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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	**RAXWA8001BAC2**
Manufacturer's company	**Arcadyan Technology Corporation**
Manufacturer Address	No.8, Sec.2, Guangfu Rd.,Hsinchu, 30071 Taiwan

Product Name	Wireless Joey Access Point 2
Brand Name	ECHOSTAR
Model No.	Wireless Joey Access Point 2
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Received Date	Dec. 18, 2015
Final Test Date	Feb. 05, 2016
Submission Type	Class II Change

Statement

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

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

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

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.10-2013**, **47 CFR FCC Part 15 Subpart E, KDB789033 D02 v01r01, KDB662911 D01 v02r01, KDB644545 D03 v01.**

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

TAF
Testing Laboratory
1190

Table of Contents

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR5D3029-01	Rev. 01	Initial issue of report	Feb. 25, 2016

1. VERIFICATION OF COMPLIANCE

Product Name	:	Wireless Joey Access Point 2
Brand Name	:	ECHOSTAR
Model No.	:	Wireless Joey Access Point 2
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 Dec. 18, 2015 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Sam Chen

SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart E				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.407(a)	26dB Spectrum Bandwidth and 99% Occupied Bandwidth	Complies	-
4.2	15.407(e)	6dB Spectrum Bandwidth	Complies	-
4.3	15.407(a)	Maximum Conducted Output Power	Complies	0.01 dB
4.4	15.407(a)	Power Spectral Density	Complies	0.01 dB
4.5	15.407(b)	Radiated Emissions	Complies	6.44 dB
4.6	15.407(b)	Band Edge Emissions	Complies	0.50 dB
4.7	15.407(g)	Frequency Stability	Complies	-
4.8	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

Items	Description
Product Type	WLAN (4TX, 4RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter
Modulation	IEEE 802.11a: OFDM IEEE 802.11n/ac: see the below table
Data Modulation	IEEE 802.11a/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Data Rate (Mbps)	IEEE 802.11a: OFDM (6/9/12/18/24/36/48/54) IEEE 802.11n/ac: see the below table
Frequency Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	16 for 20MHz bandwidth ; 8 for 40MHz bandwidth 4 for 80MHz bandwidth
Channel Band Width (99%)	For non-beamforming mode Band 2: IEEE 802.11a: 17.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.32 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.61 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.25 MHz Band 3: IEEE 802.11a: 17.37 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.49 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.32 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 74.67 MHz For beamforming mode Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.76 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.25 MHz Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.90 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.54 MHz

Maximum Conducted Output Power	For non-beamforming mode Band 2: IEEE 802.11a: 22.06 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.92 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.62 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 22.37 dBm Band 3: IEEE 802.11a: 21.51 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 21.34 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.82 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 23.88 dBm For beamforming mode Band 2: IEEE 802.11ac MCS0/Nss1 (VHT20): 21.82 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 21.79 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 21.71 dBm Band 3: IEEE 802.11ac MCS0/Nss1 (VHT20): 21.05 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 21.12 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 21.14 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

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

Antenna and Band width

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

IEEE 11n/ac Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	4	MCS 0-31
802.11n (HT40)	4	MCS 0-31
802.11ac (VHT20)	4	MCS 0-9/Nss1-4
802.11ac (VHT40)	4	MCS 0-9/Nss1-4
802.11ac (VHT80)	4	MCS 0-9/Nss1-4
Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput). Then EUT supports HT20 and HT40. Note 2: IEEE Std. 802.11ac modulation consists of VHT20, VHT40, VHT80 and VHT160 (VHT: Very High Throughput). Then EUT supports VHT20, VHT40 and VHT80. Note 3: Modulation modes consist of below configuration: HT20/HT40: IEEE 802.11n, VHT20/VHT40/VHT80: IEEE 802.11ac		

3.2. Accessories

Power	Brand Holder	Model	Rating
Adapter	DELTA ELECTRONICS, INC.	ADP-18DW BB	Input: 100-120Vac, 0.5A, 60Hz Output: 12Vdc, 1.46A
Other			
Pedestal*1			

3.3. Table for Filed Antenna

Ant.	Brand	P/N	Antenna Type	Connector
1	Airgain	N5X20SD-T-PK1-B75U	PCB Antenna	U.FL
2	Airgain	N5X20SD-PK1-G75U	PCB Antenna	U.FL
3	Airgain	N5X20SD-PK1-A35U	PCB Antenna	U.FL
4	Airgain	N5X20SD-PK1-W50U	PCB Antenna	U.FL

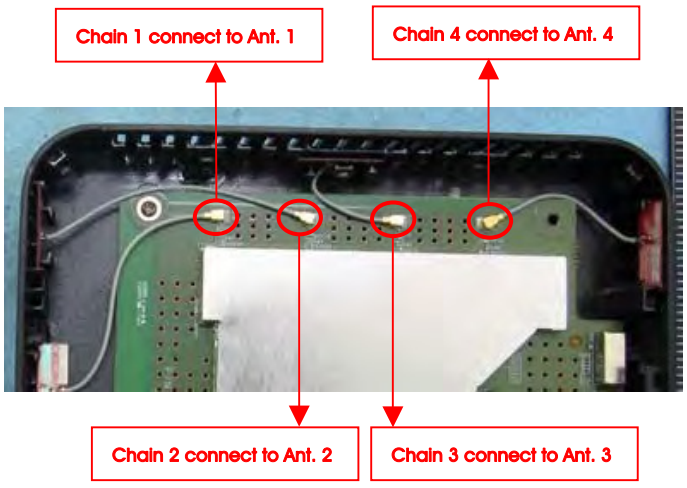
Ant.	Gain (dBi)				Correlated Composite Gain/ Directional Gain (dBi) (4TX,1S)			
	5G B1	5G B2	5G B3	5G B4	5G B1	5G B2	5G B3	5G B4
1	3.51	3.12	4.14	4.21	8.78	8.14	8.83	8.61
2	3.04	2.78	2.64	2.69				
3	4.89	4.47	4.18	4.65				
4	3.31	2.97	3.91	3.87				

Note: The EUT has four Antennas.

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

Chain 1, Chain 2, Chain 3 and Chain 4 can be used as transmitting/receiving antenna.

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



3.4. Table for Carrier Frequencies

There are three bandwidth systems.

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

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

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

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

3.5. Table for Test Modes

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

Test Items	Mode		Data Rate	Channel	Chain
Max. Conducted Output Power	For non-beamforming mode				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2+3+4
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2+3+4
	For beamforming mode:				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2+3+4
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2+3+4

Power Spectral Density	For non-beamforming mode				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2+3+4
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2+3+4
	For beamforming mode:				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2+3+4
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2+3+4
26dB Spectrum Bandwidth 99% Occupied Bandwidth Measurement	For non-beamforming mode				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2+3+4
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2+3+4
	For beamforming mode:				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2+3+4
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2+3+4

6dB Spectrum Bandwidth Measurement	For non-beamforming mode				
	11a/BPSK	Band 4	6Mbps	144	1+2+3+4
	11ac VHT20	Band 4	MCS0/Nss1	144	1+2+3+4
	11ac VHT40	Band 4	MCS0/Nss1	142	1+2+3+4
	11ac VHT80	Band 4	MCS0/Nss1	138	1+2+3+4
	For beamforming mode				
	11ac VHT20	Band 4	MCS0/Nss1	144	1+2+3+4
	11ac VHT40	Band 4	MCS0/Nss1	142	1+2+3+4
	11ac VHT80	Band 4	MCS0/Nss1	138	1+2+3+4
Radiated Emission Above 1GHz	For non-beamforming mode				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/ 116/140/144	1+2+3+4
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	1+2+3+4
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/ 110/134/142	1+2+3+4
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/ 138	1+2+3+4
	For beamforming mode:				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/ 116/140/144	1+2+3+4
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/ 110/134/142	1+2+3+4
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/ 138	1+2+3+4

Band Edge Emission	For non-beamforming mode				
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2+3+4
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2+3+4
	For beamforming mode:				
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140/144	1+2+3+4
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134/142	1+2+3+4
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106/122/138	1+2+3+4
Frequency Stability	20 MHz	Band 2-3	-	60/116	1
	40 MHz	Band 2-3	-	62/110	1
	80 MHz	Band 2-3	-	58/106	1

Note1: There are two modes of EUT, one is beamforming mode, and the other is non-beamforming mode for 802.11n/ac, Beamforming mode and non-beamforming mode has been test and record in this test report.

Note2: 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.

Note3: The EUT can only be used at Y-axis.

The following test modes were performed for all tests:

For Radiated Emission test:

Mode 1: CTX- Place EUT in Y-axis

3.6. Table for Testing Locations

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

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

3.7. Table for Multiple Listing and Class II Change

This product is an extension of original one reported under Sporton project number: FR5D3029

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

Description	Performance Checking
Add 5 GHz Band 2 and Band 3 (5250~5350 MHz, 5470~5725 MHz) for this device.	1. 26dB Spectrum Bandwidth and 99% Occupied Bandwidth 2. 6dB Spectrum Bandwidth 3. Maximum Conducted Output Power 4. Power Spectral Density 5. Radiated Emissions (Above 1GHz) 6. Band Edge Emissions 7. Frequency Stability Measurement

3.8. Table for Supporting Units

For Test Site No: 03CH01-CB

For non-beamforming mode

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC

For beamforming mode:

Support Unit	Brand	Model	FCC ID
Notebook*2	DELL	E4300	DoC
WLAN ac Dongle	Broadcom	Bcm4366	DoC

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC

3.9. Table for Parameters of Test Software Setting

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

For non-beamforming mode:

Test Software Version	DoS						
Mode	Test Frequency (MHz)						
	NCB: 20MHz						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11a	16	16	16	15.5	15.5	15.5	15.5
802.11ac MCS0/Nss1 VHT20	16	16	16	15.5	15.5	15.5	15.5
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	17	16	16.5	17	17.5	17.5	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz			
	16	16	17.5	18.5			

For beamforming mode:

Test Software Version	DoS						
Mode	Test Frequency (MHz)						
	NCB: 20MHz						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11ac MCS0/Nss1 VHT20	16	15.5	15.5	15	15	15	15.5
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	15	15	14.5	14.5	14.5	15	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz			
	15.5	15	15	16			

3.10. EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

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

The program was executed as follows:

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

3.11. Duty Cycle

For non-beamforming mode:

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	5.380	5.420	99.26	0.03	0.01
802.11ac MCS0/Nss1 VHT20	4.960	5.020	98.80	0.05	0.01
802.11ac MCS0/Nss1 VHT40	2.400	2.470	97.17	0.12	0.42
802.11ac MCS0/Nss1 VHT80	1.110	1.180	94.07	0.27	0.90

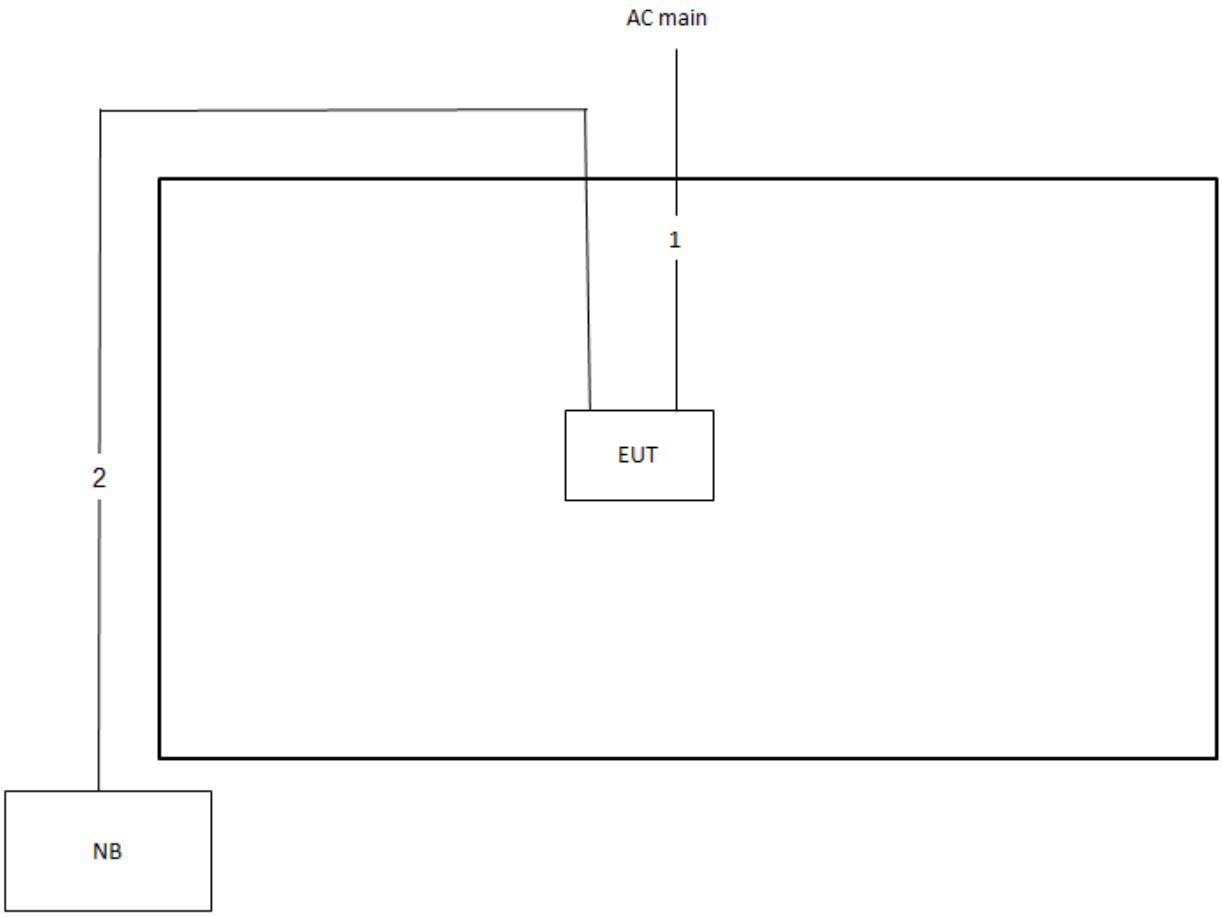
For beamforming mode:

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	3.429	3.701	92.65	0.33	0.29
802.11ac MCS0/Nss1 VHT40	1.656	1.789	92.57	0.34	0.60
802.11ac MCS0/Nss1 VHT80	4.205	4.417	95.20	0.21	0.24

3.12. Test Configurations

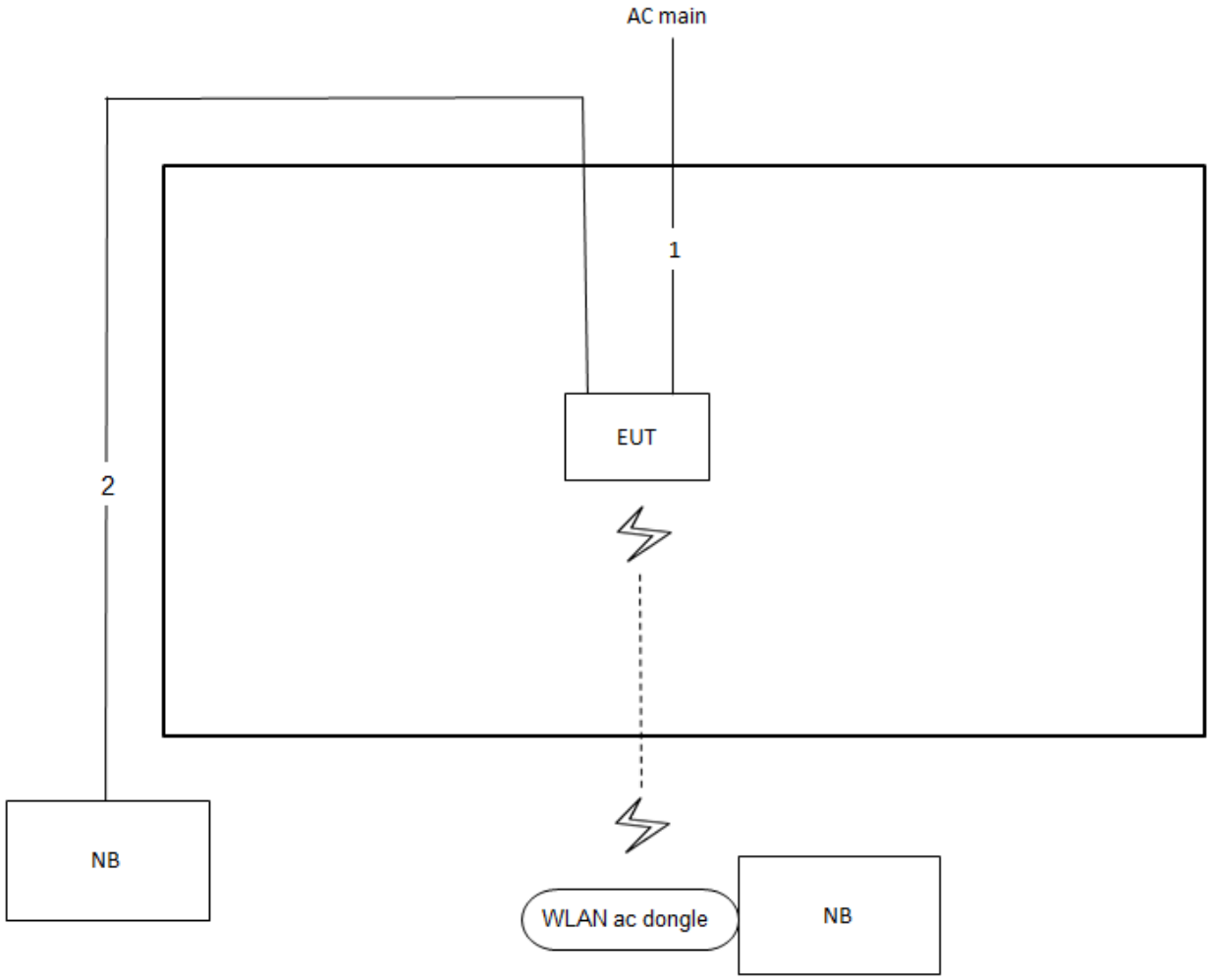
3.12.1. Radiation Emissions Test Configuration

For non-beamforming mode:



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

For beamforming mode:



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

4. TEST RESULT

4.1. 26dB Bandwidth and 99% Occupied Bandwidth Measurement

4.1.1. Limit

No restriction limits.

4.1.2. Measuring Instruments and Setting

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

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

4.1.3. Test Procedures

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

8. The transmitter was radiated to the spectrum analyzer in peak hold mode.
9. 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%.

4.1.4. Test Setup Layout

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

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

4.1.5. Test Deviation

There is no deviation with the original standard.

4.1.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

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

Temperature	23℃	Humidity	64%
Test Engineer	Serway Li		

For non-beamforming mode

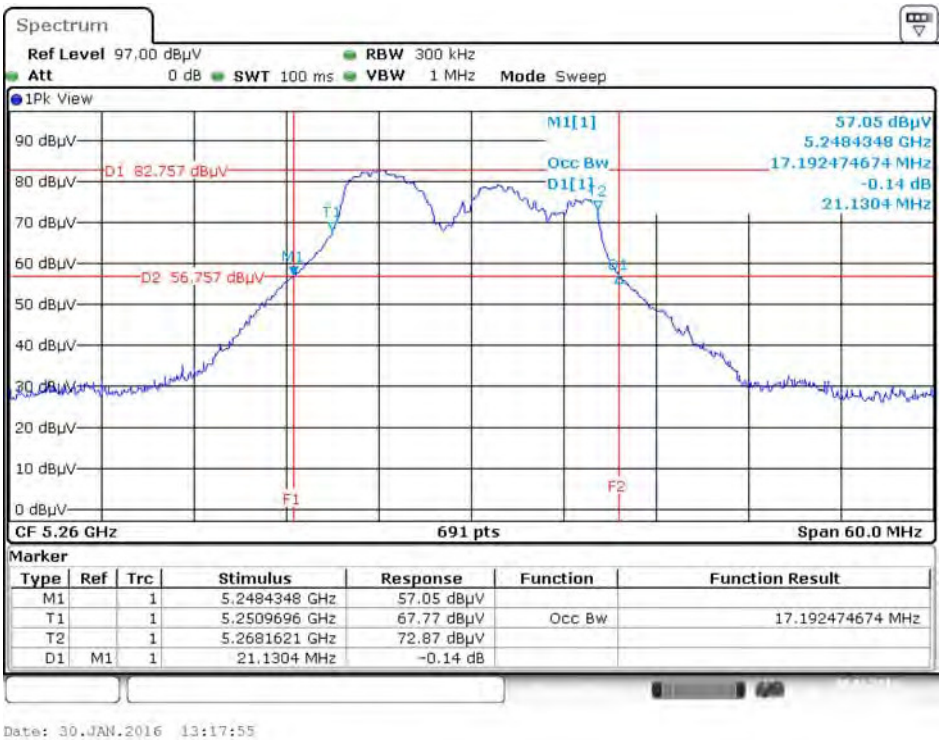
Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5260 MHz	21.13	17.19
	5300 MHz	21.04	16.93
	5320 MHz	20.96	17.11
	5500 MHz	21.39	17.37
	5580 MHz	20.78	17.11
	5700 MHz	20.78	17.19
802.11ac MCS0/Nss1 VHT20	5260 MHz	22.26	18.32
	5300 MHz	22.26	18.32
	5320 MHz	22.43	18.32
	5500 MHz	22.26	18.49
	5580 MHz	22.17	18.32
	5700 MHz	22.17	18.49
802.11ac MCS0/Nss1 VHT40	5270 MHz	42.32	36.47
	5310 MHz	42.17	36.61
	5510 MHz	41.88	36.03
	5550 MHz	41.16	36.32
	5670 MHz	42.03	36.32
802.11ac MCS0/Nss1 VHT80	5290 MHz	80.58	75.25
	5530 MHz	80.29	74.67
	5610 MHz	80.00	72.65

For beamforming mode

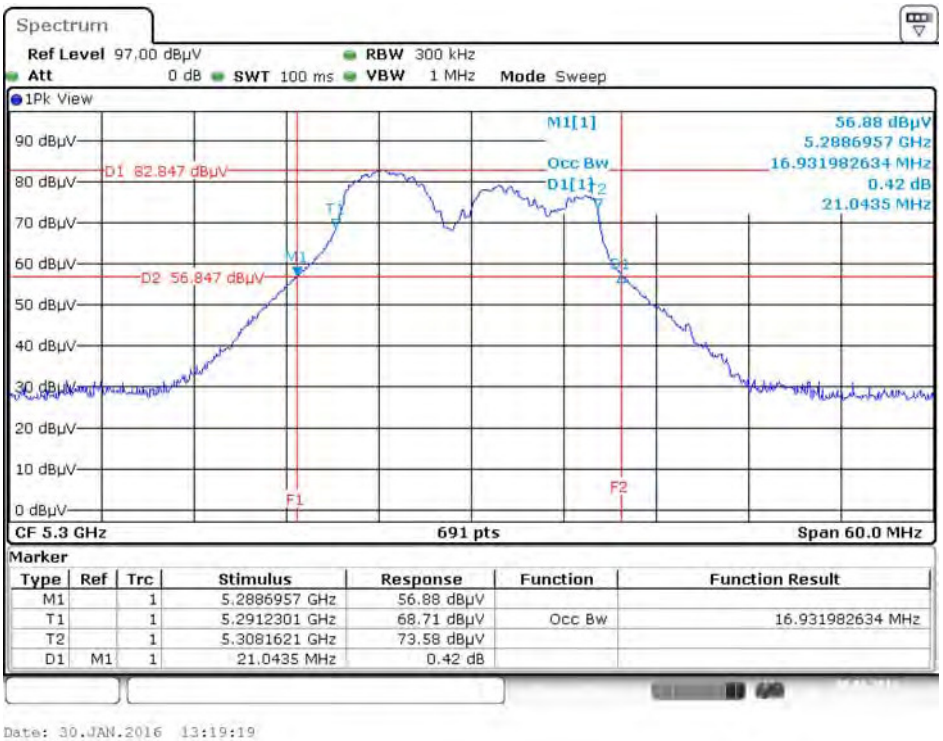
Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5260 MHz	23.57	18.06
	5300 MHz	23.30	17.97
	5320 MHz	23.39	18.06
	5500 MHz	23.74	17.97
	5580 MHz	22.78	17.97
	5700 MHz	23.74	18.06
802.11ac MCS0/Nss1 VHT40	5270 MHz	42.75	36.76
	5310 MHz	42.75	36.76
	5510 MHz	42.90	36.76
	5550 MHz	43.04	36.61
	5670 MHz	42.75	36.90
802.11ac MCS0/Nss1 VHT80	5290 MHz	80.87	75.25
	5530 MHz	80.29	75.25
	5610 MHz	80.00	75.54

For non-beamforming mode

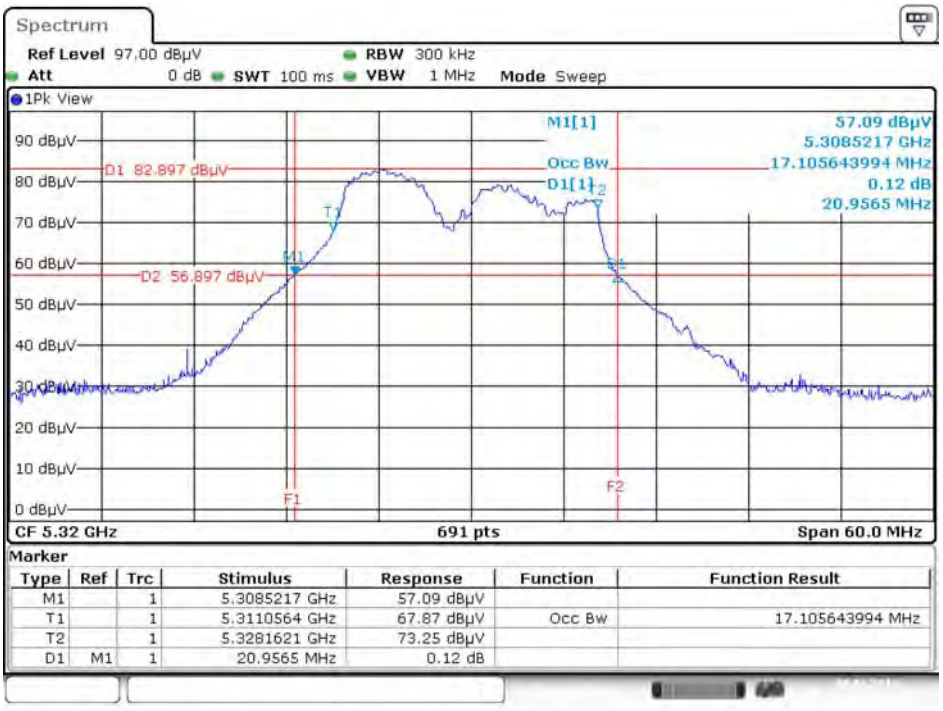
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5260 MHz



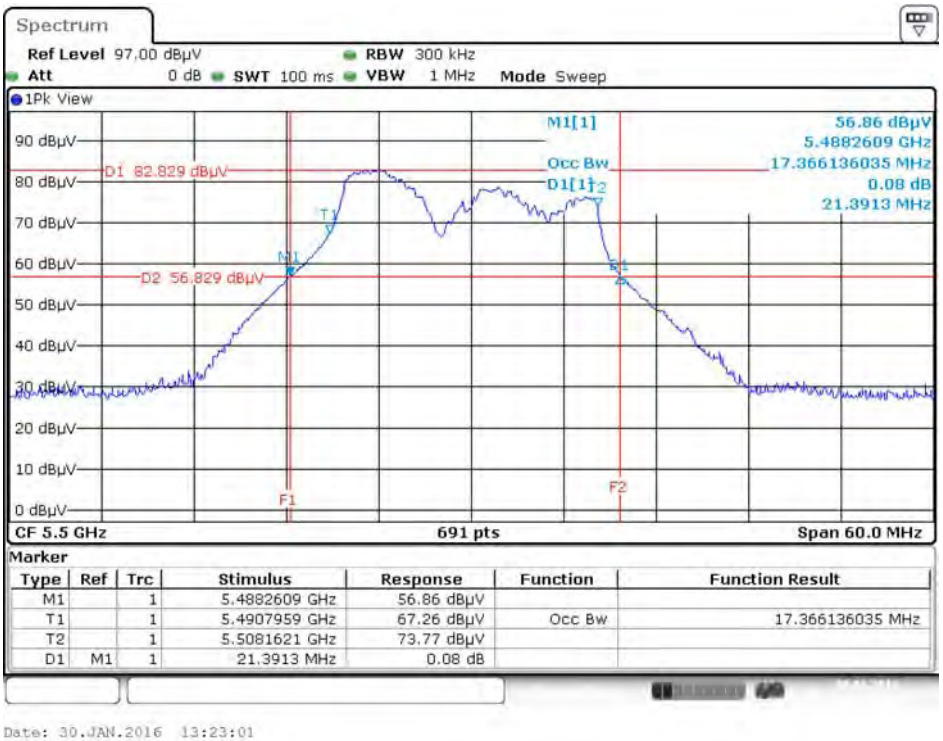
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5300 MHz



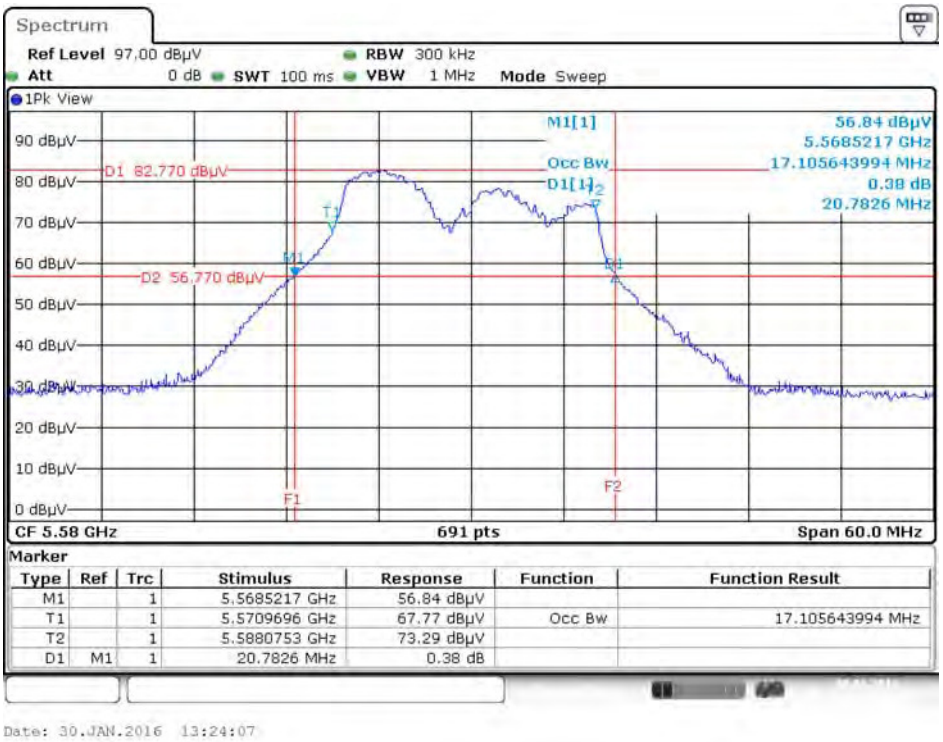
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3+ Chain 4 / 5320 MHz



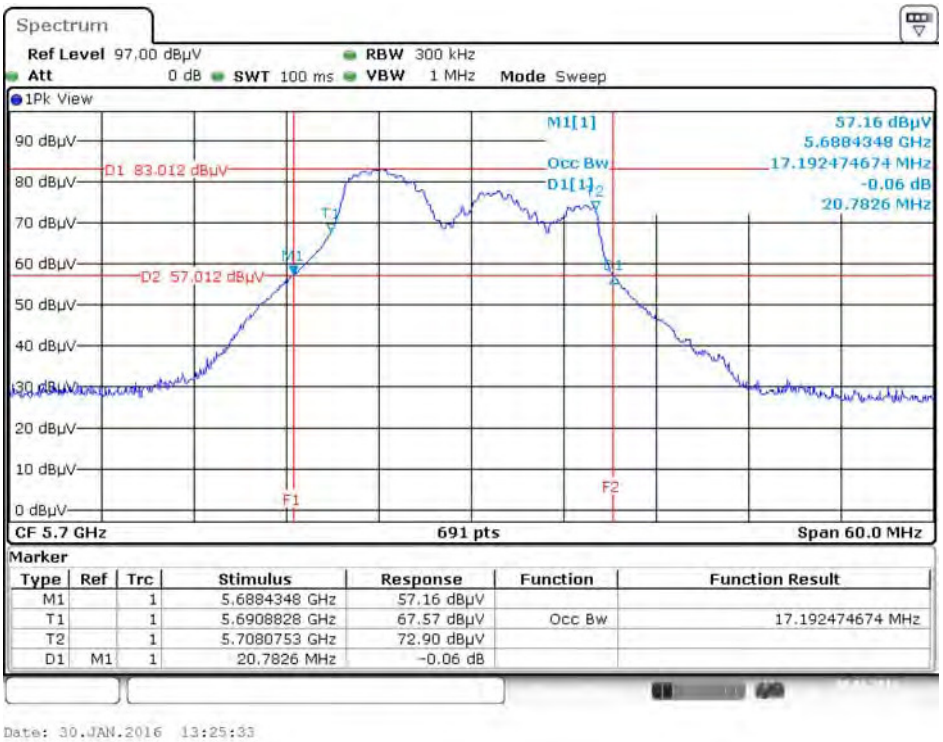
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5500 MHz



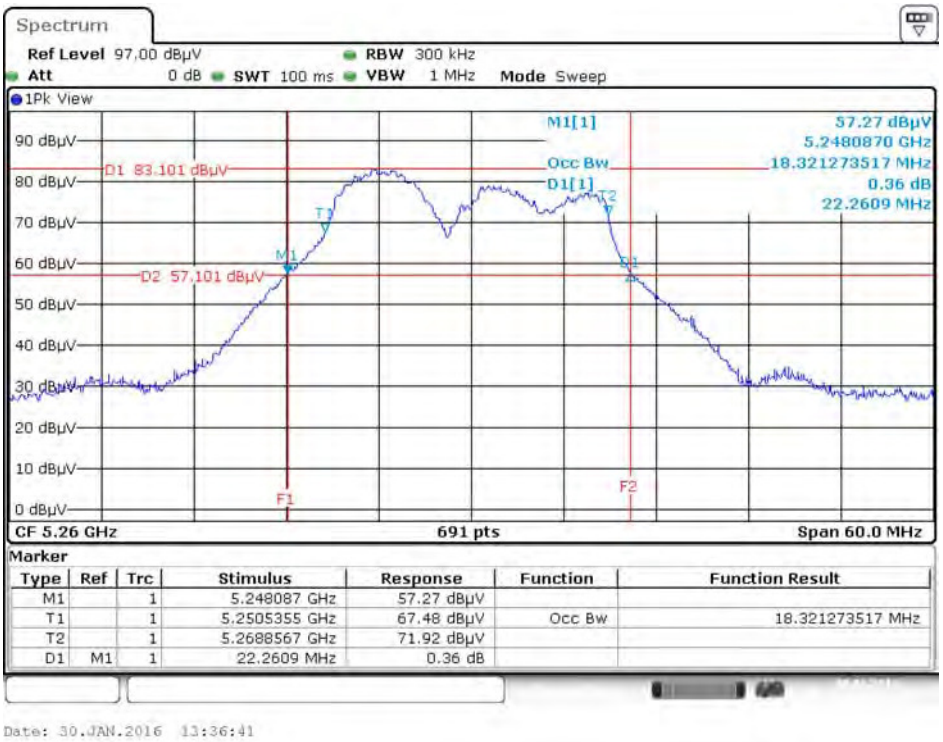
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5580 MHz



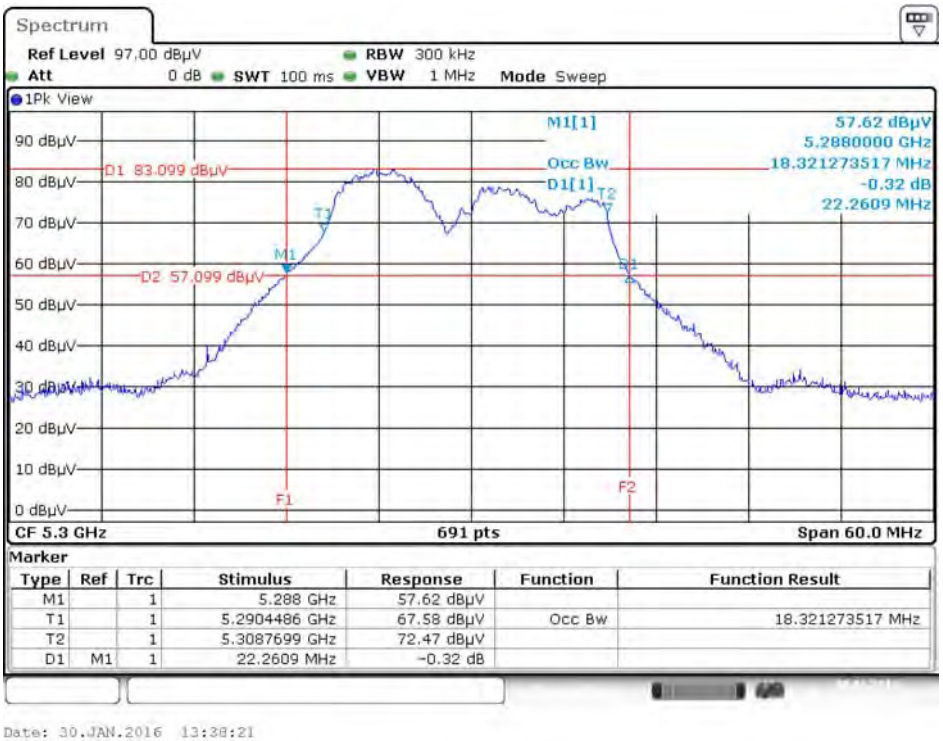
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5700 MHz



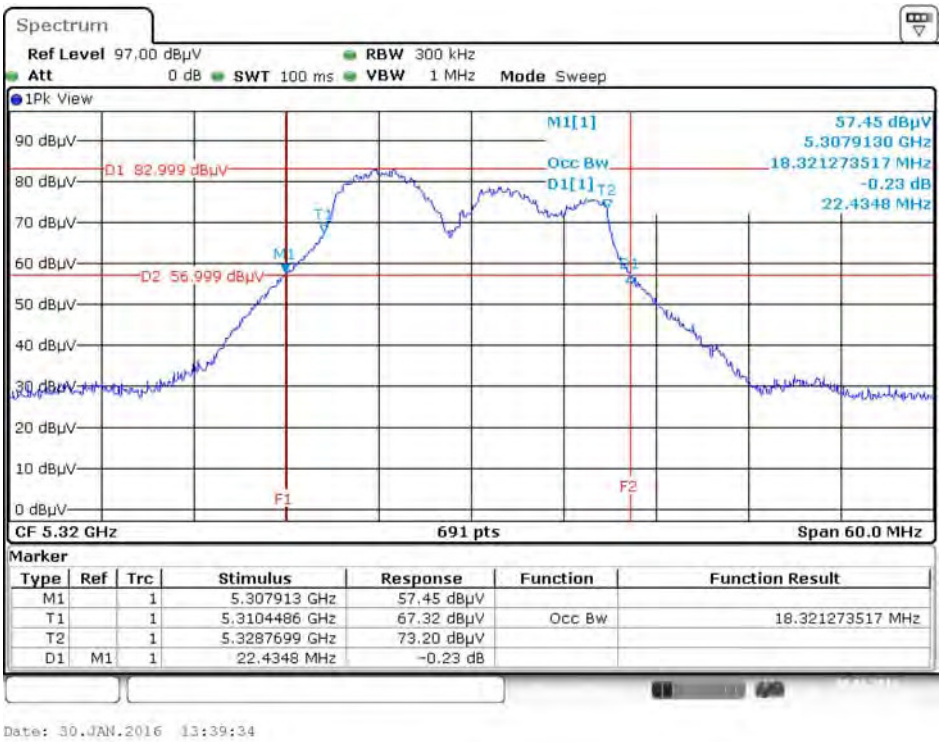
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5260 MHz



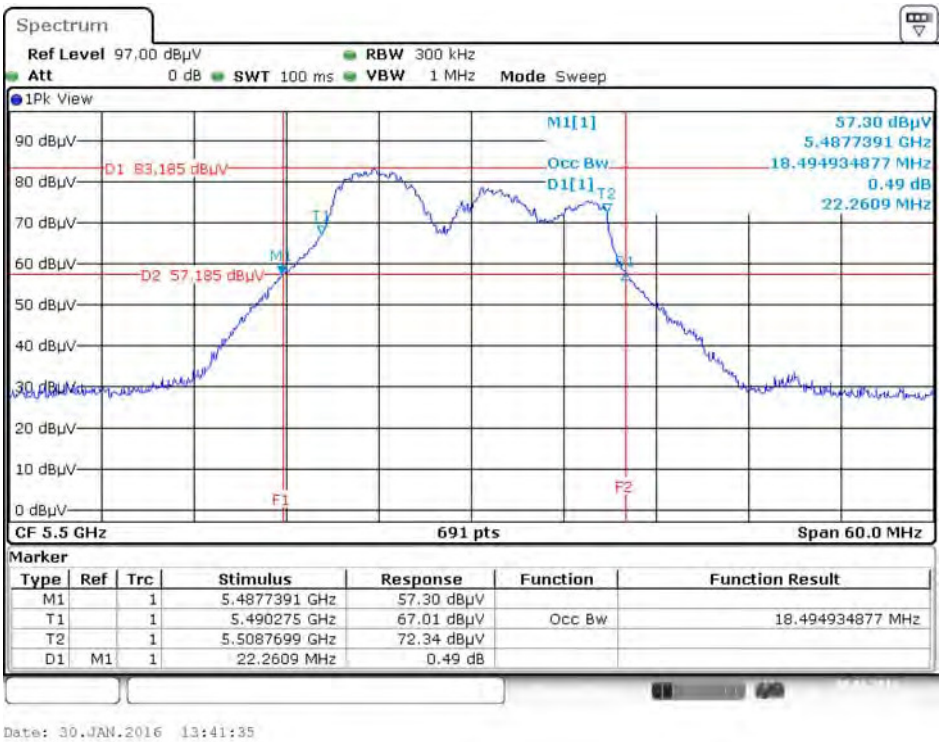
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5300 MHz



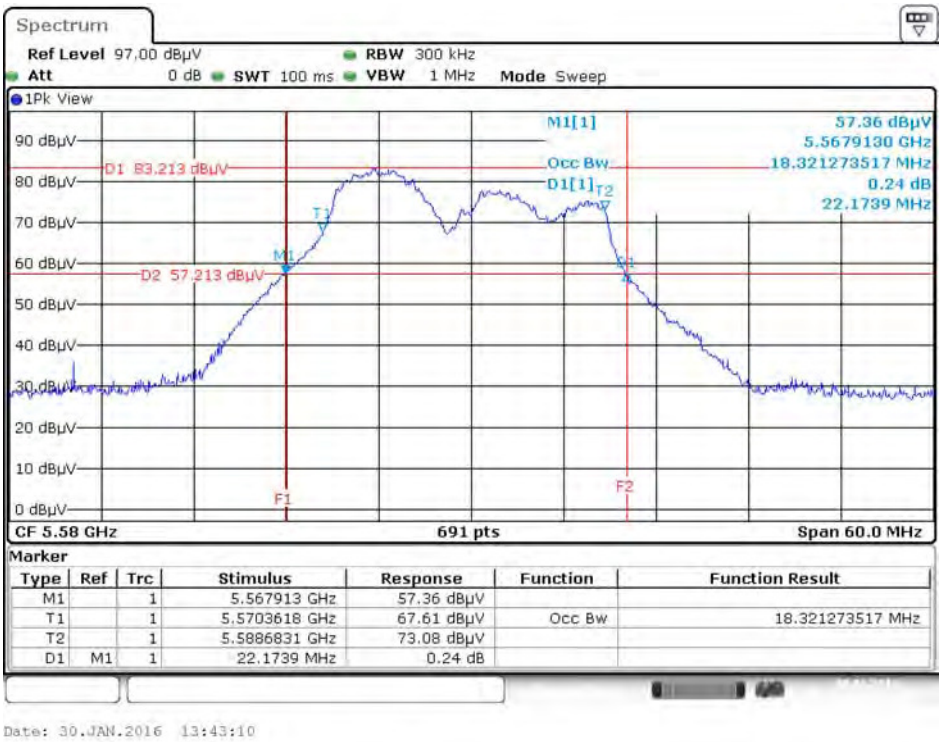
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5320 MHz



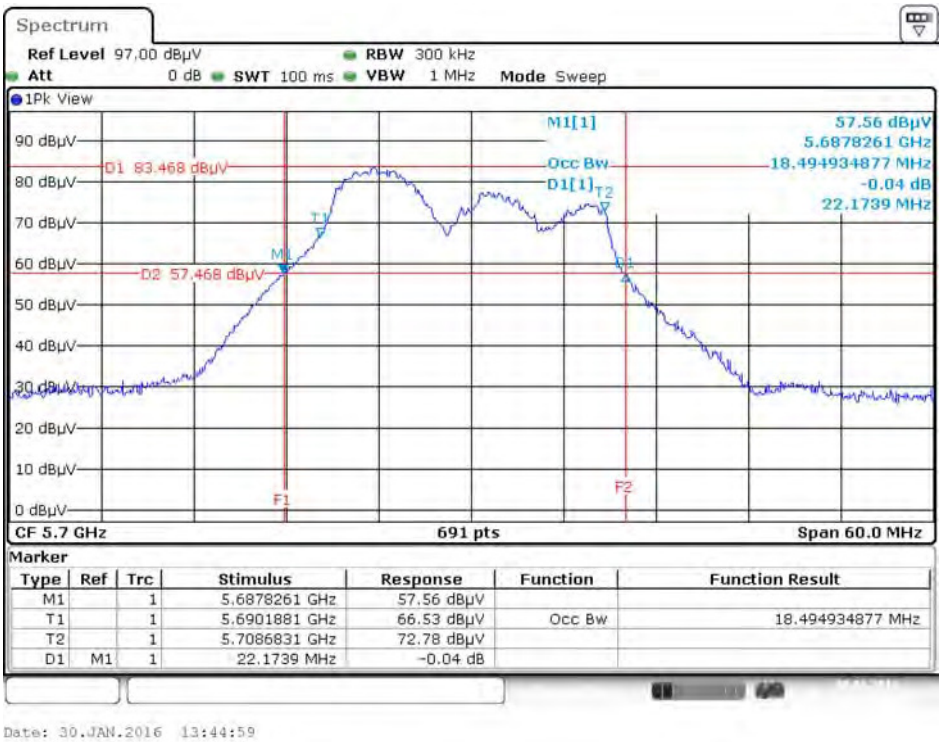
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5500 MHz



