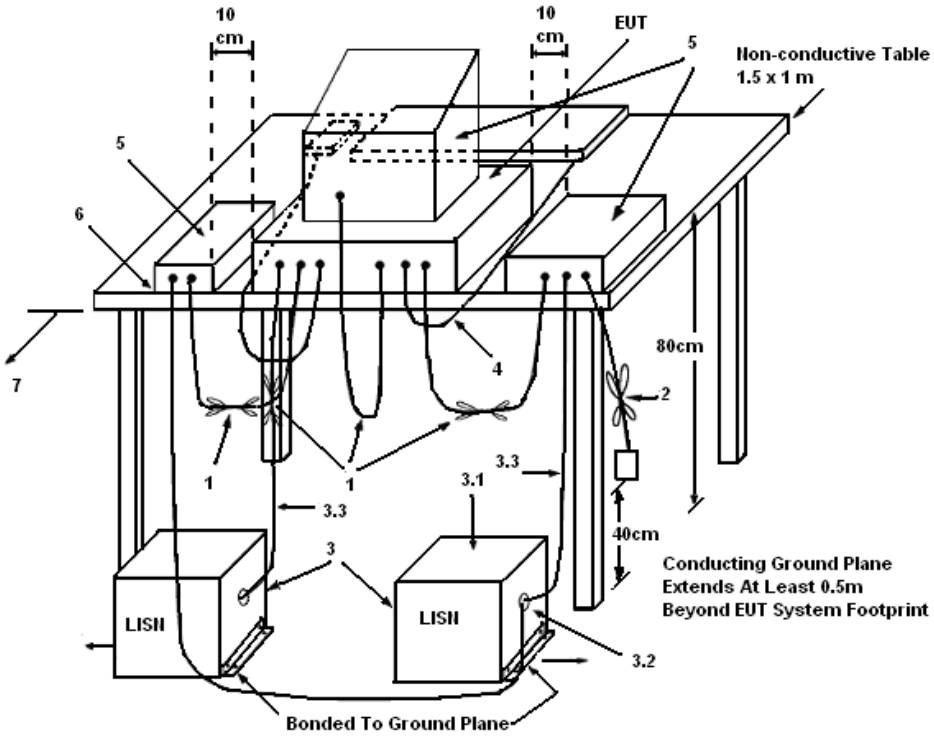
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

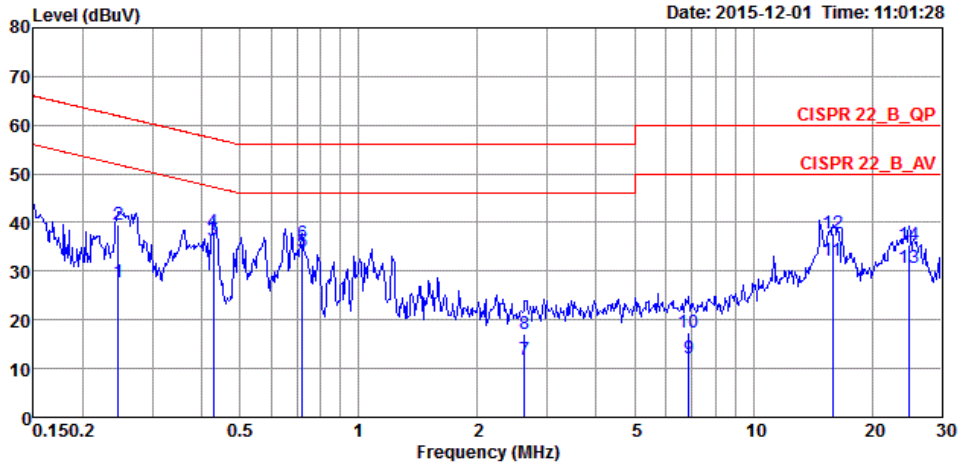
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

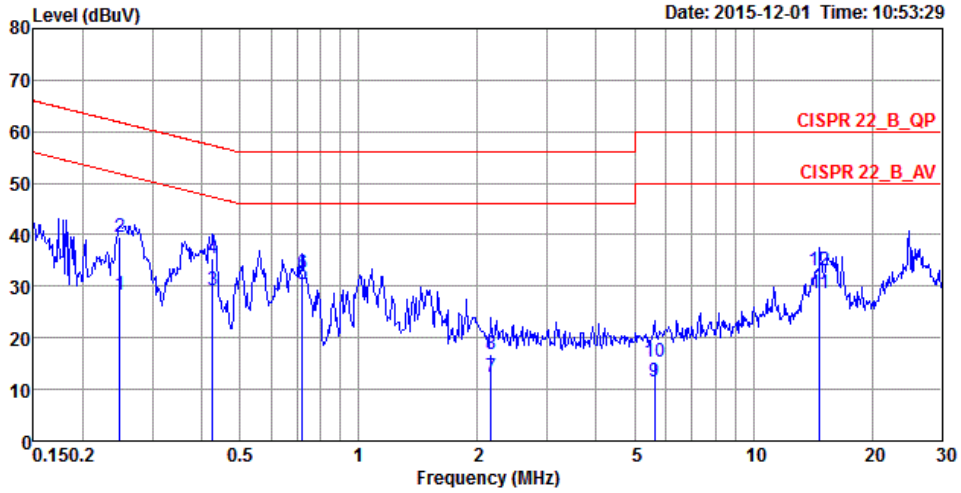
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	25℃	Humidity	58%
Test Engineer	Parody Lin	Phase	Line
Configuration	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.2455	27.73	-24.18	51.91	17.77	9.93	0.03	LINE	Average
2	0.2455	39.54	-22.37	61.91	29.58	9.93	0.03	LINE	QP
3	0.4282	36.45	-10.84	47.29	26.48	9.93	0.04	LINE	Average
4	0.4282	38.07	-19.22	57.29	28.10	9.93	0.04	LINE	QP
5	0.7198	33.97	-12.03	46.00	23.98	9.95	0.04	LINE	Average
6	0.7198	35.63	-20.37	56.00	25.64	9.95	0.04	LINE	QP
7	2.6360	11.71	-34.29	46.00	1.66	10.00	0.05	LINE	Average
8	2.6360	17.01	-38.99	56.00	6.96	10.00	0.05	LINE	QP
9	6.8776	12.22	-37.78	50.00	1.99	10.11	0.12	LINE	Average
10	6.8776	17.43	-42.57	60.00	7.20	10.11	0.12	LINE	QP
11	15.8854	32.28	-17.72	50.00	21.67	10.35	0.26	LINE	Average
12	15.8854	37.64	-22.36	60.00	27.03	10.35	0.26	LINE	QP
13	24.7904	30.80	-19.20	50.00	19.97	10.56	0.27	LINE	Average
14	24.7904	35.42	-24.58	60.00	24.59	10.56	0.27	LINE	QP

Temperature	25°C	Humidity	58%
Test Engineer	Parody Lin	Phase	Neutral
Configuration	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.2481	28.20	-23.62	51.82	18.38	9.79	0.03	NEUTRAL	Average
2	0.2481	39.44	-22.38	61.82	29.62	9.79	0.03	NEUTRAL	QP
3	0.4260	29.10	-18.23	47.33	19.27	9.79	0.04	NEUTRAL	Average
4	0.4260	35.50	-21.83	57.33	25.67	9.79	0.04	NEUTRAL	QP
5	0.7198	30.42	-15.58	46.00	20.58	9.80	0.04	NEUTRAL	Average
6	0.7198	32.54	-23.46	56.00	22.70	9.80	0.04	NEUTRAL	QP
7	2.1668	12.27	-33.73	46.00	2.37	9.84	0.06	NEUTRAL	Average
8	2.1668	16.87	-39.13	56.00	6.97	9.84	0.06	NEUTRAL	QP
9	5.6234	11.47	-38.53	50.00	1.43	9.92	0.12	NEUTRAL	Average
10	5.6234	15.24	-44.76	60.00	5.20	9.92	0.12	NEUTRAL	QP
11	14.7497	28.52	-21.48	50.00	18.16	10.10	0.26	NEUTRAL	Average
12	14.7497	33.00	-27.00	60.00	22.64	10.10	0.26	NEUTRAL	QP

Note:

Level = Read Level + LISN Factor + Cable Loss.

4.2. 26dB Bandwidth and 99% Occupied Bandwidth Measurement

4.2.1. Limit

No restriction limits.

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 spectrum analyzer.

26dB Bandwidth	
Spectrum Parameters	**Setting**
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RBW	Approximately 1% of the emission bandwidth
VBW	VBW > RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto
99% Occupied Bandwidth	
Spectrum Parameters	**Setting**
Span	1.5 times to 5.0 times the OBW
RBW	1 % to 5 % of the OBW
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold

4.2.3. Test Procedures

1. The transmitter was conducted to the spectrum analyzer in peak hold mode.
2. Measure the maximum width of the emission that is 26 dB down from the peak of the emission.
3. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
4. Measurement perform conducted of each port.

4.2.4. Test Setup Layout

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

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.

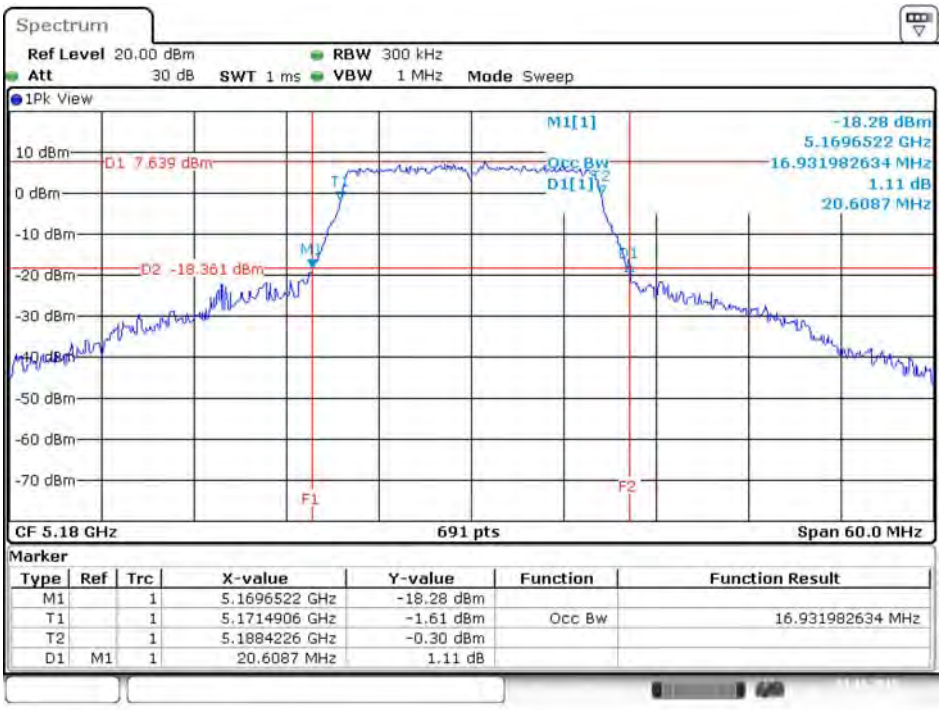
4.2.7. Test Result of 26dB Bandwidth and 99% Occupied Bandwidth

<For 1TX>

Temperature	25℃	Humidity	58%
Test Engineer	Mars Lin		

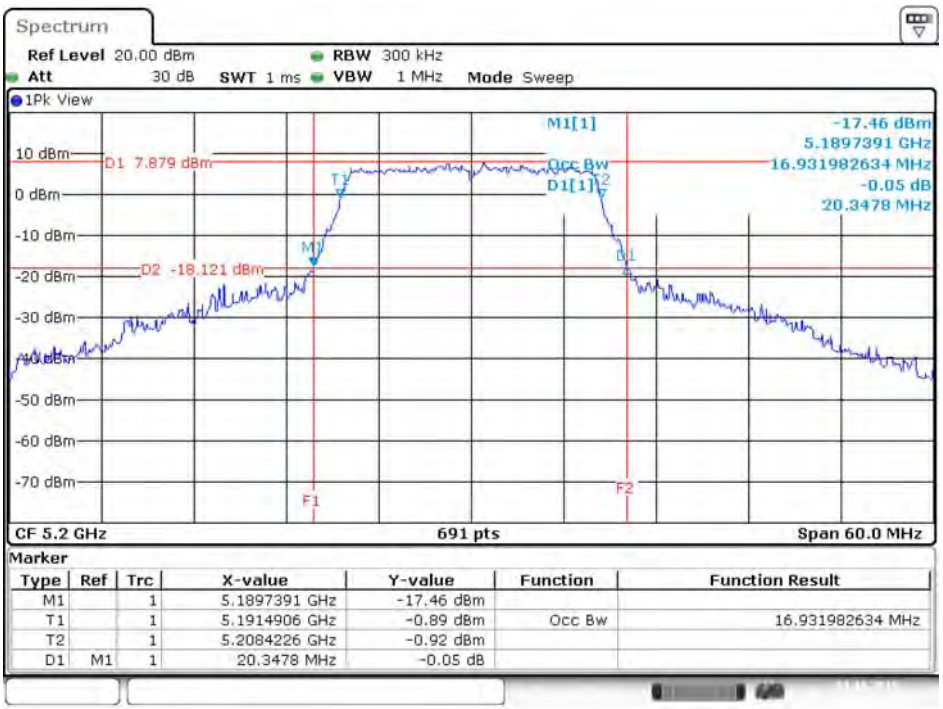
Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	20.61	16.93
	5200 MHz	20.35	16.93
	5240 MHz	20.61	17.02
	5745 MHz	20.87	16.93
	5785 MHz	21.57	17.11
	5825 MHz	20.61	16.93
802.11ac MCS0/Nss1 VHT20	5180 MHz	21.13	17.97
	5200 MHz	21.22	17.97
	5240 MHz	21.04	17.97
	5745 MHz	23.39	17.97
	5785 MHz	26.35	18.06
	5825 MHz	22.70	18.06
802.11ac MCS0/Nss1 VHT40	5190 MHz	44.35	36.60
	5230 MHz	50.87	36.90
	5755 MHz	48.12	36.90
	5795 MHz	49.86	37.05
802.11ac MCS0/Nss1 VHT80	5210 MHz	85.51	75.83
	5775 MHz	92.17	75.83

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5180 MHz



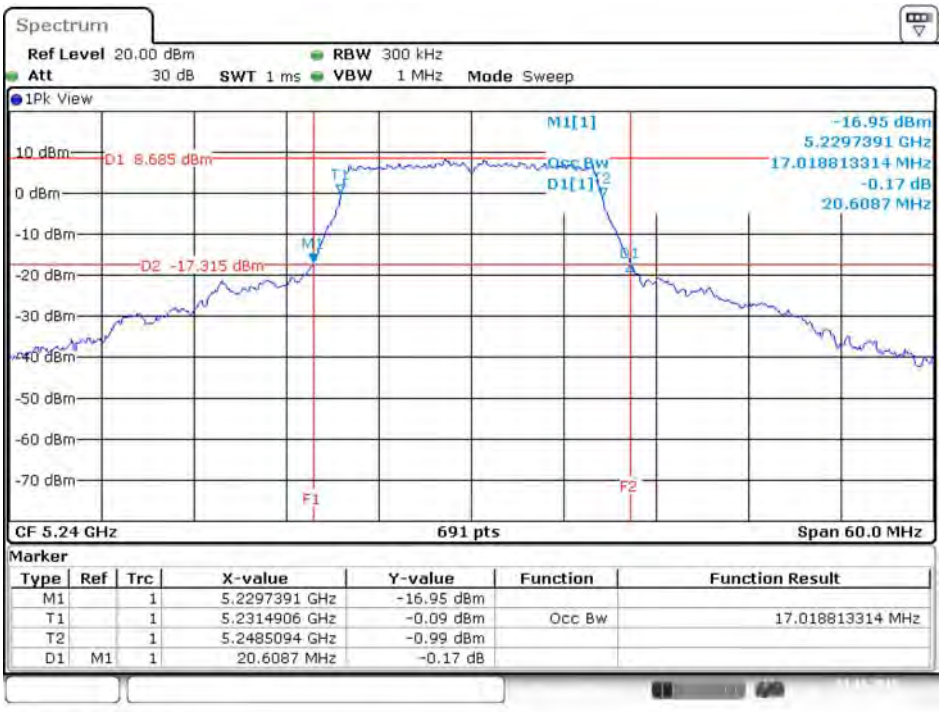
Date: 3.NOV.2015 15:16:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5200 MHz



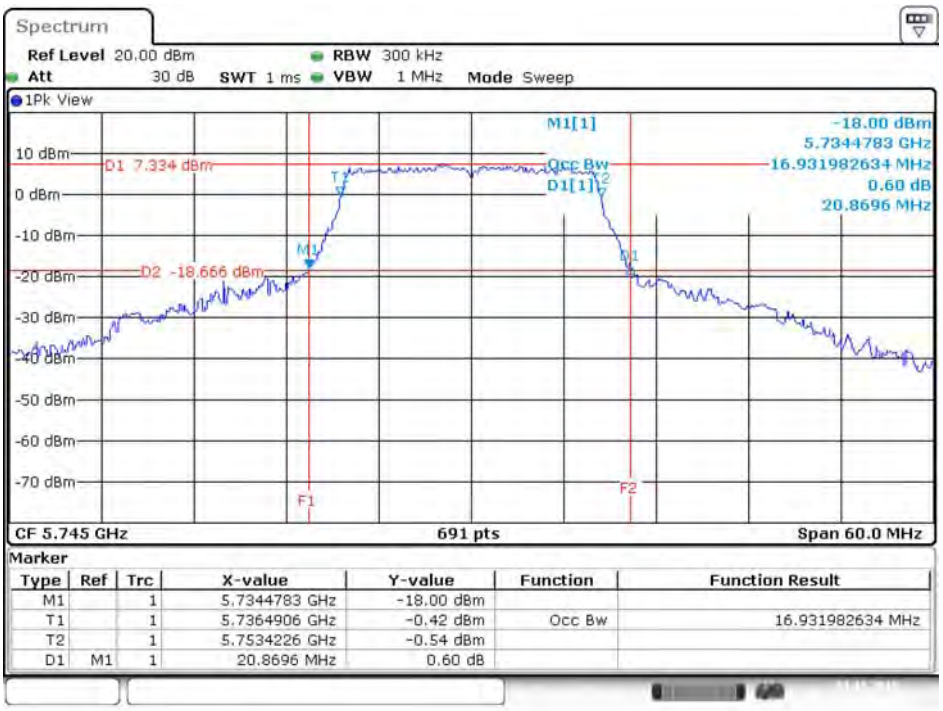
Date: 3.NOV.2015 15:17:44

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5240 MHz



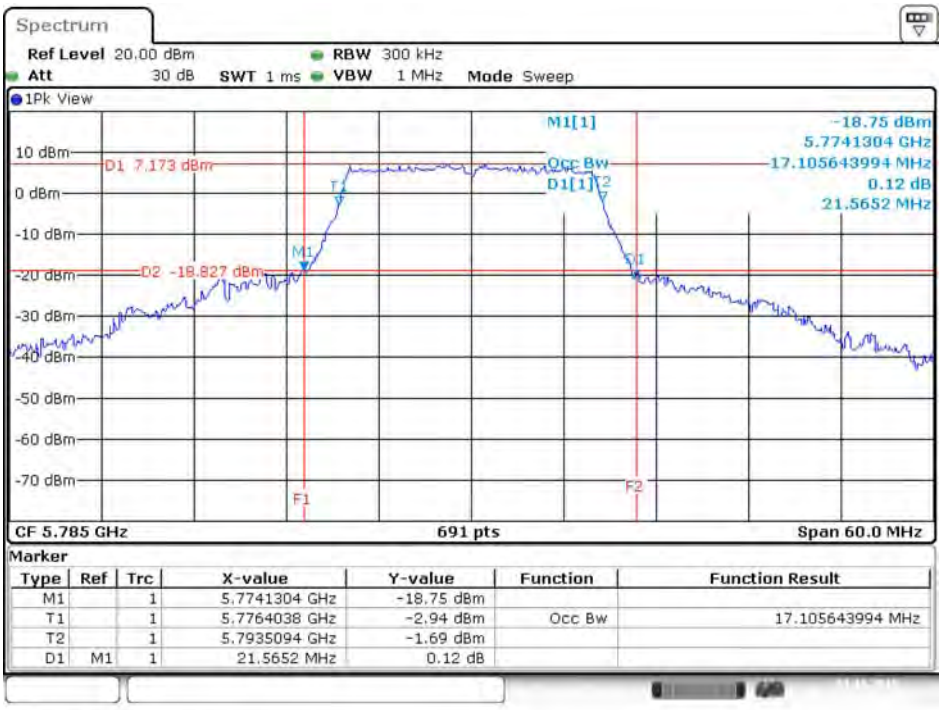
Date: 3.NOV.2015 15:18:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5745 MHz



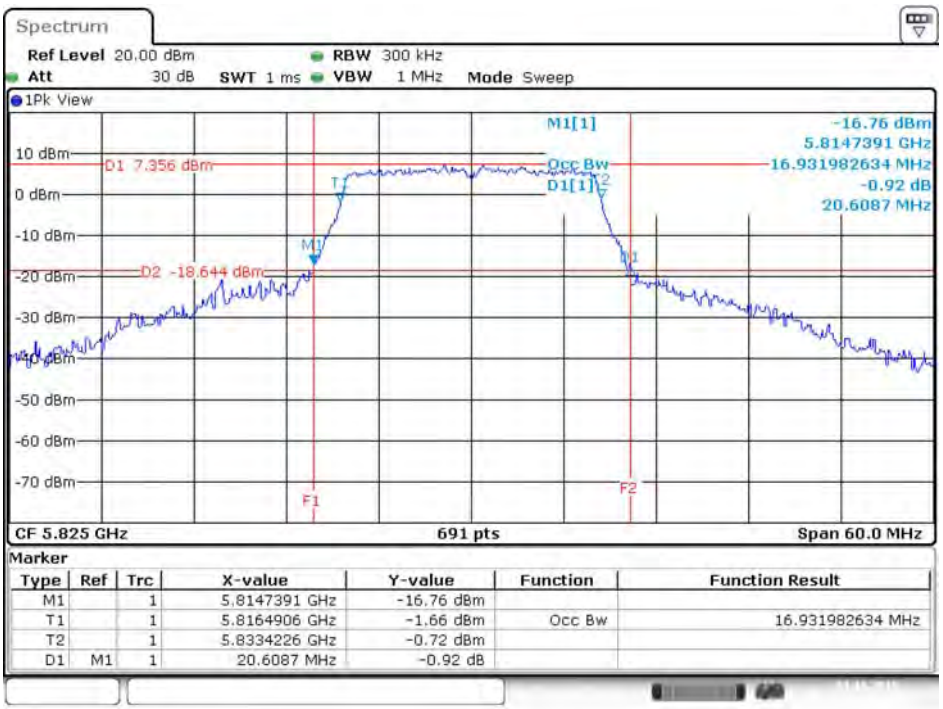
Date: 3.NOV.2015 15:23:18

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5785 MHz



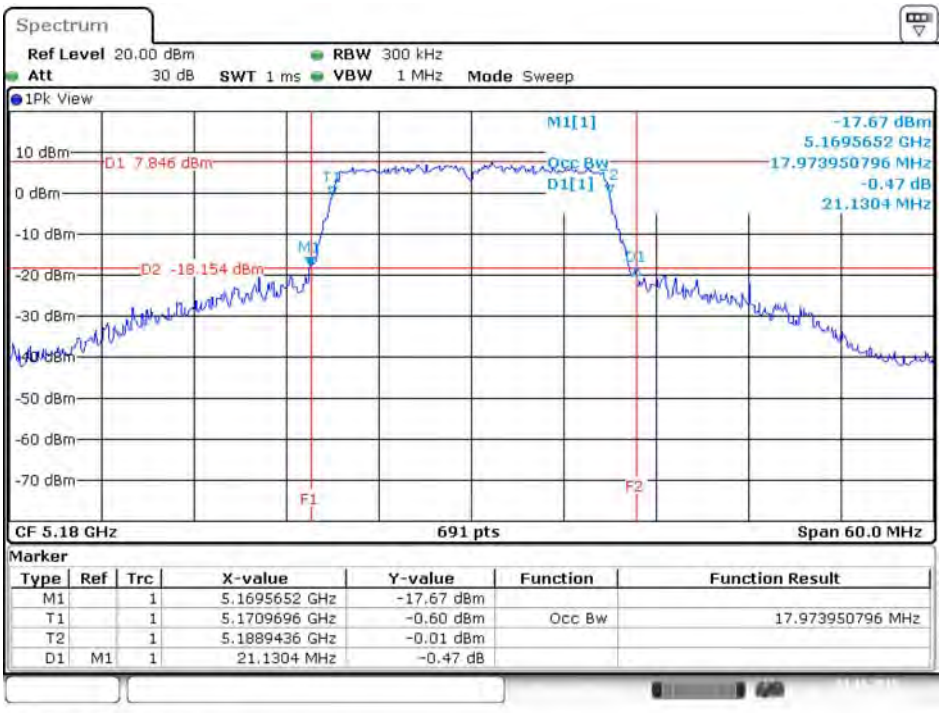
Date: 3.NOV.2015 15:24:11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5825 MHz



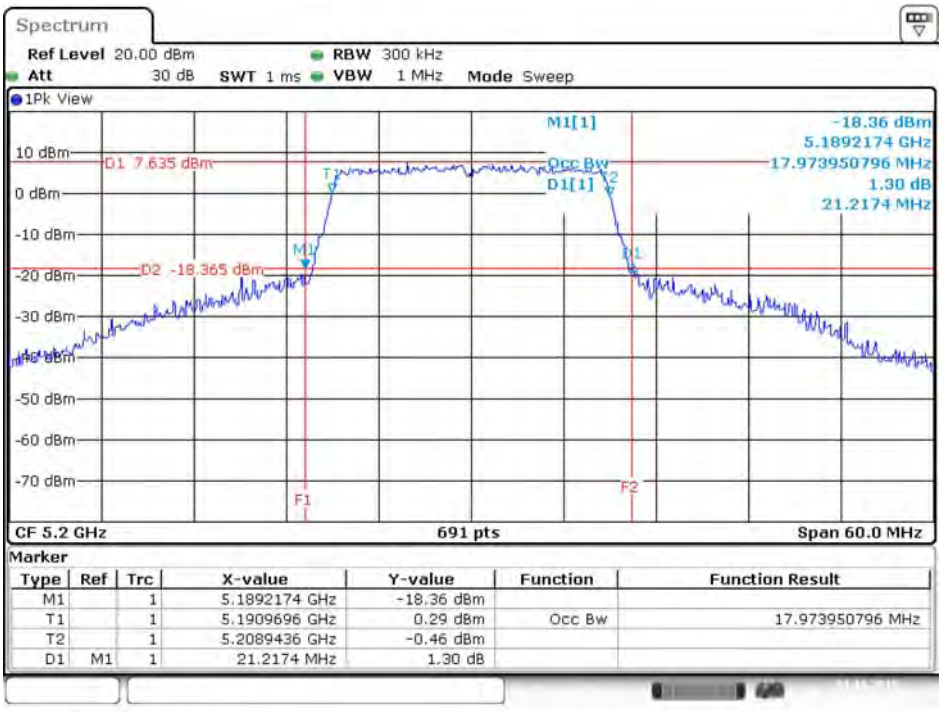
Date: 3.NOV.2015 15:24:46

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5180 MHz



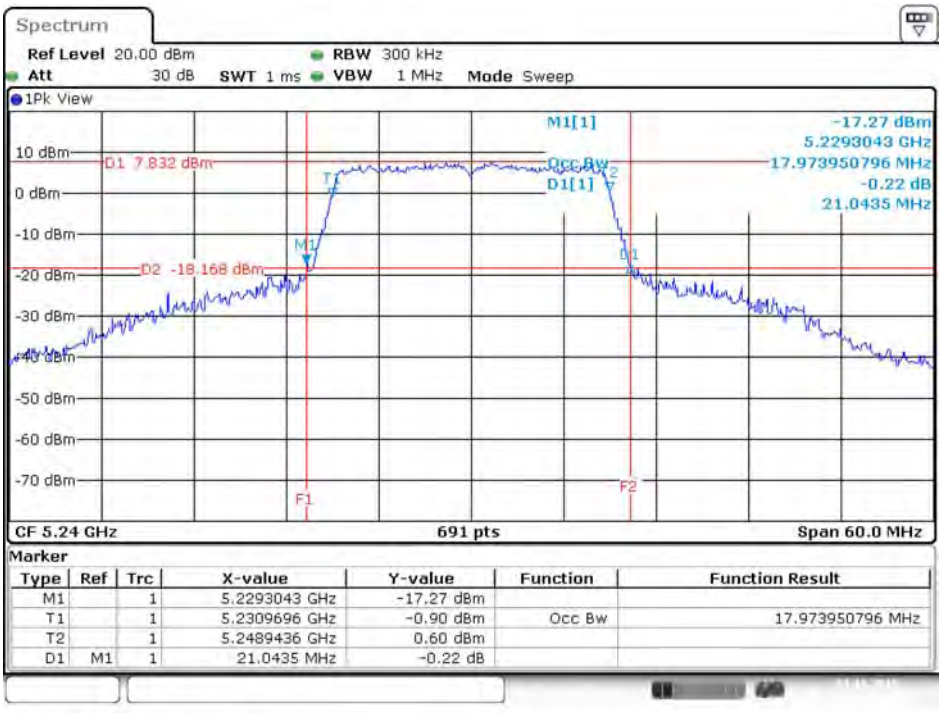
Date: 3.NOV.2015 15:30:58

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5200 MHz



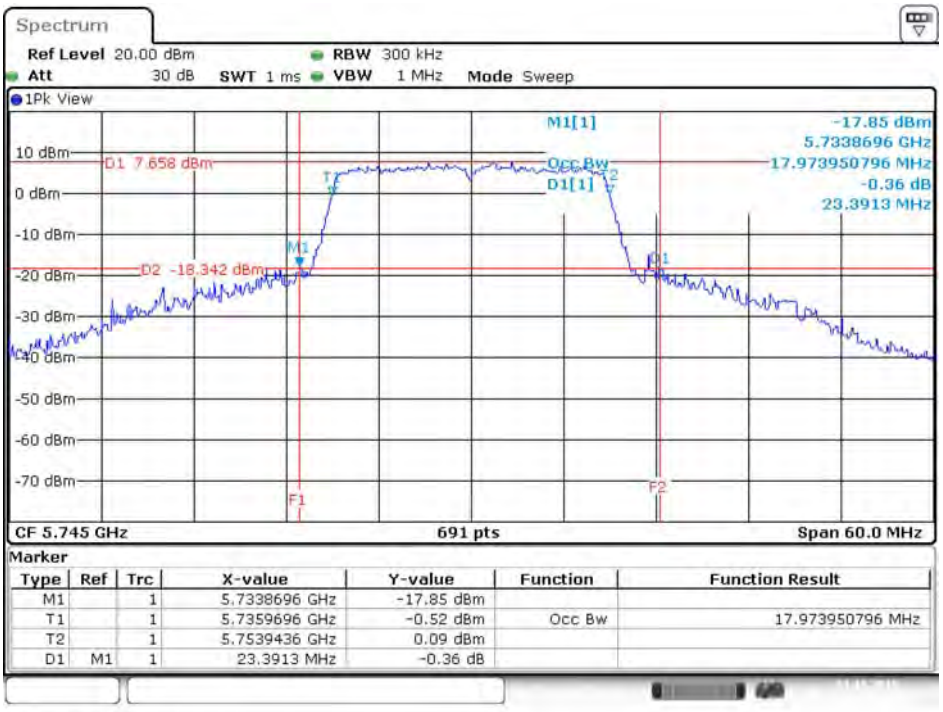
Date: 3.NOV.2015 15:30:32

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5240 MHz



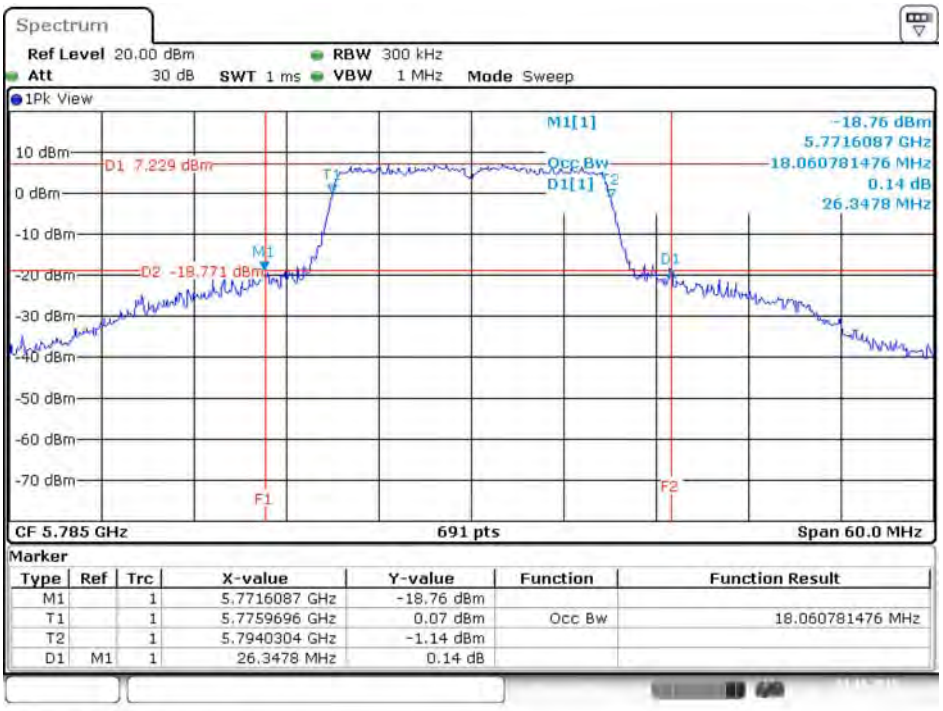
Date: 3.NOV.2015 15:30:11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5745 MHz



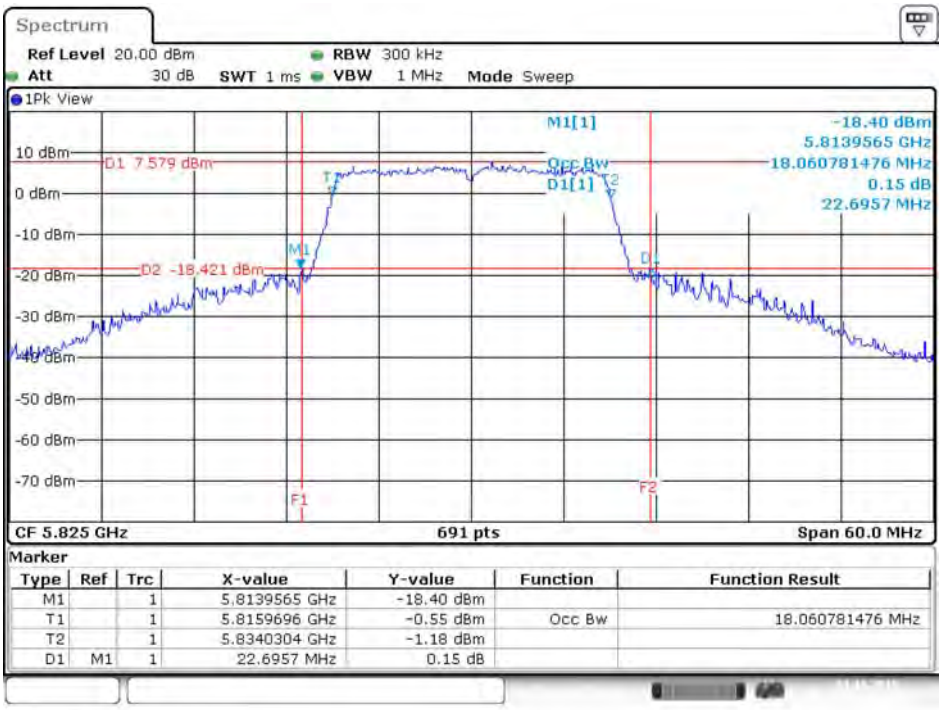
Date: 3.NOV.2015 15:27:07

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5785 MHz



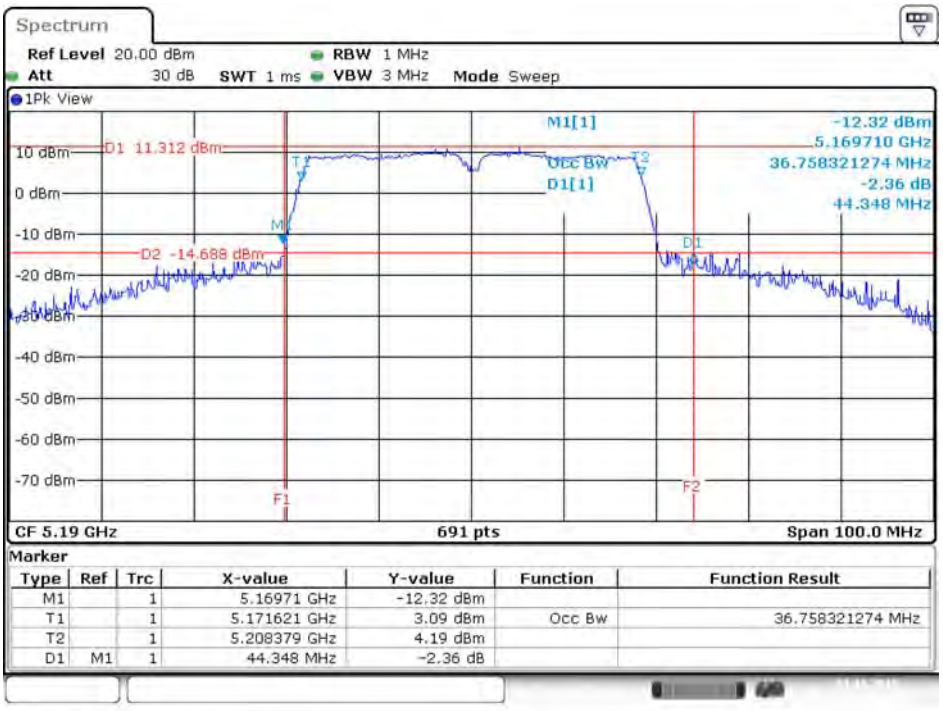
Date: 3.NOV.2015 15:26:36

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5825 MHz



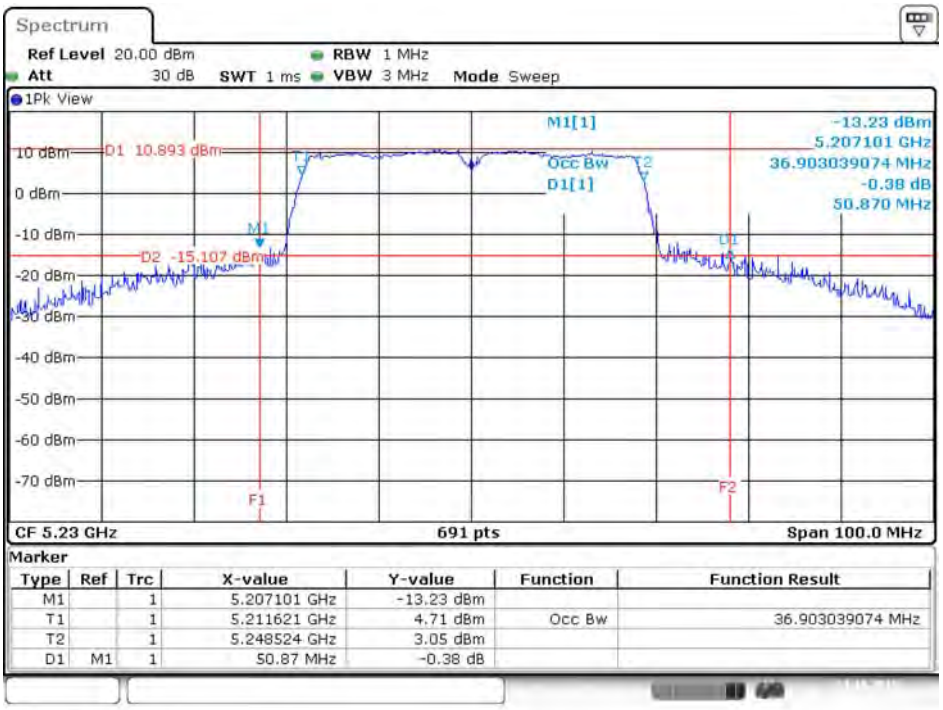
Date: 3.NOV.2015 15:26:03

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5190 MHz



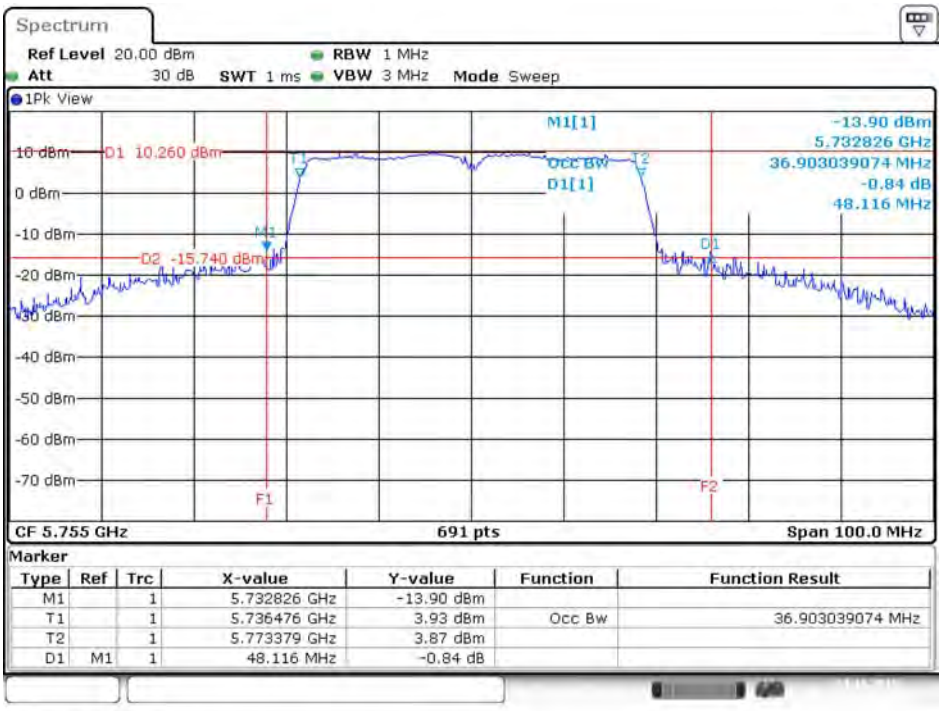
Date: 3.NOV.2015 15:38:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5230 MHz



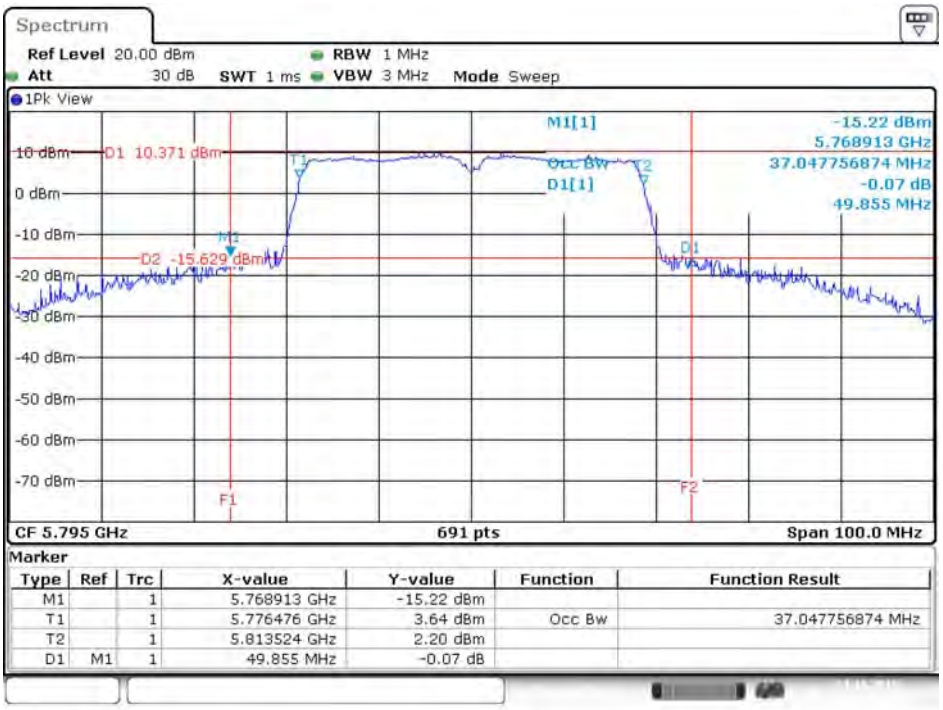
Date: 3.NOV.2015 15:37:40

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5755 MHz



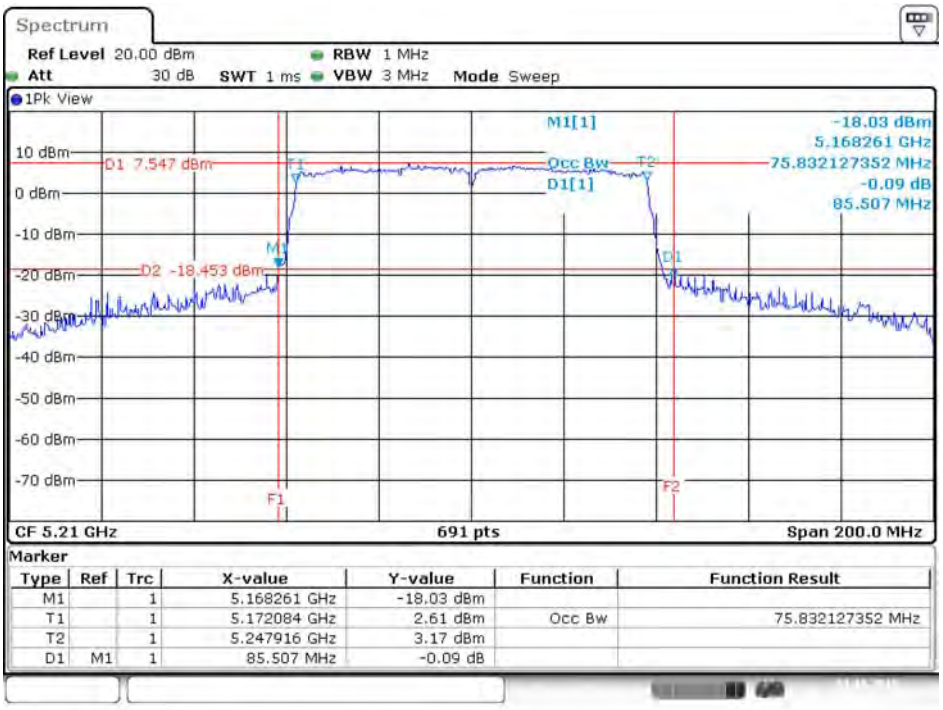
Date: 3.NOV.2015 15:43:03

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5795 MHz



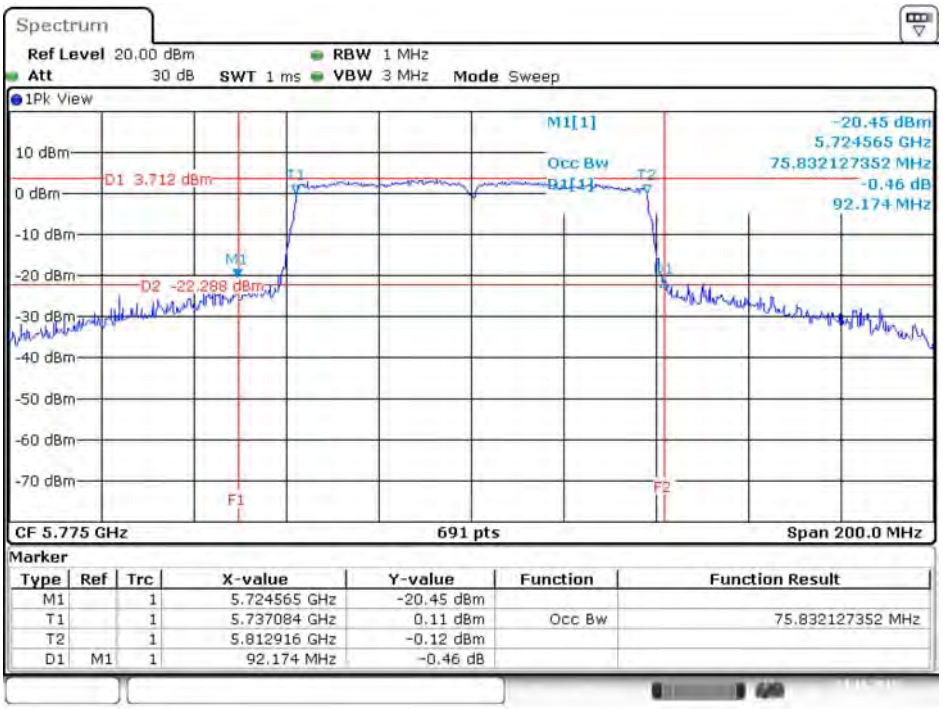
Date: 3.NOV.2015 15:54:48

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5210 MHz



Date: 3.NOV.2015 16:01:47

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5775 MHz



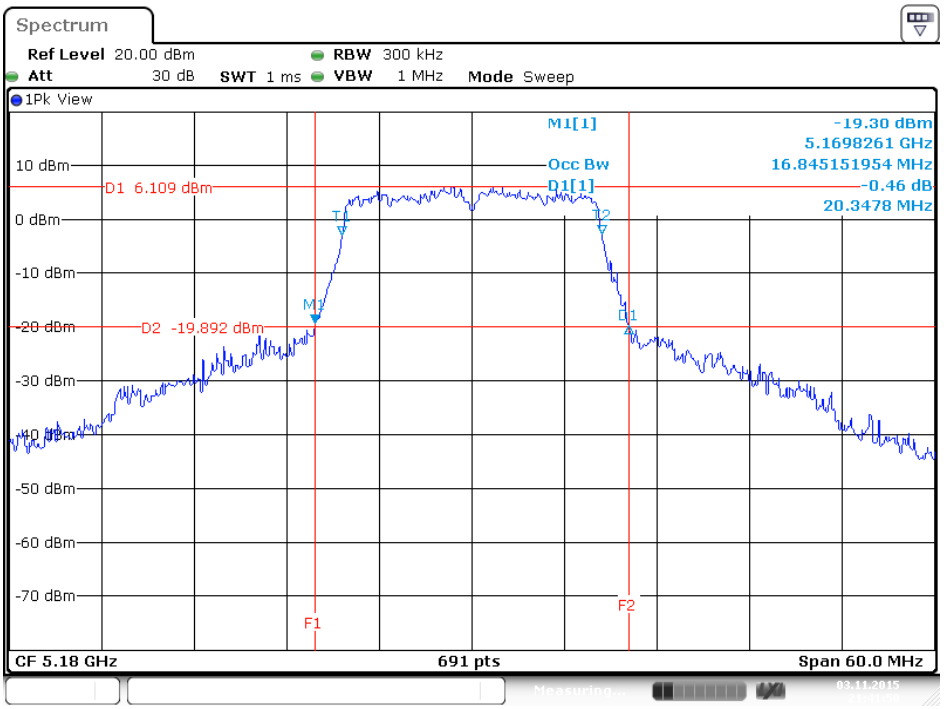
Date: 3.NOV.2015 16:12:11

<For 2TX>

Temperature	25℃	Humidity	58%
Test Engineer	Mars Lin		

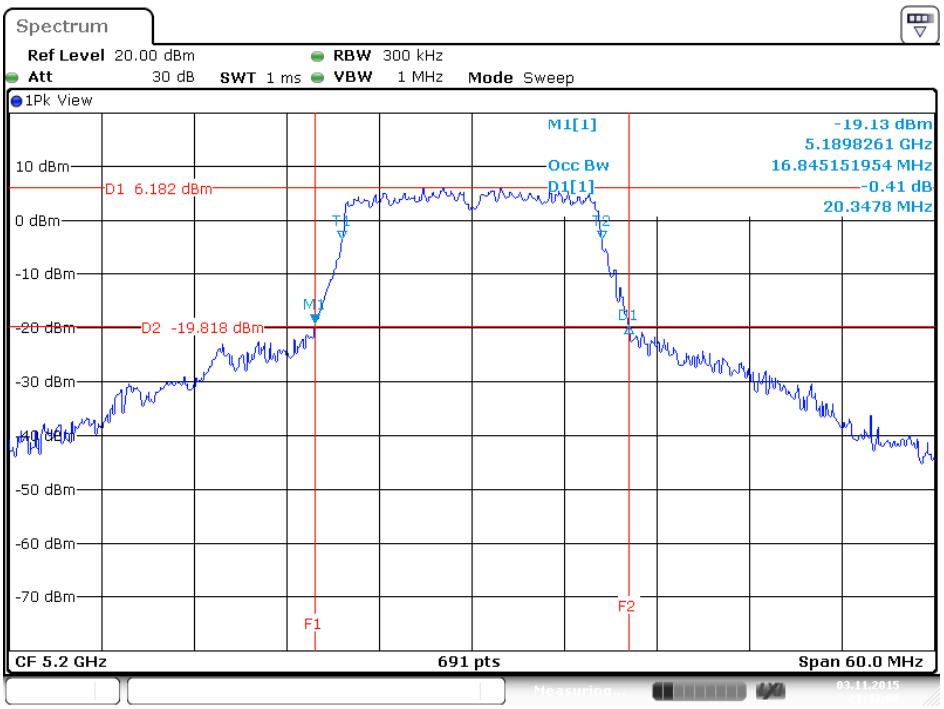
Mode	Frequency	26dB Bandwidth (MHz)		99% Occupied Bandwidth (MHz)	
		Chain 1	Chain 2	Chain 1	Chain 2
802.11a	5180 MHz	20.34	20.70	16.84	16.93
	5200 MHz	20.34	20.43	16.84	17.18
	5240 MHz	21.04	21.13	16.93	17.01
	5745 MHz	20.43	20.70	16.93	16.93
	5785 MHz	22.69	21.73	16.93	17.01
	5825 MHz	23.04	21.91	17.01	16.93
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.78	22.52	17.80	17.97
	5200 MHz	20.43	20.61	17.80	17.97
	5240 MHz	20.52	20.52	17.80	17.97
	5745 MHz	21.73	20.60	17.80	17.97
	5785 MHz	29.04	28.78	17.97	17.97
	5825 MHz	25.56	25.30	17.97	18.06
802.11ac MCS0/Nss1 VHT40	5190 MHz	40.58	40.87	36.75	36.75
	5230 MHz	44.63	47.39	36.75	36.90
	5755 MHz	43.47	43.91	36.75	36.90
	5795 MHz	64.49	62.75	37.04	37.19
802.11ac MCS0/Nss1 VHT80	5210 MHz	81.73	82.60	75.54	75.83
	5775 MHz	81.44	82.31	75.83	75.83

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5180 MHz



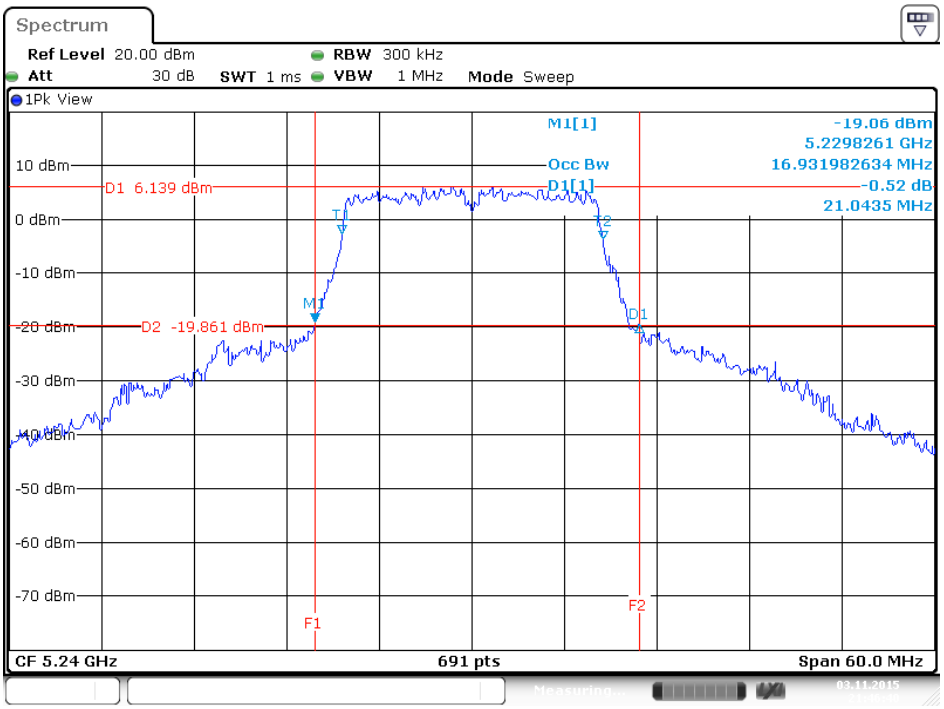
Date: 3.NOV.2015 21:41:50

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5200 MHz



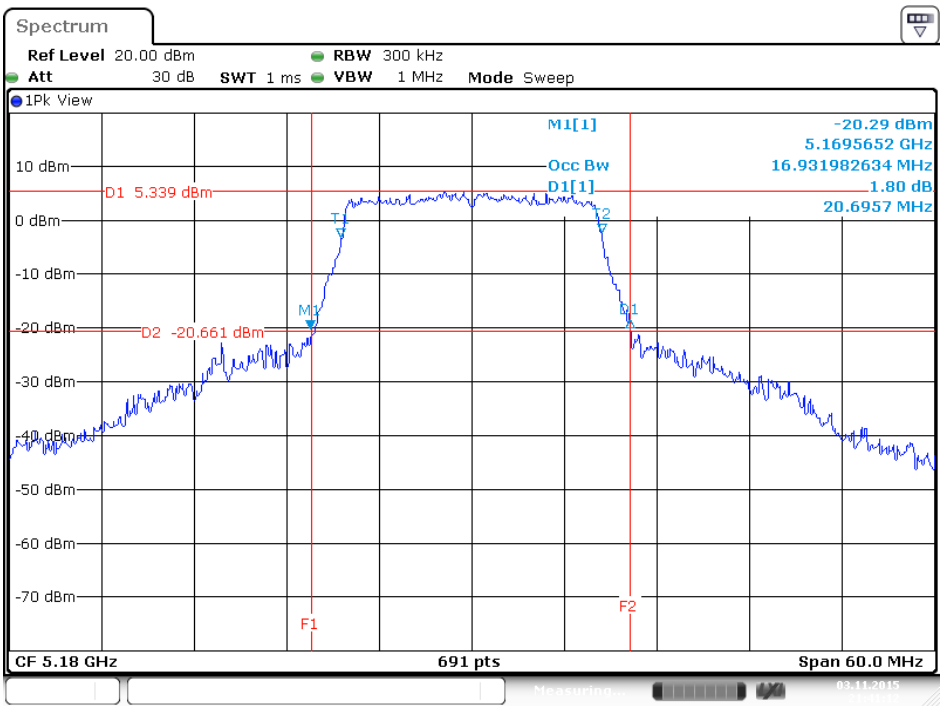
Date: 3.NOV.2015 21:43:00

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5240 MHz



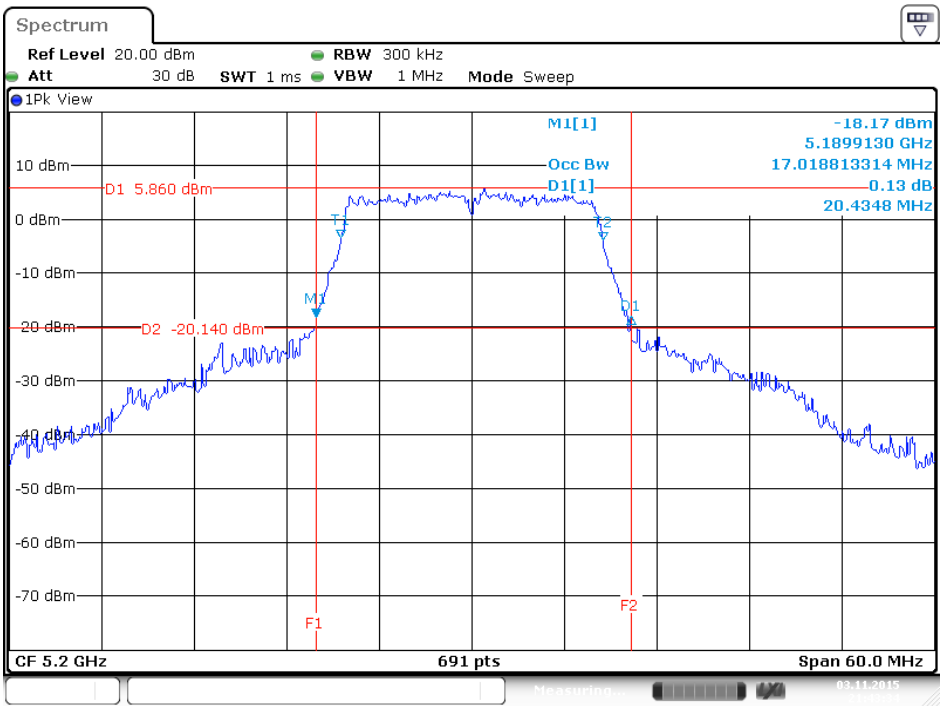
Date: 3.NOV.2015 21:46:40

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 2 / 5180 MHz



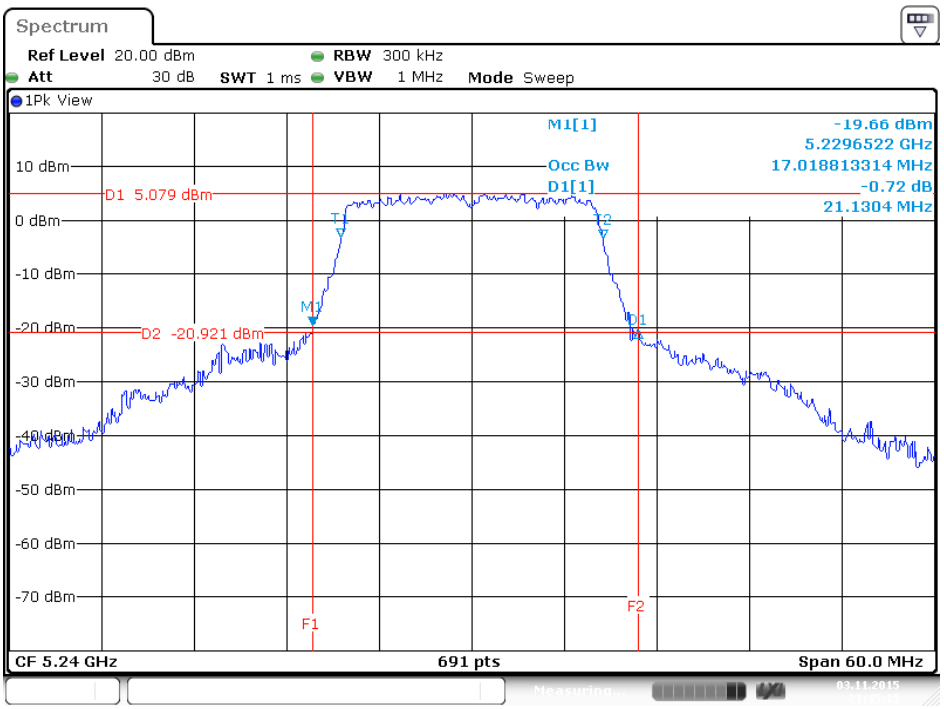
Date: 3.NOV.2015 21:41:12

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 2 / 5200 MHz



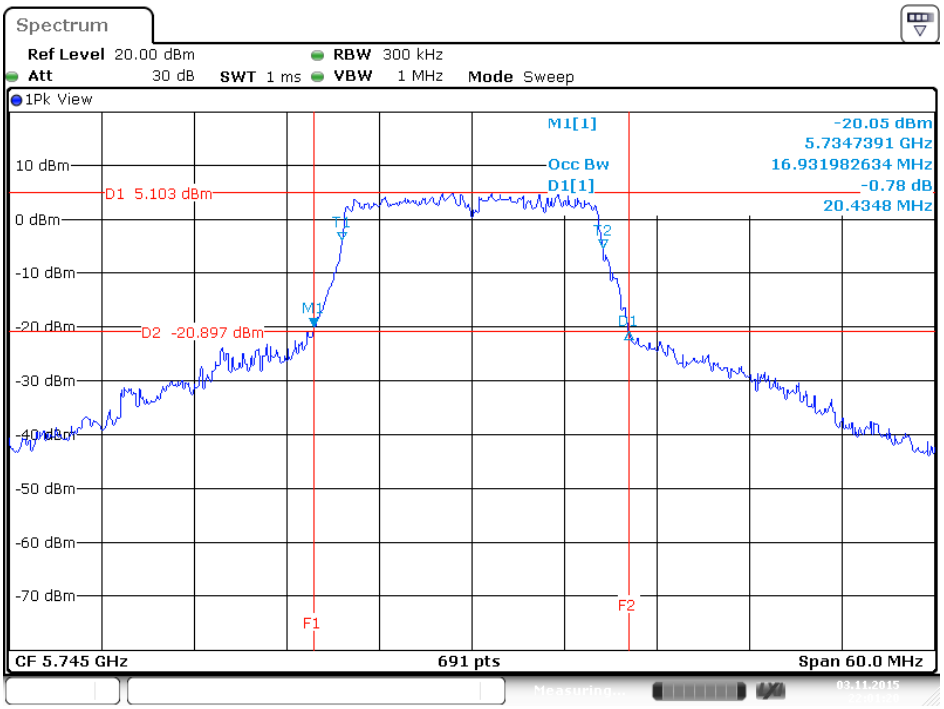
Date: 3.NOV.2015 21:43:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 2 / 5240 MHz



