 <p>CERTIFICATE 2518.08</p> <p>MS ISO/IEC 17025 TESTING SAMM NO. 0825</p>
<p>MOTOROLA PENANG ADV. COMM. LABORATORY Motorola Solutions Malaysia Sdn. Bhd. Plot 2A Medan Bayan Lepas, Mukim 12, S.W.D. 11900 Bayan Lepas, Penang, Malaysia.</p>	<p>FCC / IC TEST REPORT Report Revision : Rev.G</p>
<p>Date/s Tested : 31-Oct-2021 - 24-Dec-2021 Report Issue Date : 29-Mar-2023 Manufacturer/Location : Motorola Solutions Malaysia SDN BHD Manufacturer Address : Plot 2A Medan Bayan Lepas, Mukim 12 SWD, 11900 Bayan Lepas, Penang, Malaysia Requestor : LEE SZU SEE Product Type : Hand-held Product Version (PMN) : MXP600 Model Number (HVIN) : AZH77PCN6TZ5AN Frequency Band : 5180-5850 MHz Firmware Version (FVIN) : D55.000.9681 Applicant Name : Motorola Solutions Inc Applicant Address : 8000 West Sunrise Boulevard, Fort Lauderdale, Florida 33322 FCC Registrations : 461337 ISED Registrations : MY0001</p> <p>The equipment was tested accordance to the requirement listed below:</p> <p>(5GHz Wi-Fi) FCC 47 CFR Part 15 Subpart E IC RSS 247 Issue 2 PASS</p>	
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REVISION HISTORY

Revision History	Description	Date	Originator
Rev. A	Initial Report	7-Feb-2022	Gan Boon Teong
Rev. B	Update Frequency Band	14-Jun-2022	Gan Boon Teong
Rev. C	Update Antenna Gain	2-Feb-2023	Gan Boon Teong
Rev. D	Update Summary Table of Maximum Conducted Output Power	3-Mar-2023	Gan Boon Teong
Rev. E	Update Summary Table of Maximum Conducted Output Power	10-Mar-2023	Gan Boon Teong
Rev. F	Update Summary Table of Maximum Conducted Output Power	16-Mar-2023	Gan Boon Teong
Rev. G	Add in Report Issue Date	29-Mar-2023	Gan Boon Teong

1.0. Summary of Test Results

FCC Clause	IC Clause	Test Item	Result	Remarks	Serial Number tested	Tested by
15.407 (a)(1/2/3)	RSS 247 6.2	Maximum Conducted Output Power (Average)	Pass	Highest output power: 802.11a: 11.733 dBm (14.9mW) 802.11n20/ac20: 11.987 dBm (15.8mW)	767TXV0817	Gan
15.407(a) (1/2/3)	RSS 247 6.2	Maximum Power Spectral Density	Pass	NA	767TXV0817	Gan
15.407 (e)	RSS 247 6.2.4	6dB Bandwidth	Pass	a20:1 6.402MHz n20/ac20: 17.601MHz	767TXV0817	Gan
15.407 (g)	RSS Gen 6.11	Frequency Stability	Pass	NA	767TXV0817	Gan
15.407 (b) (1/2/3/4/6)	RSS 247 6.2	Band Edge Radiated Spurious Emission Measurement	Pass	Worst case emission: 66.1149 dBuV/m. Margin: 2.0851 dB, Noise Floor.	767TXV0821 767TXV0826	Abid & Nazirul
15.407 (b) (1/2/3/4/6)	RSS 247 6.2	Radiated Spurious Emission Measurement	Pass	Worst case emission: 61.2489 dBuV/m, Margin: 6.911 dB.	767TXV0821 767TXV0826	Abid & Nazirul
15.207 15.407 (b)(6)	RSS Gen 8.8	AC Powerline Conducted Emission	Pass	NA	NA	NA
15.203	-	Antenna	Pass	Internal antenna is not	NA	NA

	requirement	accessible to the end-user	
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2.0. Measurement Uncertainty

Measurement	Frequency	Expanded Uncertainty (k=1.96) (±)
Radiated Emissions up to 1 GHz (Field Strength)	30MHz ~ 1000MHz	5.88 dB
Radiated Emissions above 1 GHz (Field Strength)	1GHz ~ 18GHz	5.84 dB
	18GHz ~ 40GHz	6.02 dB
Conducted Spurious Emissions	9kHz ~ 12.75GHz	2.82 dB

3.0. Equipment List

Bluetooth ATE # 1 (SW Version: Ate Main_3.1.11)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
POWER SUPPLY	6652A	3640A02941	22-Jan-21	22-Jan-22
ANALYZER SPECTRUM	E4440A	US45303111	14-Jul-21	14-Jul-22
CHAMBER	SH-641	92003820	14-Jul-21	14-Jul-22
N to N RF Cable # 1	SF126/11N/11N	NA	NA	NA

Radiated Emission Station (SW Version: EMC FCC RE v1.6.3)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
EMI TEST RECEIVER	ESIB40	100307	08-Jan-21	08-Jan-22
3m Semi-anechoic Chamber	NA	888032	Not Required	Not Required
TURNTABLE FLUSH MOUNT 2M	T-200-S	N/A	Not Required	Not Required
Bore sight Antenna mast	MBS-500	N/A	Not Required	Not Required
PROGRAMMING CONTROLLER	MF-7802BS	N/A	Not Required	Not Required
POWER SUPPLY (0-60V/0-50A, 1000W)	6032A	41001736	28-Jun-21	28-Jun-22
EMI TEST RECEIVER	ESW44	101731	23-Mar-21	23-Mar-22
DATA LOGGER	SDL500	A.016776	17-Jun-21	17-Jun-22
BILOG ANTENNA	CBL6112D	55546	16-Jun-21	16-Jun-22
BILOG ANTENNA	CBL6112B	2964	4-May-21	4-May-22
DRG HORN FREQ.	SAS-571	1143	24-Feb-21	24-Feb-23
DRG HORN FREQ.	SAS-571	719	13-Sep-21	13-Sep-22
PREAMPLIFIER	PAM-0118	427	13-May-20	13-May-23
SIGNAL GENERATOR	SMB100A	180683	13-Apr-21	13-Apr-24
LOOP ANTENNA	6502	00203479	05-Feb-21	05-Feb-22
BROAD-BAND HORN ANTENNA	BBHA9170	BBHA9170255	04-Feb-21	04-Feb-22

4.0. General Information

General Description of EUT:

Product	Hand-held
Brand	Motorola Solutions
Test Model	MXP600
Power Supply Rating	3.8Vdc (Battery)
Mode of operation	WLAN 5GHz
Modulation Type	QPSK, BPSK, 16QAM, 64QAM, 256QAM
Modulation Technology	OFDM
Transfer Rate	802.11a: 6.0/9.0/12.0/18.0/24.0/36.0/48.0/54.0 Mbps 802.11n: up to MCS15 802.11ac: up to MCS9
Operating Frequency	5.180 ~ 5.240 GHz, 5.260 ~ 5.320 GHz, 5.50 ~ 5.720 GHz, 5.745 ~ 5.825 GHz
Output Power (26 EBW or 99% OBW)	15.85 mW for 5.180 ~ 5.240 GHz 15.85 mW for 5.260 ~ 5.320 GHz 15.85 mW for 5.50 ~ 5.720 GHz 15.85 mW for 5.745 ~ 5.825 GHz
Antenna Type	Inverted-L Monopole with 4.1 dBi gain
SW Version	D55.000.9681

Note:

The EUT contains following accessory devices and data cable:

Item	Brand	Model or P/N
BELIZE TIA4950 IMPRES HIGH CAP LI ION BATTERY 2850M2900T	MOTOROLA	PMNN4802A
BOTTOM CONNECTOR SERIAL DATA CABLE	MOTOROLA	PMKN4127A
AC Charger	MOTOROLA	PS000227A31-CF1

Description of Test Modes:

For 5180 to 5240 MHz:

Channels for 802.11a, 802.11n, 802.11ac (HT20, VHT20)

Channel	Frequency (MHz)
36	5180
40	5200
44	5220
48	5240

Channels for 802.11n, 802.11ac (HT40, VHT40)

Channel	Frequency (MHz)
38	5190
46	5230

Channels for 802.11ac (VHT80)

Channel	Frequency (MHz)
42	5210

For 5260 to 5320 MHz:

Channels for 802.11a, 802.11n, 802.11ac (HT20, VHT20)

Channel	Frequency (MHz)
52	5260
56	5280
60	5300
64	5320

Channels for 802.11n, 802.11ac (HT40, VHT40)

Channel	Frequency (MHz)
54	5270
62	5310

Channels for 802.11ac (VHT80)

Channel	Frequency (MHz)
58	5290

For 5500 to 5720 MHz:

Channels for 802.11a, 802.11n, 802.11ac (HT20, VHT20)

Channel	Frequency (MHz)
100	5500
104	5520
108	5540
112	5560
116	5580
120	5600
124	5620
128	5640
132	5660
136	5680
140	5700
144	5720

Channels for 802.11n, 802.11ac (HT40, VHT40)

Channel	Frequency (MHz)
102	5510
110	5550
118	5590
126	5630
134	5670
142	5710

Channels for 802.11ac (VHT80)

Channel	Frequency (MHz)
106	5530
122	5610
138	5690

For 5745 to 5825 MHz:

Channels for 802.11a, 802.11n, 802.11ac (HT20, VHT40)

Channel	Frequency(MHz)
149	5745
153	5765
157	5785
161	5805
165	5825

Channels for 802.11n, 802.11ac (HT40, VHT40)

Channel	Frequency(MHz)
151	5755
159	5795

Channels for 802.11ac (VHT80)

Channel	Frequency (MHz)
155	5775

General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, the EUT is to comply with the requirements of the following standards:

FCC Part15, Subpart E (15.407)

789033 D02 General UNII Test Procedures New Rules v01r04

644545 D03 Guidance for IEEE 802 11ac New Rules v01

ANSI C63.10-2013

RSS 247 Issue 2, RSS Gen

All test have been performed and recorded as per above standards.

Deviation from standard

Not applicable as no deviation from standard test method

Modifications to EUT

No modifications were done to the UUT to facilitate the tests in this report.

Test configuration of EUT

All relevant configurations involving radio models and accessories (including chargers, batteries, antennas) were assessed. Only worst case configurations will be included in this report.

5.0. Test Mode Applicability and Test Channel Detail

EUT Configure Mode	Applicable to				Description
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	Power from adapter
B	x	√	x	x	Power from carcharger (12Vdc)
C	x	√	x	x	Power from carcharger (24Vdc)

Where:

RE≥1G: Radiated Emission above 1GHz & Band edge Measurement

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

Note: The EUT had been pre-scanned on the position of each 3 axis planes. The worst case was found when positioned on **Y-plane**.

