FCC TEST REPORT (WIFI 5G)

for

Dongguan Meiloon Acoustic Equipments Co., Ltd.

active loudspeaker

Model Number: PW300

FCC ID: 2AJAAPW300BT

IC :21761PW300BT

Prepared for	:	Dongguan Meiloon Acoustic Equipments Co., Ltd.
Address	:	77, Yuanlin Road Fenghuanggang Ind, Estate, Tangxia Town, 523727 Dongguan City, Guangdong Province, PEOPLE'S REPUBLIC OF CHINA.
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Report No.	:	17KWE065451F
Date of Test	:	June. 01~23, 2017
Date of Report	:	June. 27, 2017

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Keyway Testing Technology Co., Ltd.

Applicant: **Address:**	Dongguan Meiloon Acoustic Equipments Co., Ltd. 77, Yuanlin Road Fenghuanggang Ind, Estate, Tangxia Town, 523727 Dongguan City, Guangdong Province, PEOPLE'S REPUBLIC OF CHINA.		
Manufacturer: **Address:**	Paradigm Electronics Inc. 205 Annagem Blvd, Mississauga, L5T2V1, Canada		
Factor: **Address:**	Dongguan Meiloon Acoustic Equipments Co., Ltd. 77, Yuanlin Road Fenghuanggang Ind, Estate, Tangxia Town, 523727 Dongguan City, Guangdong Province, PEOPLE'S REPUBLIC OF CHINA.		
E.U.T:	active loudspeaker		
Model Number:	PW300		
Trade Name:	Paradigm	**Serial No.:**	------
Date of Receipt:	Apr. 06, 2017	**Date of Test:**	June. 01~23, 2017
Test Specification:	FCC Part 15, Subpart C 15.407: 2016 ANSI C63.10:2013 789033 D02 General UNII Test Procedures New Rules v01r04 RSS-247 Issue 2,2017 RSS-Gen Issue 4 November 2014		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied. **Issue Date: June. 27, 2017**		

Tested by:	Reviewed by:	Approved by:
Keven Wu/ Engineer	Mark Li / Supervisor	Andy Gao/ Supervisor

Other Aspects:

None.

Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested

This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Keyway Testing Technology Co., Ltd.

1. TEST SUMMARY

Test Items	Test Requirement	Result
Conducted Emissions	15.207 RSS-GEN, Section 8.8	PASS
Radiated Emissions	15.407(b),15.209 &RSS-Gen §6.13	PASS
26dB bandwidth and 99%dB Bandwidth	15.407 (a) RSS-247 §5.2(1) &RSS-Gen§6.6	PASS
6dB bandwidth and 99%dB Bandwidth	15.407 (a) RSS-247 §5.2(1) &RSS-Gen§6.6	PASS
Power density	15.407 (a) & RSS-247 §6.2.1	PASS
Maximum Peak Output Power	15.407 (a) & RSS-247 §6.2.1	PASS
Emissions from out of band	15.407 (b) & RSS-247 §6.2.1	PASS
Frequency Stability	15.407 (g)	PASS
Antenna Requirement	15.203 &RSS-Gen§8.3	PASS

2. GENERAL PRODUCT INFORMATION

2.1.Product Function

Refer to Technical Construction Form and User Manual.

2.2.Description of Device (EUT)

Product Name:	active Loudspeaker
Model No.:	PW300
Operation Frequency:	5180-5240 MHz; 5745-5825 MHz(802.11a/n(HT20)) 5190-5230 MHz; 5755-5795 MHz(802.11n(HT40))
Channel numbers:	5channels for 5G 802.11a/n(HT20) 4channels for 802.11n(HT40)
Modulation technology:	Orthogonal Frequency Division Multiplexing(OFDM) for (IEEE 802.11a/802.11n)
Data speed (IEEE 802.11a):	54/48/36/24/18/12/9/6Mbps
Data speed (IEEE 802.11n):	300/270/240/180/150/120/108/90/54Mbps
Antenna Type:	Internal Antenna*2
Antenna gain:	3.25dBi for 5G
Power supply:	AC 100-240V, 50/60Hz

2.3.Test Supporting System

Notebook
Manufacturer: Lenovo
M/N: Lenovo G475
S/N: GB14477457

2.4. Independent Operation Modes

The basic operation modes are:

The EUT was configured for testing in an engineering mode which was provided by the manufacturer.

For 802.11a/n(HT20):

1.lowest channel : 5180MHz (Channel 36)

2.middle channel : 5200MHz (Channel 40)

3. highest channel : 5240MHz (Channel 48)

For 802.11n(HT40):

4. For lowest channel : 5190MHz (Channel 38)

5. highest channel : 5230MHz (Channel 46)

For 802.11a/n(HT20):

6.lowest channel : 5745MHz (Channel 149)

7. middle channel : 5785MHz (Channel 157)

8. highest channel : 5825MHz (Channel 165)

For 802.11n(HT40):

9. lowest channel : 5755MHz (Channel 151)

10. For highest channel : 5795MHz (Channel 159)

Note: for conducted emission test, we pretest all mode,the worst mode was 802.11a channel 36.

for radiated emissions test, we pretest all mode,the worst mode was 802.11a.

The worst mode's data was recording and show in the test report.

2.5.Test Sites

Test Facilities

Lab Qualifications : Certificated by Industry Canada
Registration No.: 9868A
Date of registration: December 8, 2011

Certificated by FCC, USA
Registration No.: 370994
Date of registration: February21, 2012

Certificated by CNASChina
Registration No.: CNAS L5783
Date of registration: August 8, 2012

2.6.List of Test and Measurement Instruments

For conducted emission at the mains terminals test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	101156	Apr. 09,17	Apr. 09,18
Artificial Mains Network	Rohde&Schwarz	ENV216	101315	Apr. 09,17	Apr. 09,18
Artificial Mains Network (AUX)	Rohde&Schwarz	ENV216	101314	Apr. 09,17	Apr. 09,18
RF Cable	FUJIKURA	3D-2W	944 Cable	Apr. 09,17	Apr. 09,18

For radiated emission test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	101156	Apr. 09,17	Apr. 09,18
System Simulator	Agilent	E5515C	GB43130245	Apr. 09,17	Apr. 09,18
Power Splitter	Weinschel	1506A	NW425	Apr. 09,17	Apr. 09,18
Bilog Antenna	ETS-LINDGREN	3142D	135452	Apr. 09,17	Apr. 09,18
Remark: Testable Frequency Range: 26MHz-6GHz					
Spectrum Analyzer	Agilent	E4407B	MY4511304	Apr. 09,17	Apr. 09,18
Remark: Testable Frequency Range: 100Hz-26.5GHz					
Spectrum Analyzer	R&S	FSV40	132.1.3008K39 -100967	Apr. 09,17	Apr. 09,18
Remark: Testable Frequency Range: 10Hz-40GHz					
3m Semi-anechoic Chamber	ETS-LINDGREN	966	KW01	Apr. 09,17	Apr. 09,18
Signal Amplifier	SONOMA	310	187016	Apr. 09,17	Apr. 09,18
Signal Amplifier	Agilent	8449B	3008A00251	Apr. 09,17	Apr. 09,18
RF Cable	IMRO	IMRO-400	966 Cable 1#	N/A	N/A
MULTI-DEVICE Controller	ETS-LINDGREN	2090	126913	N/A	N/A
Horn Antenna	DAZE	ZN30701	11003	Apr. 09,17	Apr. 09,18
Remark: Testable Frequency Range: 1GHz-18GHz					
Horn Antenna	SCHWARZBECK	BBHA9170	9170-068	Apr. 09,17	Apr. 09,18
Remark: Testable Frequency Range: 18GHz-40GHz					
Spectrum Analyzer	Agilent	8593E	3911A04271	Apr. 09,17	Apr. 09,18
Remark: Testable Frequency Range: 9kHz-22GHz					
Spectrum Analyzer	Agilent	E4408B	MY44211125	Apr. 09,17	Apr. 09,18
Remark: Testable Frequency Range: 9kHz-26.5GHz					
Signal Amplifier	DAZE	ZN3380C	11001	Apr. 09,17	Apr. 09,18
HighPass filter	Micro	HPM50111	324216	Apr. 09,17	Apr. 09,18
Filter	COM-MW	ZBSF-C836.5-25-X	KW032	Apr. 09,17	Apr. 09,18
Filter	COM-MW	ZBSF-C1747.5-75-X2	KW035	Apr. 09,17	Apr. 09,18
Filter	COM-MW	ZBSF-C1880-60-X2	KW037	Apr. 09,17	Apr. 09,18
Constant temperature and humidity box	GF	GTH-800-40-1P	MAA9906-005	Apr. 09,17	Apr. 09,18
Splitter	Agilent	11636B	0025164	Apr. 09,17	Apr. 09,18
Power Meter	Anritsu	ML2495A	1204003	Apr. 09,17	Apr. 09,18
Power Sensor	Anritsu	MA2411B	1126150	Apr. 09,17	Apr. 09,18
Spectrum Analyzer	Agilent	N9020A	MY56070279	Apr. 09,17	Apr. 09,18
Remark: Testable Frequency Range: 10Hz-26.5GHz					

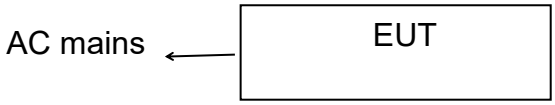
3. TEST SET-UP AND OPERATION MODES

3.1.Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

3.2.Block Diagram of Test Set-up

System Diagram of Connections between EUT and Simulators



(EUT: active loudspeaker)

3.3.Test Software

Final Test Mode	Description
Test Software	Terminal tool

3.4.Special Accessories and Auxiliary Equipment

Notebook	
Manufacturer:	Lenovo
M/N:	Lenovo G475
S/N:	GB14477457

3.5.Countermeasures to Achieve EMC Compliance

None.

4. EMISSION TEST RESULTS

4.1.Conducted Emission at the Mains Terminals Test

4.1.1 Limit 15.207 limits

Frequency MHz	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50
NOTE: 1.The lower limit shall apply at the transition frequencies. 2.The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.		

4.1.2 Test Setup

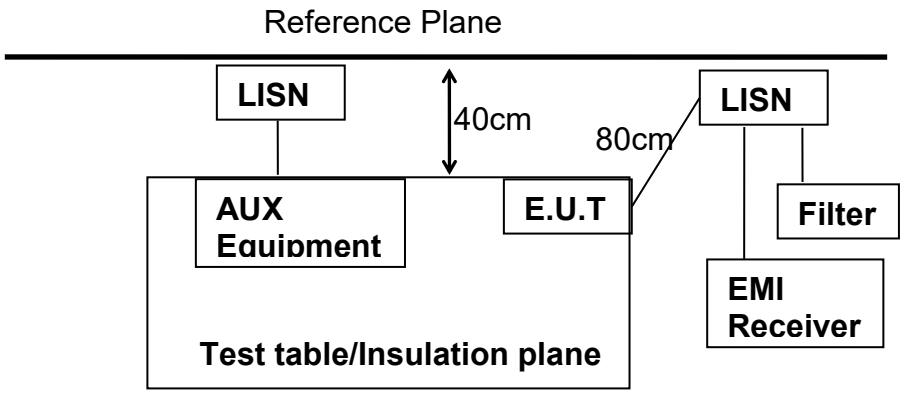
1.The EUT was put on a wooden table which was 0.8 m high above the ground and connected to the AC mains through the Artificial Mains Network (AMN). Where the mains cable supplied by the manufacture was longer than 0.8 m, the excess was folded back and forth parallel to the cable at the center so as to form a bundle no longer than 0.4 m.

2.The EUT was kept 0.4 m from any other earthed conducting surface. Both sides of AC line were checked to find out the maximum conducted emission levels according to the test procedure during the conducted emission test.

3.The frequency range from 150 kHz to 30 MHz was investigated.

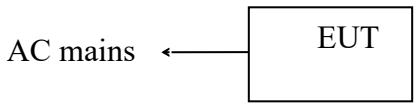
4.The bandwidth of the test receiver was set at 9 kHz.

5.Pretest for all mode, and the test data of the worst case condition(s) was reported on the following page.

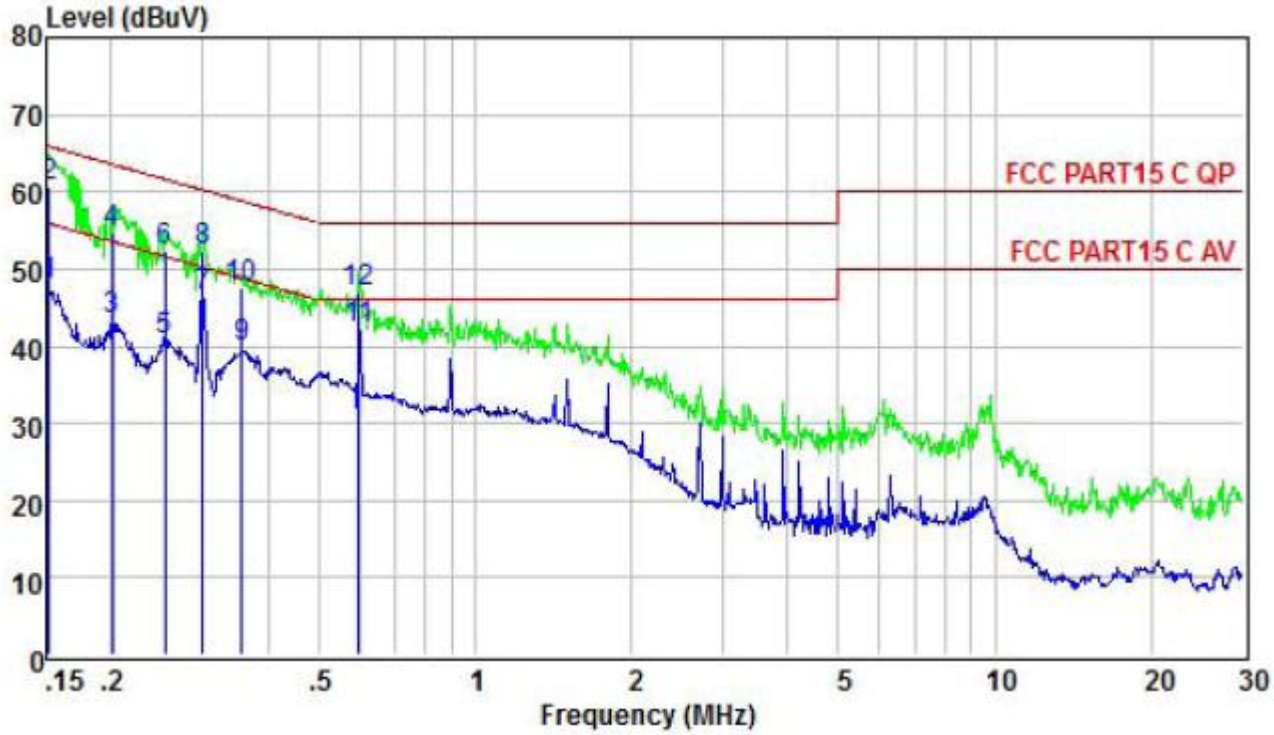


Remark: E.U.T. :Equipment Under Test
LISN: Line Impedance Stabilization Network
Test table height: 0.8m.