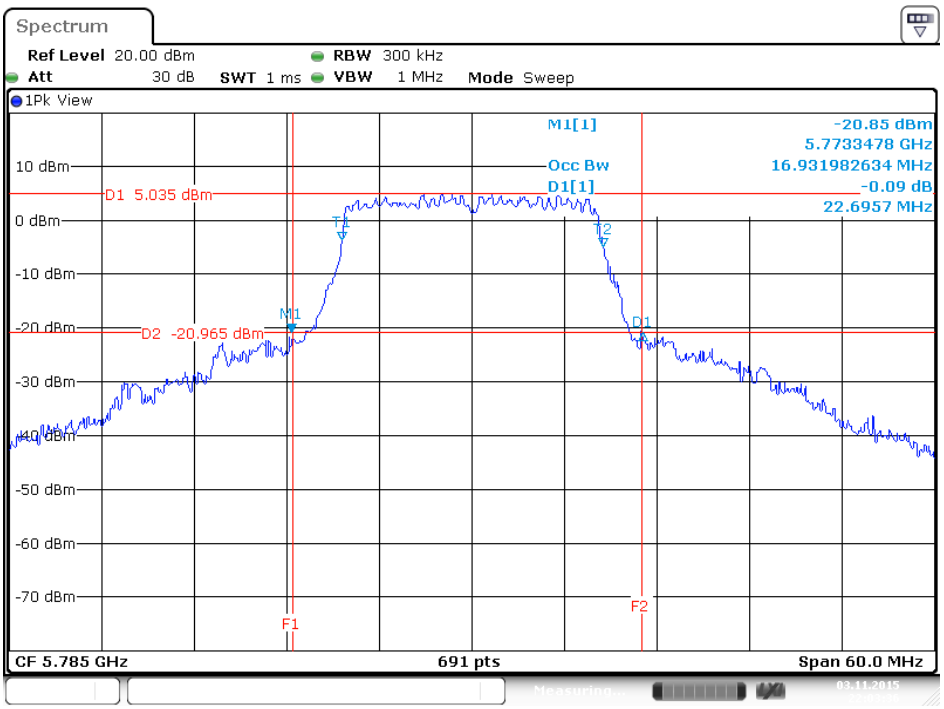
Date: 3.NOV.2015 21:45:15

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5745 MHz



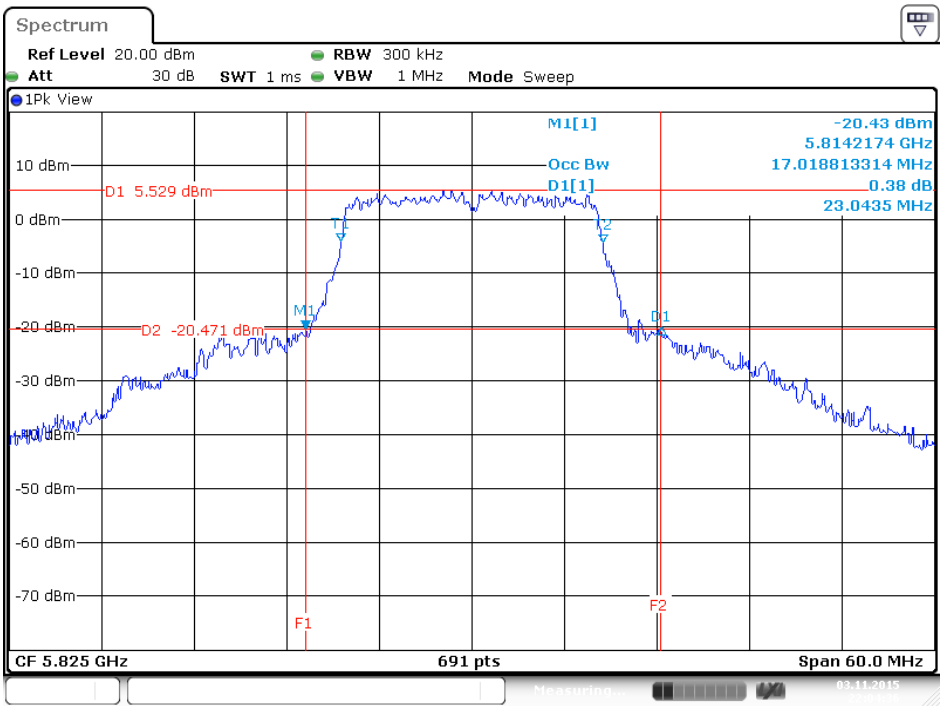
Date: 3.NOV.2015 22:01:20

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5785 MHz



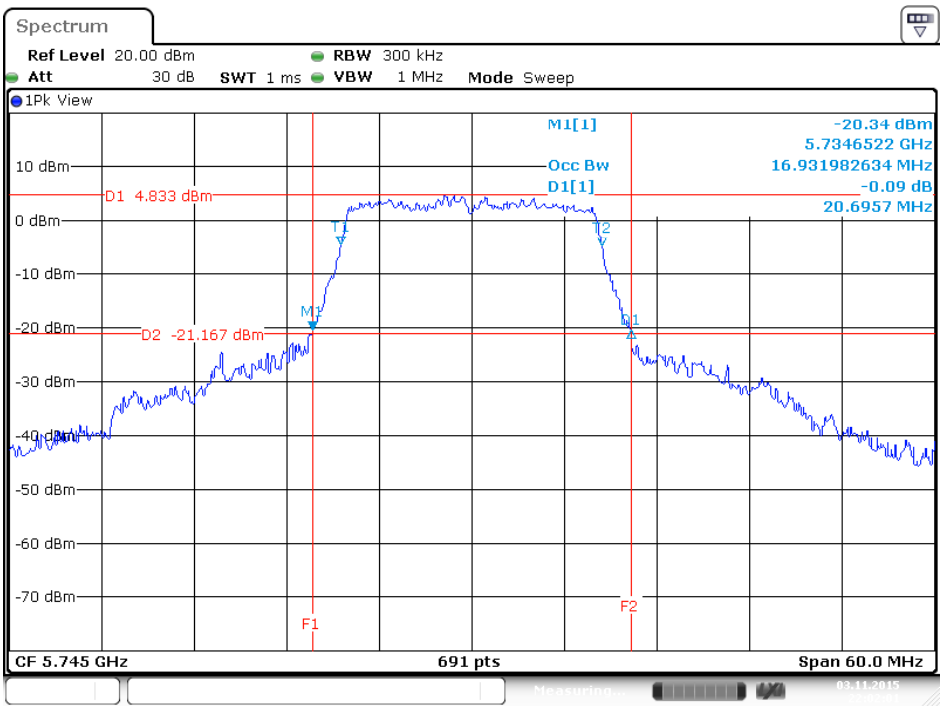
Date: 3.NOV.2015 22:03:36

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5825 MHz



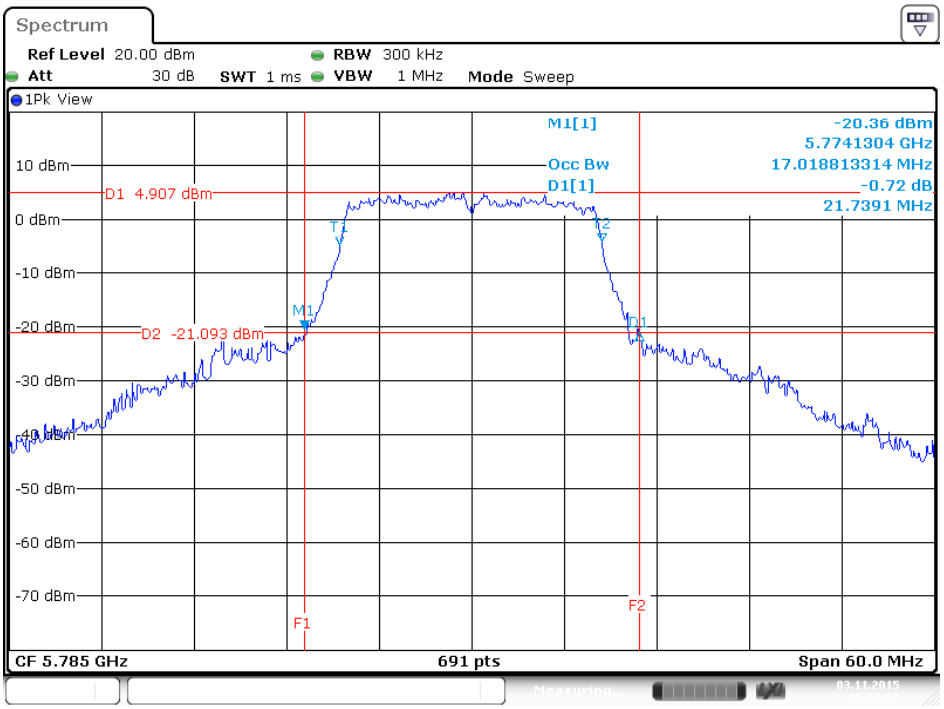
Date: 3.NOV.2015 22:04:36

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 2 / 5745 MHz



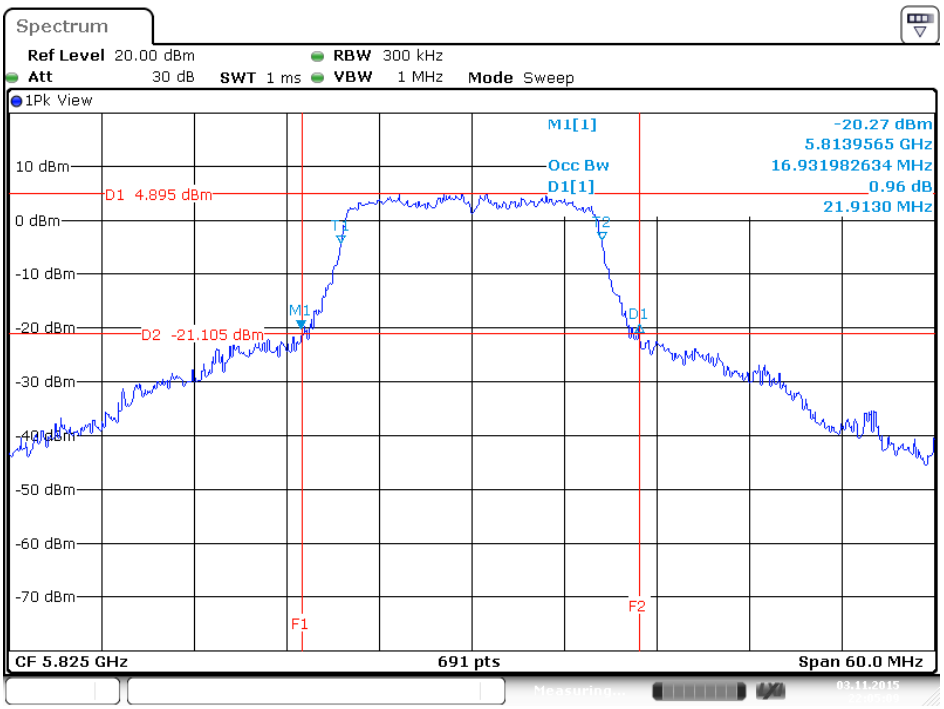
Date: 3.NOV.2015 22:02:01

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 2 / 5785 MHz



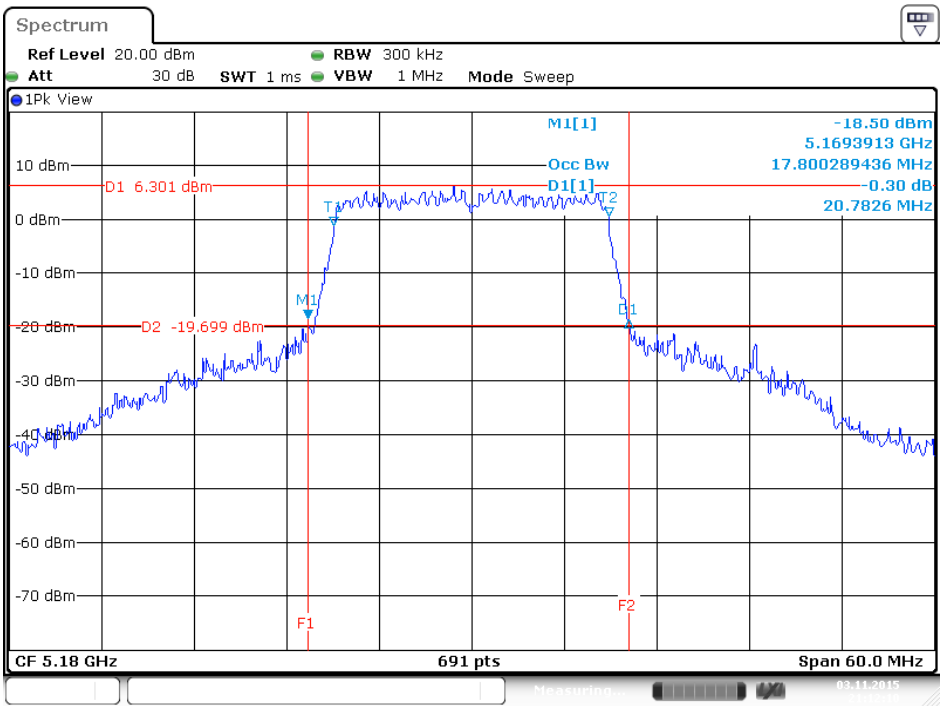
Date: 3.NOV.2015 22:02:57

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 2 / 5825 MHz



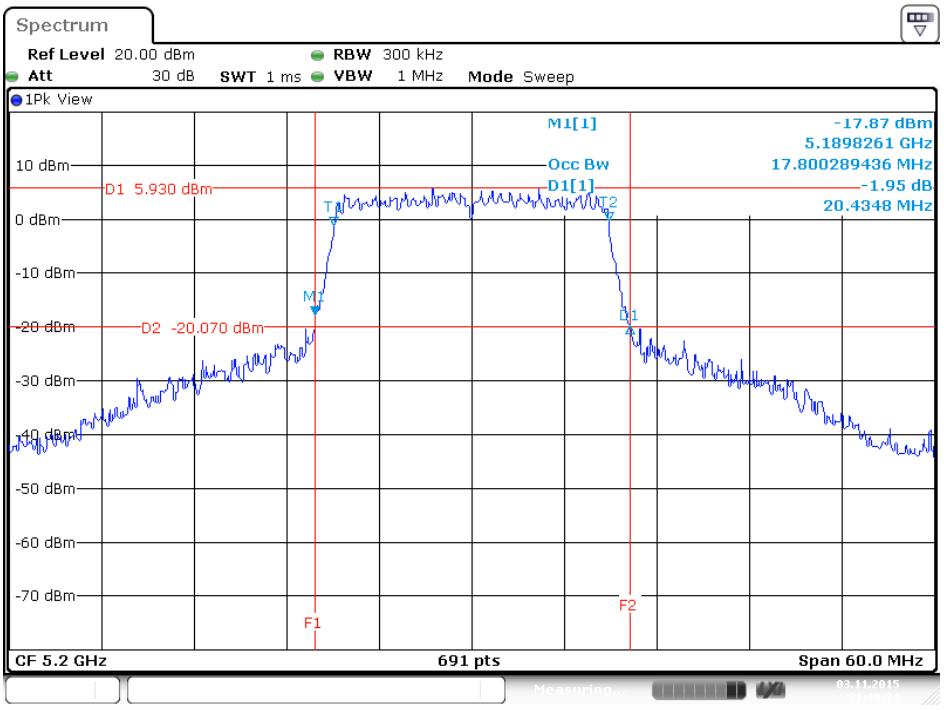
Date: 3.NOV.2015 22:05:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5180 MHz



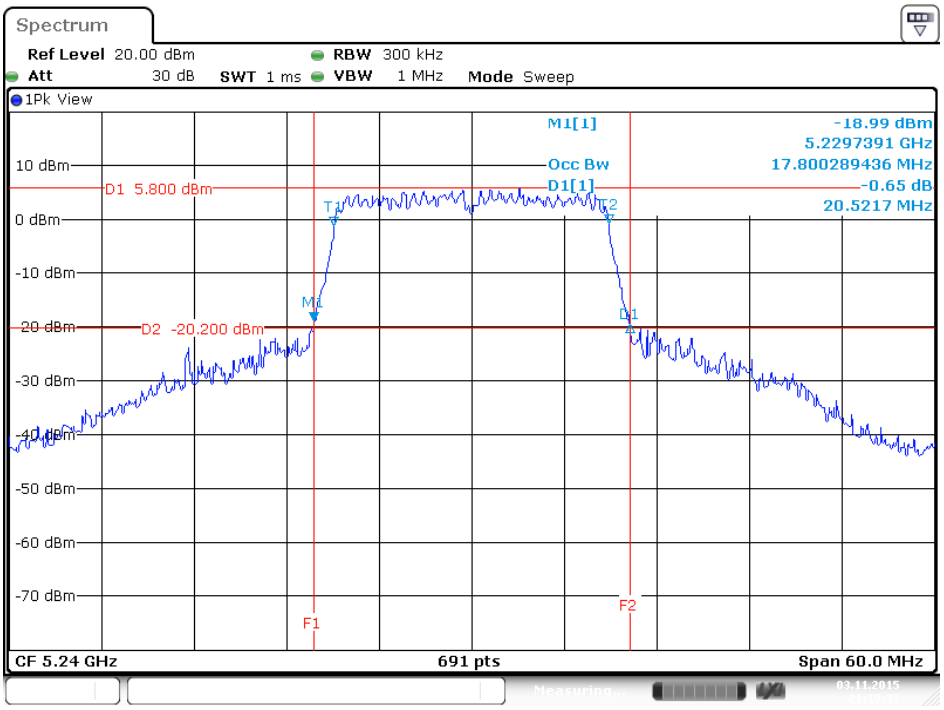
Date: 3.NOV.2015 21:12:10

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5200 MHz



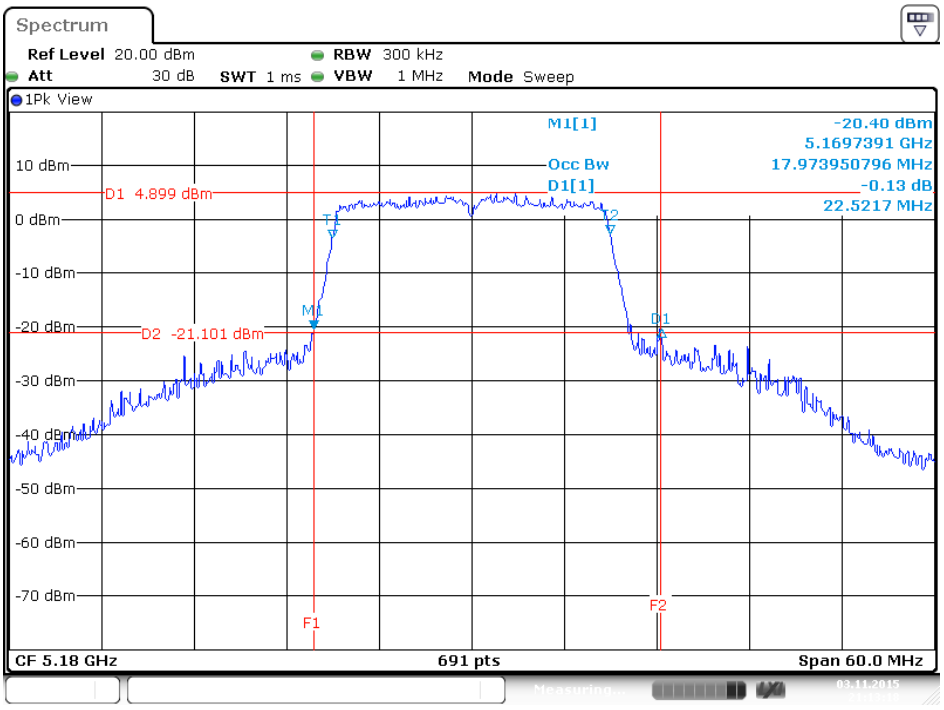
Date: 3.NOV.2015 21:18:24

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5240 MHz



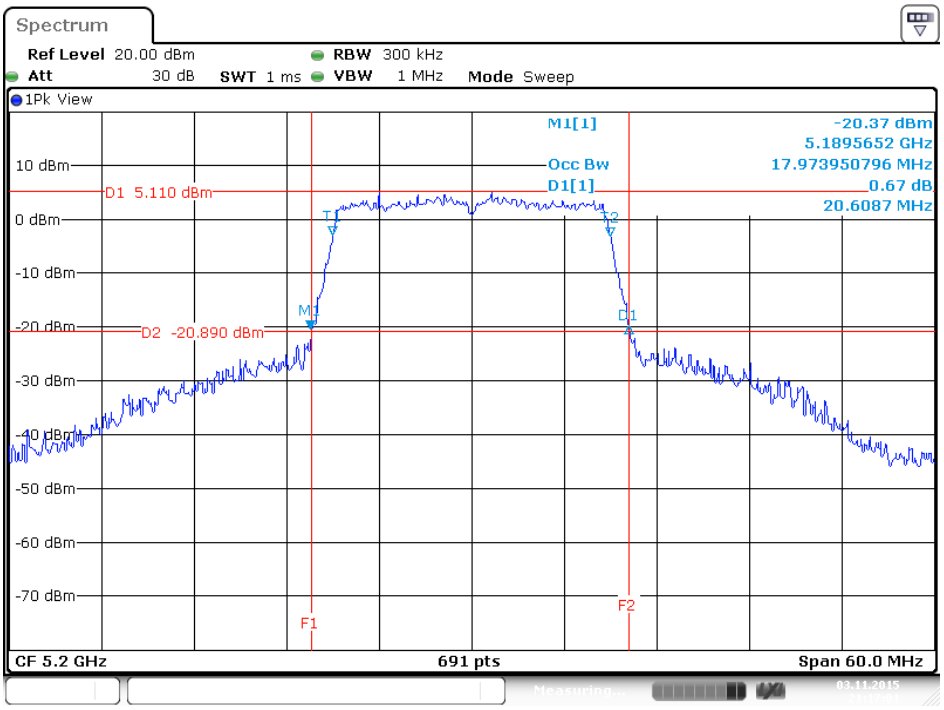
Date: 3.NOV.2015 21:19:33

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5180 MHz



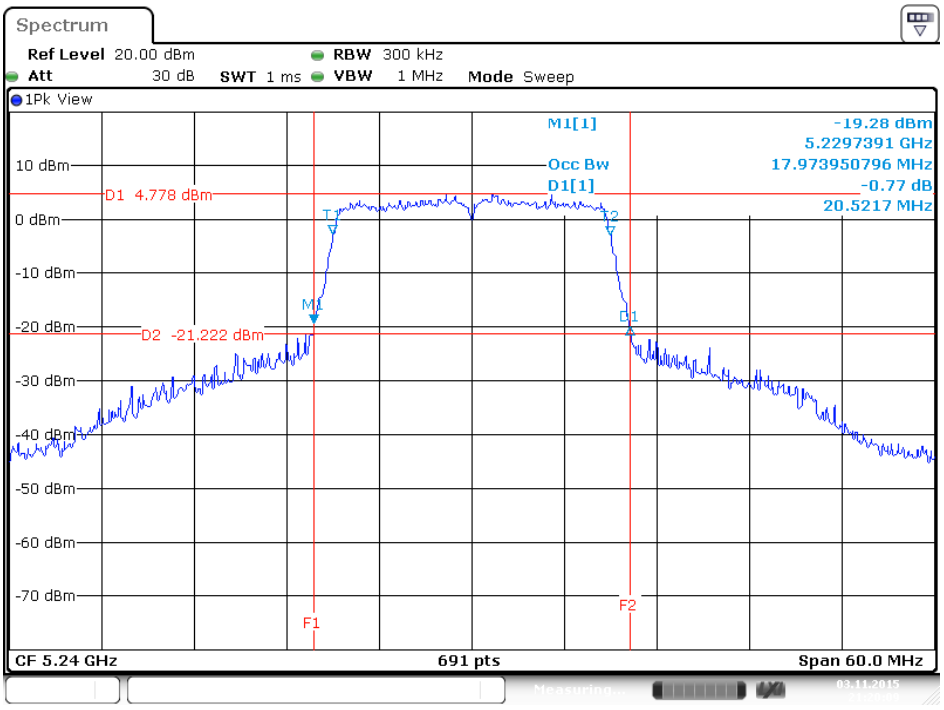
Date: 3.NOV.2015 21:13:18

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5200 MHz



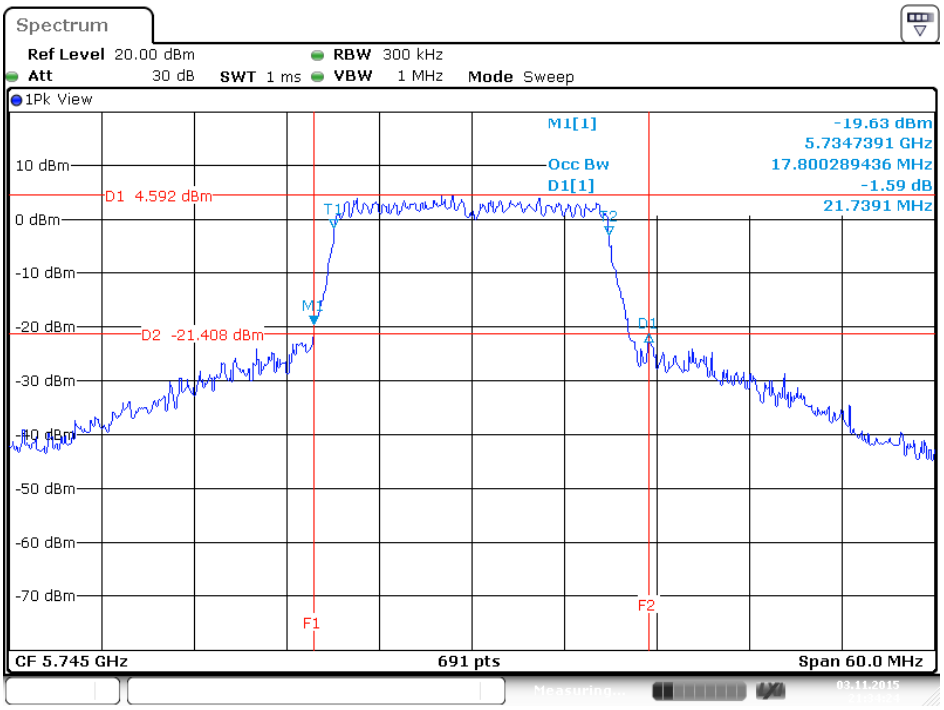
Date: 3.NOV.2015 21:17:01

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5240 MHz



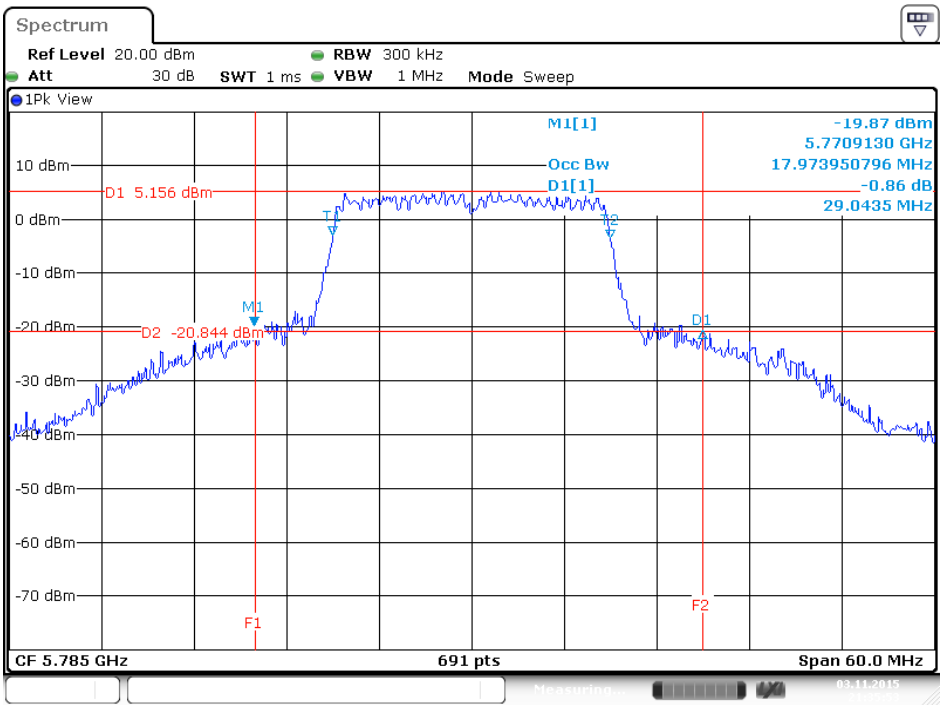
Date: 3.NOV.2015 21:20:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5745 MHz



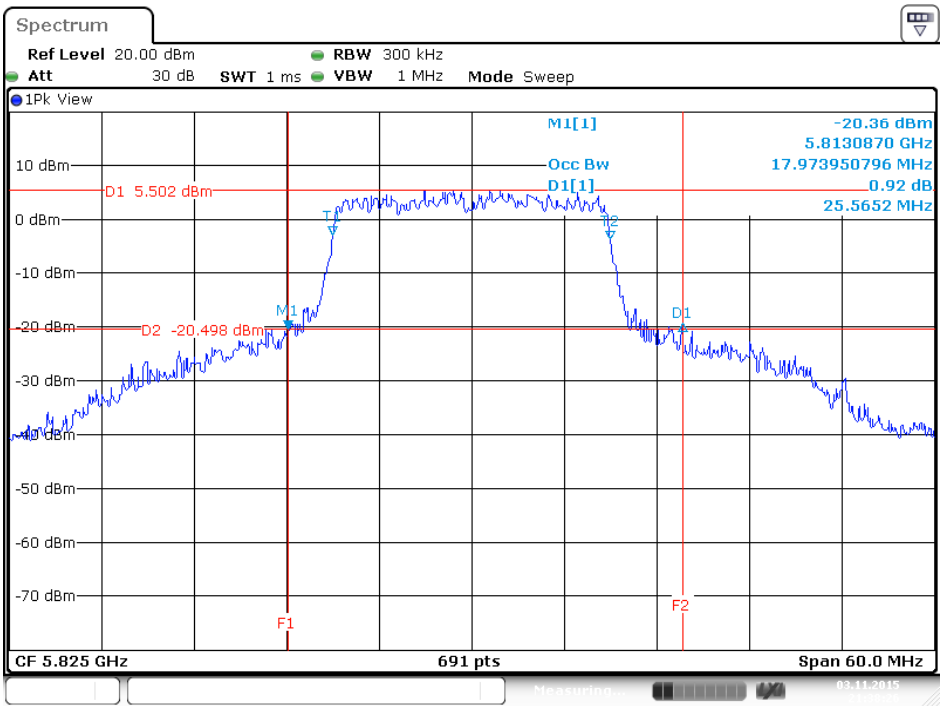
Date: 3.NOV.2015 21:34:24

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5785 MHz



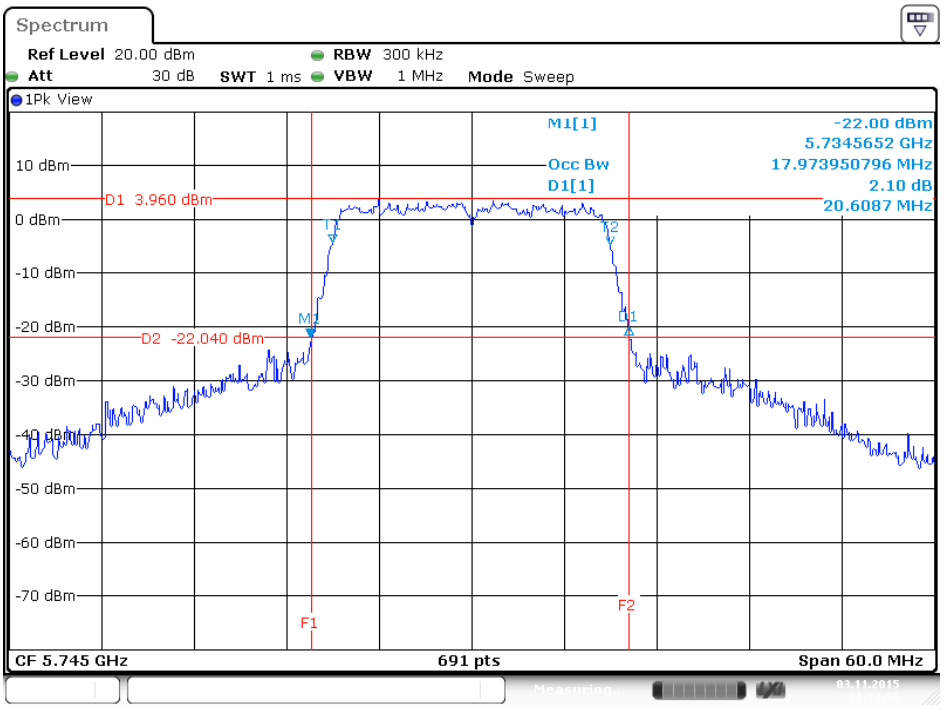
Date: 3.NOV.2015 21:35:53

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5825 MHz



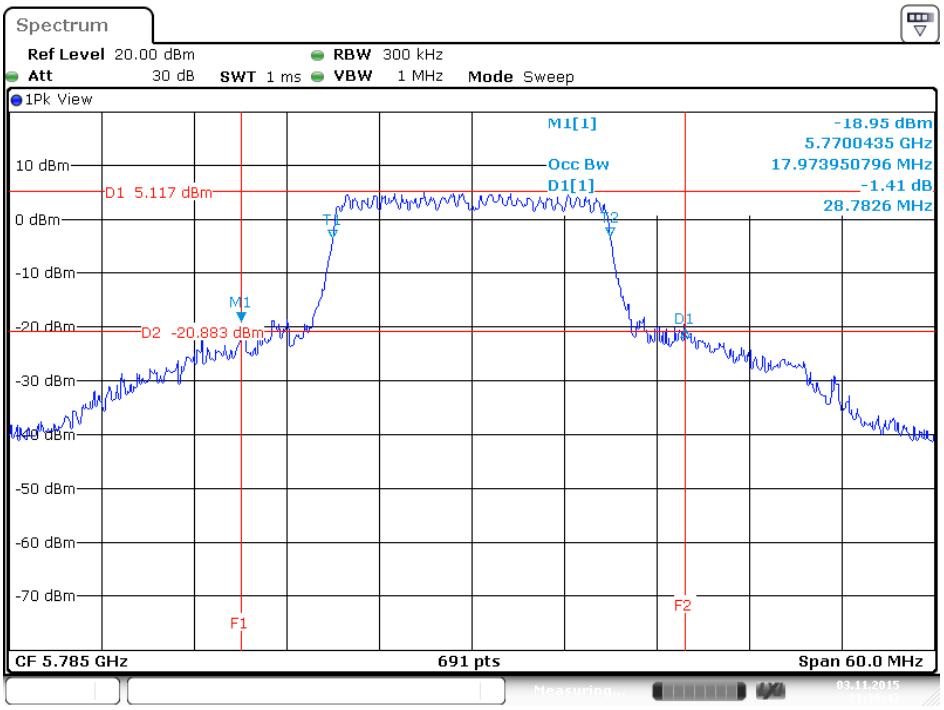
Date: 3.NOV.2015 21:38:26

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5745 MHz



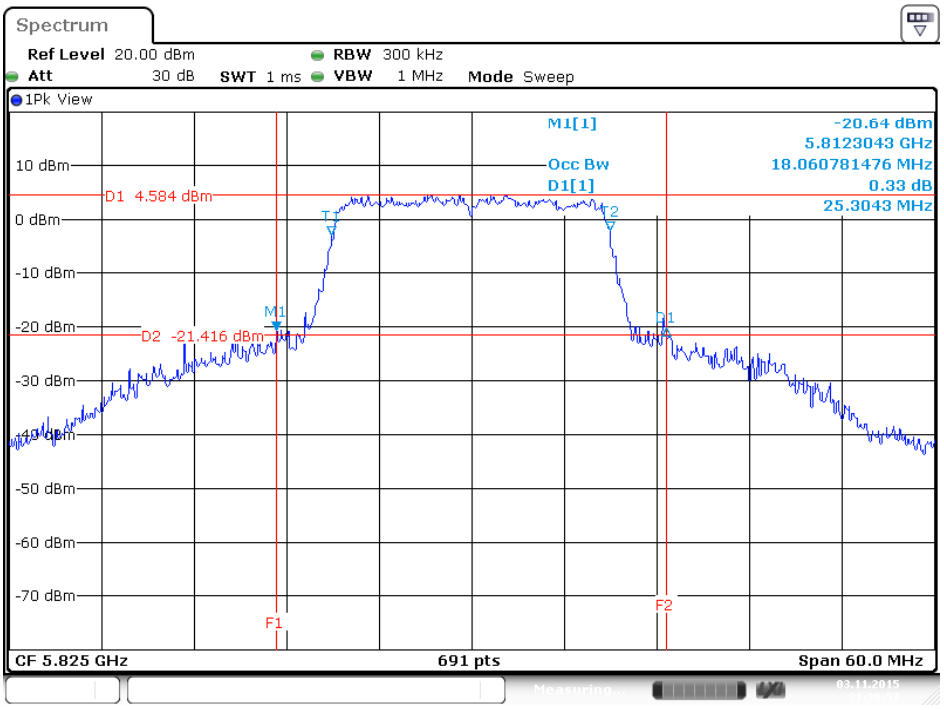
Date: 3.NOV.2015 21:33:56

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5785 MHz



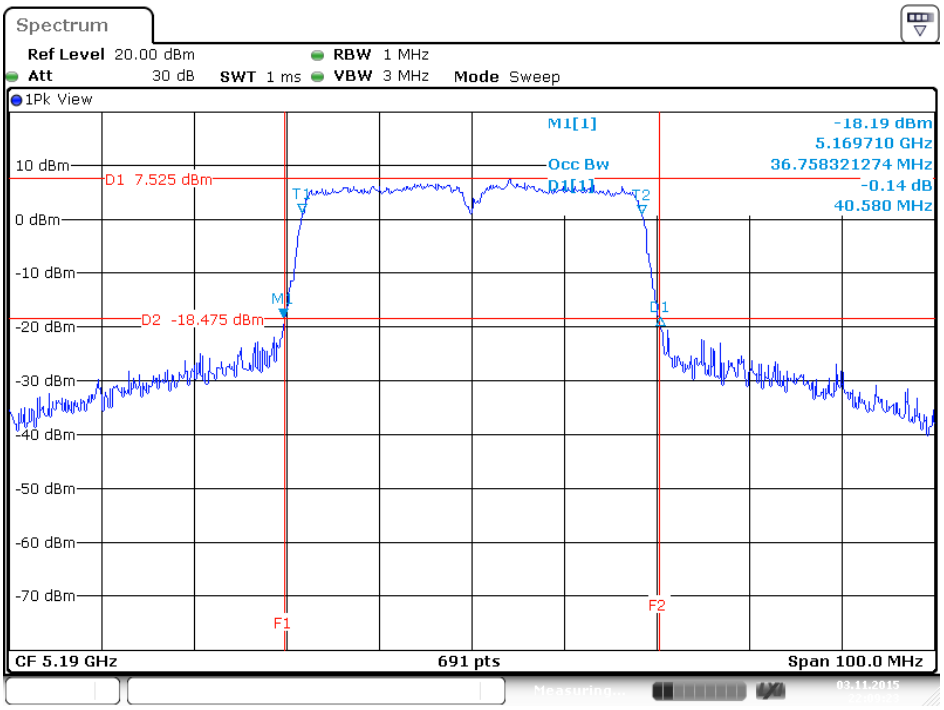
Date: 3.NOV.2015 21:36:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5825 MHz



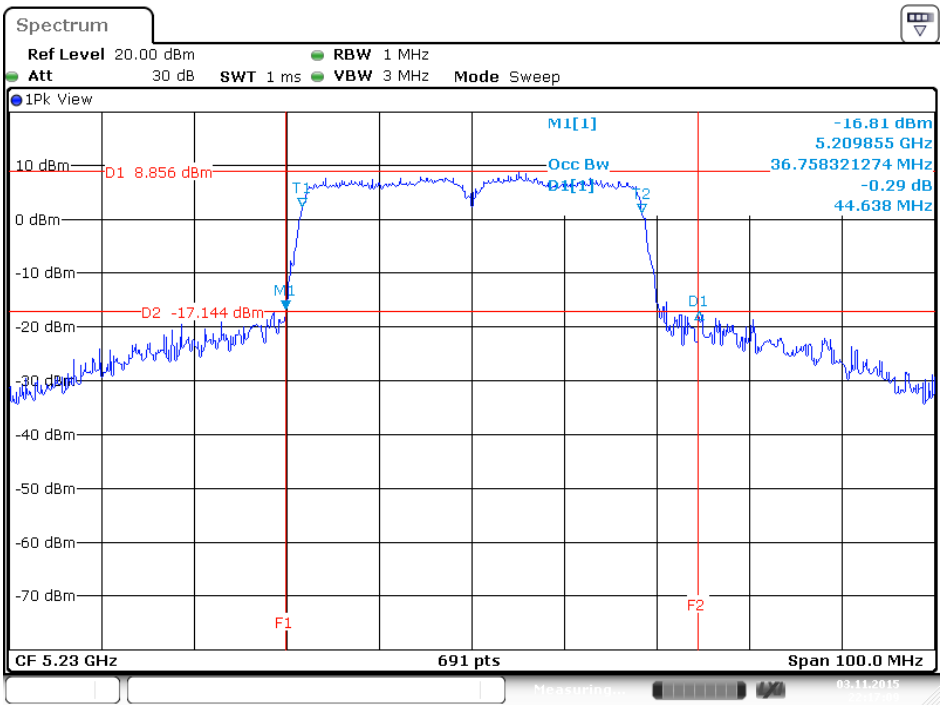
Date: 3.NOV.2015 21:38:57

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5190 MHz



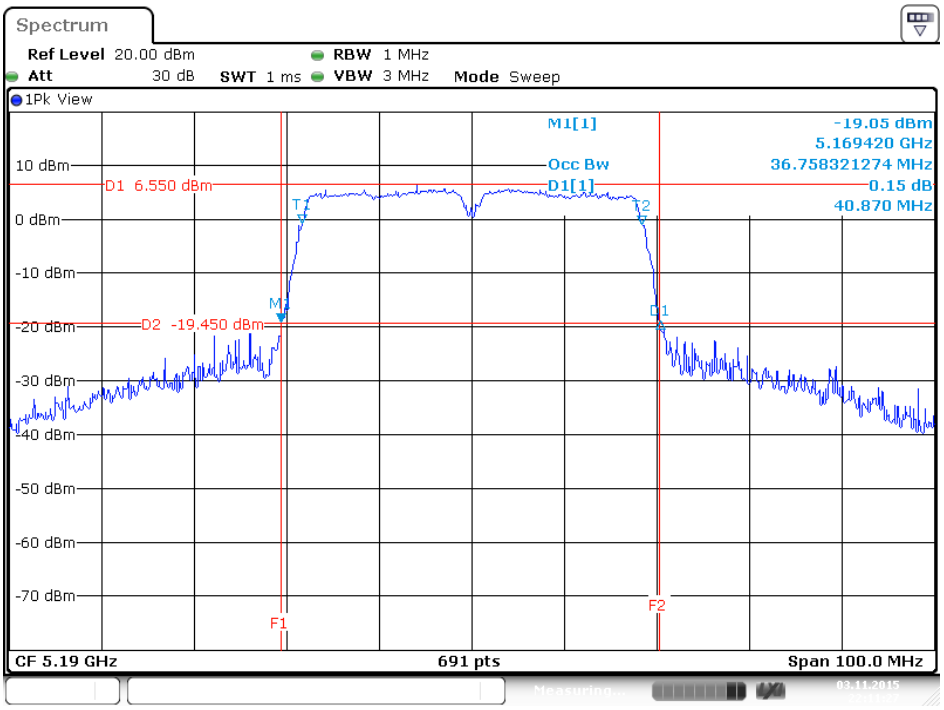
Date: 3.NOV.2015 22:09:23

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5230 MHz



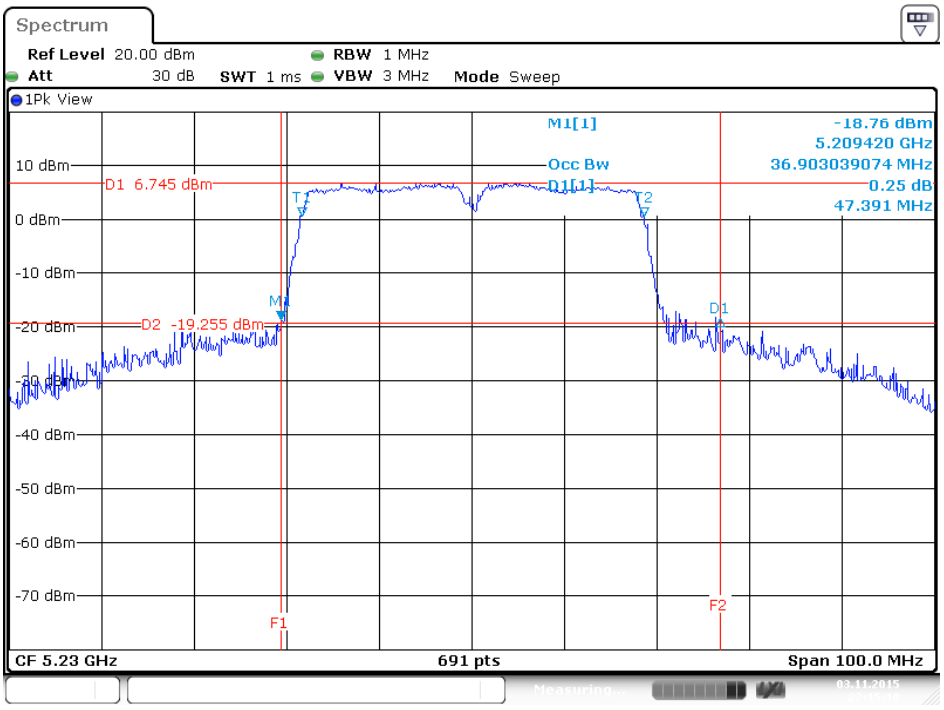
Date: 3.NOV.2015 22:17:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5190 MHz



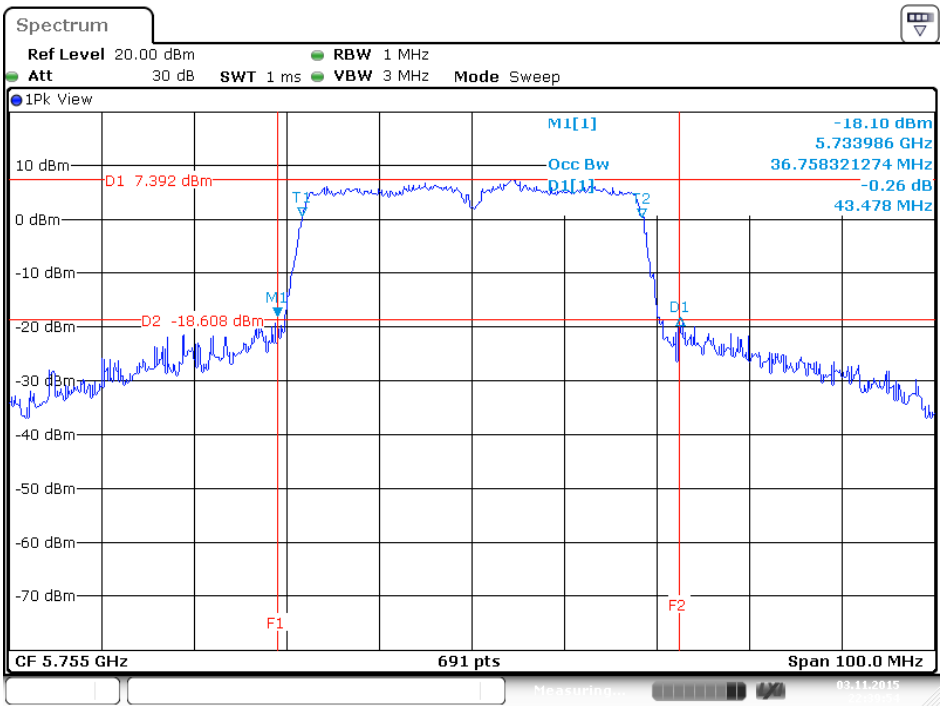
Date: 3.NOV.2015 22:11:27

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5230 MHz



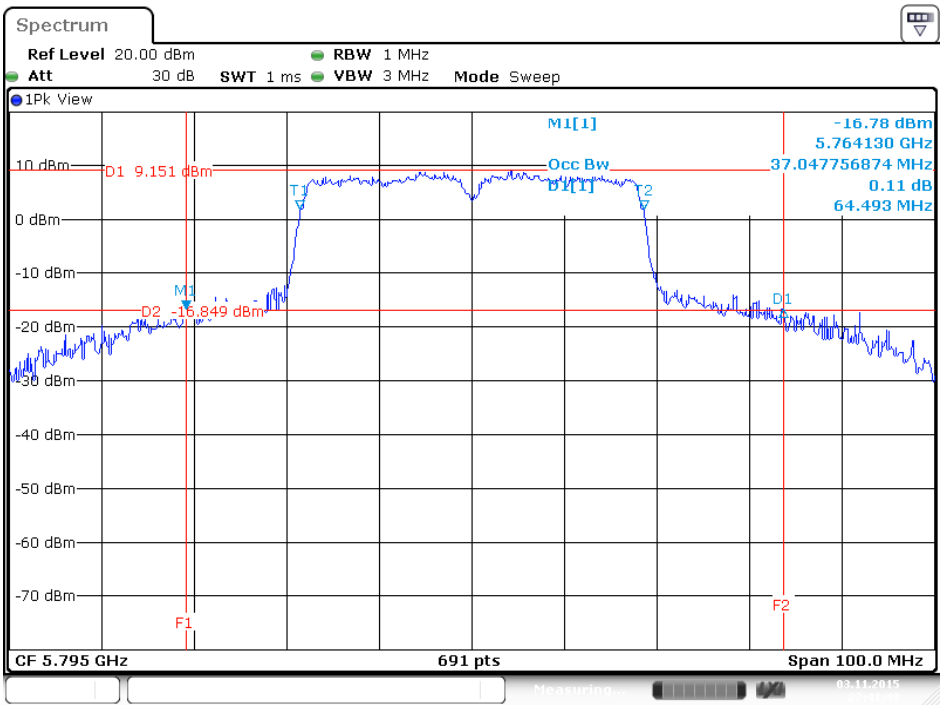
Date: 3.NOV.2015 22:15:10

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5755 MHz



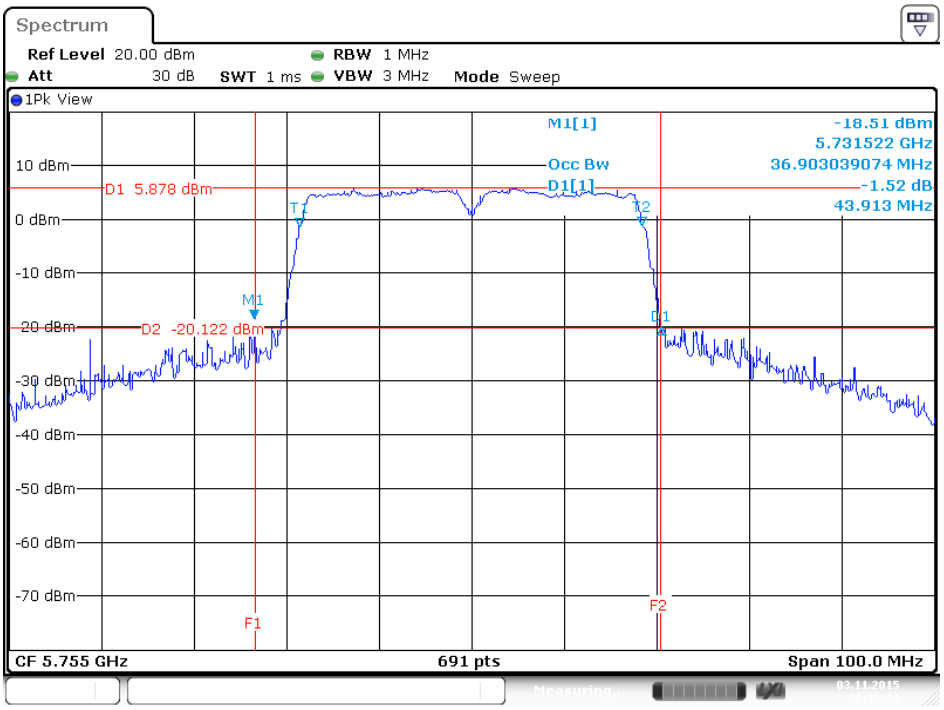
Date: 3.NOV.2015 22:39:54

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5795 MHz



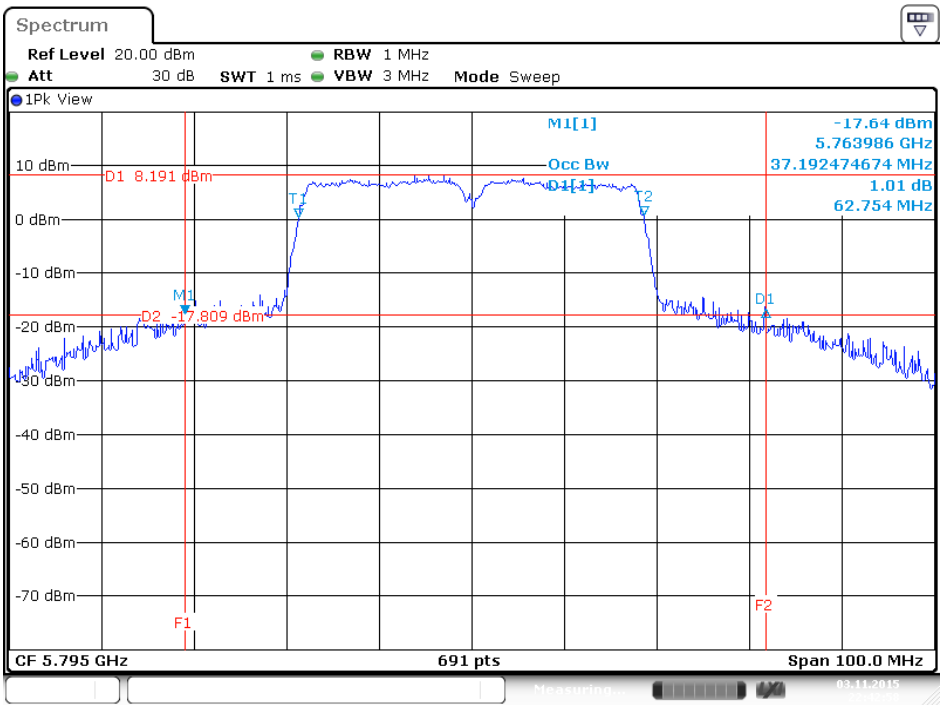
Date: 3.NOV.2015 22:41:49

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5755 MHz



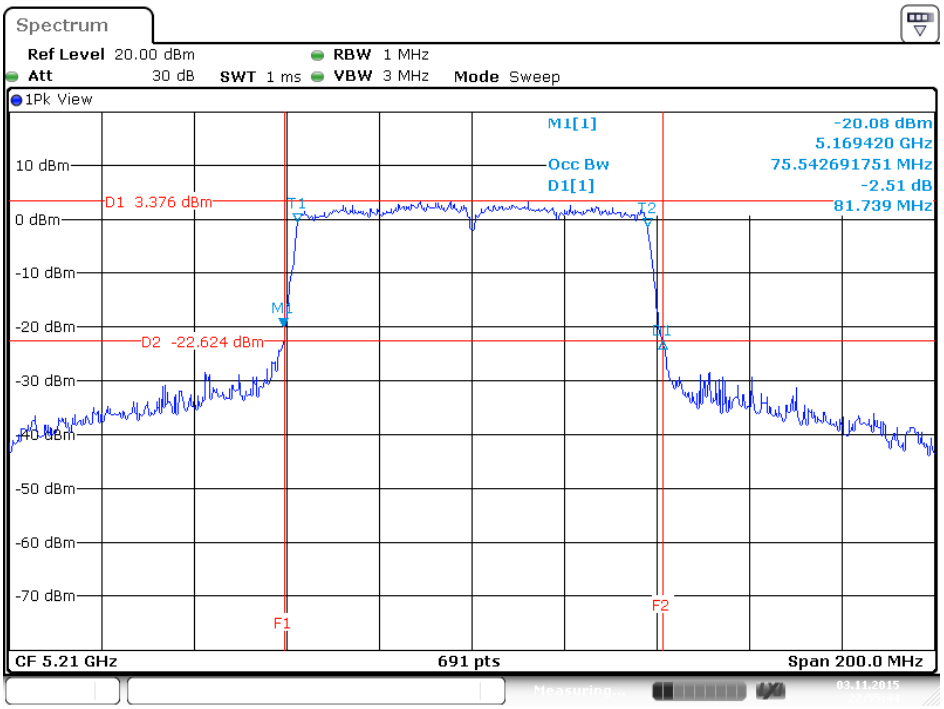
Date: 3.NOV.2015 22:38:24

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5795 MHz



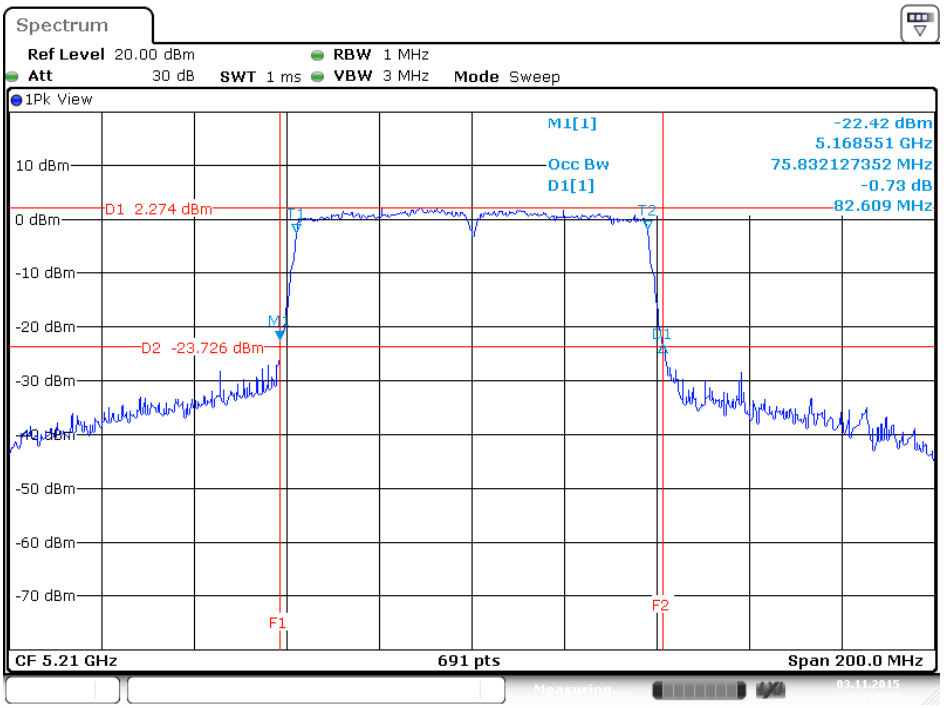
Date: 3.NOV.2015 22:42:58

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5210 MHz



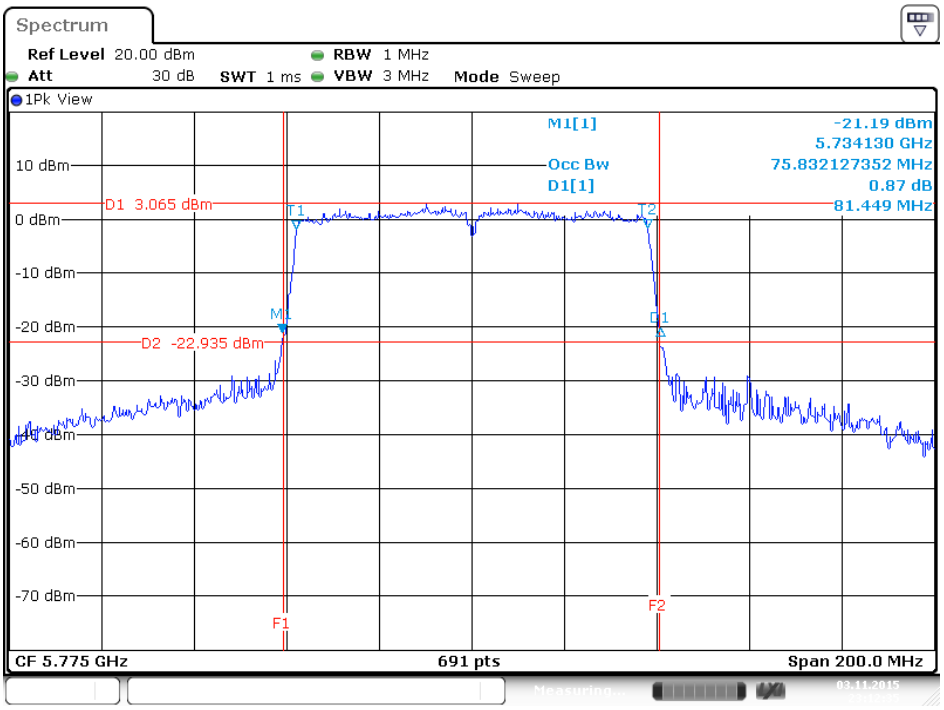
Date: 3.NOV.2015 22:55:44

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5210 MHz



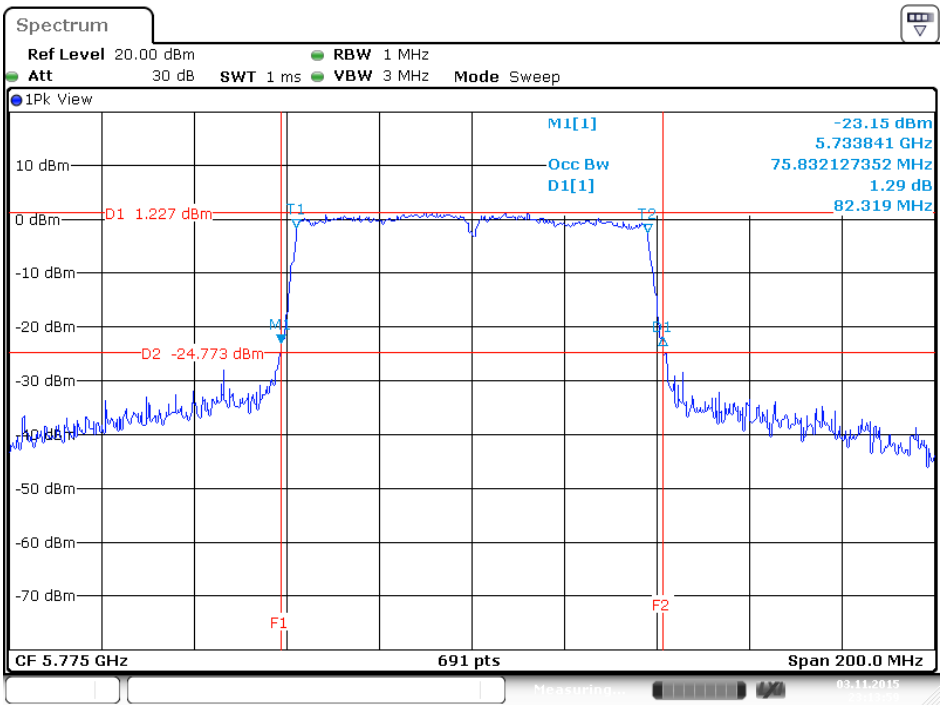
Date: 3.NOV.2015 22:57:20

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5775 MHz



Date: 3.NOV.2015 23:12:35

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5775 MHz



Date: 3.NOV.2015 23:13:59

4.3. 6dB Spectrum Bandwidth Measurement

4.3.1. Limit

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

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 spectrum analyzer.