Radiated Emission Test (Above 1GHz)

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Frequency Band	MODE	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36-48	36,44,48	OFDM	BPSK	6.0
-	5180-5240	802.11n/ac (HT20, VHT20)	36-48	36,44,48	OFDM	BPSK	6.5
-	5180-5240	802.11n/ac (HT40,VHT40)	38-46	38,46	OFDM	BPSK	13.5
-	5180-5240	802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
-	5260-5320	802.11a	52-64	52,60,64	OFDM	BPSK	6.0
-	5260-5320	802.11n/ac (HT20, VHT20)	52-46	52,60,64	OFDM	BPSK	6.5
-	5260-5320	802.11n/ac (HT40,VHT40)	54-62	54,62	OFDM	BPSK	13.5
-	5260-5320	802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
-	5500-5700	802.11a	100-140	100,116,140	OFDM	BPSK	6.0
-	5500-5720	802.11n/ac (HT20, VHT20)	100-144	100,116,144	OFDM	BPSK	6.5
-	5500-5720	802.11n/ac (HT40,VHT40)	102-142	102,110,142	OFDM	BPSK	13.5
-	5500-5720	802.11ac (VHT80)	106-138	106,122,138	OFDM	BPSK	29.3
-	5745-5825	802.11a	149-165	149,157,165	OFDM	BPSK	6.0
-	5745-5825	802.11n/ac (HT20, VHT20)	149-165	149,157,165	OFDM	BPSK	6.5
-	5745-5825	802.11n/ac (HT40,VHT40)	151-159	151,159	OFDM	BPSK	13.5
-	5745-5825	802.11ac (VHT80)	155	155	OFDM	BPSK	29.3

Radiated Emission Test (Below 1GHz)

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	MODE	Frequency band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0
-	802.11a	5260-5320	52 to 64		OFDM	BPSK	6.0
-	802.11a	5500-5700	100 to 140		OFDM	BPSK	6.0
-	802.11a	5745-5825	149 to 165		OFDM	BPSK	6.0

Power Line Conducted Emission Test

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	MODE	Frequency band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0
-	802.11a	5260-5320	52 to 64		OFDM	BPSK	6.0
-	802.11a	5500-5700	100 to 140		OFDM	BPSK	6.0
-	802.11a	5745-5825	149 to 165		OFDM	BPSK	6.0

Antenna Port Conducted Measurement:

This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Frequency Band	MODE	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36-48	36,44,48	OFDM	BPSK	6.0
-	5180-5240	802.11n/ac (HT20, VHT20)	36-48	36,44,48	OFDM	BPSK	6.5
-	5180-5240	802.11n/ac (HT40,VHT40)	38-46	38,46	OFDM	BPSK	13.5
-	5180-5240	802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
-	5260-5320	802.11a	52-64	52,60,64	OFDM	BPSK	6.0
-	5260-5320	802.11n/ac (HT20, VHT20)	52-46	52,60,64	OFDM	BPSK	6.5
-	5260-5320	802.11n/ac (HT40,VHT40)	54-62	54,62	OFDM	BPSK	13.5
-	5260-5320	802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
-	5500-5700	802.11a	100-140	100,116,140	OFDM	BPSK	6.0
-	5500-5720	802.11n/ac (HT20, VHT20)	100-144	100,116,144	OFDM	BPSK	6.5
-	5500-5720	802.11n/ac (HT40,VHT40)	102-142	102,110,142	OFDM	BPSK	13.5
-	5500-5720	802.11ac (VHT80)	106-138	106,122,138	OFDM	BPSK	29.3
-	5745-5825	802.11a	149-165	149,157,165	OFDM	BPSK	6.0
-	5745-5825	802.11n/ac (HT20, VHT20)	149-165	149,157,165	OFDM	BPSK	6.5
-	5745-5825	802.11n/ac (HT40,VHT40)	151-159	151,159	OFDM	BPSK	13.5
-	5745-5825	802.11ac (VHT80)	155	155	OFDM	BPSK	29.3

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE\geq1G	22.8°C, 70.0% RH	3.8V DC	Abid & Nazirul
RE<1G	22.8°C, 70.0% RH	3.8V DC	Abid & Nazirul
PLC	NA	NA	NA
APCM	25°C, 54.6% RH	3.8V DC	Gan Boon Teong

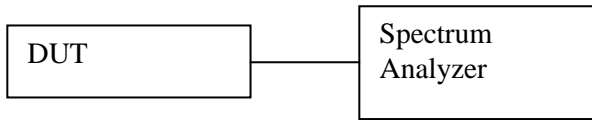
Duty Cycle of Test Signal

802.11a, 802.11n and 802.11ac (HT20, VHT20): Duty cycle of test signal is <98%.

If Duty cycle of test signal is <98%, duty cycle factor shall be considered. (Refer to section 6.0 for duty cycle measurement)

6.0. Duty Cycle of Test Signal

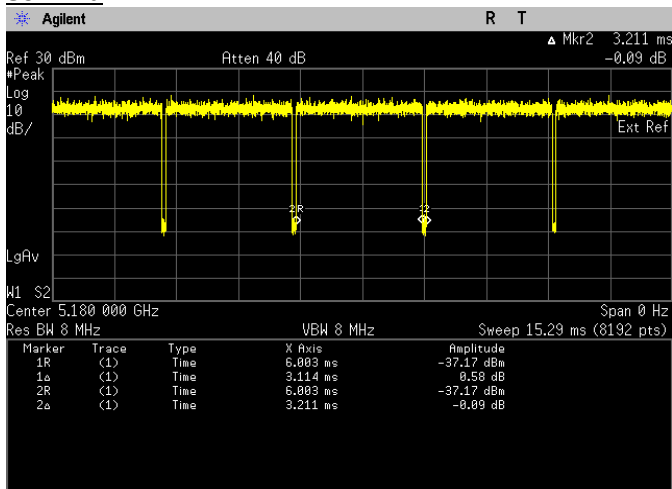
6.0.1. Test Setup



- 1) Set DUT to desire transmit frequency and transmit with maximum power.
- 2) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- 3) Setting of Spectrum analyzer :
 - a. Set the RBW = 10 MHz or the highest RBW available on spectrum analyzer.
 - b. Set the VBW ≥ RBW.
 - c. Set to Zero Span.
 - d. Detector = Peak.
 - e. Sweep time = 10ms or others that allow to measure accurate duty cycle.
 - f. Trace mode = Max hold.
- 4) Record the duty cycle as X and save the plot.

6.0.2. Test Data

802.11a

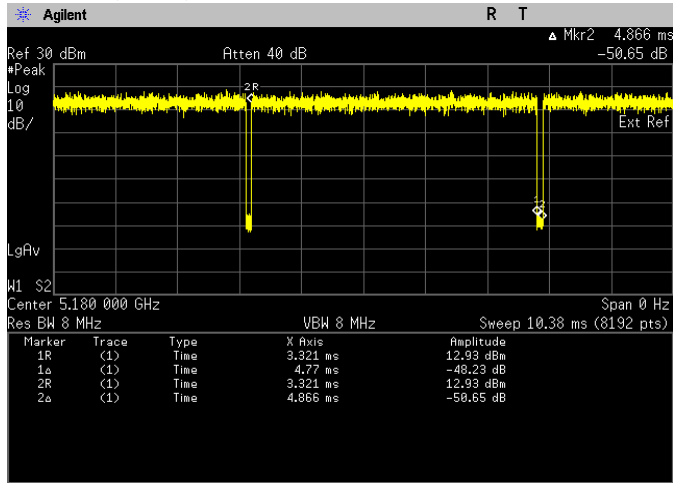


On time	3.114	ms
On + off time	3.211	ms
Duty Cycle	0.9698	
Duty Cycle Factor	0.133	

*Duty cycle = On time/ On +off time

*Duty Cycle factor = 10*log (1/Duty Cycle)

802.11n (HT20)



On time	4.77	ms
On + off time	4.869	ms
Duty Cycle	0.9797	
Duty Cycle Factor	0.089	

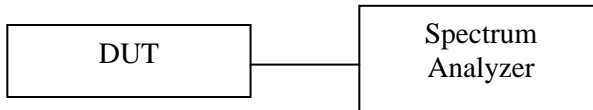
*Duty cycle = On time/ On +off time

*Duty Cycle factor = 10*log (1/Duty Cycle)

7.0. Transmitter Test Parameters

7.1. Bandwidth measurements

7.1.1. Test Setup



- a) Test Setup as per illustrated above.
- b) Set DUT to transmit at desire transmit frequency.
- c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- d) Setting of Spectrum analyzer for 26dB EBW:
 - RBW = approximate 1% of emission bandwidth
 - VBW > RBW
 - Detector = Peak
 - Trace =Max hold
 - Measure the maximum width of the emission that is 26 dB down from the maximum of the emission.
 - Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
- e) Setting of Spectrum analyzer for 99% Occupied bandwidth:
 - Span = 1.5 times to 5.0 times the OBW
 - RBW = 1% to 5 % of the OBW
 - VBW \geq 3·RBW
 - Detector = Peak
 - Trace = Max Hold
 - Use the 99% power bandwidth function of the instrument
- f) The measurement method follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04 under clause C.1) & D).

7.1.2. Test Limits

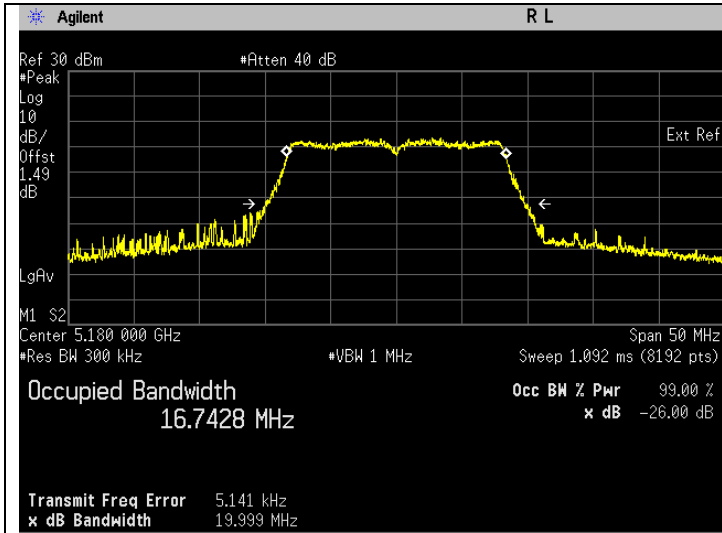
Not applicable.

7.1.3. Test Data

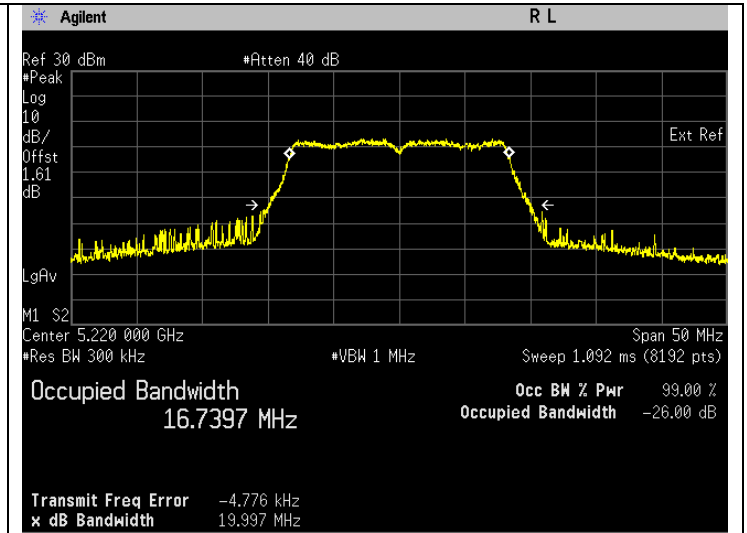
802.11a

Frequency (MHz)	Test Configuration	Results			
		26 dB Bandwidth(MHz)	Status	99% Bandwidth(MHz)	Status
5180	BPSK, Data Rate: 6	19.999	Pass	16.743	Pass
5220	BPSK, Data Rate: 6	19.997	Pass	16.740	Pass
5240	BPSK, Data Rate: 6	20.103	Pass	16.776	Pass
5260	BPSK, Data Rate: 6	19.889	Pass	16.800	Pass
5300	BPSK, Data Rate: 6	20.001	Pass	16.778	Pass
5320	BPSK, Data Rate: 6	19.928	Pass	16.780	Pass
5500	BPSK, Data Rate: 6	19.852	Pass	16.766	Pass
5580	BPSK, Data Rate: 6	20.049	Pass	16.769	Pass
5700	BPSK, Data Rate: 6	19.905	Pass	16.727	Pass
5720	BPSK, Data Rate: 6, UNII-2C	14.933	Pass	13.372	Pass
5720	BPSK, Data Rate: 6, UNII-3	4.933	Pass	3.372	Pass
5745	BPSK, Data Rate: 6	20.029	Pass	16.749	Pass
5785	BPSK, Data Rate: 6	20.227	Pass	16.776	Pass
5825	BPSK, Data Rate: 6	20.158	Pass	16.771	Pass

