SPORTON International Inc.
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FCC RADIO TEST REPORT

Applicant's company	**ASUSTeK COMPUTER INC.**
Applicant Address	4F, No. 150, Li-Te Rd., Peitou, Taipei 112, Taiwan
FCC ID	**MSQ-RTACHC00**
Manufacturer's company (1)	**ASKEY TECHNOLOGY (JIANG SU) LTD**
Manufacturer Address	NO1388, Jiao Tong Road, Wujiang Economic Technological Development Area Jiangsu Province 215200 China
Manufacturer's company (2)	**Compal Networking (KunShan) Co., LTD.**
Manufacturer Address	No. 520, Nabbang Rd., Economic & Technical Development Zone Kunshan, Jiangsu Province China
Manufacturer's company (3)	**Maintek Computer(SUZHOU) Co., LTD**
Manufacturer Address	Bldg. 6 NB, 233 Jin Feng Rd, Suzhou District Jiangsu China

Product Name	Wireless-AC1750 Dual Band Gigabit Router, Wireless-AC1900 Dual Band Gigabit Router
Brand Name	ASUS
Model No.	RT-AC66U B1, RT-AC67U/R/W,RT-AC66U V2, RT-AC1750,RT-AC1900, RT-AC1750X (X can be 0-9, A-Z, or blank), RT-AC1900X (X can be 0-9, A-Z, or blank), RT-AC1750_V2, RT-AC1750 V2, RT-AC1750R V2, RT-AC1750W V2, RT-AC1900 V2, RT-AC1900R V2, RT-AC1900_V2, RT-AC1900R_V2
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5150 ~ 5250 MHz / 5725 ~ 5850 MHz
Received Date	Jan. 28, 2016
Final Test Date	Jul. 27, 2016
Submission Type	Original Equipment

Statement

Test result included is for the IEEE 802.11n and IEEE 802.11a/ac of the product.
The test result in this report refers exclusively to the presented test model / sample.
Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.
The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.10-2013, 47 CFR FCC Part 15 Subpart E, KDB789033 D02 v01r02, 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.

Testing Laboratory
1190

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR612512-01AB	Rev. 01	Initial issue of report	Aug. 01, 2016

1. VERIFICATION OF COMPLIANCE

Product Name	:	Wireless-AC1750 Dual Band Gigabit Router, Wireless-AC1900 Dual Band Gigabit Router
Brand Name	:	ASUS
Model No.	:	RT-AC66U B1, RT-AC67U/R/W,RT-AC66U V2, RT-AC1750,RT-AC1900, RT-AC1750X (X can be 0-9, A-Z, or blank), RT-AC1900X (X can be 0-9, A-Z, or blank), RT-AC1750_V2, RT-AC1750 V2, RT-AC1750R V2, RT-AC1750W V2, RT-AC1900 V2, RT-AC1900R V2, RT-AC1900_V2, RT-AC1900R_V2
Applicant	:	ASUSTeK COMPUTER 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 Jan. 28, 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.

Sam Chen

SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

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

3. GENERAL INFORMATION

3.1. Product Details

Items	Description
Product Type	IEEE 802.11a/n/ac: WLAN (3TX, 3RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter
Modulation	IEEE 802.11a: OFDM IEEE 802.11n/ac: see the below table
Data Modulation	IEEE 802.11a/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Data Rate (Mbps)	IEEE 802.11a: OFDM (6/9/12/18/24/36/48/54) IEEE 802.11n/ac: see the below table
Frequency Range	5150 ~ 5250 MHz / 5725 ~ 5850 MHz
Channel Number	9 for 20MHz bandwidth ; 4 for 40MHz bandwidth 2 for 80MHz bandwidth
Channel Band Width (99%)	**<For non-beamforming mode>** Band 1: IEEE 802.11a: 17.02 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.71 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.33 MHz IEEE 802.11ac MCS0/Nss3 (VHT40): 37.05 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 76.70 MHz IEEE 802.11ac MCS0/Nss3 (VHT80): 75.83 MHz Band 4: IEEE 802.11a: 17.71 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 18.15 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 37.92 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 77.28 MHz **<For beamforming mode>** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.80 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.76 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz Band 4: IEEE 802.11ac MCS0/Nss1 (VHT20): 17.80 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.90 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.83 MHz

Maximum Conducted Output Power	**<For non-beamforming mode>** Band 1: IEEE 802.11a: 19.39 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 19.65 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 27.21 dBm IEEE 802.11ac MCS0/Nss3 (VHT40): 28.84 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.46 dBm IEEE 802.11ac MCS0/Nss3 (VHT80): 21.18 dBm Band 4: IEEE 802.11a: 29.88 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 29.86 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 29.97 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 29.69 dBm **<For beamforming mode>** Band 1: IEEE 802.11ac MCS0/Nss1 (VHT20): 20.81 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 26.90 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 20.99 dBm Band 4: IEEE 802.11ac MCS0/Nss1 (VHT20): 28.07 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 28.11 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 28.04 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
Beamforming Function	☒ With beamforming	☐ Without beamforming
Operate Condition	☒ Indoor	☐ Outdoor

Note: The EUT has Beamforming Function for 802.11n/ac in 2.4GHz and 5GHz.

Antenna and Bandwidth

Antenna	Three (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)	3	MCS 0-23
802.11n (HT40)	3	MCS 0-23
802.11ac (VHT20)	3	MCS 0-9/Nss1-3
802.11ac (VHT40)	3	MCS 0-9/Nss1-3
802.11ac (VHT80)	3	MCS 0-9/Nss1-3

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

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

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

3.2. Accessories

Power	Brand	Model	Rating
Adapter 1	ASUS	ADP-33AW B	INPUT: 100-240V, 1A, 50-60Hz OUTPUT: 19V, 1.75A
Adapter 2	ASUS	AD890326	INPUT: 100-240V, 0.8A, 50-60Hz OUTPUT: 19V, 1.75A
Others			
RJ-45 cable*1, Non-shielded, 1.5m			

3.3. Table for Filed Antenna

Set	Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)	
						2.4GHz	5GHz
1	1	PSA	RFDPA181313IMLB701	Dipole Antenna	I-PEX	1.85	3.14
	2	PSA	RFDPA181306IMLB701	Dipole Antenna	I-PEX	1.83	2.70
	3	PSA	RFDPA181306IMLB702	Dipole Antenna	I-PEX	2.22	3.28
2	4	M.gear	C660-510379-A (SRF20161063)	Dipole Antenna	I-PEX	1.61	2.34
	5	M.gear	C660-510380-A (SRF20161064)	Dipole Antenna	I-PEX	1.69	2.52
	6	M.gear	C660-510381-A (SRF20161065)	Dipole Antenna	I-PEX	1.69	2.52

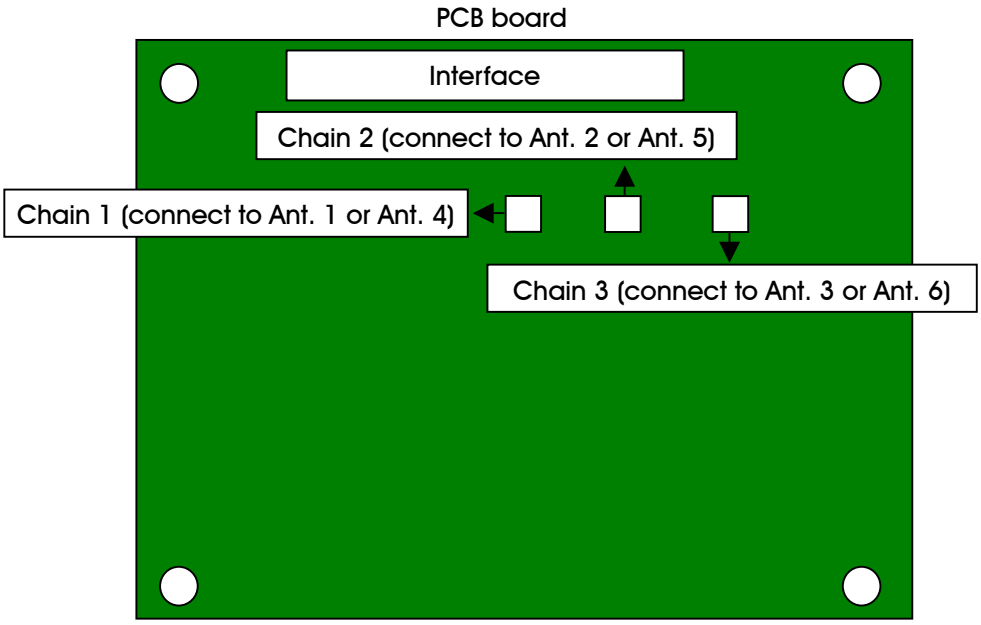
Note: The EUT has two sets of antenna and there are three antennas for each set.

Because Set 1 and Set 2 are the same type antennas, only the higher gain antenna "Set 1" was tested.

For IEEE 802.11a/b/g/n/ac mode (3TX/3RX):

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

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



3.4. Table for Carrier Frequencies

There are three bandwidth systems.

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

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

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

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

3.5. Table for Test Modes

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

Test Items	Mode		Data Rate	Channel	Chain
AC Power Conducted Emission	CTX		-	-	-
Max. Conducted Output Power	<For non-beamforming mode>				
	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	1+2+3
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	1+2+3
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1+2+3
	11ac VHT40	Band 1	MCS0/Nss3	46	1+2+3
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1+2+3
	11ac VHT80	Band 1	MCS0/Nss3	42	1+2+3
	<For beamforming mode>				
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	1+2+3
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1+2+3
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1+2+3
Power Spectral Density	<For non-beamforming mode>				
	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	1+2+3
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	1+2+3
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1+2+3
	11ac VHT40	Band 1	MCS0/Nss3	46	1+2+3
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1+2+3
	11ac VHT80	Band 1	MCS0/Nss3	42	1+2+3
	<For beamforming mode>				
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	1+2+3
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1+2+3
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1+2+3

26dB Spectrum Bandwidth & 99% Occupied Bandwidth Measurement	<For non-beamforming mode>				
	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	1+2+3
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	1+2+3
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1+2+3
	11ac VHT40	Band 1	MCS0/Nss3	46	1+2+3
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1+2+3
	11ac VHT80	Band 1	MCS0/Nss3	42	1+2+3
	<For beamforming mode>				
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	1+2+3
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1+2+3
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1+2+3
6dB Spectrum Bandwidth Measurement	<For non-beamforming mode>				
	11a/BPSK	Band 4	6Mbps	149/157/165	1+2+3
	11ac VHT20	Band 4	MCS0/Nss1	149/157/165	1+2+3
	11ac VHT40	Band 4	MCS0/Nss1	151/159	1+2+3
	11ac VHT80	Band 4	MCS0/Nss1	155	1+2+3
	<For beamforming mode>				
	11ac VHT20	Band 4	MCS0/Nss1	149/157/165	1+2+3
	11ac VHT40	Band 4	MCS0/Nss1	151/159	1+2+3
	11ac VHT80	Band 4	MCS0/Nss1	155	1+2+3
Radiated Emission Below 1GHz	CTX		-	-	-
Radiated Emission Above 1GHz	<For non-beamforming mode>				
	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	1+2+3
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	1+2+3
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1+2+3
	11ac VHT40	Band 1	MCS0/Nss3	46	1+2+3
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1+2+3
	11ac VHT80	Band 1	MCS0/Nss3	42	1+2+3
	<For beamforming mode>				
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	1+2+3

	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1+2+3
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1+2+3
Band Edge Emission	<For non-beamforming mode>				
	11a/BPSK	Band 1&4	6Mbps	36/40/48/149/157/165	1+2+3
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	1+2+3
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1+2+3
	11ac VHT40	Band 1	MCS0/Nss3	46	1+2+3
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1+2+3
	11ac VHT80	Band 1	MCS0/Nss3	42	1+2+3
	<For beamforming mode>				
	11ac VHT20	Band 1&4	MCS0/Nss1	36/40/48/149/157/165	1+2+3
	11ac VHT40	Band 1&4	MCS0/Nss1	38/46/151/159	1+2+3
	11ac VHT80	Band 1&4	MCS0/Nss1	42/155	1+2+3
Frequency Stability	20 MHz	Band 1&4	-	40/157	1
	40 MHz	Band 1&4	-	38/151	1
	80 MHz	Band 1&4	-	42/155	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.

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

3. According to the client's request, the EUT were tested in Z-axis.

The following test modes were performed for all tests:

For Conducted Emission test:

Mode 1. CTX - EUT in Z-axis_2.4G + Adapter 1

Mode 2. CTX - EUT in Z-axis_5G + Adapter 1

Mode 2 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 will follow this same test mode.

Mode 3. CTX - EUT in Z-axis_2.4G + Adapter 2

Mode 3 is the worst case, so it was selected to record in this test report.

For Radiated Emission below 1GHz test:

Mode 1. CTX - EUT in Z-axis_2.4G + Adapter 1

Mode 2. CTX - EUT in Z-axis_5G + Adapter 1

Mode 2 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 will follow this same test mode.

Mode 3. CTX - EUT in Z-axis_5G + Adapter 2

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

For Radiated Emission above 1GHz test:

Mode 1.CTX - EUT in Z-axis

For Co-location MPE and Radiated Emission Co-location Test:

The EUT could be applied with 2.4GHz WLAN function and 5GHz WLAN function; therefore Co-location Maximum Permissible Exposure (Please refer to FA612512-01) and Radiated Emission Co-location (please refer to Appendix B) tests are added for simultaneously transmit between 2.4GHz WLAN function and 5GHz WLAN function.

3.6. Table for Testing Locations

Test Site Location					
Address:	No.8, Lane 724, Bo-ai St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C.				
TEL:	886-3-656-9065				
FAX:	886-3-656-9085				
Test Site No.	**Site Category**	**Location**	**FCC Designation No.**	**IC File No.**	**VCCI Reg. No**
03CH01-CB	SAC	Hsin Chu	TW0006	IC 4086D	-
CO01-CB	Conduction	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 List

Brand Name	Equipment Name	Model Name
ASUS	Wireless-AC1750 Dual Band Gigabit Router, Wireless-AC1900 Dual Band Gigabit Router	RT-AC66U B1
		RT-AC67U/R/W
		RT-AC66U V2
		RT-AC1750
		RT-AC1900,
		RT-AC1750X (X can be 0-9, A-Z, or blank)
		RT-AC1900X (X can be 0-9, A-Z, or blank)
		RT-AC1750_V2
		RT-AC1750 V2
		RT-AC1750R V2
		RT-AC1750W V2
		RT-AC1900 V2
		RT-AC1900R V2
		RT-AC1900_V2
		RT-AC1900R_V2
Description		
All the models are identical, the difference model for difference brand served as marketing strategy.		

From the above models, model: RT-AC66U B1 was selected as representative model for the test and its data was recorded in this report.

3.8. Table for Supporting Units

For Test Site No: CO01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E6430	DoC
Flash disk	Silicon	I-Series	DoC
Flash disk3.0	Transcend	JetFlash-700	DoC

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC

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

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC

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

<For non-beamforming mode>

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC

<For beamforming mode>

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

3.9. Table for Parameters of Test Software Setting

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

<For non-beamforming mode>

Test Software Version	Mtool 2.0.2.7					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
802.11a	54	55	55	101	101	102
802.11ac MCS0/Nss1 VHT20	54	53	55	101	101	102
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	5795 MHz
	59		88		101	101
802.11ac MCS0/Nss3 VHT40	-		94		-	-
Mode	NCB: 80MHz					
802.11ac MCS0/Nss1 VHT80	5210 MHz				5775 MHz	
	55				101	
802.11ac MCS0/Nss3 VHT80	63				-	

<For beamforming mode>

Test Software Version	Mtool 2.0.2.7					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
802.11ac MCS0/Nss1 VHT20	61	57	61	91	92	91
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5190 MHz		5230 MHz		5755 MHz	5795 MHz
	60		86		90	90
Mode	NCB: 80MHz					
802.11ac MCS0/Nss1 VHT80	5210 MHz				5775 MHz	
	60				90	

3.10. EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

During the test, the following programs under WIN 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 WLAN ac dongle and transmit duty cycle no less 98%

3.11. Duty Cycle

For non-beamforming mode:

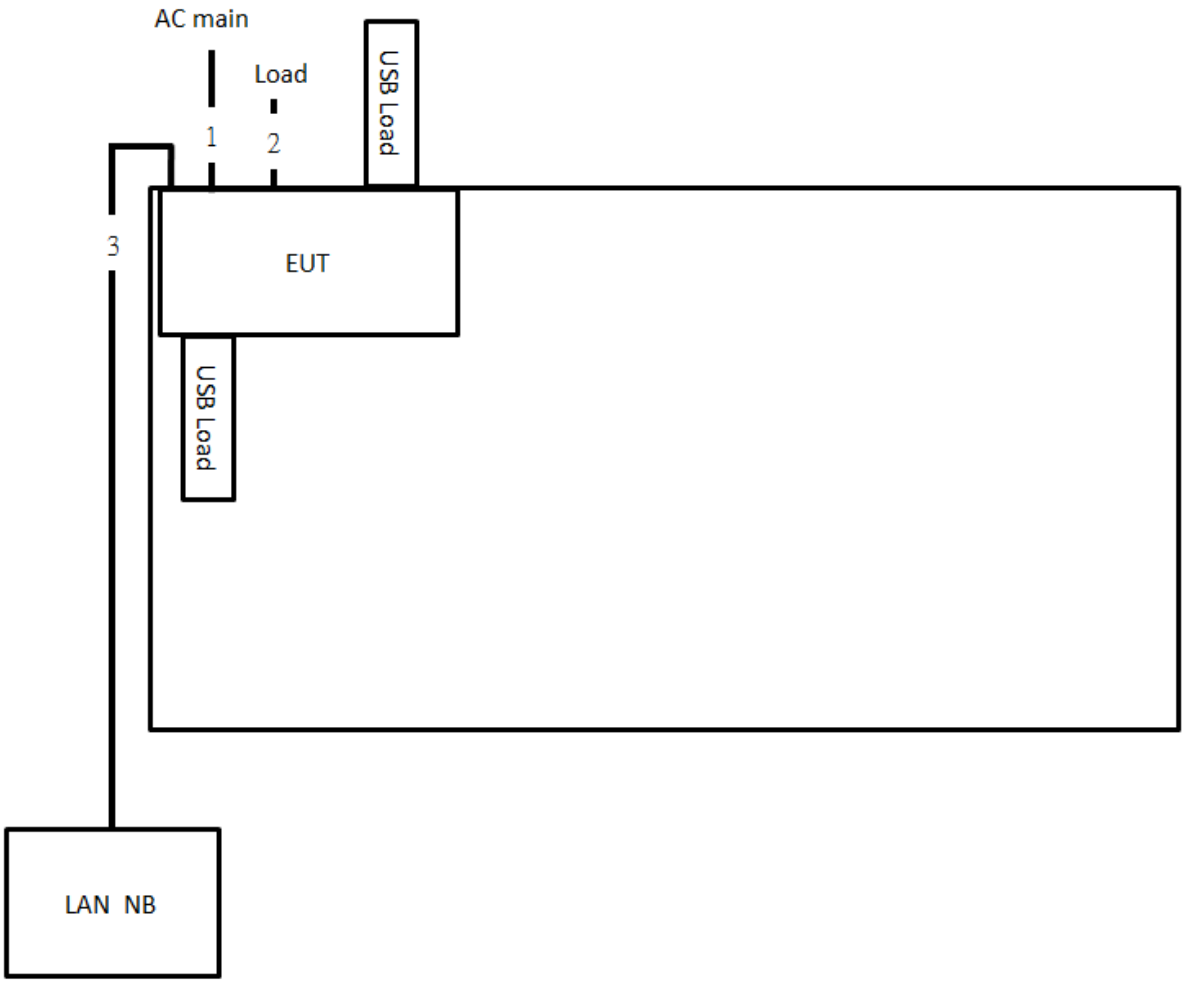
Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.059	2.083	98.85	0.05	0.01
802.11ac MCS0/Nss1 VHT20	1.891	1.923	98.34	0.07	0.01
802.11ac MCS0/Nss1 VHT40	0.908	0.947	95.88	0.18	1.10
802.11ac MCS0/Nss3 VHT40	0.265	0.333	79.58	0.99	3.77
802.11ac MCS0/Nss1 VHT80	0.442	0.463	95.46	0.20	2.26
802.11ac MCS0/Nss3 VHT80	0.170	0.220	77.27	1.12	5.88

For beamforming mode:

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11ac MCS0/Nss1 VHT20	3.857	4.205	91.72	0.38	0.26
802.11ac MCS0/Nss1 VHT40	4.998	5.294	94.41	0.25	0.20
802.11ac MCS0/Nss1 VHT80	5.104	5.500	92.80	0.32	0.20

3.12. Test Configurations

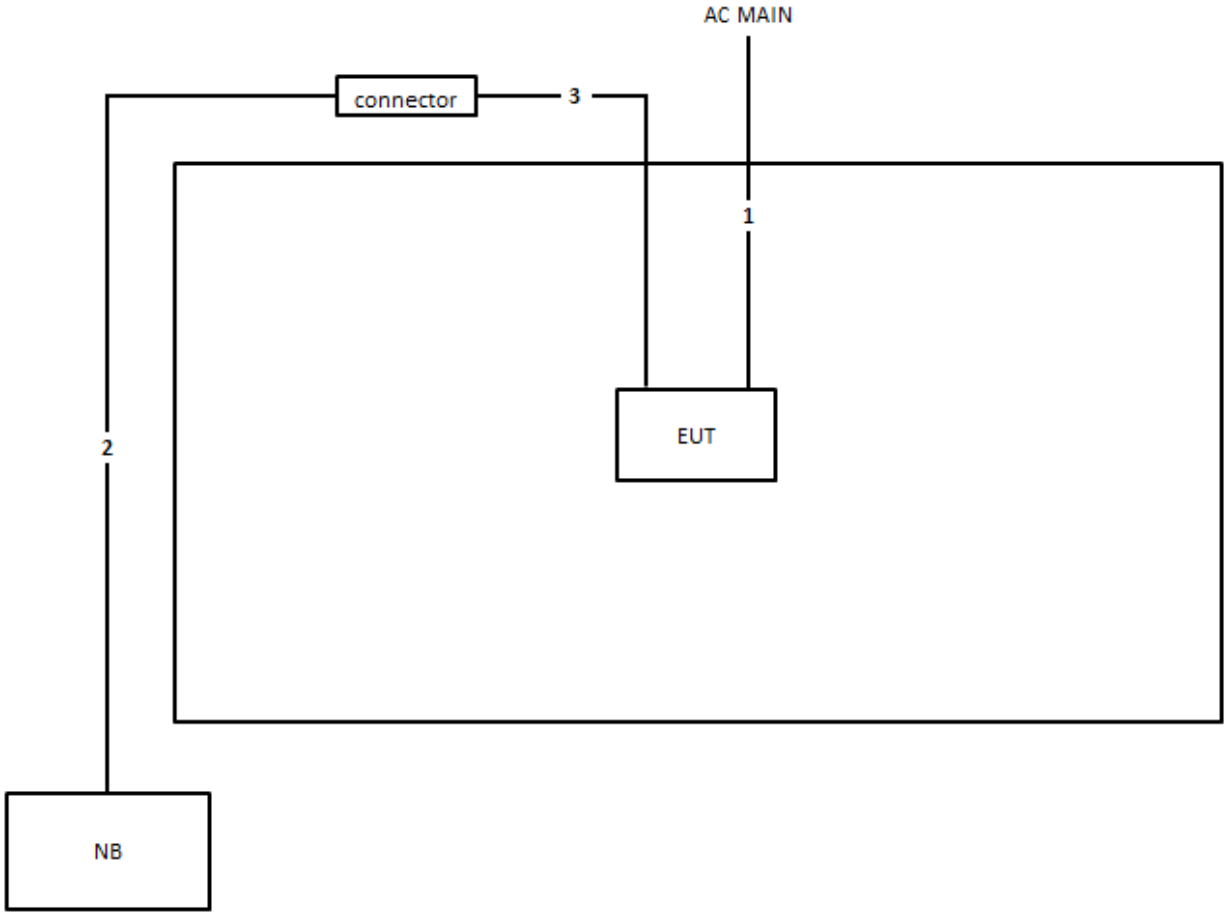
3.12.1. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shielded	Length
1	Power cable	No	2.2m
2	RJ-45 cable*4	No	1.5m
3	RJ-45 cable	No	10m

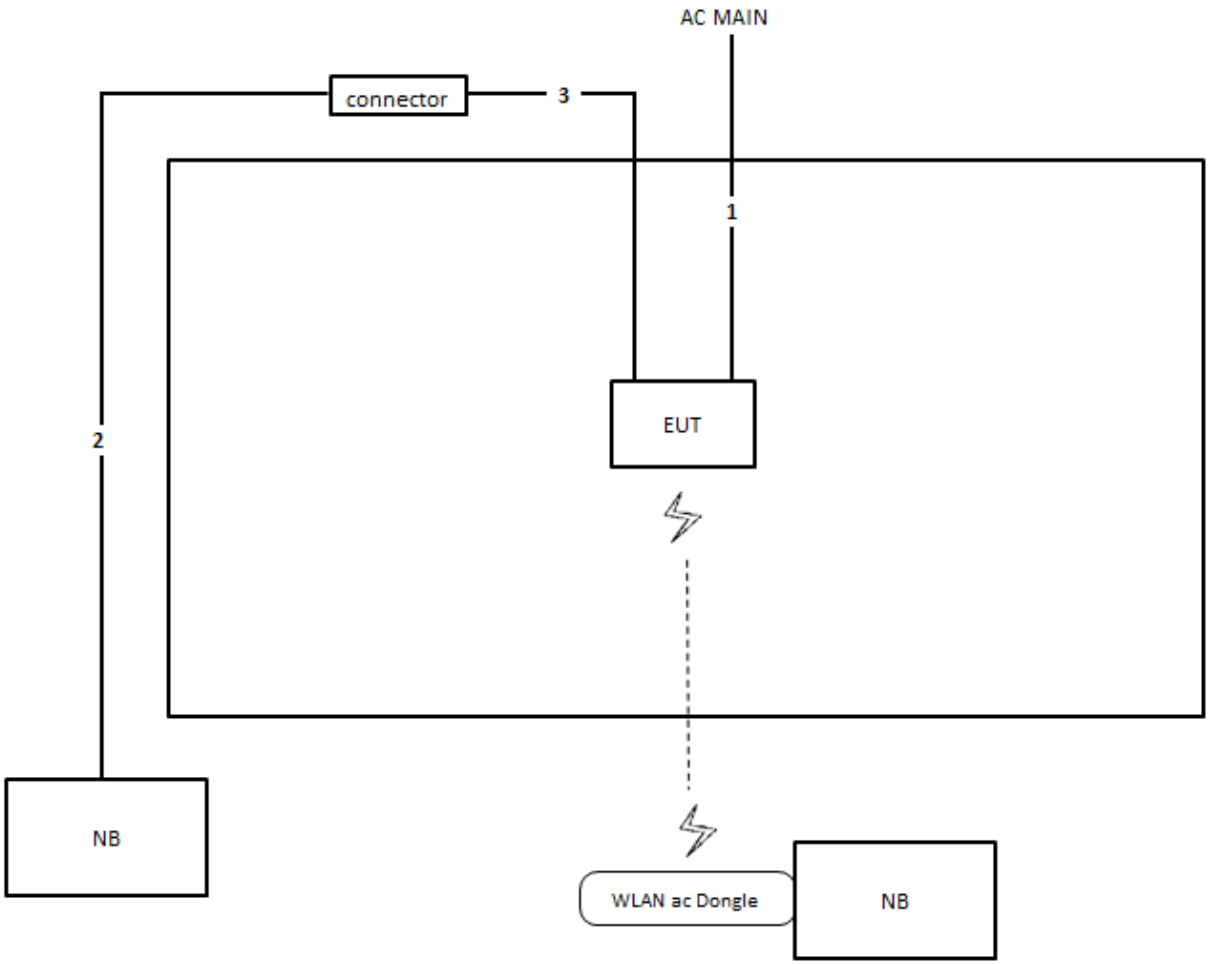
3.12.2. Radiation Emissions Test Configuration

Test Configuration: 30MHz~1GHz and above 1GHz <For non-beamforming mode>



Item	Connection	Shielded	Length
1	Power cable	No	2.2m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	1.5m

Test Configuration: above 1GHz <For beamforming mode>



Item	Connection	Shielded	Length
1	Power cable	No	2.2m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	1.5m

4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

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

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

4.1.2. Measuring Instruments and Setting

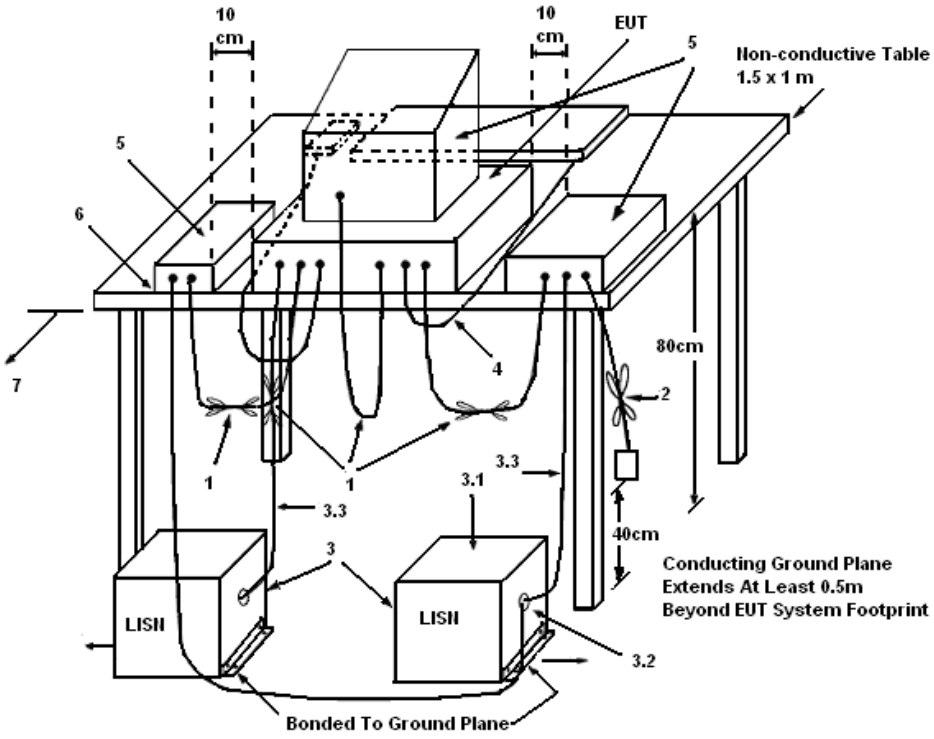
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

4.1.3. Test Procedures

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

4.1.4. Test Setup Layout



LEGEND:

(1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

(2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

(3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.