Test block

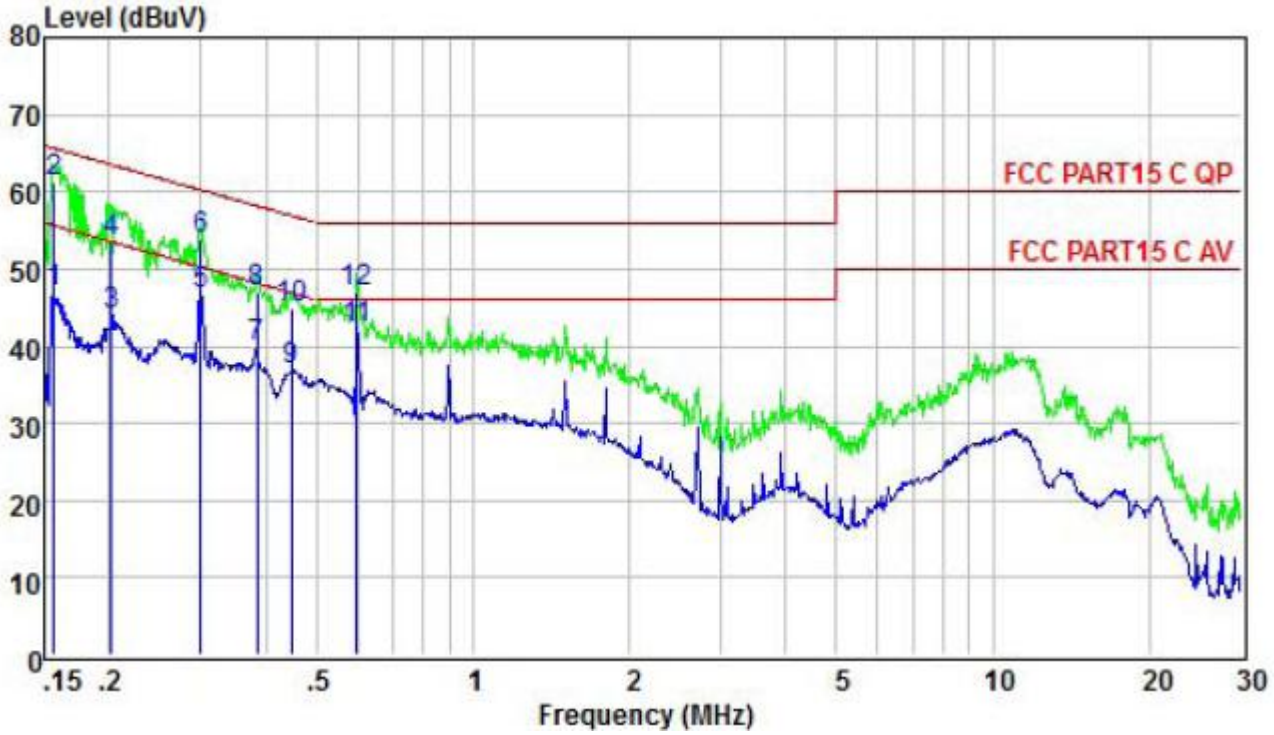


EUT：	active loudspeaker	Model Name ：	PW300
Temperature：	26℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase:	L
Test Voltage：	AC 120V/60Hz	Test Mode：	Link Mode



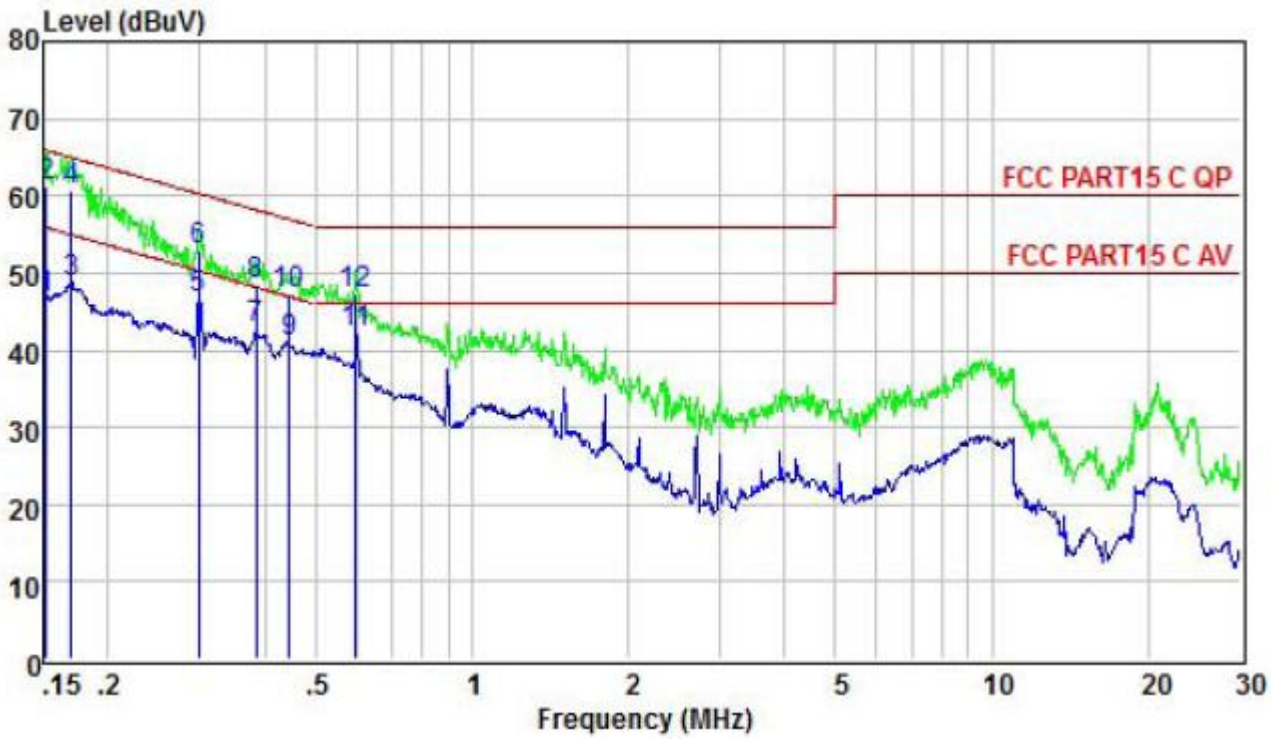
	Freq	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	
1	0.152	48.02	55.91	-7.89	Average
2	0.152	60.73	65.91	-5.18	QP
3	0.201	43.45	53.58	-10.13	Average
4	0.201	54.61	63.58	-8.97	QP
5	0.253	40.81	51.64	-10.83	Average
6	0.253	52.39	61.64	-9.25	QP
7	0.300	46.38	50.24	-3.86	Average
8	0.300	52.39	60.24	-7.85	QP
9	0.356	39.71	48.83	-9.12	Average
10	0.356	47.59	58.83	-11.24	QP
11	0.598	42.13	46.00	-3.87	Average
12	0.598	46.85	56.00	-9.15	QP

EUT：	active loudspeaker	Model Name ：	PW300
Temperature：	26℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase:	N
Test Voltage：	AC 120V/60Hz	Test Mode：	Link Mode



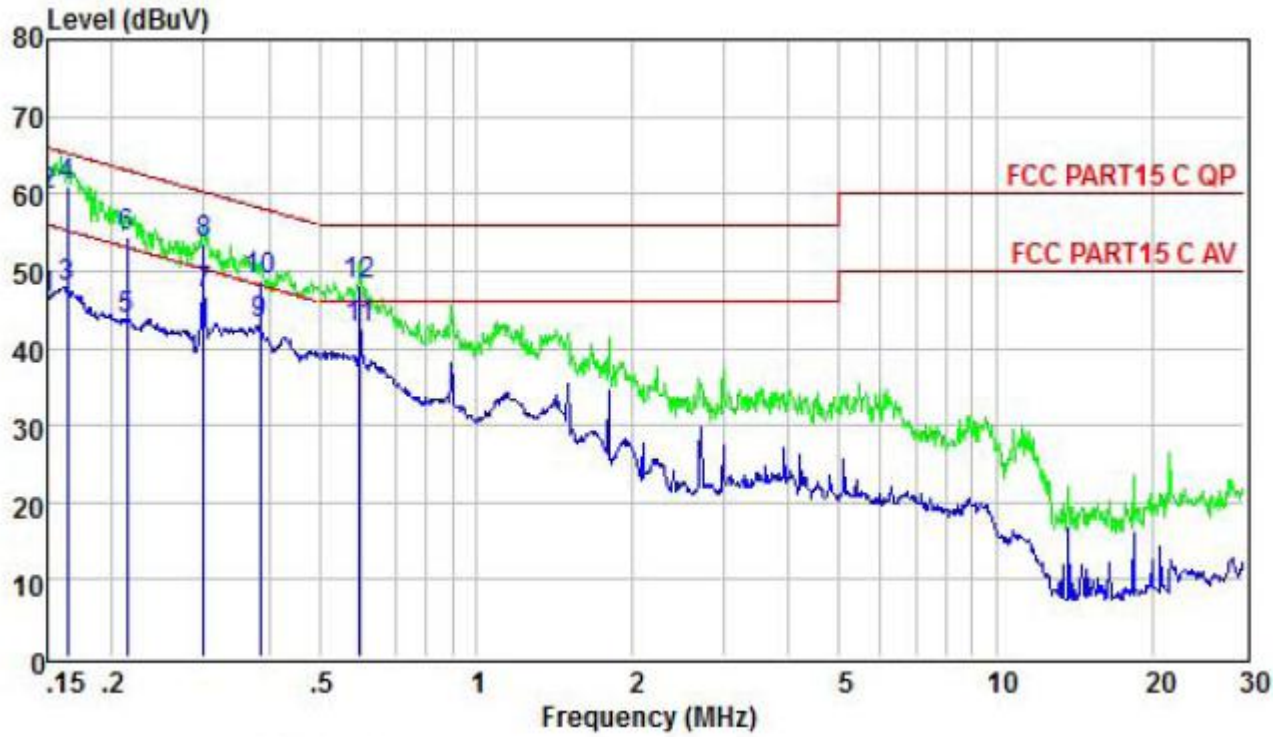
	Freq	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	
1	0.156	46.94	55.65	-8.71	Average
2	0.156	61.29	65.65	-4.36	QP
3	0.202	43.97	53.54	-9.57	Average
4	0.202	53.62	63.54	-9.92	QP
5	0.300	46.78	50.24	-3.46	Average
6	0.300	53.84	60.24	-6.40	QP
7	0.385	39.72	48.17	-8.45	Average
8	0.385	46.87	58.17	-11.30	QP
9	0.447	36.92	46.93	-10.01	Average
10	0.447	44.81	56.93	-12.12	QP
11	0.598	42.22	46.00	-3.78	Average
12	0.598	47.03	56.00	-8.97	QP

EUT：	active loudspeaker	Model Name ：	PW300
Temperature：	26℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase:	L
Test Voltage：	AC 240V/60Hz	Test Mode：	Link Mode



	Freq	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	
1	0.152	46.72	55.91	-9.19	Average
2	0.152	61.39	65.91	-4.52	QP
3	0.169	48.80	54.99	-6.19	Average
4	0.169	60.54	64.99	-4.45	QP
5	0.299	46.76	50.28	-3.52	Average
6	0.299	53.04	60.28	-7.24	QP
7	0.385	42.72	48.17	-5.45	Average
8	0.385	48.53	58.17	-9.64	QP
9	0.444	40.94	46.98	-6.04	Average
10	0.444	47.19	56.98	-9.79	QP
11	0.598	42.15	46.00	-3.85	Average
12	0.598	47.36	56.00	-8.64	QP

EUT：	active loudspeaker	Model Name ：	PW300
Temperature：	26℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase:	N
Test Voltage：	AC 240V/60Hz	Test Mode：	Link Mode



	Freq	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	
1	0.150	46.35	56.00	-9.65	Average
2	0.150	59.83	66.00	-6.17	QP
3	0.164	47.92	55.25	-7.33	Average
4	0.164	60.84	65.25	-4.41	QP
5	0.214	43.81	53.05	-9.24	Average
6	0.214	54.38	63.05	-8.67	QP
7	0.300	46.89	50.24	-3.35	Average
8	0.300	53.62	60.24	-6.62	QP
9	0.385	43.07	48.17	-5.10	Average
10	0.385	48.83	58.17	-9.34	QP
11	0.598	42.55	46.00	-3.45	Average
12	0.598	48.15	56.00	-7.85	QP

4.2.Radiated Emission Test

4.2.1 Limit 15.209 limits

Frequency MHZ	Distance Meters	Filed Strengths Limit	
		μV/m	dB(μV)/m
30~88	3	100	40.0
88~216	3	150	43.5
216~960	3	200	46.0
960~1000	3	500	54.0
Above 1000	3	74.0dB(μV)/m(Peak) 54.0dB(μV)/m(Average)	

4.2.2 Restricted bands of operation

MHz	MHz	MHz	GHz
0.009-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	
All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209,all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.			

4.2.3 Test setup

The EUT was placed on a turn table which was 0.8 m(above 1GHz, the high was 1.5m) above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 m away from the receiving antenna which was mounted on an antenna tower. The measuring antenna moved up and down to find out the maximum emission level. It moved from 1 m to 4 m for both horizontal and vertical polarizations.

The EUT was tested in the Chamber Site. It was pre-scanned with a Peak detector from the spectrum, and all the final readings from the test receiver were measured with the Quasi-Peak detector.

The bandwidth of the EMI test receiver is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 3MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz, Both PK and AV measure, PK detector is used.

The frequency range from 30MHz to 10th harmonicare checked. and no any emissions were found from 18GHz to 40 GHz, So the radiated emissions from 18GHz to 40GHz were not record.

Notes: 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading-Preamp Factor.

