



FCC RADIO TEST REPORT

FCC ID : PPQ-WP838
Equipment : Access Point
Brand Name : LITE-ON
Model Name : WP838I, WP838I-BT, WP838E
Applicant : LITE-ON Technology Corp.
Bldg. C, 90, Chien 1 Rd., Chung-Ho, New Taipei City, 23585
Taiwan
Manufacturer : Lite-On Network Communication (Dongguan) Limited
30#Keji Rd., Yin Hu Industrial Area, Qingxi Town, DongGuan
City, Guangdong, China
Standard : 47 CFR FCC Part 15.407

The product was received on Jan. 10, 2014, and testing was started from May 04, 2017 and completed on Jan. 18, 2017. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.



Approved by: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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Appendix A. Test Photos

Photographs of EUT v01



TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB Ver1.0



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	Note1
3.2	15.407(a)	Emission Bandwidth	PASS	-
3.3	15.407(a)	Maximum Conducted Output Power	PASS	-
3.4	15.407(a)	Peak Power Spectral Density	PASS	-
3.5	15.407(b)	Unwanted Emissions	PASS	-

Note1:

For PoE mode, the PoE is for measurement only, would not be marketed. It's not necessary to apply to AC Power Port Conducted emission test.

Note2:

From Sporton Project No.: 411023-06 、 411023-08 and 411023-10

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

1. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.
2. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen

Report Producer: Vicky Huang

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	a, n (HT20), ac (VHT20)	5180-5240	36-48 [4]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5725-5850		5775	155 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	1TX
5.15-5.25GHz	802.11n HT20	20	3TX
5.15-5.25GHz	802.11ac VHT20	20	3TX
5.15-5.25GHz	802.11n HT40	40	3TX
5.15-5.25GHz	802.11ac VHT40	40	3TX
5.15-5.25GHz	802.11ac VHT80	80	3TX
5.725-5.85GHz	802.11a	20	1TX
5.725-5.85GHz	802.11n HT20	20	3TX
5.725-5.85GHz	802.11ac VHT20	20	3TX
5.725-5.85GHz	802.11n HT40	40	3TX
5.725-5.85GHz	802.11ac VHT40	40	3TX
5.725-5.85GHz	802.11ac VHT80	80	3TX

Note:

- 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40, VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- BWch is the nominal channel bandwidth.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

1.1.2 Antenna Information

Internal antenna:

Model Name: WP838I, WP838I-BT / Type 1 Internal antenna (low gain)

Ant.	Brand	Model No.	Type	Connector	Antenna Gain		Cable Loss		True Gain (dBi)	
					2.4GHz	5GHz	2.4GHz	5GHz	2.4GHz	5GHz
1	LITEON	WP838 AP	PCB	I-PEX	3.5	6.5	0.2	-	3.3	6.5
2	LITEON	WP838 AP	PCB	I-PEX	6	5.8	-	-	6	5.8
3	LITEON	WP838 AP	PCB	I-PEX	5.4	6.6	-	-	5.4	6.6

Model Name: WP838I, WP838I-BT / Type 2 Internal antenna (higher gain)

Ant.	Brand	P/N	Type	Connector	Gain (dBi)	
					2.4GHz	5GHz
1	Galtronics	001174B2AD5F	Dipole	I-PEX	6.36	6.31
2	Galtronics	001174B2AD5F	Dipole	I-PEX	6.69	6.64
3	Galtronics	001174B2AD5F	Dipole	I-PEX	4.78	6.04

External antenna:

Model Name: WP838E / External antenna

Ant.	Brand	P/N	Type	Connector	Gain (dBi)	
					2.4GHz	5GHz
1	MAG.LAYERS	EDA-1713-25GR2-A7	Dipole	SMA Male RP	5	5
2	MAG.LAYERS	EDA-1713-25GR2-A7	Dipole	SMA Male RP	5	5
3	MAG.LAYERS	EDA-1713-25GR2-A7	Dipole	SMA Male RP	5	5

Note: The above information was declared by manufacturer.

<For 2.4GHz Band>

For IEEE 802.11b/g mode (1TX/1RX):

Only Ant. 1 could transmit/receive simultaneously.

For IEEE 802.11n mode (3TX/3RX):

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

<For 5GHz Band>

For IEEE 802.11a mode (1TX/1RX):

Only Ant. 1 could transmit/receive simultaneously.

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

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

**1.1.3 Mode Test Duty Cycle****For Mode 1:**

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.015	2.116	95.21	0.21	0.50
802.11ac VHT20	1.890	2.030	93.10	0.31	0.53
802.11ac VHT40	0.927	1.000	92.70	0.33	1.08
802.11ac VHT80	0.449	0.515	87.18	0.60	2.23

For Mode 2:

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.010	2.030	99.01%	0.04	0.01
802.11ac VHT20	1.904	2.040	93.33%	0.30	0.53
802.11ac VHT40	0.930	1.009	92.17%	0.35	1.08
802.11ac VHT80	0.440	0.499	88.18%	0.55	2.27

For Mode 3:

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.015	2.116	95.21	0.21	0.50
802.11ac VHT20	1.890	2.030	93.10	0.31	0.53
802.11ac VHT40	0.927	1.000	92.70	0.33	1.08
802.11ac VHT80	0.449	0.515	87.18	0.60	2.23

Note:

- ♦ DC is Duty Cycle.
- ♦ DCF is Duty Cycle Factor.

1.1.4 EUT Operational Condition

EUT Power Type	From adapter or PoE			
Beamforming Function	☐	With beamforming	☒	Without beamforming
Function	☐	Outdoor P2M	☒	Indoor P2M
	☐	Fixed P2P	☐	Client
Test Software Version	ART2-GUI Version 2.3			

Note: The above information was declared by manufacturer.



1.1.5 Table for Multiple Listing

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

EUT	Model Name	Antenna	Description
1	WP838I	Internal antenna	All the models are identical; different models serve as marketing strategy.
3	WP838I-BT		
2	WP838E	External antenna	-

From the above models, WP838I and WP838E were selected as representative model for the test and their data was recorded in this report.



1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013
- ♦ FCC KDB 789033 D02 v02r01
- ♦ FCC KDB 662911 D01 v02r01
- ♦ FCC KDB 412172 D01 v01r01

1.3 Testing Location Information

Testing Location			
☐	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
☒	JHUBEI	ADD : 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 Designation No. TW0006 with FCC

Test site registered number IC 4086B with Industry Canada.

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

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%



2 Test Configuration of EUT

2.1 Test Channel Mode

For Mode 1:

Mode	Power Setting
802.11a_(6Mbps)_1TX	-
5180MHz	20.5
5200MHz	24.5
5240MHz	25
5745MHz	25
5785MHz	25
5825MHz	25
802.11ac VHT20_Nss1,(MCS0)_3TX	-
5180MHz	18
5200MHz	20.5
5240MHz	20
5745MHz	25
5785MHz	25
5825MHz	25
802.11ac VHT40_Nss1,(MCS0)_3TX	-
5190MHz	15.5
5230MHz	21.5
5755MHz	25
5795MHz	25
802.11ac VHT80_Nss1,(MCS0)_3TX	-
5210MHz	12
5775MHz	23

**For Mode 2:**

Mode	Power Setting
802.11a_(6Mbps)_1TX	-
5180MHz	16
5200MHz	22.5
5240MHz	21.5
5745MHz	21
5785MHz	20.5
5825MHz	20.5
802.11ac VHT20_Nss1,(MCS0)_3TX	-
5180MHz	16.5
5200MHz	19
5240MHz	19
5745MHz	22
5785MHz	21.5
5825MHz	21.5
802.11ac VHT40_Nss1,(MCS0)_3TX	-
5190MHz	13.5
5230MHz	19.5
5755MHz	21
5795MHz	21
802.11ac VHT80_Nss1,(MCS0)_3TX	-
5210MHz	10.5
5775MHz	19.5

**For Mode 3:**

Mode	Power Setting
802.11a_(6Mbps)_1TX	-
5180MHz	19.5
5200MHz	23.5
5240MHz	25
5745MHz	25
5785MHz	25
5825MHz	25
802.11ac VHT20_Nss1,(MCS0)_3TX	-
5180MHz	19
5200MHz	22
5240MHz	23
5745MHz	25
5785MHz	25
5825MHz	25
802.11ac VHT40_Nss1,(MCS0)_3TX	-
5190MHz	16.5
5230MHz	21
5755MHz	25
5795MHz	25
802.11ac VHT80_Nss1,(MCS0)_3TX	-
5210MHz	13
5775MHz	21

Note:

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.



2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	Normal Link
1	EUT 1 + Type 1 antenna + Adapter
2	EUT 1 + Type 2 antenna + Adapter
3	EUT 2 + Adapter
For operating mode 2 is the worst case and it was record in this test report.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Maximum Conducted Output Power Peak Power Spectral Density
Test Condition	Conducted measurement at transmit chains
Operating Mode	CTX
1	EUT 1 + Type 1 antenna
2	EUT 1 + Type 2 antenna
3	EUT 2

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emission Bandwidth Unwanted Emissions
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
1	EUT 1 in Z axis + Type 1 antenna + Adapter
2	EUT 1 in Y axis + Type 1 antenna + Adapter
Mode 1 has been evaluated to be the worst case between Mode 1~2, thus measurement for Mode 3 will follow this same test mode.	
3	EUT 1 in Z axis + Type 1 antenna + PoE
Mode 3 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4~5 will follow this same test mode.	
4	EUT 1 in Z axis + Type 2 antenna + PoE
5	EUT 2 in Z axis + PoE
For operating mode 5 is the worst case and it was record in this test report.	



Operating Mode > 1GHz	CTX
The EUT can be placed in Y-axis and Z-axis. After evaluating, Y-axis was the worst case, so it's recorded in this report.	
1	EUT 1 in Y axis + Type 1 antenna
2	EUT 1 in Y axis + Type 2 antenna
3	EUT 2 in Y axis

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	EUT 1 + Type 1 antenna-WLAN 2.4GHz+WLAN 5GHz
2	EUT 1 + Type 2 antenna-WLAN 2.4GHz+WLAN 5GHz
3	EUT 2-WLAN 2.4GHz+WLAN 5GHz
Refer to Sporton Test Report No.: FA411023-11 for Co-location RF Exposure Evaluation.	

Note: The PoE below is for measurement only, would not be marketed.

Support Unit	Brand	Model	FCC ID
PoE	LITEON	LGS528P	DoC



2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories			
Equipment Name	Brand Name	Model Name	Rating
Adapter	APD	WA-24Q12R	Input: 100-240Vac, 50-60Hz, 0.7A Max. Output: 12Vdc, 2A
Other			
Plug*1			

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E6430	DoC
B	NB	DELL	E6430	DoC
C	NB	DELL	E6430	DoC
D	NB	DELL	E6430	DoC
E	Flash disk3.0	Transcend	639205 7755	DoC

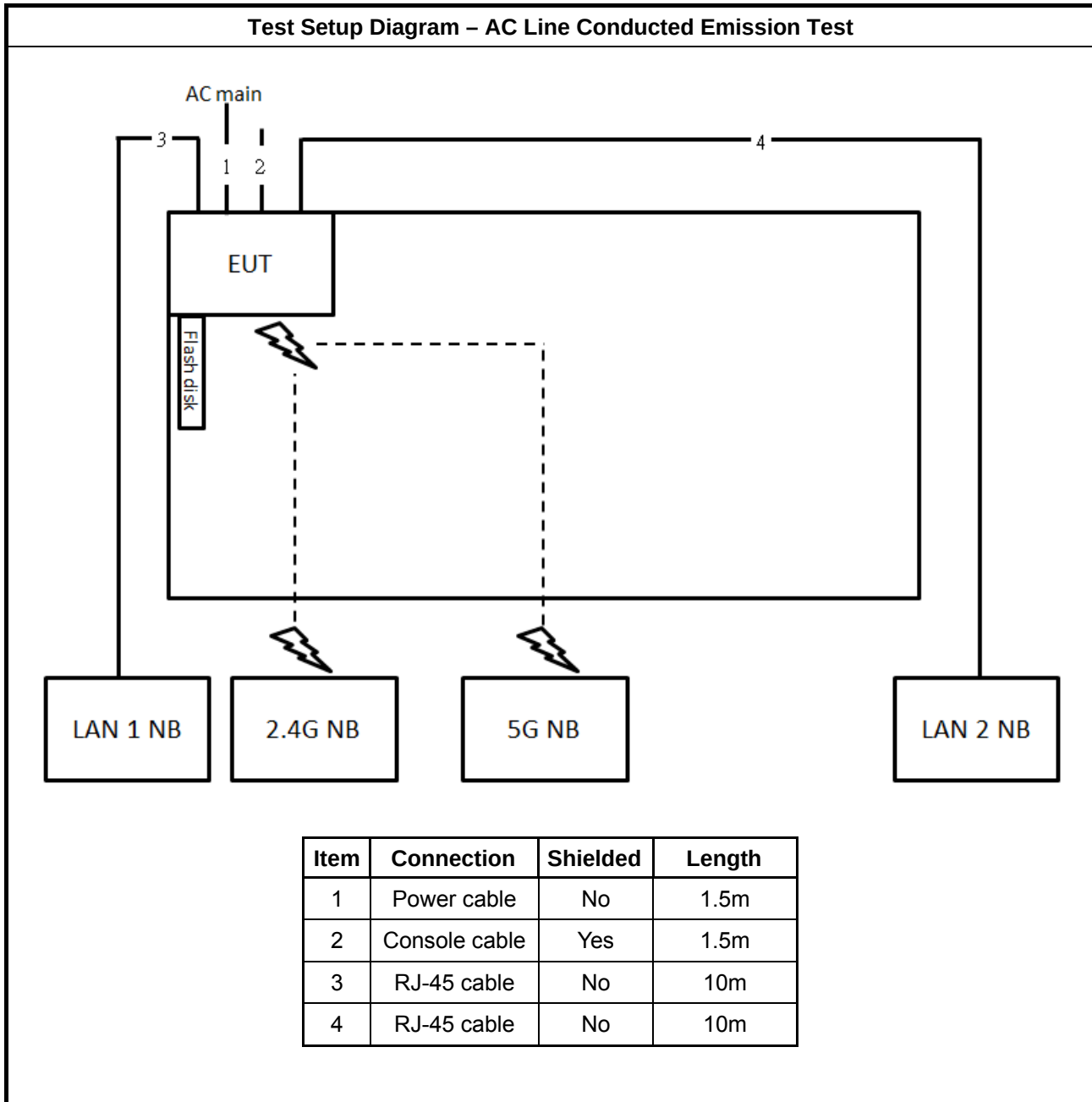
For Radiated (below 1GHz):

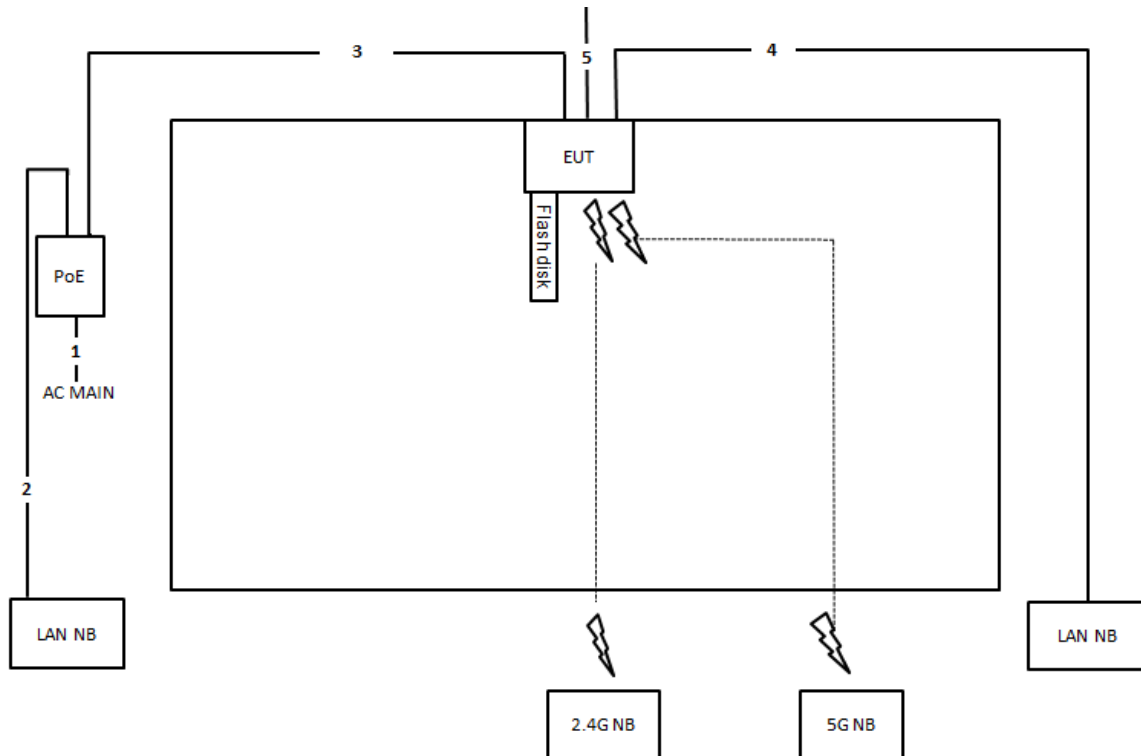
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	DoC
B	NB	DELL	E4300	DoC
C	NB	Apple	Mac Book	DoC
D	NB	Apple	Mac Book	DoC
E	Flash disk	Silicon Power	Touch 835	DoC
F	PoE	LITEON	LGS528P	DoC

**For Radiated (above 1GHz) and RF Conducted:**

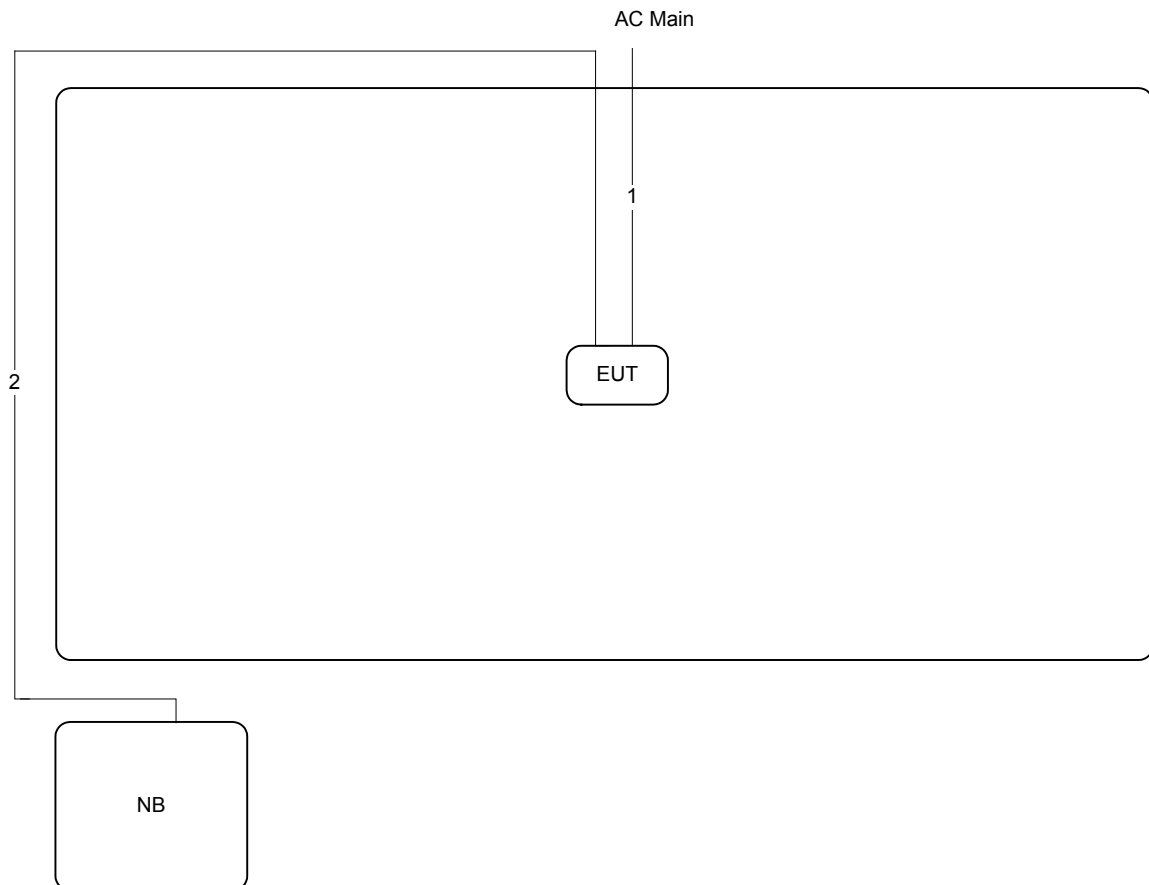
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	DoC

2.6 Test Setup Diagram

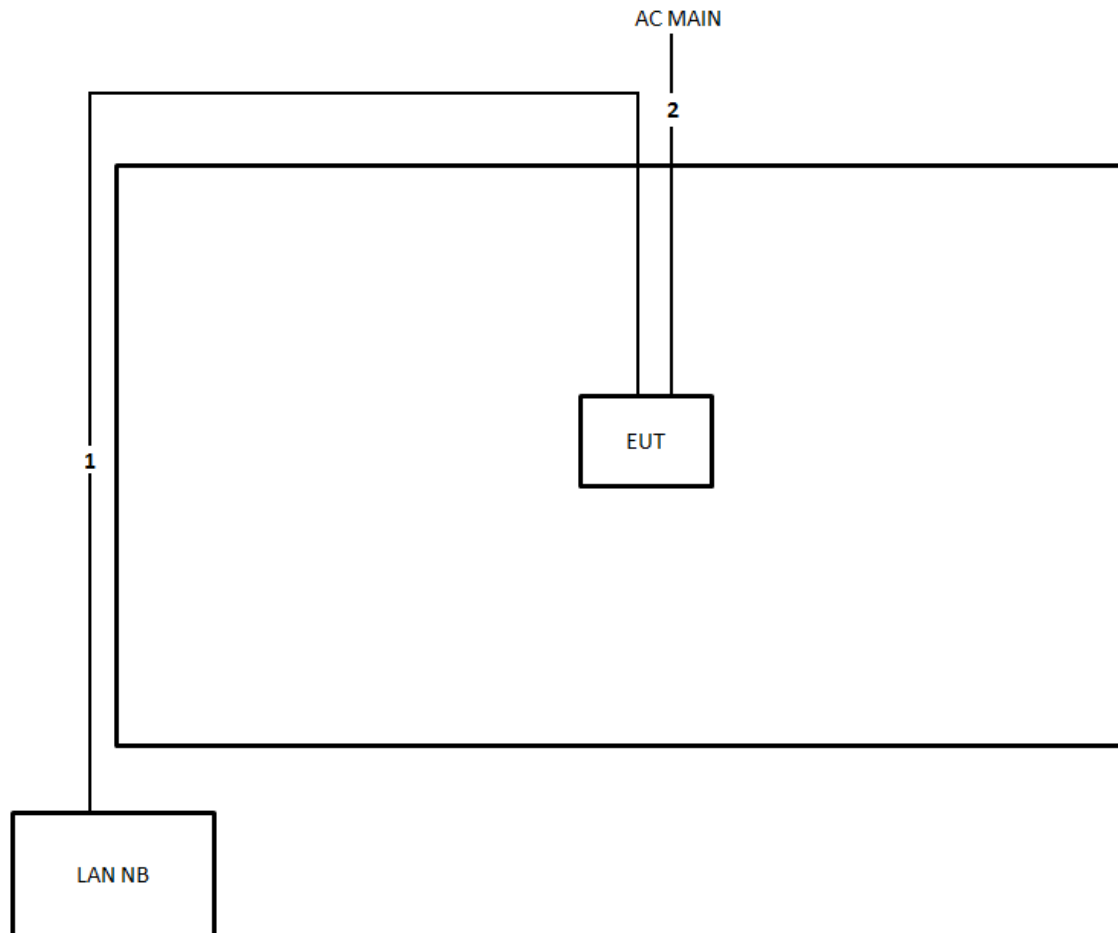


Test Setup Diagram - Radiated Test < 1GHz


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

Test Setup Diagram - Radiated Test > 1GHz
For Mode 1 and Mode 3:


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

For Mode 2:


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



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

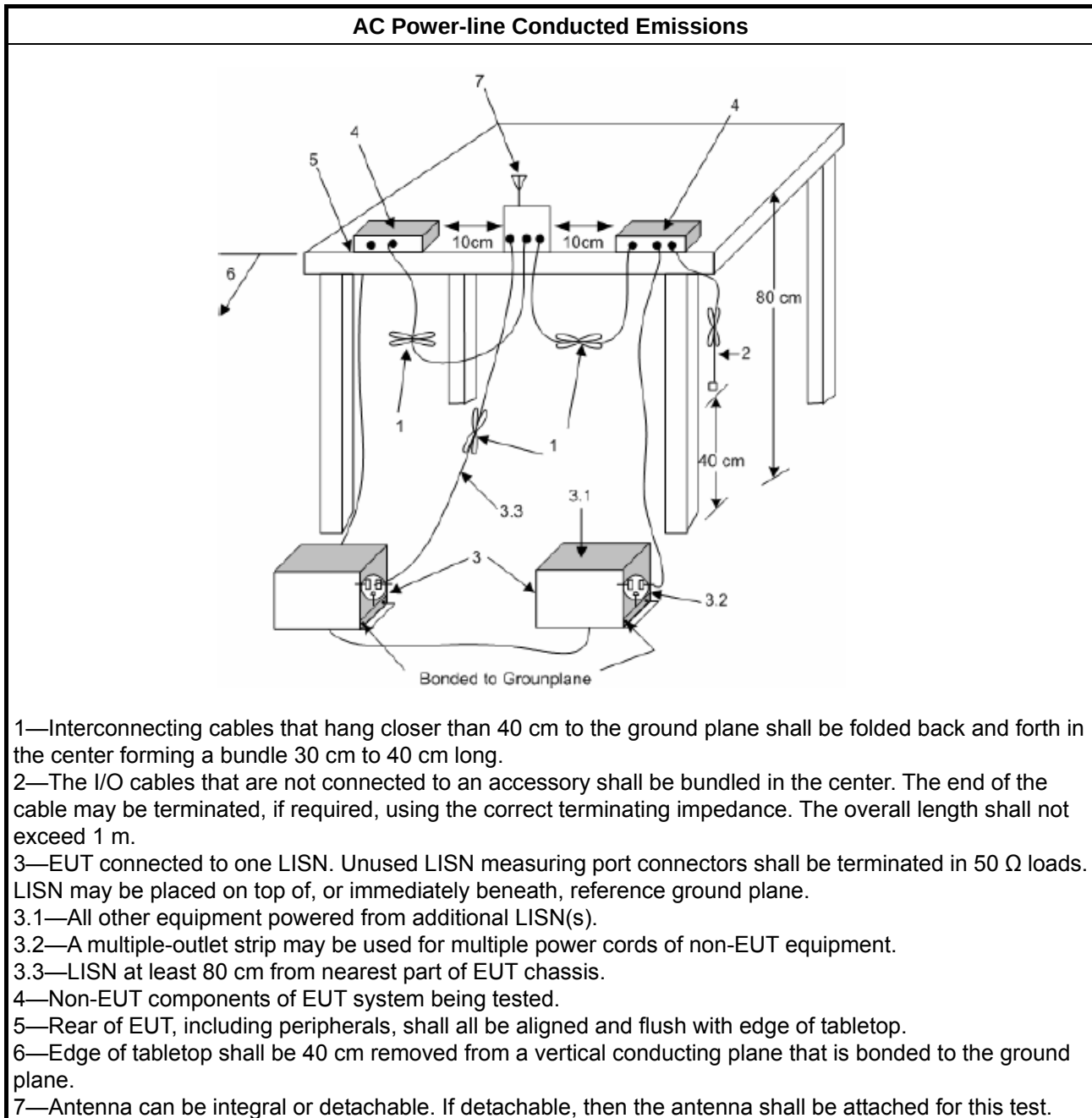
3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

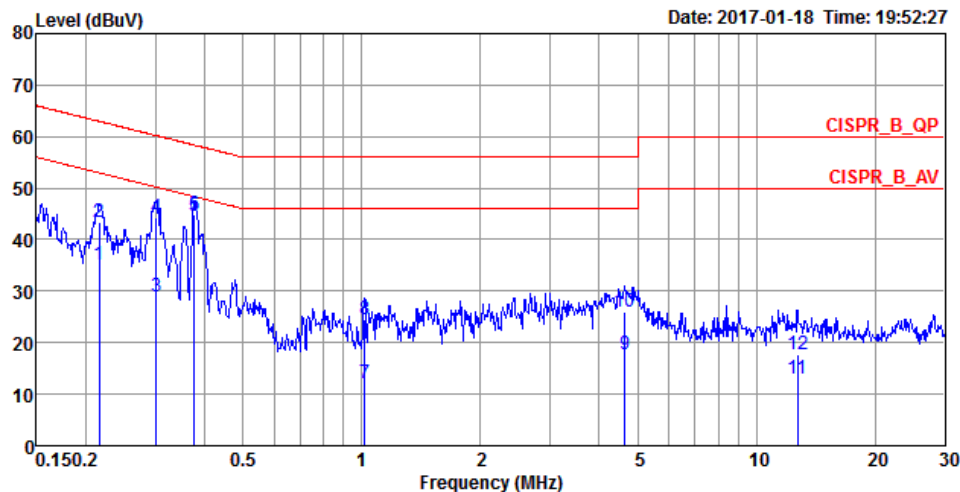
3.1.4 Test Setup





3.1.5 Test Result of AC Power-line Conducted Emissions

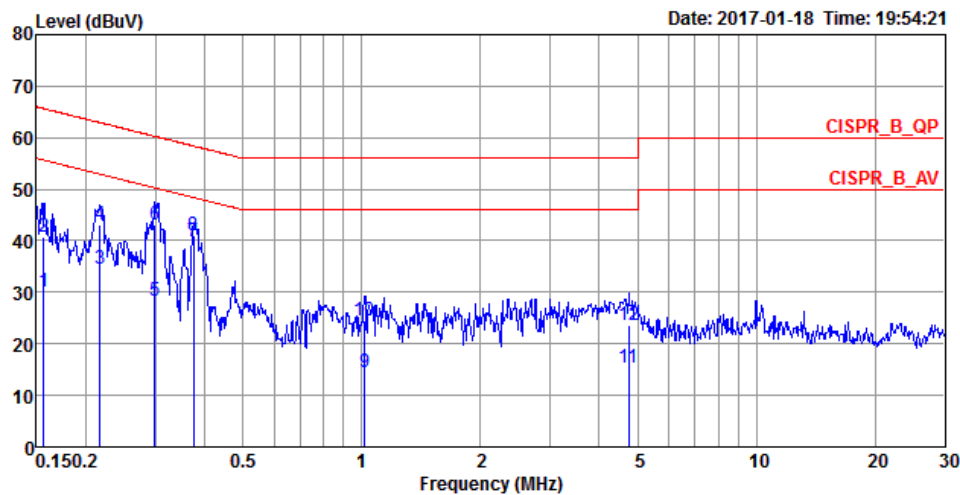
Temperature	23°C	Humidity	56%
Test Engineer	Hank Yang	Phase	Line
Configuration	Normal Link	Test Mode	Mode 2



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.2162	35.22	-17.74	52.96	25.13	9.92	0.17	LINE	Average
2	0.2162	43.54	-19.42	62.96	33.45	9.92	0.17	LINE	QP
3	0.3019	28.81	-21.38	50.19	18.81	9.92	0.08	LINE	Average
4	0.3019	44.17	-16.02	60.19	34.17	9.92	0.08	LINE	QP
5	0.3771	44.51	-3.83	48.34	34.56	9.92	0.03	LINE	Average
6	0.3771	45.01	-13.33	58.34	35.06	9.92	0.03	LINE	QP
7	1.0157	12.13	-33.87	46.00	1.47	9.94	0.72	LINE	Average
8	1.0157	24.46	-31.54	56.00	13.80	9.94	0.72	LINE	QP
9	4.6469	17.86	-28.14	46.00	7.75	10.01	0.10	LINE	Average
10	4.6469	25.95	-30.05	56.00	15.84	10.01	0.10	LINE	QP
11	12.7161	13.00	-37.00	50.00	2.62	10.19	0.19	LINE	Average
12	12.7161	17.79	-42.21	60.00	7.41	10.19	0.19	LINE	QP



Temperature	23°C	Humidity	56%
Test Engineer	Hank Yang	Phase	Neutral
Configuration	Normal Link	Test Mode	Mode 2



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1565	30.03	-25.62	55.65	19.84	10.02	0.17	NEUTRAL	Average
2	0.1565	40.85	-24.80	65.65	30.66	10.02	0.17	NEUTRAL	QP
3	0.2174	34.62	-18.30	52.92	24.53	9.92	0.17	NEUTRAL	Average
4	0.2174	43.23	-19.69	62.92	33.14	9.92	0.17	NEUTRAL	QP
5	0.2987	28.48	-21.80	50.28	18.47	9.92	0.09	NEUTRAL	Average
6	0.2987	43.20	-17.08	60.28	33.19	9.92	0.09	NEUTRAL	QP
7	0.3751	39.80	-8.59	48.39	29.85	9.92	0.03	NEUTRAL	Average
8	0.3751	41.09	-17.30	58.39	31.14	9.92	0.03	NEUTRAL	QP
9	1.0157	14.52	-31.48	46.00	3.86	9.94	0.72	NEUTRAL	Average
10	1.0157	24.48	-31.52	56.00	13.82	9.94	0.72	NEUTRAL	QP
11	4.7464	15.48	-30.52	46.00	5.37	10.01	0.10	NEUTRAL	Average
12	4.7464	23.64	-32.36	56.00	13.53	10.01	0.10	NEUTRAL	QP

Note:

Level = Read Level + LISN Factor + Cable Loss.



3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

Emission Bandwidth Limit
UNII Devices
☒ For the 5.15-5.25 GHz band, N/A
☐ For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in MHz.
☐ For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in MHz.
☒ For the 5.725-5.85 GHz band, 6 dB emission bandwidth $\geq 500\text{kHz}$.
LE-LAN Devices
☐ For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
☐ For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐ For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐ For the 5.725-5.85 GHz band, 6 dB emission bandwidth $\geq 500\text{kHz}$.

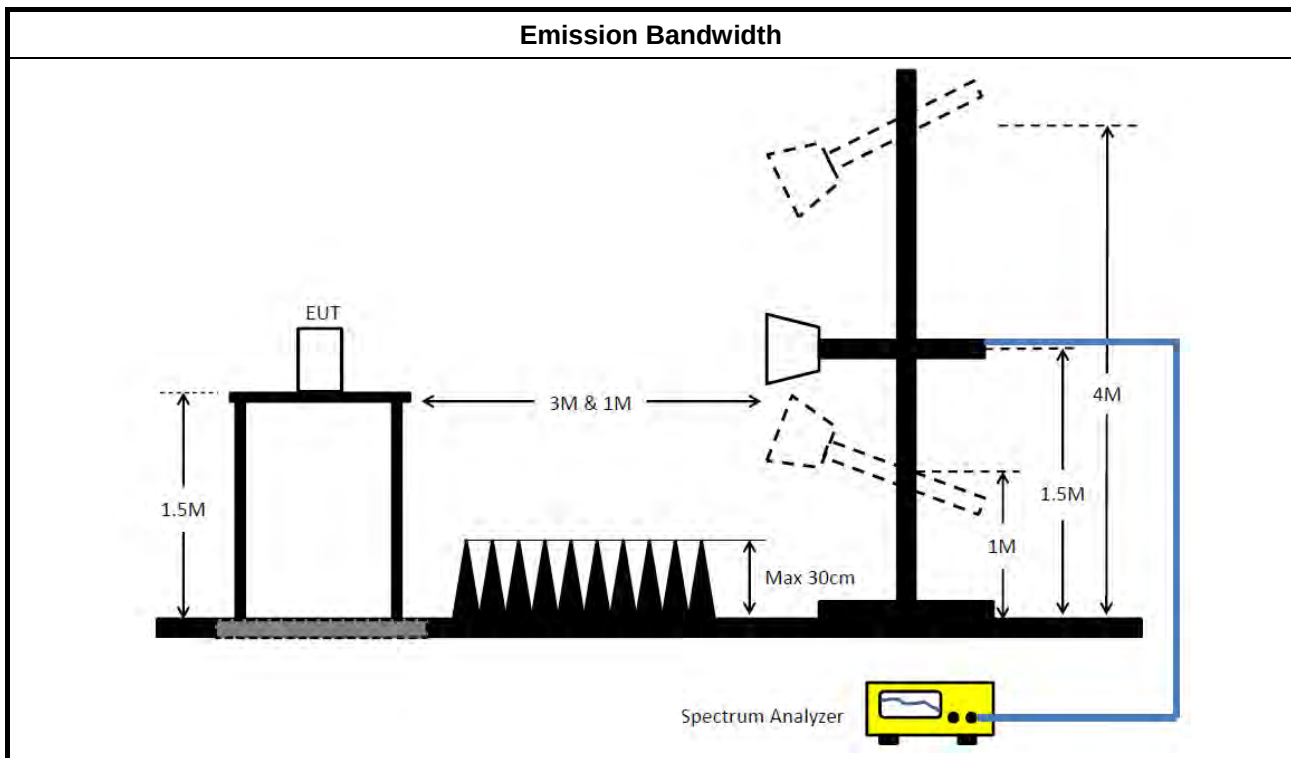
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method
▪ For the emission bandwidth shall be measured using one of the options below:
☒ Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.
☐ Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.
☐ Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.