(3.1) All other equipment powered from additional LISN(s).

(3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.

(3.3) LISN at least 80 cm from nearest part of EUT chassis.

(4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.

(5) Non-EUT components of EUT system being tested.

(6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.

(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

4.1.5. Test Deviation

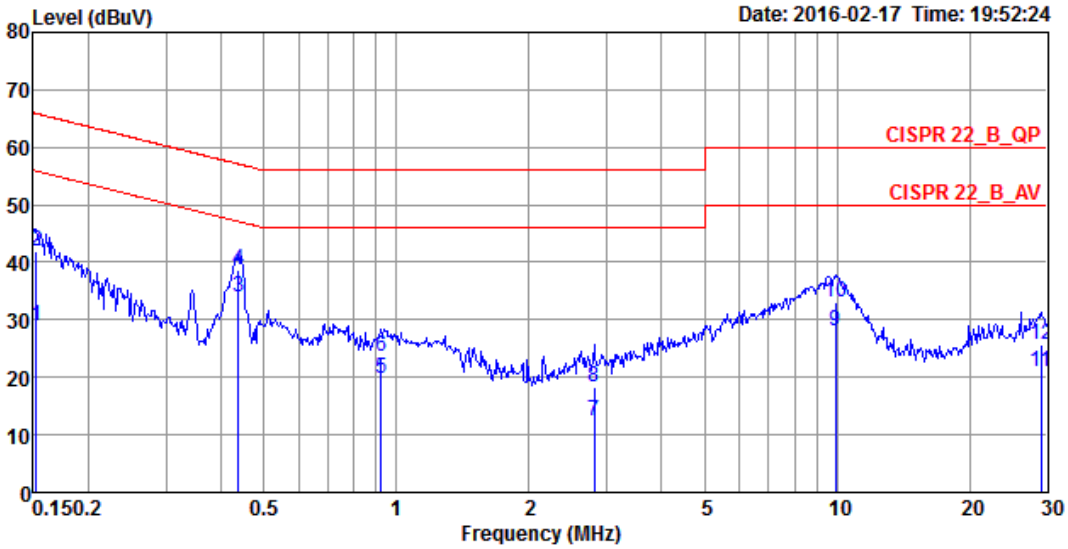
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

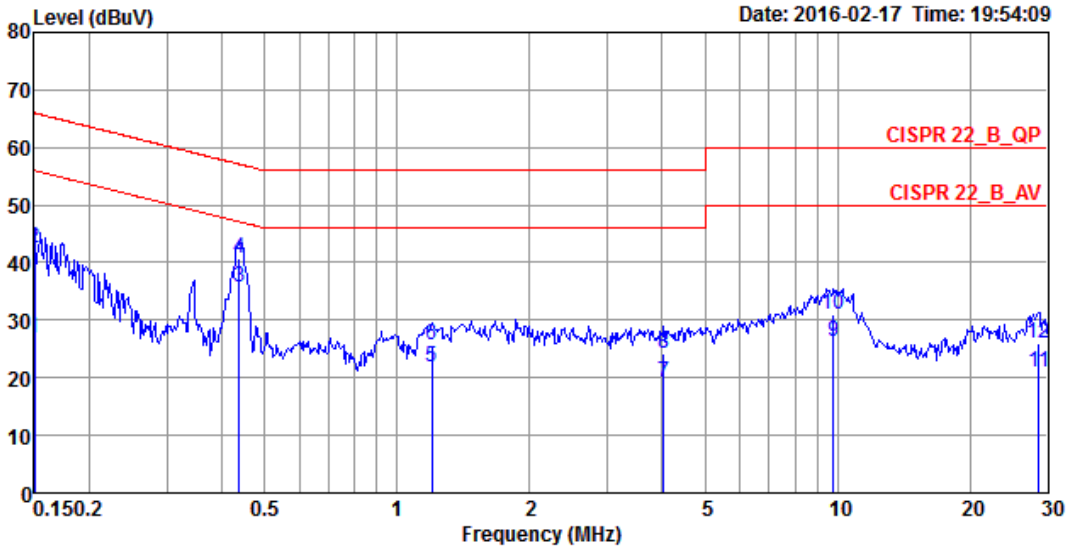
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	20°C	Humidity	56%
Test Engineer	Deven Huang	Phase	Line
Configuration	CTX	Test Mode	Mode 3



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1524	29.01	-26.86	55.87	19.06	9.93	0.02	LINE	Average
2	0.1524	42.04	-23.83	65.87	32.09	9.93	0.02	LINE	QP
3	0.4374	34.04	-13.07	47.11	24.07	9.93	0.04	LINE	Average
4	0.4374	38.77	-18.34	57.11	28.80	9.93	0.04	LINE	QP
5	0.9233	19.92	-26.08	46.00	9.91	9.96	0.05	LINE	Average
6	0.9233	23.66	-32.34	56.00	13.65	9.96	0.05	LINE	QP
7	2.8091	12.30	-33.70	46.00	2.25	10.00	0.05	LINE	Average
8	2.8091	18.27	-37.73	56.00	8.22	10.00	0.05	LINE	QP
9	9.9130	28.10	-21.90	50.00	17.67	10.18	0.25	LINE	Average
10	9.9130	33.03	-26.97	60.00	22.60	10.18	0.25	LINE	QP
11	29.0613	21.03	-28.97	50.00	10.09	10.66	0.28	LINE	Average
12	29.0613	25.77	-34.23	60.00	14.83	10.66	0.28	LINE	QP

Temperature	20°C	Humidity	56%
Test Engineer	Deven Huang	Phase	Neutral
Configuration	CTX	Test Mode	Mode 3



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1500	26.90	-29.10	56.00	17.10	9.78	0.02	NEUTRAL	Average
2	0.1500	42.41	-23.59	66.00	32.61	9.78	0.02	NEUTRAL	QP
3	0.4374	35.63	-11.48	47.11	25.80	9.79	0.04	NEUTRAL	Average
4	0.4374	40.72	-16.39	57.11	30.89	9.79	0.04	NEUTRAL	QP
5	1.1970	21.73	-24.27	46.00	11.86	9.82	0.05	NEUTRAL	Average
6	1.1970	25.68	-30.32	56.00	15.81	9.82	0.05	NEUTRAL	QP
7	4.0275	19.19	-26.81	46.00	9.25	9.87	0.07	NEUTRAL	Average
8	4.0275	24.06	-31.94	56.00	14.12	9.87	0.07	NEUTRAL	QP
9	9.8085	26.14	-23.86	50.00	15.88	10.01	0.25	NEUTRAL	Average
10	9.8085	31.06	-28.94	60.00	20.80	10.01	0.25	NEUTRAL	QP
11	28.6030	20.97	-29.03	50.00	10.36	10.33	0.28	NEUTRAL	Average
12	28.6030	25.87	-34.13	60.00	15.26	10.33	0.28	NEUTRAL	QP

Note:

Level = Read Level + LISN Factor + Cable Loss

4.2. 26dB Bandwidth and 99% Occupied Bandwidth Measurement

4.2.1. Limit

No restriction limits.

4.2.2. Measuring Instruments and Setting

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

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

4.2.3. Test Procedures

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

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

4.2.4. Test Setup Layout

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

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

4.2.5. Test Deviation

There is no deviation with the original standard.

4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

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

Temperature	25°C	Humidity	65%
Test Engineer	Andy Tsai		
Test Function	For non-beamforming mode		

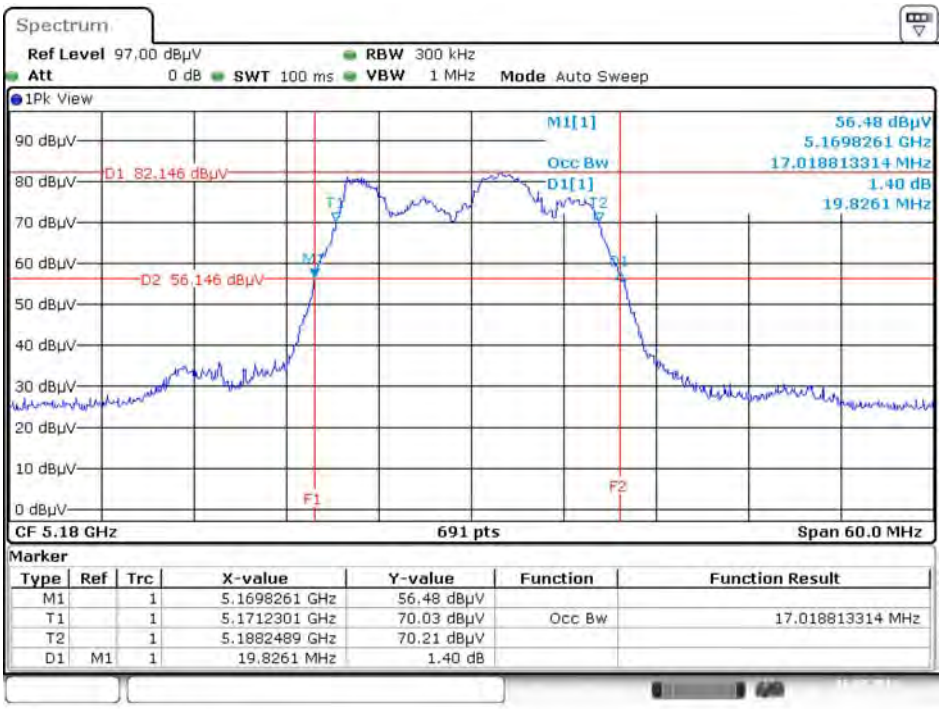
Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	19.83	17.02
	5200 MHz	19.91	16.85
	5240 MHz	20.00	16.93
	5745 MHz	24.87	17.45
	5785 MHz	24.44	17.45
	5825 MHz	30.87	17.71
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.17	17.63
	5200 MHz	20.26	17.63
	5240 MHz	20.17	17.71
	5745 MHz	26.52	17.97
	5785 MHz	30.78	17.97
	5825 MHz	35.83	18.15
802.11ac MCS0/Nss1 VHT40	5190 MHz	40.58	37.05
	5230 MHz	55.65	37.33
	5755 MHz	69.86	37.77
	5795 MHz	71.01	37.92
802.11ac MCS0/Nss3 VHT40	5230 MHz	65.36	37.05
802.11ac MCS0/Nss1 VHT80	5210 MHz	82.32	76.70
	5775 MHz	145.22	77.28
802.11ac MCS0/Nss3 VHT80	5210 MHz	81.74	75.83

Temperature	25℃	Humidity	65%
Test Engineer	Andy Tsai		
Test Function	For beamforming mode		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11ac MCS0/Nss1 VHT20	5180 MHz	20.35	17.80
	5200 MHz	20.17	17.80
	5240 MHz	20.17	17.80
	5745 MHz	20.35	17.80
	5785 MHz	20.35	17.80
	5825 MHz	20.17	17.80
802.11ac MCS0/Nss1 VHT40	5190 MHz	40.58	36.61
	5230 MHz	43.62	36.76
	5755 MHz	50.73	36.90
	5795 MHz	51.01	36.76
802.11ac MCS0/Nss1 VHT80	5210 MHz	81.16	75.83
	5775 MHz	81.16	75.83

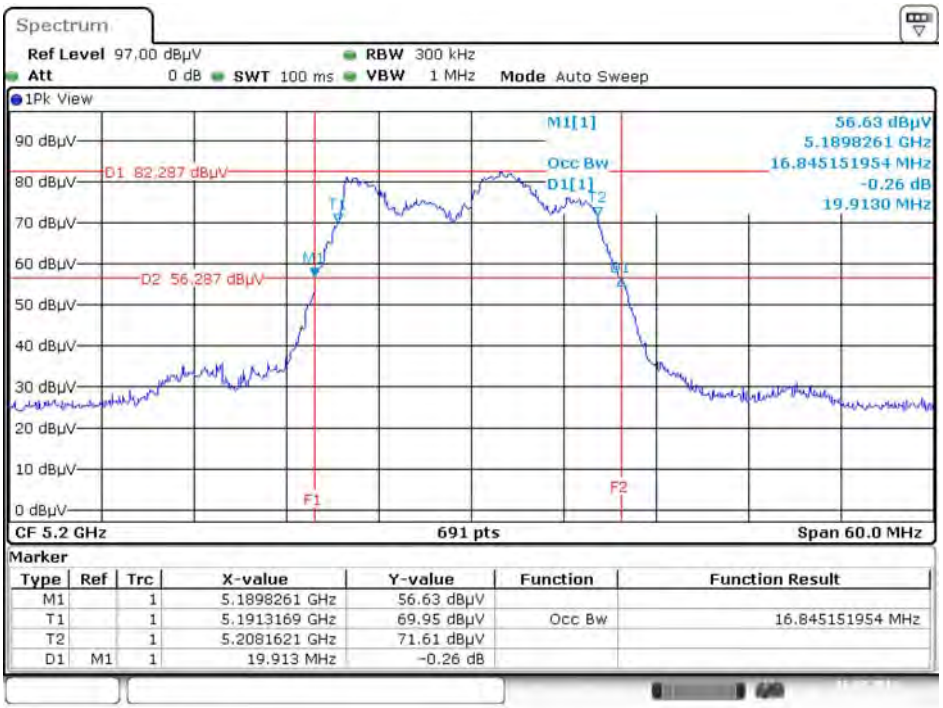
<For non-beamforming mode>

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5180 MHz



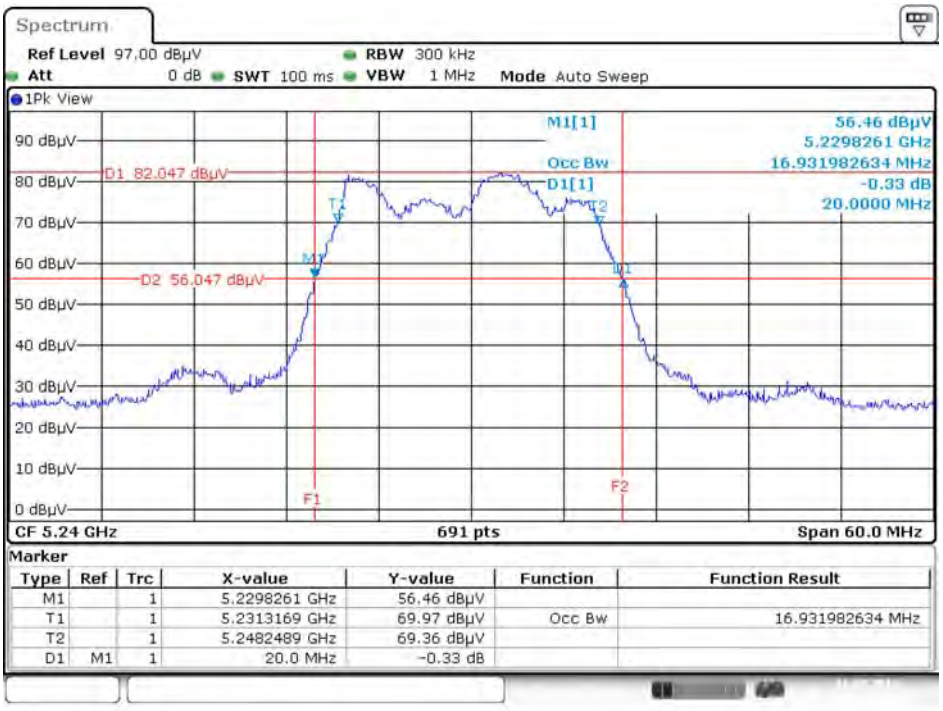
Date: 16.JUL.2016 19:58:29

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5200 MHz



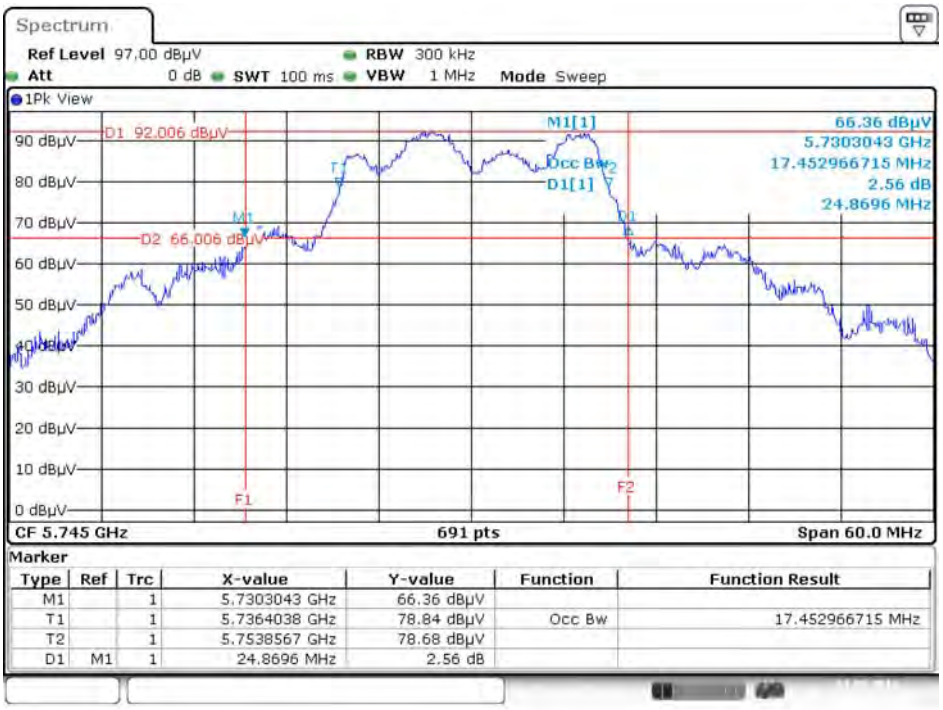
Date: 16.JUL.2016 19:57:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5240 MHz



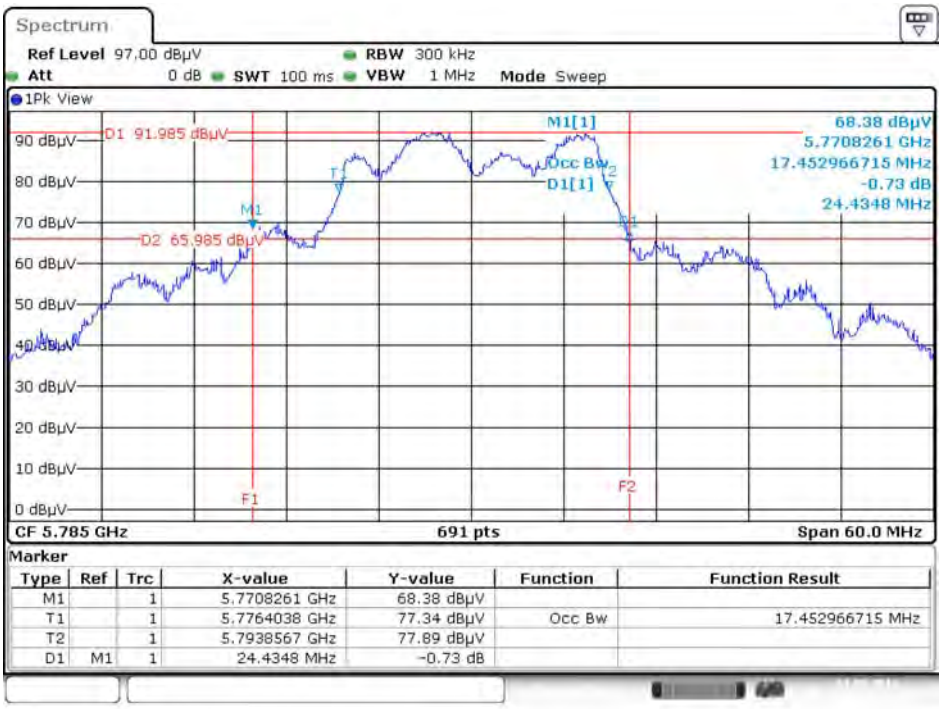
Date: 16.JUL.2016 19:56:48

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5745 MHz



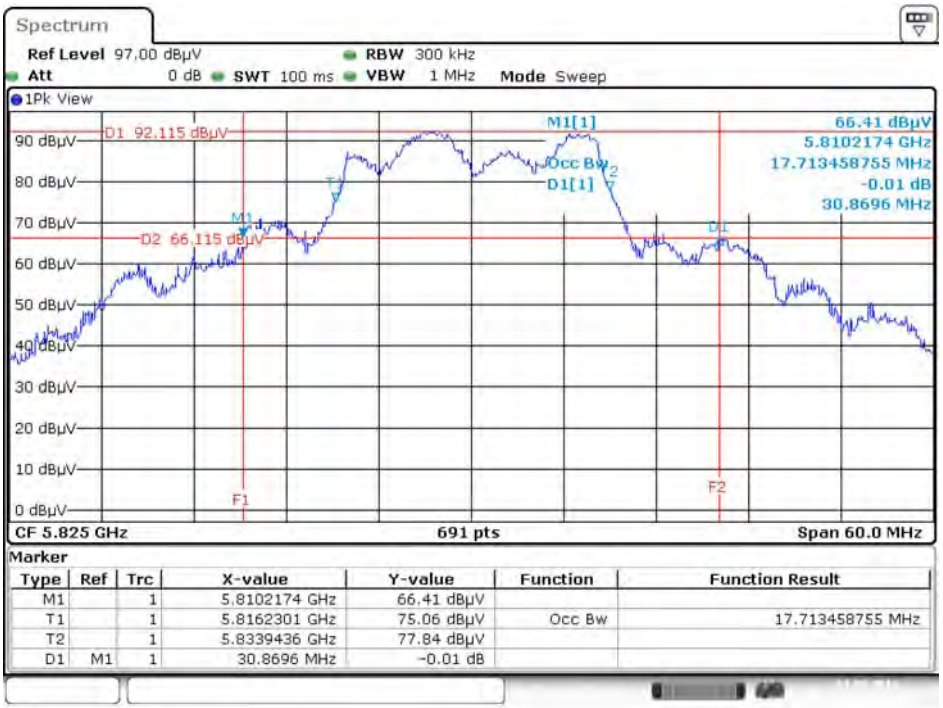
Date: 3.MAY.2016 15:16:33

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5785 MHz



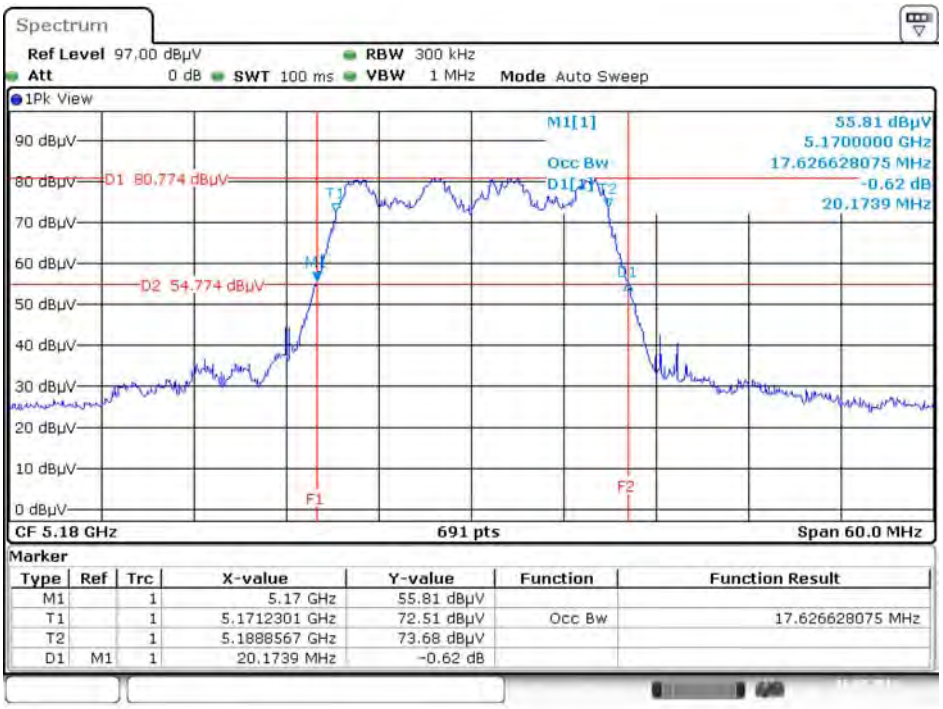
Date: 3.MAY.2016 15:16:56

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5825 MHz



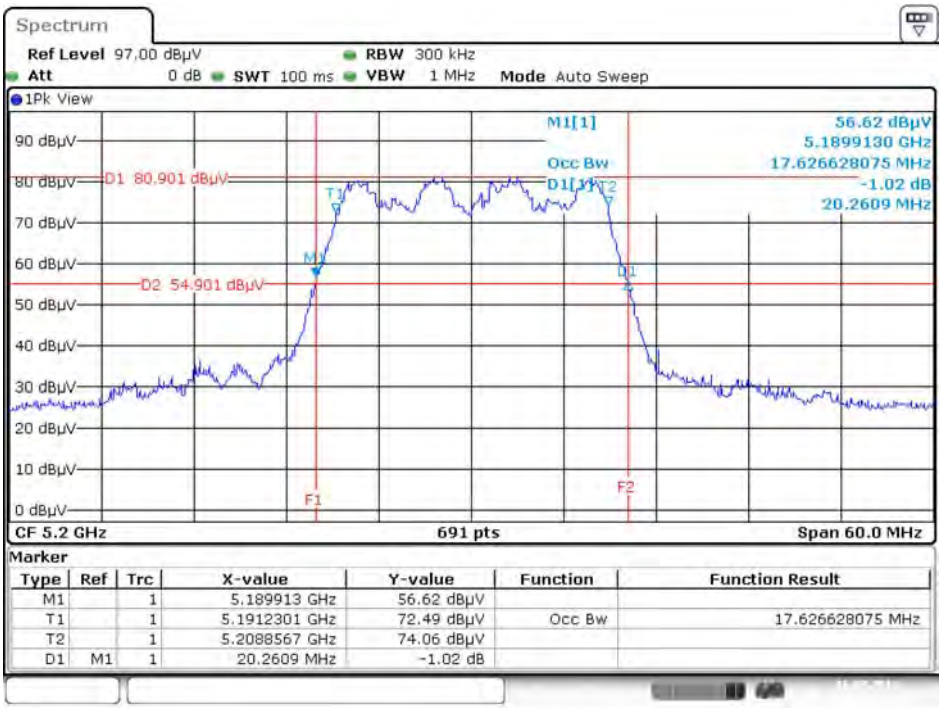
Date: 3.MAY.2016 15:17:48

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5180 MHz



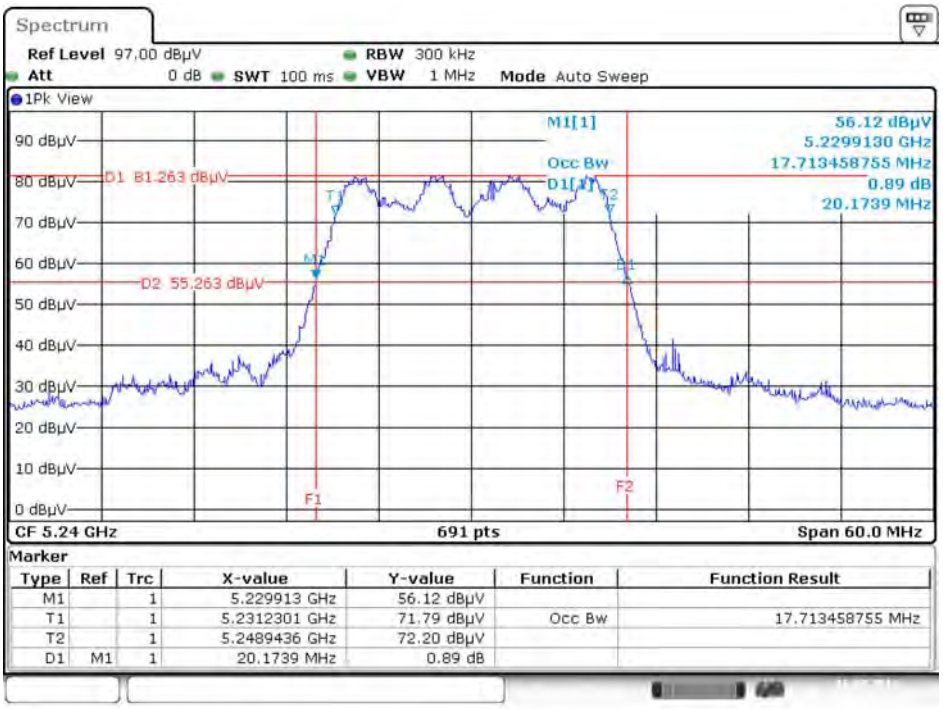
Date: 16.JUL.2016 19:54:11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5200 MHz