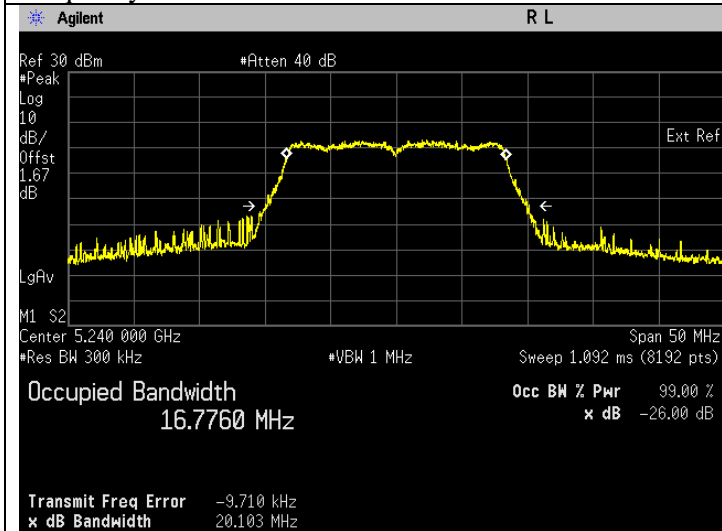
26 dB Bandwidth/ 99% Bandwidth



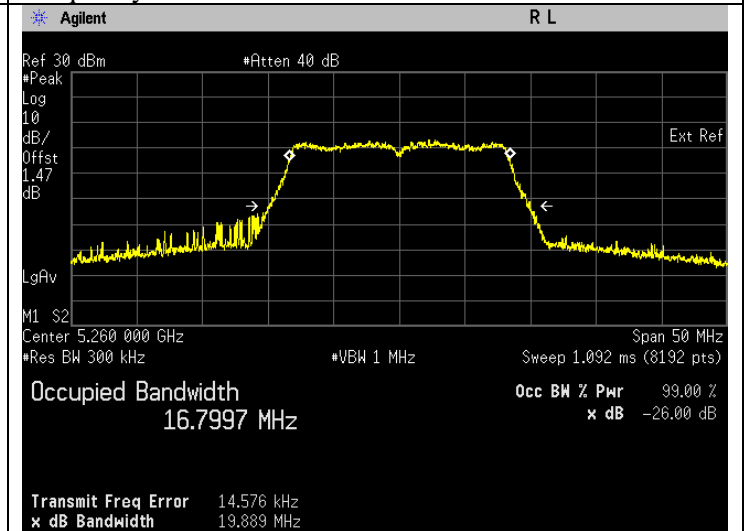
Frequency 5180 MHz



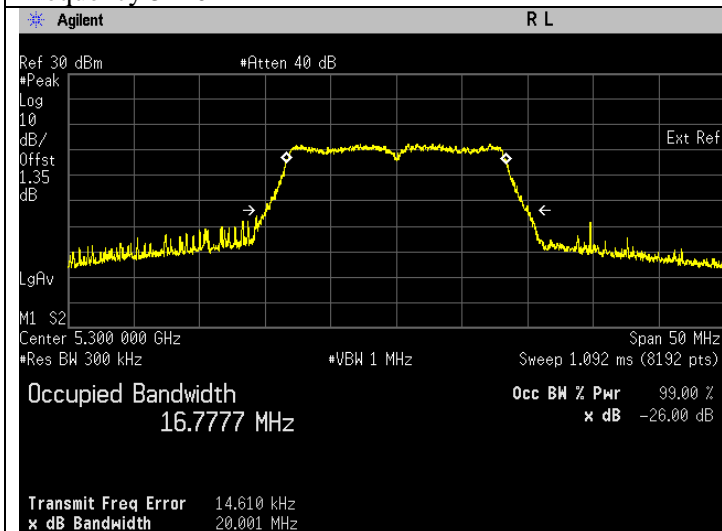
Frequency 5220 MHz



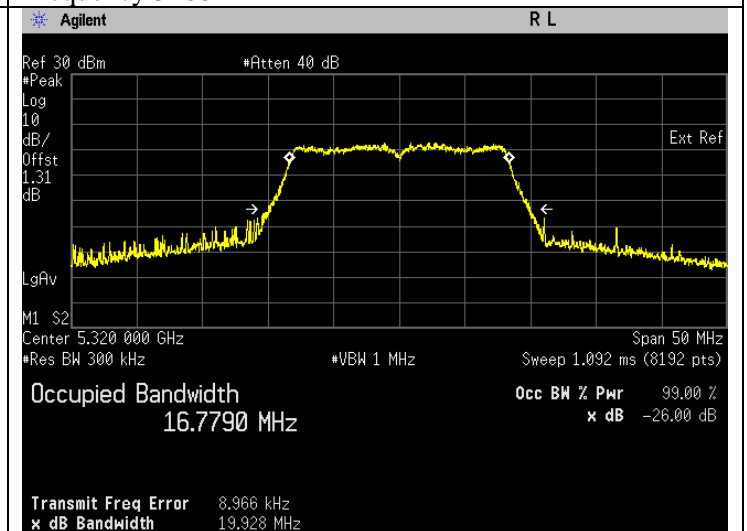
Frequency 5240 MHz



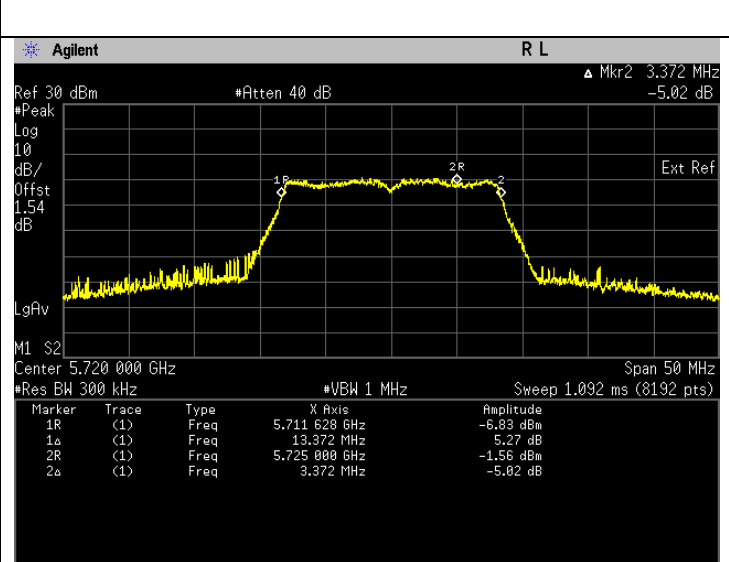
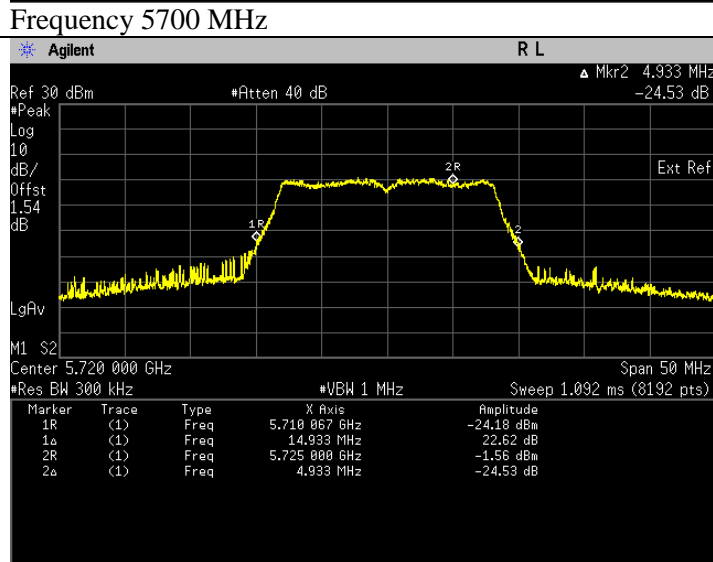
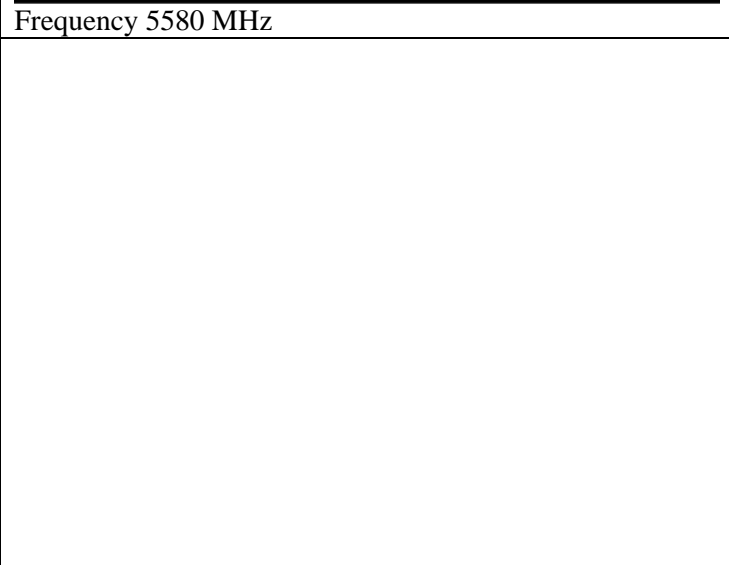
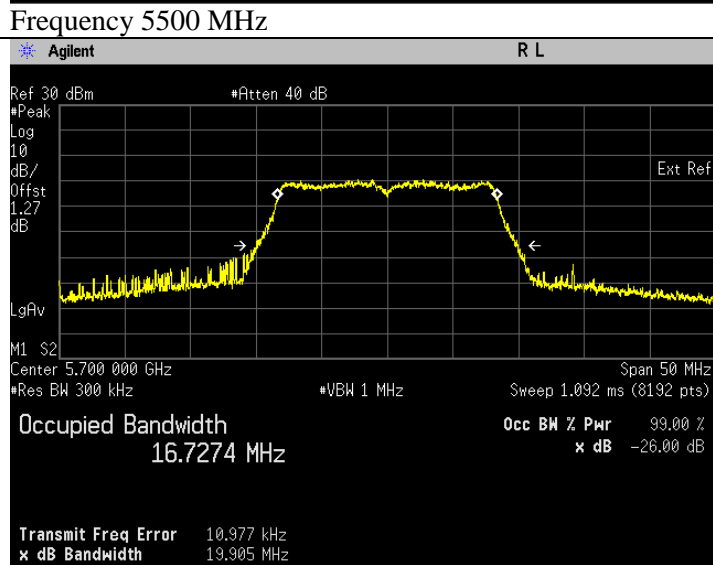
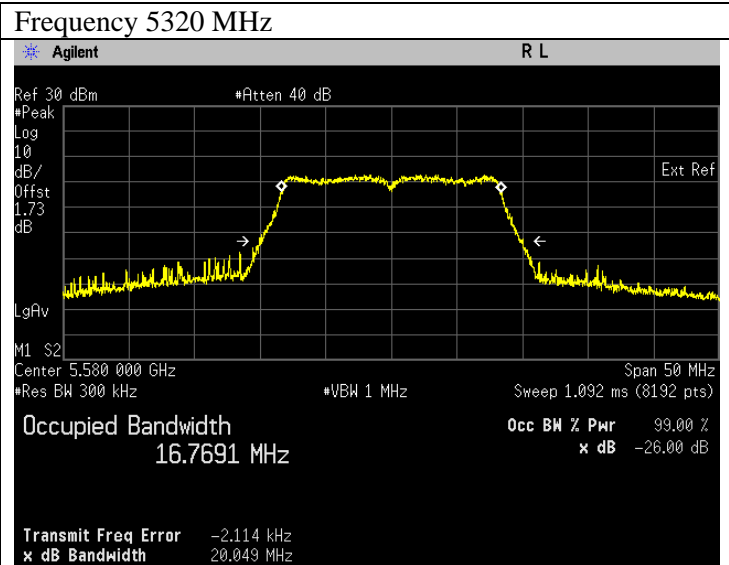
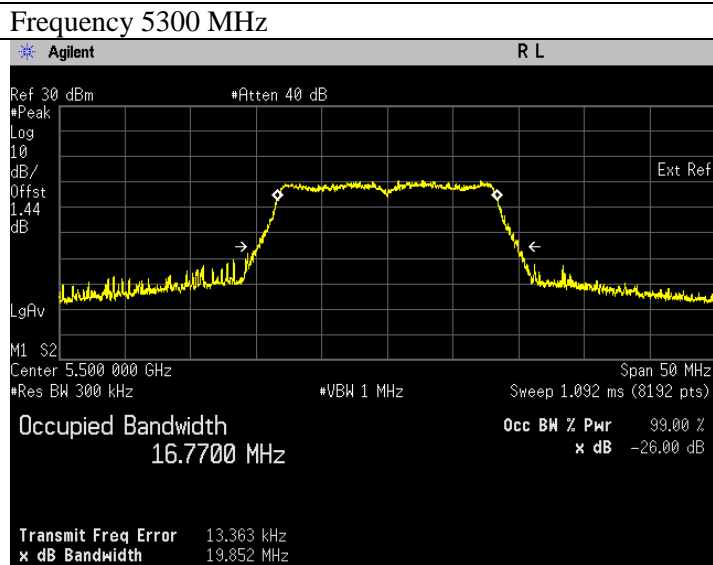
Frequency 5260 MHz



