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FCC RADIO TEST REPORT

Applicant's company	Arcadyan Technology Corporation
Applicant Address	No.8, Sec.2, Guangfu Rd., Hsinchu, 30071 Taiwan
FCC ID	RAX-AIOS4-0S
Manufacturer's company	Arcadyan Technology Corporation
Manufacturer Address	No.8, Sec.2, Guangfu Rd., Hsinchu, 30071 Taiwan

Product Name	HEOS 4.X Platform Module
Brand Name	Arcadyan
Model No.	AIOS4.0S, AIOS4.0V, AIOS4.0R, AIOS4.0F
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5150 ~ 5350MHz / 5470 ~ 5725MHz / 5725 ~ 5850 MHz
Received Date	Jul. 22, 2015
Final Test Date	Sep. 10, 2015
Submission Type	Original Equipment

Statement

Test result included is for the IEEE 802.11n and IEEE 802.11a/ac of the product.

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

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The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.10-2013, 47 CFR FCC Part 15 Subpart E, KDB789033 D02 v01, KDB662911 D01 v02r01, KDB644545 D03 v01.**

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



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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR581110-01AD	Rev. 01	Initial issue of report	Sep. 24, 2015



1. VERIFICATION OF COMPLIANCE

Product Name : HEOS 4.X Platform Module
Brand Name : Arcadyan
Model No. : AIOS4.0S, AIOS4.0V, AIOS4.0R, AIOS4.0F
Applicant : Arcadyan Technology Corporation
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 Jul. 22, 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.

A handwritten signature in blue ink that reads 'Sam Chen'. The signature is written in a cursive style and is positioned above a horizontal line.

Sam Chen

SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart E				
Part	Rule Section	Description of Test	Result	Under Limit
4.1	15.207	AC Power Line Conducted Emissions	Complies	23.08 dB
4.2	15.407(a)	26dB Spectrum Bandwidth and 99% Occupied Bandwidth	Complies	-
4.3	15.407(e)	6dB Spectrum Bandwidth	Complies	-
4.4	15.407(a)	Maximum Conducted Output Power	Complies	0.51 dB
4.5	15.407(a)	Power Spectral Density	Complies	0.01 dB
4.6	15.407(b)	Radiated Emissions	Complies	3.01 dB
4.7	15.407(b)	Band Edge Emissions	Complies	1.01 dB
4.8	15.407(g)	Frequency Stability	Complies	-
4.9	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

Items	Description
Product Type	WLAN (2TX, 2RX)
Radio Type	Intentional Transceiver
Power Type	From host system
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)
Data Rate (Mbps)	IEEE 802.11a: OFDM (6/9/12/18/24/36/48/54) IEEE 802.11n/ac: see the below table
Frequency Range	5150 ~ 5350MHz / 5470 ~ 5725MHz / 5725 ~ 5850 MHz
Channel Number	25 for 20MHz bandwidth ; 12 for 40MHz bandwidth 6 for 80MHz bandwidth
Channel Band Width (99%)	<p><u>For non-beamforming function:</u></p> <p>Band 1:</p> <p>IEEE 802.11a: 17.11 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.97 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.05 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz</p> <p>Band 2:</p> <p>IEEE 802.11a: 16.93 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.80 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.34 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.12 MHz</p> <p>Band 3:</p> <p>IEEE 802.11a: 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.89 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 42.93 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 85.65 MHz</p> <p>Band 4:</p> <p>IEEE 802.11a: 19.54 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 19.02 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.05 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz</p>

	<p><u>For beamforming function:</u></p> <p>Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.14 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz</p> <p>Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.90 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz</p> <p>Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 40.91 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 82.76 MHz</p> <p>Band 4: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.49 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.90 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz</p>
<p>Maximum Conducted Output Power</p>	<p><u>For non-beamforming function:</u></p> <p>Band 1: IEEE 802.11a: 23.32 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.31 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 22.02 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 15.14 dBm</p> <p>Band 2: IEEE 802.11a: 23.32 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.30 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.48 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.73 dBm</p> <p>Band 3: IEEE 802.11a: 23.30 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.28 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.31 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 23.44 dBm</p> <p>Band 4: IEEE 802.11a: 21.69 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 24.87 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.83 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 16.59 dBm</p>

	<p><u>For beamforming function:</u></p> <p>Band 1:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 22.82 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 22.78 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 15.76 dBm</p> <p>Band 2:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 22.82 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 22.72 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.73 dBm</p> <p>Band 3:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 22.81 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 22.77 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 22.80 dBm</p> <p>Band 4:</p> <p>IEEE 802.11ac MCS0/Nss1 (VHT20): 23.75 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 20.83 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 15.97 dBm</p>
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Items	Description	
Communication Mode	<input checked="" type="checkbox"/> IP Based (Load Based)	<input type="checkbox"/> Frame Based
TPC Function	<input checked="" type="checkbox"/> With TPC	<input type="checkbox"/> Without TPC
Weather Band (5600~5650MHz)	<input checked="" type="checkbox"/> With 5600~5650MHz	<input type="checkbox"/> Without 5600~5650MHz
Beamforming Function	<input checked="" type="checkbox"/> With beamforming	<input type="checkbox"/> Without beamforming
Operating Mode	<input type="checkbox"/> Outdoor access point	
	<input type="checkbox"/> Indoor access point	
	<input type="checkbox"/> Fixed point-to-point access points	
	<input checked="" type="checkbox"/> Indoor mobile devices	

Note: The product has beamforming function for 802.11n/ac in 5GHz band.

Antenna and Band width

Antenna	Two (TX)		
	20 MHz	40 MHz	80 MHz
Band width Mode			
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)	2	MCS 0-15
802.11n (HT40)	2	MCS 0-15
802.11ac (VHT20)	2	MCS 0-9/Nss1-2
802.11ac (VHT40)	2	MCS 0-9/Nss1-2
802.11ac (VHT80)	2	MCS 0-9/Nss1-2

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

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

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

3.2. Accessories

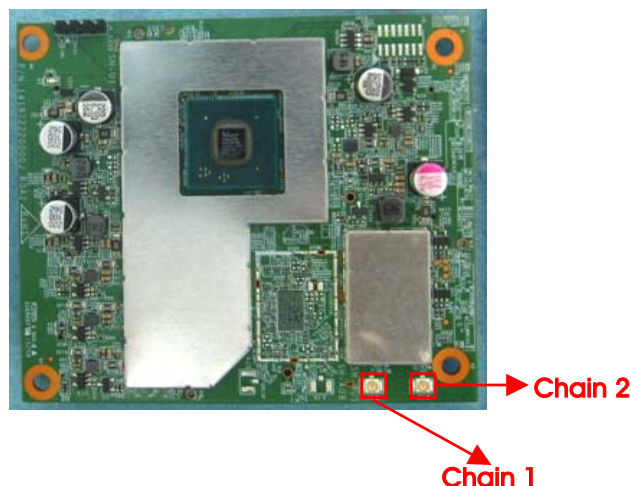
N/A

3.3. Table for Filed Antenna

Set	Brand	P/N	Type	Connector	Gain (dBi)	
					2.4GHz	5GHz
1	Airgain	N2420DG3-T2L-PK1-G30U	PIFA	I-PEX	3.10	3.66
2	Airgain	N2420DG3-T2L-PK1-G100U	PIFA	I-PEX	3.10	3.66
3	Airgain	N2420DG3-T2L-PK1-G600U	PIFA	I-PEX	3.10	3.66
4	Airgain	N2425D-T2L-PK1-G30U	PIFA	I-PEX	1.90	3.50
5	Airgain	N2425D-T2R-PK1-G150U	PIFA	I-PEX	1.90	3.50
6	Airgain	N2425D-T2R-PK1-G30U	PIFA	I-PEX	1.90	3.50
7	Airgain	N2425D-T2R-PK1-G500U	PIFA	I-PEX	1.90	3.50
Set	Brand	Model No.	Type	Connector	Gain (dBi)	
					2.4GHz	5GHz
8	Arcadyan	WN9722A-DM	Dipole	I-PEX	2.94	3.19
9	Arcadyan	WN9722A-DM-300mm	Dipole	I-PEX	2.76	2.63
10	Arcadyan	WN9722A-DM-500mm	Dipole	I-PEX	1.99	2.59

Note: 1. The EUT has ten sets of antenna, and each set contains two antennas.

2. For Conducted measurement, only the highest gain antennas "set 1" was tested and recorded in the report.
3. For Radiated measurement:
 - (1) Because set 1~7 are the same type antennas, only the higher gain antennas "set 1" was tested and recorded in the report.
 - (2) Because set 8~10 are the same type antennas, only the higher gain antennas "set 8" was tested and recorded in the report.
4. For WLAN function: Chain 1 and Chain 2 could transmit/receive simultaneously.
5. For Bluetooth function: Only Chain 1 could transmit/receive simultaneously.



3.4. Table for Carrier Frequencies

There are three bandwidth systems.

For 20MHz bandwidth systems, use Channel 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144, 149, 153, 157, 161, 165.

For 40MHz bandwidth systems, use Channel 38, 46, 54, 62, 102, 110, 118, 126, 134, 142, 151, 159.

For 80MHz bandwidth systems, use Channel 42, 58, 106, 122, 138, 155.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5150~5250 MHz Band 1	36	5180 MHz	44	5220 MHz
	38	5190 MHz	46	5230 MHz
	40	5200 MHz	48	5240 MHz
	42	5210 MHz	-	-
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	-	-
5725~5850 MHz Band 4	149	5745 MHz	157	5785 MHz
	151	5755 MHz	159	5795 MHz
	153	5765 MHz	161	5805 MHz
	155	5775 MHz	165	5825 MHz

3.5. Table for Test Modes

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

Test Items	Mode		Data Rate	Channel	Chain
AC Power Conducted Emission	CTX		-	-	-
Max. Conducted Output Power	11a/BPSK	Band 1~4	6Mbps	36/40/48/52/60/64/ 100/116/140/144/ 149/157/165	1+2
	11ac VHT20	Band 1~4	MCS0/Nss1	36/40/48/52/60/64/ 100/116/140/144/ 149/157/165	1+2
	11ac VHT40	Band 1~4	MCS0/Nss1	38/46/54/62/102/110 /134/142/151/159	1+2
	11ac VHT80	Band 1~4	MCS0/Nss1	42/58/106/122/138/ 155	1+2
Power Spectral Density	11a/BPSK	Band 1~4	6Mbps	36/40/48/52/60/64/ 100/116/140/144/ 149/157/165	1+2
	11ac VHT20	Band 1~4	MCS0/Nss1	36/40/48/52/60/64/ 100/116/140/144/ 149/157/165	1+2
	11ac VHT40	Band 1~4	MCS0/Nss1	38/46/54/62/102/110 /134/142/151/159	1+2
	11ac VHT80	Band 1~4	MCS0/Nss1	42/58/106/122/138/ 155	1+2
26dB Spectrum Bandwidth & 99% Occupied Bandwidth Measurement	11a/BPSK	Band 1~4	6Mbps	36/40/48/52/60/64/ 100/116/140/144/ 149/157/165	1+2
	11ac VHT20	Band 1~4	MCS0/Nss1	36/40/48/52/60/64/ 100/116/140/144/ 149/157/165	1+2
	11ac VHT40	Band 1~4	MCS0/Nss1	38/46/54/62/102/110 /134/142/151/159	1+2
	11ac VHT80	Band 1~4	MCS0/Nss1	42/58/106/122/138/ 155	1+2
6dB Spectrum Bandwidth Measurement	11a/BPSK	Band 4	6Mbps	144/149/157/165	1+2
	11ac VHT20	Band 4	MCS0/Nss1	144/149/157/165	1+2
	11ac VHT40	Band 4	MCS0/Nss1	142/151/159	1+2
	11ac VHT80	Band 4	MCS0/Nss1	138/155	1+2
Radiated Emission Below 1GHz	CTX		-	-	-

Radiated Emission Above 1GHz	11a/BPSK	Band 1~4	6Mbps	36/40/48/52/60/64/ 100/116/140/144/ 149/157/165	1+2
	11ac VHT20	Band 1~4	MCS0/Nss1	36/40/48/52/60/64/ 100/116/140/144/ 149/157/165	1+2
	11ac VHT40	Band 1~4	MCS0/Nss1	38/46/54/62/102/110 /134/142/151/159	1+2
	11ac VHT80	Band 1~4	MCS0/Nss1	42/58/106/122/138/ 155	1+2
Band Edge Emission	11a/BPSK	Band 1~4	6Mbps	36/40/48/52/60/64/ 100/116/140/144/ 149/157/165	1+2
	11ac VHT20	Band 1~4	MCS0/Nss1	36/40/48/52/60/64/ 100/116/140/144/ 149/157/165	1+2
	11ac VHT40	Band 1~4	MCS0/Nss1	38/46/54/62/102/110 /134/142/151/159	1+2
	11ac VHT80	Band 1~4	MCS0/Nss1	42/58/106/122/138/ 155	1+2
Frequency Stability	20 MHz	Band 1~4	-	40/60/116/157	2
	40 MHz	Band 1~4	-	38/62/110/151	2
	80 MHz	Band 1~4	-	42/58/106/155	2

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

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

The following test modes were performed for all tests:

AC Power Line Conducted Emissions test	
Test Mode	CTX
1	EUT (2.4GHz WLAN function) with set 1 antenna
2	EUT (Bluetooth function) with set 1 antenna
3	EUT (5GHz WLAN function) with set 1 antenna
Mode 3 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4 will follow this same test mode.	
4	EUT (5GHz WLAN function) with set 8 antenna
Mode 3 generated the worst test result, so it was recorded in this report.	

Radiated Emission below 1GHz test	
Test Mode	CTX
1	Place EUT in X axis (2.4GHz WLAN function) with set 1 antenna
2	Place EUT in Y axis (2.4GHz WLAN function) with set 1 antenna
3	Place EUT in Z axis (2.4GHz WLAN function) with set 1 antenna
Mode 2 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4~5 will follow this same test mode.	
4	Place EUT in Y axis (Bluetooth function) with set 1 antenna
5	Place EUT in Y axis (5GHz WLAN function) with set 1 antenna
Mode 2 has been evaluated to be the worst case among Mode 1~5, thus measurement for Mode 6 will follow this same test mode.	
6	Place EUT in Y axis (2.4GHz WLAN function) with set 8 antenna
Mode 6 generated the worst test result, so it was recorded in this report.	

Radiated Emission above 1GHz test	
Test Mode	CTX
1	Place EUT in X axis with set 1 antenna
2	Place EUT in Y axis with set 1 antenna
3	Place EUT in Z axis with set 1 antenna
Mode 1 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4 will follow this same test mode.	
4	Place EUT in X axis with set 8 antenna
Mode 1 and Mode 4 has been evaluated to be the worst case after evaluating. Consequently, measurement will follow this same test mode.	

Co-location MPE and Radiated Emission Co-location test
The EUT could be applied with Bluetooth + 2.4GHz WLAN Mode and Bluetooth + 5GHz WLAN Mode; therefore Co-location Maximum Permissible Exposure (Please refer to FA581110-01) and Radiated Emission Co-location (please refer to Appendix C) tests are added for simultaneously transmit between Bluetooth + 2.4GHz WLAN Mode and Bluetooth + 5GHz WLAN Mode.

3.6. Table for Testing Locations

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

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

3.7. Table for Multiple Listing

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

Model No.	Description
AIOS4.0S	All the models are identical, the difference model for difference model number as marketing strategy.
AIOS4.0V	
AIOS4.0R	
AIOS4.0F	

From the above models, model: AIOS4.0S was selected as representative model for the test and its data was recorded in this report.

3.8. CPU Information

There are two CPU of EUT, one is CPU 1.25G and the other is CPU 1G.

CPU 1.25G covers CPU 1G, due to it is the highest CPU speed.

3.9. Table for Supporting Units

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

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC
Test fixture	Arcadyan	WN9722A-DM Test Jig	N/A

For Test Site No: 03CH01-CB (above1GHz)

For non-beamforming function:

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC
Test fixture	Arcadyan	WN9722A-DM Test Jig	N/A

For beamforming function:

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC
Notebook	DELL	E4300	DoC
Wireless ac AP	Netgear	R7000	PY313200233
Test fixture	Arcadyan	WN9722A-DM Test Jig	N/A

For Test Site No: CO01-CB ana TH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC
Test fixture	Arcadyan	WN9722A-DM Test Jig	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.

Test Function	Non-beamforming function												
Test Software Version	Mtool 2.0.1.6												
Mode	Test Frequency (MHz)												
	NCB: 20MHz												
	5180 MHz	5200 MHz	5240 MHz	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	66	75	74	81	81	75	74	84	71	83	71	84	74
802.11ac MCS0/Nss1 VHT20	67	75	74	81	81	76	74	84	69	85	69	90	76
Mode	NCB: 40MHz												
802.11ac MCS0/Nss1 VHT40	5190 MHz	5230 MHz	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	5755 MHz	5795 MHz			
	38	67	79	66	53	79	67	83	46	69			
Mode	NCB: 80MHz												
802.11ac MCS0/Nss1 VHT80	5210 MHz		5290 MHz		5530 MHz		5610 MHz		5690 MHz		5775 MHz		
	39		66		57		77		86		54		

Test Function	Beamforming function												
Test Software Version	DOS												
Mode	Test Frequency (MHz)												
	NCB: 20MHz												
	5180 MHz	5200 MHz	5240 MHz	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz	5745 MHz	5785 MHz	5825 MHz
802.11ac MCS0/Nss1 VHT20	66	74	73	79	80	74	74	83	69	86	68	88	75
Mode	NCB: 40MHz												
802.11ac MCS0/Nss1 VHT40	5190 MHz	5230 MHz	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	5755 MHz	5795 MHz			
	37	70	76	65	51	77	66	81	46	69			
Mode	NCB: 80MHz												
802.11ac MCS0/Nss1 VHT80	5210 MHz		5290 MHz		5530 MHz		5610 MHz		5690 MHz		5775 MHz		
	41		66		60		80		84		51		

3.11. EUT Operation during Test

For non-beamforming function:

The EUT was programmed to be in continuously transmitting mode.

For beamforming function:

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 Wireless ac AP and transmit duty cycle no less 98%

3.12. Duty Cycle

For non-beamforming function:

Test Mode: Mode 1 (PIFA antenna)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.052	2.090	98.18	0.08	0.01
802.11ac MCS0/Nss1 VHT20	1.921	1.955	98.26	0.08	0.01
802.11ac MCS0/Nss1 VHT40	0.913	0.971	94.03	0.27	1.10
802.11ac MCS0/Nss1 VHT80	0.429	0.476	90.13	0.45	2.33

Test Mode: Mode 4 (Dipole antenna)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.050	2.090	98.09	0.08	0.01
802.11ac MCS0/Nss1 VHT20	1.923	1.955	98.36	0.07	0.01
802.11ac MCS0/Nss1 VHT40	0.928	0.966	96.07	0.17	1.08
802.11ac MCS0/Nss1 VHT80	0.428	0.488	87.70	0.57	2.34

For beamforming function:

Test Mode: Mode 1 (PIFA antenna)

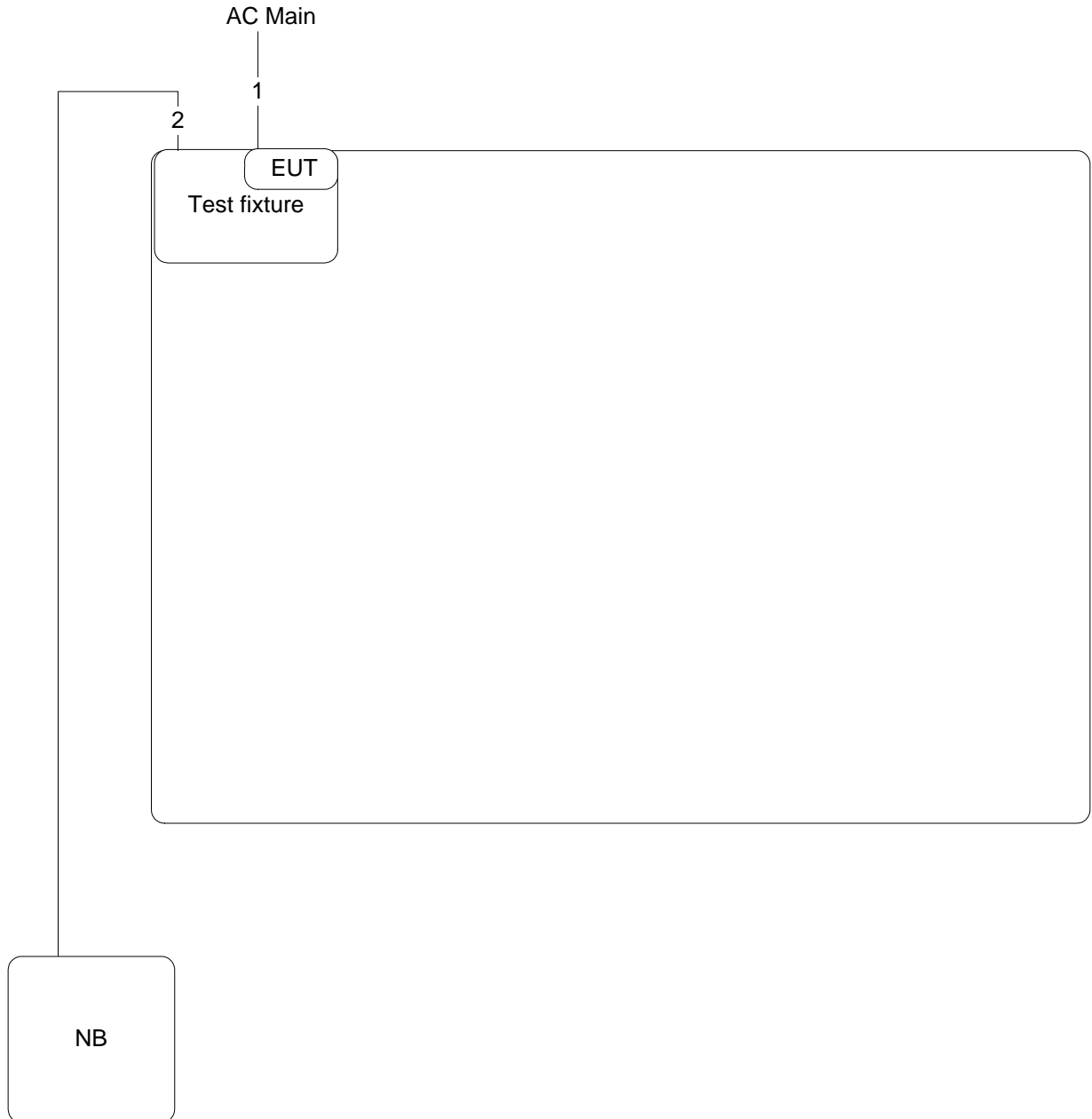
Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	5.409	5.505	98.26	0.08	0.01
802.11ac MCS0/Nss1 VHT40	5.176	6.250	82.82	0.82	0.19
802.11ac MCS0/Nss1 VHT80	5.313	5.433	97.79	0.10	0.19

Test Mode: Mode 4 (Dipole antenna)

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	5.400	5.780	93.43%	0.30	0.19
802.11ac MCS0/Nss1 VHT40	5.150	5.460	94.32%	0.25	0.19
802.11ac MCS0/Nss1 VHT80	5.290	5.631	93.94%	0.27	0.19

3.13. Test Configurations

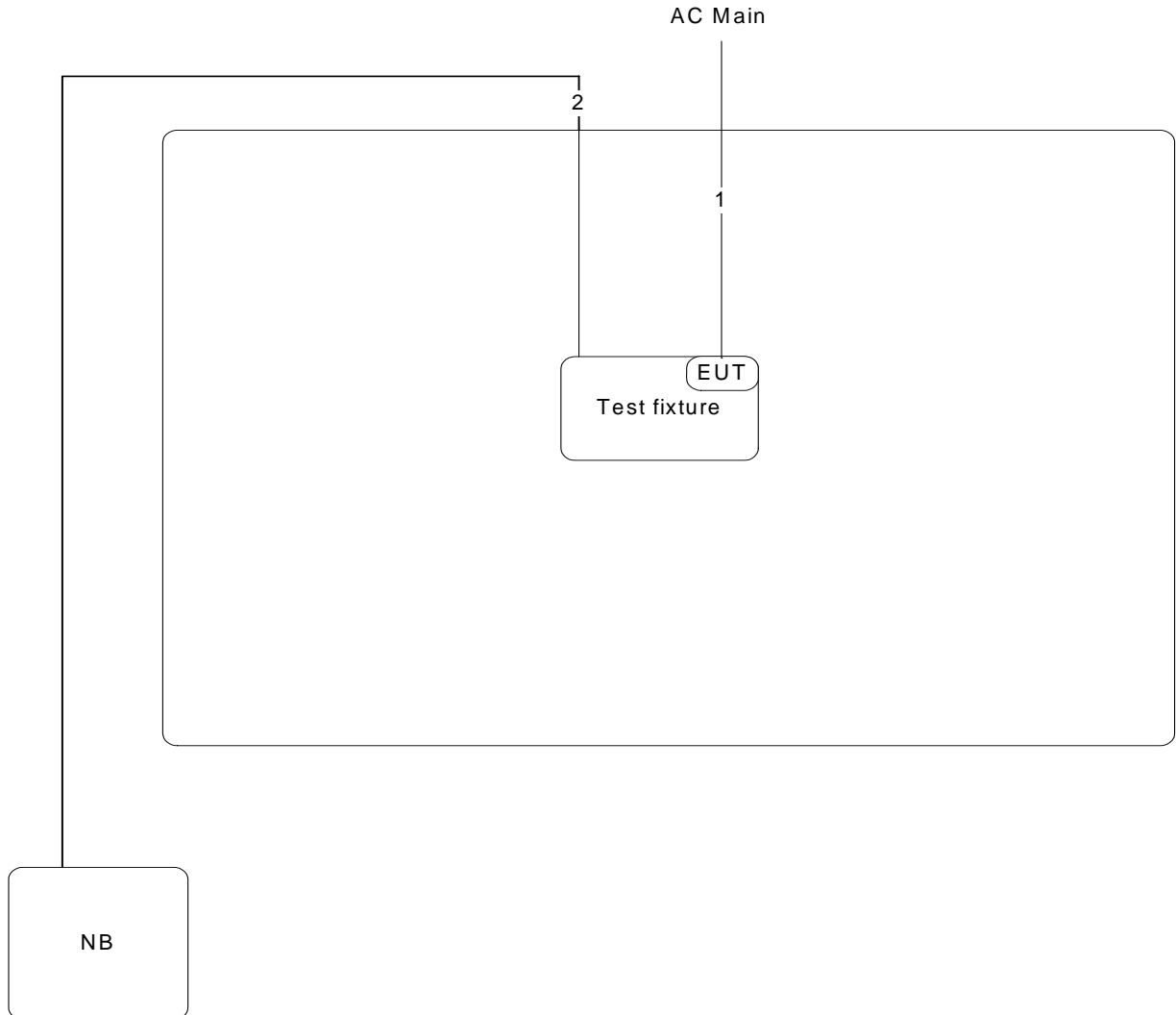
3.13.1. AC Power Line Conduction Emissions Test Configuration



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

3.13.2. Radiation Emissions Test Configuration

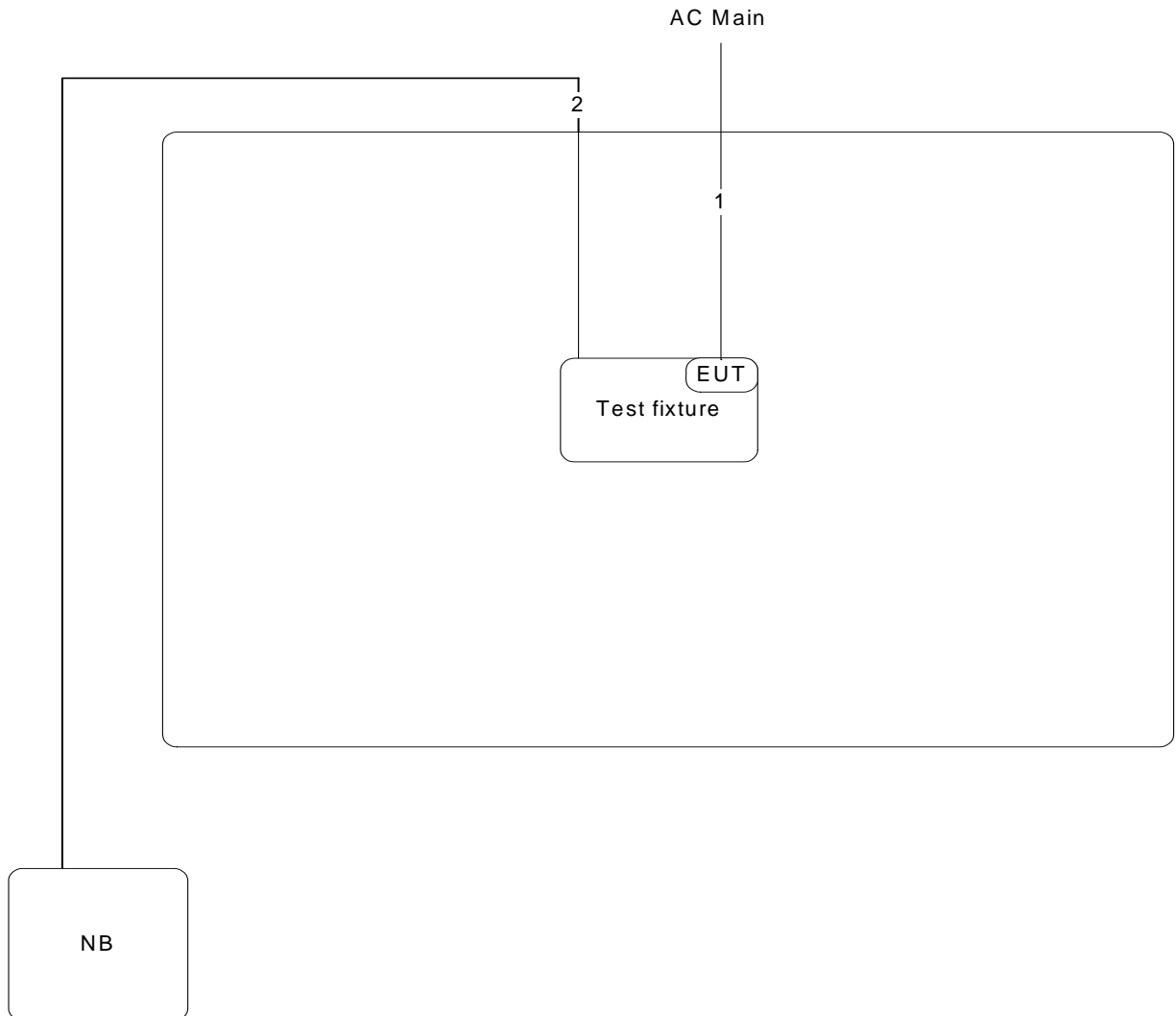
Test Configuration: 30MHz~1GHz



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

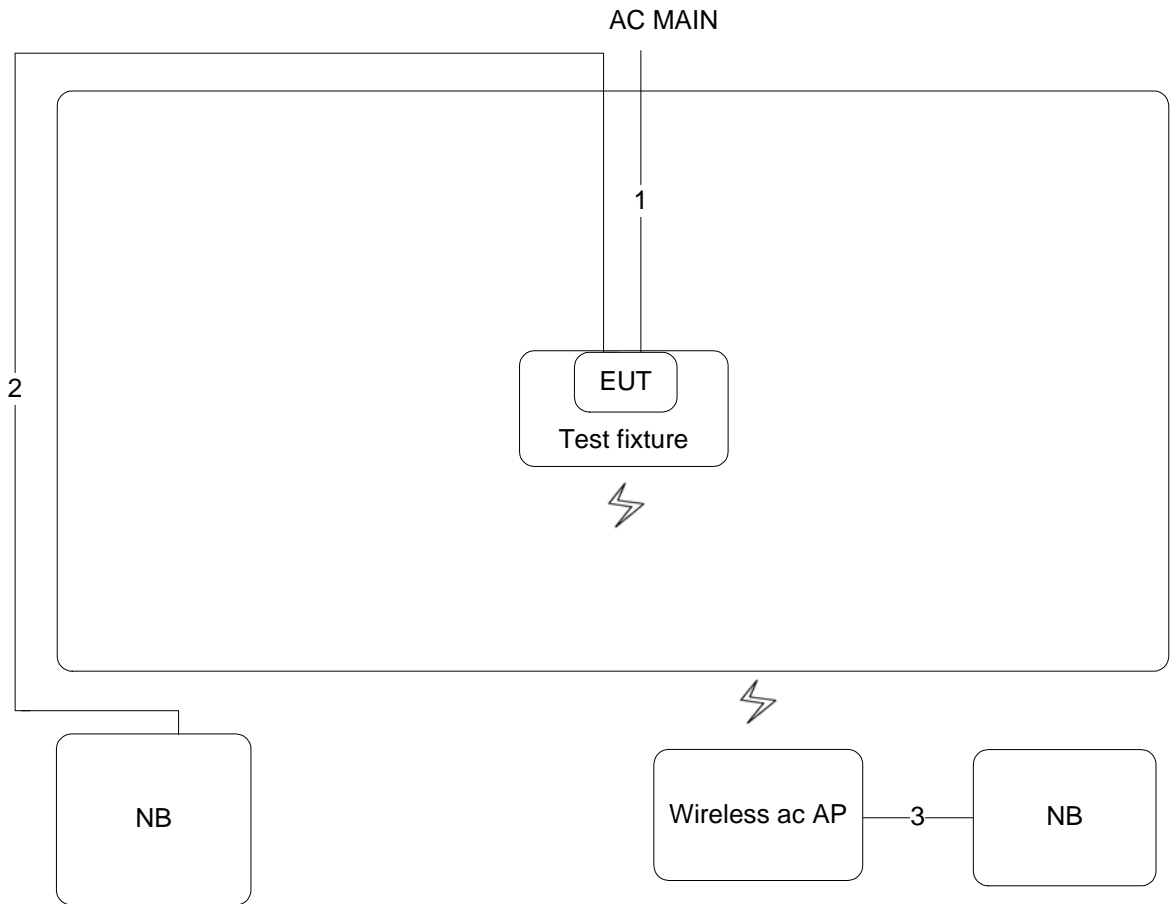
Test Configuration: above 1GHz

For non-beamforming function:



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

For beamforming function:



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

4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

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

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

4.1.2. Measuring Instruments and Setting

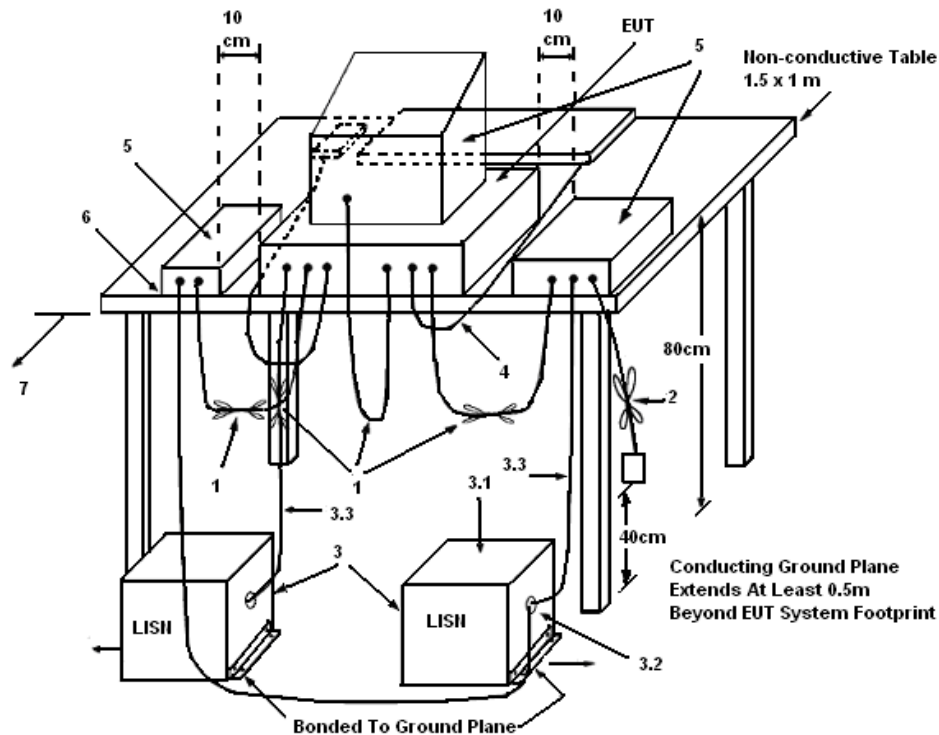
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

4.1.3. Test Procedures

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

4.1.4. Test Setup Layout



LEGEND:

- (1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- (2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- (3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω . LISN can be placed on top of, or immediately beneath, reference ground plane.
 - (3.1) All other equipment powered from additional LISN(s).
 - (3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.
 - (3.3) LISN at least 80 cm from nearest part of EUT chassis.
- (4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.
- (5) Non-EUT components of EUT system being tested.
- (6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.
- (7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

4.1.5. Test Deviation

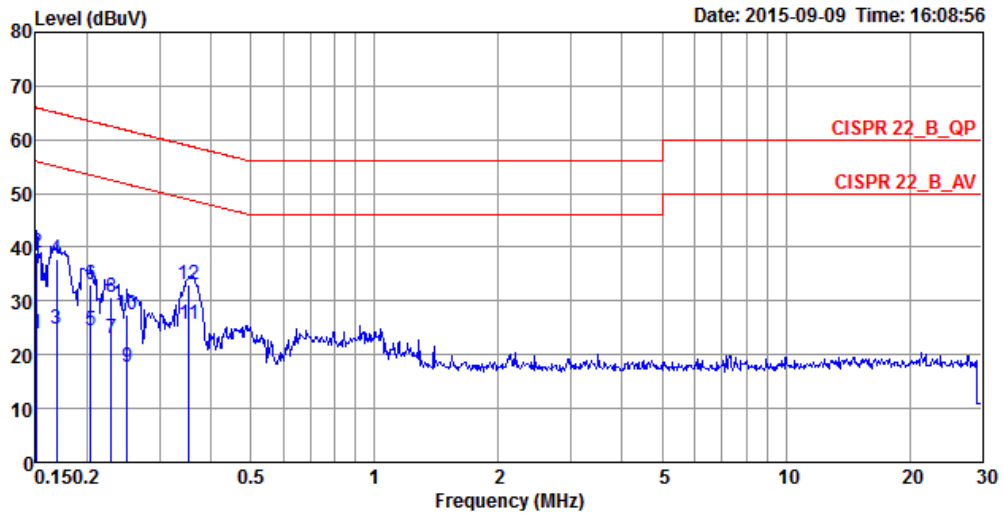
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

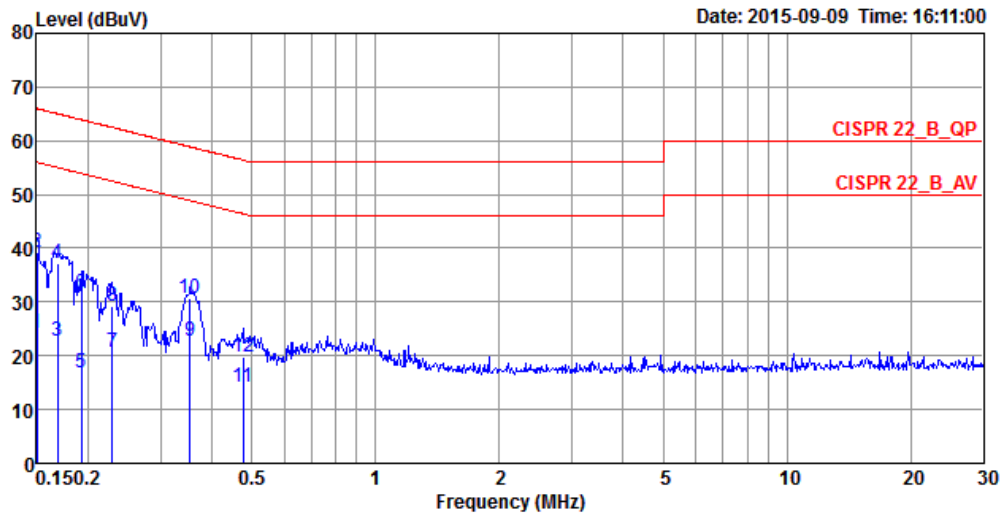
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	25°C	Humidity	52%
Test Engineer	Kane Liu	Phase	Line
Configuration	CTX	Test Mode	Mode 3



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1508	24.01	-31.95	55.96	14.06	9.93	0.02	LINE	Average
2	0.1508	38.99	-26.97	65.96	29.04	9.93	0.02	LINE	QP
3	0.1685	24.86	-30.17	55.03	14.91	9.93	0.02	LINE	Average
4	0.1685	37.67	-27.36	65.03	27.72	9.93	0.02	LINE	QP
5	0.2040	24.50	-28.95	53.45	14.55	9.93	0.02	LINE	Average
6	0.2040	33.01	-30.44	63.45	23.06	9.93	0.02	LINE	QP
7	0.2292	23.08	-29.40	52.48	13.12	9.93	0.03	LINE	Average
8	0.2292	30.68	-31.80	62.48	20.72	9.93	0.03	LINE	QP
9	0.2508	17.72	-34.01	51.73	7.76	9.93	0.03	LINE	Average
10	0.2508	27.44	-34.29	61.73	17.48	9.93	0.03	LINE	QP
11	0.3539	25.79	-23.08	48.87	15.82	9.93	0.04	LINE	Average
12	0.3539	33.03	-25.84	58.87	23.06	9.93	0.04	LINE	QP

Temperature	25°C	Humidity	52%
Test Engineer	Kane Liu	Phase	Neutral
Configuration	CTX	Test Mode	Mode 3



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1500	24.35	-31.65	56.00	14.55	9.78	0.02	NEUTRAL	Average
2	0.1500	39.34	-26.66	66.00	29.54	9.78	0.02	NEUTRAL	QP
3	0.1685	22.80	-32.23	55.03	13.00	9.78	0.02	NEUTRAL	Average
4	0.1685	37.30	-27.73	65.03	27.50	9.78	0.02	NEUTRAL	QP
5	0.1924	16.91	-37.02	53.93	7.10	9.79	0.02	NEUTRAL	Average
6	0.1924	31.63	-32.30	63.93	21.82	9.79	0.02	NEUTRAL	QP
7	0.2292	20.69	-31.79	52.48	10.87	9.79	0.03	NEUTRAL	Average
8	0.2292	29.28	-33.20	62.48	19.46	9.79	0.03	NEUTRAL	QP
9	0.3539	22.70	-26.17	48.87	12.87	9.79	0.04	NEUTRAL	Average
10	0.3539	30.57	-28.30	58.87	20.74	9.79	0.04	NEUTRAL	QP
11	0.4761	14.18	-32.23	46.41	4.35	9.79	0.04	NEUTRAL	Average
12	0.4761	19.87	-36.54	56.41	10.04	9.79	0.04	NEUTRAL	QP

Note:

Level = Read Level + LISN Factor + Cable Loss.

4.2. 26dB Bandwidth and 99% Occupied Bandwidth Measurement

4.2.1. Limit

No restriction limits.

4.2.2. Measuring Instruments and Setting

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

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

4.2.3. 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. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.2.4. Test Setup Layout

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

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

4.2.5. Test Deviation

There is no deviation with the original standard.

4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

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

Temperature	25°C	Humidity	60%
Test Engineer	Eddie Weng / Nick Peng	Test Function	Non-beamforming function

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	21.13	16.67
	5200 MHz	21.30	17.11
	5240 MHz	25.48	16.41
	5260 MHz	20.43	16.41
	5300 MHz	21.13	16.93
	5320 MHz	21.30	16.67
	5500 MHz	21.30	16.67
	5580 MHz	31.39	18.06
	5700 MHz	21.48	16.67
	5745 MHz	21.30	16.67
	5785 MHz	32.43	19.54
	5825 MHz	21.30	16.76
802.11ac MCS0/Nss1 VHT20	5180 MHz	21.65	17.80
	5200 MHz	21.48	17.97
	5240 MHz	23.04	17.19
	5260 MHz	22.96	17.11
	5300 MHz	21.57	17.80
	5320 MHz	21.48	17.80
	5500 MHz	21.57	17.89
	5580 MHz	32.78	17.37
	5700 MHz	21.57	17.80
	5745 MHz	21.48	17.80
	5785 MHz	36.96	19.02
	5825 MHz	21.48	17.89

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT40	5190 MHz	40.87	37.05
	5230 MHz	40.73	37.05
	5270 MHz	58.26	37.34
	5310 MHz	41.01	37.05
	5510 MHz	40.87	36.90
	5550 MHz	75.51	37.34
	5670 MHz	41.16	37.05
	5755 MHz	40.87	37.05
	5795 MHz	40.87	36.90
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.03	76.41
	5290 MHz	81.45	76.12
	5530 MHz	81.74	76.41
	5610 MHz	85.51	76.70
	5775 MHz	82.03	76.41

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	28.96	18.06	5706.17	5711.06	18.83	10.13	13.94	4.12
802.11ac MCS0/Nss1 VHT20	5720 MHz	40.17	18.76	5700.35	5710.71	24.65	15.52	14.29	4.46
802.11ac MCS0/Nss1 VHT40	5710 MHz	99.86	57.16	5660.00	5682.07	65.00	34.86	42.93	14.23
802.11ac MCS0/Nss1 VHT80	5690 MHz	189.86	105.07	5597.25	5639.35	127.75	62.10	85.65	19.41

Temperature	25°C	Humidity	60%
Test Engineer	Eddie Weng / Nick Peng	Test Function	Beamforming function

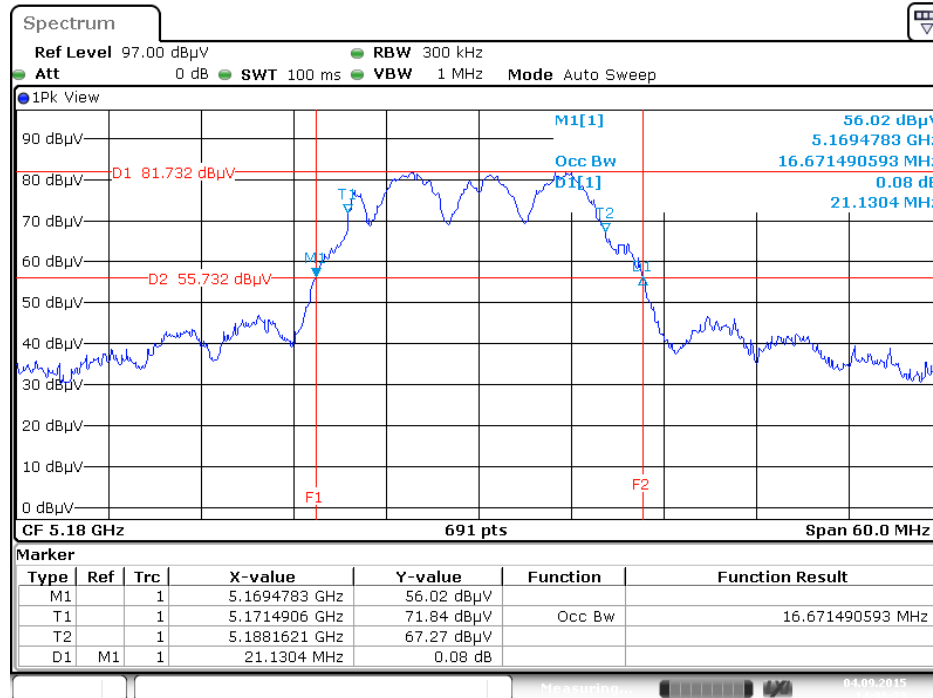
Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	21.65	18.06
	5200 MHz	21.73	18.14
	5240 MHz	19.13	17.45
	5260 MHz	19.13	17.53
	5300 MHz	21.56	18.06
	5320 MHz	21.91	18.06
	5500 MHz	21.65	18.06
	5580 MHz	30.00	17.71
	5700 MHz	21.65	18.06
	5745 MHz	21.82	18.06
	5785 MHz	29.39	18.49
	5825 MHz	21.56	17.97
802.11ac MCS0/Nss1 VHT40	5190 MHz	40.87	36.75
	5230 MHz	49.56	37.19
	5270 MHz	41.01	36.90
	5310 MHz	40.87	36.61
	5510 MHz	40.58	36.75
	5550 MHz	56.52	37.19
	5670 MHz	41.01	36.75
	5755 MHz	40.72	36.90
	5795 MHz	41.01	36.75
802.11ac MCS0/Nss1 VHT80	5210 MHz	81.44	75.83
	5290 MHz	81.73	75.83
	5530 MHz	82.02	75.83
	5610 MHz	135.94	76.41
	5775 MHz	82.02	75.83

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	34.61	18.75	5703.30	5710.62	21.70	12.91	14.38	4.37
802.11ac MCS0/Nss1 VHT40	5710 MHz	97.83	53.97	5661.16	5684.09	63.84	33.98	40.91	13.06
802.11ac MCS0/Nss1 VHT80	5690 MHz	188.41	99.27	5599.57	5642.24	125.44	62.97	82.76	16.51

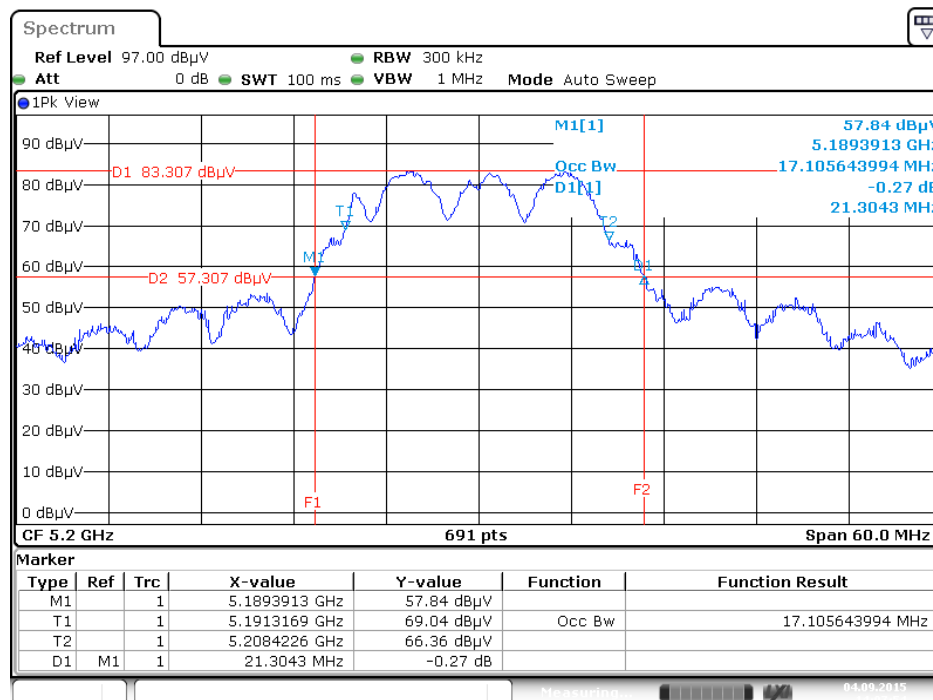
For non-beamforming function:

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5180 MHz



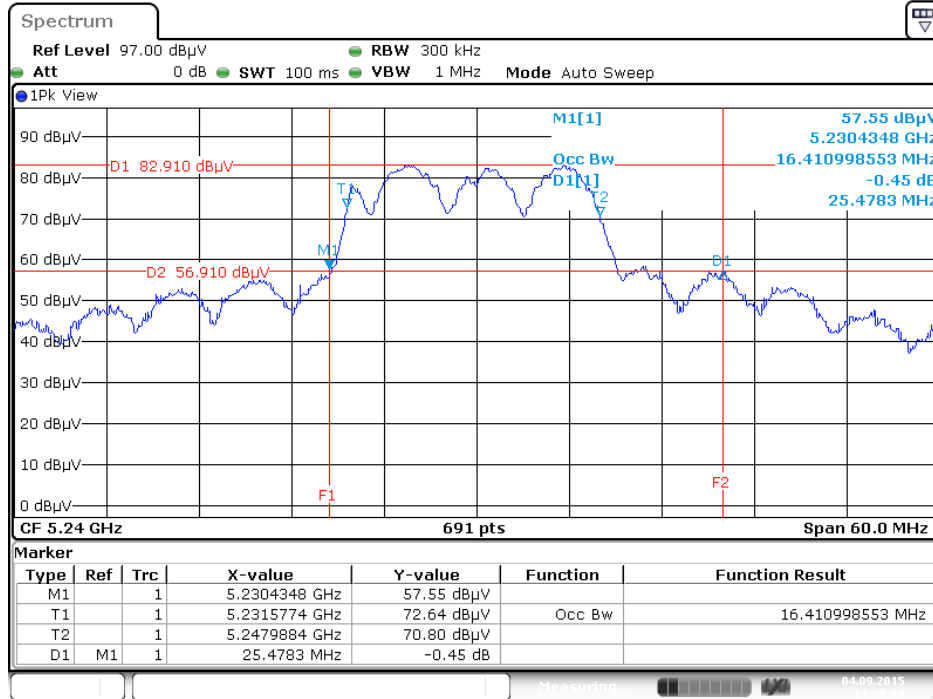
Date: 4 SEP 2015 14:08:23

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5200 MHz



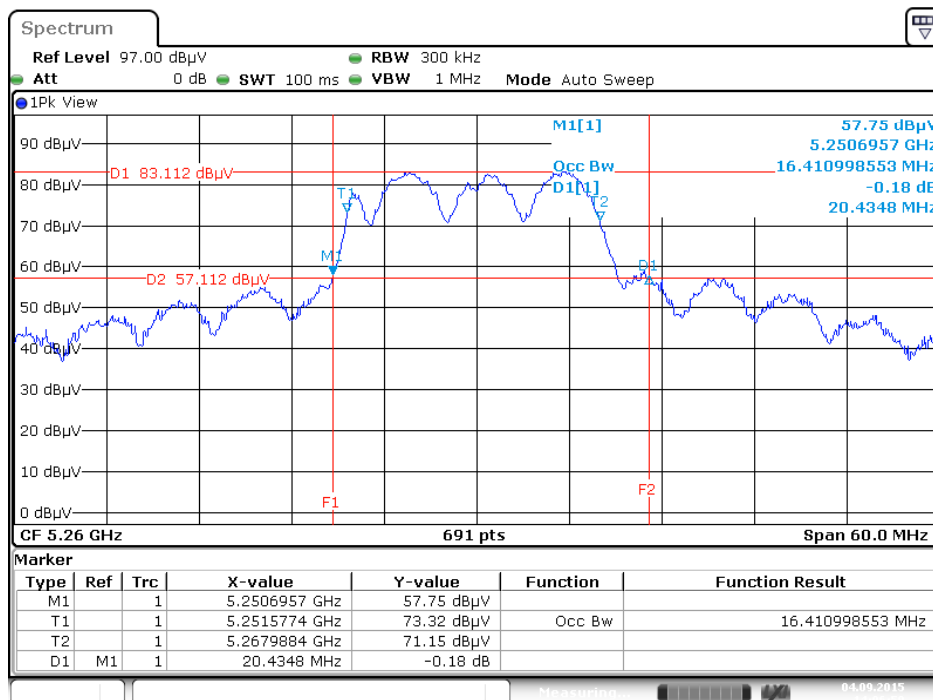
Date: 4 SEP 2015 14:07:55

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5240 MHz



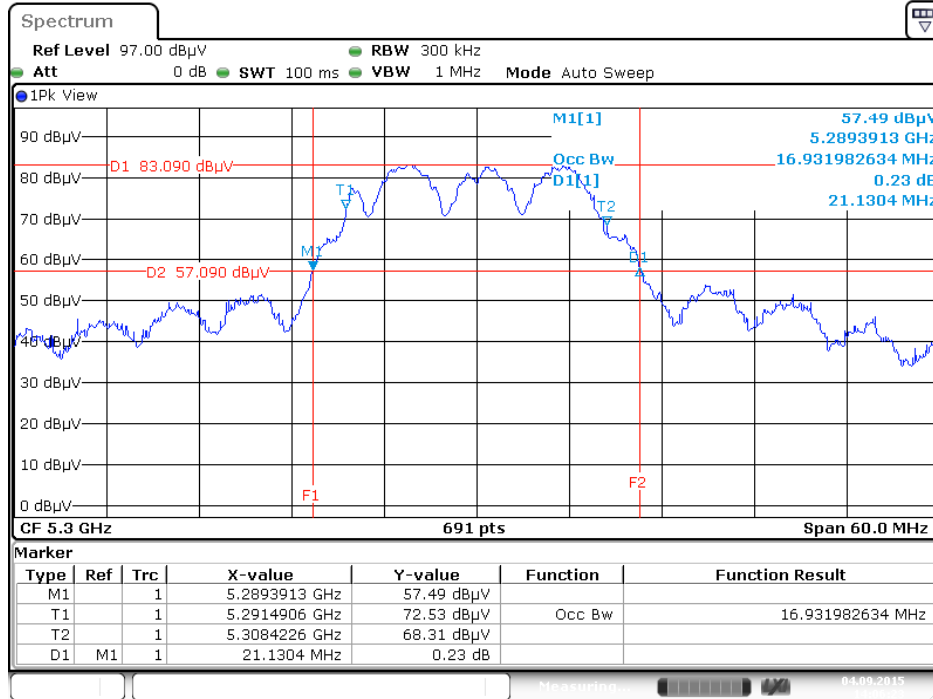
Date: 4 SEP 2015 14:07:22

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5260 MHz

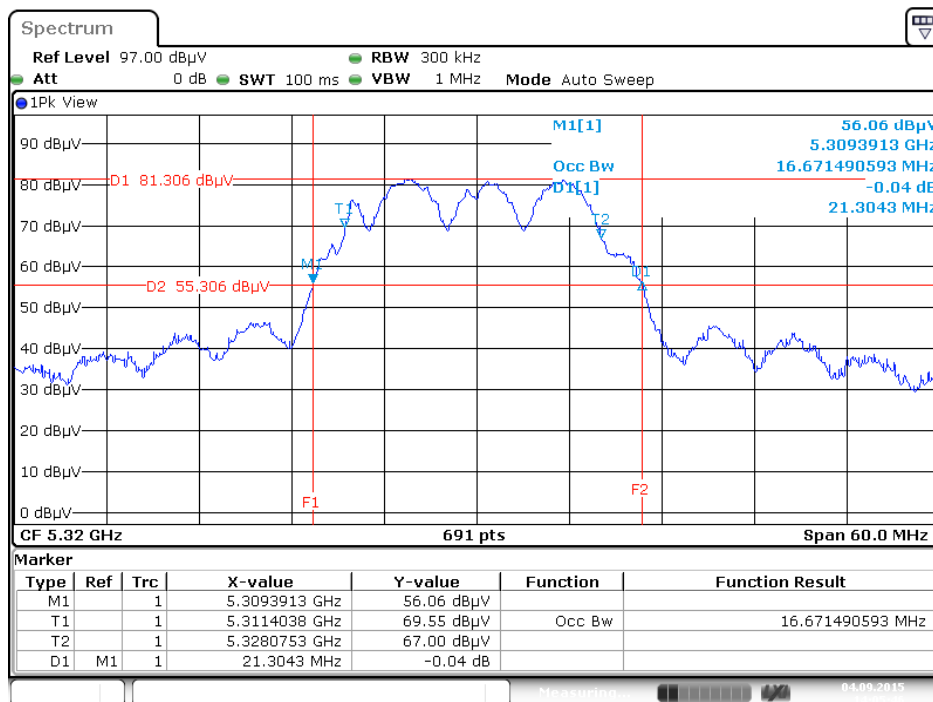


Date: 4 SEP 2015 14:06:51

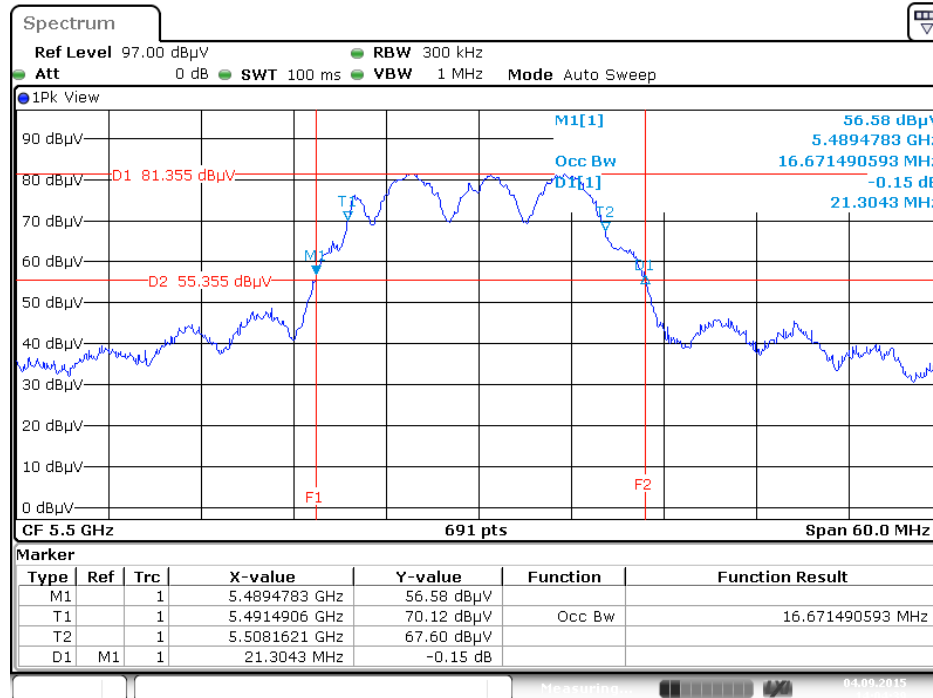
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5300 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5320 MHz

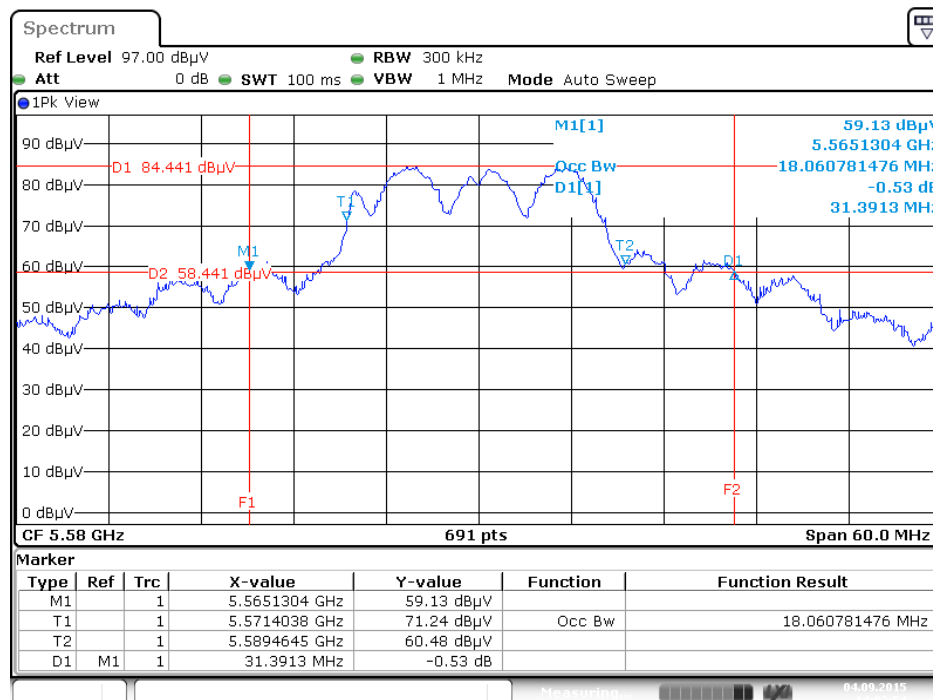


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5500 MHz



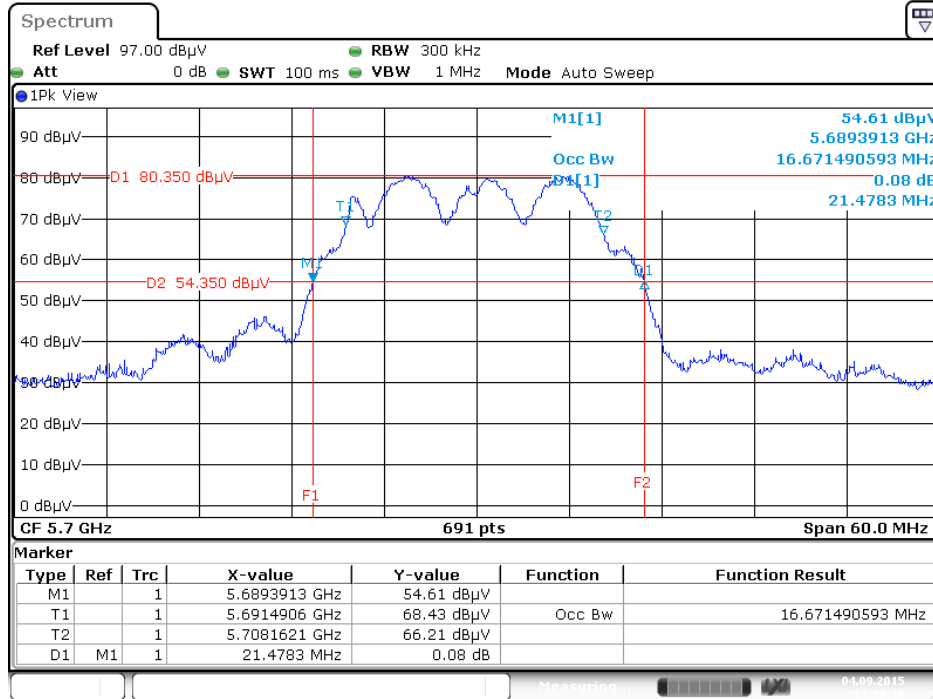
Date: 4.SEP.2015 14:04:40

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5580 MHz



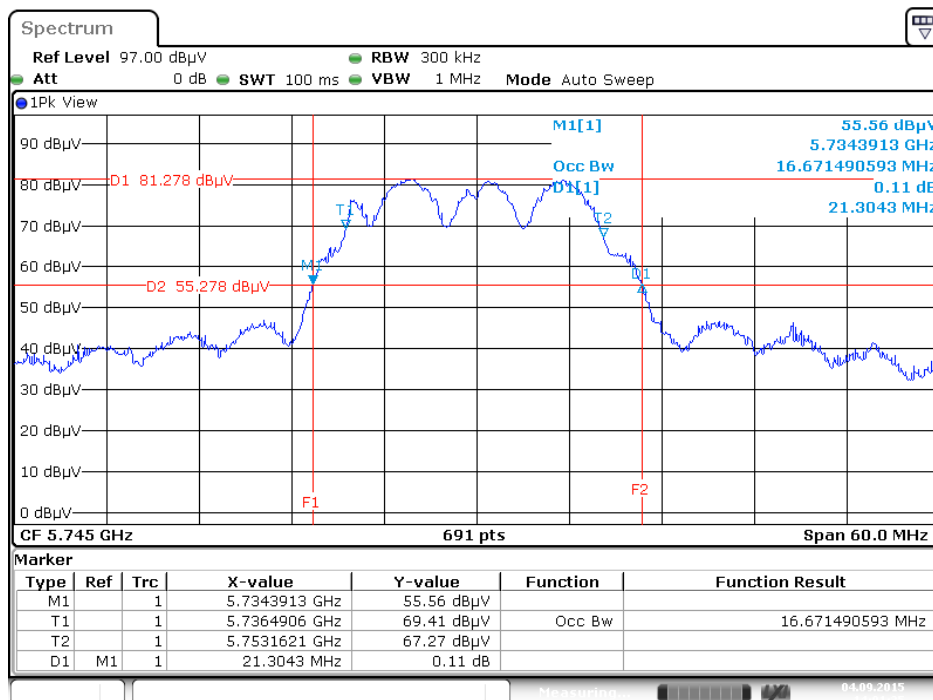
Date: 4.SEP.2015 14:02:54

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5700 MHz



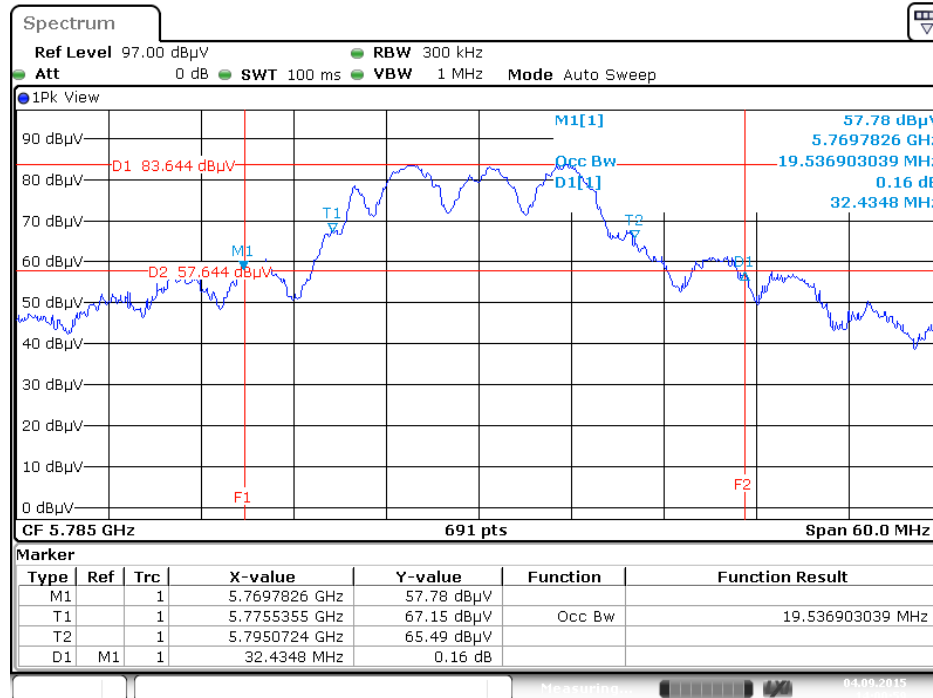
Date: 4 SEP 2015 14:02:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5745 MHz



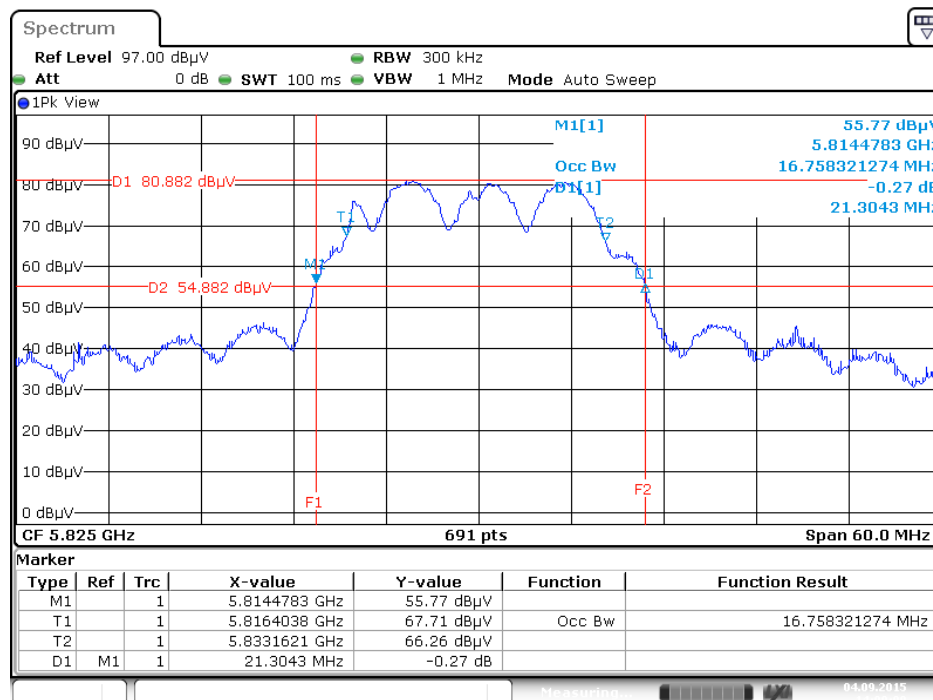
Date: 4 SEP 2015 14:01:35

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5785 MHz



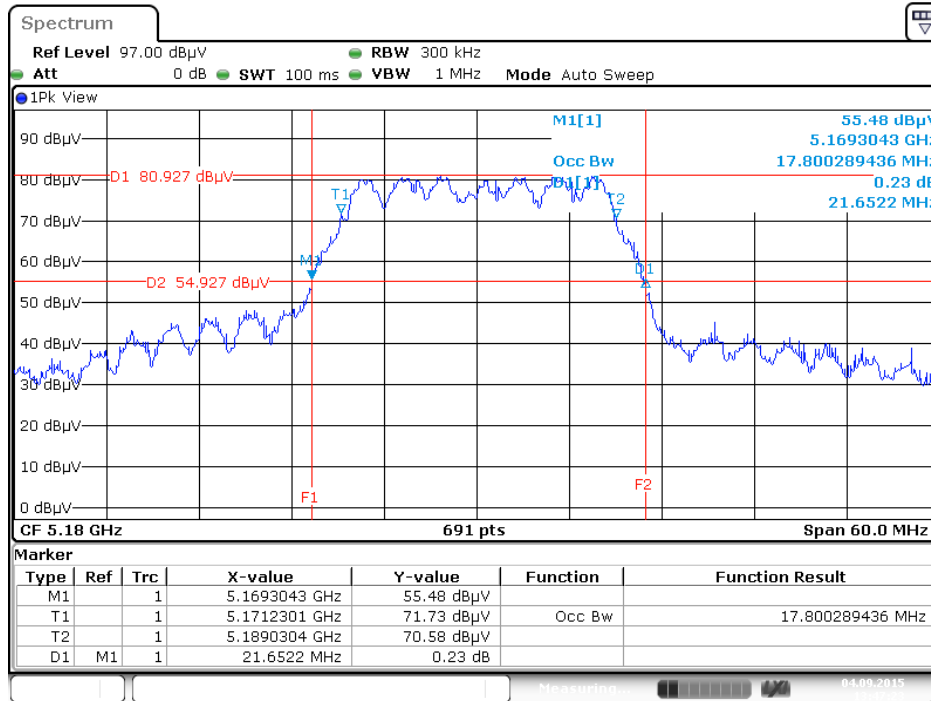
Date: 4 SEP 2015 14:00:59

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5825 MHz



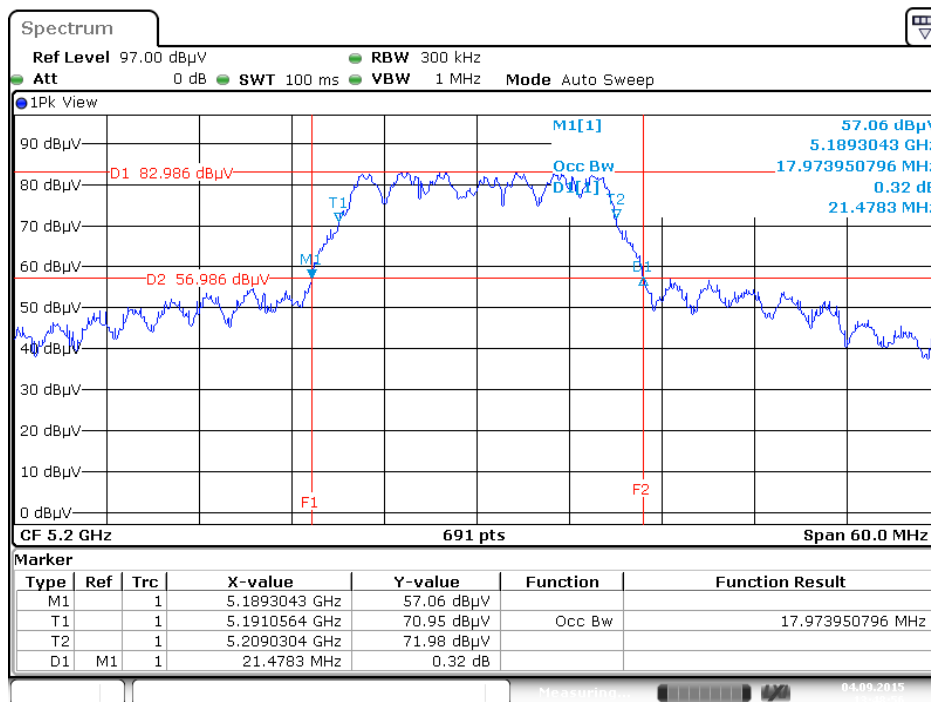
Date: 4 SEP 2015 14:00:01

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5180 MHz



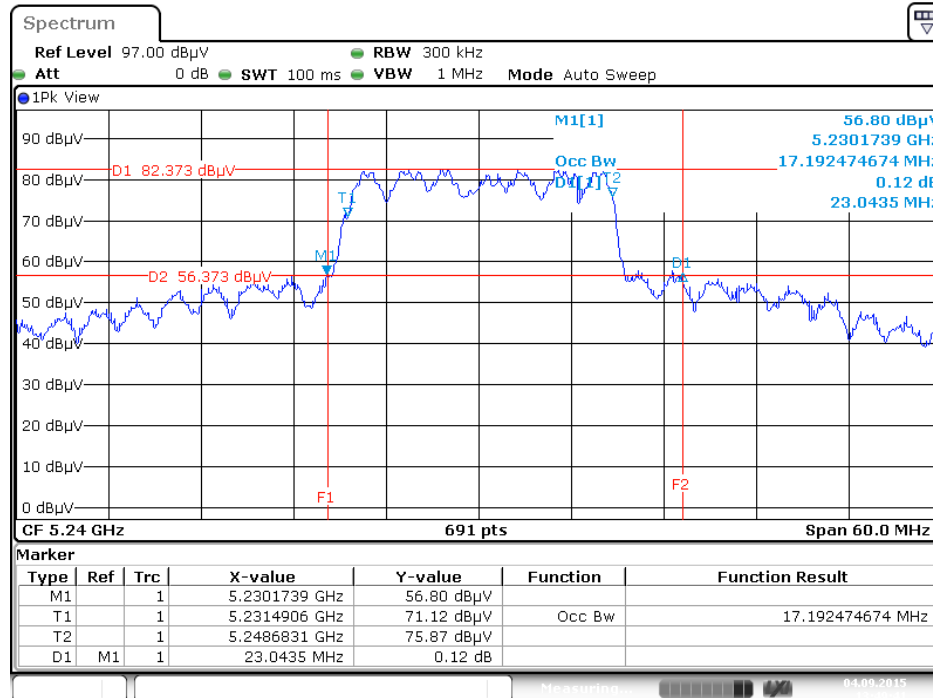
Date: 4 SEP 2015 13:47:23

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5200 MHz



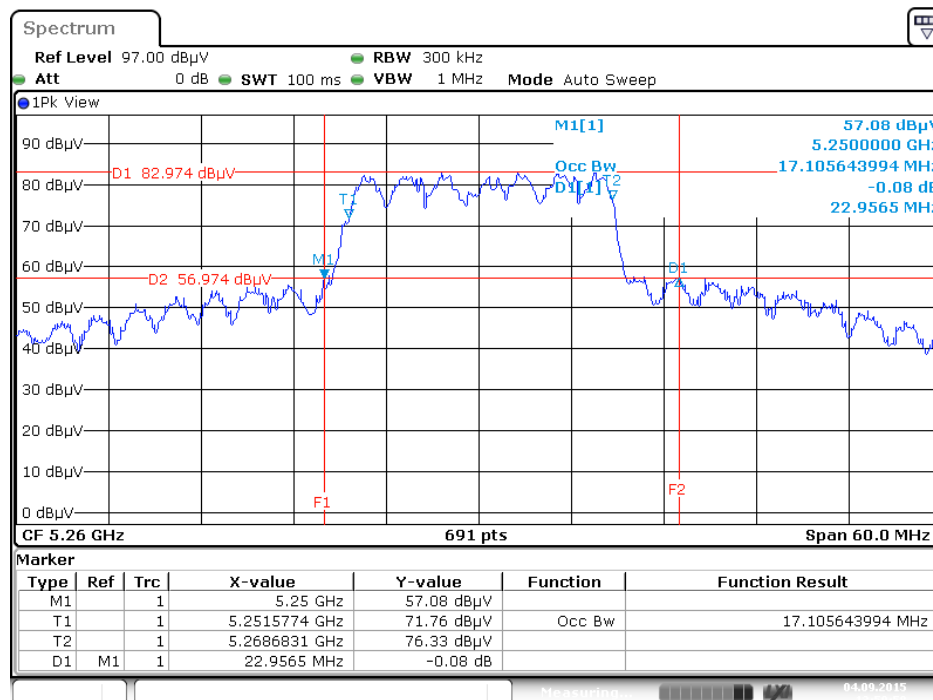
Date: 4 SEP 2015 13:48:57

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5240 MHz



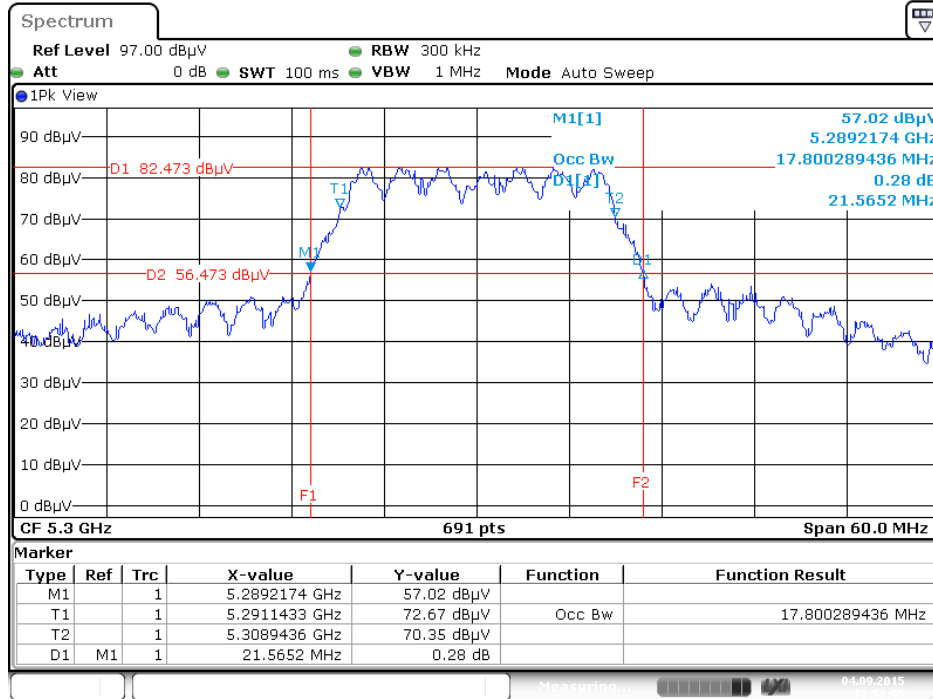
Date: 4 SEP 2015 13:49:41

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5260 MHz



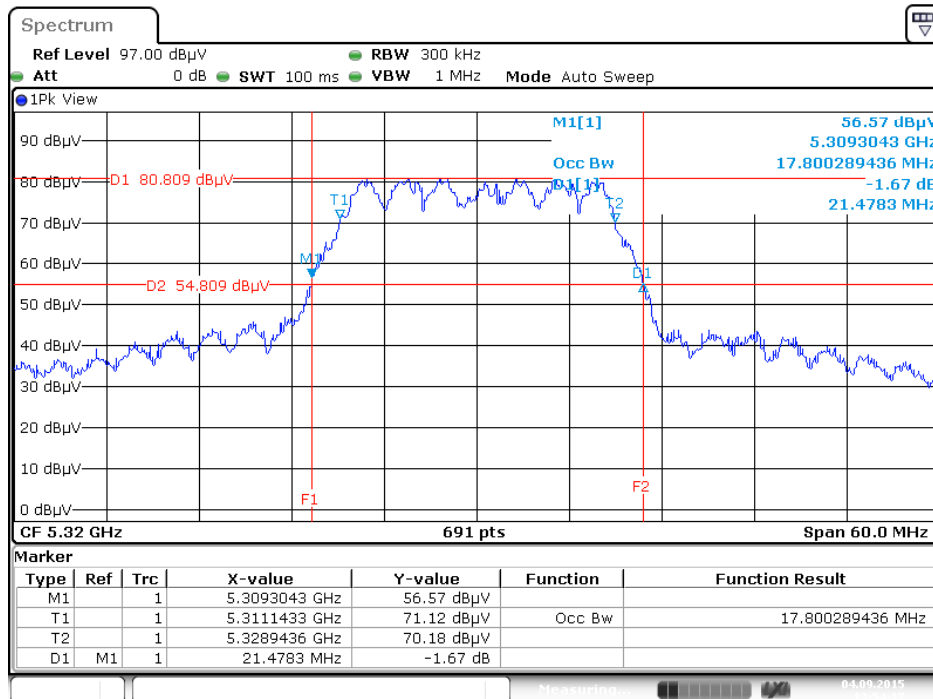
Date: 4 SEP 2015 13:50:58

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5300 MHz



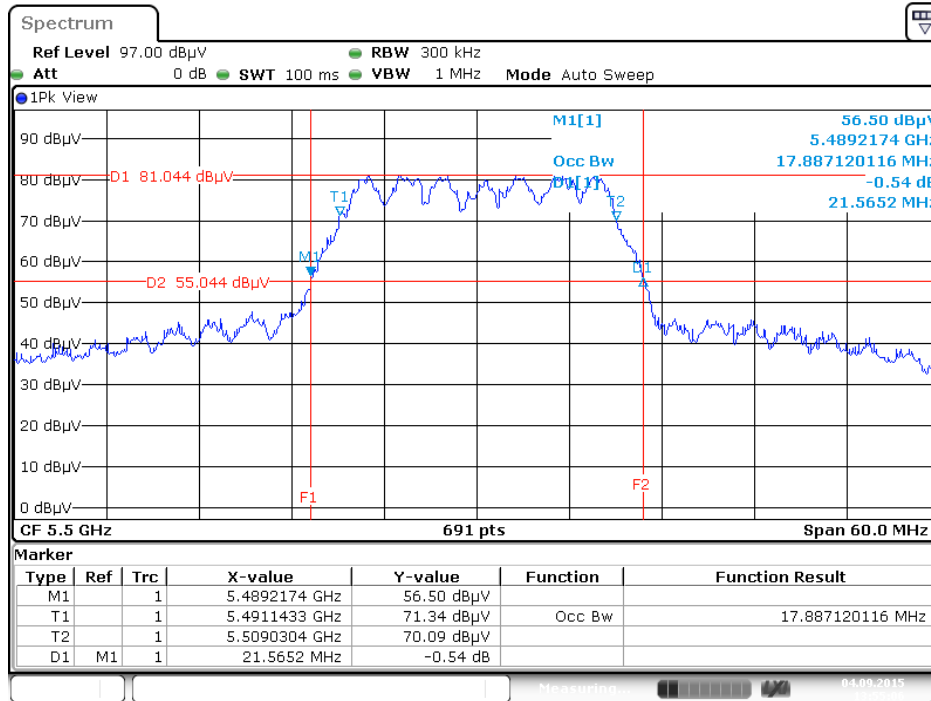
Date: 4 SEP 2015 13:52:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5320 MHz



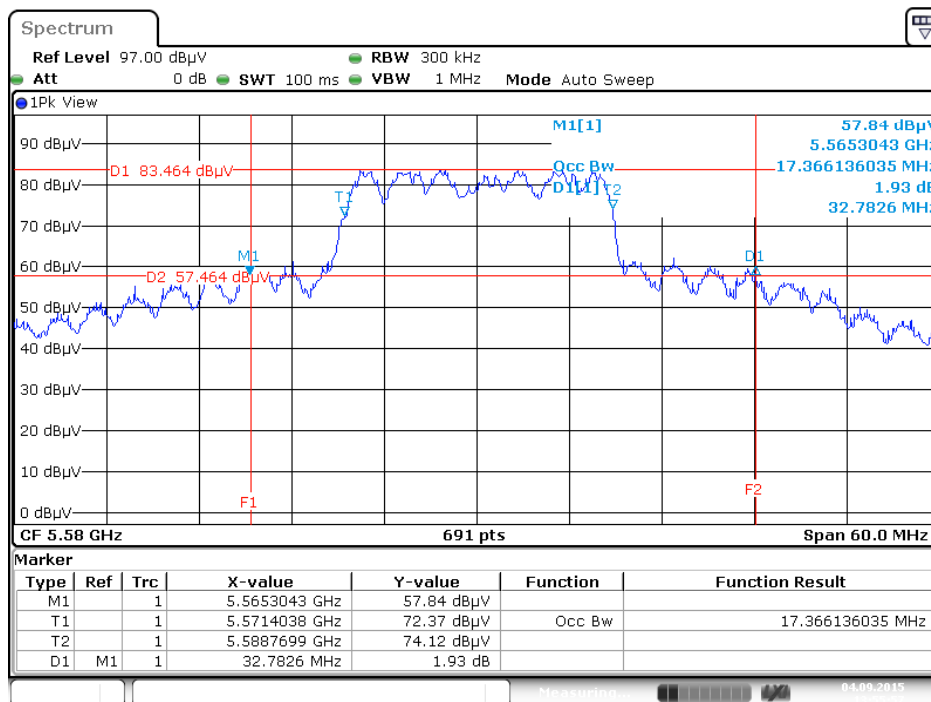
Date: 4 SEP 2015 13:54:16

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5500 MHz



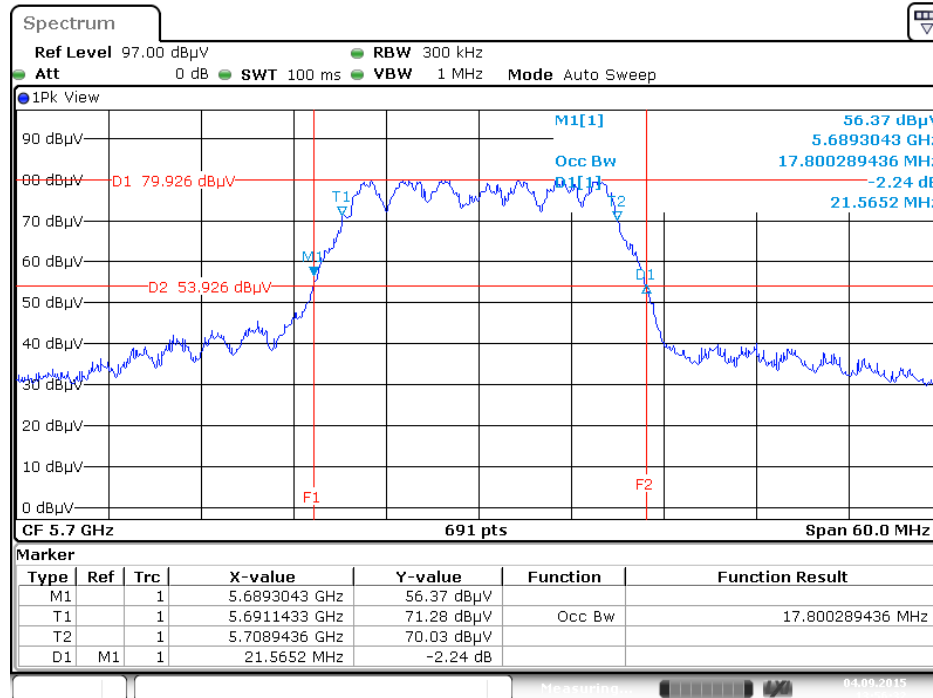
Date: 4 SEP 2015 13:55:06

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5580 MHz



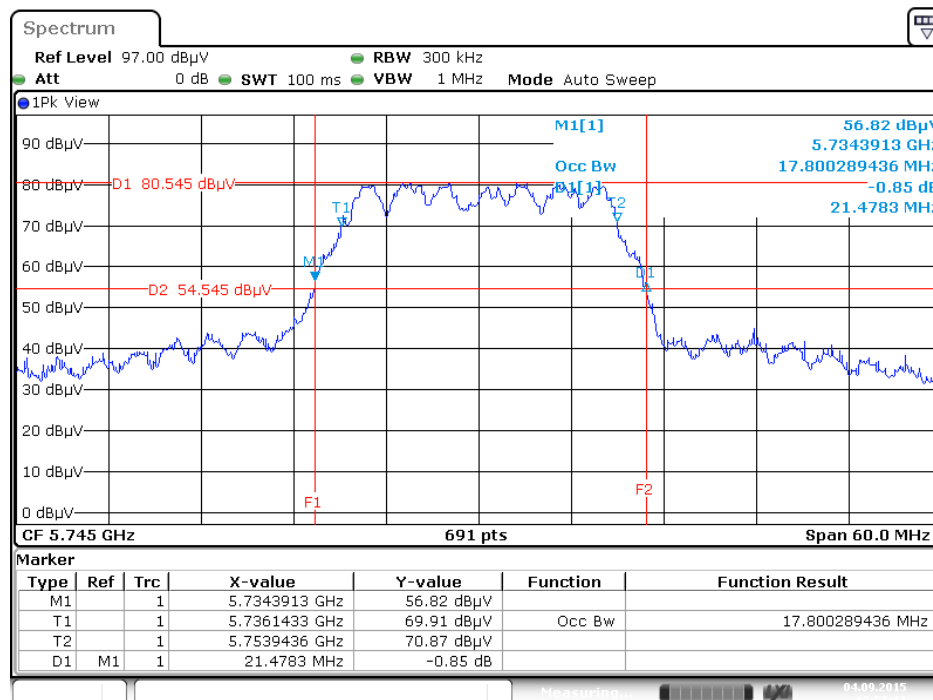
Date: 4 SEP 2015 13:55:57

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5700 MHz



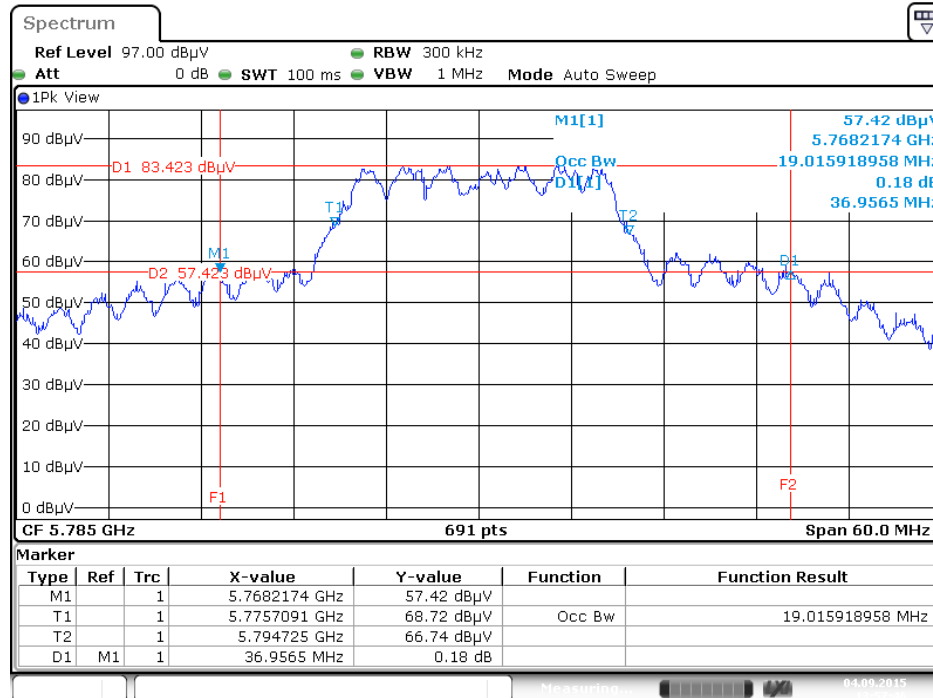
Date: 4 SEP 2015 13:56:32

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5745 MHz



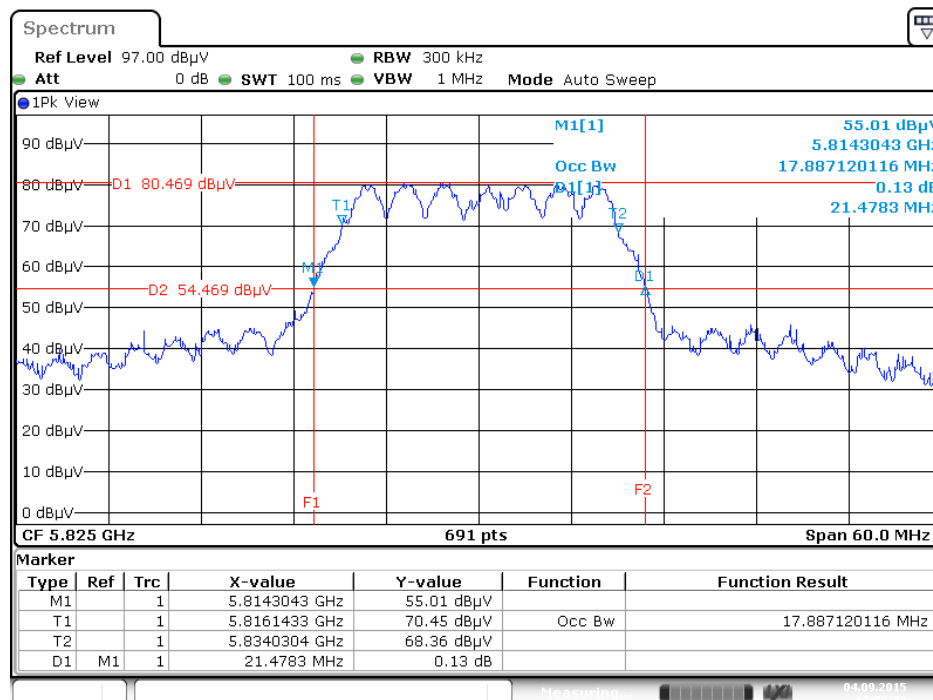
Date: 4 SEP 2015 13:57:11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5785 MHz



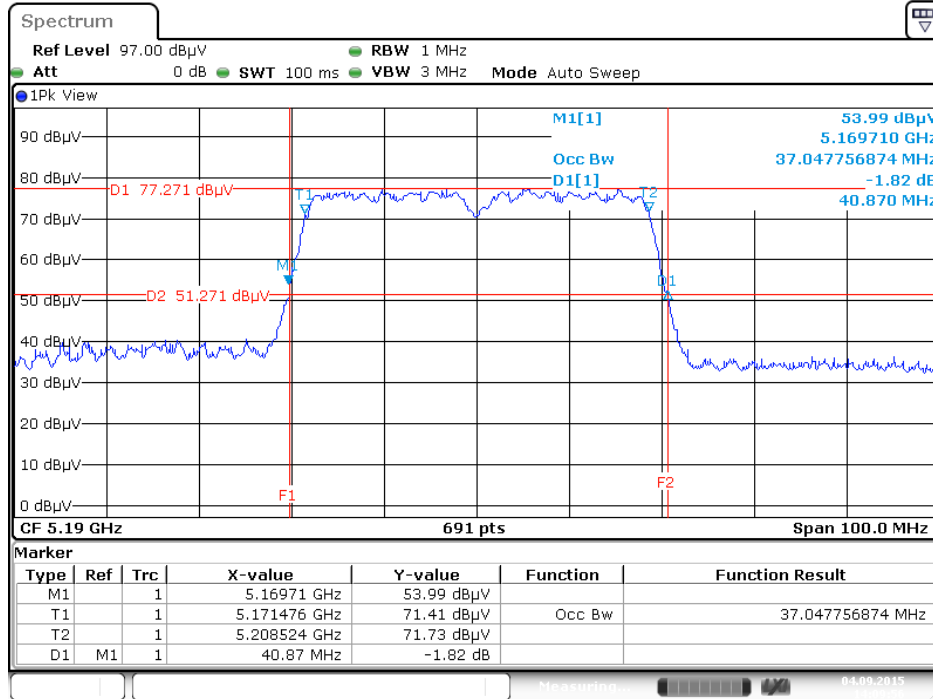
Date: 4 SEP 2015 13:57:46

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5825 MHz



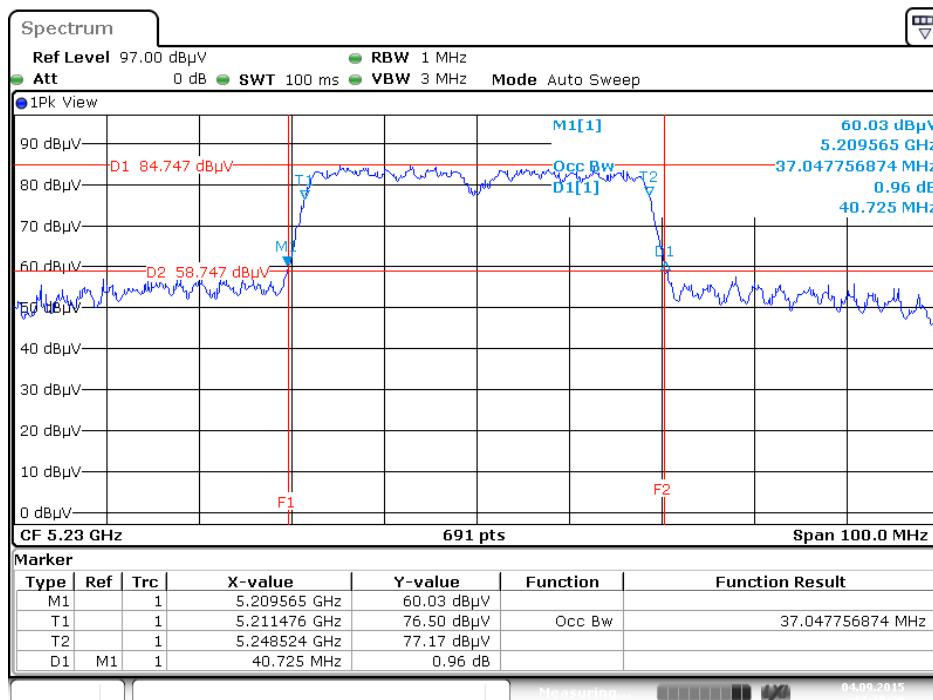
Date: 4 SEP 2015 13:58:23

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5190 MHz



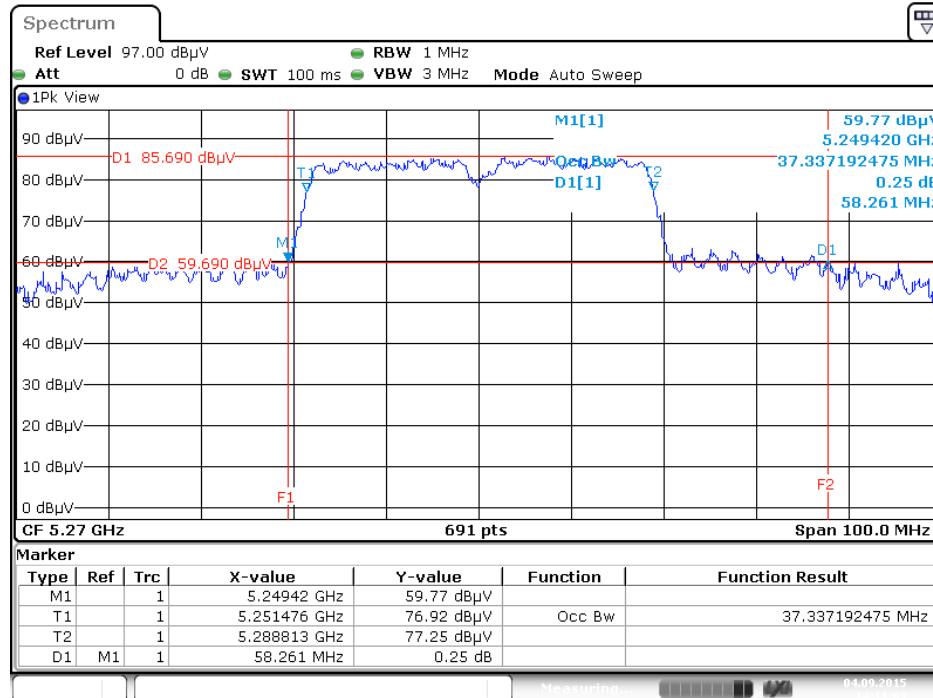
Date: 4 SEP 2015 14:09:56

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5230 MHz



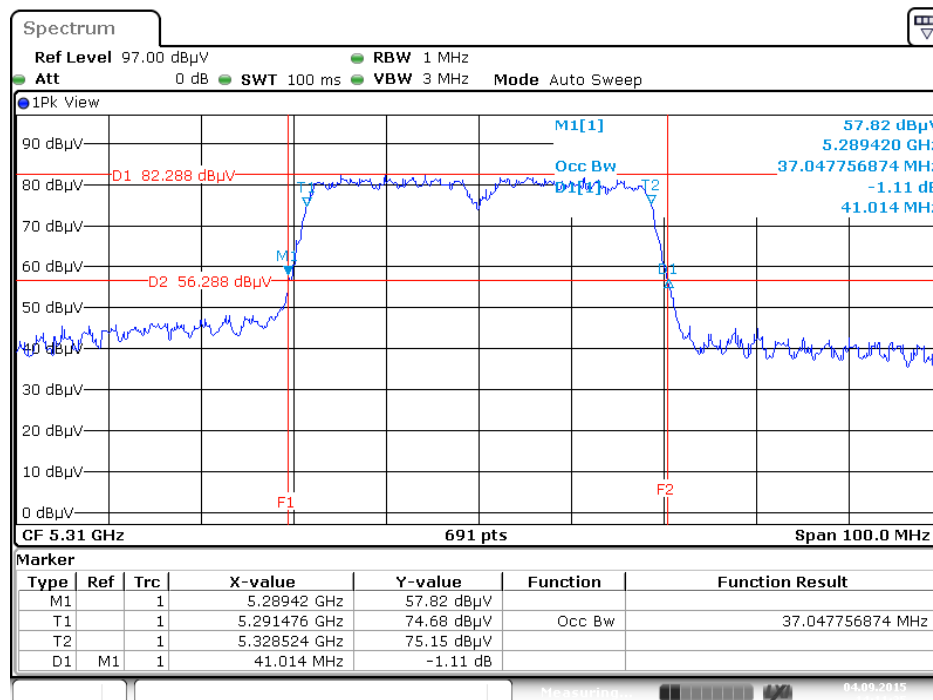
Date: 4 SEP 2015 14:10:28

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5270 MHz



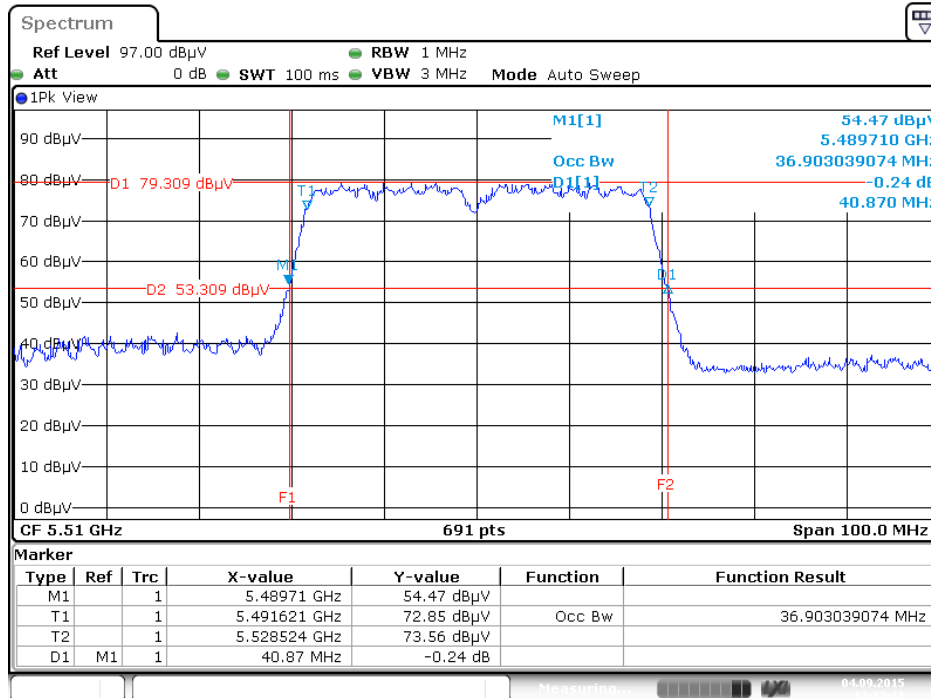
Date: 4 SEP 2015 14:11:03

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5310 MHz



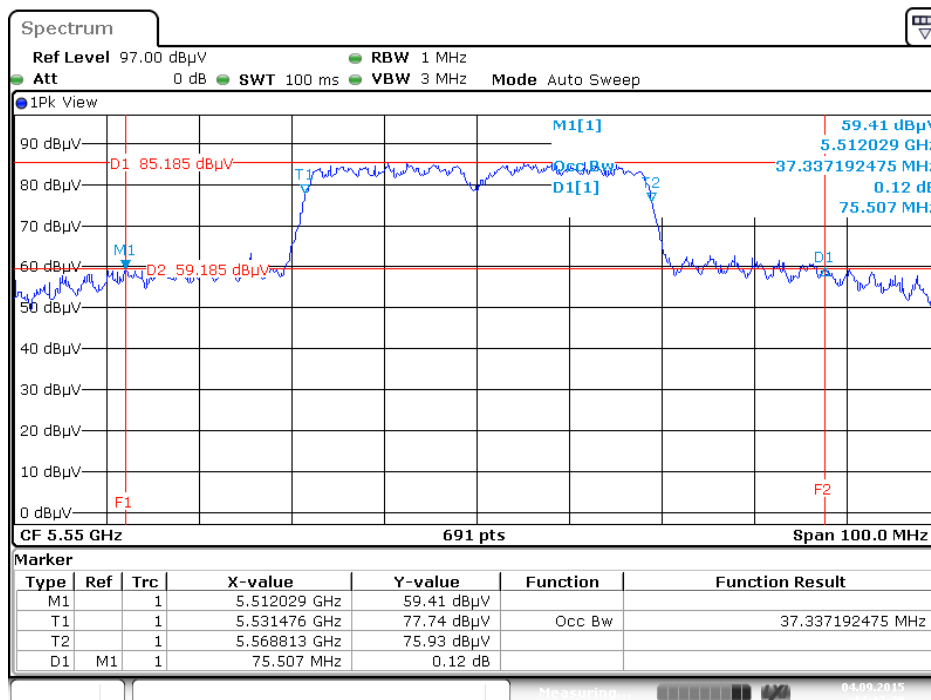
Date: 4 SEP 2015 14:11:35

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5510 MHz



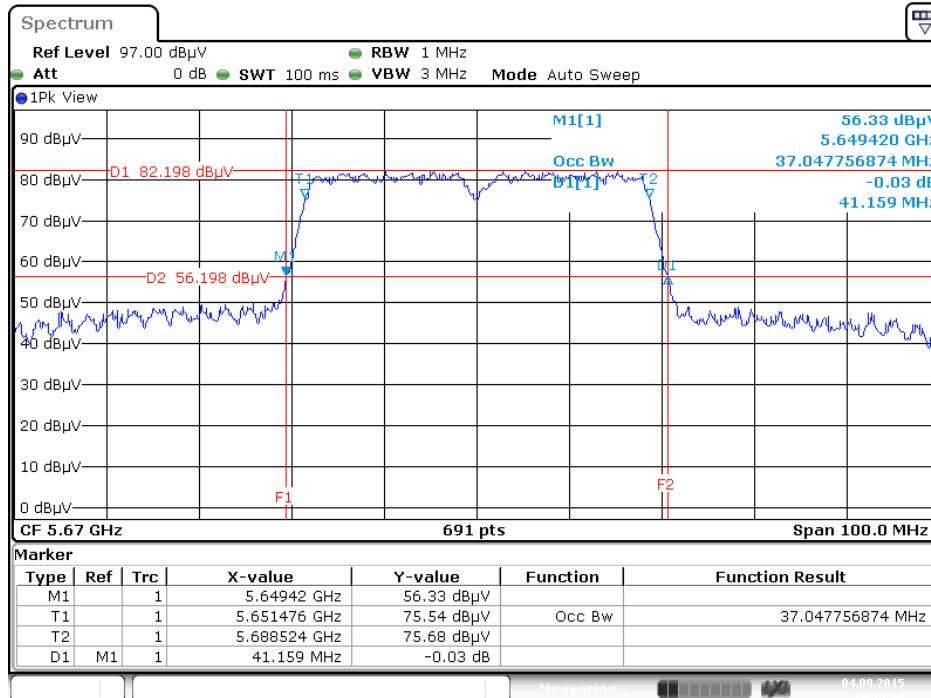
Date: 4 SEP 2015 14:12:11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5550 MHz



