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FCC RADIO TEST REPORT

Applicant's company	**Ubiquiti Networks, Inc.**
Applicant Address	2580 Orchard Parkway San Jose, CA 95131
FCC ID	**SWX-UAPACHD**
Manufacturer's company	**Ubiquiti Networks, Inc.**
Manufacturer Address	2580 Orchard Parkway San Jose, CA 95131

Product Name	UniFi Access Point
Brand Name	UBIQUITI
Model No.	UAP-AC-SHD, UAP-AC-HD
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Received Date	Jun. 21, 2016
Final Test Date	Nov. 04, 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 v01r03, KDB662911 D01 v02r01, KDB644545 D03 v01, ET Docket No. 13–49; FCC 16–24.**

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

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR661623-03	Rev. 01	Initial issue of report	Nov. 21, 2016
FR661623-03	Rev. 02	Removing 80+80 MHz Mode	Feb. 08, 2017

1. VERIFICATION OF COMPLIANCE

Product Name	:	UniFi Access Point
Brand Name	:	UBIQUITI
Model No.	:	UAP-AC-SHD, UAP-AC-HD
Applicant	:	Ubiquiti Networks, Inc.
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart E § 15.407

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Jun. 21, 2016 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.

Cliff Chang

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**
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
4.4	15.407(a)	Power Spectral Density	Complies
4.5	15.407(b)	Radiated Emissions	Complies
4.6	15.407(b)	Band Edge Emissions	Complies
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	Form PoE
Modulation	IEEE 802.11a: OFDM IEEE 802.11n/ac: see the below table
Data Modulation	IEEE 802.11a/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Data Rate (Mbps)	IEEE 802.11a: OFDM (6/9/12/18/24/36/48/54) IEEE 802.11n/ac: see the below table
Frequency Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	16 for 20MHz bandwidth ; 8 for 40MHz bandwidth 4 for 80MHz bandwidth

Channel Bandwidth (99%)	**For non-beamforming mode** **For indoor/outdoor B2~B3** U-NII-2A: IEEE 802.11a: 15.54 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 16.50 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.18 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 74.39 MHz U-NII-2C: IEEE 802.11a: 15.28 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 16.24 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.47 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.12 MHz **For beamforming mode** **For indoor/outdoor B2~B3** U-NII-2A: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz U-NII-2C: IEEE 802.11ac MCS0/Nss1 (VHT20): 18.06 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.19 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.41 MHz

Maximum Conducted Output Power	**For Non-beamforming mode** **For indoor/outdoor B2~B3** U-NII-2A: IEEE 802.11a: 18.36 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 18.18 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 21.18 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 20.69 dBm U-NII-2C: IEEE 802.11a: 18.19 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 18.36 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 21.20 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 23.81 dBm **For beamforming mode** **For indoor/outdoor B2~B3** U-NII-2A: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.75 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.88 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.47 dBm U-NII-2C: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.36 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 17.36 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 17.89 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	☐ Without beamforming

Note: The EUT has beamforming function for 802.11n/ac.

Antenna and Bandwidth

Antenna	Four (TX)		
Bandwidth 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

Support Unit	Brand	Model	Rating
PoE	UBIQUITI	GP-H480-050G	Input: 100-240V~50/60Hz, MAX 0.75A(0.75A) Output: 48V, 0.5A(0.5A)
Others			
Power cable*1, Non-shielded, 0.6m			

3.3. Table for Filed Antenna

For 2.4GHz WLAN function

Ant.	Brand	Model Name	Antenna Type	Connector	TX/RX Gain (dBi)
1	-	-	PIFA Antenna	N/A	3
2	-	-	PIFA Antenna	N/A	3

For 5GHz WLAN function

Ant.	Brand	Model Name	Antenna Type	Connector	TX/RX Gain (dBi)
3	-	-	PIFA Antenna	N/A	4
4	-	-	PIFA Antenna	N/A	4

For Bluetooth function

Ant.	Brand	Model Name	Antenna Type	Connector	TX/RX Gain (dBi)
5	-	-	PIFA Antenna	N/A	1

For RX function

Ant.	Brand	Model Name	Antenna Type	Connector	RX Gain (dBi)	
					2.4GHz	5GHz
6	-	-	PIFA Antenna	N/A	1	2

Note: The EUT has six antennas.

For 2.4GHz WLAN function

IEEE 802.11b/g/n/ac mode (4TX/4RX):

Chain 1 and Chain 2 connect to Ant. 1.

Chain 3 and Chain 4 connect to Ant. 2.

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.

For 5GHz WLAN function

IEEE 802.11a/n/ac mode (4TX/4RX): The module has four chains.

Chain 1 and Chain 2 connect to Ant. 3.

Chain 3 and Chain 4 connect to Ant. 4.

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.

For Bluetooth function: The module has one chain only.

Chain 1 connects to Ant. 5.

Chain 1 can be used as transmitting/receiving antenna.

Chain 1 could transmit/receive simultaneously.

For RX function: The module has one chain only.

Chain 1 connects to Ant. 6.

Only Chain 1 can be used as receiving antenna.

3.4. Table for Carrier Frequencies

There are three bandwidth systems.

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

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

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

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5250~5350 MHz U-NII-2A	52	5260 MHz	60	5300 MHz
	54	5270 MHz	62	5310 MHz
	56	5280 MHz	64	5320 MHz
	58	5290 MHz	-	-
5470~5725 MHz U-NII-2C	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**				
	For indoor/outdoor B2~B3				
	11a/BPSK	U-NII-2A U-NII-2C	6Mbps	52/60/64/ 100/116/140/144	1+2+3+4
	11ac VHT20	U-NII-2A U-NII-2C	MCS0/Nss1	52/60/64/ 100/116/140/144	1+2+3+4
	11ac VHT40	U-NII-2A U-NII-2C	MCS0/Nss1	54/62/ 102/110/134/142	1+2+3+4
	11ac VHT80	U-NII-2A U-NII-2C	MCS0/Nss1	58/ 106/122/138	1+2+3+4
	For beamforming mode				
	For indoor/outdoor B2~B3				
	11ac VHT20	U-NII-2A U-NII-2C	MCS0/Nss1	52/60/64/ 100/116/140/144	1+2+3+4
	11ac VHT40	U-NII-2A U-NII-2C	MCS0/Nss1	54/62/ 102/110/134/142	1+2+3+4
	11ac VHT80	U-NII-2A U-NII-2C	MCS0/Nss1	58/ 106/122/138	1+2+3+4

Power Spectral Density	**For non-beamforming mode**				
	For indoor/outdoor B2~B3				
	11a/BPSK	U-NII-2A U-NII-2C	6Mbps	52/60/64/ 100/116/140/144	1+2+3+4
	11ac VHT20	U-NII-2A U-NII-2C	MCS0/Nss1	52/60/64/ 100/116/140/144	1+2+3+4
	11ac VHT40	U-NII-2A U-NII-2C	MCS0/Nss1	54/62/ 102/110/134/142	1+2+3+4
	11ac VHT80	U-NII-2A U-NII-2C	MCS0/Nss1	58/ 106/122/138	1+2+3+4
	For beamforming mode				
	For indoor/outdoor B2~B3				
	11ac VHT20	U-NII-2A U-NII-2C	MCS0/Nss1	52/60/64/ 100/116/140/144	1+2+3+4
	11ac VHT40	U-NII-2A U-NII-2C	MCS0/Nss1	54/62/ 102/110/134/142	1+2+3+4
	11ac VHT80	U-NII-2A U-NII-2C	MCS0/Nss1	58/ 106/122/138	1+2+3+4
26dB Spectrum Bandwidth & 99% Occupied Bandwidth Measurement	**For non-beamforming mode**				
	For indoor/outdoor B2~B3				
	11a/BPSK	U-NII-2A U-NII-2C	6Mbps	52/60/64/ 100/116/140/144	1+2+3+4
	11ac VHT20	U-NII-2A U-NII-2C	MCS0/Nss1	52/60/64/ 100/116/140/144	1+2+3+4
	11ac VHT40	U-NII-2A U-NII-2C	MCS0/Nss1	54/62/ 102/110/134/142	1+2+3+4
	11ac VHT80	U-NII-2A U-NII-2C	MCS0/Nss1	58/ 106/122/138	1+2+3+4
	For beamforming mode				
	For indoor/outdoor B2~B3				
	11ac VHT20	U-NII-2A U-NII-2C	MCS0/Nss1	52/60/64/ 100/116/140/144	1+2+3+4
	11ac VHT40	U-NII-2A U-NII-2C	MCS0/Nss1	54/62/ 102/110/134/142	1+2+3+4
	11ac VHT80	U-NII-2A U-NII-2C	MCS0/Nss1	58/ 106/122/138	1+2+3+4

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

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

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

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

The following test modes were performed for all tests:

For Radiated Emission test (Above 1GHz):

The EUT can be placed in Y-axis and Z-axis. After evaluating, The worst case was found at Z-axis, so it's recorded in this report.

Mode 1. CTX at Z-axis

For Co-location MPE Test:

The EUT could be applied with 2.4GHz WLAN function, 5GHz WLAN function and Bluetooth function; therefore Co-location Maximum Permissible Exposure (Please refer to FA661623-03) tests are added for simultaneously transmit between 2.4GHz WLAN function, 5GHz WLAN function and Bluetooth function.

3.6. Table for Testing Locations

Test Site Location					
Address:	No.8, Lane 724, Bo-ai St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C.				
TEL:	886-3-656-9065				
FAX:	886-3-656-9085				
Test Site No.	**Site Category**	**Location**	**FCC Designation No.**	**IC File No.**	**VCCI Reg. No**
03CH01-CB	SAC	Hsin Chu	TW0006	IC 4086D	-
TH01-CB	OVEN Room	Hsin Chu	-	-	-

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

3.7. Table for Multiple Listing

The model names as below

Brand Name	Model Name	2.4GHz/5GHz WLAN function	2.4GHz/5GHz RX function	Bluetooth function
UBIQUITI	UAP-AC-SHD	O	O	O
	UAP-AC-HD	O	X	X

Note: The Model UAP-AC-SHD was selected to test and recorded in the report.

3.8. Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR661623-02AB

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

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

3.9. Table for Supporting Units

For Test Site No: 03CH01-CB

<For above 1GHz test non-beamforming mode>

Support Unit	Brand	Model	FCC ID
NB	DELL	E4300	DoC

<For above 1GHz test beamforming mode>

Support Unit	Brand	Model	FCC ID
NB*2	DELL	E4300	DoC
RX Device	UBIQUITI	UAP-AC-HD	SWX-UAPACHD

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
NB	DELL	E4300	DoC

3.10. Table for Parameters of Test Software Setting

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

For non-beamforming mode

For indoor/outdoor B2~B3

Test Software Version	QCA						
Mode	Test Frequency (MHz)						
	NCB: 20MHz						
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz	5720 MHz
802.11a	10.5	10.5	10.5	10.5	10.5	10.5	10.5
802.11ac MCS0/Nss1 VHT20	10.5	10.5	10.5	11	11	11	11
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	13.5	13.5	12.5	14	13.5	14	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz			
	13	11	15.5	17			

For beamforming mode

For indoor/outdoor B2~B3

Test Software Version	QCA v3.0.197.0						
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	16.5	16.5	16.5	16.5	16.5	16.5	17
Mode	NCB: 40MHz						
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	5710 MHz	
	16.5	16.5	16.5	16.5	16.5	17.5	
Mode	NCB: 80MHz						
802.11ac MCS0/Nss1 VHT80	5290 MHz	5530 MHz	5610 MHz	5690 MHz			
	16.5	15	16.5	17.5			

3.11. EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

During the test, the following programs under WIN 7 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 Telnet.
3. Executed "Lantest.exe " to link with the remote workstation to receive and transmit packet by RX Deviec and transmit duty cycle no less 98%

3.12. Duty Cycle

For non-beamforming mode:

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Min. VBW (kHz)
802.11a	2.020	2.140	94.39	0.25	0.50
802.11ac MCS0/Nss1 VHT20	5.000	5.100	98.04	0.09	0.01
802.11ac MCS0/Nss1 VHT40	2.320	2.540	91.34	0.39	0.43
802.11ac MCS0/Nss1 VHT80	1.136	1.224	92.81	0.32	0.88

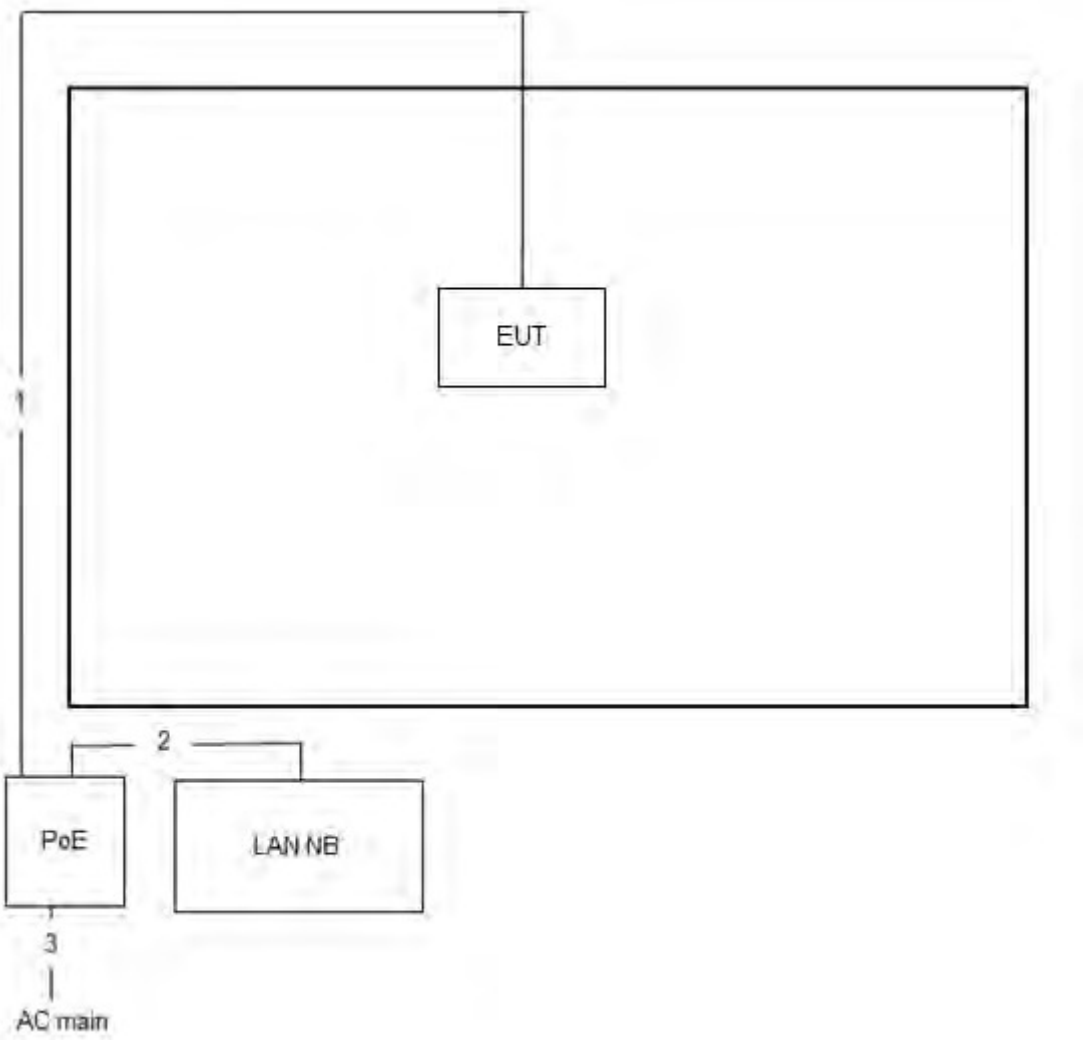
For beamforming mode:

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Min. VBW (kHz)
802.11ac MCS0/Nss1 VHT20	1.751	1.925	90.96	0.41	0.57
802.11ac MCS0/Nss1 VHT40	1.664	1.854	89.75	0.47	0.60
802.11ac MCS0/Nss1 VHT80	1.915	2.105	90.97	0.41	0.52

3.13. Test Configurations

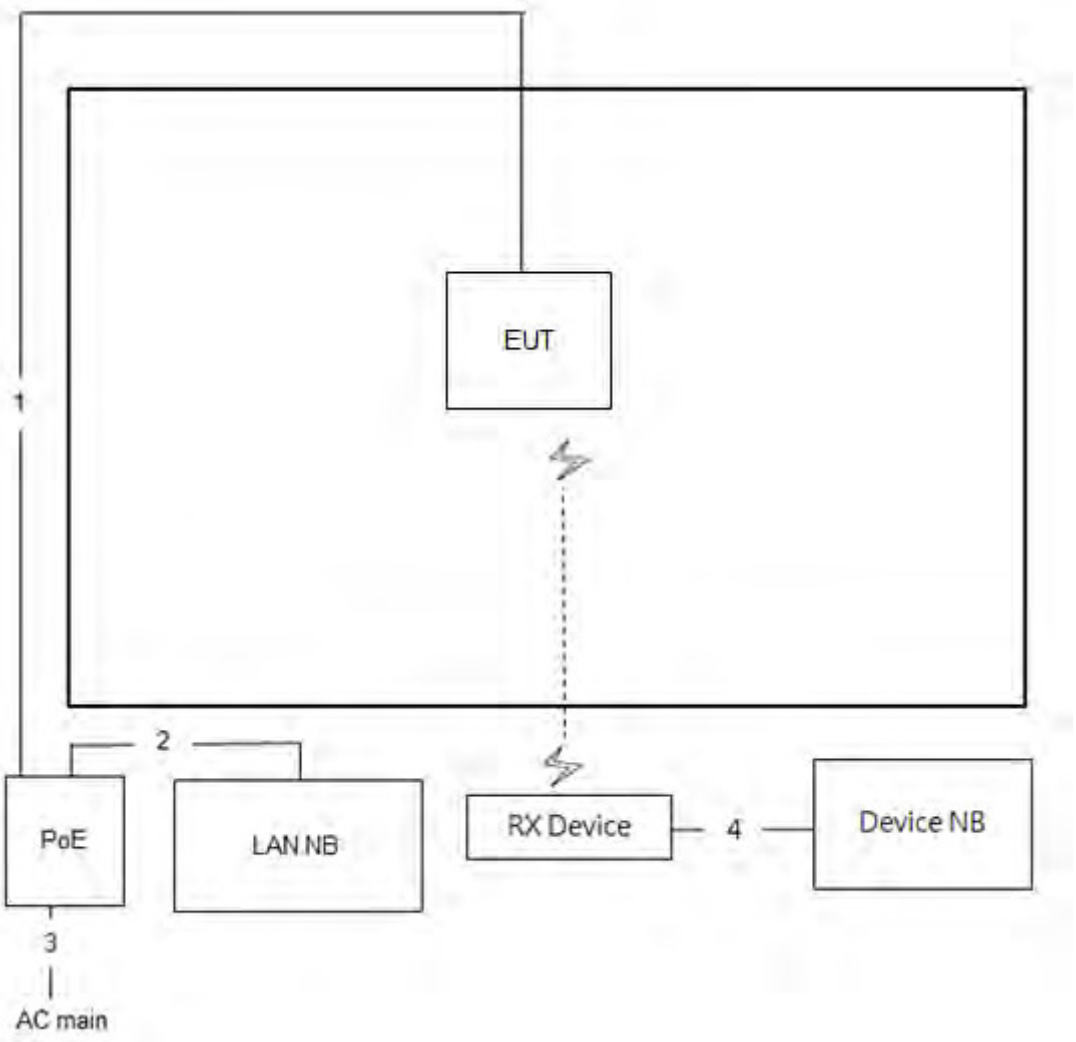
3.13.1. Radiation Emissions Test Configuration

Test Configuration: above 1GHz test non-beamforming mode



Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	RJ-45 cable	No	1.5m
3	Power cable	No	0.6m

Test Configuration: above 1GHz beamforming mode



Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	RJ-45 cable	No	1.5m
3	Power cable	No	0.6m
4	RJ-45 cable	No	1.5m

4. TEST RESULT

4.1. 26dB Bandwidth and 99% Occupied Bandwidth Measurement

4.1.1. Limit

No restriction limits.

4.1.2. Measuring Instruments and Setting

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

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

4.1.3. Test Procedures

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

1. The transmitter was radiated to the spectrum analyzer in peak hold mode.
2. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. 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	22℃	Humidity	54%
Test Engineer	Gary Chu		

For non-beamforming mode

For indoor/outdoor B2~B3

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5260 MHz	17.04	15.11
	5300 MHz	17.48	15.54
	5320 MHz	17.48	15.54
	5500 MHz	17.13	15.02
	5580 MHz	17.48	15.28
	5700 MHz	17.22	14.94
802.11ac MCS0/Nss1 VHT20	5260 MHz	18.35	15.89
	5300 MHz	18.44	16.50
	5320 MHz	18.44	16.50
	5500 MHz	18.26	15.54
	5580 MHz	18.52	16.24
	5700 MHz	18.26	15.63
802.11ac MCS0/Nss1 VHT40	5270 MHz	39.42	36.18
	5310 MHz	39.42	35.89
	5510 MHz	39.57	36.47
	5550 MHz	39.86	36.32
	5670 MHz	39.28	36.04
802.11ac MCS0/Nss1 VHT80	5290 MHz	79.13	74.39
	5530 MHz	79.71	76.12
	5610 MHz	78.84	74.67

Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11a	5720 MHz	26.70	15.72	5701.74	5711.75	23.26	3.44	13.25	2.47
802.11ac MCS0/Nss1 VHT20	5720 MHz	33.39	16.67	5701.65	5711.32	23.35	10.04	13.68	2.99
802.11ac MCS0/Nss1 VHT40	5710 MHz	80.87	42.55	5671.01	5690.17	53.99	26.88	34.83	7.72
802.11ac MCS0/Nss1 VHT80	5690 MHz	122.90	75.83	5631.16	5651.51	93.84	29.06	73.49	2.34

For beamforming mode

For indoor/outdoor B2~B3

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5260 MHz	23.13	17.89
	5300 MHz	22.17	18.06
	5320 MHz	21.91	17.97
	5500 MHz	22.87	17.97
	5580 MHz	22.43	18.06
	5700 MHz	21.65	17.97
802.11ac MCS0/Nss1 VHT40	5270 MHz	45.07	37.19
	5310 MHz	44.64	37.05
	5510 MHz	44.93	36.90
	5550 MHz	45.51	37.19
	5670 MHz	44.64	36.90
802.11ac MCS0/Nss1 VHT80	5290 MHz	87.54	76.41
	5530 MHz	86.09	76.41
	5610 MHz	85.80	76.41

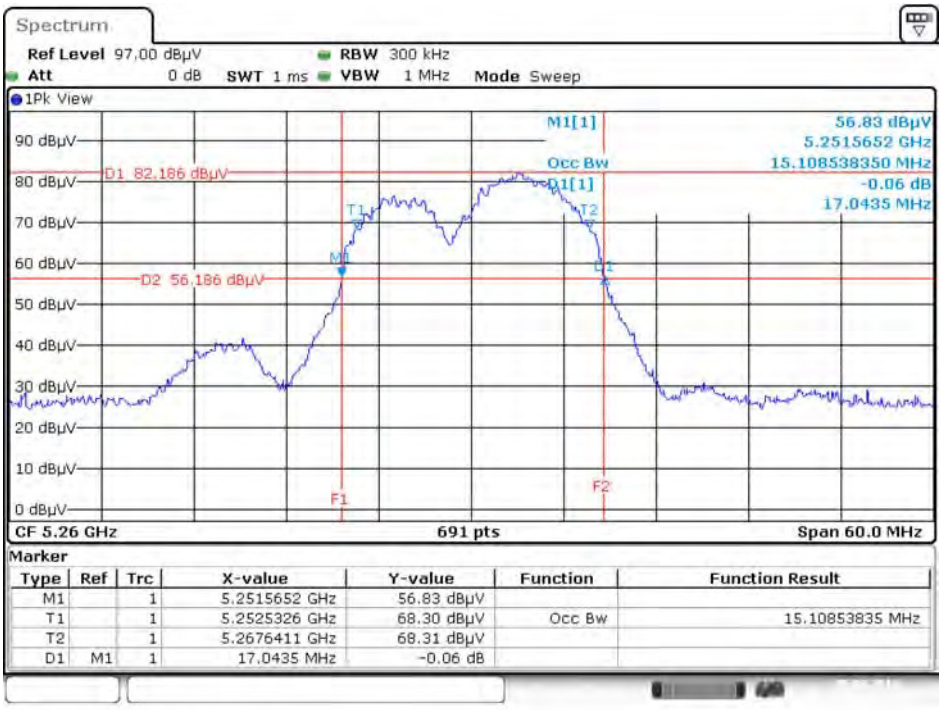
Straddle Channel

Mode	Frequency	26dB BW (MHz)	99% OBW (MHz)	26dB BW F1 (MHz)	99% OBW T1 (MHz)	UNII 2C 26dB BW (MHz)	UNII 3 26dB BW (MHz)	UNII 2C 99% BW (MHz)	UNII 3 99% BW (MHz)
802.11ac MCS0/Nss1 VHT20	5720 MHz	20.35	17.71	5709.91	5711.14	15.09	5.26	13.86	3.86
802.11ac MCS0/Nss1 VHT40	5710 MHz	40.29	36.32	5690.15	5691.91	34.85	5.44	33.09	3.23
802.11ac MCS0/Nss1 VHT80	5690 MHz	79.71	75.54	5650.29	5652.37	74.71	5.00	72.63	2.92