Frequency 5300 MHz

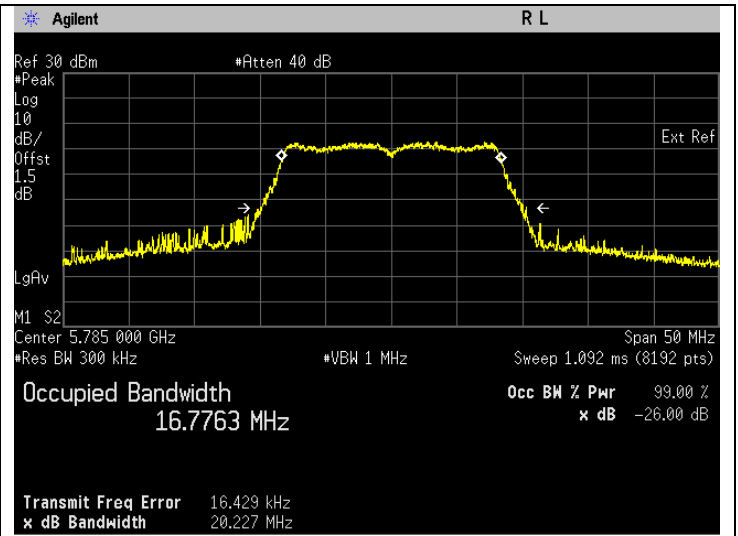
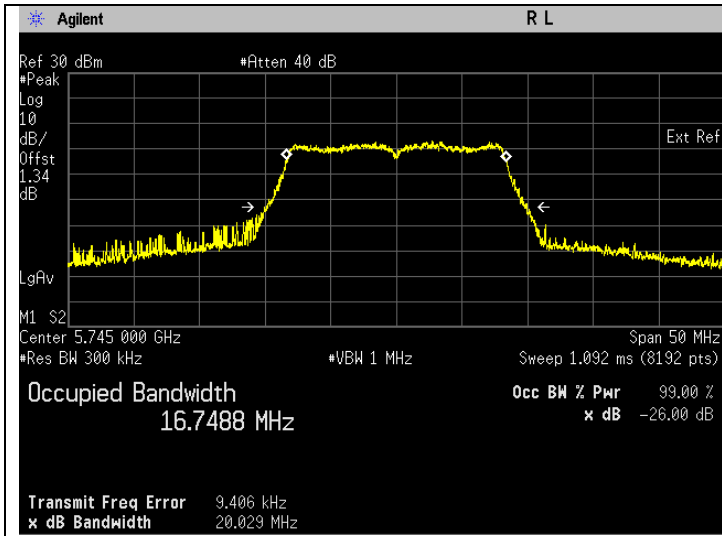


Frequency 5320 MHz



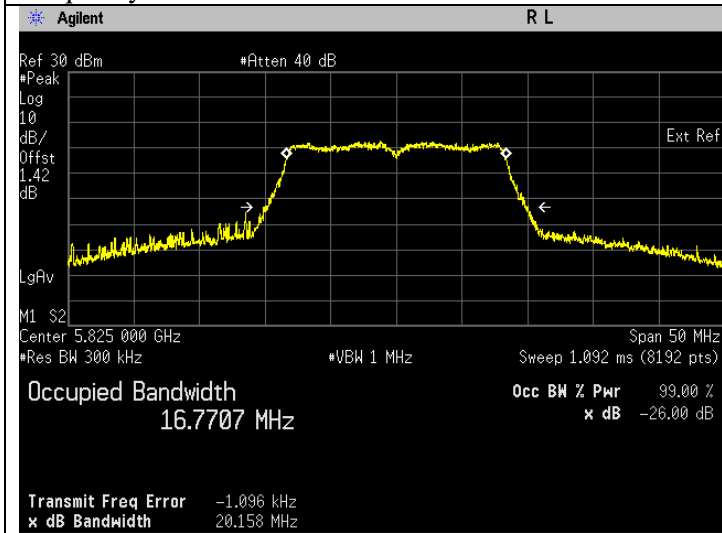
Frequency 5720 MHz, UNII-2C & UNII-3(FCC)

Frequency 5720 MHz, UNII-2C & UNII-3 (ISED)



Frequency 5745 MHz

Frequency 5785 MHz

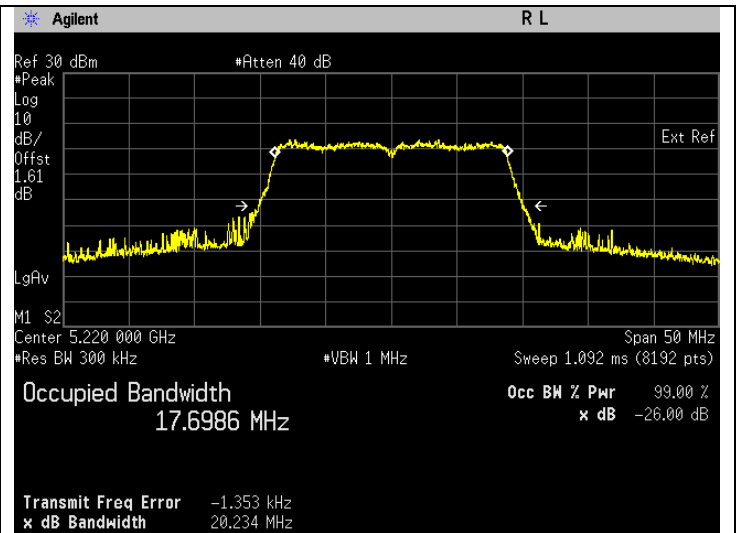
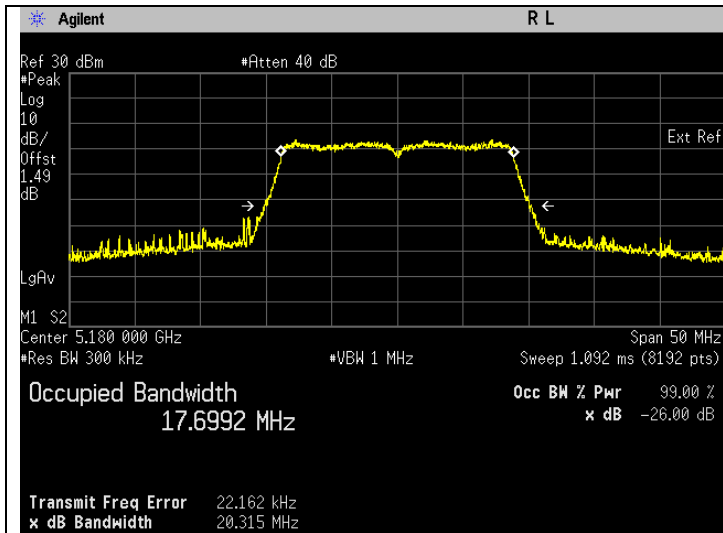


Frequency 5825 MHz

802.11n (HT20)

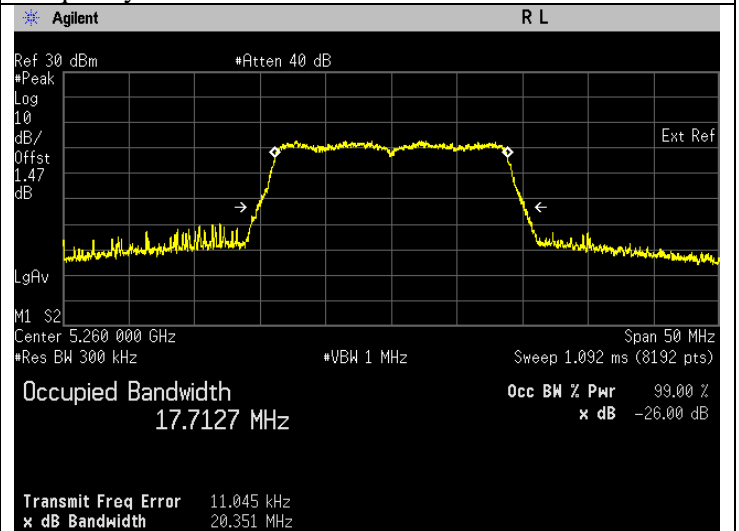
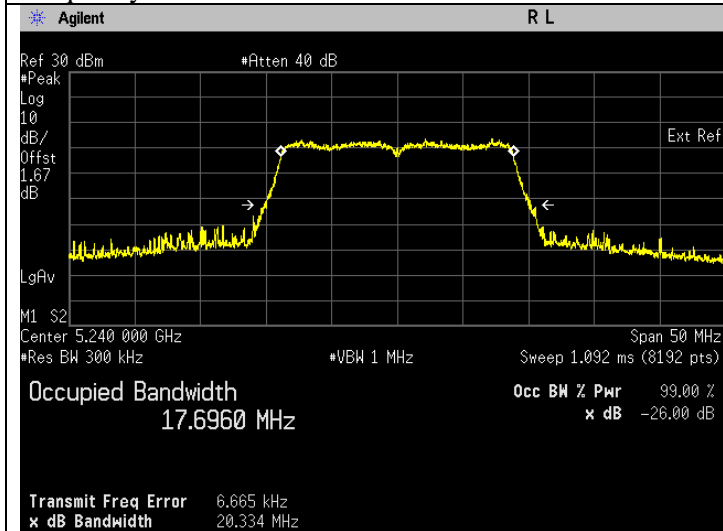
Frequency (MHz)	Test Configuration	Results			
		26 dB Bandwidth(MHz)	Status	99% Bandwidth(MHz)	Status
5180	BPSK, Data Rate: MCS0 (6.5)	20.315	Pass	17.700	Pass
5220	BPSK, Data Rate: MCS0 (6.5)	20.234	Pass	17.699	Pass
5240	BPSK, Data Rate: MCS0 (6.5)	20.334	Pass	17.697	Pass
5260	BPSK, Data Rate: MCS0 (6.5)	20.351	Pass	17.713	Pass
5300	BPSK, Data Rate: MCS0 (6.5)	20.316	Pass	17.719	Pass
5320	BPSK, Data Rate: MCS0 (6.5)	20.066	Pass	17.718	Pass
5500	BPSK, Data Rate: MCS0 (6.5)	20.313	Pass	17.733	Pass
5580	BPSK, Data Rate: MCS0 (6.5)	20.397	Pass	17.716	Pass
5700	BPSK, Data Rate: MCS0 (6.5)	20.182	Pass	17.713	Pass
5720	BPSK, Data Rate: MCS0 (6.5), UNII-2C	15.173	Pass	13.855	Pass
5720	BPSK, Data Rate: MCS0 (6.5), UNII-3	5.173	Pass	3.855	Pass
5745	BPSK, Data Rate: MCS0 (6.5)	20.237	Pass	17.710	Pass
5785	BPSK, Data Rate: MCS0 (6.5)	20.270	Pass	17.715	Pass
5825	BPSK, Data Rate: MCS0 (6.5)	20.291	Pass	17.723	Pass