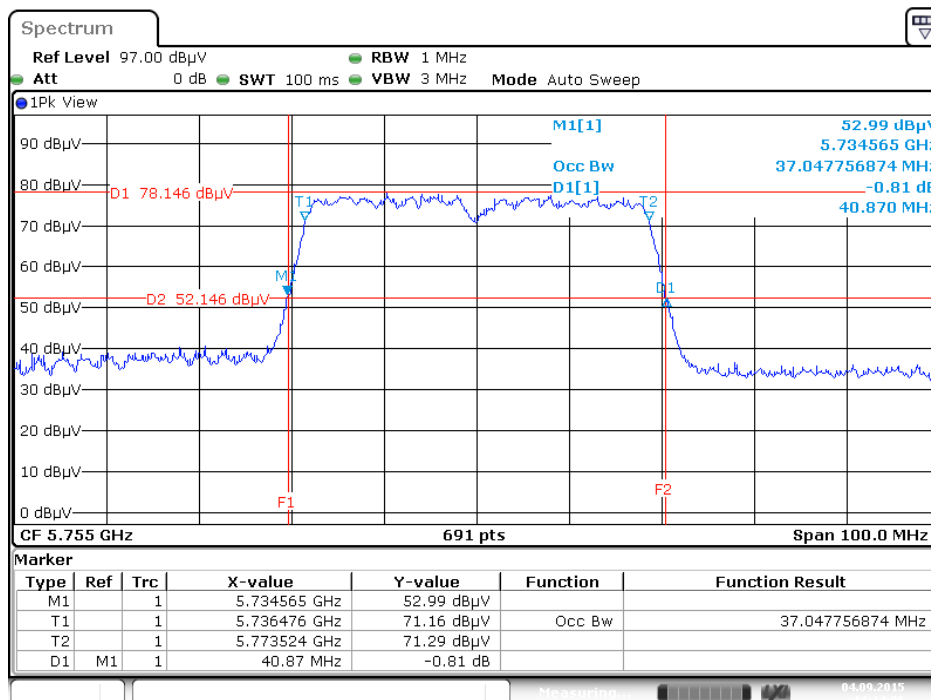
Date: 4 SEP 2015 14:12:38

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5670 MHz



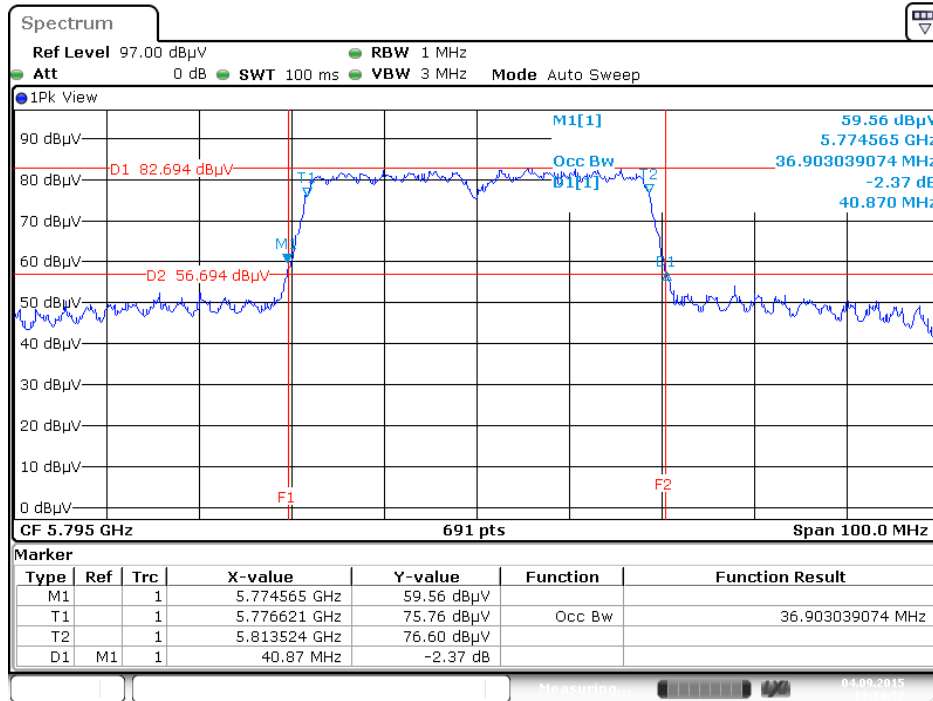
Date: 4 SEP 2015 14:13:30

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5755 MHz



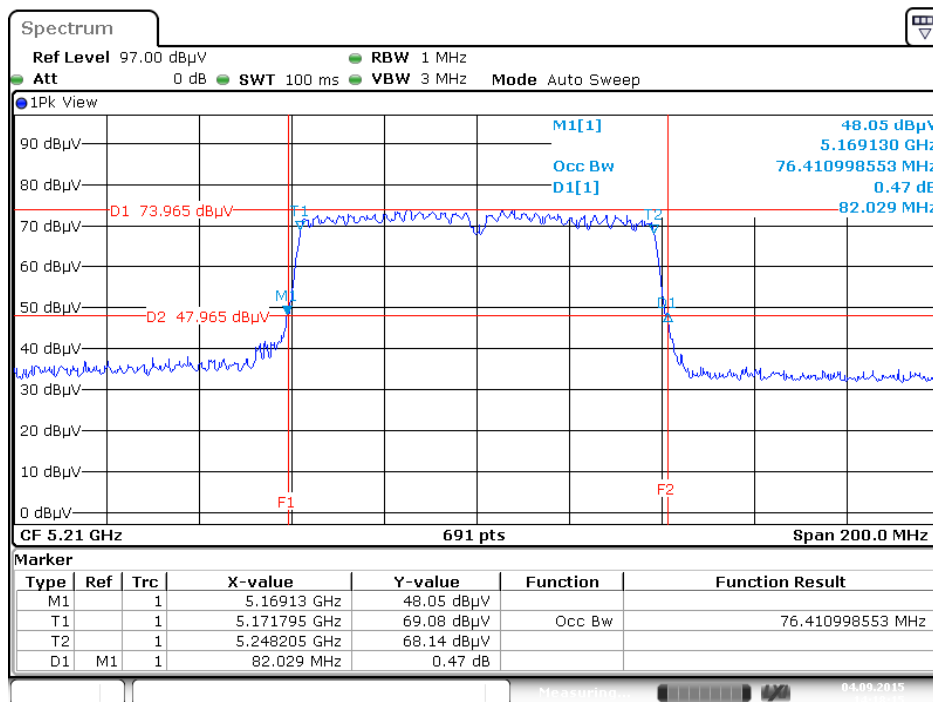
Date: 4 SEP 2015 14:14:06

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5795 MHz



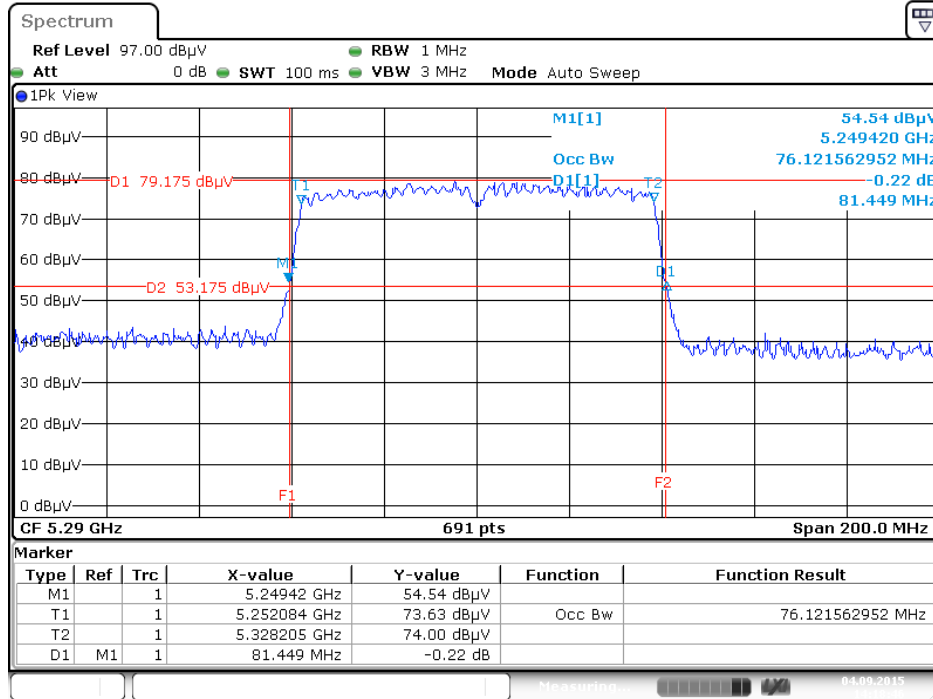
Date: 4 SEP 2015 14:14:37

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5210 MHz



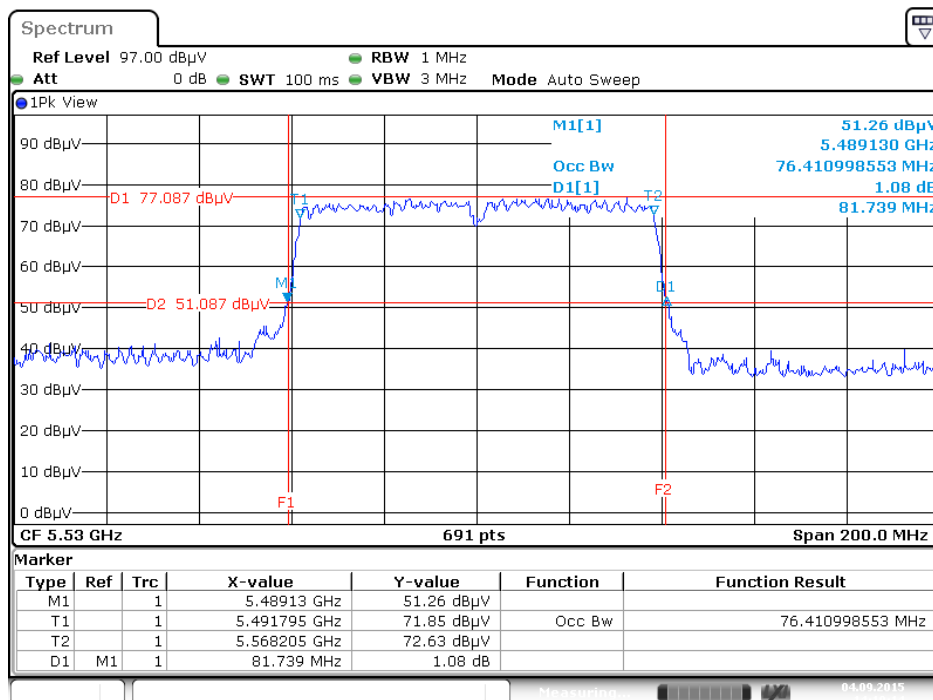
Date: 4 SEP 2015 14:18:15

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5290 MHz



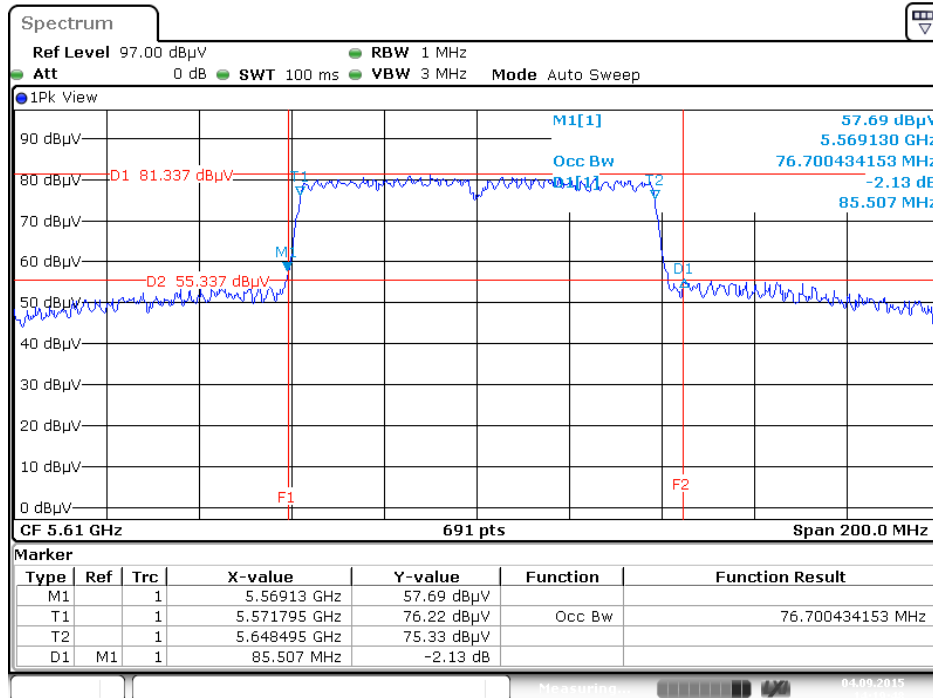
Date: 4 SEP 2015 14:18:46

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5530 MHz



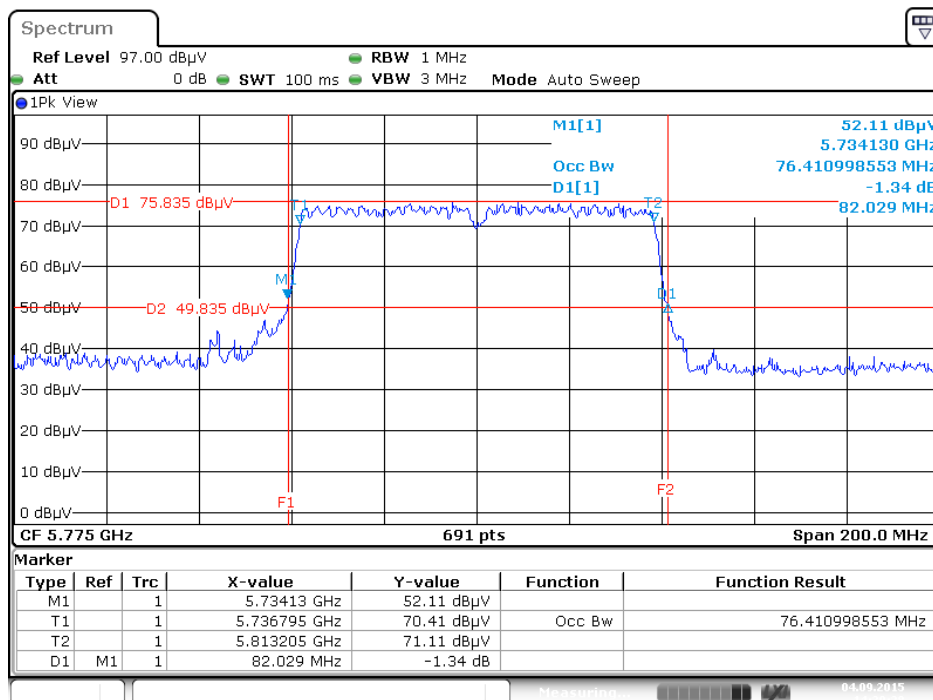
Date: 4 SEP 2015 14:19:14

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5610 MHz



Date: 4 SEP 2015 14:19:48

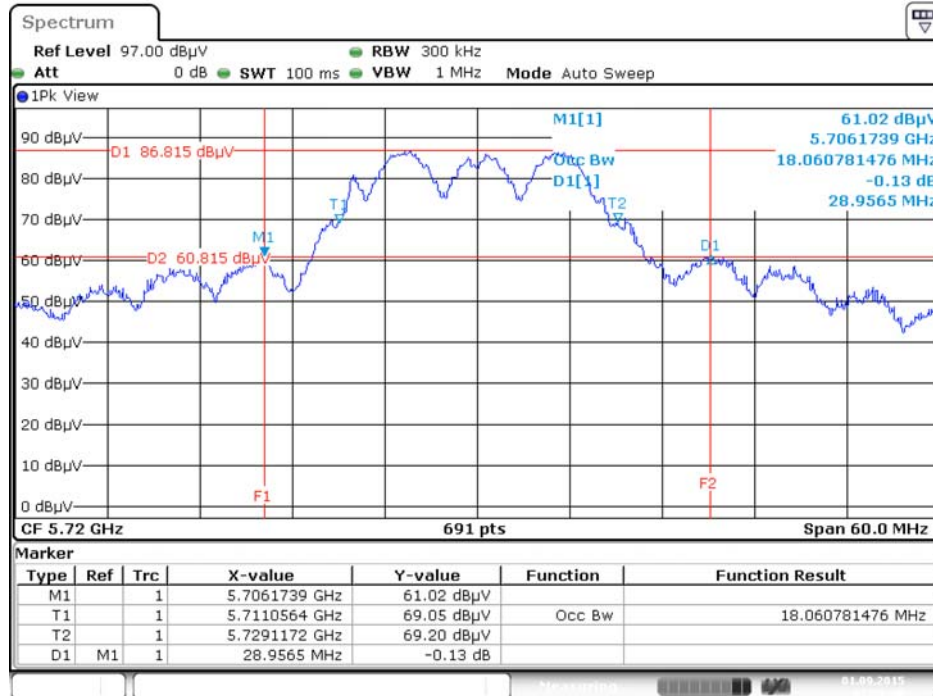
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5775 MHz



Date: 4 SEP 2015 14:20:28

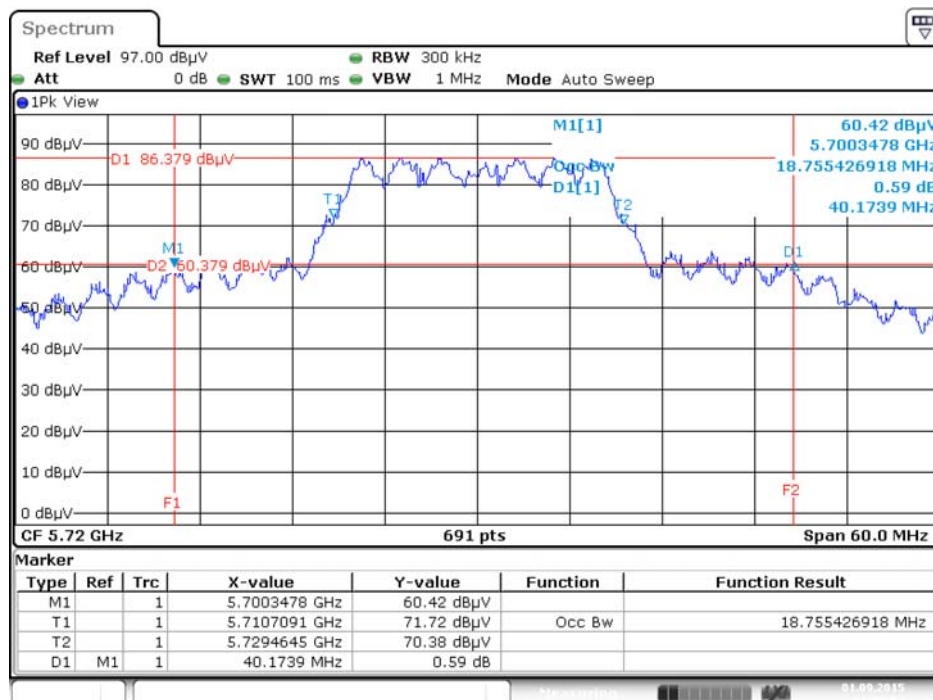
Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5720 MHz



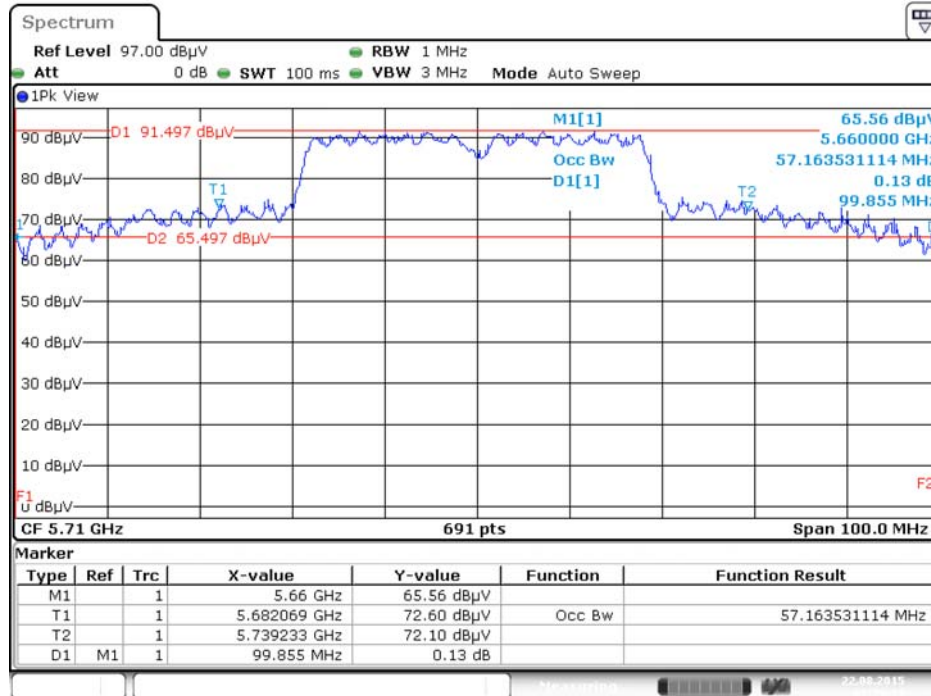
Date: 1.SEP.2015 02:26:49

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5720 MHz



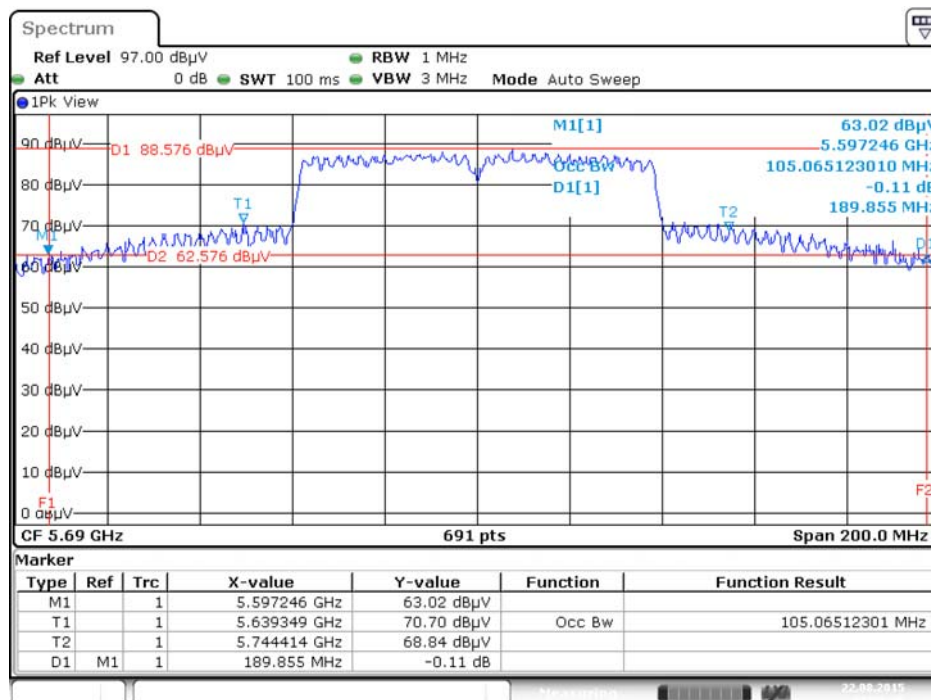
Date: 1.SEP.2015 02:29:54

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz



Date: 22.AUG.2015 01:29:10

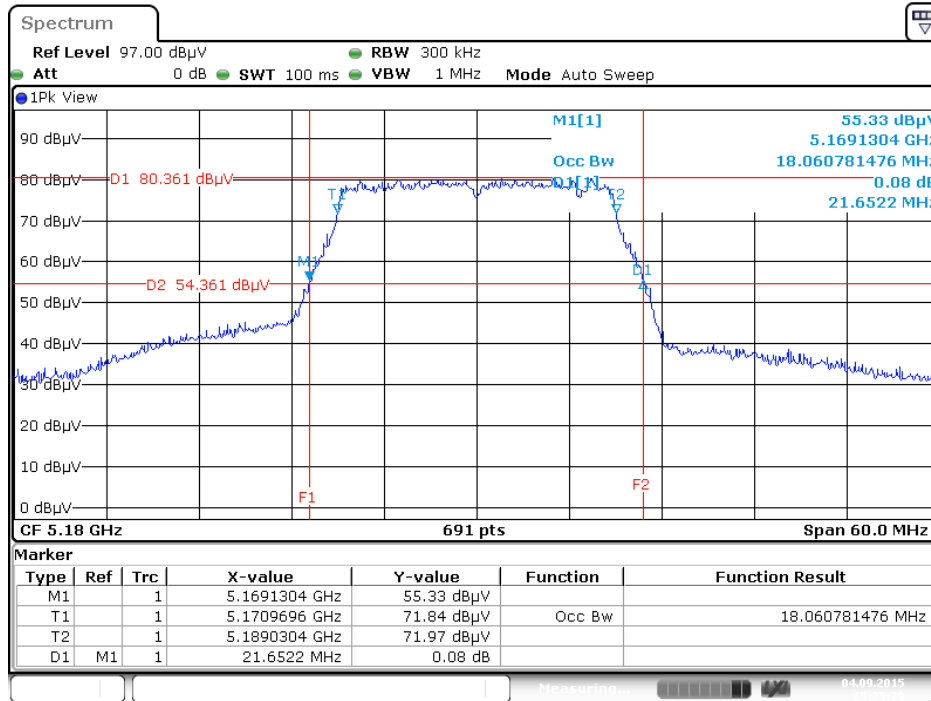
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5690 MHz



Date: 22.AUG.2015 01:26:46

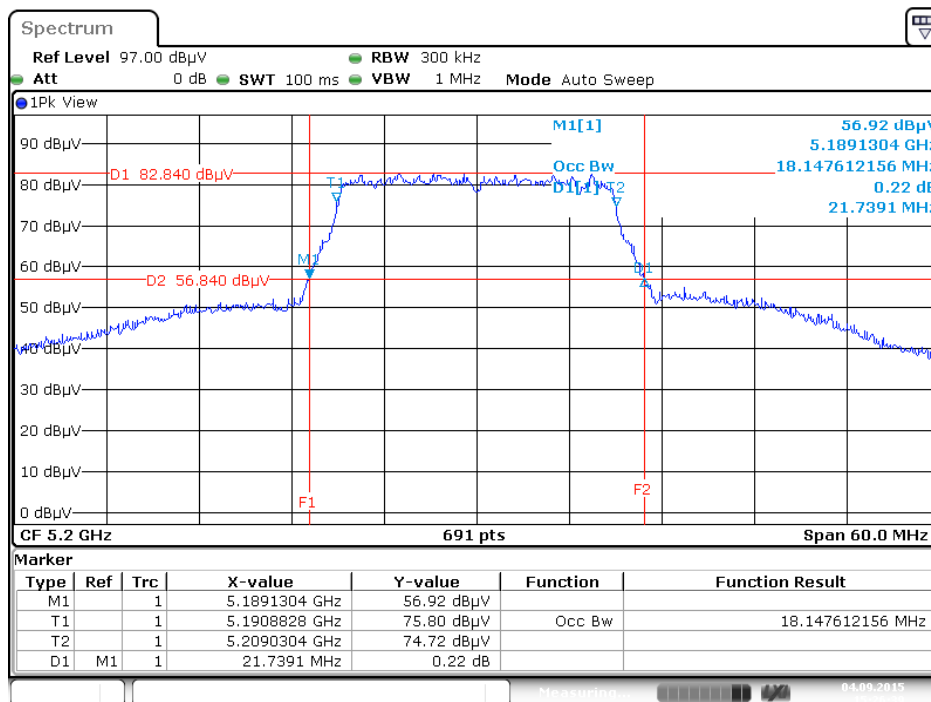
For beamforming function:

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5180 MHz



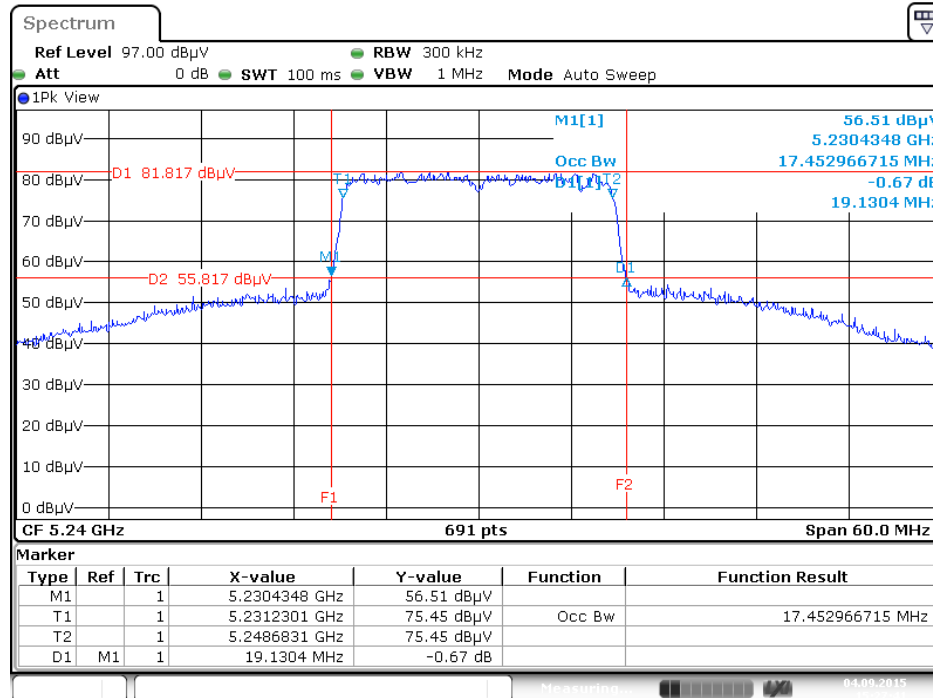
Date: 4 SEP 2015 15:25:39

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5200 MHz



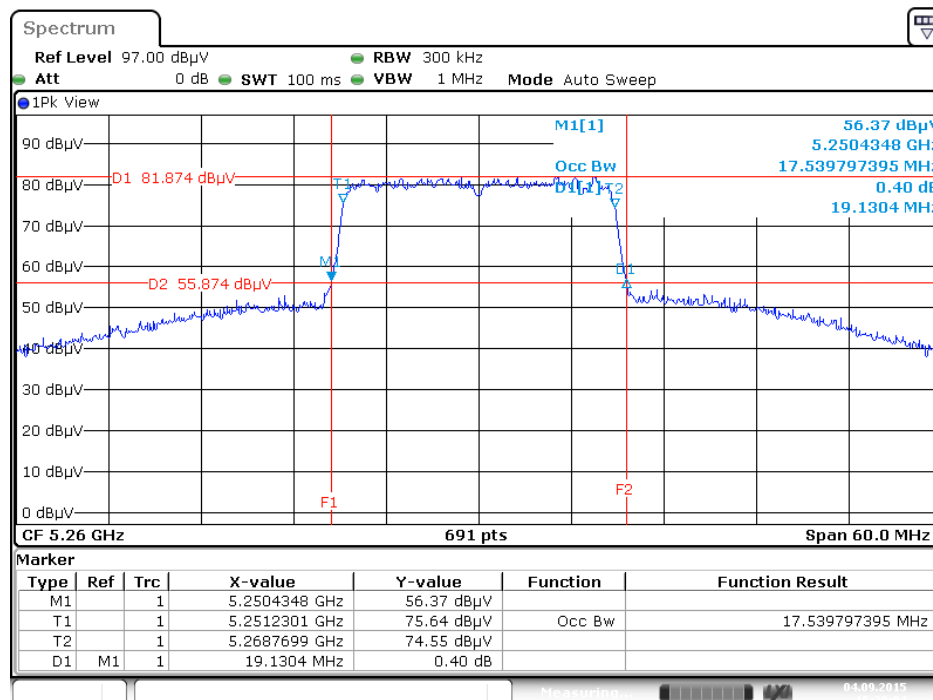
Date: 4 SEP 2015 15:26:39

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5240 MHz



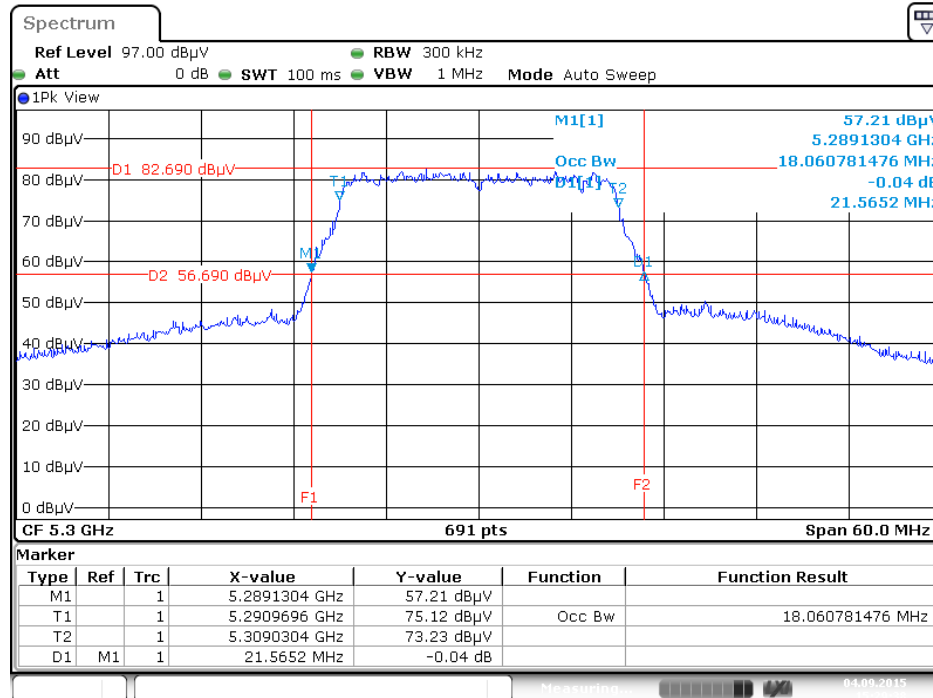
Date: 4 SEP 2015 15:27:41

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5260 MHz



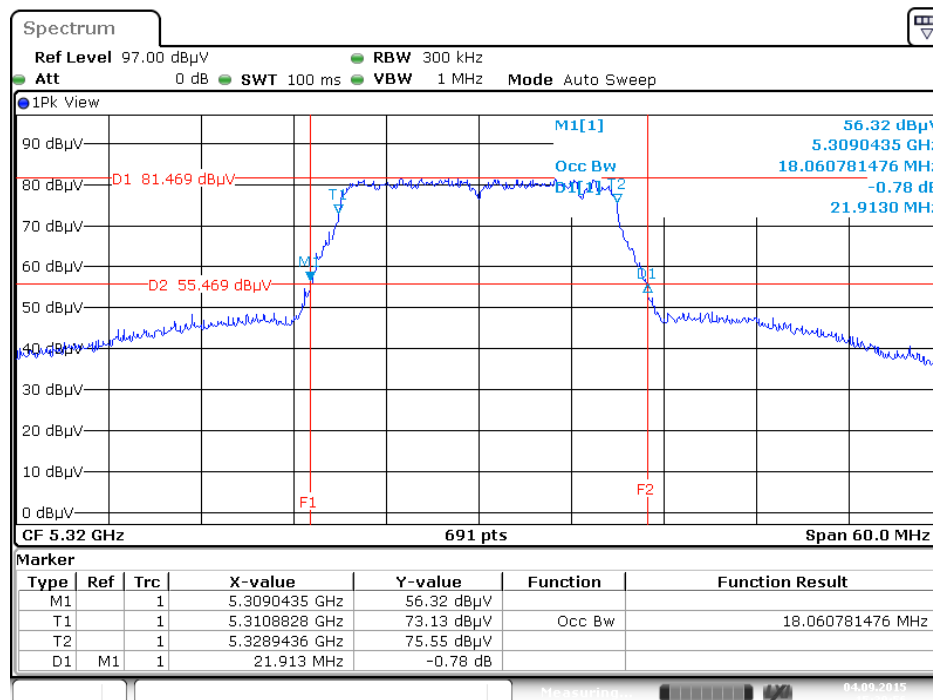
Date: 4 SEP 2015 15:29:04

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5300 MHz



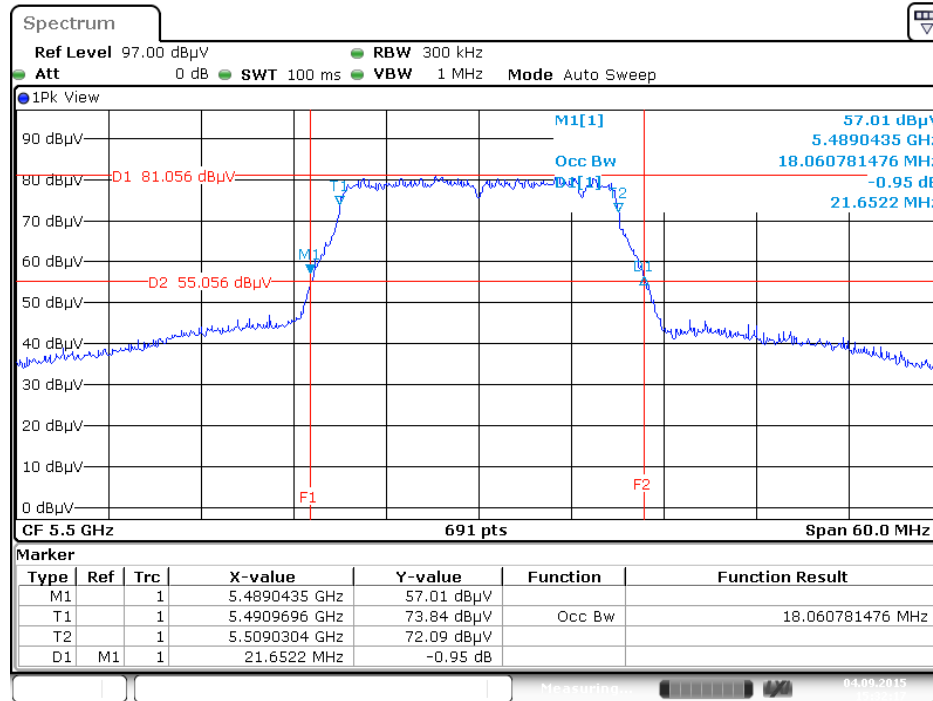
Date: 4 SEP 2015 15:29:37

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5320 MHz



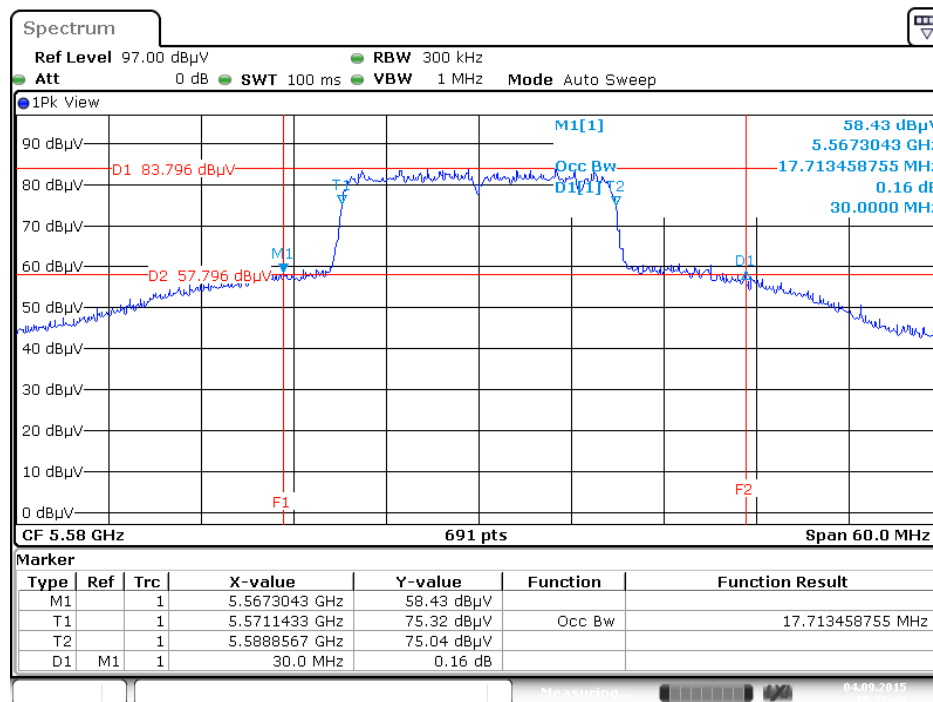
Date: 4 SEP 2015 15:30:56

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5500 MHz



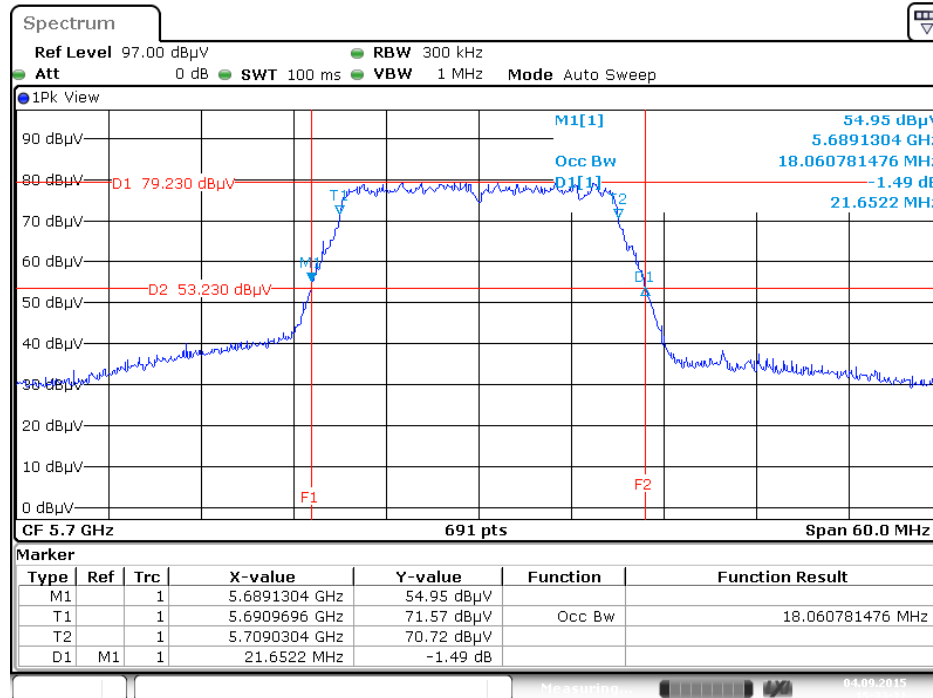
Date: 4 SEP 2015 15:32:17

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5580 MHz



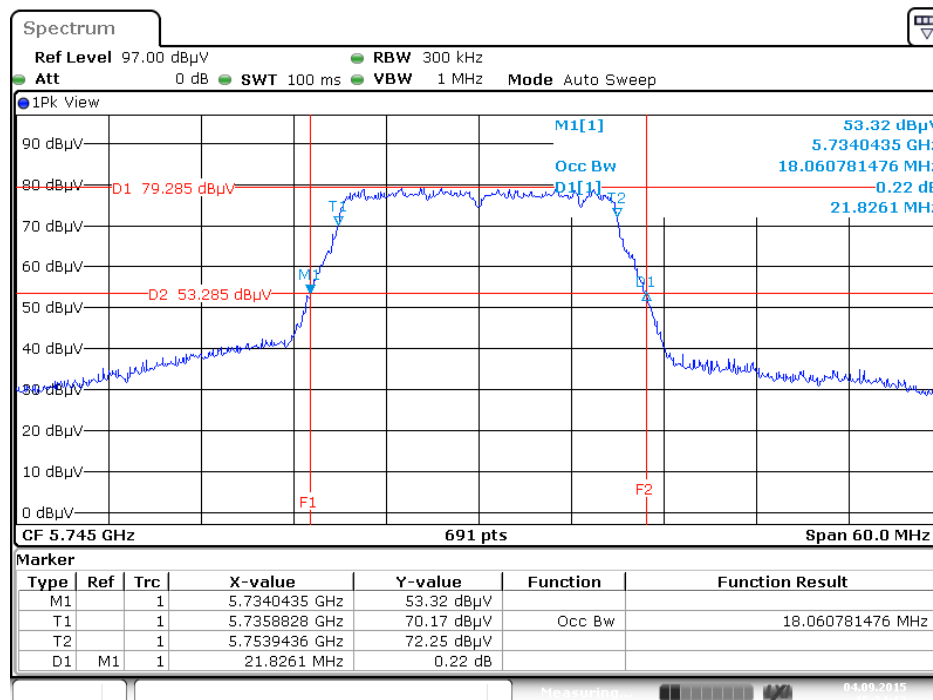
Date: 4 SEP 2015 15:32:50

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5700 MHz



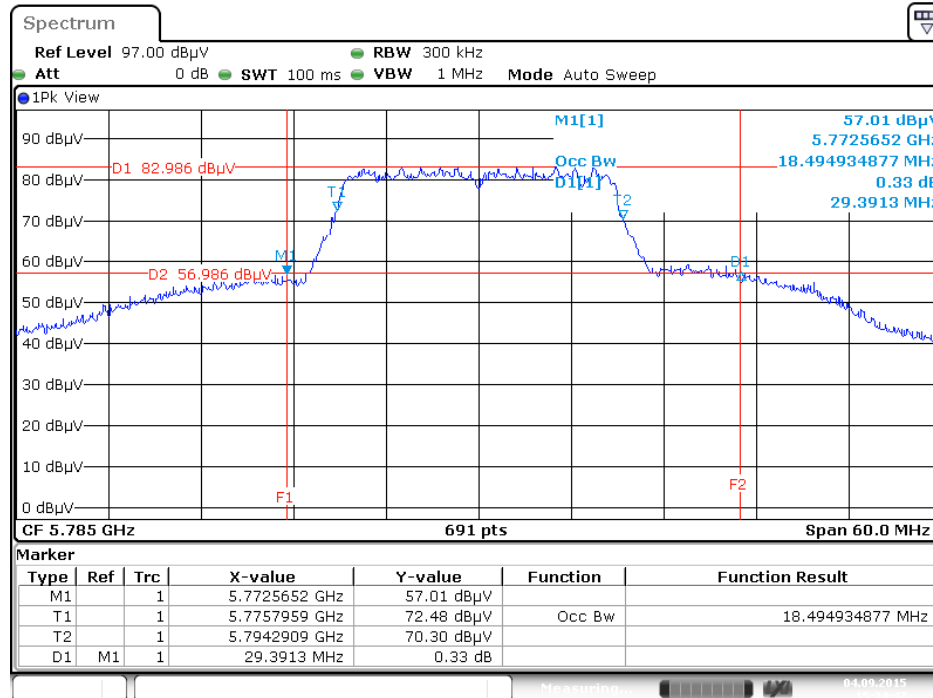
Date: 4 SEP 2015 15:33:31

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5745 MHz



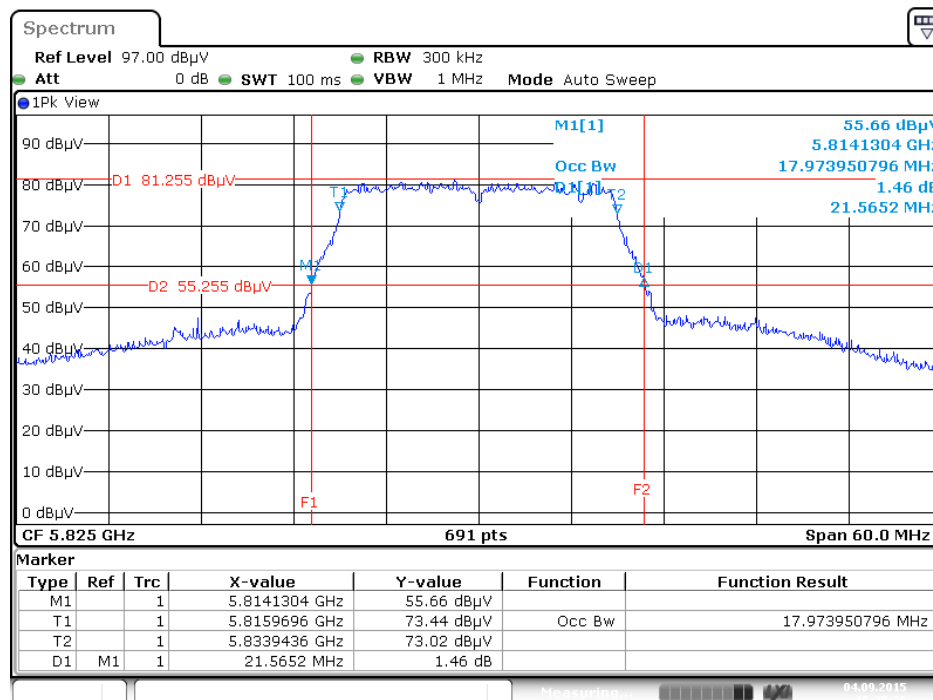
Date: 4 SEP 2015 15:34:13

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5785 MHz



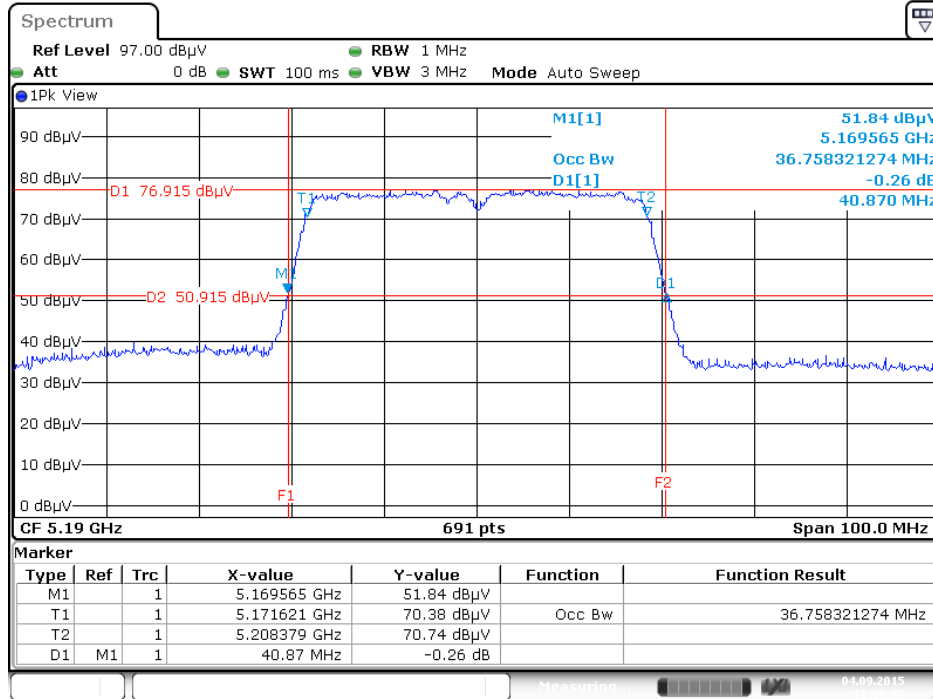
Date: 4 SEP 2015 15:34:48

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5825 MHz



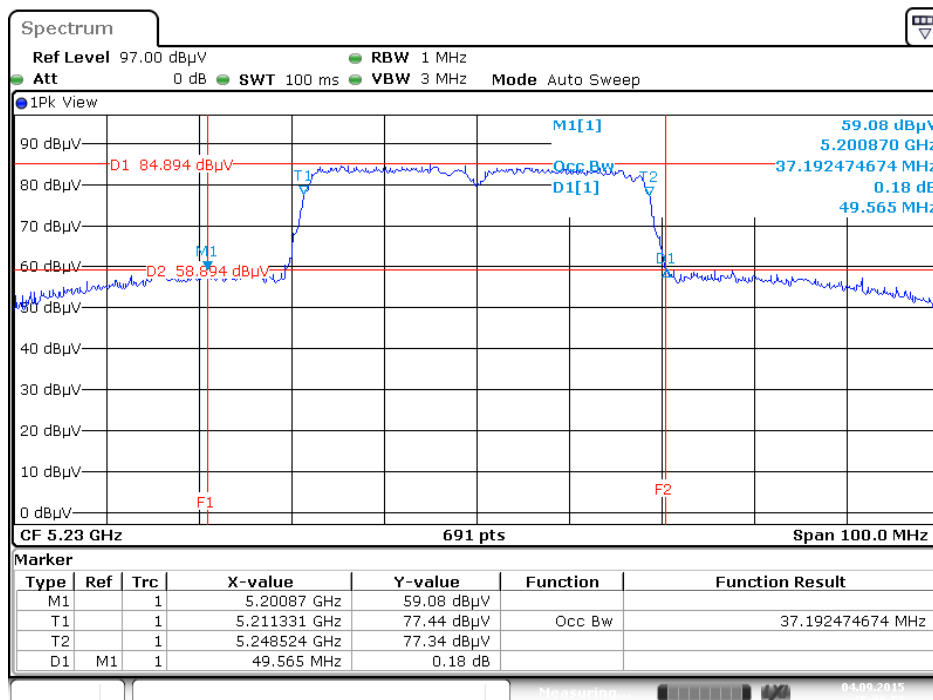
Date: 4 SEP 2015 15:35:26

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5190 MHz



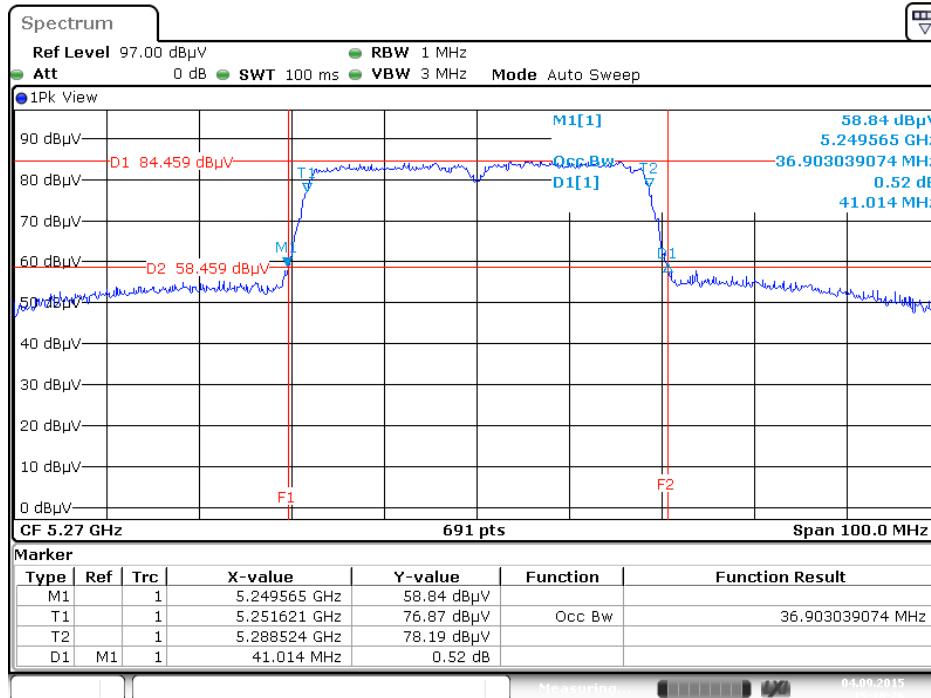
Date: 4 SEP 2015 15:08:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5230 MHz



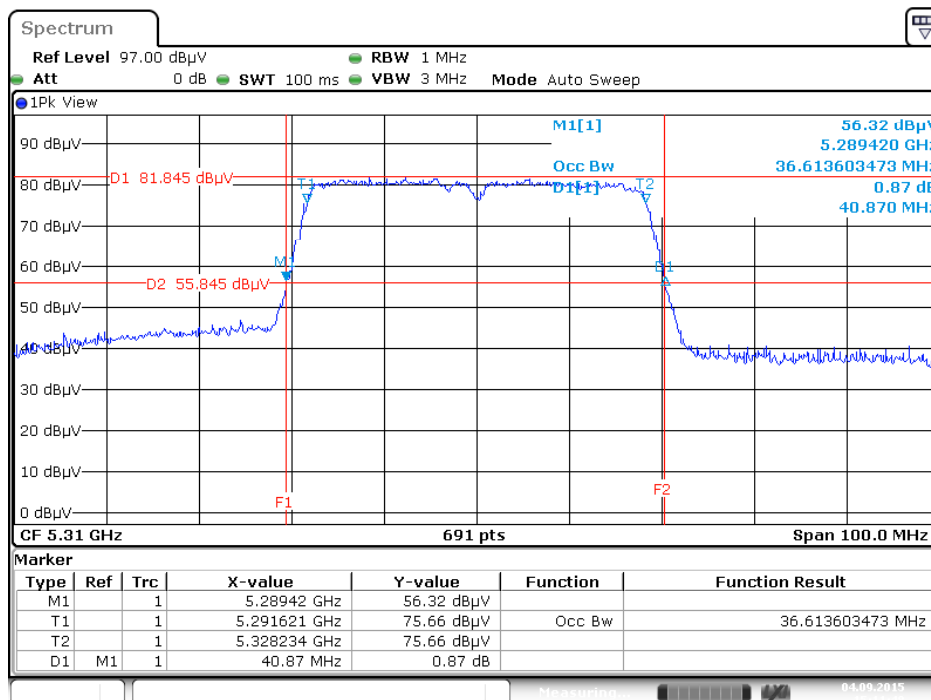
Date: 4 SEP 2015 15:08:57

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5270 MHz



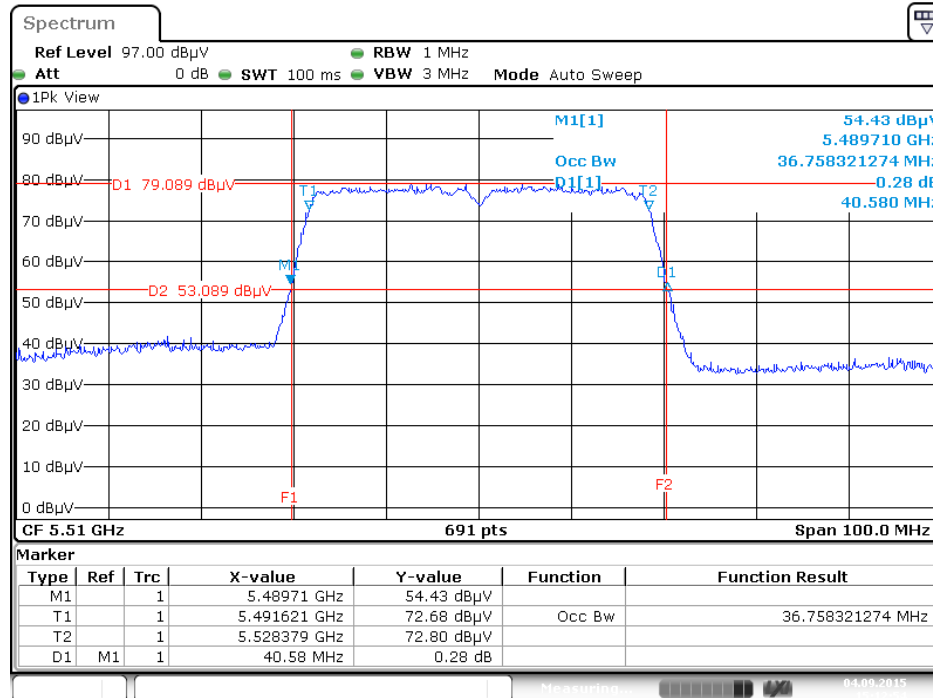
Date: 4 SEP 2015 15:10:26

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5310 MHz



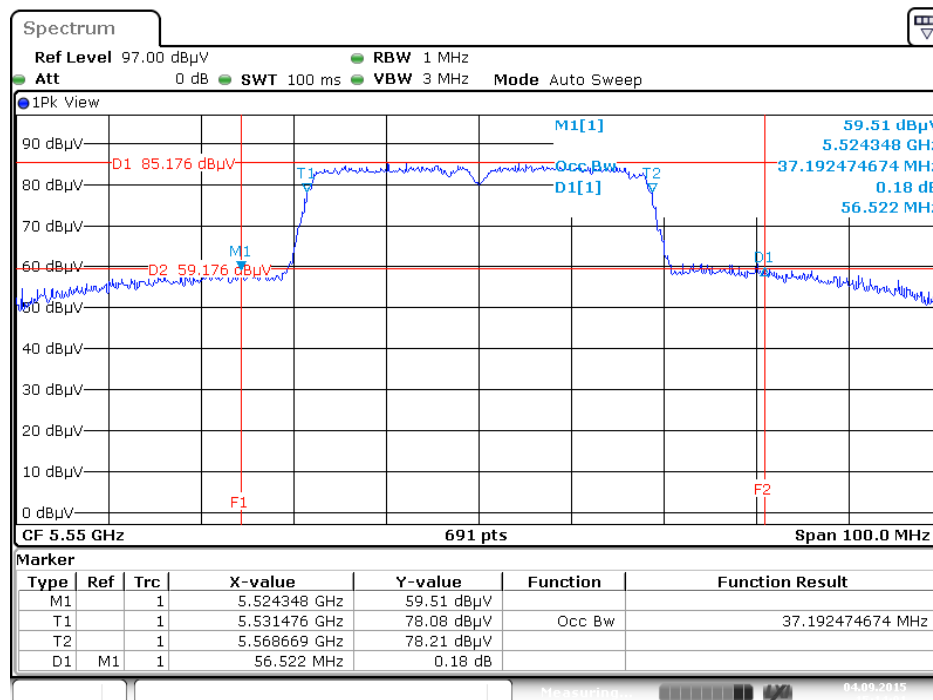
Date: 4 SEP 2015 15:11:48

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5510 MHz



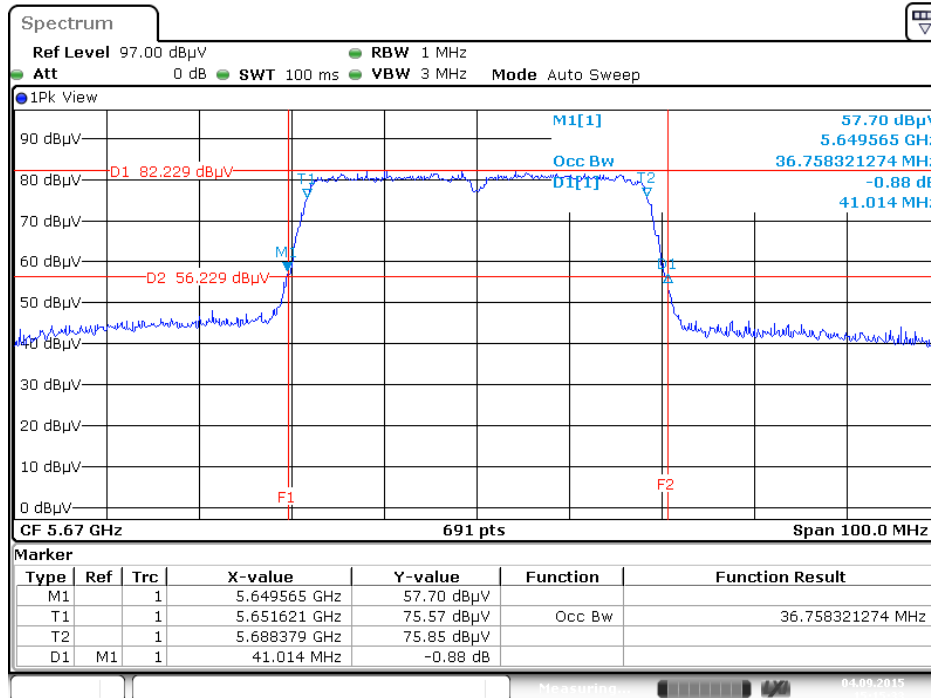
Date: 4 SEP 2015 15:12:54

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5550 MHz



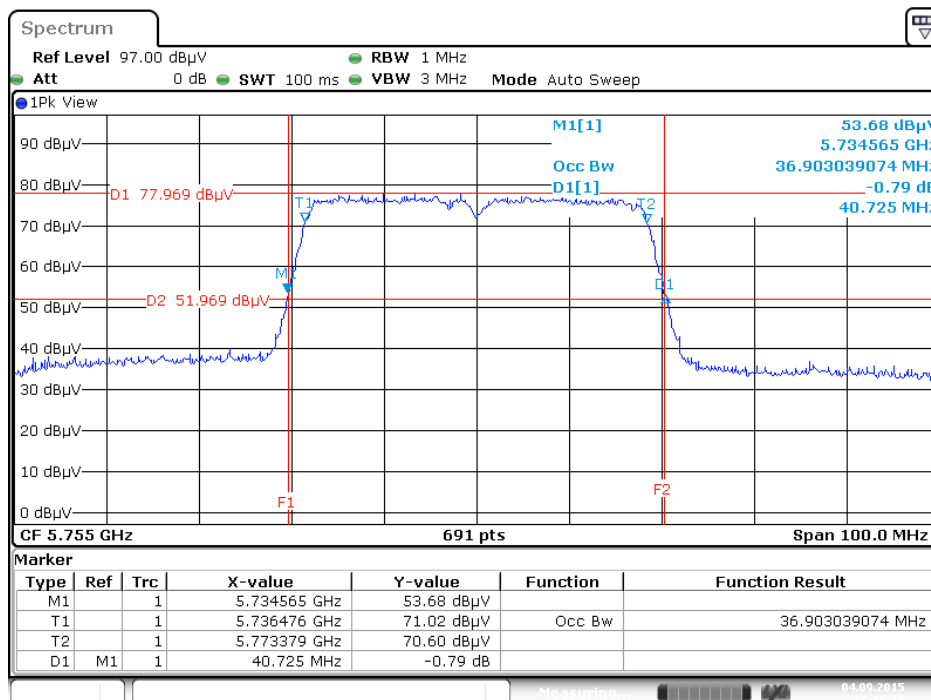
Date: 4 SEP 2015 15:14:01

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5670 MHz



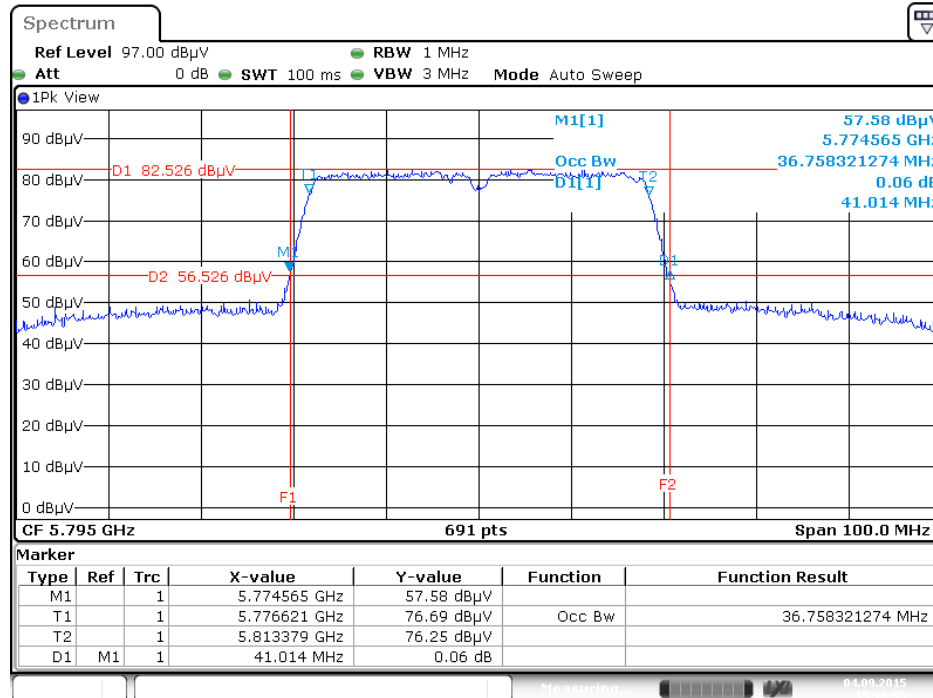
Date: 4 SEP 2015 15:15:33

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5755 MHz



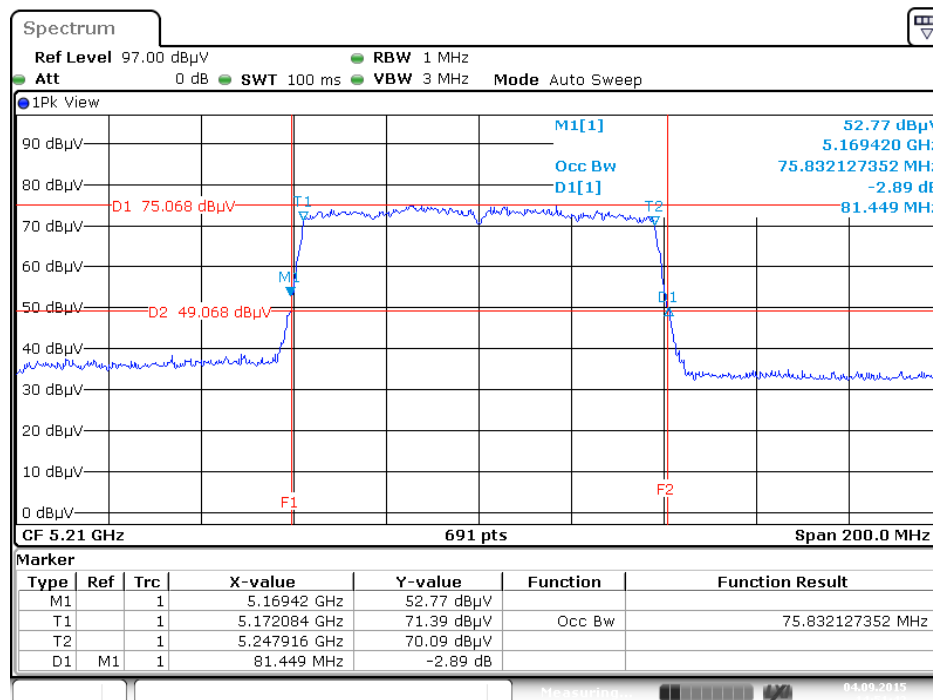
Date: 4 SEP 2015 15:16:18

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5795 MHz



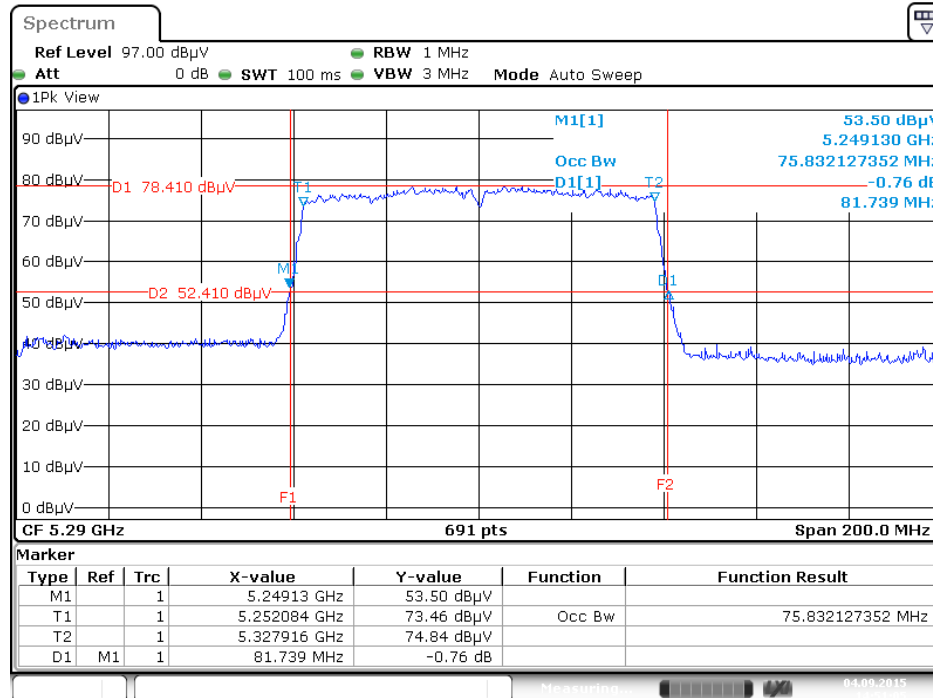
Date: 4 SEP 2015 15:16:54

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5210 MHz



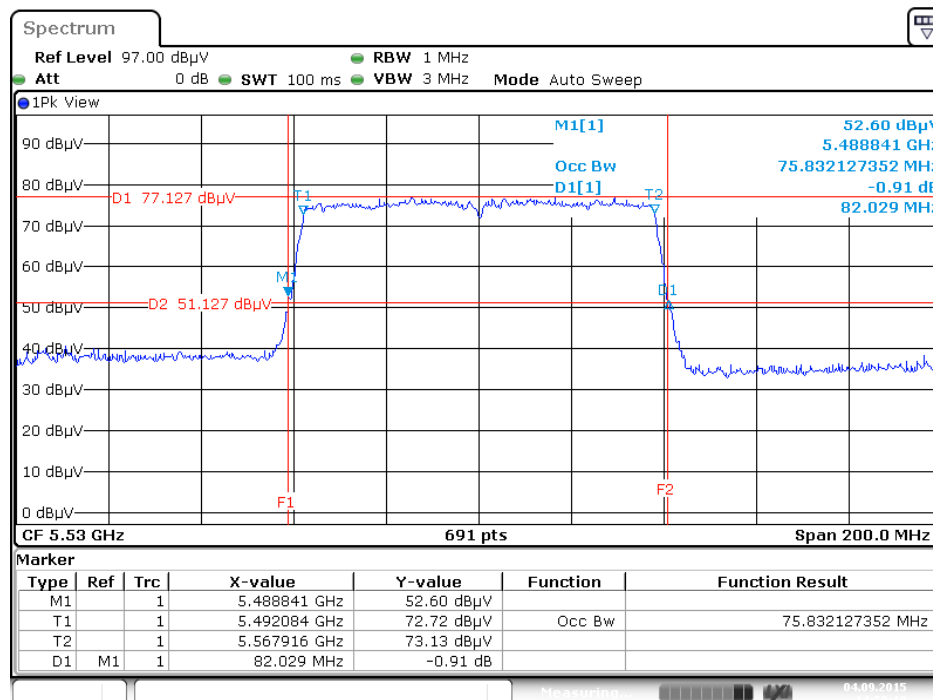
Date: 4 SEP 2015 14:51:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5290 MHz



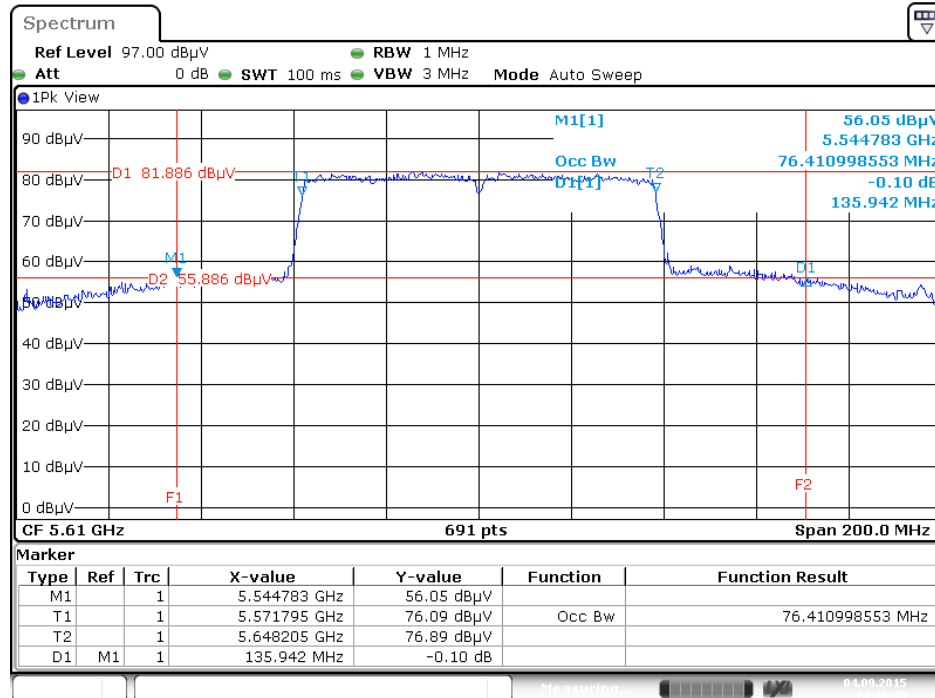
Date: 4 SEP 2015 14:51:05

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5530 MHz



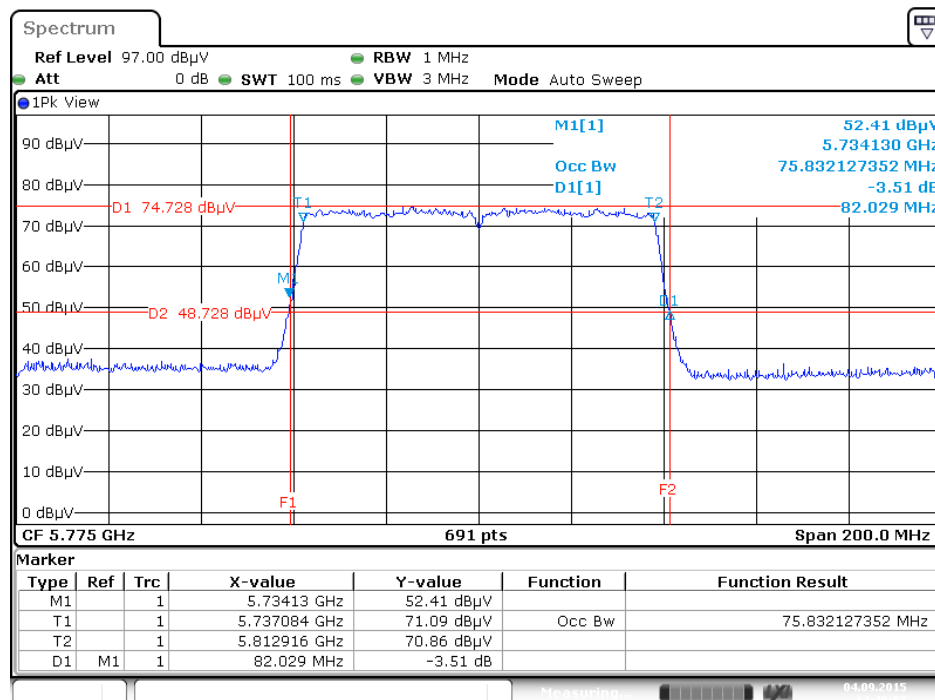
Date: 4 SEP 2015 14:50:19

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5610 MHz



Date: 4 SEP 2015 14:49:47

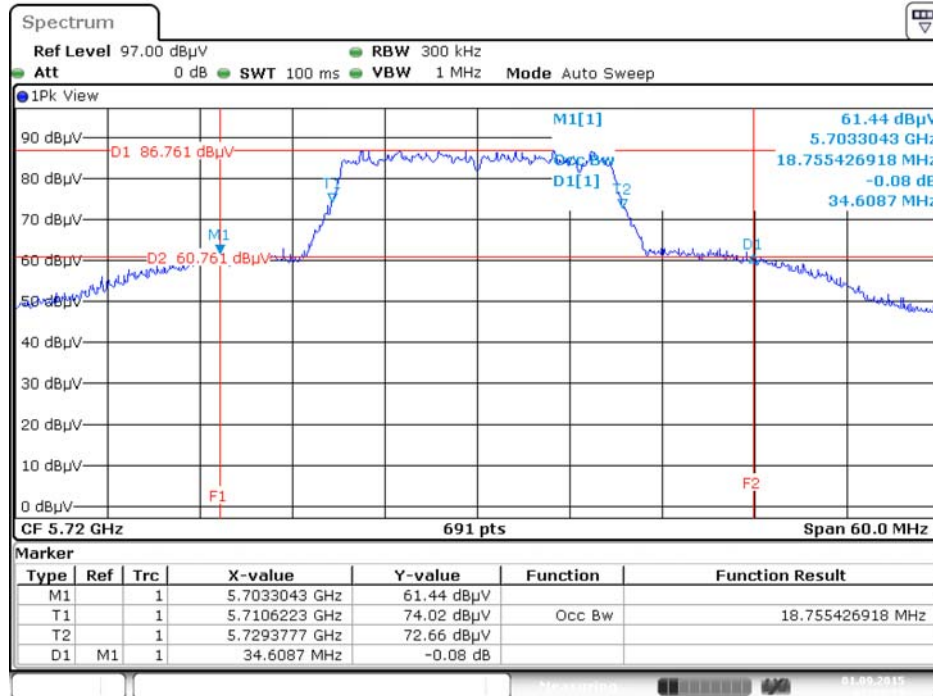
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5775 MHz



Date: 4 SEP 2015 14:49:08

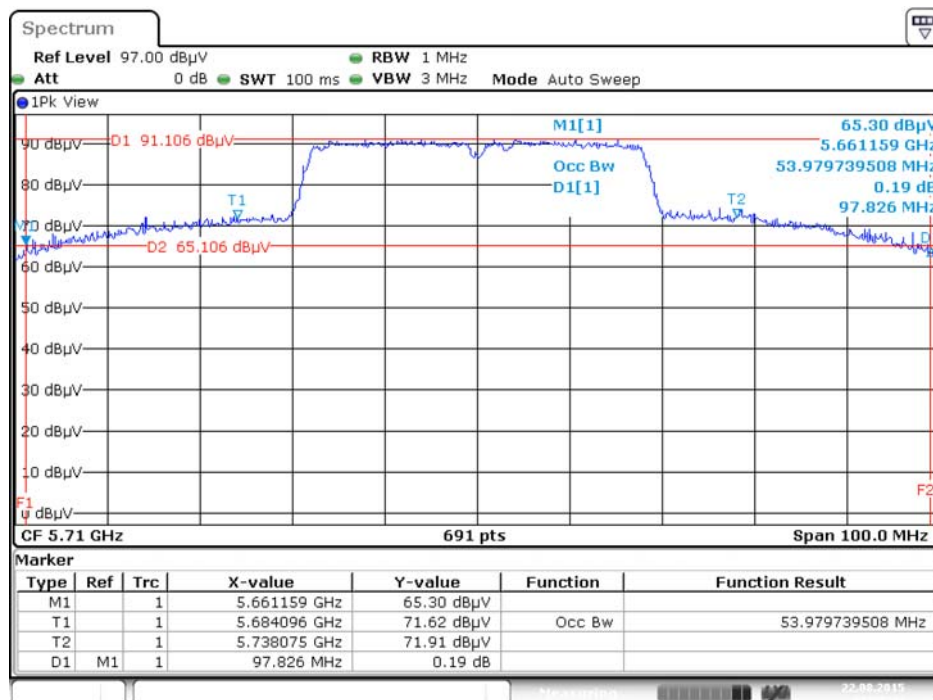
Straddle Channel

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5720 MHz



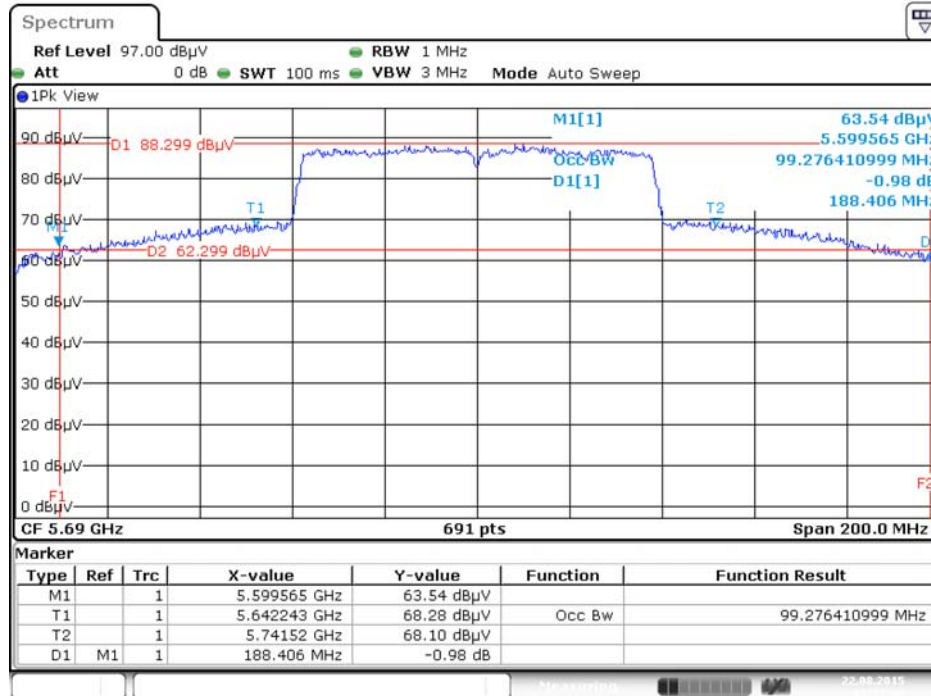
Date: 1.SEP.2015 02:33:33

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz



Date: 22.AUG.2015 01:28:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5690 MHz



Date: 22.AUG.2015 01:27:47

4.3. 6dB Spectrum Bandwidth Measurement

4.3.1. Limit

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

4.3.2. Measuring Instruments and Setting

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

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

4.3.3. 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 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (C) Emission Bandwidth.
3. Multiple antenna system was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. Measured the spectrum width with power higher than 6dB below carrier.

4.3.4. Test Setup Layout

For Radiated 6dB Bandwidth Measurement:

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

4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of 6dB Spectrum Bandwidth

Temperature	25°C	Humidity	60%
Test Engineer	Eddie Weng / Nick Peng	Test Function	Non-beamforming function

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	12.35	500	Complies
	5785 MHz	12.17	500	Complies
	5825 MHz	14.78	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	15.77	500	Complies
	5785 MHz	15.71	500	Complies
	5825 MHz	16.12	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	35.71	500	Complies
	5795 MHz	35.83	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	75.65	500	Complies

Straddle Channel

Mode	Frequency	6dB BW (MHz)	6dB BW M1 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11a	5720 MHz	12.35	5714.32	1.67	500	Complies
802.11ac MCS0/Nss1 VHT20	5720 MHz	16.00	5712.12	3.12	500	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	36.06	5692.15	3.20	500	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	72.75	5654.93	2.68	500	Complies

Temperature	25°C	Humidity	60%
Test Engineer	Eddie Weng / Nick Peng	Test Function	Beamforming function

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5745 MHz	17.56	500	Complies
	5785 MHz	15.94	500	Complies
	5825 MHz	17.33	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	35.59	500	Complies
	5795 MHz	35.82	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	75.07	500	Complies

Straddle Channel

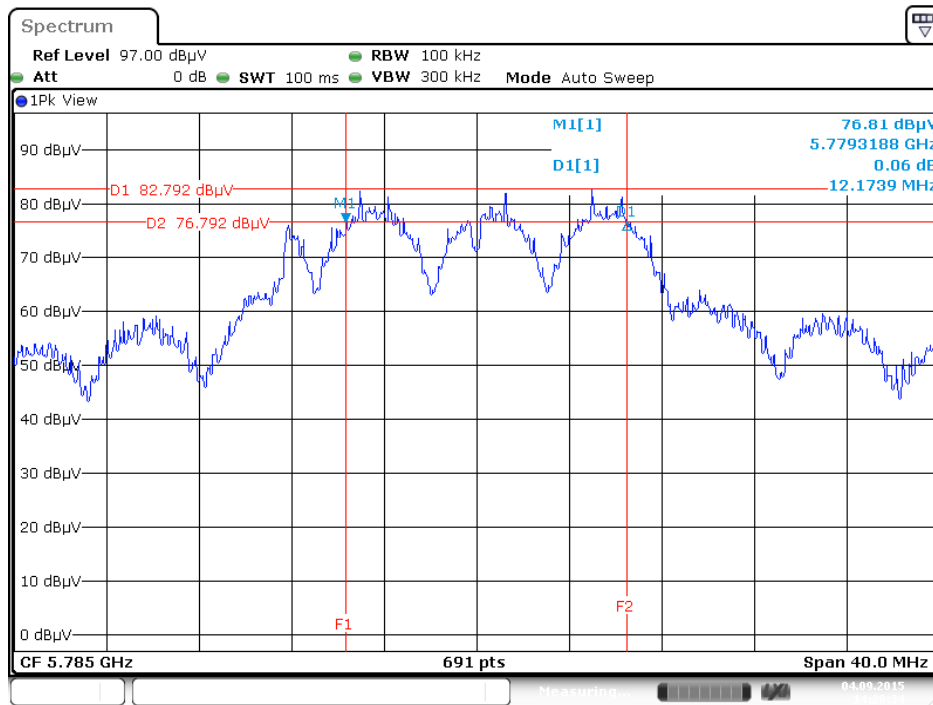
Mode	Frequency	6dB BW (MHz)	6dB BW M1 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5720 MHz	16.63	5711.77	3.40	500	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	35.24	5692.49	2.73	500	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	72.75	5654.93	2.68	500	Complies

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

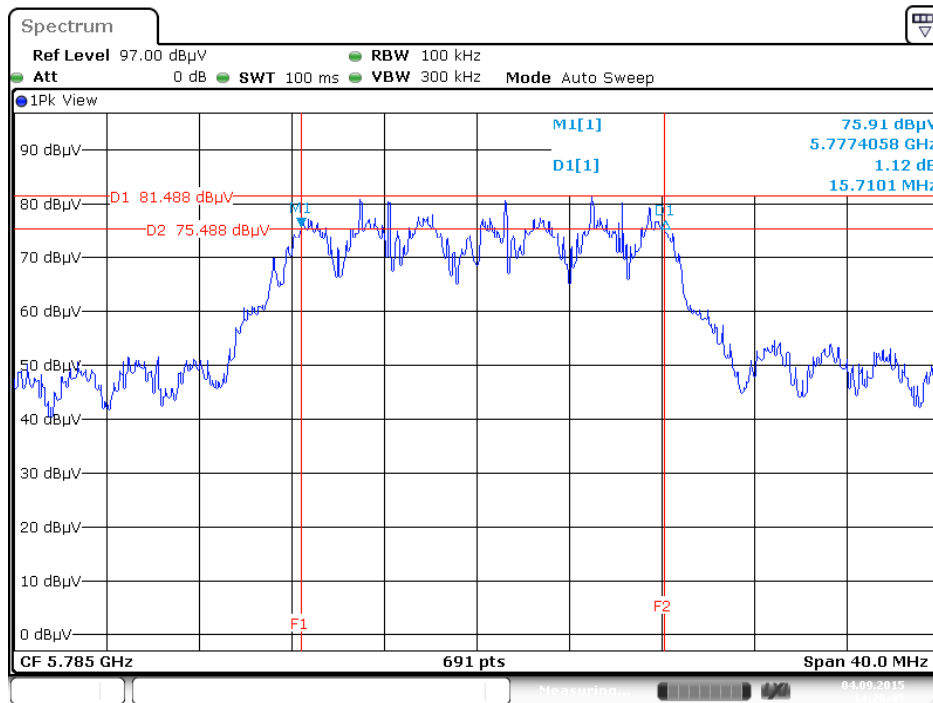
For plots, only the channel with worse result was shown.

For non-beamforming function:

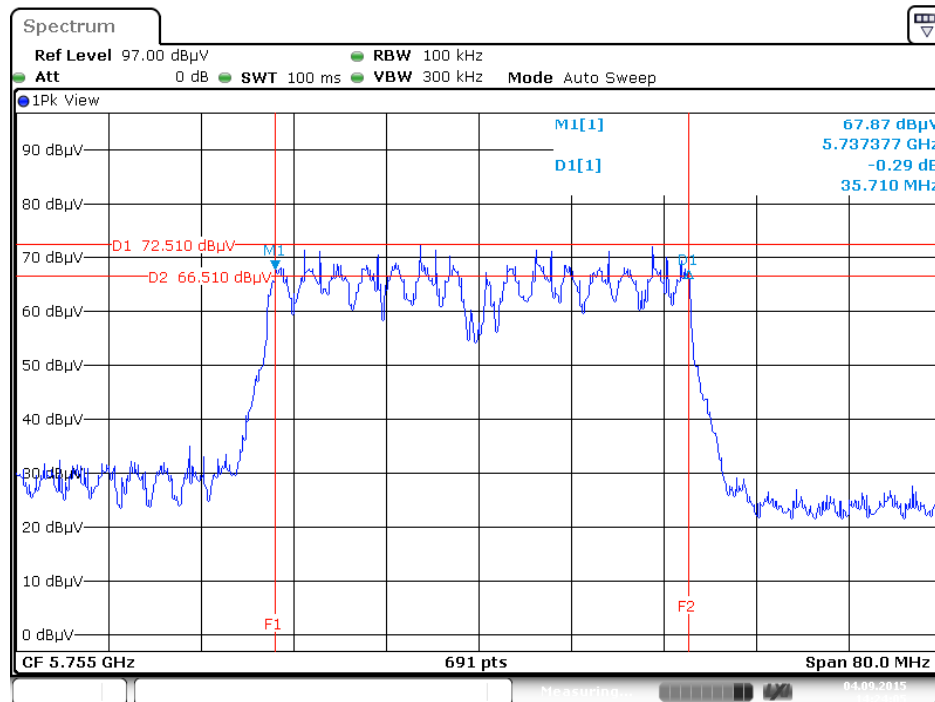
6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5785 MHz



6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5785 MHz

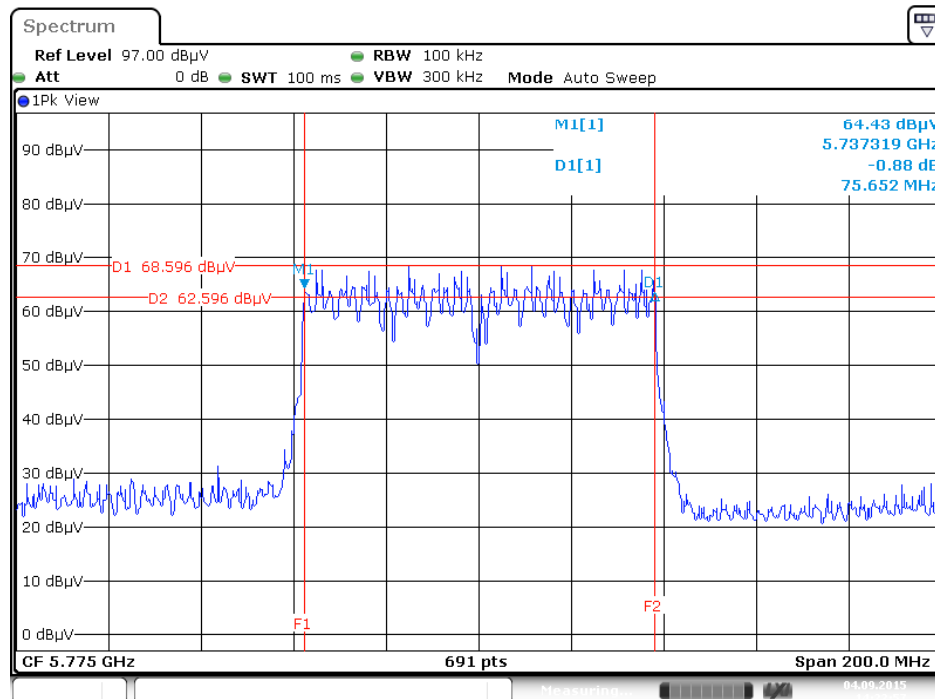


6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5755 MHz



Date: 4 SEP 2015 14:24:05

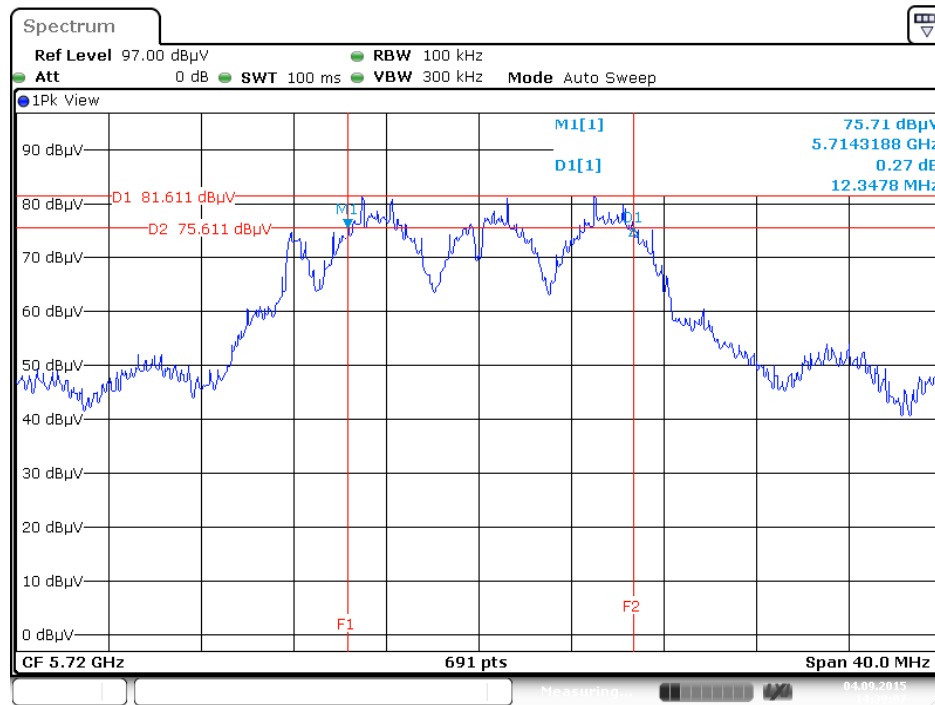
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5775 MHz



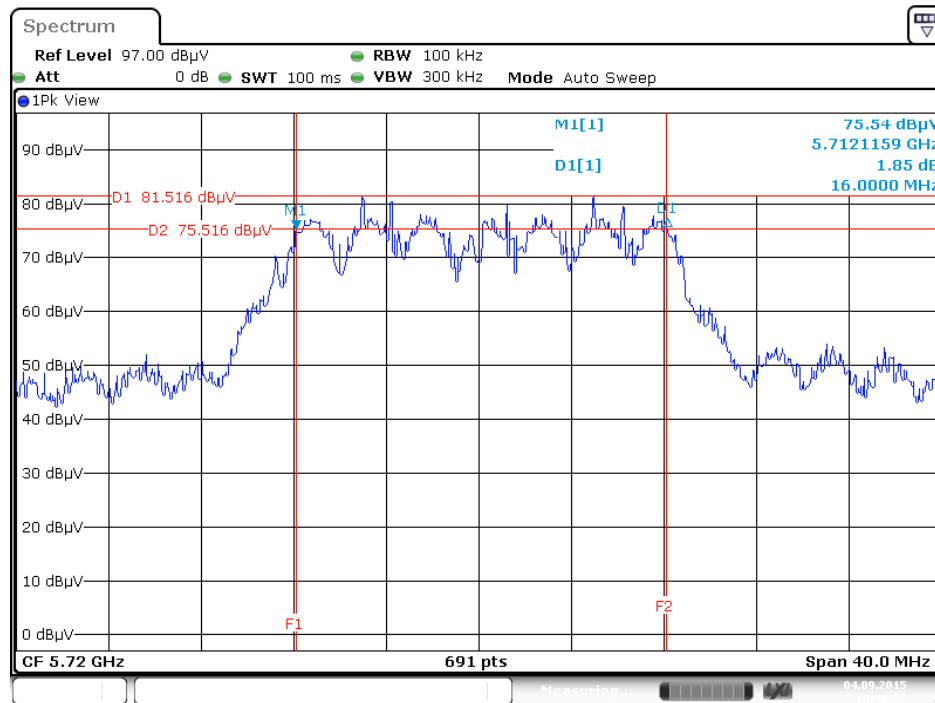
Date: 4 SEP 2015 14:22:57

Straddle Channel

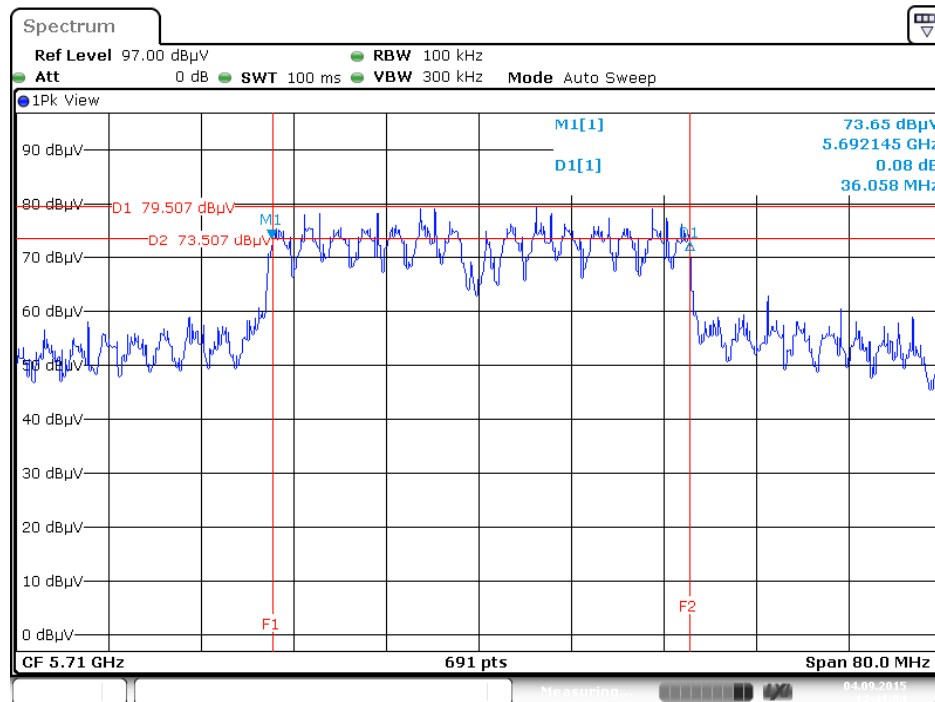
6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5720 MHz



