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FCC RADIO TEST REPORT

Applicant's company	**Xirrus, Inc.**
Applicant Address	2101 Corporate Center Drive, Thousand Oaks, CA 91320 USA
FCC ID	**SK6-XD2240B**
Manufacturer's company	**Lite-On Network Communication (Dongguan) Limited**
Manufacturer Address	30#Keji Rd.,Yin Hu Industrial Area, Qingxi Town, DongGuan City, Guangdong, China

Product Name	Wireless Access Point
Brand Name	XIRRUS, AVAYA
Model No.	XD2240 -1, WAP9144 -1
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Received Date	Aug. 17, 2015
Final Test Date	Dec. 01, 2015
Submission Type	Class II Change

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 v01r02, KDB662911 D01 v02r01, KDB644545 D03 v01.**

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

TAF
Testing Laboratory
1190

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR582537-02	Rev. 01	Initial issue of report	Feb. 03, 2016
FR582537-02	Rev. 02	1.Modifying product information (Model No. and FCC ID). 2. Adding the Bluetooth radio information.	May 18, 2016

1. VERIFICATION OF COMPLIANCE

Product Name	:	Wireless Access Point
Brand Name	:	XIRRUS, AVAYA
Model No.	:	XD2240 -1, WAP9144 -1
Applicant	:	Xirrus, 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 Aug. 17, 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	15.407(a)	26dB Spectrum Bandwidth and 99% Occupied Bandwidth	Complies	-
4.2	15.407(e)	6dB Spectrum Bandwidth	Complies	-
4.3	15.407(a)	Maximum Conducted Output Power	Complies	0.01 dB
4.4	15.407(a)	Power Spectral Density	Complies	0.02 dB
4.5	15.407(b)	Radiated Emissions	Complies	7.58 dB
4.6	15.407(b)	Band Edge Emissions	Complies	0.02 dB
4.7	15.407(g)	Frequency Stability	Complies	-
4.8	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

Items	Description
Product Type	WLAN (4TX, 4RX)
Radio Type	Intentional Transceiver
Power Type	From PoE
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	5250 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	16 for 20MHz bandwidth ; 8 for 40MHz bandwidth 4 for 80MHz bandwidth
Channel Band Width (99%)	Band 2: <For Non-Beamforming Mode> IEEE 802.11a: 22.80 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 19.68 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 51.40 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.80 MHz <For Beamforming Mode> IEEE 802.11ac MCS0/Nss1 (VHT20): 18.23 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 38.20 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.12 MHz Band 3: <For Non-Beamforming Mode> IEEE 802.11a: 16.44 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.12 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 42.40 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 78.00 MHz <For Beamforming Mode> IEEE 802.11ac MCS0/Nss1 (VHT20): 18.60 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.12 MHz

Maximum Conducted Output Power	Band 2: **<For Non-Beamforming Mode>** IEEE 802.11a: 23.10 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.08 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.89 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 18.30 dBm **<For Beamforming Mode>** IEEE 802.11ac MCS0/Nss1 (VHT20): 22.96 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 22.72 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.79 dBm Band 3: **<For Non-Beamforming Mode>** IEEE 802.11a: 22.01 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.93 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.90 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 23.73 dBm **<For Beamforming Mode>** IEEE 802.11ac MCS0/Nss1 (VHT20): 21.54 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 21.51 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 21.57 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Items	Description	
Communication Mode	☒ IP Based (Load Based)	☐ Frame Based
TPC Function	☒ With TPC	☐ Without TPC
Weather Band (5600~5650MHz)	☒ With 5600~5650MHz	☐ Without 5600~5650MHz
Beamforming Function	☒ With beamforming for 802.11n/ac in 2.4GHz /5GHz.	☐ Without beamforming
Operate Condition	☒ Indoor	☐ Outdoor

Antenna and Band width

Antenna	Four (TX)		
Band width Mode	20 MHz	40 MHz	80 MHz
IEEE 802.11a	V	X	X
IEEE 802.11n	V	V	X
IEEE 802.11ac	V	V	V

IEEE 11n/ac Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	4	MCS 0-31
802.11n (HT40)	4	MCS 0-31
802.11ac (VHT20)	4	MCS 0-9/Nss1-4
802.11ac (VHT40)	4	MCS 0-9/Nss1-4
802.11ac (VHT80)	4	MCS 0-9/Nss1-4

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 and VHT80.

Note 3: Modulation modes consist of below configuration: HT20/HT40: IEEE 802.11n, VHT20/VHT40/VHT80: IEEE 802.11ac

3.2. Accessories

Others
Wall-mounted rack*1

3.3. Table for Filed Antenna

<For Radio 1>

Ant.	Brand	Model Name	Antenna Type	Connector
1	Liteon	WP8868-E-XS	PIFA Ant.	I-PEX
3	Liteon	WP8868-E-XS	PIFA Ant.	I-PEX
5	Liteon	WP8868-E-XS	PIFA Ant.	I-PEX
7	Liteon	WP8868-E-XS	PIFA Ant.	I-PEX

Ant.	Frequency (MHz) / Antenna Gain (dBi)		
	2412, 2422	2437	2452, 2462
1	2.07	1.35	1.84
3	4.67	3.82	4.52
5	3.68	3.64	3.04
7	4.23	4.10	3.51

Ant.	5GHz Band / Antenna Gain (dBi)			
	Band 1	Band 2	Band 3	Band 4
1	0.23	3.51	4.44	3.09
3	4.19	4.54	5.63	4.29
5	4.93	4.67	5.07	4.86
7	4.65	4.54	6.01	3.94

Frequency Band (MHz)	Correlated Composite Gain (dBi) (4TX, 1S)	Uncorrelated Composite Gain (dBi) (4TX, 4S)
2412, 2422	6.99	1.40
2437	7.02	1.36
2452, 2462	7.22	1.68
5150 ~ 5250 (Band 1)	6.10	0.78
5250 ~ 5350 (Band 2)	7.01	1.42
5470 ~ 5725 (Band 3)	8.40	2.75
5725 ~ 5850 (Band 4)	7.29	1.56

<For Radio 2>

Ant.	Brand	Model Name	Antenna Type	Connector
2	Liteon	WP8868-E-XS	PIFA Ant.	I-PEX
4	Liteon	WP8868-E-XS	PIFA Ant.	I-PEX
6	Liteon	WP8868-E-XS	PIFA Ant.	I-PEX
8	Liteon	WP8868-E-XS	PIFA Ant.	I-PEX

Ant.	Frequency (MHz) / Antenna Gain (dBi)		
	2412, 2422	2437	2452, 2462
2	1.79	1.19	1.08
4	3.96	3.51	3.06
6	2.93	2.93	3.38
8	2.10	2.49	1.79

Ant.	5GHz Band / Antenna Gain (dBi)			
	Band 1	Band 2	Band 3	Band 4
2	1.64	3.82	5.79	4.60
4	3.02	6.03	6.33	3.45
6	3.48	4.02	5.02	4.78
8	3.93	6.21	5.30	3.69

Frequency Band (MHz)	Correlated Composite Gain (dBi) (4TX, 1S)	Uncorrelated Composite Gain (dBi) (4TX, 4S)
2412, 2422	6.01	0.65
2437	5.86	0.22
2452, 2462	5.33	-0.26
5150 ~ 5250 (Band 1)	4.88	-0.30
5250 ~ 5350 (Band 2)	6.43	1.51
5470 ~ 5725 (Band 3)	7.72	2.24
5725 ~ 5850 (Band 4)	6.98	1.68

<For Radio 3>

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
9	Liteon	WP8868-E-XS	PIFA Ant.	N/A	3.20

Note: 1. The EUT has three radios.

Radio 1 and Radio 2 supports 2.4GHz WLAN function and 5GHz WLAN function, Radio 3 supports Bluetooth function only.

For Conducted test:

Radio 1 and Radio 2 are the same radios, radio 2 has been evaluated to be the worst case so it's chosen to conduct tests.

Radio 1 and Radio 2 equipped the same type antennas, radio 1 has the higher gain than radio 2 so it's chosen to conduct the gain test.

For Radiated test:

Radio 1 and Radio 2 are the same radios; radio 1 has been evaluated to be the worst case so it's chosen to radiate tests.

2. The EUT has nine antennas.

For WLAN function (4TX/4RX):

For Radio 1:

Chain 5, Chain 6, Chain 7 and Chain 8 could transmit/receive simultaneously.

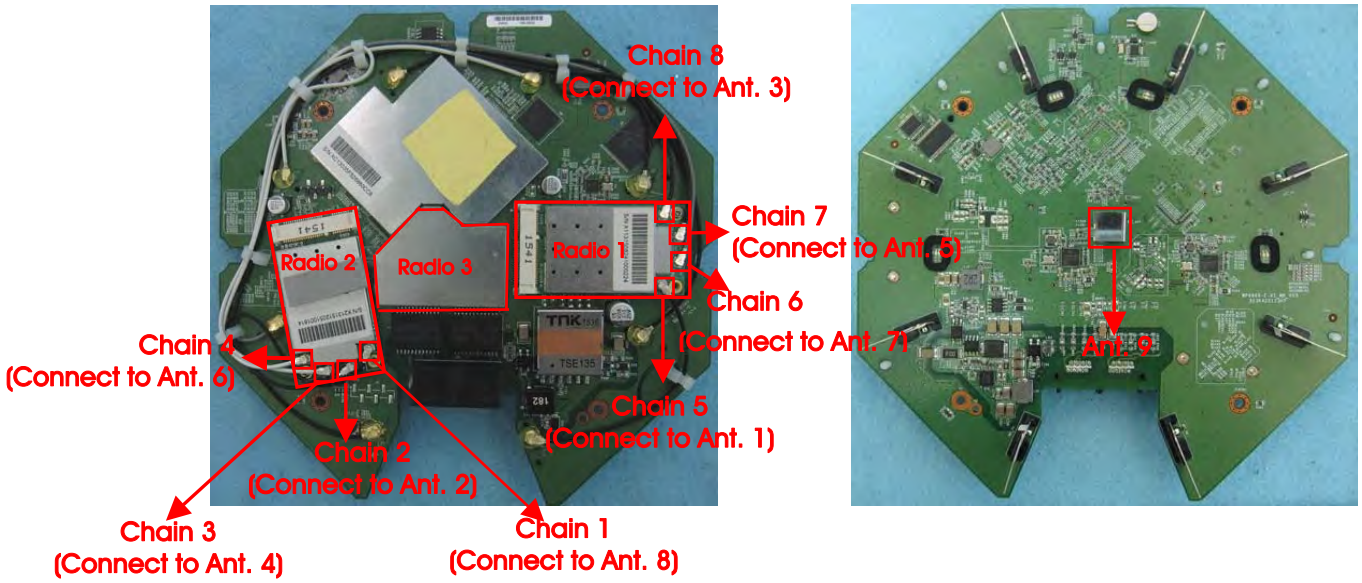
For Radio 2:

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

For Bluetooth function (1TX/1RX):

For Radio 3:

Only Ant. 9 can be used as transmitting/receiving antenna.



3.4. Table for Carrier Frequencies

There are three bandwidth systems.

For 20MHz bandwidth systems, use Channel 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144.

For 40MHz bandwidth systems, use Channel 54, 62, 102, 110, 118, 126, 134, 142.

For 80MHz bandwidth systems, use Channel 58, 106, 122, 138.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5250~5350 MHz Band 2	52	5260 MHz	60	5300 MHz
	54	5270 MHz	62	5310 MHz
	56	5280 MHz	64	5320 MHz
	58	5290 MHz	-	-
5470~5725 MHz Band 3	100	5500 MHz	124	5620 MHz
	102	5510 MHz	126	5630 MHz
	104	5520 MHz	128	5640 MHz
	106	5530 MHz	132	5660 MHz
	108	5540 MHz	134	5670 MHz
	110	5550 MHz	136	5680 MHz
	112	5560 MHz	138	5690 MHz
	116	5580 MHz	140	5700 MHz
	118	5590 MHz	142	5710 MHz
	120	5600 MHz	144	5720 MHz
	122	5610 MHz	-	-

3.5. Table for Test Modes

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

Test Items	Mode		Data Rate	Channel	Chain
Max. Conducted Output Power	<For Non-Beamforming Mode>				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140/144	5+6+7+8
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
	<For Beamforming Mode>				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
Power Spectral Density	<For Non-Beamforming Mode>				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140/144	5+6+7+8
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
	<For Beamforming Mode>				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8

26dB Spectrum Bandwidth 99% Occupied Bandwidth Measurement	<For Non-Beamforming Mode>				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/1 34/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
	<For Beamforming Mode>				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/1 34/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
Radiated Emission Above 1GHz	<For Non-Beamforming Mode>				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/1 34/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
	<For Beamforming Mode>				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/1 34/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
6dB Spectrum Bandwidth Measurement	<For Non-Beamforming Mode>				
	11a/BPSK	Band 4	6Mbps	144	5+6+7+8
	11ac VHT20	Band 4	MCS0/Nss1	144	5+6+7+8
	11ac VHT40	Band 4	MCS0/Nss1	142	5+6+7+8
	11ac VHT80	Band 4	MCS0/Nss1	138	5+6+7+8
	<For Beamforming Mode>				
	11ac VHT20	Band 4	MCS0/Nss1	144	5+6+7+8
	11ac VHT40	Band 4	MCS0/Nss1	142	5+6+7+8
	11ac VHT80	Band 4	MCS0/Nss1	138	5+6+7+8

Band Edge Emission	<For Non-Beamforming Mode>				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140/144	5+6+7+8
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
	<For Beamforming Mode>				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	5+6+7+8
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	5+6+7+8
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	5+6+7+8
Frequency Stability	20 MHz	Band 2-3	-	60/116	6
	40 MHz	Band 2-3	-	62/110	6
	80 MHz	Band 2-3	-	58/106	6

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.

2. There are two modes of EUT, one is beamforming mode, and the other is non-beamforming mode for 802.11n/ac. All test results were recorded in the report.

3. The PoE below are for measurement only, would not be marketed.

Power	Brand	Model No.	FCC ID
PoE	H3C	EWPAM1NPoE	N/A

The following test modes were performed for all tests:

For Radiated Emission test<Above 1GHz>:

The EUT can be placed at Y-axis and Z-axis and it has radio 1 and radio 2. After evaluating, the EUT at Z-axis with WLAN 5GHz_radio 1 functions was the worst case. Consequently, measurement for Radiated Emissions will follow this same test mode.

Mode 1. EUT Z-axis_Radio 1 (WLAN 5GHz functions)

For Co-location MPE Test:

Mode 1. 2.4GHz WLAN (Radio 1) + 2.4GHz WLAN (Radio 2) + Bluetooth (Radio 3)

Mode 2. 2.4GHz WLAN (Radio 1) + 5GHz WLAN (Radio 2) + Bluetooth (Radio 3)

Mode 3. 5GHz WLAN (Radio 1) + 2.4GHz WLAN (Radio 2) + Bluetooth (Radio 3)

Mode 4. 5GHz WLAN (Radio 1) + 5GHz WLAN (Radio 2) + Bluetooth (Radio 3)

The EUT could be applied with 2.4GHz/5GHz WLAN function and Bluetooth function; therefore Co-location Maximum Permissible Exposure (Please refer to FA582537-02) test is added for simultaneously transmit between 2.4GHz/5GHz WLAN function and Bluetooth function.

3.6. Table for Testing Locations

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

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

3.7. Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR582537-03

Below is the table for the change of the product with respect to the original one.

Description	Performance Checking
Adding 5 GHz Band 2 and Band 3 (5250~5350 MHz, 5470~5725 MHz)	26dB Spectrum Bandwidth and 99% Occupied Bandwidth 6dB Spectrum Bandwidth Maximum Conducted Output Power Power Spectral Density Radiated Emissions (Above 1GHz) Band Edge Emissions Frequency Stability Measurement

3.8. Table for Multiple Listing

The brand name and model numbers in the following table are all refer to the identical product.

Brand Name	Model Name	Description
XIRRUS	XD2240 -1	All the design is the same, just for different marketing use.
AVAYA	WAP9144 -1	

From the above models, model: XD2240 -1 was selected as representative model for the test and its data was recorded in this report.

3.9. Table for Supporting Units

For Test Site No: 03CH01-CB

<For Non-Beamforming Mode>

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC
PoE	H3C	EWPAM1NPOE	N/A

<For Beamforming Mode>

Support Unit	Brand	Model	FCC ID
Notebook*2	DELL	E4300	DoC
RX Client	BCM	BCM58535EAP	DoC
PoE	H3C	EWPAM1NPOE	N/A

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC
PoE	H3C	EWPAM1NPOE	N/A

3.10. 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 Non-Beamforming Mode>

Test Software Version	XirCon-Setup-1.0.2.25						
Mode	Test Frequency (MHz)						
	NCB: 20MHz						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720MHz
802.11a	71	71	71	64	64	65	73
802.11ac MCS0/Nss1 VHT20	71	70	70	64	64	65	73
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710MHz	
	73	57	56	73	73	80	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz			
	49	55	72	73			

<For Beamforming Mode>

Test Software Version	XirCon-Setup-1.0.2.25						
Mode	Test Frequency (MHz)						
	NCB: 20MHz						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720MHz
802.11ac MCS0/Nss1 VHT20	70	70	70	64	63	64	70
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710MHz	
	70	54	56	66	67	71	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz			
	58	57	66	70			

3.11. EUT Operation during Test

<For Non-Beamforming Mode>

The EUT was programmed to be in continuously transmitting mode.

<For Beamforming Mode>

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

During the test, the following programs under WIN XP were executed.

The program was executed as follows:

1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under DOS.
3. Executed "Lantest.exe " to link with the remote workstation to receive and transmit packet by RX Client and transmit duty cycle no less 98%

3.12. Duty Cycle

<For Non-Beamforming Mode>

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.053	2.086	98.43%	0.07	0.01
802.11ac MCS0/Nss1 VHT20	1.884	1.928	97.74%	0.10	0.53
802.11ac MCS0/Nss1 VHT40	0.925	0.977	94.68%	0.24	1.08
802.11ac MCS0/Nss1 VHT80	0.427	0.478	89.33%	0.49	2.34

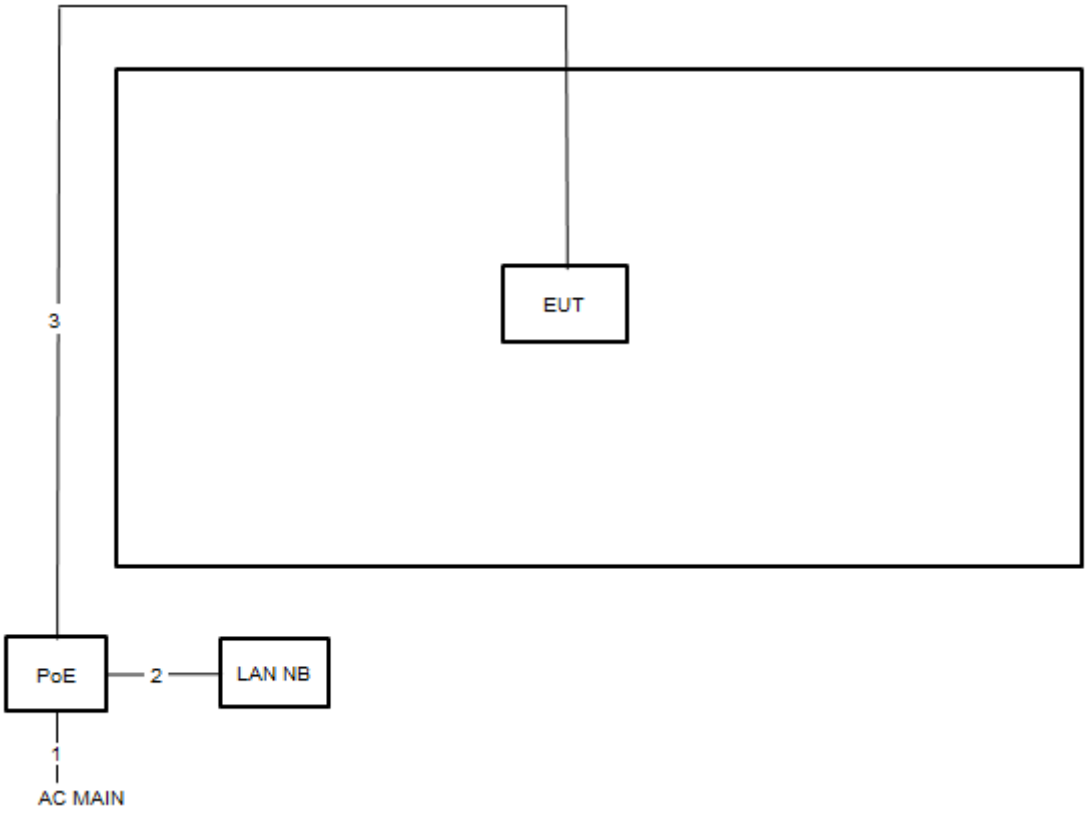
<For Beamforming Mode>

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	3.830	4.183	91.57%	0.38	0.26
802.11ac MCS0/Nss1 VHT40	3.653	4.070	89.75%	0.47	0.27
802.11ac MCS0/Nss1 VHT80	5.043	5.478	92.06%	0.36	0.20

3.13. Test Configurations

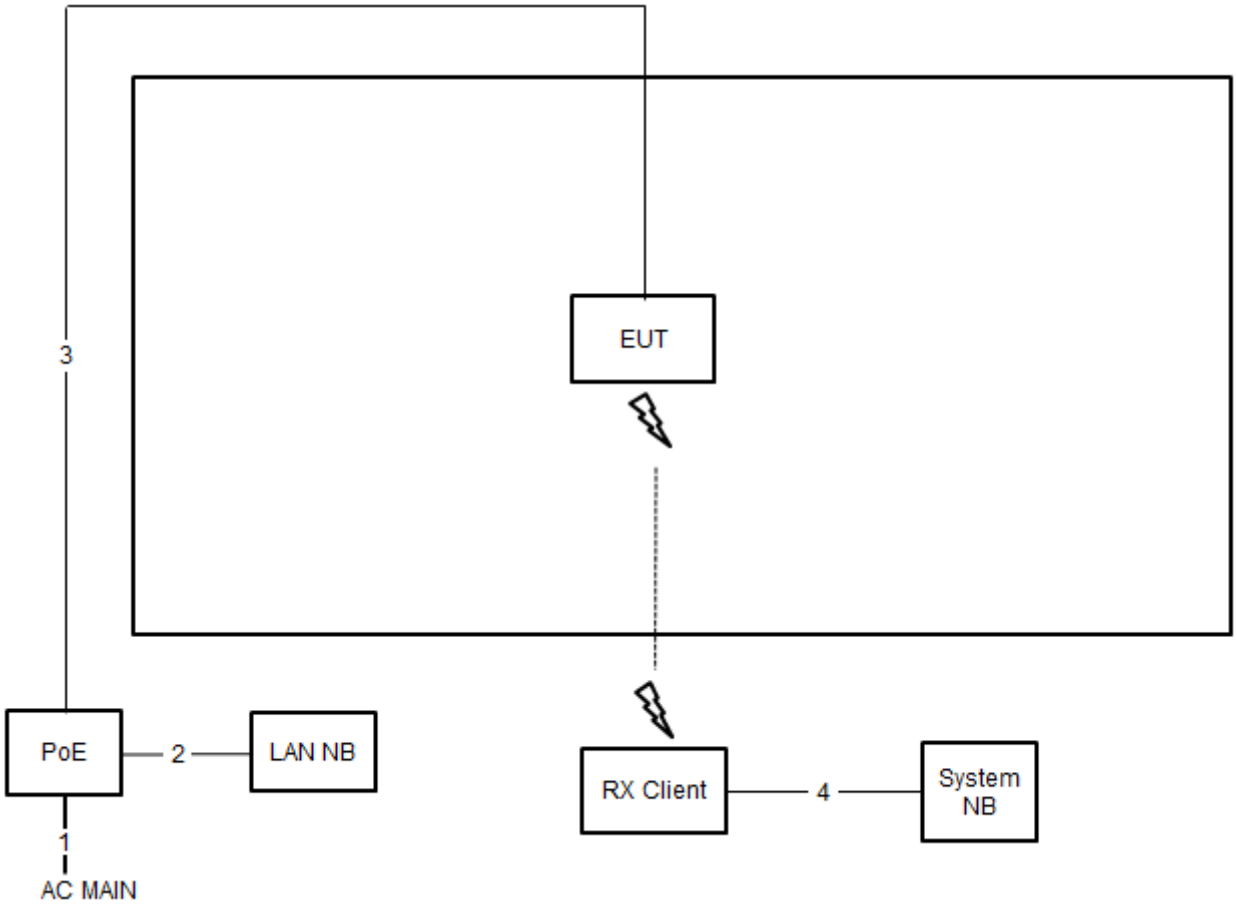
3.13.1. Radiation Emissions Test Configuration

<For Non-Beamforming Mode>



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

<For Beamforming Mode>



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

4. TEST RESULT

4.1. 26dB Bandwidth and 99% Occupied Bandwidth Measurement

4.1.1. Limit

No restriction limits.

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 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

4.1.3. Test Procedures

For Radiated 26dB Bandwidth and 99% Occupied Bandwidth Measurement:

1. The transmitter was radiated 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%.

4.1.4. Test Setup Layout

For Radiated 26dB Bandwidth and 99% Occupied Bandwidth Measurement:

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

4.1.5. Test Deviation

There is no deviation with the original standard.

4.1.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

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

Temperature	23℃	Humidity	54%
Test Engineer	Serway Li		

<For Non-Beamforming Mode>

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5260 MHz	29.04	22.80
	5300 MHz	28.56	21.96
	5320 MHz	29.04	21.84
	5500 MHz	19.80	16.32
	5580 MHz	20.04	16.44
	5700 MHz	19.80	16.32
802.11ac MCS0/Nss1 VHT20	5260 MHz	35.40	19.68
	5300 MHz	30.72	19.08
	5320 MHz	35.04	19.20
	5500 MHz	24.60	18.12
	5580 MHz	21.72	18.00
	5700 MHz	23.16	18.00
802.11ac MCS0/Nss1 VHT40	5270 MHz	93.00	51.40
	5310 MHz	45.20	37.60
	5510 MHz	41.00	37.20
	5550 MHz	73.60	41.40
	5670 MHz	83.80	42.40
802.11ac MCS0/Nss1 VHT80	5290 MHz	81.20	76.80
	5530 MHz	81.20	76.80
	5610 MHz	152.00	78.00

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11a	5720 MHz	29.30	18.32	5703.39	5710.80	21.61	7.70	14.20	4.12
802.11ac MCS0/Nss1 VHT20	5720 MHz	35.22	19.62	5702.78	5710.36	22.22	13.00	14.64	4.99
802.11ac MCS0/Nss1 VHT40	5710 MHz	85.94	42.69	5667.68	5690.32	57.32	28.62	34.68	8.01
802.11ac MCS0/Nss1 VHT80	5690 MHz	189.57	88.86	5593.77	5649.77	131.23	58.33	75.23	13.62

<For Beamforming Mode>

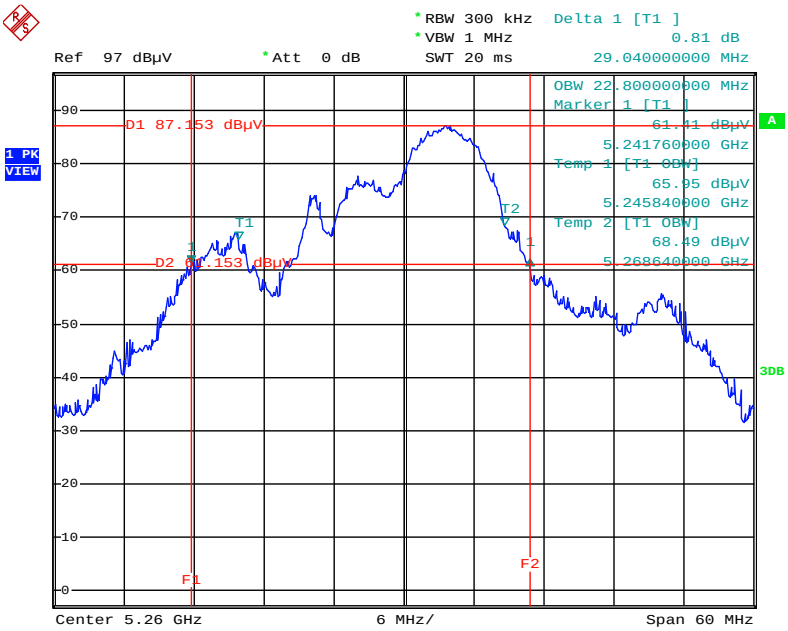
Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5260 MHz	24.95	18.06
	5300 MHz	23.56	18.23
	5320 MHz	23.39	18.14
	5500 MHz	21.82	18.06
	5580 MHz	21.56	18.06
	5700 MHz	21.91	18.06
802.11ac MCS0/Nss1 VHT40	5270 MHz	87.39	38.20
	5310 MHz	41.01	36.90
	5510 MHz	41.30	36.90
	5550 MHz	58.69	37.19
	5670 MHz	53.62	37.19
802.11ac MCS0/Nss1 VHT80	5290 MHz	82.60	76.12
	5530 MHz	81.73	75.83
	5610 MHz	84.92	76.12

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	69.13	37.63	5678.70	5691.33	46.30	22.83	33.67	3.96
802.11ac MCS0/Nss1 VHT40	5710 MHz	142.03	76.41	5629.42	5652.08	95.58	46.45	72.92	3.49
802.11ac MCS0/Nss1 VHT80	5690 MHz	22.17	18.06	5709.30	5711.06	15.70	6.48	13.94	4.12

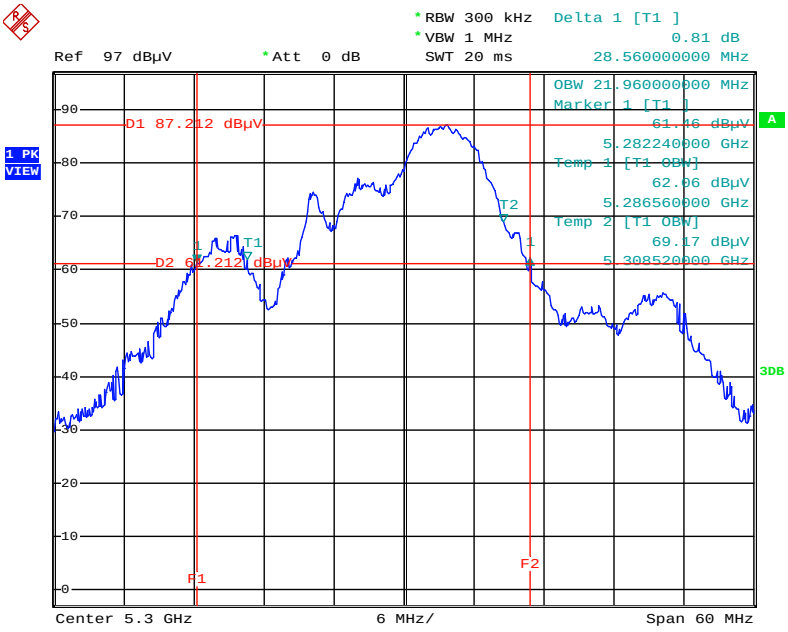
<For Non-Beamforming Mode>

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5260 MHz



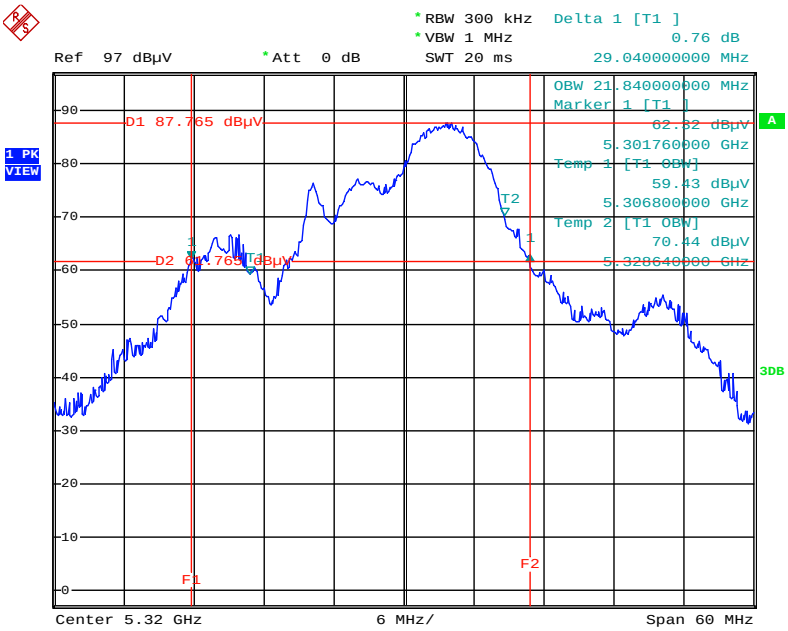
Date: 1.OCT.2015 23:20:02

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5300 MHz



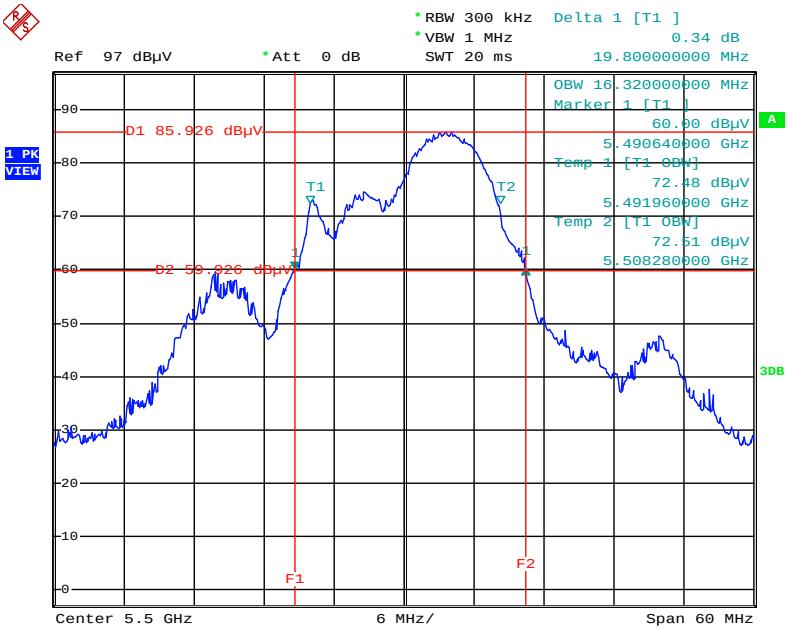
Date: 1.OCT.2015 23:24:11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5320 MHz



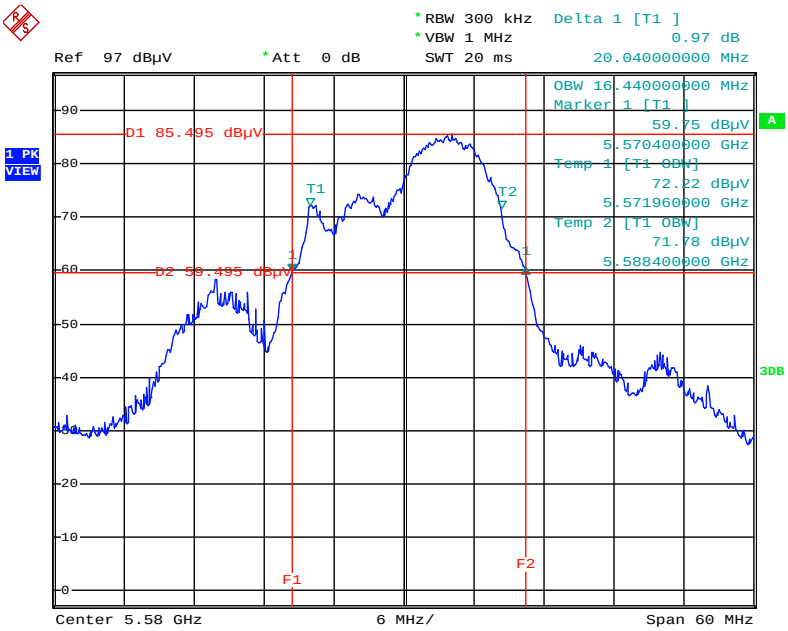
Date: 1.OCT.2015 23:26:13

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5500 MHz



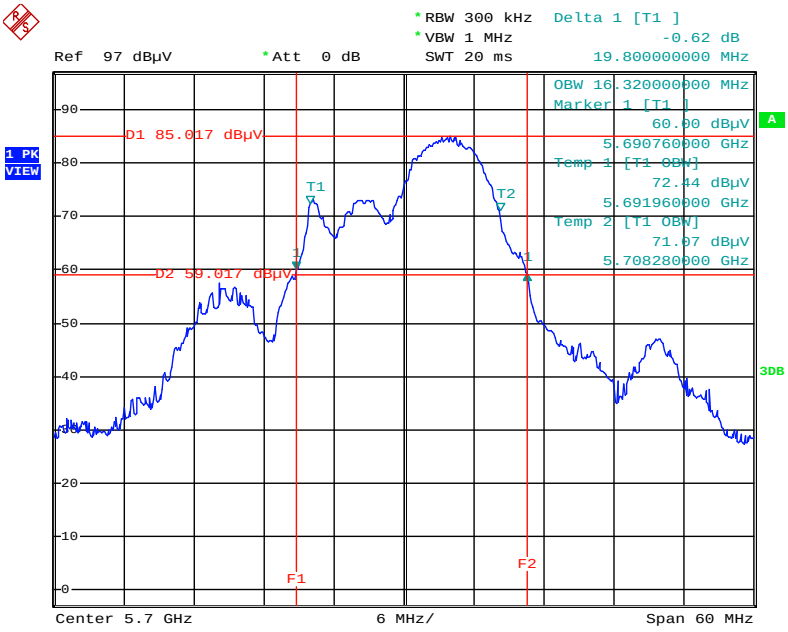
Date: 1.OCT.2015 23:28:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5580 MHz



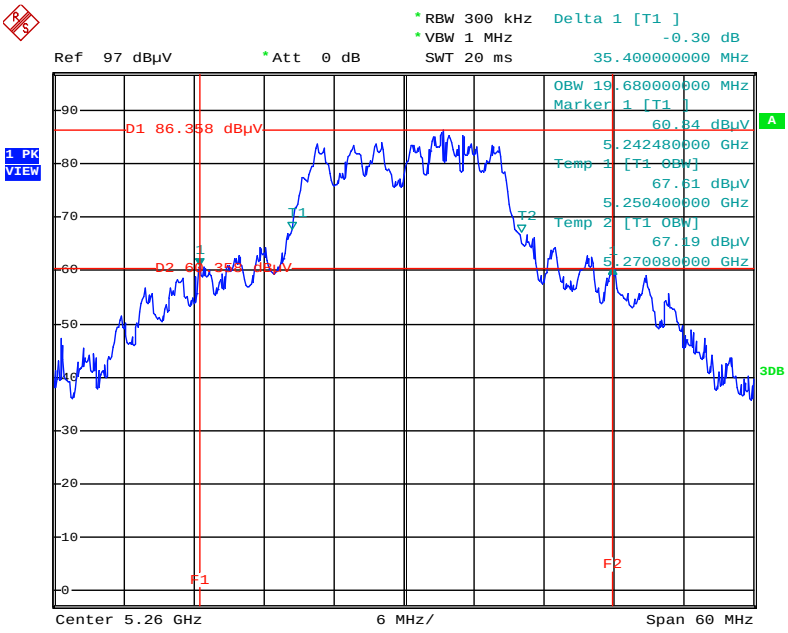
Date: 1.OCT.2015 23:30:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5700 MHz



