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FCC REPORT

Application No:	HKES1605000840IT
Applicant:	Pismo Labs Technology Limited
Product Name:	Peplink/ Pepwave/ Pismo Labs wireless product
Model No.(EUT):	Balance One
Add Model No.:	Balance One AC, Balance One Core , Pismo805AC
FCC ID:	U8G-P1805AC
Standards:	47 CFR Part 15, Subpart E (2015)
Date of Receipt:	2016-05-11
Date of Test:	2016-05-13 to 2016-05-19
Date of Issue:	2016-06-02
Test Result:	**PASS ***

. * In the configuration tested, the EUT 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.

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2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
00		2016-06-02		Original

Authorized for issue by:				
Tested By		(Hank Yan) /Project Engineer		2016-05-19 **Date**
Prepared By		(Joyce Shi) /Clerk		2016-06-02 **Date**
Checked By		(Eric Fu) /Reviewer		2016-06-02 **Date**

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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

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4 Contents

Page

1 COVER PAGE **1**

2 VERSION **2**

3 TEST SUMMARY **3**

4 CONTENTS **4**

5 GENERAL INFORMATION **5**

5.1 CLIENT INFORMATION 5
5.2 GENERAL DESCRIPTION OF EUT 5
5.3 TEST ENVIRONMENT AND MODE 7
5.4 DESCRIPTION OF SUPPORT UNITS 7
5.5 TEST LOCATION 7
5.6 TEST FACILITY 8
5.7 DEVIATION FROM STANDARDS 8
5.8 ABNORMALITIES FROM STANDARD CONDITIONS 8
5.9 OTHER INFORMATION REQUESTED BY THE CUSTOMER 8
5.10 EQUIPMENT LIST 9

6 TEST RESULTS AND MEASUREMENT DATA **12**

6.1 ANTENNA REQUIREMENT 12
6.2 CONDUCTED EMISSIONS 13
6.3 DUTY CYCLE 17
6.4 CONDUCTED OUTPUT POWER 25
6.5 26DB EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH 30
6.6 6DB EMISSION BANDWIDTH 46
6.7 POWER SPECTRAL DENSITY 55
6.8 RADIATED SPURIOUS EMISSIONS 99
6.8.1 Radiated emission below 1GHz 101
6.8.2 Transmitter emission above 1GHz 103
6.9 RESTRICTED BANDS AROUND FUNDAMENTAL FREQUENCY 118
6.10 FREQUENCY STABILITY 168
6.11 AUTOMATICALLY DISCONTINUE TRANSMISSION REQUIREMENT 183

7 PHOTOGRAPHS - EUT TEST SETUP **184**

7.1 CONDUCTED EMISSION 184
7.2 RADIATED EMISSION 184
7.3 RADIATED SPURIOUS EMISSION 185

8 PHOTOGRAPHS - EUT CONSTRUCTIONAL DETAILS **185**

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5 General Information

5.1 Client Information

Applicant:	Pismo Labs Technology Limited
Address of Applicant:	FLAT/RM A5, 5/F HK SPINNERS IND BLDG PHASE 6, 481 CASTLE PEAK ROAD, CHEUNG SHA WAN, HONG KONG

5.2 General Description of EUT

Product Name:	Peplink/ Pepwave/ Pismo Labs wireless product			
Model No.:	Balance One			
Operation Frequency:	Band	Mode	Frequency Range(MHz)	Number of channels
	UNII Band I	IEEE 802.11a	5180-5240	4
		IEEE 802.11n/ac 20MHz	5180-5240	4
		IEEE 802.11n/ac 40MHz	5190-5230	2
		IEEE 802.11ac 80MHz	5210	1
	UNII Band III	IEEE 802.11a	5745-5825	5
		IEEE 802.11n/ac 20MHz	5745-5825	5
		IEEE 802.11n/ac 40MHz	5755-5795	2
		IEEE 802.11ac 80MHz	5775	1
	* The 5600-5650MHz can not be used.			
Type of Modulation:	IEEE 802.11a: OFDM(BPSK/QPSK/16QAM/64QAM) IEEE 802.11n: OFDM(BPSK/QPSK/16QAM/64QAM) IEEE 802.11ac: OFDM (BPSK/QPSK/16QAM/64QAM/256QAM)			
Antenna Type:	MIMO*3			
Antenna Gain:	Ant1:5.45dBi; Ant2:5.72dBi; Ant3:6.03dBi			
Power Supply:	SWITCH POWER SUPPLY Model: MU24-Y120200-A1 Input: AC 100-240V, 50/60Hz, 0.7A. Output: DC 12V, 2A			

Remark:

Model No.: Balance One, Balance One AC, Balance One Core , Pismo805AC

Only the model Balance One was tested, since the circuit design, PCB layout, electrical components used, internal wiring and functions were identical for the above models, only different on model names for the marketing requirement.

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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 UNII Band I:

Mode	Channel	Frequency(MHz)
IEEE 802.11a/n/ac 20MHz	The Lowest channel	5180
	The Middle channel	5200
	The Highest channel	5240
IEEE 802.11n/ac 40MHz	The Lowest channel	5190
	The Highest channel	5230
IEEE 802.11ac 80MHz	One channel	5210

For UNII Band III:

Mode	Channel	Frequency(MHz)
IEEE 802.11a/n/ac 20MHz	The Lowest channel	5745
	The Middle channel	5785
	The Highest channel	5825
IEEE 802.11n/ac 40MHz	The Lowest channel	5755
	The Highest channel	5795
IEEE 802.11ac 80MHz	One channel	5775

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5.3 Test Environment and Mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	55% RH
Atmospheric Pressure:	1020 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.

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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)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber 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-1, 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.

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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	SEM001-06	2016-05-13	2017-05-13
2	LISN	Rohde & Schwarz	ENV216	SEM007-01	2015-10-09	2016-10-09
3	LISN	ETS-LINDGREN	3816/2	SEM007-02	2016-04-25	2017-04-25
4	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	EMC0120	2015-08-30	2016-08-30
5	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	EMC0121	2015-08-30	2016-08-30
6	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	EMC0122	2015-08-30	2016-08-30
7	EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2016-04-25	2017-04-25
8	DC Power Supply	Zhao Xin	RXN-305D	SEM011-02	2015-10-09	2016-10-09

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RE in Chamber						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. date (yyyy-mm-dd)**	**Cal.Due date (yyyy-mm-dd)**
1	10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2015-08-01	2016-08-01
2	EMI Test Receiver (9k-3GHz)	Rohde & Schwarz	ESCI	SEM004-01	2016-04-25	2017-04-25
3	Trilog-Broadband Antenna(30M-1GHz)	Schwarzbeck	VULB9168	SEM003-17	2016-01-26	2017-01-26
4	Pre-amplifier	Sonoma Instrument Co	310N	SEM005-03	2016-04-25	2017-04-25
5	Loop Antenna	ETS-Lindgren	6502	SEM003-08	2015-08-14	2016-08-14

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	AUDIX	N/A	SEL0198	2016-05-13	2017-05-13
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	2016-05-13	2017-05-13
3	EMI Test software	AUDIX	E3	SEL0201	N/A	N/A
4	Coaxial cable	SGS	N/A	SEL0202	2016-05-13	2017-05-13
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2015-11-15	2016-11-15
6	Amplifier (0.1-1300MHz)	HP	8447D	SEL0153	2015-10-09	2016-10-09
7	Horn Antenna (1-18GHz)	Rohde & Schwarz	HF907	SEL0311	2015-06-14	2016-06-14
8	Horn Antenna (18-26GHz)	ETS-Lindgren	3160	SEM003-12	2014-11-24	2017-11-24
9	Low Noise Amplifier	Black Diamond Series	BDLNA-0118-352810	SEL0319	2015-10-09	2016-10-09
10	Band filter	Amindeon	Asi 3314	SEL0094	2016-05-13	2017-05-13

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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	ZhaoXin	RXN-305D	SEM011-02	2015-10-09	2016-10-09
2	Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2015-10-17	2016-10-17
3	Barometer	ChangChun	DYM3	SEM002-01	2016-05-13	2017-05-13
4	Signal Generator	Rohde & Schwarz	SML03	SEM006-02	2016-04-25	2017-04-25
5	Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2015-10-09	2016-10-09

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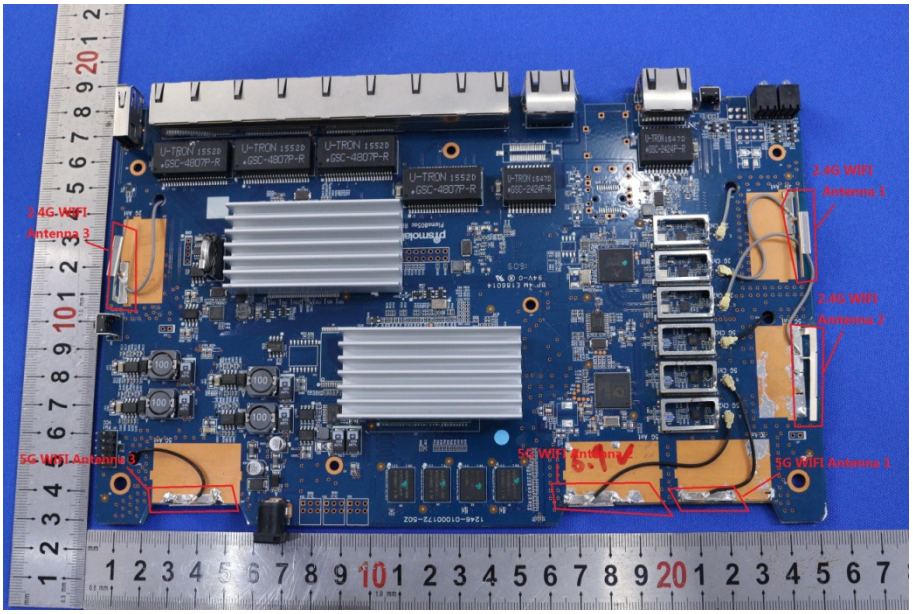
6 Test results and Measurement Data

6.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
EUT Antenna:	
The antenna is integrated antenna and no consideration of replacement. The gain of the antenna 1 is 5.45dBi, the gain of the antenna 2 is 5.72dBi, the gain of the antenna 3 is 6.03dBi, and directional gain is 10.5dBi.	

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6.2 Conducted Emissions

Test Requirement:	47 CFR Part 15 Section 15.407(b)
Test Method:	ANSI C63.10: 2013, section 6.2
Test Frequency Range:	150kHz to 30MHz
Limit:	<table><tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr><tr><td>Quasi-peak</td><td>Average</td></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>5-30</td><td>60</td><td>50</td></tr></table>* 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.

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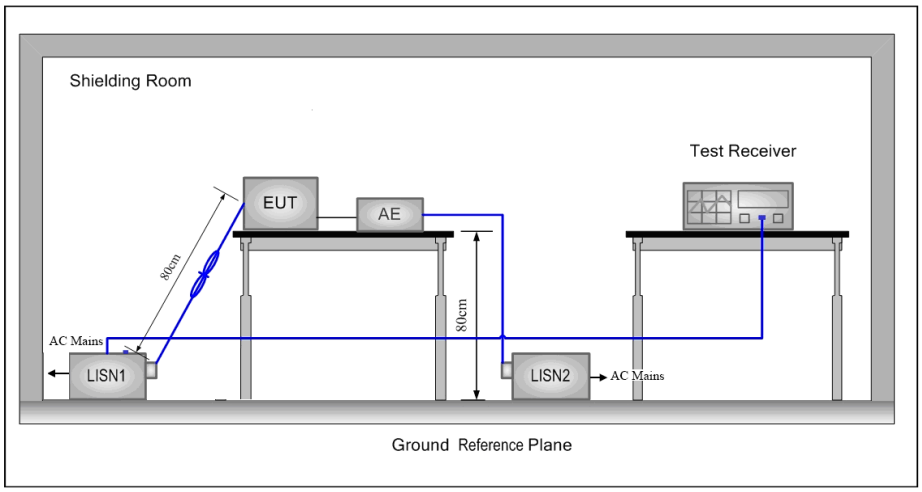
Test Setup:	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
Final Test Mode:	Through Pre-scan, find the 1SS0 of rate of 802.11ac at 48 channel is the worst case. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

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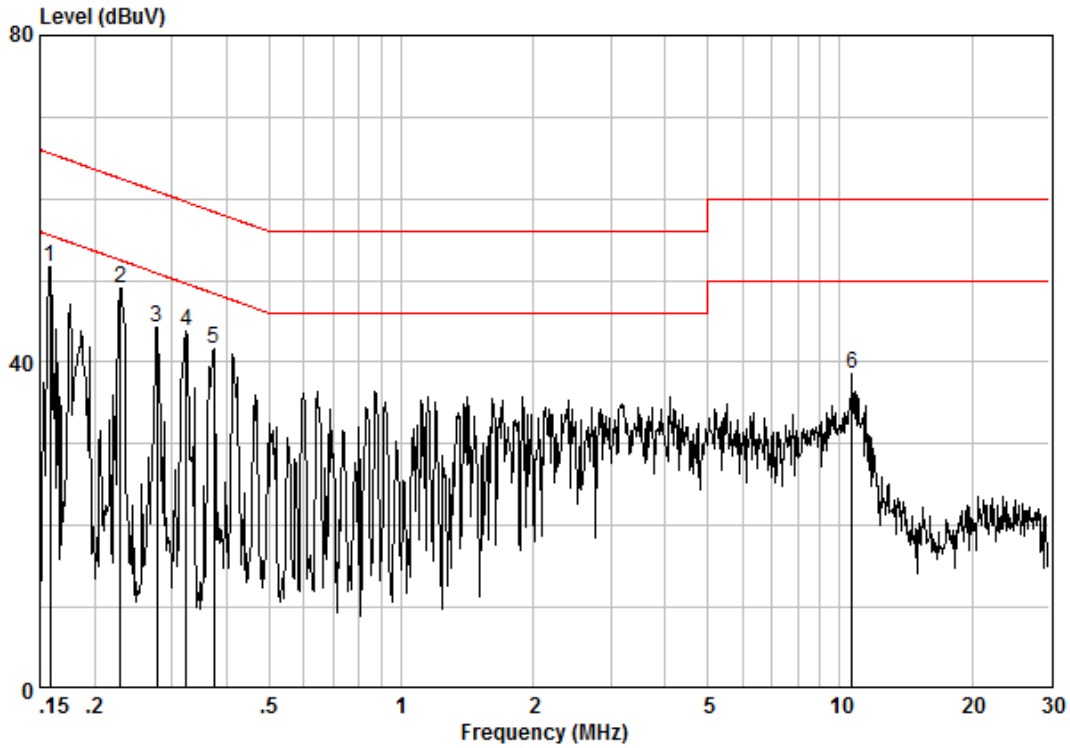
Measurement Data

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 : CE LINE
Job.No : 0840IT
Test Mode : TX mode

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.15816	0.02	9.59	42.15	51.76	55.56	-3.80	Peak
2	0.22918	0.02	9.60	39.42	49.04	52.48	-3.44	Peak
3	0.27734	0.01	9.59	34.75	44.35	50.90	-6.54	Peak
4	0.32340	0.01	9.59	34.23	43.83	49.62	-5.78	Peak
5	0.37314	0.01	9.59	32.00	41.60	48.43	-6.83	Peak
6	10.676	0.01	9.72	28.94	38.67	50.00	-11.33	Peak

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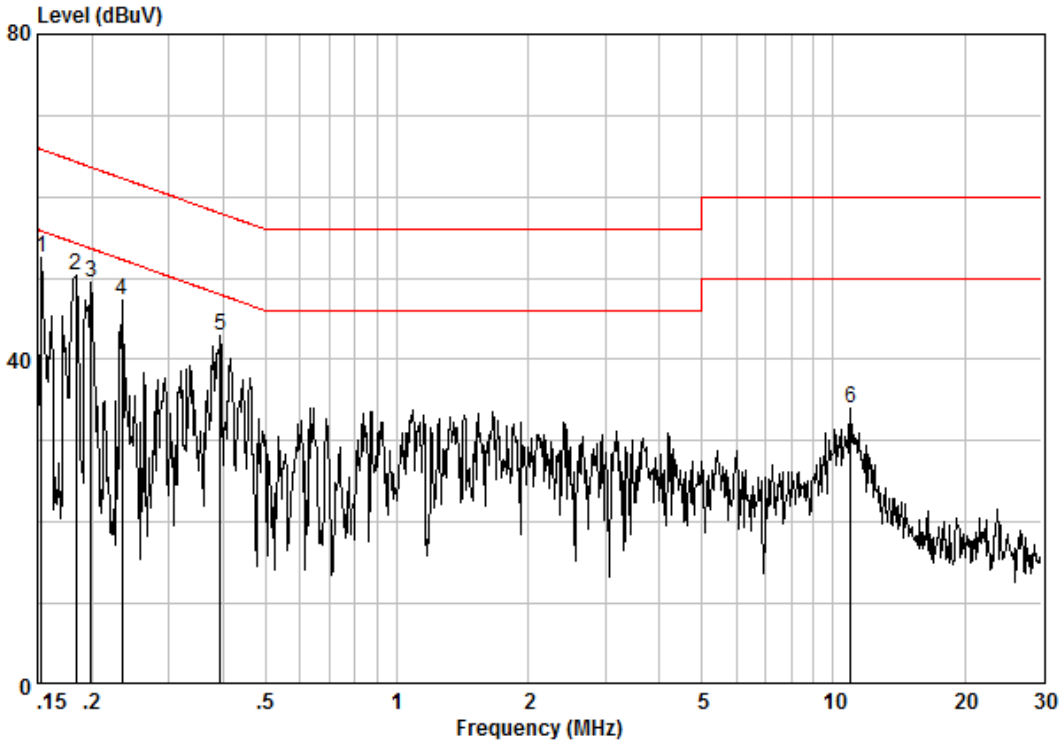
Neutral Line:



Site : Shielding Room
Condition : CE NEUTRAL
Job.No : 0840IT
Test Mode : TX mode

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 @	0.15321	0.02	9.62	42.93	52.56	55.82	-3.26	Peak
2	0.18346	0.02	9.61	40.65	50.28	54.33	-4.05	Peak
3	0.19863	0.02	9.62	39.82	49.46	53.67	-4.21	Peak
4	0.23409	0.02	9.61	37.76	47.39	52.30	-4.92	Peak
5	0.39344	0.01	9.62	33.35	42.98	47.99	-5.01	Peak
6	10.963	0.01	9.81	24.15	33.97	50.00	-16.03	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.

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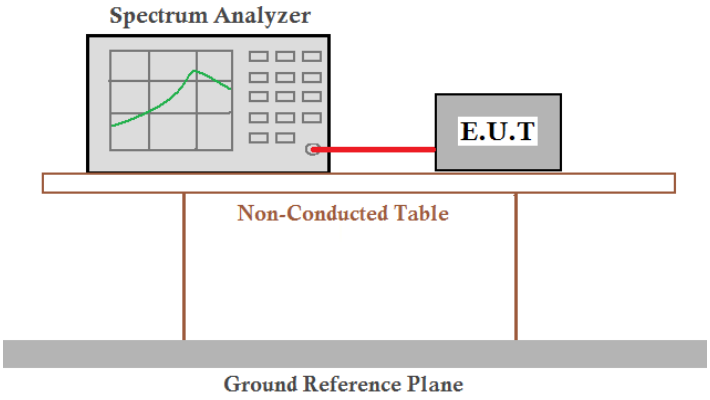
6.3 Duty Cycle

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, section 12. 2, b, 2)
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; MCS0 of rate is the worst case of 802.11n(HT20); MCS0 of rate is the worst case of 802.11n(HT40); 1SS0 of rate is the worst case of 802.11ac(HT20); 1SS0 of rate is the worst case of 802.11ac(HT40); 1SS0 of rate is the worst case of 802.11ac(HT80) 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.

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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

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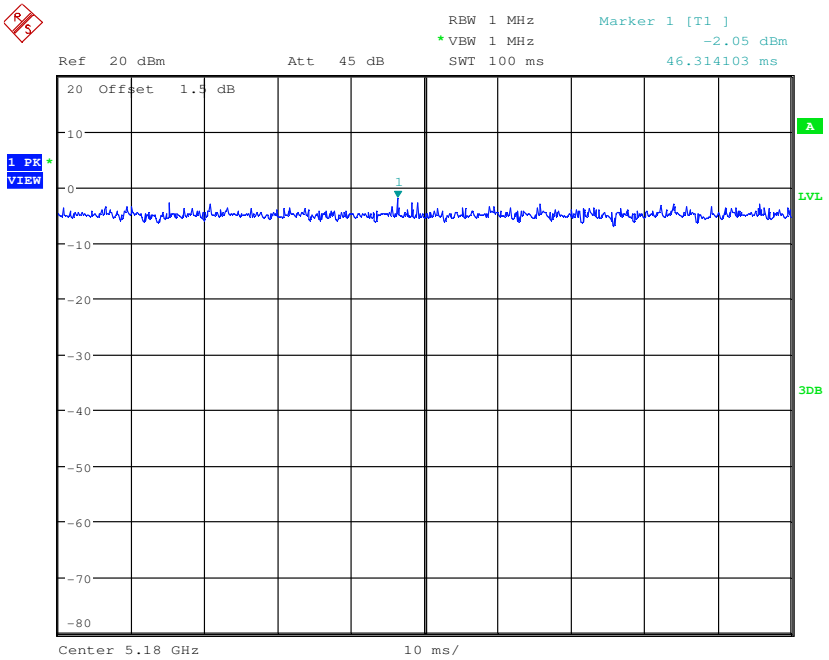
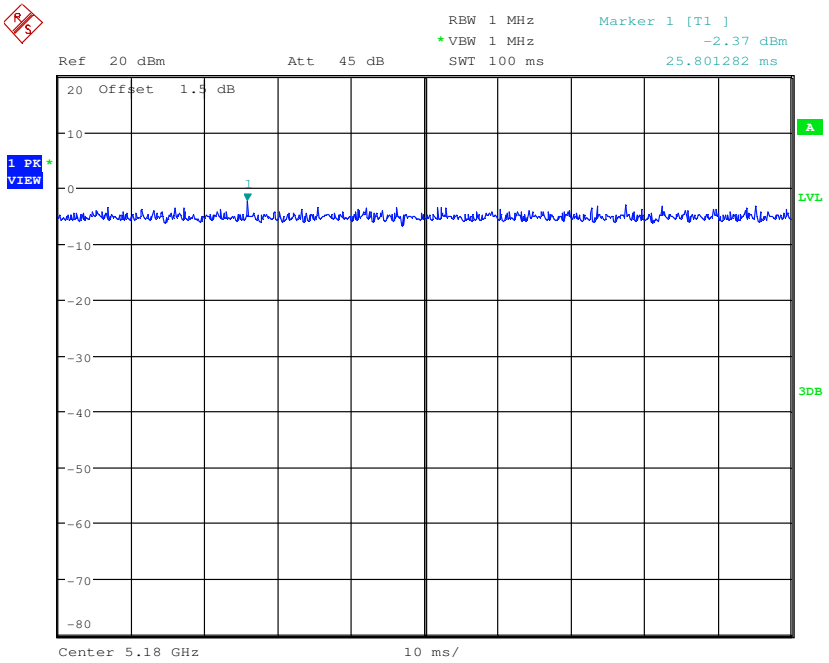
Band I

Test mode:	802.11a



Test mode:	802.11n(HT20)



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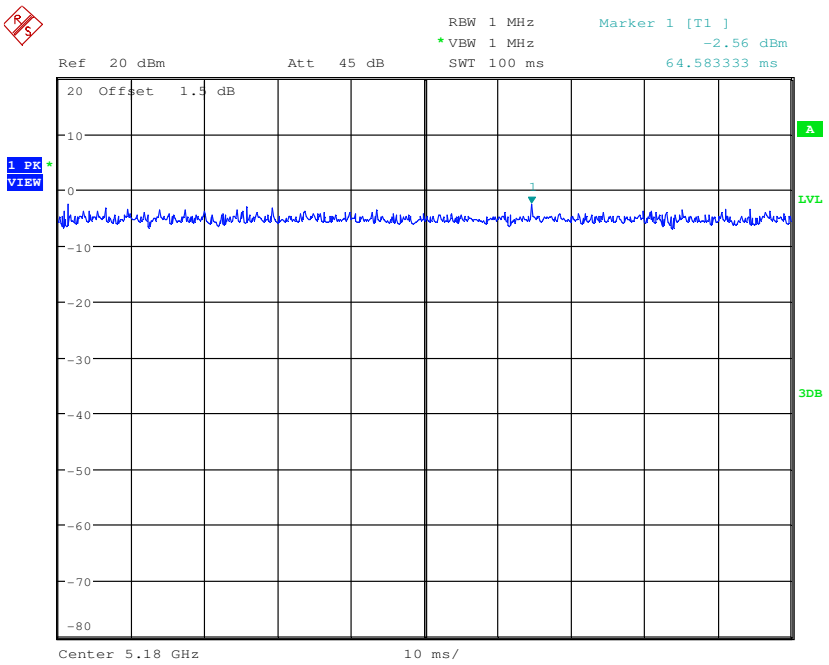
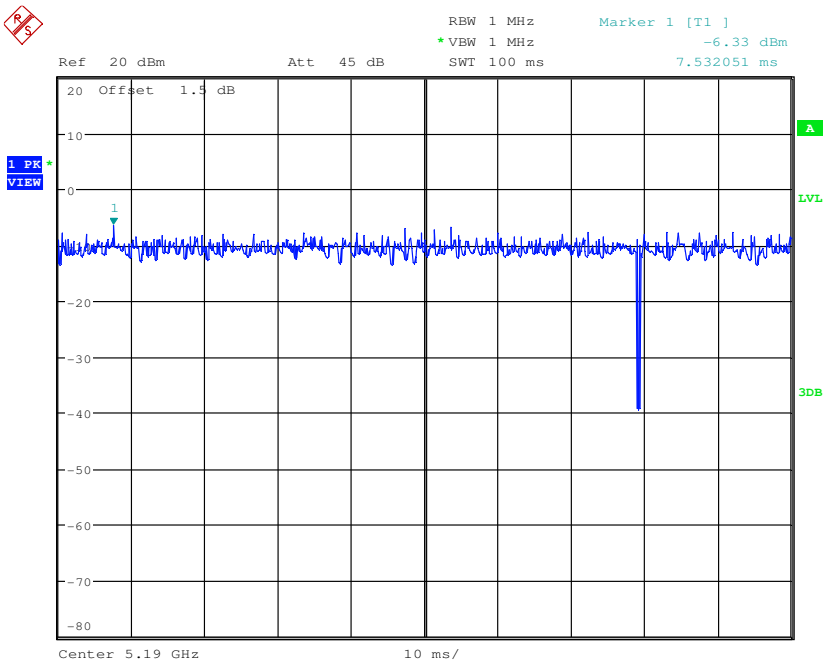
Test mode:	802.11ac20



Test mode:	802.11n(HT40)



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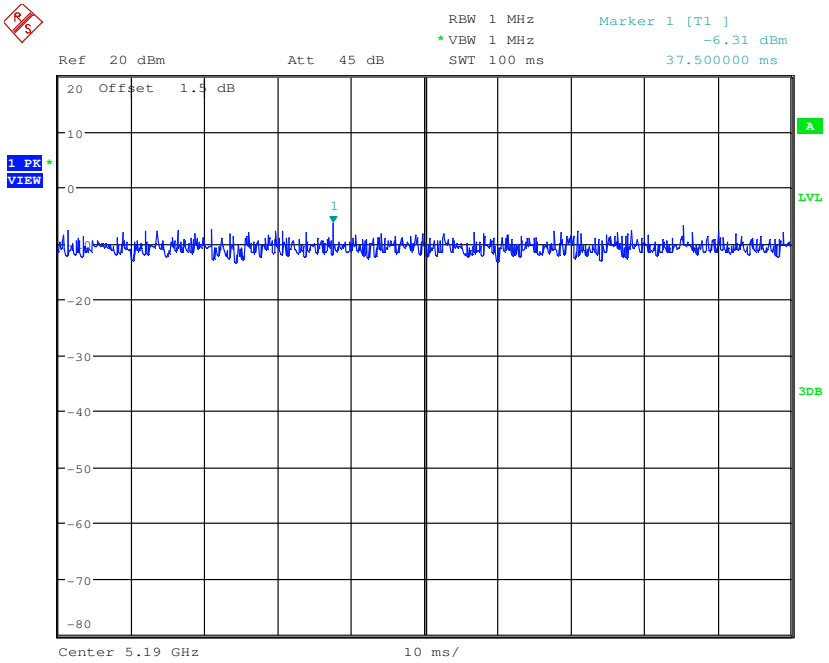
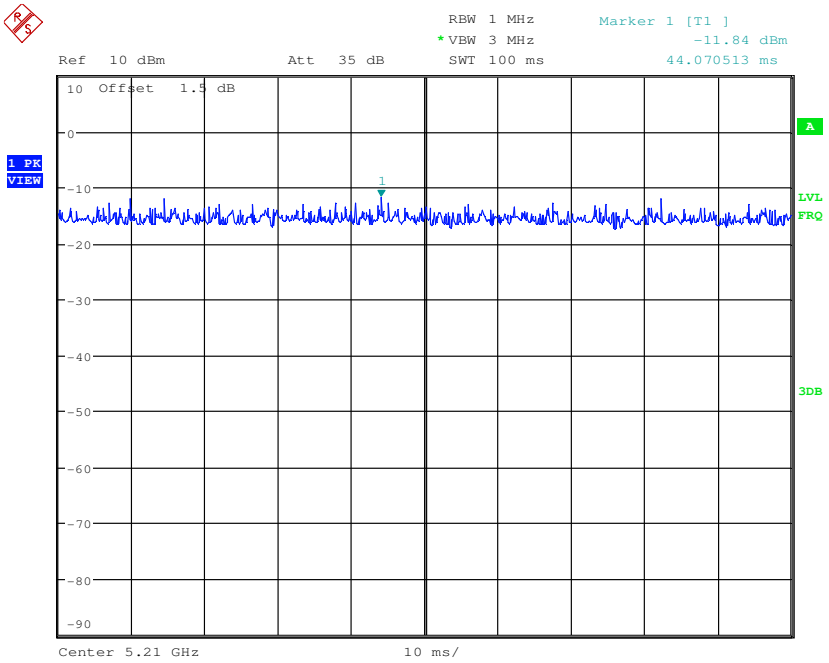
Test mode:	802.11ac40



Test mode:	802.11ac80



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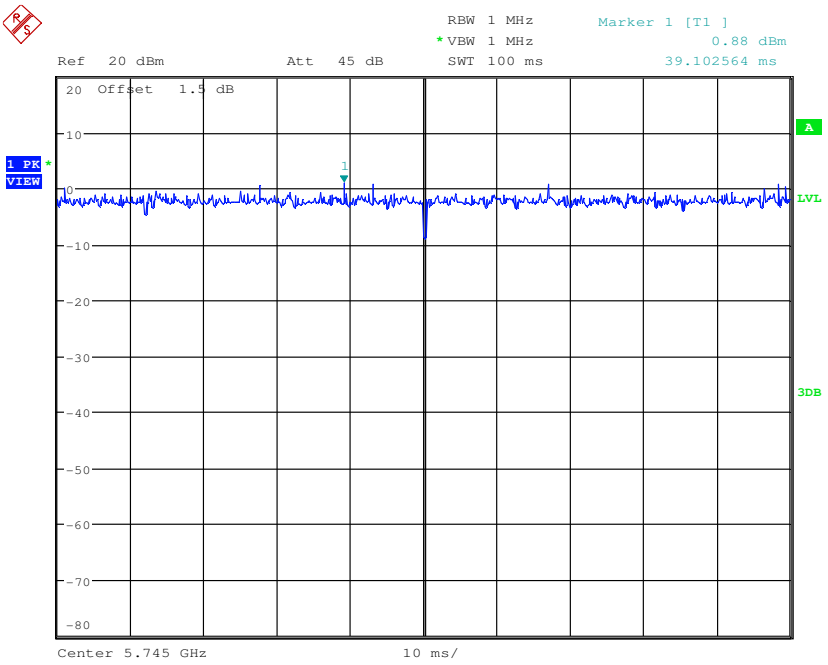
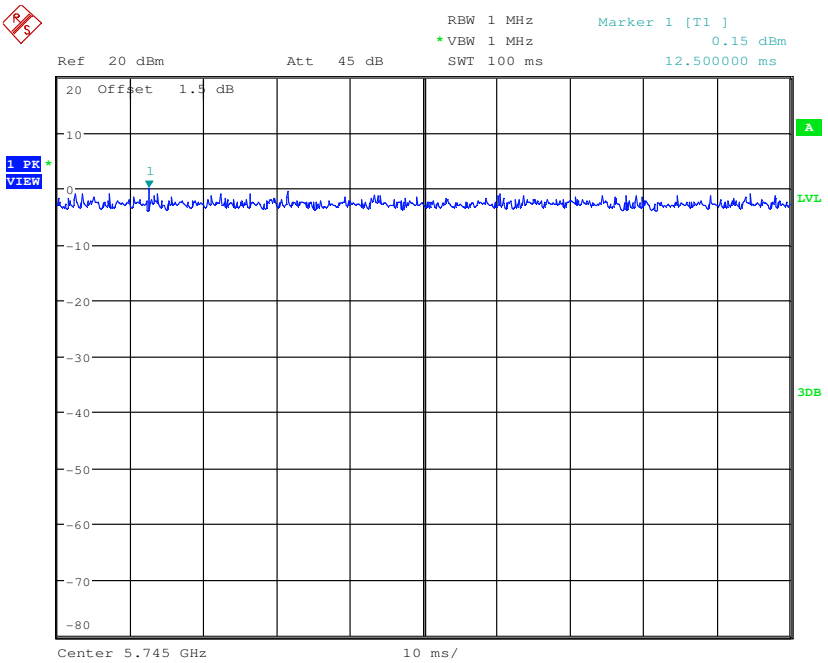
Band IV

Test mode:	802.11a



Test mode:	802.11n(HT20)



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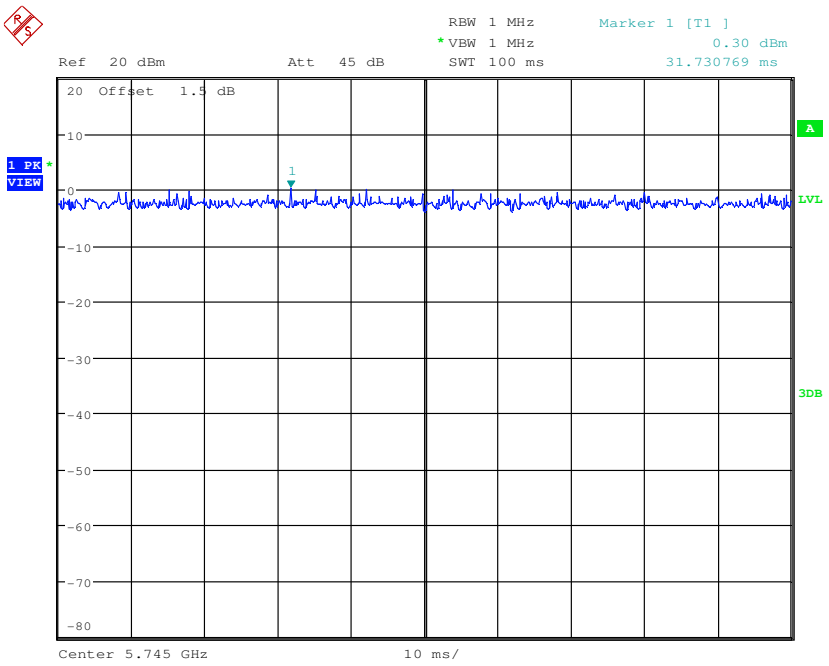
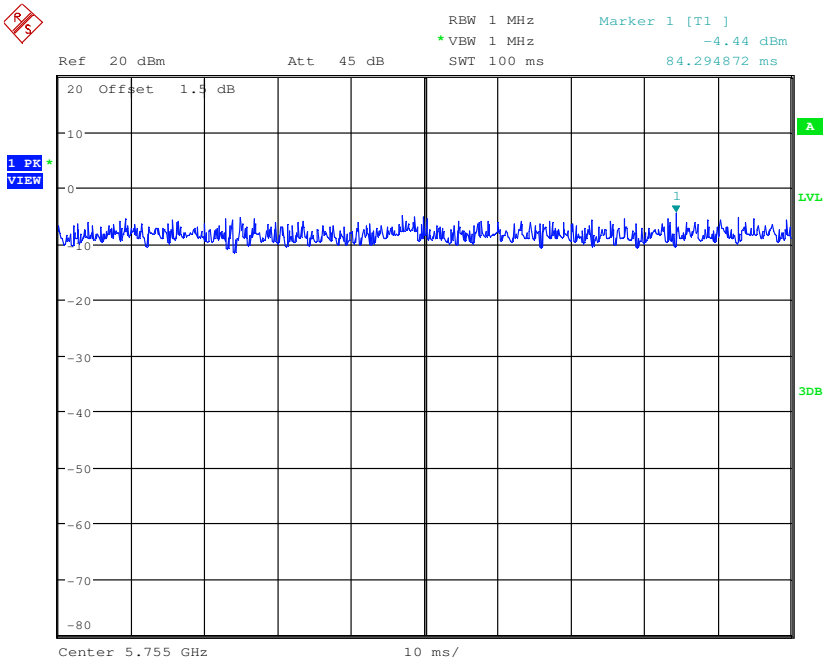
Test mode:	802.11ac20



Test mode:	802.11n(HT40)



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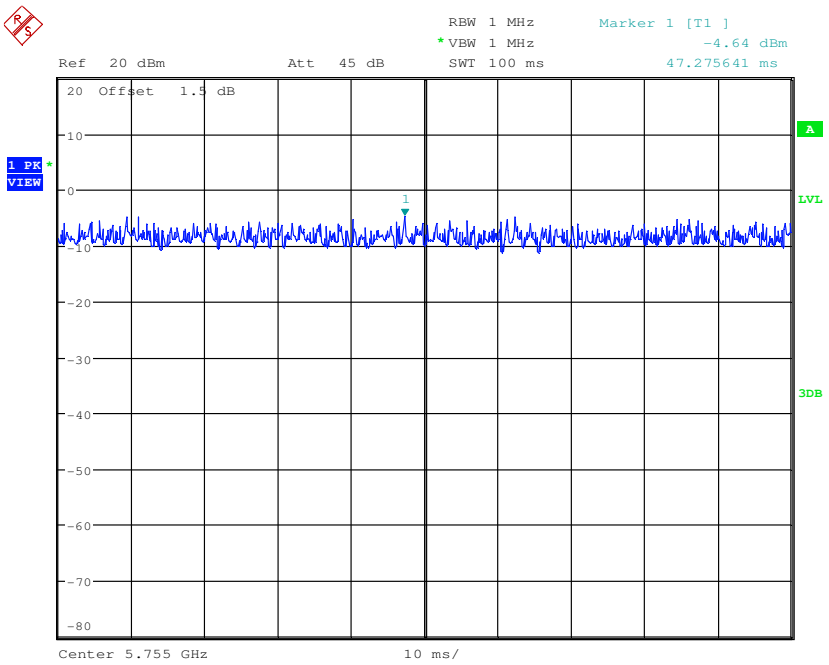
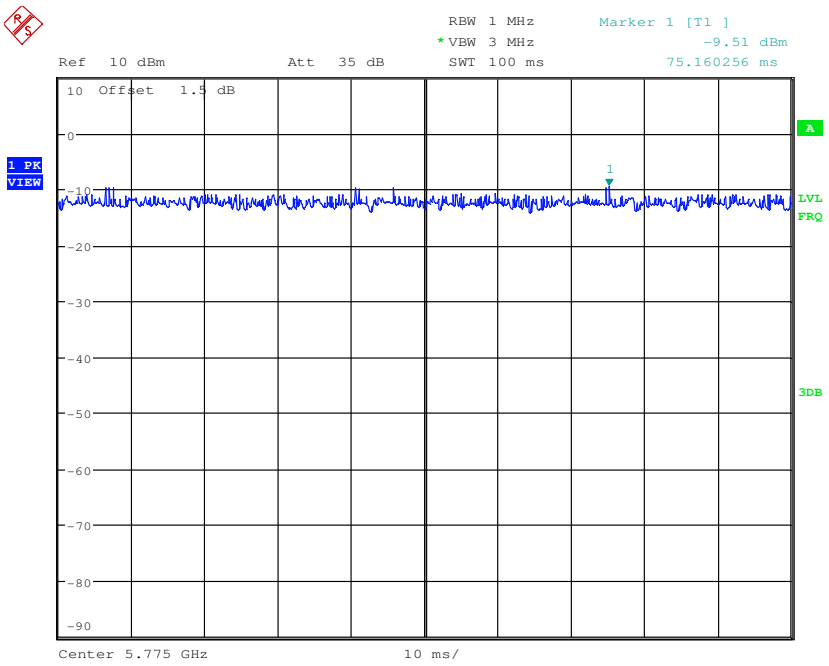
Test mode:	802.11ac40



Test mode:	802.11ac80



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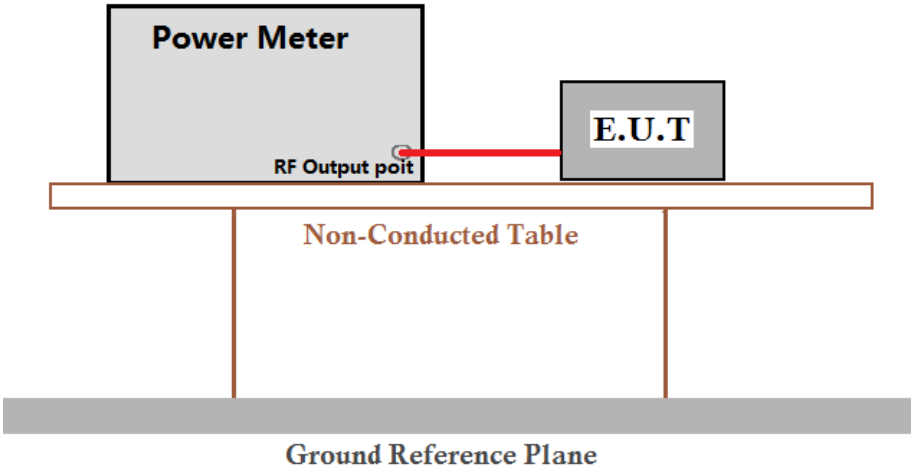
6.4 Conducted Output Power

Test Requirement:	47 CFR Part 15 Section 15.407(a)	
Test Method:	ANSI C63.10: 2013, Section 12.3.3.1	
Test Setup:		
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; MCS0 of rate is the worst case of 802.11n(HT20); MCS0 of rate is the worst case of 802.11n(HT40); 1SS0 of rate is the worst case of 802.11ac(HT20); 1SS0 of rate is the worst case of 802.11ac(HT40); 1SS0 of rate is the worst case of 802.11ac(HT80) 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 : 29.97dBm (802.11 a) Antenna gain greater than 6dBi : Not exceed 30dBm – 4.5 (directional gain-6) = 25.5dBm (802.11 n & 802.11ac)
	5725-5850MHz	Antenna gain below 6dBi：30dBm (802.11 a) Antenna gain greater than 6dBi : 29.97dBm (802.11 a) Antenna gain greater than 6dBi : Not exceed 30dBm –4.5 (directional gain-6) = 25.5dBm (802.11 n & 802.11ac)
Test Results:	Pass	

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Pre-scan under all rate								
Mode	802.11a							
Data Rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
Power (dBm)	20.13	19.23	19.89	20.03	20.09	19.92	19.98	20.05
Mode	802.11n(HT20)							
Data Rate	MCS0 6.5Mbps	MCS1 13Mbps	MCS2 19.5Mbps	MCS3 26Mbps	MCS4 39Mbps	MCS5 52Mbps	MCS6 58.5Mbps	MCS7 65Mbps
Power (dBm)	23.34	22.93	22.89	22.98	22.97	22.89	23.10	23.25
Mode	802.11n(HT20)							
Data Rate	MCS8 13Mbps	MCS9 26Mbps	MCS10 39Mbps	MCS11 52Mbps	MCS12 78Mbps	MCS13 104Mbps	MCS14 117Mbps	MCS15 130Mbps
Power (dBm)	23.30	23.21	23.08	23.07	22.95	22.91	22.99	23.17
Mode	802.11n(HT20)							
Data Rate	MCS16 19.5Mbps	MCS17 39Mbps	MCS18 58.5Mbps	MCS19 78Mbps	MCS20 117Mbps	MCS21 156Mbps	MCS22 175.5Mbps	MCS23 195Mbps
Power (dBm)	22.89	23.05	23.16	23.27	23.21	23.18	23.25	23.27
Mode	802.11n(HT40)							
Data Rate	MCS0 13.5Mbps	MCS1 27Mbps	MCS2 40.5Mbps	MCS3 54Mbps	MCS4 81Mbps	MCS5 105Mbps	MCS6 121.5Mbps	MCS7 135Mbps
Power (dBm)	16.46	16.29	16.38	16.41	16.27	16.31	16.17	16.32
Mode	802.11n(HT40)							
Data Rate	MCS8 27Mbps	MCS9 54Mbps	MCS10 81Mbps	MCS11 108Mbps	MCS12 162Mbps	MCS13 216Mbps	MCS14 243Mbps	MCS15 270Mbps
Power (dBm)	16.27	16.29	16.30	16.42	16.21	16.38	16.41	16.29
	802.11n(HT40)							
Data Rate	MCS16 40.5Mbps	MCS17 81Mbps	MCS18 121.5Mbps	MCS19 162Mbps	MCS20 243Mbps	MCS21 324Mbps	MCS22 364.5Mbps	MCS23 405Mbps
Power (dBm)	16.32	16.38	16.30	16.29	16.31	16.32	16.24	16.29

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Pre-scan under all rate								
Mode	802.11ac(HT20)							
Data Rate	1SS0 6.5Mbps	1SS1 13Mbps	1SS2 19.5Mbps	1SS3 26Mbps	1SS4 39Mbps	1SS5 52Mbps	1SS6 58.5Mbps	1SS7 78Mbps
Power (dBm)	23.07	22.89	22.91	22.92	22.82	22.89	22.93	22.95
Mode	802.11ac(HT20)							
Data Rate	1SS8 78Mbps	2SS0 13Mbps	2SS1 26Mbps	2SS2 39Mbps	2SS3 52Mbps	2SS4 78Mbps	2SS5 104Mbps	2SS6 117Mbps
Power (dBm)	22.91	22.93	22.80	22.83	22.84	22.83	22.90	22.93
Mode	802.11ac(HT20)							
Data Rate	2SS7 130Mbps	2SS8 156Mbps	3SS0 19.5Mbps	3SS1 39Mbps	3SS2 58.5Mbps	3SS3 78Mbps	3SS4 117Mbps	3SS5 156Mbps
Power (dBm)	22.96	22.93	22.92	22.89	22.81	22.88	22.84	22.84
Mode	802.11ac(HT20)							
Data Rate	3SS6 175.5Mbps	3SS7 195Mbps	3SS8 234Mbps	3SS9 260Mbps				
Power (dBm)	22.85	22.93	22.89	22.88				
Mode	802.11ac(HT40)							
Data Rate	1SS0 13.5Mbps	1SS1 27Mbps	1SS2 40.5Mbps	1SS3 54Mbps	1SS4 81Mbps	1SS5 100Mbps	1SS6 121.5Mbps	1SS7 135Mbps
Power (dBm)	17.07	16.98	16.90	16.93	16.95	16.92	17.01	17.02
Mode	802.11ac(HT40)							
Data Rate	1SS8 162Mbps	1SS9 180Mbps	2SS0 27Mbps	2SS1 54Mbps	2SS2 81Mbps	2SS3 108Mbps	2SS4 162Mbps	2SS5 216Mbps
Power (dBm)	16.82	16.78	16.93	16.92	16.96	16.89	16.93	17.03
	802.11ac(HT40)							
Data Rate	2SS6 243Mbps	2SS7 270Mbps	2SS8 324Mbps	2SS9 360Mbps	3SS0 40.5Mbps	3SS1 821Mbps	3SS2 121.5Mbps	3SS3 162Mbps
Power (dBm)	16.95	16.88	16.79	16.93	16.92	17.02	17.01	17.00
	802.11ac(HT40)							
Data Rate	2SS4 243Mbps	2SS5 324Mbps	2SS6 364.5Mbps	2SS7 405Mbps	3SS8 486Mbps	3SS9 540Mbps		
Power (dBm)	16.89	17.01	16.92	16.95	16.99	17.01		

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Pre-scan under all rate								
Mode	802.11ac(HT80)							
Data Rate	1SS0 29.3Mbps	1SS1 58.5Mbps	1SS2 87.8Mbps	1SS3 117Mbps	1SS4 175.5Mbps	1SS5 234Mbps	1SS6 263.3Mbps	1SS7 292.5Mbps
Power (dBm)	13.49	13.29	13.28	13.29	13.40	13.29	13.31	13.30
Mode	802.11ac(HT80)							
Data Rate	1SS8 351Mbps	1SS9 13Mbps	2SS0 58.6Mbps	2SS1 117Mbps	2SS2 175.6Mbps	2SS3 234Mbps	2SS4 351Mbps	2SS5 468Mbps
Power (dBm)	13.41	13.40	13.38	13.29	13.25	13.26	13.31	13.36
Mode	802.11ac(HT80)							
Data Rate	2SS6 526.6Mbps	2SS7 585Mbps	2SS8 702Mbps	2SS9 780Mbps	3SS0 87.9Mbps	3SS1 175.5Mbps	3SS2 263.4Mbps	3SS3 351Mbps
Power (dBm)	13.39	13.29	13.31	13.35	13.38	13.40	13.41	13.32
Mode	802.11ac(HT80)							
Data Rate	3SS4 562.5Mbps	3SS5 702Mbps	3SS6 789.9Mbps	3SS7 877.5Mbps	3SS8 1053 Mbps	3SS9 1170 Mbps		
Power (dBm)	13.33	13.42	13.45	13.31	13.30	13.29		

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Measurement Data:

802.11a mode					
Frequency (MHz)	Conducted Output Power (dBm)			Limit (dBm)	Result
	Ant.1	Ant.2	Ant.3		
5180	13.71	19.24	17.15	29.97	Pass
5200	14.21	19.34	17.26	29.97	Pass
5240	15.93	20.13	17.46	29.97	Pass
5745	18.30	13.83	14.26	29.97	Pass
5785	17.75	13.38	14.14	29.97	Pass
5825	17.00	11.84	14.00	29.97	Pass

802.11 n20 mode						
Frequency (MHz)	Conducted Output Power (dBm)				Limit (dBm)	Result
	Ant.1	Ant.2	Ant.3	Total		
5180	13.74	18.86	17.14	21.83	25.50	Pass
5200	14.23	19.35	17.22	22.18	25.50	Pass
5240	15.47	20.93	17.53	23.34	25.50	Pass
5745	18.40	13.79	14.23	20.78	25.50	Pass
5785	17.89	13.10	14.12	20.32	25.50	Pass
5825	17.15	11.79	13.99	19.64	25.50	Pass

802.11ac 20 mode						
Frequency (MHz)	Conducted Output Power (dBm)				Limit (dBm)	Result
	Ant.1	Ant.2	Ant.3	Total		
5180	14.64	19.43	17.20	22.29	25.50	Pass
5200	15.14	19.37	17.31	22.38	25.50	Pass
5240	16.33	20.14	17.53	23.07	25.50	Pass
5745	18.96	14.46	14.30	21.26	25.50	Pass
5785	18.40	13.76	14.18	20.76	25.50	Pass
5825	17.69	12.46	14.01	20.01	25.50	Pass

802.11 n40 mode						
Frequency (MHz)	Conducted Output Power (dBm)				Limit (dBm)	Result
	Ant.1	Ant.2	Ant.3	Total		
5190	7.19	12.68	10.80	15.54	25.50	Pass
5230	8.35	13.93	11.03	16.46	25.50	Pass
5755	14.03	7.60	8.05	15.73	25.50	Pass
5795	13.22	7.07	7.95	15.90	25.50	Pass

802.11ac 40 mode						
Frequency (MHz)	Conducted Output Power (dBm)				Limit (dBm)	Result
	Ant.1	Ant.2	Ant.3	Total		
5190	7.92	13.45	10.90	16.09	25.50	Pass
5230	9.14	14.74	11.14	17.07	25.50	Pass
5755	14.82	7.71	8.09	16.30	25.50	Pass
5795	14.05	7.17	8.03	15.68	25.50	Pass

802.11ac 80 mode						
Frequency (MHz)	Conducted Output Power (dBm)				Limit (dBm)	Result
	Ant.1	Ant.2	Ant.3	Total		
5210	7.18	9.60	7.25	12.93	25.50	Pass
5775	10.22	7.45	7.98	13.49	25.50	Pass

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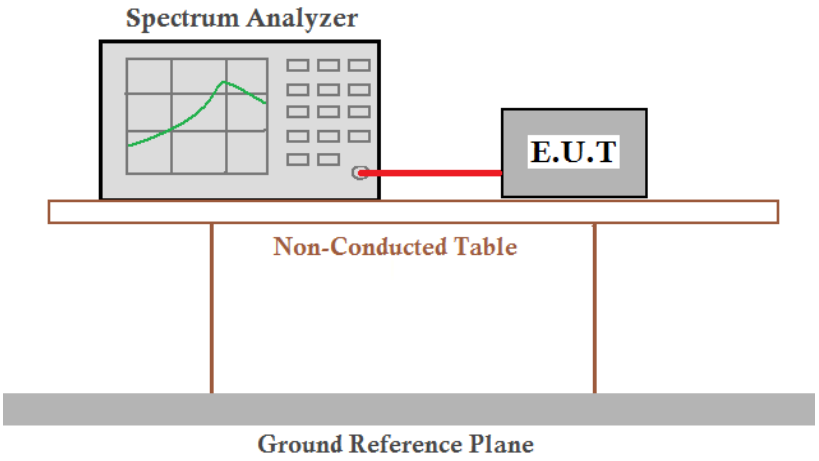
6.5 26dB Emission Bandwidth and 99% Occupied Bandwidth

Test Requirement:	47 CFR Part 15 Section 15.407(a)
Test Method:	ANSI C63.10: 2013, section 12.4 & section 6.9.2
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; MCS0 of rate is the worst case of 802.11n(HT20); MCS0 of rate is the worst case of 802.11n(HT40); 1SS0 of rate is the worst case of 802.11ac(HT20); 1SS0 of rate is the worst case of 802.11ac(HT40); 1SS0 of rate is the worst case of 802.11ac(HT80) Only the worst case is recorded in the report.
Limit:	No restriction limits
Test Results:	Pass

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Measurement Data:

802.11a mode		
Frequency (MHz)	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5180	20.50	16.50
5200	20.47	16.44
5240	21.09	16.50
802.11 n20 mode		
Frequency (MHz)	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5180	21.41	17.67
5200	21.86	17.64
5240	22.24	17.70
802.11ac 20 mode		
Frequency (MHz)	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5180	21.74	17.67
5220	21.80	17.70
5240	21.23	17.64
802.11 n40 mode		
Frequency (MHz)	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5190	43.59	36.18
5230	41.28	36.18
802.11ac 40 mode		
Frequency (MHz)	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5190	41.90	36.18
5230	42.08	36.12
802.11ac 80 mode		
Frequency (MHz)	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5210	100.77	76.35

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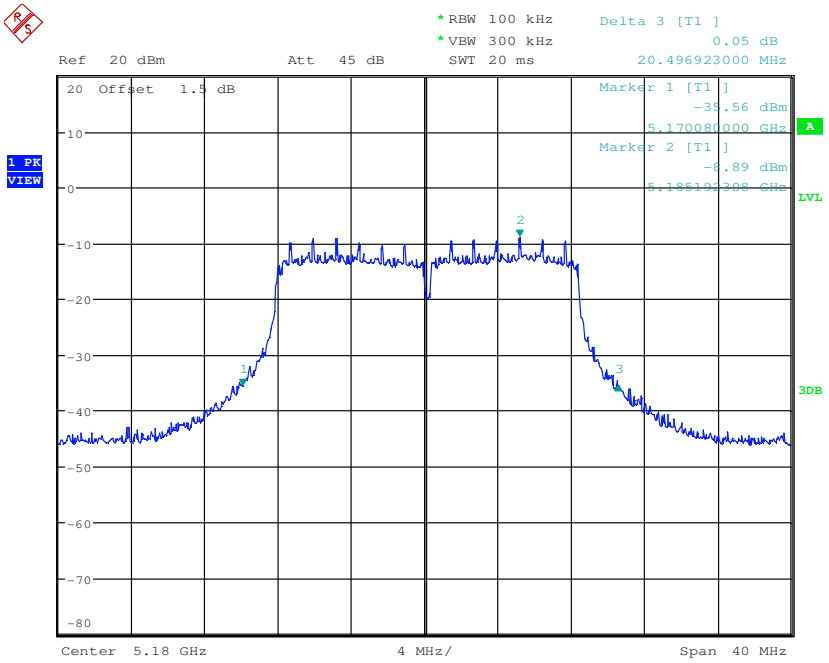
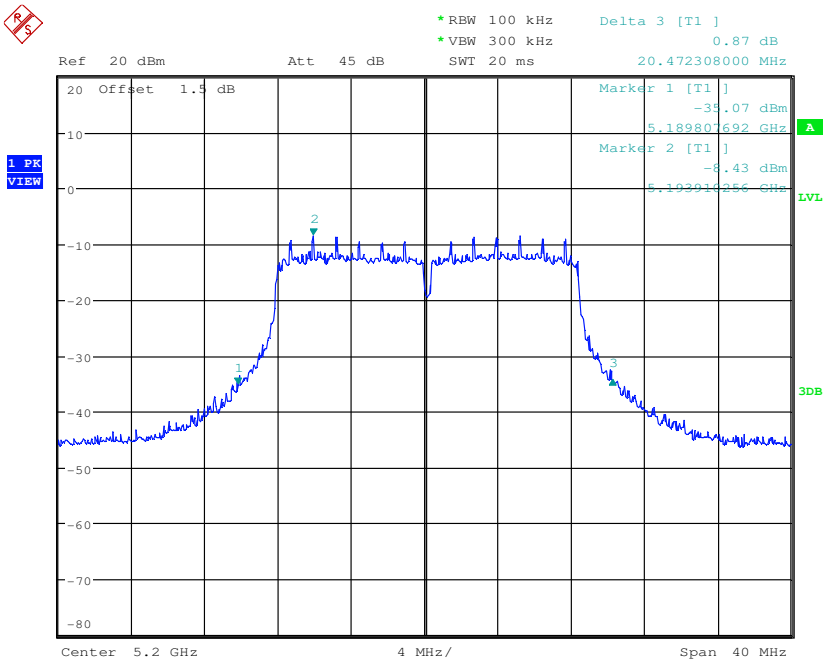
26dB Emission Bandwidth