26 dB Bandwidth/ 99% Bandwidth



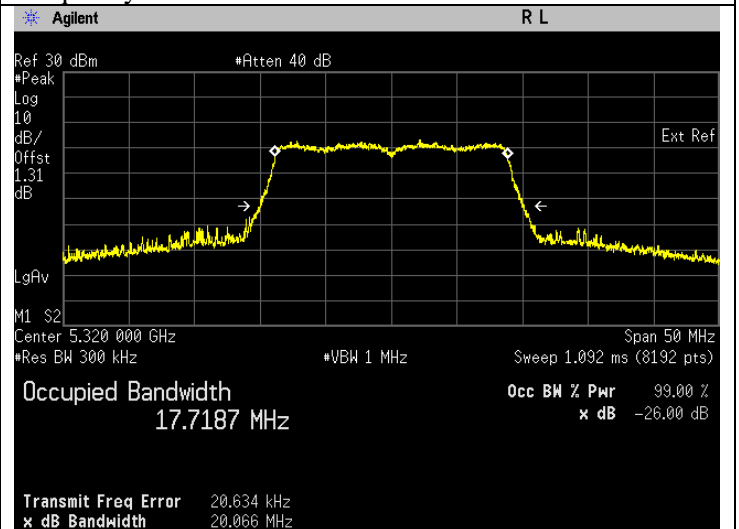
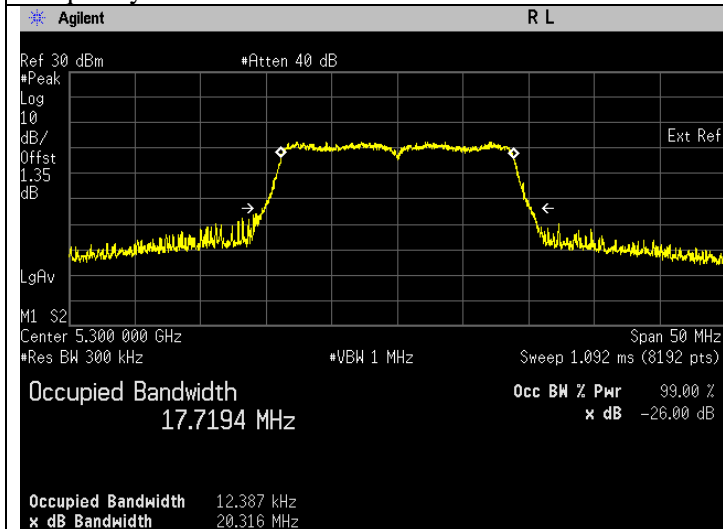
Frequency 5180 MHz

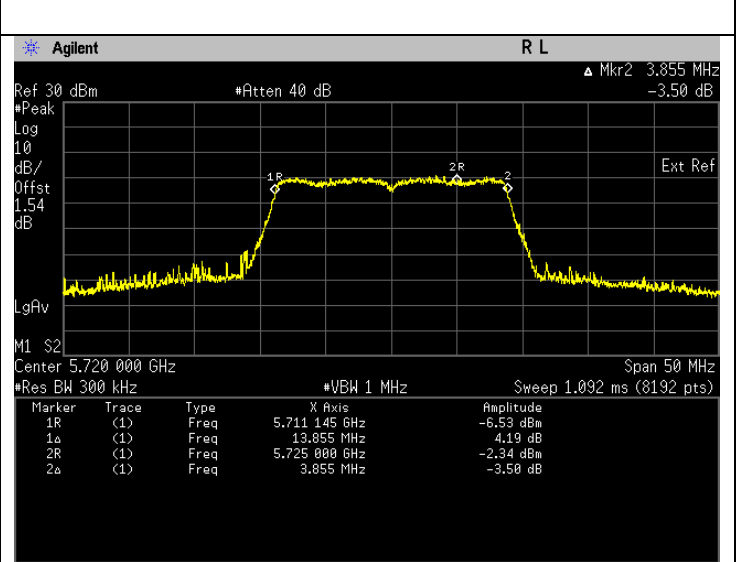
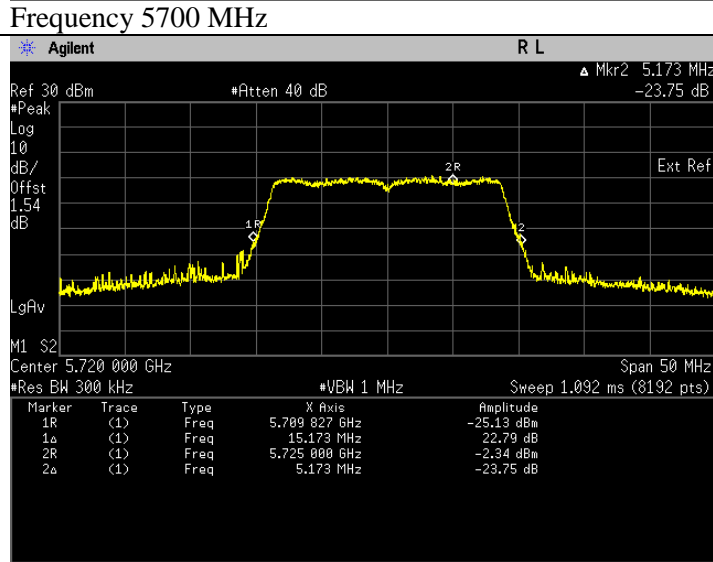
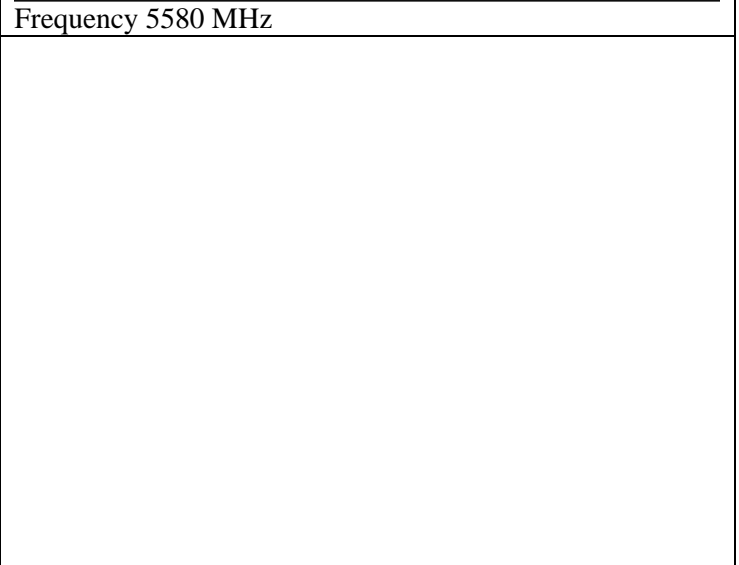
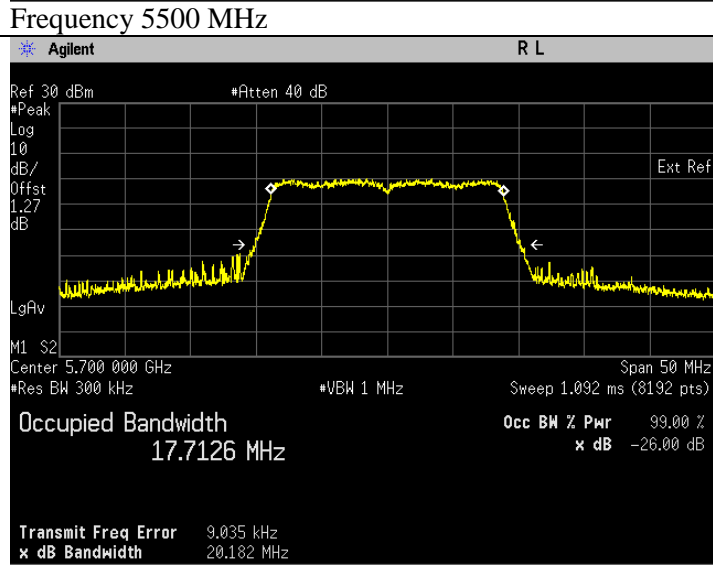
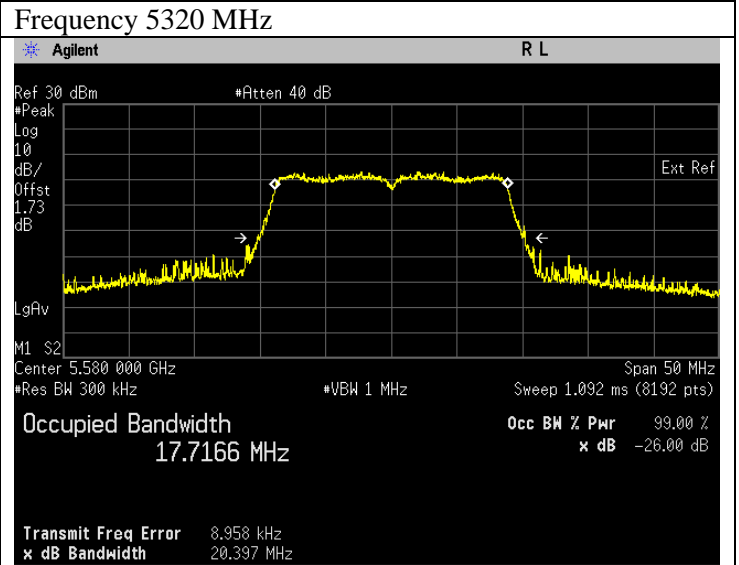
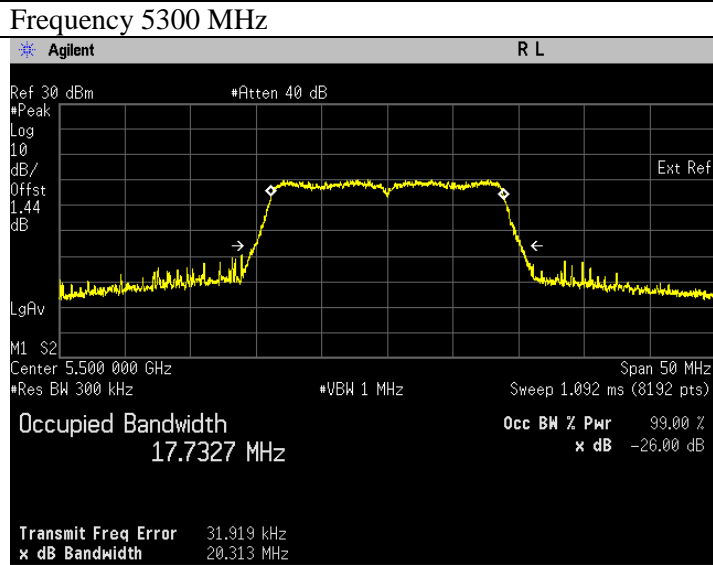
Frequency 5220 MHz