6dB Spectrum Bandwidth	
Spectrum Parameters	**Setting**
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RBW	100kHz
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.3.3. Test Procedures

1. The transmitter was conducted to the spectrum analyzer in peak hold mode.
2. Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (C) Emission Bandwidth.
3. Multiple antenna system was performed in accordance with KDB662911 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.

4.3.4. Test Setup Layout

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

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 6dB Spectrum Bandwidth

<For 1TX>

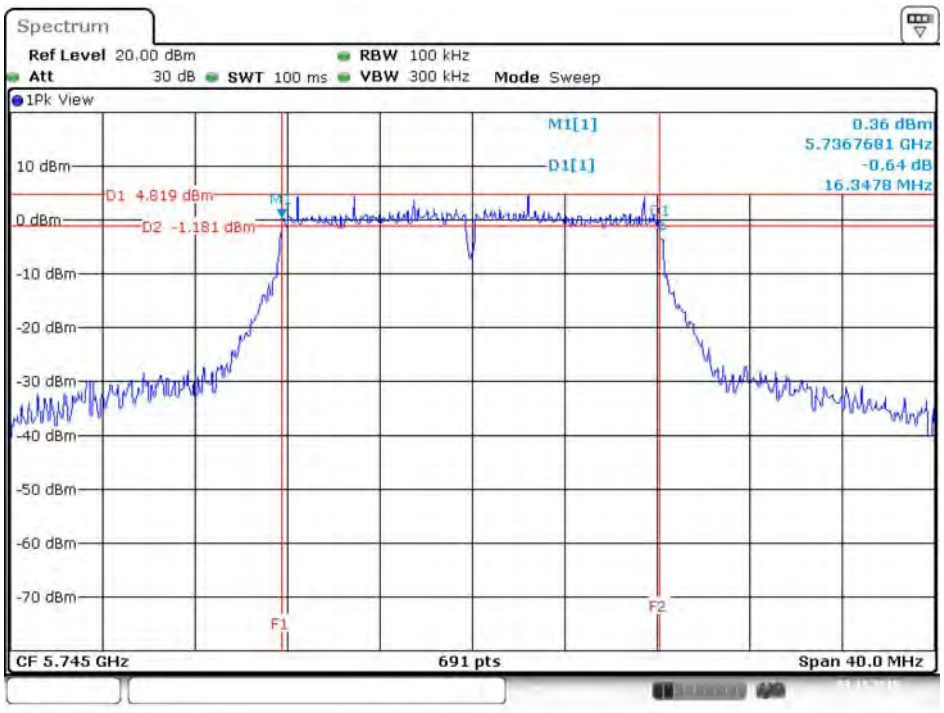
Temperature	25℃	Humidity	58%
Test Engineer	Mars Lin		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	16.35	500	Complies
	5785 MHz	16.35	500	Complies
	5825 MHz	16.35	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	17.57	500	Complies
	5785 MHz	17.57	500	Complies
	5825 MHz	17.57	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	36.06	500	Complies
	5795 MHz	36.29	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	75.65	500	Complies

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

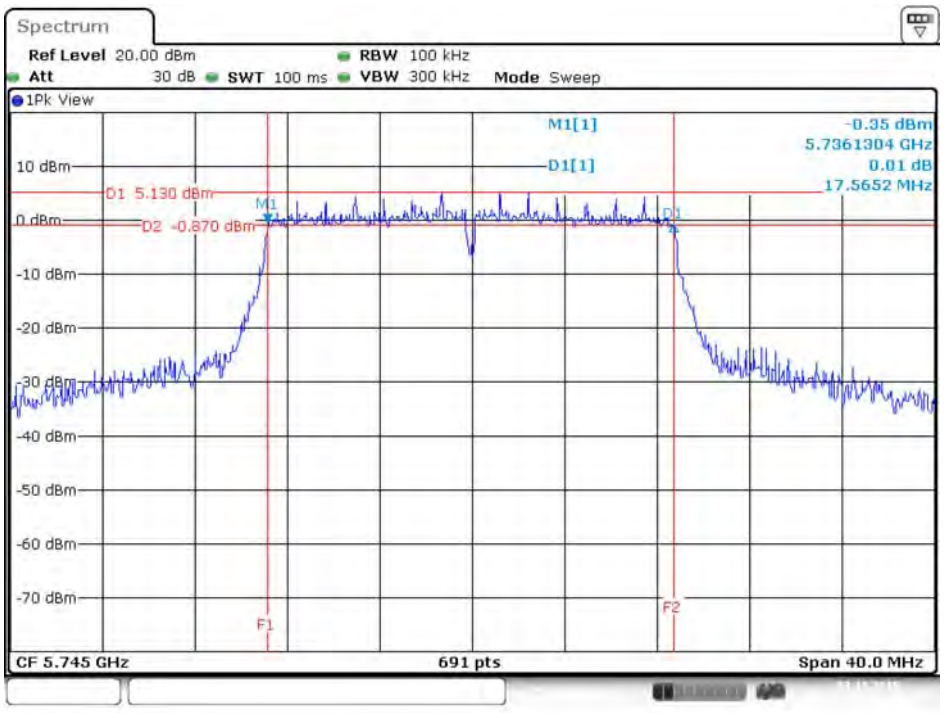
For plots, only the channel with worse result was shown.

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5745 MHz



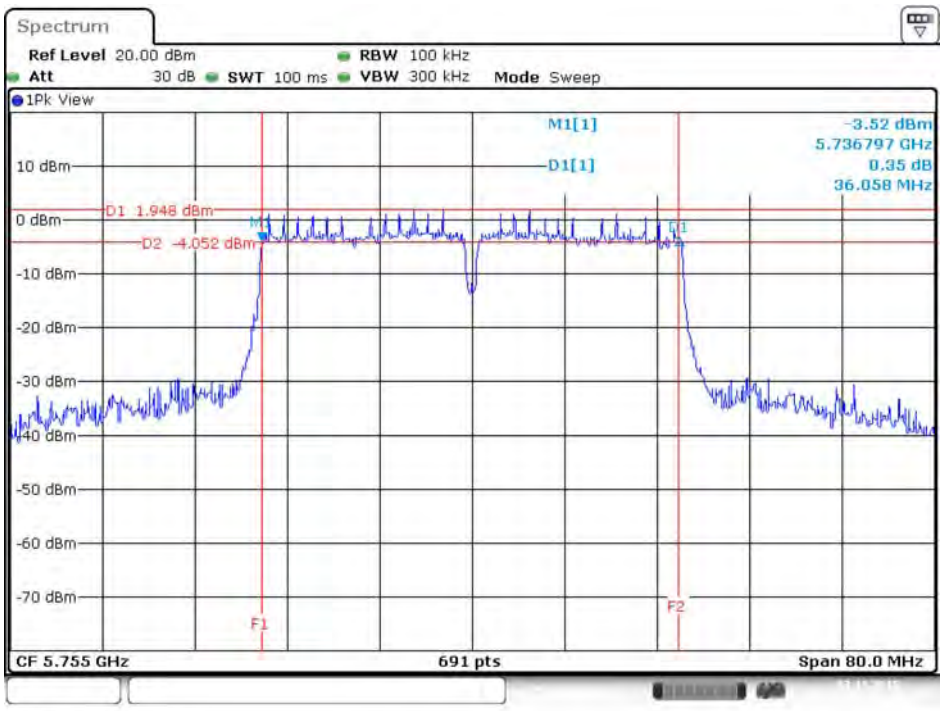
Date: 3.NOV.2015 16:17:50

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5745 MHz



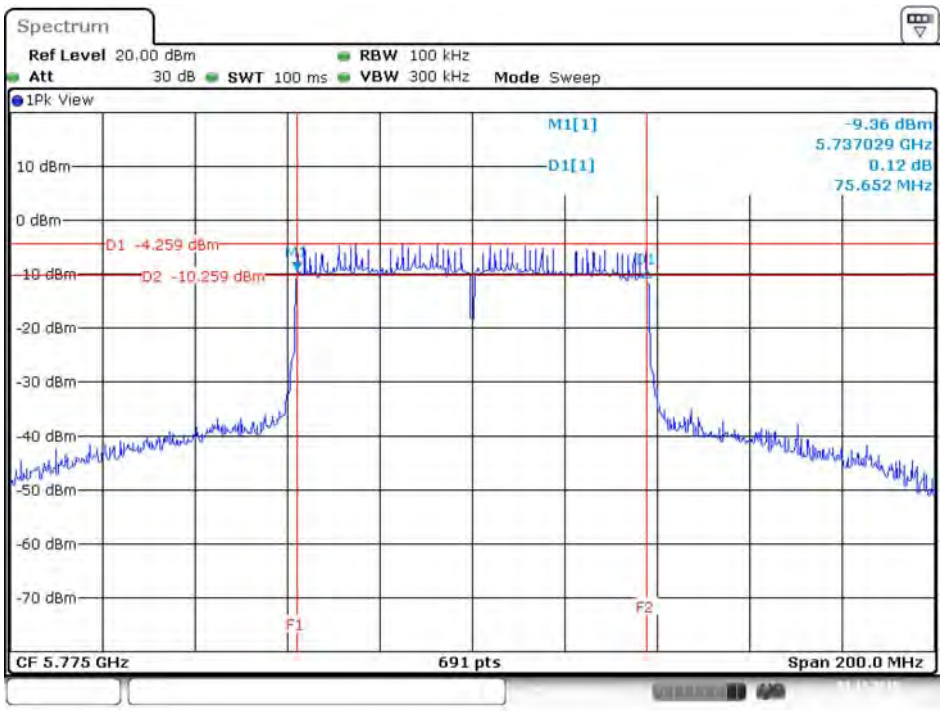
Date: 3.NOV.2015 16:16:10

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5755MHz



Date: 3.NOV.2015 16:15:02

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5775 MHz



Date: 3.NOV.2015 16:13:48

<For 2TX>

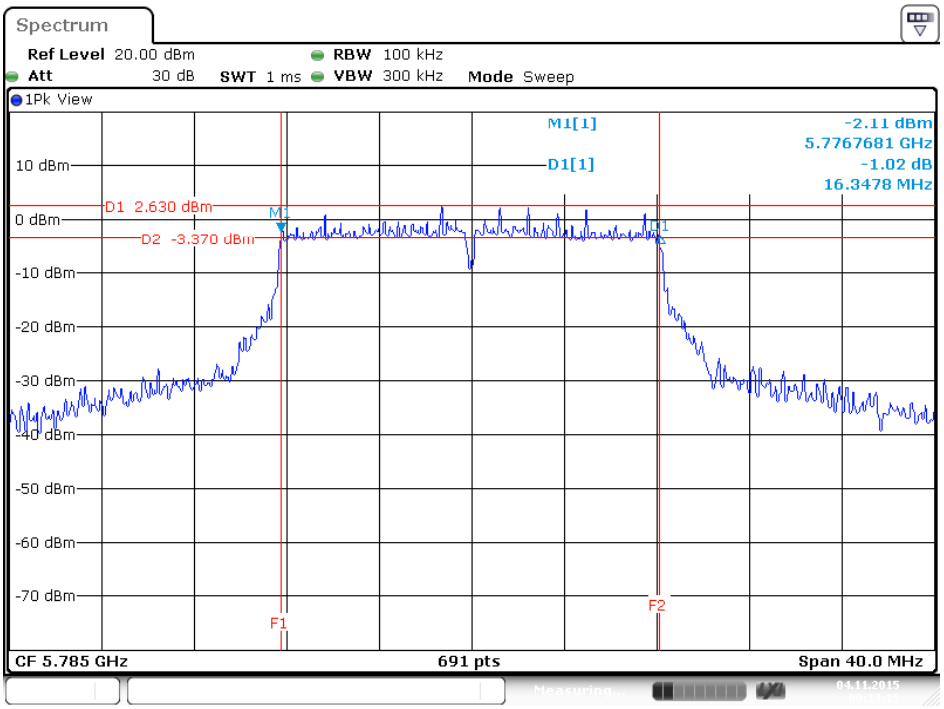
Temperature	25℃	Humidity	58%
Test Engineer	Mars Lin		

Mode	Frequency	6dB Bandwidth (MHz)		Min. Limit (kHz)	Test Result
		Chain 1	Chain 2		
802.11a	5745 MHz	16.46	16.46	500	Complies
	5785 MHz	16.34	16.34	500	Complies
	5825 MHz	16.34	16.28	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	17.62	17.62	500	Complies
	5785 MHz	17.62	16.92	500	Complies
	5825 MHz	17.62	17.15	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	36.63	36.63	500	Complies
	5795 MHz	36.52	36.66	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	75.94	75.94	500	Complies

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

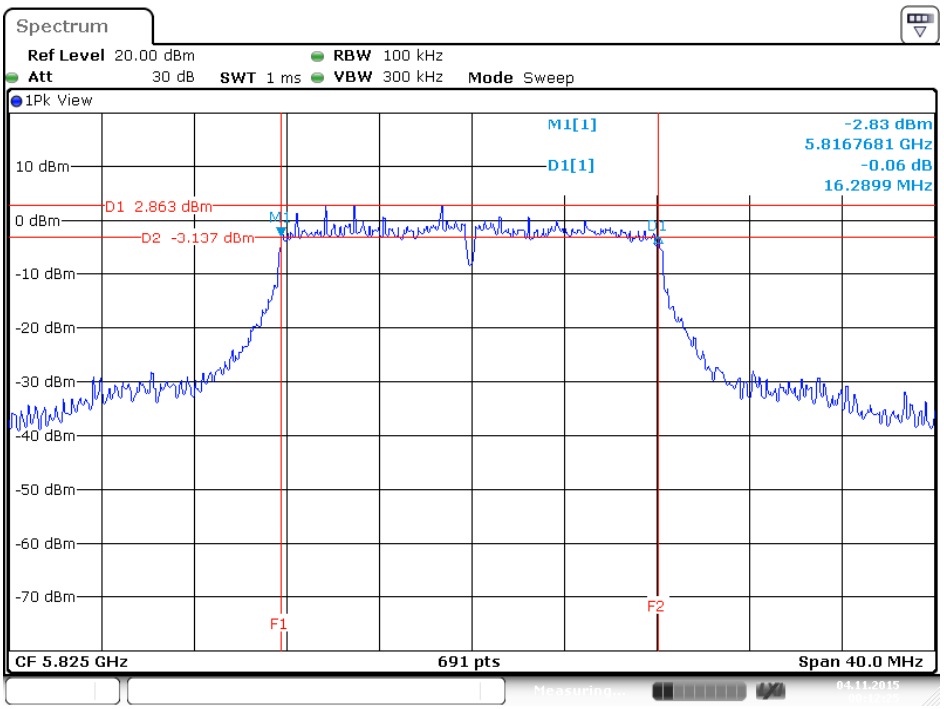
For plots, only the channel with worse result was shown.

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5785 MHz



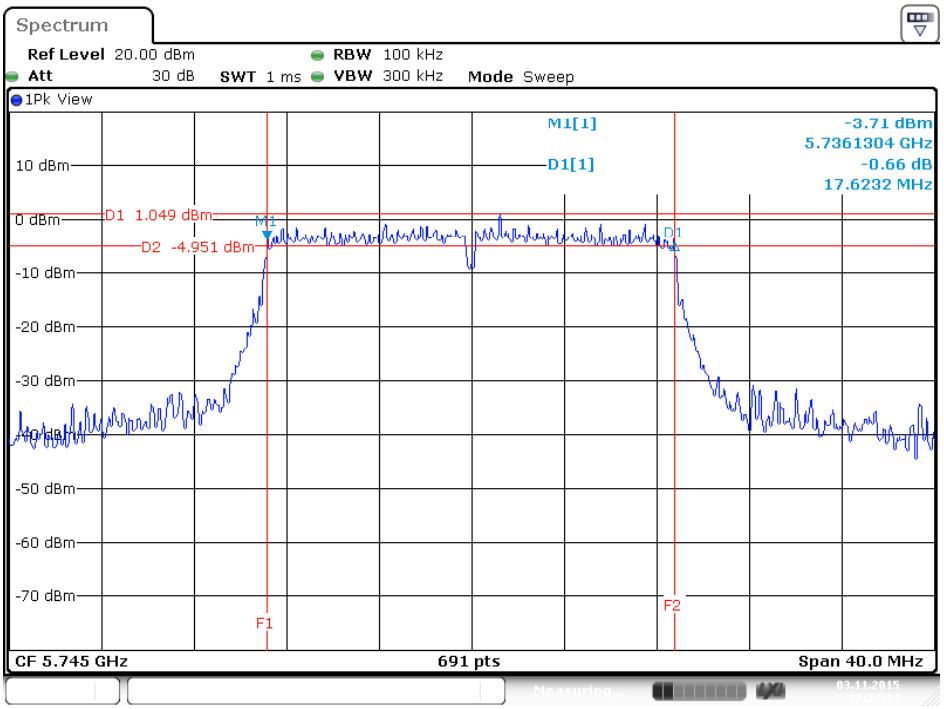
Date: 4.NOV.2015 00:14:15

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 2 / 5825 MHz



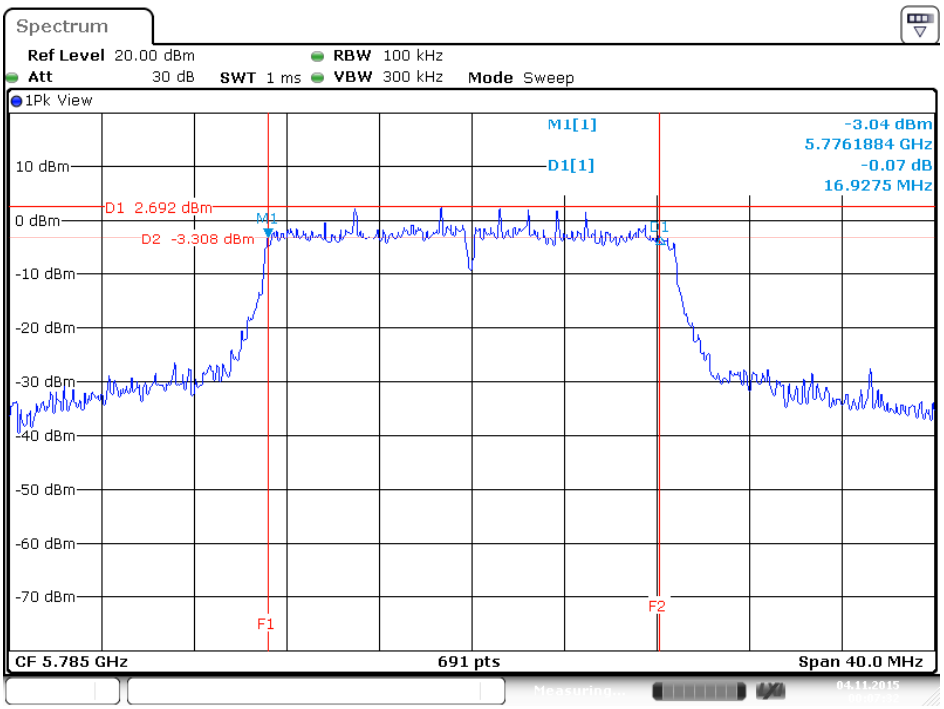
Date: 4.NOV.2015 00:12:25

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5745 MHz



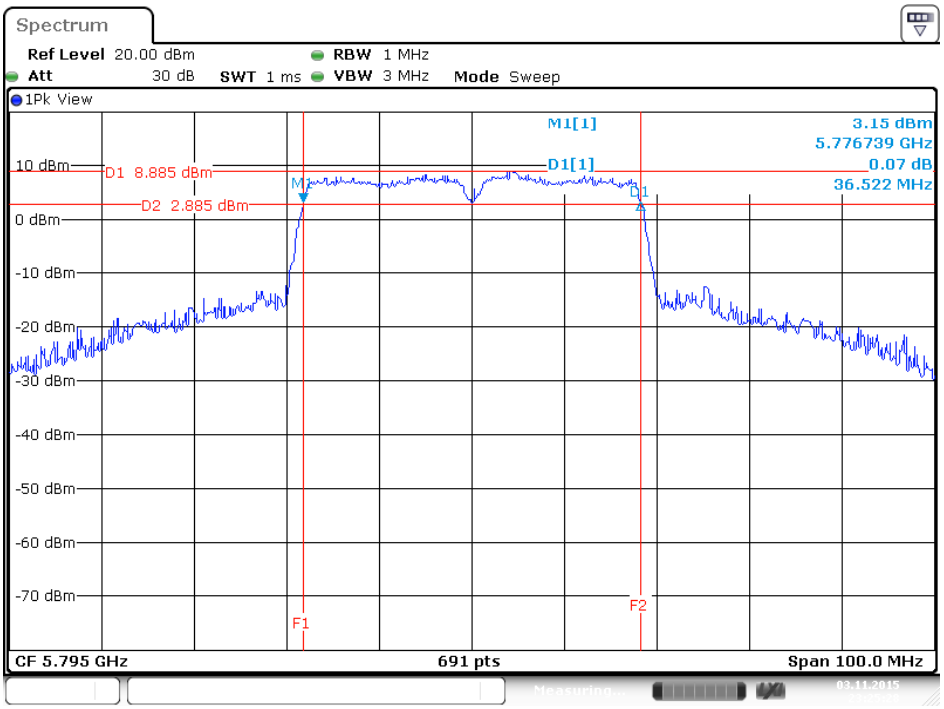
Date: 3.NOV.2015 23:27:14

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5785 MHz



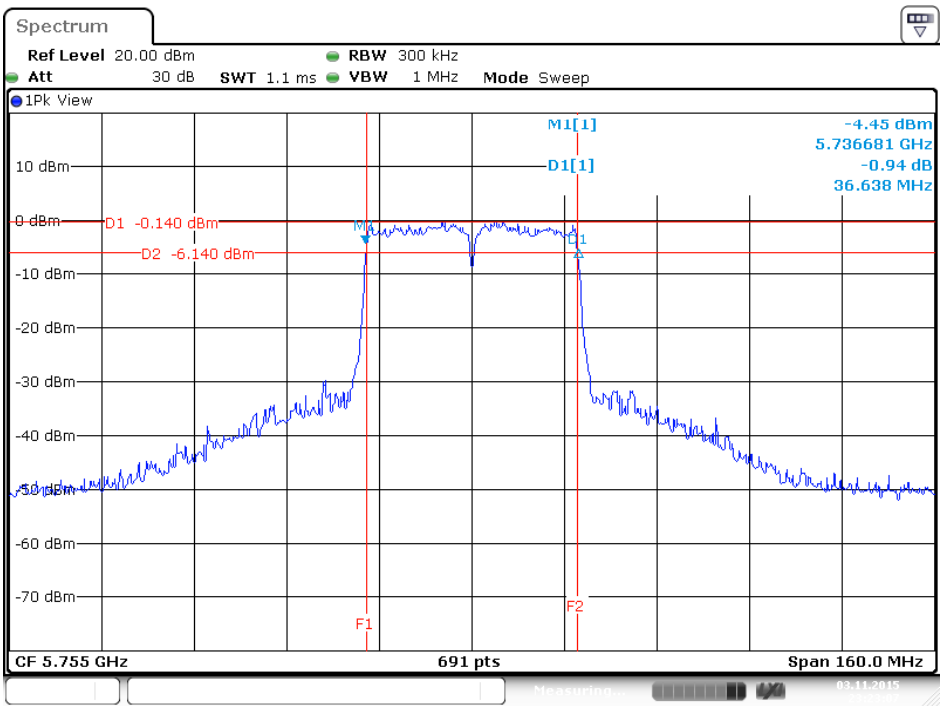
Date: 4.NOV.2015 00:07:32

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5795MHz



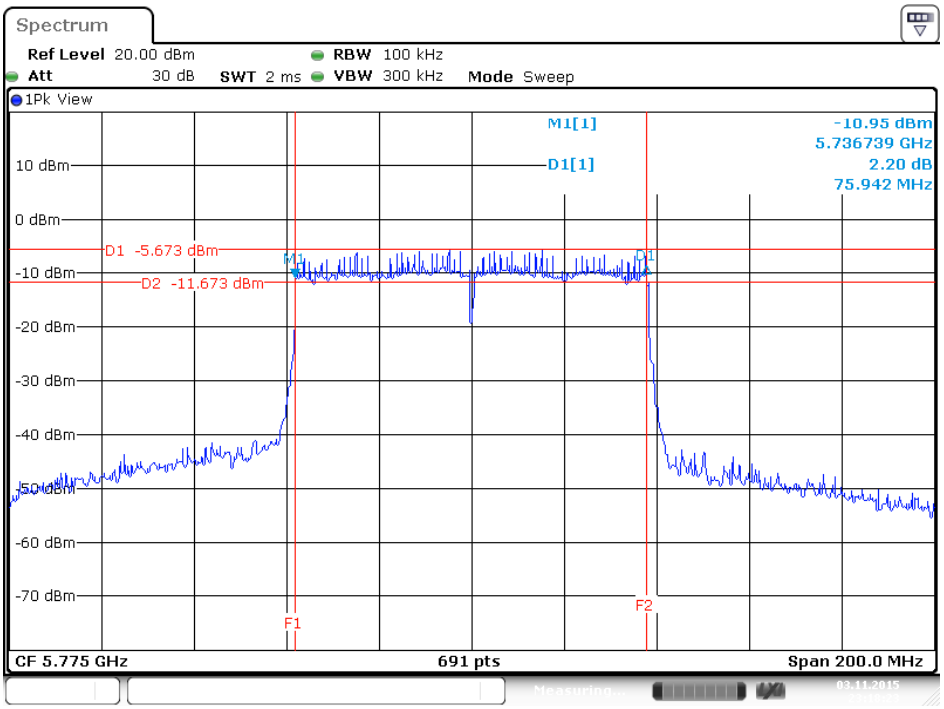
Date: 3.NOV.2015 23:25:28

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5755MHz



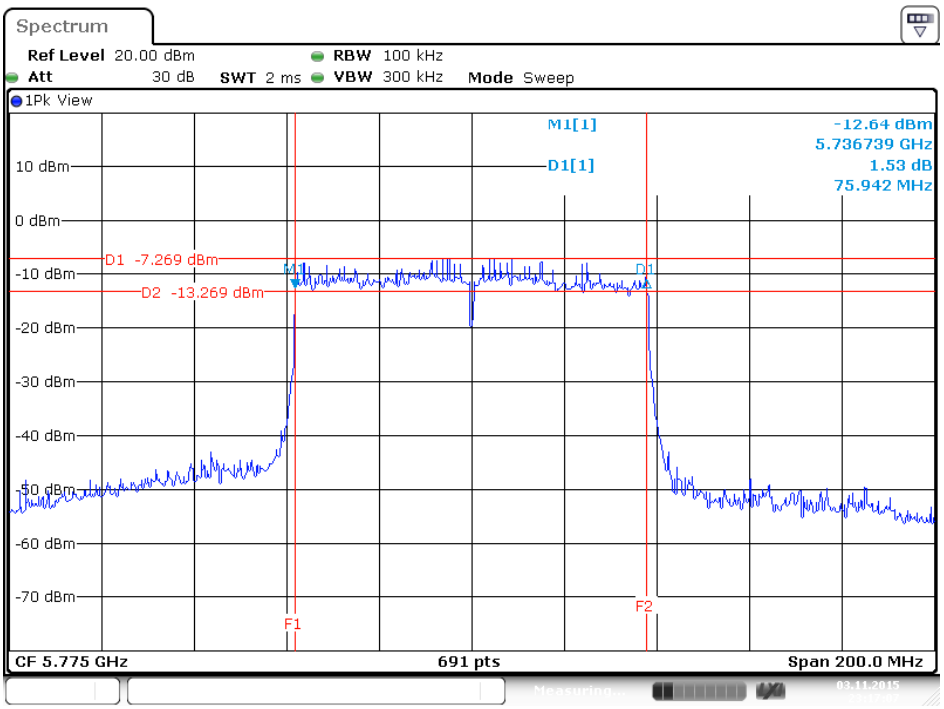
Date: 3.NOV.2015 23:23:07

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5775 MHz



Date: 3.NOV.2015 23:18:23

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5775 MHz



Date: 3.NOV.2015 23:17:07

4.4. Maximum Conducted Output Power Measurement

4.4.1. Limit

Frequency Band			Limit
☒	5.15~5.25 GHz		
	Operating Mode		
	☐	Outdoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
	☒	Indoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
	☐	Fixed point-to-point access points	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.
	☐	Mobile and portable client devices	The maximum conducted output power over the frequency band of operation shall not exceed 250 mW (24dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

☒	5.725~5.85 GHz	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.

4.4.2. Measuring Instruments and Setting

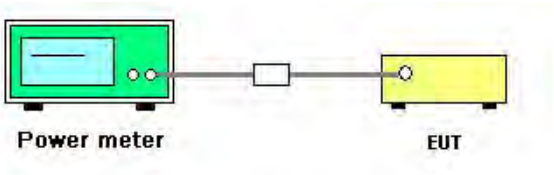
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

Power Meter Parameter	Setting
Detector	AVERAGE

4.4.3. Test Procedures

1. The transmitter output (antenna port) was connected to the power meter.
2. Test was performed in accordance with KDB789033 D02 v01r01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (E) Maximum conducted output power =>3. Measurement using a Power Meter (PM) =>b) Method PM-G (Measurement using a gated RF average power meter).
3. Multiple antenna systems was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. When measuring maximum conducted output power with multiple antenna systems, add every result of the values by mathematic formula.

4.4.4. Test Setup Layout



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 Maximum Conducted Output Power

<For 1TX>

Temperature	25℃	Humidity	58%
Test Engineer	Mars Lin	Test Date	Oct. 29, 2015~Dec. 23, 2015

Mode	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
802.11a	5180 MHz	18.74	30.00	Complies
	5200 MHz	18.85	30.00	Complies
	5240 MHz	18.88	30.00	Complies
	5745 MHz	18.65	30.00	Complies
	5785 MHz	18.85	30.00	Complies
	5825 MHz	18.71	30.00	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	18.33	30.00	Complies
	5200 MHz	18.92	30.00	Complies
	5240 MHz	18.73	30.00	Complies
	5745 MHz	18.79	30.00	Complies
	5785 MHz	18.82	30.00	Complies
	5825 MHz	18.88	30.00	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	18.88	30.00	Complies
	5230 MHz	18.89	30.00	Complies
	5755 MHz	18.76	30.00	Complies
	5795 MHz	18.91	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	17.96	30.00	Complies
	5775 MHz	17.48	30.00	Complies

<For 2TX>

Temperature	25°C	Humidity	58%
Test Engineer	Mars Lin	Test Date	Oct. 29, 2015~Dec. 23, 2015

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11a	5180 MHz	18.64	18.84	21.75	30.00	Complies
	5200 MHz	18.73	18.94	21.85	30.00	Complies
	5240 MHz	18.84	18.99	21.93	30.00	Complies
	5745 MHz	18.14	18.37	21.27	30.00	Complies
	5785 MHz	18.28	18.53	21.42	30.00	Complies
	5825 MHz	18.63	18.74	21.70	30.00	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	18.33	18.86	21.61	30.00	Complies
	5200 MHz	18.36	18.83	21.61	30.00	Complies
	5240 MHz	18.43	18.91	21.69	30.00	Complies
	5745 MHz	17.23	17.53	20.39	30.00	Complies
	5785 MHz	18.65	18.76	21.72	30.00	Complies
	5825 MHz	18.52	18.68	21.61	30.00	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	16.97	17.13	20.06	30.00	Complies
	5230 MHz	18.11	18.68	21.41	30.00	Complies
	5755 MHz	16.86	17.01	19.95	30.00	Complies
	5795 MHz	18.71	18.81	21.77	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	16.37	16.59	19.49	30.00	Complies
	5775 MHz	15.66	16.01	18.85	30.00	Complies

4.5. Power Spectral Density Measurement

4.5.1. Limit

The following table is power spectral density limits and decrease power density limit rule refer to section 4.4.1.

Frequency Band			Limit
☒	5.15~5.25 GHz		
	Operating Mode		
	☐	Outdoor access point	17 dBm/MHz
	☒	Indoor access point	17 dBm/MHz
	☐	Fixed point-to-point access points	17 dBm/MHz
	☐	Mobile and portable client devices	11 dBm/MHz
☒	5.725~5.85 GHz		30 dBm/500kHz

4.5.2. Measuring Instruments and Setting

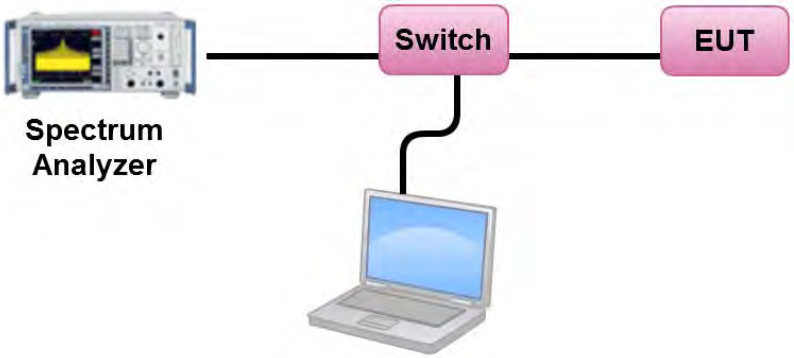
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1000 kHz
VBW	3000 kHz
Detector	RMS
Trace	AVERAGE
Sweep Time	Auto
Trace Average	100 times
Note: If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.	

4.5.3. Test Procedures

1. The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.
2. Test was performed in accordance with KDB789033 D02 v01r01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (F) Maximum Power Spectral Density (PSD).
3. Multiple antenna systems was performed in accordance KDB662911 D01 v02r01 in-Band Power Spectral Density (PSD) Measurements (a) Measure and sum the spectra across the outputs.
4. When measuring first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3 and so on up to the Nth output to obtain the value for the first frequency bin of the summed spectrum. The summed spectrum value for each of the other frequency bins is computed in the same way.
5. For 5.725~5.85 GHz, the measured result of PSD level must add 10log(500kHz/RBW) and the final result should ≤ 30 dBm.

4.5.4. Test Setup Layout



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. Test Result of Power Spectral Density

<For 1TX>

Temperature	25℃	Humidity	58%
Test Engineer	Mars Lin	Test Mode	Oct. 29, 2015~Dec. 23, 2015

Configuration IEEE 802.11a / Chain 1

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	5.46	17.00	Complies
40	5200 MHz	5.62	17.00	Complies
48	5240 MHz	5.60	17.00	Complies

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	5.32	-3.01	2.31	30.00	Complies
157	5785 MHz	5.26	-3.01	2.25	30.00	Complies
165	5825 MHz	5.50	-3.01	2.49	30.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	5.35	17.00	Complies
40	5200 MHz	5.48	17.00	Complies
48	5240 MHz	5.79	17.00	Complies

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	5.82	-3.01	2.81	30.00	Complies
157	5785 MHz	5.60	-3.01	2.59	30.00	Complies
165	5825 MHz	5.67	-3.01	2.66	30.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190 MHz	2.90	17.00	Complies
46	5230 MHz	3.00	17.00	Complies

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
151	5755 MHz	2.42	-3.01	-0.59	30.00	Complies
159	5795 MHz	2.66	-3.01	-0.35	30.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1

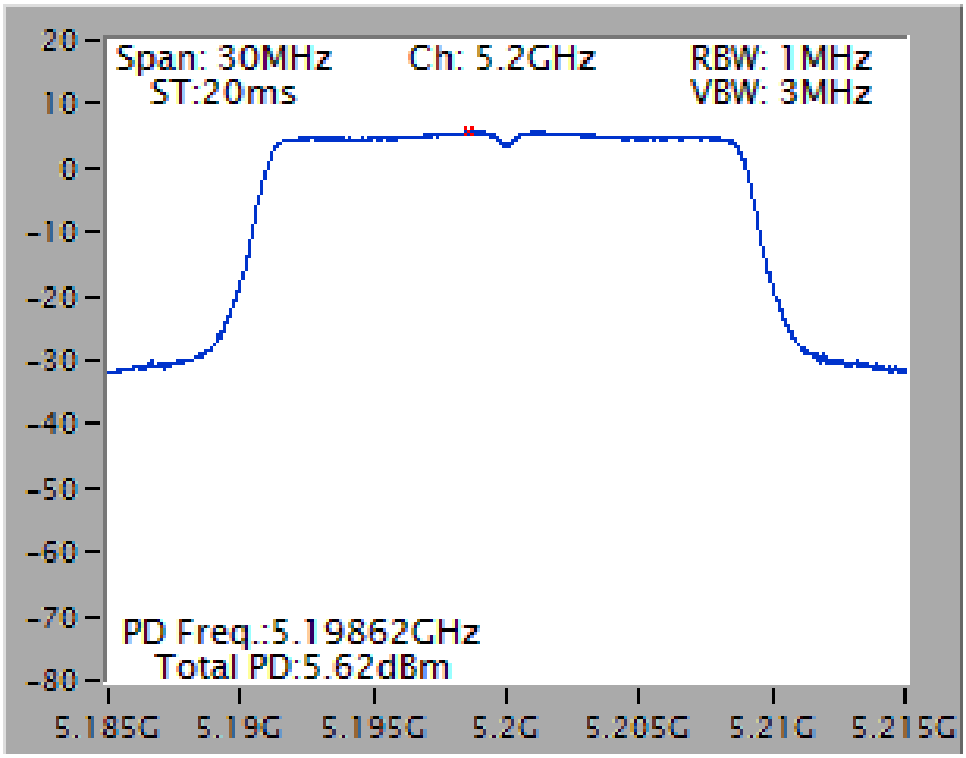
Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
42	5210 MHz	-1.45	17.00	Complies

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
155	5775 MHz	-2.09	-3.01	-5.10	30.00	Complies

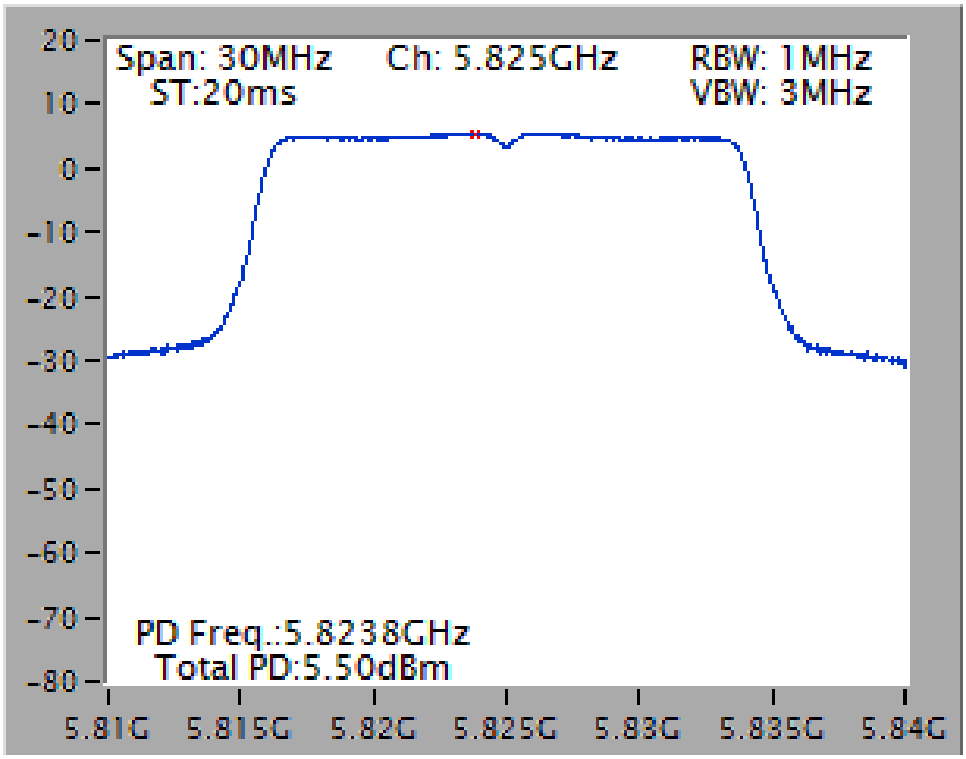
Note: All the test values were listed in the report.

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

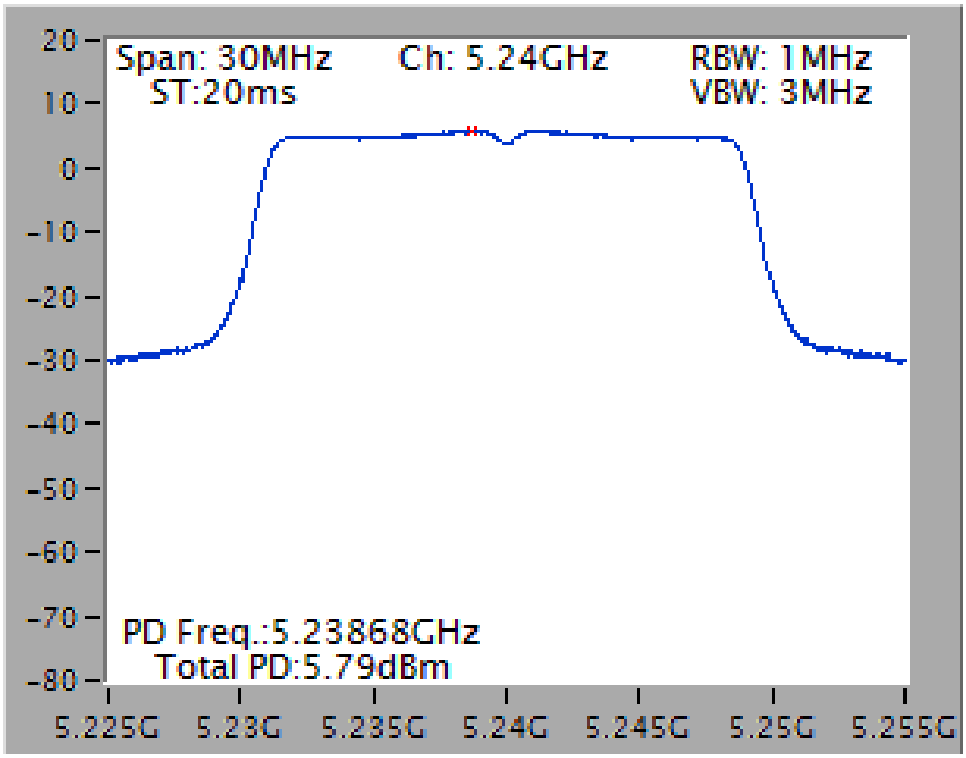
Power Density Plot on Configuration IEEE 802.11a / Chain 1 / 5200 MHz



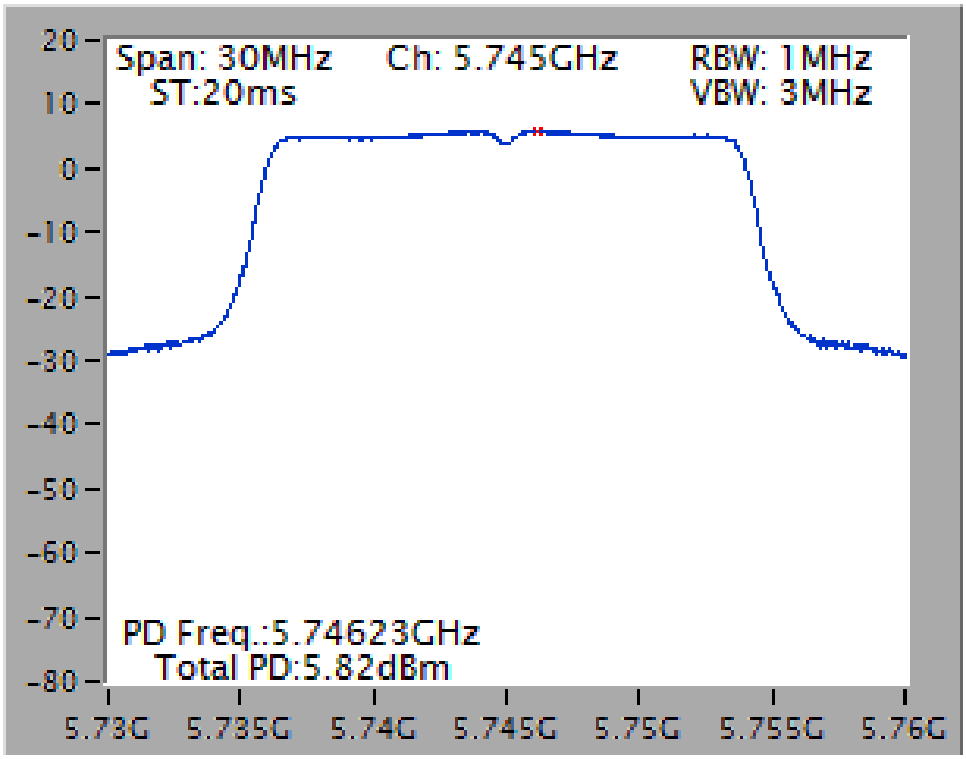
Power Density Plot on Configuration IEEE 802.11a / Chain 1 / 5825 MHz



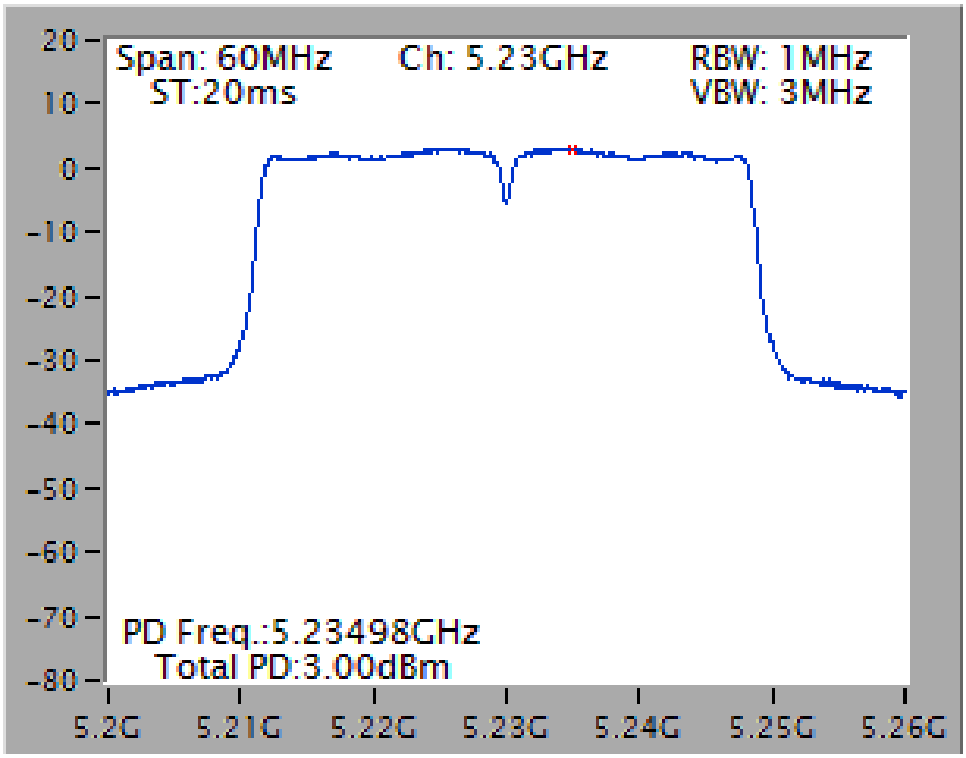
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5240 MHz



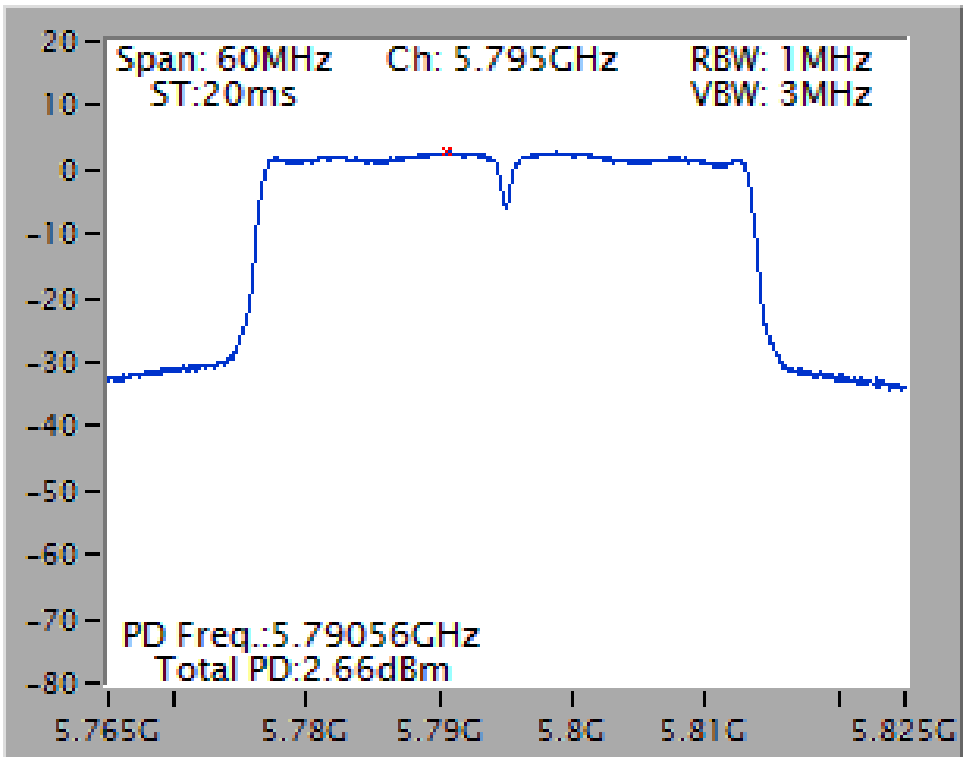
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5745 MHz



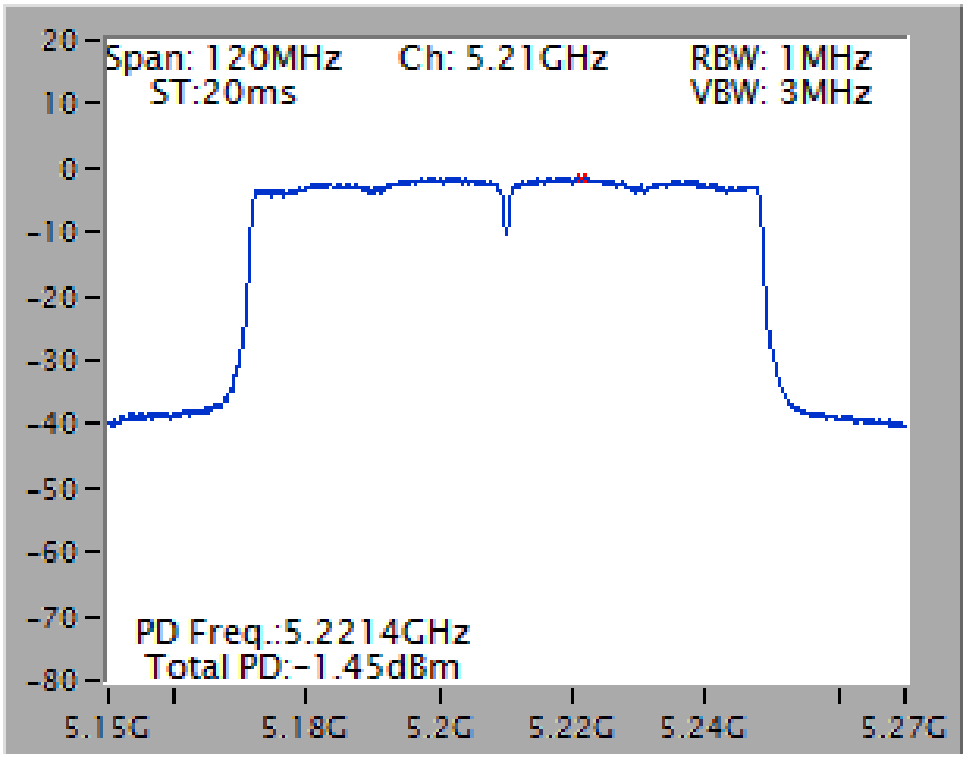
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5230 MHz