Test plot as follows:

Test mode:	802.11a	Frequency(MHz):	5180



Test mode:	802.11a	Frequency(MHz):	5200



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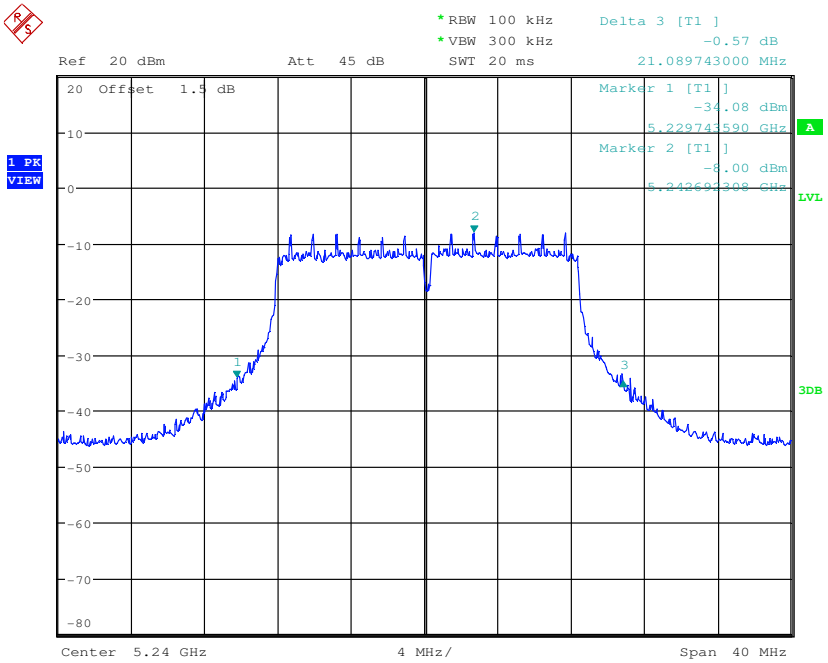
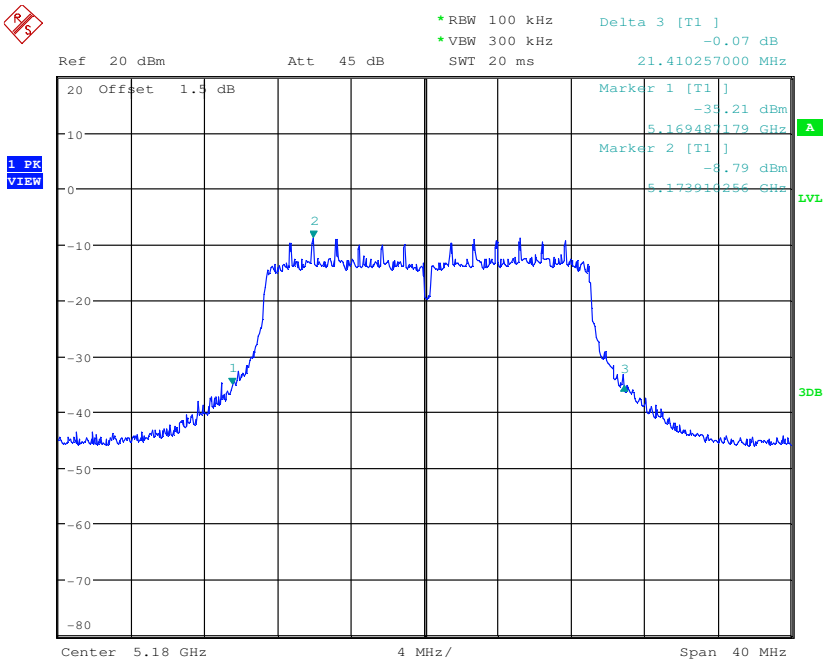
Test mode:	802.11a	Frequency(MHz):	5240



Test mode:	802.11 n20	Frequency(MHz):	5180



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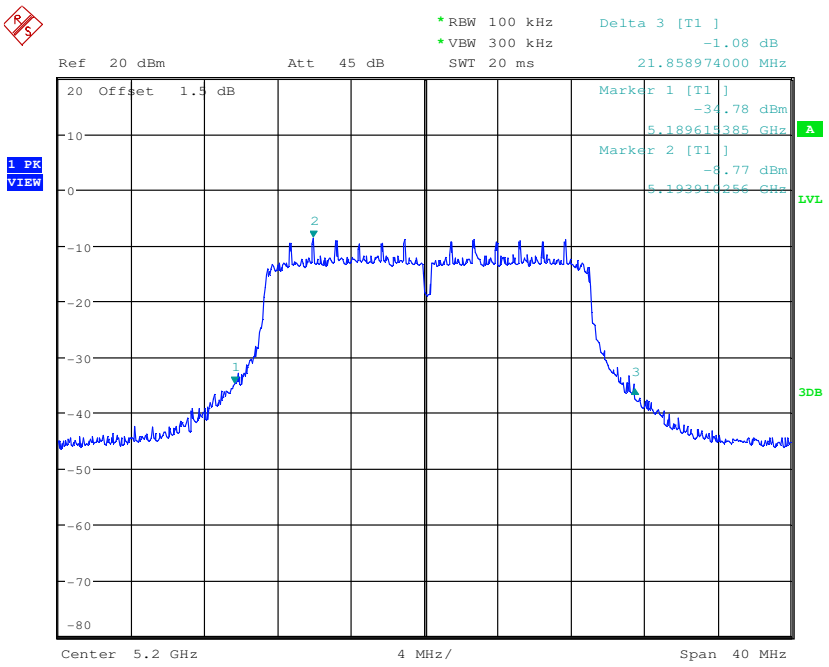
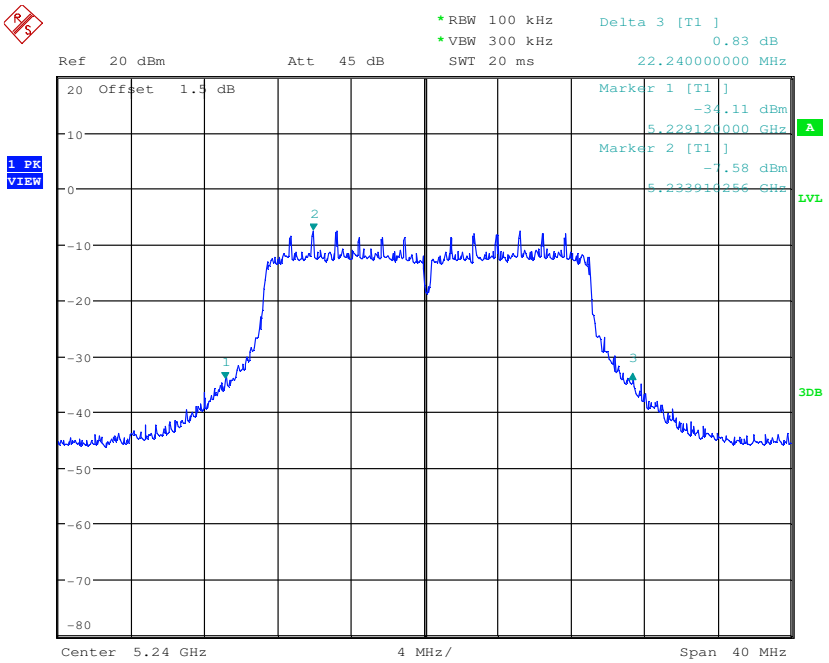
Test mode:	802.11 n20	Frequency(MHz):	5200



Test mode:	802.11 n20	Frequency(MHz):	5240



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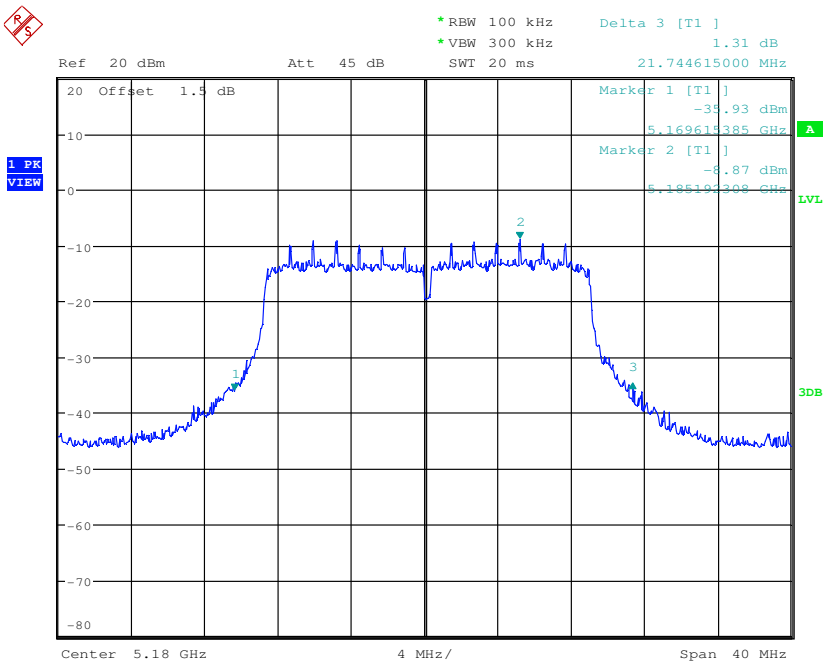
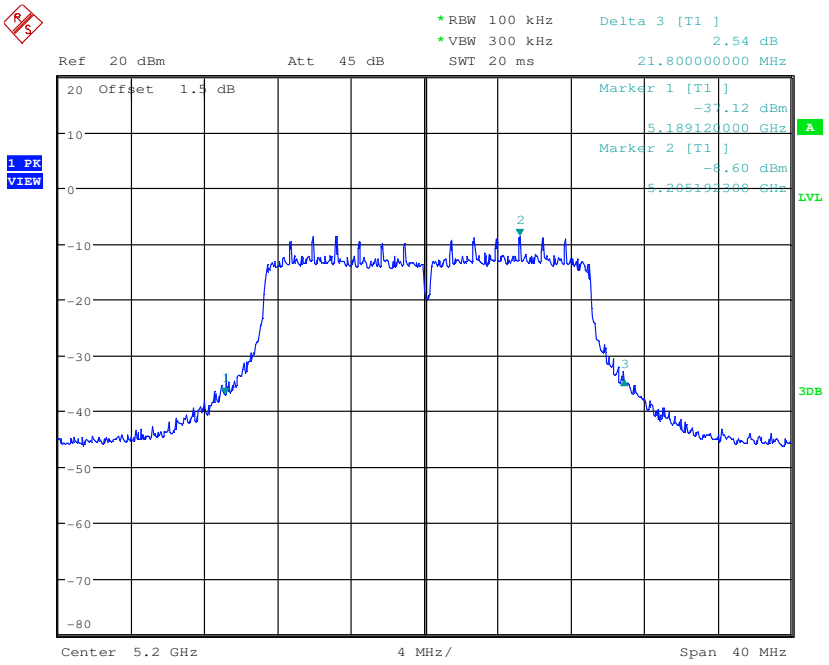
Test mode:	802.11 ac20	Frequency(MHz):	5180



Test mode:	802.11 ac20	Frequency(MHz):	5200



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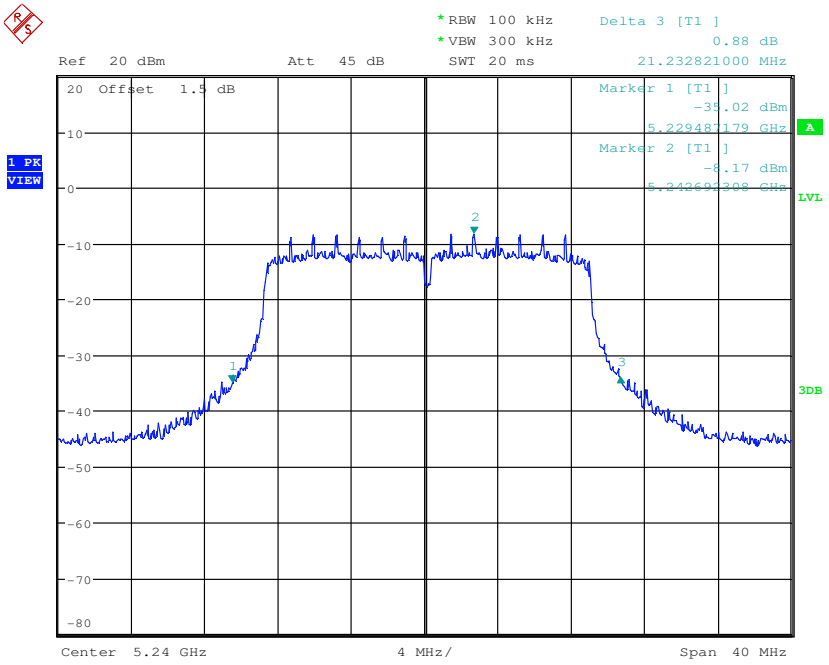
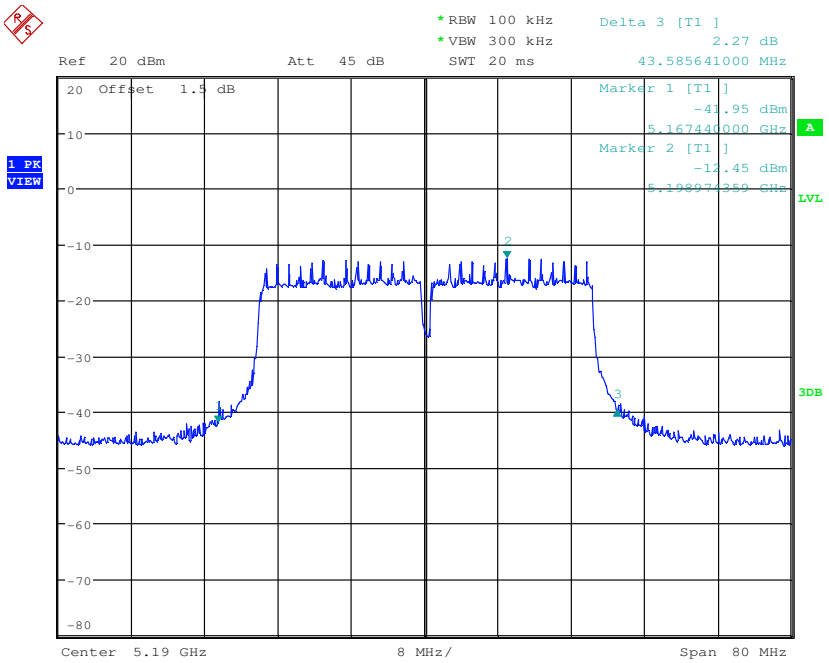
Test mode:	802.11 ac20	Frequency(MHz):	5240



Test mode:	802.11 n40	Frequency(MHz):	5190



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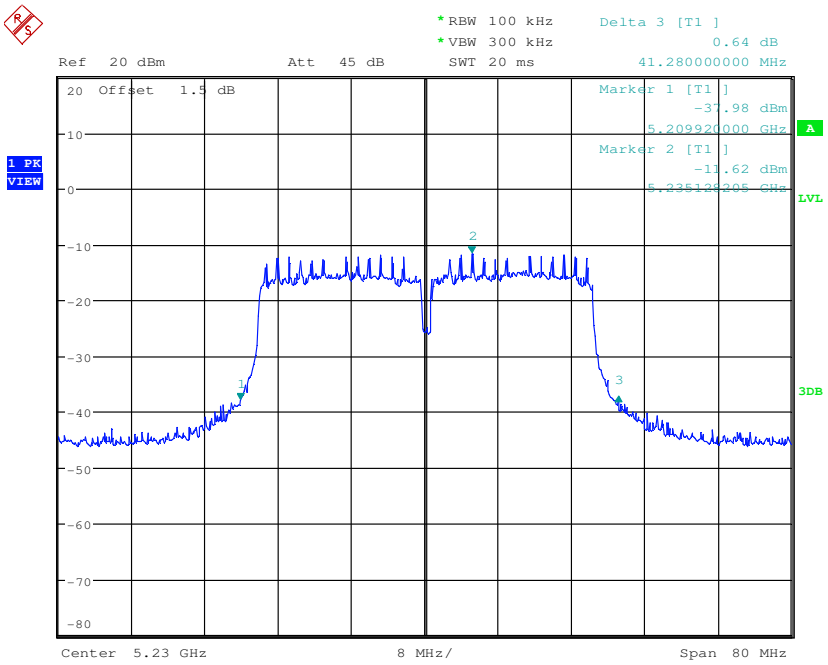
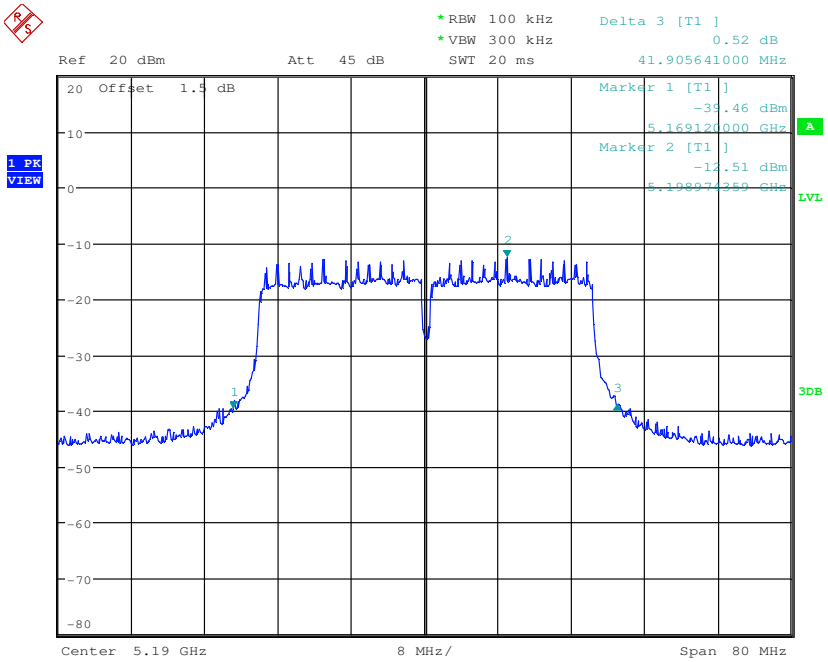
Test mode:	802.11 n40	Frequency(MHz):	5230



Test mode:	802.11 ac40	Frequency(MHz):	5190



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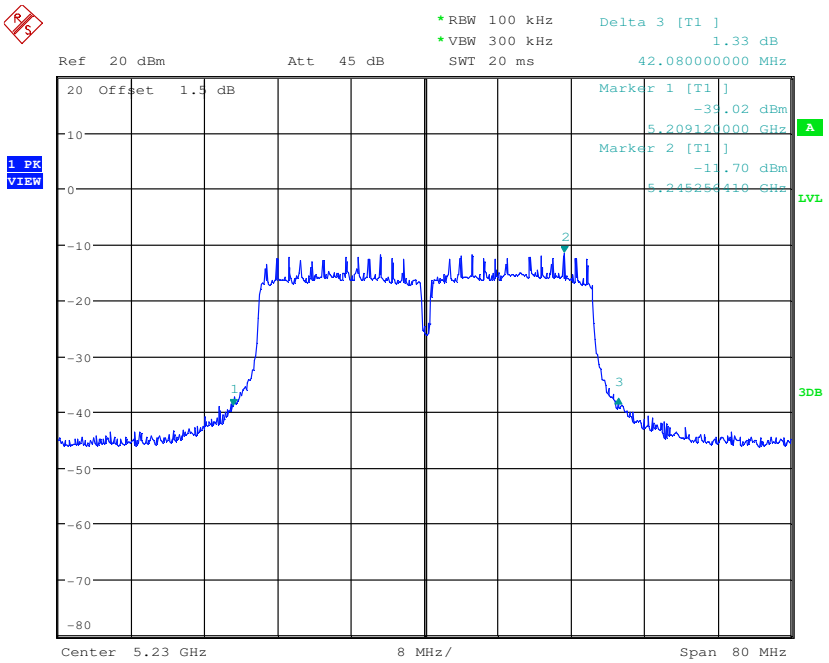
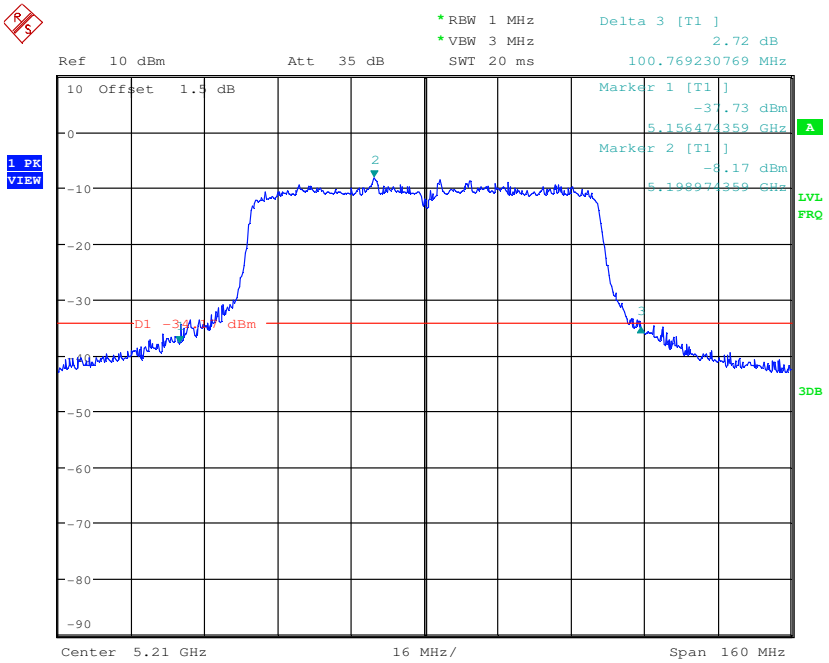
Test mode:	802.11 ac40	Frequency(MHz):	5230



Test mode:	802.11 ac80	Frequency(MHz):	5210



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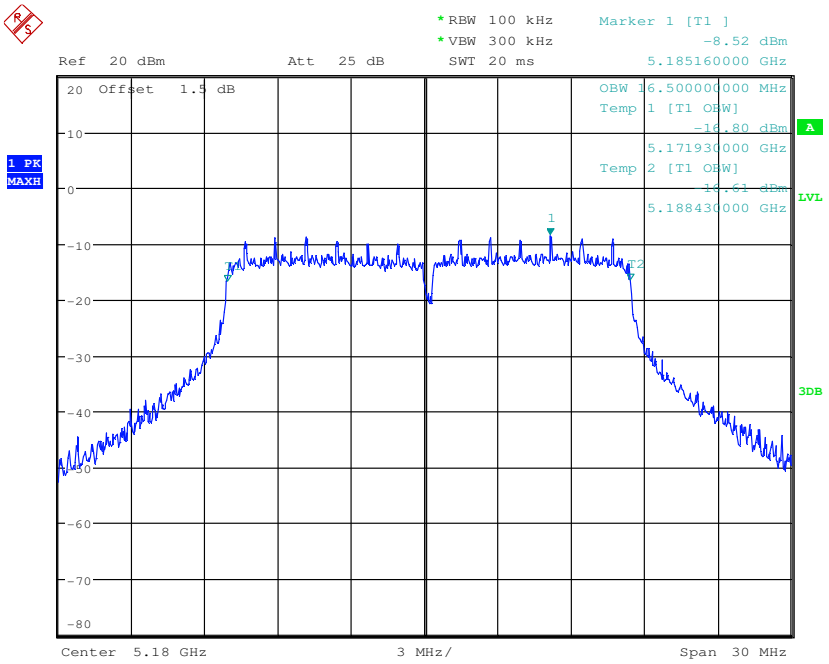
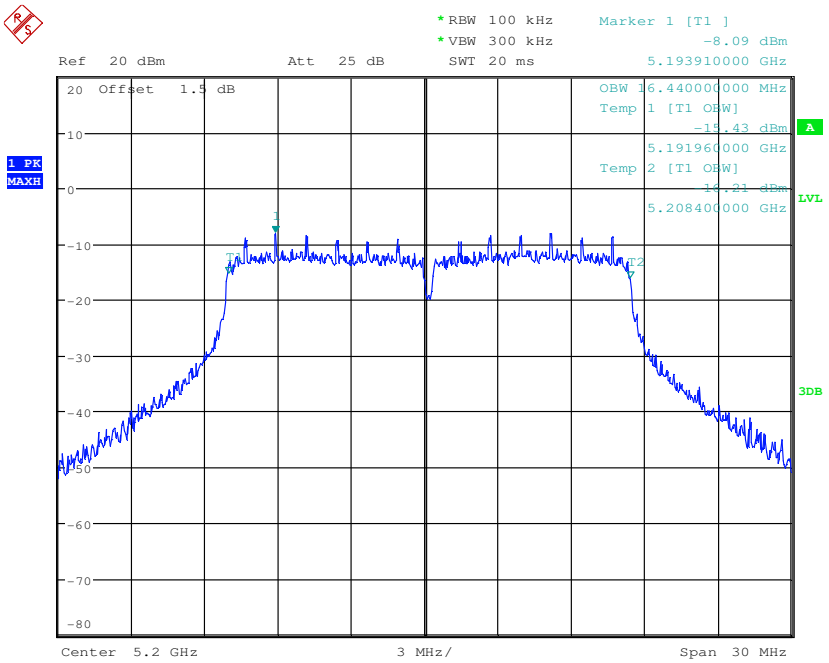
99% occupied bandwidth

Test plot as follows:

Test mode:	802.11a	Frequency(MHz):	5180



Test mode:	802.11a	Frequency(MHz):	5200



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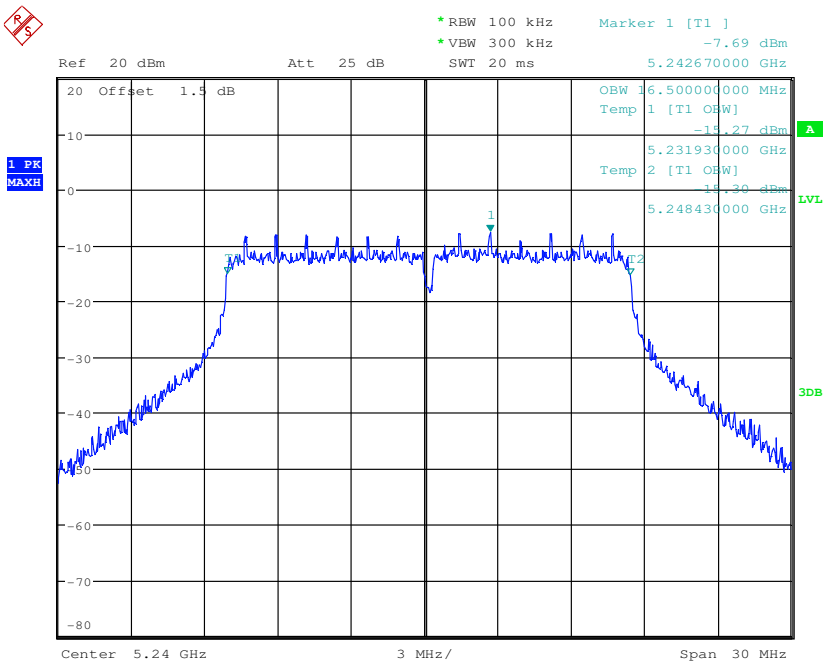
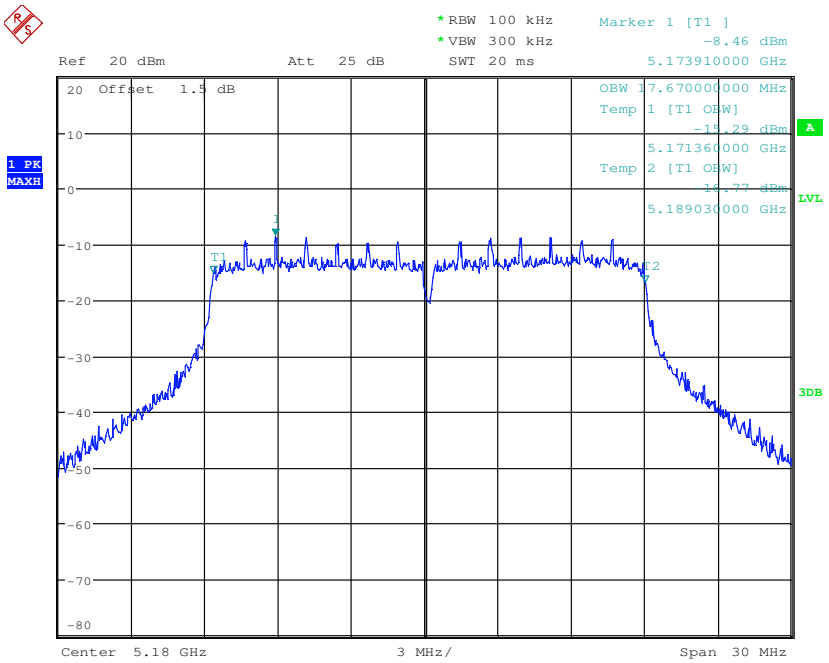
Test mode:	802.11a	Frequency(MHz):	5240



Test mode:	802.11 n20	Frequency(MHz):	5180



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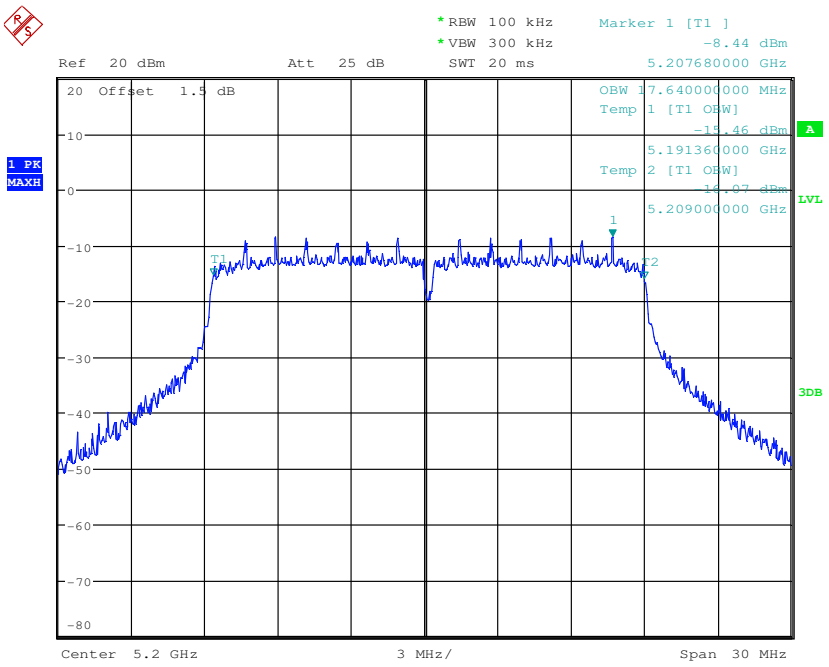
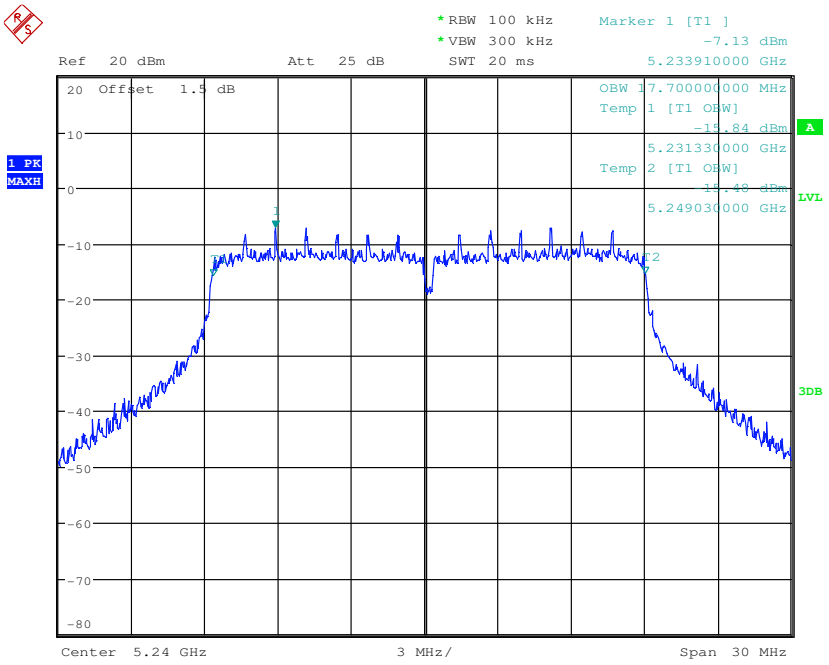
Test mode:	802.11 n20	Frequency(MHz):	5200



Test mode:	802.11 n20	Frequency(MHz):	5240



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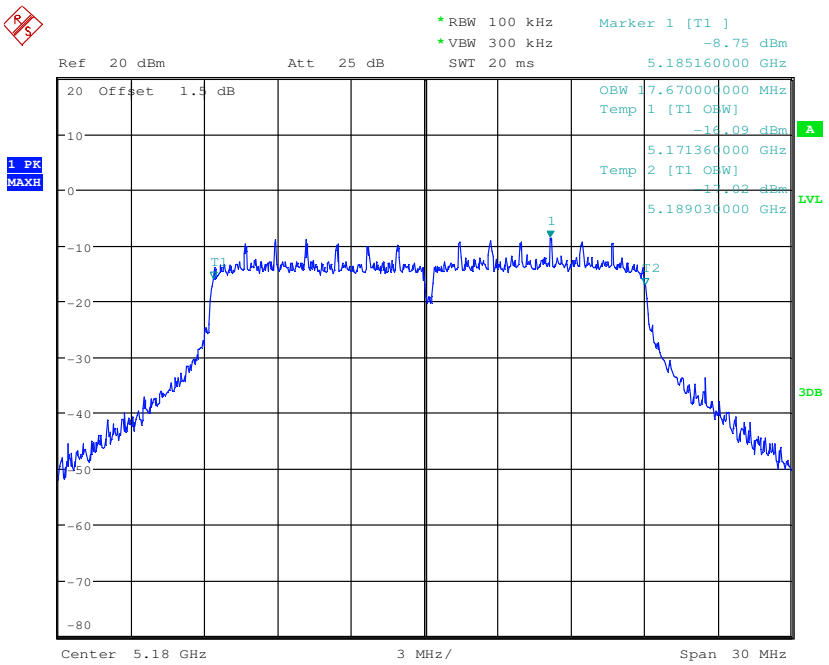
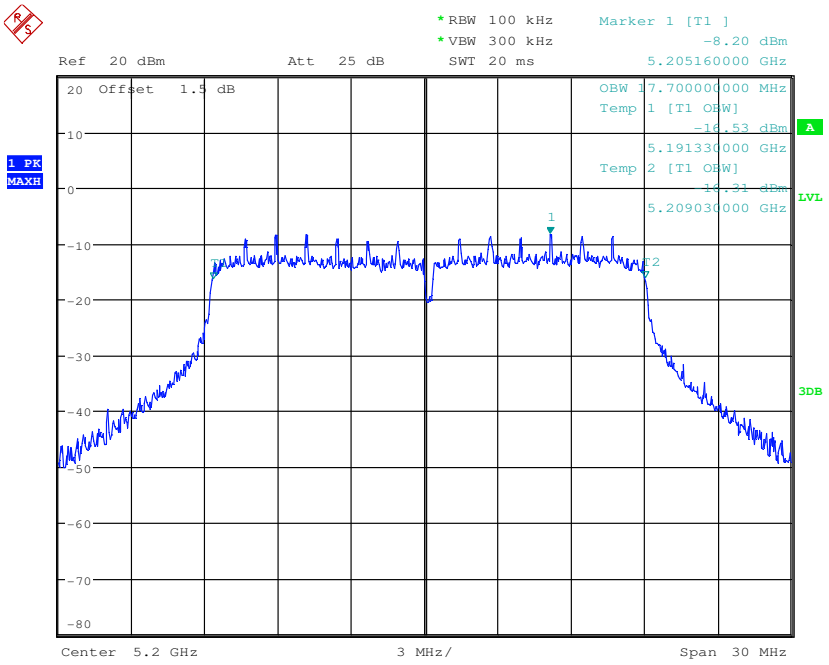
Test mode:	802.11 ac20	Frequency(MHz):	5180



Test mode:	802.11 ac20	Frequency(MHz):	5200



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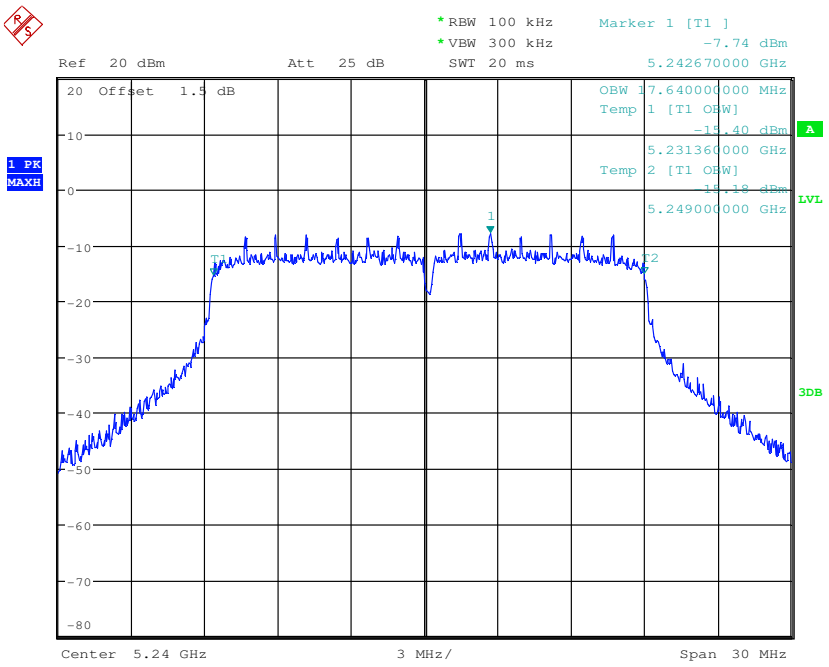
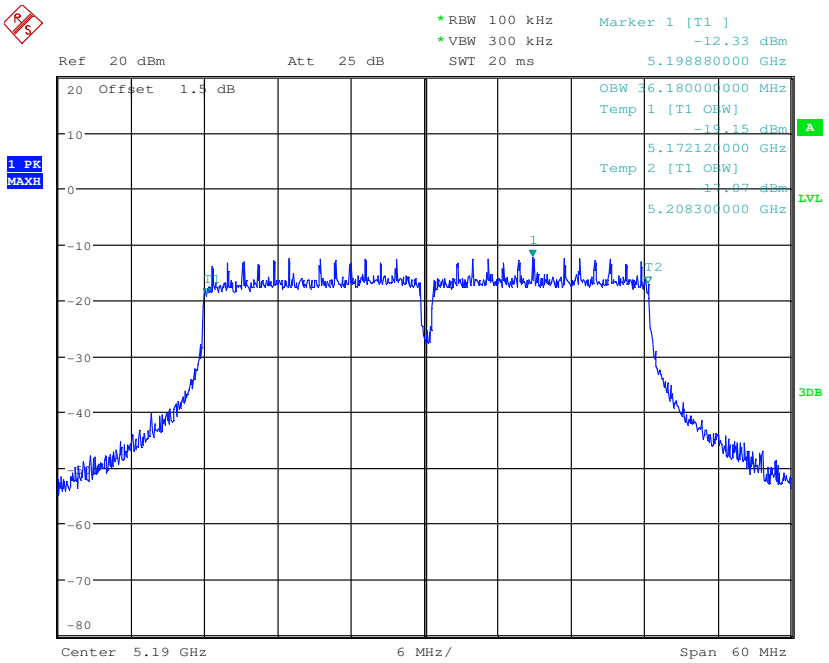
Test mode:	802.11 ac20	Frequency(MHz):	5240



Test mode:	802.11 n40	Frequency(MHz):	5190



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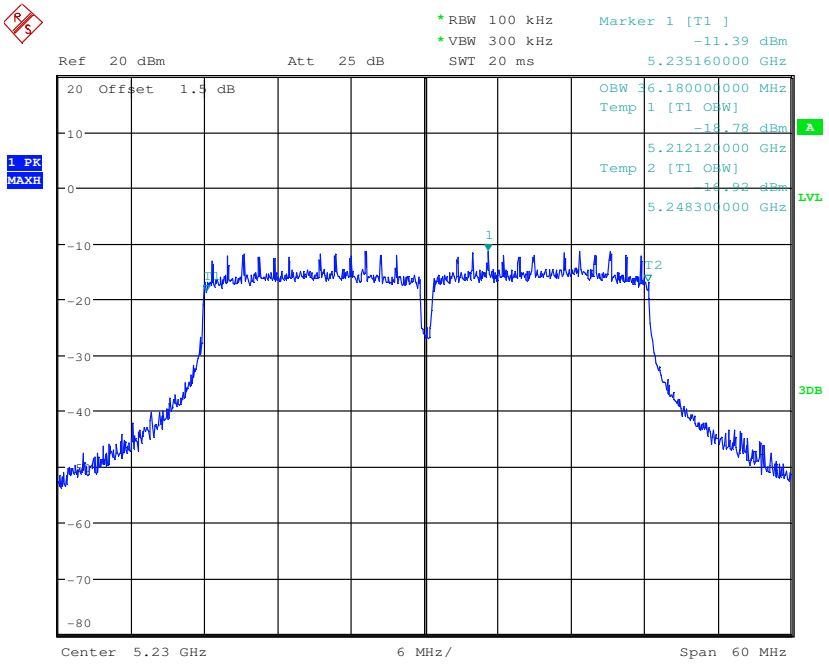
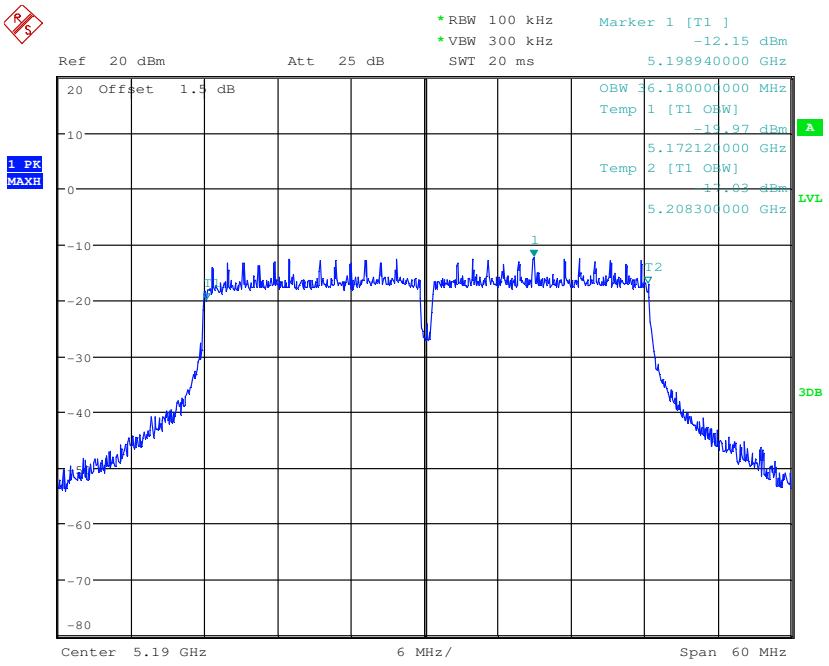
Test mode:	802.11 n40	Frequency(MHz):	5230



Test mode:	802.11 ac40	Frequency(MHz):	5190



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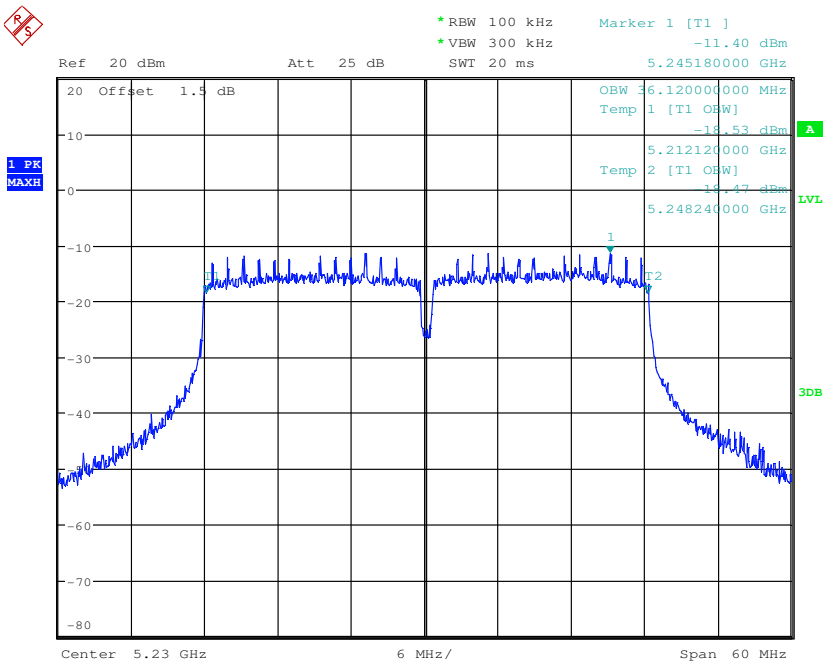
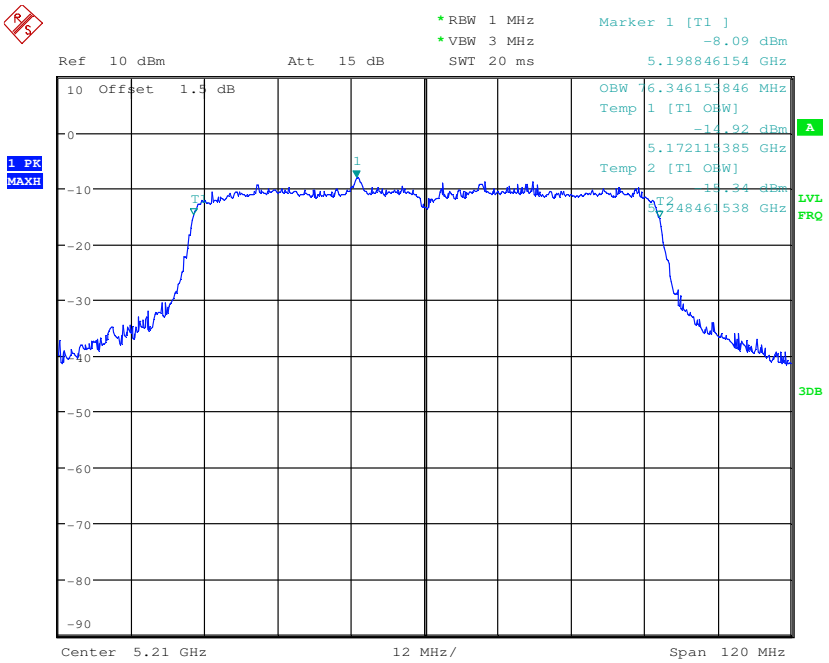
Test mode:	802.11 ac40	Frequency(MHz):	5230



Test mode:	802.11 ac80	Frequency(MHz):	5210



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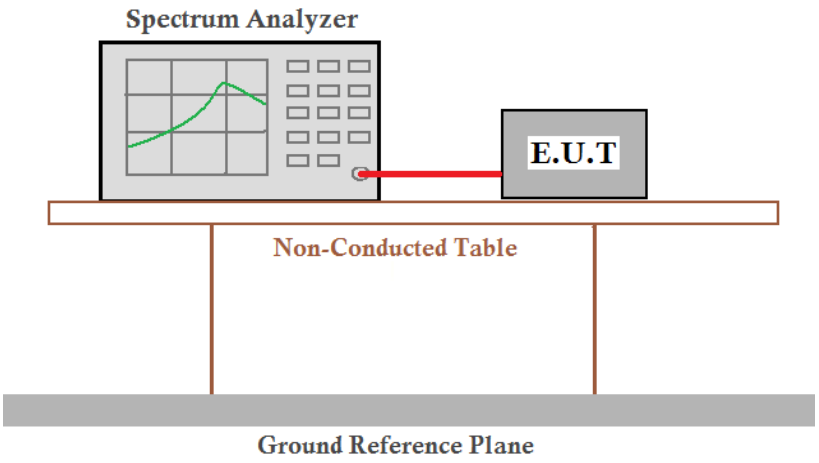
6.6 6dB Emission Bandwidth

Test Requirement:	47 CFR Part 15 Section 15.407(e)	
Test Method:	ANSI C63.10: 2013, section 6.9.2	
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; MCS0 of rate is the worst case of 802.11n(HT20); MCS0 of rate is the worst case of 802.11n(HT40); 1SS0 of rate is the worst case of 802.11ac(HT20); 1SS0 of rate is the worst case of 802.11ac(HT40); 1SS0 of rate is the worst case of 802.11ac(HT80) Only the worst case is recorded in the report.	
Limit:	Frequency Band	Limit
	5725-5850MHz	At lease 500kHz
Test Results:	Pass	

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Measurement Data:

802.11a mode			
Frequency (MHz)	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
5745	16.41	≥500	Pass
5785	16.38	≥500	Pass
5825	16.41	≥500	Pass
802.11 n20 mode			
Frequency (MHz)	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
5745	17.64	≥500	Pass
5785	17.61	≥500	Pass
5825	17.61	≥500	Pass
802.11ac 20 mode			
Frequency (MHz)	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
5745	17.64	≥500	Pass
5785	17.61	≥500	Pass
5825	17.61	≥500	Pass
802.11 n40 mode			
Frequency (MHz)	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
5755	36.06	≥500	Pass
5795	36.24	≥500	Pass
802.11ac 40 mode			
Frequency (MHz)	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
5755	36.12	≥500	Pass
5795	36.18	≥500	Pass
802.11ac 80 mode			
Frequency (MHz)	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
5775	76.41	≥500	Pass

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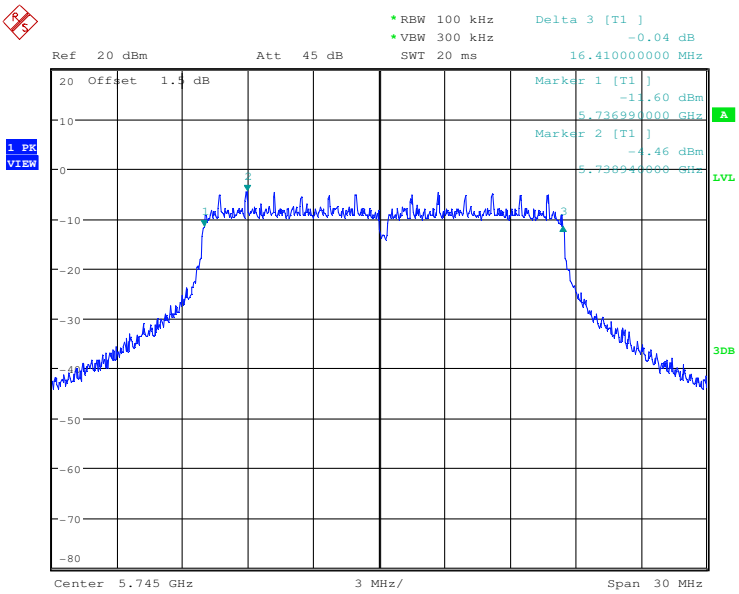
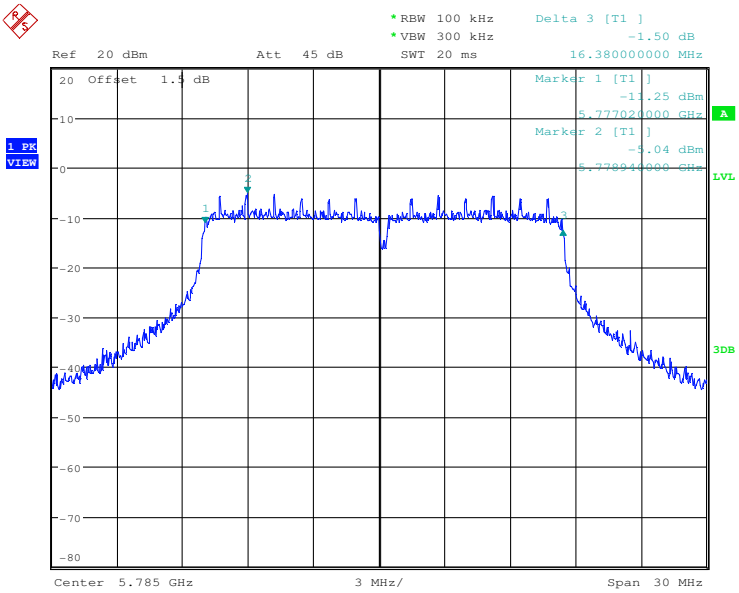
Test plot as follows:

Test mode:	802.11a	Frequency(MHz):	5745



Test mode:	802.11a	Frequency(MHz):	5785



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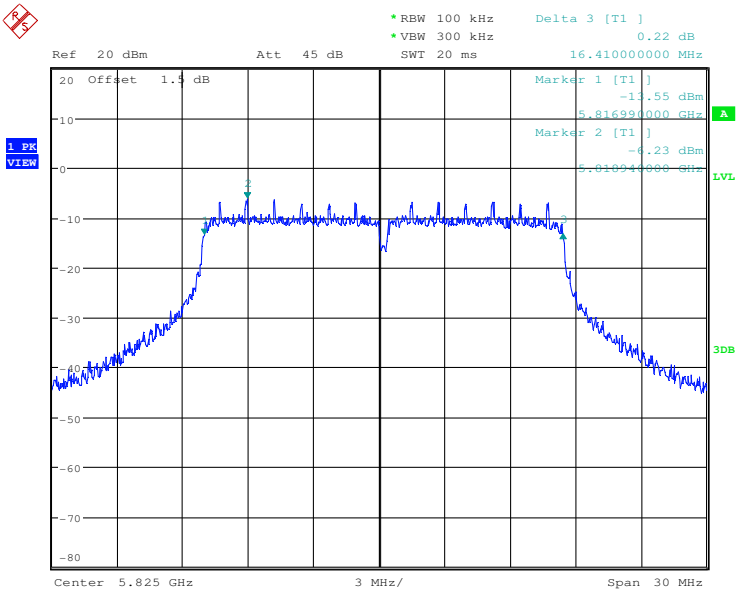
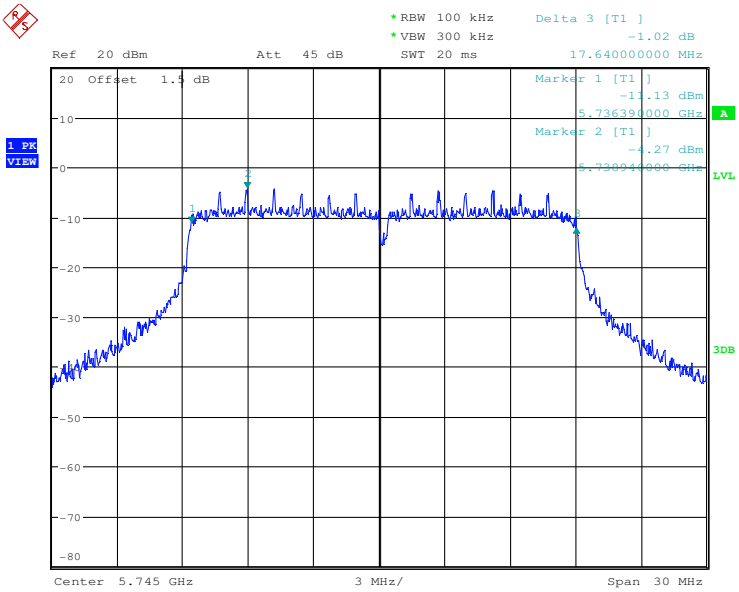
Test mode:	802.11a	Frequency(MHz):	5825