For non-beamforming mode

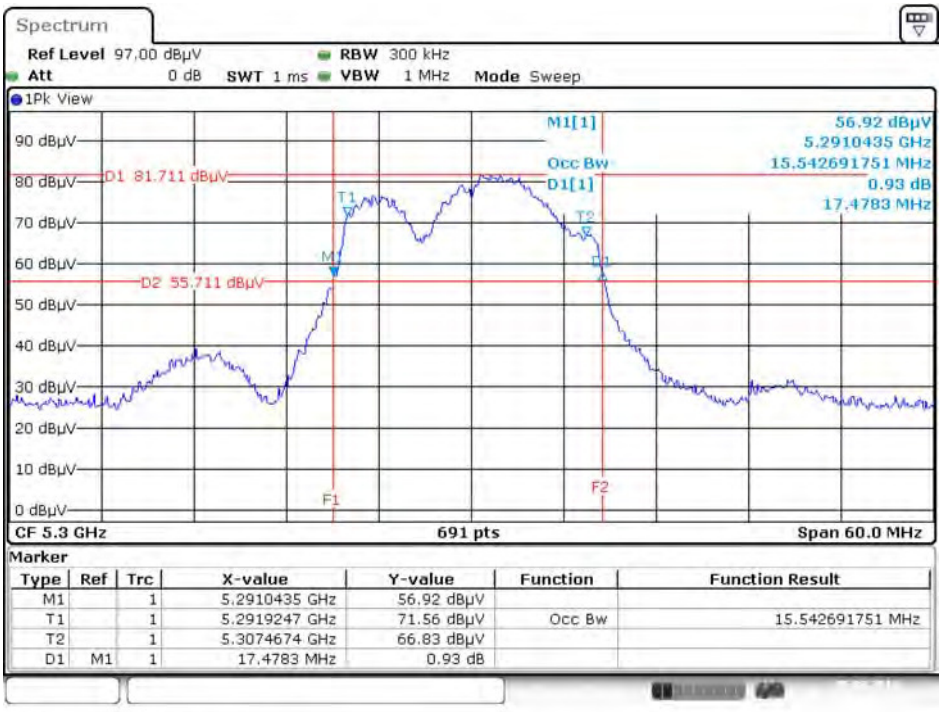
For indoor/outdoor B2~B3

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



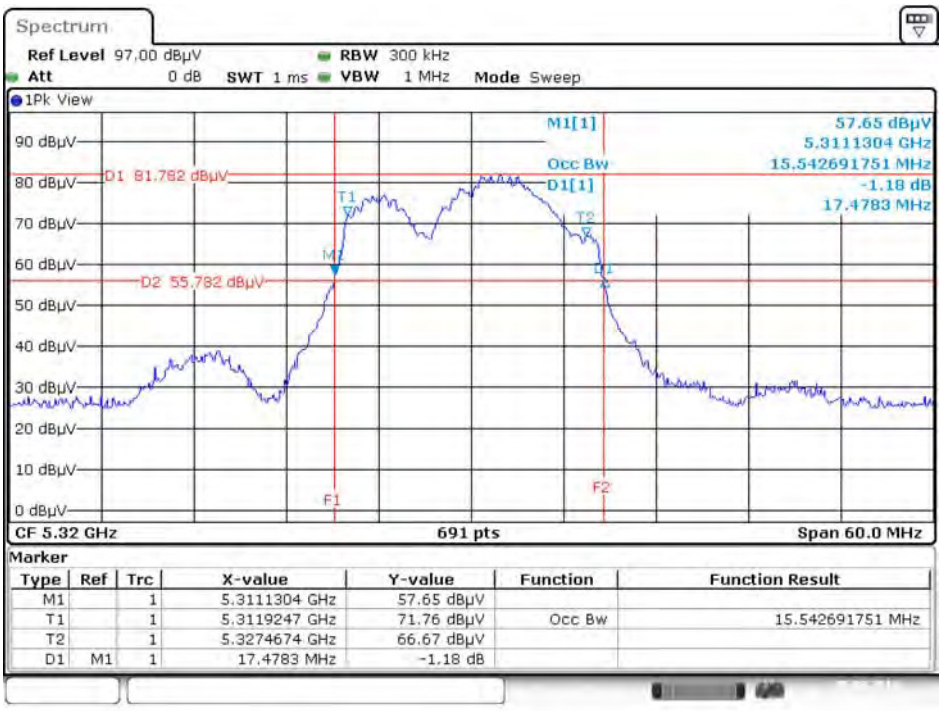
Date: 5.AUG.2016 11:45:15

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



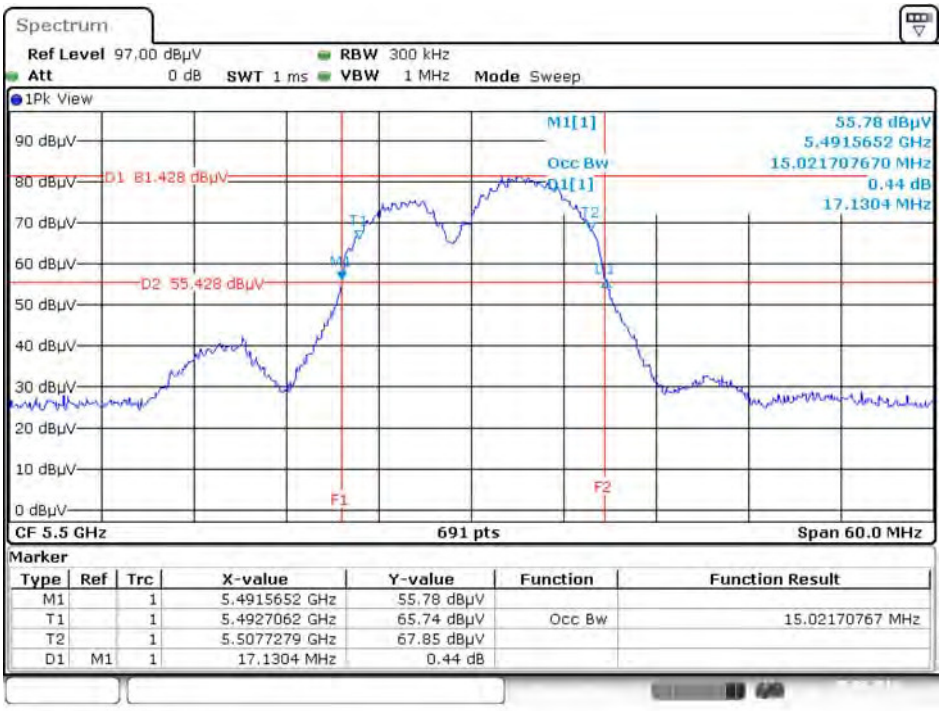
Date: 5.AUG.2016 11:46:01

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



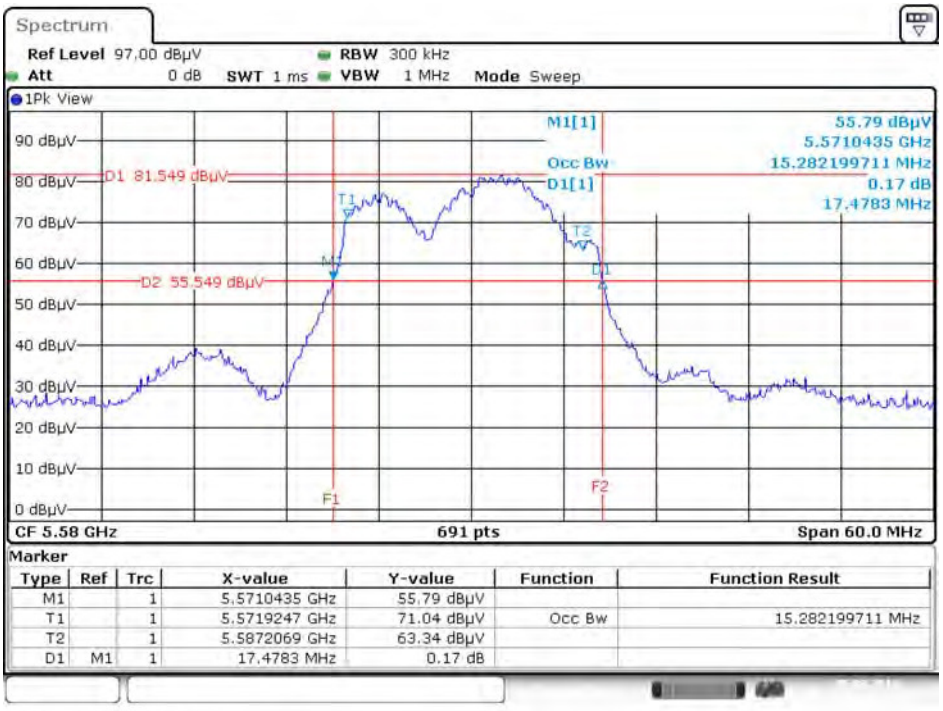
Date: 5.AUG.2016 11:46:19

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



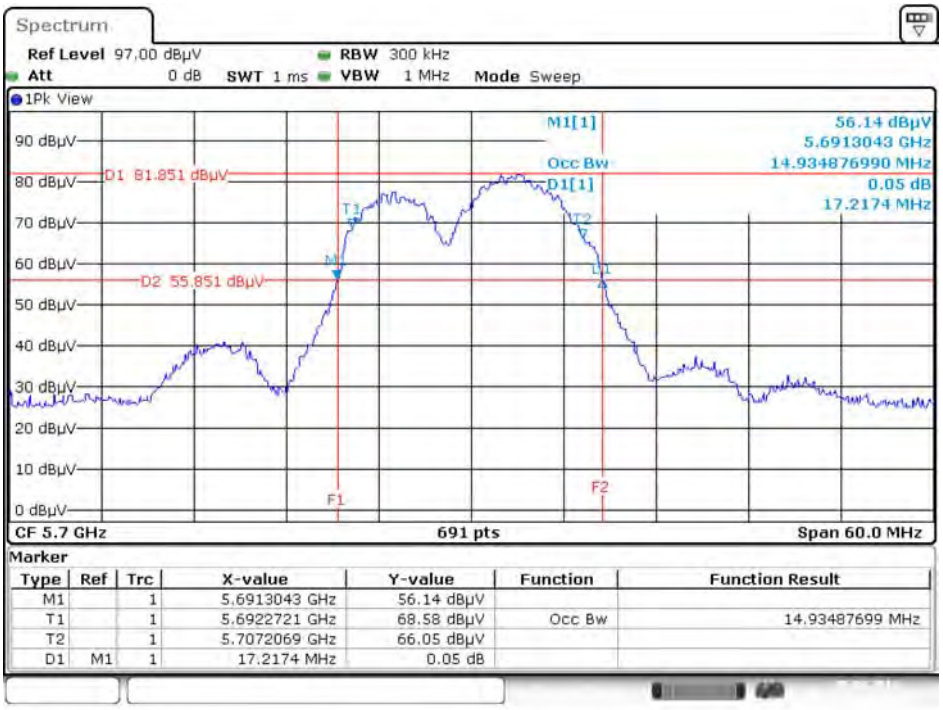
Date: 5.AUG.2016 11:46:44

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



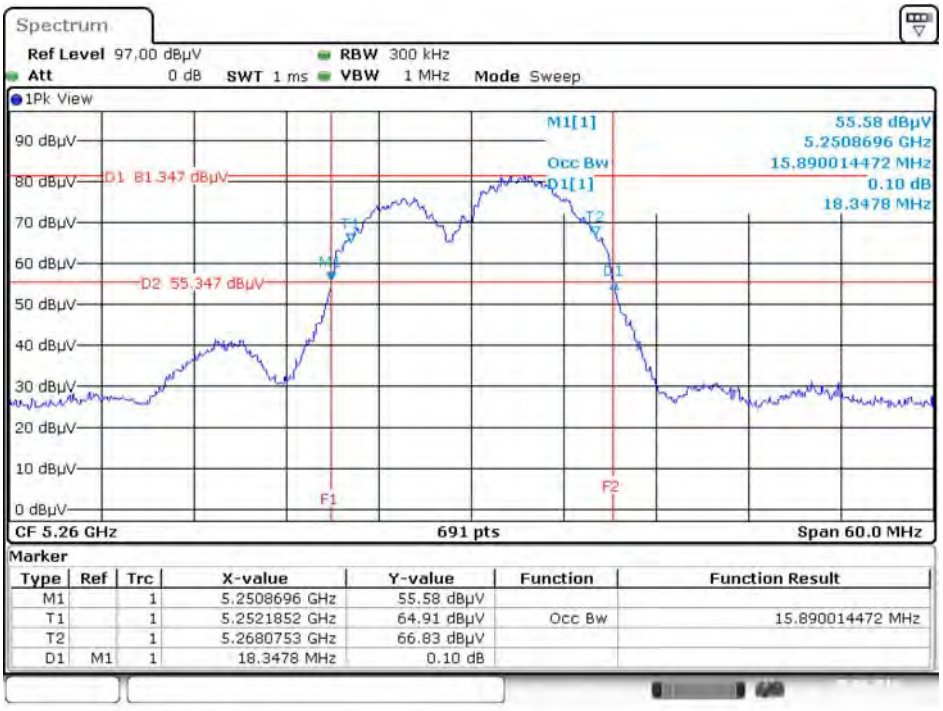
Date: 5.AUG.2016 11:47:13

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



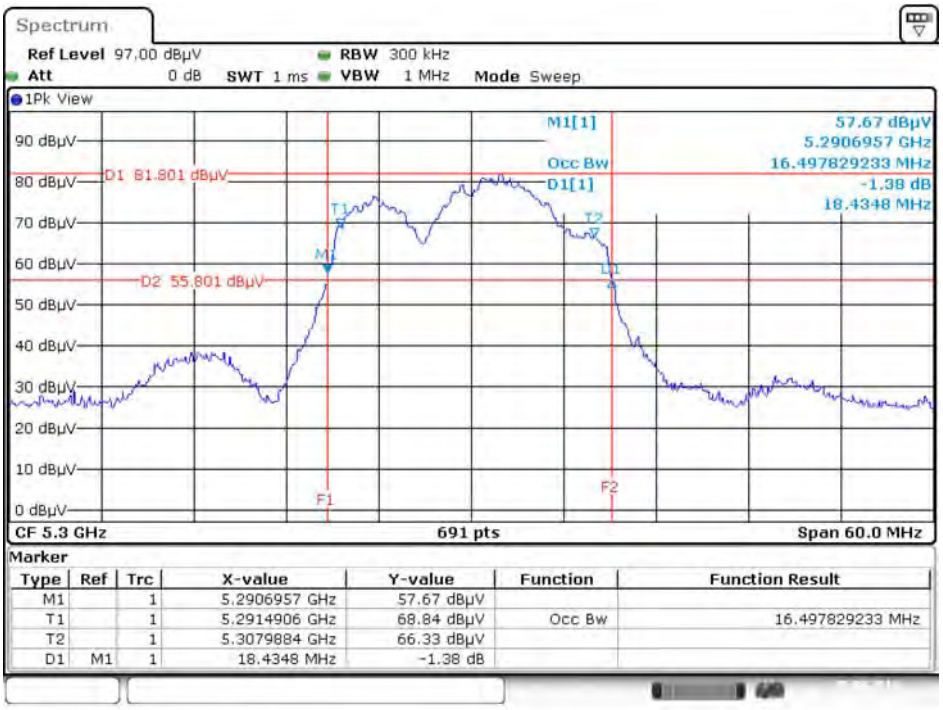
Date: 5.AUG.2016 11:47:32

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



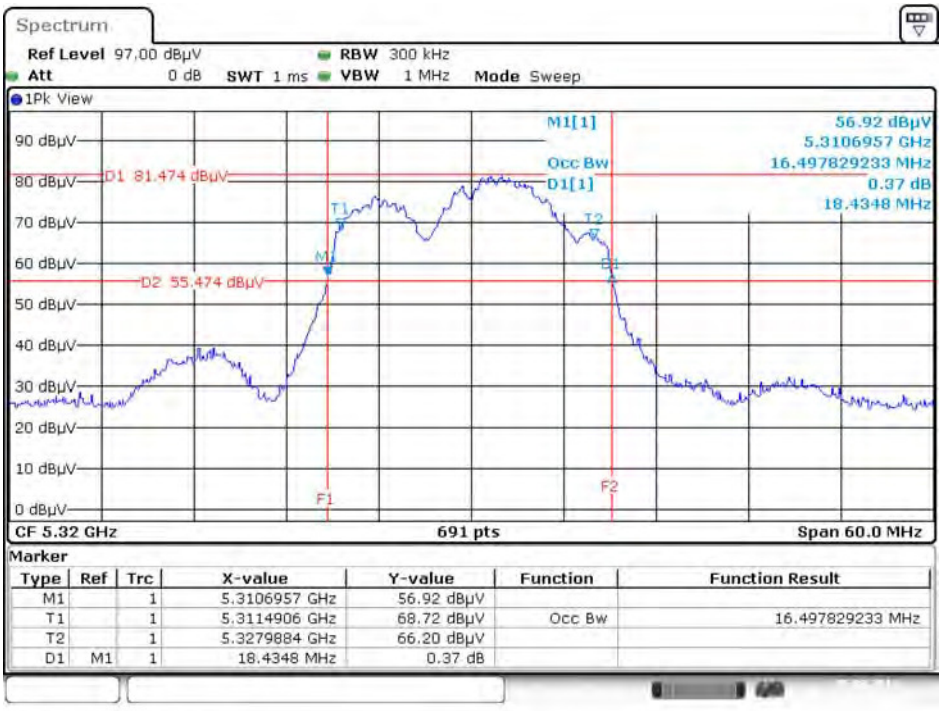
Date: 5.AUG.2016 11:52:45

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



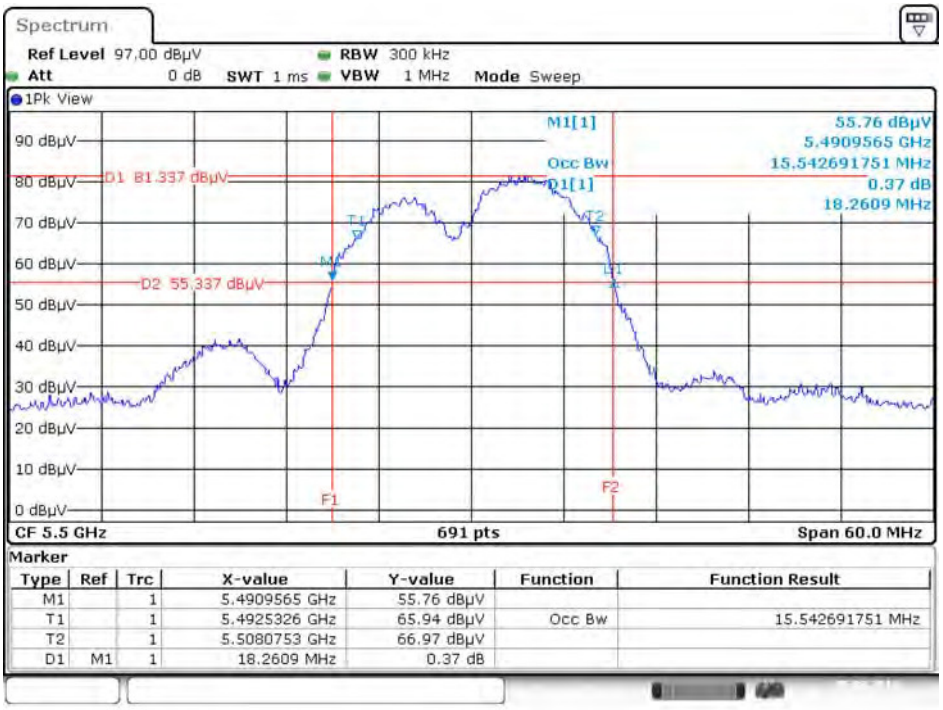
Date: 5.AUG.2016 11:53:08

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



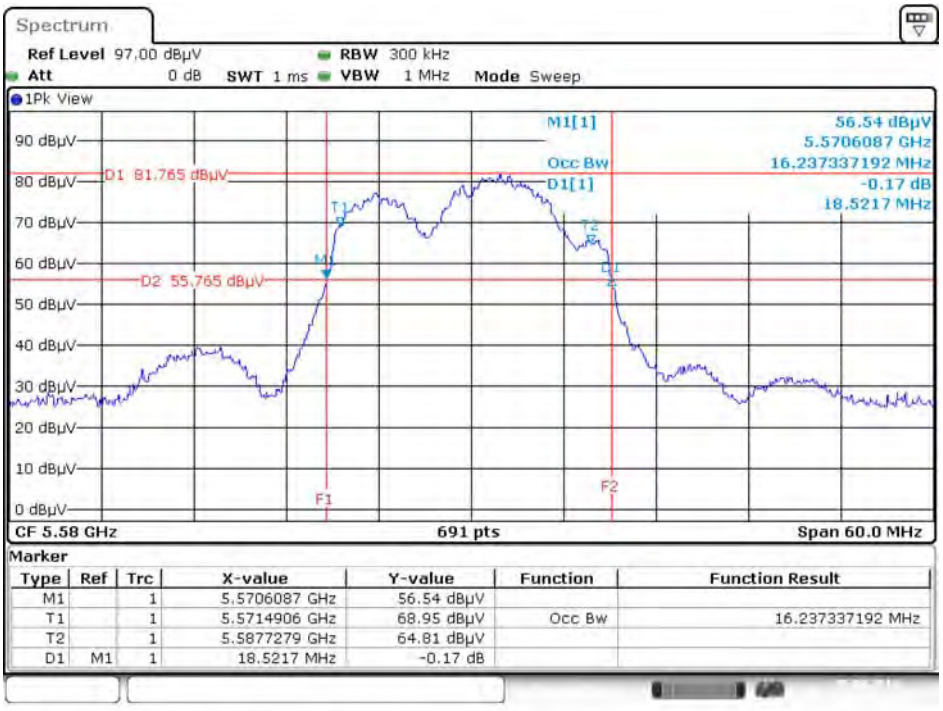
Date: 5.AUG.2016 11:53:41

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



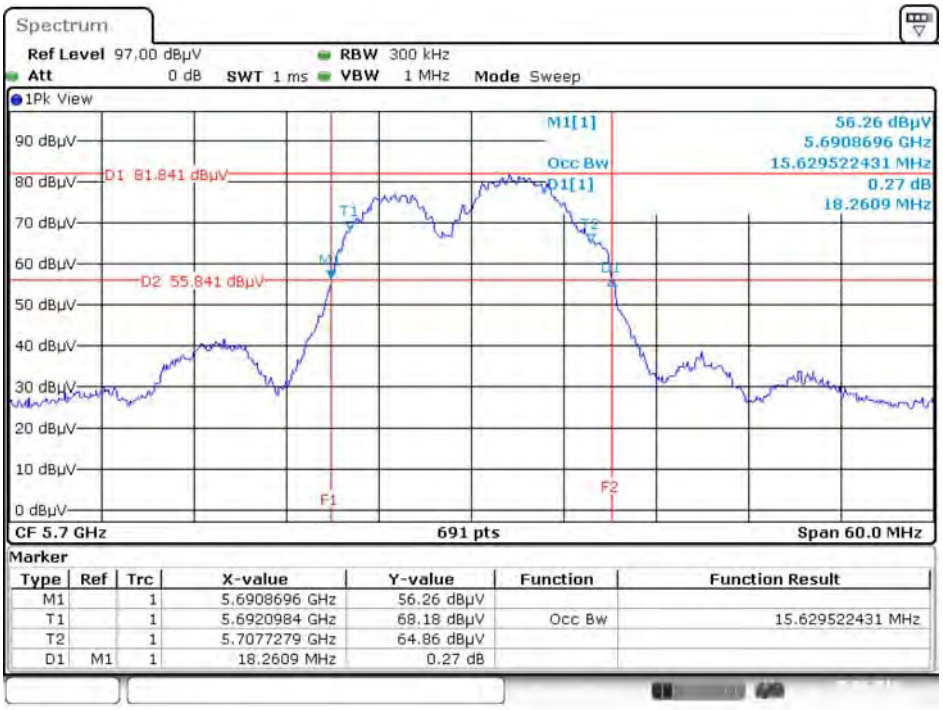
Date: 5.AUG.2016 11:54:06

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



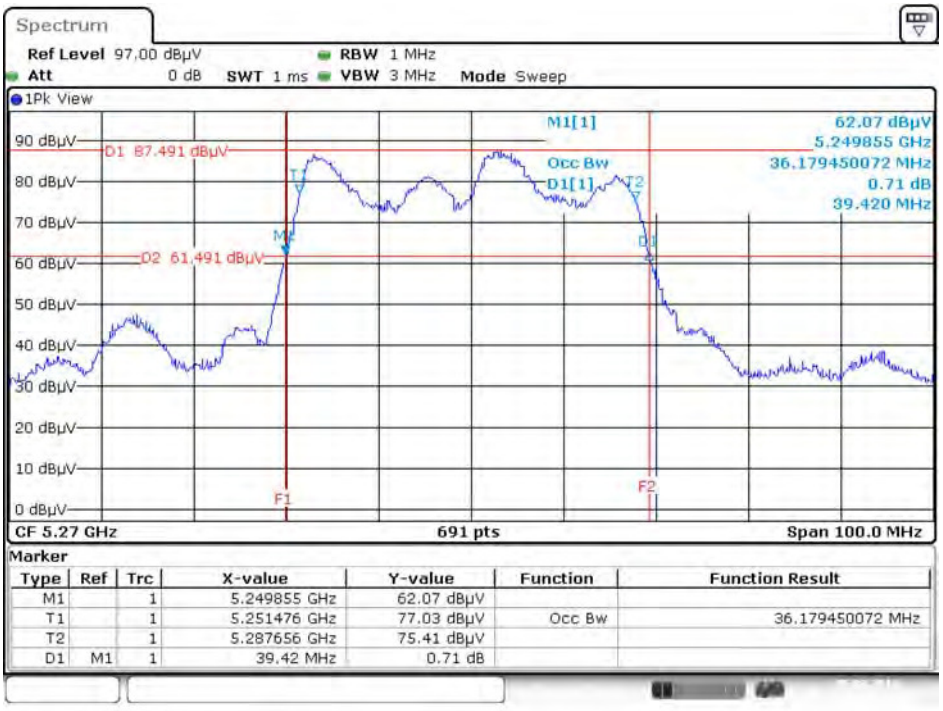
Date: 5.AUG.2016 11:54:37

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



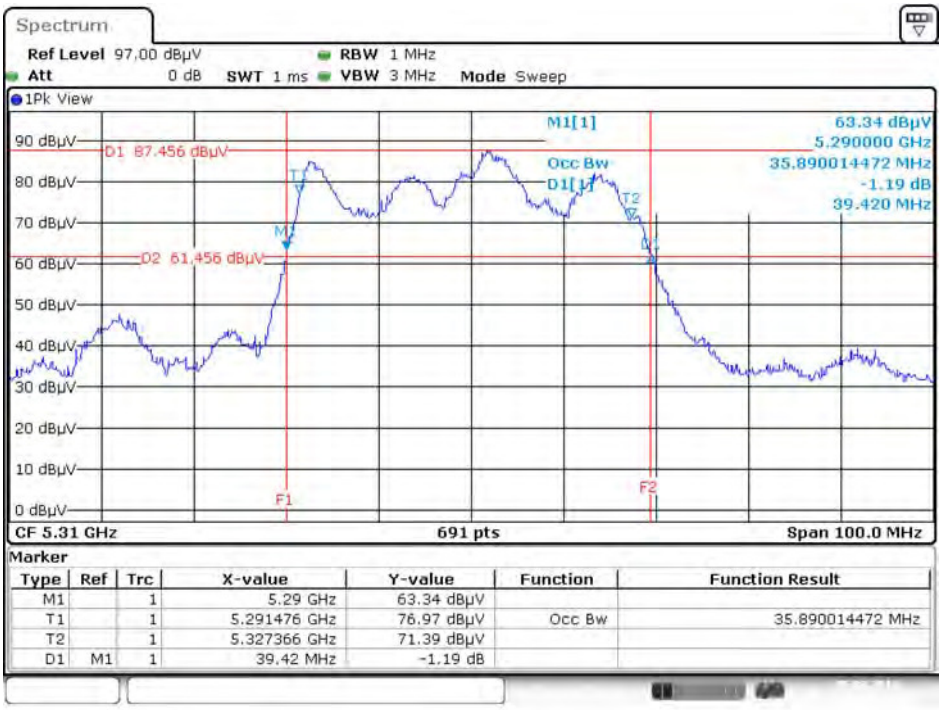
Date: 5.AUG.2016 11:55:05

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



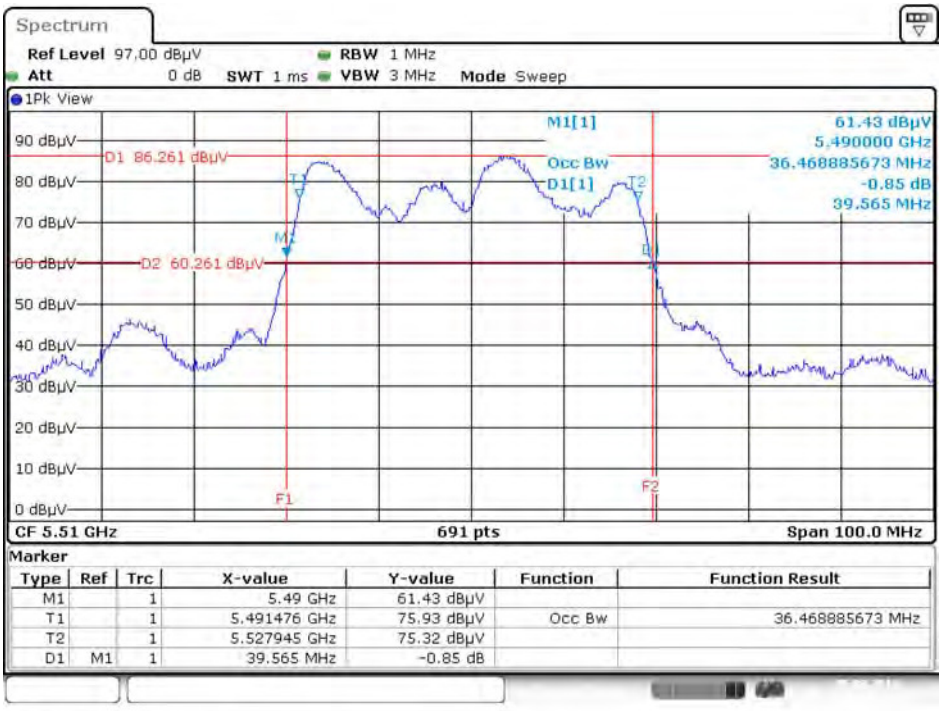
Date: 5.AUG.2016 11:59:38

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



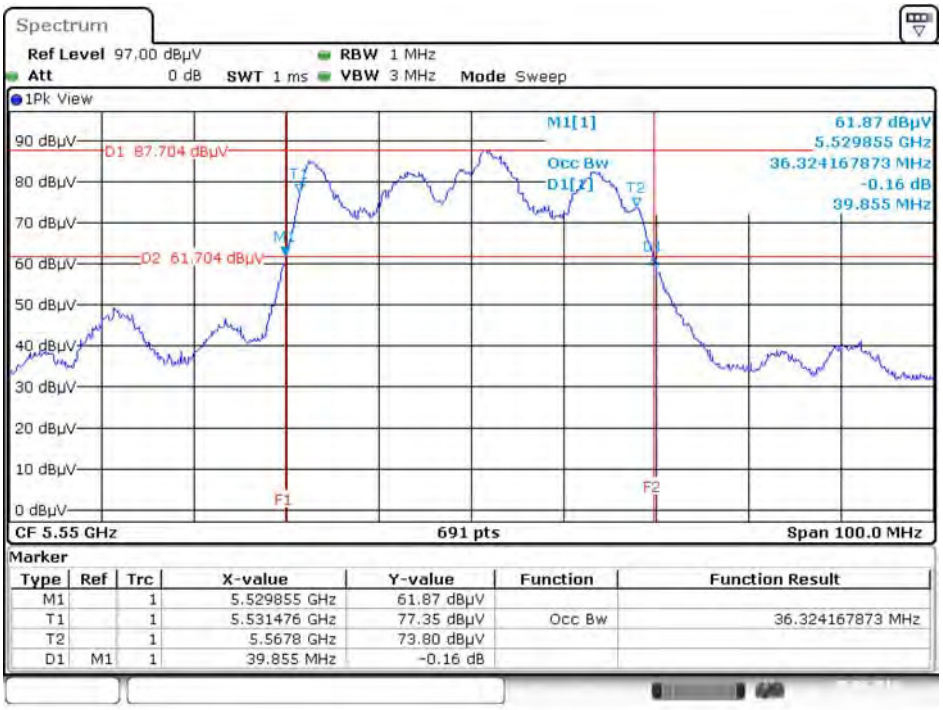
Date: 5.AUG.2016 12:00:05

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



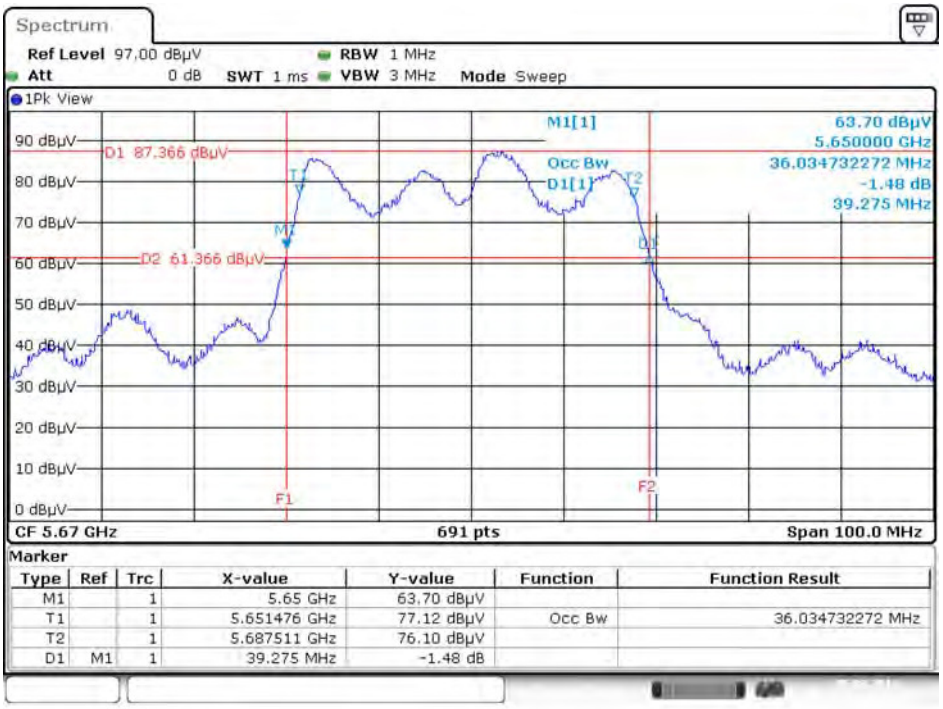
Date: 5.AUG.2016 12:00:37

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



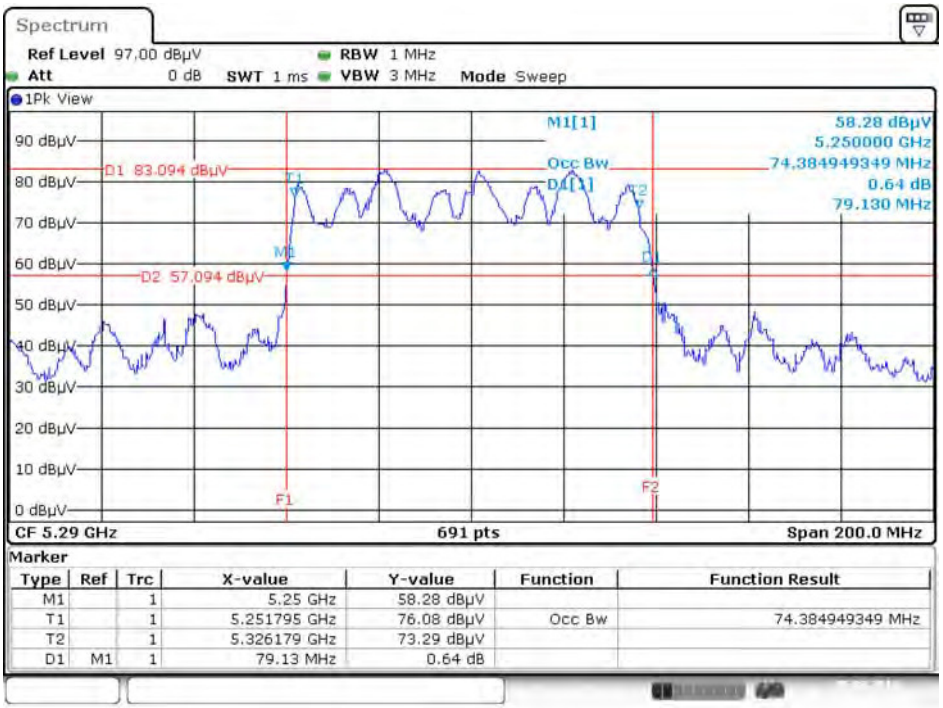
Date: 5.AUG.2016 12:01:00

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



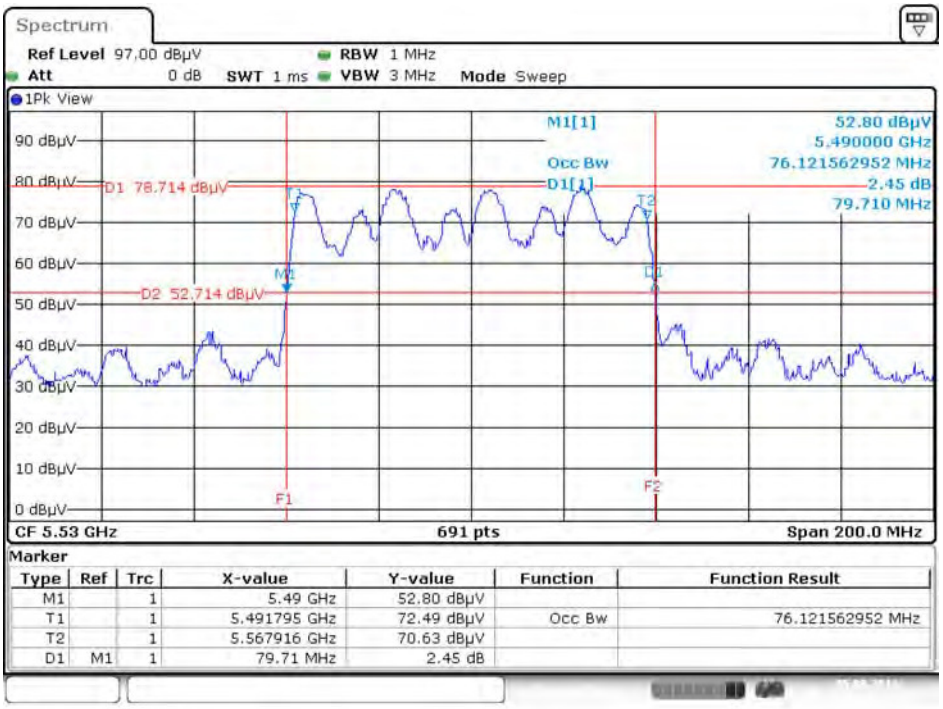
Date: 5.AUG.2016 12:01:32

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



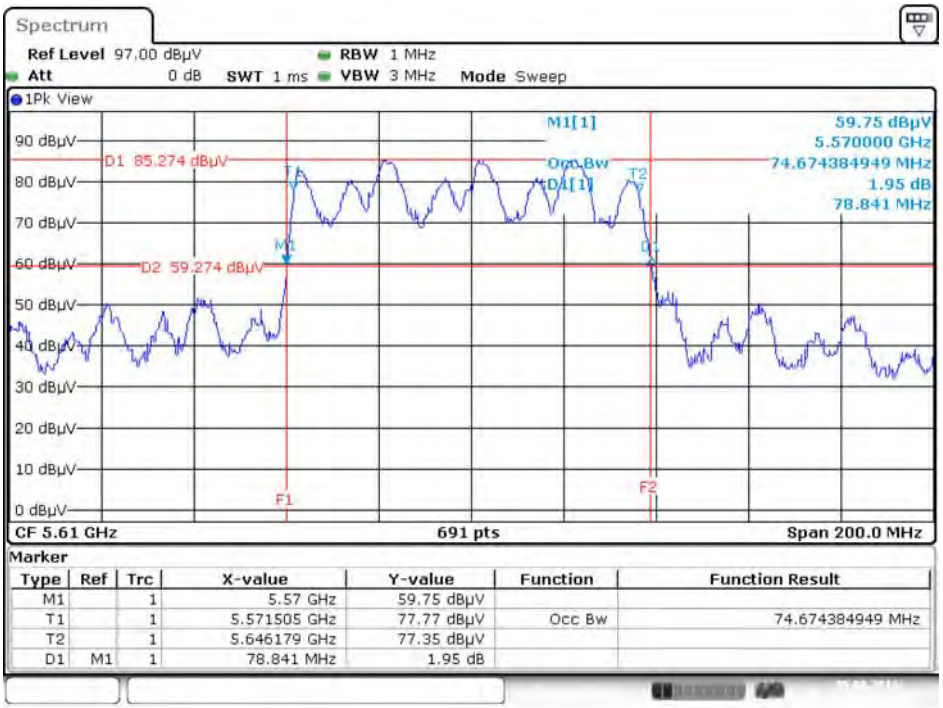
Date: 5.AUG.2016 12:04:24

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



Date: 5.AUG.2016 12:04:49

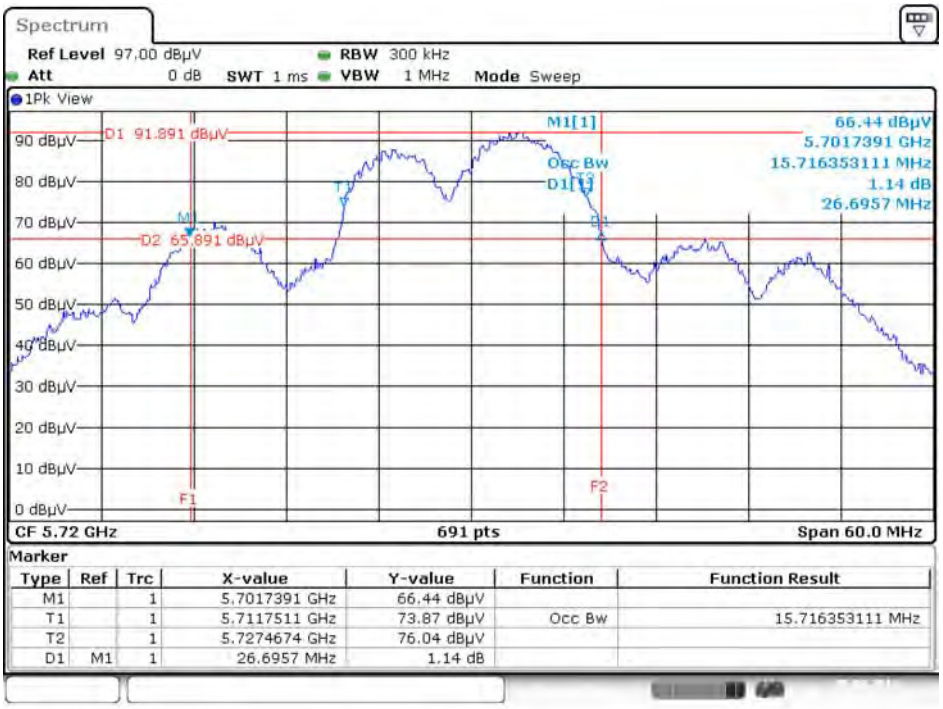
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5610 MHz



Date: 5.AUG.2016 12:05:18

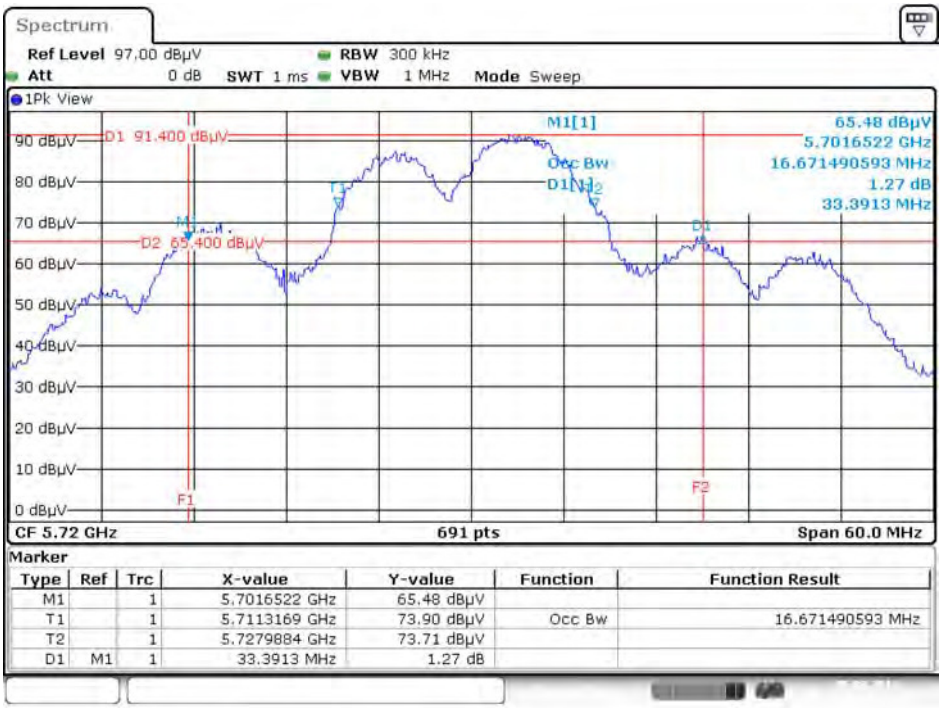
Straddle Channel

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



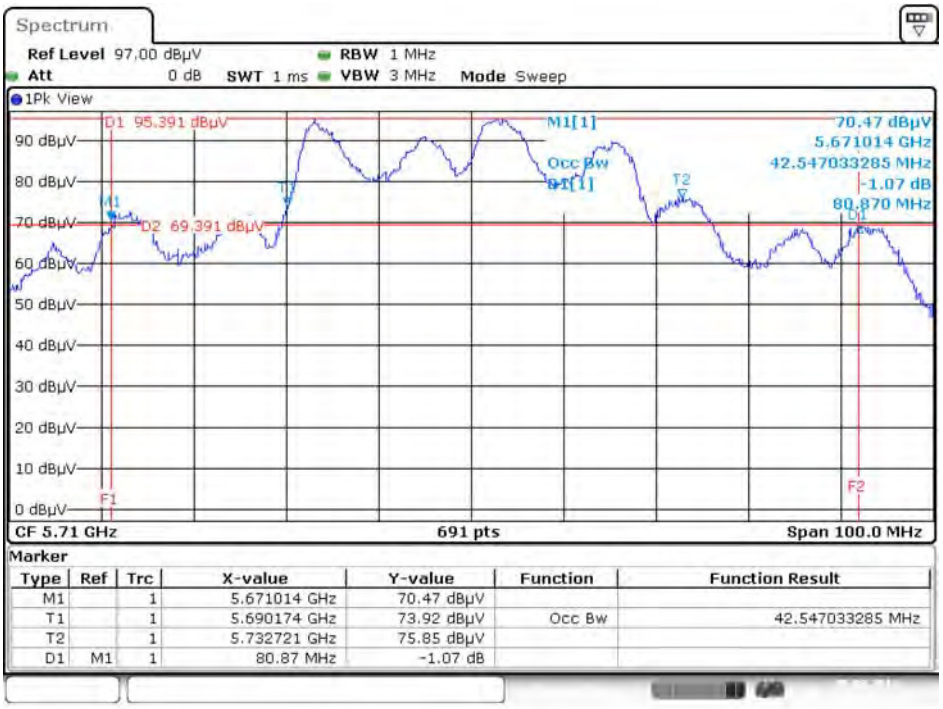
Date: 5.AUG.2016 13:55:22

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



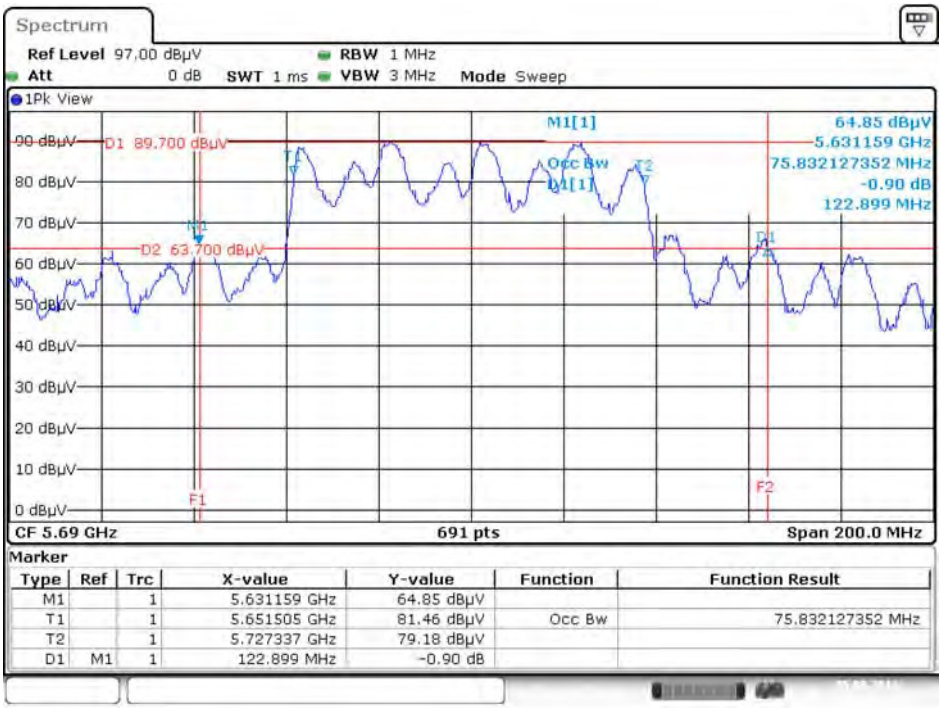
Date: 5.AUG.2016 13:57:36

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: 5.AUG.2016 13:59:01

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

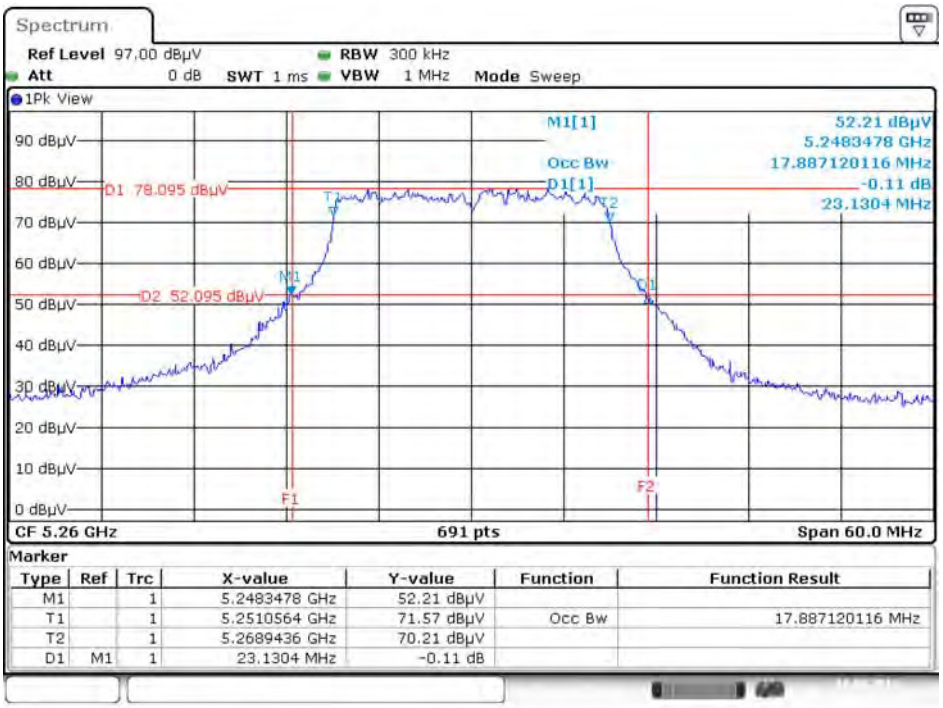


Date: 5.AUG.2016 14:01:19

For beamforming mode

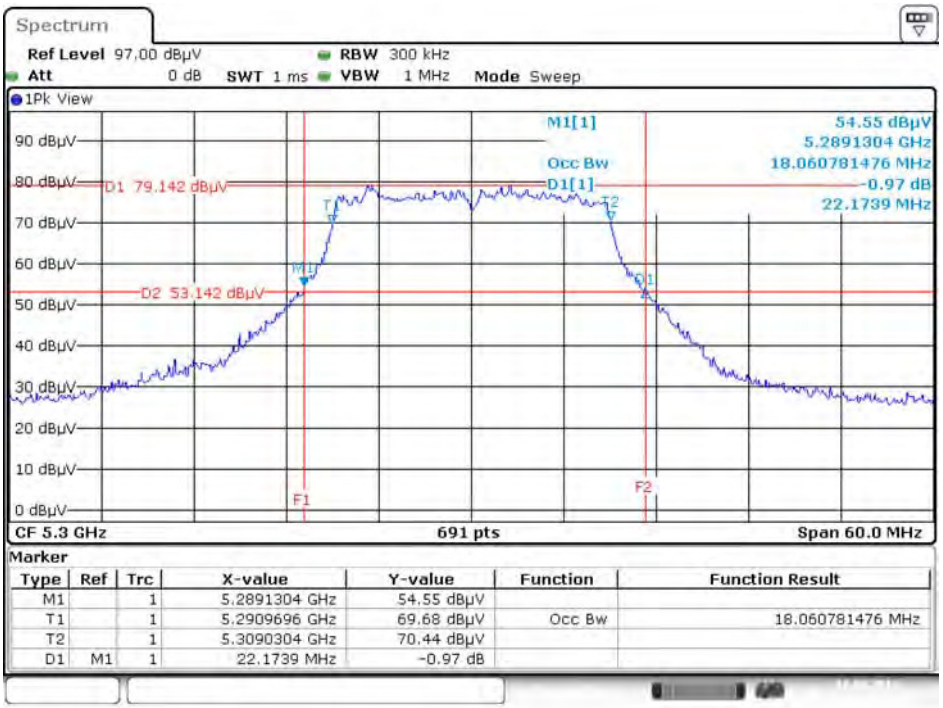
For indoor use master B1 and indoor, outdoor use B2~B4

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



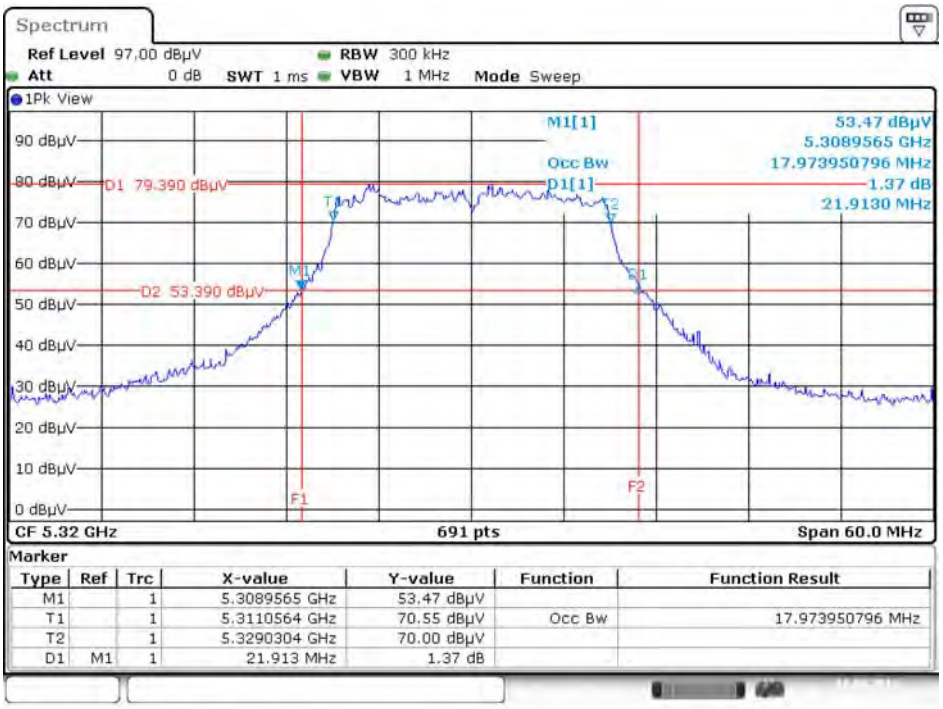
Date: 10.AUG.2016 00:14:14

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



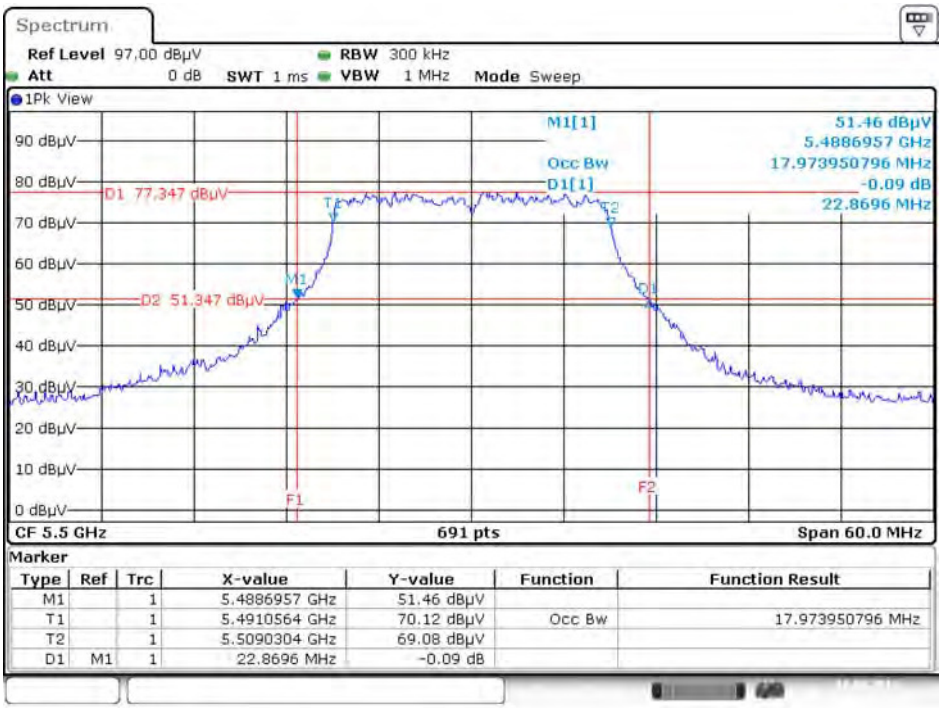
Date: 10.AUG.2016 00:15:46

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



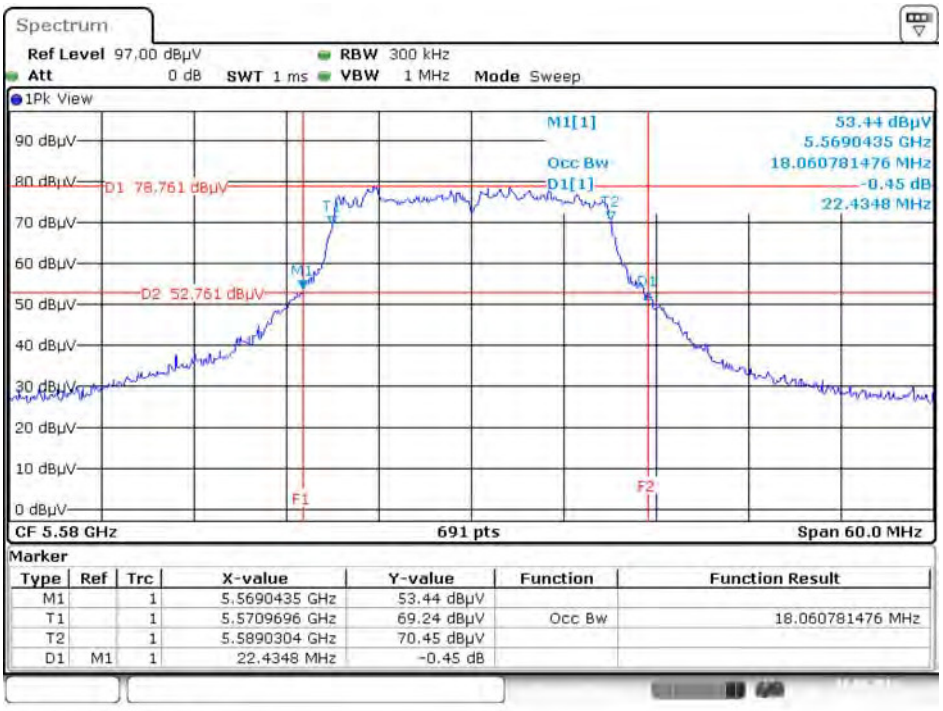
Date: 10.AUG.2016 00:17:00

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



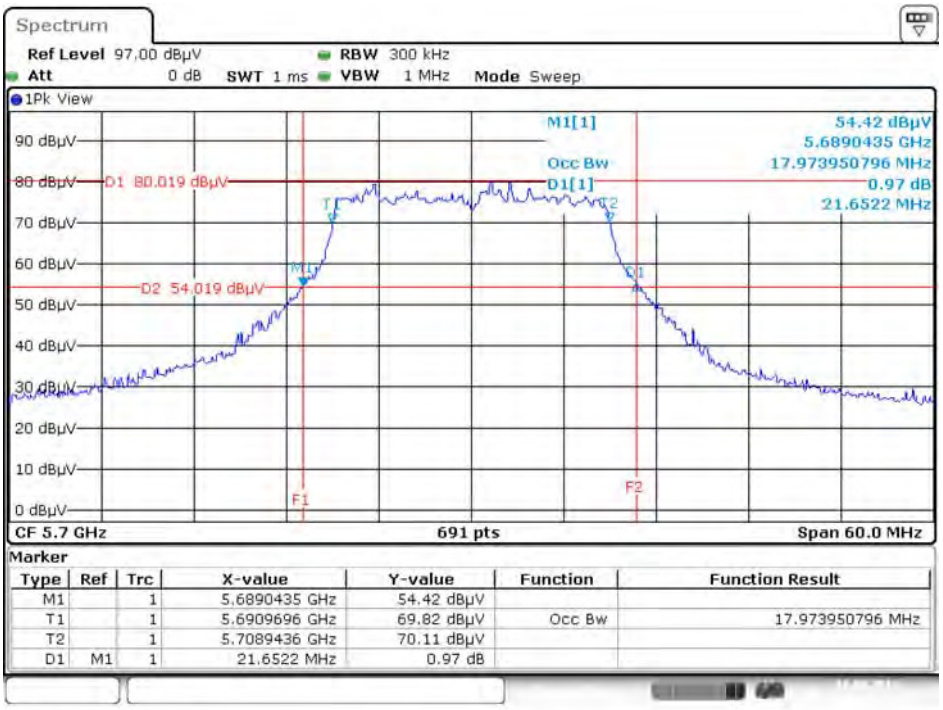
Date: 10.AUG.2016 00:18:30

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



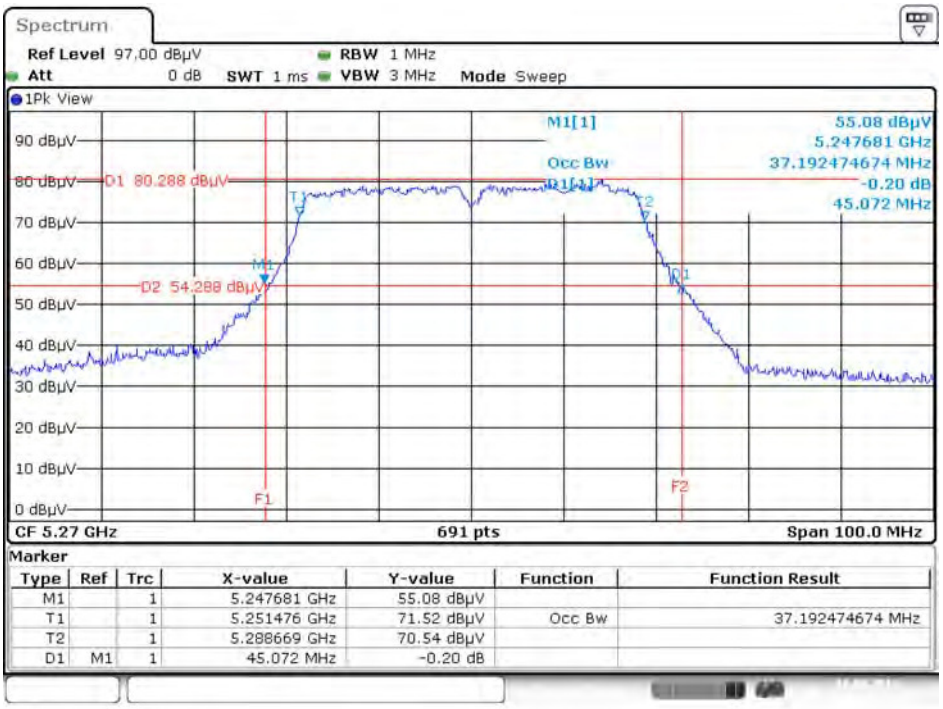
Date: 10.AUG.2016 00:19:45

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



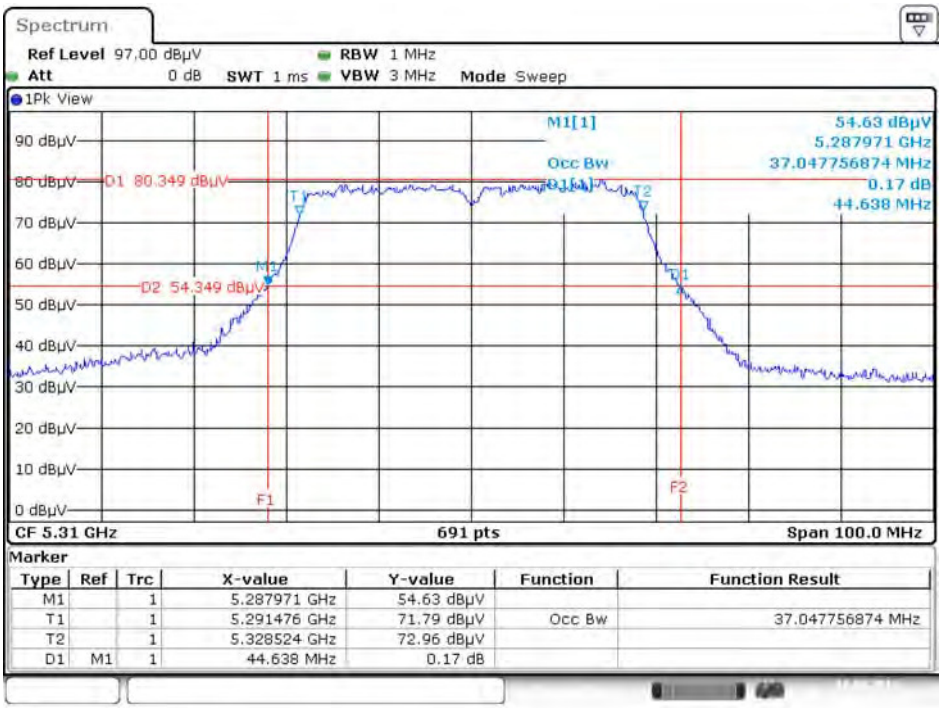
Date: 10.AUG.2016 00:21:40

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



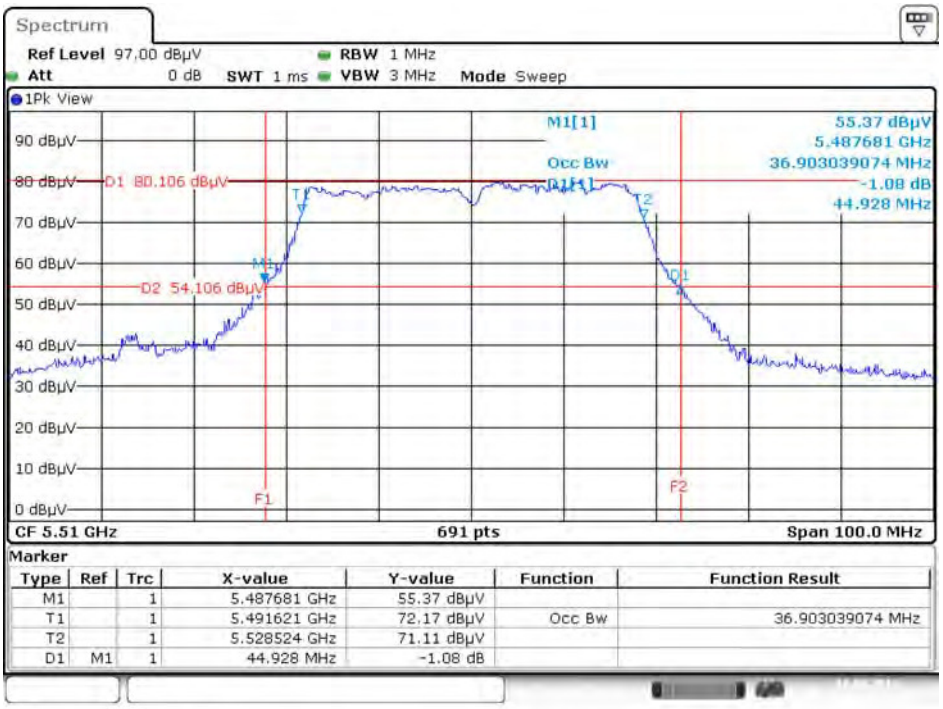
Date: 10.AUG.2016 01:11:09

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



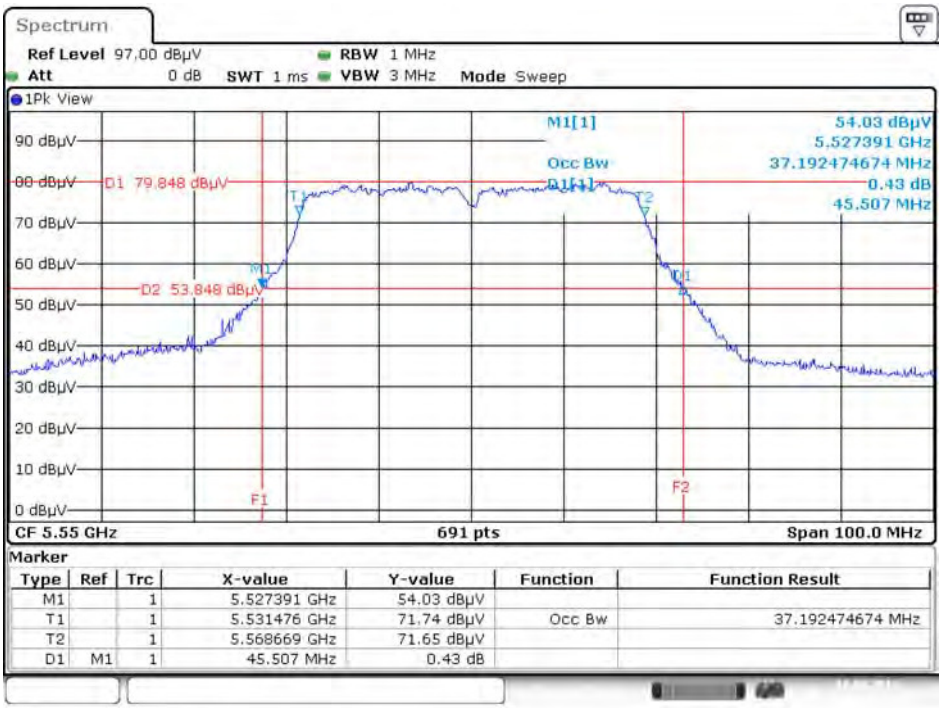
Date: 10.AUG.2016 01:12:34

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



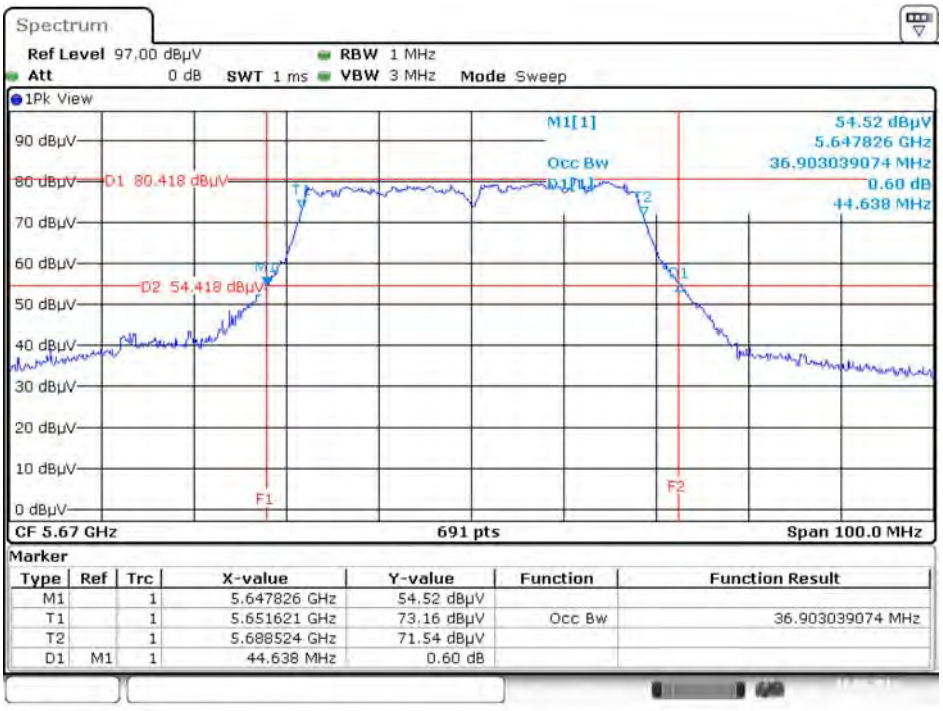
Date: 10.AUG.2016 01:15:48

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



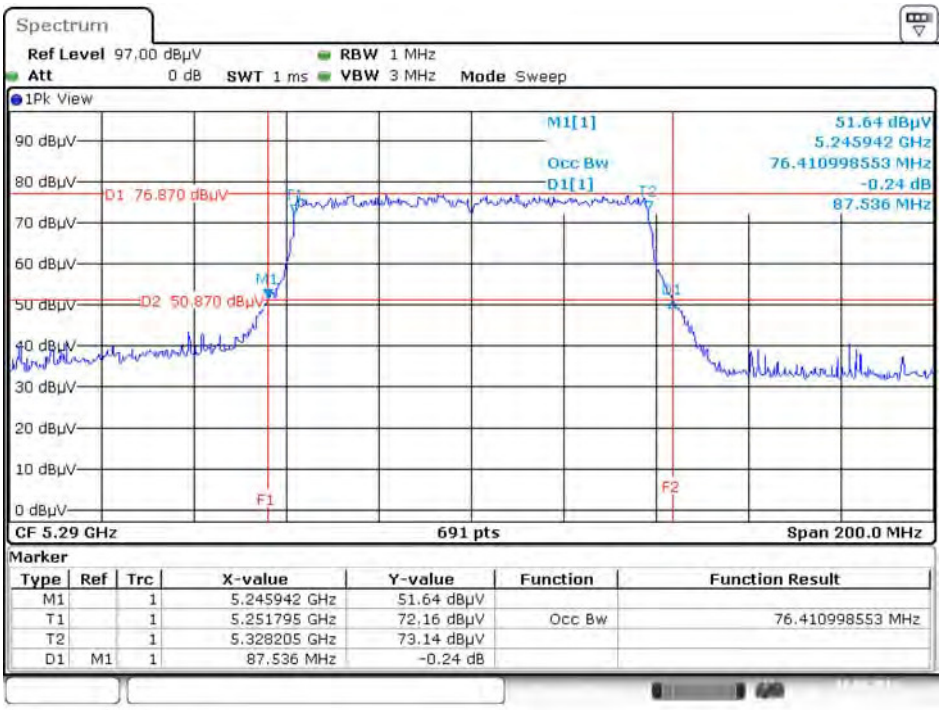
Date: 10.AUG.2016 01:17:19

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



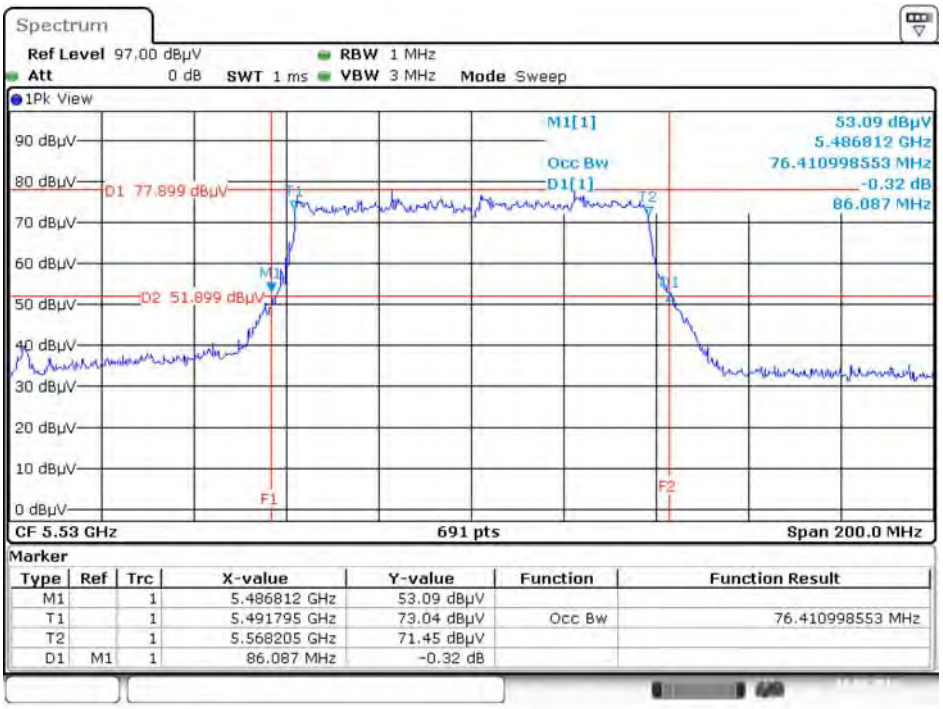
Date: 10.AUG.2016 01:18:34

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



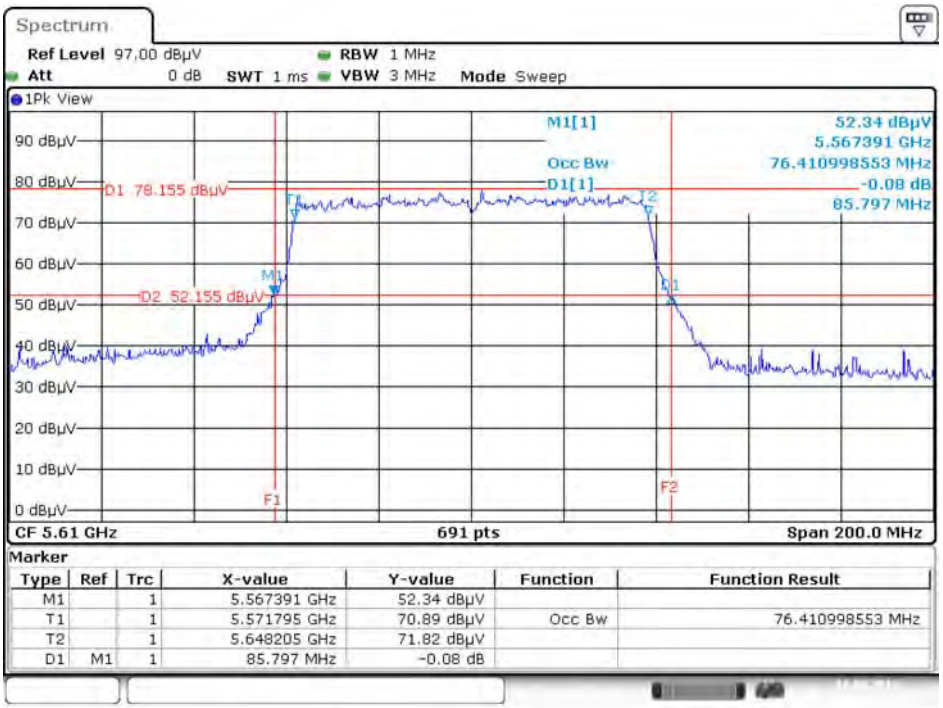
Date: 10.AUG.2016 01:27:19

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



Date: 10.AUG.2016 01:29:35

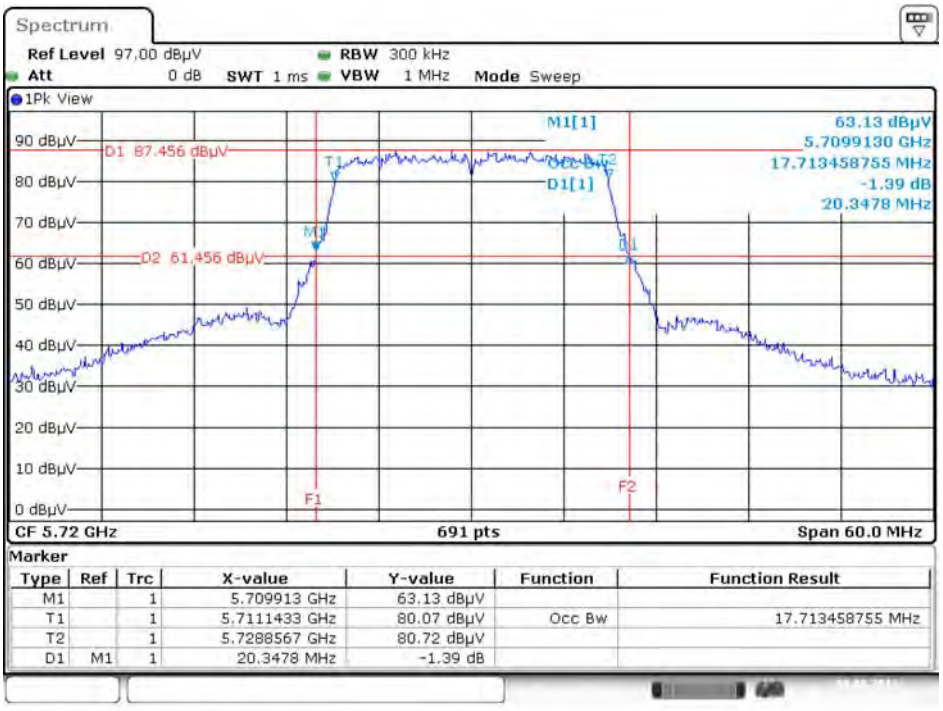
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5610 MHz



Date: 10.AUG.2016 01:32:06

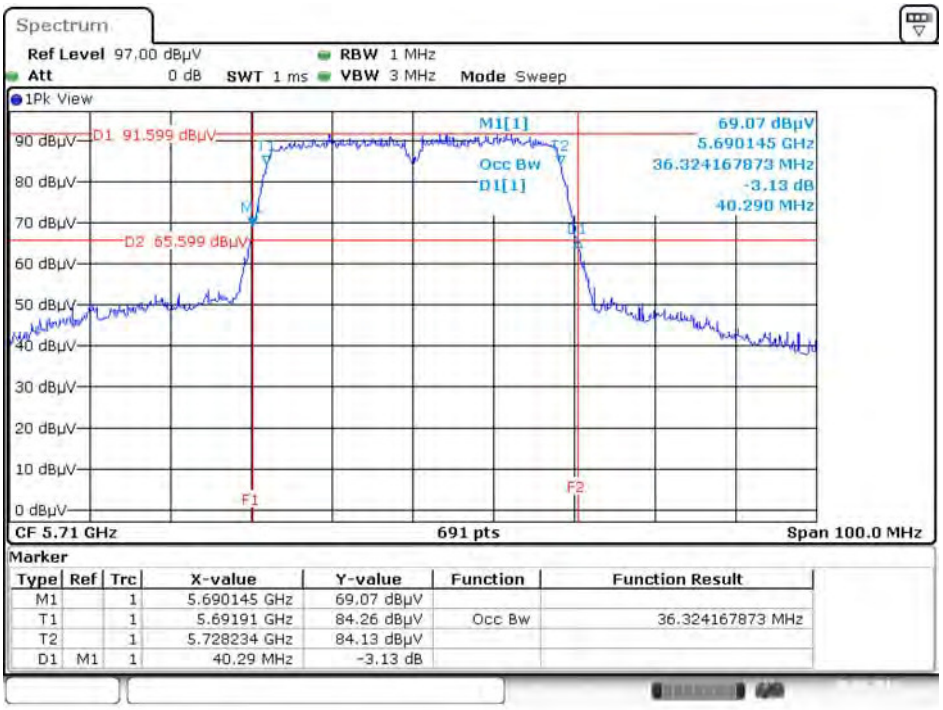
Straddle Channel

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



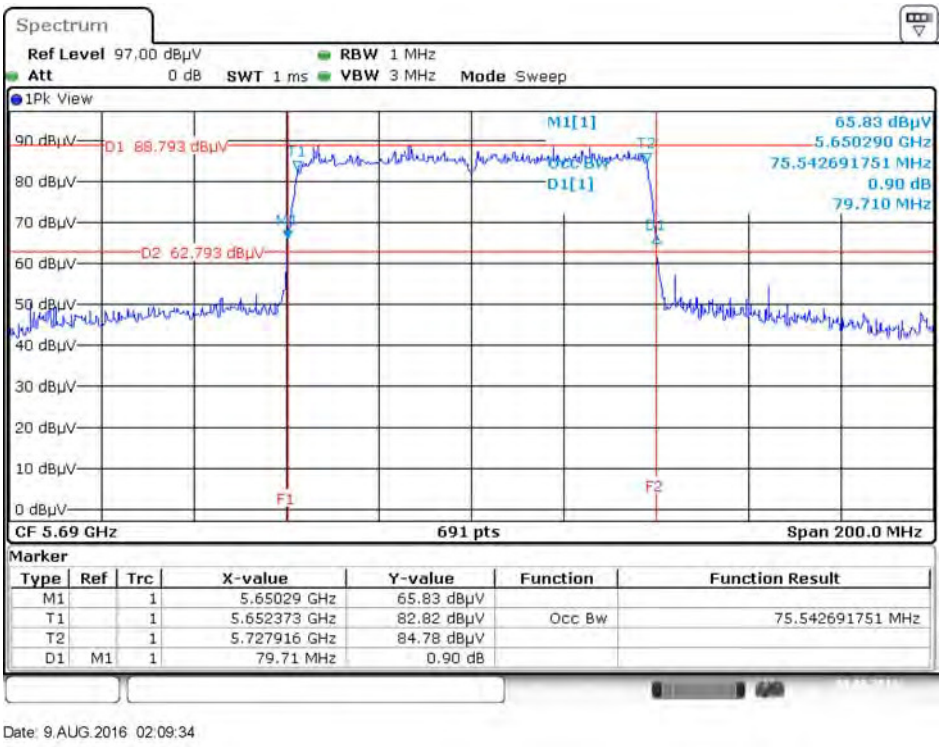
Date: 9.AUG.2016 00:55:32

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: 9.AUG.2016 01:29:01

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 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 v01r03 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	22°C	Humidity	54%
Test Engineer	Gary Chu		