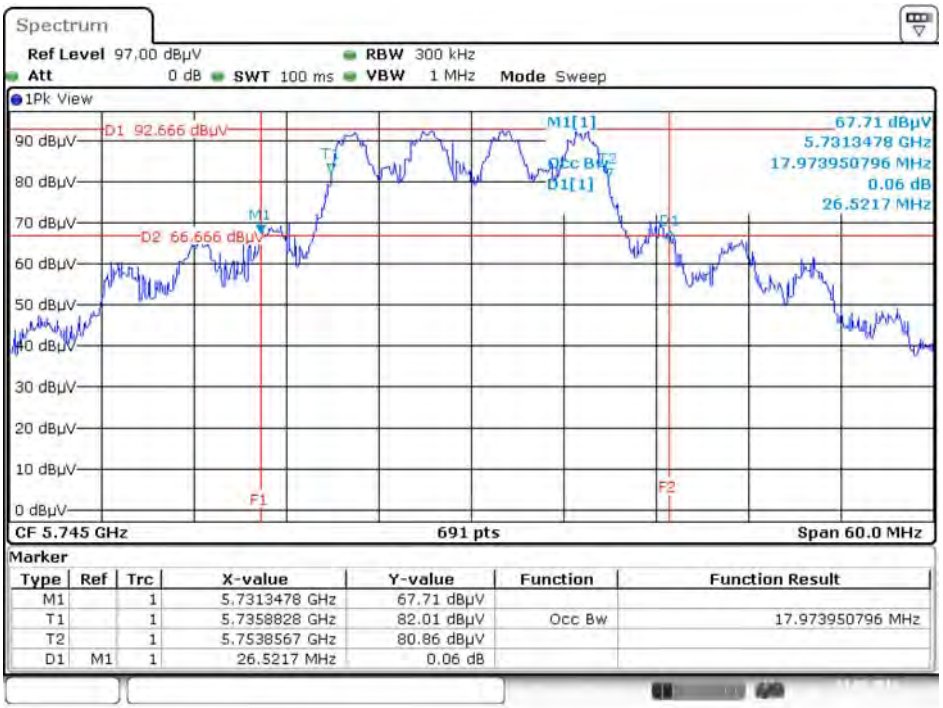
Date: 16.JUL.2016 19:55:02

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5240 MHz



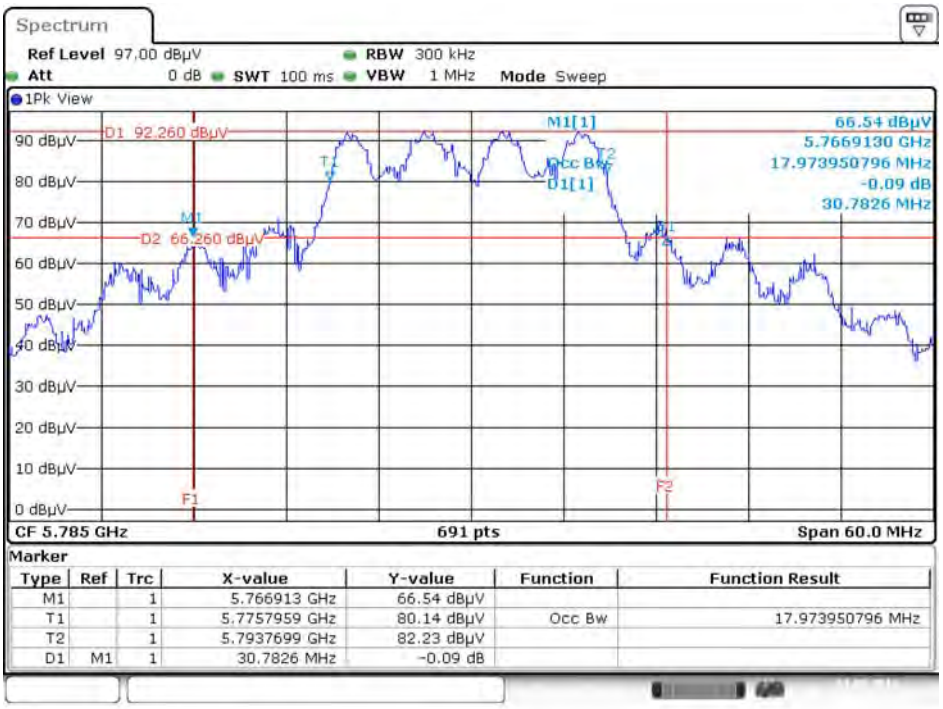
Date: 16.JUL.2016 19:55:49

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5745 MHz



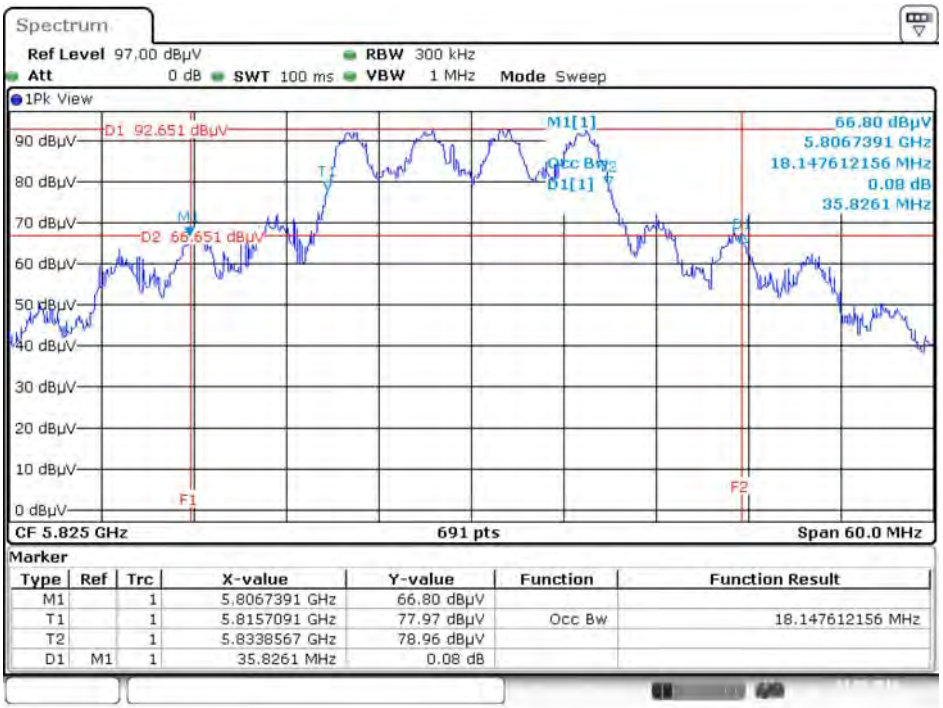
Date: 3.MAY.2016 15:35:37

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5785 MHz



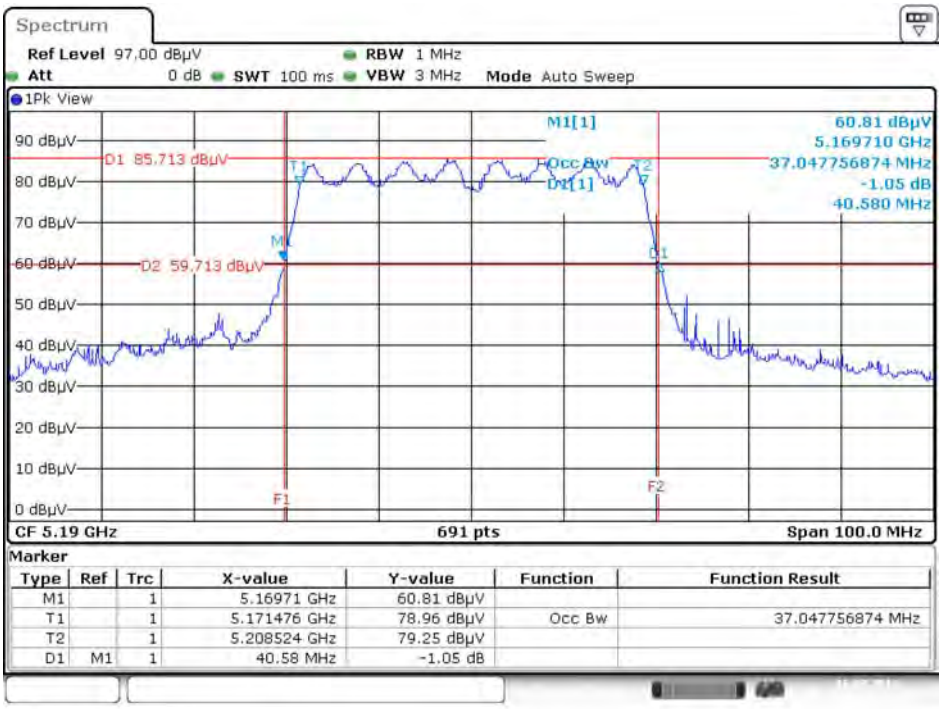
Date: 3.MAY.2016 15:35:57

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5825 MHz



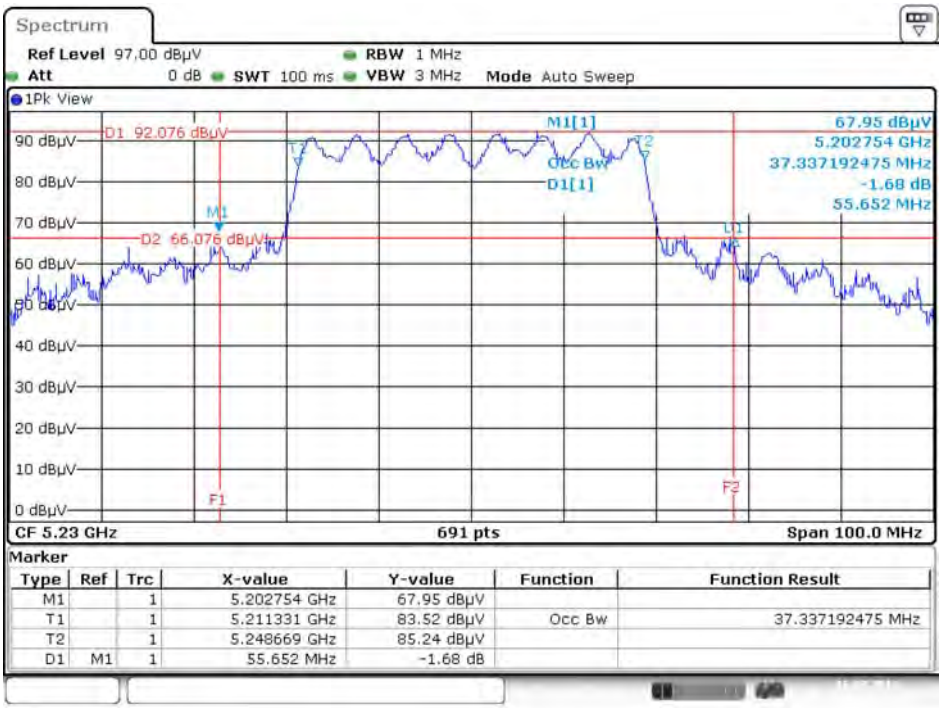
Date: 3.MAY.2016 15:36:25

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5190 MHz



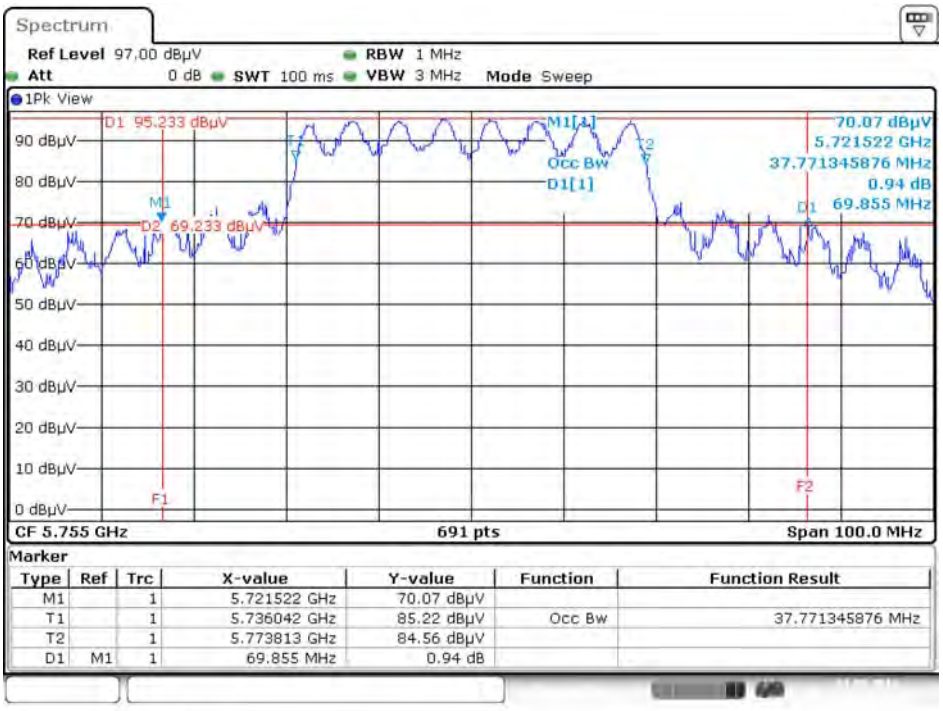
Date: 16.JUL.2016 19:53:18

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5230 MHz



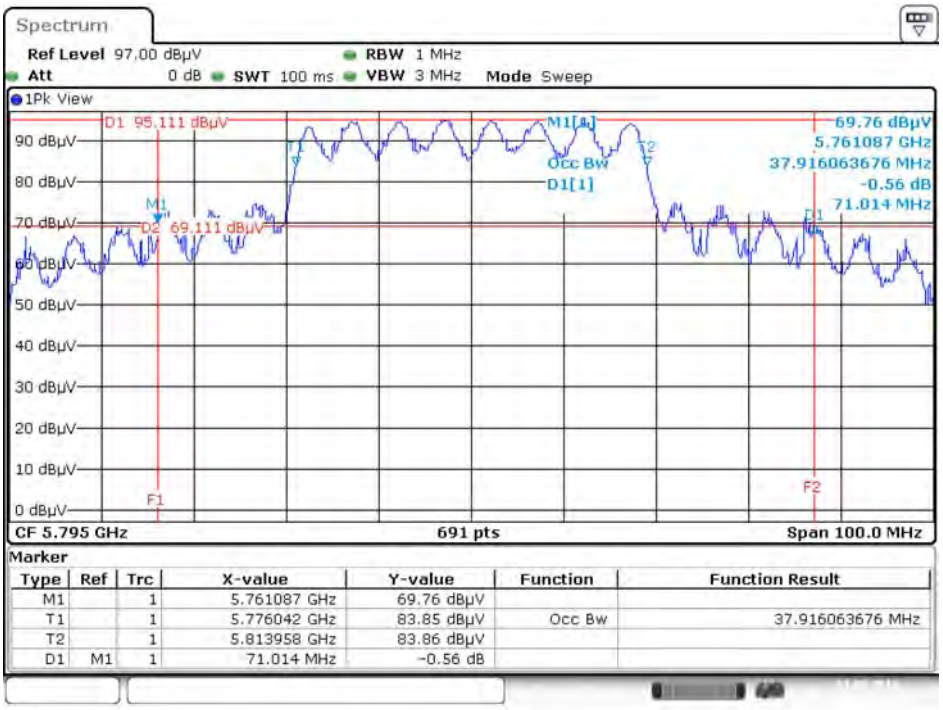
Date: 16.JUL.2016 19:52:41

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5755 MHz



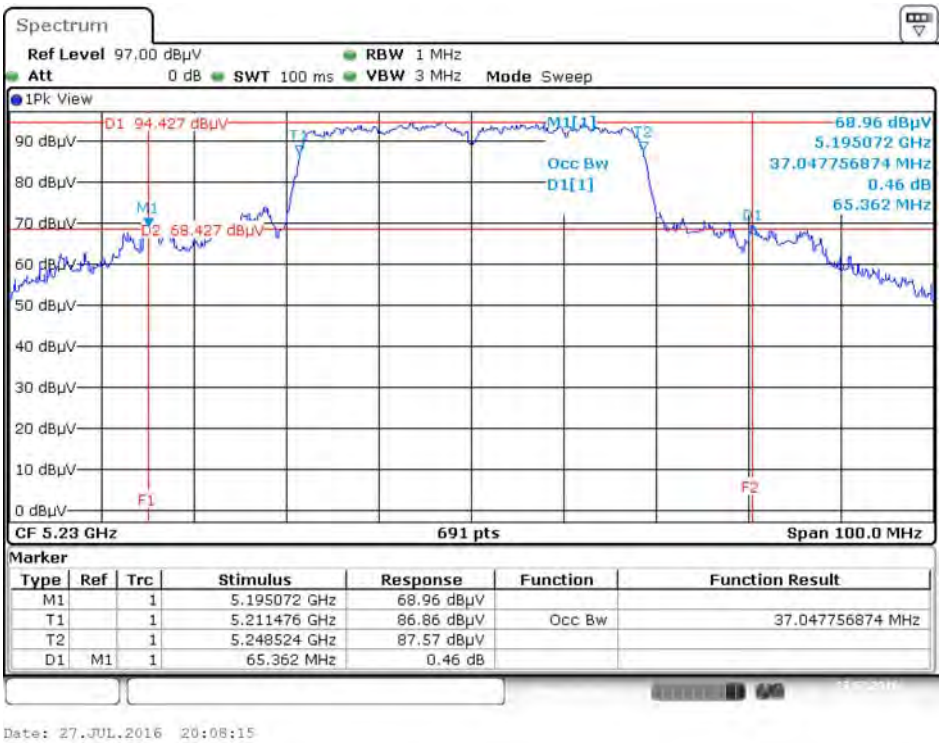
Date: 3.MAY.2016 15:38:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5795 MHz

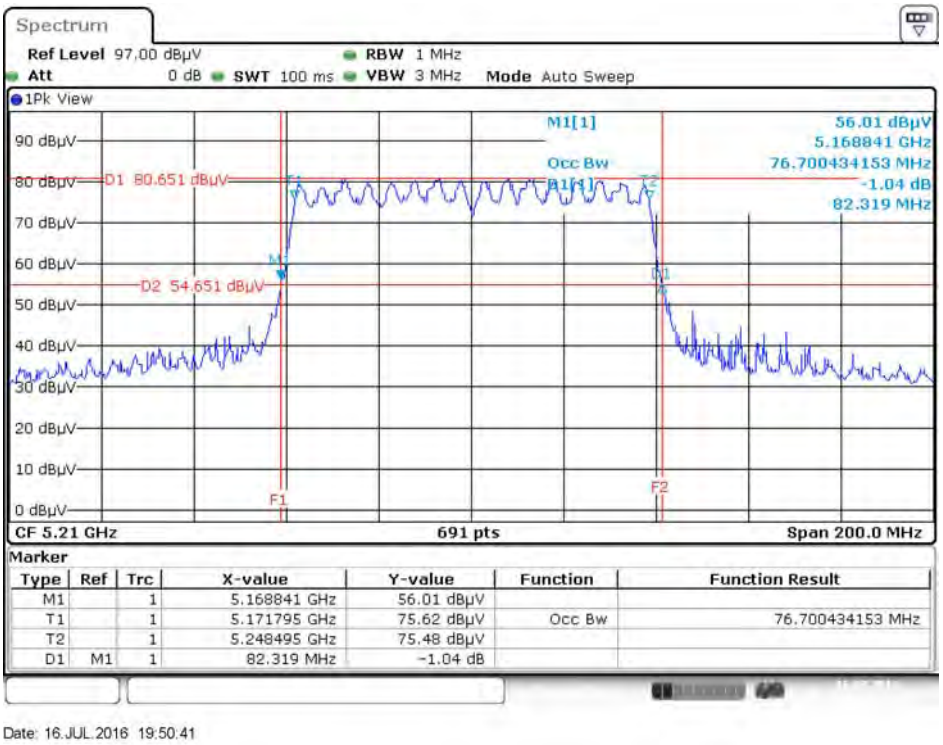


Date: 3.MAY.2016 15:39:05

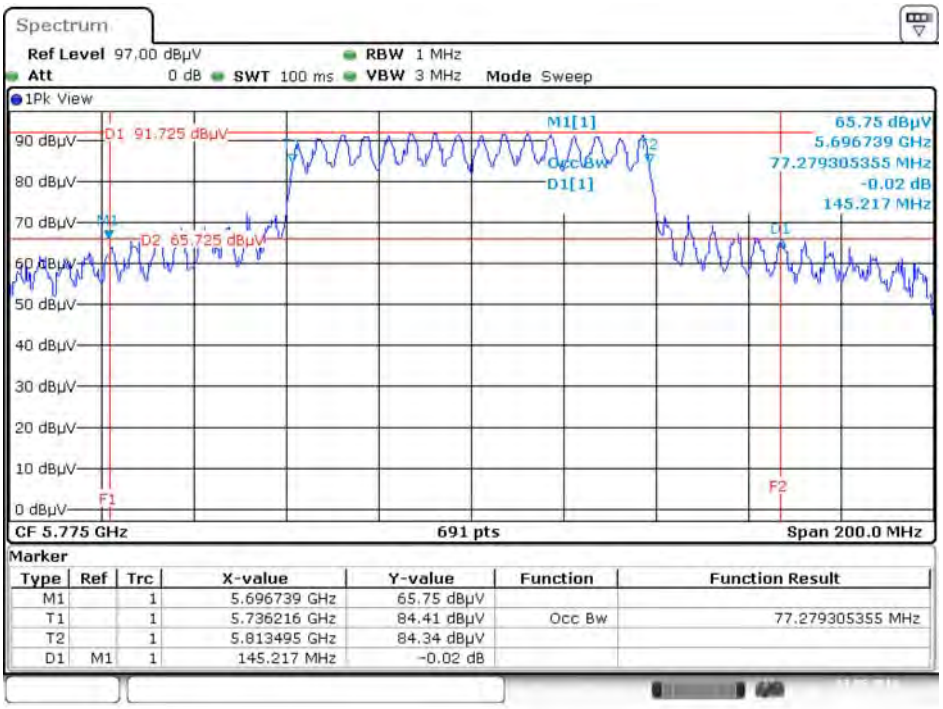
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss3 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5230 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5210 MHz