3.2.4 Test Setup



**3.2.5 Test Result of Emission Bandwidth**

Temperature	24℃	Humidity	60%
Test Engineer	Clemens Fang	Test Mode	Mode 1

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	20.78	16.50
	5200 MHz	35.91	20.67
	5240 MHz	32.26	18.76
	5745 MHz	33.30	24.23
	5785 MHz	33.30	23.01
	5825 MHz	33.13	18.41
802.11ac MCS0/Nss1 VHT20	5180 MHz	22.00	18.15
	5200 MHz	23.30	17.97
	5240 MHz	21.48	17.71
	5745 MHz	42.96	26.83
	5785 MHz	42.78	26.14
	5825 MHz	31.83	18.32
802.11ac MCS0/Nss1 VHT40	5190 MHz	42.46	36.18
	5230 MHz	46.81	36.76
	5755 MHz	75.22	43.56
	5795 MHz	67.25	38.93
802.11ac MCS0/Nss1 VHT80	5210 MHz	84.93	75.25
	5775 MHz	121.16	75.54

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	15.54	500	Complies
	5785 MHz	12.64	500	Complies
	5825 MHz	14.78	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	14.44	500	Complies
	5785 MHz	16.41	500	Complies
	5825 MHz	15.71	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	34.44	500	Complies
	5795 MHz	30.49	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	70.15	500	Complies



Temperature	24°C	Humidity	60%
Test Engineer	Serway Li	Test Mode	Mode 2

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	22.09	16.76
	5200 MHz	38.70	21.53
	5240 MHz	35.74	18.67
	5745 MHz	37.48	20.67
	5785 MHz	37.04	20.06
	5825 MHz	27.91	17.11
802.11ac MCS0/Nss1 VHT20	5180 MHz	21.22	17.71
	5200 MHz	24.00	18.41
	5240 MHz	24.78	18.50
	5745 MHz	28.35	21.36
	5785 MHz	27.57	20.67
	5825 MHz	26.44	18.67
802.11ac MCS0/Nss1 VHT40	5190 MHz	41.30	36.04
	5230 MHz	42.32	36.04
	5755 MHz	67.25	38.64
	5795 MHz	61.30	38.21
802.11ac MCS0/Nss1 VHT80	5210 MHz	88.12	74.39
	5775 MHz	92.46	76.12

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	15.54	500	Complies
	5785 MHz	12.64	500	Complies
	5825 MHz	14.78	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	14.44	500	Complies
	5785 MHz	16.41	500	Complies
	5825 MHz	15.71	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	34.44	500	Complies
	5795 MHz	30.49	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	70.15	500	Complies



Temperature	24°C	Humidity	60%
Test Engineer	Clemens Fang	Test Mode	Mode 3

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180 MHz	19.57	16.67
	5200 MHz	32.52	17.97
	5240 MHz	32.78	19.54
	5745 MHz	36.61	25.18
	5785 MHz	33.30	23.36
	5825 MHz	32.96	18.32
802.11ac MCS0/Nss1 VHT20	5180 MHz	22.09	18.15
	5200 MHz	30.78	18.32
	5240 MHz	40.44	19.54
	5745 MHz	42.09	26.48
	5785 MHz	41.57	24.40
	5825 MHz	32.35	17.89
802.11ac MCS0/Nss1 VHT40	5190 MHz	41.74	36.32
	5230 MHz	45.51	37.19
	5755 MHz	82.17	44.43
	5795 MHz	81.74	41.97
802.11ac MCS0/Nss1 VHT80	5210 MHz	83.19	74.96
	5775 MHz	87.83	75.25

Mode	Frequency	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
802.11a	5745 MHz	11.42	500	Complies
	5785 MHz	14.67	500	Complies
	5825 MHz	14.55	500	Complies
802.11ac MCS0/Nss1 VHT20	5745 MHz	5.10	500	Complies
	5785 MHz	16.41	500	Complies
	5825 MHz	14.90	500	Complies
802.11ac MCS0/Nss1 VHT40	5755 MHz	34.44	500	Complies
	5795 MHz	32.70	500	Complies
802.11ac MCS0/Nss1 VHT80	5775 MHz	70.73	500	Complies

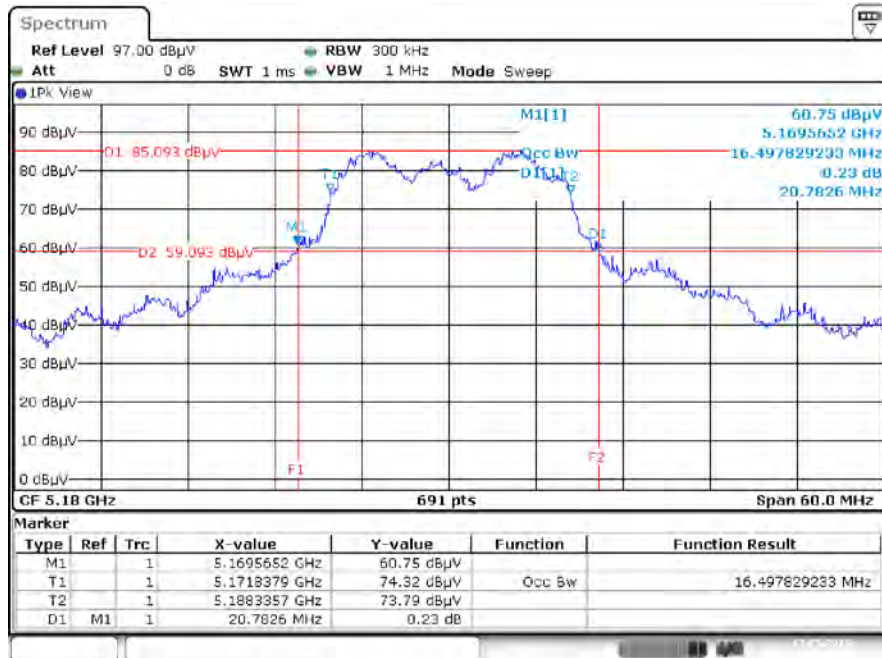
Note: All the test values were listed in the report.

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



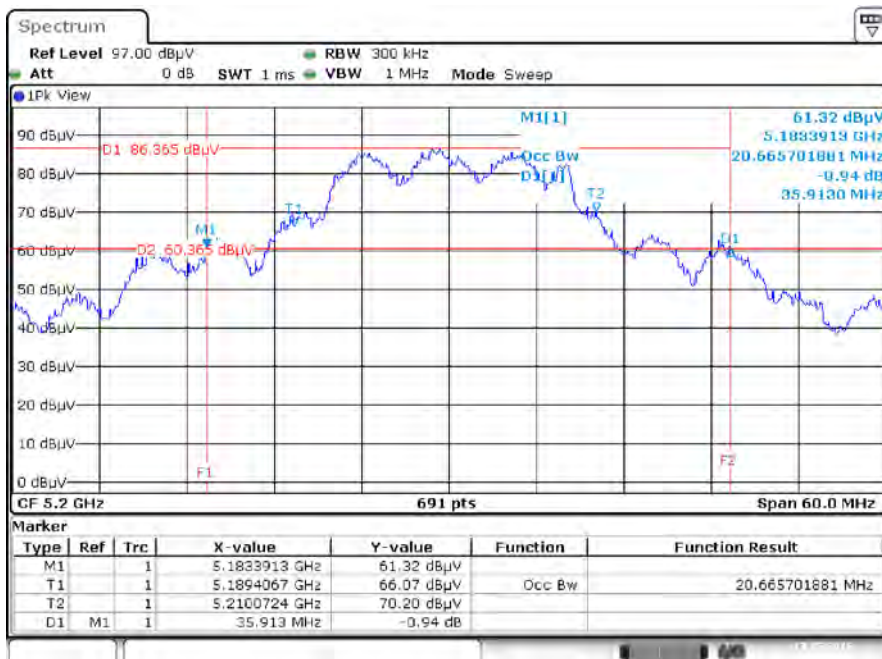
For Mode 1:

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5180 MHz

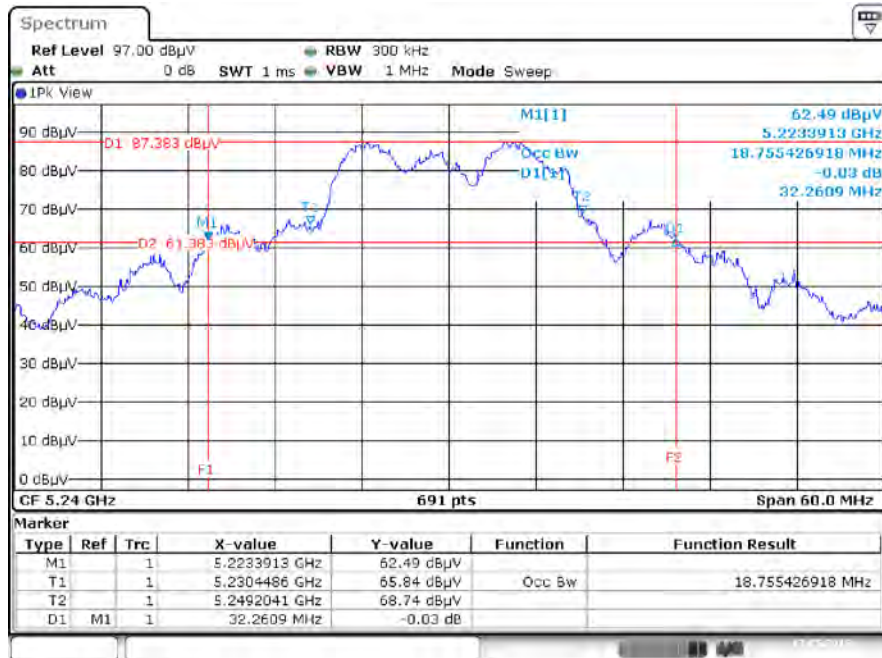


Date: 17.MAY.2016 19:19:56

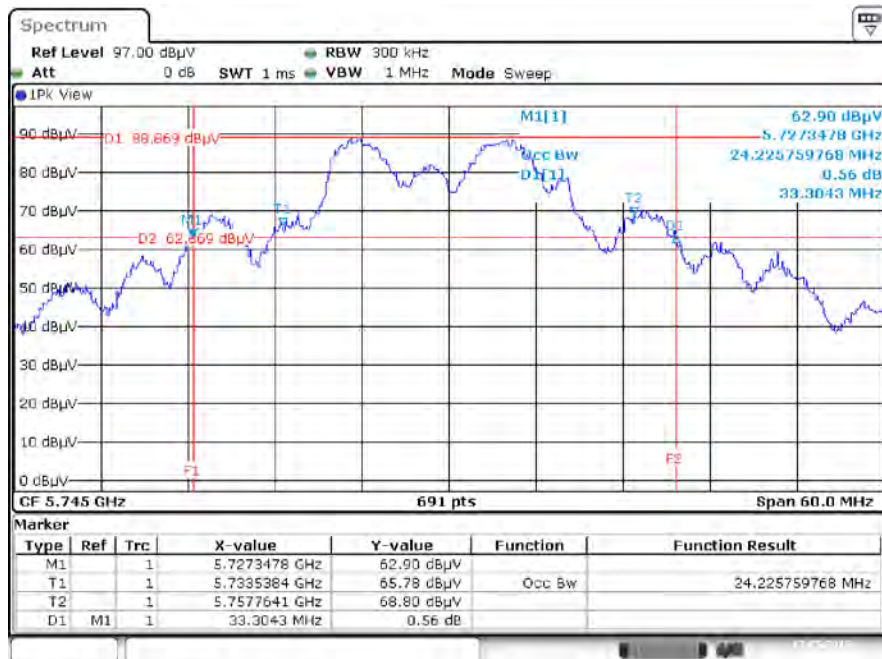
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5200 MHz



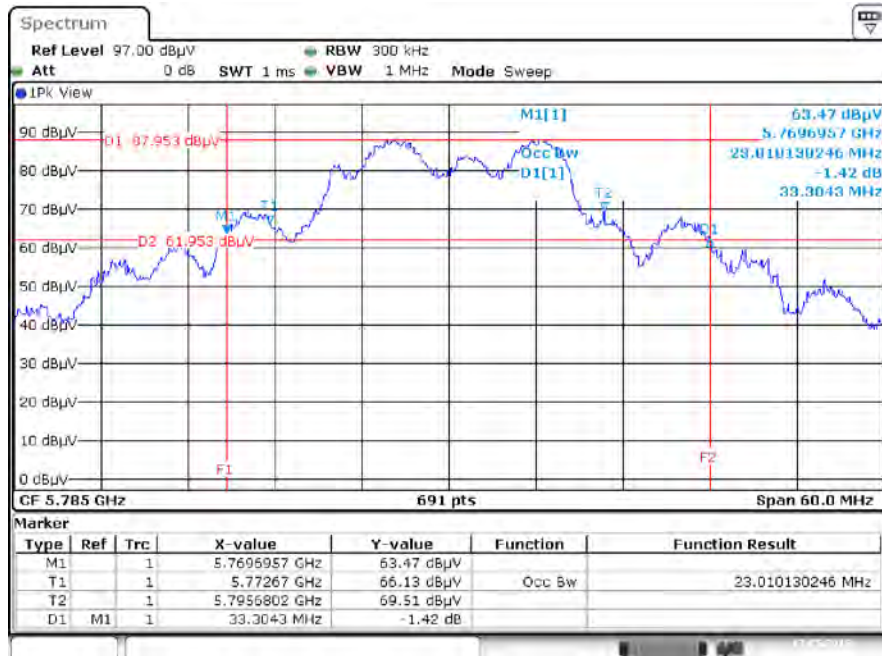
Date: 17.MAY.2016 19:26:35

**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5240 MHz**

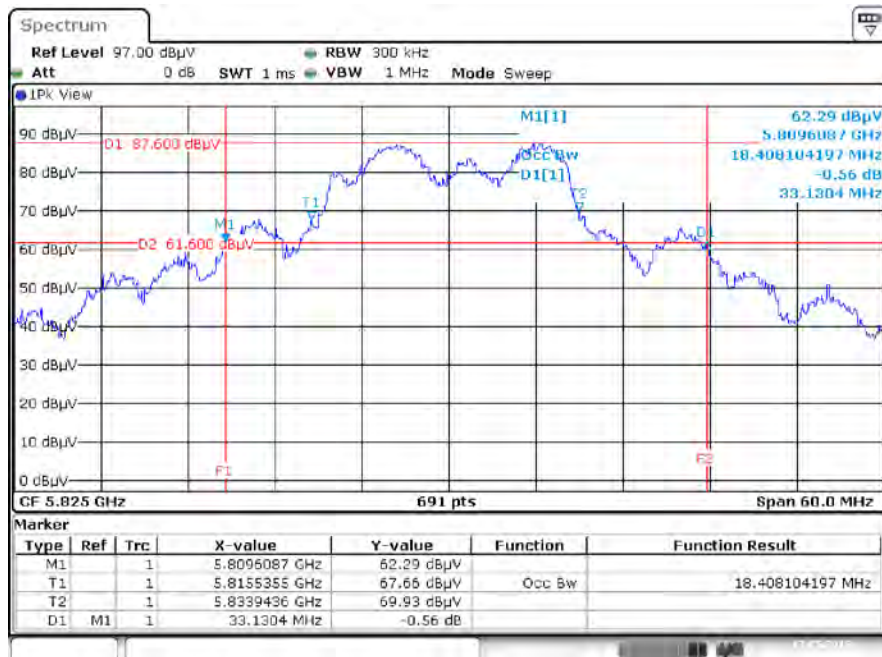
Date: 17.MAY.2016 19:25:51

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5745 MHz

Date: 17.MAY.2016 19:27:51

**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5785 MHz**

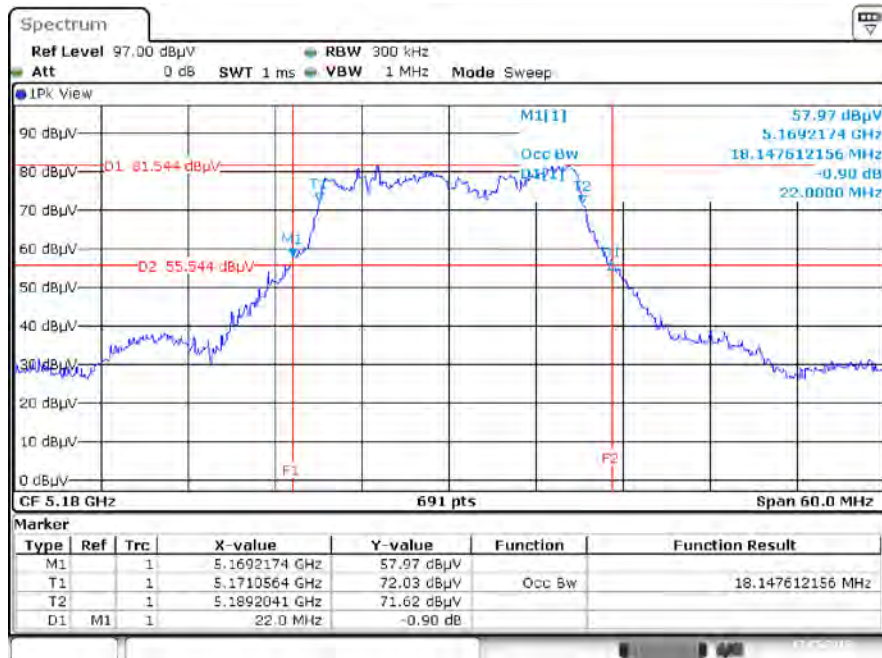
Date: 17.MAY.2016 19:28:34

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5825 MHz

Date: 17.MAY.2016 19:29:04

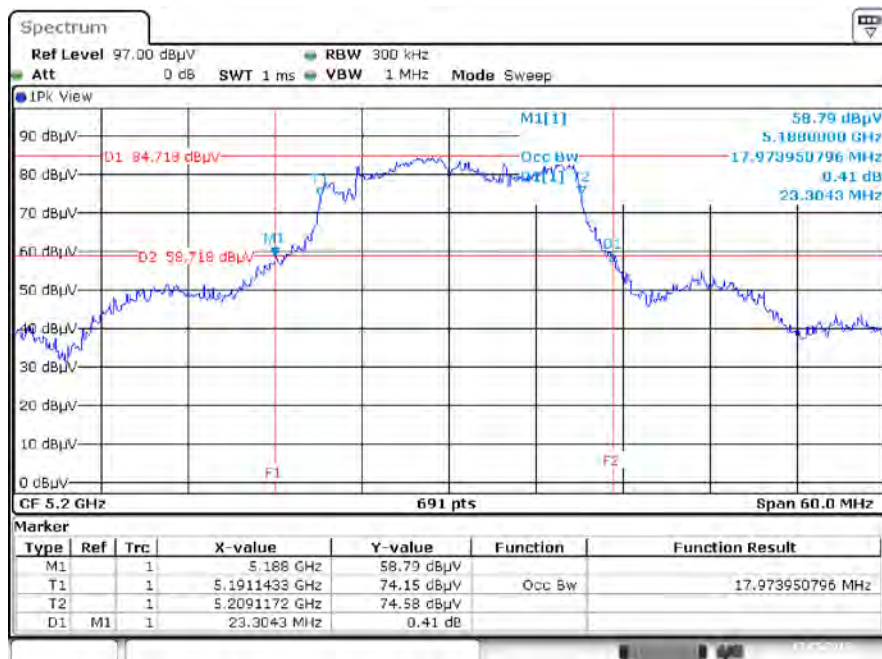


**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5180 MHz**



Date: 17,MAY.2016 19:30:03

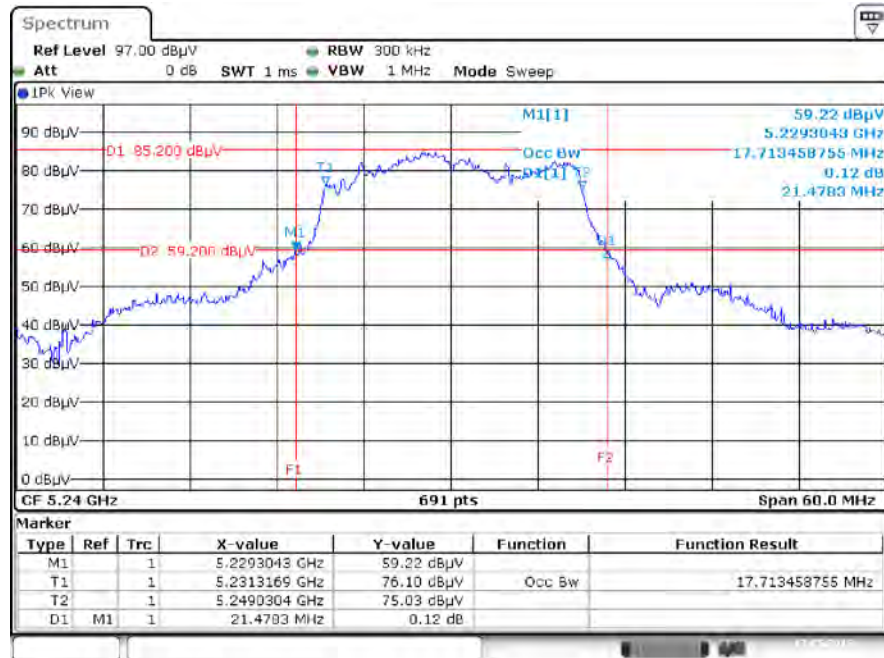
**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5200 MHz**



Date: 17,MAY.2016 19:31:10

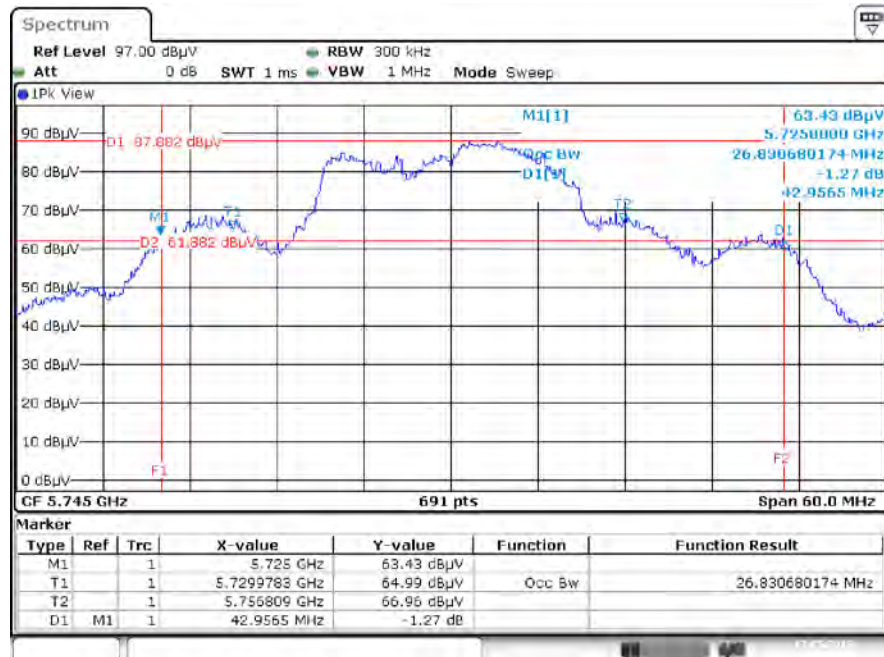


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5240 MHz



Date: 17.MAY.2016 19:32:07

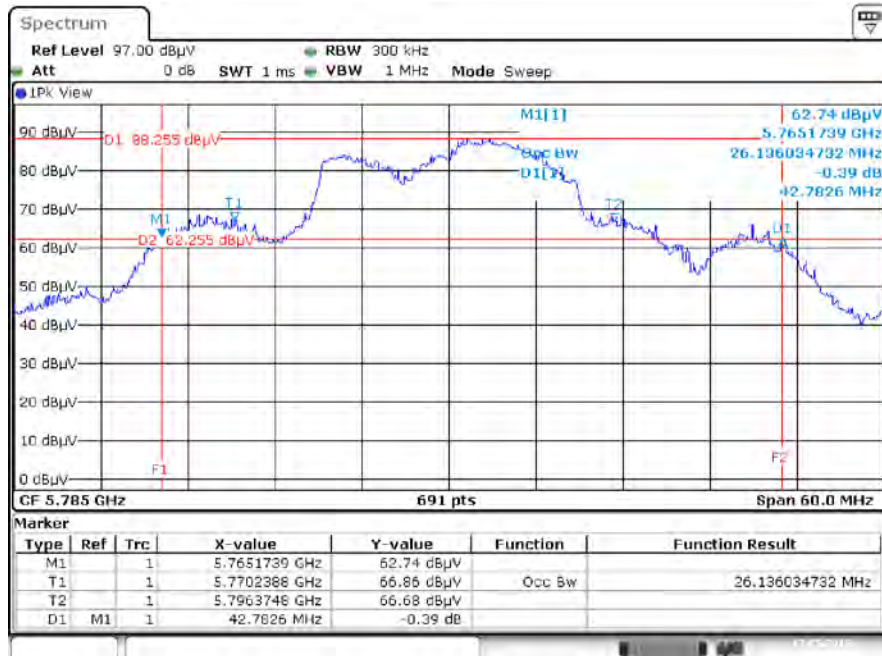
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5745 MHz



Date: 17.MAY.2016 19:32:48

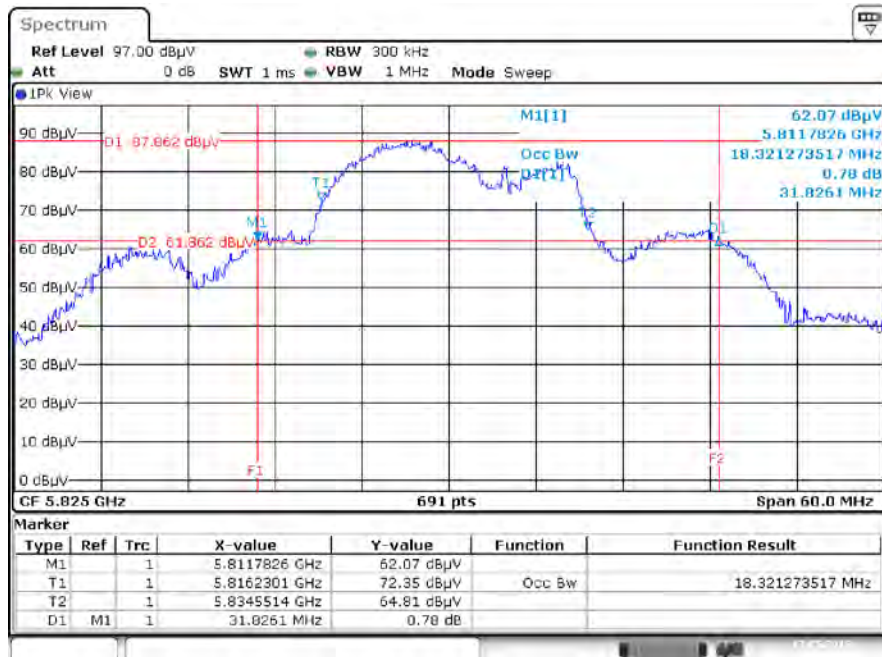


**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5785 MHz**



Date: 17.MAY.2016 19:33:24

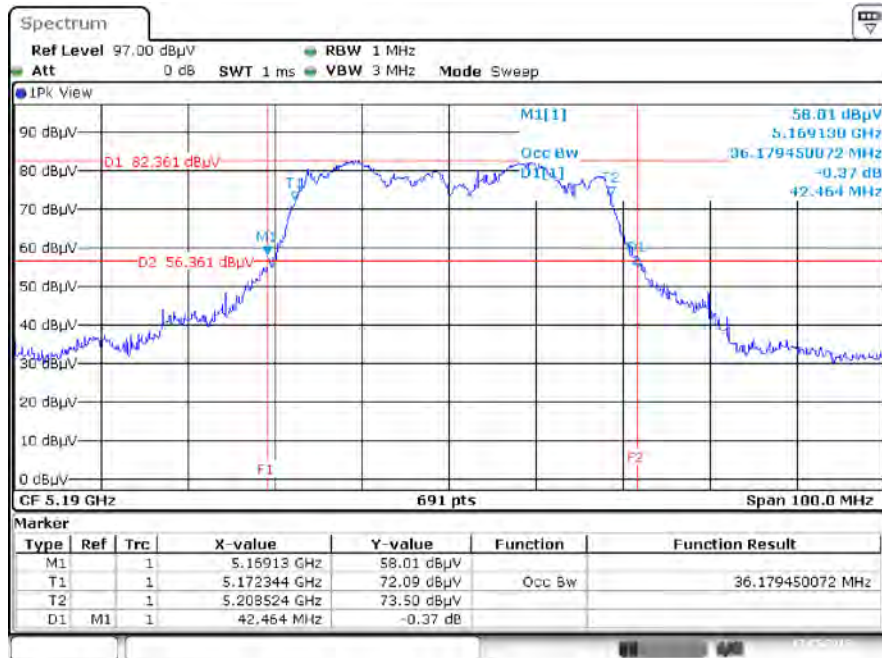
**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5825 MHz**



Date: 17.MAY.2016 19:33:56

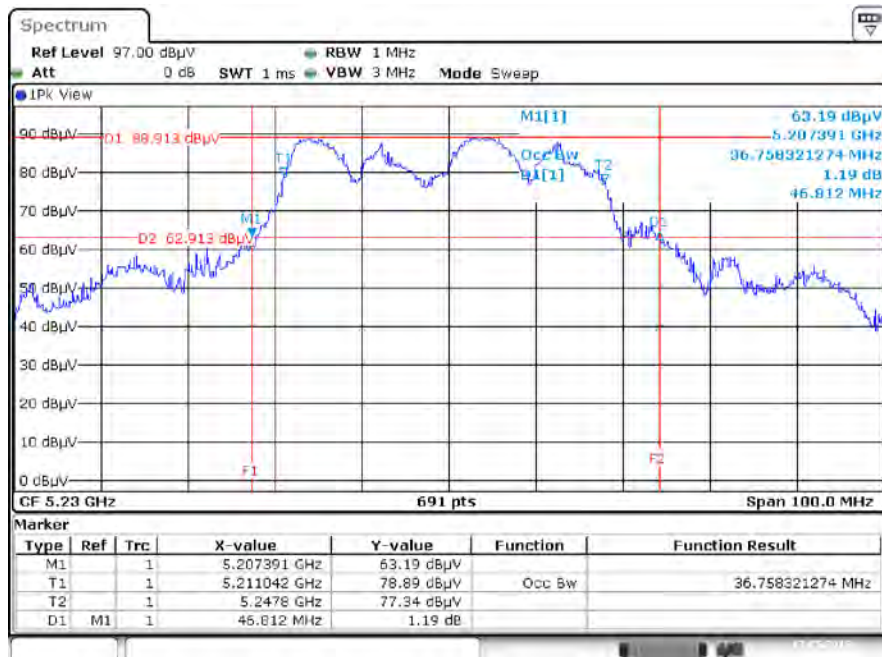


**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT40 / Ant. 1 + Ant. 2 + Ant. 3 / 5190 MHz**



Date: 17.MAY.2016 19:34:37

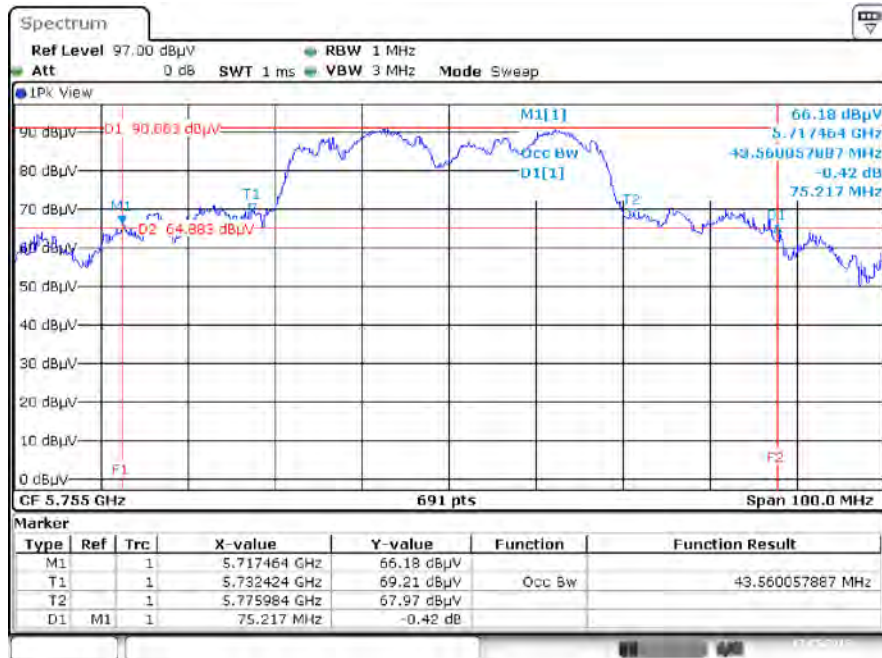
**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT40 / Ant. 1 + Ant. 2 + Ant. 3 / 5230 MHz**



Date: 17.MAY.2016 19:35:07

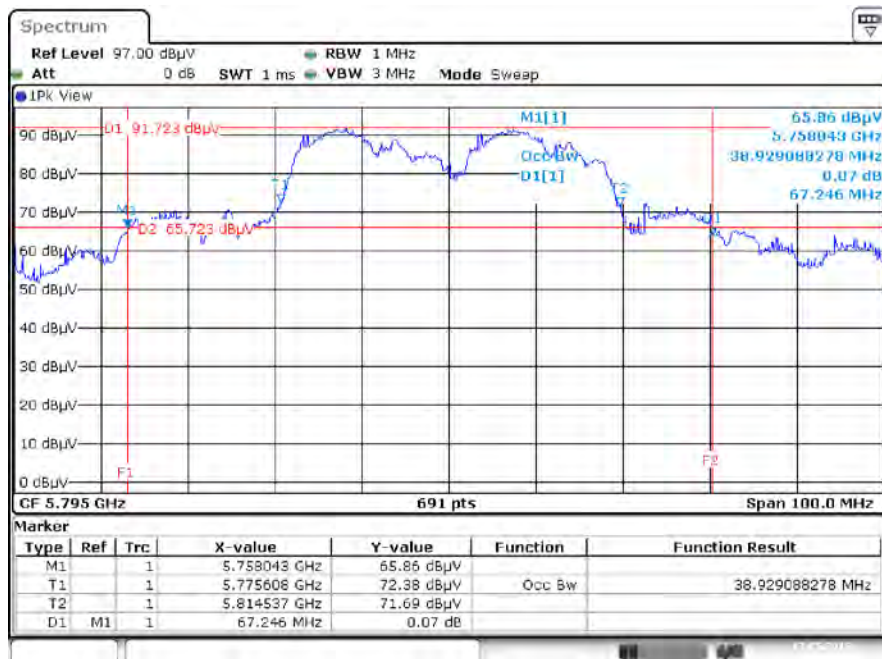


**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT40 / Ant. 1 + Ant. 2 + Ant. 3 / 5755 MHz**

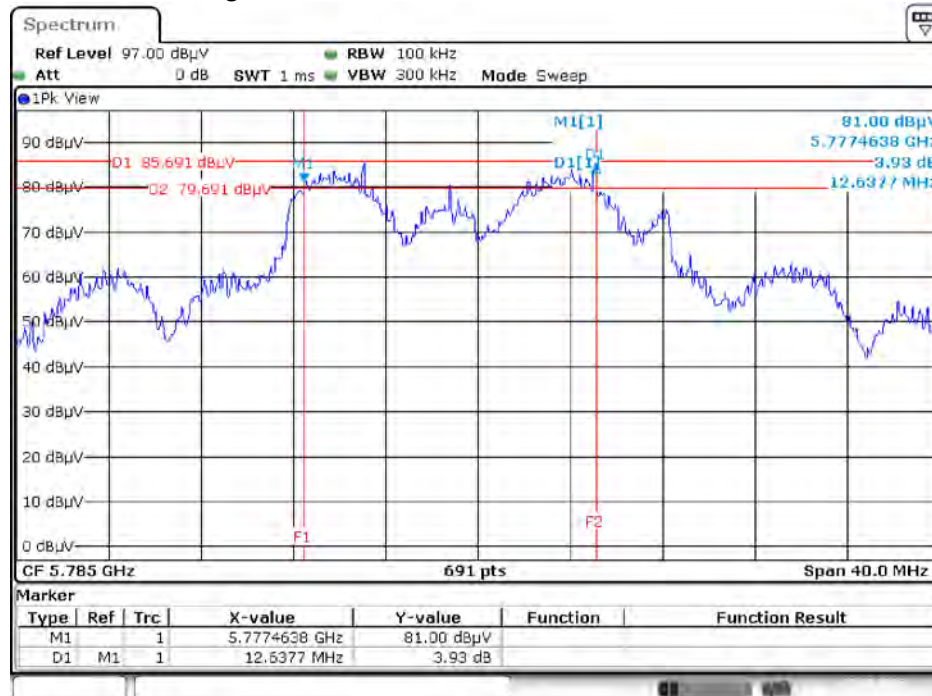


Date: 17.MAY.2016 19:37:10

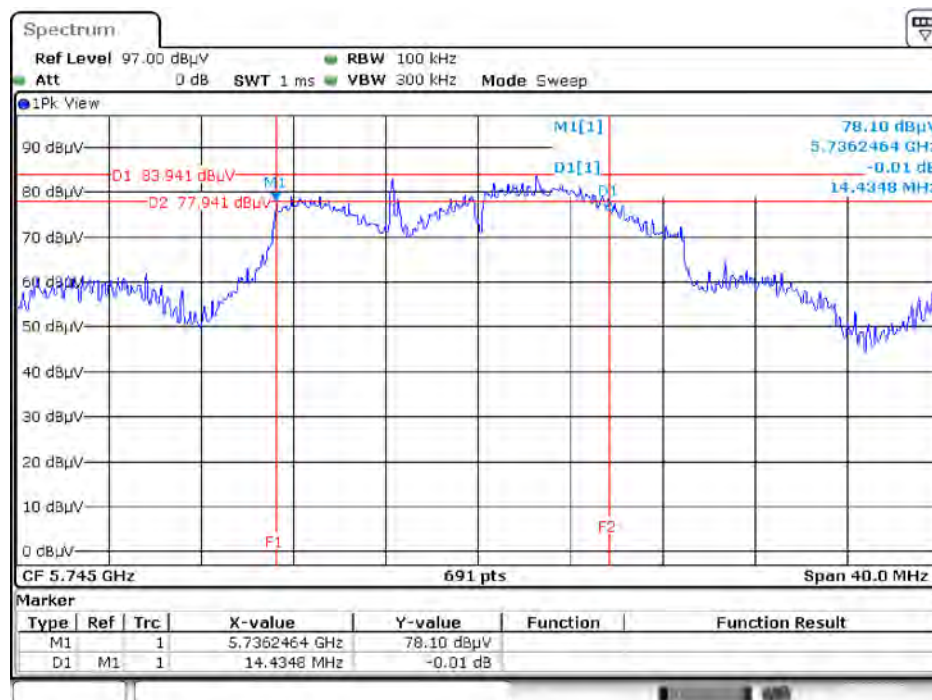
**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT40 / Ant. 1 + Ant. 2 + Ant. 3 / 5795 MHz**