For non-beamforming mode

Straddle Channel

Mode	Frequency	6dB BW (MHz)	6dB BW M1 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11a	5720 MHz	11.94	5713.68	0.62	500	Complies
802.11ac MCS0/Nss1 VHT20	5720 MHz	12.12	5713.68	0.80	500	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	34.55	5691.80	1.35	500	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	74.49	5651.74	1.23	500	Complies

For beamforming mode

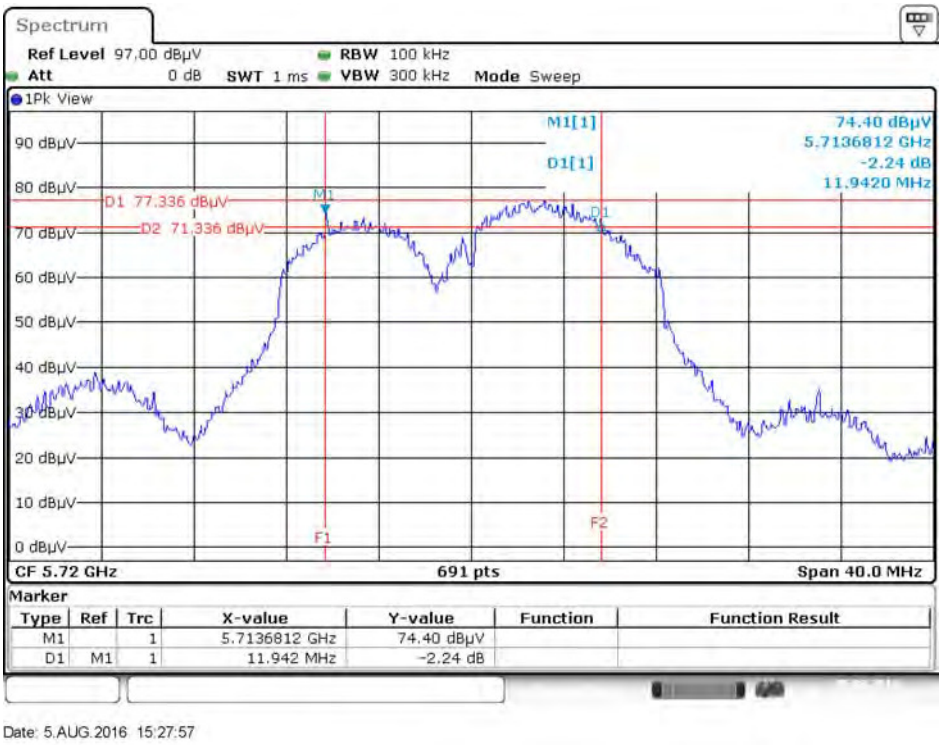
Straddle Channel

Mode	Frequency	6dB BW (MHz)	6dB BW M1 (MHz)	UNII 3 BW (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5720 MHz	17.74	5711.07	3.81	500	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz	34.44	5691.80	1.23	500	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz	74.20	5652.03	1.23	500	Complies

For non-beamforming mode

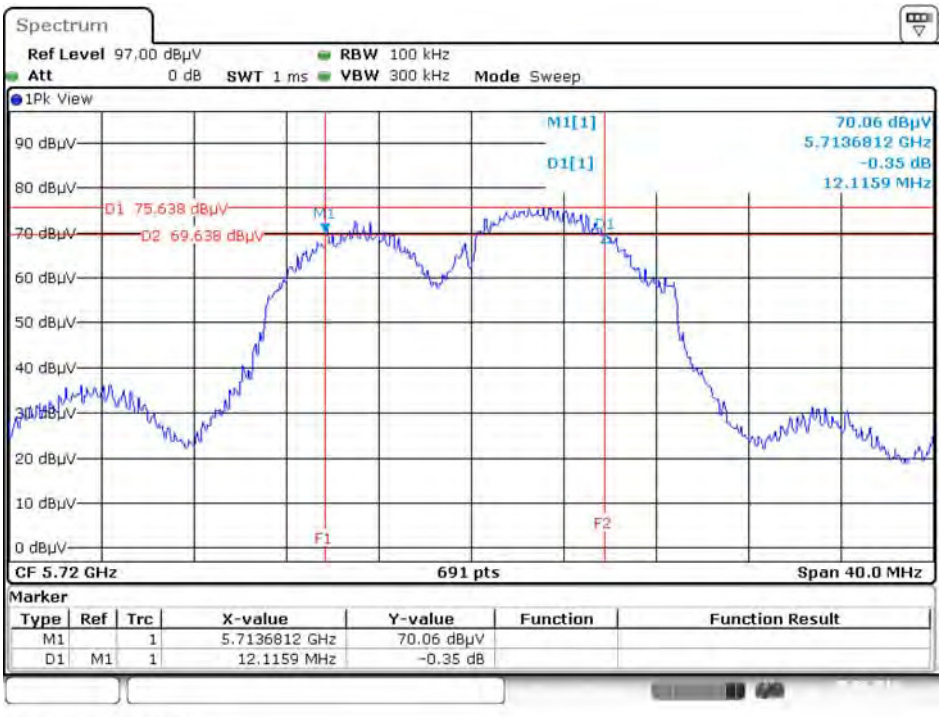
Straddle Channel

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



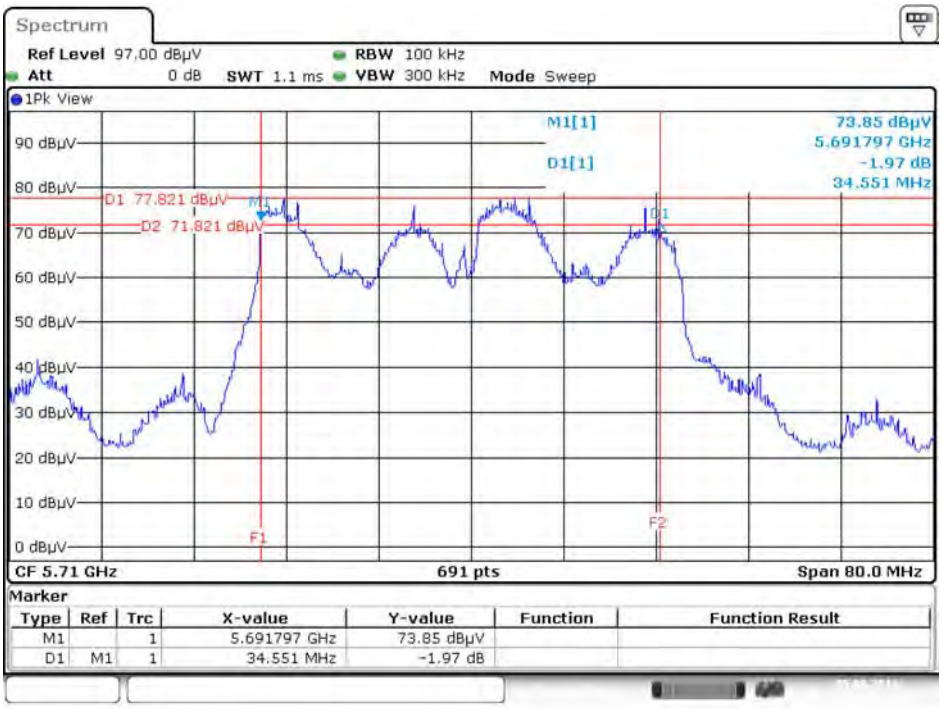
Date: 5.AUG.2016 15:27:57

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

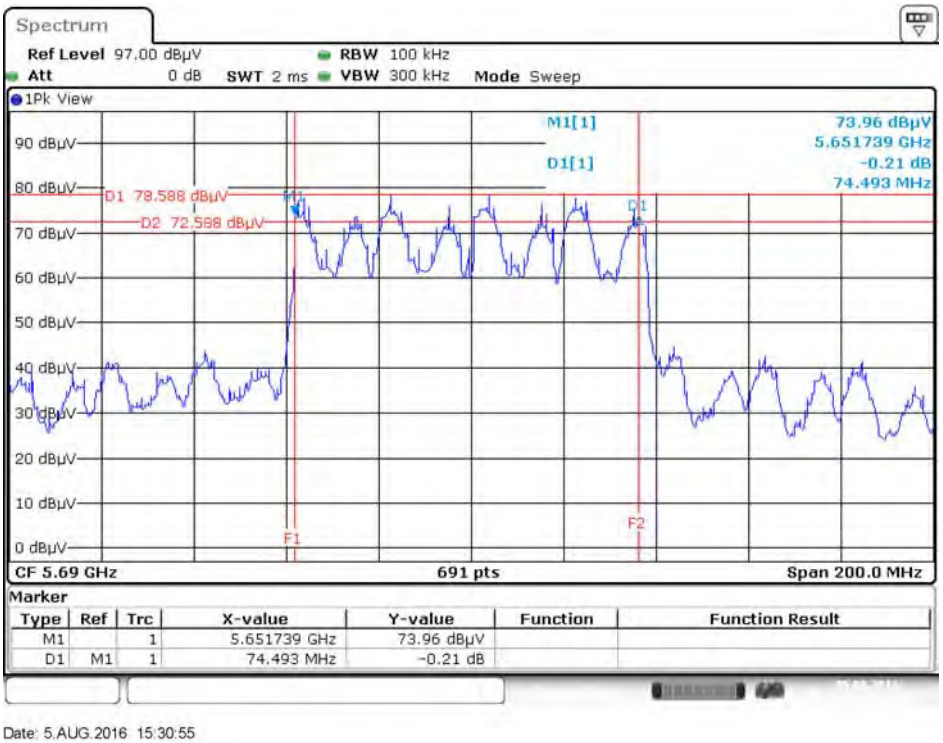


Date: 5.AUG.2016 15:28:41

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



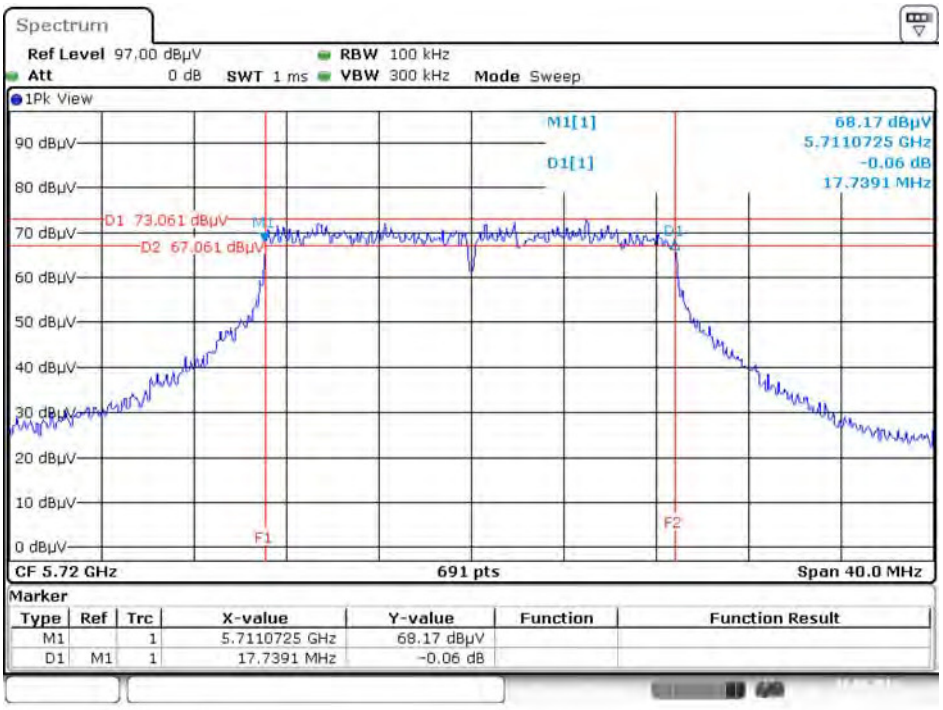
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz



For beamforming mode

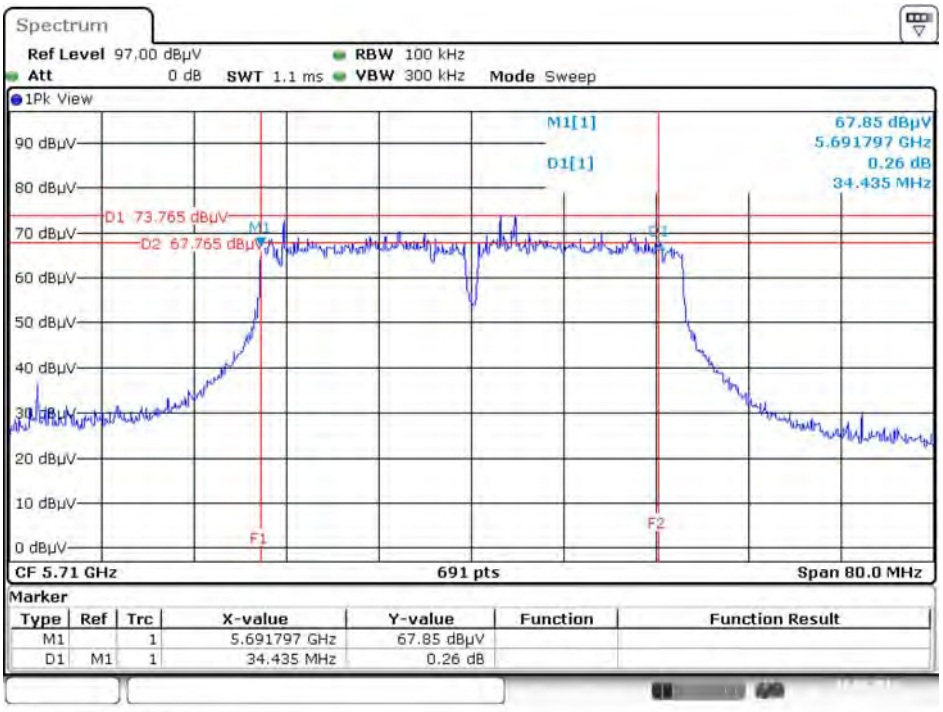
Straddle Channel

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



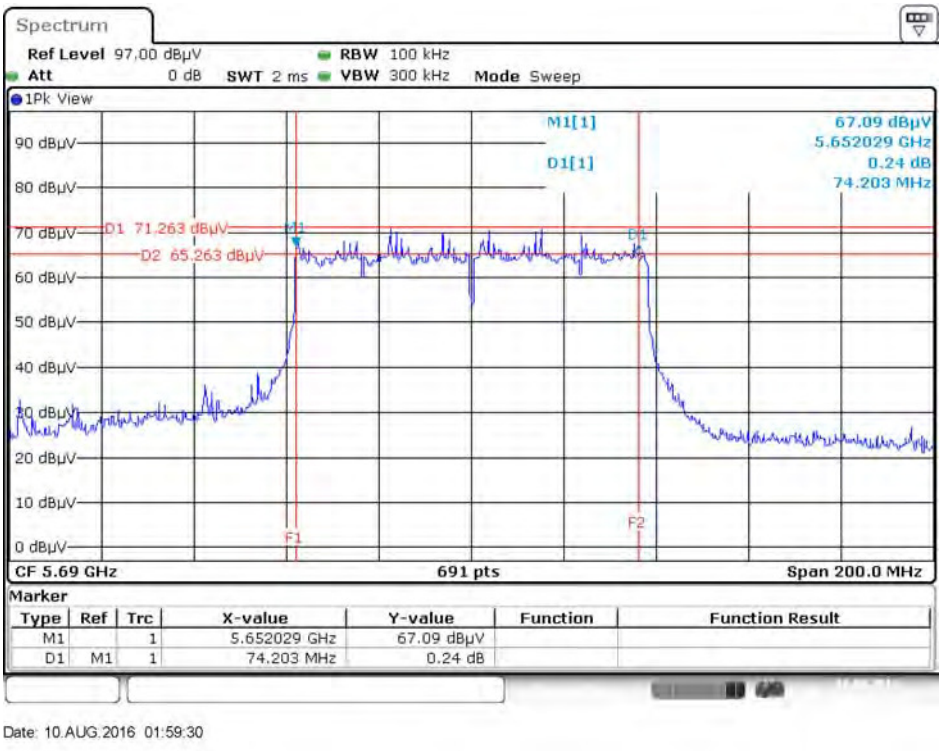
Date: 10.AUG.2016 01:51:30

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



Date: 10.AUG.2016 01:56:32

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

☒	5.25-5.35 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	
☒	5.725~5.85 GHz	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.

4.3.2. Measuring Instruments and Setting

For other channel

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

Power Meter Parameter	Setting
Detector	AVERAGE

For straddle channel

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

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

4.3.3. Test Procedures

For other channel

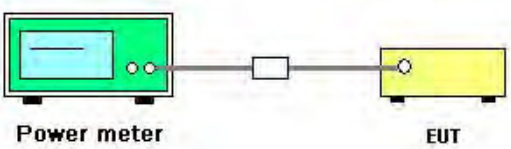
1. The transmitter output (antenna port) was connected to the power meter.
2. Test was performed in accordance with KDB789033 D02 v01r03 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (E) Maximum conducted output power =>3. Measurement using a Power Meter (PM) =>b) Method PM-G (Measurement using a gated RF average power meter).
3. Multiple antenna systems was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. When measuring maximum conducted output power with multiple antenna systems,add every result of the values by mathematic formula.

For straddle channel

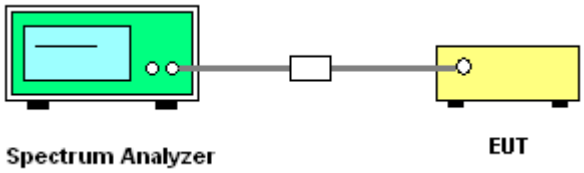
1. The transmitter output (antenna port) was connected to the spectrum analyzer.

4.3.4. Test Setup Layout

For other channel



For straddle channel



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of Maximum Conducted Output Power

Temperature	22°C	Humidity	54%
Test Engineer	Gary Chu	Test Date	Oct. 19, 2016

For non-beamforming mode

For indoor/outdoor B2~B3

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11a	5260 MHz	12.35	12.42	12.24	12.31	18.35	23.32	Complies
	5300 MHz	12.34	12.38	12.28	12.35	18.36	23.42	Complies
	5320 MHz	12.31	12.14	12.27	12.39	18.30	23.42	Complies
	5500 MHz	11.78	12.08	12.16	12.61	18.19	23.34	Complies
	5580 MHz	11.69	12.09	11.95	12.59	18.11	23.42	Complies
	5700 MHz	12.05	12.24	11.72	12.53	18.17	23.36	Complies
802.11ac MCS0/Nss1 VHT20	5260 MHz	12.01	12.22	12.06	12.09	18.12	23.64	Complies
	5300 MHz	12.18	12.25	12.07	12.15	18.18	23.66	Complies
	5320 MHz	11.87	11.93	12.18	12.06	18.03	23.66	Complies
	5500 MHz	12.05	12.11	12.57	12.32	18.29	23.62	Complies
	5580 MHz	12.02	12.24	12.64	12.35	18.34	23.68	Complies
	5700 MHz	12.04	12.38	12.75	12.16	18.36	23.62	Complies
802.11ac MCS0/Nss1 VHT40	5270 MHz	15.13	15.24	15.07	15.19	21.18	23.98	Complies
	5310 MHz	15.29	15.11	15.06	15.15	21.17	23.98	Complies
	5510 MHz	13.43	13.67	14.21	13.86	19.82	23.98	Complies
	5550 MHz	14.82	15.05	15.66	15.13	21.20	23.98	Complies
	5670 MHz	14.74	14.85	15.45	14.98	21.03	23.98	Complies
802.11ac MCS0/Nss1 VHT80	5290 MHz	14.61	14.74	14.59	14.72	20.69	23.98	Complies
	5530 MHz	13.25	14.26	14.28	13.58	19.89	23.98	Complies
	5610 MHz	16.22	16.71	16.94	16.45	22.61	23.98	Complies

Note:

For 802.11a:

5260 MHz Power limit=23.98dBm or 11+10log(B); 11+10log(17.04)-(6-6)=23.32dBm<23.98dBm, so limit=23.32dBm.

5300 MHz Power limit=23.98dBm or 11+10log(B); 11+10log(17.48)-(6-6)=23.42dBm<23.98dBm, so limit=23.42dBm.

5320 MHz Power limit=23.98dBm or 11+10log(B); 11+10log(17.48)-(6-6)=23.42dBm<23.98dBm, so limit=23.42dBm.

5500 MHz Power limit=23.98dBm or 11+10log(B); 11+10log(17.13)-(6-6)=23.34dBm<23.98dBm, so limit=23.34dBm.

5580 MHz Power limit=23.98dBm or 11+10log(B); 11+10log(17.48)-(6-6)=23.42dBm<23.98dBm, so limit=23.42dBm.

5700 MHz Power limit=23.98dBm or 11+10log(B); 11+10log(17.22)-(6-6)=23.36dBm<23.98dBm, so limit=23.36dBm.

For 802.11ac VHT20:

5260 MHz Power limit=23.98dBm or 11+10log(B); 11+10log(18.35)-(6-6)=23.64dBm<23.98dBm, so limit=23.64dBm.

5300 MHz Power limit=23.98dBm or 11+10log(B); 11+10log(18.44)-(6-6)=23.66dBm<23.98dBm, so limit=23.66dBm.

5320 MHz Power limit=23.98dBm or 11+10log(B); 11+10log(18.44)-(6-6)=23.66dBm<23.98dBm, so limit=23.66dBm.

5500 MHz Power limit=23.98dBm or 11+10log(B); 11+10log(18.26)-(6-6)=23.62dBm<23.98dBm, so limit=23.62dBm.

5580 MHz Power limit=23.98dBm or 11+10log(B); 11+10log(18.52)-(6-6)=23.68dBm<23.98dBm, so limit=23.68dBm.

5700 MHz Power limit=23.98dBm or 11+10log(B); 11+10log(18.26)-(6-6)=23.62dBm<23.98dBm, so limit=23.62dBm.

Straddle Channel

Mode	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
802.11a	5720 MHz (UNII 2C)	10.40	10.78	10.37	11.16	16.71	23.98	Complies
	5720 MHz (UNII 3)	4.10	4.32	4.11	4.76	10.35	30.00	Complies
802.11ac MCS0/Nss1 VHT20	5720 MHz (UNII 2C)	10.63	11.00	10.72	11.64	17.04	23.98	Complies
	5720 MHz (UNII 3)	5.12	5.16	5.03	5.86	11.33	30.00	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz (UNII 2C)	14.33	14.57	14.28	15.21	20.63	23.98	Complies
	5710 MHz (UNII 3)	4.18	4.49	4.08	5.04	10.48	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz (UNII 2C)	17.27	17.66	17.64	18.49	23.81	23.98	Complies
	5690 MHz (UNII 3)	4.21	4.68	4.58	5.37	10.75	30.00	Complies

For beamforming mode

For indoor/outdoor B2~B3

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	11.58	11.96	11.59	11.65	17.72	19.96	Complies
	5300 MHz	11.83	11.71	11.67	11.72	17.75	19.96	Complies
	5320 MHz	11.43	11.55	11.48	11.77	17.58	19.96	Complies
	5500 MHz	10.75	11.19	11.21	11.63	17.23	19.96	Complies
	5580 MHz	10.83	11.36	11.17	11.91	17.36	19.96	Complies
	5700 MHz	10.95	11.67	10.81	11.47	17.26	19.96	Complies
802.11ac MCS0/Nss1 VHT40	5270 MHz	12.03	11.72	11.55	11.46	17.72	19.96	Complies
	5310 MHz	12.22	11.81	11.76	11.61	17.88	19.96	Complies
	5510 MHz	10.94	11.15	11.23	11.64	17.27	19.96	Complies
	5550 MHz	10.75	11.09	11.24	11.73	17.24	19.96	Complies
	5670 MHz	10.93	11.34	11.27	11.78	17.36	19.96	Complies
802.11ac MCS0/Nss1 VHT80	5290 MHz	11.71	11.53	11.13	11.41	17.47	19.96	Complies
	5530 MHz	11.85	11.92	11.55	12.13	17.89	19.96	Complies
	5610 MHz	10.82	11.43	11.14	11.71	17.31	19.96	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi>6dBi, so B2 B3 limit =23.98-(10.02-6)=19.96dBm.

Straddle Channel

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)	10.09	10.81	10.29	10.95	16.57	18.77	Complies
	5720 MHz (UNII 3)	4.58	5.10	4.71	5.41	10.98	25.98	Complies
802.11ac MCS0/Nss1 VHT40	5710 MHz (UNII 2C)	10.86	11.53	10.75	11.52	17.20	19.96	Complies
	5710 MHz (UNII 3)	0.75	1.48	0.81	1.43	7.15	25.98	Complies
802.11ac MCS0/Nss1 VHT80	5690 MHz (UNII 2C)	10.74	11.08	11.48	11.45	17.22	19.96	Complies
	5690 MHz (UNII 3)	-2.53	-2.14	-1.52	-1.41	4.14	25.98	Complies

Note:

For 802.11ac VHT20:

5720 MHz (UNII 2C): Power limit=23.98dBm or 11+10log(B); 11+10log(15.09)-(10.02-6)=18.77dBm<23.98dBm, so power limit=18.77dBm.

For (UNII 2C): $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =10.02dBi>6dBi, so limit =23.98-(10.02-6)=19.96dBm.

For (UNII 3): $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =10.02dBi>6dBi, so limit =30-(10.02-6)=25.98dBm.

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

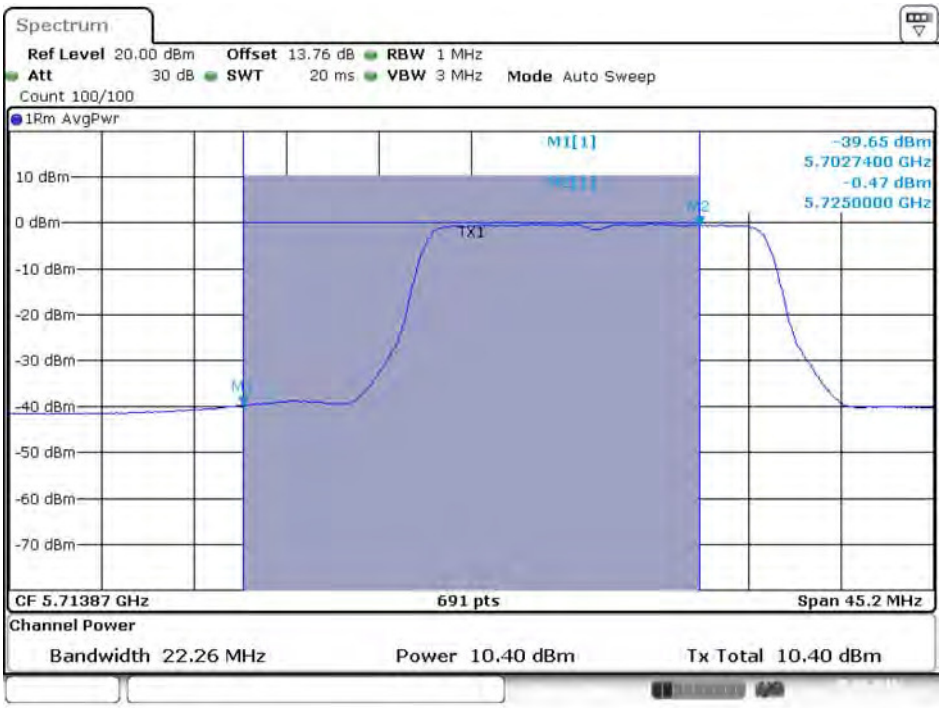
For plots, only the channel with worse result was shown.

For non-beamforming mode

For indoor, outdoor use master and slave without radar detection

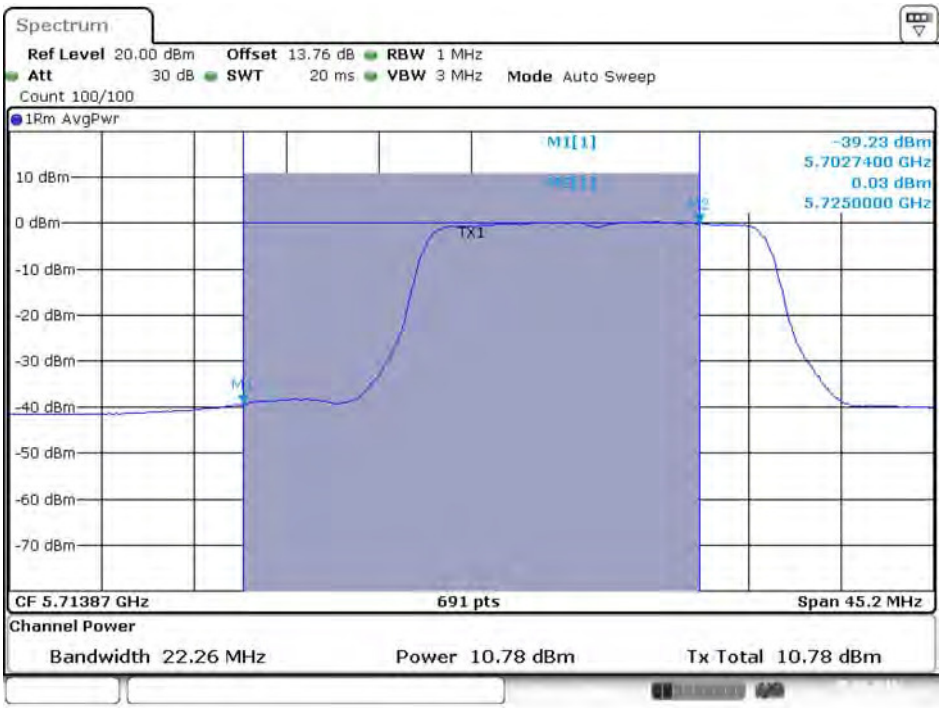
Straddle Channel

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



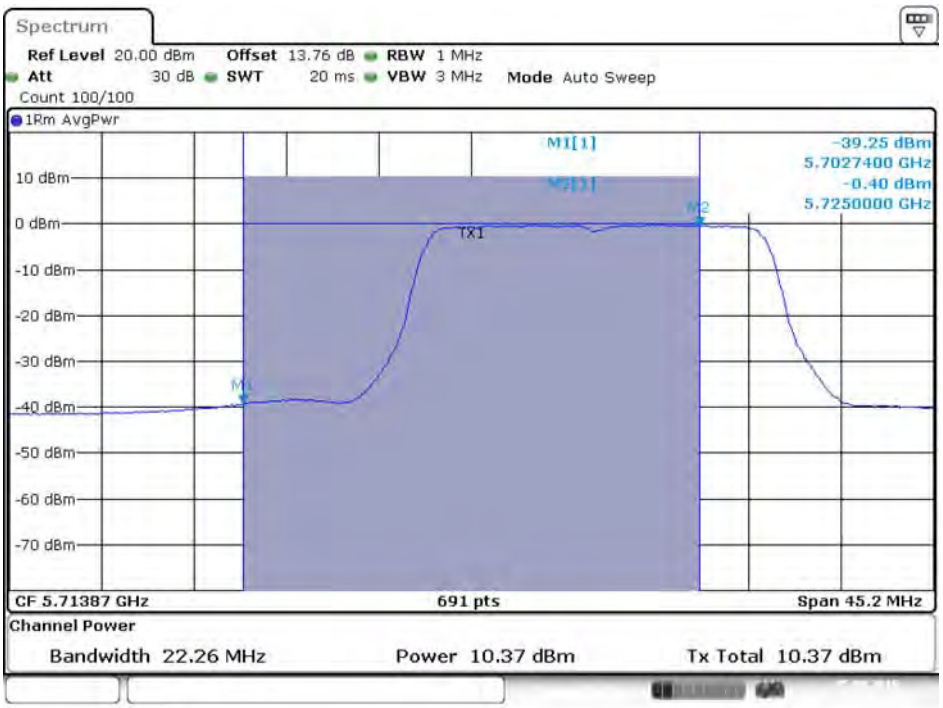
Date: 5.AUG.2016 14:21:33

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



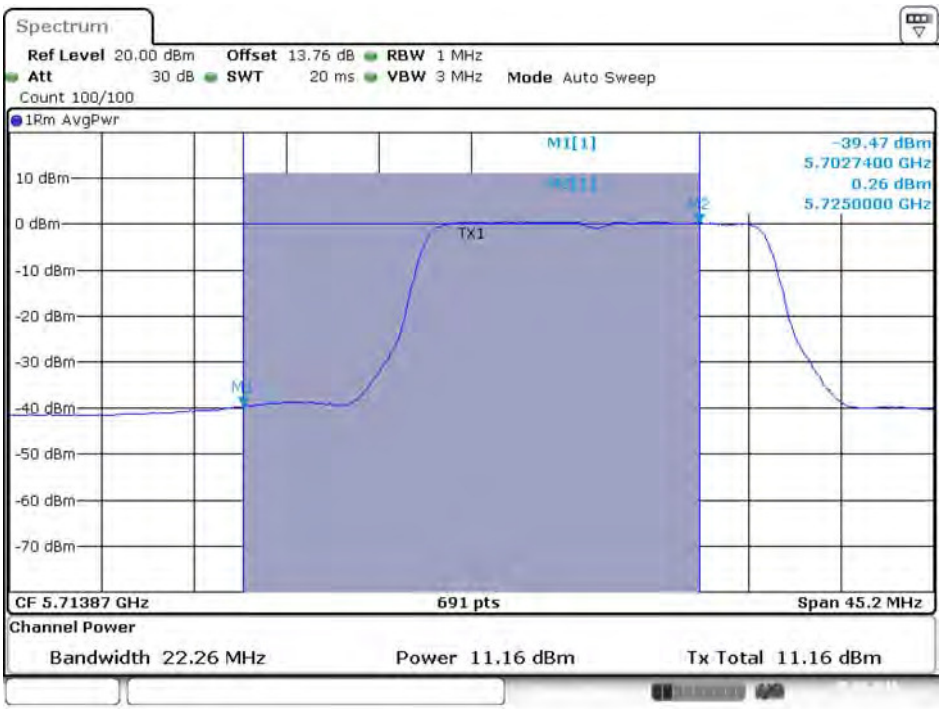
Date: 5.AUG.2016 14:21:40

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



Date: 5.AUG.2016 14:21:47

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



Date: 5.AUG.2016 14:21:54

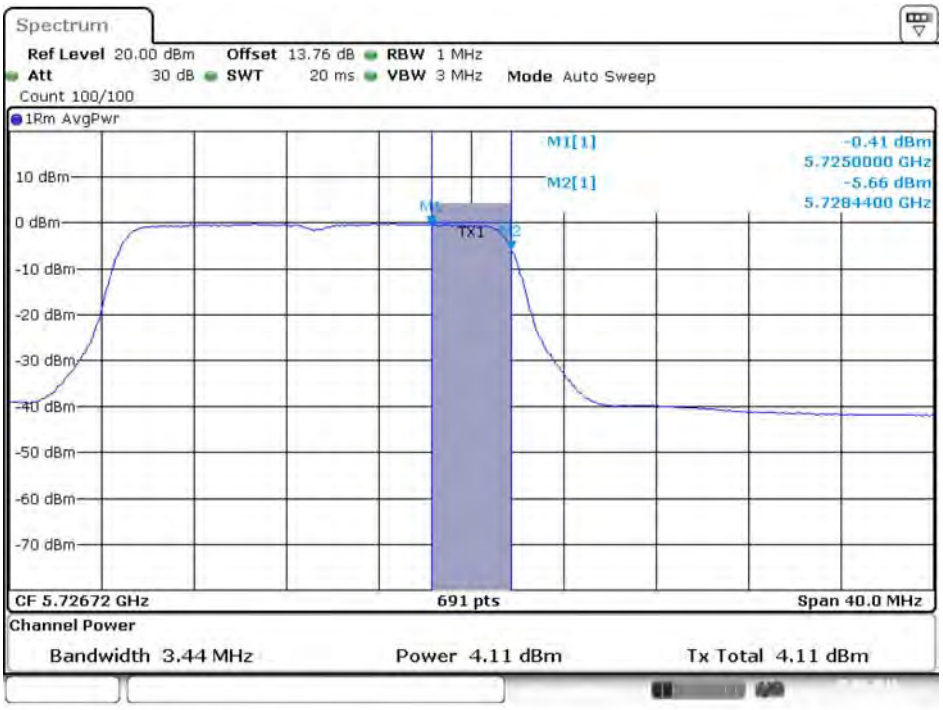
Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 1 / 5720 MHz (UNII 3)

Date: 5.AUG.2016 14:21:36

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

Date: 5.AUG.2016 14:21:43

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



Date: 5.AUG.2016 14:21:50

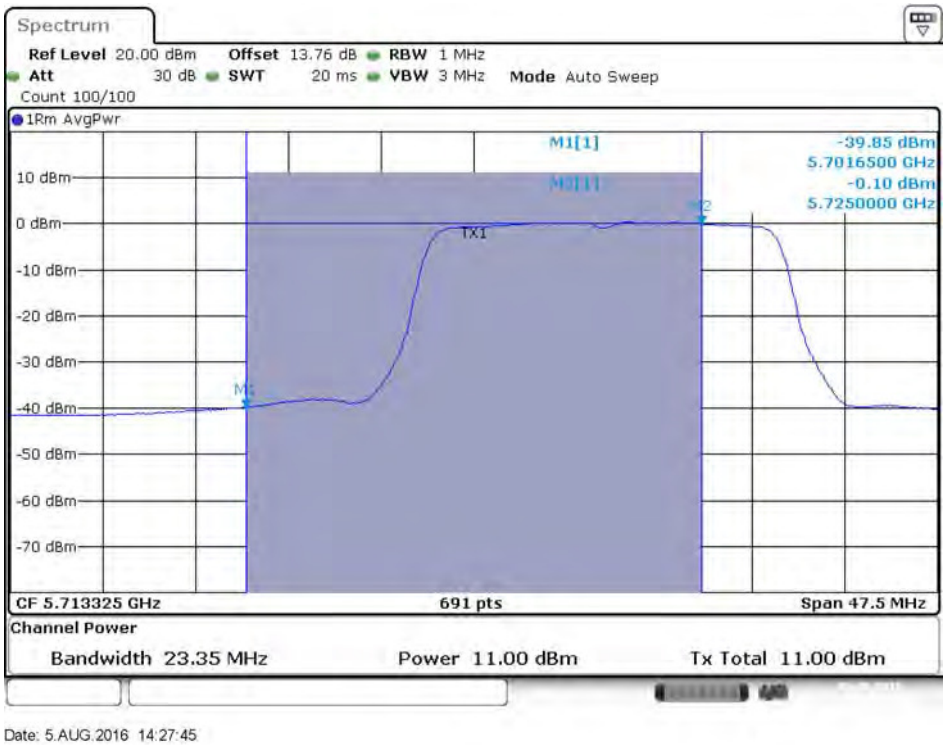
Conducted Output Power Plot on Configuration IEEE 802.11a / Chain 4 / 5720 MHz (UNII 3)