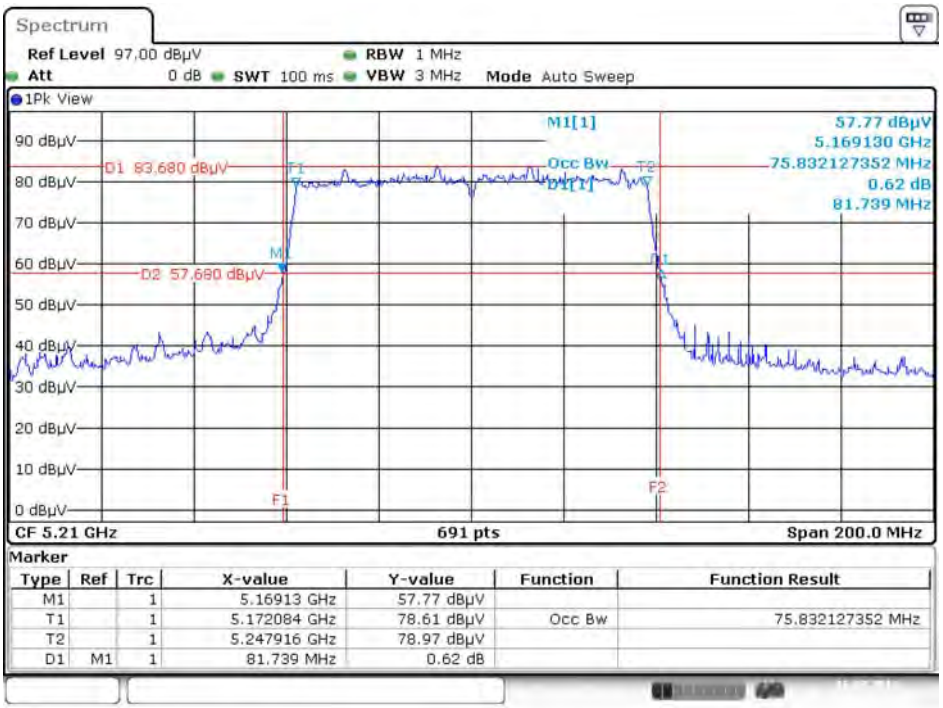


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5775 MHz



Date: 3.MAY.2016 15:43:44

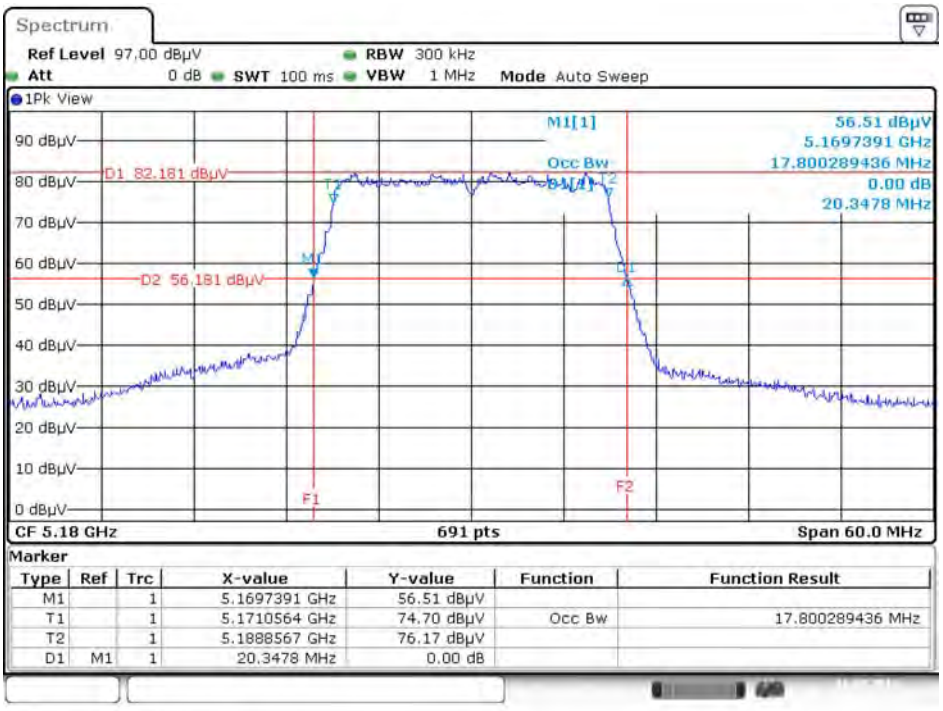
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss3 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5210 MHz



Date: 16.JUL.2016 20:02:19

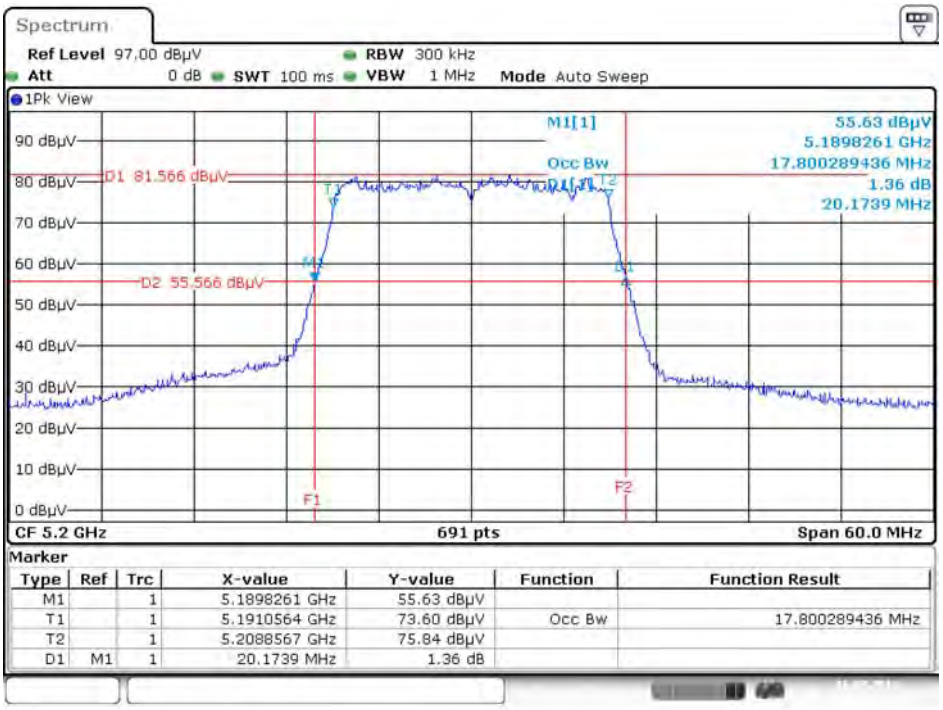
<For beamforming mode>

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5180 MHz



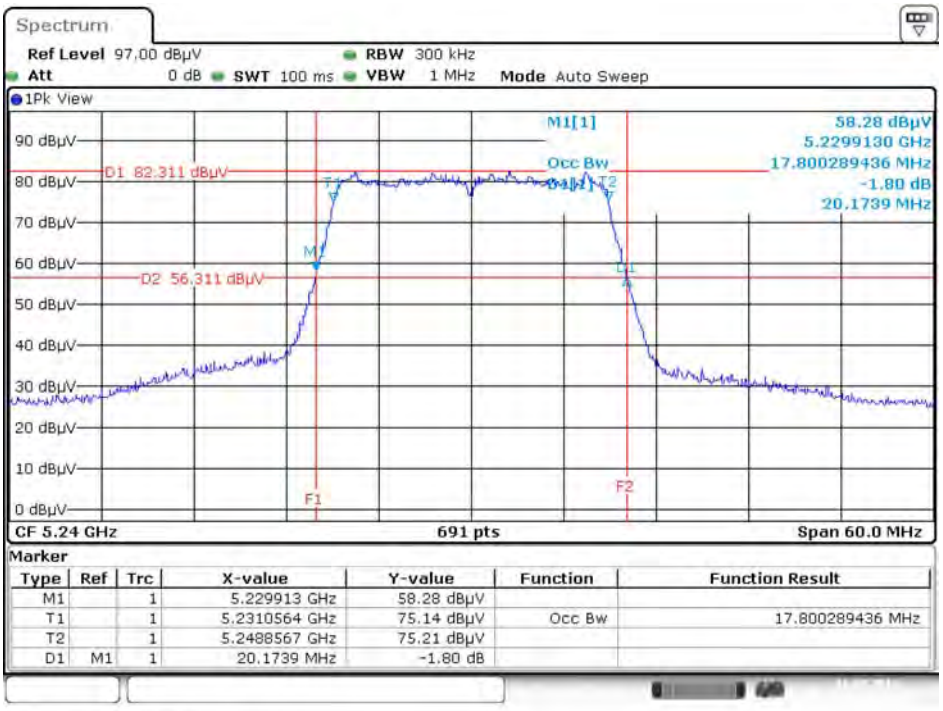
Date: 16.JUL.2016 20:18:37

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5200 MHz



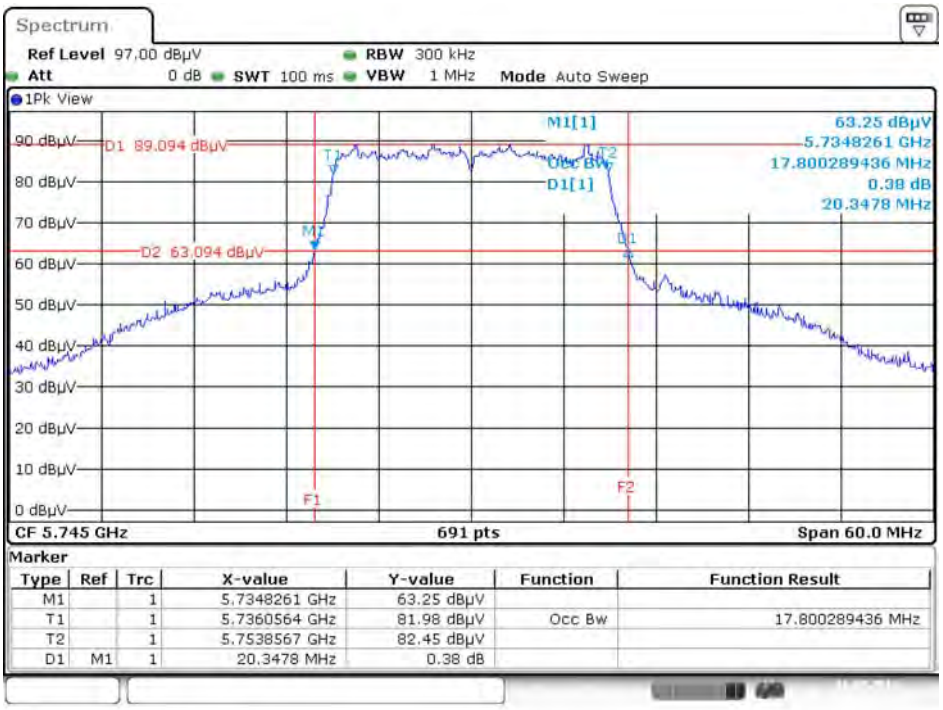
Date: 16.JUL.2016 20:21:35

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5240 MHz



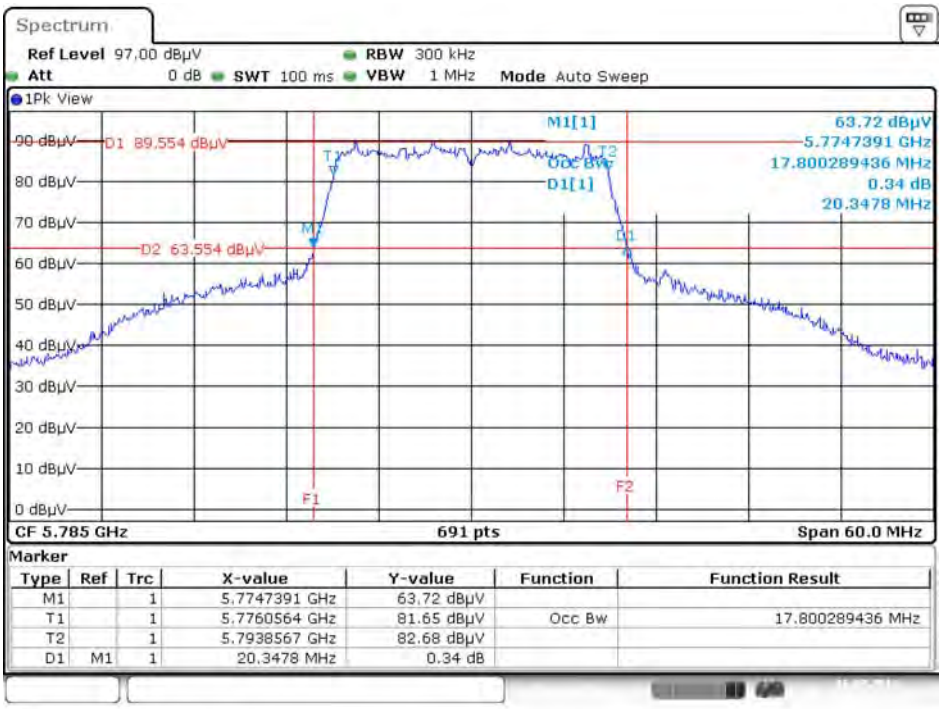
Date: 16.JUL.2016 20:22:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5745 MHz



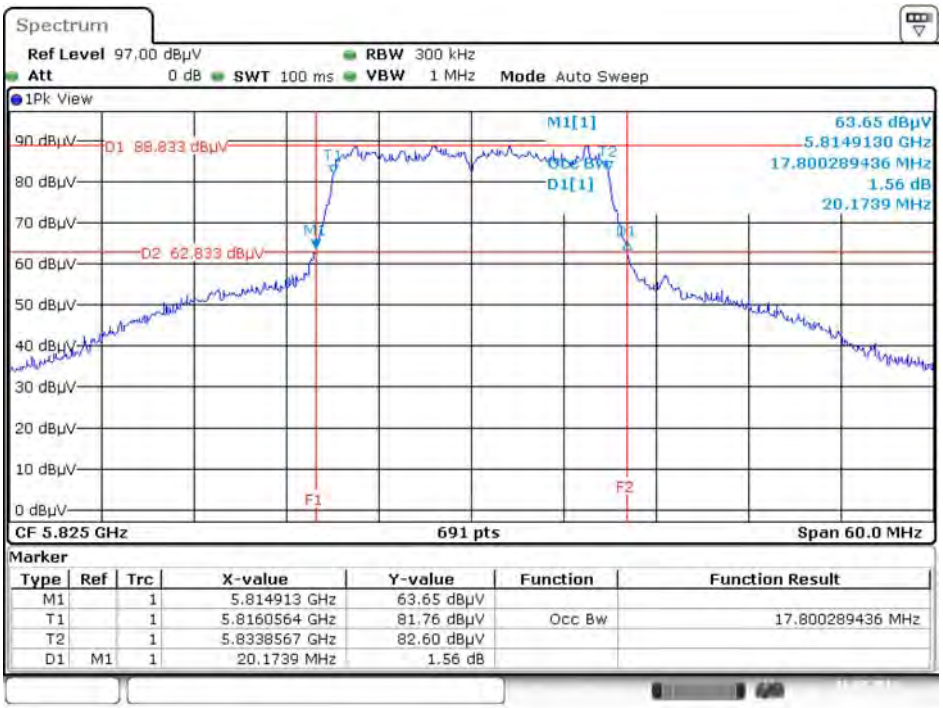
Date: 16.JUL.2016 20:23:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5785 MHz



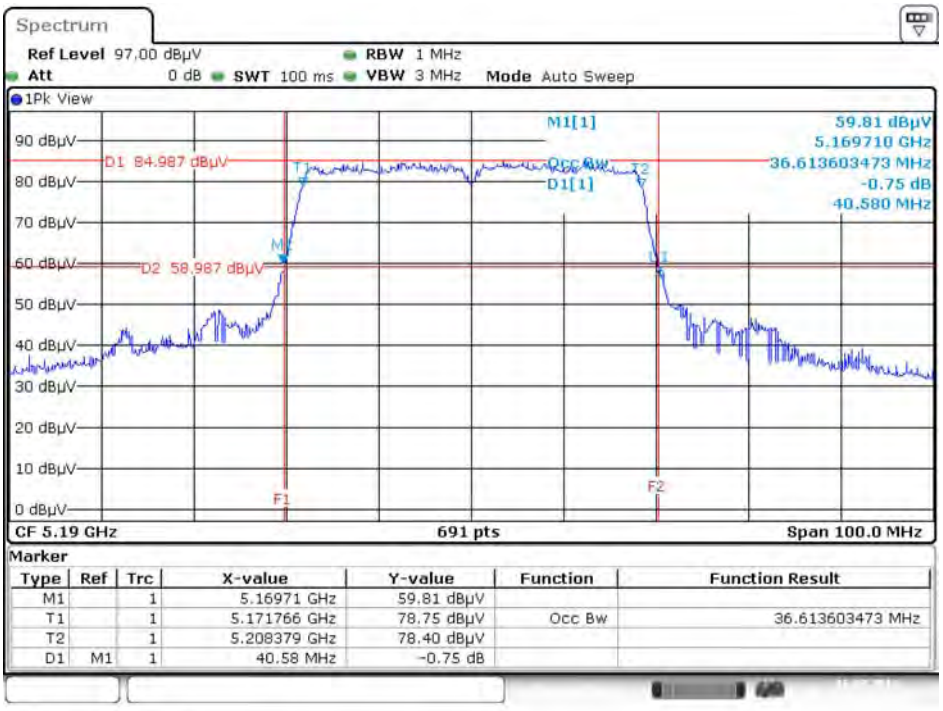
Date: 16.JUL.2016 20:24:25

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5825 MHz



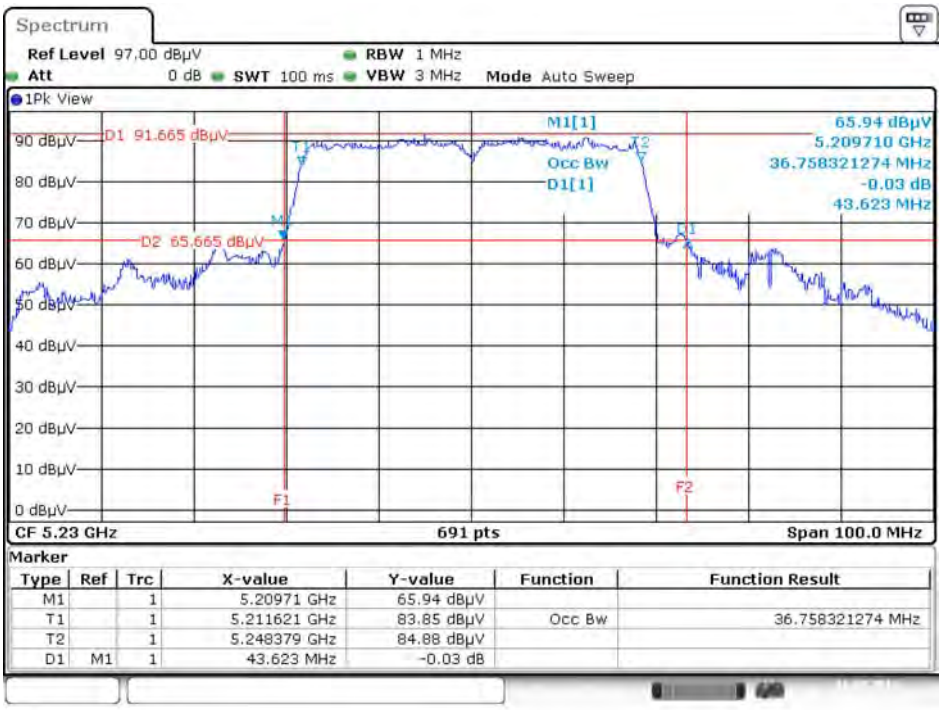
Date: 16.JUL.2016 20:25:13

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5190 MHz



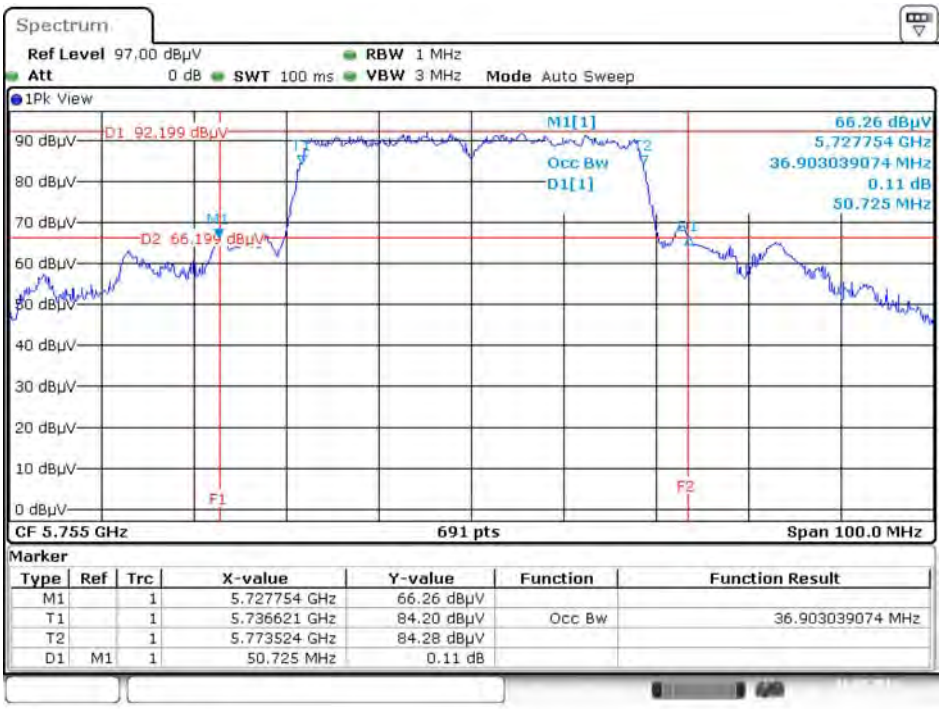
Date: 16.JUL.2016 20:14:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5230 MHz



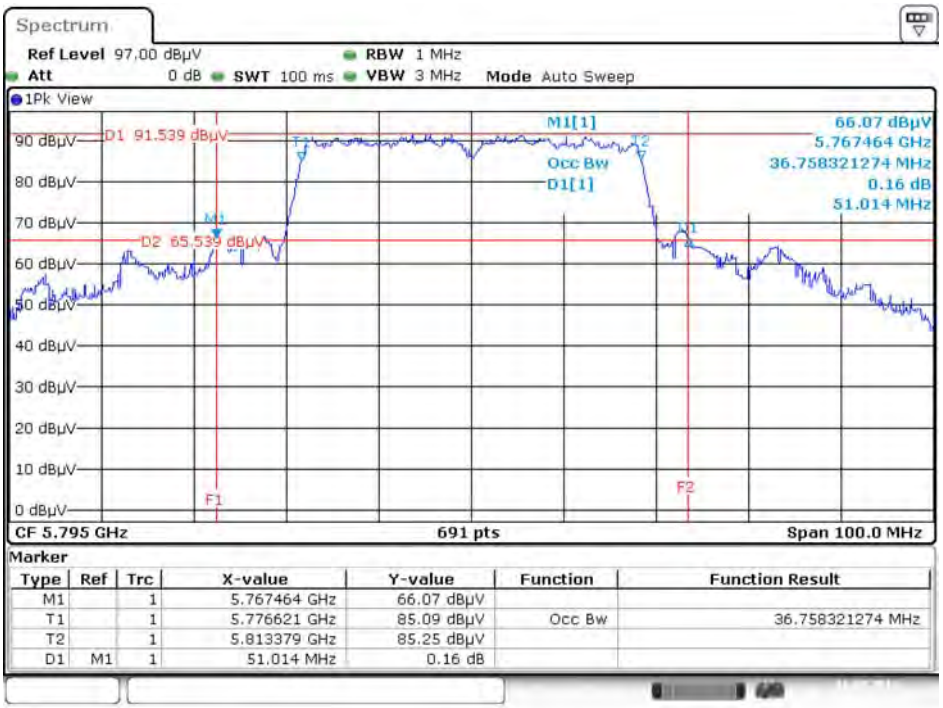
Date: 16.JUL.2016 20:15:43

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5755 MHz



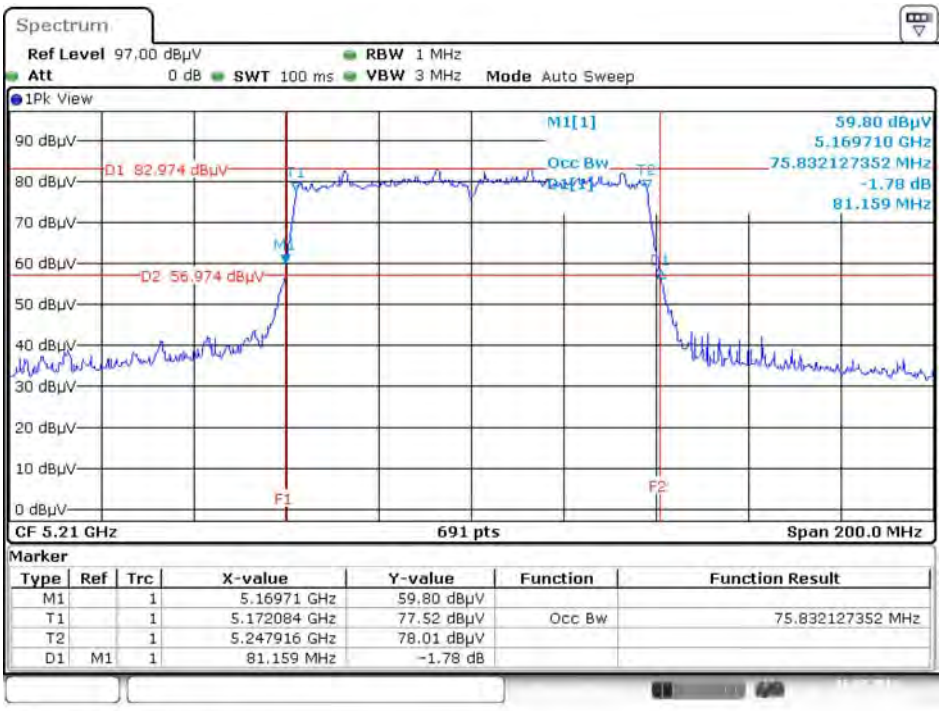
Date: 16.JUL.2016 20:16:45

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5795 MHz



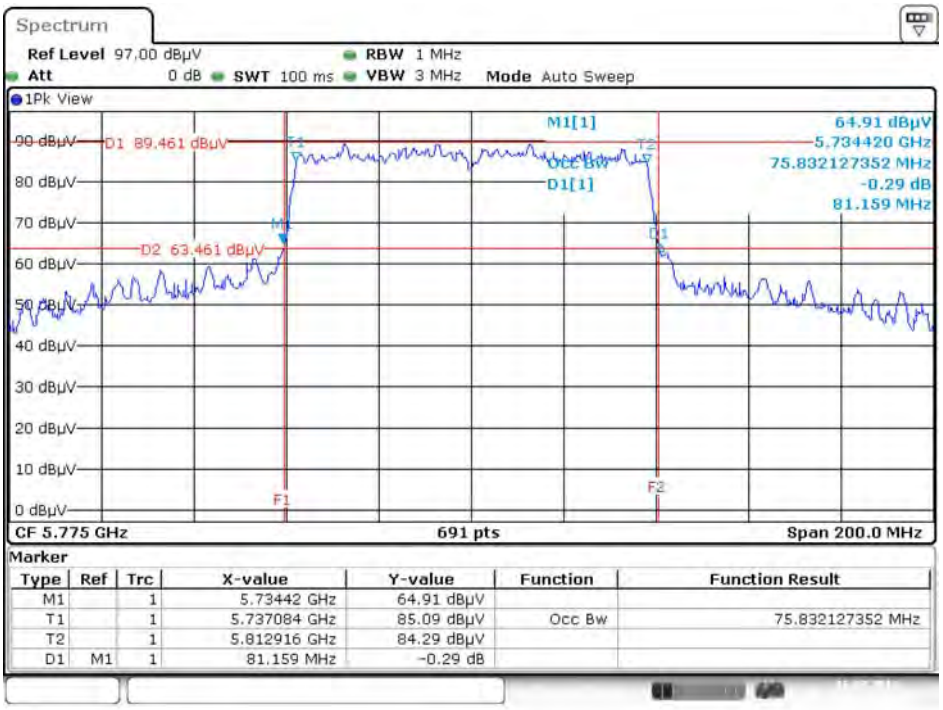
Date: 16.JUL.2016 20:17:36

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5210 MHz



Date: 16.JUL.2016 20:08:38

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5775 MHz



Date: 16.JUL.2016 20:11:58

4.3. 6dB Spectrum Bandwidth Measurement

4.3.1. Limit

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

4.3.2. Measuring Instruments and Setting

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

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

4.3.3. Test Procedures

For Radiated 6dB Bandwidth Measurement:

1. The transmitter was radiated to the spectrum analyzer in peak hold mode.
2. Test was performed in accordance with KDB789033 D02 v01r02 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (C) Emission Bandwidth.
3. Multiple antenna system was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. Measured the spectrum width with power higher than 6dB below carrier.