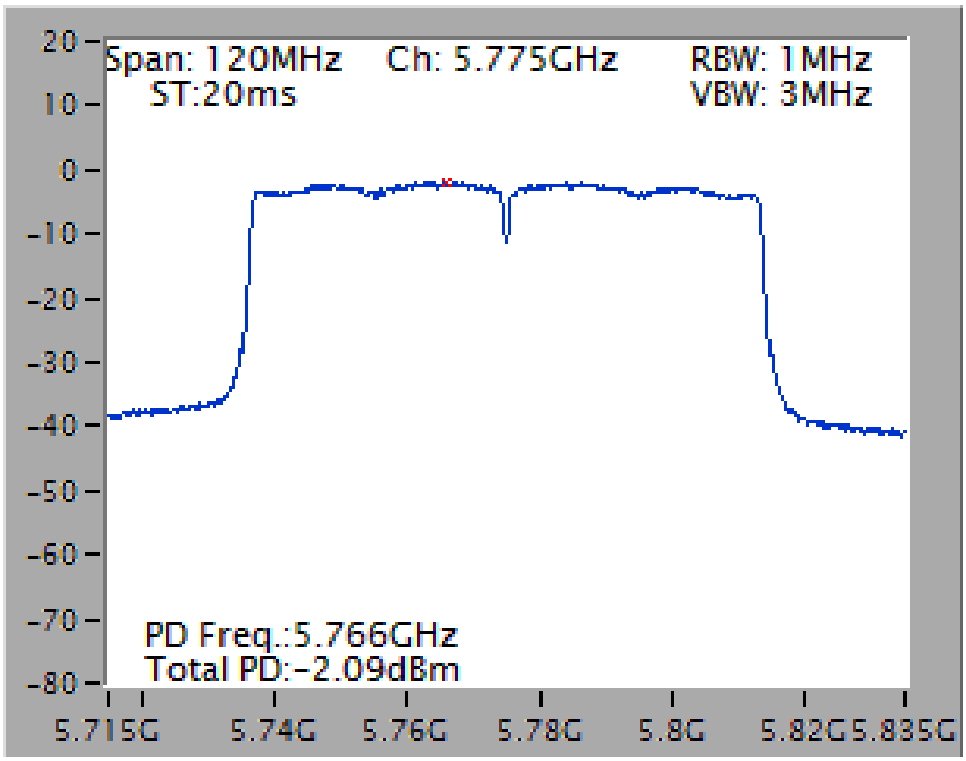
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5795 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5210 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5775 MHz



<For 2TX>

Temperature	25°C	Humidity	58%
Test Engineer	Mars Lin	Test Mode	Oct. 29, 2015~Dec. 23, 2015

Configuration IEEE 802.11a / Chain 1 + Chain 2

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	8.34	16.69	Complies
40	5200 MHz	8.52	16.69	Complies
48	5240 MHz	8.56	16.69	Complies

Note: $Directional\,Gain = 10\log\left[\frac{\sum_{j=1}^{Nss}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =6.31dBi, so limit =17-(6.31-6)=16.96 (dBm/MHz)

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	8.59	-3.01	5.58	29.69	Complies
157	5785 MHz	8.57	-3.01	5.56	29.69	Complies
165	5825 MHz	8.52	-3.01	5.51	29.69	Complies

Note: $Directional\,Gain = 10\log\left[\frac{\sum_{j=1}^{Nss}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =6.31dBi, so limit =30-(6.31-6)=29.69 (dBm/500kHz)

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	8.77	16.69	Complies
40	5200 MHz	8.91	16.69	Complies
48	5240 MHz	8.69	16.69	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{Nss}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =6.31dBi, so limit =17-(6.31-6)=16.96 (dBm/MHz)

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	7.80	-3.01	4.79	29.69	Complies
157	5785 MHz	9.24	-3.01	6.23	29.69	Complies
165	5825 MHz	9.14	-3.01	6.13	29.69	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{Nss}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =6.31dBi, so limit =30-(6.31-6)=29.69 (dBm/500kHz)

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190 MHz	4.44	16.69	Complies
46	5230 MHz	5.66	16.69	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{Nss}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =6.31dBi, so limit =17-(6.31-6)=16.96 (dBm/MHz)

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
151	5755 MHz	4.15	-3.01	1.14	29.69	Complies
159	5795 MHz	6.10	-3.01	3.09	29.69	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{Nss}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =6.31dBi, so limit =30-(6.31-6)=29.69 (dBm/500kHz)

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
42	5210 MHz	0.37	16.69	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{Nss}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =6.31dBi, so limit =17-(6.31-6)=16.96 (dBm/MHz)

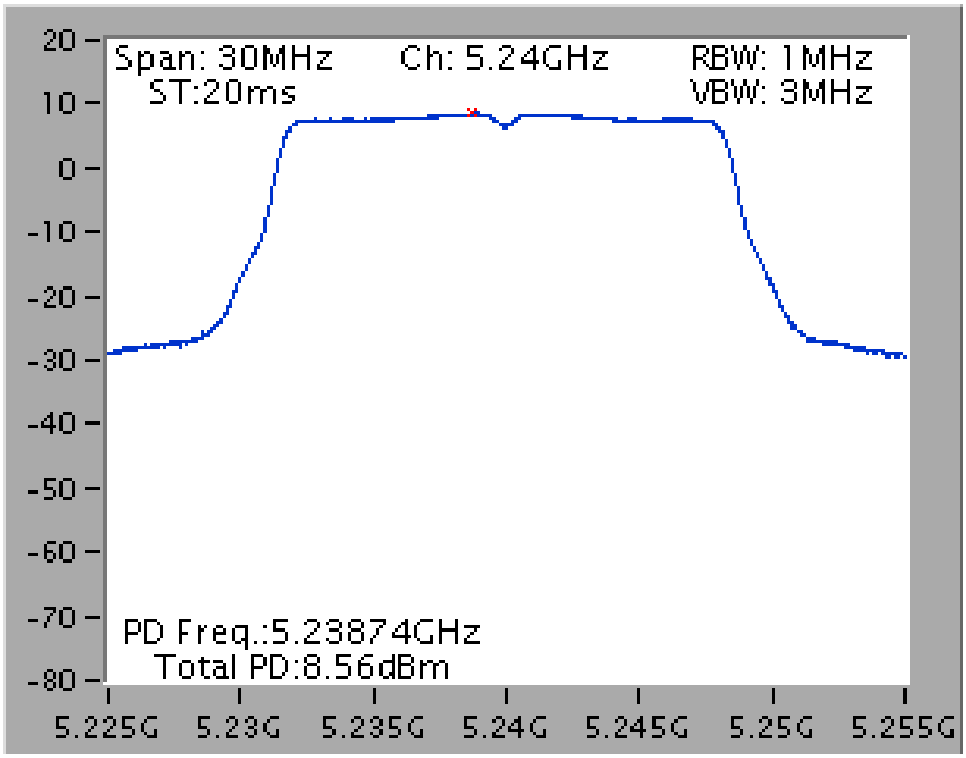
Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
155	5775 MHz	-0.20	-3.01	-3.21	29.69	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{Nss}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =6.31dBi, so limit =30-(6.31-6)=29.69 (dBm/500kHz)

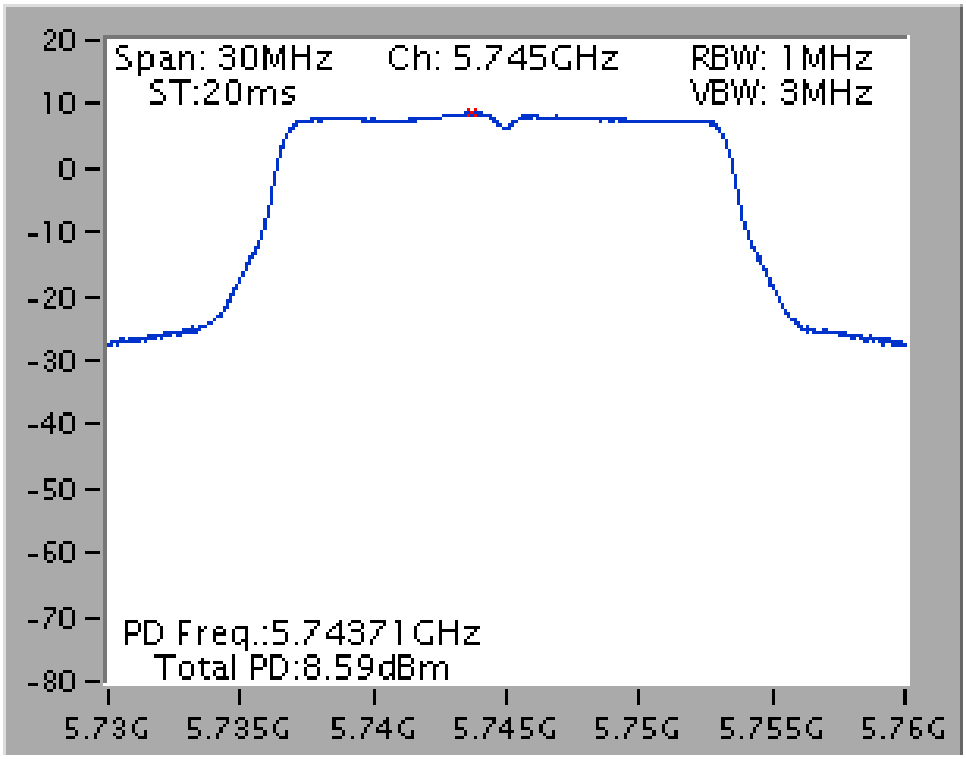
Note: All the test values were listed in the report.

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

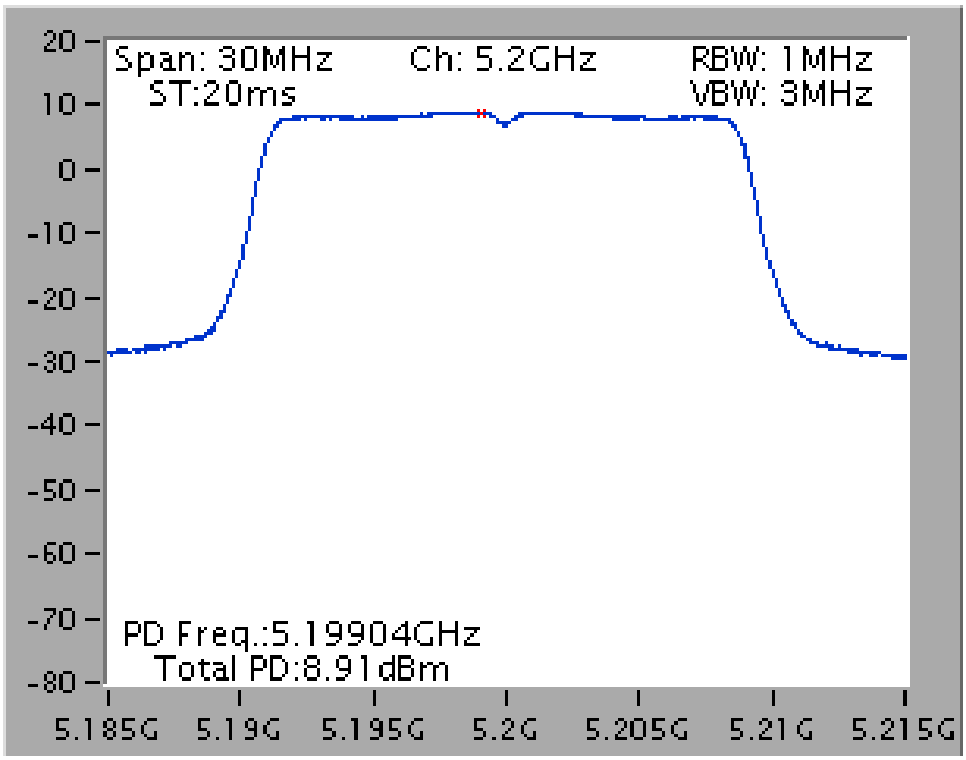
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5240 MHz



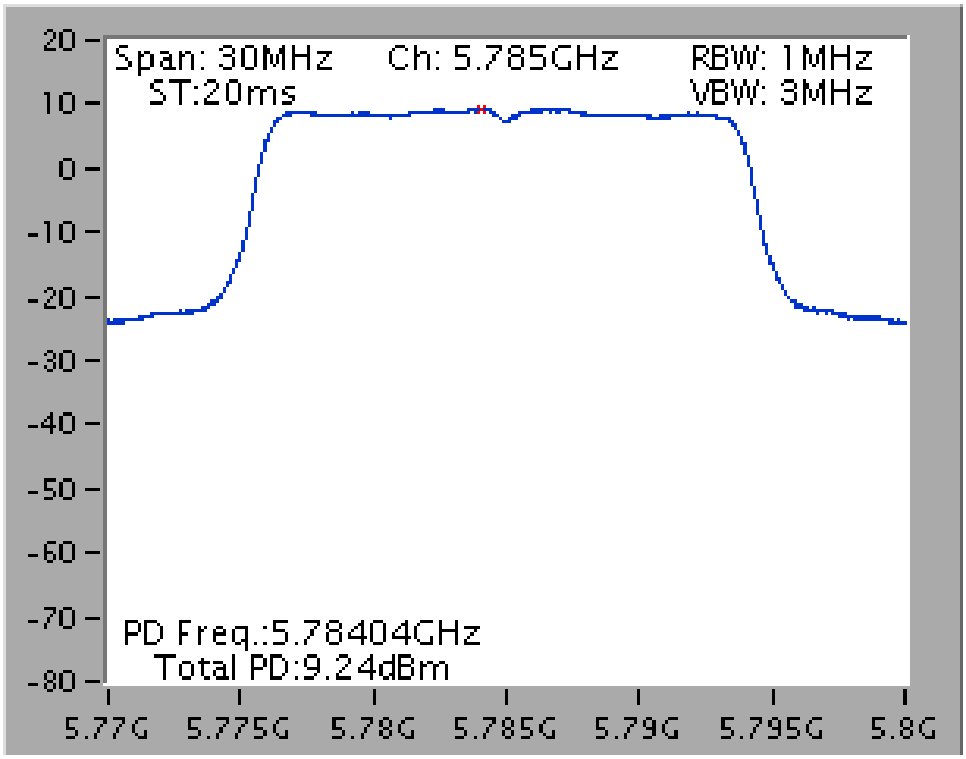
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5745 MHz



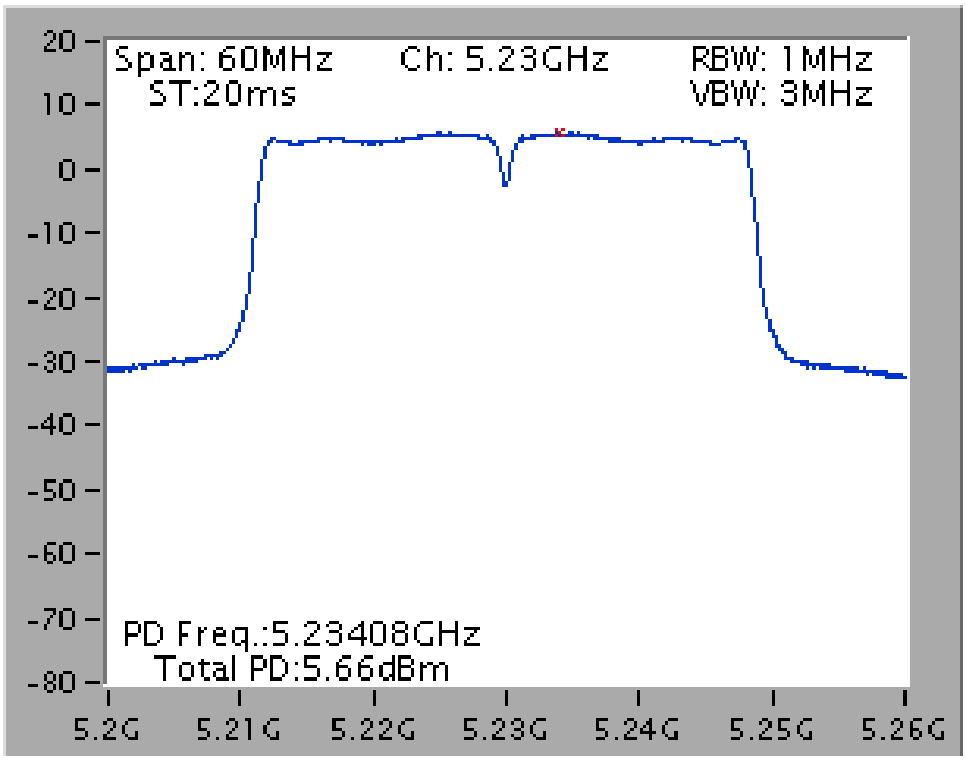
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5200 MHz



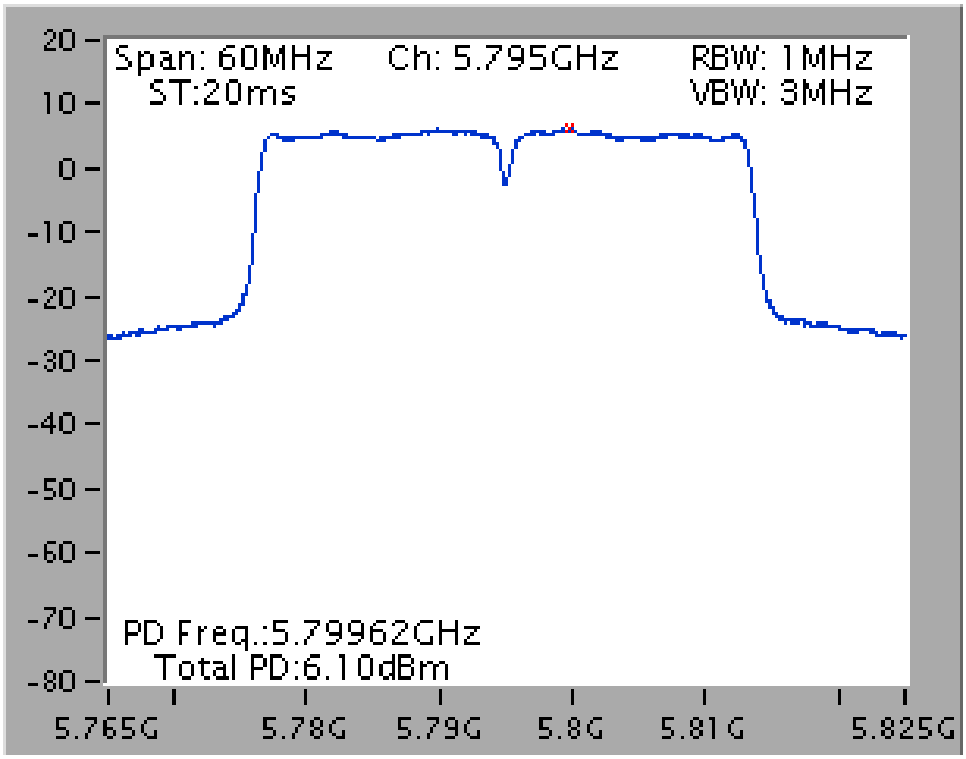
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5785 MHz



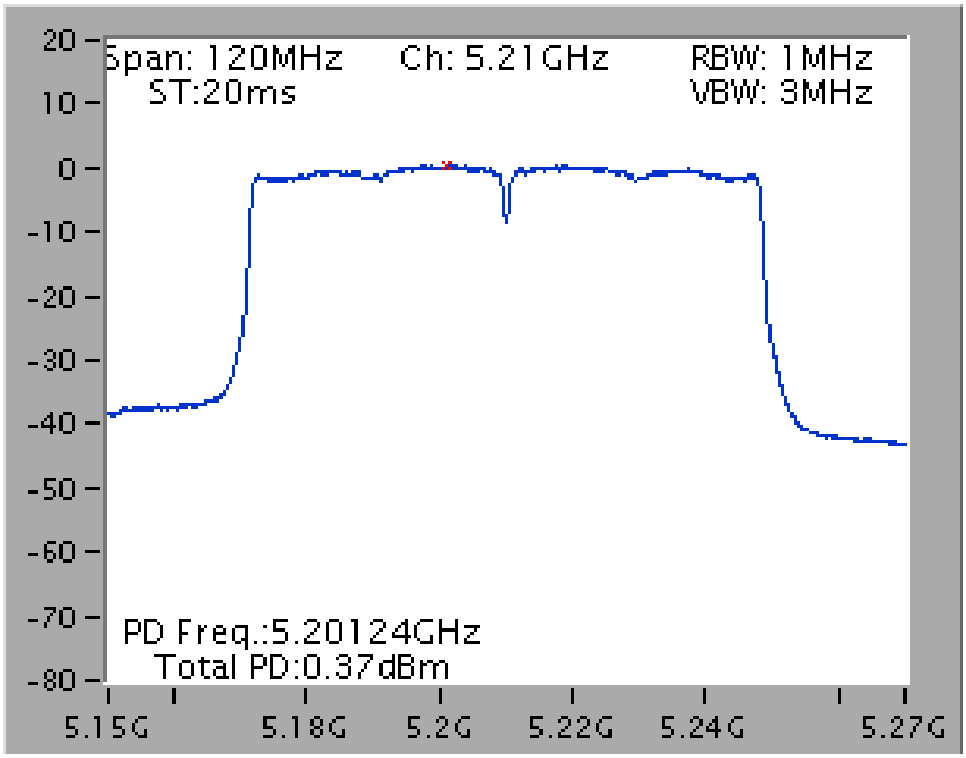
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5230 MHz



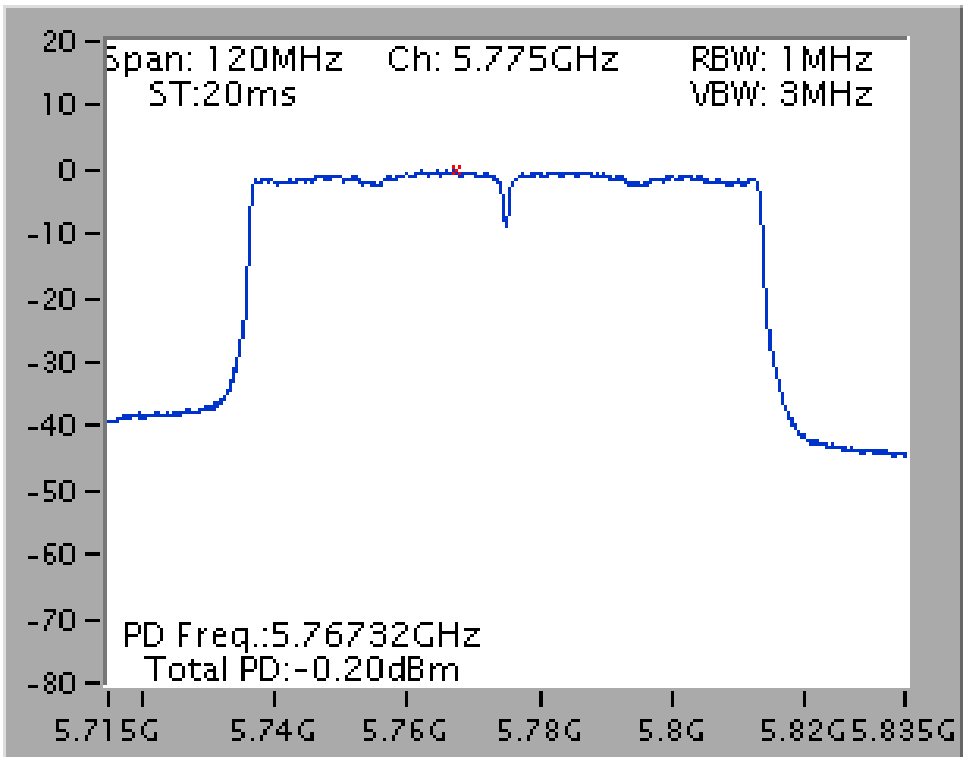
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5795 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5210 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5775 MHz



4.6. Radiated Emissions Measurement

4.6.1. Limit

For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

In addition, 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 spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40 GHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for peak

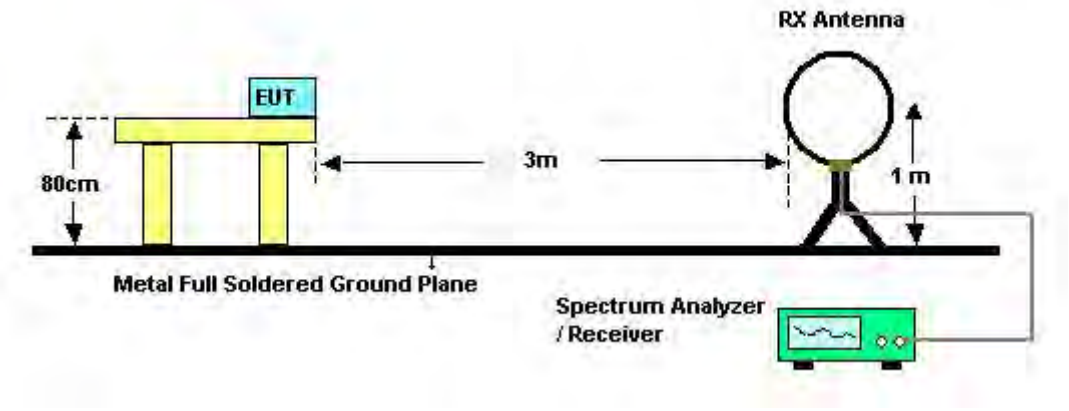
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RBW 120kHz for QP

4.6.3. Test Procedures

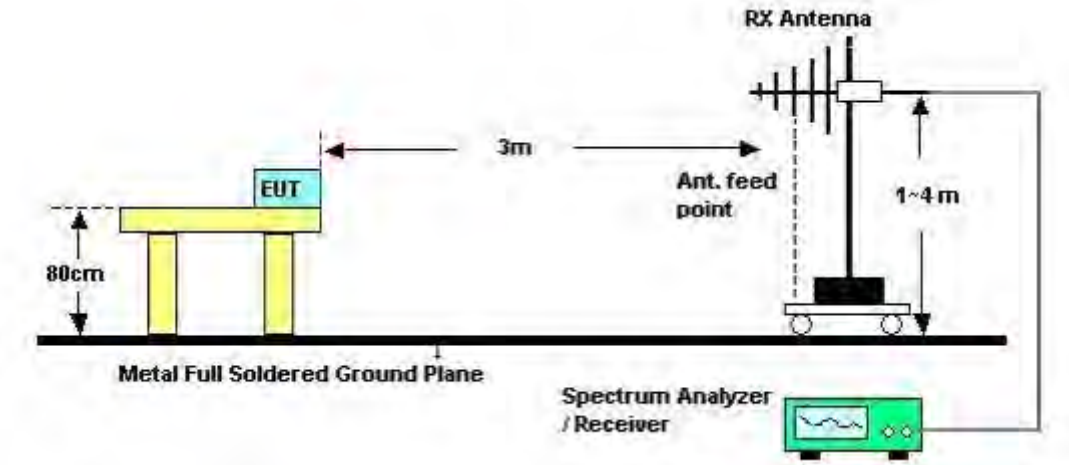
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 1m & 3m far away from the turntable.
2. Power on the EUT and all the supporting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

4.6.4. Test Setup Layout

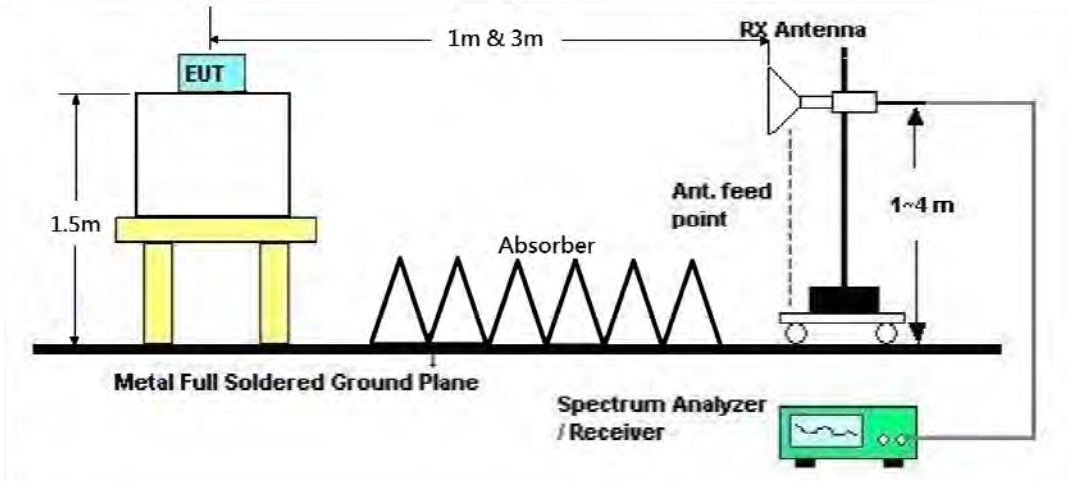
For Radiated Emissions: 9kHz ~30MHz



For Radiated Emissions: 30MHz~1GHz



For Radiated Emissions: Above 1GHz



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

Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	Normal Link
Test Date	Dec. 07, 2015	Test Mode	Mode 2

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

Note:

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

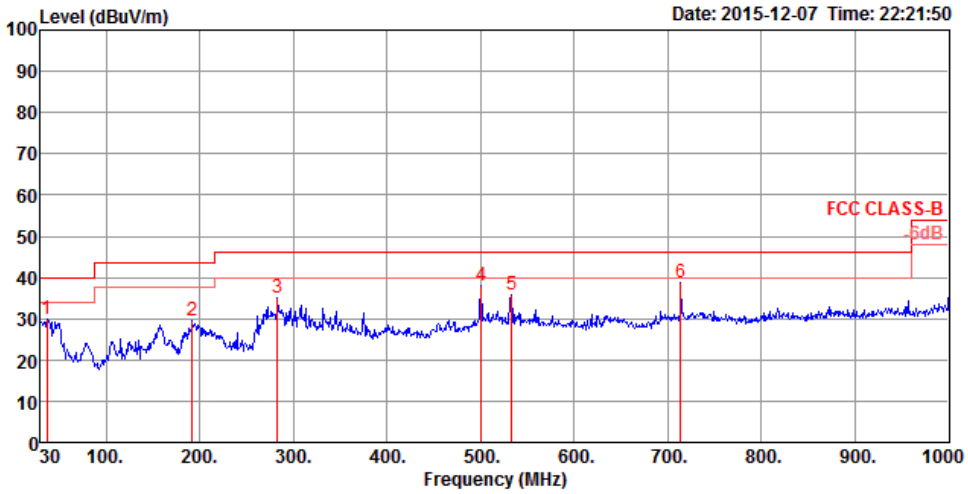
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

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

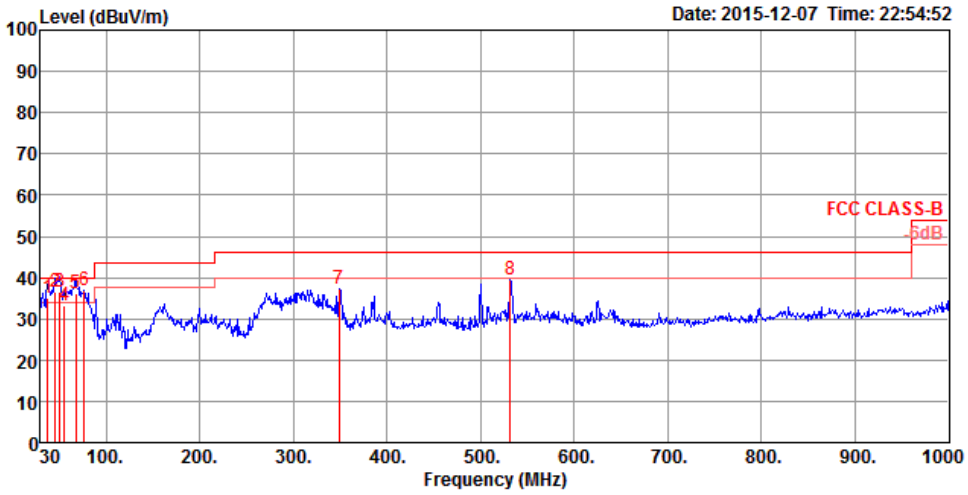
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	Normal Link
Test Mode	Mode 2		

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	36.79	29.81	40.00	-10.19	45.69	0.53	15.99	32.40	200	360	Peak	HORIZONTAL
2	191.99	29.49	43.50	-14.01	50.66	1.20	9.96	32.33	200	360	Peak	HORIZONTAL
3	283.17	35.03	46.00	-10.97	52.26	1.43	13.63	32.29	200	360	Peak	HORIZONTAL
4	500.45	38.01	46.00	-7.99	50.30	1.94	18.12	32.35	200	360	Peak	HORIZONTAL
5	533.43	35.87	46.00	-10.13	47.67	2.00	18.57	32.37	200	360	Peak	HORIZONTAL
6	713.85	38.84	46.00	-7.16	48.90	2.30	19.98	32.34	200	360	Peak	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	37.76	34.99	40.00	-5.01	51.50	0.53	15.36	32.40	200	0	QP	VERTICAL
2	45.52	36.37	40.00	-3.63	57.10	0.60	11.08	32.41	200	0	QP	VERTICAL
3	50.37	36.71	40.00	-3.29	59.50	0.61	9.01	32.41	200	0	QP	VERTICAL
4	55.22	33.21	40.00	-6.79	57.11	0.65	7.86	32.41	200	0	QP	VERTICAL
5	67.83	36.13	40.00	-3.87	61.10	0.71	6.72	32.40	200	0	QP	VERTICAL
6	76.56	36.77	40.00	-3.23	61.12	0.76	7.29	32.40	200	0	Peak	VERTICAL
7	349.13	37.34	46.00	-8.66	52.77	1.61	15.27	32.31	200	0	Peak	VERTICAL
8	531.49	39.42	46.00	-6.58	51.24	2.00	18.55	32.37	200	0	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).

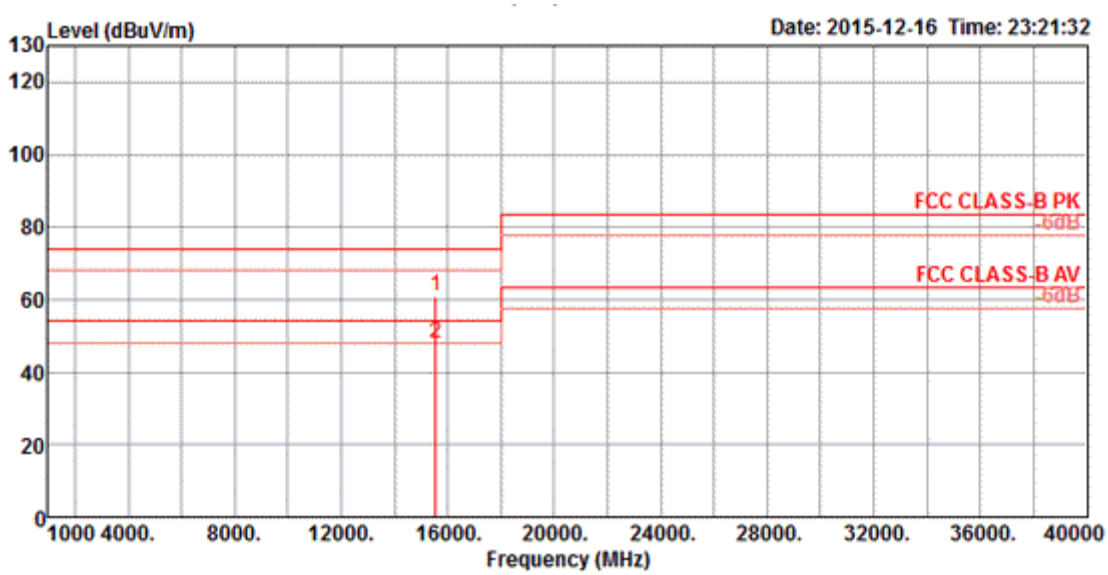
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.6.9. Results for Radiated Emissions (1GHz~40GHz)

<For 1TX>

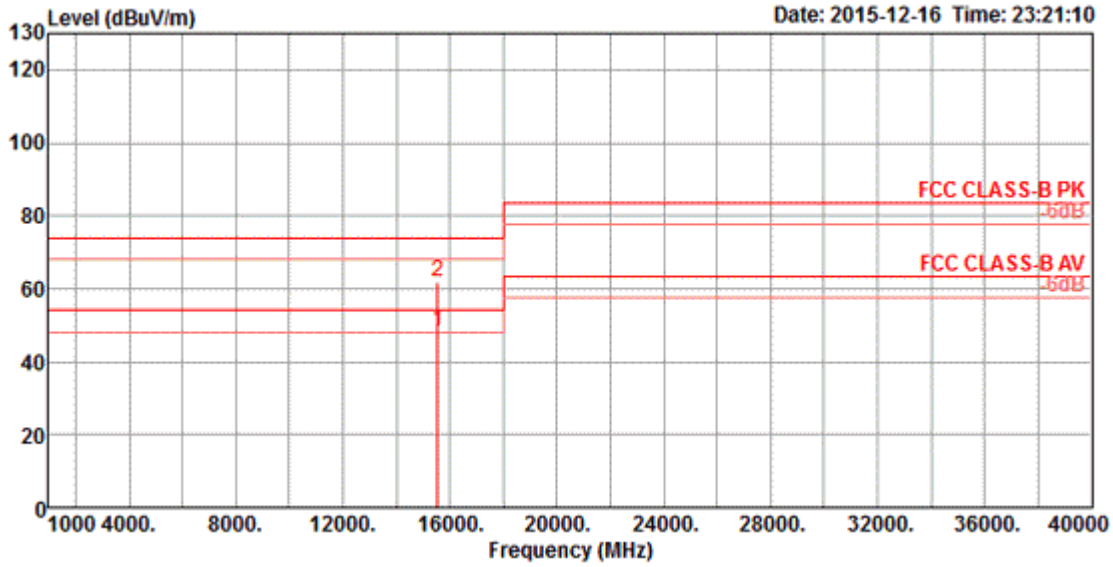
Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 36 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15539.63	60.98	74.00	-13.02	44.89	13.19	35.35	38.25	HORIZONTAL	354	104	Peak
2	15540.13	48.19	54.00	-5.81	32.10	13.19	35.35	38.25	HORIZONTAL	354	104	Average

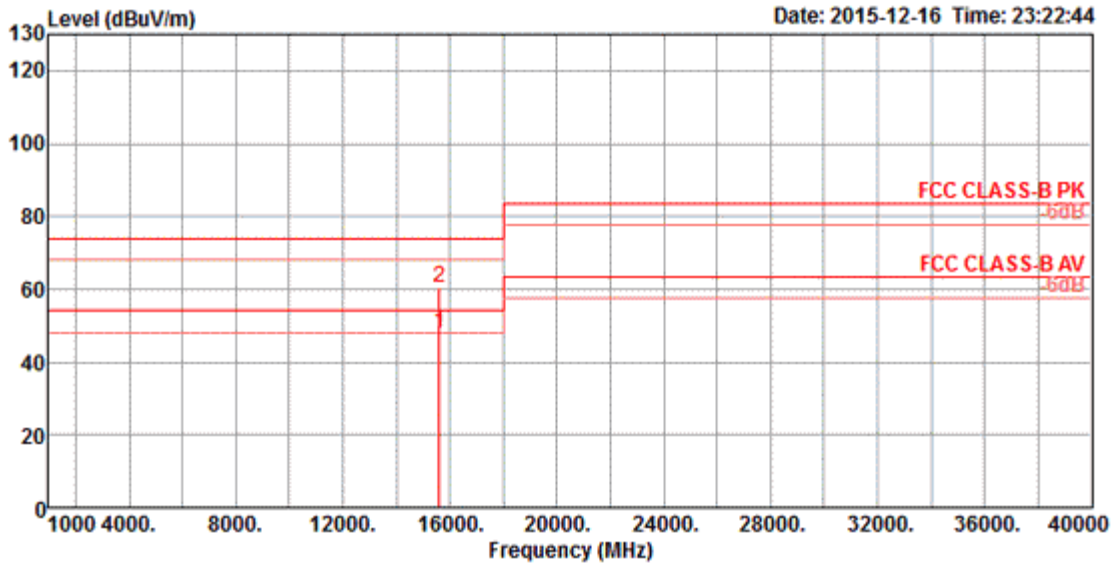
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15539.62	48.28	54.00	-5.72	32.19	13.19	35.35	38.25	VERTICAL	356	102	Average
2	15540.05	61.84	74.00	-12.16	45.75	13.19	35.35	38.25	VERTICAL	356	102	Peak

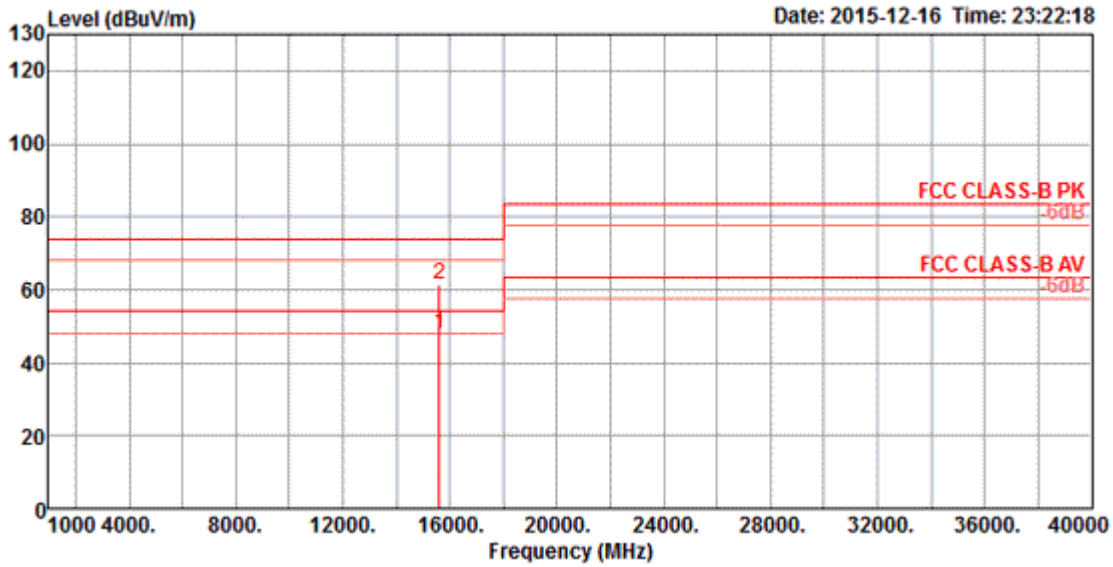
Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 40 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15600.34	47.91	54.00	-6.09	31.87	13.21	35.36	38.19	HORIZONTAL	350	104	Average
2	15600.39	60.56	74.00	-13.44	44.52	13.21	35.36	38.19	HORIZONTAL	350	104	Peak

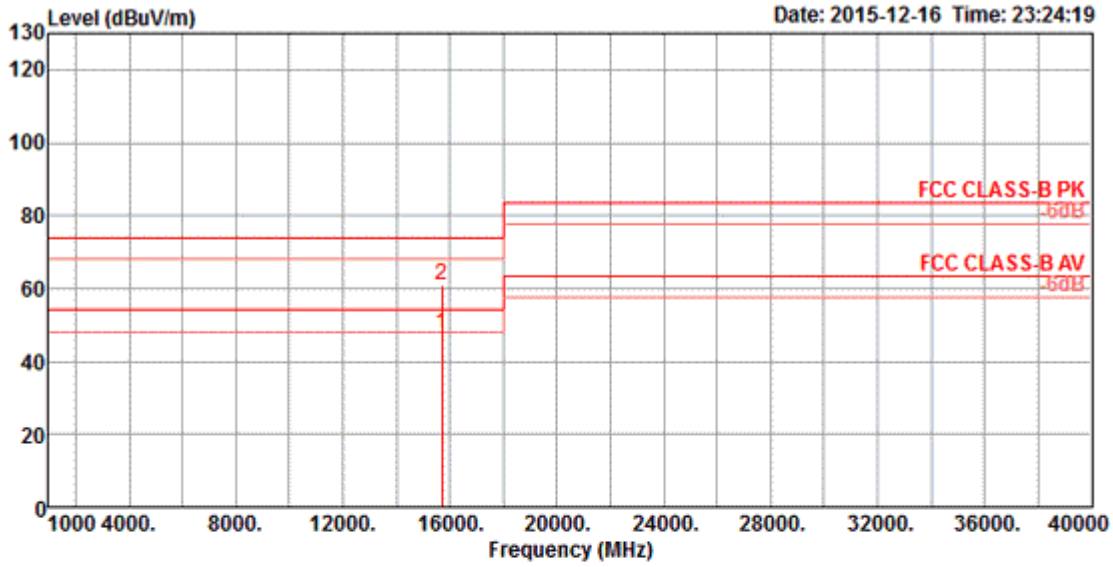
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15599.20	47.93	54.00	-6.07	31.89	13.21	35.36	38.19	VERTICAL	352	102	Average
2	15599.61	61.34	74.00	-12.66	45.30	13.21	35.36	38.19	VERTICAL	352	102	Peak

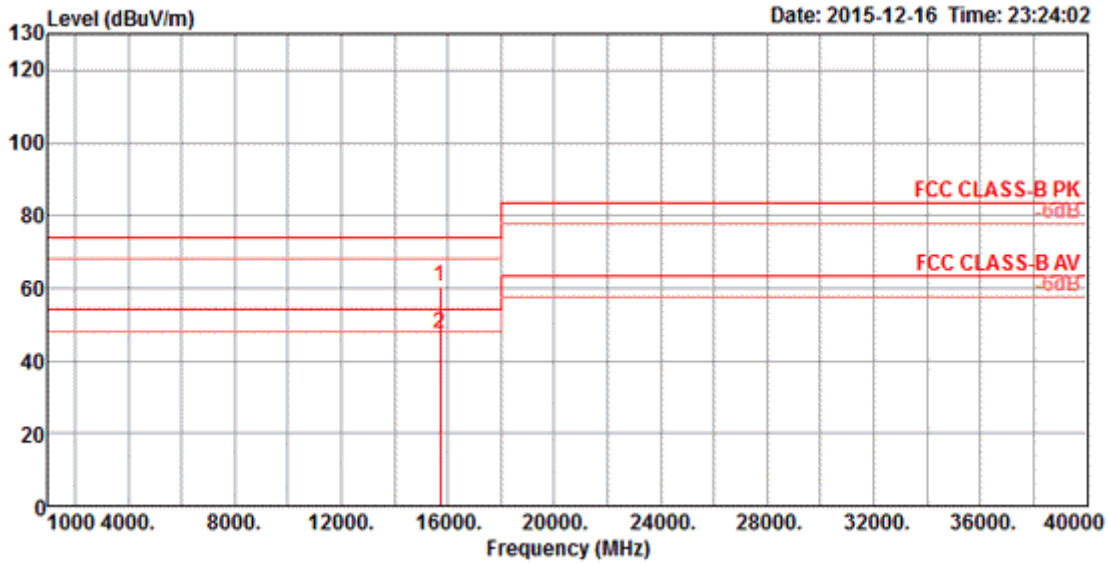
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 48 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15719.23	47.55	54.00	-6.45	31.64	13.26	35.38	38.03	HORIZONTAL	344	100	Average
2	15720.88	61.00	74.00	-13.00	45.09	13.26	35.38	38.03	HORIZONTAL	344	100	Peak

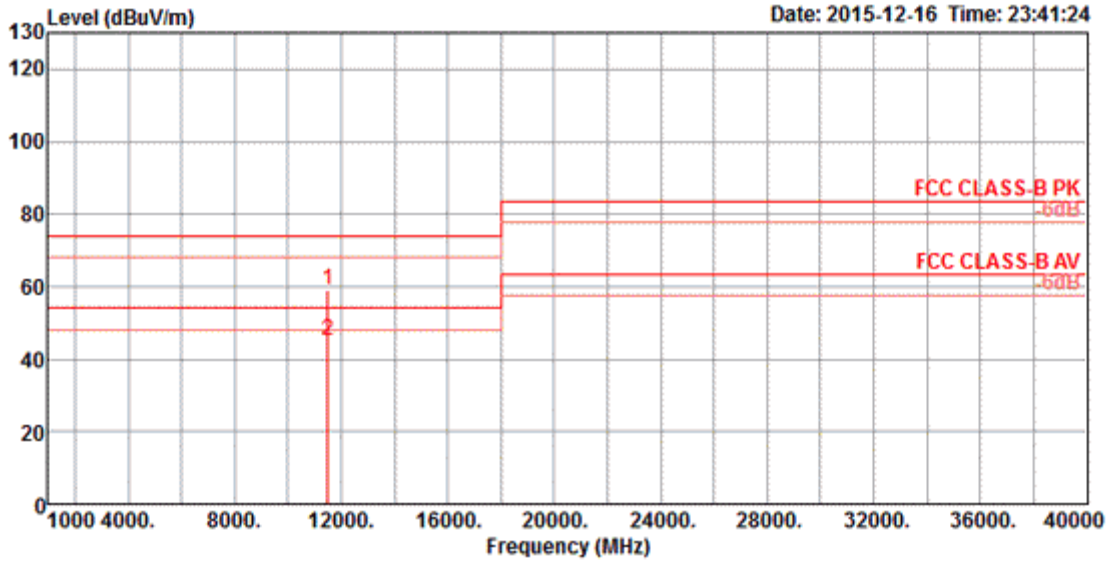
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15719.32	60.67	74.00	-13.33	44.76	13.26	35.38	38.03	VERTICAL	346	102	Peak
2	15720.24	47.55	54.00	-6.45	31.64	13.26	35.38	38.03	VERTICAL	346	102	Average

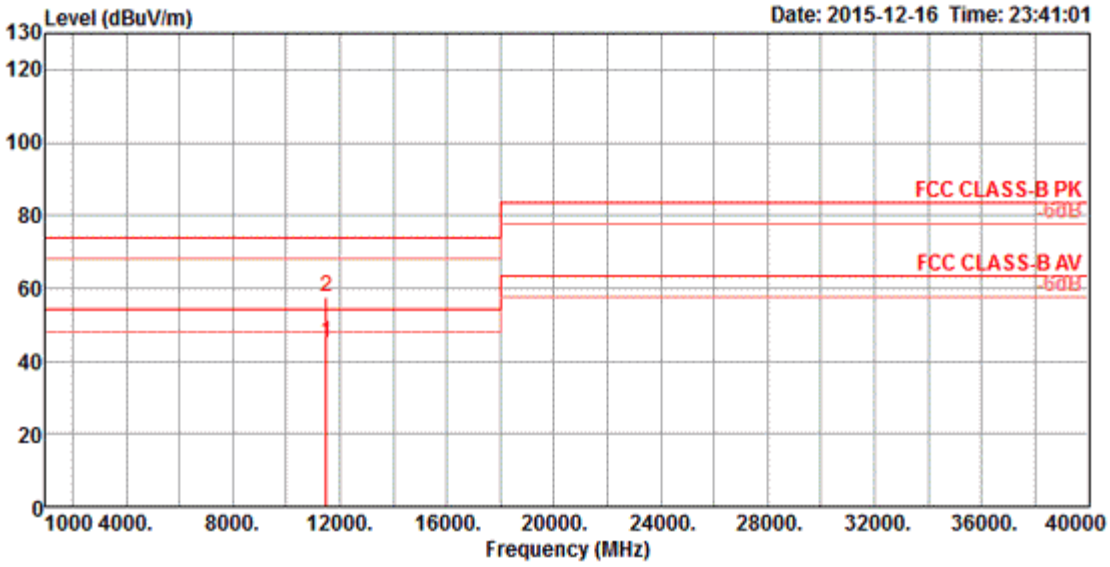
Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 149 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11489.57	59.00	74.00	-15.00	42.51	11.72	35.23	40.00	HORIZONTAL	299	103	Peak
2	11489.68	44.98	54.00	-9.02	28.49	11.72	35.23	40.00	HORIZONTAL	299	103	Average

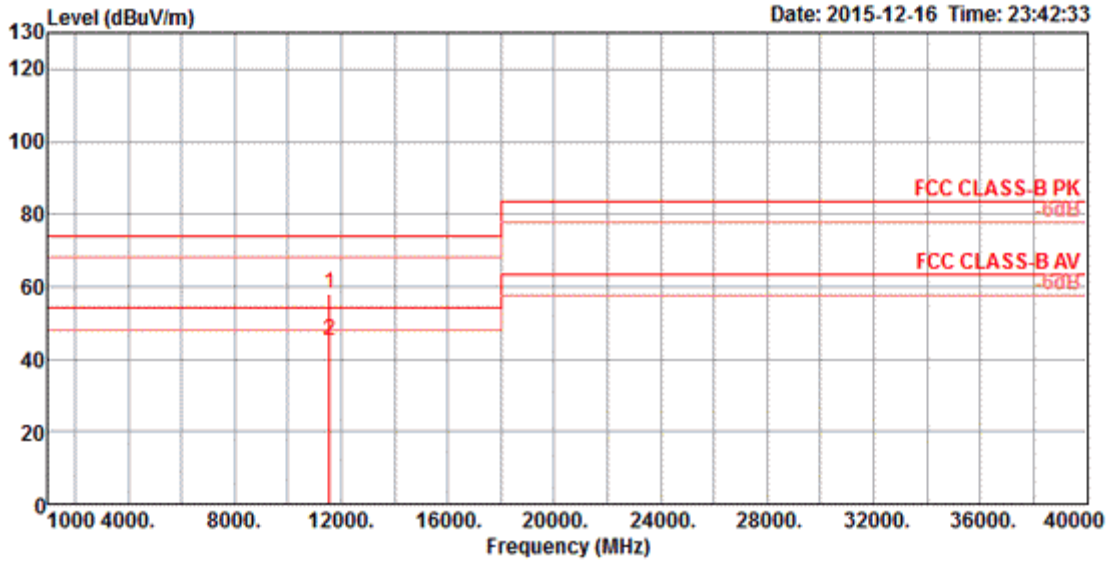
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11490.54	45.28	54.00	-8.72	28.79	11.72	35.23	40.00	VERTICAL	300	100	Average
2	11490.98	57.78	74.00	-16.22	41.29	11.72	35.23	40.00	VERTICAL	300	100	Peak

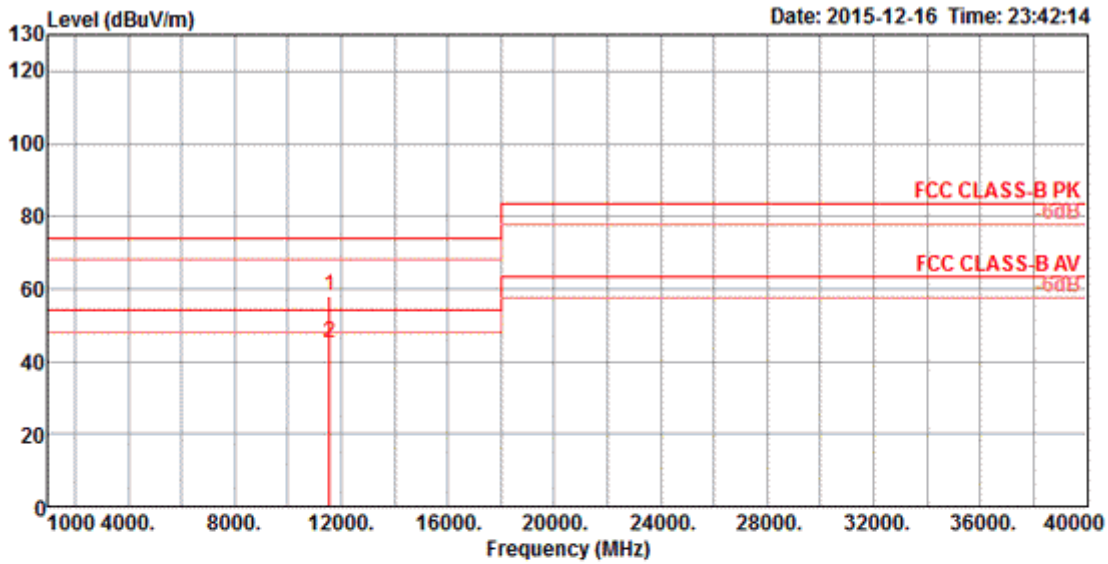
Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 157 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11569.01	58.15	74.00	-15.85	41.76	11.75	35.23	39.87	HORIZONTAL	298	103	Peak
2	11570.84	45.15	54.00	-8.85	28.76	11.75	35.23	39.87	HORIZONTAL	298	103	Average

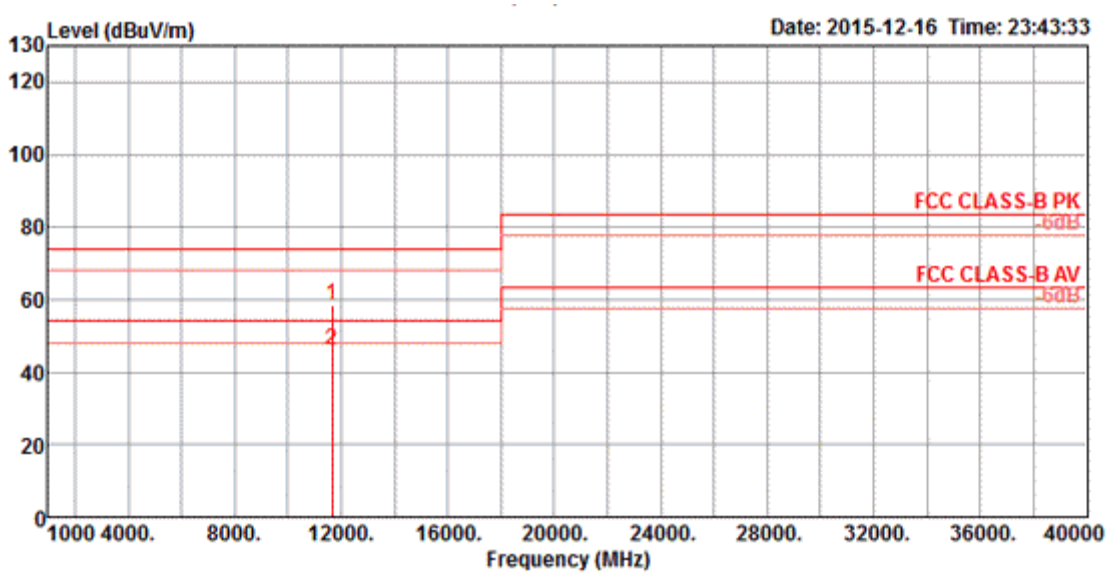
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11570.70	58.15	74.00	-15.85	41.76	11.75	35.23	39.87	VERTICAL	301	105	Peak
2	11570.92	45.17	54.00	-8.83	28.78	11.75	35.23	39.87	VERTICAL	301	105	Average

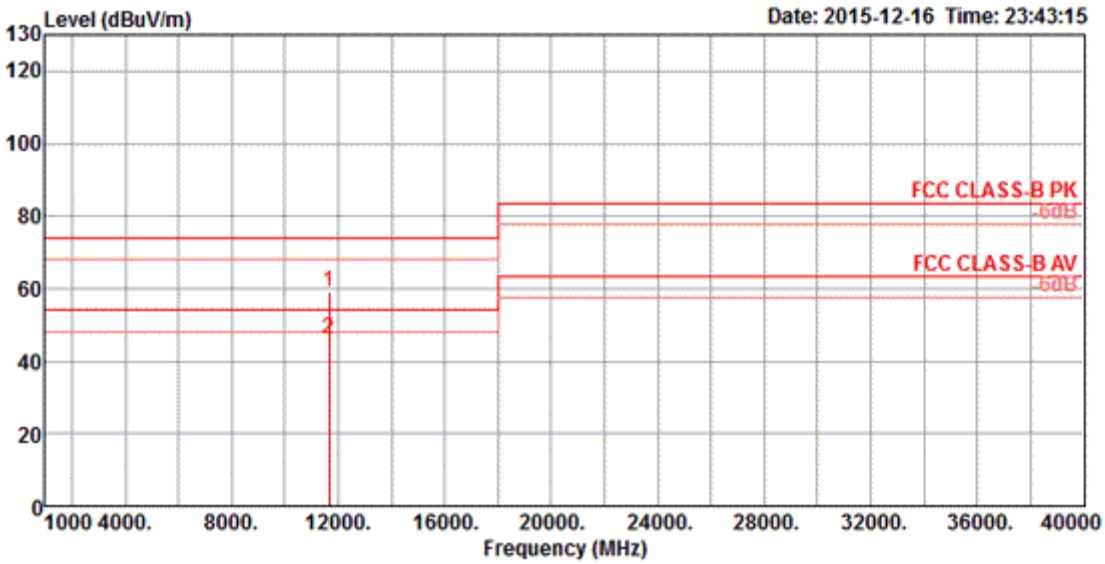
Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 165 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11649.58	58.50	74.00	-15.50	42.21	11.78	35.22	39.73	HORIZONTAL	303	107	Peak
2	11649.70	45.87	54.00	-8.13	29.58	11.78	35.22	39.73	HORIZONTAL	303	107	Average