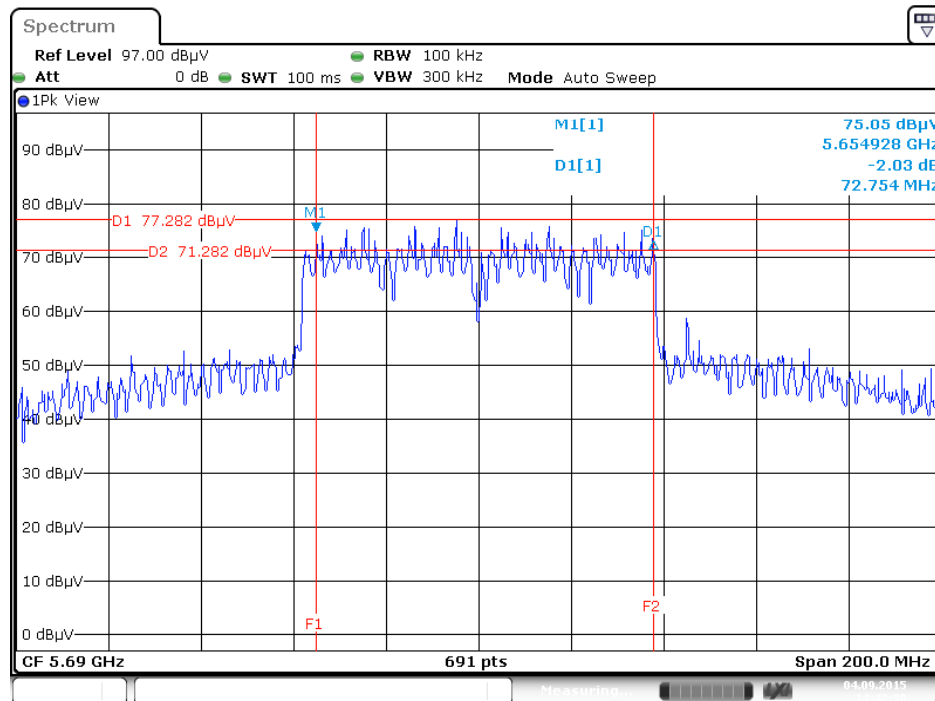
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5720 MHz



6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz

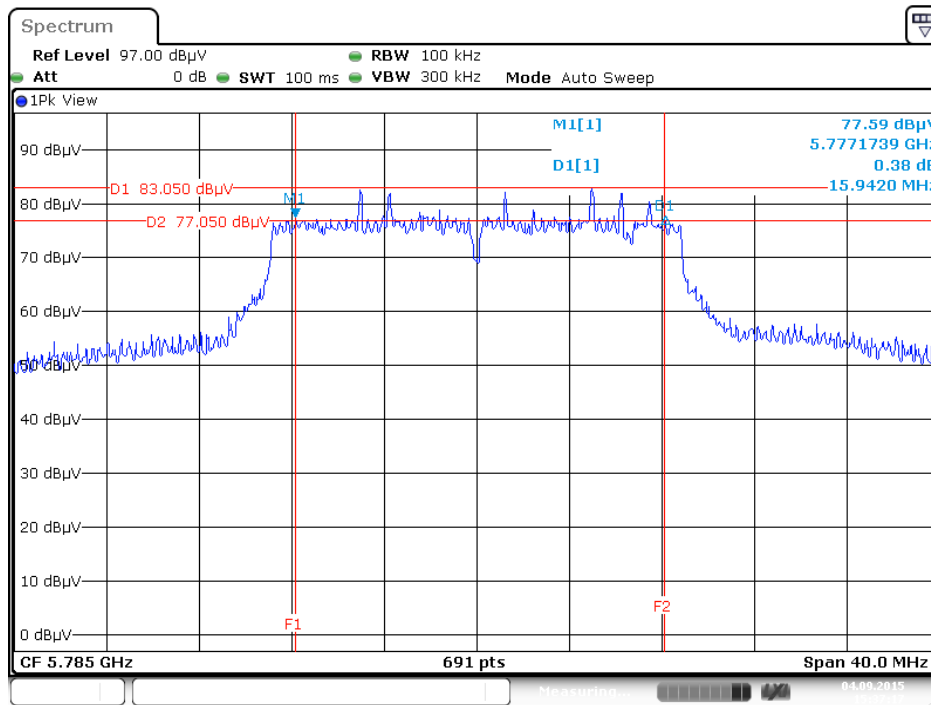


6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5690 MHz

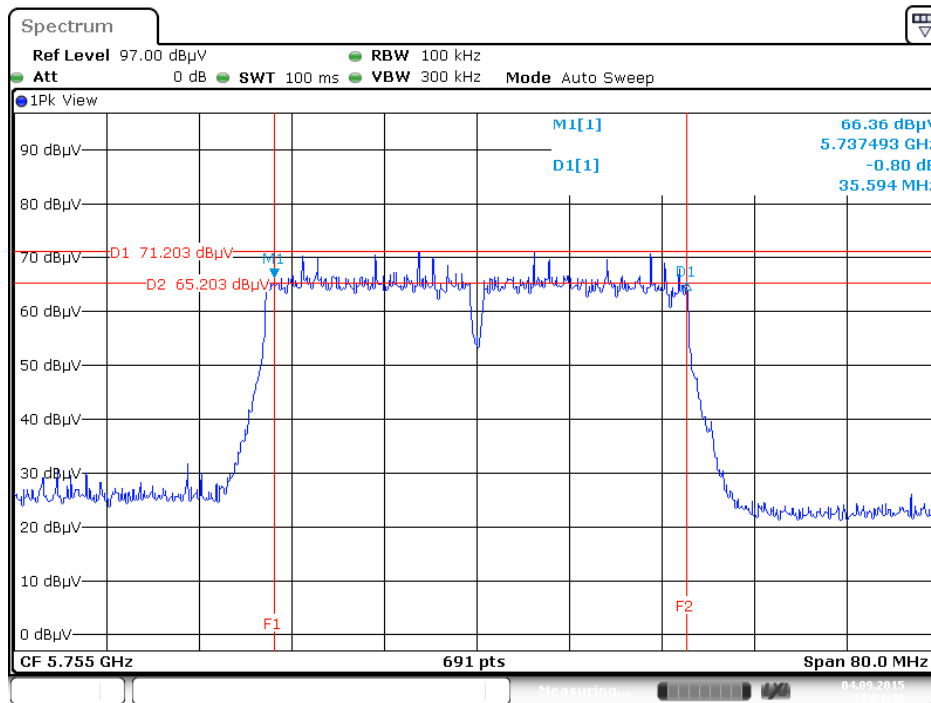


For beamforming function:

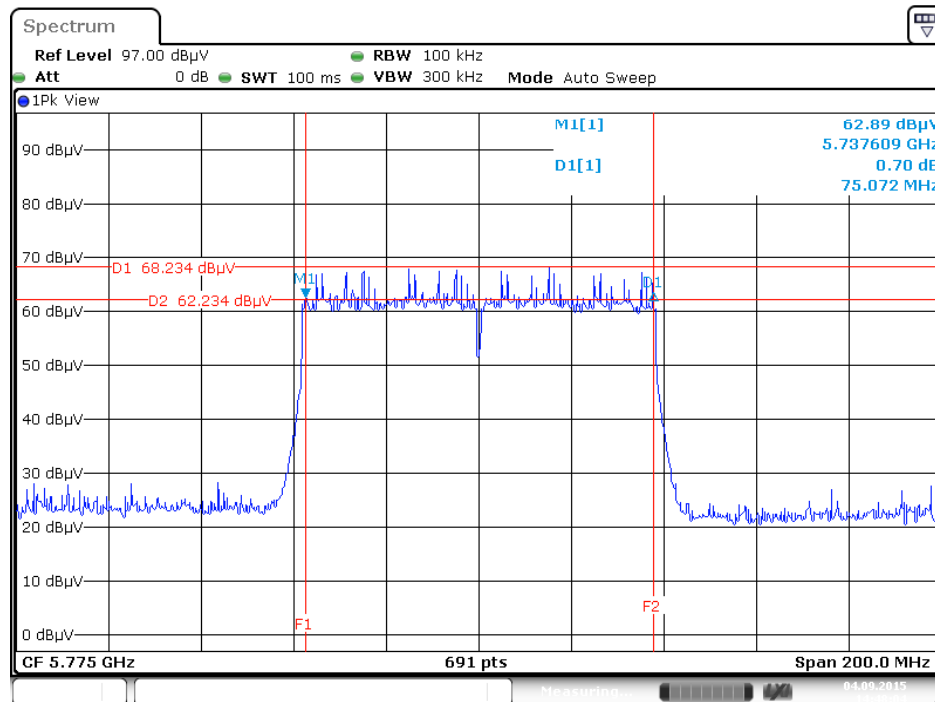
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5785 MHz



6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5755 MHz



6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5775 MHz



Date: 4 SEP 2015 14:48:05

4.4. Maximum Conducted Output Power Measurement

4.4.1. Limit

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

<input checked="" type="checkbox"/>	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.
<input checked="" type="checkbox"/>	5.470-5.725 GHz	
<input checked="" type="checkbox"/>	5.725~5.85 GHz	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.

4.4.2. Measuring Instruments and Setting

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

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

4.4.3. Test Procedures

For straddle channel:

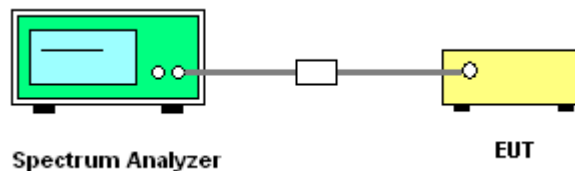
1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Test was performed in accordance with FCC Public Notice DA 02-2138, August 30, 2002.

For other channel:

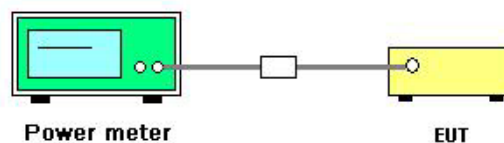
1. The transmitter output (antenna port) was connected to the power meter.
2. Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (E) Maximum conducted output power =>3. Measurement using a Power Meter (PM) =>b) Method PM-G (Measurement using a gated RF average power meter).
3. Multiple antenna systems was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. When measuring maximum conducted output power with multiple antenna systems, add every result of the values by mathematic formula.

4.4.4. Test Setup Layout

For straddle channel:



For other channel:



4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.4.7. Test Result of Maximum Conducted Output Power

Temperature	25°C	Humidity	60%
Test Engineer	Eddie Weng / Nick Peng	Test Function	Non-beamforming function
Test Date	For straddle channel: Aug. 22, 2015 / Sep. 01, 2015		
	For other channel: Aug. 22, 2015~Sep. 08, 2015		

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11a	5180 MHz	17.67	18.66	21.20	24.00	Complies
	5200 MHz	19.89	20.69	23.32	24.00	Complies
	5240 MHz	20.21	20.35	23.29	24.00	Complies
	5260 MHz	20.29	20.33	23.32	24.00	Complies
	5300 MHz	20.36	20.24	23.31	24.00	Complies
	5320 MHz	18.85	18.63	21.75	24.00	Complies
	5500 MHz	18.74	18.06	21.42	24.00	Complies
	5580 MHz	20.41	20.17	23.30	24.00	Complies
	5700 MHz	17.52	16.72	20.15	24.00	Complies
	5745 MHz	18.04	17.22	20.66	30.00	Complies
	5785 MHz	19.20	18.08	21.69	30.00	Complies
	5825 MHz	19.24	17.56	21.49	30.00	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	17.96	18.59	21.30	24.00	Complies
	5200 MHz	19.89	20.67	23.31	24.00	Complies
	5240 MHz	20.08	20.48	23.29	24.00	Complies
	5260 MHz	20.35	20.22	23.30	24.00	Complies
	5300 MHz	20.31	20.17	23.25	24.00	Complies
	5320 MHz	18.93	18.72	21.84	24.00	Complies
	5500 MHz	18.57	17.79	21.21	24.00	Complies
	5580 MHz	20.56	19.95	23.28	24.00	Complies
	5700 MHz	16.91	16.05	19.51	24.00	Complies
	5745 MHz	17.48	16.40	19.98	30.00	Complies
	5785 MHz	22.04	21.68	24.87	30.00	Complies
	5825 MHz	19.65	17.86	21.86	30.00	Complies

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11ac MCS0/Nss1 VHT40	5190 MHz	11.83	12.21	15.03	24.00	Complies
	5230 MHz	18.55	19.42	22.02	24.00	Complies
	5270 MHz	20.62	20.32	23.48	24.00	Complies
	5310 MHz	17.29	16.81	20.07	24.00	Complies
	5510 MHz	14.23	13.62	16.95	24.00	Complies
	5550 MHz	20.22	19.45	22.86	24.00	Complies
	5670 MHz	16.96	16.16	19.59	24.00	Complies
	5755 MHz	13.16	11.85	15.56	30.00	Complies
	5795 MHz	18.42	17.12	20.83	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	11.74	12.48	15.14	24.00	Complies
	5290 MHz	16.78	16.65	19.73	24.00	Complies
	5530 MHz	13.53	13.71	16.63	24.00	Complies
	5610 MHz	18.69	17.48	21.14	24.00	Complies
	5775 MHz	14.16	12.91	16.59	30.00	Complies

Straddle Channel

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11a	5720 MHz (UNII 2C)	19.14	17.84	21.55	23.75	Complies
	5720 MHz (UNII 3)	12.98	11.68	15.39	30.00	Complies
802.11ac MCS0/Nss1 VHT20	5720 MHz (UNII 2C)	19.58	18.18	21.95	24.00	Complies
	5720 MHz (UNII 3)	13.92	12.53	16.29	30.00	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz (UNII 2C)	20.78	19.75	23.31	24.00	Complies
	5710 MHz (UNII 3)	10.34	9.59	12.99	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz (UNII 2C)	21.00	19.78	23.44	24.00	Complies
	5690 MHz (UNII 3)	7.19	6.05	9.67	30.00	Complies

Note: The power limit=24dBm or $11 + 10 \cdot \log(B)$

The power limit of 11a 5720MHz (UNII 2C)= $11 + 10 \cdot \log(18.83)=23.75\text{dBm} < 24\text{dBm}$, so the limit=23.75dBm

Temperature	25°C	Humidity	60%
Test Engineer	Eddie Weng / Nick Peng	Test Function	Beamforming function
Test Date	For straddle channel: Aug. 22, 2015 / Sep. 01, 2015		
	For other channel: Aug. 22, 2015~Sep. 08, 2015		

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11ac MCS0/Nss1 VHT20	5180 MHz	17.74	18.35	21.07	23.33	Complies
	5200 MHz	19.47	20.12	22.82	23.33	Complies
	5240 MHz	19.54	20.04	22.81	23.33	Complies
	5260 MHz	19.64	19.76	22.71	23.33	Complies
	5300 MHz	19.95	19.67	22.82	23.33	Complies
	5320 MHz	18.43	18.46	21.46	23.33	Complies
	5500 MHz	18.57	17.79	21.21	23.33	Complies
	5580 MHz	20.07	19.52	22.81	23.33	Complies
	5700 MHz	16.91	16.05	19.51	23.33	Complies
	5745 MHz	17.27	16.15	19.76	29.33	Complies
	5785 MHz	21.17	20.26	23.75	29.33	Complies
	5825 MHz	19.42	17.57	21.60	29.33	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	11.67	12.18	14.94	23.33	Complies
	5230 MHz	19.31	20.18	22.78	23.33	Complies
	5270 MHz	19.84	19.58	22.72	23.33	Complies
	5310 MHz	16.87	16.61	19.75	23.33	Complies
	5510 MHz	13.72	13.15	16.45	23.33	Complies
	5550 MHz	19.79	19.09	22.46	23.33	Complies
	5670 MHz	16.41	16.18	19.31	23.33	Complies
	5755 MHz	13.16	11.85	15.56	29.33	Complies
	5795 MHz	18.42	17.12	20.83	29.33	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	12.34	13.12	15.76	23.33	Complies
	5290 MHz	16.78	16.65	19.73	23.33	Complies
	5530 MHz	14.97	14.43	17.72	23.33	Complies
	5610 MHz	19.73	18.91	22.35	23.33	Complies
	5775 MHz	13.49	12.36	15.97	29.33	Complies

Note: $Directional\ Gain = 10 \log \left[\frac{\sum_{j=1}^{N_{SS}} \left(\sum_{K=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right] = 6.67 \text{dBi} > 6 \text{dBi}.$

1. For band 1~3 power limit=24 - (6.67 - 6)=23.33dBm.
2. For band 4 power limit=30 - (6.67 - 6)=29.33dBm.

Straddle Channel

Mode	Frequency	Conducted Power (dBm)			Max. Limit (dBm)	Result
		Chain 1	Chain 2	Total		
802.11ac MCS0/Nss1 VHT20	5720 MHz (UNII 2C)	19.77	18.46	22.17	23.33	Complies
	5720 MHz (UNII 3)	14.11	12.81	16.52	29.33	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz (UNII 2C)	20.31	19.12	22.77	23.33	Complies
	5710 MHz (UNII 3)	9.81	8.94	12.41	29.33	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz (UNII 2C)	20.30	19.21	22.80	23.33	Complies
	5690 MHz (UNII 3)	6.30	5.40	8.88	29.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}.$

1. (UNII 2C) power limit = $24 - (6.67 - 6) = 23.33\text{dBm}.$
2. (UNII 3) power limit = $30 - (6.67 - 6) = 29.33\text{dBm}.$

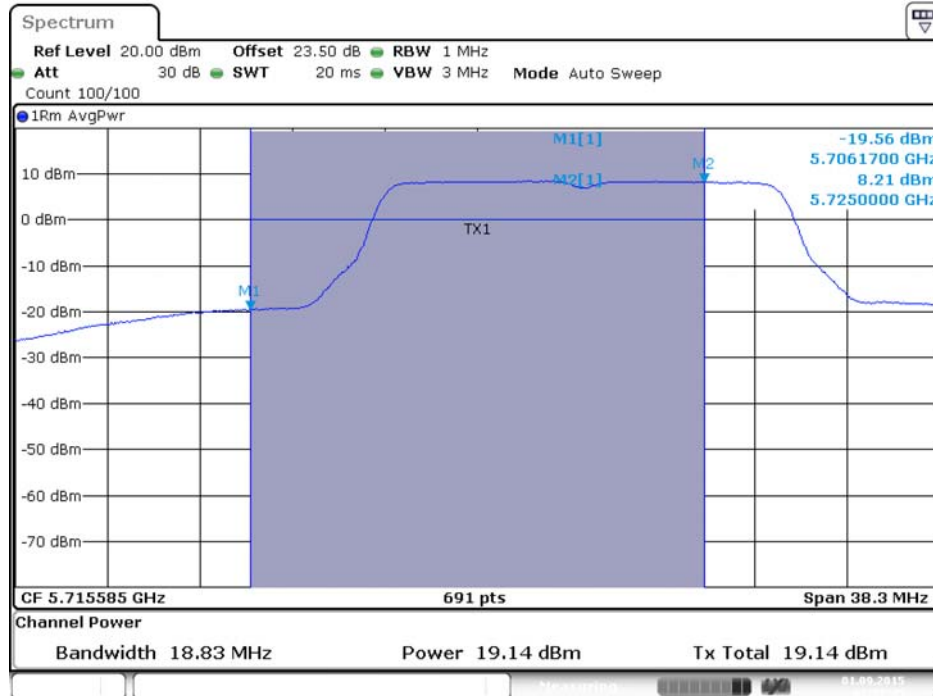
Note: All the test values were listed in the report.

For plots, only the straddle channel result was shown.

For non-beamforming function:

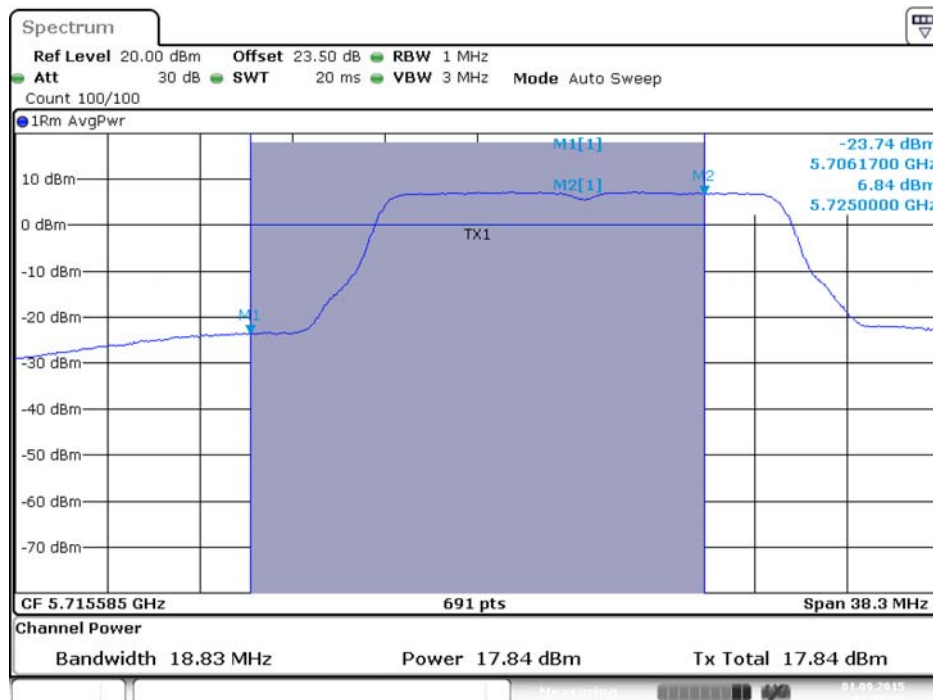
Straddle Channel

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 1 / 5720 MHz (UNII 2C)



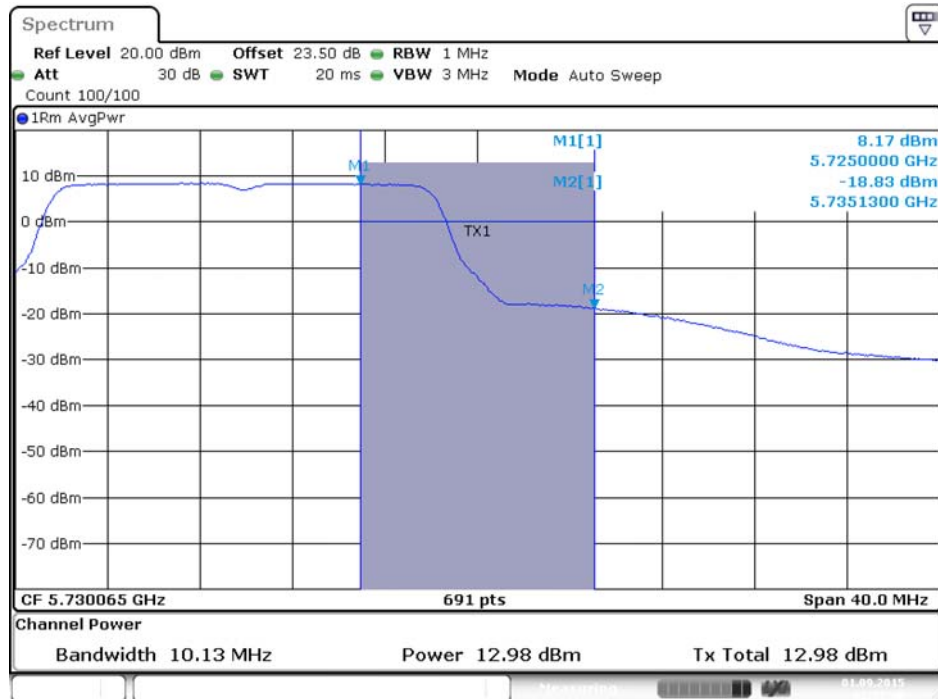
Date: 1.SEP.2015 02:57:45

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



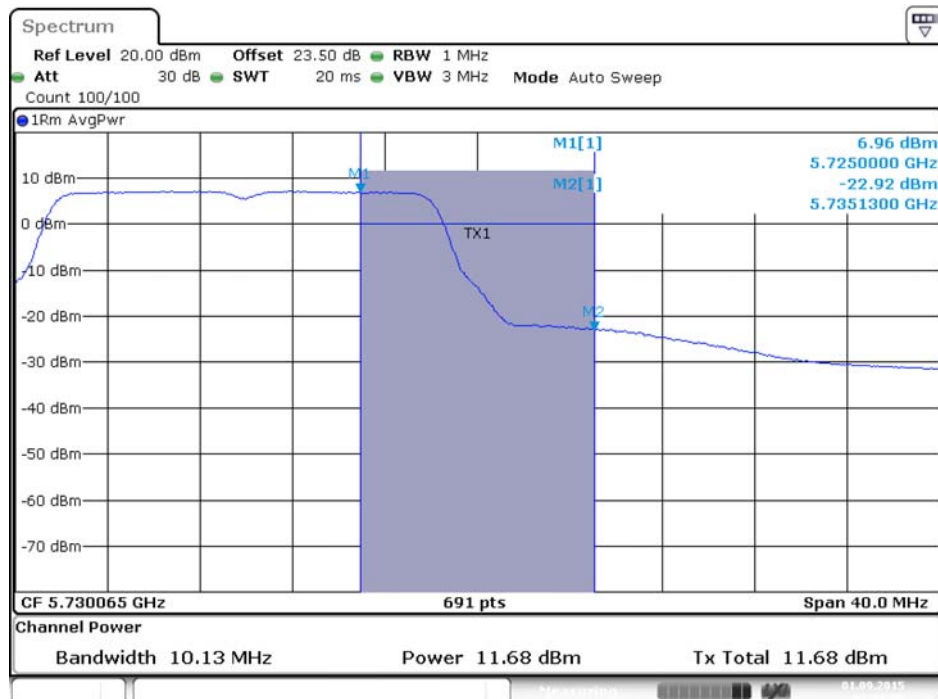
Date: 1.SEP.2015 02:57:52

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 1 / 5720 MHz (UNII 3)



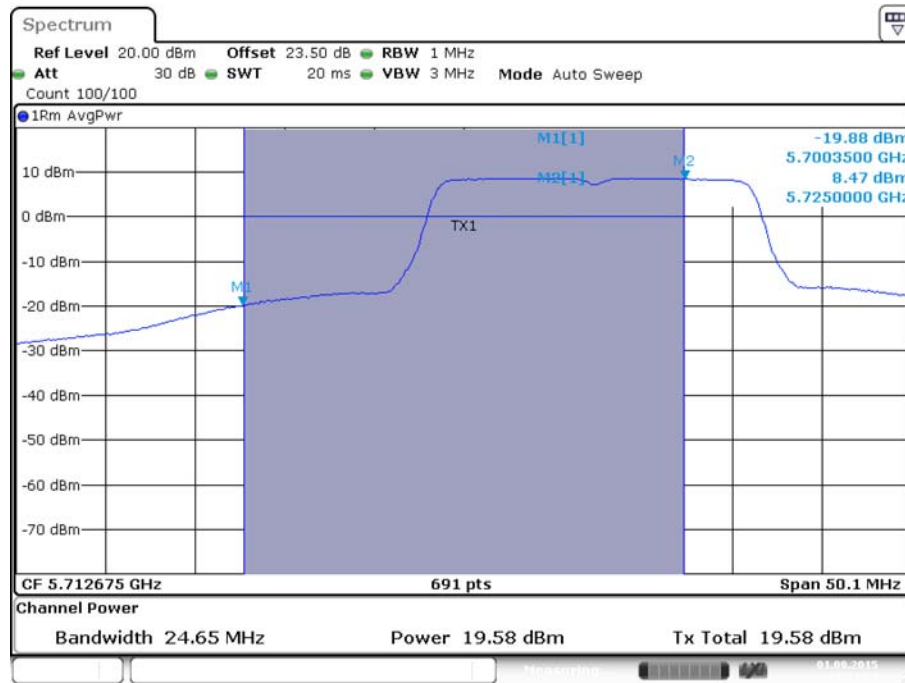
Date: 1.SEP.2015 02:57:48

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 2 / 5720 MHz (UNII 3)



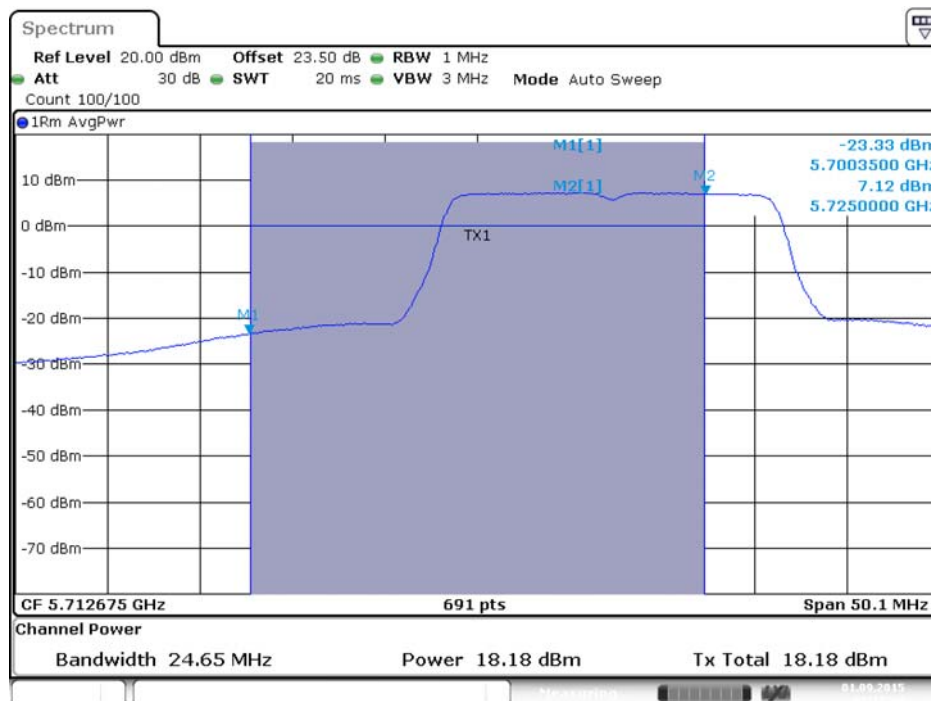
Date: 1.SEP.2015 02:57:55

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5720 MHz (UNII 2C)



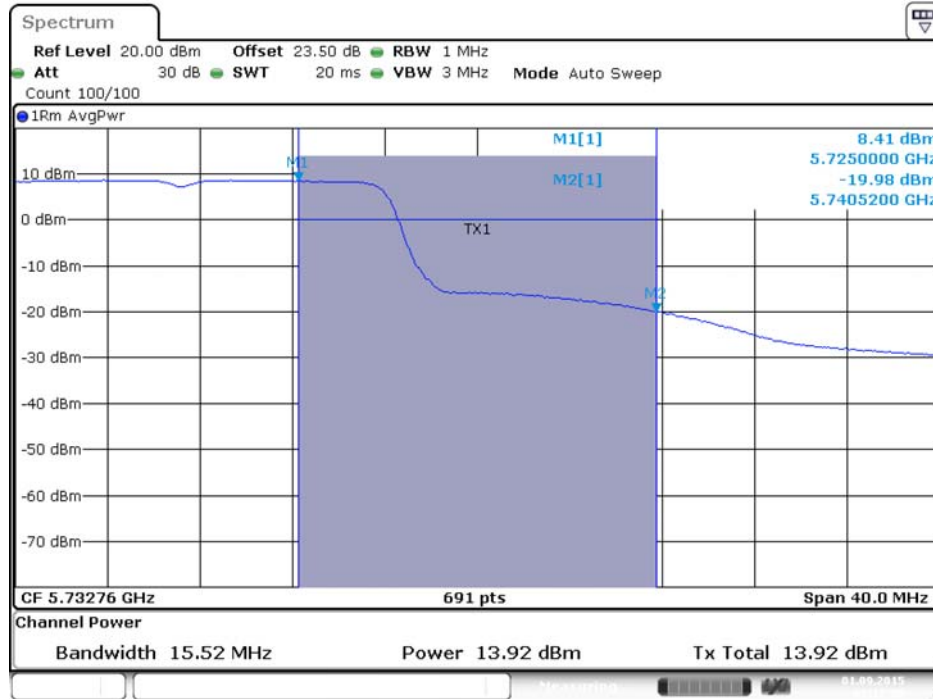
Date: 1.SEP.2015 03:17:27

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



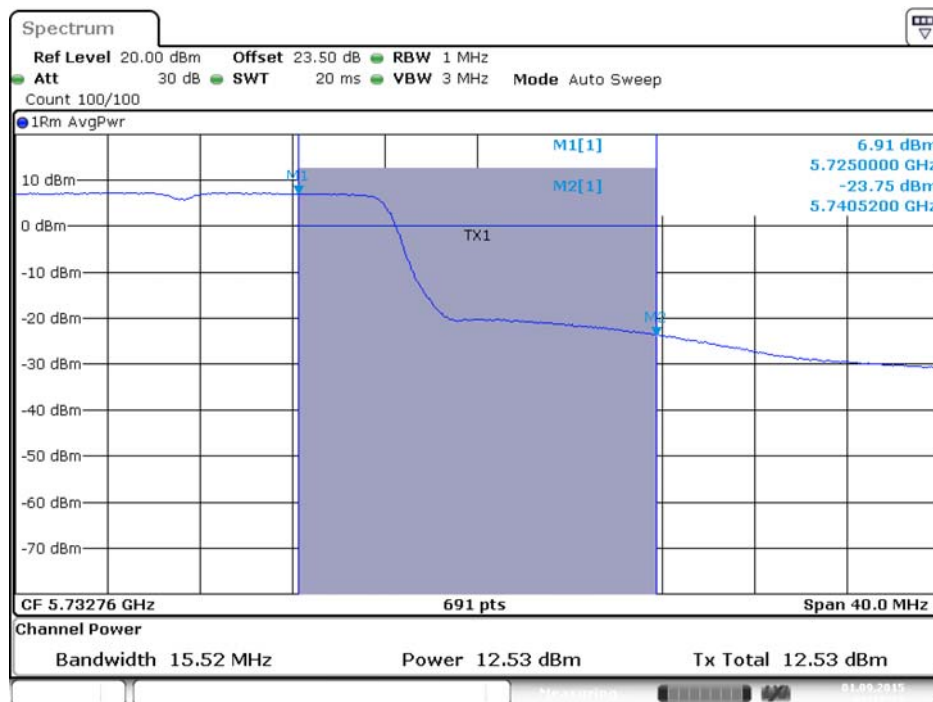
Date: 1.SEP.2015 03:17:34

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5720 MHz (UNII 3)



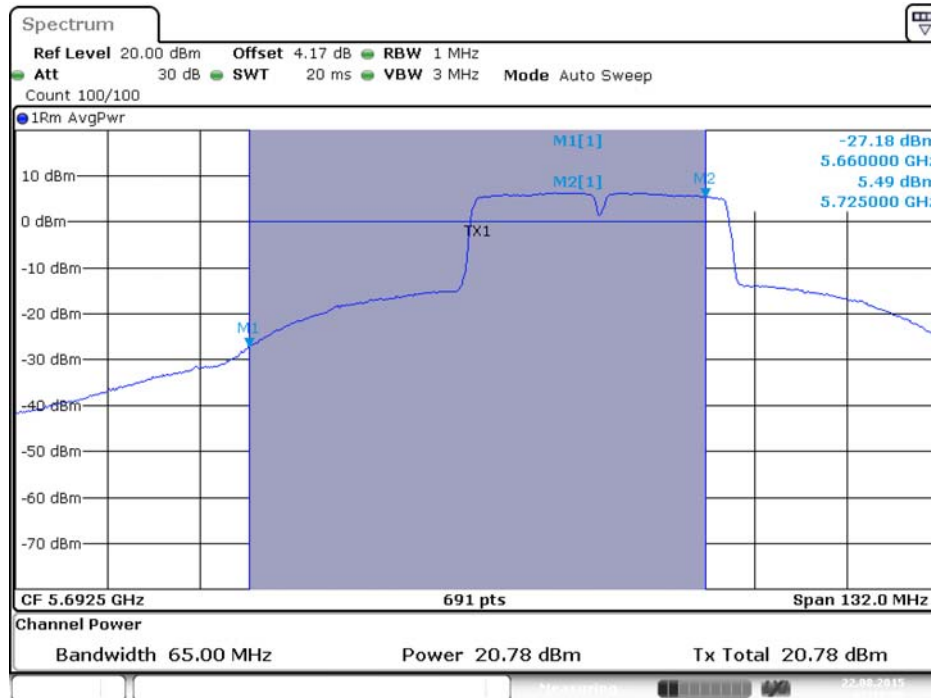
Date: 1.SEP.2015 03:17:31

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5720 MHz (UNII 3)



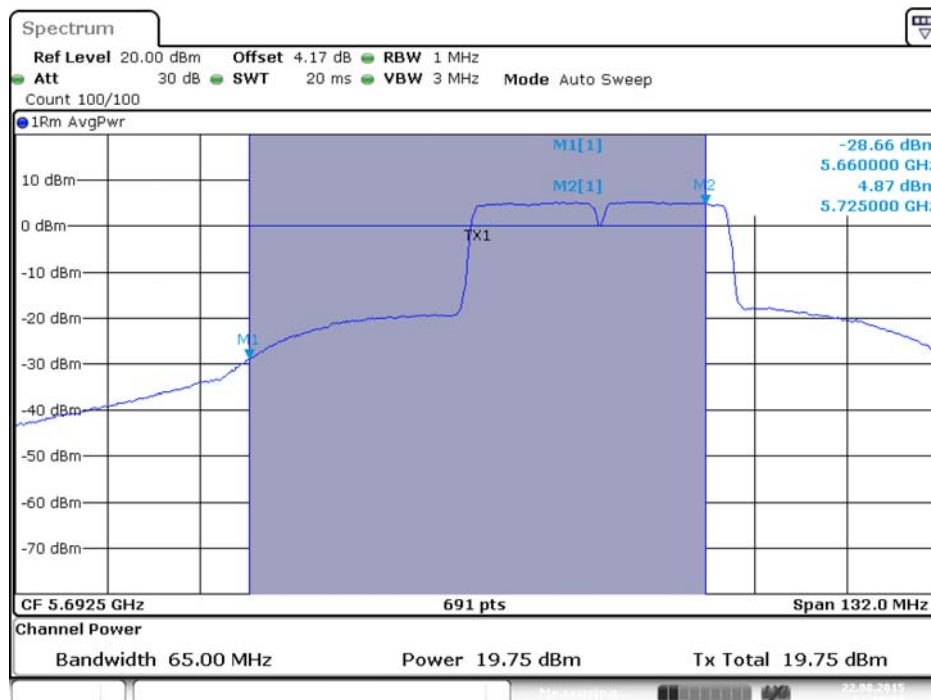
Date: 1.SEP.2015 03:17:38

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5710 MHz (UNII 2C)



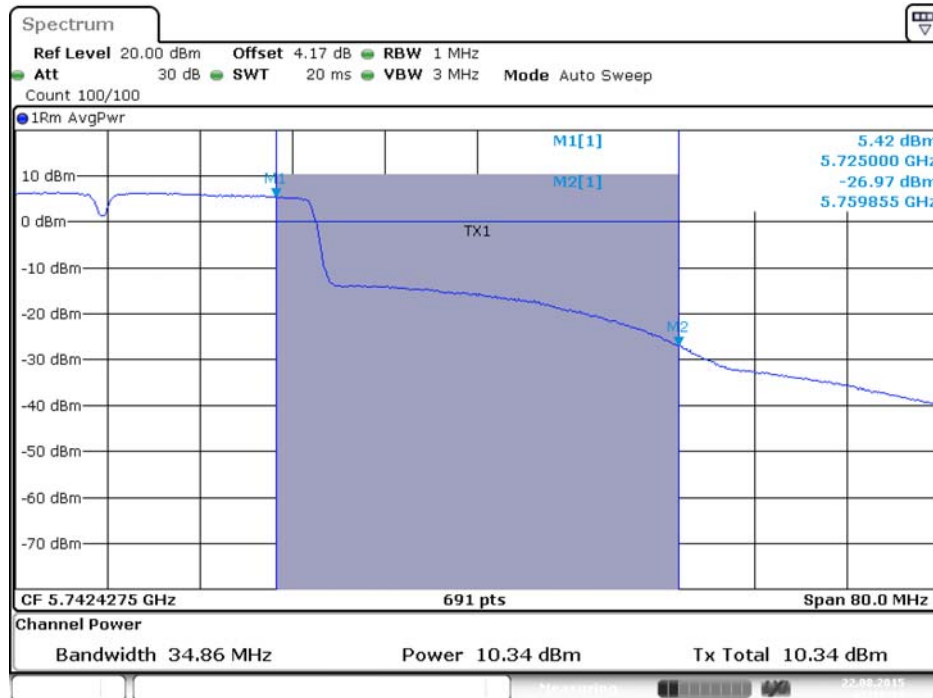
Date: 22.AUG.2015 02:18:07

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



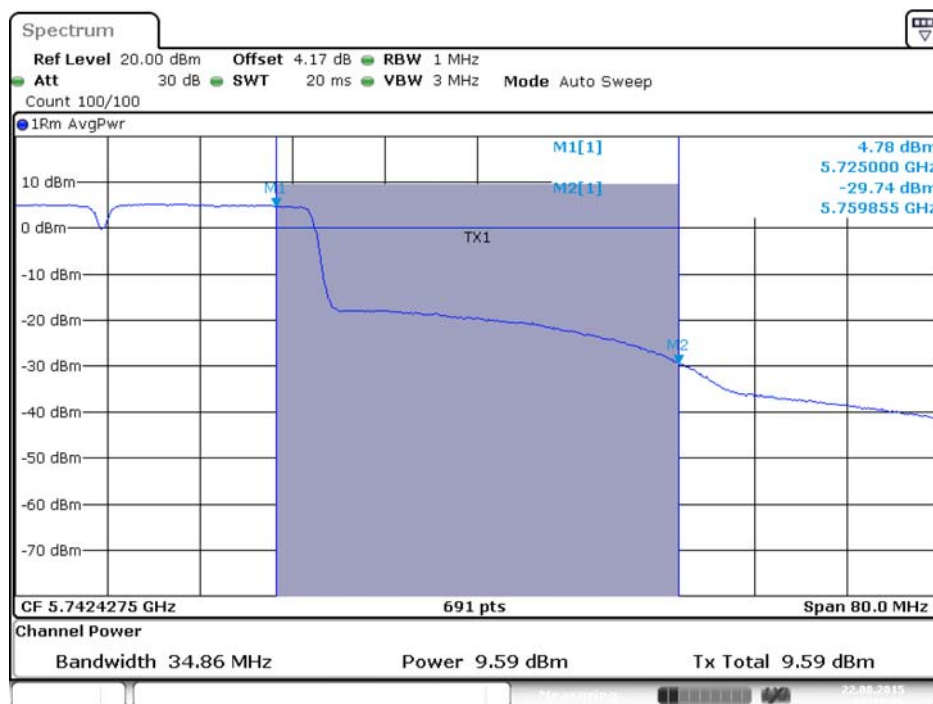
Date: 22.AUG.2015 02:18:14

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5710 MHz (UNII 3)



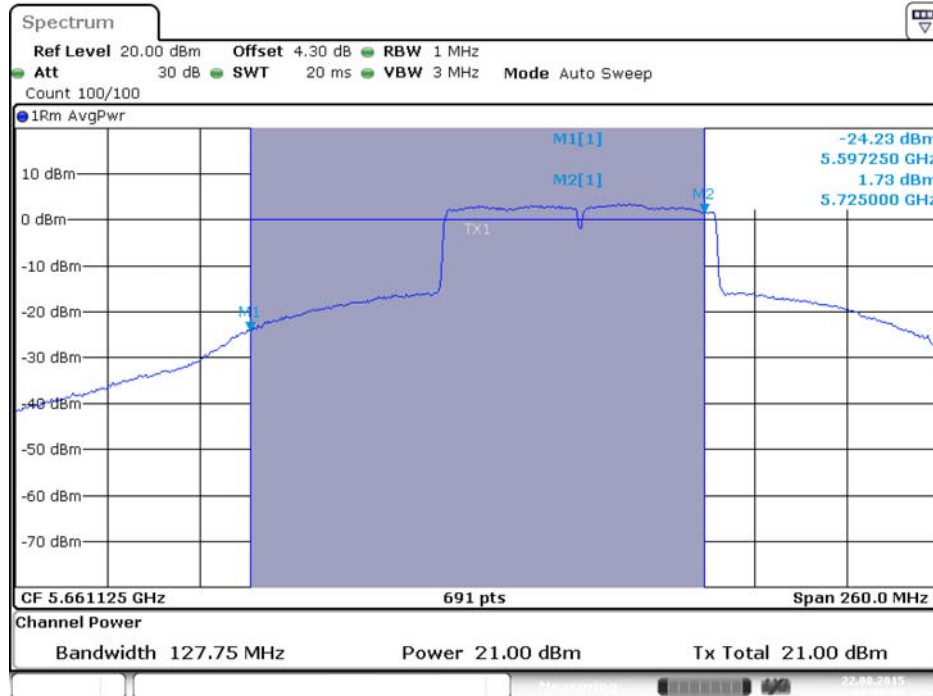
Date: 22.AUG.2015 02:18:10

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5710 MHz (UNII 3)



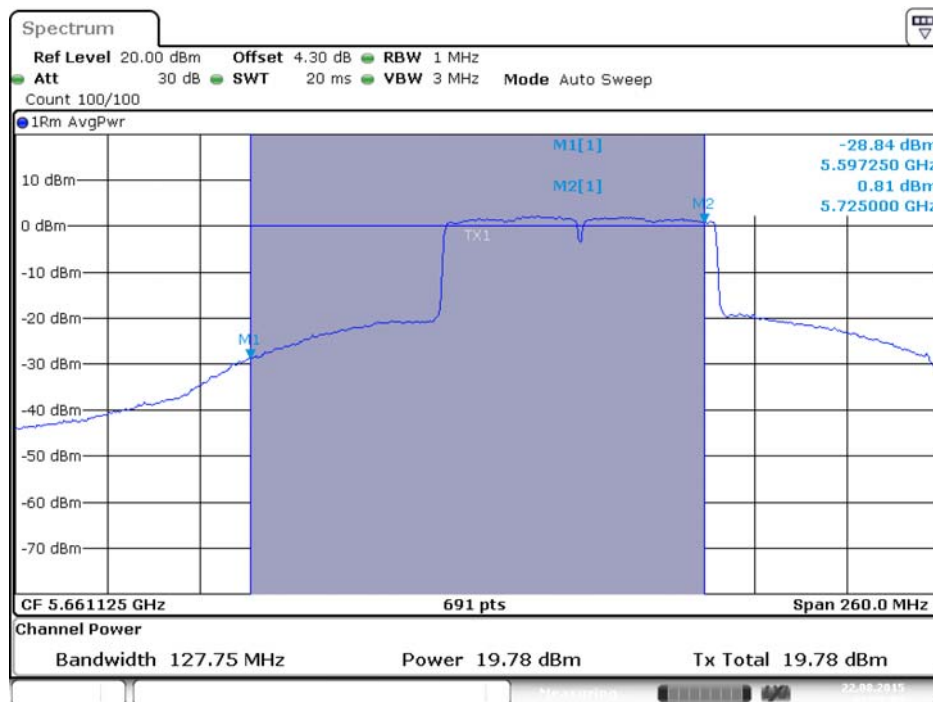
Date: 22.AUG.2015 02:18:17

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5690 MHz (UNII 2C)



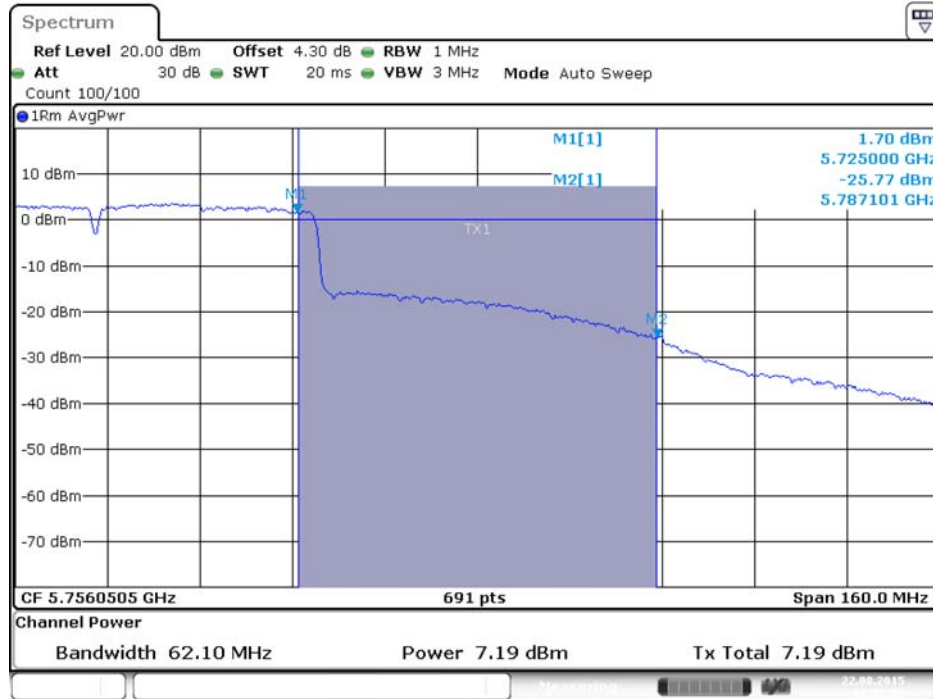
Date: 22.AUG.2015 01:57:56

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



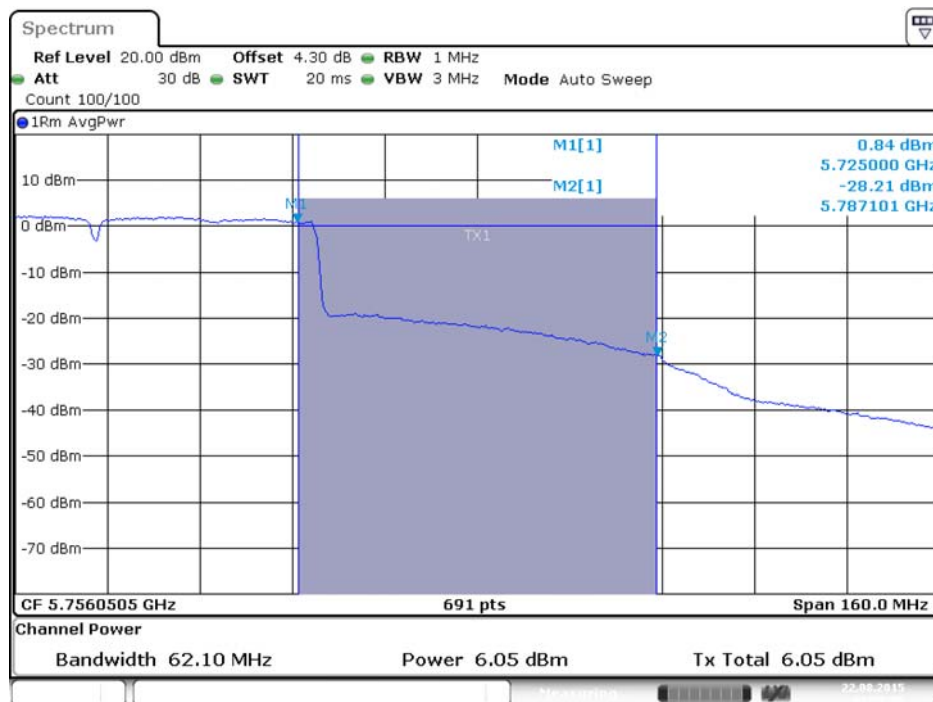
Date: 22.AUG.2015 01:58:03

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5690 MHz (UNII 3)



Date: 22.AUG.2015 01:57:59

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5690 MHz (UNII 3)