4.3.4. Test Setup Layout

For Radiated 6dB Bandwidth Measurement:

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

4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of 6dB Spectrum Bandwidth

Temperature	25°C	Humidity	65%
Test Engineer	Andy Tsai		
Test Function	For non-beamforming mode		

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	12.64	500	Complies
	5785 MHz	15.65	500	Complies
	5825 MHz	15.65	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	16.70	500	Complies
	5785 MHz	16.46	500	Complies
	5825 MHz	16.70	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	36.29	500	Complies
	5795 MHz	36.06	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	75.07	500	Complies

Temperature	25°C	Humidity	65%
Test Engineer	Andy Tsai		
Test Function	For beamforming mode		

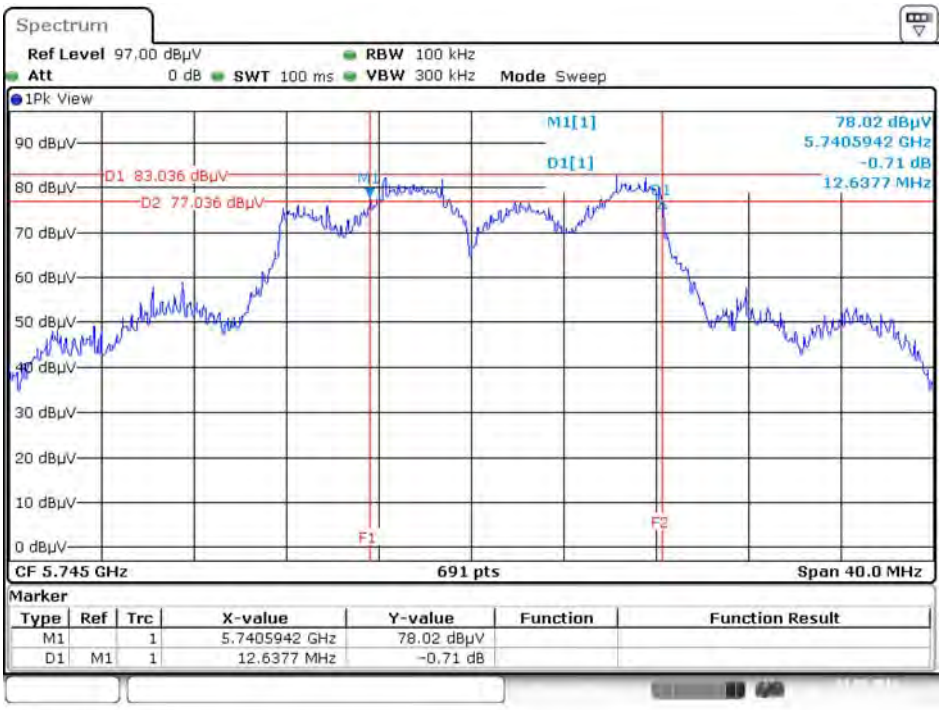
Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11ac MCS0/Nss1 VHT20	5745 MHz	16.75	500	Complies
	5785 MHz	16.75	500	Complies
	5825 MHz	16.99	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	36.41	500	Complies
	5795 MHz	36.41	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	76.52	500	Complies

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

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

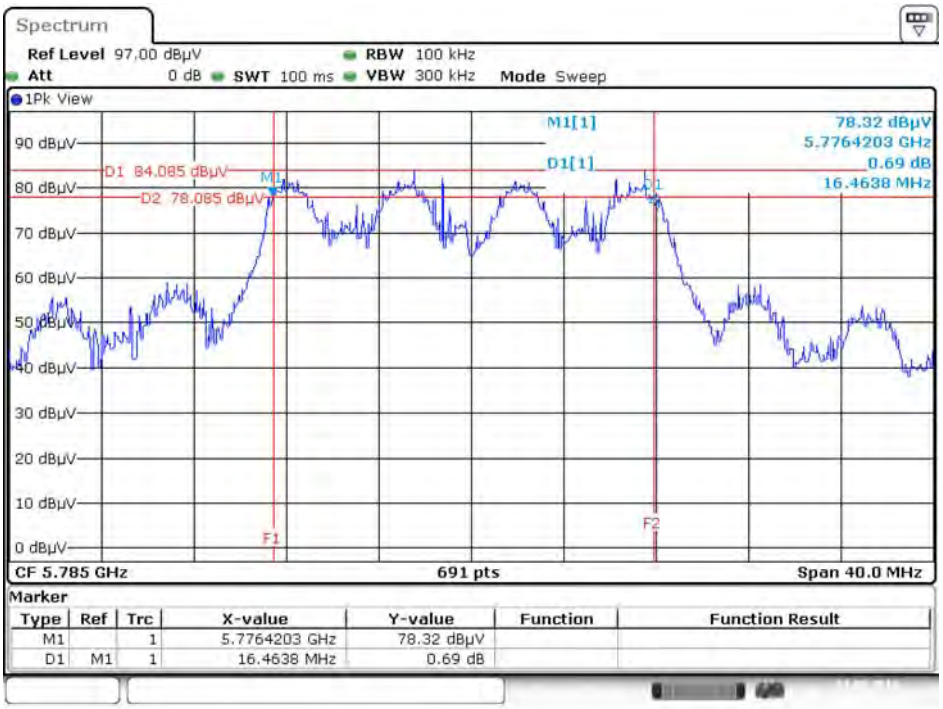
<For non-beamforming mode>

6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5745 MHz



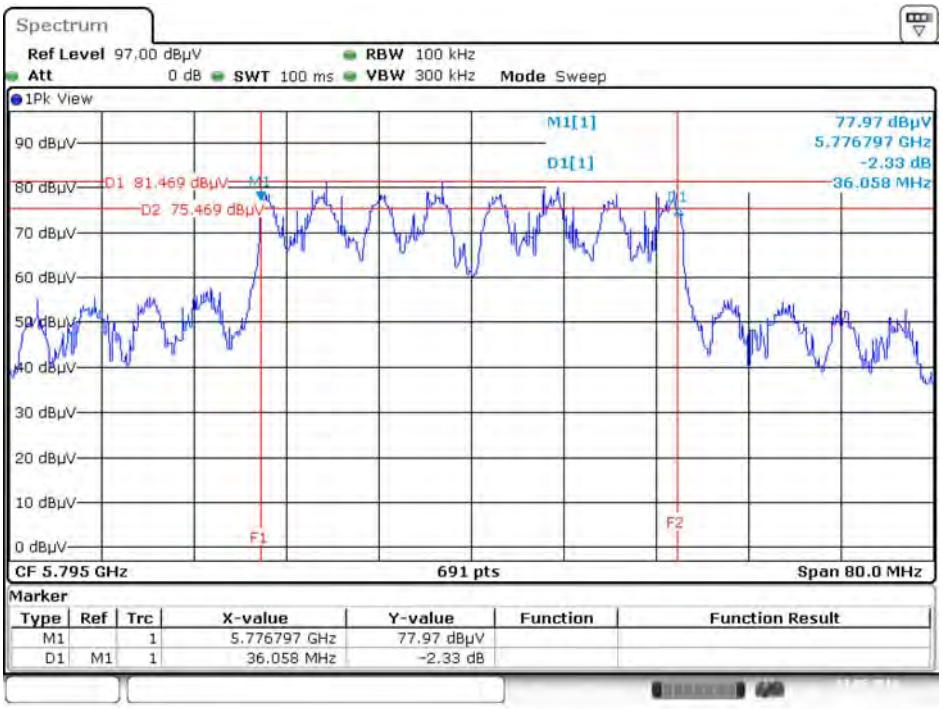
Date: 3.MAY.2016 15:46:37

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5785 MHz



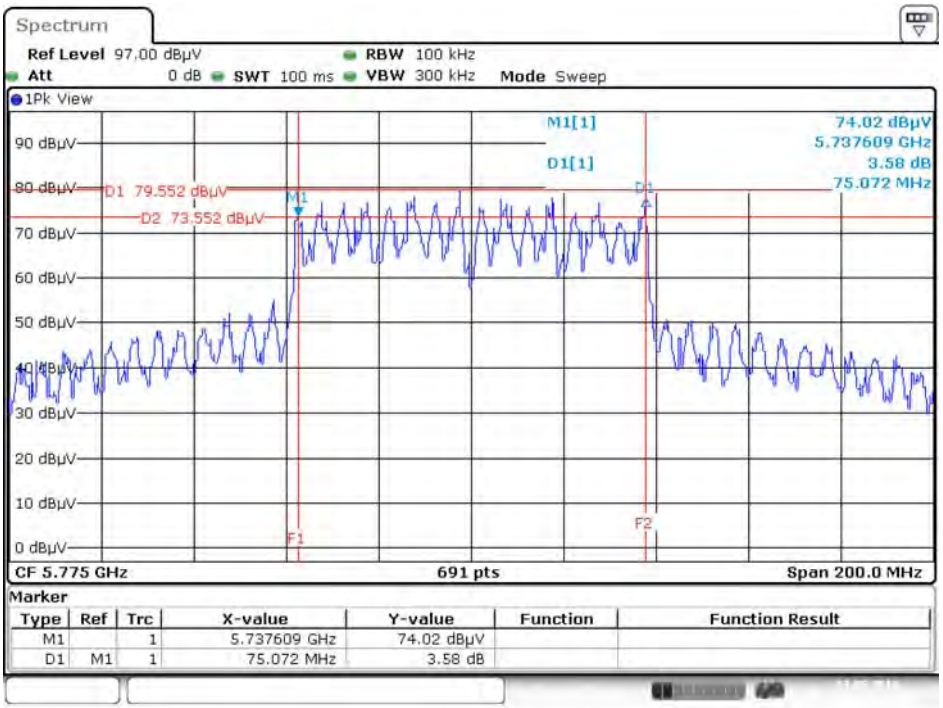
Date: 3.MAY.2016 15:51:18

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5795 MHz



Date: 3.MAY.2016 15:52:57

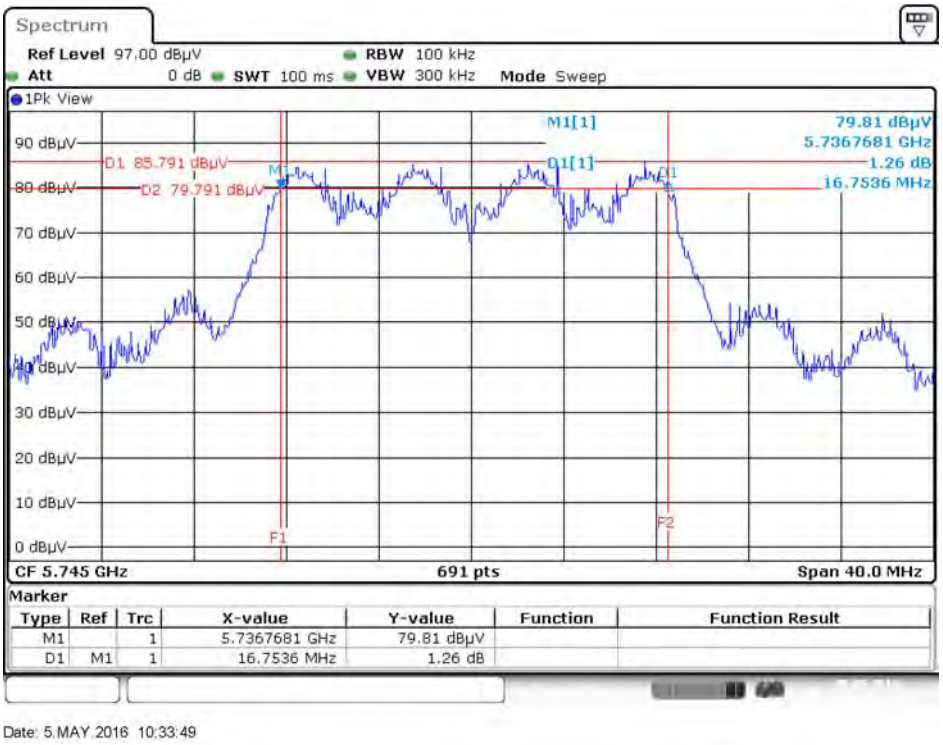
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5775 MHz



Date: 3.MAY.2016 15:53:33

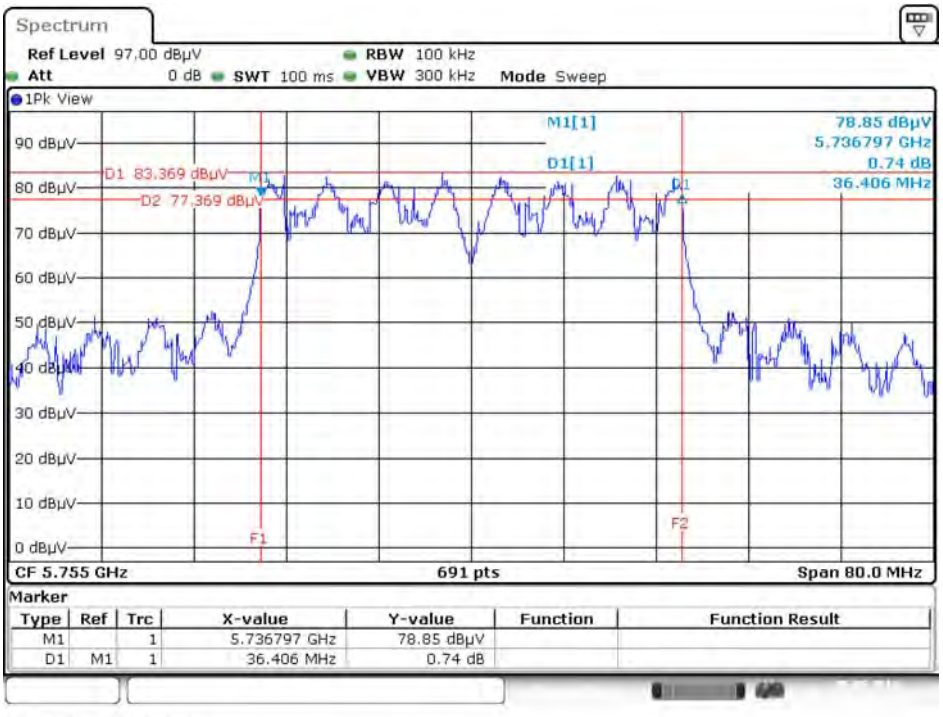
<For beamforming mode>

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5745 MHz



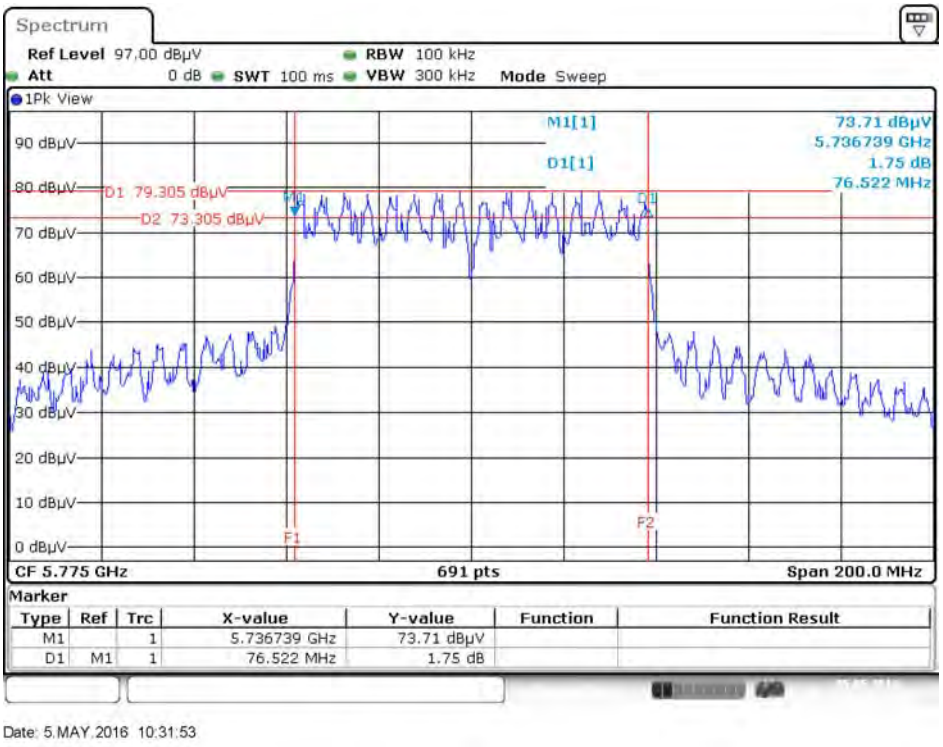
Date: 5.MAY.2016 10:33:49

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5755 MHz



Date: 5.MAY.2016 10:44:46

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5775 MHz



4.4. Maximum Conducted Output Power Measurement

4.4.1. Limit

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

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

4.4.2. Measuring Instruments and Setting

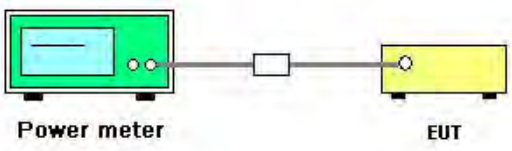
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

Power Meter Parameter	Setting
Detector	AVERAGE

4.4.3. Test Procedures

1. The transmitter output (antenna port) was connected to the power meter.
2. Test was performed in accordance with KDB789033 D02 v01r02 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (E) Maximum conducted output power =>3. Measurement using a Power Meter (PM) =>b) Method PM-G (Measurement using a gated RF average power meter).
3. Multiple antenna systems was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. When measuring maximum conducted output power with multiple antenna systems, add every result of the values by mathematic formula.

4.4.4. Test Setup Layout



4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.4.7. Test Result of Maximum Conducted Output Power

Temperature	25°C	Humidity	65%
Test Engineer	Andy Tsai	Test Date	May 03, 2016 ~ Jul. 16, 2016
Test Function	For non-beamforming mode		

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11a	5180 MHz	14.54	14.01	13.98	18.96	30.00	Complies
	5200 MHz	15.01	14.42	14.29	19.36	30.00	Complies
	5240 MHz	14.98	14.49	14.35	19.39	30.00	Complies
	5745 MHz	25.18	25.37	24.37	29.77	30.00	Complies
	5785 MHz	25.25	25.09	24.34	29.68	30.00	Complies
	5825 MHz	25.46	25.56	24.16	29.88	30.00	Complies
802.11ac MCS0/Nss1 VHT20	5180 MHz	15.16	14.39	14.39	19.43	30.00	Complies
	5200 MHz	14.81	14.19	13.96	19.11	30.00	Complies
	5240 MHz	15.37	14.65	14.58	19.65	30.00	Complies
	5745 MHz	25.29	25.41	24.52	29.86	30.00	Complies
	5785 MHz	25.35	25.17	24.42	29.77	30.00	Complies
	5825 MHz	25.58	25.46	23.91	29.82	30.00	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	16.27	16.04	15.70	20.78	30.00	Complies
	5230 MHz	22.78	22.36	22.16	27.21	30.00	Complies
	5755 MHz	25.37	25.47	24.71	29.97	30.00	Complies
	5795 MHz	25.43	25.38	24.59	29.92	30.00	Complies
802.11ac MCS0/Nss3 VHT40	5230 MHz	24.33	24.05	23.80	28.84	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	14.76	14.57	14.73	19.46	30.00	Complies
	5775 MHz	25.11	25.19	24.43	29.69	30.00	Complies
802.11ac MCS0/Nss3 VHT80	5210 MHz	16.43	16.37	16.42	21.18	30.00	Complies

Temperature	25°C	Humidity	65%
Test Engineer	Andy Tsai	Test Date	Apr. 19, 2016 ~ Jul. 16, 2016
Test Function	For beamforming mode		

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11ac MCS0/Nss1 VHT20	5180 MHz	16.16	16.05	15.87	20.80	28.19	Complies
	5200 MHz	15.34	14.87	15.01	19.85	28.19	Complies
	5240 MHz	16.09	16.13	15.89	20.81	28.19	Complies
	5745 MHz	23.18	23.49	23.23	28.07	28.19	Complies
	5785 MHz	23.34	23.12	23.22	28.00	28.19	Complies
	5825 MHz	23.23	23.29	23.31	28.05	28.19	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	16.47	16.41	16.36	21.18	28.19	Complies
	5230 MHz	22.31	22.11	21.97	26.90	28.19	Complies
	5755 MHz	23.37	23.39	23.23	28.10	28.19	Complies
	5795 MHz	23.29	23.26	23.45	28.11	28.19	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	16.11	16.22	16.33	20.99	28.19	Complies
	5775 MHz	23.12	23.36	23.31	28.04	28.19	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.81dBi, so limit=30-(7.81-6)=28.19dBm.

4.5. Power Spectral Density Measurement

4.5.1. Limit

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

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

4.5.2. Measuring Instruments and Setting

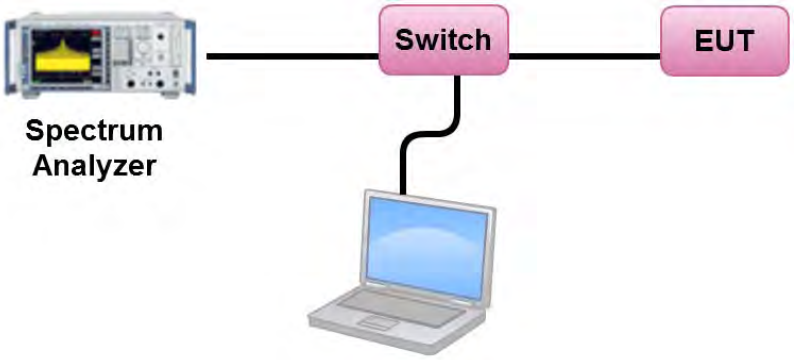
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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

4.5.3. Test Procedures

1. The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.
2. Test was performed in accordance with KDB789033 D02 v01r02 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (F) Maximum Power Spectral Density (PSD).
3. Multiple antenna systems was performed in accordance KDB662911 D01 v02r01 in-Band Power Spectral Density (PSD) Measurements 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.

4.5.4. Test Setup Layout



4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.5.7. Test Result of Power Spectral Density

Temperature	25°C	Humidity	65%
Test Engineer	Andy Tsai		
Test Function	For non-beamforming mode		

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	5.79	15.19	Complies
40	5200 MHz	6.25	15.19	Complies
48	5240 MHz	6.19	15.19	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.81dBi, so limit=17-(7.81-6)=15.19dBm.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	16.36	-3.01	13.35	28.19	Complies
157	5785 MHz	16.53	-3.01	13.52	28.19	Complies
165	5825 MHz	16.57	-3.01	13.56	28.19	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.81dBi, so limit=30-(7.81-6)=28.19dBm/500kHz.

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	6.02	15.19	Complies
40	5200 MHz	5.75	15.19	Complies
48	5240 MHz	6.24	15.19	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.81dBi, so limit=17-(7.81-6)=15.19dBm.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	16.45	-3.01	13.44	28.19	Complies
157	5785 MHz	16.35	-3.01	13.34	28.19	Complies
165	5825 MHz	16.35	-3.01	13.34	28.19	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.81dBi, so limit=30-(7.81-6)=28.19dBm/500kHz.

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190 MHz	4.88	15.19	Complies
46	5230 MHz	11.19	15.19	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.81dBi, so limit=17-(7.81-6)=15.19dBm.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
151	5755 MHz	13.79	-3.01	10.78	28.19	Complies
159	5795 MHz	13.87	-3.01	10.86	28.19	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.81dBi, so limit=30-(7.81-6)=28.19dBm/500kHz.

Configuration IEEE 802.11ac MCS0/Nss3 VHT40 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
46	5230 MHz	13.20	17.00	Complies

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
42	5210 MHz	0.37	15.19	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.81dBi, so limit=17-(7.81-6)=15.19dBm.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
155	5775 MHz	10.66	-3.01	7.65	28.19	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.81dBi, so limit=30-(7.81-6)=28.19dBm/500kHz.

Configuration IEEE 802.11ac MCS0/Nss3 VHT80 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
42	5210 MHz	2.10	17.00	Complies

Temperature	25°C	Humidity	65%
Test Engineer	Andy Tsai		
Test Function	For beamforming mode		

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	7.48	15.19	Complies
40	5200 MHz	6.64	15.19	Complies
48	5240 MHz	7.67	15.19	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.81dBi, so limit=17-(7.81-6)=15.19dBm.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	14.73	-3.01	11.72	28.19	Complies
157	5785 MHz	14.47	-3.01	11.46	28.19	Complies
165	5825 MHz	14.78	-3.01	11.77	28.19	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.81dBi, so limit=30-(7.81-6)=28.19dBm/500kHz.

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190 MHz	5.00	15.19	Complies
46	5230 MHz	10.63	15.19	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.81dBi, so limit=17-(7.81-6)=15.19dBm.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
151	5755 MHz	11.84	-3.01	8.83	28.19	Complies
159	5795 MHz	11.74	-3.01	8.73	28.19	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.81dBi, so limit=30-(7.81-6)=28.19dBm/500kHz.

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
42	5210 MHz	1.73	15.19	Complies

Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.81dBi, so limit=17-(7.81-6)=15.19dBm.

Channel	Frequency	Power Density (dBm/MHz)	10log(500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
155	5775 MHz	8.63	-3.01	5.62	28.19	Complies

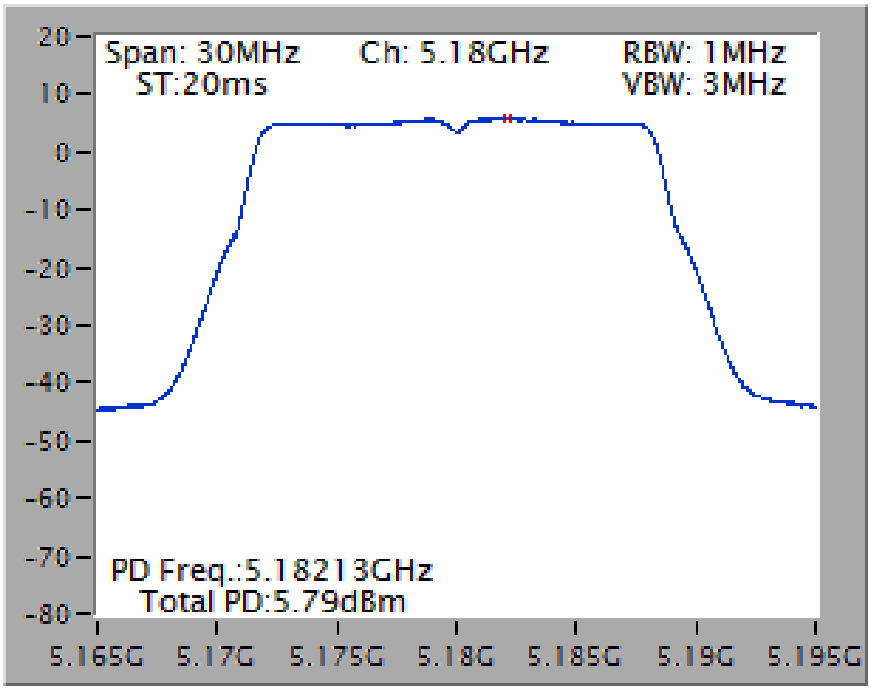
Note: $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =7.81dBi, so limit=30-(7.81-6)=28.19dBm/500kHz.

