SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

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5G WIFI FCC REPORT

Application No:	HKES1509001807PS
Applicant:	Pismo Labs Technology Limited
Product Name:	Pepwave/Peplink/Pismo Wireless Product
Model No.(EUT):	Surf SOHO
Add Model No.:	Surf SOHO LTE, MAX, Surf Pro, AP Pro, Device Connector, Express, Balance, Pismo 734,CarFi,Flex AP, Pismo 934
FCC ID:	U8G-P1934S
Standards:	47 CFR Part 15, Subpart E (2014)
Date of Receipt:	2015-09-30
Date of Test:	2015-10-03
Date of Issue:	2015-10-09
Test Result:	**PASS ***

* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Authorized Signature:

Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
00		2015-10-09		Original

Authorized for issue by:				
Tested By		Bill Chen **(Bill Chen) /Project Engineer**		2015-10-03 **Date**
Prepared By		Doris chen **(Doris Chen) /Clerk**		2015-10-09 **Date**
Checked By		Sen. Lv. **(Sen Lv) /Reviewer**		2015-10-09 **Date**

3 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Section 15.203	ANSI C63.10: 2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Section 15.407(b)	ANSI C63.10: 2013	PASS
Conducted Output Power	47 CFR Part 15 Section 15.407(a)	ANSI C63.10: 2013	PASS
6dB Occupied Bandwidth	47 CFR Part 15 Section 15.407(e)	ANSI C63.10: 2013	PASS
26 dB Emission Bandwidth & 99% Occupied Bandwidth	47 CFR Part 15 Section 15.407(a)	ANSI C63.10: 2013	PASS
Power Spectral Density	47 CFR Part 15 Section 15.407(a)	ANSI C63.10: 2013	PASS
Radiated Spurious Emissions	47 CFR Part 15 Section 15.407(b)	ANSI C63.10: 2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15 Section 15.407(b)	ANSI C63.10: 2013	PASS
Frequency Stability	47 CFR Part 15 Section 15.407(g)	ANSI C63.10: 2013	PASS
Automatically Discontinue Transmission Requirement	47 CFR Part 15 Section 15.407 (c)	ANSI C63.10: 2013	PASS

Remark:

Model No.: Surf SOHO, Surf SOHO LTE, MAX, Surf Pro, AP Pro, Device Connector, Express, Balance, Pismo 734,CarFi,Flex AP, Pismo 934

Only the Model Surf SOHO was tested, since the electrical circuit design, layout, components used and internal wiring were identical for all above models. Only the item number is different.

4 Contents

5 General Information

5.1 Client Information

Applicant:	Pismo Labs Technology Limited
Address of Applicant:	Unit A5, 5/F, HK Spinners Ind. Bldg., Phase 6, 481 Castle Peak Road, Cheung Sha Wan, Kowloon, Hong Kong

5.2 General Description of EUT

Product Name:	Pepwave/Peplink/Pismo Wireless Product	
Model No.:	Surf SOHO	
Operation Frequency:	IEEE 802.11a/ n(HT20/40): 5150MHz to 5250MHz IEEE 802.11a/ n(HT20/40): 5725MHz to 5850MHz	
Type of Modulation:	IEEE for 802.11a: OFDM(BPSK/QPSK/16QAM/64QAM) IEEE for 802.11n : OFDM(BPSK/QPSK/16QAM/64QAM)	
Sample Type:	Fixed production	
Antenna Type:	Dipole	
Antenna Gain:	3.49dBi	
Number of transmitter chains	2	
Power Supply:	Adapter:	Input: AC 100V-240V 50-60Hz 600mA Output: DC 12V 2000mA
	Output cable:	146cm (Unshielded with a ferrite core)

Operation Frequency of channel			
Band I (5.15-5.25GHz)		Band IV(5.725-5.85 GHz)	
Channel	Frequency	Channel	Frequency
36	5180MHz	149	5745MHz
38	5190MHz	151	5755MHz
40	5200MHz	153	5765MHz
42	5210MHz	155	5775MHz
44	5220MHz	157	5785MHz
46	5230MHz	159	5795MHz
48	5240MHz	161	5805MHz
		165	5825MHz

Note:
In FCC 15.31, for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table, and the selected channel to perform the test as below:

Frequency Range of Operation Operating Frequency Range (in each Band)	Number of Measurement Frequencies Required	Location of Measurement Frequency in Band of Operation
1 MHz or less	1	centre
1 MHz to 10 MHz	2	1 near high end, 1 near low end
Greater than 10 MHz	3	1 near high end, 1 near centre

For 802.11a/n(HT20):

Channel	Frequency	Channel	Frequency
36	5180MHz	149	5745MHz
40	5200MHz	157	5785MHz
48	5240MHz	165	5825MHz

For 802.11 n(HT40):

Channel	Frequency	Channel	Frequency
38	5190MHz	151	5755MHz
46	5230MHz	159	5795MHz

5.3 Test Environment and Mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	52 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.

5.4 Description of Support Units

The EUT has been tested independent unit.

5.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch E&E Lab,
No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.
Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• **VCCI**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

• **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

• **Industry Canada (IC)**

The 3m Semi-anechoic chambers and the 10m Semi-anechoic chambers of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-2, 4620C-3.

5.7 Deviation from Standards

None.

5.8 Abnormalities from Standard Conditions

None.

5.9 Other Information Requested by the Customer

None.

5.10 Equipment List

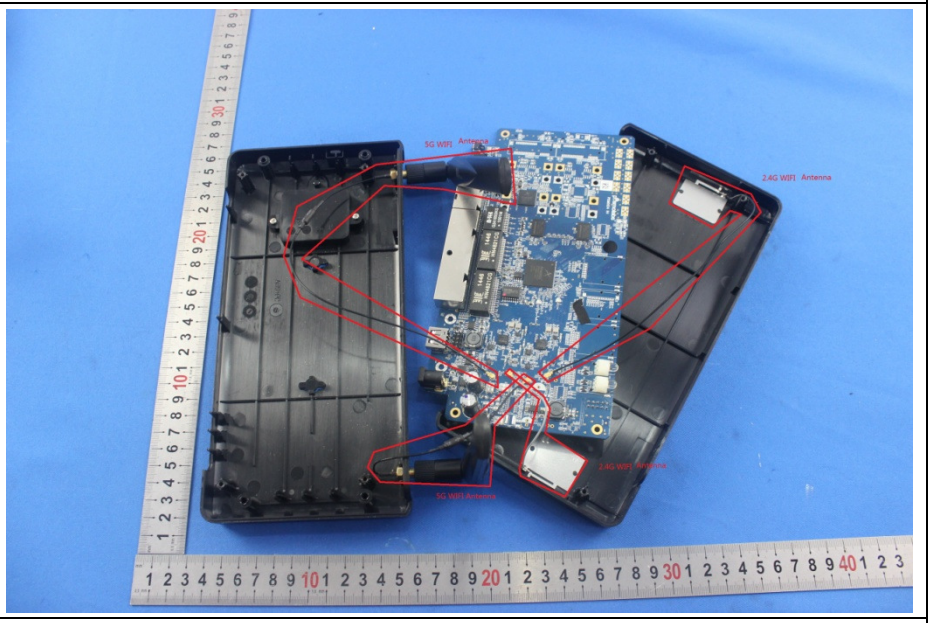
Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. date (yyyy-mm-dd)**	**Cal.Due date (yyyy-mm-dd)**
1	Shielding Room	ZhongYu Electron	GB-88	SEL0042	2015-05-13	2016-05-13
2	LISN	Rohde & Schwarz	ENV216	SEL0152	2014-10-24	2015-10-24
3	LISN	ETS-LINDGREN	3816/2	SEL0021	2015-05-13	2016-05-13
4	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	SEL0162	2015-08-30	2016-08-30
5	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	SEL0163	2015-08-30	2016-08-30
6	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	SEL0164	2015-08-30	2016-08-30
7	EMI Test Receiver	Rohde & Schwarz	ESCI	SEL0022	2015-05-13	2016-05-13
8	Coaxial Cable	SGS	N/A	SEL0025	2015-05-13	2016-05-13
9	DC Power Supply	Zhao Xin	RXN-305D	SEL0117	2014-10-24	2015-10-24
10	Humidity/ Temperature Indicator	Shanhai Qixiang	ZJ1-2B	SEL0103	2014-10-24	2015-10-24
11	Barometer	Chang Chun	DYM3	SEL0088	2015-05-13	2016-05-13

RE in Chamber						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. date (yyyy-mm-dd)**	**Cal.Due date (yyyy-mm-dd)**
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	2015-05-13	2016-05-13
2	EMI Test Receiver	Agilent Technologies	N9038A	SEL0312	2015-09-16	2016-09-16
3	EMI Test software	AUDIX	E3	SEL0050	N/A	N/A
4	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2014-10-24	2015-10-24
5	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2014-10-24	2015-10-24
6	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	2014-11-24	2015-11-24
7	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2015-05-13	2016-05-13
8	Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEL0168	2014-10-24	2015-10-24
9	Coaxial cable	SGS	N/A	SEL0027	2015-05-13	2016-05-13
10	Coaxial cable	SGS	N/A	SEL0189	2015-05-13	2016-05-13
11	Coaxial cable	SGS	N/A	SEL0121	2015-05-13	2016-05-13
12	Coaxial cable	SGS	N/A	SEL0178	2015-05-13	2016-05-13
13	Band filter	Amindeon	82346	SEL0094	2015-05-13	2016-05-13
14	Barometer	Chang Chun	DYM3	SEL0088	2015-05-13	2016-05-13
15	DC Power Supply	Zhao Xin	RXN-305D	SEL0117	2014-10-24	2015-10-24
16	Humidity/ Temperature Indicator	Shanhai Qixiang	ZJ1-2B	SEL0103	2014-10-24	2015-10-24
17	Signal Generator (10M-27GHz)	Rohde & Schwarz	SMR27	SEL0067	2015-05-13	2016-05-13
18	Signal Generator	Rohde & Schwarz	SMY01	SEL0155	2014-10-24	2015-10-24
19	Loop Antenna	Beijing Daze	ZN30401	SEL0203	2015-05-13	2016-05-13

RF connected test						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. date (yyyy-mm-dd)**	**Cal.Due date (yyyy-mm-dd)**
1	DC Power Supply	Zhao Xin	RXN-305D	SEL0117	2014-10-24	2015-10-24
2	Humidity/ Temperature Indicator	HYGRO	ZJ1-2B	SEL0033	2014-10-24	2015-10-24
3	Spectrum Analyzer	Rohde & Schwarz	FSP	SEL0154	2014-10-24	2015-10-24
4	Coaxial cable	SGS	N/A	SEL0178	2015-05-13	2016-05-13
5	Coaxial cable	SGS	N/A	SEL0179	2015-05-13	2016-05-13
6	Barometer	ChangChun	DYM3	SEL0088	2015-05-13	2016-05-13
7	Signal Generator	Rohde & Schwarz	SML03	SEL0068	2015-04-25	2016-04-25
8	Band filter	amideon	82346	SEL0094	2015-05-13	2016-05-13
9	POWER METER	R & S	NRVS	SEL0144	2014-10-24	2015-10-24
10	Attenuator	Beijin feihang taida	TST-2-6dB	SEL0205	2015-04-25	2016-04-25
11	Power Divider(splitter)	Agilent Technologies	11636B	SEL0130	2014-10-24	2015-10-24

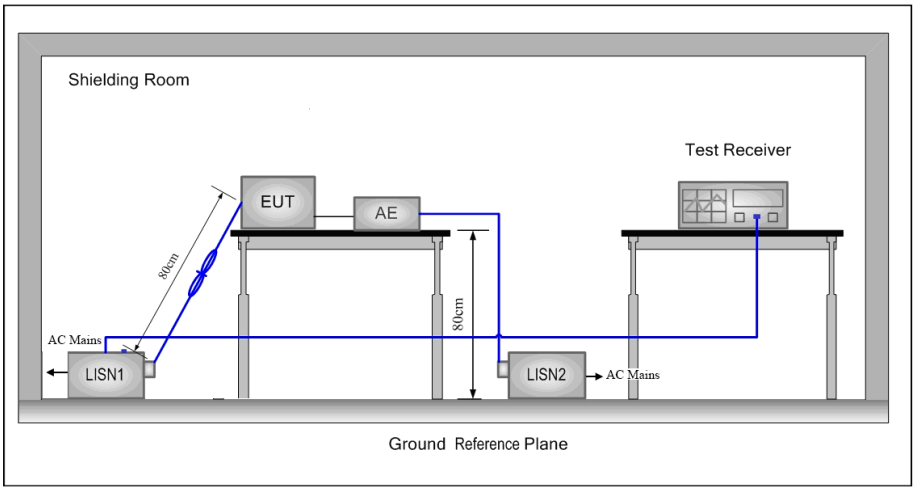
6 Test results and Measurement Data

6.1 Antenna Requirement

Test Requirement:	47 CFR Part 15 Section 15.203
EUT Antenna:	
The antenna is integrated antenna and no consideration of replacement. The best case gain of the antenna is 3.49dBi.	

6.2 Conducted Emissions

Test Requirement:	47 CFR Part 15 Section 15.407(b)
Test Method:	ANSI C63.10: 2013
Test Frequency Range:	150kHz to 30MHz
Limit:	Frequency range (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 * Decreases with the logarithm of the frequency.
Test Procedure:	1) The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.

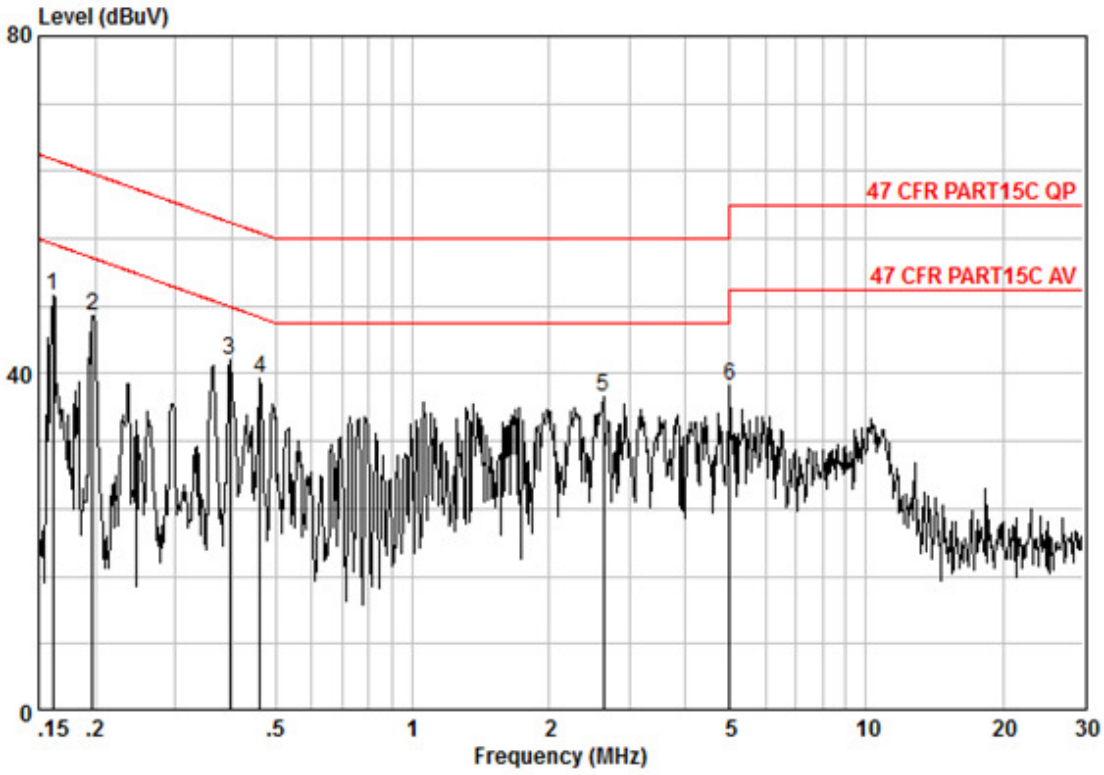
Test Setup:	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate of 802.11a at lowest channel is the worst case. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

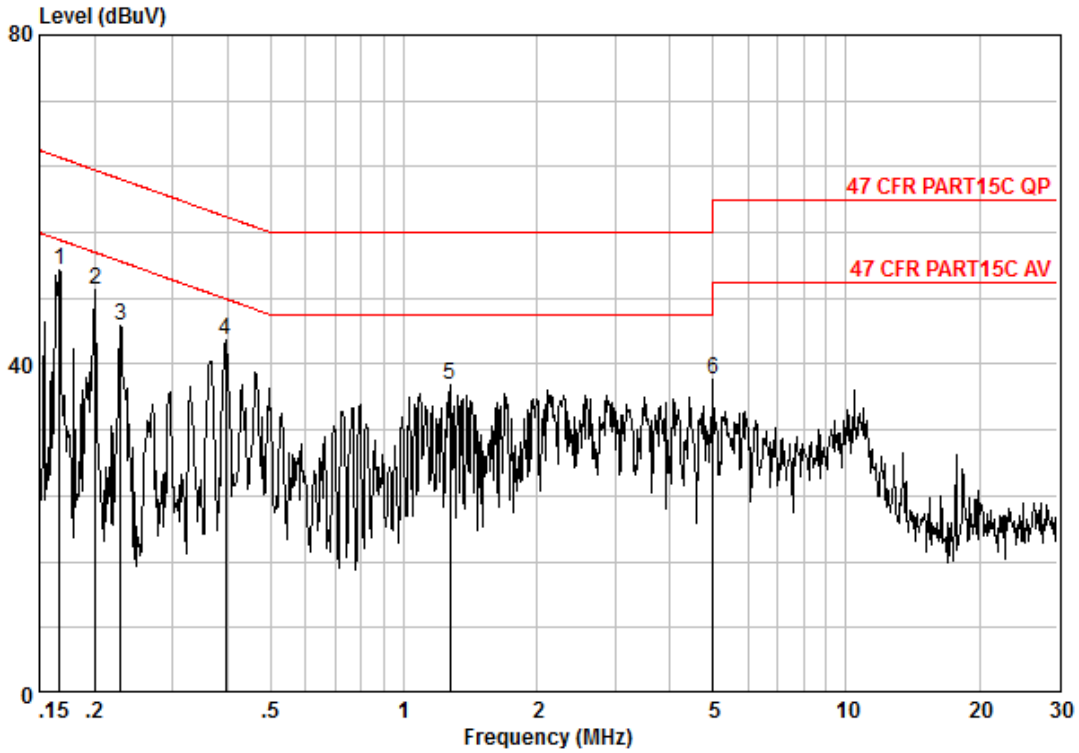
Live Line:



Site : Shielding Room
Condition : 47 CFR PART15C AV CE LINE
Job.No : 1807PS
Test Mode : TX

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 @	0.16155	0.02	9.82	39.39	49.23	55.38	-6.16	Peak
2 @	0.19758	0.02	9.83	37.04	46.89	53.71	-6.82	Peak
3 @	0.39553	0.01	9.85	31.70	41.56	47.95	-6.38	Peak
4 @	0.46122	0.01	9.86	29.50	39.37	46.67	-7.30	Peak
5 @	2.636	0.02	10.00	27.20	37.22	46.00	-8.78	Peak
6 @	5.005	0.01	10.12	28.54	38.67	50.00	-11.33	Peak

Neutral Line:



Site : Shielding Room
Condition : 47 CFR PART15C AV CE NEUTRAL
Job.No : 1807PS
Test Mode : TX

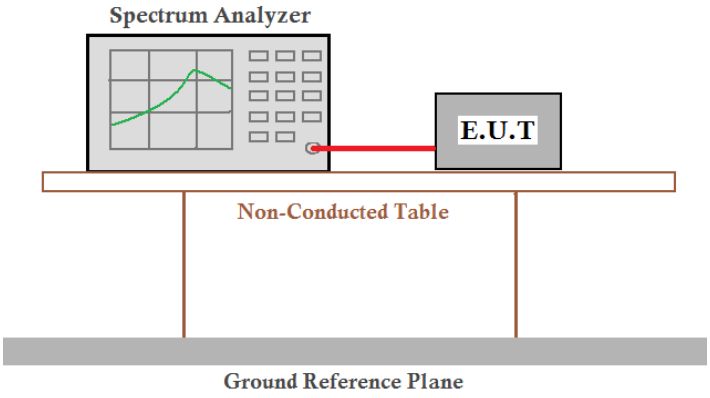
	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 @	0.16677	0.02	9.81	41.69	51.52	55.12	-3.60	Peak
2 @	0.20075	0.02	9.85	39.25	49.12	53.58	-4.46	Peak
3 @	0.22918	0.02	9.85	34.89	44.76	52.48	-7.72	Peak
4 @	0.39553	0.01	9.87	33.03	42.91	47.95	-5.04	Peak
5 @	1.269	0.02	10.05	27.34	37.41	46.00	-8.59	Peak
6 @	5.005	0.01	10.13	28.08	38.22	50.00	-11.78	Peak

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

6.3 Duty Cycle

Test Requirement:	47 CFR Part 15C 15.407 and 789033 D02 General UNII Test Procedures New Rules v01, Section (B)
Test Method:	ANSI C63.10: 2013
Test Setup:	
Limit:	N/A
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates.
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; 65Mbps of rate is the worst case of 802.11n(HT20); 130Mbps of rate is the worst case of 802.11n(HT40) Only the worst cases were recorded in the report.
Instruments Used:	Refer to section 5.10 for details.
Test Results:	Pass
	Remark: Through Pre-scan, find the duty cycle of all antenna port is 100%, and find the power of antenna 1 is larger than antenna 2, so only the antenna 1 test data include in this report.

Measurement Data

Band I

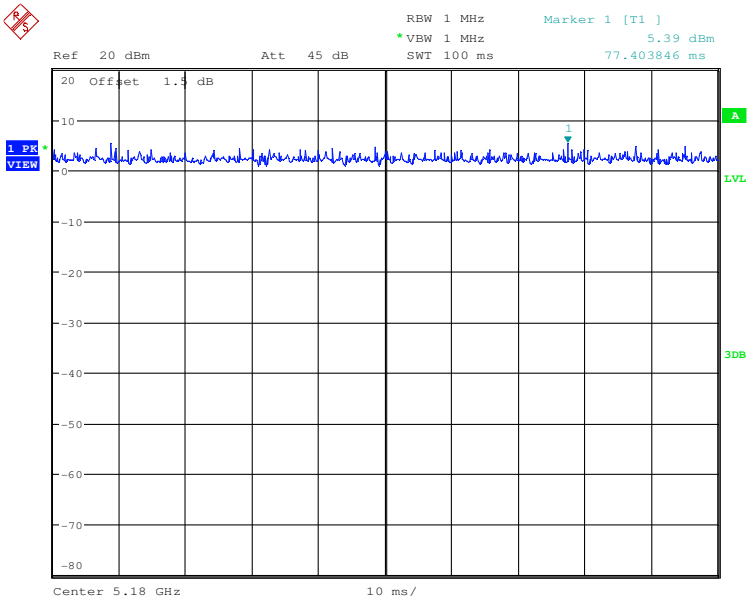
802.11a mode			
Test channel	On time	Period	Duty Cycle(%)
36	100	100	100
802.11n(HT20) mode			
Test channel	On time	Period	Duty Cycle
36	100	100	100
802.11n(HT40) mode			
Test channel	On time	Period	Duty Cycle
38	100	100	100

Band IV

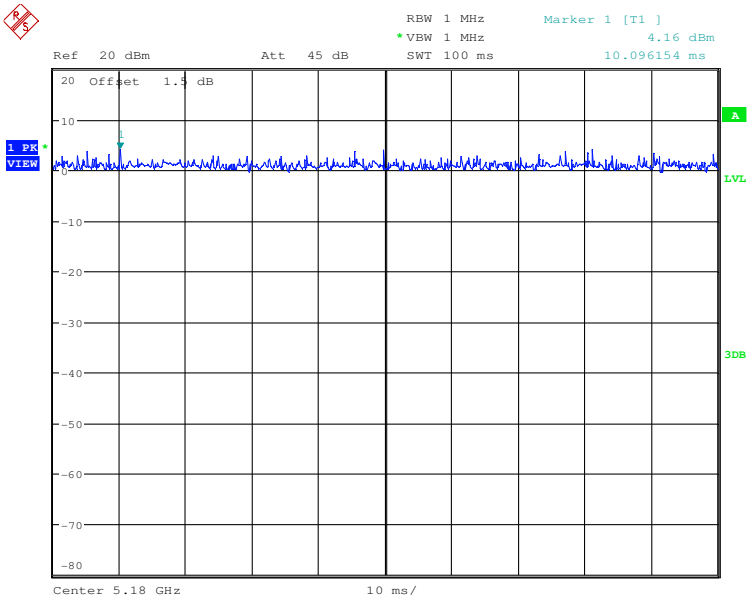
802.11a mode			
Test channel	On time	Period	Duty Cycle(%)
149	100	100	100
802.11n(HT20) mode			
Test channel	On time	Period	Duty Cycle
149	100	100	100
802.11n(HT40) mode			
Test channel	On time	Period	Duty Cycle
151	100	100	100

Band I

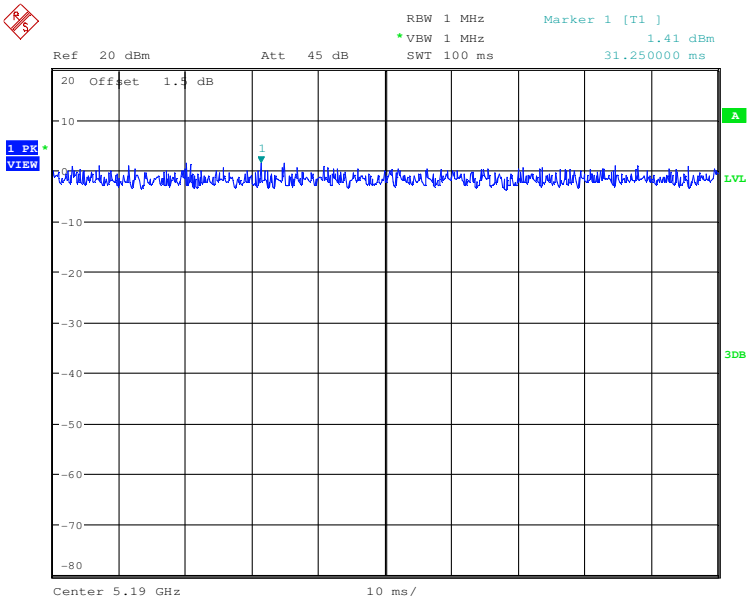
Test mode:	802.11a



Test mode:	802.11n(HT20)

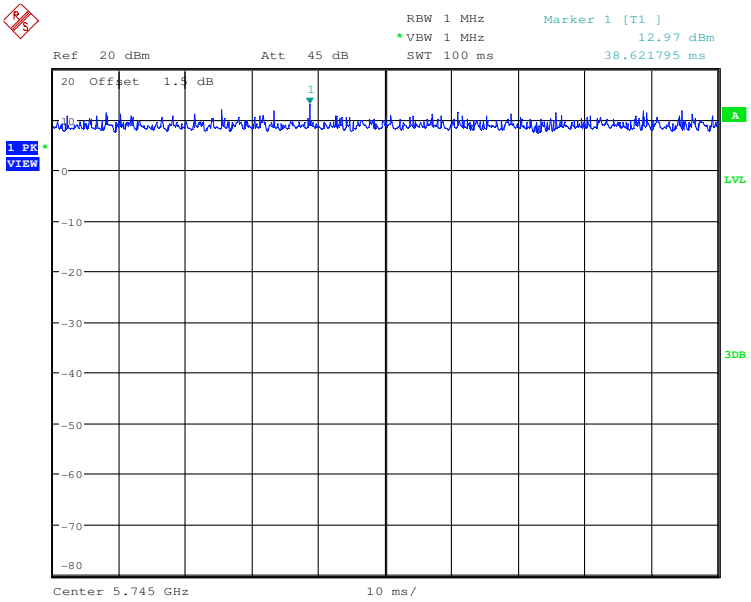


Test mode:	802.11n(HT40)

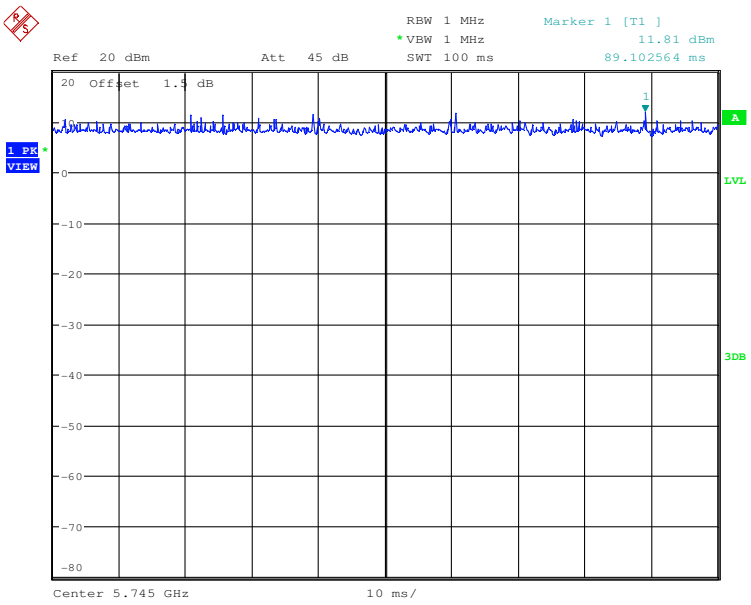


Band IV

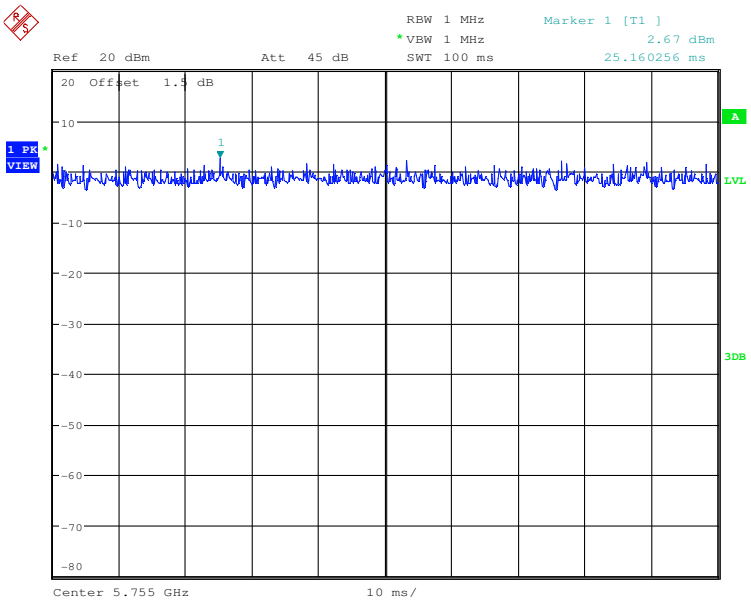
Test mode:	802.11a



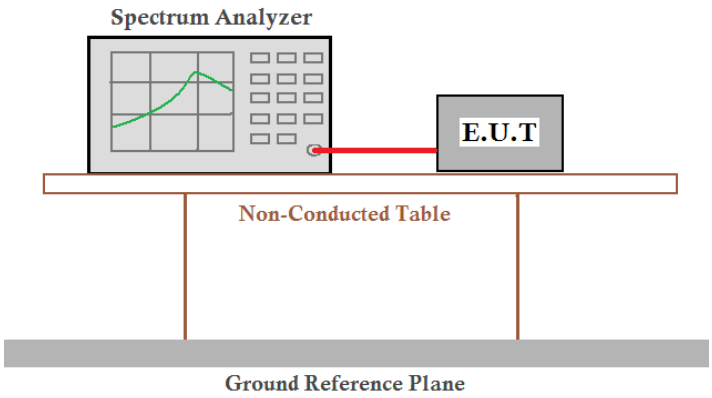
Test mode:	802.11n(HT20)



Test mode:	802.11n(HT40)



6.4 Conducted Output Power

Test Requirement:	47 CFR Part 15 Section 15.407(a)	
Test Method:	ANSI C63.10: 2013	
Test Setup:	 *Remark:* *Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.*	
Test Instruments:	Refer to section 5.10 for details	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates	
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCSO of rate is the worst case of 802.11n(HT20); MCSO of rate is the worst case of 802.11n(HT40) Only the worst case is recorded in the report.	
Limit:	Frequency Band	Limit
	5150-5250MHz	Antenna gain below 6dBi：30dBm (802.11 a) Antenna gain greater than 6dBi : Not exceed 1W(30dBm) - (antennas of directional gain-6) = 29.44dBm (802.11 n)
	5725-5850MHz	Antenna gain below 6dBi：30dBm (802.11 a) Antenna gain greater than 6dBi : Not exceed 1W(30dBm) - (antennas of directional gain-6) = 29.44dBm (802.11 n)
	*Where B is the 26dB emission bandwidth in MHz	
Test Results:	Pass	

Measurement Data of band I (5150-5250MHz)

802.11a mode				
Test channel	Conducted Output Power (dBm)		Limit (dBm)	Result
	Antenna 1	Antenna 2		
36	11.33	10.61	30.00	Pass
40	11.38	10.71	30.00	Pass
48	11.54	10.58	30.00	Pass

802.11n(HT20) mode					
Test channel	Conducted Output Power (dBm)			Limit (dBm)	Result
	Antenna 1	Antenna 2	Total		
36	10.38	10.84	13.63	29.44	Pass
40	10.37	10.46	13.43	29.44	Pass
48	10.40	10.33	13.38	29.44	Pass

802.11n(HT40) mode					
Test channel	Conducted Output Power (dBm)			Limit (dBm)	Result
	Antenna 1	Antenna 2	Total		
38	11.55	12.33	14.97	29.44	Pass
46	11.00	12.15	14.62	29.44	Pass

Measurement Data of band IV (5725-5850MHz)

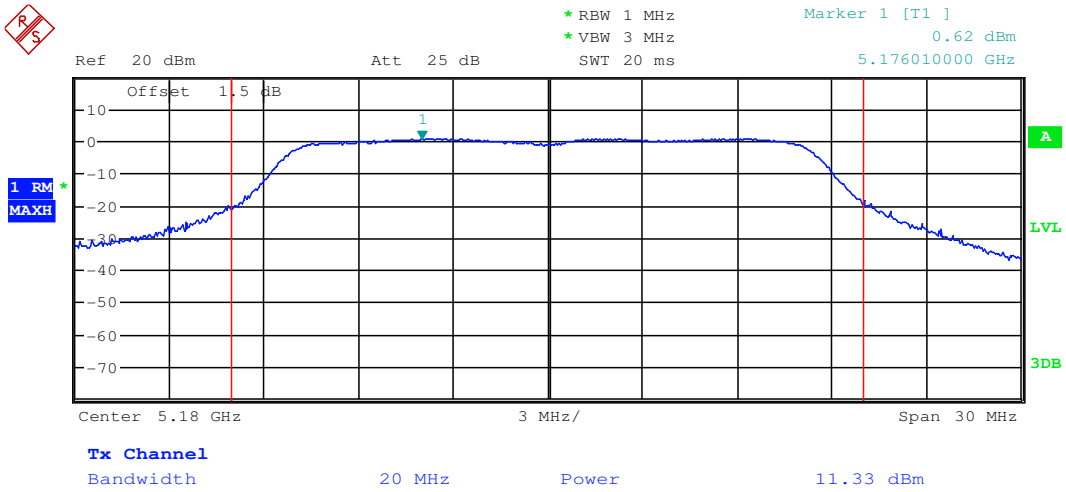
802.11a mode				
Test channel	Conducted Output Power (dBm)		Limit (dBm)	Result
	Antenna 1	Antenna 2		
149	16.70	16.75	30.00	Pass
157	15.67	15.77	30.00	Pass
165	15.24	15.45	30.00	Pass

802.11n(HT20) mode					
Test channel	Conducted Output Power (dBm)			Limit (dBm)	Result
	Antenna 1	Antenna 2	Total		
149	16.28	17.75	20.09	29.44	Pass
157	15.72	15.56	18.65	29.44	Pass
165	15.32	15.20	18.27	29.44	Pass

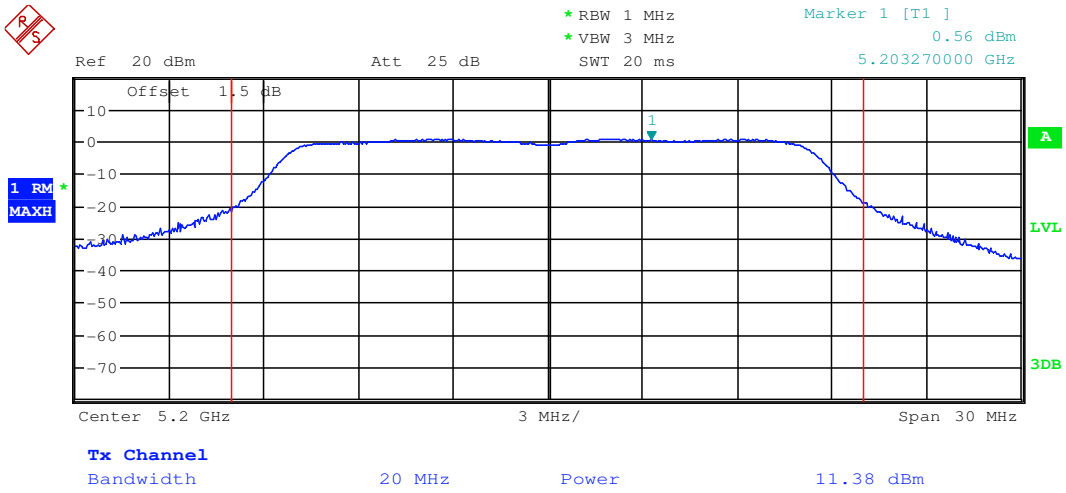
802.11n(HT40) mode					
Test channel	Conducted Output Power (dBm)			Limit (dBm)	Result
	Antenna 1	Antenna 2	Total		
151	12.07	13.16	15.66	29.44	Pass
159	11.48	11.51	14.51	29.44	Pass

Test plot as follows:
Band I
Antenna 1:

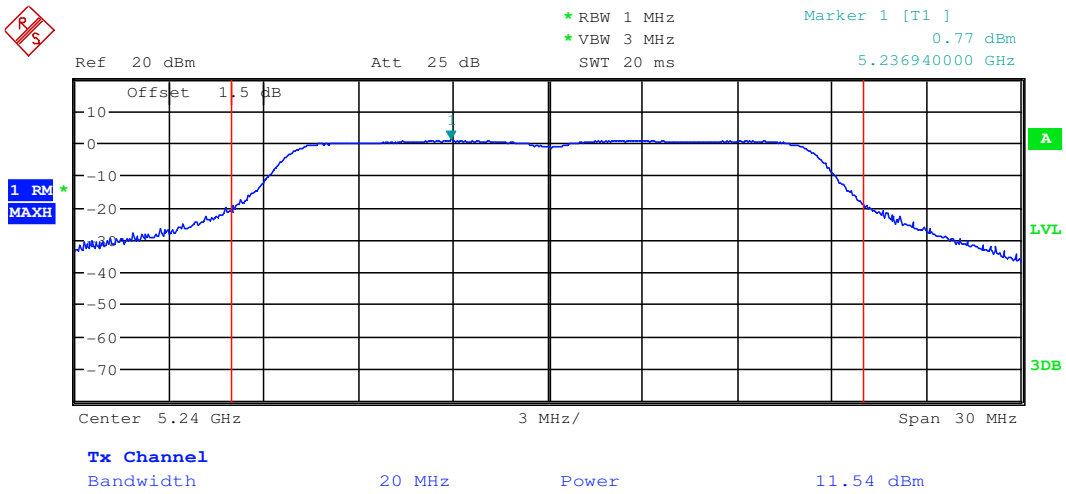
Test mode:	802.11a	Frequency(MHz):	5180



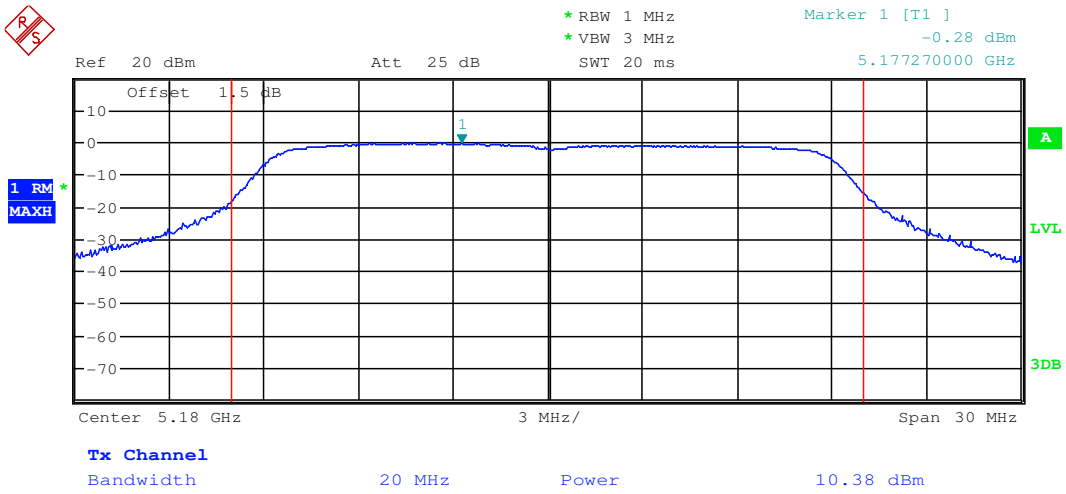
Test mode:	802.11a	Frequency(MHz):	5200



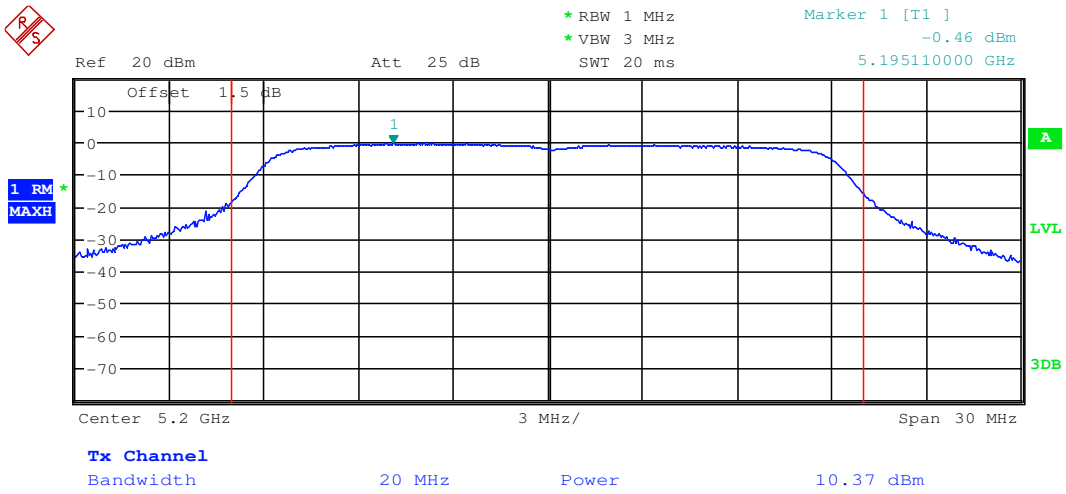
Test mode:	802.11a	Frequency(MHz):	5240



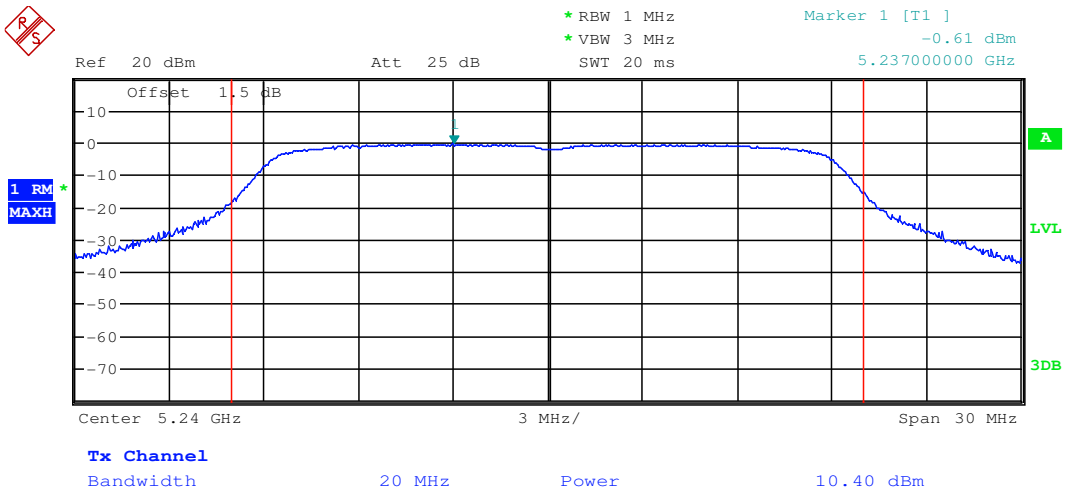
Test mode:	802.11n(HT20)	Frequency(MHz):	5180