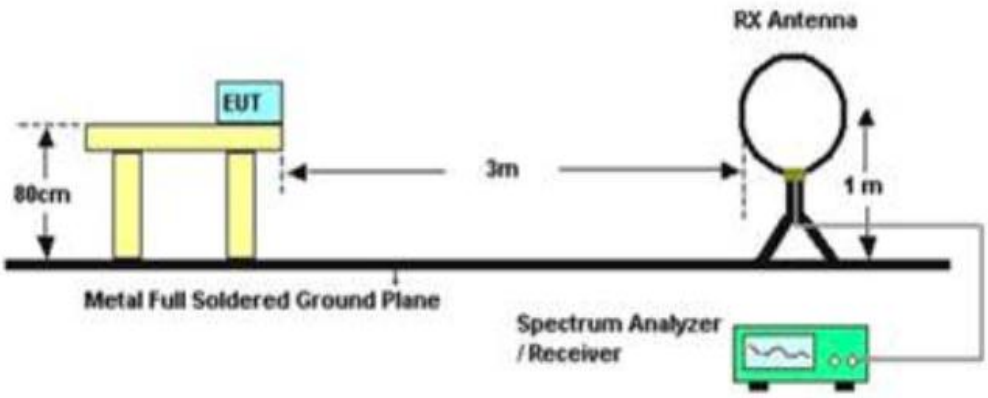
2. Measurement Uncertainty: ±3.2 dB at a level of confidence of 95%.

3. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

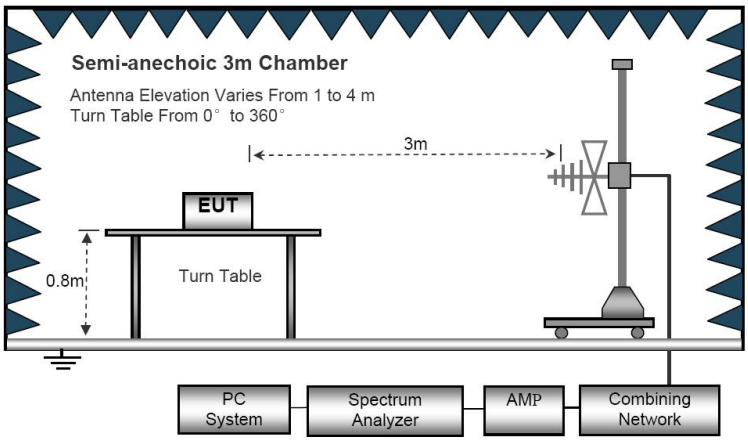
4. For emissions below 1GHz, pretest for all mode, The test data of the worst case condition(s) was reported on the following pages.

5. For Both PK and AV value above 1GHz, PK detector is used.

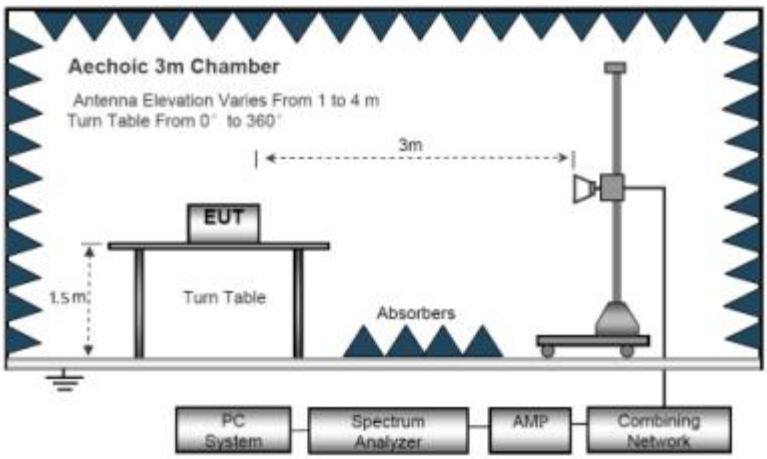
Radiated Emission Test-Up Frequency Below 30MHz



Radiated Emission Test-Up Frequency 30MHz- 1GHz



Above 1GHz



EUT：	active loudspeaker	Model Name ：	PW300
Temperature：	20℃	Relative Humidity：	48%
Pressure：	1010hPa	Test Mode：	Link Mode
Test Voltage：	AC 120V/60Hz		

Below 30MHz

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	P
--	--	--	--	P

Note:

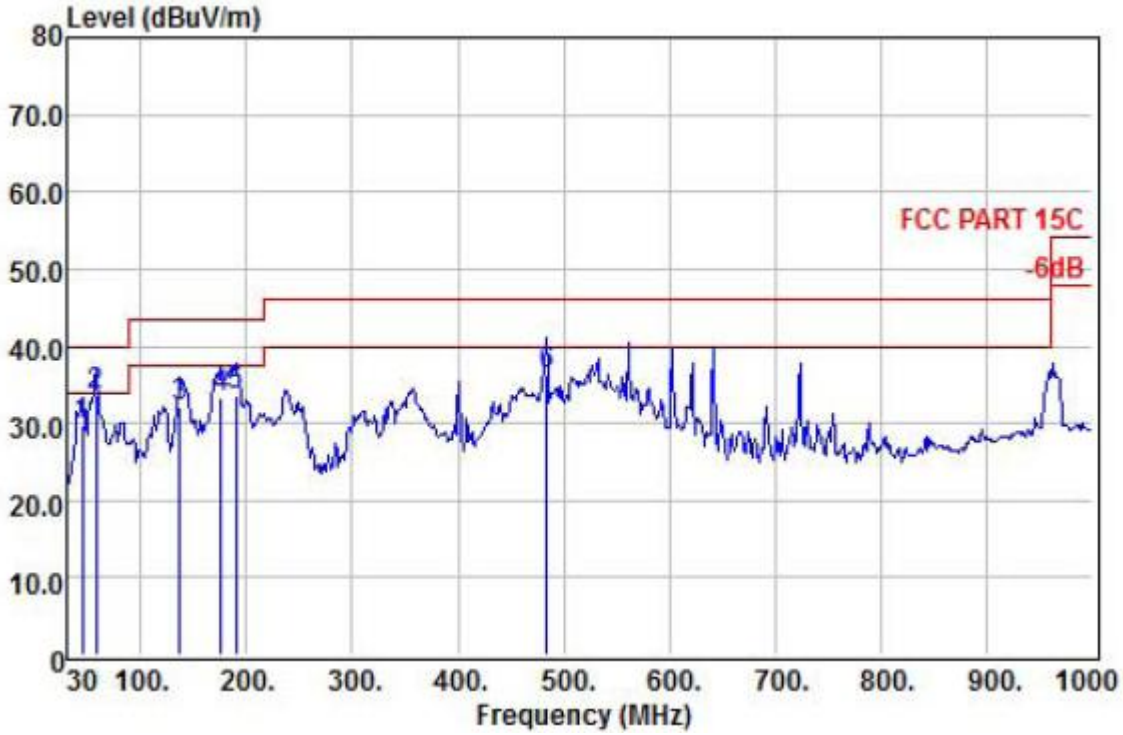
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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

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

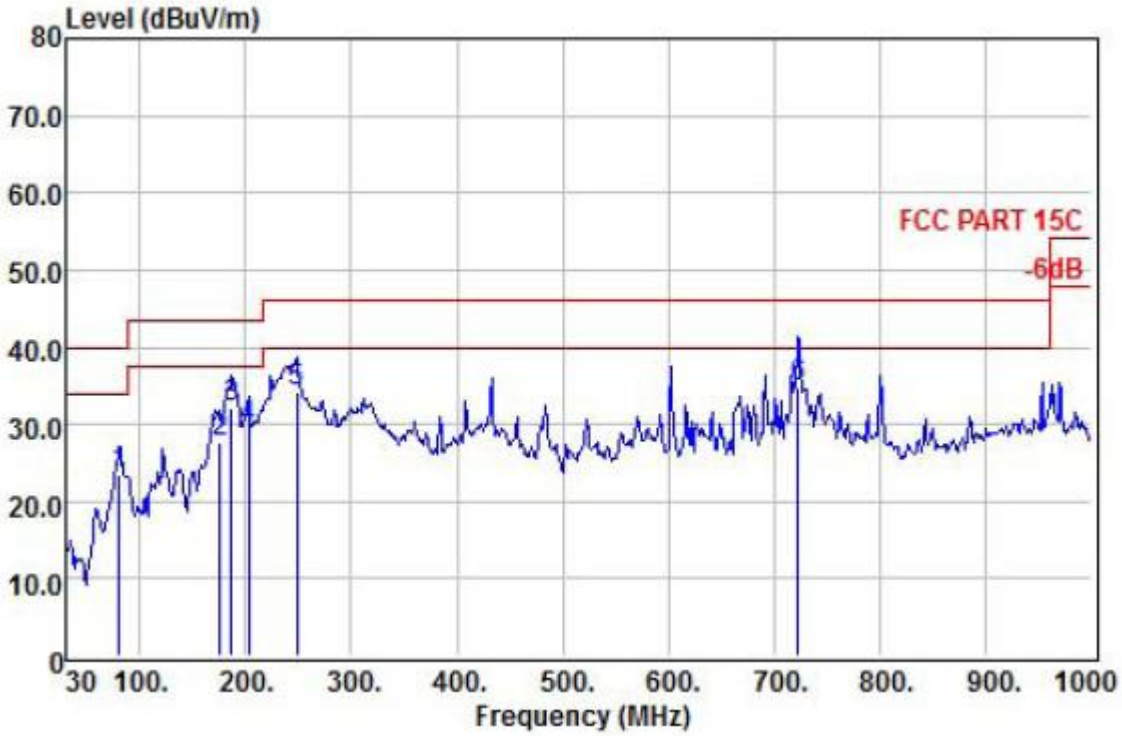
Below 1GHz			
EUT：	active loudspeaker	Model Name ：	PW300
Temperature：	20℃	Relative Humidity：	48%
Pressure：	1010hPa	Test Mode：	TX-5180(802.11a)
Test Voltage：	AC 120V/60Hz		

Vertical



	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	44.55	49.96	11.03	0.13	31.40	29.72	40.00	-10.28	QP
2	57.16	57.09	7.73	0.13	31.36	33.59	40.00	-6.41	QP
3	136.70	54.61	8.37	0.23	31.20	32.01	43.50	-11.49	QP
4	175.50	53.96	10.27	0.24	31.17	33.30	43.50	-10.20	QP
5	190.05	54.38	10.10	0.28	31.12	33.64	43.50	-9.86	QP
6	483.96	47.38	18.44	1.14	30.59	36.37	46.00	-9.63	QP

Horizontal



	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	80.44	46.60	8.05	0.15	31.34	23.46	40.00	-16.54	QP
2	175.50	48.28	10.27	0.24	31.17	27.62	43.50	-15.88	QP
3	187.14	52.87	10.19	0.27	31.13	32.20	43.50	-11.30	QP
4	202.66	49.07	11.13	0.33	31.09	29.44	43.50	-14.06	QP
5	248.25	51.96	12.85	0.40	30.96	34.25	46.00	-11.75	QP
6	722.58	41.60	22.53	1.26	30.65	34.74	46.00	-11.26	QP

Note:1. Absolute Level= Reading Level+ antenna Factor + cable loss - Preamp factor,
2. Over Limit= Absolute Level – Limit;
3.Only the worst case is presented in the report .

Above 1GHz			
EUT：	active loudspeaker	Model Name ：	PW300
Temperature：	20℃	Relative Humidity：	48%
Pressure：	1010hPa	Test Mode：	TX-802.11a
Test Voltage：	AC 120V/60Hz		

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable loss (dB)	Preamp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
802.11a-5180									
V	10360	30.27	23.99	17.04	28.84	42.46	54.00	-11.54	Average
V	10360	43.29	23.99	17.04	28.84	55.48	74.00	-18.52	Peak
V	15540	29.85	23.53	20.34	29.63	44.09	54.00	-9.91	Average
V	15540	40.38	23.53	20.34	29.63	54.62	74.00	-19.38	Peak
H	10360	31.17	23.99	17.04	28.84	43.36	54.00	-10.64	Average
H	10360	41.56	23.99	17.04	28.84	53.75	74.00	-20.25	Peak
H	15540	28.38	23.53	20.34	29.63	42.62	54.00	-11.38	Average
H	15540	38.25	23.53	20.34	29.63	52.49	74.00	-21.51	Peak
802.11a-5200									
V	10400	31.59	24.04	17.04	28.84	43.83	54.00	-10.17	Average
V	10400	42.46	24.04	17.04	28.84	54.70	74.00	-19.30	Peak
V	15600	30.72	23.79	20.39	29.64	45.26	54.00	-8.74	Average
V	15600	38.46	23.79	20.39	29.64	53.00	74.00	-21.00	Peak
H	10400	32.39	24.04	17.04	28.84	44.63	54.00	-9.37	Average
H	10400	41.26	24.04	17.04	28.84	53.50	74.00	-20.50	Peak
H	15600	28.65	23.79	20.39	29.64	43.19	54.00	-10.81	Average
H	15600	39.49	23.79	20.39	29.64	54.03	74.00	-19.97	Peak
802.11a-5240									
V	10480	30.07	25.17	17.06	28.85	43.45	54.00	-10.55	Average
V	10480	41.18	25.17	17.06	28.85	54.56	74.00	-19.44	Peak
V	15720	30.48	24.25	20.45	29.67	45.51	54.00	-8.49	Average
V	15720	35.54	24.25	20.45	29.67	50.57	74.00	-23.43	Peak
H	10480	31.65	25.17	17.06	28.85	45.03	54.00	-8.97	Average
H	10480	43.58	25.17	17.06	28.85	56.96	74.00	-17.04	Peak
H	15720	28.15	24.25	20.45	29.67	43.18	54.00	-10.82	Average
H	15720	38.29	24.25	20.45	29.67	53.32	74.00	-20.68	Peak

Note:
Absolute Level= Reading Level+antenna Factor+cable loss-preamp factor,
Over Limit= Absolute Level – Limit
“802.11a” mode is the worst mode and show in the report. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has not to be reported.

5. BAND EDGE COMPLIANCE TEST

5.1.Limits

All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.

5.2.Test setup

Test method: FCC KDB 789033 G)& Parts 15.407(b)(4) & 15.209(a)

Same as Clause 4.2.