Test mode:	802.11 n20	Frequency(MHz):	5745



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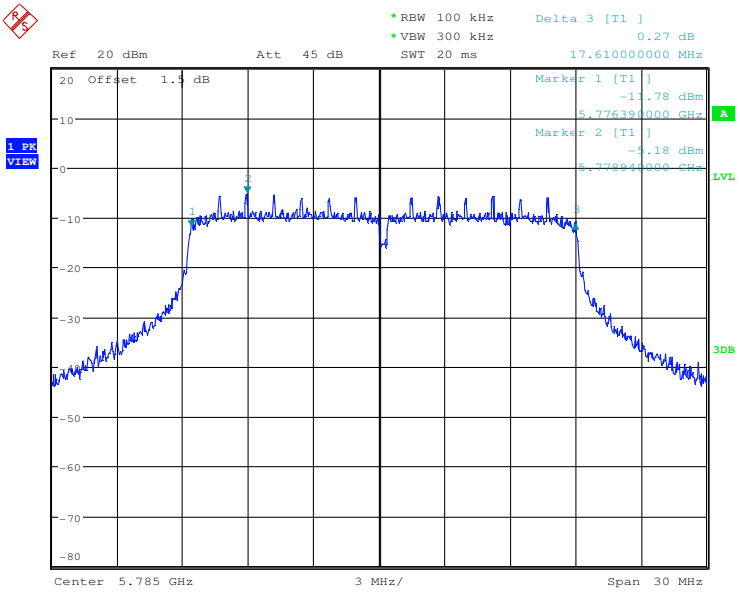
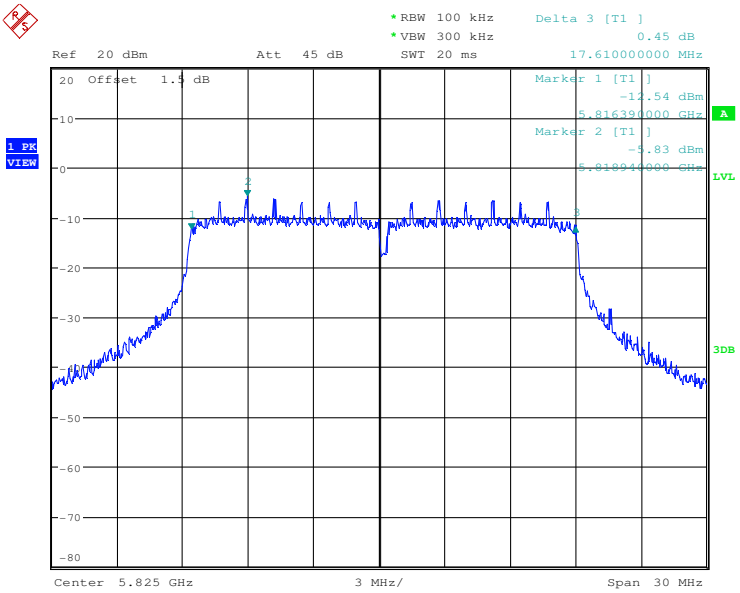
Test mode:	802.11 n20	Frequency(MHz):	5785



Test mode:	802.11 n20	Frequency(MHz):	5825



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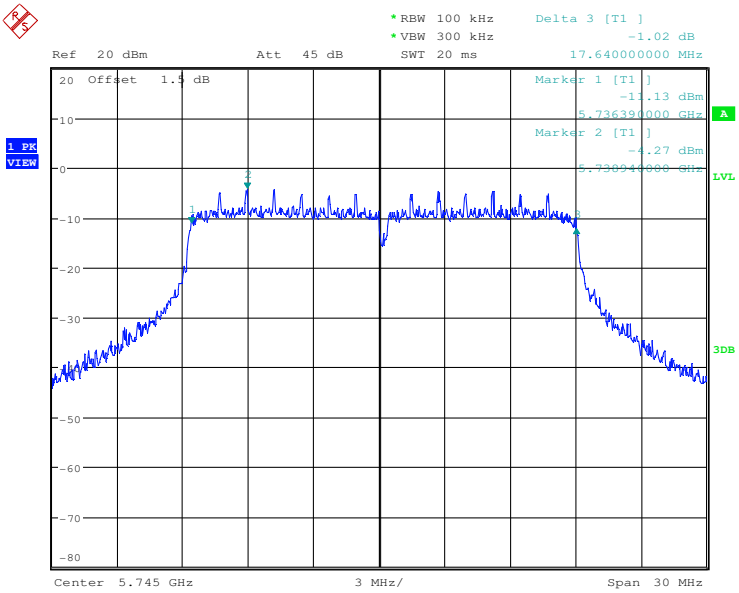
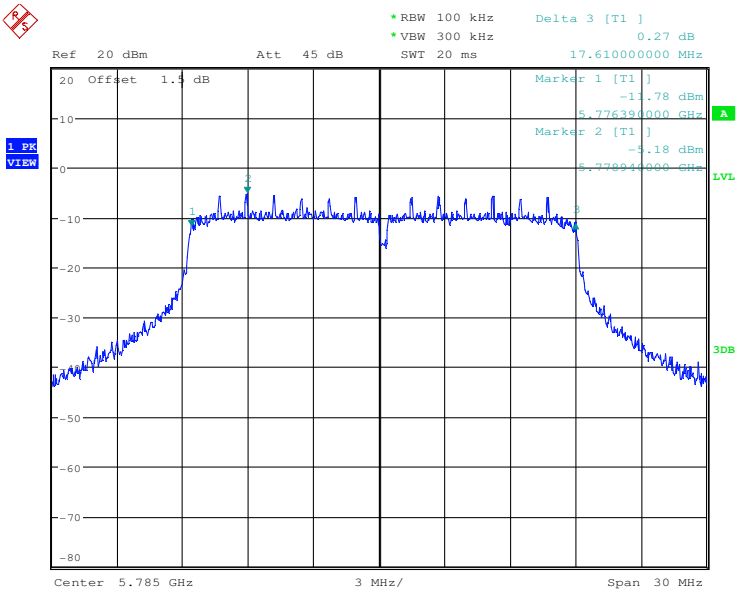
Test mode:	802.11 ac20	Frequency(MHz):	5745



Test mode:	802.11 ac20	Frequency(MHz):	5785



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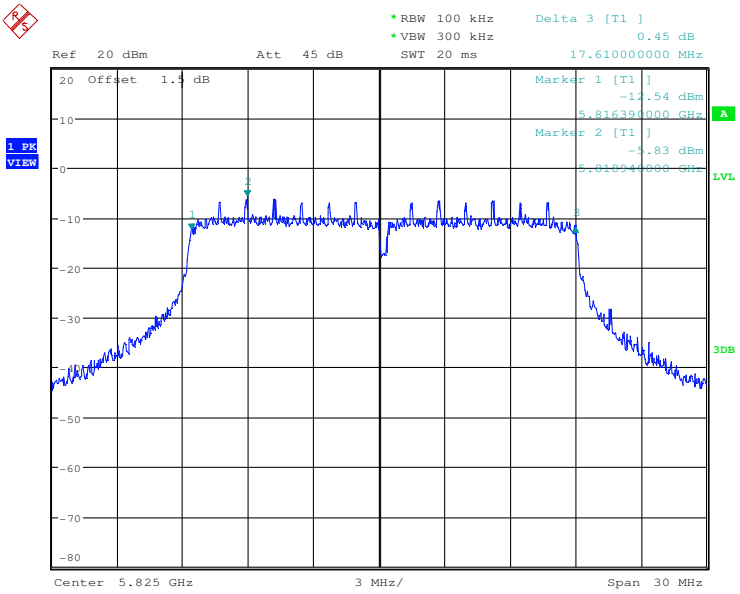
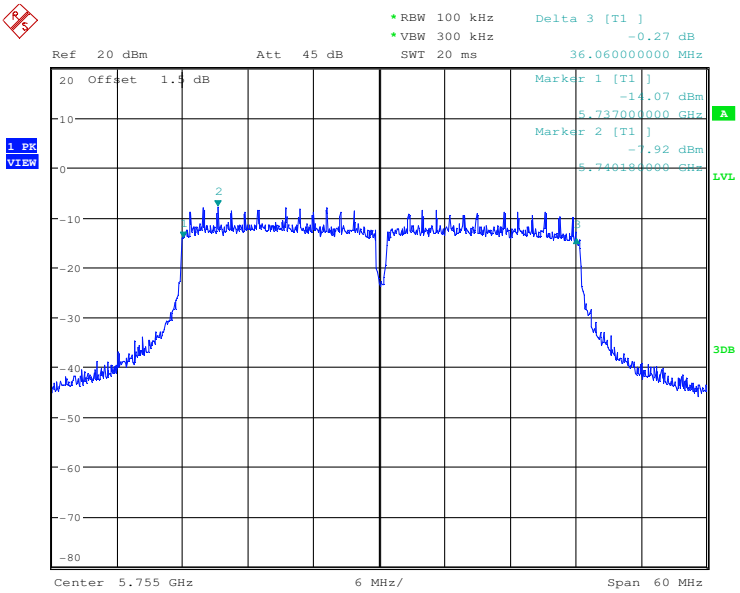
Test mode:	802.11 ac20	Frequency(MHz):	5825



Test mode:	802.11 n40	Frequency(MHz):	5755



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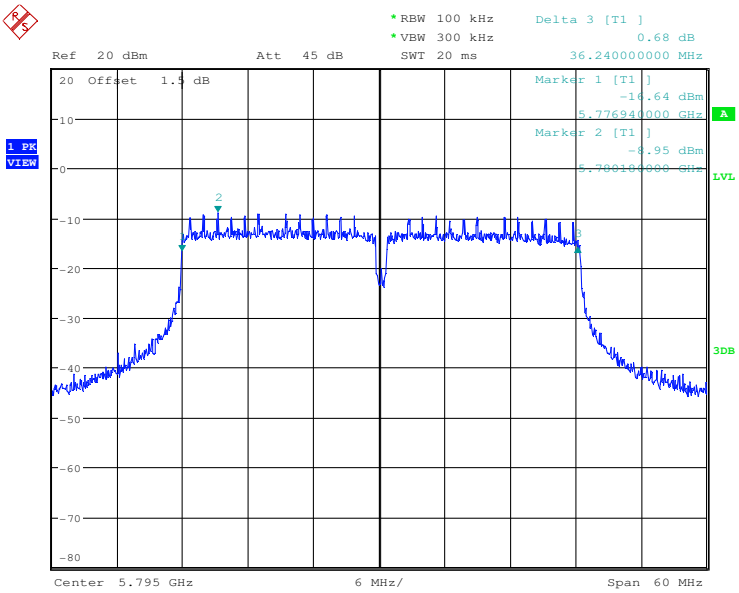
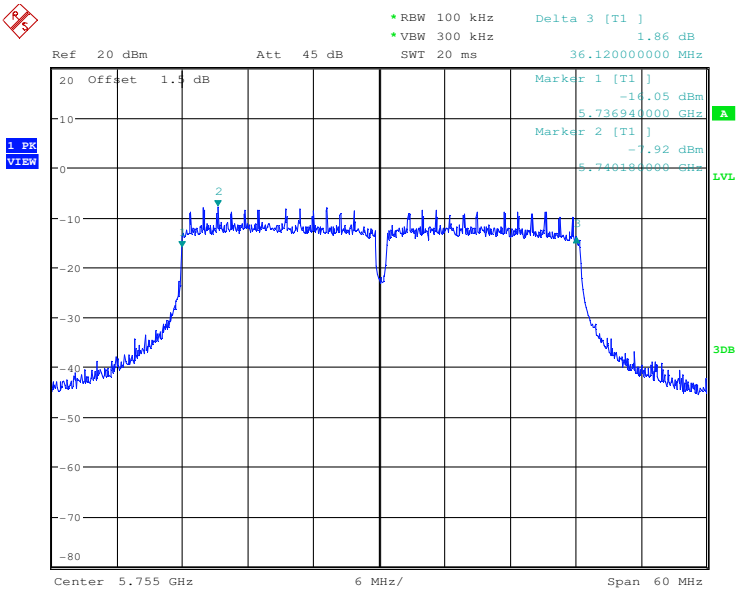
Test mode:	802.11 n40	Frequency(MHz):	5795



Test mode:	802.11 ac40	Frequency(MHz):	5755



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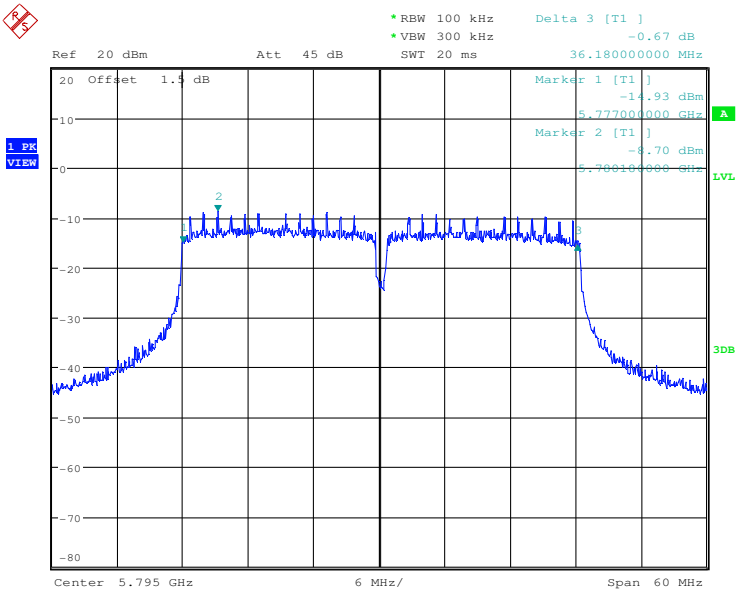
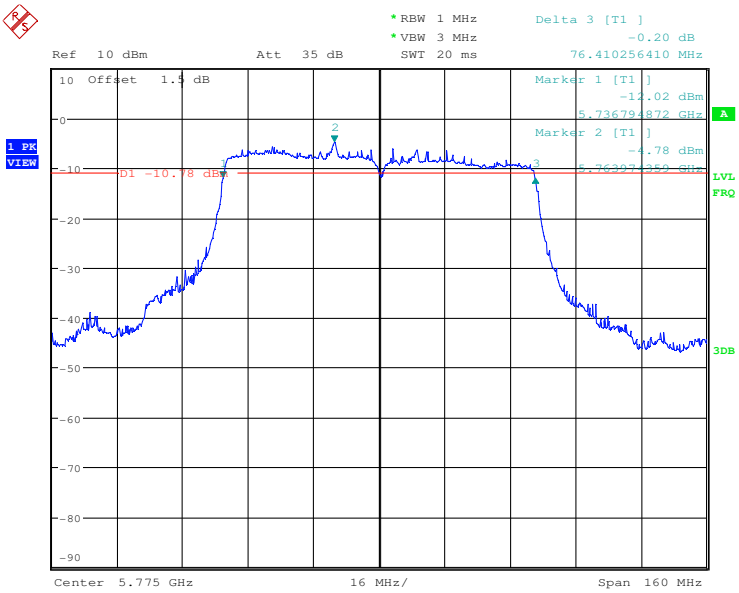
Test mode:	802.11 ac40	Frequency(MHz):	5795



Test mode:	802.11 ac80	Frequency(MHz):	5775



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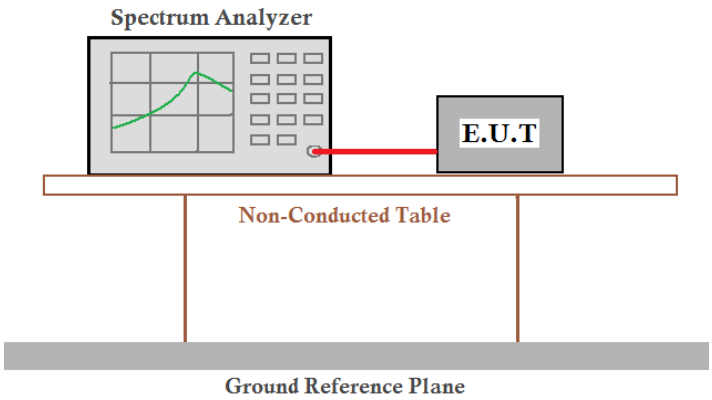
6.7 Power Spectral Density

Test Requirement:	47 CFR Part 15 Section 15.407(a)	
Test Method:	ANSI C63.10: 2013, section 12.6, b	
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; MCS0 of rate is the worst case of 802.11n(HT20); MCS0 of rate is the worst case of 802.11n(HT40); 1SS0 of rate is the worst case of 802.11ac(HT20); 1SS0 of rate is the worst case of 802.11ac(HT40); 1SS0 of rate is the worst case of 802.11ac(HT80) 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：16.97dBm (802.11 a) Antenna gain greater than 6dBi : The power spectral density less than 17dBm/1MHz – 4.5(directional gain-6) = 12.5dBm(802.11 n & 802.11 ac)
	5725-5850MHz	Antenna gain below 6dBi：30dBm (802.11 a) Antenna gain greater than 6dBi：29.97dBm (802.11 a) Antenna gain greater than 6dBi : The power spectral density less than 30dBm/500kHz – 4.5(directional gain-6) = 25.5dBm(802.11 n & 802.11 ac)
Test Results:	Pass	

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Measurement Data:

802.11a mode					
Frequency (MHz)	Power Spectral Density			Limit	Result
	Ant.1	Ant.2	Ant.3		
5180	-7.90	-2.33	-6.64	≤16.97dBm/1MHz	Pass
5200	-7.59	-2.07	-6.51	≤16.97dBm/1MHz	Pass
5240	-6.93	-1.35	-6.24	≤16.97dBm/1MHz	Pass
5745	-5.36	-7.56	-7.45	≤29.97dBm/500kHz	Pass
5785	-6.06	-8.02	-7.04	≤29.97dBm/500kHz	Pass
5825	-7.19	-9.20	-6.77	≤29.97dBm/500kHz	Pass

802.11 n20 mode						
Frequency (MHz)	Power Spectral Density				Limit	Result
	Ant.1	Ant.2	Ant.3	Total		
5180	-8.12	-2.47	-7.23	-0.41	≤12.50dBm/1MHz	Pass
5200	-7.89	-2.29	-7.07	-0.22	≤12.50dBm/1MHz	Pass
5240	-6.71	-1.57	-6.34	0.58	≤12.50dBm/1MHz	Pass
5745	-5.00	-7.49	-3.13	-0.08	≤25.50dBm/500kHz	Pass
5785	-6.07	-8.26	-3.18	-0.56	≤25.50dBm/500kHz	Pass
5825	-7.03	-9.11	-3.20	-0.97	≤25.50dBm/500kHz	Pass

802.11ac 20 mode						
Frequency (MHz)	Power Spectral Density				Limit	Result
	Ant.1	Ant.2	Ant.3	Total		
5180	-8.29	-2.57	-7.24	-0.50	≤12.50dBm/1MHz	Pass
5200	-7.97	-2.18	-6.54	-0.05	≤12.50dBm/1MHz	Pass
5240	-7.15	-1.42	-6.54	0.55	≤12.50dBm/1MHz	Pass
5745	-5.08	-7.54	-3.08	-0.09	≤25.50dBm/500kHz	Pass
5785	-6.08	-7.88	-3.14	-0.48	≤25.50dBm/500kHz	Pass
5825	-6.83	-8.85	-2.86	-0.67	≤25.50dBm/500kHz	Pass

802.11 n40 mode						
Frequency (MHz)	Power Spectral Density				Limit	Result
	Ant.1	Ant.2	Ant.3	Total		
5190	-11.55	-5.66	-10.47	-3.65	≤12.50dBm/1MHz	Pass
5230	-10.73	-4.88	-9.86	-2.89	≤12.50dBm/1MHz	Pass
5755	-8.76	-11.16	-7.11	-3.93	≤25.50dBm/500kHz	Pass
5795	-9.85	-11.78	-12.73	-3.17	≤25.50dBm/500kHz	Pass

802.11ac 40 mode						
Frequency (MHz)	Power Spectral Density				Limit	Result
	Ant.1	Ant.2	Ant.3	Total		
5190	-11.62	-5.56	-10.20	-3.54	≤12.50dBm/1MHz	Pass
5230	-10.71	-4.79	-9.88	-2.84	≤12.50dBm/1MHz	Pass
5755	-8.91	-11.04	-12.51	-5.79	≤25.50dBm/500kHz	Pass
5795	-9.80	-11.73	-12.52	-6.42	≤25.50dBm/500kHz	Pass

802.11ac 80 mode						
Frequency (MHz)	Power Spectral Density				Limit	Result
	Ant.1	Ant.2	Ant.3	Total		
5210	-16.79	-8.12	-17.22	-7.12	≤12.50dBm/1MHz	Pass
5775	-13.59	-13.53	-13.56	-8.78	≤25.50dBm/500kHz	Pass

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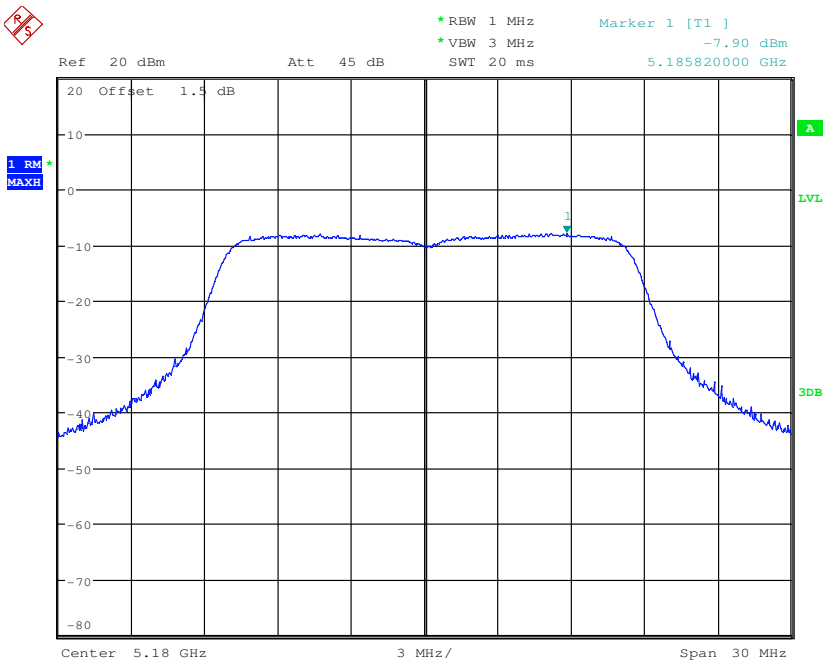
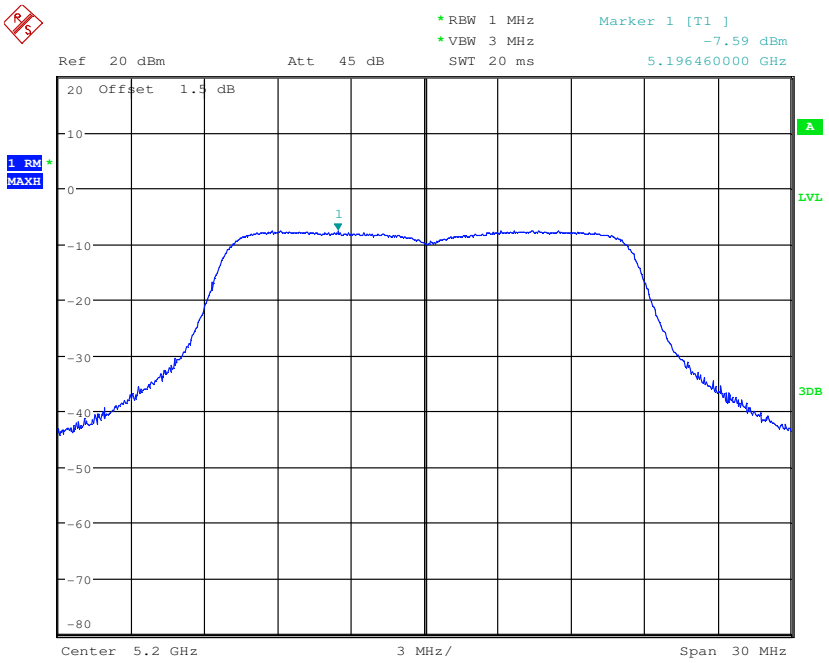
Antenna 1

Test mode:	802.11a	Frequency(MHz):	5180



Test mode:	802.11a	Frequency(MHz):	5200



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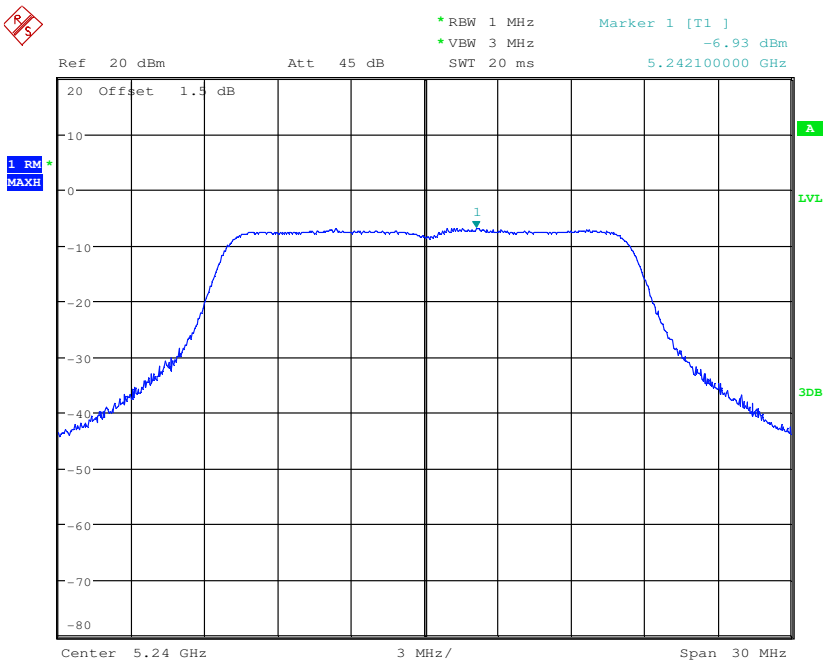
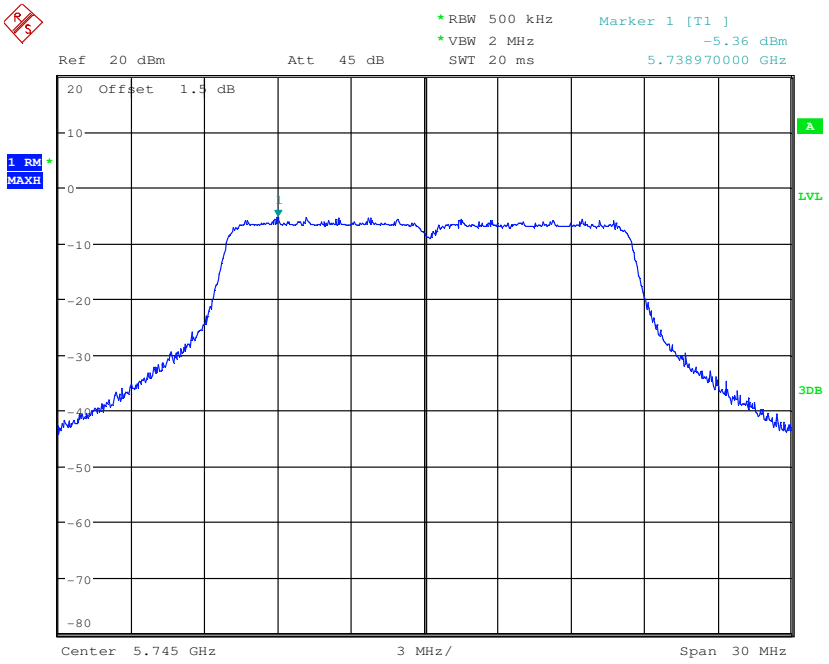
Test mode:	802.11a	Frequency(MHz):	5240



Test mode:	802.11a	Frequency(MHz):	5745



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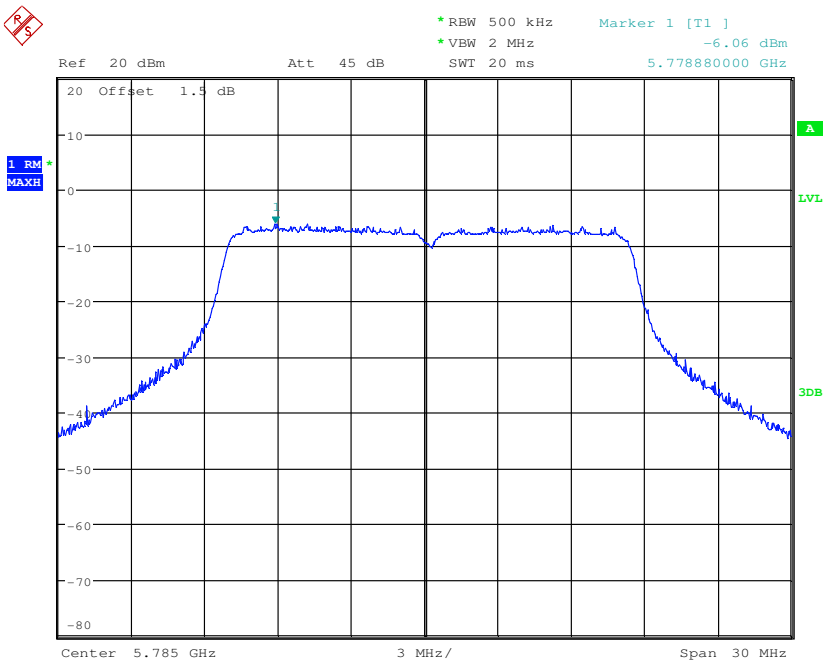
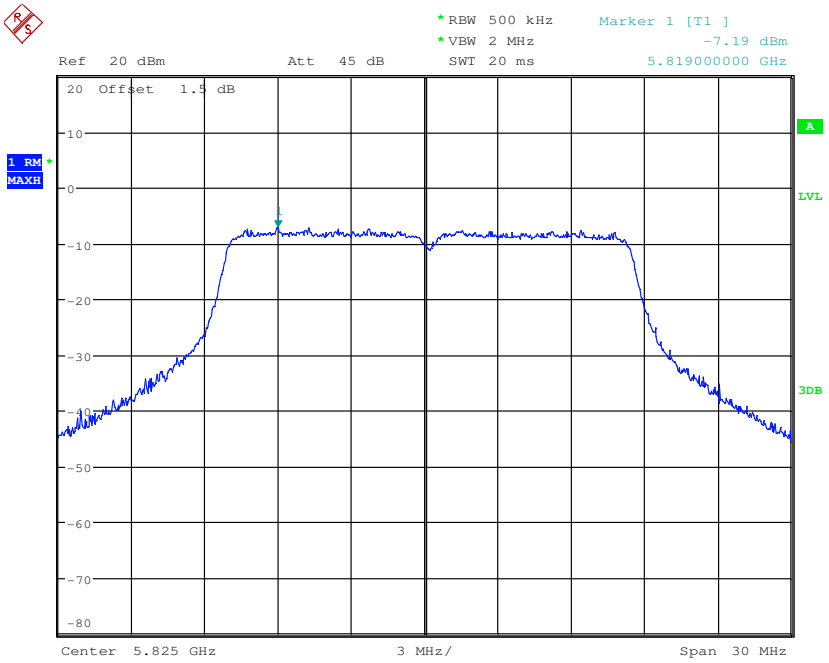
Test mode:	802.11a	Frequency(MHz):	5785



Test mode:	802.11a	Frequency(MHz):	5825



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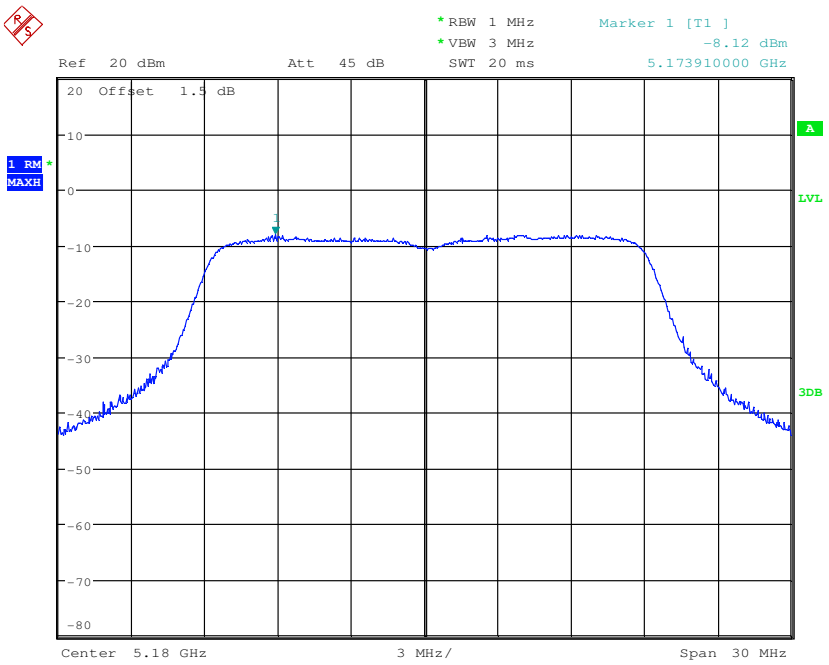
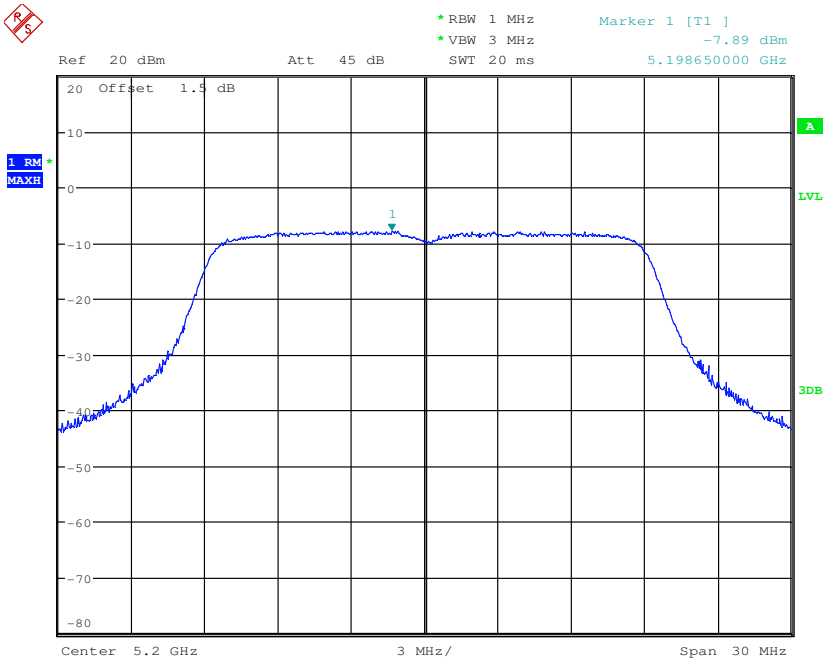
Test mode:	802.11 n20	Frequency(MHz):	5180



Test mode:	802.11 n20	Frequency(MHz):	5200



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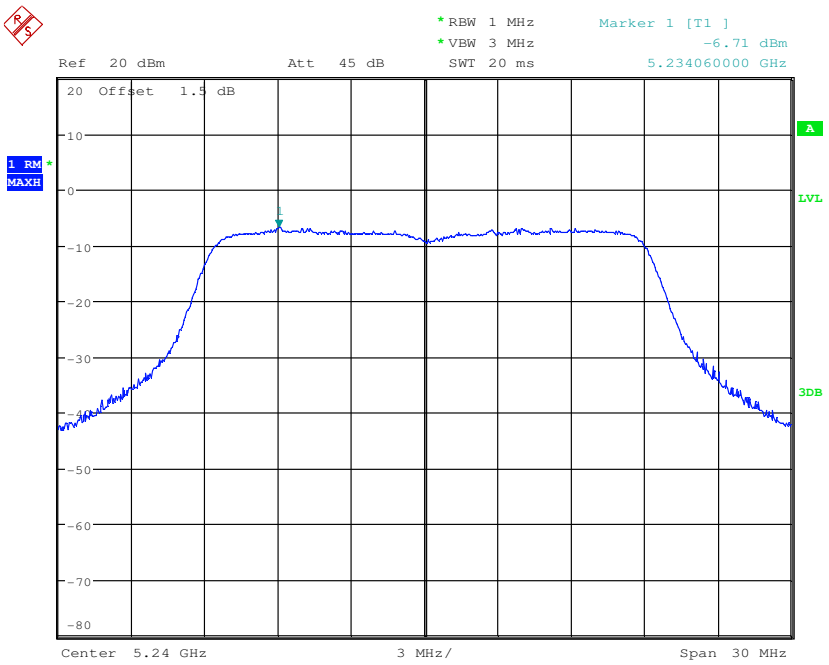
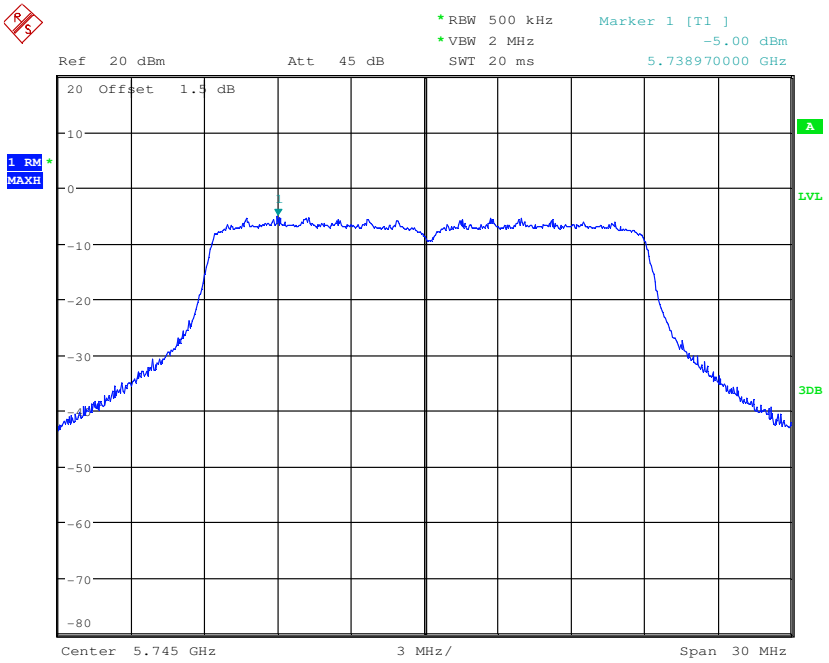
Test mode:	802.11 n20	Frequency(MHz):	5240



Test mode:	802.11 n20	Frequency(MHz):	5745



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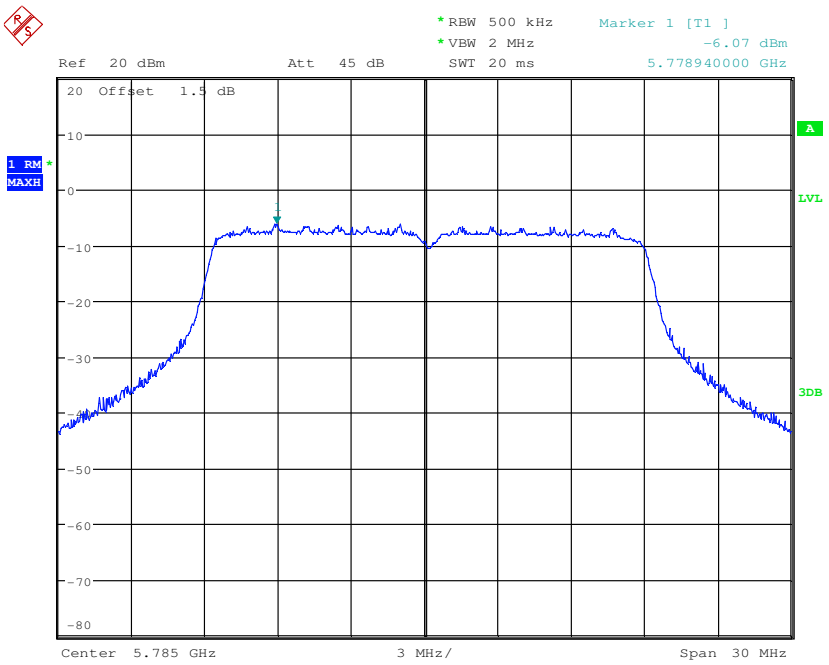
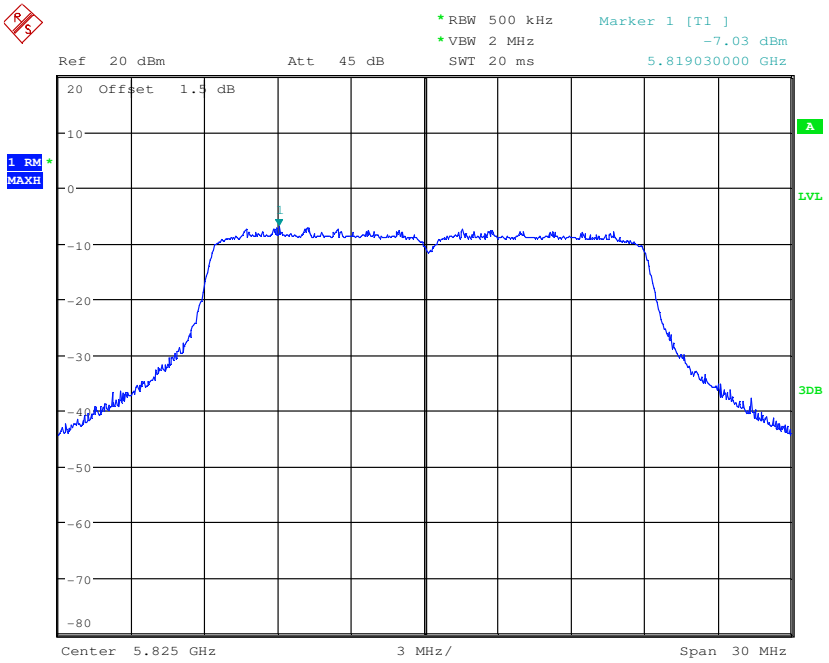
Test mode:	802.11 n20	Frequency(MHz):	5785



Test mode:	802.11 n20	Frequency(MHz):	5825



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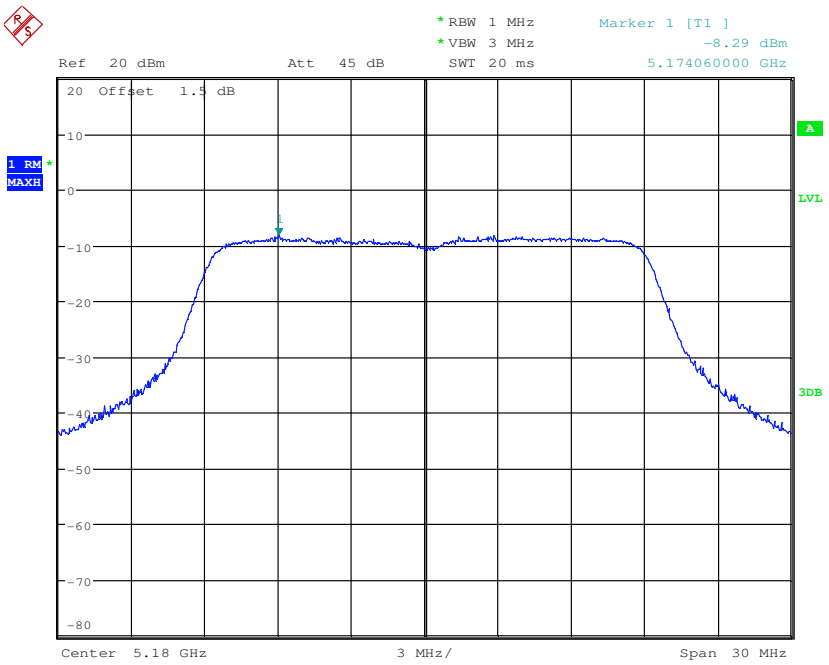
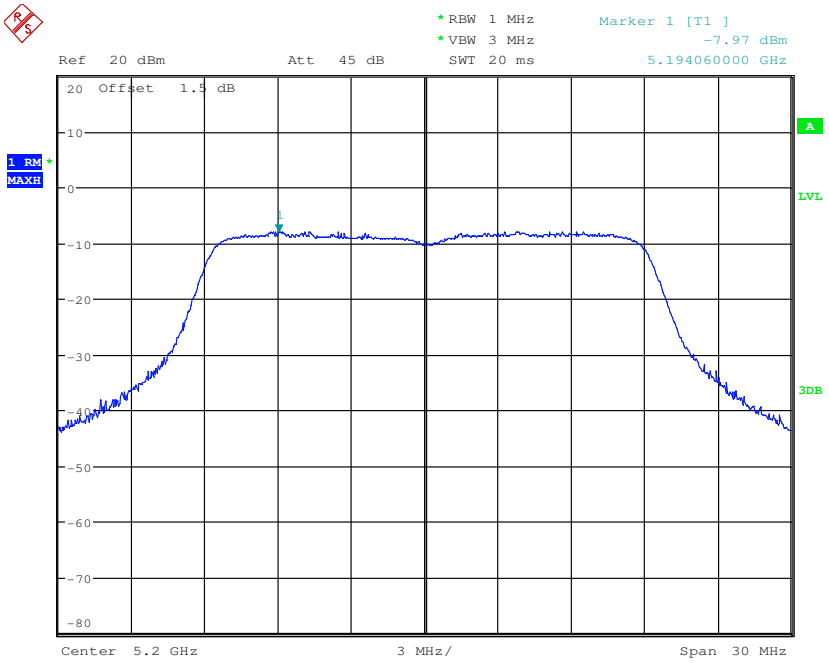
Test mode:	802.11 ac20	Frequency(MHz):	5180



Test mode:	802.11 ac20	Frequency(MHz):	5200



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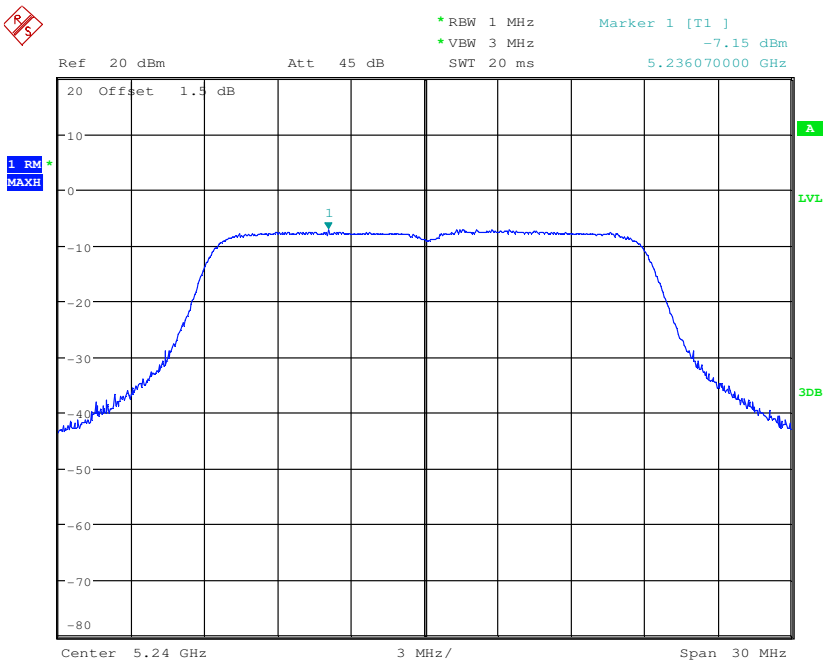
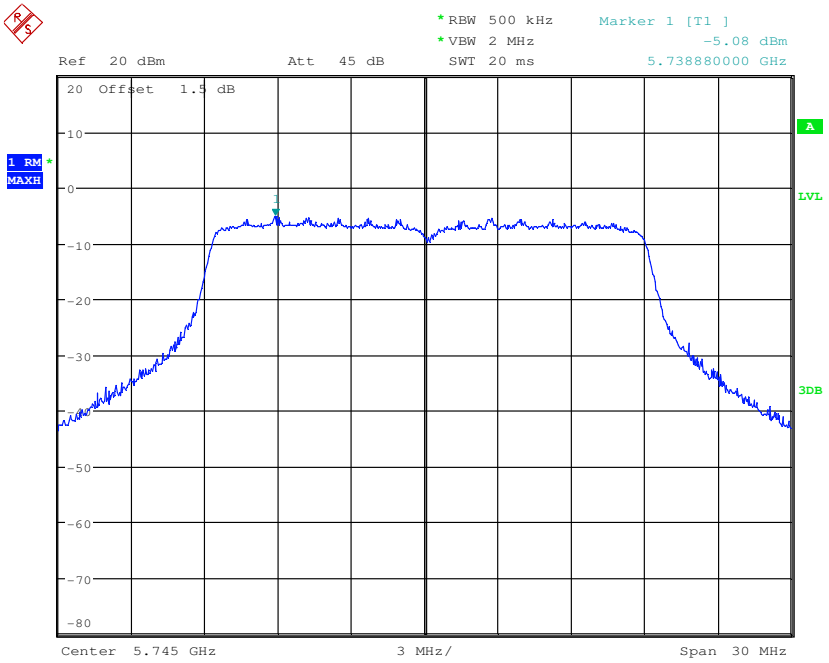
Test mode:	802.11 ac20	Frequency(MHz):	5240



Test mode:	802.11 ac20	Frequency(MHz):	5745



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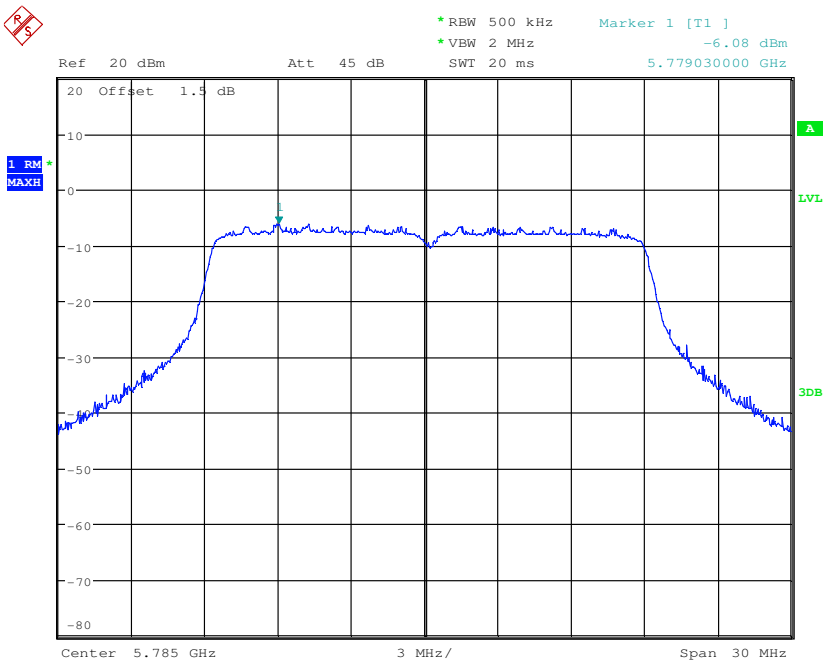
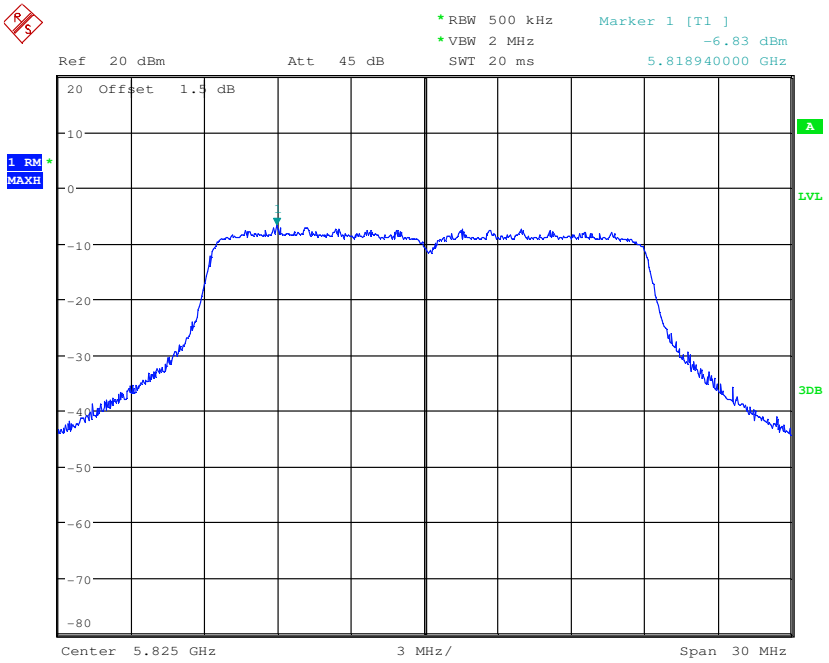
Test mode:	802.11 ac20	Frequency(MHz):	5785



Test mode:	802.11 ac20	Frequency(MHz):	5825



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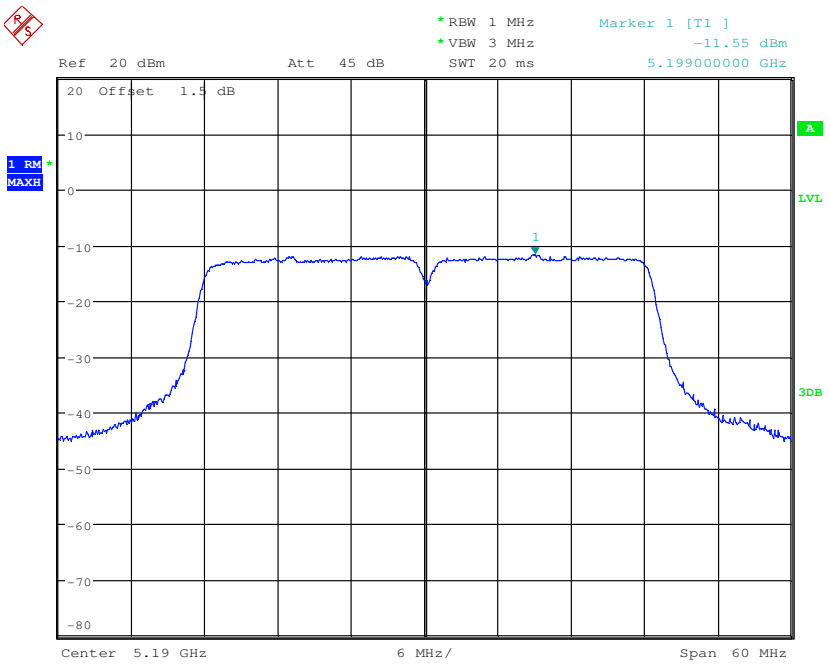
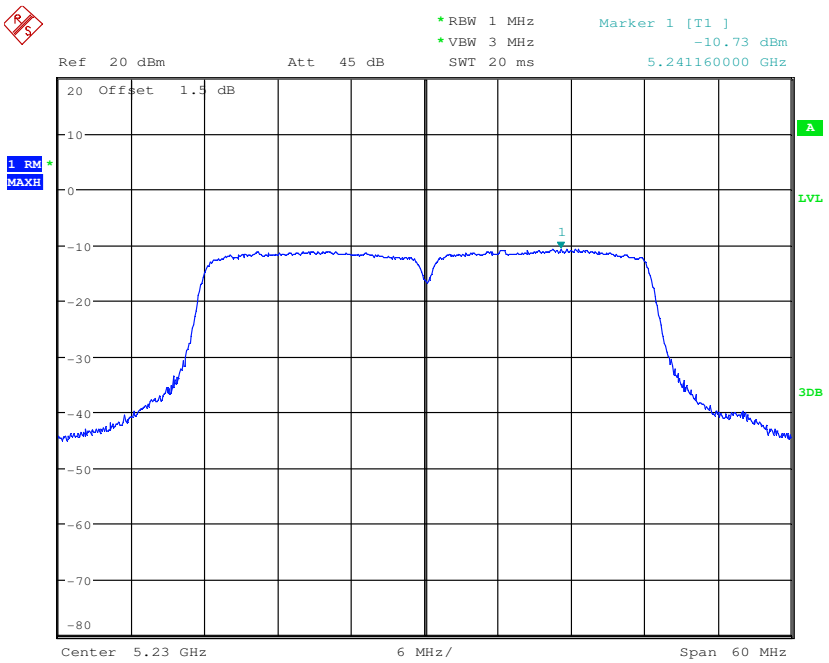
Test mode:	802.11 n40	Frequency(MHz):	5190



Test mode:	802.11 n40	Frequency(MHz):	5230



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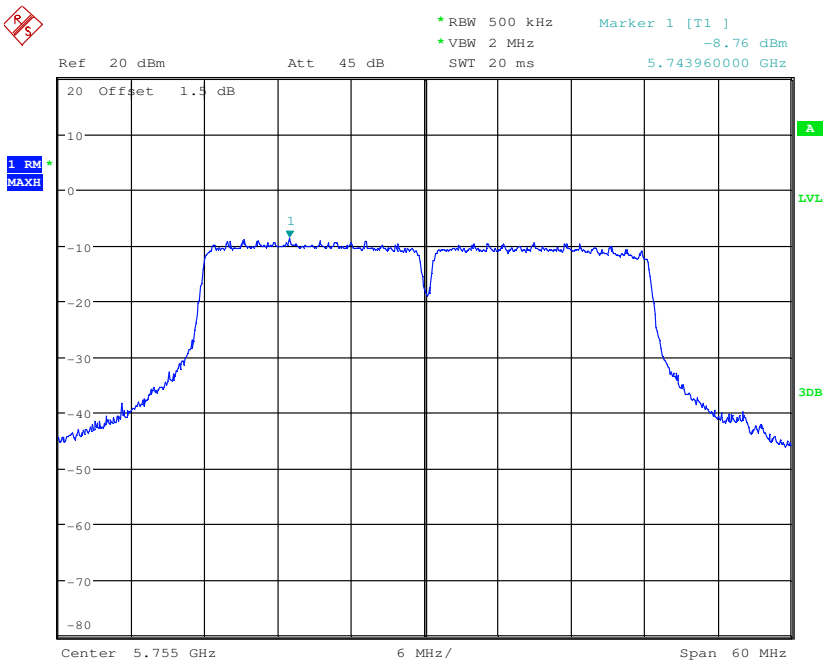
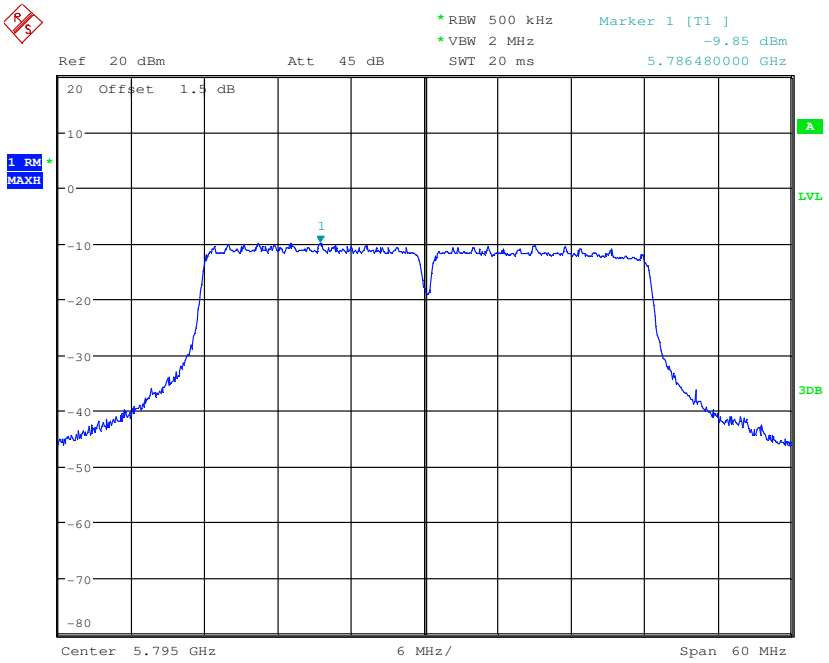
Test mode:	802.11 n40	Frequency(MHz):	5755