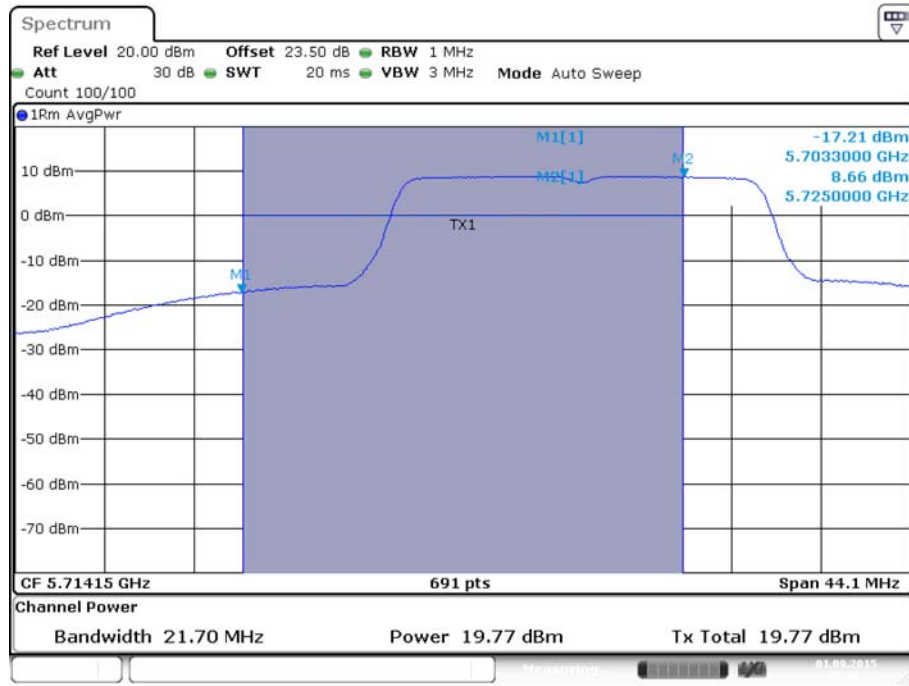


Date: 22.AUG.2015 01:58:06

For beamforming function:

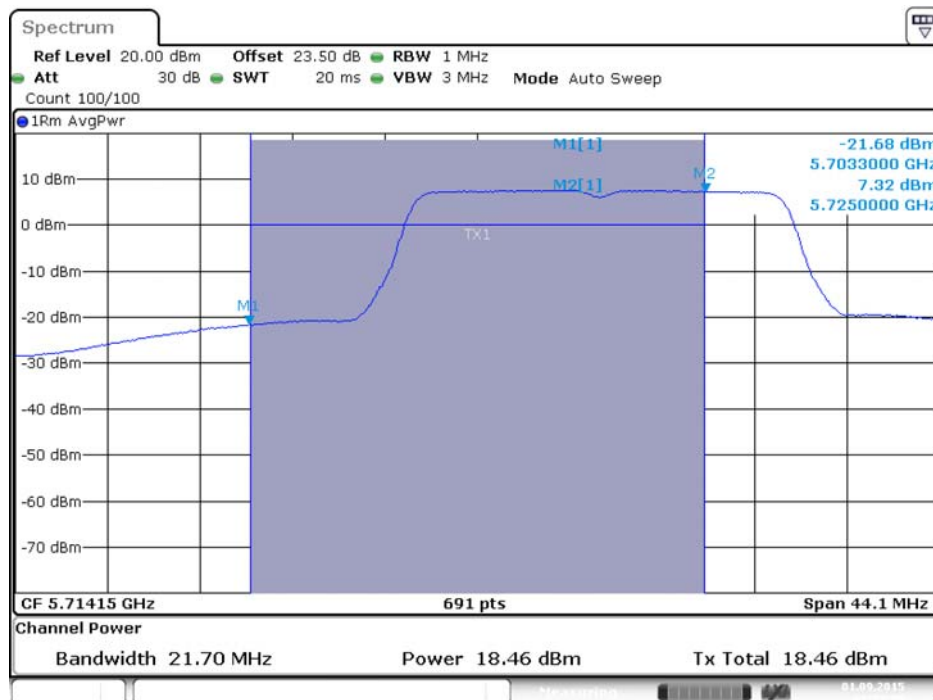
Straddle Channel

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5720 MHz (UNII 2C)



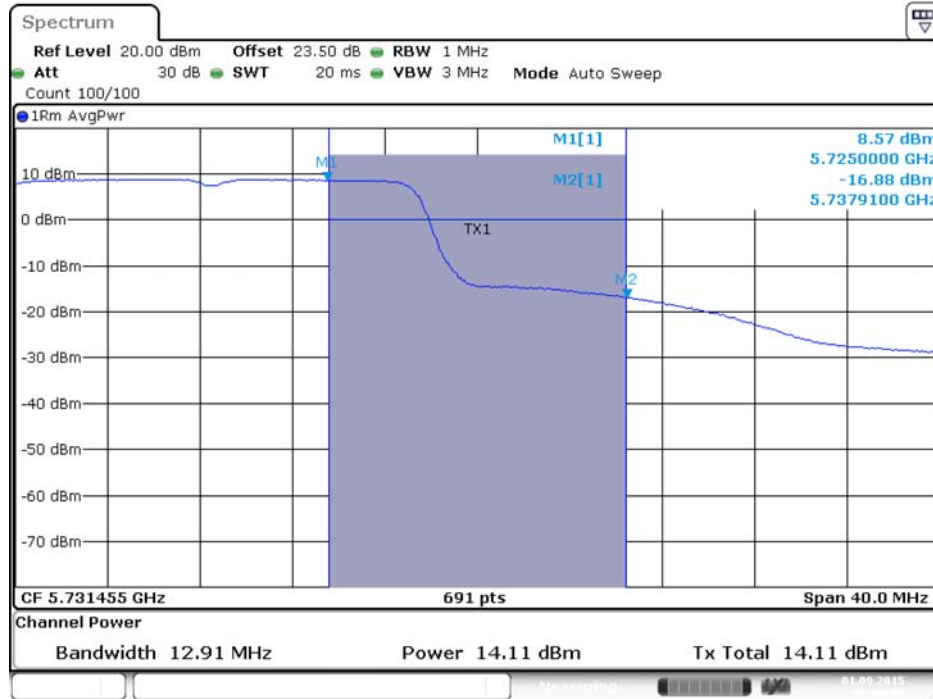
Date: 1.SEP.2015 03:34:52

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



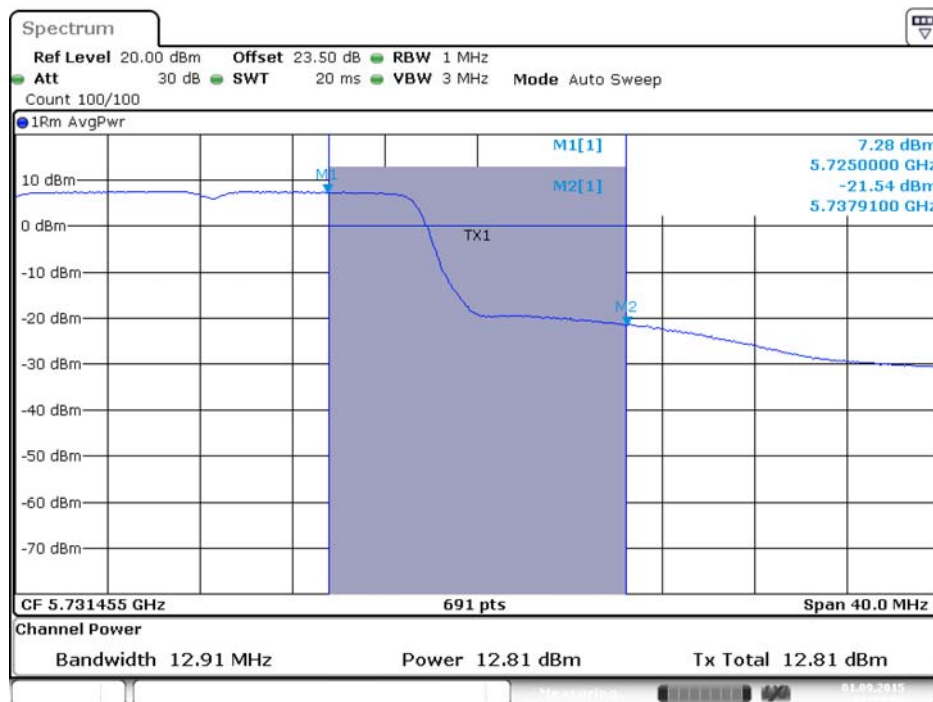
Date: 1.SEP.2015 03:34:59

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5720 MHz (UNII 3)



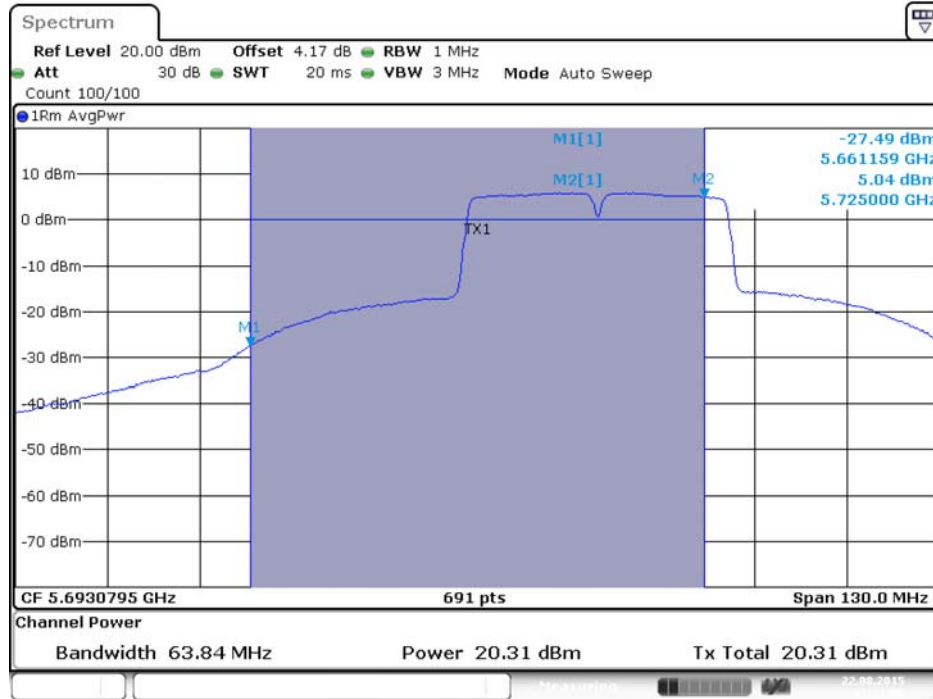
Date: 1.SEP.2015 03:34:56

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5720 MHz (UNII 3)



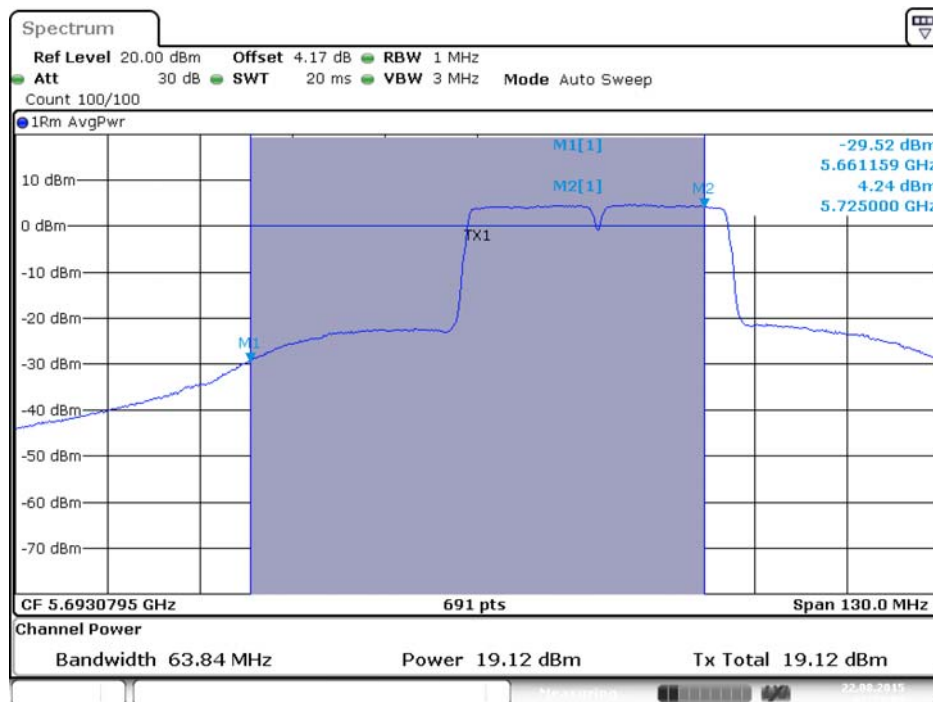
Date: 1.SEP.2015 03:35:03

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5710 MHz (UNII 2C)



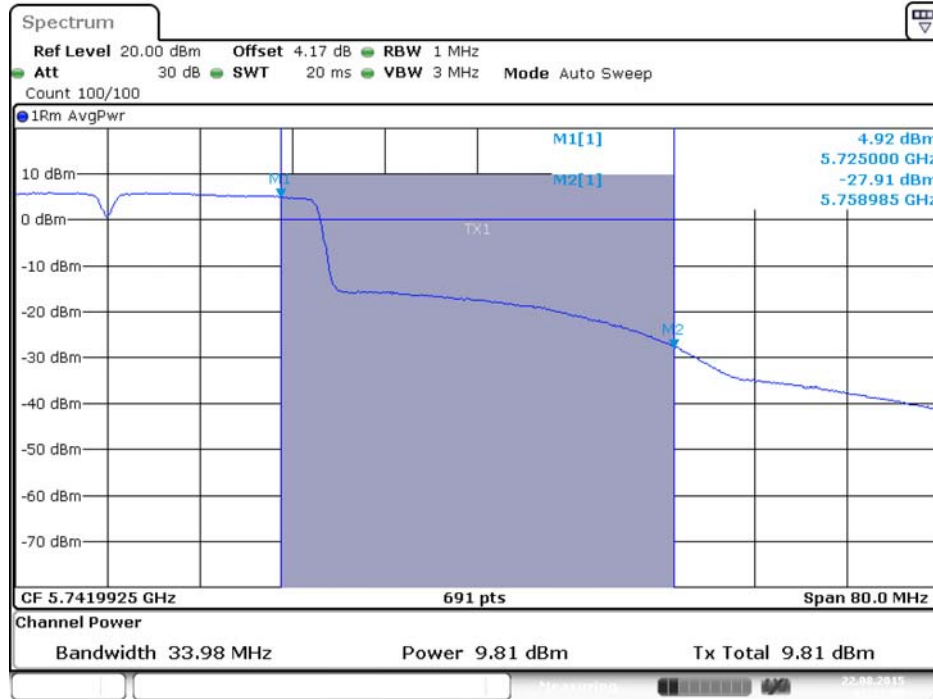
Date: 22.AUG.2015 02:22:57

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

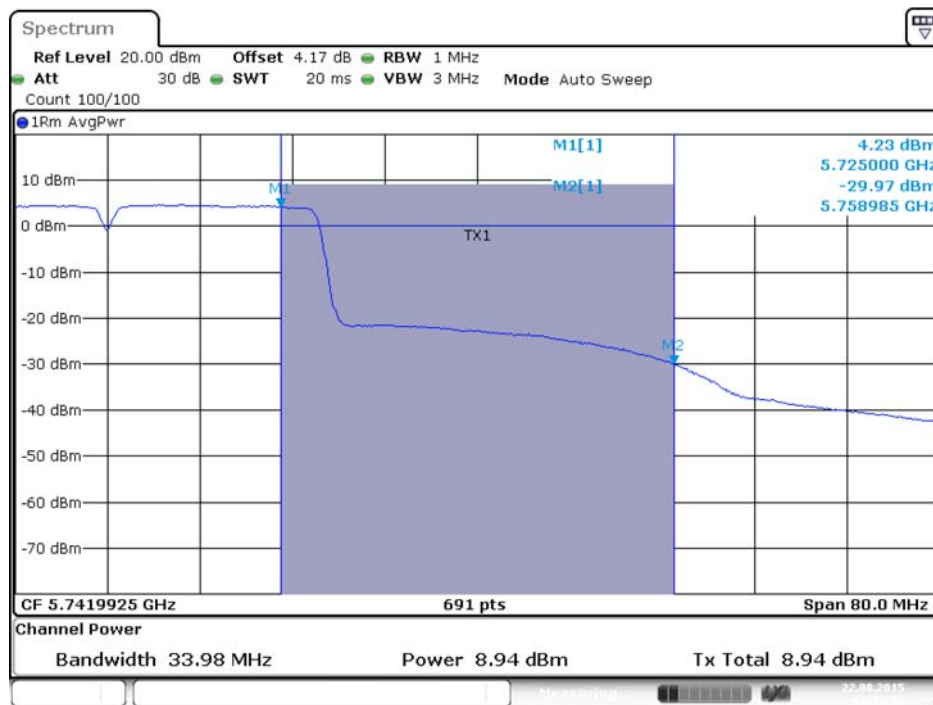


Date: 22.AUG.2015 02:23:04

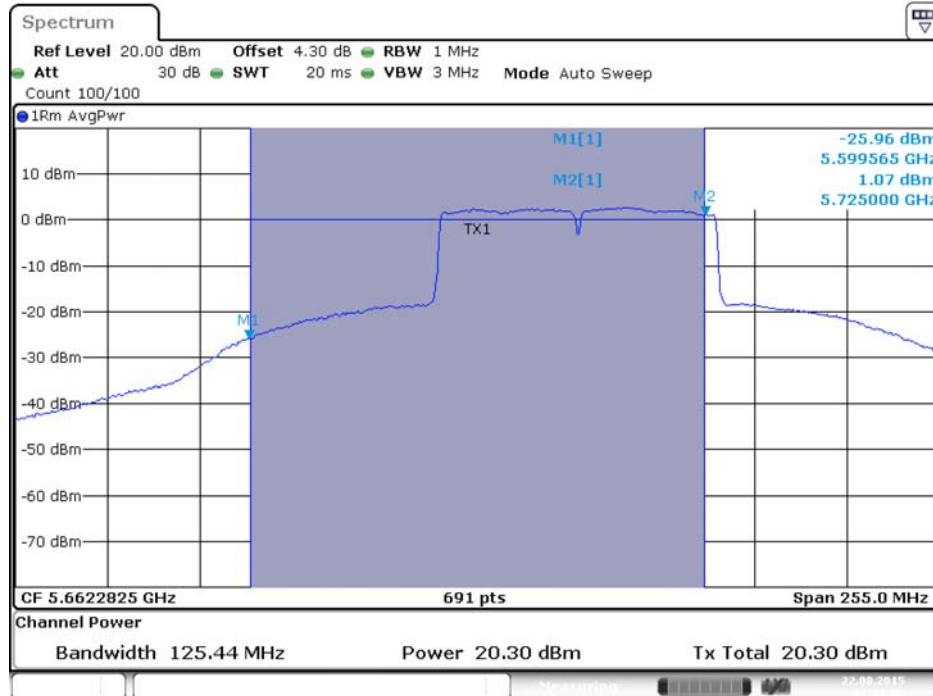
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5710 MHz (UNII 3)



Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5710 MHz (UNII 3)

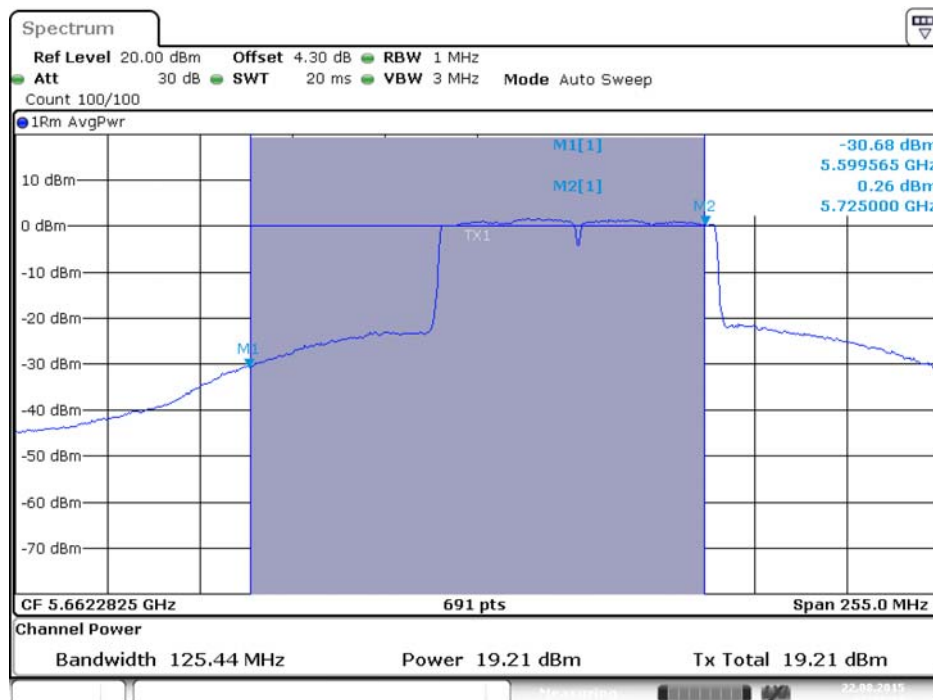


Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5690 MHz (UNII 2C)



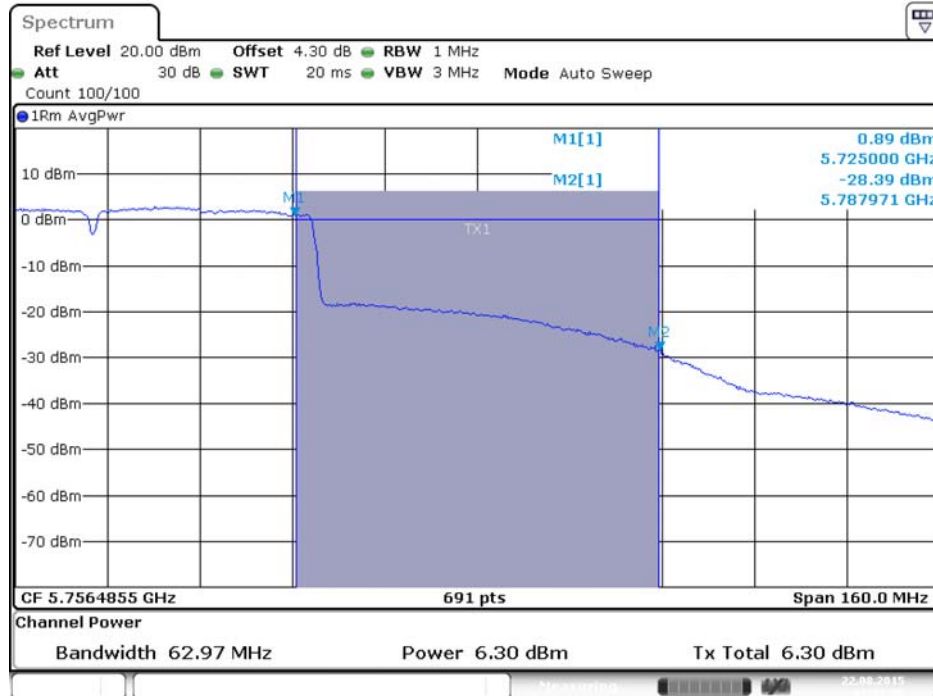
Date: 22.AUG.2015 02:11:03

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

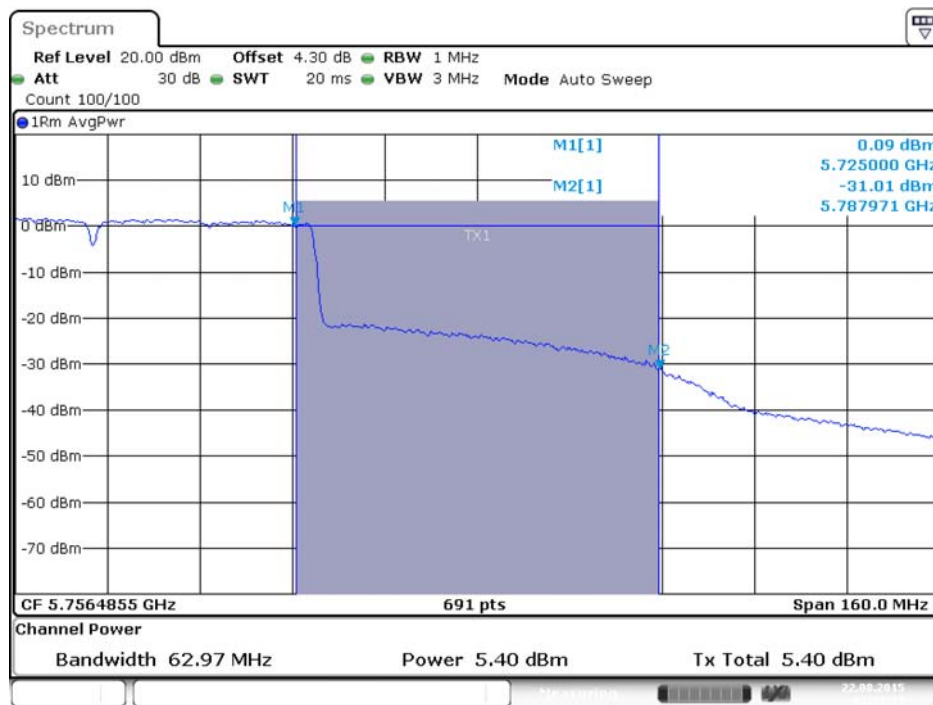


Date: 22.AUG.2015 02:11:10

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5690 MHz (UNII 3)



Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 2 / 5690 MHz (UNII 3)



4.5. Power Spectral Density Measurement

4.5.1. Limit

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

Frequency Band		Limit
<input checked="" type="checkbox"/>	5.15~5.25 GHz	
	Operating Mode	
<input type="checkbox"/>	Outdoor access point	17 dBm/MHz
<input type="checkbox"/>	Indoor access point	17 dBm/MHz
<input type="checkbox"/>	Fixed point-to-point access points	17 dBm/MHz
<input checked="" type="checkbox"/>	Mobile and portable client devices	11 dBm/MHz
<input checked="" type="checkbox"/>	5.25-5.35 GHz	11 dBm/MHz
<input checked="" type="checkbox"/>	5.470-5.725 GHz	11 dBm/MHz
<input checked="" type="checkbox"/>	5.725~5.85 GHz	30 dBm/500kHz

4.5.2. Measuring Instruments and Setting

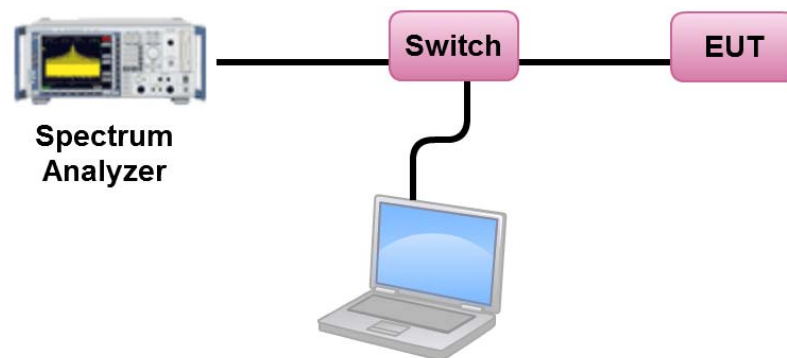
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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

4.5.3. Test Procedures

1. The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.
2. Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (F) Maximum Power Spectral Density (PSD).
3. Multiple antenna systems was performed in accordance KDB662911 D01 v02r01 in-Band Power Spectral Density (PSD) Measurements (a) Measure and sum the spectra across the outputs.
4. When measuring first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3 and so on up to the Nth output to obtain the value for the first frequency bin of the summed spectrum. The summed spectrum value for each of the other frequency bins is computed in the same way.
5. For 5.725~5.85 GHz, the measured result of PSD level must add $10\log(500\text{kHz}/\text{RBW})$ and the final result should ≤ 30 dBm.

4.5.4. Test Setup Layout



4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.5.7. Test Result of Power Spectral Density

Temperature	25°C	Humidity	60%
Test Engineer	Eddie Weng / Nick Peng	Test Date	Aug. 22, 2015~Sep. 08, 2015
Test Function	Non-beamforming function		

Configuration IEEE 802.11a / Chain 1 + Chain 2

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	8.00	10.33	Complies
40	5200 MHz	10.32	10.33	Complies
48	5240 MHz	10.25	10.33	Complies
52	5260 MHz	10.27	10.33	Complies
60	5300 MHz	10.22	10.33	Complies
64	5320 MHz	8.63	10.33	Complies
100	5500 MHz	8.43	10.33	Complies
116	5580 MHz	10.19	10.33	Complies
140	5700 MHz	7.05	10.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $11 - (6.67 - 6) = 10.33\text{dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	7.66	-3.01	4.65	29.33	Complies
157	5785 MHz	11.43	-3.01	8.42	29.33	Complies
165	5825 MHz	8.36	-3.01	5.35	29.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $30 - (6.67 - 6) = 29.33\text{dBm/500kHz}$.

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	8.43	10.33	Complies
40	5200 MHz	10.30	10.33	Complies
48	5240 MHz	10.23	10.33	Complies
52	5260 MHz	10.29	10.33	Complies
60	5300 MHz	10.25	10.33	Complies
64	5320 MHz	8.99	10.33	Complies
100	5500 MHz	8.12	10.33	Complies
116	5580 MHz	10.26	10.33	Complies
140	5700 MHz	6.46	10.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $11 - (6.67 - 6) = 10.33\text{dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	6.79	-3.01	3.78	29.33	Complies
157	5785 MHz	11.79	-3.01	8.78	29.33	Complies
165	5825 MHz	8.72	-3.01	5.71	29.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $30 - (6.67 - 6) = 29.33\text{dBm/500kHz}$.

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190 MHz	-0.42	10.33	Complies
46	5230 MHz	7.23	10.33	Complies
54	5270 MHz	7.30	10.33	Complies
62	5310 MHz	3.88	10.33	Complies
102	5510 MHz	0.87	10.33	Complies
110	5550 MHz	6.69	10.33	Complies
134	5670 MHz	3.38	10.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $11 - (6.67 - 6) = 10.33\text{dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
151	5755 MHz	-0.69	-3.01	-3.70	29.33	Complies
159	5795 MHz	4.71	-3.01	1.70	29.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $30 - (6.67 - 6) = 29.33\text{dBm/500kHz}$.

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
42	5210 MHz	-3.42	10.33	Complies
58	5290 MHz	0.64	10.33	Complies
106	5530 MHz	-1.33	10.33	Complies
122	5610 MHz	3.73	10.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $11 - (6.67 - 6) = 10.33\text{dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
155	5775 MHz	-2.79	-3.01	-5.80	29.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $30 - (6.67 - 6) = 29.33\text{dBm/500kHz}$.

Straddle Channel / Chain 1 + Chain 2

Mode	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
802.11a	5720 MHz (UNII 2C)	9.38	10.33	Complies
802.11ac MCS0/Nss1 VHT20	5720 MHz (UNII 2C)	9.57	10.33	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz (UNII 2C)	8.88	10.33	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz (UNII 2C)	5.73	10.33	Complies

Note: $Directional\ Gain = 10 \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{K=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $11 - (6.67 - 6) = 10.33\text{dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
802.11a	5720 MHz (UNII 3)	9.16	-3.01	6.15	29.33	Complies
802.11ac MCS0/Nss1 VHT20	5720 MHz (UNII 3)	9.39	-3.01	6.38	29.33	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz (UNII 3)	8.23	-3.01	5.22	29.33	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz (UNII 3)	4.42	-3.01	1.41	29.33	Complies

Note: $Directional\ Gain = 10 \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{K=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $30 - (6.67 - 6) = 29.33\text{dBm/500kHz}$.

Temperature	25°C	Humidity	60%
Test Engineer	Eddie Weng / Nick Peng	Test Date	Aug. 22, 2015~Sep. 08, 2015
Test Function	Beamforming function		

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	7.91	10.33	Complies
40	5200 MHz	9.69	10.33	Complies
48	5240 MHz	9.69	10.33	Complies
52	5260 MHz	9.57	10.33	Complies
60	5300 MHz	9.73	10.33	Complies
64	5320 MHz	8.36	10.33	Complies
100	5500 MHz	8.12	10.33	Complies
116	5580 MHz	9.73	10.33	Complies
140	5700 MHz	6.46	10.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $11 - (6.67 - 6) = 10.33\text{dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	6.60	-3.01	3.59	29.33	Complies
157	5785 MHz	11.86	-3.01	8.85	29.33	Complies
165	5825 MHz	8.55	-3.01	5.54	29.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $30 - (6.67 - 6) = 29.33\text{dBm/500kHz}$.

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190 MHz	-1.20	10.33	Complies
46	5230 MHz	6.72	10.33	Complies
54	5270 MHz	6.64	10.33	Complies
62	5310 MHz	3.68	10.33	Complies
102	5510 MHz	0.40	10.33	Complies
110	5550 MHz	6.33	10.33	Complies
134	5670 MHz	3.09	10.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $11 - (6.67 - 6) = 10.33\text{dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
151	5755 MHz	-0.69	-3.01	-3.70	29.33	Complies
159	5795 MHz	4.71	-3.01	1.70	29.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $30 - (6.67 - 6) = 29.33\text{dBm/500kHz}$.

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
42	5210 MHz	-3.42	10.33	Complies
58	5290 MHz	0.64	10.33	Complies
106	5530 MHz	-1.33	10.33	Complies
122	5610 MHz	3.21	10.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $11 - (6.67 - 6) = 10.33\text{dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
155	5775 MHz	-3.21	-3.01	-6.22	29.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $30 - (6.67 - 6) = 29.33\text{dBm/500kHz}$.

Straddle Channel / Chain 1 + Chain 2

Mode	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
802.11ac MCS0/Nss1 VHT20	5720 MHz (UNII 2C)	9.73	10.33	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz (UNII 2C)	8.32	10.33	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz (UNII 2C)	5.07	10.33	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $11 - (6.67 - 6) = 10.33\text{dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
802.11ac MCS0/Nss1 VHT20	5720 MHz (UNII 3)	9.57	-3.01	6.56	29.33	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz (UNII 3)	7.66	-3.01	4.65	29.33	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz (UNII 3)	3.77	-3.01	0.76	29.33	Complies

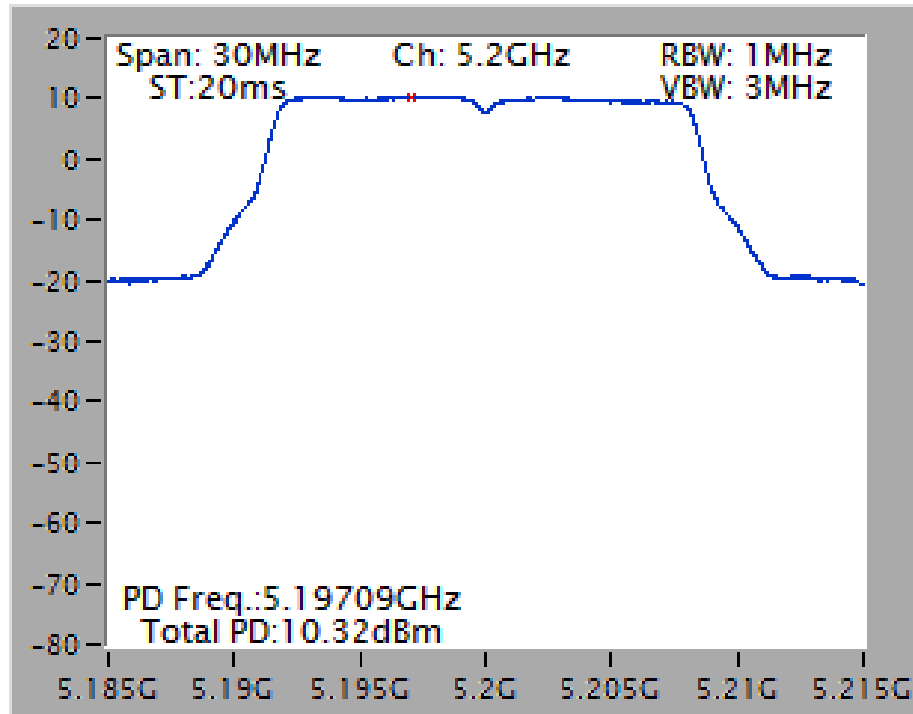
Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 6.67\text{dBi} > 6\text{dBi}$, so limit = $30 - (6.67 - 6) = 29.33\text{dBm/500kHz}$.

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

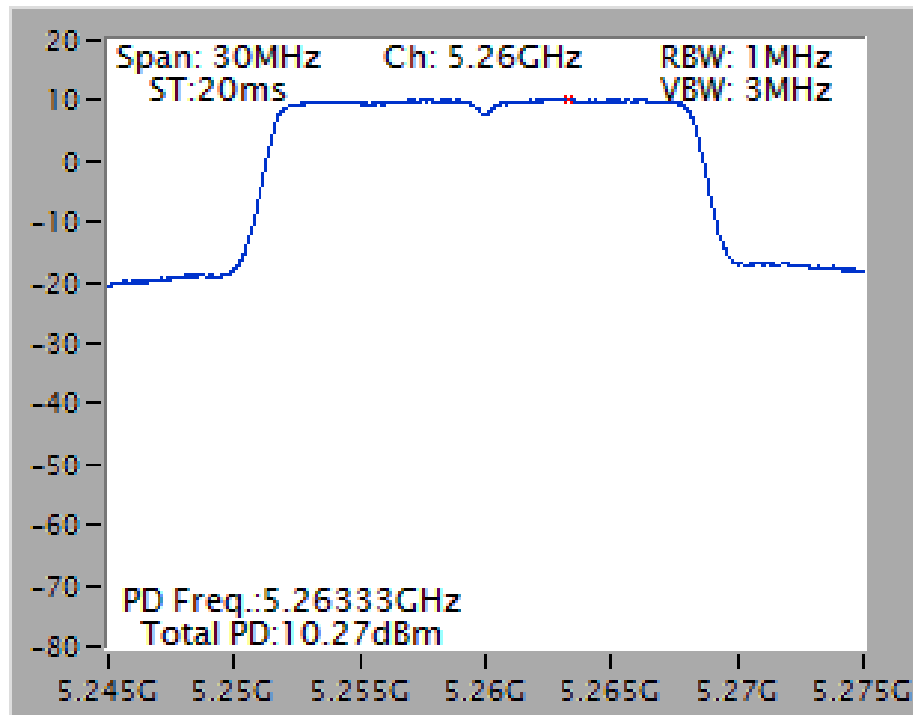
For plots, only the channel with worse result was shown.

For non-beamforming function:

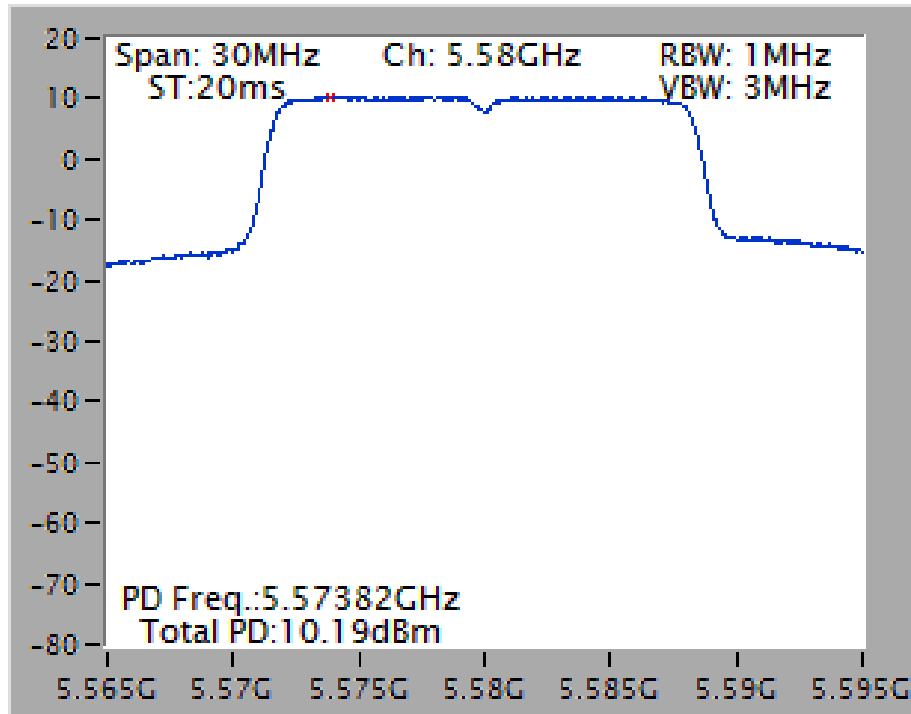
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5200 MHz



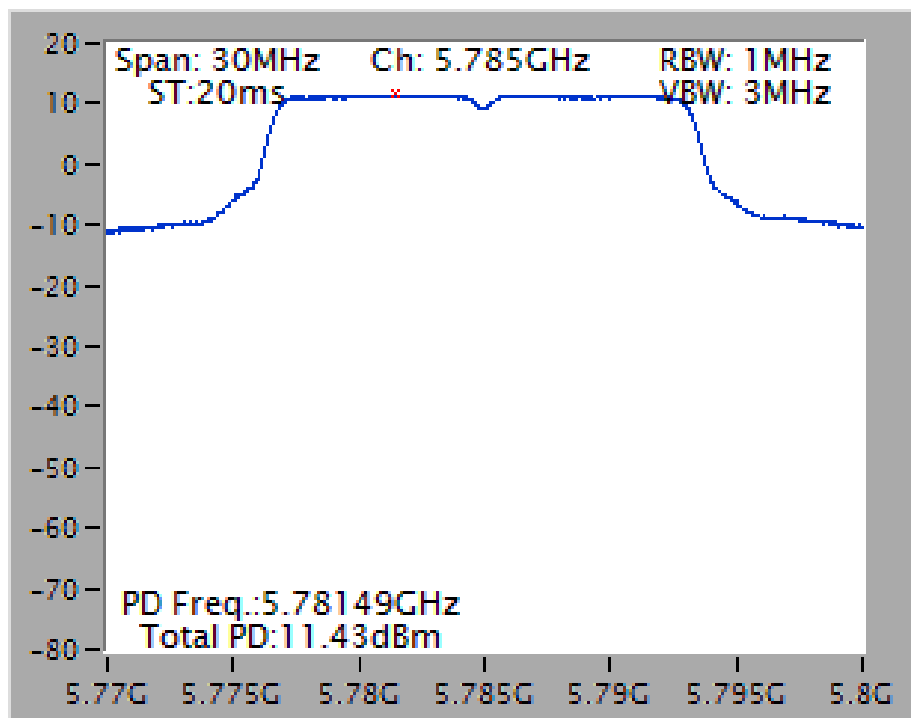
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5260 MHz



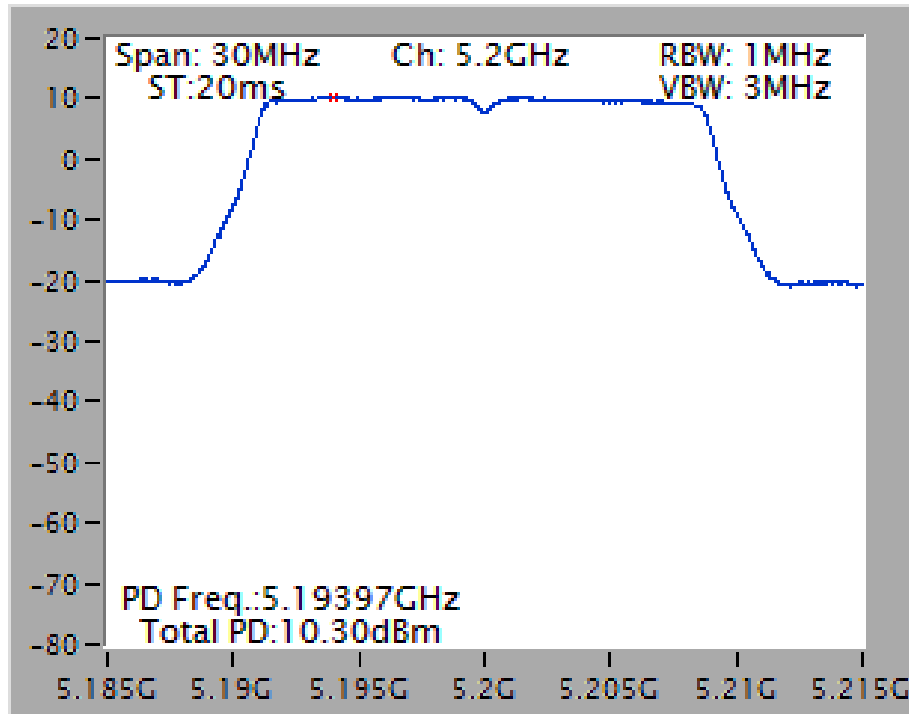
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5580 MHz



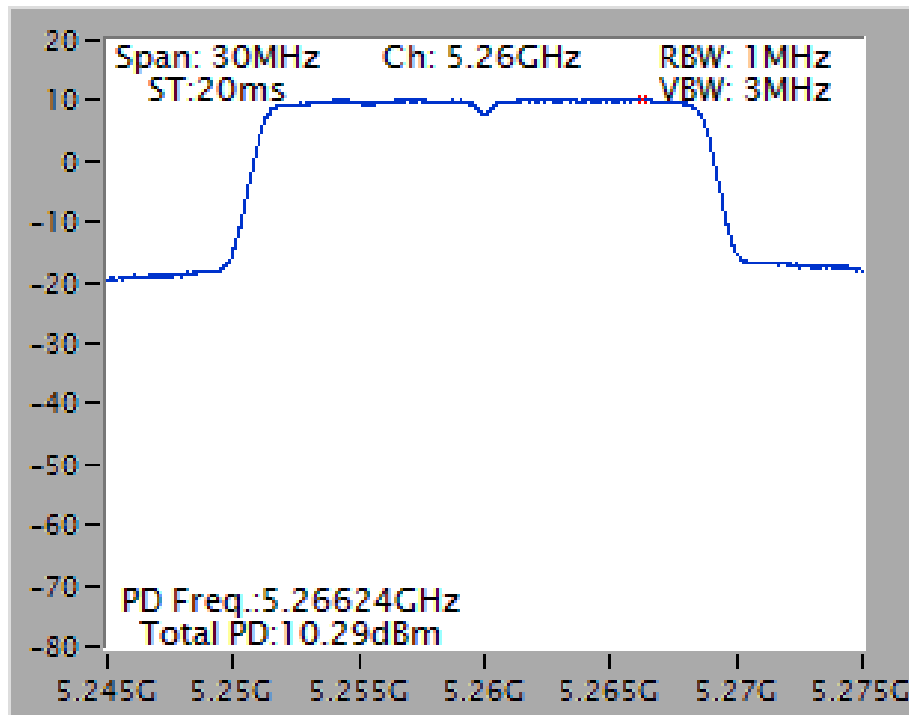
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5785 MHz



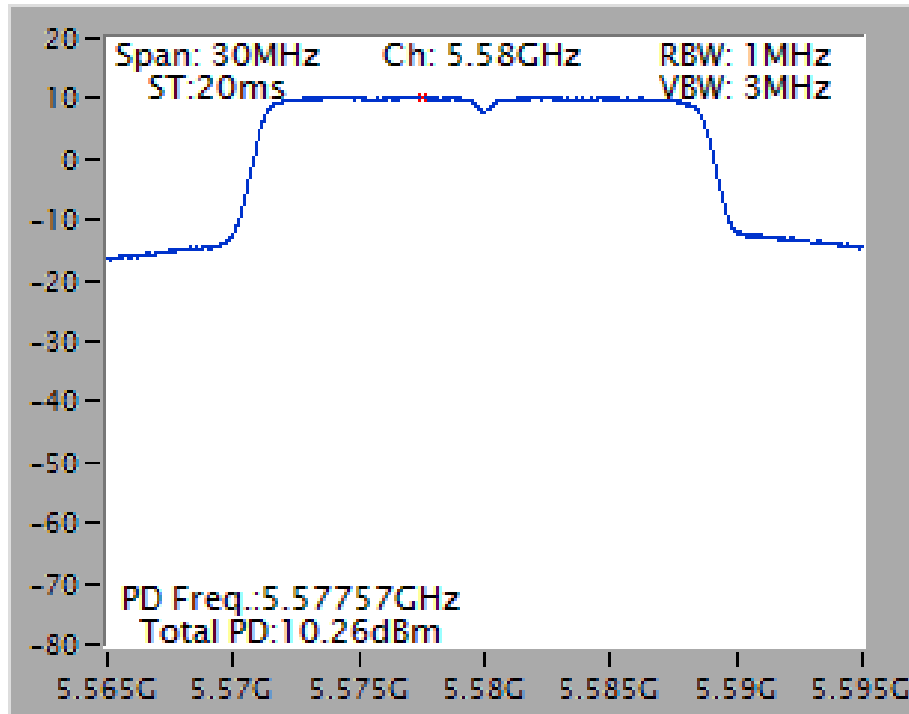
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5200 MHz



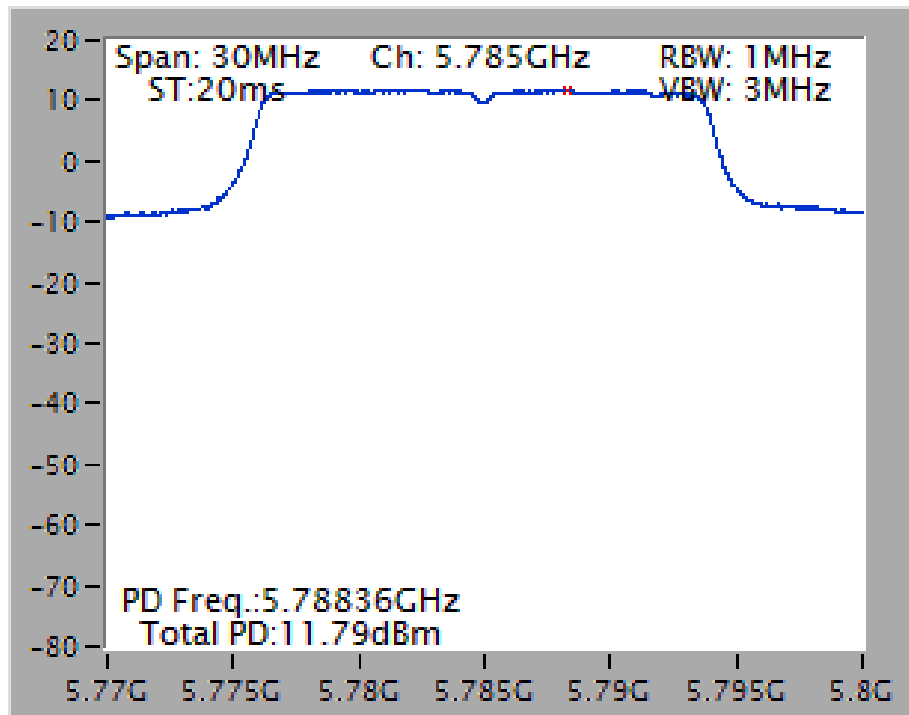
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5260 MHz



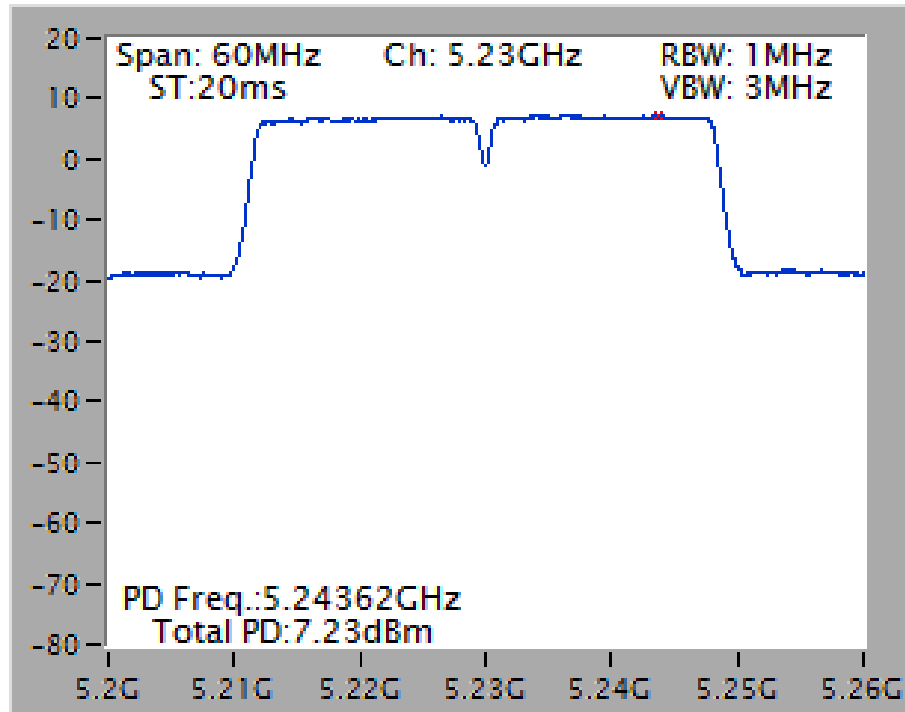
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5580 MHz