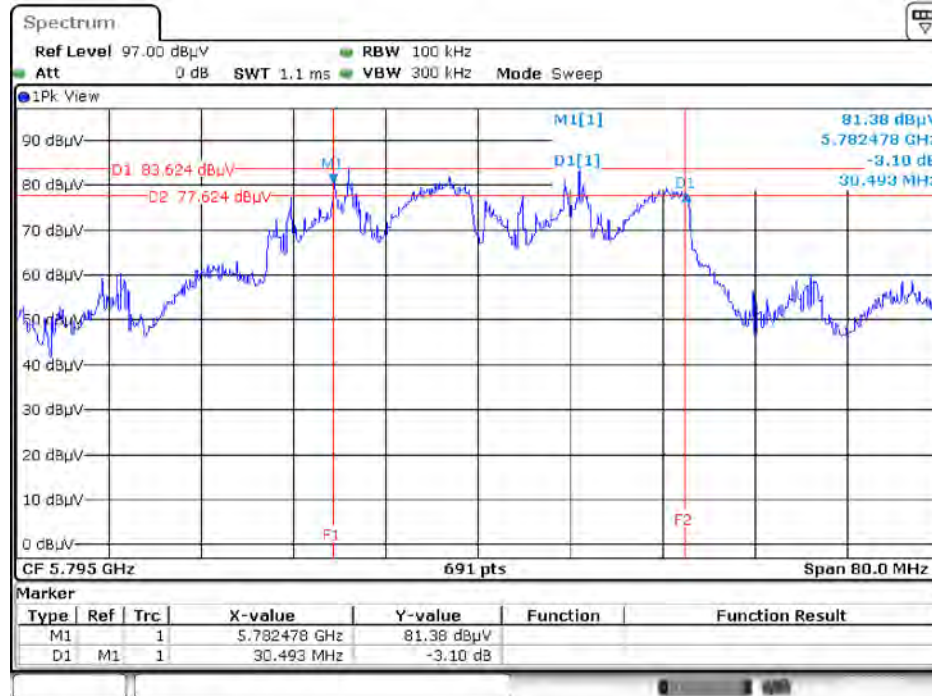
Date: 17.MAY.2016 19:36:15

**6 dB Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5785 MHz**

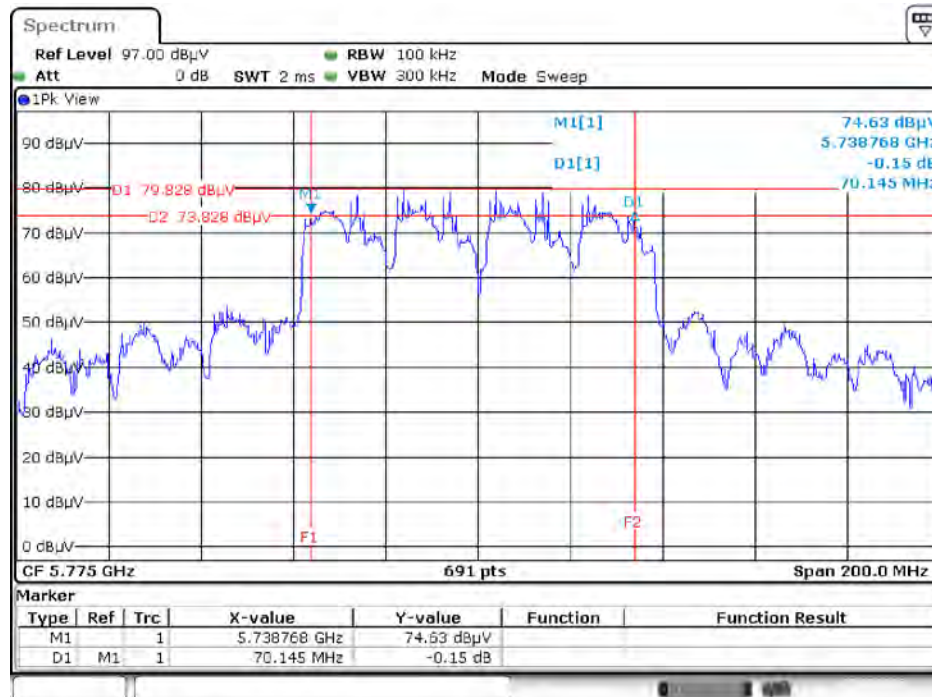
Date: 17.MAY.2016 20:08:50

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

Date: 17.MAY.2016 20:06:56

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

Date: 17.MAY.2016 20:06:27

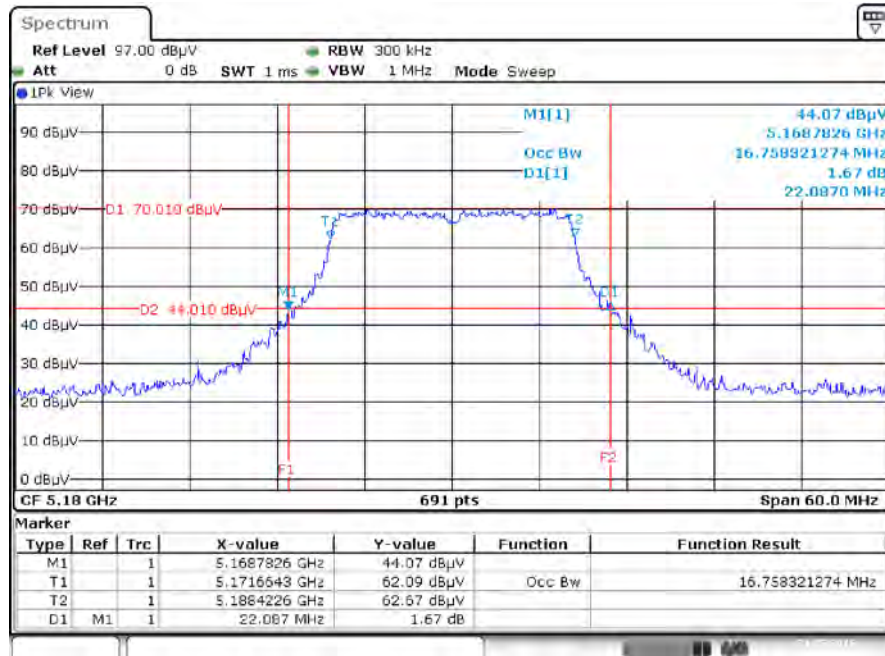
6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Ant. 1 + Ant. 2 + Ant. 3 / 5775 MHz

Date: 17.MAY.2016 20:04:39



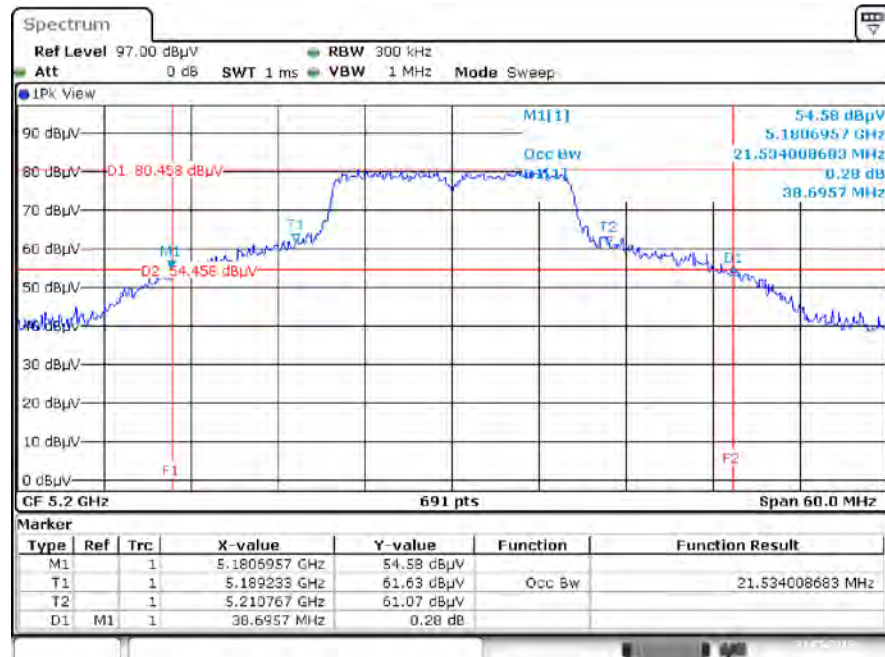
For Mode 2:

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5180 MHz



Date: 31.MAY.2016 11:50:35

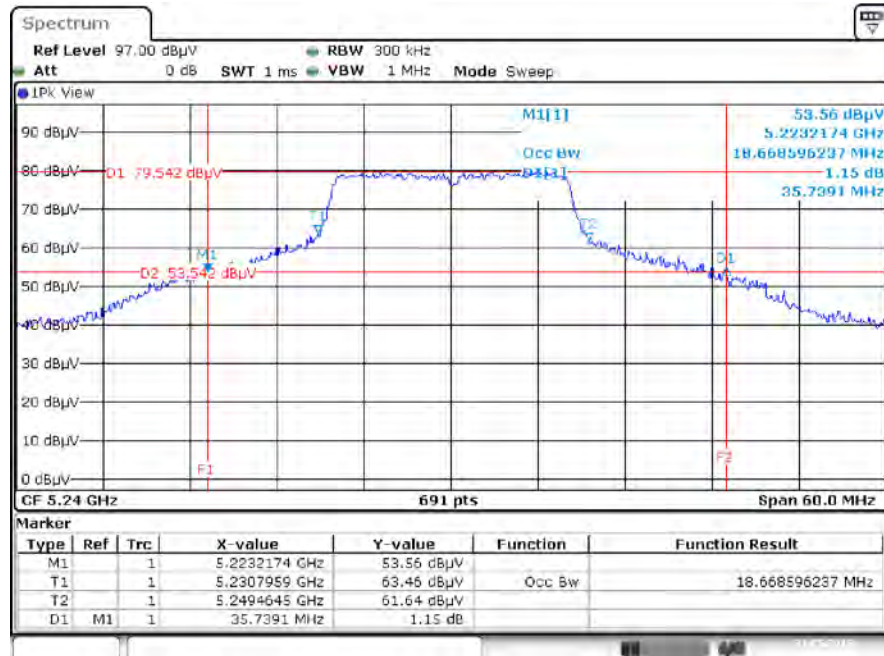
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5200 MHz



Date: 31.MAY.2016 11:53:13

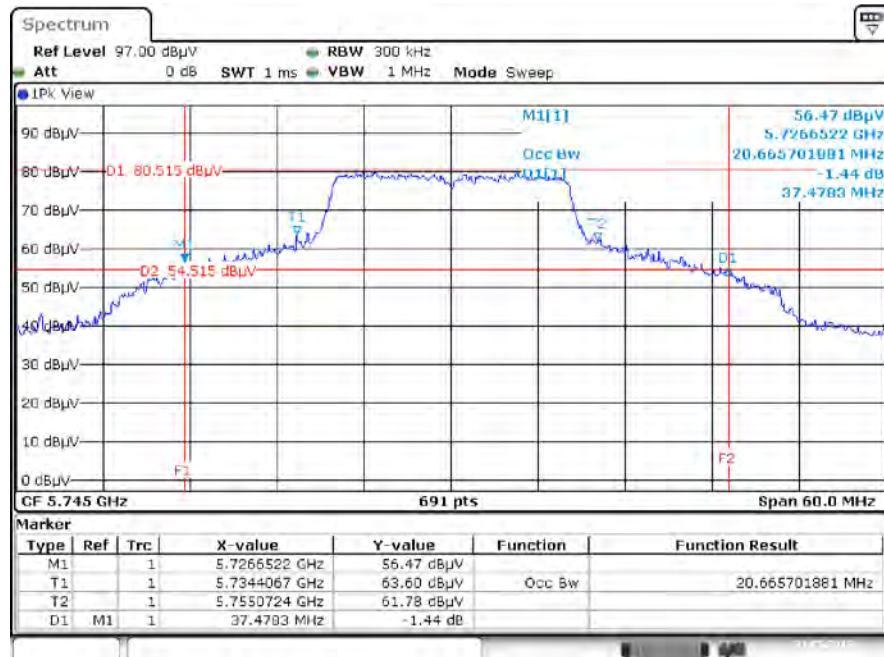


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5240 MHz

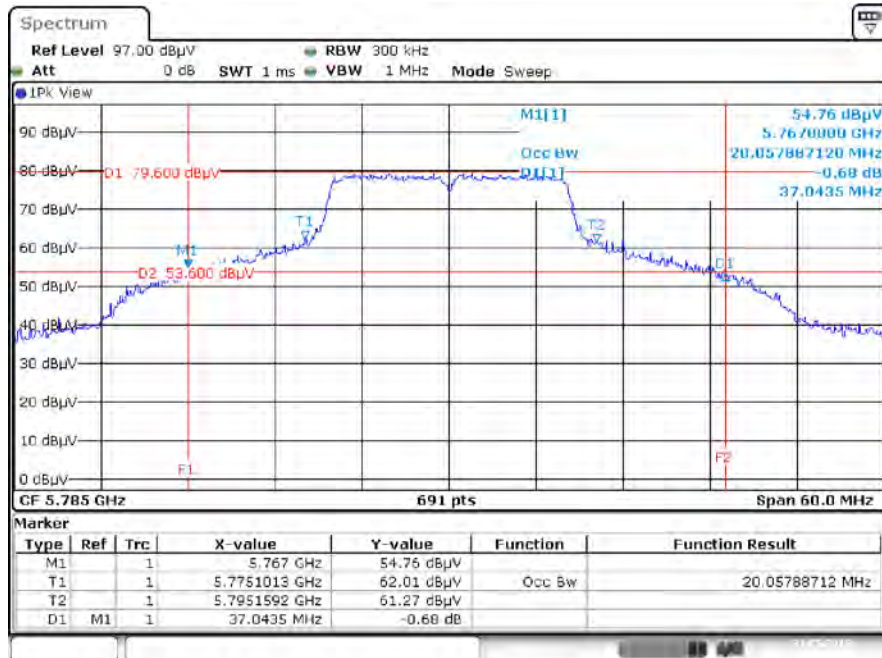


Date: 31.MAY.2016 11:53:44

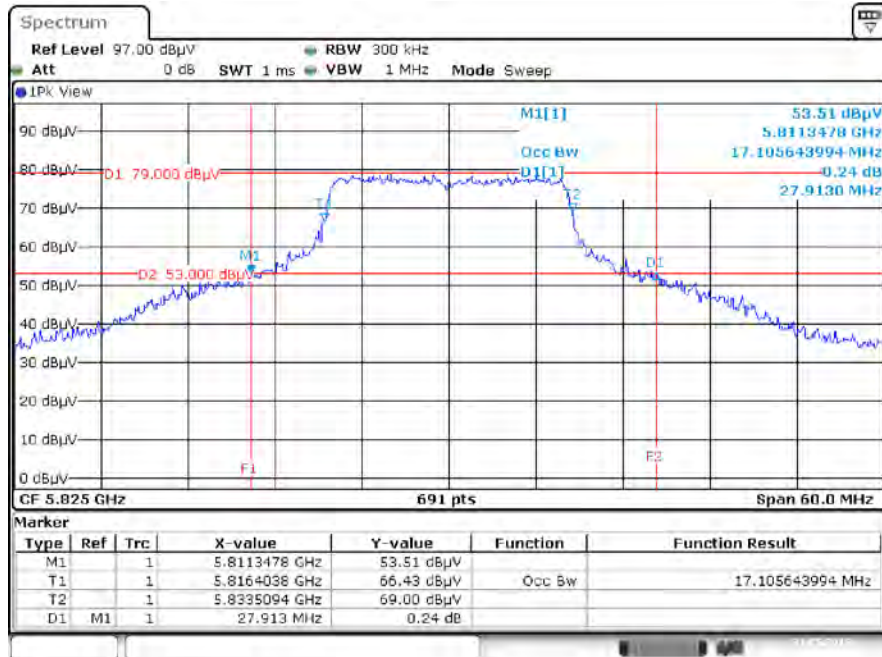
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5745 MHz



Date: 31.MAY.2016 13:40:21

**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5785 MHz**

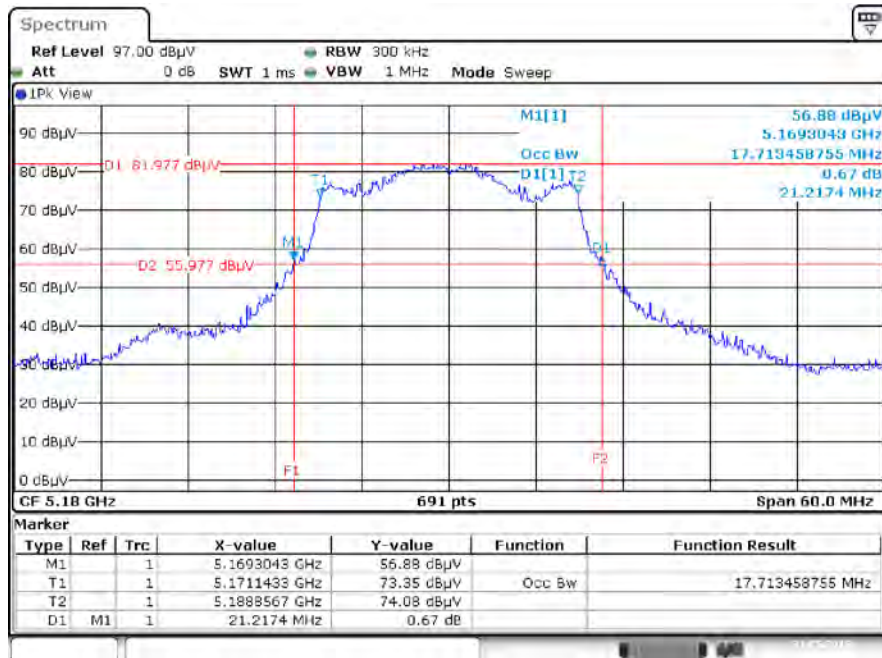
Date: 31.MAY.2016 13:43:23

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5825 MHz

Date: 31.MAY.2016 13:43:54

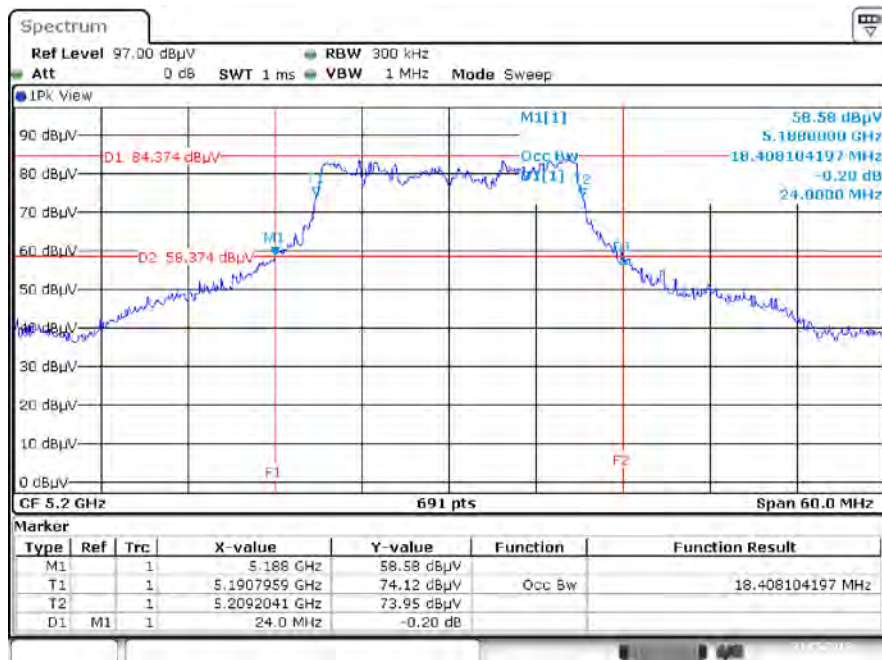


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5180 MHz



Date: 31.MAY.2016 13:45:28

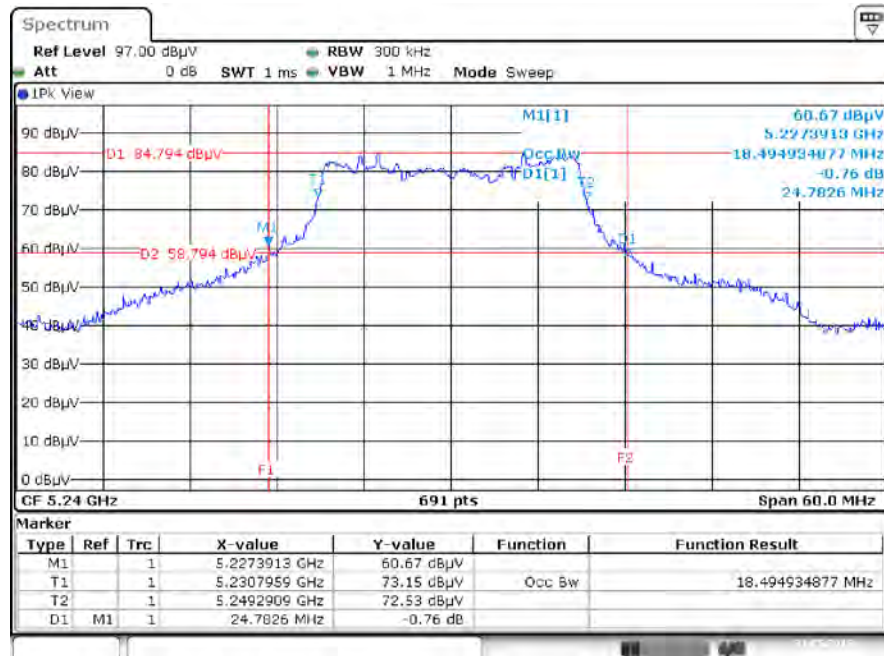
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5200 MHz



Date: 31.MAY.2016 13:46:12

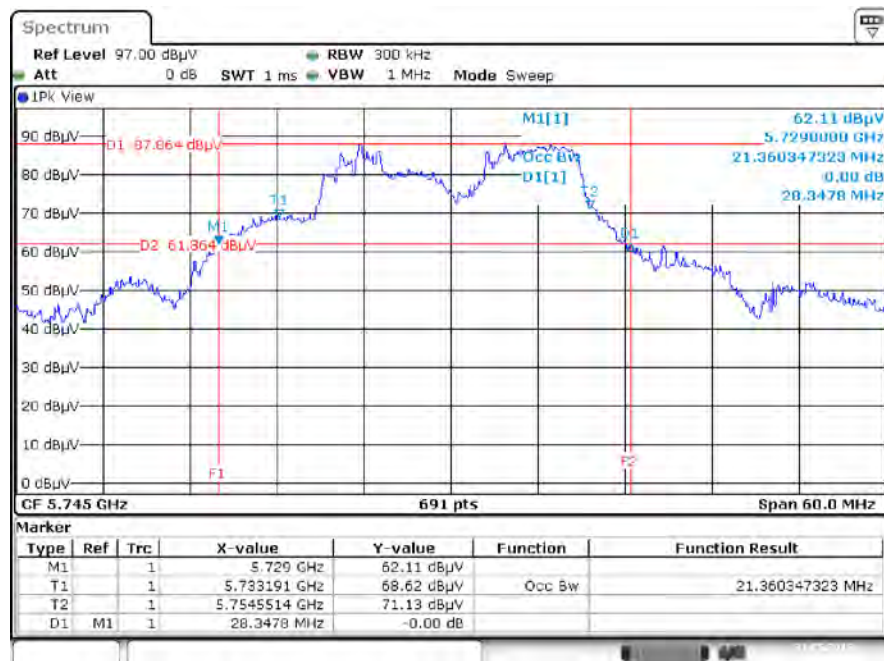


**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5240 MHz**



Date: 31.MAY.2016 13:47:21

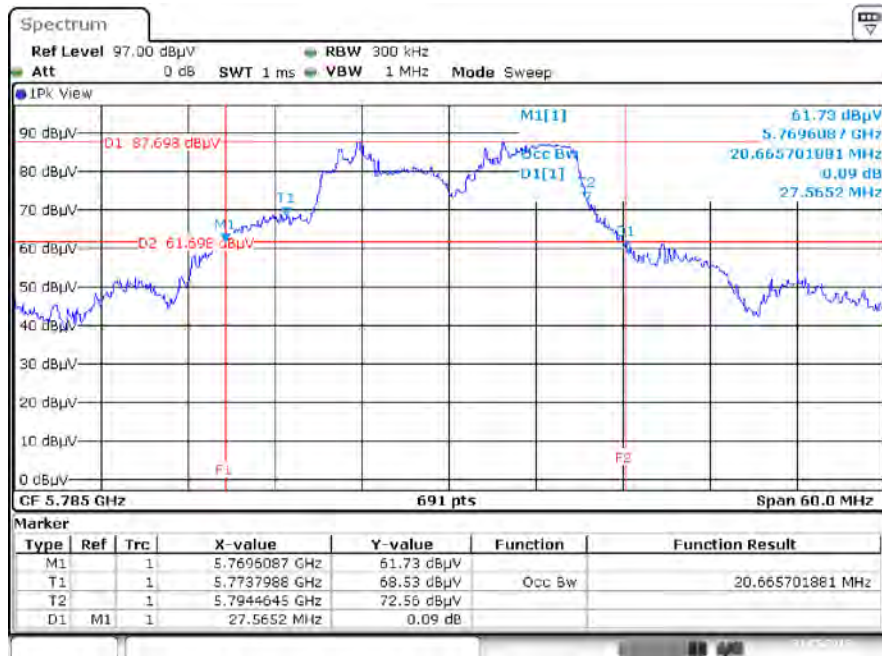
**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5745 MHz**



Date: 31.MAY.2016 14:02:18

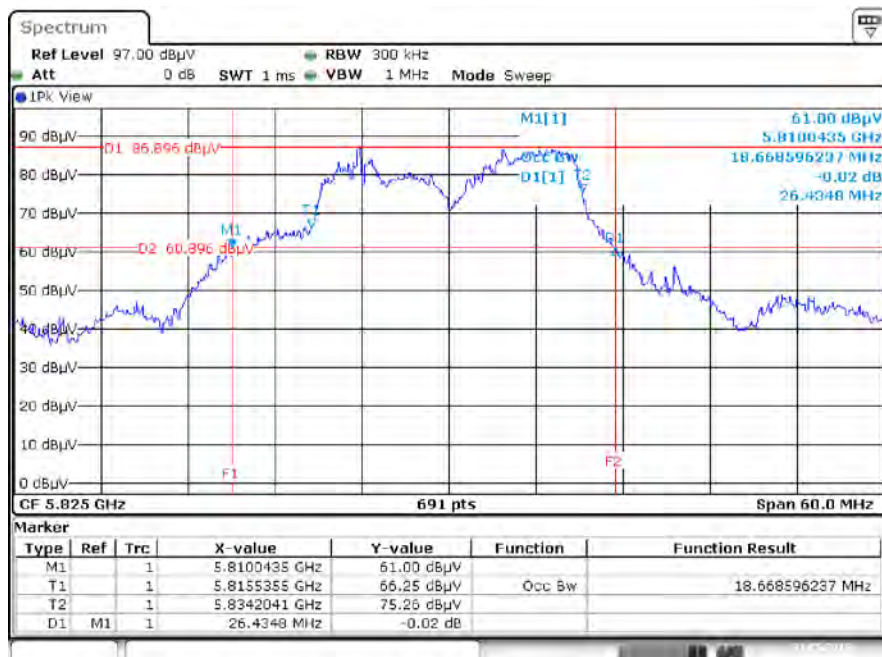


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5785 MHz



Date: 31.MAY.2016 14:02:57

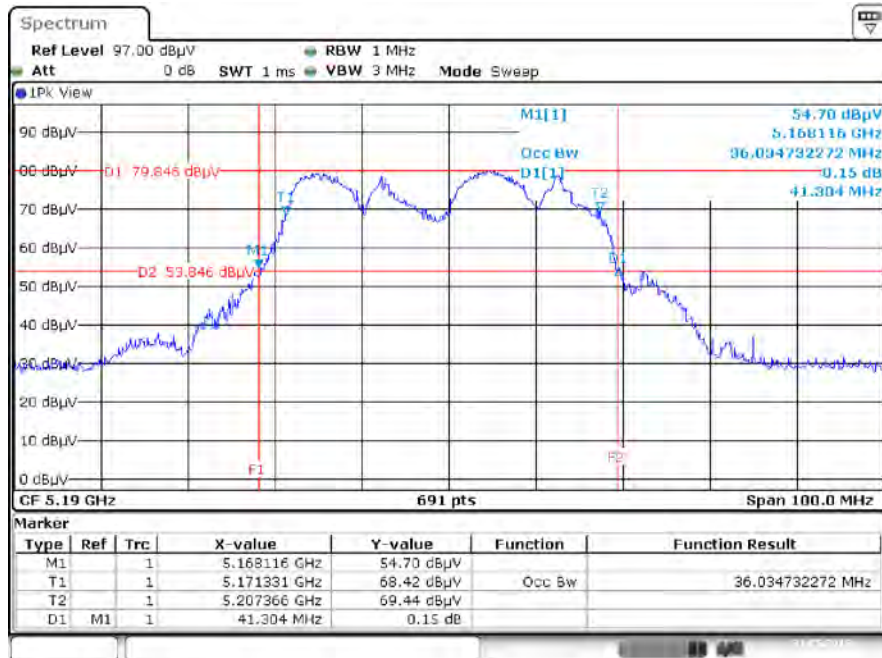
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5825 MHz



Date: 31.MAY.2016 14:03:39

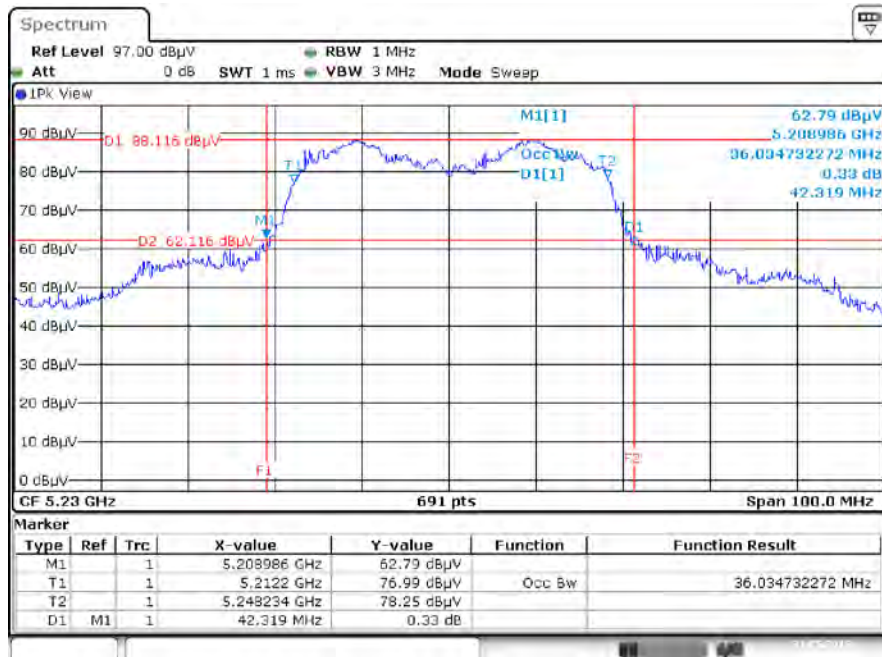


**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT40 / Ant. 1 + Ant. 2 + Ant. 3 / 5190 MHz**



Date: 31.MAY.2016 14:04:45

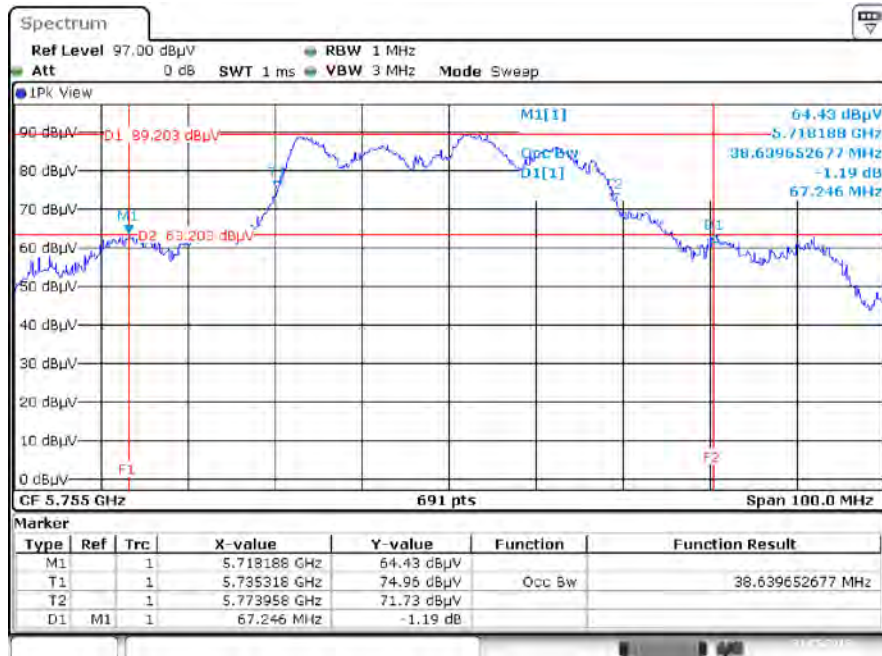
**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT40 / Ant. 1 + Ant. 2 + Ant. 3 / 5230 MHz**



Date: 31.MAY.2016 14:05:10

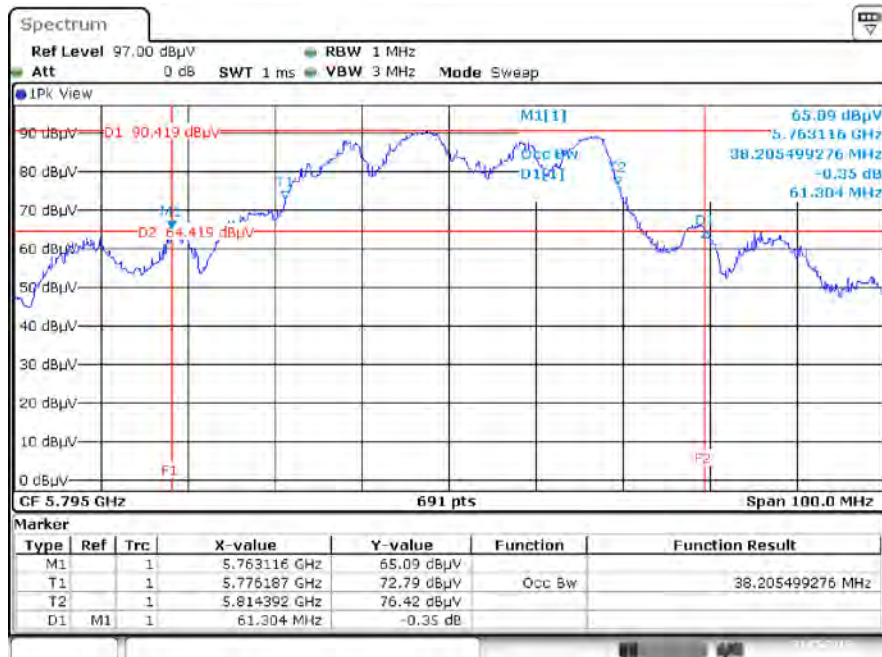


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT40 / Ant. 1 + Ant. 2 + Ant. 3 / 5755 MHz



Date: 31.MAY.2016 14:09:05

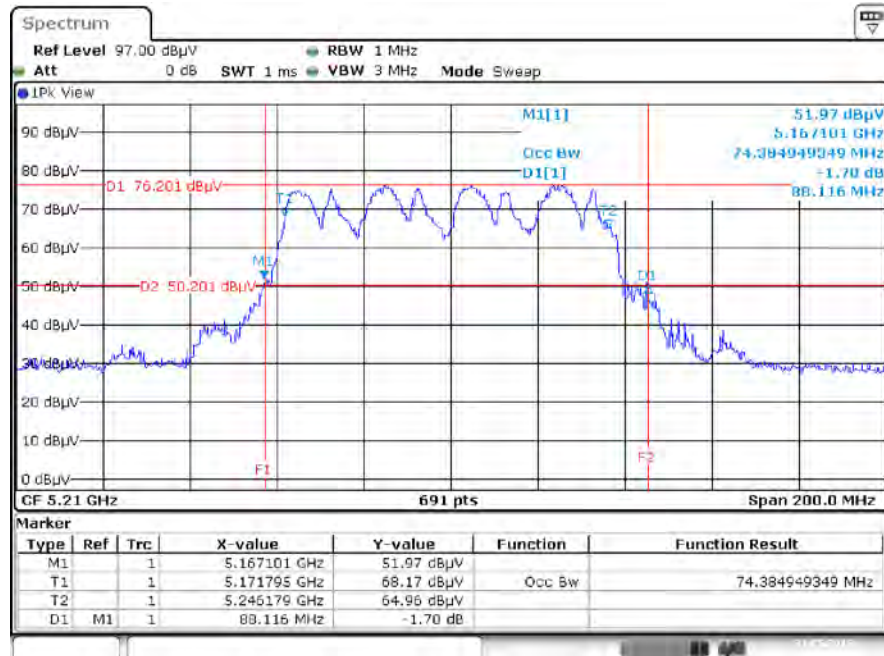
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT40 / Ant. 1 + Ant. 2 + Ant. 3 / 5795 MHz