Date: 5.AUG.2016 14:21:57

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

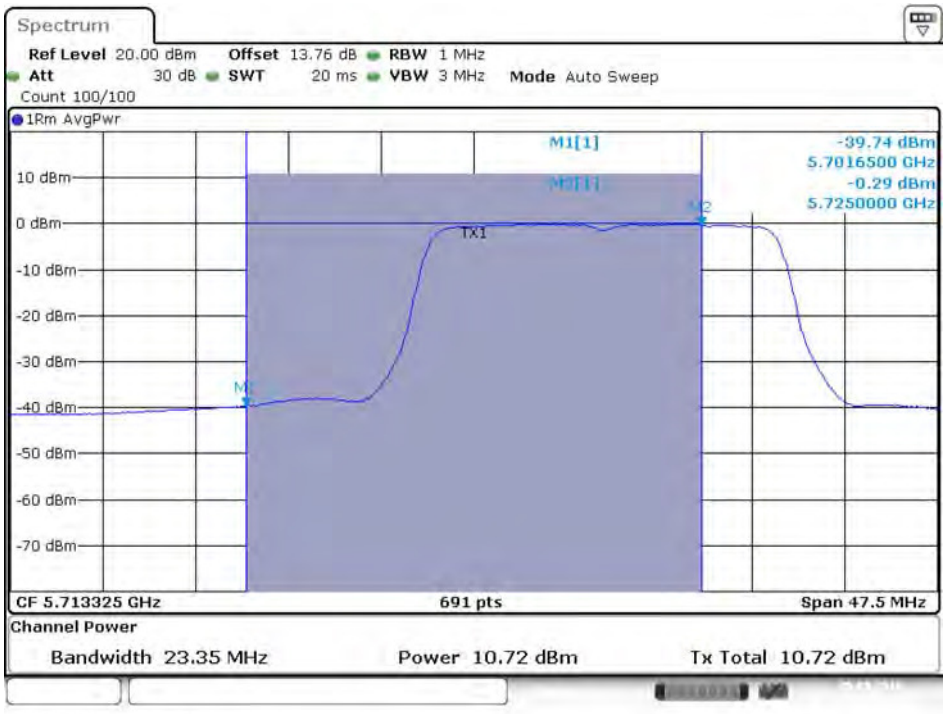
Date: 5.AUG.2016 14:27:37

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



Date: 5.AUG.2016 14:27:45

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

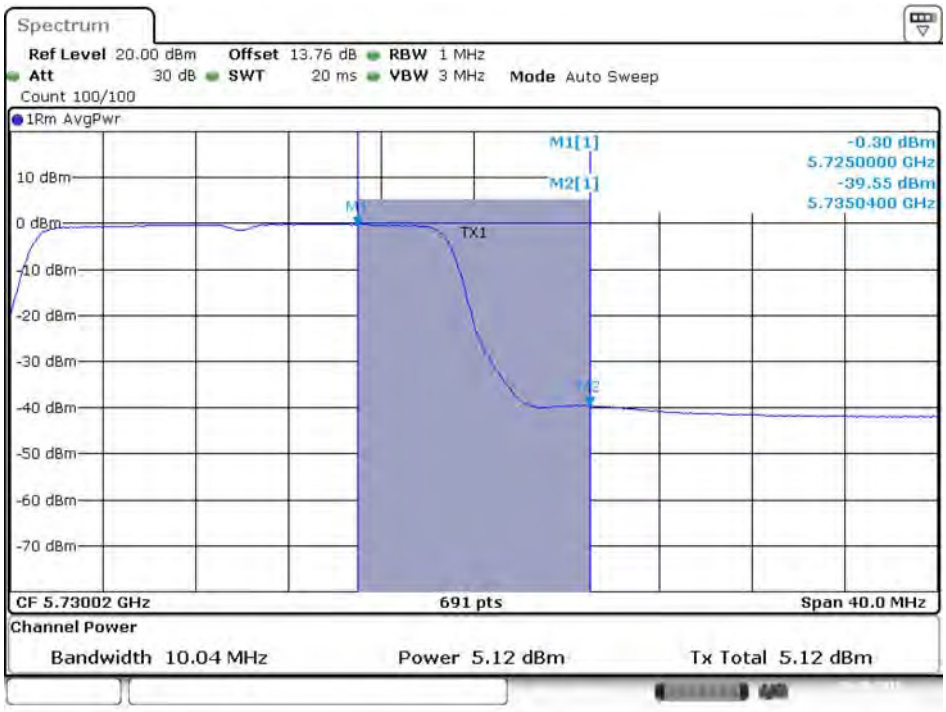


Date: 5.AUG.2016 14:27:52

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

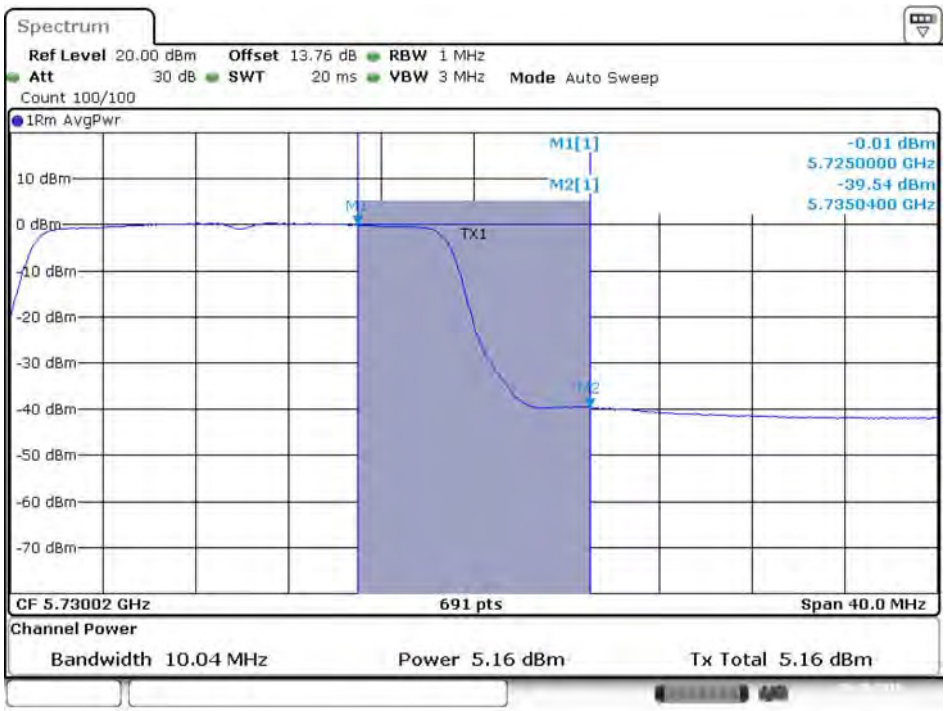
Date: 5.AUG.2016 14:27:59

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



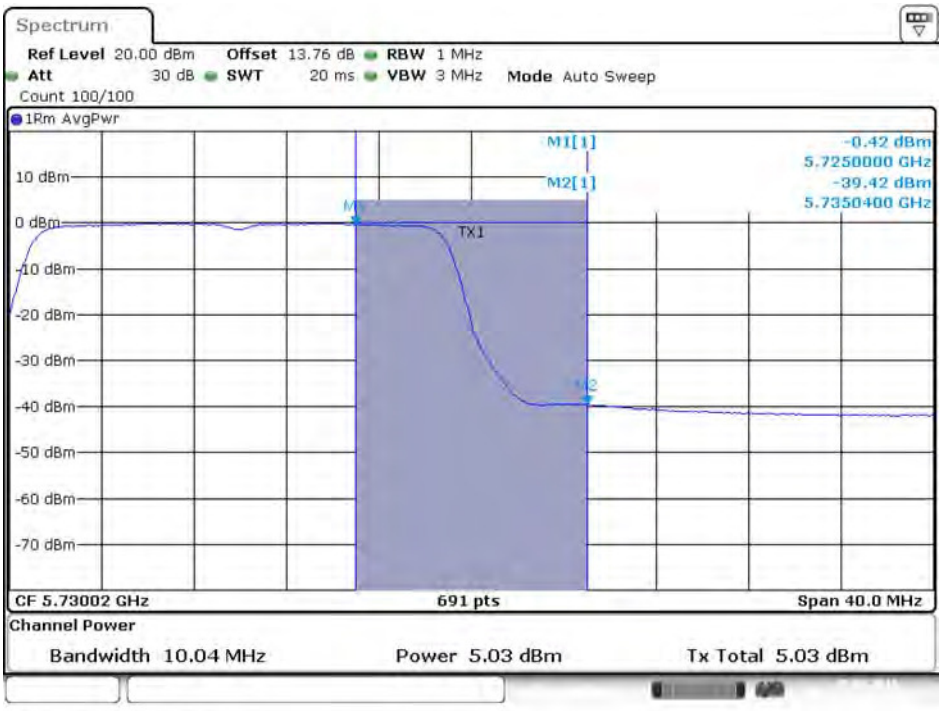
Date: 5.AUG.2016 14:27:41

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



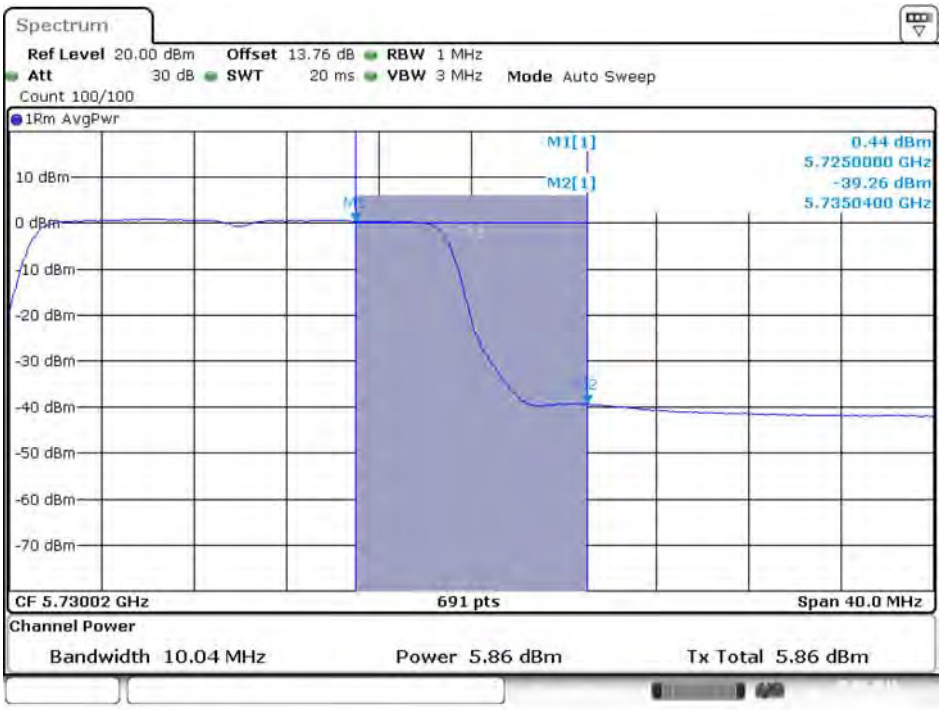
Date: 5.AUG.2016 14:27:48

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



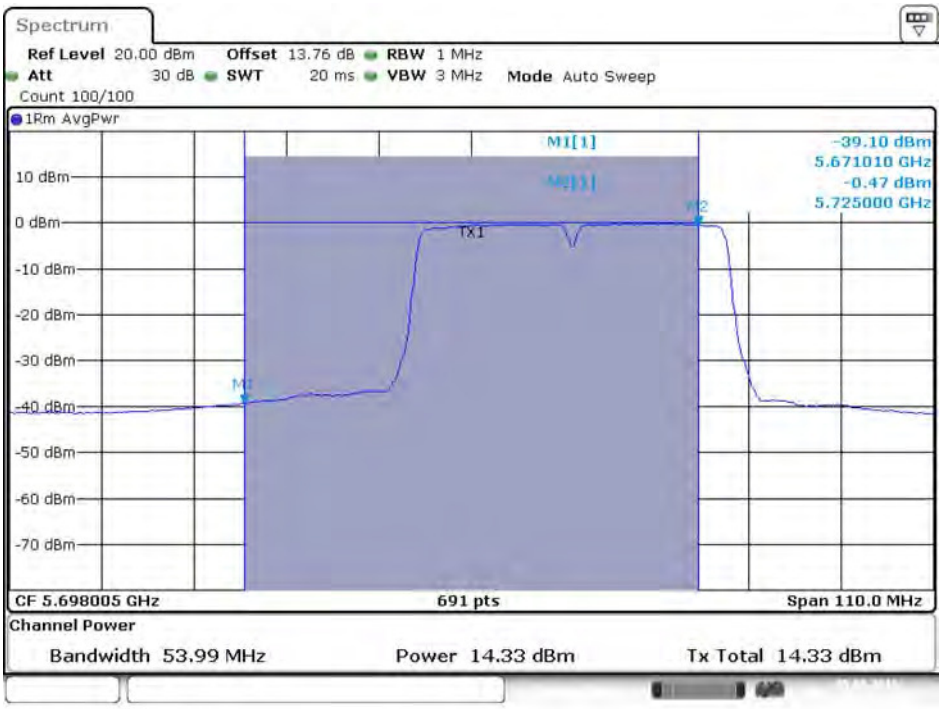
Date: 5.AUG.2016 14:27:55

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



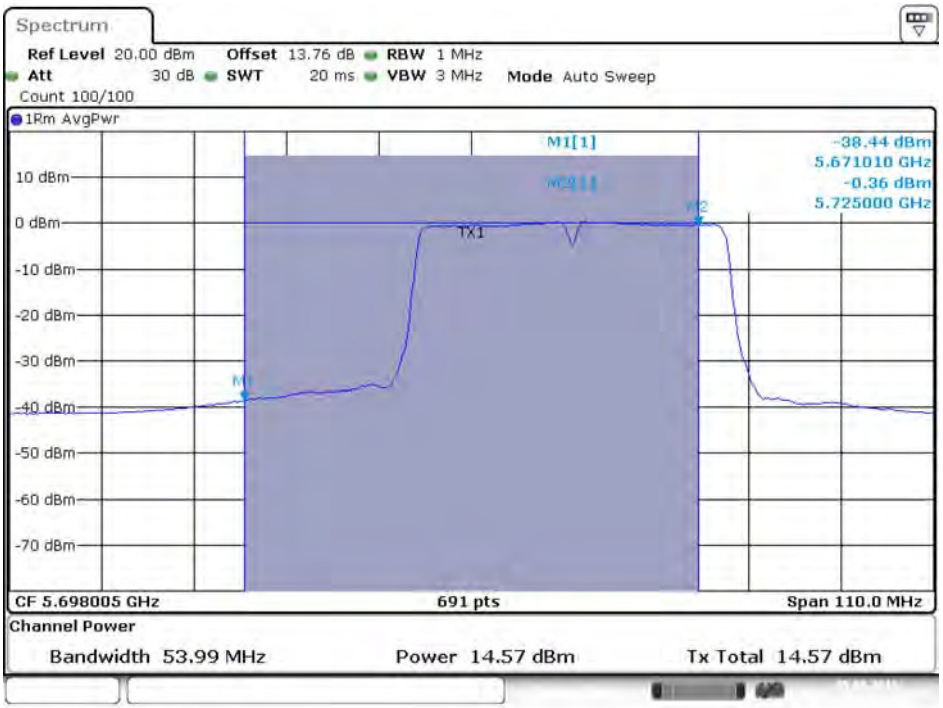
Date: 5.AUG.2016 14:28:02

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



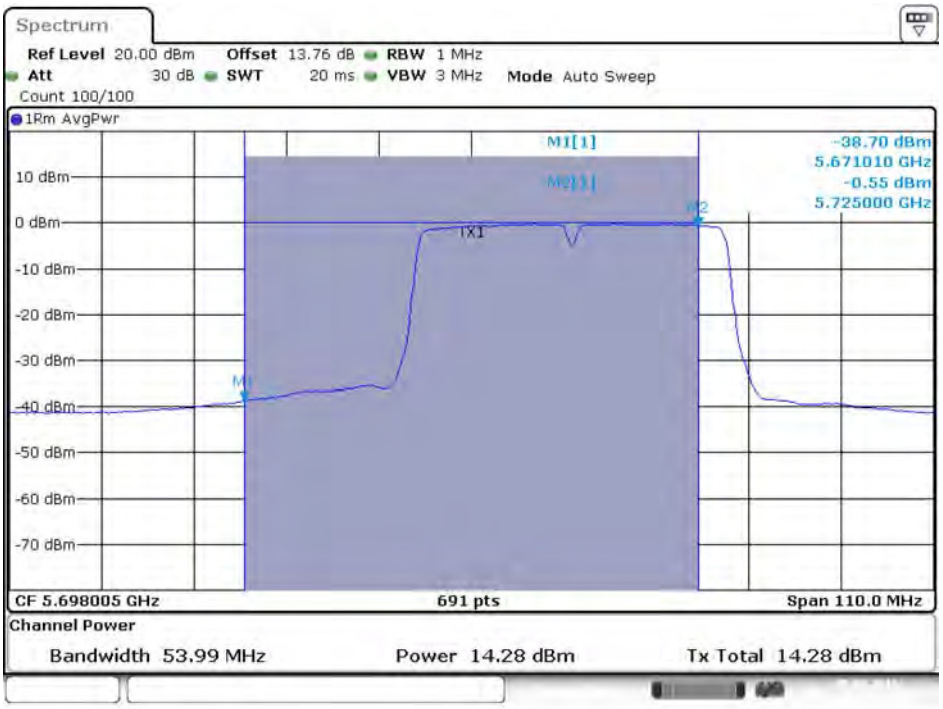
Date: 5.AUG.2016 14:39:10

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



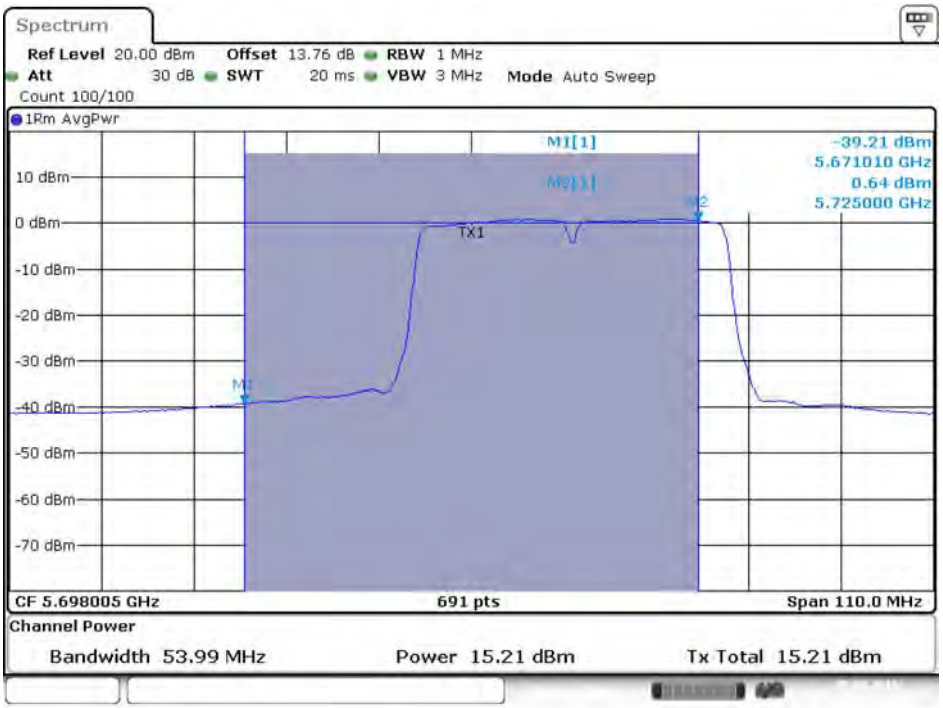
Date: 5.AUG.2016 14:39:17

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



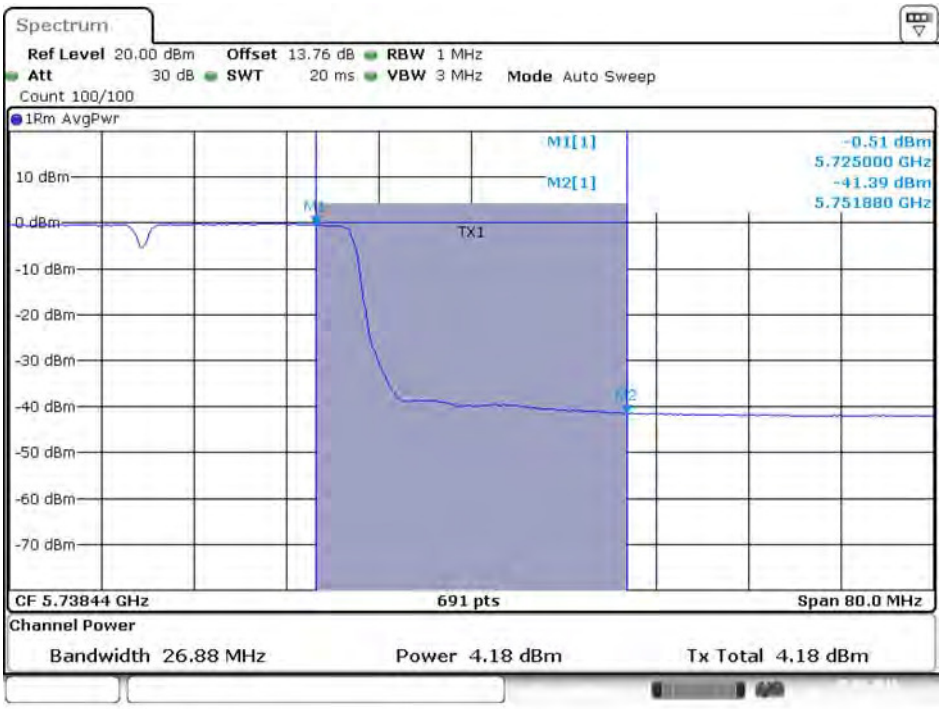
Date: 5.AUG.2016 14:39:24

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



Date: 5.AUG.2016 14:39:31

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

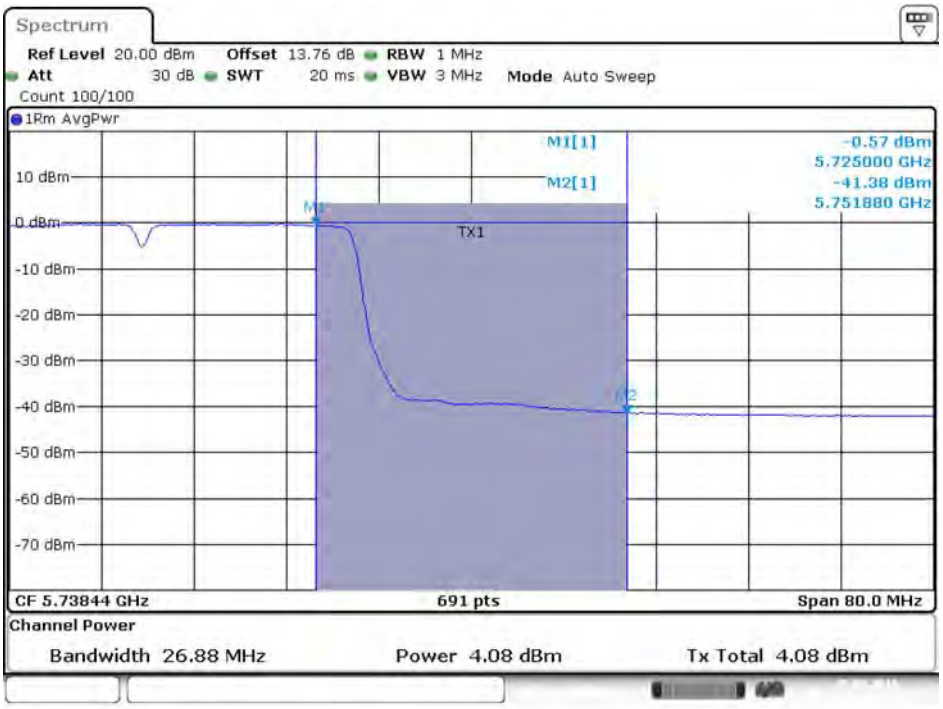


Date: 5.AUG.2016 14:39:13

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

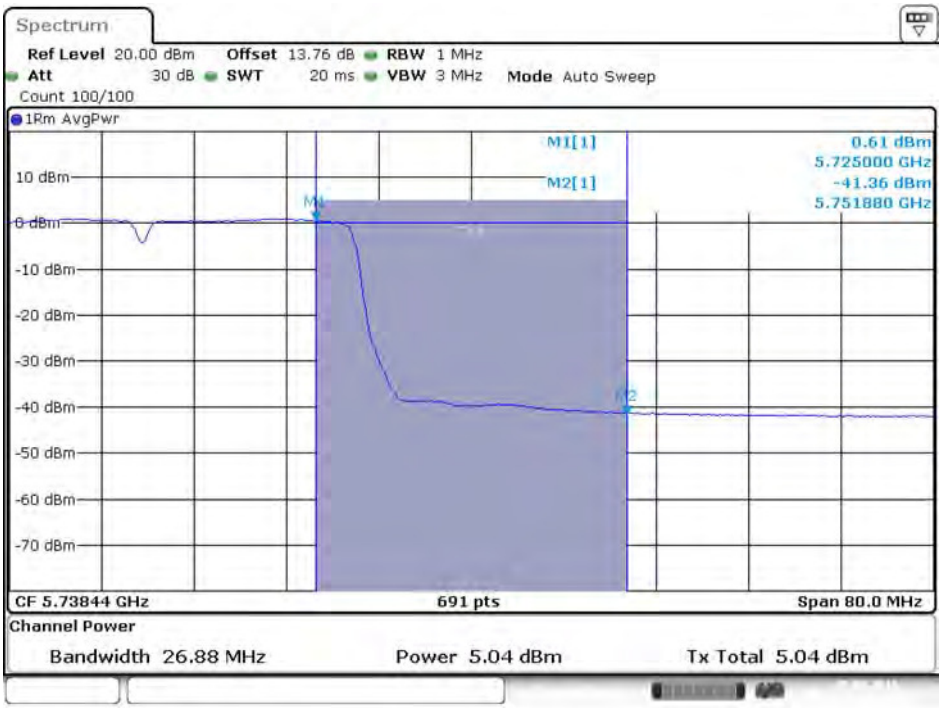
Date: 5.AUG.2016 14:39:20

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



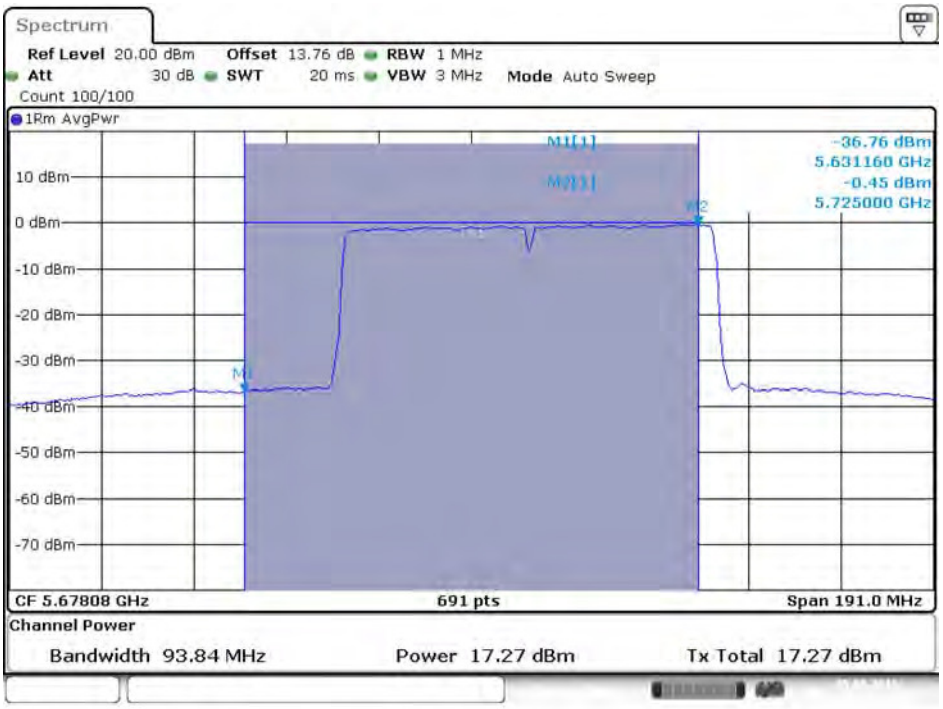
Date: 5.AUG.2016 14:39:27

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



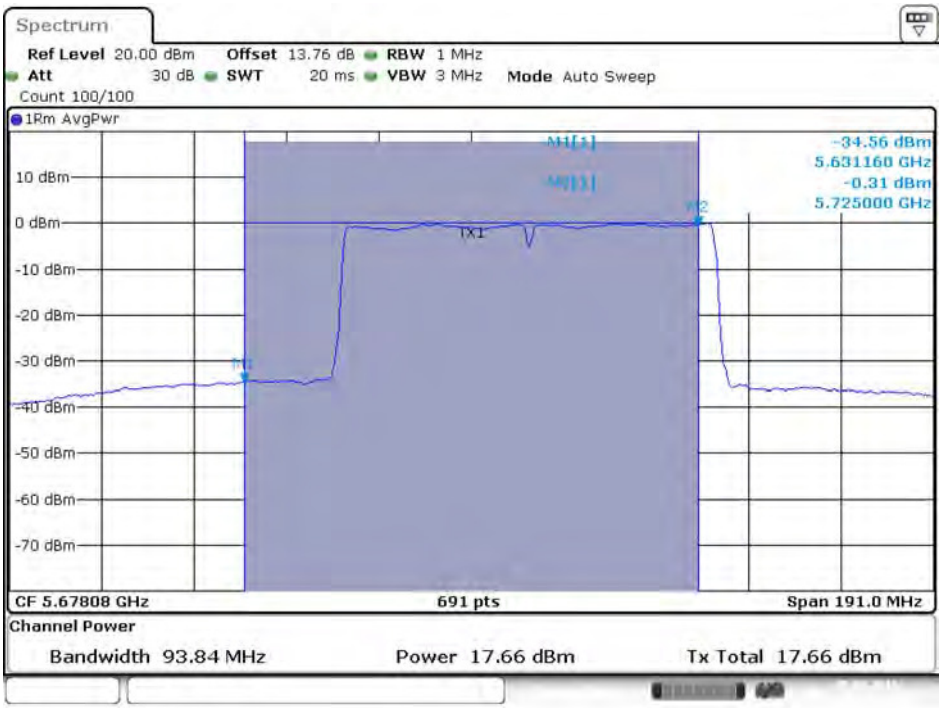
Date: 5.AUG.2016 14:39:34

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



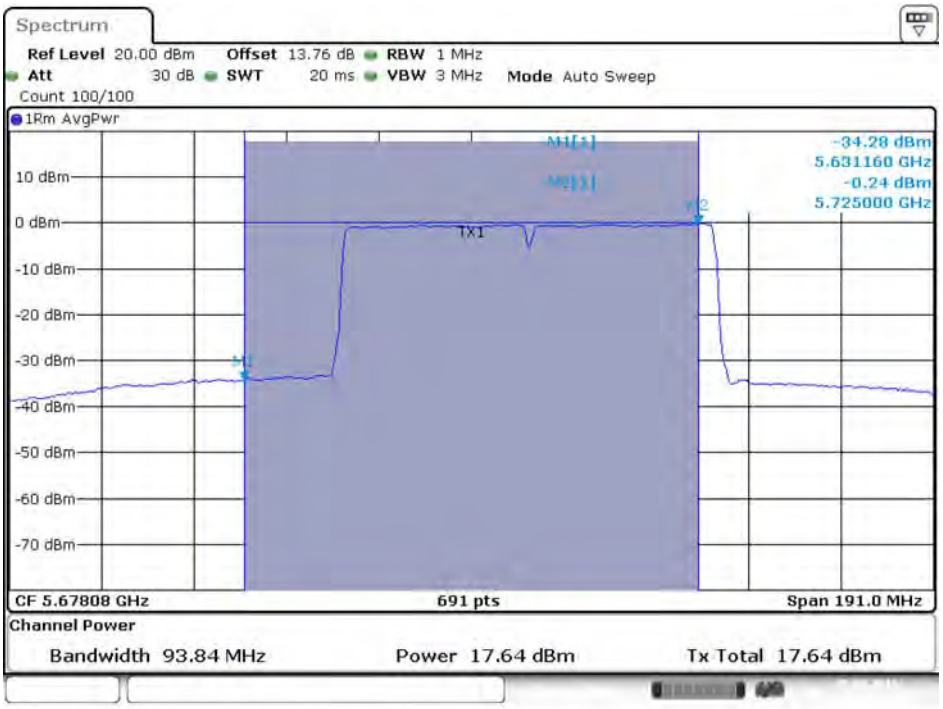
Date: 5.AUG.2016 14:49:31

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



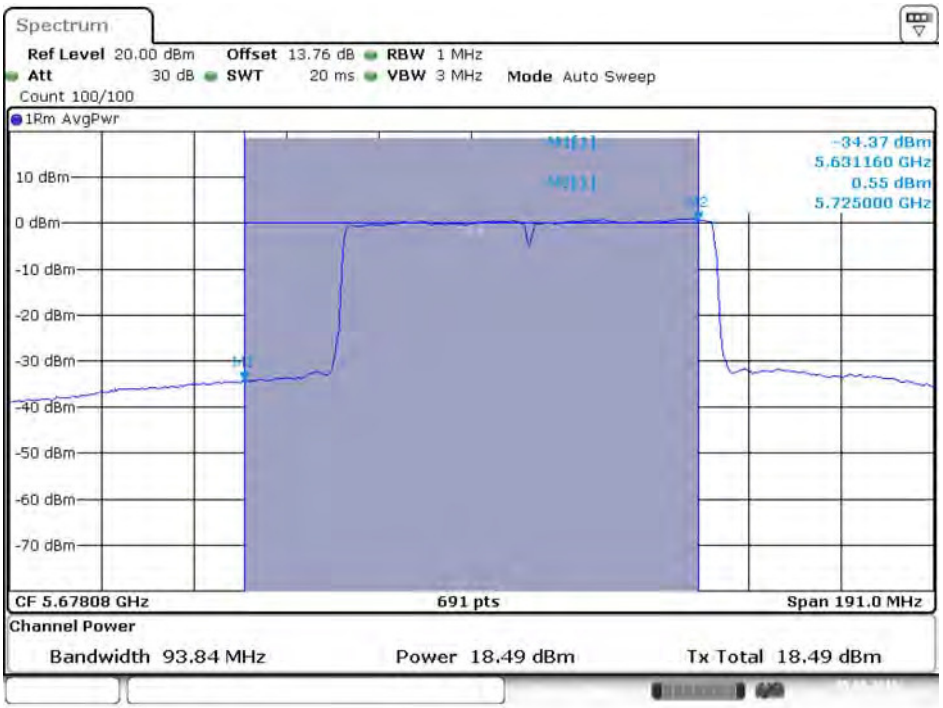
Date: 5.AUG.2016 14:49:38

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



Date: 5.AUG.2016 14:49:46

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

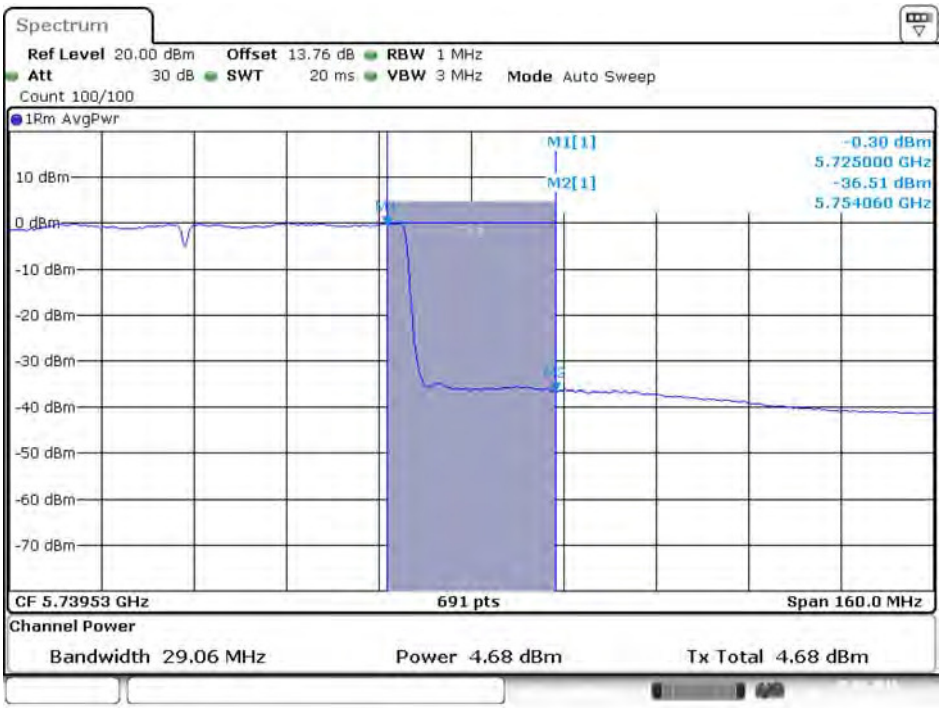


Date: 5.AUG.2016 14:49:53

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

Date: 5.AUG.2016 14:49:34

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

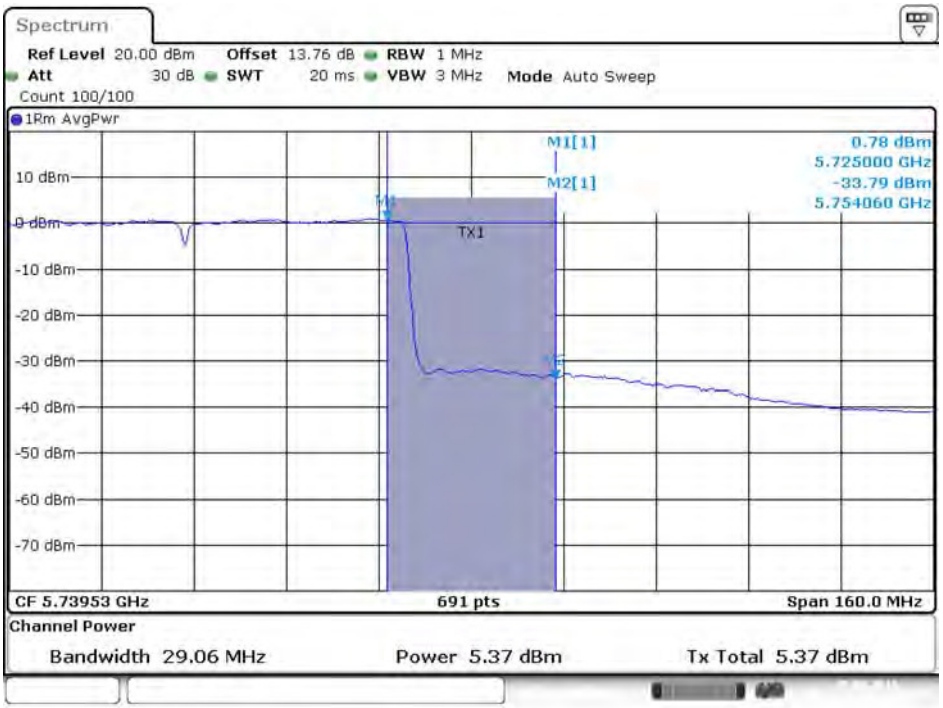


Date: 5.AUG.2016 14:49:42

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

Date: 5.AUG.2016 14:49:49

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



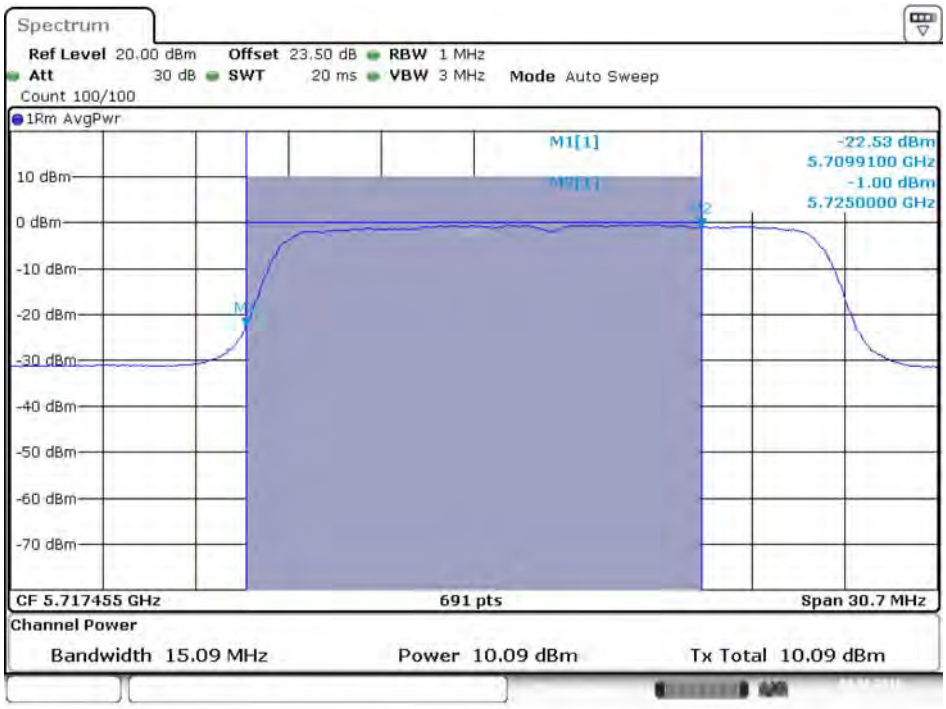
Date: 5.AUG.2016 14:49:56

For beamforming mode

For indoor, outdoor use master and slave without radar detection

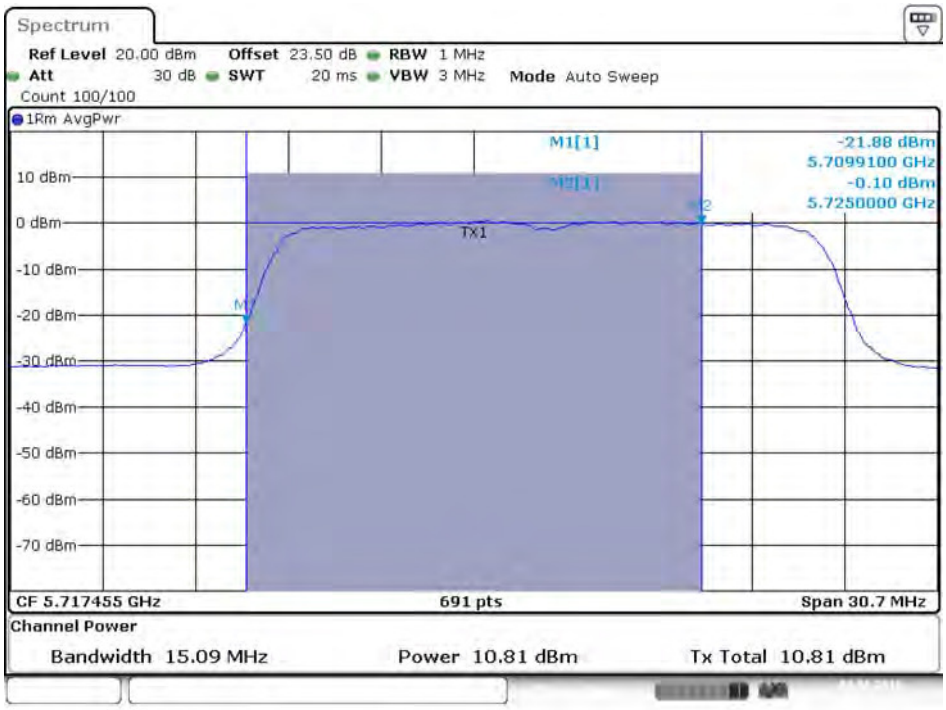
Straddle Channel

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



Date: 9.AUG.2016 01:18:35

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

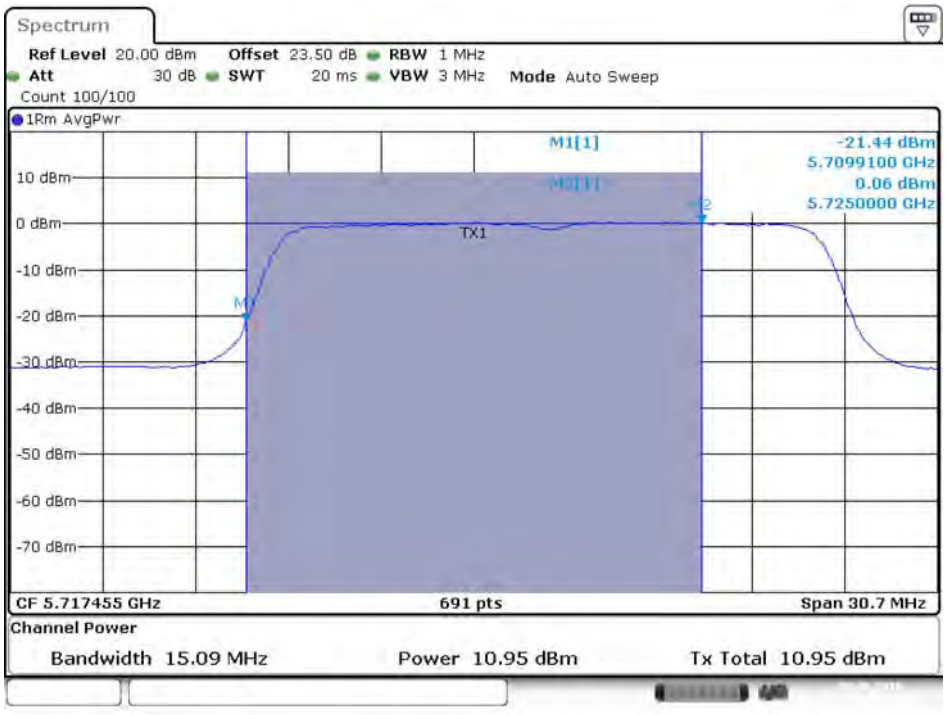


Date: 9.AUG.2016 01:14:50

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

Date: 9.AUG.2016 01:10:35

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



Date: 9.AUG.2016 01:02:35

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

Date: 9.AUG.2016 01:18:39

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

Date: 9.AUG.2016 01:14:53

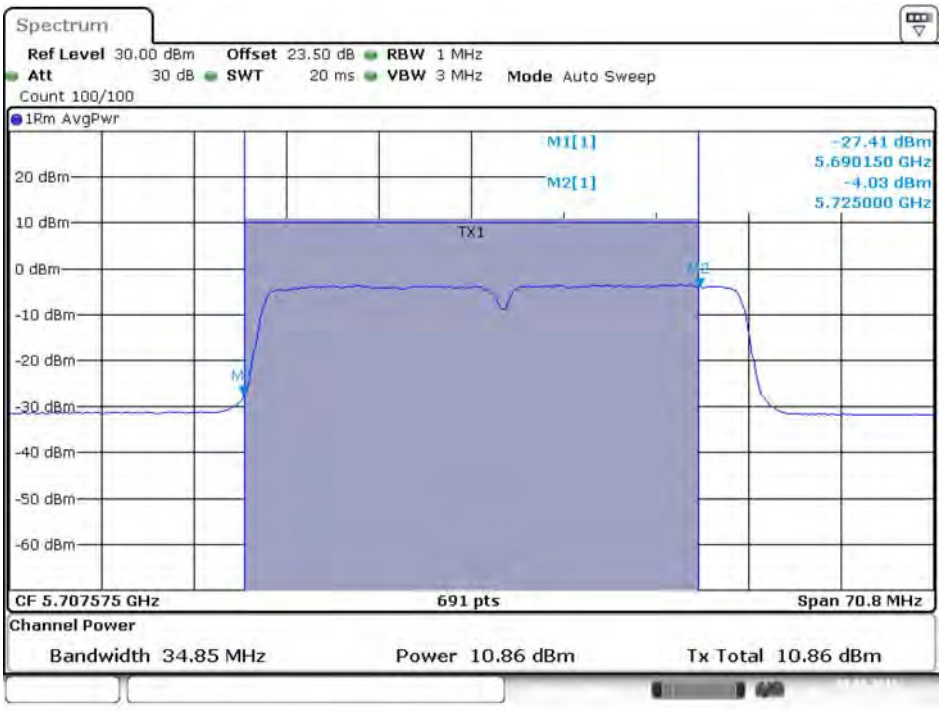
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 3 / 5720 MHz (UNII 3)

Date: 9.AUG.2016 01:10:39

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

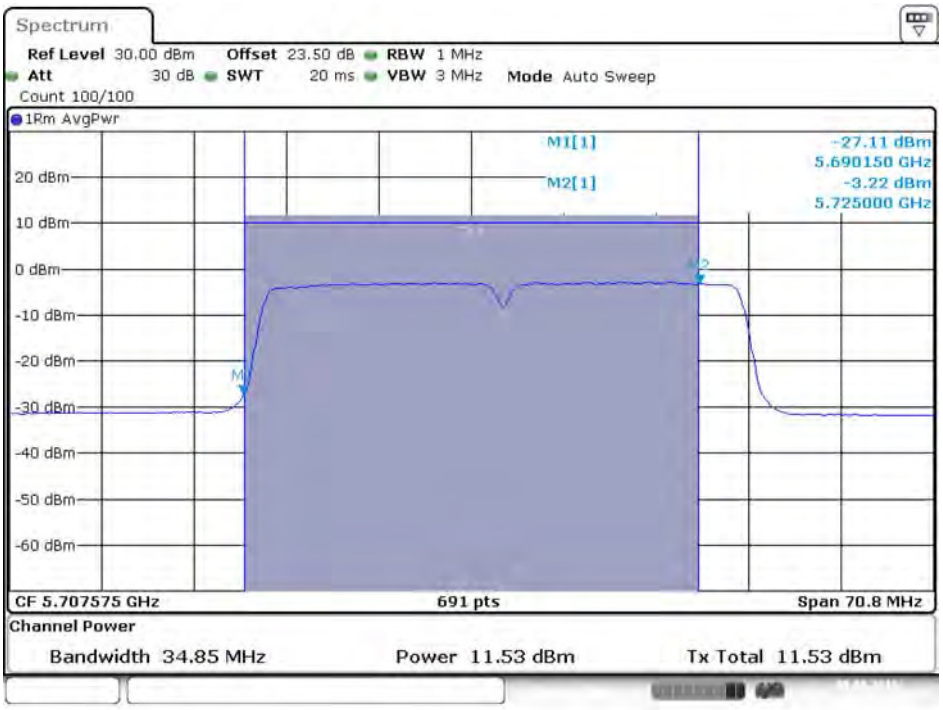
Date: 9.AUG.2016 01:02:39

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



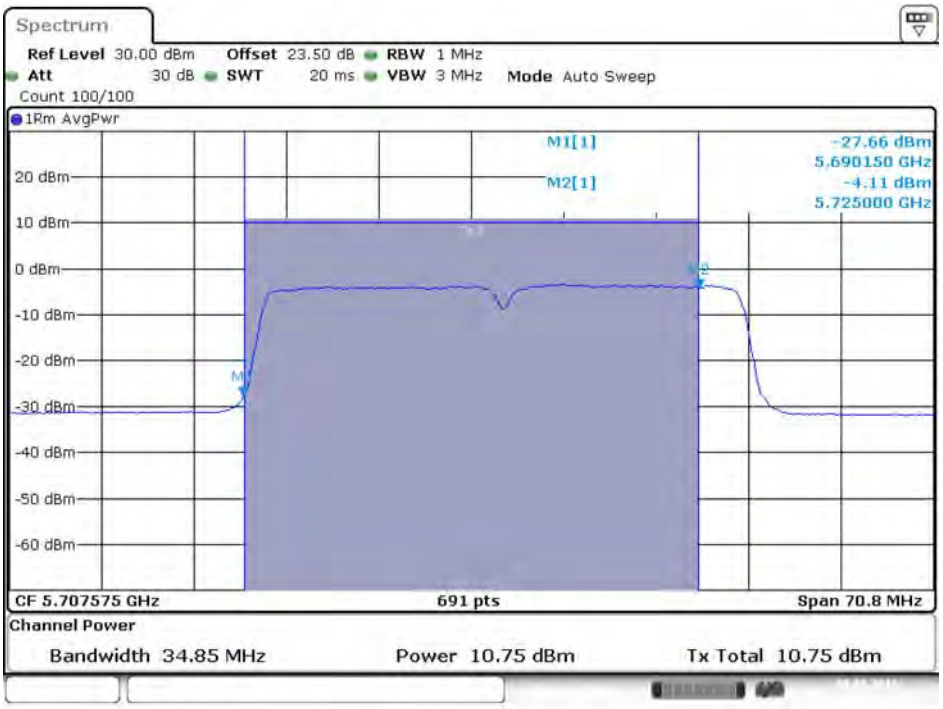
Date: 9.AUG.2016 03:10:42

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



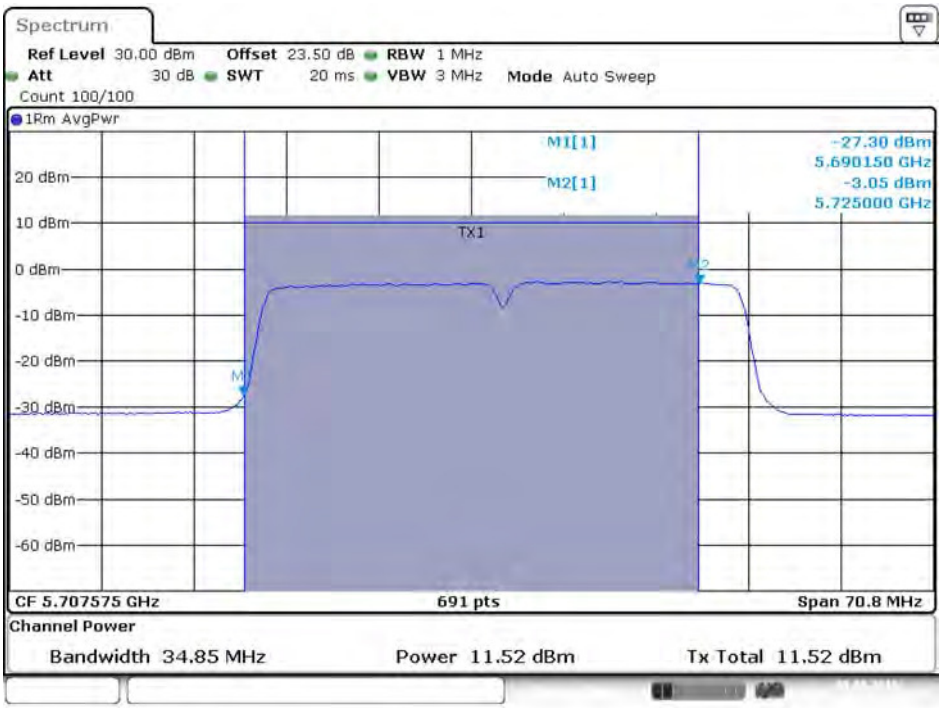
Date: 9.AUG.2016 03:08:17

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



Date: 9.AUG.2016 03:05:47

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



Date: 9.AUG.2016 02:59:54

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

Date: 9.AUG.2016 03:10:46

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

Date: 9.AUG.2016 03:08:20

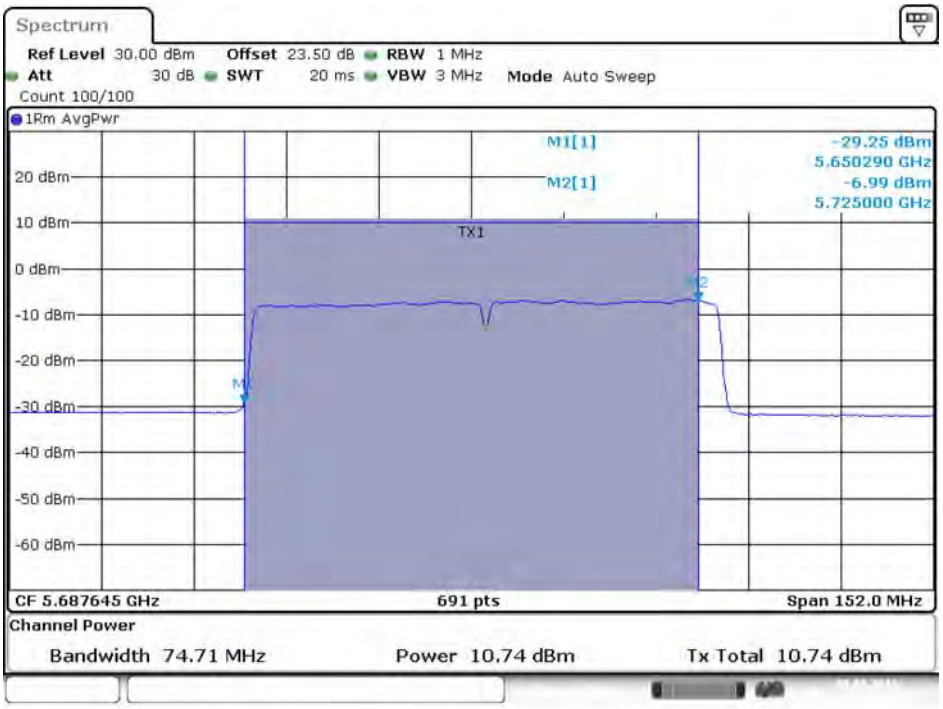
Conducted Output Power Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 3 / 5710 MHz (UNII 3)

Date: 9.AUG.2016 03:05:51

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

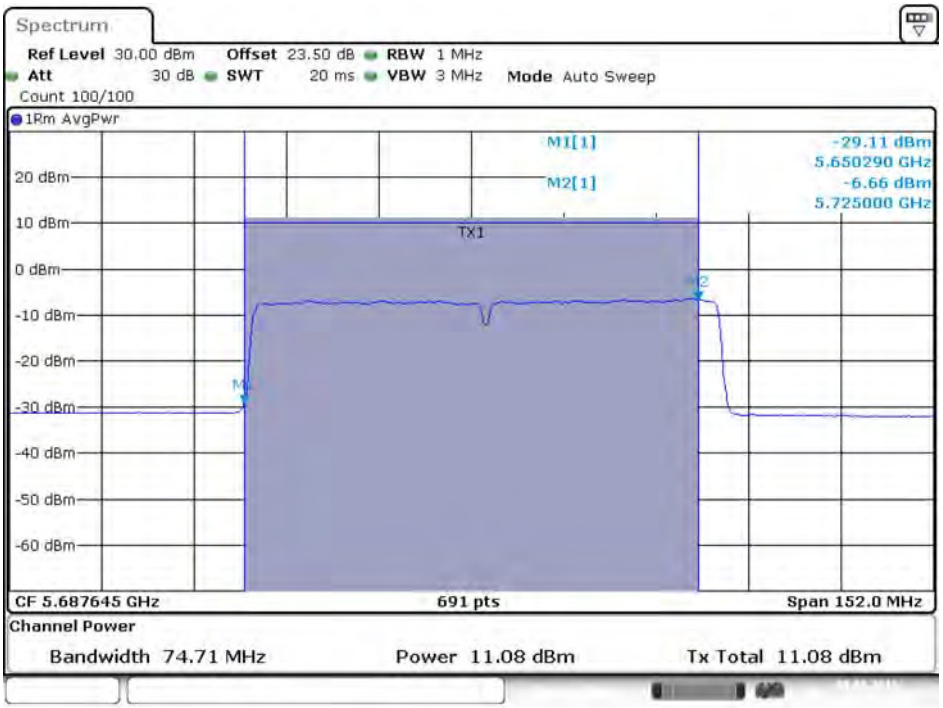
Date: 9.AUG.2016 02:59:58

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



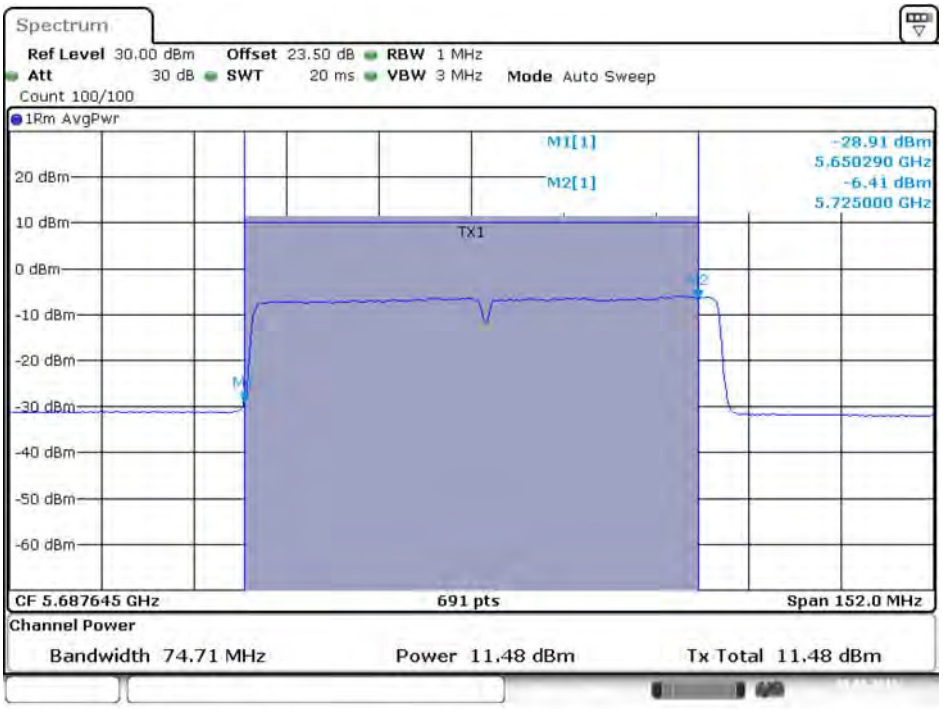
Date: 9.AUG.2016 02:36:05

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



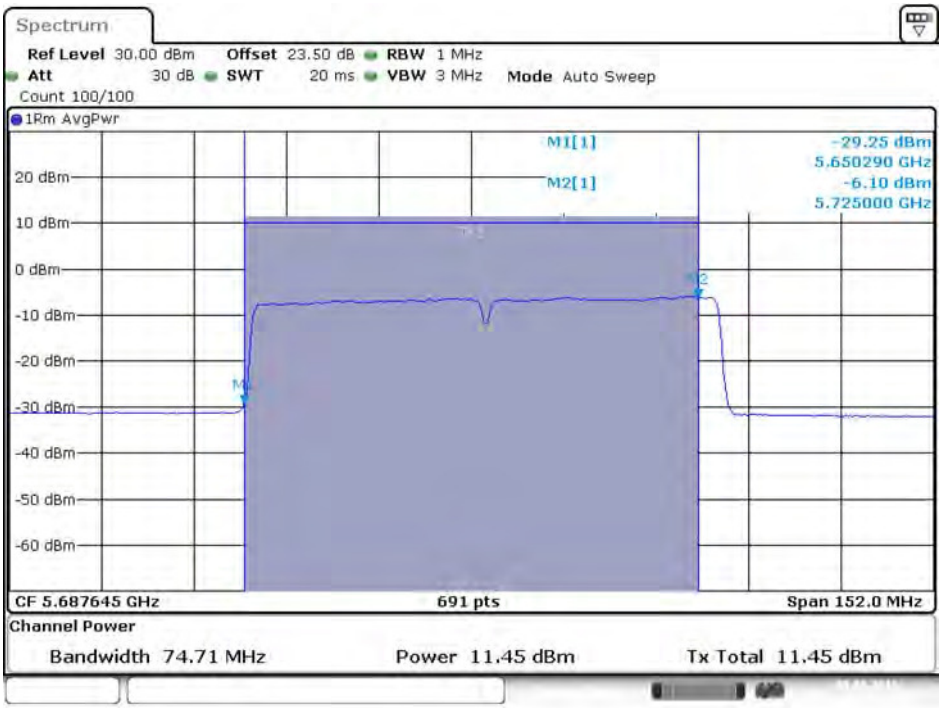
Date: 9.AUG.2016 02:38:20

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



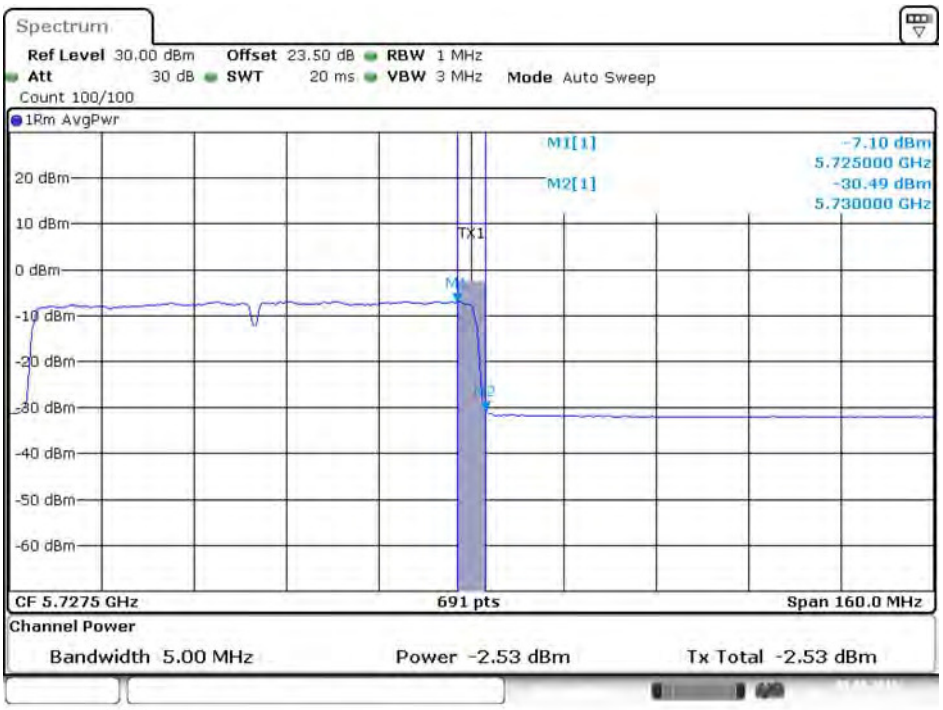
Date: 9.AUG.2016 02:40:07

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



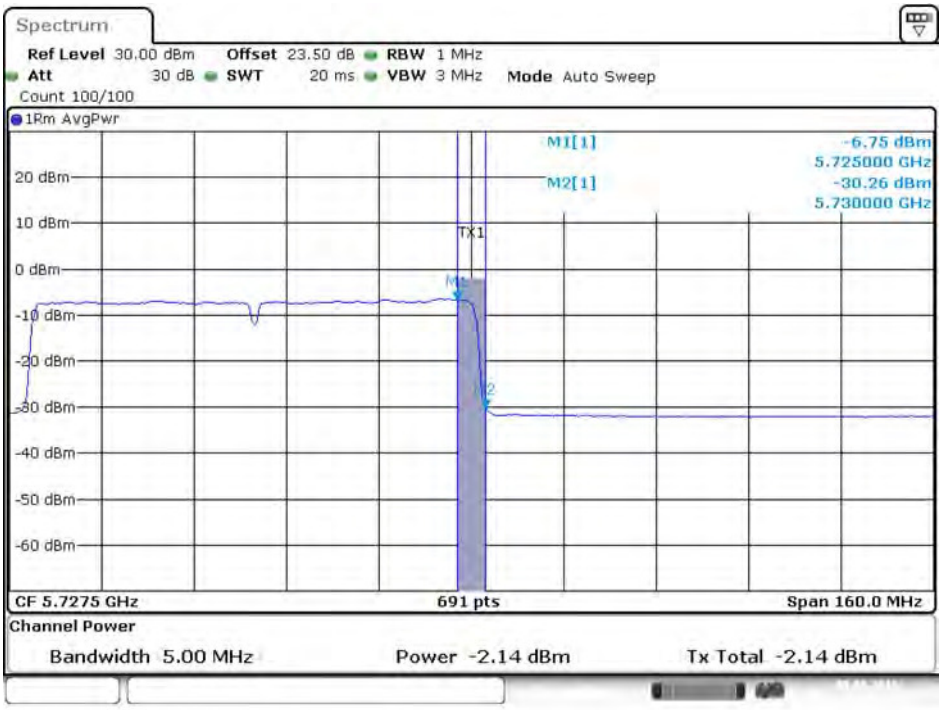
Date: 9.AUG.2016 02:42:22

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



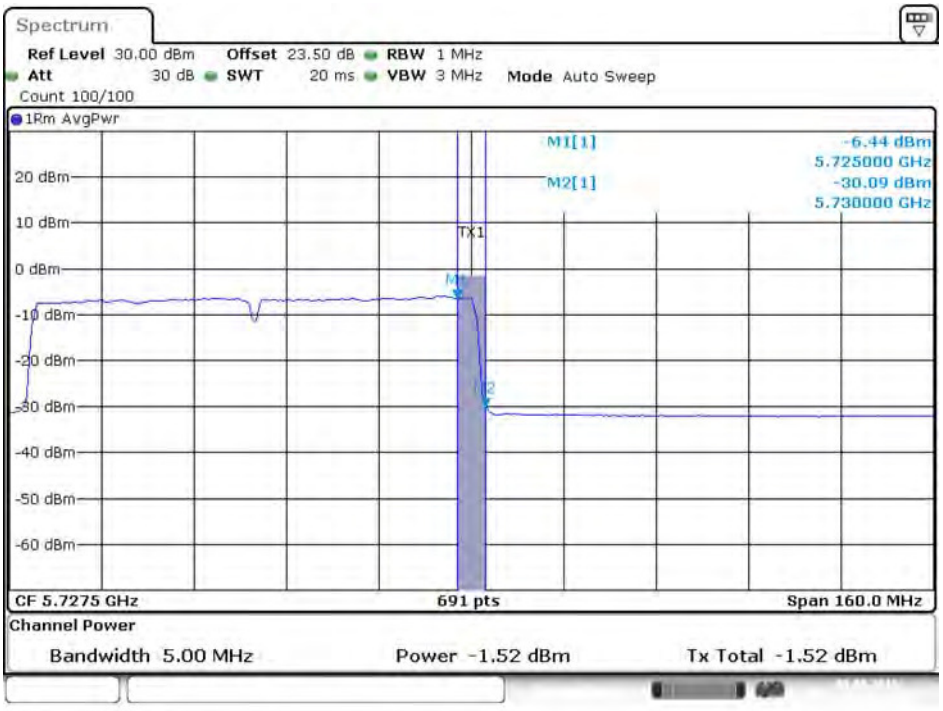
Date: 9.AUG.2016 02:36:08

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



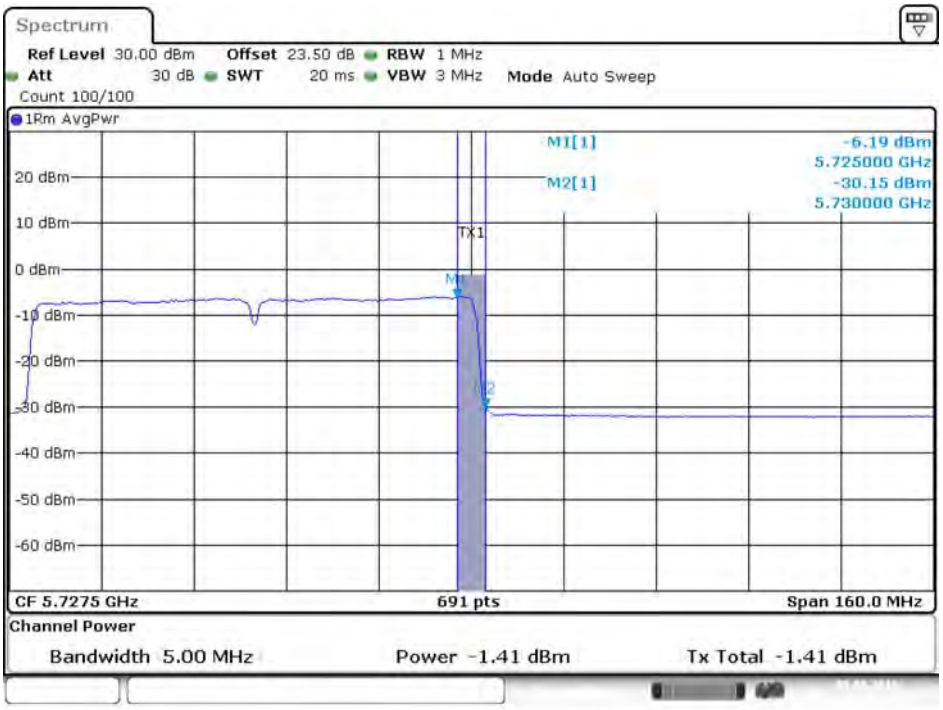
Date: 9.AUG.2016 02:38:23

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



Date: 9.AUG.2016 02:40:11

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



Date: 9.AUG.2016 02:42:26

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
☒	5.15~5.25 GHz		
	Operating Mode		
	☒	Outdoor access point	17 dBm/MHz
	☒	Indoor access point	17 dBm/MHz
	☐	Fixed point-to-point access points	17 dBm/MHz
	☒	Mobile and portable client devices	11 dBm/MHz
☒	5.25-5.35 GHz		11 dBm/MHz
☒	5.470-5.725 GHz		11 dBm/MHz
☒	5.725~5.85 GHz		30 dBm/500kHz

4.4.2. Measuring Instruments and Setting

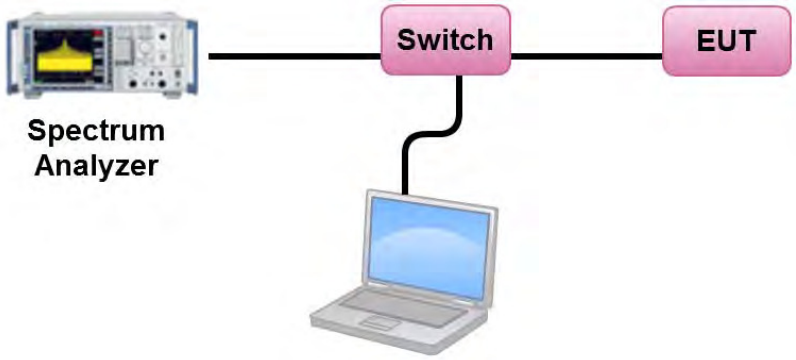
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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
Note: If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.	