Test mode:	802.11 n40	Frequency(MHz):	5795



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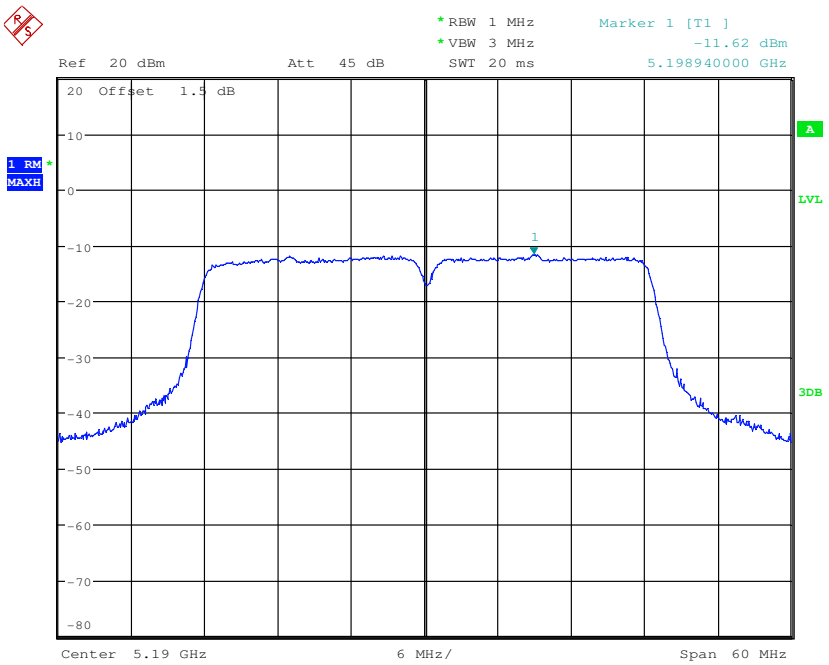
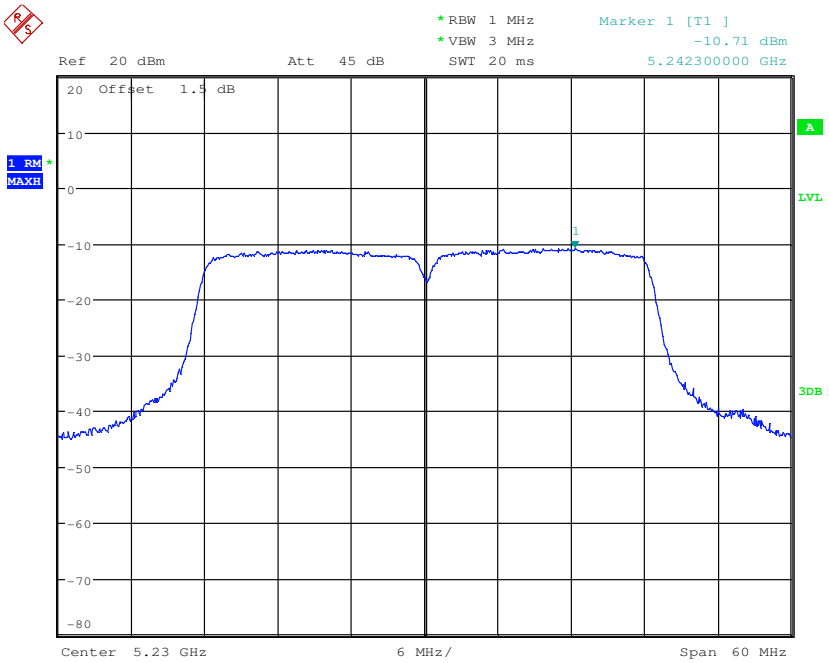
Test mode:	802.11 ac40	Frequency(MHz):	5190



Test mode:	802.11 ac40	Frequency(MHz):	5230



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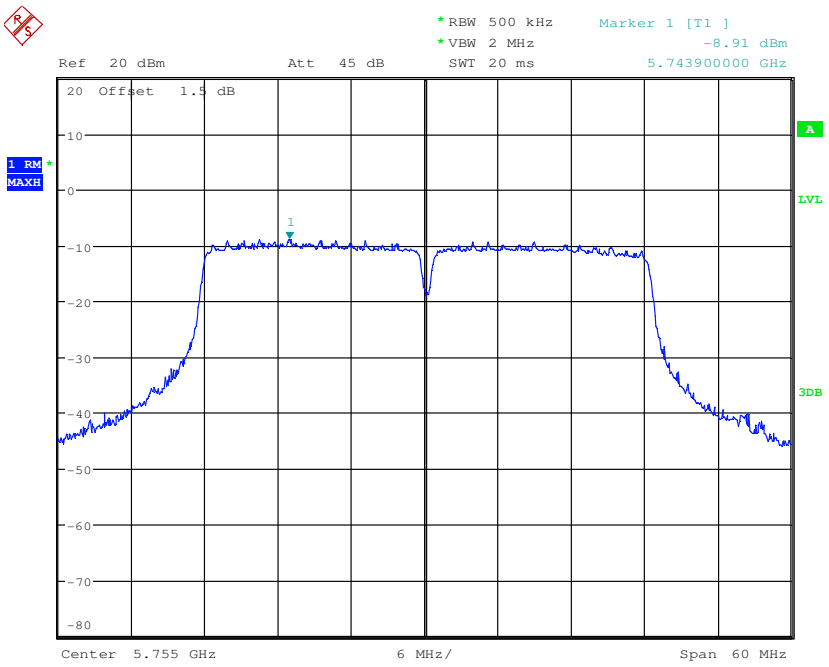
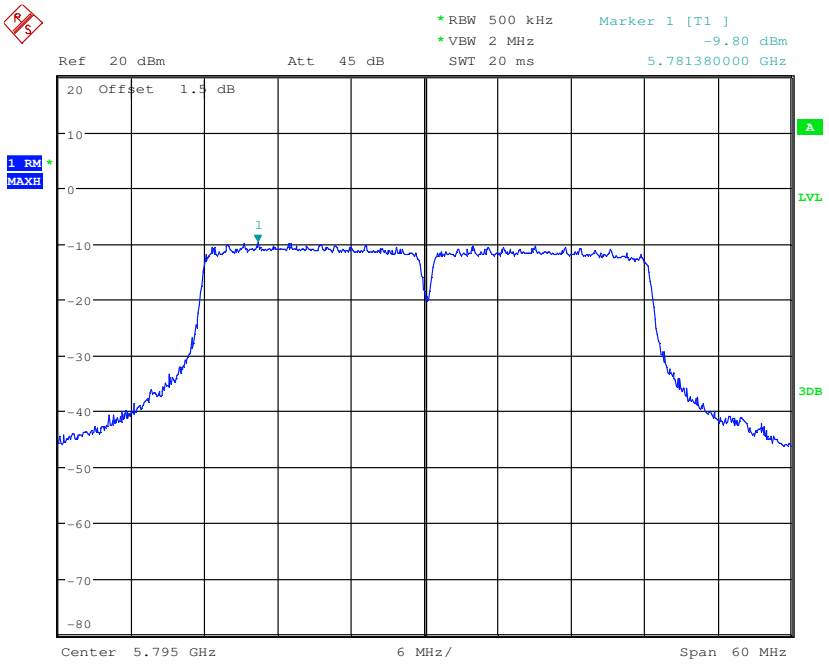
Test mode:	802.11 ac40	Frequency(MHz):	5755



Test mode:	802.11 ac40	Frequency(MHz):	5795



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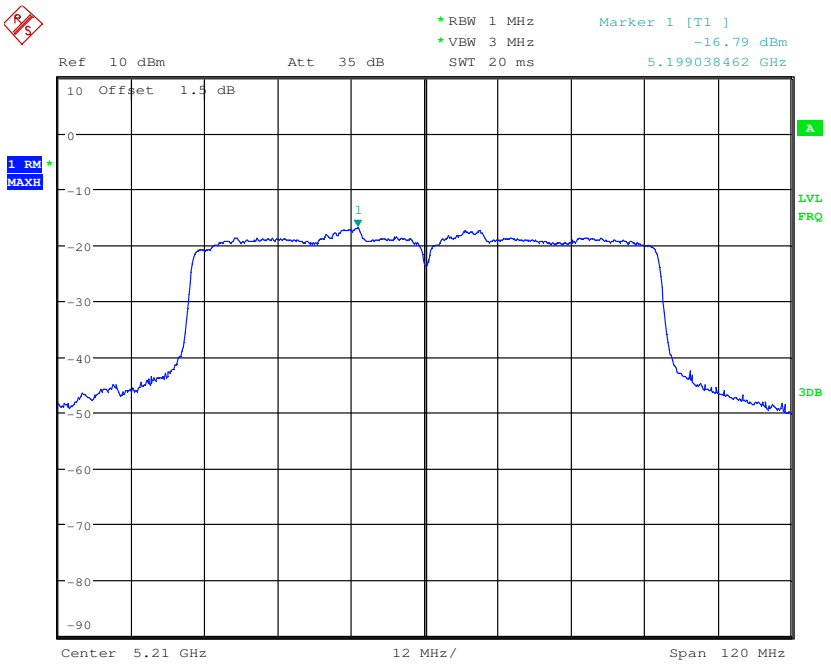
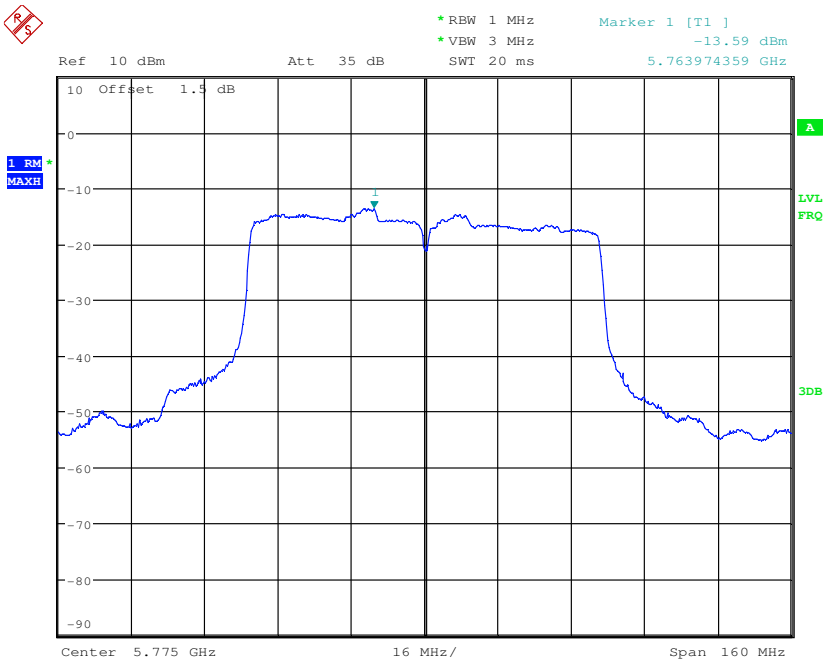
Test mode:	802.11 ac80	Frequency(MHz):	5210



Test mode:	802.11 ac80	Frequency(MHz):	5775



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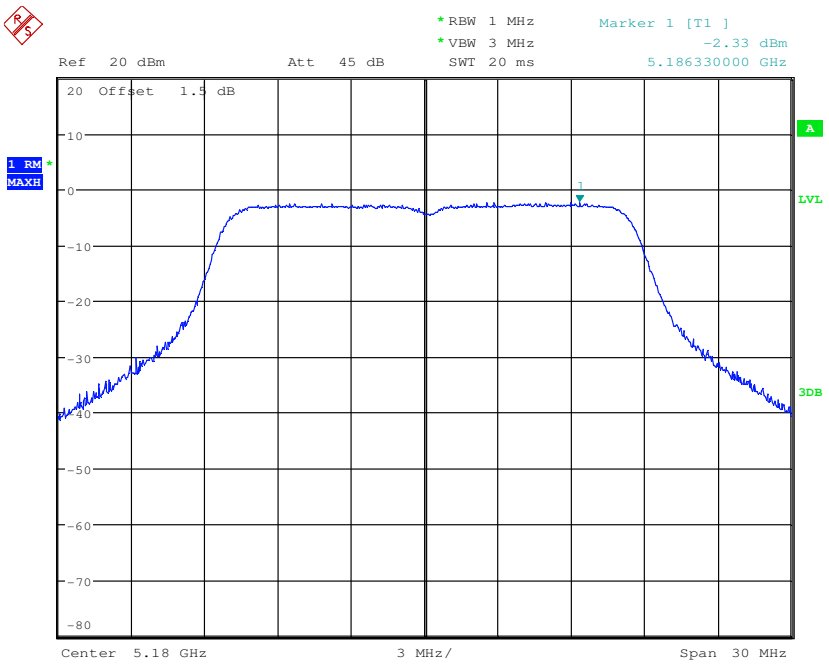
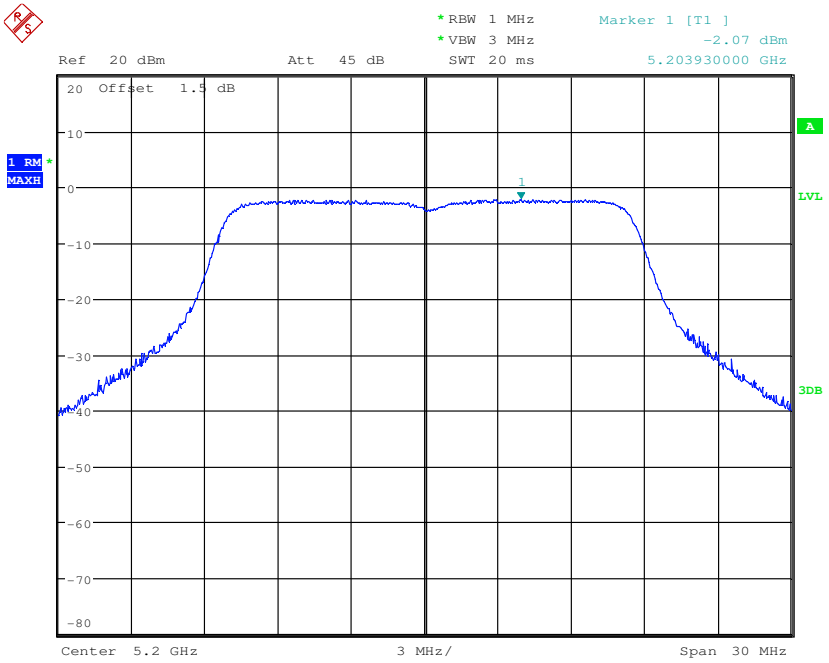
Antenna 2

Test mode:	802.11a	Frequency(MHz):	5180



Test mode:	802.11a	Frequency(MHz):	5200



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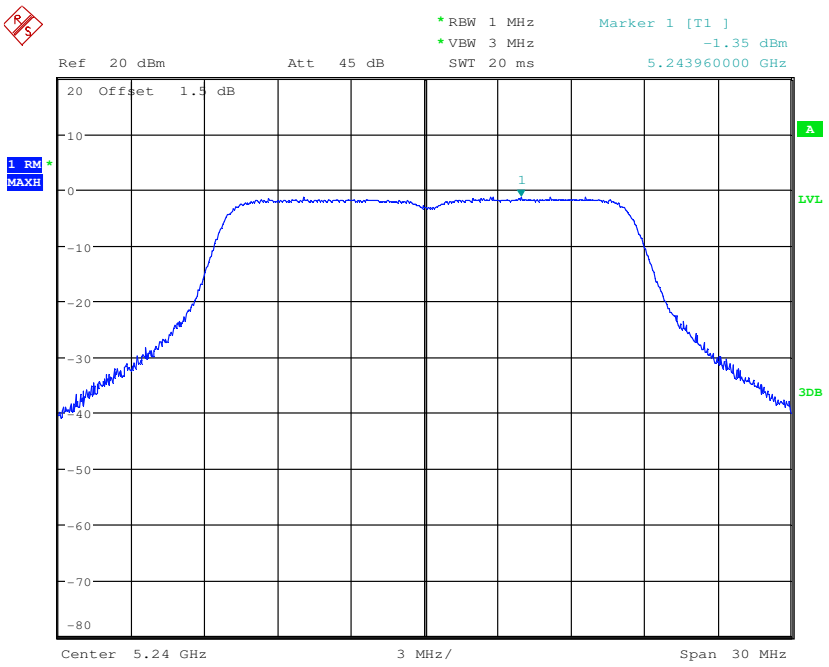
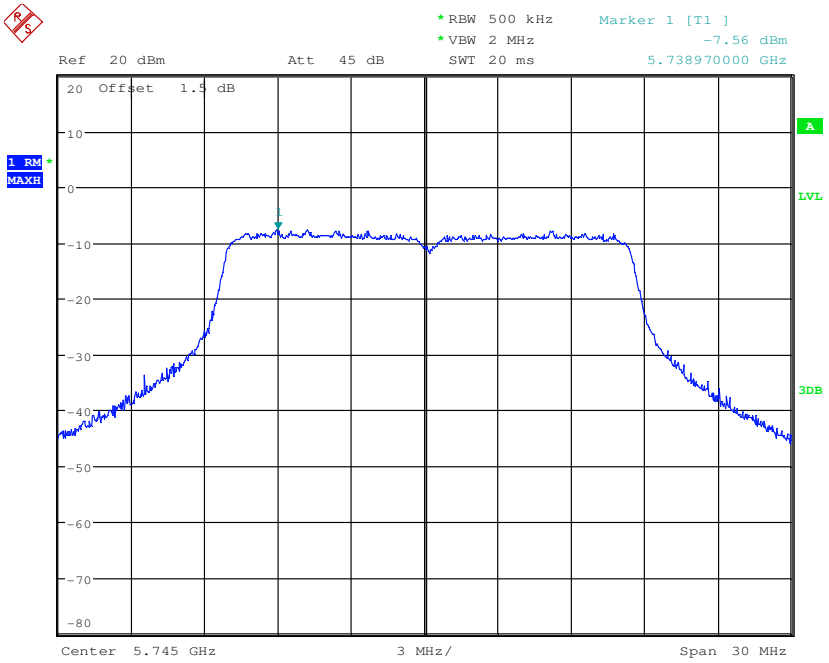
Test mode:	802.11a	Frequency(MHz):	5240



Test mode:	802.11a	Frequency(MHz):	5745



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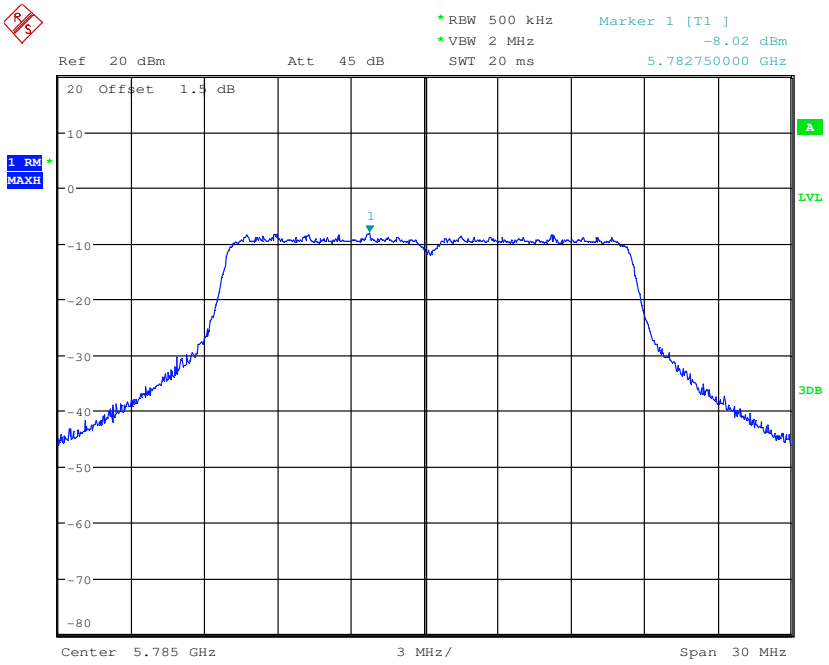
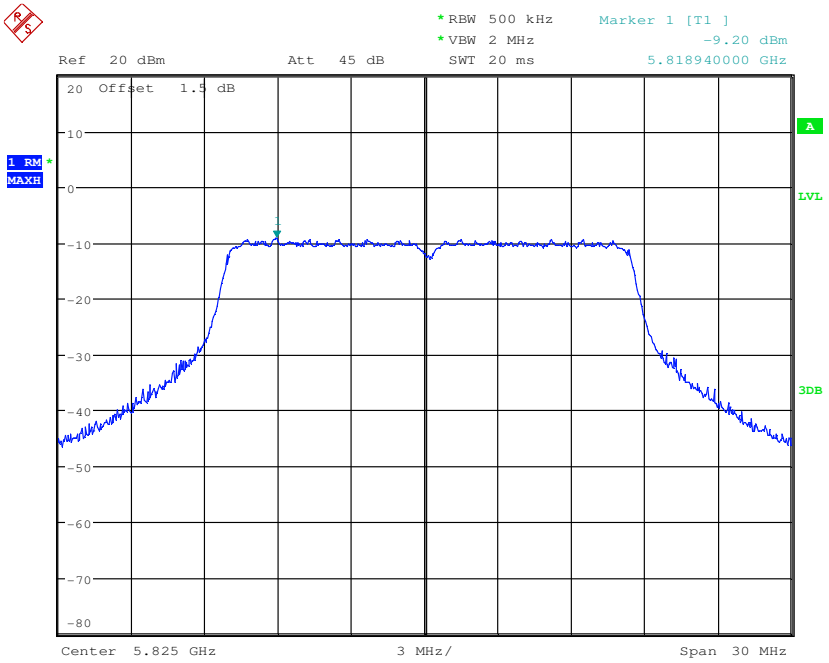
Test mode:	802.11a	Frequency(MHz):	5785



Test mode:	802.11a	Frequency(MHz):	5825



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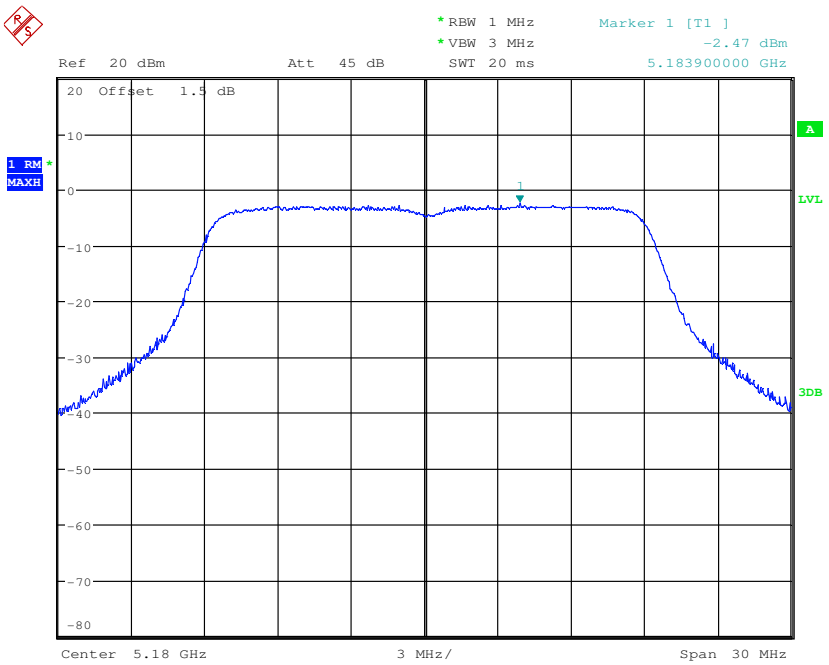
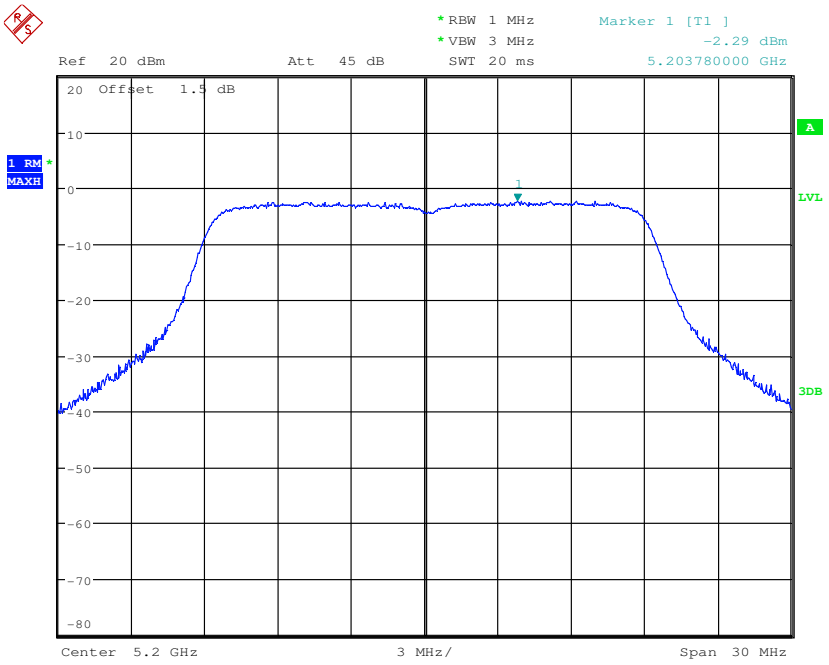
Test mode:	802.11 n20	Frequency(MHz):	5180



Test mode:	802.11 n20	Frequency(MHz):	5200



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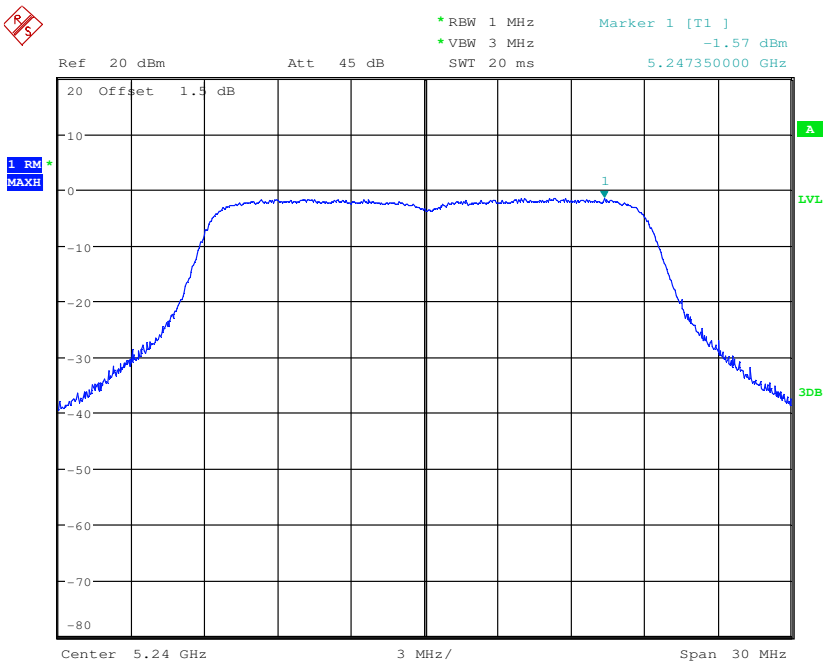
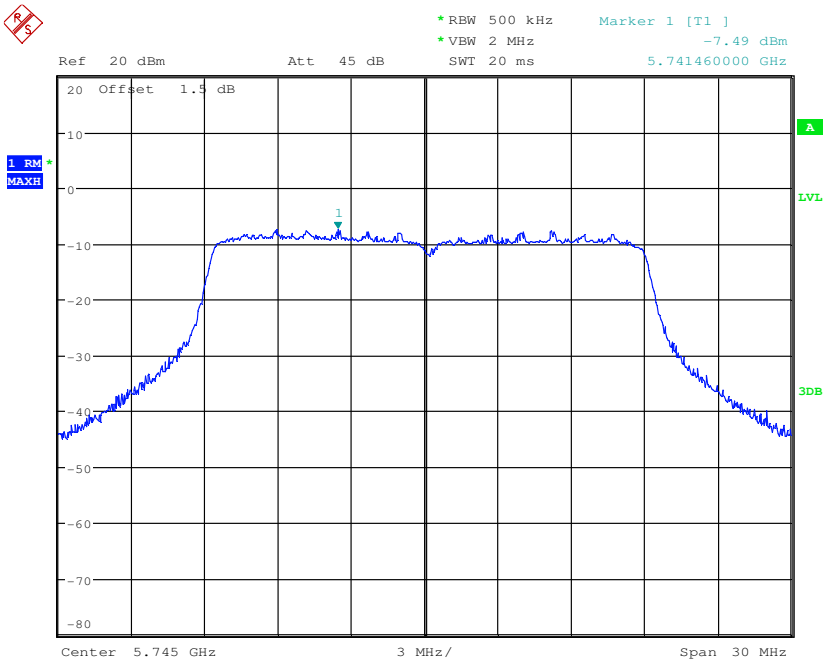
Test mode:	802.11 n20	Frequency(MHz):	5240



Test mode:	802.11 n20	Frequency(MHz):	5745



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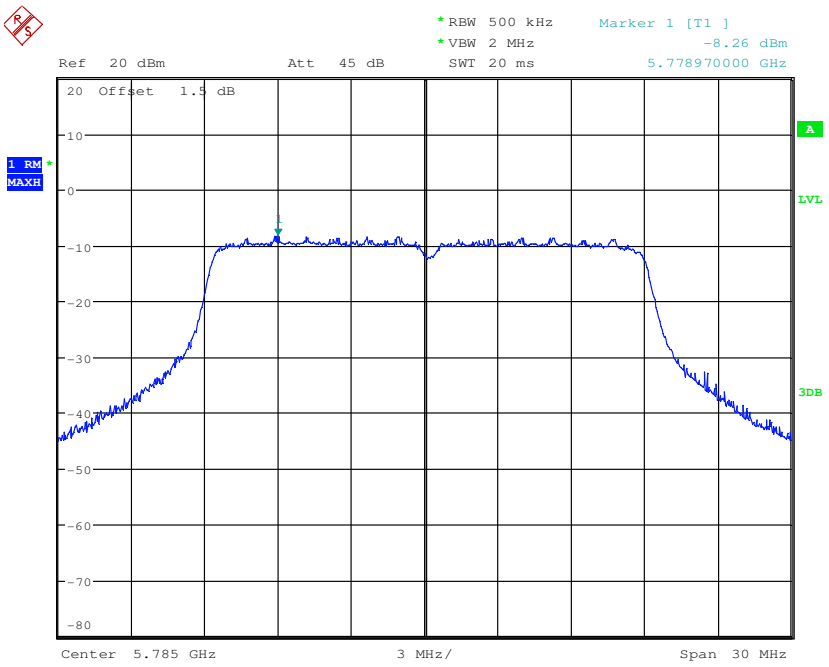
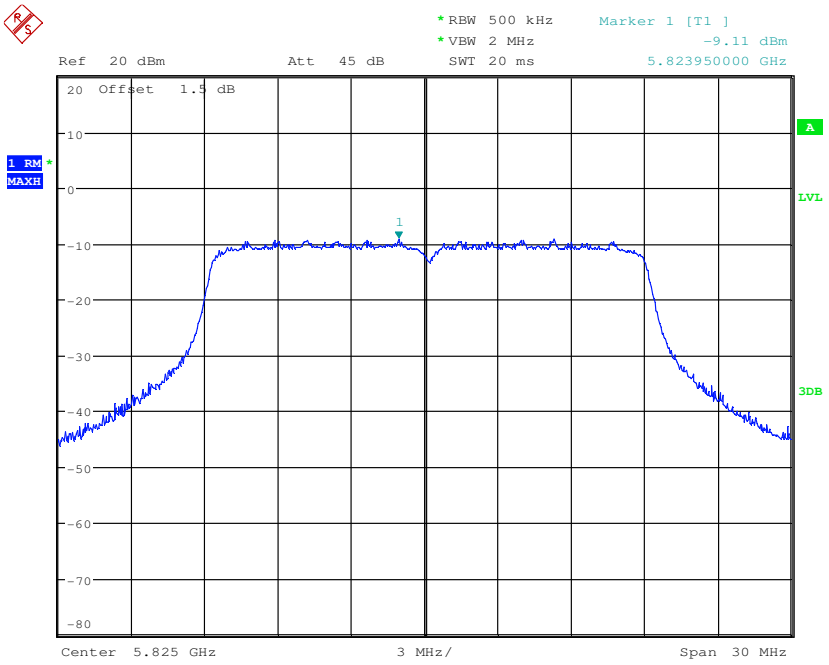
Test mode:	802.11 n20	Frequency(MHz):	5785



Test mode:	802.11 n20	Frequency(MHz):	5825



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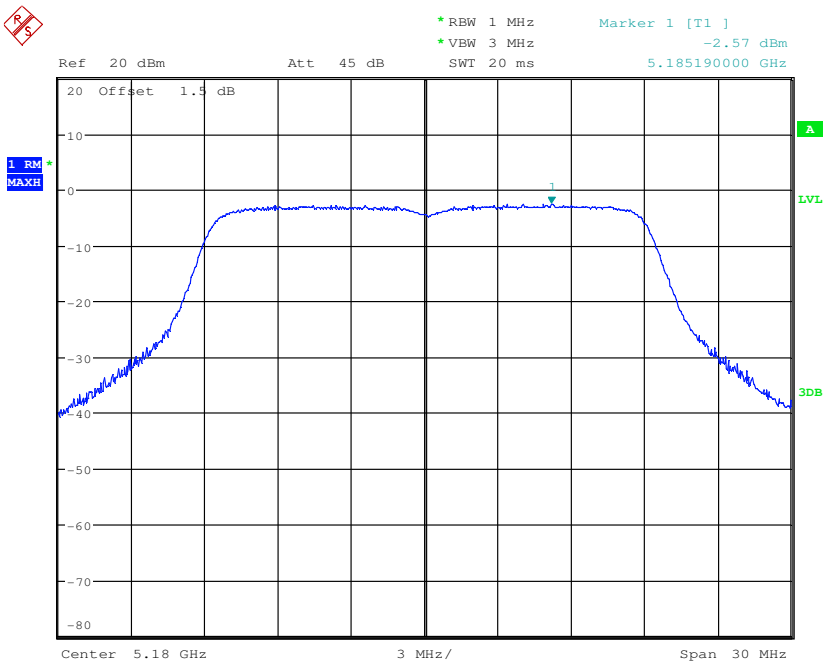
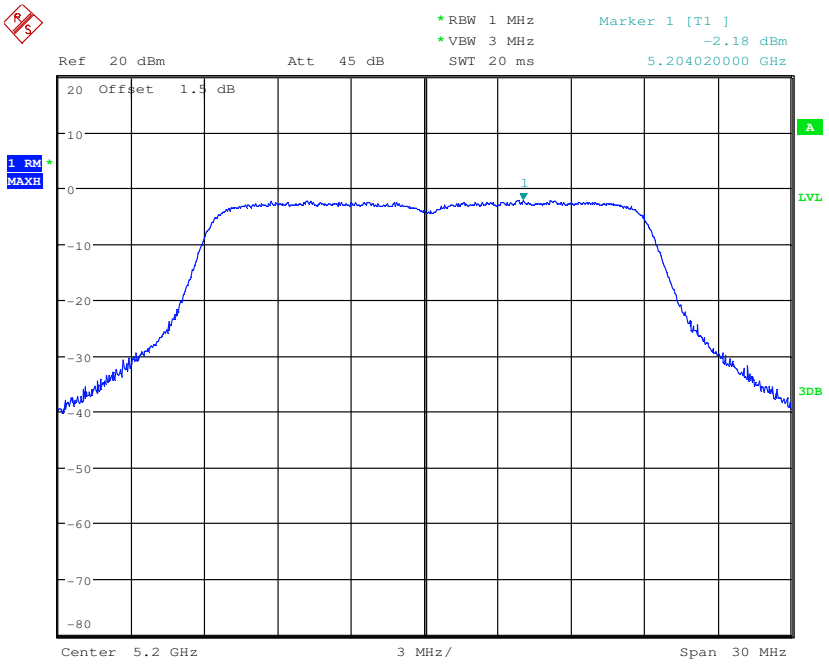
Test mode:	802.11 ac20	Frequency(MHz):	5180



Test mode:	802.11 ac20	Frequency(MHz):	5200



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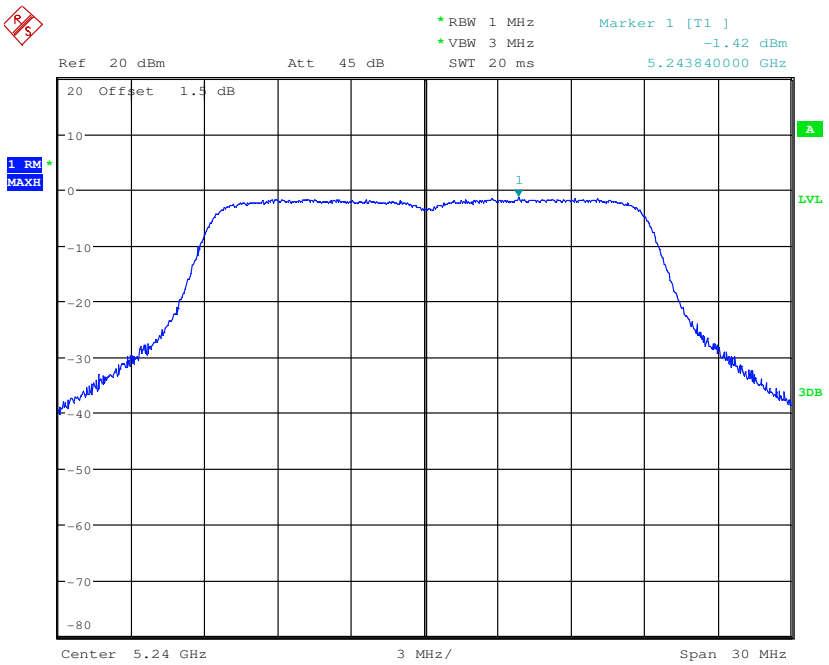
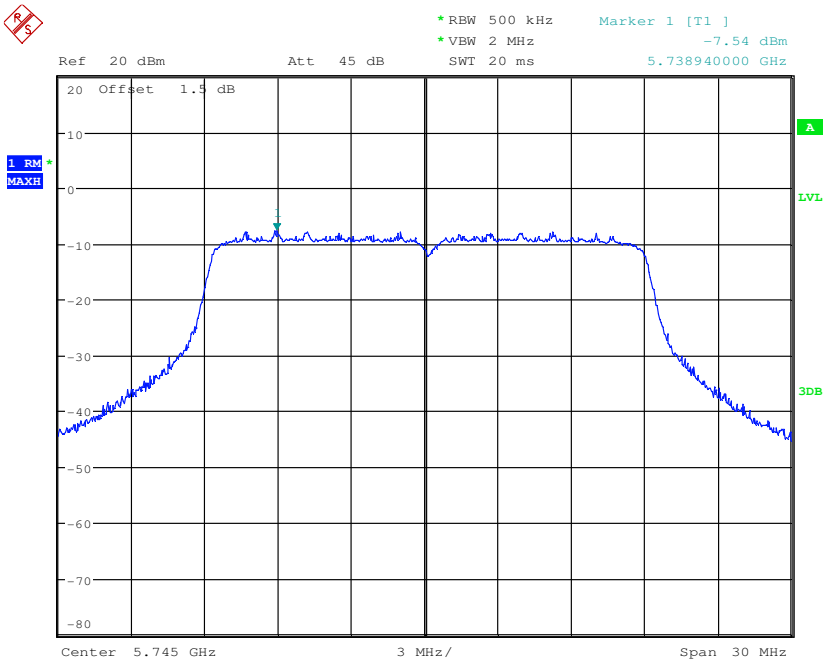
Test mode:	802.11 ac20	Frequency(MHz):	5240



Test mode:	802.11 ac20	Frequency(MHz):	5745



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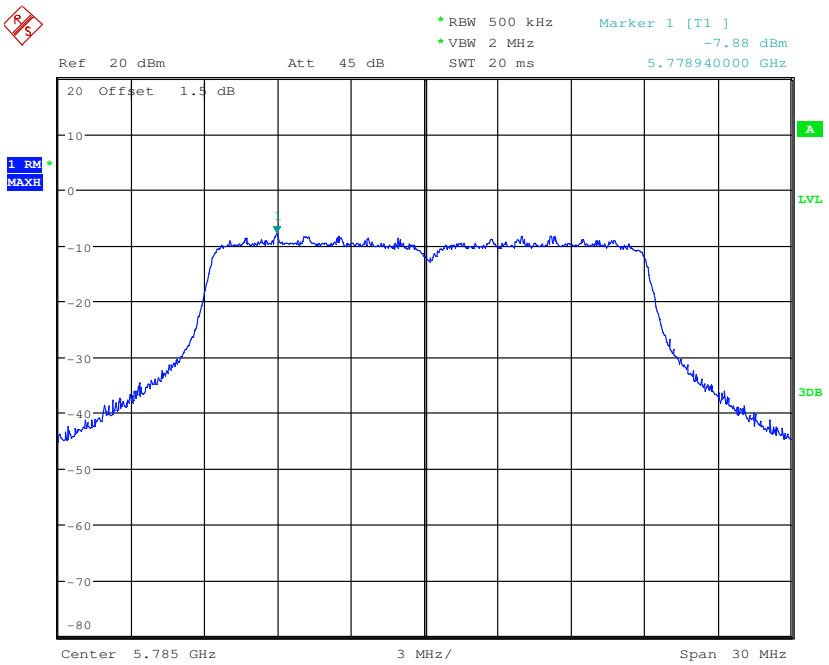
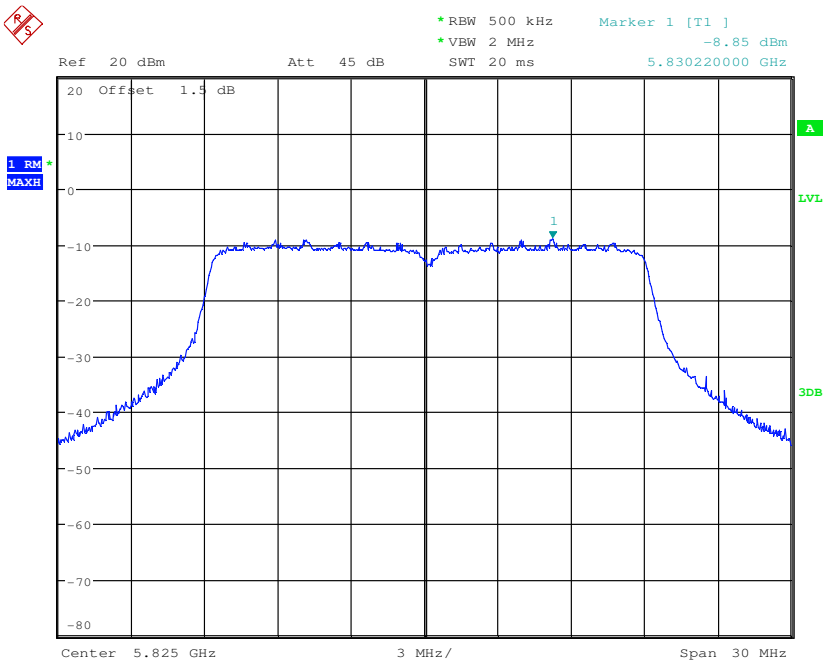
Test mode:	802.11 ac20	Frequency(MHz):	5785



Test mode:	802.11 ac20	Frequency(MHz):	5825



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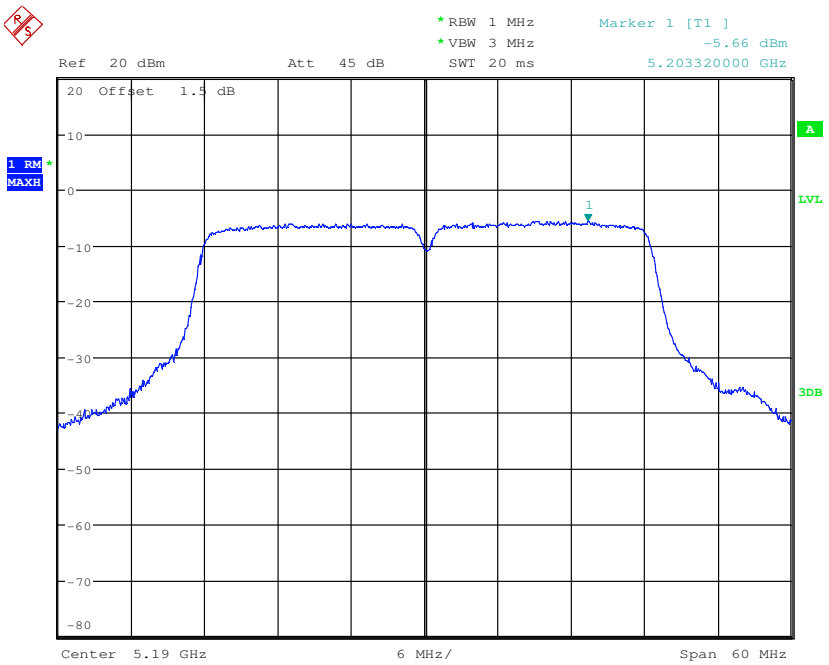
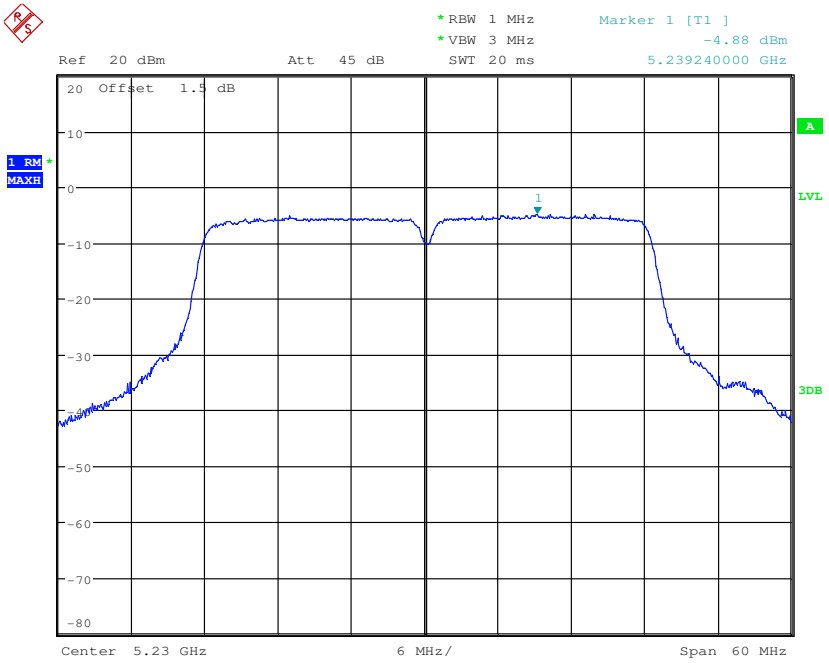
Test mode:	802.11 n40	Frequency(MHz):	5190



Test mode:	802.11 n40	Frequency(MHz):	5230



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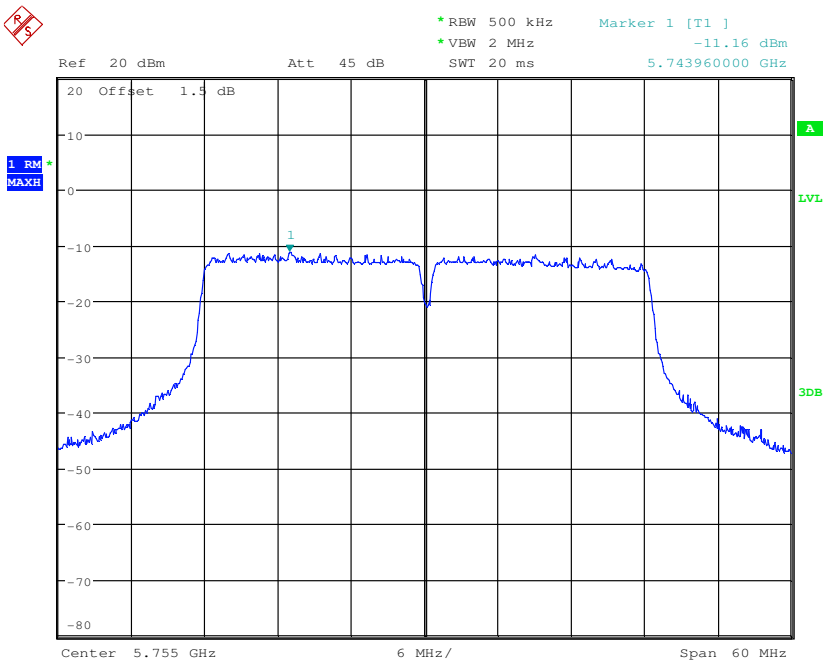
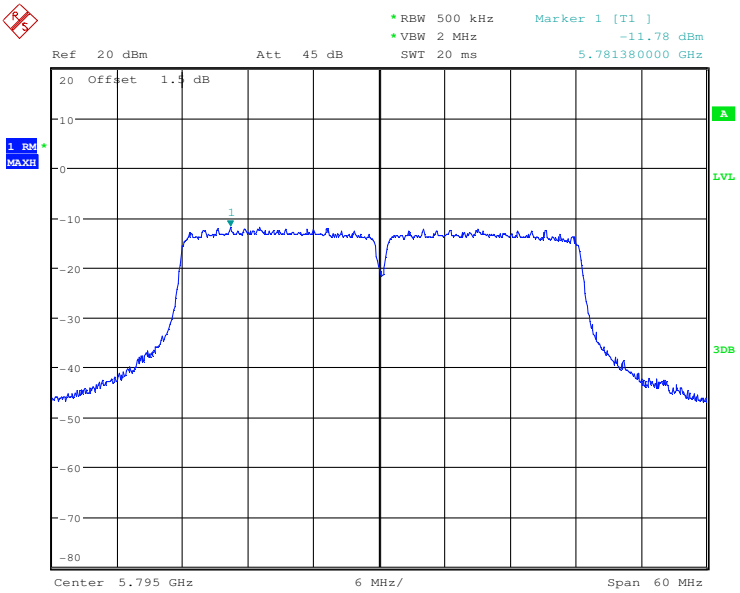
Test mode:	802.11 n40	Frequency(MHz):	5755



Test mode:	802.11 n40	Frequency(MHz):	5795



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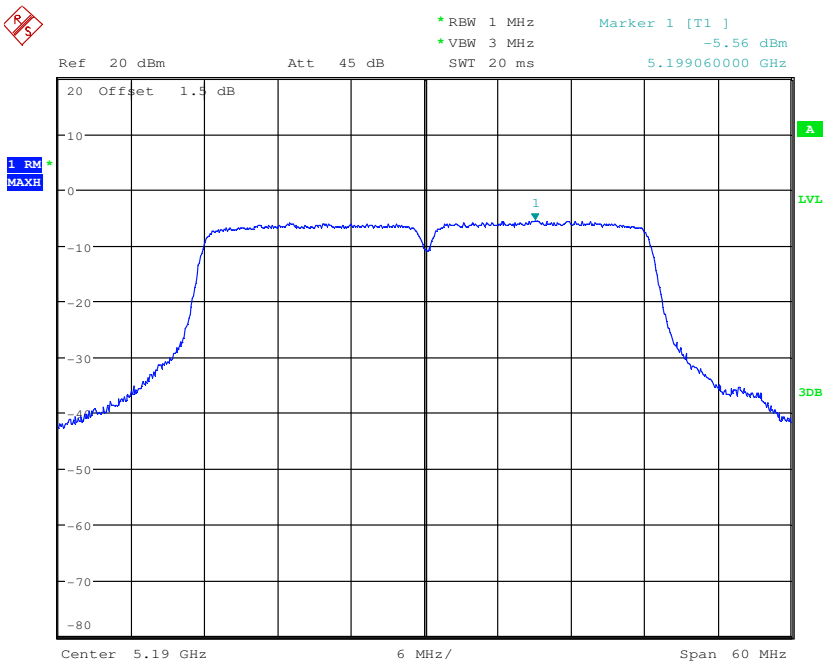
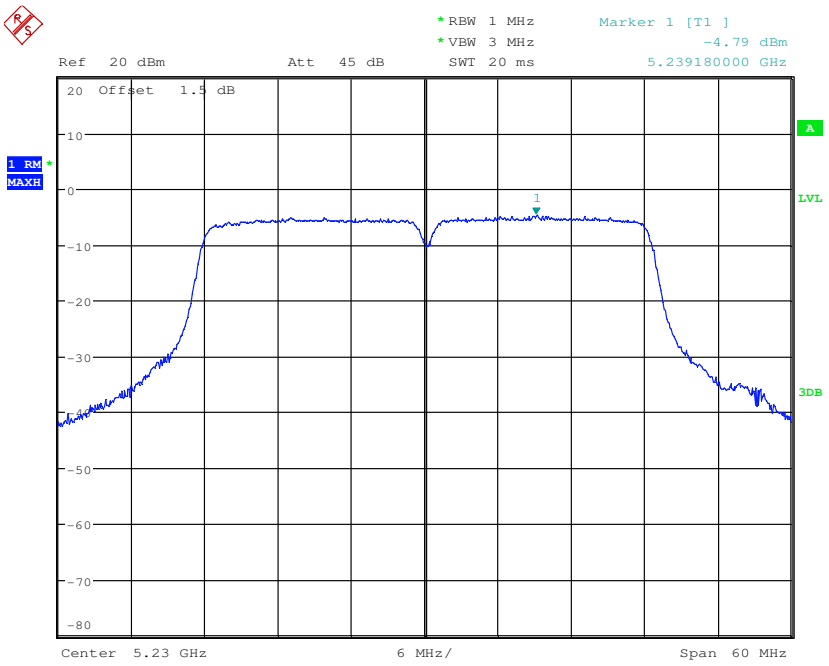
Test mode:	802.11 ac40	Frequency(MHz):	5190



Test mode:	802.11 ac40	Frequency(MHz):	5230



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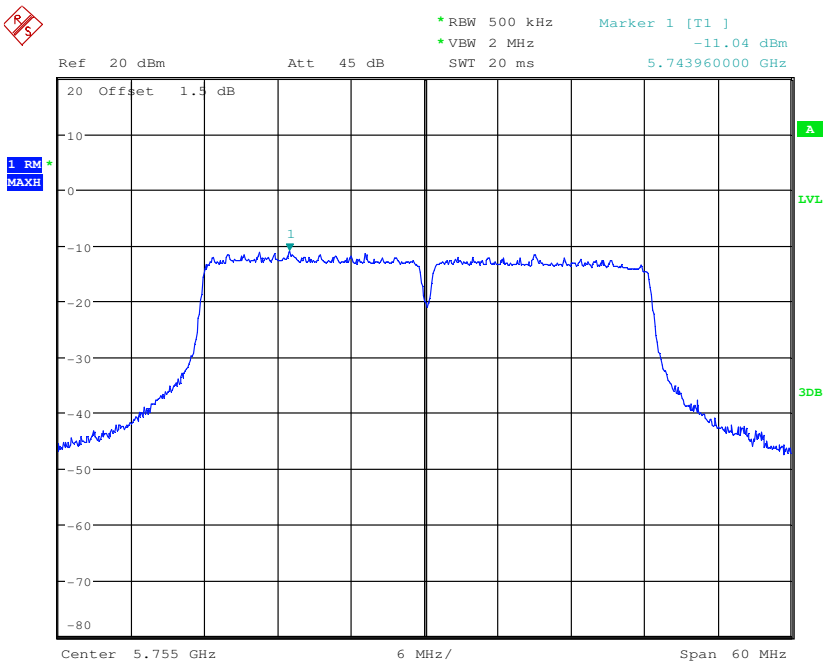
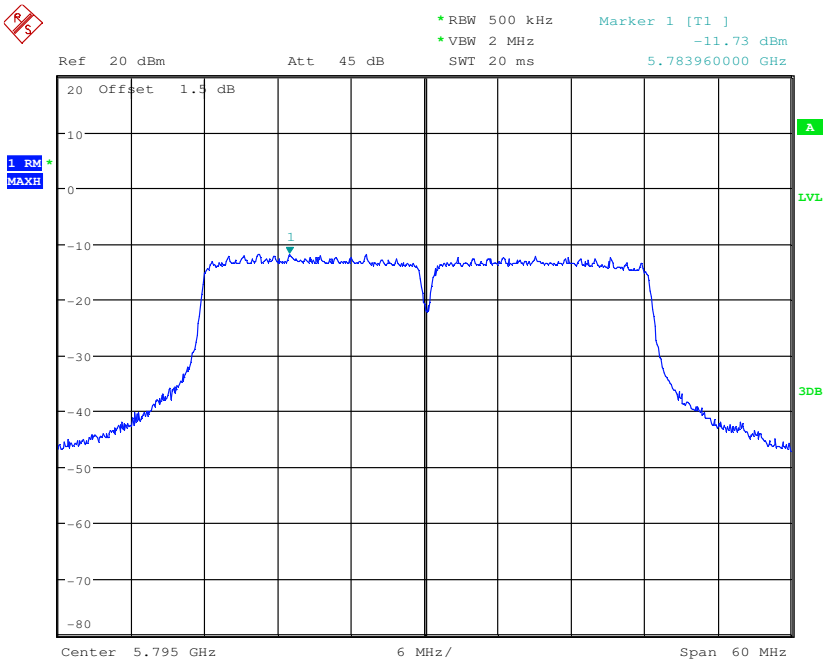
Test mode:	802.11 ac40	Frequency(MHz):	5755