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

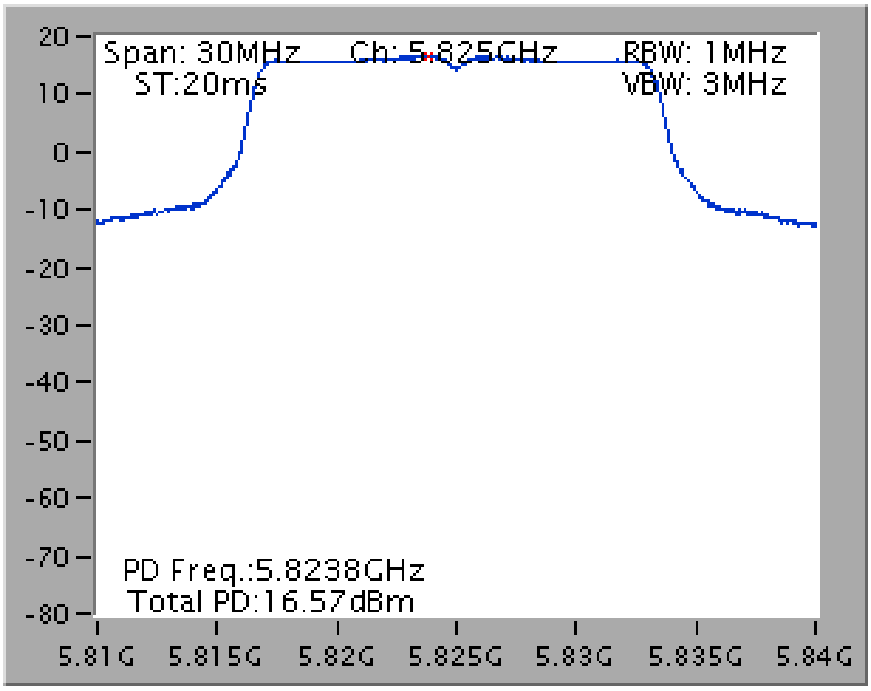
For plots, only the channel with worse result was shown.

<For non-beamforming mode>

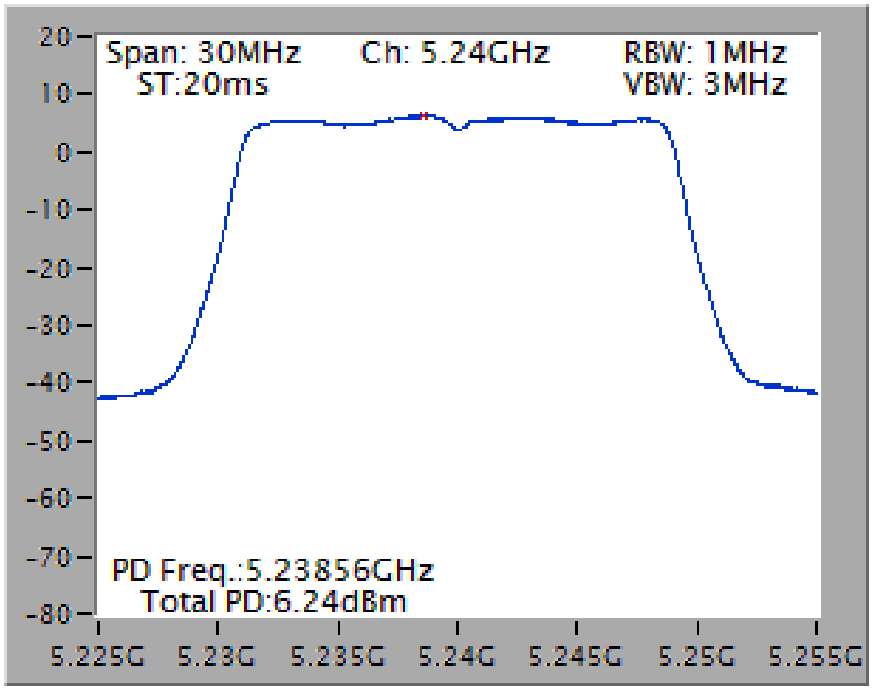
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5180 MHz



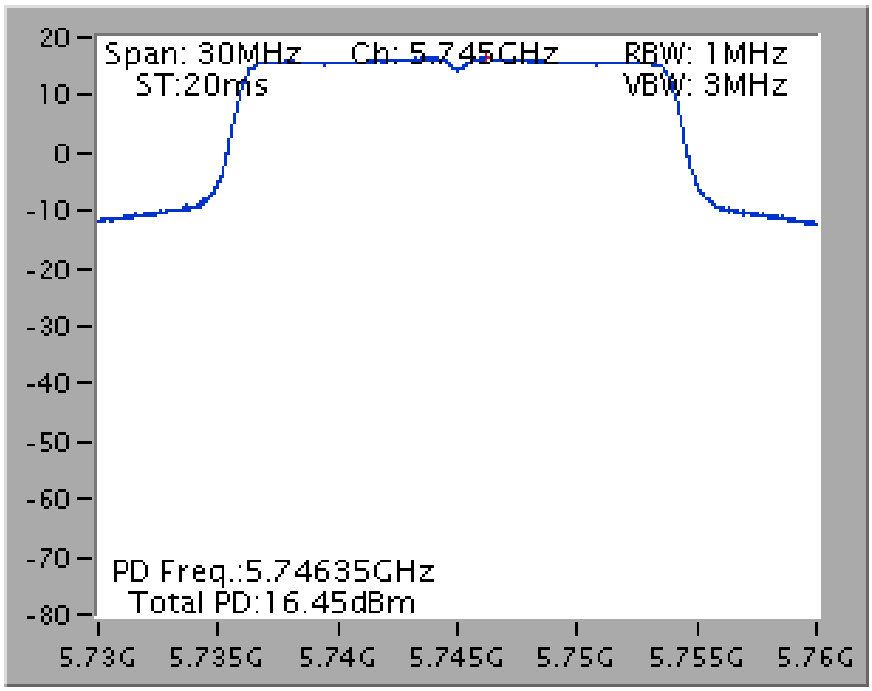
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5825 MHz



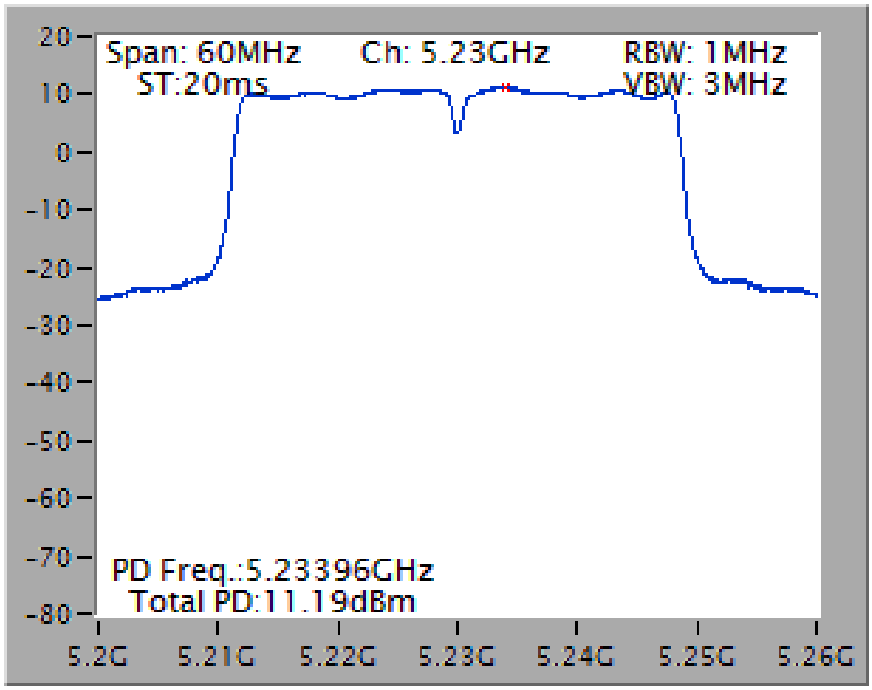
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5240 MHz



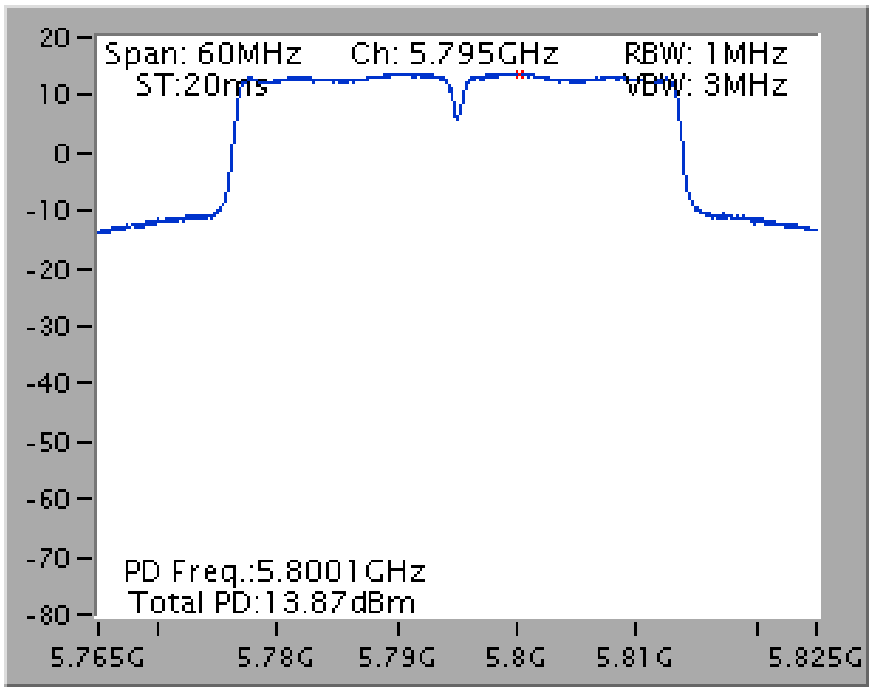
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5745 MHz



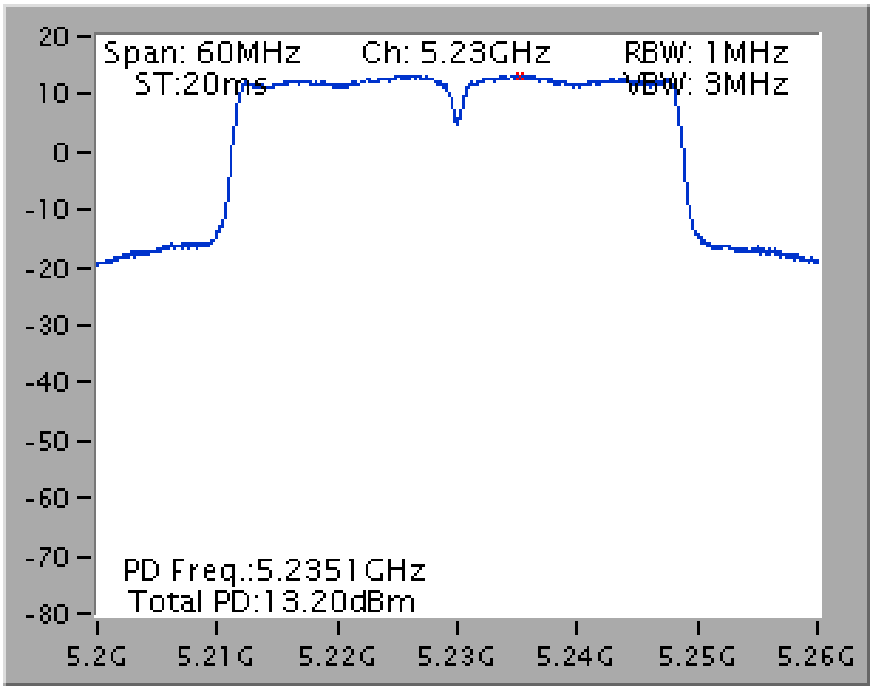
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5230 MHz



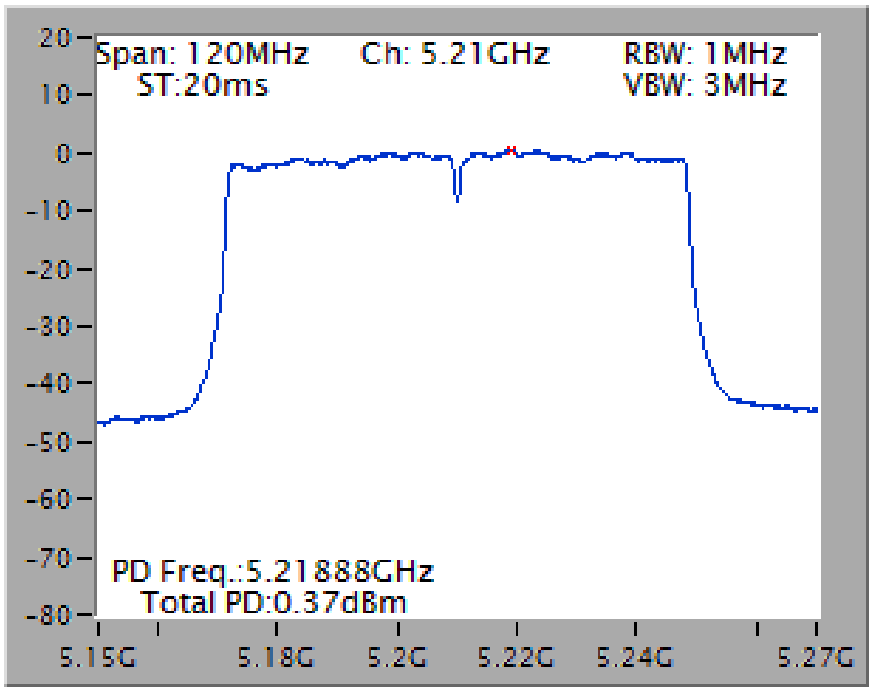
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5795 MHz



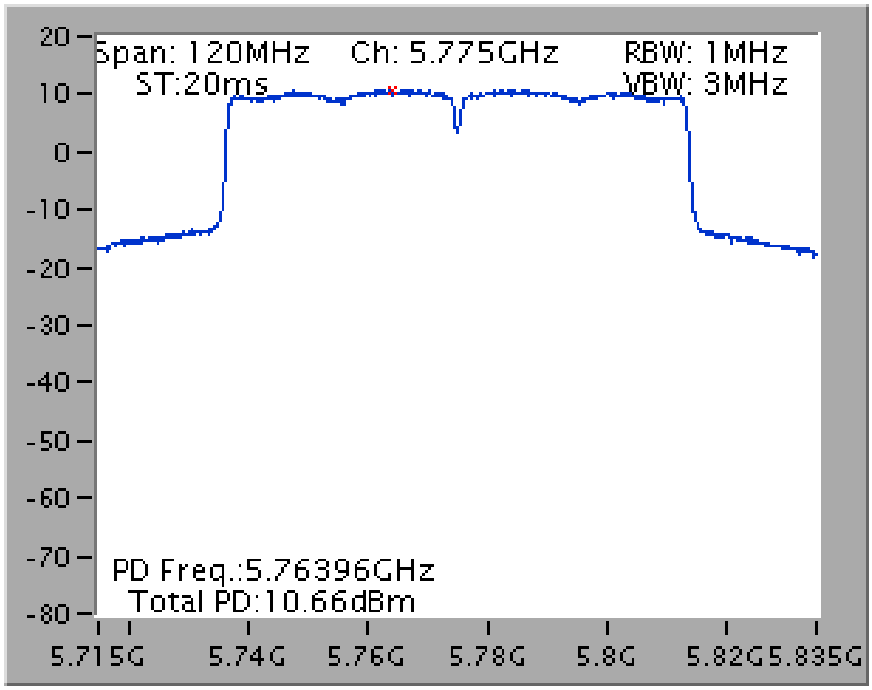
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss3 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5230 MHz



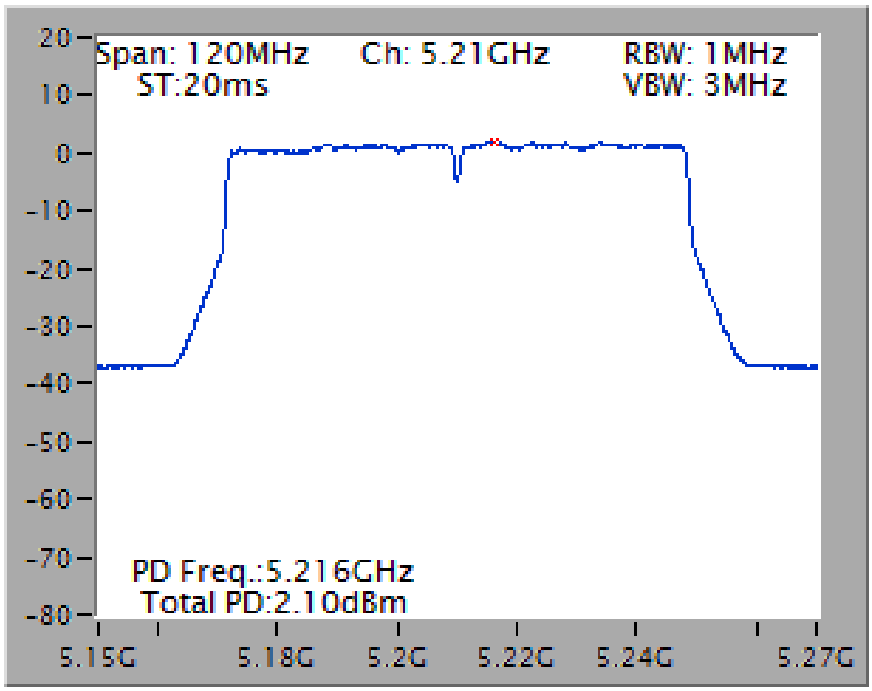
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5210 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5775 MHz

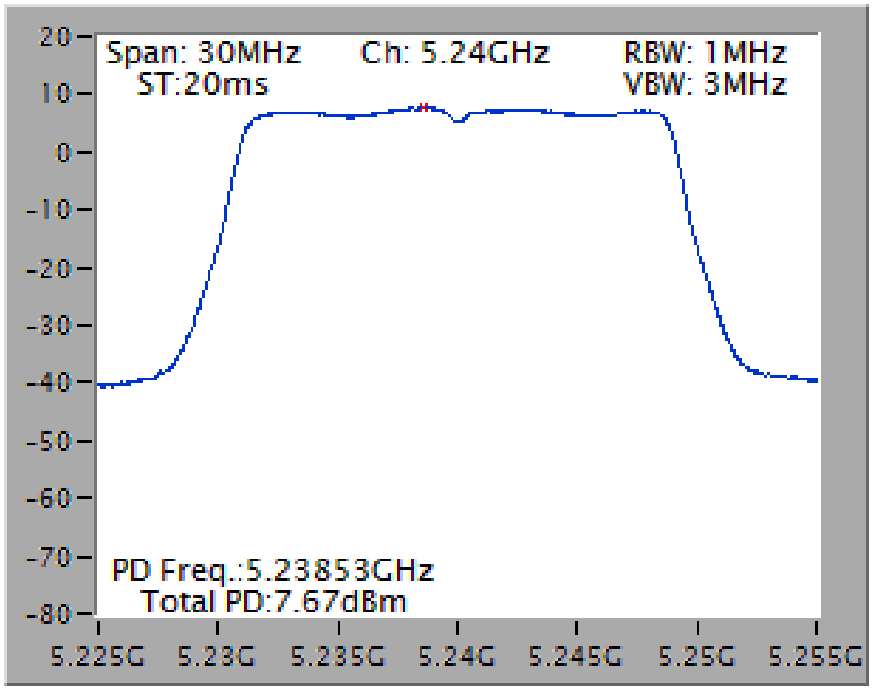


Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss3 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5210 MHz

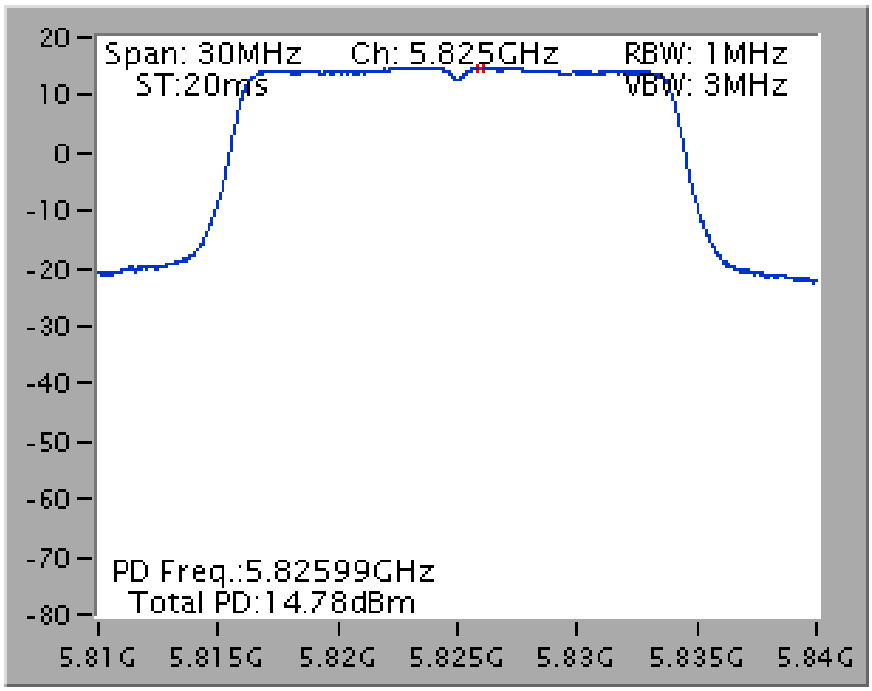


<For beamforming mode>

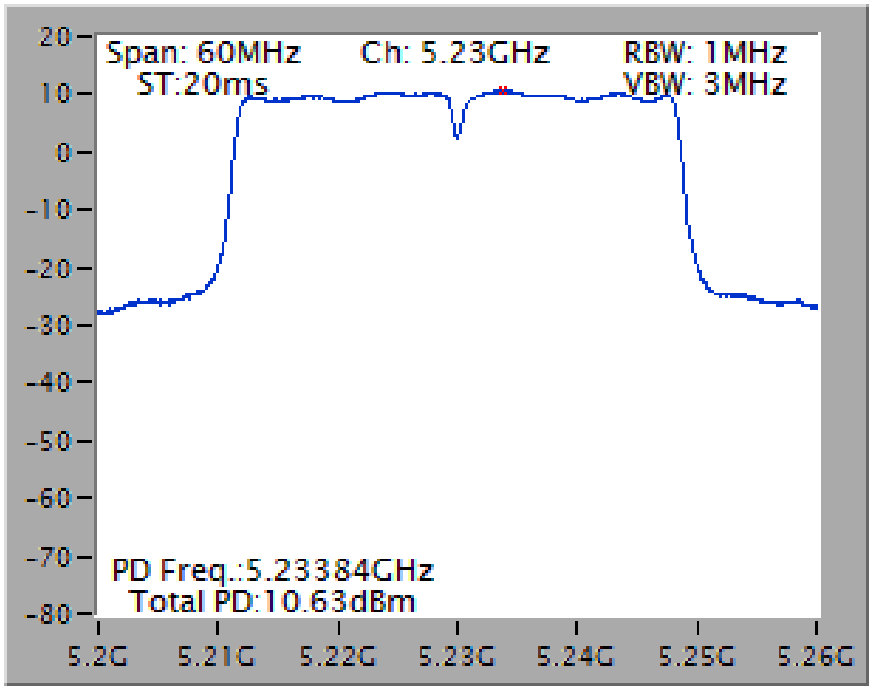
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5240 MHz



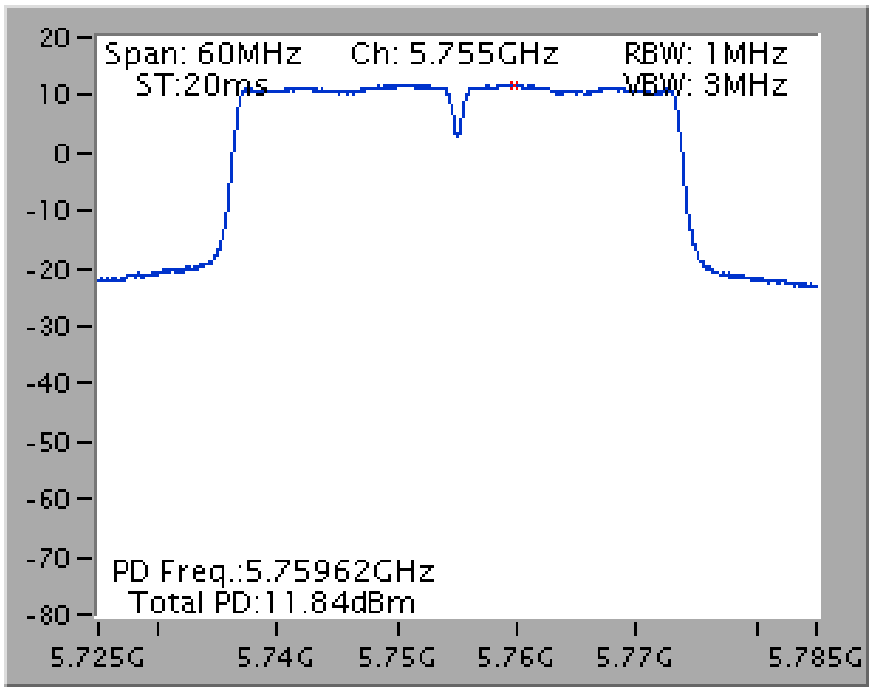
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5825 MHz



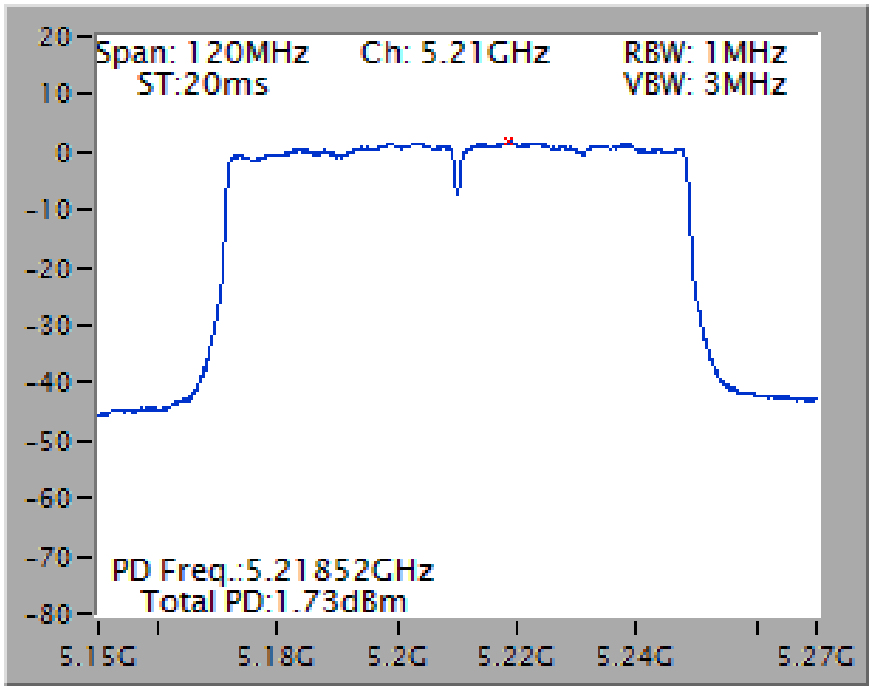
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5230 MHz



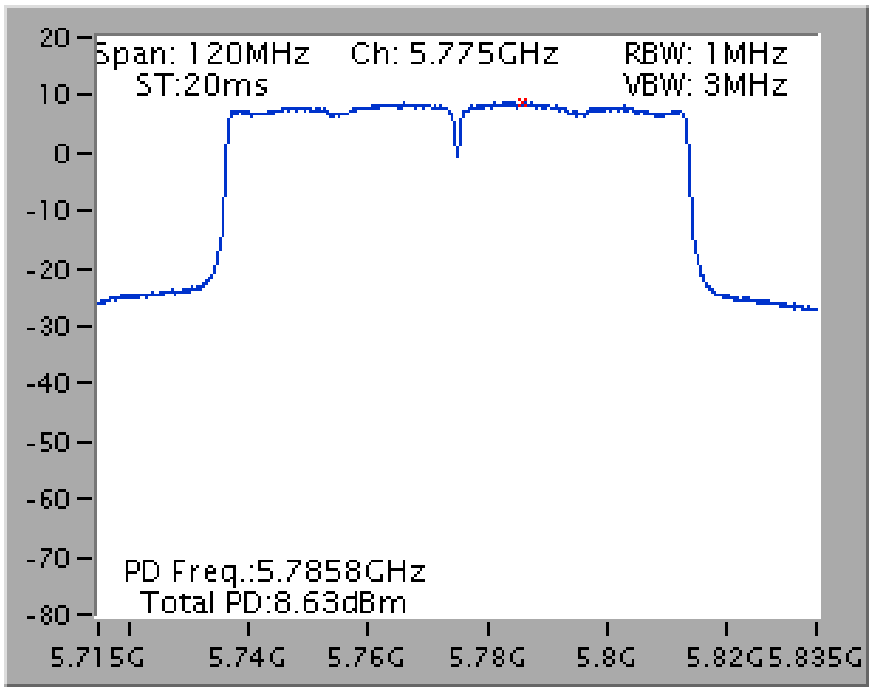
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5755 MHz



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



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5775 MHz



4.6. Radiated Emissions Measurement

4.6.1. Limit

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

For transmitters operating in the 5.725-5.85 GHz band: all emissions 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 spectrum analyzer and receiver.