5.3. Test Data

For conducted test:

A Antenna

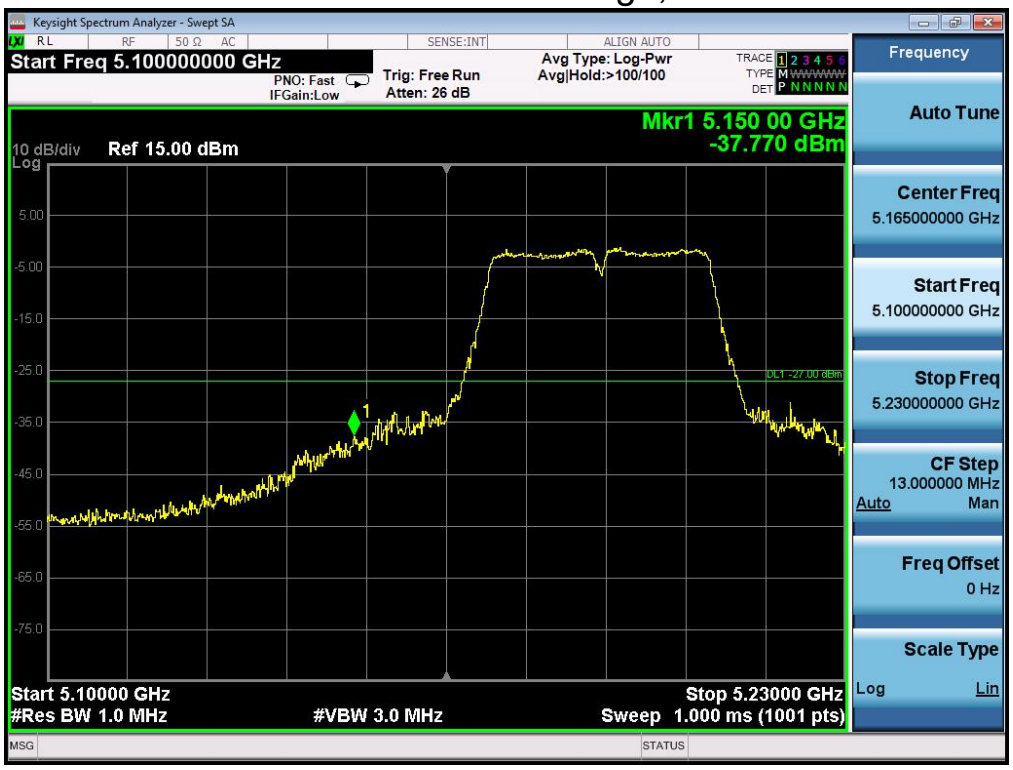
802.11a: Band Edge,Left Side

802.11a: Band Edge,Right Side

802.11n（20）: Band Edge,Left Side

802.11n（20）: Band Edge,Right Side

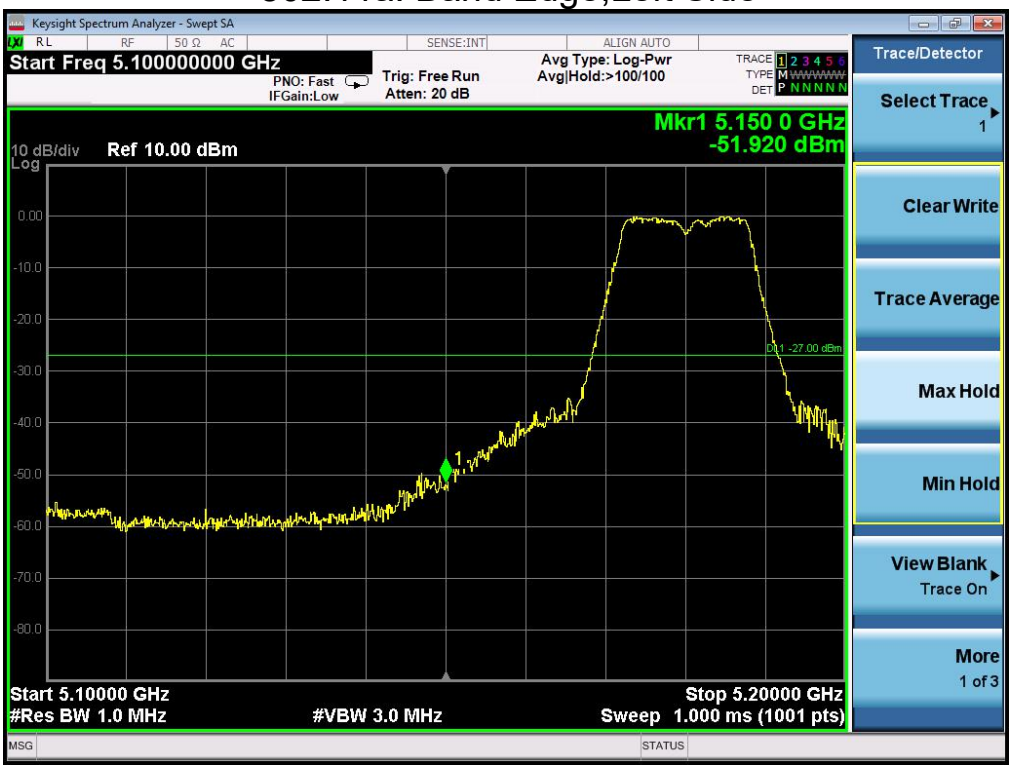
802.11n（40）: Band Edge,Left Side



802.11n（40）: Band Edge,Right Side

B Antenna

802.11a: Band Edge,Left Side



802.11a: Band Edge,Right Side

802.11n（20）: Band Edge,Left Side

802.11n（20）: Band Edge,Right Side

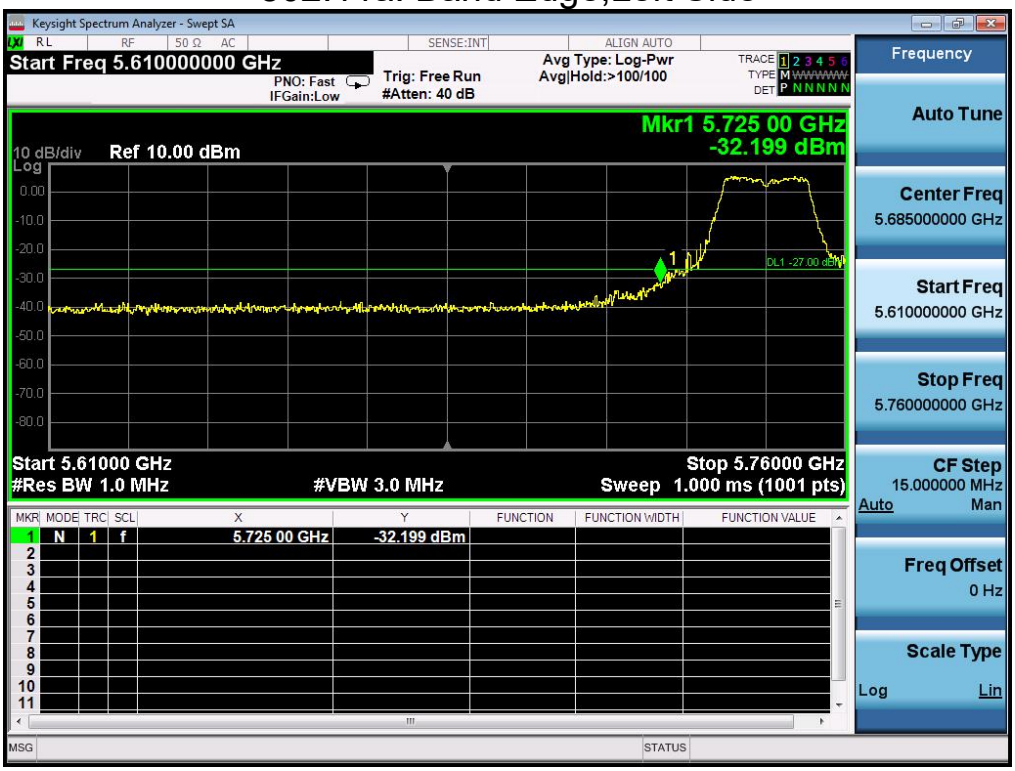
802.11n（40）: Band Edge,Left Side

802.11n（40）: Band Edge,Right Side

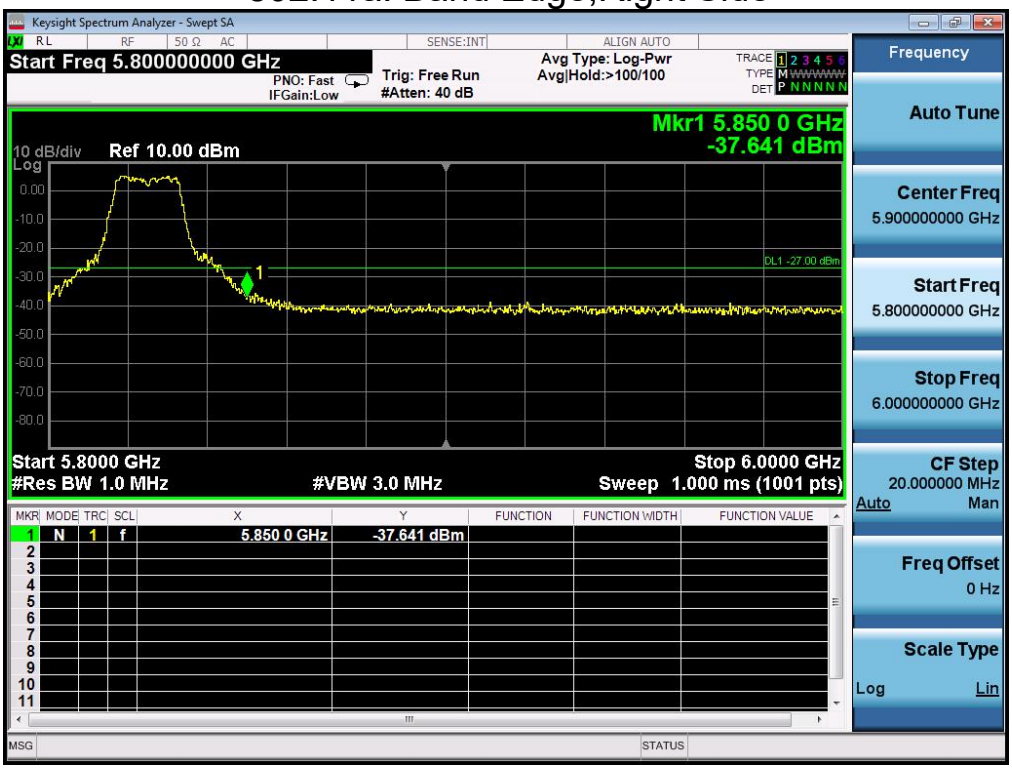
5.8G

A Antenna

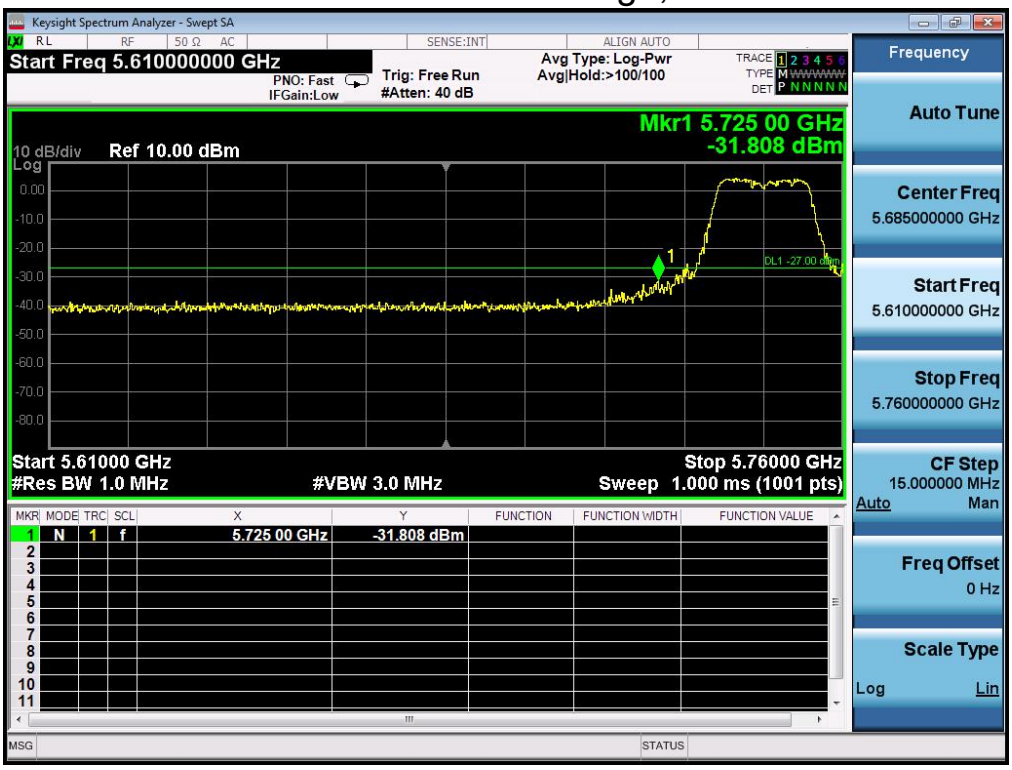