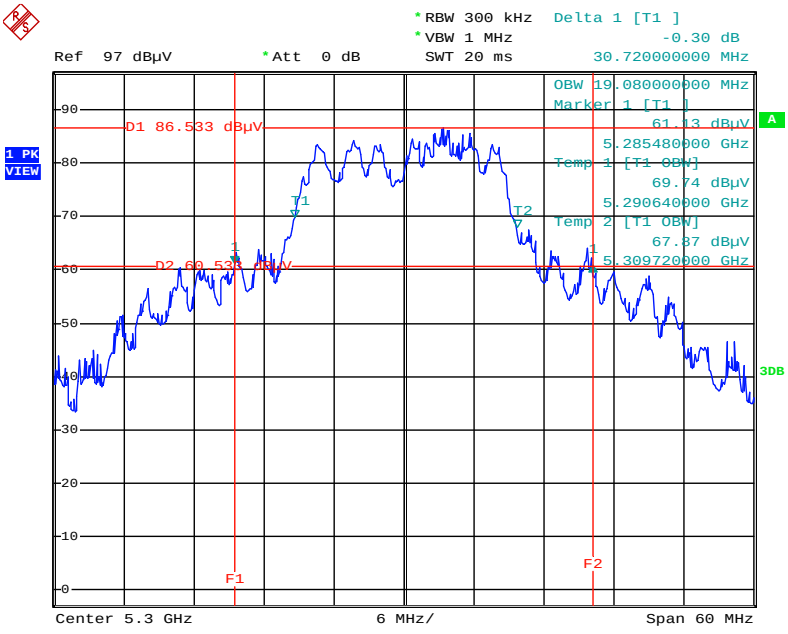
Date: 1.OCT.2015 23:32:15

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5260 MHz



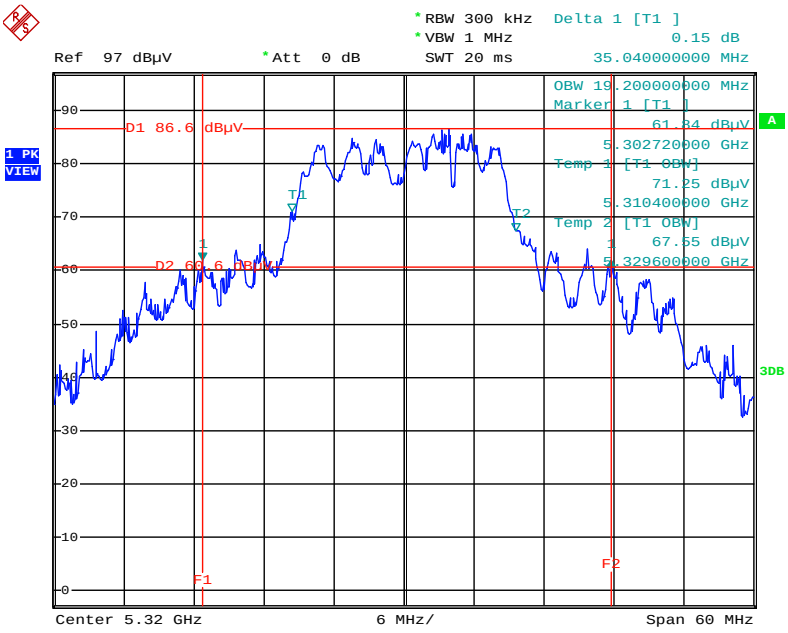
Date: 1.OCT.2015 23:53:57

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5300 MHz



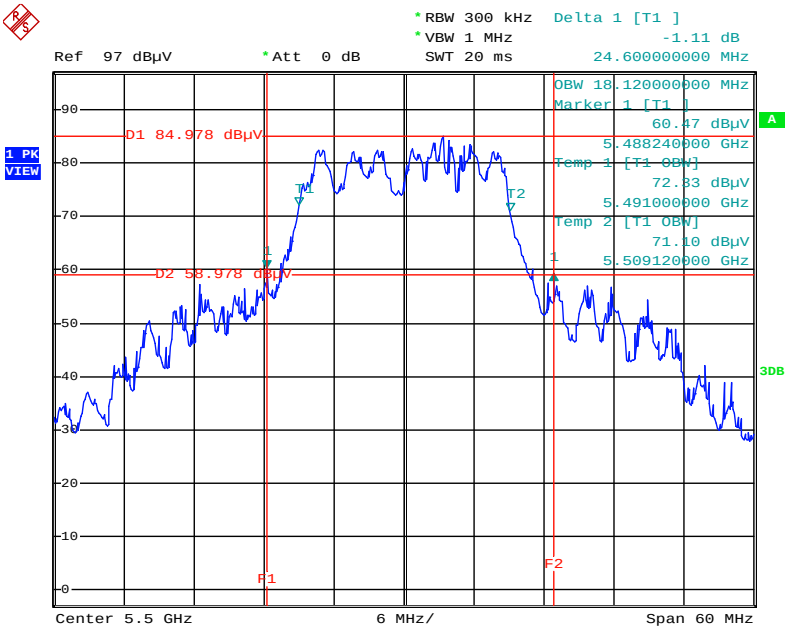
Date: 1.OCT.2015 23:55:41

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5320 MHz



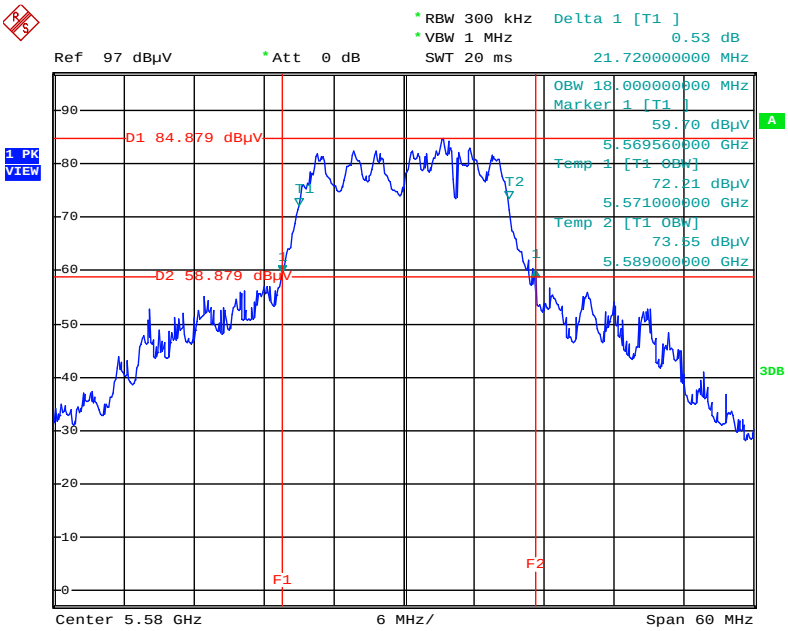
Date: 1.OCT.2015 23:57:27

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5500 MHz



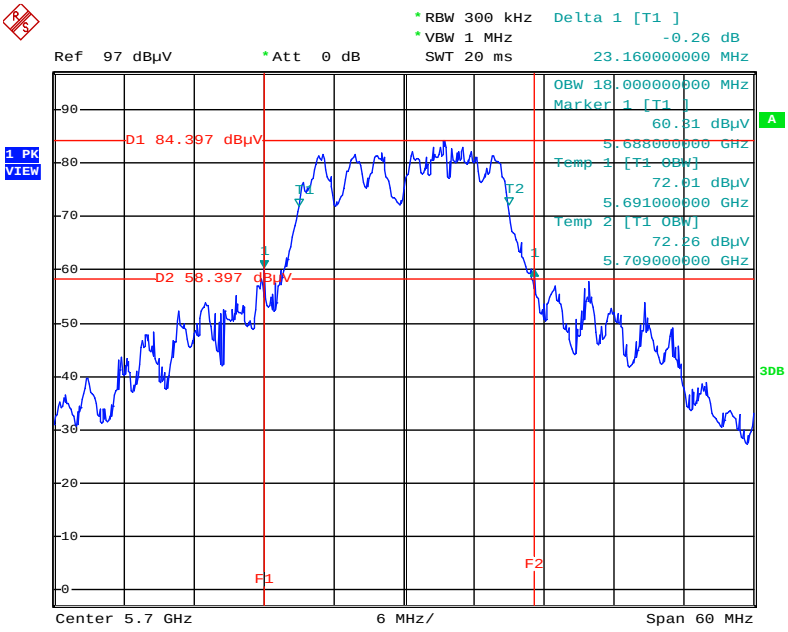
Date: 2.OCT.2015 00:22:08

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5580 MHz



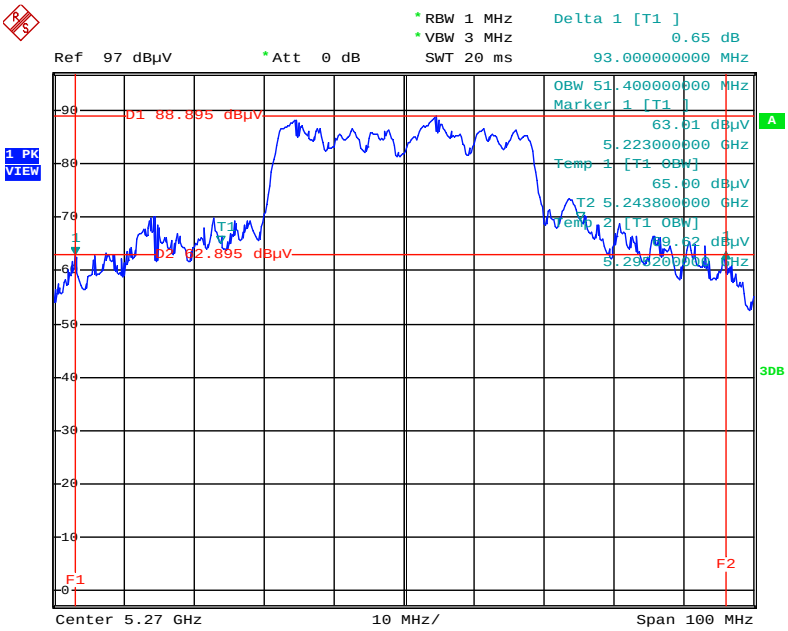
Date: 2.OCT.2015 00:23:47

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5700 MHz



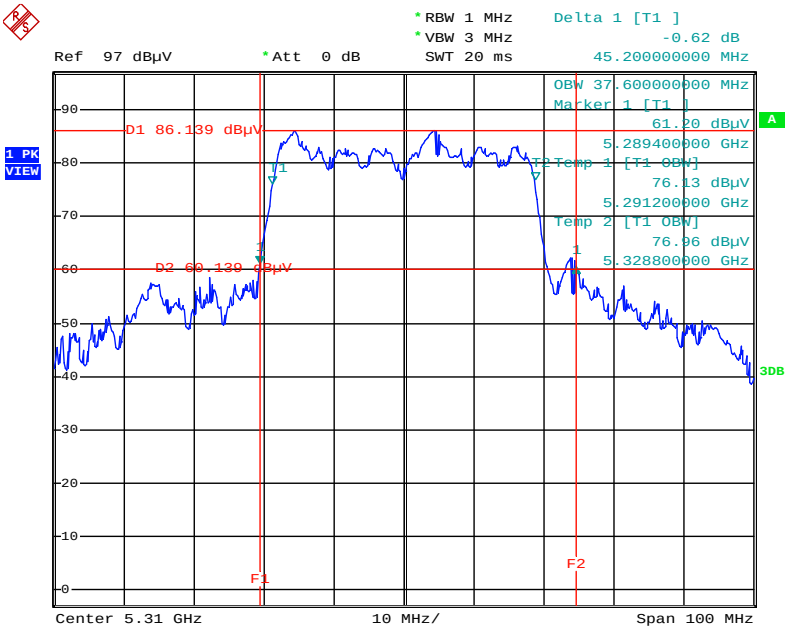
Date: 2.OCT.2015 00:25:27

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5270 MHz



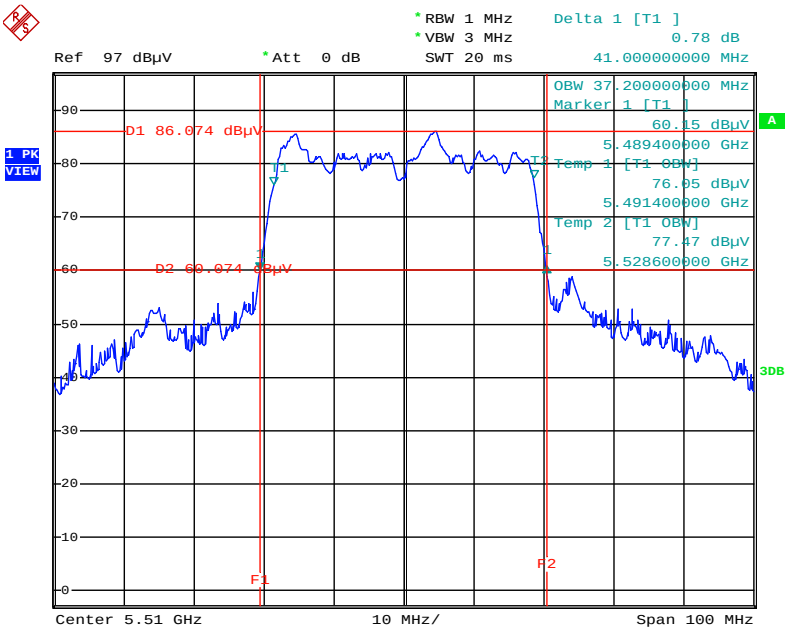
Date: 2.OCT.2015 00:40:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5310 MHz



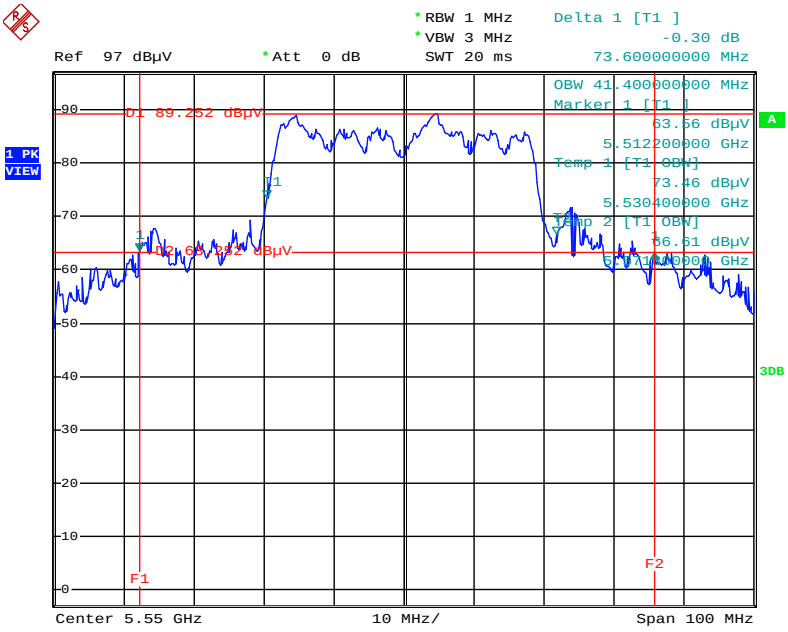
Date: 2.OCT.2015 00:42:31

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5510 MHz



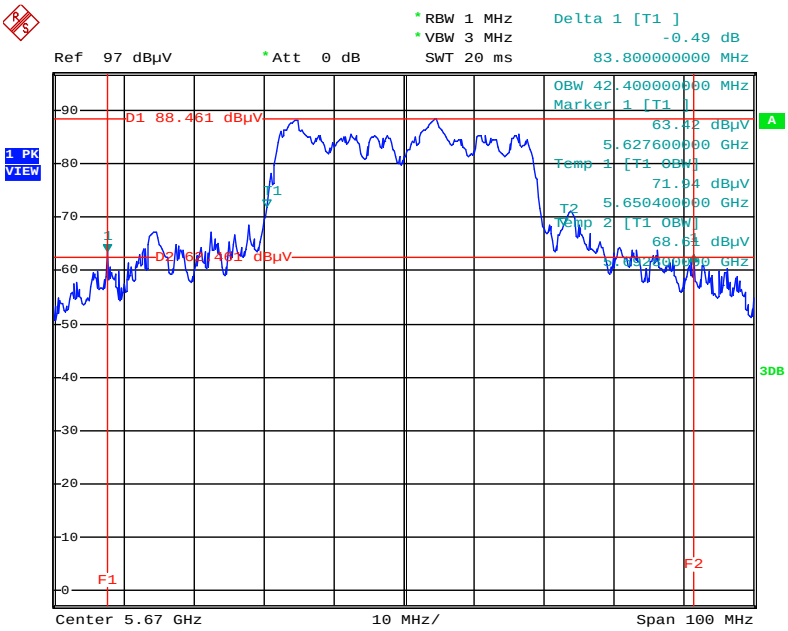
Date: 2.OCT.2015 00:44:17

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5550 MHz



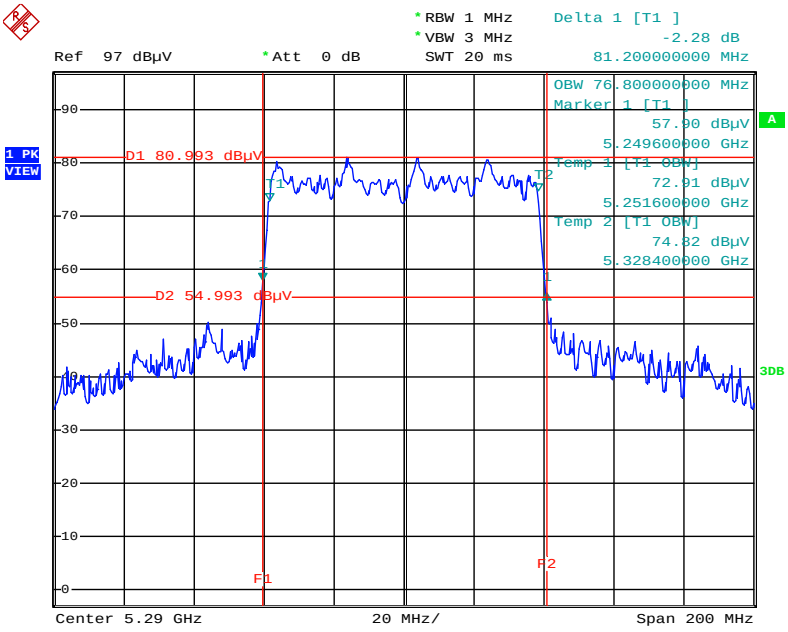
Date: 2.OCT.2015 00:46:01

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5670 MHz



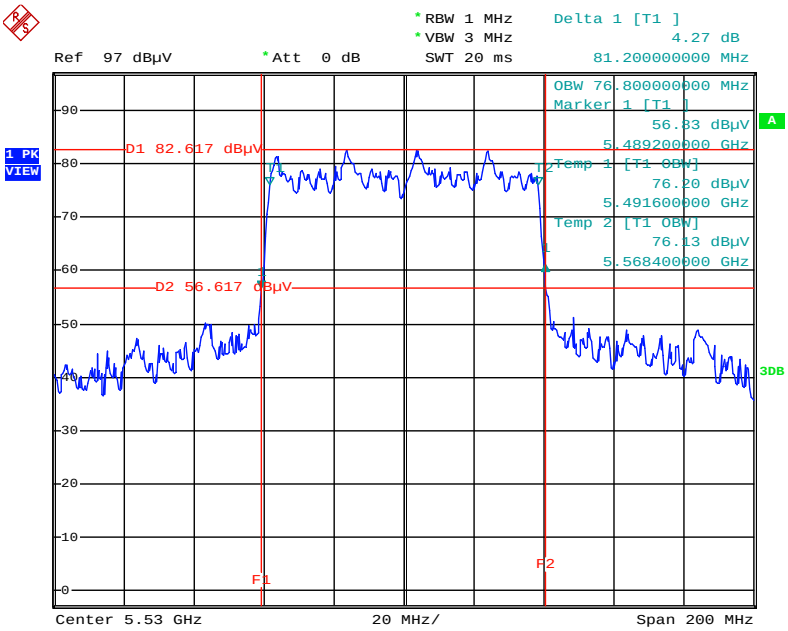
Date: 2.OCT.2015 00:48:20

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5290 MHz



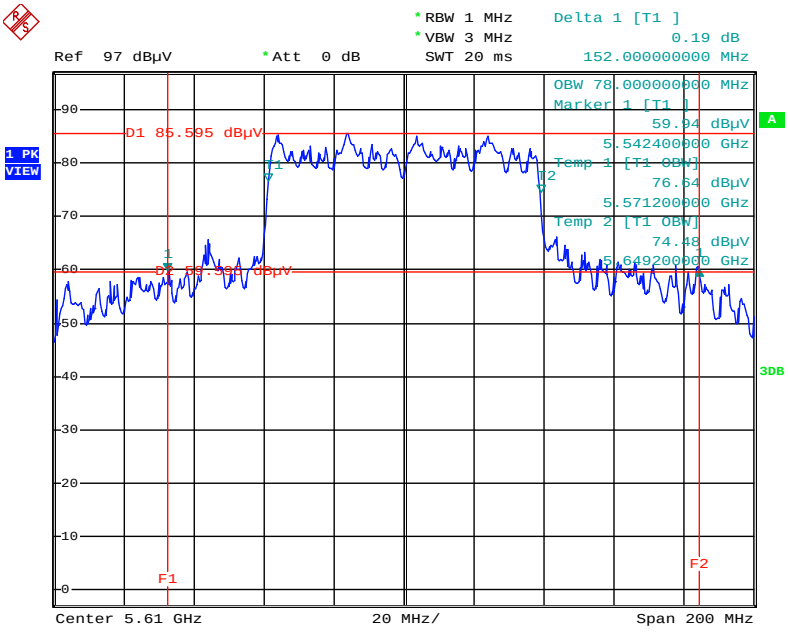
Date: 2.OCT.2015 00:57:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5530 MHz



Date: 2.OCT.2015 00:59:31

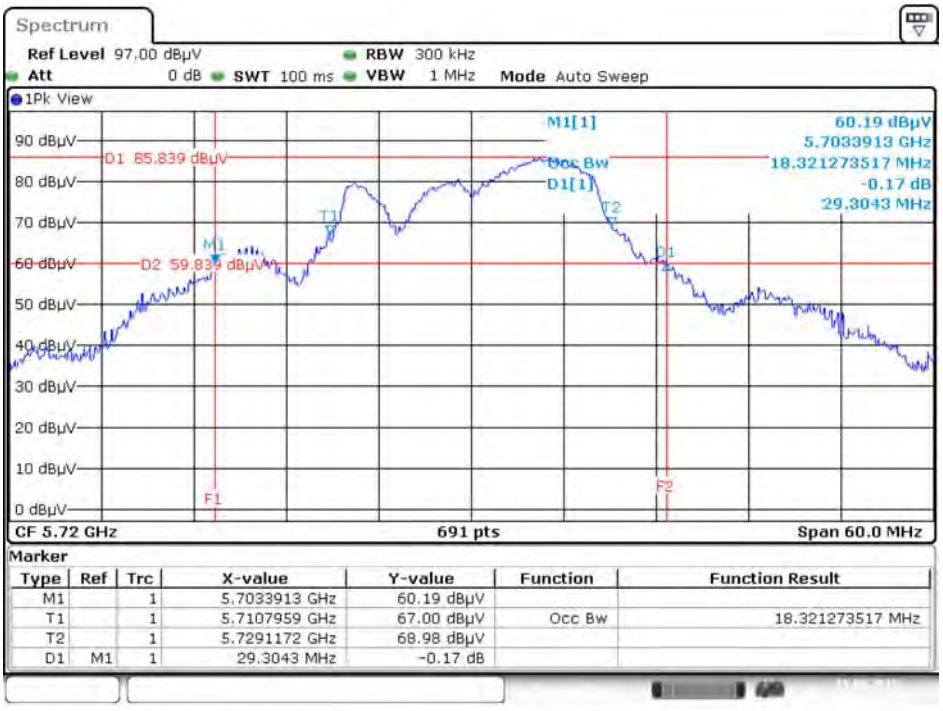
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5610 MHz



Date: 2.OCT.2015 01:01:49

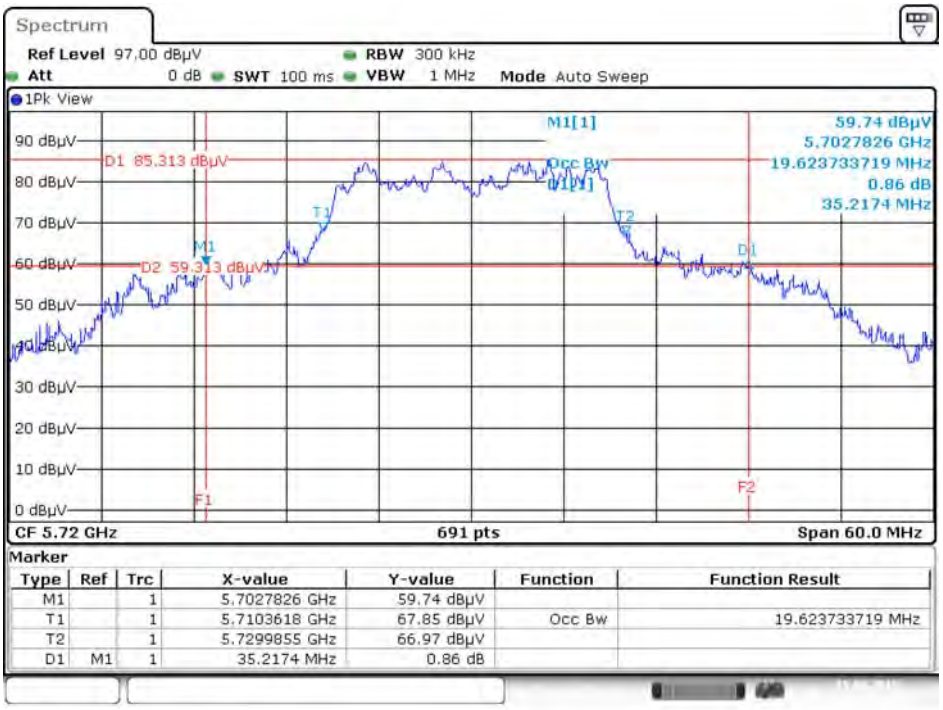
Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz



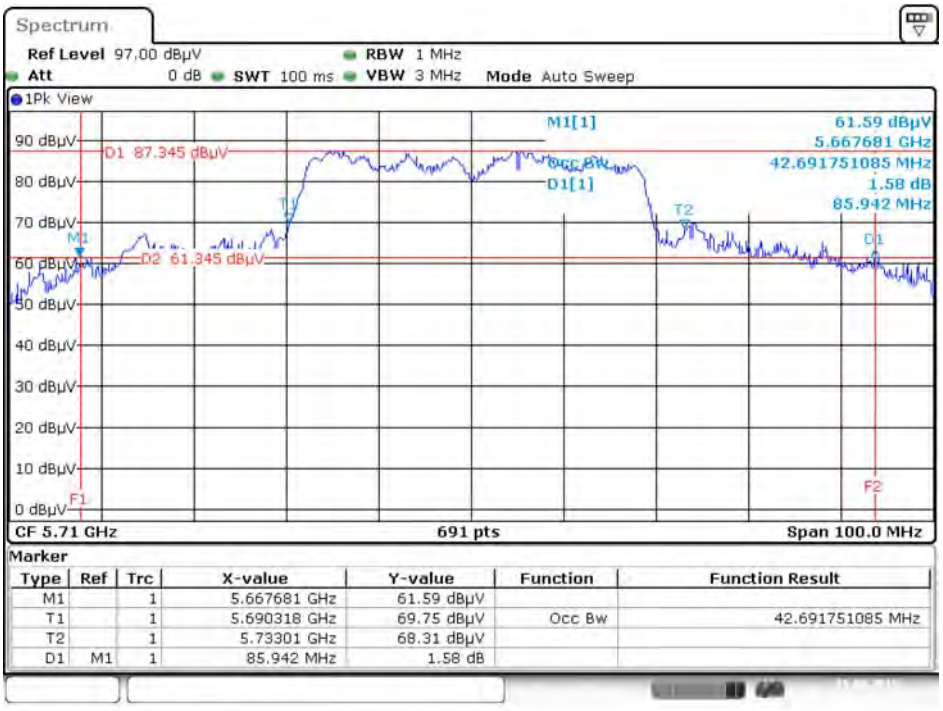
Date: 15.SEP.2015 23:38:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz



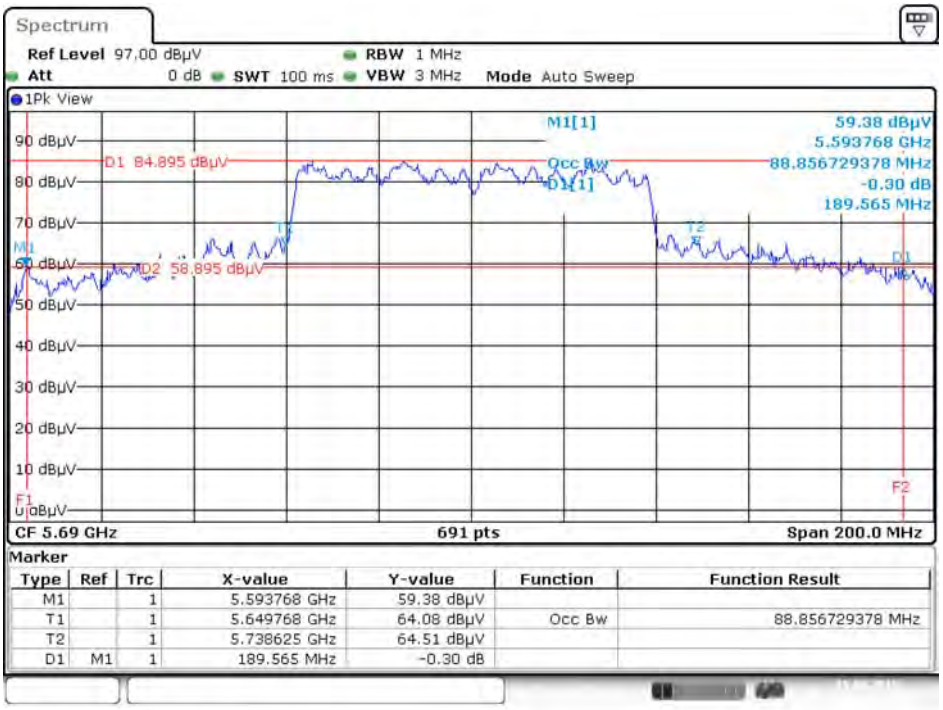
Date: 15.SEP.2015 23:39:46

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5710 MHz



Date: 15.SEP.2015 23:41:23

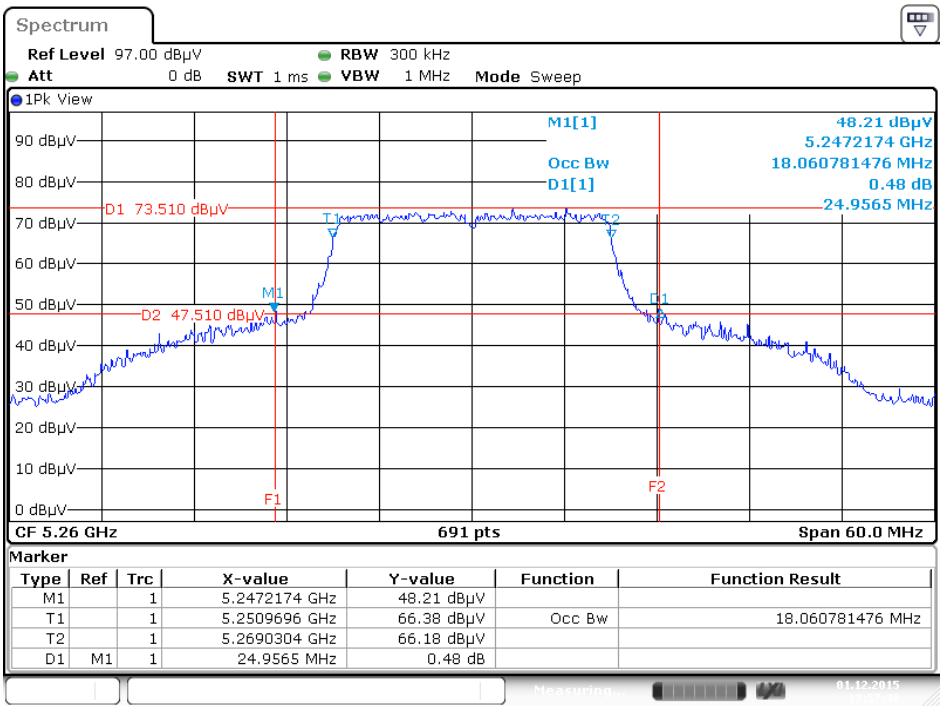
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5690 MHz