Test mode:	802.11 ac40	Frequency(MHz):	5795



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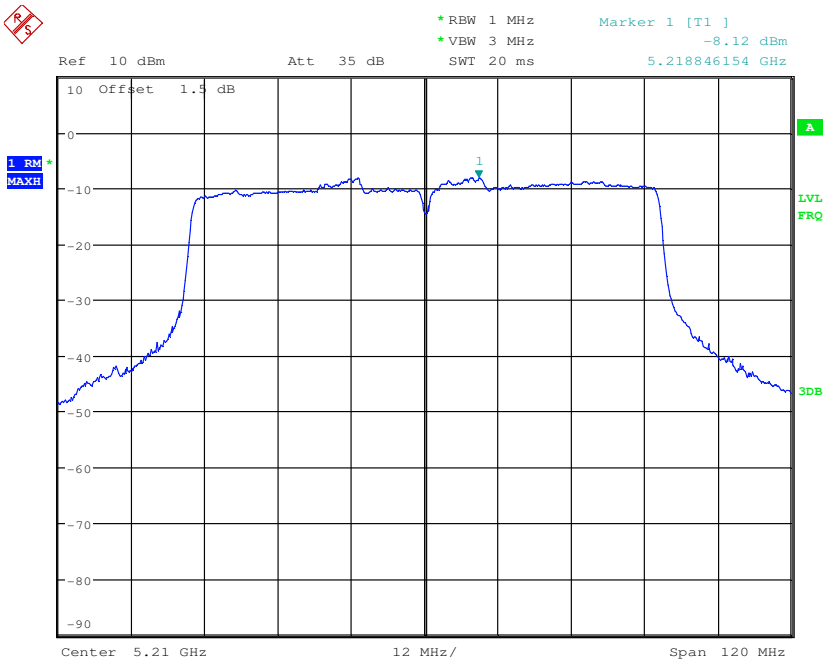
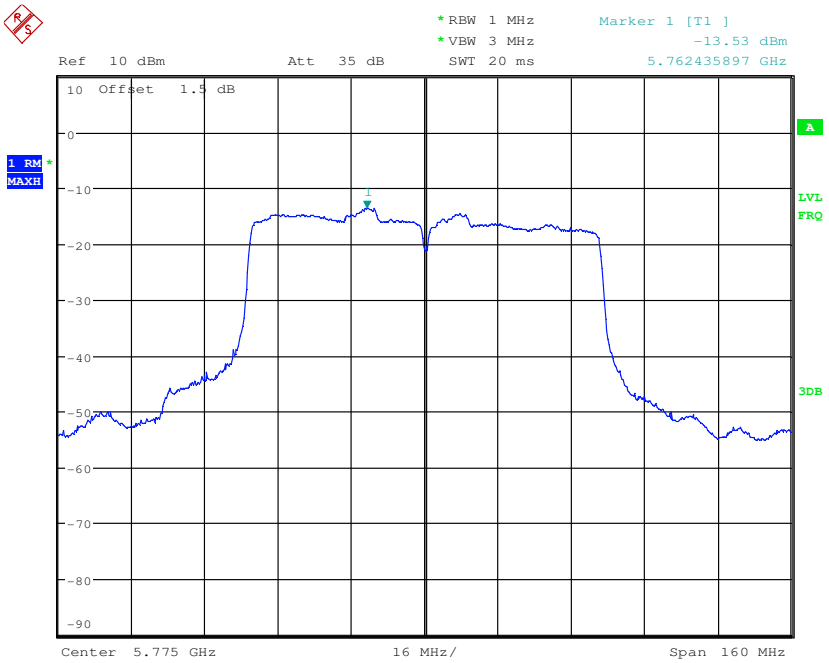
Test mode:	802.11 ac80	Frequency(MHz):	5210



Test mode:	802.11 ac80	Frequency(MHz):	5775



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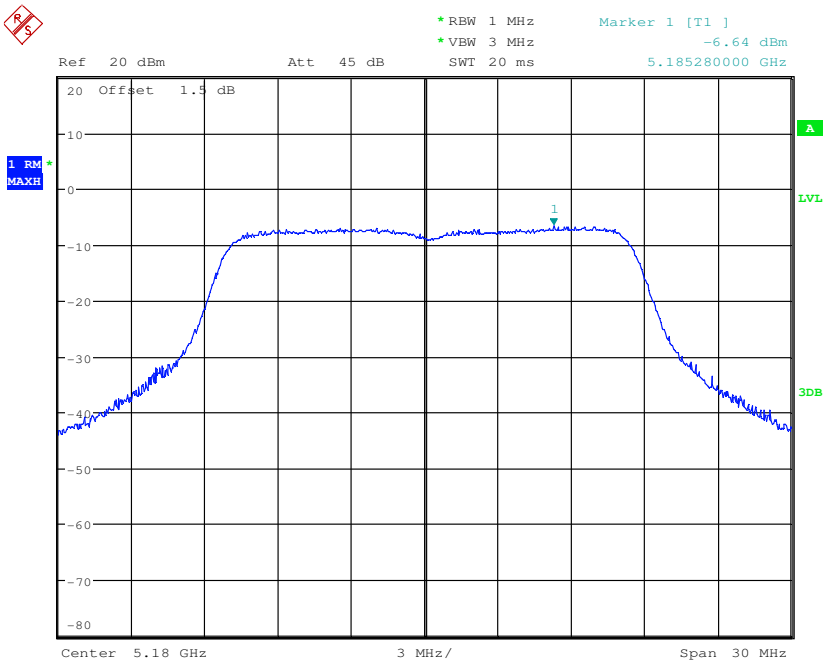
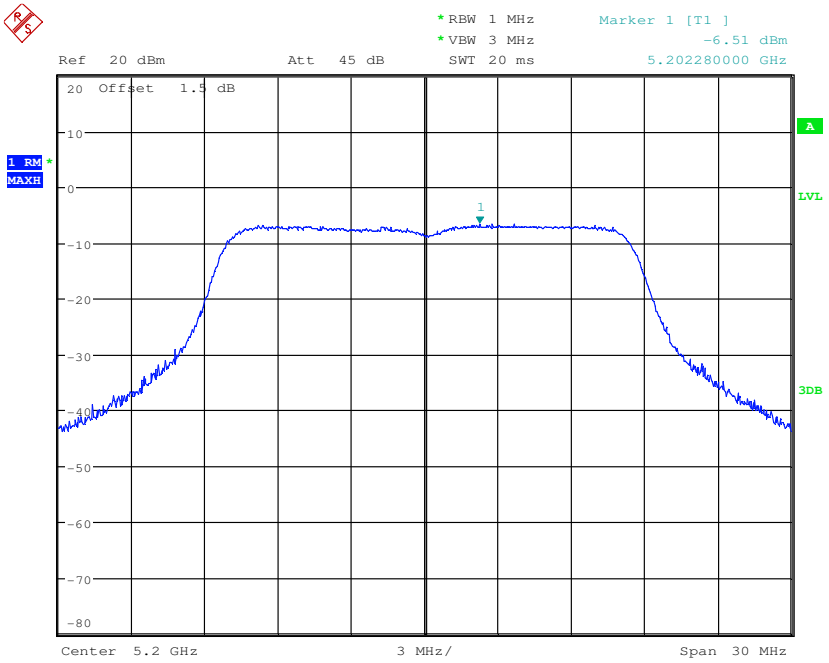
Antenna 3

Test mode:	802.11a	Frequency(MHz):	5180



Test mode:	802.11a	Frequency(MHz):	5200



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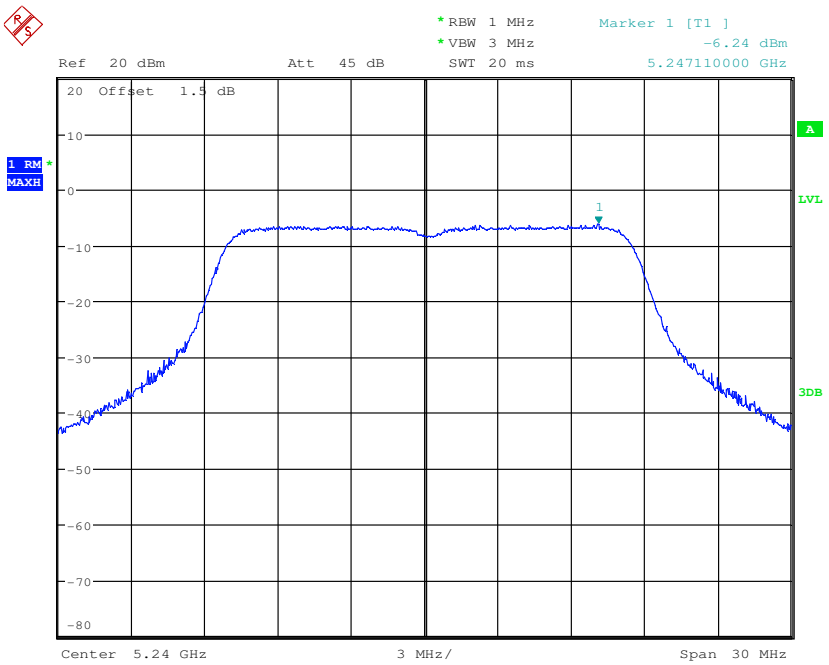
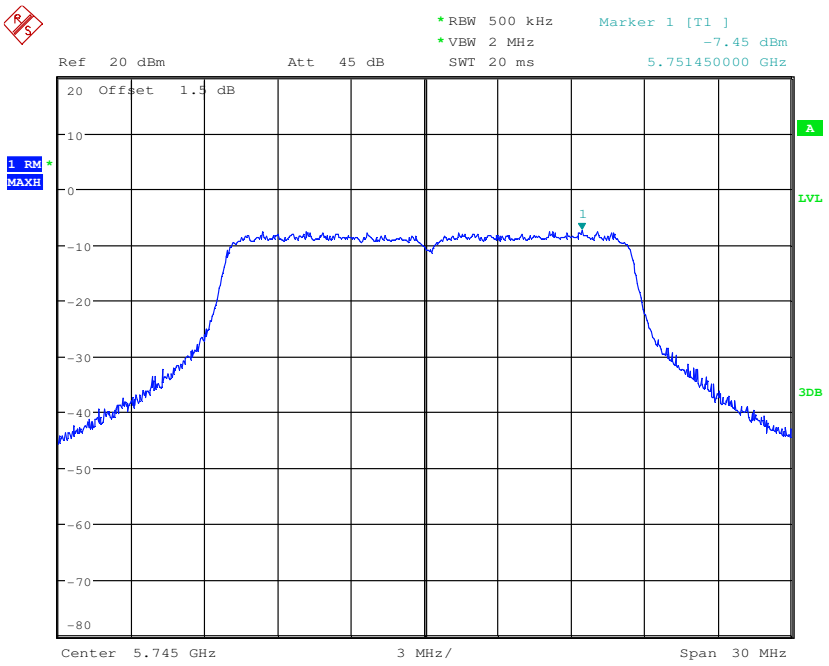
Test mode:	802.11a	Frequency(MHz):	5240



Test mode:	802.11a	Frequency(MHz):	5745



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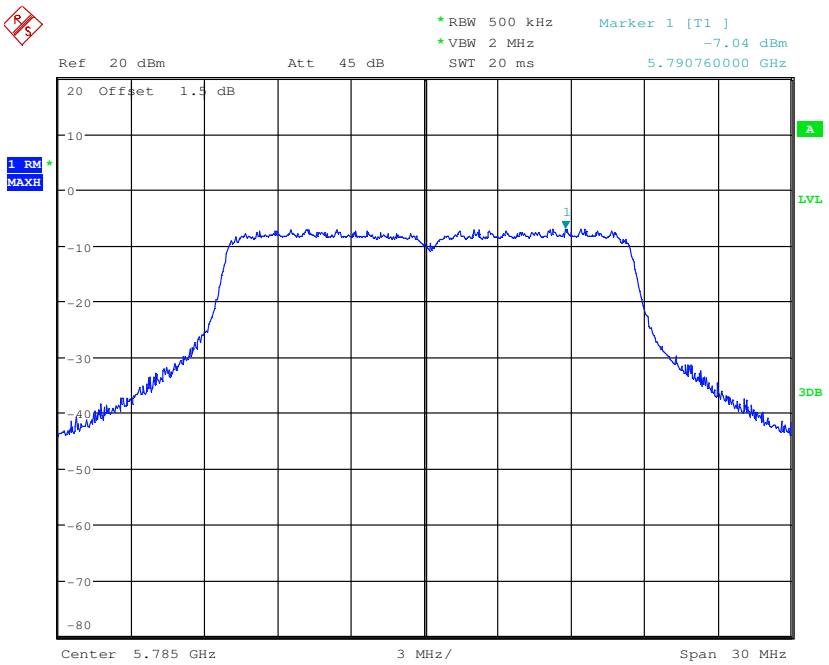
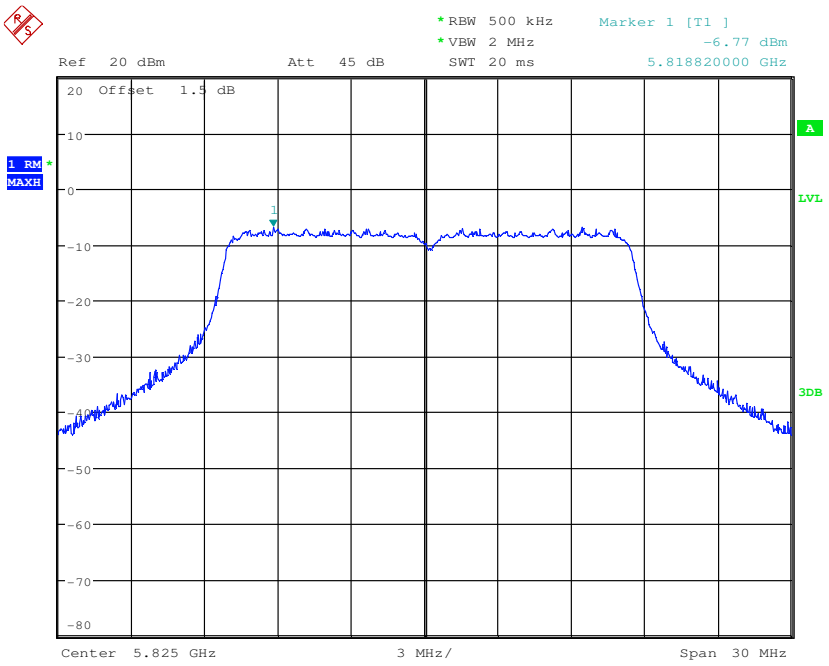
Test mode:	802.11a	Frequency(MHz):	5785



Test mode:	802.11a	Frequency(MHz):	5825



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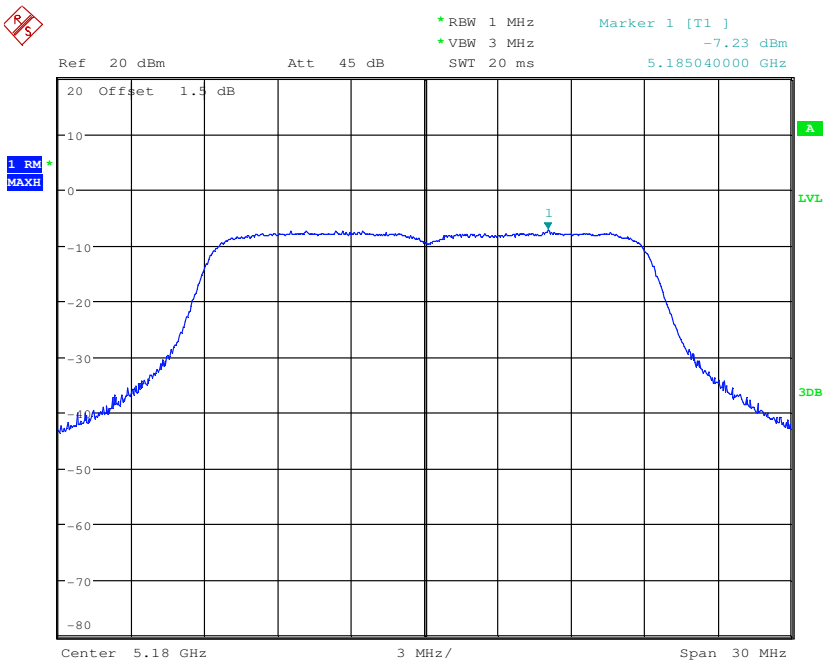
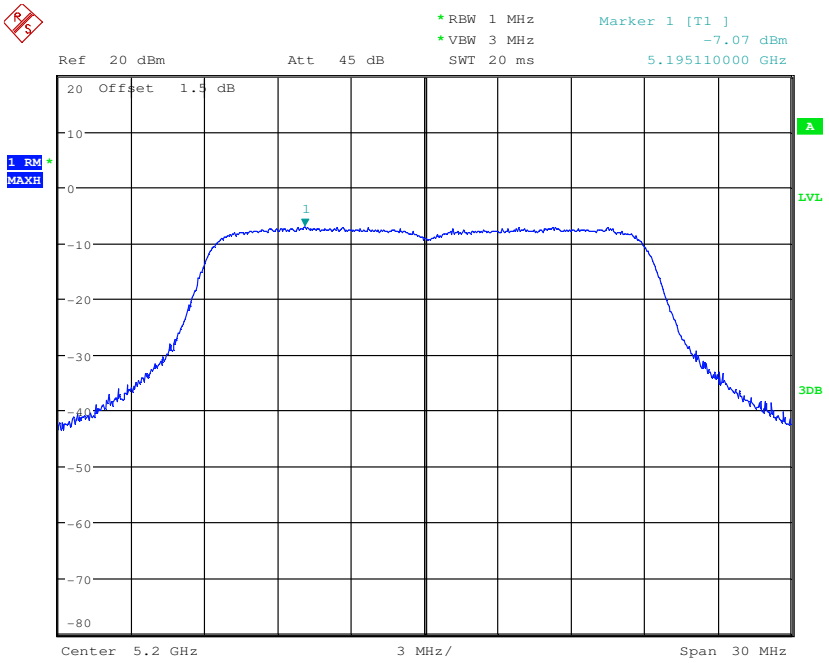
Test mode:	802.11 n20	Frequency(MHz):	5180



Test mode:	802.11 n20	Frequency(MHz):	5200



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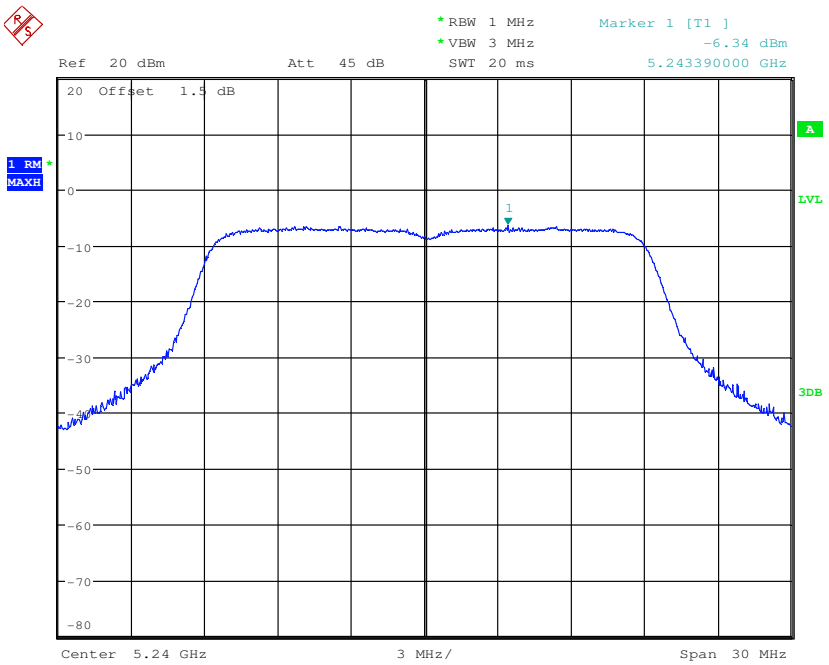
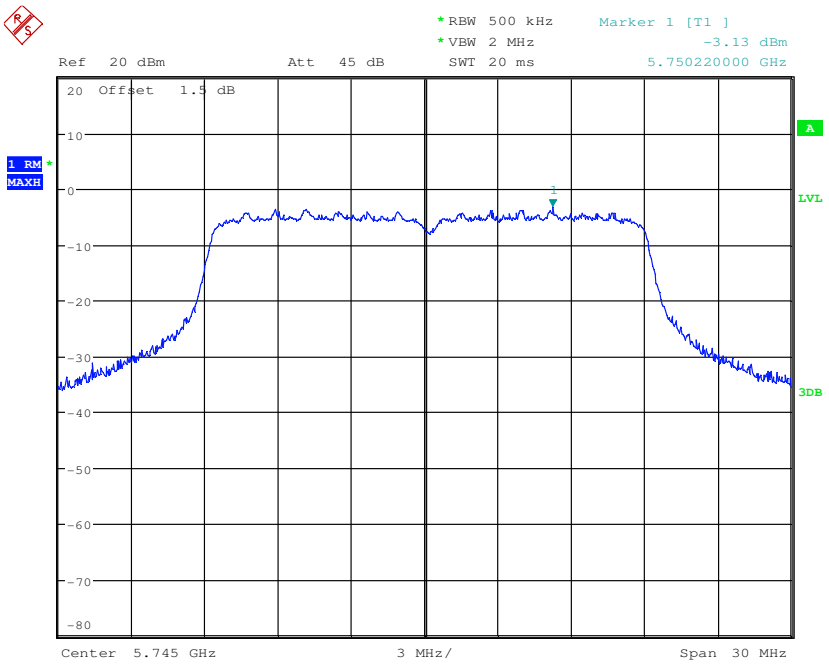
Test mode:	802.11 n20	Frequency(MHz):	5240



Test mode:	802.11 n20	Frequency(MHz):	5745



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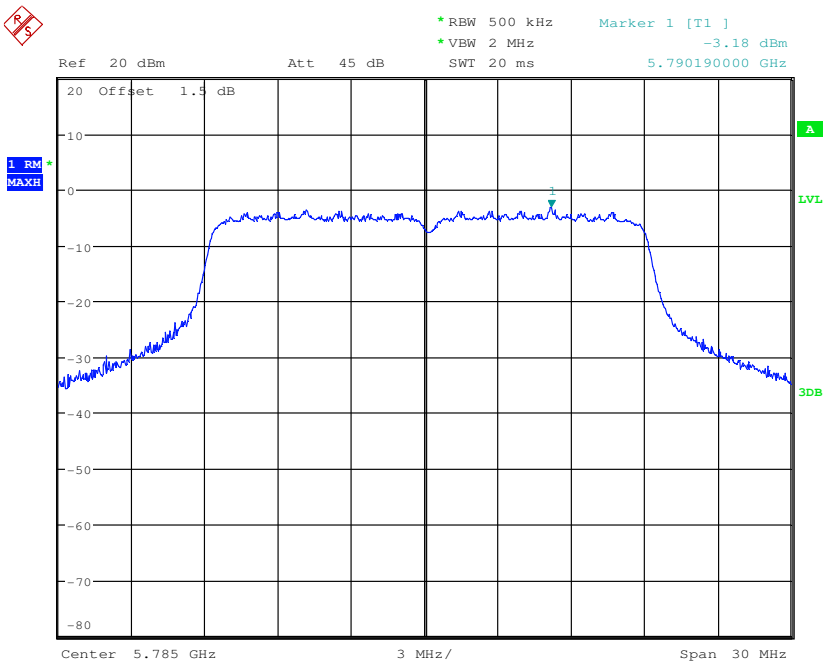
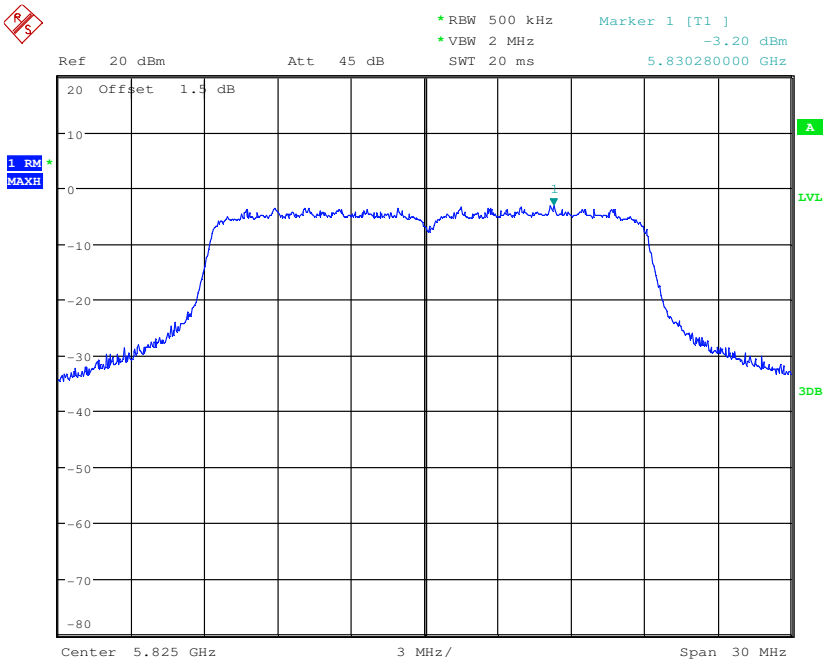
Test mode:	802.11 n20	Frequency(MHz):	5785



Test mode:	802.11 n20	Frequency(MHz):	5825



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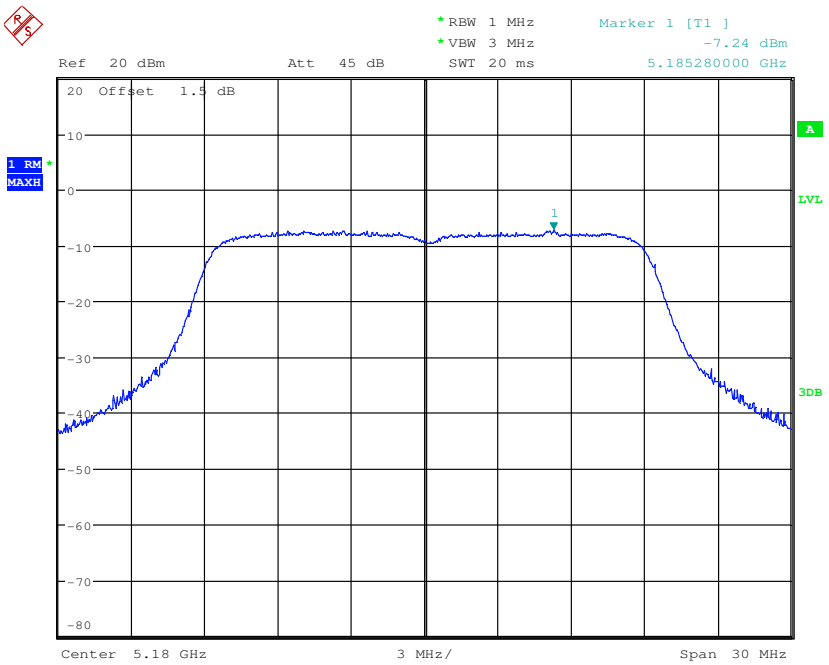
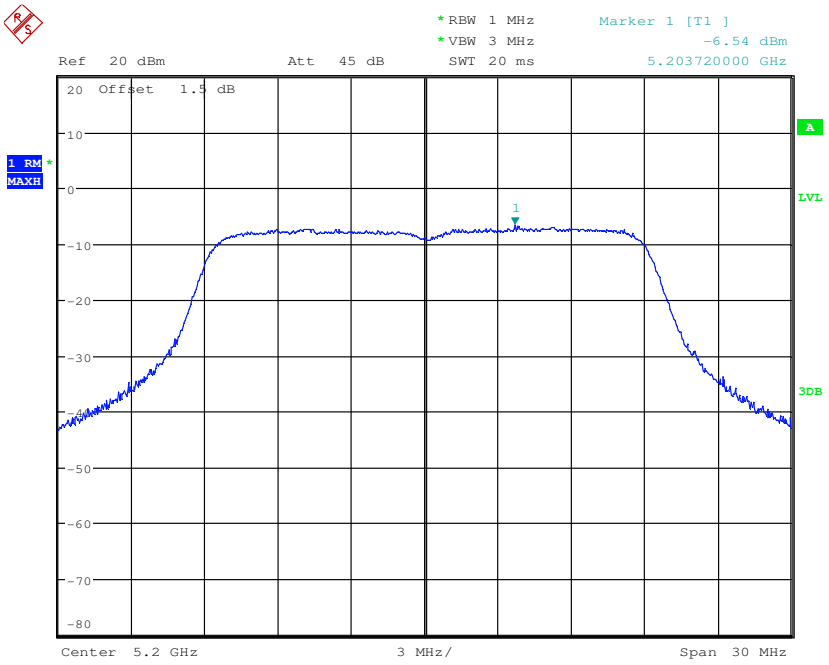
Test mode:	802.11 ac20	Frequency(MHz):	5180



Test mode:	802.11 ac20	Frequency(MHz):	5200



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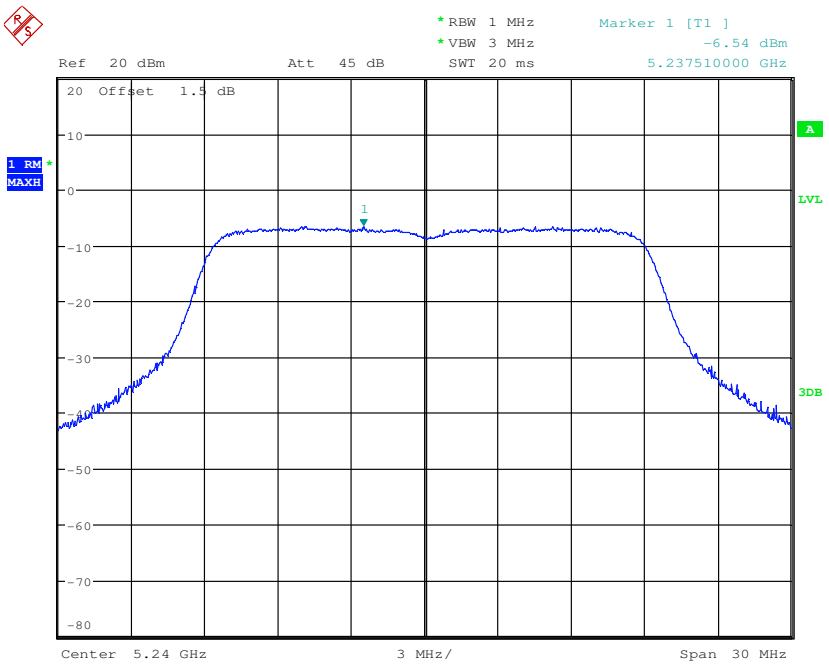
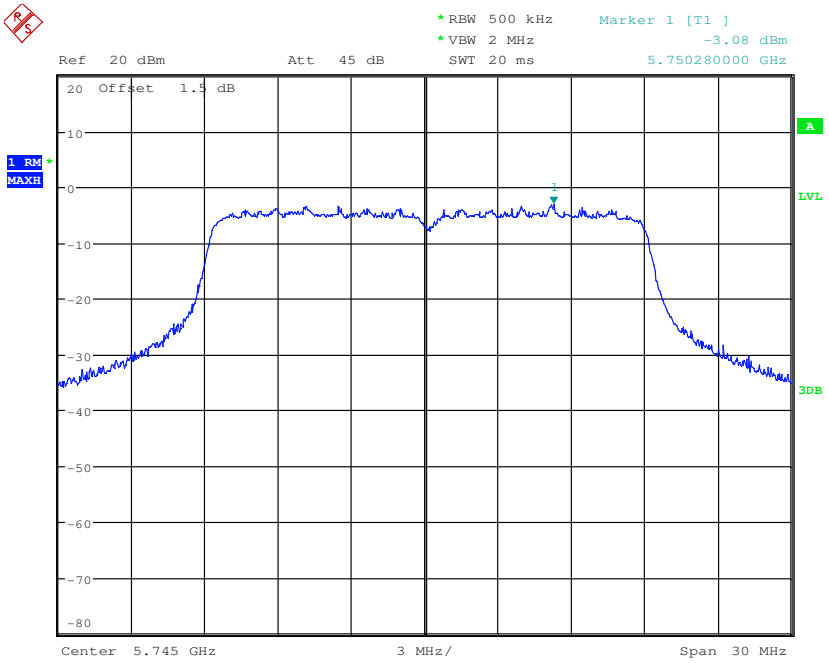
Test mode:	802.11 ac20	Frequency(MHz):	5240



Test mode:	802.11 ac20	Frequency(MHz):	5745



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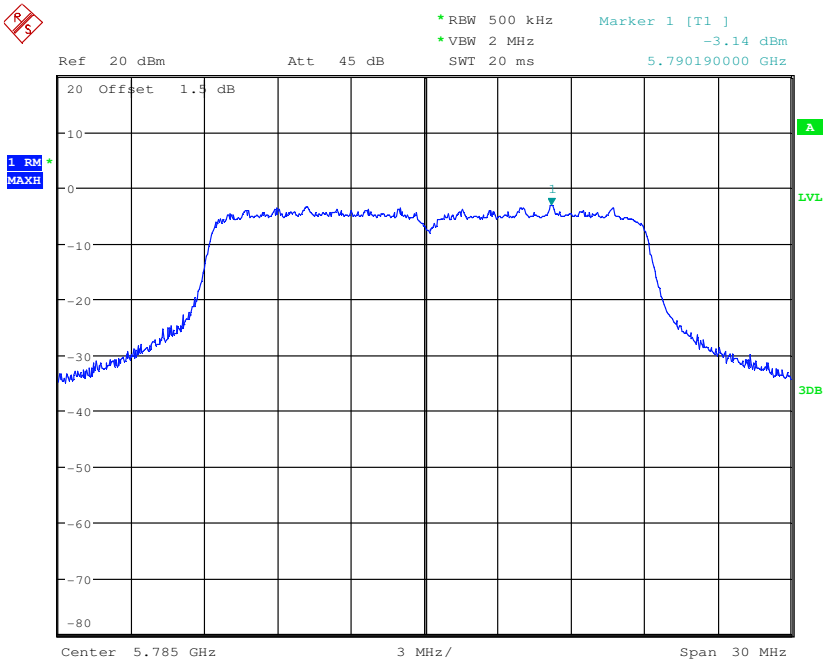
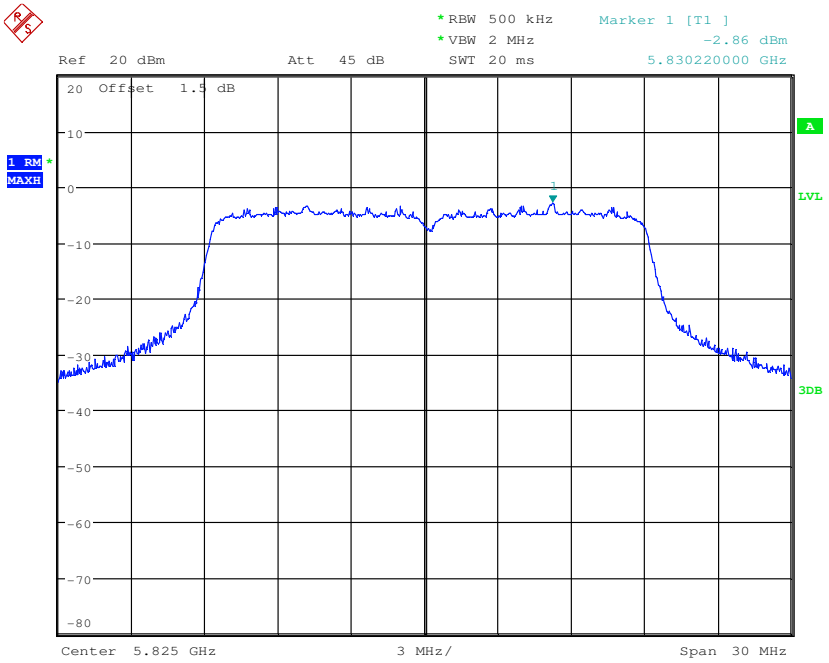
Test mode:	802.11 ac20	Frequency(MHz):	5785



Test mode:	802.11 ac20	Frequency(MHz):	5825



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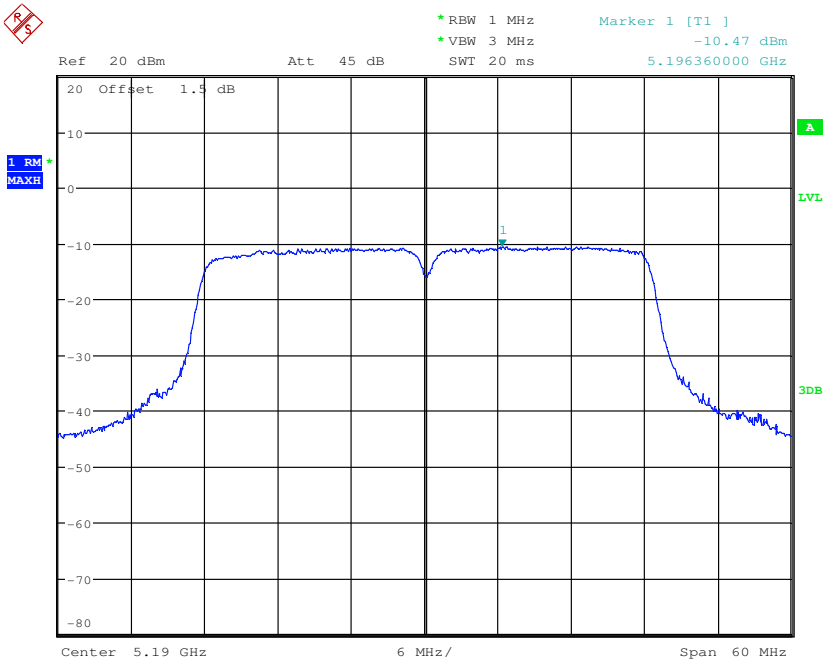
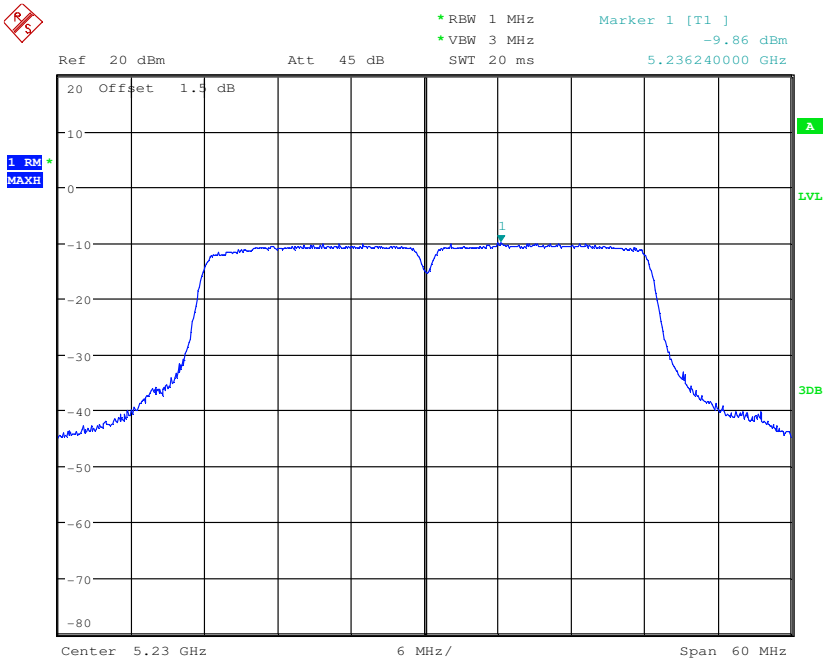
Test mode:	802.11 n40	Frequency(MHz):	5190



Test mode:	802.11 n40	Frequency(MHz):	5230



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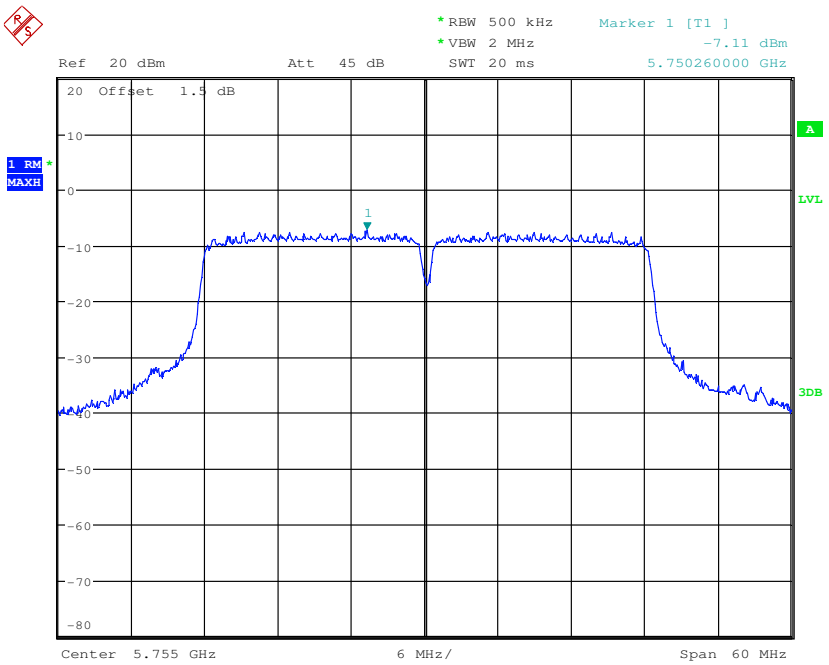
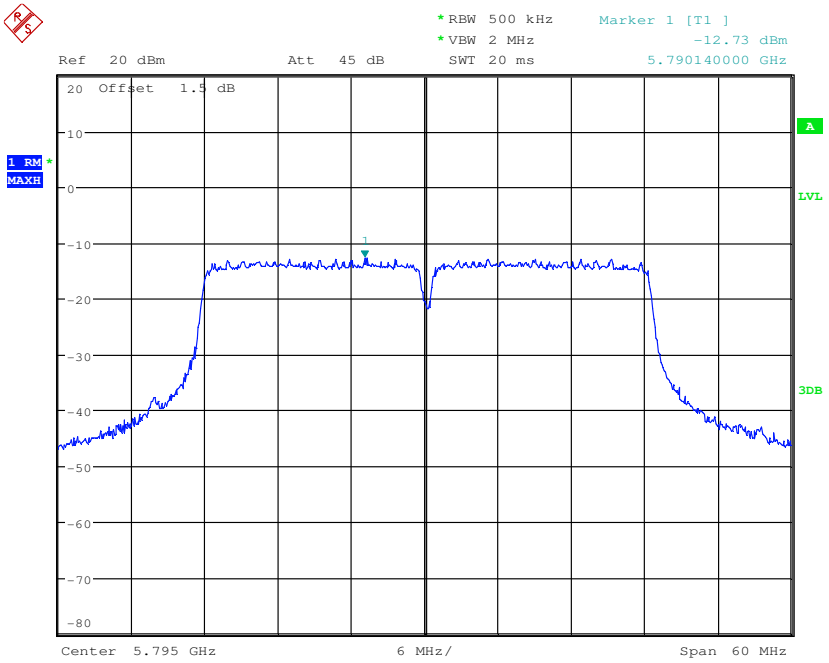
Test mode:	802.11 n40	Frequency(MHz):	5755



Test mode:	802.11 n40	Frequency(MHz):	5795



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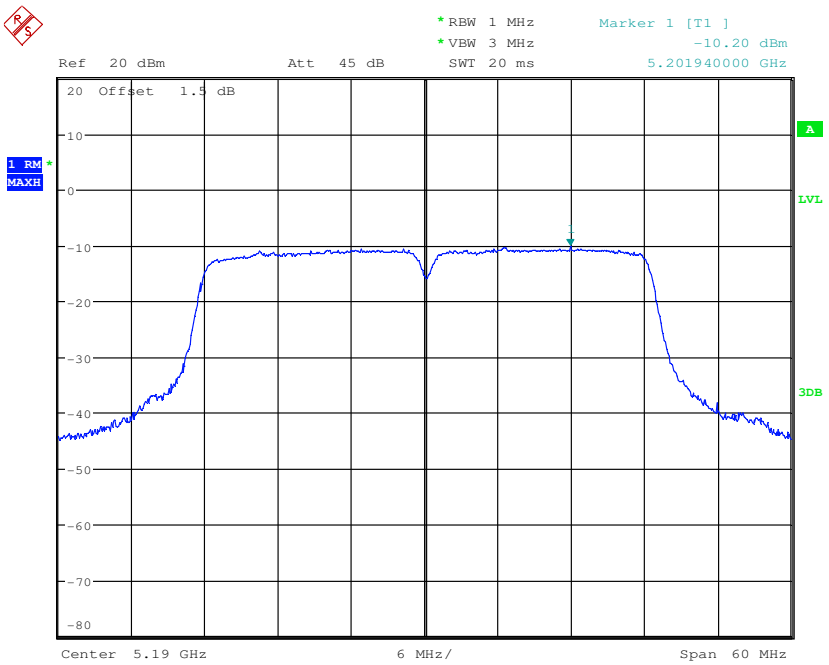
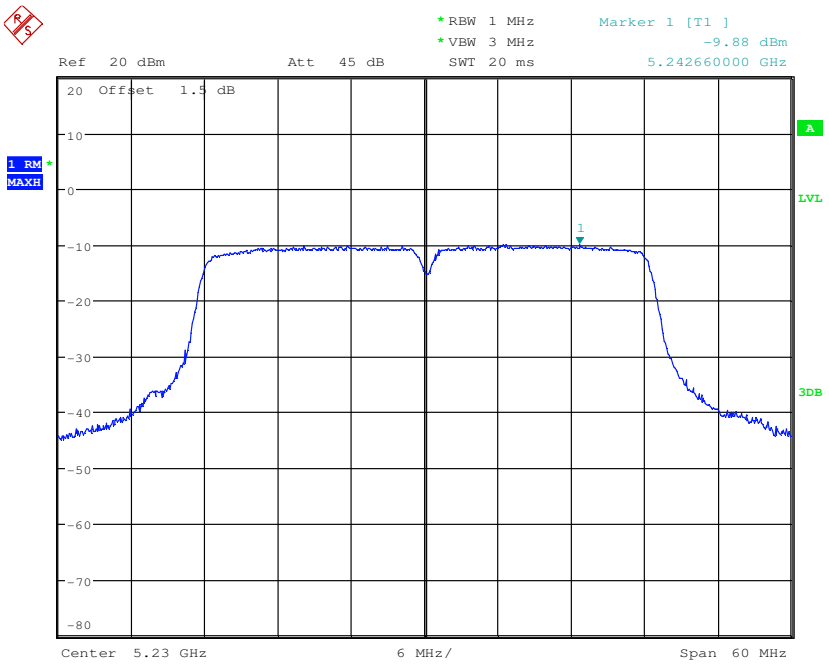
Test mode:	802.11 ac40	Frequency(MHz):	5190



Test mode:	802.11 ac40	Frequency(MHz):	5230



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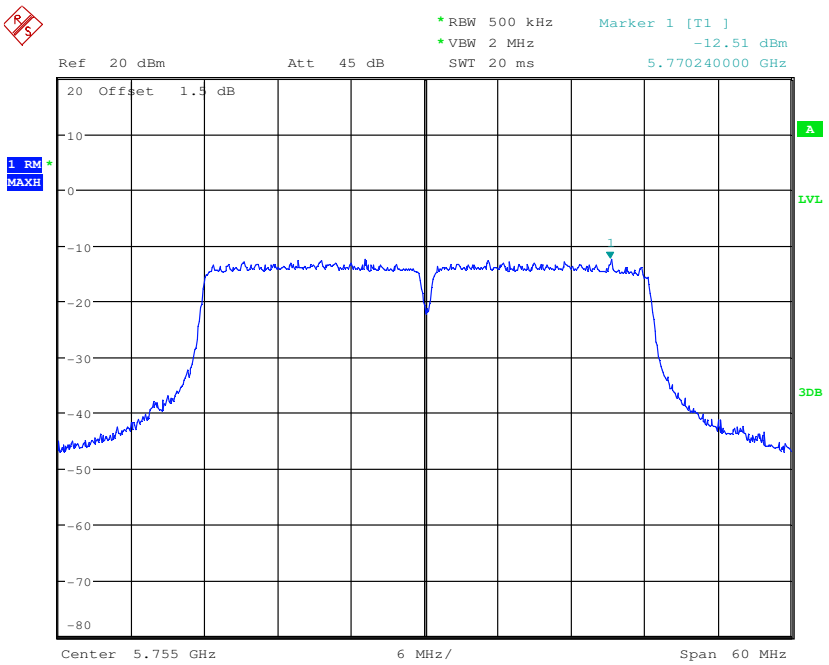
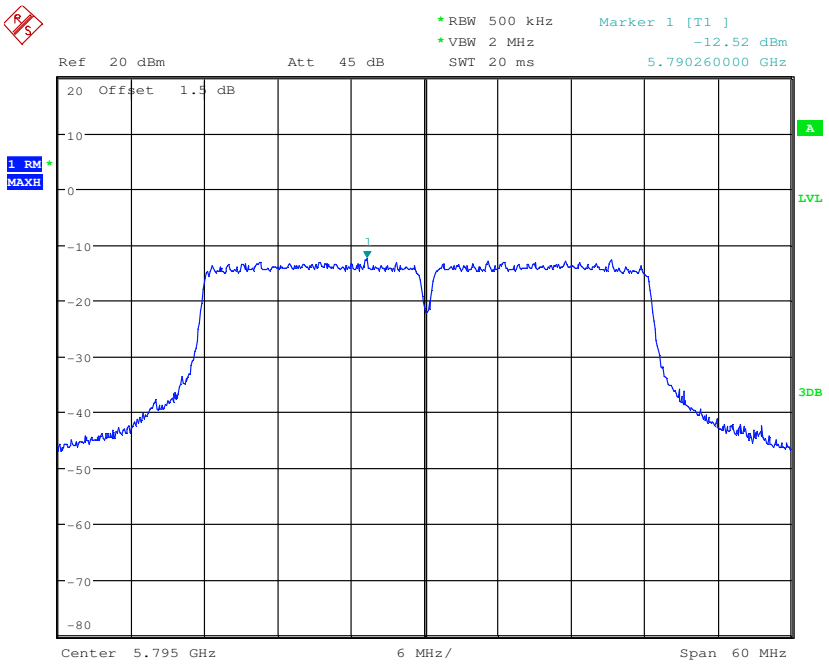
Test mode:	802.11 ac40	Frequency(MHz):	5755



Test mode:	802.11 ac40	Frequency(MHz):	5795



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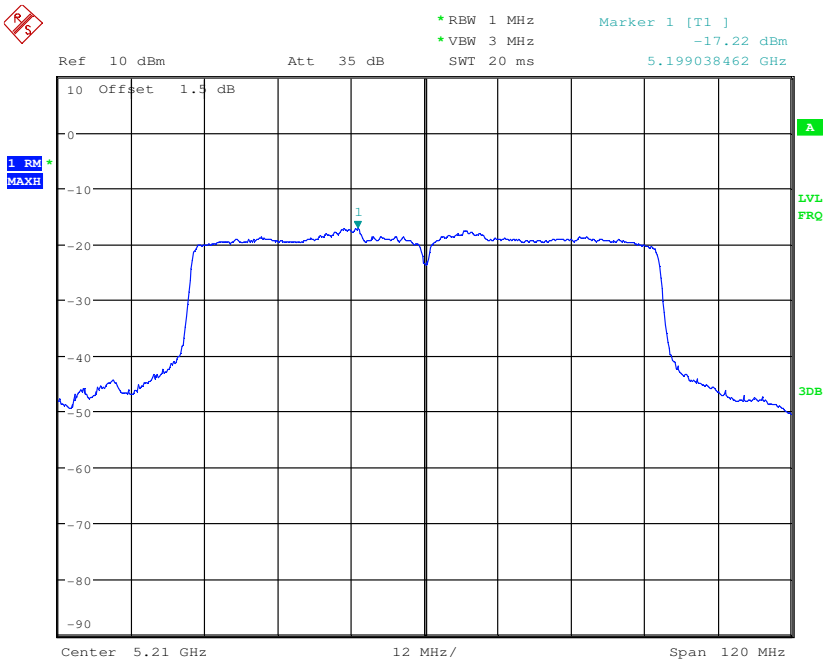
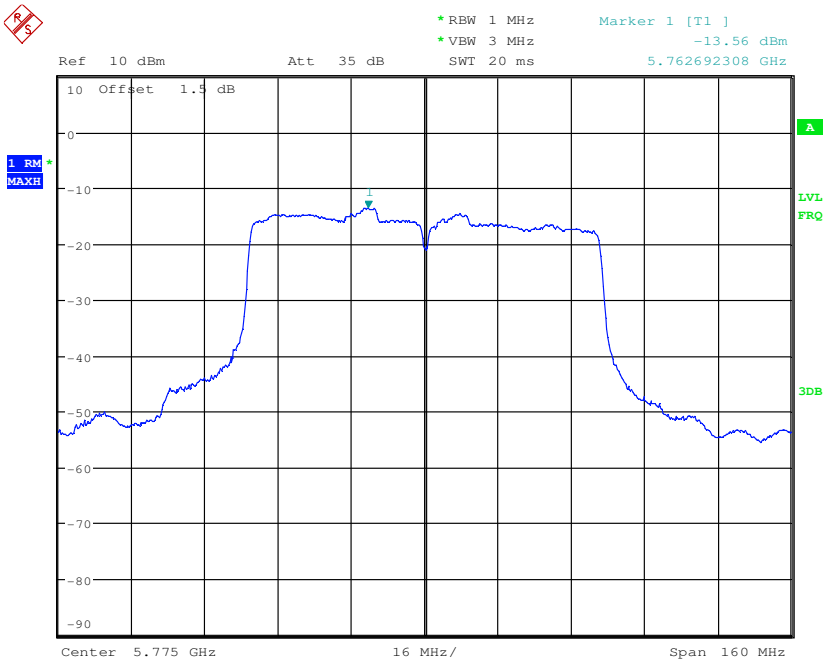
Test mode:	802.11 ac80	Frequency(MHz):	5210



Test mode:	802.11 ac80	Frequency(MHz):	5775



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6.8 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15 Section 15.407(b)
Test Method:	ANSI C63.10: 2013, section 12.7.5, 12.7.6, 12.7.7.3
Test Site:	Measurement Distance: 3m (Fully-Anechoic Chamber) Measurement Distance: 10m (Semi-Anechoic Chamber)
Test Setup:	

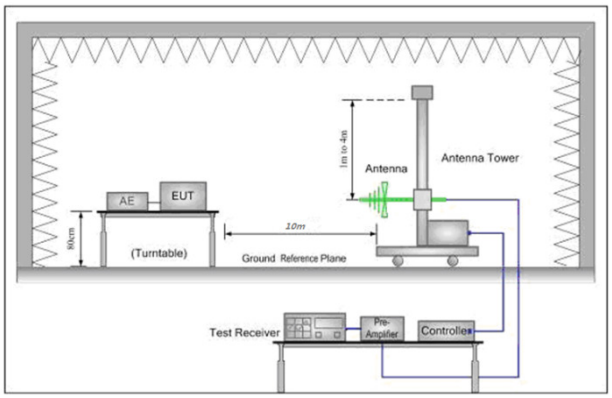

Figure 1. 30MHz to 1GHz

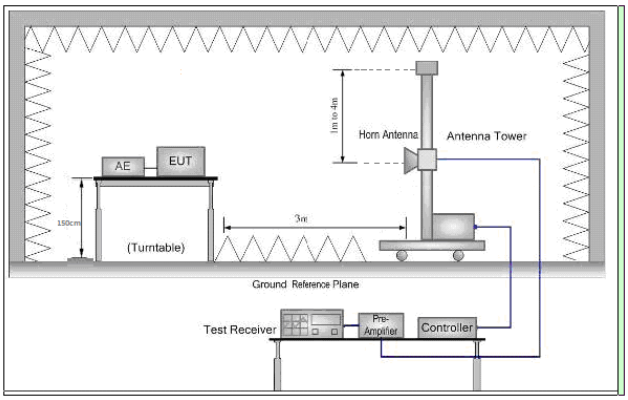

Figure 2. Above 1 GHz

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 and 10 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 or 10 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.
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; MCS0 of rate is the worst case of 802.11n(HT20); MCS0 of rate is the worst case of 802.11n(HT40); 1SS0 of rate is the worst case of 802.11ac(HT20); 1SS0 of rate is the worst case of 802.11ac(HT40); 1SS0 of rate is the worst

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	case of 802.11ac(HT80) For below 1GHz, after Pre-scan, find the 1Mbps of rate of 802.11a at lowest channel is the worst case for 5G WIFI and 1Mbps of rate of 802.11b at lowest channel is the worst case for 2.4G WIFI, so the final test was carried out at simultaneous transmission operations under the worst case of 2.4G & 5G WIFI.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