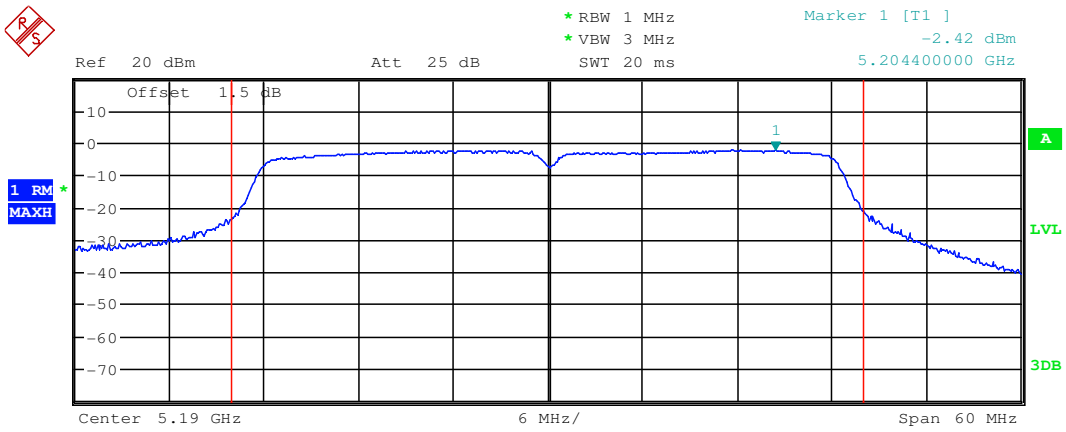
Test mode:	802.11n(HT20)	Frequency(MHz):	5200



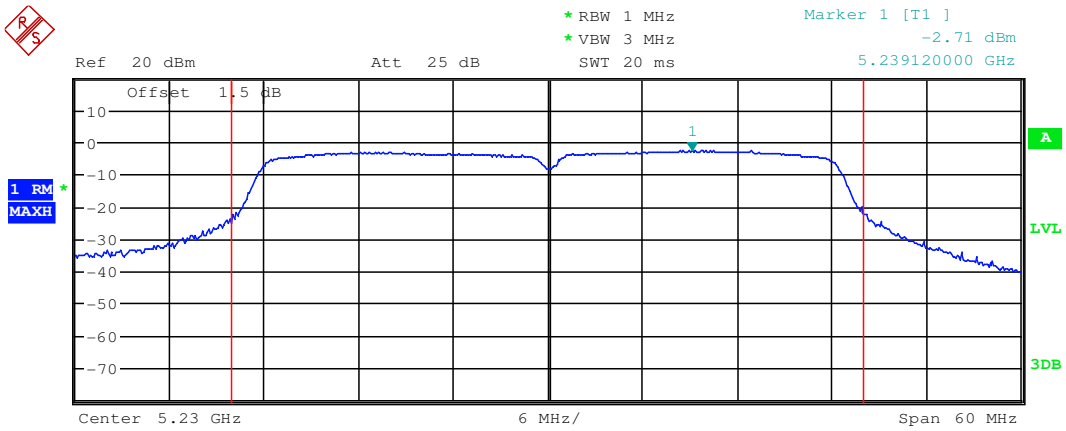
Test mode:	802.11n(HT20)	Frequency(MHz):	5240



Test mode:	802.11n(HT40)	Frequency(MHz):	5190

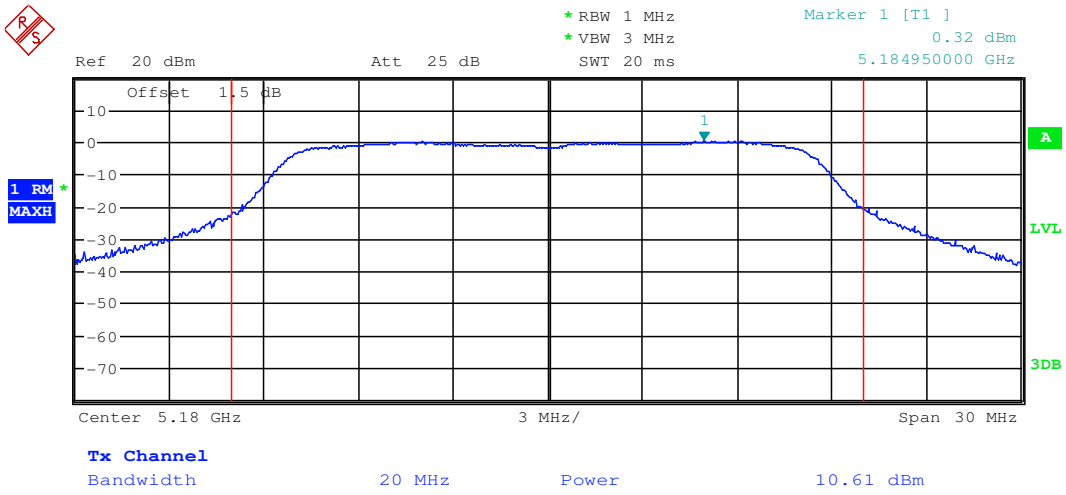


Test mode:	802.11n(HT40)	Frequency(MHz):	5230

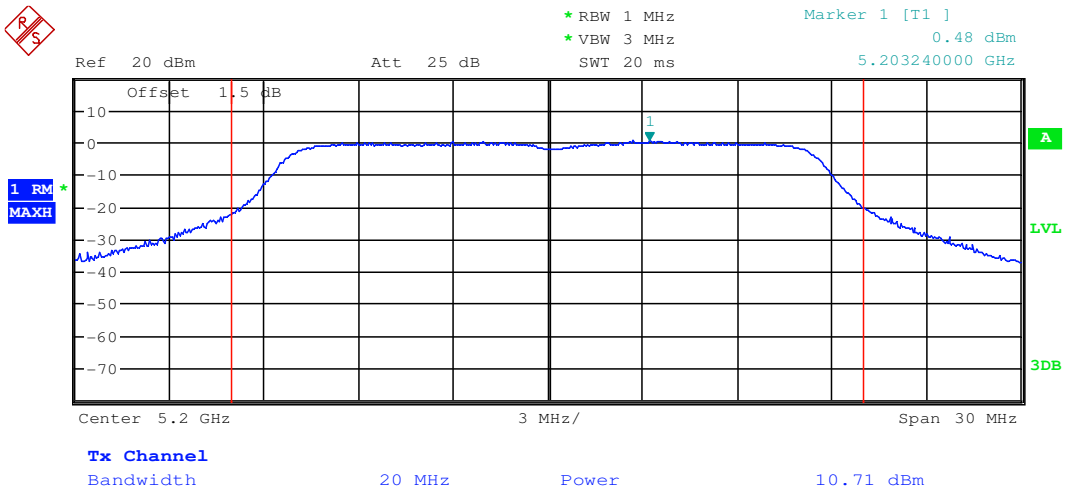


Antenna 2:

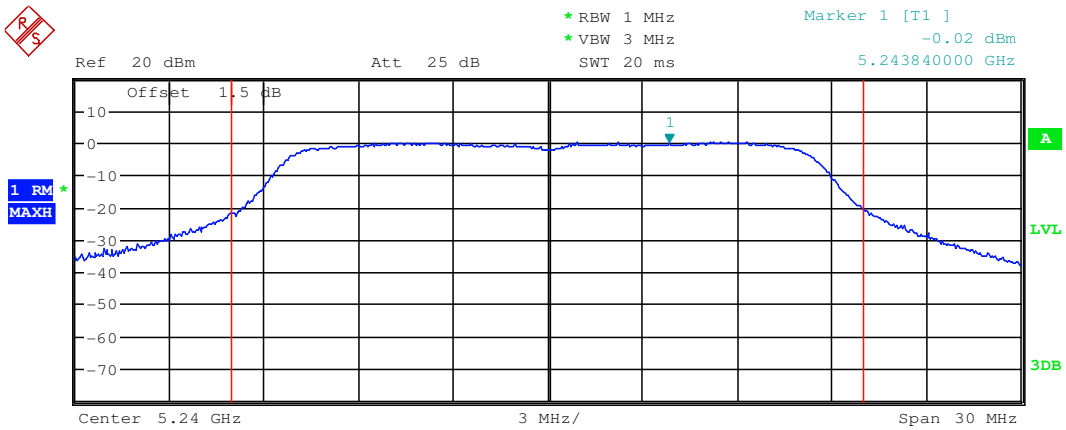
Test mode:	802.11a	Frequency(MHz):	5180



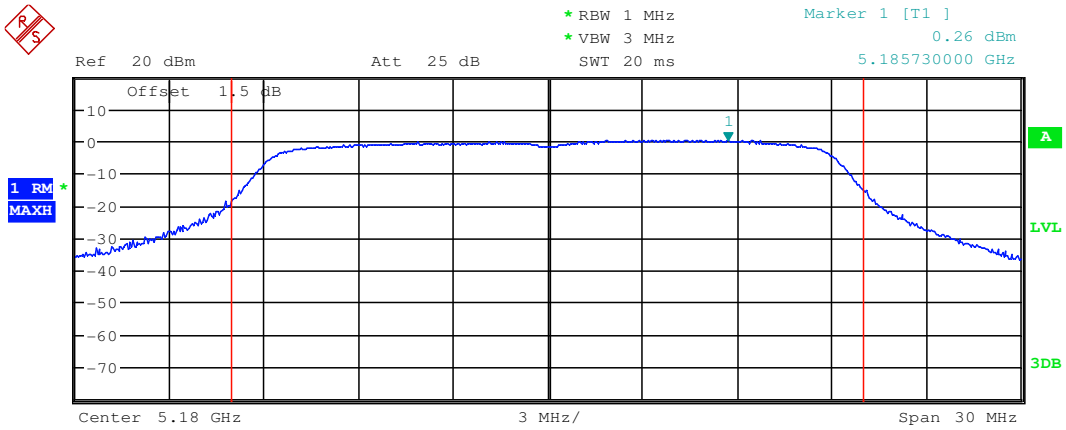
Test mode:	802.11a	Frequency(MHz):	5200



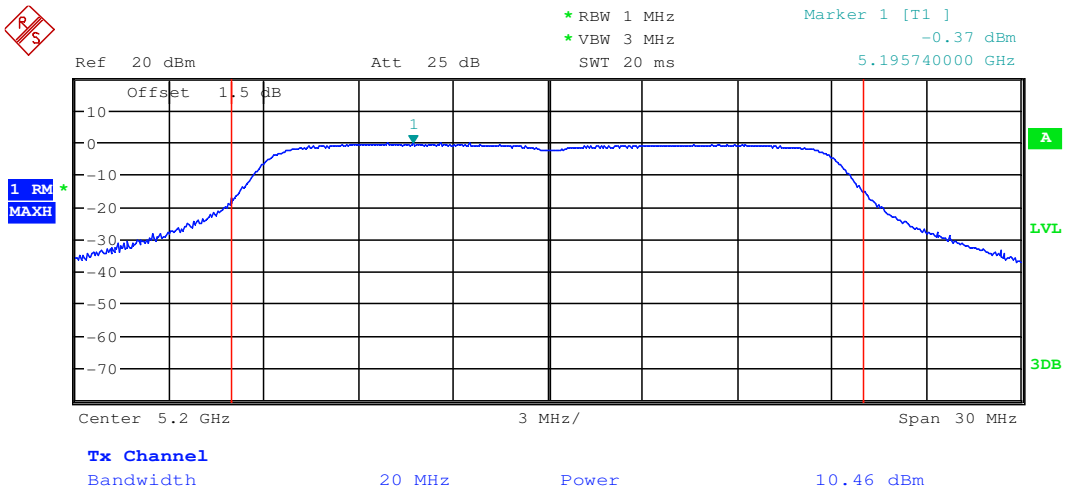
Test mode:	802.11a	Frequency(MHz):	5240



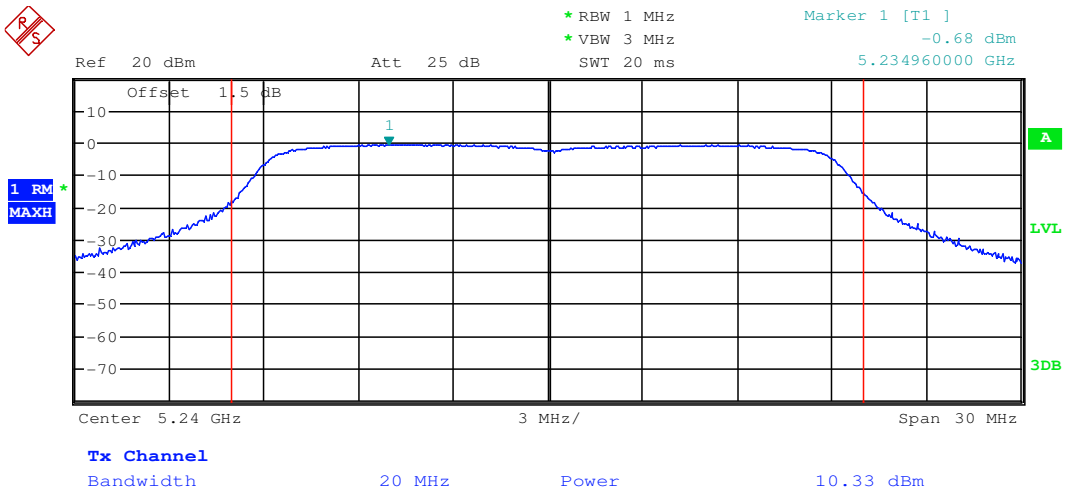
Test mode:	802.11n(HT20)	Frequency(MHz):	5180



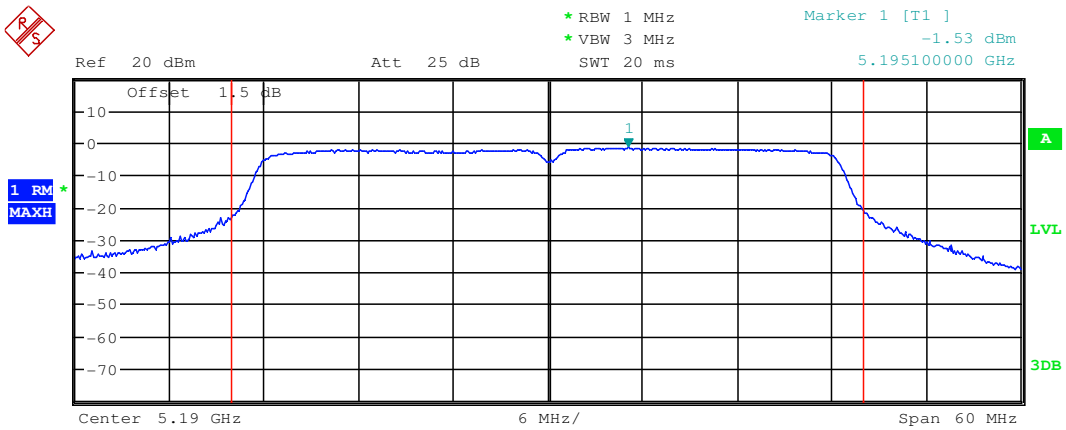
Test mode:	802.11n(HT20)	Frequency(MHz):	5200



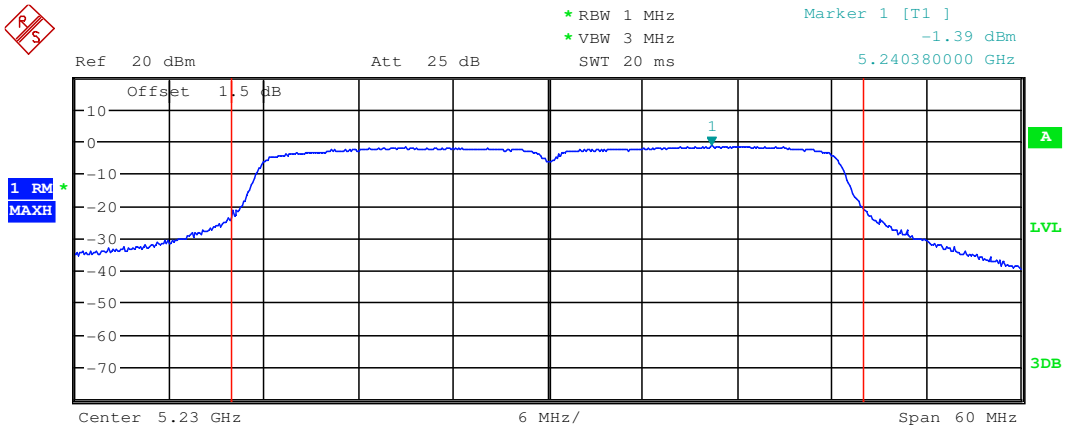
Test mode:	802.11n(HT20)	Frequency(MHz):	5240



Test mode:	802.11n(HT40)	Frequency(MHz):	5190

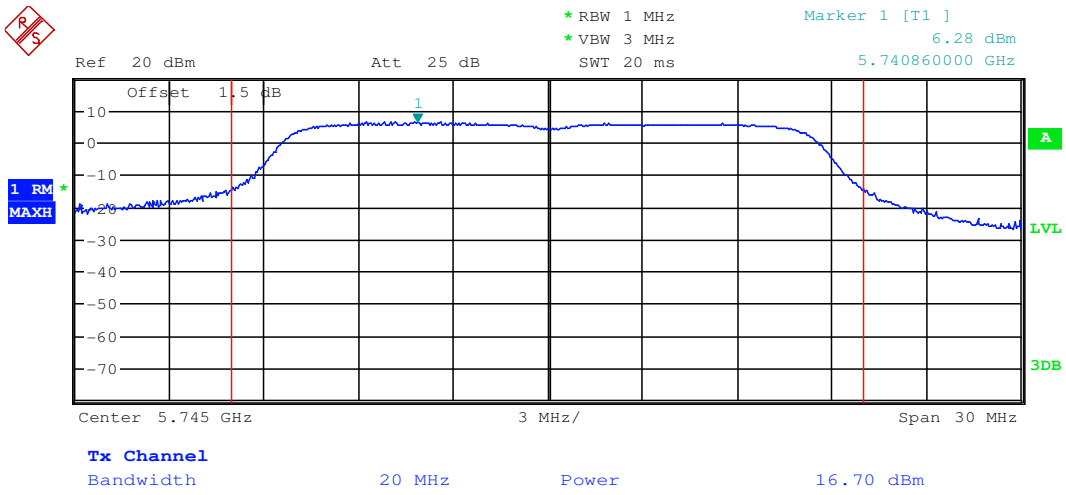


Test mode:	802.11n(HT40)	Frequency(MHz):	5230

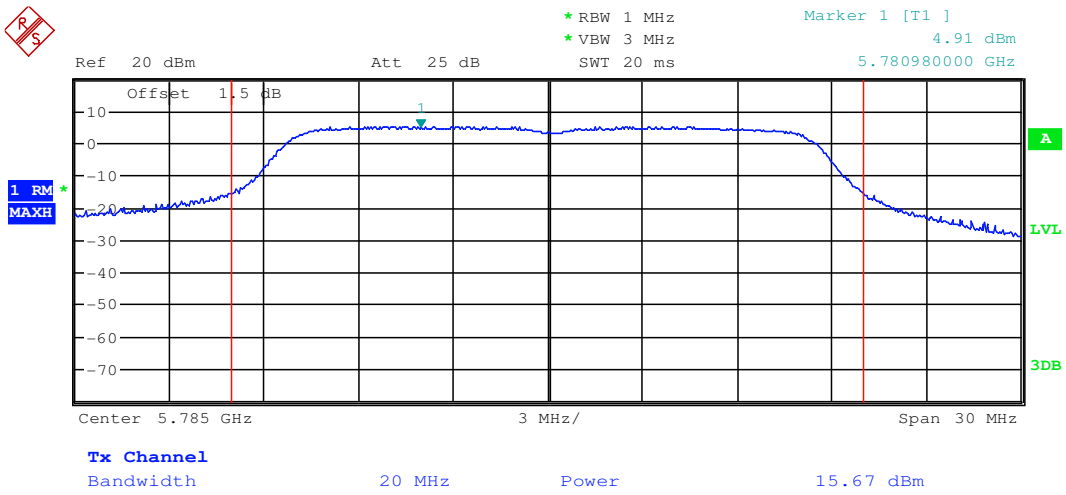


Band IV
Antenna 1:

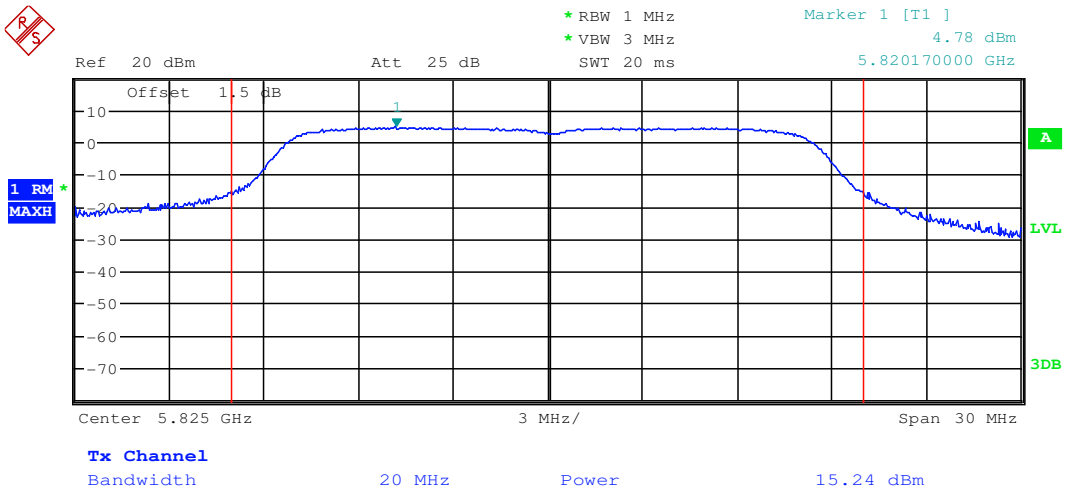
Test mode:	802.11a	Frequency(MHz):	5745



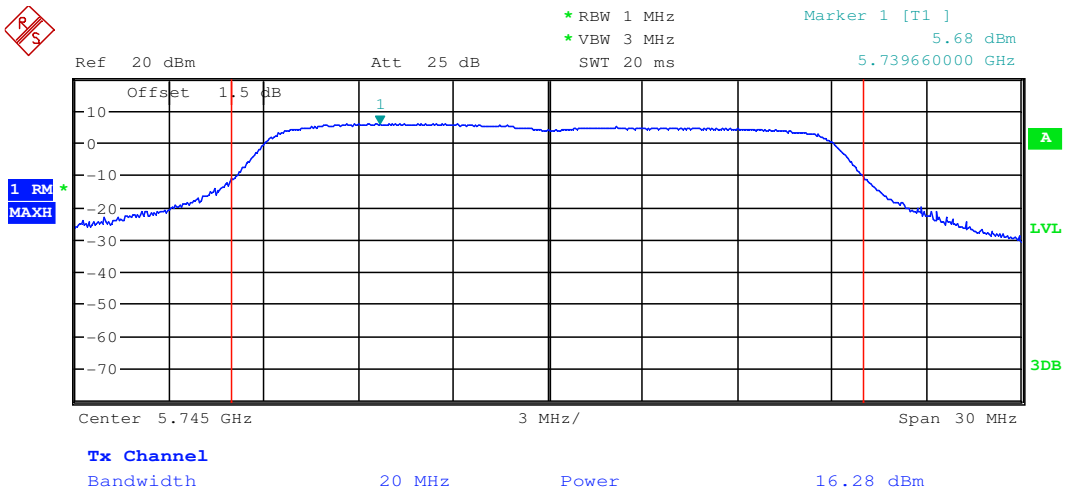
Test mode:	802.11a	Frequency(MHz):	5785



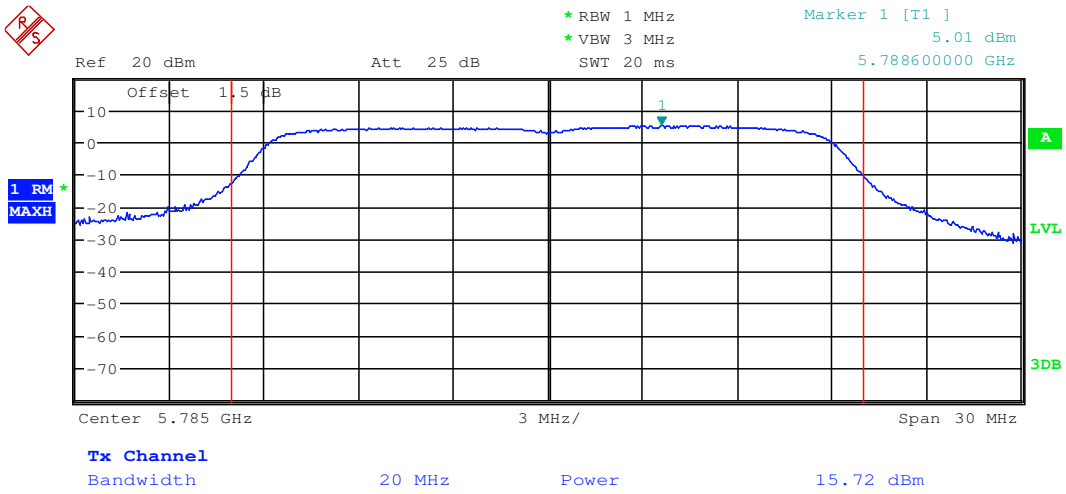
Test mode:	802.11a	Frequency(MHz):	5825



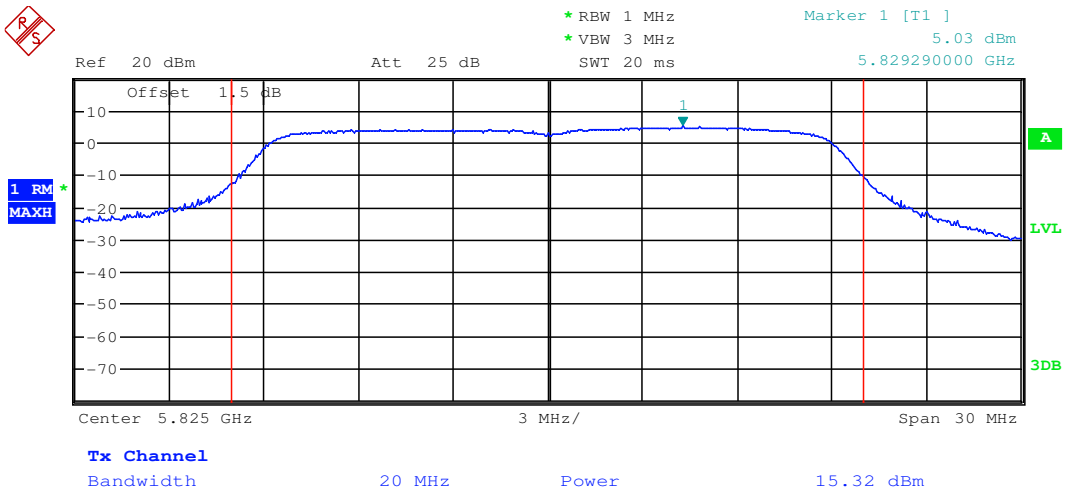
Test mode:	802.11n(HT20)	Frequency(MHz):	5745



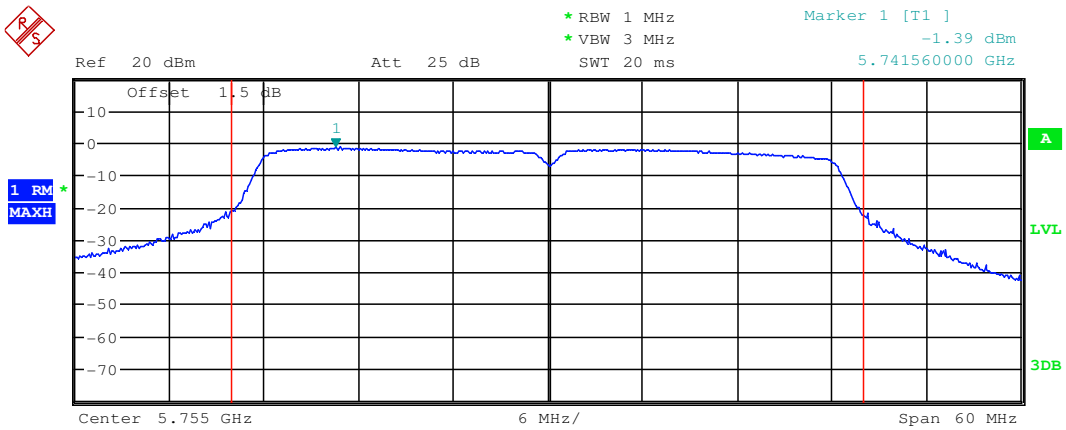
Test mode:	802.11n(HT20)	Frequency(MHz):	5785



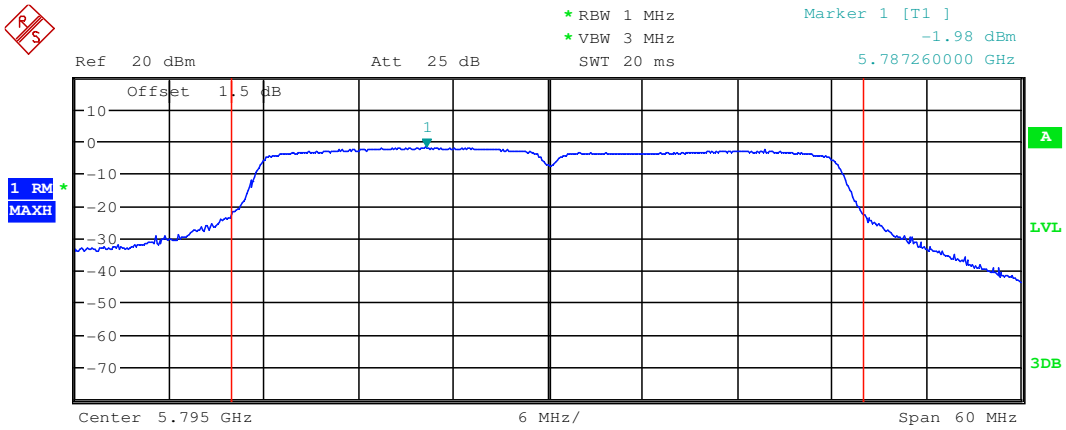
Test mode:	802.11n(HT20)	Frequency(MHz):	5825



Test mode:	802.11n(HT40)	Frequency(MHz):	5755

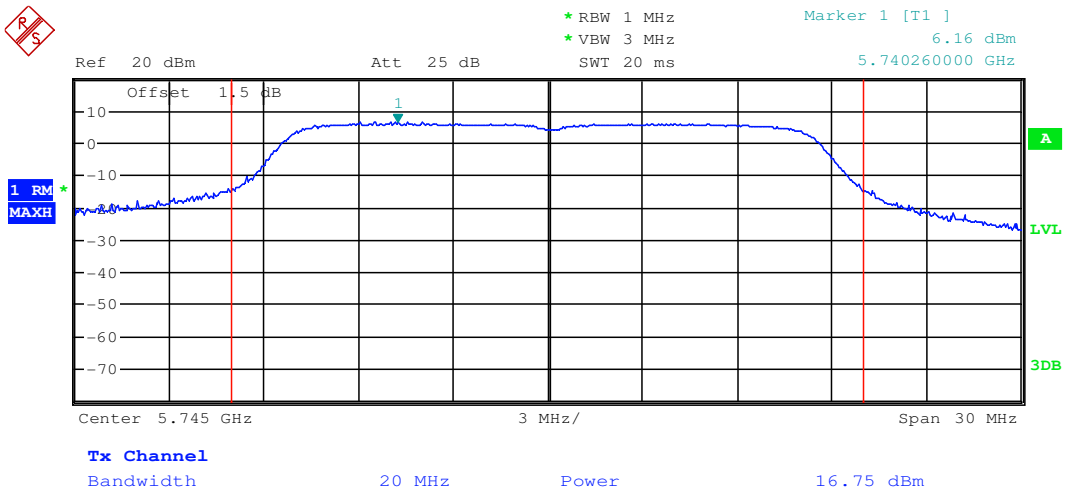


Test mode:	802.11n(HT40)	Frequency(MHz):	5795

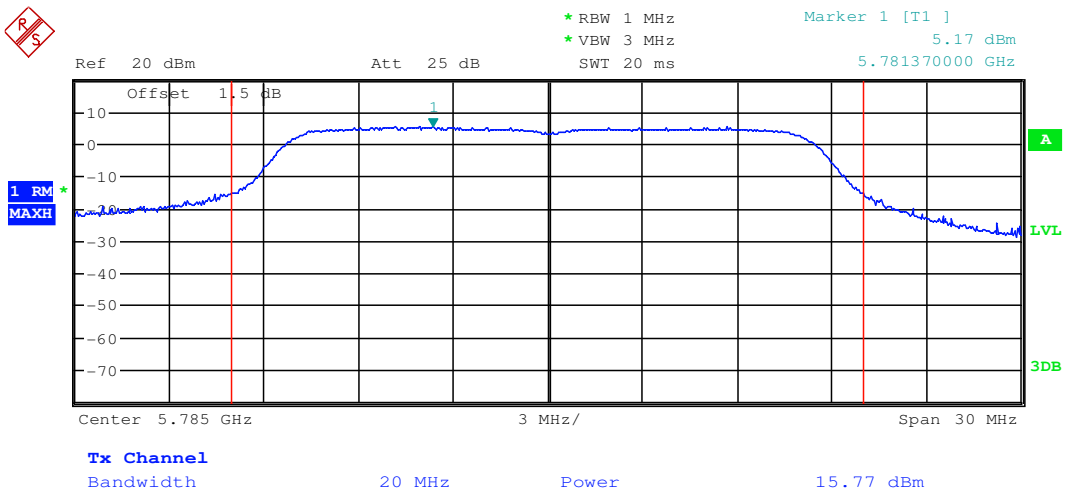


Antenna 2:

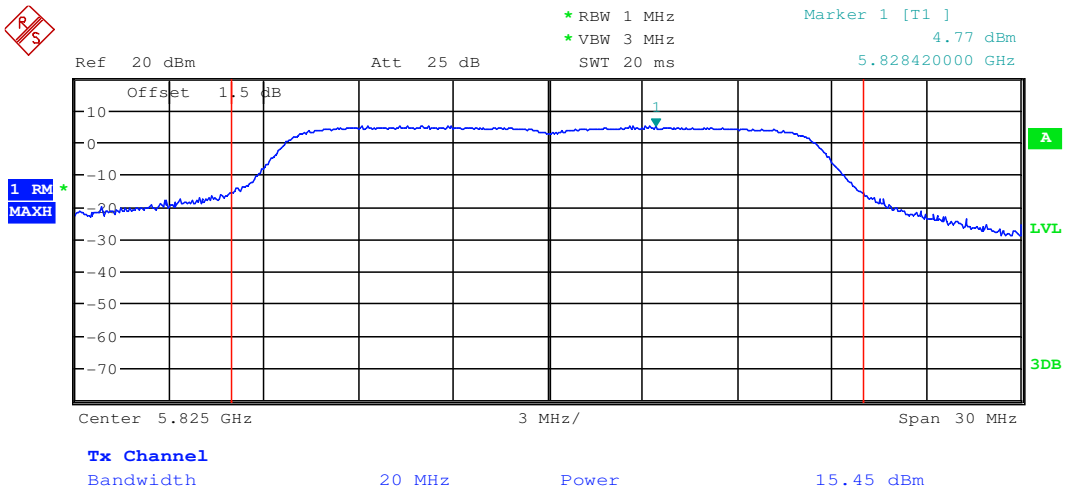
Test mode:	802.11a	Frequency(MHz):	5745



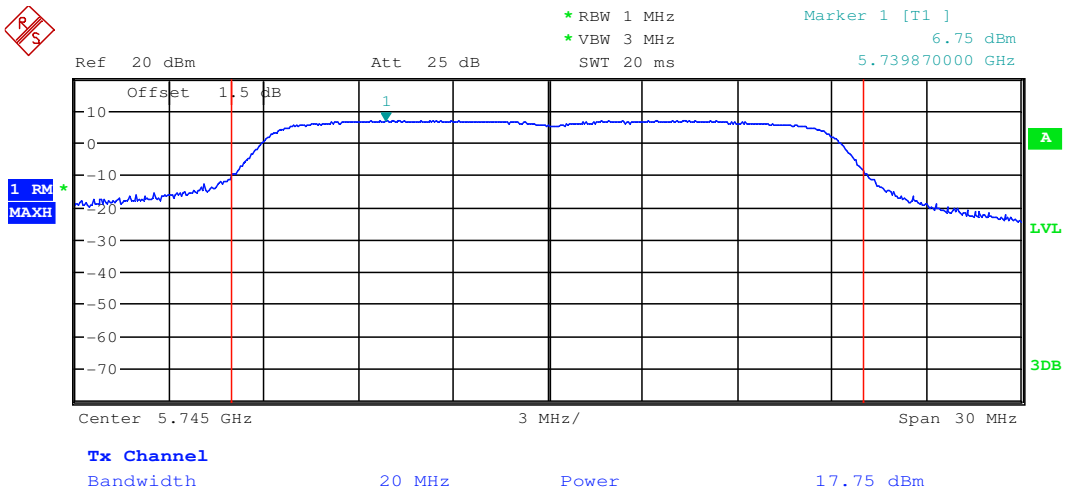
Test mode:	802.11a	Frequency(MHz):	5785



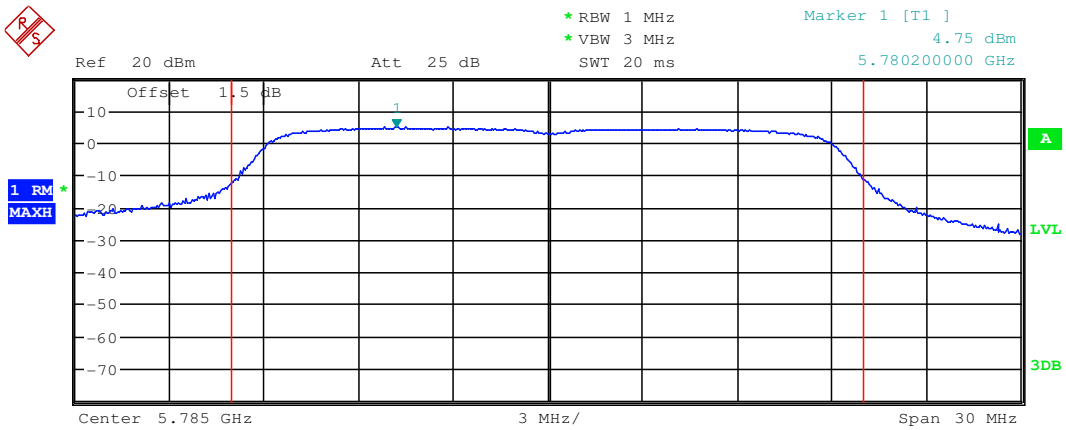
Test mode:	802.11a	Frequency(MHz):	5825



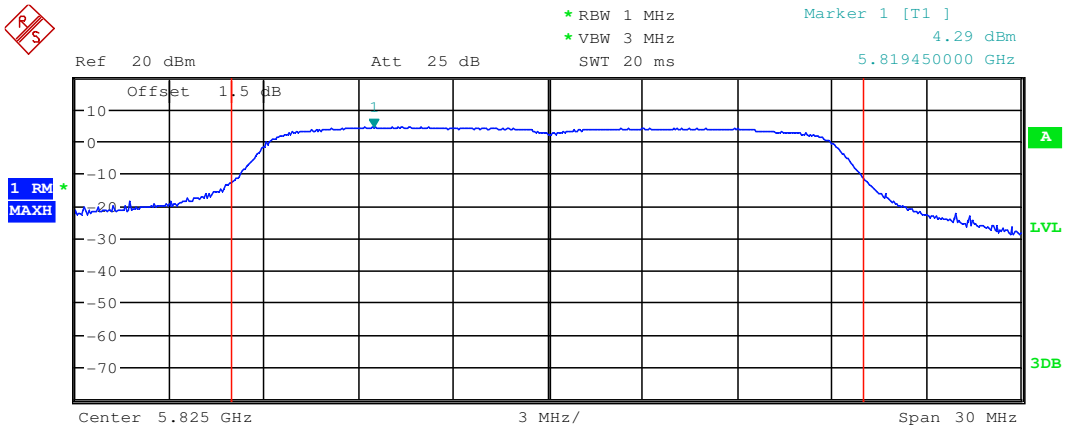
Test mode:	802.11n(HT20)	Frequency(MHz):	5745