Date: 15.SEP.2015 23:44:32

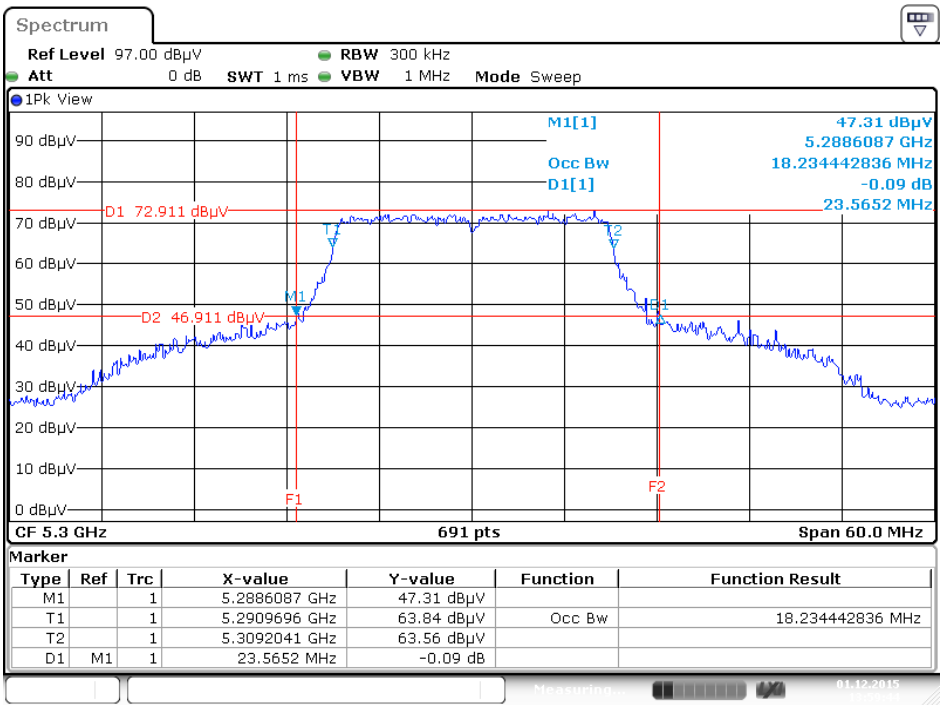
<For Beamforming Mode>

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5260 MHz



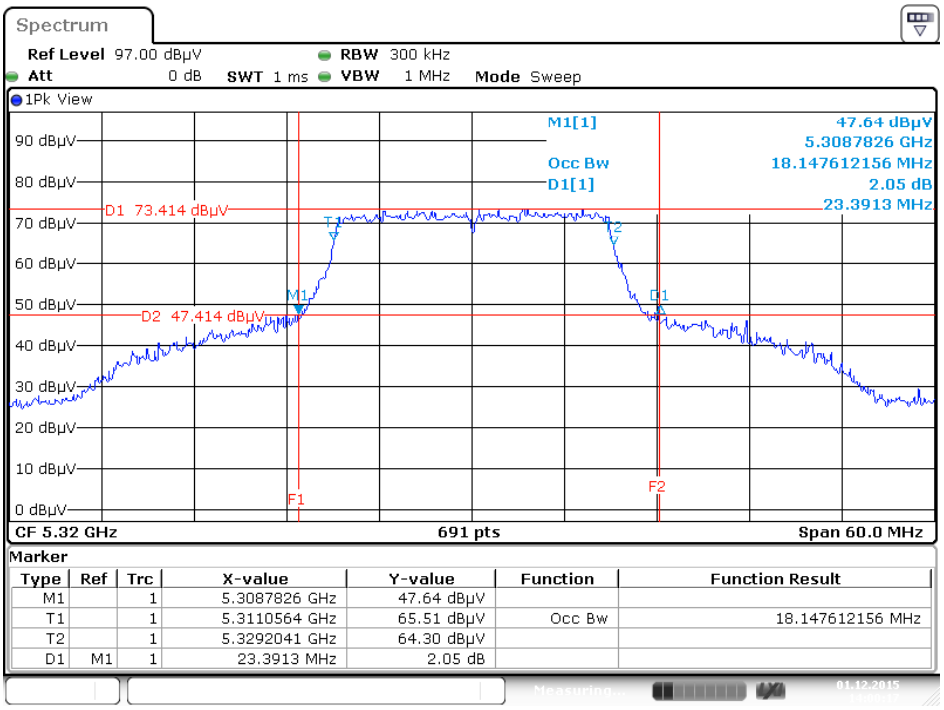
Date: 1.DEC.2015 13:57:49

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5300 MHz



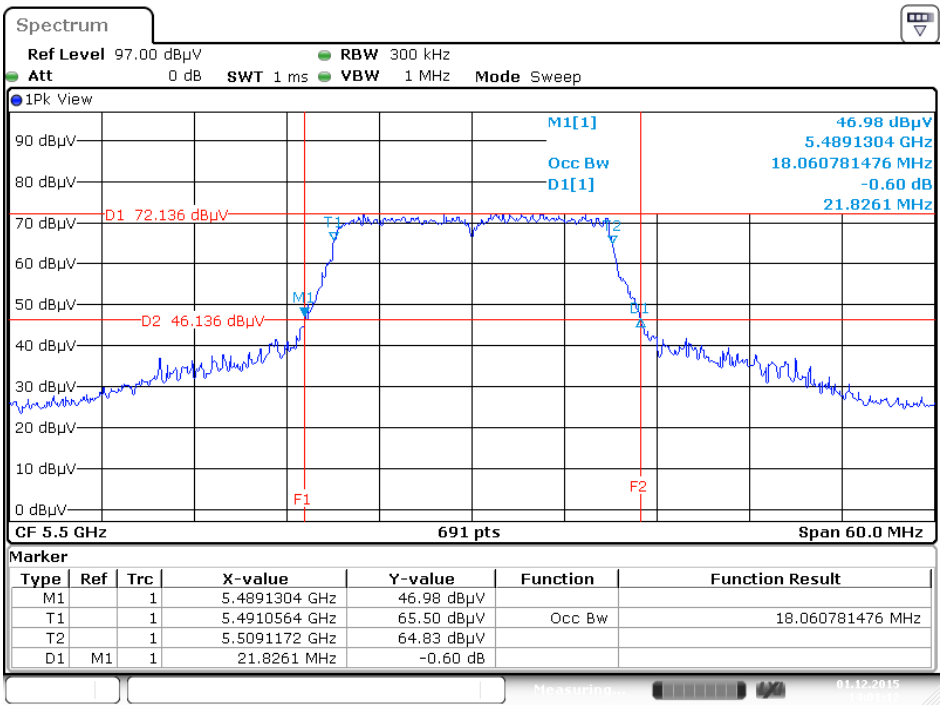
Date: 1.DEC.2015 13:59:44

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5320 MHz



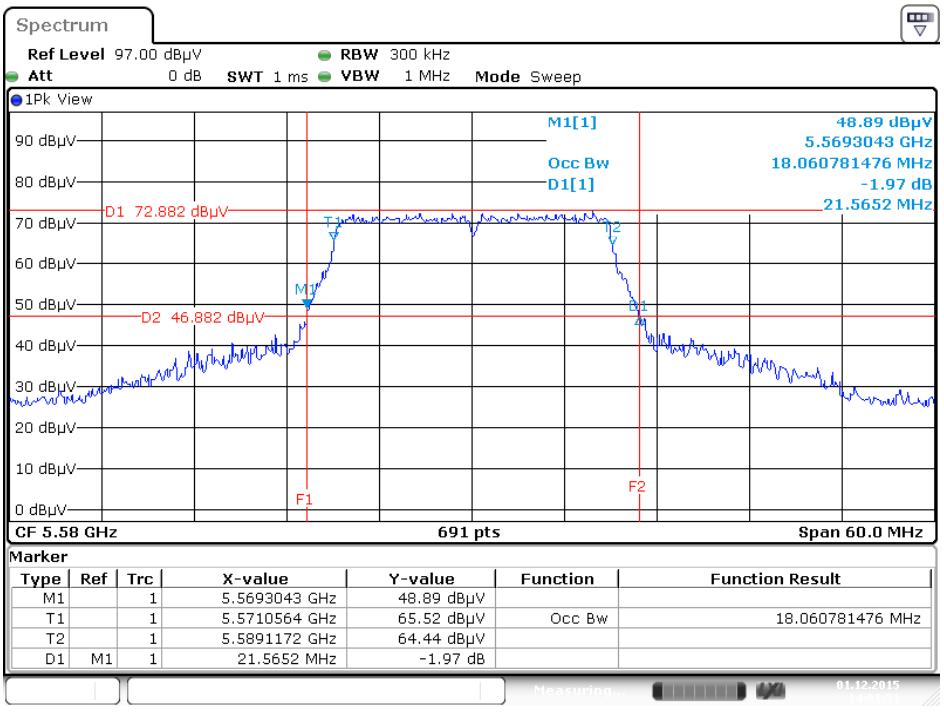
Date: 1.DEC.2015 14:00:18

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5500 MHz



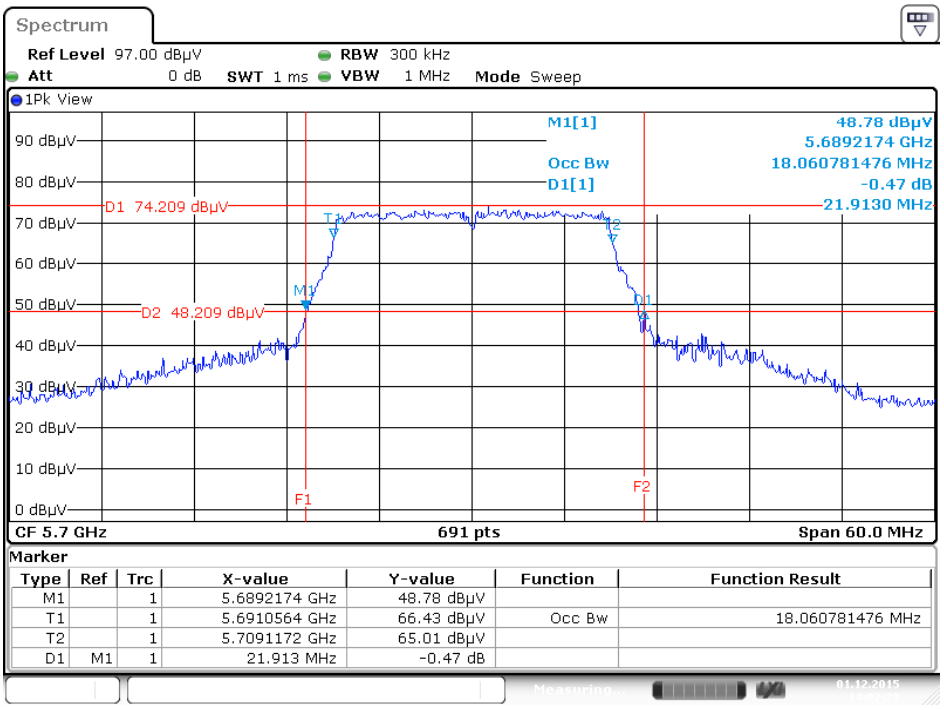
Date: 1.DEC.2015 14:01:12

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5580 MHz



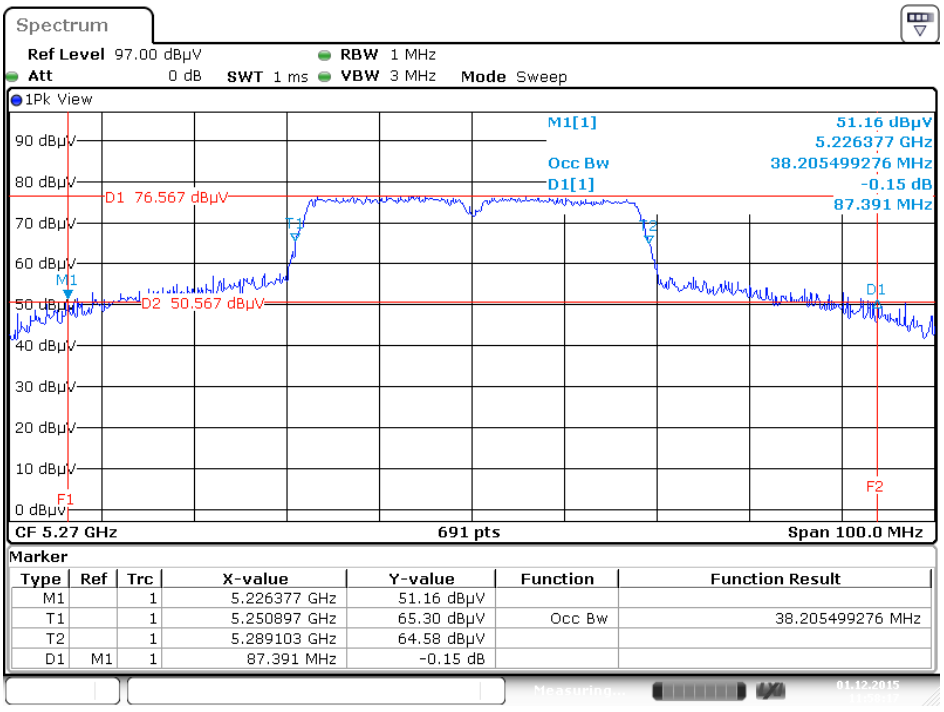
Date: 1.DEC.2015 14:01:51

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5700 MHz



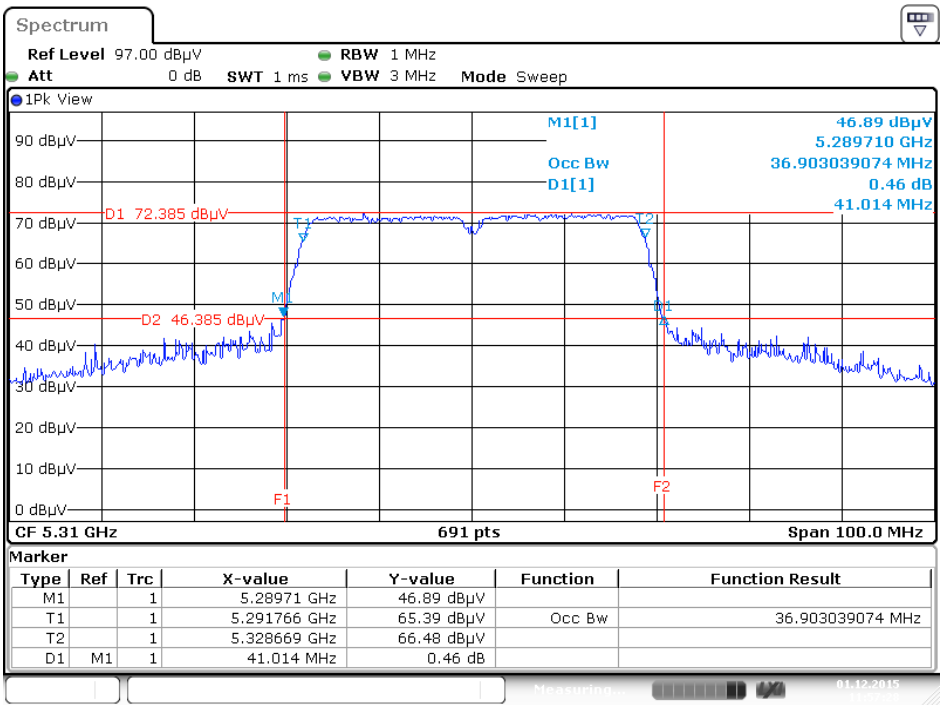
Date: 1.DEC.2015 14:02:29

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5270 MHz



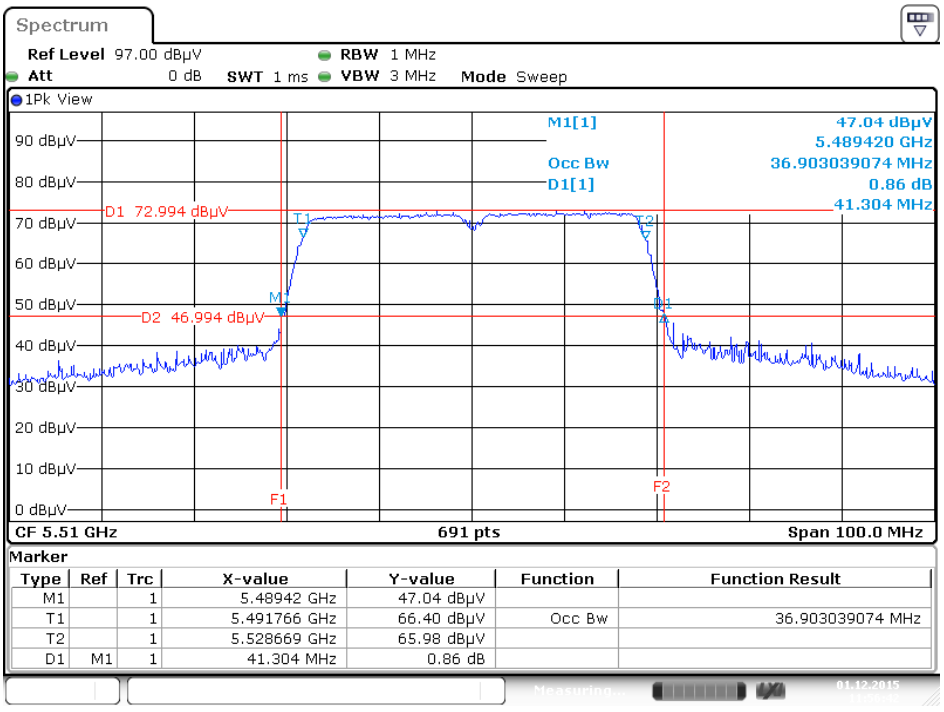
Date: 1.DEC.2015 11:58:18

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5310 MHz



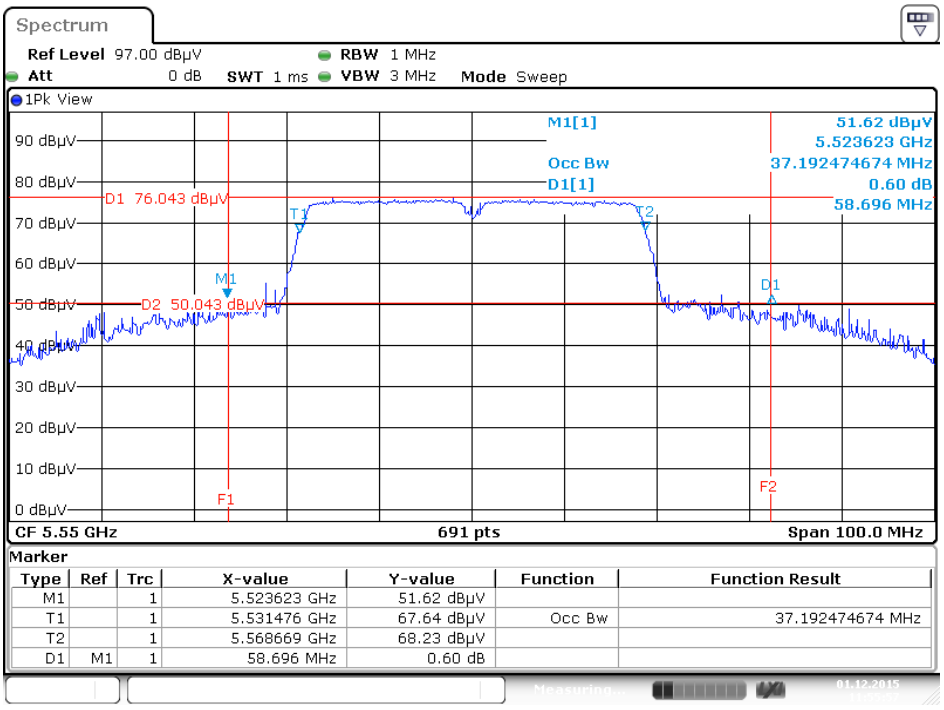
Date: 1.DEC.2015 11:57:28

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5510 MHz



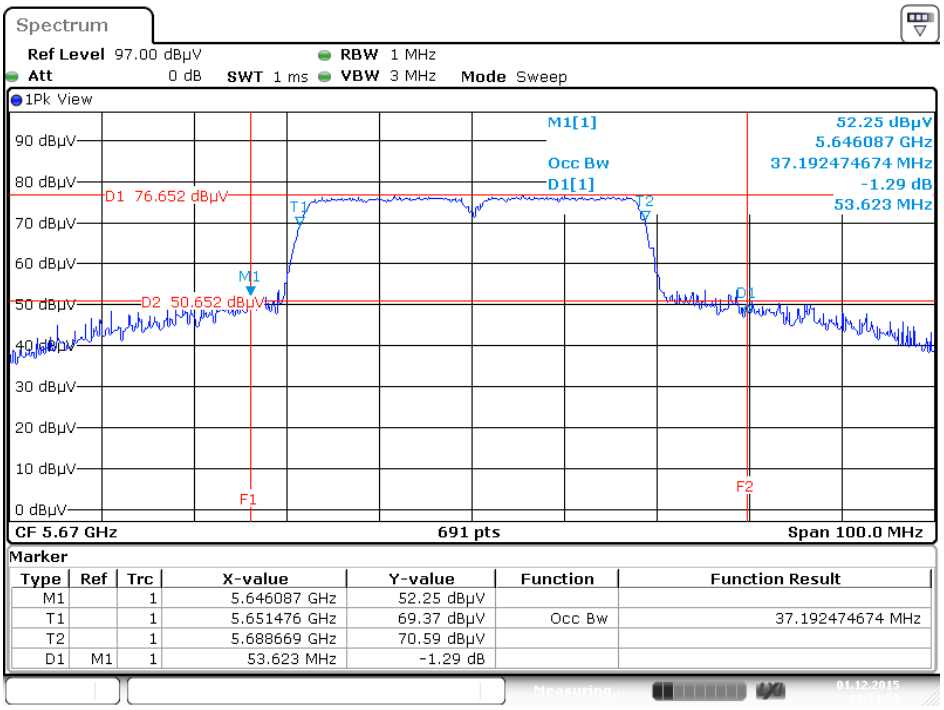
Date: 1.DEC.2015 11:56:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5550 MHz



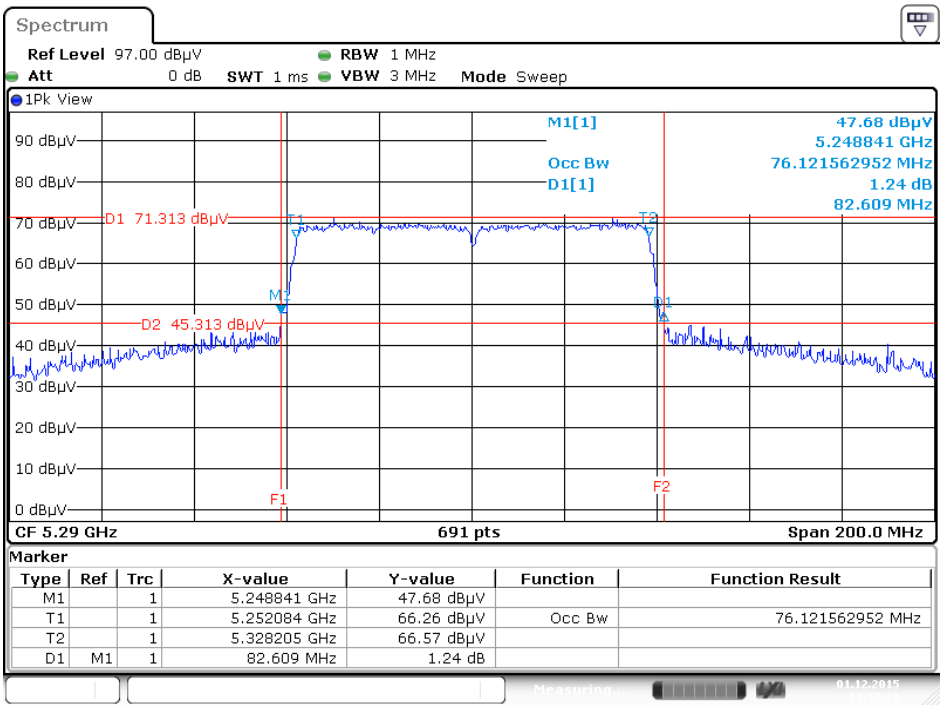
Date: 1.DEC.2015 11:55:57

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5670 MHz



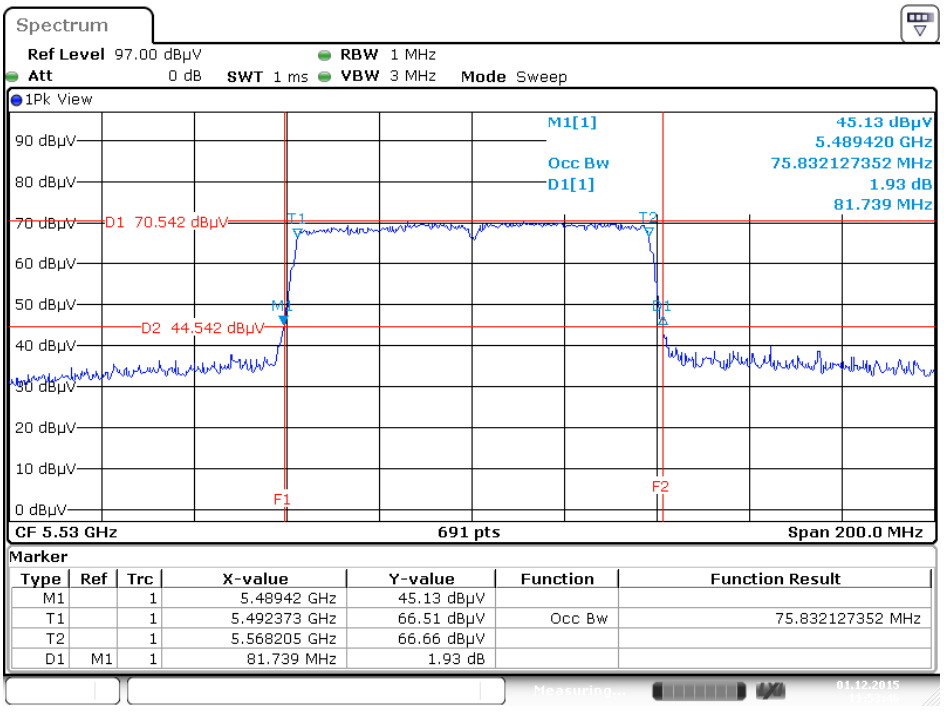
Date: 1.DEC.2015 11:54:58

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5290 MHz



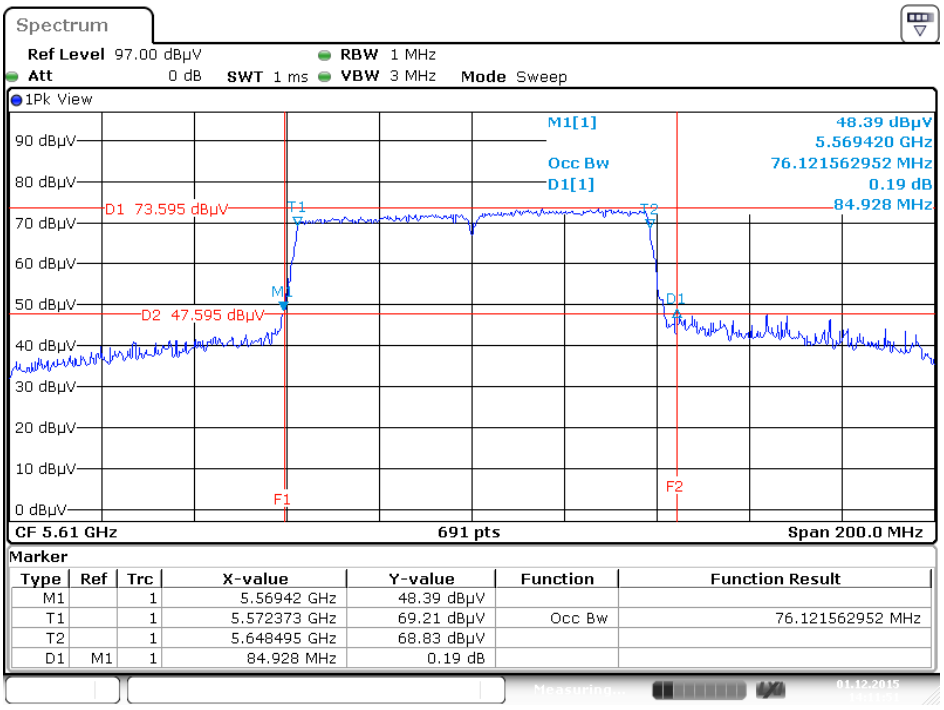
Date: 1.DEC.2015 11:52:21

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5530 MHz



Date: 1.DEC.2015 11:53:46

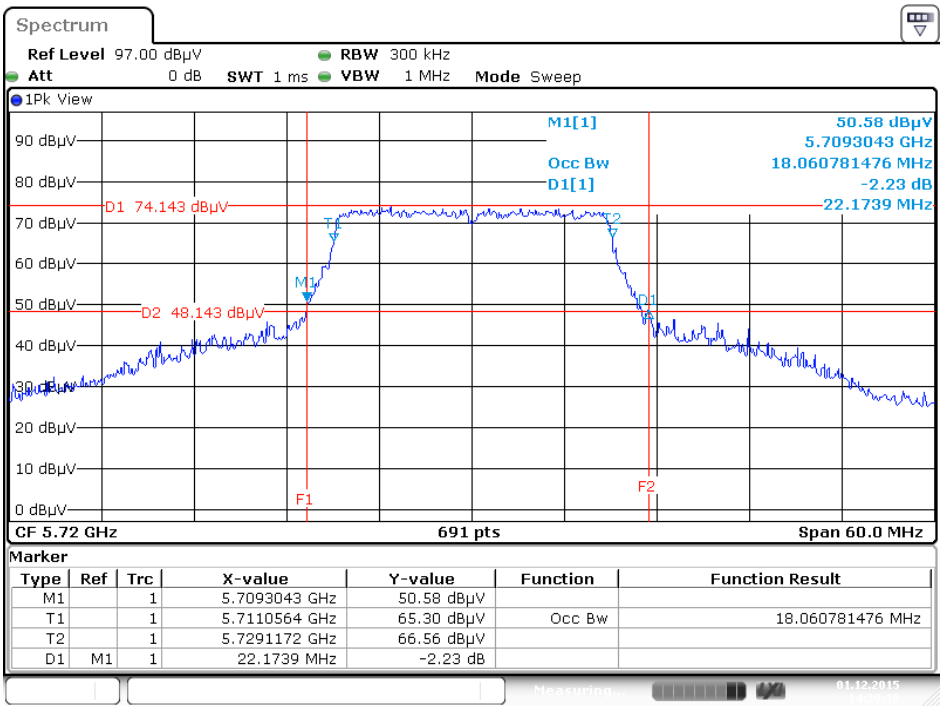
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5610 MHz



Date: 1.DEC.2015 14:11:51

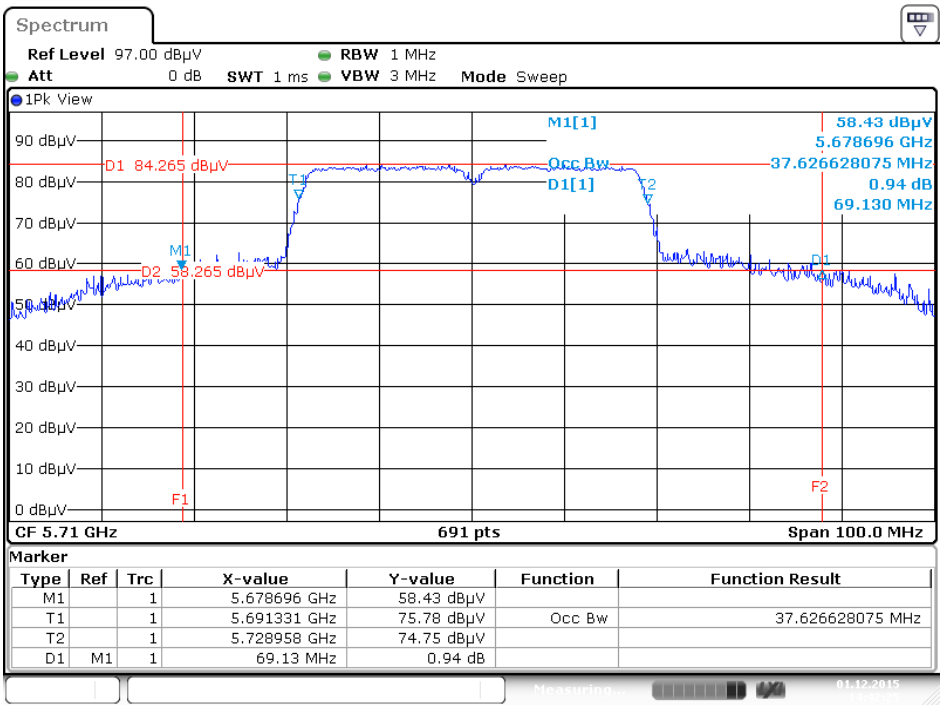
Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz



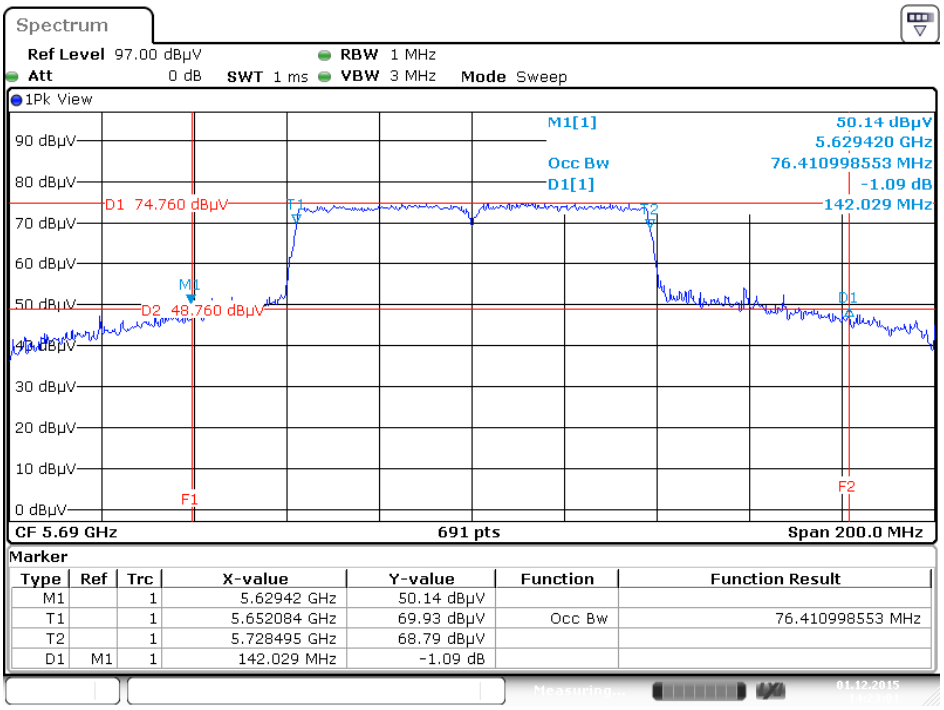
Date:1.DEC.2015 14:20:10

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5710 MHz



Date:1.DEC.2015 14:42:26

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5690 MHz



Date: 1.DEC.2015 14:23:01

4.2. 6dB Spectrum Bandwidth Measurement

4.2.1. Limit

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

4.2.2. Measuring Instruments and Setting

Please refer to section 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

4.2.3. Test Procedures

For Radiated 6dB Bandwidth Measurement:

1. The transmitter was radiated to the spectrum analyzer in peak hold mode.
2. Test was performed in accordance with KDB789033 D02 v01r02 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. Measured the spectrum width with power higher than 6dB below carrier.

4.2.4. Test Setup Layout

For Radiated 6dB Bandwidth Measurement:

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

4.2.5. 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 6dB Spectrum Bandwidth

Temperature	23℃	Humidity	54%
Test Engineer	Serway Li		

Straddle Channel

<For Non-Beamforming Mode>

Mode	Frequency	6dB BW (MHz)	6dB BW M1 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11a	5720 MHz	5.68	5720.72	1.40	500	Complies
802.11ac MCS0/Nss1 VHT20	5720 MHz	15.36	5712.88	3.24	500	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	35.04	5692.56	2.60	500	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	73.60	5652.40	1.00	500	Complies

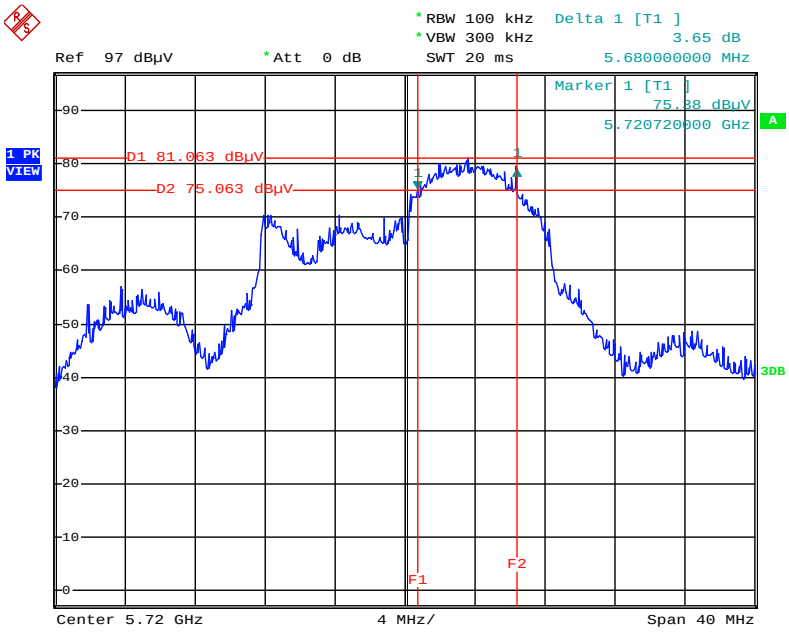
<For Beamforming Mode>

Mode	Frequency	6dB BW (MHz)	6dB BW M1 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5720 MHz	17.62	5711.25	3.87	500	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	36.29	5691.91	3.20	500	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	76.23	5652.03	3.26	500	Complies

Straddle Channel

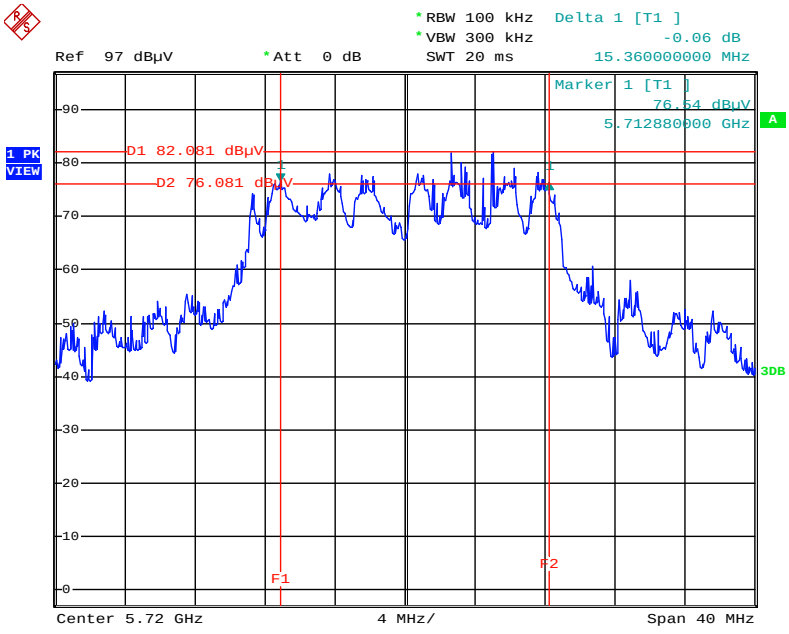
<For Non-Beamforming Mode>

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz



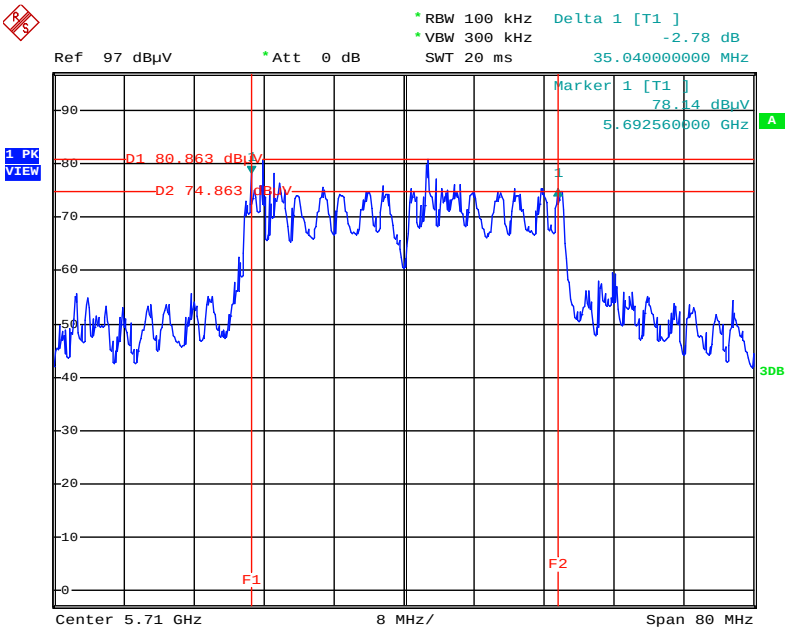
Date: 1.OCT.2015 16:52:33

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz



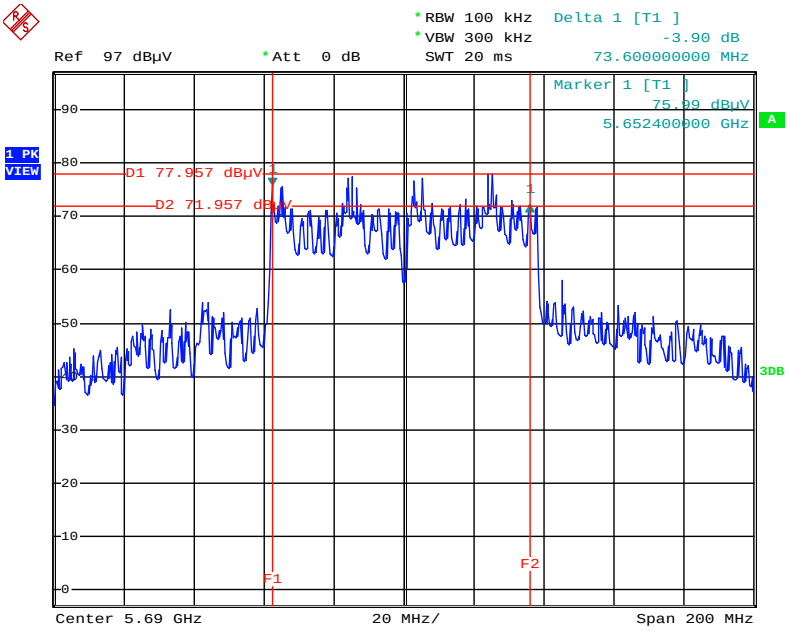
Date: 1.OCT.2015 16:51:03

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5710 MHz



Date: 1.OCT.2015 16:54:59

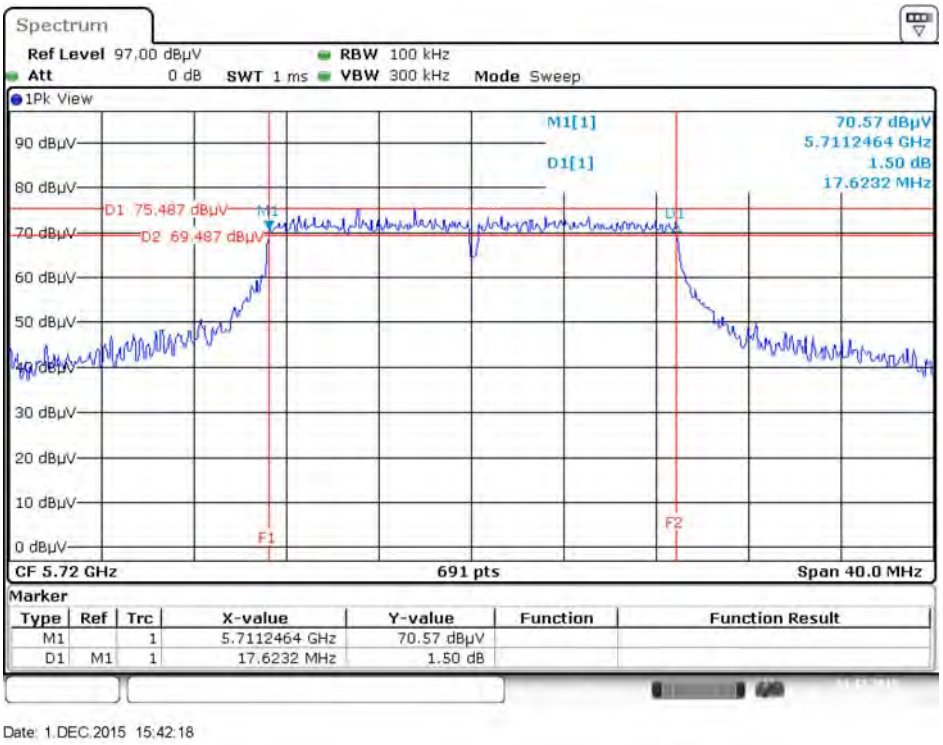
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5690 MHz



Date: 1.OCT.2015 16:55:49

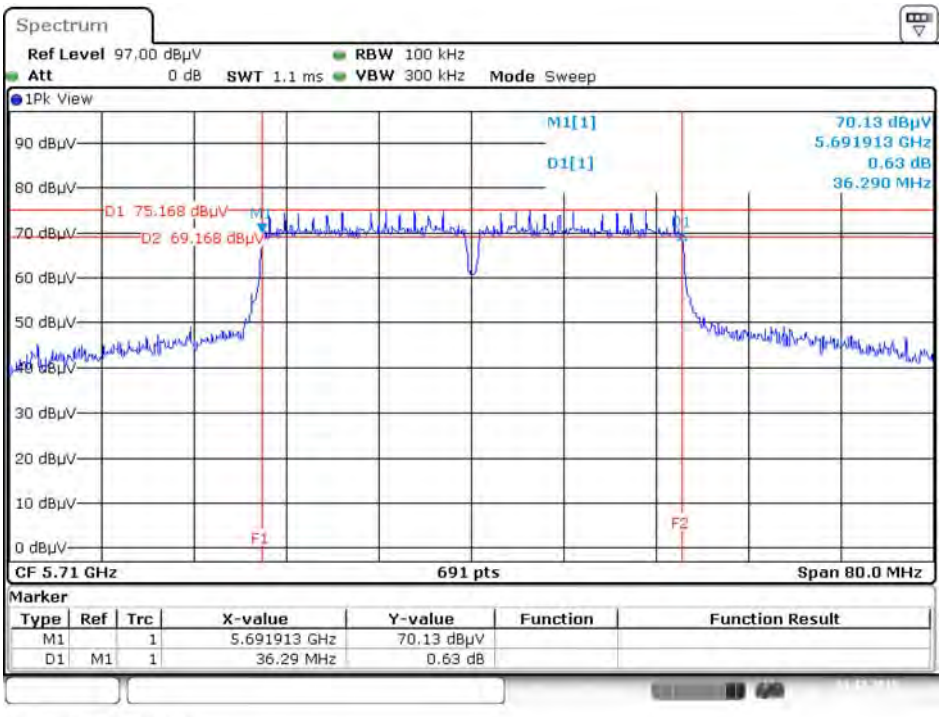
<For Beamforming Mode>

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz



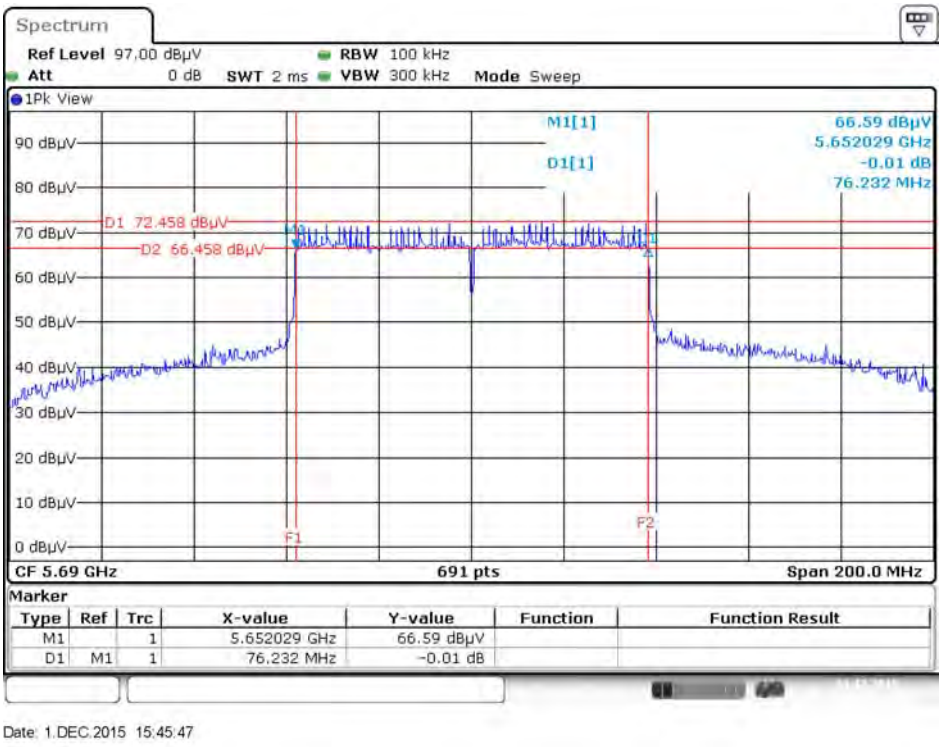
Date: 1.DEC.2015 15:42:18

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5710 MHz



Date: 1.DEC.2015 15:44:40

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5690 MHz



4.3. Maximum Conducted Output Power Measurement

4.3.1. Limit

Frequency Band		Limit
☒	5.25-5.35 GHz	The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. 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.
☒	5.470-5.725 GHz	

4.3.2. Measuring Instruments and Setting

For other channel:

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

For straddle channel:

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 count 100
Sweep Time	Auto

4.3.3. Test Procedures

For other channel:

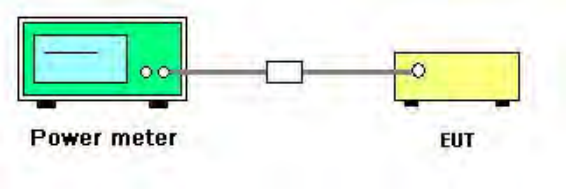
1. The transmitter output (antenna port) was connected to the power meter.
2. Test was performed in accordance with KDB789033 D02 v01r02 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (E) Maximum conducted output power =>3. Measurement using a Power 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.