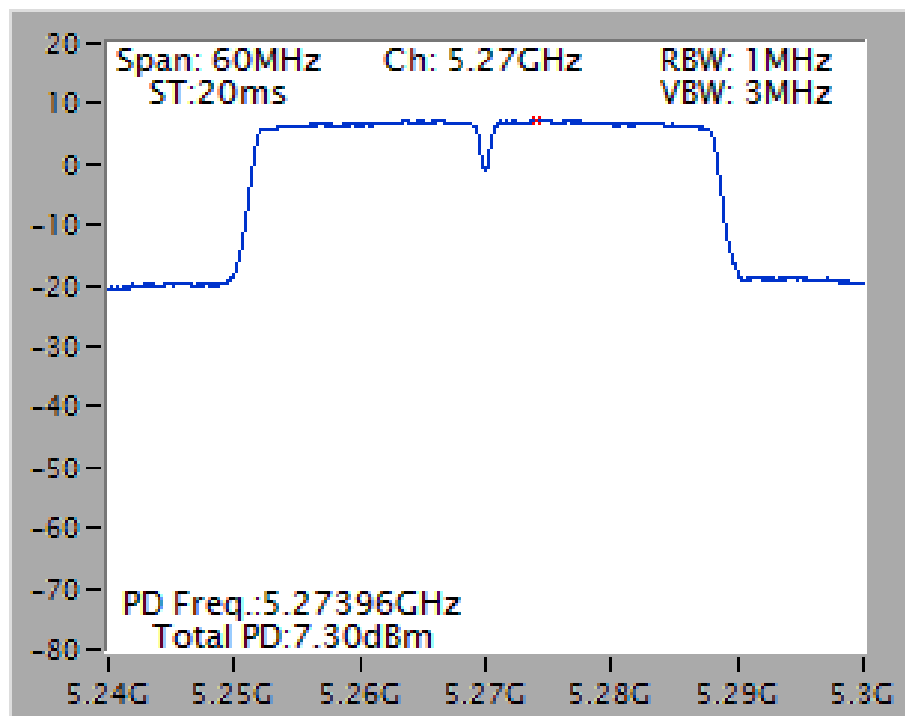
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5785 MHz



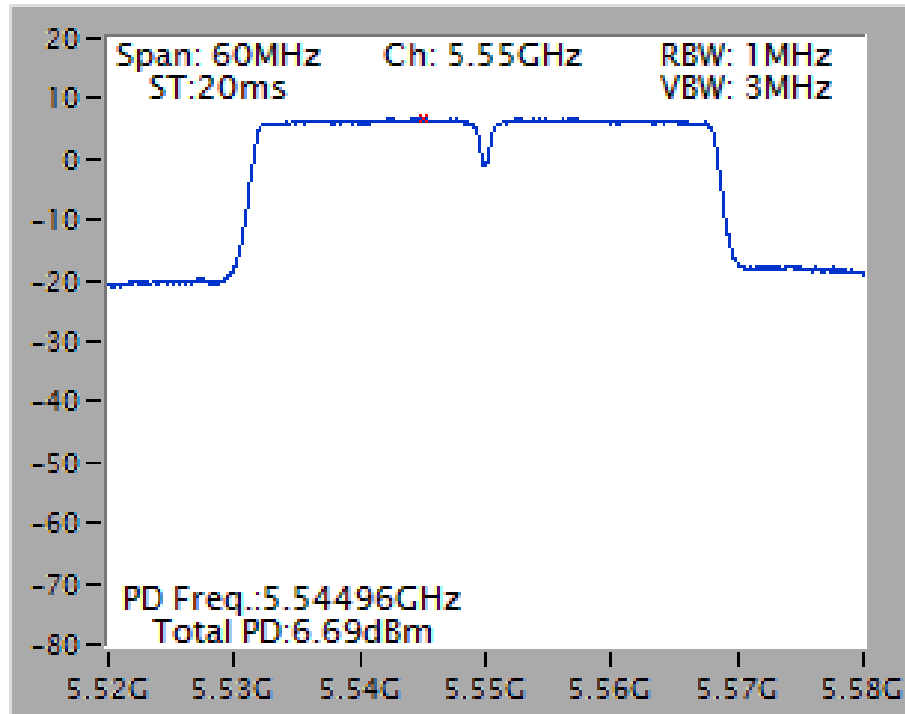
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5230 MHz



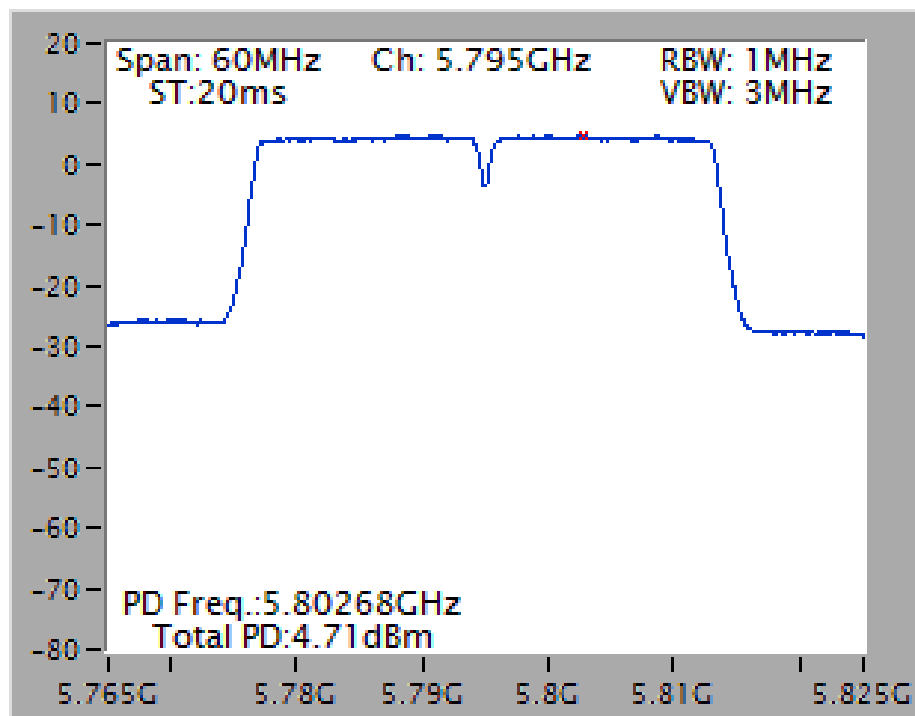
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5270 MHz



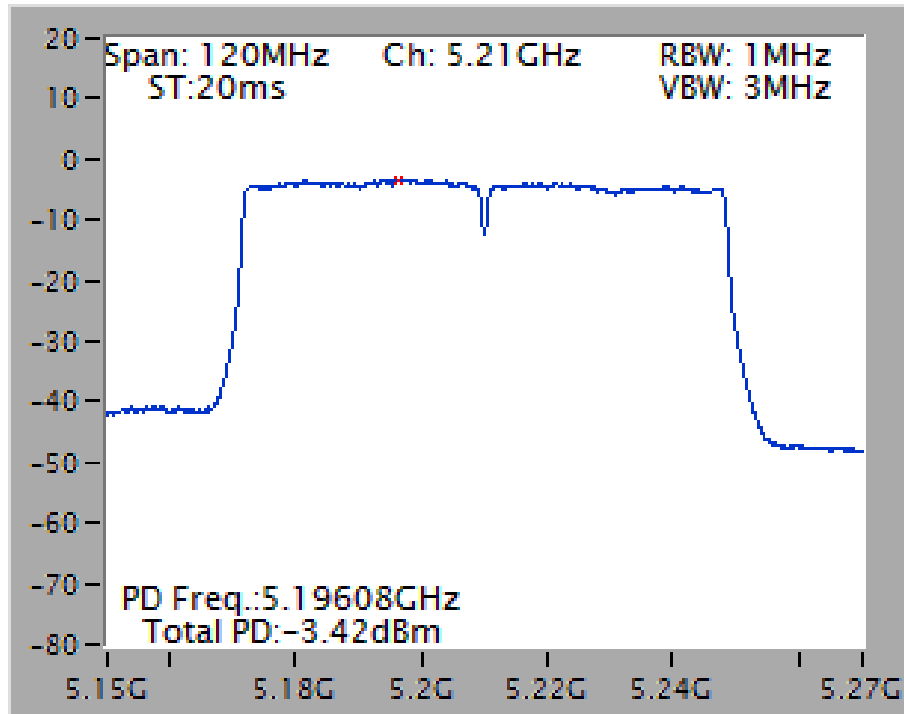
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5550 MHz



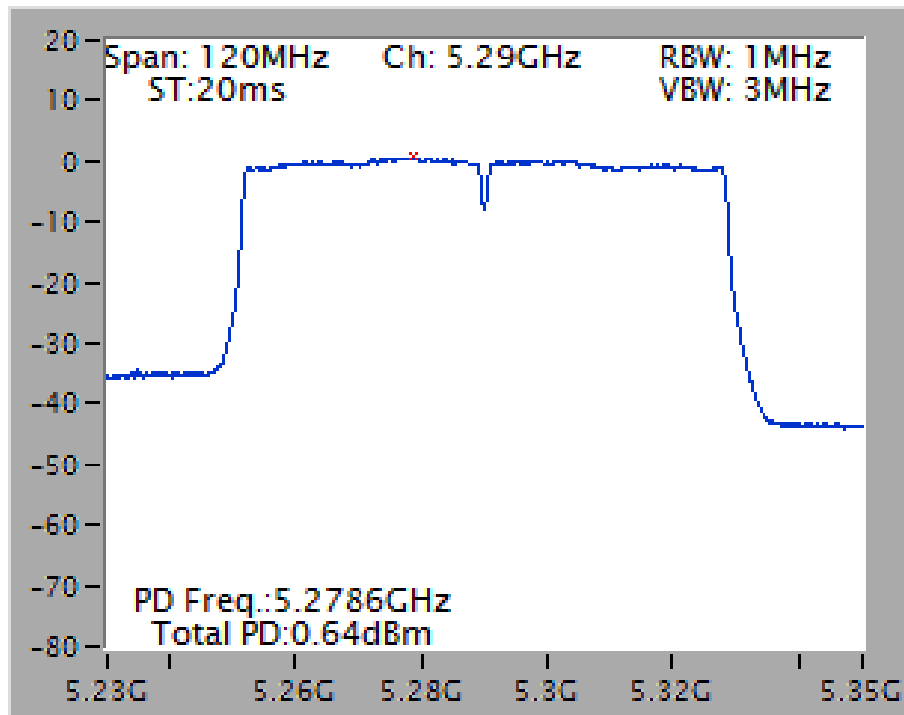
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5795 MHz



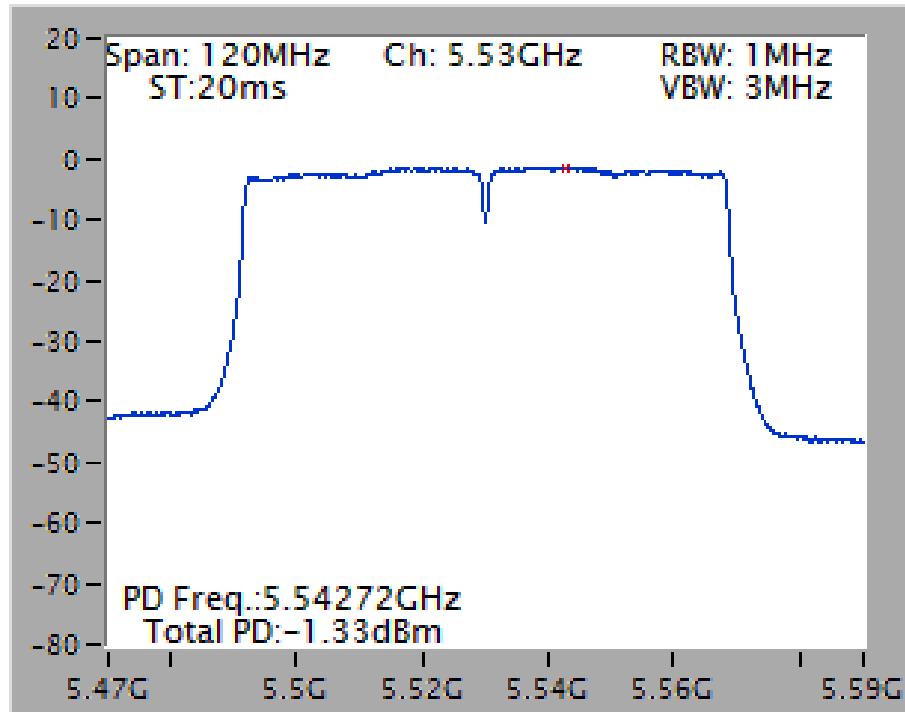
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5210 MHz



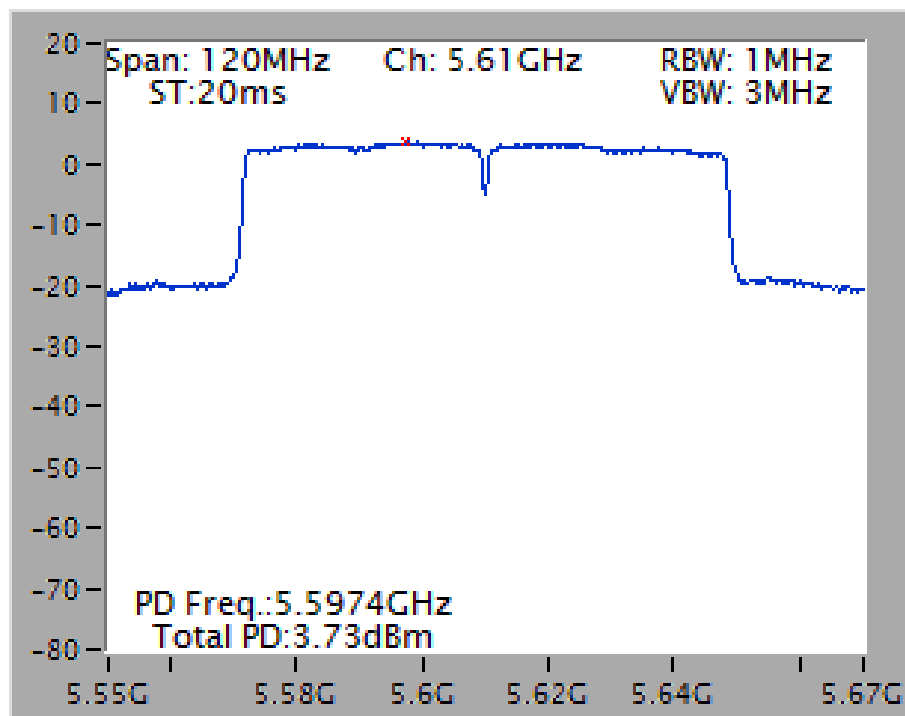
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5290 MHz



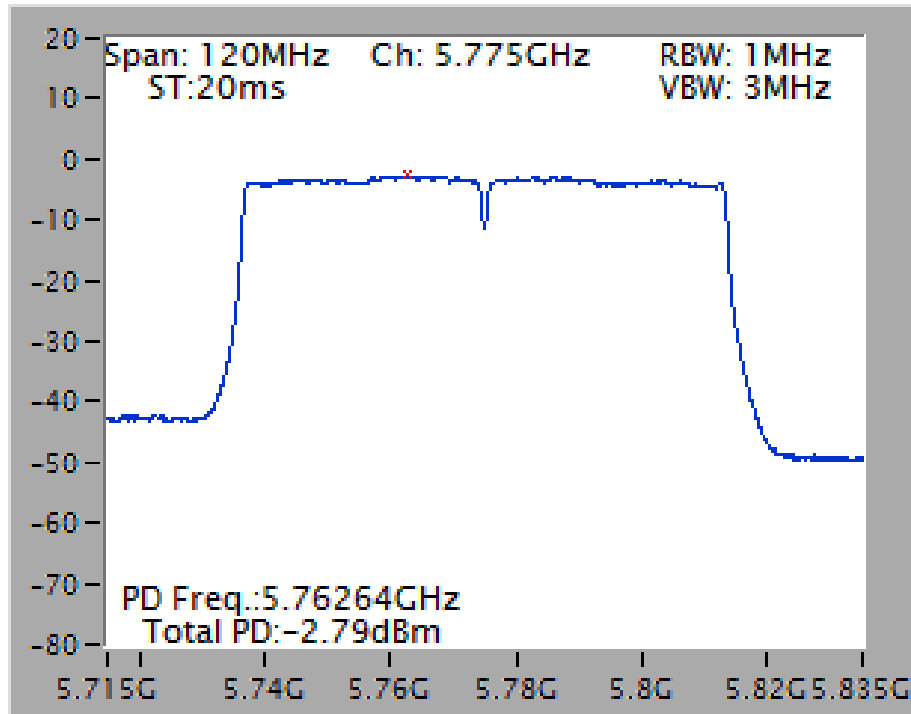
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5530 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5610 MHz

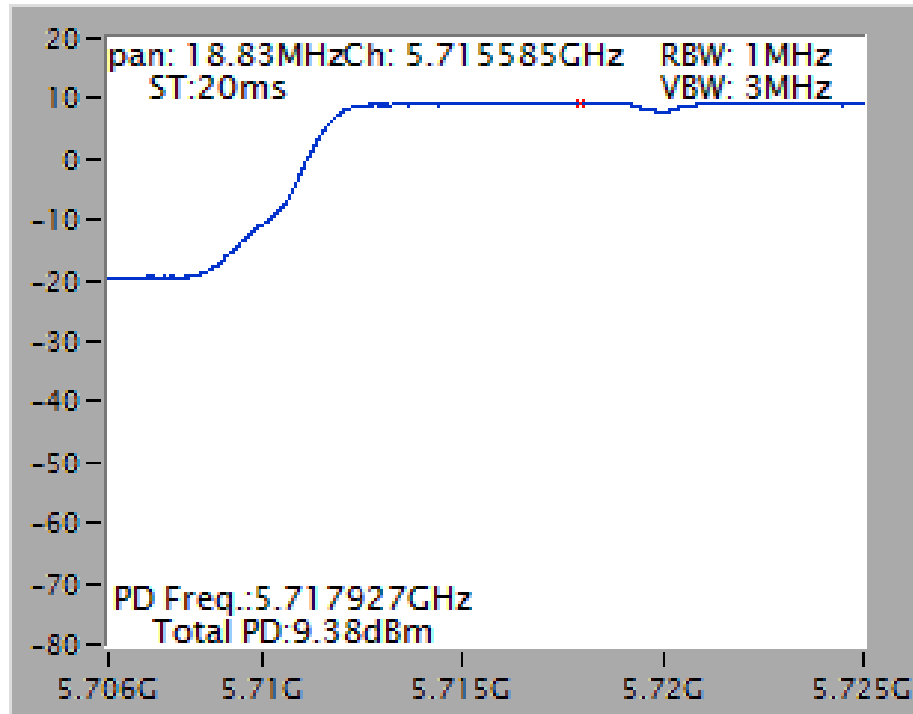


Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5775 MHz

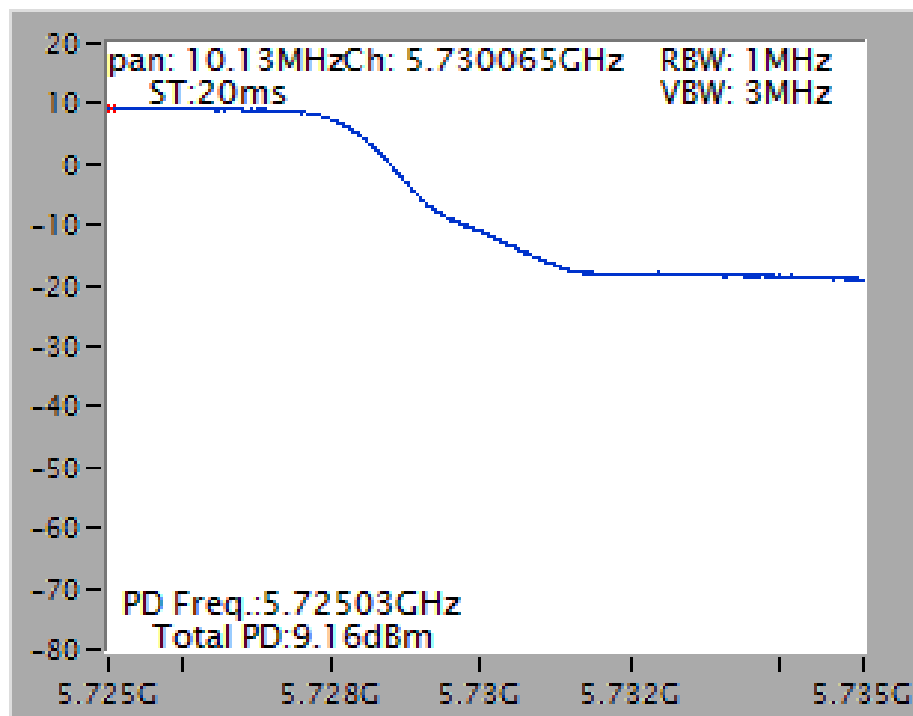


Straddle Channel

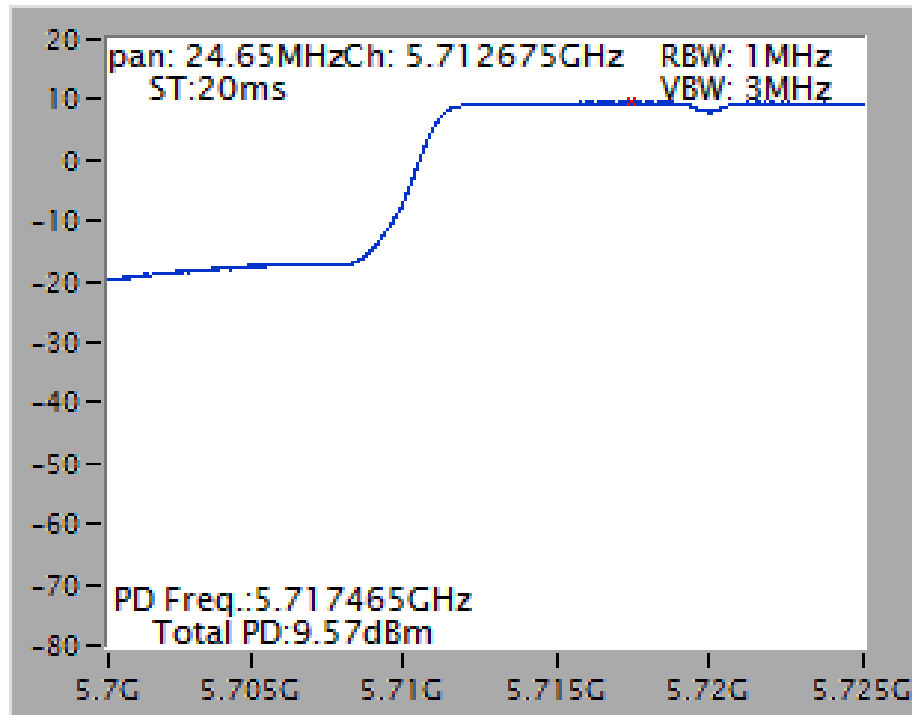
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5720 MHz (UNII 2C)



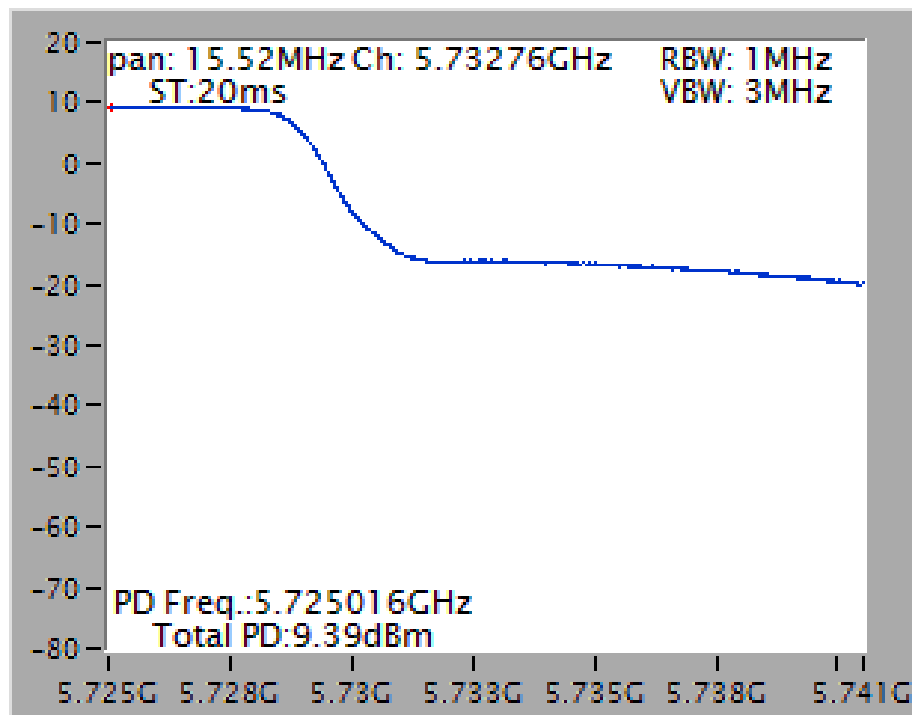
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 5720 MHz (UNII 3)



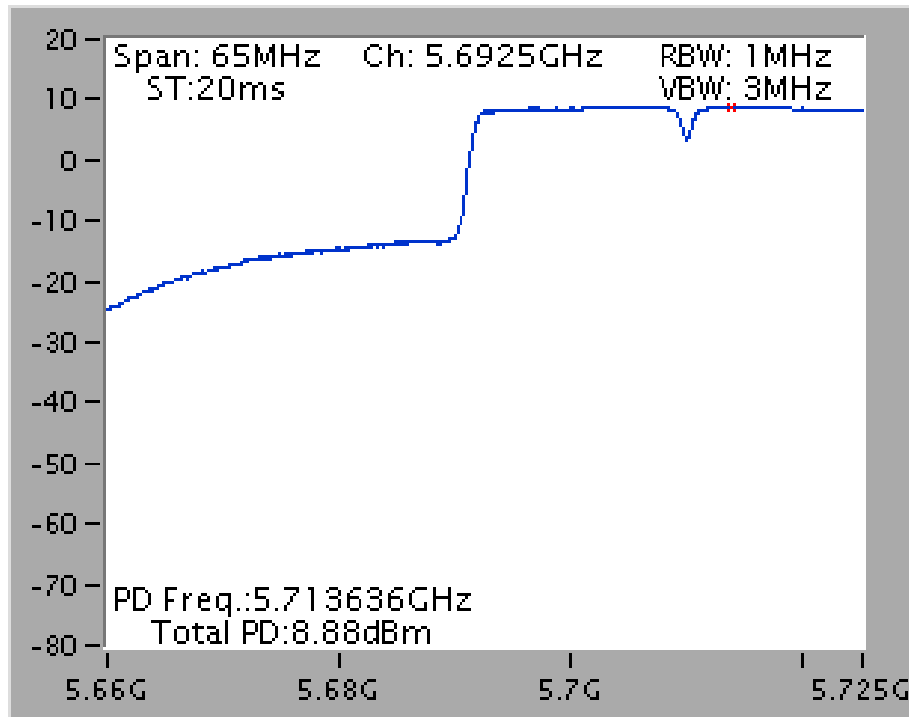
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 /
5720 MHz (UNII 2C)



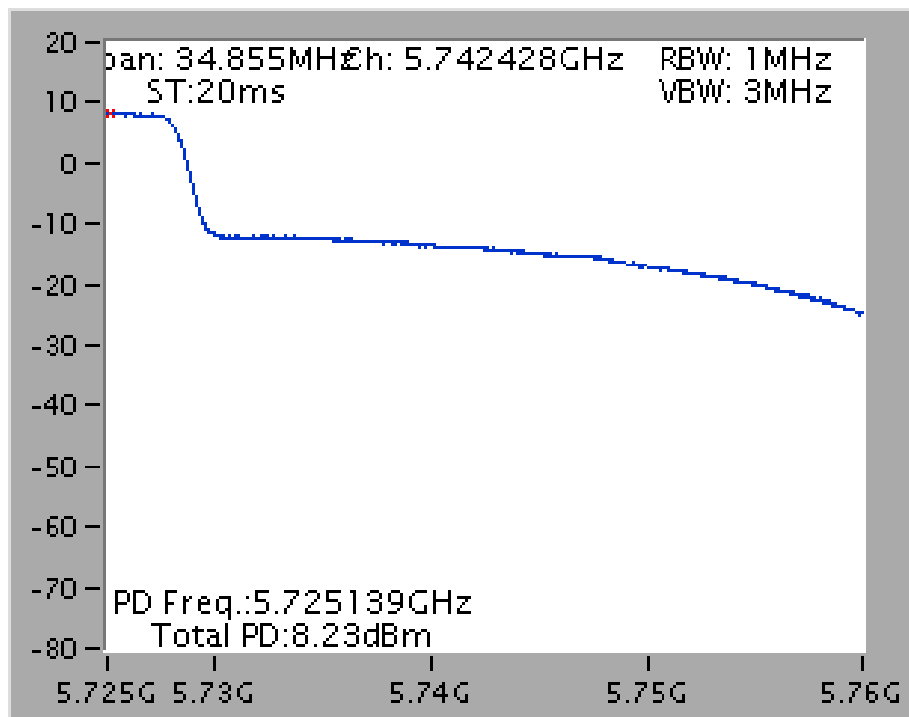
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 /
5720 MHz (UNII 3)



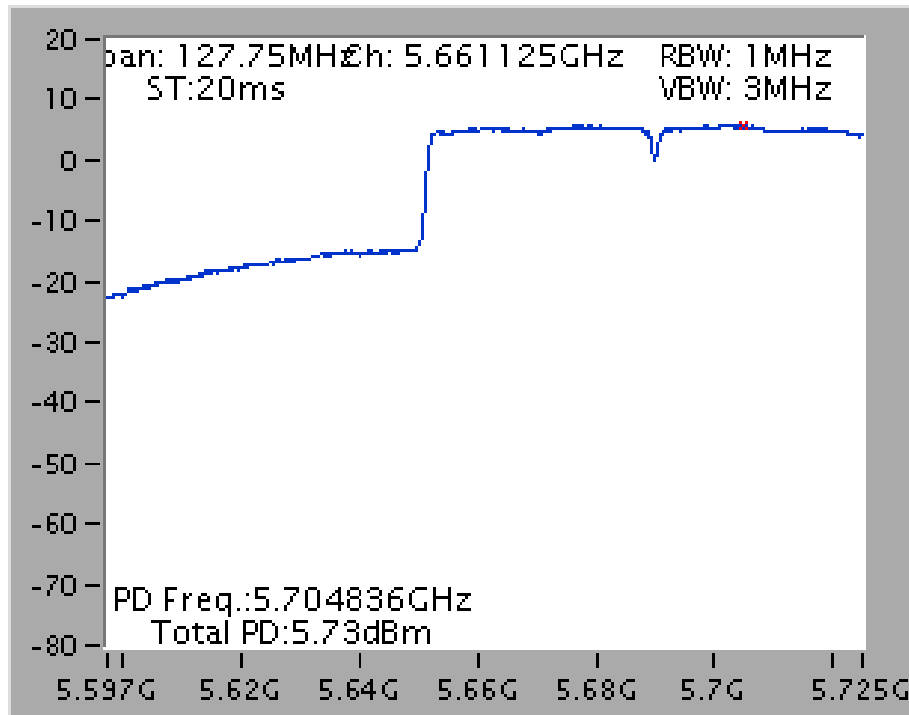
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz (UNII 2C)



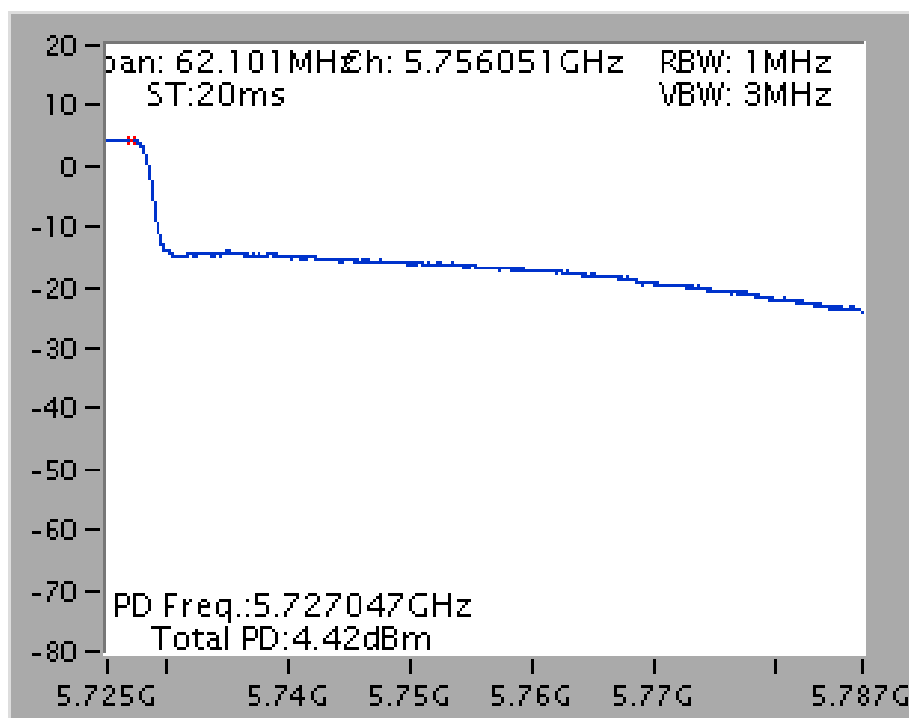
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz (UNII 3)



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 /
5690 MHz (UNII 2C)

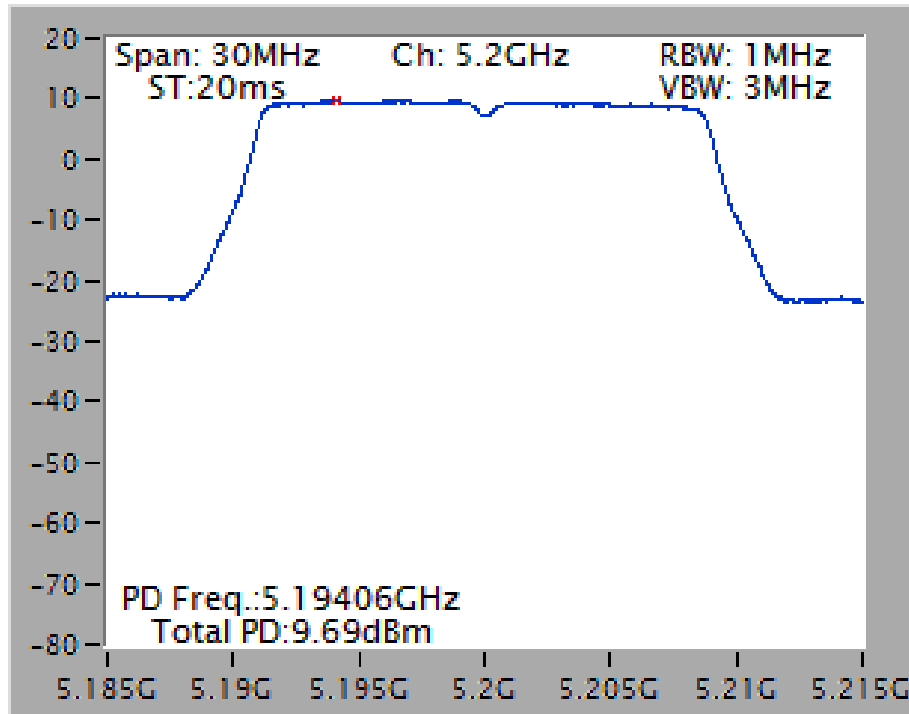


Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 /
5690 MHz (UNII 3)

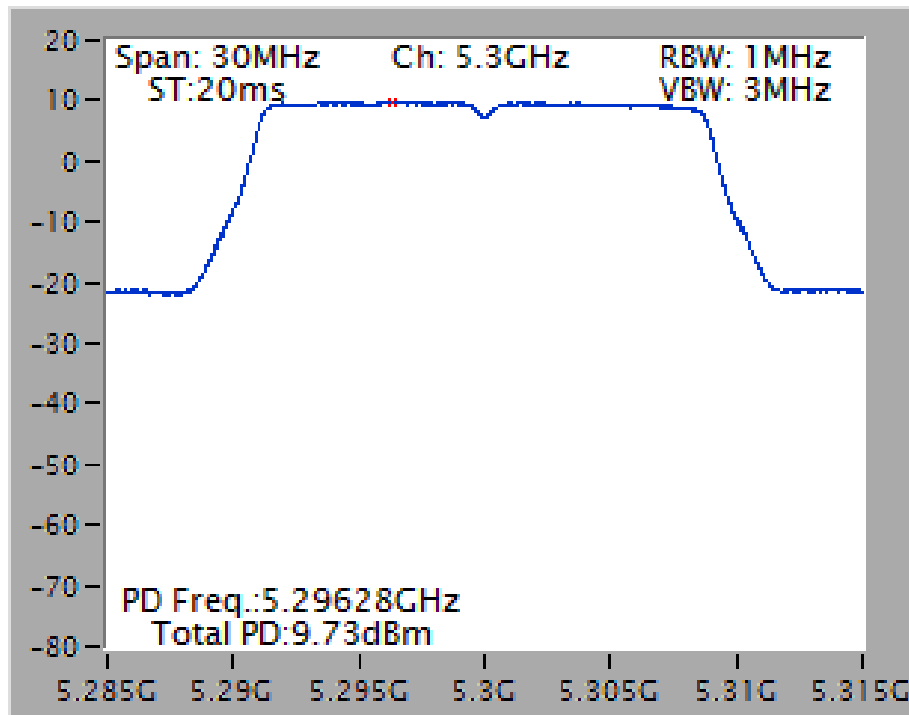


For beamforming function:

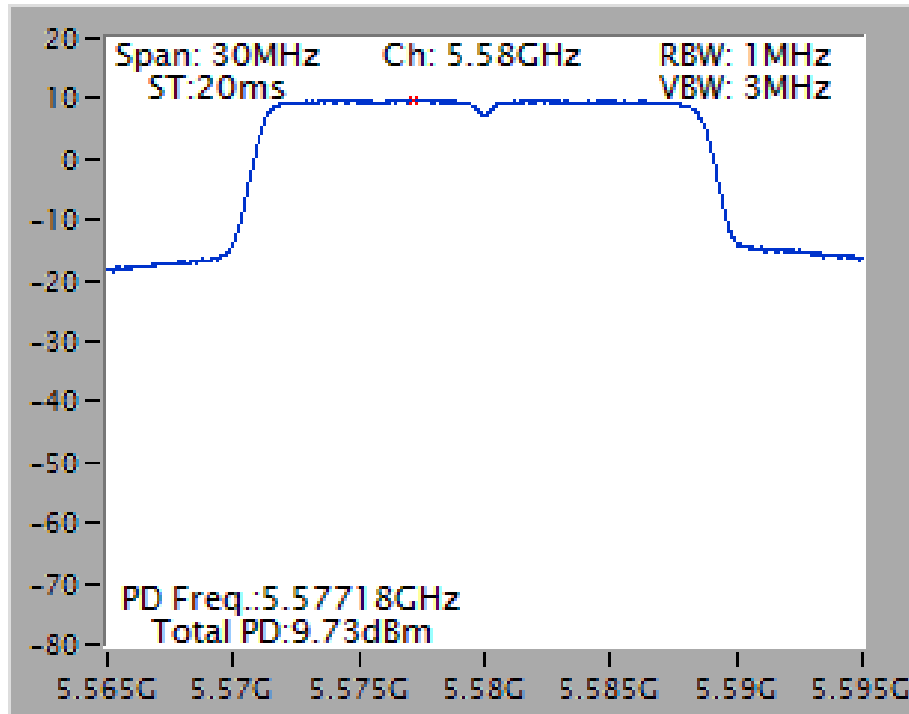
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5200 MHz



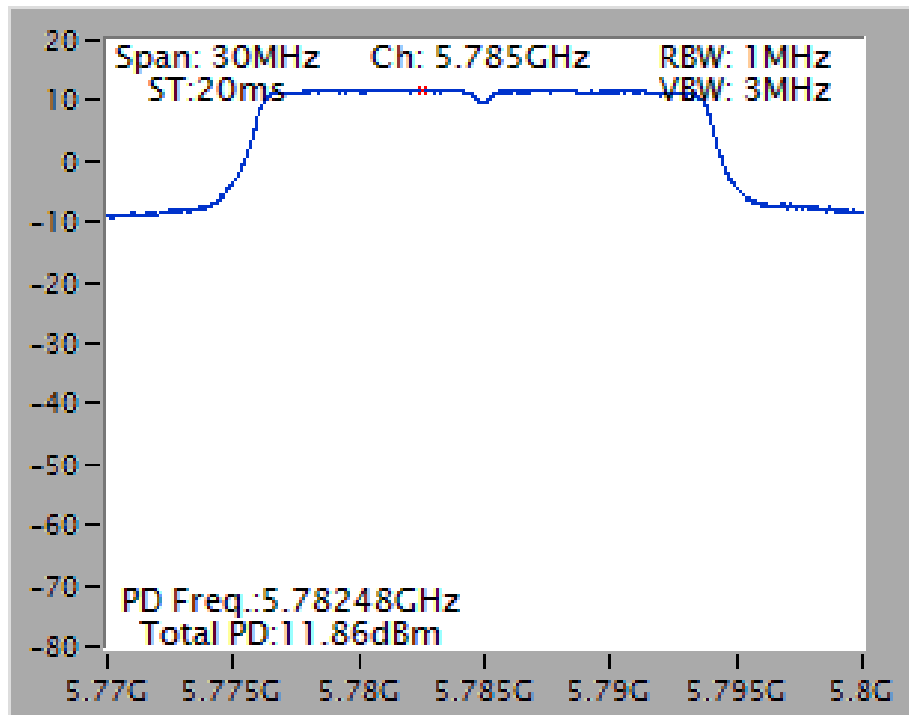
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5300 MHz



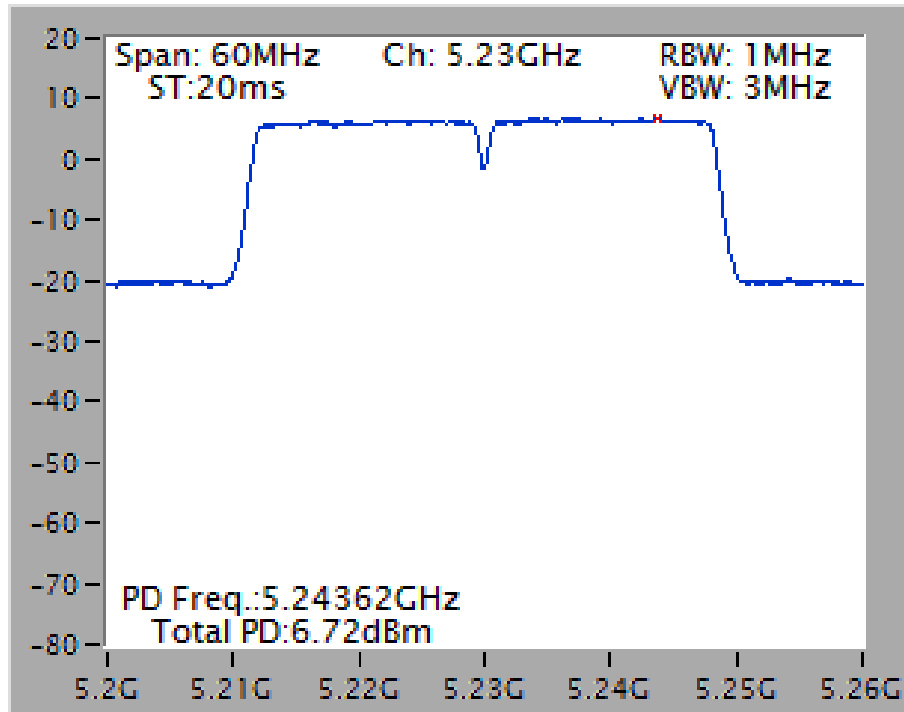
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5580 MHz



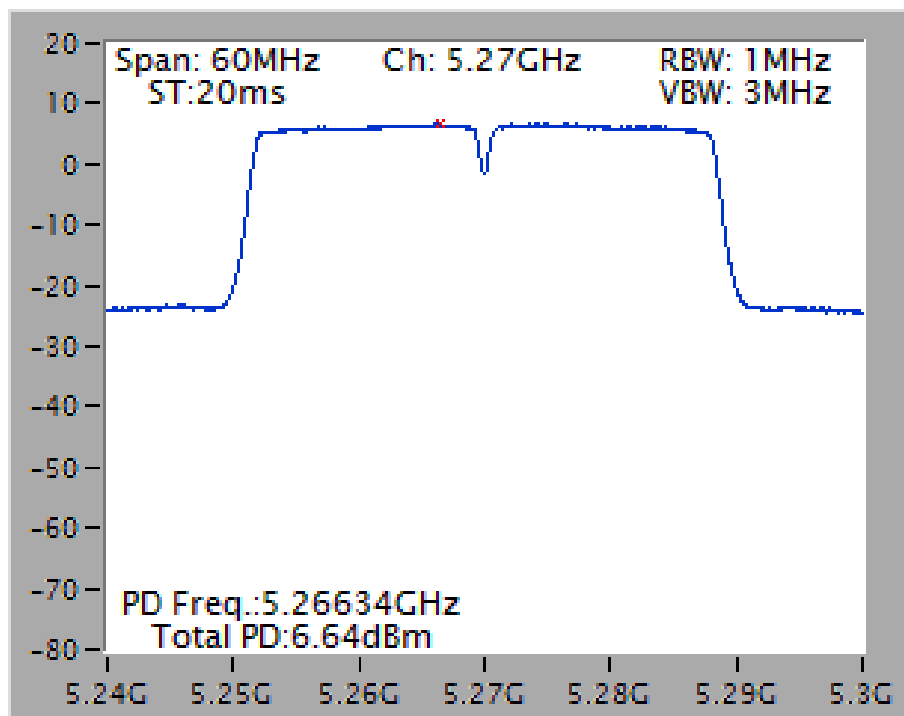
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5785 MHz



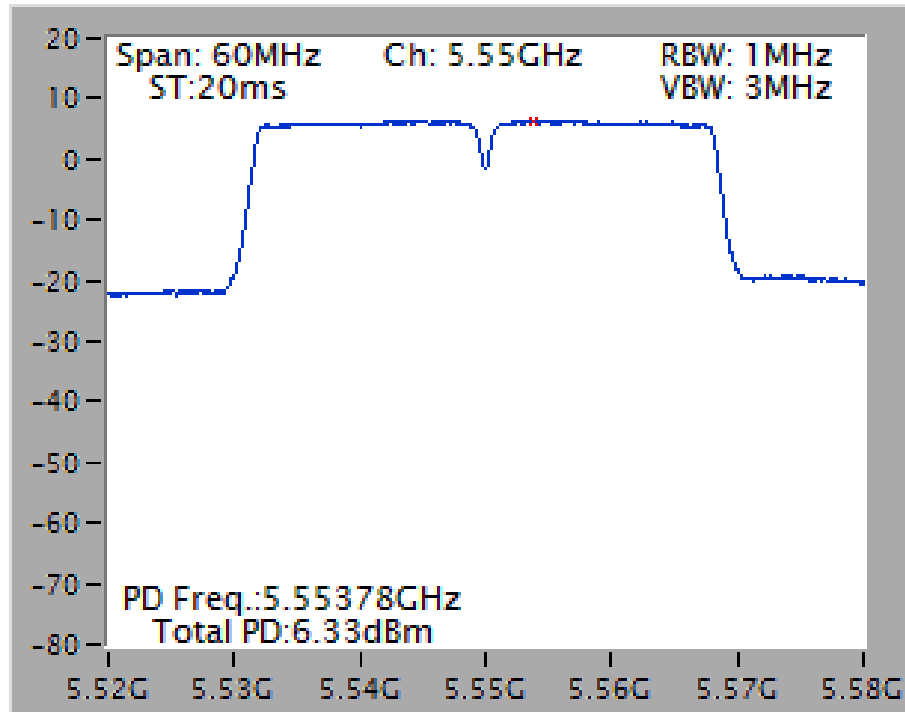
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5230 MHz



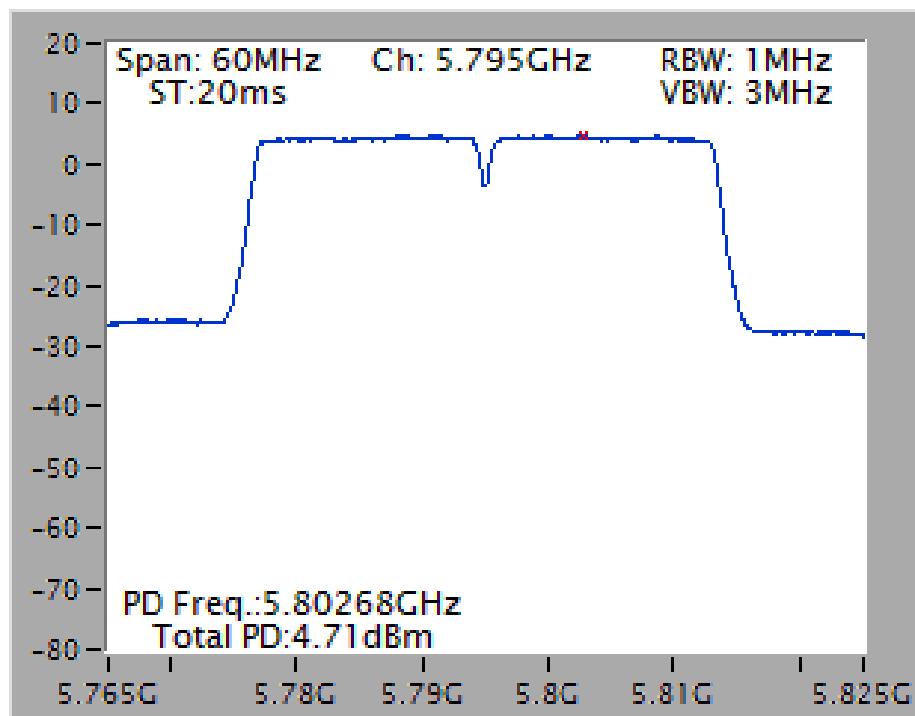
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5270 MHz



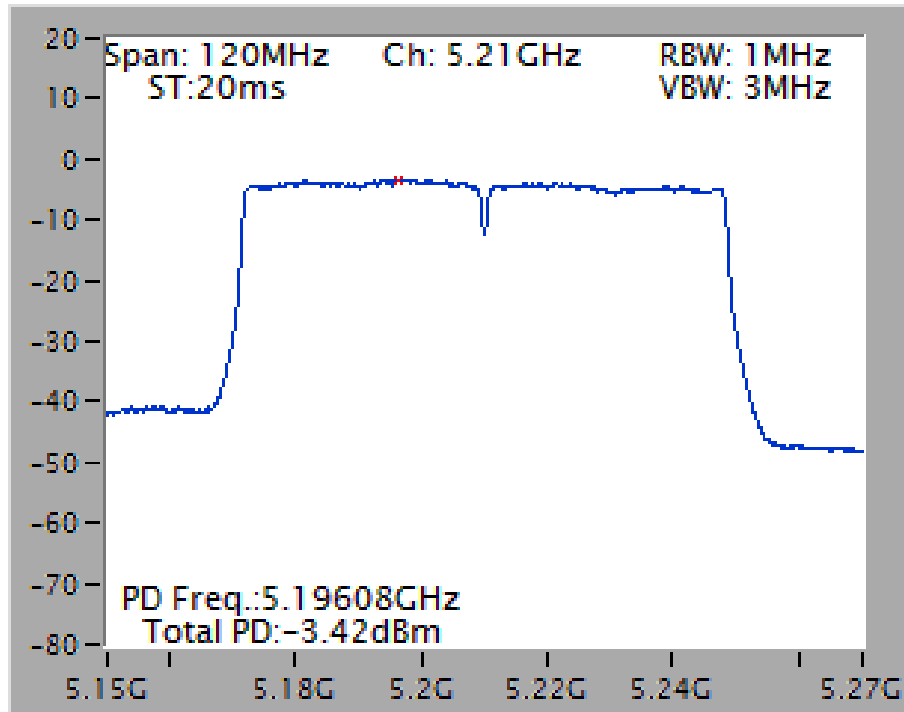
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5550 MHz



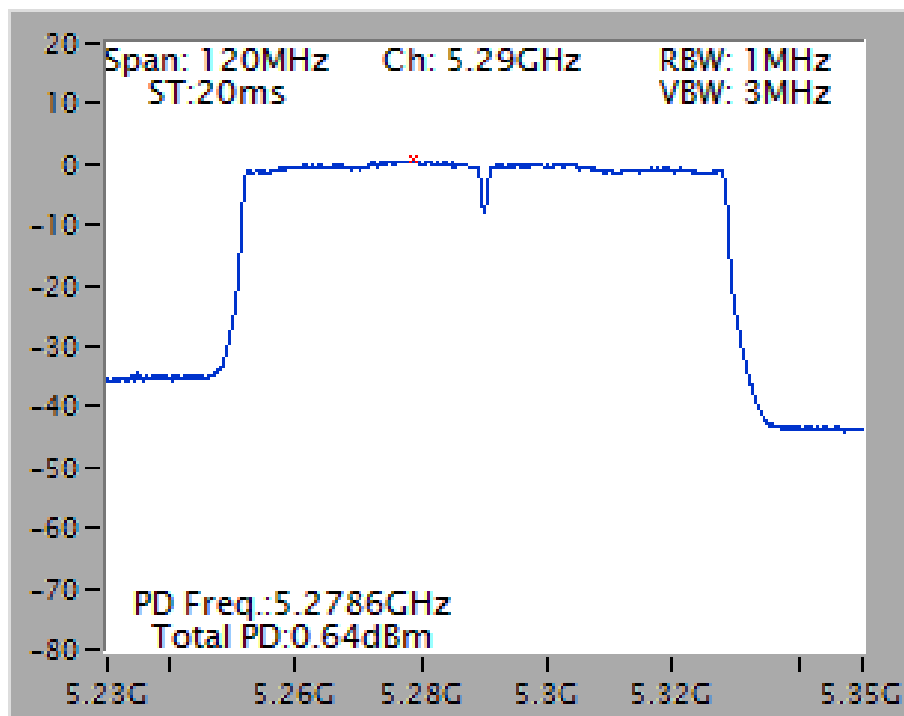
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5795 MHz