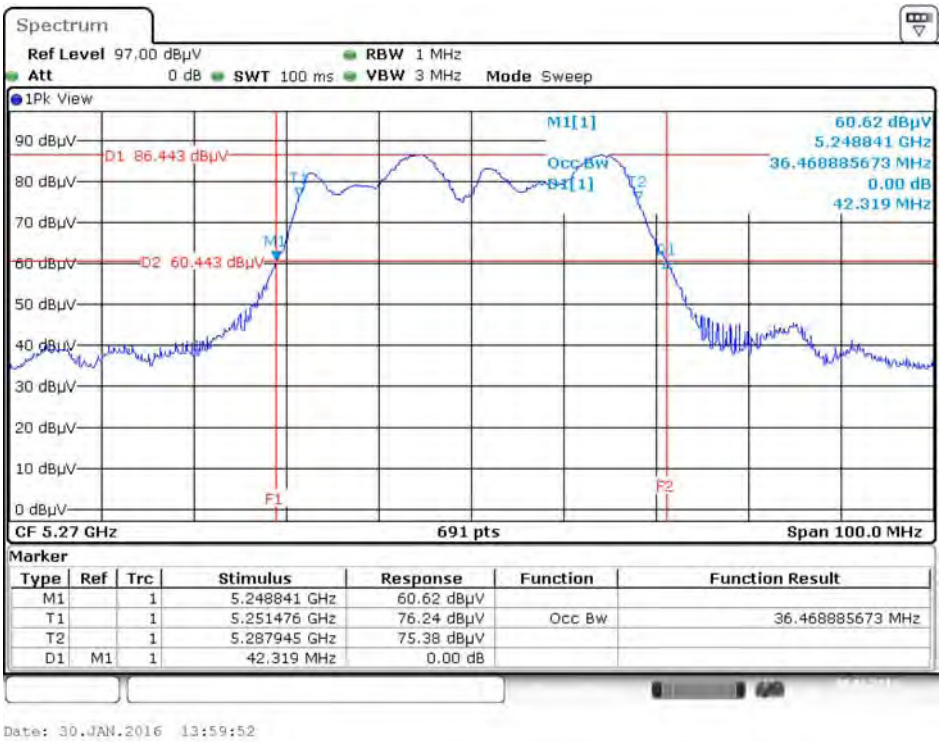
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5580 MHz



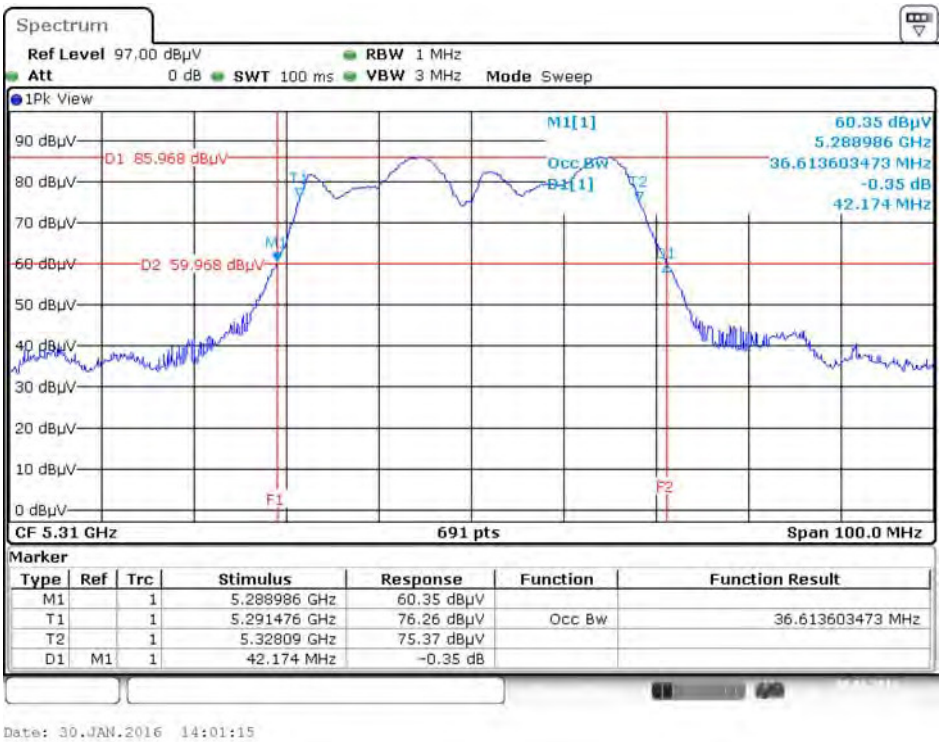
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5700 MHz



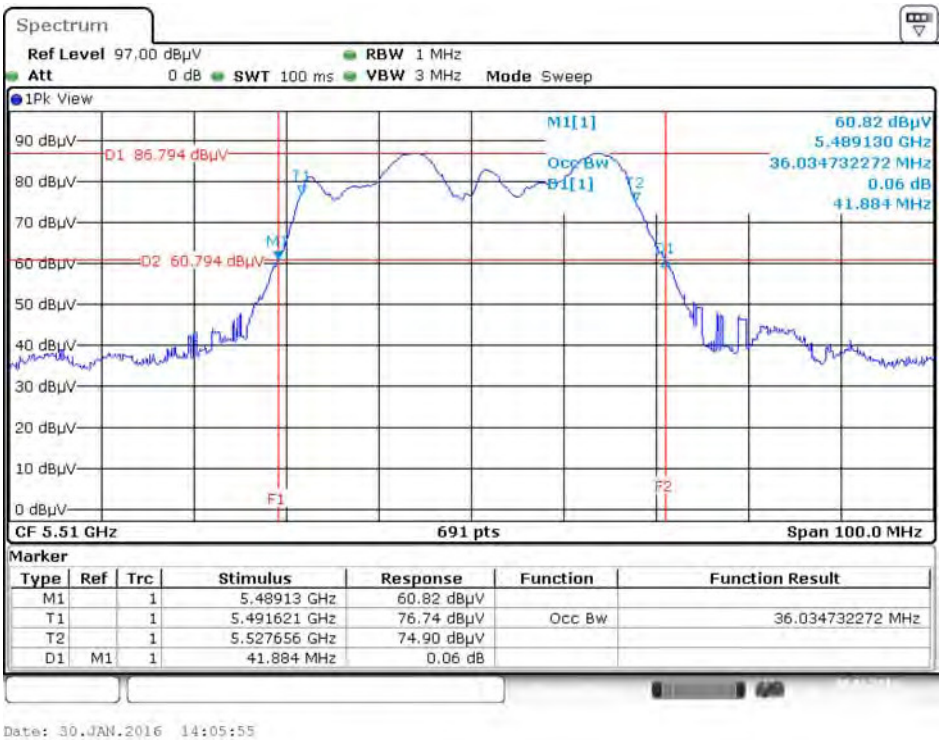
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5270 MHz



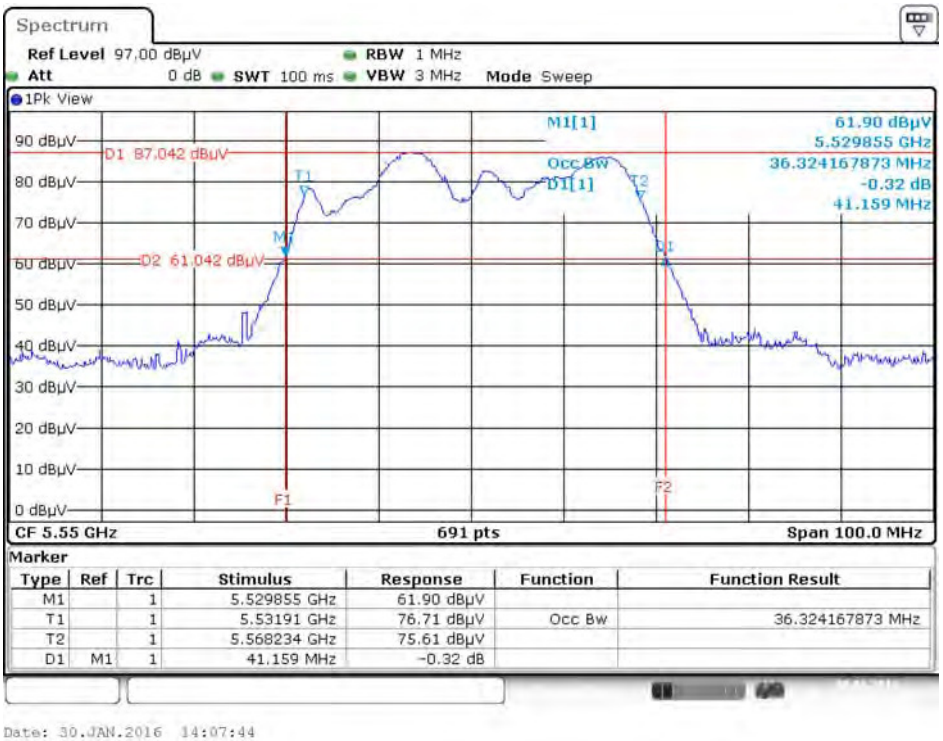
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5310 MHz



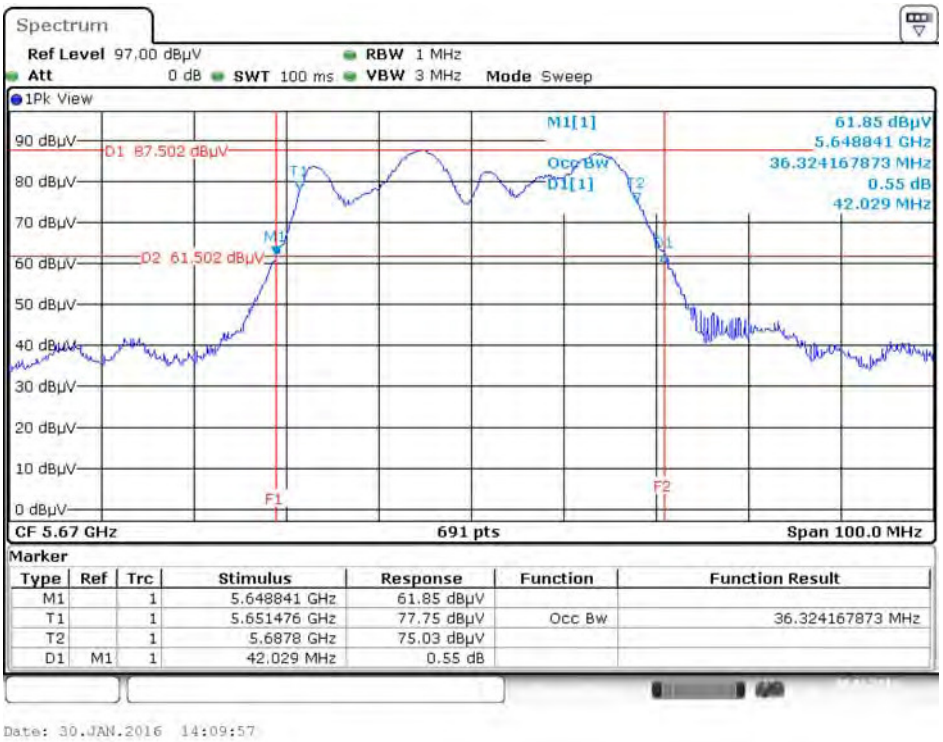
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5510 MHz



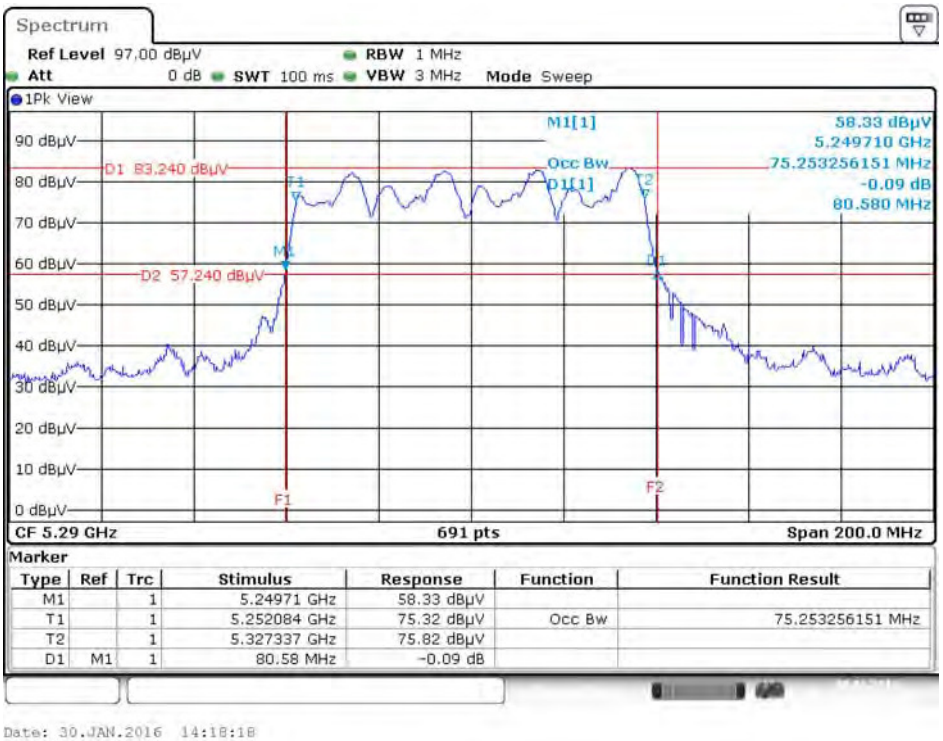
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5550 MHz



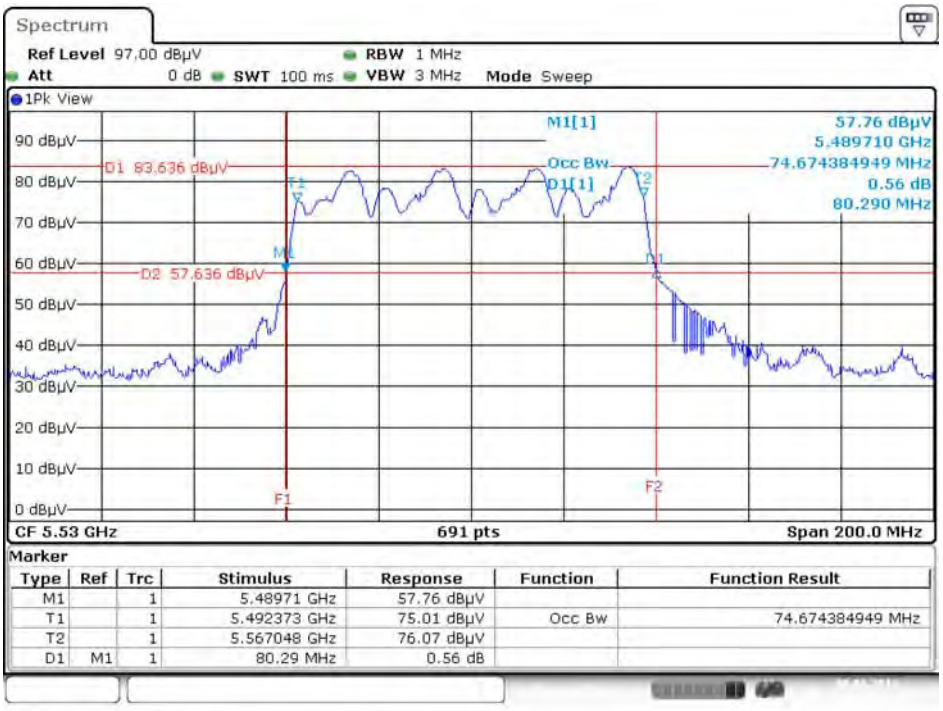
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5670 MHz



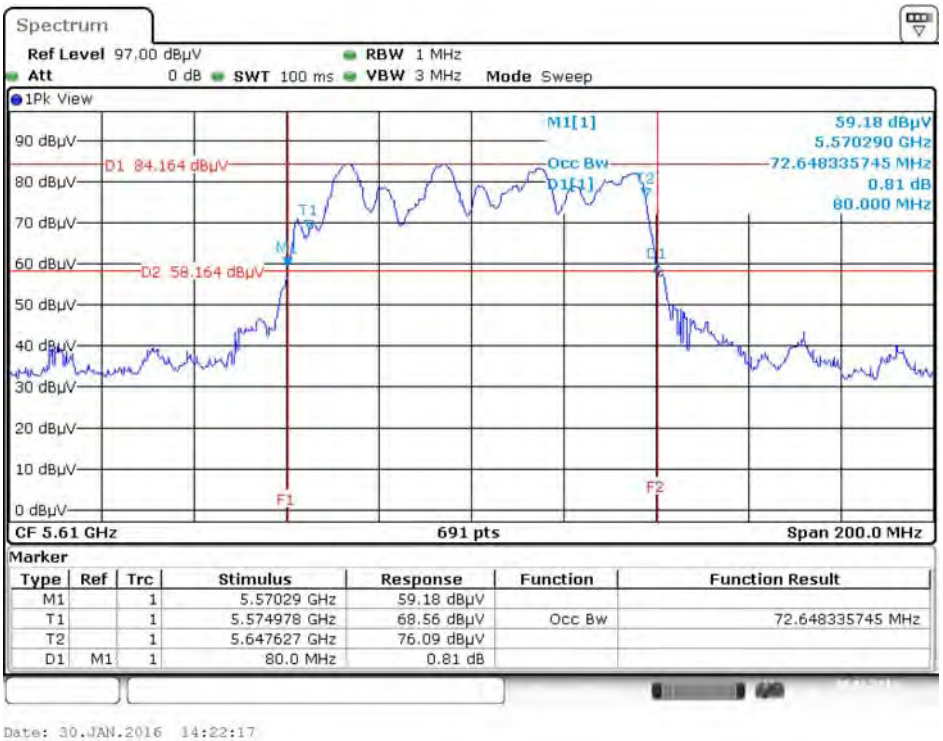
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5290 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5530 MHz

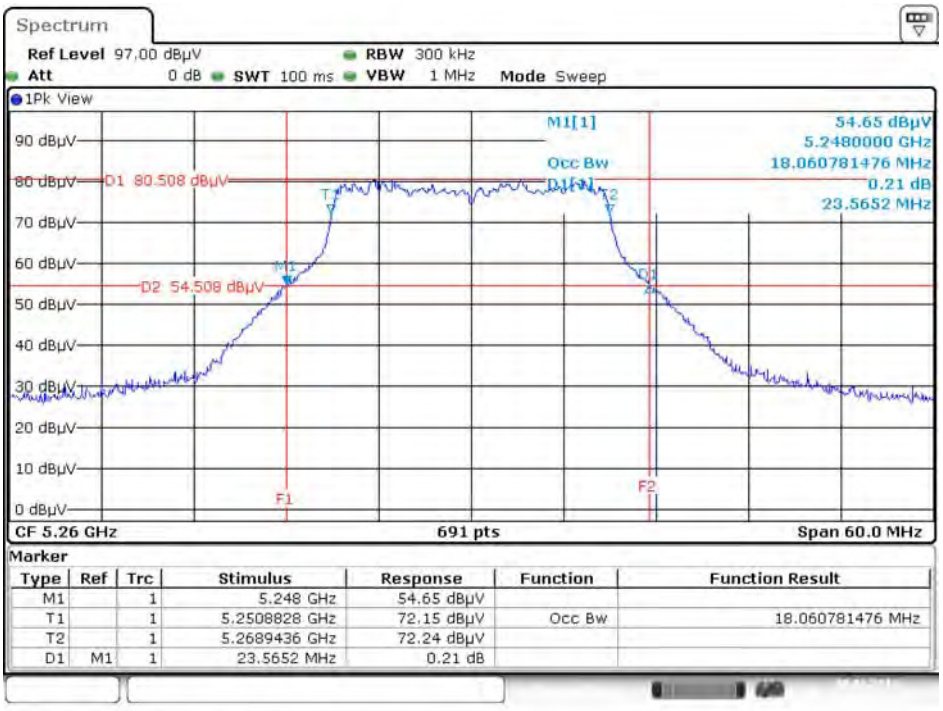


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5610 MHz

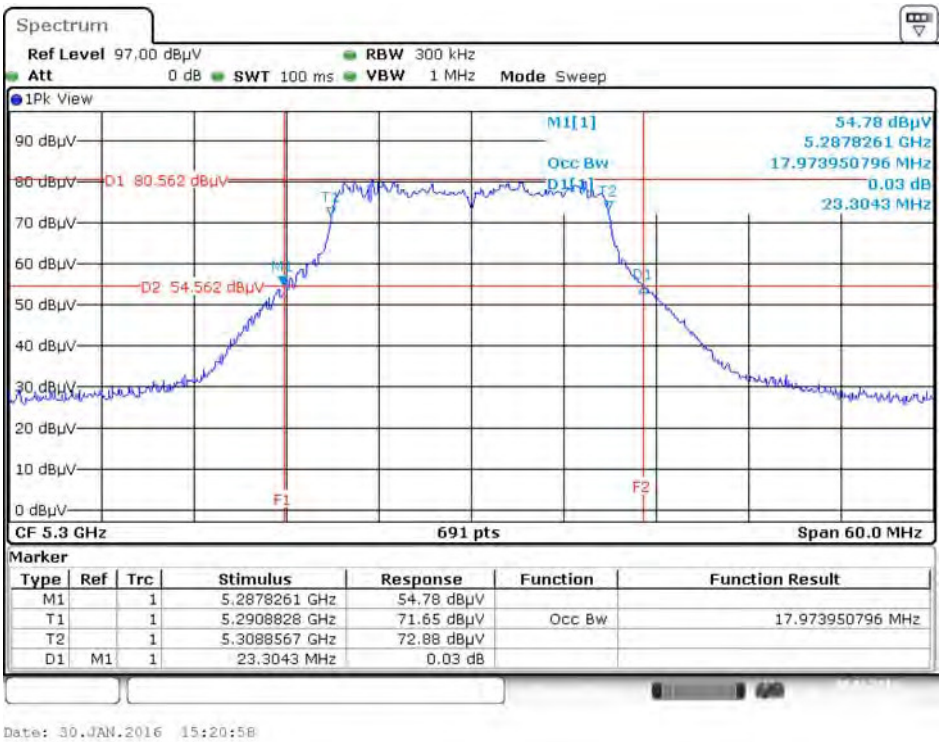


For beamforming mode

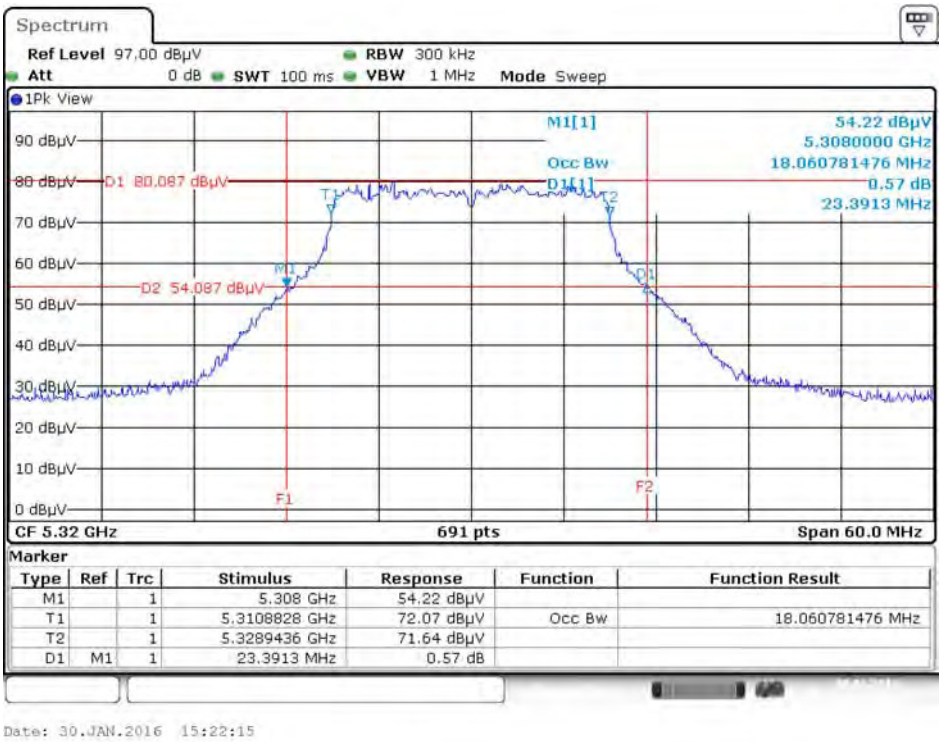
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5260 MHz



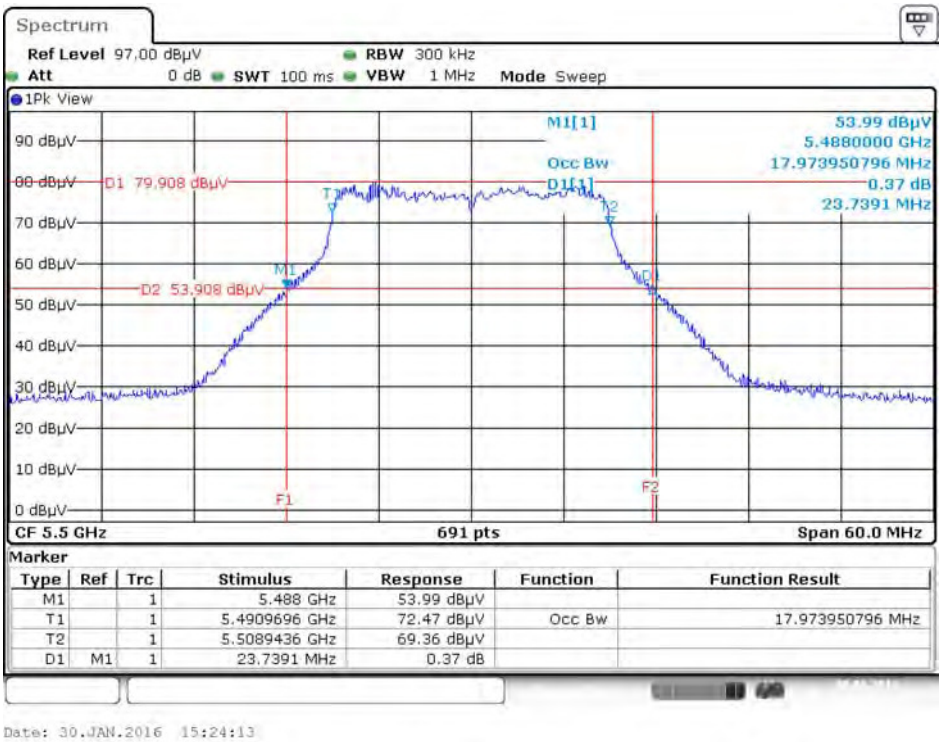
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5300 MHz



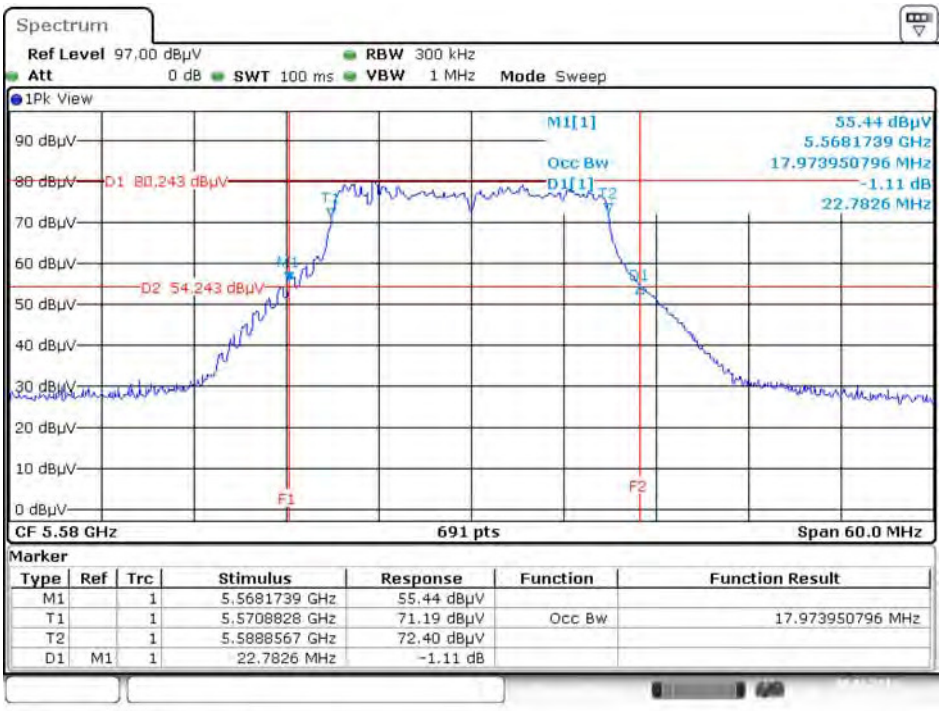
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5320 MHz



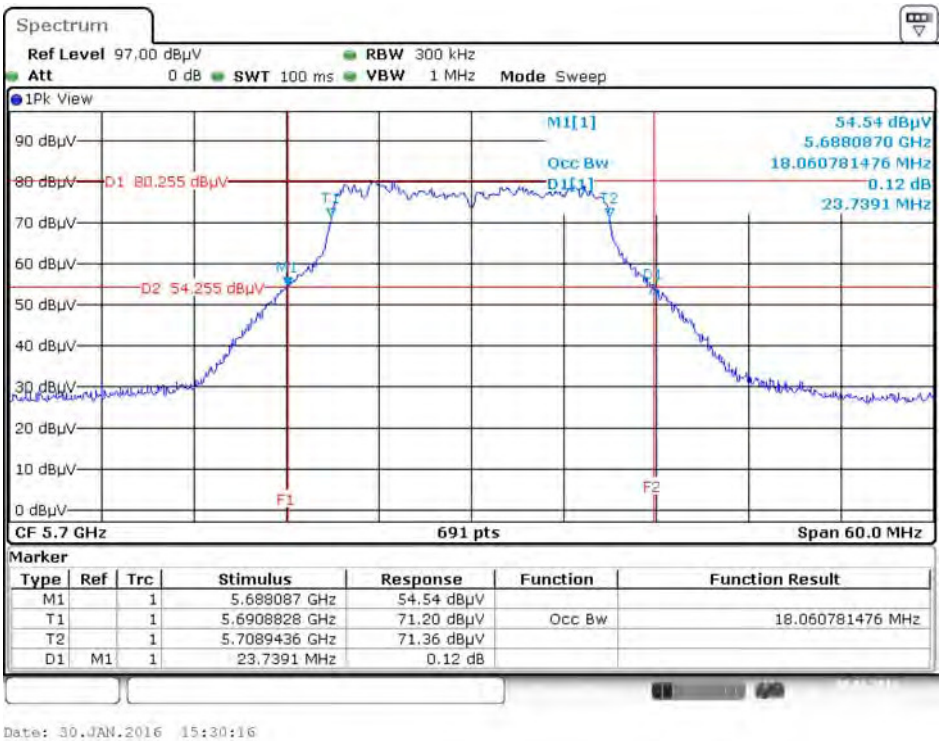
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5500 MHz



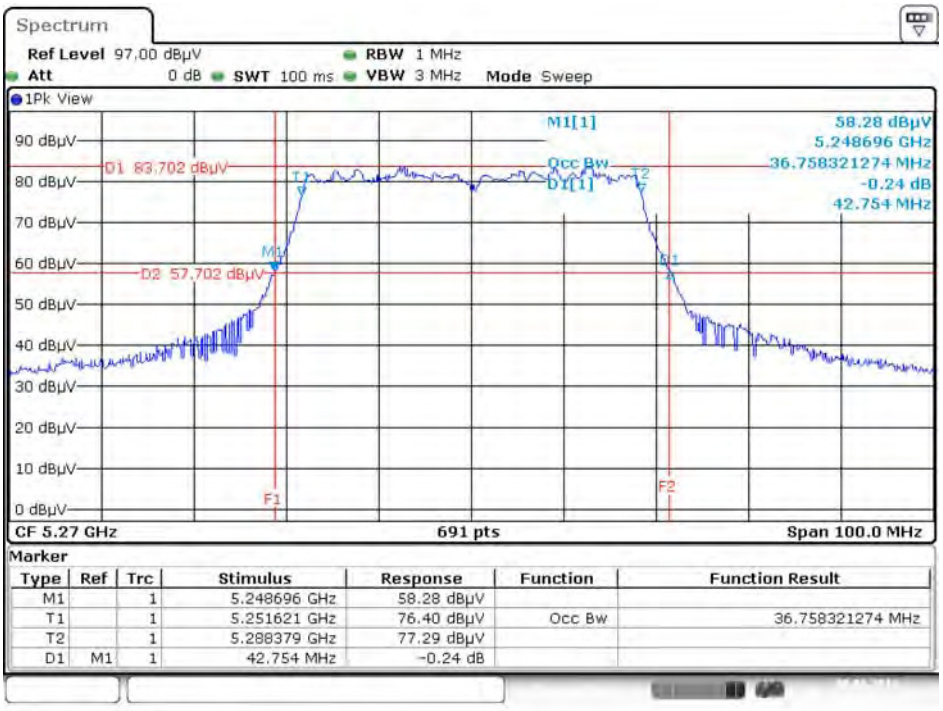
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5580 MHz



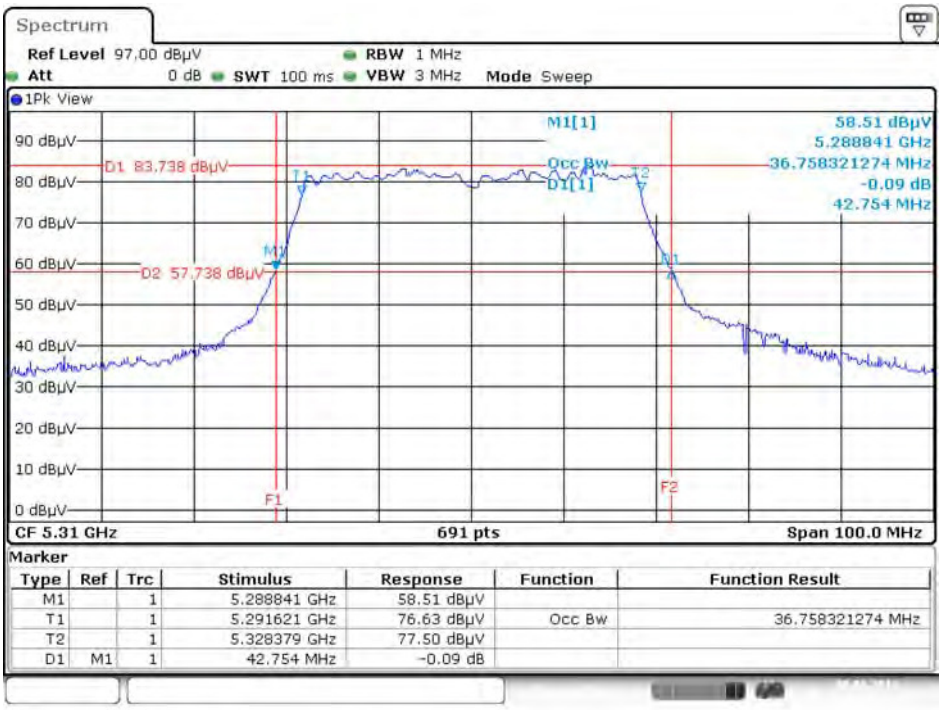
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5700 MHz



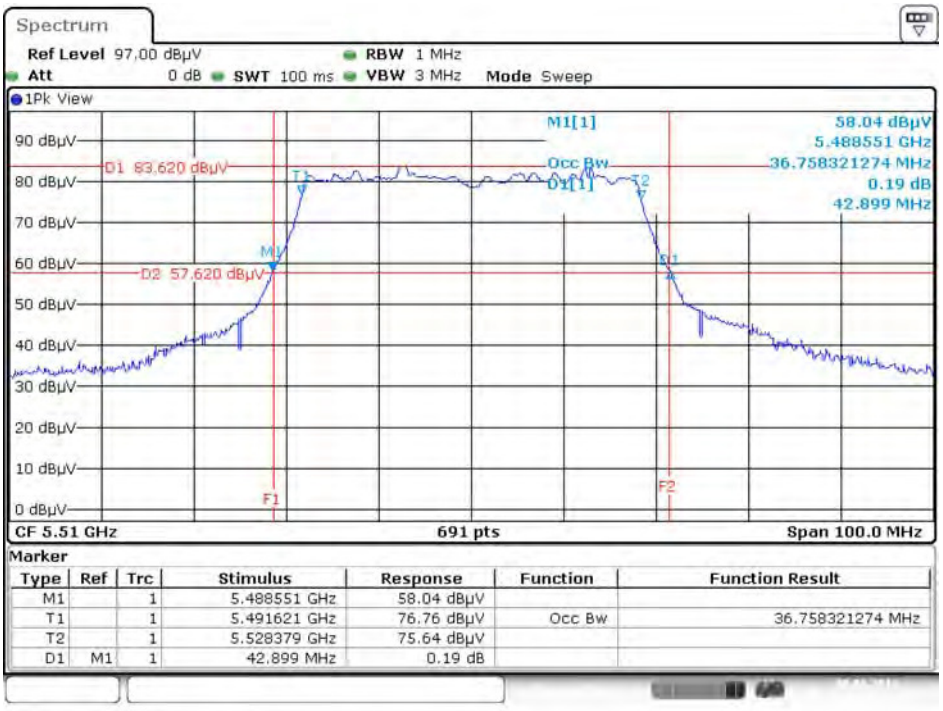
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5270 MHz



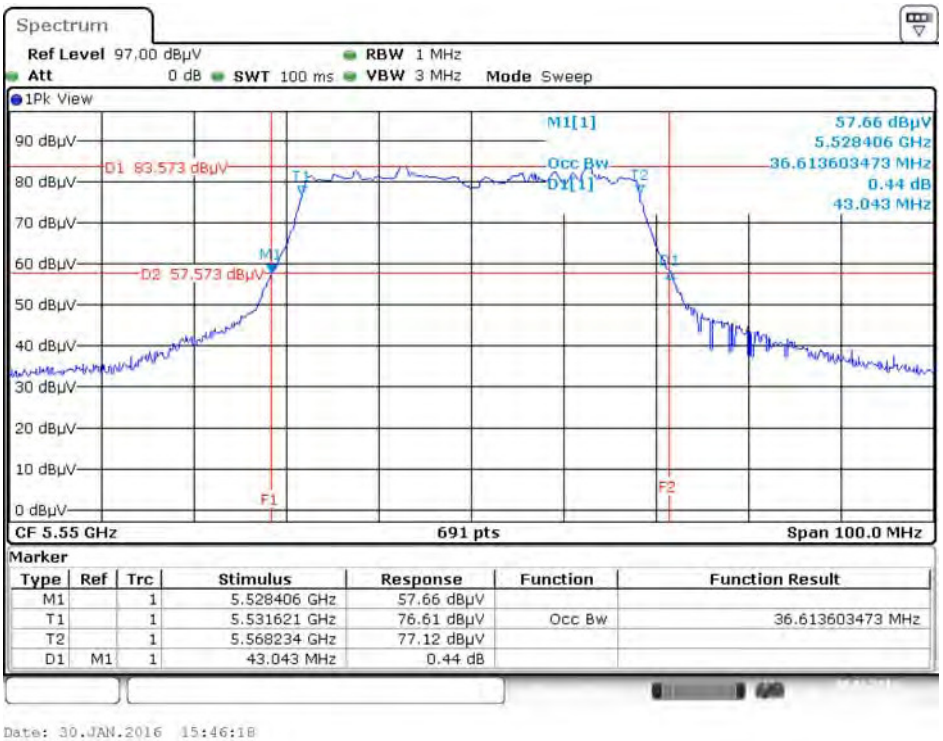
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5310 MHz



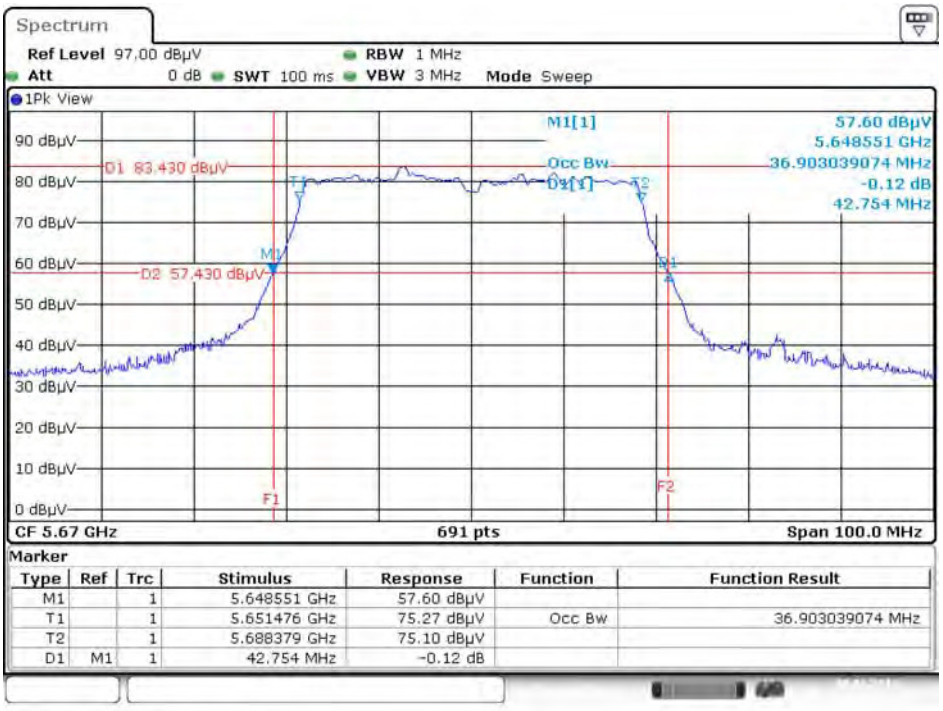
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5510 MHz



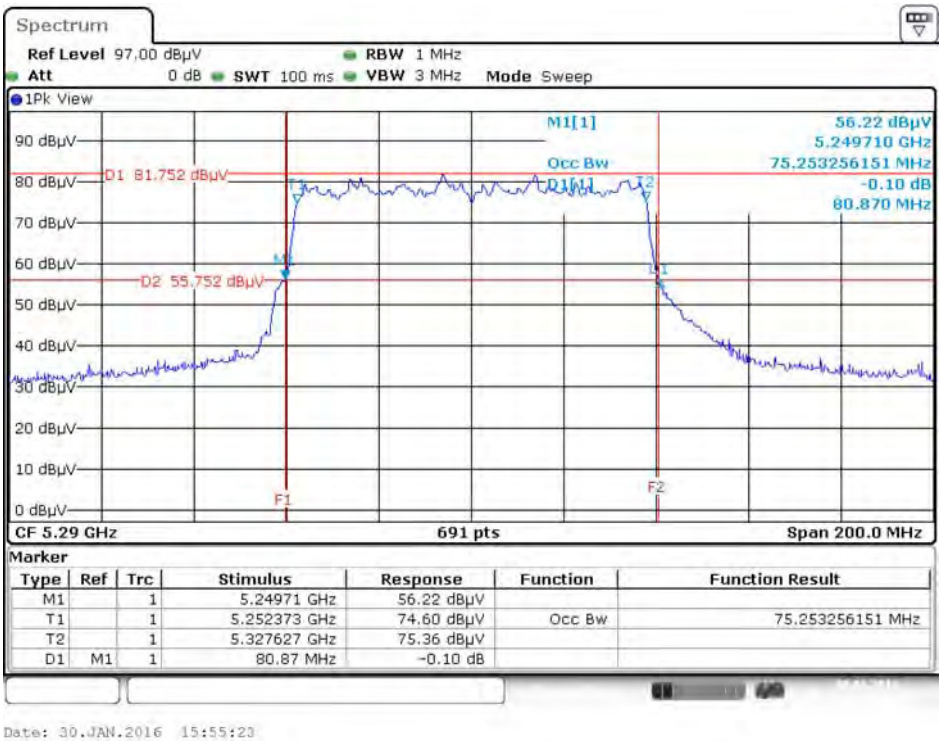
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5550 MHz



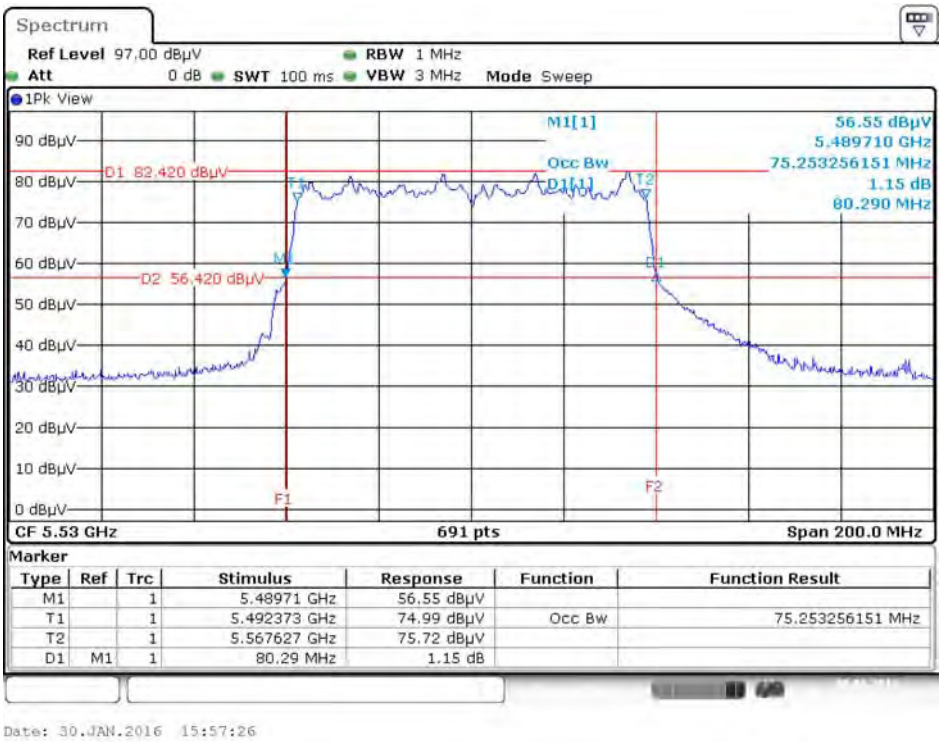
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5670 MHz