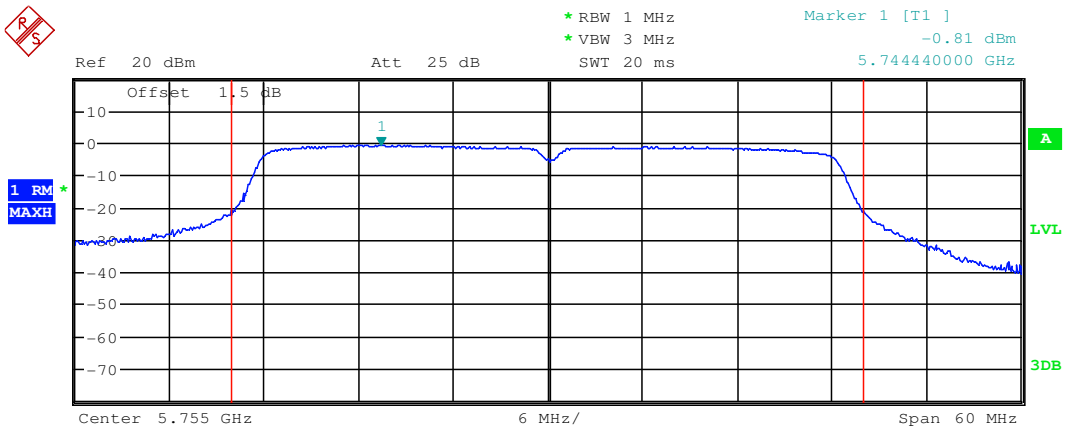
Test mode:	802.11n(HT20)	Frequency(MHz):	5785



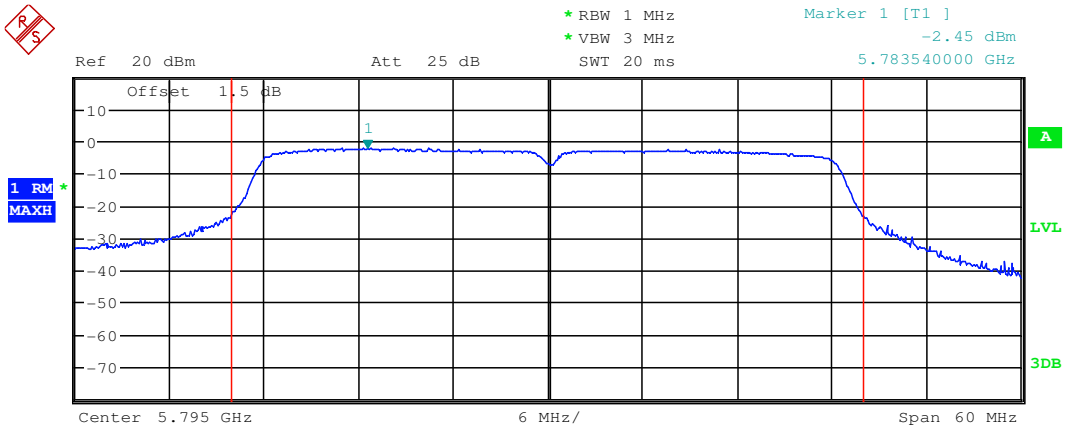
Test mode:	802.11n(HT20)	Frequency(MHz):	5825



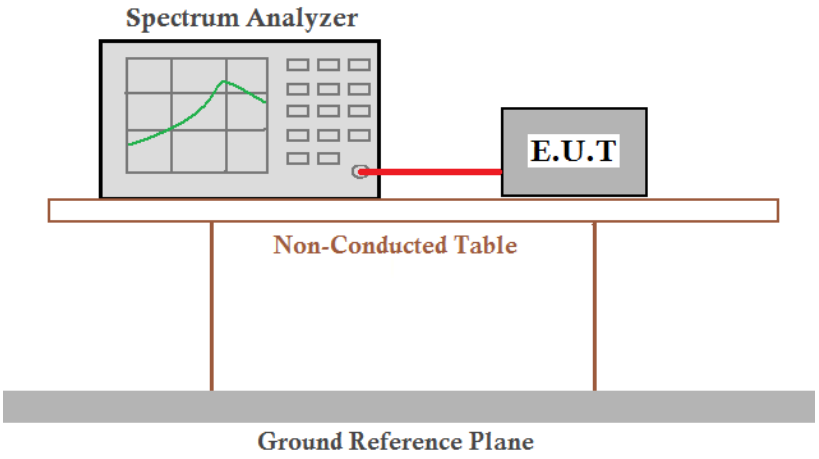
Test mode:	802.11n(HT40)	Frequency(MHz):	5755



Test mode:	802.11n(HT40)	Frequency(MHz):	5795



6.5 26dB Emission Bandwidth and 99% Occupied Bandwidth

Test Requirement:	47 CFR Part 15 Section 15.407(a)
Test Method:	ANSI C63.10: 2013
Test Setup:	
Instruments Used:	Refer to section 5.10 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCSO of rate is the worst case of 802.11n(HT20); MCSO of rate is the worst case of 802.11n(HT40); Only the worst case is recorded in the report.
Limit:	No restriction limits
Test Results:	Pass

Measurement Data of band I (5150-5250MHz)

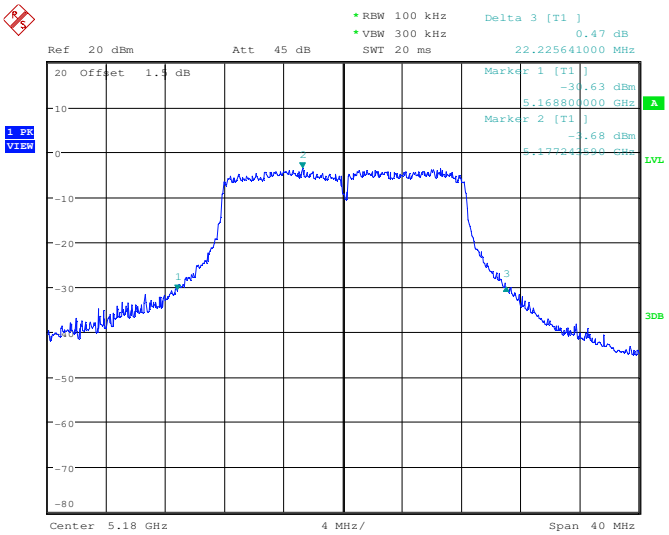
802.11a mode		
Test channel	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
36	22.23	16.50
40	22.03	16.53
48	22.81	16.53
802.11n(HT20) mode		
Test channel	26dB Occupy Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
36	22.74	17.64
40	23.14	17.67
48	23.51	17.61
802.11n(HT40) mode		
Test channel	26dB Occupy Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
38	44.36	36.24
46	43.55	36.18

Measurement Data of band IV (5725-5850MHz)

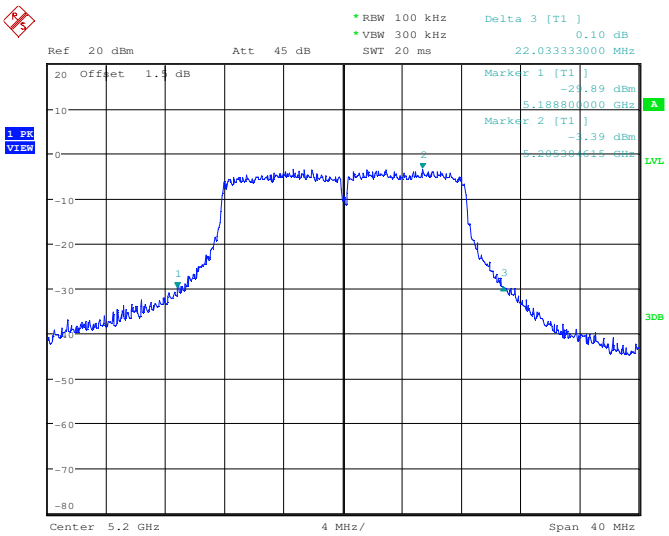
802.11a mode		
Test channel	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
149	27.00	16.56
157	27.37	16.59
165	28.91	16.56
802.11n(HT20) mode		
Test channel	26dB Occupy Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
149	23.97	17.70
157	24.47	17.67
165	26.03	17.73
802.11n(HT40) mode		
Test channel	26dB Occupy Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
151	43.76	36.18
159	45.63	36.24

26dB Emission Bandwidth
Test plot as follows:
Band I:

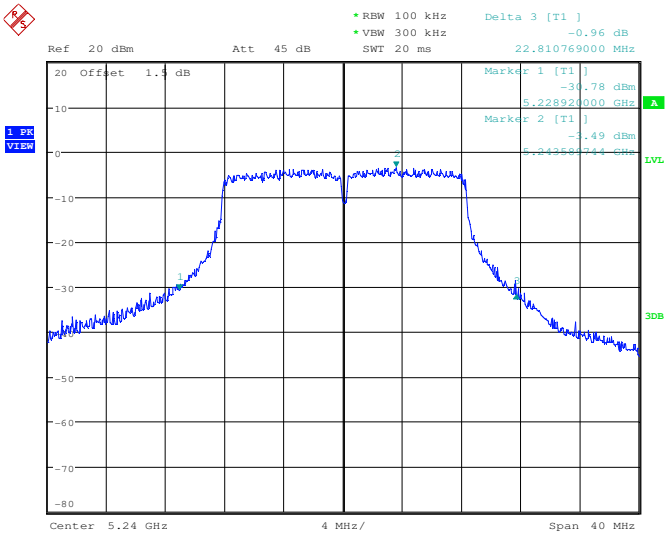
Test mode:	802.11a	Frequency(MHz):	5180



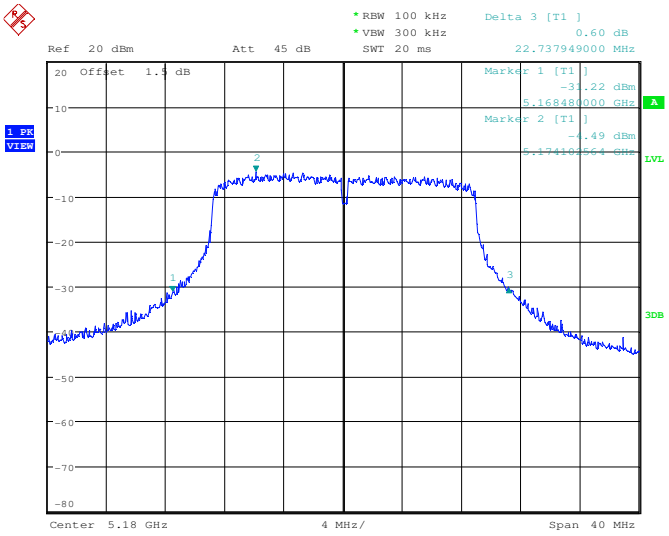
Test mode:	802.11a	Frequency(MHz):	5200



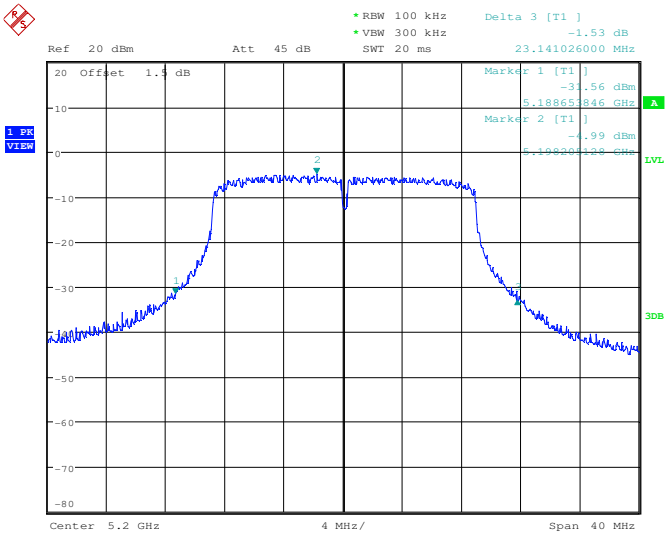
Test mode:	802.11a	Frequency(MHz):	5240



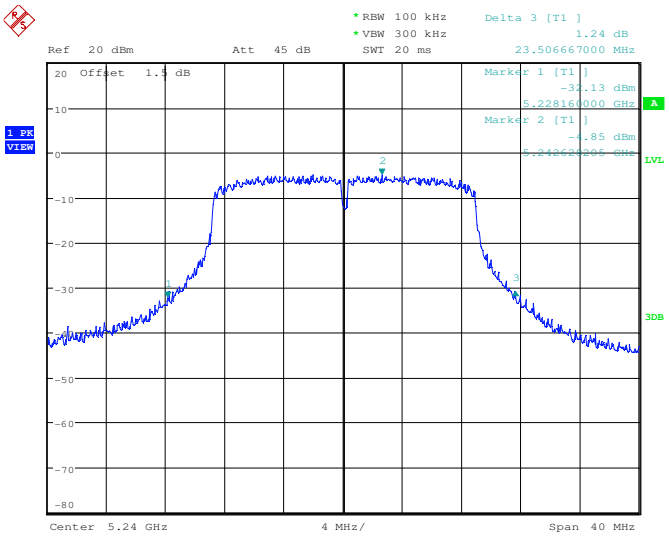
Test mode:	802.11n(HT20)	Frequency(MHz):	5180



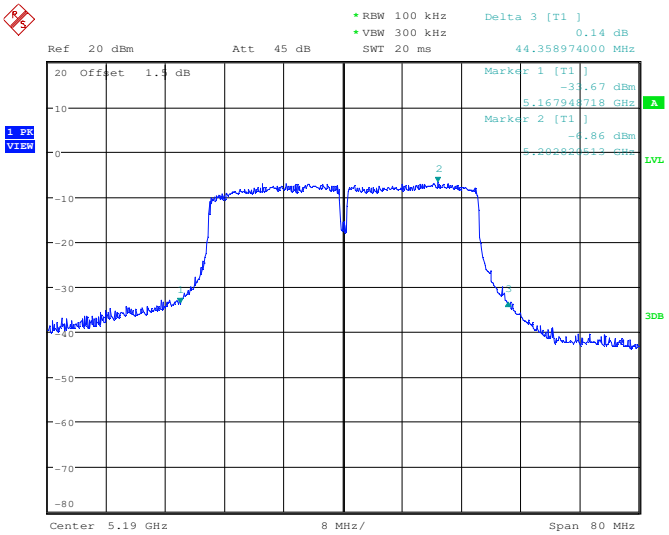
Test mode:	802.11n(HT20)	Frequency(MHz):	5200



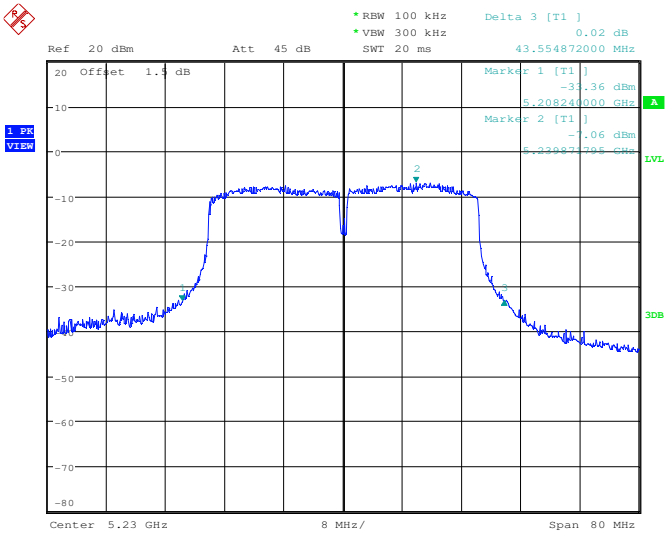
Test mode:	802.11n(HT20)	Frequency(MHz):	5240



Test mode:	802.11n(HT40)	Frequency(MHz):	5190

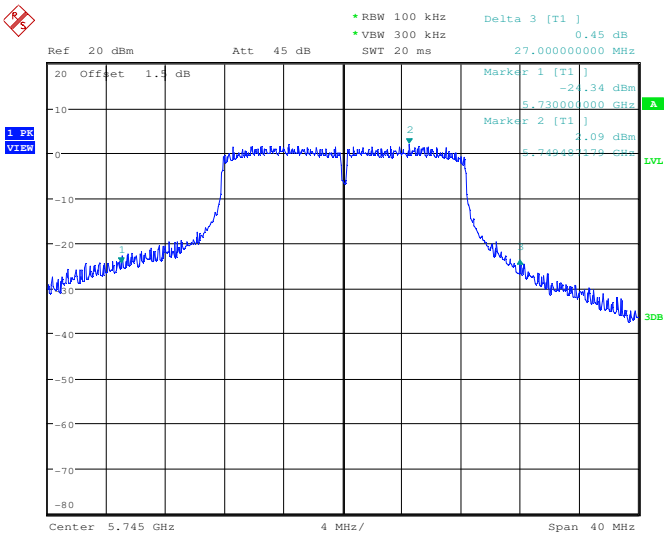


Test mode:	802.11n(HT40)	Frequency(MHz):	5230

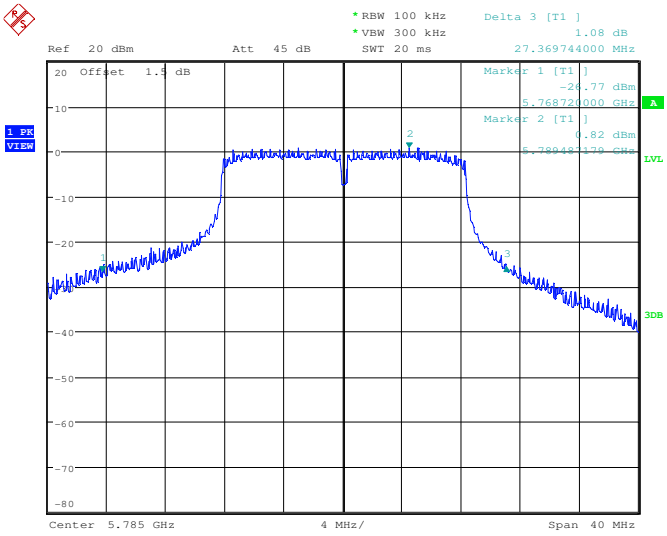


Band IV:

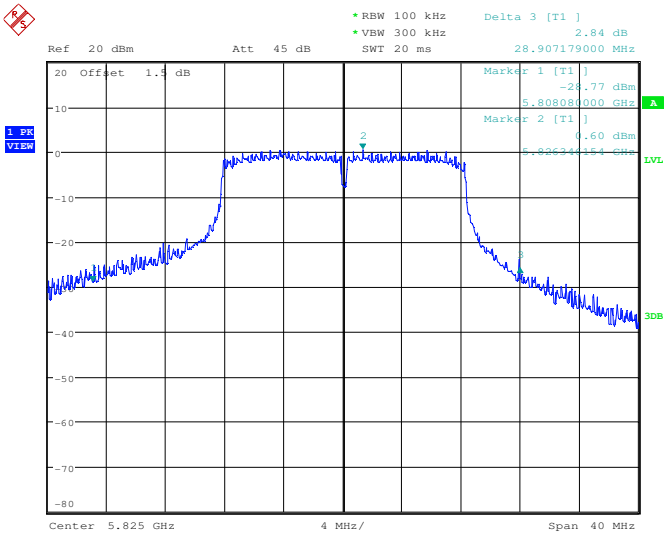
Test mode:	802.11a	Frequency(MHz):	5745



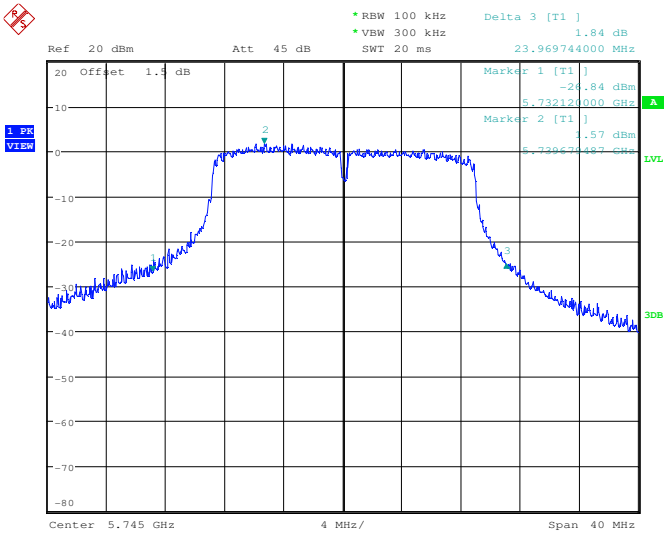
Test mode:	802.11a	Frequency(MHz):	5785



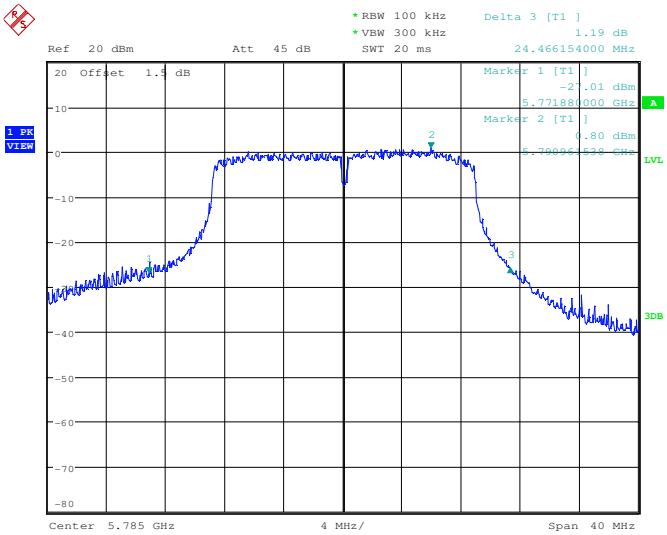
Test mode:	802.11a	Frequency(MHz):	5825



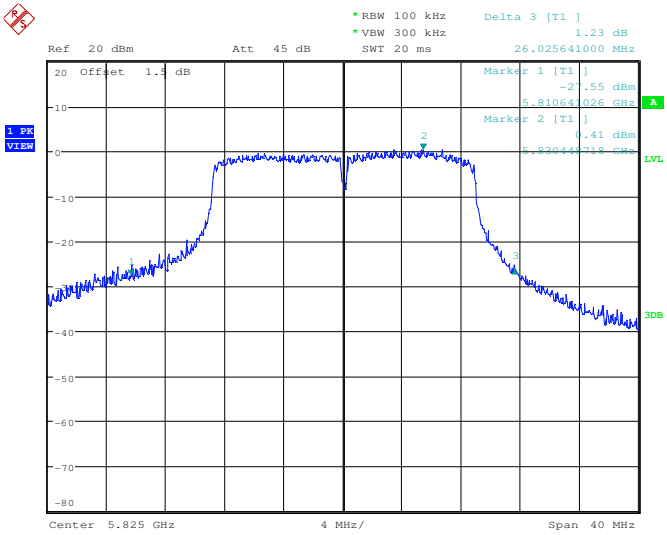
Test mode:	802.11n(HT20)	Frequency(MHz):	5745



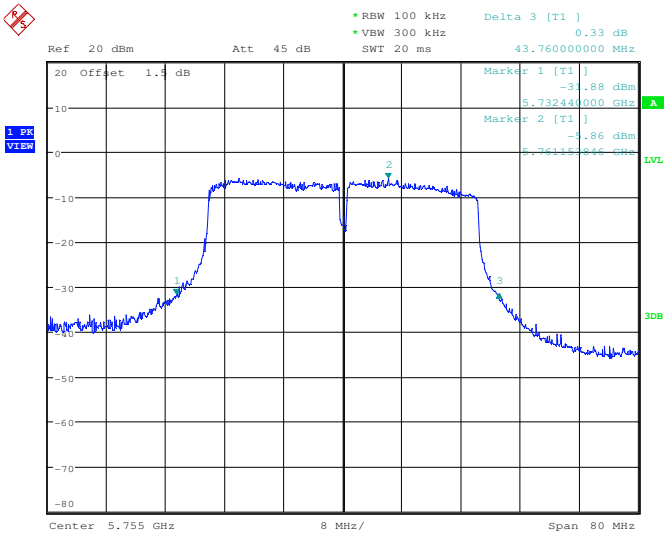
Test mode:	802.11n(HT20)	Frequency(MHz):	5785



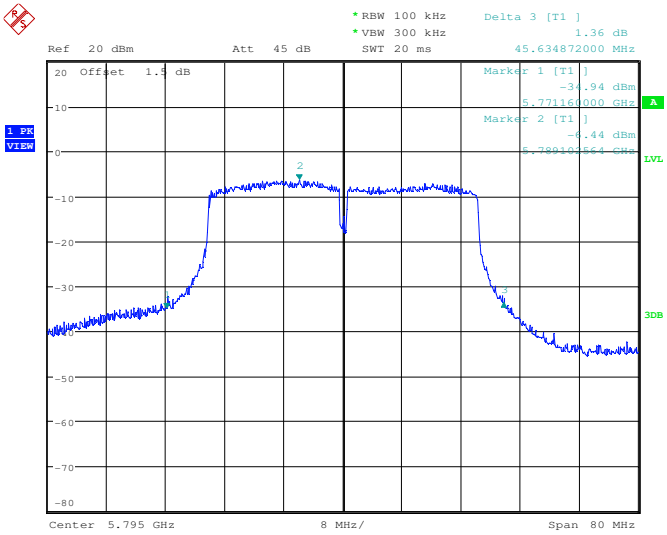
Test mode:	802.11n(HT20)	Frequency(MHz):	5825



Test mode:	802.11n(HT40)	Frequency(MHz):	5755



Test mode:	802.11n(HT40)	Frequency(MHz):	5795

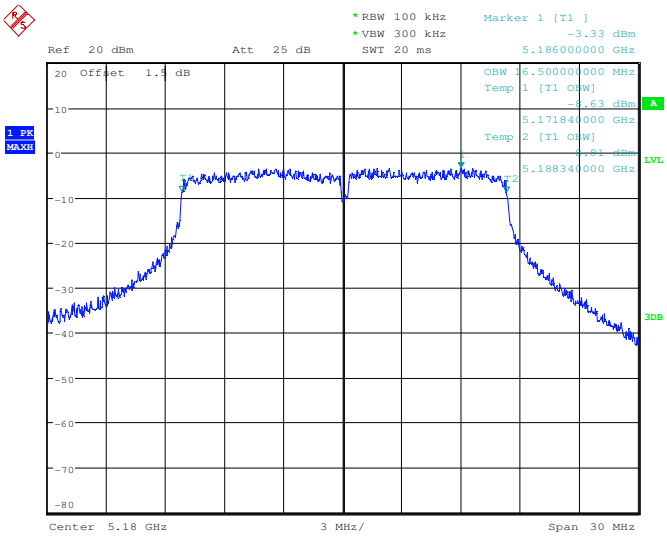


99% occupied bandwidth

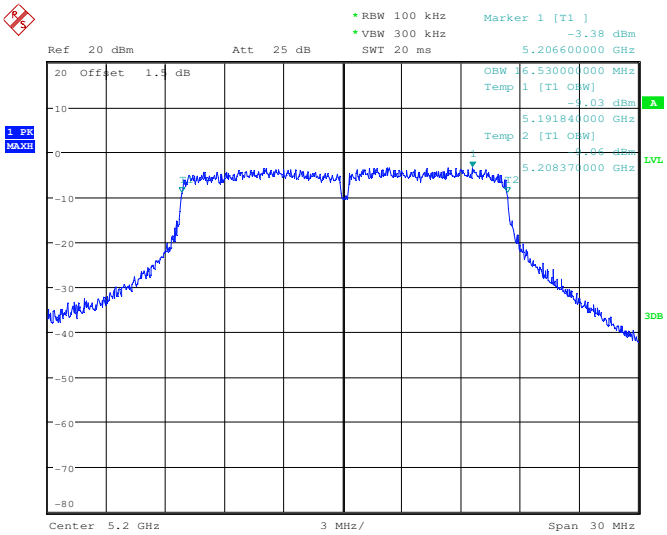
Test plot as follows:

Band I:

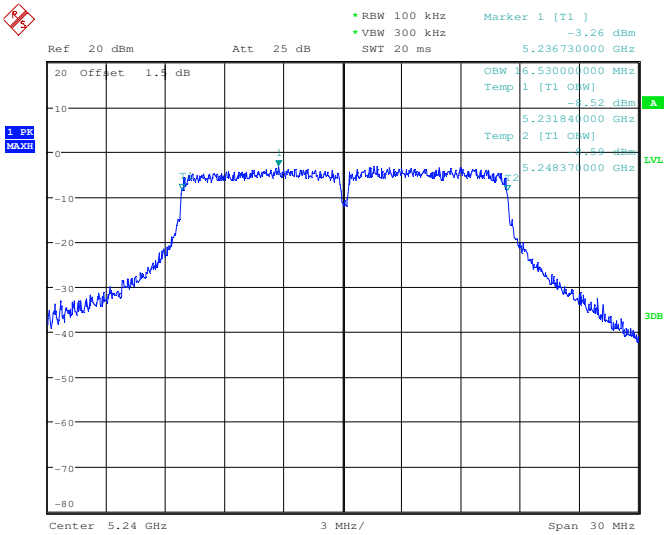
Test mode:	802.11a	Frequency(MHz):	5180



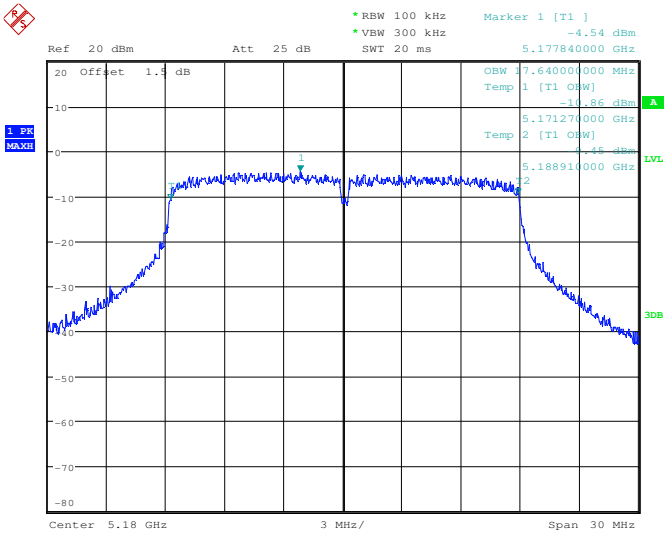
Test mode:	802.11a	Frequency(MHz):	5200



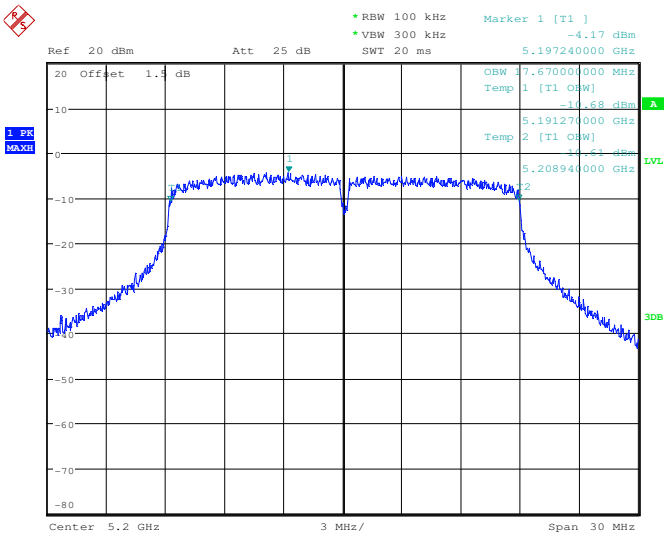
Test mode:	802.11a	Frequency(MHz):	5240



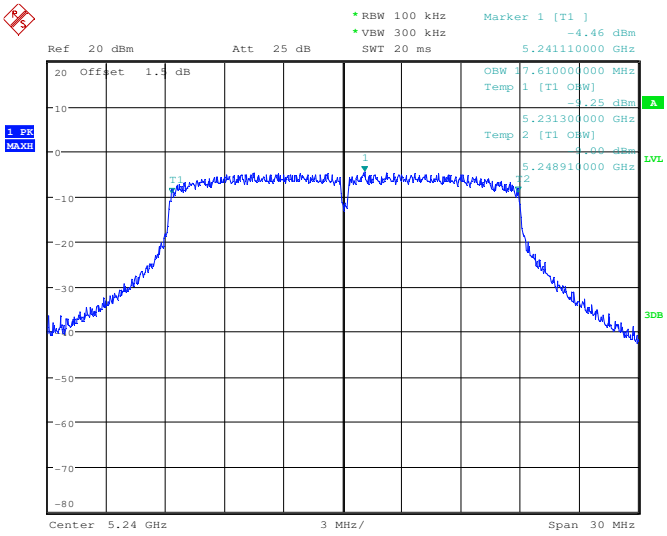
Test mode:	802.11n(HT20)	Frequency(MHz):	5180



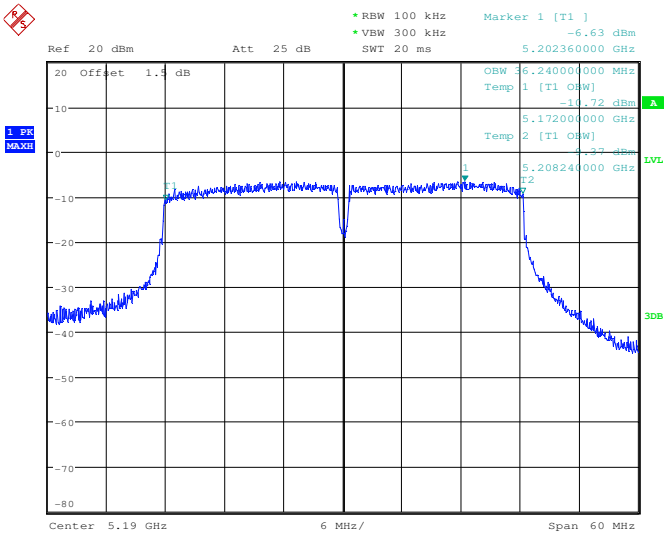
Test mode:	802.11n(HT20)	Frequency(MHz):	5200



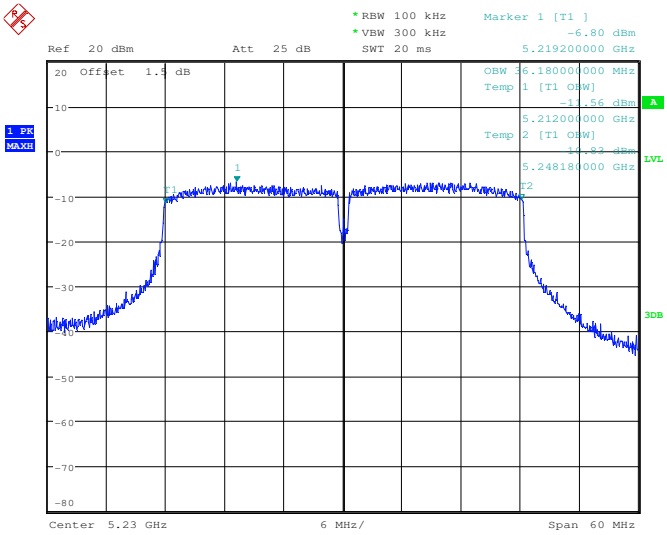
Test mode:	802.11n(HT20)	Frequency(MHz):	5240



Test mode:	802.11n(HT40)	Frequency(MHz):	5190

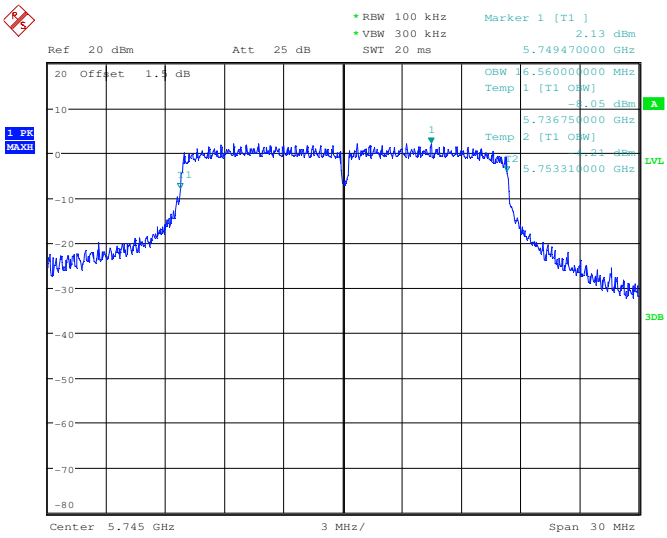


Test mode:	802.11n(HT40)	Frequency(MHz):	5230

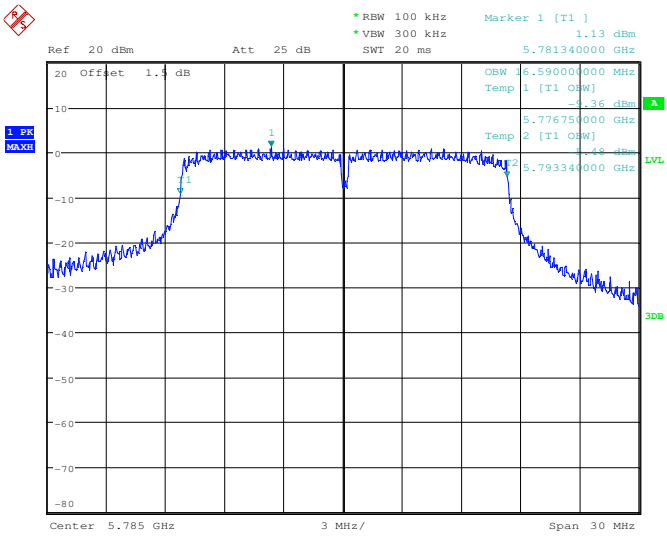


Band VI:

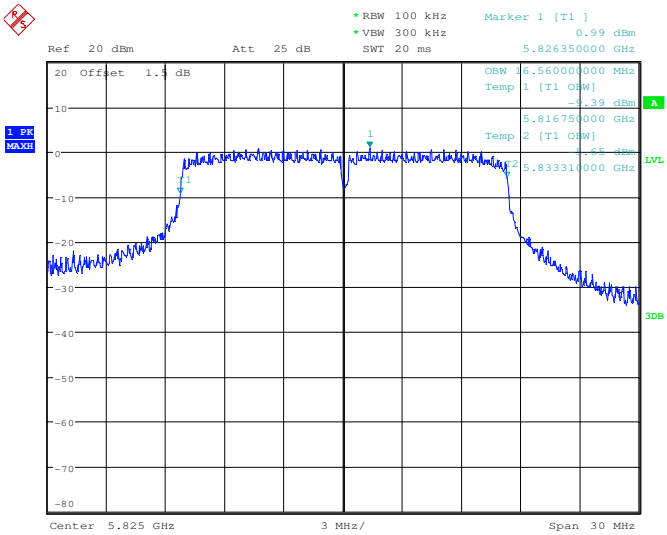
Test mode:	802.11a	Frequency(MHz):	5745



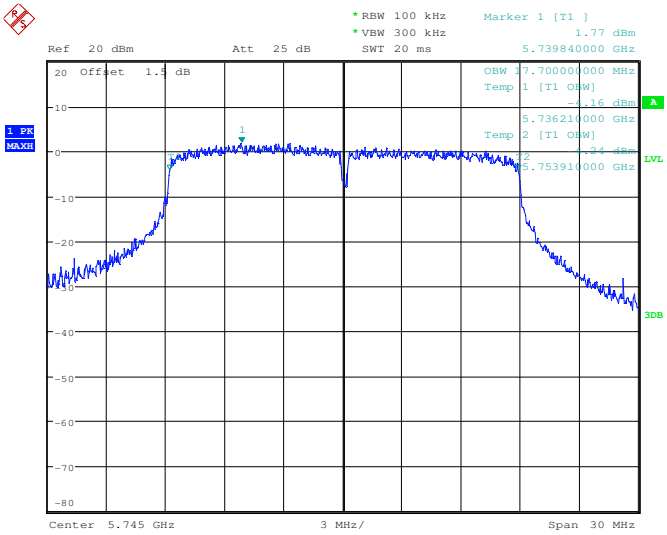
Test mode:	802.11a	Frequency(MHz):	5785



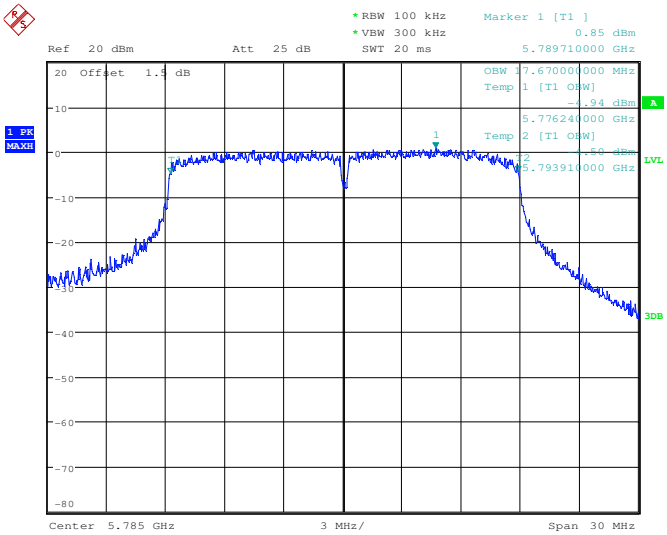
Test mode:	802.11a	Frequency(MHz):	5825



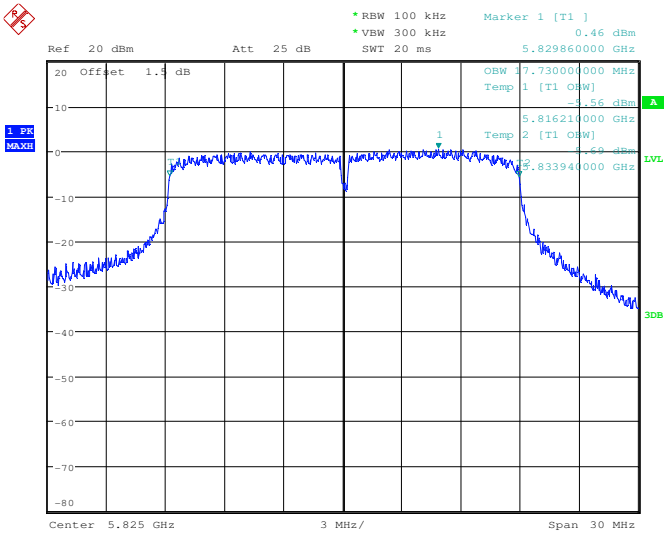
Test mode:	802.11n(HT20)	Frequency(MHz):	5745



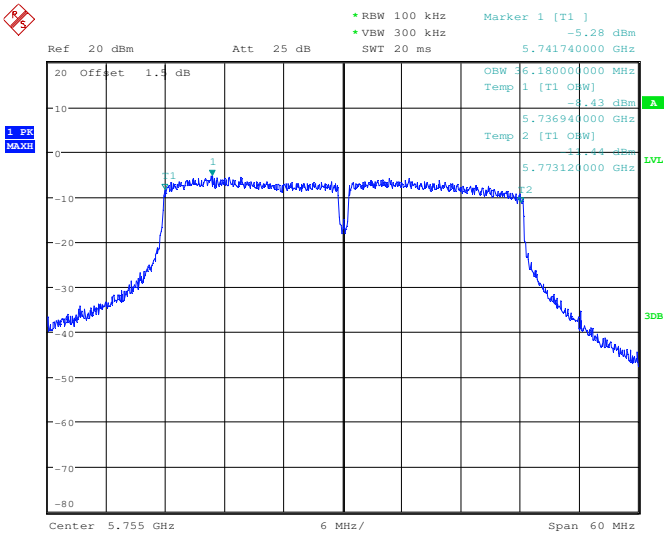
Test mode:	802.11n(HT20)	Frequency(MHz):	5785



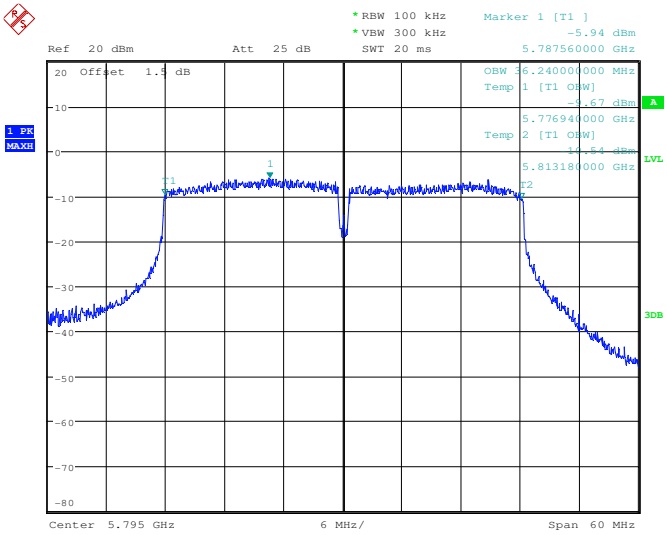
Test mode:	802.11n(HT20)	Frequency(MHz):	5825



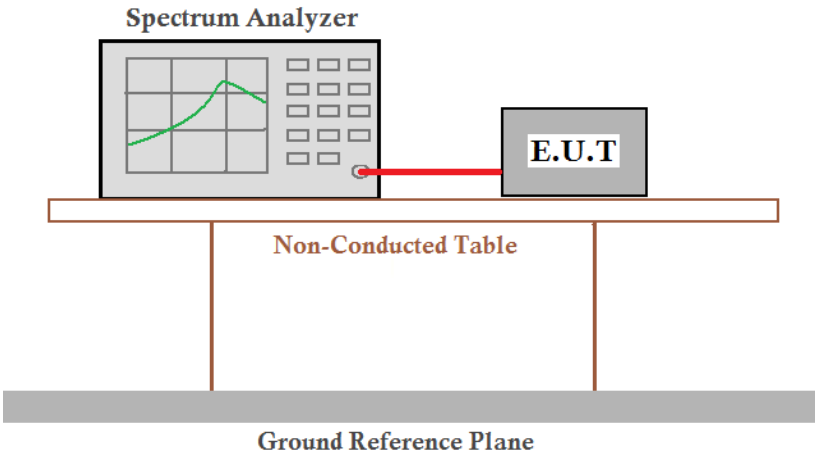
Test mode:	802.11n(HT40)	Frequency(MHz):	5755



Test mode:	802.11n(HT40)	Frequency(MHz):	5795



6.6 6dB Emission Bandwidth

Test Requirement:	47 CFR Part 15 Section 15.407(e)	
Test Method:	ANSI C63.10: 2013	
Test Setup:		
Instruments Used:	Refer to section 5.10 for details	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates	
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCSO of rate is the worst case of 802.11n(HT20); MCSO of rate is the worst case of 802.11n(HT40); Only the worst case is recorded in the report.	
Limit:	Frequency Band	Limit
	5725-5850MHz	At lease 500kHz
Test Results:	Pass	

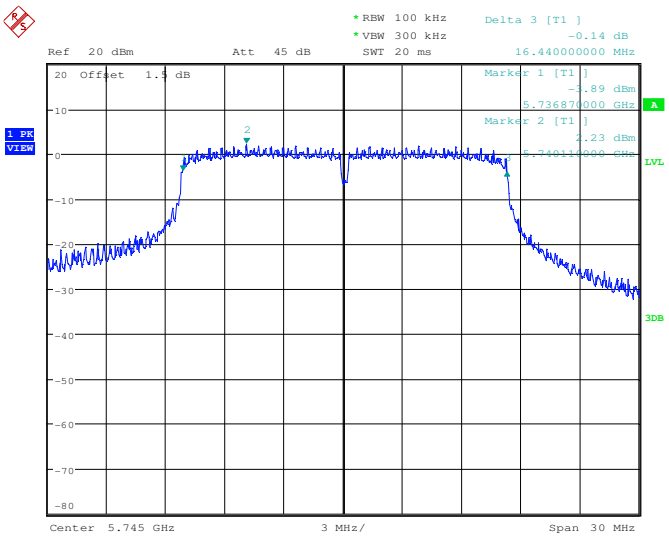
Measurement Data of band IV(5725-5850MHz)

802.11a mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
149	16.44	≥500	Pass
157	16.47	≥500	Pass
165	16.44	≥500	Pass
802.11n(HT20) mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
149	17.76	≥500	Pass
157	17.70	≥500	Pass
165	17.76	≥500	Pass
802.11n(HT40) mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
151	36.60	≥500	Pass
159	36.54	≥500	Pass

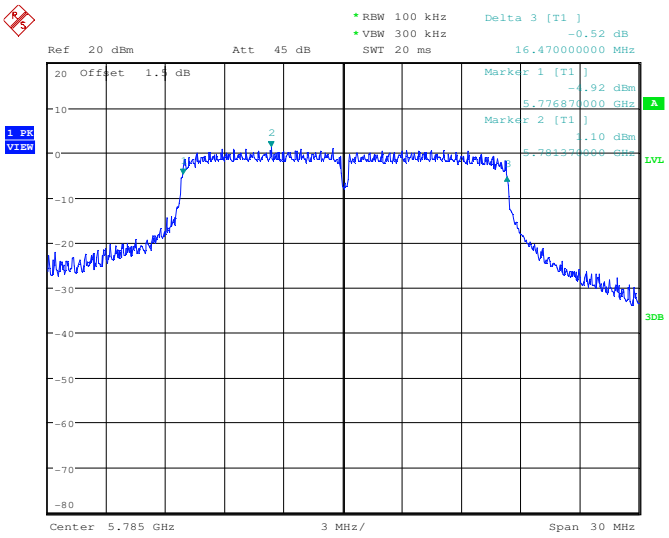
Test plot as follows:

Band IV:

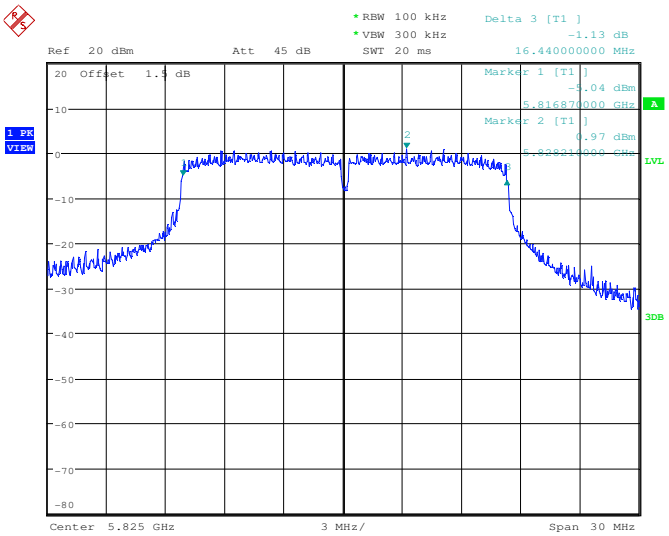
Test mode:	802.11a	Frequency(MHz):	5745



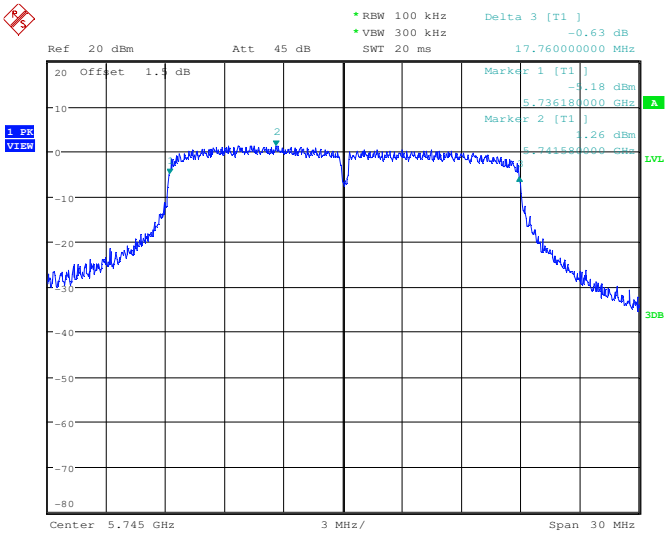
Test mode:	802.11a	Frequency(MHz):	5785



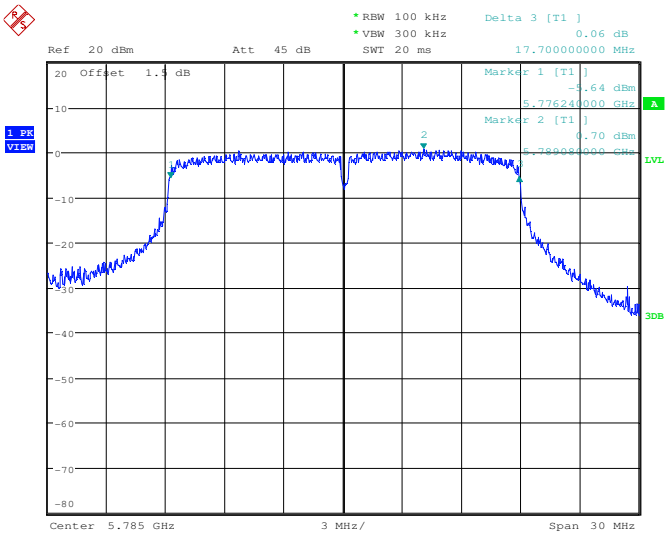
Test mode:	802.11a	Frequency(MHz):	5825



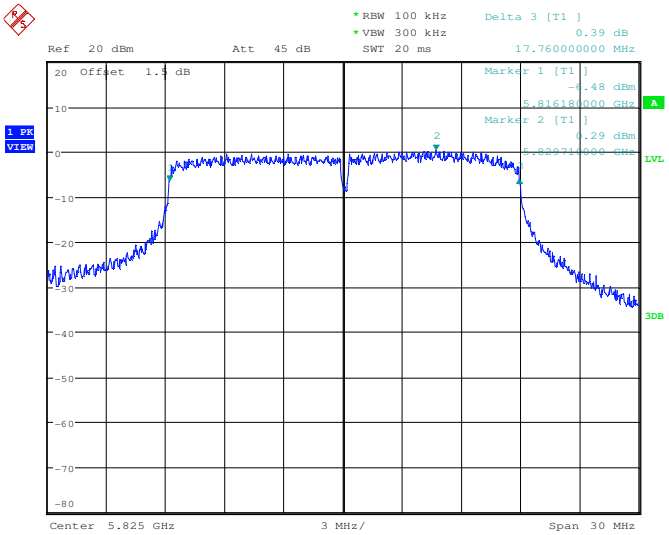
Test mode:	802.11n(HT20)	Frequency(MHz):	5745



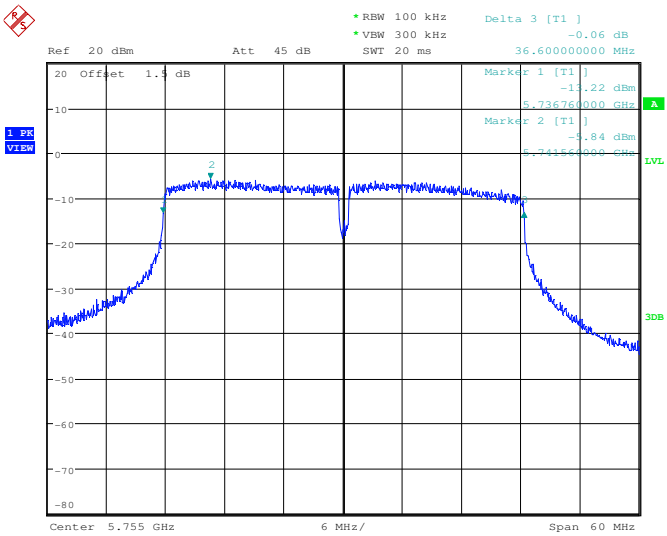
Test mode:	802.11n(HT20)	Frequency(MHz):	5785



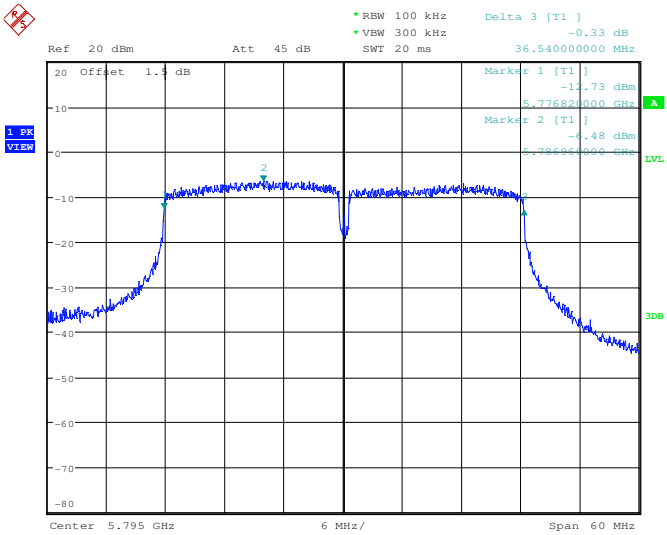
Test mode:	802.11n(HT20)	Frequency(MHz):	5825



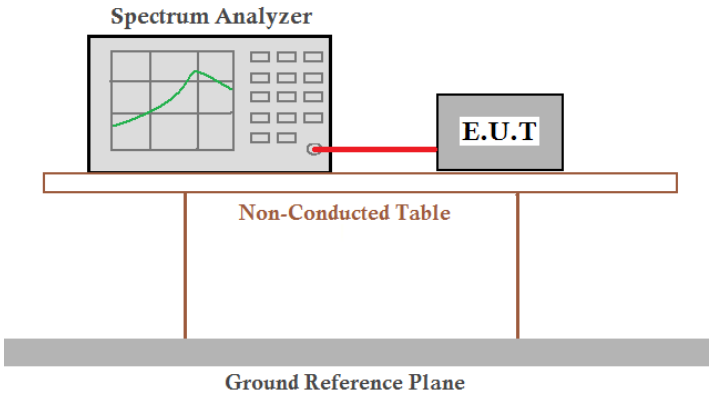
Test mode:	802.11n(HT40)	Frequency(MHz):	5755



Test mode:	802.11n(HT40)	Frequency(MHz):	5795



6.7 Power Spectral Density

Test Requirement:	47 CFR Part 15 Section 15.407(a)	
Test Method:	ANSI C63.10: 2013	
Test Setup:	 *Remark:* *Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.*	
Test Instruments:	Refer to section 5.10 for details	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates	
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCSO of rate is the worst case of 802.11n(HT20); MCSO of rate is the worst case of 802.11n(HT40) Only the worst case is recorded in the report.	
Limit:	Frequency Band	Limit
	5150-5250MHz	Antenna gain below 6dBi：17dBm (802.11 a) Antenna gain greater than 6dBi : The power spectral density less than 17dBm/1MHz - (antennas of directional gain-6) = 16.44dBm(802.11 n)
	5725-5850MHz	Antenna gain below 6dBi：30dBm (802.11 a) Antenna gain greater than 6dBi : The power spectral density less than 30dBm/500kHz - (antennas of directional gain-6) = 29.44dBm(802.11 n)
Test Results:	Pass	

Measurement Data of Band I (5150-5250MHz)

802.11a mode				
Test channel	Power Spectral Density (dBm)		Limit (dBm)	Result
	Antenna 1	Antenna 2		
36	0.24	-0.29	≤17/MHz	Pass
40	0.18	-0.02	≤17/MHz	Pass
48	0.45	-0.43	≤17/MHz	Pass

802.11n(HT20) mode					
Test channel	Power Spectral Density (dBm)			Limit (dBm)	Result
	Antenna 1	Antenna 2	Total		
36	-0.83	-0.31	2.45	≤16.44/MHz	Pass
40	-0.92	-0.92	2.09	≤16.44/MHz	Pass
48	-1.02	-1.06	1.97	≤16.44/MHz	Pass

802.11n(HT40) mode					
Test channel	Power Spectral Density (dBm)			Limit (dBm)	Result
	Antenna 1	Antenna 2	Total		
38	-2.91	-2.06	0.55	≤16.44/MHz	Pass
46	-3.28	-2.09	0.37	≤16.44/MHz	Pass

Measurement Data of Band IV (5725-5850MHz)

802.11a mode				
Test channel	Power Spectral Density (dBm)		Limit (dBm)	Result
	Antenna 1	Antenna 2		
149	3.32	3.04	≤30dBm/500KHz	Pass
157	2.33	2.47	≤30dBm/500KHz	Pass
165	1.77	1.87	≤30dBm/500KHz	Pass

802.11n(HT20) mode					
Test channel	Power Spectral Density (dBm)			Limit (dBm)	Result
	Antenna 1	Antenna 2	Total		
149	2.95	3.12	6.05	≤29.44dBm/500KHz	Pass
157	1.90	1.96	4.94	≤29.44dBm/500KHz	Pass
165	1.77	1.49	4.64	≤29.44dBm/500KHz	Pass

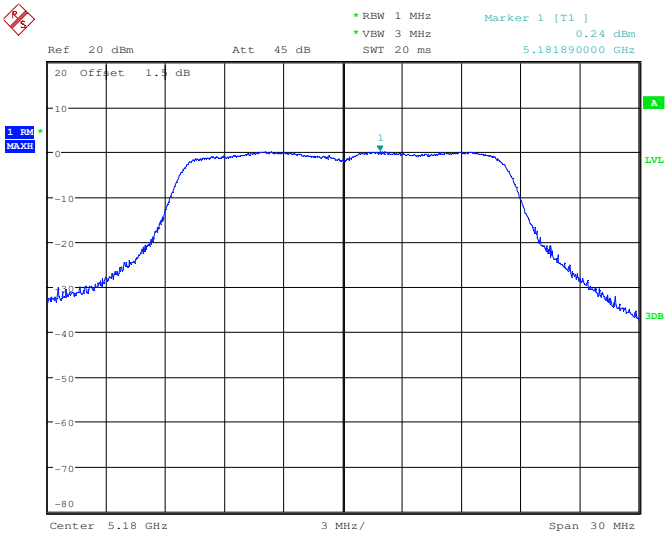
802.11n(HT40) mode					
Test channel	Power Spectral Density (dBm)			Limit (dBm)	Result
	Antenna 1	Antenna 2	Total		
151	-4.01	-4.29	-1.14	≤29.44dBm/500KHz	Pass
159	-4.76	-5.40	-2.06	≤29.44dBm/500KHz	Pass

Test plot as follows:

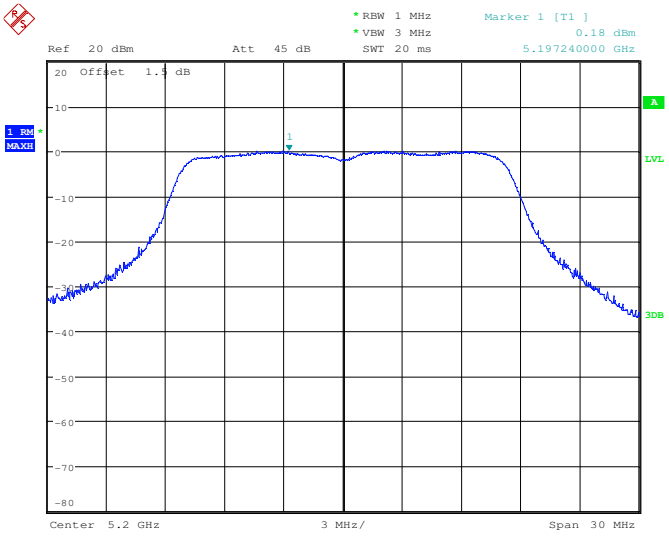
Band I

Antenna 1:

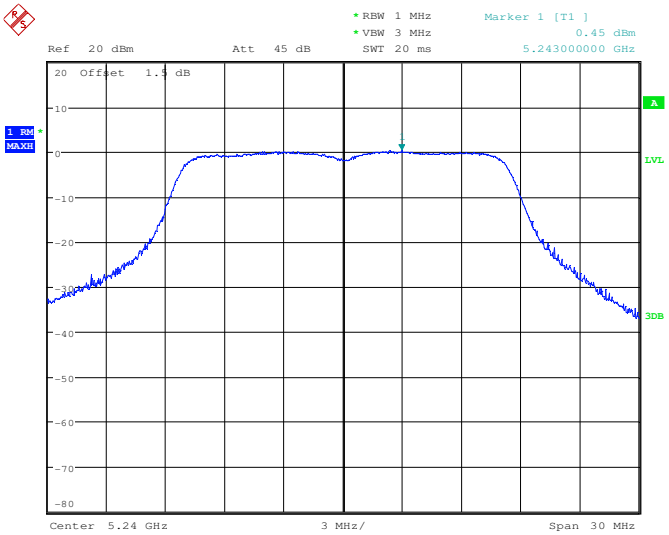
Test mode:	802.11a	Frequency(MHz):	5180



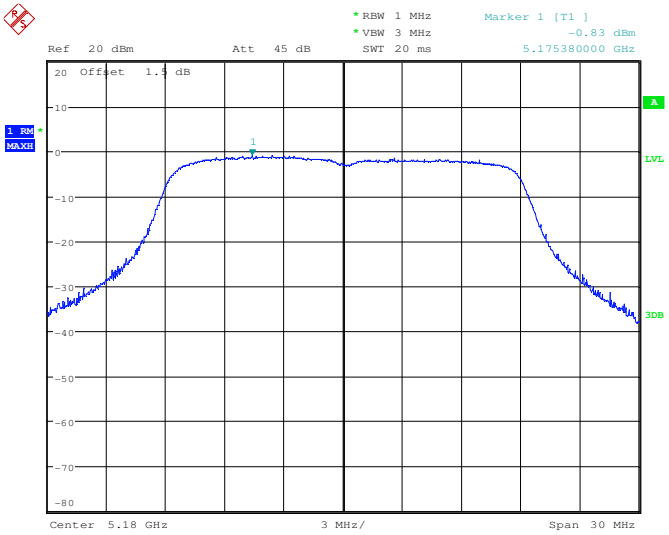
Test mode:	802.11a	Frequency(MHz):	5200



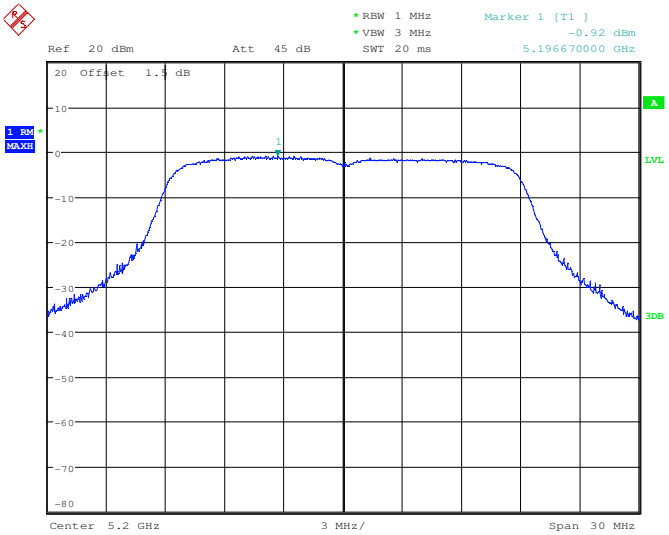
Test mode:	802.11a	Frequency(MHz):	5240



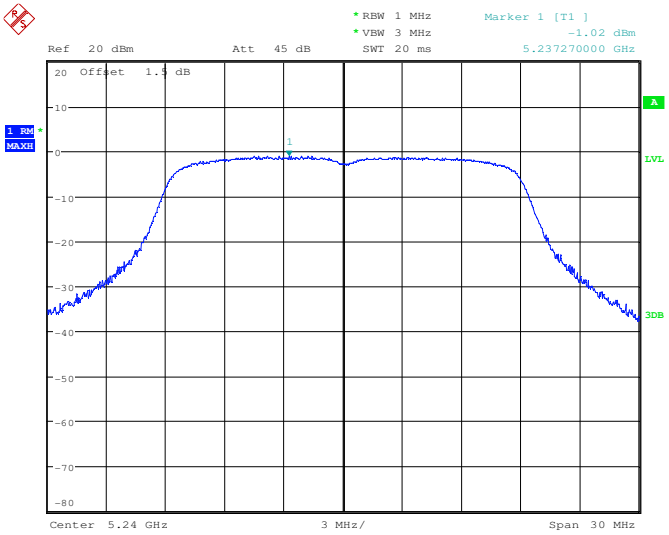
Test mode:	802.11n(HT20)	Frequency(MHz):	5180



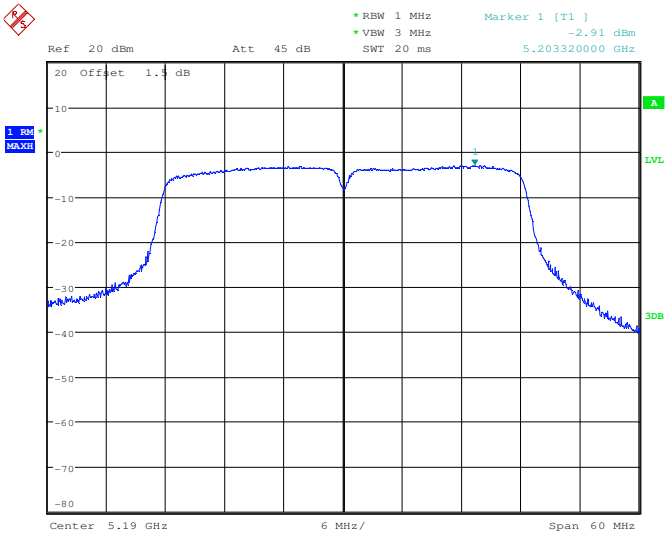
Test mode:	802.11n(HT20)	Frequency(MHz):	5200



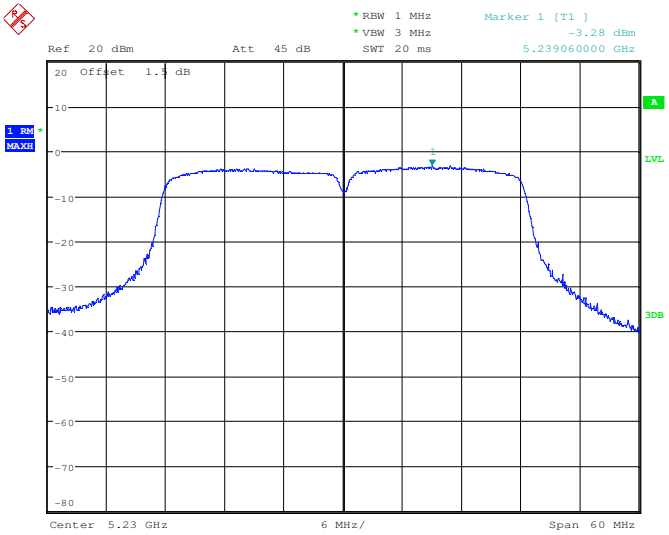
Test mode:	802.11n(HT20)	Frequency(MHz):	5240



Test mode:	802.11n(HT40)	Frequency(MHz):	5190

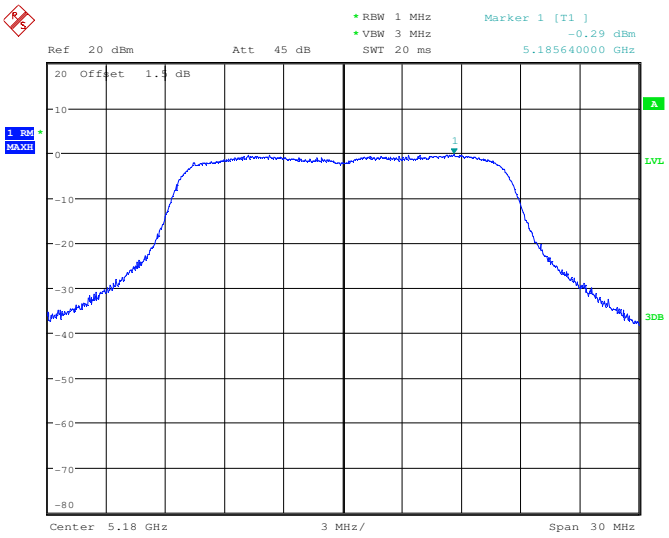


Test mode:	802.11n(HT40)	Frequency(MHz):	5230

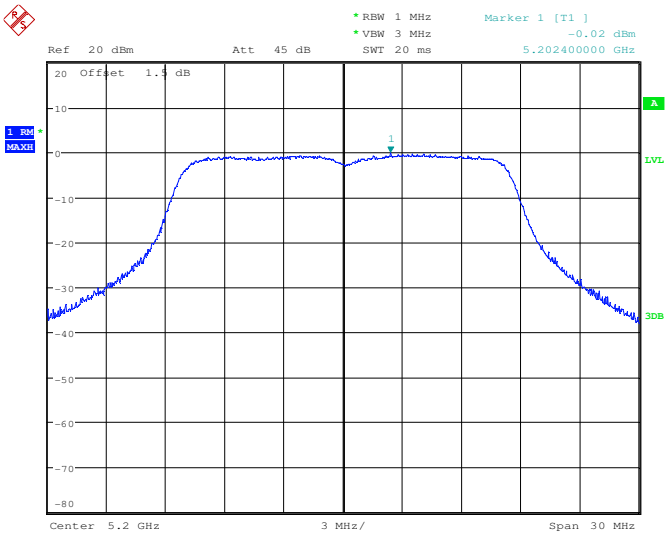


Antenna 2:

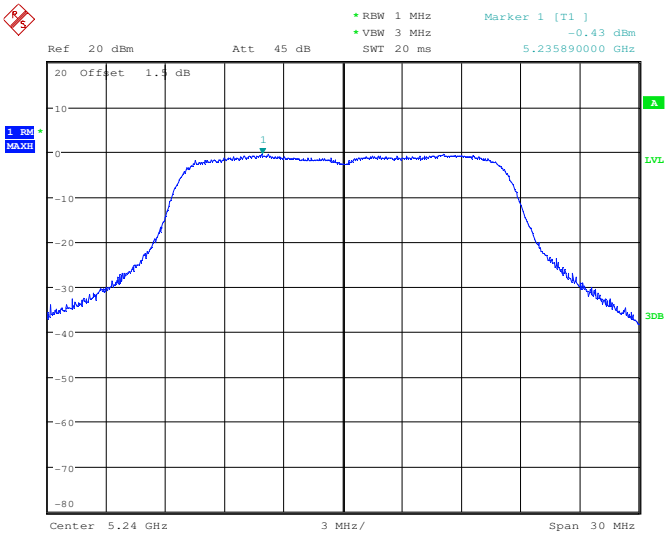
Test mode:	802.11a	Frequency(MHz):	5180



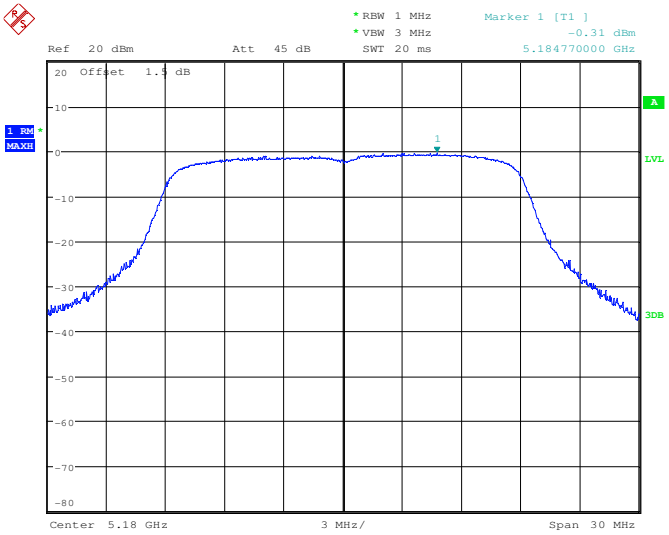
Test mode:	802.11a	Frequency(MHz):	5200



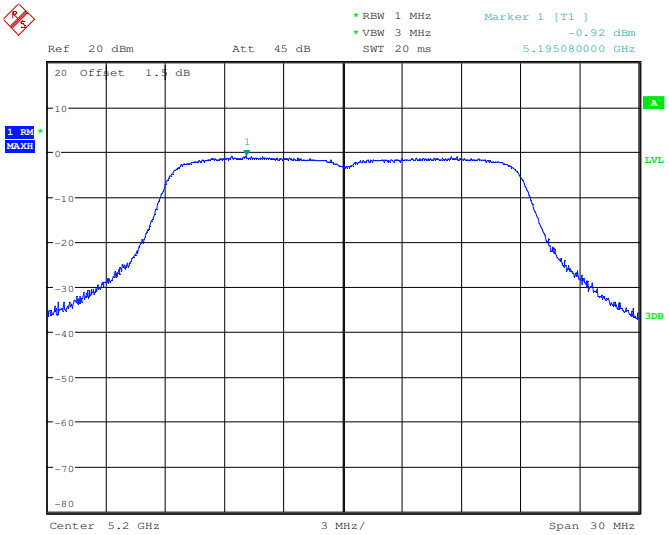
Test mode:	802.11a	Frequency(MHz):	5240



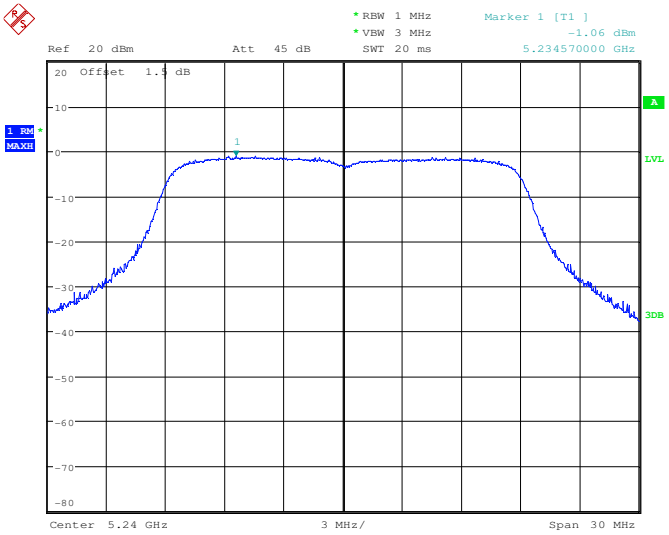
Test mode:	802.11n(HT20)	Frequency(MHz):	5180



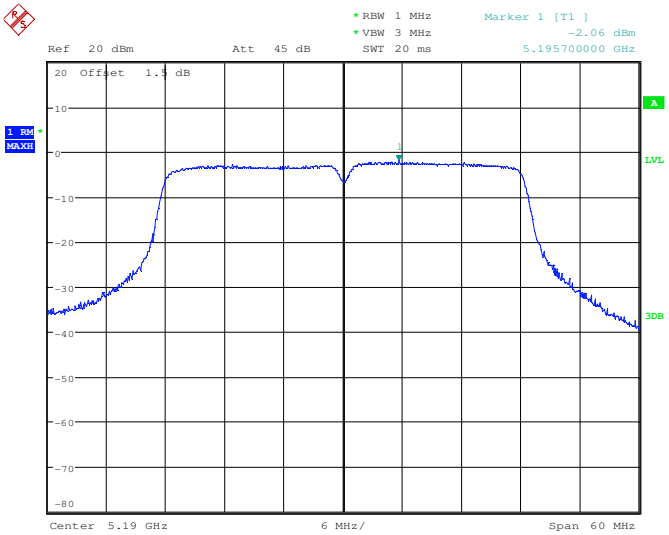
Test mode:	802.11n(HT20)	Frequency(MHz):	5200



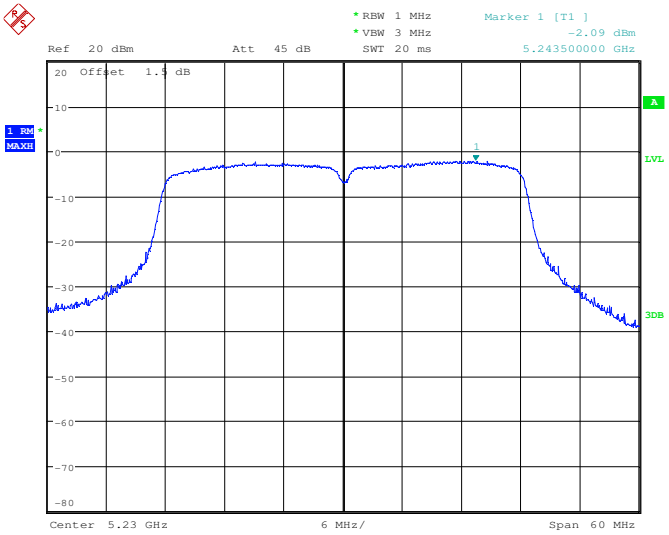
Test mode:	802.11n(HT20)	Frequency(MHz):	5240



Test mode:	802.11n(HT40)	Frequency(MHz):	5190



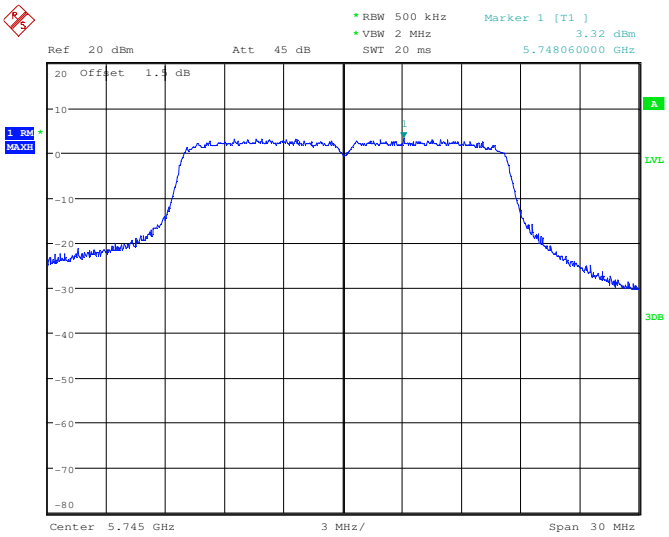
Test mode:	802.11n(HT40)	Frequency(MHz):	5230