Frequency 5240 MHz

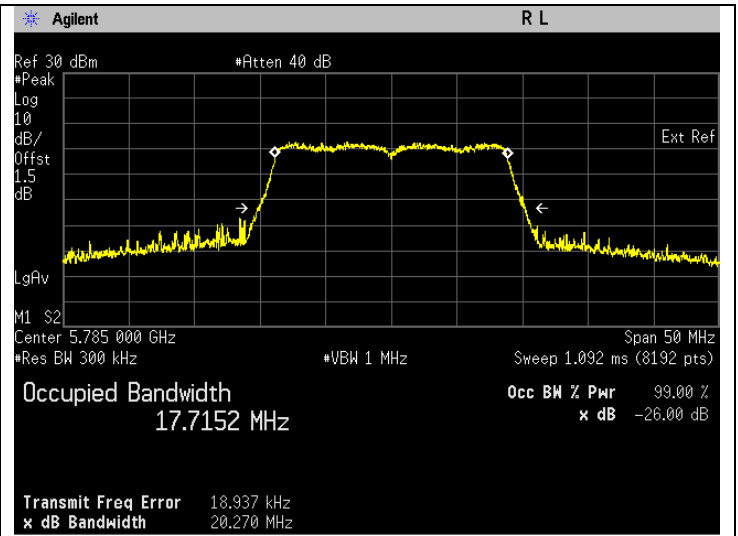
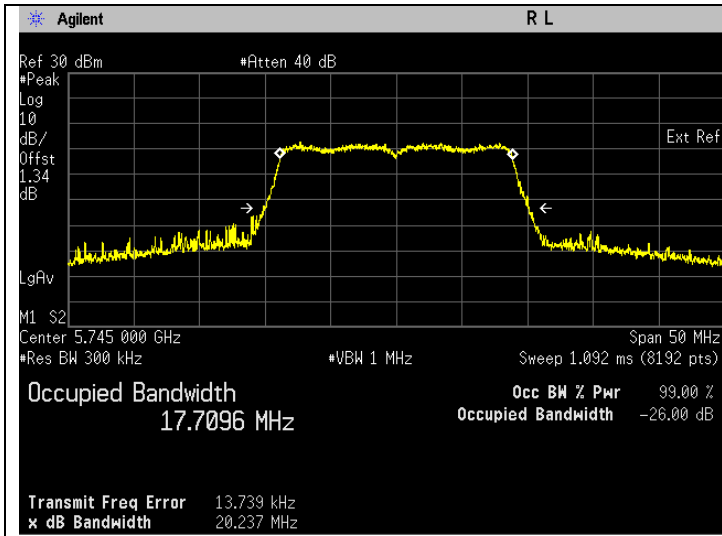
Frequency 5260 MHz





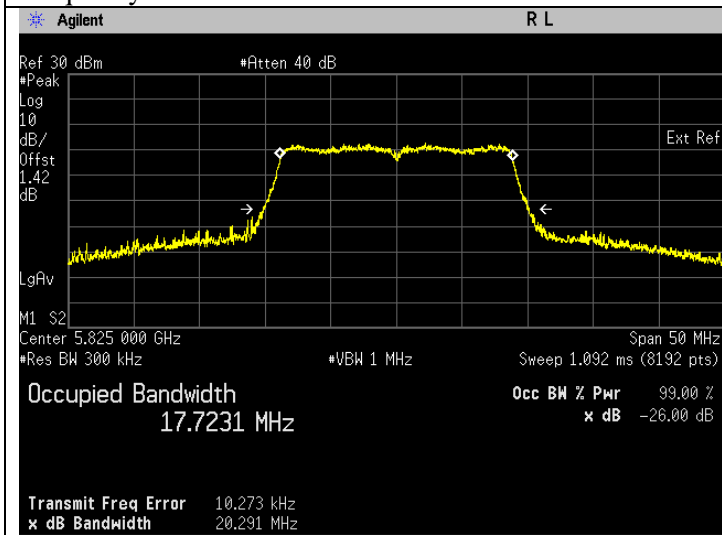
Frequency 5720 MHz, UNII-2C & UNII-3(FCC)

Frequency 5720 MHz, UNII-2C & UNII-3 (ISED)



Frequency 5745 MHz

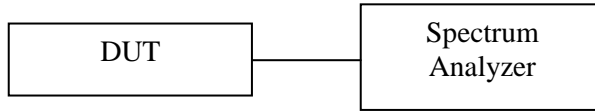
Frequency 5785 MHz



Frequency 5825 MHz

7.2. Maximum Conducted Output Power

7.2.1. Test Setup



- a) Test setup as per illustrated above.
- b) Set DUT to transmit at desire transmit frequency.
- c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- d) Setting of Spectrum analyzer :
 - Span to encompass the entire 26dB EBW or 99% Occupied Bandwidth.
 - RBW = 1 MHz
 - VBW ≥ 3 MHz
 - Detector = power averaging (RMS)
 - Trace = Max hold
 - Number of points in sweep ≥ 2 × span / RBW
 - Sweep time = auto
 - Trace average at least 100 traces in power averaging (rms) mode
 - Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges.
 - Add 10 log (1/x), where x is the duty cycle, to the measured power to compute the average power during the actual transmission times
- e) The measurement method follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04 under clause E.2.d) Method SA-2.
- f) The Maximum output power results are included duty cycle correction factor.

7.2.2. Test Limits

FCC 15.407(a)

Range(GHz)	Condition	Output Power Limit
5.15-5.25 (UNII-1)	Outdoor AP	≤1W
	Indoor AP	≤1W
	Fixed Point to Point AP	≤1W
	√ Mobile and Portable client devices	≤250mW
5.25-5.35 (UNII-2A)	√	≤250mW or 11dBm+10log ₁₀ B*
5.47-5.525 (UNII-2C)	√	*B is 26dB emission bandwidth in MHz
5.725-5.85 (UNII-3)	√	≤1W

RSS-247 6.2

Range(GHz)	Condition	Output Power Limit
5.15-5.25	indoor only (e.i.r.p.)	$\leq 200\text{mW}$ or $10+10\log_{10}B^*$ *B is 99% emission bandwidth in 1MHz
5.25-5.35	(Conducted & e.i.r.p.)	Conducted: $\leq 250\text{mW}$ or $11+10\log_{10}B^*$ EIRP: $< 1.0\text{W}$ or $17+10\log_{10}B^*$ *B is 99% emission bandwidth in 1MHz
5.47-5.6 5.65-5.725	(Conducted & e.i.r.p.)	Conducted: $\leq 250\text{mW}$ or $11+10\log_{10}B^*$ EIRP: $< 1.0\text{W}$ or $17+10\log_{10}B^*$ *B is 99% emission bandwidth in 1MHz
5.725-5.85	(Conducted)	$\leq 1\text{W}$

7.2.3. Additional Info

Antenna	Gain (dBi)
Antenna 1	4.1
Duty Cycle Correction Factor	
802.11a	0.133
802.11n (HT20)	0.089

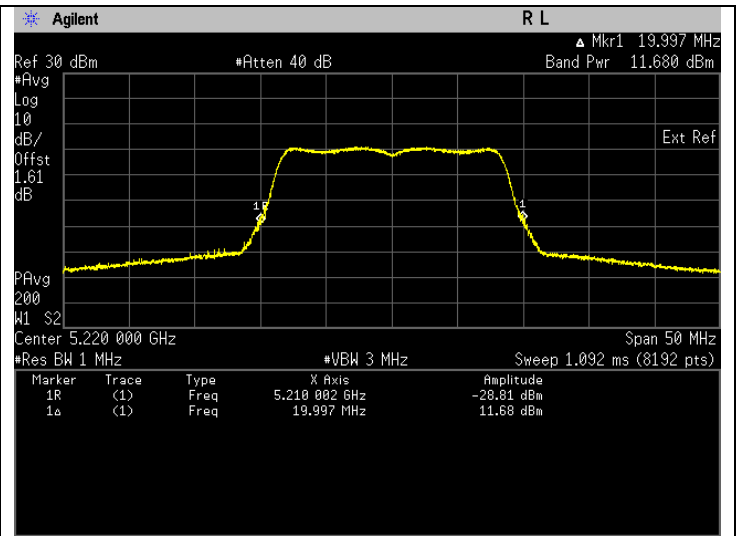
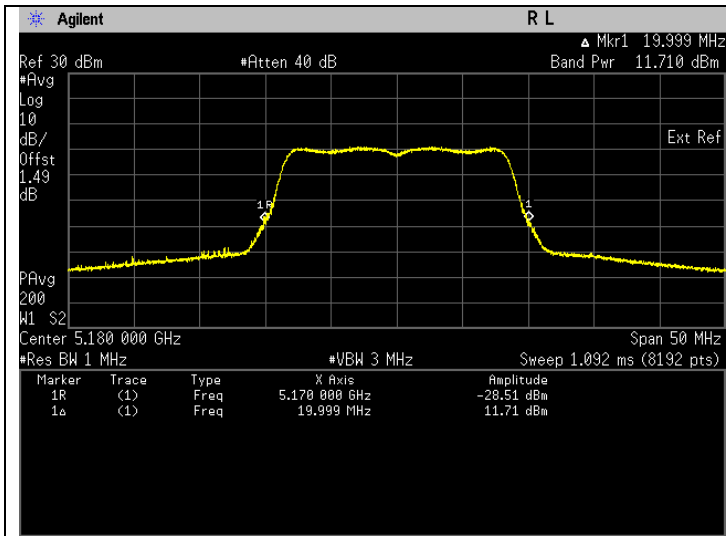
7.2.4. Test Data

Summary table

WLAN	Frequency Range (MHz)	Bandwidth (MHz)	RF Power Output		EIRP	
			Max measured (mW)	Max declared (mW)	Max measured (mW)	Max declared (mW)
802.11a	5180-5240	20	14.91	15.85	38.31	40.74
	5260-5320	20	13.43	15.85	34.52	40.74
	5500-5580	20	14.07	15.85	36.17	40.74
	5660-5720	20	7.61	15.85	19.57	40.74
	5745-5825	20	13.57	15.85	34.88	40.74
802.11n	5180-5240	20	15.80	15.85	40.64	40.74
	5260-5320	20	14.13	15.85	36.31	40.74
	5500-5580	20	14.90	15.85	38.28	40.74
	5660-5720	20	7.91	15.85	20.32	40.74
	5745-5825	20	13.93	15.85	35.81	40.74

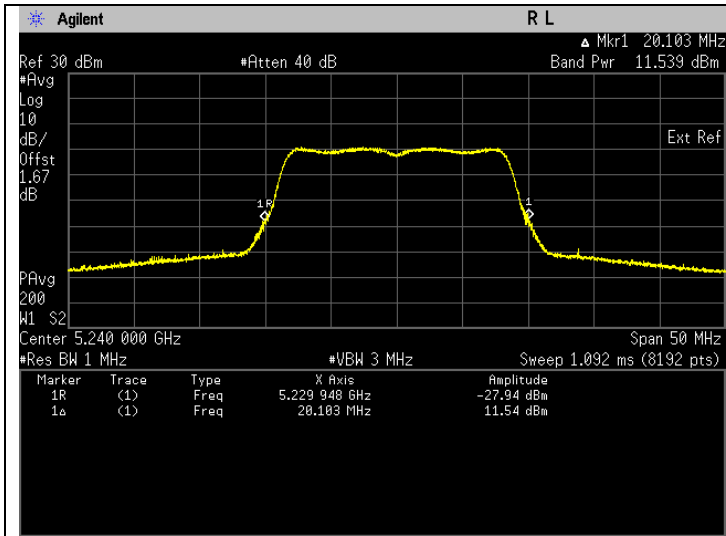
802.11a (26dB EBW)

Freq. (MHz)	Test Conditions	Results		
		Power (mW)	Power (dBm)	Status
5180	BPSK, Data Rate: 6	15.287	11.843	Pass
5220	BPSK, Data Rate: 6	15.182	11.813	Pass
5240	BPSK, Data Rate: 6	14.697	11.672	Pass
5260	BPSK, Data Rate: 6	13.747	11.382	Pass
5300	BPSK, Data Rate: 6	12.774	11.063	Pass
5320	BPSK, Data Rate: 6	12.794	11.070	Pass
5500	BPSK, Data Rate: 6	7.752	8.894	Pass
5580	BPSK, Data Rate: 6	14.518	11.619	Pass
5700	BPSK, Data Rate: 6	7.679	8.853	Pass
5745	BPSK, Data Rate: 6	13.074	11.164	Pass
5785	BPSK, Data Rate: 6	13.706	11.369	Pass
5825	BPSK, Data Rate: 6	13.077	11.165	Pass

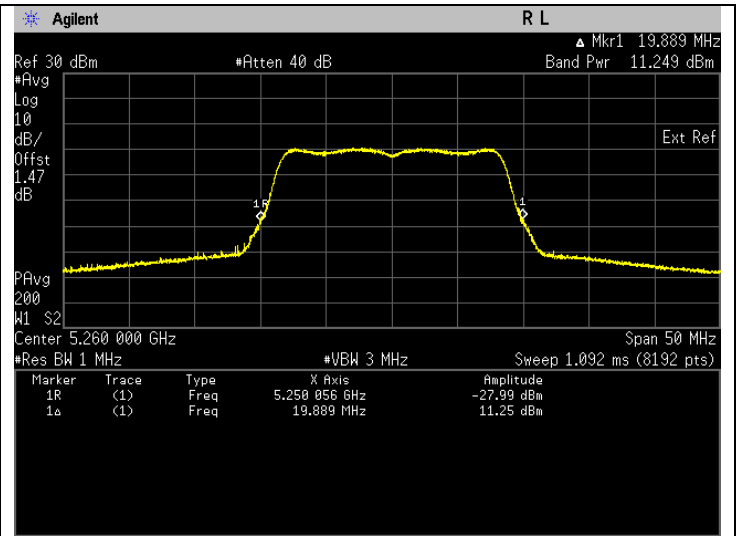


Frequency 5180 MHz, FCC.