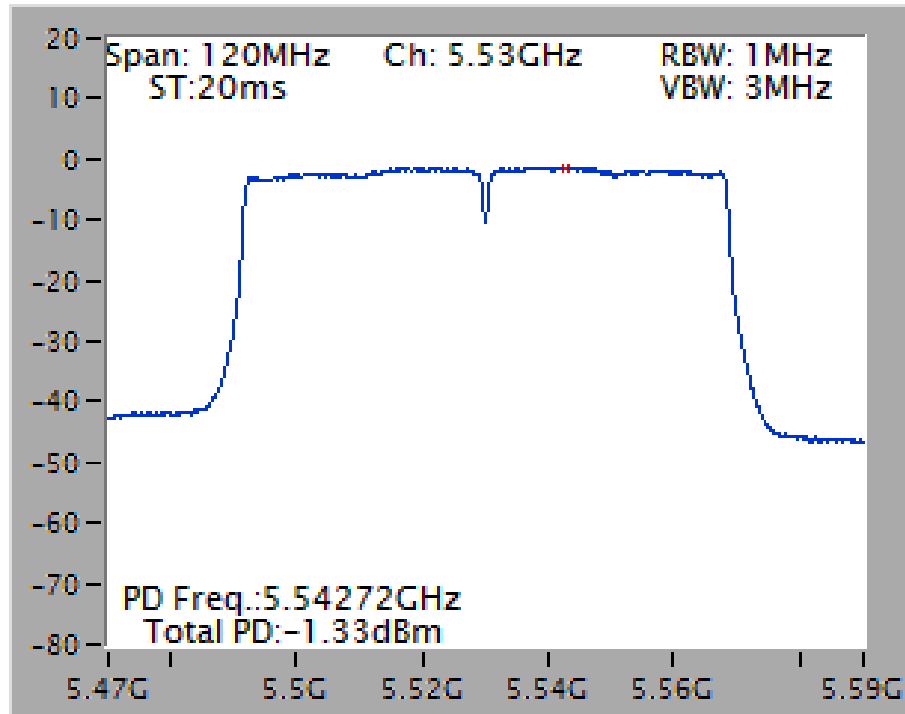
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5210 MHz



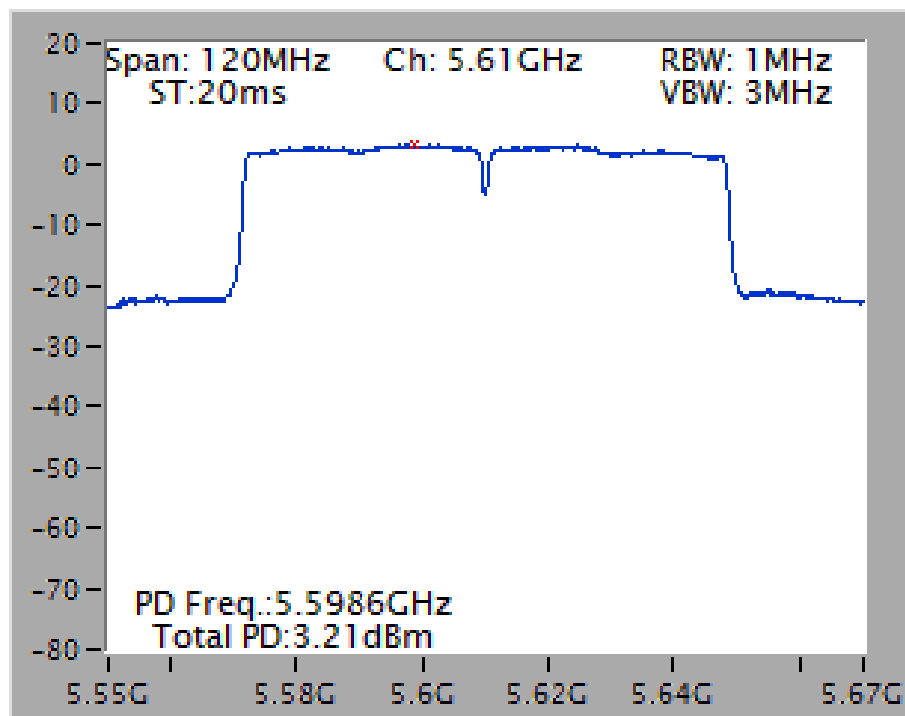
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5290 MHz



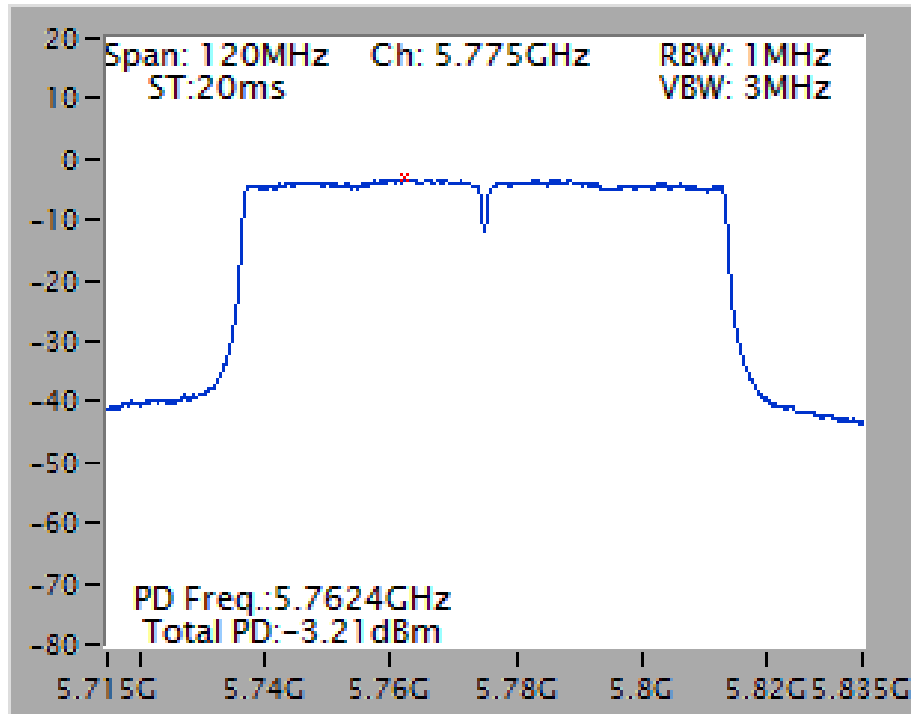
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5530 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5610 MHz

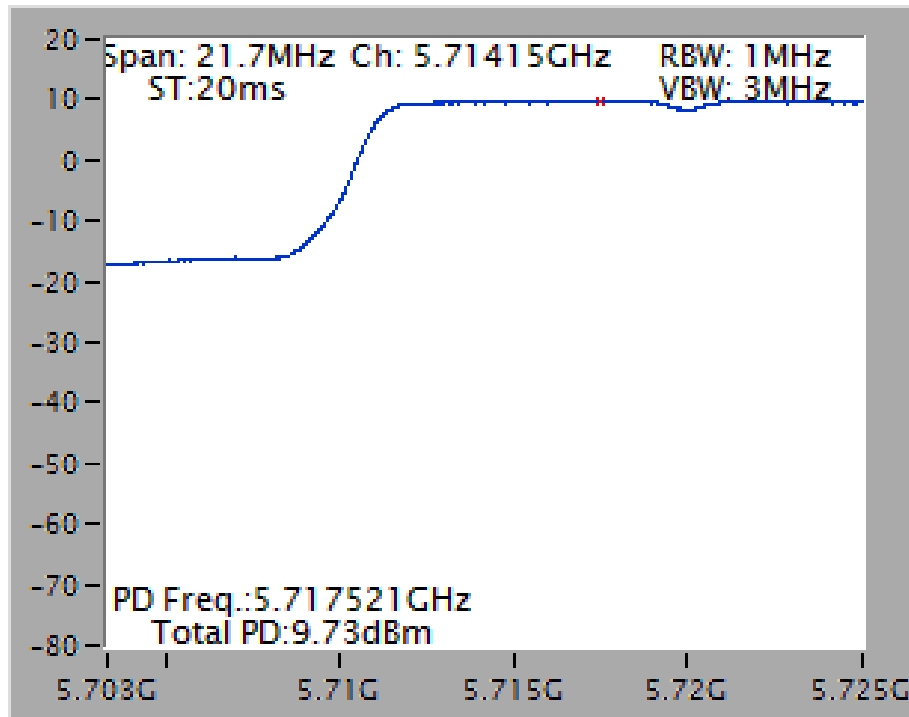


Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5775 MHz

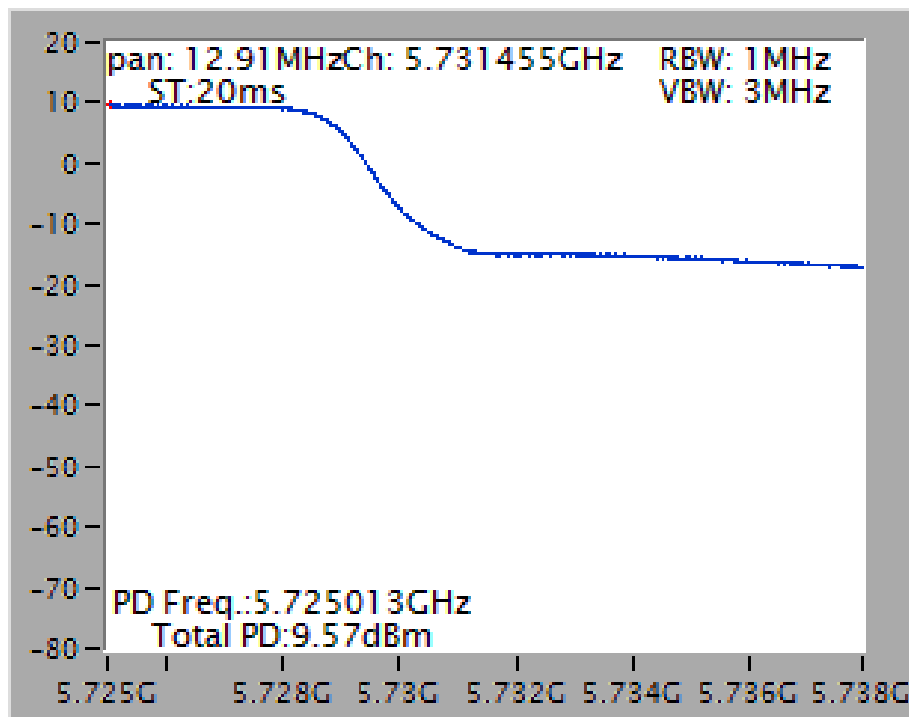


Straddle Channel

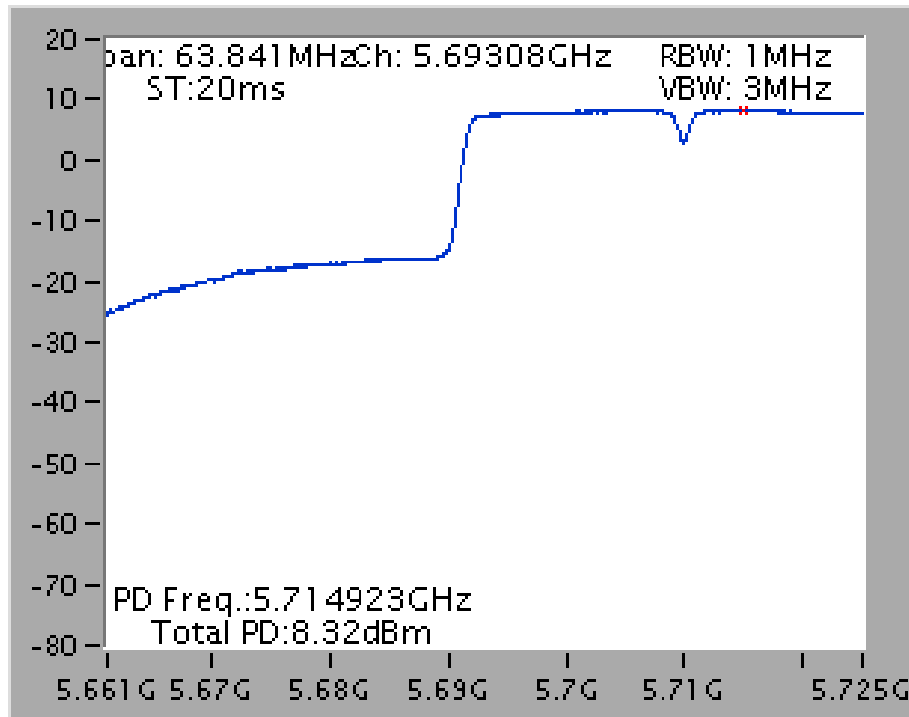
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5720 MHz (UNII 2C)



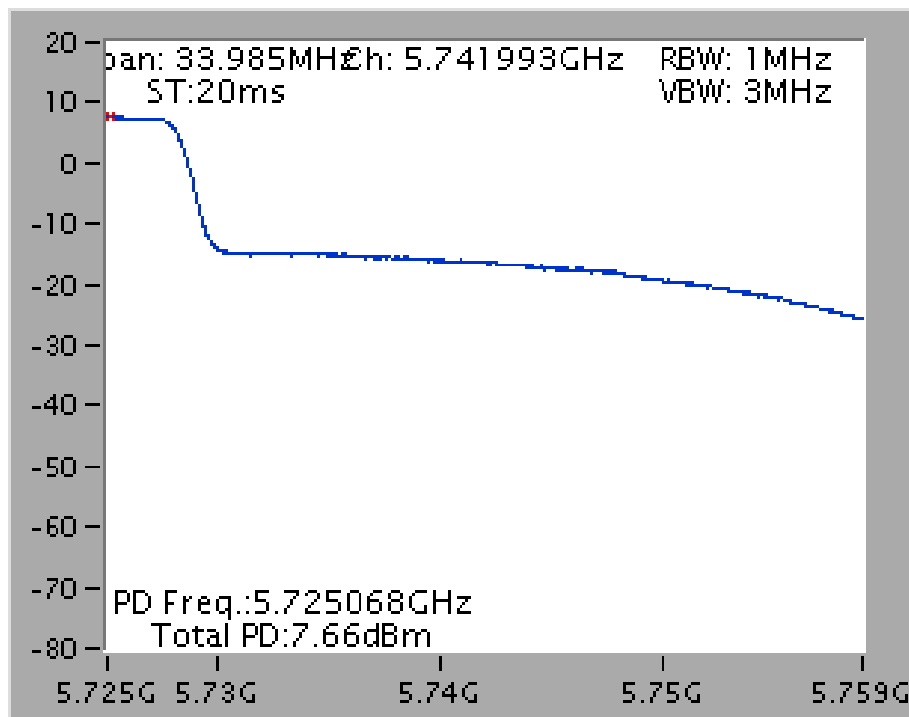
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 / 5720 MHz (UNII 3)



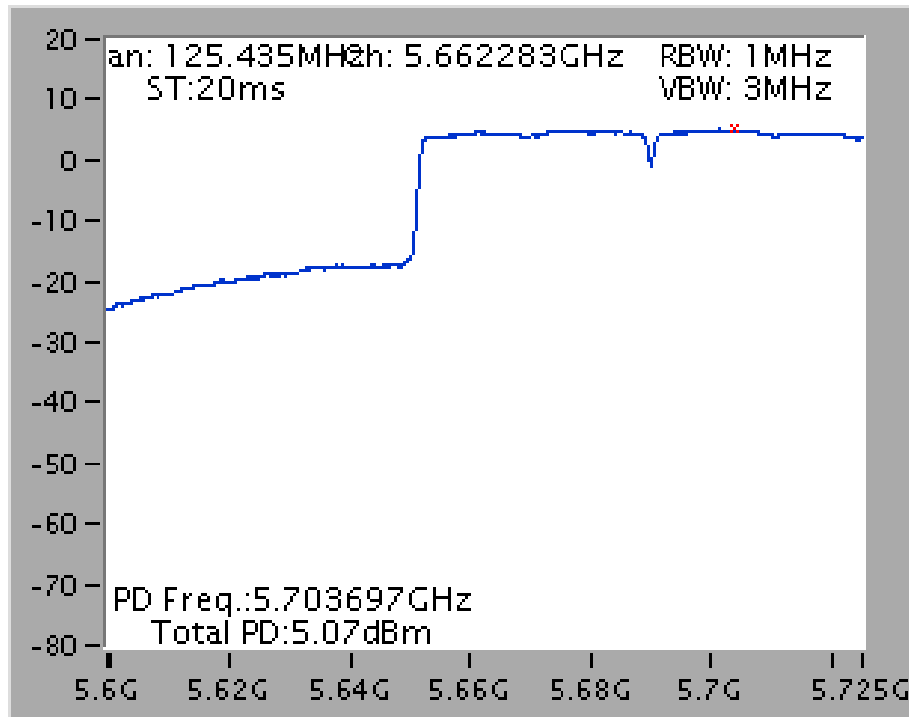
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz (UNII 2C)



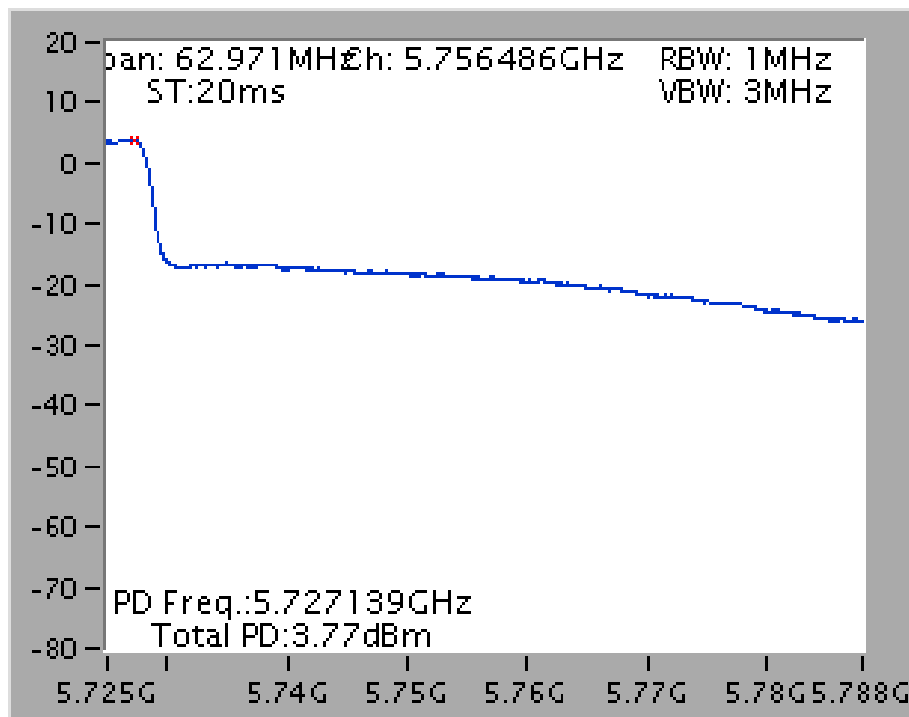
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 / 5710 MHz (UNII 3)



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5690 MHz (UNII 2C)



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 / 5690 MHz (UNII 3)



4.6. Radiated Emissions Measurement

4.6.1. Limit

For transmitters operating in the 5.15-5.35 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.

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

In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

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

4.6.2. Measuring Instruments and Setting

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

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

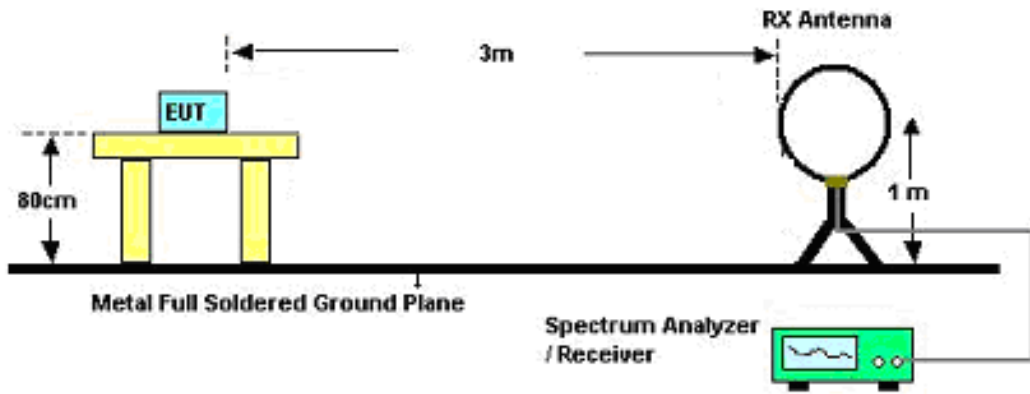
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RBW 120kHz for QP

4.6.3. Test Procedures

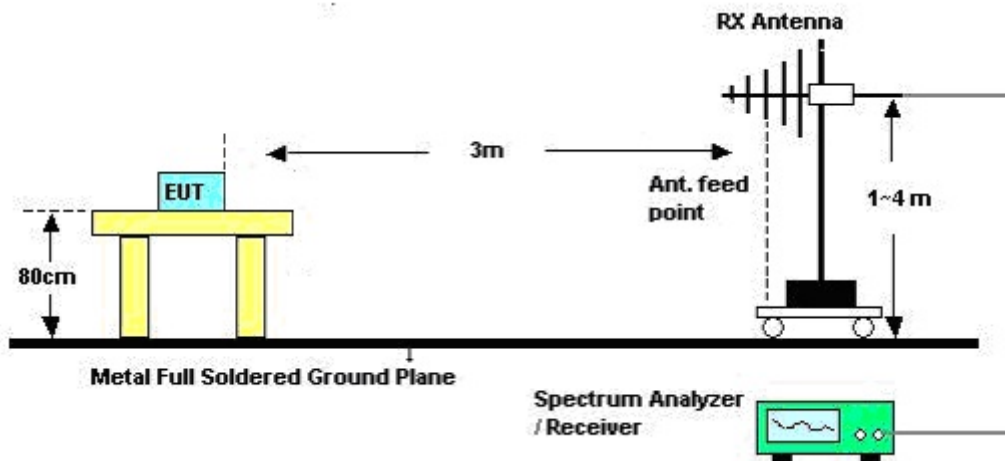
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 1m & 3m far away from the turntable.
2. Power on the EUT and all the supporting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

4.6.4. Test Setup Layout

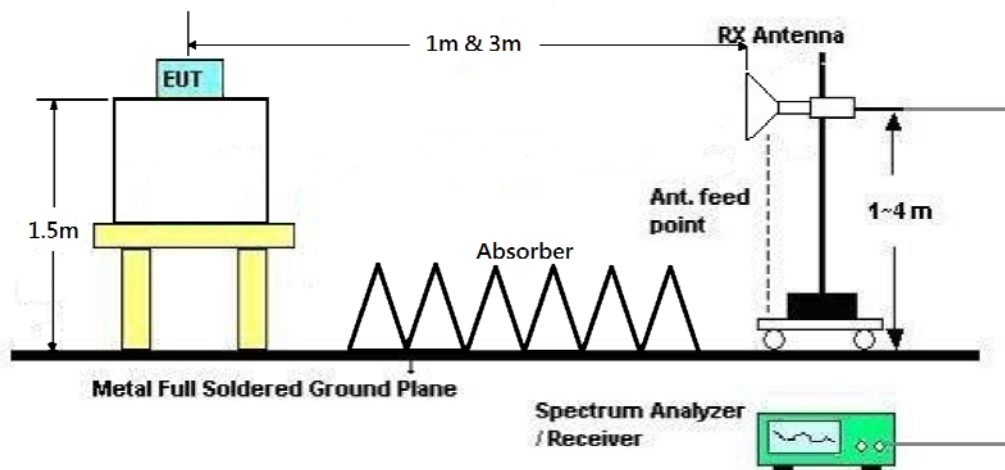
For Radiated Emissions: 9kHz ~30MHz



For Radiated Emissions: 30MHz~1GHz



For Radiated Emissions: Above 1GHz



4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

For non-beamforming function:

The EUT was programmed to be in continuously transmitting mode.

For beamforming function:

The EUT was programmed to be in beamforming transmitting mode.

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

Temperature	24°C	Humidity	61%
Test Engineer	Owen Hsu	Configurations	CTX
Test Date	Sep. 10, 2015	Test Mode	Mode 6

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

Note:

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

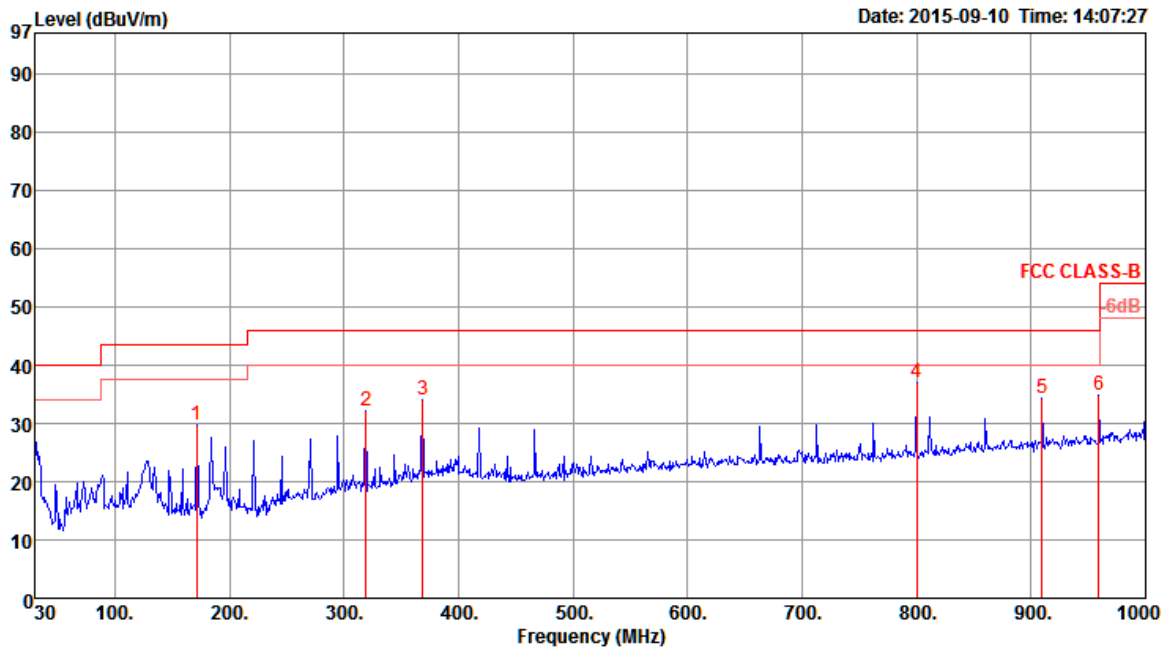
Distance extrapolation factor = $40 \log(\text{specific distance} / \text{test distance})$ (dB);

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

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

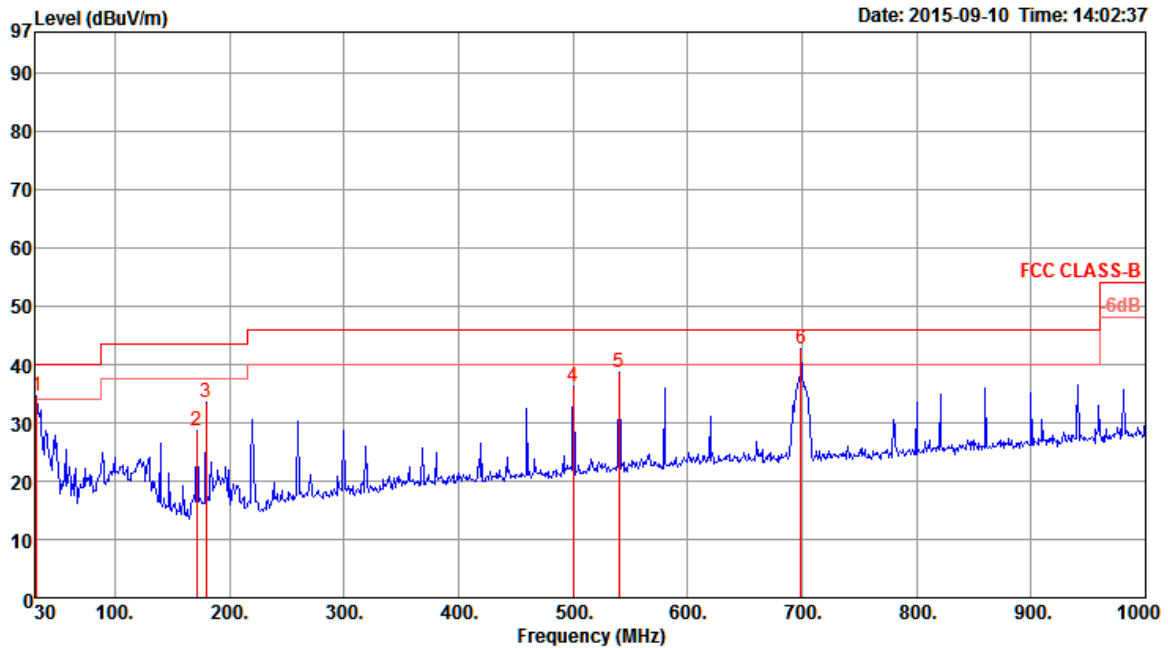
Temperature	24°C	Humidity	61%
Test Engineer	Owen Hsu	Configurations	CTX
Test Mode	Mode 6		

Horizontal



	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	171.62	29.64	43.50	-13.86	47.31	1.08	10.21	28.96	0	100	Peak	HORIZONTAL
2	319.06	32.20	46.00	-13.80	44.78	1.45	14.44	28.47	0	100	Peak	HORIZONTAL
3	368.53	33.93	46.00	-12.07	45.40	1.57	15.78	28.82	0	100	Peak	HORIZONTAL
4	800.18	37.08	46.00	-8.92	42.79	2.29	20.60	28.60	0	100	Peak	HORIZONTAL
5	909.79	34.37	46.00	-11.63	38.28	2.41	21.60	27.92	0	100	Peak	HORIZONTAL
6	959.26	34.93	46.00	-11.07	37.88	2.47	22.12	27.54	0	100	Peak	HORIZONTAL

Vertical



	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	31.94	34.70	40.00	-5.30	45.00	0.61	18.60	29.51	360	400	Peak	VERTICAL
2	171.62	28.69	43.50	-14.81	46.36	1.08	10.21	28.96	360	400	Peak	VERTICAL
3	179.38	33.51	43.50	-9.99	51.45	1.13	9.85	28.92	360	400	Peak	VERTICAL
4	500.45	36.09	46.00	-9.91	45.75	1.83	17.90	29.39	360	400	Peak	VERTICAL
5	540.22	38.66	46.00	-7.34	47.37	1.89	18.70	29.30	360	400	Peak	VERTICAL
6	699.30	42.73	46.00	-3.27	49.81	2.12	19.71	28.91	360	400	Peak	VERTICAL

Note:

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

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

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

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

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 36 / Chain 1 + Chain 2
Test Date	Aug. 19, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15539.68	57.91	74.00	-16.09	40.89	12.58	38.14	33.70	152	292	Peak	HORIZONTAL
2	15540.64	44.97	54.00	-9.03	27.95	12.58	38.14	33.70	152	292	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15530.29	57.53	74.00	-16.47	40.51	12.58	38.14	33.70	150	304	Peak	VERTICAL
2	15542.24	45.25	54.00	-8.75	28.23	12.58	38.14	33.70	150	304	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 40 / Chain 1 + Chain 2
Test Date	Aug. 19, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15591.70	57.89	74.00	-16.11	41.00	12.58	38.06	33.75	154	269	Peak	HORIZONTAL
2	15607.53	44.73	54.00	-9.27	27.90	12.58	38.03	33.78	154	269	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15592.18	44.91	54.00	-9.09	28.02	12.58	38.06	33.75	153	281	Average	VERTICAL
2	15607.37	57.72	74.00	-16.28	40.89	12.58	38.03	33.78	153	281	Peak	VERTICAL



Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 48 / Chain 1 + Chain 2
Test Date	Aug. 19, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15724.74	44.98	54.00	-9.02	28.45	12.57	37.84	33.88	156	248	Average	HORIZONTAL
2	15728.30	57.83	74.00	-16.17	41.32	12.57	37.84	33.90	156	248	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15710.19	57.97	74.00	-16.03	41.41	12.57	37.87	33.88	155	259	Peak	VERTICAL
2	15711.15	44.92	54.00	-9.08	28.36	12.57	37.87	33.88	155	259	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 52 / Chain 1 + Chain 2
Test Date	Aug. 19, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15776.89	47.06	54.00	-6.94	30.66	12.57	37.76	33.93	264	134	Average	HORIZONTAL
2	15787.44	60.08	74.00	-13.92	43.73	12.57	37.73	33.95	264	134	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15770.54	58.12	74.00	-15.88	41.72	12.57	37.76	33.93	157	279	Peak	VERTICAL
2	15782.85	45.01	54.00	-8.99	28.66	12.57	37.73	33.95	157	279	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 60 / Chain 1 + Chain 2
Test Date	Aug. 19, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10594.23	42.24	54.00	-11.76	27.31	10.16	38.40	33.63	150	252	Average	HORIZONTAL
2	10609.71	56.21	74.00	-17.79	41.24	10.19	38.40	33.62	150	252	Peak	HORIZONTAL
3	15895.74	57.77	74.00	-16.23	41.68	12.57	37.57	34.05	151	224	Peak	HORIZONTAL
4	15898.49	44.73	54.00	-9.27	28.64	12.57	37.57	34.05	151	224	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10590.13	55.68	74.00	-18.32	40.75	10.16	38.40	33.63	154	250	Peak	VERTICAL
2	10592.37	42.25	54.00	-11.75	27.32	10.16	38.40	33.63	154	250	Average	VERTICAL
3	15891.38	58.54	74.00	-15.46	42.45	12.57	37.57	34.05	153	234	Peak	VERTICAL
4	15901.25	44.51	54.00	-9.49	28.45	12.57	37.54	34.05	153	234	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 64 / Chain 1 + Chain 2
Test Date	Aug. 19, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10640.09	44.61	54.00	-9.39	29.60	10.21	38.40	33.60	158	191	Average	HORIZONTAL
2	10640.13	57.92	74.00	-16.08	42.91	10.21	38.40	33.60	158	191	Peak	HORIZONTAL
3	15953.88	44.49	54.00	-9.51	28.57	12.56	37.46	34.10	160	211	Average	HORIZONTAL
4	15967.72	57.39	74.00	-16.61	41.50	12.56	37.46	34.13	160	211	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10635.90	42.30	54.00	-11.70	27.29	10.21	38.40	33.60	149	238	Average	VERTICAL
2	10643.21	55.16	74.00	-18.84	40.15	10.21	38.40	33.60	149	238	Peak	VERTICAL
3	15954.52	44.53	54.00	-9.47	28.61	12.56	37.46	34.10	147	222	Average	VERTICAL
4	15956.12	56.94	74.00	-17.06	41.05	12.56	37.46	34.13	147	222	Peak	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 100 / Chain 1 + Chain 2
Test Date	Aug. 19, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10993.59	56.16	74.00	-17.84	40.59	10.55	38.40	33.38	156	168	Peak	HORIZONTAL
2	11000.51	42.63	54.00	-11.37	27.06	10.55	38.40	33.38	156	168	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10994.74	55.68	74.00	-18.32	40.11	10.55	38.40	33.38	157	180	Peak	VERTICAL
2	11001.63	42.62	54.00	-11.38	27.05	10.55	38.40	33.38	157	180	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 116 / Chain 1 + Chain 2
Test Date	Aug. 19, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11158.75	65.40	74.00	-8.60	49.61	10.60	38.57	33.38	279	117	Peak	HORIZONTAL
2	11159.46	50.93	54.00	-3.07	35.14	10.60	38.57	33.38	279	117	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11159.55	49.42	54.00	-4.58	33.63	10.60	38.57	33.38	281	129	Average	VERTICAL
2	11159.78	64.96	74.00	-9.04	49.17	10.60	38.57	33.38	281	129	Peak	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 140 / Chain 1 + Chain 2
Test Date	Aug. 19, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11396.51	56.63	74.00	-17.37	40.51	10.69	38.80	33.37	155	126	Peak	HORIZONTAL
2	11402.50	43.49	54.00	-10.51	27.37	10.69	38.80	33.37	155	126	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11390.19	56.91	74.00	-17.09	40.82	10.68	38.78	33.37	156	146	Peak	VERTICAL
2	11397.98	43.62	54.00	-10.38	27.50	10.69	38.80	33.37	156	146	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 144 / Chain 1 + Chain 2
Test Date	Aug. 19, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11439.13	65.94	74.00	-8.06	49.79	10.69	38.83	33.37	141	176	Peak	HORIZONTAL
2	11439.62	50.91	54.00	-3.09	34.76	10.69	38.83	33.37	141	176	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11438.94	65.94	74.00	-8.06	49.79	10.69	38.83	33.37	269	126	Peak	VERTICAL
2	11439.42	50.99	54.00	-3.01	34.84	10.69	38.83	33.37	269	126	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 149 / Chain 1 + Chain 2
Test Date	Aug. 19, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11491.38	56.53	74.00	-17.47	40.31	10.71	38.88	33.37	166	285	Peak	HORIZONTAL
2	11493.21	43.89	54.00	-10.11	27.67	10.71	38.88	33.37	166	285	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11492.53	44.19	54.00	-9.81	27.97	10.71	38.88	33.37	171	268	Average	VERTICAL
2	11493.30	56.97	74.00	-17.03	40.74	10.72	38.88	33.37	171	268	Peak	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 157 / Chain 1 + Chain 2
Test Date	Aug. 19, 2015 / Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11568.99	66.80	74.00	-7.20	50.49	10.75	38.94	33.38	209	112	Peak	HORIZONTAL
2	11569.66	50.98	54.00	-3.02	34.67	10.75	38.94	33.38	209	112	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11570.80	50.05	54.00	-3.95	33.74	10.76	38.94	33.39	176	113	Average	VERTICAL
2	11575.61	65.82	74.00	-8.18	49.51	10.76	38.94	33.39	176	113	Peak	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a CH 165 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg		
1	11646.11	47.68	54.00	-6.32	31.31	10.79	38.98	33.40	152	108	Average	HORIZONTAL
2	11646.59	60.78	74.00	-13.22	44.40	10.81	38.98	33.41	152	108	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg		
1	11650.67	48.85	54.00	-5.15	32.46	10.81	38.99	33.41	145	129	Average	VERTICAL
2	11655.67	61.38	74.00	-12.62	44.99	10.81	38.99	33.41	145	129	Peak	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15527.45	58.43	74.00	-15.57	41.41	12.58	38.14	33.70	151	195	Peak	HORIZONTAL
2	15537.45	45.60	54.00	-8.40	28.58	12.58	38.14	33.70	151	195	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15544.13	45.72	54.00	-8.28	28.72	12.58	38.12	33.70	152	176	Average	VERTICAL
2	15547.79	58.68	74.00	-15.32	41.71	12.58	38.12	33.73	152	176	Peak	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 40 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15606.25	45.42	54.00	-8.58	28.59	12.58	38.03	33.78	160	137	Average	HORIZONTAL
2	15614.66	58.15	74.00	-15.85	41.34	12.58	38.01	33.78	160	137	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15592.98	61.00	74.00	-13.00	44.11	12.58	38.06	33.75	190	135	Peak	VERTICAL
2	15593.46	46.90	54.00	-7.10	30.01	12.58	38.06	33.75	190	135	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 48 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15716.06	45.65	54.00	-8.35	29.12	12.57	37.84	33.88	161	217	Average	HORIZONTAL
2	15719.18	58.77	74.00	-15.23	42.24	12.57	37.84	33.88	161	217	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15706.97	58.62	74.00	-15.38	42.06	12.57	37.87	33.88	164	192	Peak	VERTICAL
2	15716.11	45.74	54.00	-8.26	29.21	12.57	37.84	33.88	164	192	Average	VERTICAL



Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15767.26	45.24	54.00	-8.76	28.84	12.57	37.76	33.93	160	58	Average	HORIZONTAL
2	15773.51	58.31	74.00	-15.69	41.91	12.57	37.76	33.93	160	58	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15769.38	58.36	74.00	-15.64	41.96	12.57	37.76	33.93	159	36	Peak	VERTICAL
2	15777.45	45.34	54.00	-8.66	28.96	12.57	37.76	33.95	159	36	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 60 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10586.63	43.21	54.00	-10.79	28.28	10.16	38.40	33.63	157	96	Average	HORIZONTAL
2	10596.78	55.70	74.00	-18.30	40.77	10.16	38.40	33.63	157	96	Peak	HORIZONTAL
3	15893.99	45.36	54.00	-8.64	29.27	12.57	37.57	34.05	159	114	Average	HORIZONTAL
4	15914.86	57.97	74.00	-16.03	41.95	12.56	37.54	34.08	159	114	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10589.47	56.89	74.00	-17.11	41.96	10.16	38.40	33.63	158	270	Peak	VERTICAL
2	10599.66	43.45	54.00	-10.55	28.52	10.16	38.40	33.63	158	270	Average	VERTICAL
3	15898.80	44.99	54.00	-9.01	28.90	12.57	37.57	34.05	161	290	Average	VERTICAL
4	15901.73	57.45	74.00	-16.55	41.39	12.57	37.54	34.05	161	290	Peak	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 64 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10631.92	43.00	54.00	-11.00	27.99	10.21	38.40	33.60	157	89	Average	HORIZONTAL
2	10652.02	55.99	74.00	-18.01	40.94	10.24	38.40	33.59	157	89	Peak	HORIZONTAL
3	15947.79	44.98	54.00	-9.02	29.04	12.56	37.48	34.10	153	112	Average	HORIZONTAL
4	15961.25	57.19	74.00	-16.81	41.30	12.56	37.46	34.13	153	112	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10625.48	43.23	54.00	-10.77	28.26	10.19	38.40	33.62	156	113	Average	VERTICAL
2	10627.93	55.48	74.00	-18.52	40.47	10.21	38.40	33.60	156	113	Peak	VERTICAL
3	15953.65	57.56	74.00	-16.44	41.64	12.56	37.46	34.10	154	97	Peak	VERTICAL
4	15963.75	44.87	54.00	-9.13	28.98	12.56	37.46	34.13	154	97	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10990.72	57.56	74.00	-16.44	41.99	10.55	38.40	33.38	161	130	Peak	HORIZONTAL
2	11007.98	43.27	54.00	-10.73	27.68	10.55	38.42	33.38	161	130	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10992.74	56.44	74.00	-17.56	40.87	10.55	38.40	33.38	158	109	Peak	VERTICAL
2	11014.62	43.56	54.00	-10.44	27.96	10.56	38.42	33.38	158	109	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 116 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11159.52	66.01	54.00	12.01	50.22	10.60	38.57	33.38	224	115	Average	HORIZONTAL
2	11159.78	50.98	54.00	-3.02	35.19	10.60	38.57	33.38	224	115	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11159.38	50.55	54.00	-3.45	34.76	10.60	38.57	33.38	215	147	Average	VERTICAL
2	11164.28	62.42	74.00	-11.58	46.62	10.61	38.57	33.38	215	147	Peak	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 140 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11391.12	57.29	74.00	-16.71	41.20	10.68	38.78	33.37	183	168	Peak	HORIZONTAL
2	11394.10	43.71	54.00	-10.29	27.61	10.69	38.78	33.37	183	168	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11392.47	57.21	74.00	-16.79	41.11	10.69	38.78	33.37	178	140	Peak	VERTICAL
2	11397.28	44.10	54.00	-9.90	27.98	10.69	38.80	33.37	178	140	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11439.84	50.71	54.00	-3.29	34.56	10.69	38.83	33.37	165	120	Average	HORIZONTAL
2	11442.21	65.89	54.00	11.89	49.74	10.69	38.83	33.37	165	120	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11439.49	50.99	54.00	-3.01	34.84	10.69	38.83	33.37	191	145	Average	VERTICAL
2	11441.51	65.46	74.00	-8.54	49.31	10.69	38.83	33.37	191	145	Peak	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11487.44	60.70	74.00	-13.30	44.48	10.71	38.88	33.37	172	119	Peak	HORIZONTAL
2	11492.50	47.40	54.00	-6.60	31.18	10.71	38.88	33.37	172	119	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11491.63	46.95	54.00	-7.05	30.73	10.71	38.88	33.37	168	144	Average	VERTICAL
2	11496.99	60.51	74.00	-13.49	44.28	10.72	38.88	33.37	168	144	Peak	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 157 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11570.32	50.78	54.00	-3.22	34.47	10.76	38.94	33.39	176	134	Average	HORIZONTAL
2	11575.22	66.09	74.00	-7.91	49.78	10.76	38.94	33.39	176	134	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11572.76	50.04	54.00	-3.96	33.73	10.76	38.94	33.39	184	107	Average	VERTICAL
2	11573.01	64.77	74.00	-9.23	48.46	10.76	38.94	33.39	184	107	Peak	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 165 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11650.13	61.38	74.00	-12.62	45.00	10.81	38.98	33.41	178	129	Peak	HORIZONTAL
2	11650.29	47.63	54.00	-6.37	31.25	10.81	38.98	33.41	178	129	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11650.00	46.99	54.00	-7.01	30.61	10.81	38.98	33.41	164	144	Average	VERTICAL
2	11654.97	59.95	74.00	-14.05	43.56	10.81	38.99	33.41	164	144	Peak	VERTICAL



Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15576.06	45.28	54.00	-8.72	28.36	12.58	38.09	33.75	164	99	Average	HORIZONTAL
2	15579.17	58.19	74.00	-15.81	41.30	12.58	38.06	33.75	164	99	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15570.48	45.43	54.00	-8.57	28.49	12.58	38.09	33.73	167	113	Average	VERTICAL
2	15577.15	58.12	74.00	-15.88	41.20	12.58	38.09	33.75	167	113	Peak	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 46 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15684.26	57.95	74.00	-16.05	41.32	12.58	37.90	33.85	153	70	Peak	HORIZONTAL
2	15698.78	45.51	54.00	-8.49	28.91	12.58	37.87	33.85	153	70	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15691.67	45.30	54.00	-8.70	28.67	12.58	37.90	33.85	160	85	Average	VERTICAL
2	15691.89	58.84	74.00	-15.16	42.21	12.58	37.90	33.85	160	85	Peak	VERTICAL



Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15805.74	44.78	54.00	-9.22	28.49	12.57	37.70	33.98	150	61	Average	HORIZONTAL
2	15815.38	57.45	74.00	-16.55	41.16	12.57	37.70	33.98	150	61	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15800.90	45.01	54.00	-8.99	28.69	12.57	37.70	33.95	127	105	Average	VERTICAL
2	15819.52	57.22	74.00	-16.78	40.95	12.57	37.68	33.98	127	105	Peak	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 62 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10621.47	55.82	74.00	-18.18	40.85	10.19	38.40	33.62	164	114	Peak	HORIZONTAL
2	10625.61	42.90	54.00	-11.10	27.93	10.19	38.40	33.62	164	114	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10617.50	56.43	74.00	-17.57	41.46	10.19	38.40	33.62	154	64	Peak	VERTICAL
2	10622.12	42.80	54.00	-11.20	27.83	10.19	38.40	33.62	154	64	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11020.32	43.01	54.00	-10.99	27.41	10.56	38.42	33.38	153	188	Average	HORIZONTAL
2	11029.55	56.04	74.00	-17.96	40.43	10.56	38.43	33.38	153	188	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11014.49	56.53	74.00	-17.47	40.93	10.56	38.42	33.38	157	163	Peak	VERTICAL
2	11015.77	43.15	54.00	-10.85	27.55	10.56	38.42	33.38	157	163	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 110 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11097.53	42.98	54.00	-11.02	27.28	10.58	38.50	33.38	153	192	Average	HORIZONTAL
2	11102.95	56.92	74.00	-17.08	41.22	10.58	38.50	33.38	153	192	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11093.04	55.73	74.00	-18.27	40.03	10.58	38.50	33.38	160	167	Peak	VERTICAL
2	11099.17	43.38	54.00	-10.62	27.68	10.58	38.50	33.38	160	167	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 134 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11340.16	56.07	74.00	-17.93	40.05	10.66	38.73	33.37	149	245	Peak	HORIZONTAL
2	11345.06	43.47	54.00	-10.53	27.42	10.67	38.75	33.37	149	245	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11349.10	43.64	54.00	-10.36	27.59	10.67	38.75	33.37	153	199	Average	VERTICAL
2	11349.94	56.88	74.00	-17.12	40.83	10.67	38.75	33.37	153	199	Peak	VERTICAL



Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11414.81	50.64	54.00	-3.36	34.50	10.69	38.82	33.37	126	174	Average	HORIZONTAL
2	11417.44	65.10	74.00	-8.90	48.96	10.69	38.82	33.37	126	174	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11414.58	49.15	54.00	-4.85	33.01	10.69	38.82	33.37	272	125	Average	VERTICAL
2	11419.81	63.78	74.00	-10.22	47.64	10.69	38.82	33.37	272	125	Peak	VERTICAL



Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11502.08	43.98	54.00	-10.02	27.73	10.72	38.90	33.37	153	110	Average	HORIZONTAL
2	11509.52	56.63	74.00	-17.37	40.38	10.72	38.90	33.37	153	110	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11500.64	57.37	74.00	-16.63	41.12	10.72	38.90	33.37	157	131	Peak	VERTICAL
2	11519.65	43.73	54.00	-10.27	27.47	10.73	38.91	33.38	157	131	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 159 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11590.26	47.01	54.00	-6.99	30.69	10.76	38.95	33.39	181	133	Average	HORIZONTAL
2	11592.85	60.29	74.00	-13.71	43.97	10.76	38.95	33.39	181	133	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11589.20	57.19	74.00	-16.81	40.87	10.76	38.95	33.39	145	93	Peak	VERTICAL
2	11596.57	43.76	54.00	-10.24	27.43	10.78	38.95	33.40	145	93	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15623.43	58.08	74.00	-15.92	41.27	12.58	38.01	33.78	162	162	Peak	HORIZONTAL
2	15631.44	44.74	54.00	-9.26	27.98	12.58	37.98	33.80	162	162	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15624.90	44.70	54.00	-9.30	27.91	12.58	38.01	33.80	181	139	Average	VERTICAL
2	15624.97	57.48	74.00	-16.52	40.69	12.58	38.01	33.80	181	139	Peak	VERTICAL



Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15864.39	58.00	74.00	-16.00	41.84	12.57	37.62	34.03	138	128	Peak	HORIZONTAL
2	15877.88	44.72	54.00	-9.28	28.59	12.57	37.59	34.03	138	128	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15865.16	58.60	74.00	-15.40	42.44	12.57	37.62	34.03	146	144	Peak	VERTICAL
2	15868.43	44.59	54.00	-9.41	28.46	12.57	37.59	34.03	146	144	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 106 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11059.71	43.00	54.00	-11.00	27.34	10.57	38.47	33.38	157	207	Average	HORIZONTAL
2	11066.12	55.95	74.00	-18.05	40.28	10.58	38.47	33.38	157	207	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11060.99	56.78	74.00	-17.22	41.11	10.58	38.47	33.38	161	180	Peak	VERTICAL
2	11063.65	42.95	54.00	-11.05	27.28	10.58	38.47	33.38	161	180	Average	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 122 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11220.51	56.37	74.00	-17.63	40.50	10.63	38.62	33.38	150	277	Peak	HORIZONTAL
2	11227.08	43.01	54.00	-10.99	27.13	10.63	38.63	33.38	150	277	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11213.21	42.84	54.00	-11.16	26.97	10.63	38.62	33.38	157	260	Average	VERTICAL
2	11226.41	56.51	74.00	-17.49	40.63	10.63	38.63	33.38	157	260	Peak	VERTICAL



Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11384.84	49.23	54.00	-4.77	33.14	10.68	38.78	33.37	121	177	Average	HORIZONTAL
2	11389.78	62.11	74.00	-11.89	46.02	10.68	38.78	33.37	121	177	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11387.15	46.90	54.00	-7.10	30.81	10.68	38.78	33.37	148	127	Average	VERTICAL
2	11389.58	59.74	74.00	-14.26	43.65	10.68	38.78	33.37	148	127	Peak	VERTICAL

Temperature	24°C	Humidity	61%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 155 / Chain 1 + Chain 2
Test Date	Aug. 20, 2015	Test Function	Non-beamforming function
Test Mode	Mode 1 (PIFA antenna)		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11541.09	55.93	74.00	-18.07	39.66	10.73	38.92	33.38	139	143	Peak	HORIZONTAL
2	11544.01	43.44	54.00	-10.56	27.17	10.73	38.92	33.38	139	143	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11540.42	56.71	74.00	-17.29	40.44	10.73	38.92	33.38	134	161	Peak	VERTICAL
2	11552.05	43.18	54.00	-10.82	26.88	10.75	38.93	33.38	134	161	Average	VERTICAL