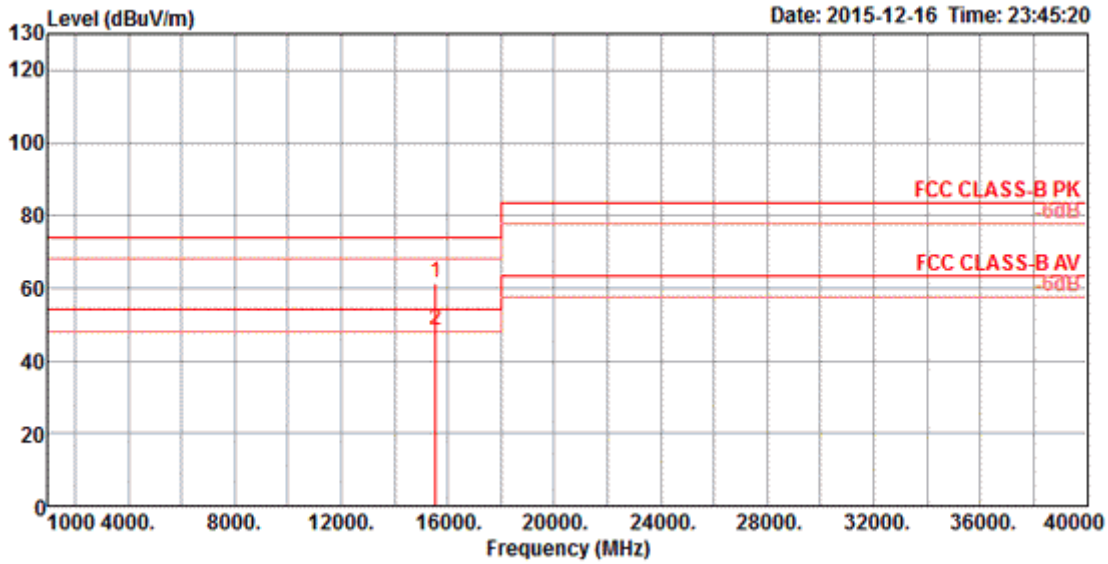
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11649.36	58.97	74.00	-15.03	42.68	11.78	35.22	39.73	VERTICAL	301	109	Peak
2	11649.49	46.14	54.00	-7.86	29.85	11.78	35.22	39.73	VERTICAL	301	109	Average

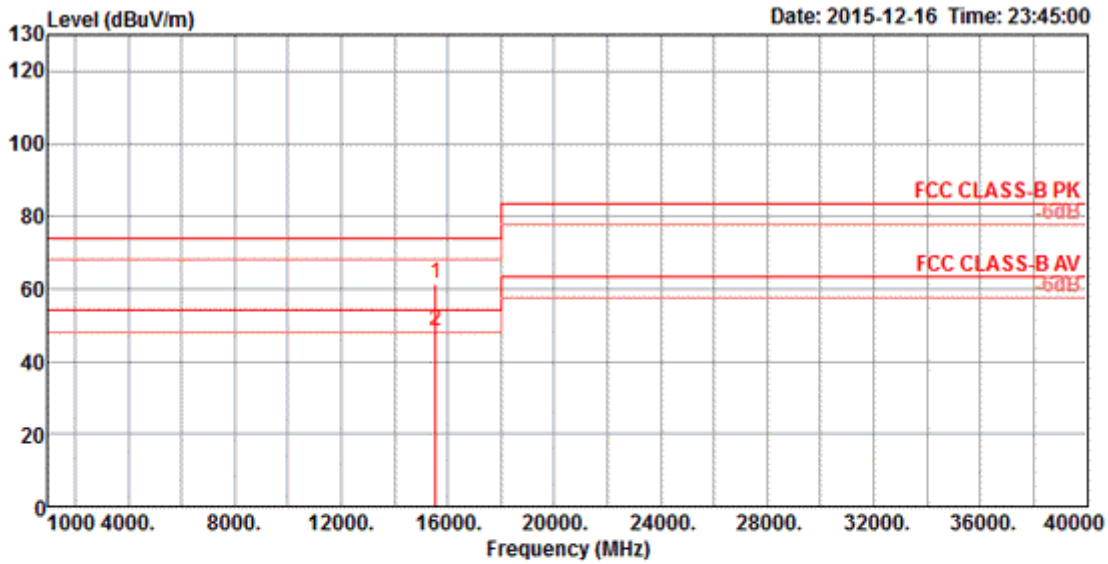
Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15539.52	61.33	74.00	-12.67	45.24	13.19	35.35	38.25	HORIZONTAL	298	104	Peak
2	15539.85	48.52	54.00	-5.48	32.43	13.19	35.35	38.25	HORIZONTAL	298	104	Average

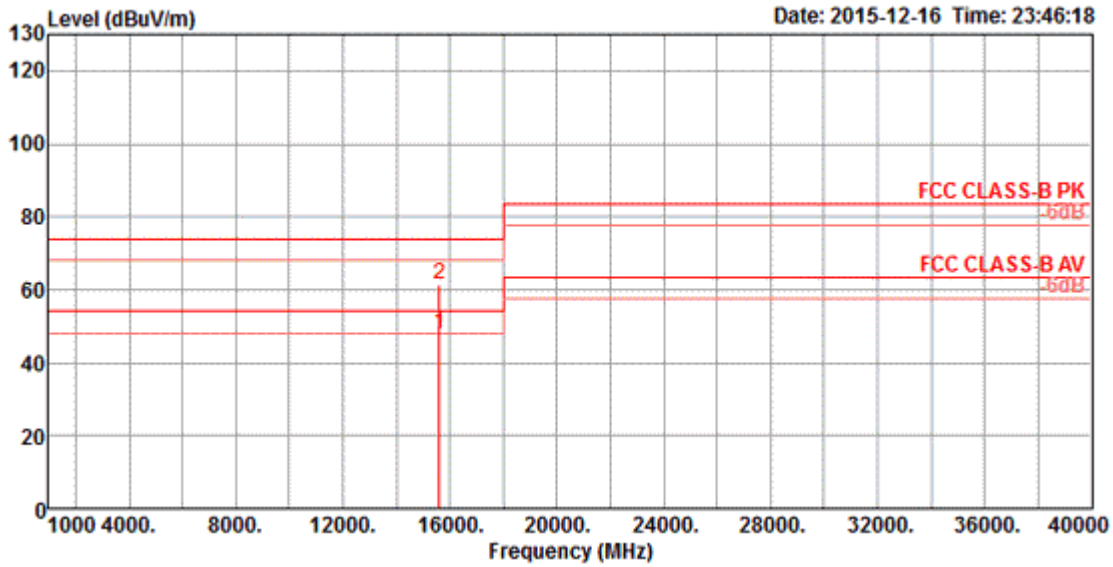
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15539.56	61.64	74.00	-12.36	45.55	13.19	35.35	38.25	VERTICAL	303	106	Peak
2	15540.88	48.52	54.00	-5.48	32.43	13.19	35.35	38.25	VERTICAL	303	106	Average

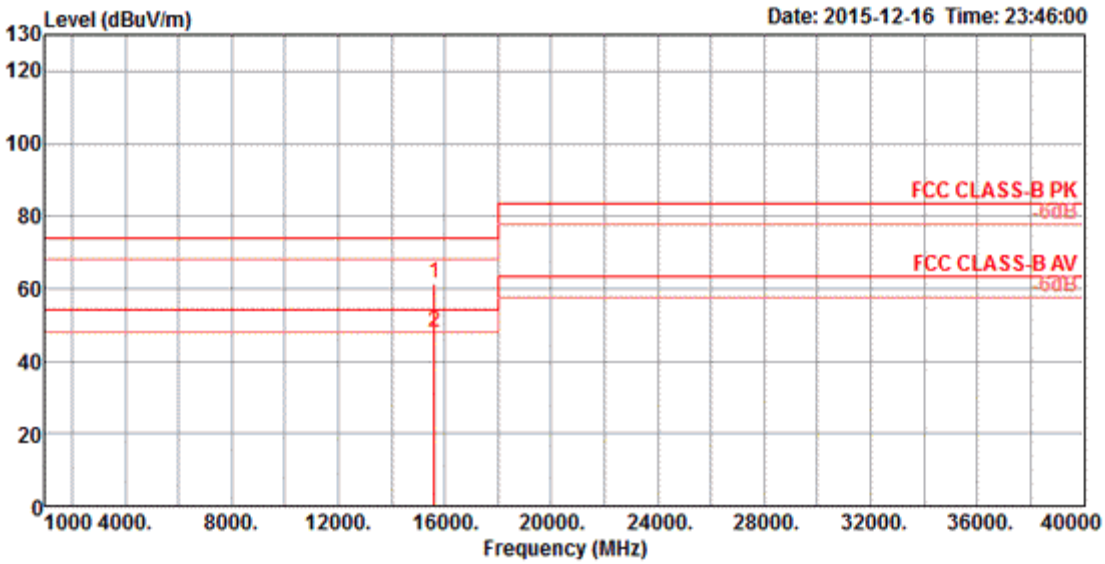
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 40 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15599.09	47.95	54.00	-6.05	31.91	13.21	35.36	38.19	HORIZONTAL	292	101	Average
2	15599.24	61.60	74.00	-12.40	45.56	13.21	35.36	38.19	HORIZONTAL	292	101	Peak

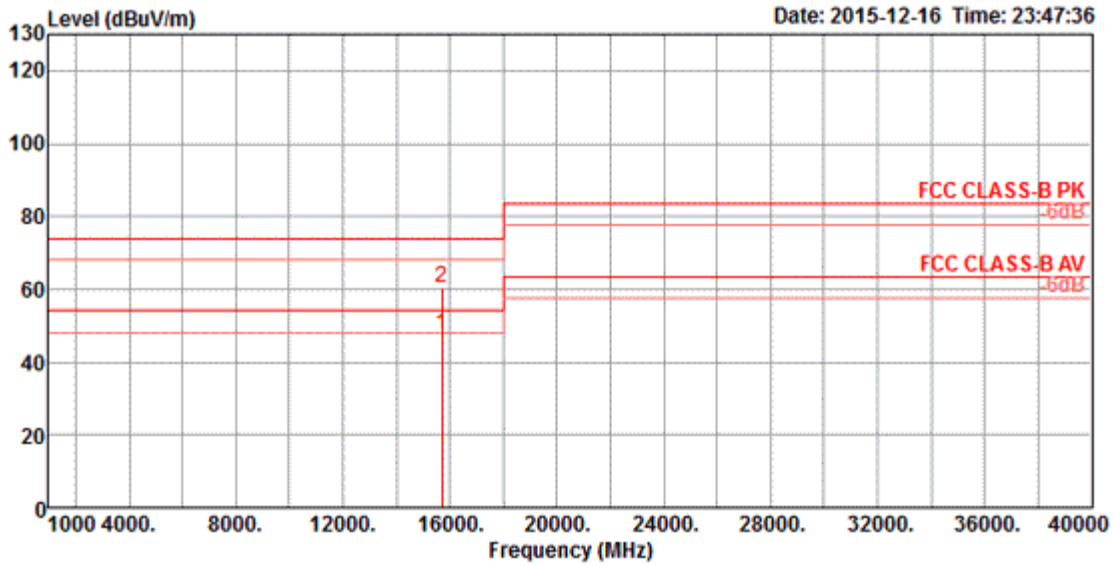
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15599.78	61.39	74.00	-12.61	45.35	13.21	35.36	38.19	VERTICAL	294	102	Peak
2	15600.80	48.08	54.00	-5.92	32.07	13.23	35.36	38.14	VERTICAL	294	102	Average

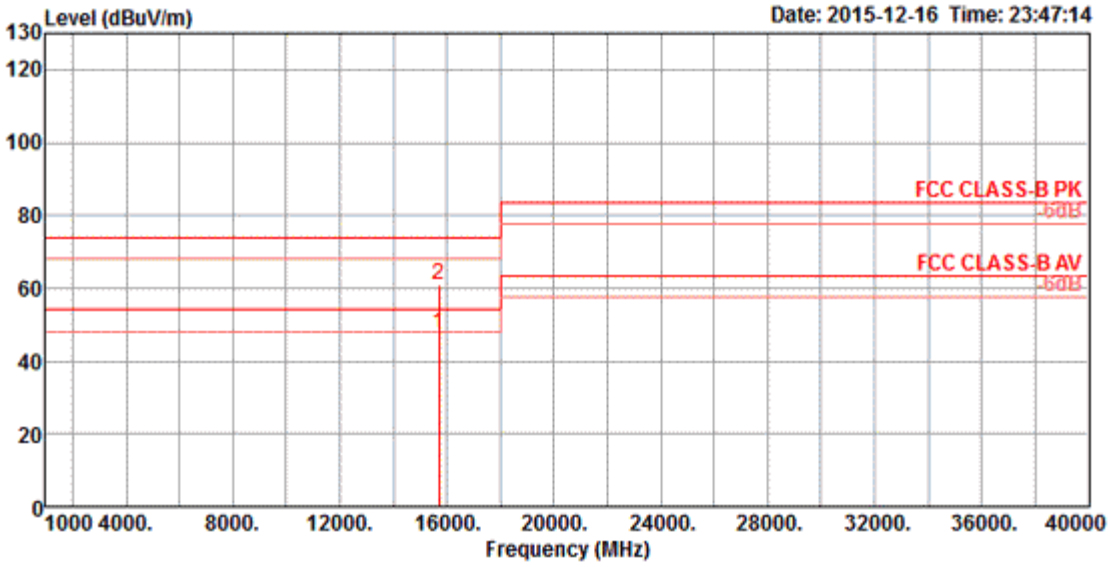
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 48 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15719.87	47.58	54.00	-6.42	31.67	13.26	35.38	38.03	HORIZONTAL	286	107	Average
2	15720.29	60.64	74.00	-13.36	44.73	13.26	35.38	38.03	HORIZONTAL	286	107	Peak

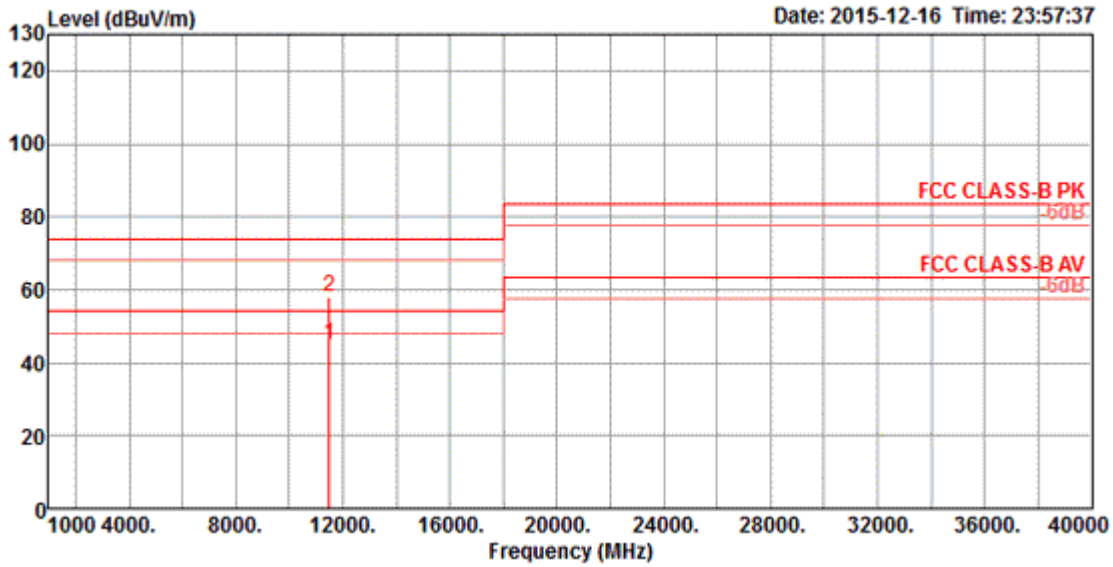
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15720.26	47.45	54.00	-6.55	31.54	13.26	35.38	38.03	VERTICAL	288	104	Average
2	15720.78	61.05	74.00	-12.95	45.14	13.26	35.38	38.03	VERTICAL	288	104	Peak

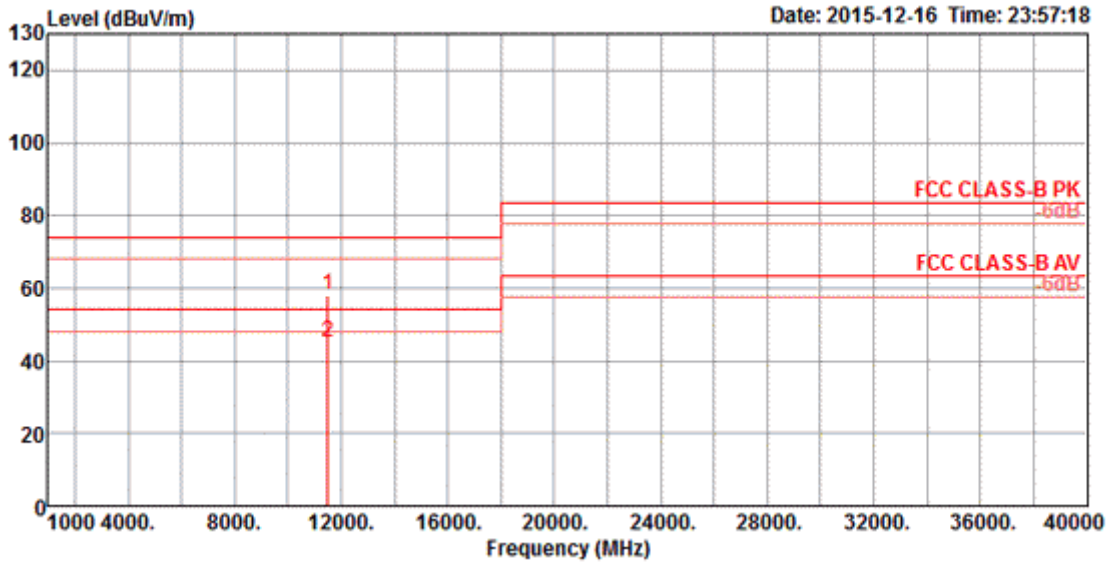
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11489.08	45.10	54.00	-8.90	28.61	11.72	35.23	40.00	HORIZONTAL	230	103	Average
2	11489.39	57.85	74.00	-16.15	41.36	11.72	35.23	40.00	HORIZONTAL	230	103	Peak

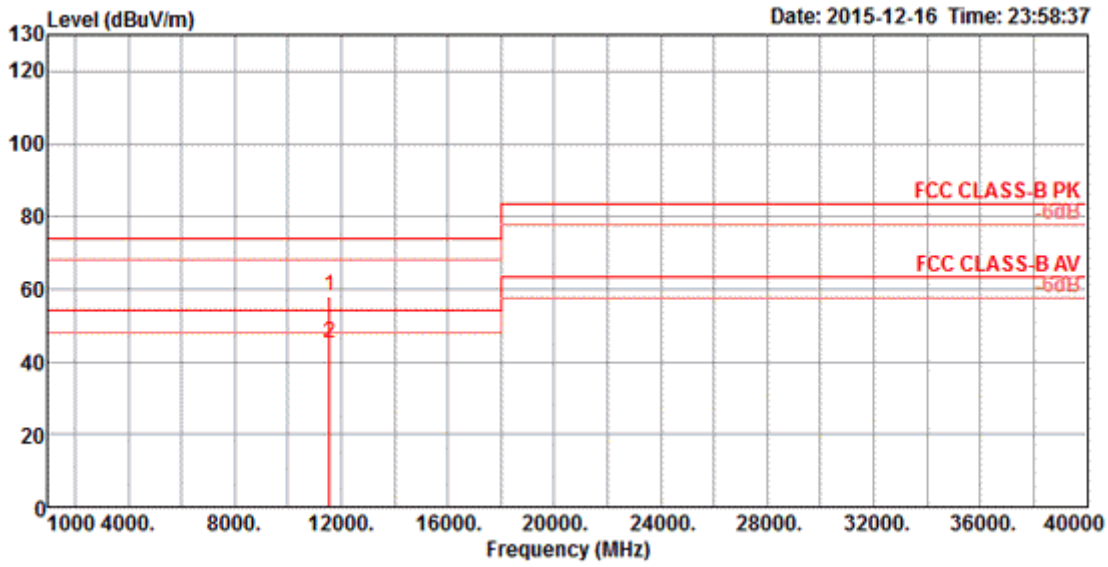
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11489.23	58.12	74.00	-15.88	41.63	11.72	35.23	40.00	VERTICAL	233	100	Peak
2	11490.70	45.18	54.00	-8.82	28.69	11.72	35.23	40.00	VERTICAL	233	100	Average

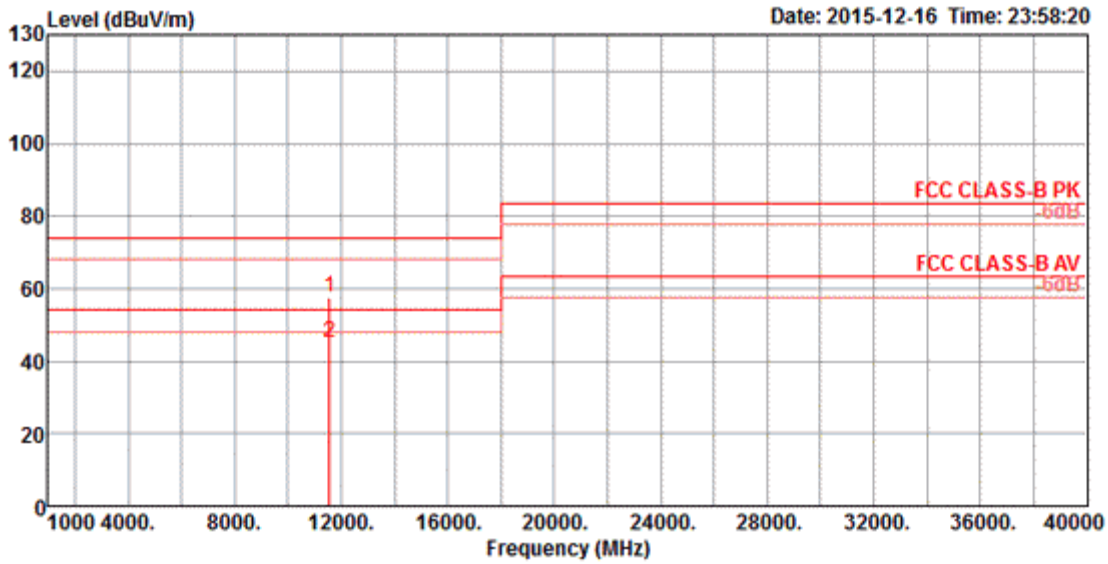
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 157 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11570.70	57.85	74.00	-16.15	41.46	11.75	35.23	39.87	HORIZONTAL	228	112	Peak
2	11570.84	44.86	54.00	-9.14	28.47	11.75	35.23	39.87	HORIZONTAL	228	112	Average

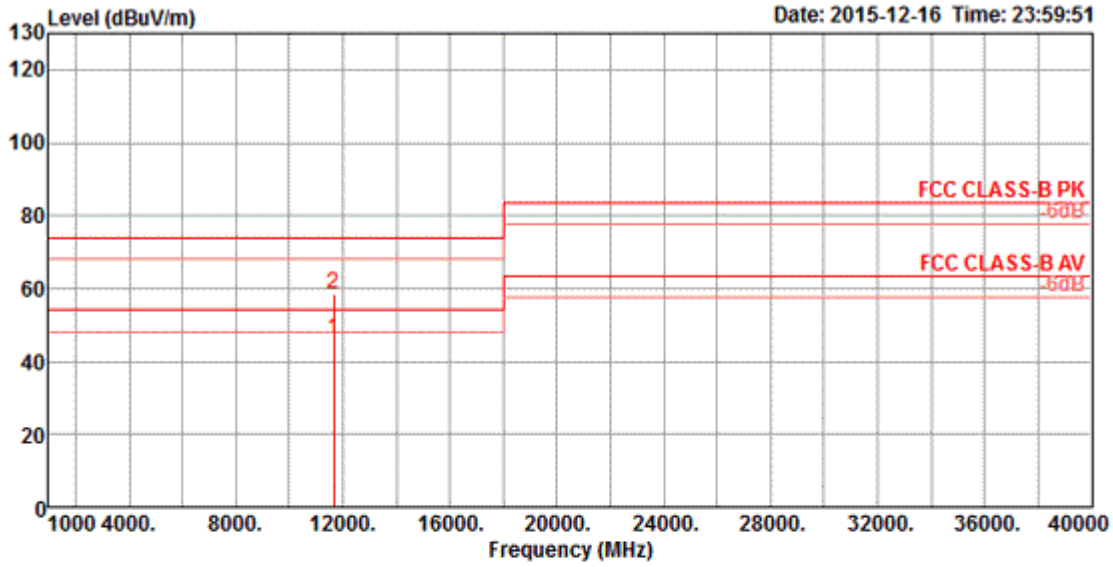
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11570.77	57.52	74.00	-16.48	41.13	11.75	35.23	39.87	VERTICAL	232	108	Peak
2	11570.87	45.26	54.00	-8.74	28.87	11.75	35.23	39.87	VERTICAL	232	108	Average

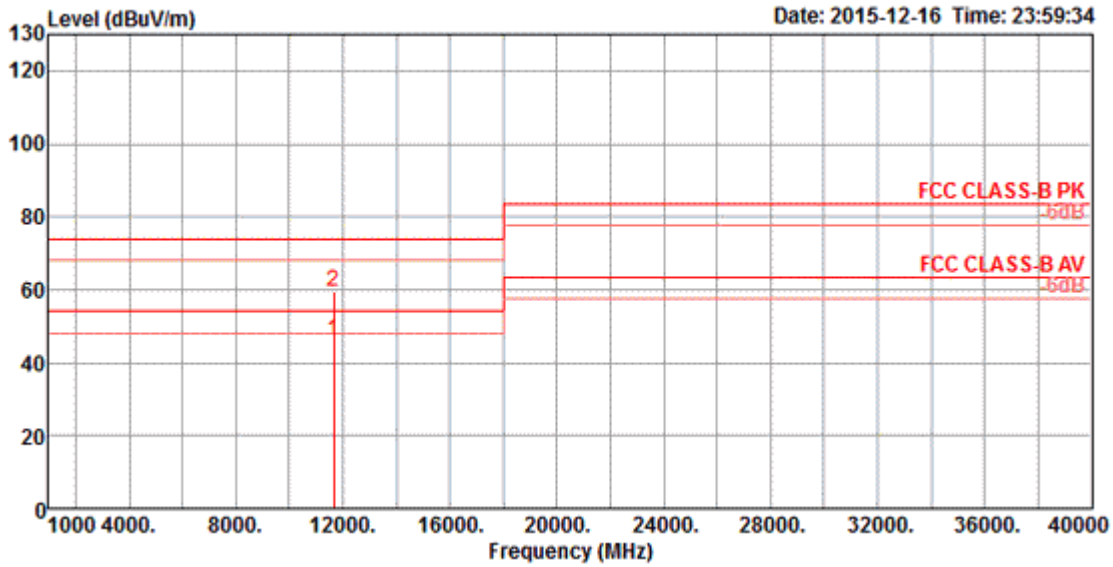
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 165 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11649.22	45.89	54.00	-8.11	29.60	11.78	35.22	39.73	HORIZONTAL	221	108	Average
2	11649.56	58.68	74.00	-15.32	42.39	11.78	35.22	39.73	HORIZONTAL	221	108	Peak

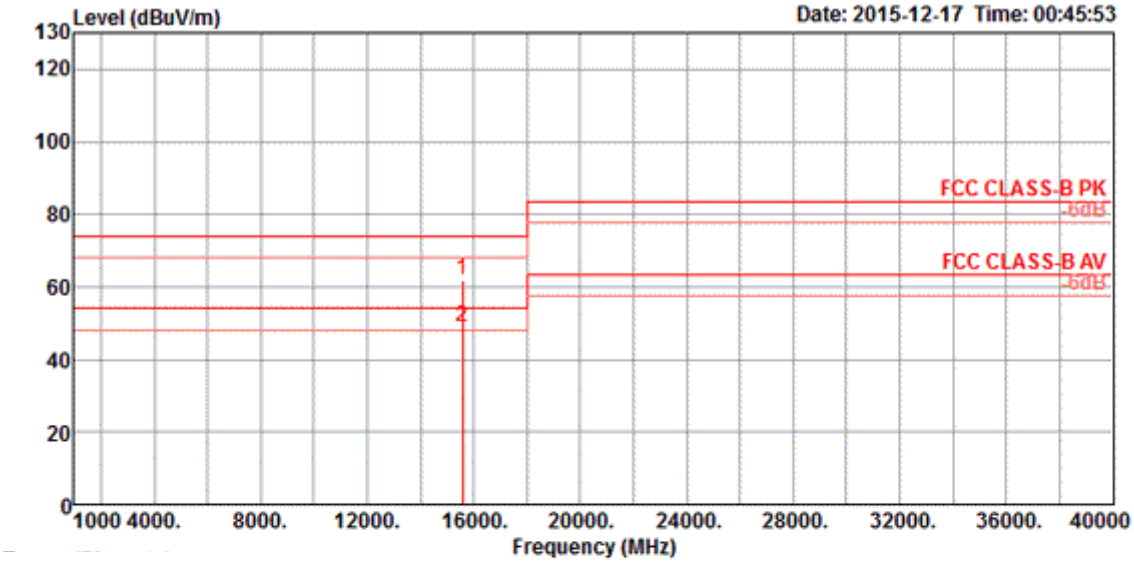
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11649.19	46.05	54.00	-7.95	29.76	11.78	35.22	39.73	VERTICAL	226	114	Average
2	11649.61	59.38	74.00	-14.62	43.09	11.78	35.22	39.73	VERTICAL	226	114	Peak

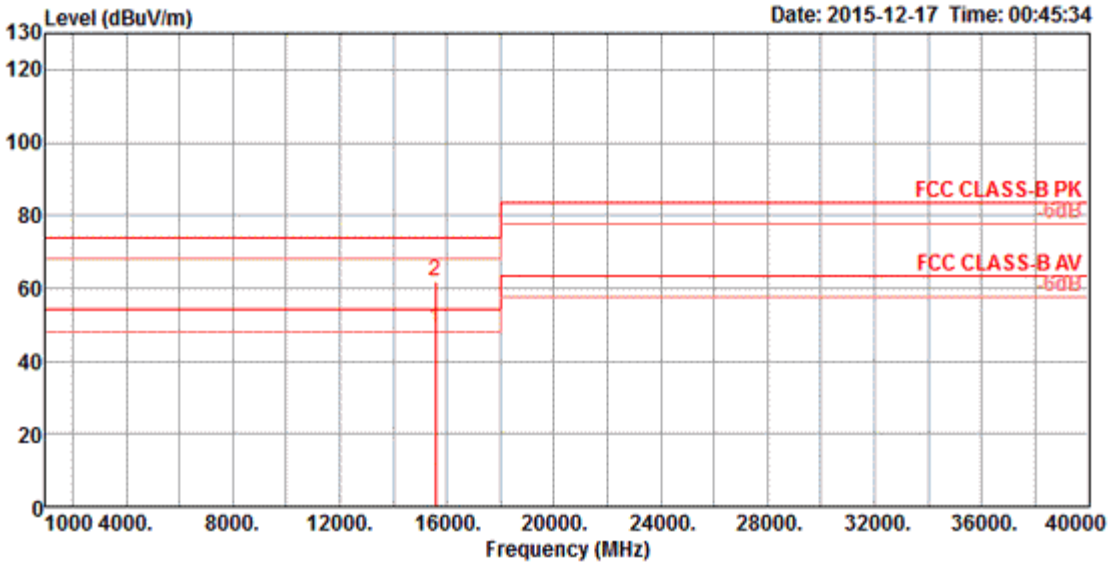
Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15569.35	61.99	74.00	-12.01	45.95	13.21	35.36	38.19	HORIZONTAL	218	107	Peak
2	15570.64	49.07	54.00	-4.93	33.03	13.21	35.36	38.19	HORIZONTAL	218	107	Average

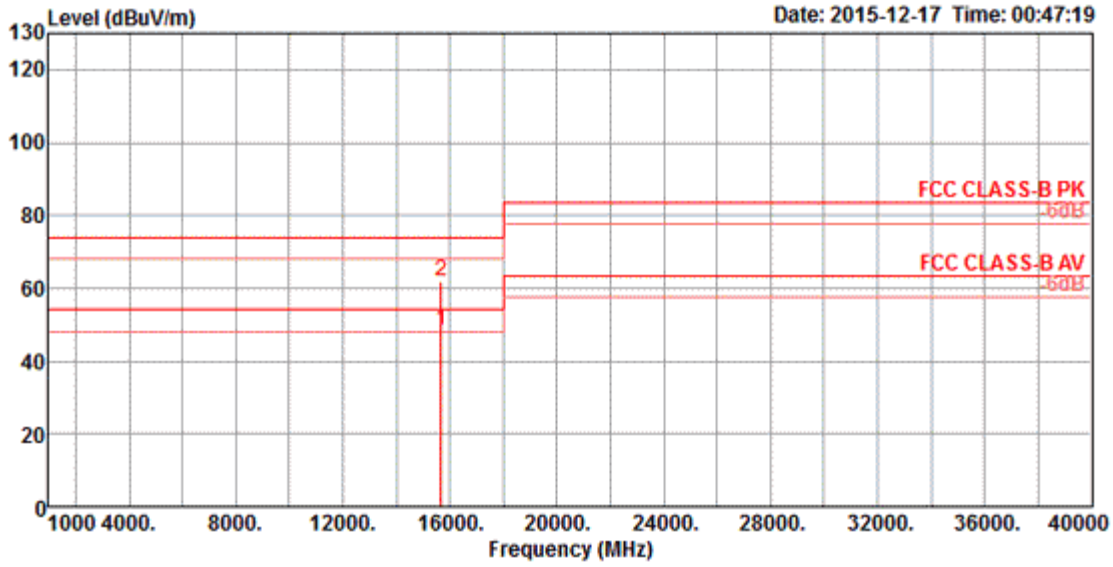
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15570.38	49.16	54.00	-4.84	33.12	13.21	35.36	38.19	VERTICAL	221	111	Average
2	15570.38	61.69	74.00	-12.31	45.65	13.21	35.36	38.19	VERTICAL	221	111	Peak

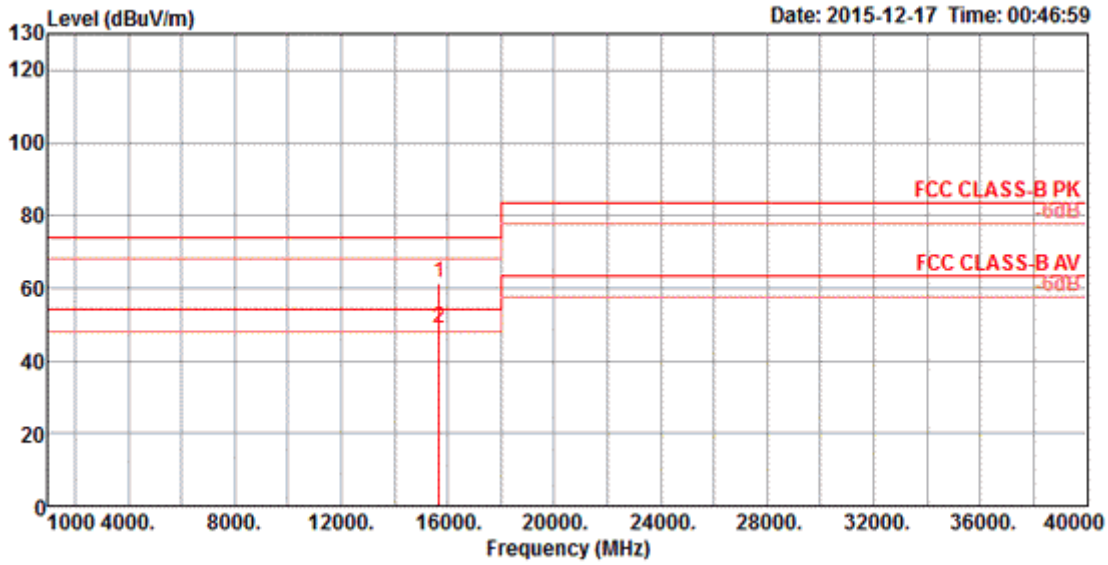
Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 46 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15689.42	48.31	54.00	-5.69	32.35	13.25	35.37	38.08	HORIZONTAL	217	108	Average
2	15689.97	61.82	74.00	-12.18	45.86	13.25	35.37	38.08	HORIZONTAL	217	108	Peak

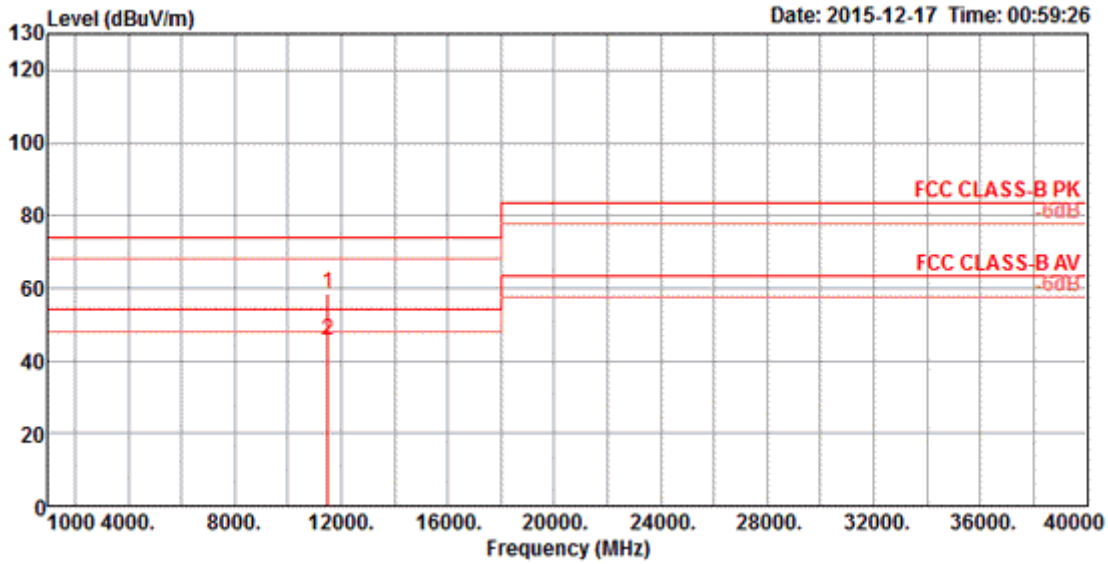
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15689.23	61.53	74.00	-12.47	45.57	13.25	35.37	38.08	VERTICAL	215	109	Peak
2	15690.72	48.72	54.00	-5.28	32.76	13.25	35.37	38.08	VERTICAL	215	109	Average

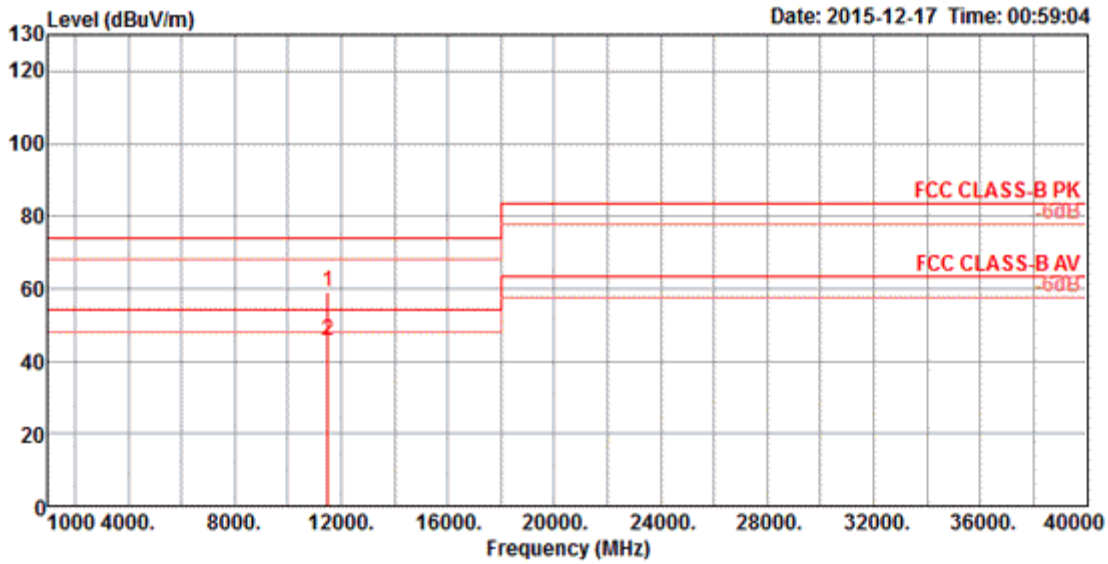
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11509.08	58.60	74.00	-15.40	42.11	11.72	35.23	40.00	HORIZONTAL	172	101	Peak
2	11509.14	45.51	54.00	-8.49	29.02	11.72	35.23	40.00	HORIZONTAL	172	101	Average

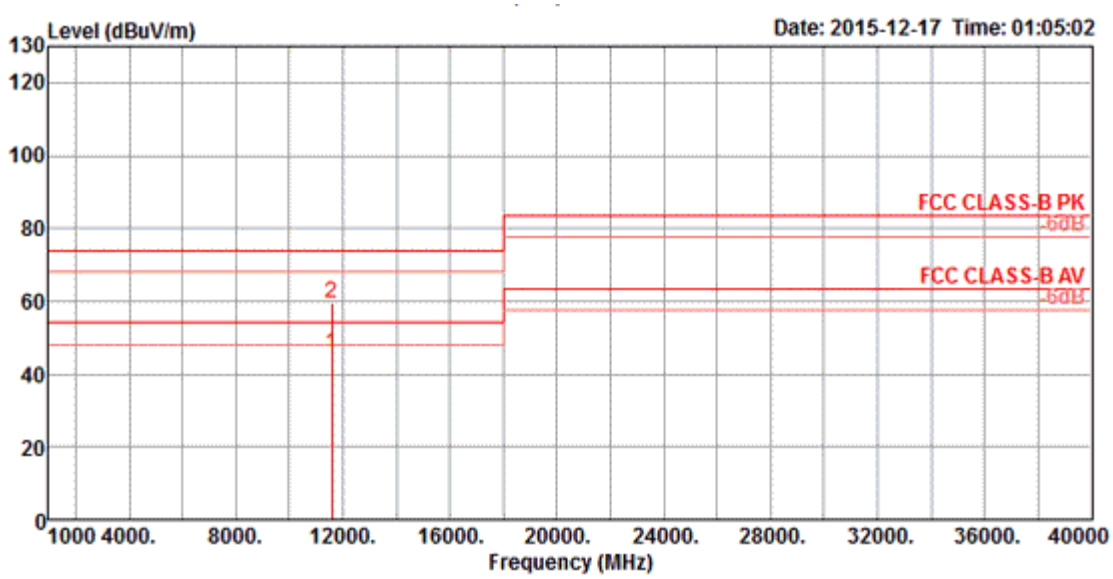
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11509.54	59.11	74.00	-14.89	42.62	11.72	35.23	40.00	VERTICAL	176	104	Peak
2	11509.75	45.55	54.00	-8.45	29.06	11.72	35.23	40.00	VERTICAL	176	104	Average

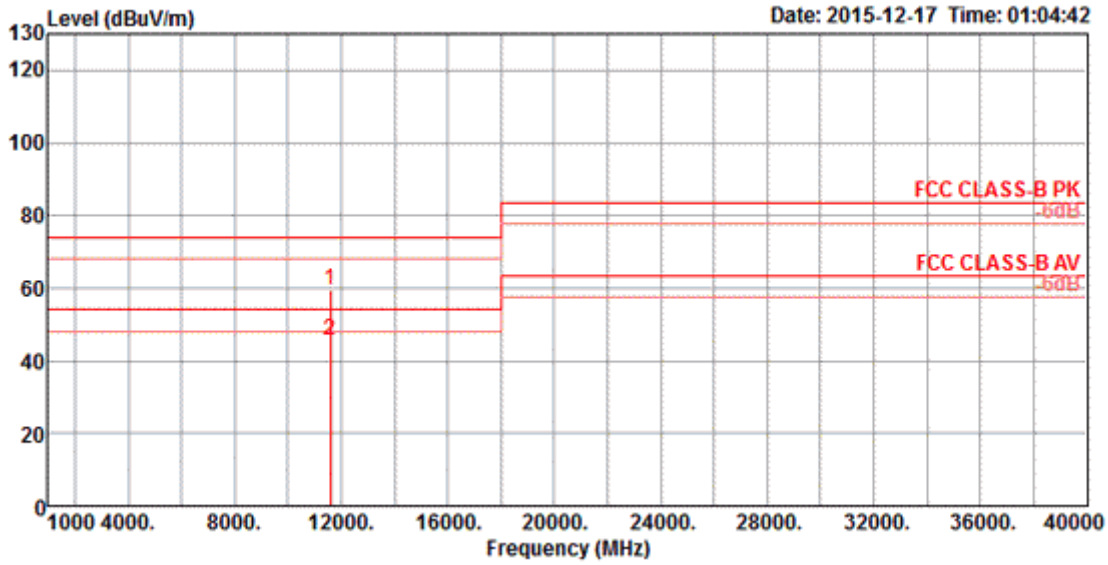
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 159 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11590.06	45.55	54.00	-8.45	29.20	11.77	35.22	39.80	HORIZONTAL	168	102	Average
2	11590.62	59.25	74.00	-14.75	42.90	11.77	35.22	39.80	HORIZONTAL	168	102	Peak

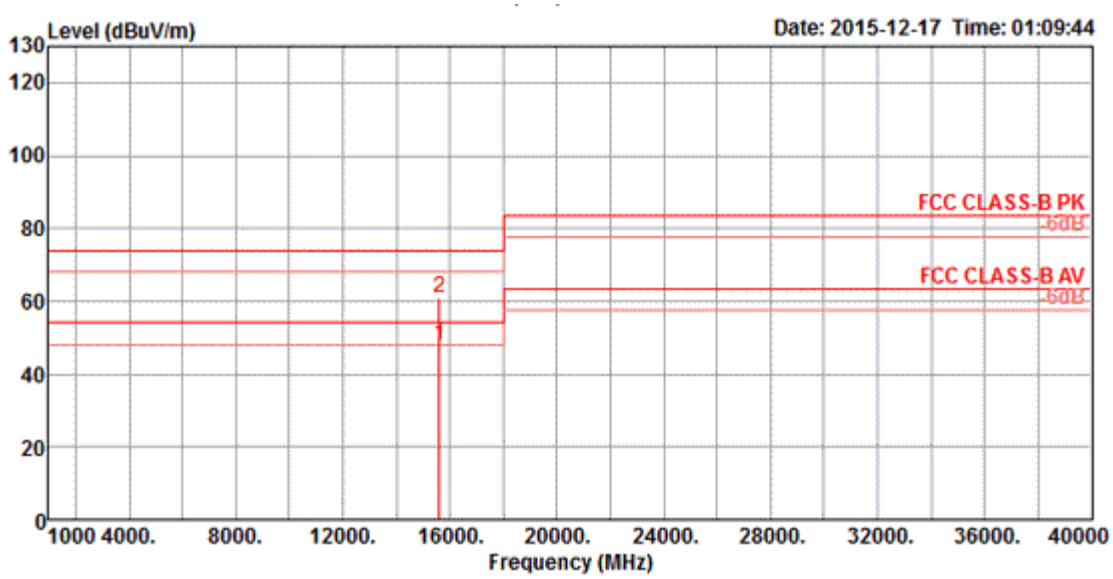
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11590.74	59.38	74.00	-14.62	43.03	11.77	35.22	39.80	VERTICAL	170	103	Peak
2	11590.96	45.52	54.00	-8.48	29.17	11.77	35.22	39.80	VERTICAL	170	103	Average

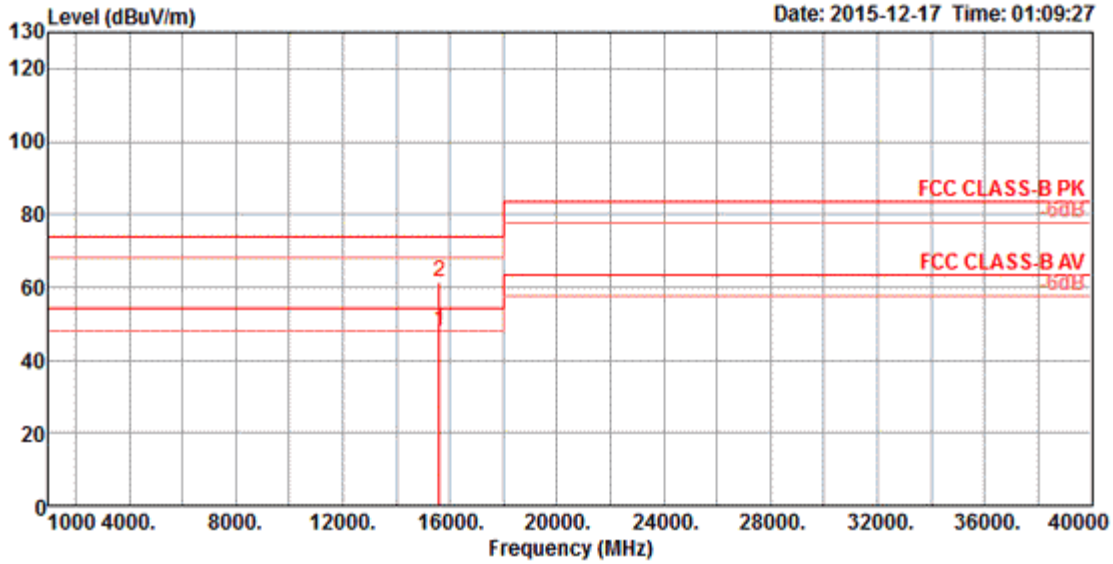
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15629.67	47.88	54.00	-6.12	31.87	13.23	35.36	38.14	HORIZONTAL	158	103	Average
2	15629.98	61.05	74.00	-12.95	45.04	13.23	35.36	38.14	HORIZONTAL	158	103	Peak

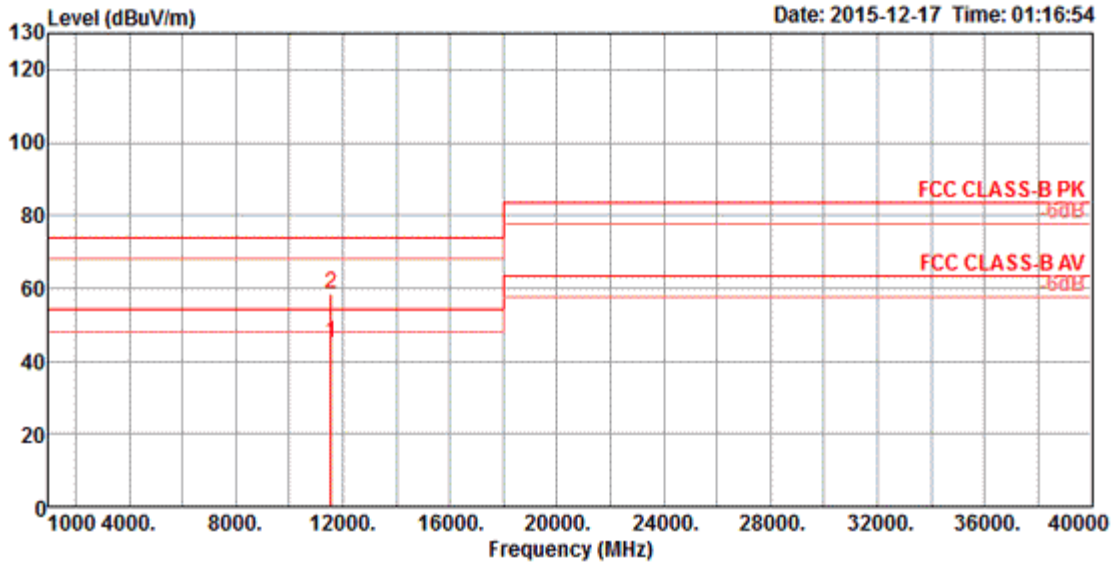
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	15629.36	48.09	54.00	-5.91	32.08	13.23	35.36	38.14	VERTICAL	162	101	Average
2	15630.19	61.48	74.00	-12.52	45.47	13.23	35.36	38.14	VERTICAL	162	101	Peak

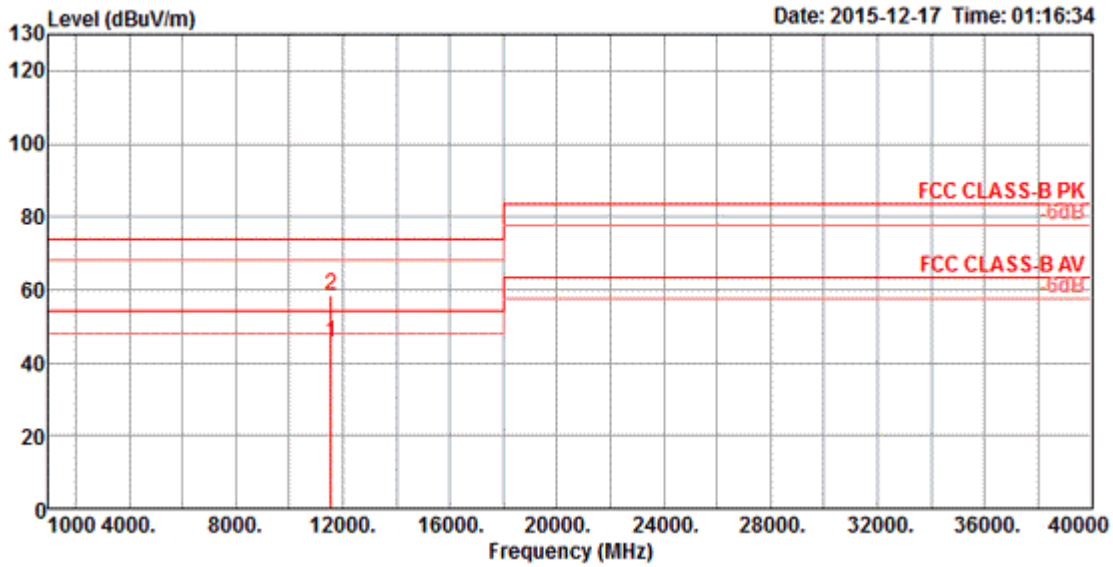
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 155 / Chain 1

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11549.24	45.21	54.00	-8.79	28.77	11.74	35.23	39.93	HORIZONTAL	142	111	Average
2	11549.36	58.45	74.00	-15.55	42.01	11.74	35.23	39.93	HORIZONTAL	142	111	Peak

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	11549.46	45.45	54.00	-8.55	29.01	11.74	35.23	39.93	VERTICAL	141	108	Average
2	11550.01	58.45	74.00	-15.55	42.01	11.74	35.23	39.93	VERTICAL	141	108	Peak

Note:

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

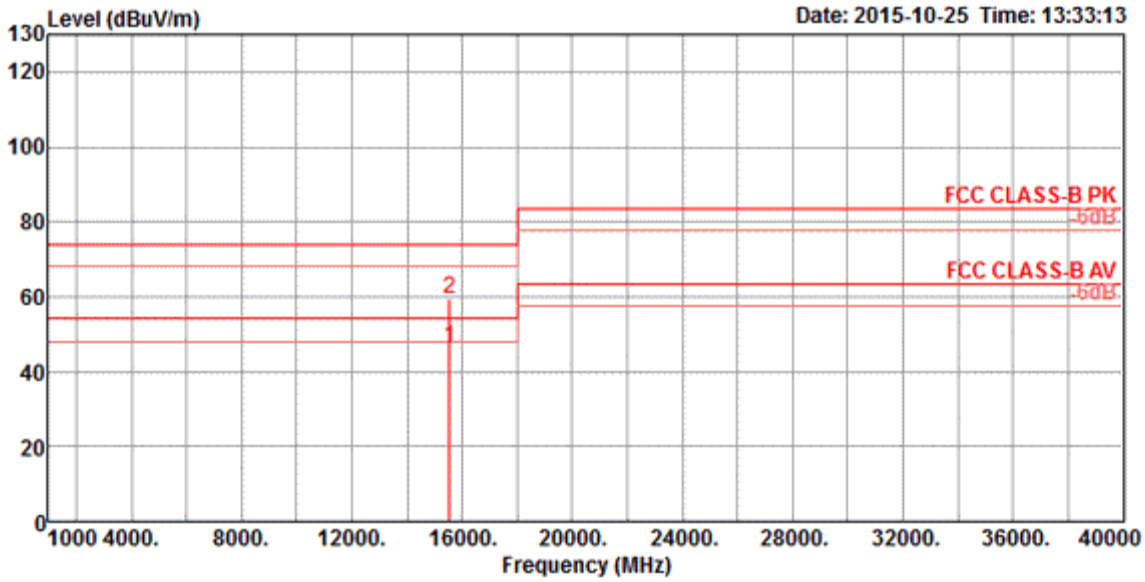
Emission level (dBuV/m) = 20 log Emission level (uV/m).