802.11a: Band Edge,Left Side



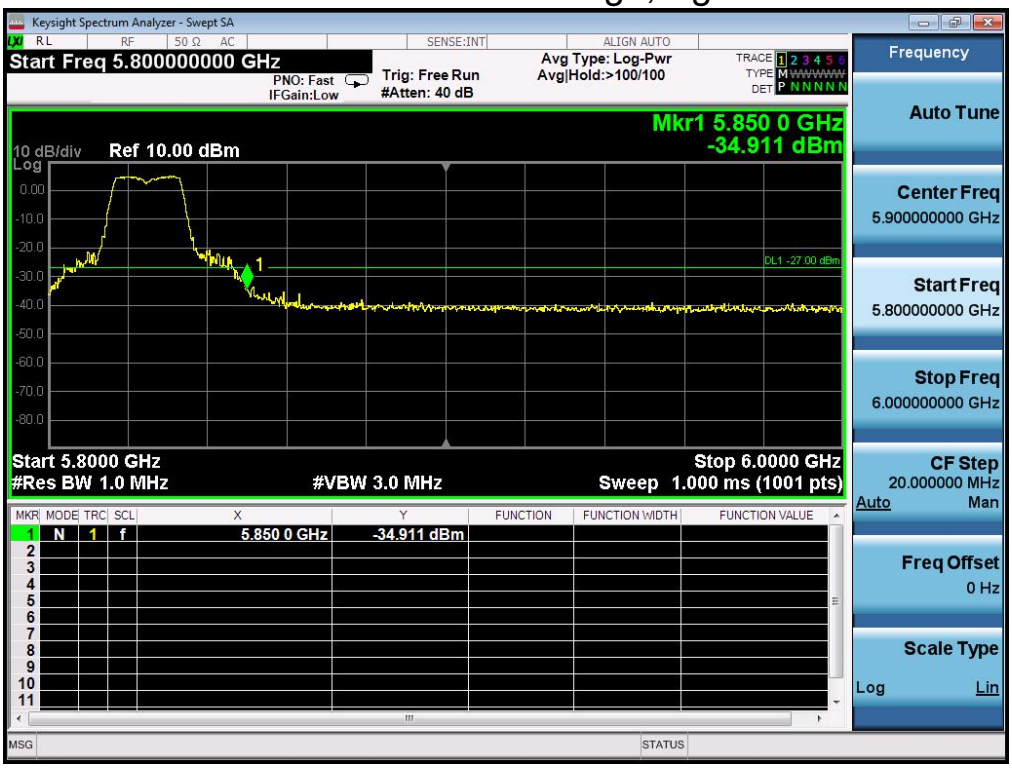
802.11a: Band Edge,Right Side



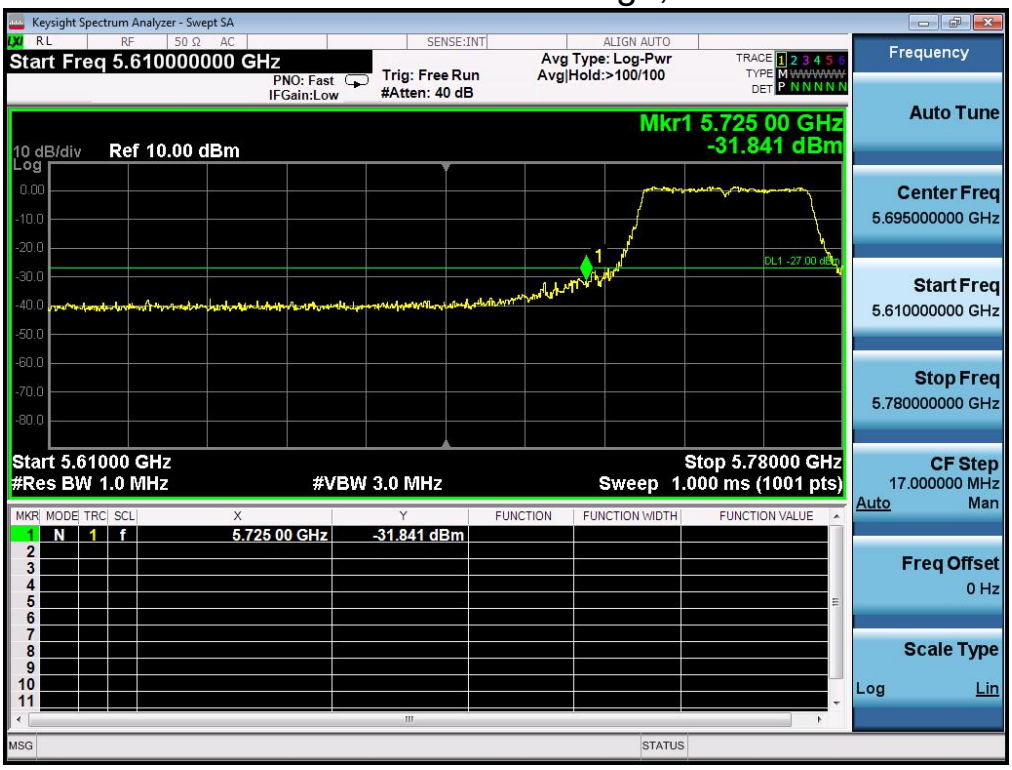
802.11n（20）: Band Edge,Left Side



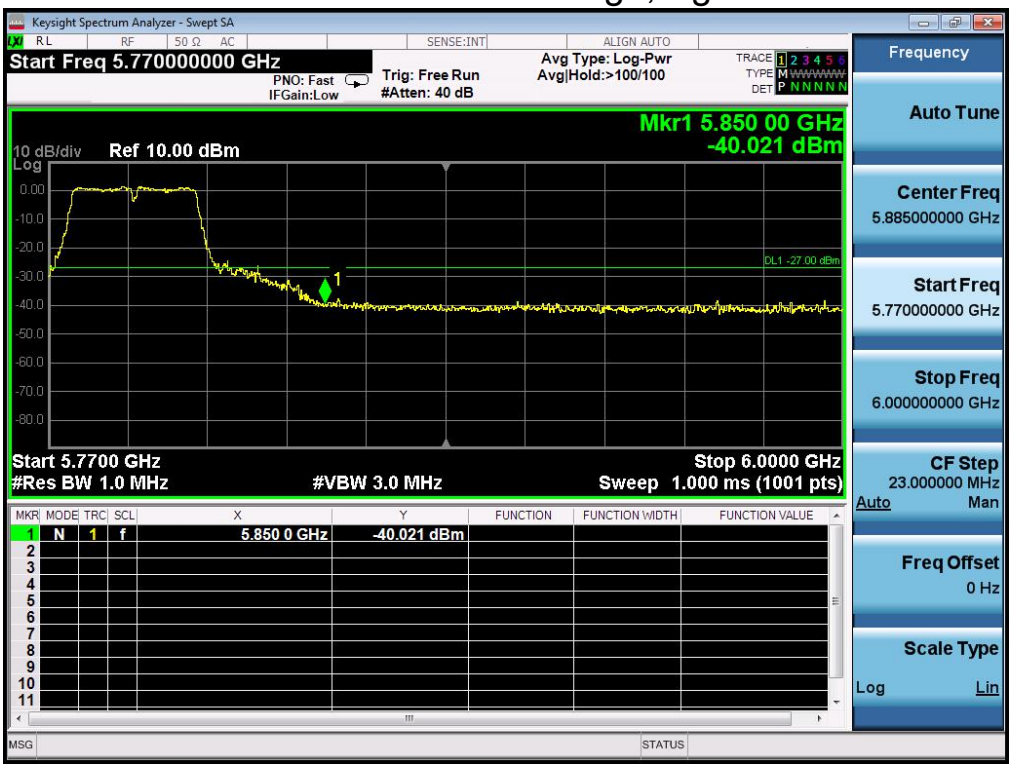
802.11n（20）: Band Edge,Right Side



802.11n（40）: Band Edge,Left Side

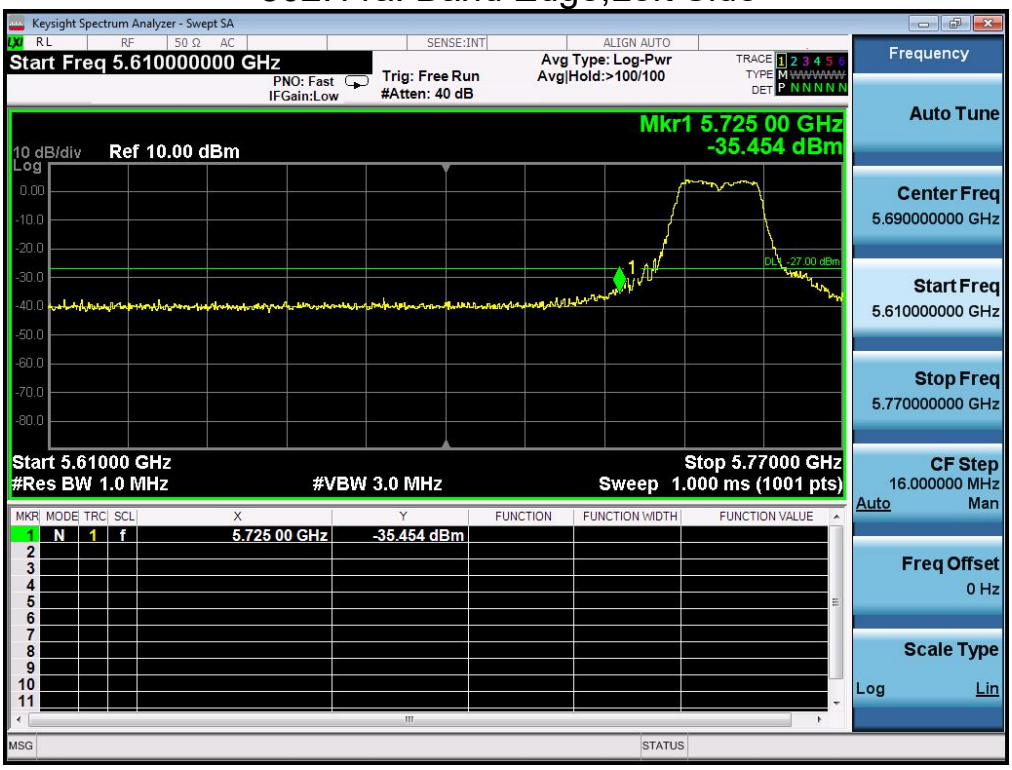


802.11n（40）: Band Edge,Right Side

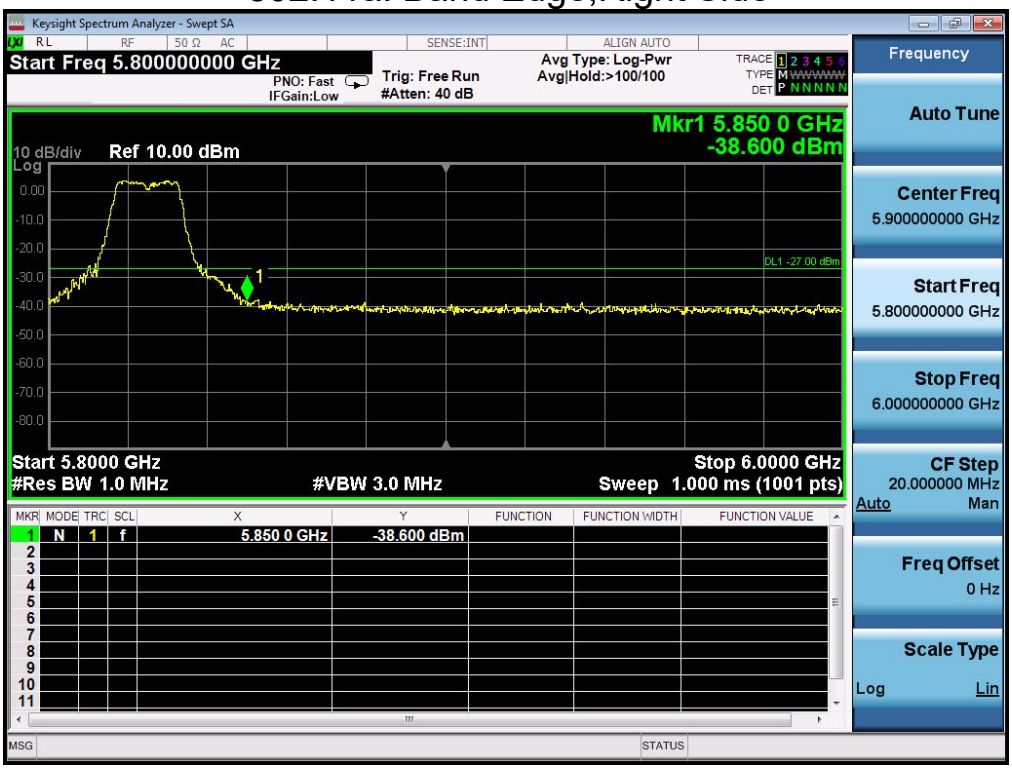


B Antenna

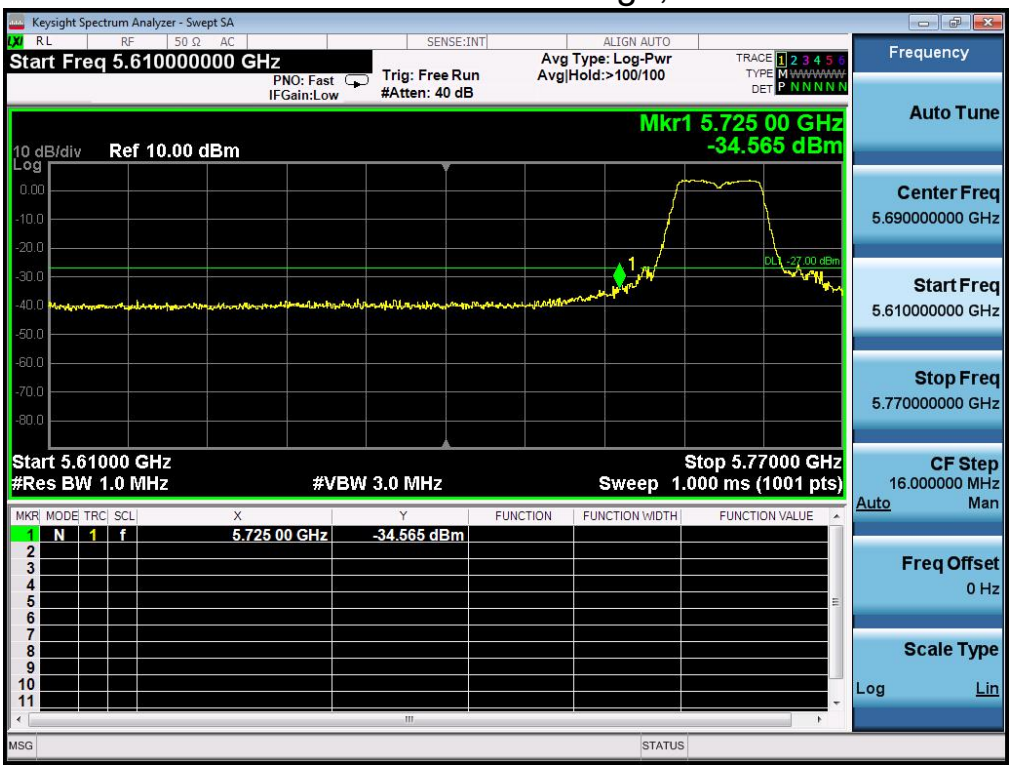
802.11a: Band Edge,Left Side



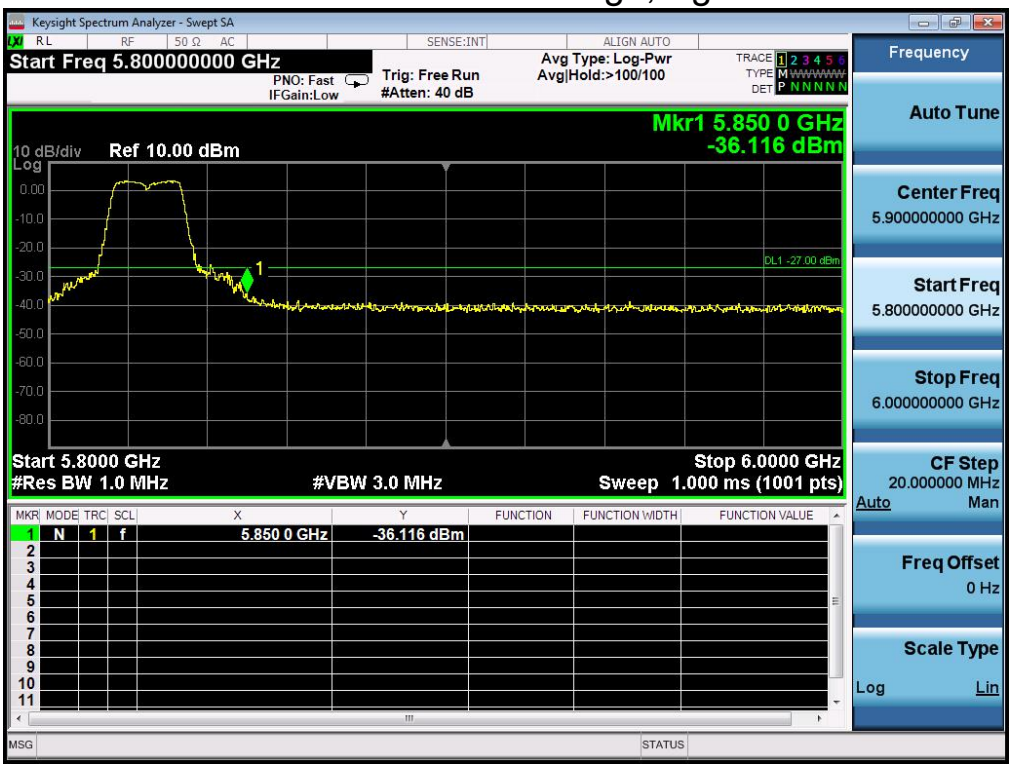
802.11a: Band Edge,Right Side



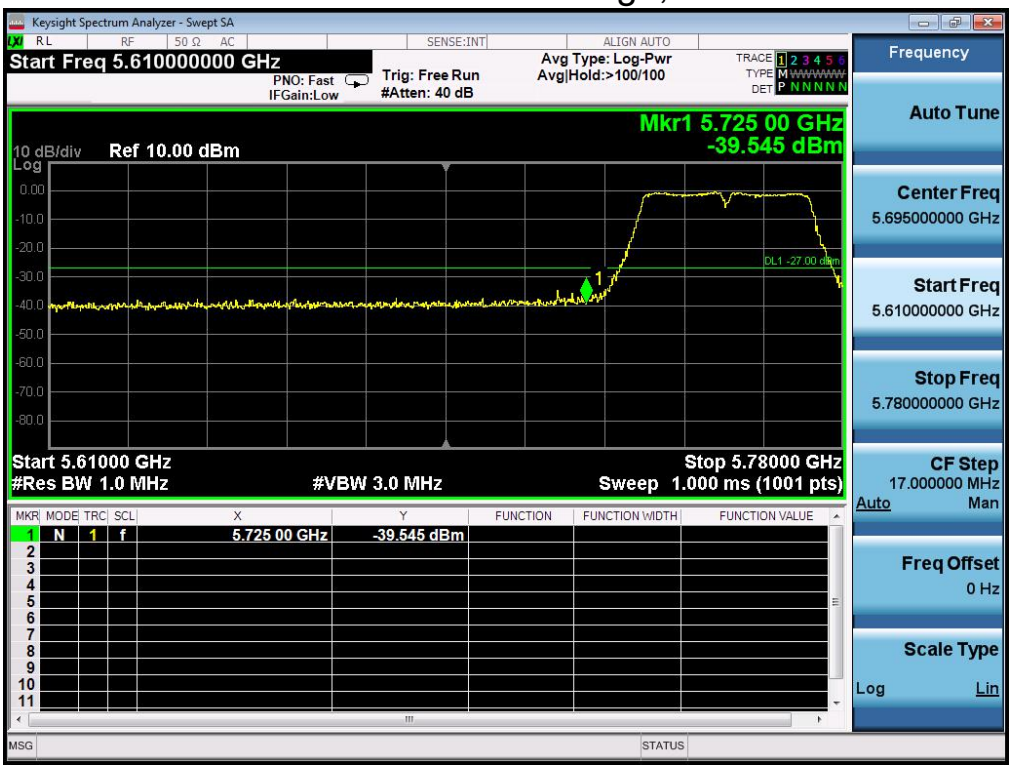
802.11n（20）: Band Edge,Left Side



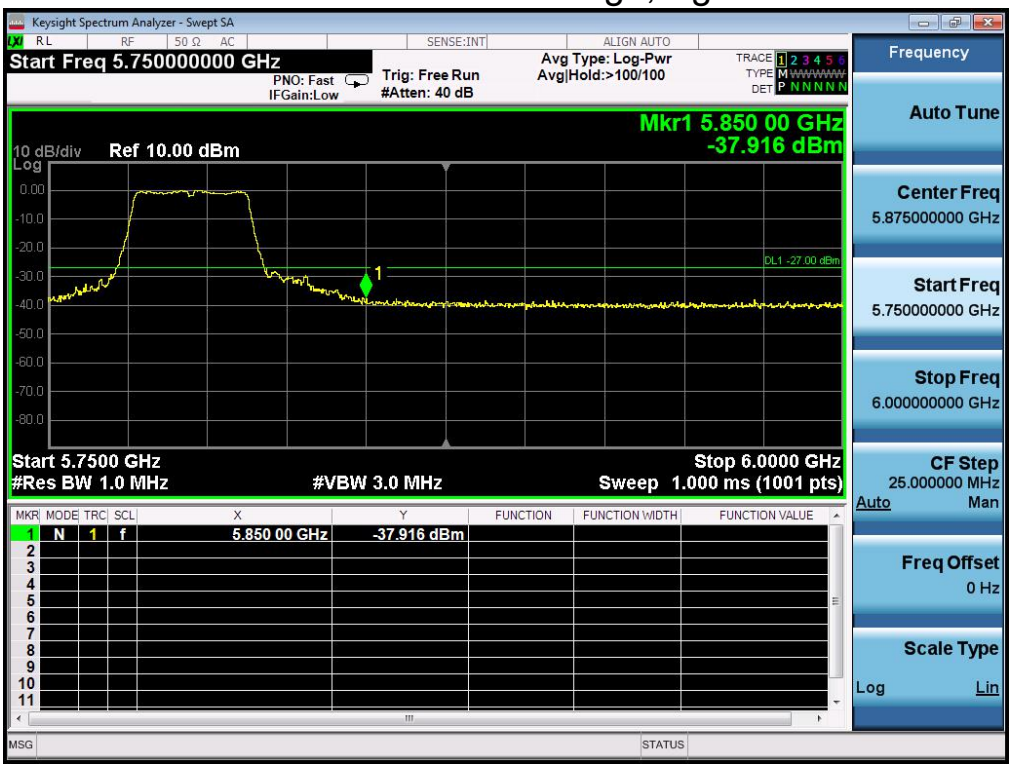