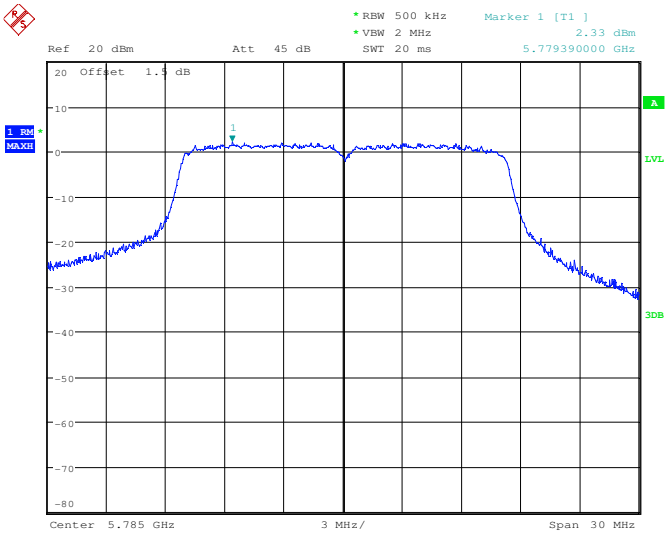
Band IV

Antenna 1:

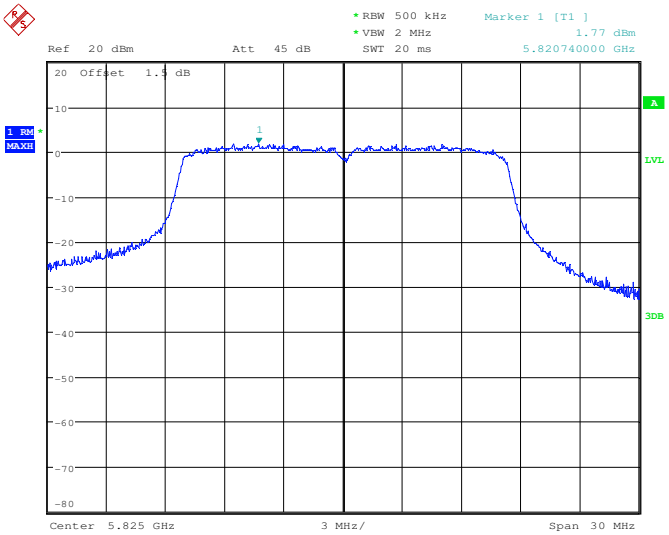
Test mode:	802.11a	Frequency(MHz):	5745



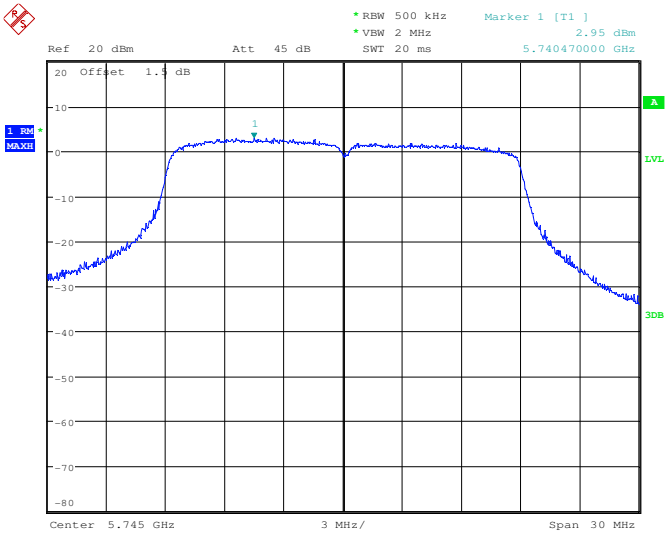
Test mode:	802.11a	Frequency(MHz):	5785



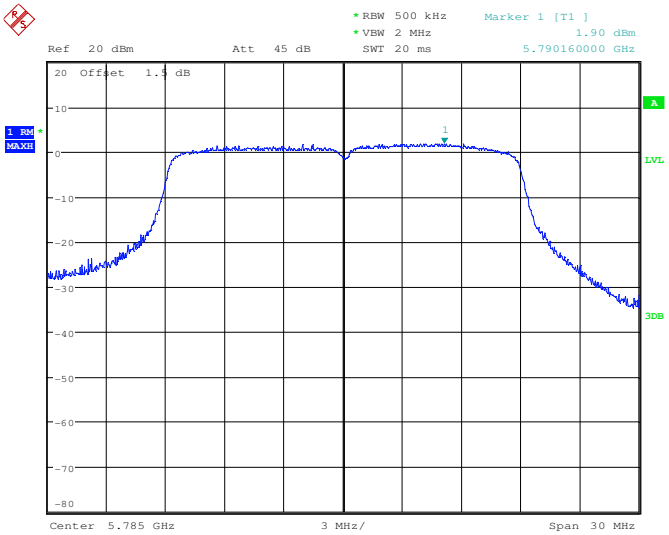
Test mode:	802.11a	Frequency(MHz):	5825



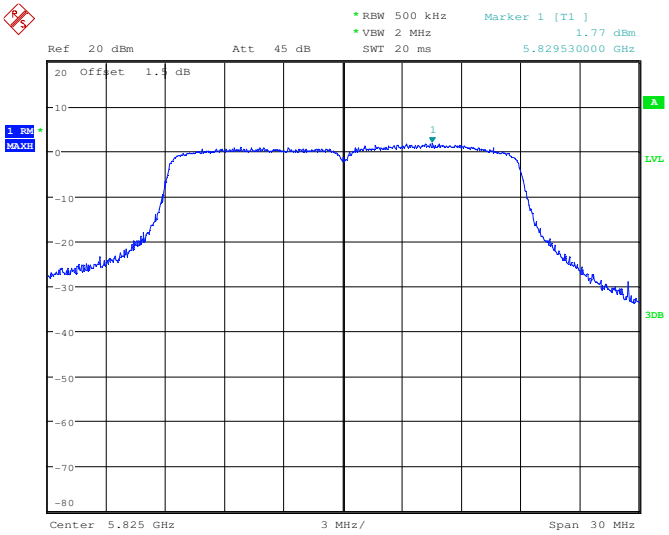
Test mode:	802.11n(HT20)	Frequency(MHz):	5745



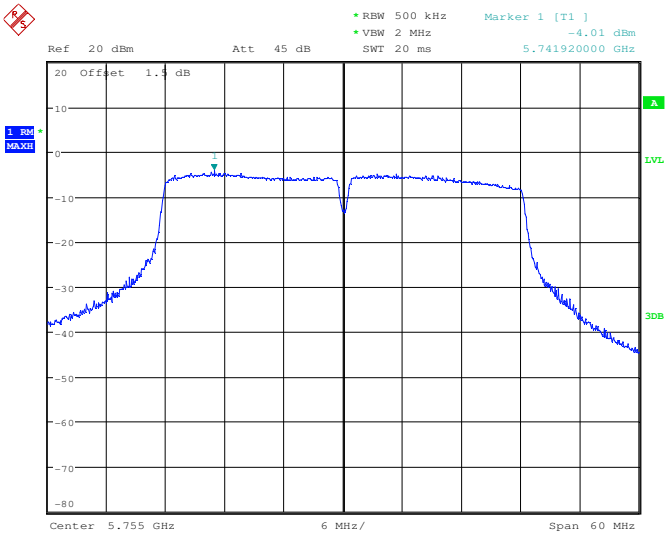
Test mode:	802.11n(HT20)	Frequency(MHz):	5785



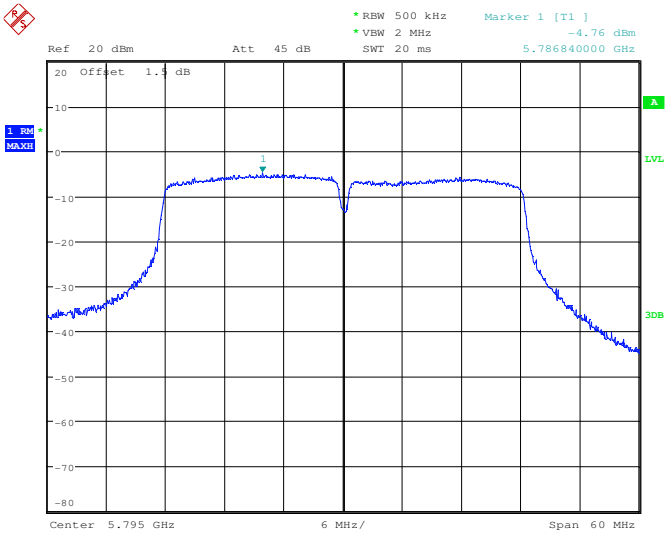
Test mode:	802.11n(HT20)	Frequency(MHz):	5825



Test mode:	802.11n(HT40)	Frequency(MHz):	5755

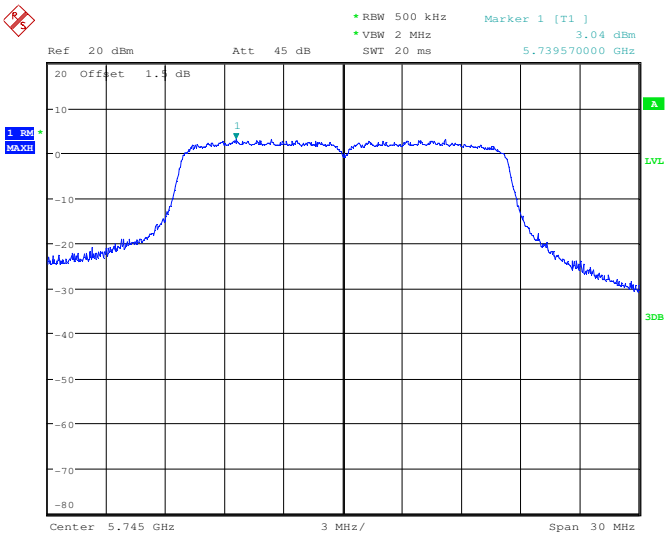


Test mode:	802.11n(HT40)	Frequency(MHz):	5795

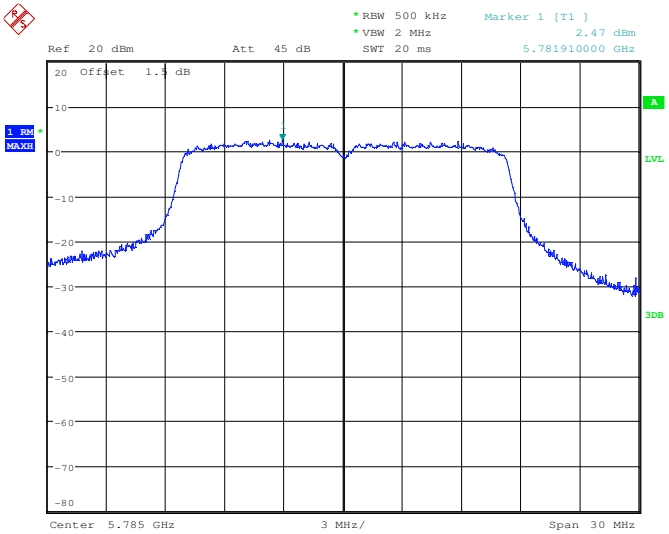


Antenna 2:

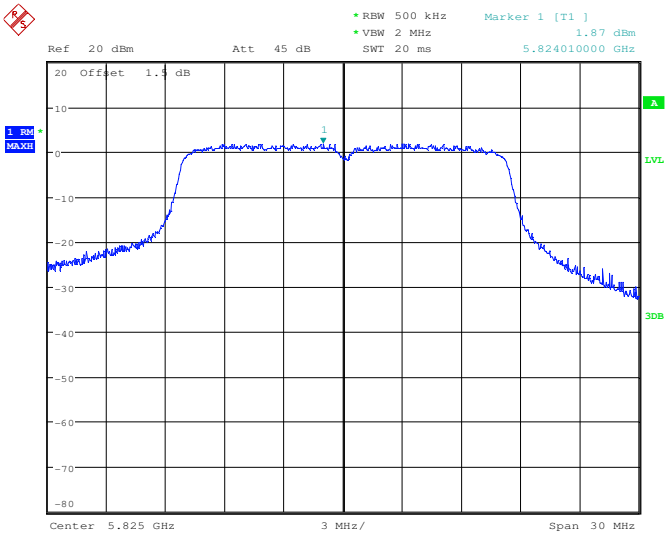
Test mode:	802.11a	Frequency(MHz):	5745



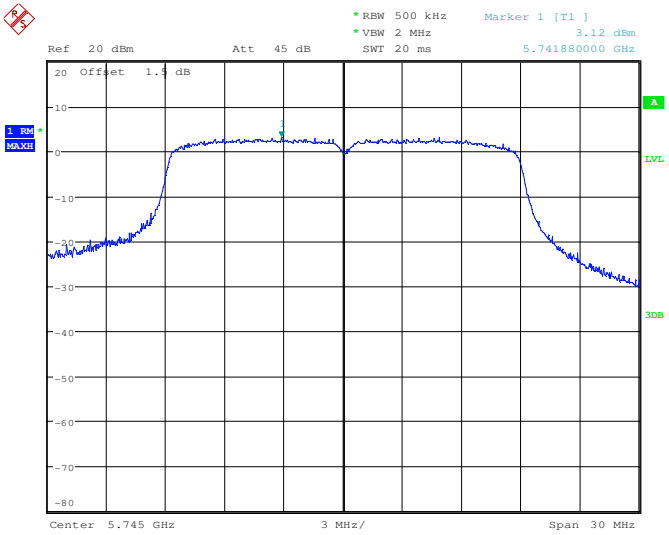
Test mode:	802.11a	Frequency(MHz):	5785



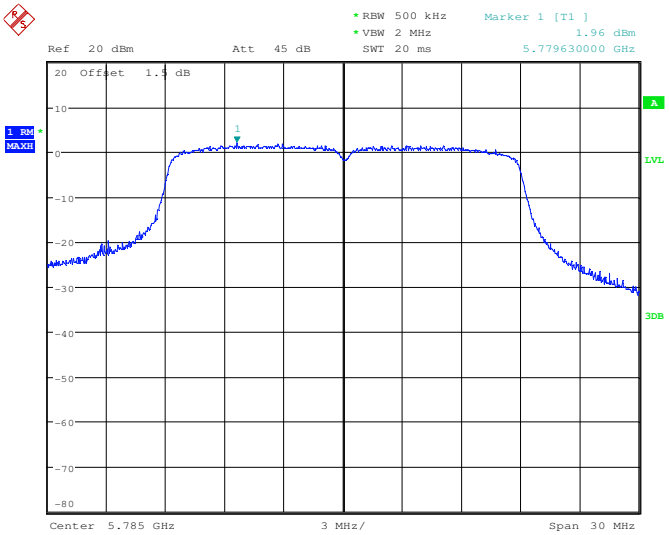
Test mode:	802.11a	Frequency(MHz):	5825



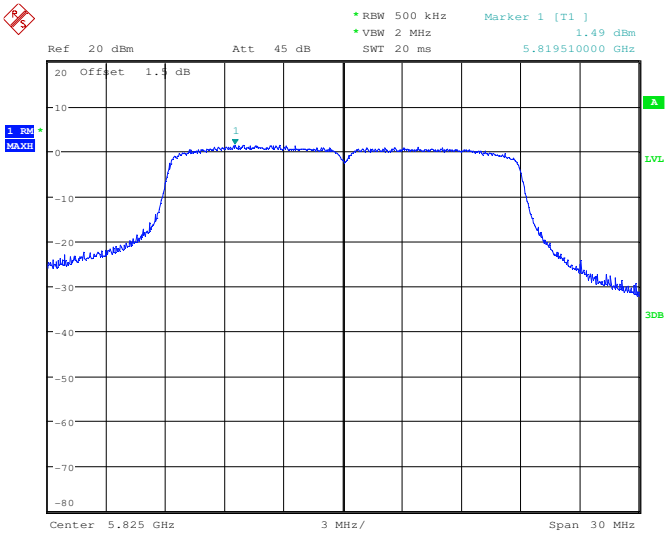
Test mode:	802.11n(HT20)	Frequency(MHz):	5745



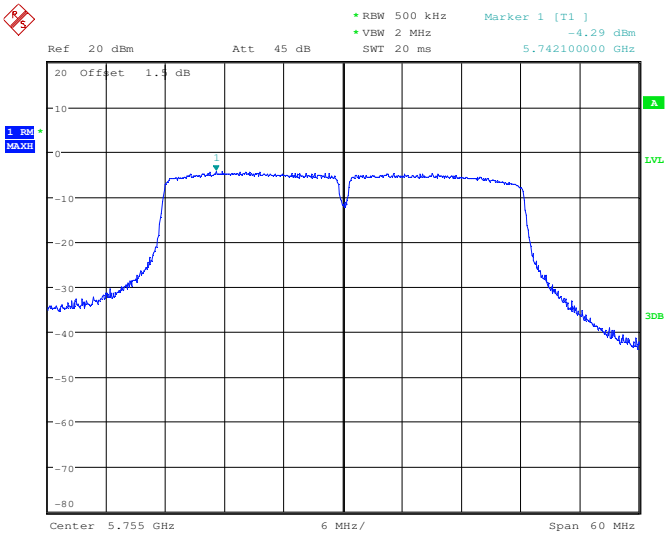
Test mode:	802.11n(HT20)	Frequency(MHz):	5785



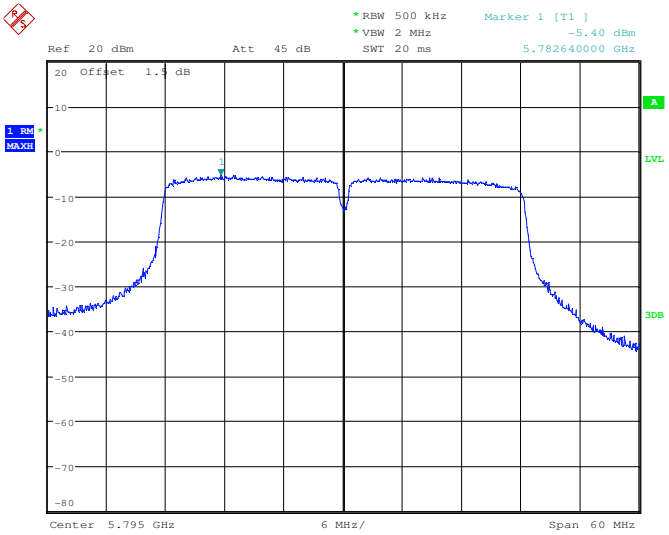
Test mode:	802.11n(HT20)	Frequency(MHz):	5825



Test mode:	802.11n(HT40)	Frequency(MHz):	5755



Test mode:	802.11n(HT40)	Frequency(MHz):	5795



6.8 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15 Section 15.407(b)
Test Method:	ANSI C63.10: 2013
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)
Test Setup:	

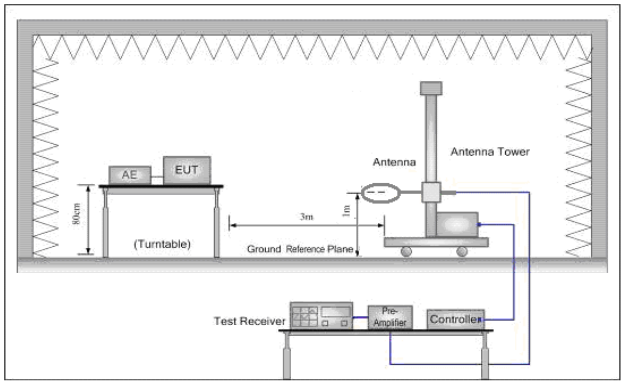


Figure 1. 30MHz to 1GHz

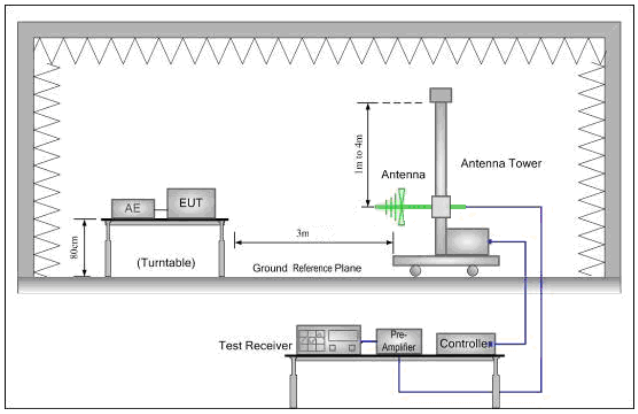


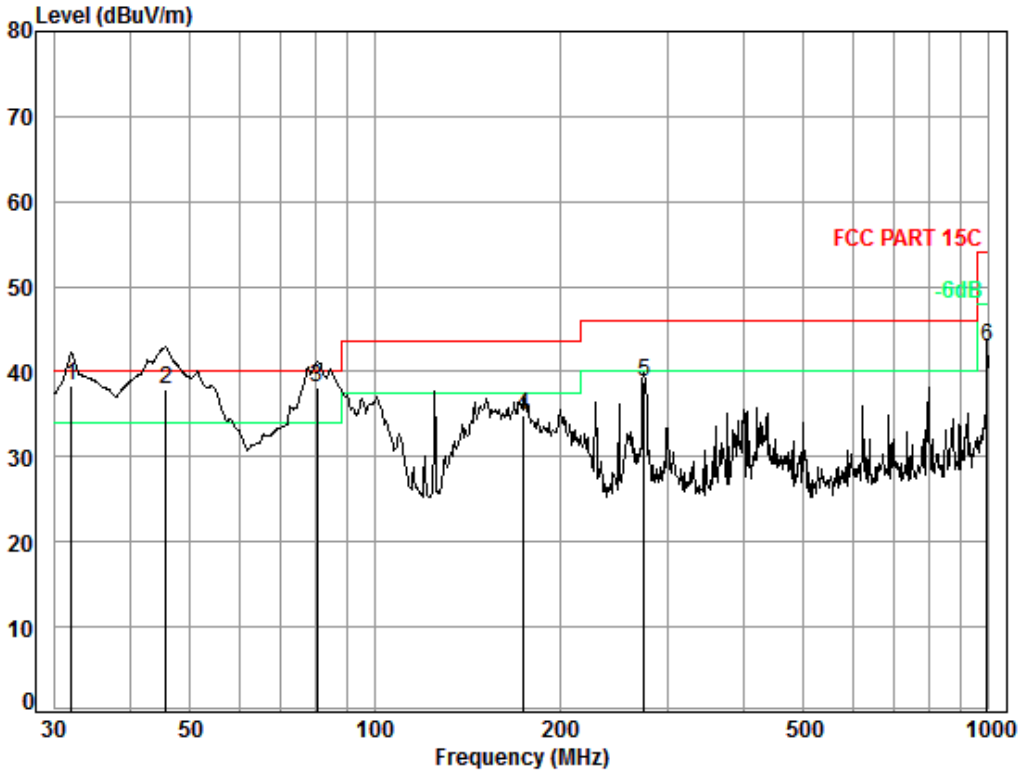
Figure 2. Above 1 GHz

Test Procedure:	a. For below 1GHz test, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. b. For above 1GHz test, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. c. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. g. Test the EUT in the outermost channels. h. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates.
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCSO of rate is the worst case of 802.11n(HT20); MCSO of rate is the worst case of 802.11n(HT40) For below 1GHz, through Pre-scan, find the 1Mbps of rate of 802.11a at lowest channel is the worst case.

	Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

6.8.1 Radiated emission below 1GHz

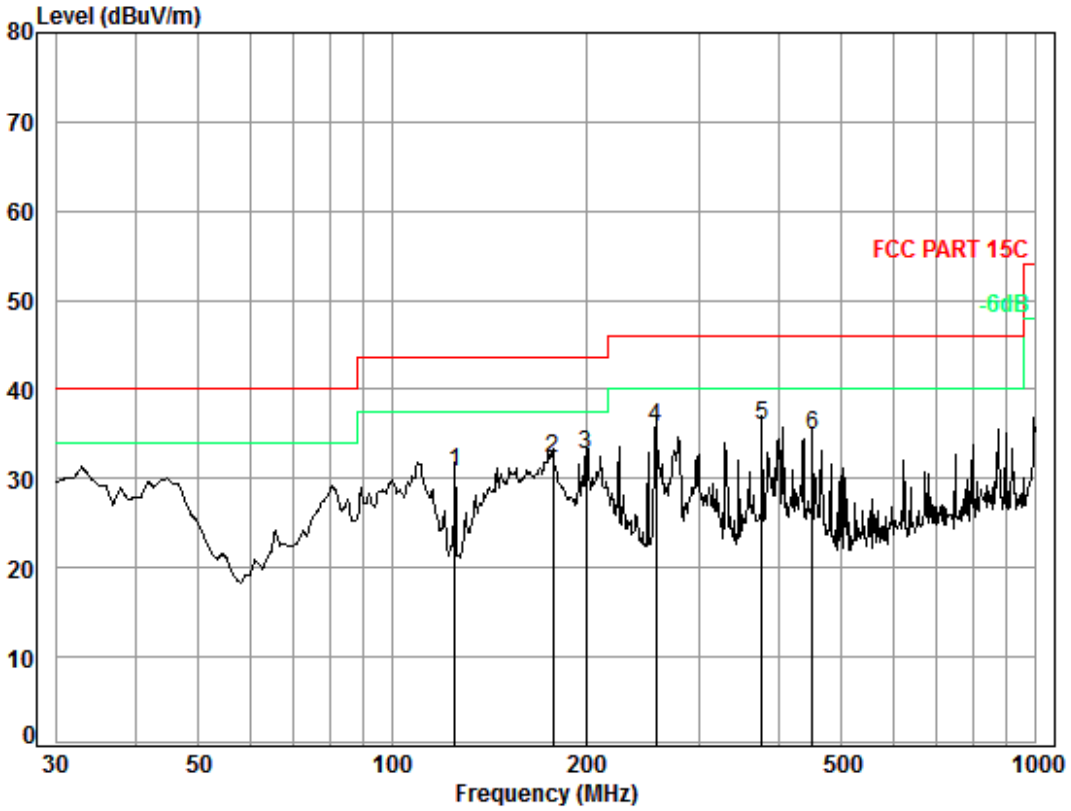
30MHz~1GHz（QP）		
Test mode:	Transmitting mode	Vertical



Condition: FCC PART 15C 3m 3142C Vertical
Job No. : 1807PS
Test mode: TX mode

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	31.95	0.60	17.61	27.35	47.52	38.38	40.00	-1.62
2	45.53	0.72	10.66	27.30	53.82	37.90	40.00	-2.10
3	80.36	1.10	7.74	27.23	56.53	38.14	40.00	-1.86
4	174.42	1.36	9.68	26.79	50.71	34.96	43.50	-8.54
5	274.19	1.79	12.78	26.47	50.70	38.80	46.00	-7.20
6	996.50	3.70	24.16	26.33	41.39	42.92	54.00	-11.08

Test mode:	Transmitting mode	Horizontal



Condition: FCC PART 15C 3m 3142C Horizontal
Job No. : 1807PS
Test mode: TX mode

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	125.01	1.26	7.80	27.04	48.73	30.75	43.50	-12.75
2	177.51	1.37	9.80	26.78	47.88	32.27	43.50	-11.23
3	199.99	1.40	10.20	26.70	47.69	32.59	43.50	-10.91
4	257.42	1.71	12.45	26.51	48.12	35.77	46.00	-10.23
5	375.94	2.13	16.01	26.97	44.85	36.02	46.00	-9.98
6	449.56	2.41	16.89	27.44	42.97	34.83	46.00	-11.17

6.8.2Transmitter emission above 1GHz

Test plot as follows:

Test mode:	802.11a	Frequency(MHz):	5180	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3449.984	7.06	32.84	38.72	47.57	48.75	74	-25.25	Vertical
4661.723	6.10	34.62	39.19	48.81	50.34	74	-23.66	Vertical
7810.490	8.80	35.67	39.02	44.63	50.08	74	-23.92	Vertical
10360.000	9.50	37.13	37.89	42.19	50.93	74	-23.07	Vertical
12371.810	10.47	39.17	39.01	41.71	52.34	74	-21.66	Vertical
15540.000	11.83	39.38	41.17	42.69	52.73	74	-21.27	Vertical
3481.030	7.01	32.87	38.73	47.54	48.69	74	-25.31	Horizontal
4805.903	6.42	34.71	39.24	48.11	50.00	74	-24.00	Horizontal
7884.606	8.85	35.72	39.01	45.08	50.64	74	-23.36	Horizontal
10360.000	9.50	37.13	37.89	41.82	50.56	74	-23.44	Horizontal
12371.810	10.47	39.17	39.01	41.43	52.06	74	-21.94	Horizontal
15540.000	11.83	39.38	41.17	42.85	52.89	74	-21.11	Horizontal

Test mode:	802.11a	Frequency(MHz):	5200	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3413.093	7.13	32.79	38.70	46.99	48.21	74	-25.79	Vertical
4603.619	5.97	34.58	39.17	48.26	49.64	74	-24.36	Vertical
8042.548	8.92	35.81	38.97	45.03	50.79	74	-23.21	Vertical
10400.000	9.55	37.02	37.92	40.47	49.12	74	-24.88	Vertical
12667.400	10.46	39.27	39.26	41.55	52.02	74	-21.98	Vertical
15600.000	11.82	39.50	41.19	42.95	53.08	74	-20.92	Vertical
3506.069	6.97	32.90	38.74	46.93	48.06	74	-25.94	Horizontal
4788.712	6.39	34.69	39.23	47.88	49.73	74	-24.27	Horizontal
7951.913	8.89	35.77	39.00	44.92	50.58	74	-23.42	Horizontal
10400.000	9.55	37.02	37.92	41.46	50.11	74	-23.89	Horizontal
12715.350	10.44	39.28	39.30	41.87	52.29	74	-21.71	Horizontal
15600.000	11.82	39.50	41.19	42.44	52.57	74	-21.43	Horizontal

Test mode:	802.11a	Frequency(MHz):	5220	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3506.069	6.97	32.90	38.74	46.49	47.62	74	-26.38	Vertical
4620.146	6.01	34.59	39.18	47.47	48.89	74	-25.11	Vertical
8111.203	8.93	35.83	38.92	45.18	51.02	74	-22.98	Vertical
10440.000	9.60	37.16	37.94	40.33	49.15	74	-24.85	Vertical
12631.560	10.48	39.26	39.23	41.47	51.98	74	-22.02	Vertical
15660.000	11.80	39.62	41.21	43.26	53.47	74	-20.53	Vertical
3588.694	6.92	32.99	38.78	45.92	47.05	74	-26.95	Horizontal
4603.619	5.97	34.58	39.17	46.45	47.83	74	-26.17	Horizontal
8250.274	8.94	35.84	38.82	43.65	49.61	74	-24.39	Horizontal
10440.000	9.60	37.16	37.94	40.44	49.26	74	-24.74	Horizontal
12703.350	10.45	39.28	39.29	41.39	51.83	74	-22.17	Horizontal
15660.000	11.80	39.62	41.21	42.22	52.43	74	-21.57	Horizontal

Test mode:	802.11a	Frequency(MHz):	5240	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3506.069	6.97	32.90	38.74	46.49	47.62	74	-26.38	Vertical
4620.146	6.01	34.59	39.18	47.47	48.89	74	-25.11	Vertical
8111.203	8.93	35.83	38.92	45.18	51.02	74	-22.98	Vertical
10480.000	9.65	37.30	37.96	40.24	49.23	74	-24.77	Vertical
12631.560	10.48	39.26	39.23	41.47	51.98	74	-22.02	Vertical
15720.000	11.79	39.74	41.23	43.26	53.56	74	-20.44	Vertical
3588.694	6.92	32.99	38.78	45.92	47.05	74	-26.95	Horizontal
4603.619	5.97	34.58	39.17	46.45	47.83	74	-26.17	Horizontal
8250.274	8.94	35.84	38.82	43.65	49.61	74	-24.39	Horizontal
10480.000	9.65	37.30	37.96	40.44	49.43	74	-24.57	Horizontal
12703.350	10.45	39.28	39.29	41.39	51.83	74	-22.17	Horizontal
15720.000	11.79	39.74	41.23	42.22	52.52	74	-21.48	Horizontal

Test mode:	802.11a	Frequency(MHz):	5745	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3316.635	7.32	32.56	38.66	47.11	48.33	74	-25.67	Vertical
4578.940	5.91	34.55	39.16	47.34	48.64	74	-25.36	Vertical
8551.751	8.96	35.89	38.61	42.89	49.13	74	-24.87	Vertical
11490.000	10.06	38.22	38.46	43.09	52.91	74	-21.09	Vertical
14485.460	12.08	39.59	40.64	42.82	53.85	74	-20.15	Vertical
17235.000	12.74	41.01	41.69	41.23	53.29	74	-20.71	Vertical
3512.356	6.96	32.91	38.75	47.79	48.91	74	-25.09	Horizontal
4823.156	6.46	34.72	39.24	48.61	50.55	74	-23.45	Horizontal
8714.822	8.95	35.94	38.50	42.71	49.10	74	-24.90	Horizontal
11490.000	10.06	38.22	38.46	40.91	50.73	74	-23.27	Horizontal
13922.110	11.47	39.11	40.23	42.78	53.13	74	-20.87	Horizontal
17235.000	12.74	41.01	41.69	40.83	52.89	74	-21.11	Horizontal

Test mode:	802.11a	Frequency(MHz):	5785	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3939.129	6.72	33.40	38.93	47.02	48.21	74	-25.79	Vertical
4797.300	6.40	34.70	39.24	48.01	49.87	74	-24.13	Vertical
8511.462	8.96	35.87	38.64	43.83	50.02	74	-23.98	Vertical
11570.000	10.10	38.28	38.50	41.36	51.24	74	-22.76	Vertical
14471.790	12.06	39.57	40.63	42.53	53.53	74	-20.47	Vertical
17355.000	12.95	40.96	41.72	41.76	53.95	74	-20.05	Vertical
3462.369	7.04	32.85	38.72	48.30	49.47	74	-24.53	Horizontal
4720.560	6.23	34.65	39.21	48.78	50.45	74	-23.55	Horizontal
8503.427	8.96	35.86	38.64	44.01	50.19	74	-23.81	Horizontal
11570.000	10.10	38.28	38.50	43.53	53.41	74	-20.59	Horizontal
14567.780	12.03	39.58	40.70	42.14	53.05	74	-20.95	Horizontal
17355.000	12.95	40.96	41.72	41.71	53.90	74	-20.10	Horizontal

Test mode:	802.11a	Frequency(MHz):	5825	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3487.273	6.99	32.88	38.74	46.62	47.75	74	-26.25	Vertical
4661.723	6.10	34.62	39.19	48.08	49.61	74	-24.39	Vertical
8383.809	8.95	35.81	38.73	44.65	50.68	74	-23.32	Vertical
11650.000	10.12	38.35	38.54	42.36	52.29	74	-21.71	Vertical
14458.130	12.05	39.56	40.62	41.66	52.65	74	-21.35	Vertical
17475.000	13.17	40.91	41.75	41.29	53.62	74	-20.38	Vertical
3726.298	6.84	33.10	38.84	46.69	47.79	74	-26.21	Horizontal
4771.583	6.35	34.68	39.23	47.18	48.98	74	-25.02	Horizontal
8698.376	8.95	35.93	38.51	43.54	49.91	74	-24.09	Horizontal
11650.000	10.12	38.35	38.54	41.97	51.90	74	-22.10	Horizontal
14458.130	12.05	39.56	40.62	41.78	52.77	74	-21.23	Horizontal
17475.000	13.17	40.91	41.75	41.14	53.47	74	-20.53	Horizontal

Test mode:	802.11n(HT20)	Frequency(MHz):	5180	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3759.831	6.82	33.12	38.85	48.53	49.62	74	-24.38	Vertical
4945.674	6.72	34.85	39.28	49.24	51.53	74	-22.47	Vertical
8415.541	8.95	35.82	38.70	43.22	49.29	74	-24.71	Vertical
10360.000	9.50	37.13	37.89	41.35	50.09	74	-23.91	Vertical
12619.640	10.48	39.26	39.22	41.17	51.69	74	-22.31	Vertical
15540.000	11.83	39.38	41.17	43.54	53.58	74	-20.42	Vertical
3449.984	7.06	32.84	38.72	46.49	47.67	74	-26.33	Horizontal
4670.083	6.12	34.62	39.19	47.38	48.93	74	-25.07	Horizontal
8172.721	8.93	35.84	38.88	44.02	49.91	74	-24.09	Horizontal
10360.000	9.50	37.13	37.89	42.79	51.53	74	-22.47	Horizontal
12290.290	10.42	39.06	38.95	42.14	52.67	74	-21.33	Horizontal
15540.000	11.83	39.38	41.17	43.39	53.43	74	-20.57	Horizontal

Test mode:	802.11n(HT20)	Frequency(MHz):	5200	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3499.792	6.97	32.89	38.74	46.87	47.99	74	-26.01	Vertical
4620.146	6.01	34.59	39.18	47.78	49.20	74	-24.80	Vertical
8847.515	8.95	35.97	38.41	43.15	49.66	74	-24.34	Vertical
10400.000	9.55	37.02	37.92	41.75	50.40	74	-23.60	Vertical
12703.350	10.45	39.28	39.29	41.10	51.54	74	-22.46	Vertical
15600.000	11.82	39.50	41.19	43.21	53.34	74	-20.66	Vertical
3746.382	6.83	33.11	38.85	48.24	49.33	74	-24.67	Horizontal
4611.875	5.99	34.59	39.17	48.09	49.50	74	-24.50	Horizontal
8616.609	8.96	35.91	38.57	43.39	49.69	74	-24.31	Horizontal
10400.000	9.55	37.02	37.92	41.29	49.94	74	-24.06	Horizontal
12703.350	10.45	39.28	39.29	41.51	51.95	74	-22.05	Horizontal
15600.000	11.82	39.50	41.19	43.57	53.70	74	-20.30	Horizontal

Test mode:	802.11n(HT20)	Frequency(MHz):	5220	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3524.966	6.96	32.92	38.75	46.89	48.02	74	-25.98	Vertical
4670.083	6.12	34.62	39.19	47.43	48.98	74	-25.02	Vertical
8535.612	8.96	35.88	38.62	42.68	48.90	74	-25.10	Vertical
10440.000	9.60	37.16	37.94	39.96	48.78	74	-25.22	Vertical
12691.350	10.45	39.27	39.28	41.60	52.04	74	-21.96	Vertical
15660.000	11.80	39.62	41.21	43.16	53.37	74	-20.63	Vertical
3537.620	6.95	32.93	38.76	47.80	48.92	74	-25.08	Horizontal
4620.146	6.01	34.59	39.18	48.32	49.74	74	-24.26	Horizontal
8698.376	8.95	35.93	38.51	42.91	49.28	74	-24.72	Horizontal
10440.000	9.60	37.16	37.94	40.33	49.15	74	-24.85	Horizontal
13142.690	10.43	39.23	39.64	41.09	51.11	74	-22.89	Horizontal
15660.000	11.80	39.62	41.21	43.34	53.55	74	-20.45	Horizontal

Test mode:	802.11n(HT20)	Frequency(MHz):	5240	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3524.966	6.96	32.92	38.75	46.89	48.02	74	-25.98	Vertical
4670.083	6.12	34.62	39.19	47.43	48.98	74	-25.02	Vertical
8535.612	8.96	35.88	38.62	42.68	48.90	74	-25.10	Vertical
10480.000	9.65	37.30	37.96	39.96	48.95	74	-25.05	Vertical
12691.350	10.45	39.27	39.28	41.60	52.04	74	-21.96	Vertical
15720.000	11.79	39.74	41.23	43.16	53.46	74	-20.54	Vertical
3537.620	6.95	32.93	38.76	47.80	48.92	74	-25.08	Horizontal
4620.146	6.01	34.59	39.18	48.32	49.74	74	-24.26	Horizontal
8698.376	8.95	35.93	38.51	42.91	49.28	74	-24.72	Horizontal
10480.000	9.65	37.30	37.96	40.32	49.31	74	-24.69	Horizontal
13142.690	10.43	39.23	39.64	41.09	51.11	74	-22.89	Horizontal
15720.000	11.79	39.74	41.23	43.34	53.64	74	-20.36	Horizontal

Test mode:	802.11n(HT20)	Frequency(MHz):	5745	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3340.491	7.28	32.63	38.67	47.58	48.82	74	-25.18	Vertical
4780.140	6.37	34.69	39.23	48.00	49.83	74	-24.17	Vertical
8881.003	8.94	35.98	38.39	42.64	49.17	74	-24.83	Vertical
11490.000	10.06	38.22	38.46	41.00	50.82	74	-23.18	Vertical
14458.130	12.05	39.56	40.62	42.11	53.10	74	-20.90	Vertical
17235.000	12.74	41.01	41.69	40.37	52.43	74	-21.57	Vertical
3352.483	7.25	32.66	38.67	47.04	48.28	74	-25.72	Horizontal
4645.047	6.06	34.61	39.18	48.47	49.96	74	-24.04	Horizontal
8681.961	8.95	35.93	38.52	43.24	49.60	74	-24.40	Horizontal
11490.000	10.06	38.22	38.46	40.80	50.62	74	-23.38	Horizontal
14094.100	11.70	39.23	40.36	42.36	52.93	74	-21.07	Horizontal
17235.000	12.74	41.01	41.69	41.37	53.43	74	-20.57	Horizontal