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

<For 2TX>

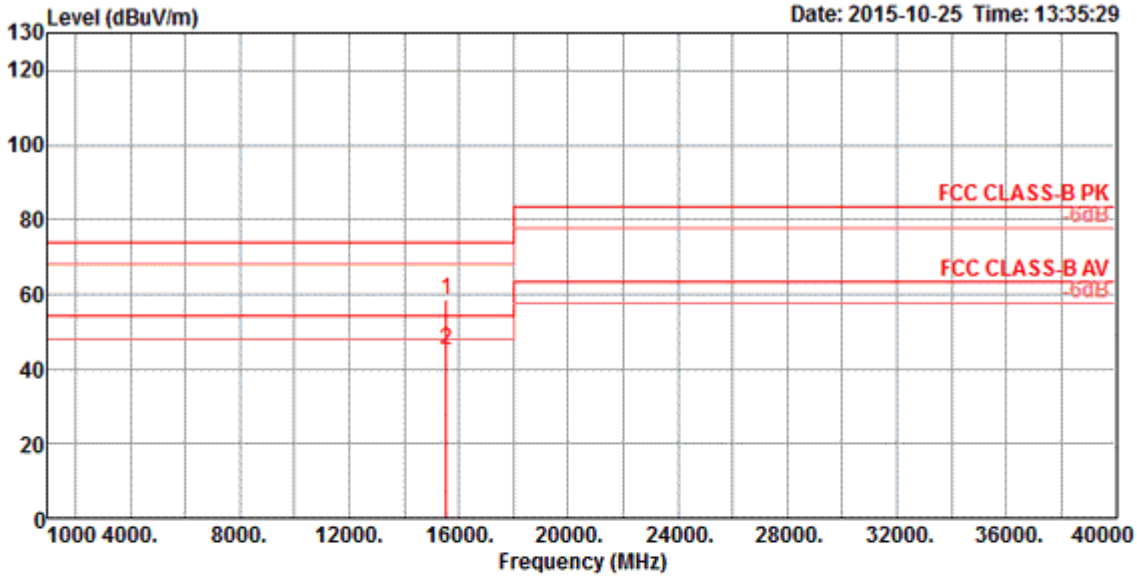
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 36 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15537.44	46.48	54.00	-7.52	30.31	13.18	35.35	38.34	HORIZONTAL	153	338	Average
2	15538.06	59.43	74.00	-14.57	43.26	13.18	35.35	38.34	HORIZONTAL	153	338	Peak

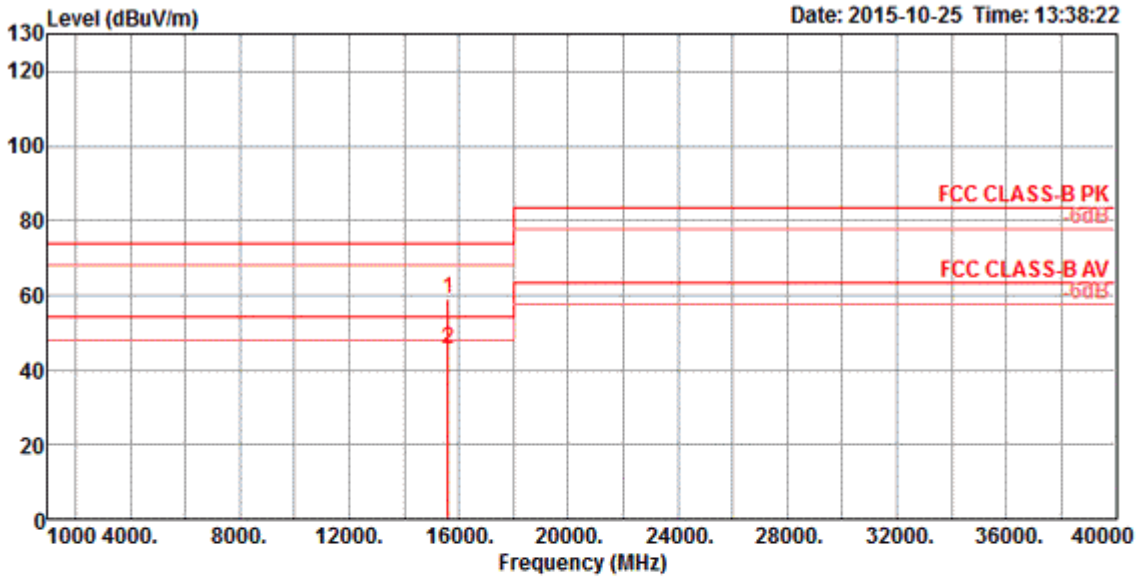
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15535.12	58.73	74.00	-15.27	42.56	13.18	35.35	38.34	VERTICAL	179	111	Peak
2	15535.90	45.29	54.00	-8.71	29.12	13.18	35.35	38.34	VERTICAL	179	111	Average

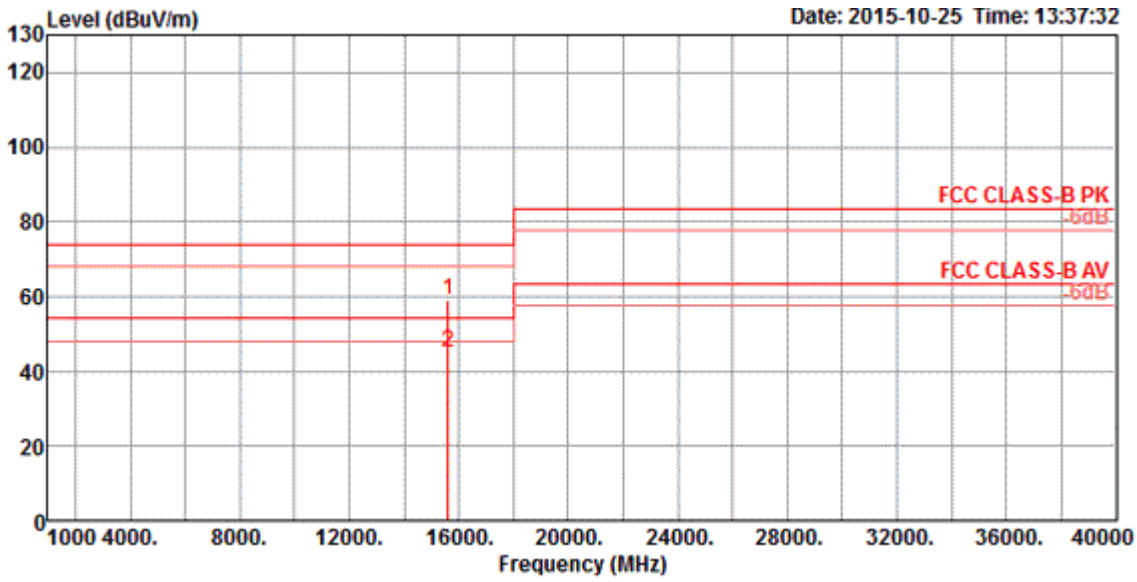
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 40 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15599.64	58.95	74.00	-15.05	42.83	13.21	35.36	38.27	HORIZONTAL	151	211	Peak
2	15604.68	45.37	54.00	-8.63	29.31	13.21	35.36	38.21	HORIZONTAL	151	211	Average

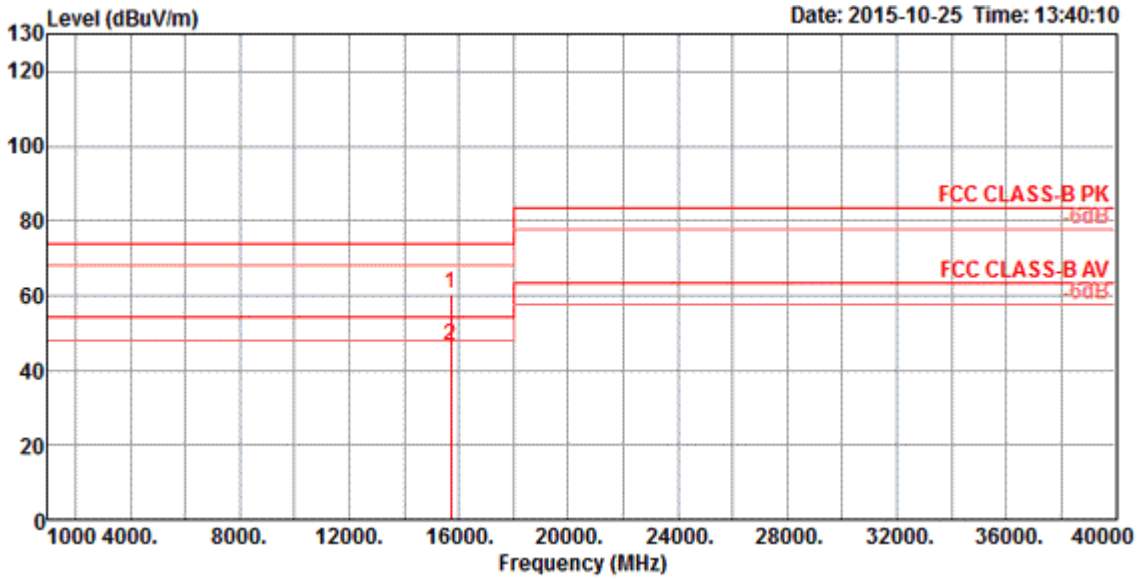
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15600.30	59.24	74.00	-14.76	43.12	13.21	35.36	38.27	VERTICAL	172	171	Peak
2	15604.46	45.31	54.00	-8.69	29.25	13.21	35.36	38.21	VERTICAL	172	171	Average

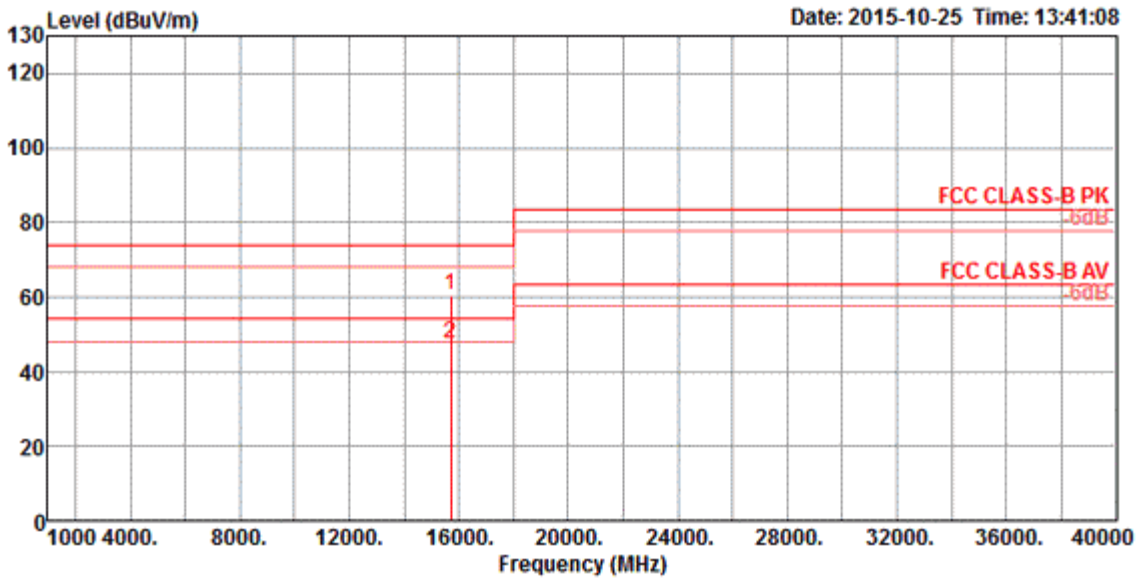
Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 48 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15717.24	60.58	74.00	-13.42	44.62	13.26	35.38	38.08	HORIZONTAL	142	338	Peak
2	15720.28	46.37	54.00	-7.63	30.41	13.26	35.38	38.08	HORIZONTAL	142	338	Average

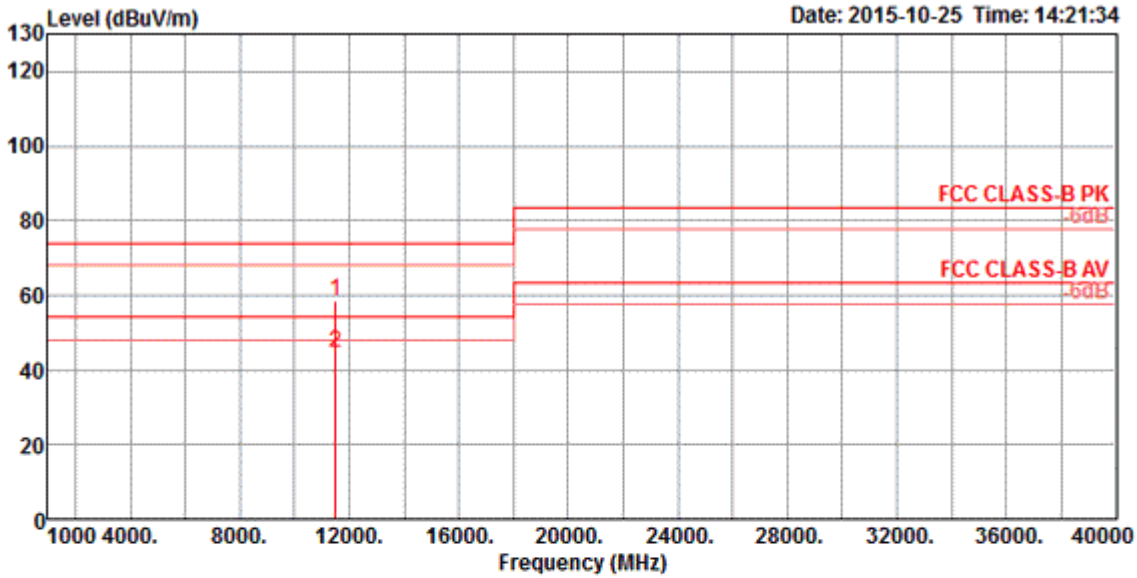
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15718.66	60.47	74.00	-13.53	44.51	13.26	35.38	38.08	VERTICAL	114	287	Peak
2	15723.16	47.27	54.00	-6.73	31.31	13.26	35.38	38.08	VERTICAL	114	287	Average

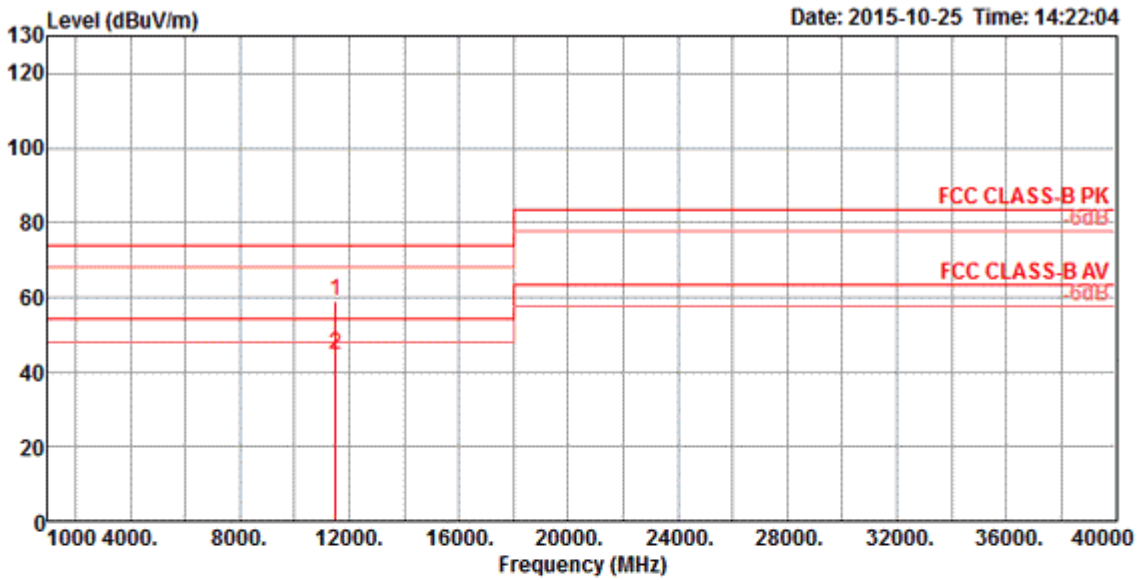
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 149 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11487.26	58.39	74.00	-15.61	42.25	11.47	35.23	39.90	HORIZONTAL	173	329	Peak
2	11491.80	44.64	54.00	-9.36	28.50	11.47	35.23	39.90	HORIZONTAL	173	329	Average

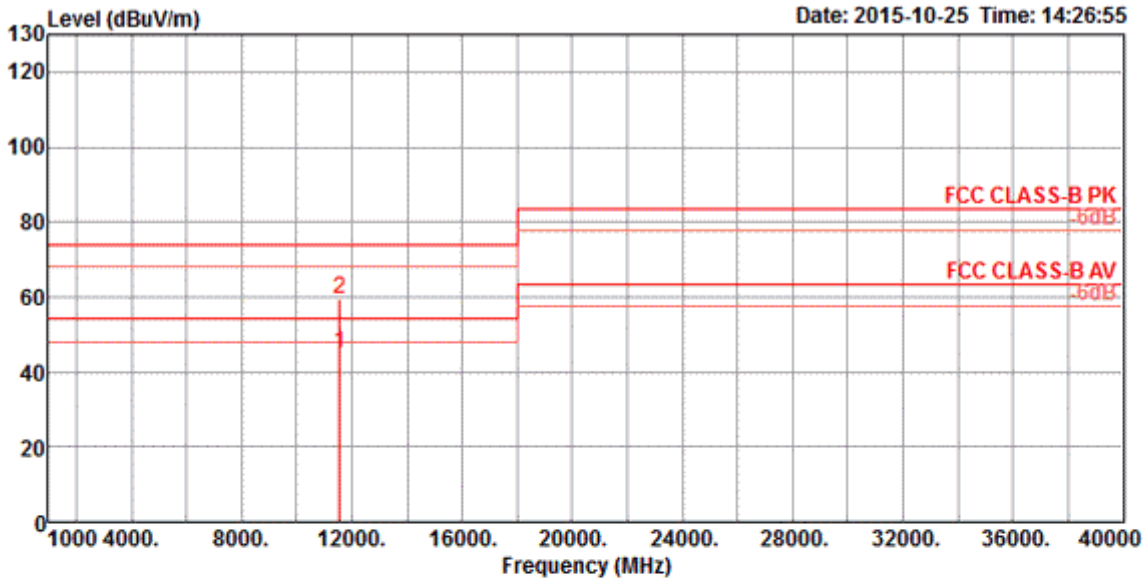
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11490.40	59.16	74.00	-14.84	43.02	11.47	35.23	39.90	VERTICAL	165	298	Peak
2	11491.76	44.67	54.00	-9.33	28.53	11.47	35.23	39.90	VERTICAL	165	298	Average

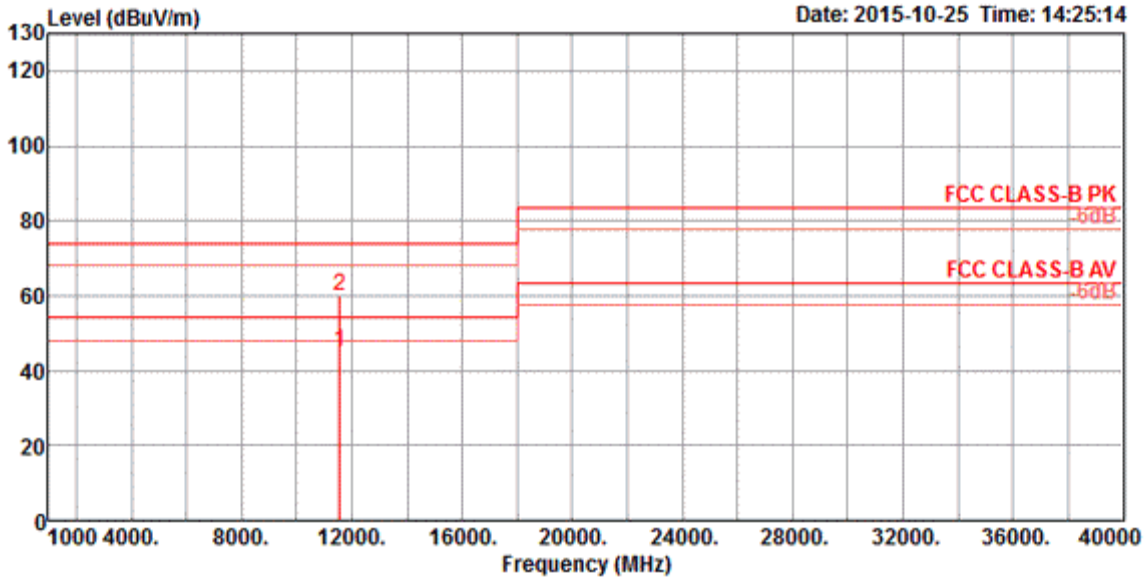
Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 157 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11568.90	45.30	54.00	-8.70	29.22	11.54	35.23	39.77	HORIZONTAL	144	243	Average
2	11570.84	59.24	74.00	-14.76	43.16	11.54	35.23	39.77	HORIZONTAL	144	243	Peak

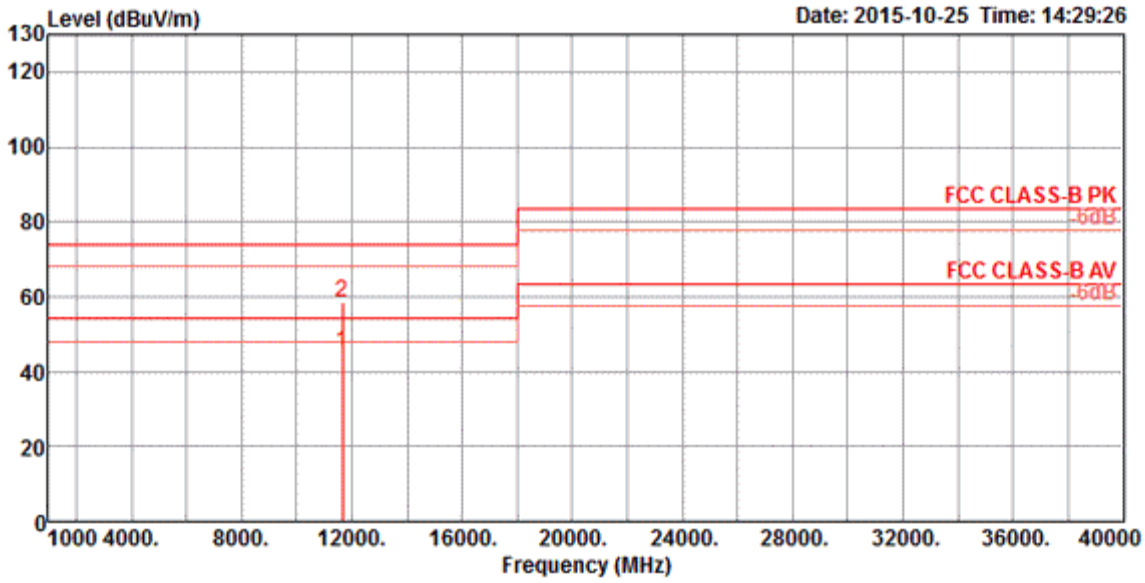
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11568.80	45.06	54.00	-8.94	28.98	11.54	35.23	39.77	VERTICAL	159	262	Average
2	11573.00	59.73	74.00	-14.27	43.65	11.54	35.23	39.77	VERTICAL	159	262	Peak

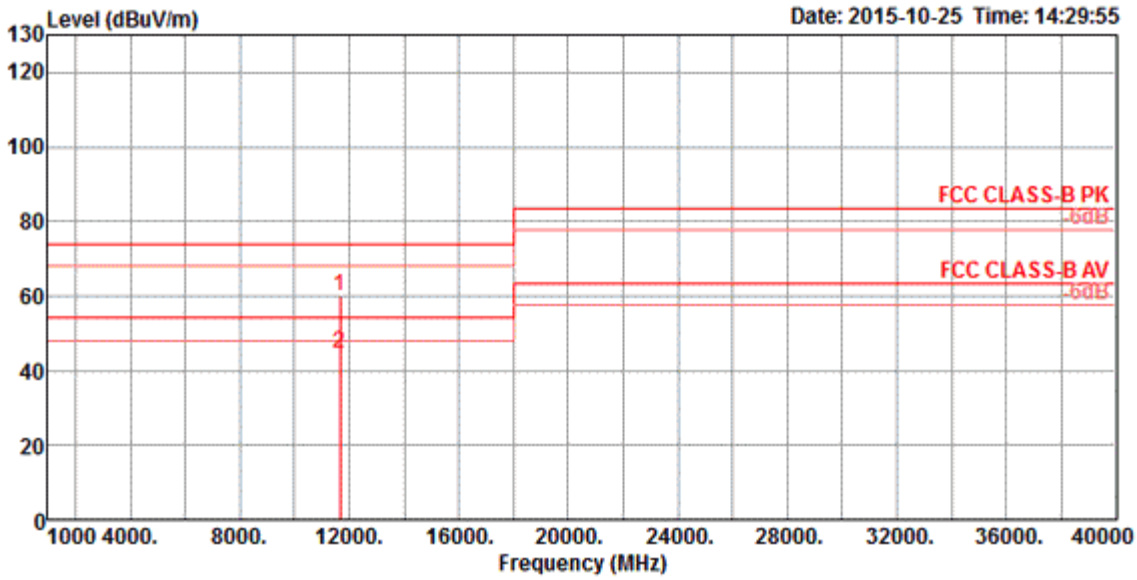
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 165 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11648.34	45.20	54.00	-8.80	29.17	11.62	35.22	39.63	HORIZONTAL	148	252	Average
2	11653.06	58.65	74.00	-15.35	42.68	11.62	35.22	39.57	HORIZONTAL	148	252	Peak

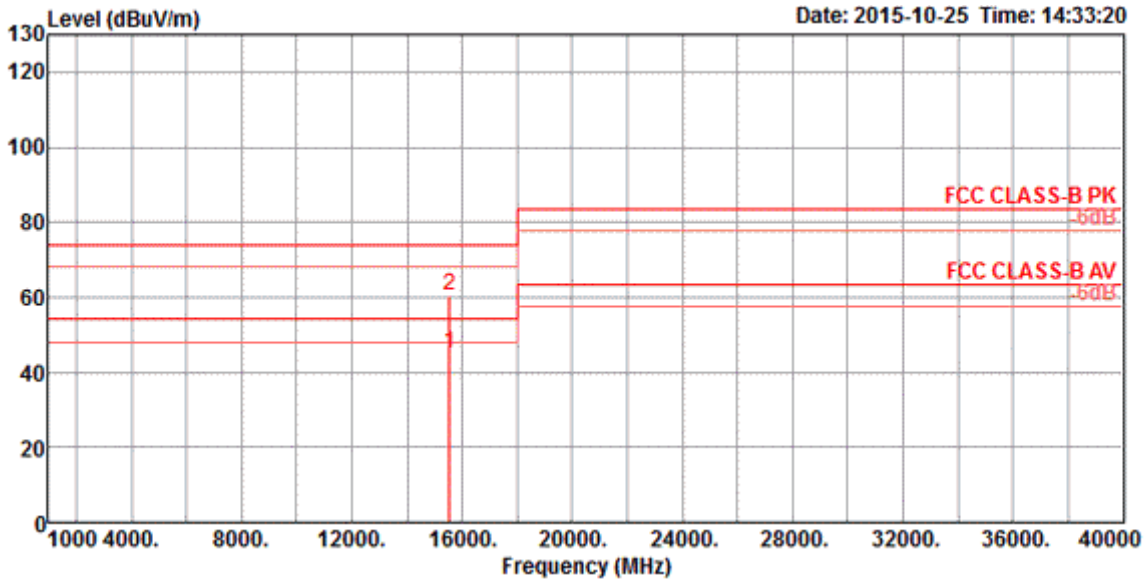
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11650.52	59.94	74.00	-14.06	43.91	11.62	35.22	39.63	VERTICAL	163	262	Peak
2	11651.46	44.50	54.00	-9.50	28.53	11.62	35.22	39.57	VERTICAL	163	262	Average

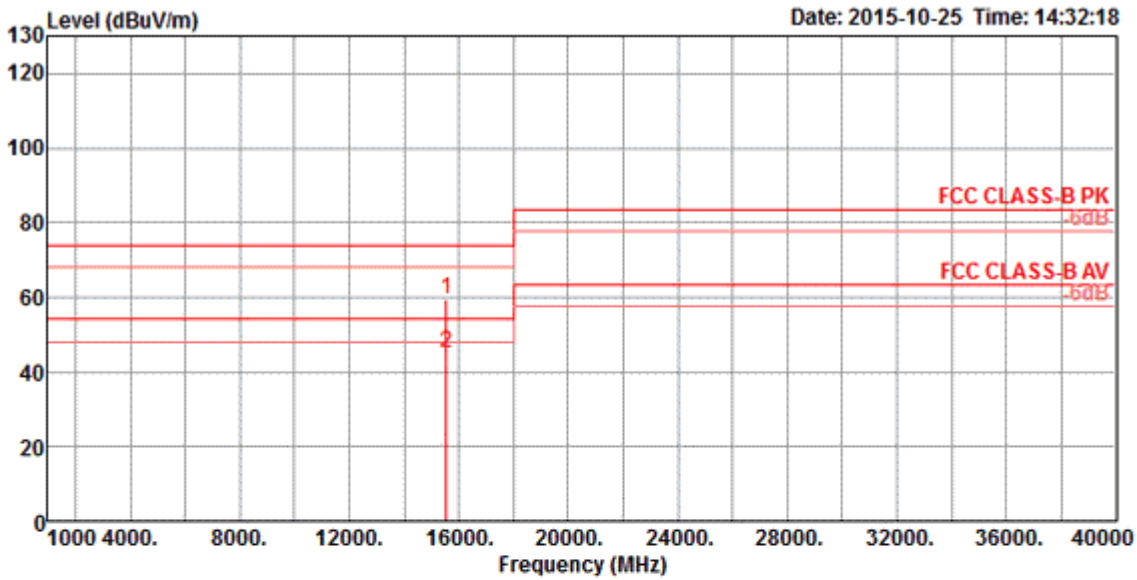
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15539.32	45.27	54.00	-8.73	29.10	13.18	35.35	38.34	HORIZONTAL	177	154	Average
2	15540.30	60.49	74.00	-13.51	44.32	13.18	35.35	38.34	HORIZONTAL	177	154	Peak

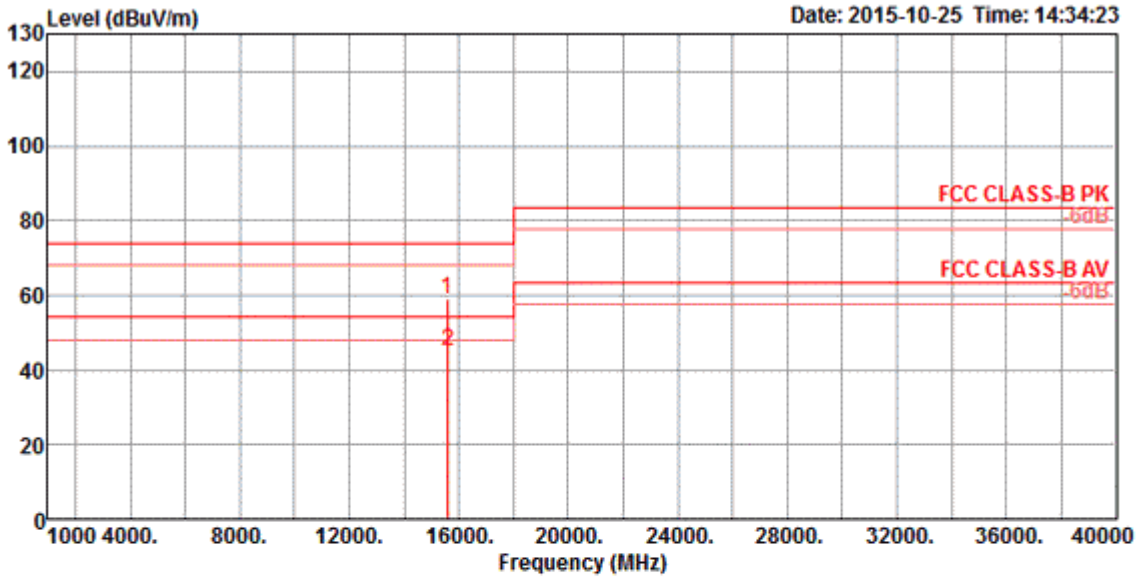
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15541.20	59.51	74.00	-14.49	43.34	13.18	35.35	38.34	VERTICAL	182	134	Peak
2	15544.08	45.28	54.00	-8.72	29.11	13.18	35.35	38.34	VERTICAL	182	134	Average

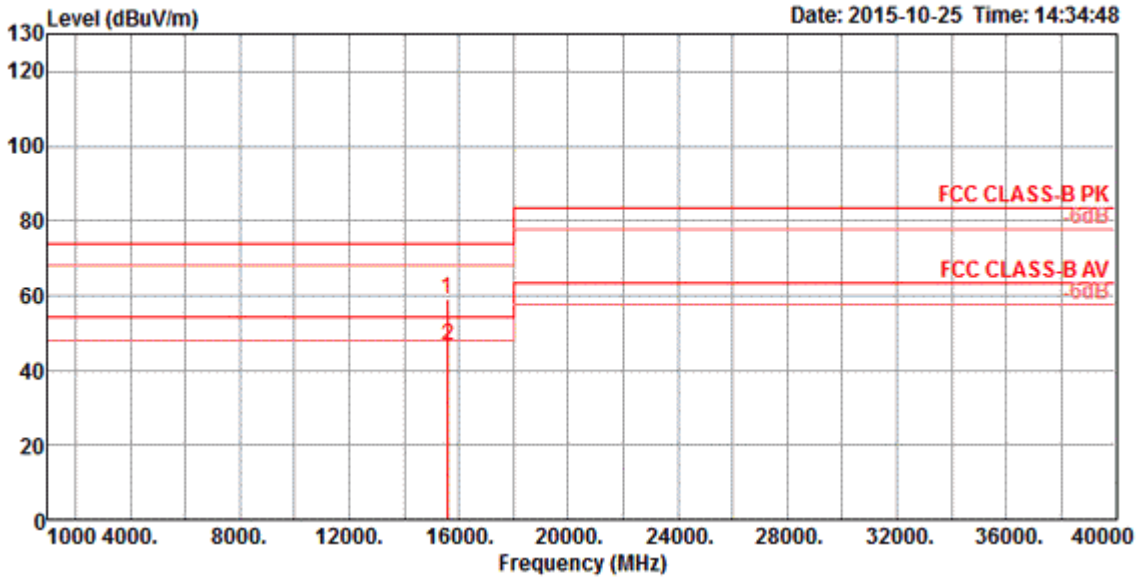
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 40 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15597.86	59.06	74.00	-14.94	42.94	13.21	35.36	38.27	HORIZONTAL	172	175	Peak
2	15602.06	45.24	54.00	-8.76	29.18	13.21	35.36	38.21	HORIZONTAL	172	175	Average

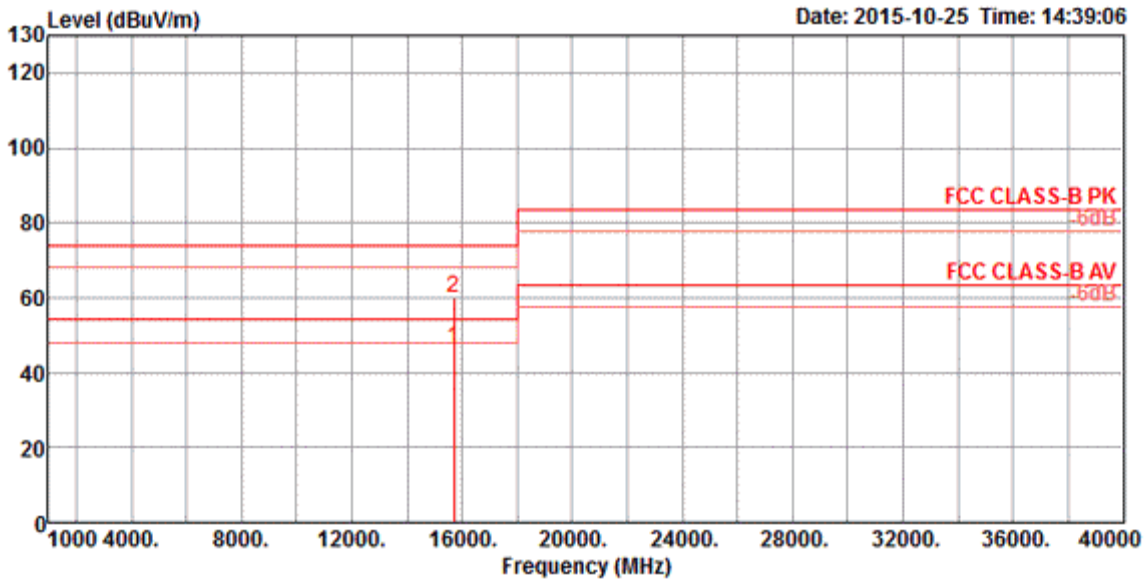
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15596.66	58.96	74.00	-15.04	42.84	13.21	35.36	38.27	VERTICAL	168	199	Peak
2	15599.10	46.36	54.00	-7.64	30.24	13.21	35.36	38.27	VERTICAL	168	199	Average

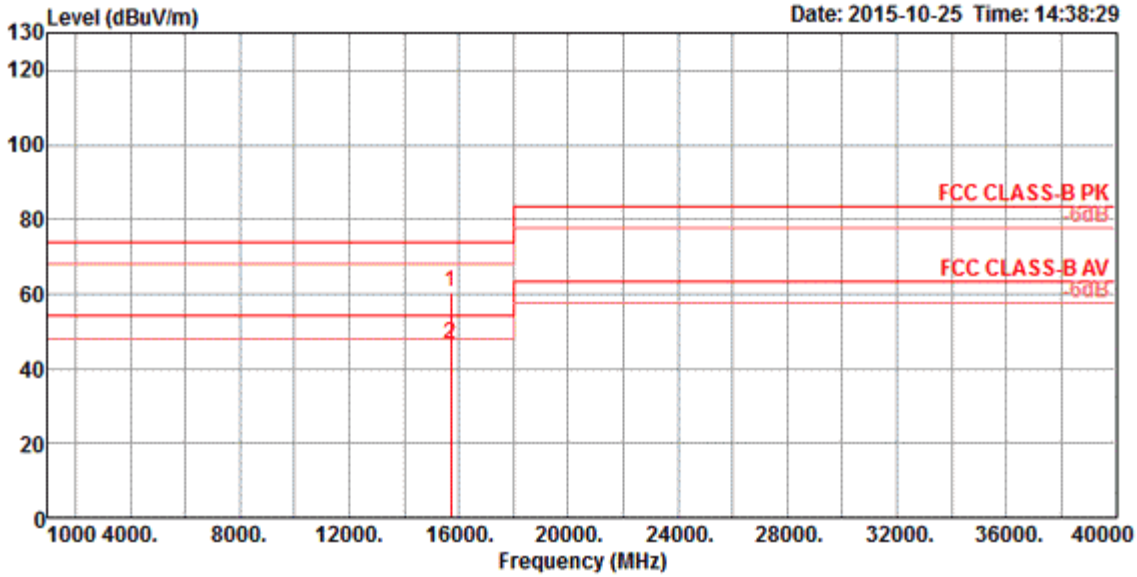
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 48 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15720.44	46.39	54.00	-7.61	30.43	13.26	35.38	38.08	HORIZONTAL	157	284	Average
2	15721.68	60.06	74.00	-13.94	44.10	13.26	35.38	38.08	HORIZONTAL	157	284	Peak

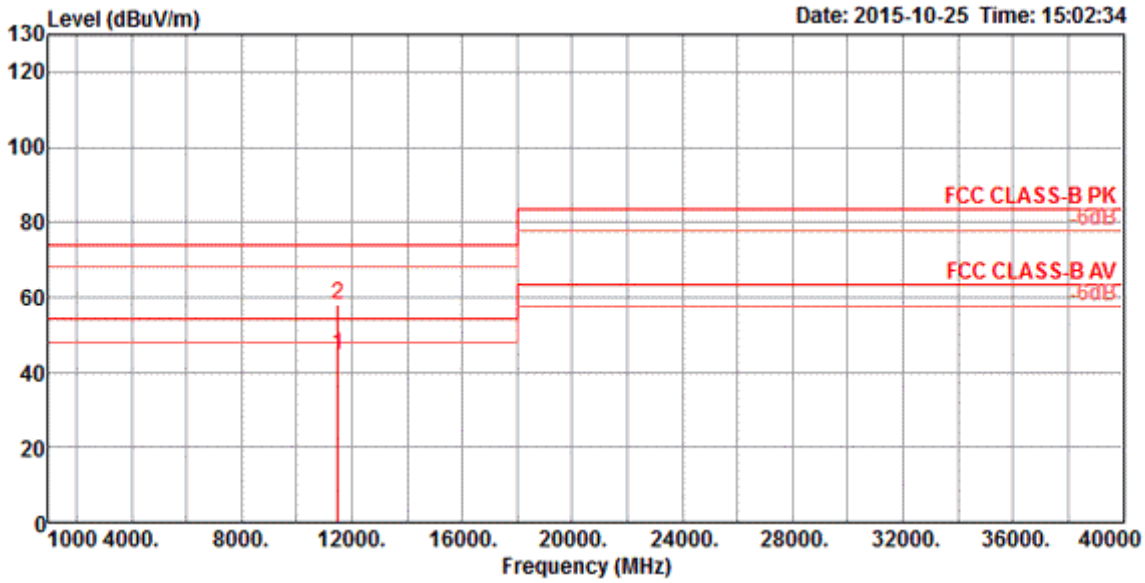
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15719.78	60.46	74.00	-13.54	44.50	13.26	35.38	38.08	VERTICAL	162	267	Peak
2	15720.26	46.44	54.00	-7.56	30.48	13.26	35.38	38.08	VERTICAL	162	267	Average

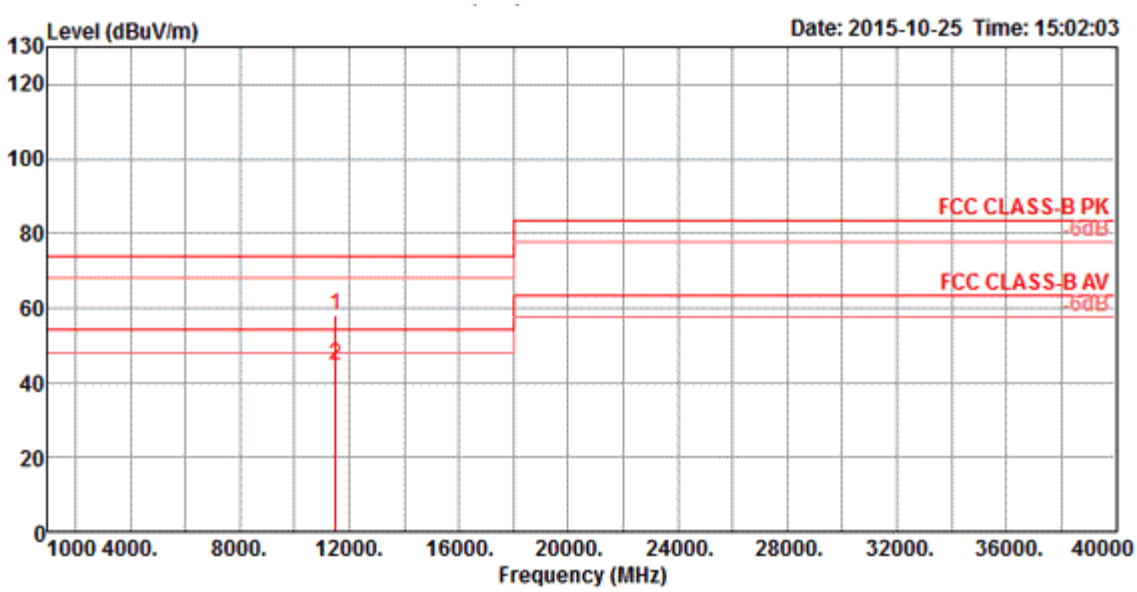
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11491.64	44.62	54.00	-9.38	28.48	11.47	35.23	39.90	HORIZONTAL	172	144	Average
2	11491.80	58.23	74.00	-15.77	42.09	11.47	35.23	39.90	HORIZONTAL	172	144	Peak

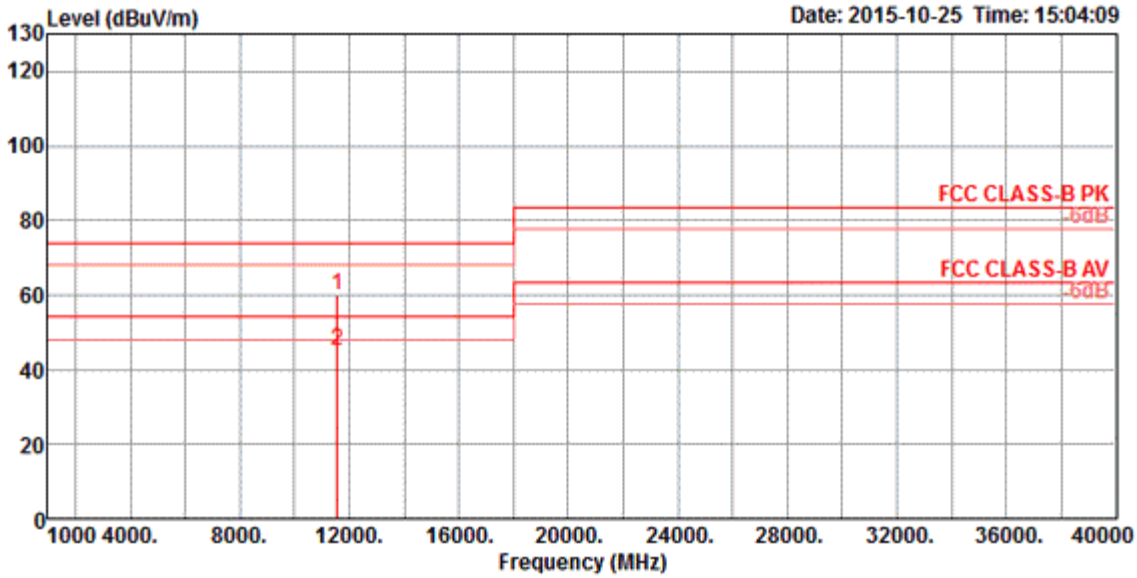
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11490.82	58.17	74.00	-15.83	42.03	11.47	35.23	39.90	VERTICAL	165	183	Peak
2	11494.38	44.65	54.00	-9.35	28.51	11.47	35.23	39.90	VERTICAL	165	183	Average

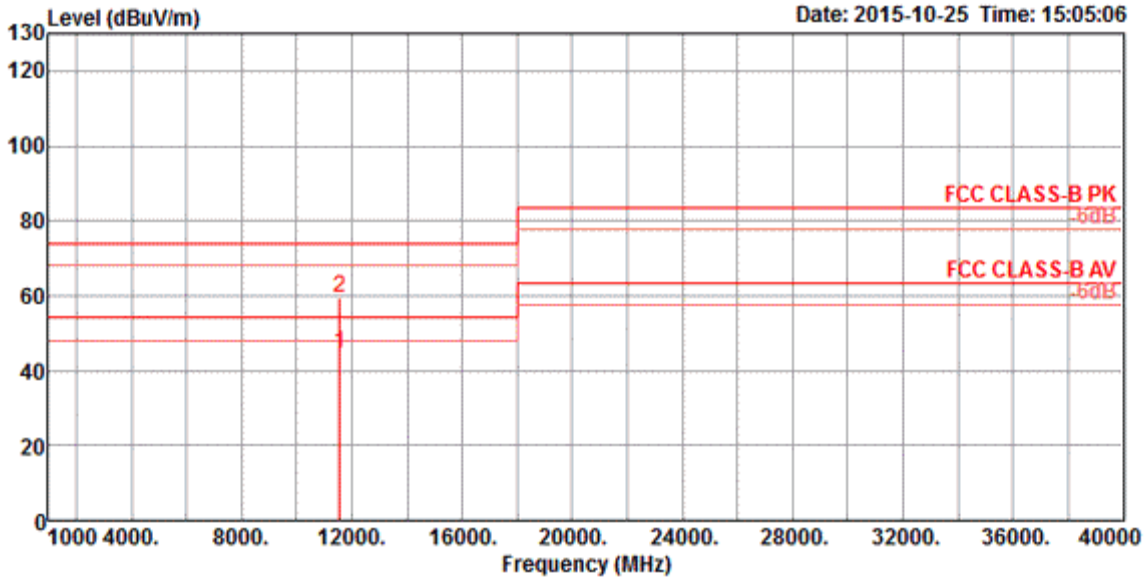
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 157 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11567.14	59.84	74.00	-14.16	43.76	11.54	35.23	39.77	HORIZONTAL	164	115	Peak
2	11574.26	44.92	54.00	-9.08	28.84	11.54	35.23	39.77	HORIZONTAL	164	115	Average

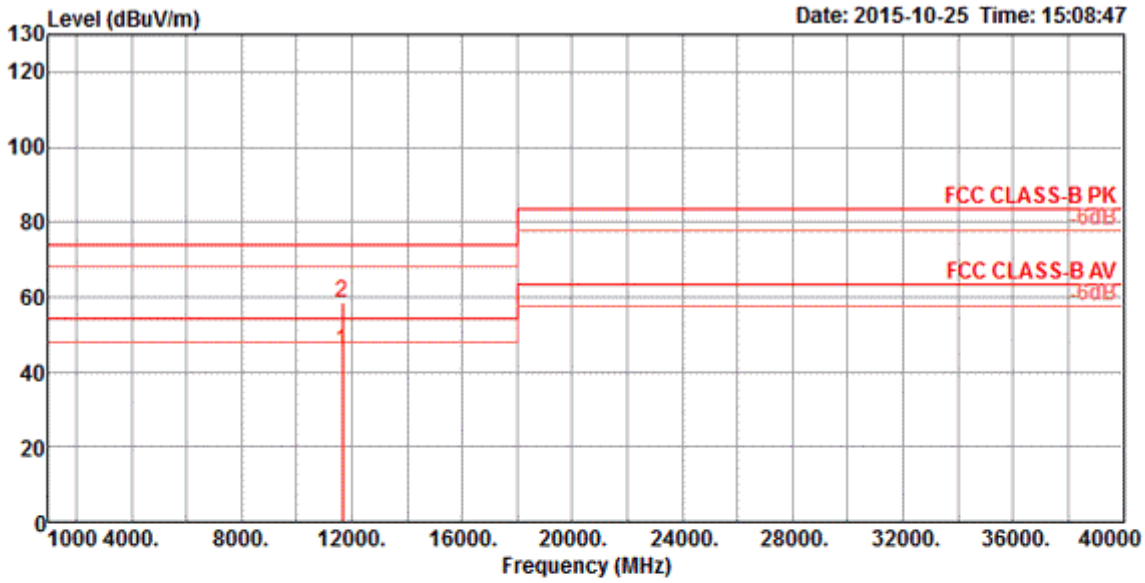
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11573.70	44.76	54.00	-9.24	28.68	11.54	35.23	39.77	VERTICAL	158	58	Average
2	11574.74	59.35	74.00	-14.65	43.27	11.54	35.23	39.77	VERTICAL	158	58	Peak

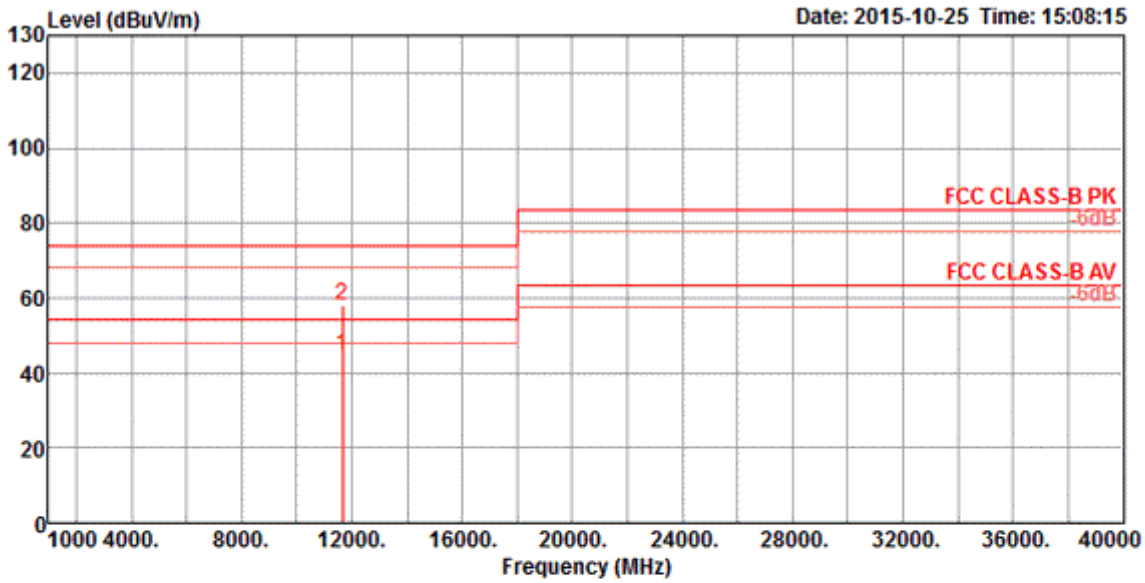
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 165 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11645.66	45.38	54.00	-8.62	29.36	11.61	35.22	39.63	HORIZONTAL	161	148	Average
2	11647.48	58.58	74.00	-15.42	42.56	11.61	35.22	39.63	HORIZONTAL	161	148	Peak

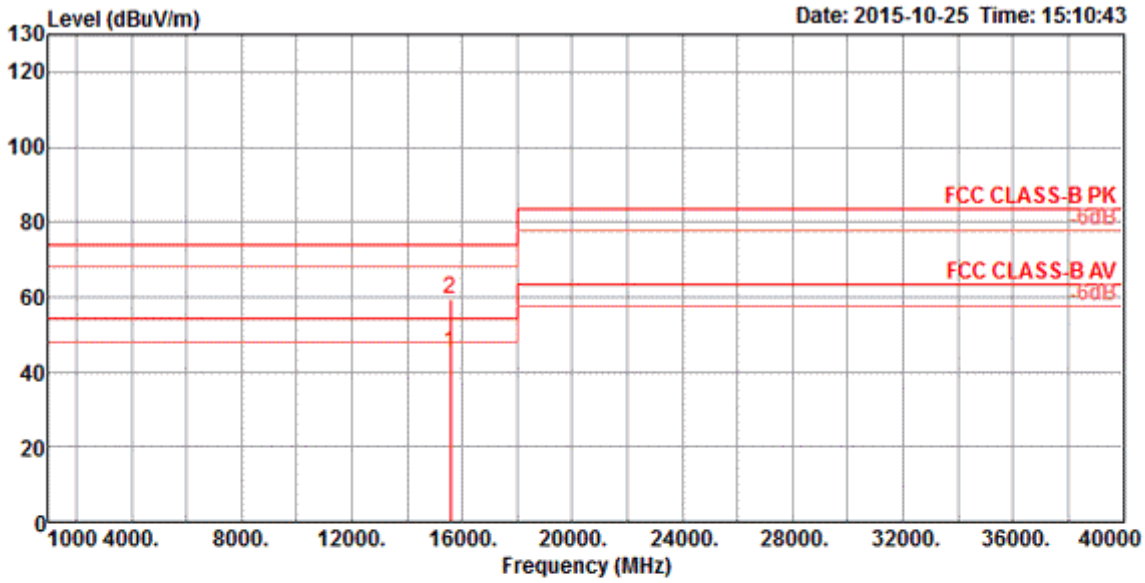
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11646.06	44.49	54.00	-9.51	28.47	11.61	35.22	39.63	VERTICAL	171	108	Average
2	11648.44	57.95	74.00	-16.05	41.92	11.62	35.22	39.63	VERTICAL	171	108	Peak

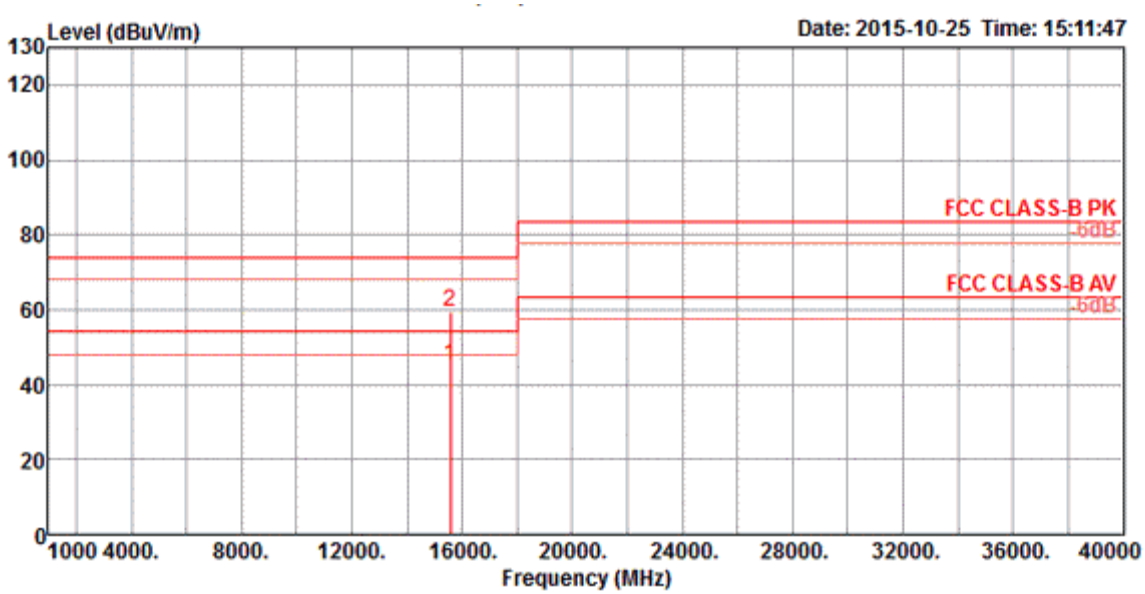
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15568.90	45.25	54.00	-8.75	29.14	13.20	35.36	38.27	HORIZONTAL	154	180	Average
2	15569.42	59.66	74.00	-14.34	43.55	13.20	35.36	38.27	HORIZONTAL	154	180	Peak

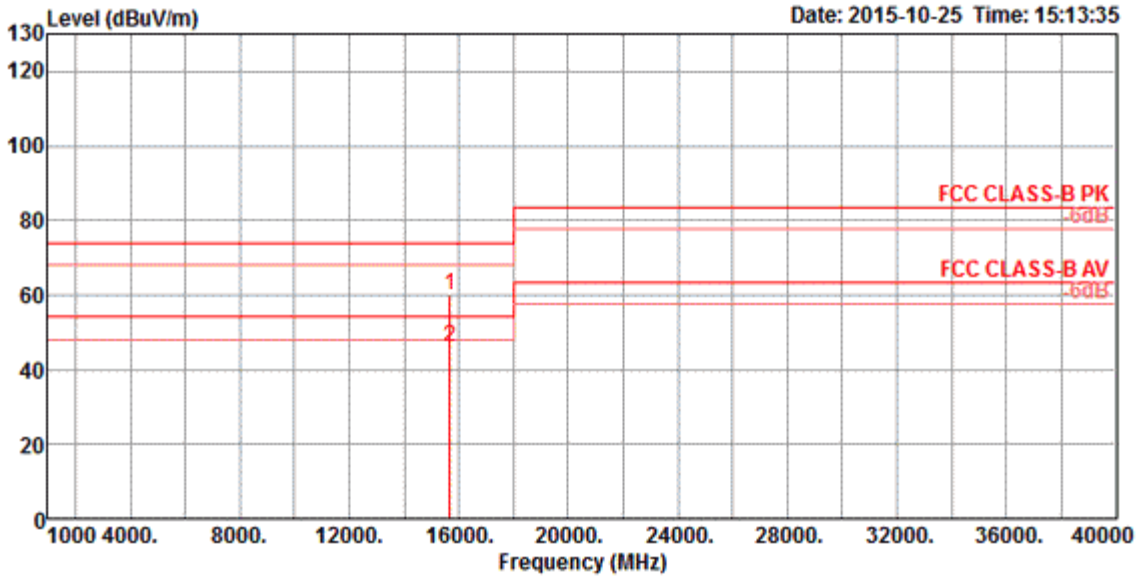
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15568.46	45.21	54.00	-8.79	29.10	13.20	35.36	38.27	VERTICAL	191	202	Average
2	15571.58	59.40	74.00	-14.60	43.29	13.20	35.36	38.27	VERTICAL	191	202	Peak

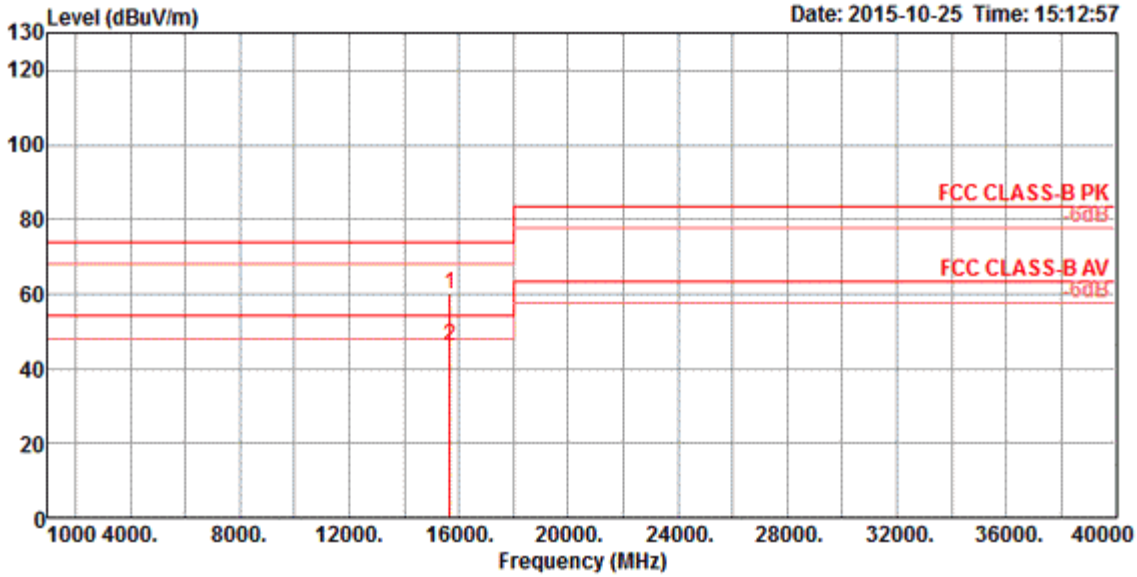
Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 46 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15689.66	59.96	74.00	-14.04	43.94	13.24	35.37	38.15	HORIZONTAL	151	290	Peak
2	15690.22	46.17	54.00	-7.83	30.15	13.24	35.37	38.15	HORIZONTAL	151	290	Average