802.11n（20）: Band Edge,Right Side



802.11n（40）: Band Edge,Left Side

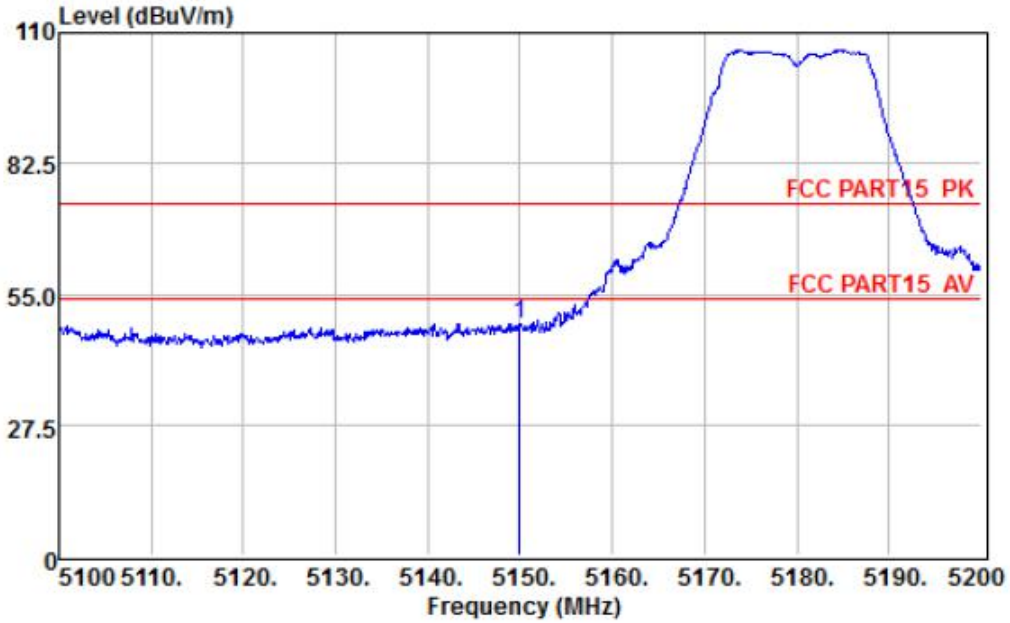


802.11n（40）: Band Edge,Right Side

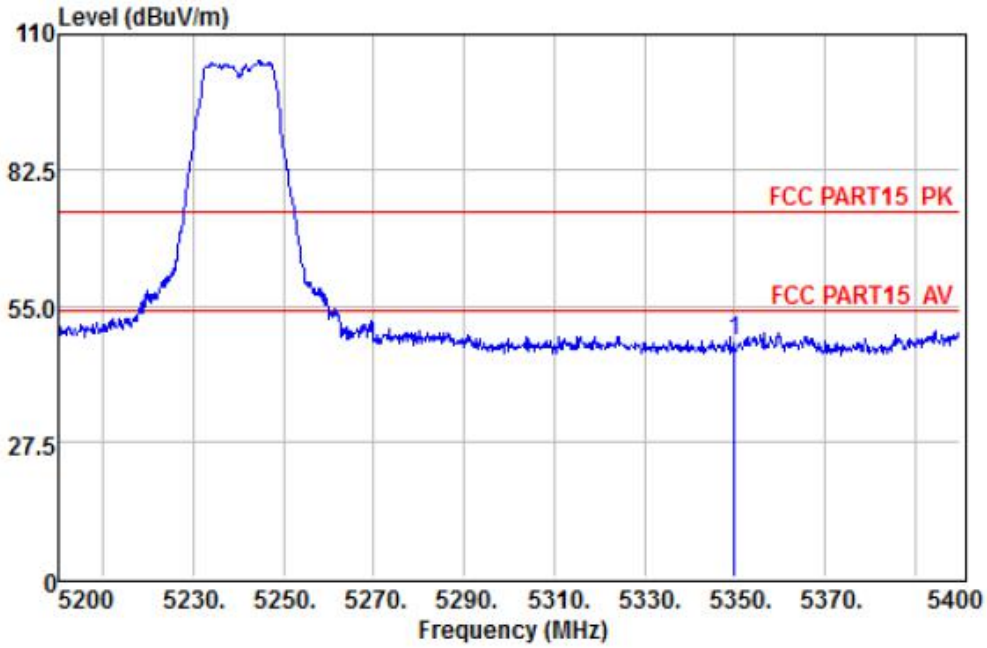


Spurious Emission in Band Edge:

802.11a - Horizontal

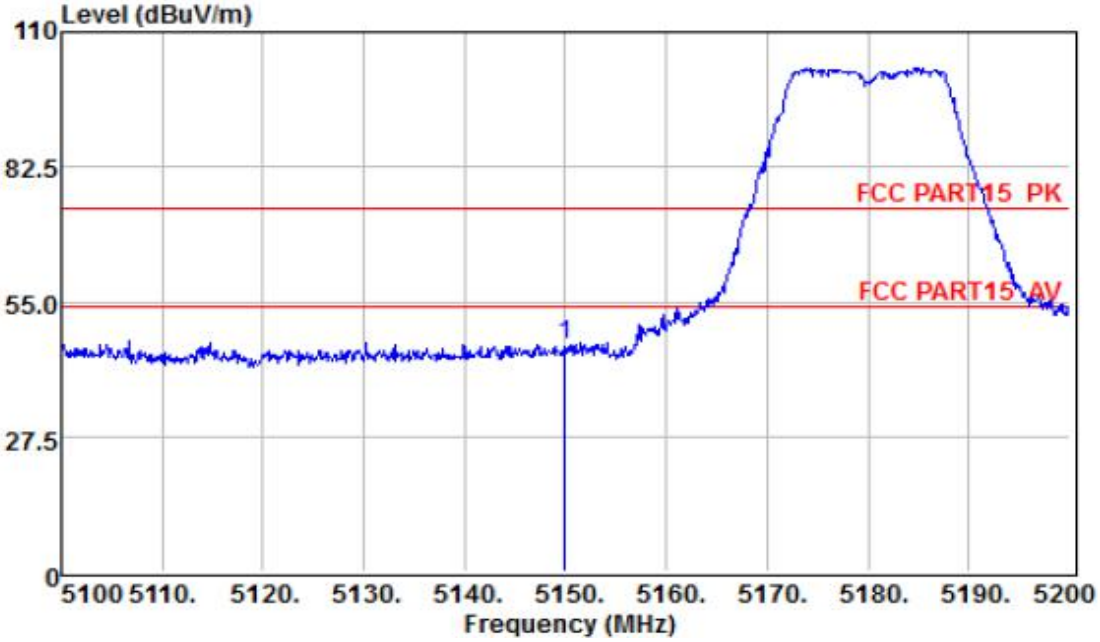


	Freq	Preamp Factor	Read Level	Cable Loss	Antenna Factor	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	5150.00	27.62	29.69	12.82	33.61	48.50	74.00	-25.50	Peak

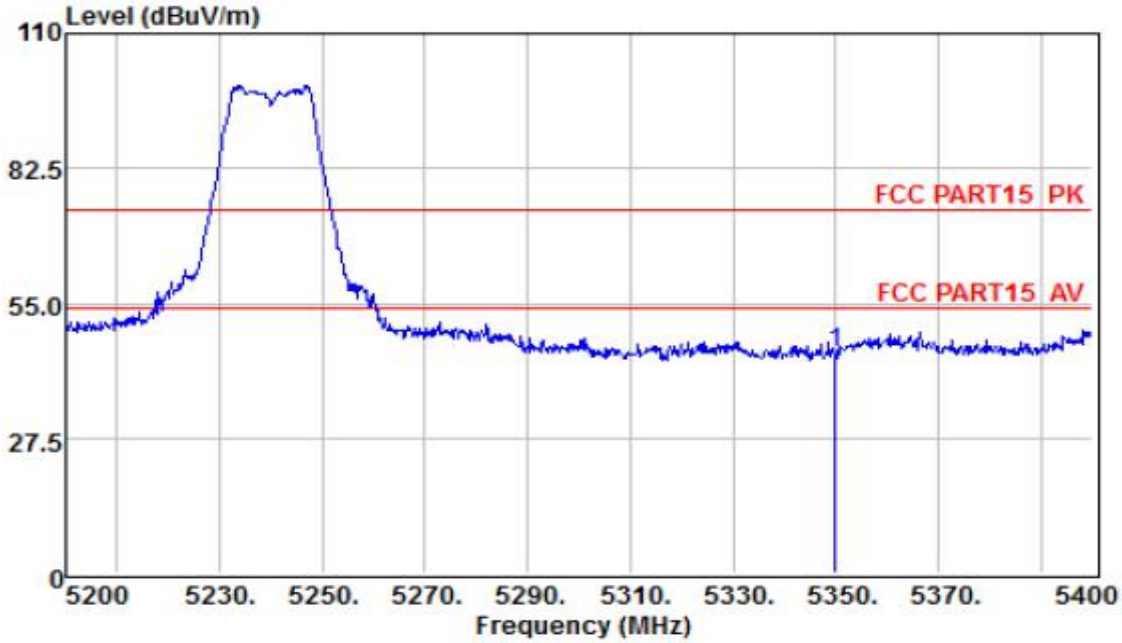


	Freq	Preamp Factor	Read Level	Cable Loss	Antenna Factor	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	5350.00	27.64	28.08	13.43	33.89	47.76	74.00	-26.24	Peak