Test mode:	802.11n(HT20)	Frequency(MHz):	5785	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3382.653	7.19	32.74	38.69	46.21	47.45	74	-26.55	Vertical
4645.047	6.06	34.61	39.18	47.56	49.05	74	-24.95	Vertical
8714.822	8.95	35.94	38.50	42.94	49.33	74	-24.67	Vertical
11570.000	10.10	38.28	38.50	40.83	50.71	74	-23.29	Vertical
14349.300	11.95	39.45	40.54	42.25	53.11	74	-20.89	Vertical
17355.000	12.95	40.96	41.72	40.42	52.61	74	-21.39	Vertical
3394.796	7.17	32.77	38.69	46.52	47.77	74	-26.23	Horizontal
4754.514	6.31	34.67	39.22	46.49	48.25	74	-25.75	Horizontal
8764.347	8.95	35.95	38.47	41.75	48.18	74	-25.82	Horizontal
11570.000	10.10	38.28	38.50	41.12	51.00	74	-23.00	Horizontal
14444.480	12.04	39.54	40.61	42.18	53.15	74	-20.85	Horizontal
17355.000	12.95	40.96	41.72	41.46	53.65	74	-20.35	Horizontal

Test mode:	802.11n(HT20)	Frequency(MHz):	5825	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3588.69	6.92	32.99	38.78	45.08	46.21	74	-27.79	Vertical
4513.77	5.76	34.44	39.14	46.88	47.94	74	-26.06	Vertical
8714.82	8.95	35.94	38.5	42.55	48.94	74	-25.06	Vertical
11650.00	10.12	38.35	38.54	42.67	52.6	74	-21.4	Vertical
14417.22	12.01	39.52	40.59	42.25	53.19	74	-20.81	Vertical
17475.00	13.17	40.91	41.75	40.77	53.1	74	-20.9	Vertical
3406.98	7.15	32.79	38.7	46.64	47.88	74	-26.12	Horizontal
4771.58	6.35	34.68	39.23	47.27	49.07	74	-24.93	Horizontal
8889.40	8.94	35.98	38.39	42.88	49.41	74	-24.59	Horizontal
11650.00	10.12	38.35	38.54	41.21	51.14	74	-22.86	Horizontal
14526.56	12.07	39.59	40.67	41.13	52.12	74	-21.88	Horizontal
17475.00	13.17	40.91	41.75	41.48	53.81	74	-20.19	Horizontal

Test mode:	802.11n(HT40)	Frequency(MHz):	5190	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3449.984	7.06	32.84	38.72	47.57	48.75	74	-25.25	Vertical
4661.723	6.10	34.62	39.19	48.81	50.34	74	-23.66	Vertical
7810.490	8.80	35.67	39.02	44.63	50.08	74	-23.92	Vertical
10380.000	9.93	37.07	37.90	43.19	52.29	74	-21.71	Vertical
12371.810	10.47	39.17	39.01	41.71	52.34	74	-21.66	Vertical
15570.000	12.97	39.44	41.18	42.08	53.31	74	-20.69	Vertical
3481.030	7.01	32.87	38.73	47.54	48.69	74	-25.31	Horizontal
4805.903	6.42	34.71	39.24	48.11	50.00	74	-24.00	Horizontal
7884.606	8.85	35.72	39.01	45.08	50.64	74	-23.36	Horizontal
10380.000	9.93	37.07	37.90	43.01	52.11	74	-21.89	Horizontal
12371.810	10.47	39.17	39.01	41.43	52.06	74	-21.94	Horizontal
15570.000	12.97	39.44	41.18	40.99	52.22	74	-21.78	Horizontal

Test mode:	802.11n(HT40)	Frequency(MHz):	5210	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3499.792	6.97	32.89	38.74	46.87	47.99	74	-26.01	Vertical
4620.146	6.01	34.59	39.18	47.78	49.20	74	-24.80	Vertical
8847.515	8.95	35.97	38.41	43.15	49.66	74	-24.34	Vertical
10420.000	9.96	37.23	37.95	43.11	52.35	74	-21.65	Vertical
12703.350	10.45	39.28	39.29	41.10	51.54	74	-22.46	Vertical
15630.000	12.96	39.68	41.22	41.00	52.42	74	-21.58	Vertical
3746.382	6.83	33.11	38.85	48.24	49.33	74	-24.67	Horizontal
4611.875	5.99	34.59	39.17	48.09	49.50	74	-24.50	Horizontal
8616.609	8.96	35.91	38.57	43.39	49.69	74	-24.31	Horizontal
10420.000	9.96	37.23	37.95	43.50	52.74	74	-21.26	Horizontal
12703.350	10.45	39.28	39.29	41.51	51.95	74	-22.05	Horizontal
15630.000	12.96	39.68	41.22	42.32	53.74	74	-20.26	Horizontal

Test mode:	802.11n(HT40)	Frequency(MHz):	5755	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3340.491	7.28	32.63	38.67	47.58	48.82	74	-25.18	Vertical
4780.140	6.37	34.69	39.23	48.00	49.83	74	-24.17	Vertical
8881.003	8.94	35.98	38.39	42.64	49.17	74	-24.83	Vertical
11510.000	10.39	38.23	38.47	42.45	52.60	74	-21.40	Vertical
14458.130	12.05	39.56	40.62	42.11	53.10	74	-20.90	Vertical
17265.000	16.25	40.99	41.69	36.99	52.54	74	-21.46	Vertical
3352.483	7.25	32.66	38.67	47.04	48.28	74	-25.72	Horizontal
4645.047	6.06	34.61	39.18	48.47	49.96	74	-24.04	Horizontal
8681.961	8.95	35.93	38.52	43.24	49.60	74	-24.40	Horizontal
11510.000	10.39	38.23	38.47	41.87	52.02	74	-21.98	Horizontal
14094.100	11.70	39.23	40.36	42.36	52.93	74	-21.07	Horizontal
17265.000	16.25	40.99	41.69	36.87	52.42	74	-21.58	Horizontal

Test mode:	802.11n(HT40)	Frequency(MHz):	5795	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3382.65	7.19	32.74	38.69	46.21	47.45	74	-26.55	Vertical
4645.05	6.06	34.61	39.18	47.56	49.05	74	-24.95	Vertical
8714.82	8.95	35.94	38.50	42.94	49.33	74	-24.67	Vertical
11590.00	10.43	38.29	38.51	43.07	53.28	74	-20.72	Vertical
14349.30	11.95	39.45	40.54	42.25	53.11	74	-20.89	Vertical
17385.00	16.03	40.95	41.73	37.01	52.26	74	-21.74	Vertical
3394.80	7.17	32.77	38.69	46.52	47.77	74	-26.23	Horizontal
4754.51	6.31	34.67	39.22	46.49	48.25	74	-25.75	Horizontal
8764.35	8.95	35.95	38.47	41.75	48.18	74	-25.82	Horizontal
11590.00	10.43	38.29	38.51	42.38	52.59	74	-21.41	Horizontal
14444.48	12.04	39.54	40.61	42.18	53.15	74	-20.85	Horizontal
17385.00	16.03	40.95	41.73	36.79	52.04	74	-21.96	Horizontal

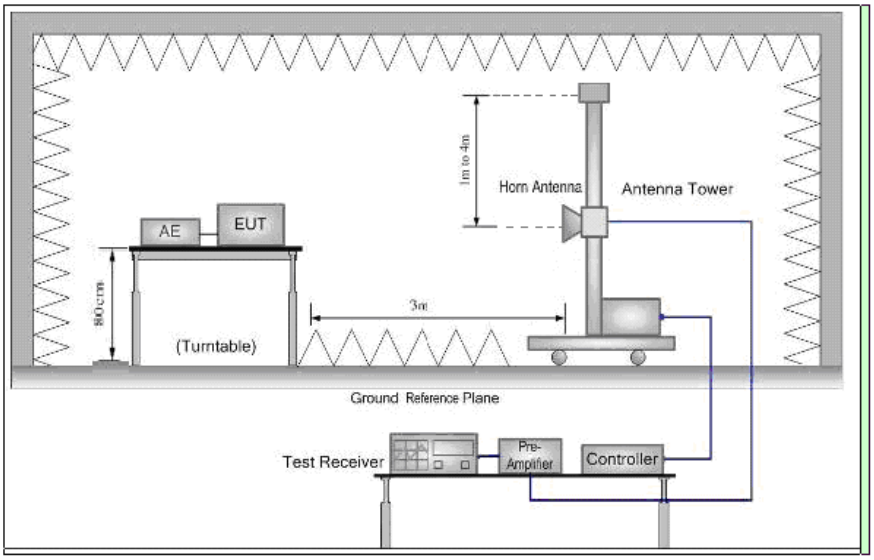
Remark:
1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
2) Scan from 9kHz to 25GHz,The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported .
3) As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.

6.9 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15 Section 15.407(b)
Test Method:	ANSI C63.10: 2013
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)
Limit:	

Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

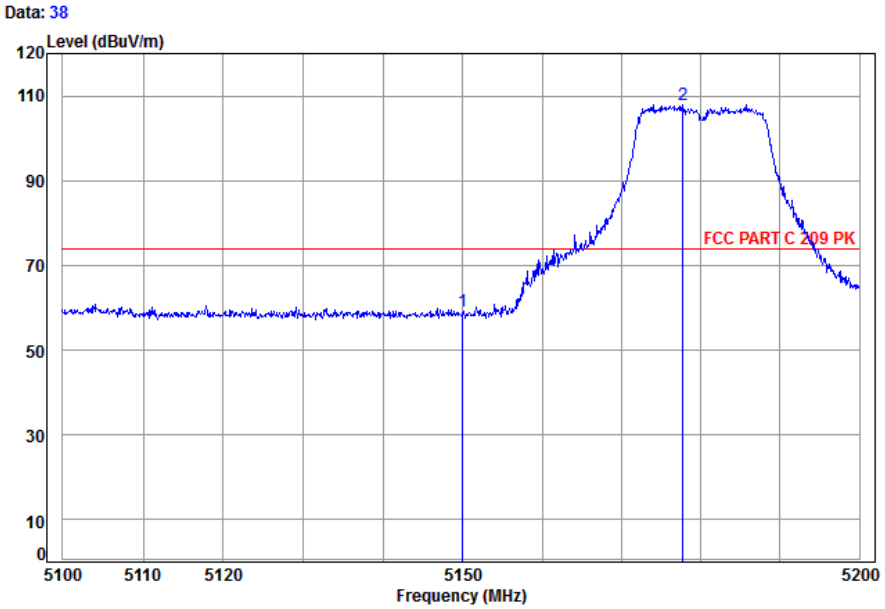
Test Setup:



Test Procedure:	a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel g. Test the EUT in the outermost channels. h. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates.
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCSO of rate is the worst case of 802.11n(HT20); MCSO of rate is the worst case of 802.11n(HT40) Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

Test plot as follows:

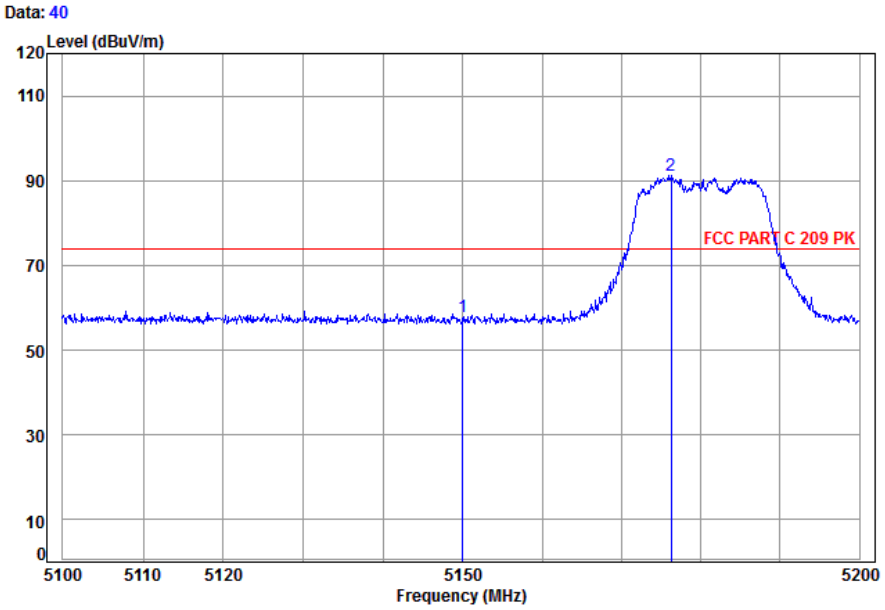
Test mode:	802.11a	Test channel:	36	Remark:	Peak	Vertical




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Vertical
Job No:  : 1807PS
Mode:    : 5180 Band edge
         : A
                Cable    Ant Preamp   Read          Limit   Over
           Freq  Loss Factor Factor  Level  Level   Line  Limit
          ------ ----- ------ ------ ------ ------ ------ -----
            MHz    dB   dB/m     dB  dBuV dBuV/m dBuV/m    dB

1 pk  5150.00  6.10  34.86  39.28  57.49  59.17  74.00 -14.83
2 pp  5177.73  6.13  34.86  39.28 106.17 107.88  74.00  33.88
```

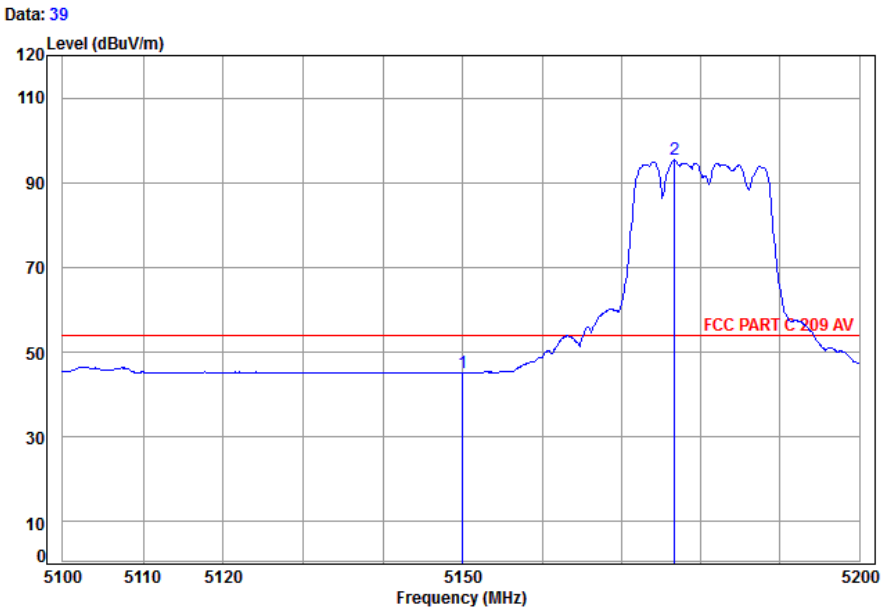
Test mode:	802.11a	Test channel:	36	Remark:	Peak	Horizontal



Site : chamber
Condition: FCC PART C 209 PK 3m Horizontal
Job No: : 1807PS
Mode: : 5180 Band edge
: A

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pk	5150.00	6.10	34.86	39.28	56.07	57.75	74.00	-16.25
2 pp	5176.23	6.12	34.86	39.28	89.55	91.25	74.00	17.25

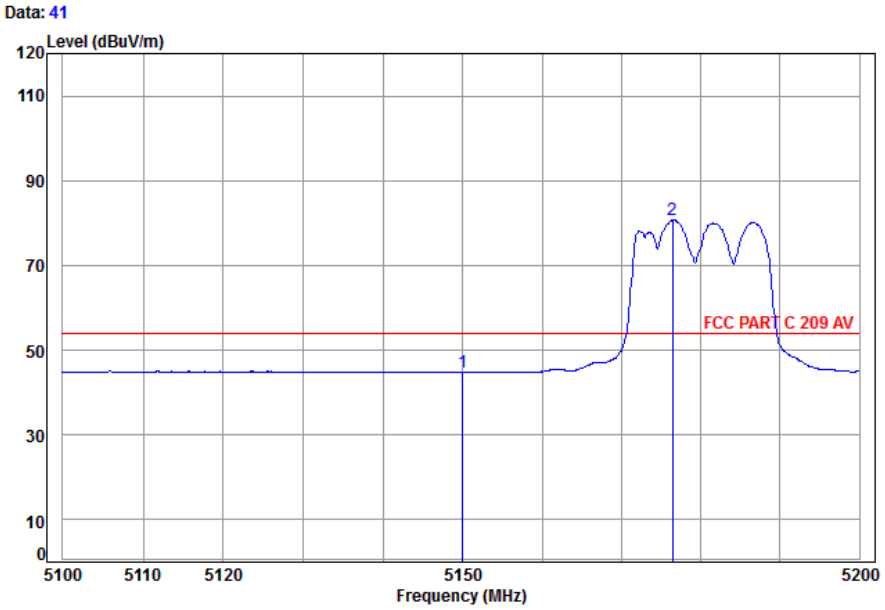
Test mode:	802.11a	Test channel:	36	Remark:	Average	Vertical



Site : chamber
Condition: FCC PART C 209 AV 3m Vertical
Job No: : 1807PS
Mode: : 5180 Band edge
: A

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 av	5150.00	6.10	34.86	39.28	43.49	45.17	54.00	-8.83
2 pp	5176.63	6.12	34.86	39.28	93.66	95.36	54.00	41.36

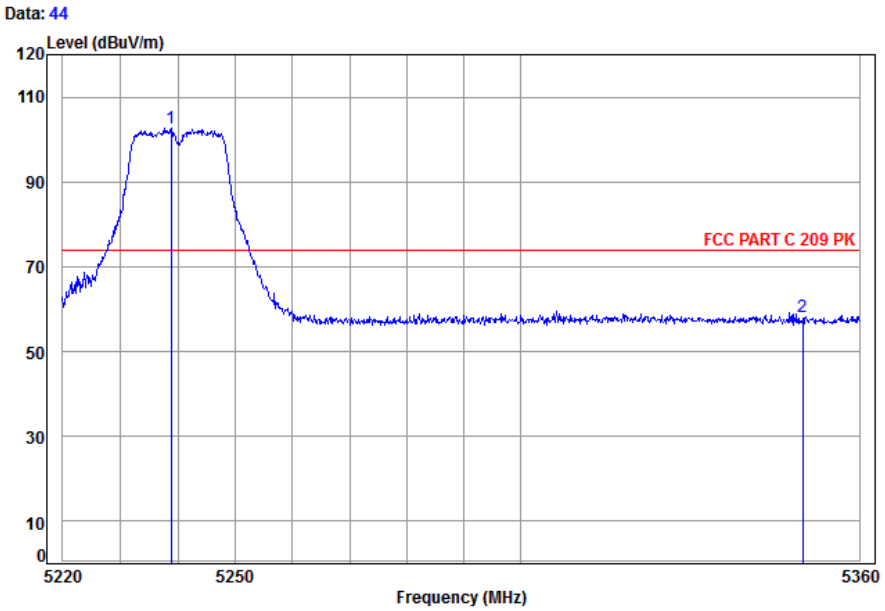
Test mode:	802.11a	Test channel:	36	Remark:	Average	Horizontal



Site : chamber
Condition: FCC PART C 209 AV 3m Horizontal
Job No: : 1807PS
Mode: : 5180 Band edge
: A

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 av	5150.00	6.10	34.86	39.28	43.17	44.85	54.00	-9.15
2 pp	5176.43	6.12	34.86	39.28	78.98	80.68	54.00	26.68

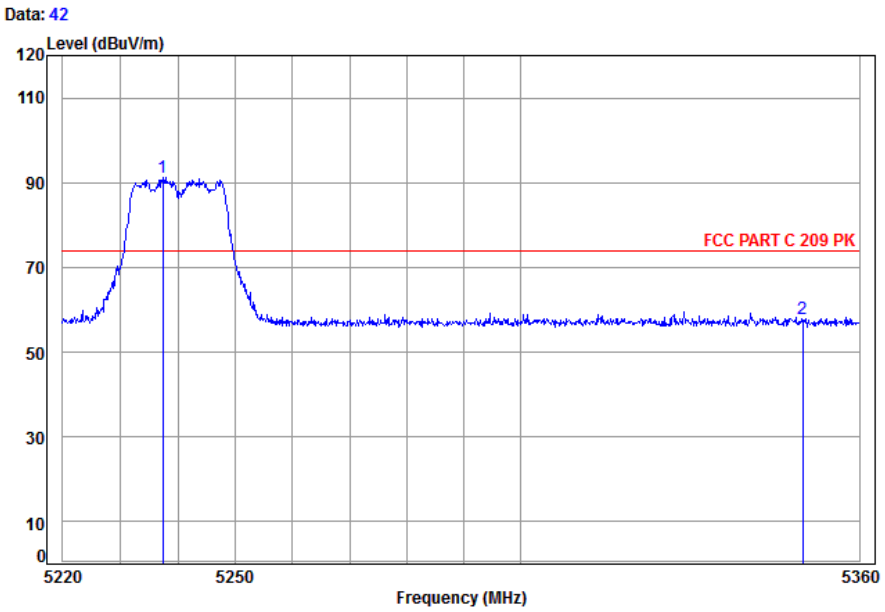
Test mode:	802.11a	Test channel:	48	Remark:	Peak	Vertical




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Vertical
Job No:  : 1807PS
Mode:    : 5240 Band edge
         : A
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5238.82	6.17	34.84	39.27	100.83	102.57	74.00	28.57
2 pk	5350.00	6.25	34.80	39.26	56.53	58.32	74.00	-15.68

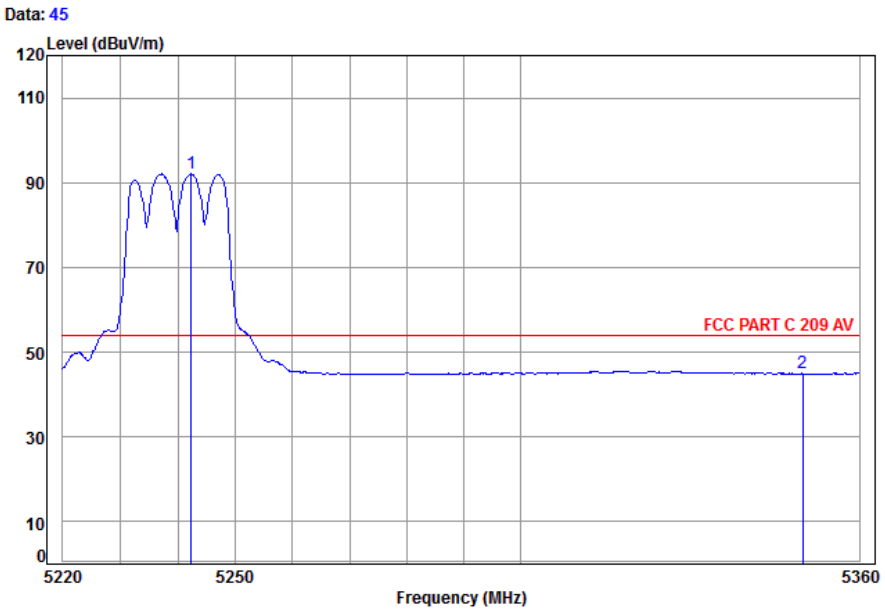
Test mode:	802.11a	Test channel:	48	Remark:	Peak	Horizontal



Site : chamber
Condition: FCC PART C 209 PK 3m Horizontal
Job No: : 1807PS
Mode: : 5240 Band edge
: A

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5237.44	6.17	34.84	39.27	89.43	91.17	74.00	17.17
2 pk	5350.00	6.25	34.80	39.26	56.11	57.90	74.00	-16.10

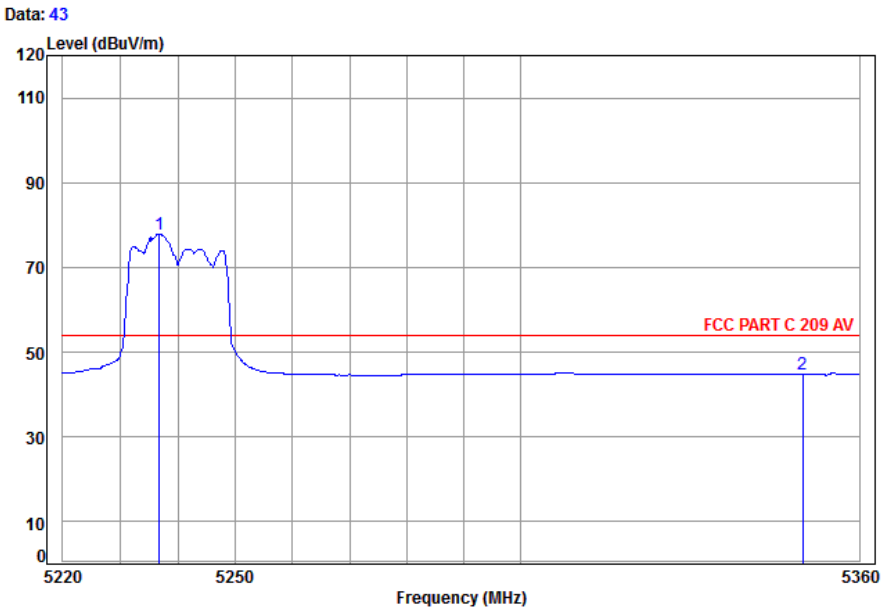
Test mode:	802.11a	Test channel:	48	Remark:	Average	Vertical




```
Site     : chamber
Condition: FCC PART C 209 AV 3m Vertical
Job No:  : 1807PS
Mode:    : 5240 Band edge
         : A
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5242.29	6.17	34.83	39.27	90.33	92.06	54.00	38.06
2 av	5350.00	6.25	34.80	39.26	43.17	44.96	54.00	-9.04

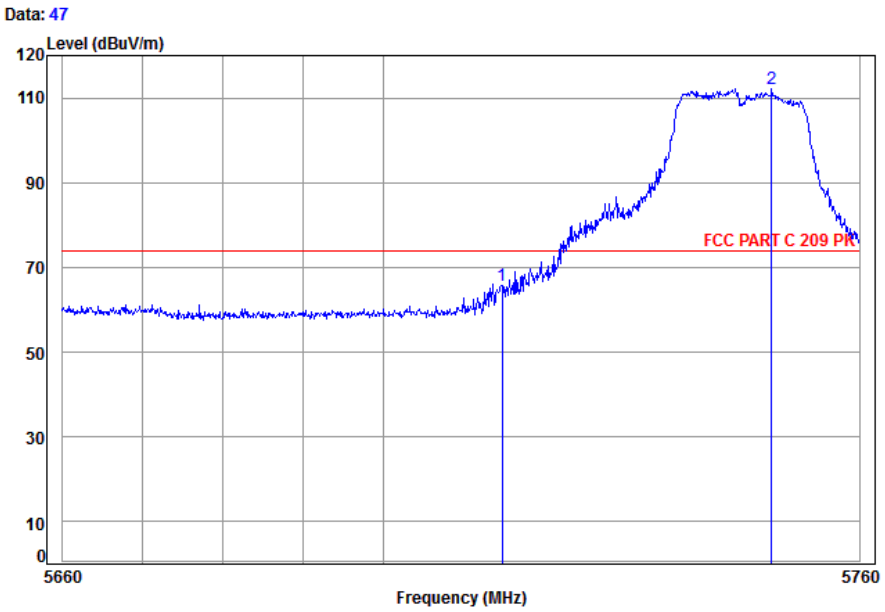
Test mode:	802.11a	Test channel:	48	Remark:	Average	Horizontal




```
Site     : chamber
Condition: FCC PART C 209 AV 3m Horizontal
Job No:  : 1807PS
Mode:    : 5240 Band edge
         : A
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5236.74	6.17	34.84	39.27	76.13	77.87	54.00	23.87
2 av	5350.00	6.25	34.80	39.26	42.94	44.73	54.00	-9.27

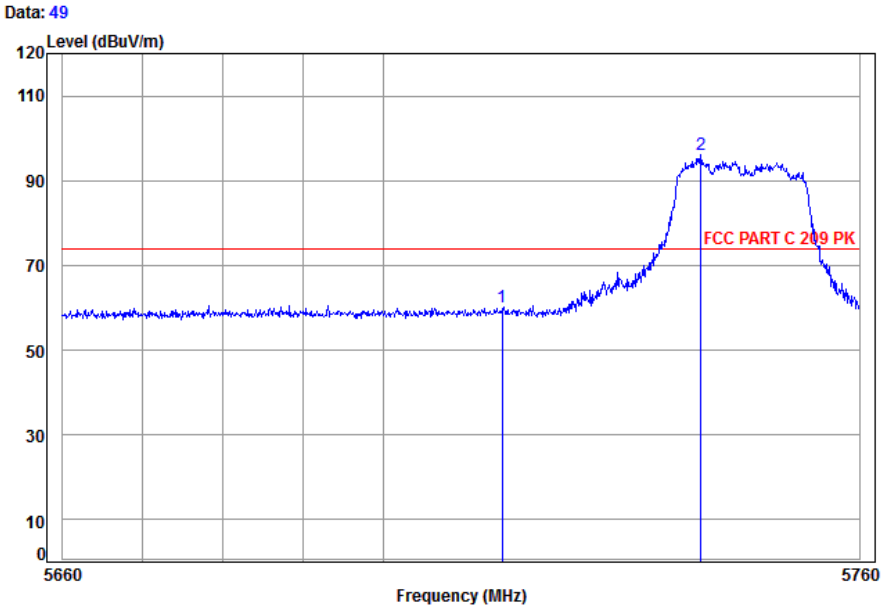
Test mode:	802.11a	Test channel:	149	Remark:	Peak	Vertical



Site : chamber
Condition: FCC PART C 209 PK 3m Vertical
Job No: : 1807PS
Mode: : 5745 Band edge
: A

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pk	5715.00	6.87	35.70	39.21	62.51	65.87	74.00	-8.13
2 pp	5748.91	6.95	35.79	39.21	108.56	112.09	74.00	38.09

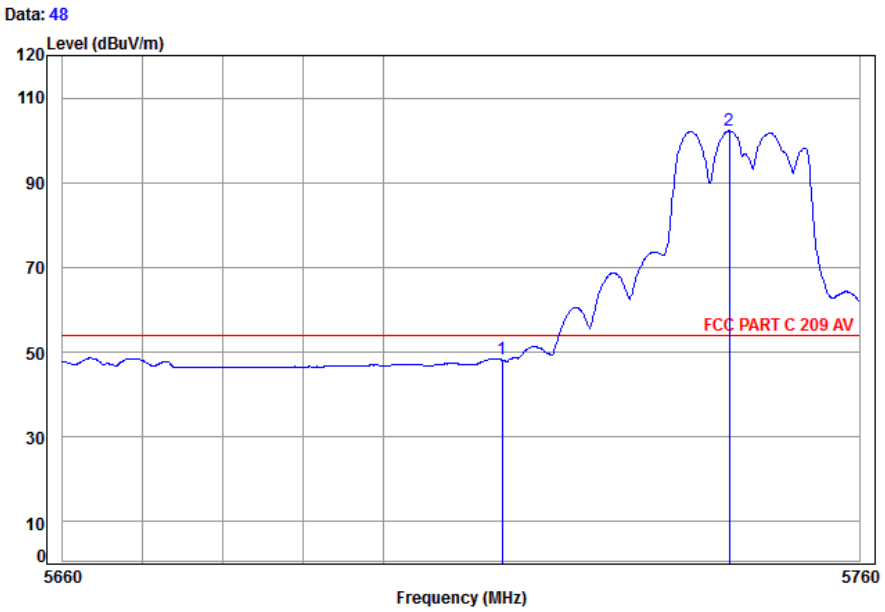
Test mode:	802.11a	Test channel:	149	Remark:	Peak	Horizontal



Site : chamber
Condition: FCC PART C 209 PK 3m Horizontal
Job No: : 1807PS
Mode: : 5745 Band edge
: A

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pk	5715.00	6.87	35.70	39.21	56.71	60.07	74.00	-13.93
2 pp	5739.96	6.92	35.76	39.21	92.58	96.05	74.00	22.05

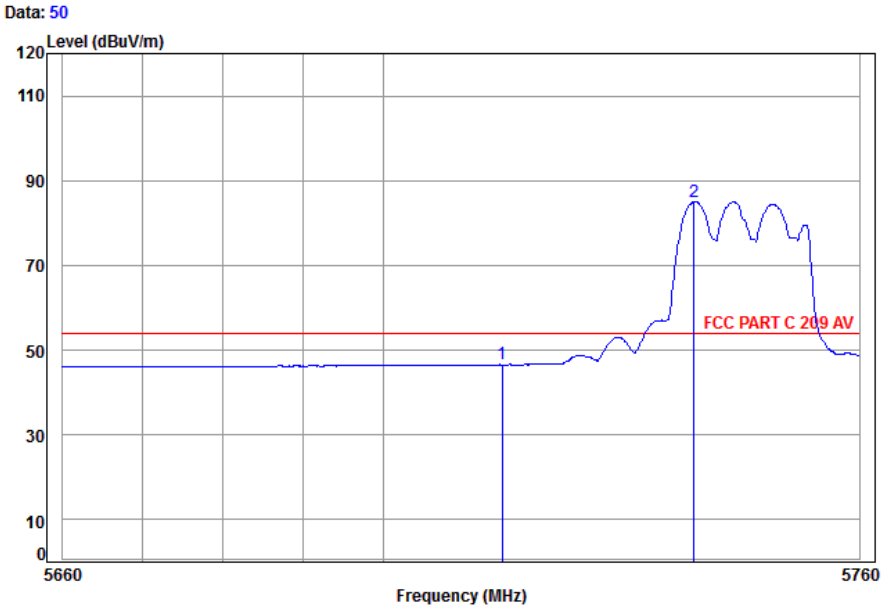
Test mode:	802.11a	Test channel:	149	Remark:	Average	Vertical



Site : chamber
Condition: FCC PART C 209 AV 3m Vertical
Job No: : 1807PS
Mode: : 5745 Band edge
: A

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 av	5715.00	6.87	35.70	39.21	45.17	48.53	54.00	-5.47
2 pp	5743.58	6.93	35.77	39.21	98.75	102.24	54.00	48.24

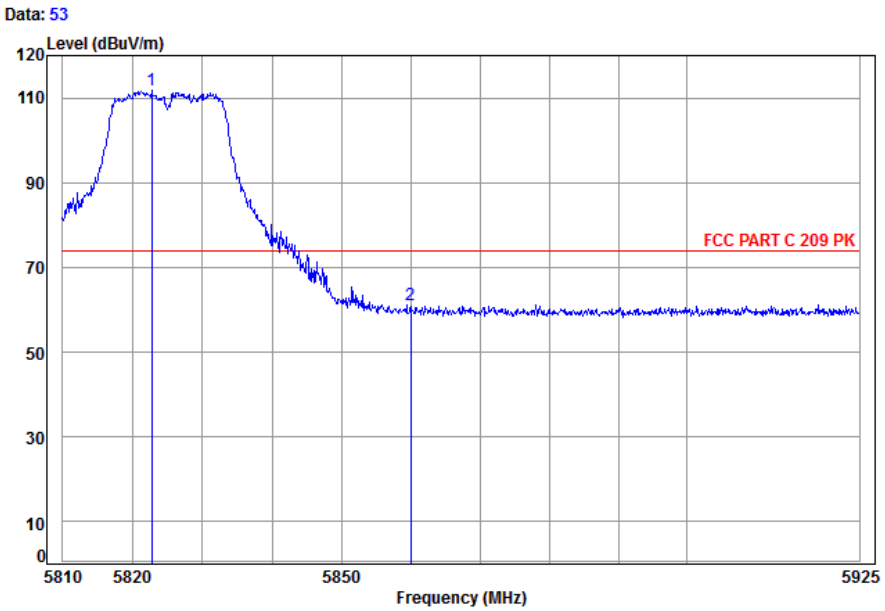
Test mode:	802.11a	Test channel:	149	Remark:	Average	Horizontal



Site : chamber
Condition: FCC PART C 209 AV 3m Horizontal
Job No: : 1807PS
Mode: : 5745 Band edge
: A

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 av	5715.00	6.87	35.70	39.21	43.24	46.60	54.00	-7.40
2 pp	5739.16	6.92	35.76	39.21	81.58	85.05	54.00	31.05

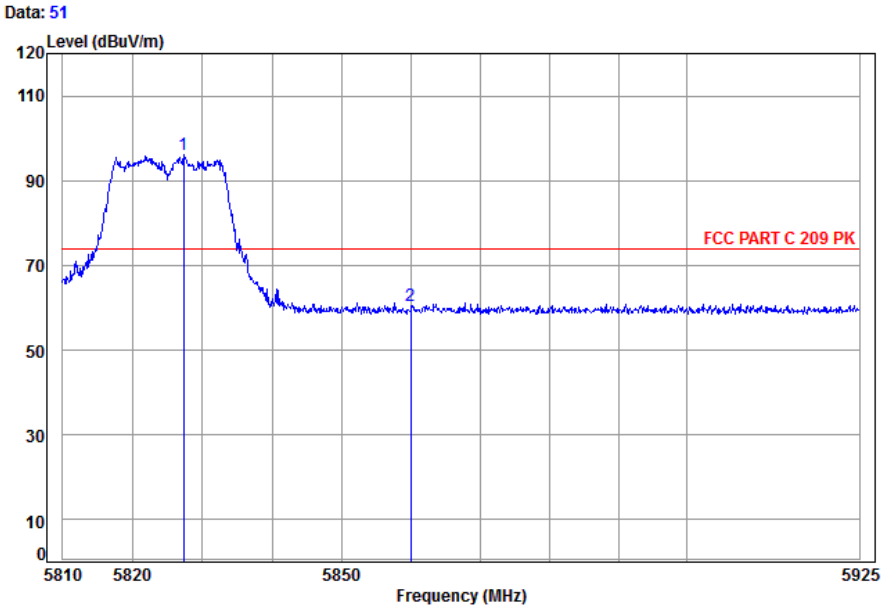
Test mode:	802.11a	Test channel:	165	Remark:	Peak	Vertical




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Vertical
Job No:  : 1807PS
Mode:    : 5825 Band edge
         : A
                Cable    Ant Preamp   Read          Limit   Over
           Freq  Loss Factor Factor  Level  Level   Line  Limit
          ------ ------ ------ ------ ------ ------ ------ ------
            MHz     dB   dB/m     dB  dBuV dBuV/m dBuV/m     dB

1 pp  5822.77   7.11  35.96  39.20 107.94 111.81  74.00  37.81
2 pk  5860.00   7.20  36.03  39.20  57.11  61.14  74.00 -12.86
```

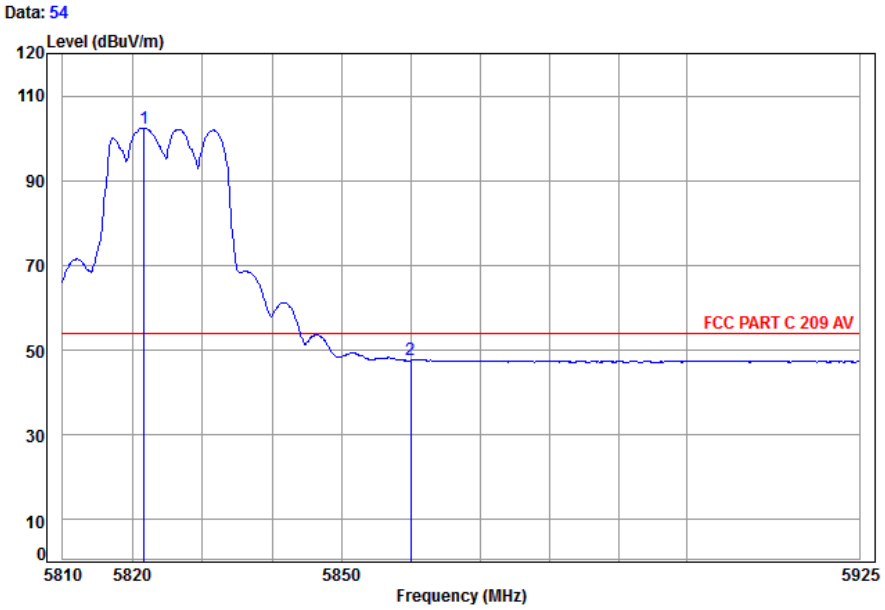
Test mode:	802.11a	Test channel:	165	Remark:	Peak	Horizontal




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Horizontal
Job No:  : 1807PS
Mode:    : 5825 Band edge
         : A
                Cable    Ant Preamp   Read          Limit   Over
             Freq  Loss Factor Factor  Level  Level  Line  Limit
          ________ _____ ______ ______ _____ _____ _____ _____
                MHz   dB   dB/m    dB  dBuV dBuV/m dBuV/m    dB

  1 pp  5827.34  7.12  35.96 39.20 92.18 96.06 74.00 22.06
  2 pk  5860.00  7.20  36.03 39.20 56.39 60.42 74.00 -13.58
```

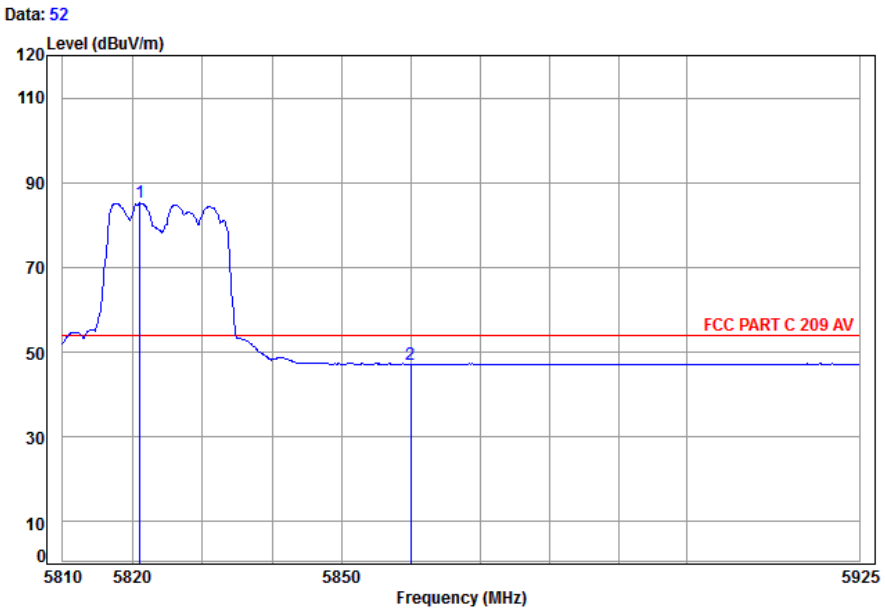
Test mode:	802.11a	Test channel:	165	Remark:	Average	Vertical