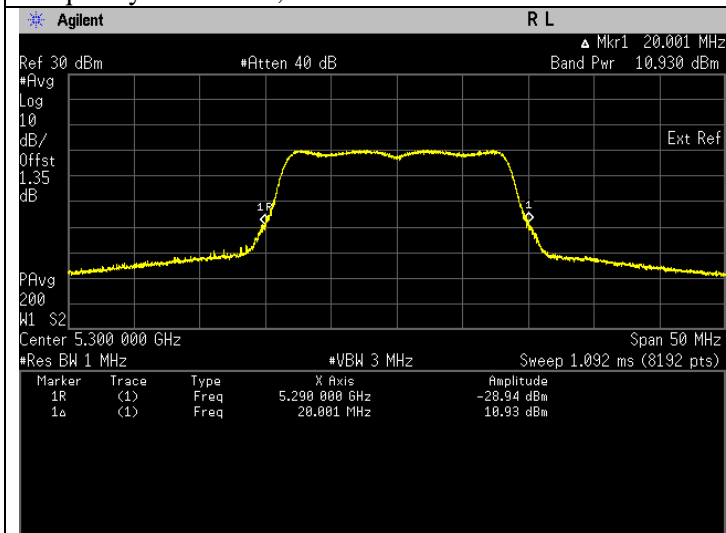
Frequency 5220 MHz, FCC.



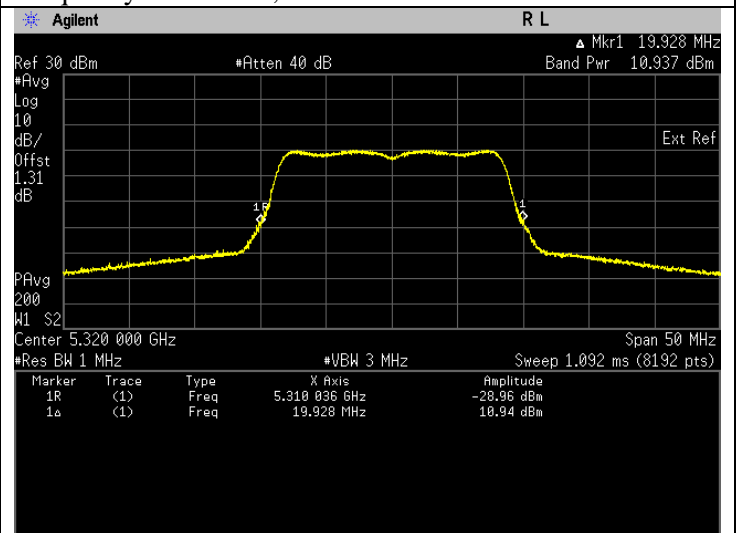
Frequency 5240 MHz, FCC.



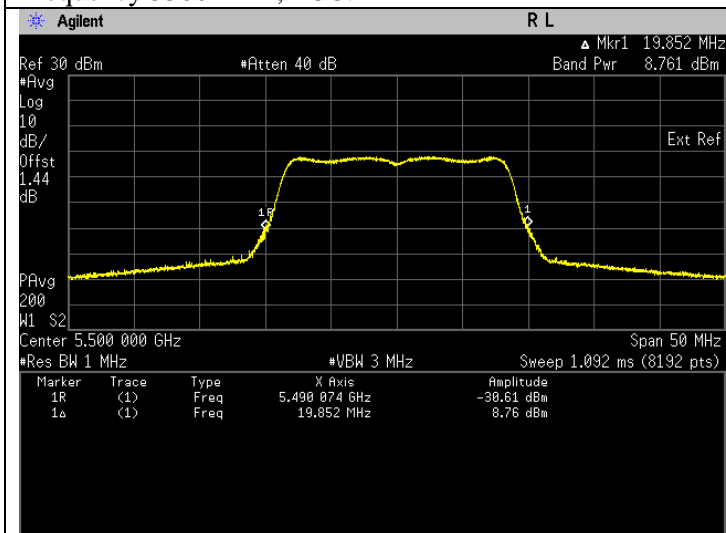
Frequency 5260 MHz, FCC.



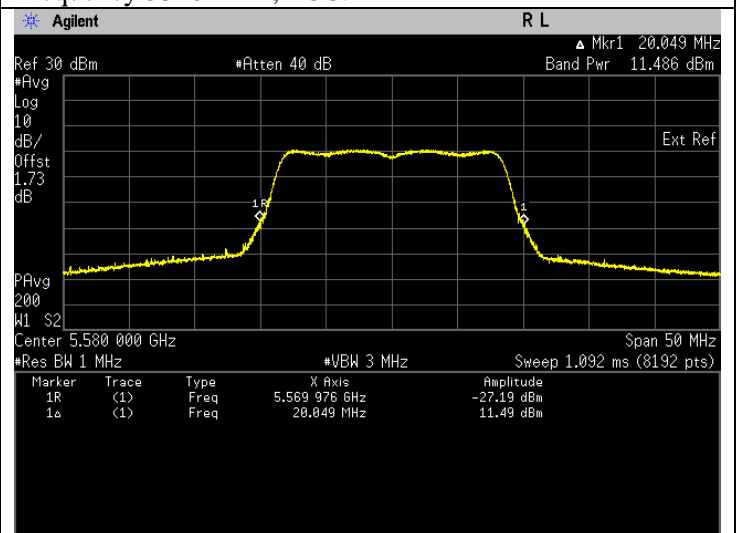
Frequency 5300 MHz, FCC.



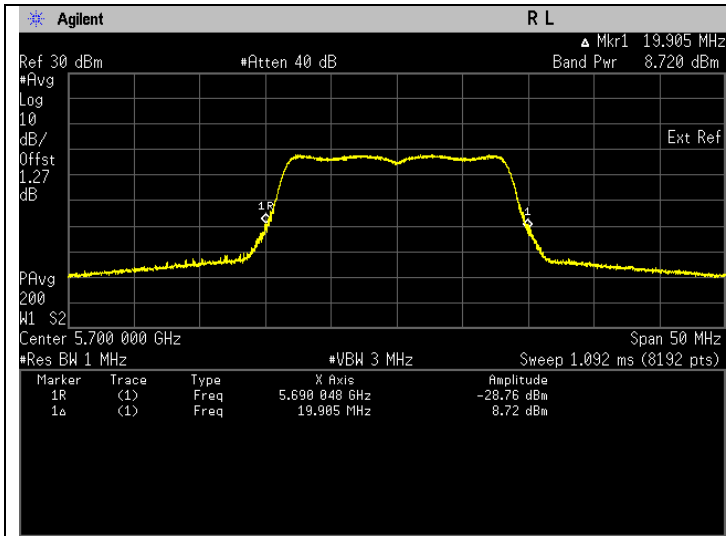
Frequency 5320 MHz, FCC.



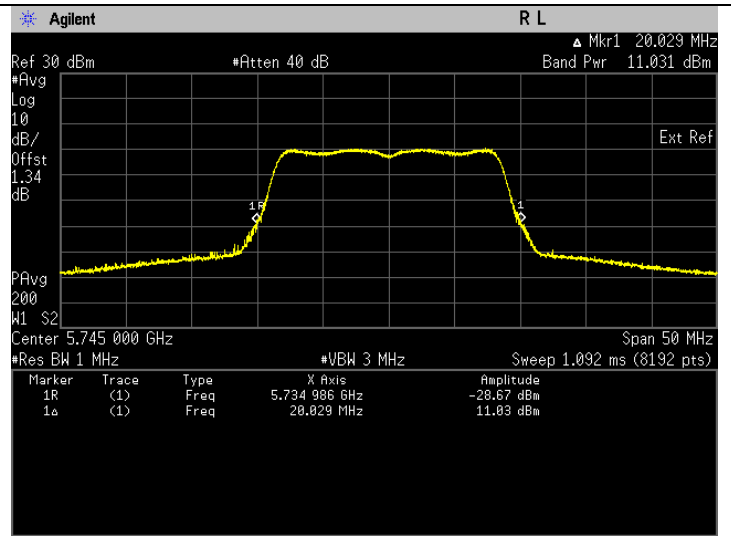
Frequency 5500 MHz, FCC.



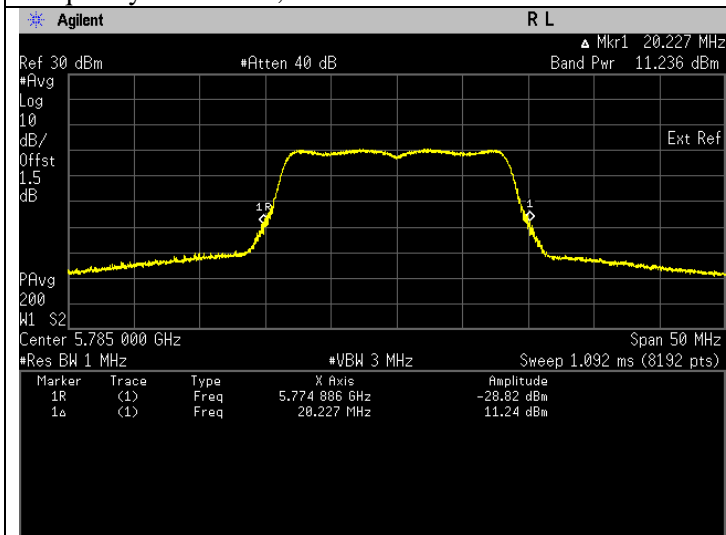
Frequency 5580 MHz, FCC.



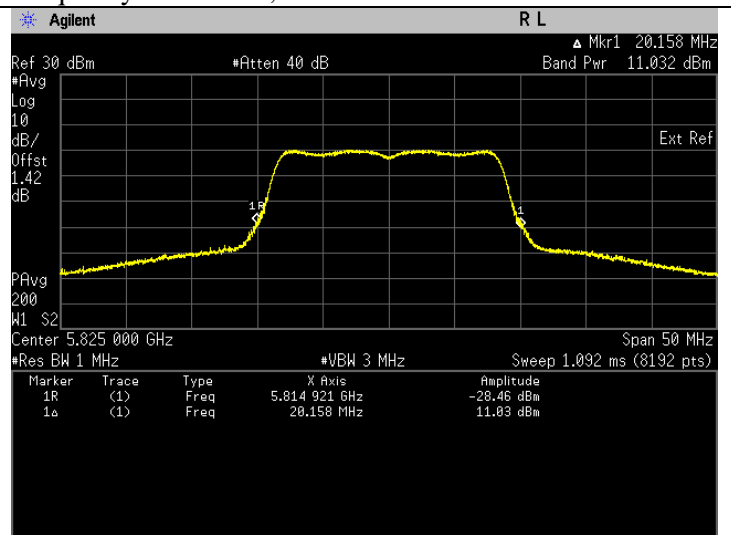
Frequency 5700 MHz, FCC.



Frequency 5745 MHz, FCC.