4.4.3. 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 v01r03 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 and sum the spectra across the outputs.
4. For 5.725~5.85 GHz, the measured result of PSD level must add 10log(500kHz/RBW) and the final result should ≤ 30 dBm.

4.4.4. 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	22°C	Humidity	54%
Test Engineer	Gary Chu	Test Date	Oct. 19, 2016

For non-beamforming mode

For indoor/outdoor B2~B3

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	4.92	6.98	Complies
60	5300 MHz	4.91	6.98	Complies
64	5320 MHz	4.88	6.98	Complies
100	5500 MHz	4.85	6.98	Complies
116	5580 MHz	4.93	6.98	Complies
140	5700 MHz	4.97	6.98	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi, so B2 B3 limit =11-(10.02-6)=6.98dBm/MHz.

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
52	5260 MHz	4.76	6.98	Complies
60	5300 MHz	4.82	6.98	Complies
64	5320 MHz	4.81	6.98	Complies
100	5500 MHz	4.88	6.98	Complies
116	5580 MHz	4.85	6.98	Complies
140	5700 MHz	4.97	6.98	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi, so B2 B3 limit =11-(10.02-6)=6.98dBm/MHz.

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
54	5270 MHz	4.87	6.98	Complies
62	5310 MHz	4.93	6.98	Complies
102	5510 MHz	3.41	6.98	Complies
110	5550 MHz	4.88	6.98	Complies
134	5670 MHz	4.90	6.98	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi, so B2 B3 limit =11-(10.02-6)=6.98dBm/MHz.

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
58	5290 MHz	1.41	6.98	Complies
106	5530 MHz	-3.41	6.98	Complies
122	5610 MHz	3.39	6.98	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi, so B2 B3 limit =11-(10.02-6)=6.98dBm/MHz.

Straddle Channel

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)	4.68	6.98	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =10.02dBi, so limit =11-(10.02-6)=6.98dBm/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)	4.47	-3.01	1.46	25.98	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =10.02dBi, so limit =30-(10.02-6)=25.98dBm/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)	4.76	6.98	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =10.02dBi, so limit =11-(10.02-6)=6.98dBm/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)	4.58	-3.01	1.57	25.98	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =10.02dBi, so limit =30-(10.02-6)=25.98dBm/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)	4.69	6.98	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi, so limit =11-(10.02-6)=6.98dBm/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)	4.38	-3.01	1.37	25.98	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi, so limit =30-(10.02-6)=25.98dBm/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)	4.61	6.98	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi, so limit =11-(10.02-6)=6.98dBm/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)	4.60	-3.01	1.59	25.98	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi, so limit =30-(10.02-6)=25.98dBm/500kHz.

For beamforming mode

For indoor/outdoor B2~B3

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
52	5260 MHz	4.37	6.98	Complies
60	5300 MHz	4.42	6.98	Complies
64	5320 MHz	4.25	6.98	Complies
100	5500 MHz	3.91	6.98	Complies
116	5580 MHz	4.00	6.98	Complies
140	5700 MHz	3.94	6.98	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi, so B2 B3 limit =11-(10.02-6)=6.98dBm/MHz.

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
54	5270 MHz	1.43	6.98	Complies
62	5310 MHz	1.57	6.98	Complies
102	5510 MHz	0.92	6.98	Complies
110	5550 MHz	0.89	6.98	Complies
134	5670 MHz	1.05	6.98	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi, so B2 B3 limit =11-(10.02-6)=6.98dBm/MHz.

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
58	5290 MHz	-1.73	6.98	Complies
106	5530 MHz	-1.72	6.98	Complies
122	5610 MHz	-1.91	6.98	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi, so B2 B3 limit =11-(10.02-6)=6.98dBm/MHz.

Straddle Channel

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)	4.64	6.98	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi, so limit =11-(10.02-6)=6.98dBm/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)	4.39	-3.01	1.38	25.98	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi, so limit =30-(10.02-6)=25.98dBm/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)	1.81	6.98	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi, so limit =11-(10.02-6)=6.98dBm/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)	1.65	-3.01	-1.36	25.98	Complies

Note: $DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ =10.02dBi, so limit =30-(10.02-6)=25.98dBm/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)	-1.60	6.98	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =10.02dBi, so limit =11-(10.02-6)=6.98dBm/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)	-1.66	-3.01	-4.67	25.98	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =10.02dBi, so limit =30-(10.02-6)=25.98dBm/500kHz.

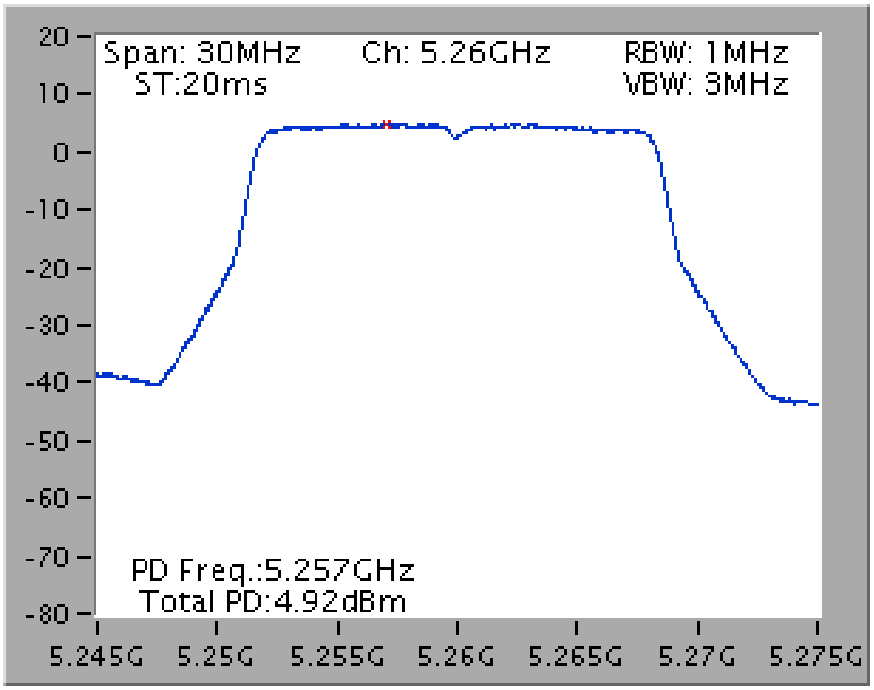
Note: All the test values were listed in the report.

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

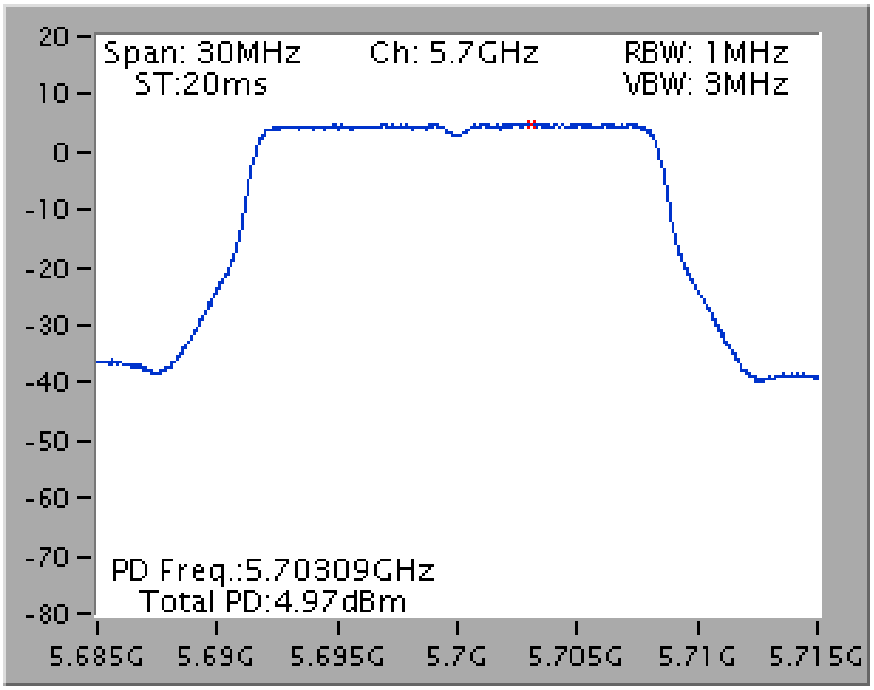
For non-beamforming mode

For indoor/outdoor B2~B3

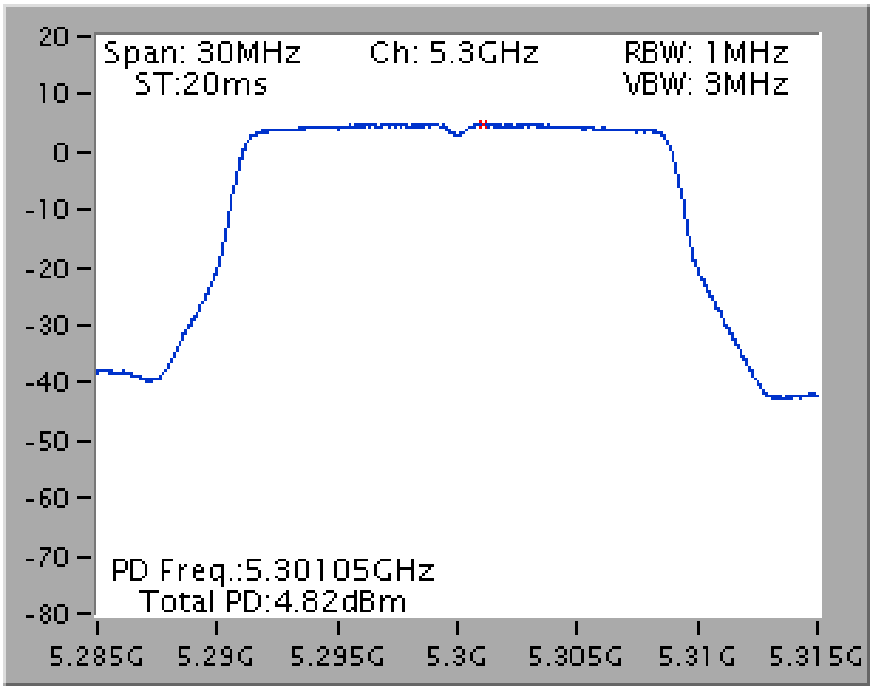
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5260 MHz



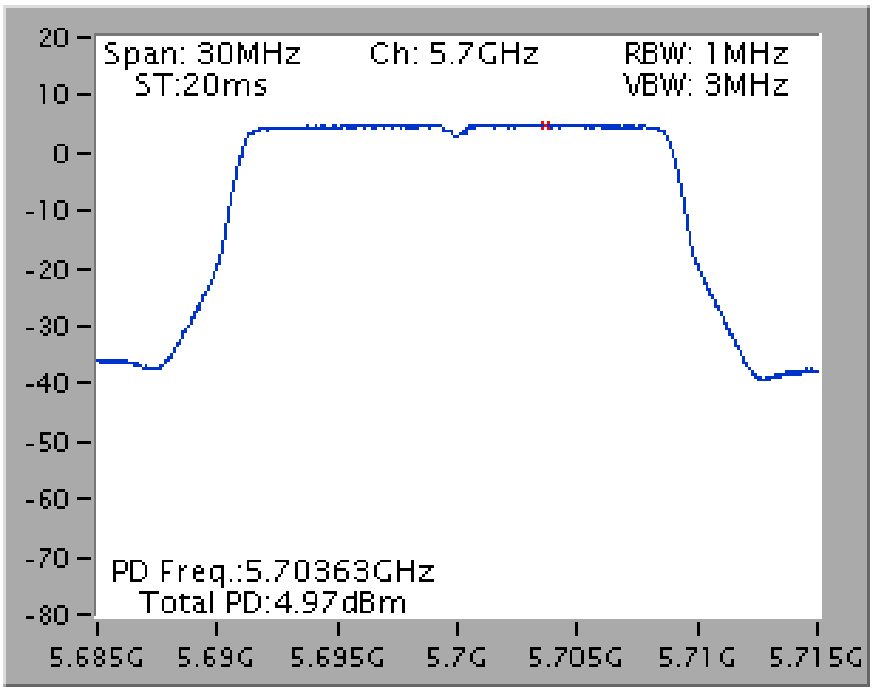
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5700 MHz



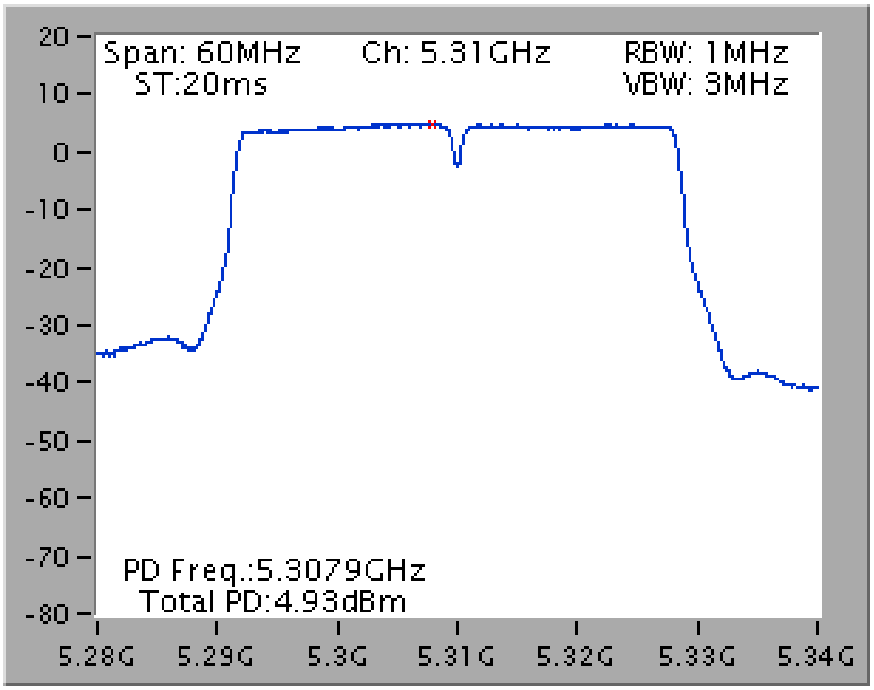
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5300 MHz



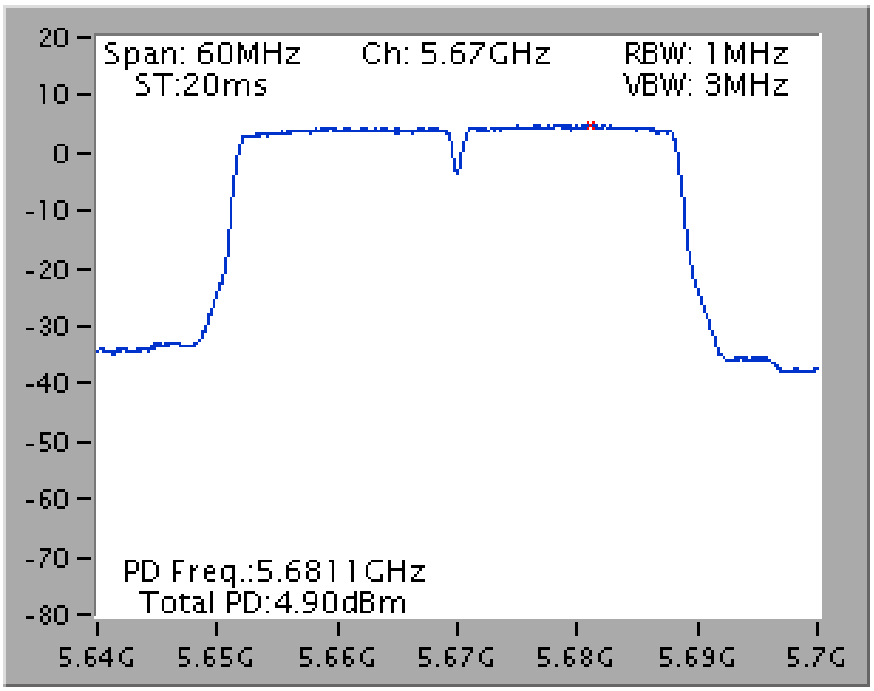
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5700 MHz



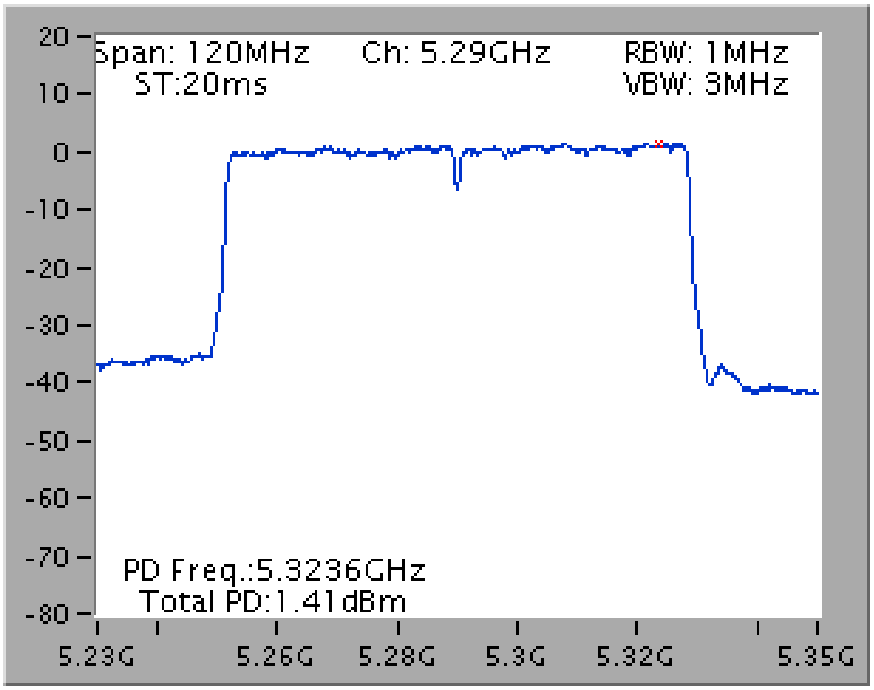
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5310 MHz



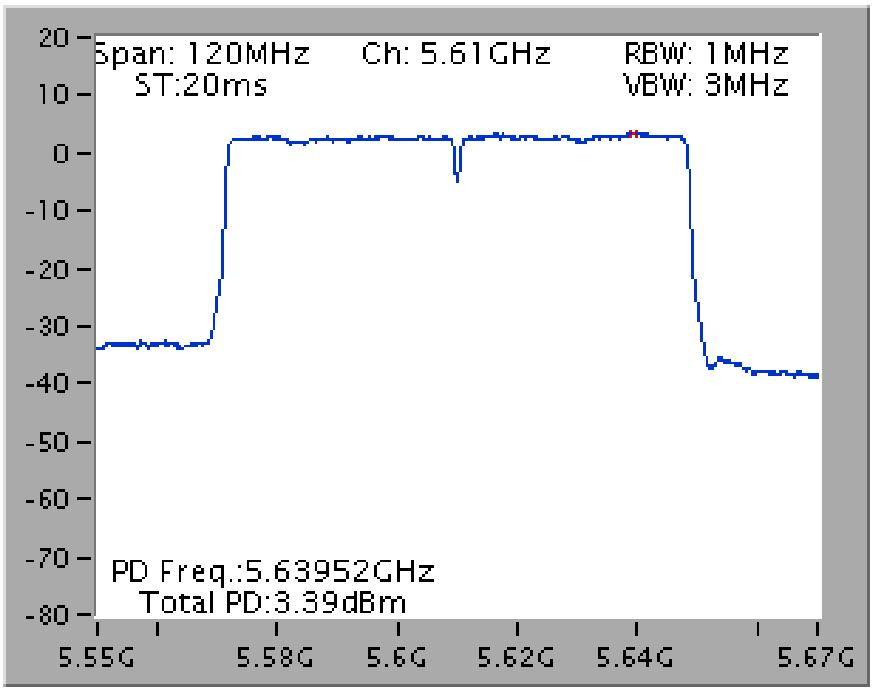
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5670 MHz



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

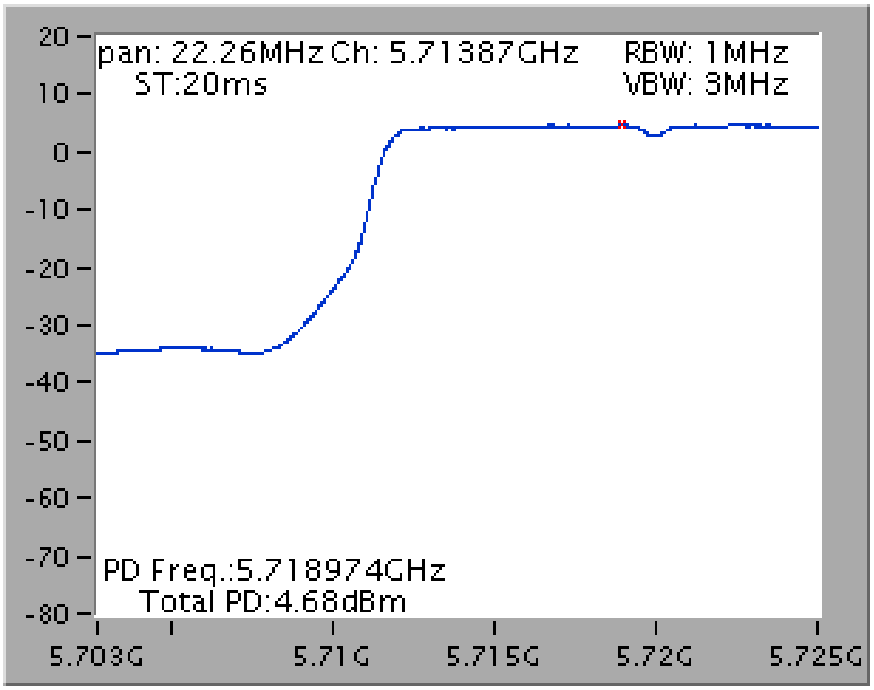


Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5610 MHz

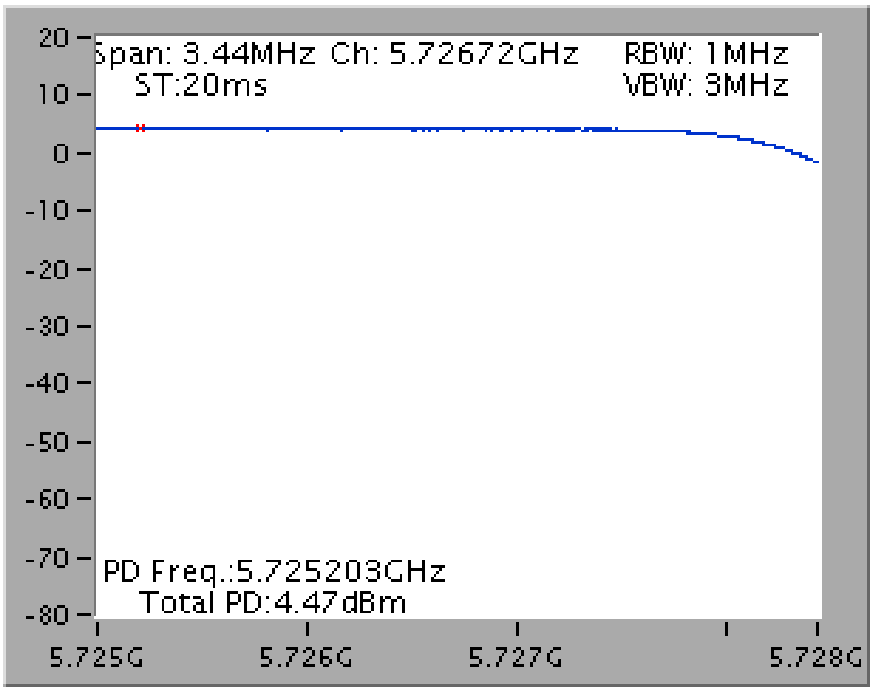


Straddle Channel

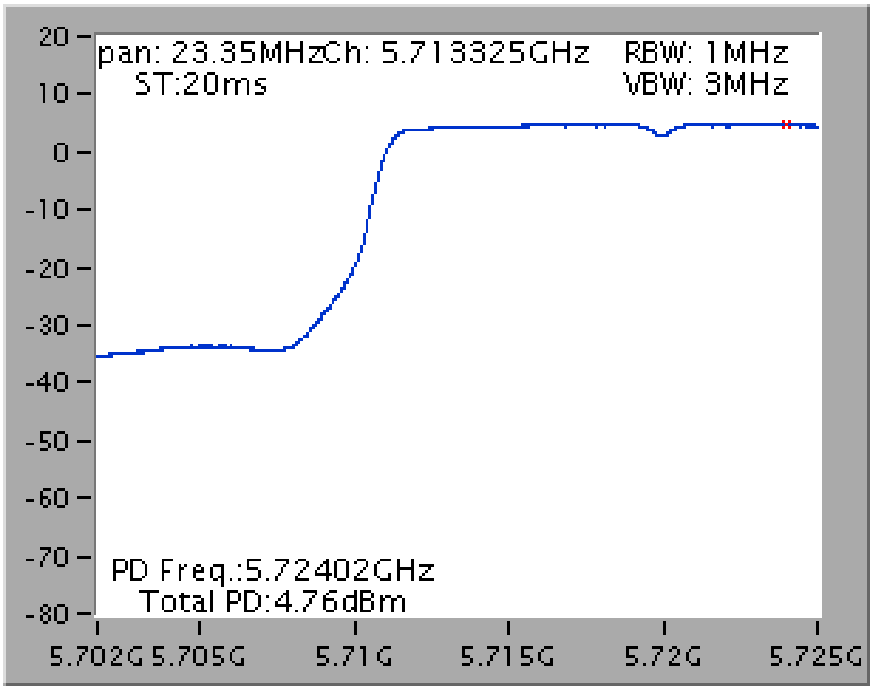
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz (UNII 2C)



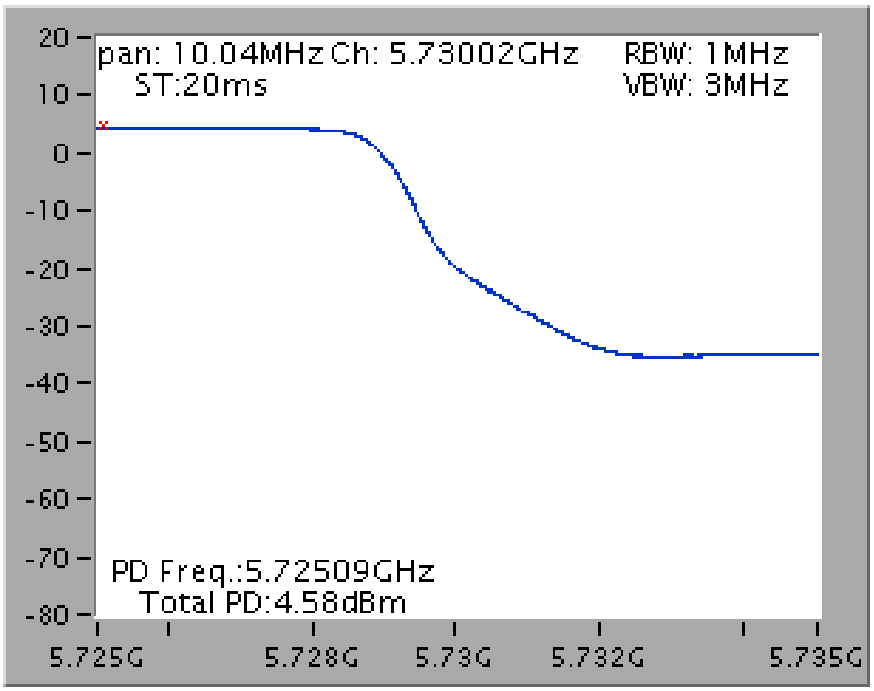
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz (UNII 3)



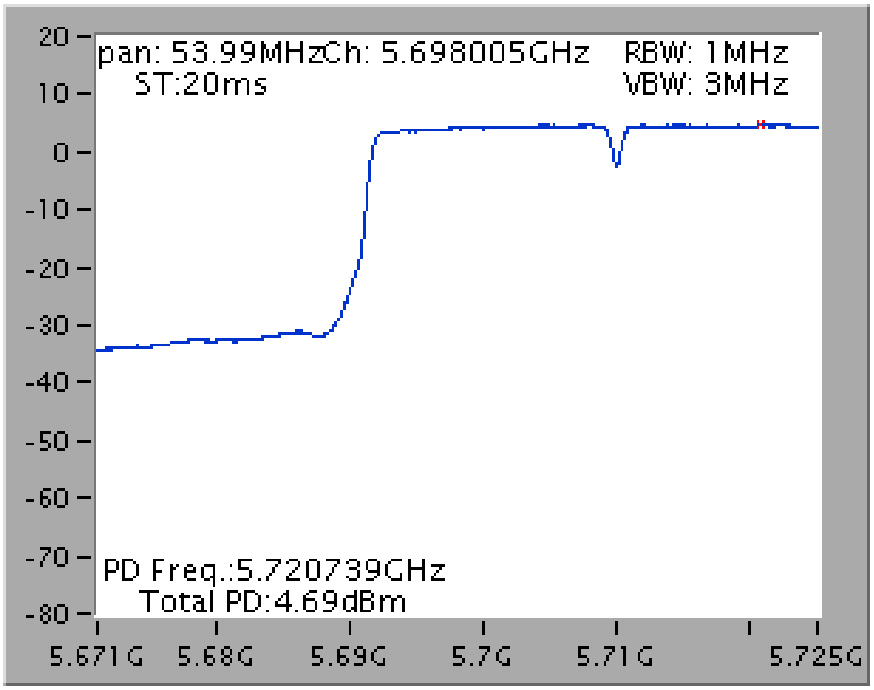
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz (UNII 2C)



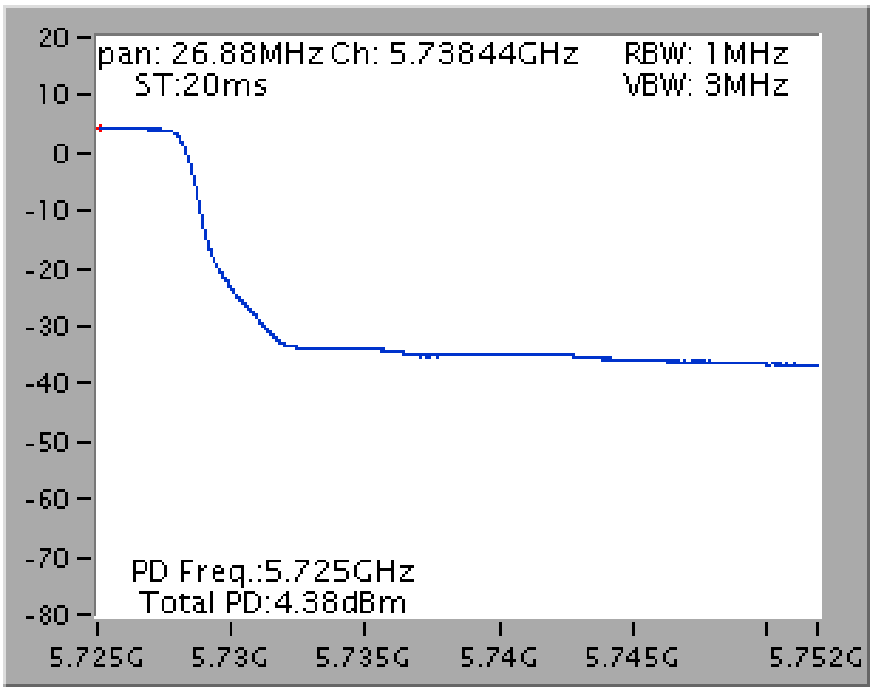
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz (UNII 3)



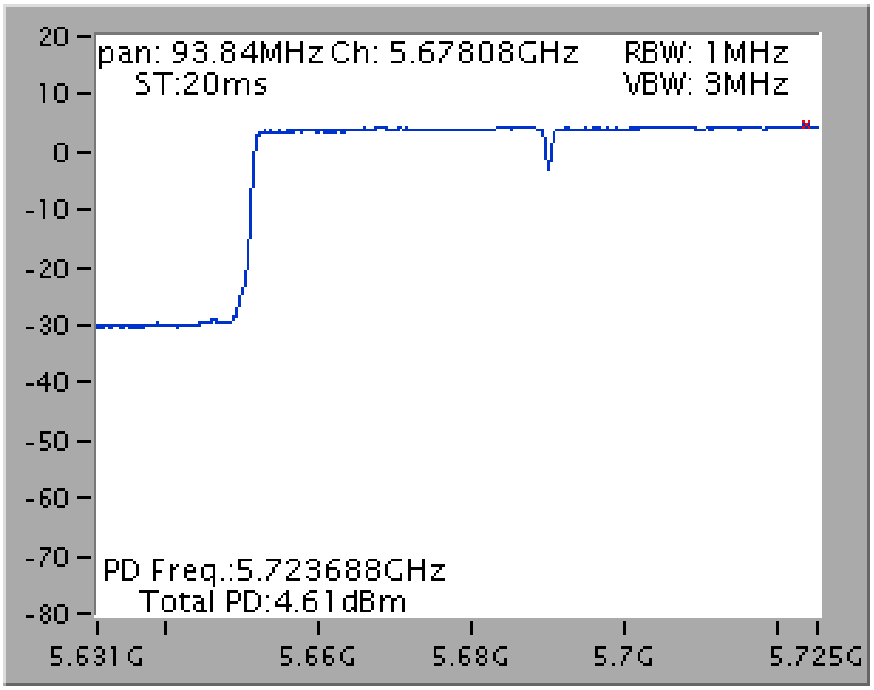
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz (UNII 2C)



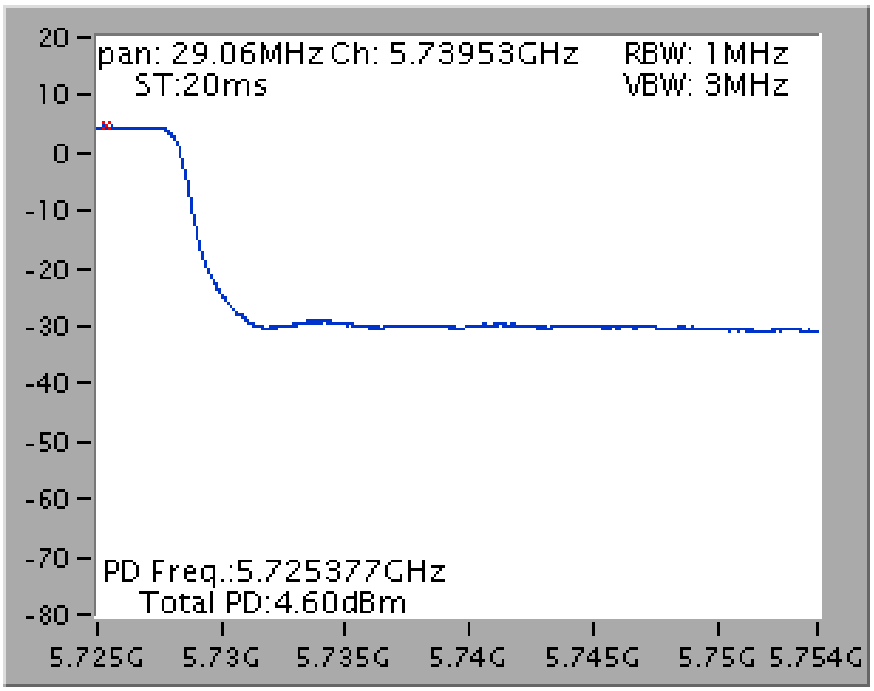
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz (UNII 3)



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



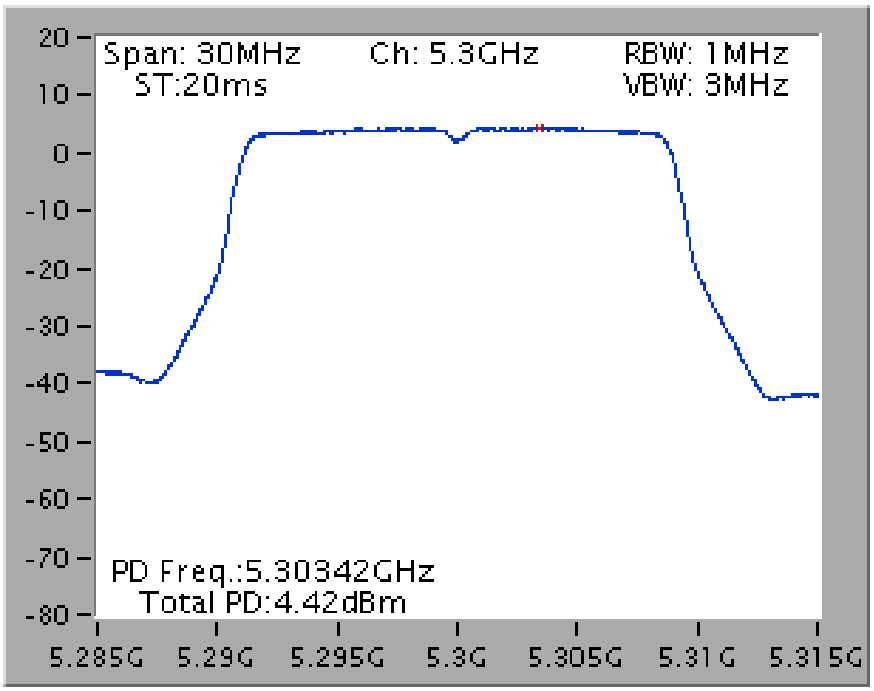
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz (UNII 3)



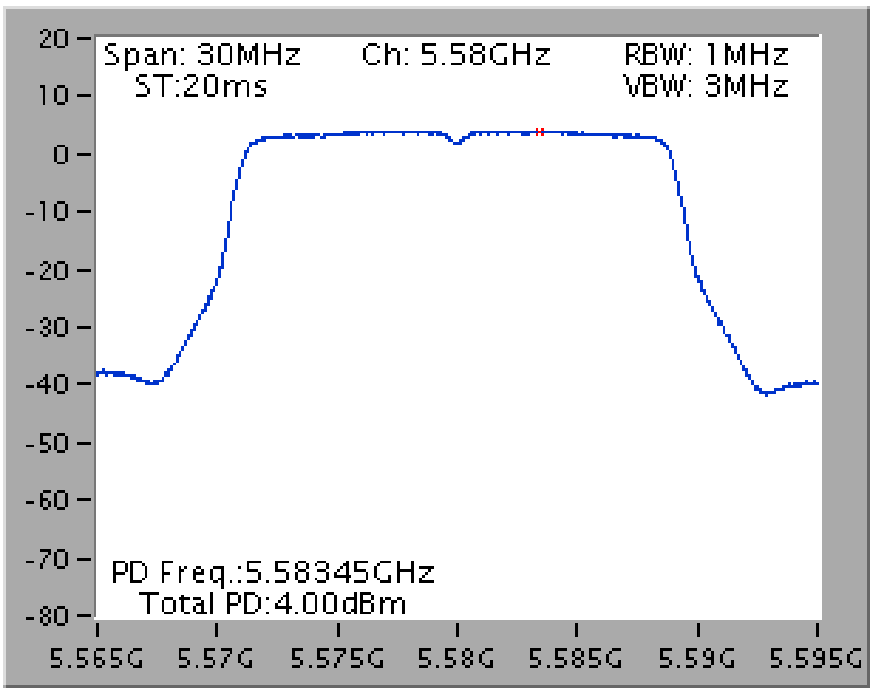
For beamforming mode

For indoor/outdoor B2~B3

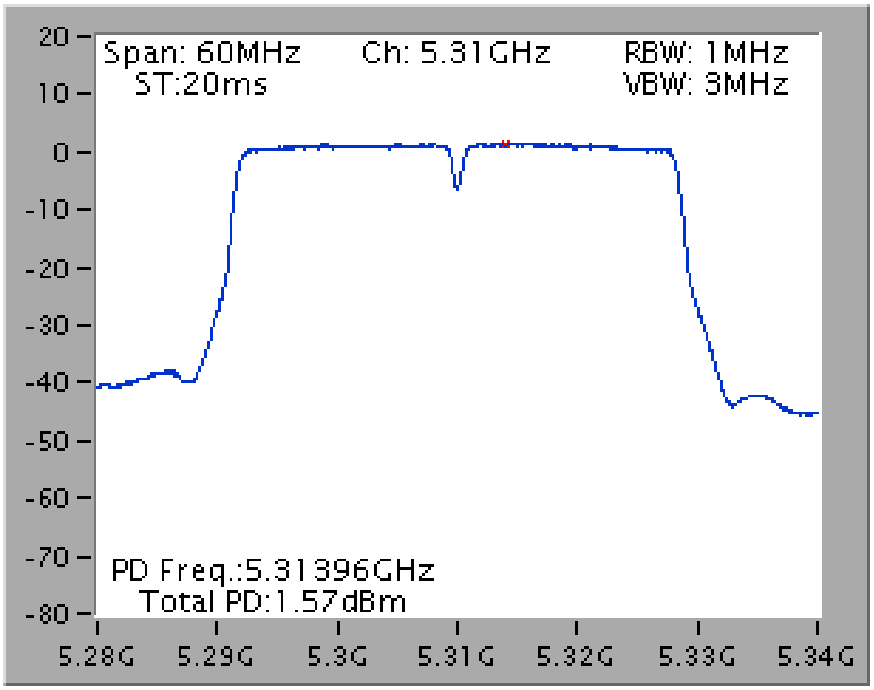
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5300 MHz



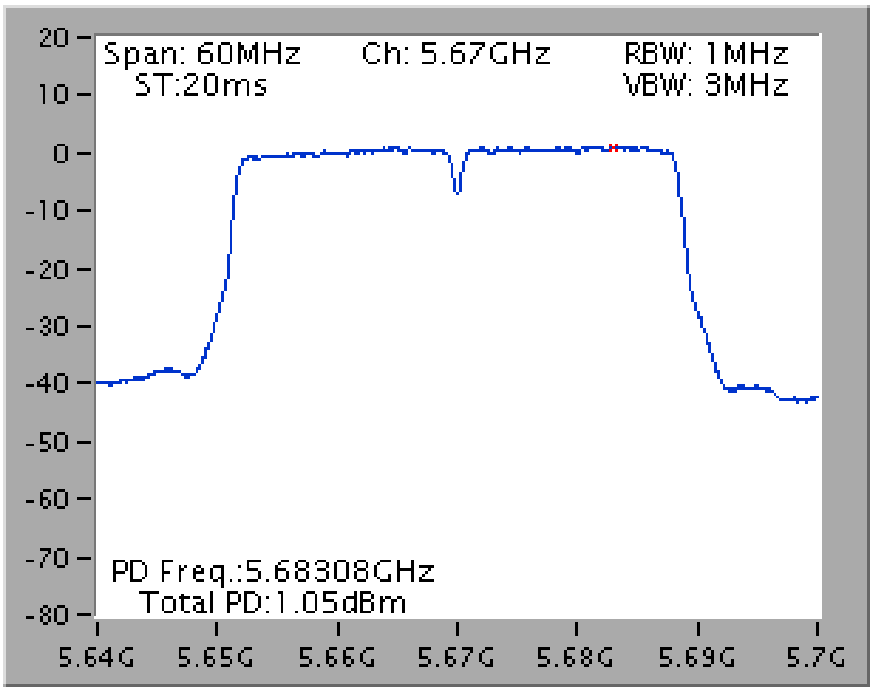
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5580 MHz



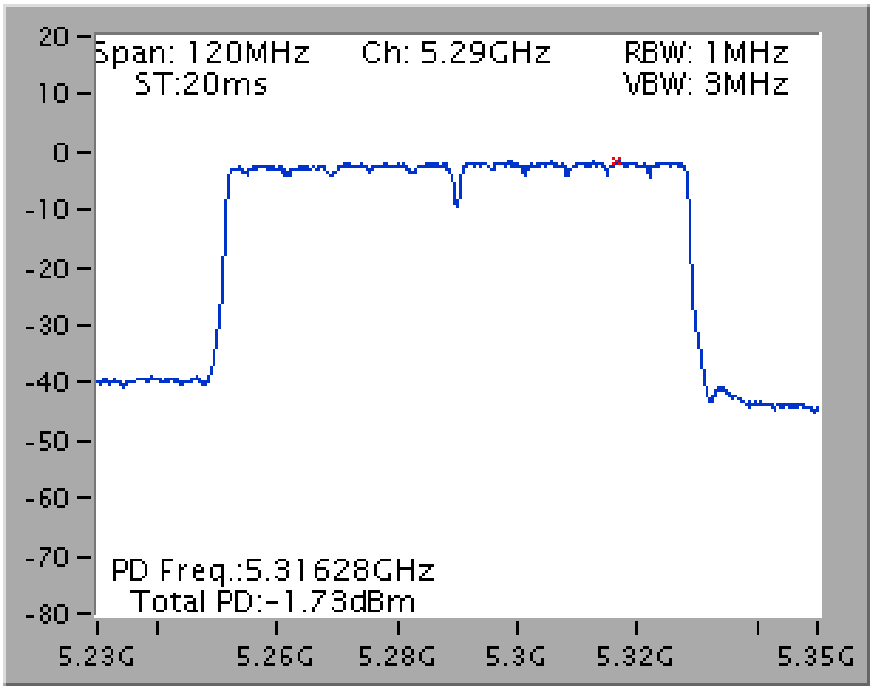
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5310 MHz



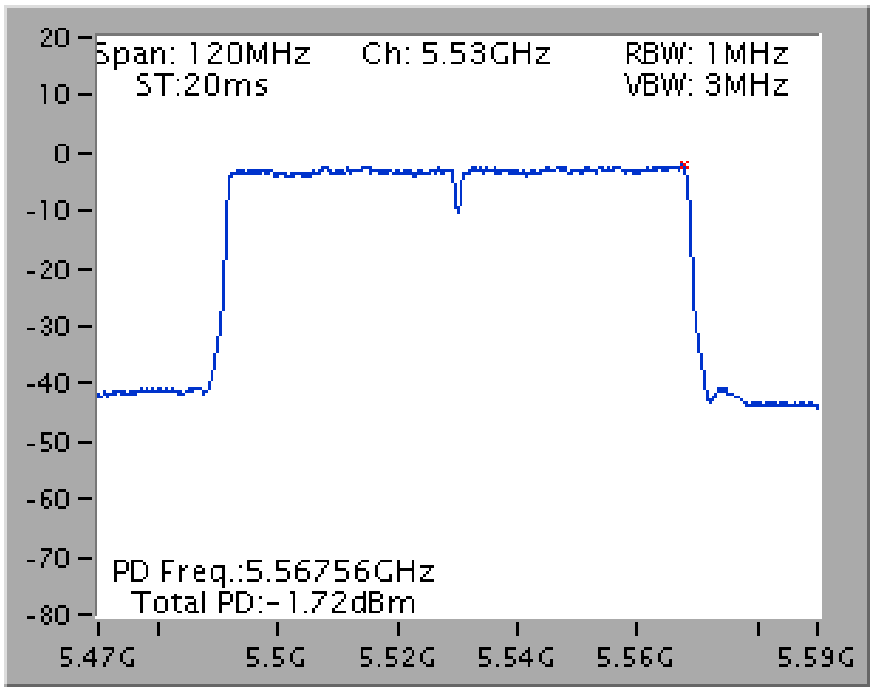
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5670 MHz



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

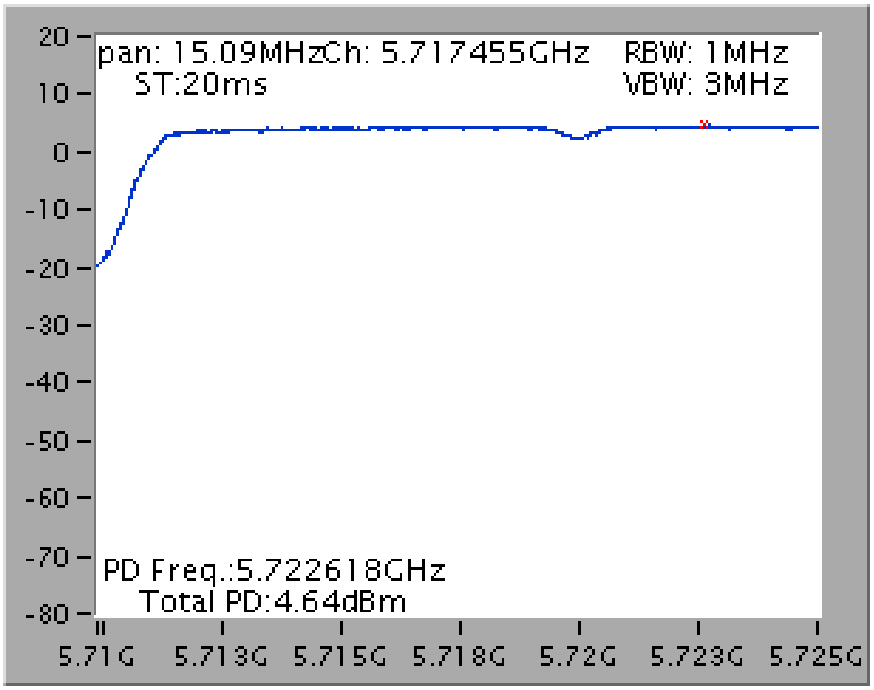


Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5530 MHz

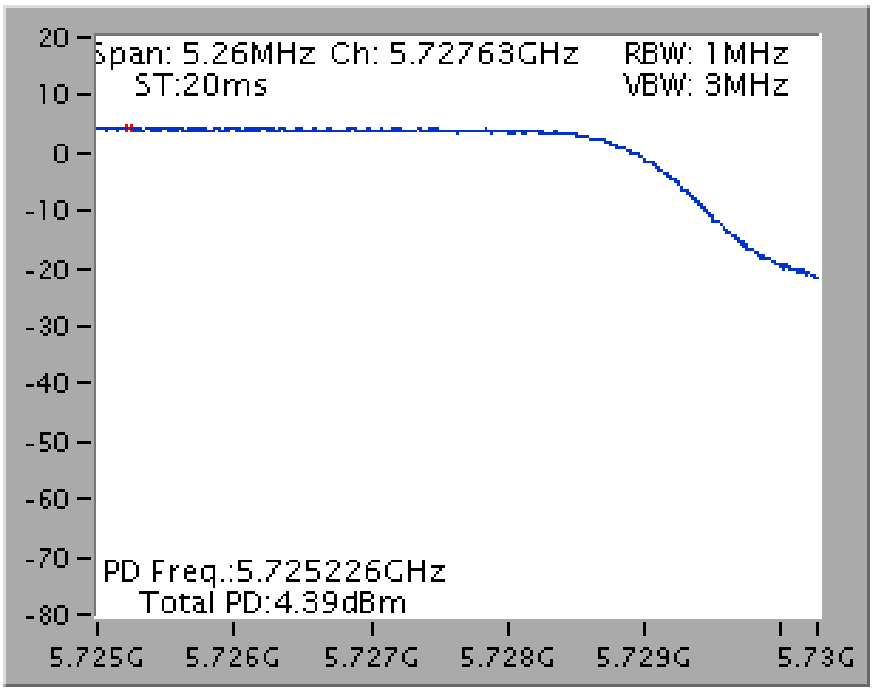


Straddle Channel

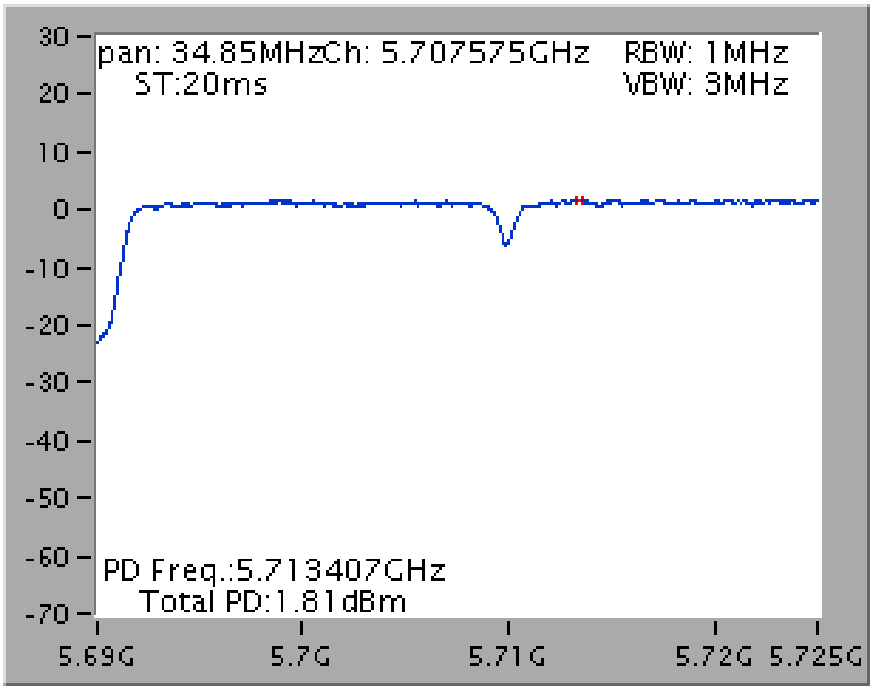
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz (UNII 2C)