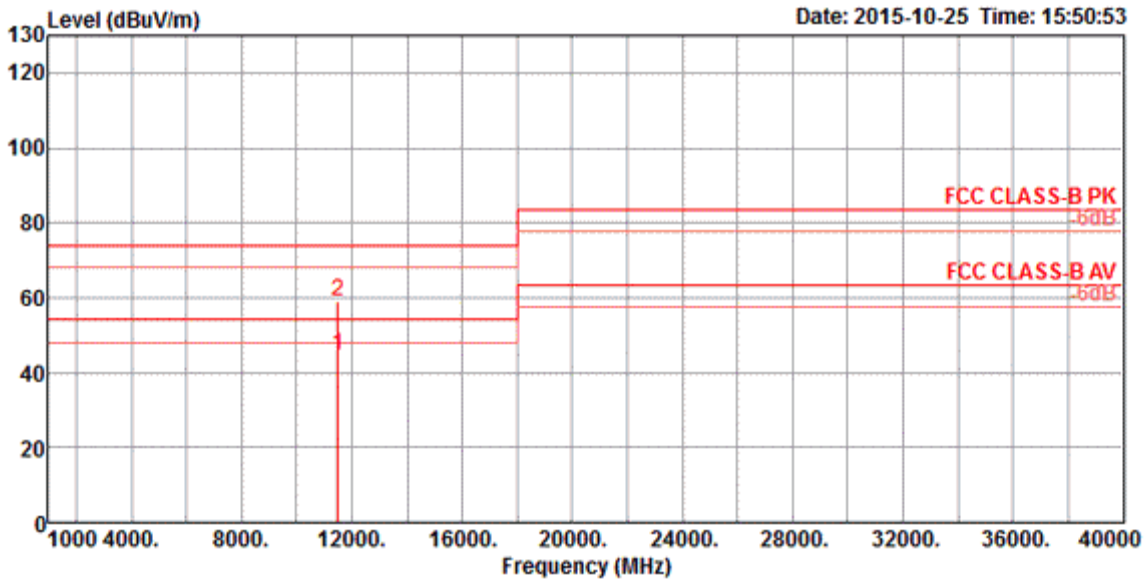
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15688.98	59.83	74.00	-14.17	43.81	13.24	35.37	38.15	VERTICAL	185	243	Peak
2	15693.00	46.09	54.00	-7.91	30.13	13.25	35.37	38.08	VERTICAL	185	243	Average

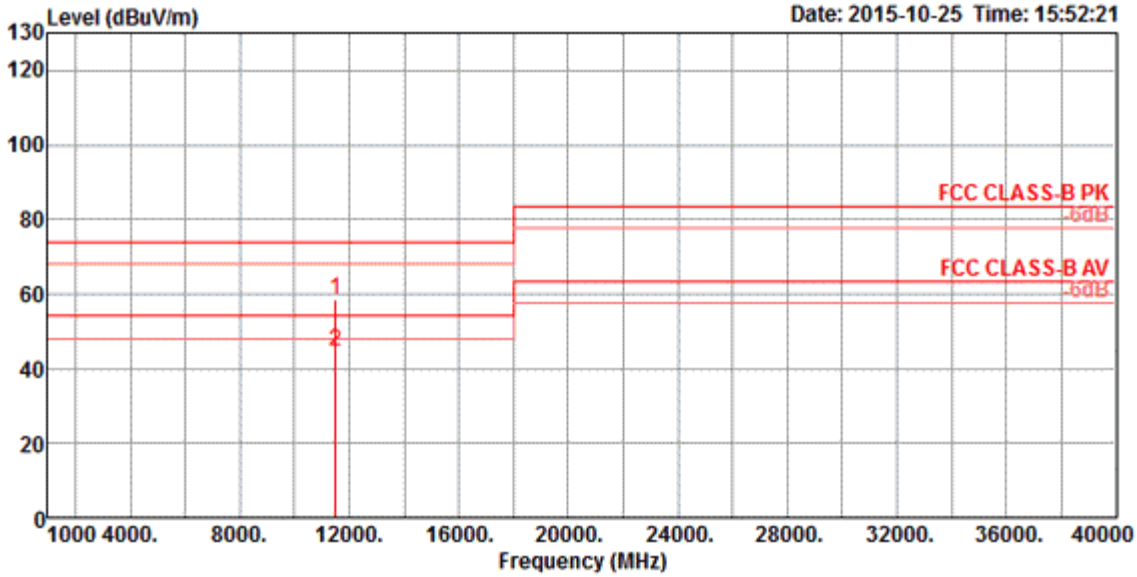
Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11513.76	44.63	54.00	-9.37	28.47	11.49	35.23	39.90	HORIZONTAL	180	207	Average
2	11514.50	59.16	74.00	-14.84	43.00	11.49	35.23	39.90	HORIZONTAL	180	207	Peak

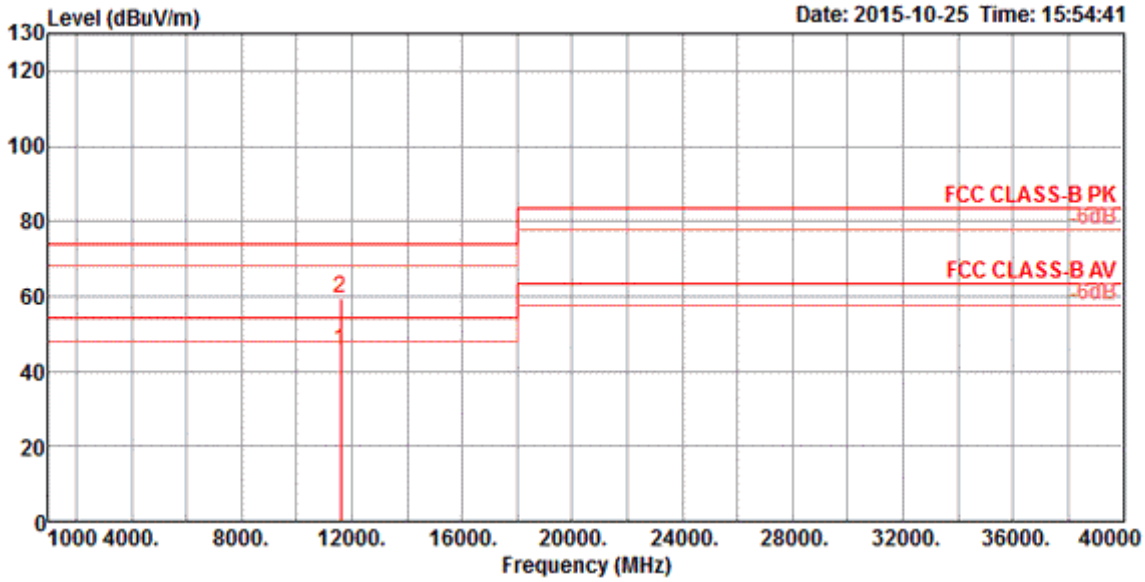
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11508.58	58.29	74.00	-15.71	42.13	11.49	35.23	39.90	VERTICAL	166	249	Peak
2	11513.76	44.69	54.00	-9.31	28.53	11.49	35.23	39.90	VERTICAL	166	249	Average

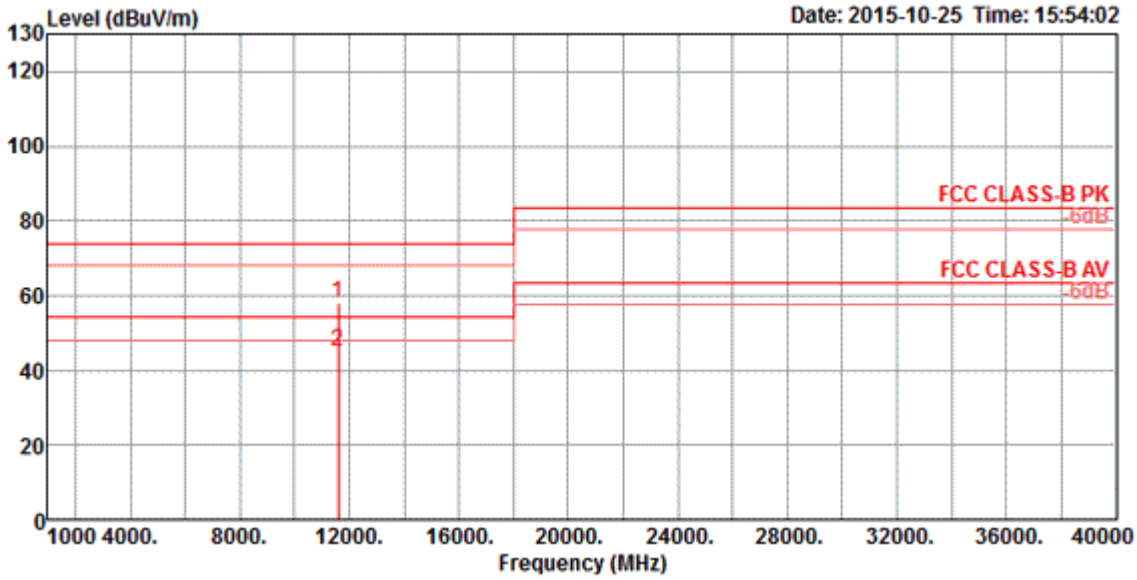
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 159 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11585.34	45.72	54.00	-8.28	29.68	11.56	35.22	39.70	HORIZONTAL	167	286	Average
2	11591.20	59.57	74.00	-14.43	43.53	11.56	35.22	39.70	HORIZONTAL	167	286	Peak

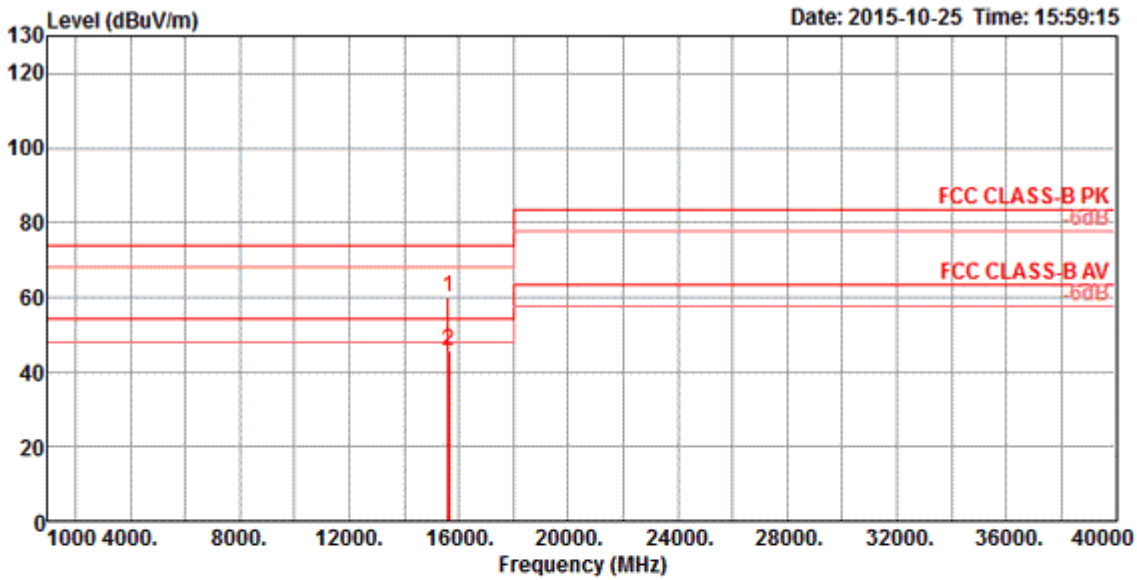
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11588.80	58.26	74.00	-15.74	42.22	11.56	35.22	39.70	VERTICAL	153	335	Peak
2	11593.46	44.92	54.00	-9.08	28.88	11.56	35.22	39.70	VERTICAL	153	335	Average

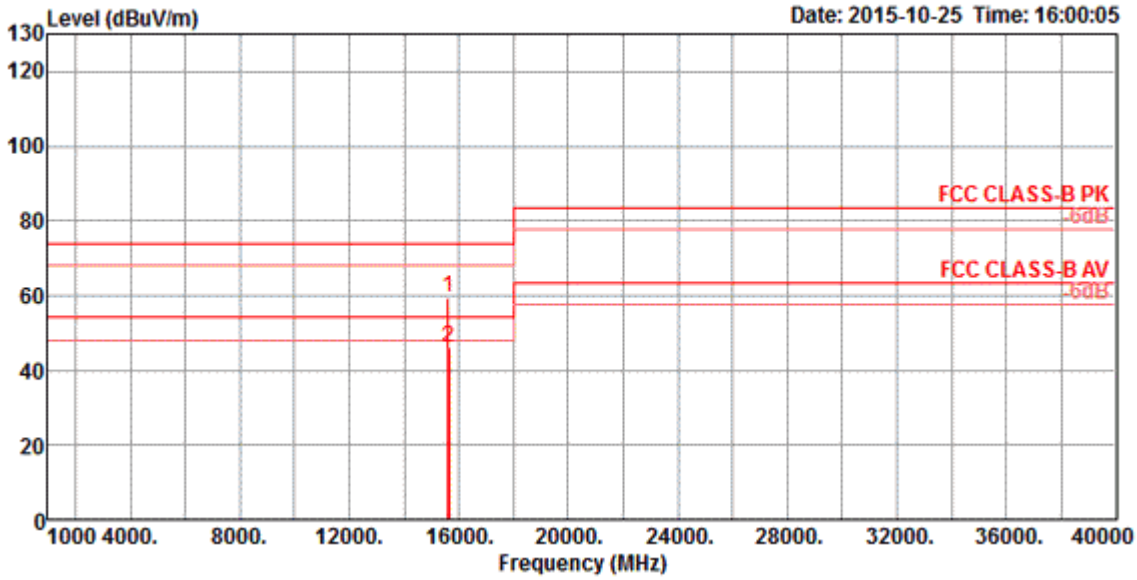
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15631.08	59.77	74.00	-14.23	43.70	13.22	35.36	38.21	HORIZONTAL	134	270	Peak
2	15635.00	45.59	54.00	-8.41	29.52	13.22	35.36	38.21	HORIZONTAL	134	270	Average

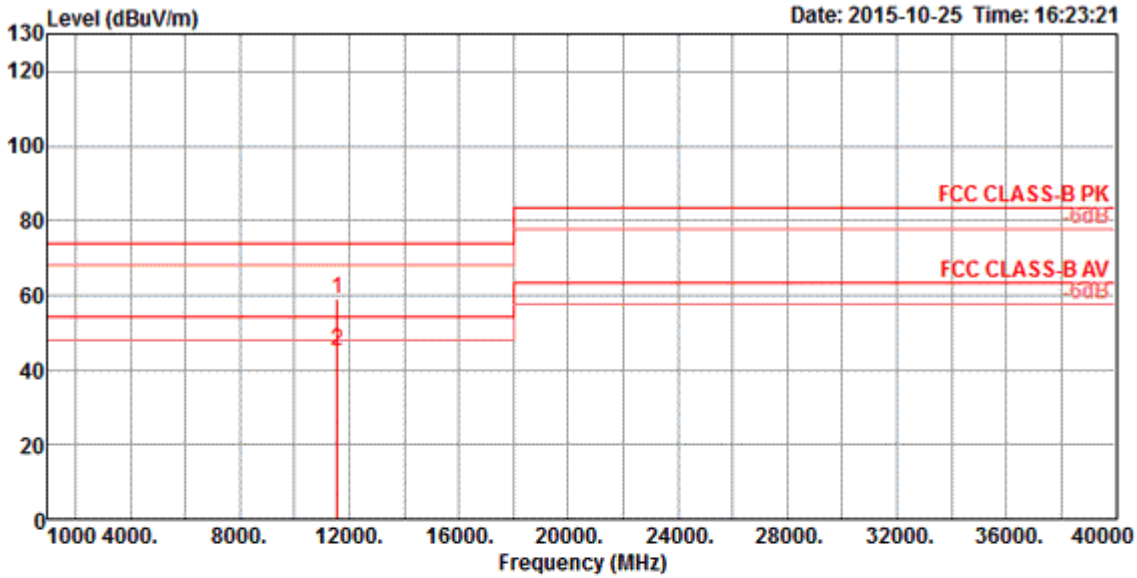
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	15625.76	59.45	74.00	-14.55	43.38	13.22	35.36	38.21	VERTICAL	143	302	Peak
2	15634.38	46.07	54.00	-7.93	30.00	13.22	35.36	38.21	VERTICAL	143	302	Average

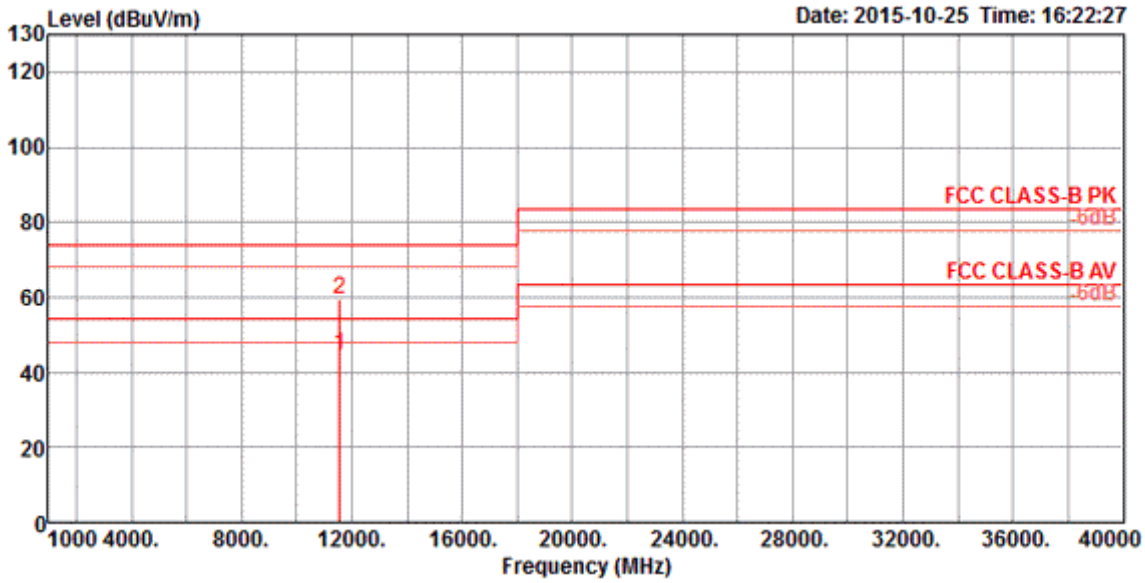
Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 155 / Chain 1 + Chain 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11549.46	59.11	74.00	-14.89	42.99	11.52	35.23	39.83	HORIZONTAL	171	275	Peak
2	11549.52	44.91	54.00	-9.09	28.79	11.52	35.23	39.83	HORIZONTAL	171	275	Average

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	11549.42	44.84	54.00	-9.16	28.72	11.52	35.23	39.83	VERTICAL	155	264	Average
2	11554.98	59.47	74.00	-14.53	43.41	11.52	35.23	39.77	VERTICAL	155	264	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.

4.7. Band Edge Emissions Measurement

4.7.1. Limit

For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

In addition, 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

4.7.2. 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 (Emission in non-restricted band)	1MHz / 3MHz for Peak

4.7.3. Test Procedures

1. The test procedure is the same as section 4.6.3.

4.7.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.6.4.

4.7.5. Test Deviation

There is no deviation with the original standard.

4.7.6. EUT Operation during Test

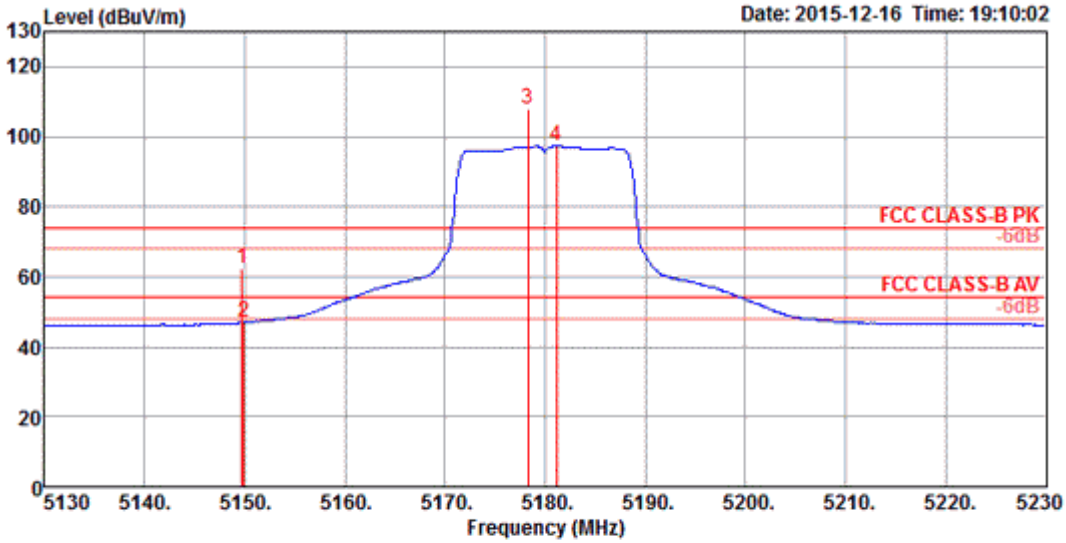
The EUT was programmed to be in continuously transmitting mode.

4.7.7. Test Result of Band Edge and Fundamental Emissions

<For 1TX>

Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 36, 40, 48 / Chain 1

Channel 36

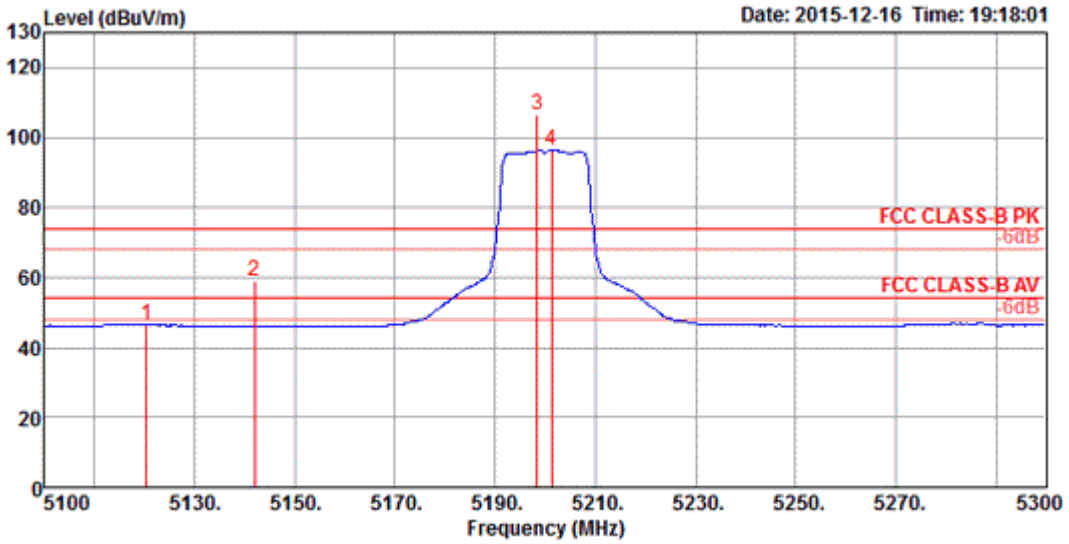


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5149.71	62.55	74.00	-11.45	56.19	7.78	32.94	31.52	VERTICAL	213	228	Peak
2	5149.86	46.98	54.00	-7.02	40.62	7.78	32.94	31.52	VERTICAL	213	228	Average
3	5178.26	108.13			101.74	7.78	32.94	31.55	VERTICAL	213	228	Peak
4	5181.16	97.34			90.95	7.78	32.94	31.55	VERTICAL	213	228	Average

Item 3, 4 are the fundamental frequency at 5180 MHz.

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

Channel 40

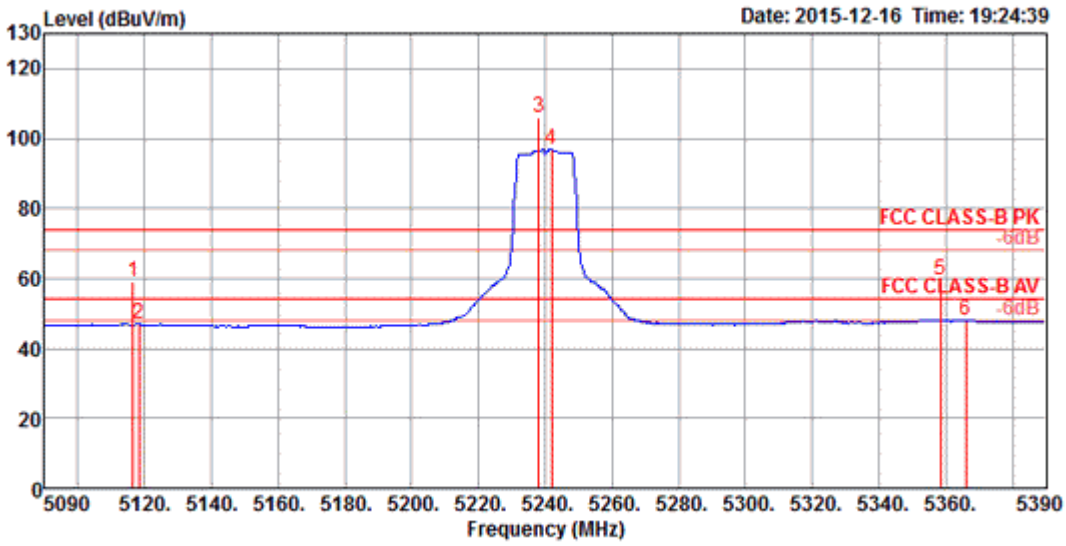


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5120.40	46.52	54.00	-7.48	40.18	7.78	32.94	31.50	VERTICAL	183	244	Average
2	5142.00	58.96	74.00	-15.04	52.60	7.78	32.94	31.52	VERTICAL	183	244	Peak
3	5198.40	106.68			100.28	7.78	32.94	31.56	VERTICAL	183	244	Peak
4	5201.20	96.54			90.14	7.78	32.94	31.56	VERTICAL	183	244	Average

Item 3, 4 are the fundamental frequency at 5200 MHz.

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

Channel 48



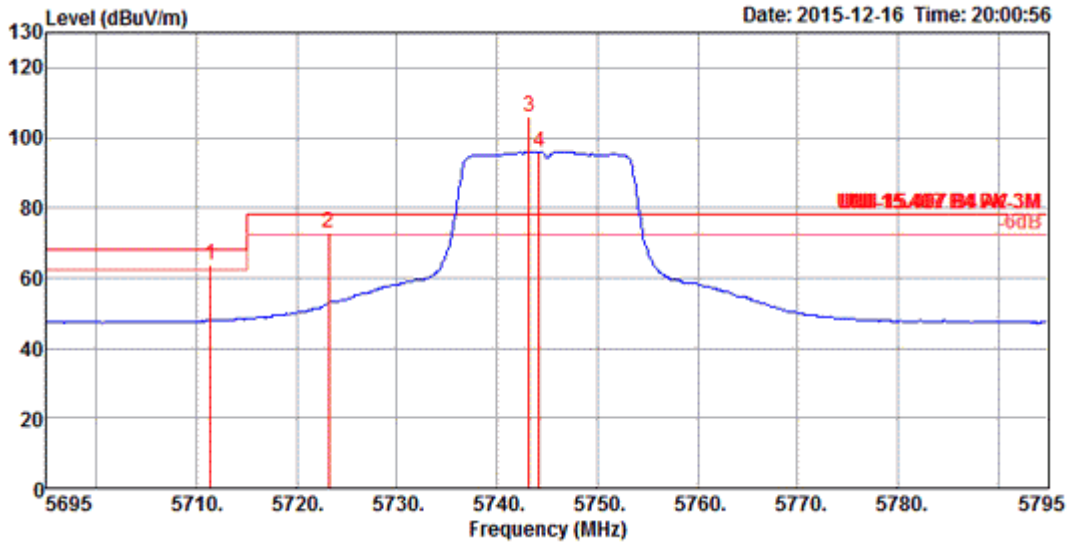
	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5116.40	59.15	74.00	-14.85	52.81	7.78	32.94	31.50	VERTICAL	198	248	Peak
2	5118.20	46.93	54.00	-7.07	40.59	7.78	32.94	31.50	VERTICAL	198	248	Average
3	5238.20	106.25			99.82	7.78	32.94	31.59	VERTICAL	198	248	Peak
4	5241.80	96.78			90.34	7.78	32.93	31.59	VERTICAL	198	248	Average
5	5358.40	59.64	74.00	-14.36	53.11	7.77	32.93	31.69	VERTICAL	198	248	Peak
6	5366.00	48.15	54.00	-5.85	41.62	7.77	32.93	31.69	VERTICAL	198	248	Average

Item 3, 4 are the fundamental frequency at 5240 MHz.

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

Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 149, 157, 165 / Chain 1

Channel 149

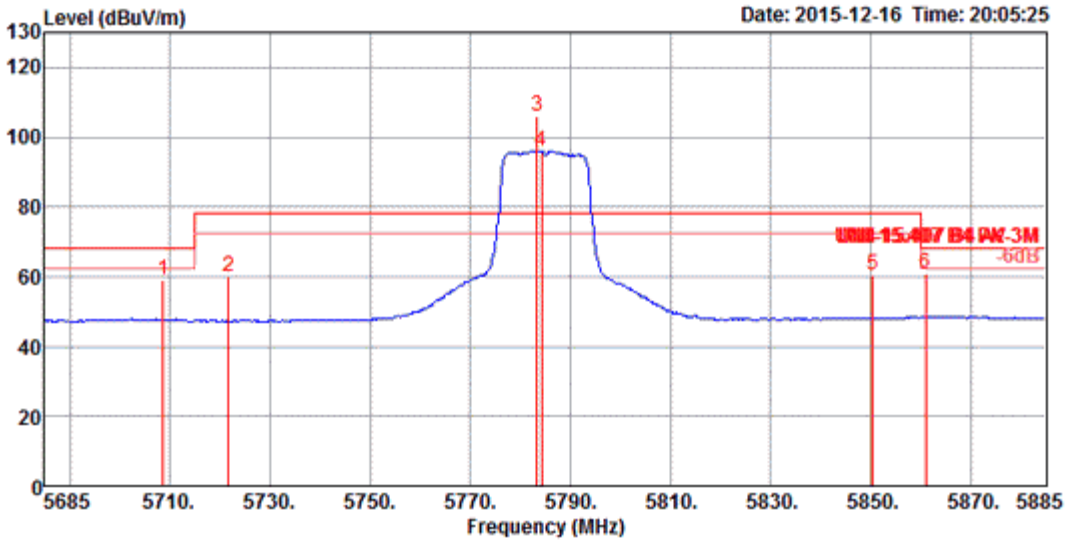


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5711.40	63.78	68.20	-4.42	56.70	8.02	33.00	32.06	VERTICAL	269	250	Peak
2	5723.20	72.83	78.20	-5.37	65.71	8.04	33.00	32.08	VERTICAL	269	250	Peak
3	5743.20	106.09			98.94	8.06	33.01	32.10	VERTICAL	269	250	Peak
4	5744.20	96.08			88.93	8.06	33.01	32.10	VERTICAL	269	250	Average

Item 3, 4 are the fundamental frequency at 5745 MHz.

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

Channel 157

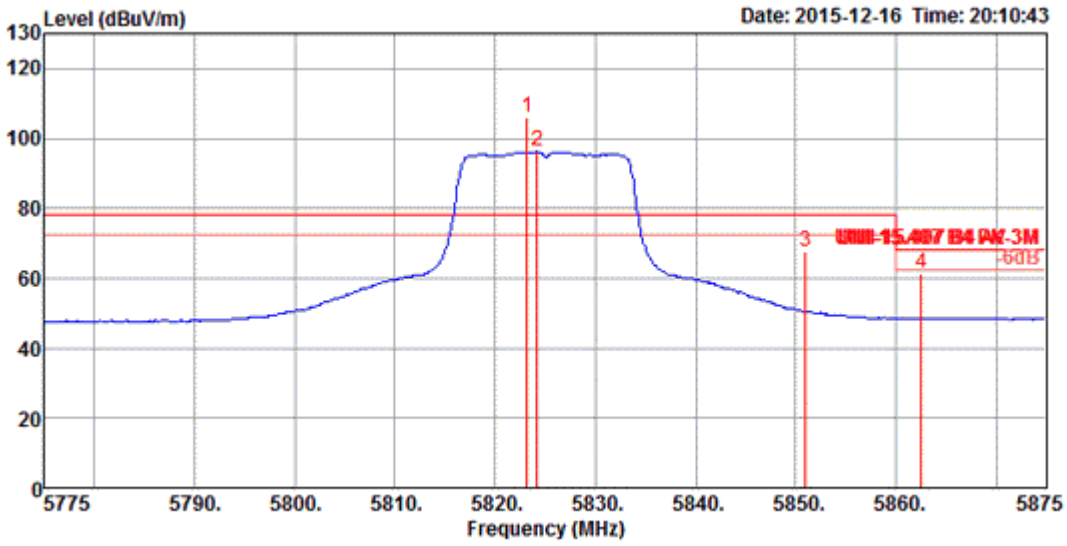


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5708.60	59.07	68.20	-9.13	51.99	8.02	33.00	32.06	VERTICAL	285	247	Peak
2	5721.80	59.79	78.20	-18.41	52.71	8.02	33.00	32.06	VERTICAL	285	247	Peak
3	5783.40	105.99			98.78	8.10	33.03	32.14	VERTICAL	285	247	Peak
4	5784.20	96.03			88.82	8.10	33.03	32.14	VERTICAL	285	247	Average
5	5850.40	60.36	78.20	-17.84	53.01	8.18	33.05	32.22	VERTICAL	285	247	Peak
6	5861.00	61.03	68.20	-7.17	53.66	8.19	33.06	32.24	VERTICAL	285	247	Peak

Item 3, 4 are the fundamental frequency at 5785 MHz.

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

Channel 165



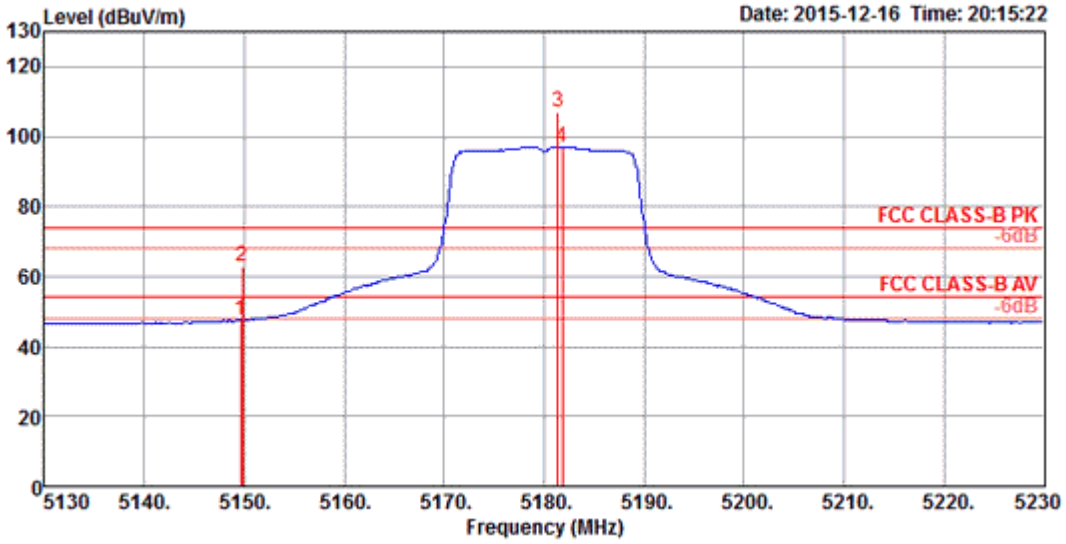
	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5823.20	105.98			98.67	8.16	33.05	32.20	VERTICAL	285	247	Peak
2	5824.20	96.18			88.87	8.16	33.05	32.20	VERTICAL	285	247	Average
3	5851.00	67.66	78.20	-10.54	60.31	8.18	33.05	32.22	VERTICAL	285	247	Peak
4	5862.60	61.58	68.20	-6.62	54.21	8.19	33.06	32.24	VERTICAL	285	247	Peak

Item 1, 2 are the fundamental frequency at 5825 MHz.

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

Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36, 40, 48 / Chain 1

Channel 36

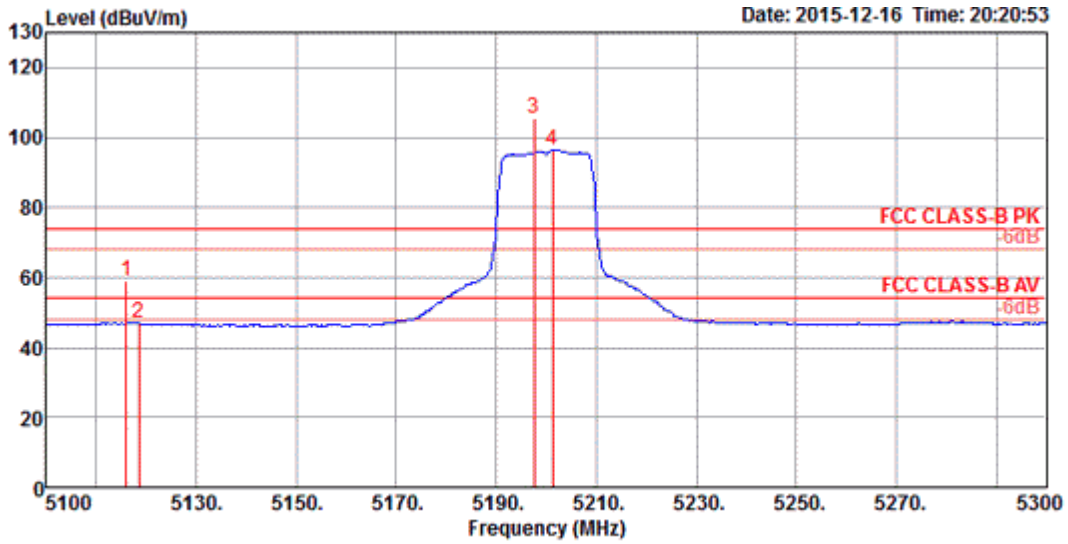


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5149.60	47.45	54.00	-6.55	41.09	7.78	32.94	31.52	VERTICAL	176	249	Average
2	5149.80	62.89	74.00	-11.11	56.53	7.78	32.94	31.52	VERTICAL	176	249	Peak
3	5181.40	106.79			100.40	7.78	32.94	31.55	VERTICAL	176	249	Peak
4	5181.80	97.04			90.65	7.78	32.94	31.55	VERTICAL	176	249	Average

Item 3, 4 are the fundamental frequency at 5180 MHz.

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

Channel 40

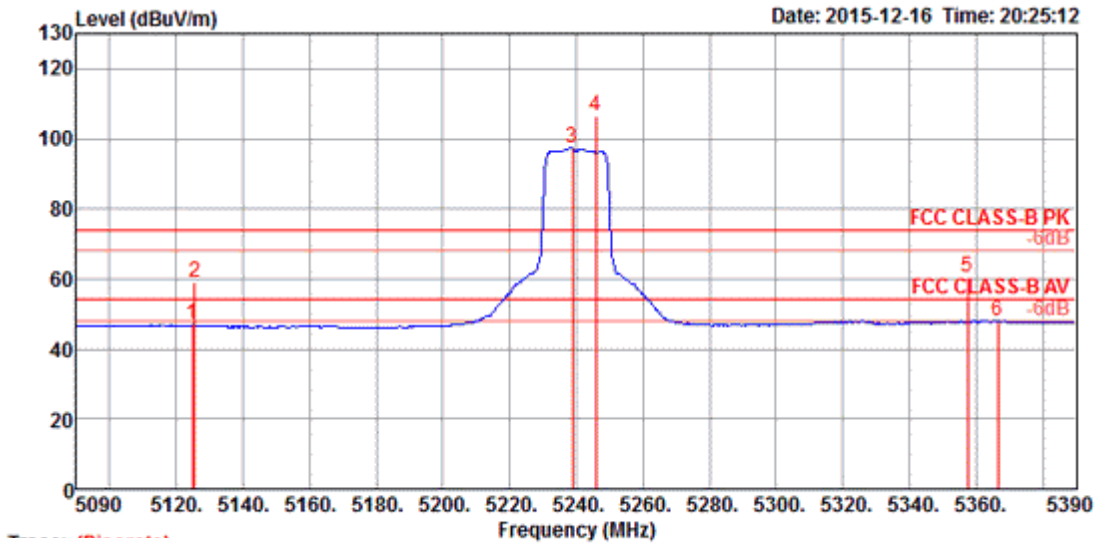


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5116.00	59.08	74.00	-14.92	52.74	7.78	32.94	31.50	VERTICAL	200	250	Peak
2	5118.40	47.03	54.00	-6.97	40.69	7.78	32.94	31.50	VERTICAL	200	250	Average
3	5197.60	105.74			99.34	7.78	32.94	31.56	VERTICAL	200	250	Peak
4	5201.20	96.38			89.98	7.78	32.94	31.56	VERTICAL	200	250	Average

Item 3, 4 are the fundamental frequency at 5200 MHz.

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

Channel 48



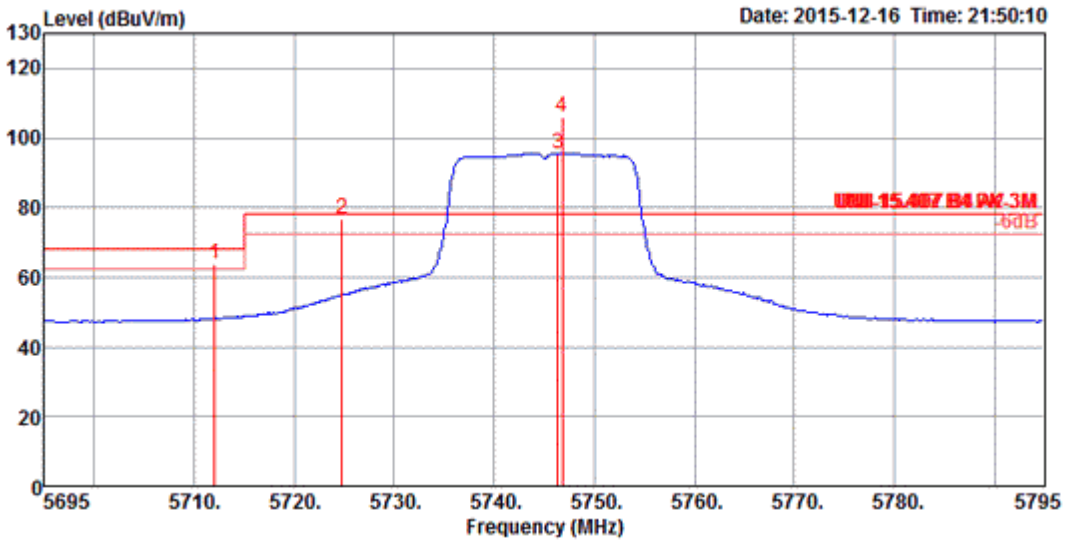
	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5124.80	46.79	54.00	-7.21	40.45	7.78	32.94	31.50	VERTICAL	183	255	Average
2	5125.40	59.06	74.00	-14.94	52.72	7.78	32.94	31.50	VERTICAL	183	255	Peak
3	5238.80	97.28			90.85	7.78	32.94	31.59	VERTICAL	183	255	Average
4	5246.00	106.52			100.08	7.78	32.93	31.59	VERTICAL	183	255	Peak
5	5357.60	60.50	74.00	-13.50	53.97	7.77	32.93	31.69	VERTICAL	183	255	Peak
6	5366.60	48.02	54.00	-5.98	41.49	7.77	32.93	31.69	VERTICAL	183	255	Average

Item 3, 4 are the fundamental frequency at 5240 MHz.

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

Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149, 157, 165 / Chain 1

Channel 149

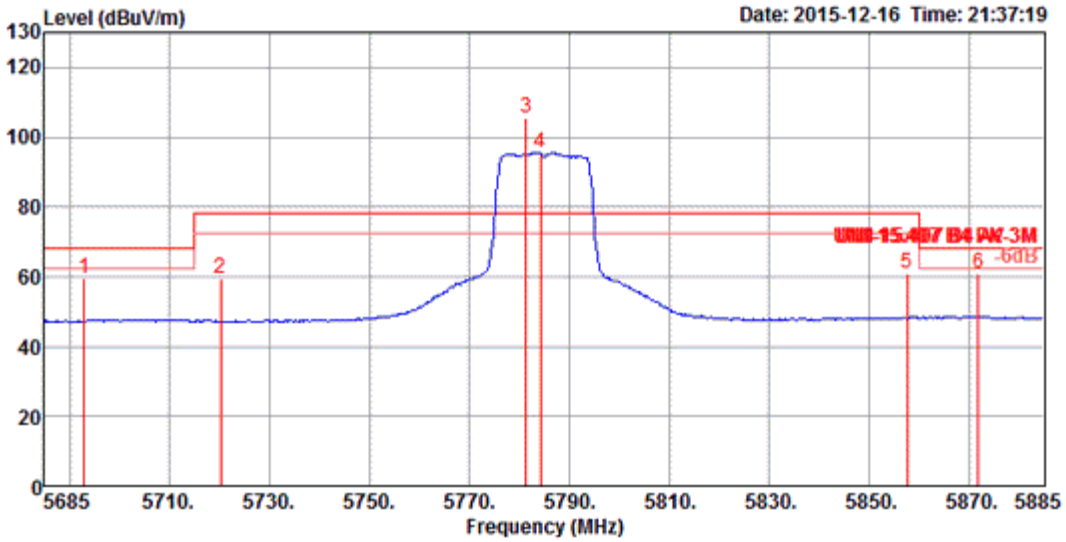


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5712.00	63.58	68.20	-4.62	56.50	8.02	33.00	32.06	VERTICAL	157	251	Peak
2	5724.80	76.64	78.20	-1.56	69.52	8.04	33.00	32.08	VERTICAL	157	251	Peak
3	5746.40	95.56			88.42	8.06	33.02	32.10	VERTICAL	157	251	Average
4	5746.80	106.21			99.07	8.06	33.02	32.10	VERTICAL	157	251	Peak

Item 3, 4 are the fundamental frequency at 5745 MHz.

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

Channel 157

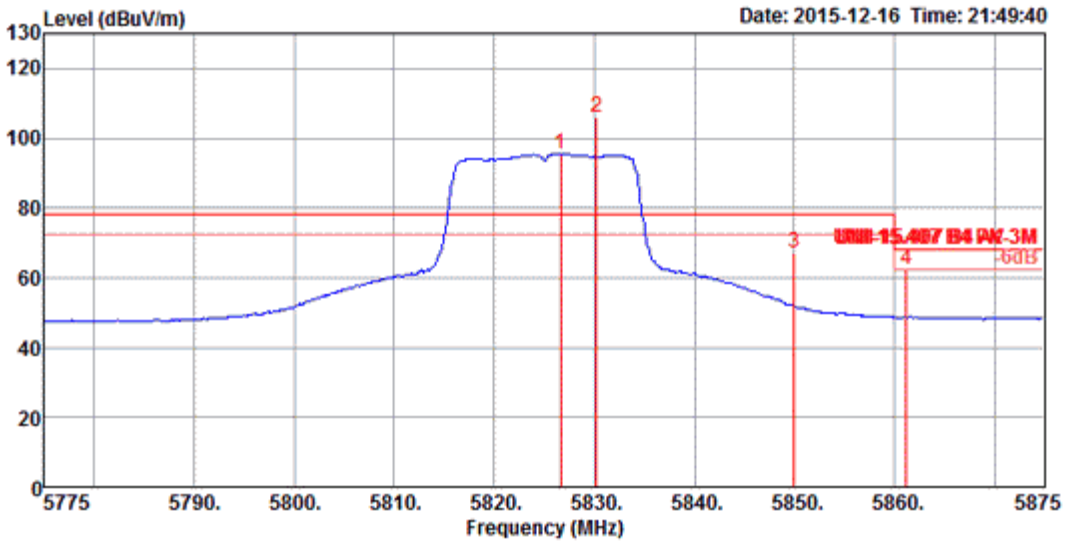


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5693.00	59.62	68.20	-8.58	52.57	8.01	33.00	32.04	VERTICAL	157	252	Peak
2	5720.20	59.47	78.20	-18.73	52.39	8.02	33.00	32.06	VERTICAL	157	252	Peak
3	5781.40	105.68			98.47	8.10	33.03	32.14	VERTICAL	157	252	Peak
4	5784.20	95.43			88.22	8.10	33.03	32.14	VERTICAL	157	252	Average
5	5857.60	60.69	78.20	-17.51	53.31	8.19	33.05	32.24	VERTICAL	157	252	Peak
6	5871.80	61.01	68.20	-7.19	53.64	8.19	33.06	32.24	VERTICAL	157	252	Peak

Item 3, 4 are the fundamental frequency at 5785 MHz.

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

Channel 165



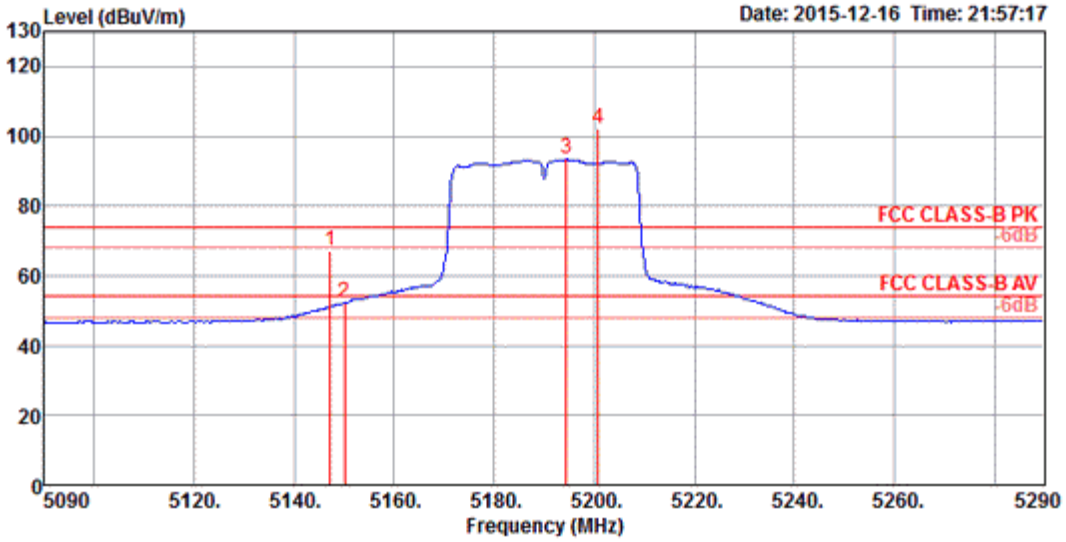
	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5826.60	95.28			87.97	8.16	33.05	32.20	VERTICAL	256	248	Average
2	5830.20	105.84			98.53	8.16	33.05	32.20	VERTICAL	256	248	Peak
3	5850.00	66.98	78.20	-11.22	59.63	8.18	33.05	32.22	VERTICAL	256	248	Peak
4	5861.20	62.49	68.20	-5.71	55.12	8.19	33.06	32.24	VERTICAL	256	248	Peak

Item 1, 2 are the fundamental frequency at 5825 MHz.

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

Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38, 46 / Chain 1

Channel 38

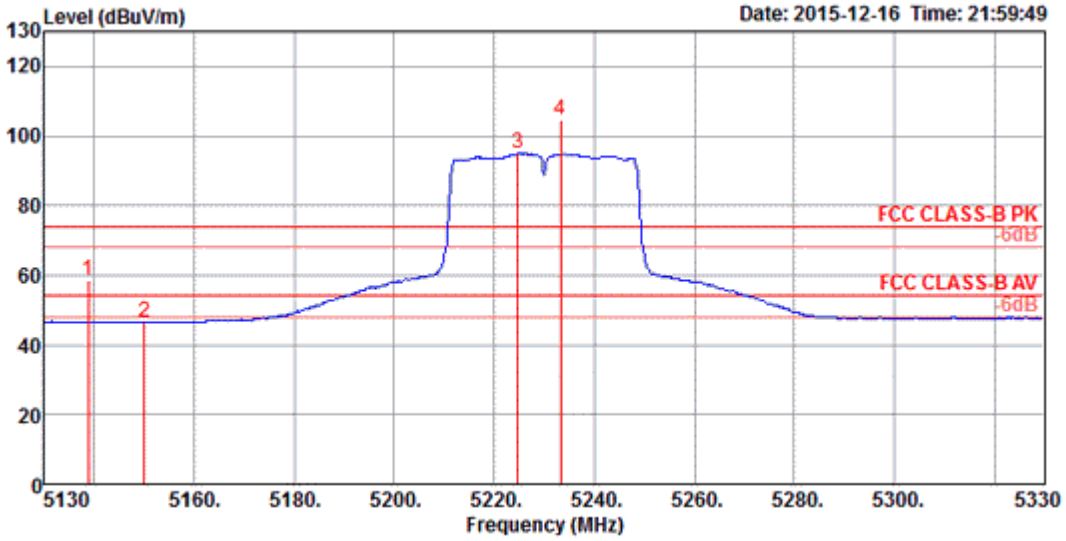


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5147.20	67.01	74.00	-6.99	60.65	7.78	32.94	31.52	VERTICAL	234	246	Peak
2	5150.00	52.34	54.00	-1.66	45.98	7.78	32.94	31.52	VERTICAL	234	246	Average
3	5194.40	93.48			87.08	7.78	32.94	31.56	VERTICAL	234	246	Average
4	5200.80	102.19			95.79	7.78	32.94	31.56	VERTICAL	234	246	Peak

Item 3, 4 are the fundamental frequency at 5190 MHz.

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

Channel 46



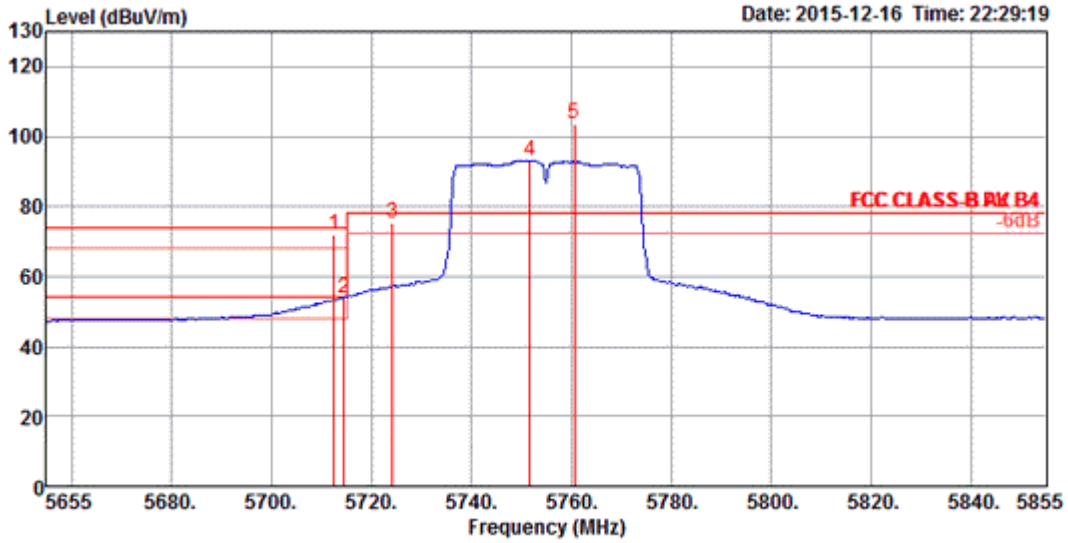
	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5138.80	58.62	74.00	-15.38	52.27	7.78	32.94	31.51	VERTICAL	180	241	Peak
2	5150.00	46.40	54.00	-7.60	40.04	7.78	32.94	31.52	VERTICAL	180	241	Average
3	5224.80	94.95			88.53	7.78	32.94	31.58	VERTICAL	180	241	Average
4	5233.20	104.38			97.95	7.78	32.94	31.59	VERTICAL	180	241	Peak

Item 3, 4 are the fundamental frequency at 5230 MHz.

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

Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151, 159 / Chain 1

Channel 151

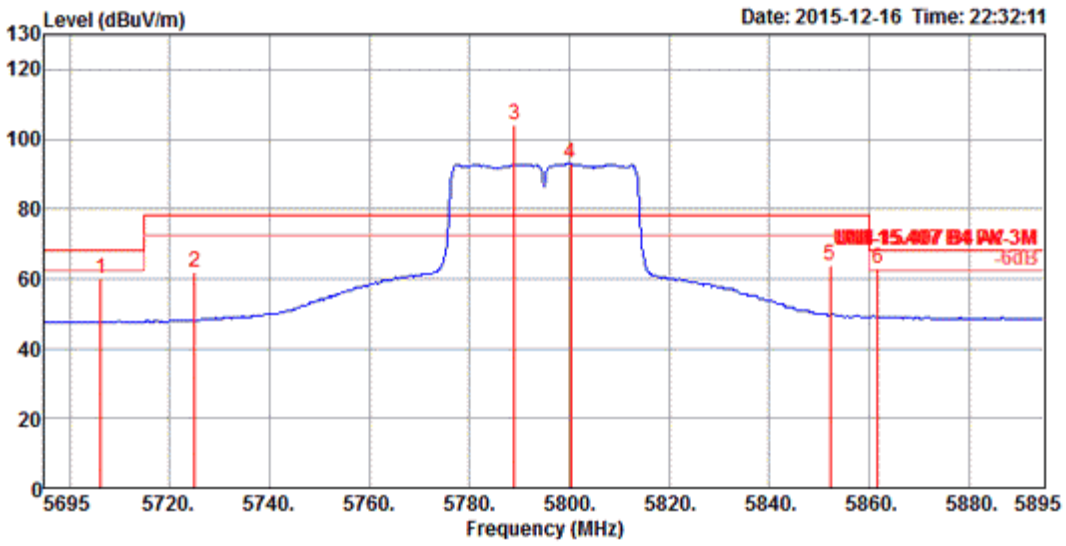


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5712.60	72.14	74.00	-1.86	65.06	8.02	33.00	32.06	VERTICAL	287	224	Peak
2	5714.60	53.84	54.00	-0.16	46.76	8.02	33.00	32.06	VERTICAL	287	224	Average
3	5724.20	75.49	78.20	-2.71	68.37	8.04	33.00	32.08	VERTICAL	287	224	Peak
4	5751.80	93.15			86.01	8.06	33.02	32.10	VERTICAL	287	224	Average
5	5760.60	103.74			96.56	8.08	33.02	32.12	VERTICAL	287	224	Peak

Item 4, 5 are the fundamental frequency at 5755 MHz.

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

Channel 159



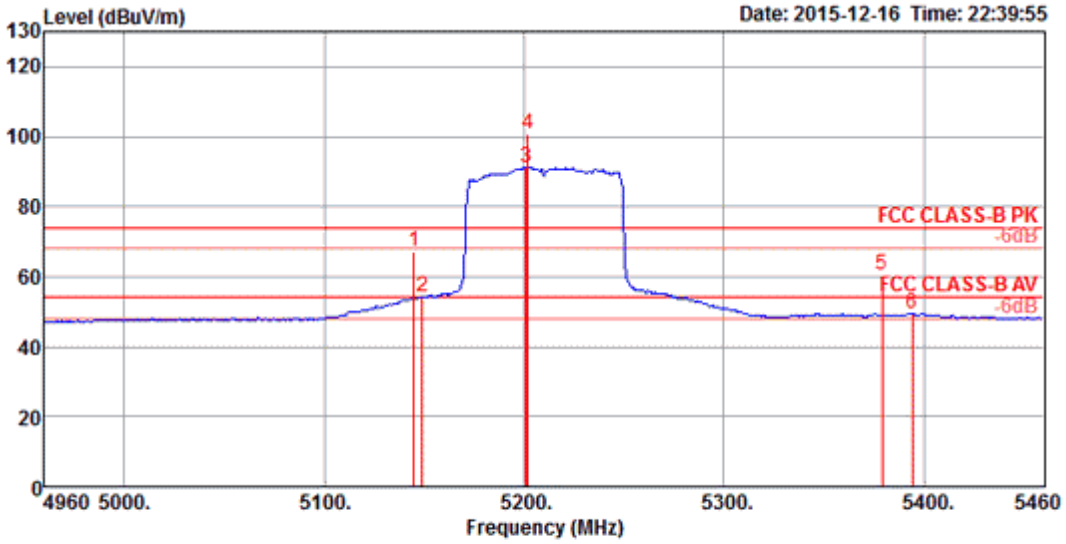
	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5706.20	59.86	68.20	-8.34	52.78	8.02	33.00	32.06	VERTICAL	185	228	Peak
2	5725.00	61.74	78.20	-16.46	54.62	8.04	33.00	32.08	VERTICAL	185	228	Peak
3	5789.00	104.05			96.80	8.12	33.03	32.16	VERTICAL	185	228	Peak
4	5800.20	92.97			85.72	8.12	33.03	32.16	VERTICAL	185	228	Average
5	5852.20	63.83	78.20	-14.37	56.48	8.18	33.05	32.22	VERTICAL	185	228	Peak
6	5861.80	62.74	68.20	-5.46	55.37	8.19	33.06	32.24	VERTICAL	185	228	Peak

Item 3, 4 are the fundamental frequency at 5795 MHz.