Date: 31.MAY.2016 14:09:28

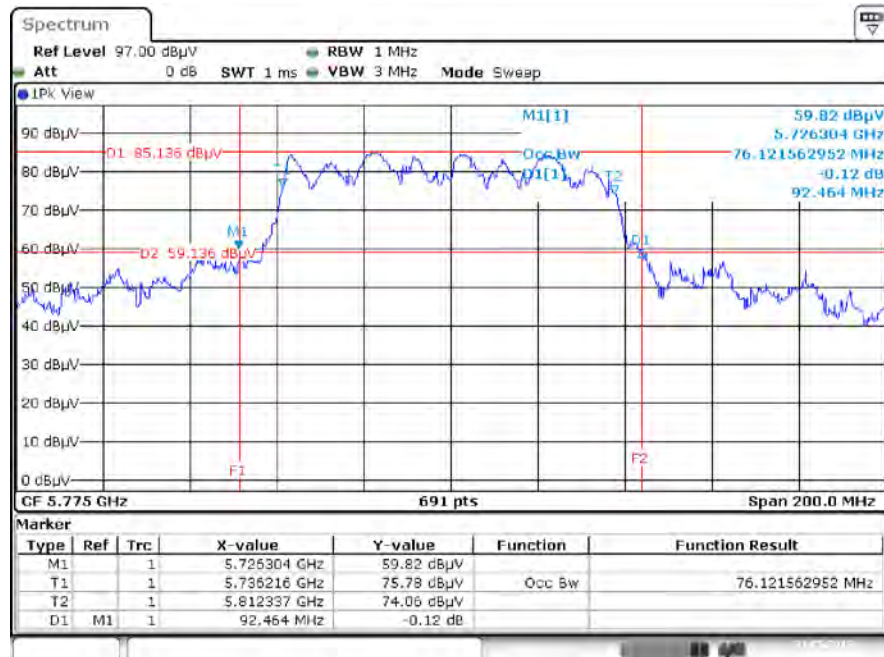


**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT80 / Ant. 1 + Ant. 2 + Ant. 3 / 5210 MHz**

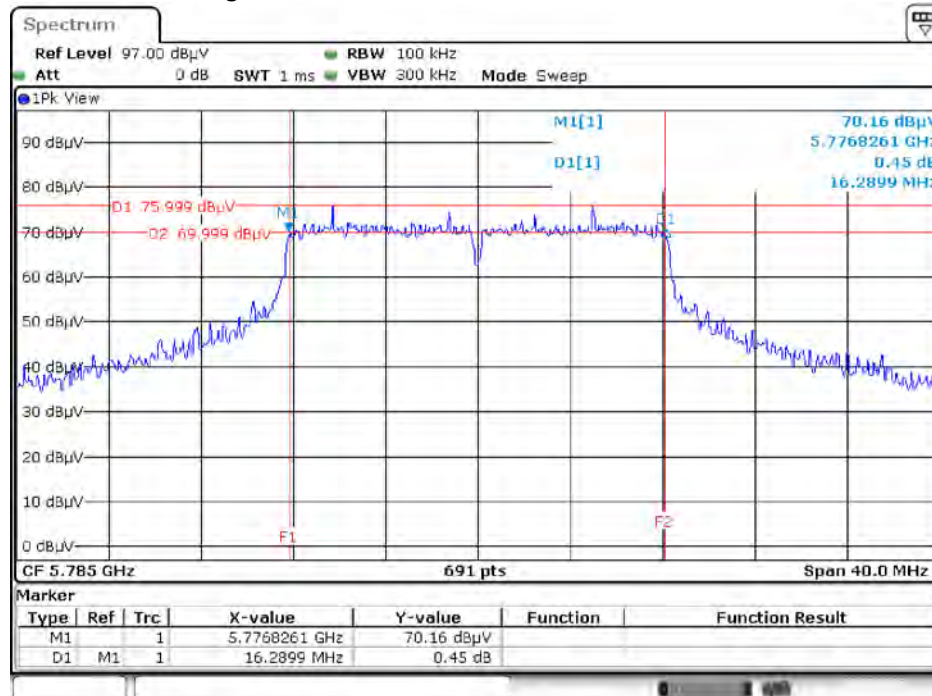


Date: 31.MAY.2016 14:10:35

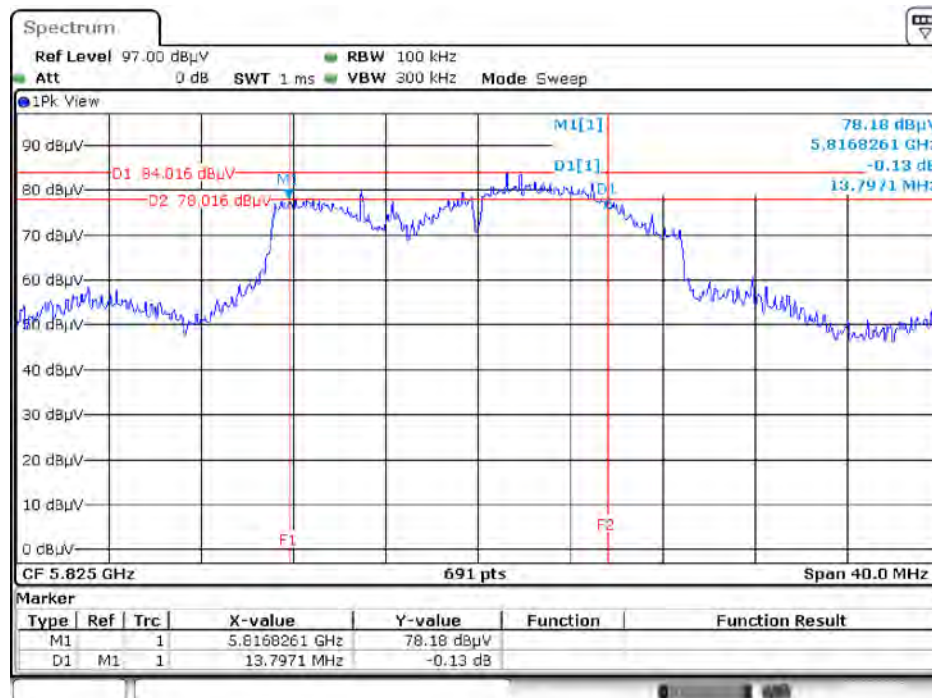
**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT80 / Ant. 1 + Ant. 2 + Ant. 3 / 5775 MHz**



Date: 31.MAY.2016 14:12:07

**6 dB Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5785 MHz**

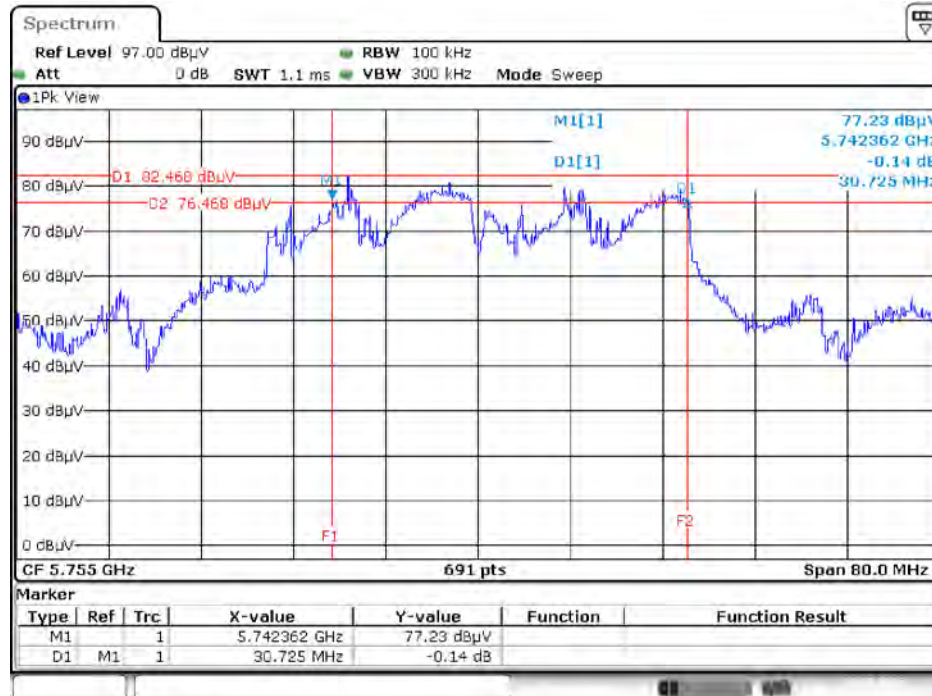
Date: 31.MAY.2016 14:34:03

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5825 MHz

Date: 31.MAY.2016 14:48:04

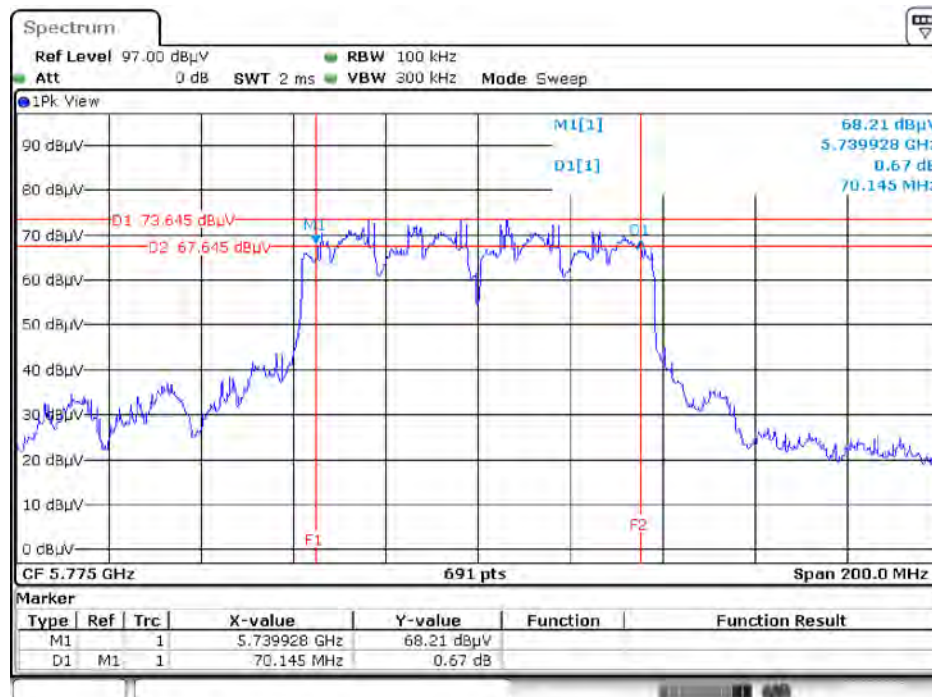


6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Ant. 1 + Ant. 2 + Ant. 3 / 5755MHz

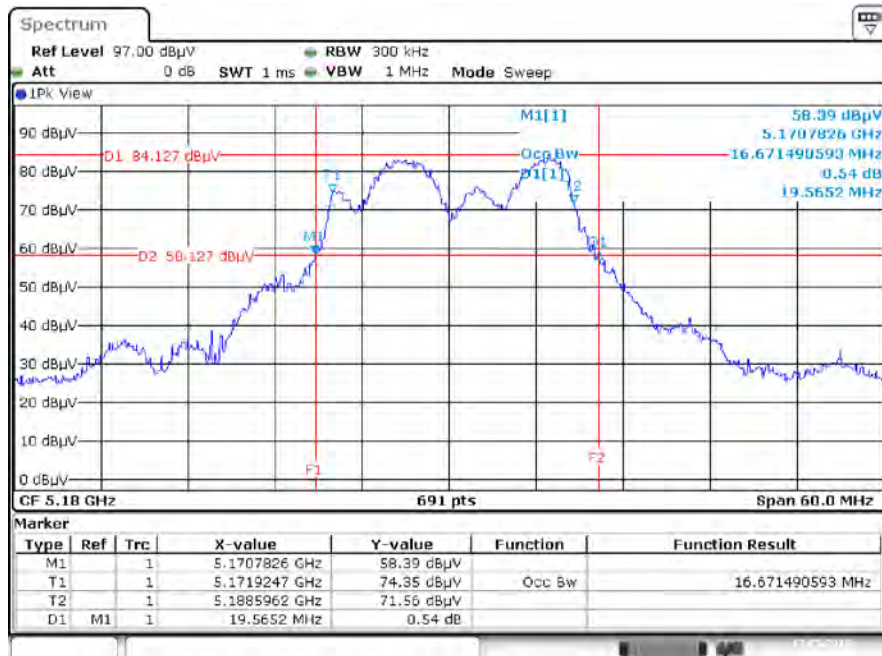
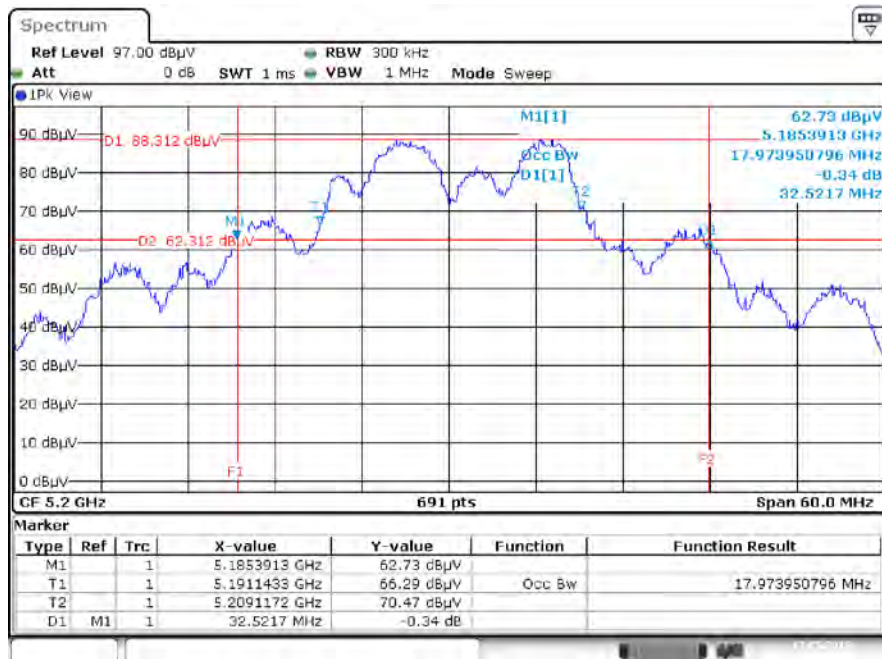


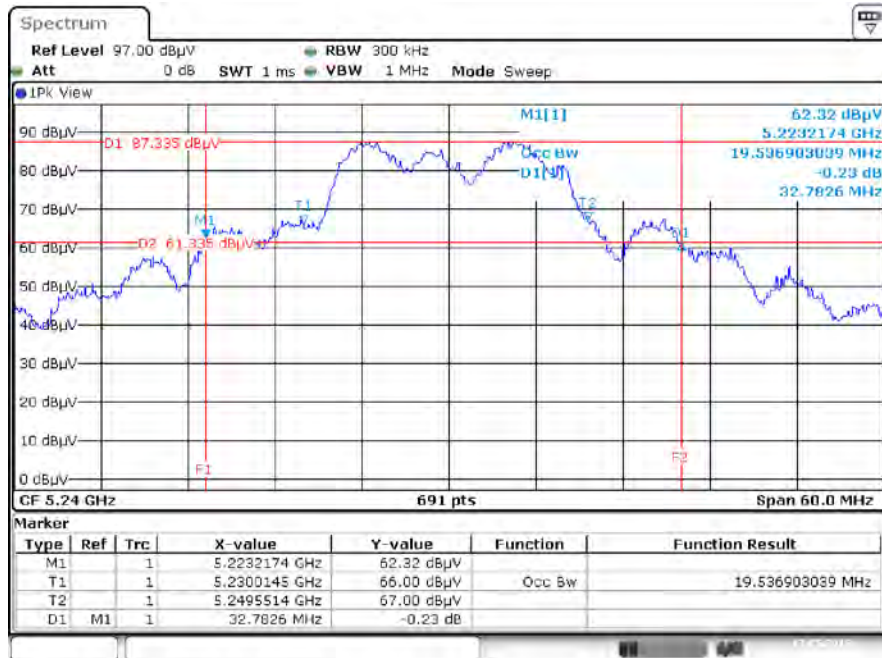
Date: 31 MAY 2016 14:49:13

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

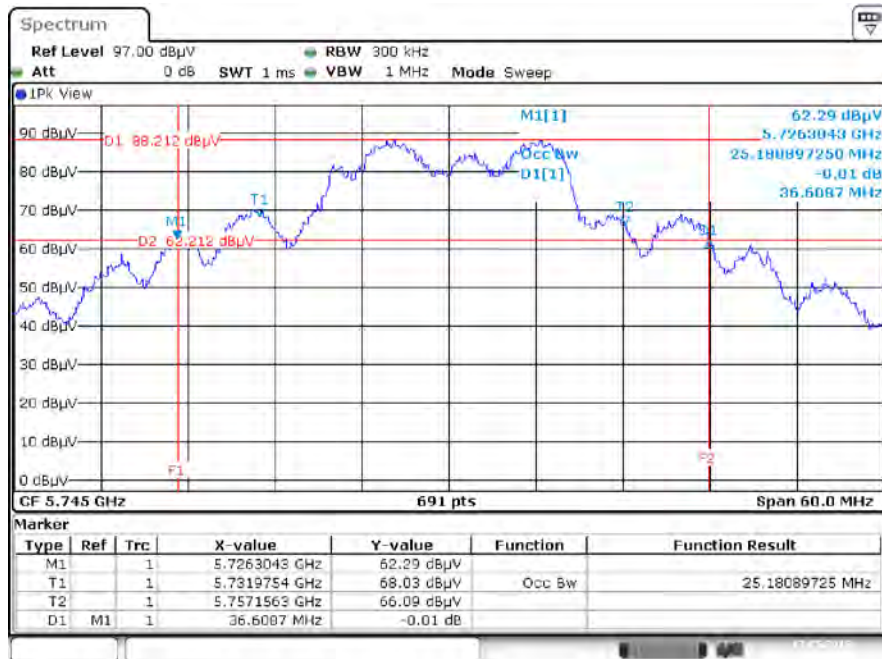


Date: 31 MAY 2016 14:51:12

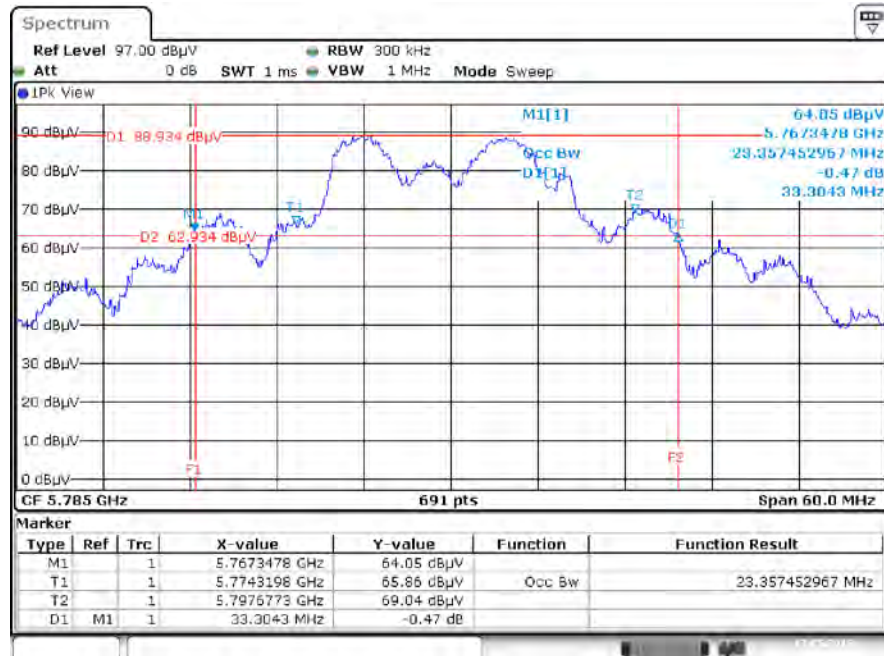
**For Mode 3:****26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5180 MHz****26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5200 MHz**

**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5240 MHz**

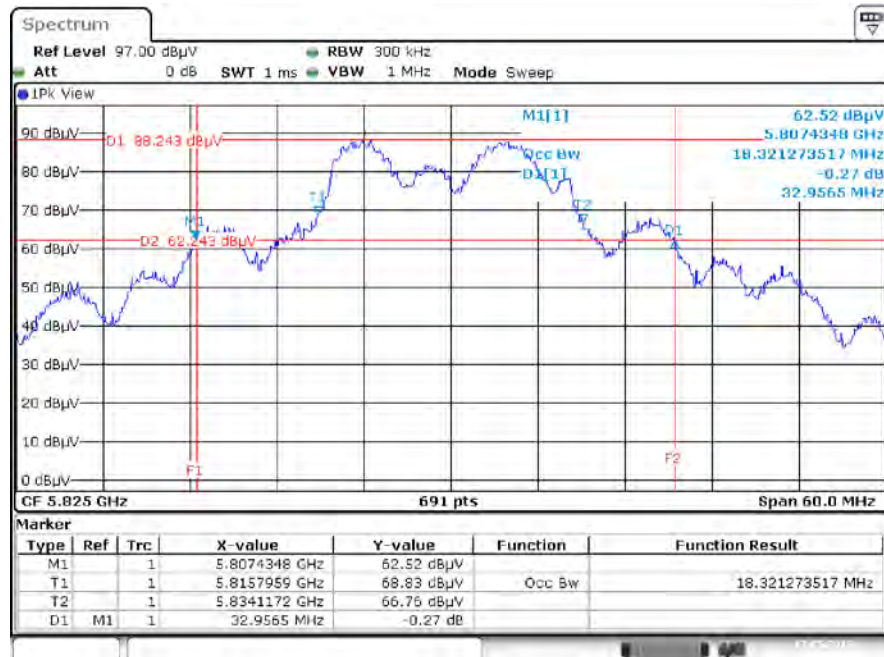
Date: 17,MAY.2016 19:43:06

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5745 MHz

Date: 17,MAY.2016 19:43:41

**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5785 MHz**

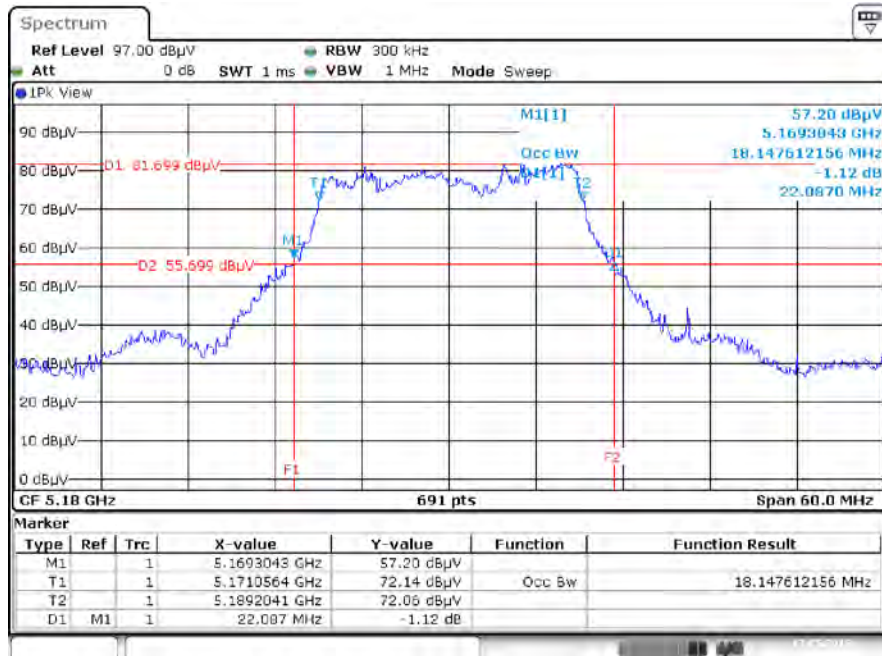
Date: 17.MAY.2016 19:44:08

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5825 MHz

Date: 17.MAY.2016 19:44:48

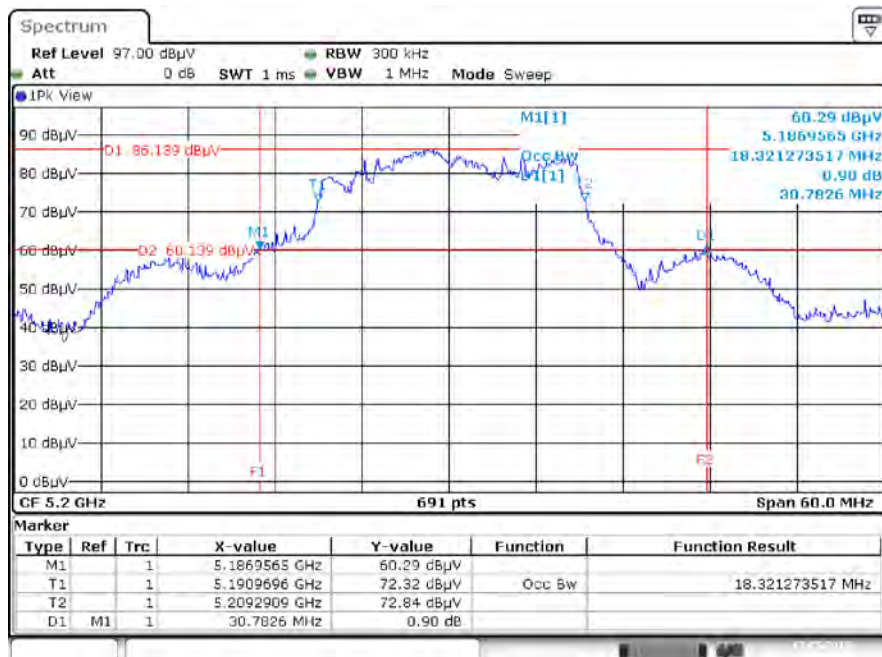


**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5180 MHz**



Date: 17.MAY.2016 19:45:38

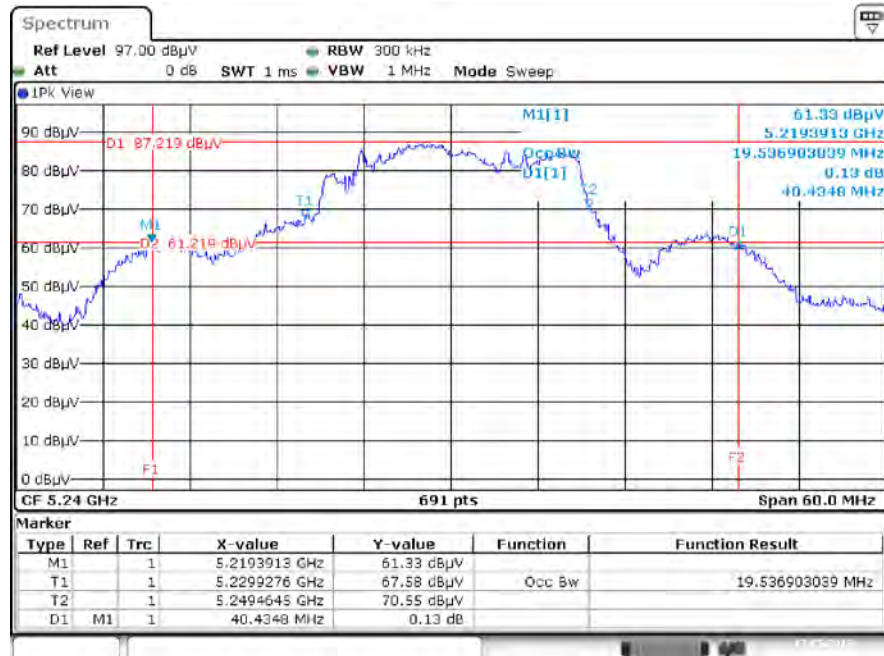
**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5200 MHz**



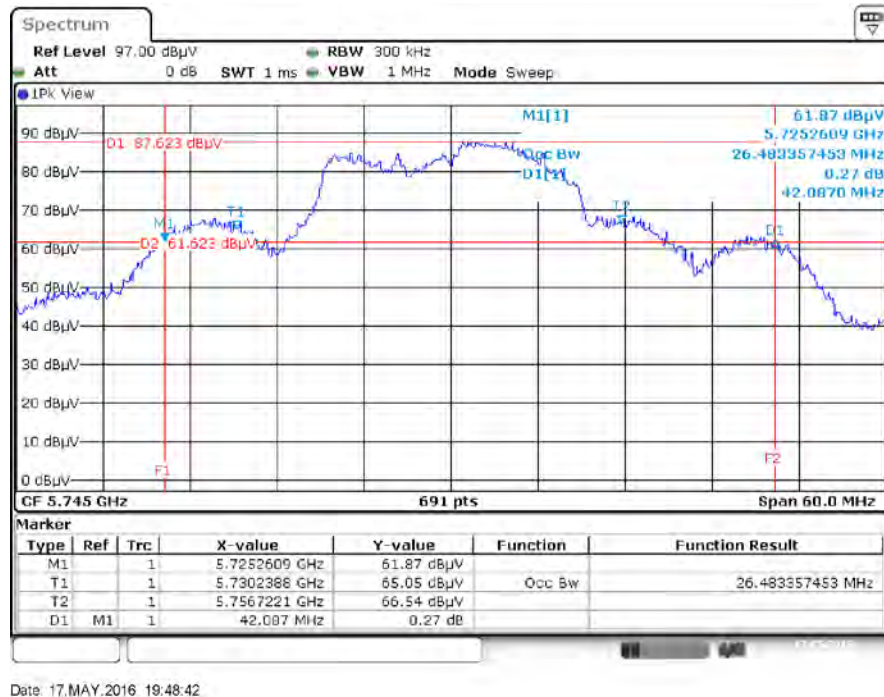
Date: 17.MAY.2016 19:47:33



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

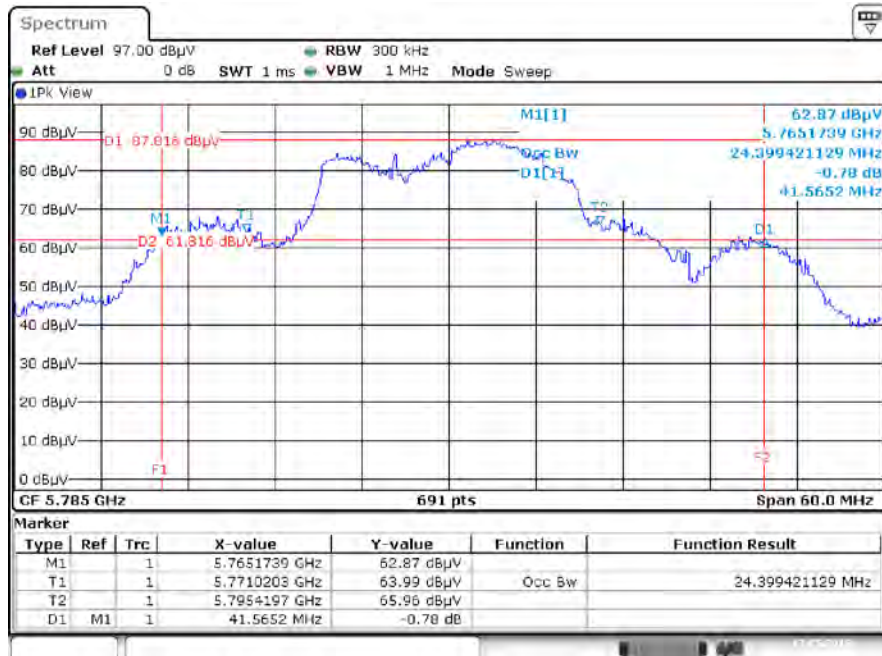


**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5745 MHz**



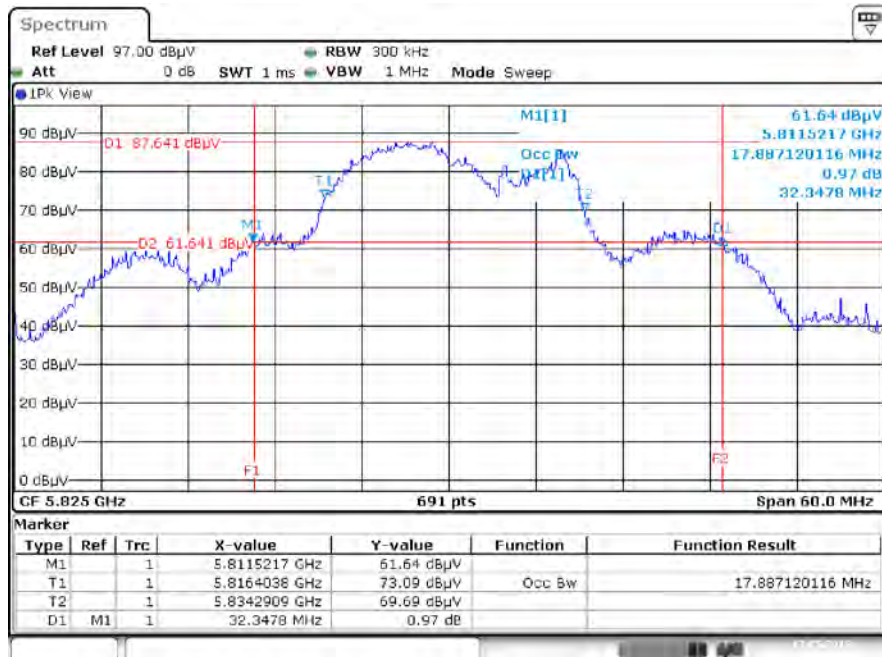


**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5785 MHz**



Date: 17,MAY.2016 19:49:12

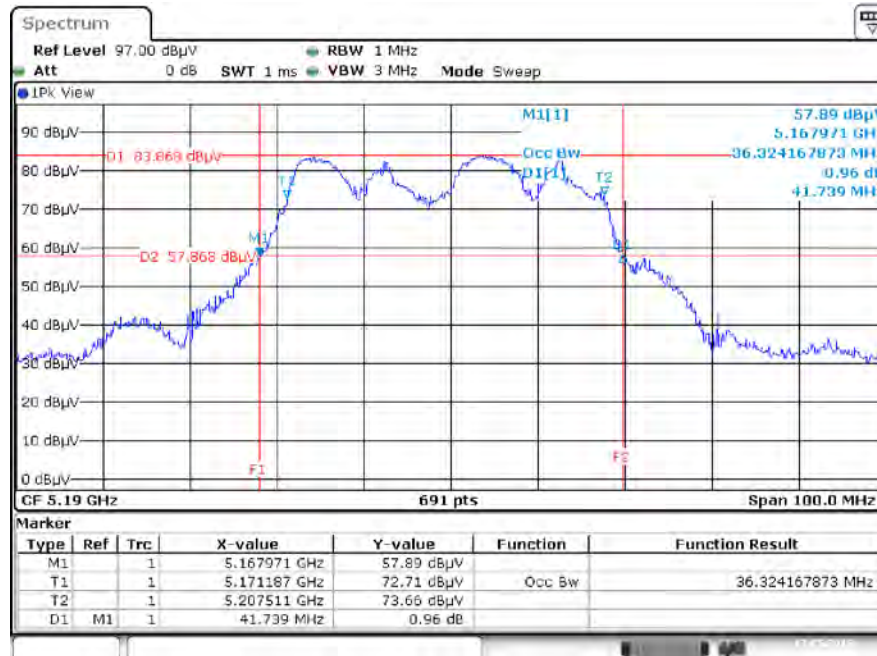
**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT20 / Ant. 1 + Ant. 2 + Ant. 3 / 5825 MHz**



Date: 17,MAY.2016 19:50:45

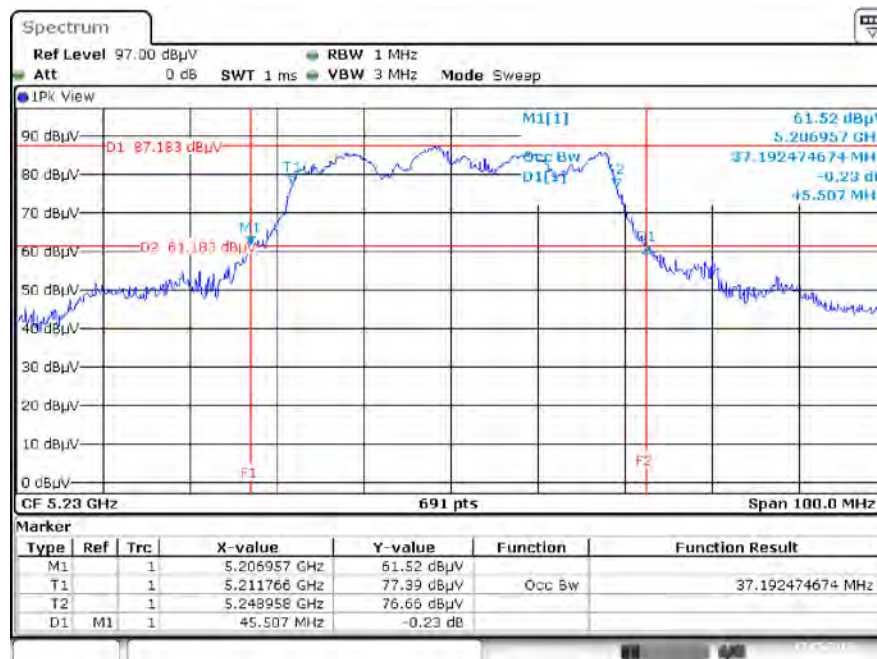


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT40 / Ant. 1 + Ant. 2 + Ant. 3 / 5190 MHz