```
Site     : chamber
Condition: FCC PART C 209 AV 3m Vertical
Job No:  : 1807PS
Mode:    : 5825 Band edge
         : A
                Cable    Ant Preamp   Read          Limit   Over
           Freq  Loss Factor Factor  Level  Level   Line  Limit
          ------ ----- ------ ------ ------ ------ ------ -----
            MHz    dB   dB/m     dB  dBuV dBuV/m dBuV/m    dB

1 pp  5821.63  7.11  35.95  39.20 98.64 102.50  54.00 48.50
2 av  5860.00  7.20  36.03  39.20 43.75  47.78  54.00 -6.22
```

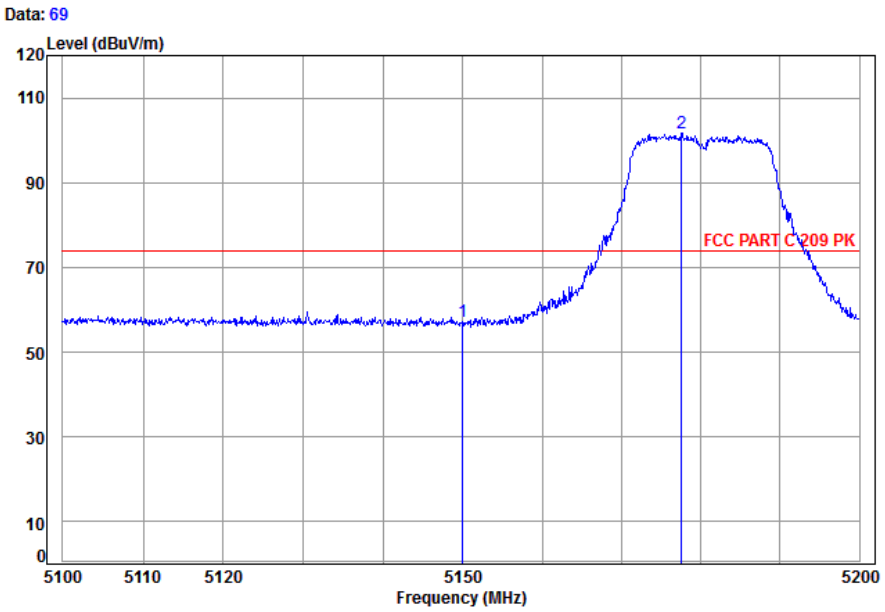
Test mode:	802.11a	Test channel:	165	Remark:	Average	Horizontal




```
Site     : chamber
Condition: FCC PART C 209 AV 3m Horizontal
Job No:  : 1807PS
Mode:    : 5825 Band edge
         : A
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5821.06	7.11	35.95	39.20	81.33	85.19	54.00	31.19
2 av	5860.00	7.20	36.03	39.20	43.21	47.24	54.00	-6.76

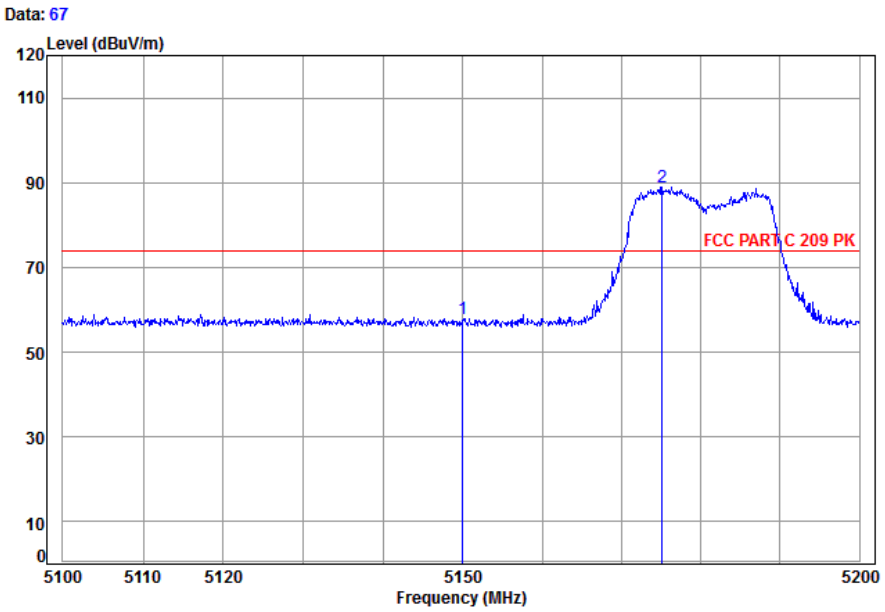
Test mode:	802.11n(HT20)	Test channel:	36	Remark:	Peak	Vertical




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Vertical
Job No:  : 1807PS
Mode:    : 5180 Band edge
         : N20
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pk	5150.00	6.10	34.86	39.28	55.68	57.36	74.00	-16.64
2 pp	5177.53	6.13	34.86	39.28	99.92	101.63	74.00	27.63

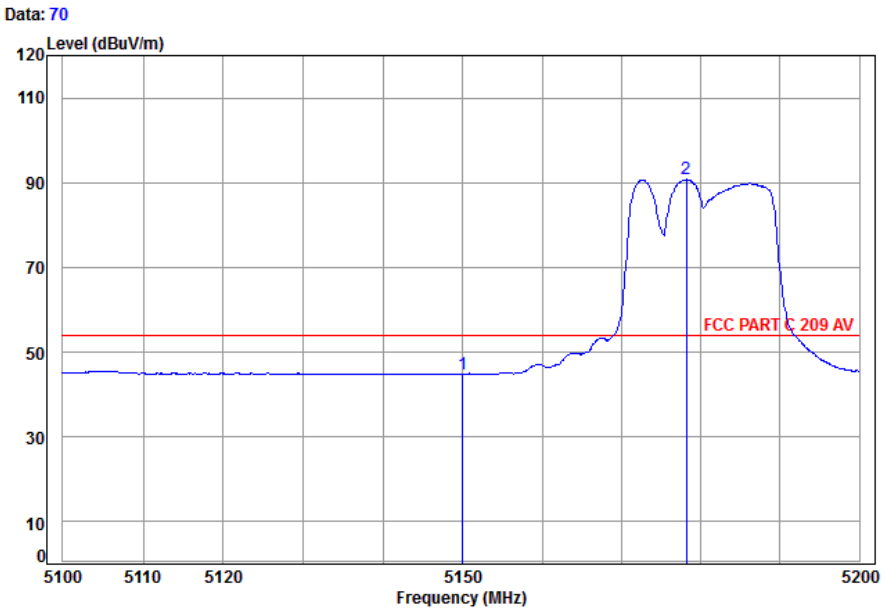
Test mode:	802.11n(HT20)	Test channel:	36	Remark:	Peak	Horizontal



Site : chamber
Condition: FCC PART C 209 PK 3m Horizontal
Job No: : 1807PS
Mode: : 5180 Band edge
: N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pk	5150.00	6.10	34.86	39.28	56.29	57.97	74.00	-16.03
2 pp	5175.12	6.12	34.86	39.28	87.23	88.93	74.00	14.93

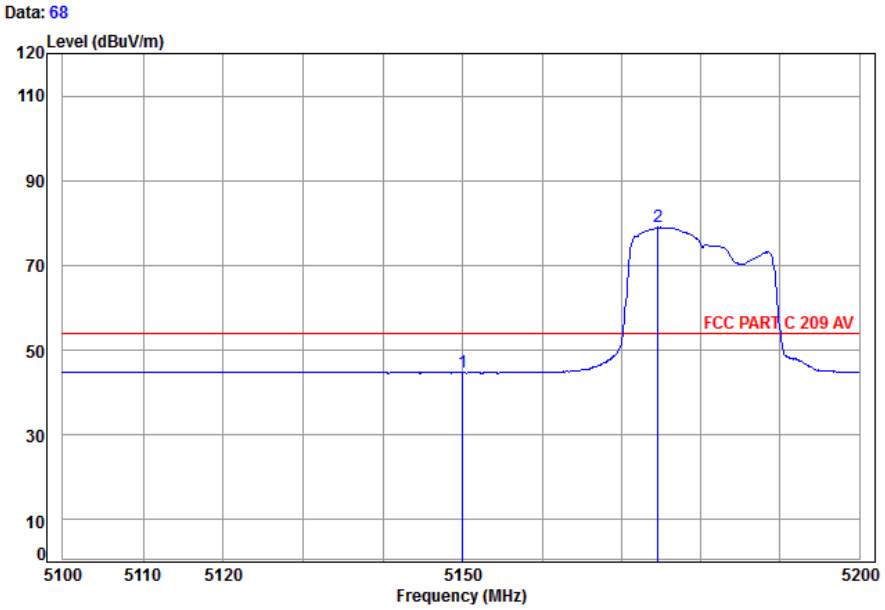
Test mode:	802.11n(HT20)	Test channel:	36	Remark:	Average	Vertical



Site : chamber
Condition: FCC PART C 209 AV 3m Vertical
Job No: : 1807PS
Mode: : 5180 Band edge
: N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 av	5150.00	6.10	34.86	39.28	43.14	44.82	54.00	-9.18
2 pp	5178.14	6.13	34.86	39.28	89.09	90.80	54.00	36.80

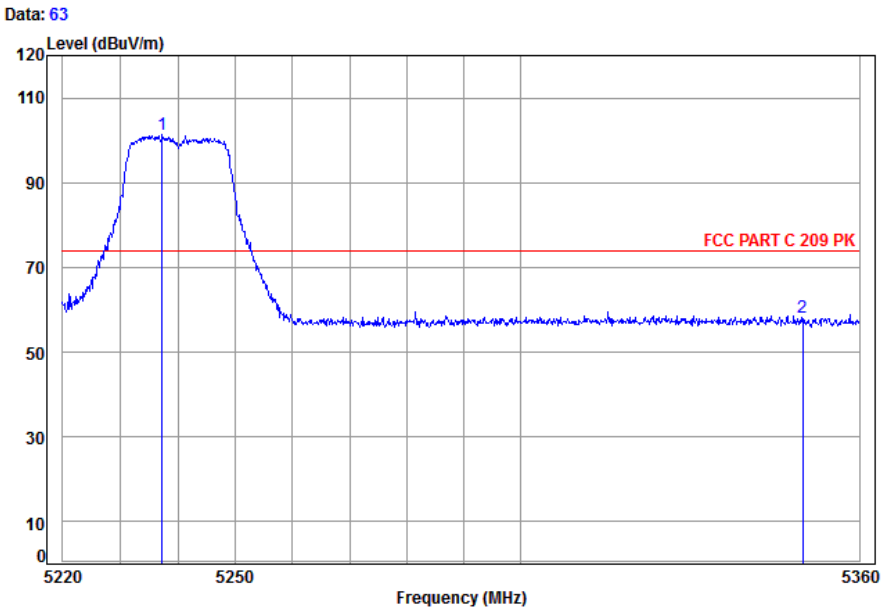
Test mode:	802.11n(HT20)	Test channel:	36	Remark:	Average	Horizontal



Site : chamber
Condition: FCC PART C 209 AV 3m Horizontal
Job No: : 1807PS
Mode: : 5180 Band edge
: N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 av	5150.00	6.10	34.86	39.28	43.09	44.77	54.00	-9.23
2 pp	5174.52	6.12	34.86	39.28	77.27	78.97	54.00	24.97

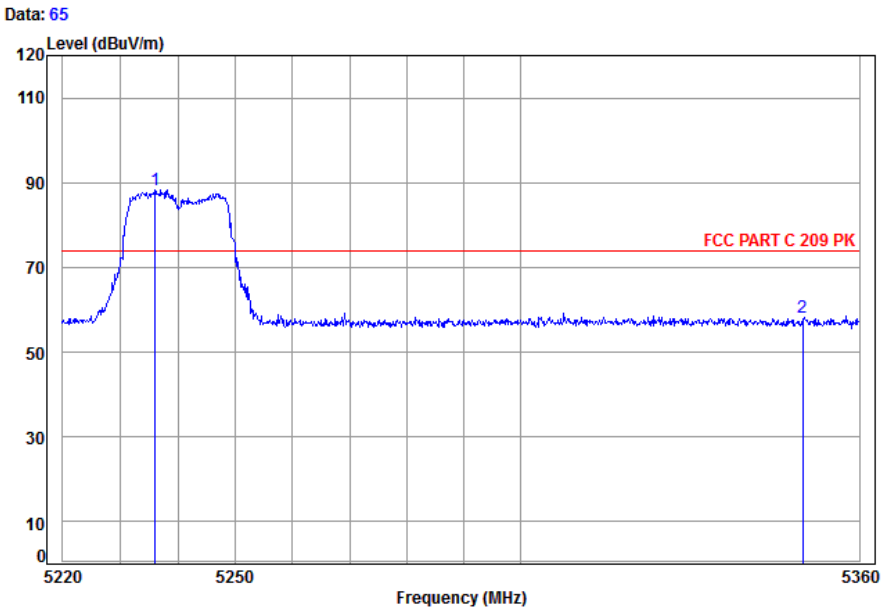
Test mode:	802.11n(HT20)	Test channel:	48	Remark:	Peak	Vertical




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Vertical
Job No:  : 1807PS
Mode:    : 5240 Band edge
         : N20
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5237.30	6.17	34.84	39.27	99.47	101.21	74.00	27.21
2 pk	5350.00	6.25	34.80	39.26	56.43	58.22	74.00	-15.78

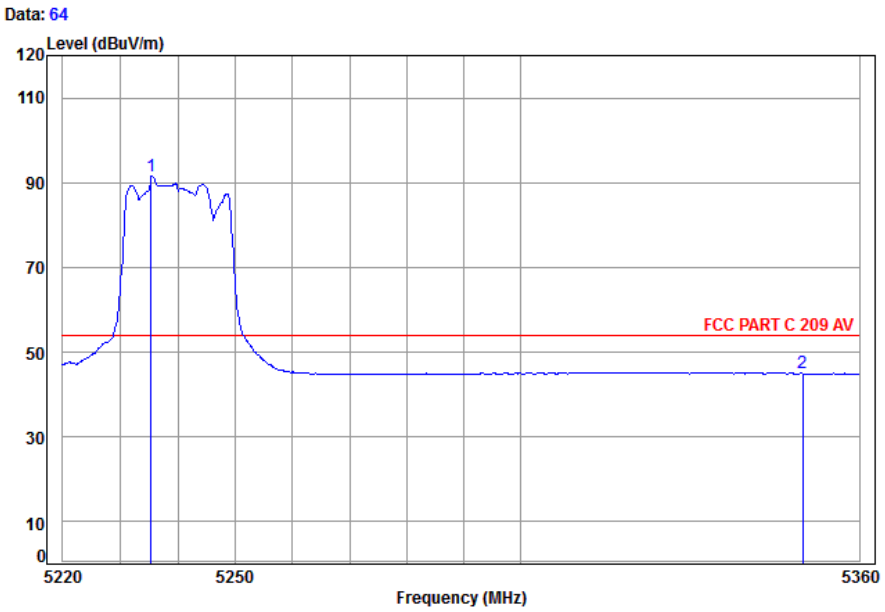
Test mode:	802.11n(HT20)	Test channel:	48	Remark:	Peak	Horizontal




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Horizontal
Job No:  : 1807PS
Mode:    : 5240 Band edge
         : N20
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5236.05	6.17	34.84	39.27	86.59	88.33	74.00	14.33
2 pk	5350.00	6.25	34.80	39.26	56.54	58.33	74.00	-15.67

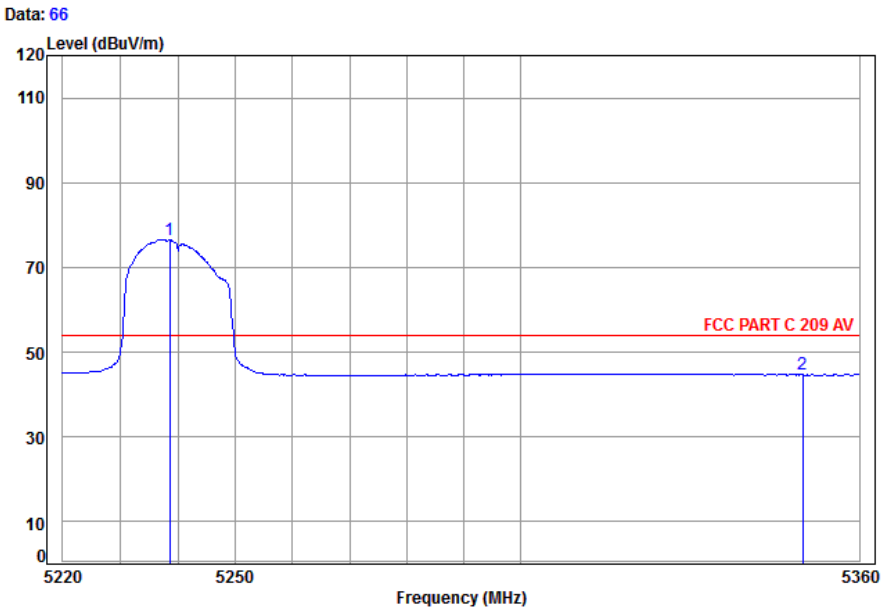
Test mode:	802.11n(HT20)	Test channel:	48	Remark:	Average	Vertical




```
Site     : chamber
Condition: FCC PART C 209 AV 3m Vertical
Job No:  : 1807PS
Mode:    : 5240 Band edge
         : N20
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5235.36	6.17	34.84	39.27	89.79	91.53	54.00	37.53
2 av	5350.00	6.25	34.80	39.26	43.20	44.99	54.00	-9.01

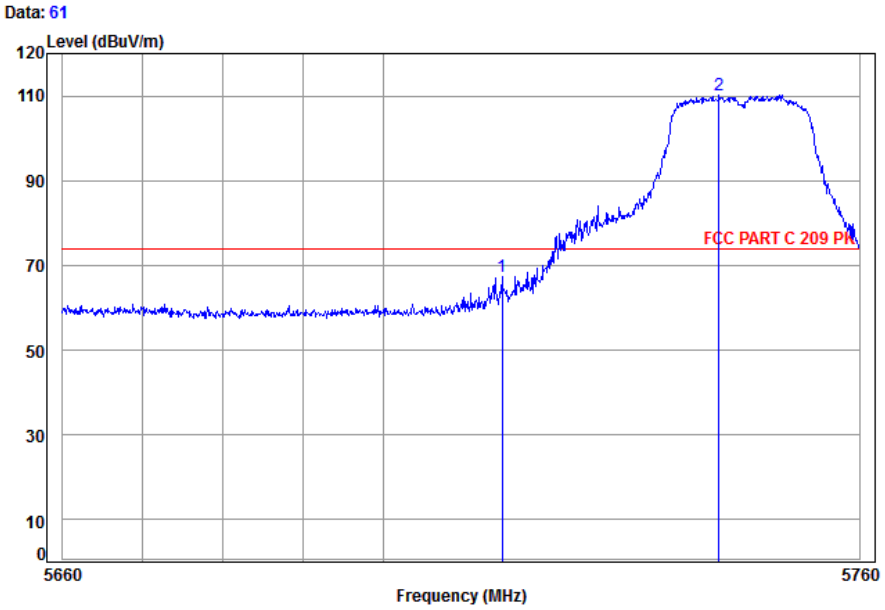
Test mode:	802.11n(HT20)	Test channel:	48	Remark:	Average	Horizontal




```
Site     : chamber
Condition: FCC PART C 209 AV 3m Horizontal
Job No:  : 1807PS
Mode:    : 5240 Band edge
         : N20
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5238.55	6.17	34.84	39.27	74.71	76.45	54.00	22.45
2 av	5350.00	6.25	34.80	39.26	42.90	44.69	54.00	-9.31

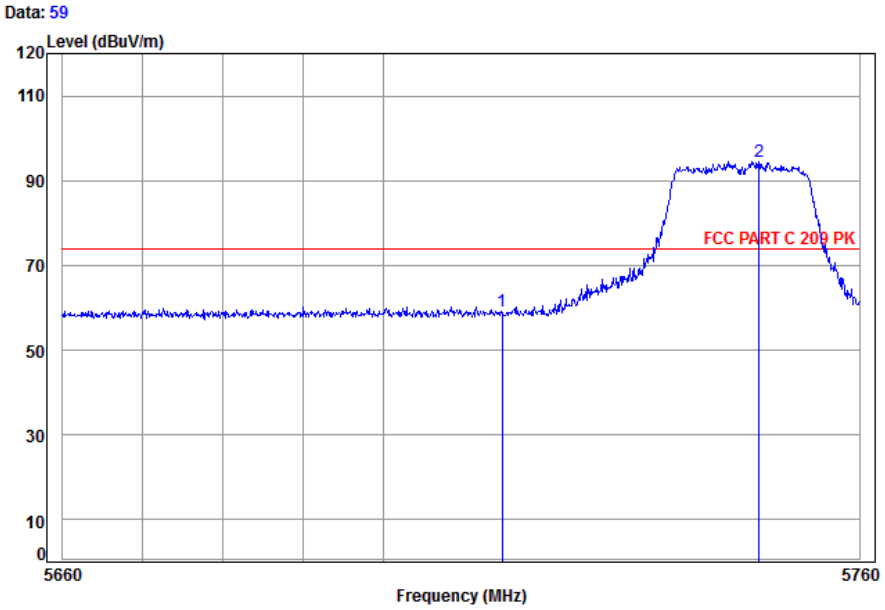
Test mode:	802.11n(HT20)	Test channel:	149	Remark:	Peak	Vertical




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Vertical
Job No:  : 1807PS
Mode:    : 5745 Band edge
         : N20
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pk	5715.00	6.87	35.70	39.21	63.87	67.23	74.00	-6.77
2 pp	5742.27	6.93	35.77	39.21	106.76	110.25	74.00	36.25

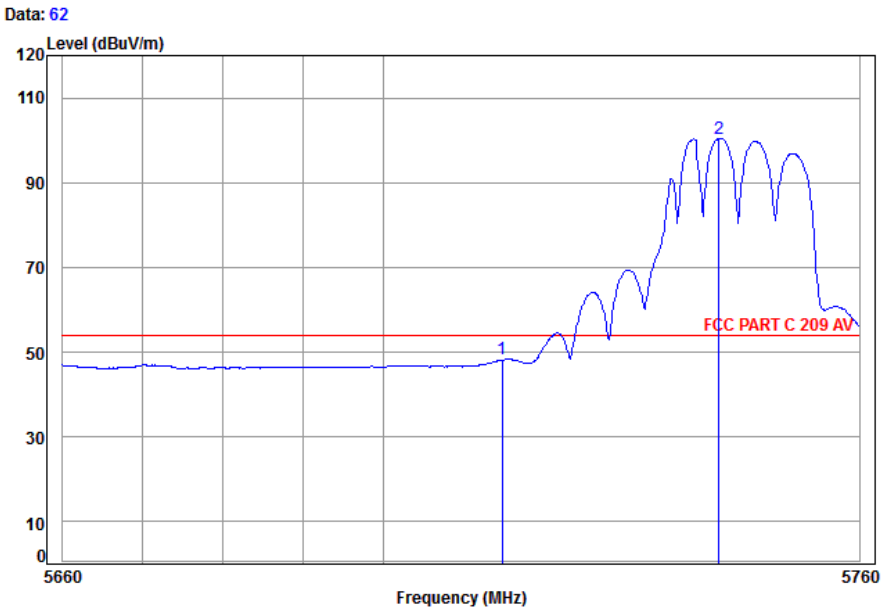
Test mode:	802.11n(HT20)	Test channel:	149	Remark:	Peak	Horizontal



Site : chamber
Condition: FCC PART C 209 PK 3m Horizontal
Job No: : 1807PS
Mode: : 5745 Band edge
: N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pk	5715.00	6.87	35.70	39.21	55.99	59.35	74.00	-14.65
2 pp	5747.30	6.94	35.78	39.21	90.97	94.48	74.00	20.48

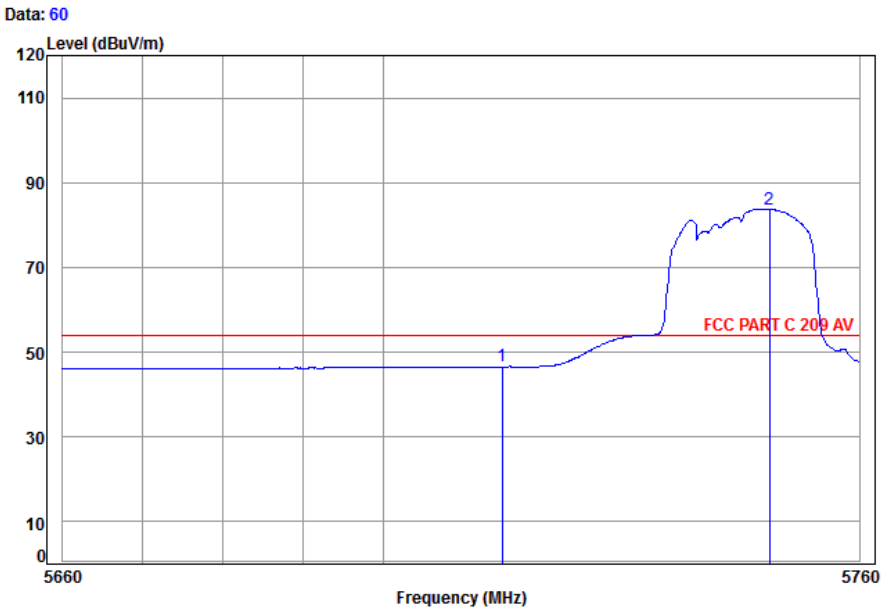
Test mode:	802.11n(HT20)	Test channel:	149	Remark:	Average	Vertical



Site : chamber
Condition: FCC PART C 209 AV 3m Vertical
Job No: : 1807PS
Mode: : 5745 Band edge
: N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 av	5715.00	6.87	35.70	39.21	45.01	48.37	54.00	-5.63
2 pp	5742.27	6.93	35.77	39.21	96.99	100.48	54.00	46.48

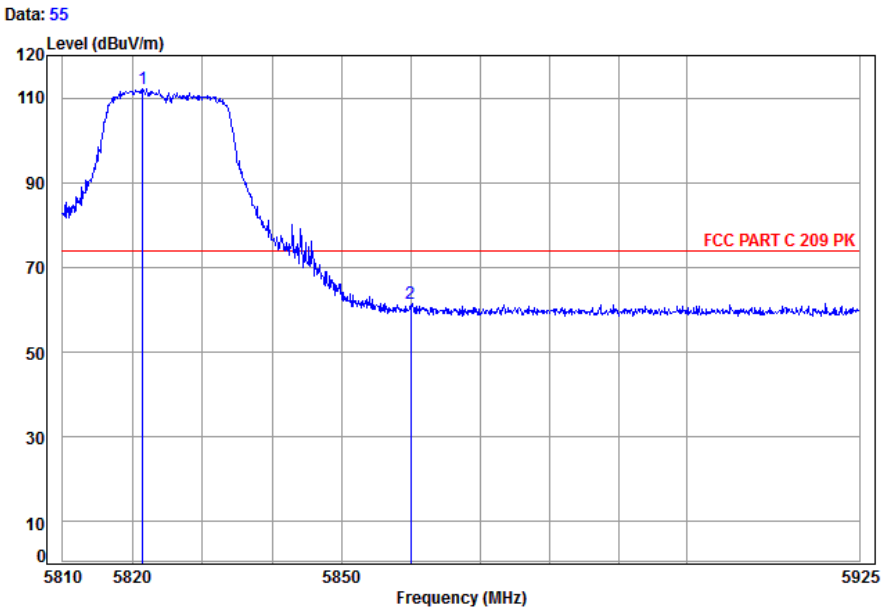
Test mode:	802.11n(HT20)	Test channel:	149	Remark:	Average	Horizontal



Site : chamber
Condition: FCC PART C 209 AV 3m Horizontal
Job No: : 1807PS
Mode: : 5745 Band edge
: N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 av	5715.00	6.87	35.70	39.21	43.24	46.60	54.00	-7.40
2 pp	5748.61	6.94	35.79	39.21	80.33	83.85	54.00	29.85

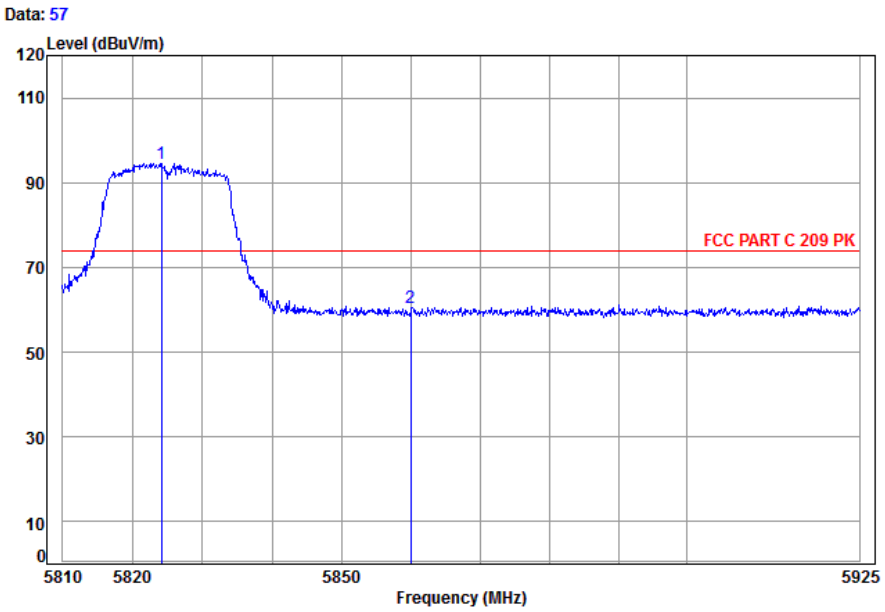
Test mode:	802.11n(HT20)	Test channel:	165	Remark:	Peak	Vertical




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Vertical
Job No:  : 1807PS
Mode:    : 5825 Band edge
         : N20
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5821.40	7.11	35.95	39.20	108.32	112.18	74.00	38.18
2 pk	5860.00	7.20	36.03	39.20	57.29	61.32	74.00	-12.68

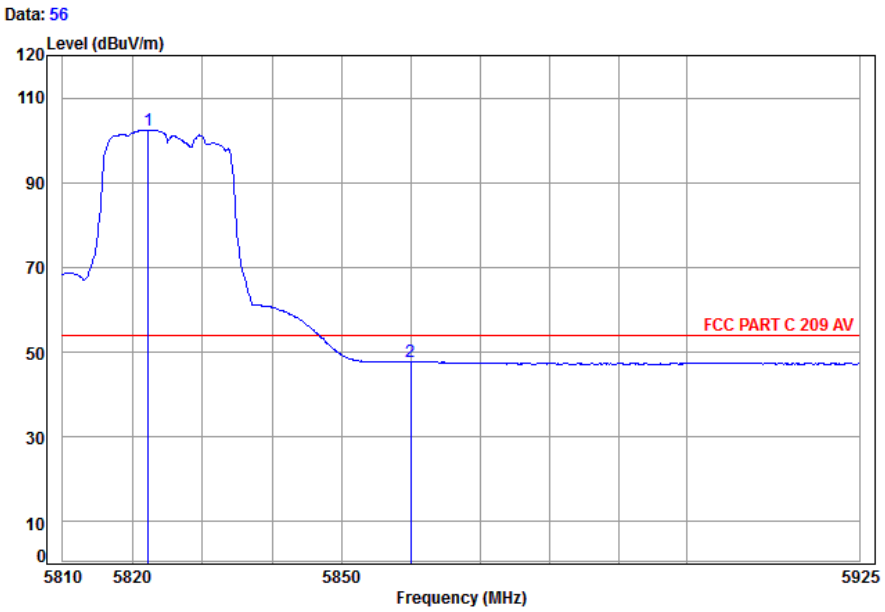
Test mode:	802.11n(HT20)	Test channel:	165	Remark:	Peak	Horizontal




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Horizontal
Job No:  : 1807PS
Mode:    : 5825 Band edge
         : N20
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5824.14	7.12	35.96	39.20	90.76	94.64	74.00	20.64
2 pk	5860.00	7.20	36.03	39.20	56.61	60.64	74.00	-13.36

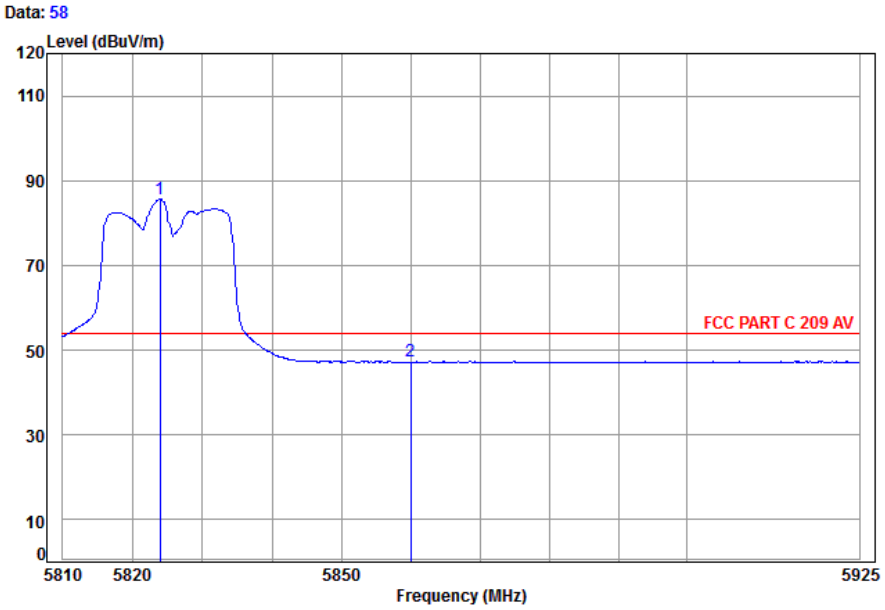
Test mode:	802.11n(HT20)	Test channel:	165	Remark:	Average	Vertical




```
Site     : chamber
Condition: FCC PART C 209 AV 3m Vertical
Job No:  : 1807PS
Mode:    : 5825 Band edge
         : N20
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5822.20	7.11	35.95	39.20	98.64	102.50	54.00	48.50
2 av	5860.00	7.20	36.03	39.20	43.74	47.77	54.00	-6.23

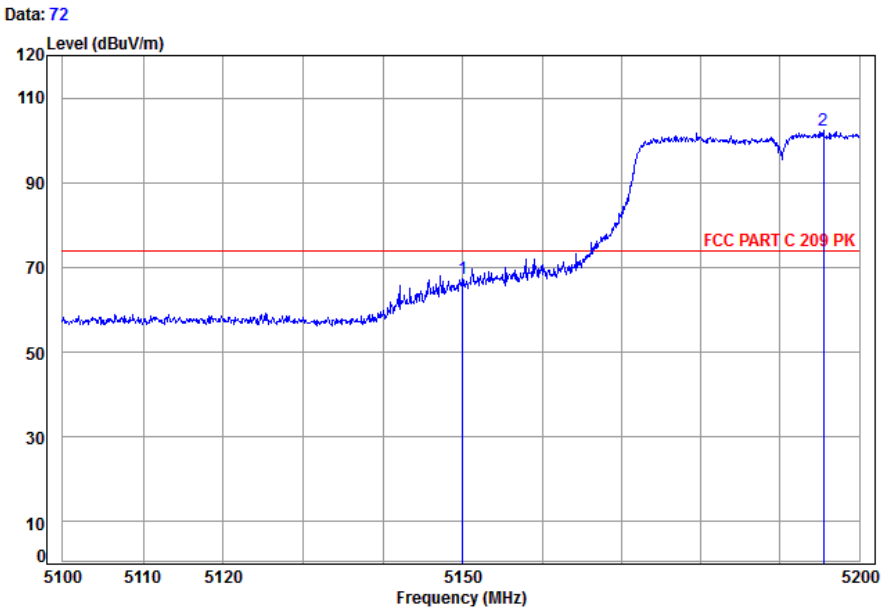
Test mode:	802.11n(HT20)	Test channel:	165	Remark:	Average	Horizontal




```
Site     : chamber
Condition: FCC PART C 209 AV 3m Horizontal
Job No:  : 1807PS
Mode:    : 5825 Band edge
         : N20
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5823.91	7.12	35.96	39.20	81.76	85.64	54.00	31.64
2 av	5860.00	7.20	36.03	39.20	43.25	47.28	54.00	-6.72

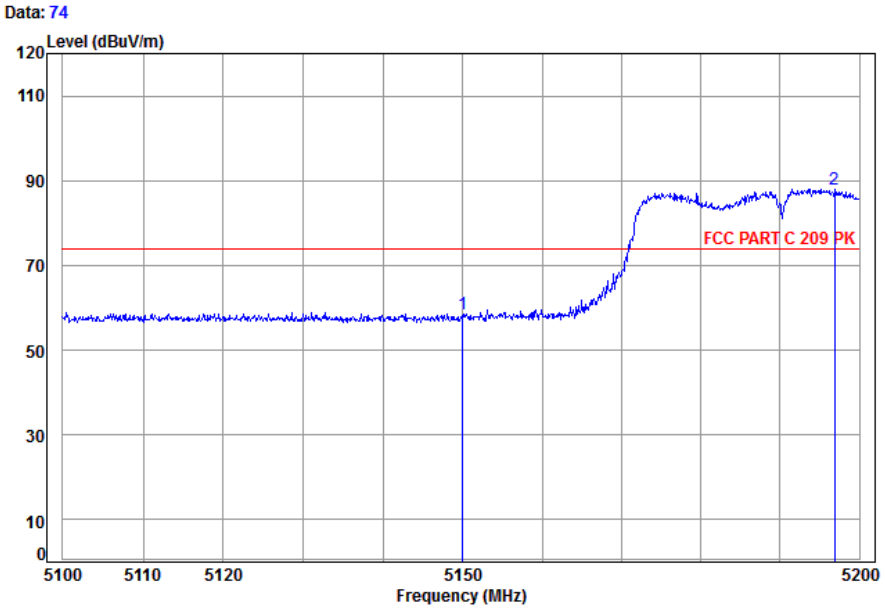
Test mode:	802.11n(HT40)	Test channel:	38	Remark:	Peak	Vertical



Site : chamber
Condition: FCC PART C 209 PK 3m Vertical
Job No: : 1807PS
Mode: : 5190 Band edge
: N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pk	5150.00	6.10	34.86	39.28	65.61	67.29	74.00	-6.71
2 pp	5195.46	6.14	34.85	39.28	100.49	102.20	74.00	28.20

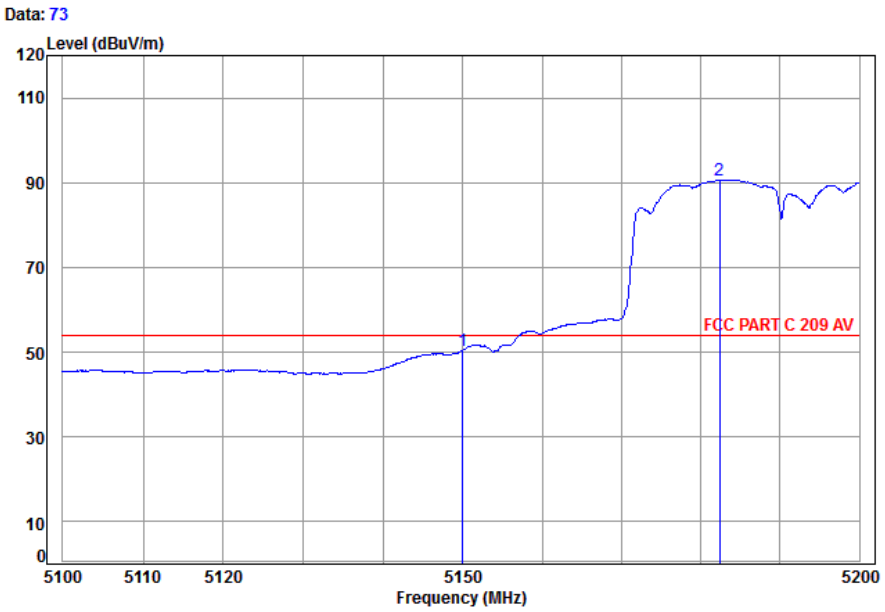
Test mode:	802.11n(HT40)	Test channel:	38	Remark:	Peak	Horizontal




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Horizontal
Job No:  : 1807PS
Mode:    : 5190 Band edge
         : N40
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pk	5150.00	6.10	34.86	39.28	56.96	58.64	74.00	-15.36
2 pp	5196.87	6.14	34.85	39.28	86.18	87.89	74.00	13.89