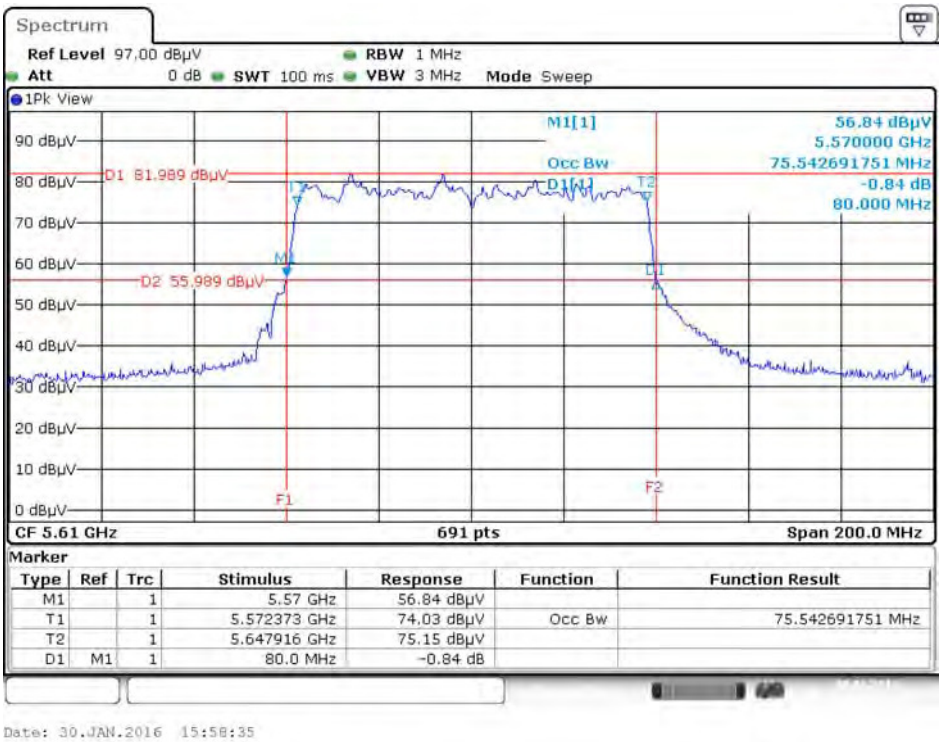
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5290 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5530 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5610 MHz



Temperature	23℃	Humidity	64%
Test Engineer	Serway Li		

Straddle Channel

For non-beamforming mode

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	20.26	17.02	5708.78	5710.97	16.22	4.04	14.03	2.99
802.11ac MCS0/Nss1 VHT20	5720 MHz	21.65	18.06	5708.00	5710.45	17.00	4.65	14.55	3.51
802.11ac MCS0/Nss1 VHT40	5710 MHz	42.32	36.90	5688.99	5691.48	36.01	6.30	33.52	3.38
802.11ac MCS0/Nss1 VHT80	5690 MHz	80.58	75.25	5649.71	5652.37	75.29	5.29	72.63	2.63

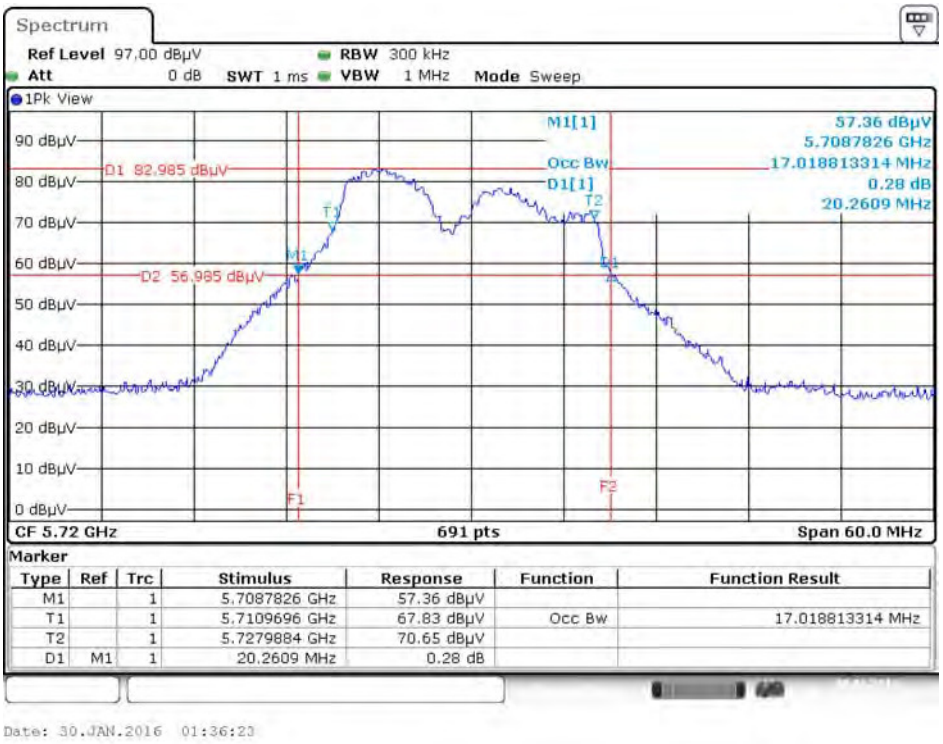
For beamforming mode

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	21.39	17.80	5709.39	5711.06	15.61	5.78	13.94	3.86
802.11ac MCS0/Nss1 VHT40	5710 MHz	41.88	36.76	5689.13	5691.62	35.87	6.01	33.38	3.38
802.11ac MCS0/Nss1 VHT80	5690 MHz	80.87	75.54	5649.42	5652.37	75.58	5.29	72.63	2.92

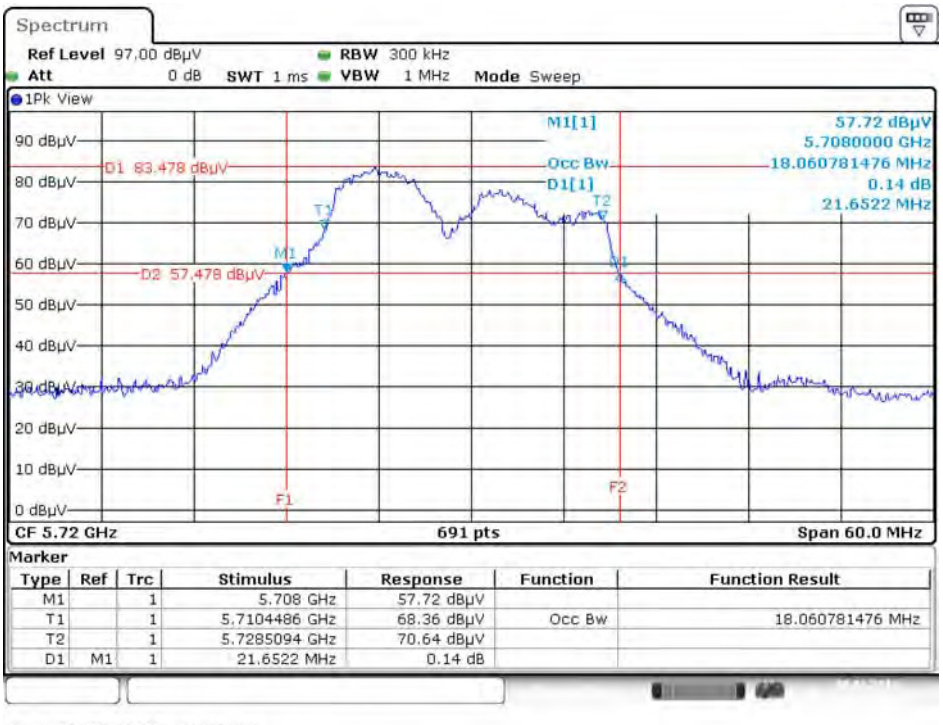
Straddle Channel

For non-beamforming mode

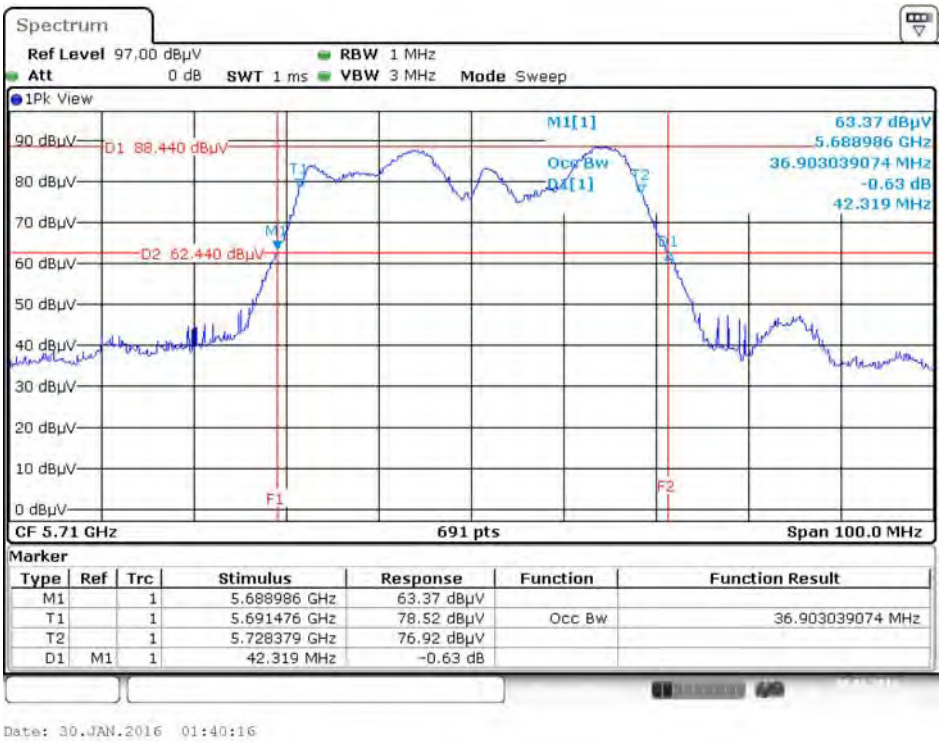
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz

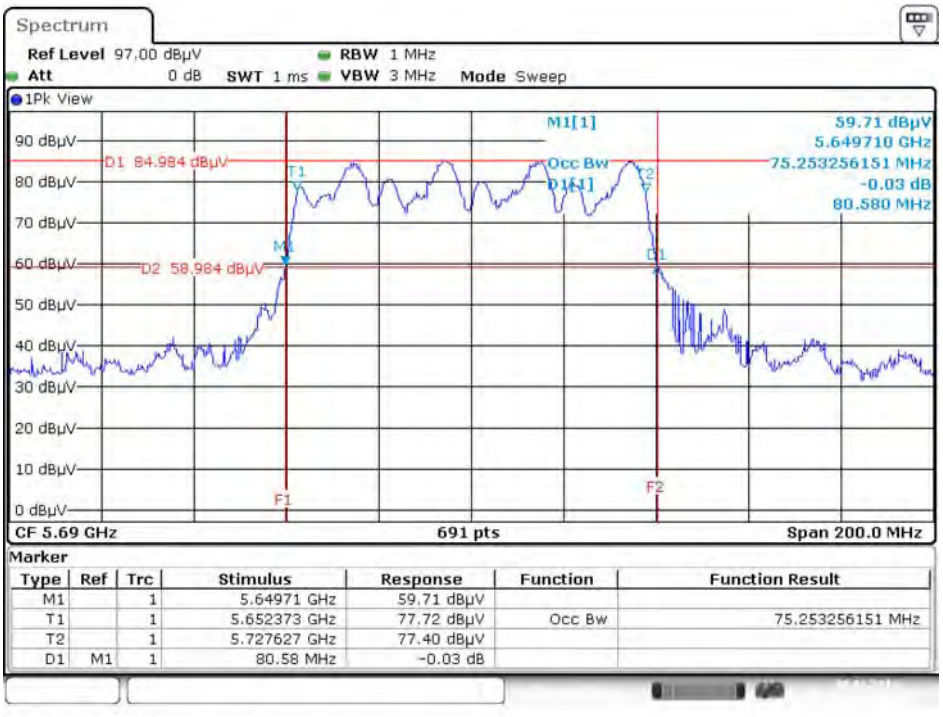


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz



Date: 30.JAN.2016 01:40:16

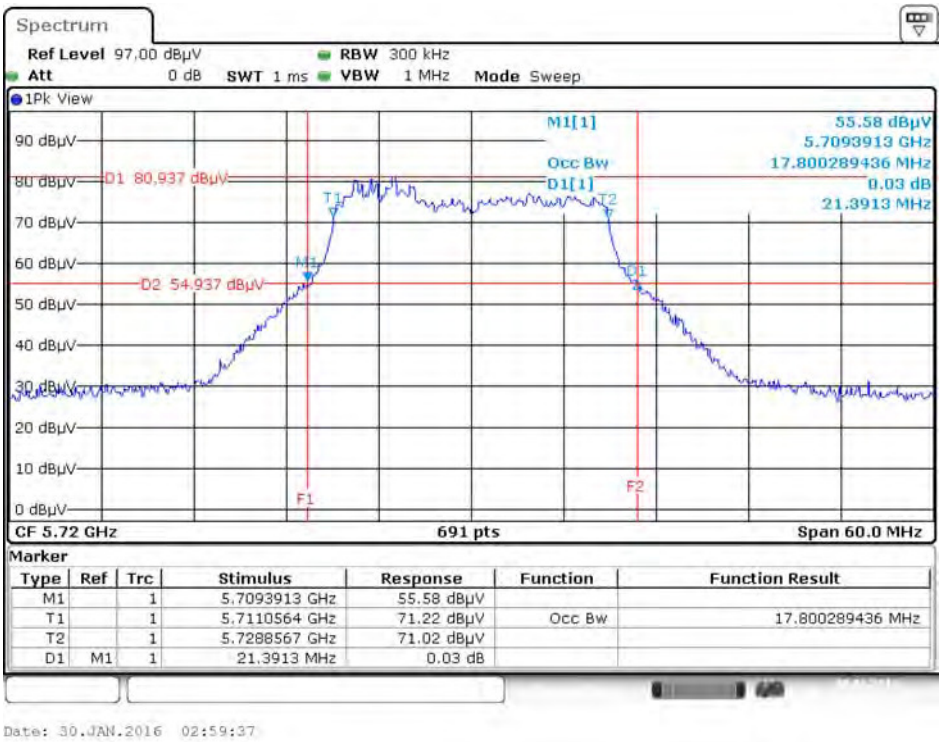
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz



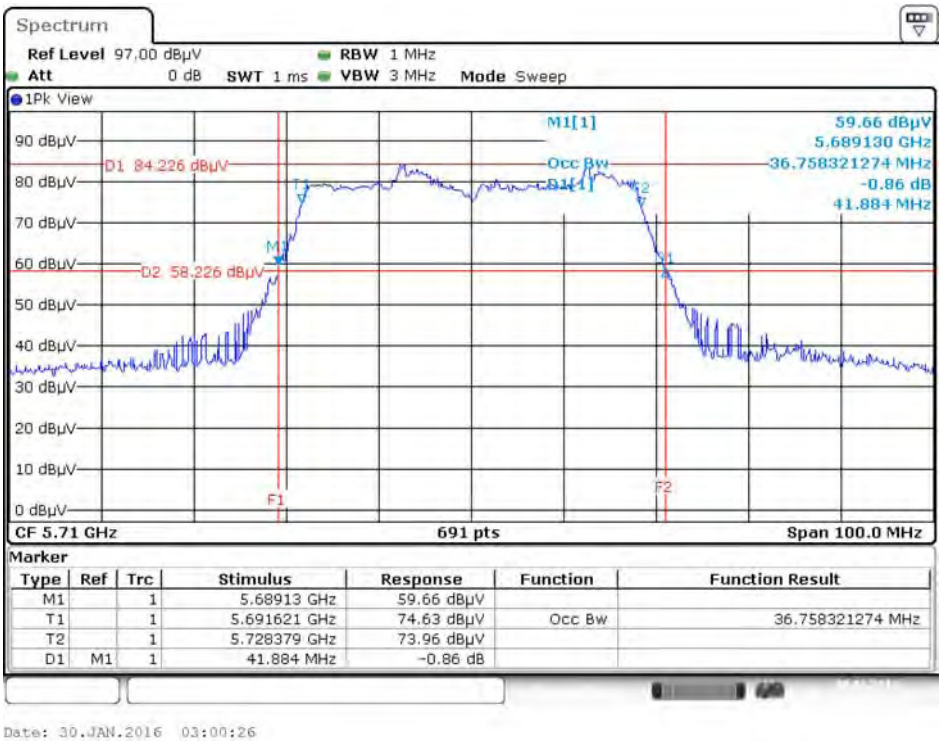
Date: 30.JAN.2016 01:42:45

For non-beamforming mode

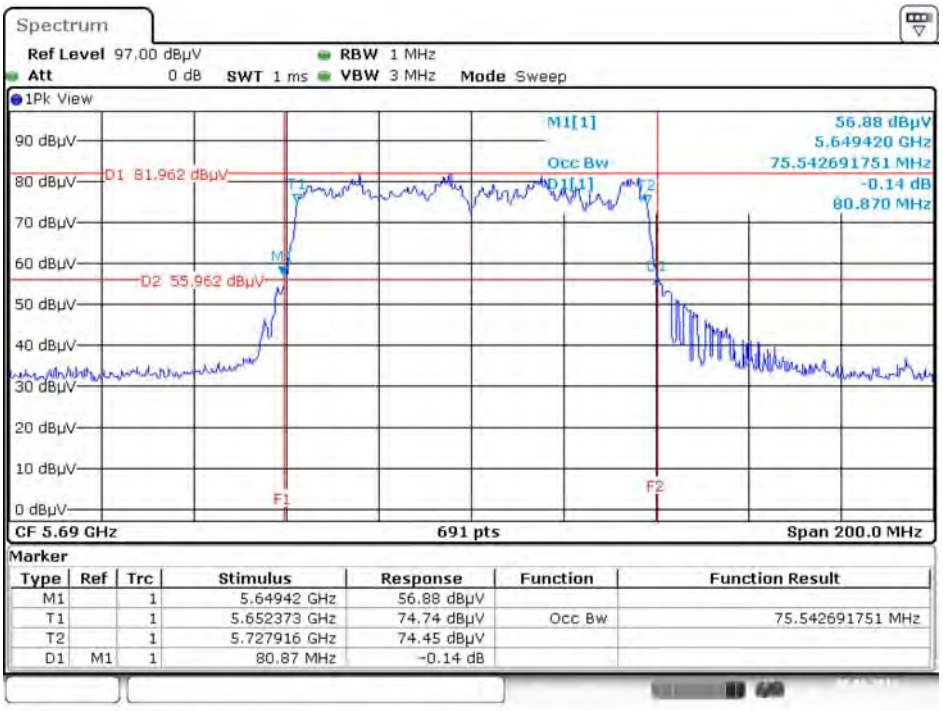
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz



4.2. 6dB Spectrum Bandwidth Measurement

4.2.1. Limit

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

4.2.2. Measuring Instruments and Setting

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

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

4.2.3. Test Procedures

For Radiated 6dB Bandwidth Measurement:

1. The transmitter was radiated to the spectrum analyzer in peak hold mode.
2. Test was performed in accordance with KDB789033 D02 v01r01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (C) Emission Bandwidth.
3. Multiple antenna system was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. Measured the spectrum width with power higher than 6dB below carrier.

4.2.4. Test Setup Layout

For Radiated 6dB Bandwidth Measurement:

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

4.2.5. Test Deviation

There is no deviation with the original standard.

4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.2.7. Test Result of 6dB Spectrum Bandwidth

Temperature	23°C	Humidity	64%
Test Engineer	Serway Li		

Straddle Channel

For non-beamforming mode

Mode	Frequency	6dB BW (MHz)	6dB BW F2 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11a	5720 MHz	13.85	5711.77	0.62	500.00	Complies
802.11ac MCS0/Nss1 VHT20	5720 MHz	14.84	5711.13	0.97	500.00	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	33.62	5692.38	1.00	500.00	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	63.77	5662.46	1.23	500.00	Complies

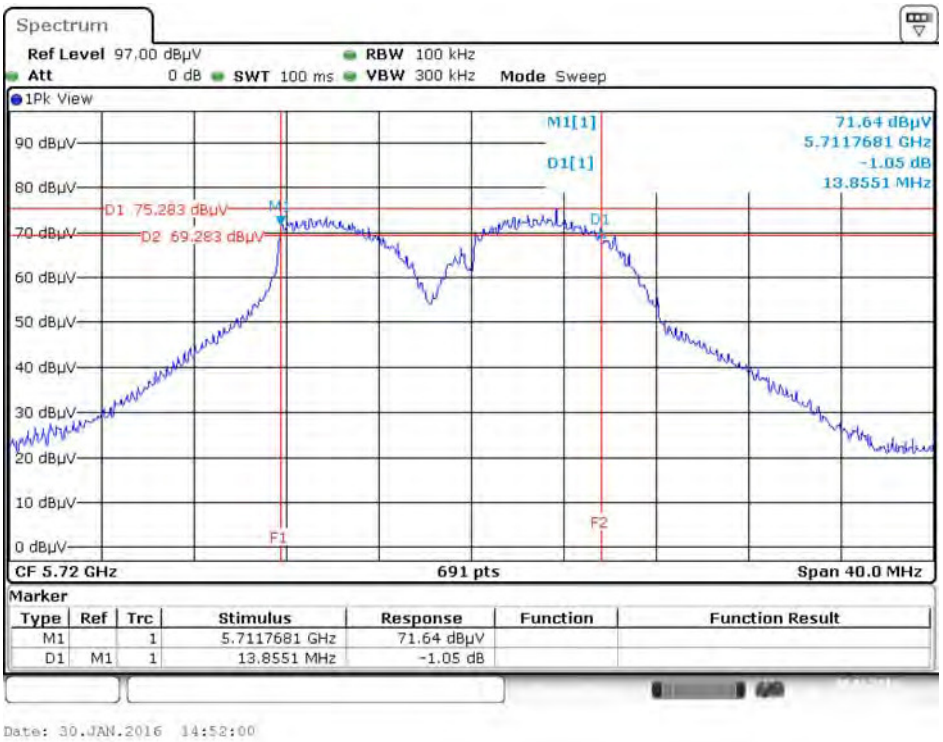
For beamforming mode

Mode	Frequency	6dB BW (MHz)	6dB BW F2 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5720 MHz	16.06	5711.42	2.48	500.00	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	35.13	5692.38	2.51	500.00	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	73.91	5652.32	1.23	500.00	Complies

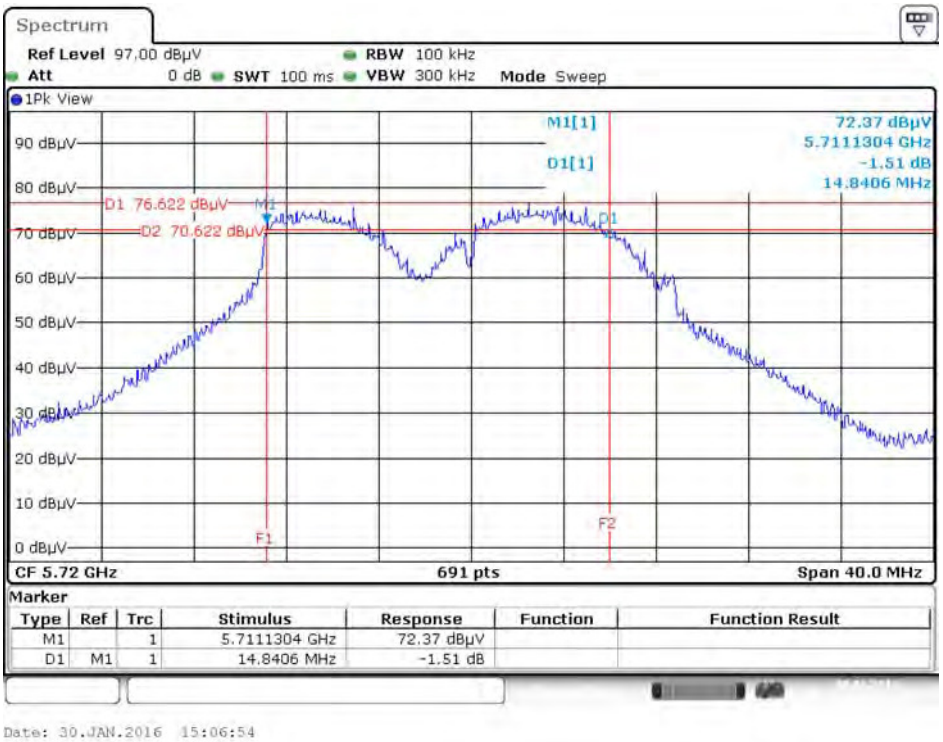
Straddle Channel

For non-beamforming mode

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz

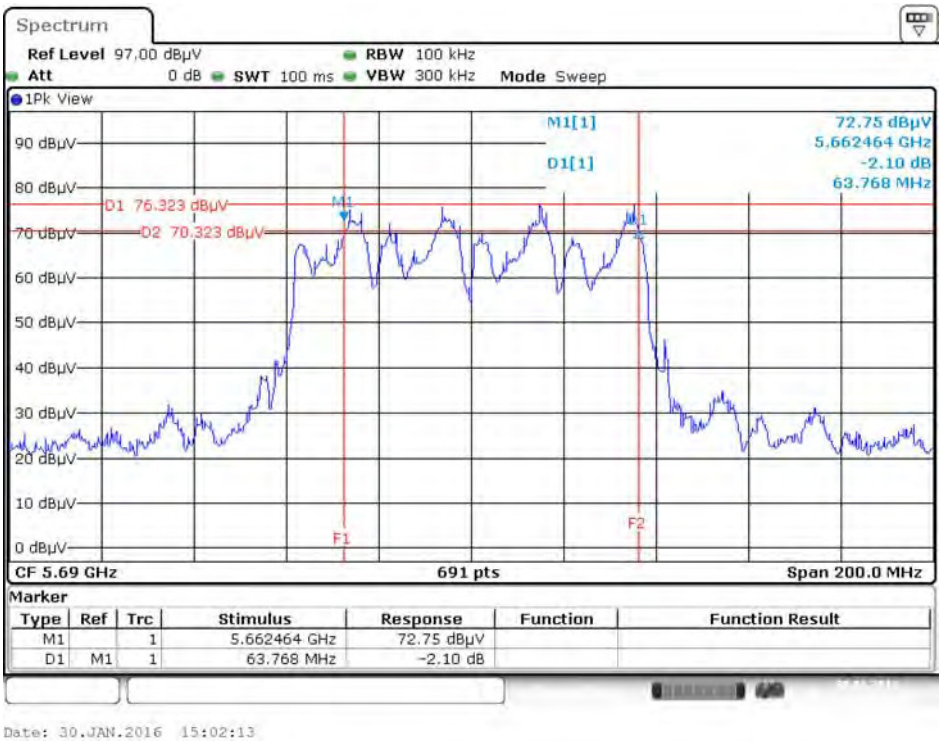


6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz



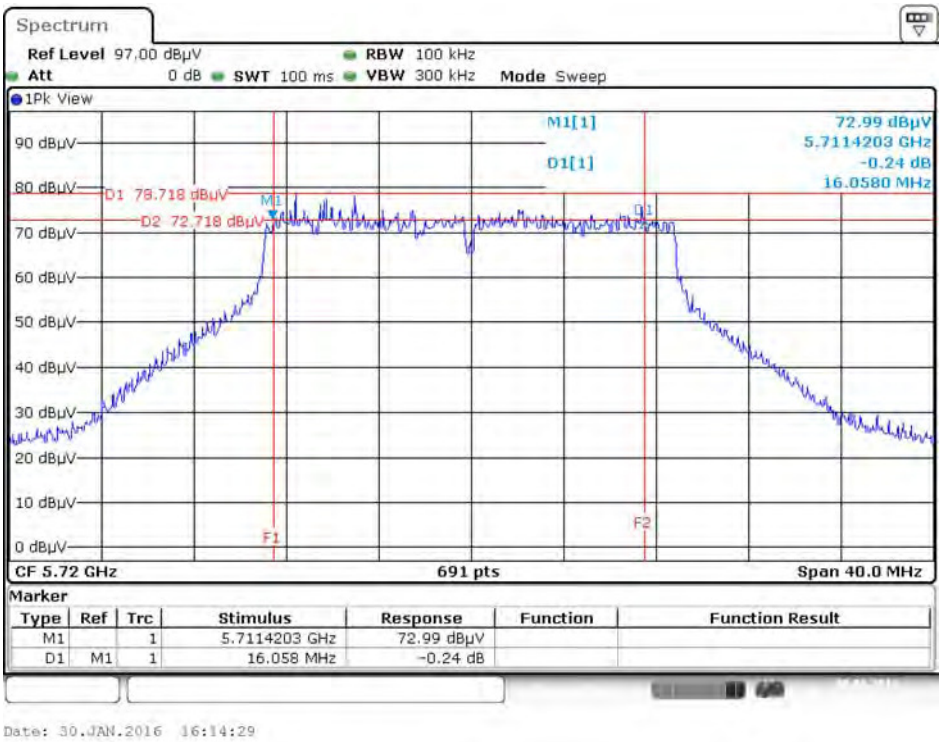
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz

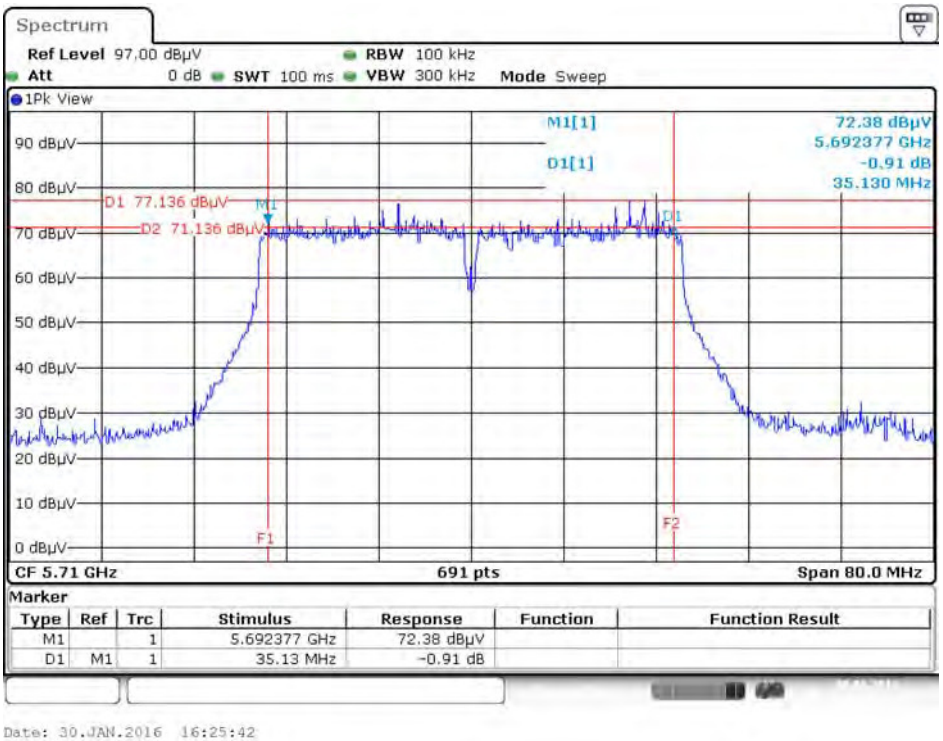


For beamforming mode

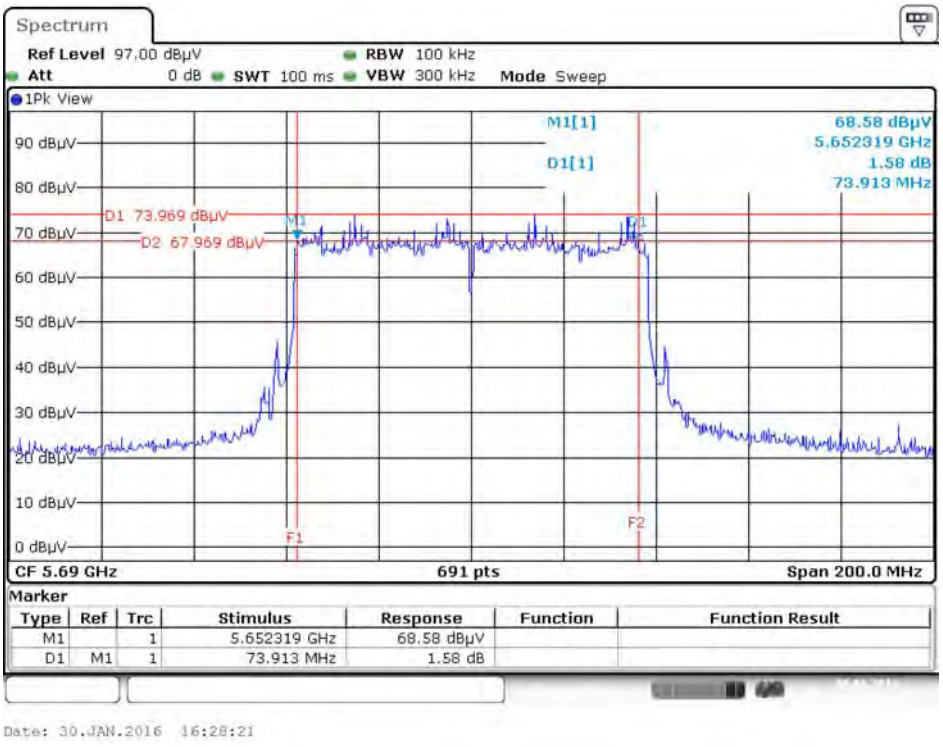
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz



6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz



6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz



4.3. Maximum Conducted Output Power Measurement

4.3.1. Limit

Frequency Band		Limit
☒	5.25-5.35 GHz	The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
☒	5.470-5.725 GHz	

4.3.2. Measuring Instruments and Setting

For 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

4.3.3. Test Procedures

For straddle channel:

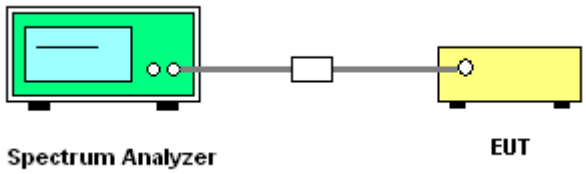
1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Test was performed in accordance with FCC Public Notice DA 02-2138, August 30, 2002.

For other channel:

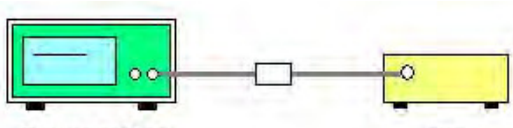
1. The transmitter output (antenna port) was connected to the power meter.
2. Test was performed in accordance with KDB789033 D02 v01r01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (E) Maximum conducted output power =>3. Measurement using a Power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

4.3.4. Test Setup Layout

For straddle channel:



For other channel:



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of Maximum Conducted Output Power

Temperature	23°C	Humidity	64%
Test Engineer	Serway Li	Test Date	Jan. 29, 2016~Feb. 05, 2016

For non-beamforming mode

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11a	5260 MHz	15.64	15.43	15.89	16.27	21.84	23.98	Complies
	5300 MHz	15.58	15.63	15.97	16.41	21.93	23.98	Complies
	5320 MHz	15.61	15.59	16.31	16.55	22.06	23.98	Complies
	5500 MHz	14.74	15.18	15.36	16.23	21.43	23.98	Complies
	5580 MHz	14.72	15.25	15.62	16.05	21.46	23.98	Complies
	5700 MHz	14.72	15.63	15.89	15.63	21.51	23.98	Complies
802.11ac MCS0/Nss1 VHT20	5260 MHz	15.46	15.53	16.14	16.41	21.92	23.98	Complies
	5300 MHz	15.61	15.27	15.78	16.73	21.90	23.98	Complies
	5320 MHz	15.64	15.29	15.74	16.37	21.80	23.98	Complies
	5500 MHz	14.62	15.15	15.31	16.07	21.34	23.98	Complies
	5580 MHz	14.57	14.78	15.32	15.72	21.14	23.98	Complies
	5700 MHz	14.68	15.14	15.24	15.85	21.27	23.98	Complies
802.11ac MCS0/Nss1 VHT40	5270 MHz	17.64	17.11	17.56	18.02	23.62	23.98	Complies
	5310 MHz	16.32	16.47	16.72	17.13	22.69	23.98	Complies
	5510 MHz	16.82	17.38	17.47	17.92	23.44	23.98	Complies
	5550 MHz	17.08	17.68	17.77	18.26	23.74	23.98	Complies
	5670 MHz	17.41	17.55	17.67	18.48	23.82	23.98	Complies
802.11ac MCS0/Nss1 VHT80	5290 MHz	16.01	15.92	16.29	17.08	22.37	23.98	Complies
	5530 MHz	16.02	15.89	16.38	17.14	22.41	23.98	Complies
	5610 MHz	17.43	17.48	17.77	18.24	23.76	23.98	Complies

Temperature	23°C	Humidity	64%
Test Engineer	Serway Li	Test Date	Jan. 29, 2016~Feb. 05, 2016

For beamforming mode

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11ac MCS0/Nss1 VHT20	5260 MHz	15.48	15.49	16.08	16.11	21.82	21.84	Complies
	5300 MHz	15.22	15.39	15.67	15.97	21.59	21.84	Complies
	5320 MHz	15.45	15.09	15.68	16.04	21.60	21.84	Complies
	5500 MHz	14.36	14.86	15.12	15.67	21.05	21.15	Complies
	5580 MHz	14.34	14.69	15.22	15.29	20.92	21.15	Complies
	5700 MHz	14.41	14.86	15.01	15.24	20.91	21.15	Complies
802.11ac MCS0/Nss1 VHT40	5270 MHz	15.42	15.33	16.16	16.11	21.79	21.84	Complies
	5310 MHz	15.31	15.21	15.97	16.28	21.74	21.84	Complies
	5510 MHz	14.44	14.76	15.31	15.67	21.09	21.15	Complies
	5550 MHz	14.65	14.88	15.19	15.61	21.12	21.15	Complies
	5670 MHz	14.77	14.67	15.09	15.56	21.06	21.15	Complies
802.11ac MCS0/Nss1 VHT80	5290 MHz	15.46	15.18	15.96	16.09	21.71	21.84	Complies
	5530 MHz	14.55	14.88	15.23	15.69	21.13	21.15	Complies
	5610 MHz	14.61	14.78	15.37	15.62	21.14	21.15	Complies

Note:

Band 2=Directional Gain=8.14dBi, so limit=23.98-(8.14-6)=21.84dBm

Band 3=Directional Gain=8.83dBi, so limit=23.98-(8.83-6)=21.15dBm

Temperature	23°C	Humidity	64%
Test Engineer	Serway Li		

Straddle Channel

For non-beamforming mode

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11a	5720 MHz (UNII 2C)	13.31	13.85	13.96	14.43	19.93	23.10	Complies
	5720 MHz (UNII 3)	7.33	8.26	8.28	8.28	14.08	30.00	Complies
802.11ac MCS0/Nss1 VHT20	5720 MHz (UNII 2C)	13.47	13.83	13.74	14.26	19.85	23.30	Complies
	5720 MHz (UNII 3)	7.98	8.74	8.56	8.58	14.49	30.00	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz (UNII 2C)	17.07	17.03	17.27	17.42	23.22	23.98	Complies
	5710 MHz (UNII 3)	6.64	6.59	6.60	7.24	12.80	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz (UNII 2C)	17.61	17.78	17.63	18.39	23.88	23.98	Complies
	5690 MHz (UNII 3)	2.98	3.33	2.33	4.49	9.38	30.00	Complies

Note:

The power limit of 11a 5720MHz (UNII 2C):

23.98dBm or 11+10log(16.22) = 23.10dBm < 23.98dBm, so the limit= 23.10dBm

The power limit of 11ac VHT20 5720MHz (UNII 2C):

23.98dBm or 11+10log(17.00) = 23.30dBm < 23.98dBm, so the limit= 23.30dBm

For beamforming mode

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11ac MCS0/Nss1 VHT20	5720 MHz (UNII 2C)	13.54	13.31	14.44	14.24	19.93	20.10	Complies
	5720 MHz (UNII 3)	8.06	8.12	8.65	8.75	14.43	27.39	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz (UNII 2C)	14.04	14.63	14.57	15.11	20.62	21.15	Complies
	5710 MHz (UNII 3)	3.64	4.20	4.19	4.94	10.29	27.39	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz (UNII 2C)	14.55	14.47	15.77	15.02	21.00	21.15	Complies
	5690 MHz (UNII 3)	0.08	-0.45	1.88	0.48	6.61	27.39	Complies

Note:

The power limit of 11ac VHT20 5720MHz (UNII 2C):

23.98dBm or 11+10log(15.61) = 20.10dBm < 23.98dBm, so the limit= 20.10dBm

The power limit of 11ac VHT40 5710MHz and 11ac VHT80 5690MHz (UNII 2C):

23.98–(8.83–6)=21.15dBm.

Directional Gain=8.61dBi. The power limit of (UNII 3):=30–(8.61–6)=27.39dBm.

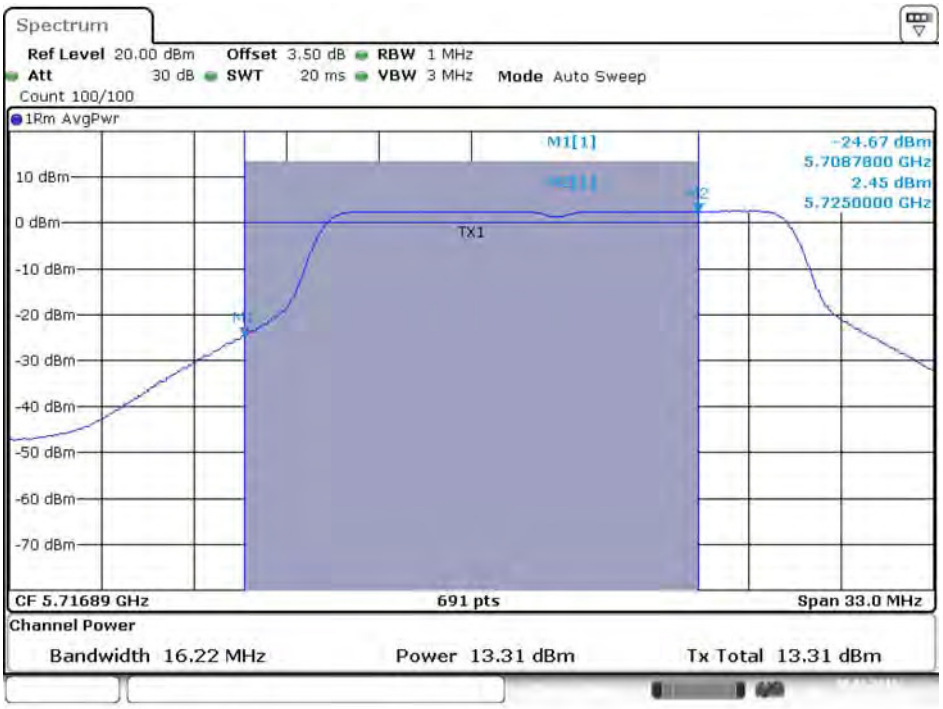
Note: All the test values were listed in the report.

For plots, only the straddle channel result was shown.