Date: 17.MAY.2016 19:51:43

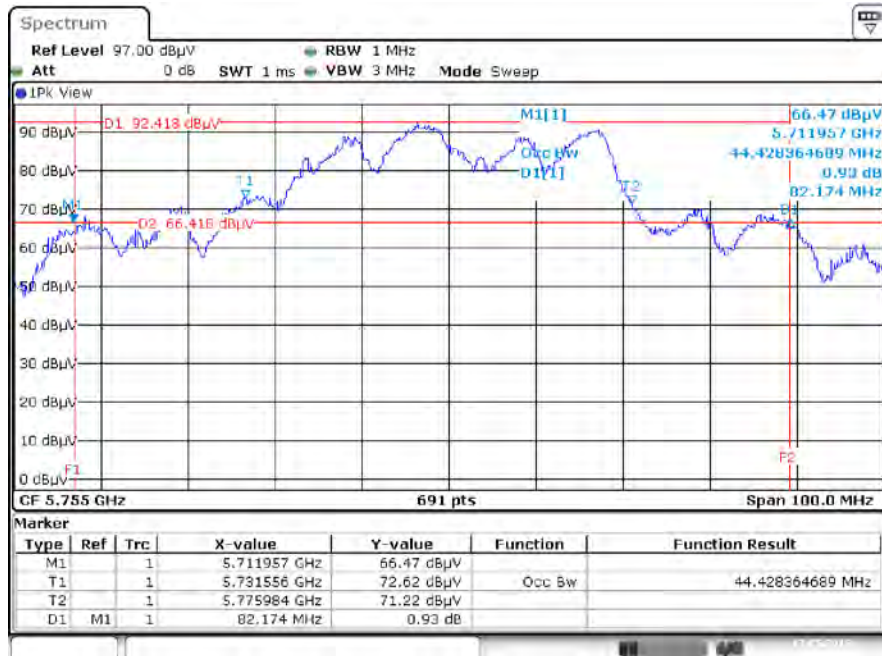
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT40 / Ant. 1 + Ant. 2 + Ant. 3 / 5230 MHz



Date: 17.MAY.2016 19:52:21



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

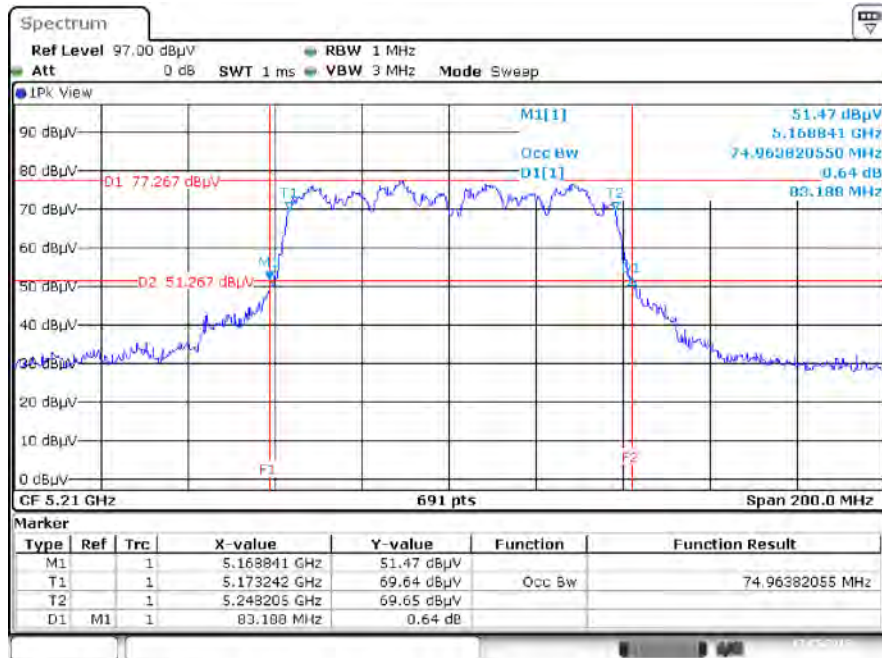


**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT40 / Ant. 1 + Ant. 2 + Ant. 3 / 5795 MHz**

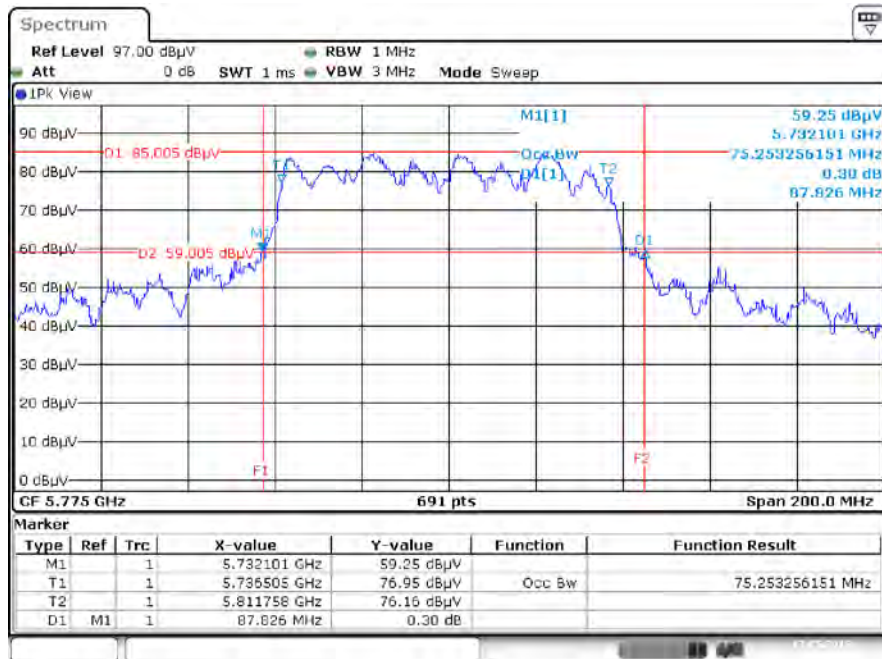


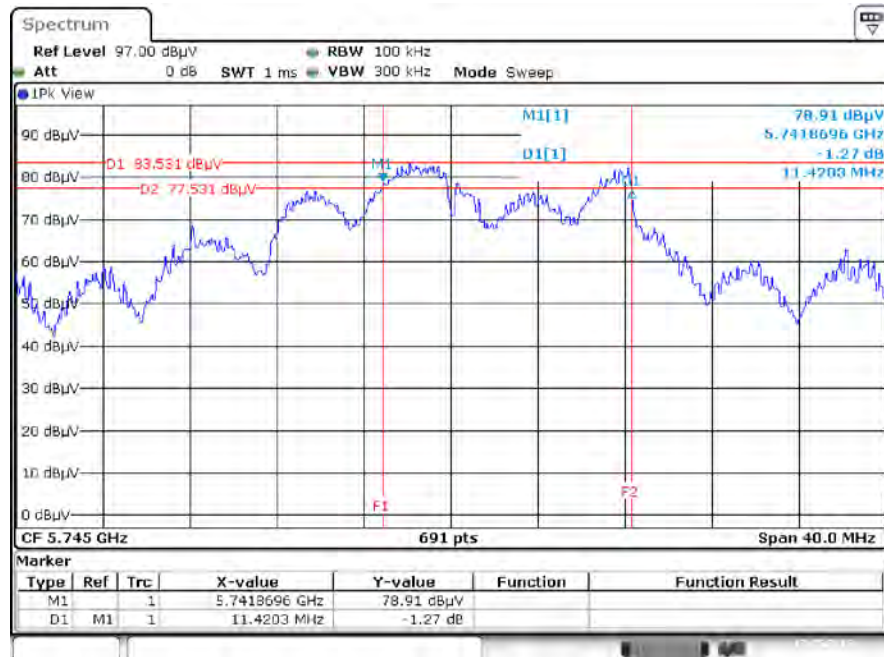


**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT80 / Ant. 1 + Ant. 2 + Ant. 3 / 5210 MHz**

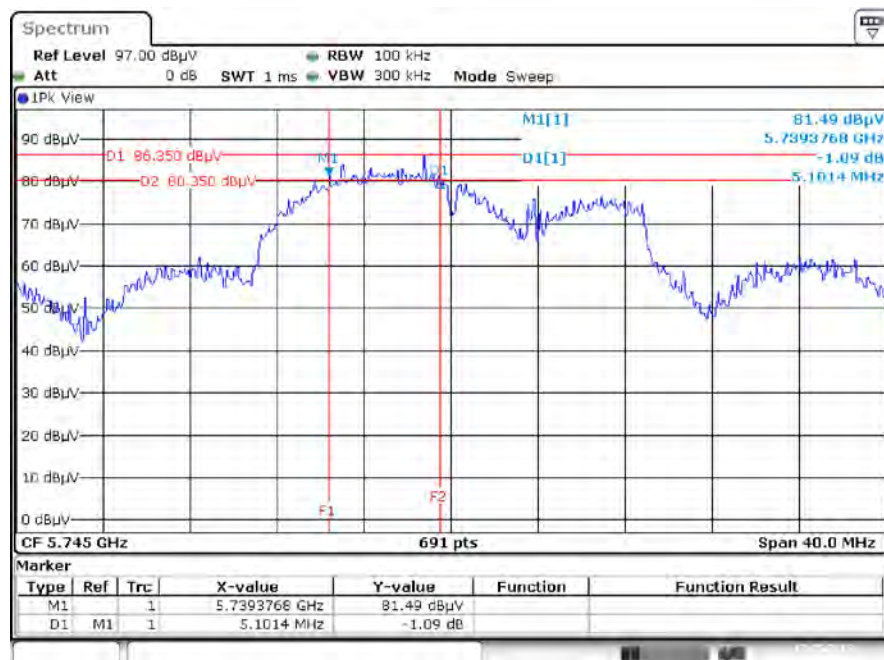


**26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1
VHT80 / Ant. 1 + Ant. 2 + Ant. 3 / 5775 MHz**

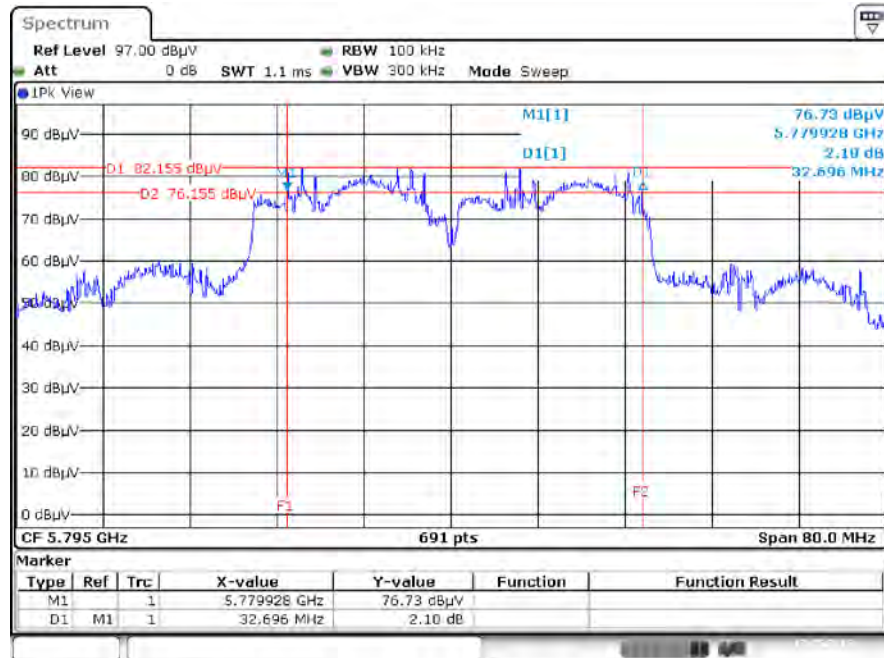
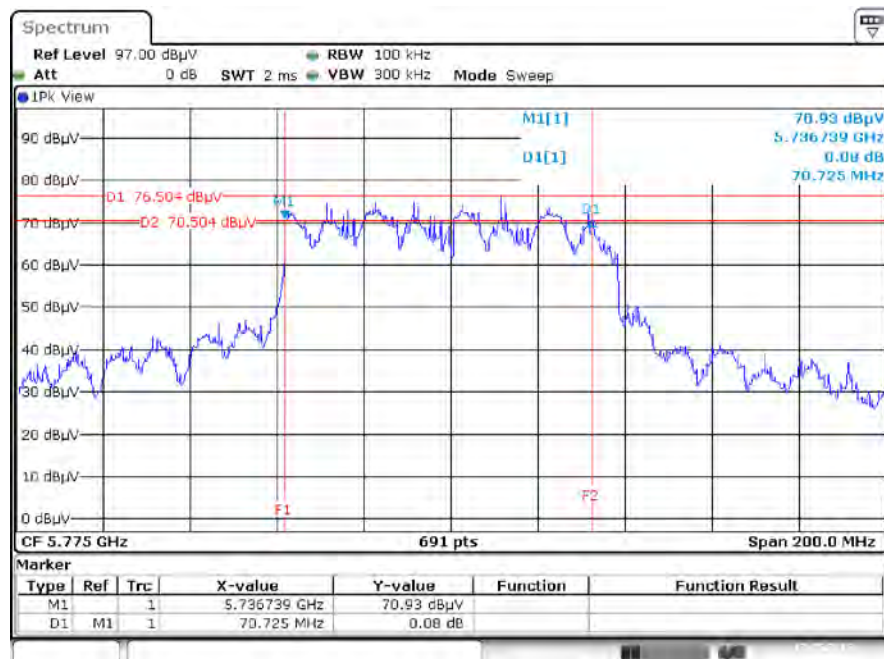


**6 dB Bandwidth Plot on Configuration IEEE 802.11a / Ant. 1 / 5745 MHz**

Date: 17.MAY.2016 19:57:59

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

Date: 17.MAY.2016 20:00:31

**6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Ant. 1 + Ant. 2 + Ant. 3 / 5795 MHz****6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Ant. 1 + Ant. 2 + Ant. 3 / 5775 MHz**

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
UNII Devices	
☒ For the 5.15-5.25 GHz band:	
☐	- Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. e.i.r.p. at any elevation angle above 30 degrees ≤ 125mW [21dBm] - Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ - Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 23$ dBi, then $P_{Out} = 30 - (G_{TX} - 23)$. - Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☐	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☐	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☒ For the 5.725-5.85 GHz band:	
☐	- Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
LE-LAN Devices	
☐	For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
☐	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐ For the 5.725-5.85 GHz band:	
☐	- Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

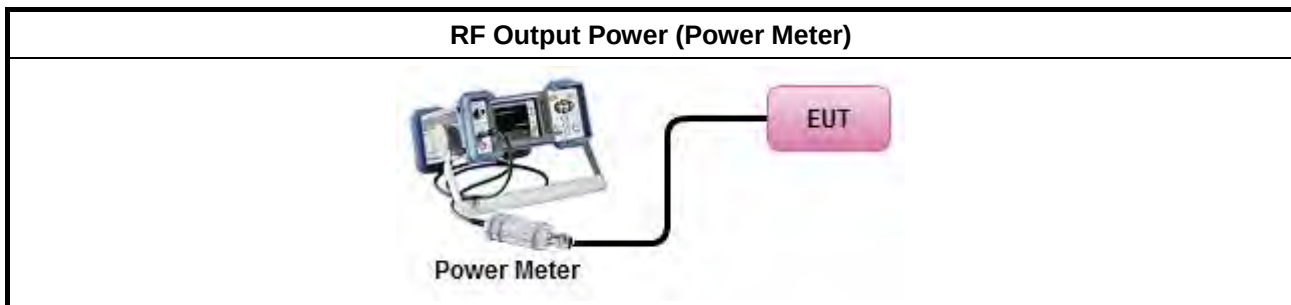
3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
Maximum Conducted Output Power	
	Average over on/off periods with duty factor
☐	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
☐	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty factor
☒	Refer as FCC KDB 789033, clause E Method PM-G (using an RF average power meter).
For conducted measurement.	
If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.	
If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$	

3.3.4 Test Setup



**3.3.5 Test Result of Maximum Conducted Output Power**

Temperature	24℃	Humidity	60%
Test Engineer	Clemens Fang	Test Mode	Mode 1
Test Date	May 15, 2016~May 17, 2016		

Mode	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1		
802.11a	5180 MHz	17.23	29.50	Complies
	5200 MHz	23.50	29.50	Complies
	5240 MHz	23.42	29.50	Complies
	5745 MHz	22.05	29.50	Complies
	5785 MHz	22.08	29.50	Complies
	5825 MHz	22.12	29.50	Complies

Note: Antenna true gain=6.50dBi>6dBi, so power limit=30-(6.50-6)=29.50dBm.

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Total		
802.11ac MCS0/Nss1 VHT20	5180 MHz	16.38	17.68	18.17	22.24	29.40	Complies
	5200 MHz	19.24	20.06	20.56	24.76	29.40	Complies
	5240 MHz	19.59	19.87	19.91	24.56	29.40	Complies
	5745 MHz	21.35	21.46	22.23	26.47	29.40	Complies
	5785 MHz	21.65	21.35	21.68	26.33	29.40	Complies
	5825 MHz	21.12	21.30	21.25	26.00	29.40	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	13.66	14.46	14.61	19.03	29.40	Complies
	5230 MHz	20.18	20.20	20.44	25.05	29.40	Complies
	5755 MHz	21.13	21.32	21.92	26.24	29.40	Complies
	5795 MHz	21.02	21.14	21.88	26.13	29.40	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	10.54	10.96	11.20	15.68	29.40	Complies
	5775 MHz	19.85	19.73	20.38	24.77	29.40	Complies

Note: Max. antenna true gain=6.60dBi>6dBi, so power limit=30-(6.60-6)=29.40dBm.



Temperature	24°C	Humidity	60%
Test Engineer	Serway Li	Test Mode	Mode 2
Test Date	May 31, 2016		

Mode	Frequency	Conducted Power (dBm)		Max. Limit (dBm)	Result
		Ant. 1			
802.11a	5180 MHz	17.23		29.69	Complies
	5200 MHz	23.50		29.69	Complies
	5240 MHz	22.42		29.69	Complies
	5745 MHz	22.05		29.69	Complies
	5785 MHz	22.08		29.69	Complies
	5825 MHz	22.12		29.69	Complies

Note: Antenna true gain=6.31dBi>6dBi, so power limit=30-(6.31-6)=29.69dBm.

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Total		
802.11ac MCS0/Nss1 VHT20	5180 MHz	16.38	17.68	18.17	22.24	29.40	Complies
	5200 MHz	19.24	20.06	20.56	24.76	29.40	Complies
	5240 MHz	19.59	19.87	19.91	24.56	29.40	Complies
	5745 MHz	21.35	21.46	22.23	26.47	29.40	Complies
	5785 MHz	21.65	21.35	21.68	26.33	29.40	Complies
	5825 MHz	21.12	21.30	21.25	26.00	29.40	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	13.66	14.46	14.61	19.03	29.40	Complies
	5230 MHz	20.18	20.20	20.44	25.05	29.40	Complies
	5755 MHz	21.13	21.32	21.92	26.24	29.40	Complies
	5795 MHz	21.02	21.14	21.88	26.13	29.40	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	10.54	10.96	11.20	15.68	29.40	Complies
	5775 MHz	19.85	19.73	20.38	24.77	29.40	Complies

Note: Max. antenna true gain=6.64dBi>6dBi, so power limit=30-(6.64-6)=29.36dBm.



Temperature	24°C	Humidity	60%
Test Engineer	Clemens Fang	Test Mode	Mode 3
Test Date	May 15, 2016~May 17, 2016		

Mode	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
		Ant. 1		
802.11a	5180 MHz	18.13	30.00	Complies
	5200 MHz	21.61	30.00	Complies
	5240 MHz	22.26	30.00	Complies
	5745 MHz	21.84	30.00	Complies
	5785 MHz	21.71	30.00	Complies
	5825 MHz	21.27	30.00	Complies

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Total		
802.11ac MCS0/Nss1 VHT20	5180 MHz	15.86	15.91	15.79	20.62	30.00	Complies
	5200 MHz	20.74	19.52	19.70	24.79	30.00	Complies
	5240 MHz	21.24	19.92	20.21	25.27	30.00	Complies
	5745 MHz	20.36	19.21	20.59	24.87	30.00	Complies
	5785 MHz	20.32	19.52	19.73	24.64	30.00	Complies
	5825 MHz	20.23	19.60	19.88	24.68	30.00	Complies
802.11ac MCS0/Nss1 VHT40	5190 MHz	15.33	14.54	14.23	19.50	30.00	Complies
	5230 MHz	19.11	17.78	17.48	22.95	30.00	Complies
	5755 MHz	20.62	19.38	20.43	24.95	30.00	Complies
	5795 MHz	20.25	19.53	20.05	24.73	30.00	Complies
802.11ac MCS0/Nss1 VHT80	5210 MHz	14.66	13.67	13.25	18.67	30.00	Complies
	5775 MHz	18.29	16.58	17.43	22.26	30.00	Complies

3.4 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
☒ For the 5.15-5.25 GHz band:	
	- Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$. - Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$. - Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 17 - (G_{TX} - 23)$. - Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
☐ For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
☐ For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
☒ For the 5.725-5.85 GHz band:	
	- Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
LE-LAN Devices	
☐ For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.	
☐ For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.	
	e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below: -13 dBW/MHz for $0^\circ \leq \theta < 8^\circ$; -13 - 0.716 (θ-8) dBW/MHz for $8^\circ \leq \theta < 40^\circ$ -35.9 - 1.22 (θ-40) dBW/MHz for $40^\circ \leq \theta \leq 45^\circ$; -42 dBW/MHz for $\theta > 45^\circ$
☐ For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.	
☐ For the 5.725-5.85 GHz band:	
	- Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz G_{TX} = the maximum transmitting antenna directional gain in dBi.	

3.4.2 Measuring Instruments

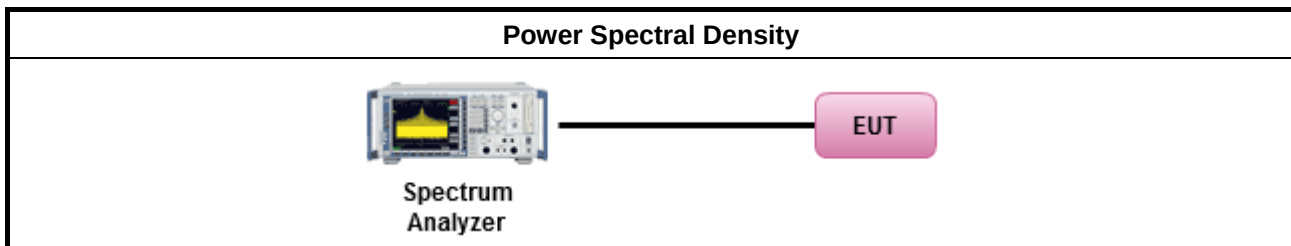
Refer a test equipment and calibration data table in this test report.



3.4.3 Test Procedures

Test Method	
Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options:	
☐	Refer as FCC KDB 789033, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth [duty cycle ≥ 98% or external video / power trigger]
☒	Refer as FCC KDB 789033, clause E Method SA-1 (spectral trace averaging).
☐	Refer as FCC KDB 789033, clause E Method SA-1 Alt. (RMS detection with slow sweep speed) duty cycle < 98% and average over on/off periods with duty factor
☒	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
☐	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
For conducted measurement.	
If the EUT supports multiple transmit chains using options given below:	
☒	Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
☐	Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
☐	Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.
☐	If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$

3.4.4 Test Setup





3.4.5 Test Result of Peak Power Spectral Density

Temperature	24℃	Humidity	60%
Test Engineer	Clemens Fang	Test Mode	Mode 1
Test Date	May 15, 2016~May 17, 2016		

Configuration IEEE 802.11a / Ant. 1

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	4.08	16.50	Complies
40	5200 MHz	10.37	16.50	Complies
48	5240 MHz	10.30	16.50	Complies

Note: Antenna true gain=6.50dBi>6dBi, so power limit=17-(6.50-6)=16.50dBm/MHz

Channel	Frequency	Power Density (dBm/MHz)	10log (500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	8.89	-3.01	5.88	29.50	Complies
157	5785 MHz	8.93	-3.01	5.92	29.50	Complies
165	5825 MHz	8.95	-3.01	5.94	29.50	Complies

Note: Antenna true gain=6.50dBi>6dBi, so power limit=30-(6.50-6)=29.50 dBm/500kHz.

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	8.92	11.92	Complies
40	5200 MHz	11.57	11.92	Complies
48	5240 MHz	11.43	11.92	Complies

Note: $Directional\ Gain = 10\log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{K=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 11.08\text{dBi} > 6\text{dBi}$, so limit=17 - (11.08 - 6)=11.92 dBm/MHz.

Channel	Frequency	Power Density (dBm/MHz)	10log (500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	13.28	-3.01	10.27	24.92	Complies
157	5785 MHz	13.10	-3.01	10.09	24.92	Complies
165	5825 MHz	12.85	-3.01	9.84	24.92	Complies

Note: $Directional\ Gain = 10\log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{K=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 11.08\text{dBi} > 6\text{dBi}$, so limit=30 - (11.08 - 6)=24.92 dBm/500kHz.



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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190 MHz	2.89	11.92	Complies
46	5230 MHz	8.89	11.92	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right] = 11.08\text{dBi} > 6\text{dBi}$, so limit = $17 - (11.08 - 6) = 11.92\text{dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log (500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
151	5755 MHz	10.05	-3.01	7.04	24.92	Complies
159	5795 MHz	9.91	-3.01	6.90	24.92	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right] = 11.08\text{dBi} > 6\text{dBi}$, so limit = $30 - (11.08 - 6) = 24.92\text{dBm/500kHz}$.

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
42	5210 MHz	-3.47	11.92	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right] = 11.08\text{dBi} > 6\text{dBi}$, so limit = $17 - (11.08 - 6) = 11.92\text{dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log (500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
155	5775 MHz	5.64	-3.01	2.63	24.92	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right] = 11.08\text{dBi} > 6\text{dBi}$, so limit = $30 - (11.08 - 6) = 24.92\text{dBm/500kHz}$.



Temperature	24°C	Humidity	60%
Test Engineer	Serway Li	Test Mode	Mode 2
Test Date	May 31, 2016		

Configuration IEEE 802.11a / Ant. 1

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	3.90	16.69	Complies
40	5200 MHz	10.23	16.69	Complies
48	5240 MHz	9.16	16.69	Complies

Note: Antenna true gain=6.31dBi>6dBi, so power limit=17-(6.31-6)=16.69dBm/MHz.

Channel	Frequency	Power Density (dBm/MHz)	10log (500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	8.88	-3.01	5.87	29.69	Complies
157	5785 MHz	8.94	-3.01	5.93	29.69	Complies
165	5825 MHz	8.99	-3.01	5.98	29.69	Complies

Note: Antenna true gain=6.31dBi>6dBi, so power limit=30-(6.31-6)=26.69 dBm/500kHz.

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	9.04	11.90	Complies
40	5200 MHz	11.58	11.90	Complies
48	5240 MHz	11.40	11.90	Complies

Note: $Directional\ Gain = 10\log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{K=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 11.10\text{dBi} > 6\text{dBi}$, so limit=17 - (11.10 - 6)=11.90 dBm/MHz.

Channel	Frequency	Power Density (dBm/MHz)	10log (500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	13.10	-3.01	10.09	24.90	Complies
157	5785 MHz	12.98	-3.01	9.97	24.90	Complies
165	5825 MHz	12.69	-3.01	9.68	24.90	Complies

Note: $Directional\ Gain = 10\log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{K=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right] = 11.10\text{dBi} > 6\text{dBi}$, so limit=30 - (11.10 - 6)=24.90 dBm/500kHz.

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190 MHz	2.74	11.90	Complies
46	5230 MHz	8.81	11.90	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 11.10\text{dBi} > 6\text{dBi}$, so limit = $17 - (11.10 - 6) = 11.90\text{dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log (500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
151	5755 MHz	10.06	-3.01	7.05	24.90	Complies
159	5795 MHz	9.98	-3.01	6.97	24.90	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 11.10\text{dBi} > 6\text{dBi}$, so limit = $30 - (11.10 - 6) = 24.90\text{dBm/500kHz}$.

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
42	5210 MHz	-3.44	11.90	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 11.10\text{dBi} > 6\text{dBi}$, so limit = $17 - (11.10 - 6) = 11.90\text{dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log (500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
155	5775 MHz	5.63	-3.01	2.62	24.90	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 11.10\text{dBi} > 6\text{dBi}$, so limit = $30 - (11.10 - 6) = 24.90\text{dBm/500kHz}$.



Temperature	24°C	Humidity	60%
Test Engineer	Clemens Fang	Test Mode	Mode 3
Test Date	May 15, 2016~May 17, 2016		

Configuration IEEE 802.11a / Ant. 1

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	4.97	17.00	Complies
40	5200 MHz	8.49	17.00	Complies
48	5240 MHz	9.01	17.00	Complies

Channel	Frequency	Power Density (dBm/MHz)	10log (500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	8.57	-3.01	5.56	30.00	Complies
157	5785 MHz	8.43	-3.01	5.42	30.00	Complies
165	5825 MHz	8.07	-3.01	5.06	30.00	Complies

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	7.42	13.23	Complies
40	5200 MHz	11.63	13.23	Complies
48	5240 MHz	12.06	13.23	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right] = 9.77\text{dBi} > 6\text{dBi}$, so limit = $17 - (9.77 - 6) = 13.23\text{ dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log (500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	11.69	-3.01	8.68	26.23	Complies
157	5785 MHz	11.47	-3.01	8.46	26.23	Complies
165	5825 MHz	11.49	-3.01	8.48	26.23	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right] = 9.77\text{dBi} > 6\text{dBi}$, so limit = $30 - (9.77 - 6) = 26.23\text{ dBm/500kHz}$.



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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190 MHz	3.33	13.23	Complies
46	5230 MHz	6.70	13.23	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 9.77\text{dBi} > 6\text{dBi}$, so limit = $17 - (9.77 - 6) = 13.23\text{dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log (500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
151	5755 MHz	8.78	-3.01	5.77	26.23	Complies
159	5795 MHz	8.46	-3.01	5.45	26.23	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 19.77\text{dBi} > 6\text{dBi}$, so limit = $30 - (9.77 - 6) = 26.23\text{dBm/500kHz}$.

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

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
42	5210 MHz	-0.49	13.23	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 9.77\text{dBi} > 6\text{dBi}$, so limit = $17 - (9.77 - 6) = 13.23\text{dBm/MHz}$.

Channel	Frequency	Power Density (dBm/MHz)	10log (500kHz/RBW) Factor (dB)	Power Density (dBm/500kHz)	Power Density Limit (dBm/500kHz)	Result
155	5775 MHz	3.08	-3.01	0.07	26.23	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{K=1}^{N_{ANT}}g_{j,k}\right\}^2}{N_{ANT}}\right] = 9.77\text{dBi} > 6\text{dBi}$, so limit = $30 - (9.77 - 6) = 26.23\text{dBm/500kHz}$.

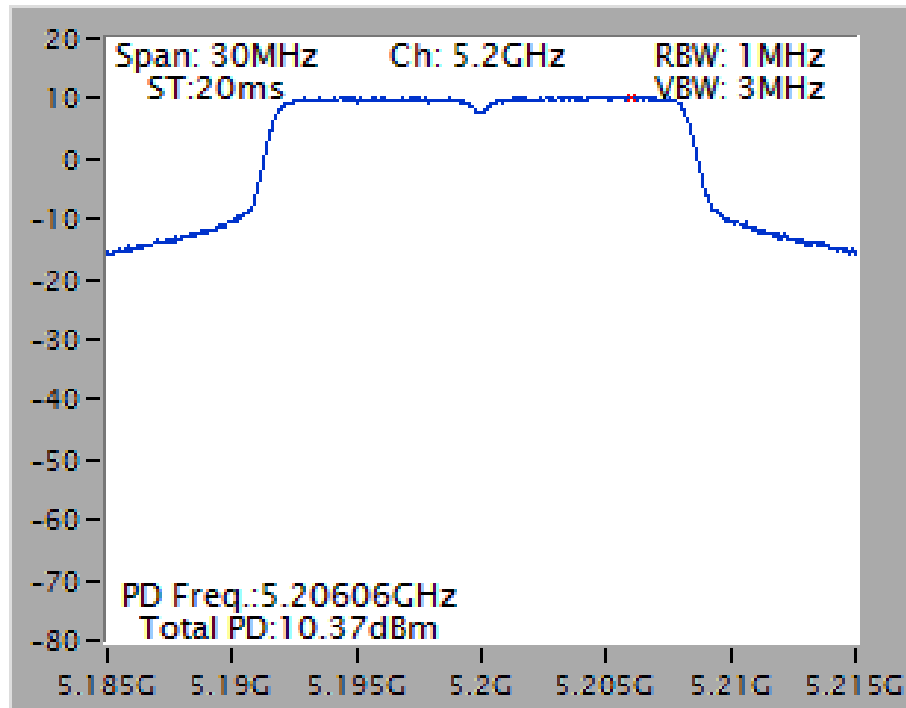
Note: All the test values were listed in the report.