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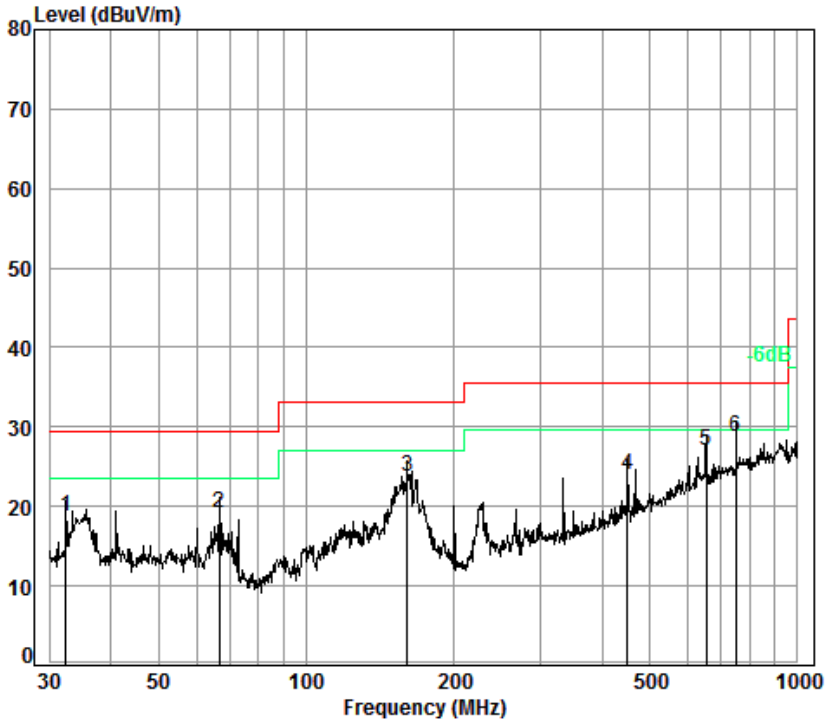
6.8.1 Radiated emission below 1GHz

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



Condition: 10m Vertical
Job No. : 0840IT
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	32.41	6.70	12.56	32.97	32.51	18.80	29.50	-10.70
2	66.50	6.97	10.71	32.92	34.36	19.12	29.50	-10.38
3	160.35	7.50	13.36	32.73	35.56	23.69	33.10	-9.41
4	451.14	8.43	16.19	32.60	31.88	23.90	35.60	-11.70
5	651.94	9.03	19.56	32.60	30.95	26.94	35.60	-8.66
6 pp	750.11	9.20	20.77	32.60	31.30	28.67	35.60	-6.93

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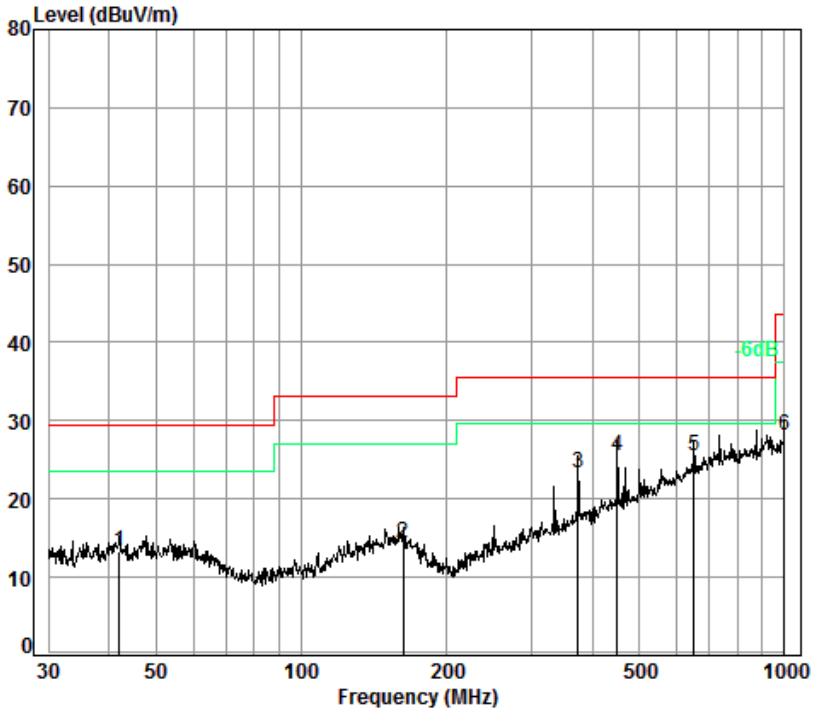
Test mode:	Transmitting mode	Horizontal



Condition: 10m Horizontal
Job No. : 0840IT
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	42.01	6.80	13.15	32.99	26.33	13.29	29.50	-16.21
2	162.61	7.50	13.13	32.73	26.48	14.38	33.10	-18.72
3	374.62	8.30	14.38	32.60	33.34	23.42	35.60	-12.18
4	451.14	8.43	16.19	32.60	33.43	25.45	35.60	-10.15
5 pp	649.66	9.02	19.53	32.60	29.51	25.46	35.60	-10.14
6	1000.00	9.60	22.85	32.50	28.13	28.08	43.50	-15.42

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6.8.2Transmitter emission above 1GHz

Test plot as follows:

Test mode:	802.11a		Frequency(MHz):	5180	Remark:		Peak	
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7678.832	36.04	10.89	37.44	43.41	52.90	74	-21.10	Vertical
9007.715	37.00	11.80	37.18	39.79	51.41	74	-22.59	Vertical
10360.000	37.08	12.98	35.96	37.18	51.28	74	-22.72	Vertical
12751.430	37.98	14.86	37.89	38.20	53.15	74	-20.85	Vertical
15540.000	40.94	17.07	38.92	34.37	53.46	74	-20.54	Vertical
17797.150	43.90	21.44	36.95	23.75	52.14	74	-21.86	Vertical
7214.789	35.59	10.68	37.63	40.98	49.62	74	-24.38	Horizontal
9007.715	37.00	11.80	37.18	40.26	51.88	74	-22.12	Horizontal
10360.000	37.08	12.98	35.96	36.59	50.69	74	-23.31	Horizontal
13179.990	38.28	15.60	38.40	36.20	51.68	74	-22.32	Horizontal
15540.000	40.94	17.07	38.92	34.60	53.69	74	-20.31	Horizontal
17864.510	44.06	21.66	36.94	24.37	53.15	74	-20.85	Horizontal

Test mode:	802.11a		Frequency(MHz):	5220	Remark:		Peak	
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7093.172	35.49	10.64	37.69	42.53	50.97	74	-23.03	Vertical
8990.716	37.00	11.79	37.19	39.23	50.83	74	-23.17	Vertical
10440.000	37.10	13.04	35.99	36.11	50.26	74	-23.74	Vertical
13217.380	38.32	15.61	38.46	37.65	53.12	74	-20.88	Vertical
15660.000	41.06	17.18	38.73	33.71	53.22	74	-20.78	Vertical
17864.510	44.06	21.66	36.94	24.22	53.00	74	-21.00	Vertical
7093.172	35.49	10.64	37.69	41.86	50.30	74	-23.70	Horizontal
9007.715	37.00	11.80	37.18	39.70	51.32	74	-22.68	Horizontal
10440.000	37.10	13.04	35.99	37.44	51.59	74	-22.41	Horizontal
13217.380	38.32	15.61	38.46	37.18	52.65	74	-21.35	Horizontal
15660.000	41.06	17.18	38.73	34.04	53.55	74	-20.45	Horizontal
17864.510	44.06	21.66	36.94	24.04	52.82	74	-21.18	Horizontal

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Test mode:	802.11a		Frequency(MHz):	5240	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7093.172	35.49	10.64	37.69	42.80	51.24	74	-22.76	Vertical
8990.716	37.00	11.79	37.19	39.50	51.10	74	-22.90	Vertical
10480.000	37.10	13.07	36.00	35.65	49.82	74	-24.18	Vertical
12775.540	37.99	14.93	37.91	37.78	52.79	74	-21.21	Vertical
15720.000	41.12	17.24	38.63	34.18	53.91	74	-20.09	Vertical
17830.800	43.98	21.55	36.94	24.23	52.82	74	-21.18	Vertical
7214.789	35.59	10.68	37.63	39.67	48.31	74	-25.69	Horizontal
8990.716	37.00	11.79	37.19	39.68	51.28	74	-22.72	Horizontal
10480.000	37.10	13.07	36.00	35.27	49.44	74	-24.56	Horizontal
13242.370	38.34	15.61	38.50	36.36	51.81	74	-22.19	Horizontal
15720.000	41.12	17.24	38.63	33.54	53.27	74	-20.73	Horizontal
17797.150	43.90	21.44	36.95	24.57	52.96	74	-21.04	Horizontal

Test mode:	802.11a		Frequency(MHz):	5745	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7678.832	36.04	10.89	37.44	42.18	51.67	74	-22.33	Vertical
9659.786	37.10	12.53	36.28	40.38	53.73	74	-20.27	Vertical
11490.000	37.45	14.01	36.68	35.08	49.86	74	-24.14	Vertical
12775.540	37.99	14.93	37.91	37.61	52.62	74	-21.38	Vertical
15128.660	40.63	16.67	39.58	35.58	53.30	74	-20.70	Vertical
17235.000	43.05	19.50	37.03	28.28	53.80	74	-20.20	Vertical
7678.832	36.04	10.89	37.44	43.17	52.66	74	-21.34	Horizontal
9659.786	37.10	12.53	36.28	40.24	53.59	74	-20.41	Horizontal
11490.000	37.45	14.01	36.68	34.93	49.71	74	-24.29	Horizontal
13217.380	38.32	15.61	38.46	35.76	51.23	74	-22.77	Horizontal
15504.760	40.91	17.03	38.97	33.73	52.70	74	-21.30	Horizontal
17235.000	43.05	19.50	37.03	28.38	53.90	74	-20.10	Horizontal

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Test mode:	802.11a		Frequency(MHz):	5785	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7093.172	35.49	10.64	37.69	42.42	50.86	74	-23.14	Vertical
8990.716	37.00	11.79	37.19	39.21	50.81	74	-23.19	Vertical
11570.000	37.49	14.09	36.75	34.20	49.03	74	-24.97	Vertical
13192.440	38.29	15.60	38.42	36.29	51.76	74	-22.24	Vertical
15157.260	40.66	16.70	39.53	35.20	53.03	74	-20.97	Vertical
17355.000	43.23	19.92	37.01	27.06	53.20	74	-20.80	Vertical
7174.020	35.57	10.67	37.65	39.39	47.98	74	-26.02	Horizontal
9007.715	37.00	11.80	37.18	40.72	52.34	74	-21.66	Horizontal
11570.000	37.49	14.09	36.75	34.07	48.90	74	-25.10	Horizontal
13192.440	38.29	15.60	38.42	37.48	52.95	74	-21.05	Horizontal
15157.260	40.66	16.70	39.53	35.24	53.07	74	-20.93	Horizontal
17355.000	43.23	19.92	37.01	27.24	53.38	74	-20.62	Horizontal

Test mode:	802.11a		Frequency(MHz):	5825	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7228.430	35.59	10.69	37.63	39.25	47.90	74	-26.10	Vertical
9659.786	37.10	12.53	36.28	40.39	53.74	74	-20.26	Vertical
11650.000	37.50	14.18	36.83	34.69	49.54	74	-24.46	Vertical
13217.380	38.32	15.61	38.46	37.09	52.56	74	-21.44	Vertical
15504.760	40.91	17.03	38.97	33.57	52.54	74	-21.46	Vertical
17475.000	43.45	20.33	36.99	26.34	53.13	74	-20.87	Vertical
7678.832	36.04	10.89	37.44	42.58	52.07	74	-21.93	Horizontal
10050.670	37.22	12.75	35.85	39.54	53.66	74	-20.34	Horizontal
11650.000	37.50	14.18	36.83	35.61	50.46	74	-23.54	Horizontal
13192.440	38.29	15.60	38.42	36.78	52.25	74	-21.75	Horizontal
15128.660	40.63	16.67	39.58	33.31	51.03	74	-22.97	Horizontal
17475.000	43.45	20.33	36.99	26.31	53.10	74	-20.90	Horizontal

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Test mode:	802.11 n20	Frequency(MHz):	5180	Remark:	Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7678.832	36.04	10.89	37.44	43.41	52.90	74	-21.10	Vertical
9007.715	37.00	11.80	37.18	39.79	51.41	74	-22.59	Vertical
10360.000	37.08	12.98	35.96	38.18	52.28	74	-21.72	Vertical
12751.430	37.98	14.86	37.89	38.20	53.15	74	-20.85	Vertical
15540.000	40.94	17.07	38.92	34.37	53.46	74	-20.54	Vertical
17596.580	43.69	20.75	36.98	24.87	52.33	74	-21.67	Vertical
7678.832	36.04	10.89	37.44	42.17	51.66	74	-22.34	Horizontal
9007.715	37.00	11.80	37.18	40.26	51.88	74	-22.12	Horizontal
10360.000	37.08	12.98	35.96	36.59	50.69	74	-23.31	Horizontal
12775.540	37.99	14.93	37.91	37.11	52.12	74	-21.88	Horizontal
15540.000	40.94	17.07	38.92	34.60	53.69	74	-20.31	Horizontal
17563.380	43.63	20.64	36.98	25.43	52.72	74	-21.28	Horizontal

Test mode:	802.11 n20	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
7086.476	35.49	10.63	37.69	42.19	50.62	74	-23.38	Vertical
8990.716	37.00	11.79	37.19	39.67	51.27	74	-22.73	Vertical
10440.000	37.10	13.04	35.99	34.19	48.34	74	-25.66	Vertical
12775.540	37.99	14.93	37.91	37.73	52.74	74	-21.26	Vertical
15660.000	41.06	17.18	38.73	33.42	52.93	74	-21.07	Vertical
17864.510	44.06	21.66	36.94	24.96	53.74	74	-20.26	Vertical
7228.430	35.59	10.69	37.63	38.75	47.40	74	-26.60	Horizontal
9007.715	37.00	11.80	37.18	39.25	50.87	74	-23.13	Horizontal
10440.000	37.10	13.04	35.99	34.06	48.21	74	-25.79	Horizontal
13192.440	38.29	15.60	38.42	36.27	51.74	74	-22.26	Horizontal
15660.000	41.06	17.18	38.73	34.07	53.58	74	-20.42	Horizontal
17898.290	44.15	21.78	36.93	23.09	52.09	74	-21.91	Horizontal

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Test mode:	802.11 n20		Frequency(MHz):	5240	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7093.172	35.49	10.64	37.69	42.76	51.20	74	-22.80	Vertical
9007.715	37.00	11.80	37.18	38.86	50.48	74	-23.52	Vertical
10480.000	37.10	13.07	36.00	34.20	48.37	74	-25.63	Vertical
12751.430	37.98	14.86	37.89	37.71	52.66	74	-21.34	Vertical
15720.000	41.12	17.24	38.63	33.84	53.57	74	-20.43	Vertical
17864.510	44.06	21.66	36.94	23.74	52.52	74	-21.48	Vertical
7678.832	36.04	10.89	37.44	41.95	51.44	74	-22.56	Horizontal
8990.716	37.00	11.79	37.19	38.74	50.34	74	-23.66	Horizontal
10480.000	37.10	13.07	36.00	34.41	48.58	74	-25.42	Horizontal
13217.380	38.32	15.61	38.46	36.45	51.92	74	-22.08	Horizontal
15720.000	41.12	17.24	38.63	33.83	53.56	74	-20.44	Horizontal
17932.130	44.23	21.89	36.93	23.22	52.41	74	-21.59	Horizontal

Test mode:	802.11 n20		Frequency(MHz):	5745	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
8328.564	36.40	11.58	37.27	42.56	53.27	74	-20.73	Vertical
9659.786	37.10	12.53	36.28	40.38	53.73	74	-20.27	Vertical
11490.000	37.45	14.01	36.68	35.08	49.86	74	-24.14	Vertical
13778.220	39.06	16.00	39.32	37.12	52.86	74	-21.14	Vertical
15800.410	41.20	17.31	38.51	33.09	53.09	74	-20.91	Vertical
17235.000	43.05	19.50	37.03	28.28	53.80	74	-20.20	Vertical
7678.832	36.04	10.89	37.44	43.17	52.66	74	-21.34	Horizontal
9659.786	37.10	12.53	36.28	40.24	53.59	74	-20.41	Horizontal
11490.000	37.45	14.01	36.68	33.93	48.71	74	-25.29	Horizontal
13804.270	39.10	16.03	39.36	37.06	52.83	74	-21.17	Horizontal
15800.410	41.20	17.31	38.51	32.39	52.39	74	-21.61	Horizontal
17235.000	43.05	19.50	37.03	28.38	53.90	74	-20.10	Horizontal

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Test mode:	802.11 n20		Frequency(MHz):	5785	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7751.699	36.08	10.93	37.41	38.14	47.74	74	-26.26	Vertical
9659.786	37.10	12.53	36.28	40.37	53.72	74	-20.28	Vertical
11570.000	37.49	14.09	36.75	34.67	49.50	74	-24.50	Vertical
13192.440	38.29	15.60	38.42	37.40	52.87	74	-21.13	Vertical
15243.400	40.72	16.78	39.39	35.49	53.60	74	-20.40	Vertical
17355.000	43.23	19.92	37.01	27.78	53.92	74	-20.08	Vertical
7678.832	36.04	10.89	37.44	41.96	51.45	74	-22.55	Horizontal
9659.786	37.10	12.53	36.28	40.35	53.70	74	-20.30	Horizontal
11570.000	37.49	14.09	36.75	34.47	49.30	74	-24.70	Horizontal
13167.540	38.27	15.59	38.38	35.84	51.32	74	-22.68	Horizontal
15128.660	40.63	16.67	39.58	34.38	52.10	74	-21.90	Horizontal
17355.000	43.23	19.92	37.01	27.37	53.51	74	-20.49	Horizontal

Test mode:	802.11 n20		Frequency(MHz):	5825	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7093.172	35.49	10.64	37.69	43.01	51.45	74	-22.55	Vertical
8990.716	37.00	11.79	37.19	38.95	50.55	74	-23.45	Vertical
11650.000	37.50	14.18	36.83	33.76	48.61	74	-25.39	Vertical
13192.440	38.29	15.60	38.42	36.37	51.84	74	-22.16	Vertical
15157.260	40.66	16.70	39.53	35.39	53.22	74	-20.78	Vertical
17475.000	43.45	20.33	36.99	26.21	53.00	74	-21.00	Vertical
7678.832	36.04	10.89	37.44	41.99	51.48	74	-22.52	Horizontal
8990.716	37.00	11.79	37.19	39.11	50.71	74	-23.29	Horizontal
11650.000	37.50	14.18	36.83	34.78	49.63	74	-24.37	Horizontal
13192.440	38.29	15.60	38.42	36.77	52.24	74	-21.76	Horizontal
15800.410	41.20	17.31	38.51	33.46	53.46	74	-20.54	Horizontal
17475.000	43.45	20.33	36.99	27.14	53.93	74	-20.07	Horizontal

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Test mode:	802.11 ac20		Frequency(MHz):	5180	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7153.722	35.55	10.66	37.66	40.12	48.67	74	-25.33	Vertical
8990.716	37.00	11.79	37.19	40.85	52.45	74	-21.55	Vertical
10360.000	37.08	12.98	35.96	36.40	50.50	74	-23.50	Vertical
12775.540	37.99	14.93	37.91	37.06	52.07	74	-21.93	Vertical
15540.000	40.94	17.07	38.92	34.53	53.62	74	-20.38	Vertical
17797.150	43.90	21.44	36.95	25.20	53.59	74	-20.41	Vertical
7228.430	35.59	10.69	37.63	39.25	47.90	74	-26.10	Horizontal
9007.715	37.00	11.80	37.18	39.27	50.89	74	-23.11	Horizontal
10360.000	37.08	12.98	35.96	36.29	50.39	74	-23.61	Horizontal
12751.430	37.98	14.86	37.89	36.74	51.69	74	-22.31	Horizontal
15540.000	40.94	17.07	38.92	34.10	53.19	74	-20.81	Horizontal
17746.790	43.85	21.26	36.95	24.35	52.51	74	-21.49	Horizontal

Test mode:	802.11 ac20		Frequency(MHz):	5220	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7678.832	36.04	10.89	37.44	41.83	51.32	74	-22.68	Vertical
8889.395	36.94	11.80	37.20	34.76	46.30	74	-27.70	Vertical
10440.000	37.10	13.04	35.99	35.11	49.26	74	-24.74	Vertical
12751.430	37.98	14.86	37.89	36.78	51.73	74	-22.27	Vertical
15660.000	41.06	17.18	38.73	33.71	53.22	74	-20.78	Vertical
17864.510	44.06	21.66	36.94	24.22	53.00	74	-21.00	Vertical
7093.172	35.49	10.64	37.69	41.86	50.30	74	-23.70	Horizontal
9007.715	37.00	11.80	37.18	39.70	51.32	74	-22.68	Horizontal
10440.000	37.10	13.04	35.99	35.44	49.59	74	-24.41	Horizontal
13217.380	38.32	15.61	38.46	37.18	52.65	74	-21.35	Horizontal
15660.000	41.06	17.18	38.73	34.04	53.55	74	-20.45	Horizontal
17864.510	44.06	21.66	36.94	24.04	52.82	74	-21.18	Horizontal

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Test mode:	802.11 ac20		Frequency(MHz):	5240	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7678.832	36.04	10.89	37.44	42.45	51.94	74	-22.06	Vertical
9007.715	37.00	11.80	37.18	38.86	50.48	74	-23.52	Vertical
10480.000	37.10	13.07	36.00	36.20	50.37	74	-23.63	Vertical
12751.430	37.98	14.86	37.89	37.71	52.66	74	-21.34	Vertical
15720.000	41.12	17.24	38.63	33.84	53.57	74	-20.43	Vertical
17864.510	44.06	21.66	36.94	24.74	53.52	74	-20.48	Vertical
7678.832	36.04	10.89	37.44	41.95	51.44	74	-22.56	Horizontal
8990.716	37.00	11.79	37.19	38.74	50.34	74	-23.66	Horizontal
10480.000	37.10	13.07	36.00	34.41	48.58	74	-25.42	Horizontal
12775.540	37.99	14.93	37.91	38.55	53.56	74	-20.44	Horizontal
15720.000	41.12	17.24	38.63	33.83	53.56	74	-20.44	Horizontal
17932.130	44.23	21.89	36.93	24.22	53.41	74	-20.59	Horizontal

Test mode:	802.11 ac20		Frequency(MHz):	5745	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7664.340	36.03	10.88	37.44	42.29	51.76	74	-22.24	Vertical
9659.786	37.1	12.53	36.28	39.74	53.09	74	-20.91	Vertical
11490.000	37.45	14.01	36.68	34.47	49.25	74	-24.75	Vertical
13105.510	38.21	15.58	38.29	37.22	52.72	74	-21.28	Vertical
14761.680	40.34	16.47	39.76	35.5	52.55	74	-21.45	Vertical
17235.000	43.05	19.5	37.03	28.37	53.89	74	-20.11	Vertical
7664.340	36.03	10.88	37.44	42.93	52.4	74	-21.60	Horizontal
9899.929	37.2	12.66	35.96	39.17	53.07	74	-20.93	Horizontal
11490.000	37.45	14.01	36.68	35.62	50.4	74	-23.60	Horizontal
13192.440	38.29	15.6	38.42	35.98	51.45	74	-22.55	Horizontal
15157.260	40.66	16.7	39.53	34.58	52.41	74	-21.59	Horizontal
17235.000	43.05	19.5	37.03	28.07	53.59	74	-20.41	Horizontal

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Test mode:	802.11 ac20		Frequency(MHz):	5785	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7093.172	35.49	10.64	37.69	42.42	50.86	74	-23.14	Vertical
8990.716	37.00	11.79	37.19	39.21	50.81	74	-23.19	Vertical
11570.000	37.49	14.09	36.75	35.20	50.03	74	-23.97	Vertical
13192.440	38.29	15.60	38.42	37.29	52.76	74	-21.24	Vertical
15157.260	40.66	16.70	39.53	35.20	53.03	74	-20.97	Vertical
17355.000	43.23	19.92	37.01	27.06	53.20	74	-20.80	Vertical
7106.583	35.51	10.64	37.68	42.03	50.50	74	-23.50	Horizontal
9007.715	37.00	11.80	37.18	40.72	52.34	74	-21.66	Horizontal
11570.000	37.49	14.09	36.75	34.07	48.90	74	-25.10	Horizontal
13192.440	38.29	15.60	38.42	36.48	51.95	74	-22.05	Horizontal
15157.260	40.66	16.70	39.53	34.24	52.07	74	-21.93	Horizontal
17355.000	43.23	19.92	37.01	27.24	53.38	74	-20.62	Horizontal

Test mode:	802.11 ac20		Frequency(MHz):	5825	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7678.832	36.04	10.89	37.44	42.02	51.51	74	-22.49	Vertical
9659.786	37.10	12.53	36.28	40.32	53.67	74	-20.33	Vertical
11650.000	37.50	14.18	36.83	33.76	48.61	74	-25.39	Vertical
13192.440	38.29	15.60	38.42	37.37	52.84	74	-21.16	Vertical
15157.260	40.66	16.70	39.53	35.39	53.22	74	-20.78	Vertical
17475.000	43.45	20.33	36.99	26.21	53.00	74	-21.00	Vertical
7678.832	36.04	10.89	37.44	41.99	51.48	74	-22.52	Horizontal
8990.716	37.00	11.79	37.19	39.11	50.71	74	-23.29	Horizontal
11650.000	37.50	14.18	36.83	32.78	47.63	74	-26.37	Horizontal
13192.440	38.29	15.60	38.42	36.77	52.24	74	-21.76	Horizontal
15128.660	40.63	16.67	39.58	34.38	52.10	74	-21.90	Horizontal
17475.000	43.45	20.33	36.99	27.14	53.93	74	-20.07	Horizontal

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Test mode:	802.11 n40		Frequency(MHz):	5190	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7678.832	36.04	10.89	37.44	43.03	52.52	74	-21.48	Vertical
9007.715	37.00	11.80	37.18	39.66	51.28	74	-22.72	Vertical
10380.000	37.09	13.00	35.97	37.32	51.44	74	-22.56	Vertical
12775.540	37.99	14.93	37.91	37.55	52.56	74	-21.44	Vertical
15570.000	40.97	17.09	38.87	33.84	53.03	74	-20.97	Vertical
17797.150	43.90	21.44	36.95	25.50	53.89	74	-20.11	Vertical
7678.832	36.04	10.89	37.44	42.21	51.70	74	-22.30	Horizontal
9007.715	37.00	11.80	37.18	39.58	51.20	74	-22.80	Horizontal
10380.000	37.09	13.00	35.97	36.25	50.37	74	-23.63	Horizontal
12751.430	37.98	14.86	37.89	37.22	52.17	74	-21.83	Horizontal
15570.000	40.97	17.09	38.87	33.77	52.96	74	-21.04	Horizontal
17932.130	44.23	21.89	36.93	23.14	52.33	74	-21.67	Horizontal

Test mode:	802.11 n40		Frequency(MHz):	5230	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7187.584	35.59	10.67	37.65	38.93	47.54	74	-26.46	Vertical
9007.715	37.00	11.80	37.18	39.76	51.38	74	-22.62	Vertical
10460.000	37.10	13.06	36.00	35.31	49.47	74	-24.53	Vertical
13117.890	38.22	15.58	38.31	36.12	51.61	74	-22.39	Vertical
15690.000	41.09	17.21	38.68	33.70	53.32	74	-20.68	Vertical
17730.040	43.83	21.21	36.96	25.45	53.53	74	-20.47	Vertical
7093.172	35.49	10.64	37.69	42.72	51.16	74	-22.84	Horizontal
8344.312	36.40	11.61	37.27	41.68	52.42	74	-21.58	Horizontal
10460.000	37.10	13.06	36.00	34.33	48.49	74	-25.51	Horizontal
13192.440	38.29	15.60	38.42	36.63	52.10	74	-21.90	Horizontal
15690.000	41.09	17.21	38.68	33.55	53.17	74	-20.83	Horizontal
17864.510	44.06	21.66	36.94	23.85	52.63	74	-21.37	Horizontal

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Test mode:	802.11 n40		Frequency(MHz):	5755	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7678.832	36.04	10.89	37.44	40.64	50.13	74	-23.87	Vertical
9659.786	37.10	12.53	36.28	38.23	51.58	74	-22.42	Vertical
11510.000	37.46	14.03	36.70	36.49	51.28	74	-22.72	Vertical
13167.540	38.27	15.59	38.38	36.35	51.83	74	-22.17	Vertical
15157.260	40.66	16.70	39.53	34.20	52.03	74	-21.97	Vertical
17265.000	43.10	19.60	37.02	27.53	53.21	74	-20.79	Vertical
7133.481	35.53	10.65	37.67	41.32	49.83	74	-24.17	Horizontal
8990.716	37.00	11.79	37.19	39.04	50.64	74	-23.36	Horizontal
11510.000	37.46	14.03	36.70	33.68	48.47	74	-25.53	Horizontal
13192.440	38.29	15.60	38.42	35.85	51.32	74	-22.68	Horizontal
14929.940	40.47	16.52	39.78	36.22	53.43	74	-20.57	Horizontal
17265.000	43.10	19.60	37.02	27.49	53.17	74	-20.83	Horizontal

Test mode:	802.11 n40		Frequency(MHz):	5795	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7093.172	35.49	10.64	37.69	42.58	51.02	74	-22.98	Vertical
9007.715	37.00	11.80	37.18	39.10	50.72	74	-23.28	Vertical
11590.000	37.50	14.12	36.77	33.16	48.01	74	-25.99	Vertical
13192.440	38.29	15.60	38.42	37.15	52.62	74	-21.38	Vertical
15214.630	40.71	16.75	39.44	35.15	53.17	74	-20.83	Vertical
17385.000	43.28	20.02	37.01	27.42	53.71	74	-20.29	Vertical
7678.832	36.04	10.89	37.44	42.17	51.66	74	-22.34	Horizontal
9659.786	37.10	12.53	36.28	40.20	53.55	74	-20.45	Horizontal
11590.000	37.50	14.12	36.77	32.75	47.60	74	-26.40	Horizontal
13117.890	38.22	15.58	38.31	36.01	51.50	74	-22.50	Horizontal
15157.260	40.66	16.70	39.53	35.10	52.93	74	-21.07	Horizontal
17385.000	43.28	20.02	37.01	26.61	52.90	74	-21.10	Horizontal

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Test mode:	802.11 ac40		Frequency(MHz):	5190	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7678.832	36.04	10.89	37.44	43.03	52.52	74	-21.48	Vertical
9007.715	37.00	11.80	37.18	39.66	51.28	74	-22.72	Vertical
10380.000	37.09	13.00	35.97	36.32	50.44	74	-23.56	Vertical
12775.540	37.99	14.93	37.91	38.55	53.56	74	-20.44	Vertical
15570.000	40.97	17.09	38.87	33.84	53.03	74	-20.97	Vertical
17797.150	43.90	21.44	36.95	25.50	53.89	74	-20.11	Vertical
7093.172	35.49	10.64	37.69	41.92	50.36	74	-23.64	Horizontal
9007.715	37.00	11.80	37.18	39.58	51.20	74	-22.80	Horizontal
10380.000	37.09	13.00	35.97	36.25	50.37	74	-23.63	Horizontal
12751.430	37.98	14.86	37.89	38.22	53.17	74	-20.83	Horizontal
15570.000	40.97	17.09	38.87	33.77	52.96	74	-21.04	Horizontal
17932.130	44.23	21.89	36.93	24.14	53.33	74	-20.67	Horizontal

Test mode:	802.11 ac40		Frequency(MHz):	5230	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7093.172	35.49	10.64	37.69	42.99	51.43	74	-22.57	Vertical
9007.715	37.00	11.80	37.18	39.76	51.38	74	-22.62	Vertical
10460.000	37.10	13.06	36.00	35.31	49.47	74	-24.53	Vertical
13117.890	38.22	15.58	38.31	36.12	51.61	74	-22.39	Vertical
15690.000	41.09	17.21	38.68	33.70	53.32	74	-20.68	Vertical
17830.800	43.98	21.55	36.94	24.59	53.18	74	-20.82	Vertical
7026.495	35.43	10.61	37.72	43.43	51.75	74	-22.25	Horizontal
9007.715	37.00	11.80	37.18	38.61	50.23	74	-23.77	Horizontal
10460.000	37.10	13.06	36.00	35.33	49.49	74	-24.51	Horizontal
13192.440	38.29	15.60	38.42	36.63	52.10	74	-21.90	Horizontal
15690.000	41.09	17.21	38.68	33.55	53.17	74	-20.83	Horizontal
17864.510	44.06	21.66	36.94	24.85	53.63	74	-20.37	Horizontal

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Test mode:	802.11 ac40		Frequency(MHz):	5755	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7678.832	36.04	10.89	37.44	42.64	52.13	74	-21.87	Vertical
9659.786	37.10	12.53	36.28	40.23	53.58	74	-20.42	Vertical
11510.000	37.46	14.03	36.70	34.49	49.28	74	-24.72	Vertical
13267.410	38.37	15.62	38.54	35.80	51.25	74	-22.75	Vertical
15417.140	40.82	16.95	39.11	33.63	52.29	74	-21.71	Vertical
17265.000	43.10	19.60	37.02	27.53	53.21	74	-20.79	Vertical
7106.583	35.51	10.64	37.68	41.67	50.14	74	-23.86	Horizontal
8990.716	37.00	11.79	37.19	39.04	50.64	74	-23.36	Horizontal
11510.000	37.46	14.03	36.70	33.68	48.47	74	-25.53	Horizontal
12751.430	37.98	14.86	37.89	37.92	52.87	74	-21.13	Horizontal
14929.940	40.47	16.52	39.78	35.22	52.43	74	-21.57	Horizontal
17265.000	43.10	19.60	37.02	27.49	53.17	74	-20.83	Horizontal

Test mode:	802.11 ac40		Frequency(MHz):	5795	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7678.832	36.04	10.89	37.44	41.50	50.99	74	-23.01	Vertical
9659.786	37.10	12.53	36.28	40.11	53.46	74	-20.54	Vertical
11590.000	37.50	14.12	36.77	35.16	50.01	74	-23.99	Vertical
13117.890	38.22	15.58	38.31	37.06	52.55	74	-21.45	Vertical
15800.410	41.20	17.31	38.51	33.34	53.34	74	-20.66	Vertical
17385.000	43.28	20.02	37.01	27.42	53.71	74	-20.29	Vertical
7079.786	35.48	10.63	37.69	42.54	50.96	74	-23.04	Horizontal
8990.716	37.00	11.79	37.19	39.80	51.40	74	-22.60	Horizontal
11590.000	37.50	14.12	36.77	35.75	50.60	74	-23.40	Horizontal
13192.440	38.29	15.60	38.42	36.75	52.22	74	-21.78	Horizontal
15157.260	40.66	16.70	39.53	35.10	52.93	74	-21.07	Horizontal
17385.000	43.28	20.02	37.01	26.61	52.90	74	-21.10	Horizontal

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Test mode:	802.11 ac80		Frequency(MHz):	5210	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7664.340	36.03	10.88	37.44	41.60	51.07	74	-22.93	Vertical
8990.716	37.00	11.79	37.19	39.58	51.18	74	-22.82	Vertical
10420.000	37.10	13.03	35.98	34.24	48.39	74	-25.61	Vertical
12751.430	37.98	14.86	37.89	37.42	52.37	74	-21.63	Vertical
15630.000	41.03	17.15	38.78	33.71	53.11	74	-20.89	Vertical
17830.800	43.98	21.55	36.94	25.08	53.67	74	-20.33	Vertical
7086.476	35.49	10.63	37.69	41.65	50.08	74	-23.92	Horizontal
9007.715	37.00	11.80	37.18	39.11	50.73	74	-23.27	Horizontal
10420.000	37.10	13.03	35.98	34.88	49.03	74	-24.97	Horizontal
12775.540	37.99	14.93	37.91	37.39	52.40	74	-21.60	Horizontal
15630.000	41.03	17.15	38.78	33.45	52.85	74	-21.15	Horizontal
17763.560	43.86	21.32	36.95	25.35	53.58	74	-20.42	Horizontal

Test mode:	802.11 ac80		Frequency(MHz):	5775	Remark:		Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7678.832	36.04	10.89	37.44	42.40	51.89	74	-22.11	Vertical
9007.715	37.00	11.80	37.18	38.95	50.57	74	-23.43	Vertical
11550.000	37.48	14.07	36.74	34.09	48.90	74	-25.10	Vertical
13167.540	38.27	15.59	38.38	36.38	51.86	74	-22.14	Vertical
15740.830	41.14	17.26	38.60	33.37	53.17	74	-20.83	Vertical
17325.000	43.19	19.81	37.01	27.80	53.79	74	-20.21	Vertical
7099.874	35.50	10.64	37.69	40.82	49.27	74	-24.73	Horizontal
9007.715	37.00	11.80	37.18	38.75	50.37	74	-23.63	Horizontal
11550.000	37.48	14.07	36.74	34.85	49.66	74	-24.34	Horizontal
13217.380	38.32	15.61	38.46	36.22	51.69	74	-22.31	Horizontal
15800.410	41.20	17.31	38.51	32.72	52.72	74	-21.28	Horizontal
17325.000	43.19	19.81	37.01	26.80	52.79	74	-21.21	Horizontal

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As the worst case are 5825MHz of 802.11n(20) for 5G WIFI and 2462MHz of 802.11b for 2.4G WIFI, so simultaneous transmission operations under the worst case of 2.4G & 5G WIFI were recorded in the below table.

Test mode:	802.11 n40 & 802.11 b		Frequency(MHz):		5190 &2462	Remark:	Peak
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
7678.832	36.04	10.89	37.44	43.01	52.50	74	-21.50	Vertical
9007.715	37.00	11.80	37.18	39.68	51.30	74	-22.70	Vertical
10380.000	37.09	13.00	35.97	37.33	51.45	74	-22.55	Vertical
12775.540	37.99	14.93	37.91	37.54	52.55	74	-21.45	Vertical
15570.000	40.97	17.09	38.87	33.83	53.02	74	-20.98	Vertical
17797.150	43.90	21.44	36.95	25.54	53.93	74	-20.07	Vertical
7678.832	36.04	10.89	37.44	42.25	51.74	74	-22.26	Horizontal
9007.715	37.00	11.80	37.18	39.63	51.25	74	-22.75	Horizontal
10380.000	37.09	13.00	35.97	36.38	50.50	74	-23.50	Horizontal
12751.430	37.98	14.86	37.89	37.39	52.34	74	-21.66	Horizontal
15570.000	40.97	17.09	38.87	33.79	52.98	74	-21.02	Horizontal
17932.130	44.23	21.89	36.93	23.26	52.45	74	-21.55	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.

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6.9 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15 Section 15.407(b)
Test Method:	ANSI C63.10: 2013, section 12.7.6, 12.7.7.3
Test Site:	Measurement Distance: 10m (Semi-Anechoic Chamber) & 3m (Fully-Anechoic Chamber)
Limit:	

Frequency	Limit (dBuV/m)	Remark
30MHz-88MHz	29.5@10m	Quasi-peak Value
88MHz-216MHz	33.0@10m	Quasi-peak Value
216MHz-960MHz	35.6@10m	Quasi-peak Value
960MHz-1GHz	44.0@10m	Quasi-peak Value
Above 1GHz	54.0@3m	Average Value
	74.0@3m	Peak Value

Test Setup:

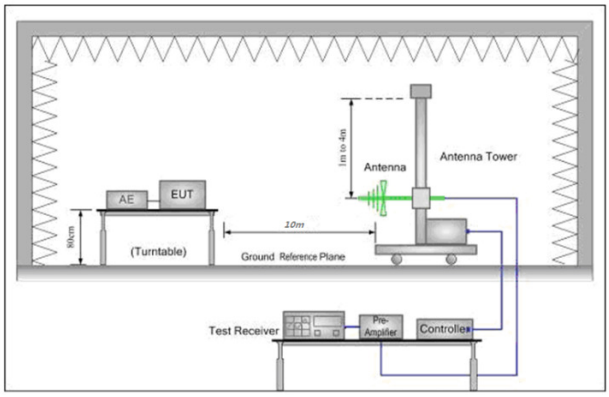

Figure 1. 30MHz to 1GHz

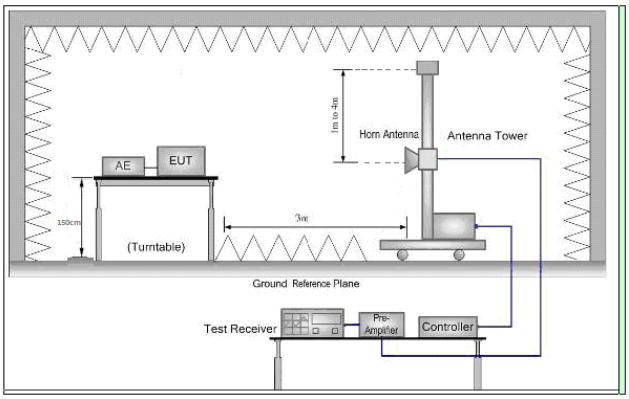

Figure 2. Above 1 GHz

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Test Procedure:	a. 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. 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.
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; MCS0 of rate is the worst case of 802.11n(HT20); MCS0 of rate is the worst case of 802.11n(HT40); 1SS0 of rate is the worst case of 802.11ac(HT20); 1SS0 of rate is the worst case of 802.11ac(HT40); 1SS0 of rate is the worst case of 802.11ac(HT80) Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

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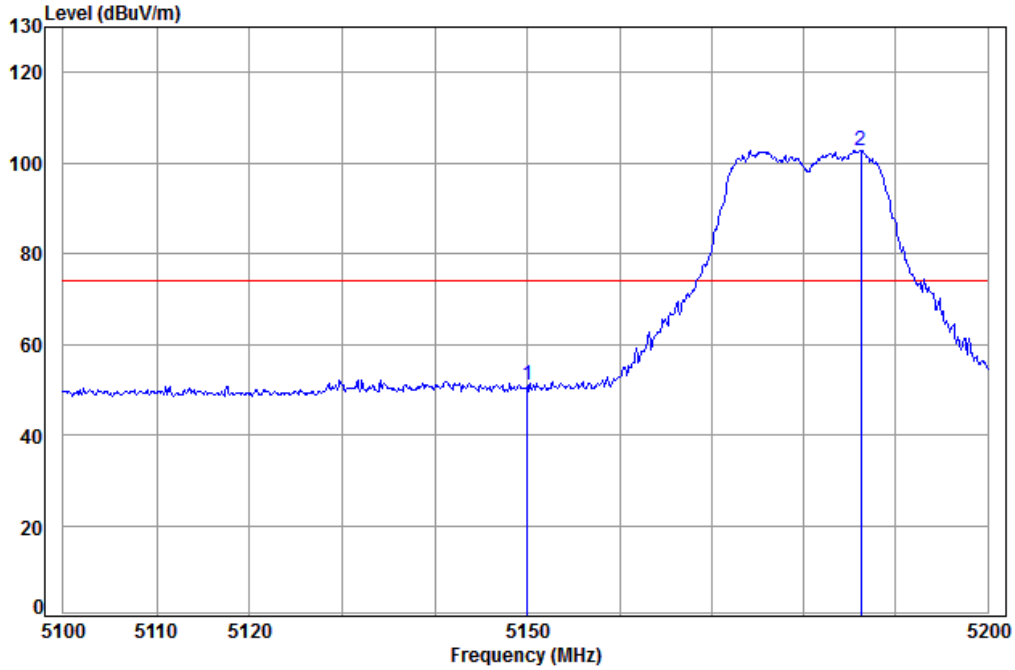
Test plot as follows:

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




```
Condition: 3m Vertical
Job No:   : 0840IT
Mode:     : 5180 Band edge
          : A20
                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     5150.00   8.08  34.07  38.82  47.55  50.88  74.00 -23.12
  2 pp  5186.19   8.10  34.02  38.82  99.48 102.78  74.00  28.78
```

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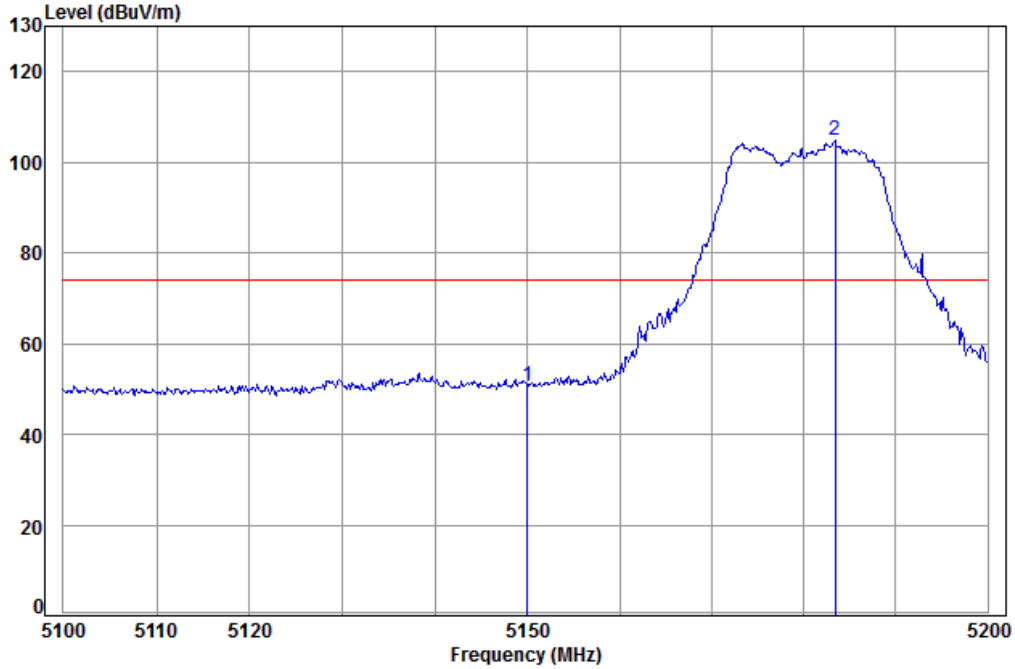
Test mode:	802.11a	Frequency(MHz):	5180	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5180 Band edge
: A20

	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	5150.00	8.08	34.07	38.82	47.44	50.77	74.00	-23.23
2 pp	5183.37	8.09	34.02	38.82	101.45	104.74	74.00	30.74

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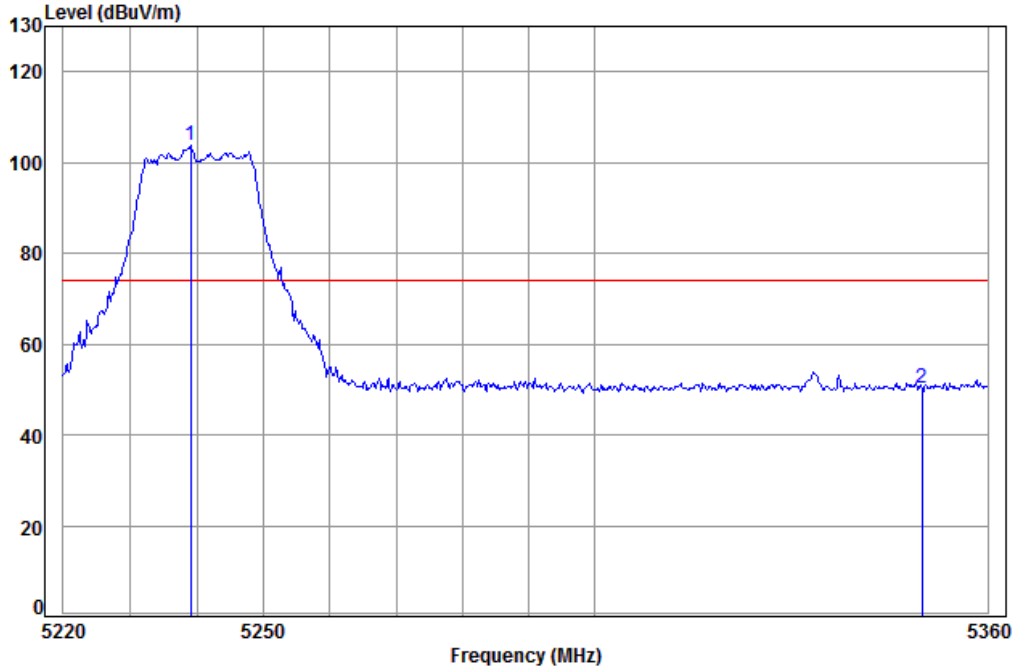
Test mode:	802.11a	Frequency(MHz):	5240	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
Mode: : 5240 Band edge
: A20

	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	5239.10	8.12	34.08	38.83	100.48	103.85	74.00	29.85
2	5350.00	8.18	34.30	38.85	46.81	50.44	74.00	-23.56

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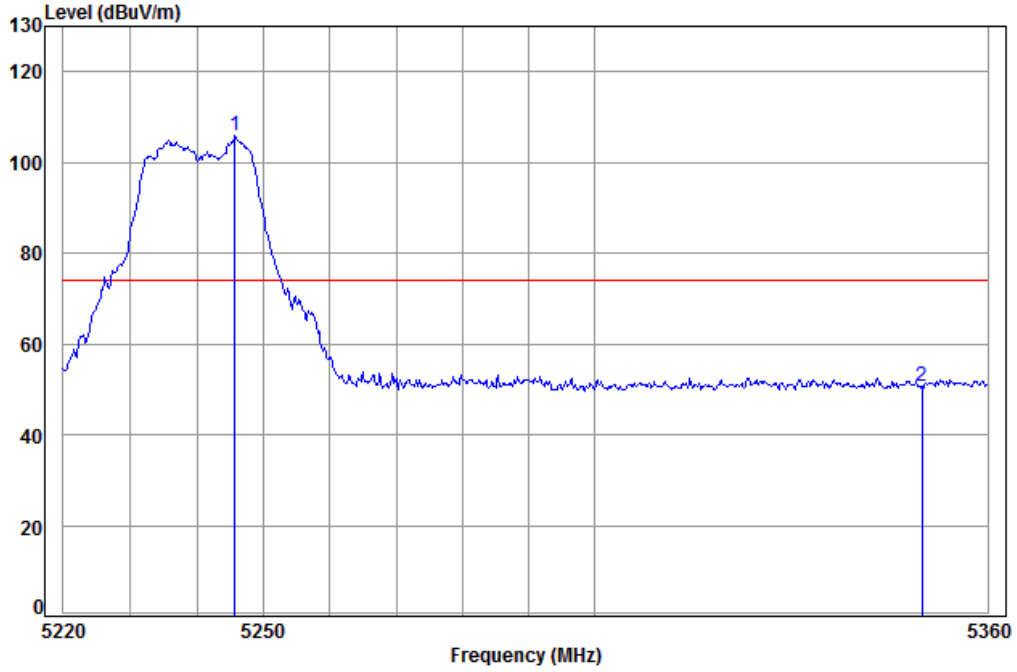
Test mode:	802.11a	Frequency(MHz):	5240	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5240 Band edge
: A20

	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	5245.76	8.13	34.09	38.83	102.52	105.91	74.00	31.91
2	5350.00	8.18	34.30	38.85	47.11	50.74	74.00	-23.26

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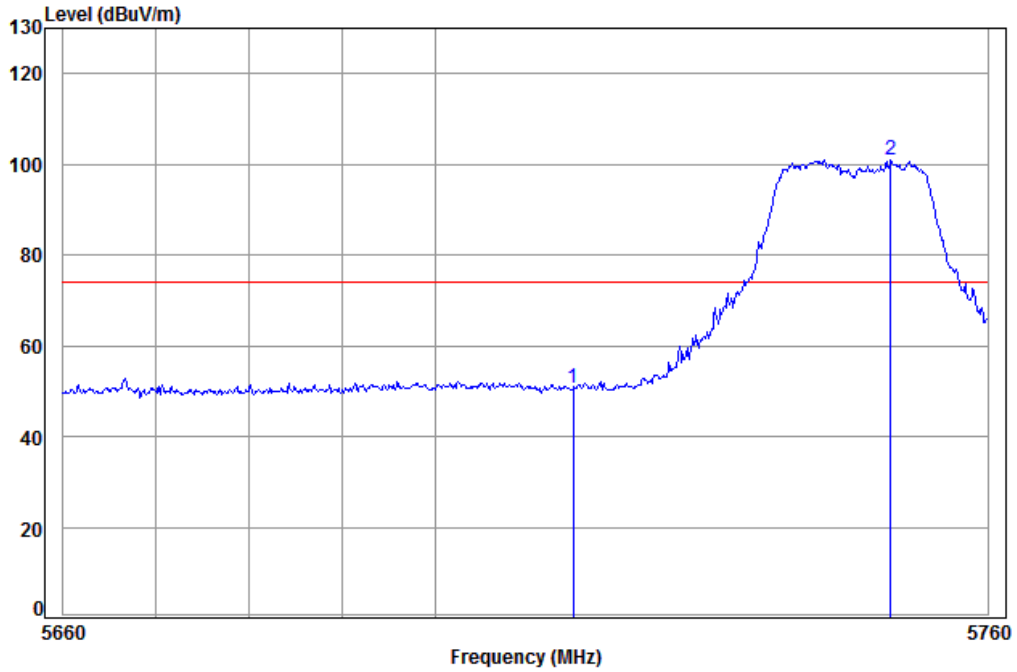
Test mode:	802.11a	Frequency(MHz):	5745	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
Mode: : 5745 Band edge
: A20

	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	5715.00	8.47	34.24	38.91	46.88	50.68	74.00	-23.32
2 pp	5749.42	8.50	34.22	38.92	97.23	101.03	74.00	27.03

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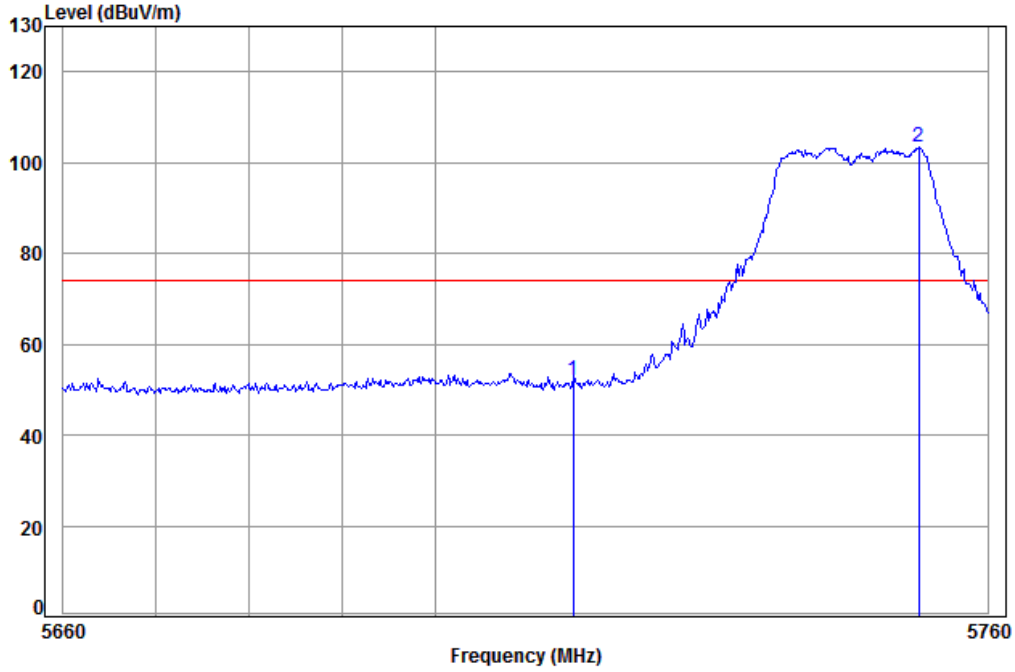
Test mode:	802.11a	Frequency(MHz):	5745	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5745 Band edge
: A20

	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	5715.00	8.47	34.24	38.91	48.32	52.12	74.00	-21.88
2 pp	5752.54	8.51	34.22	38.92	99.54	103.35	74.00	29.35

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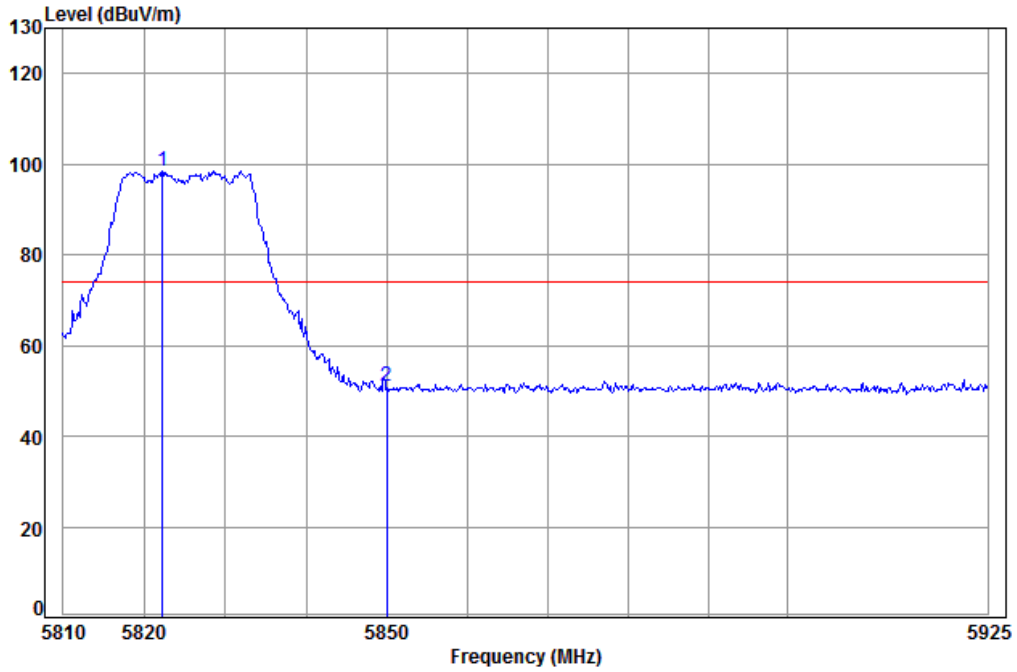
Test mode:	802.11a	Frequency(MHz):	5825	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
Mode: : 5825 Band edge
: A20

	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	8.58	34.26	38.93	94.55	98.46	74.00	24.46
2	5850.00	8.60	34.33	38.94	47.08	51.07	74.00	-22.93