For straddle channel:

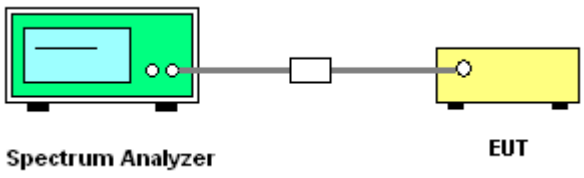
1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Test was performed in accordance with FCC Public Notice DA 02-2138, August 30, 2002.

4.3.4. Test Setup Layout

For other channel:



For straddle channel:



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 Maximum Conducted Output Power

Temperature	23°C	Humidity	54%
Test Engineer	Serway Li	Test Date	Sep. 15, 2015 ~ Dec. 01, 2015

<For Non-Beamforming Mode>

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 5	Chain 6	Chain 7	Chain 8	Total		
802.11a	5260 MHz	16.39	17.54	17.32	16.97	23.10	23.98	Complies
	5300 MHz	16.10	17.64	17.28	17.17	23.10	23.98	Complies
	5320 MHz	16.15	17.83	16.96	17.12	23.08	23.98	Complies
	5500 MHz	14.61	16.35	15.38	15.76	21.59	23.97	Complies
	5580 MHz	14.62	16.54	15.62	15.98	21.77	23.98	Complies
	5700 MHz	14.54	16.21	15.39	16.19	21.66	23.97	Complies
802.11ac MCS0/Nss1 VHT20	5260 MHz	16.62	17.73	16.96	16.83	23.08	23.98	Complies
	5300 MHz	16.23	17.63	16.84	16.79	22.92	23.98	Complies
	5320 MHz	15.97	17.68	17.07	16.88	22.96	23.98	Complies
	5500 MHz	14.49	16.18	15.35	15.80	21.52	23.98	Complies
	5580 MHz	14.43	16.55	15.59	15.74	21.66	23.98	Complies
	5700 MHz	14.47	16.11	15.61	16.07	21.63	23.98	Complies
802.11ac MCS0/Nss1 VHT40	5270 MHz	17.18	18.36	18.09	17.75	23.89	23.98	Complies
	5310 MHz	13.76	14.81	14.03	14.17	20.23	23.98	Complies
	5510 MHz	12.41	14.33	13.64	13.87	19.64	23.98	Complies
	5550 MHz	16.68	18.42	17.91	17.83	23.78	23.98	Complies
	5670 MHz	16.77	18.84	17.78	17.87	23.90	23.98	Complies
802.11ac MCS0/Nss1 VHT80	5290 MHz	11.51	13.01	12.34	12.12	18.30	23.98	Complies
	5530 MHz	12.13	14.37	13.56	13.71	19.54	23.98	Complies
	5610 MHz	16.19	18.72	17.67	17.87	23.73	23.98	Complies

Note:

For 802.11a Mode

5500 MHz Power limit=23.98dBm or 11+10log(B); 11+10log(19.80)=23.97dBm<23.98dBm, so power limit=23.97dBm.

5700 MHz Power limit=23.98dBm or 11+10log(B); 11+10log(19.80)=23.97dBm<23.98dBm, so power limit=23.97dBm.

Straddle Channel

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 5	Chain 6	Chain 7	Chain 8	Total		
802.11a	5720 MHz (UNII 2C)	14.45	17.02	15.73	16.34	22.01	23.98	Complies
	5720 MHz (UNII 3)	8.35	10.89	9.82	10.70	16.07	30.00	Complies
802.11ac MCS0/Nss1 VHT20	5720 MHz (UNII 2C)	14.33	16.90	15.62	16.38	21.93	23.98	Complies
	5720 MHz (UNII 3)	8.85	11.41	10.25	11.18	16.55	30.00	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz (UNII 2C)	15.83	17.88	16.83	17.54	23.11	23.98	Complies
	5710 MHz (UNII 3)	5.67	8.37	7.23	7.96	13.44	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz (UNII 2C)	16.25	18.14	17.45	18.03	23.55	23.98	Complies
	5690 MHz (UNII 3)	2.86	5.31	4.31	5.21	10.55	30.00	Complies

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

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

<For Beamforming Mode>

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 5	Chain 6	Chain 7	Chain 8	Total		
802.11ac MCS0/Nss1 VHT20	5260 MHz	16.29	17.16	16.45	16.96	22.75	22.97	Complies
	5300 MHz	16.23	17.63	16.84	16.79	22.92	22.97	Complies
	5320 MHz	15.97	17.68	17.07	16.88	22.96	22.97	Complies
	5500 MHz	14.49	16.18	15.35	15.80	21.52	21.58	Complies
	5580 MHz	14.23	16.35	15.21	15.58	21.43	21.58	Complies
	5700 MHz	14.35	16.08	15.48	15.98	21.54	21.58	Complies
802.11ac MCS0/Nss1 VHT40	5270 MHz	16.28	17.18	16.22	17.05	22.72	22.97	Complies
	5310 MHz	12.78	13.14	12.63	13.28	18.99	22.97	Complies
	5510 MHz	12.41	14.33	13.64	13.87	19.64	21.58	Complies
	5550 MHz	14.69	15.91	15.14	16.08	21.51	21.58	Complies
	5670 MHz	15.01	15.95	14.49	15.71	21.35	21.58	Complies
802.11ac MCS0/Nss1 VHT80	5290 MHz	13.57	14.04	13.14	14.26	19.79	22.97	Complies
	5530 MHz	12.48	13.87	12.88	13.79	19.32	21.58	Complies
	5610 MHz	14.83	16.19	14.89	15.86	21.50	21.58	Complies

Note:

Band 2: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.01dBi, so limit= 23.98-(7.01-6)=22.97 dBm

Band 3: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =8.40dBi, so limit= 23.98-(8.40-6)=21.58 dBm

Straddle Channel

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 5	Chain 6	Chain 7	Chain 8	Total		
802.11ac MCS0/Nss1 VHT20	5720 MHz (UNII 2C)	13.98	15.15	13.69	14.54	20.40	20.56	Complies
	5720 MHz (UNII 3)	8.57	9.70	8.28	9.23	15.00	28.71	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz (UNII 2C)	15.14	15.98	14.80	15.63	21.43	21.58	Complies
	5710 MHz (UNII 3)	5.28	6.13	4.89	5.83	11.58	28.71	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz (UNII 2C)	15.15	16.16	14.97	15.82	21.57	21.58	Complies
	5690 MHz (UNII 3)	1.80	2.89	1.54	2.70	8.29	28.71	Complies

Note:

For 802.11ac MCS0/Nss1 VHT20Mode

5720 MHz Power limit=23.98dBm or 11+10log(B); 11+10log(15.7)=20.56dBm<23.98dBm, so power limit=20.56dBm.

Band 3: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =8.40dBi, so limit= 23.98-(8.40-6)=21.58 dBm

Band 4: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.29dBi, so limit= 30-(7.29-6)=28.71 dBm

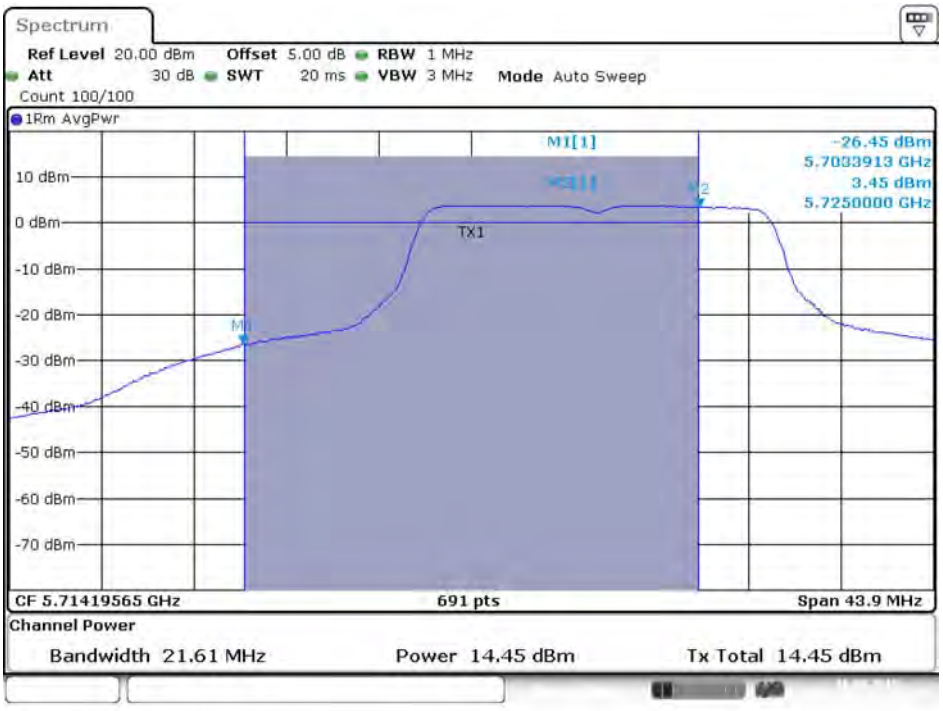
Note: All the test values were listed in the report.

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

Straddle Channel

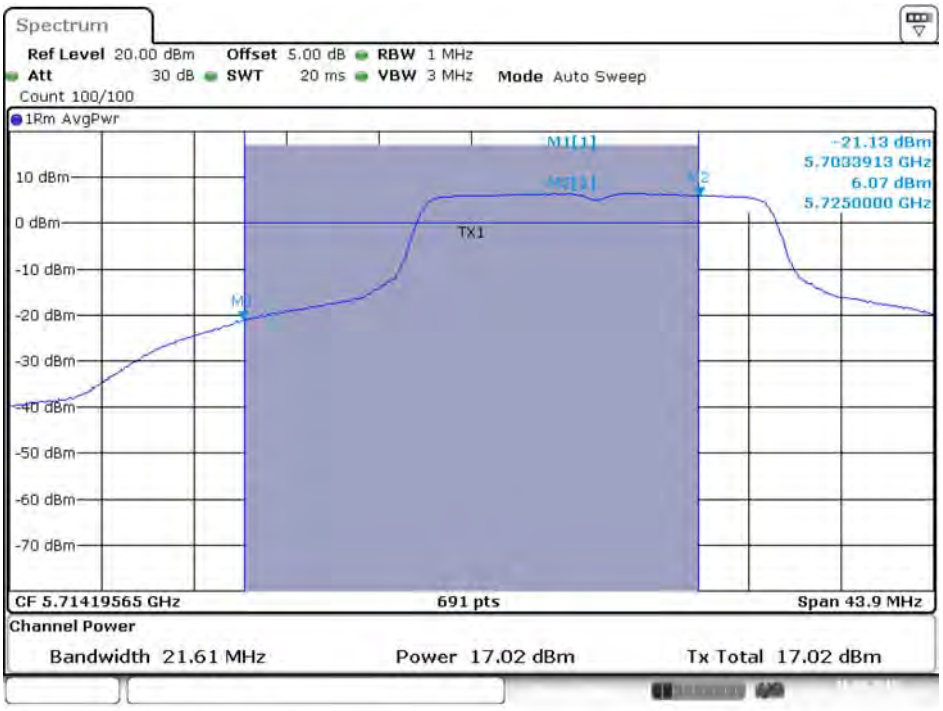
<For Non-Beamforming Mode>

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 5 / 5720 MHz (UNII 2C)



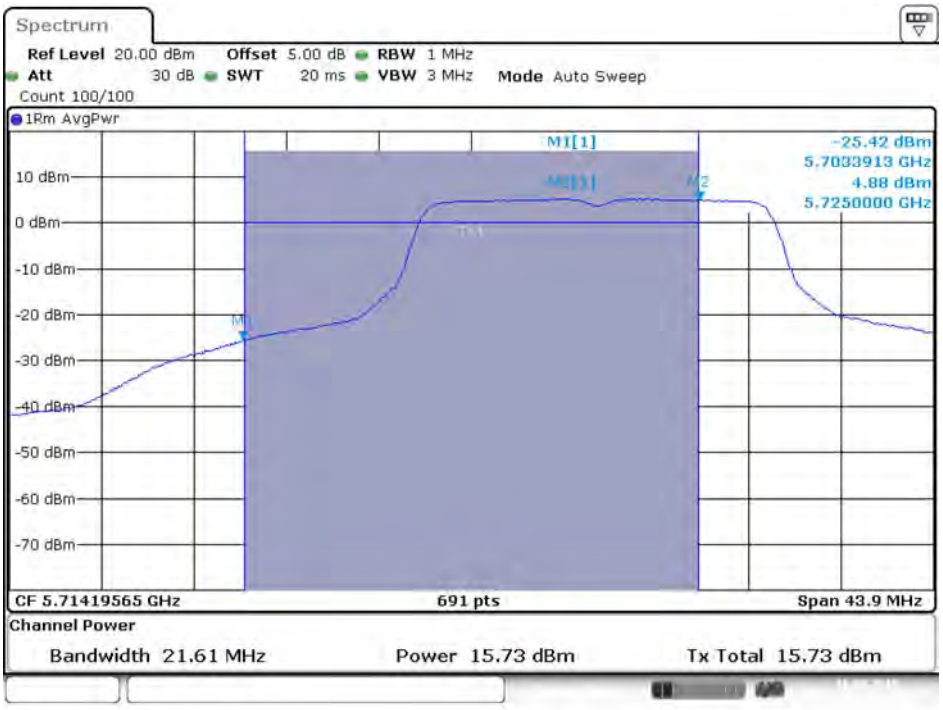
Date: 16.SEP.2015 01:42:06

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 6 / 5720 MHz (UNII 2C)



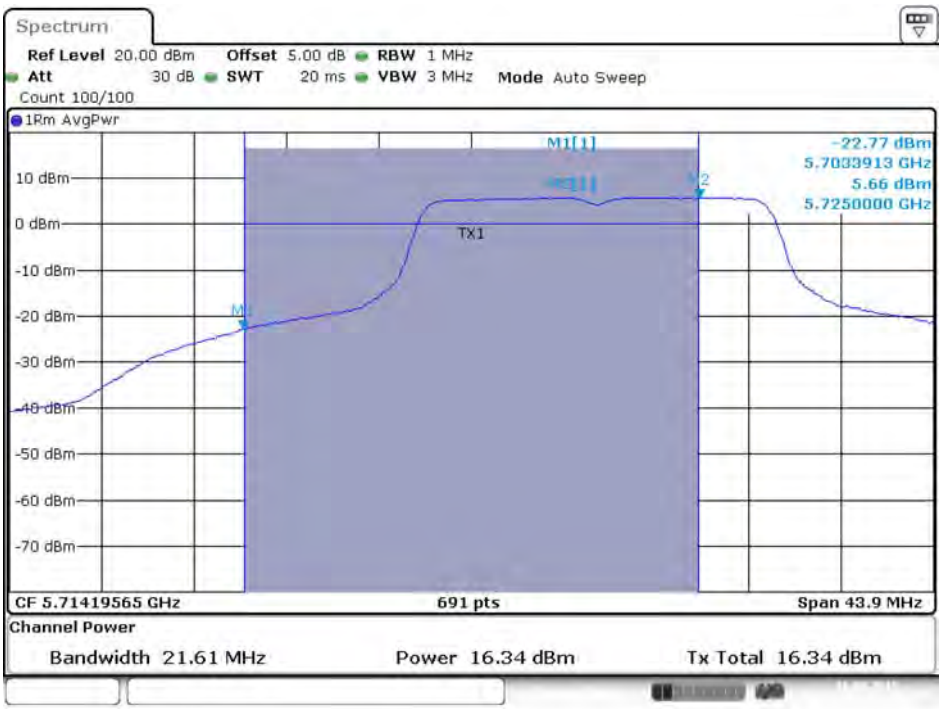
Date: 16.SEP.2015 01:42:13

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 7 / 5720 MHz (UNII 2C)



Date: 16.SEP.2015 01:42:20

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 8 / 5720 MHz (UNII 2C)

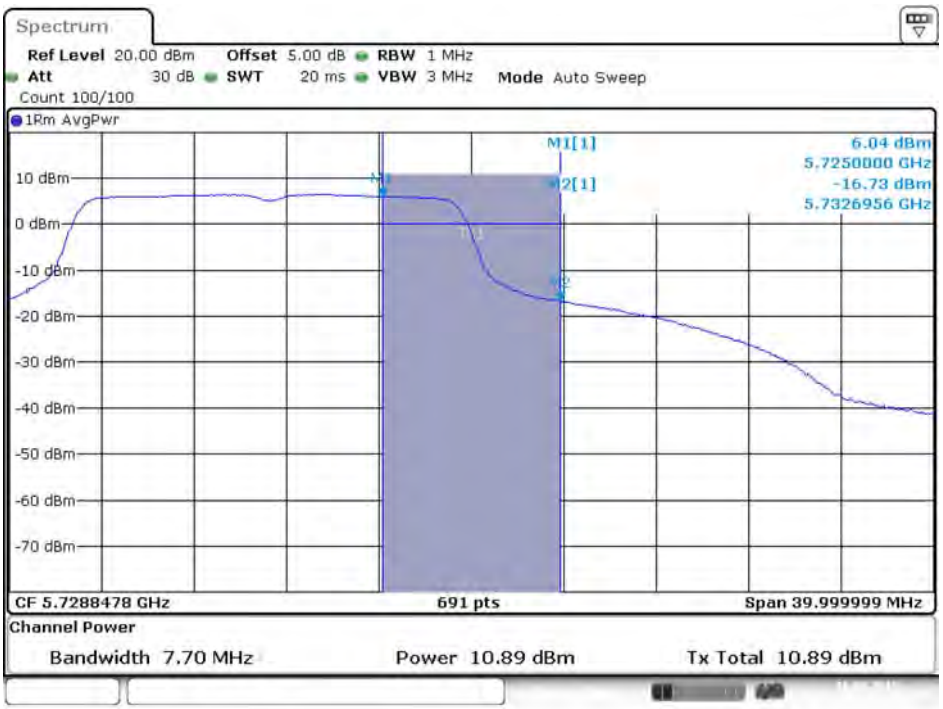


Date: 16.SEP.2015 01:42:27

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 5 / 5720 MHz (UNII 3)

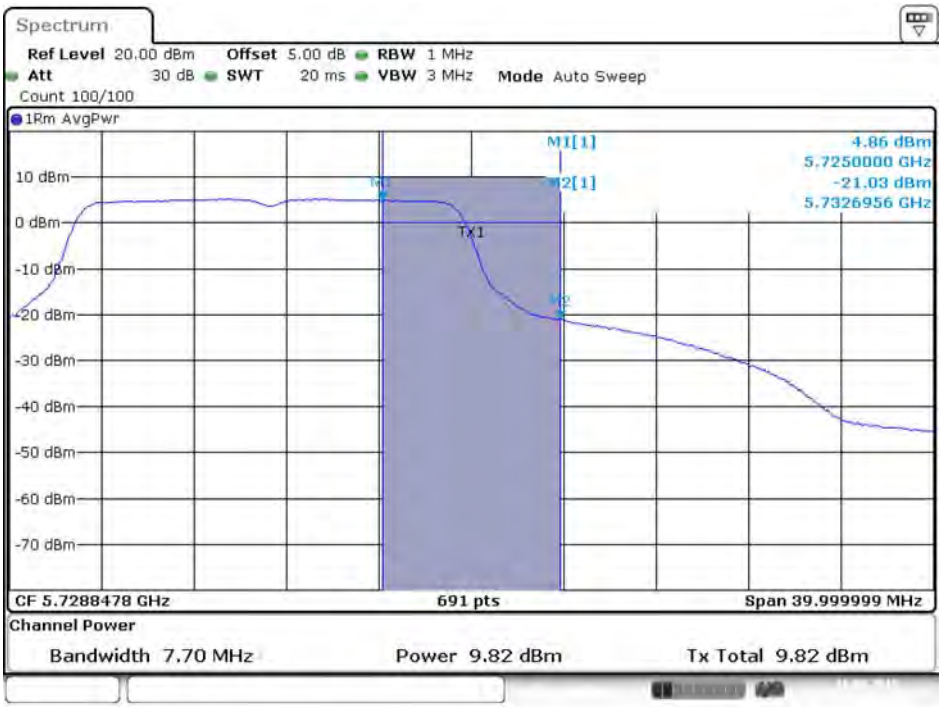
Date: 16.SEP.2015 01:42:09

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 6 / 5720 MHz (UNII 3)



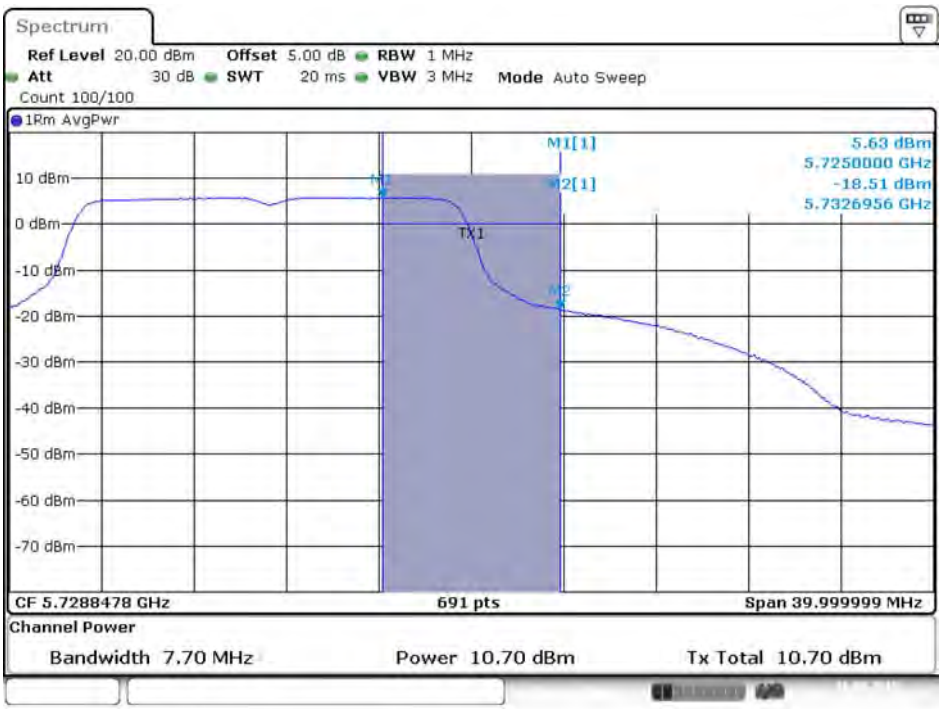
Date: 16.SEP.2015 01:42:16

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 7 / 5720 MHz (UNII 3)



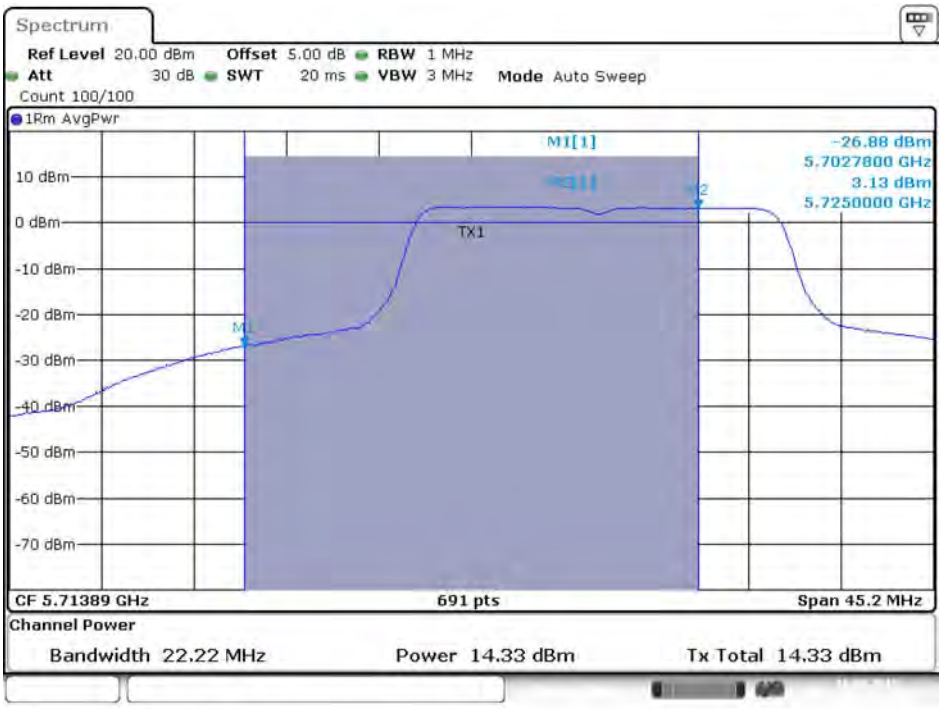
Date: 16.SEP.2015 01:42:23

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 8 / 5720 MHz (UNII 3)



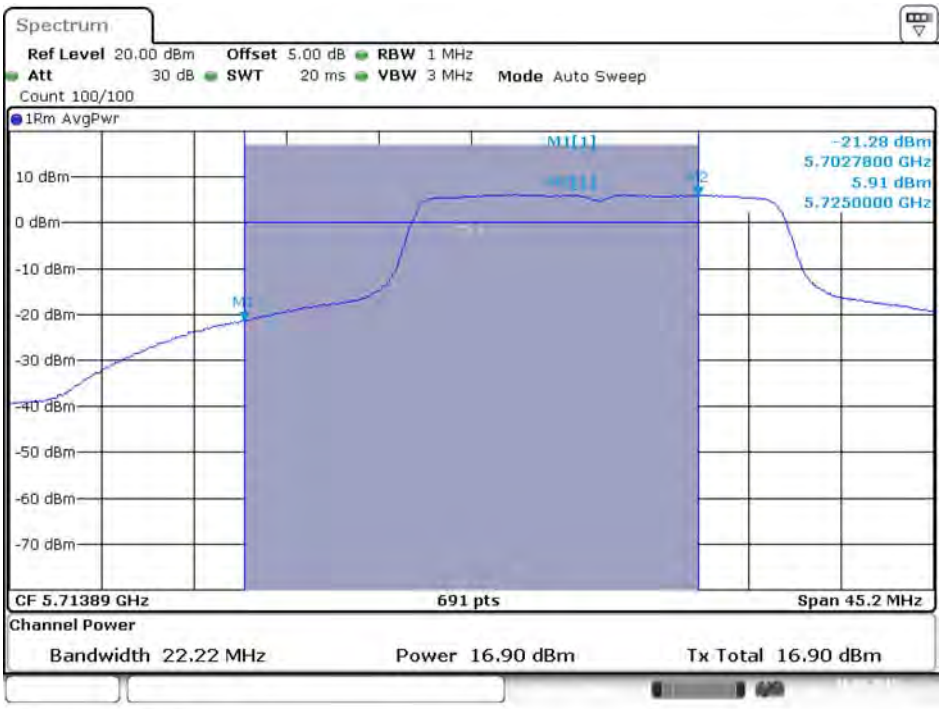
Date: 16.SEP.2015 01:42:30

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 / 5720 MHz (UNII 2C)



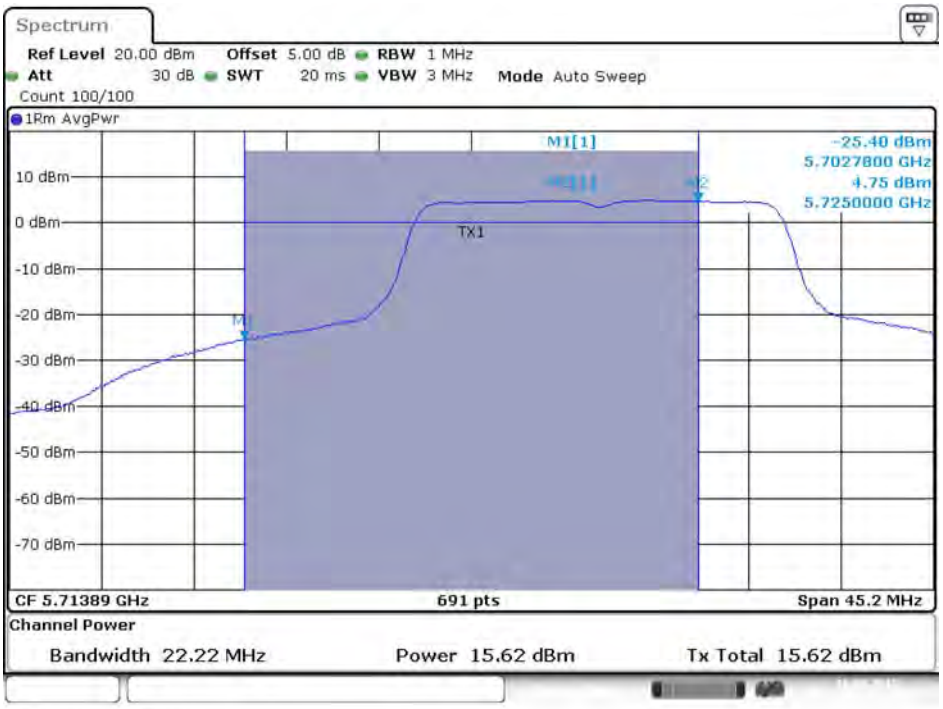
Date: 16.SEP.2015 01:17:40

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 6 / 5720 MHz (UNII 2C)



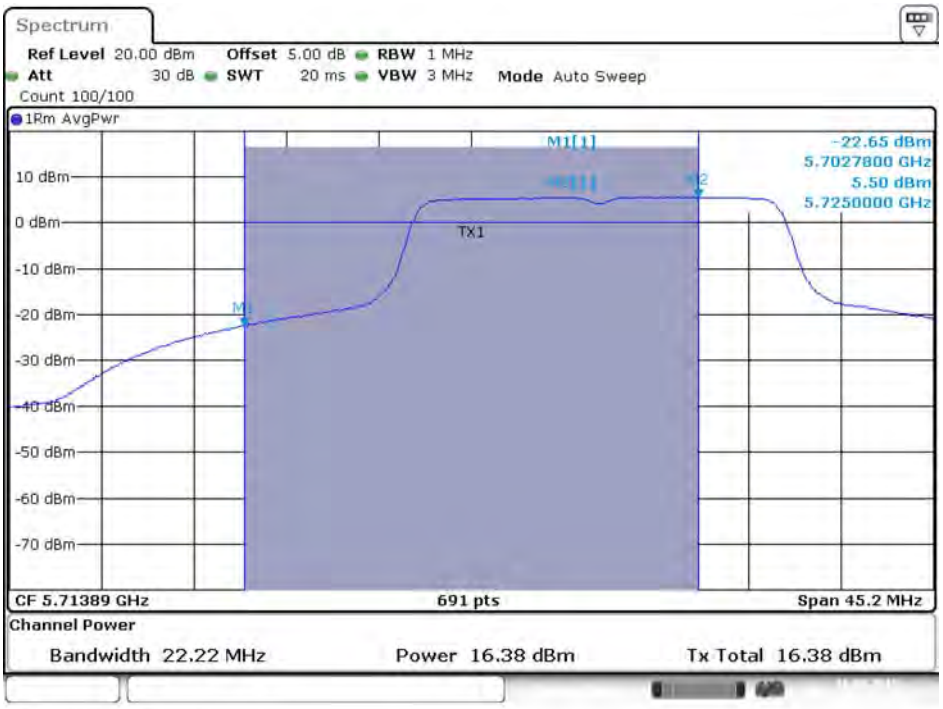
Date: 16.SEP.2015 01:17:47

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 7 / 5720 MHz (UNII 2C)



Date: 16.SEP.2015 01:17:54

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 8 / 5720 MHz (UNII 2C)



Date: 16.SEP.2015 01:18:01

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 / 5720 MHz (UNII 3)

Date: 16.SEP.2015 01:17:43

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 6 / 5720 MHz (UNII 3)

Date: 16.SEP.2015 01:17:50

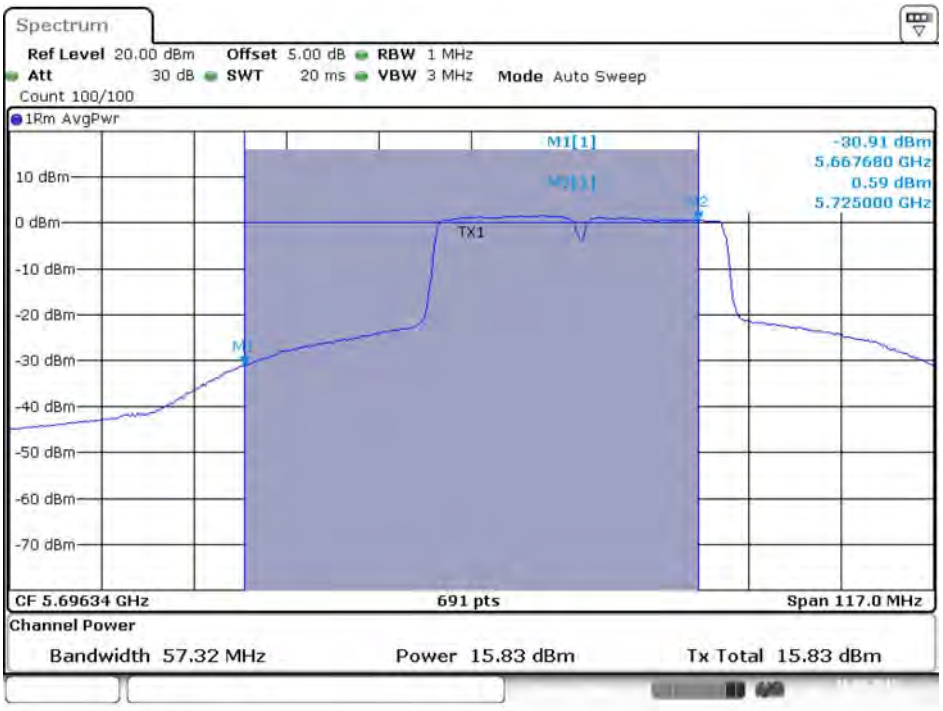
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 7 / 5720 MHz (UNII 3)

Date: 16.SEP.2015 01:17:57

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 8 / 5720 MHz (UNII 3)

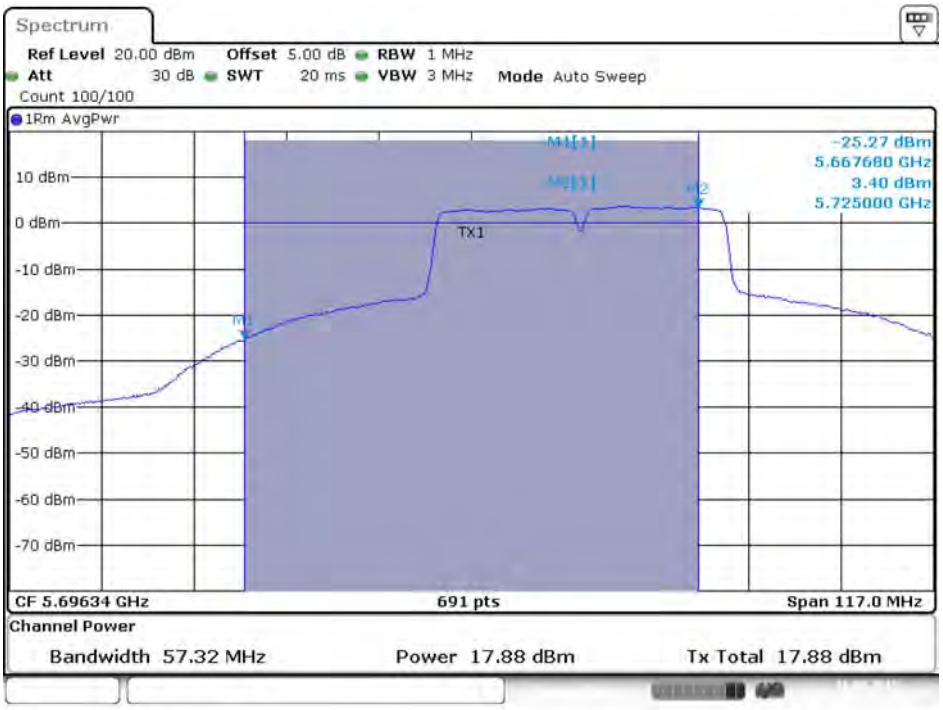
Date: 16.SEP.2015 01:18:04

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 / 5710 MHz (UNII 2C)