802.11a - Vertical

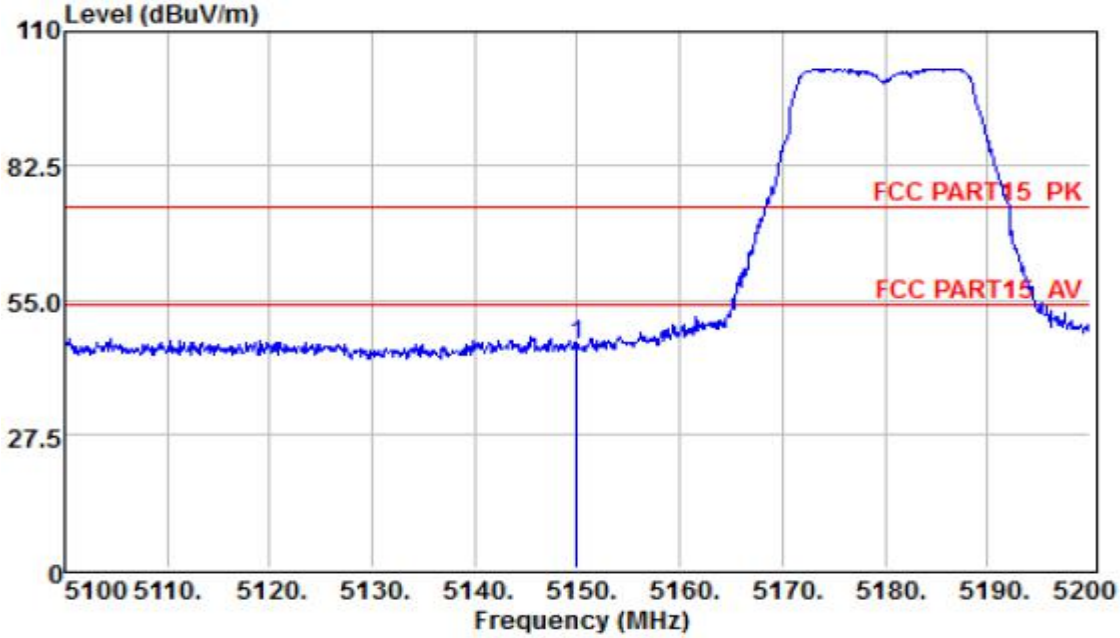


	Freq	Preamp Factor	Read Level	CableLoss	Antenna Factor	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	5150.00	27.62	27.35	12.82	33.61	46.16	74.00	-27.84	Peak

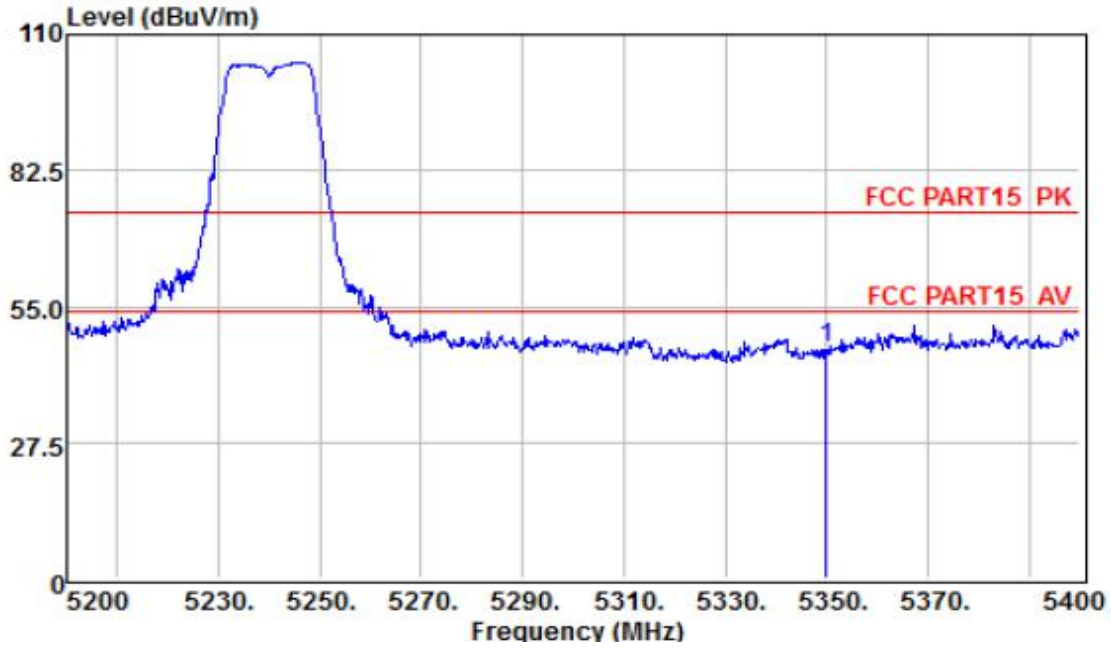


	Freq	Preamp Factor	Read Level	CableLoss	Antenna Factor	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	5350.00	27.64	25.42	13.43	33.89	45.10	74.00	-28.90	Peak

802.11n(20) - Horizontal

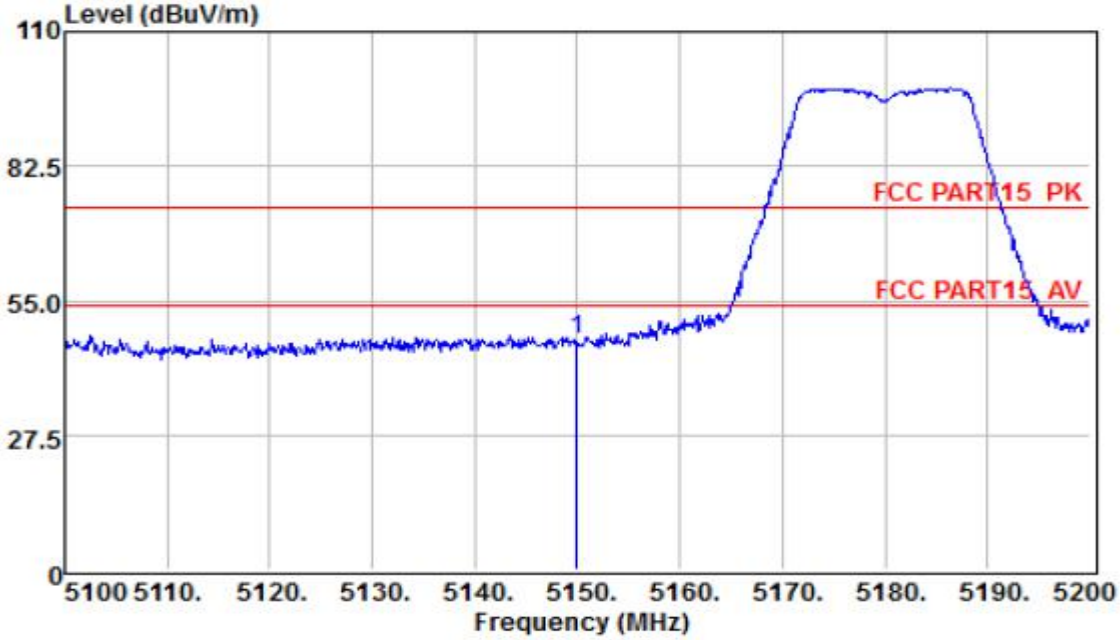


	Freq	Preamp Factor	Read Level	CableLoss	Antenna Factor	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	5150.00	27.62	26.83	12.82	33.61	45.64	74.00	-28.36	Peak

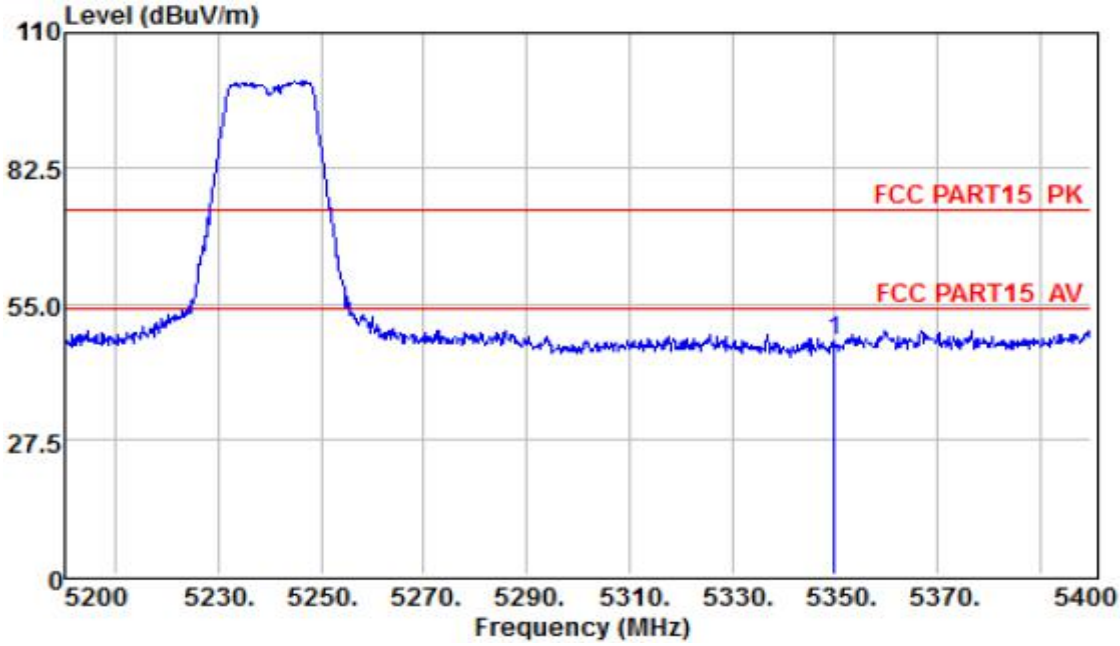


	Freq	Preamp Factor	Read Level	CableLoss	Antenna Factor	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	5350.00	27.64	26.78	13.43	33.89	46.46	74.00	-27.54	Peak

802.11n(20) - Vertical

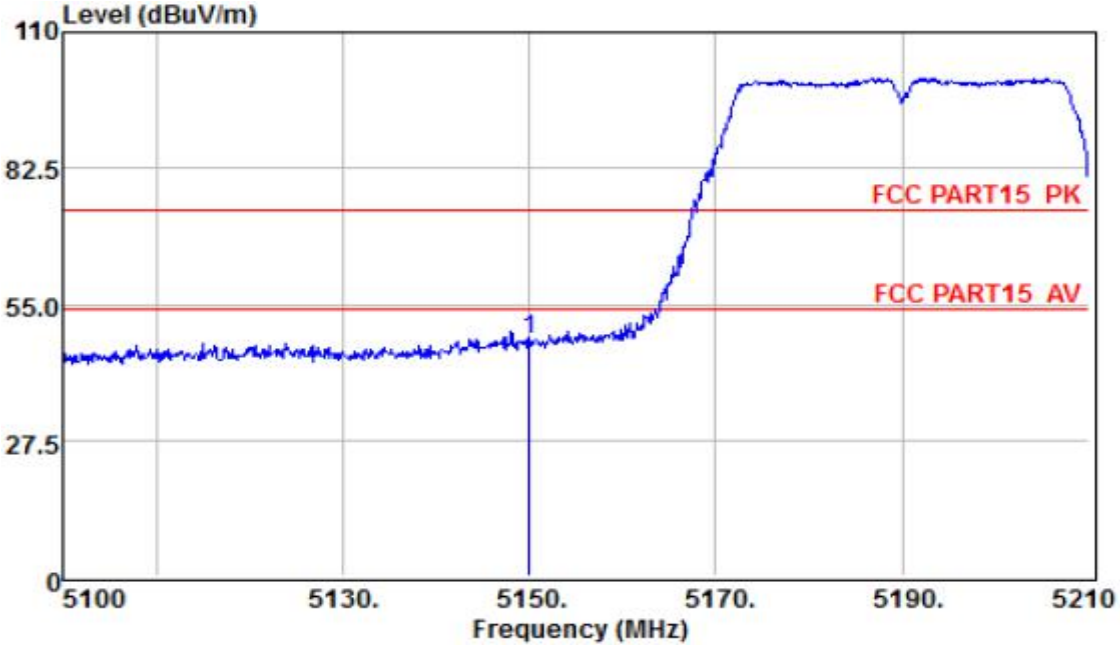


	Freq	Preamp Factor	Read Level	CableLoss	Antenna Factor	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	5150.00	27.62	28.23	12.82	33.61	47.04	74.00	-26.96	Peak

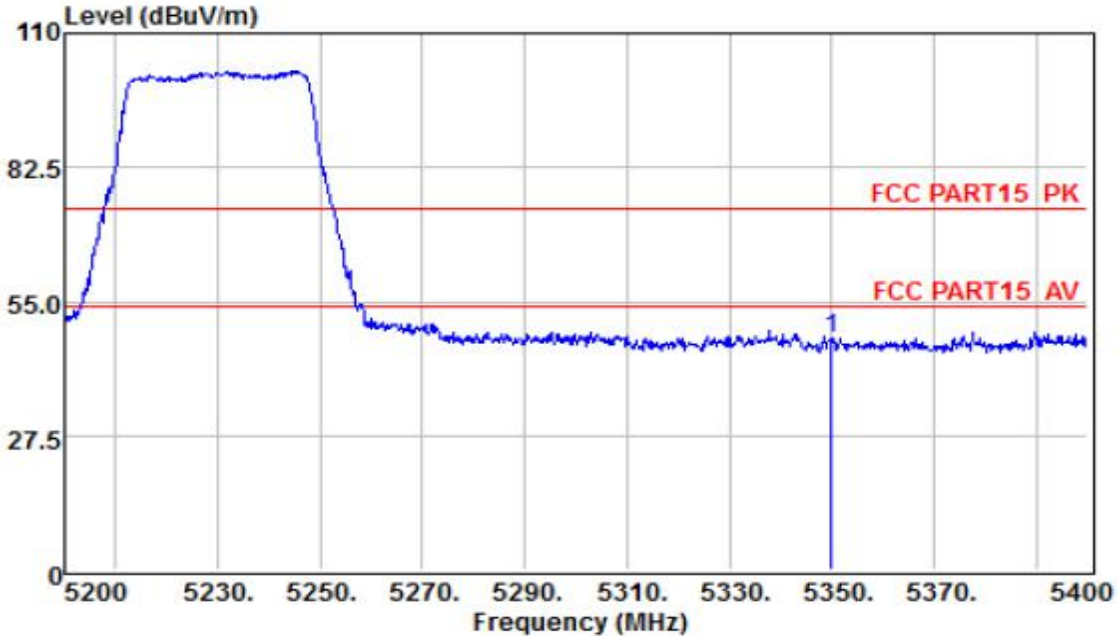


	Freq	Preamp Factor	Read Level	CableLoss	Antenna Factor	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	5350.00	27.64	27.55	13.43	33.89	47.23	74.00	-26.77	Peak