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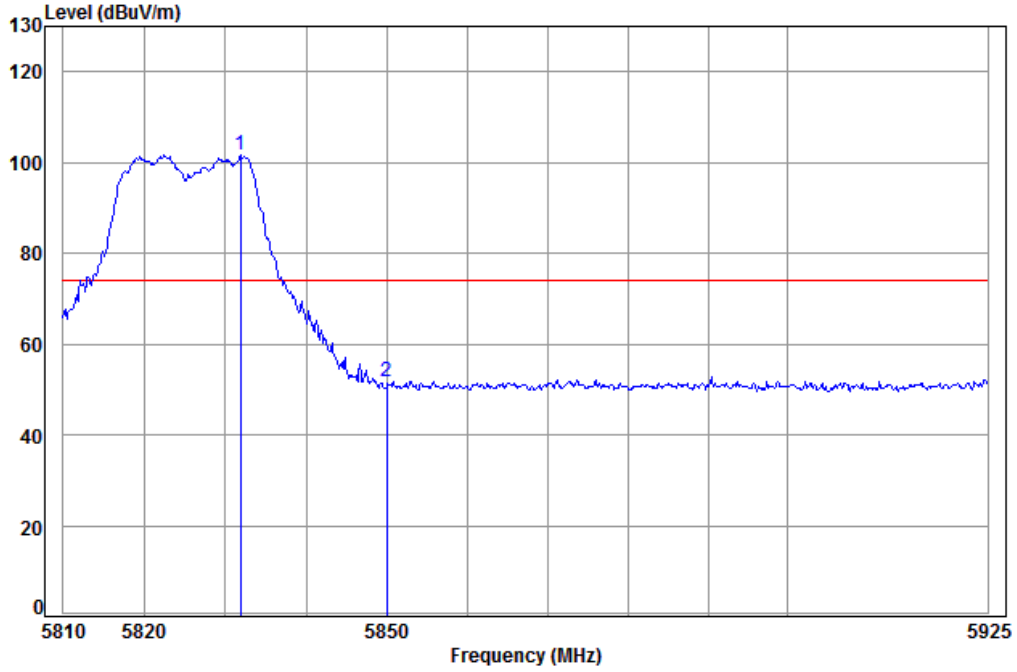
Test mode:	802.11a	Frequency(MHz):	5825	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5825 Band edge
: A20

	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	5831.91	8.59	34.28	38.93	97.63	101.57	74.00	27.57
2	5850.00	8.60	34.33	38.94	47.57	51.56	74.00	-22.44

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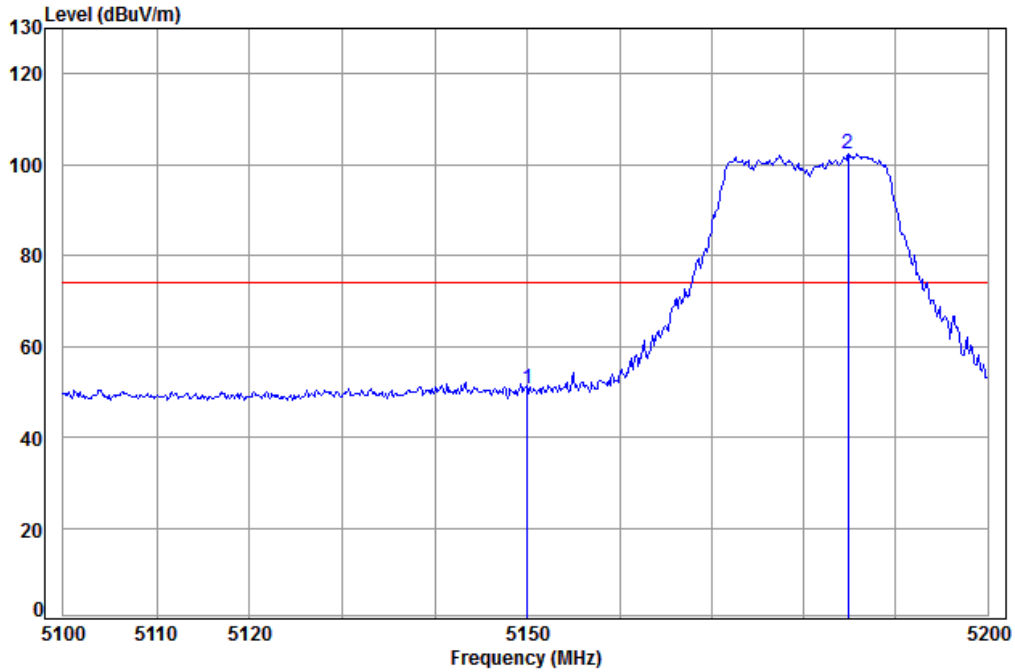
Test mode:	802.11 n20	Frequency(MHz):	5180	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
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	5150.00	8.08	34.07	38.82	47.18	50.51	74.00	-23.49
2 pp	5184.78	8.10	34.02	38.82	99.19	102.49	74.00	28.49

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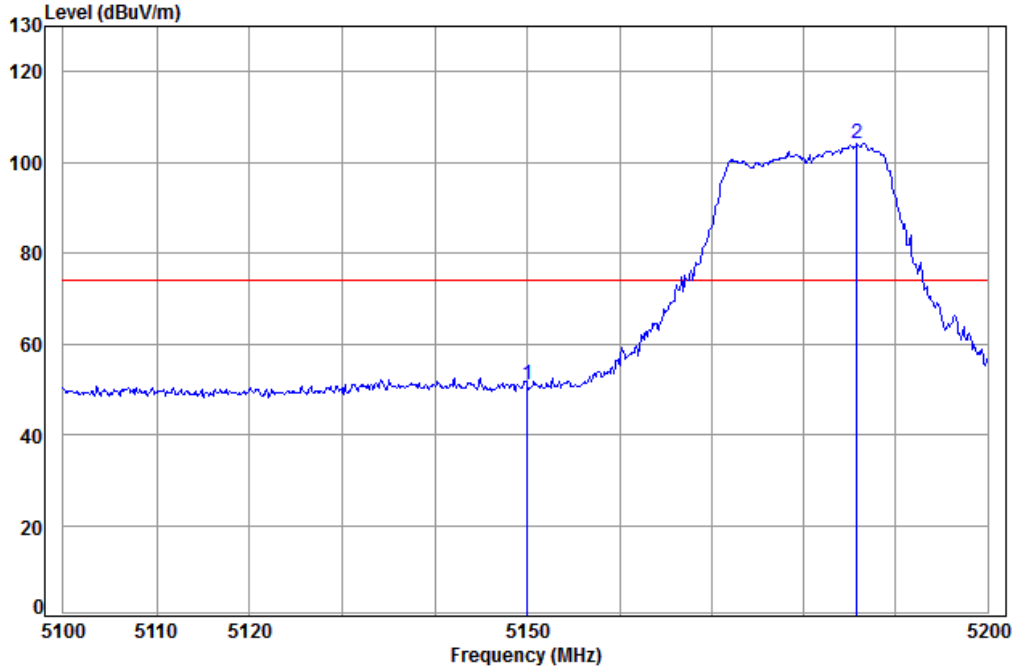
Test mode:	802.11 n20	Frequency(MHz):	5180	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
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	5150.00	8.08	34.07	38.82	47.57	50.90	74.00	-23.10
2 pp	5185.78	8.10	34.02	38.82	100.94	104.24	74.00	30.24

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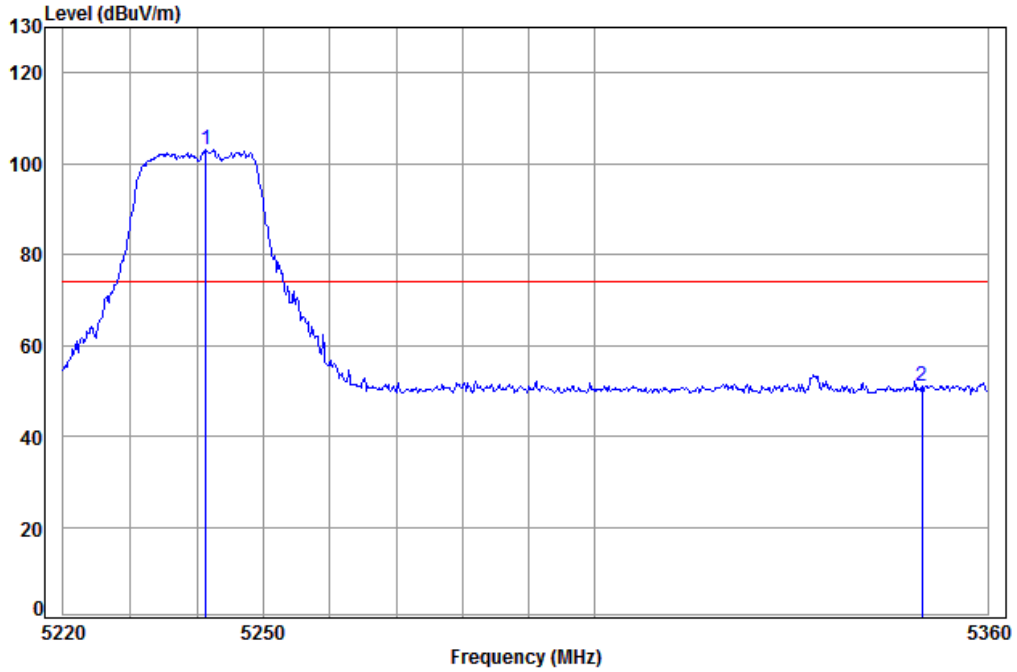
Test mode:	802.11 n20	Frequency(MHz):	5240	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
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	5241.32	8.12	34.08	38.83	99.66	103.03	74.00	29.03
2	5350.00	8.18	34.30	38.85	47.35	50.98	74.00	-23.02

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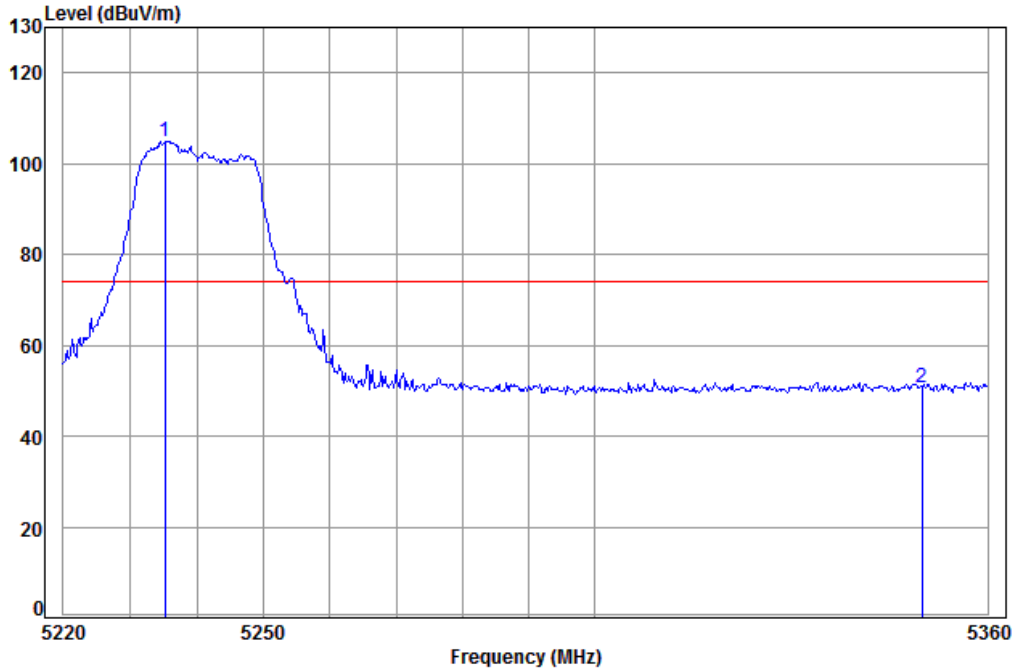
Test mode:	802.11 n20	Frequency(MHz):	5240	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
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	5235.22	8.12	34.07	38.83	101.50	104.86	74.00	30.86
2	5350.00	8.18	34.30	38.85	47.06	50.69	74.00	-23.31

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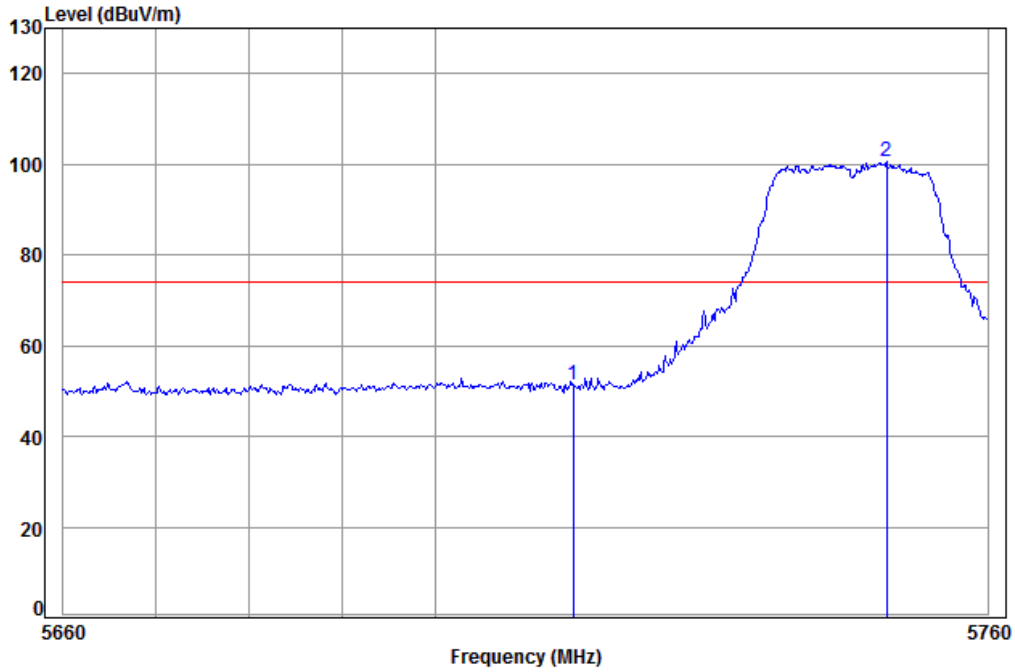
Test mode:	802.11 n20	Frequency(MHz):	5745	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
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	5715.00	8.47	34.24	38.91	47.39	51.19	74.00	-22.81
2 pp	5749.02	8.50	34.23	38.92	96.82	100.63	74.00	26.63

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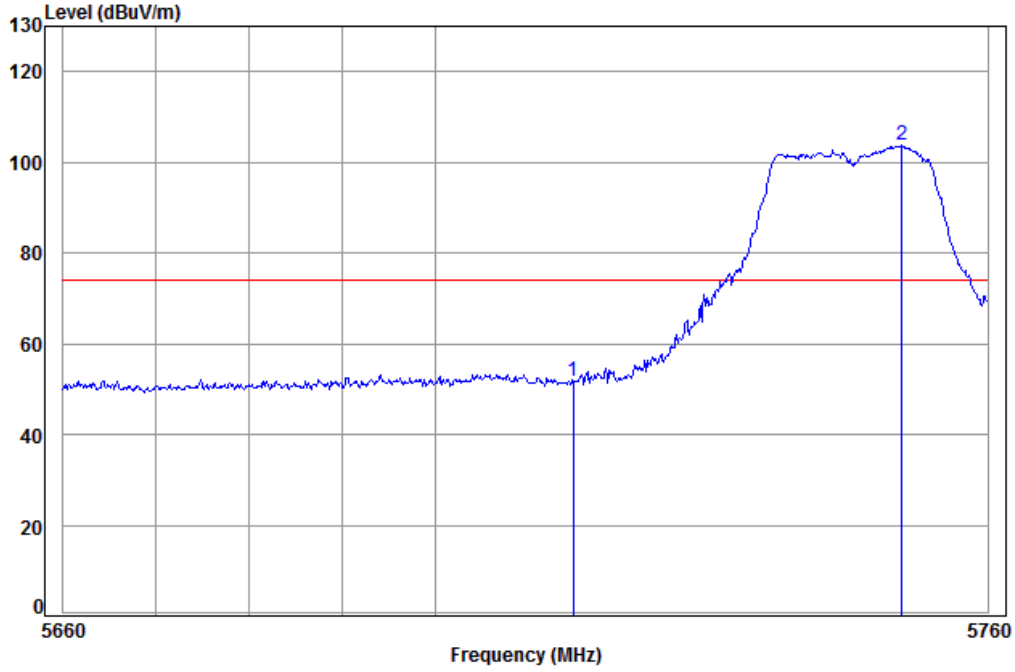
Test mode:	802.11 n20	Frequency(MHz):	5745	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
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	5715.00	8.47	34.24	38.91	48.00	51.80	74.00	-22.20
2 pp	5750.63	8.51	34.22	38.92	99.95	103.76	74.00	29.76

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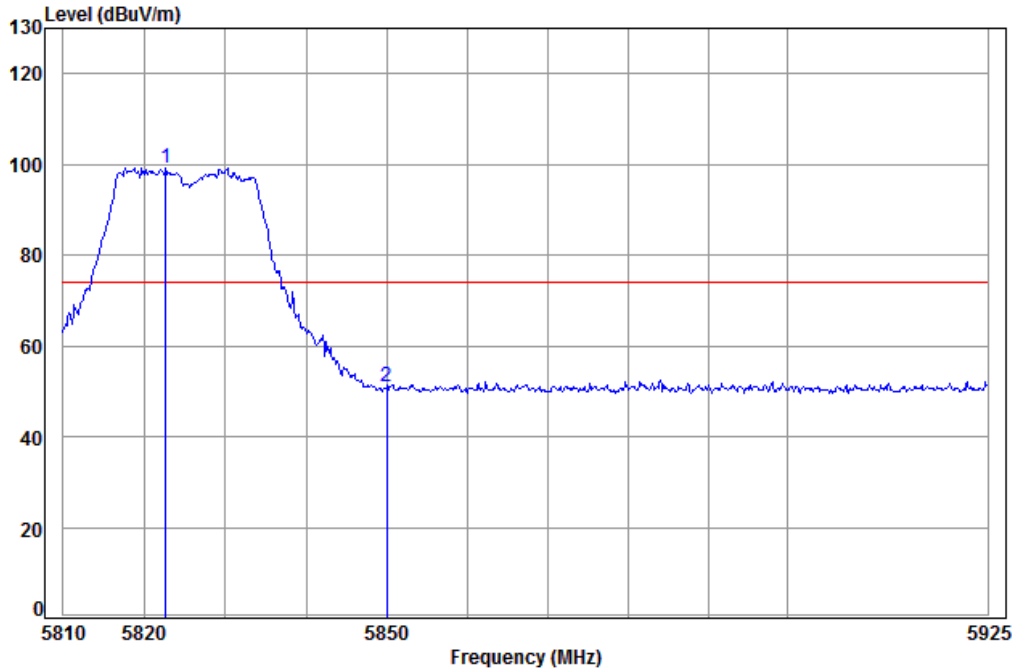
Test mode:	802.11 n20	Frequency(MHz):	5825	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
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	5822.65	8.58	34.26	38.93	95.26	99.17	74.00	25.17
2	5850.00	8.60	34.33	38.94	47.00	50.99	74.00	-23.01

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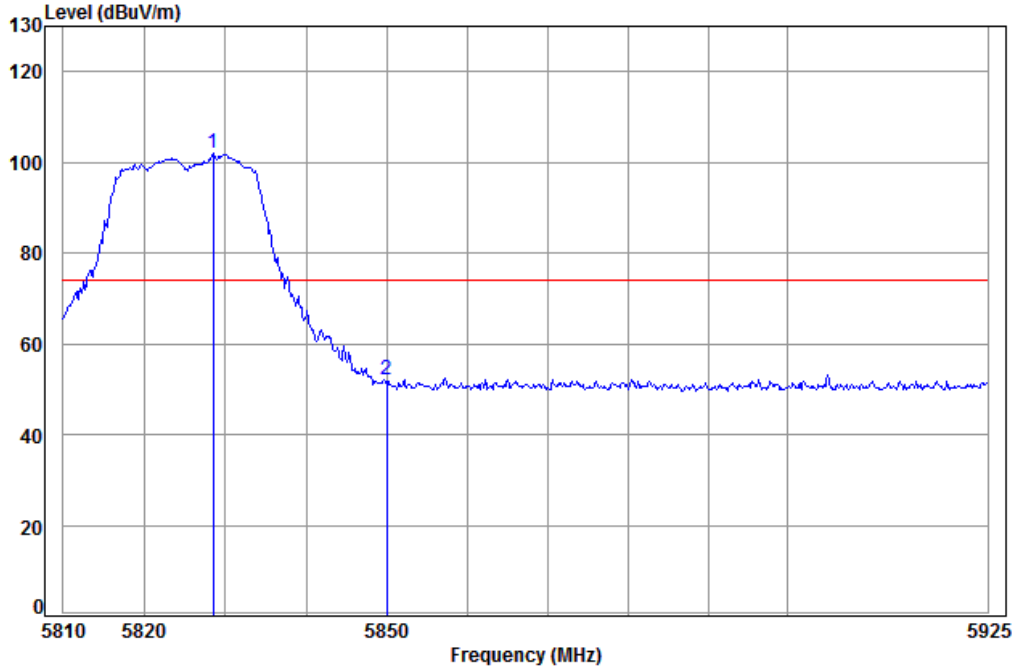
Test mode:	802.11 n20	Frequency(MHz):	5825	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
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	5828.48	8.58	34.27	38.93	97.97	101.89	74.00	27.89
2	5850.00	8.60	34.33	38.94	47.92	51.91	74.00	-22.09

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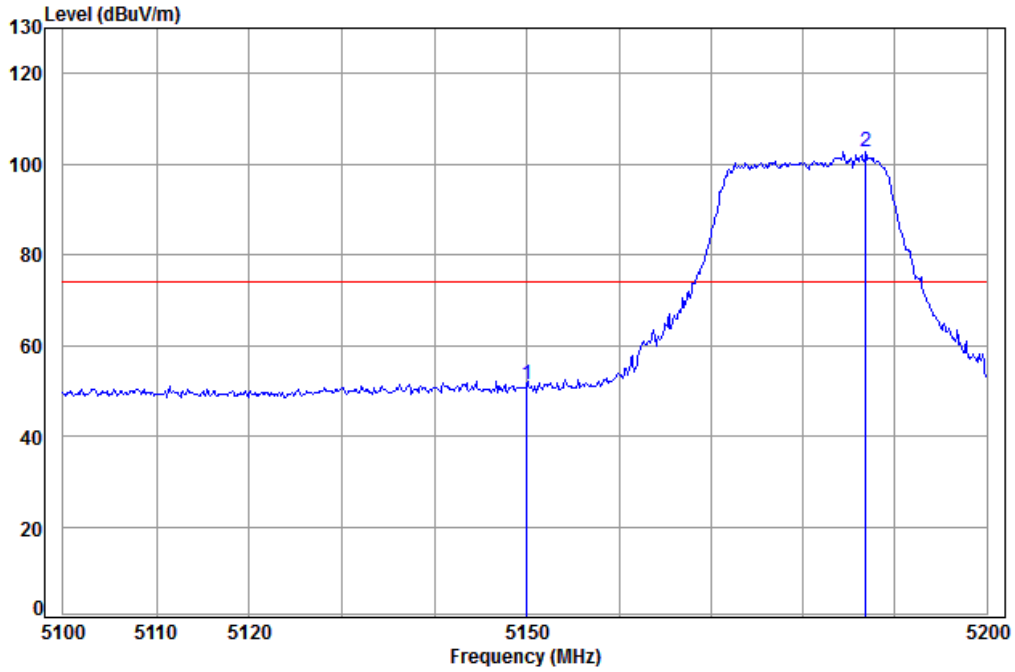
Test mode:	802.11 ac20	Frequency(MHz):	5180	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
Mode: : 5180 Band edge
: AC20

	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	5150.00	8.08	34.07	38.82	48.19	51.52	74.00	-22.48
2 pp	5186.79	8.10	34.02	38.82	99.56	102.86	74.00	28.86

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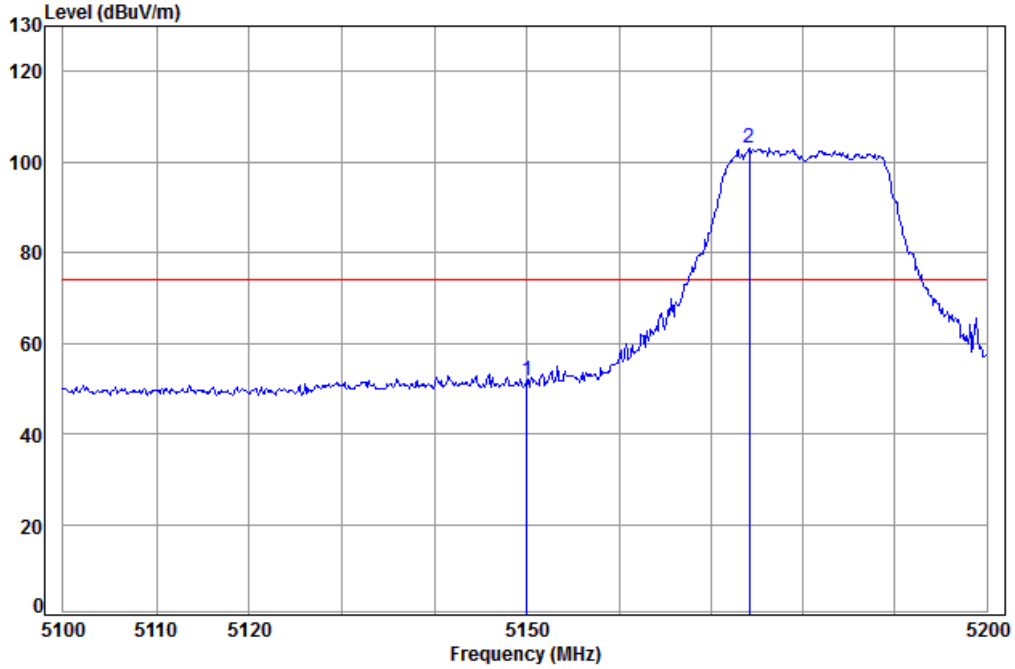
Test mode:	802.11 ac20	Frequency(MHz):	5180	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5180 Band edge
: AC20

	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	5150.00	8.08	34.07	38.82	48.39	51.72	74.00	-22.28
2 pp	5174.11	8.09	34.04	38.82	99.92	103.23	74.00	29.23

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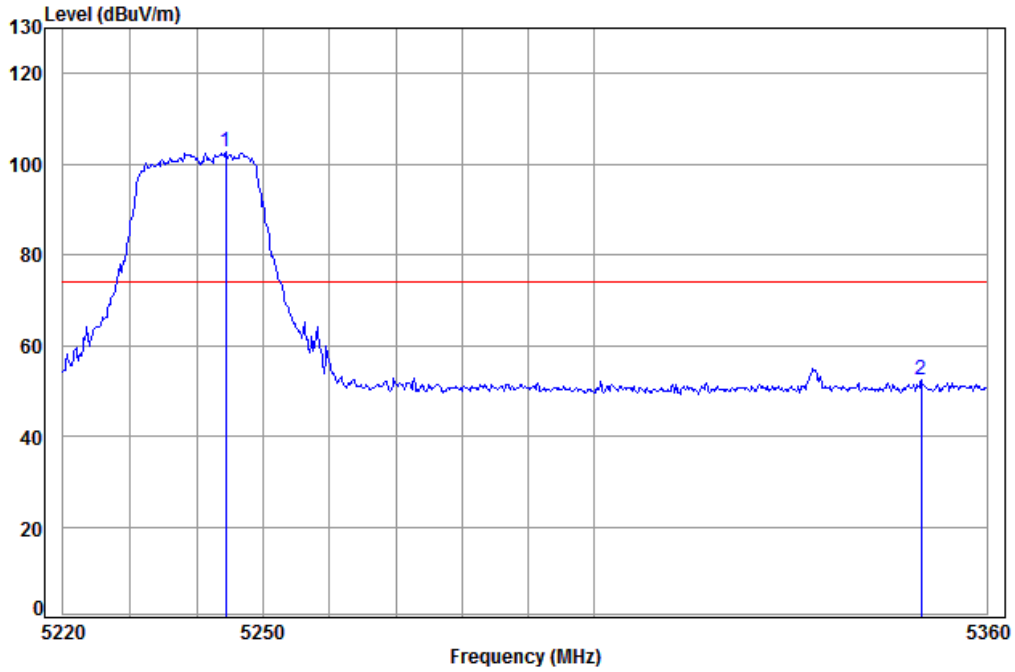
Test mode:	802.11 ac20	Frequency(MHz):	5240	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
Mode: : 5240 Band edge
: AC20

	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	5244.37	8.13	34.09	38.83	99.35	102.74	74.00	28.74
2	5350.00	8.18	34.30	38.85	48.79	52.42	74.00	-21.58

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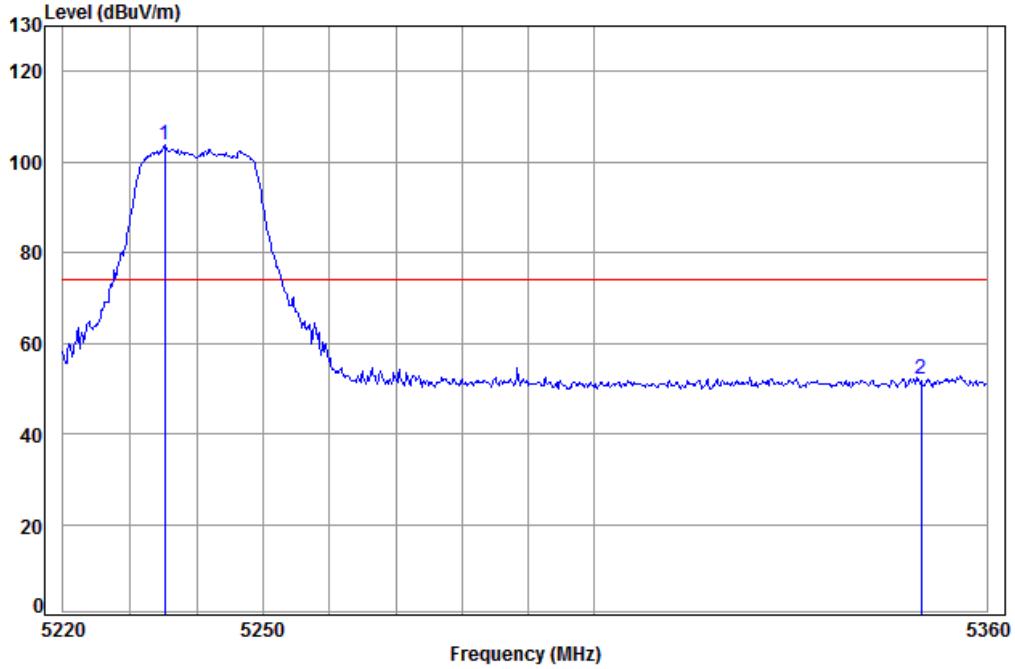
Test mode:	802.11 ac20	Frequency(MHz):	5240	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5240 Band edge
: AC20

	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	5235.22	8.12	34.07	38.83	100.58	103.94	74.00	29.94
2	5350.00	8.18	34.30	38.85	48.38	52.01	74.00	-21.99

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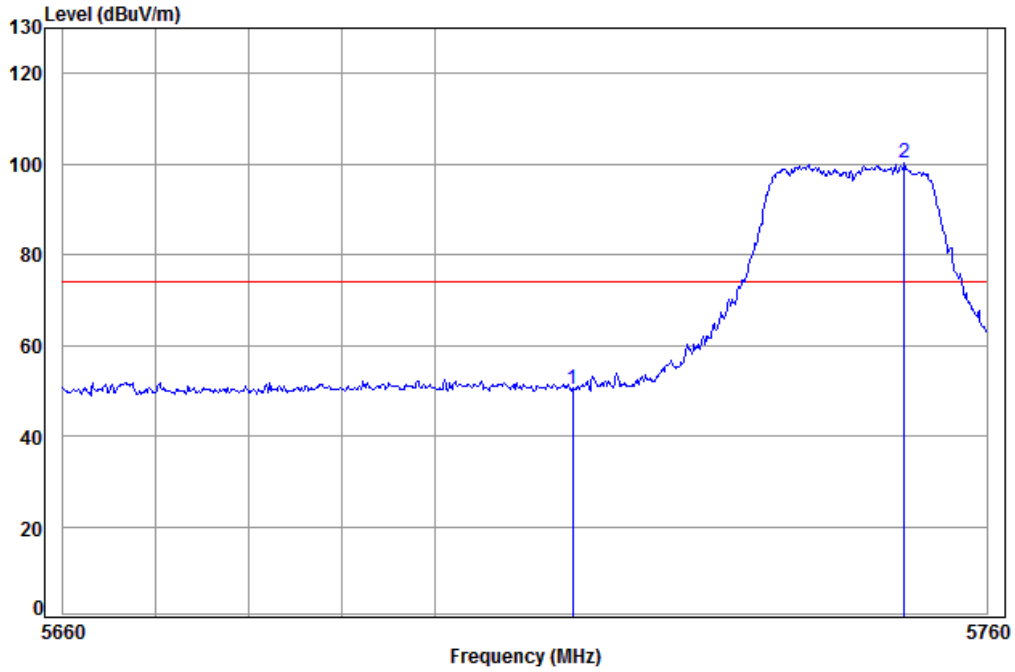
Test mode:	802.11 ac20	Frequency(MHz):	5745	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
Mode: : 5745 Band edge
: AC20

	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	5715.00	8.47	34.24	38.91	46.49	50.29	74.00	-23.71
2 pp	5751.03	8.51	34.22	38.92	96.32	100.13	74.00	26.13

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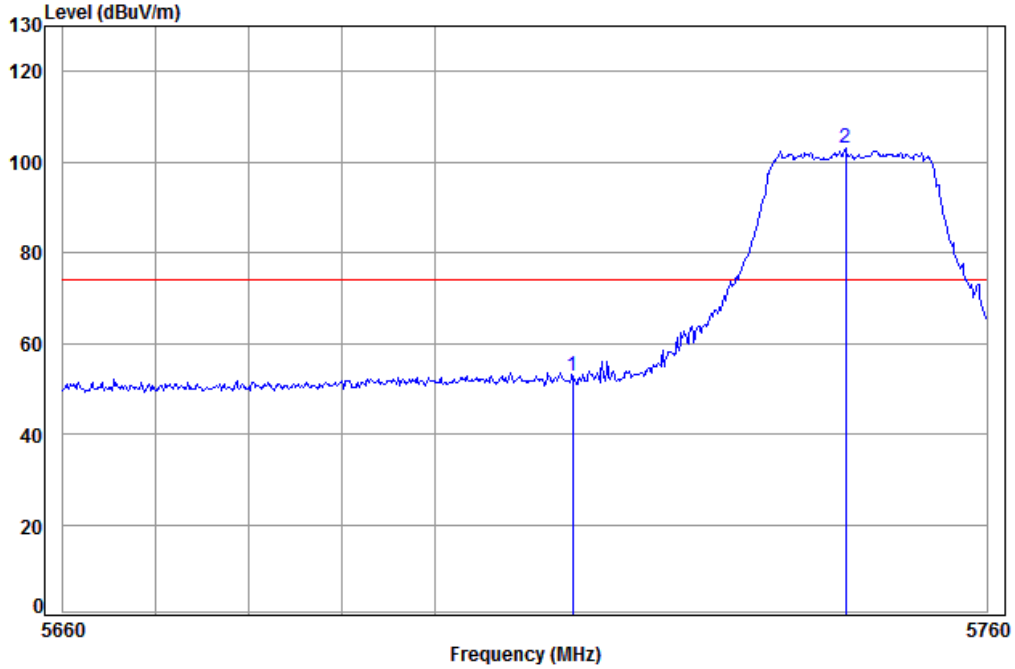
Test mode:	802.11 ac20	Frequency(MHz):	5745	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5745 Band edge
: AC20

	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	5715.00	8.47	34.24	38.91	48.90	52.70	74.00	-21.30
2 pp	5744.59	8.50	34.23	38.92	99.22	103.03	74.00	29.03

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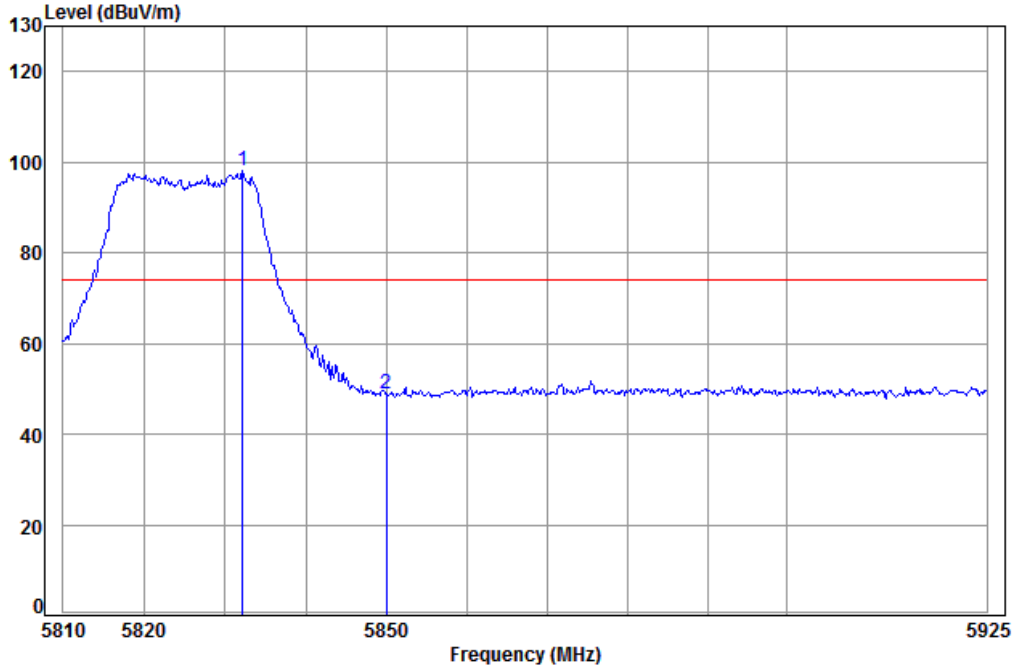
Test mode:	802.11 ac20	Frequency(MHz):	5825	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
Mode: : 5825 Band edge
: AC20

	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	5832.13	8.59	34.28	38.93	94.02	97.96	74.00	23.96
2	5850.00	8.60	34.33	38.94	44.92	48.91	74.00	-25.09

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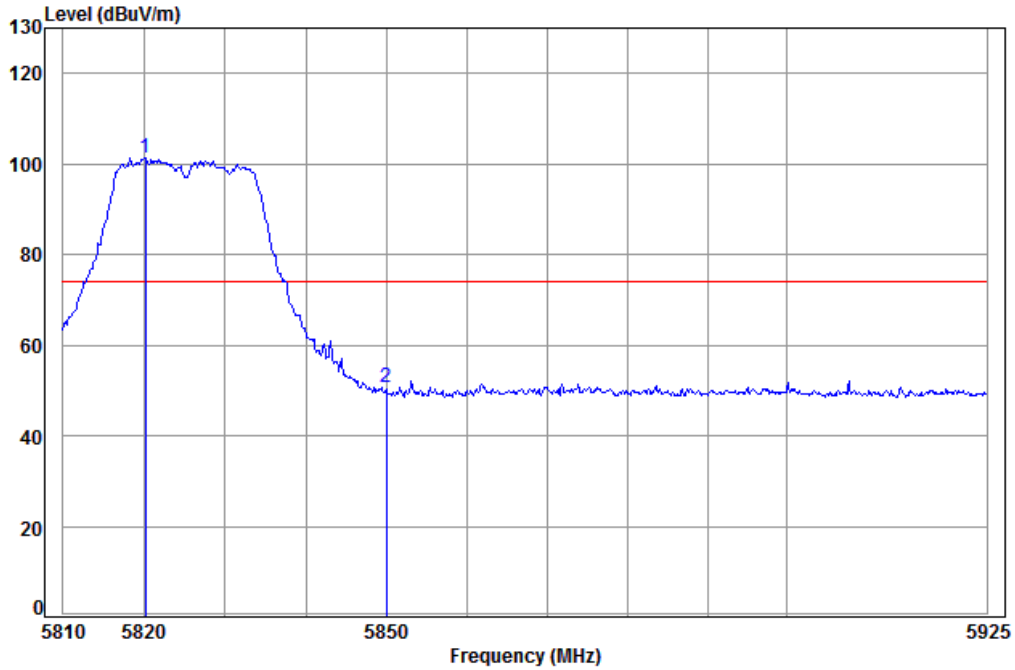
Test mode:	802.11 ac20	Frequency(MHz):	5825	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5825 Band edge
: AC20

	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	5820.14	8.58	34.25	38.93	97.48	101.38	74.00	27.38
2	5850.00	8.60	34.33	38.94	46.72	50.71	74.00	-23.29

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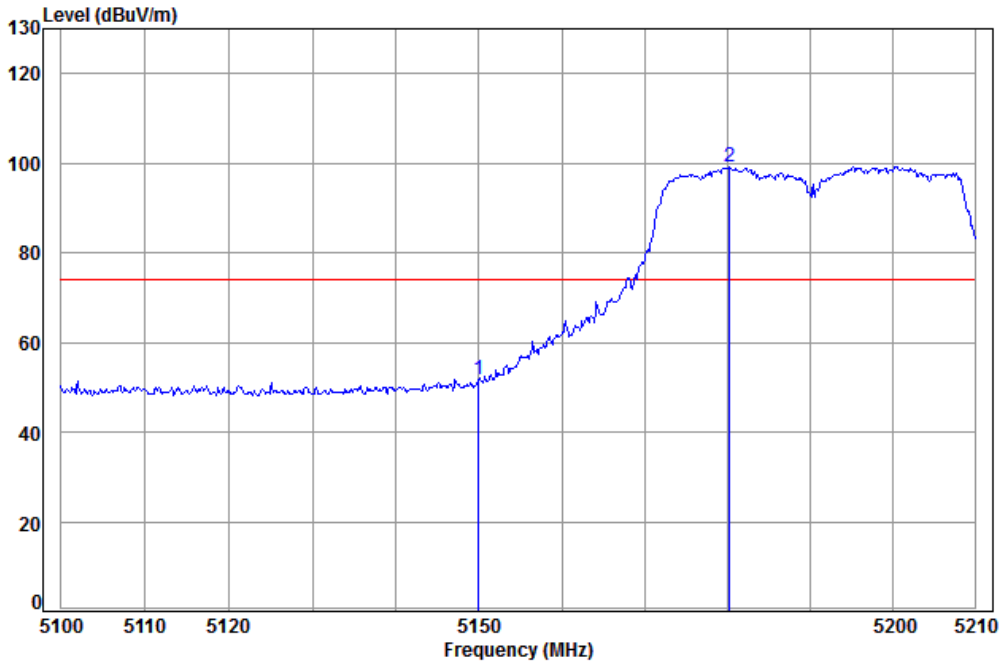
Test mode:	802.11 n40	Frequency(MHz):	5190	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
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	5150.00	8.08	34.07	38.82	48.40	51.73	74.00	-22.27
2 pp	5180.29	8.09	34.03	38.82	96.05	99.35	74.00	25.35

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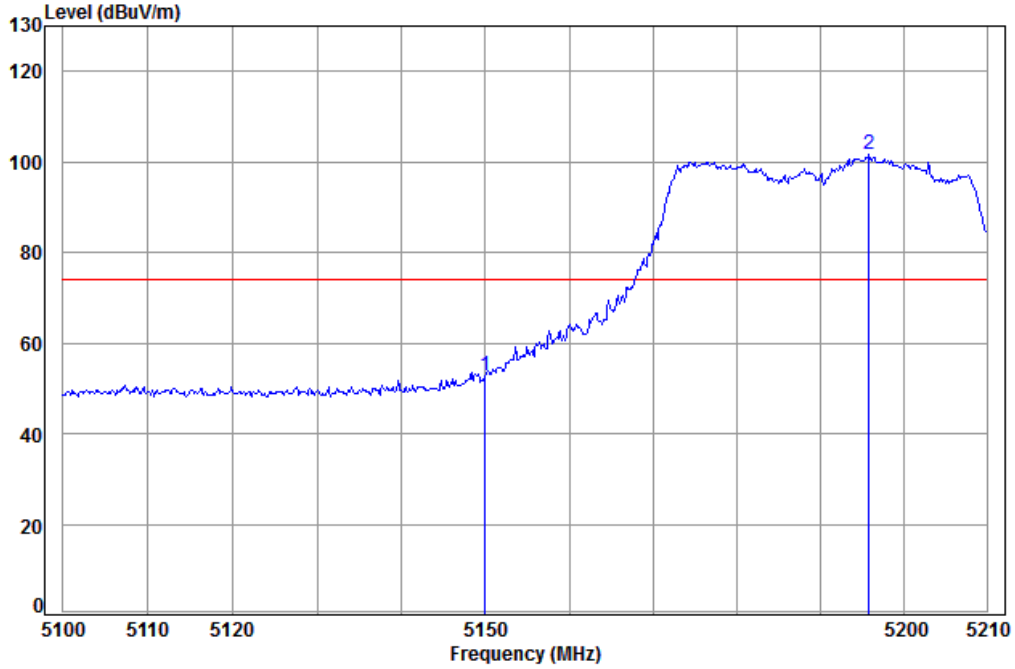
Test mode:	802.11 n40	Frequency(MHz):	5190	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
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	5150.00	8.08	34.07	38.82	49.50	52.83	74.00	-21.17
2 pp	5195.90	8.10	34.01	38.83	98.40	101.68	74.00	27.68

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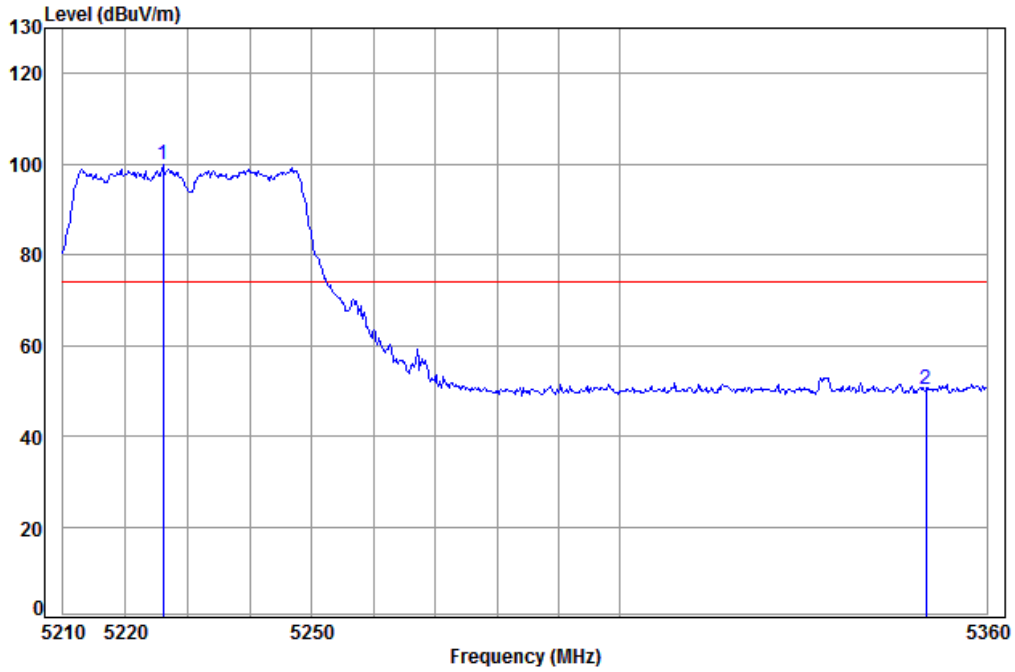
Test mode:	802.11 n40	Frequency(MHz):	5230	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
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	5226.00	8.12	34.05	38.83	96.64	99.98	74.00	25.98
2	5350.00	8.18	34.30	38.85	46.65	50.28	74.00	-23.72

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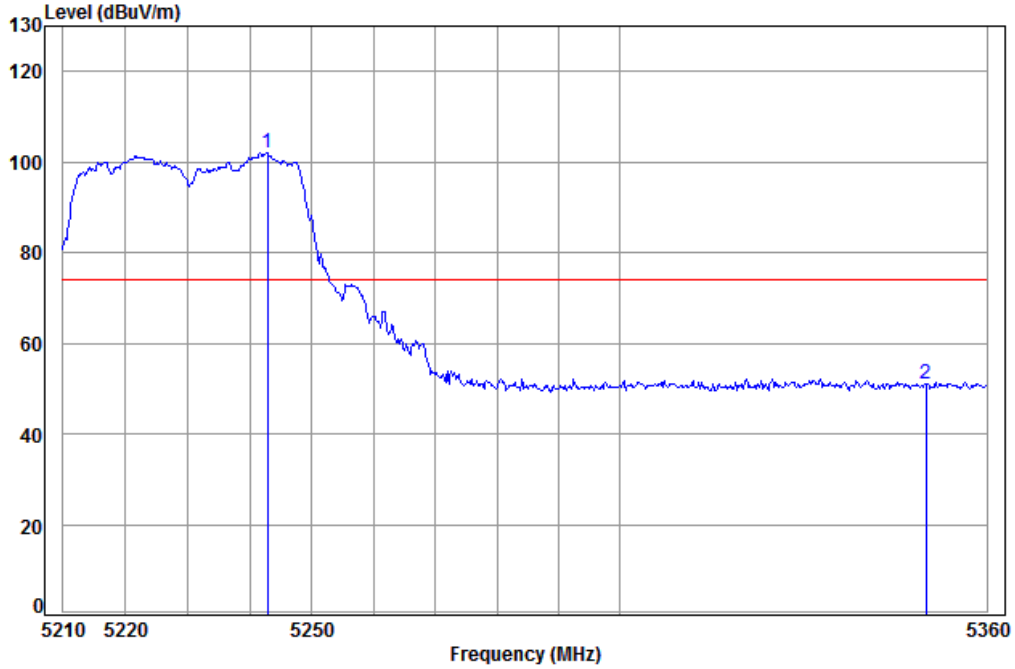
Test mode:	802.11 n40	Frequency(MHz):	5230	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
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	5242.79	8.12	34.09	38.83	98.68	102.06	74.00	28.06
2	5350.00	8.18	34.30	38.85	47.23	50.86	74.00	-23.14

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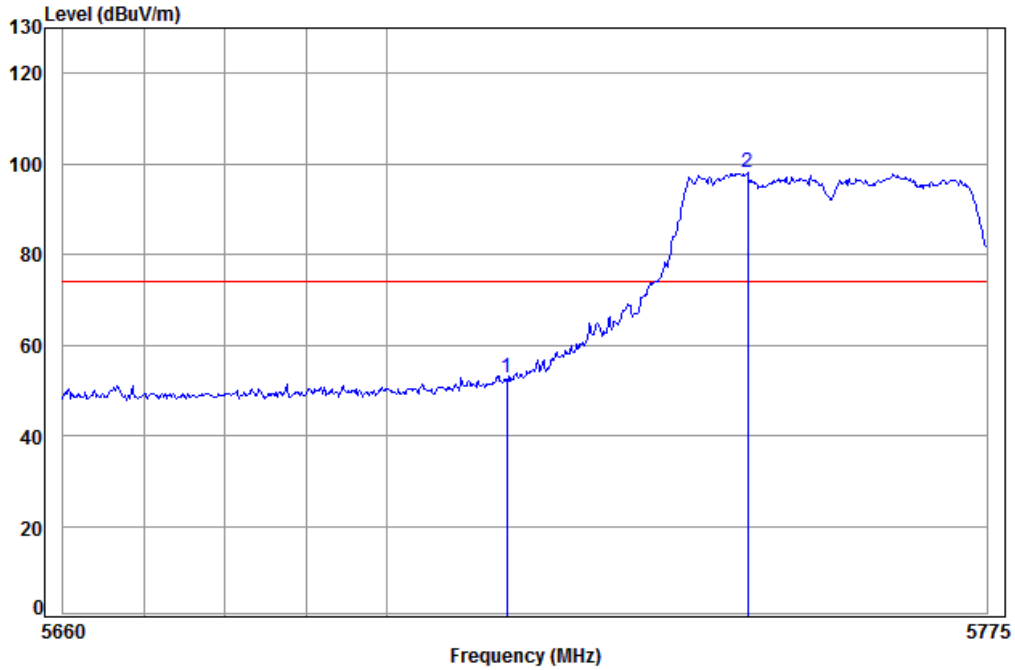
Test mode:	802.11 n40	Frequency(MHz):	5755	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
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	5715.00	8.47	34.24	38.91	49.10	52.90	74.00	-21.10
2 pp	5744.99	8.50	34.23	38.92	94.15	97.96	74.00	23.96

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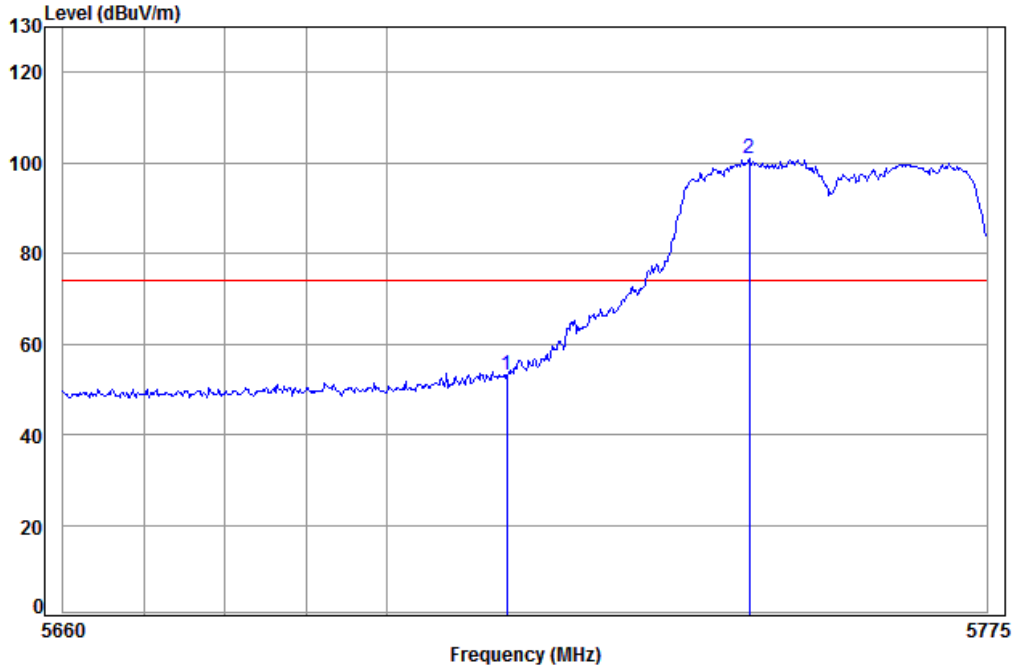
Test mode:	802.11 n40	Frequency(MHz):	5755	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
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	5715.00	8.47	34.24	38.91	49.51	53.31	74.00	-20.69
2 pp	5745.22	8.50	34.23	38.92	97.13	100.94	74.00	26.94

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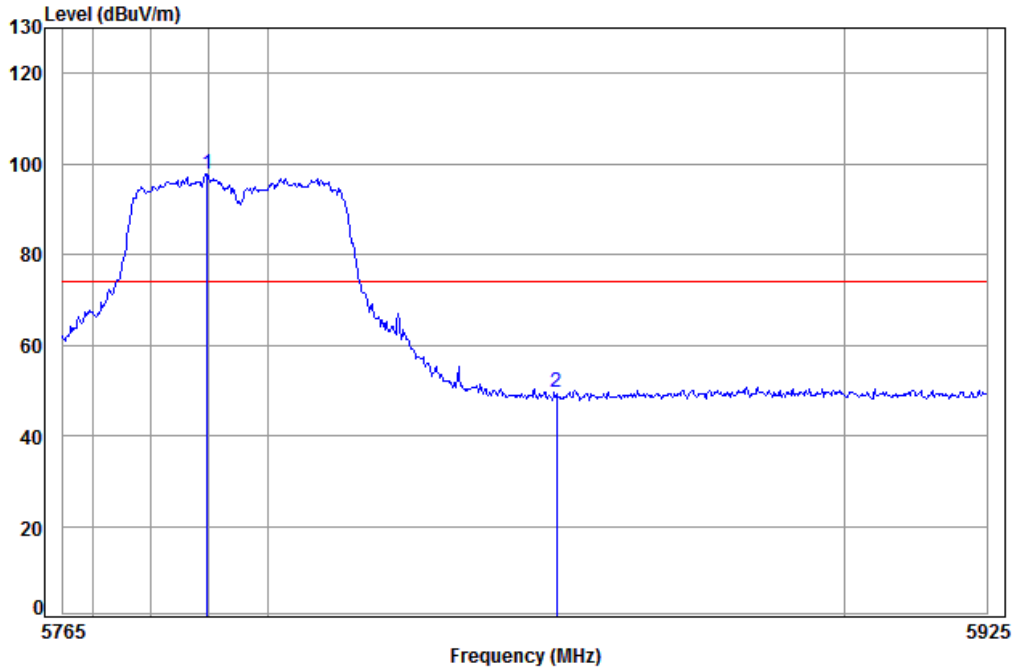
Test mode:	802.11 n40	Frequency(MHz):	5795	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
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	5789.67	8.54	34.21	38.93	93.98	97.80	74.00	23.80
2	5850.00	8.60	34.33	38.94	45.43	49.42	74.00	-24.58