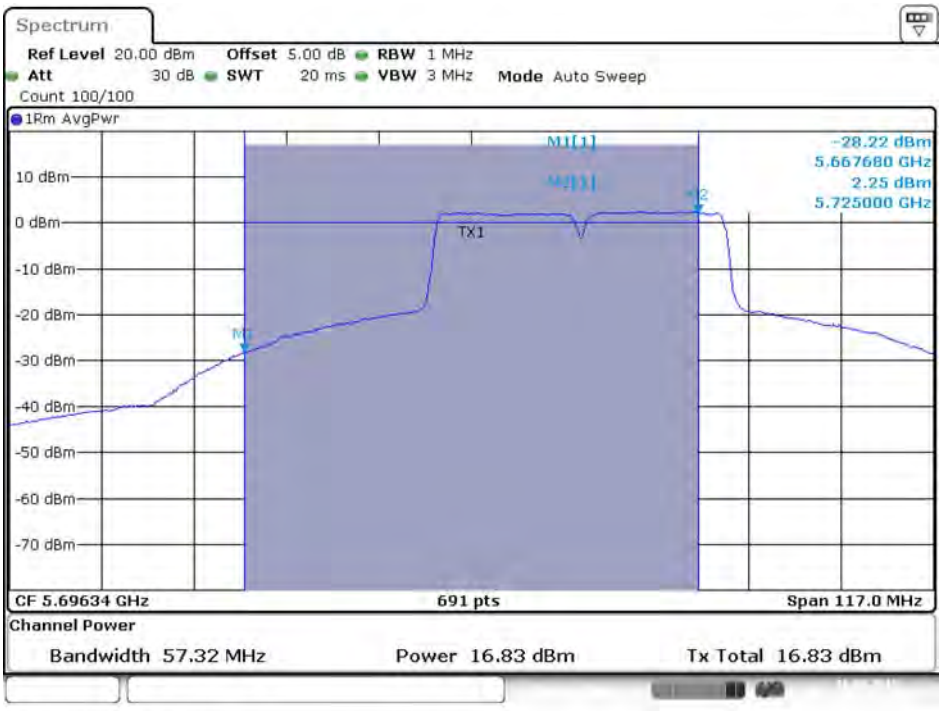
Date: 16.SEP.2015 01:58:39

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 6 / 5710 MHz (UNII 2C)



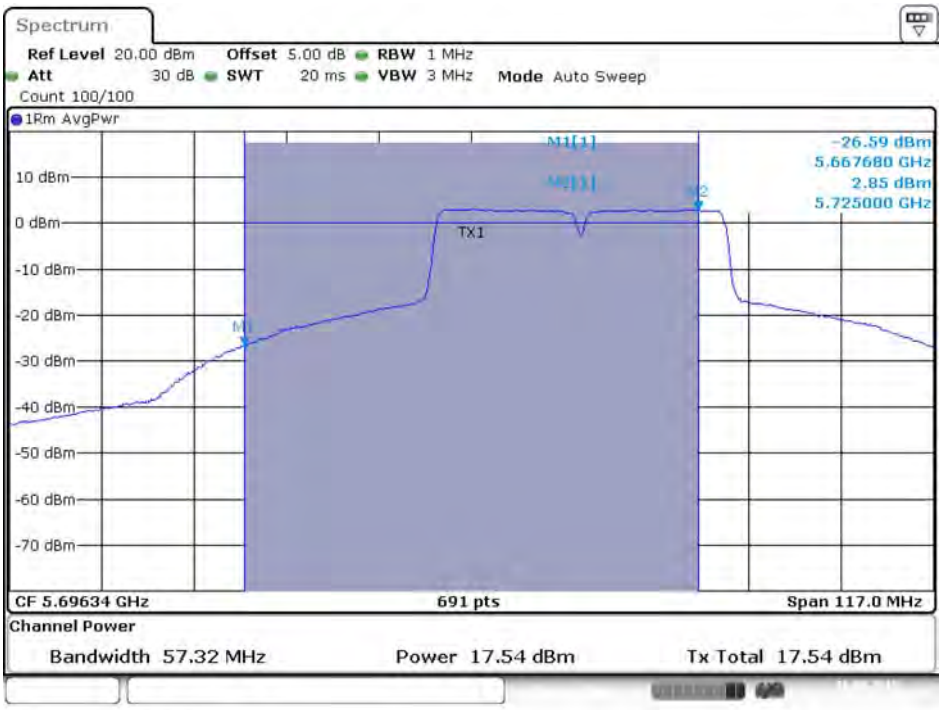
Date: 16.SEP.2015 01:58:46

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 7 / 5710 MHz (UNII 2C)



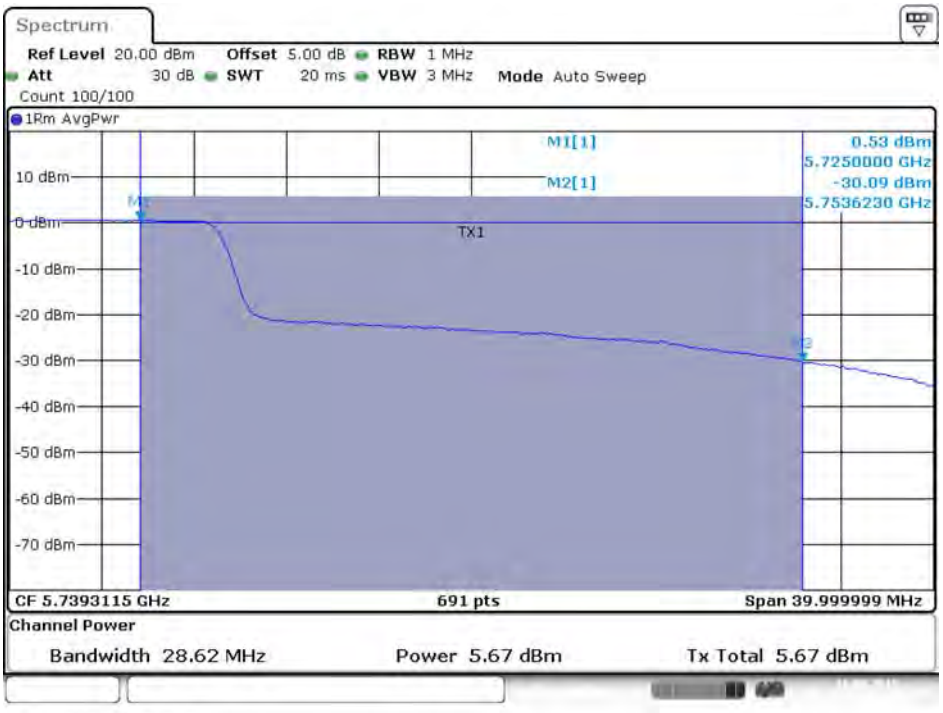
Date: 16.SEP.2015 01:58:53

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 8 / 5710 MHz (UNII 2C)



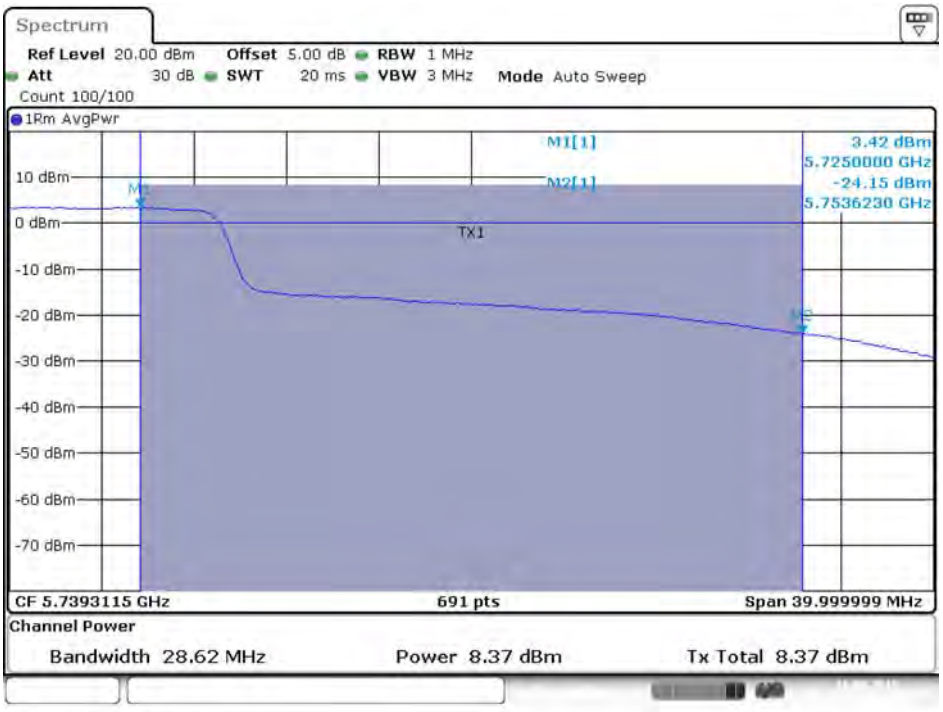
Date: 16.SEP.2015 01:59:00

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 / 5710 MHz (UNII 3)



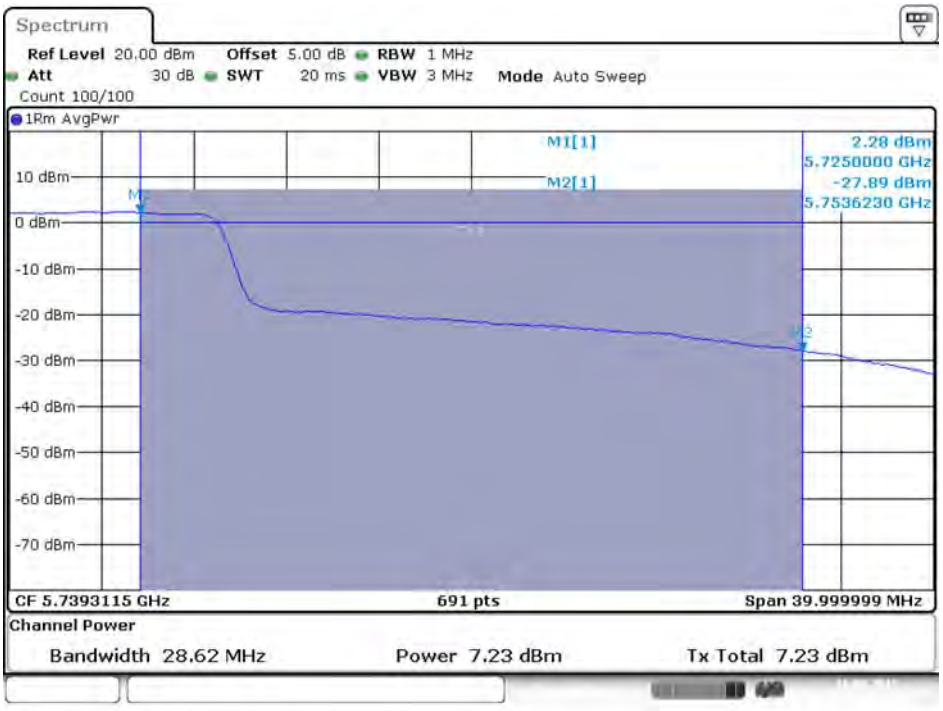
Date: 16.SEP.2015 01:58:42

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 6 / 5710 MHz (UNII 3)



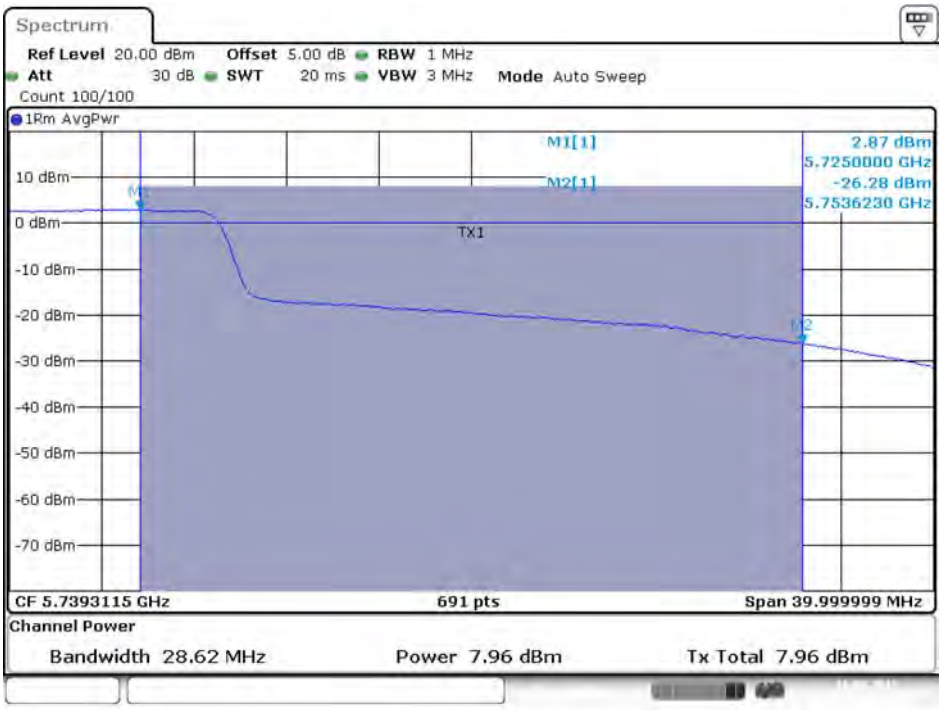
Date: 16.SEP.2015 01:58:49

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 7 / 5710 MHz (UNII 3)



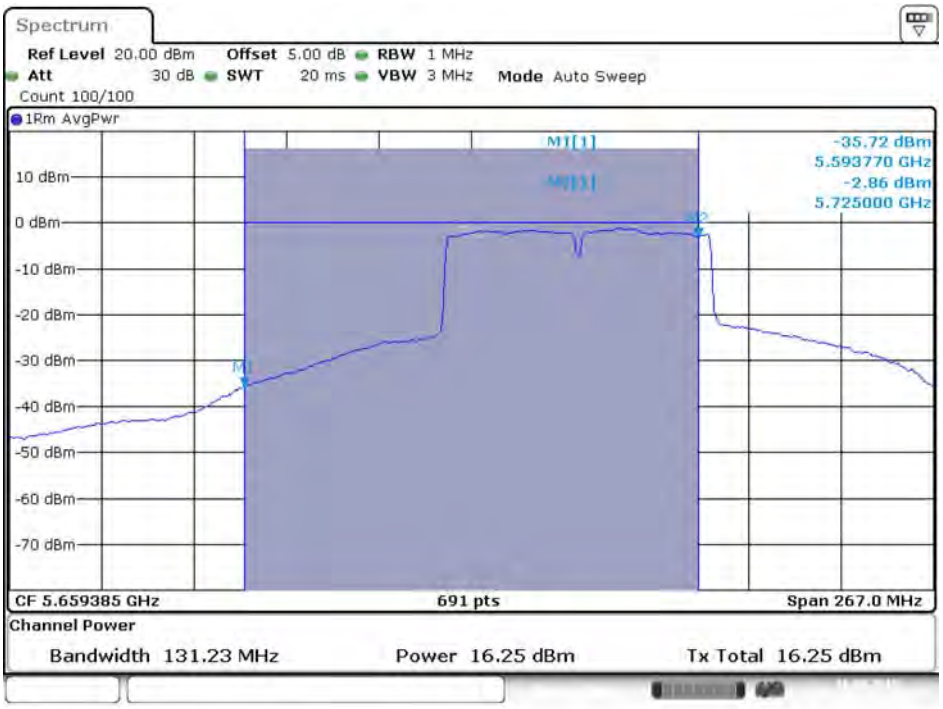
Date: 16.SEP.2015 01:58:56

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 8 / 5710 MHz (UNII 3)



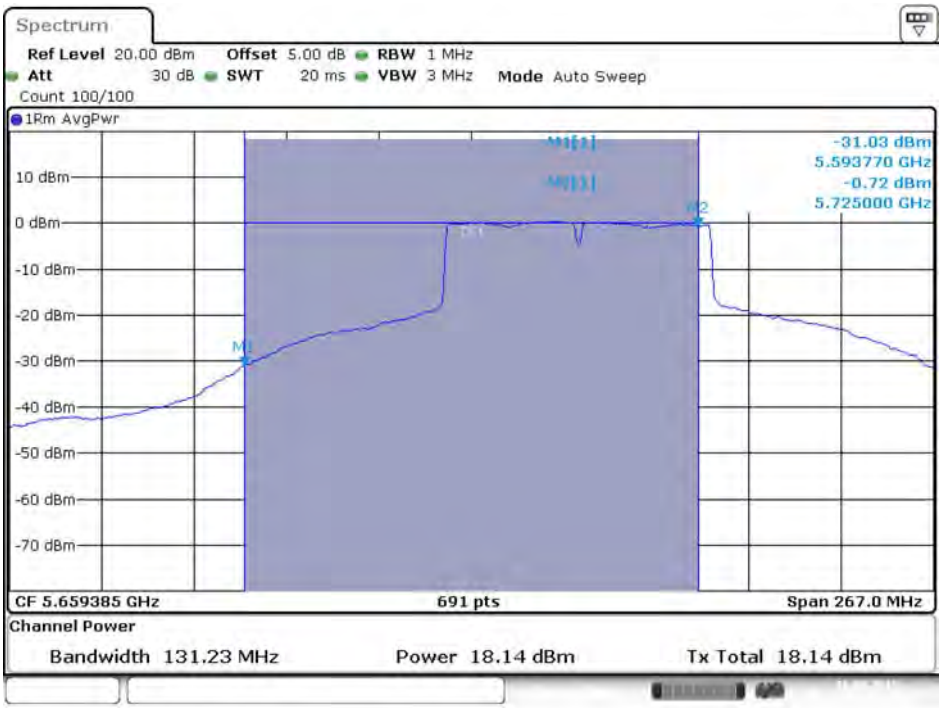
Date: 16.SEP.2015 01:59:03

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 / 5690 MHz (UNII 2C)



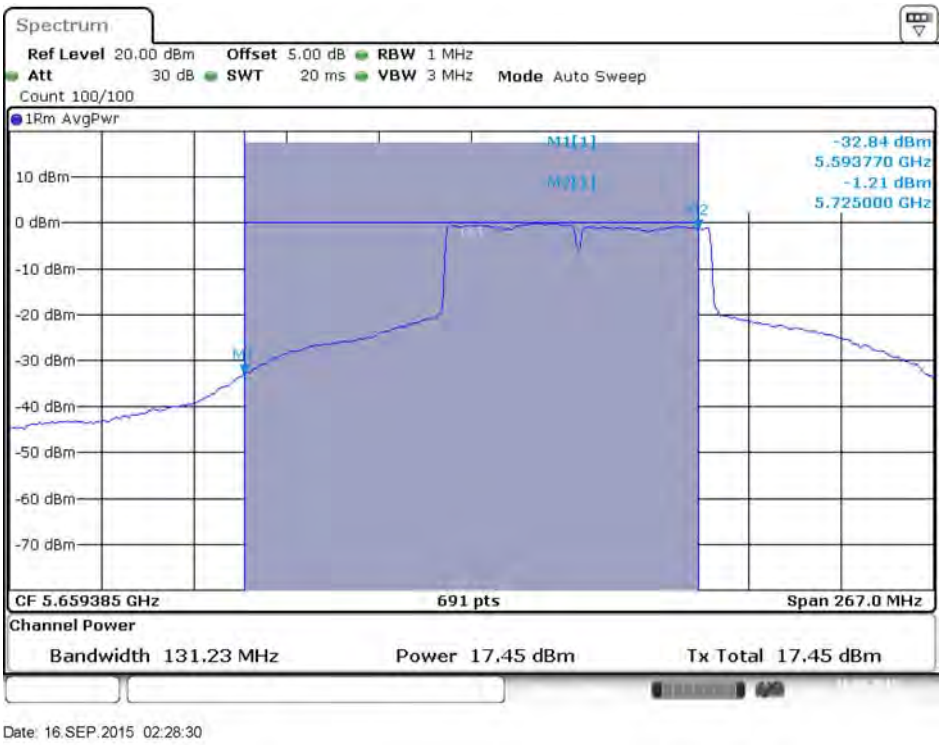
Date: 16.SEP.2015 02:28:15

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 6 / 5690 MHz (UNII 2C)



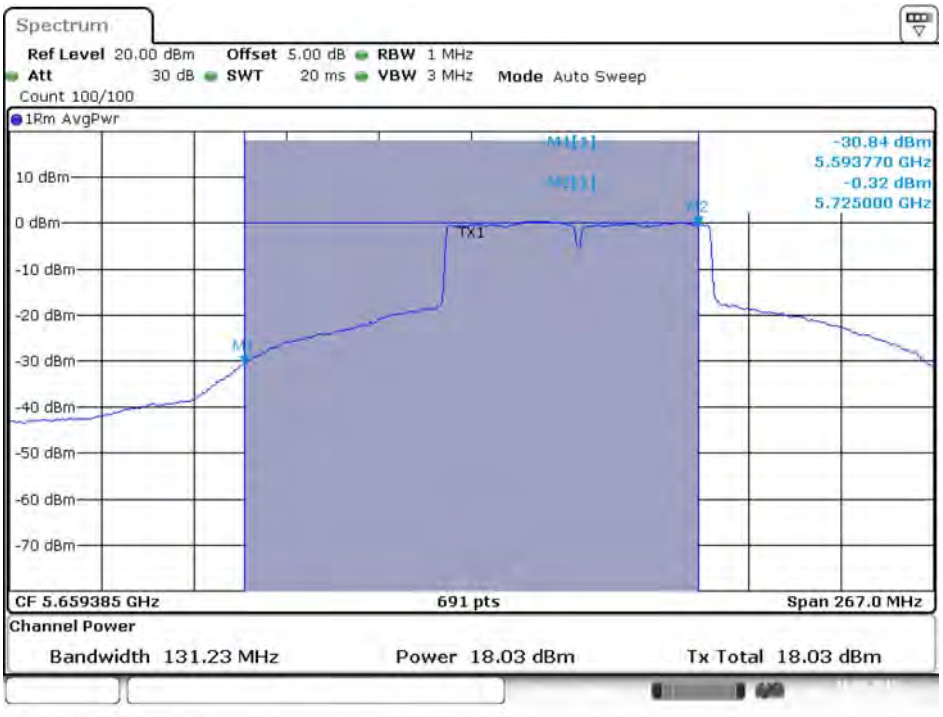
Date: 16.SEP.2015 02:28:37

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 7 / 5690 MHz (UNII 2C)



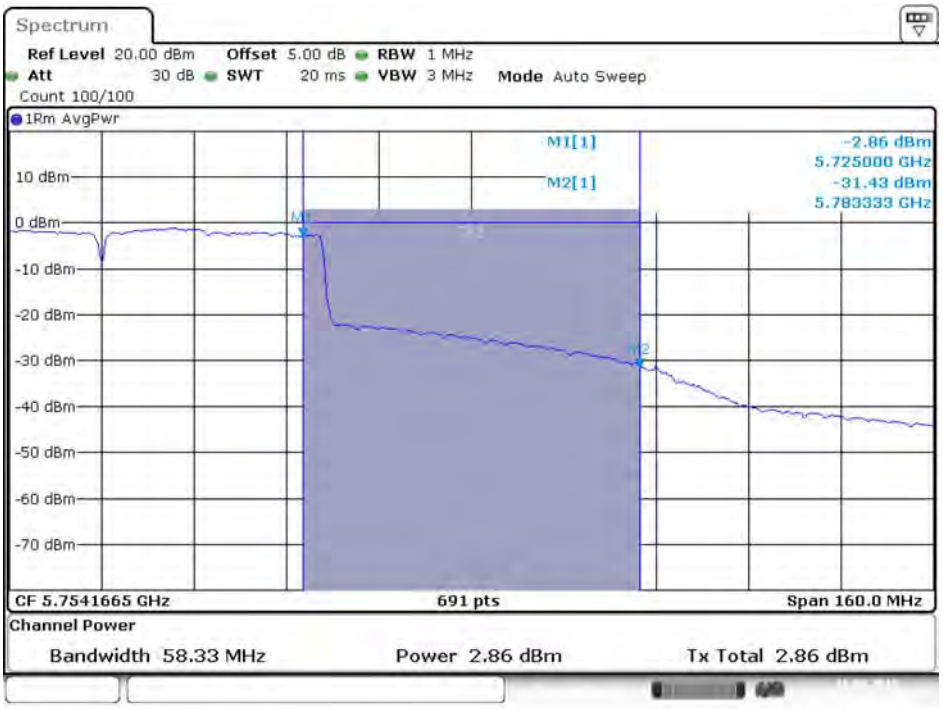
Date: 16.SEP.2015 02:28:30

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 8 / 5690 MHz (UNII 2C)



Date: 16.SEP.2015 02:28:23

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 / 5690 MHz (UNII 3)

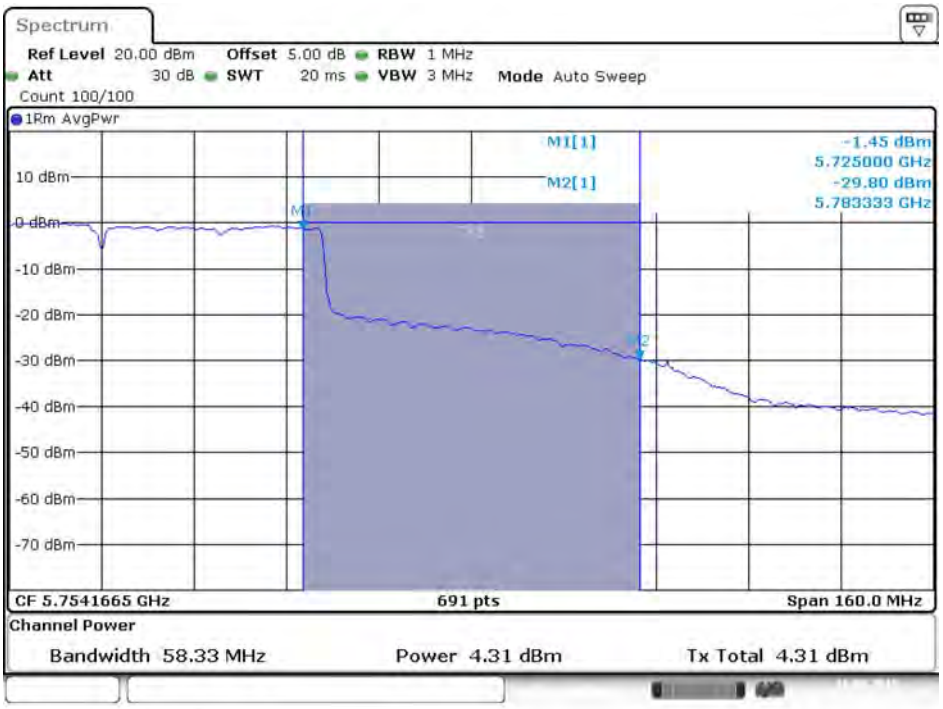


Date: 16.SEP.2015 02:28:19

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 6 / 5690 MHz (UNII 3)

Date: 16.SEP.2015 02:28:26

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 7 / 5690 MHz (UNII 3)



Date: 16.SEP.2015 02:28:33

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 8 / 5690 MHz (UNII 3)

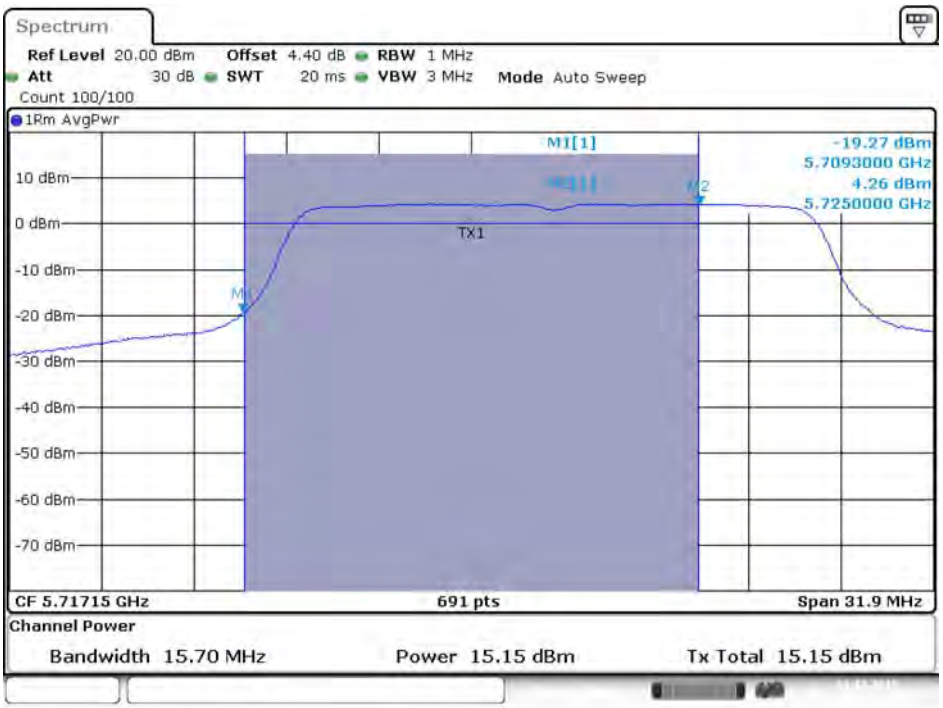
Date: 16.SEP.2015 02:28:40

<For Beamforming Mode>

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 / 5720 MHz (UNII 2C)

Date: 1.DEC.2015 15:05:58

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 6 / 5720 MHz (UNII 2C)

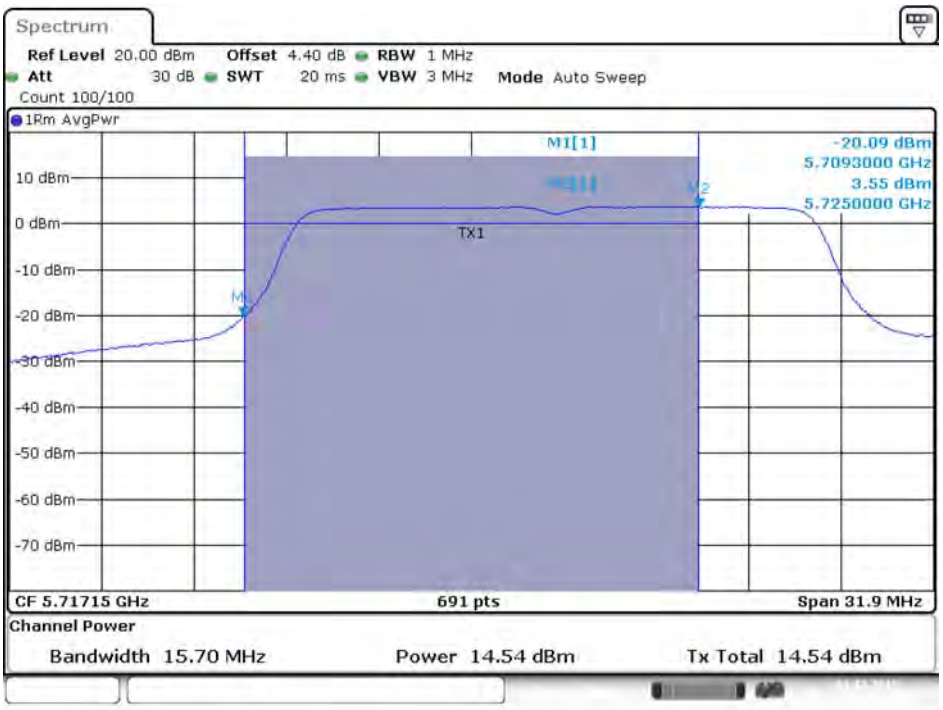


Date: 1.DEC.2015 15:06:05

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 7 / 5720 MHz (UNII 2C)

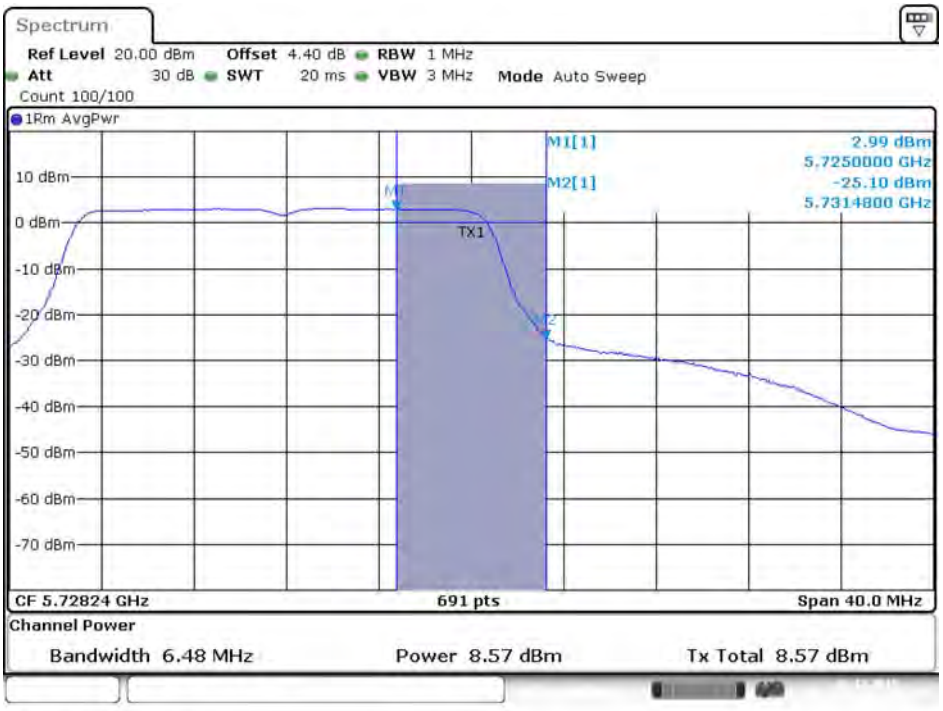
Date: 1.DEC.2015 15:06:13

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 8 / 5720 MHz (UNII 2C)



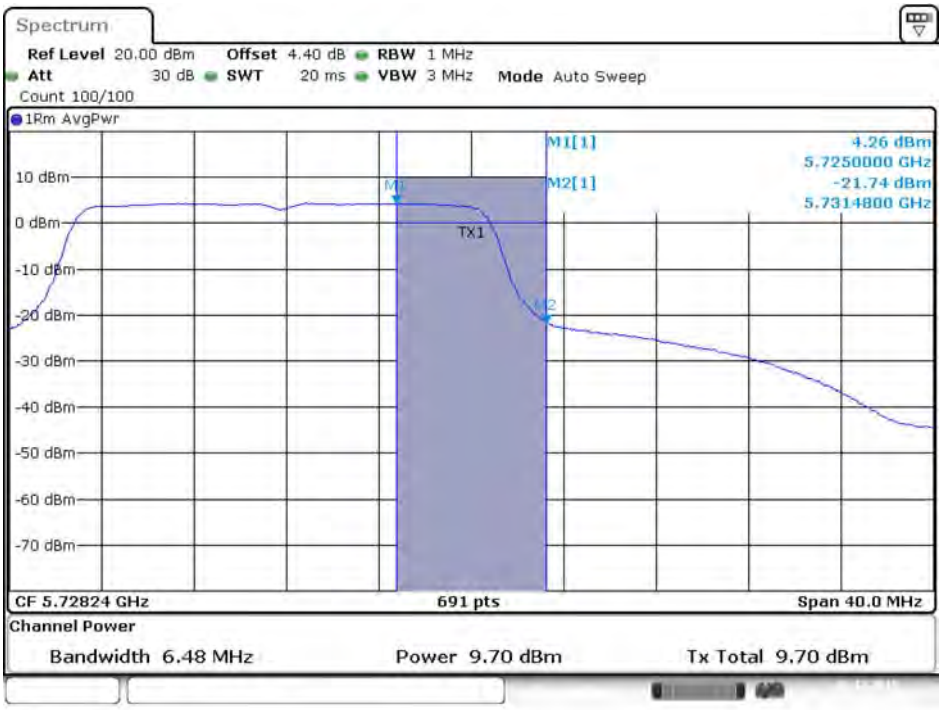
Date: 1.DEC.2015 15:06:20

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 / 5720 MHz (UNII 3)



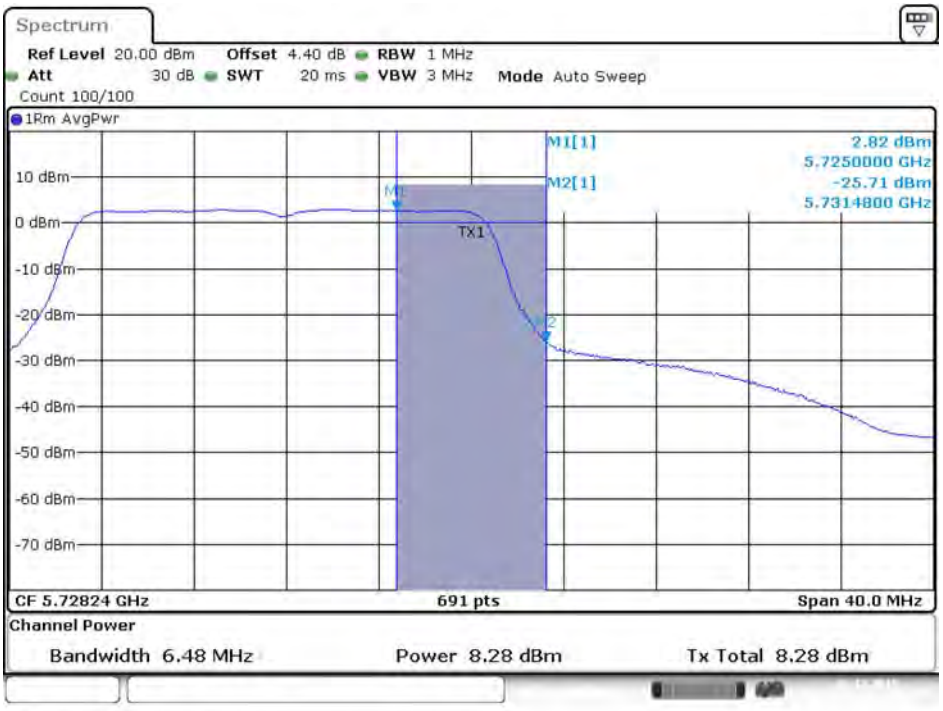
Date: 1.DEC.2015 15:06:02

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 6 / 5720 MHz (UNII 3)



Date: 1.DEC.2015 15:06:09

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 7 / 5720 MHz (UNII 3)

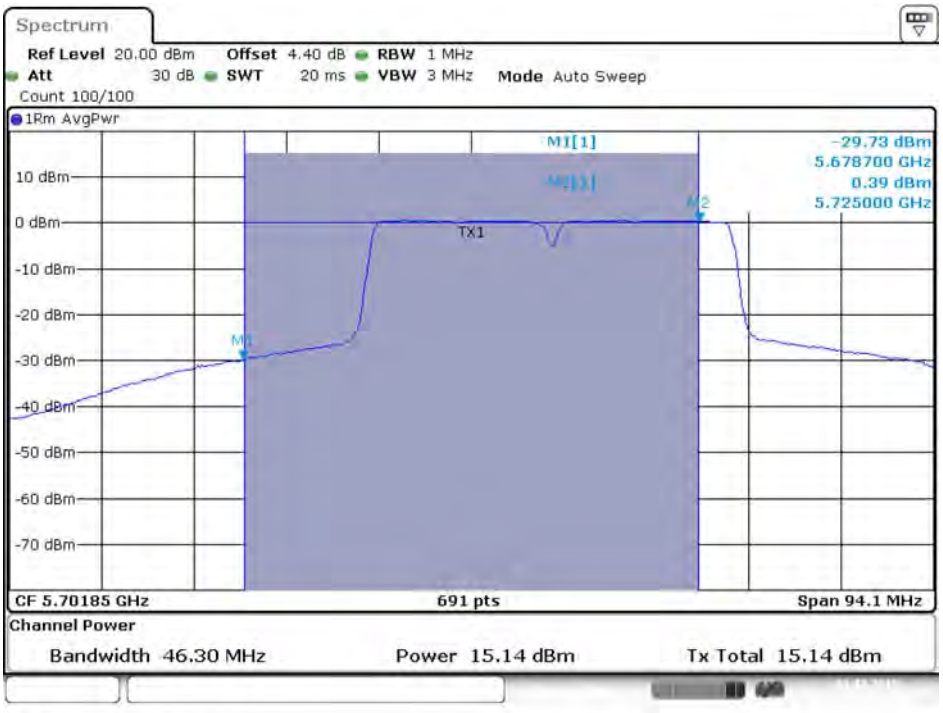


Date: 1.DEC.2015 15:06:16

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 8 / 5720 MHz (UNII 3)