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

Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42, 155 / Chain 1

Channel 42

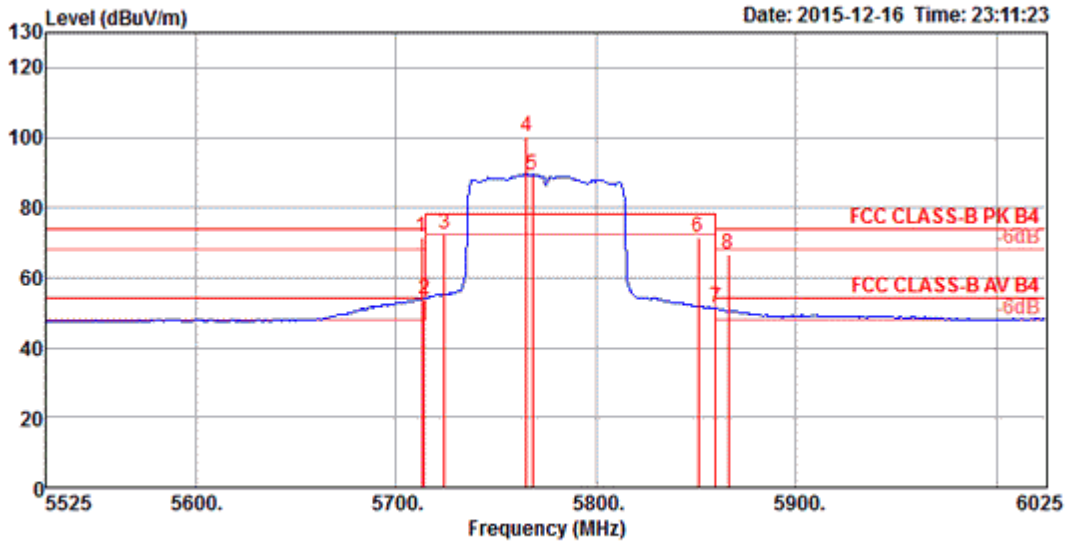


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5145.00	67.15	74.00	-6.85	60.79	7.78	32.94	31.52	VERTICAL	181	227	Peak
2	5149.00	53.97	54.00	-0.03	47.61	7.78	32.94	31.52	VERTICAL	181	227	Average
3	5201.00	91.15			84.75	7.78	32.94	31.56	VERTICAL	181	227	Average
4	5202.00	100.88			94.47	7.78	32.94	31.57	VERTICAL	181	227	Peak
5	5379.00	60.64	74.00	-13.36	54.10	7.77	32.93	31.70	VERTICAL	181	227	Peak
6	5394.00	49.37	54.00	-4.63	42.81	7.77	32.93	31.72	VERTICAL	181	227	Average

Item 3, 4 are the fundamental frequency at 5210 MHz.

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

Channel 155



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	T/Pos	A/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5713.00	71.27	74.00	-2.73	64.19	8.02	33.00	32.06	VERTICAL	269	225	Peak
2	5714.00	53.91	54.00	-0.09	46.83	8.02	33.00	32.06	VERTICAL	269	225	Average
3	5724.00	72.34	78.20	-5.86	65.22	8.04	33.00	32.08	VERTICAL	269	225	Peak
4	5765.00	100.35			93.18	8.08	33.03	32.12	VERTICAL	269	225	Peak
5	5768.00	89.44			82.27	8.08	33.03	32.12	VERTICAL	269	225	Average
6	5851.00	71.64	78.20	-6.56	64.29	8.18	33.05	32.22	VERTICAL	269	225	Peak
7	5860.00	51.22	54.00	-2.78	43.85	8.19	33.06	32.24	VERTICAL	269	225	Average
8	5866.00	66.70	74.00	-7.30	59.33	8.19	33.06	32.24	VERTICAL	269	225	Peak

Item 4, 5 are the fundamental frequency at 5775 MHz.

Note:

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

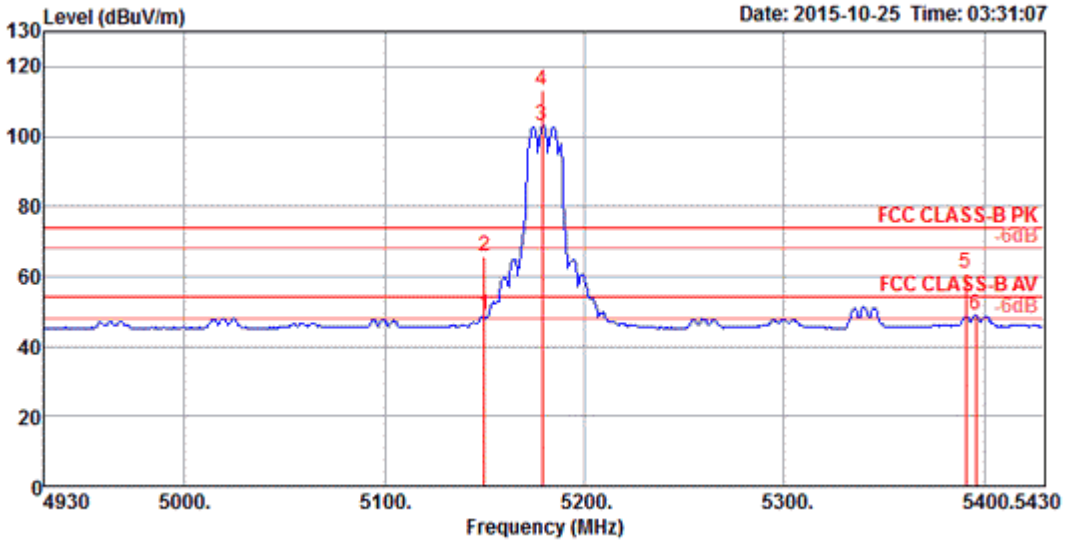
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

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

<For 2TX>

Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 36, 40, 48 / Chain 1 + Chain 2

Channel 36

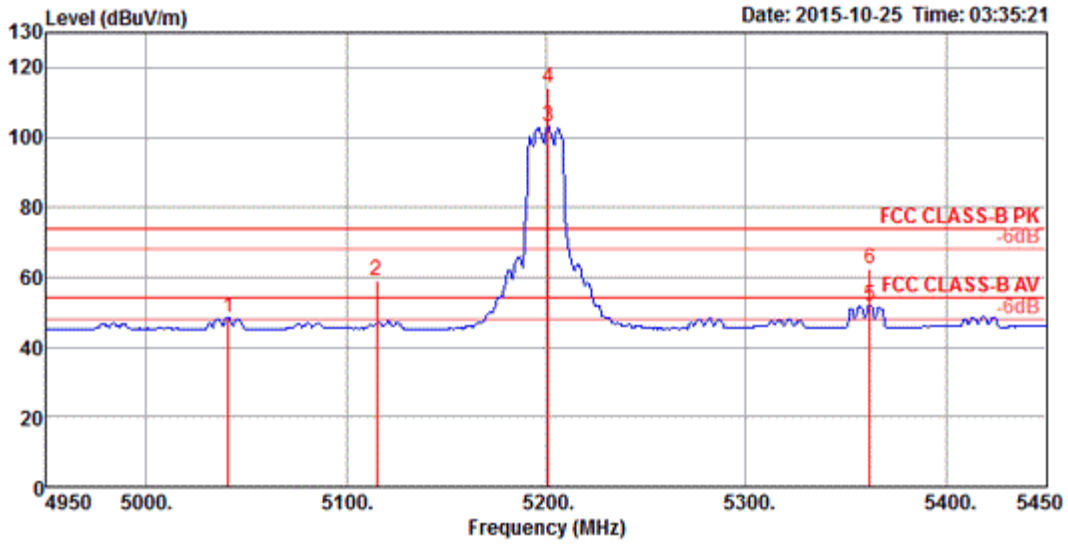


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5150.00	48.91	54.00	-5.09	42.55	7.78	32.94	31.52	VERTICAL	205	320	Average
2	5150.00	65.69	74.00	-8.31	59.33	7.78	32.94	31.52	VERTICAL	205	320	Peak
3	5179.00	103.37			96.98	7.78	32.94	31.55	VERTICAL	205	320	Average
4	5179.00	113.19			106.80	7.78	32.94	31.55	VERTICAL	205	320	Peak
5	5391.00	60.81	74.00	-13.19	54.25	7.77	32.93	31.72	VERTICAL	205	320	Peak
6	5396.00	48.91	54.00	-5.09	42.35	7.77	32.93	31.72	VERTICAL	205	320	Average

Item 3, 4 are the fundamental frequency at 5180 MHz.

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

Channel 40

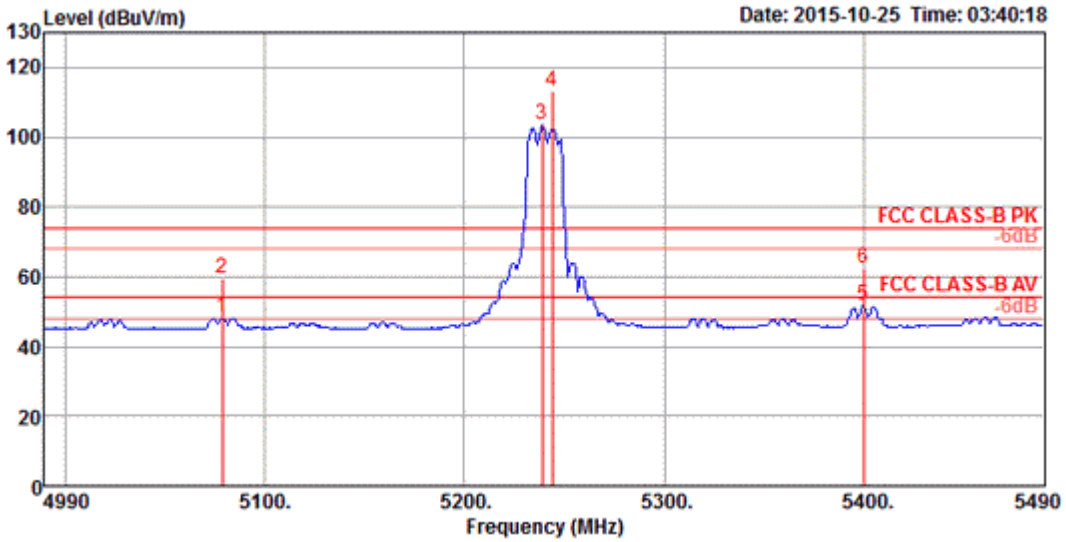


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5041.00	48.54	54.00	-5.46	42.27	7.78	32.95	31.44	VERTICAL	199	184	Average
2	5115.00	59.24	74.00	-14.76	52.90	7.78	32.94	31.50	VERTICAL	199	184	Peak
3	5201.00	103.31			96.91	7.78	32.94	31.56	VERTICAL	199	184	Average
4	5201.00	113.93			107.53	7.78	32.94	31.56	VERTICAL	199	184	Peak
5	5362.00	51.93	54.00	-2.07	45.40	7.77	32.93	31.69	VERTICAL	199	184	Average
6	5362.00	62.58	74.00	-11.42	56.05	7.77	32.93	31.69	VERTICAL	199	184	Peak

Item 3, 4 are the fundamental frequency at 5200 MHz.

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

Channel 48



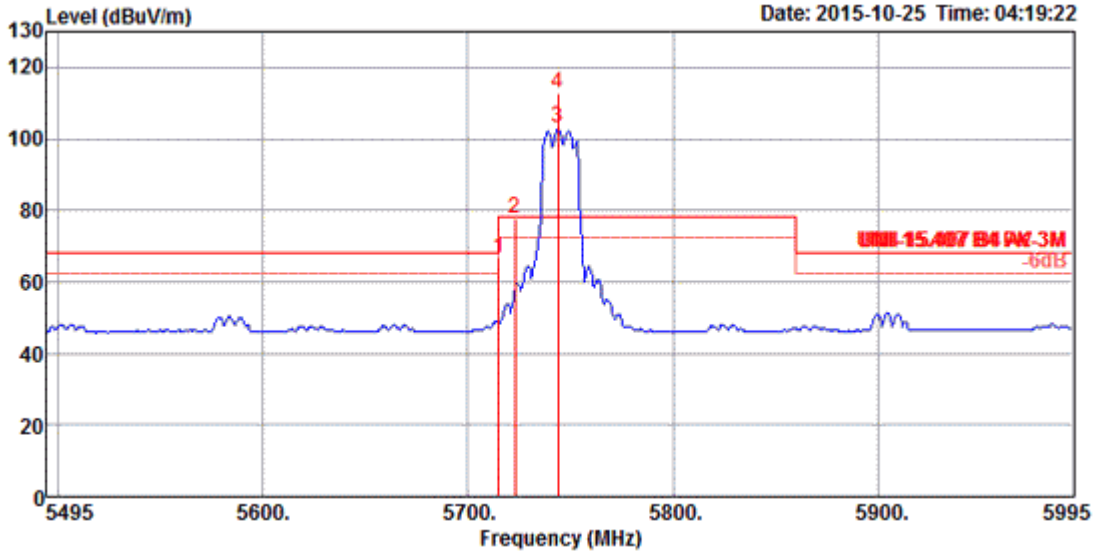
	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5079.00	48.26	54.00	-5.74	41.96	7.78	32.94	31.46	VERTICAL	198	318	Average
2	5079.00	59.60	74.00	-14.40	53.30	7.78	32.94	31.46	VERTICAL	198	318	Peak
3	5239.00	103.54			97.11	7.78	32.94	31.59	VERTICAL	198	318	Average
4	5244.00	113.42			106.98	7.78	32.93	31.59	VERTICAL	198	318	Peak
5	5400.00	51.64	54.00	-2.36	45.08	7.77	32.93	31.72	VERTICAL	198	318	Average
6	5400.00	62.39	74.00	-11.61	55.83	7.77	32.93	31.72	VERTICAL	198	318	Peak

Item 3, 4 are the fundamental frequency at 5240 MHz.

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

Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11a CH 149, 157, 165 / Chain 1 + Chain 2

Channel 149

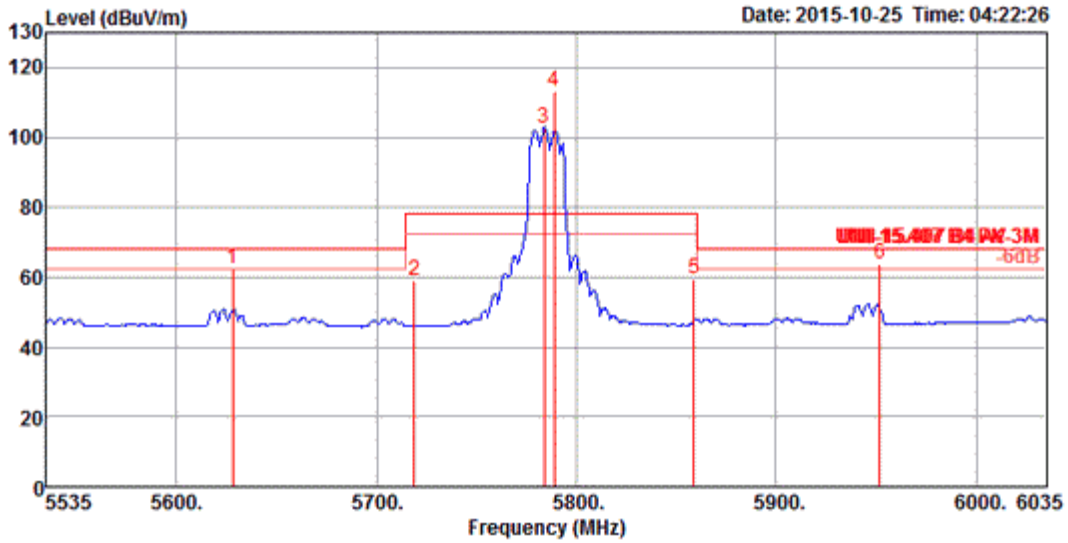


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5715.00	66.50	68.20	-1.70	59.43	8.01	33.00	32.06	VERTICAL	202	253	Peak
2	5723.00	77.55	78.20	-0.65	70.44	8.03	33.00	32.08	VERTICAL	202	253	Peak
3	5744.00	102.97			95.82	8.06	33.01	32.10	VERTICAL	202	253	Average
4	5744.00	112.75			105.60	8.06	33.01	32.10	VERTICAL	202	253	Peak

Item 3, 4 are the fundamental frequency at 5745 MHz.

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

Channel 157

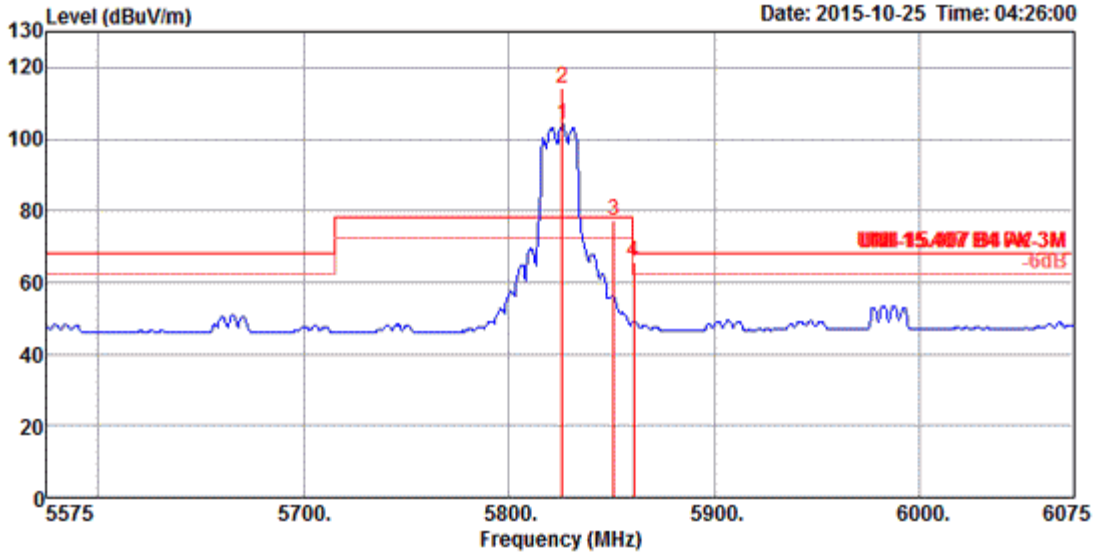


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5628.00	62.45	68.20	-5.75	55.53	7.93	32.97	31.96	VERTICAL	198	128	Peak
2	5719.00	58.85	78.20	-19.35	51.76	8.03	33.00	32.06	VERTICAL	198	128	Peak
3	5784.00	102.87			95.66	8.10	33.03	32.14	VERTICAL	198	128	Average
4	5789.00	113.01			105.78	8.10	33.03	32.16	VERTICAL	198	128	Peak
5	5859.00	59.62	78.20	-18.58	52.25	8.18	33.05	32.24	VERTICAL	198	128	Peak
6	5952.00	63.77	68.20	-4.43	56.22	8.30	33.09	32.34	VERTICAL	198	128	Peak

Item 3, 4 are the fundamental frequency at 5785 MHz.

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

Channel 165



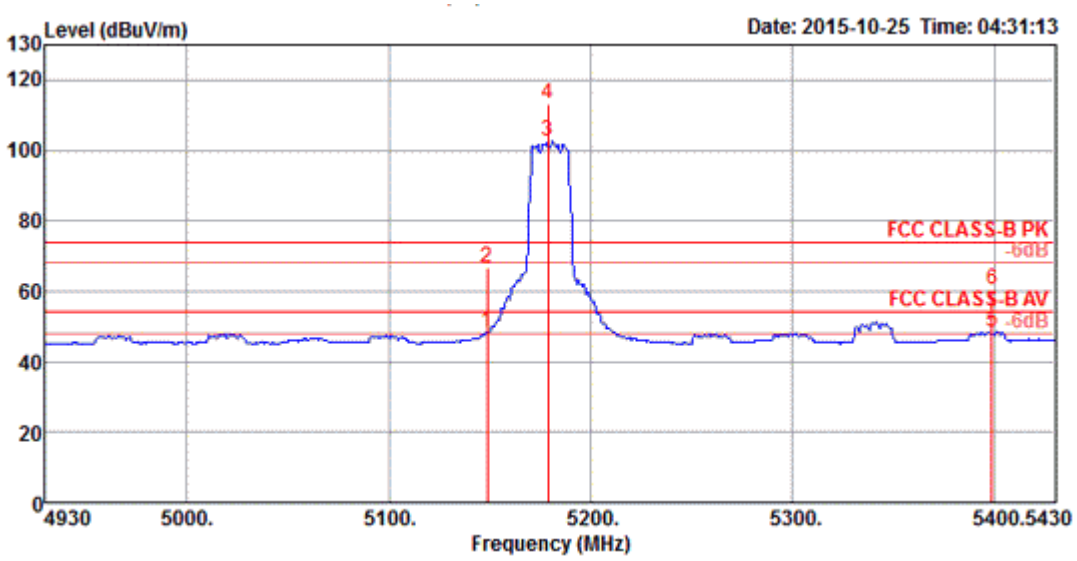
	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5826.00	104.11			96.80	8.16	33.05	32.20	VERTICAL	201	119	Average
2	5826.00	114.13			106.82	8.16	33.05	32.20	VERTICAL	201	119	Peak
3	5851.00	77.17	78.20	-1.03	69.82	8.18	33.05	32.22	VERTICAL	201	119	Peak
4	5861.00	65.56	68.20	-2.64	58.20	8.18	33.06	32.24	VERTICAL	201	119	Peak

Item 1, 2 are the fundamental frequency at 5825 MHz.

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

Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36, 40, 48 / Chain 1 + Chain 2

Channel 36

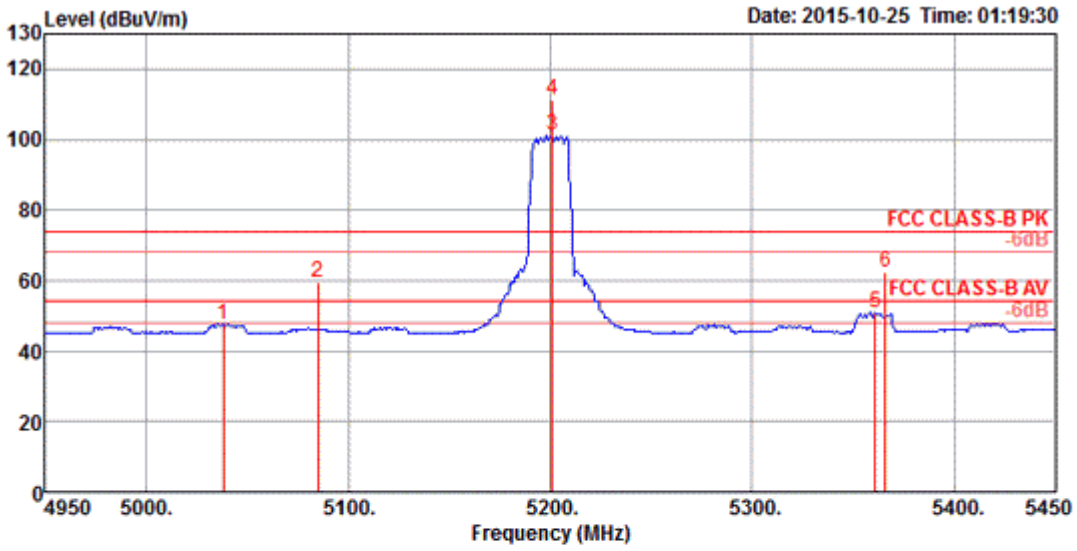


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5149.00	48.56	54.00	-5.44	42.20	7.78	32.94	31.52	VERTICAL	201	312	Average
2	5149.00	66.78	74.00	-7.22	60.42	7.78	32.94	31.52	VERTICAL	201	312	Peak
3	5179.00	102.53			96.14	7.78	32.94	31.55	VERTICAL	201	312	Average
4	5179.00	113.24			106.85	7.78	32.94	31.55	VERTICAL	201	312	Peak
5	5399.00	48.41	54.00	-5.59	41.85	7.77	32.93	31.72	VERTICAL	201	312	Average
6	5399.00	60.43	74.00	-13.57	53.87	7.77	32.93	31.72	VERTICAL	201	312	Peak

Item 3, 4 are the fundamental frequency at 5180 MHz.

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

Channel 40

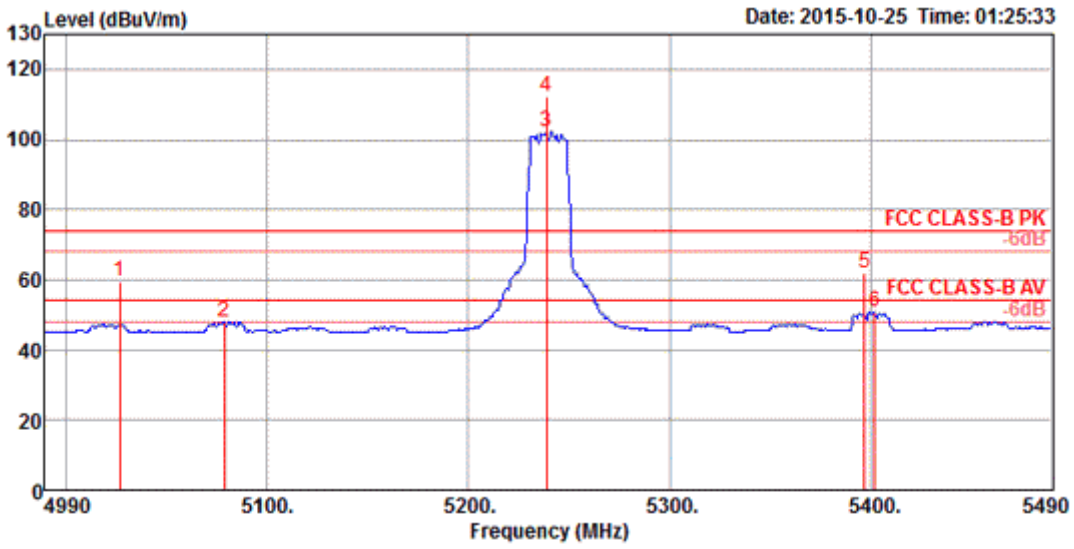


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5038.00	47.52	54.00	-6.48	41.27	7.78	32.95	31.42	VERTICAL	200	326	Average
2	5085.00	59.54	74.00	-14.46	53.23	7.78	32.94	31.47	VERTICAL	200	326	Peak
3	5201.00	101.25			94.85	7.78	32.94	31.56	VERTICAL	200	326	Average
4	5201.00	111.39			104.99	7.78	32.94	31.56	VERTICAL	200	326	Peak
5	5361.00	50.93	54.00	-3.07	44.40	7.77	32.93	31.69	VERTICAL	200	326	Average
6	5366.00	62.45	74.00	-11.55	55.92	7.77	32.93	31.69	VERTICAL	200	326	Peak

Item 3, 4 are the fundamental frequency at 5200 MHz.

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

Channel 48



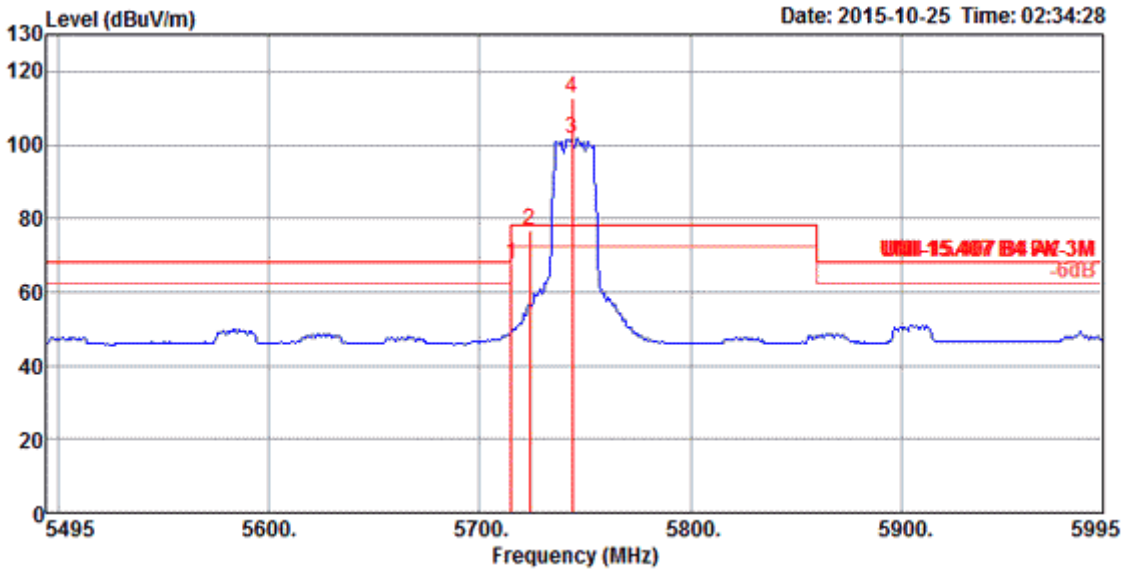
	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5027.00	59.47	74.00	-14.53	53.22	7.78	32.95	31.42	VERTICAL	197	312	Peak
2	5079.00	47.92	54.00	-6.08	41.62	7.78	32.94	31.46	VERTICAL	197	312	Average
3	5239.00	102.15			95.72	7.78	32.94	31.59	VERTICAL	197	312	Average
4	5239.00	112.36			105.93	7.78	32.94	31.59	VERTICAL	197	312	Peak
5	5397.00	61.84	74.00	-12.16	55.28	7.77	32.93	31.72	VERTICAL	197	312	Peak
6	5402.00	50.80	54.00	-3.20	44.23	7.77	32.93	31.73	VERTICAL	197	312	Average

Item 3, 4 are the fundamental frequency at 5240 MHz.

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

Temperature	25℃	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149, 157, 165 / Chain 1 + Chain 2

Channel 149

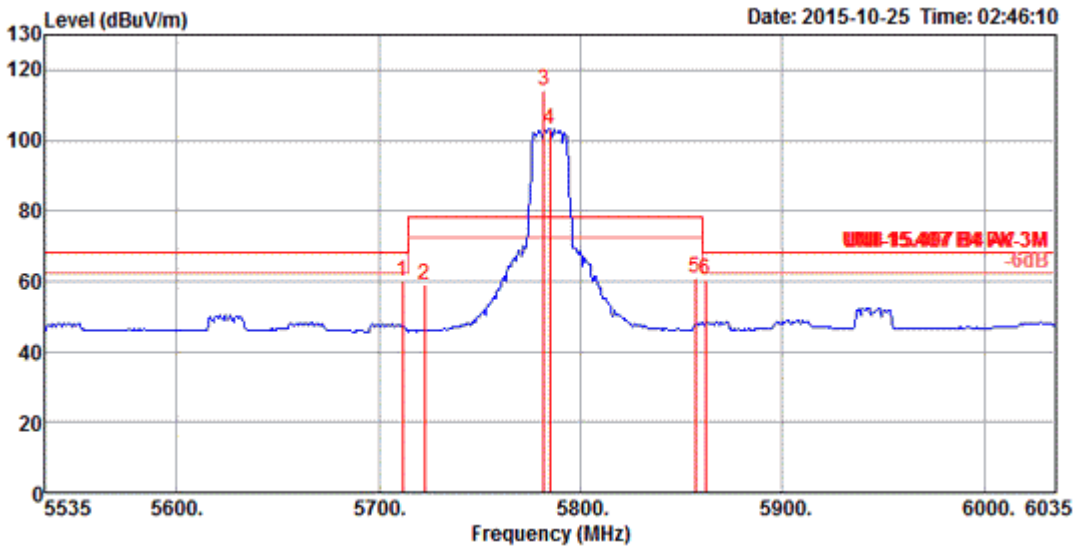


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5715.00	67.50	68.20	-0.70	60.43	8.01	33.00	32.06	VERTICAL	300	0	Peak
2	5724.00	76.81	78.20	-1.39	69.70	8.03	33.00	32.08	VERTICAL	300	0	Peak
3	5744.00	101.70			94.55	8.06	33.01	32.10	VERTICAL	300	0	Average
4	5744.00	112.77			105.62	8.06	33.01	32.10	VERTICAL	300	0	Peak

Item 3, 4 are the fundamental frequency at 5745 MHz.

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

Channel 157

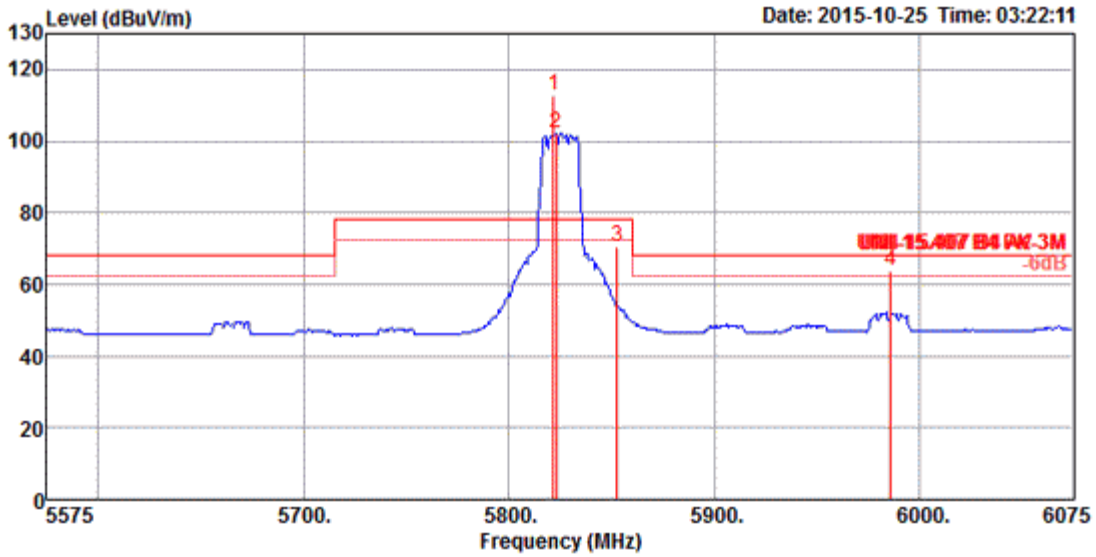


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5712.00	60.03	68.20	-8.17	52.96	8.01	33.00	32.06	VERTICAL	298	350	Peak
2	5723.00	59.11	78.20	-19.09	52.00	8.03	33.00	32.08	VERTICAL	298	350	Peak
3	5782.00	114.28			107.07	8.10	33.03	32.14	VERTICAL	298	350	Peak
4	5785.00	103.04			95.83	8.10	33.03	32.14	VERTICAL	298	350	Average
5	5857.00	60.87	78.20	-17.33	53.50	8.18	33.05	32.24	VERTICAL	298	350	Peak
6	5862.00	60.59	68.20	-7.61	53.21	8.20	33.06	32.24	VERTICAL	298	350	Peak

Item 3, 4 are the fundamental frequency at 5785 MHz.

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

Channel 165



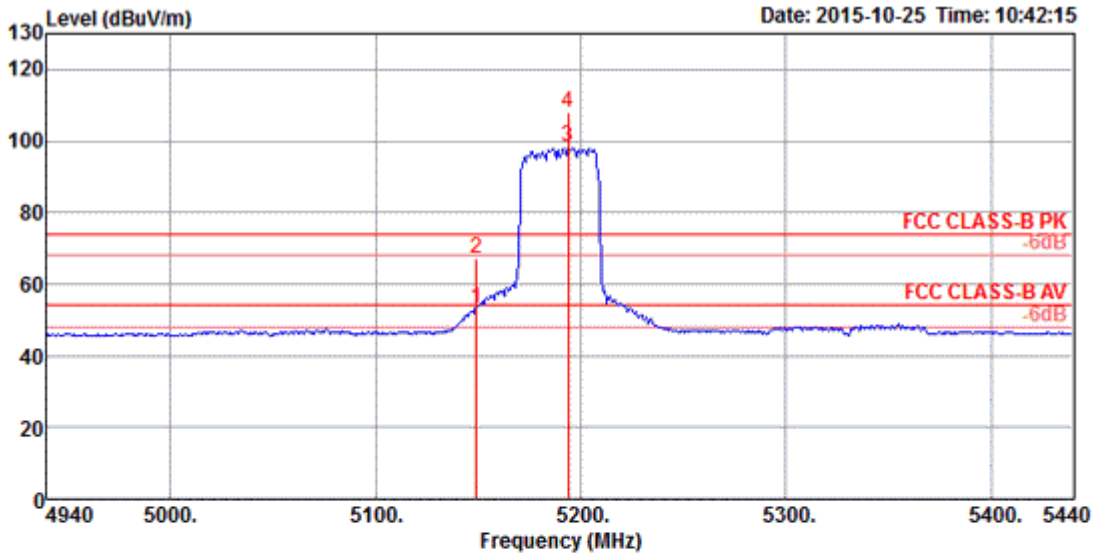
	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5822.00	112.54			105.27	8.14	33.05	32.18	VERTICAL	198	121	Peak
2	5823.00	102.13			94.84	8.14	33.05	32.20	VERTICAL	198	121	Average
3	5853.00	70.56	78.20	-7.64	63.21	8.18	33.05	32.22	VERTICAL	198	121	Peak
4	5986.00	64.02	68.20	-4.18	56.42	8.32	33.10	32.38	VERTICAL	198	121	Peak

Item 1, 2 are the fundamental frequency at 5825 MHz.

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

Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38, 46 / Chain 1 + Chain 2

Channel 38

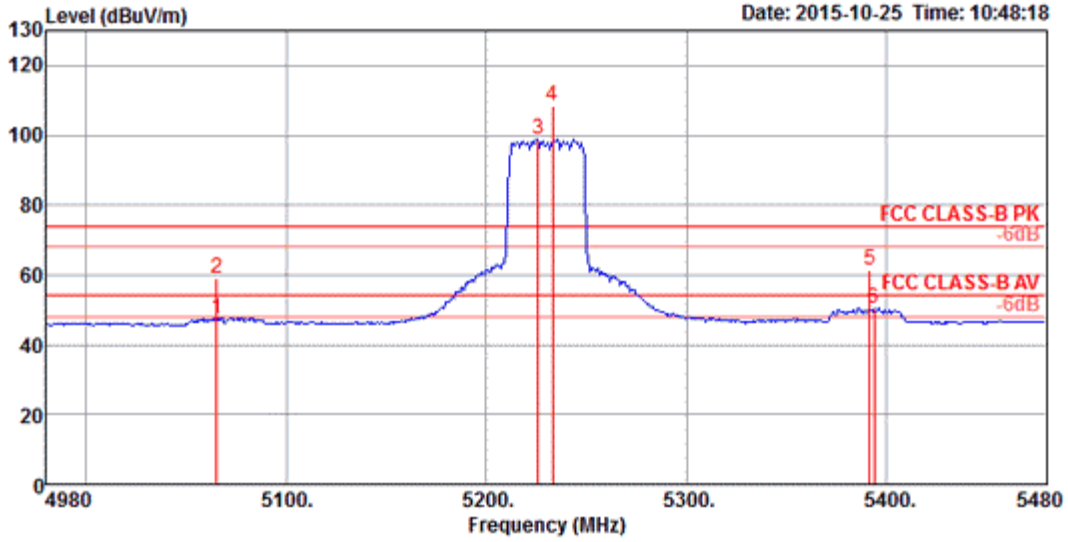


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5149.00	53.39	54.00	-0.61	47.03	7.78	32.94	31.52	VERTICAL	200	315	Average
2	5149.00	67.30	74.00	-6.70	60.94	7.78	32.94	31.52	VERTICAL	200	315	Peak
3	5194.00	98.34			91.94	7.78	32.94	31.56	VERTICAL	200	315	Average
4	5194.00	108.12			101.72	7.78	32.94	31.56	VERTICAL	200	315	Peak

Item 3, 4 are the fundamental frequency at 5190 MHz.

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

Channel 46



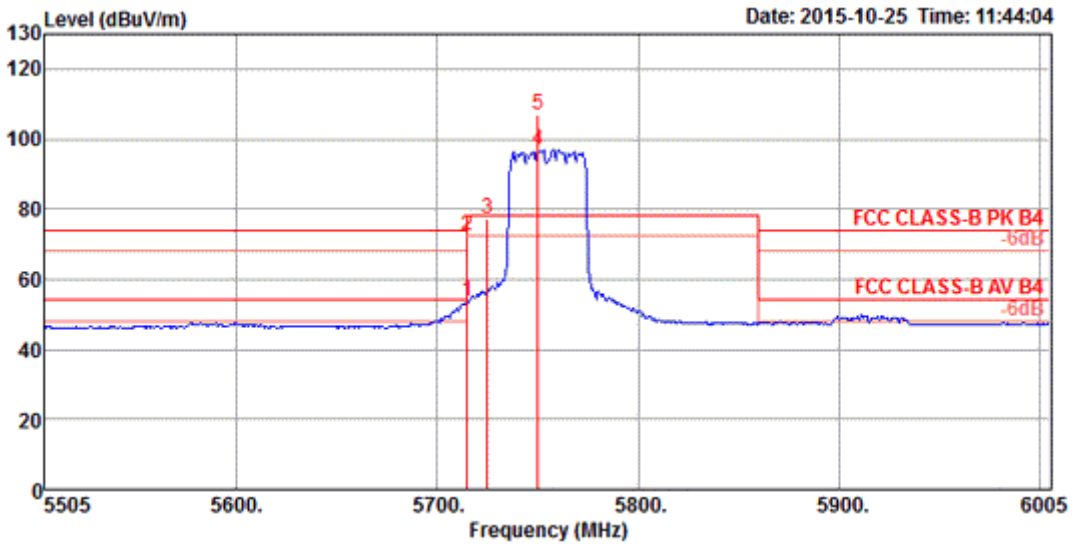
	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5065.00	47.60	54.00	-6.40	41.32	7.78	32.95	31.45	VERTICAL	200	131	Average
2	5065.00	58.89	74.00	-15.11	52.61	7.78	32.95	31.45	VERTICAL	200	131	Peak
3	5226.00	98.96			92.54	7.78	32.94	31.58	VERTICAL	200	131	Average
4	5233.00	108.42			101.99	7.78	32.94	31.59	VERTICAL	200	131	Peak
5	5392.00	61.30	74.00	-12.70	54.74	7.77	32.93	31.72	VERTICAL	200	131	Peak
6	5394.00	50.52	54.00	-3.48	43.96	7.77	32.93	31.72	VERTICAL	200	131	Average

Item 3, 4 are the fundamental frequency at 5230 MHz.

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

Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151, 159 / Chain 1 + Chain 2

Channel 151

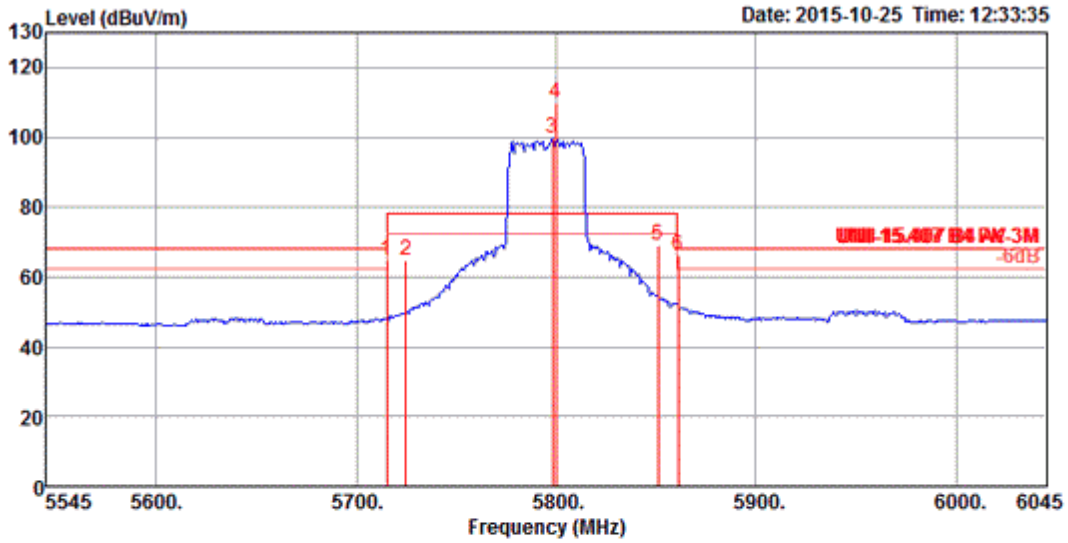


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5715.00	53.78	54.00	-0.22	46.71	8.01	33.00	32.06	VERTICAL	200	123	Average
2	5715.00	72.27	74.00	-1.73	65.20	8.01	33.00	32.06	VERTICAL	200	123	Peak
3	5725.00	77.34	78.20	-0.86	70.23	8.03	33.00	32.08	VERTICAL	200	123	Peak
4	5750.00	96.94			89.80	8.06	33.02	32.10	VERTICAL	200	123	Average
5	5750.00	106.83			99.69	8.06	33.02	32.10	VERTICAL	200	123	Peak

Item 3, 4 are the fundamental frequency at 5755 MHz.

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

Channel 159



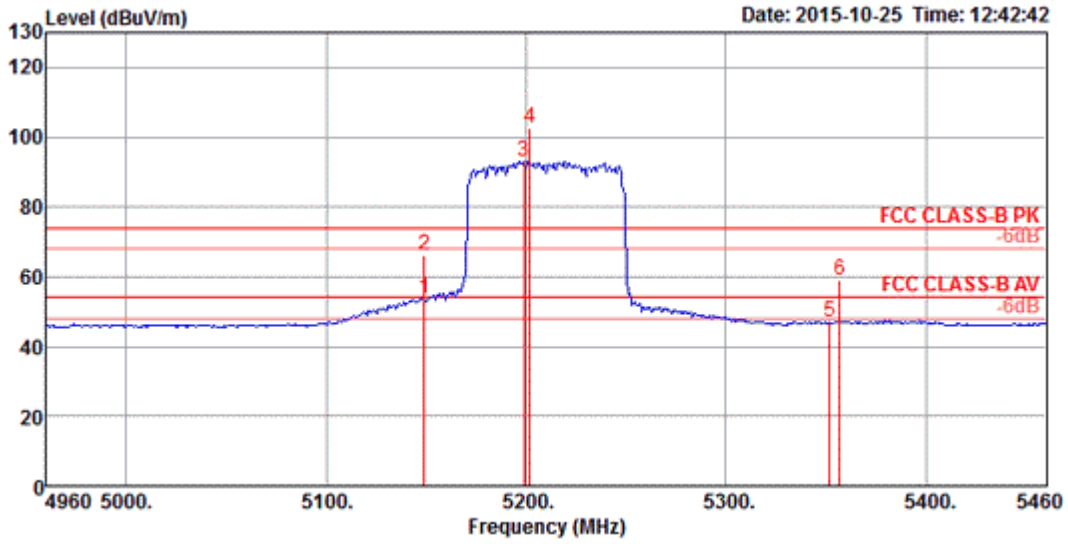
	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5715.00	64.82	68.20	-3.38	57.75	8.01	33.00	32.06	VERTICAL	200	121	Peak
2	5725.00	64.81	78.20	-13.39	57.70	8.03	33.00	32.08	VERTICAL	200	121	Peak
3	5798.00	99.58			92.33	8.12	33.03	32.16	VERTICAL	200	121	Average
4	5800.00	109.69			102.44	8.12	33.03	32.16	VERTICAL	200	121	Peak
5	5851.00	68.91	78.20	-9.29	61.56	8.18	33.05	32.22	VERTICAL	200	121	Peak
6	5861.00	66.19	68.20	-2.01	58.83	8.18	33.06	32.24	VERTICAL	200	121	Peak

Item 3, 4 are the fundamental frequency at 5795 MHz.

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

Temperature	25°C	Humidity	59%
Test Engineer	Peter Wu	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42, 155 / Chain 1 + Chain 2

Channel 42

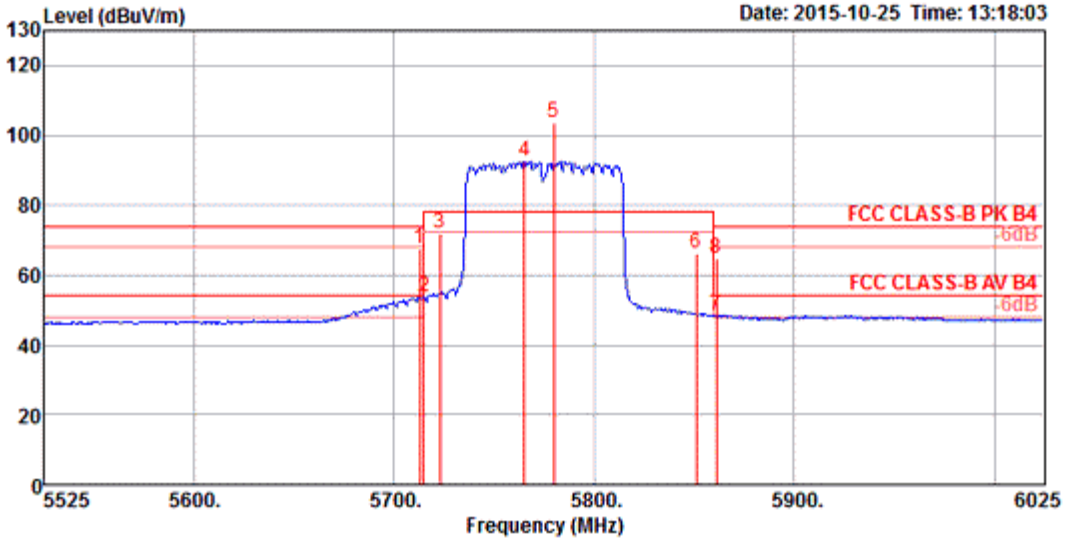


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5149.00	53.62	54.00	-0.38	47.26	7.78	32.94	31.52	VERTICAL	200	314	Average
2	5149.00	66.42	74.00	-7.58	60.06	7.78	32.94	31.52	VERTICAL	200	314	Peak
3	5199.00	93.15			86.75	7.78	32.94	31.56	VERTICAL	200	314	Average
4	5202.00	102.71			96.30	7.78	32.94	31.57	VERTICAL	200	314	Peak
5	5352.00	47.10	54.00	-6.90	40.58	7.77	32.93	31.68	VERTICAL	200	314	Average
6	5357.00	59.08	74.00	-14.92	52.55	7.77	32.93	31.69	VERTICAL	200	314	Peak

Item 3, 4 are the fundamental frequency at 5210 MHz.

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

Channel 155



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Pol/Phase	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		cm	deg	
1	5713.00	67.63	74.00	-6.37	60.56	8.01	33.00	32.06	VERTICAL	200	124	Peak
2	5715.00	53.89	54.00	-0.11	46.82	8.01	33.00	32.06	VERTICAL	200	124	Average
3	5723.00	71.81	78.20	-6.39	64.70	8.03	33.00	32.08	VERTICAL	200	124	Peak
4	5765.00	92.42			85.25	8.08	33.03	32.12	VERTICAL	200	124	Average
5	5780.00	103.41			96.20	8.10	33.03	32.14	VERTICAL	200	124	Peak
6	5851.00	66.30	78.20	-11.90	58.95	8.18	33.05	32.22	VERTICAL	200	124	Peak
7	5861.00	48.60	54.00	-5.40	41.24	8.18	33.06	32.24	VERTICAL	200	124	Average
8	5861.00	64.64	74.00	-9.36	57.28	8.18	33.06	32.24	VERTICAL	200	124	Peak

Item 4, 5 are the fundamental frequency at 5775 MHz.

Note:

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

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

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

4.8. Frequency Stability Measurement

4.8.1. Limit

In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification).

4.8.2. Measuring Instruments and Setting

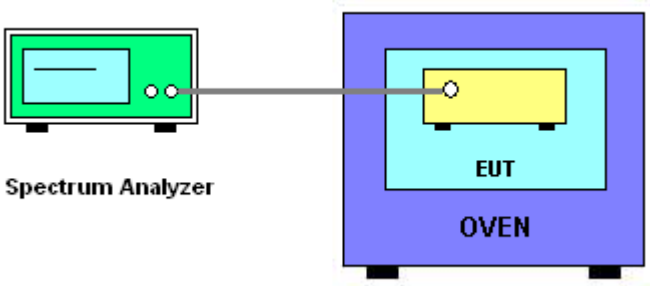
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RBW	10 kHz
VBW	10 kHz
Sweep Time	Auto

4.8.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 10^6 ppm and the limit is less than ±20ppm (IEEE 802.11nspecification).
6. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
7. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
8. Extreme temperature is -20°C~55°C.

4.8.4. Test Setup Layout



4.8.5. Test Deviation

There is no deviation with the original standard.

4.8.6. EUT Operation during Test

The EUT was programmed to be in continuously un-modulation transmitting mode.

4.8.7. Test Result of Frequency Stability

Temperature	25°C	Humidity	58%
Test Engineer	Peter Wu	Test Date	Oct. 29, 2015~Dec. 23, 2015

Mode: 20 MHz / Chain 2

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5199.9794	5199.9780	5199.9762	5199.9741
110.00	5199.9782	5199.9769	5199.9753	5199.9734
93.50	5199.9768	5199.9757	5199.9745	5199.9723
Max. Deviation (MHz)	0.0232	0.0243	0.0255	0.0277
Max. Deviation (ppm)	4.46	4.67	4.90	5.33
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-20	5199.9836	5199.9823	5199.9806	5199.9782
-10	5199.9821	5199.9809	5199.9793	5199.9774
0	5199.9807	5199.9795	5199.9776	5199.9754
10	5199.9794	5199.9781	5199.9766	5199.9748
20	5199.9782	5199.9769	5199.9753	5199.9734
30	5199.9768	5199.9757	5199.9743	5199.9727
40	5199.9752	5199.9737	5199.9721	5199.9701
50	5199.9735	5199.9723	5199.9708	5199.9681
55	5199.9735	5199.9723	5199.9708	5199.9681
Max. Deviation (MHz)	0.0265	0.0277	0.0292	0.0319
Max. Deviation (ppm)	5.10	5.33	5.62	6.13
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5784.9781	5784.9767	5784.9749	5784.9728
110.00	5784.9769	5784.9756	5784.9740	5784.9721
93.50	5784.9755	5784.9744	5784.9732	5784.9710
Max. Deviation (MHz)	0.0245	0.0256	0.0268	0.0290
Max. Deviation (ppm)	4.24	4.43	4.63	5.01
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-20	5784.9823	5784.9810	5784.9793	5784.9769
-10	5784.9808	5784.9796	5784.9780	5784.9761
0	5784.9794	5784.9782	5784.9763	5784.9741
10	5784.9781	5784.9768	5784.9753	5784.9735
20	5784.9769	5784.9756	5784.9740	5784.9721
30	5784.9755	5784.9744	5784.9730	5784.9714
40	5784.9739	5784.9724	5784.9708	5784.9688
50	5784.9722	5784.9710	5784.9695	5784.9668
55	5784.9722	5784.9710	5784.9695	5784.9668
Max. Deviation (MHz)	0.0278	0.0290	0.0305	0.0332
Max. Deviation (ppm)	4.81	5.01	5.27	5.74
Result	Complies			

Mode: 40 MHz / Chain 2

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5189.9781	5189.9767	5189.9749	5189.9728
110.00	5189.9769	5189.9756	5189.9740	5189.9721
93.50	5189.9755	5189.9744	5189.9732	5189.9710
Max. Deviation (MHz)	0.0245	0.0256	0.0268	0.0290
Max. Deviation (ppm)	4.72	4.93	5.16	5.59
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-20	5189.9823	5189.9810	5189.9793	5189.9769
-10	5189.9808	5189.9796	5189.9780	5189.9761
0	5189.9794	5189.9782	5189.9763	5189.9741
10	5189.9781	5189.9768	5189.9753	5189.9735
20	5189.9769	5189.9756	5189.9740	5189.9721
30	5189.9755	5189.9744	5189.9730	5189.9714
40	5189.9739	5189.9724	5189.9708	5189.9688
50	5189.9722	5189.9710	5189.9695	5189.9668
55	5189.9722	5189.9710	5189.9695	5189.9668
Max. Deviation (MHz)	0.0278	0.0290	0.0305	0.0332
Max. Deviation (ppm)	5.36	5.59	5.88	6.40
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5754.9781	5754.9767	5754.9749	5754.9728
110.00	5754.9769	5754.9756	5754.9740	5754.9721
93.50	5754.9755	5754.9744	5754.9732	5754.9710
Max. Deviation (MHz)	0.0245	0.0256	0.0268	0.0290
Max. Deviation (ppm)	4.26	4.45	4.66	5.04
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-20	5754.9823	5754.9810	5754.9793	5754.9769
-10	5754.9808	5754.9796	5754.9780	5754.9761
0	5754.9794	5754.9782	5754.9763	5754.9741
10	5754.9781	5754.9768	5754.9753	5754.9735
20	5754.9769	5754.9756	5754.9740	5754.9721
30	5754.9755	5754.9744	5754.9730	5754.9714
40	5754.9739	5754.9724	5754.9708	5754.9688
50	5754.9722	5754.9710	5754.9695	5754.9668
55	5754.9722	5754.9710	5754.9695	5754.9668
Max. Deviation (MHz)	0.0278	0.0290	0.0305	0.0332
Max. Deviation (ppm)	4.83	5.04	5.30	5.77
Result	Complies			

Mode: 80 MHz / Chain 2

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5209.9781	5209.9767	5209.9749	5209.9728
110.00	5209.9769	5209.9756	5209.9740	5209.9721
93.50	5209.9755	5209.9744	5209.9732	5209.9710
Max. Deviation (MHz)	0.0245	0.0256	0.0268	0.0290
Max. Deviation (ppm)	4.70	4.91	5.14	5.57
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-20	5209.9823	5209.9810	5209.9793	5209.9769
-10	5209.9808	5209.9796	5209.9780	5209.9761
0	5209.9794	5209.9782	5209.9763	5209.9741
10	5209.9781	5209.9768	5209.9753	5209.9735
20	5209.9769	5209.9756	5209.9740	5209.9721
30	5209.9755	5209.9744	5209.9730	5209.9714
40	5209.9739	5209.9724	5209.9708	5209.9688
50	5209.9722	5209.9710	5209.9695	5209.9668
55	5209.9722	5209.9710	5209.9695	5209.9668
Max. Deviation (MHz)	0.0278	0.0290	0.0305	0.0332
Max. Deviation (ppm)	5.34	5.57	5.85	6.37
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5774.9781	5774.9767	5774.9749	5774.9728
110.00	5774.9769	5774.9756	5774.9740	5774.9721
93.50	5774.9755	5774.9744	5774.9732	5774.9710
Max. Deviation (MHz)	0.0245	0.0256	0.0268	0.0290
Max. Deviation (ppm)	4.24	4.43	4.64	5.02
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-20	5774.9823	5774.9810	5774.9793	5774.9769
-10	5774.9808	5774.9796	5774.9780	5774.9761
0	5774.9794	5774.9782	5774.9763	5774.9741
10	5774.9781	5774.9768	5774.9753	5774.9735
20	5774.9769	5774.9756	5774.9740	5774.9721
30	5774.9755	5774.9744	5774.9730	5774.9714
40	5774.9739	5774.9724	5774.9708	5774.9688
50	5774.9722	5774.9710	5774.9695	5774.9668
55	5774.9722	5774.9710	5774.9695	5774.9668
Max. Deviation (MHz)	0.0278	0.0290	0.0305	0.0332
Max. Deviation (ppm)	4.81	5.02	5.28	5.75
Result	Complies			

4.9. Antenna Requirements

4.9.1. 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.

4.9.2. Antenna Connector Construction

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

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Test Receiver	R&S	ESCS 30	100355	9kHz ~ 2.75GHz	Apr. 22, 2015	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 02, 2014	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Nov. 16, 2015	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 25, 2015	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112D	37880	20MHz ~ 2GHz	Sep. 03, 2015	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 12, 2015*	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Oct. 22, 2015	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2015	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Feb. 24, 2015	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 12, 2015	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Feb.10, 2015	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 06, 2014	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Oct. 27, 2015	Radiation (03CH01-CB)
EMI Receiver	Agilent	N9038A	MY52260123	9kHz ~ 8.4GHz	Jan. 21, 2015	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz ~ 1 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz ~ 1 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-17	N/A	1 GHz ~ 18 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-17	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-1	N/A	1 GHz ~ 40 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-1	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-2	N/A	1 GHz ~ 40 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-2	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
Test Software	Audix	E3	6.2009-I0-7	N/A	N/A	Radiation (03CH01-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 12, 2014	Conducted (TH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 09, 2015	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Nov. 15, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 03, 2014	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 02, 2015	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410002	50MHz~18GHz	Nov. 03, 2014	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410002	50MHz~18GHz	Nov. 02, 2015	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.

"*" Calibration Interval of instruments listed above is two years.

N.C.R. means Non-Calibration required.

6. MEASUREMENT UNCERTAINTY

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