Straddle Channel

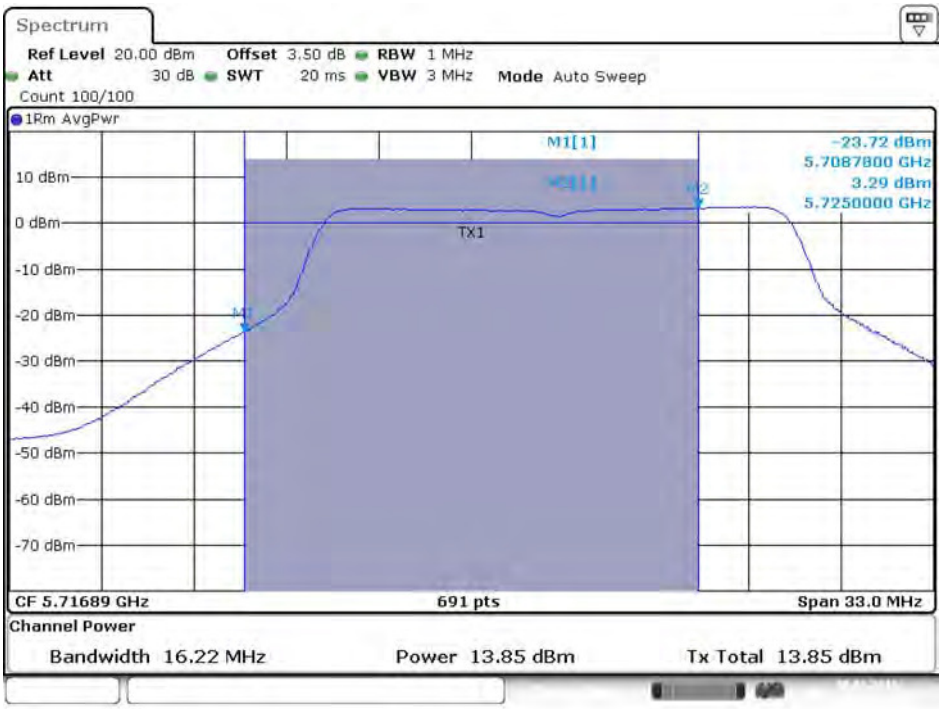
For non-beamforming mode

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



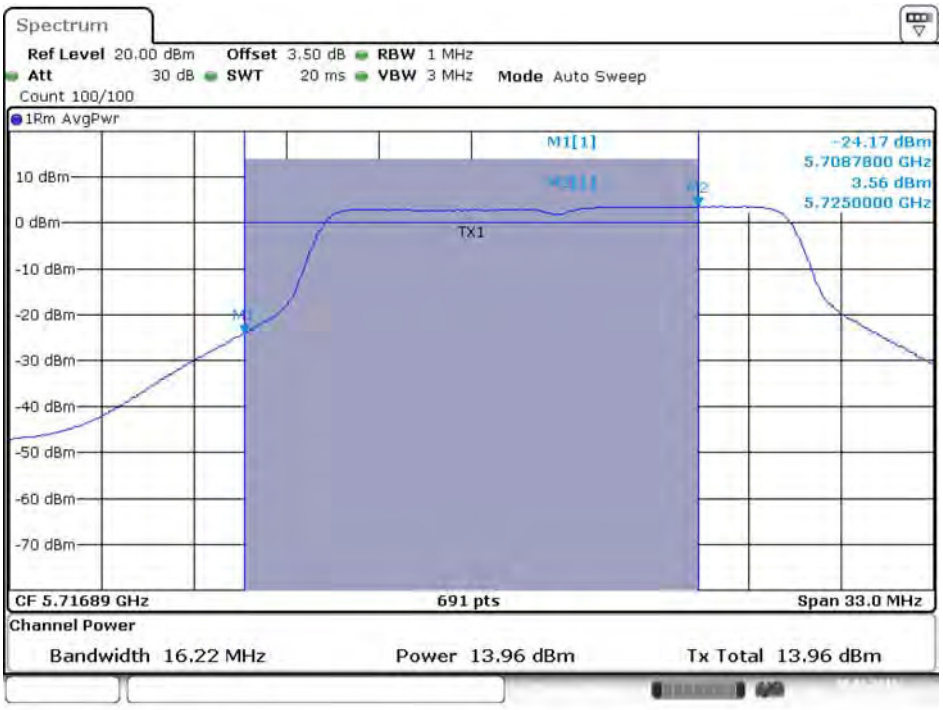
Date: 30.JAN.2016 02:42:24

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



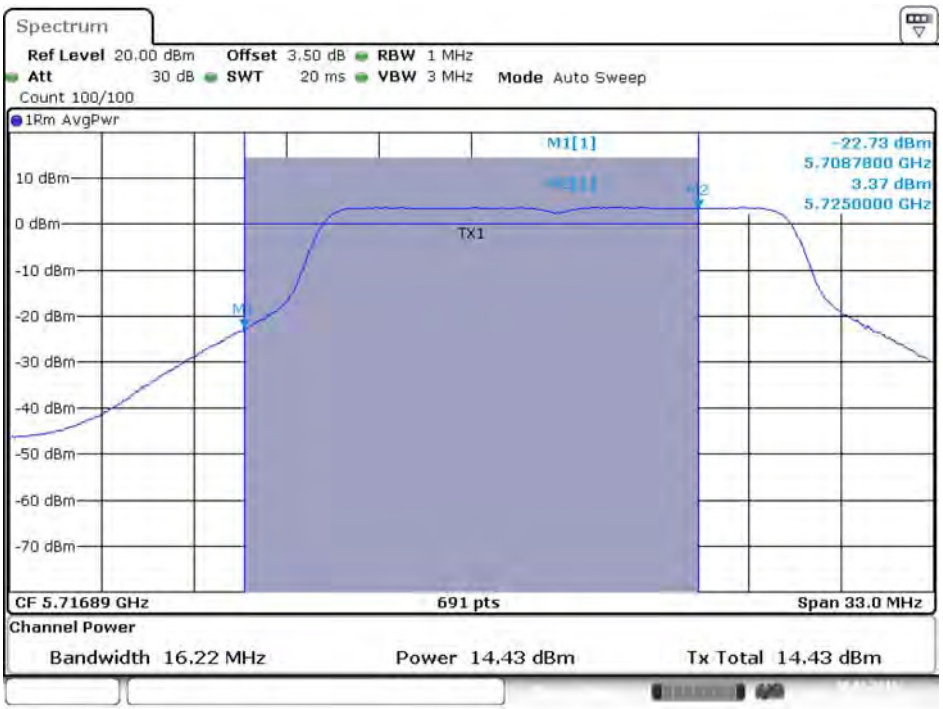
Date: 30.JAN.2016 02:42:32

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



Date: 30.JAN.2016 02:42:40

Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 4 / 5720 MHz (UNII 2C)



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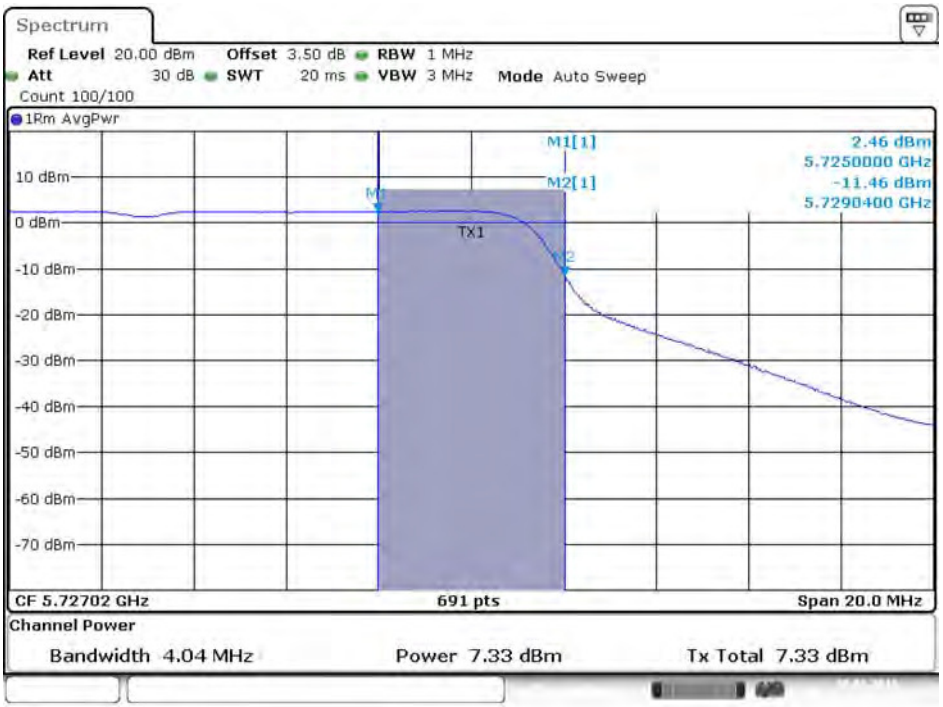
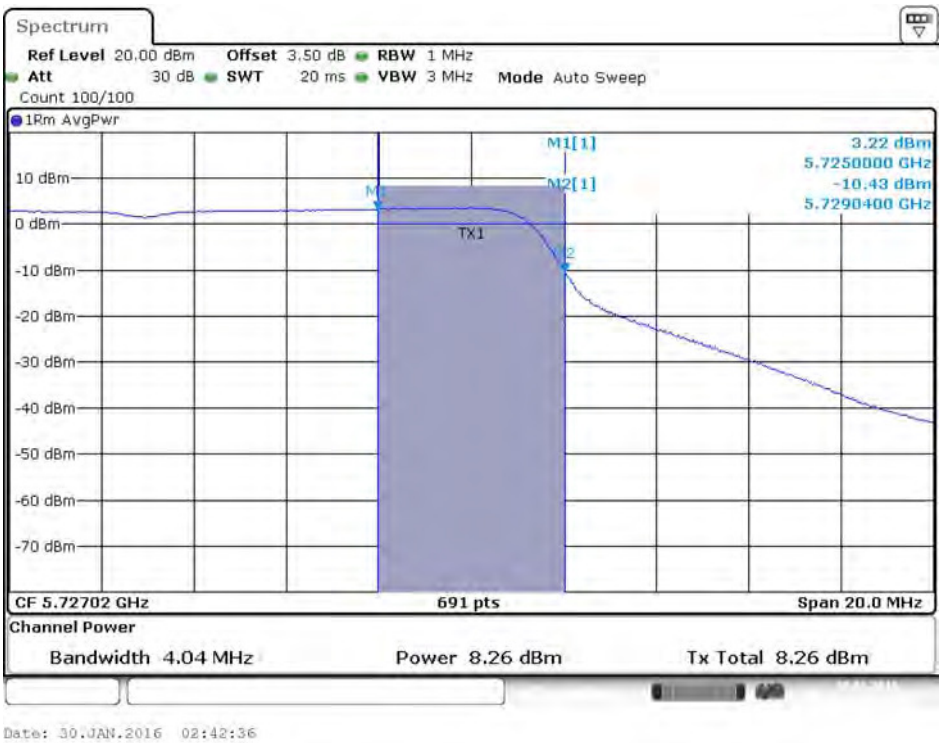
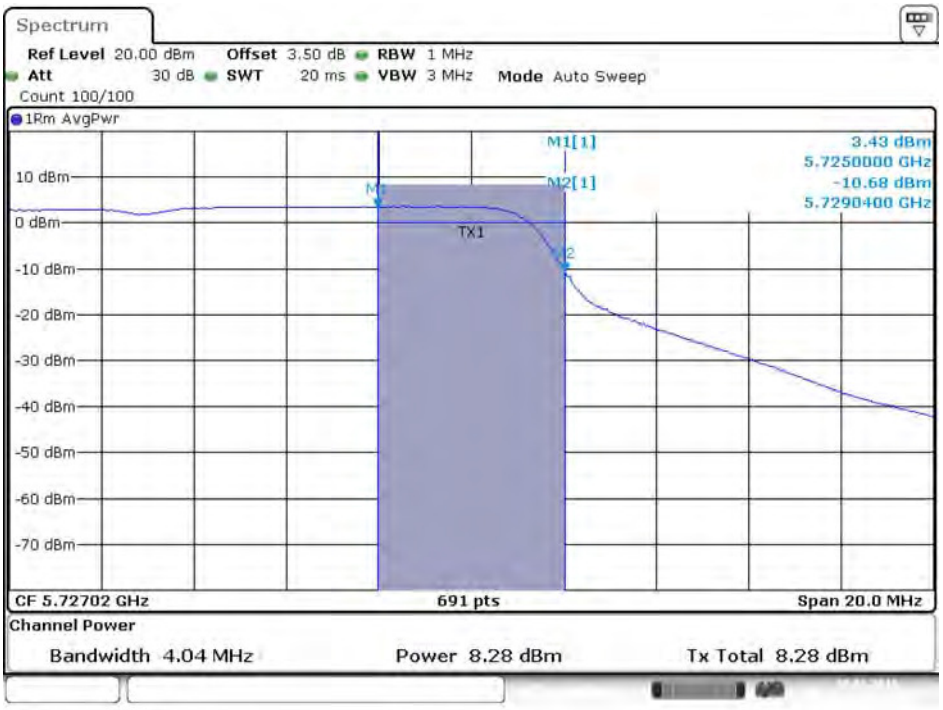
Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 1 / 5720 MHz (UNII 3)



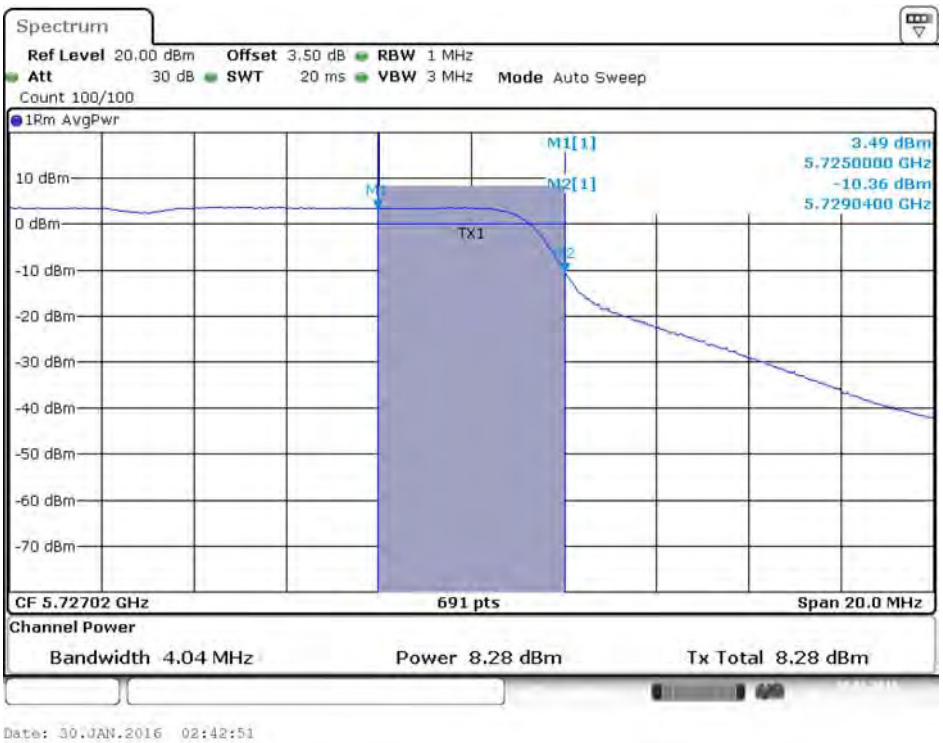
Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 2 / 5720 MHz (UNII 3)



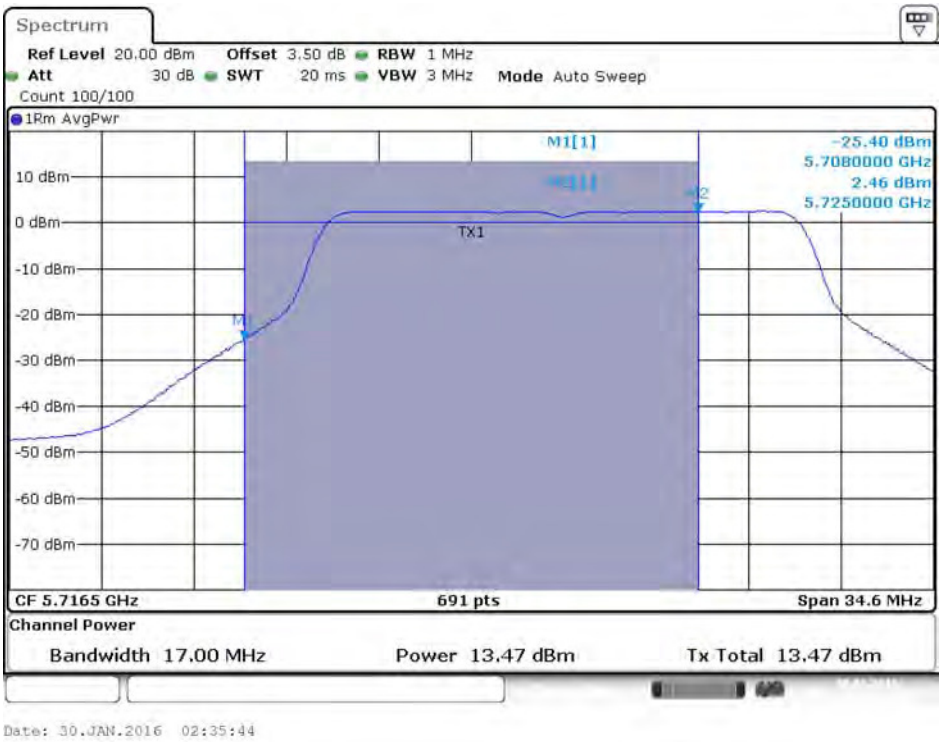
Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 3 / 5720 MHz (UNII 3)



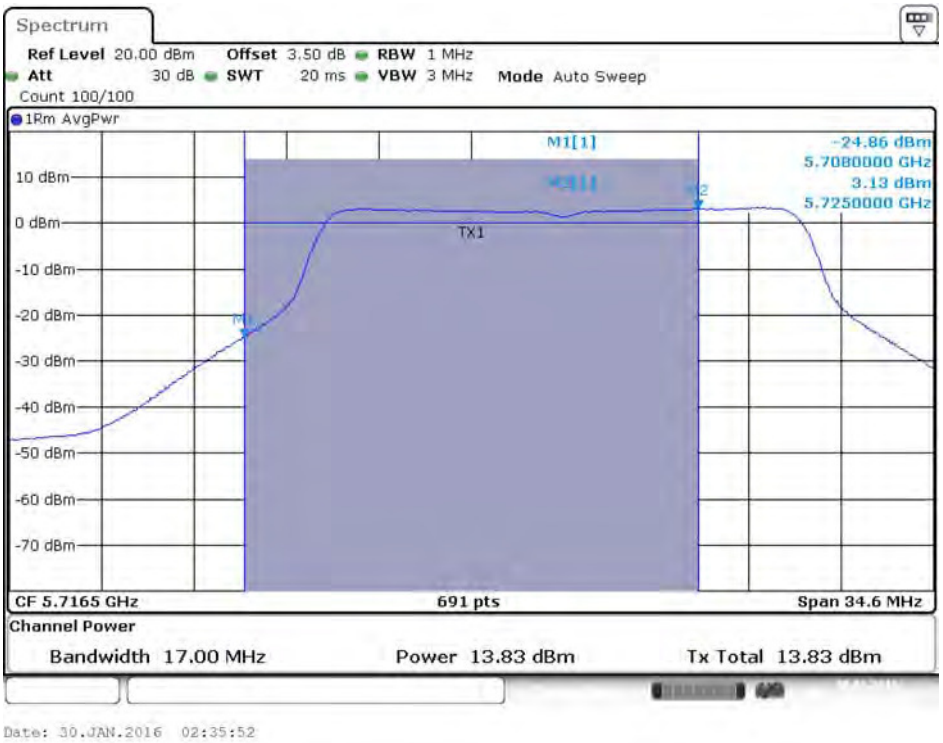
Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 4 / 5720 MHz (UNII 3)



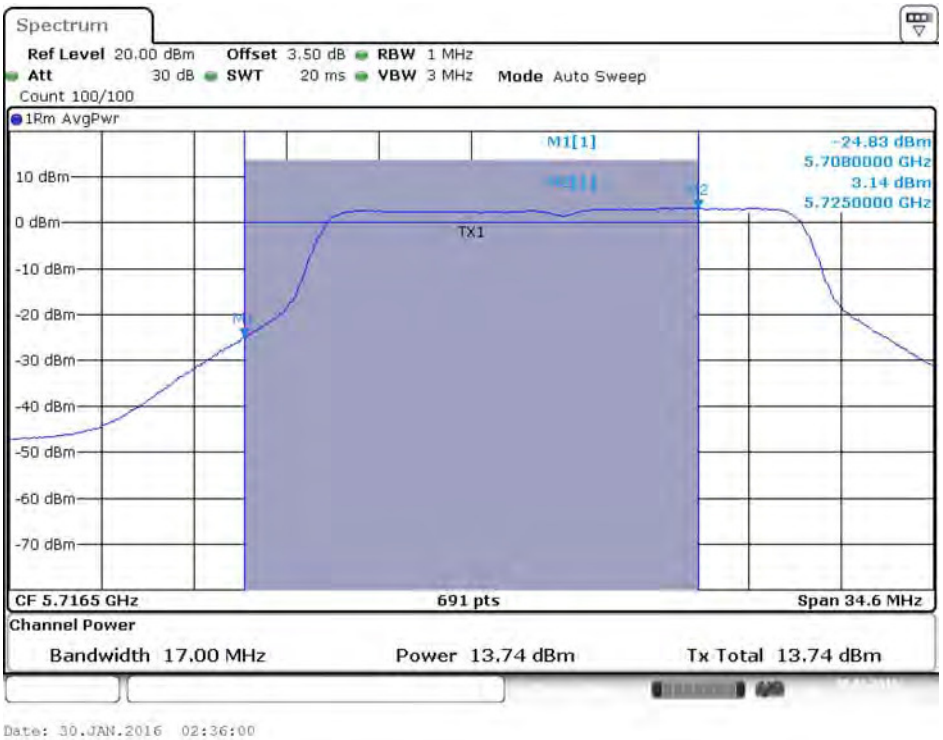
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5720 MHz (UNII 2C)



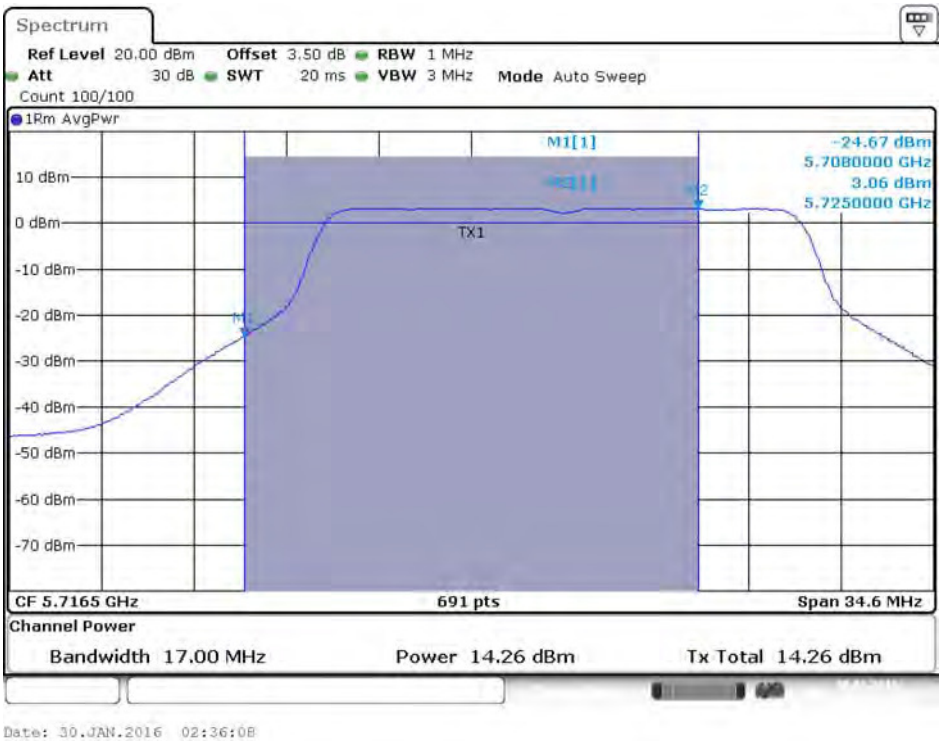
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5720 MHz (UNII 2C)



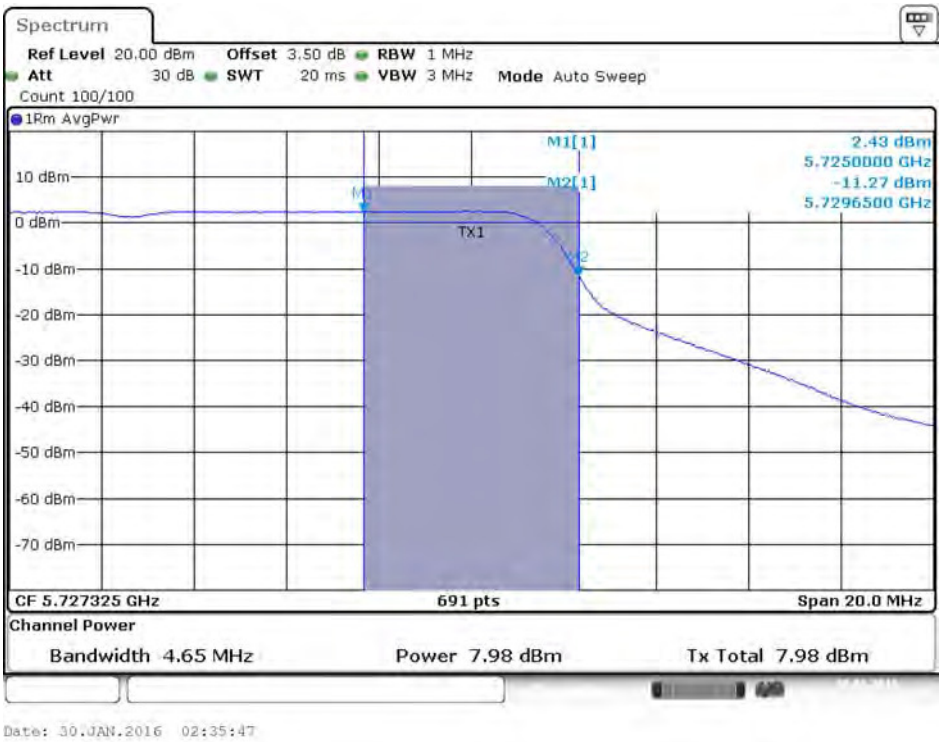
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5720 MHz (UNII 2C)



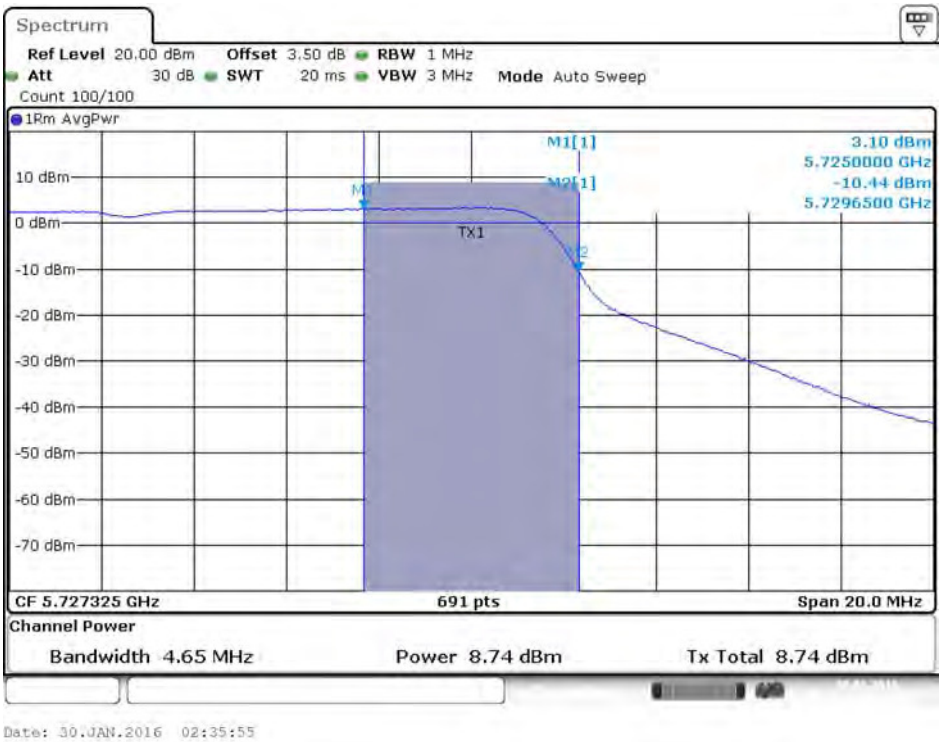
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5720 MHz (UNII 2C)



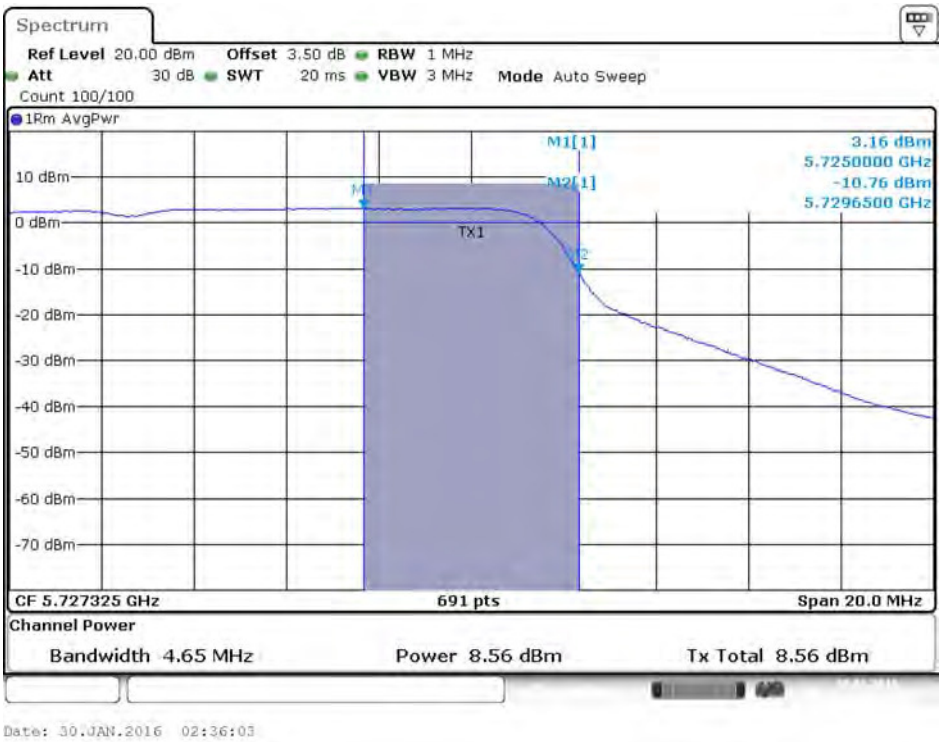
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 / 5720 MHz (UNII 3)



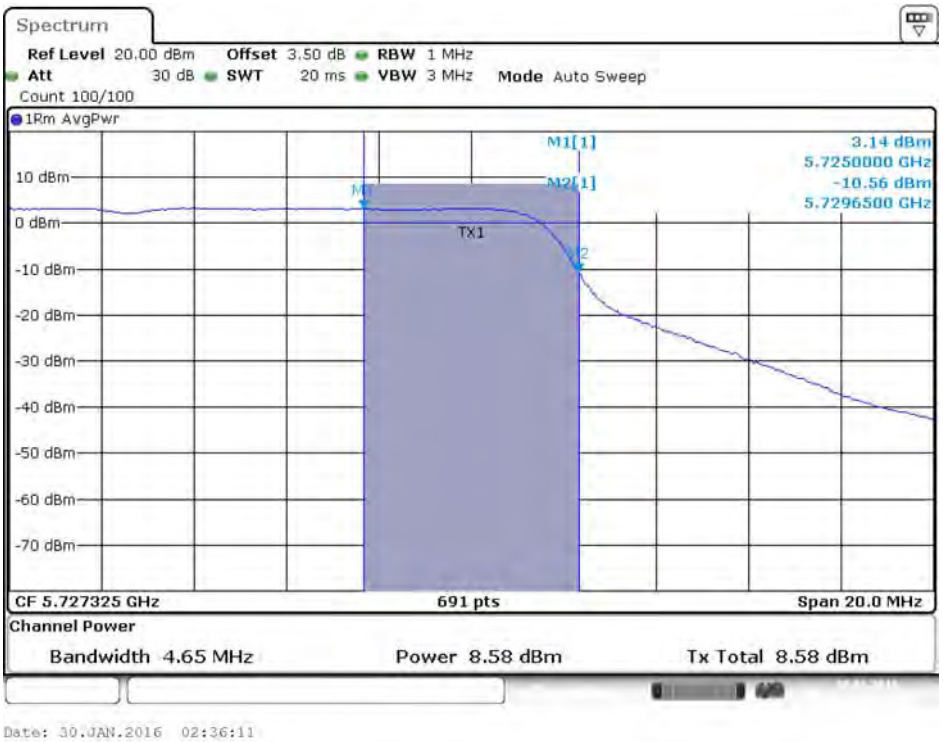
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 2 / 5720 MHz (UNII 3)



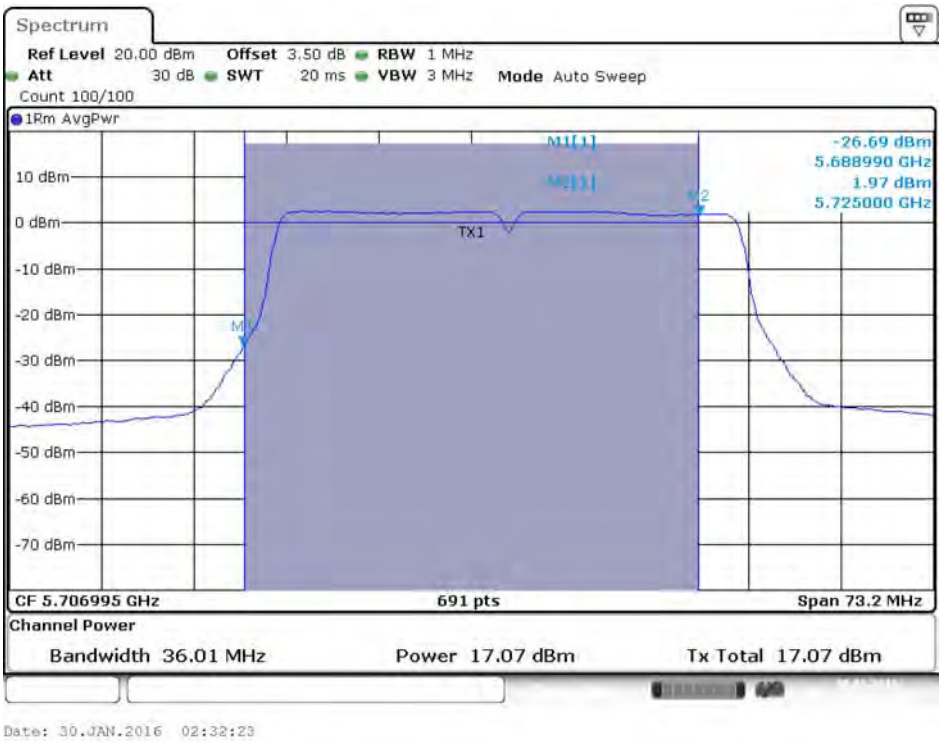
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5720 MHz (UNII 3)



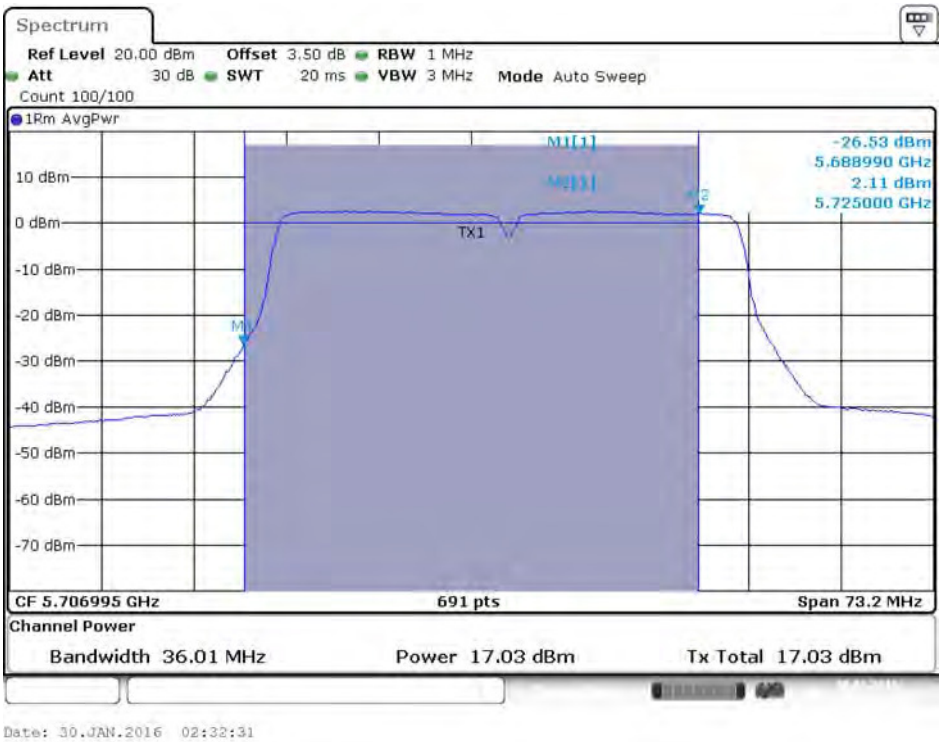
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5720 MHz (UNII 3)



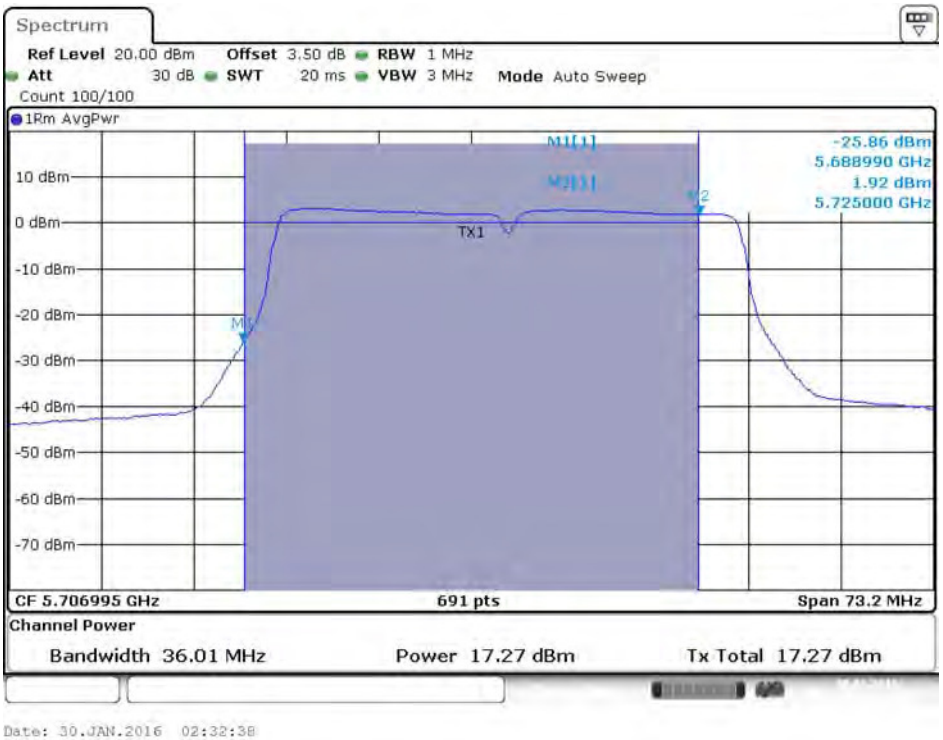
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5710 MHz (UNII 2C)



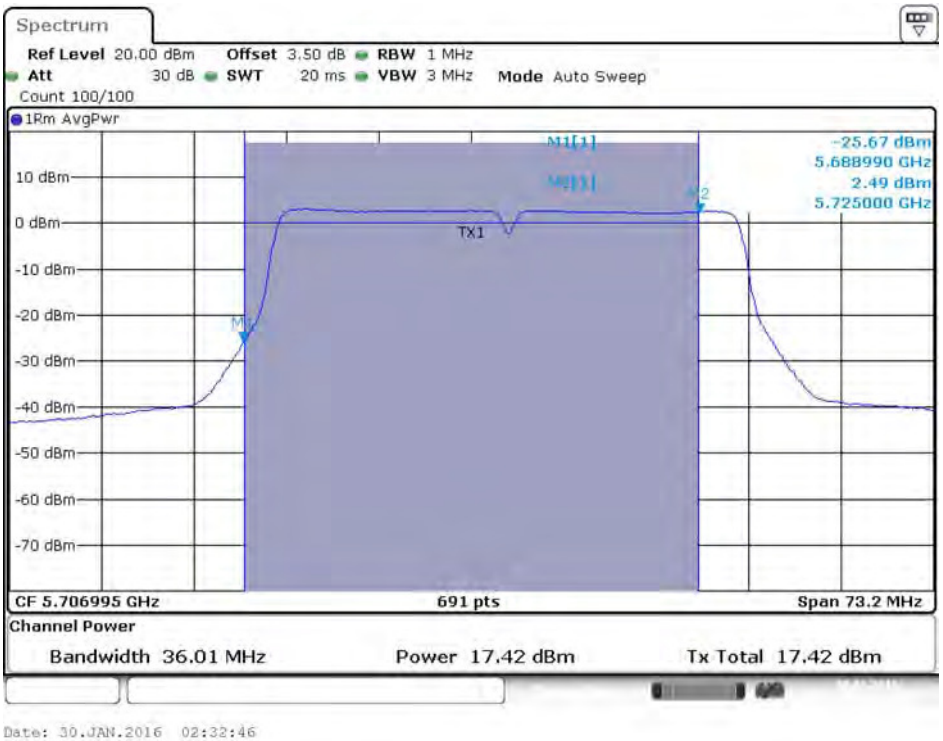
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5710 MHz (UNII 2C)



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

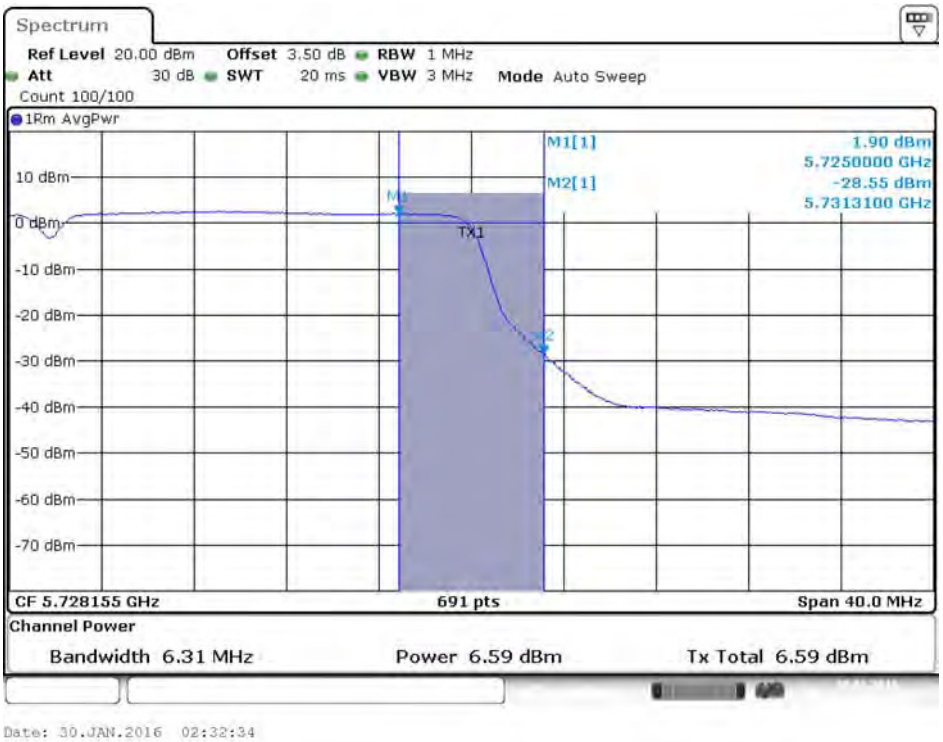


Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 / 5710 MHz (UNII 2C)

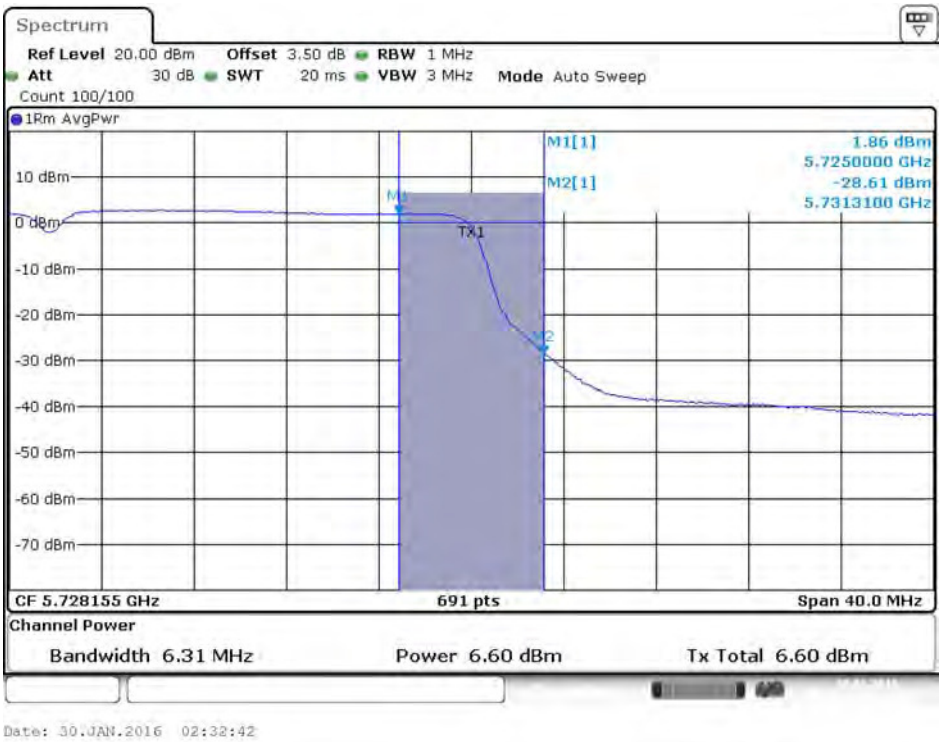


Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5710 MHz (UNII 3)

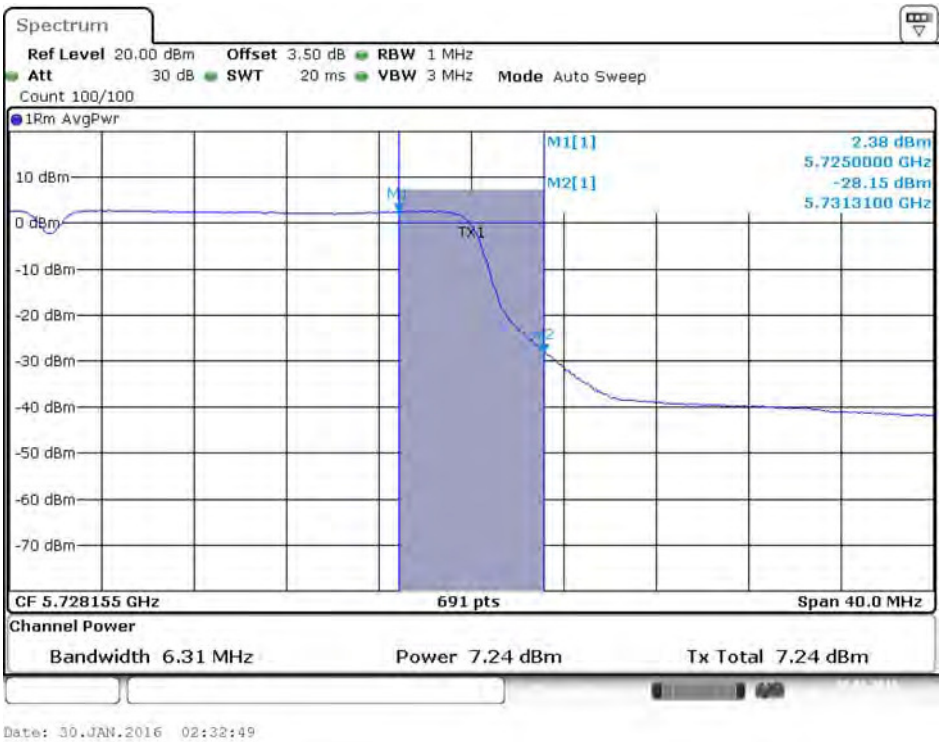
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5710 MHz (UNII 3)