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

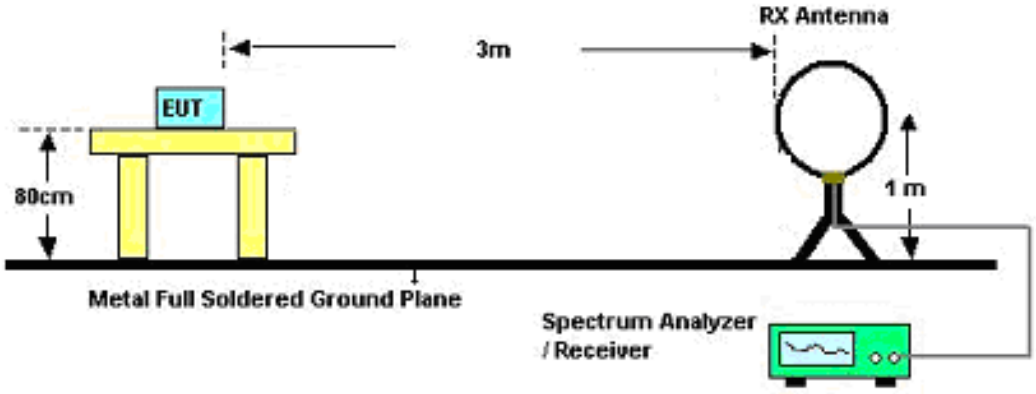
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RBW 120kHz for QP

4.6.3. Test Procedures

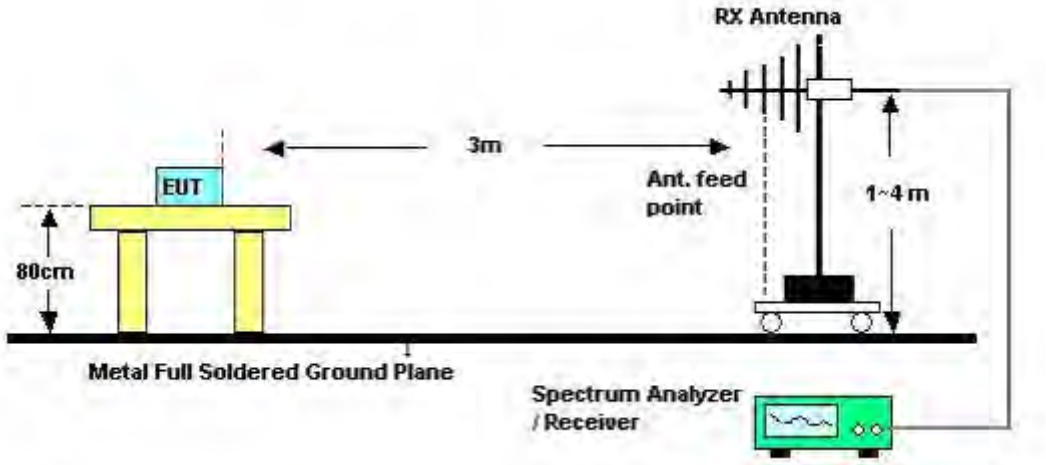
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 1m & 3m far away from the turntable.
2. Power on the EUT and all the supporting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

4.6.4. Test Setup Layout

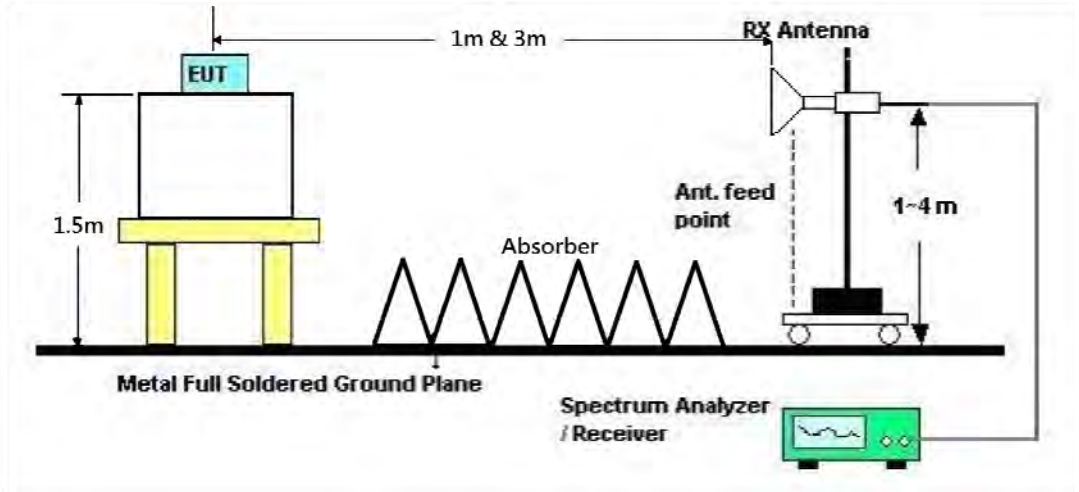
For Radiated Emissions: 9kHz ~30MHz



For Radiated Emissions: 30MHz~1GHz



For Radiated Emissions: Above 1GHz



4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

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

Temperature	26°C	Humidity	64%
Test Engineer	Gino Huang	Configurations	CTX
Test Date	Jul. 20, 2016	Test Mode	Mode 2

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

Note:

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

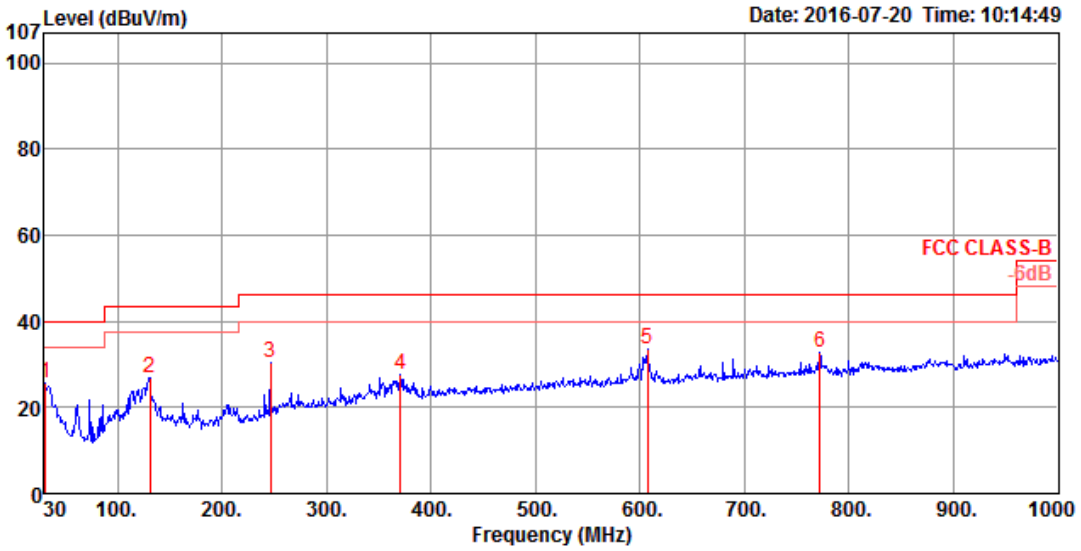
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

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

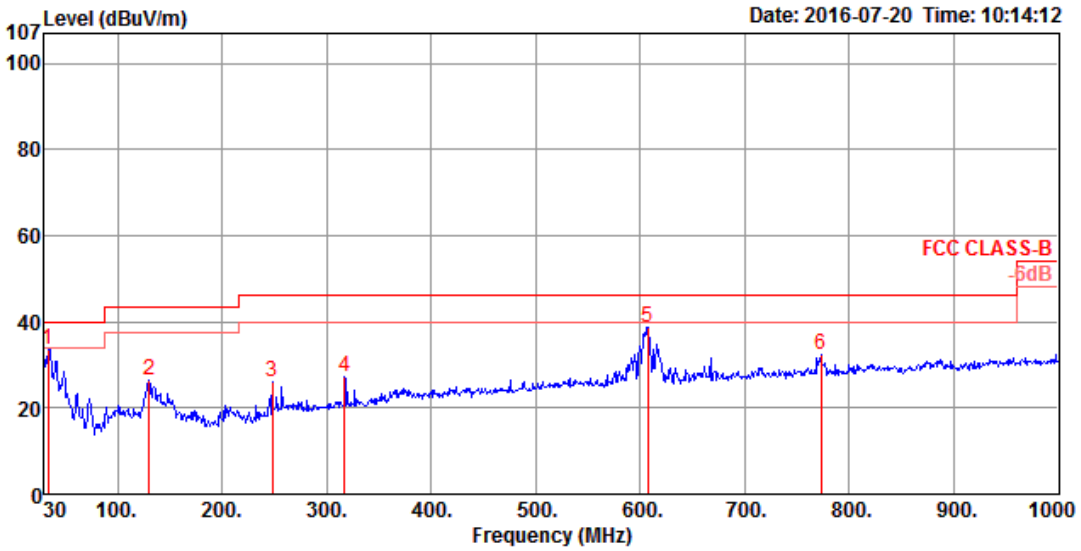
Temperature	26°C	Humidity	64%
Test Engineer	Gino Huang	Configurations	CTX
Test Mode	Mode 2		

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	30.97	25.68	40.00	-14.32	32.97	0.54	24.81	32.64	150	181	Peak	HORIZONTAL
2	130.88	27.03	43.50	-16.47	40.42	1.12	18.05	32.56	200	236	Peak	HORIZONTAL
3	246.31	30.44	46.00	-15.56	43.20	1.54	18.23	32.53	150	135	Peak	HORIZONTAL
4	370.47	27.61	46.00	-18.39	36.74	1.89	21.51	32.53	125	204	Peak	HORIZONTAL
5	607.15	33.42	46.00	-12.58	38.81	2.40	24.89	32.68	150	217	Peak	HORIZONTAL
6	772.05	32.67	46.00	-13.33	36.08	2.72	26.32	32.45	100	160	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	33.88	33.55	40.00	-6.45	42.51	0.59	23.09	32.64	100	205	Peak	VERTICAL
2	129.91	26.29	43.50	-17.21	39.63	1.12	18.10	32.56	125	282	Peak	VERTICAL
3	248.25	25.97	46.00	-20.03	38.50	1.55	18.45	32.53	150	228	Peak	VERTICAL
4	317.12	27.13	46.00	-18.87	37.82	1.75	20.08	32.52	200	323	Peak	VERTICAL
5	607.15	38.73	46.00	-7.27	44.12	2.40	24.89	32.68	100	168	Peak	VERTICAL
6	773.02	32.47	46.00	-13.53	35.85	2.72	26.35	32.45	100	218	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.

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

<For non-beamforming mode>

Temperature	26°C	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11a CH 36 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 07, 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	15532.69	60.00	74.00	-14.00	43.31	13.38	38.45	35.14	268	173	Peak	HORIZONTAL
2	15533.62	46.62	54.00	-7.38	29.93	13.38	38.45	35.14	268	173	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	15533.88	60.10	74.00	-13.90	43.41	13.38	38.45	35.14	232	246	Peak	VERTICAL
2	15537.47	46.95	54.00	-7.05	30.26	13.38	38.45	35.14	232	246	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11a CH 40 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 11, 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	15602.36	46.94	54.00	-7.06	30.41	13.38	38.34	35.19	172	304	Average	HORIZONTAL
2	15608.80	60.30	74.00	-13.70	43.77	13.38	38.34	35.19	172	304	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	15606.48	59.98	74.00	-14.02	43.45	13.38	38.34	35.19	165	294	Peak	VERTICAL
2	15607.24	46.91	54.00	-7.09	30.38	13.38	38.34	35.19	165	294	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11a CH 48 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 11, 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	15711.60	46.24	54.00	-7.76	29.86	13.39	38.23	35.24	196	5	Average	HORIZONTAL
2	15714.55	59.53	74.00	-14.47	43.15	13.39	38.23	35.24	196	5	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	15720.19	58.97	74.00	-15.03	42.59	13.39	38.23	35.24	191	235	Peak	VERTICAL
2	15720.58	46.20	54.00	-7.80	29.82	13.39	38.23	35.24	191	235	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11a CH 149 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 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	11489.92	46.62	54.00	-7.38	29.43	10.66	39.90	33.37	121	286	Average	HORIZONTAL
2	11498.00	59.26	74.00	-14.74	42.07	10.66	39.90	33.37	121	286	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	11483.84	60.64	74.00	-13.36	43.45	10.66	39.90	33.37	108	3	Peak	VERTICAL
2	11485.20	47.96	54.00	-6.04	30.77	10.66	39.90	33.37	108	3	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11a CH 157 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 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	11481.80	46.33	54.00	-7.67	29.12	10.66	39.92	33.37	146	261	Average	HORIZONTAL
2	11484.96	58.98	74.00	-15.02	41.79	10.66	39.90	33.37	146	261	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	11491.60	58.93	74.00	-15.07	41.74	10.66	39.90	33.37	129	97	Peak	VERTICAL
2	11499.44	46.58	54.00	-7.42	29.39	10.66	39.90	33.37	129	97	Average	VERTICAL

Temperature	26°C	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11a CH 165 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 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	11645.40	46.39	54.00	-7.61	29.48	10.69	39.63	33.41	125	237	Average	HORIZONTAL
2	11653.24	58.58	74.00	-15.42	41.73	10.69	39.57	33.41	125	237	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	11652.48	60.06	74.00	-13.94	43.21	10.69	39.57	33.41	102	50	Peak	VERTICAL
2	11653.32	47.74	54.00	-6.26	30.89	10.69	39.57	33.41	102	50	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 07, 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	15540.93	46.44	54.00	-7.56	29.75	13.38	38.45	35.14	224	98	Average	HORIZONTAL
2	15541.73	59.69	74.00	-14.31	43.00	13.38	38.45	35.14	224	98	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	15534.74	59.48	74.00	-14.52	42.79	13.38	38.45	35.14	254	277	Peak	VERTICAL
2	15535.48	46.36	54.00	-7.64	29.67	13.38	38.45	35.14	254	277	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 40 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 11, 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	15604.96	60.20	74.00	-13.80	43.67	13.38	38.34	35.19	275	60	Peak	HORIZONTAL
2	15607.76	46.79	54.00	-7.21	30.26	13.38	38.34	35.19	275	60	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	15604.36	59.18	74.00	-14.82	42.65	13.38	38.34	35.19	106	232	Peak	VERTICAL
2	15604.76	46.70	54.00	-7.30	30.17	13.38	38.34	35.19	106	232	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 48 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 07, 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	15711.67	46.12	54.00	-7.88	29.74	13.39	38.23	35.24	239	26	Average	HORIZONTAL
2	15719.74	58.77	74.00	-15.23	42.39	13.39	38.23	35.24	239	26	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15710.42	46.21	54.00	-7.79	29.83	13.39	38.23	35.24	183	254	Average	VERTICAL
2	15719.81	59.24	74.00	-14.76	42.86	13.39	38.23	35.24	183	254	Peak	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 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	11488.76	46.87	54.00	-7.13	29.68	10.66	39.90	33.37	154	310	Average	HORIZONTAL
2	11489.17	59.41	74.00	-14.59	42.22	10.66	39.90	33.37	154	310	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	11488.24	61.45	74.00	-12.55	44.26	10.66	39.90	33.37	105	102	Peak	VERTICAL
2	11488.94	48.54	54.00	-5.46	31.35	10.66	39.90	33.37	105	102	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 157 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 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	11570.05	59.83	74.00	-14.17	42.77	10.68	39.77	33.39	127	295	Peak	HORIZONTAL
2	11570.65	46.76	54.00	-7.24	29.70	10.68	39.77	33.39	127	295	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11570.08	48.13	54.00	-5.87	31.07	10.68	39.77	33.39	105	142	Average	VERTICAL
2	11570.31	61.42	74.00	-12.58	44.36	10.68	39.77	33.39	105	142	Peak	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 165 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 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	11649.88	46.19	54.00	-7.81	29.28	10.69	39.63	33.41	131	190	Average	HORIZONTAL
2	11650.32	59.23	74.00	-14.77	42.32	10.69	39.63	33.41	131	190	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	11649.12	60.60	74.00	-13.40	43.69	10.69	39.63	33.41	114	2	Peak	VERTICAL
2	11649.18	47.18	54.00	-6.82	30.27	10.69	39.63	33.41	114	2	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 07, 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	15573.24	46.19	54.00	-7.81	29.58	13.38	38.39	35.16	147	268	Average	HORIZONTAL
2	15575.10	59.35	74.00	-14.65	42.74	13.38	38.39	35.16	147	268	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	15565.61	59.18	74.00	-14.82	42.57	13.38	38.39	35.16	150	47	Peak	VERTICAL
2	15569.62	46.17	54.00	-7.83	29.56	13.38	38.39	35.16	150	47	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 46 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 08, 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	15681.60	59.74	74.00	-14.26	43.28	13.39	38.28	35.21	271	45	Peak	HORIZONTAL
2	15690.67	46.33	54.00	-7.67	29.87	13.39	38.28	35.21	271	45	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	15683.14	46.47	54.00	-7.53	30.01	13.39	38.28	35.21	168	145	Average	VERTICAL
2	15699.81	60.01	74.00	-13.99	43.63	13.39	38.23	35.24	168	145	Peak	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 08, 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	11509.72	59.27	74.00	-14.73	42.09	10.66	39.90	33.38	125	233	Peak	HORIZONTAL
2	11511.61	46.31	54.00	-7.69	29.13	10.66	39.90	33.38	125	233	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	11508.78	47.06	54.00	-6.94	29.87	10.66	39.90	33.37	120	215	Average	VERTICAL
2	11511.21	59.85	74.00	-14.15	42.67	10.66	39.90	33.38	120	215	Peak	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 159 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 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	11587.93	58.81	74.00	-15.19	41.83	10.68	39.70	33.40	165	107	Peak	HORIZONTAL
2	11590.22	45.90	54.00	-8.10	28.92	10.68	39.70	33.40	165	107	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	11590.38	46.37	54.00	-7.63	29.39	10.68	39.70	33.40	152	253	Average	VERTICAL
2	11591.59	58.69	74.00	-15.31	41.71	10.68	39.70	33.40	152	253	Peak	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss3 VHT40 CH 46 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 08, 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	15680.67	59.43	74.00	-14.57	42.97	13.39	38.28	35.21	178	36	Peak	HORIZONTAL
2	15682.85	46.18	54.00	-7.82	29.72	13.39	38.28	35.21	178	36	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	15682.56	59.56	74.00	-14.44	43.10	13.39	38.28	35.21	146	155	Peak	VERTICAL
2	15688.81	46.24	54.00	-7.76	29.78	13.39	38.28	35.21	146	155	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 08, 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	15627.69	60.24	74.00	-13.76	43.71	13.38	38.34	35.19	145	114	Peak	HORIZONTAL
2	15637.24	46.39	54.00	-7.61	29.86	13.38	38.34	35.19	145	114	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	15625.64	46.36	54.00	-7.64	29.83	13.38	38.34	35.19	152	304	Average	VERTICAL
2	15638.08	59.51	74.00	-14.49	42.98	13.38	38.34	35.19	152	304	Peak	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 155 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 08, 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	5133.30	49.63	74.00	-24.37	43.30	7.94	31.44	33.05	100	134	Peak	HORIZONTAL
2	5133.55	42.46	54.00	-11.54	36.13	7.94	31.44	33.05	100	134	Average	HORIZONTAL
3	11549.53	46.15	54.00	-7.85	29.04	10.67	39.83	33.39	176	156	Average	HORIZONTAL
4	11549.62	59.67	74.00	-14.33	42.56	10.67	39.83	33.39	176	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	5133.51	51.69	54.00	-2.31	45.36	7.94	31.44	33.05	193	140	Average	VERTICAL
2	5133.52	55.35	74.00	-18.65	49.02	7.94	31.44	33.05	193	140	Peak	VERTICAL
3	11549.77	46.36	54.00	-7.64	29.25	10.67	39.83	33.39	157	330	Average	VERTICAL
4	11550.01	58.66	74.00	-15.34	41.55	10.67	39.83	33.39	157	330	Peak	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss3 VHT80 CH 42 / Chain 1 + Chain 2 + Chain 3
Test Date	May 05, 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	15634.20	46.30	54.00	-7.70	29.77	13.38	38.34	35.19	218	51	Average	HORIZONTAL
2	15635.58	59.38	74.00	-14.62	42.85	13.38	38.34	35.19	218	51	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	15623.85	59.30	74.00	-14.70	42.77	13.38	38.34	35.19	268	293	Peak	VERTICAL
2	15626.57	46.28	54.00	-7.72	29.75	13.38	38.34	35.19	268	293	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	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 09, 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	15542.84	61.02	74.00	-12.98	44.33	13.38	38.45	35.14	185	144	Peak	HORIZONTAL
2	15544.78	47.66	54.00	-6.34	30.97	13.38	38.45	35.14	185	144	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	15537.70	47.79	54.00	-6.21	31.10	13.38	38.45	35.14	201	100	Average	VERTICAL
2	15542.26	61.03	74.00	-12.97	44.34	13.38	38.45	35.14	201	100	Peak	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 40 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 11, 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	15605.88	59.48	74.00	-14.52	42.95	13.38	38.34	35.19	146	92	Peak	HORIZONTAL
2	15608.28	46.86	54.00	-7.14	30.33	13.38	38.34	35.19	146	92	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	15603.72	59.38	74.00	-14.62	42.85	13.38	38.34	35.19	210	276	Peak	VERTICAL
2	15607.92	47.01	54.00	-6.99	30.48	13.38	38.34	35.19	210	276	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 48 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 09, 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	15722.18	60.67	74.00	-13.33	44.29	13.39	38.23	35.24	220	281	Peak	HORIZONTAL
2	15722.26	47.40	54.00	-6.60	31.02	13.39	38.23	35.24	220	281	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	15715.74	60.68	74.00	-13.32	44.30	13.39	38.23	35.24	222	251	Peak	VERTICAL
2	15716.60	47.81	54.00	-6.19	31.43	13.39	38.23	35.24	222	251	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 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	11489.14	58.12	74.00	-15.88	40.93	10.66	39.90	33.37	200	93	Peak	HORIZONTAL
2	11489.46	45.34	54.00	-8.66	28.15	10.66	39.90	33.37	200	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	11485.56	45.19	54.00	-8.81	28.00	10.66	39.90	33.37	200	191	Average	VERTICAL
2	11490.68	59.17	74.00	-14.83	41.98	10.66	39.90	33.37	200	191	Peak	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 157 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 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	11566.24	57.94	74.00	-16.06	40.88	10.68	39.77	33.39	200	61	Peak	HORIZONTAL
2	11567.50	44.90	54.00	-9.10	27.84	10.68	39.77	33.39	200	61	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	11569.68	58.16	74.00	-15.84	41.10	10.68	39.77	33.39	200	169	Peak	VERTICAL
2	11572.68	45.06	54.00	-8.94	28.00	10.68	39.77	33.39	200	169	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 165 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 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	11645.30	57.57	74.00	-16.43	40.66	10.69	39.63	33.41	200	81	Peak	HORIZONTAL
2	11646.06	45.18	54.00	-8.82	28.27	10.69	39.63	33.41	200	81	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	11645.80	45.27	54.00	-8.73	28.36	10.69	39.63	33.41	200	191	Average	VERTICAL
2	11649.80	58.02	74.00	-15.98	41.11	10.69	39.63	33.41	200	191	Peak	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 09, 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	15570.72	47.44	54.00	-6.56	30.83	13.38	38.39	35.16	232	111	Average	HORIZONTAL
2	15571.18	60.57	74.00	-13.43	43.96	13.38	38.39	35.16	232	111	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	15572.90	61.08	74.00	-12.92	44.47	13.38	38.39	35.16	217	77	Peak	VERTICAL
2	15573.26	47.68	54.00	-6.32	31.07	13.38	38.39	35.16	217	75	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 46 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 09, 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	15689.58	61.36	74.00	-12.64	44.90	13.39	38.28	35.21	218	245	Peak	HORIZONTAL
2	15689.78	47.39	54.00	-6.61	30.93	13.39	38.28	35.21	218	245	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15692.12	60.94	74.00	-13.06	44.56	13.39	38.23	35.24	228	305	Peak	VERTICAL
2	15694.60	47.53	54.00	-6.47	31.15	13.39	38.23	35.24	228	305	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 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	11505.82	45.20	54.00	-8.80	28.01	10.66	39.90	33.37	200	79	Average	HORIZONTAL
2	11508.58	58.17	74.00	-15.83	40.98	10.66	39.90	33.37	200	79	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	11506.36	45.42	54.00	-8.58	28.23	10.66	39.90	33.37	200	172	Average	VERTICAL
2	11514.08	58.14	74.00	-15.86	40.96	10.66	39.90	33.38	200	172	Peak	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 159 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 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	11585.00	44.98	54.00	-9.02	28.00	10.68	39.70	33.40	200	43	Average	HORIZONTAL
2	11593.64	57.75	74.00	-16.25	40.77	10.68	39.70	33.40	200	43	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	11592.80	44.90	54.00	-9.10	27.92	10.68	39.70	33.40	200	245	Average	VERTICAL
2	11593.28	58.04	74.00	-15.96	41.06	10.68	39.70	33.40	200	245	Peak	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 09, 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	15625.30	47.64	54.00	-6.36	31.11	13.38	38.34	35.19	218	230	Average	HORIZONTAL
2	15628.36	60.65	74.00	-13.35	44.12	13.38	38.34	35.19	218	230	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	15628.74	60.64	74.00	-13.36	44.11	13.38	38.34	35.19	224	182	Peak	VERTICAL
2	15631.62	47.76	54.00	-6.24	31.23	13.38	38.34	35.19	224	184	Average	VERTICAL

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 155 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 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	5133.57	50.87	74.00	-23.13	44.54	7.94	31.44	33.05	248	136	Peak	HORIZONTAL
2	5133.61	44.09	54.00	-9.91	37.76	7.94	31.44	33.05	248	136	Average	HORIZONTAL
3	11547.28	44.66	54.00	-9.34	27.55	10.67	39.83	33.39	200	45	Average	HORIZONTAL
4	11552.08	58.23	74.00	-15.77	41.17	10.68	39.77	33.39	200	45	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	5133.53	56.13	74.00	-17.87	49.80	7.94	31.44	33.05	211	184	Peak	VERTICAL
2	5133.61	51.99	54.00	-2.01	45.66	7.94	31.44	33.05	211	184	Average	VERTICAL
3	11547.64	44.87	54.00	-9.13	27.76	10.67	39.83	33.39	200	124	Average	VERTICAL
4	11549.50	57.68	74.00	-16.32	40.57	10.67	39.83	33.39	200	124	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.