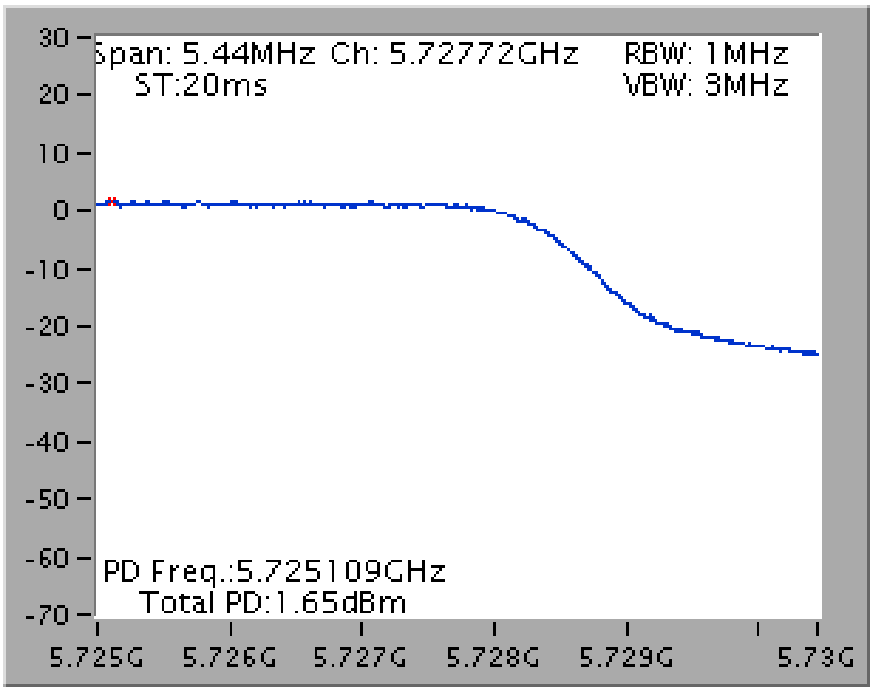
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5720 MHz (UNII 3)



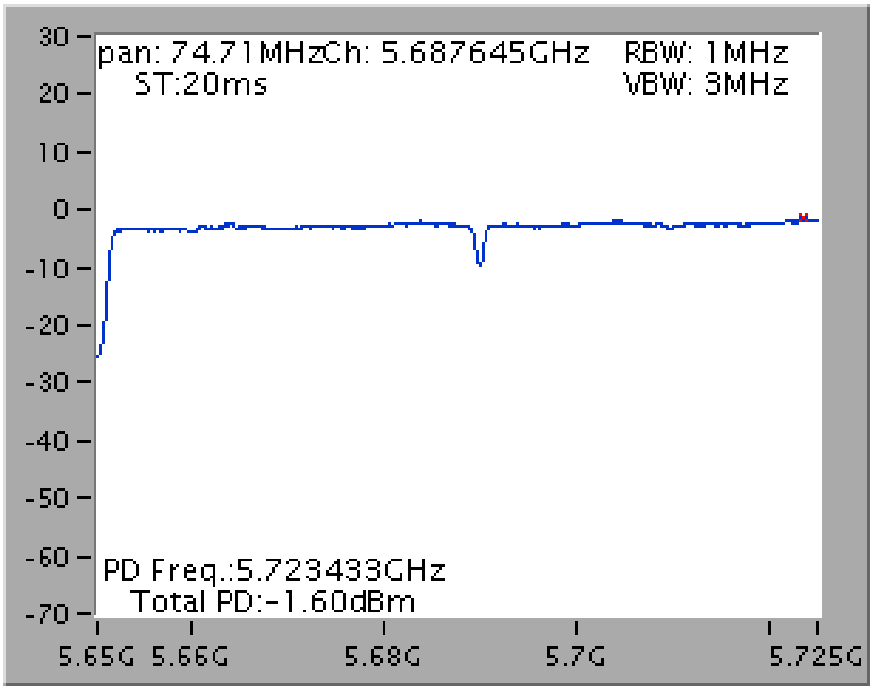
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz (UNII 2C)



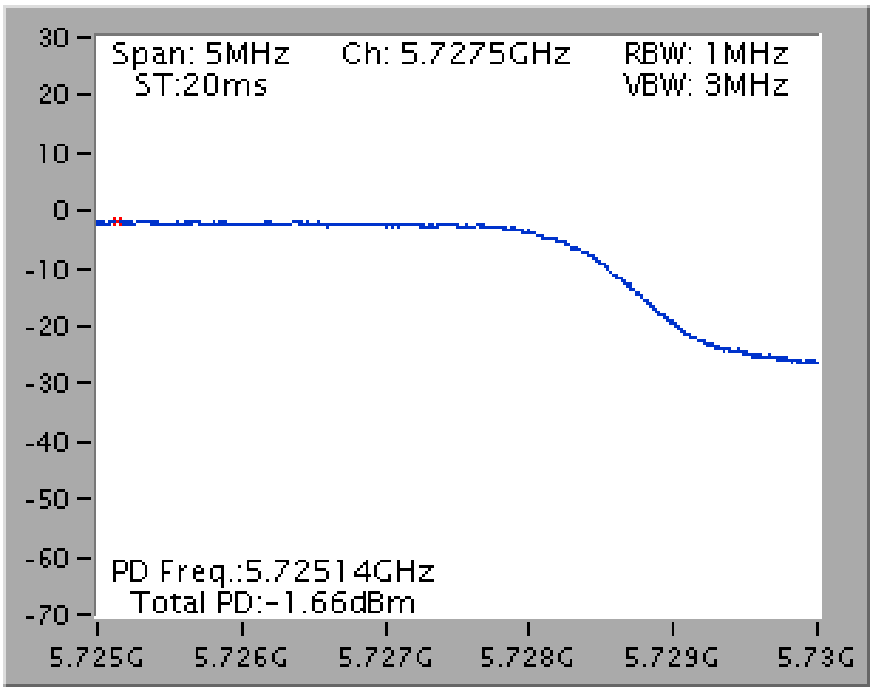
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5710 MHz (UNII 3)



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

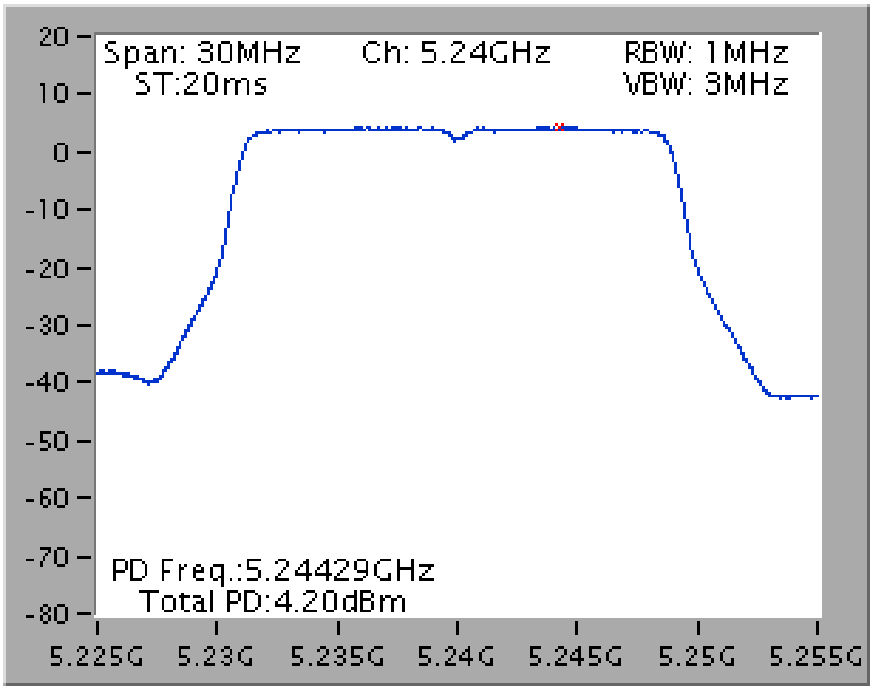


Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5690 MHz (UNII 3)

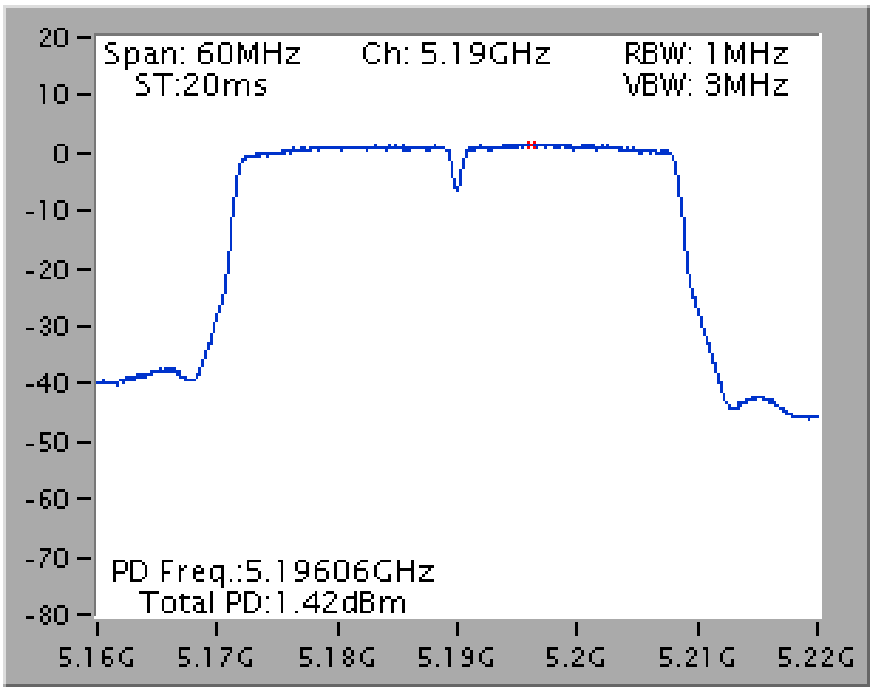


For indoor use slave without radar detection B1

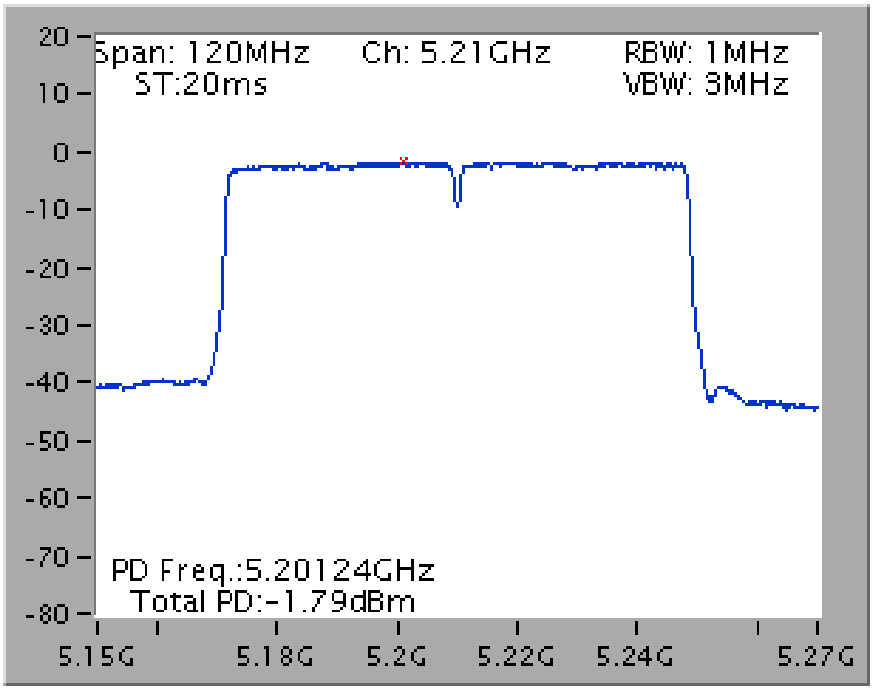
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5240 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5190 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4 / 5210 MHz



4.5. Radiated Emissions Measurement

4.5.1. Limit

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

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

For transmitters operating in the 5.725-5.85 GHz band: all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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.

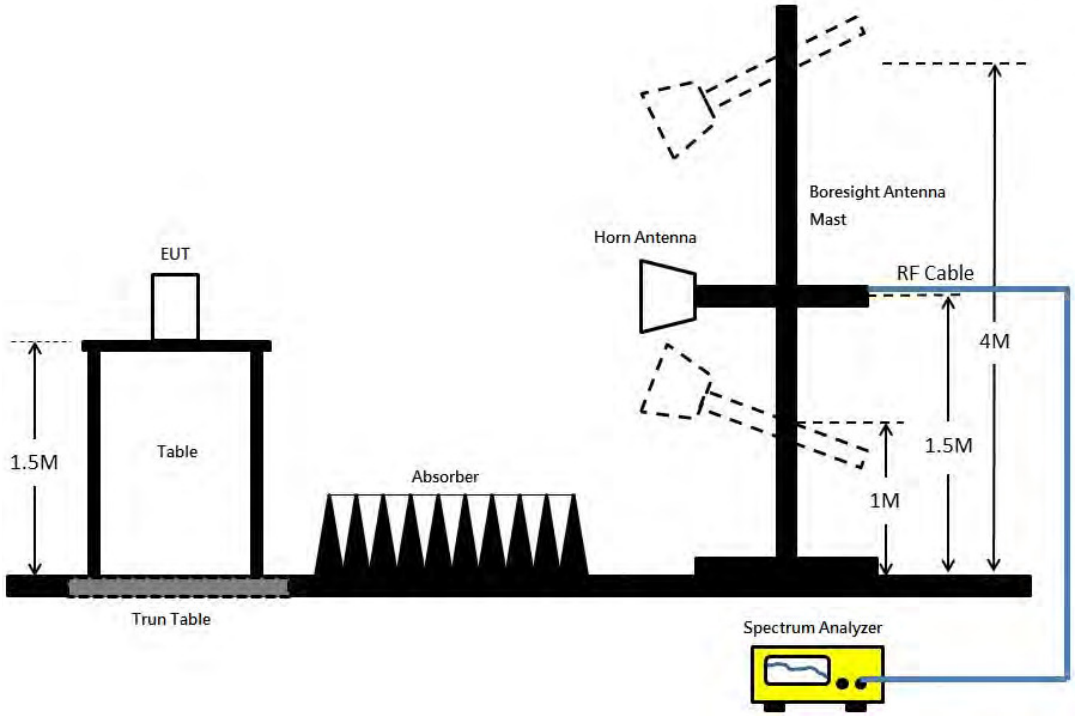
Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40 GHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for peak

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℃	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11a CH 52 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10519.20	61.56	68.20	-6.64	47.08	9.60	38.40	33.52	228	76	Peak	HORIZONTAL
2	15767.40	47.83	54.00	-6.17	31.61	12.18	37.76	33.72	129	123	Average	HORIZONTAL
3	15791.40	60.37	74.00	-13.63	44.20	12.20	37.69	33.72	129	123	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10518.20	63.56	68.20	-4.64	49.08	9.60	38.40	33.52	100	29	Peak	VERTICAL
2	15768.00	48.07	54.00	-5.93	31.85	12.18	37.76	33.72	224	279	Average	VERTICAL
3	15781.20	60.12	74.00	-13.88	43.90	12.18	37.76	33.72	224	279	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11a CH 60 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Oct. 18, 2016~Nov. 04, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10600.52	57.38	74.00	-16.62	43.08	11.43	38.98	36.11	193	200	Peak	HORIZONTAL
2	10600.92	44.50	54.00	-9.50	30.20	11.43	38.98	36.11	193	200	Average	HORIZONTAL
3	15896.08	59.78	74.00	-14.22	44.81	12.61	38.32	35.96	193	106	Peak	HORIZONTAL
4	15898.16	46.14	54.00	-7.86	31.17	12.61	38.32	35.96	193	106	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10609.44	43.50	54.00	-10.50	29.20	11.43	38.98	36.11	191	132	Average	VERTICAL
2	10609.52	56.25	74.00	-17.75	41.95	11.43	38.98	36.11	191	132	Peak	VERTICAL
3	15891.52	59.77	74.00	-14.23	44.80	12.61	38.32	35.96	226	201	Peak	VERTICAL
4	15899.28	46.17	54.00	-7.83	31.20	12.61	38.32	35.96	226	201	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11a CH 64 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15974.90	60.60	74.00	-13.40	44.81	12.29	37.40	33.90	164	250	Peak	HORIZONTAL
2	15977.70	48.02	54.00	-5.98	32.23	12.29	37.40	33.90	164	250	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15953.30	48.03	54.00	-5.97	32.14	12.27	37.47	33.85	182	116	Average	VERTICAL
2	15957.60	61.59	74.00	-12.41	45.70	12.27	37.47	33.85	182	116	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11a CH 100 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11008.90	44.65	54.00	-9.35	29.58	9.86	38.40	33.19	175	177	Average	HORIZONTAL
2	11011.00	56.93	74.00	-17.07	41.86	9.86	38.40	33.19	175	177	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10998.80	44.84	54.00	-9.16	29.77	9.86	38.40	33.19	209	94	Average	VERTICAL
2	11002.10	58.12	74.00	-15.88	43.05	9.86	38.40	33.19	209	94	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11a CH 116 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11158.40	44.39	54.00	-9.61	28.97	9.94	38.67	33.19	128	267	Average	HORIZONTAL
2	11178.40	56.49	74.00	-17.51	41.07	9.94	38.67	33.19	128	267	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11159.10	45.39	54.00	-8.61	29.97	9.94	38.67	33.19	100	142	Average	VERTICAL
2	11175.00	57.08	74.00	-16.92	41.66	9.94	38.67	33.19	100	142	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11a CH 140 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11417.90	45.87	54.00	-8.13	29.89	10.07	39.09	33.18	244	172	Average	HORIZONTAL
2	11421.40	58.00	74.00	-16.00	42.02	10.07	39.09	33.18	244	172	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11417.60	45.79	54.00	-8.21	29.81	10.07	39.09	33.18	218	85	Average	VERTICAL
2	11419.90	58.22	74.00	-15.78	42.24	10.07	39.09	33.18	218	85	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10523.90	57.65	68.20	-10.55	43.17	9.60	38.40	33.52	191	53	Peak	HORIZONTAL
2	15755.10	47.34	54.00	-6.66	31.07	12.18	37.76	33.67	205	63	Average	HORIZONTAL
3	15764.70	60.69	74.00	-13.31	44.47	12.18	37.76	33.72	205	63	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10518.60	64.54	68.20	-3.66	50.06	9.60	38.40	33.52	100	29	Peak	VERTICAL
2	15755.10	47.51	54.00	-6.49	31.24	12.18	37.76	33.67	154	286	Average	VERTICAL
3	15761.90	59.94	74.00	-14.06	43.67	12.18	37.76	33.67	154	286	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 60 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15896.20	59.02	74.00	-14.98	43.04	12.24	37.55	33.81	224	274	Peak	HORIZONTAL
2	15925.00	46.45	54.00	-7.55	30.56	12.27	37.47	33.85	224	274	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15891.20	59.22	74.00	-14.78	43.24	12.24	37.55	33.81	292	98	Peak	VERTICAL
2	15919.30	46.81	54.00	-7.19	30.88	12.27	37.47	33.81	292	98	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 64 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15949.90	46.81	54.00	-7.19	30.92	12.27	37.47	33.85	132	47	Average	HORIZONTAL
2	15982.80	59.99	74.00	-14.01	44.20	12.29	37.40	33.90	132	47	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15954.60	46.97	54.00	-7.03	31.08	12.27	37.47	33.85	114	316	Average	VERTICAL
2	15966.90	59.77	74.00	-14.23	43.93	12.29	37.40	33.85	114	316	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10982.60	43.95	54.00	-10.05	28.92	9.84	38.40	33.21	268	50	Average	HORIZONTAL
2	11011.50	56.41	74.00	-17.59	41.34	9.86	38.40	33.19	268	50	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10982.90	44.06	54.00	-9.94	29.03	9.84	38.40	33.21	182	250	Average	VERTICAL
2	10994.10	57.05	74.00	-16.95	42.00	9.84	38.40	33.19	182	250	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 116 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11159.40	56.87	74.00	-17.13	41.45	9.94	38.67	33.19	184	78	Peak	HORIZONTAL
2	11164.20	44.61	54.00	-9.39	29.19	9.94	38.67	33.19	184	78	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11138.00	56.79	74.00	-17.21	41.45	9.92	38.61	33.19	173	325	Peak	VERTICAL
2	11155.20	44.11	54.00	-9.89	28.77	9.92	38.61	33.19	173	325	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 140 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Oct. 18, 2016~Nov. 04, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11412.88	58.38	74.00	-15.62	43.32	11.85	39.22	36.01	156	96	Peak	HORIZONTAL
2	11415.28	44.54	54.00	-9.46	29.48	11.85	39.22	36.01	156	96	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11394.72	57.83	74.00	-16.17	42.79	11.84	39.22	36.02	150	234	Peak	VERTICAL
2	11415.20	44.60	54.00	-9.40	29.54	11.85	39.22	36.01	150	234	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15800.44	46.37	54.00	-7.63	30.20	12.20	37.69	33.72	209	127	Average	HORIZONTAL
2	15800.52	59.65	74.00	-14.35	43.48	12.20	37.69	33.72	209	127	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15800.00	46.49	54.00	-7.51	30.32	12.20	37.69	33.72	125	267	Average	VERTICAL
2	15805.48	59.55	74.00	-14.45	43.38	12.20	37.69	33.72	125	267	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 62 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10612.80	42.50	54.00	-11.50	27.90	9.65	38.40	33.45	160	73	Average	HORIZONTAL
2	10622.44	54.92	74.00	-19.08	40.30	9.67	38.40	33.45	160	73	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10610.00	42.77	54.00	-11.23	28.17	9.65	38.40	33.45	248	118	Average	VERTICAL
2	10615.08	56.16	74.00	-17.84	41.56	9.65	38.40	33.45	248	118	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11015.88	56.47	74.00	-17.53	41.40	9.86	38.40	33.19	224	106	Peak	HORIZONTAL
2	11021.32	43.71	54.00	-10.29	28.64	9.86	38.40	33.19	224	106	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11024.20	43.79	54.00	-10.21	28.72	9.86	38.40	33.19	159	324	Average	VERTICAL
2	11026.28	56.83	74.00	-17.17	41.76	9.86	38.40	33.19	159	324	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 110 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Oct. 18, 2016~Nov. 04, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11089.36	44.17	54.00	-9.83	29.31	11.68	39.29	36.11	150	135	Average	HORIZONTAL
2	11103.12	57.14	74.00	-16.86	42.27	11.69	39.28	36.10	150	135	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11109.60	44.15	54.00	-9.85	29.28	11.69	39.28	36.10	150	73	Average	VERTICAL
2	11116.00	57.87	74.00	-16.13	42.99	11.70	39.28	36.10	150	73	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 134 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11340.32	43.56	54.00	-10.44	27.79	10.02	38.93	33.18	267	301	Average	HORIZONTAL
2	11347.04	56.67	74.00	-17.33	40.90	10.02	38.93	33.18	267	301	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11330.88	44.56	54.00	-9.44	28.79	10.02	38.93	33.18	221	223	Average	VERTICAL
2	11346.88	57.33	74.00	-16.67	41.56	10.02	38.93	33.18	221	223	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15865.52	59.25	74.00	-14.75	43.17	12.22	37.62	33.76	238	105	Peak	HORIZONTAL
2	15874.12	46.05	54.00	-7.95	30.07	12.24	37.55	33.81	238	105	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15869.80	46.29	54.00	-7.71	30.26	12.22	37.62	33.81	237	236	Average	VERTICAL
2	15876.00	58.82	74.00	-15.18	42.84	12.24	37.55	33.81	237	236	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 106 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Aug. 22, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11059.90	43.19	54.00	-10.81	28.05	9.88	38.45	33.19	215	122	Average	HORIZONTAL
2	11064.65	56.29	74.00	-17.71	41.08	9.89	38.51	33.19	215	122	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11059.86	56.78	74.00	-17.22	41.64	9.88	38.45	33.19	173	224	Peak	VERTICAL
2	11060.13	43.23	54.00	-10.77	28.02	9.89	38.51	33.19	173	224	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 122 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11211.84	56.19	74.00	-17.81	40.70	9.96	38.72	33.19	174	289	Peak	HORIZONTAL
2	11229.96	43.33	54.00	-10.67	27.78	9.97	38.77	33.19	174	289	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11224.80	55.61	74.00	-18.39	40.06	9.97	38.77	33.19	161	146	Peak	VERTICAL
2	11228.64	43.30	54.00	-10.70	27.75	9.97	38.77	33.19	161	146	Average	VERTICAL

Straddle Channel

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11a CH 144 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11429.20	58.74	74.00	-15.26	42.76	10.07	39.09	33.18	259	35	Peak	HORIZONTAL
2	11443.70	45.99	54.00	-8.01	30.01	10.07	39.09	33.18	259	35	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11440.40	46.46	54.00	-7.54	30.48	10.07	39.09	33.18	171	333	Average	VERTICAL
2	11450.50	58.64	74.00	-15.36	42.59	10.08	39.15	33.18	171	333	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11424.00	45.42	54.00	-8.58	29.44	10.07	39.09	33.18	252	153	Average	HORIZONTAL
2	11460.40	58.01	74.00	-15.99	41.96	10.08	39.15	33.18	252	153	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11436.90	58.21	74.00	-15.79	42.23	10.07	39.09	33.18	153	333	Peak	VERTICAL
2	11440.20	45.85	54.00	-8.15	29.87	10.07	39.09	33.18	153	333	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 17, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11423.32	45.43	54.00	-8.57	29.45	10.07	39.09	33.18	190	228	Average	HORIZONTAL
2	11429.88	58.31	74.00	-15.69	42.33	10.07	39.09	33.18	190	228	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11422.44	45.56	54.00	-8.44	29.58	10.07	39.09	33.18	293	78	Average	VERTICAL
2	11426.48	58.59	74.00	-15.41	42.61	10.07	39.09	33.18	293	78	Peak	VERTICAL

Temperature	22℃	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Oct. 18, 2016~Nov. 04, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11377.76	44.30	54.00	-9.70	29.26	11.83	39.23	36.02	150	328	Average	HORIZONTAL
2	11398.72	57.97	74.00	-16.03	42.92	11.84	39.22	36.01	150	328	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11364.16	57.65	74.00	-16.35	42.62	11.82	39.23	36.02	150	180	Peak	VERTICAL
2	11387.04	44.39	54.00	-9.61	29.36	11.83	39.22	36.02	150	180	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.

For beamforming mode

Temperature	22℃	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 31, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15778.90	60.24	74.00	-13.76	43.94	13.39	38.17	35.26	155	89	Peak	HORIZONTAL
2	15783.94	47.10	54.00	-6.90	30.88	13.39	38.12	35.29	155	89	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15776.86	60.17	74.00	-13.83	43.87	13.39	38.17	35.26	155	36	Peak	VERTICAL
2	15780.54	47.24	54.00	-6.76	30.94	13.39	38.17	35.26	155	36	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 60 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Oct. 18, 2016~Nov. 04, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10586.32	44.83	54.00	-9.17	30.57	11.42	38.95	36.11	220	358	Average	HORIZONTAL
2	10601.20	57.75	74.00	-16.25	43.45	11.43	38.98	36.11	220	358	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10584.88	58.32	74.00	-15.68	44.06	11.42	38.95	36.11	188	60	Peak	VERTICAL
2	10593.92	44.82	54.00	-9.18	30.52	11.43	38.98	36.11	188	60	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 64 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 31, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10637.34	42.58	54.00	-11.42	27.87	10.60	38.95	34.84	152	316	Average	HORIZONTAL
2	10640.00	55.53	74.00	-18.47	40.82	10.60	38.95	34.84	152	316	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10636.92	42.41	54.00	-11.59	27.70	10.60	38.95	34.84	141	201	Average	VERTICAL
2	10639.26	55.88	74.00	-18.12	41.17	10.60	38.95	34.84	141	201	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 31, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10995.66	42.65	54.00	-11.35	27.58	10.66	39.09	34.68	139	84	Average	HORIZONTAL
2	10999.98	55.14	74.00	-18.86	40.05	10.66	39.10	34.67	139	84	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11001.36	55.58	74.00	-18.42	40.49	10.66	39.10	34.67	137	135	Peak	VERTICAL
2	11004.08	42.67	54.00	-11.33	27.58	10.66	39.10	34.67	137	135	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 116 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 31, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11159.62	55.73	74.00	-18.27	40.44	10.69	39.30	34.70	149	68	Peak	HORIZONTAL
2	11163.72	43.75	54.00	-10.25	28.46	10.69	39.30	34.70	149	68	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11155.48	42.97	54.00	-11.03	27.71	10.69	39.26	34.69	148	147	Average	VERTICAL
2	11157.20	55.58	74.00	-18.42	40.29	10.69	39.30	34.70	148	147	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 140 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 31, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11396.22	56.29	74.00	-17.71	40.71	10.73	39.58	34.73	169	93	Peak	HORIZONTAL
2	11399.22	43.44	54.00	-10.56	27.86	10.73	39.58	34.73	169	93	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11395.12	56.62	74.00	-17.38	41.04	10.73	39.58	34.73	168	131	Peak	VERTICAL
2	11396.28	43.43	54.00	-10.57	27.85	10.73	39.58	34.73	168	131	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 31, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15807.30	47.32	54.00	-6.68	31.10	13.39	38.12	35.29	134	239	Average	HORIZONTAL
2	15811.40	59.56	74.00	-14.44	43.34	13.39	38.12	35.29	134	239	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15807.28	47.22	54.00	-6.78	31.00	13.39	38.12	35.29	137	181	Average	VERTICAL
2	15812.90	60.40	74.00	-13.60	44.18	13.39	38.12	35.29	137	181	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 62 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Oct. 18, 2016~Nov. 04, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10636.08	57.64	74.00	-16.36	43.30	11.45	39.00	36.11	175	255	Peak	HORIZONTAL
2	10638.72	44.72	54.00	-9.28	30.39	11.45	39.00	36.12	175	255	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10601.36	44.04	54.00	-9.96	29.74	11.43	38.98	36.11	150	57	Average	VERTICAL
2	10639.68	57.20	74.00	-16.80	42.87	11.45	39.00	36.12	150	57	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 31, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11019.10	55.77	74.00	-18.23	40.68	10.66	39.10	34.67	137	66	Peak	HORIZONTAL
2	11022.80	42.62	54.00	-11.38	27.53	10.66	39.10	34.67	137	66	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11015.56	42.89	54.00	-11.11	27.80	10.66	39.10	34.67	140	120	Average	VERTICAL
2	11024.42	55.21	74.00	-18.79	40.12	10.66	39.10	34.67	140	120	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 110 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 31, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11097.76	43.35	54.00	-10.65	28.14	10.68	39.22	34.69	119	156	Average	HORIZONTAL
2	11104.84	55.78	74.00	-18.22	40.57	10.68	39.22	34.69	119	156	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11104.24	55.85	74.00	-18.15	40.64	10.68	39.22	34.69	146	66	Peak	VERTICAL
2	11104.78	43.23	54.00	-10.77	28.02	10.68	39.22	34.69	146	66	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 134 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 31, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11335.30	43.07	54.00	-10.93	27.57	10.72	39.50	34.72	124	329	Average	HORIZONTAL
2	11340.00	55.60	74.00	-18.40	40.10	10.72	39.50	34.72	124	329	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11336.98	43.13	54.00	-10.87	27.63	10.72	39.50	34.72	112	222	Average	VERTICAL
2	11338.78	56.09	74.00	-17.91	40.59	10.72	39.50	34.72	112	222	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 31, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15865.28	47.32	54.00	-6.68	31.18	13.39	38.06	35.31	186	326	Average	HORIZONTAL
2	15868.26	60.34	74.00	-13.66	44.20	13.39	38.06	35.31	186	326	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15872.40	59.89	74.00	-14.11	43.75	13.39	38.06	35.31	188	254	Peak	VERTICAL
2	15873.90	47.23	54.00	-6.77	31.17	13.39	38.01	35.34	188	254	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 106 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Oct. 18, 2016~Nov. 04, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11061.78	58.03	74.00	-15.97	43.19	11.67	39.29	36.12	150	265	Peak	HORIZONTAL
2	11064.84	44.50	54.00	-9.50	29.66	11.67	39.29	36.12	150	265	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11061.64	44.14	54.00	-9.86	29.30	11.67	39.29	36.12	150	161	Average	VERTICAL
2	11062.04	57.58	74.00	-16.42	42.74	11.67	39.29	36.12	150	161	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 122 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 30, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11216.14	55.66	74.00	-18.34	40.32	10.70	39.34	34.70	110	47	Peak	HORIZONTAL
2	11219.64	43.27	54.00	-10.73	27.93	10.70	39.34	34.70	110	47	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11219.10	42.46	54.00	-11.54	27.12	10.70	39.34	34.70	112	66	Average	VERTICAL
2	11223.14	56.72	74.00	-17.28	41.35	10.70	39.38	34.71	112	66	Peak	VERTICAL

Straddle Channel

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 31, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11435.68	43.21	54.00	-10.79	27.59	10.74	39.62	34.74	179	75	Average	HORIZONTAL
2	11436.90	55.92	74.00	-18.08	40.30	10.74	39.62	34.74	179	75	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11436.16	43.43	54.00	-10.57	27.81	10.74	39.62	34.74	162	150	Average	VERTICAL
2	11444.30	56.01	74.00	-17.99	40.39	10.74	39.62	34.74	162	150	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 31, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11418.88	55.77	74.00	-18.23	40.15	10.74	39.62	34.74	208	224	Peak	HORIZONTAL
2	11418.99	43.14	54.00	-10.86	27.52	10.74	39.62	34.74	208	224	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11418.78	43.10	54.00	-10.90	27.48	10.74	39.62	34.74	103	110	Average	VERTICAL
2	11418.98	56.66	74.00	-17.34	41.04	10.74	39.62	34.74	103	110	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	Jul. 31, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11377.70	43.68	54.00	-10.32	28.15	10.72	39.54	34.73	114	253	Average	HORIZONTAL
2	11384.80	56.39	74.00	-17.61	40.81	10.73	39.58	34.73	114	253	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11382.30	43.60	54.00	-10.40	28.07	10.72	39.54	34.73	114	263	Average	VERTICAL
2	11384.28	56.27	74.00	-17.73	40.74	10.72	39.54	34.73	114	263	Peak	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 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

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

For transmitters operating in the 5.725-5.85 GHz band: all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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 0.

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:

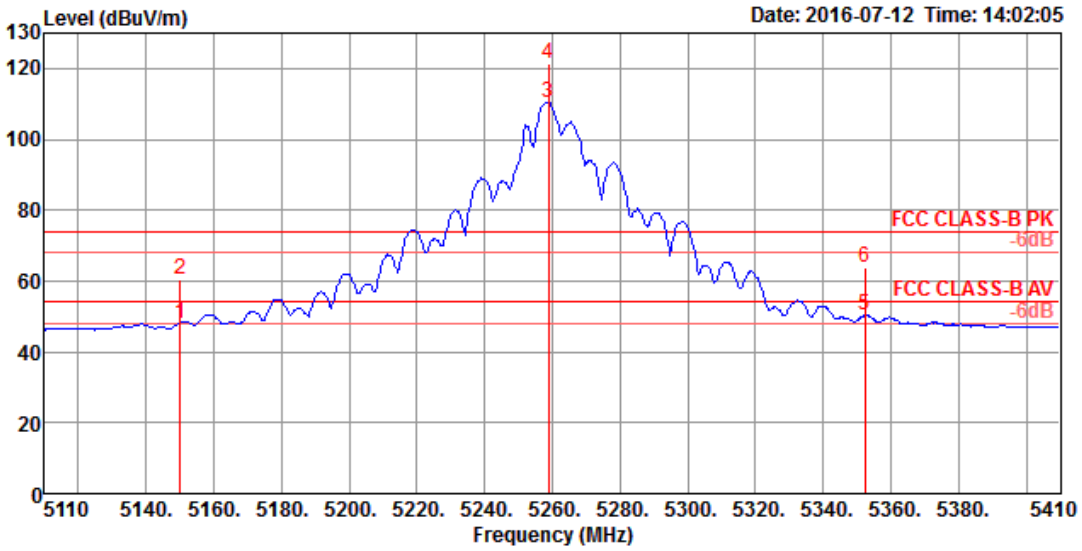
The EUT was programmed to be in beamforming transmitting mode.

4.6.7. Test Result of Band Edge and Fundamental Emissions

For non-beamforming mode

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11a CH 52, 60, 64 / Chain 1 + Chain 2 + Chain 3 + Chain 4

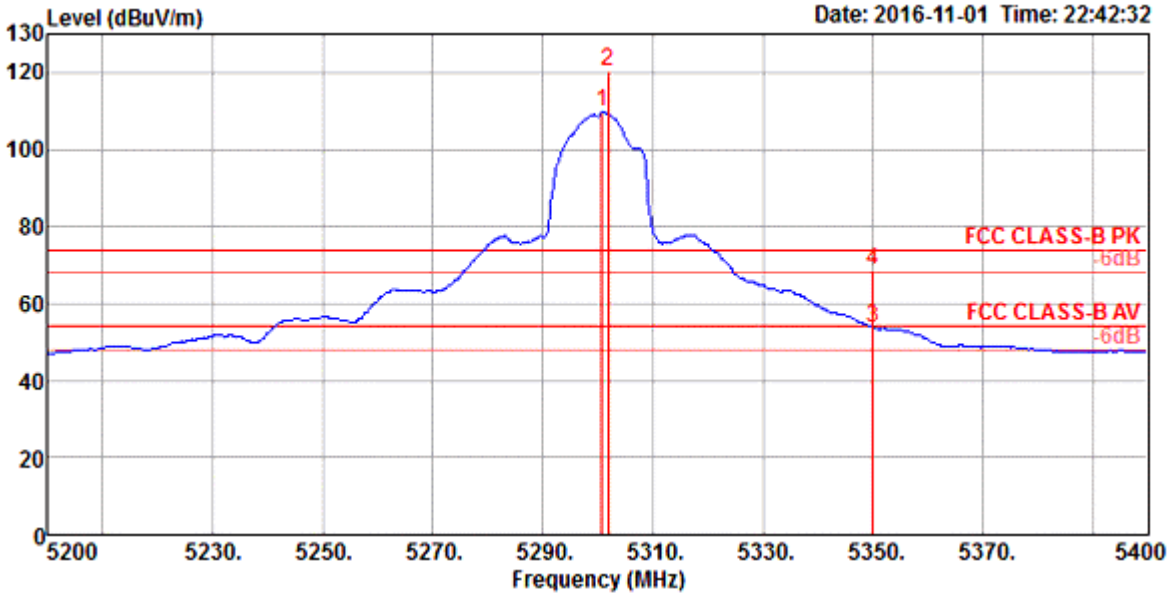
Channel 52



	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	5150.00	48.20	54.00	-5.80	40.98	7.34	31.52	31.64	275	332	Average	VERTICAL
2	5150.00	60.44	74.00	-13.56	53.22	7.34	31.52	31.64	275	332	Peak	VERTICAL
3 0	5258.80	110.26			102.81	7.47	31.61	31.63	275	332	Average	VERTICAL
4 0	5258.80	121.51			114.06	7.47	31.61	31.63	275	332	Peak	VERTICAL
5	5352.40	50.32	54.00	-3.68	42.66	7.60	31.68	31.62	275	332	Average	VERTICAL
6	5352.40	63.77	74.00	-10.23	56.11	7.60	31.68	31.62	275	332	Peak	VERTICAL

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

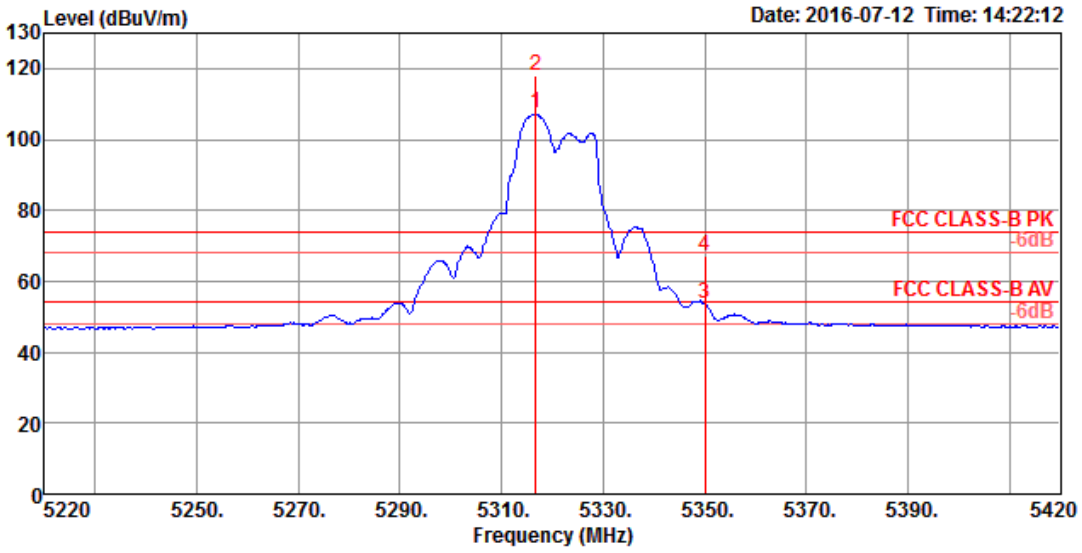
Channel 60



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBu\		dBuV	dB	dB/m	dB	cm	deg		
1 @	5300.80	109.63			104.61	8.18	33.45	36.61	282	139	Average	HORIZONTAL
2 @	5302.00	120.38			115.36	8.18	33.45	36.61	282	139	Peak	HORIZONTAL
3	5350.00	53.84	54.00	-0.16	48.72	8.19	33.53	36.60	282	139	Average	HORIZONTAL
4	5350.00	68.37	74.00	-5.63	63.25	8.19	33.53	36.60	282	139	Peak	HORIZONTAL

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

Channel 64

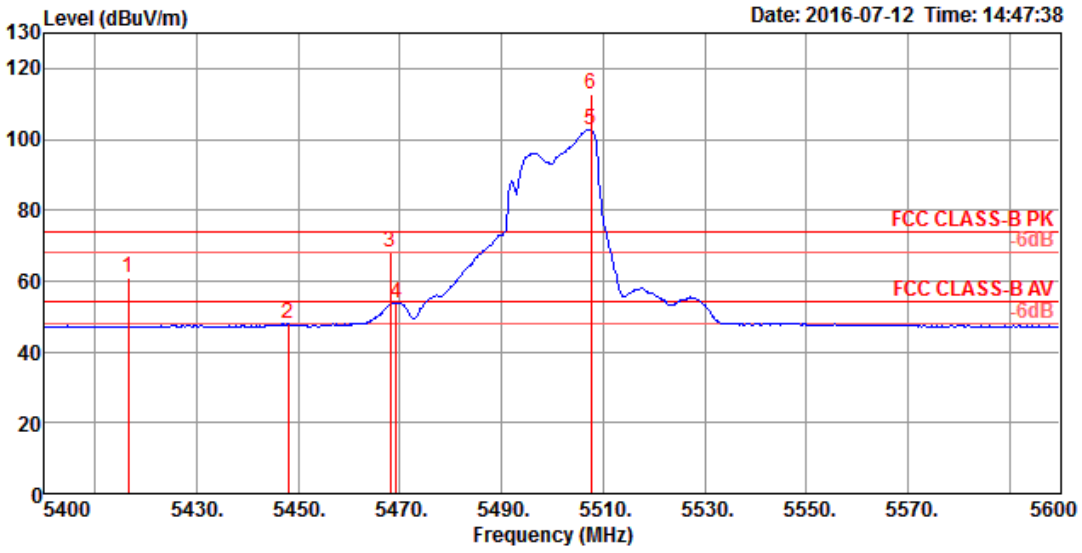


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1 0	5316.80	107.27			99.69	7.56	31.65	31.63	276	332	Average	VERTICAL
2 0	5316.80	117.86			110.28	7.56	31.65	31.63	276	332	Peak	VERTICAL
3	5350.00	53.60	54.00	-0.40	45.94	7.60	31.68	31.62	276	332	Average	VERTICAL
4	5350.00	67.24	74.00	-6.76	59.58	7.60	31.68	31.62	276	332	Peak	VERTICAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11a CH 100, 116, 140 / Chain 1 + Chain 2 + Chain 3 + Chain 4

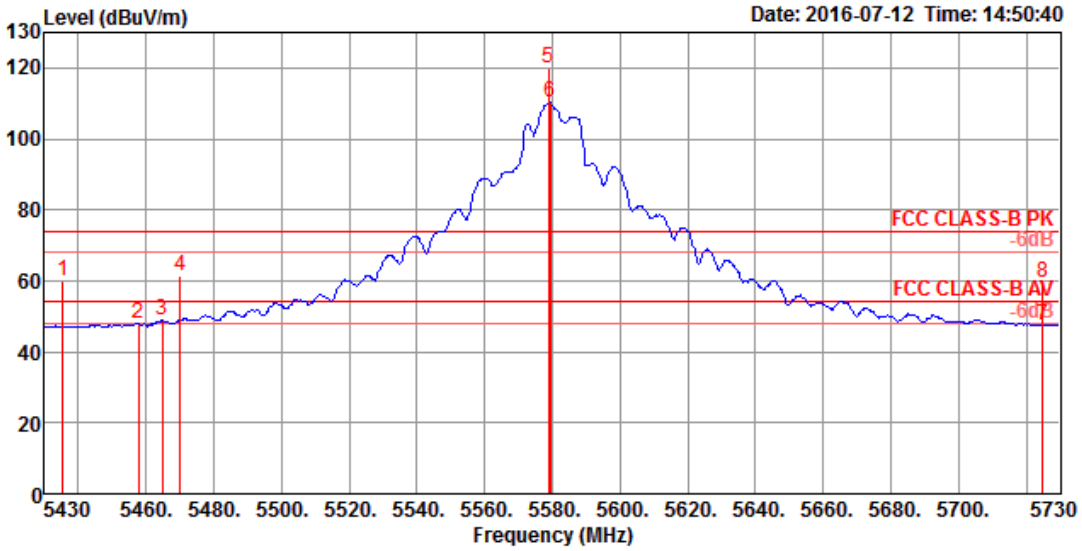
Channel 100



	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	5416.40	60.73	74.00	-13.27	52.96	7.65	31.74	31.62	300	51	Peak	HORIZONTAL
2	5448.00	47.76	54.00	-6.24	39.98	7.64	31.76	31.62	300	51	Average	HORIZONTAL
3	5468.00	68.35	74.00	-5.65	60.54	7.64	31.78	31.61	300	51	Peak	HORIZONTAL
4	5469.20	53.56	54.00	-0.44	45.75	7.64	31.78	31.61	300	51	Average	HORIZONTAL
5 0	5507.60	102.75			94.94	7.63	31.80	31.62	300	51	Average	HORIZONTAL
6 0	5507.60	112.54			104.73	7.63	31.80	31.62	300	51	Peak	HORIZONTAL

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

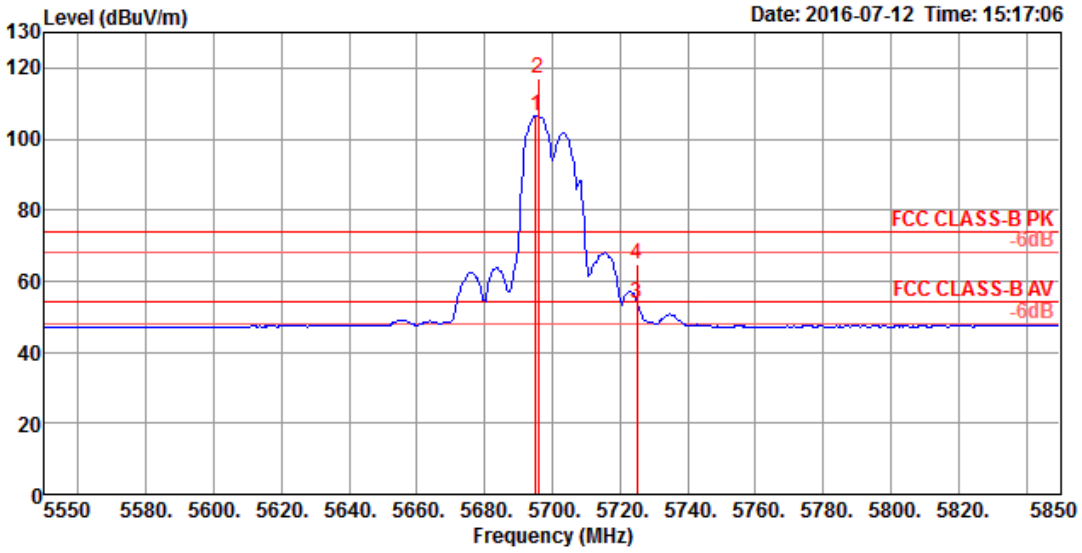
Channel 116



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5435.40	59.78	74.00	-14.22	52.00	7.65	31.75	31.62	210	78	Peak	VERTICAL
2	5457.60	47.86	54.00	-6.14	40.07	7.64	31.76	31.61	210	78	Average	VERTICAL
3	5464.80	48.74	54.00	-5.26	40.93	7.64	31.78	31.61	210	78	Average	VERTICAL
4	5470.00	61.34	74.00	-12.66	53.53	7.64	31.78	31.61	210	78	Peak	VERTICAL
5 0	5578.80	119.90			112.04	7.61	31.90	31.65	210	78	Peak	VERTICAL
6 0	5579.40	110.24			102.38	7.61	31.90	31.65	210	78	Average	VERTICAL
7	5725.00	47.66	54.00	-6.34	39.54	7.74	32.08	31.70	210	78	Average	VERTICAL
8	5725.00	59.30	74.00	-14.70	51.18	7.74	32.08	31.70	210	78	Peak	VERTICAL

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

Channel 140

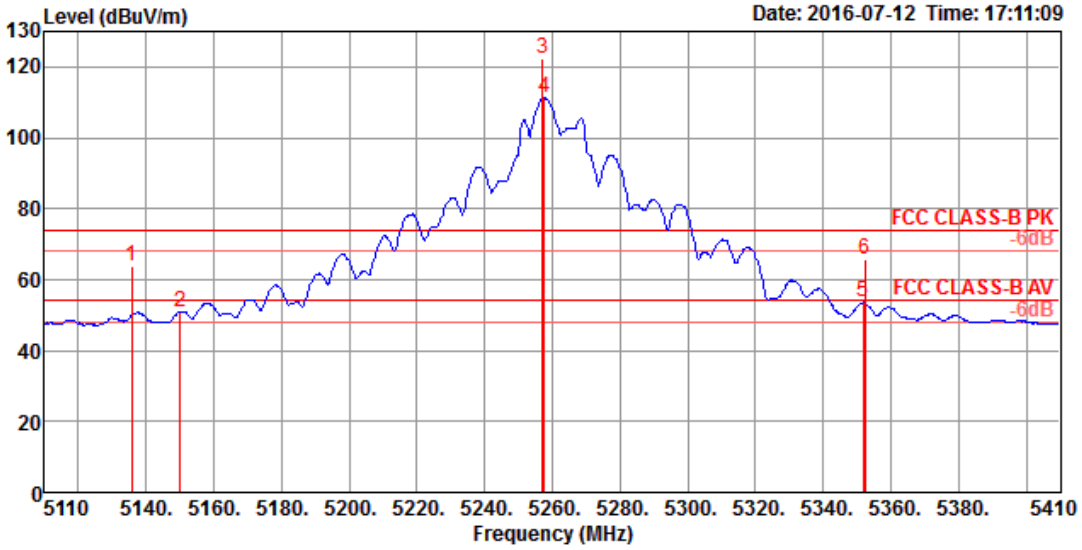


		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	0	5695.20	106.60			98.54	7.71	32.04	31.69	218	118	Average	VERTICAL
2	0	5695.80	116.82			108.76	7.71	32.04	31.69	218	118	Peak	VERTICAL
3		5725.00	53.55	54.00	-0.45	45.43	7.74	32.08	31.70	218	118	Average	VERTICAL
4		5725.00	64.75	74.00	-9.25	56.63	7.74	32.08	31.70	218	118	Peak	VERTICAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52, 60, 64 / Chain 1 + Chain 2 + Chain 3 + Chain 4

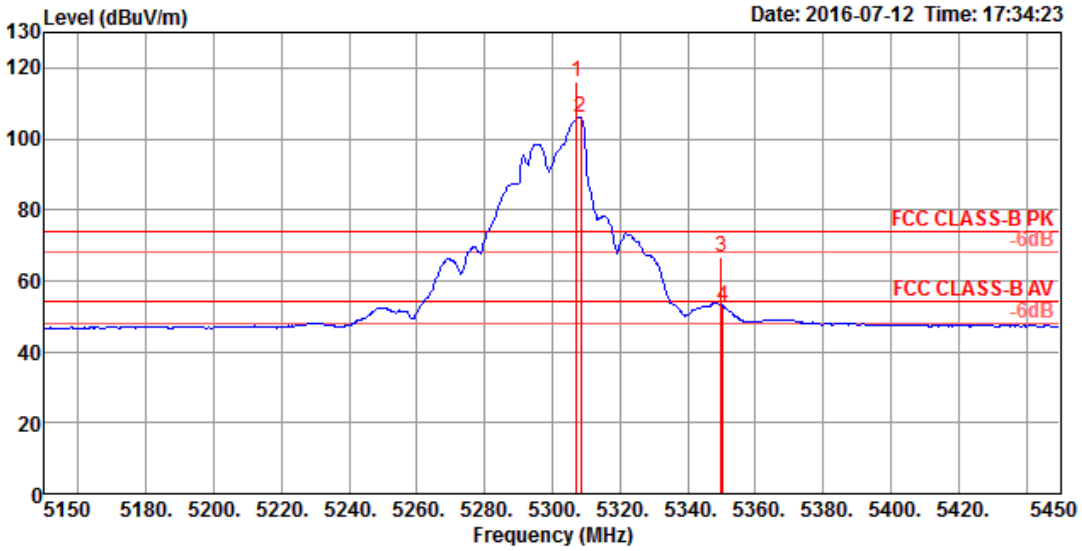
Channel 52



	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	5135.80	63.81	74.00	-10.19	56.63	7.32	31.51	31.65	222	328	Peak	VERTICAL
2	5150.00	50.71	54.00	-3.29	43.49	7.34	31.52	31.64	222	328	Average	VERTICAL
3 0	5257.00	122.34			114.89	7.47	31.61	31.63	222	328	Peak	VERTICAL
4 0	5257.60	111.31			103.86	7.47	31.61	31.63	222	328	Average	VERTICAL
5	5351.80	53.49	54.00	-0.51	45.83	7.60	31.68	31.62	222	328	Average	VERTICAL
6	5352.40	65.65	74.00	-8.35	57.99	7.60	31.68	31.62	222	328	Peak	VERTICAL

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

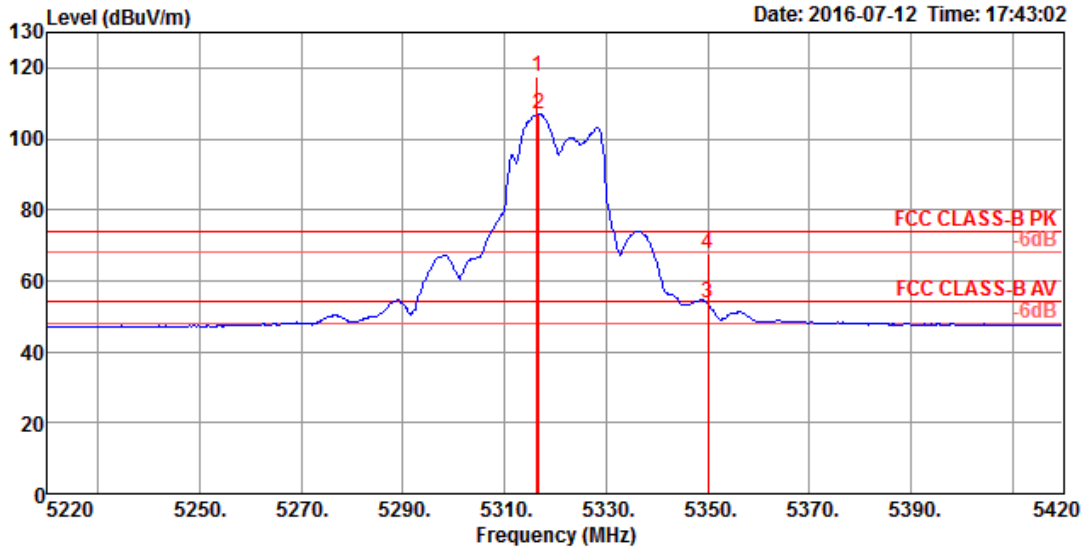
Channel 60



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1 0	5307.20	115.96			108.41	7.54	31.64	31.63	300	118	Peak	HORIZONTAL
2 0	5308.40	106.06			98.48	7.56	31.65	31.63	300	118	Average	HORIZONTAL
3	5350.00	66.62	74.00	-7.38	58.96	7.60	31.68	31.62	300	118	Peak	HORIZONTAL
4	5350.40	52.63	54.00	-1.37	44.97	7.60	31.68	31.62	300	118	Average	HORIZONTAL