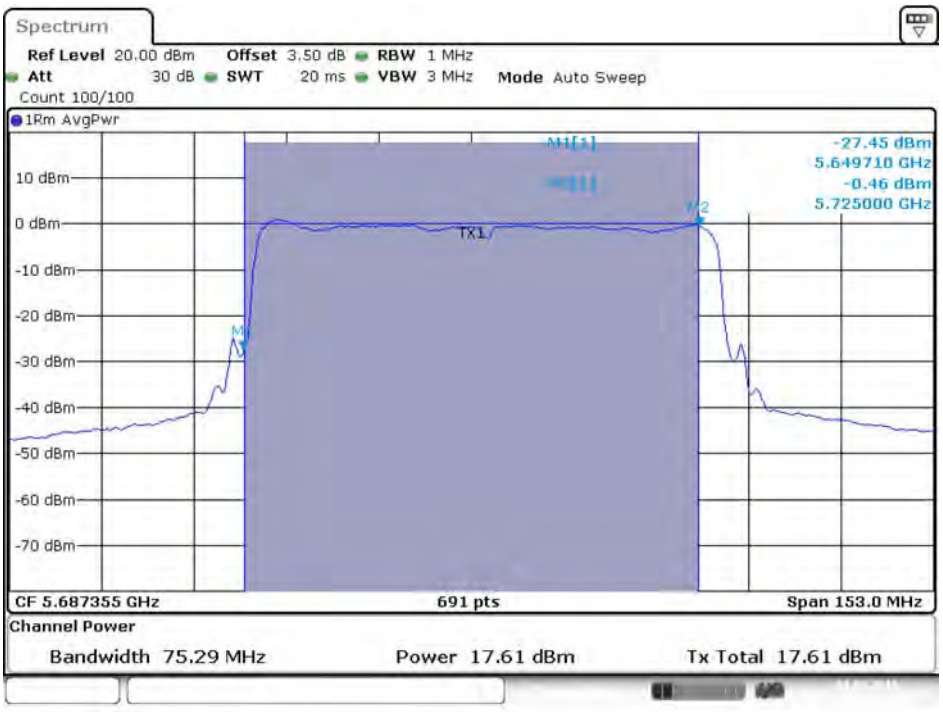
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5710 MHz (UNII 3)



Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 / 5710 MHz (UNII 3)

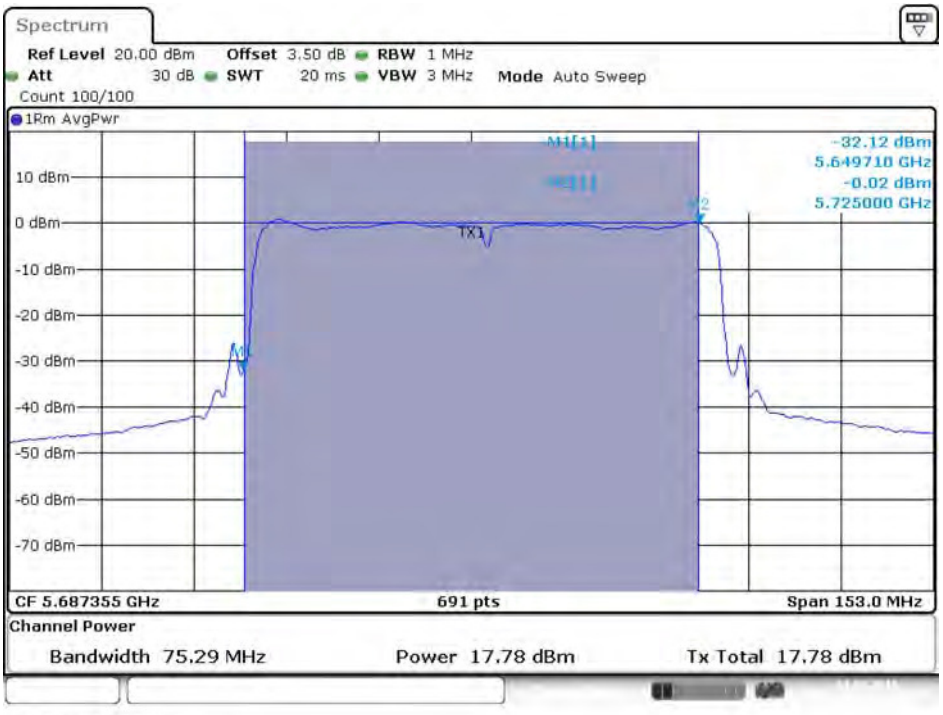


Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 / 5690 MHz (UNII 2C)



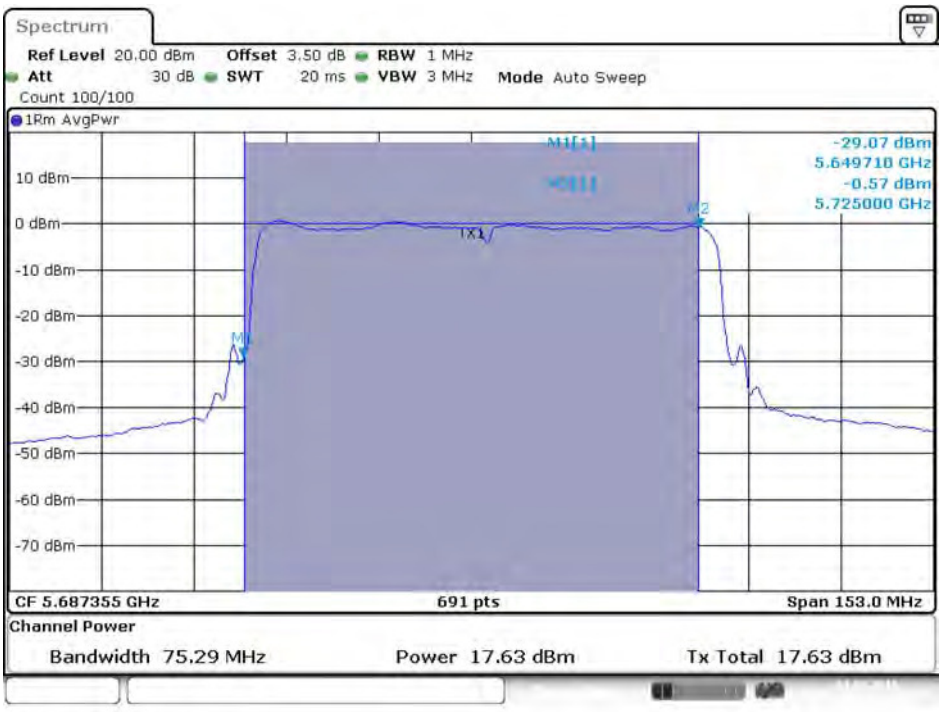
Date: 3.FEB.2016 21:49:52

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



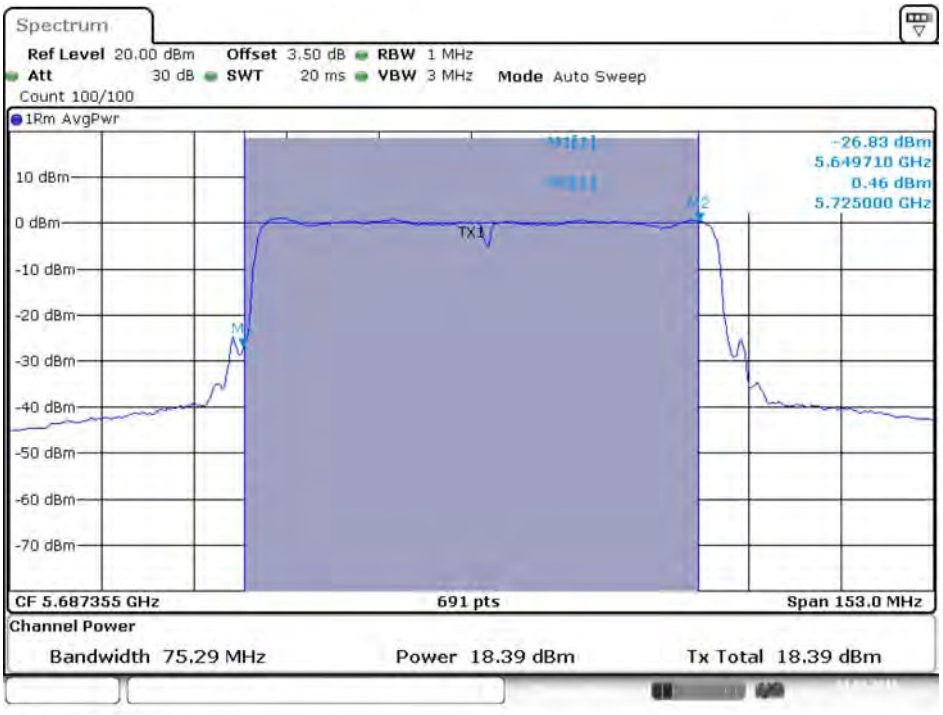
Date: 3.FEB.2016 21:49:59

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



Date: 3.FEB.2016 21:50:06

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 / 5690 MHz (UNII 2C)

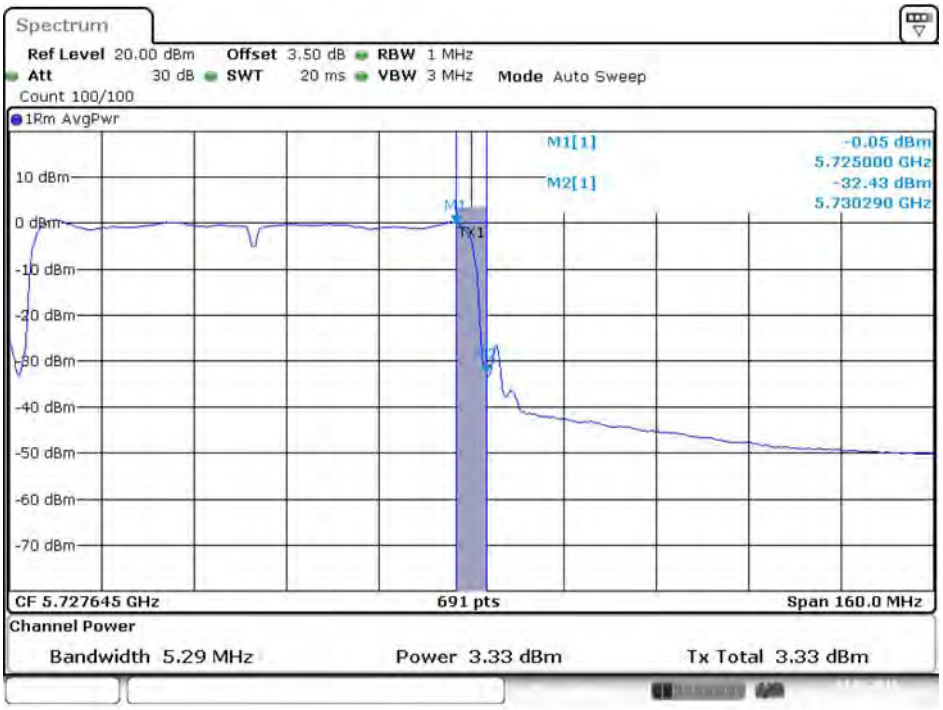


Date: 3.FEB.2016 21:50:13

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

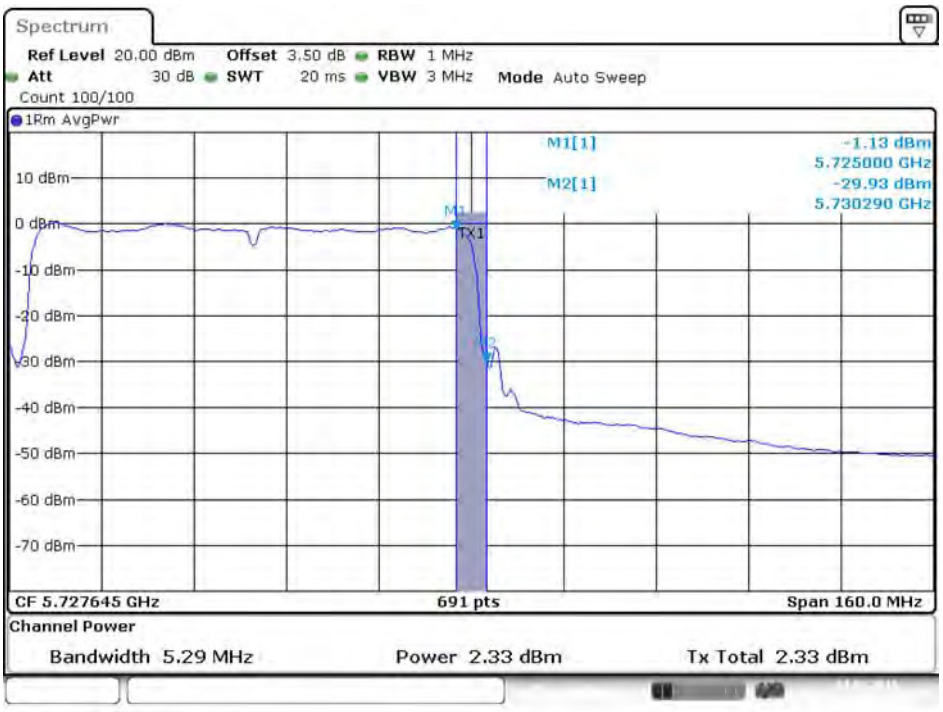
Date: 3.FEB.2016 21:49:55

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



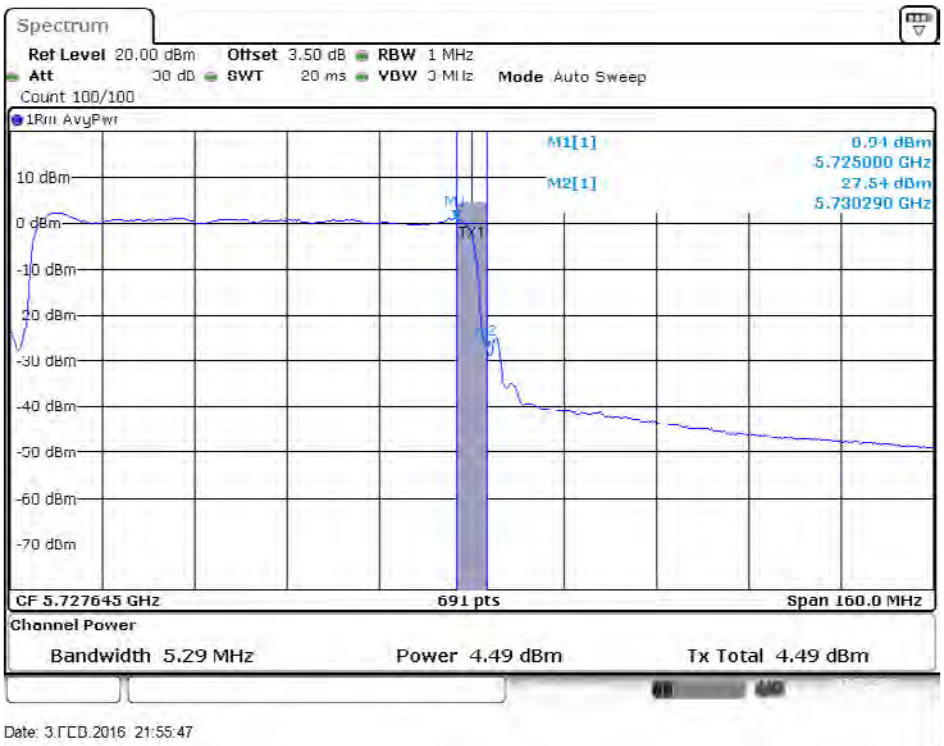
Date: 3.FEB.2016 21:50:02

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



Date: 3.FEB.2016 21:50:09

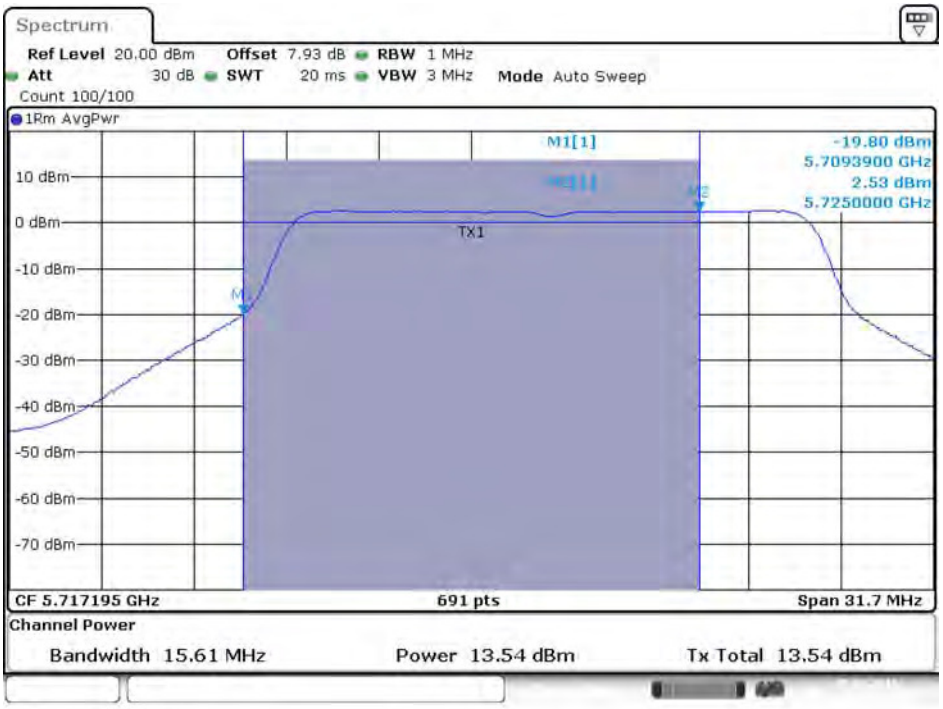
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 / 5690 MHz (UNII 3)



Date: 3.FEB.2016 21:55:47

For beamforming mode

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

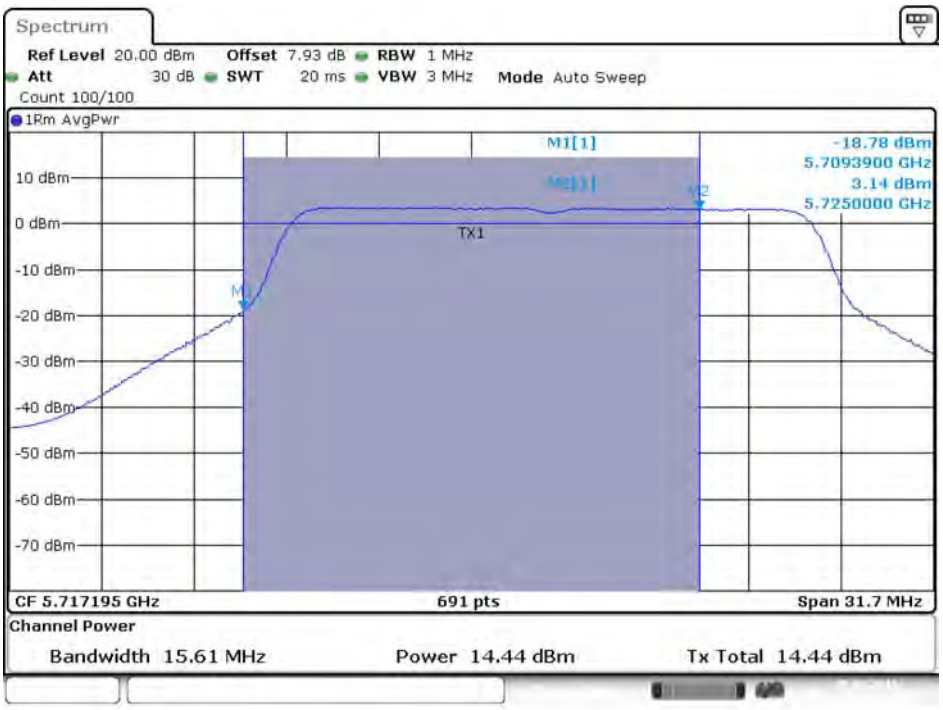


Date: 5.FEB.2016 10:32:33

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

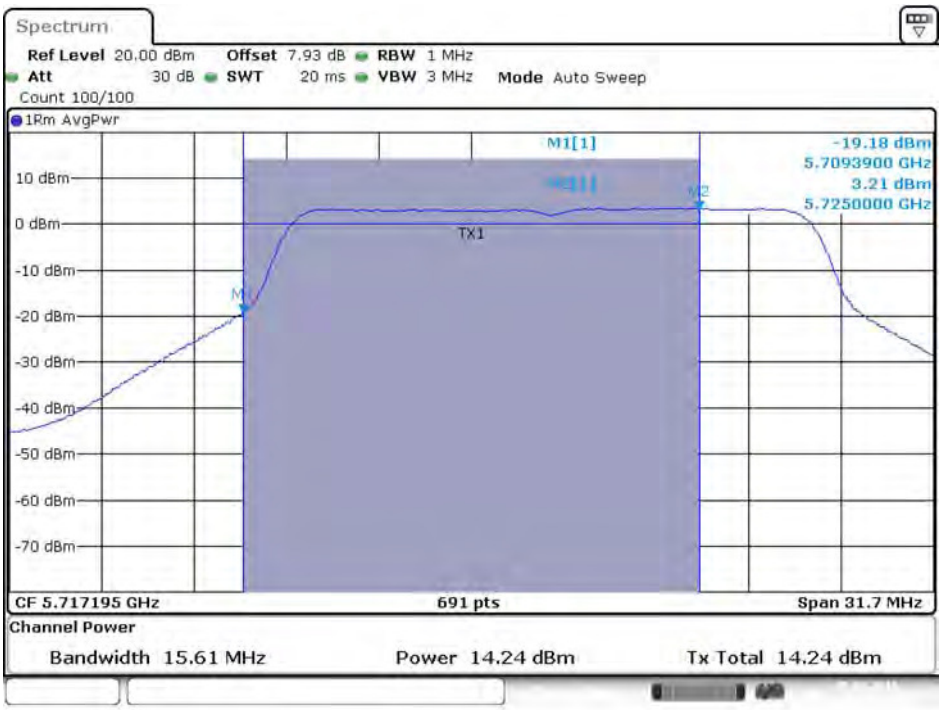
Date: 5.FEB.2016 10:32:40

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



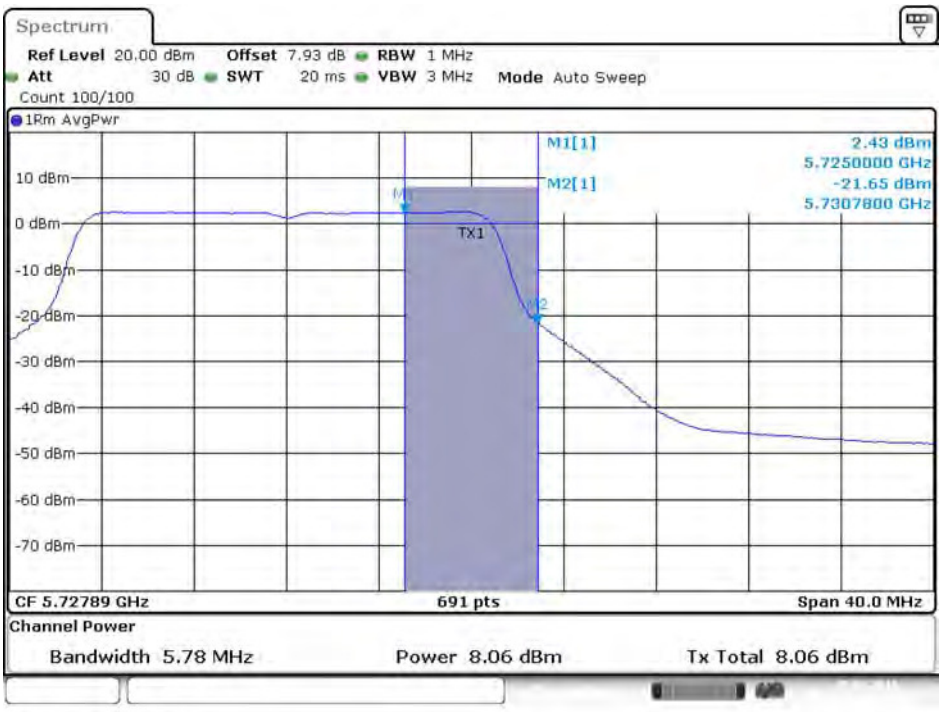
Date: 5.FEB.2016 10:32:47

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5720 MHz (UNII 2C)



Date: 5.FEB.2016 10:32:54

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



Date: 5.FEB.2016 10:32:36

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

Date: 5.FEB.2016 10:32:43

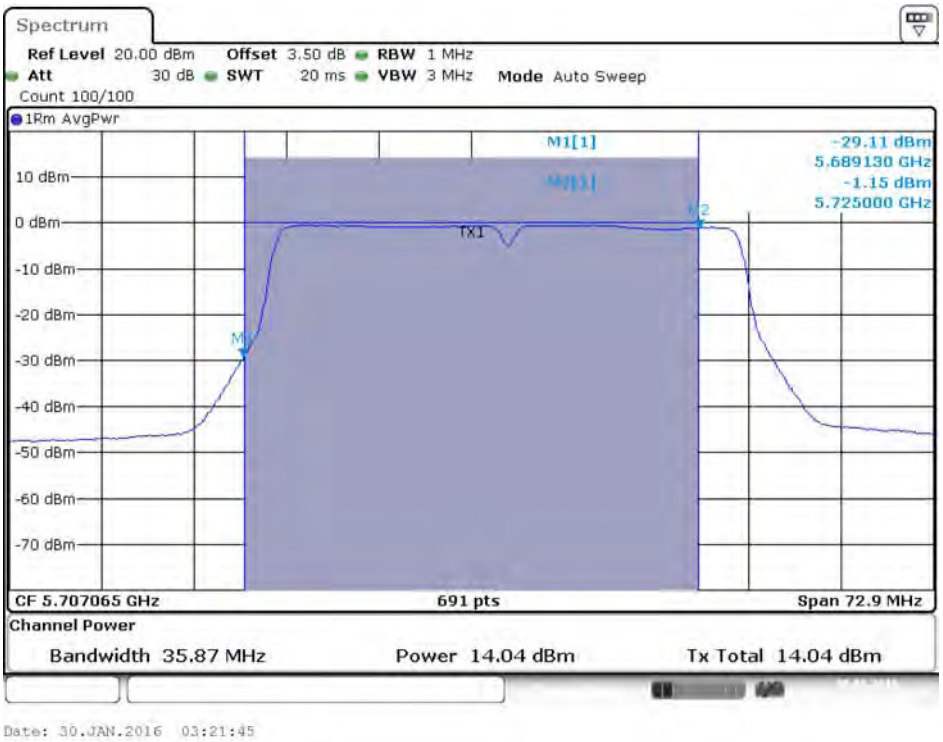
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5720 MHz (UNII 3)

Date: 5.FEB.2016 10:32:51

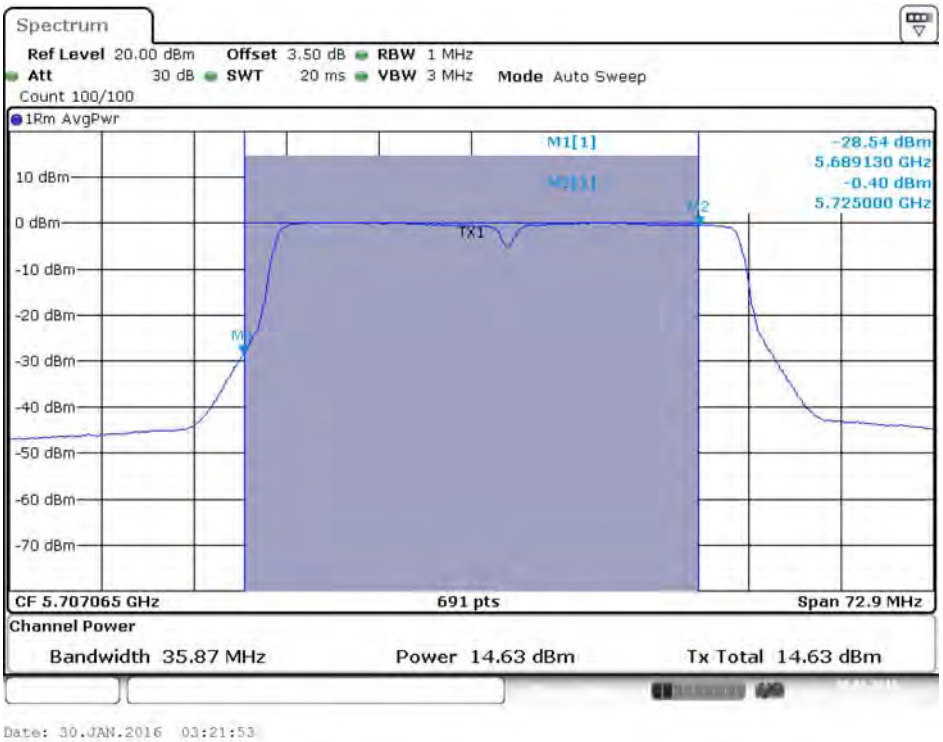
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 4 / 5720 MHz (UNII 3)

Date: 5.FEB.2016 10:32:58

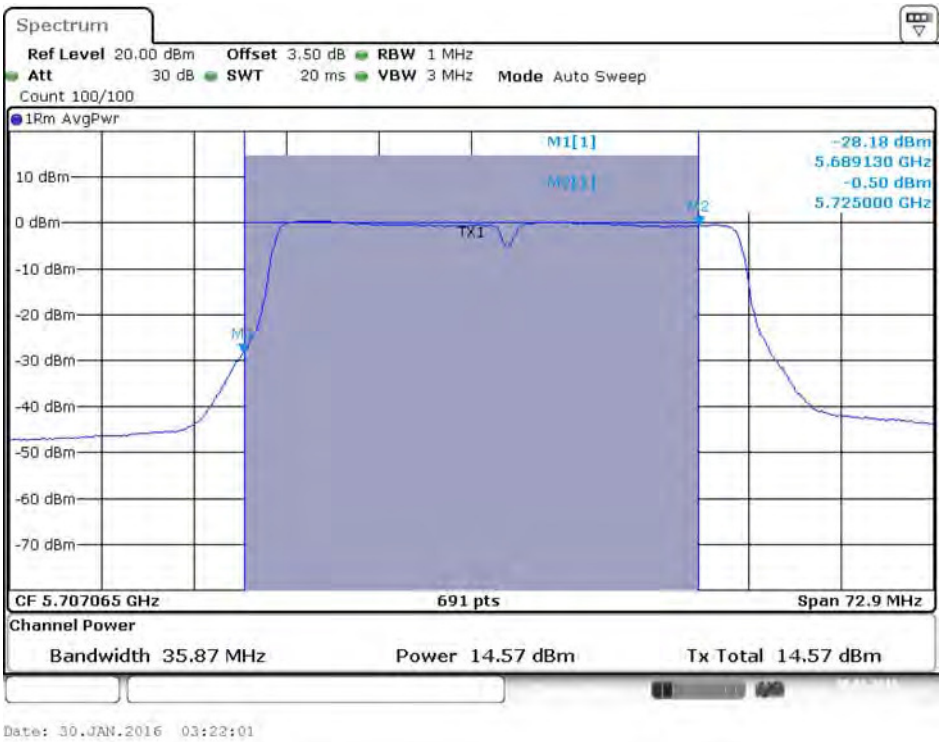
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 / 5710 MHz (UNII 2C)



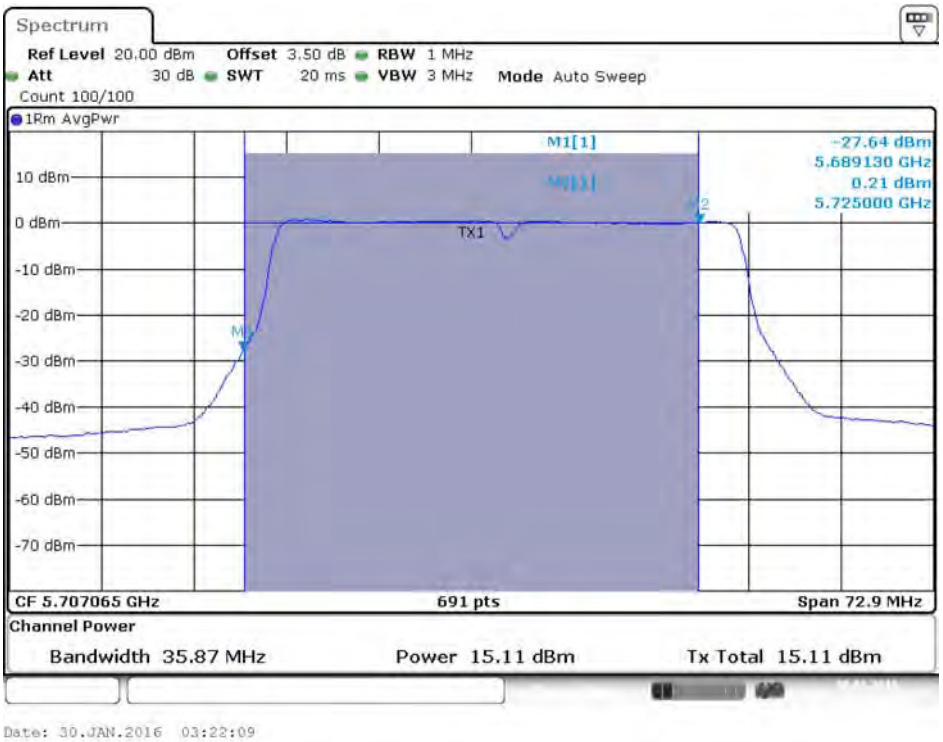
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 2 / 5710 MHz (UNII 2C)



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



Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 / 5710 MHz (UNII 2C)



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)

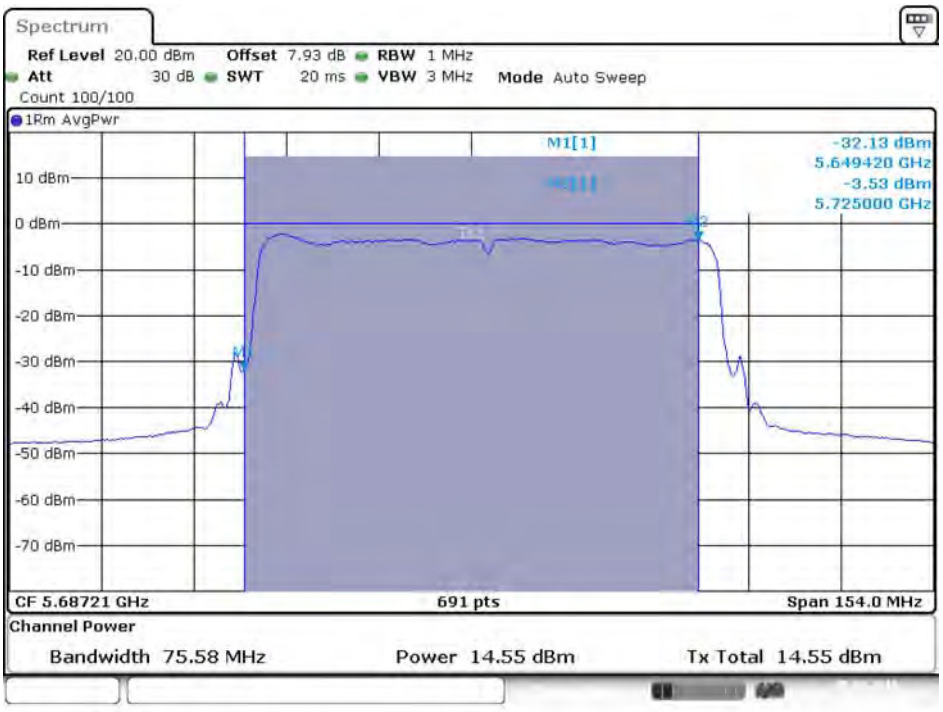
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5710 MHz (UNII 3)

Date: 30.JAN.2016 03:22:04

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 4 / 5710 MHz (UNII 3)

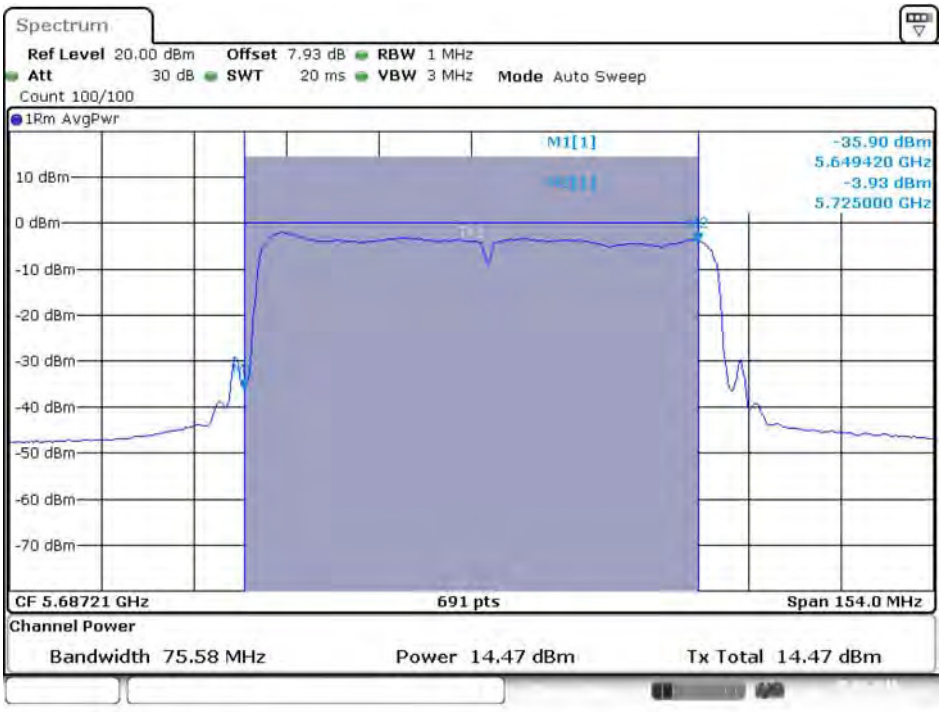
Date: 30.JAN.2016 03:22:12

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



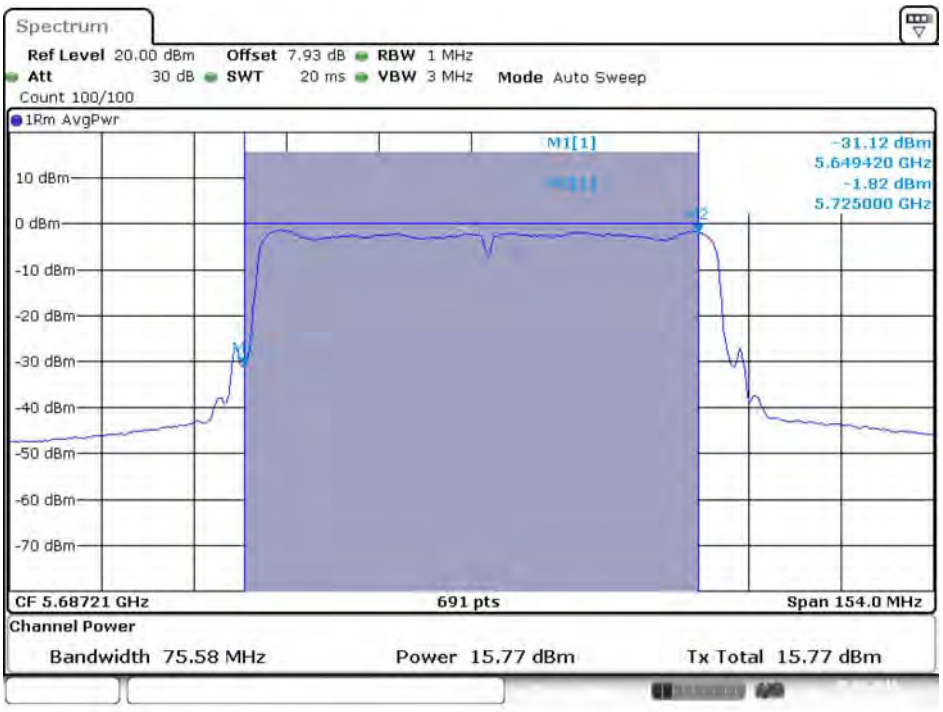
Date: 5.FEB.2016 10:40:55

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



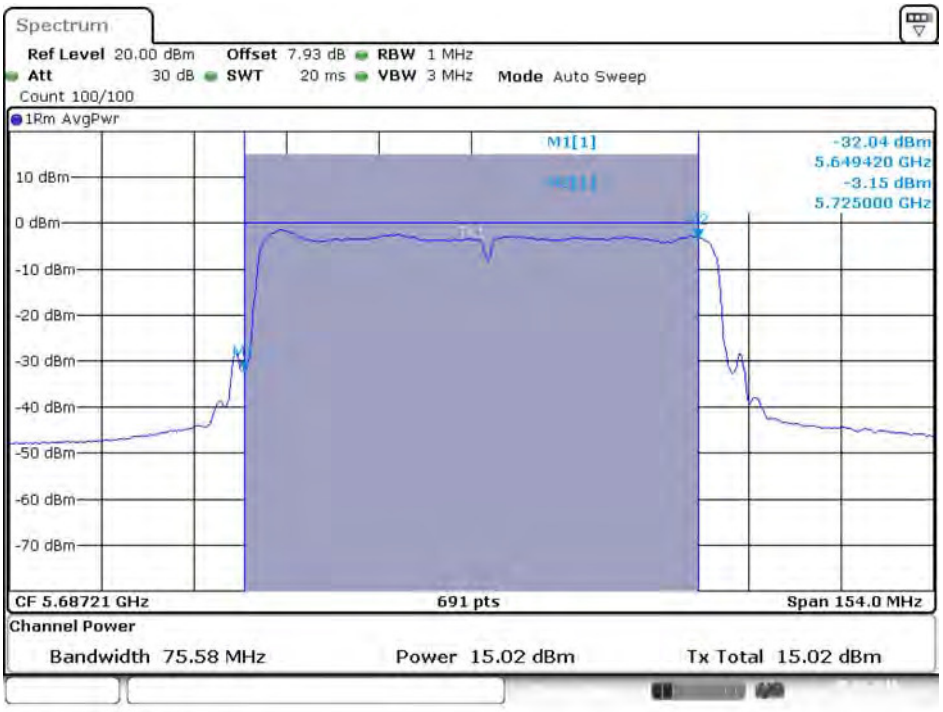
Date: 5.FEB.2016 10:41:02

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



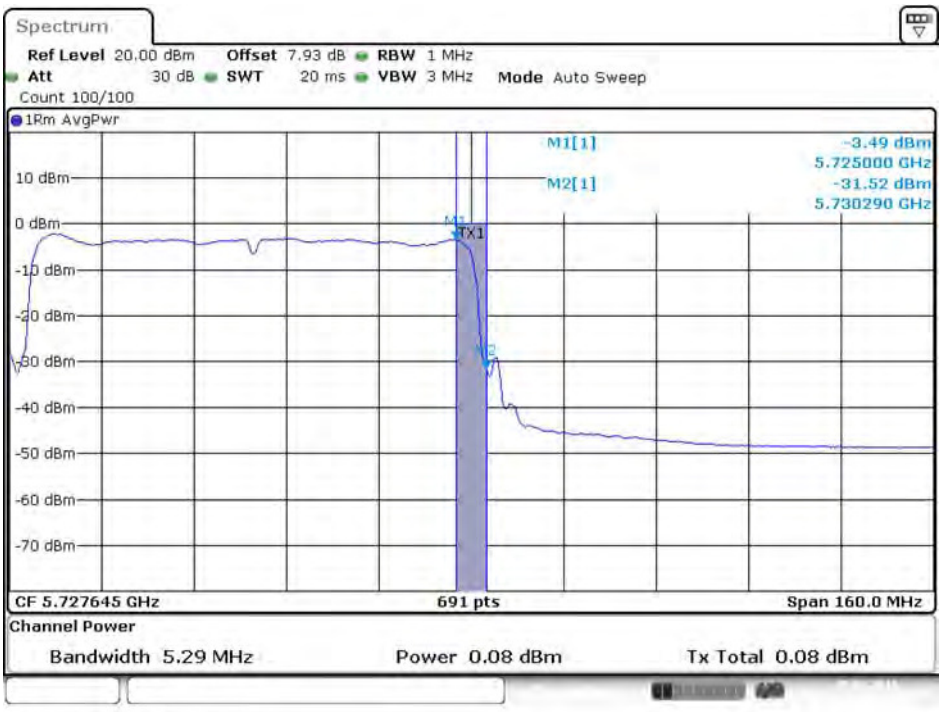
Date: 5.FEB.2016 10:41:09

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 / 5690 MHz (UNII 2C)



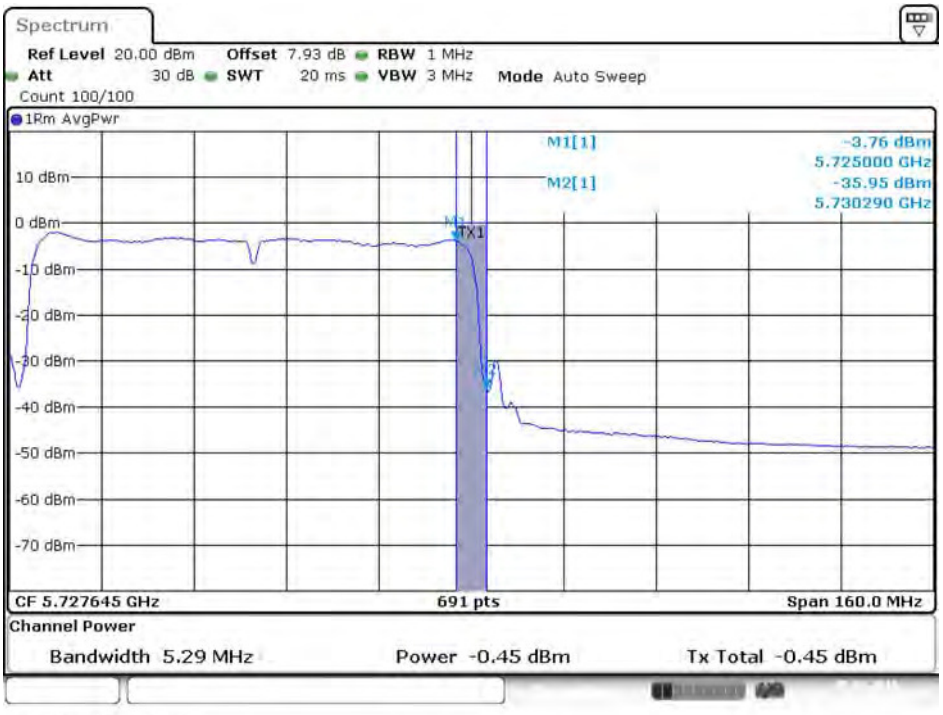
Date: 5.FEB.2016 10:41:16

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



Date: 5.FEB.2016 10:40:58

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

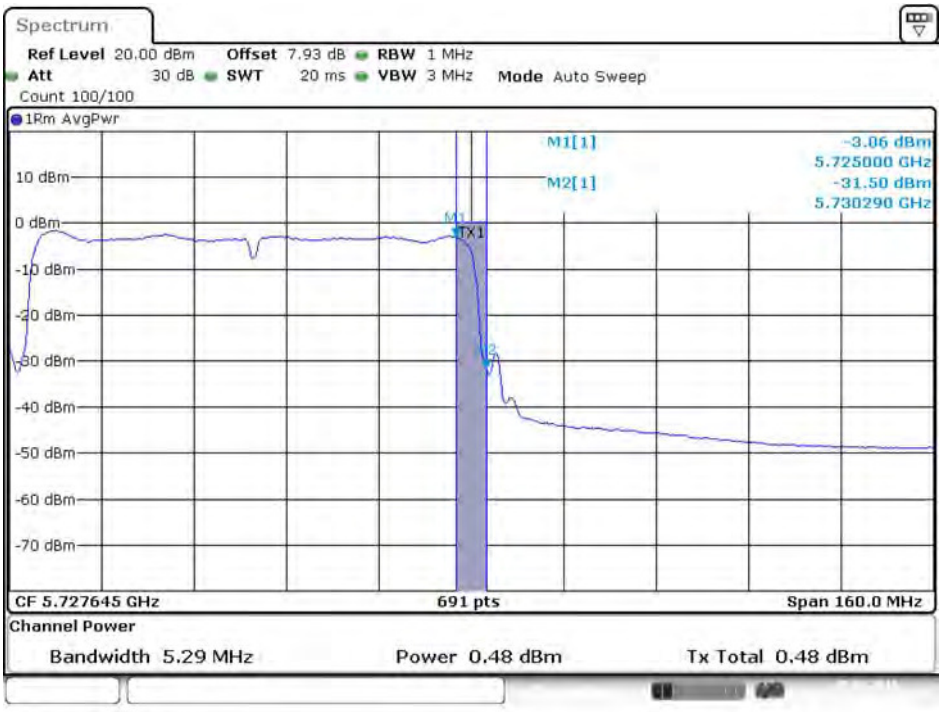


Date: 5.FEB.2016 10:41:05

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

Date: 5.FEB.2016 10:41:12

Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 4 / 5690 MHz (UNII 3)



Date: 5.FEB.2016 10:41:19

4.4. Power Spectral Density Measurement

4.4.1. Limit

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

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

4.4.2. Measuring Instruments and Setting

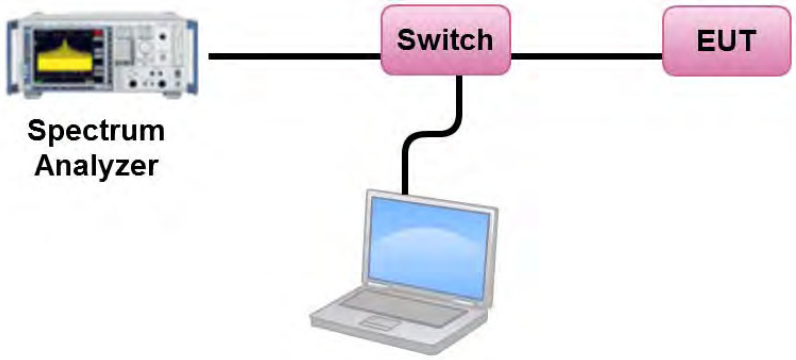
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1000 kHz
VBW	3000 kHz
Detector	RMS
Trace	AVERAGE
Sweep Time	Auto
Trace Average	100 times

4.4.3. Test Procedures

1. The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.
2. Test was performed in accordance with KDB789033 D02 v01r01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (F) Maximum Power Spectral Density (PSD).
3. Multiple antenna systems was performed in accordance KDB662911 D01 v02r01 in-Band Power Spectral Density (PSD) Measurements (a) Measure and sum the spectra across the outputs.
4. When measuring first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3 and so on up to the Nth output to obtain the value for the first frequency bin of the summed spectrum. The summed spectrum value for each of the other frequency bins is computed in the same way.