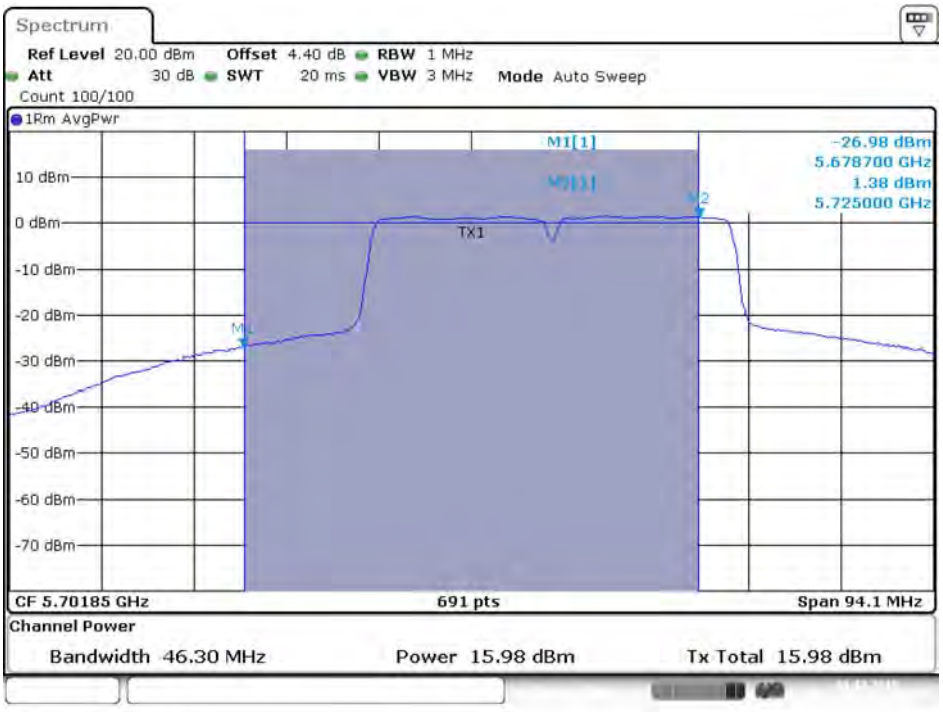
Date: 1.DEC.2015 15:06:23

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 / 5710 MHz (UNII 2C)



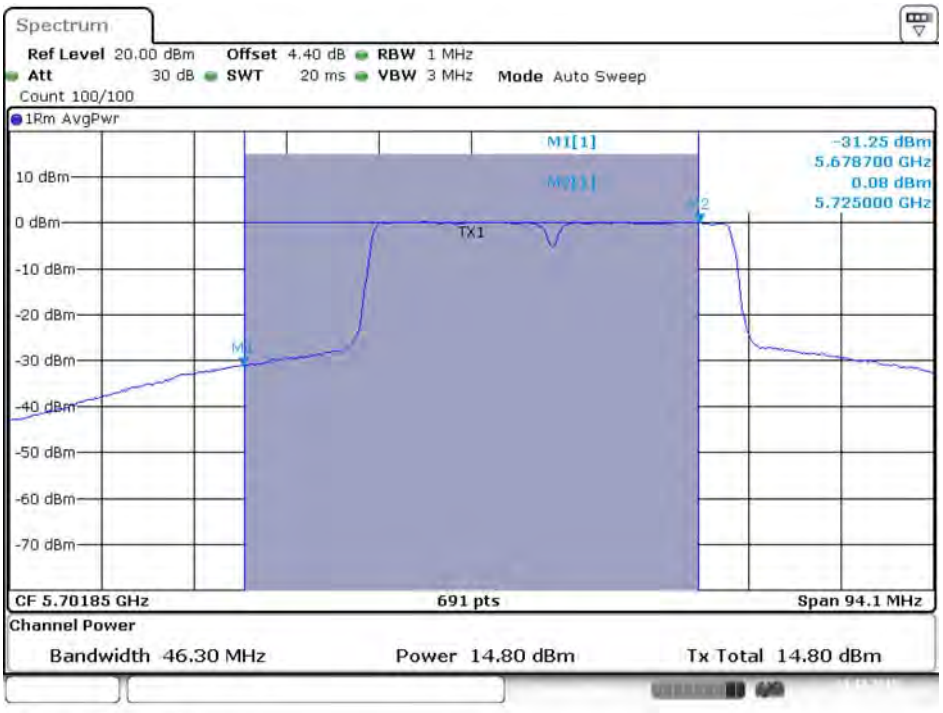
Date: 1.DEC.2015 14:47:41

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 6 / 5710 MHz (UNII 2C)



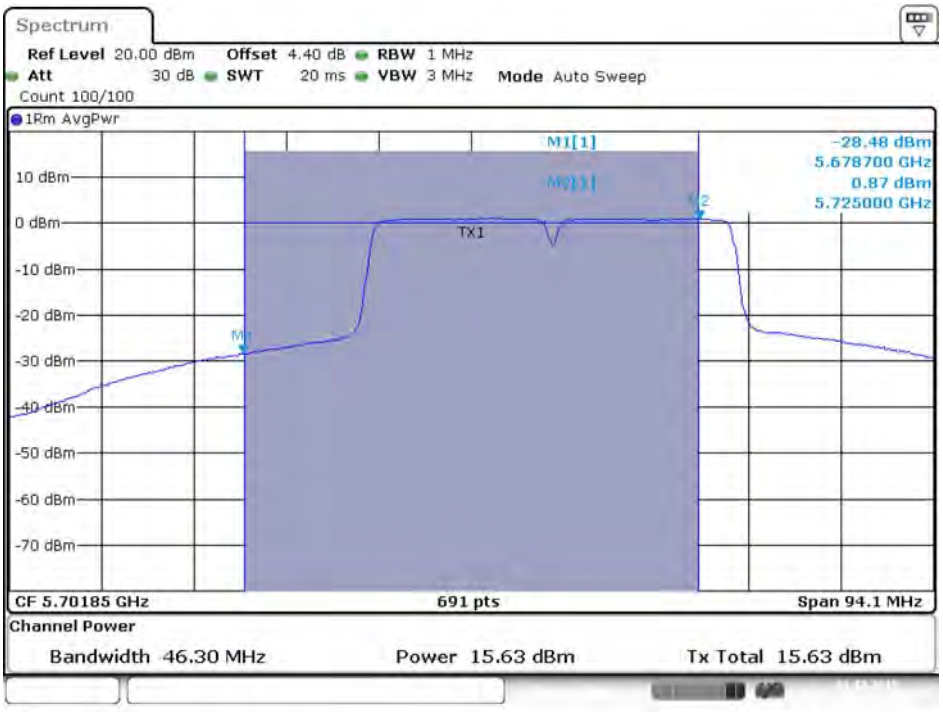
Date: 1.DEC.2015 14:47:48

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 7 / 5710 MHz (UNII 2C)



Date: 1.DEC.2015 14:47:55

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 8 / 5710 MHz (UNII 2C)

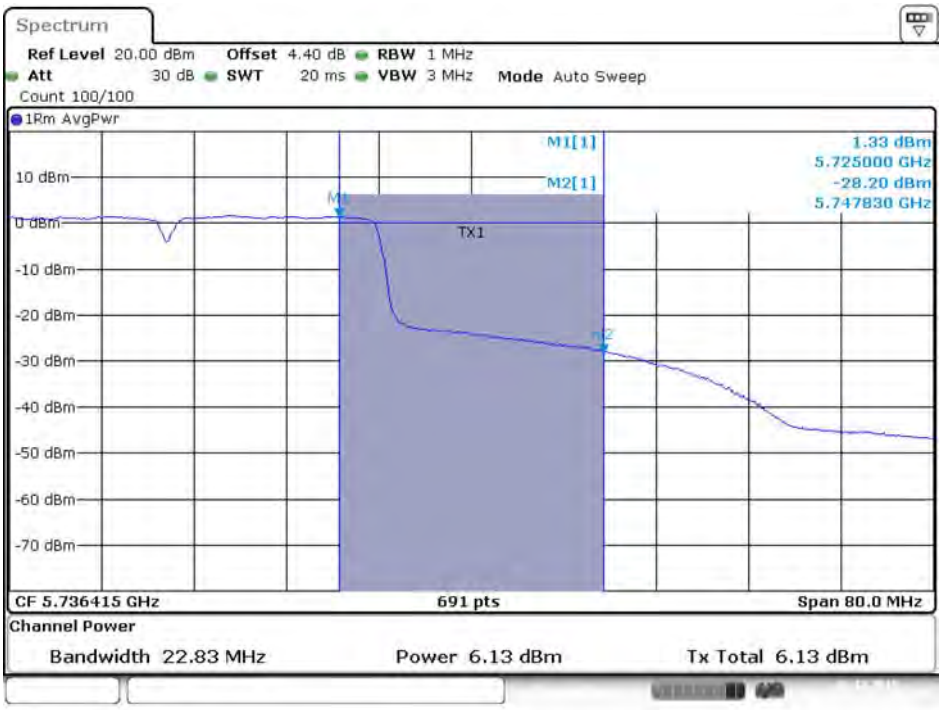


Date: 1.DEC.2015 14:48:03

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 / 5710 MHz (UNII 3)

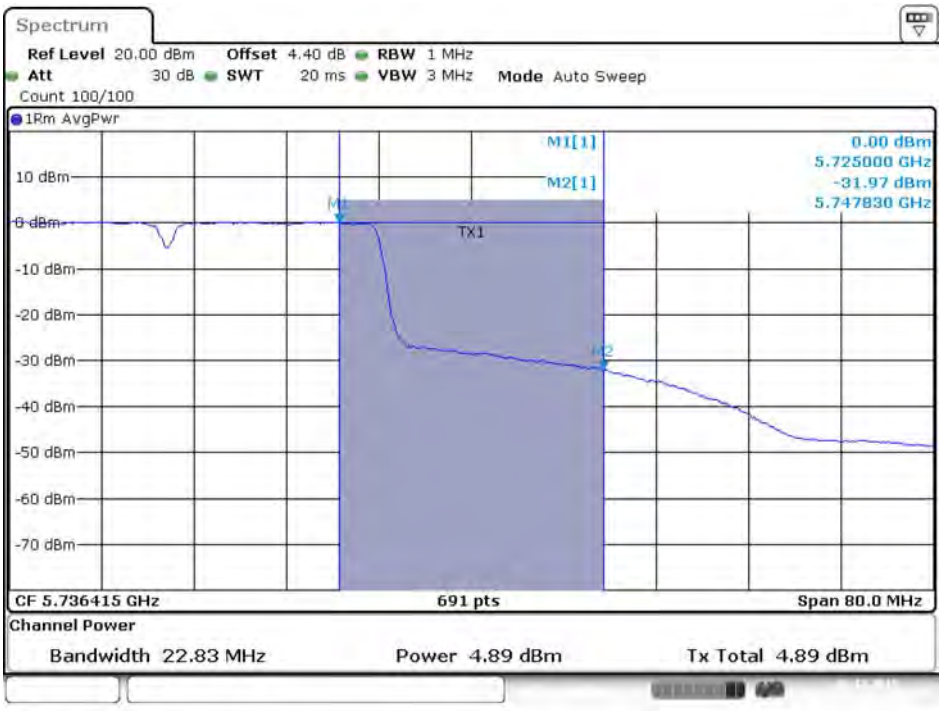
Date: 1.DEC.2015 14:47:44

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 6 / 5710 MHz (UNII 3)



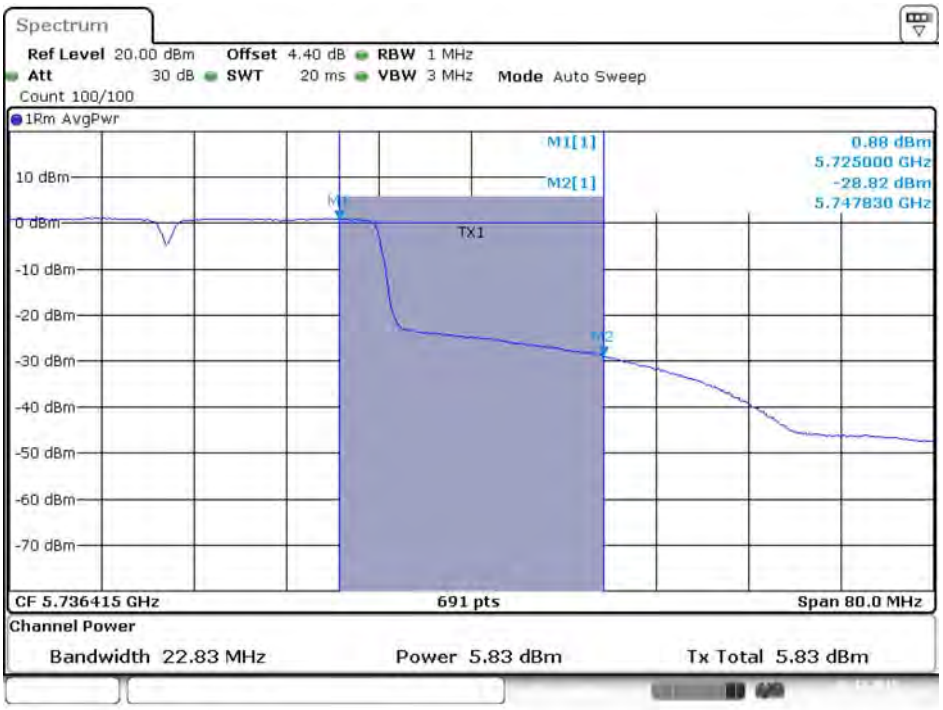
Date: 1.DEC.2015 14:47:52

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 7 / 5710 MHz (UNII 3)



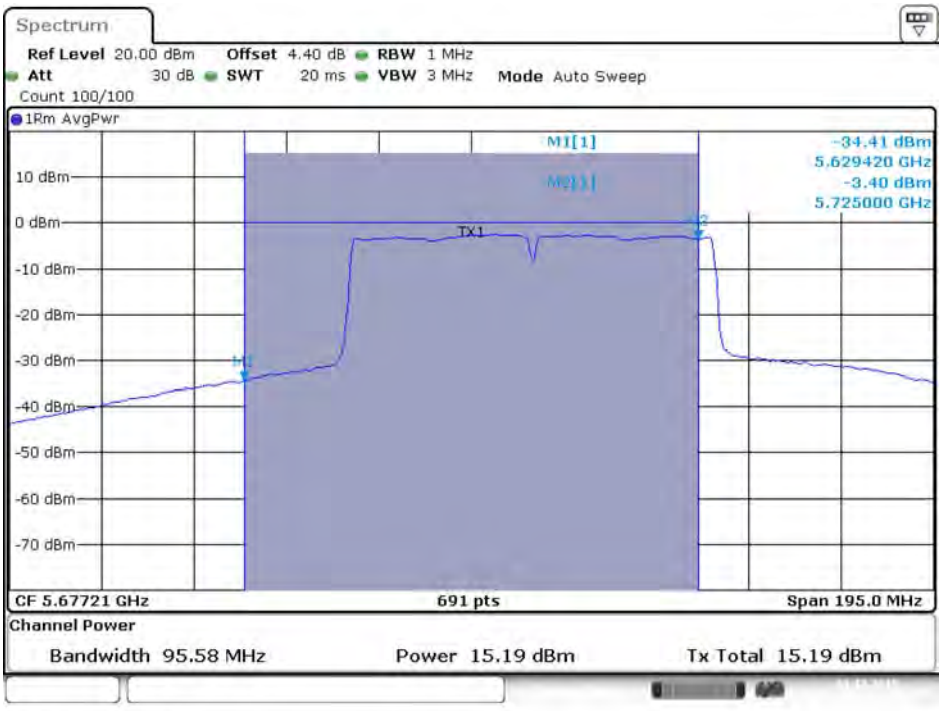
Date: 1.DEC.2015 14:47:59

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 8 / 5710 MHz (UNII 3)



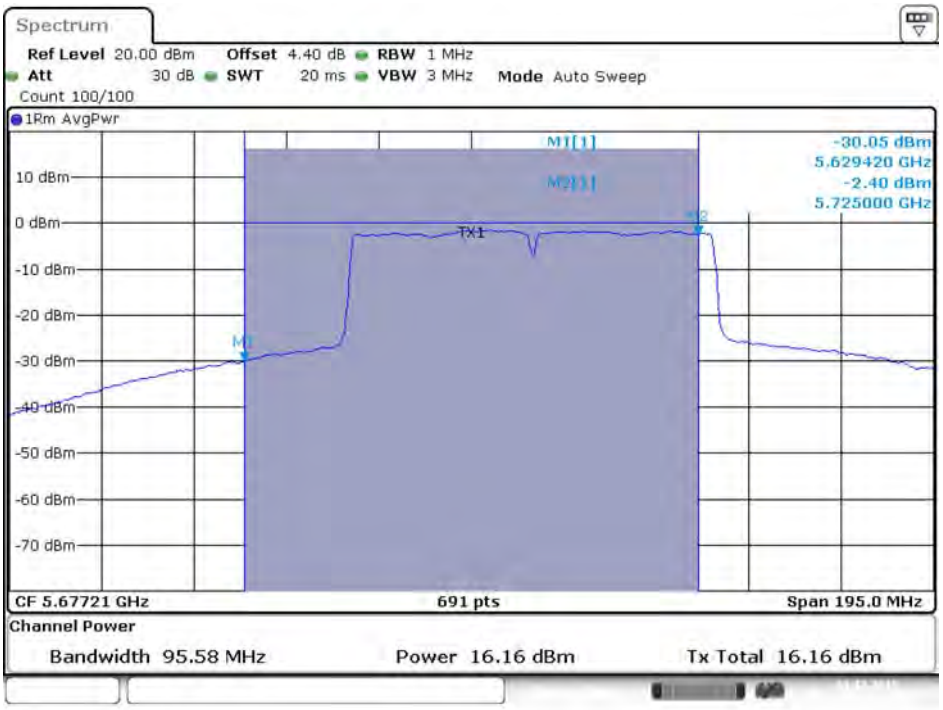
Date: 1.DEC.2015 14:48:06

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 / 5690 MHz (UNII 2C)



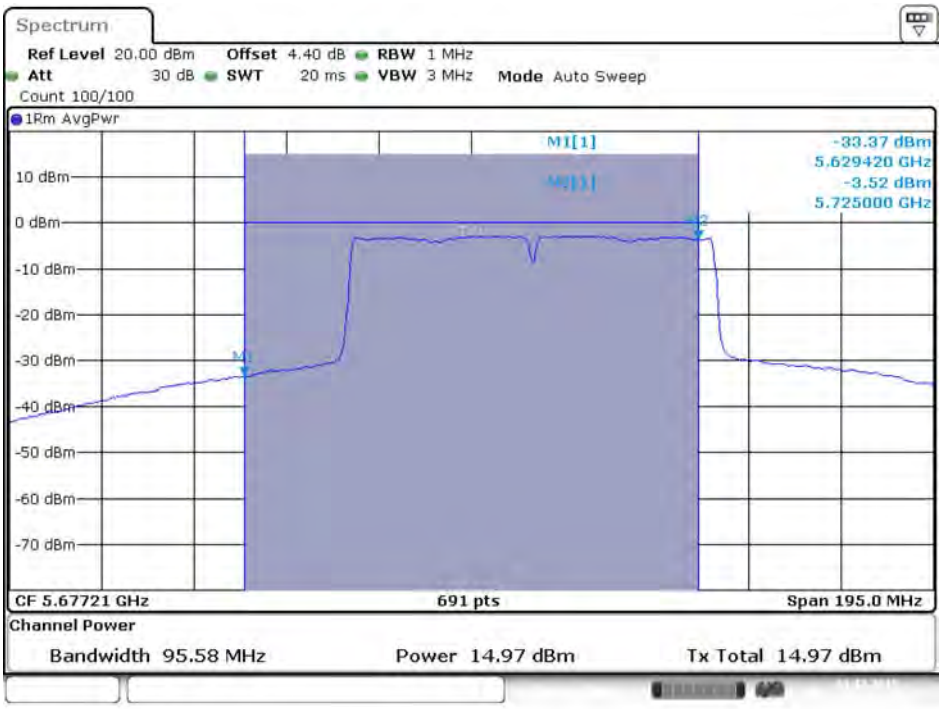
Date: 1.DEC.2015 14:32:07

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 6 / 5690 MHz (UNII 2C)



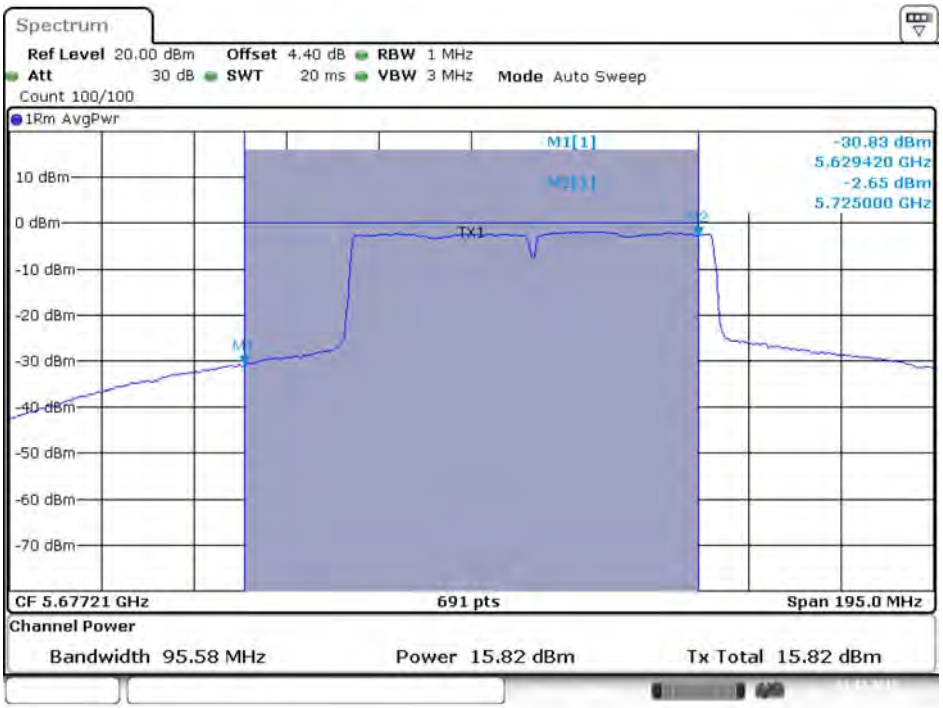
Date: 1.DEC.2015 14:32:14

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 7 / 5690 MHz (UNII 2C)



Date: 1.DEC.2015 14:32:21

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 8 / 5690 MHz (UNII 2C)



Date: 1.DEC.2015 14:32:28

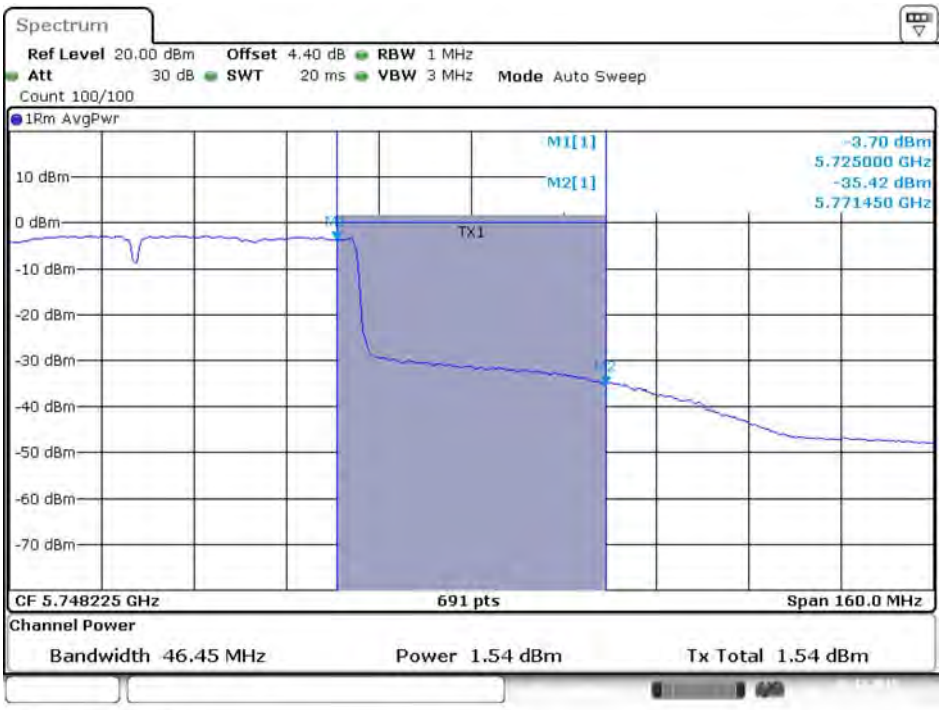
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 / 5690 MHz (UNII 3)

Date: 1.DEC.2015 14:32:10

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 6 / 5690 MHz (UNII 3)

Date: 1.DEC.2015 14:32:17

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 7 / 5690 MHz (UNII 3)



Date: 1.DEC.2015 14:32:25

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 8 / 5690 MHz (UNII 3)

Date: 1.DEC.2015 14:32:32

4.4. Power Spectral Density Measurement

4.4.1. Limit

The following table is power spectral density limits and decrease power density limit rule refer to section 4.3.1.

Frequency Band		Limit
☒	5.25-5.35 GHz	11 dBm/MHz
☒	5.470-5.725 GHz	11 dBm/MHz

4.4.2. Measuring Instruments and Setting

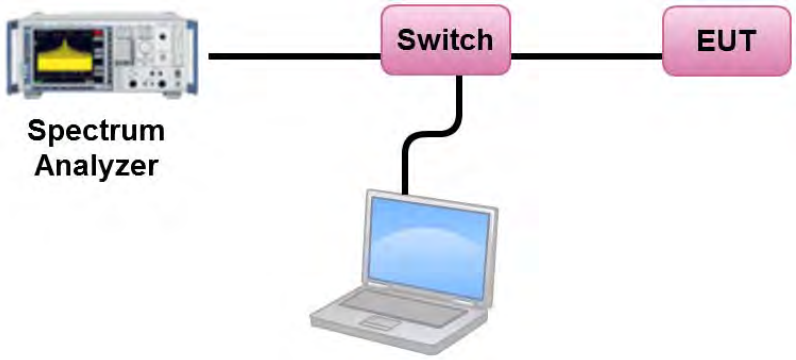
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum 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

4.4.3. 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 v01r02 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.

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 Power Spectral Density

Temperature	23°C	Humidity	54%
Test Engineer	Serway		

<For Non-Beamforming Mode>

Mode	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
802.11a	5260 MHz	9.91	9.99	Complies
	5300 MHz	9.89	9.99	Complies
	5320 MHz	9.86	9.99	Complies
	5500 MHz	8.41	8.60	Complies
	5580 MHz	8.52	8.60	Complies
	5700 MHz	8.47	8.60	Complies
802.11ac MCS0/Nss1 VHT20	5260 MHz	9.87	9.99	Complies
	5300 MHz	9.74	9.99	Complies
	5320 MHz	9.80	9.99	Complies
	5500 MHz	8.39	8.60	Complies
	5580 MHz	8.48	8.60	Complies
	5700 MHz	8.46	8.60	Complies
802.11ac MCS0/Nss1 VHT40	5270 MHz	7.74	9.99	Complies
	5310 MHz	4.13	9.99	Complies
	5510 MHz	3.54	8.60	Complies
	5550 MHz	7.66	8.60	Complies
	5670 MHz	7.80	8.60	Complies
802.11ac MCS0/Nss1 VHT80	5290 MHz	-0.84	9.99	Complies
	5530 MHz	0.40	8.60	Complies
	5610 MHz	4.64	8.60	Complies

Note:

Band 2: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.01dBi, so limit= 11-(7.01-6)=9.99 dBm/MHz.

Band 3: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =8.40dBi, so limit= 11-(8.40-6)=8.60 dBm/MHz.

Straddle Channel

Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
144	5720 MHz (UNII 2C)	8.58	8.60	Complies

Band 3: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =8.40dBi, so limit= 11-(8.40-6)=8.60 dBm/MHz.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
144	5720 MHz (UNII 3)	8.37	-3.01	5.36	28.71	Complies

Band 4: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.29dBi, so limit= 30-(7.29-6)=28.71 dBm/500kHz.

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
144	5720 MHz (UNII 2C)	8.58	8.60	Complies

Band 3: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =8.40dBi, so limit= 11-(8.40-6)=8.60 dBm/MHz.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
144	5720 MHz (UNII 3)	8.52	-3.01	5.51	28.71	Complies

Band 4: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.29dBi, so limit= 30-(7.29-6)=28.71 dBm/500kHz.

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
142	5710 MHz (UNII 2C)	6.90	8.60	Complies

Band 3: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =8.40dBi, so limit= 11-(8.40-6)=8.60 dBm/MHz.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
142	5710 MHz (UNII 3)	6.74	-3.01	3.73	28.71	Complies

Band 4: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.29dBi, so limit= 30-(7.29-6)=28.71 dBm/500kHz.

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
138	5690 MHz (UNII 2C)	4.34	8.60	Complies

Band 3: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =8.40dBi, so limit= 11-(8.40-6)=8.60 dBm/MHz.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
138	5690 MHz (UNII 3)	3.52	-3.01	0.51	28.71	Complies

Band 4: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =7.29dBi, so limit= 30-(7.29-6)=28.71 dBm/500kHz.

<For Beamforming Mode>

Mode	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
802.11ac MCS0/Nss1 VHT20	5260 MHz	9.46	9.99	Complies
	5300 MHz	9.66	9.99	Complies
	5320 MHz	9.63	9.99	Complies
	5500 MHz	8.28	8.60	Complies
	5580 MHz	8.29	8.60	Complies
	5700 MHz	8.16	8.60	Complies
802.11ac MCS0/Nss1 VHT40	5270 MHz	6.40	9.99	Complies
	5310 MHz	2.97	9.99	Complies
	5510 MHz	3.18	8.60	Complies
	5550 MHz	5.19	8.60	Complies
	5670 MHz	5.12	8.60	Complies
802.11ac MCS0/Nss1 VHT80	5290 MHz	0.73	9.99	Complies
	5530 MHz	0.09	8.60	Complies
	5610 MHz	2.09	8.60	Complies

Note:

Band 2: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.01dBi, so limit= 11-(7.01-6)=9.99 dBm/MHz.

Band 3: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =8.40dBi, so limit= 11-(8.40-6)=8.60 dBm/MHz.

Straddle Channel

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
144	5720 MHz (UNII 2C)	8.04	8.60	Complies

Band 3: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =8.40dBi, so limit= 11-(8.40-6)=8.60 dBm/MHz.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
144	5720 MHz (UNII 3)	8.03	-3.01	5.02	28.71	Complies

Band 4: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.29dBi, so limit= 30-(7.29-6)=28.71 dBm/500kHz.

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
142	5710 MHz (UNII 2C)	5.36	8.60	Complies

Band 3: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =8.40dBi, so limit= 11-(8.40-6)=8.60 dBm/MHz.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
142	5710 MHz (UNII 3)	5.40	-3.01	2.39	28.71	Complies

Band 4: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.29dBi, so limit= 30-(7.29-6)=28.71 dBm/500kHz.

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
138	5690 MHz (UNII 2C)	2.38	8.60	Complies

Band 3: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =8.40dBi, so limit= 11-(8.40-6)=8.60 dBm/MHz.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
138	5690 MHz (UNII 3)	2.06	-3.01	-0.95	28.71	Complies

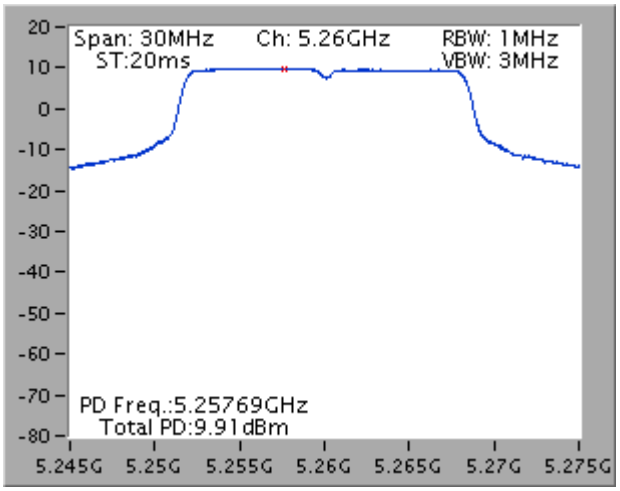
Band 4: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.29dBi, so limit= 30-(7.29-6)=28.71 dBm/500kHz.

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

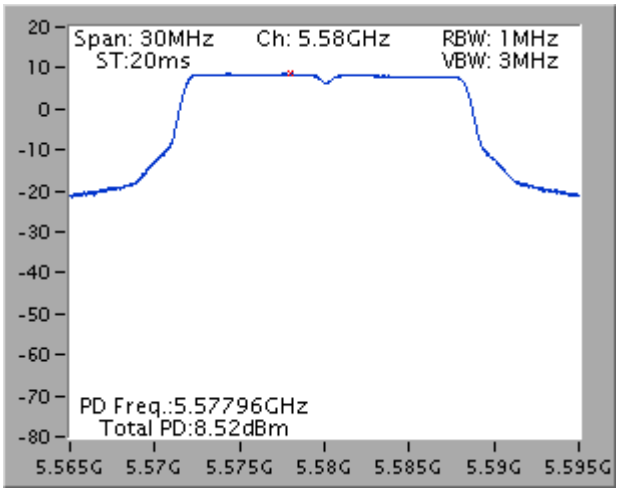
For plots, only the channel with worse result was shown.