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

Channel 64

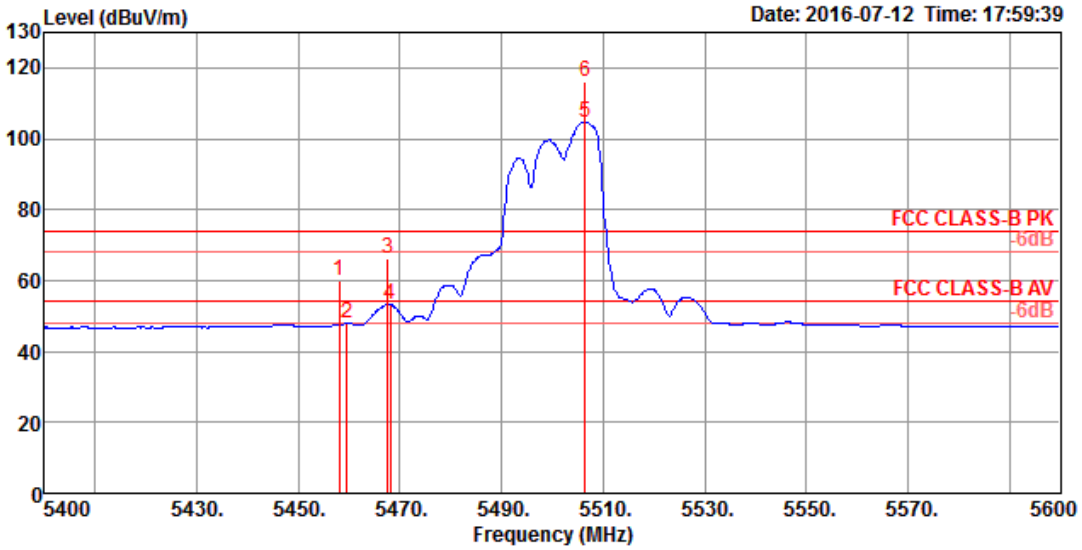


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1 0	5316.40	117.50			109.92	7.56	31.65	31.63	241	332	Peak	VERTICAL
2 0	5316.80	106.95			99.37	7.56	31.65	31.63	241	332	Average	VERTICAL
3	5350.00	53.52	54.00	-0.48	45.86	7.60	31.68	31.62	241	332	Average	VERTICAL
4	5350.00	67.85	74.00	-6.15	60.19	7.60	31.68	31.62	241	332	Peak	VERTICAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100, 116, 140 / Chain 1 + Chain 2 + Chain 3 + Chain 4

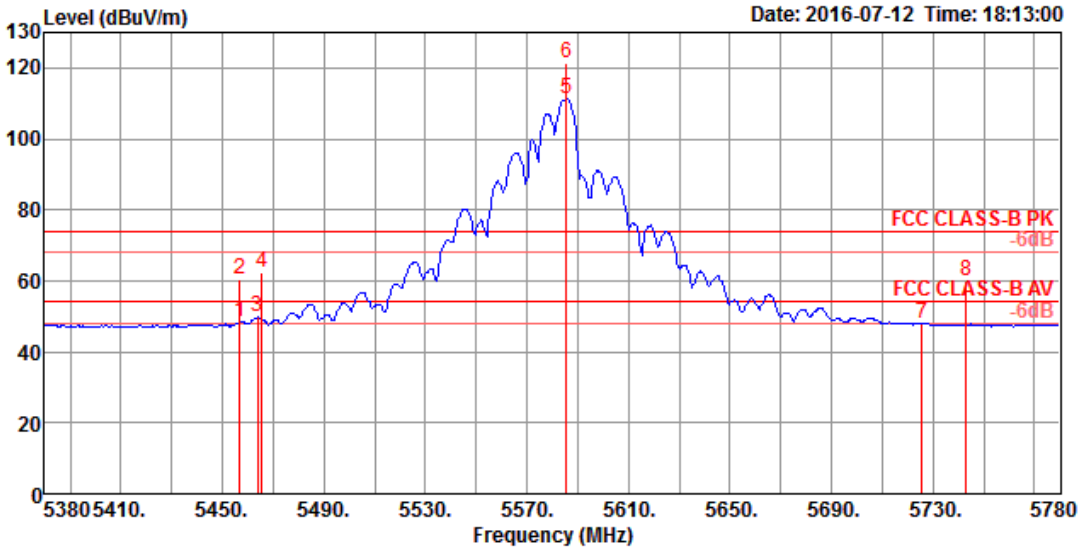
Channel 100



	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	5458.00	60.07	74.00	-13.93	52.28	7.64	31.76	31.61	297	166	Peak	VERTICAL
2	5459.60	47.82	54.00	-6.18	40.03	7.64	31.76	31.61	297	166	Average	VERTICAL
3	5467.60	66.10	74.00	-7.90	58.29	7.64	31.78	31.61	297	166	Peak	VERTICAL
4	5468.00	53.10	54.00	-0.90	45.29	7.64	31.78	31.61	297	166	Average	VERTICAL
5 0	5506.40	104.79			96.98	7.63	31.80	31.62	297	166	Average	VERTICAL
6 0	5506.40	116.13			108.32	7.63	31.80	31.62	297	166	Peak	VERTICAL

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

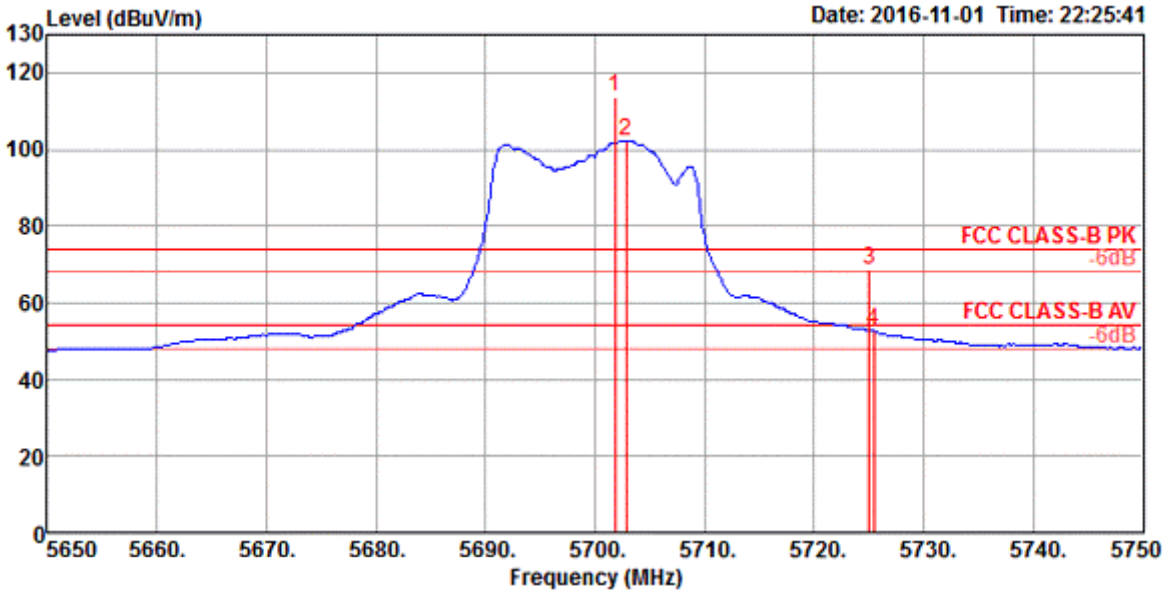
Channel 116



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5456.80	48.45	54.00	-5.55	40.66	7.64	31.76	31.61	287	165	Average	VERTICAL
2	5456.80	60.49	74.00	-13.51	52.70	7.64	31.76	31.61	287	165	Peak	VERTICAL
3	5464.00	49.66	54.00	-4.34	41.85	7.64	31.78	31.61	287	165	Average	VERTICAL
4	5465.60	62.35	74.00	-11.65	54.54	7.64	31.78	31.61	287	165	Peak	VERTICAL
5 0	5585.60	111.34			103.48	7.61	31.90	31.65	287	165	Average	VERTICAL
6 0	5585.60	121.39			113.53	7.61	31.90	31.65	287	165	Peak	VERTICAL
7	5725.60	48.13	54.00	-5.87	40.01	7.74	32.08	31.70	287	165	Average	VERTICAL
8	5743.20	60.13	74.00	-13.87	51.98	7.76	32.10	31.71	287	165	Peak	VERTICAL

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

Channel 140

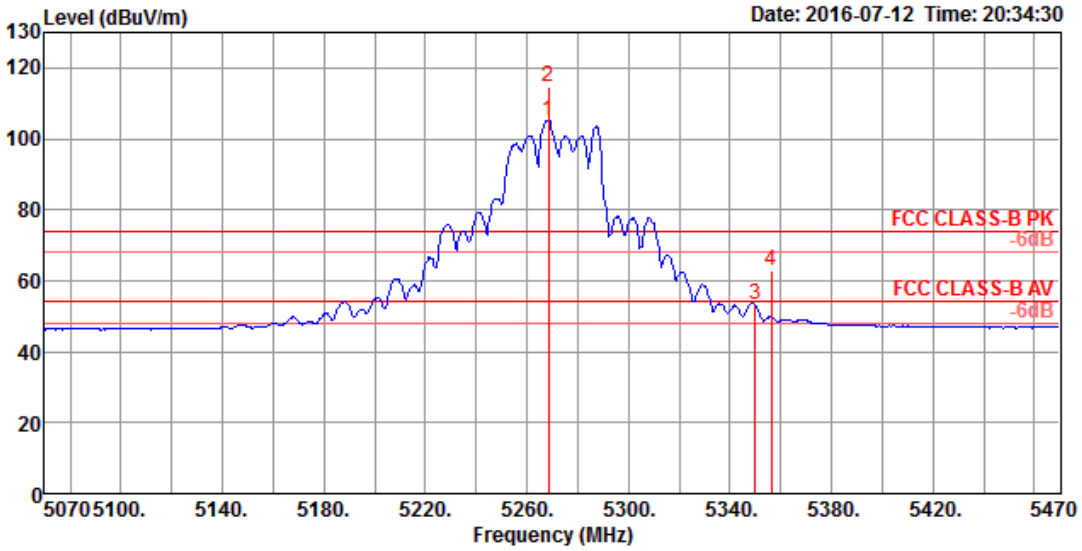


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBu\		dBuV	dB	dB/m	dB	cm	deg		
1 @	5701.80	113.51			107.02	8.65	34.36	36.52	287	118	Peak	HORIZONTAL
2 @	5702.80	102.33			95.84	8.65	34.36	36.52	287	118	Average	HORIZONTAL
3	5725.00	68.83	74.00	-5.17	62.28	8.62	34.45	36.52	287	118	Peak	HORIZONTAL
4	5725.40	52.56	54.00	-1.44	46.01	8.62	34.45	36.52	287	118	Average	HORIZONTAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54, 62 / Chain 1 + Chain 2 + Chain 3 + Chain 4

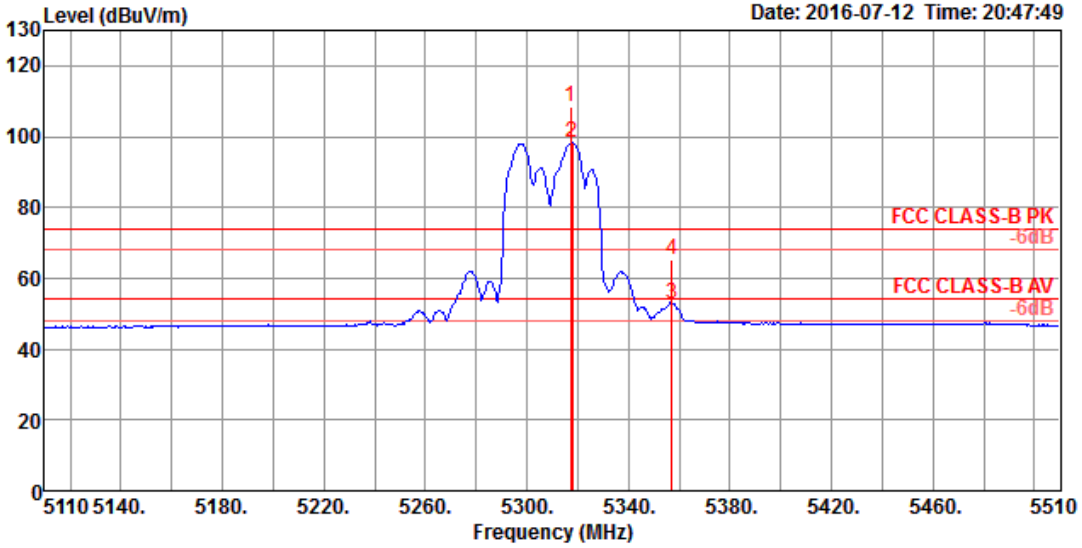
Channel 54



	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 0	5268.40	105.22			97.74	7.49	31.62	31.63	300	330	Average	VERTICAL
2 0	5268.40	114.75			107.27	7.49	31.62	31.63	300	330	Peak	VERTICAL
3	5350.00	53.19	54.00	-0.81	45.53	7.60	31.68	31.62	300	330	Average	VERTICAL
4	5356.40	62.71	74.00	-11.29	55.02	7.62	31.69	31.62	300	330	Peak	VERTICAL

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

Channel 62

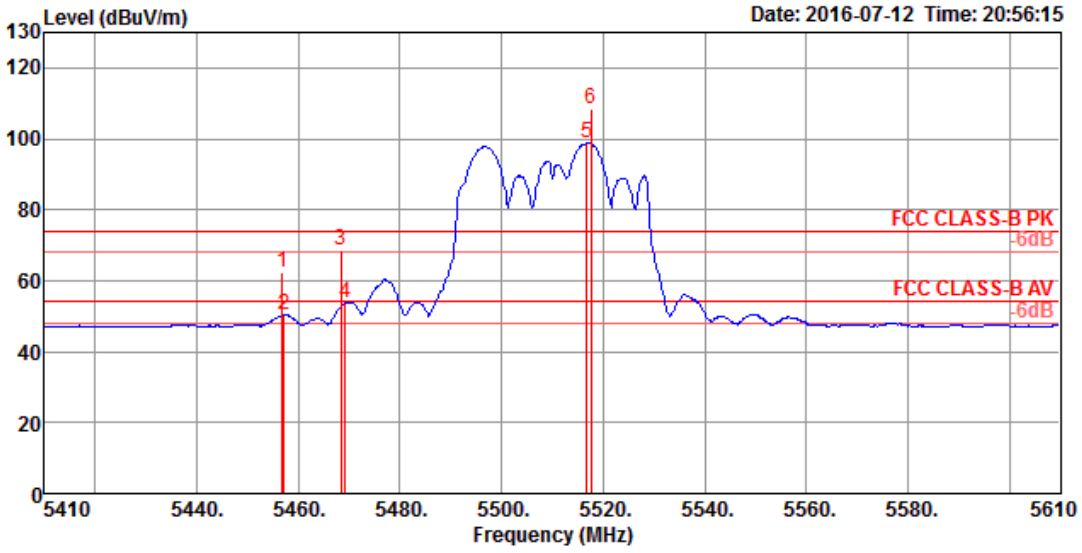


		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	0	5317.20	108.23			100.65	7.56	31.65	31.63	300	116	Peak	HORIZONTAL
2	0	5318.00	98.13			90.55	7.56	31.65	31.63	300	116	Average	HORIZONTAL
3		5357.20	52.98	54.00	-1.02	45.29	7.62	31.69	31.62	300	116	Average	HORIZONTAL
4		5357.20	65.27	74.00	-8.73	57.58	7.62	31.69	31.62	300	116	Peak	HORIZONTAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102, 110, 134 / Chain 1 + Chain 2 + Chain 3 + Chain 4

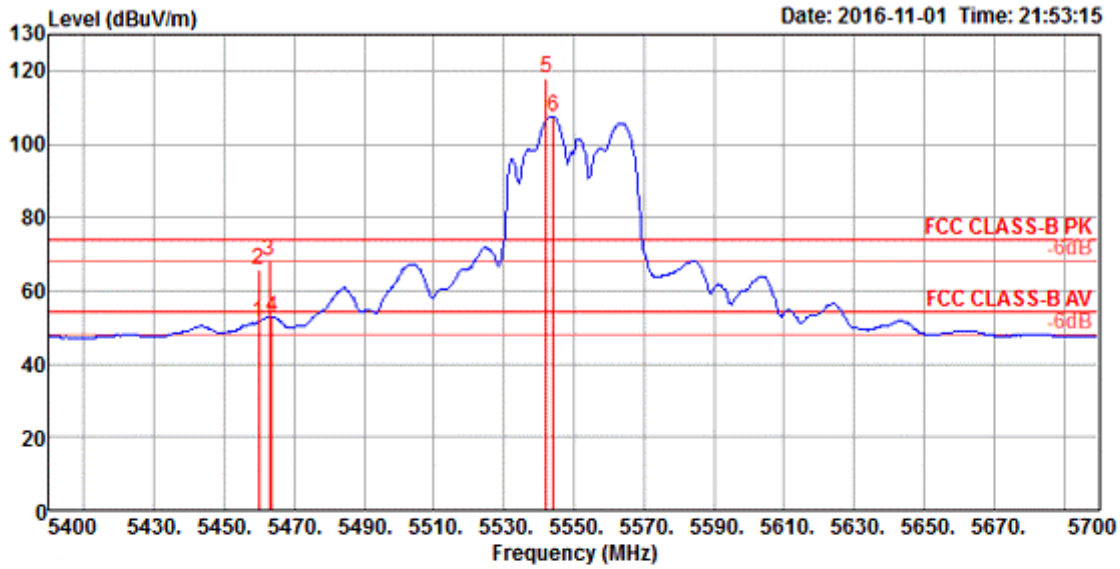
Channel 102



	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	5456.80	62.49	74.00	-11.51	54.70	7.64	31.76	31.61	300	163	Peak	VERTICAL
2	5457.20	50.27	54.00	-3.73	42.48	7.64	31.76	31.61	300	163	Average	VERTICAL
3	5468.40	68.42	74.00	-5.58	60.61	7.64	31.78	31.61	300	163	Peak	VERTICAL
4	5469.20	53.61	54.00	-0.39	45.80	7.64	31.78	31.61	300	163	Average	VERTICAL
5 0	5516.80	98.68			90.85	7.63	31.82	31.62	300	163	Average	VERTICAL
6 0	5517.60	108.21			100.38	7.63	31.82	31.62	300	163	Peak	VERTICAL

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

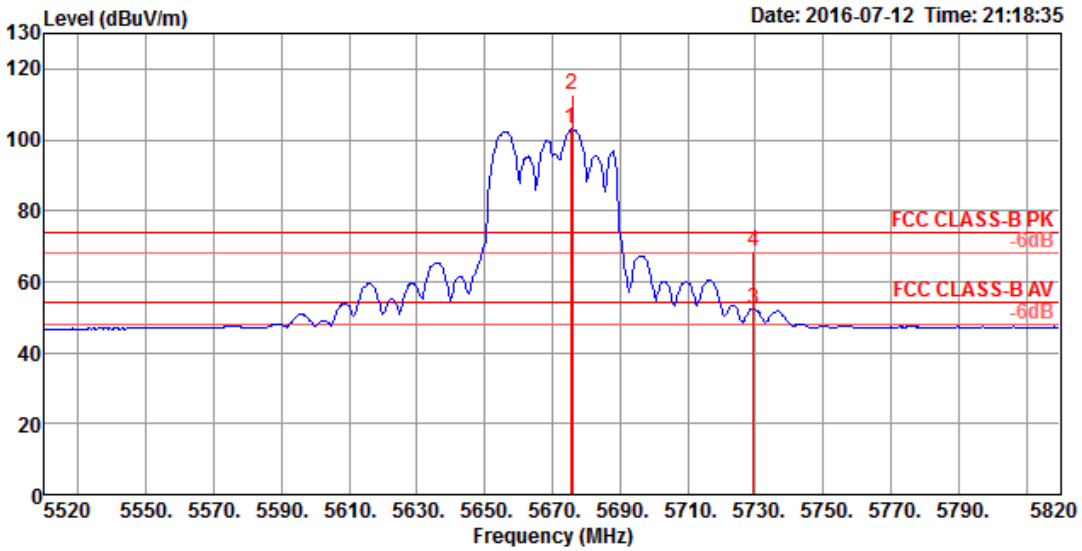
Channel 110



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5460.00	51.56	54.00	-2.44	46.05	8.38	33.72	36.59	300	179	Average	VERTICAL
2	5460.00	65.54	74.00	-8.46	60.03	8.38	33.72	36.59	300	179	Peak	VERTICAL
3	5463.00	68.35	74.00	-5.65	62.83	8.39	33.72	36.59	300	179	Peak	VERTICAL
4	5463.60	52.83	54.00	-1.17	47.28	8.39	33.75	36.59	300	179	Average	VERTICAL
5 @	5542.20	118.00			112.05	8.63	33.89	36.57	300	179	Peak	VERTICAL
6 @	5544.00	107.61			101.61	8.63	33.94	36.57	300	179	Average	VERTICAL

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

Channel 134

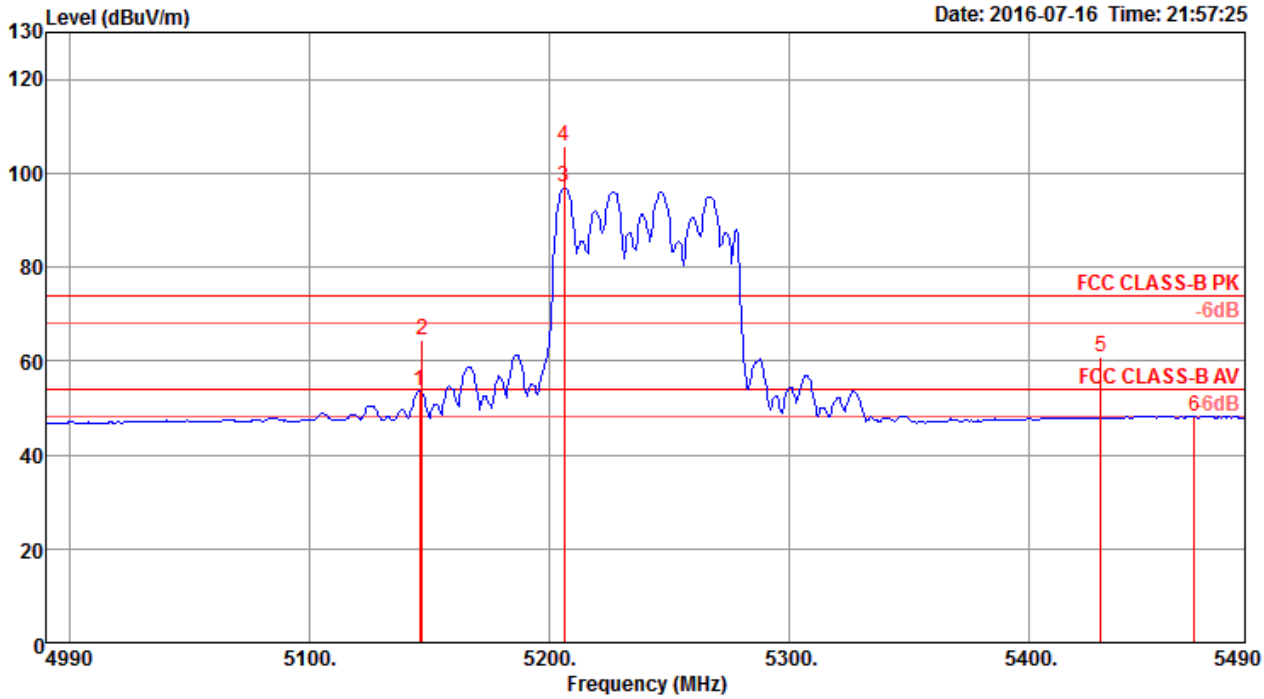


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1 0	5675.40	102.91			94.88	7.69	32.02	31.68	300	161	Average	VERTICAL
2 0	5676.00	112.65			104.62	7.69	32.02	31.68	300	161	Peak	VERTICAL
3	5729.40	52.49	54.00	-1.51	44.38	7.74	32.08	31.71	300	161	Average	VERTICAL
4	5729.40	68.46	74.00	-5.54	60.35	7.74	32.08	31.71	300	161	Peak	VERTICAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 58

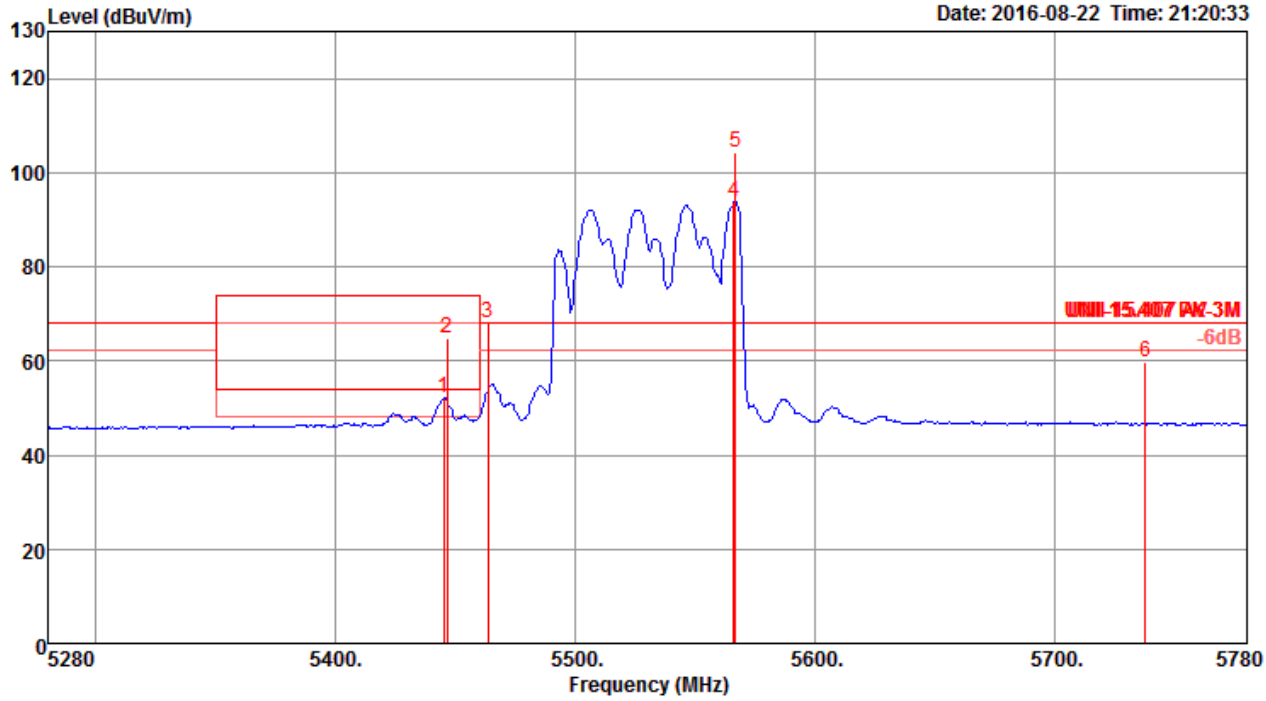


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5146.00	53.76	54.00	-0.24	46.50	6.44	33.74	32.92	238	167	Average	VERTICAL
2	5147.00	64.55	74.00	-9.45	57.29	6.44	33.74	32.92	238	167	Peak	VERTICAL
3	5206.00	96.98			89.57	6.49	33.84	32.92	238	167	Average	VERTICAL
4	5206.00	105.83			98.42	6.49	33.84	32.92	238	167	Peak	VERTICAL
5	5430.00	60.96	74.00	-13.04	53.04	6.67	34.18	32.93	238	167	Peak	VERTICAL
6	5469.00	48.28	54.00	-5.72	40.27	6.69	34.25	32.93	238	167	Average	VERTICAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 106, 122 / Chain 1 + Chain 2 + Chain 3 + Chain 4

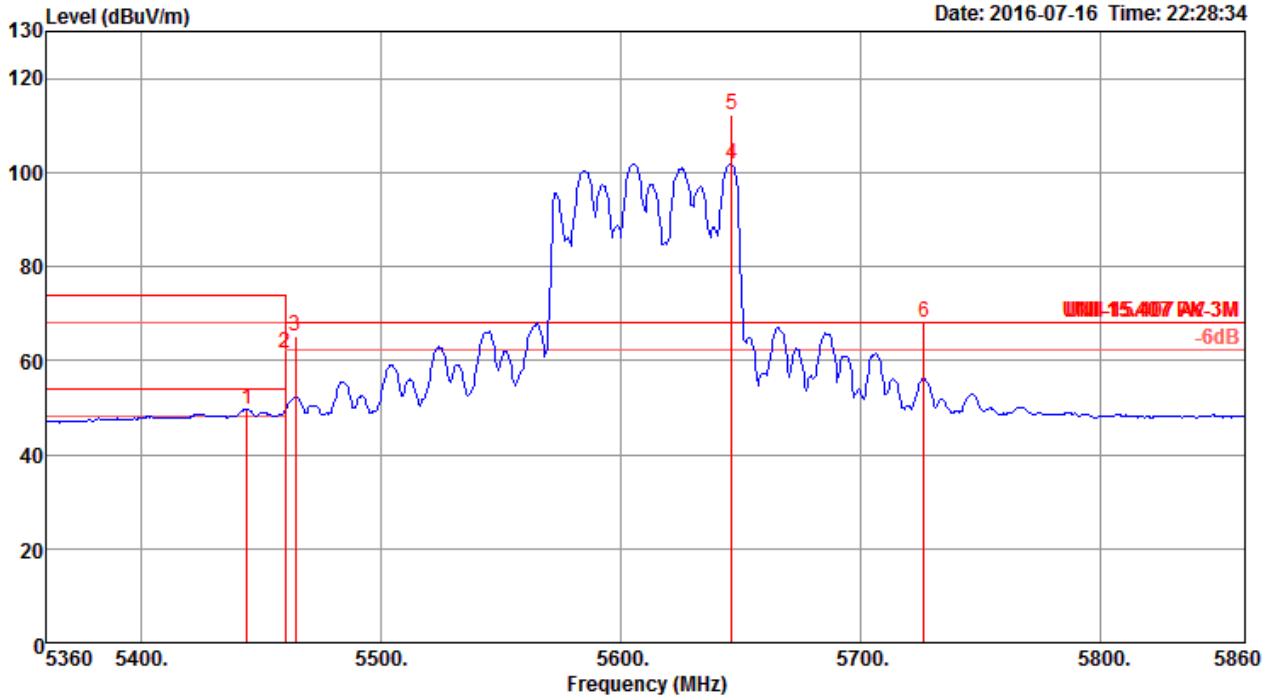
Channel 106



	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	5445.06	52.07	54.00	-1.93	44.13	6.67	34.20	32.93	300	318	Average	VERTICAL
2	5446.67	64.86	74.00	-9.14	56.92	6.67	34.20	32.93	300	318	Peak	VERTICAL
3	5463.49	68.04	68.20	-0.16	60.06	6.68	34.23	32.93	300	318	Peak	VERTICAL
4	5566.06	93.65			85.53	6.73	34.34	32.95	300	318	Average	VERTICAL
5	5566.86	104.16			96.04	6.73	34.34	32.95	300	318	Peak	VERTICAL
6	5737.53	59.92	68.20	-8.28	51.59	6.88	34.44	32.99	300	318	Peak	VERTICAL

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

Channel 122



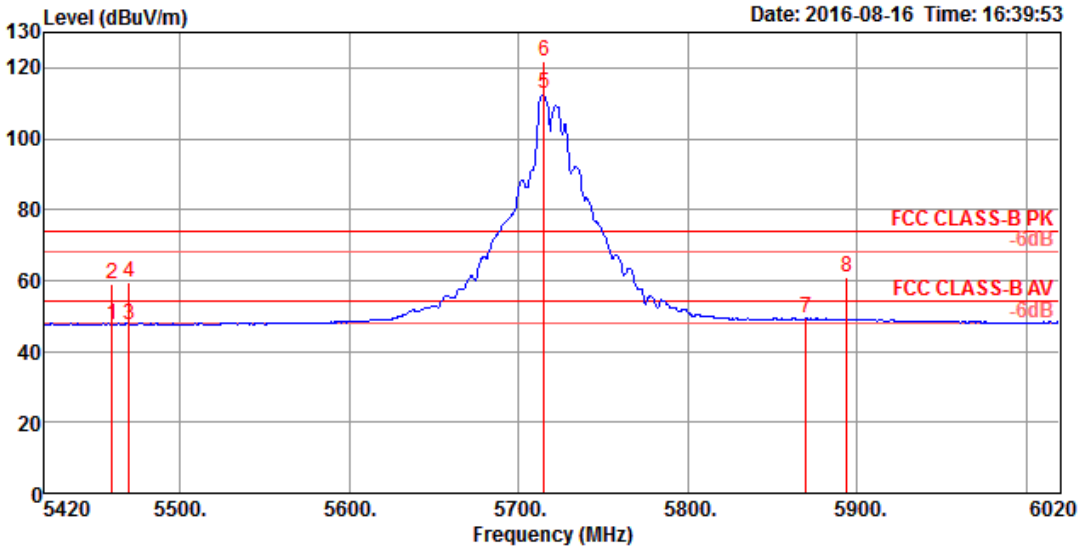
	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5444.00	49.75	54.00	-4.25	41.81	6.67	34.20	32.93	223	135	Average	VERTICAL
2	5460.00	61.63	74.00	-12.37	53.65	6.68	34.23	32.93	223	135	Peak	VERTICAL
3	5464.00	65.27	68.20	-2.93	57.26	6.69	34.25	32.93	223	135	Peak	VERTICAL
4	5646.00	101.89			93.67	6.80	34.39	32.97	223	135	Average	VERTICAL
5	5646.00	112.27			104.05	6.80	34.39	32.97	223	135	Peak	VERTICAL
6	5726.00	68.14	68.20	-0.06	59.81	6.88	34.44	32.99	223	135	Peak	VERTICAL

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

Straddle Channel

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11a CH 144 (UNII 2C) / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 144

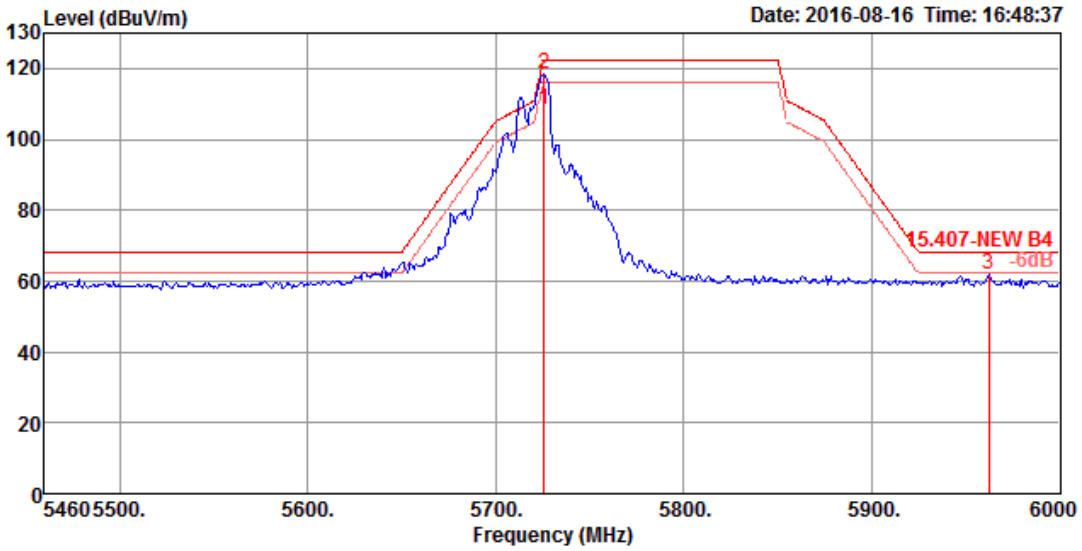


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5460.00	47.65	54.00	-6.35	39.18	8.33	31.75	31.61	311	181	Average	VERTICAL
2	5460.00	59.00	74.00	-15.00	50.53	8.33	31.75	31.61	311	181	Peak	VERTICAL
3	5470.00	47.52	54.00	-6.48	39.03	8.33	31.77	31.61	311	181	Average	VERTICAL
4	5470.00	59.40	74.00	-14.60	50.91	8.33	31.77	31.61	311	181	Peak	VERTICAL
5 0	5715.20	112.54			103.36	8.82	32.06	31.70	311	181	Average	VERTICAL
6 0	5715.20	121.75			112.57	8.82	32.06	31.70	311	181	Peak	VERTICAL
7	5870.00	49.33	54.00	-4.67	39.93	8.92	32.24	31.76	311	181	Average	VERTICAL
8	5894.00	61.11	74.00	-12.89	51.82	8.78	32.28	31.77	311	181	Peak	VERTICAL

Item 5, 6 are the fundamental frequency at 5720 MHz.

Temperature	22℃	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11a CH 144 (UNII 3) / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 144

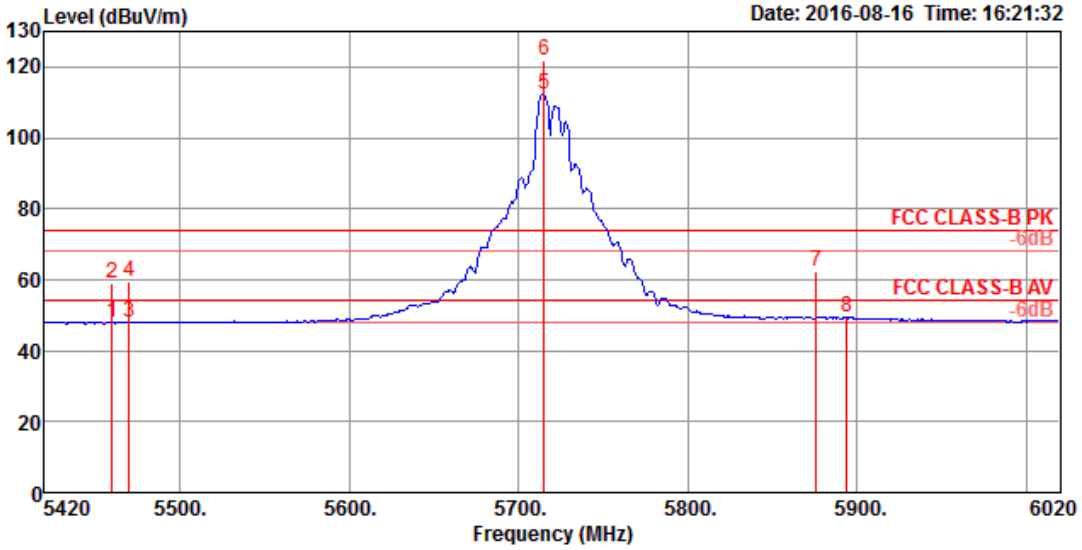


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5725.68	108.34			99.06	8.90	32.08	31.70	320	131	Average	HORIZONTAL
2	5725.68	118.31			109.03	8.90	32.08	31.70	320	131	Peak	HORIZONTAL
3	5962.20	61.92	68.20	-6.28	52.85	8.51	32.36	31.80	320	131	Peak	HORIZONTAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 (UNII 2C) / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 144

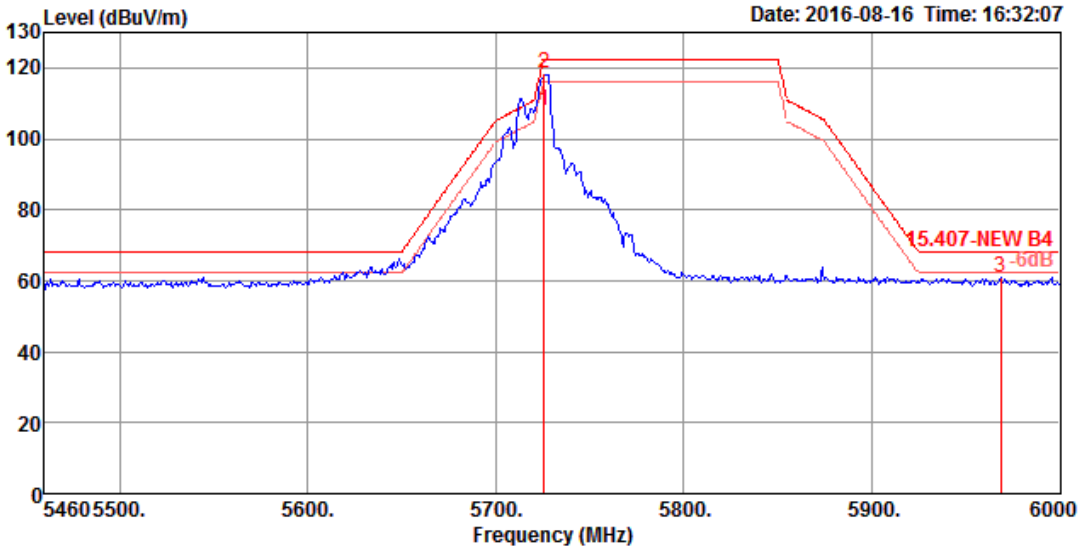


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5460.00	47.79	54.00	-6.21	39.32	8.33	31.75	31.61	309	181	Average	VERTICAL
2	5460.00	59.22	74.00	-14.78	50.75	8.33	31.75	31.61	309	181	Peak	VERTICAL
3	5470.00	47.87	54.00	-6.13	39.38	8.33	31.77	31.61	309	181	Average	VERTICAL
4	5470.00	59.27	74.00	-14.73	50.78	8.33	31.77	31.61	309	181	Peak	VERTICAL
5 0	5715.20	112.45			103.27	8.82	32.06	31.70	309	181	Average	VERTICAL
6 0	5715.20	121.65			112.47	8.82	32.06	31.70	309	181	Peak	VERTICAL
7	5876.00	62.27	74.00	-11.73	52.92	8.85	32.26	31.76	309	181	Peak	VERTICAL
8	5894.00	49.33	54.00	-4.67	40.04	8.78	32.28	31.77	309	181	Average	VERTICAL

Item 5, 6 are the fundamental frequency at 5720 MHz.

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 (UNII 3) / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 144

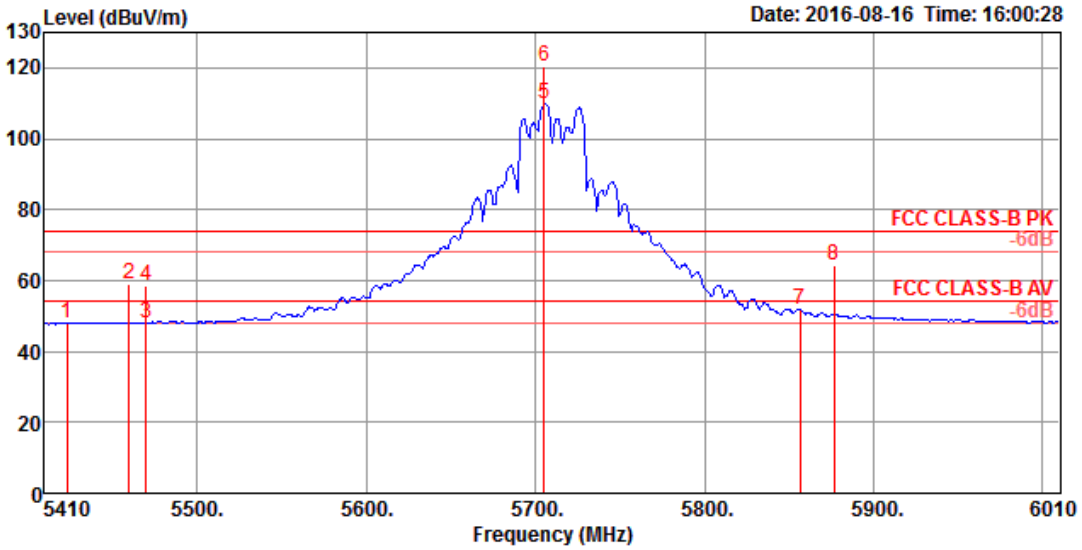


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5725.68	108.12			98.84	8.90	32.08	31.70	320	129	Average	HORIZONTAL
2	5725.68	118.55			109.27	8.90	32.08	31.70	320	129	Peak	HORIZONTAL
3	5968.68	60.91	68.20	-7.29	51.84	8.51	32.36	31.80	320	129	Peak	HORIZONTAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 (UNII 2C) / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 142

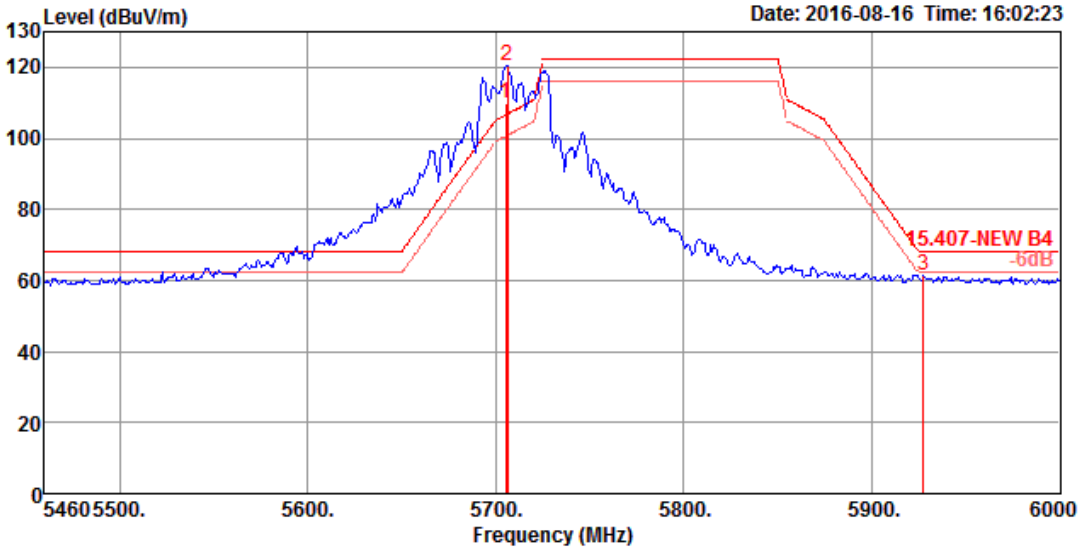


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5423.20	47.99	54.00	-6.01	39.55	8.34	31.72	31.62	320	174	Average	VERTICAL
2	5460.00	58.93	74.00	-15.07	50.46	8.33	31.75	31.61	320	174	Peak	VERTICAL
3	5470.00	48.18	54.00	-5.82	39.69	8.33	31.77	31.61	320	174	Average	VERTICAL
4	5470.00	58.73	74.00	-15.27	50.24	8.33	31.77	31.61	320	174	Peak	VERTICAL
5 0	5705.20	109.89			100.79	8.75	32.04	31.69	320	174	Average	VERTICAL
6 0	5705.20	120.36			111.26	8.75	32.04	31.69	320	174	Peak	VERTICAL
7	5856.40	51.94	54.00	-2.06	42.53	8.92	32.24	31.75	320	174	Average	VERTICAL
8	5876.80	64.28	74.00	-9.72	54.93	8.85	32.26	31.76	320	174	Peak	VERTICAL

Item 5, 6 are the fundamental frequency at 5710 MHz.

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 (UNII 3) / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 142

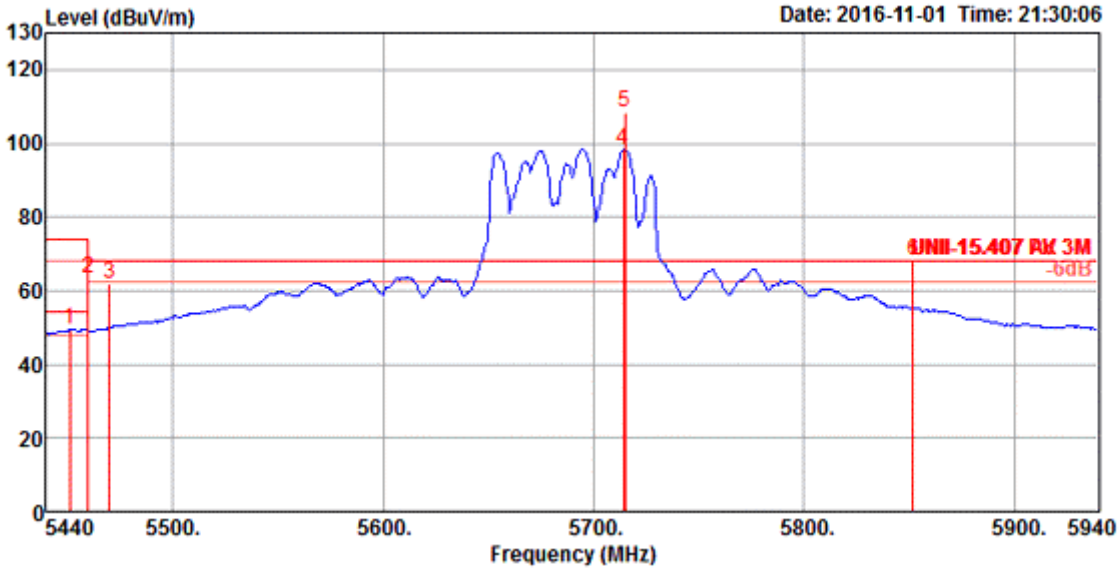


		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	0	5705.16	109.91			100.81	8.75	32.04	31.69	320	174	Average	VERTICAL
2	0	5706.24	120.59			111.40	8.82	32.06	31.69	320	174	Peak	VERTICAL
3		5927.64	61.29	68.20	-6.91	52.11	8.64	32.32	31.78	320	174	Peak	VERTICAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138 (UNII 2C) / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 138

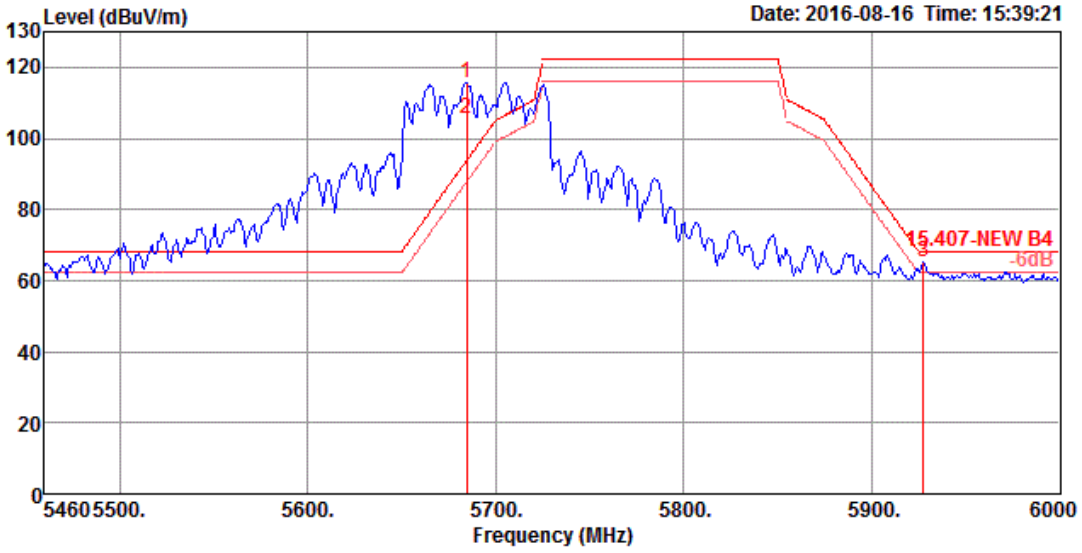


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5451.00	49.37	54.00	-4.63	43.89	8.36	33.72	36.60	291	137	Average	HORIZONTAL
2	5460.00	63.14	74.00	-10.86	57.63	8.38	33.72	36.59	291	137	Peak	HORIZONTAL
3	5470.00	62.10	68.20	-6.10	56.53	8.41	33.75	36.59	291	137	Peak	HORIZONTAL
4 @	5714.00	98.35			91.83	8.63	34.41	36.52	291	137	Average	HORIZONTAL
5 @	5715.00	108.61			102.09	8.63	34.41	36.52	291	137	Peak	HORIZONTAL
6	5852.00	68.09	68.20	-0.11	61.18	8.61	34.78	36.48	291	137	Peak	HORIZONTAL

Item 4, 5 are the fundamental frequency at 5690 MHz.