4.4.4. Test Setup Layout



4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.4.7. Test Result of Power Spectral Density

Temperature	23°C	Humidity	64%
Test Engineer	Serway Li	Test Date	Jan. 29, 2016~Feb. 05, 2016

For non-beamforming mode

Mode	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
802.11a	5260 MHz	8.56	8.86	Complies
	5300 MHz	8.69	8.86	Complies
	5320 MHz	8.77	8.86	Complies
	5500 MHz	8.10	8.17	Complies
	5580 MHz	8.12	8.17	Complies
	5700 MHz	8.15	8.17	Complies
802.11ac MCS0/Nss1 VHT20	5260 MHz	8.85	8.86	Complies
	5300 MHz	8.70	8.86	Complies
	5320 MHz	8.78	8.86	Complies
	5500 MHz	8.14	8.17	Complies
	5580 MHz	8.14	8.17	Complies
	5700 MHz	7.95	8.17	Complies
802.11ac MCS0/Nss1 VHT40	5270 MHz	7.55	8.86	Complies
	5310 MHz	6.32	8.86	Complies
	5510 MHz	6.85	8.17	Complies
	5550 MHz	7.71	8.17	Complies
	5670 MHz	7.69	8.17	Complies
802.11ac MCS0/Nss1 VHT80	5290 MHz	2.91	8.86	Complies
	5530 MHz	3.07	8.17	Complies
	5610 MHz	4.74	8.17	Complies

Note:

Band 2=Directional Gain=8.14dBi, so limit=11-(8.14-6)=8.86dBm/MHz

Band 3=Directional Gain=8.83dBi, so limit=11-(8.83-6)=8.17dBm/MHz

For beamforming mode

Mode	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
802.11ac MCS0/Nss1 VHT20	5260 MHz	8.73	8.86	Complies
	5300 MHz	8.50	8.86	Complies
	5320 MHz	8.51	8.86	Complies
	5500 MHz	7.92	8.17	Complies
	5580 MHz	7.84	8.17	Complies
	5700 MHz	7.82	8.17	Complies
802.11ac MCS0/Nss1 VHT40	5270 MHz	5.78	8.86	Complies
	5310 MHz	5.64	8.86	Complies
	5510 MHz	4.88	8.17	Complies
	5550 MHz	4.98	8.17	Complies
	5670 MHz	5.02	8.17	Complies
802.11ac MCS0/Nss1 VHT80	5290 MHz	2.60	8.86	Complies
	5530 MHz	2.02	8.17	Complies
	5610 MHz	2.14	8.17	Complies

Note:

Band 2=Directional Gain= 8.14dBi, so limit=11-(8.14-6)=8.86dBm/MHz

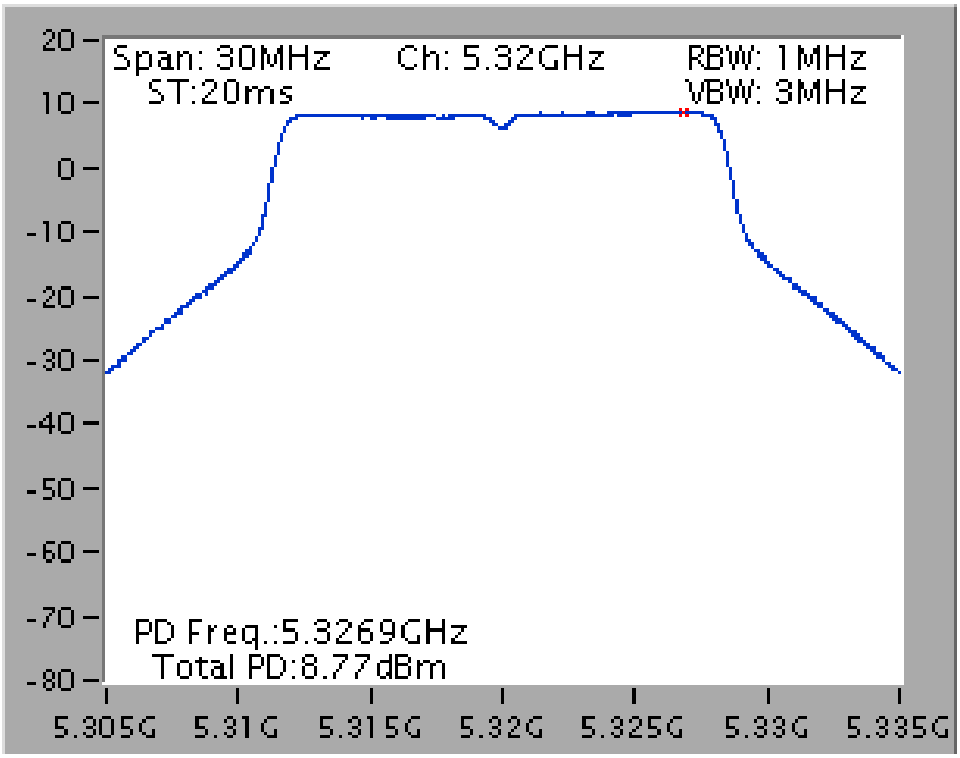
Band 3=Directional Gain= 8.83dBi, so limit=11-(8.83-6)=8.17dBm/MHz

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

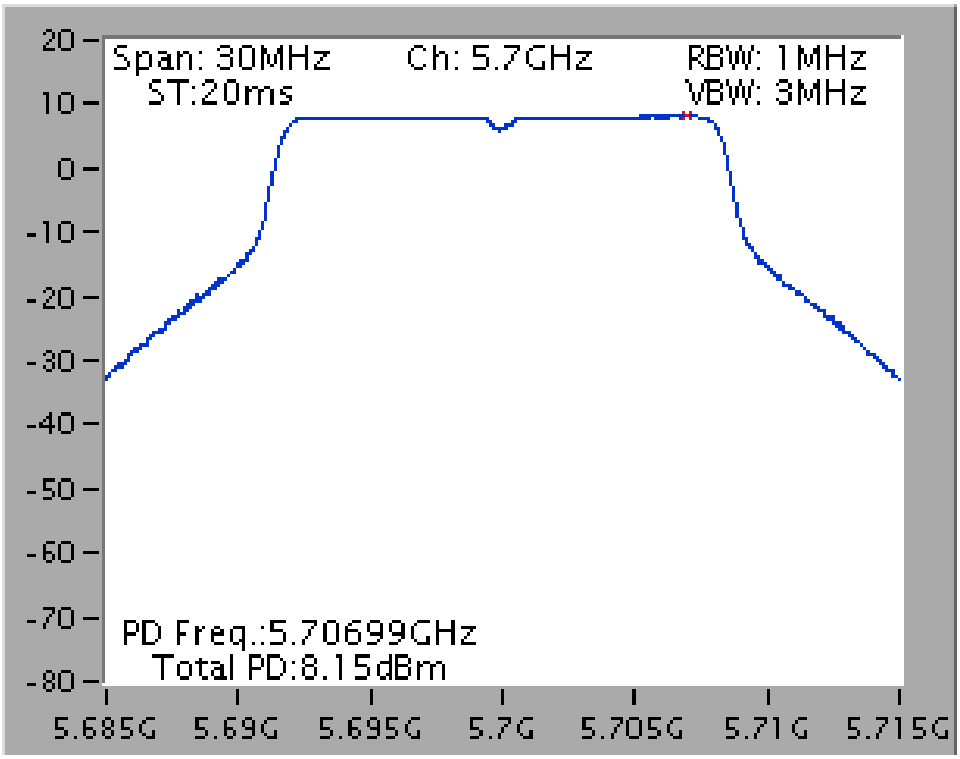
For plots, only the channel with worse result was shown.

For non-beamforming mode

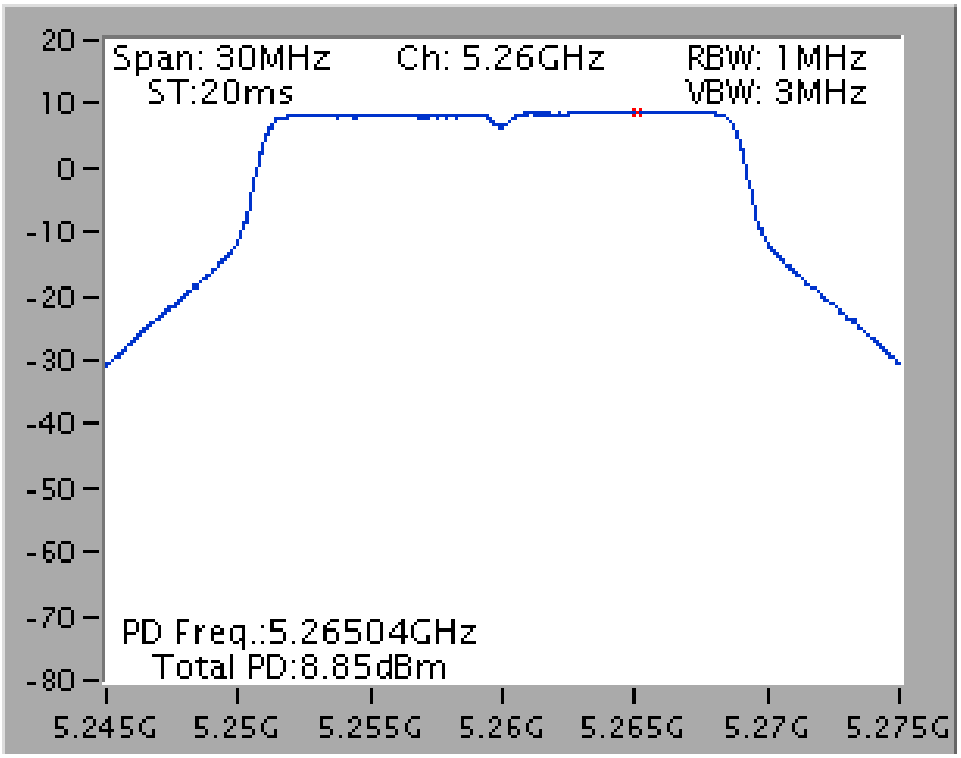
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5320 MHz



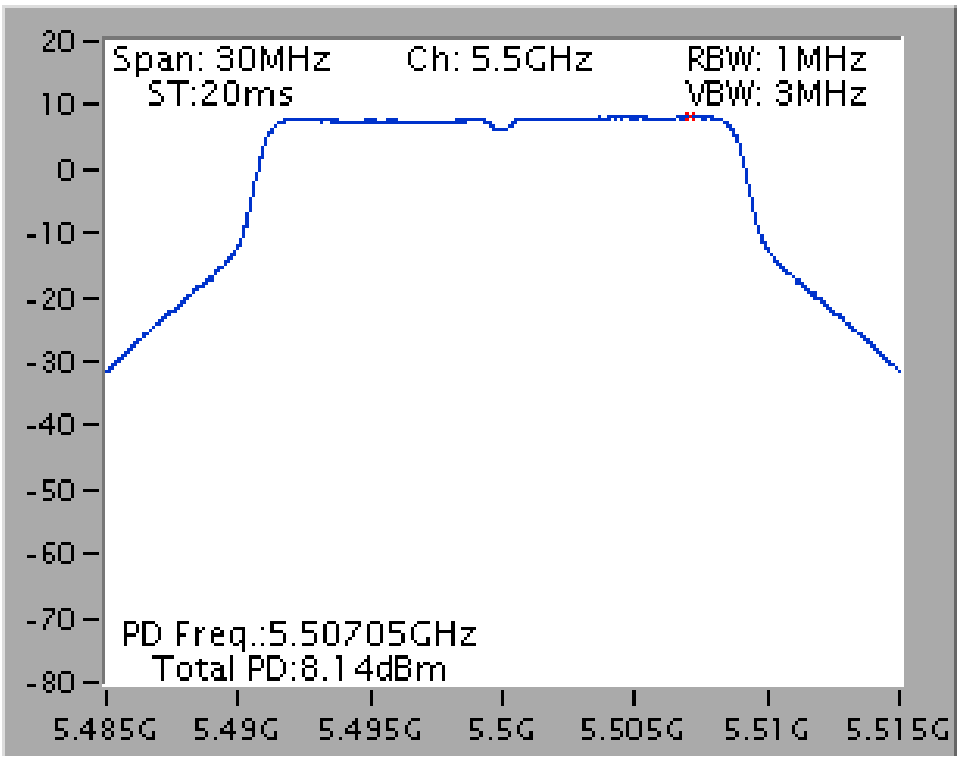
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5700 MHz



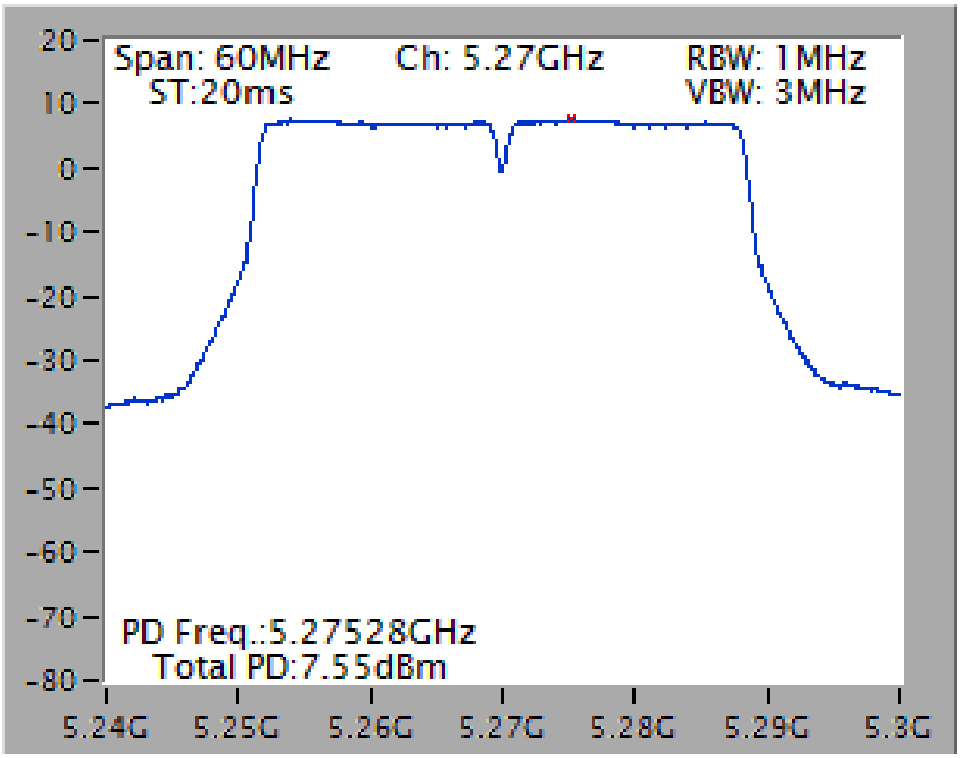
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5260 MHz



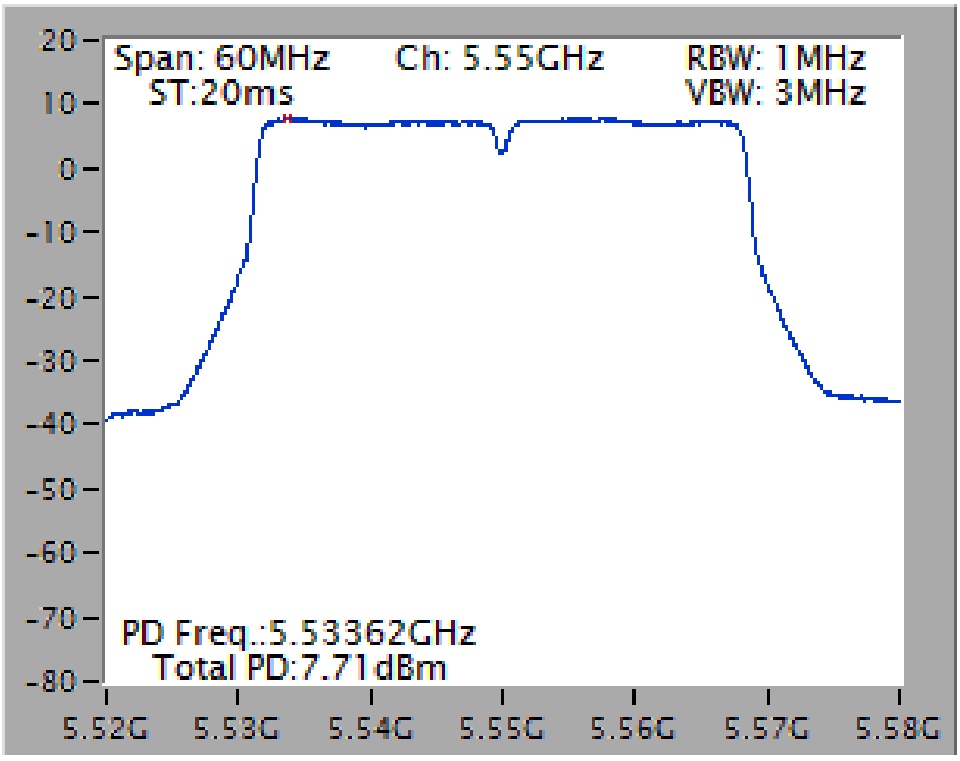
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5500 MHz



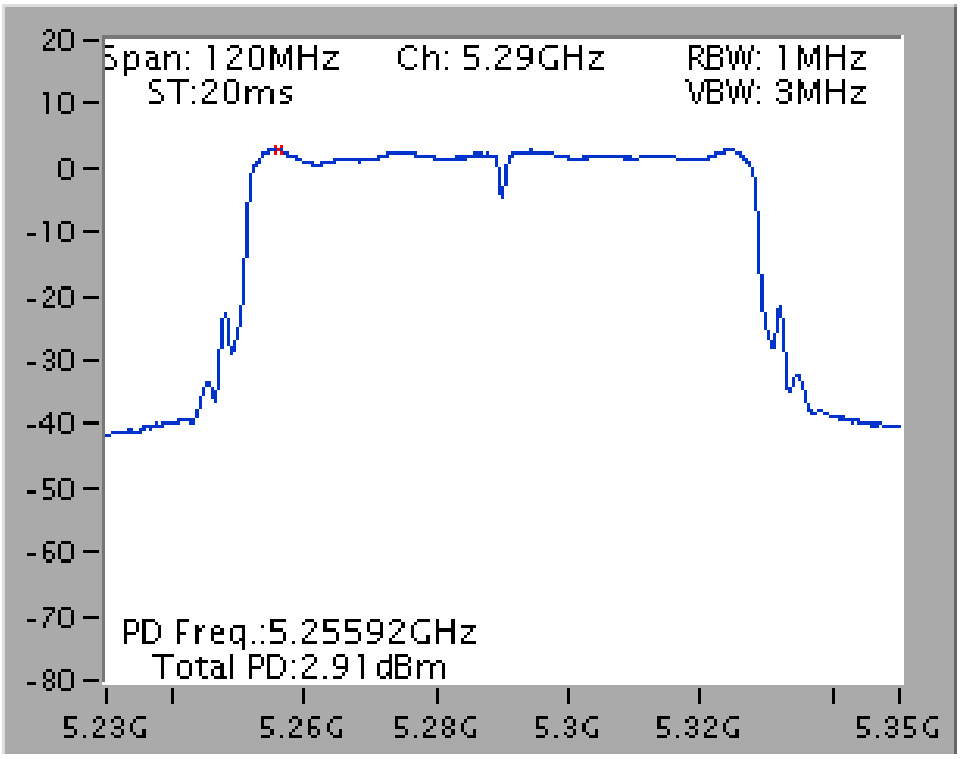
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5270 MHz



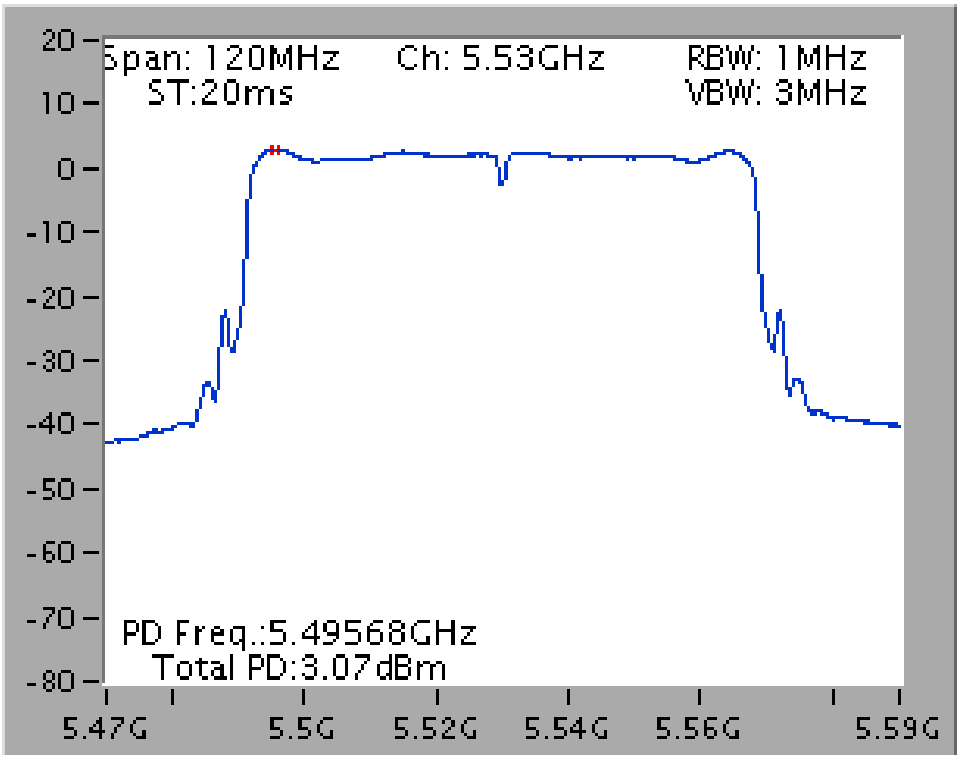
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5550 MHz



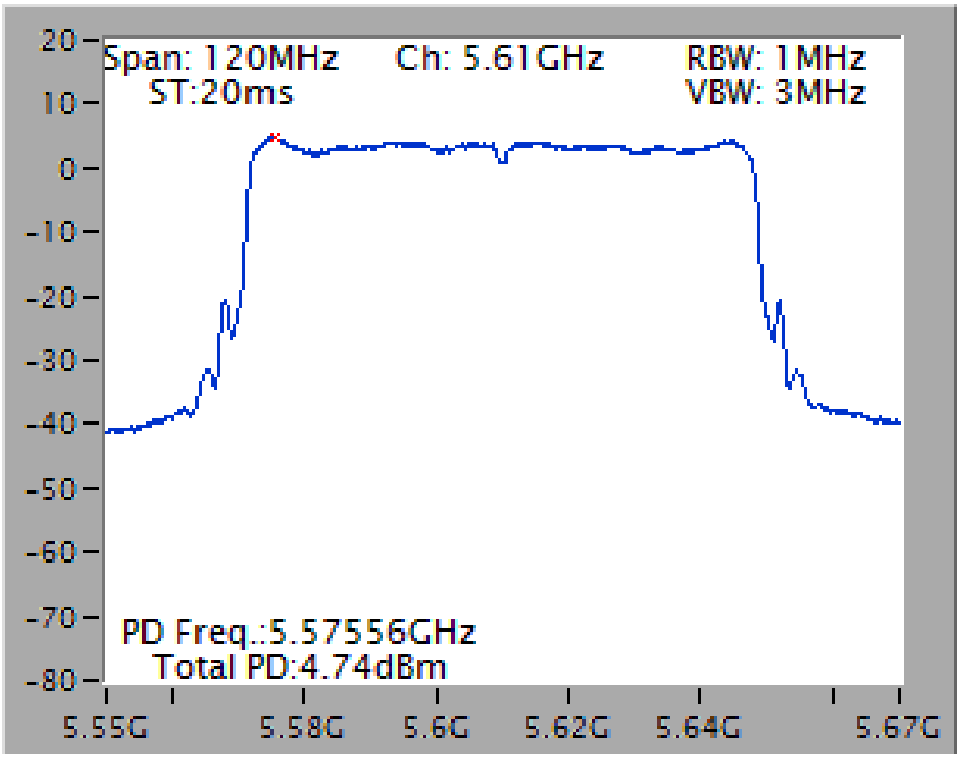
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5290 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5530 MHz

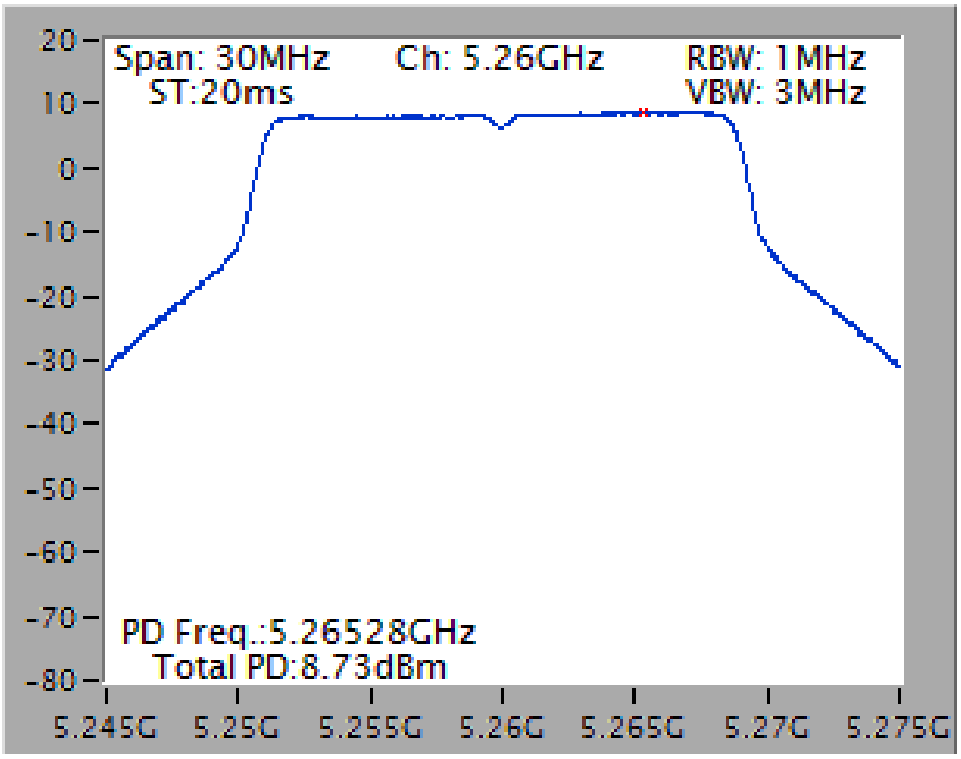


Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5610 MHz

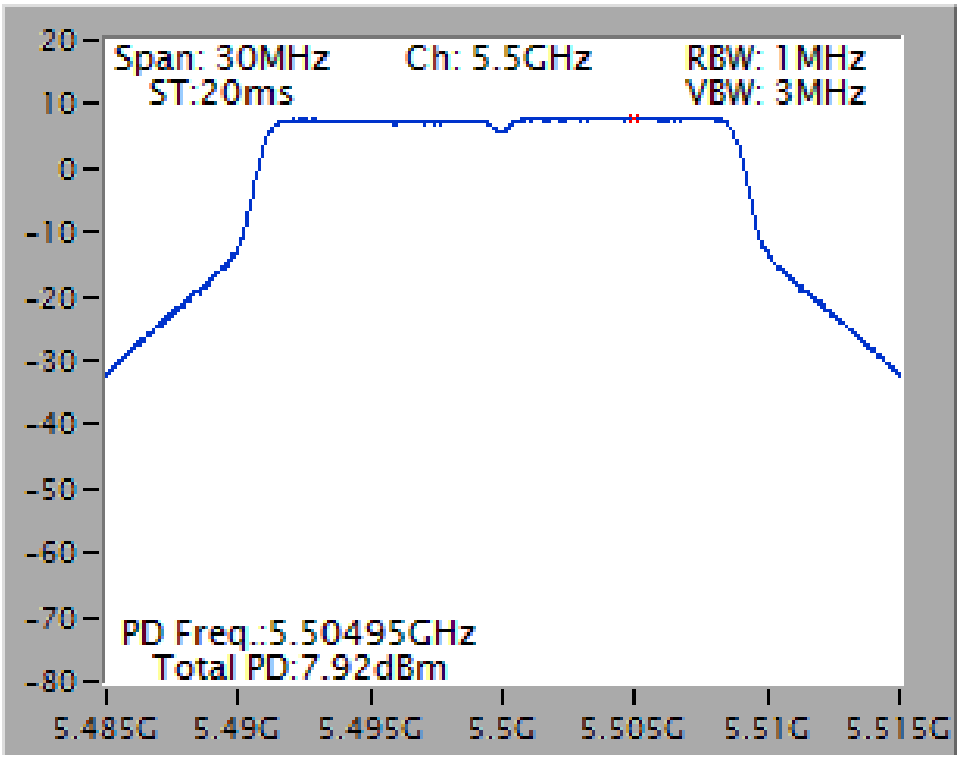


For beamforming mode

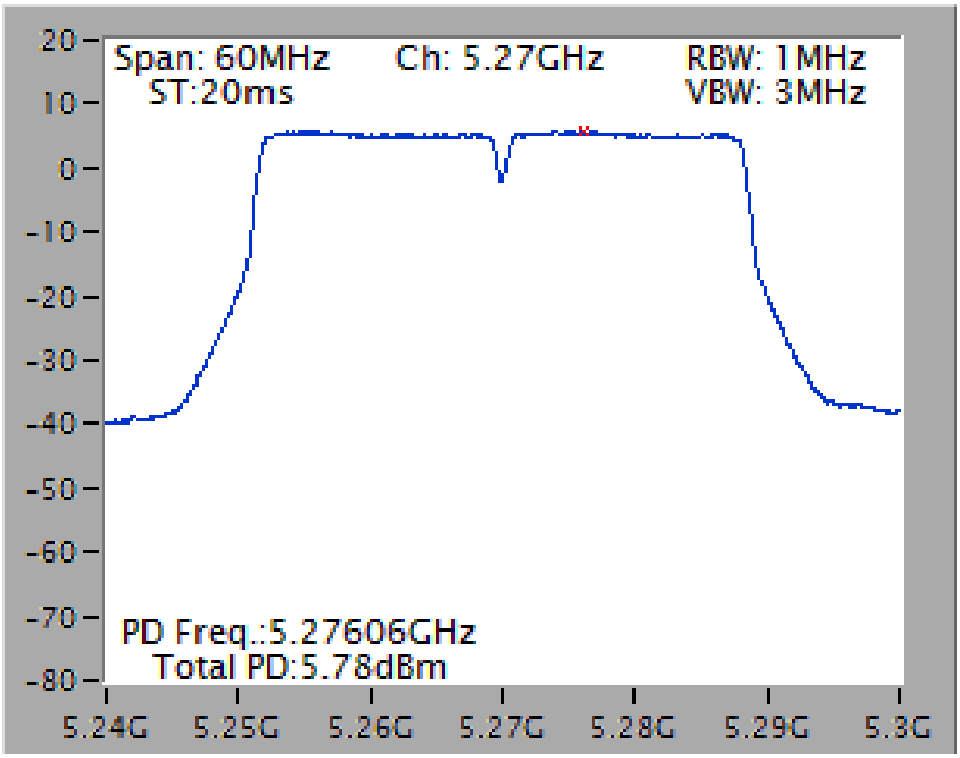
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5260 MHz



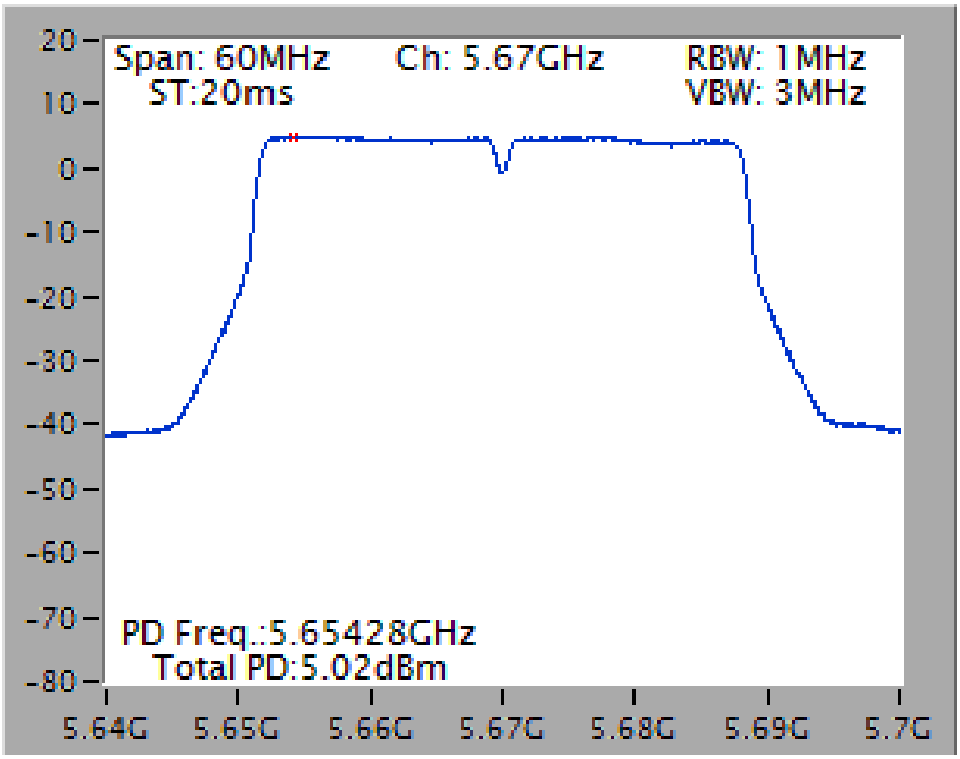
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5500 MHz



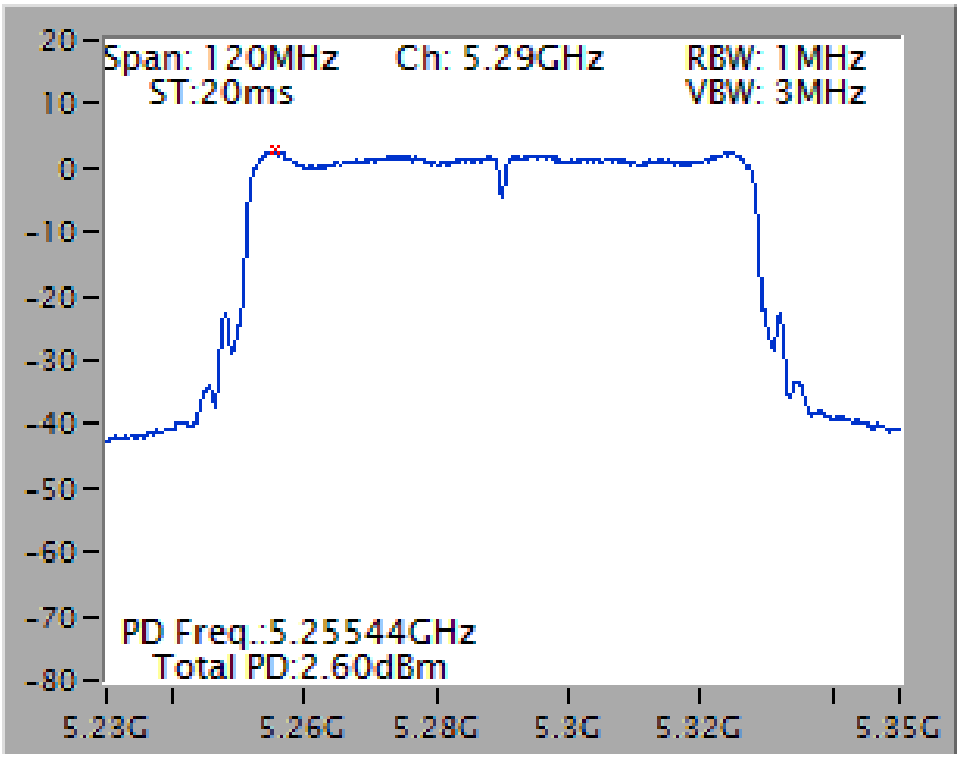
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5270 MHz



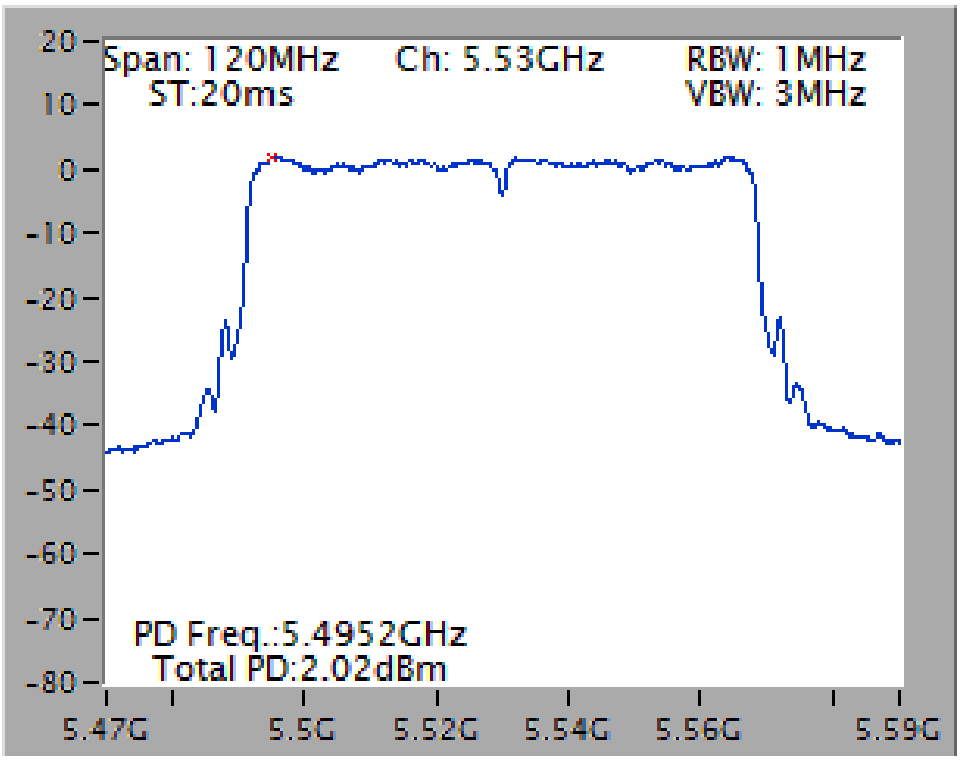
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5670 MHz



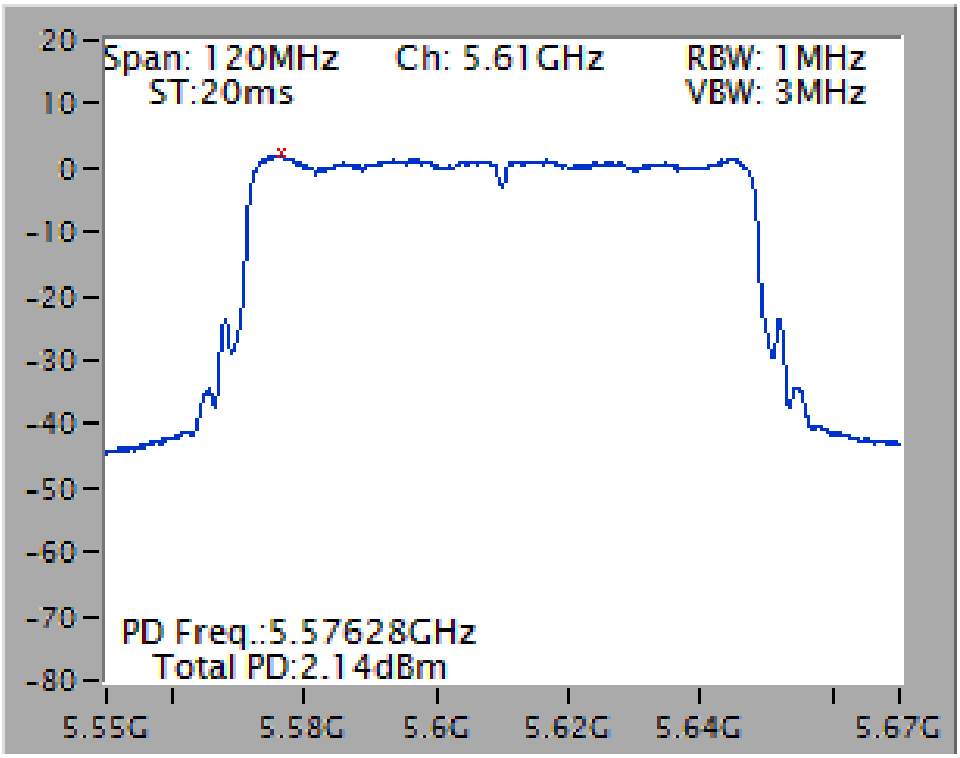
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5290 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5530 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5610 MHz