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

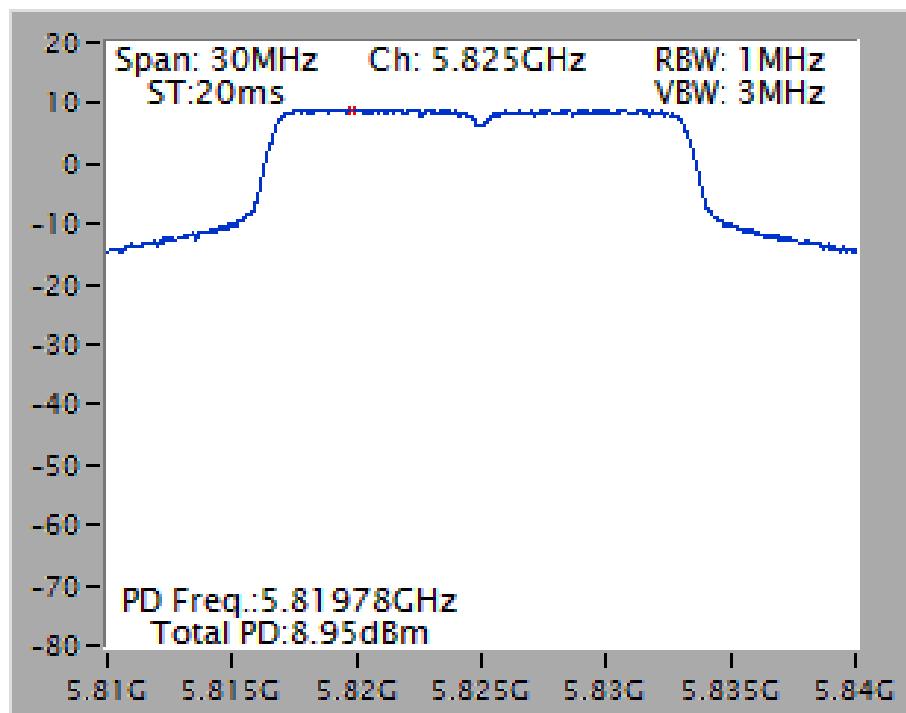


For Mode 1:

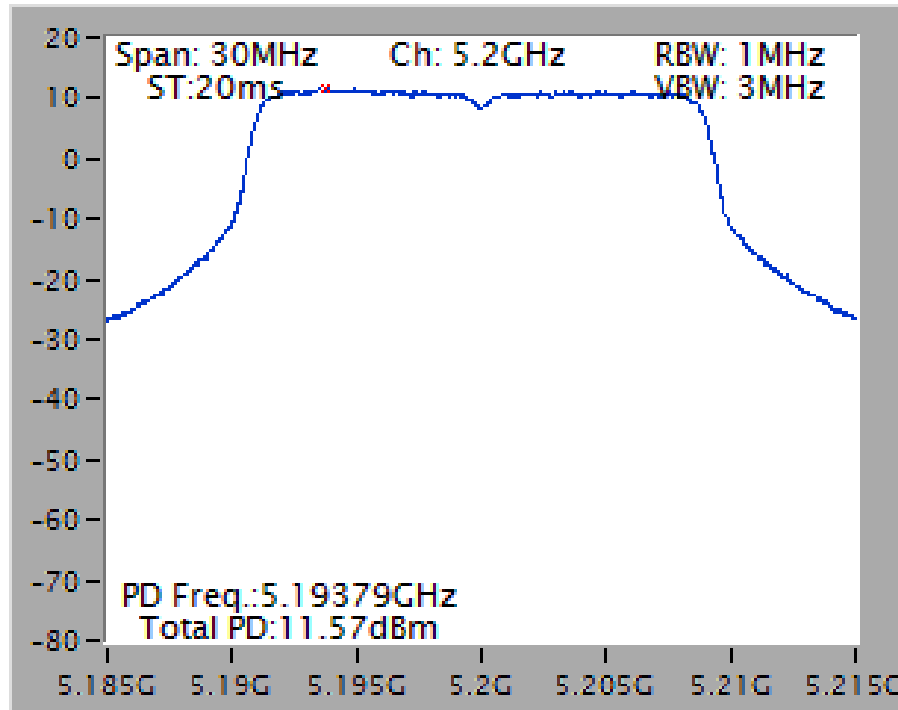
Power Density Plot on Configuration IEEE 802.11a / Ant. 1 / 5200 MHz



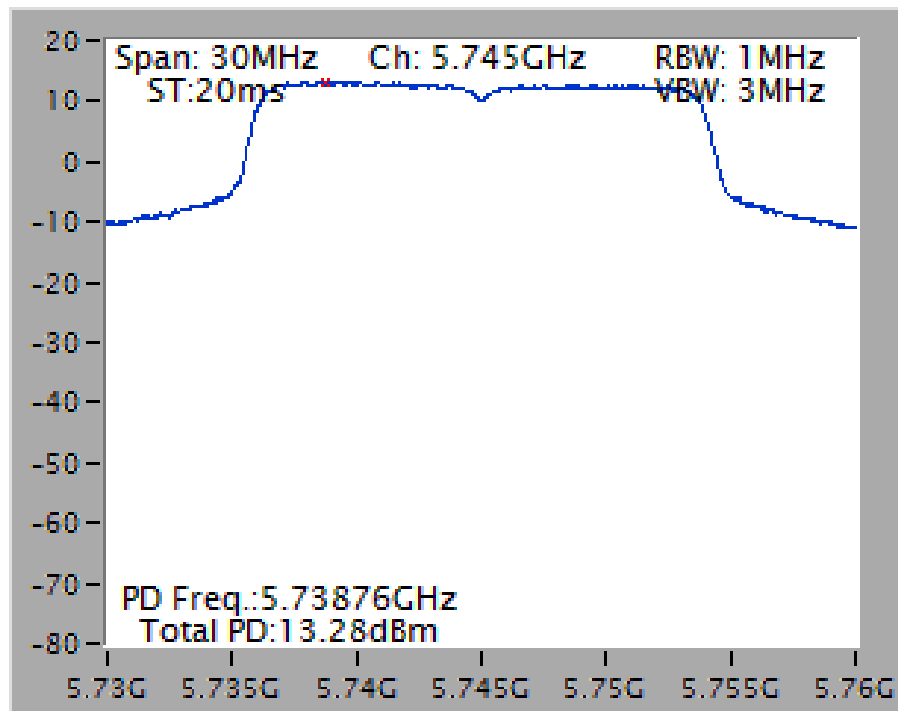
Power Density Plot on Configuration IEEE 802.11a / Ant. 1 / 5825 MHz



**Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Ant. 1 + Ant. 2 + Ant. 3 /
5200 MHz**



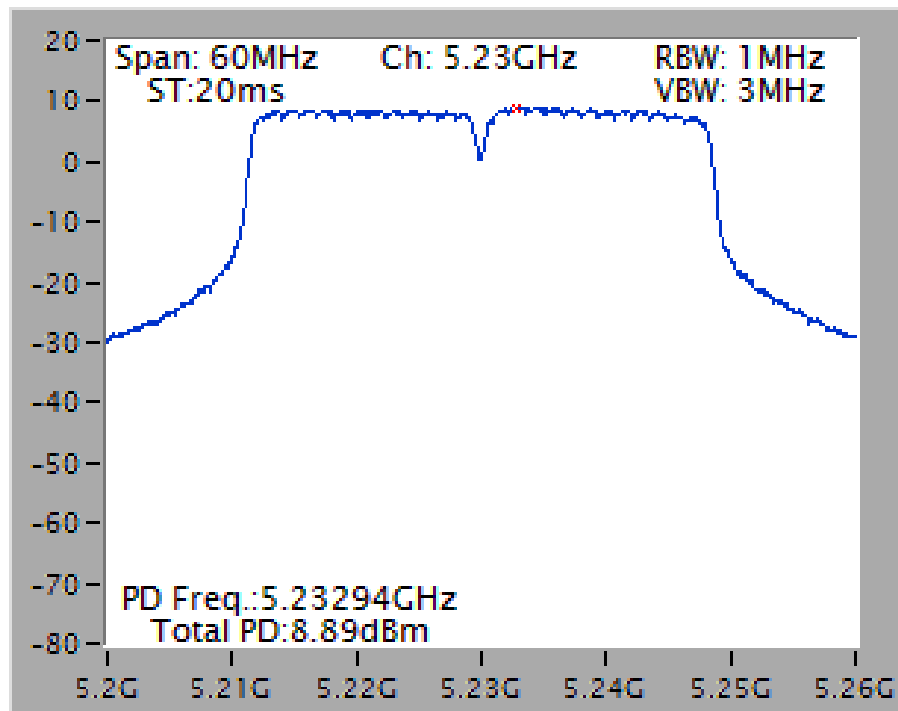
**Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Ant. 1 + Ant. 2 + Ant. 3 /
5745 MHz**





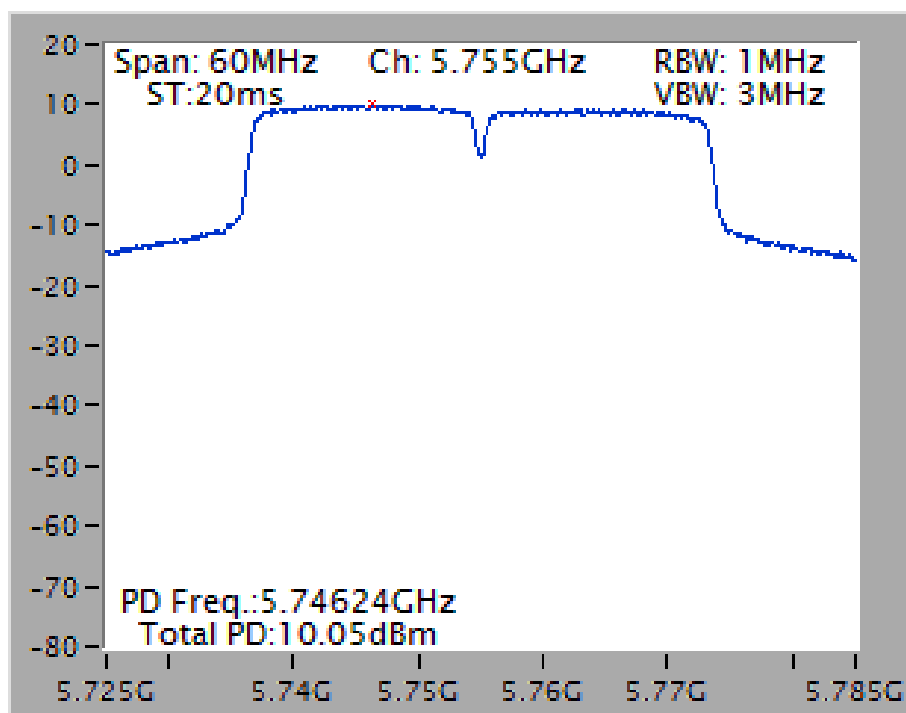
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Ant. 1 + Ant. 2 + Ant. 3 /

5230 MHz



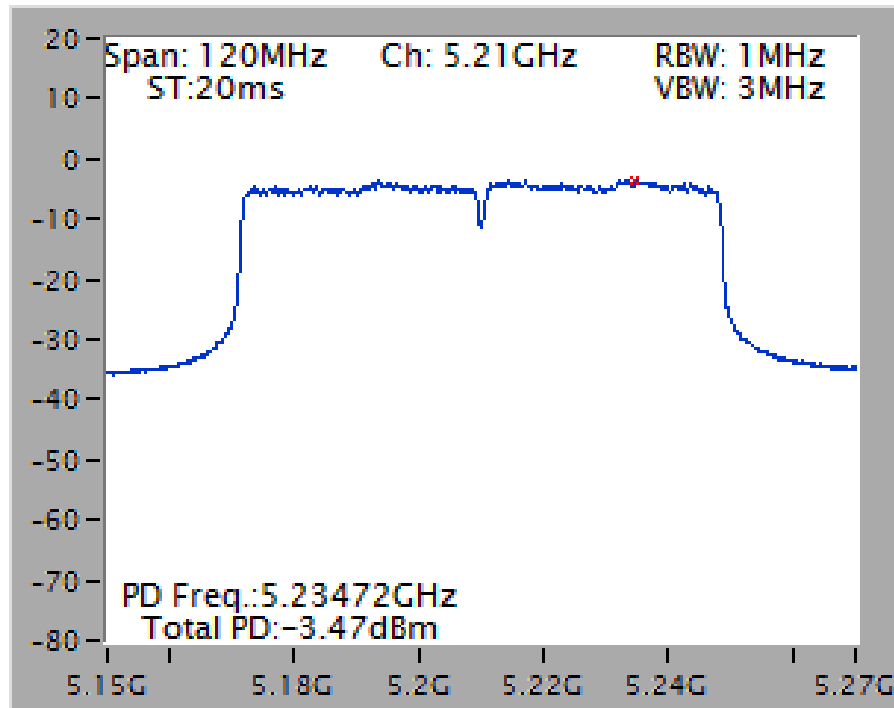
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Ant. 1 + Ant. 2 + Ant. 3 /

5755 MHz

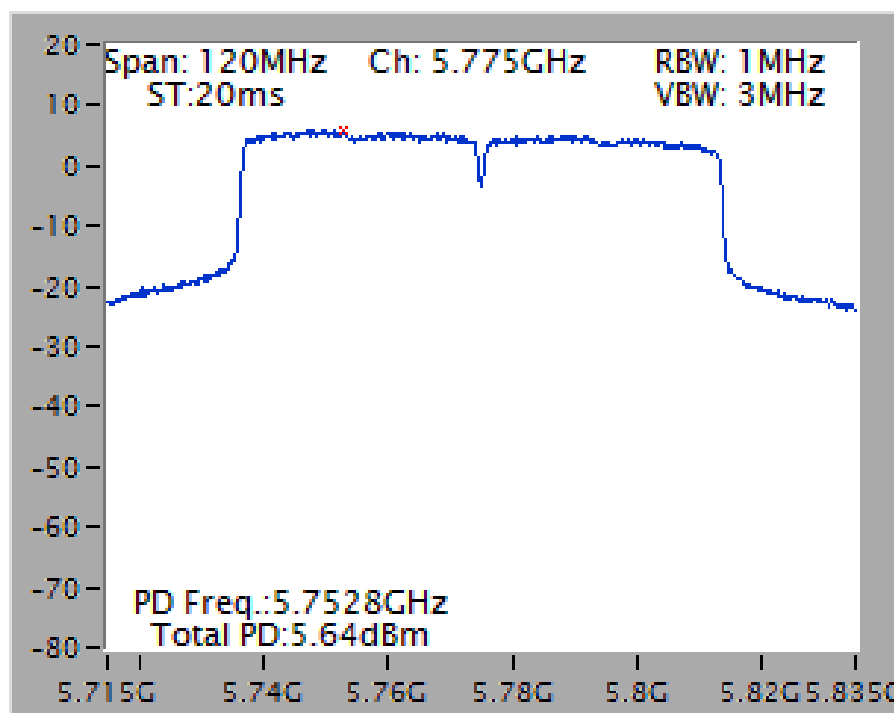




Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Ant. 1 + Ant. 2 + Ant. 3 /
5210 MHz



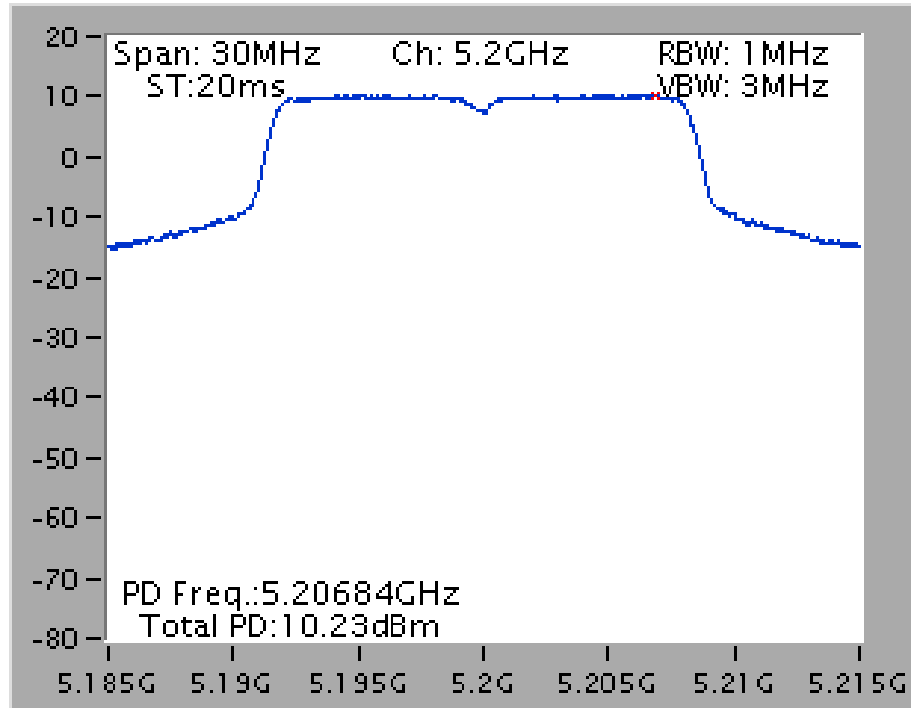
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Ant. 1 + Ant. 2 + Ant. 3 /
5775 MHz



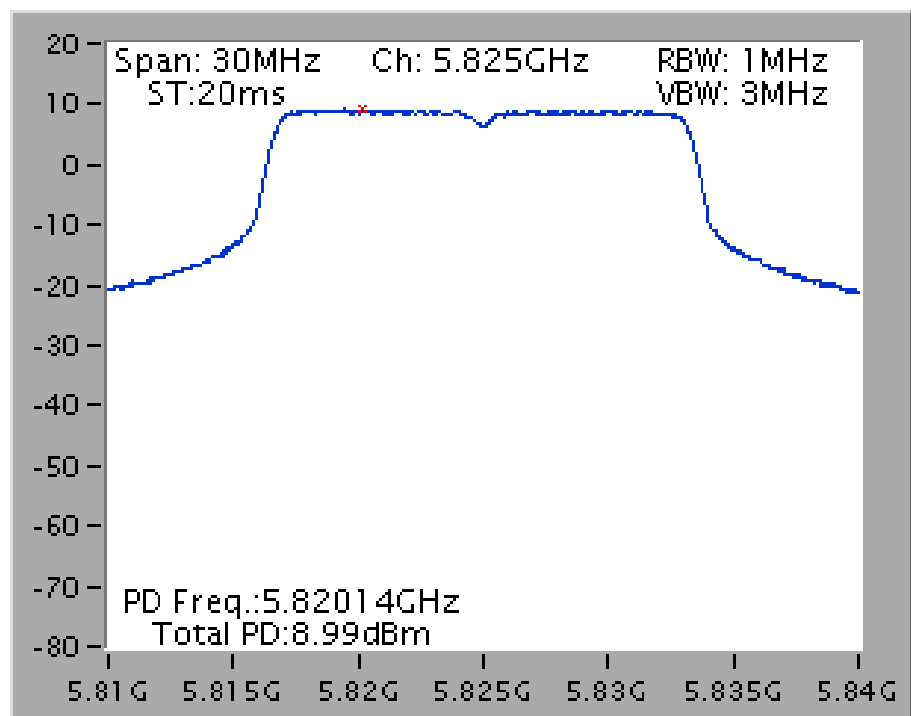


For Mode 2:

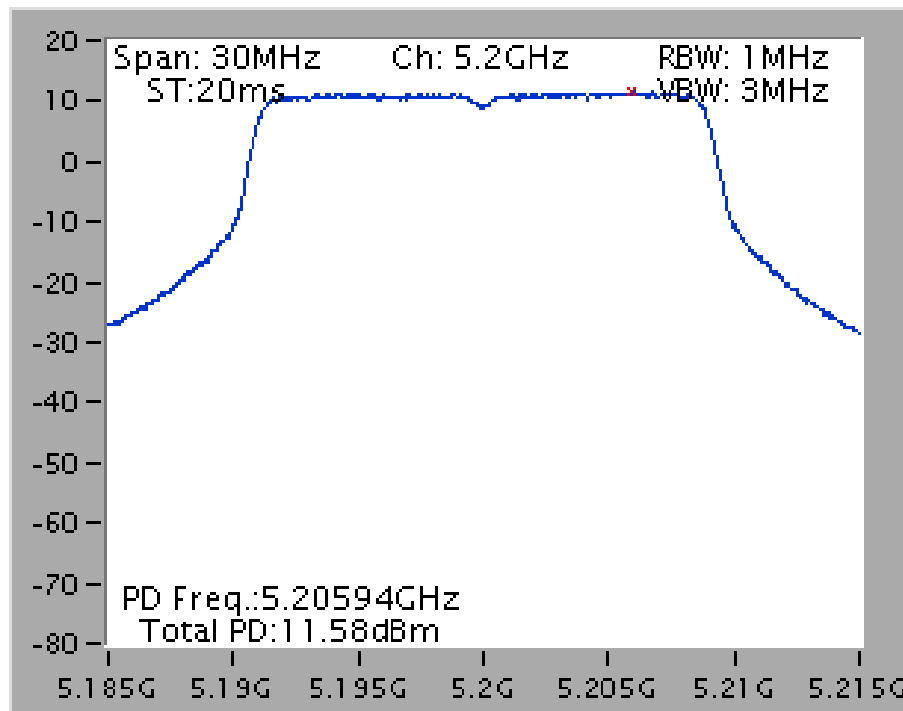
Power Density Plot on Configuration IEEE 802.11a / Ant. 1 / 5200 MHz



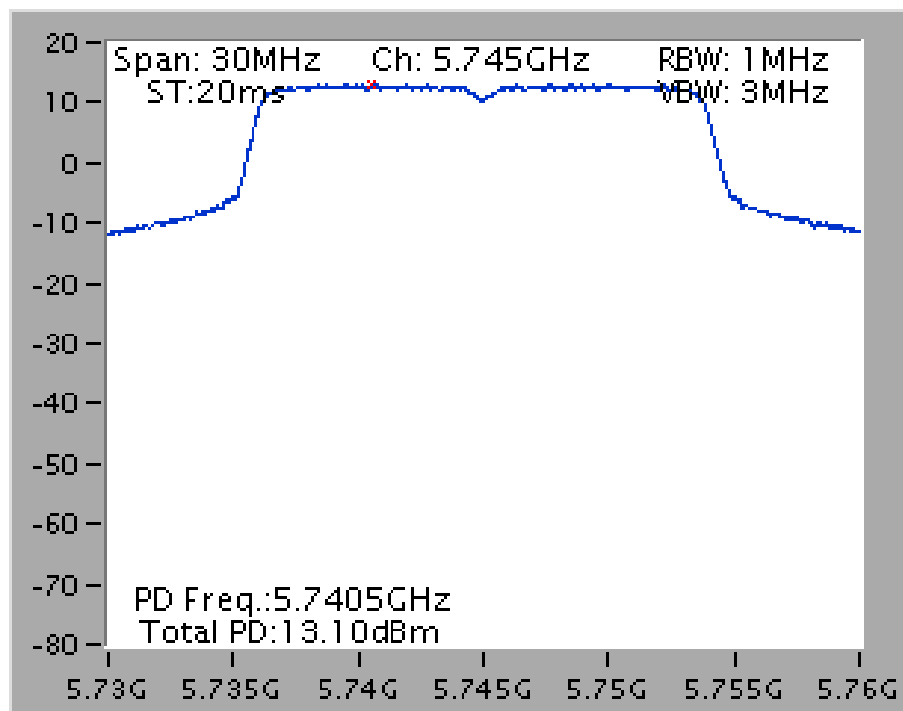
Power Density Plot on Configuration IEEE 802.11a / Ant. 1 / 5825 MHz



**Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Ant. 1 + Ant. 2 + Ant. 3 /
5200MHz**

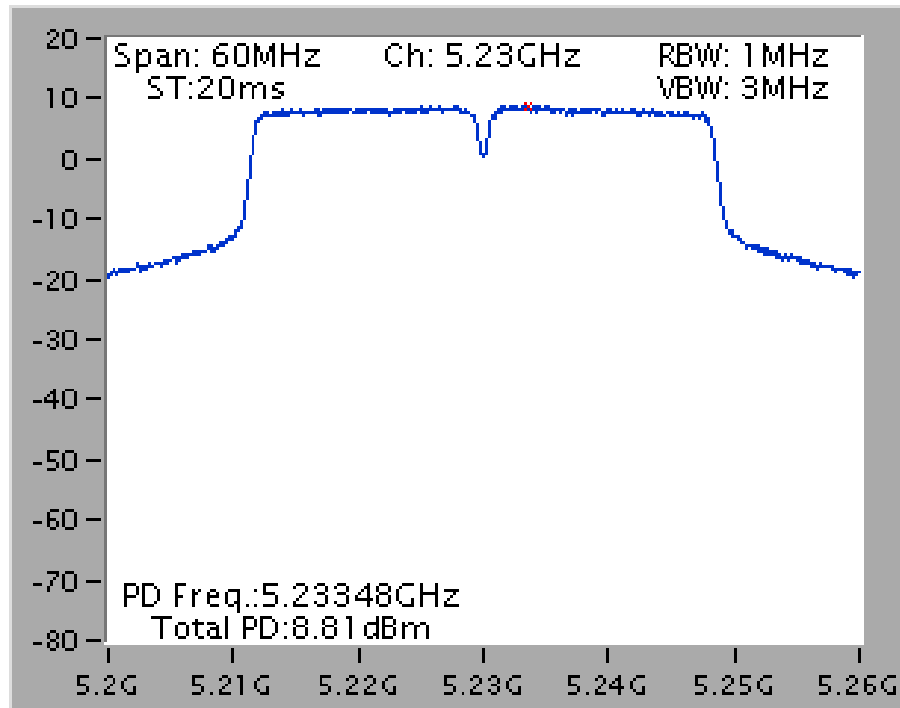


**Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Ant. 1 + Ant. 2 + Ant. 3 /
5745 MHz**

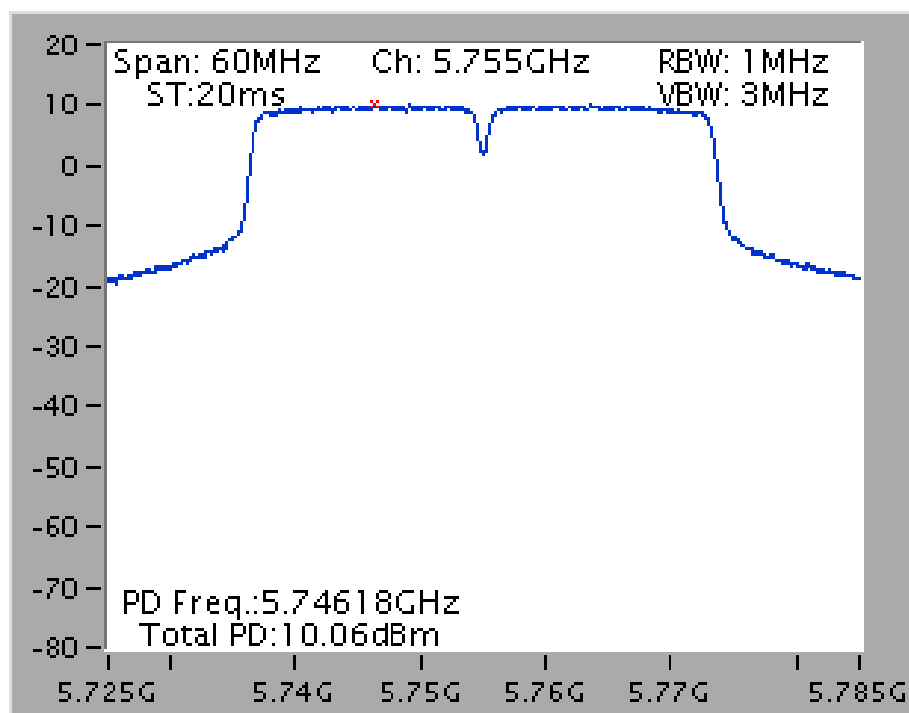




**Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Ant. 1 + Ant. 2 + Ant. 3 /
5230 MHz**



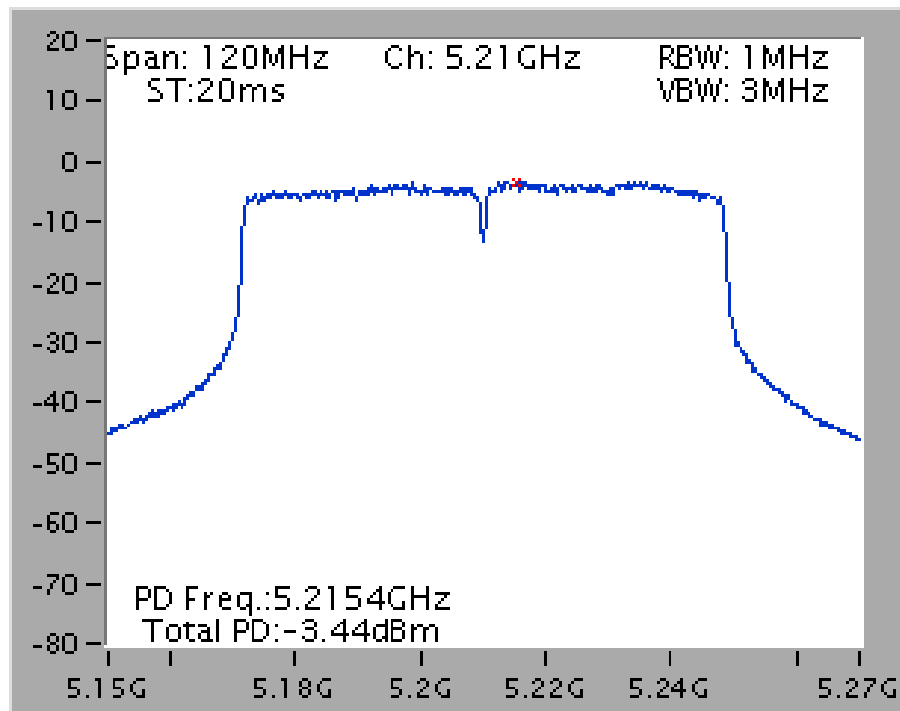
**Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Ant. 1 + Ant. 2 + Ant. 3 /
5755 MHz**





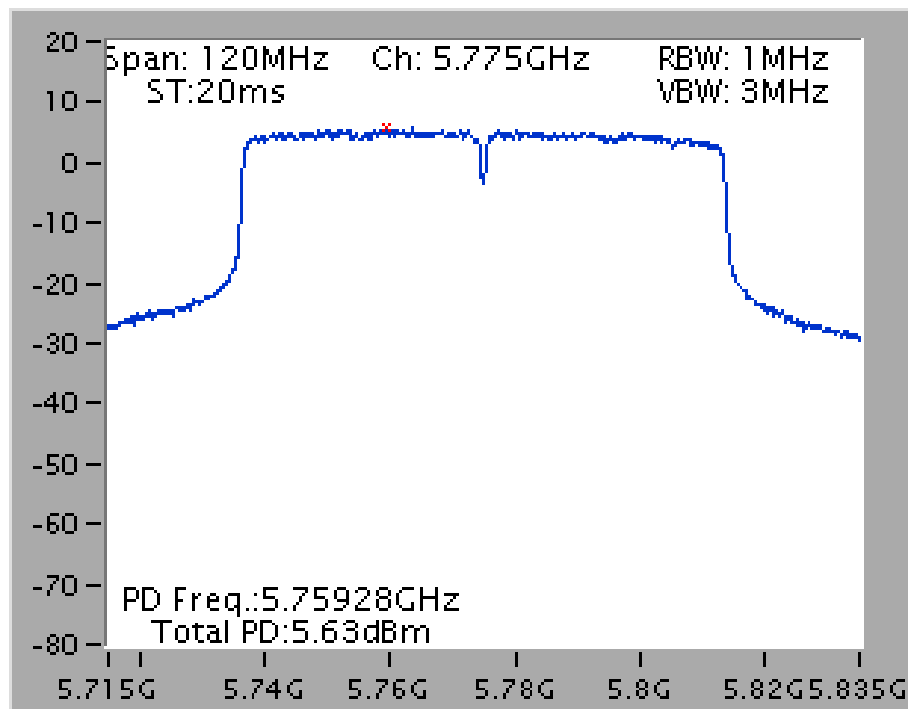
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Ant. 1 + Ant. 2 + Ant. 3 /

5210 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Ant. 1 + Ant. 2 + Ant. 3 /

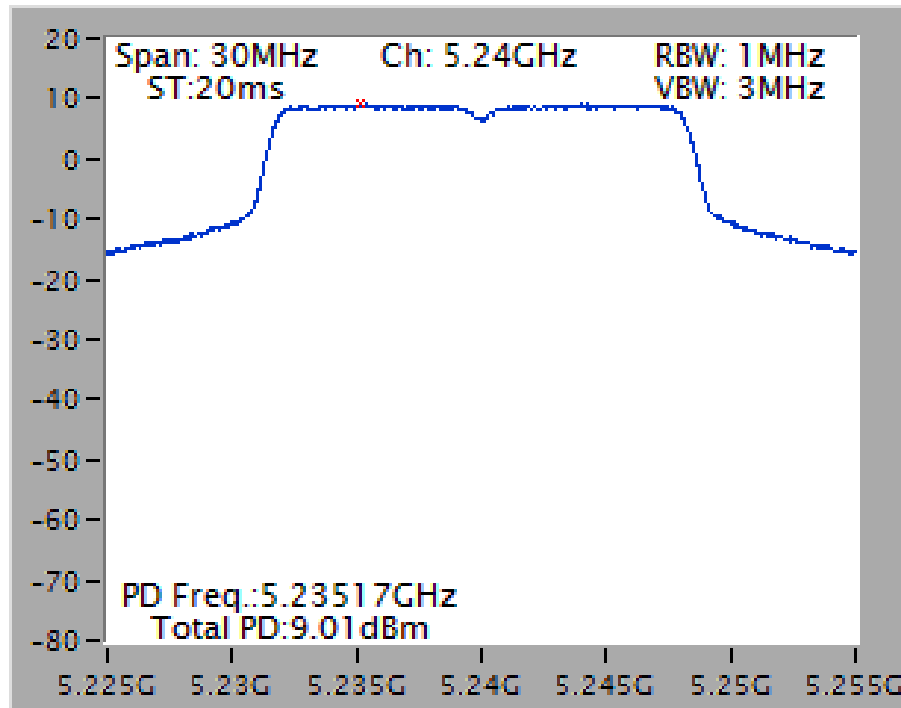
5775 MHz



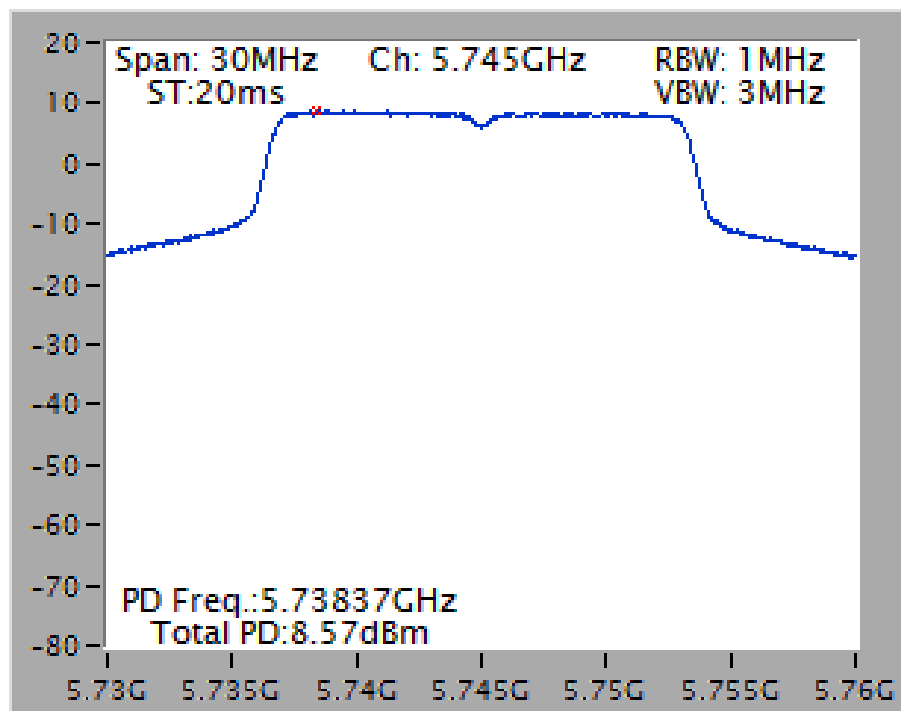


For Mode 3:

Power Density Plot on Configuration IEEE 802.11a / Ant. 1 / 5240 MHz

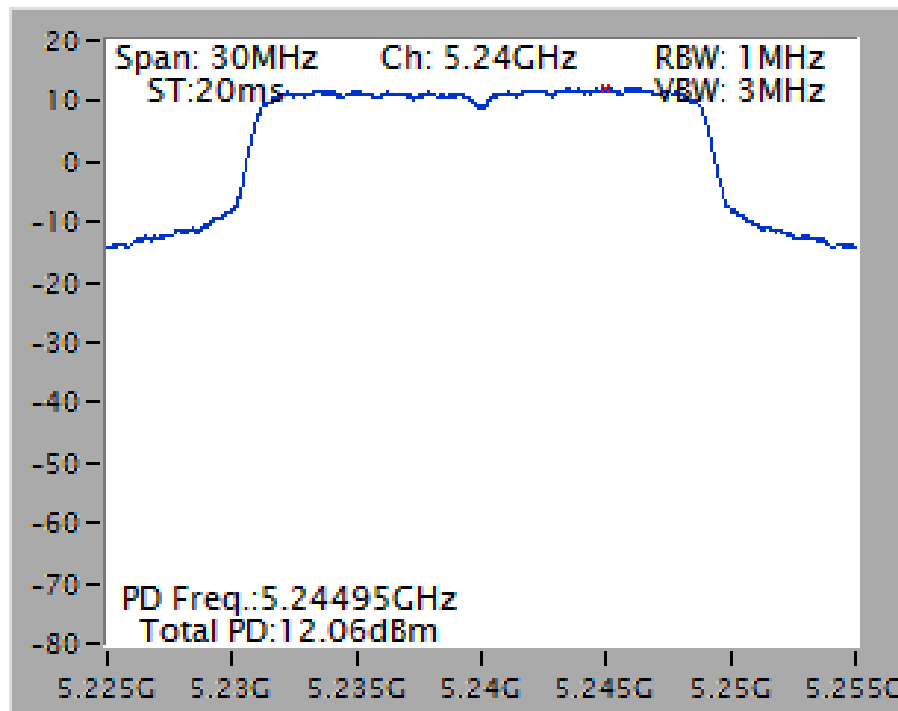


Power Density Plot on Configuration IEEE 802.11a / Ant. 1 / 5745 MHz



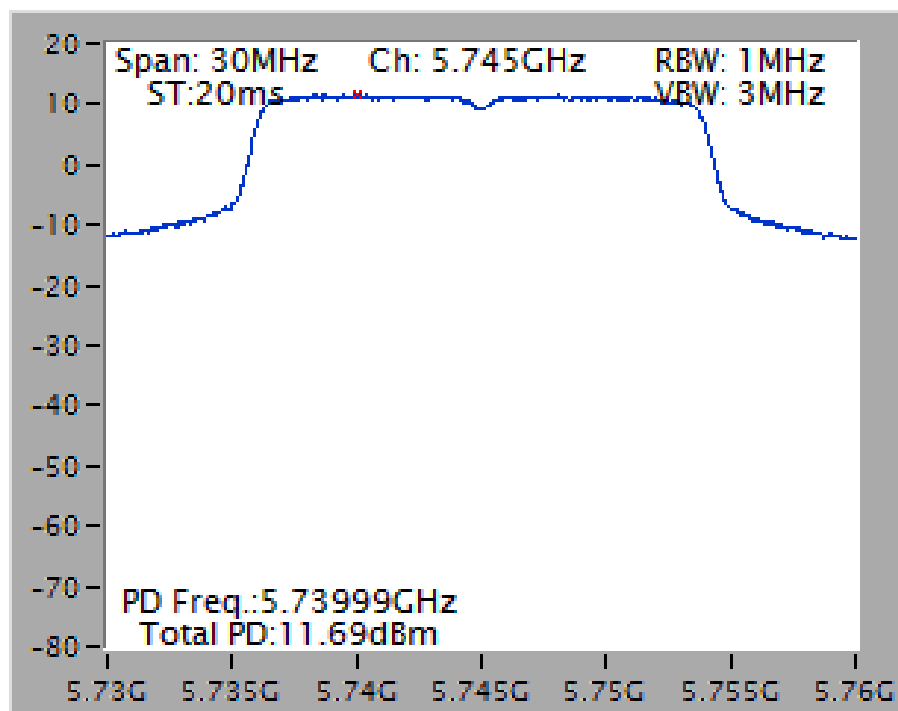
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Ant. 1 + Ant. 2 + Ant. 3 /

5240 MHz



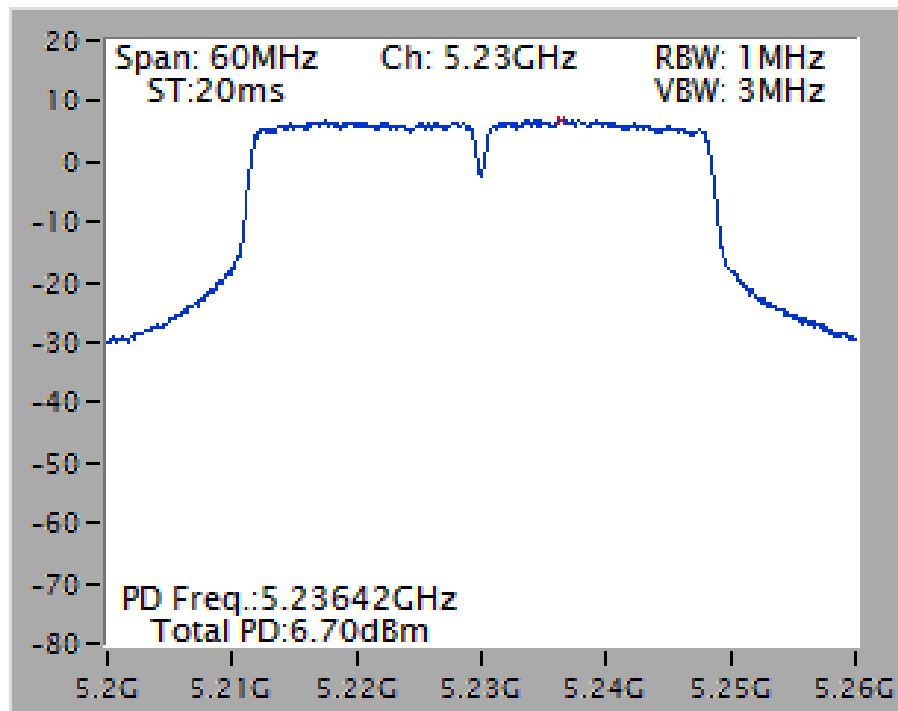
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Ant. 1 + Ant. 2 + Ant. 3 /