802.11n(40) - Horizontal

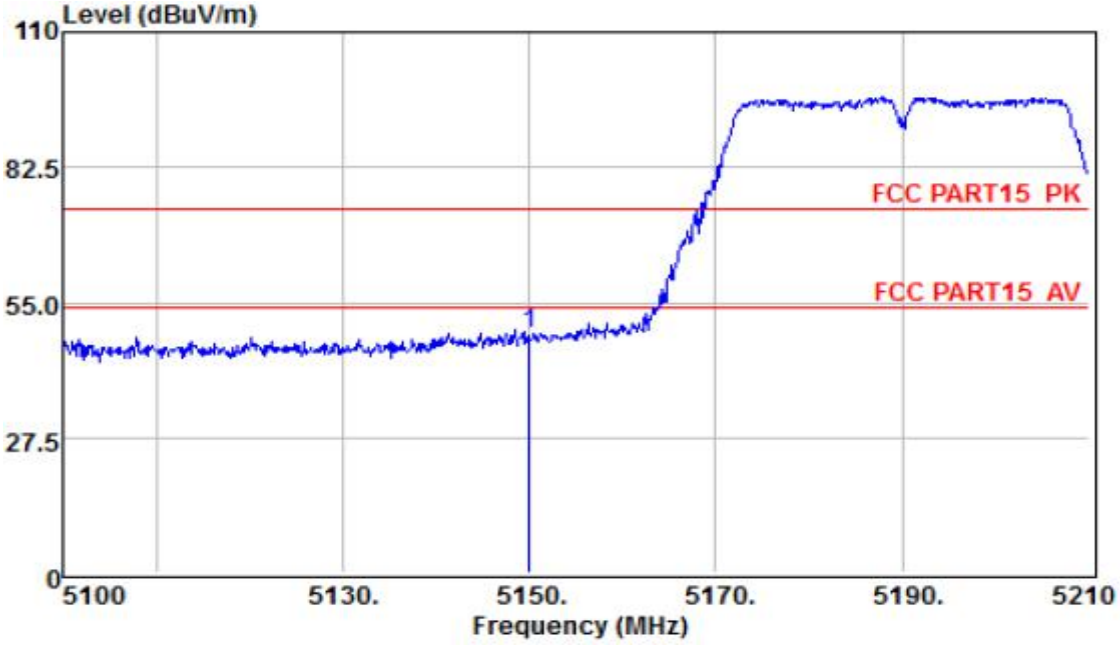


	Freq	Preamp Factor	Read Level	CableLoss	Antenna Factor	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	5150.00	27.62	28.90	12.82	33.61	47.71	74.00	-26.29	Peak

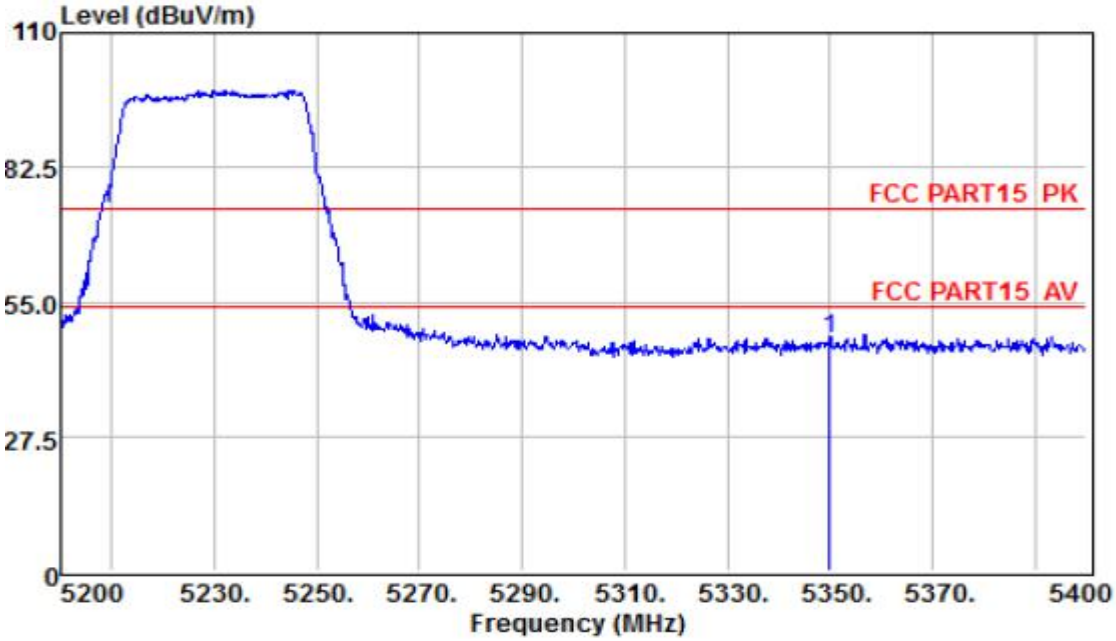


	Freq	Preamp Factor	Read Level	CableLoss	Antenna Factor	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	5350.00	27.64	27.83	13.43	33.89	47.51	74.00	-26.49	Peak

802.11n(40) - Vertical



	Freq	Preamp Factor	Read Level	CableLoss	Antenna Factor	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	5150.00	27.62	29.67	12.82	33.61	48.48	74.00	-25.52	Peak



	Freq	Preamp Factor	Read Level	CableLoss	Antenna Factor	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	5350.00	27.64	27.82	13.43	33.89	47.50	74.00	-26.50	Peak

6. 26DB AND 6DB BANDWIDTH TEST

6.1.Applicable Standard

The bandwidth at 26 dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating at its maximum power control level, as defined in KDB 789033, at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 26 dB bandwidth.

The 26 dB bandwidth is used to determine the conducted power limits.

The minimum of 6dB Bandwidth measurement is 0.5 MHz for U-NII-3

6.2. Test Procedure

1. Emission Bandwidth (EBW)

a) Set RBW = approximately 1% of the emission bandwidth.
b) Set the VBW > RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

6.3. Test setup

5.2G

A Antenna

Mode	Channel number	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
802.11a	36	5180	21.18	16.790
	40	5200	21.18	16.803
	48	5240	21.41	16.784
802.11n (HT20)	36	5180	21.81	17.875
	40	5200	21.99	17.858
	48	5240	21.96	17.851
802.11n (HT40)	38	5190	42.34	36.222
	46	5230	41.98	36.209

B Antenna

Mode	Channel number	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
802.11a	36	5180	21.18	16.717
	40	5200	21.31	16.713
	48	5240	21.27	16.712
802.11n (HT20)	36	5180	21.88	17.826
	40	5200	21.77	17.819
	48	5240	21.75	17.813
802.11n (HT40)	38	5190	43.41	36.434
	46	5230	43.02	36.392

5.8G

A Antenna

	Channel number	Frequency (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)
802.11a	149	5745	16.56	16.525	0.5
	157	5785	16.56	16.536	0.5
	165	5825	16.55	16.518	0.5
802.11n (HT20)	149	5745	17.81	17.684	0.5
	157	5785	17.79	17.694	0.5
	165	5825	17.71	17.682	0.5
802.11n (HT40)	151	5755	36.52	36.191	0.5
	159	5795	36.53	36.200	0.5

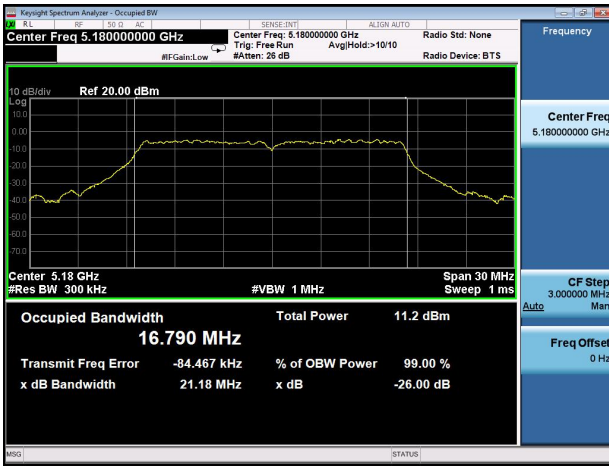
B Antenna

	Channel number	Frequency (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)
802.11a	149	5745	16.56	16.491	0.5
	157	5785	16.57	16.513	0.5
	165	5825	16.56	16.492	0.5
802.11n (HT20)	149	5745	17.79	17.662	0.5
	157	5785	17.77	17.666	0.5
	165	5825	17.74	17.659	0.5
802.11n (HT40)	151	5755	36.53	36.164	0.5
	159	5795	36.55	36.173	0.5

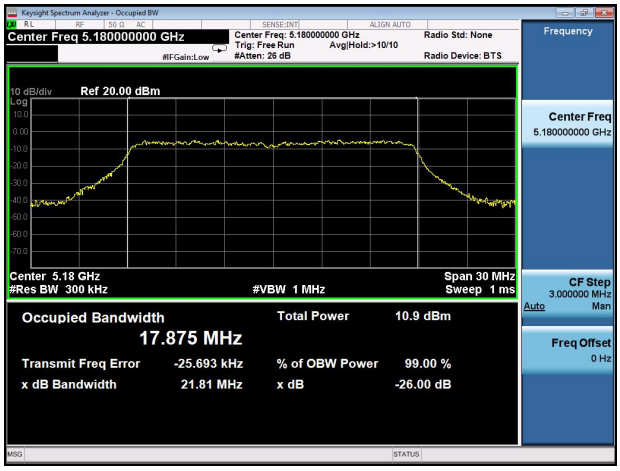
5.2G

A Antenna

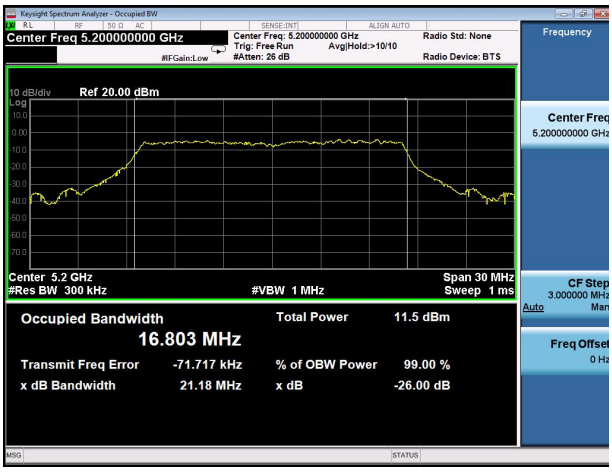
802.11a mode-ch36



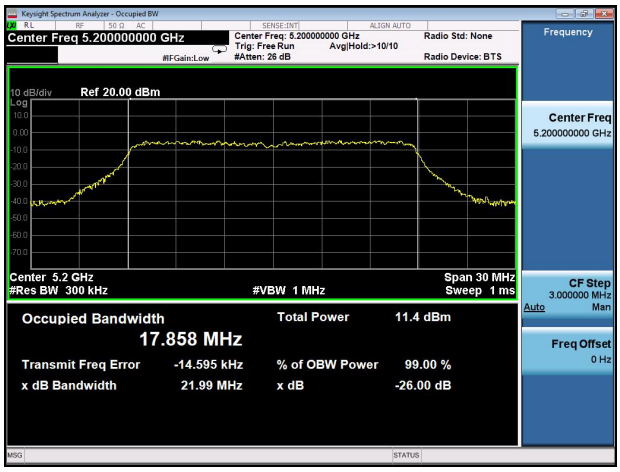
802.11n(HT20) mode-ch36



802.11a mode-ch40



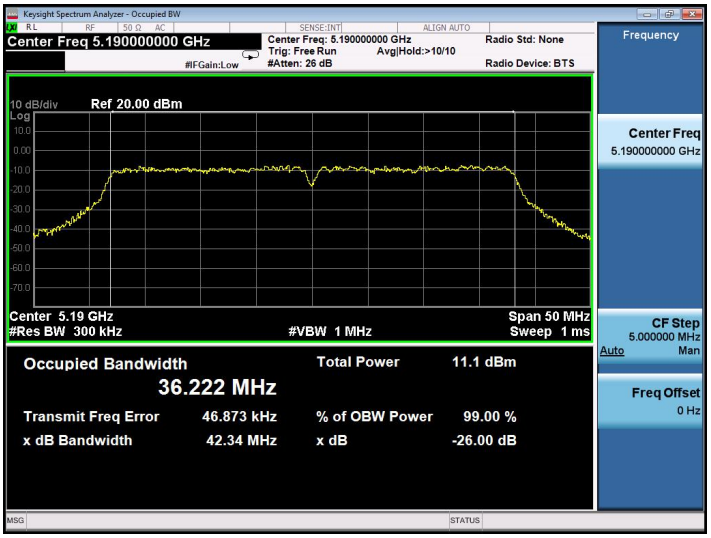
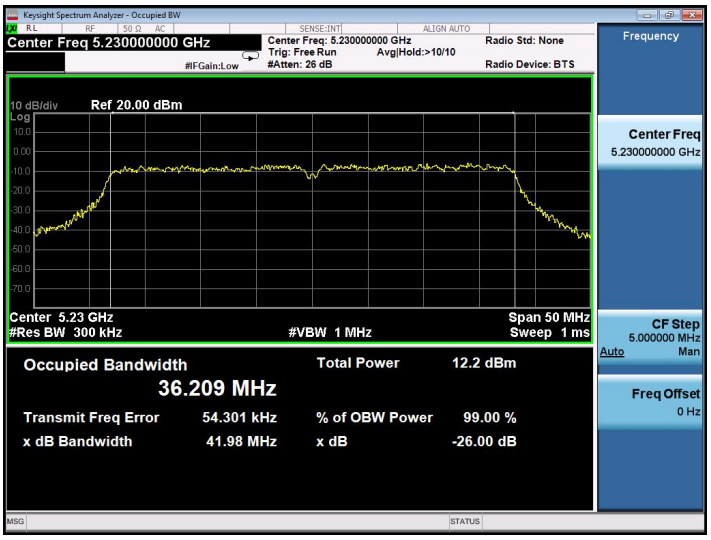
802.11 n(HT20) mode-ch40



802.11a mode-ch48

802.11 n(HT20) mode-ch48

802.11n(HT40) mode-ch38



802.11 n(HT40) mode-ch46