4.7. Band Edge Emissions Measurement

4.7.1. Limit

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

For transmitters operating in the 5.725-5.85 GHz band: all emissions 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

4.7.2. Measuring Instruments and Setting

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

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

4.7.3. Test Procedures

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

4.7.4. Test Setup Layout

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

4.7.5. Test Deviation

There is no deviation with the original standard.

4.7.6. EUT Operation during Test

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.

4.7.7. Test Result of Band Edge and Fundamental Emissions

<For non-beamforming mode>

Temperature	26°C	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11a CH 36, 40, 48 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 07, 2016 ~ Jul. 11, 2016		

Channel 36

	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	5101.47	61.43	74.00	-12.57	54.04	7.48	34.81	34.90	210	174	Peak	VERTICAL
2	5103.08	49.98	54.00	-4.02	42.59	7.48	34.81	34.90	210	174	Average	VERTICAL
3	5182.40	104.59			97.14	7.48	34.88	34.91	210	174	Average	VERTICAL
4	5182.40	114.00			106.55	7.48	34.88	34.91	210	174	Peak	VERTICAL
5	5389.14	62.76	74.00	-11.24	55.01	7.58	35.09	34.92	210	174	Peak	VERTICAL
6	5398.75	52.97	54.00	-1.03	45.22	7.58	35.09	34.92	210	174	Average	VERTICAL

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

Channel 40

	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	4984.00	60.90	74.00	-13.10	53.69	7.45	34.66	34.90	187	187	Peak	VERTICAL
2	5121.00	48.94	54.00	-5.06	41.54	7.48	34.82	34.90	187	187	Average	VERTICAL
3	5201.00	102.14			94.67	7.48	34.90	34.91	187	187	Average	VERTICAL
4	5201.00	111.72			104.25	7.48	34.90	34.91	187	187	Peak	VERTICAL
5	5417.00	52.83	54.00	-1.17	44.99	7.64	35.12	34.92	187	187	Average	VERTICAL
6	5419.00	63.13	74.00	-10.87	55.29	7.64	35.12	34.92	187	187	Peak	VERTICAL

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

Channel 48

	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	5001.00	59.95	74.00	-14.05	52.67	7.48	34.70	34.90	193	6	Peak	VERTICAL
2	5021.00	49.50	54.00	-4.50	42.20	7.48	34.72	34.90	193	6	Average	VERTICAL
3	5242.00	104.98			97.45	7.50	34.94	34.91	193	6	Average	VERTICAL
4	5242.00	114.39			106.86	7.50	34.94	34.91	193	6	Peak	VERTICAL
5	5457.00	62.84	74.00	-11.16	54.92	7.69	35.15	34.92	193	6	Peak	VERTICAL
6	5459.00	52.25	54.00	-1.75	44.33	7.69	35.15	34.92	193	6	Average	VERTICAL

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

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11a CH 149, 157, 165 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 22, 2016		

Channel 149

	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	5624.00	65.06	68.20	-3.14	57.89	8.31	31.96	33.10	200	223	Peak	VERTICAL
2	5741.00	123.20			115.87	8.37	32.10	33.14	200	223	Peak	VERTICAL
3	5751.00	113.49			106.16	8.37	32.10	33.14	200	223	Average	VERTICAL
4	5976.00	62.43	68.20	-5.77	54.80	8.46	32.38	33.21	200	223	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5745 MHz.

Channel 157

	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	5627.00	62.40	68.20	-5.80	55.23	8.31	31.96	33.10	199	133	Peak	VERTICAL
2	5787.00	112.91			105.53	8.39	32.14	33.15	199	133	Average	VERTICAL
3	5787.00	122.43			115.05	8.39	32.14	33.15	199	133	Peak	VERTICAL
4	5948.00	62.15	68.20	-6.05	54.56	8.45	32.34	33.20	199	133	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5785 MHz.

Channel 165

	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	5581.40	64.31	68.20	-3.89	57.22	8.28	31.90	33.09	201	138	Peak	VERTICAL
2	5828.60	112.87			105.43	8.41	32.20	33.17	201	138	Average	VERTICAL
3	5828.60	122.43			114.99	8.41	32.20	33.17	201	138	Peak	VERTICAL
4	6068.60	63.37	68.20	-4.83	55.41	8.56	32.63	33.23	201	138	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5825 MHz.

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36, 40, 48 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 06, 2016 ~ Jul. 11, 2016		

Channel 36

	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	5098.27	51.04	54.00	-2.96	43.65	7.48	34.81	34.90	207	220	Average	VERTICAL
2	5098.27	61.51	74.00	-12.49	54.12	7.48	34.81	34.90	207	220	Peak	VERTICAL
3	5178.40	105.28			97.83	7.48	34.88	34.91	207	220	Average	VERTICAL
4	5178.40	114.81			107.36	7.48	34.88	34.91	207	220	Peak	VERTICAL
5	5395.55	52.95	54.00	-1.05	45.20	7.58	35.09	34.92	207	220	Average	VERTICAL
6	5400.35	63.49	74.00	-10.51	55.74	7.58	35.09	34.92	207	220	Peak	VERTICAL

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

Channel 40

	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	5113.00	49.38	54.00	-4.62	41.98	7.48	34.82	34.90	192	5	Average	VERTICAL
2	5122.00	60.80	74.00	-13.20	53.40	7.48	34.82	34.90	192	5	Peak	VERTICAL
3	5202.00	104.27			96.78	7.49	34.91	34.91	192	5	Average	VERTICAL
4	5203.00	113.65			106.16	7.49	34.91	34.91	192	5	Peak	VERTICAL
5	5417.00	52.27	54.00	-1.73	44.43	7.64	35.12	34.92	192	5	Average	VERTICAL
6	5425.00	62.05	74.00	-11.95	54.21	7.64	35.12	34.92	192	5	Peak	VERTICAL

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

Channel 48

	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	5013.24	60.59	74.00	-13.41	53.29	7.48	34.72	34.90	203	149	Peak	VERTICAL
2	5021.25	49.20	54.00	-4.80	41.90	7.48	34.72	34.90	203	149	Average	VERTICAL
3	5241.60	104.15			96.62	7.50	34.94	34.91	203	149	Average	VERTICAL
4	5241.60	114.06			106.53	7.50	34.94	34.91	203	149	Peak	VERTICAL
5	5458.75	52.95	54.00	-1.05	45.03	7.69	35.15	34.92	203	149	Average	VERTICAL
6	5460.35	63.12	74.00	-10.88	55.20	7.69	35.15	34.92	203	149	Peak	VERTICAL

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

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149, 157, 165 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 22, 2016		

Channel 149

	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	5620.20	65.80	68.20	-2.40	58.66	8.30	31.94	33.10	214	224	Peak	VERTICAL
2	5740.20	122.45			115.12	8.37	32.10	33.14	214	224	Peak	VERTICAL
3	5751.00	112.91			105.58	8.37	32.10	33.14	214	224	Average	VERTICAL
4	5992.20	61.09	68.20	-7.11	53.46	8.46	32.38	33.21	214	224	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5745 MHz.

Channel 157

	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	5620.60	62.77	68.20	-5.43	55.63	8.30	31.94	33.10	209	335	Peak	VERTICAL
2	5780.20	110.13			102.75	8.39	32.14	33.15	209	335	Average	VERTICAL
3	5780.20	119.98			112.60	8.39	32.14	33.15	209	335	Peak	VERTICAL
4	5944.60	61.32	68.20	-6.88	53.73	8.45	32.34	33.20	209	335	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5785 MHz.

Channel 165

	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	5577.80	63.35	68.20	-4.85	56.25	8.28	31.90	33.08	195	137	Peak	VERTICAL
2	5827.40	121.79			114.35	8.41	32.20	33.17	195	137	Peak	VERTICAL
3	5828.60	112.37			104.93	8.41	32.20	33.17	195	137	Average	VERTICAL
4	5937.80	62.92	68.20	-5.28	55.35	8.45	32.32	33.20	195	137	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5825 MHz.

Temperature	26°C	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38, 46 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 06, 2016 ~ Jul. 07, 2016		

Channel 38

	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	2390.00	48.71	54.00	-5.29	16.25	5.23	27.23	0.00	105	189	Average	VERTICAL
2	2390.00	60.59	74.00	-13.41	28.13	5.23	27.23	0.00	105	189	Peak	VERTICAL
3	2412.80	118.66			86.09	5.27	27.30	0.00	105	189	Average	VERTICAL
4	2413.20	122.70			90.13	5.27	27.30	0.00	105	189	Peak	VERTICAL
5	2488.00	59.73	74.00	-14.27	26.92	5.34	27.47	0.00	105	189	Peak	VERTICAL
6	2489.60	48.22	54.00	-5.78	15.39	5.35	27.48	0.00	105	189	Average	VERTICAL

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

Channel 46

	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	5148.27	52.93	54.00	-1.07	45.51	7.48	34.85	34.91	200	2	Average	VERTICAL
2	5148.27	64.13	74.00	-9.87	56.71	7.48	34.85	34.91	200	2	Peak	VERTICAL
3	5233.21	108.90			101.37	7.50	34.94	34.91	200	2	Average	VERTICAL
4	5233.21	118.38			110.85	7.50	34.94	34.91	200	2	Peak	VERTICAL
5	5352.60	64.26	74.00	-9.74	56.56	7.56	35.05	34.91	200	2	Peak	VERTICAL
6	5353.40	52.09	54.00	-1.91	44.39	7.56	35.05	34.91	200	2	Average	VERTICAL

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

Temperature	26°C	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss3 VHT40 CH 46 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 07, 2016		

Channel 46

	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	5144.26	67.70	74.00	-6.30	60.28	7.48	34.85	34.91	204	134	Peak	VERTICAL
2	5149.07	52.41	54.00	-1.59	44.99	7.48	34.85	34.91	204	134	Average	VERTICAL
3	5233.21	107.90			100.37	7.50	34.94	34.91	204	134	Average	VERTICAL
4	5235.61	118.59			111.06	7.50	34.94	34.91	204	134	Peak	VERTICAL
5	5353.40	53.00	54.00	-1.00	45.30	7.56	35.05	34.91	204	134	Average	VERTICAL
6	5353.40	64.29	74.00	-9.71	56.59	7.56	35.05	34.91	204	134	Peak	VERTICAL

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

Temperature	26°C	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151, 159 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 06, 2016		

Channel 151

	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	5638.00	63.24	68.20	-4.96	56.08	8.31	31.96	33.11	199	137	Peak	VERTICAL
2	5754.00	119.28			111.95	8.37	32.10	33.14	199	137	Peak	VERTICAL
3	5759.00	109.58			102.22	8.38	32.12	33.14	199	137	Average	VERTICAL
4	5934.00	61.69	68.20	-6.51	54.12	8.45	32.32	33.20	199	137	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5755 MHz.

Channel 159

	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	5603.00	61.87	68.20	-6.33	54.76	8.29	31.92	33.10	206	228	Peak	VERTICAL
2	5791.40	108.50			101.09	8.40	32.16	33.15	206	228	Average	VERTICAL
3	5791.40	118.78			111.37	8.40	32.16	33.15	206	228	Peak	VERTICAL
4	5951.00	61.60	68.20	-6.60	54.01	8.45	32.34	33.20	206	228	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5795 MHz.

Temperature	26°C	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42, 155 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 22, 2016		

Channel 42

	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	5148.30	52.93	54.00	-1.07	45.51	7.48	34.85	34.91	200	218	Average	VERTICAL
2	5148.30	64.08	74.00	-9.92	56.66	7.48	34.85	34.91	200	218	Peak	VERTICAL
3	5197.98	97.84			90.37	7.48	34.90	34.91	200	218	Average	VERTICAL
4	5197.98	107.71			100.24	7.48	34.90	34.91	200	218	Peak	VERTICAL

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

Channel 155

	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	5631.00	66.49	68.20	-1.71	59.32	8.31	31.96	33.10	220	309	Peak	VERTICAL
2	5761.80	105.25			97.89	8.38	32.12	33.14	220	309	Average	VERTICAL
3	5761.80	114.94			107.58	8.38	32.12	33.14	220	309	Peak	VERTICAL
4	5927.40	67.16	68.20	-1.04	59.59	8.45	32.32	33.20	220	309	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5775 MHz.

Temperature	26°C	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss3 VHT80 CH 42 / Chain 1 + Chain 2 + Chain 3
Test Date	May 05, 2016		

Channel 42

	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	5142.69	67.92	74.00	-6.08	60.50	7.48	34.85	34.91	207	176	Peak	VERTICAL
2	5150.00	52.90	54.00	-1.10	45.48	7.48	34.85	34.91	207	176	Average	VERTICAL
3	5202.79	109.51			102.02	7.49	34.91	34.91	207	176	Peak	VERTICAL
4	5213.21	94.77			87.28	7.49	34.91	34.91	207	176	Average	VERTICAL
5	5353.43	48.45	54.00	-5.55	40.75	7.56	35.05	34.91	207	176	Average	VERTICAL
6	5396.70	60.85	74.00	-13.15	53.10	7.58	35.09	34.92	207	176	Peak	VERTICAL

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

Note:

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	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36, 40, 48 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 09, 2016 ~ Jul. 11, 2016		

Channel 36

	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	5107.00	61.76	74.00	-12.24	54.37	7.48	34.81	34.90	201	306	Peak	VERTICAL
2	5108.00	50.89	54.00	-3.11	43.50	7.48	34.81	34.90	201	306	Average	VERTICAL
3	5187.00	116.11			108.64	7.48	34.90	34.91	201	306	Peak	VERTICAL
4	5188.00	105.77			98.30	7.48	34.90	34.91	201	306	Average	VERTICAL
5	5404.00	52.98	54.00	-1.02	45.18	7.61	35.11	34.92	201	306	Average	VERTICAL
6	5404.00	63.69	74.00	-10.31	55.89	7.61	35.11	34.92	201	306	Peak	VERTICAL

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

Channel 40

	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	5119.00	50.22	54.00	-3.78	42.82	7.48	34.82	34.90	202	97	Average	VERTICAL
2	5119.00	62.05	74.00	-11.95	54.65	7.48	34.82	34.90	202	97	Peak	VERTICAL
3	5198.00	104.39			96.92	7.48	34.90	34.91	202	97	Average	VERTICAL
4	5207.00	114.29			106.80	7.49	34.91	34.91	202	97	Peak	VERTICAL
5	5417.00	52.91	54.00	-1.09	45.07	7.64	35.12	34.92	202	97	Average	VERTICAL
6	5420.00	64.15	74.00	-9.85	56.31	7.64	35.12	34.92	202	97	Peak	VERTICAL

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

Channel 48

	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	5126.00	61.54	74.00	-12.46	54.14	7.48	34.82	34.90	219	294	Peak	VERTICAL
2	5127.00	49.20	54.00	-4.80	41.79	7.48	34.84	34.91	219	294	Average	VERTICAL
3	5248.00	107.58			100.02	7.51	34.96	34.91	219	294	Average	VERTICAL
4	5248.00	117.06			109.50	7.51	34.96	34.91	219	294	Peak	VERTICAL
5	5467.00	52.89	54.00	-1.11	44.92	7.72	35.17	34.92	219	294	Average	VERTICAL
6	5467.00	64.14	74.00	-9.86	56.17	7.72	35.17	34.92	219	294	Peak	VERTICAL

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

Temperature	26℃	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149, 157, 165 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 22, 2016		

Channel 149

	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	5591.00	67.08	68.20	-1.12	59.99	8.28	31.90	33.09	199	151	Peak	VERTICAL
2	5751.00	122.18			114.85	8.37	32.10	33.14	199	151	Peak	VERTICAL
3	5752.00	112.06			104.73	8.37	32.10	33.14	199	151	Average	VERTICAL
4	5985.00	62.13	68.20	-6.07	54.50	8.46	32.38	33.21	199	151	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5745 MHz.

Channel 157

	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	5626.00	66.98	68.20	-1.22	59.81	8.31	31.96	33.10	207	229	Peak	VERTICAL
2	5787.00	120.57			113.19	8.39	32.14	33.15	207	229	Peak	VERTICAL
3	5788.00	110.92			103.54	8.39	32.14	33.15	207	229	Average	VERTICAL
4	5947.00	65.27	68.20	-2.93	57.68	8.45	32.34	33.20	207	229	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5785 MHz.

Channel 165

	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	5579.00	62.85	68.20	-5.35	55.76	8.28	31.90	33.09	205	232	Peak	VERTICAL
2	5827.00	111.66			104.22	8.41	32.20	33.17	205	232	Average	VERTICAL
3	5827.00	122.30			114.86	8.41	32.20	33.17	205	232	Peak	VERTICAL
4	5989.00	66.86	68.20	-1.34	59.23	8.46	32.38	33.21	205	232	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5825 MHz.

Temperature	26°C	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38, 46 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 09, 2016		

Channel 38

	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	5147.00	64.13	74.00	-9.87	56.71	7.48	34.85	34.91	205	305	Peak	VERTICAL
2	5150.00	52.98	54.00	-1.02	45.56	7.48	34.85	34.91	205	305	Average	VERTICAL
3	5186.00	112.91			105.46	7.48	34.88	34.91	205	305	Peak	VERTICAL
4	5196.00	103.00			95.53	7.48	34.90	34.91	205	305	Average	VERTICAL
5	5350.00	48.64	54.00	-5.36	40.94	7.56	35.05	34.91	205	305	Average	VERTICAL
6	5418.00	62.22	74.00	-11.78	54.38	7.64	35.12	34.92	205	305	Peak	VERTICAL

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

Channel 46

	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	5135.00	61.25	74.00	-12.75	53.84	7.48	34.84	34.91	231	298	Peak	VERTICAL
2	5143.00	50.56	54.00	-3.44	43.14	7.48	34.85	34.91	231	298	Average	VERTICAL
3	5247.00	109.50			101.94	7.51	34.96	34.91	231	298	Average	VERTICAL
4	5248.00	118.66			111.10	7.51	34.96	34.91	231	298	Peak	VERTICAL
5	5356.00	65.35	74.00	-8.65	57.64	7.56	35.06	34.91	231	298	Peak	VERTICAL
6	5367.00	52.92	54.00	-1.08	45.21	7.56	35.06	34.91	231	298	Average	VERTICAL

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

Temperature	26°C	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151, 159 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 22, 2016		

Channel 151

	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	5612.00	66.58	68.20	-1.62	59.44	8.30	31.94	33.10	212	148	Peak	VERTICAL
2	5769.00	121.49			114.14	8.38	32.12	33.15	212	148	Peak	VERTICAL
3	5770.00	110.65			103.30	8.38	32.12	33.15	212	148	Average	VERTICAL
4	5930.00	66.96	68.20	-1.24	59.39	8.45	32.32	33.20	212	148	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5755 MHz.

Channel 159

	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	5630.00	67.14	68.20	-1.06	59.97	8.31	31.96	33.10	206	149	Peak	VERTICAL
2	5790.00	110.84			103.43	8.40	32.16	33.15	206	149	Average	VERTICAL
3	5791.00	120.55			113.14	8.40	32.16	33.15	206	149	Peak	VERTICAL
4	5960.00	66.82	68.20	-1.38	59.21	8.46	32.36	33.21	206	149	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5795 MHz.

Temperature	26°C	Humidity	64%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42, 155 / Chain 1 + Chain 2 + Chain 3
Test Date	Apr. 22, 2016 ~ Jul. 09, 2016		

Channel 42

	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	52.90	54.00	-1.10	45.48	7.48	34.85	34.91	200	124	Average	VERTICAL
2	5150.00	65.02	74.00	-8.98	57.60	7.48	34.85	34.91	200	124	Peak	VERTICAL
3	5181.00	109.42			101.97	7.48	34.88	34.91	200	124	Peak	VERTICAL
4	5222.00	99.61			92.09	7.50	34.93	34.91	200	124	Average	VERTICAL
5	5350.00	49.41	54.00	-4.59	41.71	7.56	35.05	34.91	200	124	Average	VERTICAL
6	5355.00	62.33	74.00	-11.67	54.62	7.56	35.06	34.91	200	124	Peak	VERTICAL

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

Channel 155

	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	5649.00	67.05	68.20	-1.15	59.86	8.32	31.98	33.11	207	151	Peak	VERTICAL
2	5740.00	119.37			112.04	8.37	32.10	33.14	207	151	Peak	VERTICAL
3	5762.00	106.70			99.34	8.38	32.12	33.14	207	151	Average	VERTICAL
4	5925.00	66.89	68.20	-1.31	59.32	8.45	32.32	33.20	207	151	Peak	VERTICAL

Item 2, 3 are the fundamental frequency at 5775 MHz.

Note:

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

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

4.8. Frequency Stability Measurement

4.8.1. Limit

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

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

4.8.2. Measuring Instruments and Setting

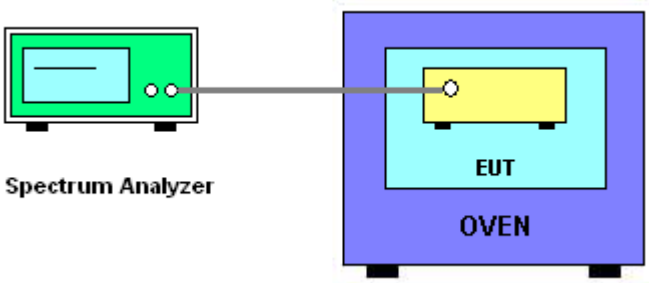
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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

4.8.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 10^6 ppm and the limit is less than ±20ppm (IEEE 802.11nspecification).
6. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
7. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
8. Extreme temperature is 0°C~40°C.

4.8.4. Test Setup Layout



4.8.5. Test Deviation

There is no deviation with the original standard.

4.8.6. EUT Operation during Test

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

4.8.7. Test Result of Frequency Stability

Temperature	25°C	Humidity	65%
Test Engineer	Andy Tsai	Test Date	May 03, 2016 ~ Jul. 16, 2016

Mode: 20 MHz / Chain 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5199.9917	5199.9908	5199.9903	5199.9899
110.00	5199.9914	5199.9912	5199.9905	5199.9898
93.50	5199.9909	5199.9905	5199.9904	5199.9899
Max. Deviation (MHz)	0.0091	0.0095	0.0097	0.0102
Max. Deviation (ppm)	1.75	1.82	1.86	1.96
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5199.9900	5199.9899	5199.9891	5199.9888
10	5199.9904	5199.9902	5199.9894	5199.9892
20	5199.9914	5199.9912	5199.9908	5199.9903
30	5199.9936	5199.9933	5199.9931	5199.9921
40	5199.9948	5199.9946	5199.9940	5199.9933
Max. Deviation (MHz)	0.0100	0.0101	0.0109	0.0112
Max. Deviation (ppm)	1.92	1.94	2.09	2.15
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5784.9917	5784.9915	5784.9907	5784.9898
110.00	5784.9914	5784.9912	5784.9909	5784.9907
93.50	5784.9910	5784.9901	5784.9900	5784.9899
Max. Deviation (MHz)	0.0090	0.0099	0.0100	0.0102
Max. Deviation (ppm)	1.55	1.71	1.73	1.76
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5784.9890	5784.9882	5784.9876	5784.9870
10	5784.9898	5784.9888	5784.9880	5784.9878
20	5784.9914	5784.9912	5784.9905	5784.9900
30	5784.9936	5784.9927	5784.9925	5784.9918
40	5784.9949	5784.9942	5784.9932	5784.9925
Max. Deviation (MHz)	0.0110	0.0118	0.0124	0.0130
Max. Deviation (ppm)	1.90	2.04	2.14	2.24
Result	Complies			

Mode: 40 MHz / Chain 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5189.9923	5189.9918	5189.9909	5189.9903
110.00	5189.9914	5189.9905	5189.9895	5189.9885
93.50	5189.9912	5189.9907	5189.9901	5189.9896
Max. Deviation (MHz)	0.0088	0.0095	0.0105	0.0115
Max. Deviation (ppm)	1.69	1.83	2.02	2.21
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5189.9891	5189.9888	5189.9882	5189.9872
10	5189.9895	5189.9886	5189.9879	5189.9870
20	5189.9914	5189.9909	5189.9908	5189.9907
30	5189.9936	5189.9935	5189.9925	5189.9918
40	5189.9940	5189.9933	5189.9929	5189.9923
Max. Deviation (MHz)	0.0109	0.0114	0.0121	0.0130
Max. Deviation (ppm)	2.10	2.19	2.33	2.50
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5754.9924	5754.9919	5754.9913	5754.9911
110.00	5754.9914	5754.9906	5754.9903	5754.9896
93.50	5754.9911	5754.9901	5754.9891	5754.9883
Max. Deviation (MHz)	0.0089	0.0099	0.0109	0.0117
Max. Deviation (ppm)	1.54	1.72	1.89	2.03
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5754.9892	5754.9886	5754.9885	5754.9877
10	5754.9908	5754.9900	5754.9894	5754.9891
20	5754.9914	5754.9912	5754.9911	5754.9905
30	5754.9936	5754.9935	5754.9933	5754.9929
40	5754.9944	5754.9941	5754.9932	5754.9930
Max. Deviation (MHz)	0.0108	0.0114	0.0115	0.0123
Max. Deviation (ppm)	1.87	1.98	1.99	2.13
Result	Complies			

Mode: 80 MHz / Chain 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5209.9923	5209.9918	5209.9917	5209.9908
110.00	5209.9914	5209.9912	5209.9904	5209.9897
93.50	5209.9904	5209.9902	5209.9893	5209.9889
Max. Deviation (MHz)	0.0096	0.0098	0.0107	0.0111
Max. Deviation (ppm)	1.84	1.88	2.05	2.13
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5209.9885	5209.9878	5209.9871	5209.9864
10	5209.9898	5209.9896	5209.9891	5209.9884
20	5209.9914	5209.9906	5209.9904	5209.9899
30	5209.9936	5209.9931	5209.9922	5209.9921
40	5209.9946	5209.9938	5209.9936	5209.9933
Max. Deviation (MHz)	0.0115	0.0122	0.0129	0.0136
Max. Deviation (ppm)	2.20	2.34	2.47	2.61
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5774.9922	5774.9921	5774.9912	5774.9905
110.00	5774.9914	5774.9909	5774.9903	5774.9893
93.50	5774.9906	5774.9902	5774.9894	5774.9884
Max. Deviation (MHz)	0.0094	0.0098	0.0106	0.0116
Max. Deviation (ppm)	1.62	1.69	1.83	2.01
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5774.9885	5774.9880	5774.9870	5774.9869
10	5774.9897	5774.9888	5774.9878	5774.9875
20	5774.9914	5774.9907	5774.9906	5774.9897
30	5774.9936	5774.9929	5774.9920	5774.9910
40	5774.9941	5774.9931	5774.9925	5774.9918
Max. Deviation (MHz)	0.0115	0.0120	0.0130	0.0131
Max. Deviation (ppm)	1.99	2.07	2.25	2.26
Result	Complies			

4.9. Antenna Requirements

4.9.1. Limit

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

4.9.2. Antenna Connector Construction

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

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 27, 2016	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 08, 2015	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 23, 2015	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 25, 2015	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA	TESEQ	CBL6112D	37880	20MHz ~ 2GHz	Sep. 03, 2015	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Oct. 22, 2015	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2015	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Mar. 15, 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	100056	9kHz ~ 40GHz	Oct. 27, 2015	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 16, 2016	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz ~ 1 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-17	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-1	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-2	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Radiation (03CH01-CB)
Test Software	Audix	E3	6.2009-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. 02, 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)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
RF Cable-high	Woken	RG402	High Cable-9	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Nov. 02, 2015	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 02, 2015	Conducted (TH01-CB)

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

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

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

6. MEASUREMENT UNCERTAINTY

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