5745 MHz

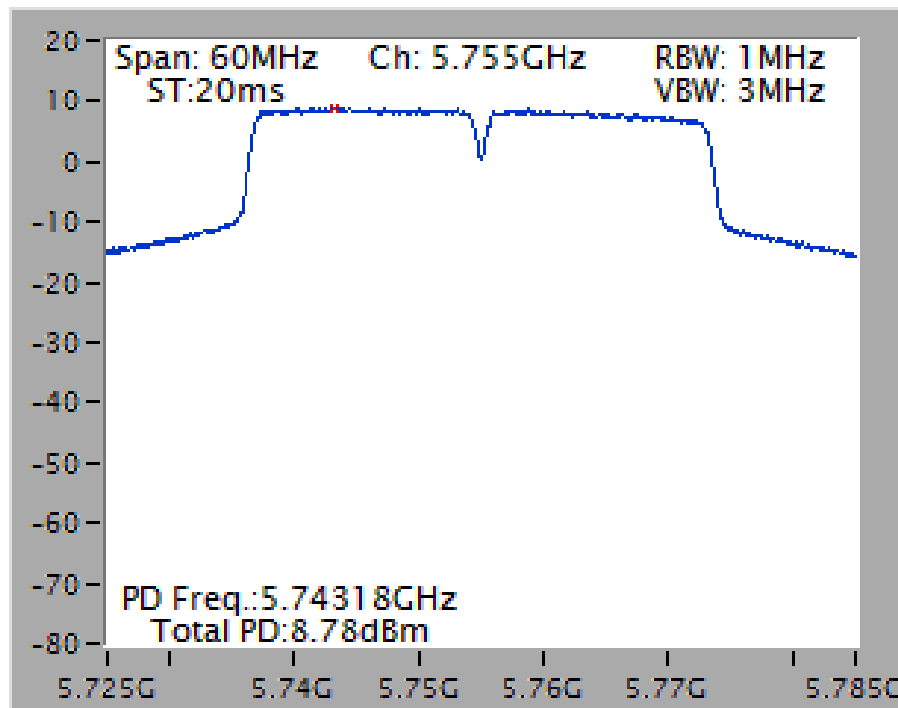




Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Ant. 1 + Ant. 2 + Ant. 3 /
5230 MHz



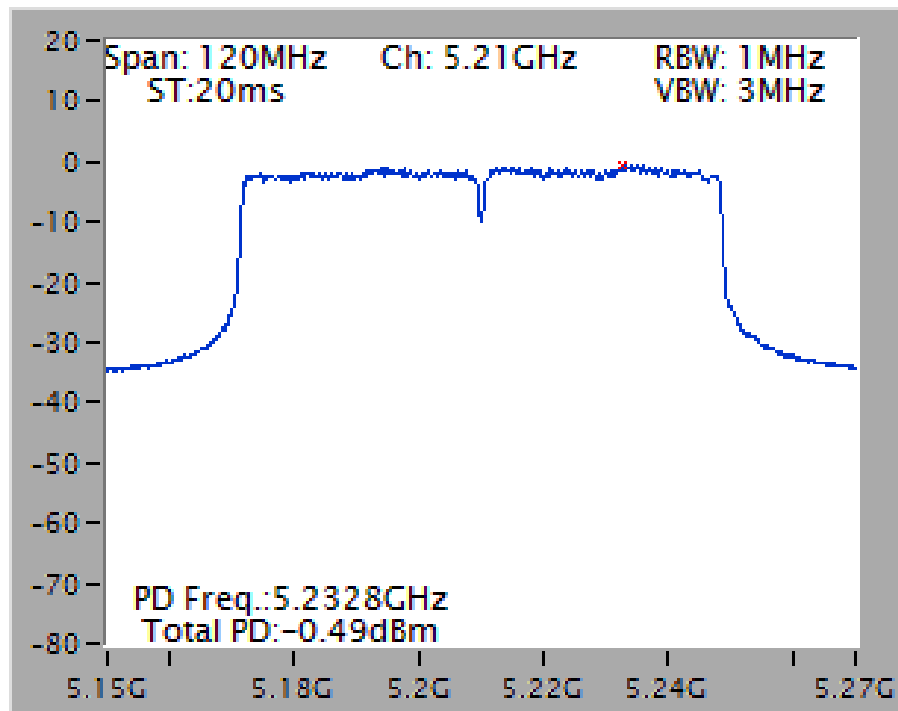
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Ant. 1 + Ant. 2 + Ant. 3 /
5755 MHz





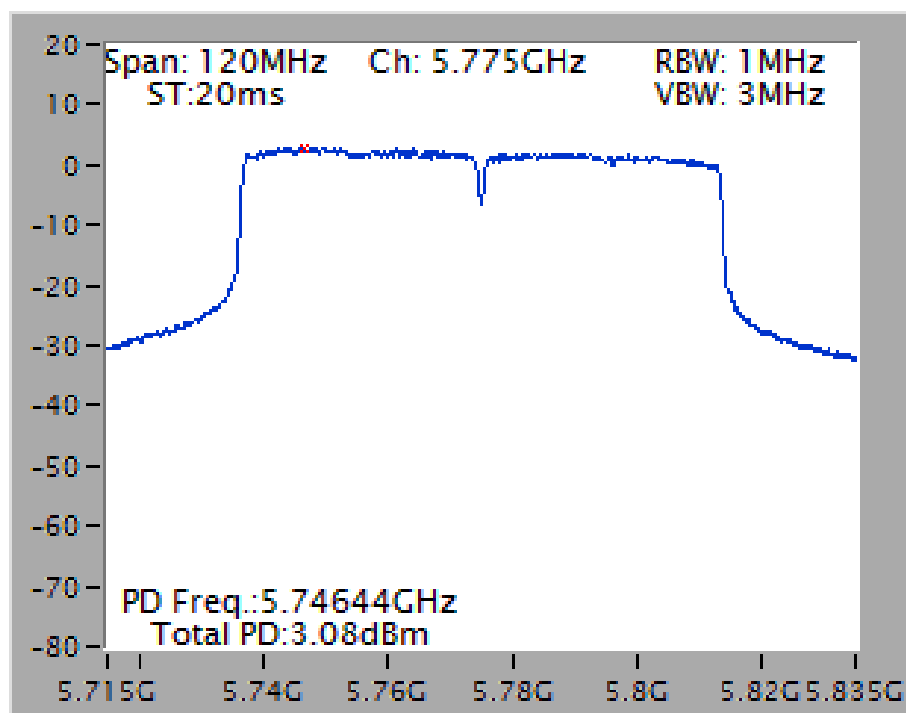
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Ant. 1 + Ant. 2 + Ant. 3 /

5210 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Ant. 1 + Ant. 2 + Ant. 3 /

5775 MHz





3.5 Unwanted Emissions

3.5.1 Transmitter Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
☒ 5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☐ 5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☐ 5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☒ 5.725 - 5.85 GHz	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.

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of



linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

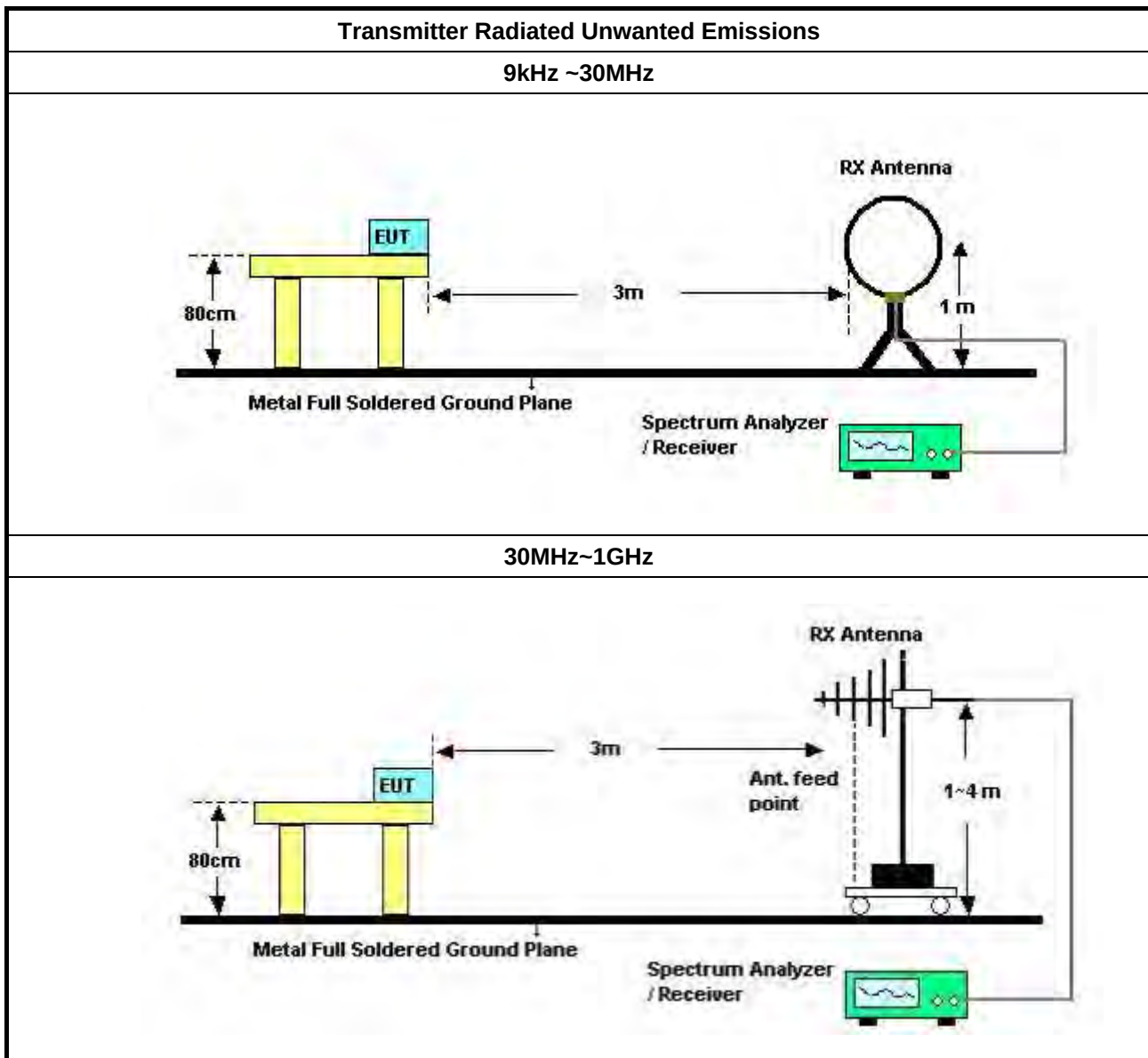
3.5.2 Measuring Instruments

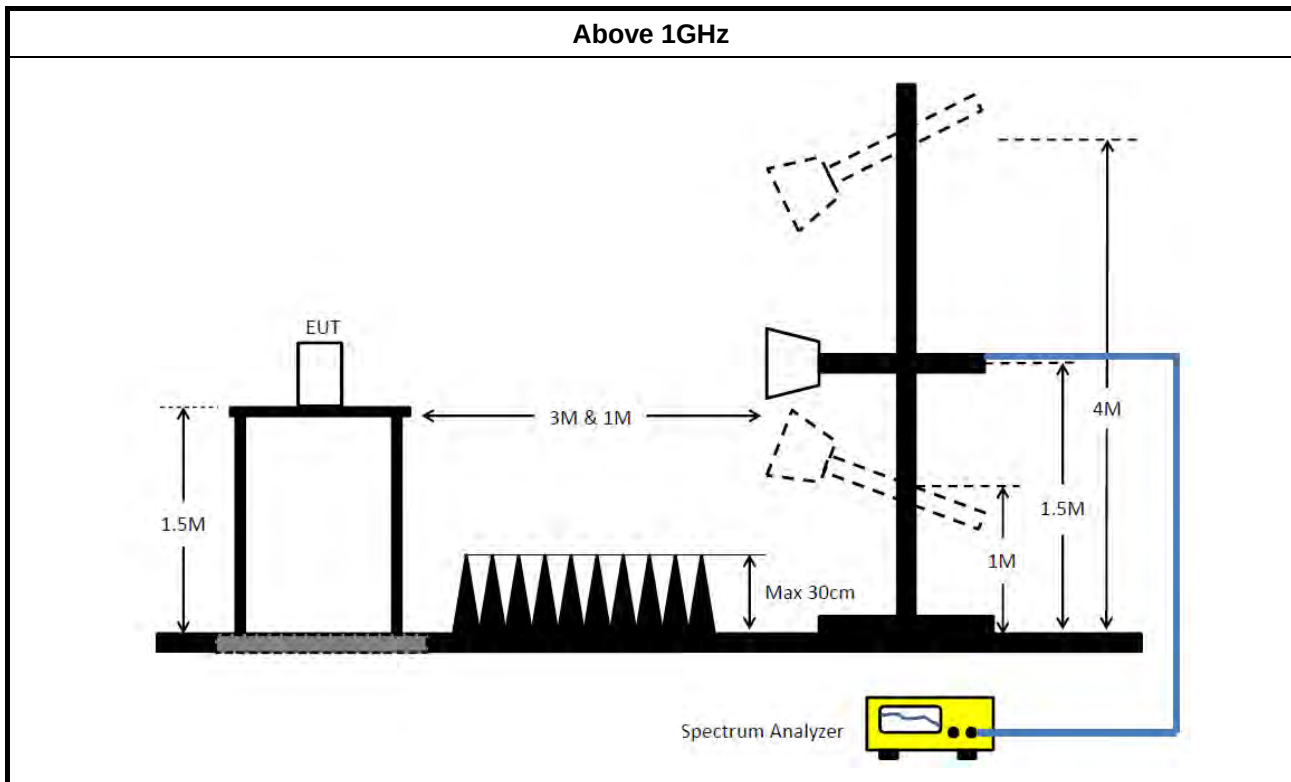
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method	
Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).	
The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].	
For the transmitter unwanted emissions shall be measured using following options below:	
For radiated measurement.	Refer as FCC KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.
	Refer as FCC KDB 789033, clause G)1) for unwanted emissions into restricted bands.
	☐ Refer as FCC KDB 789033, G)6) Method AD (Trace Averaging).
	☒ Refer as FCC KDB 789033, G)6) Method VB (Reduced VBW).
	☐ Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW $\geq 1/T$, where T is pulse time.
	☐ Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	☒ Refer as FCC KDB 789033, clause G)5) measurement procedure peak limit.
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.	☐ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.

3.5.4 Test Setup





3.5.5 Transmitter Unwanted Emissions (Below 30MHz)

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

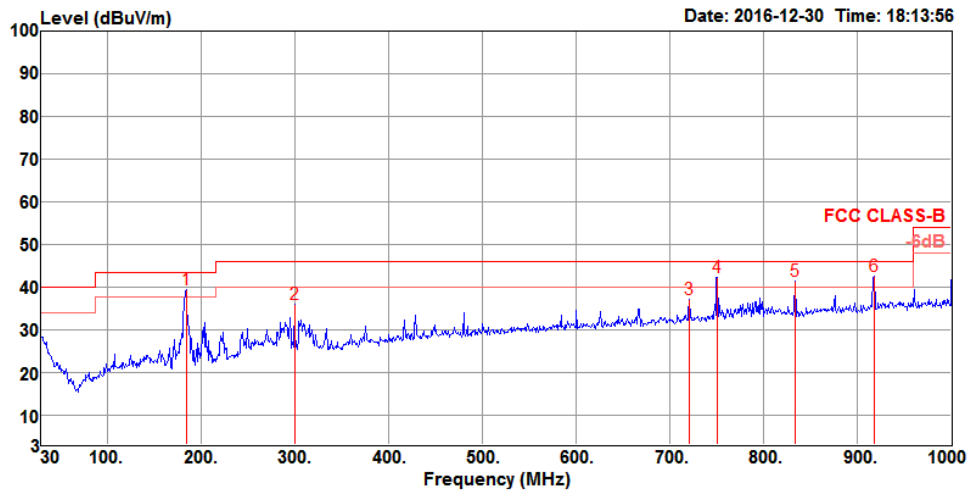
The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10 harmonic or 40 GHz, whichever is appropriate.



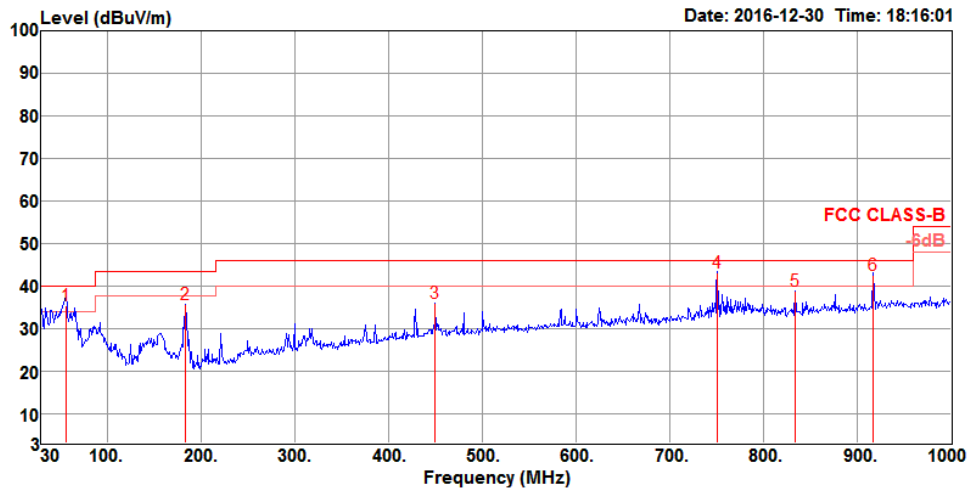
3.5.6 Test Result of Transmitter Unwanted Emissions (30MHz~1GHz)

Temperature	23°C	Humidity	63%
Test Engineer	Steven Liang	Configurations	Normal Link
Test Date	Dec. 30, 2016~Jan. 17, 2017	Test Mode	Mode 5

Horizontal



	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	184.23	39.23	43.50	-4.27	53.68	2.34	15.55	32.34	150	228 Peak	HORIZONTAL
2	299.66	35.78	46.00	-10.22	45.38	3.00	19.68	32.28	150	209 Peak	HORIZONTAL
3	720.64	37.18	46.00	-8.82	38.88	4.78	25.83	32.31	300	239 Peak	HORIZONTAL
4	750.71	42.33	46.00	-3.67	43.63	4.87	26.10	32.27	150	212 Peak	HORIZONTAL
5	833.16	41.45	46.00	-4.55	41.47	5.14	26.87	32.03	100	187 Peak	HORIZONTAL
6	917.55	42.45	46.00	-3.55	41.02	5.45	27.50	31.52	100	97 Peak	HORIZONTAL

**Vertical**

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	Limit	Level	Loss	Factor	Factor			
				dB	dBuV	dB	dB/m	dB	cm	deg	
1	56.19	35.24	40.00	-4.76	53.04	1.24	13.34	32.38	150	255 QP	VERTICAL
2	183.26	35.50	43.50	-8.00	49.94	2.33	15.57	32.34	100	118 Peak	VERTICAL
3	450.01	35.83	46.00	-10.17	41.41	3.73	23.00	32.31	150	349 Peak	VERTICAL
4	750.71	42.94	46.00	-3.06	44.24	4.87	26.10	32.27	150	201 QP	VERTICAL
5	833.16	38.85	46.00	-7.15	38.87	5.14	26.87	32.03	100	166 Peak	VERTICAL
6	916.58	42.46	46.00	-3.54	41.03	5.45	27.50	31.52	100	111 QP	VERTICAL

Note:

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

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

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

**3.5.7 Test Result of Transmitter Unwanted Emissions (1GHz~10th Harmonic)**

Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 36 / Ant. 1
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15531.32	59.48	74.00	-14.52	43.32	13.26	38.25	35.35	138	55 Peak	HORIZONTAL
2	15541.08	48.73	54.00	-5.27	32.57	13.26	38.25	35.35	138	55 Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15539.76	59.80	74.00	-14.20	43.64	13.26	38.25	35.35	155	12 Peak	VERTICAL
2	15546.17	48.54	54.00	-5.46	32.38	13.26	38.25	35.35	155	12 Average	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 40 / Ant. 1
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15585.57	60.19	74.00	-13.81	44.08	13.28	38.19	35.36	150	220	Peak	HORIZONTAL
2	15603.89	48.27	54.00	-5.73	32.18	13.31	38.14	35.36	150	220	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15591.68	60.15	74.00	-13.85	44.04	13.28	38.19	35.36	116	177	Peak	VERTICAL
2	15602.63	48.12	54.00	-5.88	32.03	13.31	38.14	35.36	116	177	Average	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 48 / Ant. 1
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15716.05	58.51	74.00	-15.49	42.51	13.35	38.03	35.38	143	40	Peak	HORIZONTAL
2	15719.28	47.99	54.00	-6.01	31.99	13.35	38.03	35.38	143	40	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15711.08	47.30	54.00	-6.70	31.29	13.35	38.03	35.37	125	95	Average	VERTICAL
2	15713.83	58.62	74.00	-15.38	42.62	13.35	38.03	35.38	125	95	Peak	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 149 / Ant. 1
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11487.13	64.14	74.00	-9.86	47.77	11.60	40.00	35.23	144	105	Peak
2	11487.90	48.14	54.00	-5.86	31.77	11.60	40.00	35.23	144	105	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11493.71	47.52	54.00	-6.48	31.15	11.60	40.00	35.23	129	264	Average
2	11500.84	58.29	74.00	-15.71	41.92	11.60	40.00	35.23	129	264	Peak



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 157 / Ant. 1
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11567.72	47.14	54.00	-6.86	30.86	11.64	39.87	35.23	142	110 Average	HORIZONTAL
2	11571.62	62.41	74.00	-11.59	46.13	11.64	39.87	35.23	142	110 Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11561.02	57.55	74.00	-16.45	41.27	11.64	39.87	35.23	131	57 Peak	VERTICAL
2	11573.47	46.94	54.00	-7.06	30.66	11.64	39.87	35.23	131	57 Average	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 165 / Ant. 1
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11639.46	58.58	74.00	-15.42	42.38	11.69	39.73	35.22	153	206 Peak	HORIZONTAL
2	11651.02	47.31	54.00	-6.69	31.15	11.71	39.67	35.22	153	206 Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11648.50	47.23	54.00	-6.77	31.03	11.69	39.73	35.22	128	155 Average	VERTICAL
2	11657.61	58.98	74.00	-15.02	42.82	11.71	39.67	35.22	128	155 Peak	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15534.13	48.70	54.00	-5.30	32.54	13.26	38.25	35.35	125	207	Average	HORIZONTAL
2	15543.11	60.60	74.00	-13.40	44.44	13.26	38.25	35.35	125	207	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15537.17	48.49	54.00	-5.51	32.33	13.26	38.25	35.35	109	151	Average	VERTICAL
2	15540.52	60.31	74.00	-13.69	44.15	13.26	38.25	35.35	109	151	Peak	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 40 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15591.02	60.30	74.00	-13.70	44.19	13.28	38.19	35.36	142	144	Peak	HORIZONTAL
2	15592.62	48.85	54.00	-5.15	32.74	13.28	38.19	35.36	142	144	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15592.14	48.92	54.00	-5.08	32.81	13.28	38.19	35.36	127	187	Average	VERTICAL
2	15600.64	59.88	74.00	-14.12	43.79	13.31	38.14	35.36	127	187	Peak	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 48 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15710.06	58.90	74.00	-15.10	42.89	13.35	38.03	35.37	131	103	Peak	HORIZONTAL
2	15724.87	48.26	54.00	-5.74	32.26	13.35	38.03	35.38	131	103	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15721.72	48.05	54.00	-5.95	32.05	13.35	38.03	35.38	127	149	Average	VERTICAL
2	15722.16	59.52	74.00	-14.48	43.52	13.35	38.03	35.38	127	149	Peak	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11485.57	62.91	74.00	-11.09	46.54	11.60	40.00	35.23	148	106 Peak	HORIZONTAL
2	11486.11	52.35	54.00	-1.65	35.98	11.60	40.00	35.23	148	106 Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11480.78	59.54	74.00	-14.46	43.19	11.57	40.01	35.23	176	202 Peak	VERTICAL
2	11493.29	48.66	54.00	-5.34	32.29	11.60	40.00	35.23	176	202 Average	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 157 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11565.99	50.69	54.00	-3.31	34.41	11.64	39.87	35.23	149	107	Average	HORIZONTAL
2	11573.47	61.58	74.00	-12.42	45.30	11.64	39.87	35.23	149	107	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11566.59	57.62	74.00	-16.38	41.34	11.64	39.87	35.23	143	29	Peak	VERTICAL
2	11573.47	48.01	54.00	-5.99	31.73	11.64	39.87	35.23	143	29	Average	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 165 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11645.09	50.55	54.00	-3.45	34.35	11.69	39.73	35.22	154	110	Average	HORIZONTAL
2	11646.47	61.68	74.00	-12.32	45.48	11.69	39.73	35.22	154	110	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11642.39	58.74	74.00	-15.26	42.54	11.69	39.73	35.22	126	48	Peak	VERTICAL
2	11652.33	48.76	54.00	-5.24	32.60	11.71	39.67	35.22	126	48	Average	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15561.94	59.34	74.00	-14.66	43.23	13.28	38.19	35.36	109	93 Peak	HORIZONTAL
2	15572.00	48.80	54.00	-5.20	32.69	13.28	38.19	35.36	109	93 Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15568.88	60.43	74.00	-13.57	44.32	13.28	38.19	35.36	142	159 Peak	VERTICAL
2	15575.07	48.76	54.00	-5.24	32.65	13.28	38.19	35.36	142	159 Average	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 46 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15687.17	46.96	54.00	-7.04	30.92	13.33	38.08	35.37	152	81	Average	HORIZONTAL
2	15694.83	60.40	74.00	-13.60	44.39	13.35	38.03	35.37	152	81	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15682.89	47.96	54.00	-6.04	31.92	13.33	38.08	35.37	111	33	Average	VERTICAL
2	15691.84	59.51	74.00	-14.49	43.50	13.35	38.03	35.37	111	33	Peak	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11504.37	47.98	54.00	-6.02	31.61	11.60	40.00	35.23	129	23	Average	HORIZONTAL
2	11504.73	57.99	74.00	-16.01	41.62	11.60	40.00	35.23	129	23	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11501.86	60.09	74.00	-13.91	43.72	11.60	40.00	35.23	153	161	Peak	VERTICAL
2	11505.25	50.00	54.00	-4.00	33.63	11.60	40.00	35.23	153	161	Average	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 159 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11584.81	48.64	54.00	-5.36	32.39	11.67	39.80	35.22	129	111 Average	HORIZONTAL
2	11585.01	60.09	74.00	-13.91	43.84	11.67	39.80	35.22	129	111 Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11587.13	48.27	54.00	-5.73	32.02	11.67	39.80	35.22	142	146 Average	VERTICAL
2	11588.32	60.41	74.00	-13.59	44.16	11.67	39.80	35.22	142	146 Peak	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15623.85	59.34	74.00	-14.66	43.25	13.31	38.14	35.36	111	294 Peak	HORIZONTAL
2	15634.71	48.87	54.00	-5.13	32.78	13.31	38.14	35.36	111	294 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15620.02	49.18	54.00	-4.82	33.09	13.31	38.14	35.36	124	154 Average	VERTICAL
2	15637.58	59.63	74.00	-14.37	43.54	13.31	38.14	35.36	124	154 Peak	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 155 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor			
			dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11546.09	60.67	74.00	-13.33	44.35	11.62	39.93	35.23	133	49 Peak	HORIZONTAL
2	11556.55	49.66	54.00	-4.34	33.38	11.64	39.87	35.23	133	48 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor			
			dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11545.45	49.41	54.00	-4.59	33.09	11.62	39.93	35.23	122	64 Average	VERTICAL
2	11546.65	60.94	74.00	-13.06	44.62	11.62	39.93	35.23	122	64 Peak	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11a CH 36 / Ant. 1
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15541.28	61.12	74.00	-12.88	44.96	13.26	38.25	35.35	105	49	Peak	HORIZONTAL
2	15541.72	47.98	54.00	-6.02	31.82	13.26	38.25	35.35	105	49	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15537.56	47.93	54.00	-6.07	31.77	13.26	38.25	35.35	100	0	Average	VERTICAL
2	15541.62	60.58	74.00	-13.42	44.42	13.26	38.25	35.35	100	0	Peak	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11a CH 40 / Ant. 1
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15597.20	60.24	74.00	-13.76	44.13	13.28	38.19	35.36	110	285	Peak	HORIZONTAL
2	15599.00	48.08	54.00	-5.92	31.97	13.28	38.19	35.36	110	285	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15599.00	60.58	74.00	-13.42	44.47	13.28	38.19	35.36	112	50	Peak	VERTICAL
2	15599.64	50.53	54.00	-3.47	34.42	13.28	38.19	35.36	112	50	Average	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11a CH 48 / Ant. 1
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15719.86	47.67	54.00	-6.33	31.67	13.35	38.03	35.38	112	192	Average	HORIZONTAL
2	15719.88	59.96	74.00	-14.04	43.96	13.35	38.03	35.38	112	192	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15719.30	49.89	54.00	-4.11	33.89	13.35	38.03	35.38	105	3	Average	VERTICAL
2	15719.96	60.57	74.00	-13.43	44.57	13.35	38.03	35.38	105	3	Peak	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11a CH 149 / Ant. 1
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11490.36	45.03	54.00	-8.97	28.66	11.60	40.00	35.23	116	323 Average	HORIZONTAL
2	11491.92	57.87	74.00	-16.13	41.50	11.60	40.00	35.23	116	323 Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11485.08	58.09	74.00	-15.91	41.72	11.60	40.00	35.23	116	155 Peak	VERTICAL
2	11485.62	45.18	54.00	-8.82	28.81	11.60	40.00	35.23	116	155 Average	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11a CH 157 / Ant. 1
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11571.24	58.47	74.00	-15.53	42.19	11.64	39.87	35.23	114	214	Peak	HORIZONTAL
2	11574.00	45.80	54.00	-8.20	29.52	11.64	39.87	35.23	114	214	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11567.30	58.44	74.00	-15.56	42.16	11.64	39.87	35.23	111	337	Peak	VERTICAL
2	11573.10	45.75	54.00	-8.25	29.47	11.64	39.87	35.23	111	337	Average	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11a CH 165 / Ant. 1
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11648.66	46.52	54.00	-7.48	30.32	11.69	39.73	35.22	120	104	Average	HORIZONTAL
2	11648.82	59.49	74.00	-14.51	43.29	11.69	39.73	35.22	120	104	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11645.54	46.30	54.00	-7.70	30.10	11.69	39.73	35.22	125	181	Average	VERTICAL
2	11648.96	58.94	74.00	-15.06	42.74	11.69	39.73	35.22	125	181	Peak	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15538.78	47.87	54.00	-6.13	31.71	13.26	38.25	35.35	124	108 Average	HORIZONTAL
2	15544.04	60.62	74.00	-13.38	44.46	13.26	38.25	35.35	124	108 Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15540.94	61.58	74.00	-12.42	45.42	13.26	38.25	35.35	123	3 Peak	VERTICAL
2	15541.16	47.82	54.00	-6.18	31.66	13.26	38.25	35.35	123	3 Average	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 40 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15602.46	60.78	74.00	-13.22	44.69	13.31	38.14	35.36	126	290 Peak	HORIZONTAL
2	15604.38	47.44	54.00	-6.56	31.35	13.31	38.14	35.36	126	290 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15597.62	47.34	54.00	-6.66	31.23	13.28	38.19	35.36	125	193 Average	VERTICAL
2	15599.94	60.15	74.00	-13.85	44.04	13.28	38.19	35.36	125	193 Peak	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 48 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15716.08	46.85	54.00	-7.15	30.85	13.35	38.03	35.38	124	262	Average	HORIZONTAL
2	15719.40	59.72	74.00	-14.28	43.72	13.35	38.03	35.38	124	262	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15715.80	60.46	74.00	-13.54	44.46	13.35	38.03	35.38	123	70	Peak	VERTICAL
2	15720.50	47.75	54.00	-6.25	31.75	13.35	38.03	35.38	123	70	Average	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11490.76	57.21	74.00	-16.79	40.84	11.60	40.00	35.23	128	309 Peak	HORIZONTAL
2	11493.06	44.93	54.00	-9.07	28.56	11.60	40.00	35.23	128	309 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11486.32	44.78	54.00	-9.22	28.41	11.60	40.00	35.23	139	276 Average	VERTICAL
2	11493.72	57.08	74.00	-16.92	40.71	11.60	40.00	35.23	139	276 Peak	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 157 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11567.54	45.60	54.00	-8.40	29.32	11.64	39.87	35.23	144	271	Average	HORIZONTAL
2	11567.92	58.46	74.00	-15.54	42.18	11.64	39.87	35.23	144	271	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11569.60	45.56	54.00	-8.44	29.28	11.64	39.87	35.23	142	357	Average	VERTICAL
2	11570.82	58.24	74.00	-15.76	41.96	11.64	39.87	35.23	142	357	Peak	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 165 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11646.28	45.98	54.00	-8.02	29.78	11.69	39.73	35.22	140	253 Average	HORIZONTAL
2	11648.62	59.09	74.00	-14.91	42.89	11.69	39.73	35.22	140	253 Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11648.68	46.99	54.00	-7.01	30.79	11.69	39.73	35.22	140	227 Average	VERTICAL
2	11654.24	58.56	74.00	-15.44	42.40	11.71	39.67	35.22	140	227 Peak	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15565.94	60.34	74.00	-13.66	44.23	13.28	38.19	35.36	130	148	Peak	HORIZONTAL
2	15573.40	47.33	54.00	-6.67	31.22	13.28	38.19	35.36	130	148	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15568.86	60.12	74.00	-13.88	44.01	13.28	38.19	35.36	136	11	Peak	VERTICAL
2	15570.18	47.27	54.00	-6.73	31.16	13.28	38.19	35.36	136	11	Average	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 46 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15690.34	46.78	54.00	-7.22	30.74	13.33	38.08	35.37	114	116 Average	HORIZONTAL
2	15693.36	60.41	74.00	-13.59	44.40	13.35	38.03	35.37	114	116 Peak	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15688.68	47.03	54.00	-6.97	30.99	13.33	38.08	35.37	138	223 Average	VERTICAL
2	15689.02	59.82	74.00	-14.18	43.78	13.33	38.08	35.37	138	223 Peak	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11505.48	44.99	54.00	-9.01	28.62	11.60	40.00	35.23	133	152 Average	HORIZONTAL
2	11514.26	58.06	74.00	-15.94	41.69	11.60	40.00	35.23	133	152 Peak	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11510.02	58.11	74.00	-15.89	41.74	11.60	40.00	35.23	133	70 Peak	VERTICAL
2	11514.84	46.07	54.00	-7.93	29.70	11.60	40.00	35.23	133	70 Average	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 159 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	Remark
1	11588.14	58.87	74.00	-15.13	42.62	11.67	39.80	35.22	161	38	Peak
2	11593.26	45.71	54.00	-8.29	29.46	11.67	39.80	35.22	161	38	Average

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	Remark
1	11586.94	57.85	74.00	-16.15	41.60	11.67	39.80	35.22	136	182	Peak
2	11587.22	46.85	54.00	-7.15	30.60	11.67	39.80	35.22	136	182	Average



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15627.48	46.79	54.00	-7.21	30.70	13.31	38.14	35.36	150	174	Average	HORIZONTAL
2	15633.04	59.84	74.00	-14.16	43.75	13.31	38.14	35.36	150	174	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15628.96	46.87	54.00	-7.13	30.78	13.31	38.14	35.36	126	37	Average	VERTICAL
2	15631.98	59.55	74.00	-14.45	43.46	13.31	38.14	35.36	126	37	Peak	VERTICAL



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 155 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11545.30	45.63	54.00	-8.37	29.31	11.62	39.93	35.23	145	319	Average	HORIZONTAL
2	11546.92	57.90	74.00	-16.10	41.58	11.62	39.93	35.23	145	319	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11545.60	46.57	54.00	-7.43	30.25	11.62	39.93	35.23	107	219	Average	VERTICAL
2	11550.02	58.22	74.00	-15.78	41.90	11.62	39.93	35.23	107	219	Peak	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 36 / Ant. 1
Test Date	May 05, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15539.39	61.42	74.00	-12.58	45.26	13.26	38.25	35.35	217	275	Peak	HORIZONTAL
2	15544.51	48.68	54.00	-5.32	32.52	13.26	38.25	35.35	217	275	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15540.35	48.76	54.00	-5.24	32.60	13.26	38.25	35.35	180	202	Average	VERTICAL
2	15543.83	61.13	74.00	-12.87	44.97	13.26	38.25	35.35	180	202	Peak	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 40 / Ant. 1
Test Date	May 05, 2016	Test Mode	Mode 3

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	15608.34	48.68	54.00	-5.32	32.59	13.31	38.14	35.36	215	293	Average	HORIZONTAL
2	15615.21	61.86	74.00	-12.14	45.77	13.31	38.14	35.36	215	293	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	15602.53	61.26	74.00	-12.74	45.17	13.31	38.14	35.36	193	321	Peak	VERTICAL
2	15612.10	48.80	54.00	-5.20	32.71	13.31	38.14	35.36	193	321	Average	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 48 / Ant. 1
Test Date	May 05, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15715.93	60.86	74.00	-13.14	44.86	13.35	38.03	35.38	224	54 Peak	HORIZONTAL
2	15716.09	48.29	54.00	-5.71	32.29	13.35	38.03	35.38	224	54 Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15720.10	61.99	74.00	-12.01	45.99	13.35	38.03	35.38	187	172 Peak	VERTICAL
2	15720.61	48.88	54.00	-5.12	32.88	13.35	38.03	35.38	187	172 Average	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 149 / Ant. 1
Test Date	May 06, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11492.40	60.91	74.00	-13.09	44.54	11.60	40.00	35.23	188	346	Peak	HORIZONTAL
2	11499.99	47.32	54.00	-6.68	30.95	11.60	40.00	35.23	188	346	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11490.78	60.71	74.00	-13.29	44.34	11.60	40.00	35.23	195	190	Peak	VERTICAL
2	11497.44	47.44	54.00	-6.56	31.07	11.60	40.00	35.23	195	190	Average	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 157 / Ant. 1
Test Date	May 06, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11567.92	61.32	74.00	-12.68	45.04	11.64	39.87	35.23	200	195	Peak	HORIZONTAL
2	11573.53	48.51	54.00	-5.49	32.23	11.64	39.87	35.23	200	195	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11576.60	48.57	54.00	-5.43	32.29	11.64	39.87	35.23	184	168	Average	VERTICAL
2	11577.35	61.26	74.00	-12.74	44.98	11.64	39.87	35.23	184	168	Peak	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 165 / Ant. 1
Test Date	May 06, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11643.69	61.43	74.00	-12.57	45.23	11.69	39.73	35.22	219	136	Peak
2	11646.35	48.76	54.00	-5.24	32.56	11.69	39.73	35.22	219	136	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11656.45	48.74	54.00	-5.26	32.58	11.71	39.67	35.22	181	172	Average
2	11659.03	61.69	74.00	-12.31	45.53	11.71	39.67	35.22	181	172	Peak