<For Non-Beamforming Mode>

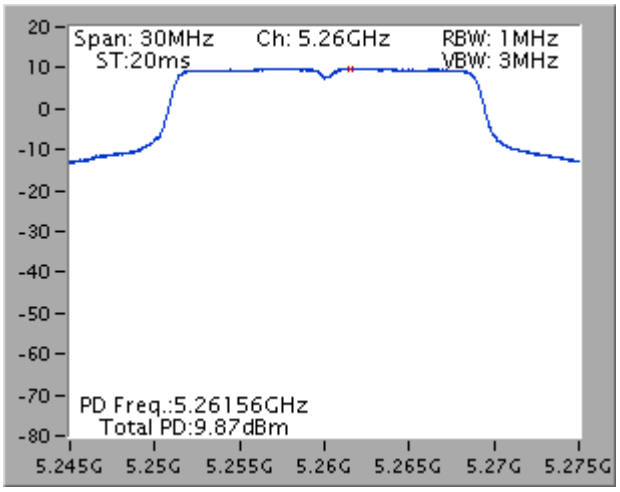
Power Density Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5260 MHz



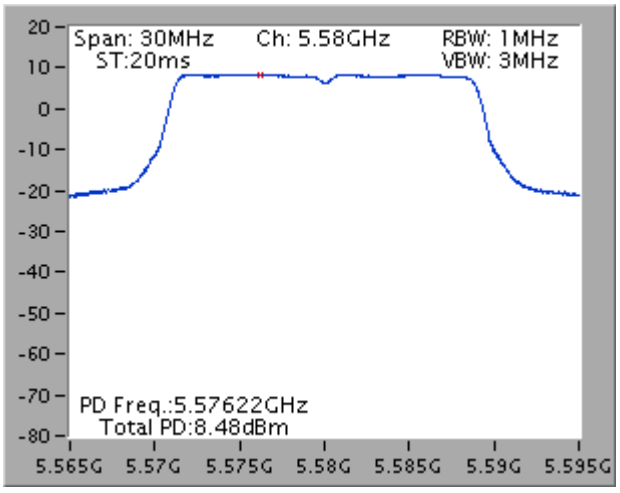
Power Density Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5580 MHz



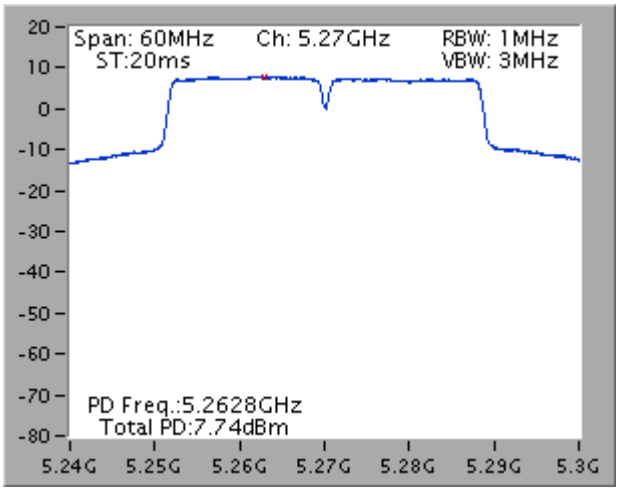
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5260 MHz



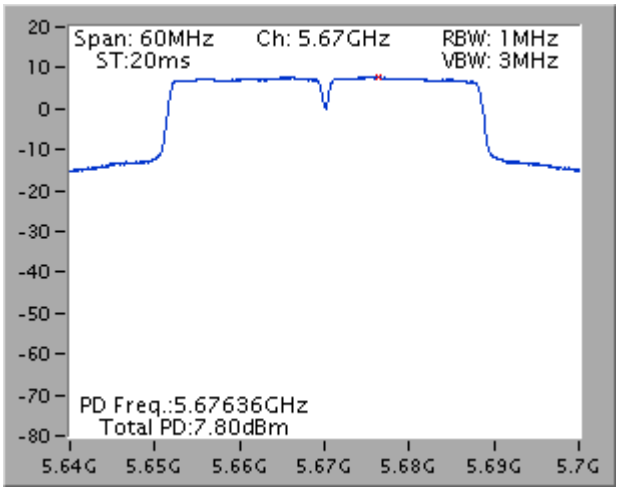
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5580 MHz



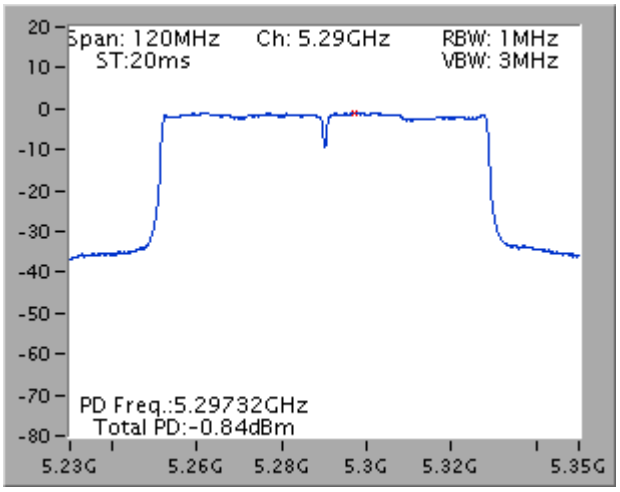
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5270 MHz



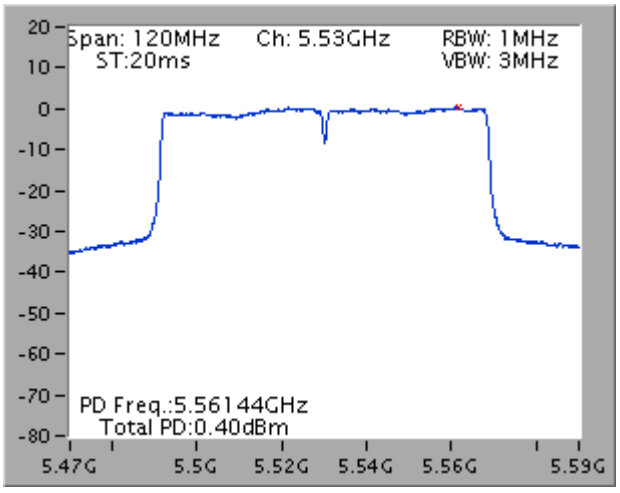
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5670 MHz



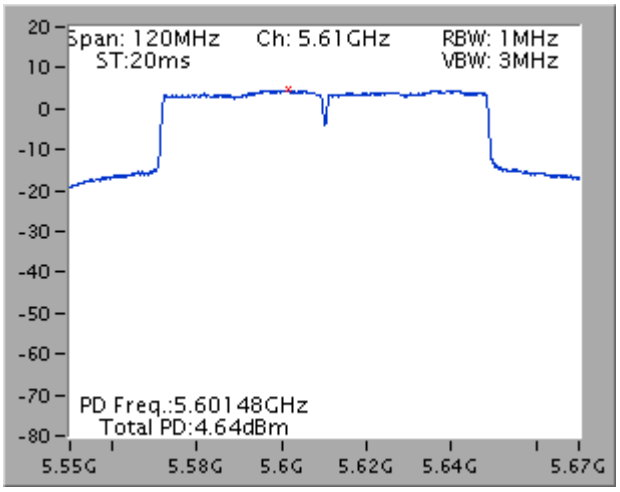
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5290 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5530 MHz

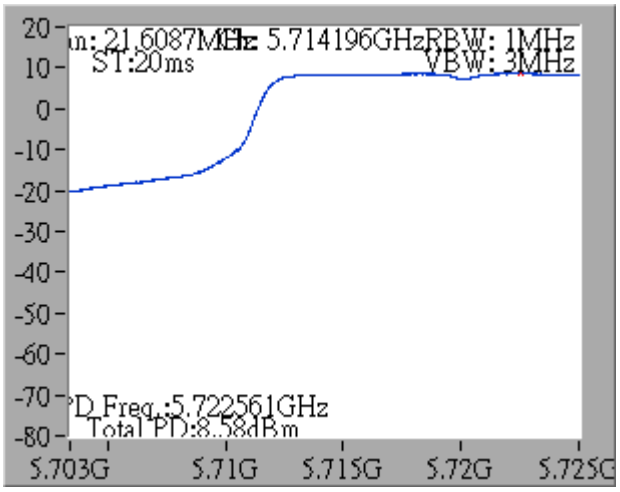


Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5610 MHz

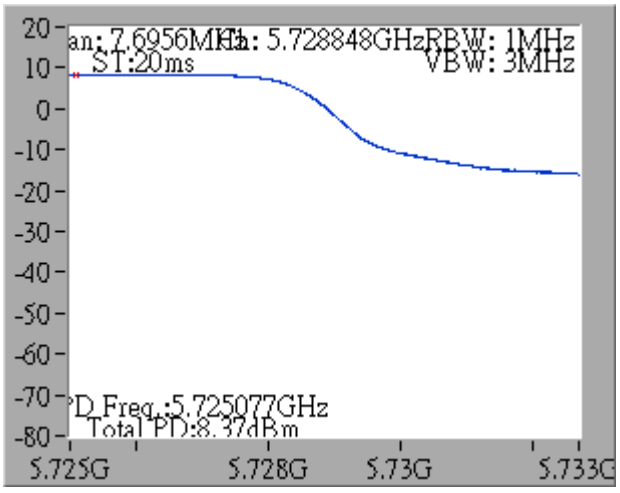


Straddle Channel

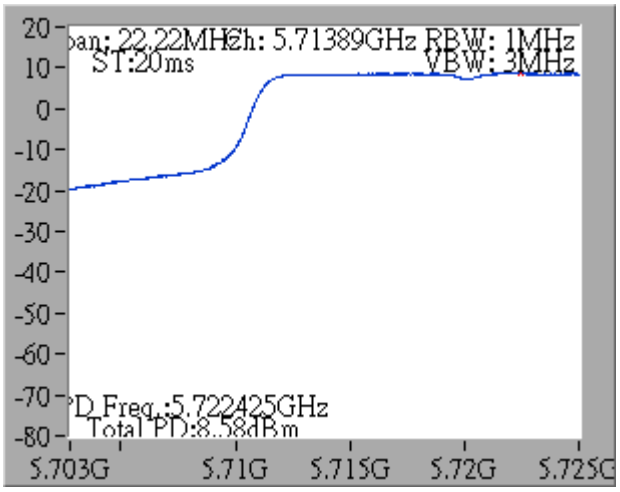
Power Density Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz (UNII 2C)



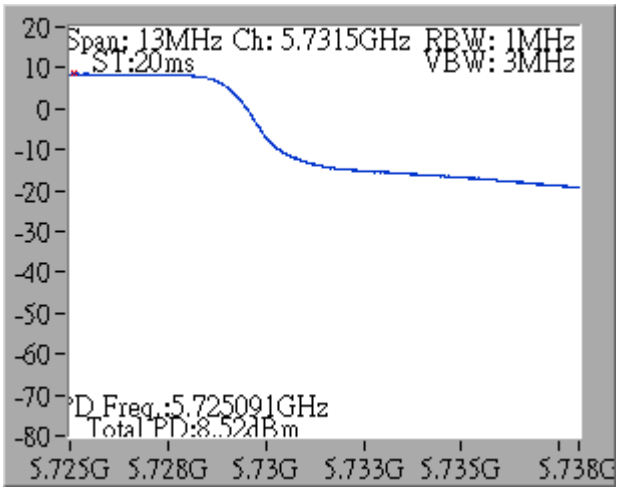
Power Density Plot on Configuration IEEE 802.11a / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz (UNII 3)



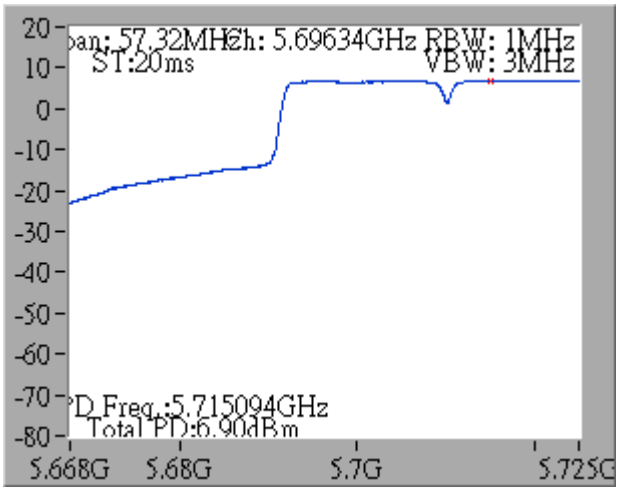
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz (UNII 2C)



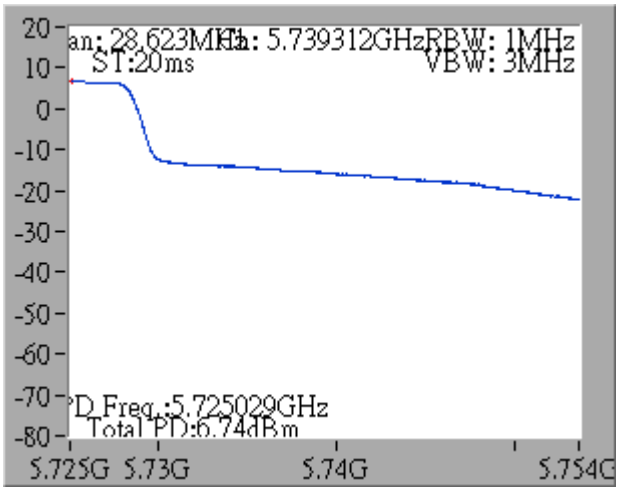
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz (UNII 3)



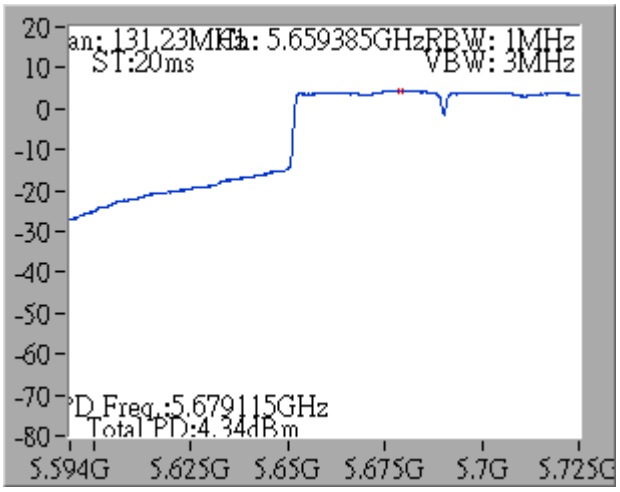
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5710 MHz (UNII 2C)



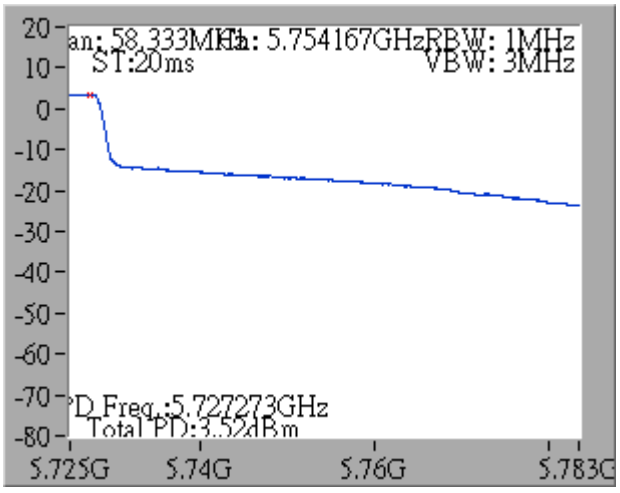
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5710 MHz (UNII 3)



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5690 MHz (UNII 2C)

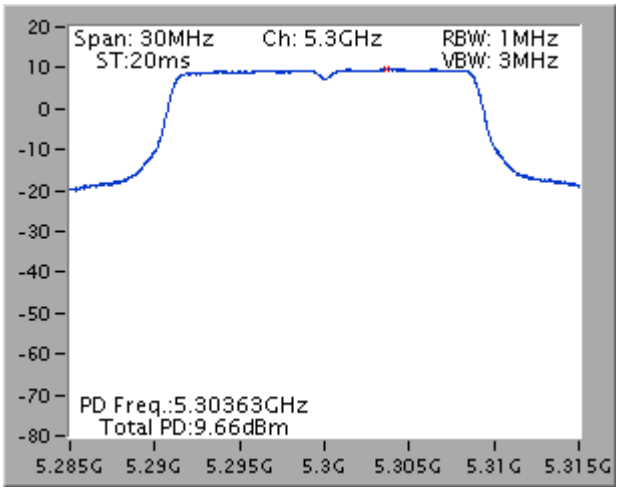


Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5690 MHz (UNII 3)

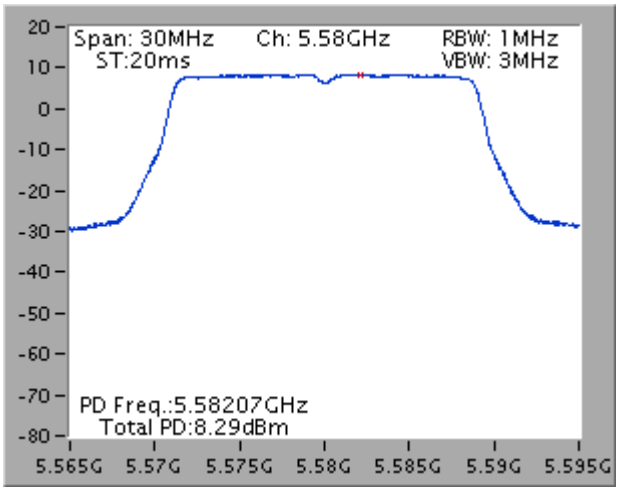


<For Beamforming Mode>

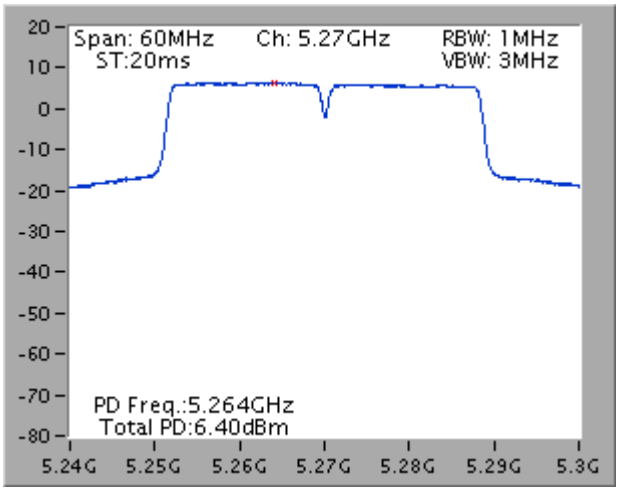
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5300 MHz



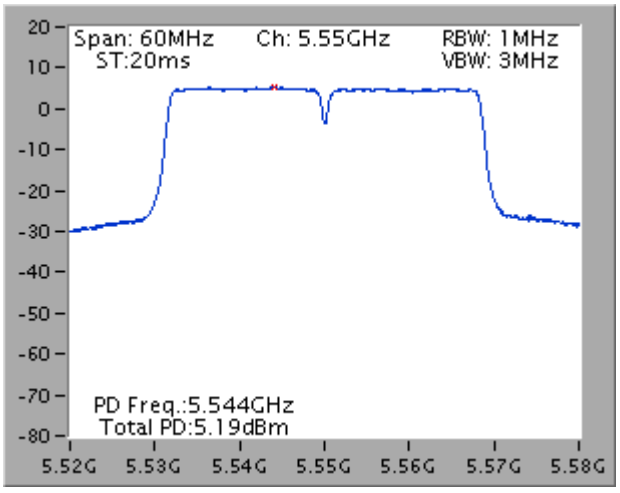
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5580 MHz



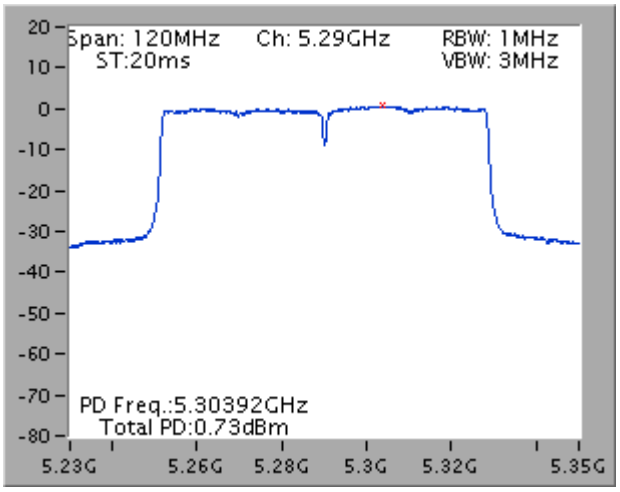
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5270 MHz



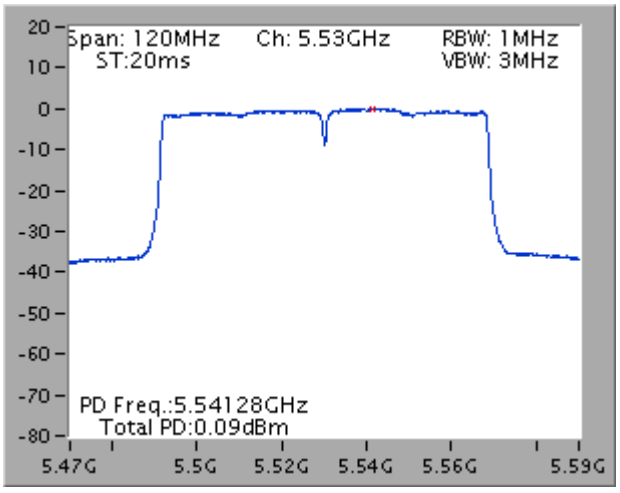
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5550 MHz



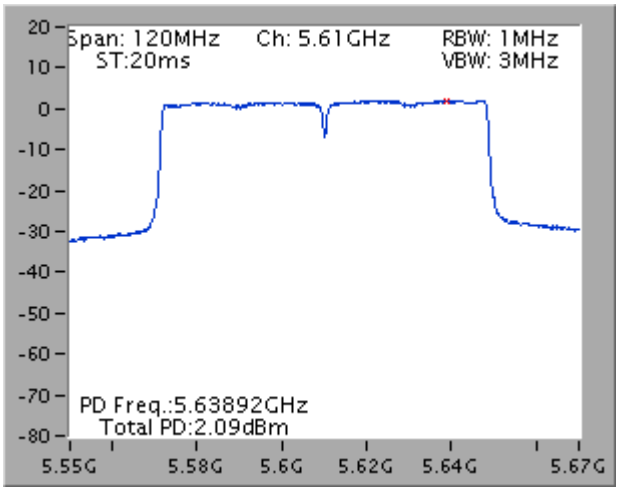
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5290 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5530 MHz

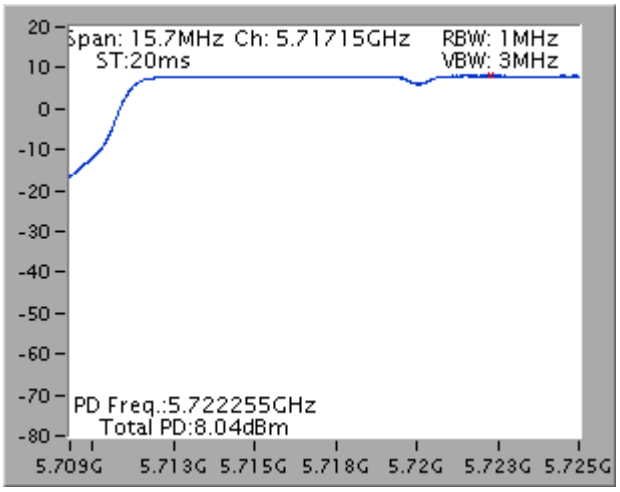


Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5610 MHz

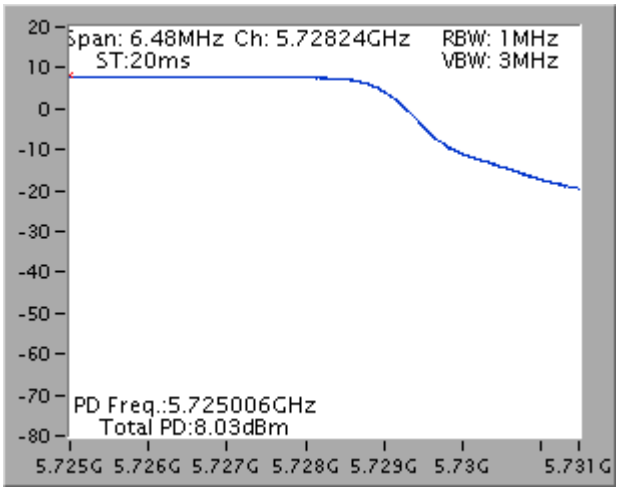


Straddle Channel

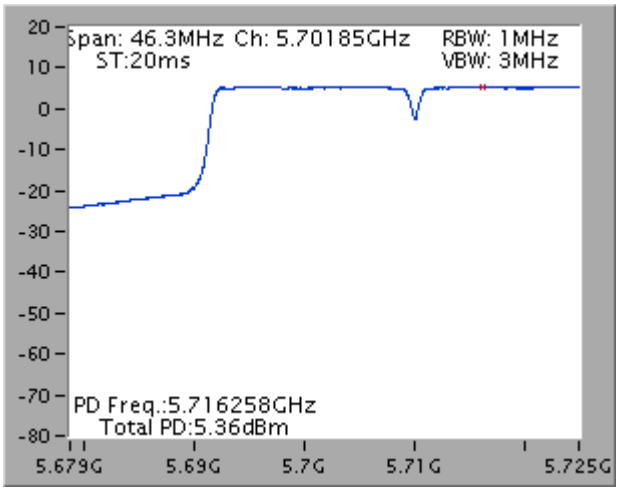
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz (UNII 2C)



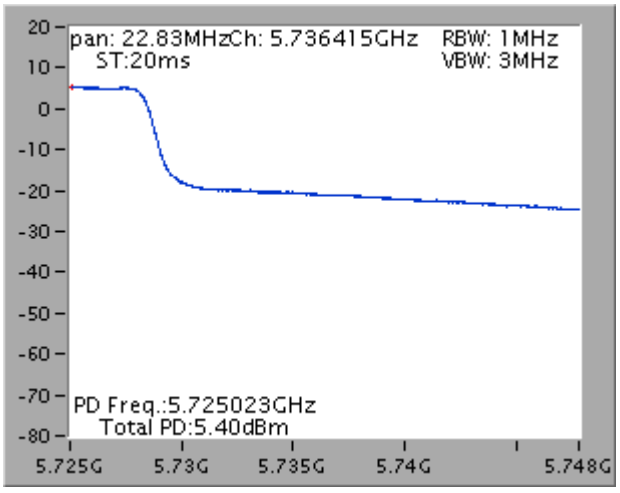
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5720 MHz (UNII 3)



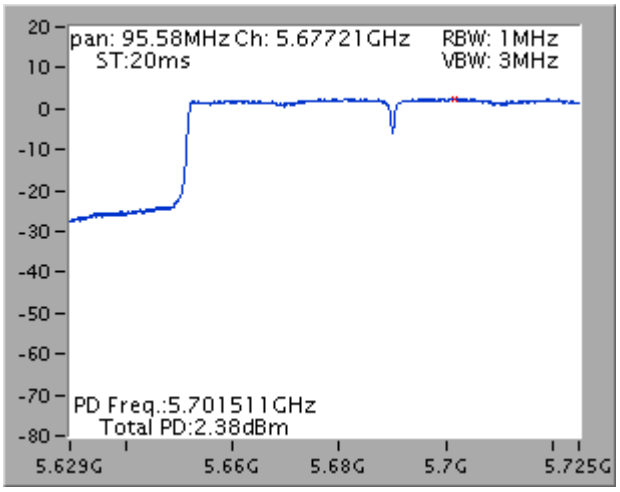
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5710 MHz (UNII 2C)



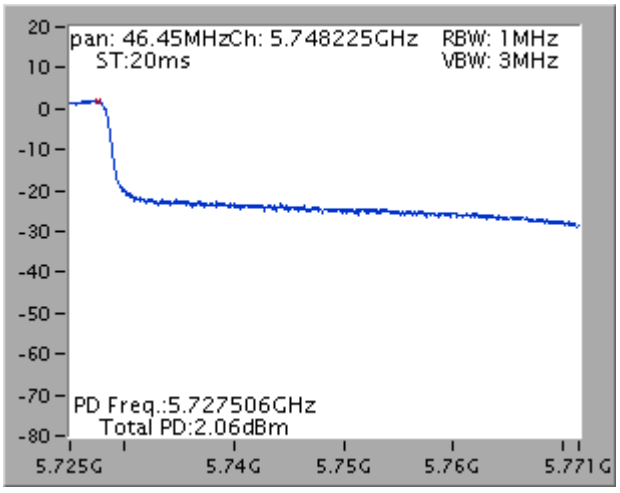
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5710 MHz (UNII 3)



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5690 MHz (UNII 2C)



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 5 + Chain 6 + Chain 7 + Chain 8 / 5690 MHz (UNII 3)



4.5. Radiated Emissions Measurement

4.5.1. Limit

For transmitters operating in the 5.25-5.35 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 5.470-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band 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

4.5.2. Measuring Instruments and Setting

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

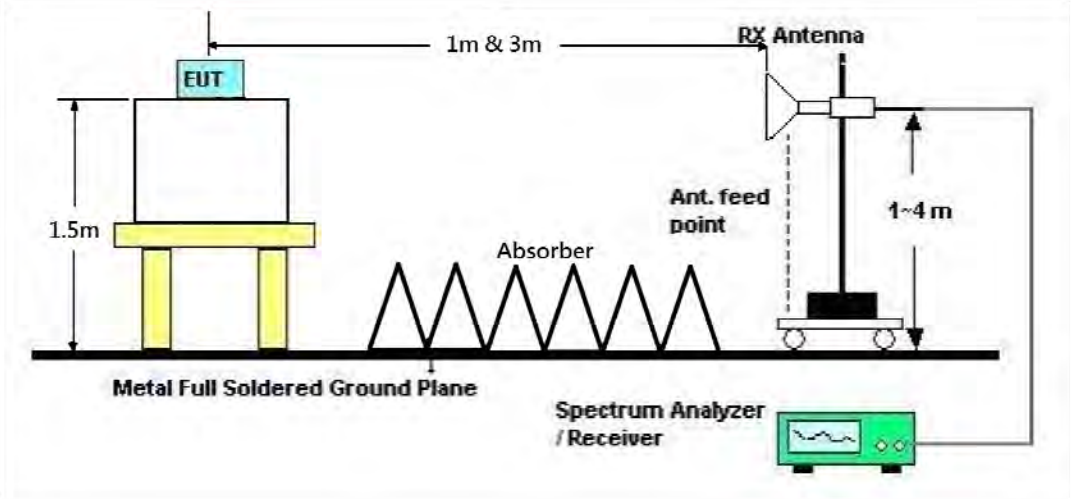
Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40 GHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for peak

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

4.5.3. Test Procedures

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

4.5.4. Test Setup Layout



4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

<For Non-Beamforming Mode>

The EUT was programmed to be in continuously transmitting mode.

<For Beamforming Mode>

The EUT was programmed to be in beamforming transmitting mode.

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

<For Non-Beamforming Mode>

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 52 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15779.63	43.96	54.00	-10.04	31.31	10.10	38.31	35.76	195	234	HORIZONTAL	Average
2	15780.69	56.91	74.00	-17.09	44.26	10.10	38.31	35.76	195	234	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15779.53	57.23	74.00	-16.77	44.58	10.10	38.31	35.76	136	292	VERTICAL	Peak
2	15780.06	43.92	54.00	-10.08	31.27	10.10	38.31	35.76	136	292	VERTICAL	Average

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 60 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10599.07	55.29	74.00	-18.71	41.75	8.31	39.06	33.83	139	114	HORIZONTAL	Peak
2	10599.29	42.57	54.00	-11.43	29.03	8.31	39.06	33.83	139	114	HORIZONTAL	Average
3	15900.25	57.16	74.00	-16.84	44.45	10.12	38.36	35.77	198	190	HORIZONTAL	Peak
4	15900.51	44.40	54.00	-9.60	31.69	10.12	38.36	35.77	198	190	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10599.21	56.18	74.00	-17.82	42.64	8.31	39.06	33.83	204	195	VERTICAL	Peak
2	10600.56	42.80	54.00	-11.20	29.26	8.31	39.06	33.83	204	195	VERTICAL	Average
3	15899.92	44.39	54.00	-9.61	31.68	10.12	38.36	35.77	140	115	VERTICAL	Average
4	15900.30	57.87	74.00	-16.13	45.16	10.12	38.36	35.77	140	115	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 64 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10639.50	55.45	74.00	-18.55	41.91	8.32	39.08	33.86	159	210	HORIZONTAL	Peak
2	10639.79	42.67	54.00	-11.33	29.13	8.32	39.08	33.86	159	210	HORIZONTAL	Average
3	15959.15	58.10	74.00	-15.90	45.36	10.14	38.38	35.78	145	262	HORIZONTAL	Peak
4	15959.43	44.55	54.00	-9.45	31.81	10.14	38.38	35.78	145	262	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10639.50	42.67	54.00	-11.33	29.13	8.32	39.08	33.86	144	116	VERTICAL	Average
2	10640.49	55.79	74.00	-18.21	42.25	8.32	39.08	33.86	144	116	VERTICAL	Peak
3	15959.41	44.61	54.00	-9.39	31.87	10.14	38.38	35.78	192	182	VERTICAL	Average
4	15959.83	57.54	74.00	-16.46	44.80	10.14	38.38	35.78	192	182	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 100 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10999.04	42.75	54.00	-11.25	29.03	8.43	39.30	34.01	150	250	HORIZONTAL	Average
2	10999.78	56.58	74.00	-17.42	42.86	8.43	39.30	34.01	150	250	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10999.16	42.77	54.00	-11.23	29.05	8.43	39.30	34.01	183	298	VERTICAL	Average
2	10999.39	55.30	74.00	-18.70	41.58	8.43	39.30	34.01	183	298	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 116 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11159.68	55.98	74.00	-18.02	42.30	8.52	39.27	34.11	172	135	HORIZONTAL	Peak
2	11160.83	42.85	54.00	-11.15	29.17	8.52	39.27	34.11	172	135	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11159.18	42.83	54.00	-11.17	29.15	8.52	39.27	34.11	113	209	VERTICAL	Average
2	11160.76	56.31	74.00	-17.69	42.63	8.52	39.27	34.11	113	209	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 140 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11399.48	56.24	74.00	-17.76	42.64	8.66	39.22	34.28	152	195	HORIZONTAL	Peak
2	11400.13	43.40	54.00	-10.60	29.80	8.66	39.22	34.28	152	195	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11399.90	43.40	54.00	-10.60	29.80	8.66	39.22	34.28	176	130	VERTICAL	Average
2	11399.99	56.43	74.00	-17.57	42.83	8.66	39.22	34.28	176	130	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15774.40	44.23	54.00	-9.77	31.58	10.10	38.31	35.76	165	229	HORIZONTAL	Average
2	15777.20	57.77	74.00	-16.23	45.12	10.10	38.31	35.76	165	229	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15775.56	44.50	54.00	-9.50	31.85	10.10	38.31	35.76	165	142	VERTICAL	Average
2	15787.16	57.97	74.00	-16.03	45.30	10.10	38.33	35.76	165	142	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 60 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15880.48	44.34	54.00	-9.66	31.63	10.12	38.36	35.77	165	78	HORIZONTAL	Average
2	15896.32	56.91	74.00	-17.09	44.20	10.12	38.36	35.77	165	78	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15904.80	44.61	54.00	-9.39	31.90	10.12	38.36	35.77	165	182	VERTICAL	Average
2	15910.08	57.62	74.00	-16.38	44.89	10.14	38.36	35.77	165	182	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 64 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15940.24	57.14	74.00	-16.86	44.40	10.14	38.38	35.78	165	150	HORIZONTAL	Peak
2	15964.72	44.19	54.00	-9.81	31.44	10.15	38.38	35.78	165	150	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15947.36	44.37	54.00	-9.63	31.63	10.14	38.38	35.78	165	246	VERTICAL	Average
2	15953.60	57.34	74.00	-16.66	44.60	10.14	38.38	35.78	165	246	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10982.96	42.29	54.00	-11.71	28.58	8.42	39.28	33.99	165	47	HORIZONTAL	Average
2	10986.00	54.97	74.00	-19.03	41.26	8.42	39.28	33.99	165	47	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10980.88	42.32	54.00	-11.68	28.61	8.42	39.28	33.99	165	196	VERTICAL	Average
2	11006.40	54.98	74.00	-19.02	41.26	8.43	39.30	34.01	165	196	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 116 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11141.76	41.61	54.00	-12.39	27.95	8.50	39.27	34.11	165	311	HORIZONTAL	Average
2	11146.00	53.70	74.00	-20.30	40.02	8.52	39.27	34.11	165	311	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11140.16	41.29	54.00	-12.71	27.63	8.50	39.27	34.11	165	193	VERTICAL	Average
2	11154.56	54.38	74.00	-19.62	40.70	8.52	39.27	34.11	165	193	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 140 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11398.40	42.70	54.00	-11.30	29.10	8.66	39.22	34.28	165	260	HORIZONTAL	Average
2	11408.24	55.25	74.00	-18.75	41.63	8.68	39.22	34.28	165	260	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11408.16	42.66	54.00	-11.34	29.04	8.68	39.22	34.28	165	130	VERTICAL	Average
2	11411.52	55.44	74.00	-18.56	41.82	8.68	39.22	34.28	165	130	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15807.36	44.03	54.00	-9.97	31.35	10.11	38.33	35.76	165	161	HORIZONTAL	Average
2	15817.52	56.97	74.00	-17.03	44.30	10.11	38.33	35.77	165	161	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15815.92	44.01	54.00	-9.99	31.34	10.11	38.33	35.77	165	200	VERTICAL	Average
2	15820.56	56.95	74.00	-17.05	44.28	10.11	38.33	35.77	165	200	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 62 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15936.80	58.56	74.00	-15.44	45.82	10.14	38.38	35.78	165	262	HORIZONTAL	Peak
2	15938.64	45.67	54.00	-8.33	32.93	10.14	38.38	35.78	165	262	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15936.80	45.78	54.00	-8.22	33.04	10.14	38.38	35.78	165	128	VERTICAL	Average
2	15939.12	58.07	74.00	-15.93	45.33	10.14	38.38	35.78	165	128	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21 , 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11007.28	42.34	54.00	-11.66	28.62	8.43	39.30	34.01	165	316	HORIZONTAL	Average
2	11016.16	55.06	74.00	-18.94	41.34	8.43	39.30	34.01	165	316	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11000.00	54.94	74.00	-19.06	41.22	8.43	39.30	34.01	165	213	VERTICAL	Peak
2	11006.96	42.55	54.00	-11.45	28.83	8.43	39.30	34.01	165	213	VERTICAL	Average

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 110 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21 , 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11101.92	42.16	54.00	-11.84	28.48	8.48	39.28	34.08	165	264	HORIZONTAL	Average
2	11106.72	54.99	74.00	-19.01	41.31	8.48	39.28	34.08	165	264	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11087.76	54.81	74.00	-19.19	41.10	8.48	39.29	34.06	165	145	VERTICAL	Peak
2	11113.84	42.19	54.00	-11.81	28.49	8.50	39.28	34.08	165	145	VERTICAL	Average

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 134 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11325.76	42.62	54.00	-11.38	29.01	8.61	39.23	34.23	165	307	HORIZONTAL	Average
2	11358.64	55.30	74.00	-18.70	41.66	8.64	39.23	34.23	165	307	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11326.48	42.64	54.00	-11.36	29.03	8.61	39.23	34.23	165	144	VERTICAL	Average
2	11326.64	54.84	74.00	-19.16	41.23	8.61	39.23	34.23	165	144	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21 , 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15850.08	44.28	54.00	-9.72	31.59	10.11	38.35	35.77	165	216	HORIZONTAL	Average
2	15862.96	57.25	74.00	-16.75	44.55	10.12	38.35	35.77	165	216	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15850.48	57.13	74.00	-16.87	44.44	10.11	38.35	35.77	165	136	VERTICAL	Peak
2	15850.64	44.25	54.00	-9.75	31.56	10.11	38.35	35.77	165	136	VERTICAL	Average

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 106 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11060.40	54.80	74.00	-19.20	41.09	8.45	39.29	34.03	165	187	HORIZONTAL	Peak
2	11073.52	41.98	54.00	-12.02	28.27	8.48	39.29	34.06	165	187	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11072.72	42.04	54.00	-11.96	28.33	8.48	39.29	34.06	165	102	VERTICAL	Average
2	11073.36	54.80	74.00	-19.20	41.09	8.48	39.29	34.06	165	102	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 122 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11214.96	54.52	74.00	-19.48	40.87	8.55	39.26	34.16	165	180	HORIZONTAL	Peak
2	11224.56	41.87	54.00	-12.13	28.21	8.57	39.25	34.16	165	180	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11211.36	55.32	74.00	-18.68	41.67	8.55	39.26	34.16	165	273	VERTICAL	Peak
2	11222.40	42.09	54.00	-11.91	28.43	8.57	39.25	34.16	165	273	VERTICAL	Average

Straddle Channel

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 144 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11440.01	56.23	74.00	-17.77	42.65	8.68	39.21	34.31	173	345	HORIZONTAL	Peak
2	11440.14	43.14	54.00	-10.86	29.56	8.68	39.21	34.31	173	345	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11439.28	43.05	54.00	-10.95	29.47	8.68	39.21	34.31	137	215	VERTICAL	Average
2	11440.20	56.33	74.00	-17.67	42.75	8.68	39.21	34.31	137	215	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11439.62	43.18	54.00	-10.82	29.60	8.68	39.21	34.31	156	100	HORIZONTAL	Average
2	11440.27	56.24	74.00	-17.76	42.66	8.68	39.21	34.31	156	100	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11440.70	56.17	74.00	-17.83	42.59	8.68	39.21	34.31	204	149	VERTICAL	Peak
2	11440.84	43.08	54.00	-10.92	29.50	8.68	39.21	34.31	204	149	VERTICAL	Average

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11419.95	56.75	74.00	-17.25	43.14	8.68	39.21	34.28	147	271	HORIZONTAL	Peak
2	11420.43	43.29	54.00	-10.71	29.68	8.68	39.21	34.28	147	271	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11419.51	56.93	74.00	-17.07	43.32	8.68	39.21	34.28	186	322	VERTICAL	Peak
2	11419.77	43.20	54.00	-10.80	29.59	8.68	39.21	34.28	186	322	VERTICAL	Average

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11379.13	43.31	54.00	-10.69	29.68	8.66	39.23	34.26	163	173	HORIZONTAL	Average
2	11379.85	57.56	74.00	-16.44	43.93	8.66	39.23	34.26	163	173	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11380.03	56.35	74.00	-17.65	42.72	8.66	39.23	34.26	156	224	VERTICAL	Peak
2	11380.47	43.30	54.00	-10.70	29.67	8.66	39.23	34.26	156	224	VERTICAL	Average

<For Beamforming Mode>

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15785.68	46.42	54.00	-7.58	31.18	12.66	38.34	35.76	250	334	HORIZONTAL	Average
2	15786.84	59.83	74.00	-14.17	44.59	12.66	38.34	35.76	250	334	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15773.64	59.56	74.00	-14.44	44.34	12.63	38.35	35.76	250	84	VERTICAL	Peak
2	15777.16	46.20	54.00	-7.80	30.98	12.63	38.35	35.76	250	84	VERTICAL	Average

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 60 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10600.80	58.62	74.00	-15.38	43.01	10.46	38.98	33.83	250	263	HORIZONTAL	Peak
2	10603.56	44.32	54.00	-9.68	28.72	10.46	38.98	33.84	250	263	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10600.60	57.48	74.00	-16.52	41.87	10.46	38.98	33.83	250	152	VERTICAL	Peak
2	10605.80	44.71	54.00	-9.29	29.11	10.46	38.98	33.84	250	152	VERTICAL	Average

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 64 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11240.04	45.00	54.00	-9.00	29.10	10.81	39.25	34.16	250	80	HORIZONTAL	Average
2	11247.72	58.16	74.00	-15.84	42.26	10.81	39.25	34.16	250	80	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11240.20	44.86	54.00	-9.14	28.96	10.81	39.25	34.16	250	211	VERTICAL	Average
2	11240.20	55.95	74.00	-18.05	40.05	10.81	39.25	34.16	250	211	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10993.28	57.76	74.00	-16.24	41.83	10.67	39.27	34.01	250	244	HORIZONTAL	Peak
2	11008.80	45.03	54.00	-8.97	29.05	10.69	39.30	34.01	250	244	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11003.20	44.87	54.00	-9.13	28.89	10.69	39.30	34.01	250	96	VERTICAL	Average
2	11003.20	55.64	74.00	-18.36	39.66	10.69	39.30	34.01	250	96	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 116 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11154.00	57.32	74.00	-16.68	41.41	10.75	39.27	34.11	250	223	HORIZONTAL	Peak
2	11164.40	44.44	54.00	-9.56	28.51	10.77	39.27	34.11	250	223	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11157.04	44.39	54.00	-9.61	28.46	10.77	39.27	34.11	250	69	VERTICAL	Average
2	11158.92	57.44	74.00	-16.56	41.51	10.77	39.27	34.11	250	69	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 140 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11397.68	59.03	74.00	-14.97	43.20	10.89	39.22	34.28	250	183	HORIZONTAL	Peak
2	11409.96	44.96	54.00	-9.04	29.13	10.89	39.22	34.28	250	183	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11395.32	57.45	74.00	-16.55	41.60	10.89	39.22	34.26	250	100	VERTICAL	Peak
2	11409.96	44.92	54.00	-9.08	29.09	10.89	39.22	34.28	250	100	VERTICAL	Average

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15803.40	60.64	74.00	-13.36	45.40	12.66	38.34	35.76	250	111	HORIZONTAL	Peak
2	15812.68	46.40	54.00	-7.60	31.16	12.66	38.34	35.76	250	111	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15804.52	46.39	54.00	-7.61	31.15	12.66	38.34	35.76	250	123	VERTICAL	Average
2	15817.28	59.05	74.00	-14.95	43.82	12.66	38.34	35.77	250	123	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 62 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10613.92	57.85	74.00	-16.15	42.25	10.46	38.98	33.84	250	314	HORIZONTAL	Peak
2	10614.40	44.67	54.00	-9.33	29.07	10.46	38.98	33.84	250	314	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10616.52	57.70	74.00	-16.30	42.10	10.46	38.98	33.84	250	125	VERTICAL	Peak
2	10622.56	44.88	54.00	-9.12	29.24	10.48	39.00	33.84	250	125	VERTICAL	Average

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11021.32	44.64	54.00	-9.36	28.66	10.69	39.30	34.01	250	206	HORIZONTAL	Average
2	11022.96	57.70	74.00	-16.30	41.72	10.69	39.30	34.01	250	206	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11011.96	57.12	74.00	-16.88	41.14	10.69	39.30	34.01	250	348	VERTICAL	Peak
2	11022.76	44.67	54.00	-9.33	28.69	10.69	39.30	34.01	250	348	VERTICAL	Average

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 110 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11095.72	44.21	54.00	-9.79	28.25	10.74	39.28	34.06	250	333	HORIZONTAL	Average
2	11108.76	57.26	74.00	-16.74	41.32	10.74	39.28	34.08	250	333	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11092.40	44.28	54.00	-9.72	28.32	10.74	39.28	34.06	250	80	VERTICAL	Average
2	11107.08	56.97	74.00	-17.03	41.03	10.74	39.28	34.08	250	80	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 134 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11331.04	44.55	54.00	-9.45	28.69	10.86	39.23	34.23	250	208	HORIZONTAL	Average
2	11331.06	54.43	74.00	-19.57	38.57	10.86	39.23	34.23	250	208	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11331.92	44.31	54.00	-9.69	28.45	10.86	39.23	34.23	250	339	VERTICAL	Average
2	11331.98	54.87	74.00	-19.13	39.01	10.86	39.23	34.23	250	339	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10574.20	44.53	54.00	-9.47	28.96	10.45	38.95	33.83	250	357	HORIZONTAL	Average
2	10578.80	57.25	74.00	-16.75	41.68	10.45	38.95	33.83	250	357	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10571.72	57.33	74.00	-16.67	41.76	10.45	38.95	33.83	250	203	VERTICAL	Peak
2	10577.20	44.70	54.00	-9.30	29.13	10.45	38.95	33.83	250	203	VERTICAL	Average

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 106 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11050.88	44.58	54.00	-9.42	28.62	10.70	39.29	34.03	250	187	HORIZONTAL	Average
2	11056.04	57.63	74.00	-16.37	41.67	10.70	39.29	34.03	250	187	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11062.56	44.76	54.00	-9.24	28.78	10.72	39.29	34.03	250	122	VERTICAL	Average
2	11063.56	57.39	74.00	-16.61	41.41	10.72	39.29	34.03	250	122	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 122 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11212.32	57.31	74.00	-16.69	41.42	10.79	39.26	34.16	250	326	HORIZONTAL	Peak
2	11219.76	44.81	54.00	-9.19	28.92	10.79	39.26	34.16	250	326	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11219.04	58.36	74.00	-15.64	42.47	10.79	39.26	34.16	250	230	VERTICAL	Peak
2	11222.40	44.96	54.00	-9.04	29.06	10.81	39.25	34.16	250	230	VERTICAL	Average

Straddle Channel

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11441.52	44.92	54.00	-9.08	29.11	10.91	39.21	34.31	250	328	HORIZONTAL	Average
2	11441.66	56.47	74.00	-17.53	40.66	10.91	39.21	34.31	250	328	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11442.68	44.91	54.00	-9.09	29.10	10.91	39.21	34.31	250	237	VERTICAL	Average
2	11447.08	57.53	74.00	-16.47	41.72	10.91	39.21	34.31	250	237	VERTICAL	Peak

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11410.00	57.26	74.00	-16.74	41.43	10.89	39.22	34.28	250	100	HORIZONTAL	Peak
2	11413.20	44.77	54.00	-9.23	28.94	10.89	39.22	34.28	250	100	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11412.16	57.30	74.00	-16.70	41.47	10.89	39.22	34.28	250	167	VERTICAL	Peak
2	11418.32	44.85	54.00	-9.15	29.01	10.91	39.21	34.28	250	167	VERTICAL	Average

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11372.32	59.07	74.00	-14.93	43.23	10.87	39.23	34.26	250	166	HORIZONTAL	Peak
2	11375.24	45.07	54.00	-8.93	29.23	10.87	39.23	34.26	250	166	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11371.00	58.04	74.00	-15.96	42.20	10.87	39.23	34.26	250	101	VERTICAL	Peak
2	11377.68	45.03	54.00	-8.97	29.19	10.87	39.23	34.26	250	101	VERTICAL	Average

Note:

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

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

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

4.6. Band Edge Emissions Measurement

4.6.1. Limit

For transmitters operating in the 5.25-5.35 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 5.470-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band 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 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

4.6.3. Test Procedures

The test procedure is the same as section 4.5.3.