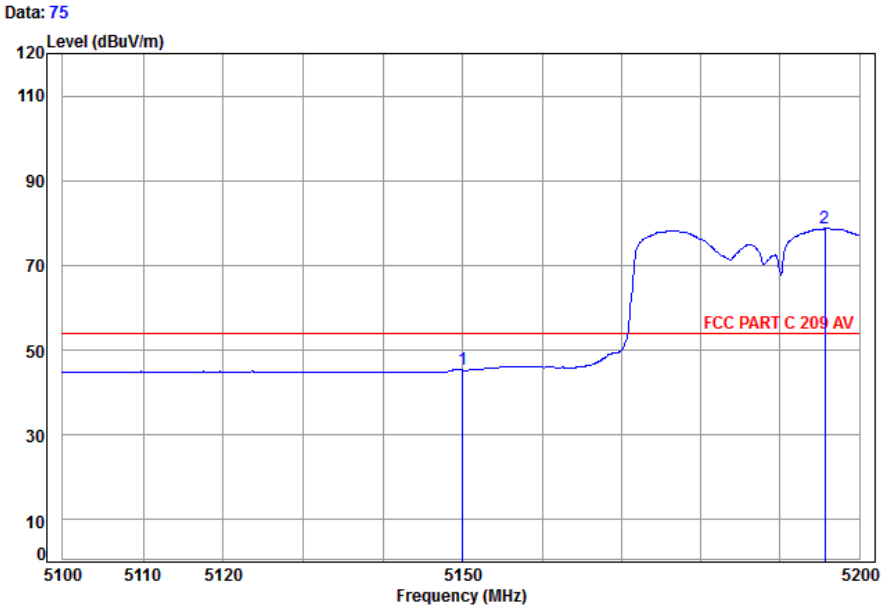
Test mode:	802.11n(HT40)	Test channel:	38	Remark:	Average	Vertical




```
Site     : chamber
Condition: FCC PART C 209 AV 3m Vertical
Job No:  : 1807PS
Mode:    : 5190 Band edge
         : N40
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 av	5150.00	6.10	34.86	39.28	48.71	50.39	54.00	-3.61
2 pp	5182.36	6.13	34.85	39.28	89.01	90.71	54.00	36.71

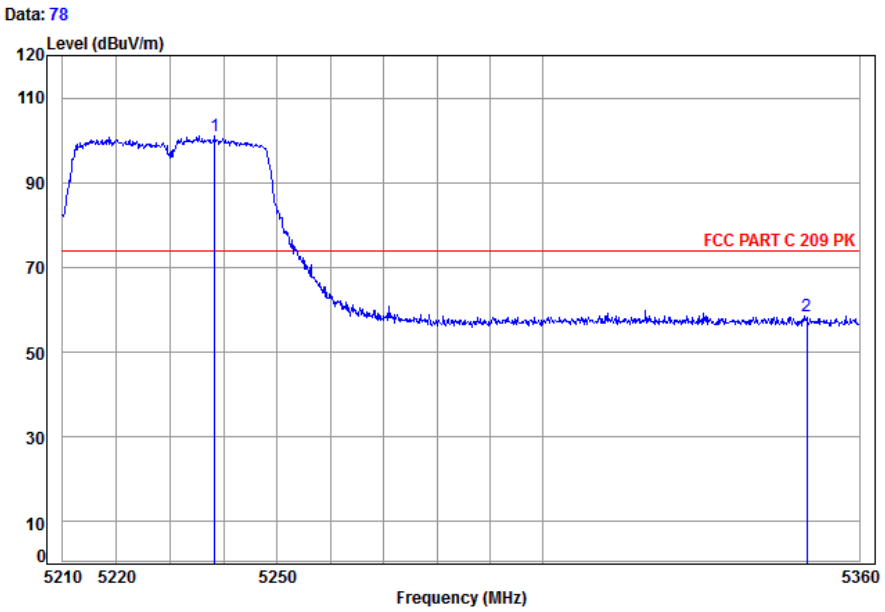
Test mode:	802.11n(HT40)	Test channel:	38	Remark:	Average	Horizontal



Site : chamber
Condition: FCC PART C 209 AV 3m Horizontal
Job No: : 1807PS
Mode: : 5190 Band edge
: N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 av	5150.00	6.10	34.86	39.28	43.74	45.42	54.00	-8.58
2 pp	5195.66	6.14	34.85	39.28	77.06	78.77	54.00	24.77

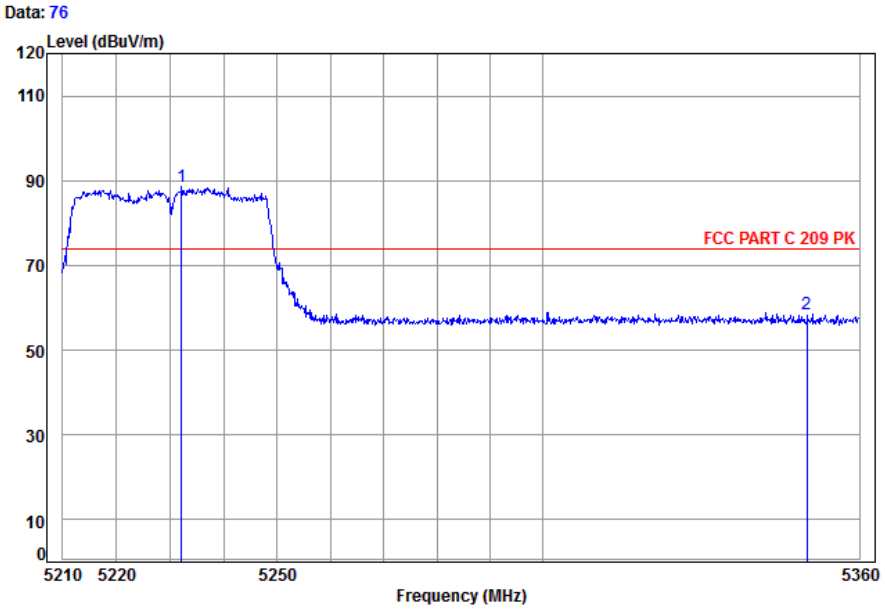
Test mode:	802.11n(HT40)	Test channel:	46	Remark:	Peak	Vertical




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Vertical
Job No:  : 1807PS
Mode:    : 5230 Band edge
         : N40
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5238.32	6.17	34.84	39.27	99.23	100.97	74.00	26.97
2 pk	5350.00	6.25	34.80	39.26	56.61	58.40	74.00	-15.60

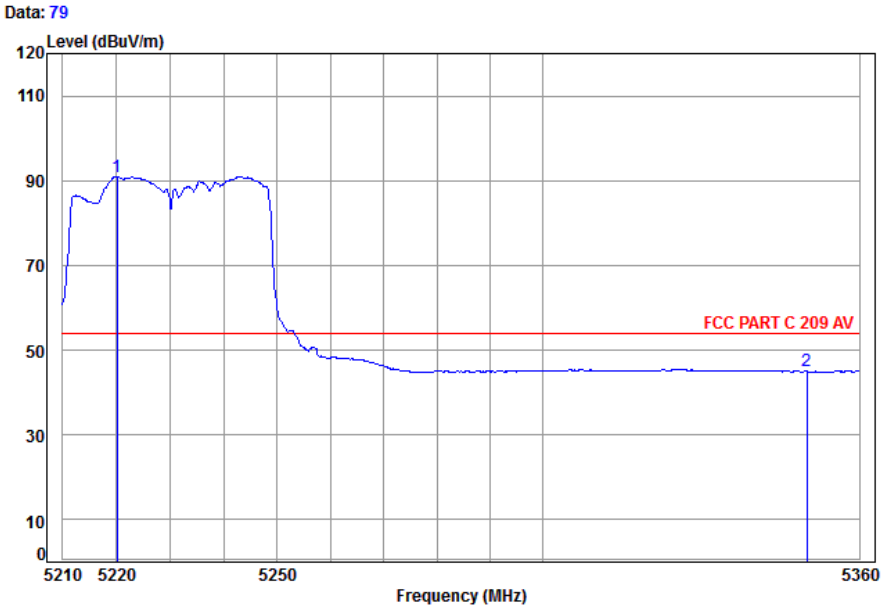
Test mode:	802.11n(HT40)	Test channel:	46	Remark:	Peak	Horizontal




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Horizontal
Job No:  : 1807PS
Mode:    : 5230 Band edge
         : N40
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5232.08	6.17	34.84	39.27	86.85	88.59	74.00	14.59
2 pk	5350.00	6.25	34.80	39.26	56.58	58.37	74.00	-15.63

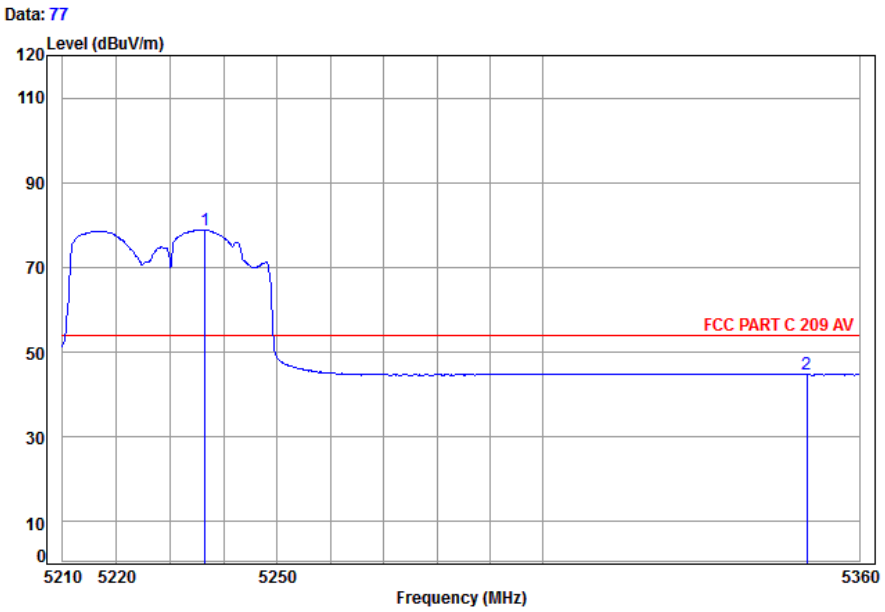
Test mode:	802.11n(HT40)	Test channel:	46	Remark:	Average	Vertical



Site : chamber
Condition: FCC PART C 209 AV 3m Vertical
Job No: : 1807PS
Mode: : 5230 Band edge
: N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5220.07	6.16	34.84	39.27	89.22	90.95	54.00	36.95
2 av	5350.00	6.25	34.80	39.26	43.23	45.02	54.00	-8.98

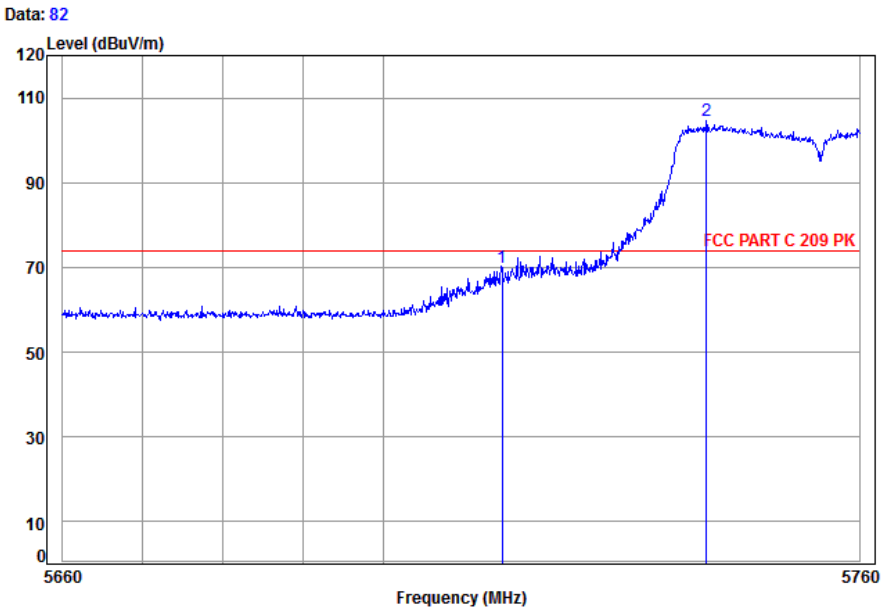
Test mode:	802.11n(HT40)	Test channel:	46	Remark:	Average	Horizontal




```
Site     : chamber
Condition: FCC PART C 209 AV 3m Horizontal
Job No:  : 1807PS
Mode:    : 5230 Band edge
         : N40
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5236.54	6.17	34.84	39.27	77.14	78.88	54.00	24.88
2 av	5350.00	6.25	34.80	39.26	42.97	44.76	54.00	-9.24

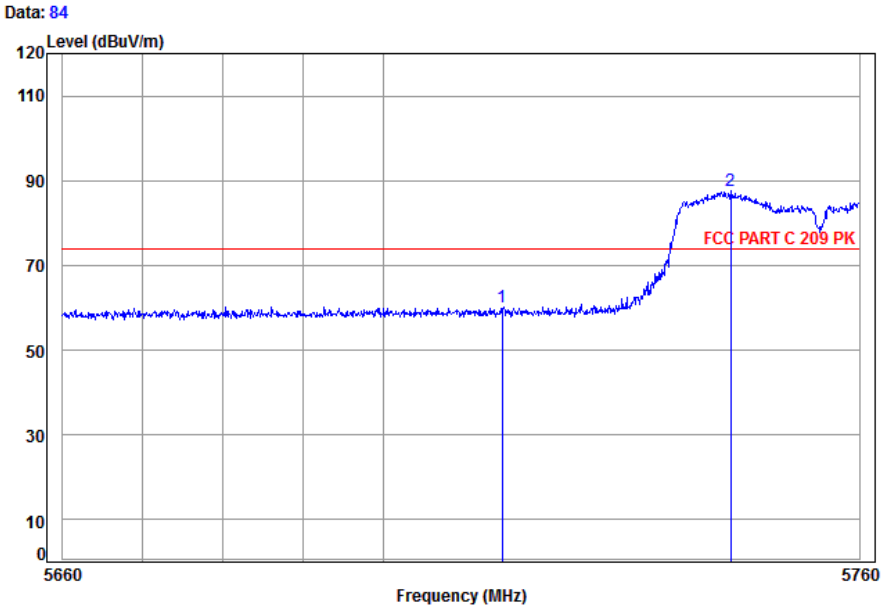
Test mode:	802.11n(HT40)	Test channel:	151	Remark:	Peak	Vertical




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Vertical
Job No:  : 1807PS
Mode:    : 5755 Band edge
         : N40
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pk	5715.00	6.87	35.70	39.21	66.68	70.04	74.00	-3.96
2 pp	5740.66	6.93	35.77	39.21	101.00	104.49	74.00	30.49

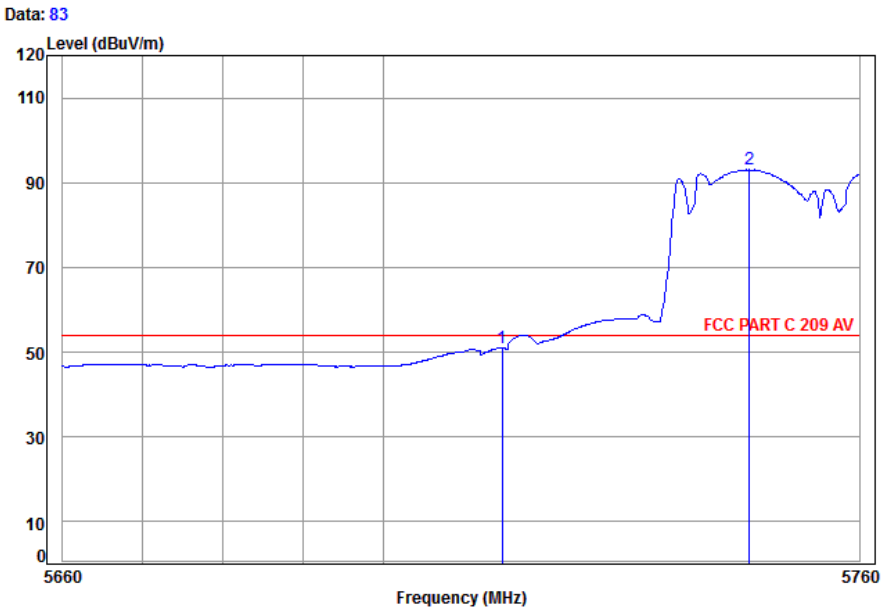
Test mode:	802.11n(HT40)	Test channel:	151	Remark:	Peak	Horizontal




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Horizontal
Job No:  : 1807PS
Mode:    : 5755 Band edge
         : N40
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pk	5715.00	6.87	35.70	39.21	56.93	60.29	74.00	-13.71
2 pp	5743.78	6.93	35.77	39.21	84.15	87.64	74.00	13.64

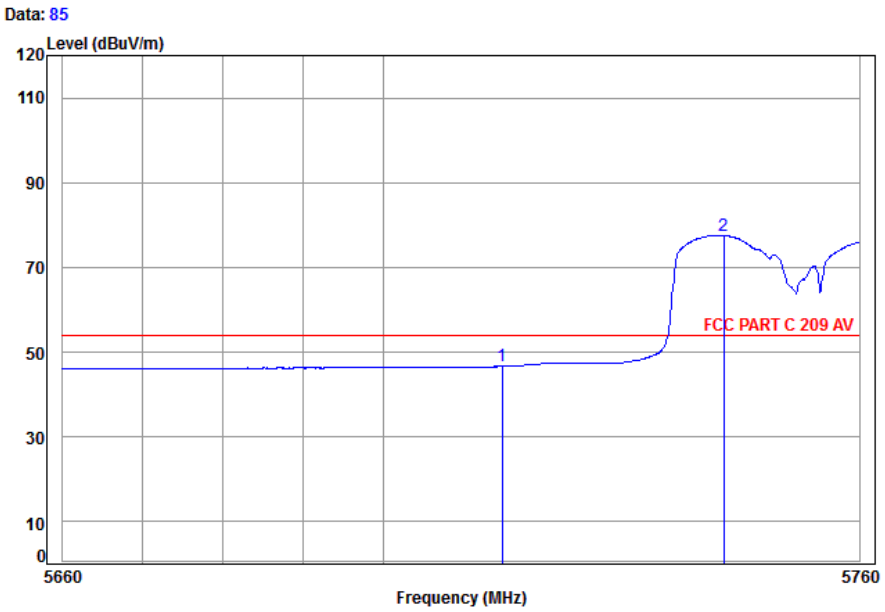
Test mode:	802.11n(HT40)	Test channel:	151	Remark:	Average	Vertical



Site : chamber
Condition: FCC PART C 209 AV 3m Vertical
Job No: : 1807PS
Mode: : 5755 Band edge
: N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 av	5715.00	6.87	35.70	39.21	47.61	50.97	54.00	-3.03
2 pp	5746.10	6.94	35.78	39.21	89.53	93.04	54.00	39.04

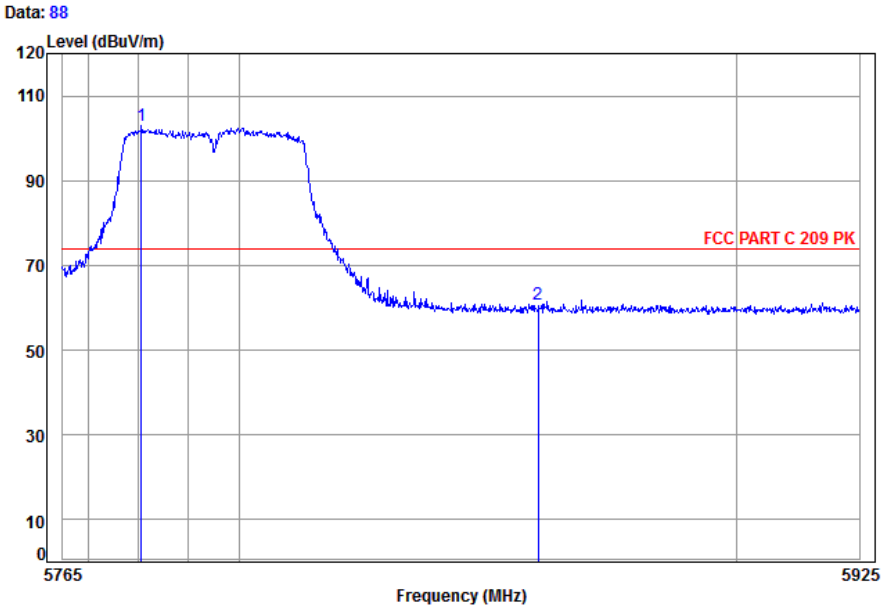
Test mode:	802.11n(HT40)	Test channel:	151	Remark:	Average	Horizontal



Site : chamber
Condition: FCC PART C 209 AV 3m Horizontal
Job No: : 1807PS
Mode: : 5755 Band edge
: N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 av	5715.00	6.87	35.70	39.21	43.40	46.76	54.00	-7.24
2 pp	5742.88	6.93	35.77	39.21	74.15	77.64	54.00	23.64

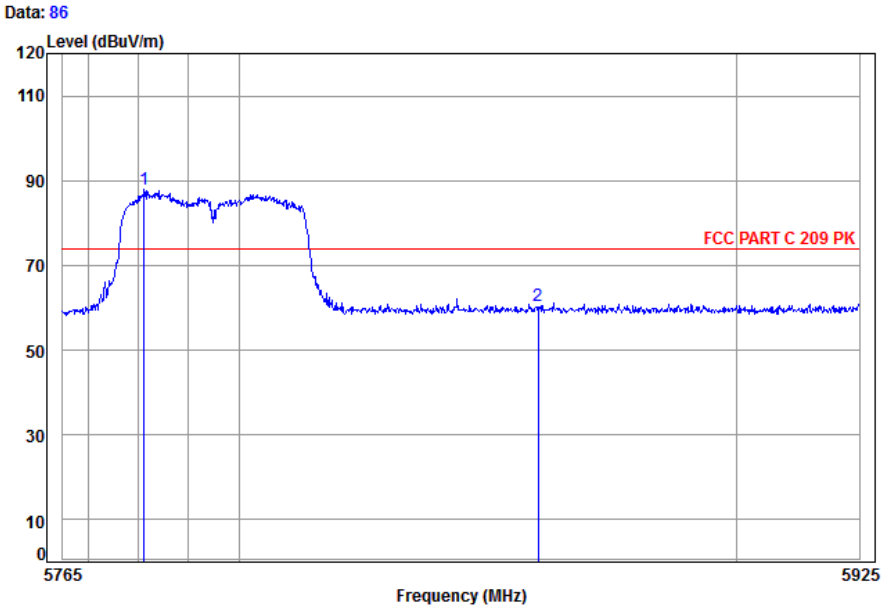
Test mode:	802.11n(HT40)	Test channel:	159	Remark:	Peak	Vertical




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Vertical
Job No:  : 1807PS
Mode:    : 5795 Band edge
         : N40
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5780.65	7.02	35.86	39.21	99.33	103.00	74.00	29.00
2 pk	5860.00	7.20	36.03	39.20	56.87	60.90	74.00	-13.10

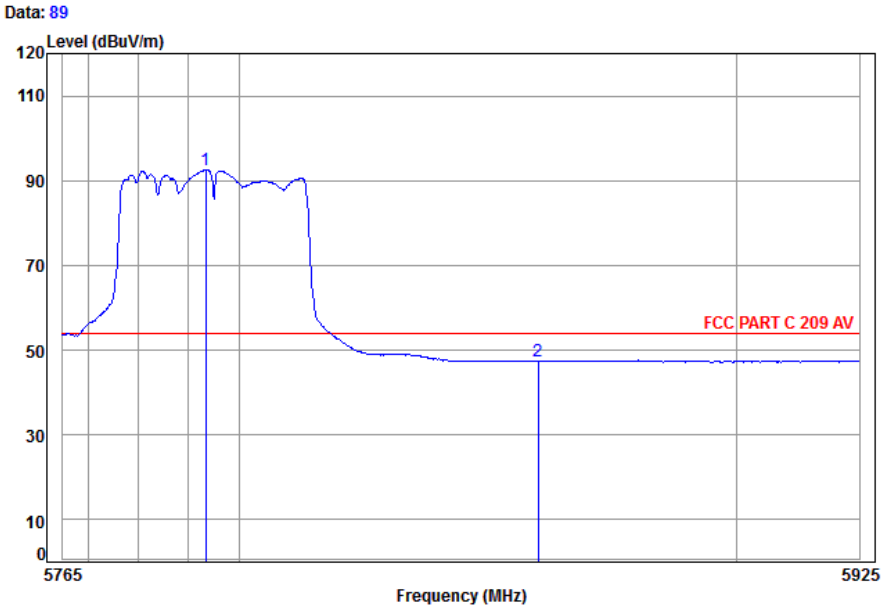
Test mode:	802.11n(HT40)	Test channel:	159	Remark:	Peak	Horizontal




```
Site     : chamber
Condition: FCC PART C 209 PK 3m Horizontal
Job No:  : 1807PS
Mode:    : 5795 Band edge
         : N40
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5781.12	7.02	35.86	39.21	84.24	87.91	74.00	13.91
2 pk	5860.00	7.20	36.03	39.20	56.54	60.57	74.00	-13.43

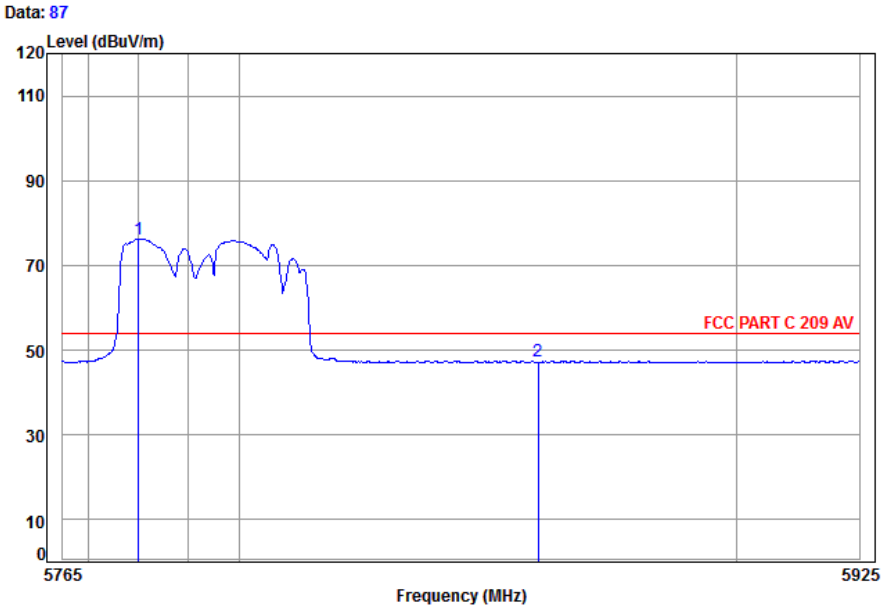
Test mode:	802.11n(HT40)	Test channel:	159	Remark:	Average	Vertical




```
Site     : chamber
Condition: FCC PART C 209 AV 3m Vertical
Job No:  : 1807PS
Mode:    : 5795 Band edge
         : N40
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5793.48	7.05	35.89	39.21	88.78	92.51	54.00	38.51
2 av	5860.00	7.20	36.03	39.20	43.44	47.47	54.00	-6.53

Test mode:	802.11n(HT40)	Test channel:	159	Remark:	Average	Horizontal



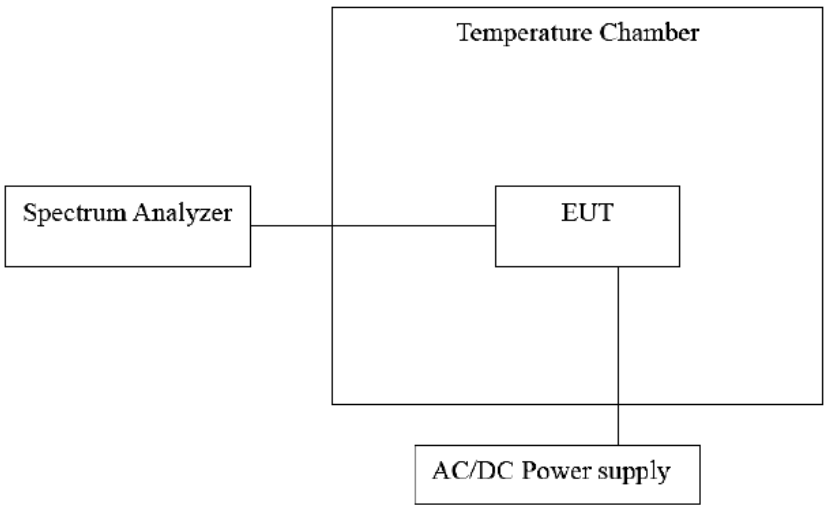

```
Site     : chamber
Condition: FCC PART C 209 AV 3m Horizontal
Job No:  : 1807PS
Mode:    : 5795 Band edge
         : N40
```

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	5780.01	7.02	35.86	39.21	72.47	76.14	54.00	22.14
2 av	5860.00	7.20	36.03	39.20	43.26	47.29	54.00	-6.71

Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

6.10 Frequency Stability

Test Requirement:	47 CFR Part 15 Section 15.407(g)
Test Method:	ANSI C63.10: 2013
Test Setup:	
Limit:	The frequency tolerance shall be maintained within the band of operation frequency over a temperature variation of -10 degrees to 40 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.
Test Procedure:	a. The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage. b. Turn the EUT on and couple its output to a spectrum analyzer. c. Turn the EUT off and set the chamber to the highest temperature specified. d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature. f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates.
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCSO of rate is the worst case of 802.11n(HT20); MCSO of rate is the worst case of 802.11n(HT40) Only the worst case is recorded in the report.

Test plot as follows:

Test mode:	802.11a	Frequency(MHz):	5180

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5180.0063	6300	Pass
30		5180.0065	6500	Pass
20		5179.9977	-3000	Pass
10		5179.9888	-11200	Pass
0		5180.0039	3900	Pass
-10		5180.0036	3600	Pass
20	138	5179.9833	-16700	Pass
	120	5180.0035	3500	Pass
	102	5179.9826	-17400	Pass

Test mode:	802.11a	Frequency(MHz):	5200

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5200.0087	8700	Pass
30		5200.0088	8800	Pass
20		5200.0072	7200	Pass
10		5200.0041	4100	Pass
0		5199.9980	-2000	Pass
-10		5199.9975	-2500	Pass
20	138	5199.9967	-3300	Pass
	120	5200.0033	3300	Pass
	102	5200.0055	5500	Pass

Test mode:	802.11a	Frequency(MHz):	5240

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5240.0021	2100	Pass
30		5240.0033	3300	Pass
20		5240.0012	1200	Pass
10		5239.9988	-1200	Pass
0		5239.9984	-1600	Pass
-10		5239.9982	-1800	Pass
20	138	5240.0034	3400	Pass
	120	5240.0010	1000	Pass
	102	5239.9982	-1800	Pass

Test mode:	802.11a	Frequency(MHz):	5745

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5745.0032	3200	Pass
30		5745.0055	5500	Pass
20		5745.0045	4500	Pass
10		5745.0031	3100	Pass
0		5744.9967	-3300	Pass
-10		5744.9964	-3600	Pass
20	138	5745.0011	1100	Pass
	120	5745.0014	1400	Pass
	102	5745.0025	2500	Pass

Test mode:	802.11a	Frequency(MHz):	5785

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5785.0021	2100	Pass
30		5785.0029	2900	Pass
20		5785.0021	2100	Pass
10		5785.0009	900	Pass
0		5785.0028	2800	Pass
-10		5785.0025	2500	Pass
20	138	5785.0032	3200	Pass
	120	5785.0014	1400	Pass
	102	5784.9976	-2400	Pass

Test mode:	802.11a	Frequency(MHz):	5825

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5825.0011	1100	Pass
30		5825.0033	3300	Pass
20		5825.0021	2100	Pass
10		5824.9989	-1100	Pass
0		5824.9988	-1200	Pass
-10		5824.9985	-1500	Pass
20	138	5825.0033	3300	Pass
	120	5825.0013	1300	Pass
	102	5825.0022	2200	Pass

Test mode:	802.11n(HT20)	Frequency(MHz):	5180

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5180.0033	3300	Pass
30		5180.0024	2400	Pass
20		5179.9988	-1200	Pass
10		5179.9996	-400	Pass
0		5180.0021	2100	Pass
-10		5180.0011	1100	Pass
20	138	5180.0021	2100	Pass
	120	5179.9993	-700	Pass
	102	5179.9993	-700	Pass

Test mode:	802.11n(HT20)	Frequency(MHz):	5200

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5200.0033	3300	Pass
30		5200.0022	2200	Pass
20		5200.0025	2500	Pass
10		5200.0015	1500	Pass
0		5200.0022	2200	Pass
-10		5200.0020	2000	Pass
20	138	5199.9975	-2500	Pass
	120	5199.9991	-900	Pass
	102	5200.0032	3200	Pass

Test mode:	802.11n(HT20)	Frequency(MHz):	5240

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5240.0021	2100	Pass
30		5240.0020	2000	Pass
20		5240.0027	2700	Pass
10		5240.0016	1600	Pass
0		5240.0033	3300	Pass
-10		5240.0033	3500	Pass
20	138	5240.0031	3100	Pass
	120	5239.9991	-900	Pass
	102	5239.9988	-1200	Pass

Test mode:	802.11n(HT20)	Frequency(MHz):	5745

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5745.0022	2200	Pass
30		5745.0028	2800	Pass
20		5745.0031	3100	Pass
10		5745.0024	2400	Pass
0		5745.0013	1300	Pass
-10		5745.0015	1500	Pass
20	138	5745.0042	4200	Pass
	120	5744.9988	-1200	Pass
	102	5745.0023	2300	Pass

Test mode:	802.11n(HT20)	Frequency(MHz):	5785

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5785.0033	3300	Pass
30		5785.0048	4800	Pass
20		5785.0022	2200	Pass
10		5784.9987	-1300	Pass
0		5784.9966	-3400	Pass
-10		5784.9968	-3200	Pass
20	138	5785.0031	3100	Pass
	120	5785.0020	2000	Pass
	102	5785.0033	3300	Pass

Test mode:	802.11n(HT20)	Frequency(MHz):	5825

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5824.9993	-700	Pass
30		5824.9977	-2300	Pass
20		5824.9966	-3400	Pass
10		5824.9985	-1500	Pass
0		5825.0015	1500	Pass
-10		5825.0010	1000	Pass
20	138	5825.0035	3500	Pass
	120	5824.9987	-1300	Pass
	102	5825.0024	2400	Pass

Test mode:	802.11n(HT40)	Frequency(MHz):	5190

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5190.0088	1200	Pass
30		5190.0077	2300	Pass
20		5190.0085	1500	Pass
10		5190.0032	3200	Pass
0		5190.0022	2200	Pass
-10		5190.0020	2000	Pass
20	138	5189.9910	-9000	Pass
	120	5189.9978	-2200	Pass
	102	5190.0032	3200	Pass

Test mode:	802.11n(HT40)	Frequency(MHz):	5230

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5230.0045	4500	Pass
30		5230.0056	5600	Pass
20		5230.0033	3300	Pass
10		5229.9988	-1200	Pass
0		5229.9985	-1500	Pass
-10		5229.9990	-1000	Pass
20	138	5230.0043	4300	Pass
	120	5230.0023	2300	Pass
	102	5229.9978	-2200	Pass

Test mode:	802.11n(HT40)	Frequency(MHz):	5755

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5755.0033	3300	Pass
30		5755.0029	2900	Pass
20		5755.0026	2600	Pass
10		5755.0055	5500	Pass
0		5755.0035	3500	Pass
-10		5755.0030	3000	Pass
20	138	5755.0042	4200	Pass
	120	5755.0032	3200	Pass
	102	5755.0037	3700	Pass

Test mode:	802.11n(HT40)	Frequency(MHz):	5795

Temperature (°C)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
40	120	5794.9982	-1800	Pass
30		5794.9978	-2200	Pass
20		5795.0041	4100	Pass
10		5795.0032	3200	Pass
0		5795.0025	2500	Pass
-10		5795.0020	2000	Pass
20	138	5795.0026	2600	Pass
	120	5794.9983	-1700	Pass
	102	5794.9967	-3300	Pass

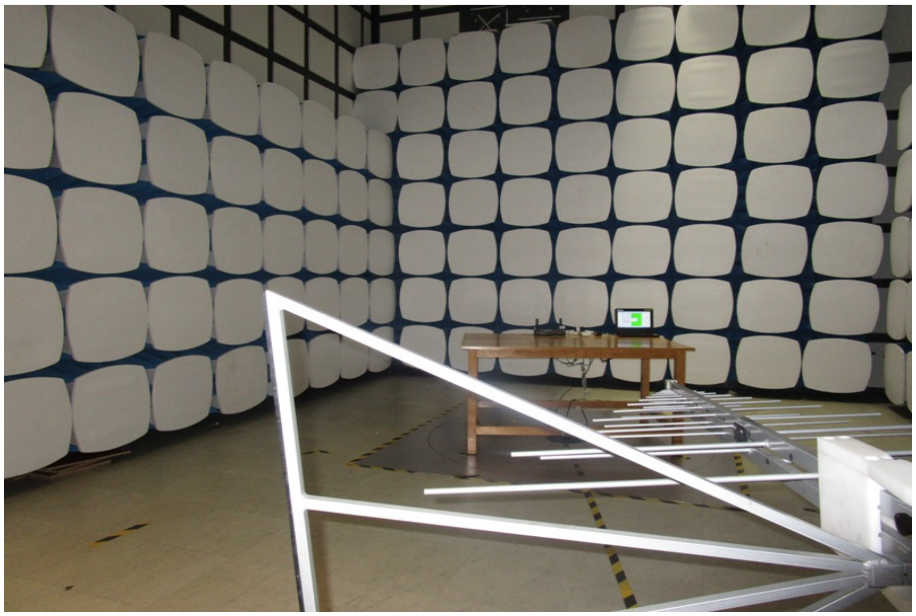
6.11 Automatically Discontinue Transmission Requirement

Test Requirement:	47 CFR Part 15 Section 15.407 (c)
Declaration from applicant	WIFI chip (AR9344) support automatically discontinue transmission in case of either absence of information to transmit or operational failure, if the chip detect absence of information to transmit or operational failure, it will be automatically shut off.

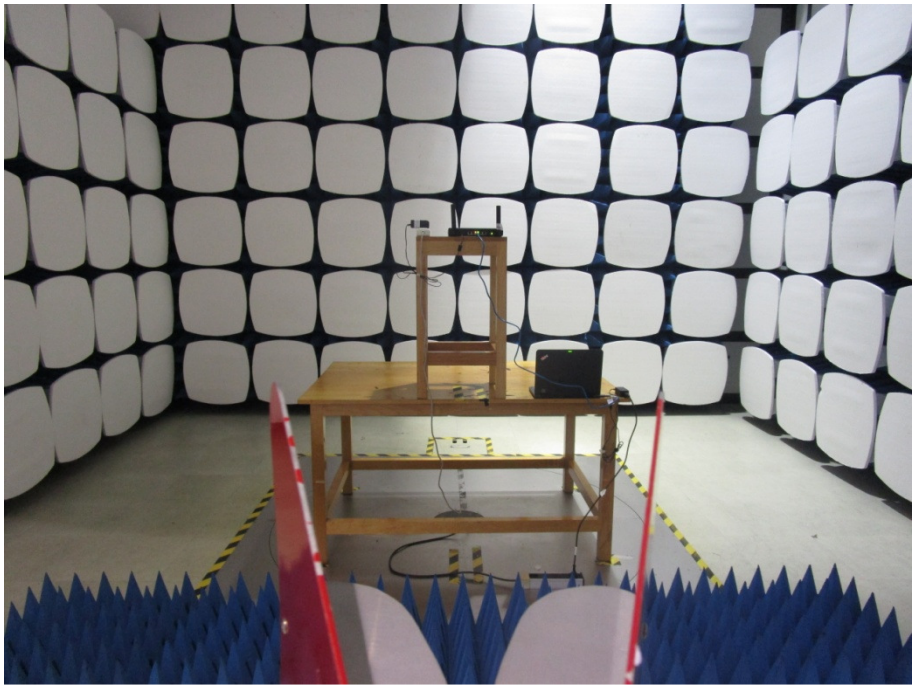
7 Photographs - EUT Test Setup

Test model No.: Surf SOHO

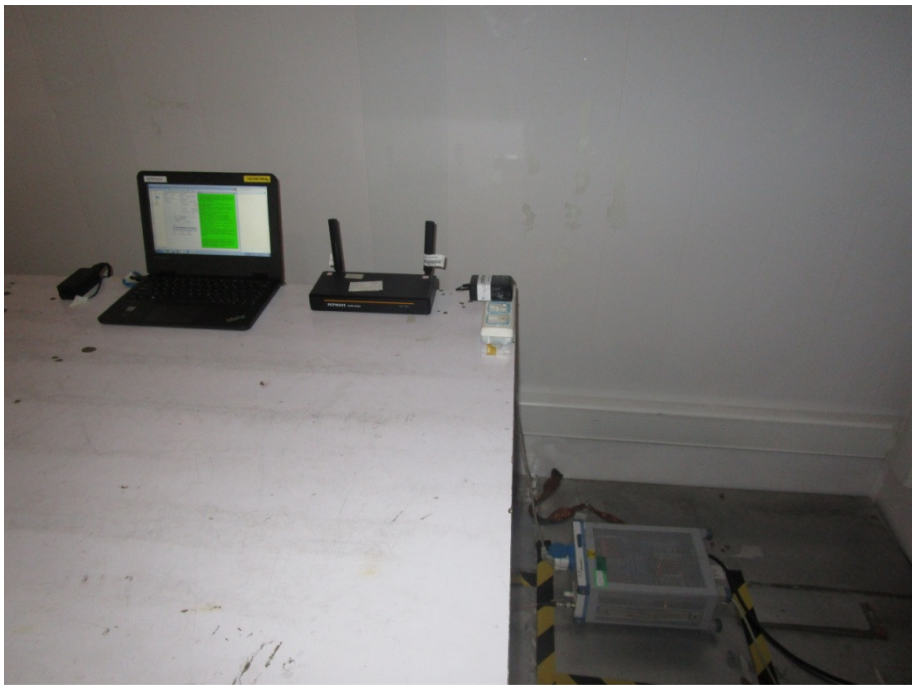
7.1 Radiated Emission



7.2 Radiated Spurious Emission



7.3 Conducted Emission



8 Photographs - EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for HKES1509001807PS.