Temperature	22℃	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138 (UNII 3) / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 138



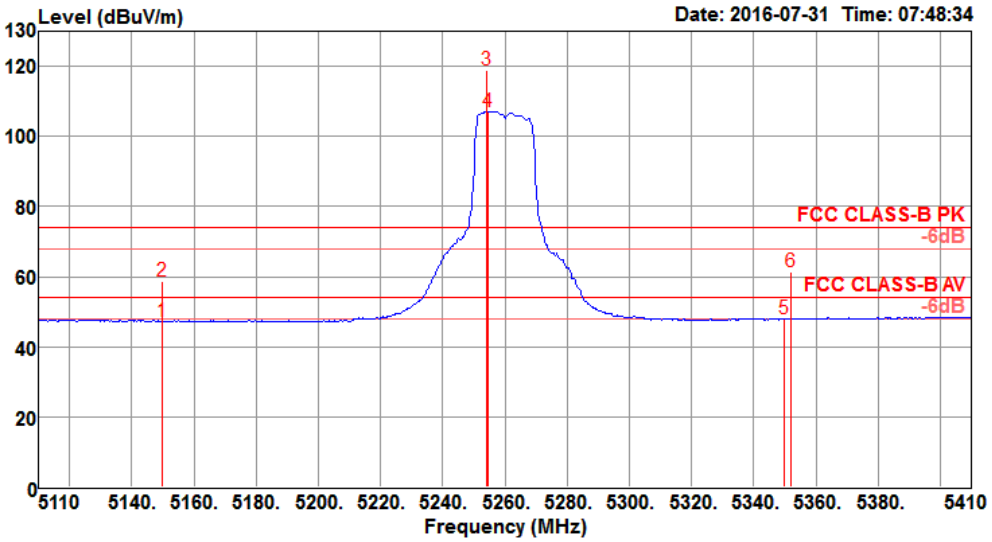
		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	0	5684.64	115.58			106.56	8.68	32.02	31.68	297	177	Peak	VERTICAL
2	0	5684.64	105.61			96.59	8.68	32.02	31.68	297	177	Average	VERTICAL
3		5927.64	65.46	68.20	-2.74	56.28	8.64	32.32	31.78	297	177	Peak	VERTICAL

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

For beamforming mode

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52, 60, 64 / Chain 1 + Chain 2 + Chain 3 + Chain 4

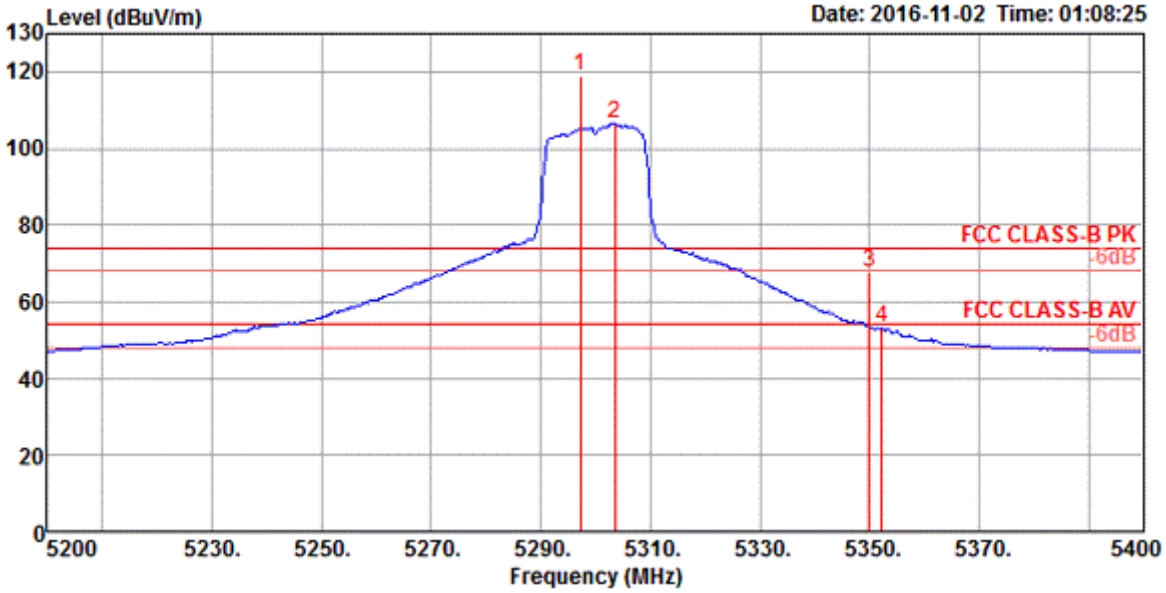
Channel 52



	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	5150.00	47.22	54.00	-6.78	39.80	7.48	34.85	34.91	291	182	Average	VERTICAL
2	5150.00	58.81	74.00	-15.19	51.39	7.48	34.85	34.91	291	182	Peak	VERTICAL
3	5254.00	118.75			111.19	7.51	34.96	34.91	291	182	Peak	VERTICAL
4	5254.60	107.15			99.59	7.51	34.96	34.91	291	182	Average	VERTICAL
5	5350.00	47.77	54.00	-6.23	40.07	7.56	35.05	34.91	291	182	Average	VERTICAL
6	5351.80	61.35	74.00	-12.65	53.65	7.56	35.05	34.91	291	182	Peak	VERTICAL

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

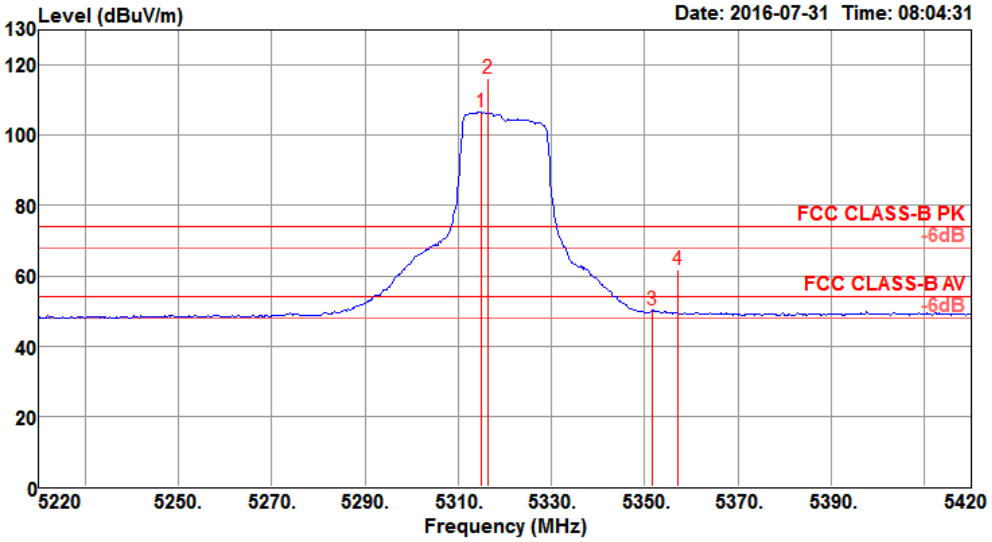
Channel 60



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1 @	5297.20	119.20			114.19	8.17	33.45	36.61	246	144	Peak	HORIZONTAL
2 @	5303.60	106.52			101.50	8.18	33.45	36.61	246	144	Average	HORIZONTAL
3	5350.00	67.45	74.00	-6.55	62.33	8.19	33.53	36.60	246	144	Peak	HORIZONTAL
4	5352.40	53.32	54.00	-0.68	48.20	8.19	33.53	36.60	246	144	Average	HORIZONTAL

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

Channel 64

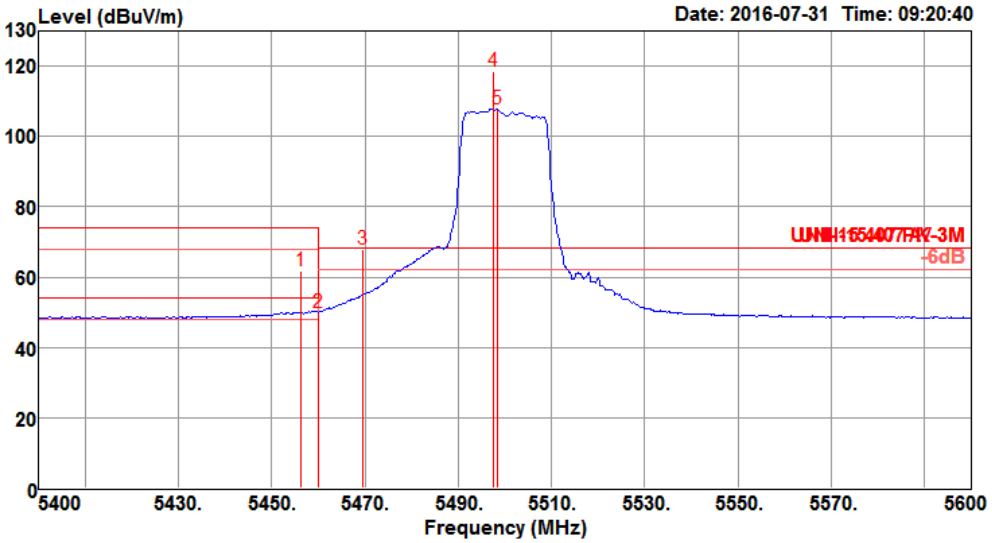


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5314.80	106.64			98.99	7.54	35.02	34.91	274	229	Average	VERTICAL
2	5316.40	116.40			108.75	7.54	35.02	34.91	274	229	Peak	VERTICAL
3	5351.60	50.15	54.00	-3.85	42.45	7.56	35.05	34.91	274	229	Average	VERTICAL
4	5357.20	61.72	74.00	-12.28	54.01	7.56	35.06	34.91	274	229	Peak	VERTICAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100, 116, 140 / Chain 1 + Chain 2 + Chain 3 + Chain 4

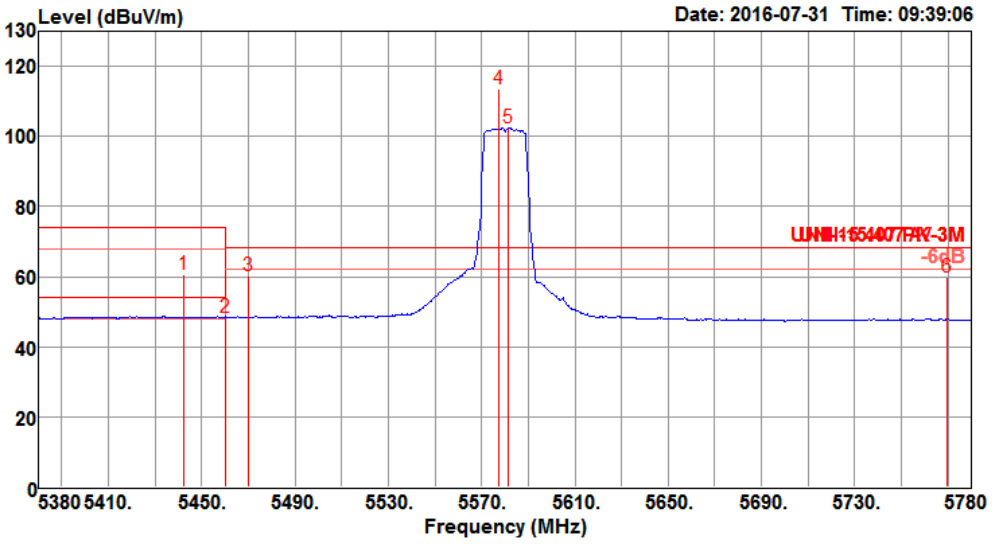
Channel 100



	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	5456.40	61.90	74.00	-12.10	53.98	7.69	35.15	34.92	276	174	Peak	VERTICAL
2	5460.00	50.00	54.00	-4.00	42.08	7.69	35.15	34.92	276	174	Average	VERTICAL
3	5469.60	67.94	68.20	-0.26	59.97	7.72	35.17	34.92	276	174	Peak	VERTICAL
4	5497.60	118.32			110.27	7.77	35.20	34.92	276	174	Peak	VERTICAL
5	5498.40	107.87			99.82	7.77	35.20	34.92	276	174	Average	VERTICAL

Item 4, 5 are the fundamental frequency at 5500 MHz.

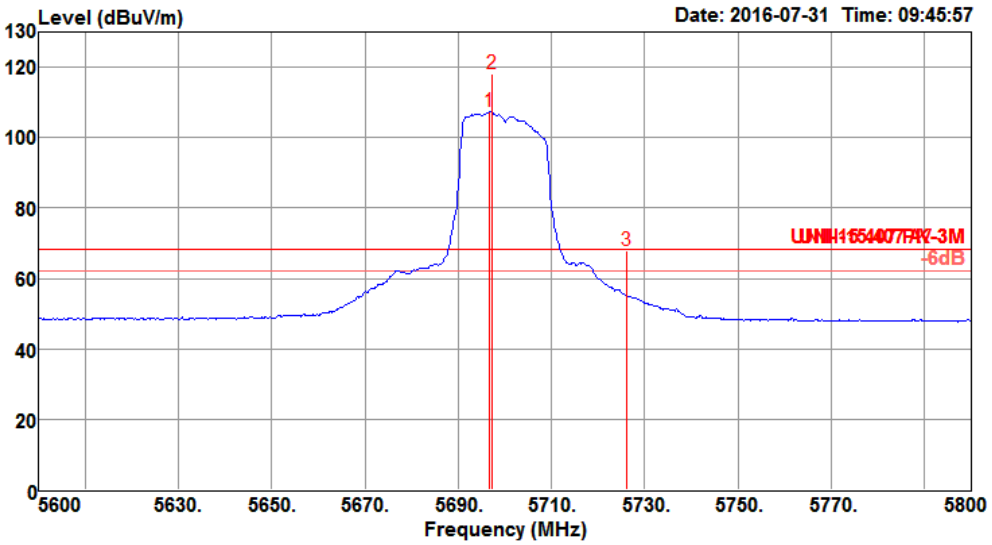
Channel 116



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5442.40	60.57	74.00	-13.43	52.69	7.66	35.14	34.92	276	253	Peak	HORIZONTAL
2	5460.00	48.50	54.00	-5.50	40.58	7.69	35.15	34.92	276	253	Average	HORIZONTAL
3	5470.00	60.36	68.20	-7.84	52.39	7.72	35.17	34.92	276	253	Peak	HORIZONTAL
4	5577.60	113.49			105.29	7.91	35.22	34.93	276	253	Peak	HORIZONTAL
5	5581.60	102.44			94.24	7.91	35.22	34.93	276	253	Average	HORIZONTAL
6	5769.60	59.77	68.20	-8.43	51.72	7.75	35.25	34.95	276	253	Peak	HORIZONTAL

Item 4, 5 are the fundamental frequency at 5580 MHz.

Channel 140

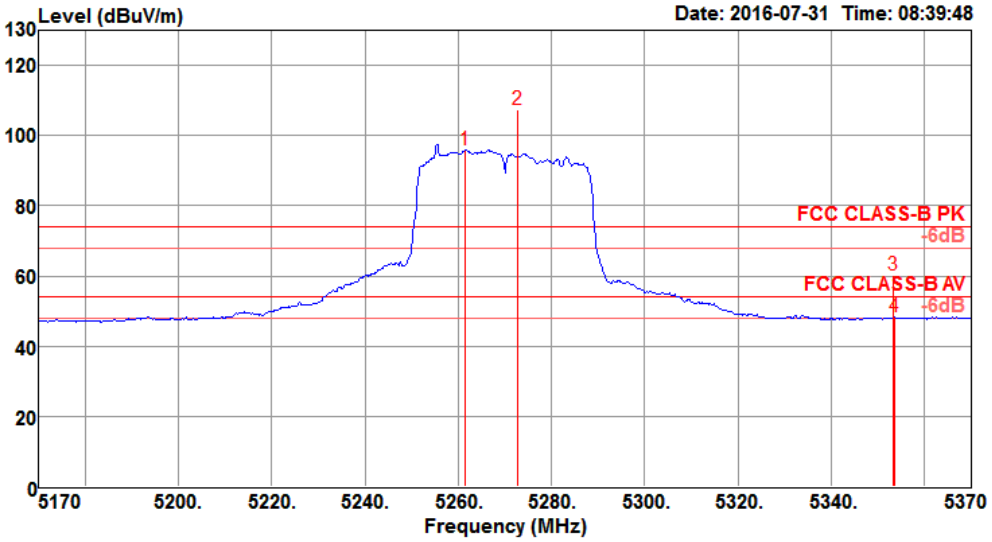


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5696.80	107.30			99.18	7.82	35.24	34.94	296	183	Average	VERTICAL
2	5697.20	118.18			110.06	7.82	35.24	34.94	296	183	Peak	VERTICAL
3	5726.00	67.78	68.20	-0.42	59.68	7.79	35.25	34.94	296	183	Peak	VERTICAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54, 62 / Chain 1 + Chain 2 + Chain 3 + Chain 4

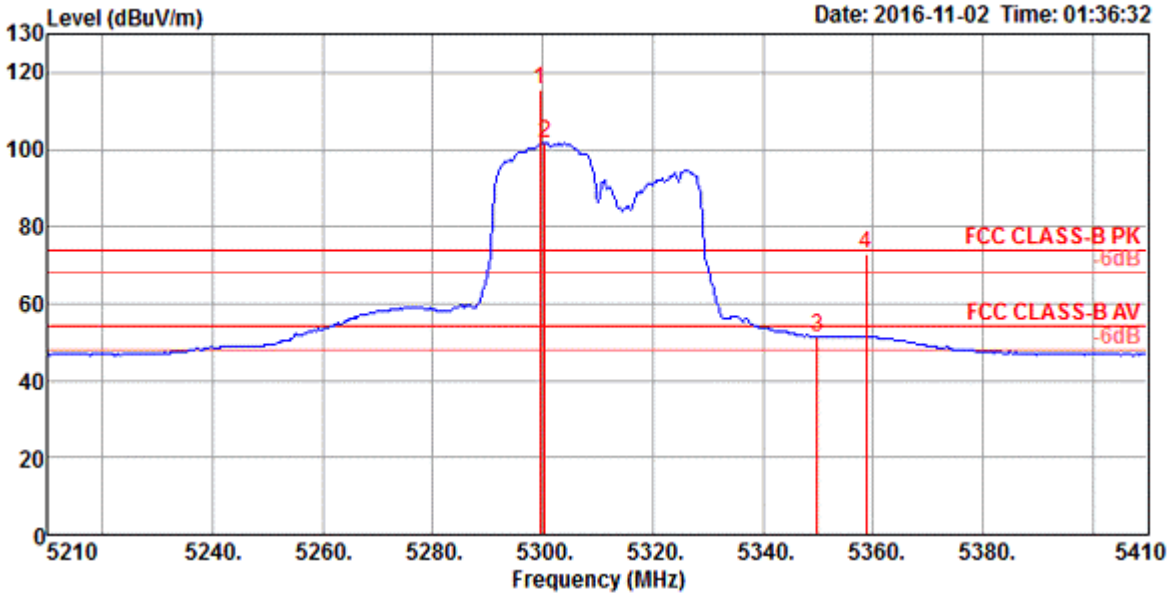
Channel 54



	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	5261.60	95.86			88.30	7.51	34.96	34.91	275	56	Average	HORIZONTAL
2	5272.80	107.31			99.73	7.52	34.97	34.91	275	56	Peak	HORIZONTAL
3	5353.20	60.40	74.00	-13.60	52.70	7.56	35.05	34.91	275	56	Peak	HORIZONTAL
4	5353.60	48.28	54.00	-5.72	40.58	7.56	35.05	34.91	275	56	Average	HORIZONTAL

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

Channel 62

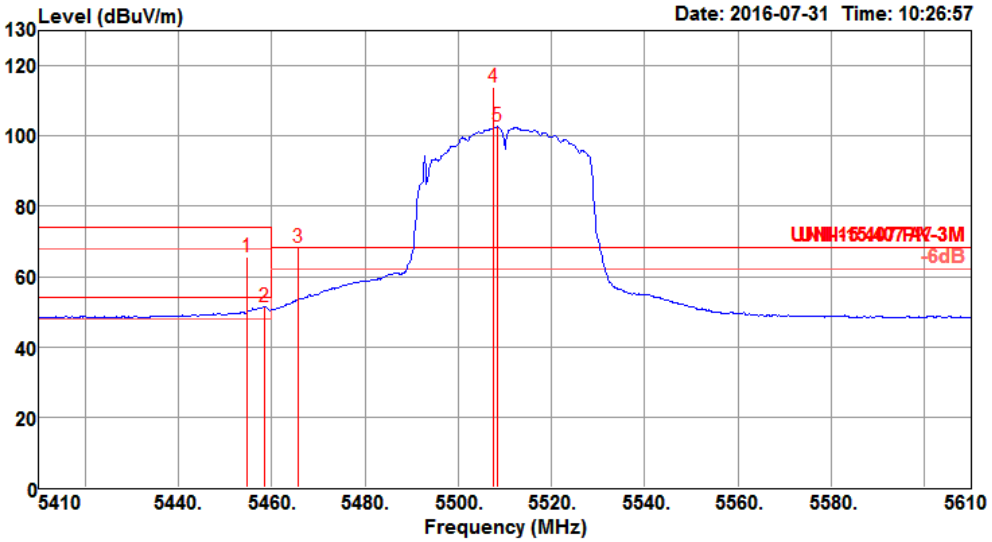


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1 @	5299.60	115.64			110.62	8.18	33.45	36.61	289	144	Peak	HORIZONTAL
2 @	5300.40	101.77			96.75	8.18	33.45	36.61	289	144	Average	HORIZONTAL
3	5350.00	51.49	54.00	-2.51	46.37	8.19	33.53	36.60	289	144	Average	HORIZONTAL
4	5358.80	72.98	74.00	-1.02	67.84	8.19	33.55	36.60	289	144	Peak	HORIZONTAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102, 110, 134 / Chain 1 + Chain 2 + Chain 3 + Chain 4

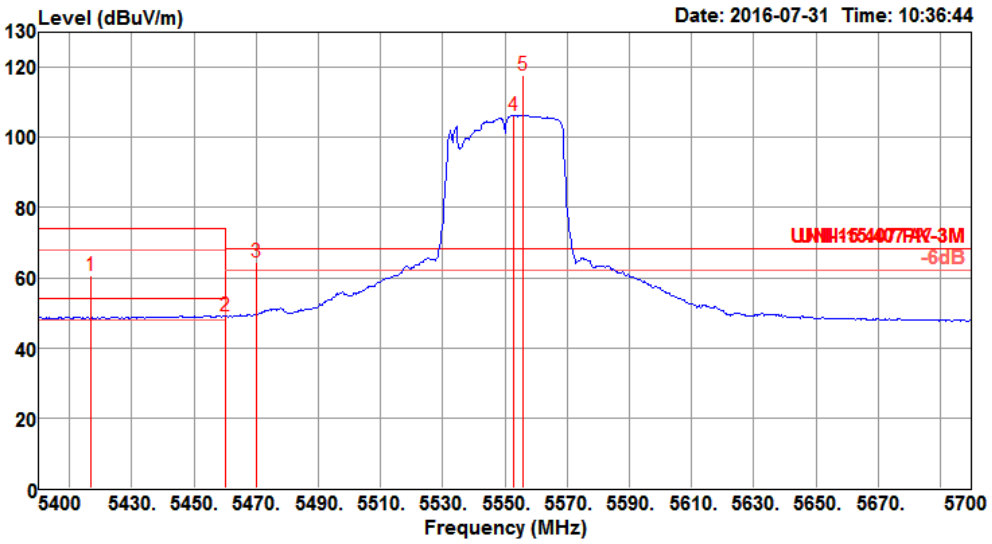
Channel 102



	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	5454.80	65.62	74.00	-8.38	57.70	7.69	35.15	34.92	291	227	Peak	VERTICAL
2	5458.40	51.43	54.00	-2.57	43.51	7.69	35.15	34.92	291	227	Average	VERTICAL
3	5465.60	68.18	68.20	-0.02	60.21	7.72	35.17	34.92	291	227	Peak	VERTICAL
4	5507.60	114.09			106.04	7.77	35.20	34.92	291	227	Peak	VERTICAL
5	5508.40	102.60			94.55	7.77	35.20	34.92	291	227	Average	VERTICAL

Item 4, 5 are the fundamental frequency at 5510 MHz.

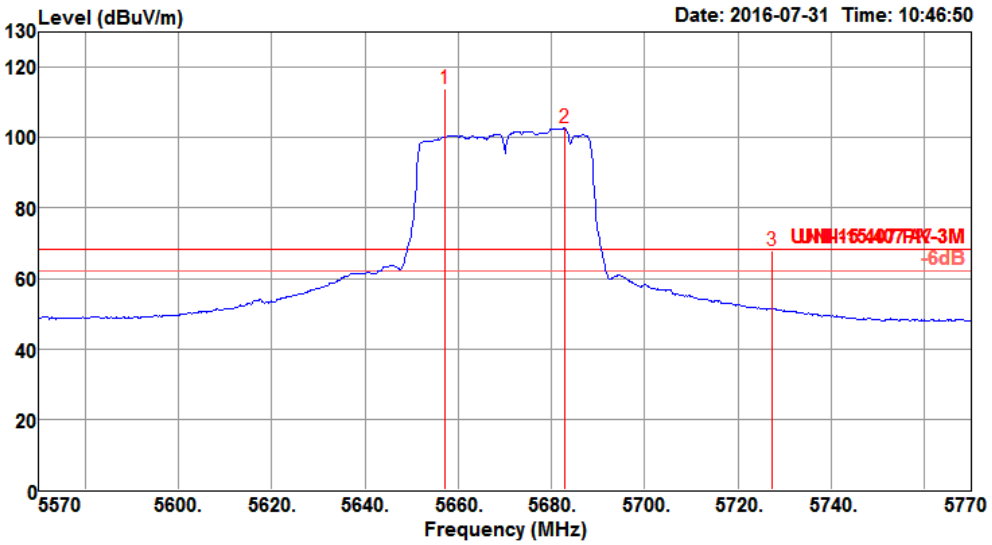
Channel 110



	Freq	Level	Line	Limit	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	5416.80	60.52	74.00	-13.48	52.68	7.64	35.12	34.92	276	186	Peak	VERTICAL
2	5460.00	49.04	54.00	-4.96	41.12	7.69	35.15	34.92	276	186	Average	VERTICAL
3	5470.00	64.44	68.20	-3.76	56.47	7.72	35.17	34.92	276	186	Peak	VERTICAL
4	5553.00	106.41			98.26	7.86	35.21	34.92	276	186	Average	VERTICAL
5	5556.00	117.60			109.45	7.86	35.21	34.92	276	186	Peak	VERTICAL

Item 4, 5 are the fundamental frequency at 5550 MHz.

Channel 134

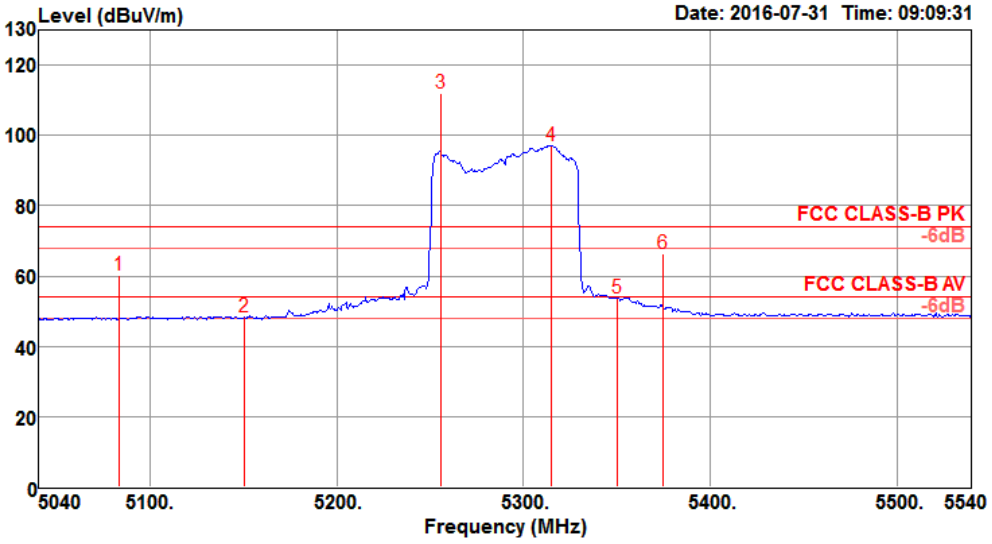


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5657.20	113.74			105.59	7.86	35.23	34.94	280	174	Peak	VERTICAL
2	5682.80	102.79			94.65	7.84	35.24	34.94	280	174	Average	VERTICAL
3	5727.20	67.96	68.20	-0.24	59.86	7.79	35.25	34.94	280	174	Peak	VERTICAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 58

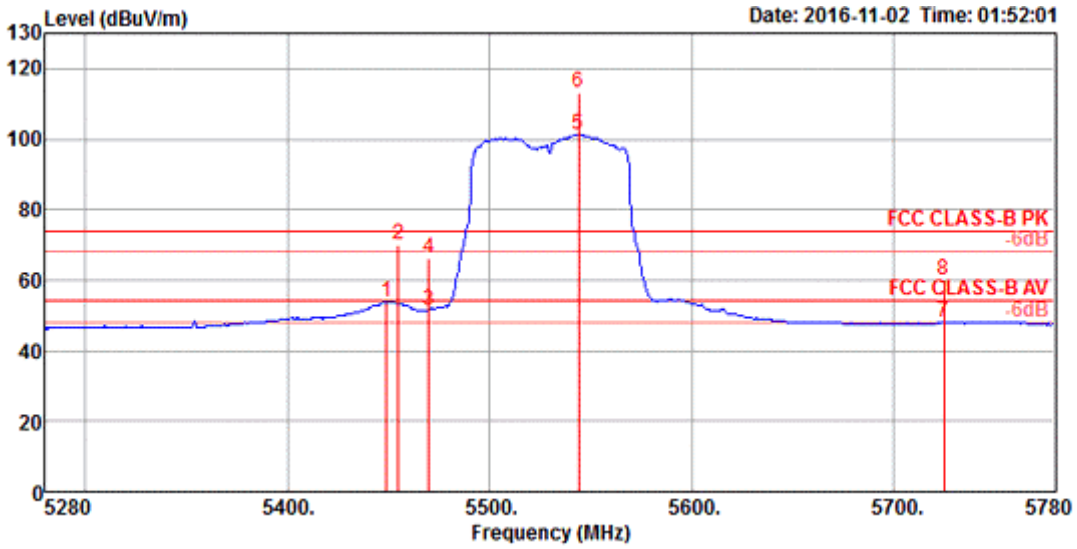


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5083.00	60.13	74.00	-13.87	52.76	7.48	34.79	34.90	288	235	Peak	VERTICAL
2	5150.00	48.35	54.00	-5.65	40.93	7.48	34.85	34.91	288	235	Average	VERTICAL
3	5256.00	112.17			104.61	7.51	34.96	34.91	288	235	Peak	VERTICAL
4	5315.00	97.16			89.51	7.54	35.02	34.91	288	235	Average	VERTICAL
5	5350.00	53.86	54.00	-0.14	46.16	7.56	35.05	34.91	288	235	Average	VERTICAL
6	5375.00	66.34	74.00	-7.66	58.61	7.57	35.08	34.92	288	235	Peak	VERTICAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 106, 122/ Chain 1 + Chain 2 + Chain 3 + Chain 4

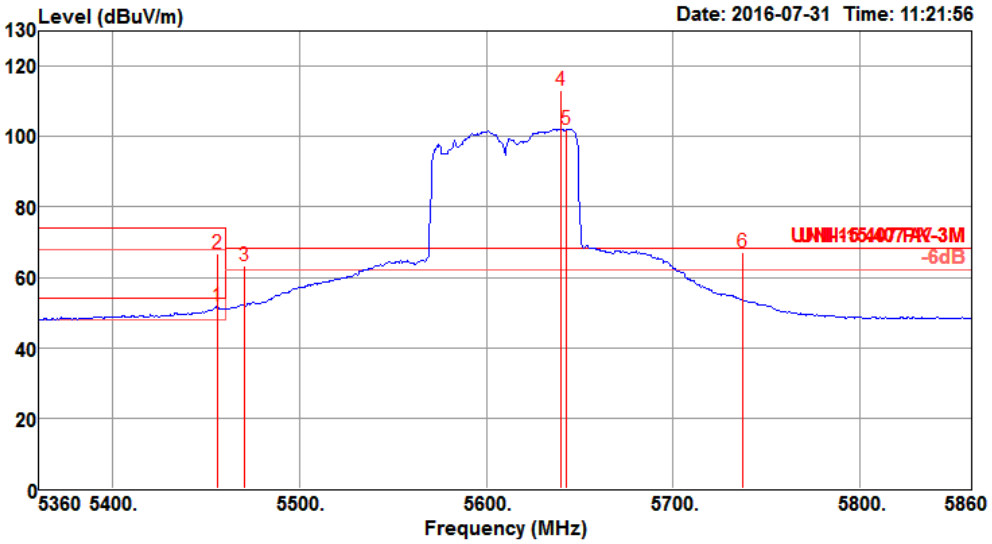
Channel 106



	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	5449.00	53.86	54.00	-0.14	48.39	8.35	33.72	36.60	300	181	Average	VERTICAL
2	5455.00	70.20	74.00	-3.80	64.70	8.37	33.72	36.59	300	181	Peak	VERTICAL
3	5470.00	51.30	54.00	-2.70	45.73	8.41	33.75	36.59	300	181	Average	VERTICAL
4	5470.00	66.31	74.00	-7.69	60.74	8.41	33.75	36.59	300	181	Peak	VERTICAL
5 @	5544.00	101.41			95.41	8.63	33.94	36.57	300	181	Average	VERTICAL
6 @	5544.00	113.41			107.41	8.63	33.94	36.57	300	181	Peak	VERTICAL
7	5725.00	47.78	54.00	-6.22	41.23	8.62	34.45	36.52	300	181	Average	VERTICAL
8	5725.00	59.72	74.00	-14.28	53.17	8.62	34.45	36.52	300	181	Peak	VERTICAL

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

Channel 122



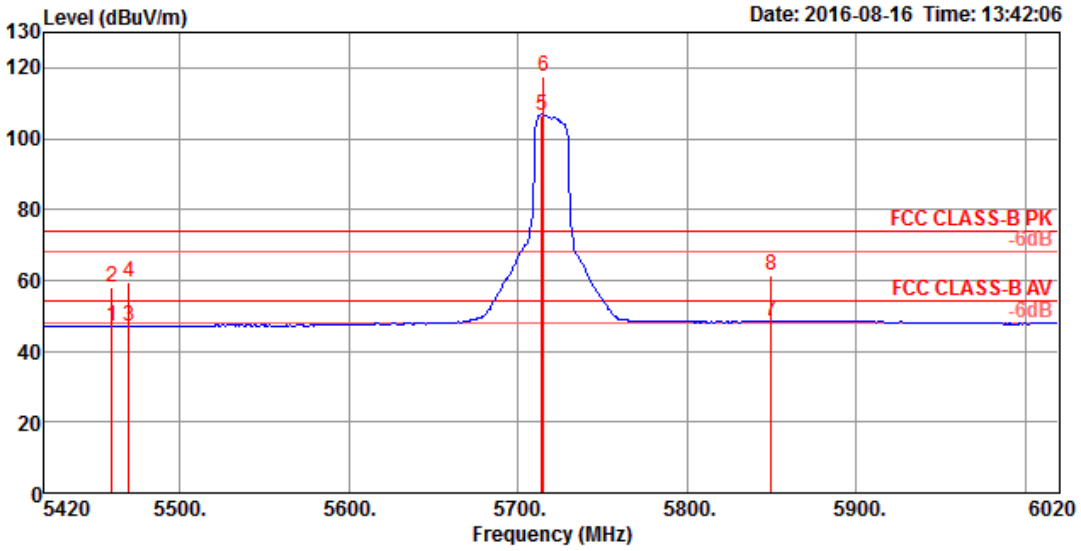
	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5456.00	51.73	54.00	-2.27	43.81	7.69	35.15	34.92	278	180	Average	VERTICAL
2	5456.00	66.55	74.00	-7.45	58.63	7.69	35.15	34.92	278	180	Peak	VERTICAL
3	5470.00	63.11	68.20	-5.09	55.14	7.72	35.17	34.92	278	180	Peak	VERTICAL
4	5640.00	113.23			105.03	7.90	35.23	34.93	278	180	Peak	VERTICAL
5	5643.00	102.14			93.96	7.88	35.23	34.93	278	180	Average	VERTICAL
6	5737.00	67.18	68.20	-1.02	59.08	7.79	35.25	34.94	278	180	Peak	VERTICAL

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

Straddle Channel

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 (UNII 2C) / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 144

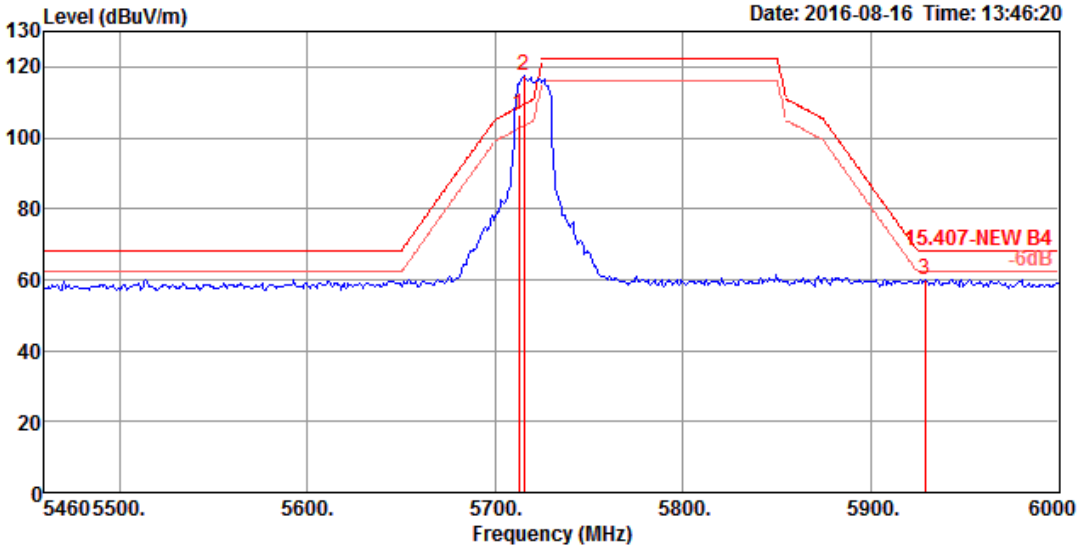


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5460.00	47.05	54.00	-6.95	39.85	8.33	31.75	32.88	298	150	Average	HORIZONTAL
2	5460.00	57.89	74.00	-16.11	50.69	8.33	31.75	32.88	298	150	Peak	HORIZONTAL
3	5470.00	47.09	54.00	-6.91	39.86	8.33	31.77	32.87	298	150	Average	HORIZONTAL
4	5470.00	59.31	74.00	-14.69	52.08	8.33	31.77	32.87	298	150	Peak	HORIZONTAL
5 0	5714.00	106.69			98.70	8.82	32.06	32.89	298	150	Average	HORIZONTAL
6 0	5715.20	117.44			109.45	8.82	32.06	32.89	298	150	Peak	HORIZONTAL
7	5850.00	48.32	54.00	-5.68	40.03	8.98	32.22	32.91	298	150	Average	HORIZONTAL
8	5850.00	61.37	74.00	-12.63	53.08	8.98	32.22	32.91	298	150	Peak	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5720 MHz.

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 144 (UNII 3) / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 144

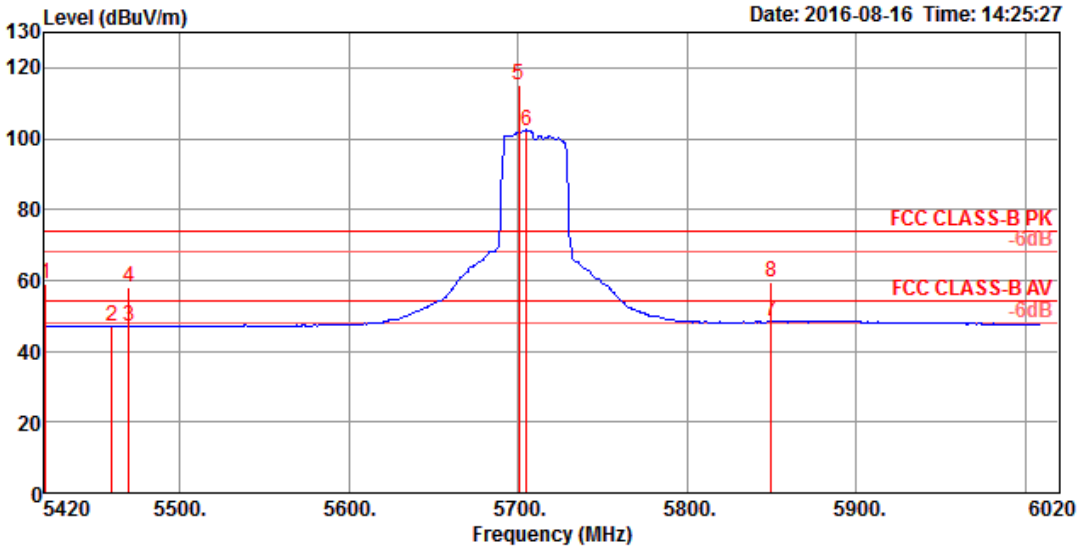


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5712.80	106.60			98.61	8.82	32.06	32.89	298	150	Average	HORIZONTAL
2 0	5715.20	117.49			109.50	8.82	32.06	32.89	298	150	Peak	HORIZONTAL
3	5928.80	60.08	68.20	-8.12	52.03	8.64	32.32	32.91	298	150	Peak	HORIZONTAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 (UNII 2C) / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 142

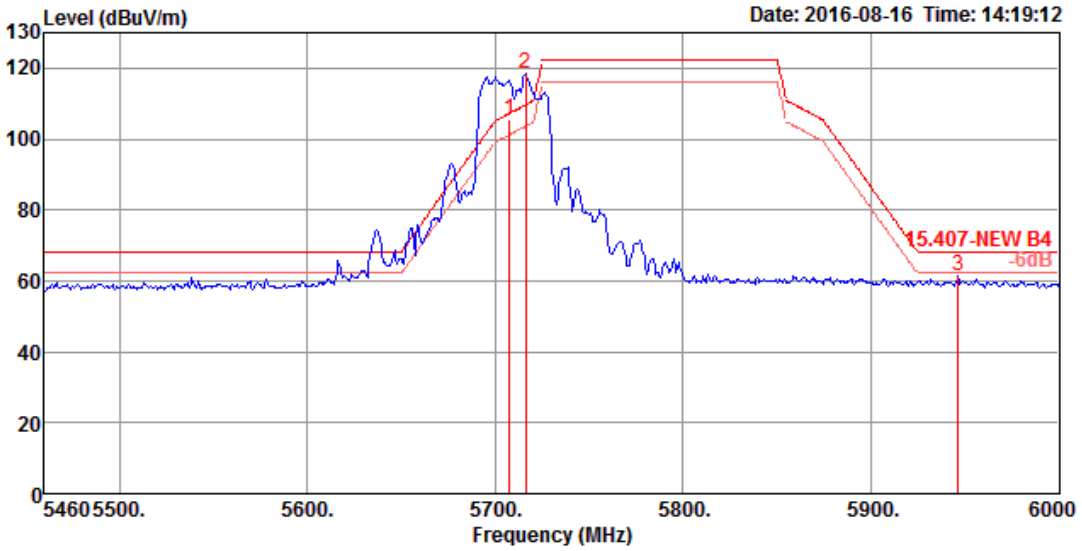


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5420.80	59.21	74.00	-14.79	52.03	8.34	31.72	32.88	300	143	Peak	HORIZONTAL
2	5460.00	46.87	54.00	-7.13	39.67	8.33	31.75	32.88	300	143	Average	HORIZONTAL
3	5470.00	46.95	54.00	-7.05	39.72	8.33	31.77	32.87	300	143	Average	HORIZONTAL
4	5470.00	58.20	74.00	-15.80	50.97	8.33	31.77	32.87	300	143	Peak	HORIZONTAL
5 0	5700.40	114.98			107.08	8.75	32.04	32.89	300	143	Peak	HORIZONTAL
6 0	5705.20	102.29			94.39	8.75	32.04	32.89	300	143	Average	HORIZONTAL
7	5850.00	48.28	54.00	-5.72	39.99	8.98	32.22	32.91	300	143	Average	HORIZONTAL
8	5850.00	59.61	74.00	-14.39	51.32	8.98	32.22	32.91	300	143	Peak	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5710 MHz.

Temperature	22℃	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 142 (UNII 3) / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 142

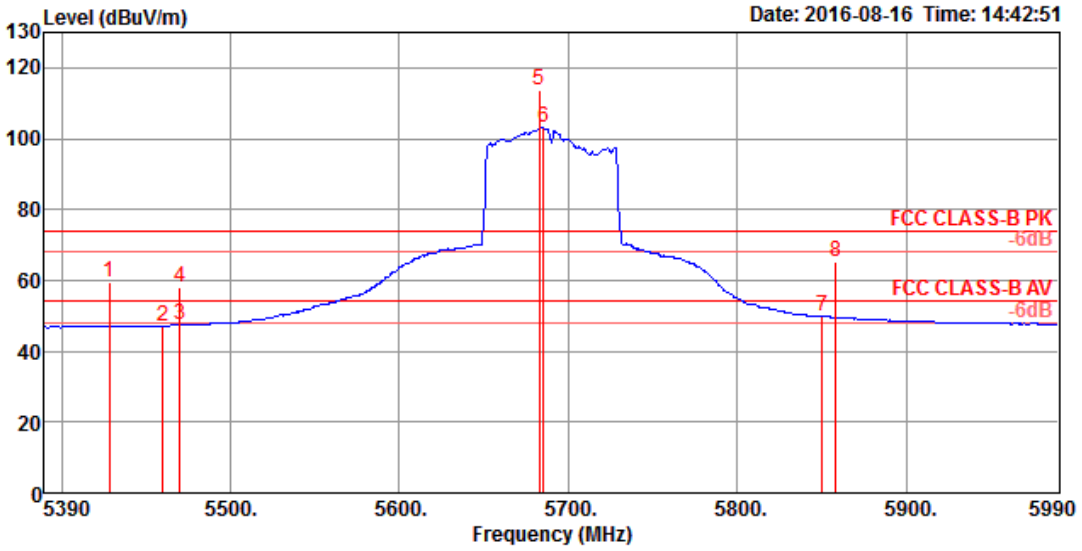


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5707.60	105.55			97.56	8.82	32.06	32.89	236	180	Average	VERTICAL
2 0	5716.00	118.64			110.65	8.82	32.06	32.89	236	180	Peak	VERTICAL
3	5946.40	61.41	68.20	-6.79	53.40	8.58	32.34	32.91	236	180	Peak	VERTICAL

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

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138 (UNII 2C) / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 138

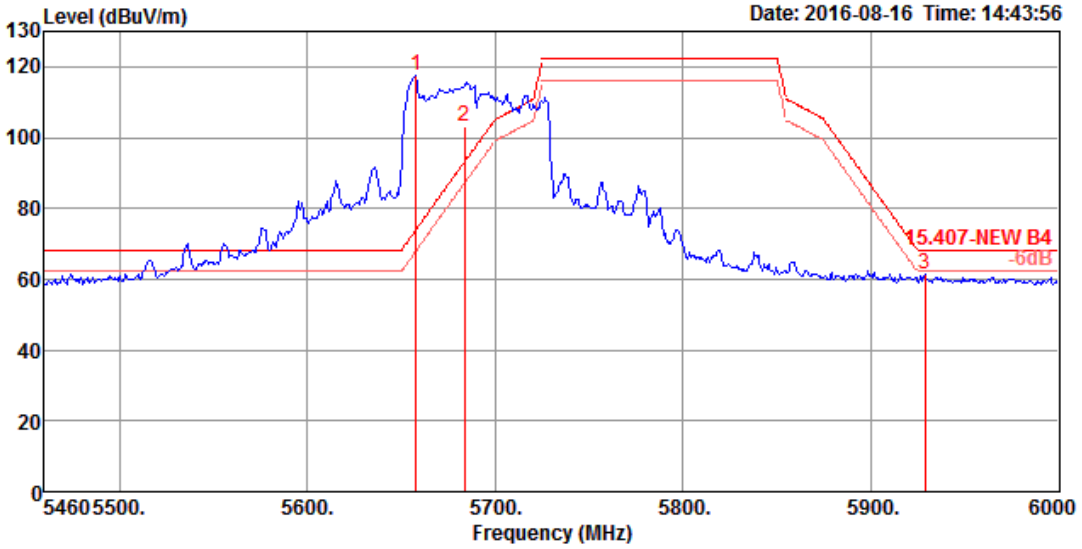


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5428.40	59.50	74.00	-14.50	52.32	8.34	31.72	32.88	278	180	Peak	VERTICAL
2	5460.00	47.07	54.00	-6.93	39.87	8.33	31.75	32.88	278	180	Average	VERTICAL
3	5470.00	47.37	54.00	-6.63	40.14	8.33	31.77	32.87	278	180	Average	VERTICAL
4	5470.00	58.00	74.00	-16.00	50.77	8.33	31.77	32.87	278	180	Peak	VERTICAL
5 0	5682.80	113.73			105.92	8.68	32.02	32.89	278	180	Peak	VERTICAL
6 0	5685.20	102.93			95.12	8.68	32.02	32.89	278	180	Average	VERTICAL
7	5850.00	50.05	54.00	-3.95	41.76	8.98	32.22	32.91	278	180	Average	VERTICAL
8	5858.00	65.01	74.00	-8.99	56.76	8.92	32.24	32.91	278	180	Peak	VERTICAL

Item 5, 6 are the fundamental frequency at 5690 MHz.

Temperature	22°C	Humidity	54%
Test Engineer	Zero Chen & Stim Sung & Steven Liang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 138 (UNII 3) / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel 138



		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	0	5657.64	117.47			109.76	8.60	32.00	32.89	278	180	Peak	VERTICAL
2	0	5683.56	103.03			95.22	8.68	32.02	32.89	278	180	Average	VERTICAL
3		5928.72	61.60	68.20	-6.60	53.55	8.64	32.32	32.91	278	180	Peak	VERTICAL

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

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

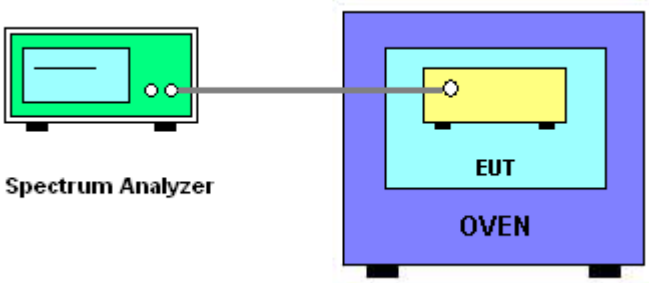
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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~70°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	22°C	Humidity	54%
Test Engineer	Gary Chu	Test Date	Aug. 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	5299.9825	5299.9822	5299.9813	5299.9810
110.00	5299.9822	5299.9821	5299.9815	5299.9809
93.50	5299.9814	5299.9806	5299.9799	5299.9792
Max. Deviation (MHz)	0.0186	0.0194	0.0201	0.0208
Max. Deviation (ppm)	3.51	3.66	3.79	3.92
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5300 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5299.9861	5299.9860	5299.9856	5299.9847
-20	5299.9843	5299.9837	5299.9831	5299.9824
-10	5299.9836	5299.9829	5299.9822	5299.9819
0	5299.9834	5299.9832	5299.9825	5299.9823
10	5299.9828	5299.9823	5299.9814	5299.9806
20	5299.9822	5299.9815	5299.9811	5299.9803
30	5299.9813	5299.9803	5299.9796	5299.9787
40	5299.9804	5299.9799	5299.9790	5299.9785
50	5299.9805	5299.9795	5299.9785	5299.9782
60	5299.9797	5299.9787	5299.9780	5299.9779
70	5299.9802	5299.9801	5299.9793	5299.9791
Max. Deviation (MHz)	0.0198	0.0201	0.0210	0.0215
Max. Deviation (ppm)	3.73	3.79	3.96	4.05
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5580 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5579.9832	5579.9826	5579.9818	5579.9815
110.00	5579.9822	5579.9820	5579.9816	5579.9812
93.50	5579.9819	5579.9818	5579.9817	5579.9815
Max. Deviation (MHz)	0.0181	0.0182	0.0184	0.0188
Max. Deviation (ppm)	3.24	3.26	3.30	3.37
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5580 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5579.9874	5579.9872	5579.9863	5579.9855
-20	5579.9870	5579.9868	5579.9865	5579.9859
-10	5579.9851	5579.9849	5579.9843	5579.9836
0	5579.9846	5579.9839	5579.9829	5579.9825
10	5579.9834	5579.9833	5579.9831	5579.9830
20	5579.9822	5579.9815	5579.9807	5579.9799
30	5579.9813	5579.9807	5579.9805	5579.9796
40	5579.9805	5579.9798	5579.9791	5579.9788
50	5579.9811	5579.9801	5579.9793	5579.9784
60	5579.9808	5579.9803	5579.9794	5579.9787
70	5579.9787	5579.9779	5579.9774	5579.9767
Max. Deviation (MHz)	0.0213	0.0221	0.0226	0.0233
Max. Deviation (ppm)	3.81	3.96	4.04	4.17
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	5309.9823	5309.9818	5309.9817	5309.9814
110.00	5309.9822	5309.9815	5309.9808	5309.9798
93.50	5309.9816	5309.9810	5309.9808	5309.9806
Max. Deviation (MHz)	0.0184	0.0190	0.0192	0.0202
Max. Deviation (ppm)	3.47	3.58	3.62	3.80
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5310 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5309.9877	5309.9867	5309.9862	5309.9860
-20	5309.9871	5309.9870	5309.9862	5309.9861
-10	5309.9864	5309.9859	5309.9850	5309.9849
0	5309.9851	5309.9847	5309.9838	5309.9836
10	5309.9836	5309.9831	5309.9824	5309.9816
20	5309.9822	5309.9819	5309.9811	5309.9810
30	5309.9813	5309.9810	5309.9805	5309.9802
40	5309.9803	5309.9800	5309.9796	5309.9788
50	5309.9798	5309.9794	5309.9788	5309.9780
60	5309.9799	5309.9791	5309.9784	5309.9776
70	5309.9795	5309.9788	5309.9785	5309.9784
Max. Deviation (MHz)	0.0205	0.0212	0.0215	0.0216
Max. Deviation (ppm)	3.85	3.99	4.04	4.06
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5550 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5549.9832	5549.9827	5549.9819	5549.9812
110.00	5549.9822	5549.9819	5549.9818	5549.9815
93.50	5549.9820	5549.9816	5549.9807	5549.9803
Max. Deviation (MHz)	0.0180	0.0184	0.0193	0.0197
Max. Deviation (ppm)	3.24	3.32	3.48	3.55
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5550 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5549.9859	5549.9850	5549.9848	5549.9840
-20	5549.9842	5549.9840	5549.9830	5549.9828
-10	5549.9838	5549.9837	5549.9836	5549.9834
0	5549.9835	5549.9828	5549.9825	5549.9819
10	5549.9825	5549.9821	5549.9818	5549.9817
20	5549.9822	5549.9818	5549.9814	5549.9809
30	5549.9813	5549.9803	5549.9801	5549.9798
40	5549.9806	5549.9801	5549.9799	5549.9796
50	5549.9797	5549.9787	5549.9781	5549.9778
60	5549.9807	5549.9797	5549.9790	5549.9789
70	5549.9799	5549.9796	5549.9794	5549.9787
Max. Deviation (MHz)	0.0201	0.0204	0.0206	0.0213
Max. Deviation (ppm)	3.62	3.67	3.71	3.83
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	5289.9830	5289.9826	5289.9816	5289.9807
110.00	5289.9822	5289.9814	5289.9811	5289.9805
93.50	5289.9818	5289.9817	5289.9813	5289.9809
Max. Deviation (MHz)	0.0182	0.0186	0.0189	0.0195
Max. Deviation (ppm)	3.44	3.52	3.57	3.69
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5290 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5289.9867	5289.9857	5289.9856	5289.9853
-20	5289.9857	5289.9847	5289.9837	5289.9829
-10	5289.9845	5289.9836	5289.9826	5289.9821
0	5289.9839	5289.9829	5289.9828	5289.9823
10	5289.9835	5289.9831	5289.9824	5289.9816
20	5289.9822	5289.9812	5289.9802	5289.9796
30	5289.9813	5289.9808	5289.9803	5289.9794
40	5289.9807	5289.9804	5289.9801	5289.9791
50	5289.9812	5289.9810	5289.9804	5289.9794
60	5289.9804	5289.9800	5289.9790	5289.9781
70	5289.9791	5289.9786	5289.9784	5289.9777
Max. Deviation (MHz)	0.0209	0.0214	0.0216	0.0223
Max. Deviation (ppm)	3.95	4.04	4.08	4.21
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5530 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5529.9828	5529.9824	5529.9820	5529.9817
110.00	5529.9822	5529.9817	5529.9808	5529.9798
93.50	5529.9817	5529.9812	5529.9808	5529.9798
Max. Deviation (MHz)	0.0183	0.0188	0.0192	0.0202
Max. Deviation (ppm)	3.31	3.40	3.47	3.65
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5530 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5529.9885	5529.9875	5529.9871	5529.9870
-20	5529.9867	5529.9863	5529.9862	5529.9854
-10	5529.9863	5529.9861	5529.9858	5529.9852
0	5529.9850	5529.9848	5529.9843	5529.9837
10	5529.9830	5529.9826	5529.9820	5529.9814
20	5529.9822	5529.9817	5529.9808	5529.9802
30	5529.9813	5529.9810	5529.9806	5529.9803
40	5529.9812	5529.9810	5529.9801	5529.9792
50	5529.9799	5529.9792	5529.9784	5529.9776
60	5529.9798	5529.9790	5529.9787	5529.9785
70	5529.9801	5529.9799	5529.9798	5529.9794
Max. Deviation (MHz)	0.0199	0.0201	0.0202	0.0208
Max. Deviation (ppm)	3.59	3.63	3.65	3.76
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	EMCO	3115	9610-4976	1GHz ~ 18GHz	Apr. 25, 2016	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2015	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 25, 2016	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	Nov. 13, 2015	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	May 05, 2016	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 16, 2016	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-16	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	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-17	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	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-1	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-2	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-2	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
Test Software	Audix	E3	6.2009-l0-7	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. 03, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Nov. 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)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
RF Cable-high	Woken	RG402	High Cable-10	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.

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%