Temperature	23°C	Humidity	64%
Test Engineer	Serway Li	Test Date	Jan. 29, 2016~Feb. 05, 2016

Straddle Channel

For non-beamforming mode

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
144	5720 MHz (UNII 2C)	7.79	8.17	Complies

Note: Directional Gain=8.83dBi, so limit=11-(8.83-6)=8.17dBm/MHz

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
144	5720 MHz (UNII 3)	7.95	-3.01	4.94	27.39	Complies

Note: Directional Gain=8.61dBi, so limit=30-(8.61-6)=27.39dBm/500kHz

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
144	5720 MHz (UNII 2C)	7.73	8.17	Complies

Note: Directional Gain=8.83dBi, so limit=11-(8.83-6)=8.17dBm/MHz

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
144	5720 MHz (UNII 3)	7.82	-3.01	4.81	27.39	Complies

Note: Directional Gain=8.61dBi, so limit=30-(8.61-6)=27.39dBm/500kHz

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
142	5710 MHz (UNII 2C)	7.53	8.17	Complies

Note: Directional Gain=8.83dBi, so limit=11-(8.83-6)=8.17dBm/MHz

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
142	5710 MHz (UNII 3)	6.87	-3.01	3.86	27.39	Complies

Note: Directional Gain=8.61dBi, so limit=30-(8.61-6)=27.39dBm/500kHz

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
138	5690 MHz (UNII 2C)	5.72	8.17	Complies

Note: Directional Gain=8.83dBi, so limit=11-(8.83-6)=8.17dBm/MHz

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
138	5690 MHz (UNII 3)	4.67	-3.01	1.66	27.39	Complies

Note: Directional Gain=8.61dBi, so limit=30-(8.61-6)=27.39dBm/500kHz

For beamforming mode

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
144	5720 MHz (UNII 2C)	7.63	8.17	Complies

Note: Directional Gain=8.83dBi, so limit=11-(8.83-6)=8.17dBm/MHz

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
144	5720 MHz (UNII 3)	7.57	-3.01	4.56	27.39	Complies

Note: Directional Gain=8.61dBi, so limit=30-(8.61-6)=27.39dBm/500kHz

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
142	5710 MHz (UNII 2C)	5.02	8.17	Complies

Note: Directional Gain=8.83dBi, so limit=11-(8.83-6)=8.17dBm/MHz

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
142	5710 MHz (UNII 3)	4.30	-3.01	1.29	27.39	Complies

Note: Directional Gain=8.61dBi, so limit=30-(8.61-6)=27.39dBm/500kHz

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
138	5690 MHz (UNII 2C)	2.86	8.17	Complies

Note: Directional Gain=8.83dBi, so limit=11-(8.83-6)=8.17dBm/MHz

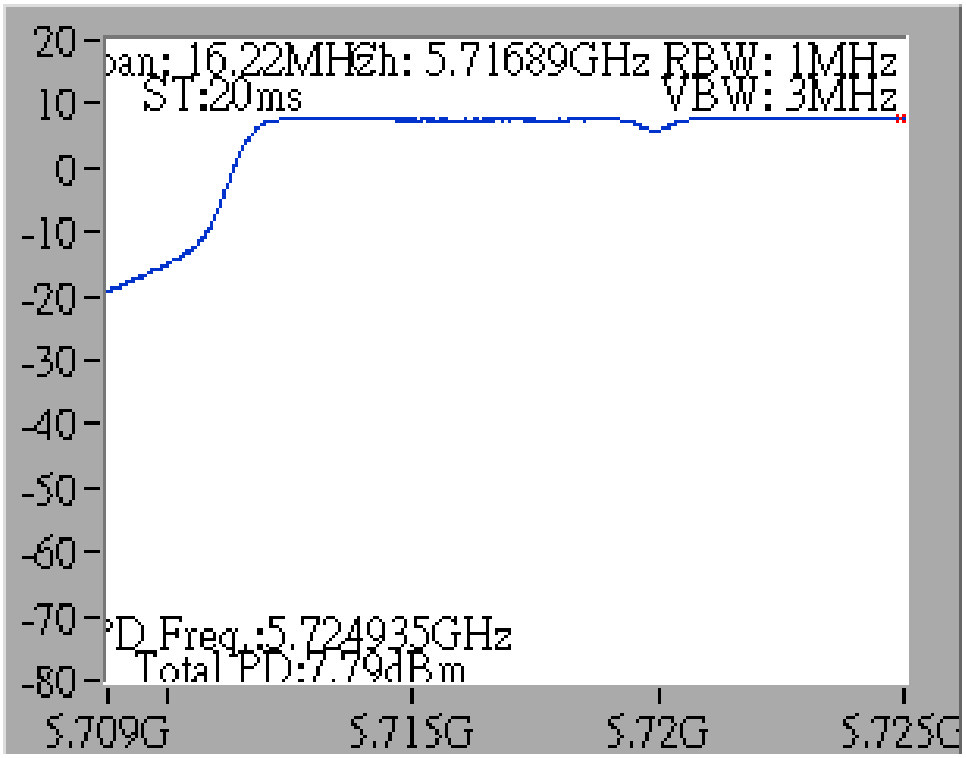
Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
138	5690 MHz (UNII 3)	1.74	-3.01	-1.27	27.39	Complies

Note: Directional Gain=8.61dBi, so limit=30-(8.61-6)=27.39dBm/500kHz

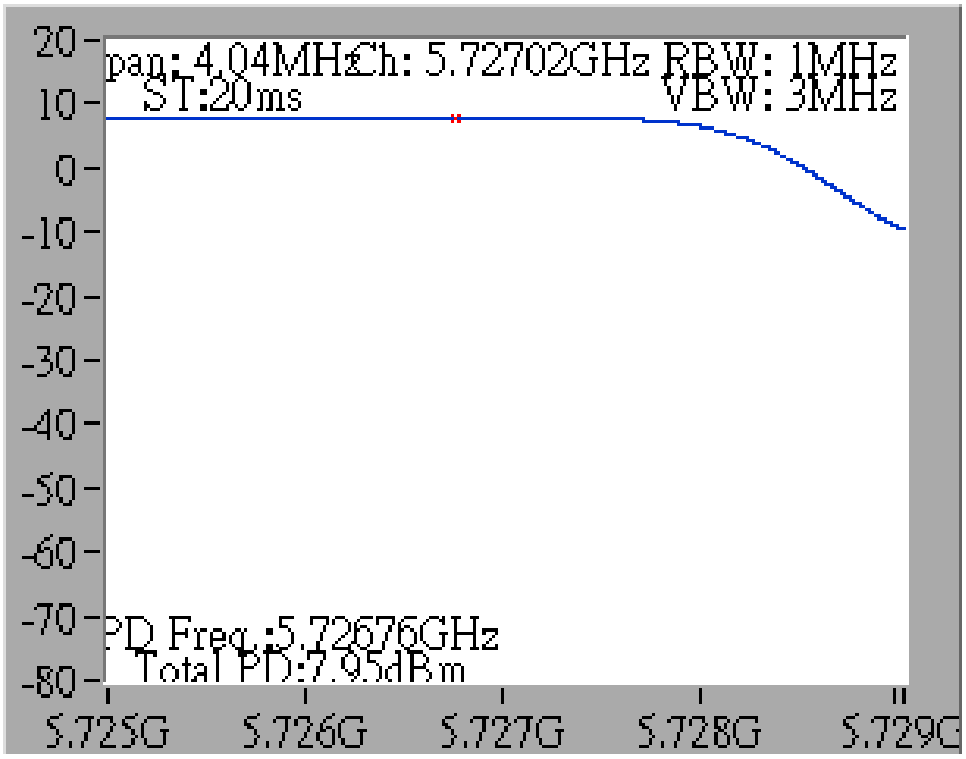
Straddle Channel

For non-beamforming mode

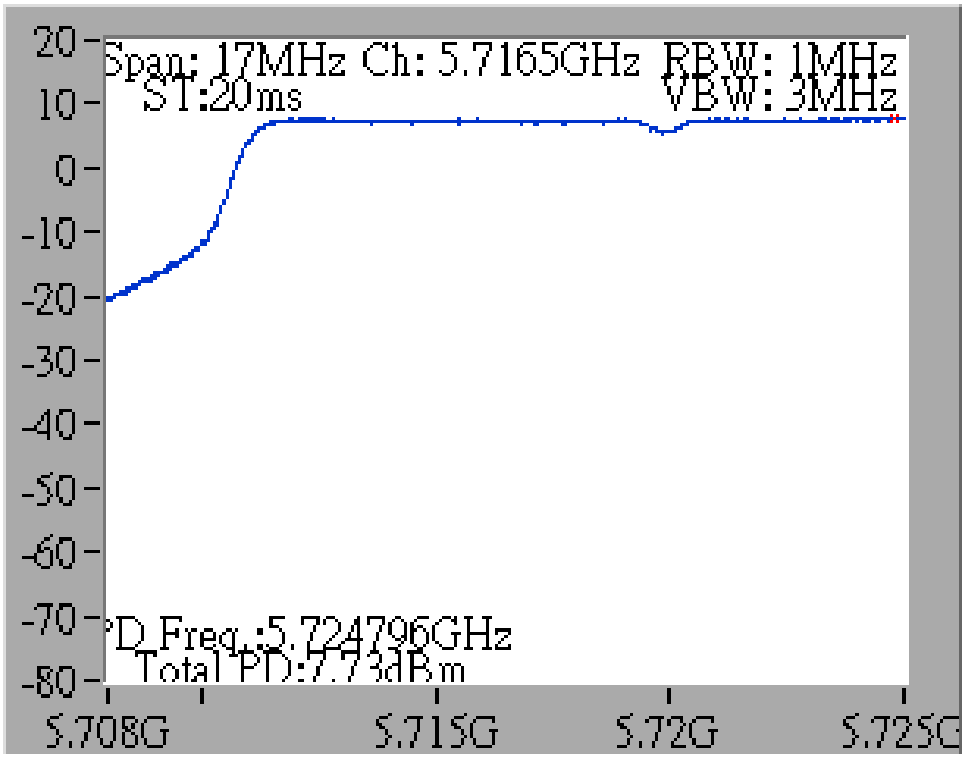
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz (UNII 2C)



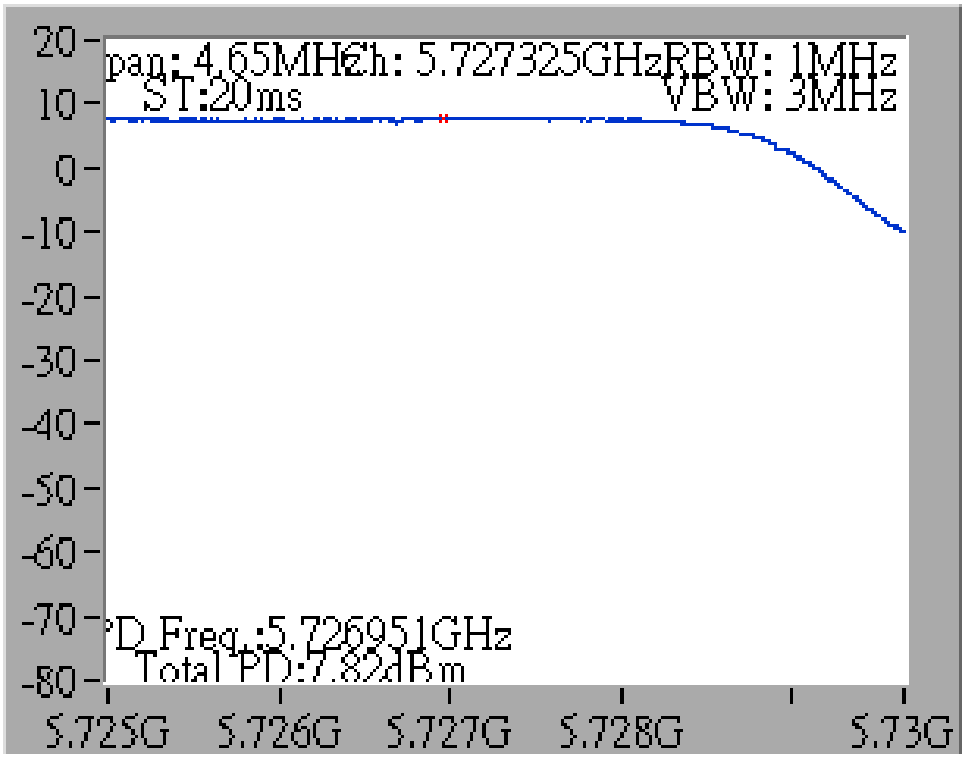
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz (UNII 3)



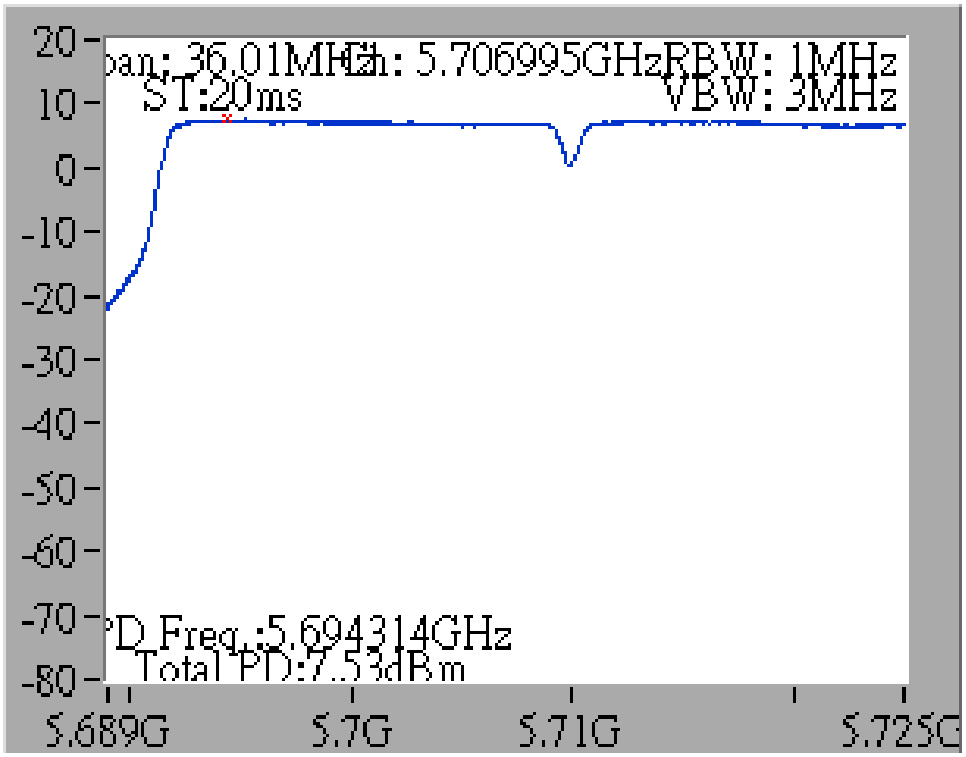
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz (UNII 2C)



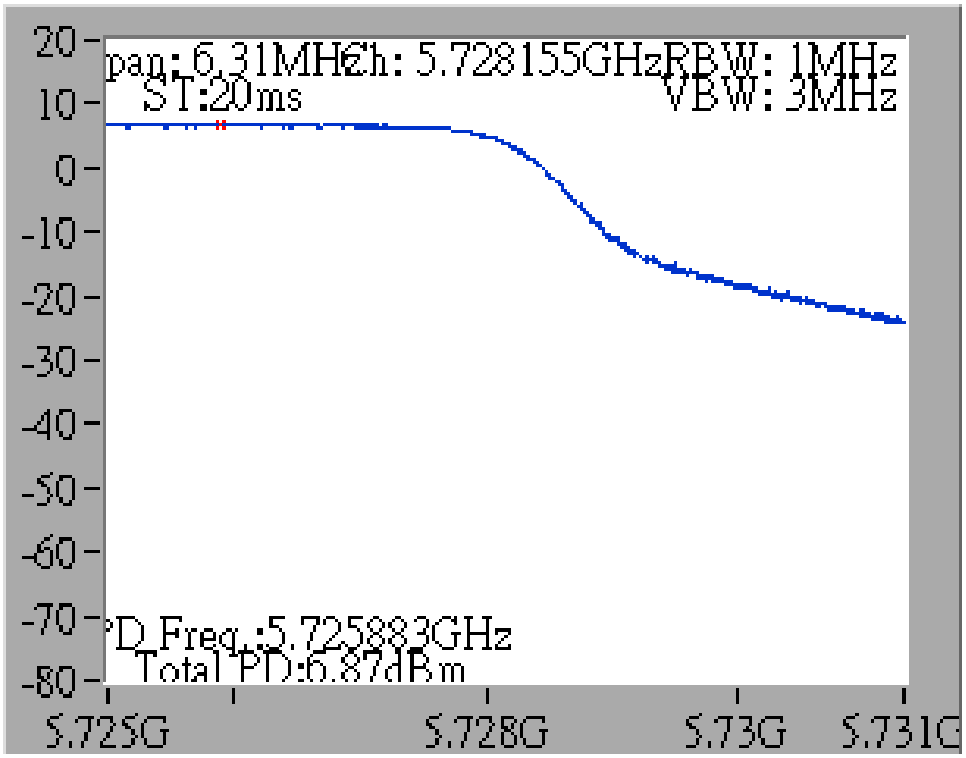
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz (UNII 3)



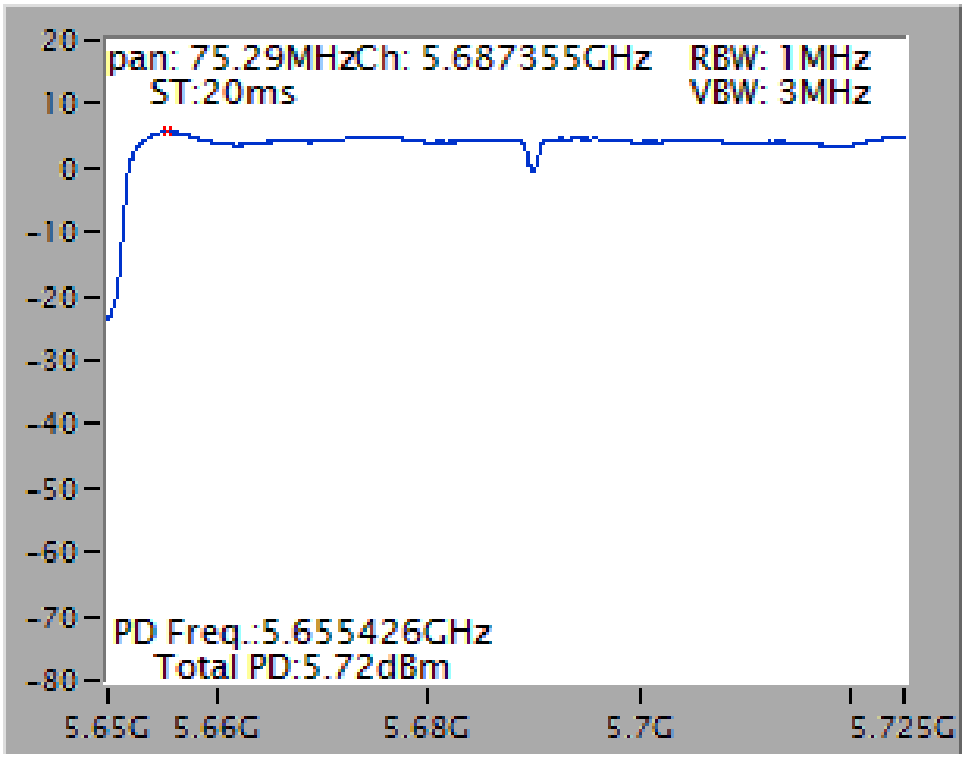
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz (UNII 2C)



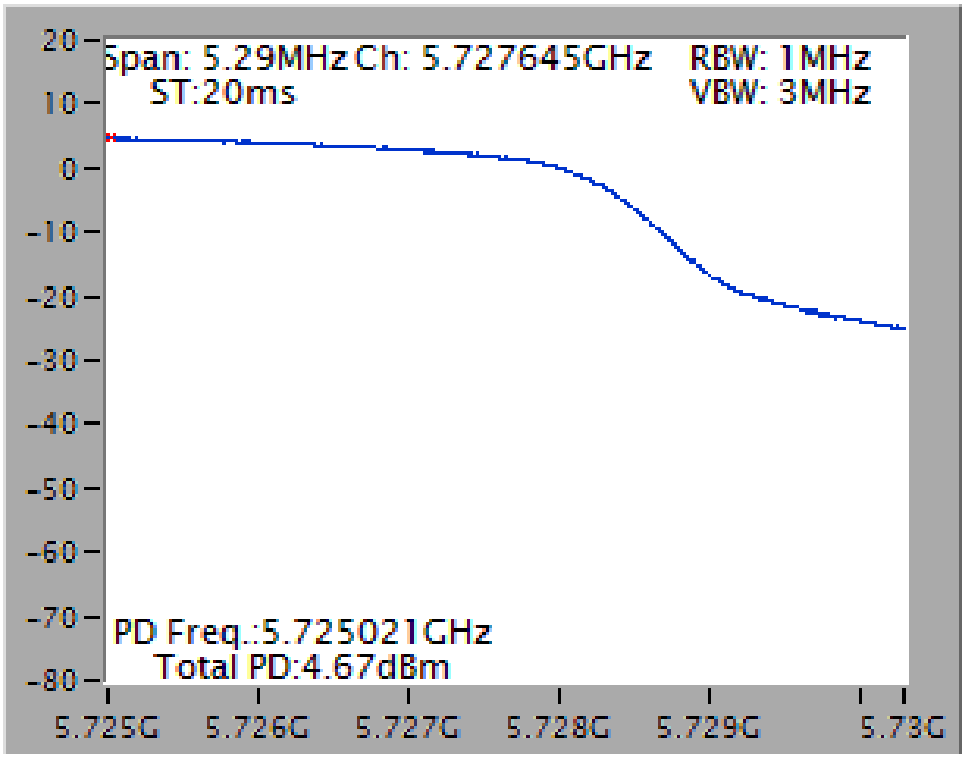
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz (UNII 3)



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz (UNII 2C)

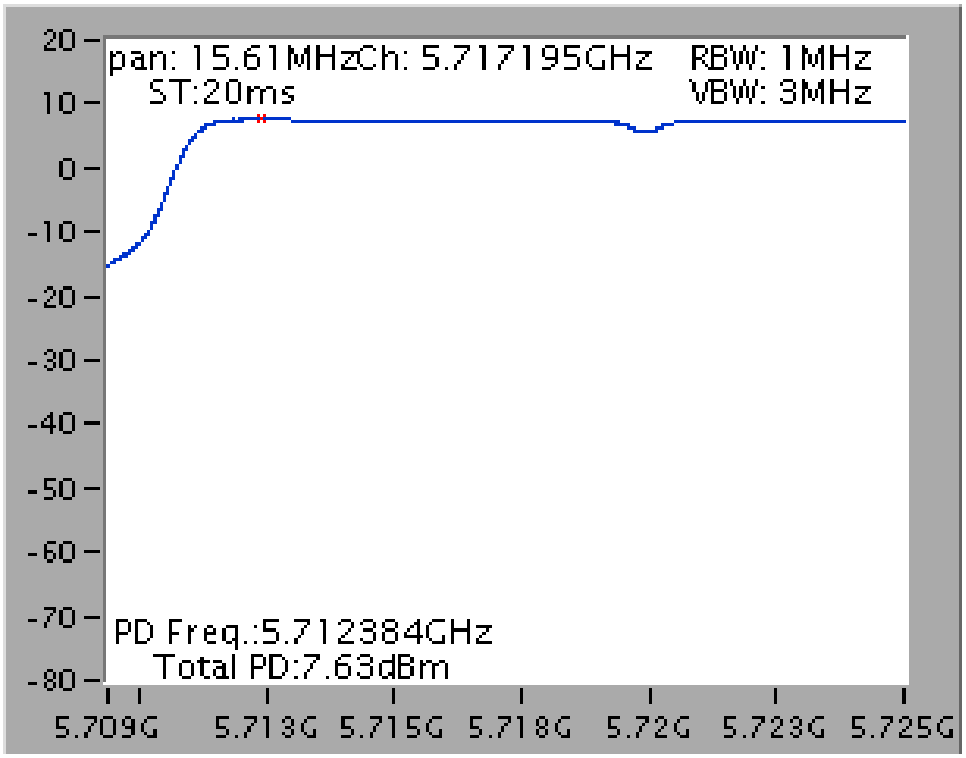


Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz (UNII 3)

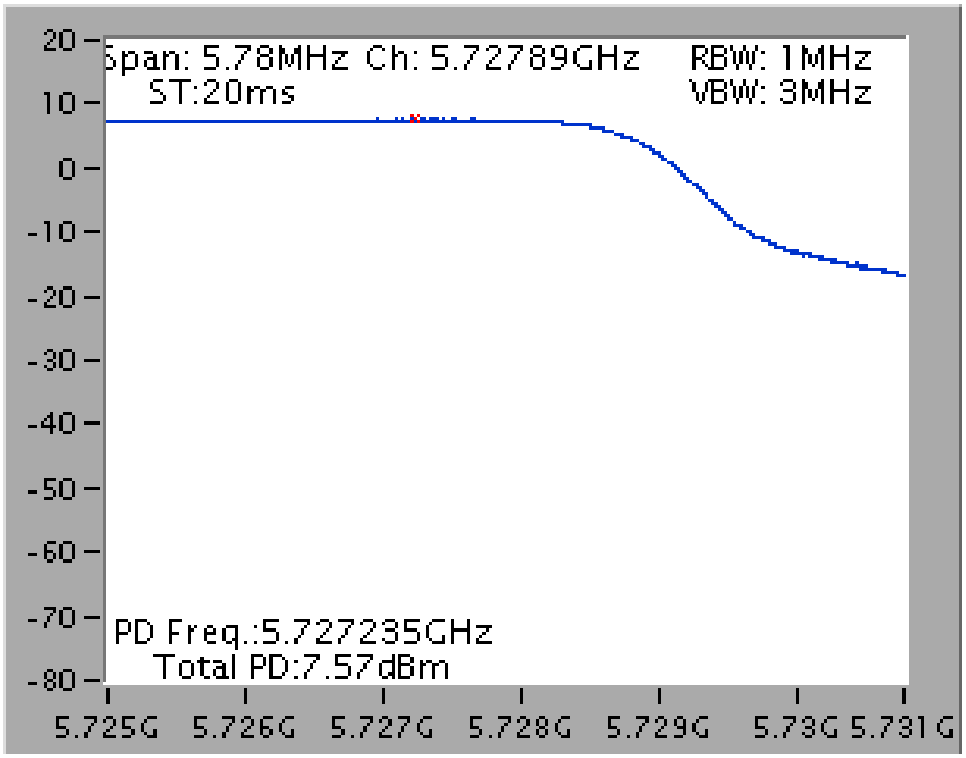


For beamforming mode

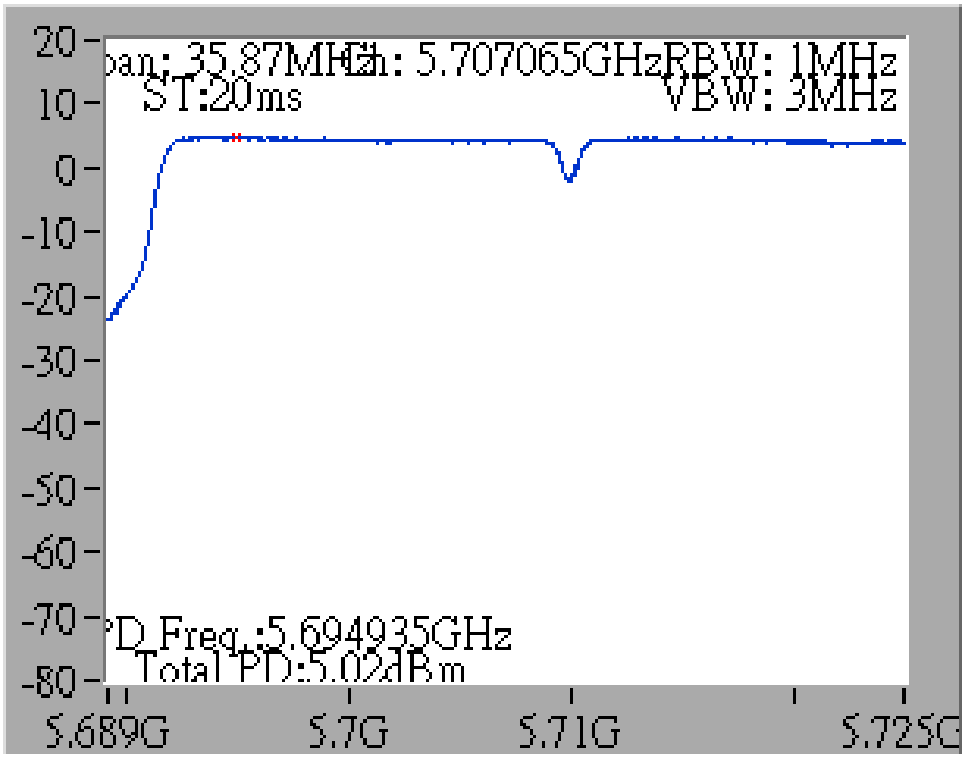
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz (UNII 2C)



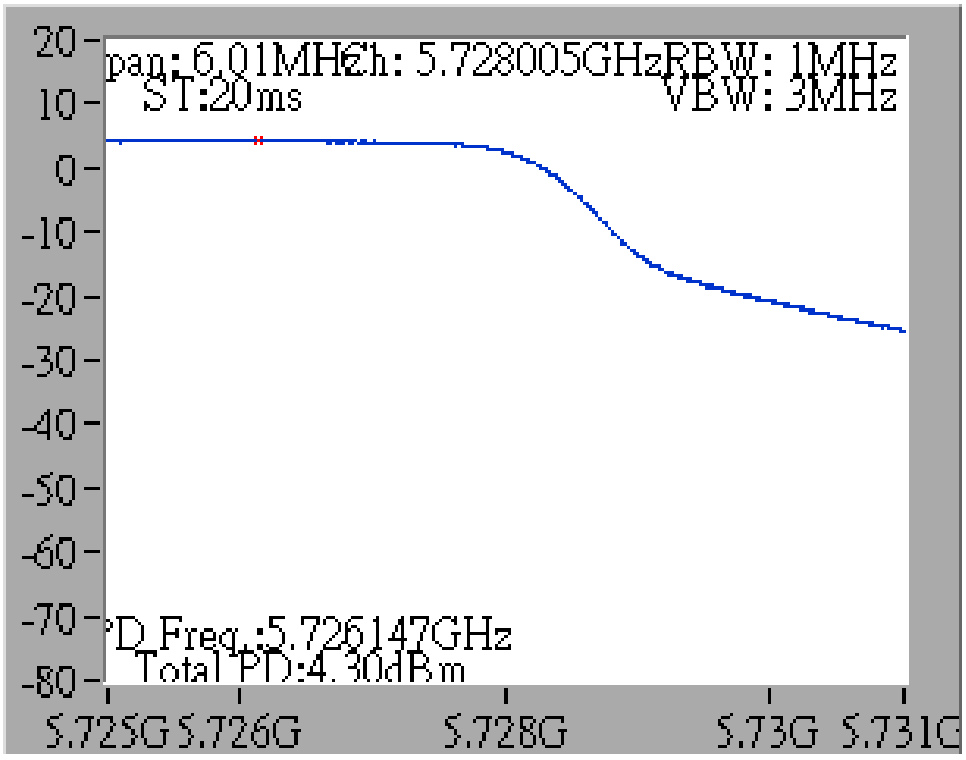
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz (UNII 3)



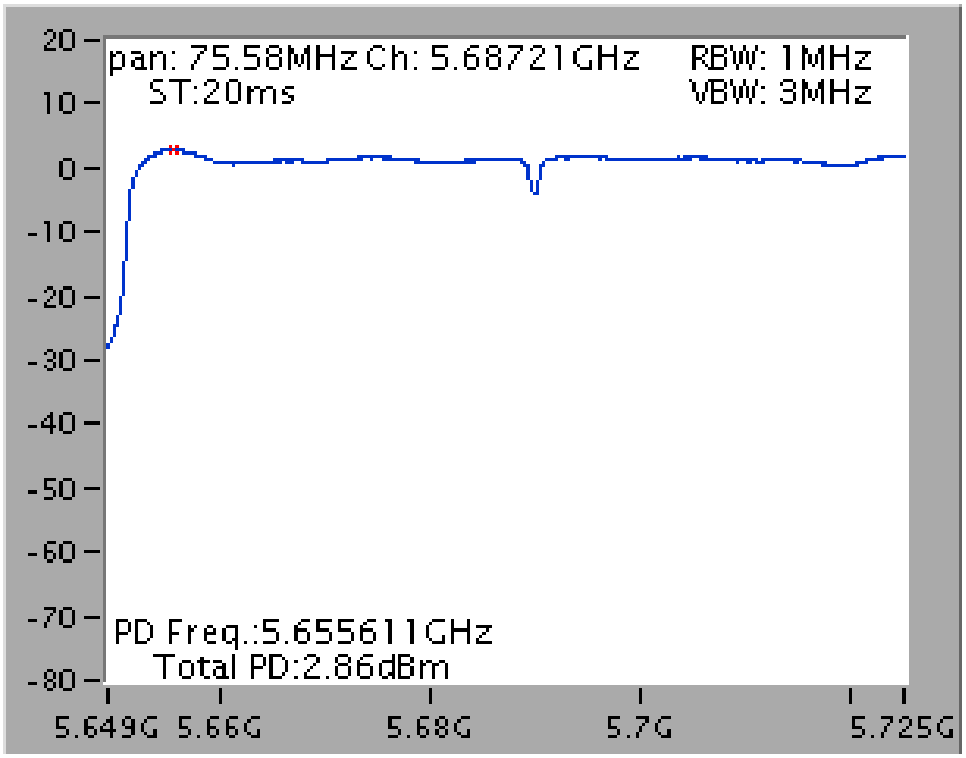
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz (UNII 2C)



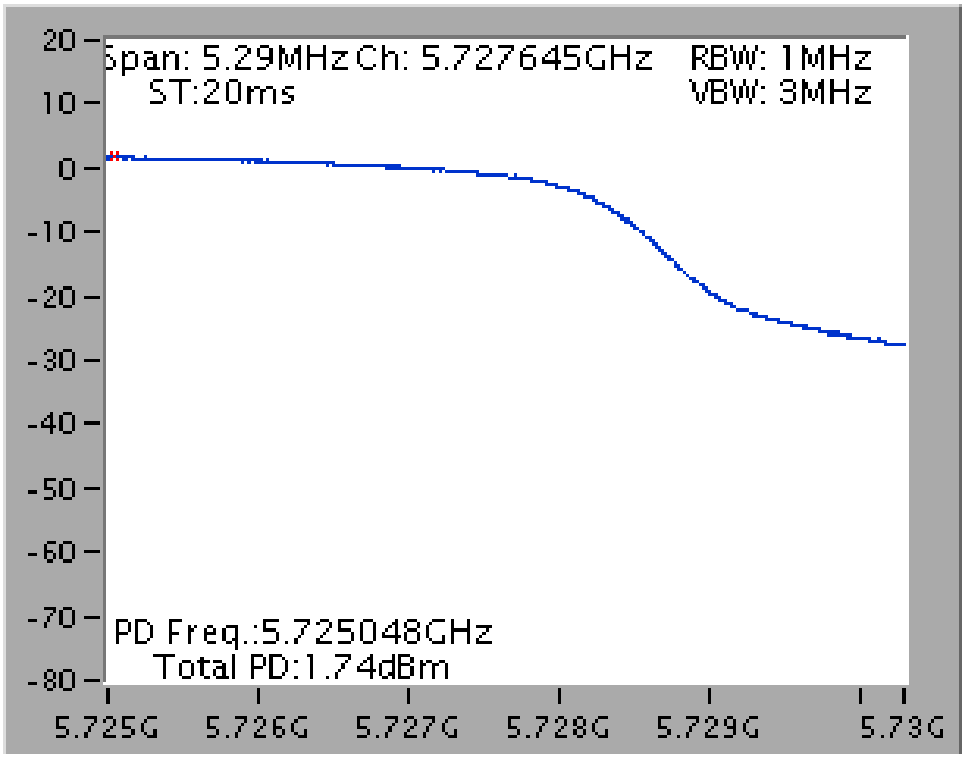
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz (UNII 3)



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz (UNII 2C)



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz (UNII 3)



4.5. Radiated Emissions Measurement

4.5.1. Limit

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

For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

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

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

4.5.2. Measuring Instruments and Setting

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

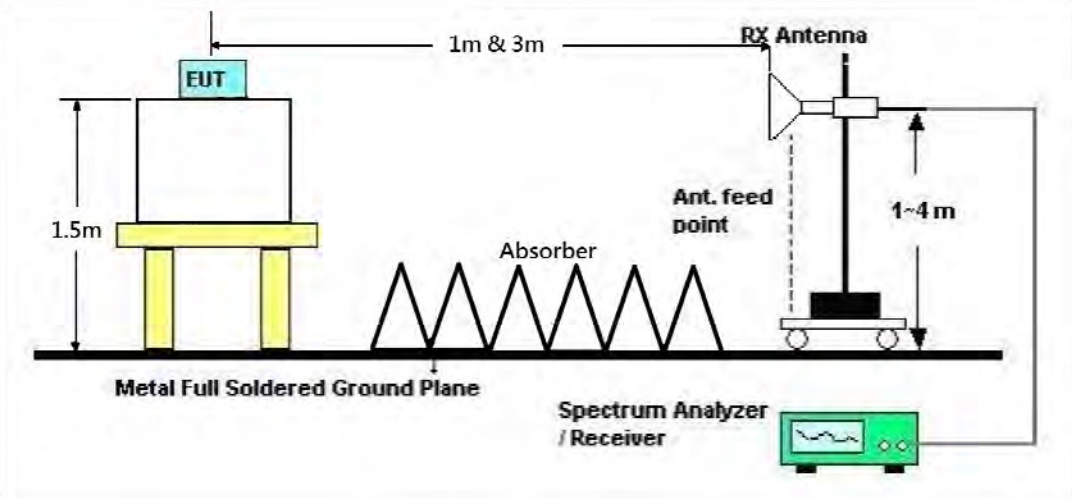
Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40 GHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for peak

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

4.5.3. Test Procedures

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

4.5.4. Test Setup Layout



4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

For Non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

The EUT was programmed to be in beamforming transmitting mode.

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

For non-beamforming mode

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11a CH 52 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15774.76	45.29	54.00	-8.71	30.15	12.54	37.92	35.32	Average	150	247	HORIZONTAL
2	15778.48	58.23	74.00	-15.77	43.09	12.54	37.92	35.32	Peak	150	247	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15785.08	58.31	74.00	-15.69	43.24	12.54	37.85	35.32	Peak	150	91	VERTICAL
2	15785.40	47.56	54.00	-6.44	32.49	12.54	37.85	35.32	Average	150	91	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11a CH 60 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15899.56	45.94	54.00	-8.06	31.03	12.55	37.73	35.37	Average	150	251	HORIZONTAL
2	15905.92	61.27	74.00	-12.73	46.36	12.55	37.73	35.37	Peak	150	251	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15895.52	47.34	54.00	-6.66	32.43	12.55	37.73	35.37	Average	126	62	VERTICAL
2	15907.96	62.79	74.00	-11.21	47.88	12.55	37.73	35.37	Peak	126	62	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11a CH 64 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15959.20	44.74	54.00	-9.26	29.92	12.55	37.66	35.39	Average	150	266	HORIZONTAL
2	15968.16	56.84	74.00	-17.16	42.08	12.55	37.60	35.39	Peak	150	266	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15952.32	47.23	54.00	-6.77	32.41	12.55	37.66	35.39	Average	150	59	VERTICAL
2	15956.28	61.12	74.00	-12.88	46.30	12.55	37.66	35.39	Peak	150	59	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11a CH 100 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11002.28	53.55	74.00	-20.45	39.47	10.37	38.50	34.79	Peak	150	293	HORIZONTAL
2	11009.16	40.98	54.00	-13.02	26.90	10.37	38.50	34.79	Average	150	293	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10991.84	54.75	74.00	-19.25	40.68	10.36	38.51	34.80	Peak	150	16	VERTICAL
2	11005.24	41.96	54.00	-12.04	27.88	10.37	38.50	34.79	Average	150	16	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11a CH 116 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11154.40	41.05	54.00	-12.95	26.86	10.32	38.66	34.79	Average	150	231	HORIZONTAL
2	11156.00	53.66	74.00	-20.34	39.47	10.32	38.66	34.79	Peak	150	231	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11150.96	56.51	74.00	-17.49	42.32	10.32	38.66	34.79	Peak	150	87	VERTICAL
2	11154.72	42.35	54.00	-11.65	28.16	10.32	38.66	34.79	Average	150	87	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11a CH 140 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11407.20	41.50	54.00	-12.50	27.10	10.22	38.98	34.80	Average	150	255	HORIZONTAL
2	11409.68	53.68	74.00	-20.32	39.28	10.22	38.98	34.80	Peak	150	255	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11400.28	55.02	74.00	-18.98	40.62	10.22	38.98	34.80	Peak	150	82	VERTICAL
2	11400.44	42.64	54.00	-11.36	28.24	10.22	38.98	34.80	Average	150	82	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11a CH 144 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11445.28	41.57	54.00	-12.43	27.15	10.20	39.02	34.80	Average	150	163	HORIZONTAL
2	11446.80	53.87	74.00	-20.13	39.45	10.20	39.02	34.80	Peak	150	163	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11437.24	42.14	54.00	-11.86	27.72	10.20	39.02	34.80	Average	150	35	VERTICAL
2	11448.04	54.27	74.00	-19.73	39.85	10.20	39.02	34.80	Peak	150	35	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15786.80	45.59	54.00	-8.41	30.52	12.54	37.85	35.32	Average	150	168	HORIZONTAL
2	15787.48	57.12	74.00	-16.88	42.05	12.54	37.85	35.32	Peak	150	168	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15774.28	59.78	74.00	-14.22	44.64	12.54	37.92	35.32	Peak	150	43	VERTICAL
2	15783.92	46.43	54.00	-7.57	31.36	12.54	37.85	35.32	Average	150	43	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 60 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15898.24	57.62	74.00	-16.38	42.71	12.55	37.73	35.37	Peak	150	156	HORIZONTAL
2	15909.68	45.77	54.00	-8.23	30.86	12.55	37.73	35.37	Average	150	156	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15904.12	57.95	74.00	-16.05	43.04	12.55	37.73	35.37	Peak	150	56	VERTICAL
2	15906.64	46.59	54.00	-7.41	31.68	12.55	37.73	35.37	Average	150	56	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 64 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15950.96	45.51	54.00	-8.49	30.69	12.55	37.66	35.39	Average	150	129	HORIZONTAL
2	15956.72	57.65	74.00	-16.35	42.83	12.55	37.66	35.39	Peak	150	129	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15952.56	45.94	54.00	-8.06	31.12	12.55	37.66	35.39	Average	150	88	VERTICAL
2	15956.64	58.16	74.00	-15.84	43.34	12.55	37.66	35.39	Peak	150	88	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11007.44	40.92	54.00	-13.08	26.84	10.37	38.50	34.79	Average	150	194	HORIZONTAL
2	11008.84	52.92	74.00	-21.08	38.84	10.37	38.50	34.79	Peak	150	194	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11000.32	55.26	74.00	-18.74	41.18	10.37	38.50	34.79	Peak	150	66	VERTICAL
2	11003.56	41.83	54.00	-12.17	27.75	10.37	38.50	34.79	Average	150	66	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 116 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11152.16	53.14	74.00	-20.86	38.95	10.32	38.66	34.79	Peak	150	193	HORIZONTAL
2	11164.08	41.15	54.00	-12.85	26.93	10.31	38.70	34.79	Average	150	193	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11155.72	41.82	54.00	-12.18	27.63	10.32	38.66	34.79	Average	150	32	VERTICAL
2	11167.32	52.79	74.00	-21.21	38.57	10.31	38.70	34.79	Peak	150	32	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 140 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11406.00	41.56	54.00	-12.44	27.16	10.22	38.98	34.80	Average	150	251	HORIZONTAL
2	11408.20	49.34	74.00	-24.66	34.94	10.22	38.98	34.80	Peak	150	251	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11393.12	54.16	74.00	-19.84	39.76	10.22	38.98	34.80	Peak	150	66	VERTICAL
2	11407.68	42.61	54.00	-11.39	28.21	10.22	38.98	34.80	Average	150	66	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11430.44	53.73	74.00	-20.27	39.31	10.20	39.02	34.80	Peak	150	196	HORIZONTAL
2	11448.08	41.52	54.00	-12.48	27.10	10.20	39.02	34.80	Average	150	196	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11431.40	42.28	54.00	-11.72	27.86	10.20	39.02	34.80	Average	150	85	VERTICAL
2	11440.80	54.05	74.00	-19.95	39.63	10.20	39.02	34.80	Peak	150	85	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15805.32	57.27	74.00	-16.73	42.20	12.54	37.85	35.32	Peak	150	182	HORIZONTAL
2	15814.64	45.59	54.00	-8.41	30.52	12.54	37.85	35.32	Average	150	182	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15802.28	45.76	54.00	-8.24	30.69	12.54	37.85	35.32	Average	150	63	VERTICAL
2	15806.04	57.61	74.00	-16.39	42.54	12.54	37.85	35.32	Peak	150	63	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 62 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15928.88	46.10	54.00	-7.90	31.28	12.55	37.66	35.39	Average	150	188	HORIZONTAL
2	15930.36	54.31	74.00	-19.69	39.49	12.55	37.66	35.39	Peak	150	188	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15926.28	57.69	74.00	-16.31	42.87	12.55	37.66	35.39	Peak	150	167	VERTICAL
2	15926.76	46.32	54.00	-7.68	31.50	12.55	37.66	35.39	Average	150	167	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11017.36	41.05	54.00	-12.95	26.97	10.37	38.50	34.79	Average	150	182	HORIZONTAL
2	11022.56	54.11	74.00	-19.89	40.03	10.37	38.50	34.79	Peak	150	182	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11019.88	41.85	54.00	-12.15	27.77	10.37	38.50	34.79	Average	150	33	VERTICAL
2	11022.48	55.25	74.00	-18.75	41.17	10.37	38.50	34.79	Peak	150	33	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 110 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11092.08	41.59	54.00	-12.41	27.46	10.34	38.58	34.79	Average	150	163	HORIZONTAL
2	11107.52	54.07	74.00	-19.93	39.91	10.33	38.62	34.79	Peak	150	163	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11094.96	56.43	74.00	-17.57	42.27	10.33	38.62	34.79	Peak	150	81	VERTICAL
2	11106.00	42.71	54.00	-11.29	28.55	10.33	38.62	34.79	Average	150	81	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 134 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11333.44	41.06	54.00	-12.94	26.72	10.24	38.90	34.80	Average	150	169	HORIZONTAL
2	11346.80	53.69	74.00	-20.31	39.35	10.24	38.90	34.80	Peak	150	169	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11334.12	41.81	54.00	-12.19	27.47	10.24	38.90	34.80	Average	150	84	VERTICAL
2	11348.96	54.43	74.00	-19.57	40.09	10.24	38.90	34.80	Peak	150	84	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11414.72	53.27	74.00	-20.73	38.87	10.22	38.98	34.80	Peak	150	187	HORIZONTAL
2	11420.32	41.43	54.00	-12.57	27.01	10.20	39.02	34.80	Average	150	187	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11422.96	41.92	54.00	-12.08	27.50	10.20	39.02	34.80	Average	150	53	VERTICAL
2	11423.60	55.21	74.00	-18.79	40.79	10.20	39.02	34.80	Peak	150	53	VERTICAL