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 06, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15543.91	61.38	74.00	-12.62	45.22	13.26	38.25	35.35	169	255 Peak	HORIZONTAL
2	15548.94	48.74	54.00	-5.26	32.58	13.26	38.25	35.35	169	255 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15538.44	61.57	74.00	-12.43	45.41	13.26	38.25	35.35	178	245 Peak	VERTICAL
2	15542.34	48.53	54.00	-5.47	32.37	13.26	38.25	35.35	178	245 Average	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 40 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 06, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos		
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor			Remark
			dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	Pol/Phase
1	15596.41	62.88	74.00	-11.12	46.77	13.28	38.19	35.36	155	326	Peak
2	15604.57	48.45	54.00	-5.55	32.36	13.31	38.14	35.36	155	326	Average

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos		
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor			Remark
			dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	Pol/Phase
1	15590.33	48.23	54.00	-5.77	32.12	13.28	38.19	35.36	186	321	Average
2	15601.42	60.72	74.00	-13.28	44.63	13.31	38.14	35.36	186	321	Peak



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 48 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 06, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15722.52	61.87	74.00	-12.13	45.87	13.35	38.03	35.38	176	296 Peak	HORIZONTAL
2	15728.22	48.67	54.00	-5.33	32.67	13.35	38.03	35.38	176	296 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15712.71	48.73	54.00	-5.27	32.73	13.35	38.03	35.38	207	262 Average	VERTICAL
2	15716.67	61.97	74.00	-12.03	45.97	13.35	38.03	35.38	207	262 Peak	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 06, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11496.05	60.04	74.00	-13.96	43.67	11.60	40.00	35.23	203	183	Peak	HORIZONTAL
2	11496.22	46.86	54.00	-7.14	30.49	11.60	40.00	35.23	203	183	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11486.01	59.41	74.00	-14.59	43.04	11.60	40.00	35.23	227	225	Peak	VERTICAL
2	11499.96	46.98	54.00	-7.02	30.61	11.60	40.00	35.23	227	225	Average	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 157 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 06, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos		
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor			Remark
			dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	Pol/Phase
1	11640.42	61.36	74.00	-12.64	45.16	11.69	39.73	35.22	192	152	Peak
2	11653.27	48.37	54.00	-5.63	32.21	11.71	39.67	35.22	192	152	Average

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos		
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor			Remark
			dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	Pol/Phase
1	11648.29	61.58	74.00	-12.42	45.38	11.69	39.73	35.22	220	170	Peak
2	11655.44	48.30	54.00	-5.70	32.14	11.71	39.67	35.22	220	170	Average



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 165 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 06, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos		
	MHz	dBuV/m	dBuV/m	Limit	Level	Loss	Factor	Factor			Remark
				dB	dBuV	dB	dB/m	dB	cm	deg	Pol/Phase
1	11652.78	61.33	74.00	-12.67	45.17	11.71	39.67	35.22	151	170	Peak
2	11653.33	48.46	54.00	-5.54	32.30	11.71	39.67	35.22	151	170	Average

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos		
	MHz	dBuV/m	dBuV/m	Limit	Level	Loss	Factor	Factor			Remark
				dB	dBuV	dB	dB/m	dB	cm	deg	Pol/Phase
1	11650.72	61.14	74.00	-12.86	44.94	11.69	39.73	35.22	201	118	Peak
2	11655.15	48.38	54.00	-5.62	32.22	11.71	39.67	35.22	201	118	Average



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 06, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15566.38	61.03	74.00	-12.97	44.92	13.28	38.19	35.36	167	187	Peak	HORIZONTAL
2	15566.67	48.32	54.00	-5.68	32.21	13.28	38.19	35.36	167	187	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15561.92	60.91	74.00	-13.09	44.80	13.28	38.19	35.36	184	211	Peak
2	15566.73	48.22	54.00	-5.78	32.11	13.28	38.19	35.36	184	211	Average



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 46 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 06, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15681.84	61.30	74.00	-12.70	45.26	13.33	38.08	35.37	216	196 Peak	HORIZONTAL
2	15694.02	48.43	54.00	-5.57	32.42	13.35	38.03	35.37	216	196 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	15691.39	48.47	54.00	-5.53	32.46	13.35	38.03	35.37	203	262 Average	VERTICAL
2	15691.65	61.14	74.00	-12.86	45.13	13.35	38.03	35.37	203	262 Peak	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 06, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor			
			dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11514.31	60.18	74.00	-13.82	43.81	11.60	40.00	35.23	195	216 Peak	HORIZONTAL
2	11514.72	47.31	54.00	-6.69	30.94	11.60	40.00	35.23	195	216 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor			
			dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11512.98	60.75	74.00	-13.25	44.38	11.60	40.00	35.23	204	245 Peak	VERTICAL
2	11516.25	47.21	54.00	-6.79	30.84	11.60	40.00	35.23	204	245 Average	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 159 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 06, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11585.34	60.97	74.00	-13.03	44.72	11.67	39.80	35.22	180	254	Peak	HORIZONTAL
2	11589.91	48.11	54.00	-5.89	31.86	11.67	39.80	35.22	180	254	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11591.77	60.83	74.00	-13.17	44.58	11.67	39.80	35.22	150	157	Peak	VERTICAL
2	11593.44	47.99	54.00	-6.01	31.74	11.67	39.80	35.22	150	157	Average	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 06, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15621.35	60.66	74.00	-13.34	44.57	13.31	38.14	35.36	204	240	Peak	HORIZONTAL
2	15636.40	48.05	54.00	-5.95	31.96	13.31	38.14	35.36	204	240	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15621.20	47.96	54.00	-6.04	31.87	13.31	38.14	35.36	231	268	Average	VERTICAL
2	15635.24	60.76	74.00	-13.24	44.67	13.31	38.14	35.36	231	268	Peak	VERTICAL



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 155 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 06, 2016	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11557.06	60.16	74.00	-13.84	43.88	11.64	39.87	35.23	194	208	Peak	HORIZONTAL
2	11559.26	47.70	54.00	-6.30	31.42	11.64	39.87	35.23	194	208	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11556.08	47.74	54.00	-6.26	31.46	11.64	39.87	35.23	218	231	Average	VERTICAL
2	11559.96	60.99	74.00	-13.01	44.71	11.64	39.87	35.23	218	231	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.



3.5.8 Test Result of Transmitter Unwanted Emissions (Band Edge)

Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 36, 40, 48 / Ant. 1
Test Date	May 04, 2016	Test Mode	Mode 1

Channel 36

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5149.26	66.20	74.00	-7.80	60.39	7.23	31.52	32.94	189	324 Peak	VERTICAL
2	5149.66	53.42	54.00	-0.58	47.61	7.23	31.52	32.94	189	324 Average	VERTICAL
3 0	5178.00	112.93	74.00			7.26	31.55	32.94	189	324 Peak	VERTICAL
4 0	5185.79	104.74	54.00			7.26	31.55	32.94	189	324 Average	VERTICAL

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

Channel 40

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5149.30	66.84	74.00	-7.16	61.03	7.23	31.52	32.94	179	326 Peak	VERTICAL
2	5150.00	53.74	54.00	-0.26	47.93	7.23	31.52	32.94	179	326 Average	VERTICAL
3 0	5204.39	116.13	74.00			7.29	31.57	32.94	179	326 Peak	VERTICAL
4 0	5205.59	108.32	54.00			7.29	31.57	32.94	179	326 Average	VERTICAL

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

Channel 48

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5150.00	49.67	54.00	-4.33	43.86	7.23	31.52	32.94	185	325 Average	VERTICAL
2	5150.00	59.18	74.00	-14.82	53.37	7.23	31.52	32.94	185	325 Peak	VERTICAL
3 0	5244.79	117.37	74.00			7.31	31.59	32.93	185	325 Peak	VERTICAL
4 0	5245.99	108.96	54.00			7.31	31.59	32.93	185	325 Average	VERTICAL
5	5350.00	50.56	54.00	-3.44	44.44	7.37	31.68	32.93	185	325 Average	VERTICAL
6	5350.00	60.22	74.00	-13.78	54.10	7.37	31.68	32.93	185	325 Peak	VERTICAL

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



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 149, 157, 165 / Ant. 1
Test Date	May 04, 2016	Test Mode	Mode 1

Channel 149

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5516.00	62.55	68.20	-5.65	56.14	7.52	31.82	32.93	170	326	Peak	VERTICAL
2	5740.00	114.65	122.20			7.73	32.10	33.01	170	326	Peak	VERTICAL
3	5750.80	105.95	122.20			7.73	32.10	33.02	170	326	Average	VERTICAL
4	5981.00	61.45	68.20	-6.75	54.34	7.83	32.38	33.10	170	326	Peak	VERTICAL

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

Channel 157

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5641.00	62.90	68.20	-5.30	56.26	7.64	31.98	32.98	177	333	Peak	VERTICAL
2	5778.30	105.64	122.20			7.76	32.14	33.03	177	333	Average	VERTICAL
3	5781.00	114.09	122.20			7.76	32.14	33.03	177	333	Peak	VERTICAL
4	5971.00	62.11	68.20	-6.09	55.02	7.83	32.36	33.10	177	333	Peak	VERTICAL

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

Channel 165

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5642.00	61.55	68.20	-6.65	54.91	7.64	31.98	32.98	179	358	Peak	VERTICAL
2	5818.70	107.12	122.20			7.78	32.18	33.04	179	358	Average	VERTICAL
3	5822.00	116.03	122.20			7.78	32.18	33.05	179	358	Peak	VERTICAL
4	5998.00	61.82	68.20	-6.38	54.69	7.84	32.40	33.11	179	358	Peak	VERTICAL

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



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36, 40, 48 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Channel 36

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor			
			dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5149.66	65.30	74.00	-8.70	59.49	7.23	31.52	32.94	188	328 Peak	VERTICAL
2	5150.00	53.63	54.00	-0.37	47.82	7.23	31.52	32.94	188	328 Average	VERTICAL
3 0	5185.99	107.28	54.00			7.26	31.55	32.94	188	328 Average	VERTICAL
4 0	5187.19	115.13	74.00			7.28	31.56	32.94	188	328 Peak	VERTICAL

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

Channel 40

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor			
			dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5148.50	63.76	74.00	-10.24	57.95	7.23	31.52	32.94	184	328 Peak	VERTICAL
2	5150.00	53.74	54.00	-0.26	47.93	7.23	31.52	32.94	184	328 Average	VERTICAL
3 0	5205.99	119.60	74.00			7.29	31.57	32.94	184	328 Peak	VERTICAL
4 0	5206.59	111.28	54.00			7.29	31.57	32.94	184	328 Average	VERTICAL

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

Channel 48

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor			
			dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5128.02	50.46	54.00	-3.54	44.67	7.22	31.51	32.94	185	327 Average	VERTICAL
2	5141.80	60.89	74.00	-13.11	55.08	7.23	31.52	32.94	185	327 Peak	VERTICAL
3 0	5245.39	113.25	54.00			7.31	31.59	32.93	185	327 Average	VERTICAL
4 0	5245.39	121.19	74.00			7.31	31.59	32.93	185	327 Peak	VERTICAL
5	5350.00	50.86	54.00	-3.14	44.74	7.37	31.68	32.93	185	327 Average	VERTICAL
6	5350.00	60.86	74.00	-13.14	54.74	7.37	31.68	32.93	185	327 Peak	VERTICAL

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



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149, 157, 165 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Channel 149

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5501.00	61.93	68.20	-6.27	55.54	7.51	31.80	32.92	175	313 Peak	VERTICAL
2	5738.00	119.53	122.20			7.71	32.08	33.01	175	313 Peak	VERTICAL
3	5739.50	111.85	122.20			7.73	32.10	33.01	175	313 Average	VERTICAL
4	5990.00	60.17	68.20	-8.03	53.06	7.83	32.38	33.10	175	313 Peak	VERTICAL

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

Channel 157

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5606.00	62.33	68.20	-5.87	55.77	7.60	31.92	32.96	181	314 Peak	VERTICAL
2	5779.00	120.10	122.20			7.76	32.14	33.03	181	314 Peak	VERTICAL
3	5780.00	111.88	122.20			7.76	32.14	33.03	181	314 Average	VERTICAL
4	5983.00	62.38	68.20	-5.82	55.27	7.83	32.38	33.10	181	314 Peak	VERTICAL

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

Channel 165

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5616.00	61.85	68.20	-6.35	55.27	7.61	31.94	32.97	189	350 Peak	VERTICAL
2	5822.80	110.70	122.20			7.78	32.20	33.05	189	350 Average	VERTICAL
3	5823.00	118.13	122.20			7.78	32.20	33.05	189	350 Peak	VERTICAL
4	6015.00	61.11	68.20	-7.09	53.91	7.86	32.46	33.12	189	350 Peak	VERTICAL

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



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38, 46 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Channel 38

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5145.09	53.61	54.00	-0.39	47.80	7.23	31.52	32.94	193	313 Average	VERTICAL
2	5145.69	64.57	74.00	-9.43	58.76	7.23	31.52	32.94	193	313 Peak	VERTICAL
3 0	5184.01	99.75	54.00			7.26	31.55	32.94	193	313 Average	VERTICAL
4 0	5185.21	107.58	74.00			7.26	31.55	32.94	193	313 Peak	VERTICAL

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

Channel 46

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5149.16	64.36	74.00	-9.64	58.55	7.23	31.52	32.94	189	319 Peak	VERTICAL
2	5150.00	53.20	54.00	-0.80	47.39	7.23	31.52	32.94	189	319 Average	VERTICAL
3 0	5228.80	107.39	54.00			7.30	31.58	32.94	189	319 Average	VERTICAL
4 0	5239.58	115.65	74.00			7.31	31.59	32.94	189	319 Peak	VERTICAL

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



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151, 159 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Channel 151

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5651.00	65.44	68.94	-3.50	58.80	7.64	31.98	32.98	179	325	Peak	VERTICAL
2	5742.00	108.53	122.20			7.73	32.10	33.01	179	325	Average	VERTICAL
3	5742.00	116.17	122.20			7.73	32.10	33.01	179	325	Peak	VERTICAL
4	5955.00	62.14	68.94	-6.80	55.07	7.82	32.34	33.09	179	325	Peak	VERTICAL

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

Channel 159

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5595.00	61.52	68.20	-6.68	54.96	7.60	31.92	32.96	175	326	Peak	VERTICAL
2	5787.00	107.36	122.20			7.76	32.14	33.03	175	326	Average	VERTICAL
3	5787.00	115.42	122.20			7.76	32.14	33.03	175	326	Peak	VERTICAL
4	5980.00	60.86	68.20	-7.34	53.75	7.83	32.38	33.10	175	326	Peak	VERTICAL

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



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42, 155 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 1

Channel 42

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	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	53.31	54.00	-0.69	47.50	7.23	31.52	32.94	186	320	Average	VERTICAL
2	5150.00	62.44	74.00	-11.56	56.63	7.23	31.52	32.94	186	320	Peak	VERTICAL
3 0	5199.00	103.45	74.00			7.28	31.56	32.94	186	320	Peak	VERTICAL
4 0	5230.00	94.55	54.00			7.30	31.58	32.94	186	320	Average	VERTICAL
5	5350.00	49.06	54.00	-4.94	42.94	7.37	31.68	32.93	186	320	Average	VERTICAL
6	5350.00	58.78	74.00	-15.22	52.66	7.37	31.68	32.93	186	320	Peak	VERTICAL

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

Channel 155

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5652.00	68.00	69.69	-1.69	61.36	7.64	31.98	32.98	177	321	Peak	VERTICAL
2	5761.00	103.76	122.20			7.74	32.12	33.02	177	321	Average	VERTICAL
3	5764.00	112.21	122.20			7.74	32.12	33.02	177	321	Peak	VERTICAL
4	5941.00	62.38	68.20	-5.82	55.33	7.82	32.32	33.00	177	321	Peak	VERTICAL

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



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11a CH 36, 40, 48 / Ant. 1
Test Date	May 21, 2016	Test Mode	Mode 2

Channel 36

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5144.80	58.36	74.00	-15.64	52.55	7.23	31.52	32.94	184	45 Peak	VERTICAL
2	5149.40	46.27	54.00	-7.73	40.46	7.23	31.52	32.94	184	45 Average	VERTICAL
3 0	5185.80	99.02	54.00			7.26	31.55	32.94	184	45 Average	VERTICAL
4 0	5185.80	108.77	74.00			7.26	31.55	32.94	184	45 Peak	VERTICAL

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

Channel 40

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5148.00	64.75	74.00	-9.25	58.94	7.23	31.52	32.94	180	46 Peak	VERTICAL
2	5150.00	49.96	54.00	-4.04	44.15	7.23	31.52	32.94	180	46 Average	VERTICAL
3 0	5203.20	114.24	74.00			7.29	31.57	32.94	180	46 Peak	VERTICAL
4 0	5204.40	103.55	54.00			7.29	31.57	32.94	180	46 Average	VERTICAL

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

Channel 48

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5144.60	59.11	74.00	-14.89	53.30	7.23	31.52	32.94	180	44 Peak	VERTICAL
2	5150.00	47.45	54.00	-6.55	41.64	7.23	31.52	32.94	180	44 Average	VERTICAL
3 0	5234.60	114.45	74.00			7.31	31.59	32.94	180	44 Peak	VERTICAL
4 0	5243.00	104.66	54.00			7.31	31.59	32.93	180	44 Average	VERTICAL
5	5350.00	48.66	54.00	-5.34	42.54	7.37	31.68	32.93	180	44 Average	VERTICAL
6	5375.60	61.36	74.00	-12.64	55.20	7.39	31.70	32.93	180	44 Peak	VERTICAL

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



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11a CH 149, 157, 165 / Ant. 1
Test Date	May 21, 2016	Test Mode	Mode 2

Channel 149

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5553.00	60.86	68.20	-7.34	54.39	7.55	31.86	32.94	174	72 Peak	VERTICAL
2	5739.00	102.99	122.20			7.73	32.10	33.01	174	72 Average	VERTICAL
3	5739.00	112.92	122.20			7.73	32.10	33.01	174	72 Peak	VERTICAL
4	5994.00	59.15	68.20	-9.05	52.01	7.84	32.40	33.10	174	72 Peak	VERTICAL

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

Channel 157

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5580.00	61.10	68.20	-7.10	54.58	7.58	31.90	32.96	189	70 Peak	VERTICAL
2	5780.00	102.59	122.20			7.76	32.14	33.03	189	70 Average	VERTICAL
3	5782.00	112.62	122.20			7.76	32.14	33.03	189	70 Peak	VERTICAL
4	6033.00	59.47	68.20	-8.73	52.19	7.88	32.52	33.12	189	70 Peak	VERTICAL

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

Channel 165

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	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	61.02	68.20	-7.18	54.43	7.61	31.94	32.96	178	61 Peak	VERTICAL
2	5820.00	101.98	122.20			7.78	32.18	33.04	178	61 Average	VERTICAL
3	5820.00	111.66	122.20			7.78	32.18	33.04	178	61 Peak	VERTICAL
4	5959.00	59.27	68.20	-8.93	52.18	7.83	32.36	33.10	178	61 Peak	VERTICAL

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



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36, 40, 48 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Channel 36

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5149.60	63.75	74.00	-10.25	57.94	7.23	31.52	32.94	188	340	Peak	VERTICAL
2	5150.00	49.96	54.00	-4.04	44.15	7.23	31.52	32.94	188	340	Average	VERTICAL
3 0	5188.00	103.38	54.00			7.28	31.56	32.94	188	340	Average	VERTICAL
4 0	5188.00	112.52	74.00			7.28	31.56	32.94	188	340	Peak	VERTICAL

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

Channel 40

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5150.00	47.70	54.00	-6.30	41.89	7.23	31.52	32.94	176	352	Average	HORIZONTAL
2	5150.00	61.01	74.00	-12.99	55.20	7.23	31.52	32.94	176	352	Peak	HORIZONTAL
3 0	5204.80	113.46	74.00			7.29	31.57	32.94	176	352	Peak	HORIZONTAL
4 0	5206.00	103.92	54.00			7.29	31.57	32.94	176	352	Average	HORIZONTAL

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

Channel 48

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5133.20	58.63	74.00	-15.37	52.84	7.22	31.51	32.94	198	16	Peak	VERTICAL
2	5150.00	46.47	54.00	-7.53	40.66	7.23	31.52	32.94	198	16	Average	VERTICAL
3 0	5245.40	106.35	54.00			7.31	31.59	32.93	198	16	Average	VERTICAL
4 0	5246.00	116.39	74.00			7.31	31.59	32.93	198	16	Peak	VERTICAL
5	5350.00	47.73	54.00	-6.27	41.61	7.37	31.68	32.93	198	16	Average	VERTICAL
6	5381.00	60.09	74.00	-13.91	53.93	7.39	31.70	32.93	198	16	Peak	VERTICAL

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



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149, 157, 165 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Channel 149

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss 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	59.59	68.20	-8.61	52.97	7.63	31.96	32.97	188	359 Peak	VERTICAL
2	5753.00	106.15	122.20			7.73	32.10	33.02	188	359 Average	VERTICAL
3	5753.00	115.50	122.20			7.73	32.10	33.02	188	359 Peak	VERTICAL
4	5948.00	58.47	68.20	-9.73	51.40	7.82	32.34	33.09	188	359 Peak	VERTICAL

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

Channel 157

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5596.00	59.96	68.20	-8.24	53.40	7.60	31.92	32.96	199	73 Peak	VERTICAL
2	5791.00	116.88	122.20			7.77	32.16	33.03	199	73 Peak	VERTICAL
3	5792.00	106.80	122.20			7.77	32.16	33.03	199	73 Average	VERTICAL
4	6002.00	59.29	68.20	-8.91	52.16	7.84	32.40	33.11	199	73 Peak	VERTICAL

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

Channel 165

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5641.00	60.05	68.20	-8.15	53.41	7.64	31.98	32.98	165	0 Peak	VERTICAL
2	5818.00	105.82	122.20			7.78	32.18	33.04	165	0 Average	VERTICAL
3	5819.00	115.65	122.20			7.78	32.18	33.04	165	0 Peak	VERTICAL
4	6054.00	58.65	68.20	-9.55	51.31	7.89	32.58	33.13	165	0 Peak	VERTICAL

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



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38, 46 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Channel 38

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5148.40	62.36	74.00	-11.64	56.55	7.23	31.52	32.94	177	1 Peak	HORIZONTAL
2	5150.00	50.24	54.00	-3.76	44.43	7.23	31.52	32.94	177	1 Average	HORIZONTAL
3 0	5188.00	95.37	54.00			7.28	31.56	32.94	177	1 Average	HORIZONTAL
4 0	5192.00	105.09	74.00			7.28	31.56	32.94	177	1 Peak	HORIZONTAL

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

Channel 46

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5150.00	51.88	54.00	-2.12	46.07	7.23	31.52	32.94	155	0 Average	HORIZONTAL
2	5150.00	66.11	74.00	-7.89	60.30	7.23	31.52	32.94	155	0 Peak	HORIZONTAL
3 0	5238.40	101.77	54.00			7.31	31.59	32.94	155	0 Average	HORIZONTAL
4 0	5240.80	112.22	74.00			7.31	31.59	32.94	155	0 Peak	HORIZONTAL
5	5350.00	47.70	54.00	-6.30	41.58	7.37	31.68	32.93	155	0 Average	HORIZONTAL
6	5350.60	59.43	74.00	-14.57	53.31	7.37	31.68	32.93	155	0 Peak	HORIZONTAL

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



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151, 159 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Channel 151

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5645.00	61.03	68.20	-7.17	54.39	7.64	31.98	32.98	168	360	Peak	VERTICAL
2	5743.00	103.92	122.20			7.73	32.10	33.01	168	360	Average	VERTICAL
3	5764.00	113.63	122.20			7.74	32.12	33.02	168	360	Peak	VERTICAL
4	5966.00	60.04	68.20	-8.16	52.95	7.83	32.36	33.10	168	360	Peak	VERTICAL

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

Channel 159

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5632.00	60.71	68.20	-7.49	54.09	7.63	31.96	32.97	215	71	Peak	VERTICAL
2	5782.00	104.43	122.20			7.76	32.14	33.03	215	71	Average	VERTICAL
3	5802.00	113.99	122.20			7.77	32.16	33.04	215	71	Peak	VERTICAL
4	5932.00	59.71	68.20	-8.49	52.65	7.82	32.32	33.08	215	71	Peak	VERTICAL

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



Temperature	23°C	Humidity	63%
Test Engineer	Eddie Weng / Stim Song / Paul Chen	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42, 155 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 21, 2016	Test Mode	Mode 2

Channel 42

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5147.00	60.14	74.00	-13.86	54.33	7.23	31.52	32.94	173	2 Peak	HORIZONTAL
2	5150.00	50.52	54.00	-3.48	44.71	7.23	31.52	32.94	173	2 Average	HORIZONTAL
3 0	5189.00	89.88	54.00			7.28	31.56	32.94	173	2 Average	HORIZONTAL
4 0	5219.00	101.13	74.00			7.30	31.58	32.94	173	2 Peak	HORIZONTAL
5	5350.00	46.86	54.00	-7.14	40.74	7.37	31.68	32.93	173	2 Average	HORIZONTAL
6	5382.00	57.80	74.00	-16.20	51.64	7.39	31.70	32.93	173	2 Peak	HORIZONTAL

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

Channel 155

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5645.00	67.22	68.20	-0.98	60.58	7.64	31.98	32.98	172	1 Peak	VERTICAL
2	5763.00	109.08	122.20			7.74	32.12	33.02	172	1 Peak	VERTICAL
3	5764.00	99.99	122.20			7.74	32.12	33.02	172	1 Average	VERTICAL
4	5930.00	60.12	68.20	-8.08	53.06	7.82	32.32	33.08	172	1 Peak	VERTICAL

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



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 36, 40, 48 / Ant. 1
Test Date	May 04, 2016	Test Mode	Mode 3

Channel 36

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5147.80	68.56	74.00	-5.44	62.75	7.23	31.52	32.94	200	193	Peak	HORIZONTAL
2	5149.80	53.84	54.00	-0.16	48.03	7.23	31.52	32.94	200	193	Average	HORIZONTAL
3 0	5184.59	105.26	54.00			7.26	31.55	32.94	200	193	Average	HORIZONTAL
4 0	5185.19	113.52	74.00			7.26	31.55	32.94	200	193	Peak	HORIZONTAL

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

Channel 40

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	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	53.42	54.00	-0.58	47.61	7.23	31.52	32.94	181	354	Average	HORIZONTAL
2	5150.00	67.40	74.00	-6.60	61.59	7.23	31.52	32.94	181	354	Peak	HORIZONTAL
3 0	5203.99	107.59	54.00			7.29	31.57	32.94	181	354	Average	HORIZONTAL
4 0	5204.39	116.09	74.00			7.29	31.57	32.94	181	354	Peak	HORIZONTAL

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	5141.02	60.60	74.00	-13.40	54.81	7.22	31.51	32.94	195	195	Peak	HORIZONTAL
2	5150.00	49.84	54.00	-4.16	44.03	7.23	31.52	32.94	195	195	Average	HORIZONTAL
3	5244.79	117.05	74.00			7.31	31.59	32.93	195	195	Peak	HORIZONTAL
4	5245.99	108.88	54.00			7.31	31.59	32.93	195	195	Average	HORIZONTAL
5	5350.00	50.56	54.00	-3.44	44.44	7.37	31.68	32.93	195	195	Average	HORIZONTAL
6	5352.99	60.69	74.00	-13.31	54.57	7.37	31.68	32.93	195	195	Peak	HORIZONTAL

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



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11a CH 149, 157, 165 / Ant. 1
Test Date	May 04, 2016	Test Mode	Mode 3

Channel 149

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5635.20	60.68	68.20	-7.52	54.07	7.63	31.96	32.98	300	180	Peak	HORIZONTAL
2	5653.80	61.20	71.02	-9.82	54.56	7.64	31.98	32.98	300	180	Peak	HORIZONTAL
3	5740.21	105.14	122.20			7.73	32.10	33.01	300	180	Average	HORIZONTAL
4	5741.41	113.70	122.20			7.73	32.10	33.01	300	180	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5745 MHz.

Channel 157

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5623.00	60.75	68.20	-7.45	54.17	7.61	31.94	32.97	187	360	Peak	HORIZONTAL
2	5779.00	104.93	122.20			7.76	32.14	33.03	187	360	Average	HORIZONTAL
3	5779.00	112.67	122.20			7.76	32.14	33.03	187	360	Peak	HORIZONTAL
4	5968.00	61.25	68.20	-6.95	54.16	7.83	32.36	33.10	187	360	Peak	HORIZONTAL

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

Channel 165

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5609.00	62.05	68.20	-6.15	55.46	7.61	31.94	32.96	192	181	Peak	HORIZONTAL
2	5820.00	106.38	122.20			7.78	32.18	33.04	192	181	Average	HORIZONTAL
3	5823.00	114.33	122.20			7.78	32.20	33.05	192	181	Peak	HORIZONTAL
4	5952.00	62.13	68.20	-6.07	55.06	7.82	32.34	33.09	192	181	Peak	HORIZONTAL

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



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 36, 40, 48 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 3

Channel 36

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor			
			dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5149.40	66.53	74.00	-7.47	60.72	7.23	31.52	32.94	169	12 Peak	HORIZONTAL
2	5150.00	53.94	54.00	-0.06	48.13	7.23	31.52	32.94	169	12 Average	HORIZONTAL
3 0	5180.80	106.18	54.00			7.26	31.55	32.94	169	12 Average	HORIZONTAL
4 0	5181.80	115.18	74.00			7.26	31.55	32.94	169	12 Peak	HORIZONTAL

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

Channel 40

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor			
			dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5149.60	53.63	54.00	-0.37	47.82	7.23	31.52	32.94	164	12 Average	HORIZONTAL
2	5149.60	64.50	74.00	-9.50	58.69	7.23	31.52	32.94	164	12 Peak	HORIZONTAL
3 0	5199.20	109.43	54.00			7.28	31.56	32.94	164	12 Average	HORIZONTAL
4 0	5200.80	117.14	74.00			7.28	31.56	32.94	164	12 Peak	HORIZONTAL

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

Channel 48

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor			
			dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5147.60	60.87	74.00	-13.13	55.06	7.23	31.52	32.94	197	193 Peak	HORIZONTAL
2	5150.00	50.47	54.00	-3.53	44.66	7.23	31.52	32.94	197	193 Average	HORIZONTAL
3 0	5237.60	111.14	54.00			7.31	31.59	32.94	197	193 Average	HORIZONTAL
4 0	5237.60	118.41	74.00			7.31	31.59	32.94	197	193 Peak	HORIZONTAL
5	5350.00	50.71	54.00	-3.29	44.59	7.37	31.68	32.93	197	193 Average	HORIZONTAL
6	5351.80	62.18	74.00	-11.82	56.06	7.37	31.68	32.93	197	193 Peak	HORIZONTAL

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



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149, 157, 165 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 04, 2016	Test Mode	Mode 3

Channel 149

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5586.00	61.41	68.20	-6.79	54.89	7.58	31.90	32.96	174	190	Peak	HORIZONTAL
2	5744.00	112.52	122.20			7.73	32.10	33.01	174	190	Average	HORIZONTAL
3	5744.00	120.25	122.20			7.73	32.10	33.01	174	190	Peak	HORIZONTAL
4	5924.00	60.95	68.94	-7.99	53.97	7.81	32.30	33.08	174	190	Peak	HORIZONTAL

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

Channel 157

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	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	62.14	68.20	-6.06	55.52	7.63	31.96	32.97	162	187	Peak	HORIZONTAL
2	5792.00	111.57	122.20			7.77	32.16	33.03	162	187	Average	HORIZONTAL
3	5793.00	119.45	122.20			7.77	32.16	33.03	162	187	Peak	HORIZONTAL
4	5996.00	61.14	68.20	-7.06	54.01	7.84	32.40	33.11	162	187	Peak	HORIZONTAL

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

Channel 165

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5628.00	62.64	68.20	-5.56	56.02	7.63	31.96	32.97	158	186	Peak	HORIZONTAL
2	5832.00	110.51	122.20			7.78	32.20	33.05	158	186	Average	HORIZONTAL
3	5832.00	118.38	122.20			7.78	32.20	33.05	158	186	Peak	HORIZONTAL
4	6053.00	61.07	68.20	-7.13	53.73	7.89	32.58	33.13	158	186	Peak	HORIZONTAL

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



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 38, 46 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 05, 2016	Test Mode	Mode 3

Channel 38

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5146.01	53.64	54.00	-0.36	47.83	7.23	31.52	32.94	155	6 Average	HORIZONTAL
2	5147.45	66.31	74.00	-7.69	60.50	7.23	31.52	32.94	155	6 Peak	HORIZONTAL
3 0	5184.50	111.12	74.00			7.26	31.55	32.94	155	6 Peak	HORIZONTAL
4 0	5185.37	100.95	54.00			7.26	31.55	32.94	155	6 Average	HORIZONTAL

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

Channel 46

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5143.17	50.60	54.00	-3.40	44.79	7.23	31.52	32.94	166	13 Average	HORIZONTAL
2	5146.35	62.92	74.00	-11.08	57.11	7.23	31.52	32.94	166	13 Peak	HORIZONTAL
3 0	5244.47	113.87	74.00			7.31	31.59	32.93	166	13 Peak	HORIZONTAL
4 0	5245.92	104.13	54.00			7.31	31.59	32.93	166	13 Average	HORIZONTAL

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



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151, 159 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 05, 2016	Test Mode	Mode 3

Channel 151

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5653.50	67.62	70.80	-3.18	60.98	7.64	31.98	32.98	158	358	Peak	HORIZONTAL
2	5743.50	117.83	122.20			7.73	32.10	33.01	158	358	Peak	HORIZONTAL
3	5762.24	107.91	122.20			7.74	32.12	33.02	158	358	Average	HORIZONTAL
4	5953.50	63.83	68.20	-4.37	56.76	7.82	32.34	33.09	158	358	Peak	HORIZONTAL

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

Channel 159

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5618.00	65.75	68.20	-2.45	59.17	7.61	31.94	32.97	143	353	Peak	HORIZONTAL
2	5790.50	117.83	122.20			7.77	32.16	33.03	143	353	Peak	HORIZONTAL
3	5790.66	106.82	122.20			7.77	32.16	33.03	143	353	Average	HORIZONTAL
4	5972.50	65.18	68.20	-3.02	58.09	7.83	32.36	33.10	143	353	Peak	HORIZONTAL

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



Temperature	24°C	Humidity	65%
Test Engineer	Andy Tsai	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 42, 155 / Ant. 1 + Ant. 2 + Ant. 3
Test Date	May 05, 2016	Test Mode	Mode 3

Channel 42

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5135.47	51.78	54.00	-2.22	45.99	7.22	31.51	32.94	170	360	Average	HORIZONTAL
2	5136.19	63.35	74.00	-10.65	57.56	7.22	31.51	32.94	170	360	Peak	HORIZONTAL
3 0	5235.33	93.91	54.00			7.31	31.59	32.94	170	360	Average	HORIZONTAL
4 0	5236.05	103.49	74.00			7.31	31.59	32.94	170	360	Peak	HORIZONTAL
5	5350.00	50.68	54.00	-3.32	44.56	7.37	31.68	32.93	170	360	Average	HORIZONTAL
6	5358.68	62.36	74.00	-11.64	56.22	7.38	31.69	32.93	170	360	Peak	HORIZONTAL

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

Channel 155

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5652.00	68.24	69.69	-1.45	61.60	7.64	31.98	32.98	159	358	Peak	HORIZONTAL
2	5752.57	101.64	122.20			7.73	32.10	33.02	159	358	Average	HORIZONTAL
3	5764.00	114.87	122.20			7.74	32.12	33.02	159	358	Peak	HORIZONTAL
4	5957.50	63.55	68.20	-4.65	56.49	7.82	32.34	33.10	159	358	Peak	HORIZONTAL

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 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz~8.45GHz	Jan. 27, 2016	Jan. 26, 2017	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 14, 2016	Dec. 13, 2017	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz~30MHz	Dec. 23, 2015	Dec. 22, 2016	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz~30MHz	Dec. 21, 2016	Dec. 20, 2017	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz~ 30MHz	May 24, 2016	May 23, 2017	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 30, 2016	Aug. 29, 2017	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Mar. 15, 2018	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Oct. 22, 2015	Oct. 21, 2016	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2015	Jul. 20, 2016	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Mar. 15, 2016	Mar. 14, 2017	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 18, 2016	Jan. 17, 2017	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Nov. 13, 2015	Nov. 12, 2016	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Oct. 27, 2015	Oct. 26, 2016	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 16, 2016	May 15, 2017	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Nov. 01, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-17	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Nov. 01, 2016	Radiation (03CH01-CB)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	High Cable-40G-1	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Nov. 01, 2016	Radiation (03CH01-CB)
Test Software	Audix	E3	6.2009-10-7	N/A	N/A	N/A	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 09, 2015	Dec. 08, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Nov. 02, 2015	Nov. 01, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz – 26.5 GHz	Nov. 02, 2015	Nov. 01, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz – 26.5 GHz	Nov. 02, 2015	Nov. 01, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz – 26.5 GHz	Nov. 02, 2015	Nov. 01, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Nov. 02, 2015	Nov. 01, 2016	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 02, 2015	Nov. 01, 2016	Conducted (TH01-CB)

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

“*” Calibration Interval of instruments listed above is two years.

NCR means Non-Calibration required.