4.6.4. Test Setup Layout

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

4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

<For Non-Beamforming Mode>

The EUT was programmed to be in continuously transmitting mode.

<For Beamforming Mode>

The EUT was programmed to be in beamforming transmitting mode.

4.6.7. Test Result of Band Edge and Fundamental Emissions

<For Non-Beamforming Mode>

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 52, 60, 64 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5145.66	57.95	74.00	-16.05	53.61	5.51	33.17	34.34	252	220	VERTICAL	Peak
2	5150.00	44.80	54.00	-9.20	40.46	5.51	33.17	34.34	252	220	VERTICAL	Average
3	5256.53	103.41			98.82	5.56	33.36	34.33	252	220	VERTICAL	Average
4	5256.96	113.64			109.05	5.56	33.36	34.33	252	220	VERTICAL	Peak
5	5350.00	45.37	54.00	-8.63	40.57	5.59	33.53	34.32	252	220	VERTICAL	Average
6	5350.43	59.52	74.00	-14.48	54.72	5.59	33.53	34.32	252	220	VERTICAL	Peak

Item 3, 4 are the fundamental frequency at 5260 MHz.

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5306.95	104.03			99.34	5.57	33.45	34.33	120	153	VERTICAL	Average
2	5307.81	114.21			109.52	5.57	33.45	34.33	120	153	VERTICAL	Peak
3	5350.00	46.93	54.00	-7.07	42.13	5.59	33.53	34.32	120	153	VERTICAL	Average
4	5350.29	60.55	74.00	-13.45	55.75	5.59	33.53	34.32	120	153	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5326.08	114.69			109.94	5.58	33.50	34.33	208	150	VERTICAL	Peak
2	5326.95	104.50			99.75	5.58	33.50	34.33	208	150	VERTICAL	Average
3	5350.00	53.53	54.00	-0.47	48.73	5.59	33.53	34.32	208	150	VERTICAL	Average
4	5351.16	73.51	74.00	-0.49	68.71	5.59	33.53	34.32	208	150	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 100, 116, 140 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5427.35	47.52	54.00	-6.48	42.56	5.62	33.66	34.32	242	311	VERTICAL	Average
2	5459.19	62.08	74.00	-11.92	57.04	5.63	33.72	34.31	242	311	VERTICAL	Peak
3	5468.74	52.91	54.00	-1.09	47.83	5.64	33.75	34.31	242	311	VERTICAL	Average
4	5469.03	69.72	74.00	-4.28	64.64	5.64	33.75	34.31	242	311	VERTICAL	Peak
5	5506.08	114.24			109.09	5.66	33.80	34.31	242	311	VERTICAL	Peak
6	5506.66	104.21			99.06	5.66	33.80	34.31	242	311	VERTICAL	Average

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 116

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5425.88	60.71	74.00	-13.29	55.75	5.62	33.66	34.32	204	312	VERTICAL	Peak
2	5426.60	49.37	54.00	-4.63	44.41	5.62	33.66	34.32	204	312	VERTICAL	Average
3	5467.83	57.76	74.00	-16.24	52.69	5.63	33.75	34.31	204	312	VERTICAL	Peak
4	5470.00	45.22	54.00	-8.78	40.14	5.64	33.75	34.31	204	312	VERTICAL	Average
5	5585.79	113.99			108.55	5.72	34.05	34.33	204	312	VERTICAL	Peak
6	5586.51	103.83			98.39	5.72	34.05	34.33	204	312	VERTICAL	Average
7	5734.41	61.71	74.00	-12.29	55.70	5.87	34.50	34.36	204	312	VERTICAL	Peak
8	5747.43	49.15	54.00	-4.85	43.09	5.88	34.55	34.37	204	312	VERTICAL	Average

Item 5, 6 are the fundamental frequency at 5580 MHz.

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5703.76	108.31			102.43	5.83	34.40	34.35	226	327	HORIZONTAL	Peak
2	5704.34	98.61			92.73	5.83	34.40	34.35	226	327	HORIZONTAL	Average
3	5725.00	53.49	54.00	-0.51	47.50	5.85	34.50	34.36	226	327	HORIZONTAL	Average
4	5725.29	69.99	74.00	-4.01	64.00	5.85	34.50	34.36	226	327	HORIZONTAL	Peak

Item 1, 2 are the fundamental frequency at 5700 MHz.

Temperature	25℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52, 60, 64 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21, 2015		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5098.40	58.68	74.00	-15.32	54.23	6.10	33.30	34.95	Peak	239	119	VERTICAL
2	5103.20	47.87	54.00	-6.13	43.42	6.10	33.30	34.95	Average	239	119	VERTICAL
3	5254.40	102.49			97.78	6.20	33.45	34.94	Average	239	119	VERTICAL
4	5264.80	112.64			107.90	6.21	33.47	34.94	Peak	239	119	VERTICAL
5	5420.00	61.40	74.00	-12.60	56.40	6.31	33.62	34.93	Peak	239	119	VERTICAL
6	5424.80	49.35	54.00	-4.65	44.35	6.31	33.62	34.93	Average	239	119	VERTICAL

Item 3, 4 are the fundamental frequency at 5260 MHz.

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5292.00	113.26			108.50	6.22	33.48	34.94	Peak	250	53	VERTICAL
2	5307.20	103.14			98.35	6.23	33.50	34.94	Average	250	53	VERTICAL
3	5452.80	50.12	54.00	-3.88	45.07	6.33	33.65	34.93	Average	250	53	VERTICAL
4	5457.60	62.49	74.00	-11.51	57.44	6.33	33.65	34.93	Peak	250	53	VERTICAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5316.80	103.62			98.80	6.24	33.52	34.94	Average	250	53	VERTICAL
2	5316.80	114.18			109.36	6.24	33.52	34.94	Peak	250	53	VERTICAL
3	5352.00	53.46	54.00	-0.54	48.59	6.26	33.55	34.94	Average	250	53	VERTICAL
4	5352.80	73.42	74.00	-0.58	68.55	6.26	33.55	34.94	Peak	250	53	VERTICAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100, 116, 140 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21, 2015		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5457.60	64.90	74.00	-9.10	59.86	5.63	33.72	34.31	254	314	VERTICAL	Peak
2	5458.80	49.22	54.00	-4.78	44.18	5.63	33.72	34.31	254	314	VERTICAL	Average
3	5468.80	53.83	54.00	-0.17	48.75	5.64	33.75	34.31	254	314	VERTICAL	Average
4	5470.00	70.36	74.00	-3.64	65.28	5.64	33.75	34.31	254	314	VERTICAL	Peak
5	5503.60	105.02			99.88	5.65	33.80	34.31	254	314	VERTICAL	Average
6	5507.60	115.81			110.66	5.66	33.80	34.31	254	314	VERTICAL	Peak

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 116

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5418.00	61.31	74.00	-12.69	56.35	5.62	33.66	34.32	241	317	VERTICAL	Peak
2	5428.00	50.56	54.00	-3.44	45.60	5.62	33.66	34.32	241	317	VERTICAL	Average
3	5469.00	58.16	74.00	-15.84	53.08	5.64	33.75	34.31	241	317	VERTICAL	Peak
4	5470.00	45.85	54.00	-8.15	40.77	5.64	33.75	34.31	241	317	VERTICAL	Average
5	5574.00	115.96			110.58	5.71	34.00	34.33	241	317	VERTICAL	Peak
6	5578.00	106.24			100.80	5.72	34.05	34.33	241	317	VERTICAL	Average
7	5739.00	62.57	74.00	-11.43	56.51	5.87	34.55	34.36	241	317	VERTICAL	Peak
8	5744.00	51.17	54.00	-2.83	45.11	5.87	34.55	34.36	241	317	VERTICAL	Average

Item 5, 6 are the fundamental frequency at 5580 MHz.

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5695.20	101.82			95.94	5.83	34.40	34.35	230	56	VERTICAL	Average
2	5695.20	112.15			106.27	5.83	34.40	34.35	230	56	VERTICAL	Peak
3	5725.00	53.83	54.00	-0.17	47.84	5.85	34.50	34.36	230	56	VERTICAL	Average
4	5725.00	70.57	74.00	-3.43	64.58	5.85	34.50	34.36	230	56	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5700 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54, 62 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21, 2015		

Channel 54

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5124.00	48.52	54.00	-5.48	44.25	5.50	33.12	34.35	293	147	VERTICAL	Average
2	5124.00	59.78	74.00	-14.22	55.51	5.50	33.12	34.35	293	147	VERTICAL	Peak
3	5255.00	110.37			105.79	5.55	33.36	34.33	293	147	VERTICAL	Peak
4	5265.00	100.52			95.90	5.56	33.39	34.33	293	147	VERTICAL	Average
5	5350.00	60.96	74.00	-13.04	56.16	5.59	33.53	34.32	293	147	VERTICAL	Peak
6	5416.00	49.36	54.00	-4.64	44.42	5.62	33.64	34.32	293	147	VERTICAL	Average

Item 3, 4 are the fundamental frequency at 5270 MHz.

Channel 62

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5304.40	96.31			91.62	5.57	33.45	34.33	278	136	VERTICAL	Average
2	5314.40	105.81			101.09	5.58	33.47	34.33	278	136	VERTICAL	Peak
3	5350.00	53.89	54.00	-0.11	49.09	5.59	33.53	34.32	278	136	VERTICAL	Average
4	5354.80	70.56	74.00	-3.44	65.74	5.59	33.55	34.32	278	136	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5310 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102, 110, 134 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21, 2015		

Channel 102

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5458.40	49.10	54.00	-4.90	44.06	5.63	33.72	34.31	250	317	VERTICAL	Average
2	5459.60	64.13	74.00	-9.87	59.09	5.63	33.72	34.31	250	317	VERTICAL	Peak
3	5468.40	53.23	54.00	-0.77	48.16	5.63	33.75	34.31	250	317	VERTICAL	Average
4	5468.80	68.18	74.00	-5.82	63.10	5.64	33.75	34.31	250	317	VERTICAL	Peak
5	5516.80	108.05			102.85	5.66	33.85	34.31	250	317	VERTICAL	Peak
6	5523.60	97.98			92.76	5.68	33.85	34.31	250	317	VERTICAL	Average

Item 5, 6 are the fundamental frequency at 5510 MHz.

Channel 110

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5458.00	49.70	54.00	-4.30	44.66	5.63	33.72	34.31	268	317	VERTICAL	Average
2	5459.00	63.22	74.00	-10.78	63.22	5.63	33.72	34.31	268	317	VERTICAL	Peak
3	5468.00	63.41	74.00	-10.59	63.41	5.64	33.75	34.31	268	317	VERTICAL	Peak
4	5469.00	51.77	54.00	-2.23	46.69	5.64	33.75	34.31	268	317	VERTICAL	Average
5	5554.00	104.05			98.73	5.69	33.95	34.32	268	317	VERTICAL	Average
6	5554.00	114.05			114.05	5.69	33.95	34.32	268	317	VERTICAL	Peak

Item 5, 6 are the fundamental frequency at 5550 MHz.

Channel 134

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5660.00	101.65			95.91	5.79	34.30	34.35	259	56	VERTICAL	Average
2	5665.20	112.50			106.76	5.79	34.30	34.35	259	56	VERTICAL	Peak
3	5725.00	53.91	54.00	-0.09	47.92	5.85	34.50	34.36	259	56	VERTICAL	Average
4	5730.40	71.45	74.00	-2.55	65.44	5.87	34.50	34.36	259	56	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5670 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58, 106, 122 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Aug. 21, 2015		

Channel 58

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5133.00	57.08	74.00	-16.92	52.78	5.50	33.15	34.35	261	136	VERTICAL	Peak
2	5148.00	46.12	54.00	-7.88	41.78	5.51	33.17	34.34	261	136	VERTICAL	Average
3	5299.00	91.67			86.98	5.57	33.45	34.33	261	136	VERTICAL	Average
4	5304.00	101.23			96.54	5.57	33.45	34.33	261	136	VERTICAL	Peak
5	5350.00	53.78	54.00	-0.22	48.98	5.59	33.53	34.32	261	136	VERTICAL	Average
6	5360.00	64.39	74.00	-9.61	59.57	5.59	33.55	34.32	261	136	VERTICAL	Peak

Item 3, 4 are the fundamental frequency at 5290 MHz.

Channel 106

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5459.00	53.93	54.00	-0.07	48.89	5.63	33.72	34.31	273	317	VERTICAL	Average
2	5459.00	65.94	74.00	-8.06	60.90	5.63	33.72	34.31	273	317	VERTICAL	Peak
3	5470.00	68.06	68.20	-0.14	62.98	5.64	33.75	34.31	273	317	VERTICAL	Peak
4	5544.00	95.44			90.12	5.69	33.95	34.32	273	317	VERTICAL	Average
5	5557.00	105.08			99.76	5.69	33.95	34.32	273	317	VERTICAL	Peak
6	5727.00	59.31	68.20	-8.89	53.30	5.87	34.50	34.36	273	317	VERTICAL	Peak

Item 4, 5 are the fundamental frequency at 5530 MHz.

Channel 122

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5459.00	53.24	54.00	-0.76	48.20	5.63	33.72	34.31	297	315	VERTICAL	Average
2	5459.00	65.60	74.00	-8.40	60.56	5.63	33.72	34.31	297	315	VERTICAL	Peak
3	5461.00	65.42	68.20	-2.78	60.38	5.63	33.72	34.31	297	315	VERTICAL	Peak
4	5579.00	100.33			94.89	5.72	34.05	34.33	297	315	VERTICAL	Average
5	5597.00	110.31			104.80	5.74	34.10	34.33	297	315	VERTICAL	Peak
6	5759.00	67.66	68.20	-0.54	61.55	5.88	34.60	34.37	297	315	VERTICAL	Peak

Item 4, 5 are the fundamental frequency at 5610 MHz.

Straddle Channel

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 144 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Channel 144

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5722.89	105.68			99.69	5.85	34.50	34.36	230	133	VERTICAL	Average
2	5723.47	115.09			109.10	5.85	34.50	34.36	230	133	VERTICAL	Peak
3	5883.00	61.82	74.00	-12.18	55.29	5.98	34.95	34.40	230	133	VERTICAL	Peak
4	5885.31	51.01	54.00	-2.99	44.48	5.98	34.95	34.40	230	133	VERTICAL	Average

Item 1, 2 are the fundamental frequency at 5720 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Channel 144

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5718.84	105.08			99.14	5.85	34.45	34.36	223	147	VERTICAL	Average
2	5719.42	114.58			108.64	5.85	34.45	34.36	223	147	VERTICAL	Peak
3	5874.31	51.93	54.00	-2.07	45.40	5.97	34.95	34.39	223	147	VERTICAL	Average
4	5874.31	63.78	74.00	-10.22	57.25	5.97	34.95	34.39	223	147	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5720 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Channel 142

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5718.68	101.96			96.02	5.85	34.45	34.36	224	143	VERTICAL	Average
2	5719.26	111.44			105.50	5.85	34.45	34.36	224	143	VERTICAL	Peak
3	5859.26	62.17	74.00	-11.83	55.71	5.95	34.90	34.39	224	143	VERTICAL	Peak
4	5863.89	50.79	54.00	-3.21	44.31	5.97	34.90	34.39	224	143	VERTICAL	Average

Item 1, 2 are the fundamental frequency at 5710 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Sep. 14, 2015		

Channel 138

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5679.15	99.43			93.62	5.81	34.35	34.35	226	147	VERTICAL	Average
2	5679.87	108.66			102.85	5.81	34.35	34.35	226	147	VERTICAL	Peak
3	5859.41	68.66	74.00	-5.34	62.20	5.95	34.90	34.39	226	147	VERTICAL	Peak
4	5863.75	53.61	54.00	-0.39	47.13	5.97	34.90	34.39	226	147	VERTICAL	Average

Item 1, 2 are the fundamental frequency at 5690 MHz.

<For Beamforming Mode>

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52, 60, 64 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5262.80	103.38			96.93	7.39	33.39	34.33	250	48	VERTICAL	Average
2	5264.40	113.26			106.81	7.39	33.39	34.33	250	48	VERTICAL	Peak
3	5350.00	46.50	54.00	-7.50	39.83	7.46	33.53	34.32	250	48	VERTICAL	Average
4	5350.00	58.06	74.00	-15.94	51.39	7.46	33.53	34.32	250	48	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5260 MHz.

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5293.60	102.19			95.65	7.42	33.45	34.33	250	312	VERTICAL	Average
2	5296.00	112.19			105.65	7.42	33.45	34.33	250	312	VERTICAL	Peak
3	5374.40	47.77	54.00	-6.23	41.02	7.49	33.58	34.32	250	312	VERTICAL	Average
4	5379.20	60.62	74.00	-13.38	53.87	7.49	33.58	34.32	250	312	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5327.20	103.31			96.70	7.44	33.50	34.33	268	128	VERTICAL	Average
2	5328.00	112.75			106.14	7.44	33.50	34.33	268	128	VERTICAL	Peak
3	5350.00	52.11	54.00	-1.89	45.44	7.46	33.53	34.32	268	128	VERTICAL	Average
4	5353.80	73.45	74.00	-0.55	66.78	7.46	33.53	34.32	268	128	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100, 116, 140 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5460.00	48.62	54.00	-5.38	41.58	7.63	33.72	34.31	250	128	VERTICAL	Average
2	5460.00	60.04	74.00	-13.96	53.00	7.63	33.72	34.31	250	128	VERTICAL	Peak
3	5470.00	51.25	54.00	-2.75	44.15	7.66	33.75	34.31	250	128	VERTICAL	Average
4	5470.00	64.54	74.00	-9.46	57.44	7.66	33.75	34.31	250	128	VERTICAL	Peak
5	5501.40	104.58			97.37	7.72	33.80	34.31	250	128	VERTICAL	Average
6	5501.60	115.25			108.04	7.72	33.80	34.31	250	128	VERTICAL	Peak

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 116

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5460.00	47.37	54.00	-6.63	40.33	7.63	33.72	34.31	250	126	VERTICAL	Average
2	5460.00	59.01	74.00	-14.99	51.97	7.63	33.72	34.31	250	126	VERTICAL	Peak
3	5470.00	47.77	54.00	-6.23	40.67	7.66	33.75	34.31	250	126	VERTICAL	Average
4	5470.00	59.19	74.00	-14.81	52.09	7.66	33.75	34.31	250	126	VERTICAL	Peak
5	5572.20	105.53			98.02	7.85	33.99	34.33	250	126	VERTICAL	Average
6	5573.40	114.03			106.52	7.85	33.99	34.33	250	126	VERTICAL	Peak
7	5725.00	47.58	54.00	-6.42	39.62	7.87	34.45	34.36	250	126	VERTICAL	Average
8	5725.00	59.36	74.00	-14.64	51.40	7.87	34.45	34.36	250	126	VERTICAL	Peak

Item 5, 6 are the fundamental frequency at 5580 MHz.

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5692.00	102.23			94.34	7.88	34.36	34.35	271	153	VERTICAL	Average
2	5694.80	111.59			103.70	7.88	34.36	34.35	271	153	VERTICAL	Peak
3	5725.00	53.51	54.00	-0.49	45.55	7.87	34.45	34.36	271	153	VERTICAL	Average
4	5725.00	69.33	74.00	-4.67	61.37	7.87	34.45	34.36	271	153	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5700 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54, 62 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Channel 54

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5282.00	102.89			96.40	7.40	33.42	34.33	246	133	VERTICAL	Average
2	5283.60	112.71			106.22	7.40	33.42	34.33	246	133	VERTICAL	Peak
3	5351.60	49.76	54.00	-4.24	43.09	7.46	33.53	34.32	246	133	VERTICAL	Average
4	5351.60	63.24	74.00	-10.76	56.57	7.46	33.53	34.32	246	133	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5270 MHz.

Channel 62

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5326.40	96.40			89.79	7.44	33.50	34.33	250	134	VERTICAL	Average
2	5326.80	105.43			98.82	7.44	33.50	34.33	250	134	VERTICAL	Peak
3	5350.00	53.41	54.00	-0.59	46.74	7.46	33.53	34.32	250	134	VERTICAL	Average
4	5352.00	68.76	74.00	-5.24	62.09	7.46	33.53	34.32	250	134	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5310 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102, 110, 134 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Channel 102

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5460.00	50.03	54.00	-3.97	42.99	7.63	33.72	34.31	250	130	VERTICAL	Average
2	5460.00	61.57	74.00	-12.43	54.53	7.63	33.72	34.31	250	130	VERTICAL	Peak
3	5470.00	53.78	54.00	-0.22	46.68	7.66	33.75	34.31	250	130	VERTICAL	Average
4	5470.00	68.60	74.00	-5.40	61.50	7.66	33.75	34.31	250	130	VERTICAL	Peak
5	5502.80	97.98			90.77	7.72	33.80	34.31	250	130	VERTICAL	Average
6	5503.60	108.10			100.89	7.72	33.80	34.31	250	130	VERTICAL	Peak

Item 5, 6 are the fundamental frequency at 5510 MHz.

Channel 110

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5460.00	49.90	54.00	-4.10	42.86	7.63	33.72	34.31	250	138	VERTICAL	Average
2	5460.00	63.26	74.00	-10.74	56.22	7.63	33.72	34.31	250	138	VERTICAL	Peak
3	5470.00	51.33	54.00	-2.67	44.23	7.66	33.75	34.31	250	138	VERTICAL	Average
4	5470.00	64.00	74.00	-10.00	56.90	7.66	33.75	34.31	250	138	VERTICAL	Peak
5	5543.60	101.80			94.36	7.82	33.94	34.32	250	138	VERTICAL	Average
6	5544.80	111.33			103.89	7.82	33.94	34.32	250	138	VERTICAL	Peak

Item 5, 6 are the fundamental frequency at 5550 MHz.

Channel 134

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5663.20	110.68			102.87	7.89	34.27	34.35	301	130	VERTICAL	Peak
2	5664.40	101.22			93.41	7.89	34.27	34.35	301	130	VERTICAL	Average
3	5725.00	51.82	54.00	-2.18	43.86	7.87	34.45	34.36	301	130	VERTICAL	Average
4	5728.40	69.68	74.00	-4.32	61.72	7.87	34.45	34.36	301	130	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5670 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58, 106, 122 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Channel 58

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5262.80	93.74			87.29	7.39	33.39	34.33	250	47	VERTICAL	Average
2	5319.60	105.53			98.96	7.43	33.47	34.33	250	47	VERTICAL	Peak
3	5350.00	53.49	54.00	-0.51	46.82	7.46	33.53	34.32	250	47	VERTICAL	Average
4	5382.80	67.04	74.00	-6.96	60.29	7.49	33.58	34.32	250	47	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5290 MHz.

Channel 106

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5452.80	66.14	74.00	-7.86	59.10	7.63	33.72	34.31	250	133	VERTICAL	Peak
2	5460.00	53.86	54.00	-0.14	46.82	7.63	33.72	34.31	250	133	VERTICAL	Average
3	5467.60	66.53	74.00	-7.47	59.43	7.66	33.75	34.31	250	133	VERTICAL	Peak
4	5470.00	53.98	54.00	-0.02	46.88	7.66	33.75	34.31	250	133	VERTICAL	Average
5	5500.40	94.68			87.47	7.72	33.80	34.31	250	133	VERTICAL	Average
6	5500.40	103.92			96.71	7.72	33.80	34.31	250	133	VERTICAL	Peak

Item 5, 6 are the fundamental frequency at 5530 MHz.

Channel 122

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5460.00	49.26	54.00	-4.74	42.22	7.63	33.72	34.31	283	174	VERTICAL	Average
2	5460.00	60.36	74.00	-13.64	53.32	7.63	33.72	34.31	283	174	VERTICAL	Peak
3	5470.00	50.14	54.00	-3.86	43.04	7.66	33.75	34.31	283	174	VERTICAL	Average
4	5470.00	61.21	74.00	-12.79	54.11	7.66	33.75	34.31	283	174	VERTICAL	Peak
5	5595.60	97.67			90.01	7.91	34.08	34.33	283	174	VERTICAL	Average
6	5595.60	108.18			100.52	7.91	34.08	34.33	283	174	VERTICAL	Peak
7	5728.40	51.93	54.00	-2.07	43.97	7.87	34.45	34.36	283	174	VERTICAL	Average
8	5763.60	67.78	74.00	-6.22	59.74	7.86	34.55	34.37	283	174	VERTICAL	Peak

Item 5, 6 are the fundamental frequency at 5610 MHz.

Straddle Channel

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Channel 144

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5721.80	112.22			104.29	7.88	34.41	34.36	250	172	VERTICAL	Peak
2	5727.80	102.58			94.62	7.87	34.45	34.36	250	172	VERTICAL	Average
3	5850.00	47.89	54.00	-6.11	39.66	7.84	34.78	34.39	250	172	VERTICAL	Average
4	5850.00	57.74	74.00	-16.26	49.51	7.84	34.78	34.39	250	172	VERTICAL	Peak
5	5860.00	48.00	54.00	-6.00	39.73	7.83	34.83	34.39	250	172	VERTICAL	Average
6	5860.00	47.51	54.00	-6.49	39.24	7.83	34.83	34.39	250	172	VERTICAL	Average
7	5860.00	59.32	74.00	-14.68	51.05	7.83	34.83	34.39	250	172	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5720 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Channel 142

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5722.00	109.45			101.52	7.88	34.41	34.36	250	147	VERTICAL	Peak
2	5722.80	100.16			92.20	7.87	34.45	34.36	250	147	VERTICAL	Average
3	5857.20	49.62	54.00	-4.38	41.35	7.83	34.83	34.39	250	147	VERTICAL	Average
4	5858.00	61.65	74.00	-12.35	53.38	7.83	34.83	34.39	250	147	VERTICAL	Peak
5	5860.00	49.48	54.00	-4.52	41.21	7.83	34.83	34.39	250	147	VERTICAL	Average
6	5884.40	61.73	74.00	-12.27	53.43	7.83	34.87	34.40	250	147	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5710 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138 / Chain 5 + Chain 6 + Chain 7 + Chain 8
Test Date	Nov. 29, 2015		

Channel 138

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5722.00	109.45			101.52	7.88	34.41	34.36	250	147	VERTICAL	Peak
2	5722.80	100.16			92.20	7.87	34.45	34.36	250	147	VERTICAL	Average
3	5857.20	49.62	54.00	-4.38	41.35	7.83	34.83	34.39	250	147	VERTICAL	Average
4	5858.00	61.65	74.00	-12.35	53.38	7.83	34.83	34.39	250	147	VERTICAL	Peak
5	5860.00	49.48	54.00	-4.52	41.21	7.83	34.83	34.39	250	147	VERTICAL	Average
6	5884.40	61.73	74.00	-12.27	53.43	7.83	34.87	34.40	250	147	VERTICAL	Peak

Item 1, 2 are the fundamental frequency at 5690 MHz.

Note:

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

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

4.7. Frequency Stability Measurement

4.7.1. 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).

4.7.2. Measuring Instruments and Setting

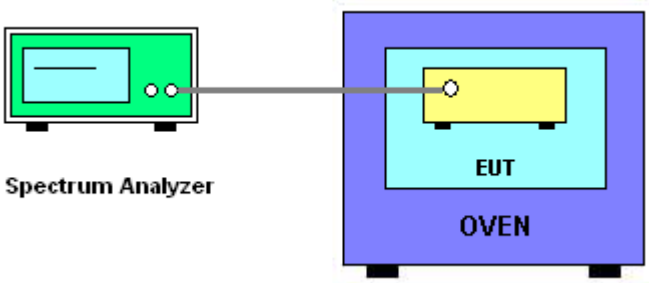
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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

4.7.3. 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 0°C~50°C.

4.7.4. Test Setup Layout



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 un-modulation transmitting mode.

4.7.7. Test Result of Frequency Stability

Temperature	23°C	Humidity	54%
Test Engineer	Serway Li	Test Date	Sep. 15, 2015 ~ Dec. 01, 2015

Mode: 20 MHz / Chain 6

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5300 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5300.0078	5300.0065	5300.0049	5300.0030
110.00	5300.0066	5300.0053	5300.0037	5300.0018
93.50	5300.0052	5300.0039	5300.0023	5300.0004
Max. Deviation (MHz)	**0.0078**	**0.0065**	**0.0049**	**0.0030**
Max. Deviation (ppm)	**1.47**	**1.23**	**0.92**	**0.57**
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5300 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5300.0122	5300.0109	5300.0092	5300.0071
10	5300.0105	5300.0092	5300.0076	5300.0057
20	5300.0066	5300.0078	5300.0062	5300.0043
30	5300.0078	5300.0065	5300.0049	5300.0030
40	5300.0066	5300.0053	5300.0037	5300.0018
50	5300.0051	5300.0038	5300.0022	5300.0003
Max. Deviation (MHz)	**0.0122**	**0.0109**	**0.0092**	**0.0071**
Max. Deviation (ppm)	**2.30**	**2.06**	**1.74**	**1.34**
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5580 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5580.0132	5580.0119	5580.0103	5580.0084
110.00	5580.0120	5580.0107	5580.0091	5580.0072
93.50	5580.0106	5580.0093	5580.0077	5580.0058
Max. Deviation (MHz)	**0.0132**	**0.0119**	**0.0103**	**0.0084**
Max. Deviation (ppm)	**2.37**	**2.13**	**1.85**	**1.51**
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5580 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5580.0159	5580.0146	5580.0130	5580.0111
10	5580.0145	5580.0132	5580.0116	5580.0097
20	5580.0120	5580.0119	5580.0103	5580.0084
30	5580.0120	5580.0107	5580.0091	5580.0072
40	5580.0105	5580.0092	5580.0076	5580.0057
50	5580.0090	5580.0077	5580.0061	5580.0042
Max. Deviation (MHz)	**0.0159**	**0.0146**	**0.0130**	**0.0111**
Max. Deviation (ppm)	**2.85**	**2.62**	**2.33**	**1.99**
Result	Complies			

Mode: 40 MHz / Chain 6

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5310 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5309.9946	5309.9933	5309.9917	5309.9898
110.00	5309.9934	5309.9921	5309.9905	5309.9886
93.50	5309.9920	5309.9907	5309.9891	5309.9872
Max. Deviation (MHz)	**0.0080**	**0.0093**	**0.0109**	**0.0128**
Max. Deviation (ppm)	**1.51**	**1.75**	**2.05**	**2.41**
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5310 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5309.9959	5309.9946	5309.9930	5309.9911
10	5309.9946	5309.9933	5309.9917	5309.9898
20	5309.9934	5309.9921	5309.9905	5309.9886
30	5309.9919	5309.9906	5309.9890	5309.9871
40	5309.9904	5309.9891	5309.9875	5309.9856
50	5309.9883	5309.9869	5309.9852	5309.9831
Max. Deviation (MHz)	**0.0117**	**0.0131**	**0.0148**	**0.0169**
Max. Deviation (ppm)	**2.20**	**2.47**	**2.79**	**3.18**
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5550 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5550.0072	5550.0059	5550.0043	5550.0024
110.00	5550.0060	5550.0047	5550.0031	5550.0012
93.50	5550.0046	5550.0033	5550.0017	5549.9998
Max. Deviation (MHz)	**0.0072**	**0.0059**	**0.0043**	**0.0024**
Max. Deviation (ppm)	**1.30**	**1.06**	**0.77**	**0.43**
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5550 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5550.0116	5550.0103	5550.0086	5550.0065
10	5550.0099	5550.0086	5550.0070	5550.0051
20	5550.0060	5550.0072	5550.0056	5550.0037
30	5550.0072	5550.0059	5550.0043	5550.0024
40	5550.0060	5550.0047	5550.0031	5550.0012
50	5550.0045	5550.0032	5550.0016	5549.9997
Max. Deviation (MHz)	**0.0116**	**0.0103**	**0.0086**	**0.0065**
Max. Deviation (ppm)	**2.09**	**1.86**	**1.55**	**1.17**
Result	Complies			

Mode: 80 MHz / Chain 6

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5290 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5289.9958	5289.9945	5289.9929	5289.9910
110.00	5289.9946	5289.9933	5289.9917	5289.9898
93.50	5289.9932	5289.9919	5289.9903	5289.9884
Max. Deviation (MHz)	**0.0068**	**0.0081**	**0.0097**	**0.0116**
Max. Deviation (ppm)	**1.29**	**1.53**	**1.83**	**2.19**
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5290 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5290.0002	5289.9989	5289.9972	5289.9951
10	5289.9985	5289.9972	5289.9956	5289.9937
20	5289.9946	5289.9958	5289.9942	5289.9923
30	5289.9958	5289.9945	5289.9929	5289.9910
40	5289.9946	5289.9933	5289.9917	5289.9898
50	5289.9931	5289.9918	5289.9902	5289.9883
Max. Deviation (MHz)	**0.0069**	**0.0082**	**0.0098**	**0.0117**
Max. Deviation (ppm)	**1.30**	**1.55**	**1.85**	**2.21**
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5530 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5530.0000	5529.9987	5529.9971	5529.9952
110.00	5529.9988	5529.9975	5529.9959	5529.9940
93.50	5529.9974	5529.9961	5529.9945	5529.9926
Max. Deviation (MHz)	**0.0026**	**0.0039**	**0.0055**	**0.0074**
Max. Deviation (ppm)	**0.47**	**0.71**	**0.99**	**1.34**
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5530 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5530.0013	5530.0000	5529.9984	5529.9965
10	5530.0000	5529.9987	5529.9971	5529.9952
20	5529.9988	5529.9975	5529.9959	5529.9940
30	5529.9973	5529.9960	5529.9944	5529.9925
40	5529.9958	5529.9945	5529.9929	5529.9910
50	5529.9937	5529.9923	5529.9906	5529.9885
Max. Deviation (MHz)	**0.0063**	**0.0077**	**0.0094**	**0.0115**
Max. Deviation (ppm)	**1.14**	**1.39**	**1.70**	**2.08**
Result	Complies			

4.8. Antenna Requirements

4.8.1. 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.

4.8.2. 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
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Oct. 28, 2014	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	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)
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)
Spectrum analyzer	R&S	FSP40	100142	9kHz~40GHz	Oct. 15, 2014	Conducted (TH01-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Oct. 13, 2015	Conducted (TH01-CB
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 12, 2014	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)

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

6. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty	Remark
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%