Temperature	22℃	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	15869.71	47.21	54.00	-6.79	31.90	11.64	38.61	34.94	157	212	Average	HORIZONTAL
2	15873.07	60.45	74.00	-13.55	45.14	11.64	38.61	34.94	157	212	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	15872.08	60.42	74.00	-13.58	45.11	11.64	38.61	34.94	229	267	Peak	VERTICAL
2	15876.02	47.29	54.00	-6.71	31.89	11.67	38.67	34.94	229	267	Average	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 106 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11060.78	56.34	74.00	-17.66	43.07	9.43	38.50	34.66	92	154	Peak	HORIZONTAL
2	11062.14	42.57	54.00	-11.43	29.30	9.43	38.50	34.66	92	154	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11051.69	55.87	74.00	-18.13	42.61	9.42	38.50	34.66	132	213	Peak	VERTICAL
2	11069.38	42.69	54.00	-11.31	29.41	9.43	38.50	34.65	132	213	Average	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 122 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11216.58	56.70	74.00	-17.30	43.33	9.51	38.50	34.64	271	165	Peak	HORIZONTAL
2	11221.30	42.73	54.00	-11.27	29.34	9.53	38.50	34.64	271	165	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11219.39	42.70	54.00	-11.30	29.33	9.51	38.50	34.64	336	176	Average	VERTICAL
2	11222.81	56.35	74.00	-17.65	42.96	9.53	38.50	34.64	336	176	Peak	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11211.72	56.48	74.00	-17.52	43.11	9.51	38.50	34.64	131	170	Peak	HORIZONTAL
2	11228.89	42.70	54.00	-11.30	29.31	9.53	38.50	34.64	131	170	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11216.64	55.88	74.00	-18.12	42.51	9.51	38.50	34.64	47	137	Peak	VERTICAL
2	11221.50	42.77	54.00	-11.23	29.38	9.53	38.50	34.64	47	137	Average	VERTICAL

For beamforming mode

Temperature	22°C	**Humidity**	55%
Test Engineer	Stim Sung & Andy Tsai	**Configurations**	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	15777.74	58.83	74.00	-15.17	43.62	11.58	38.48	34.85	133	161	Peak	HORIZONTAL
2	15782.21	45.57	54.00	-8.43	30.26	11.61	38.55	34.85	133	161	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	15775.16	45.48	54.00	-8.52	30.27	11.58	38.48	34.85	120	157	Average	VERTICAL
2	15780.83	58.17	74.00	-15.83	42.96	11.58	38.48	34.85	120	157	Peak	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 60 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	10599.23	42.47	54.00	-11.53	29.76	9.16	38.50	34.95	98	151	Average	HORIZONTAL
2	10603.13	55.08	74.00	-18.92	42.37	9.16	38.50	34.95	98	151	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	10601.19	56.14	74.00	-17.86	43.43	9.16	38.50	34.95	71	143	Peak	VERTICAL
2	10601.78	42.49	54.00	-11.51	29.78	9.16	38.50	34.95	71	143	Average	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 64 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	10636.88	54.89	74.00	-19.11	42.14	9.18	38.50	34.93	58	129	Peak	HORIZONTAL
2	10637.87	42.19	54.00	-11.81	29.44	9.18	38.50	34.93	58	129	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	10638.30	54.86	74.00	-19.14	42.08	9.18	38.50	34.90	40	122	Peak	VERTICAL
2	10640.13	42.30	54.00	-11.70	29.52	9.18	38.50	34.90	40	122	Average	VERTICAL

Temperature	22℃	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	10996.52	42.81	54.00	-11.19	29.57	9.40	38.50	34.66	13	105	Average	HORIZONTAL
2	11000.05	55.37	74.00	-18.63	42.13	9.40	38.50	34.66	13	105	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	10995.24	56.32	74.00	-17.68	43.10	9.38	38.50	34.66	35	116	Peak	VERTICAL
2	11000.19	42.73	54.00	-11.27	29.49	9.40	38.50	34.66	35	116	Average	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 116 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11156.11	42.49	54.00	-11.51	29.17	9.47	38.50	34.65	48	118	Average	HORIZONTAL
2	11159.60	55.42	74.00	-18.58	42.08	9.49	38.50	34.65	48	118	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11156.92	42.51	54.00	-11.49	29.17	9.49	38.50	34.65	56	123	Average	VERTICAL
2	11162.58	55.00	74.00	-19.00	41.66	9.49	38.50	34.65	56	123	Peak	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 140 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11396.96	55.90	74.00	-18.10	42.41	9.62	38.50	34.63	74	132	Peak	HORIZONTAL
2	11400.74	42.89	54.00	-11.11	29.40	9.62	38.50	34.63	74	132	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11402.29	43.14	54.00	-10.86	29.65	9.62	38.50	34.63	91	141	Average	VERTICAL
2	11402.80	55.62	74.00	-18.38	42.13	9.62	38.50	34.63	91	141	Peak	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11441.19	43.12	54.00	-10.88	29.60	9.64	38.50	34.62	99	147	Average	HORIZONTAL
2	11444.33	56.71	74.00	-17.29	43.19	9.64	38.50	34.62	99	147	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11441.14	43.40	54.00	-10.60	29.88	9.64	38.50	34.62	119	162	Average	VERTICAL
2	11444.33	55.45	74.00	-18.55	41.93	9.64	38.50	34.62	119	162	Peak	VERTICAL

Temperature	22℃	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	15806.25	58.13	74.00	-15.87	42.82	11.61	38.55	34.85	240	137	Peak	HORIZONTAL
2	15809.62	45.34	54.00	-8.66	30.03	11.61	38.55	34.85	240	137	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	15805.29	58.38	74.00	-15.62	43.07	11.61	38.55	34.85	251	141	Peak	VERTICAL
2	15811.55	45.46	54.00	-8.54	30.15	11.61	38.55	34.85	251	141	Average	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 62 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	10621.06	55.40	74.00	-18.60	42.67	9.16	38.50	34.93	265	146	Peak	HORIZONTAL
2	10623.38	42.25	54.00	-11.75	29.50	9.18	38.50	34.93	265	146	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	10615.64	54.71	74.00	-19.29	41.98	9.16	38.50	34.93	293	156	Peak	VERTICAL
2	10622.31	42.43	54.00	-11.57	29.68	9.18	38.50	34.93	293	156	Average	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11019.26	42.63	54.00	-11.37	29.39	9.40	38.50	34.66	301	161	Average	HORIZONTAL
2	11021.43	55.67	74.00	-18.33	42.43	9.40	38.50	34.66	301	161	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11017.24	55.43	74.00	-18.57	42.19	9.40	38.50	34.66	316	166	Peak	VERTICAL
2	11018.56	42.73	54.00	-11.27	29.49	9.40	38.50	34.66	316	166	Average	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 110 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11096.35	55.76	74.00	-18.24	42.46	9.45	38.50	34.65	328	171	Peak	HORIZONTAL
2	11104.47	42.56	54.00	-11.44	29.26	9.45	38.50	34.65	328	171	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11101.75	55.76	74.00	-18.24	42.46	9.45	38.50	34.65	349	178	Peak	VERTICAL
2	11103.32	42.60	54.00	-11.40	29.30	9.45	38.50	34.65	349	178	Average	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 134 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11340.82	42.92	54.00	-11.08	29.47	9.58	38.50	34.63	328	194	Average	HORIZONTAL
2	11342.76	56.55	74.00	-17.45	43.10	9.58	38.50	34.63	328	194	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11338.37	56.07	74.00	-17.93	42.62	9.58	38.50	34.63	328	194	Peak	VERTICAL
2	11338.78	43.02	54.00	-10.98	29.57	9.58	38.50	34.63	328	194	Average	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11415.58	56.44	74.00	-17.56	42.95	9.62	38.50	34.63	308	187	Peak	HORIZONTAL
2	11421.47	43.00	54.00	-11.00	29.49	9.64	38.50	34.63	308	187	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11421.57	56.20	74.00	-17.80	42.69	9.64	38.50	34.63	281	179	Peak	VERTICAL
2	11423.43	43.22	54.00	-10.78	29.71	9.64	38.50	34.63	281	179	Average	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	15869.63	58.51	74.00	-15.49	43.20	11.64	38.61	34.94	284	110	Peak	HORIZONTAL
2	15871.27	45.64	54.00	-8.36	30.33	11.64	38.61	34.94	284	110	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	15866.38	59.38	74.00	-14.62	44.02	11.64	38.61	34.89	299	161	Peak	VERTICAL
2	15866.94	45.76	54.00	-8.24	30.40	11.64	38.61	34.89	299	161	Average	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 106 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11063.54	42.62	54.00	-11.38	29.35	9.43	38.50	34.66	312	179	Average	HORIZONTAL
2	11064.58	56.09	74.00	-17.91	42.82	9.43	38.50	34.66	312	179	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11055.56	42.48	54.00	-11.52	29.22	9.42	38.50	34.66	324	175	Average	VERTICAL
2	11064.12	55.73	74.00	-18.27	42.46	9.43	38.50	34.66	324	175	Peak	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 122 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11220.37	42.42	54.00	-11.58	29.05	9.51	38.50	34.64	303	156	Average	HORIZONTAL
2	11224.55	55.62	74.00	-18.38	42.23	9.53	38.50	34.64	303	156	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11217.98	55.63	74.00	-18.37	42.26	9.51	38.50	34.64	124	169	Peak	VERTICAL
2	11222.88	42.61	54.00	-11.39	29.22	9.53	38.50	34.64	124	169	Average	VERTICAL

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11379.10	42.85	54.00	-11.15	29.38	9.60	38.50	34.63	328	168	Average	HORIZONTAL
2	11384.29	55.62	74.00	-18.38	42.15	9.60	38.50	34.63	328	168	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11376.06	55.67	74.00	-18.33	42.20	9.60	38.50	34.63	355	164	Peak	VERTICAL
2	11382.39	42.81	54.00	-11.19	29.34	9.60	38.50	34.63	355	164	Average	VERTICAL

Note:

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

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

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

4.6. Band Edge Emissions Measurement

4.6.1. Limit

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

For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

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

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

4.6.2. Measuring Instruments and Setting

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

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for Peak

4.6.3. Test Procedures

1. The test procedure is the same as section 4.5.3.

4.6.4. Test Setup Layout

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

4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

For Non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

The EUT was programmed to be in beamforming transmitting mode.

4.6.7. Test Result of Band Edge and Fundamental Emissions

For non-beamforming mode

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11a CH 52, 60, 64 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 24, 2015		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5145.38	51.16	54.00	-2.84	44.92	7.20	34.04	35.00	Average	190	104	VERTICAL
2	5146.96	63.54	74.00	-10.46	57.30	7.20	34.04	35.00	Peak	190	104	VERTICAL
3	5262.60	123.12			116.65	7.23	34.24	35.00	Peak	190	104	VERTICAL
4	5263.04	114.08			107.61	7.23	34.24	35.00	Average	190	104	VERTICAL
5	5358.99	52.06	54.00	-1.94	45.42	7.26	34.38	35.00	Average	190	104	VERTICAL
6	5388.08	64.71	74.00	-9.29	58.01	7.26	34.43	34.99	Peak	190	104	VERTICAL

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

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5302.60	122.70			116.18	7.24	34.28	35.00	Peak	198	105	VERTICAL
2	5303.18	112.58			106.06	7.24	34.28	35.00	Average	198	105	VERTICAL
3	5350.00	52.89	54.00	-1.11	46.28	7.25	34.36	35.00	Average	198	105	VERTICAL
4	5354.41	65.06	74.00	-8.94	58.42	7.26	34.38	35.00	Peak	198	105	VERTICAL

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

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5322.75	119.71			113.16	7.24	34.31	35.00	Peak	204	106	VERTICAL
2	5323.04	109.79			103.24	7.24	34.31	35.00	Average	204	106	VERTICAL
3	5350.00	53.18	54.00	-0.82	46.57	7.25	34.36	35.00	Average	204	106	VERTICAL
4	5355.75	66.74	74.00	-7.26	60.10	7.26	34.38	35.00	Peak	204	106	VERTICAL

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

Temperature	22℃	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11a CH 100, 116, 140 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 24, 2015		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5457.60	66.08	74.00	-7.92	59.26	7.28	34.53	34.99	Peak	206	124	VERTICAL
2	5458.32	52.22	54.00	-1.78	45.40	7.28	34.53	34.99	Average	206	124	VERTICAL
3	5464.83	68.04	74.00	-5.96	61.20	7.28	34.55	34.99	Peak	206	124	VERTICAL
4	5464.98	53.13	54.00	-0.87	46.29	7.28	34.55	34.99	Average	206	124	VERTICAL
5	5504.49	109.14			102.24	7.29	34.60	34.99	Average	206	124	VERTICAL
6	5505.50	119.34			112.44	7.29	34.60	34.99	Peak	206	124	VERTICAL

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

Channel 116

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5423.13	51.88	54.00	-2.12	45.12	7.27	34.48	34.99	Average	201	120	VERTICAL
2	5458.44	66.05	74.00	-7.95	59.23	7.28	34.53	34.99	Peak	201	120	VERTICAL
3	5465.95	51.95	54.00	-2.05	45.11	7.28	34.55	34.99	Average	201	120	VERTICAL
4	5467.11	64.91	74.00	-9.09	58.07	7.28	34.55	34.99	Peak	201	120	VERTICAL
5	5585.79	112.82			105.93	7.28	34.62	35.01	Average	201	120	VERTICAL
6	5585.79	121.97			115.08	7.28	34.62	35.01	Peak	201	120	VERTICAL
7	5744.40	51.48	54.00	-2.52	44.60	7.27	34.65	35.04	Average	201	120	VERTICAL
8	5744.98	63.81	74.00	-10.19	56.93	7.27	34.65	35.04	Peak	201	120	VERTICAL

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

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5693.20	108.30			101.42	7.27	34.64	35.03	Average	196	280	VERTICAL
2	5693.63	117.79			110.91	7.27	34.64	35.03	Peak	196	280	VERTICAL
3	5725.33	53.17	54.00	-0.83	46.28	7.27	34.65	35.03	Average	196	280	VERTICAL
4	5732.71	69.95	74.00	-4.05	63.07	7.27	34.65	35.04	Peak	196	280	VERTICAL

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

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11a CH 144 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 24, 2015		

Channel 144

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5713.05	112.46			105.58	7.27	34.64	35.03	Average	205	280	VERTICAL
2	5713.05	121.06			114.18	7.27	34.64	35.03	Peak	205	280	VERTICAL
3	5866.45	62.40	74.00	-11.60	55.53	7.26	34.67	35.06	Peak	205	280	VERTICAL
4	5873.98	50.62	54.00	-3.38	43.74	7.26	34.68	35.06	Average	205	280	VERTICAL

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

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52, 60, 64 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 24, 2015~Dec. 25, 2015		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5119.60	49.09	54.00	-4.91	42.92	7.19	33.99	35.01	Average	214	107	VERTICAL
2	5120.20	61.44	74.00	-12.56	55.27	7.19	33.99	35.01	Peak	214	107	VERTICAL
3	5261.80	112.31			105.88	7.22	34.21	35.00	Average	214	107	VERTICAL
4	5263.00	122.85			116.38	7.23	34.24	35.00	Peak	214	107	VERTICAL
5	5364.40	50.11	54.00	-3.89	43.46	7.26	34.38	34.99	Average	214	107	VERTICAL
6	5371.60	63.09	74.00	-10.91	56.41	7.26	34.41	34.99	Peak	214	107	VERTICAL

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

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5301.60	122.55			116.03	7.24	34.28	35.00	Peak	203	107	VERTICAL
2	5302.80	112.03			105.51	7.24	34.28	35.00	Average	203	107	VERTICAL
3	5350.00	52.83	54.00	-1.17	46.22	7.25	34.36	35.00	Average	203	107	VERTICAL
4	5350.40	65.91	74.00	-8.09	59.30	7.25	34.36	35.00	Peak	203	107	VERTICAL

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

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5322.40	119.54			112.99	7.24	34.31	35.00	Peak	198	106	VERTICAL
2	5322.80	109.31			102.76	7.24	34.31	35.00	Average	198	106	VERTICAL
3	5350.00	53.49	54.00	-0.51	46.88	7.25	34.36	35.00	Average	198	106	VERTICAL
4	5350.60	67.92	74.00	-6.08	61.31	7.25	34.36	35.00	Peak	198	106	VERTICAL

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

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100, 116, 140 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5456.80	65.41	74.00	-8.59	58.59	7.28	34.53	34.99	Peak	205	123	VERTICAL
2	5458.00	52.10	54.00	-1.90	45.28	7.28	34.53	34.99	Average	205	123	VERTICAL
3	5464.60	53.20	54.00	-0.80	46.36	7.28	34.55	34.99	Average	205	123	VERTICAL
4	5466.20	68.04	74.00	-5.96	61.20	7.28	34.55	34.99	Peak	205	123	VERTICAL
5	5505.20	109.16			102.26	7.29	34.60	34.99	Average	205	123	VERTICAL
6	5505.20	119.93			113.03	7.29	34.60	34.99	Peak	205	123	VERTICAL

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

Channel 116

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5422.40	50.46	54.00	-3.54	43.70	7.27	34.48	34.99	Average	204	121	VERTICAL
2	5452.00	63.50	74.00	-10.50	56.68	7.28	34.53	34.99	Peak	204	121	VERTICAL
3	5464.40	63.76	74.00	-10.24	56.92	7.28	34.55	34.99	Peak	204	121	VERTICAL
4	5466.00	50.47	54.00	-3.53	43.63	7.28	34.55	34.99	Average	204	121	VERTICAL
5	5585.60	111.31			104.42	7.28	34.62	35.01	Average	204	121	VERTICAL
6	5585.60	122.04			115.15	7.28	34.62	35.01	Peak	204	121	VERTICAL
7	5738.40	62.16	74.00	-11.84	55.28	7.27	34.65	35.04	Peak	204	121	VERTICAL
8	5744.80	49.01	54.00	-4.99	42.13	7.27	34.65	35.04	Average	204	121	VERTICAL

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

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5701.60	117.03			110.15	7.27	34.64	35.03	Peak	201	133	VERTICAL
2	5701.80	106.52			99.64	7.27	34.64	35.03	Average	201	133	VERTICAL
3	5725.00	53.23	54.00	-0.77	46.34	7.27	34.65	35.03	Average	201	133	VERTICAL
4	5725.00	68.44	74.00	-5.56	61.55	7.27	34.65	35.03	Peak	201	133	VERTICAL

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

Temperature	22℃	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Channel 144

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5723.20	110.23			103.34	7.27	34.65	35.03	Average	181	62	VERTICAL
2	5723.20	120.36			113.47	7.27	34.65	35.03	Peak	181	62	VERTICAL
3	5883.20	49.23	54.00	-4.77	42.36	7.26	34.68	35.07	Average	181	62	VERTICAL
4	5886.40	61.49	74.00	-12.51	54.62	7.26	34.68	35.07	Peak	181	62	VERTICAL

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

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54, 62 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015, Jan. 08, 2016		

Channel 54

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5273.20	109.68			103.21	7.23	34.24	35.00	Average	199	104	VERTICAL
2	5273.60	119.38			112.91	7.23	34.24	35.00	Peak	199	104	VERTICAL
3	5352.80	66.97	74.00	-7.03	60.36	7.25	34.36	35.00	Peak	199	104	VERTICAL
4	5353.60	53.47	54.00	-0.53	46.86	7.25	34.36	35.00	Average	199	104	VERTICAL

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

Channel 62

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5312.80	102.68			94.04	8.23	34.01	33.60	210	102	Average	VERTICAL
2	5313.60	112.22			103.58	8.23	34.01	33.60	210	102	Peak	VERTICAL
3	5351.20	66.68	74.00	-7.32	58.02	8.20	34.06	33.60	210	102	Peak	VERTICAL
4	5351.20	53.43	54.00	-0.57	44.77	8.20	34.06	33.60	210	102	Average	VERTICAL

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

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102, 110, 134 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Channel 102

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5452.80	63.47	74.00	-10.53	56.65	7.28	34.53	34.99	Peak	199	123	VERTICAL
2	5456.40	50.47	54.00	-3.53	43.65	7.28	34.53	34.99	Average	199	123	VERTICAL
3	5467.60	53.19	54.00	-0.81	46.35	7.28	34.55	34.99	Average	199	123	VERTICAL
4	5467.60	68.26	74.00	-5.74	61.42	7.28	34.55	34.99	Peak	199	123	VERTICAL
5	5494.40	103.46			96.58	7.29	34.58	34.99	Average	199	123	VERTICAL
6	5495.20	113.87			106.97	7.29	34.60	34.99	Peak	199	123	VERTICAL

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

Channel 110

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5455.20	52.48	54.00	-1.52	45.66	7.28	34.53	34.99	Average	193	123	VERTICAL
2	5457.00	64.50	74.00	-9.50	57.68	7.28	34.53	34.99	Peak	193	123	VERTICAL
3	5467.20	53.04	54.00	-0.96	46.20	7.28	34.55	34.99	Average	193	123	VERTICAL
4	5467.20	67.95	74.00	-6.05	61.11	7.28	34.55	34.99	Peak	193	123	VERTICAL
5	5535.00	118.69			111.79	7.29	34.61	35.00	Peak	193	123	VERTICAL
6	5555.40	109.03			102.13	7.29	34.61	35.00	Average	193	123	VERTICAL

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

Channel 134

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5653.60	106.17			99.28	7.28	34.63	35.02	Average	200	127	VERTICAL
2	5653.60	116.01			109.12	7.28	34.63	35.02	Peak	200	127	VERTICAL
3	5733.20	53.35	54.00	-0.65	46.47	7.27	34.65	35.04	Average	200	127	VERTICAL
4	5733.60	67.87	74.00	-6.13	60.99	7.27	34.65	35.04	Peak	200	127	VERTICAL

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

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Channel 102

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5718.80	117.11			110.23	7.27	34.64	35.03	Peak	190	245	VERTICAL
2	5719.60	107.91			101.03	7.27	34.64	35.03	Average	190	245	VERTICAL
3	5858.00	48.91	54.00	-5.09	42.04	7.26	34.67	35.06	Average	190	245	VERTICAL
4	5858.00	61.51	74.00	-12.49	54.64	7.26	34.67	35.06	Peak	190	245	VERTICAL

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

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58, 106, 122 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015, Jan. 08, 2016		

Channel 58

	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	5080.00	48.11	54.00	-5.89	40.27	7.86	33.62	33.64	224	99	Average	VERTICAL
2	5137.00	61.70	74.00	-12.30	53.52	8.09	33.72	33.63	224	99	Peak	VERTICAL
3	5255.00	108.40			99.83	8.27	33.91	33.61	224	99	Peak	VERTICAL
4	5294.00	98.26			89.65	8.24	33.98	33.61	224	99	Average	VERTICAL
5	5354.00	66.53	74.00	-7.47	57.87	8.20	34.06	33.60	224	99	Peak	VERTICAL
6	5354.00	53.39	54.00	-0.61	44.73	8.20	34.06	33.60	224	99	Average	VERTICAL

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

Channel 106

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5436.00	63.17	74.00	-10.83	56.39	7.27	34.50	34.99	Peak	205	123	VERTICAL
2	5458.00	51.72	54.00	-2.28	44.90	7.28	34.53	34.99	Average	205	123	VERTICAL
3	5467.00	53.12	54.00	-0.88	46.28	7.28	34.55	34.99	Average	205	123	VERTICAL
4	5467.00	67.90	74.00	-6.10	61.06	7.28	34.55	34.99	Peak	205	123	VERTICAL
5	5495.00	101.35			94.47	7.29	34.58	34.99	Average	205	123	VERTICAL
6	5495.00	110.60			103.72	7.29	34.58	34.99	Peak	205	123	VERTICAL
7	5725.00	48.03	54.00	-5.97	41.14	7.27	34.65	35.03	Average	205	123	VERTICAL
8	5737.00	59.31	74.00	-14.69	52.43	7.27	34.65	35.04	Peak	205	123	VERTICAL

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

Channel 122

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5456.00	52.01	54.00	-1.99	45.19	7.28	34.53	34.99	Average	207	121	VERTICAL
2	5457.00	68.80	74.00	-5.20	61.98	7.28	34.53	34.99	Peak	207	121	VERTICAL
3	5467.00	52.76	54.00	-1.24	45.92	7.28	34.55	34.99	Average	207	121	VERTICAL
4	5467.00	68.70	74.00	-5.30	61.86	7.28	34.55	34.99	Peak	207	121	VERTICAL
5	5576.00	105.52			98.62	7.28	34.62	35.00	Average	207	121	VERTICAL
6	5576.00	115.08			108.18	7.28	34.62	35.00	Peak	207	121	VERTICAL
7	5735.00	53.32	54.00	-0.68	46.44	7.27	34.65	35.04	Average	207	121	VERTICAL
8	5735.00	68.61	74.00	-5.39	61.73	7.27	34.65	35.04	Peak	207	121	VERTICAL

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

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138/ Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 25, 2015		

Channel 138

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5655.00	114.68			107.79	7.28	34.63	35.02	Peak	210	116	VERTICAL
2	5656.00	105.62			98.73	7.28	34.63	35.02	Average	210	116	VERTICAL
3	5850.00	50.93	54.00	-3.07	44.06	7.26	34.67	35.06	Average	210	116	VERTICAL
4	5850.00	63.69	74.00	-10.31	56.82	7.26	34.67	35.06	Peak	210	116	VERTICAL

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

For beamforming mode

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52, 60, 64 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	Cm		
1	5130.99	61.50	74.00	-12.50	56.61	6.07	33.29	34.47	140	202	Peak	VERTICAL
2	5149.42	48.78	54.00	-5.22	43.83	6.11	33.31	34.47	140	202	Average	VERTICAL
3	5265.61	123.81			118.41	6.39	33.48	34.47	140	202	Peak	VERTICAL
4	5268.01	113.14			107.74	6.39	33.48	34.47	140	202	Average	VERTICAL
5	5413.05	63.76	74.00	-10.24	57.84	6.72	33.67	34.47	140	202	Peak	VERTICAL
6	5421.06	51.24	54.00	-2.76	45.27	6.75	33.69	34.47	140	202	Average	VERTICAL

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

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	Cm		
1	5292.63	124.25			118.73	6.47	33.52	34.47	140	193	Peak	VERTICAL
2	5297.76	112.66			107.14	6.47	33.52	34.47	140	193	Average	VERTICAL
3	5350.00	53.16	54.00	-0.84	47.46	6.58	33.59	34.47	140	193	Average	VERTICAL
4	5351.60	66.53	74.00	-7.47	60.83	6.58	33.59	34.47	140	193	Peak	VERTICAL

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

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	Cm		
1	5326.09	109.57			103.92	6.55	33.57	34.47	110	196	Average	VERTICAL
2	5327.37	120.97			115.32	6.55	33.57	34.47	110	196	Peak	VERTICAL
3	5350.00	53.40	54.00	-0.60	47.70	6.58	33.59	34.47	110	196	Average	VERTICAL
4	5351.09	67.63	74.00	-6.37	61.93	6.58	33.59	34.47	110	196	Peak	VERTICAL

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

Temperature	22℃	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100, 116, 140 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	Cm		
1	5460.00	65.97	74.00	-8.03	59.91	6.79	33.74	34.47	120	194	Peak	VERTICAL
2	5460.00	52.53	54.00	-1.47	46.47	6.79	33.74	34.47	120	194	Average	VERTICAL
3	5469.23	69.08	74.00	-4.92	62.97	6.82	33.76	34.47	120	194	Peak	VERTICAL
4	5470.00	53.50	54.00	-0.50	47.39	6.82	33.76	34.47	120	194	Average	VERTICAL
5	5507.05	110.51			104.32	6.86	33.80	34.47	120	194	Average	VERTICAL
6	5507.37	121.86			115.67	6.86	33.80	34.47	120	194	Peak	VERTICAL

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

Channel 116

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	Cm		
1	5419.74	50.23	54.00	-3.77	44.26	6.75	33.69	34.47	142	200	Average	VERTICAL
2	5442.18	63.45	74.00	-10.55	57.43	6.77	33.72	34.47	142	200	Peak	VERTICAL
3	5469.20	61.66	74.00	-12.34	55.55	6.82	33.76	34.47	142	200	Peak	VERTICAL
4	5470.00	49.88	54.00	-4.12	43.77	6.82	33.76	34.47	142	200	Average	VERTICAL
5	5575.19	123.21			116.66	6.98	34.05	34.48	142	200	Peak	VERTICAL
6	5577.60	111.92			105.37	6.98	34.05	34.48	142	200	Average	VERTICAL
7	5725.00	62.47	74.00	-11.53	56.05	6.43	34.50	34.51	142	200	Peak	VERTICAL
8	5734.65	49.41	54.00	-4.59	43.00	6.43	34.50	34.52	142	200	Average	VERTICAL

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

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	Cm		
1	5693.27	107.30			100.84	6.57	34.40	34.51	125	199	Average	VERTICAL
2	5696.47	118.96			112.50	6.57	34.40	34.51	125	199	Peak	VERTICAL
3	5725.00	66.40	74.00	-7.60	59.98	6.43	34.50	34.51	125	199	Peak	VERTICAL
4	5725.00	53.40	54.00	-0.60	46.98	6.43	34.50	34.51	125	199	Average	VERTICAL

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

Temperature	22℃	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Channel 144

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	5721.60	122.96			116.52	6.50	34.45	34.51	132	198	Peak	VERTICAL
2	5722.40	110.89			104.47	6.43	34.50	34.51	132	198	Average	VERTICAL
3	5866.64	61.21	74.00	-12.79	54.38	6.47	34.90	34.54	132	198	Peak	VERTICAL
4	5874.65	48.43	54.00	-5.57	41.47	6.55	34.95	34.54	132	198	Average	VERTICAL

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

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54, 62 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Channel 54

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	Cm		
1	5273.21	107.83			102.43	6.39	33.48	34.47	107	212	Average	VERTICAL
2	5281.22	121.46			116.00	6.43	33.50	34.47	107	212	Peak	VERTICAL
3	5350.00	53.15	54.00	-0.85	47.45	6.58	33.59	34.47	107	212	Average	VERTICAL
4	5357.34	66.99	74.00	-7.01	61.23	6.62	33.61	34.47	107	212	Peak	VERTICAL

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

Channel 62

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	Cm		
1	5316.41	102.74			97.15	6.51	33.55	34.47	139	211	Average	VERTICAL
2	5326.03	113.90			108.25	6.55	33.57	34.47	139	211	Peak	VERTICAL
3	5350.00	53.26	54.00	-0.74	47.56	6.58	33.59	34.47	139	211	Average	VERTICAL
4	5352.47	67.15	74.00	-6.85	61.45	6.58	33.59	34.47	139	211	Peak	VERTICAL

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

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102, 110, 134 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Channel 102

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	Cm		
1	5459.36	64.27	74.00	-9.73	58.21	6.79	33.74	34.47	116	199	Peak	VERTICAL
2	5459.68	49.94	54.00	-4.06	43.88	6.79	33.74	34.47	116	199	Average	VERTICAL
3	5468.65	67.80	74.00	-6.20	61.69	6.82	33.76	34.47	116	199	Peak	VERTICAL
4	5469.30	53.20	54.00	-0.80	47.09	6.82	33.76	34.47	116	199	Average	VERTICAL
5	5507.44	115.48			109.29	6.86	33.80	34.47	116	199	Peak	VERTICAL
6	5507.76	103.67			97.48	6.86	33.80	34.47	116	199	Average	VERTICAL

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

Channel 110

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	Cm		
1	5459.30	52.08	54.00	-1.92	46.02	6.79	33.74	34.47	125	191	Average	VERTICAL
2	5459.62	64.80	74.00	-9.20	58.74	6.79	33.74	34.47	125	191	Peak	VERTICAL
3	5466.67	68.80	74.00	-5.20	62.69	6.82	33.76	34.47	125	191	Peak	VERTICAL
4	5470.00	53.44	54.00	-0.56	47.33	6.82	33.76	34.47	125	191	Average	VERTICAL
5	5551.92	110.78			104.38	6.93	33.95	34.48	125	191	Average	VERTICAL
6	5554.81	122.13			115.73	6.93	33.95	34.48	125	191	Peak	VERTICAL

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

Channel 134

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	Cm		
1	5653.01	118.60			12.06	6.79	34.25	34.50	129	202	Peak	VERTICAL
2	5662.63	108.16			01.64	6.72	34.30	34.50	129	202	Average	VERTICAL
3	5725.00	53.46	54.00	-0.54	47.04	6.43	34.50	34.51	129	202	Average	VERTICAL
4	5725.45	68.28	74.00	-5.72	61.86	6.43	34.50	34.51	129	202	Peak	VERTICAL

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

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Channel 102

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	5695.58	109.30			102.84	6.57	34.40	34.51	146	200	Average	VERTICAL
2	5707.60	121.15			114.71	6.50	34.45	34.51	146	200	Peak	VERTICAL
3	5853.43	60.82	74.00	-13.18	54.12	6.39	34.85	34.54	146	200	Peak	VERTICAL
4	5854.23	49.08	54.00	-4.92	42.38	6.39	34.85	34.54	146	200	Average	VERTICAL

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

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58, 106, 122 / Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015, Jan. 08, 2016		

Channel 58

	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	5088.00	61.35	74.00	-12.65	53.42	7.92	33.65	33.64	195	105	Peak	VERTICAL
2	5144.00	49.25	54.00	-4.75	40.99	8.15	33.74	33.63	195	105	Average	VERTICAL
3	5282.00	114.18			105.58	8.25	33.96	33.61	195	105	Peak	VERTICAL
4	5282.00	103.38			94.78	8.25	33.96	33.61	195	105	Average	VERTICAL
5	5350.00	53.16	54.00	-0.84	44.50	8.20	34.06	33.60	195	105	Average	VERTICAL
6	5357.00	65.27	74.00	-8.73	56.60	8.19	34.08	33.60	195	105	Peak	VERTICAL

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

Channel 106

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	5457.08	66.25	74.00	-7.75	60.19	6.79	33.74	34.47	121	203	Peak	VERTICAL
2	5460.00	52.02	54.00	-1.98	45.96	6.79	33.74	34.47	121	203	Average	VERTICAL
3	5467.50	68.03	74.00	-5.97	61.92	6.82	33.76	34.47	121	203	Peak	VERTICAL
4	5470.00	53.50	54.00	-0.50	47.39	6.82	33.76	34.47	121	203	Average	VERTICAL
5	5495.55	101.22			95.03	6.86	33.80	34.47	121	203	Average	VERTICAL
6	5524.39	115.66			109.41	6.88	33.85	34.48	121	203	Peak	VERTICAL
7	5725.00	46.83	54.00	-7.17	40.41	6.43	34.50	34.51	121	203	Average	VERTICAL
8	5731.41	59.22	74.00	-14.78	52.81	6.43	34.50	34.52	121	203	Peak	VERTICAL

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

Channel 122

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	5449.74	64.45	74.00	-9.55	58.39	6.79	33.74	34.47	139	194	Peak	VERTICAL
2	5460.00	50.06	54.00	-3.94	44.00	6.79	33.74	34.47	139	194	Average	VERTICAL
3	5465.99	64.82	74.00	-9.18	58.71	6.82	33.76	34.47	139	194	Peak	VERTICAL
4	5470.00	50.44	54.00	-3.56	44.33	6.82	33.76	34.47	139	194	Average	VERTICAL
5	5577.15	117.90			111.35	6.98	34.05	34.48	139	194	Peak	VERTICAL
6	5605.99	104.86			98.25	7.00	34.10	34.49	139	194	Average	VERTICAL
7	5725.00	70.04	74.00	-3.96	63.62	6.43	34.50	34.51	139	194	Peak	VERTICAL
8	5725.00	53.32	54.00	-0.68	46.90	6.43	34.50	34.51	139	194	Average	VERTICAL

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

Temperature	22°C	Humidity	55%
Test Engineer	Stim Sung & Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138/ Chain 1 + Chain 2 + Chain 3+ Chain 4
Test Date	Dec. 27, 2015		

Channel 138

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	5654.74	105.35			98.81	6.79	34.25	34.50	150	191	Average	VERTICAL
2	5670.77	116.80			110.29	6.72	34.30	34.51	150	191	Peak	VERTICAL
3	5850.00	49.93	54.00	-4.07	43.23	6.39	34.85	34.54	150	191	Average	VERTICAL
4	5851.86	62.64	74.00	-11.36	55.94	6.39	34.85	34.54	150	191	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5690 MHz

Note:

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

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

4.7. Frequency Stability Measurement

4.7.1. Limit

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

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

4.7.2. Measuring Instruments and Setting

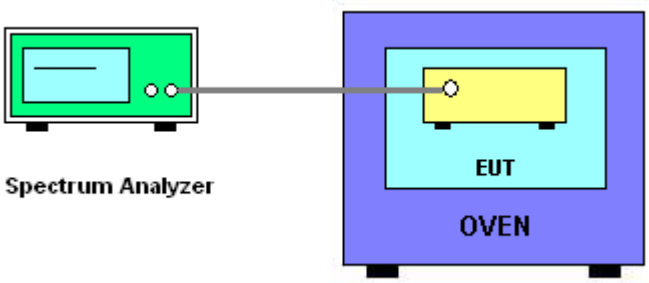
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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

4.7.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 10^6 ppm and the limit is less than ±20ppm (IEEE 802.11nspecification).
6. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
7. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
8. Extreme temperature is -30°C~50°C.

4.7.4. Test Setup Layout



4.7.5. Test Deviation

There is no deviation with the original standard.

4.7.6. EUT Operation during Test

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

4.7.7. Test Result of Frequency Stability

Temperature	23°C	Humidity	64%
Test Engineer	Serway Li	Test Date	Jan. 29, 2016~Feb. 05, 2016

Mode: 20 MHz / Chain 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5300 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5299.9404	5299.9390	5299.9372	5299.9351
110.00	5299.9392	5299.9379	5299.9363	5299.9344
93.50	5299.9378	5299.9367	5299.9355	5299.9333
Max. Deviation (MHz)	0.0622	0.0633	0.0645	0.0667
Max. Deviation (ppm)	11.74	11.94	12.17	12.58
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5300 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5299.9453	5299.9446	5299.9423	5299.9393
-20	5299.9446	5299.9433	5299.9416	5299.9392
-10	5299.9431	5299.9419	5299.9403	5299.9384
0	5299.9417	5299.9405	5299.9386	5299.9364
10	5299.9404	5299.9391	5299.9376	5299.9358
20	5299.9392	5299.9379	5299.9363	5299.9344
30	5299.9378	5299.9367	5299.9353	5299.9337
40	5299.9362	5299.9347	5299.9331	5299.9311
50	5299.9345	5299.9333	5299.9318	5299.9291
Max. Deviation (MHz)	0.0655	0.0667	0.0682	0.0709
Max. Deviation (ppm)	12.36	12.58	12.87	13.38
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5580 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5579.9391	5579.9377	5579.9359	5579.9338
110.00	5579.9379	5579.9366	5579.9350	5579.9331
93.50	5579.9365	5579.9354	5579.9342	5579.9320
Max. Deviation (MHz)	0.0635	0.0646	0.0658	0.0680
Max. Deviation (ppm)	11.38	11.58	11.79	12.19
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5580 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5579.9436	5579.9429	5579.9412	5579.9385
-20	5579.9433	5579.9420	5579.9403	5579.9379
-10	5579.9418	5579.9406	5579.9390	5579.9371
0	5579.9404	5579.9392	5579.9373	5579.9351
10	5579.9391	5579.9378	5579.9363	5579.9345
20	5579.9379	5579.9366	5579.9350	5579.9331
30	5579.9365	5579.9354	5579.9340	5579.9324
40	5579.9349	5579.9334	5579.9318	5579.9298
50	5579.9332	5579.9320	5579.9305	5579.9278
Max. Deviation (MHz)	0.0668	0.0680	0.0695	0.0722
Max. Deviation (ppm)	11.97	12.19	12.46	12.94
Result	Complies			

Mode: 40 MHz / Chain 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5310 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5309.9451	5309.9437	5309.9419	5309.9398
110.00	5309.9439	5309.9426	5309.9410	5309.9391
93.50	5309.9425	5309.9414	5309.9402	5309.9380
Max. Deviation (MHz)	0.0575	0.0586	0.0598	0.0620
Max. Deviation (ppm)	10.83	11.04	11.26	11.68
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5310 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5309.9498	5309.9492	5309.9465	5309.9444
-20	5309.9493	5309.9480	5309.9463	5309.9439
-10	5309.9478	5309.9466	5309.9450	5309.9431
0	5309.9464	5309.9452	5309.9433	5309.9411
10	5309.9451	5309.9438	5309.9423	5309.9405
20	5309.9439	5309.9426	5309.9410	5309.9391
30	5309.9425	5309.9414	5309.9400	5309.9384
40	5309.9409	5309.9394	5309.9378	5309.9358
50	5309.9392	5309.9380	5309.9365	5309.9338
Max. Deviation (MHz)	0.0608	0.0620	0.0635	0.0662
Max. Deviation (ppm)	11.45	11.68	11.96	12.47
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5550 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5549.9404	5549.9390	5549.9372	5549.9351
110.00	5549.9392	5549.9379	5549.9363	5549.9344
93.50	5549.9378	5549.9367	5549.9355	5549.9333
Max. Deviation (MHz)	0.0622	0.0633	0.0645	0.0667
Max. Deviation (ppm)	11.21	11.41	11.62	12.02
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5550 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5549.9453	5549.9442	5549.9425	5549.9399
-20	5549.9446	5549.9433	5549.9416	5549.9392
-10	5549.9431	5549.9419	5549.9403	5549.9384
0	5549.9417	5549.9405	5549.9386	5549.9364
10	5549.9404	5549.9391	5549.9376	5549.9358
20	5549.9392	5549.9379	5549.9363	5549.9344
30	5549.9378	5549.9367	5549.9353	5549.9337
40	5549.9362	5549.9347	5549.9331	5549.9311
50	5549.9345	5549.9333	5549.9318	5549.9291
Max. Deviation (MHz)	0.0655	0.0667	0.0682	0.0709
Max. Deviation (ppm)	11.80	12.02	12.29	12.77
Result	Complies			

Mode: 80 MHz / Chain 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5290 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5289.9438	5289.9424	5289.9406	5289.9385
110.00	5289.9426	5289.9413	5289.9397	5289.9378
93.50	5289.9412	5289.9401	5289.9389	5289.9367
Max. Deviation (MHz)	0.0588	0.0599	0.0611	0.0633
Max. Deviation (ppm)	11.12	11.32	11.55	11.97
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5290 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5289.9495	5289.9472	5289.9466	5289.9433
-20	5289.9480	5289.9467	5289.9450	5289.9426
-10	5289.9465	5289.9453	5289.9437	5289.9418
0	5289.9451	5289.9439	5289.9420	5289.9398
10	5289.9438	5289.9425	5289.9410	5289.9392
20	5289.9426	5289.9413	5289.9397	5289.9378
30	5289.9412	5289.9401	5289.9387	5289.9371
40	5289.9396	5289.9381	5289.9365	5289.9345
50	5289.9379	5289.9367	5289.9352	5289.9325
Max. Deviation (MHz)	0.0621	0.0633	0.0648	0.0675
Max. Deviation (ppm)	11.74	11.97	12.25	12.76
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5530 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5529.9417	5529.9403	5529.9385	5529.9364
110.00	5529.9405	5529.9392	5529.9376	5529.9357
93.50	5529.9391	5529.9380	5529.9368	5529.9346
Max. Deviation (MHz)	0.0609	0.0620	0.0632	0.0654
Max. Deviation (ppm)	11.01	11.21	11.43	11.83
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5530 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5529.9462	5529.9448	5529.9433	5529.9416
-20	5529.9459	5529.9446	5529.9429	5529.9405
-10	5529.9444	5529.9432	5529.9416	5529.9397
0	5529.9430	5529.9418	5529.9399	5529.9377
10	5529.9417	5529.9404	5529.9389	5529.9371
20	5529.9405	5529.9392	5529.9376	5529.9357
30	5529.9391	5529.9380	5529.9366	5529.9350
40	5529.9375	5529.9360	5529.9344	5529.9324
50	5529.9358	5529.9346	5529.9331	5529.9304
Max. Deviation (MHz)	0.0642	0.0654	0.0669	0.0696
Max. Deviation (ppm)	11.61	11.83	12.10	12.59
Result	Complies			

4.8. Antenna Requirements

4.8.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

4.8.2. Antenna Connector Construction

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

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Oct. 22, 2015	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2015	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 12, 2015	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 18, 2016	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Feb.10, 2015	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Oct. 27, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-17	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-1	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-2	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
Test Software	Audix	E3	6.2009-I0-7	N/A	N/A	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 09, 2015	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 02, 2015	Conducted (TH01-CB)

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

N.C.R means Non-Calibration required.

6. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty	Remark
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%