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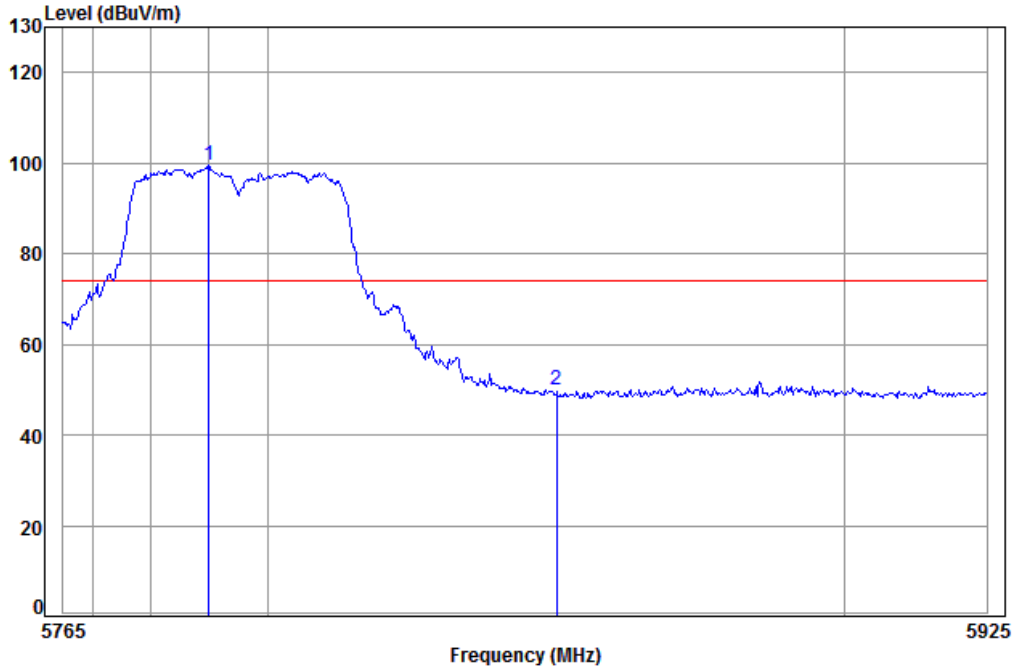
Test mode:	802.11 n40	Frequency(MHz):	5795	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
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	5789.99	8.55	34.20	38.93	95.67	99.49	74.00	25.49
2	5850.00	8.60	34.33	38.94	45.80	49.79	74.00	-24.21

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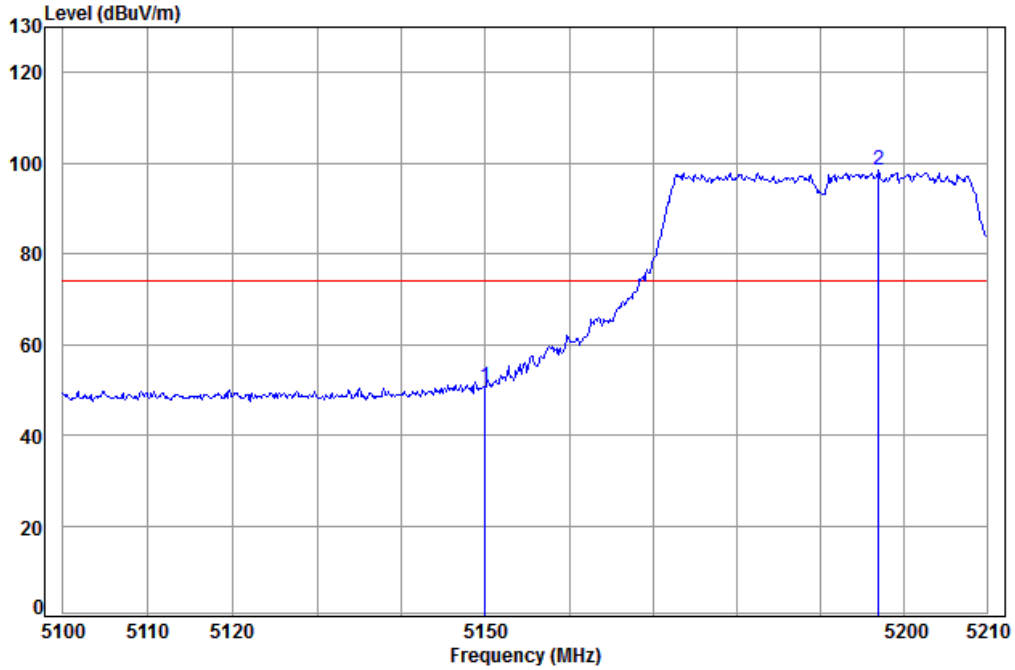
Test mode:	802.11 ac40	Frequency(MHz):	5190	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
Mode: : 5190 Band edge
: AC40

	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	5150.00	8.08	34.07	38.82	47.41	50.74	74.00	-23.26
2 pp	5197.01	8.10	34.00	38.83	95.15	98.42	74.00	24.42

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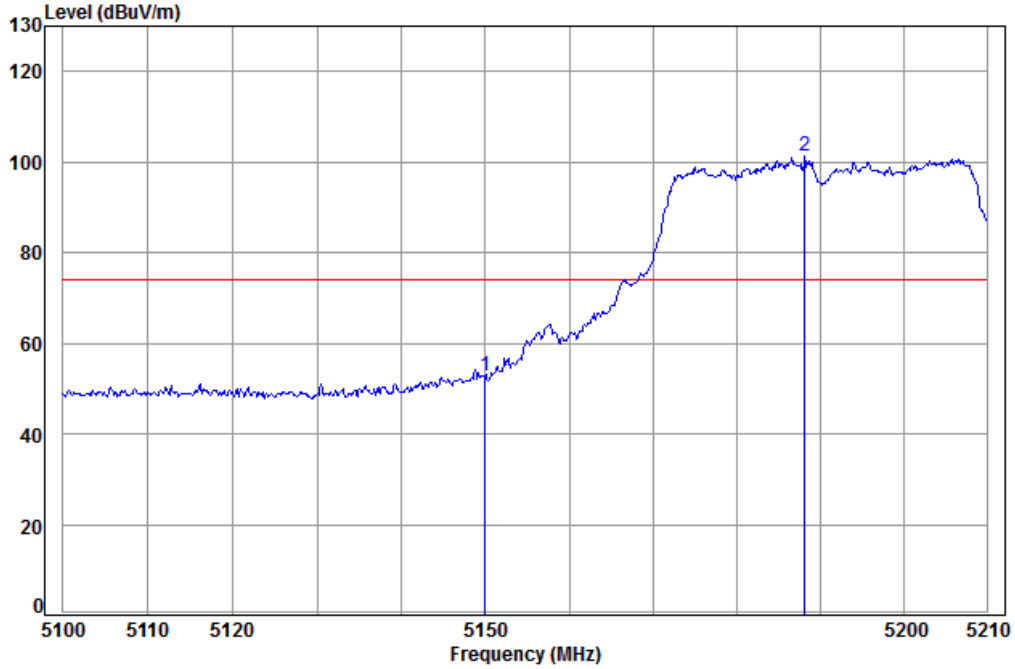
Test mode:	802.11 ac40	Frequency(MHz):	5190	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5190 Band edge
: AC40

	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	5150.00	8.08	34.07	38.82	49.48	52.81	74.00	-21.19
2 pp	5188.14	8.10	34.02	38.82	97.85	101.15	74.00	27.15

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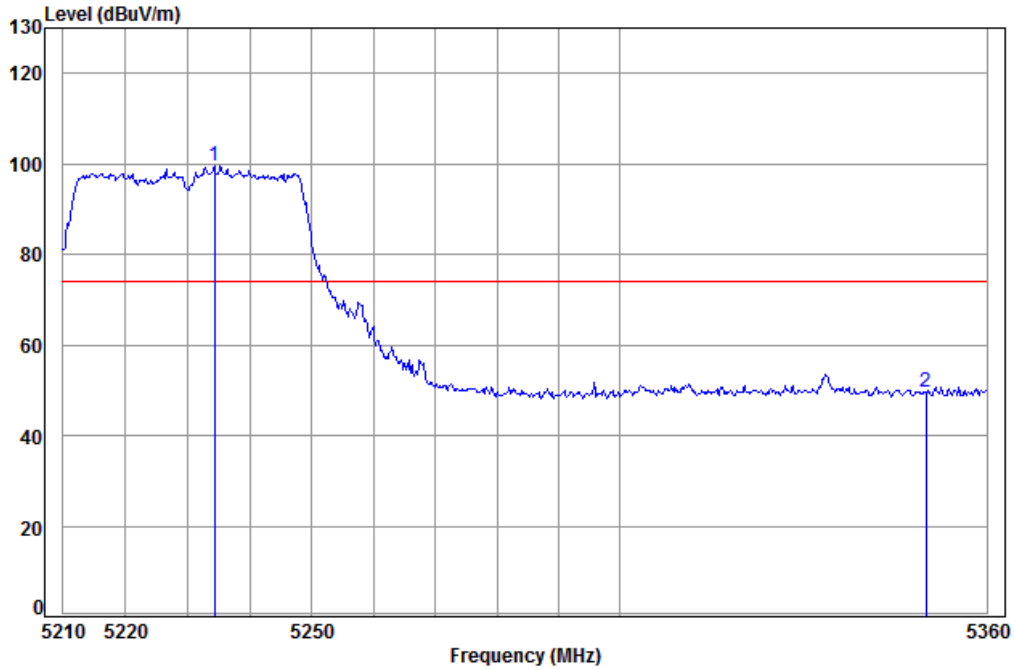
Test mode:	802.11 ac40	Frequency(MHz):	5230	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
Mode: : 5230 Band edge
: AC40

	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	5234.31	8.12	34.07	38.83	96.04	99.40	74.00	25.40
2	5350.00	8.18	34.30	38.85	45.85	49.48	74.00	-24.52

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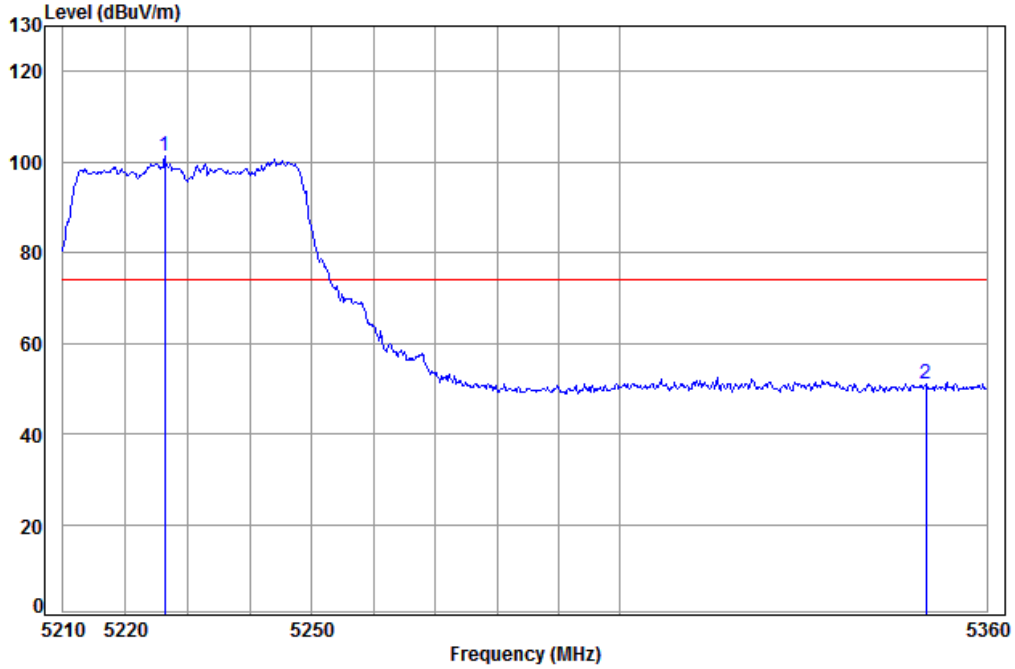
Test mode:	802.11 ac40	Frequency(MHz):	5230	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5230 Band edge
: AC40

	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	5226.29	8.12	34.05	38.83	97.84	101.18	74.00	27.18
2	5350.00	8.18	34.30	38.85	47.30	50.93	74.00	-23.07

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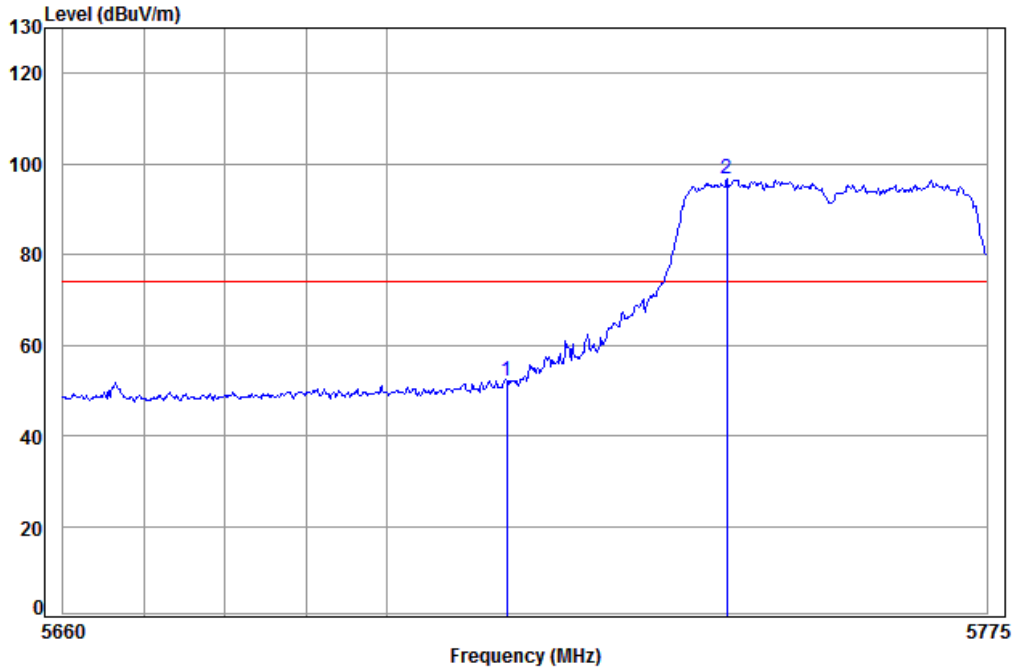
Test mode:	802.11 ac40	Frequency(MHz):	5755	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
Mode: : 5755 Band edge
: AC40

	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	5715.00	8.47	34.24	38.91	48.12	51.92	74.00	-22.08
2 pp	5742.45	8.50	34.23	38.92	93.04	96.85	74.00	22.85

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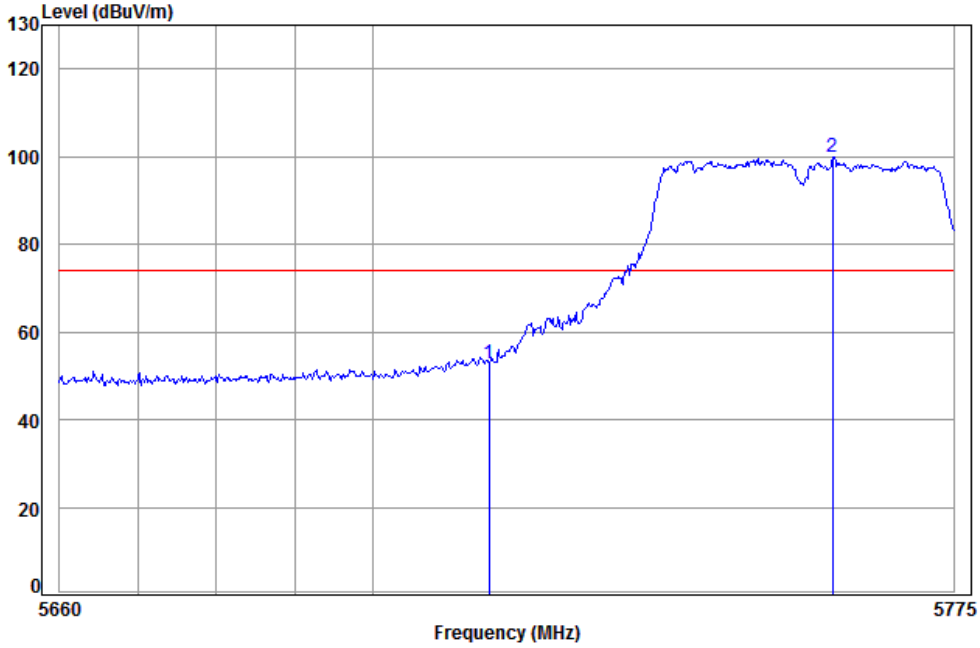
Test mode:	802.11 ac40	Frequency(MHz):	5755	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5755 Band edge
: AC40

	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	5715.00	8.47	34.24	38.91	49.03	52.83	74.00	-21.17
2 pp	5759.34	8.51	34.22	38.92	96.10	99.91	74.00	25.91

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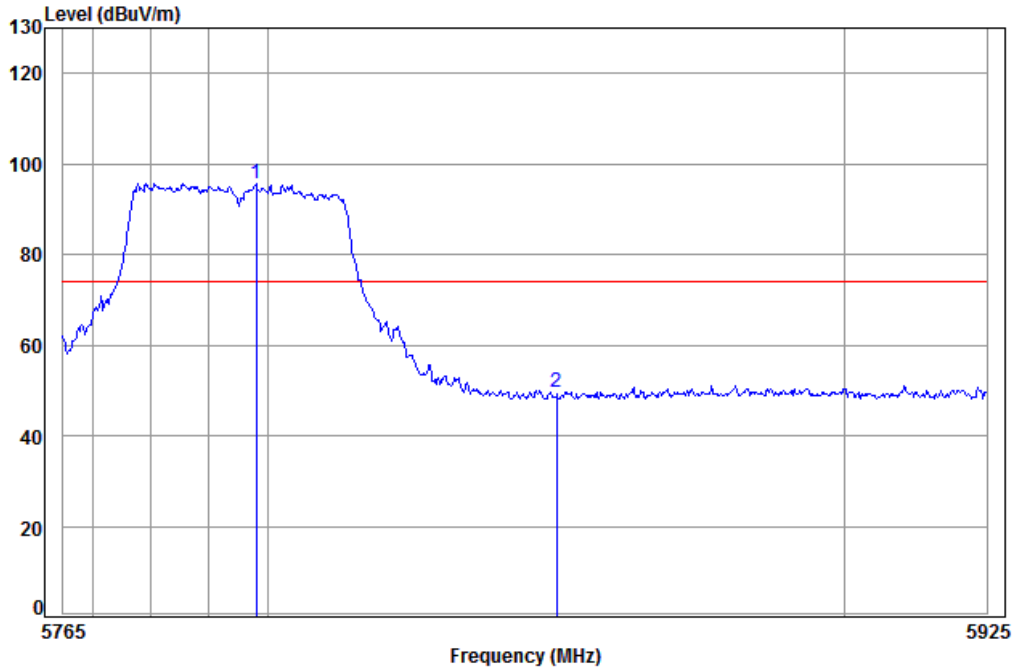
Test mode:	802.11 ac40	Frequency(MHz):	5795	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
Mode: : 5795 Band edge
: AC40

	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	5798.08	8.55	34.20	38.93	91.93	95.75	74.00	21.75
2	5850.00	8.60	34.33	38.94	45.47	49.46	74.00	-24.54

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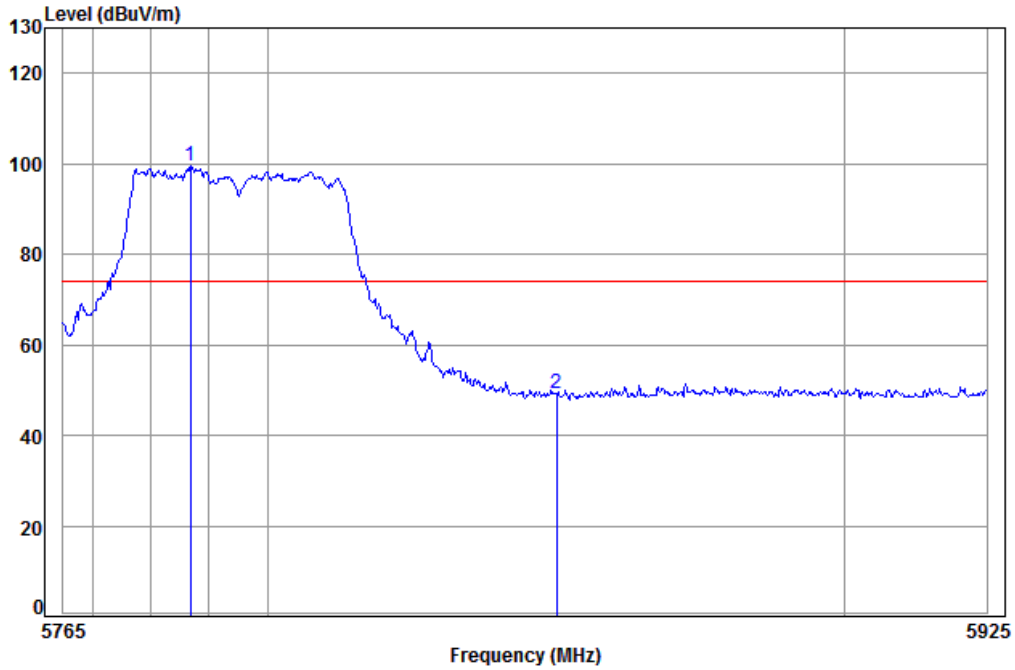
Test mode:	802.11 ac40	Frequency(MHz):	5795	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5795 Band edge
: AC40

	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	5786.82	8.54	34.21	38.93	95.61	99.43	74.00	25.43
2	5850.00	8.60	34.33	38.94	45.41	49.40	74.00	-24.60

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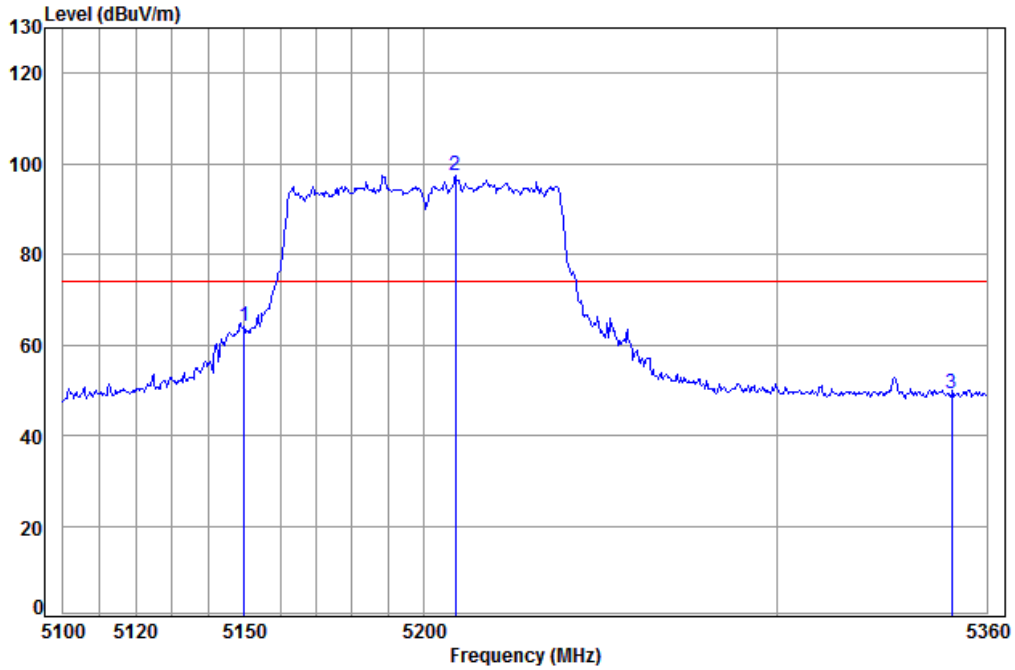
Test mode:	802.11 ac80	Frequency(MHz):	5210	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
Mode: : 5210 Band edge
: AC80

	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	5150.00	8.08	34.07	38.82	60.61	63.94	74.00	-10.06
2 pp	5208.92	8.11	34.02	38.83	94.29	97.59	74.00	23.59
3	5350.00	8.18	34.30	38.85	45.62	49.25	74.00	-24.75

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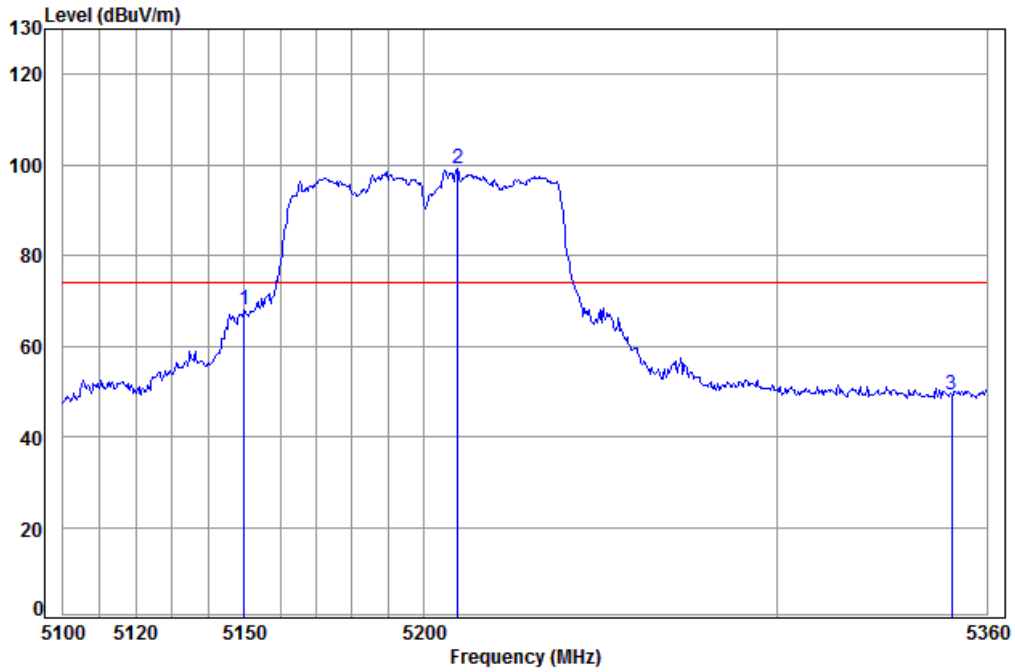
Test mode:	802.11 ac80	Frequency(MHz):	5210	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5210 Band edge
: AC80

	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	5150.00	8.08	34.07	38.82	64.55	67.88	74.00	-6.12
2 pp	5209.44	8.11	34.02	38.83	95.93	99.23	74.00	25.23
3	5350.00	8.18	34.30	38.85	45.52	49.15	74.00	-24.85

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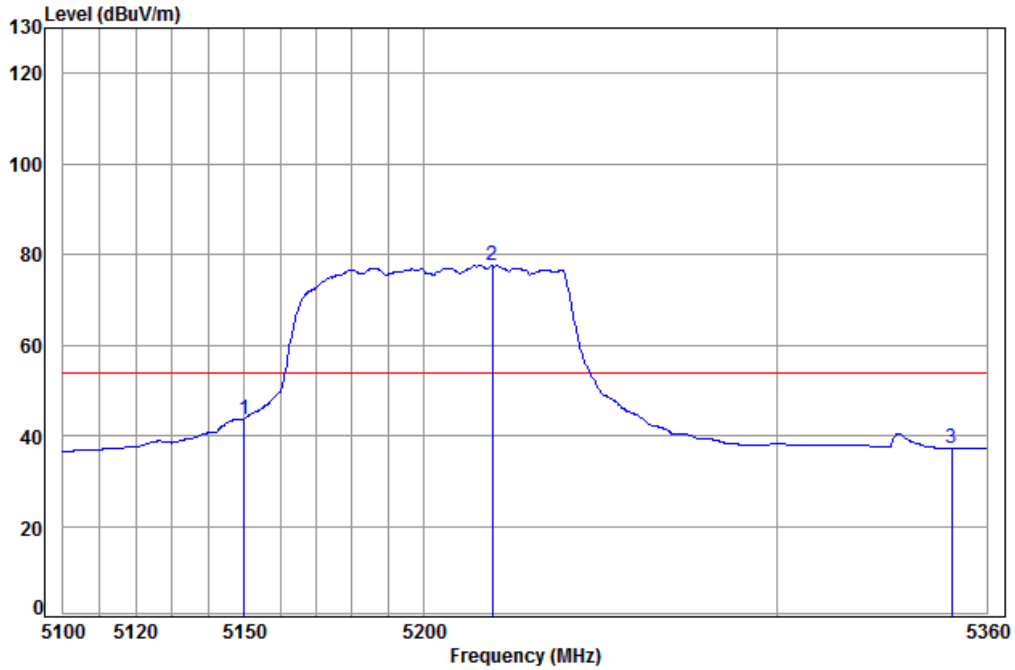
Test mode:	802.11 ac80	Frequency(MHz):	5210	Remark:	Average	Vertical



Condition: 3m Vertical
Job No: : 0840IT
Mode: : 5210 Band edge
: AC80

	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	5150.00	8.08	34.07	38.82	40.32	43.65	54.00	-10.35
2 pp	5219.29	8.11	34.04	38.83	74.23	77.55	54.00	23.55
3	5350.00	8.18	34.30	38.85	33.64	37.27	54.00	-16.73

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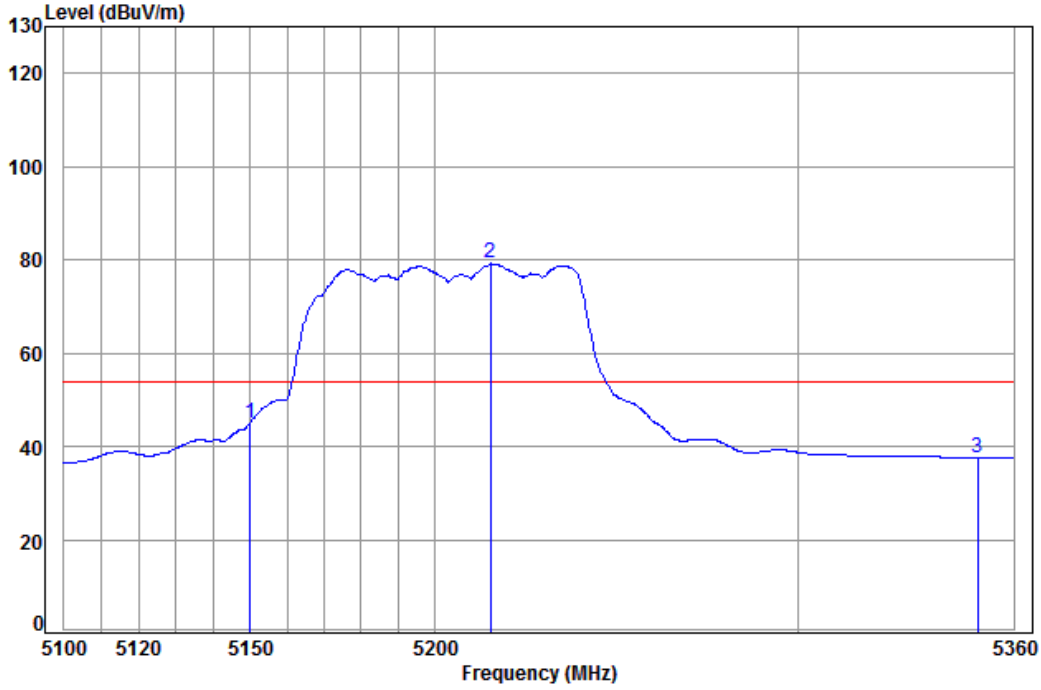
Test mode:	802.11 ac80	Frequency(MHz):	5210	Remark:	Average	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5210 Band edge
: AC80

	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	5150.00	8.08	34.07	38.82	41.69	45.02	54.00	-8.98
2 pp	5215.14	8.11	34.03	38.83	75.88	79.19	54.00	25.19
3	5350.00	8.18	34.30	38.85	34.02	37.65	54.00	-16.35

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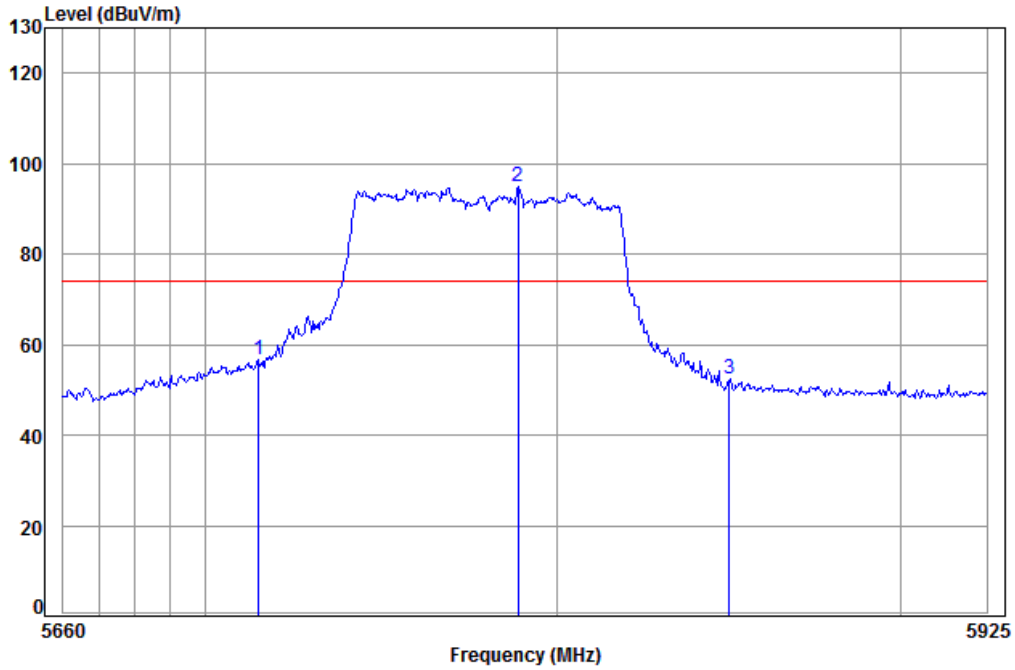
Test mode:	802.11 ac80	Frequency(MHz):	5775	Remark:	Peak	Vertical



Condition: 3m Vertical
Job No: : 0840IT
Mode: : 5775 Band edge
: AC80

	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	5715.00	8.47	34.24	38.91	52.70	56.50	74.00	-17.50
2 pp	5789.13	8.54	34.21	38.93	91.05	94.87	74.00	20.87
3	5850.00	8.60	34.33	38.94	48.59	52.58	74.00	-21.42

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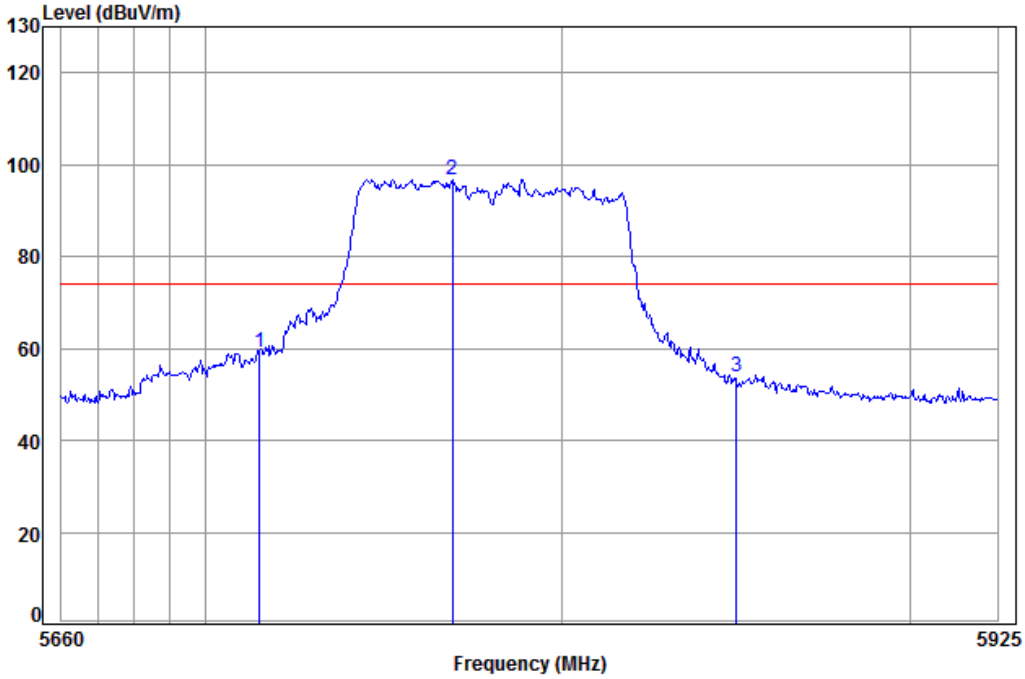
Test mode:	802.11 ac80	Frequency(MHz):	5775	Remark:	Peak	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5775 Band edge
: AC80

	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	5715.00	8.47	34.24	38.91	55.43	59.23	74.00	-14.77
2 pp	5769.30	8.52	34.22	38.92	92.90	96.72	74.00	22.72
3	5850.00	8.60	34.33	38.94	49.77	53.76	74.00	-20.24

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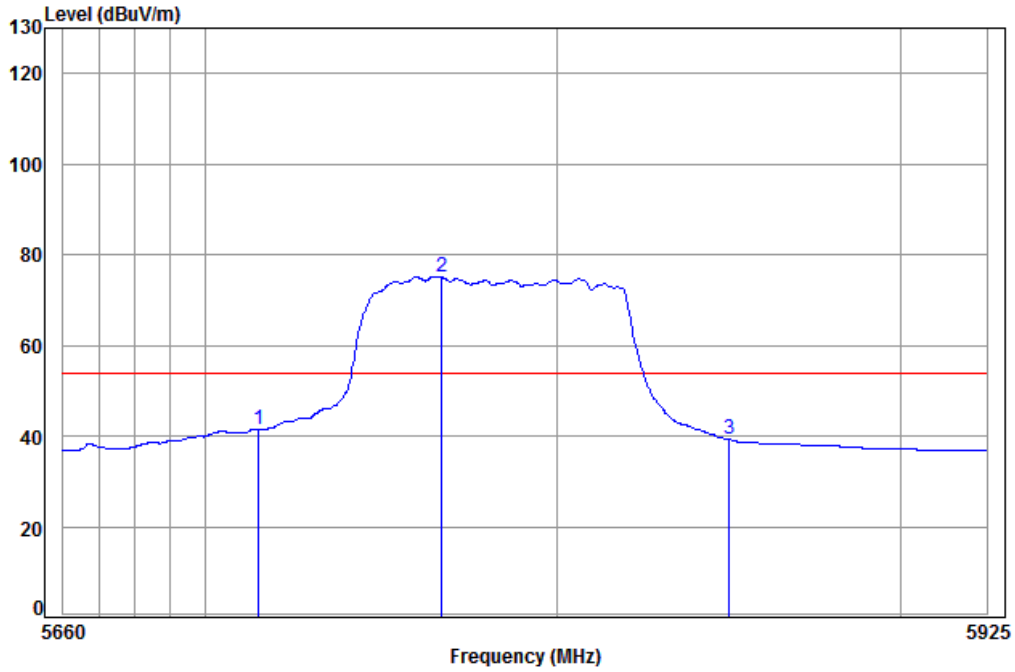
Test mode:	802.11 ac80	Frequency(MHz):	5775	Remark:	Average	Vertical



Condition: 3m Vertical
Job No: : 0840IT
Mode: : 5775 Band edge
: AC80

	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	5715.00	8.47	34.24	38.91	37.76	41.56	54.00	-12.44
2 pp	5767.19	8.52	34.22	38.92	71.37	75.19	54.00	21.19
3	5850.00	8.60	34.33	38.94	35.21	39.20	54.00	-14.80

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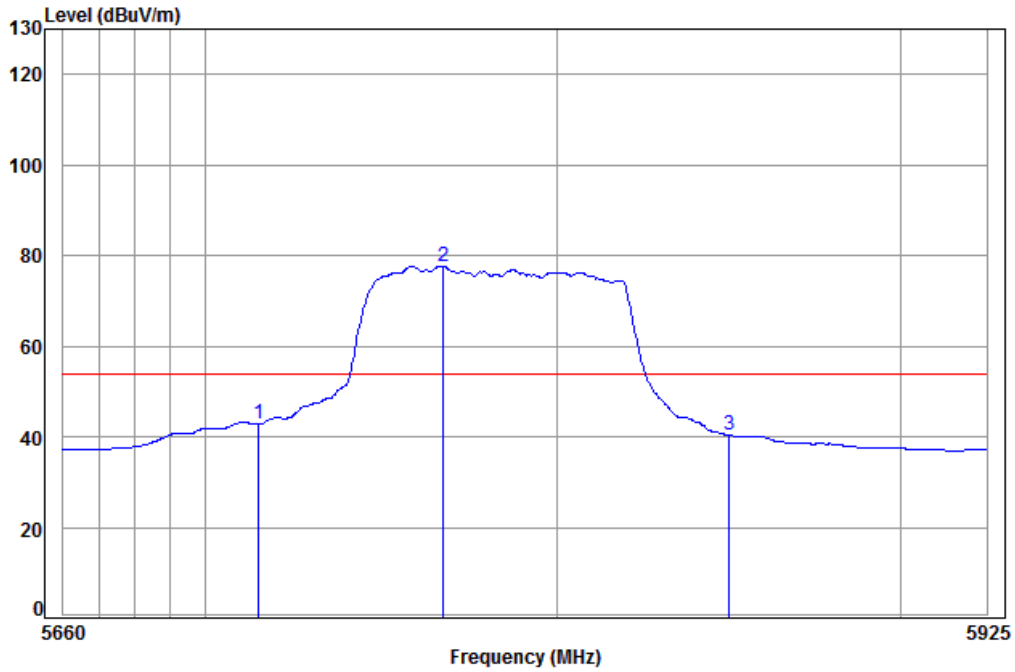
Test mode:	802.11 ac80	Frequency(MHz):	5775	Remark:	Average	Horizontal



Condition: 3m Horizontal
Job No: : 0840IT
Mode: : 5775 Band edge
: AC80

	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	5715.00	8.47	34.24	38.91	39.04	42.84	54.00	-11.16
2 pp	5767.71	8.52	34.22	38.92	73.93	77.75	54.00	23.75
3	5850.00	8.60	34.33	38.94	36.31	40.30	54.00	-13.70

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

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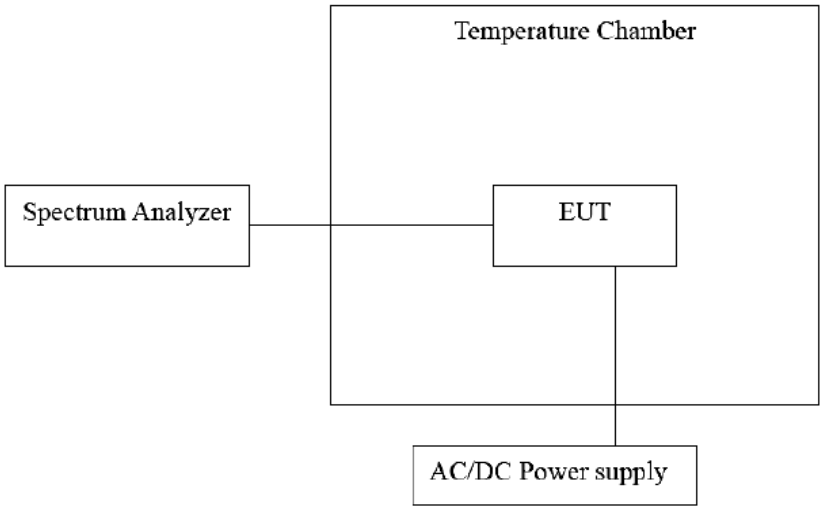
6.10 Frequency Stability

Test Requirement:	47 CFR Part 15 Section 15.407(g)
Test Method:	ANSI C63.10: 2013, section 6.8
Test Setup:	
Limit:	The frequency tolerance shall be maintained within the band of operation frequency over a temperature variation of -5 degrees to 45 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 25 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 +25 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; MCS0 of rate is the worst case of 802.11n(HT20); MCS0 of rate is the worst case of 802.11n(HT40); 1SS0 of rate is the worst case of 802.11ac(HT20); 1SS0 of rate is the worst case of 802.11ac(HT40); 1SS0 of rate is the worst case of 802.11ac(HT80) Only the worst case is recorded in the report.

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Test plot as follows:

Test mode:	802.11a	Frequency(MHz):	5180

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5180.0054	5400	Pass
35		5180.0032	3200	Pass
25		5179.9976	-2400	Pass
15		5179.9932	-6800	Pass
5		5180.0057	5700	Pass
-5		5180.0046	4600	Pass
25	138	5179.9954	-4600	Pass
	120	5180.0023	2300	Pass
	102	5179.9946	-5400	Pass

Test mode:	802.11a	Frequency(MHz):	5200

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5200.0078	7800	Pass
35		5200.0065	6500	Pass
25		5200.0043	4300	Pass
15		5200.0054	5400	Pass
5		5199.9962	-3800	Pass
-5		5199.9978	-2200	Pass
25	138	5199.9984	-1600	Pass
	120	5200.0096	9600	Pass
	102	5200.0010	1000	Pass

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Test mode:	802.11a	Frequency(MHz):	5240

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5240.0081	8100	Pass
35		5240.0073	7300	Pass
25		5240.0069	6900	Pass
15		5239.9957	-4300	Pass
5		5239.9942	-5800	Pass
-5		5239.9965	-3500	Pass
25	138	5240.0054	5400	Pass
	120	5240.0031	3100	Pass
	102	5239.9987	-1300	Pass

Test mode:	802.11a	Frequency(MHz):	5745

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5745.0083	8300	Pass
35		5745.0079	7900	Pass
25		5745.0067	6700	Pass
15		5745.0058	5800	Pass
5		5744.9969	-3100	Pass
-5		5744.9946	-5400	Pass
25	138	5745.0087	8700	Pass
	120	5745.0098	9800	Pass
	102	5745.0063	6300	Pass

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Test mode:	802.11a	Frequency(MHz):	5785

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5785.0078	7800	Pass
35		5785.0064	6400	Pass
25		5785.0049	4900	Pass
15		5785.0052	5200	Pass
5		5785.0074	7400	Pass
-5		5785.0041	4100	Pass
25	138	5785.0063	6300	Pass
	120	5785.0059	5900	Pass
	102	5784.9963	-3700	Pass

Test mode:	802.11a	Frequency(MHz):	5825

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5825.00789	7890	Pass
35		5825.0013	1300	Pass
25		5825.0039	3900	Pass
15		5824.9964	-3600	Pass
5		5824.9923	-7700	Pass
-5		5824.9987	-1300	Pass
25	138	5825.0078	7800	Pass
	120	5825.0062	6200	Pass
	102	5825.0014	1400	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5180.0042	4200	Pass
35		5180.0095	9500	Pass
25		5179.9969	-3100	Pass
15		5179.9929	-7100	Pass
5		5180.0041	4100	Pass
-5		5180.0064	6400	Pass
25	138	5180.0031	3100	Pass
	120	5179.9949	-5100	Pass
	102	5179.9953	-4700	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5200.0067	6700	Pass
35		5200.0053	5300	Pass
25		5200.0079	7900	Pass
15		5200.0068	6800	Pass
5		5200.0049	4900	Pass
-5		5200.0027	2700	Pass
25	138	5199.9911	-8900	Pass
	120	5199.9989	-1100	Pass
	102	5200.0026	2600	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5240.0063	6300	Pass
35		5240.0075	7500	Pass
25		5240.0089	8900	Pass
15		5240.0064	6400	Pass
5		5240.0061	6100	Pass
-5		5240.0059	5900	Pass
25	138	5240.0082	8200	Pass
	120	5239.9976	-2400	Pass
	102	5239.9945	-5500	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5745.0043	4300	Pass
35		5745.0061	6100	Pass
25		5745.0082	8200	Pass
15		5745.0064	6400	Pass
5		5745.0045	4500	Pass
-5		5745.0037	3700	Pass
25	138	5745.0065	6500	Pass
	120	5744.9963	-3700	Pass
	102	5745.0089	8900	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5785.0071	7100	Pass
35		5785.0085	8500	Pass
25		5785.0049	4900	Pass
15		5784.9938	-6200	Pass
5		5784.9969	-3100	Pass
-5		5784.9979	-2100	Pass
25	138	5785.0061	6100	Pass
	120	5785.0058	5800	Pass
	102	5785.0066	6600	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5824.9994	-6000	Pass
35		5824.9956	-4400	Pass
25		5824.9969	-3100	Pass
15		5824.9974	-2600	Pass
5		5825.0012	1200	Pass
-5		5825.0073	7300	Pass
25	138	5825.0066	6600	Pass
	120	5824.9972	-2800	Pass
	102	5825.0059	5900	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5190.0087	8700	Pass
35		5190.0075	7500	Pass
25		5190.0064	6400	Pass
15		5190.0038	3800	Pass
5		5190.0059	5900	Pass
-5		5190.0047	4700	Pass
25	138	5189.9969	-3100	Pass
	120	5189.9988	-1200	Pass
	102	5190.0064	6400	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5230.0089	8900	Pass
35		5230.0068	6800	Pass
25		5230.0059	5900	Pass
15		5229.9953	-4700	Pass
5		5229.9987	-1300	Pass
-5		5229.9965	-3500	Pass
25	138	5230.0067	6700	Pass
	120	5230.0052	5200	Pass
	102	5229.9989	-1100	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5755.0074	7400	Pass
35		5755.0081	8100	Pass
25		5755.0089	8900	Pass
15		5755.0072	7200	Pass
5		5755.0068	6800	Pass
-5		5755.0051	5100	Pass
25	138	5755.0043	4300	Pass
	120	5755.0039	3900	Pass
	102	5755.0045	4500	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5794.9982	-1800	Pass
35		5794.9963	-3700	Pass
25		5795.0075	7500	Pass
15		5795.0068	6800	Pass
5		5795.0081	8100	Pass
-5		5795.0069	6900	Pass
25	138	5795.0055	5500	Pass
	120	5794.9961	-3900	Pass
	102	5794.9973	-2700	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5180.0049	4900	Pass
35		5180.0068	6800	Pass
25		5179.9973	-2700	Pass
15		5179.9991	-9000	Pass
5		5180.0046	4600	Pass
-5		5180.0025	2500	Pass
25	138	5180.0074	7400	Pass
	120	5179.9938	-6200	Pass
	102	5179.9954	-4600	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5200.0086	8600	Pass
35		5200.0074	7400	Pass
25		5200.0065	6500	Pass
15		5200.0078	7800	Pass
5		5200.0061	6100	Pass
-5		5200.0029	2900	Pass
25	138	5199.9972	-2800	Pass
	120	5199.9988	-1200	Pass
	102	5200.0047	4700	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5240.0073	7300	Pass
35		5240.0029	2900	Pass
25		5240.0086	8600	Pass
15		5240.0082	8200	Pass
5		5240.0049	4900	Pass
-5		5240.0027	2700	Pass
25	138	5240.0065	6500	Pass
	120	5239.9948	-5200	Pass
	102	5239.9994	-6000	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5745.0096	9600	Pass
35		5745.0087	8700	Pass
25		5745.0063	6300	Pass
15		5745.0059	5900	Pass
5		5745.0063	6300	Pass
-5		5745.0078	7800	Pass
25	138	5745.0091	9100	Pass
	120	5744.9943	-5700	Pass
	102	5745.0056	5600	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5785.0088	8800	Pass
35		5785.0094	9400	Pass
25		5785.0064	6400	Pass
15		5784.9973	-2700	Pass
5		5784.9959	-4100	Pass
-5		5784.9977	-2300	Pass
25	138	5785.0068	6800	Pass
	120	5785.0029	2900	Pass
	102	5785.0031	3100	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5824.9982	-1800	Pass
35		5824.9971	-2900	Pass
25		5824.9969	-3100	Pass
15		5824.9954	-4600	Pass
5		5825.0043	4300	Pass
-5		5825.0019	1900	Pass
25	138	5825.0058	5800	Pass
	120	5824.9971	-2900	Pass
	102	5825.0063	6300	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5190.0091	9100	Pass
35		5190.0063	6300	Pass
25		5190.0052	5200	Pass
15		5190.0078	7800	Pass
5		5190.0069	6900	Pass
-5		5190.0029	2900	Pass
25	138	5189.9914	-8600	Pass
	120	5189.9969	-3100	Pass
	102	5190.0046	4600	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5230.0091	9100	Pass
35		5230.0063	6300	Pass
25		5230.0074	7400	Pass
15		5229.9982	-1800	Pass
5		5229.9969	-3100	Pass
-5		5229.9973	-2700	Pass
25	138	5230.0068	6800	Pass
	120	5230.0087	8700	Pass
	102	5229.9966	-3400	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5755.00886	8860	Pass
35		5755.0059	5900	Pass
25		5755.0073	7300	Pass
15		5755.0052	5200	Pass
5		5755.0083	8300	Pass
-5		5755.0039	3900	Pass
25	138	5755.0068	6800	Pass
	120	5755.0074	7400	Pass
	102	5755.0015	1500	Pass

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

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5794.9979	-2100	Pass
35		5794.9984	-1600	Pass
25		5795.0036	3600	Pass
15		5795.0089	8900	Pass
5		5795.0061	6100	Pass
-5		5795.0023	2300	Pass
25	138	5795.0067	6700	Pass
	120	5794.9978	-2200	Pass
	102	5794.9939	-6100	Pass

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Test mode:	802.11ac(HT80)	Frequency(MHz):	5210

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5210.0094	9400	Pass
35		5210.0067	6700	Pass
25		5210.0083	8300	Pass
15		5210.0069	6900	Pass
5		5210.0074	7400	Pass
-5		5210.0033	3300	Pass
25	138	5210.0059	5900	Pass
	120	5210.0068	6800	Pass
	102	5210.0075	7500	Pass

Test mode:	802.11ac(HT80)	Frequency(MHz):	5775

Temperature (℃)	Voltage(VAC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	120	5774.9974	-2600	Pass
35		5774.9983	-1700	Pass
25		5775.0068	6800	Pass
15		5775.0029	2900	Pass
5		5775.0041	4100	Pass
-5		5775.0025	2500	Pass
25	138	5775.0069	6900	Pass
	120	5774.9929	-7100	Pass
	102	5774.9981	-1900	Pass

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6.11 Automatically Discontinue Transmission Requirement

Test Requirement:	47 CFR Part 15 Section 15.407 (c)
Declaration from applicant	WIFI chip (QCA9880) 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.

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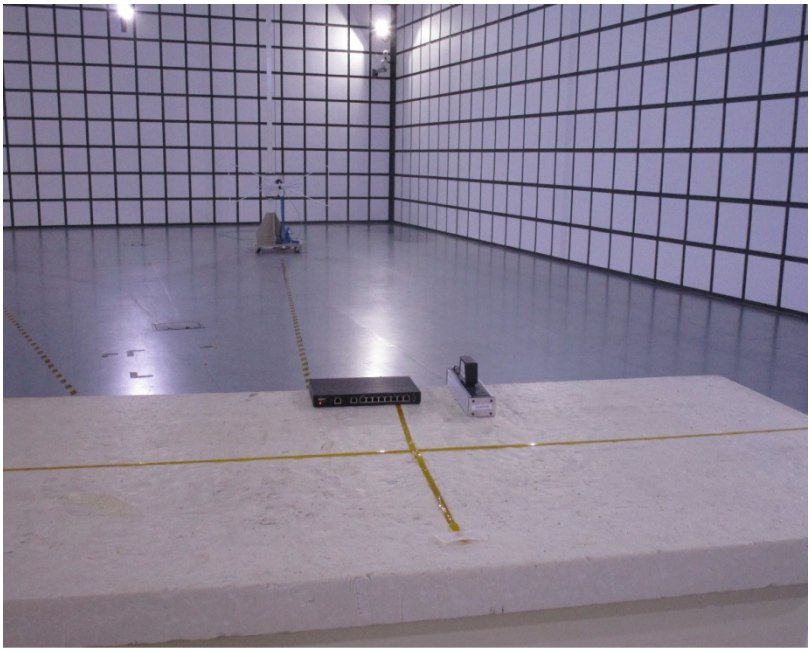
7 Photographs - EUT Test Setup

Test model No.: Balance One

7.1 Conducted Emission

7.2 Radiated Emission



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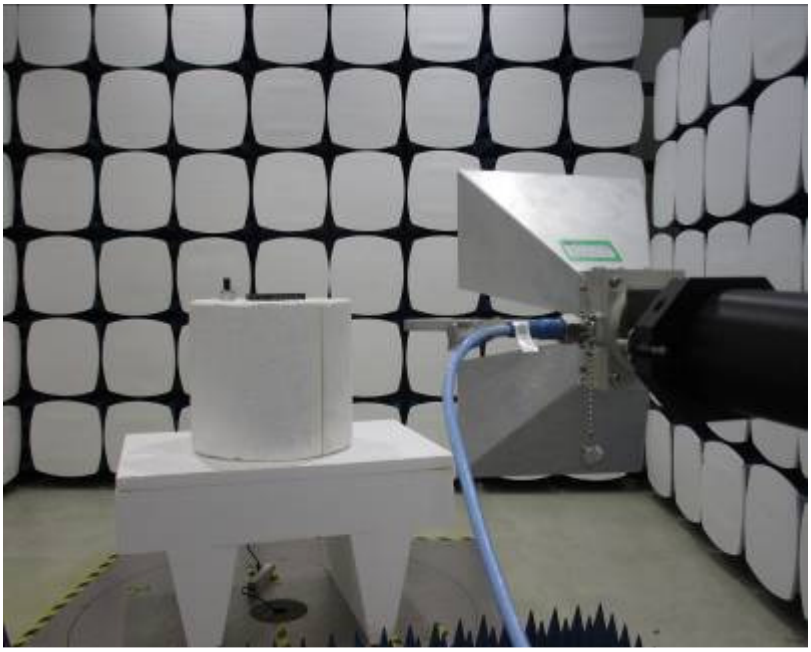
7.3 Radiated Spurious Emission



8 Photographs - EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for HKES1605000840IT.

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