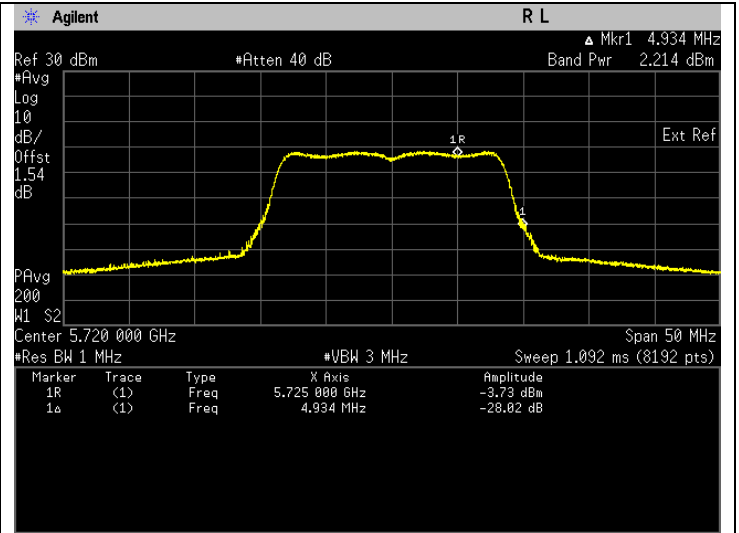
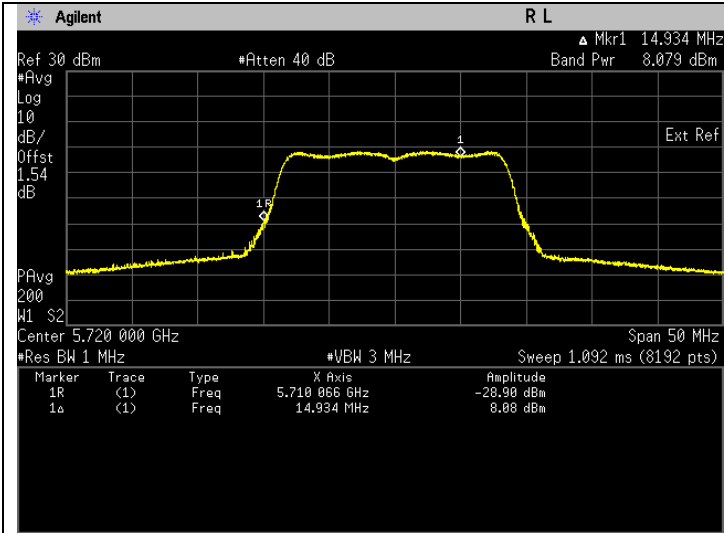
Frequency 5785 MHz, FCC.



Frequency 5825 MHz, FCC.

Straddle Frequency

Freq. (MHz)	Test Conditions	Results		
		U-NII- 2C		
		Power (mW)	Power (dBm)	Status
5720	BPSK, Data Rate: 6	6.625	8.212	Pass
		U-NII-3		
5720	BPSK, Data Rate: 6	1.717	2.347	Pass

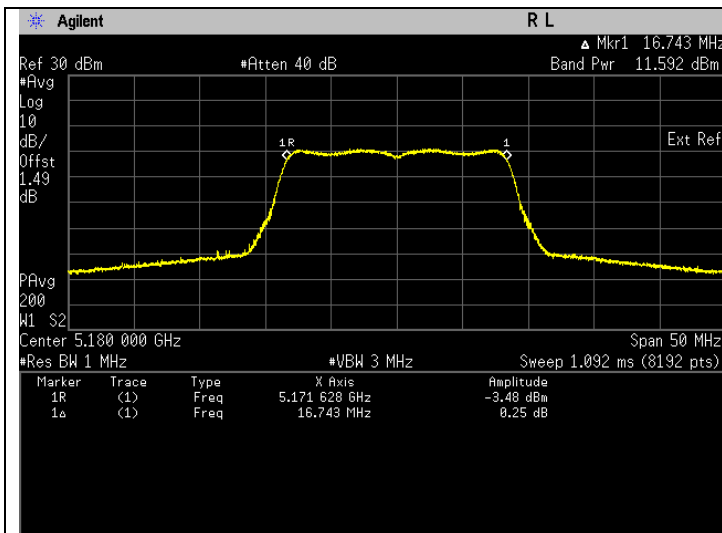


Frequency 5720 MHz, FCC, U-NII-2C. *Note: The band power is captured before the 5725 MHz.

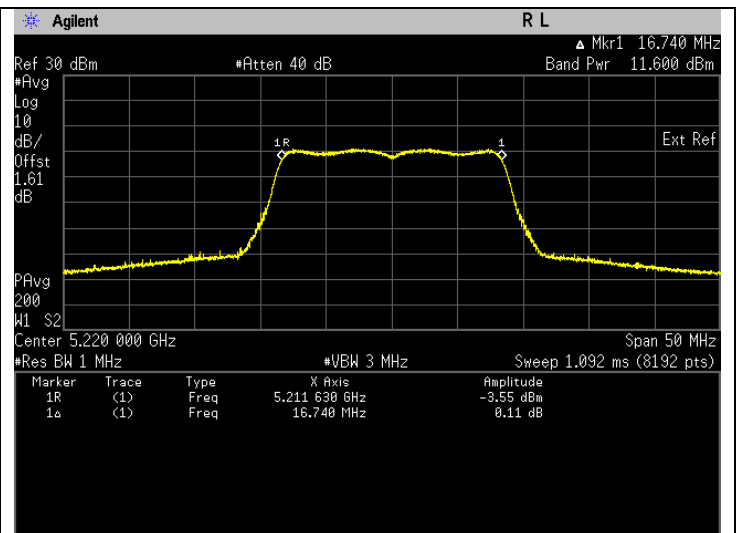
Frequency 5720 MHz, FCC, U-NII-3. *Note: The band power is captured after the 5725 MHz.

802.11a (99% EBW)

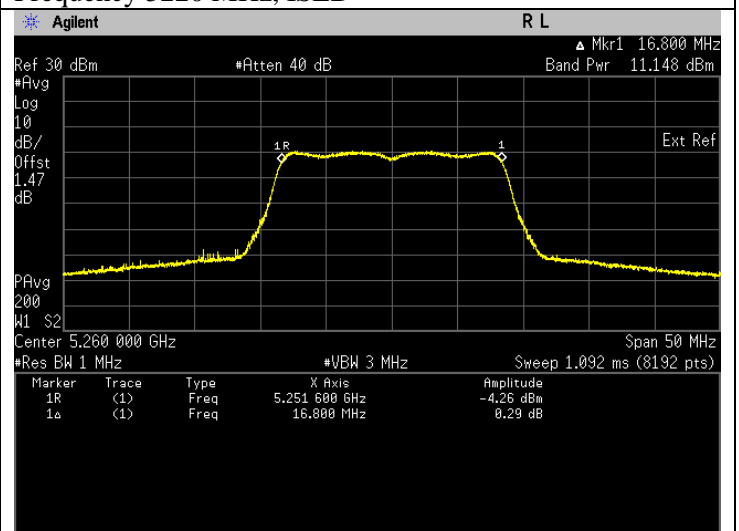
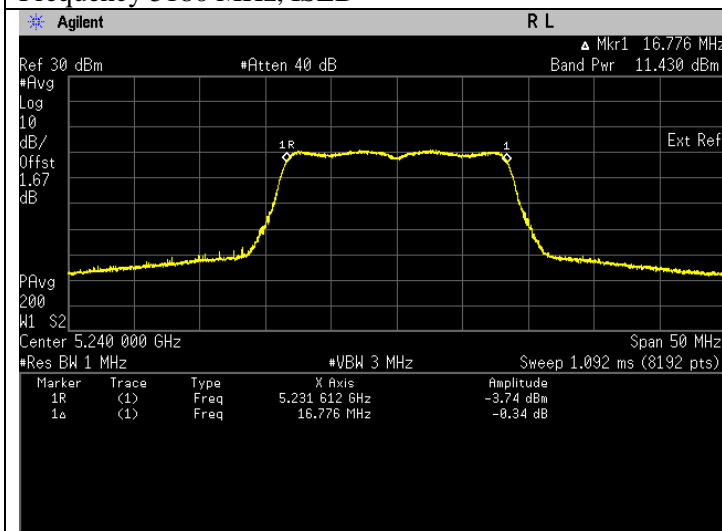
Freq. (MHz)	Test Conditions	Results				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5180	BPSK, Data Rate: 6	14.877	11.725	Pass	15.825	Pass
5220	BPSK, Data Rate: 6	14.905	11.733	Pass	15.833	Pass
5240	BPSK, Data Rate: 6	14.332	11.563	Pass	15.663	Pass
5260	BPSK, Data Rate: 6	13.431	11.281	Pass	15.381	Pass
5300	BPSK, Data Rate: 6	12.671	11.028	Pass	15.128	Pass
5320	BPSK, Data Rate: 6	12.607	11.006	Pass	15.106	Pass
5500	BPSK, Data Rate: 6	7.569	8.790	Pass	12.89	Pass
5580	BPSK, Data Rate: 6	14.071	11.483	Pass	15.583	Pass
5700	BPSK, Data Rate: 6	7.612	8.815	Pass	12.915	Pass
5745	BPSK, Data Rate: 6	12.901	11.106	Pass	15.206	Pass
5785	BPSK, Data Rate: 6	13.571	11.326	Pass	15.426	Pass
5825	BPSK, Data Rate: 6	12.665	11.026	Pass	15.126	Pass

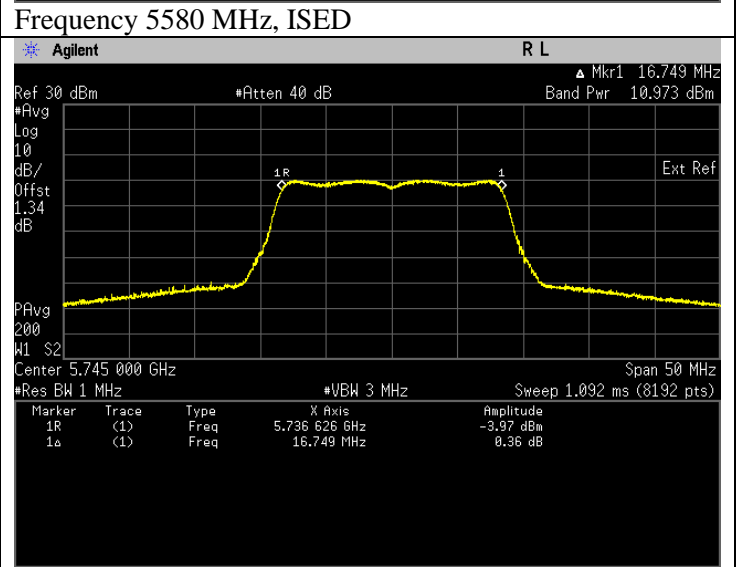
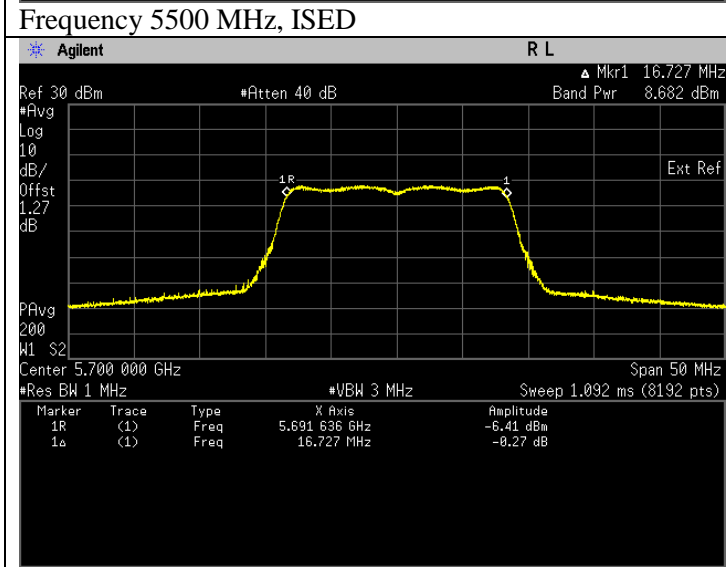
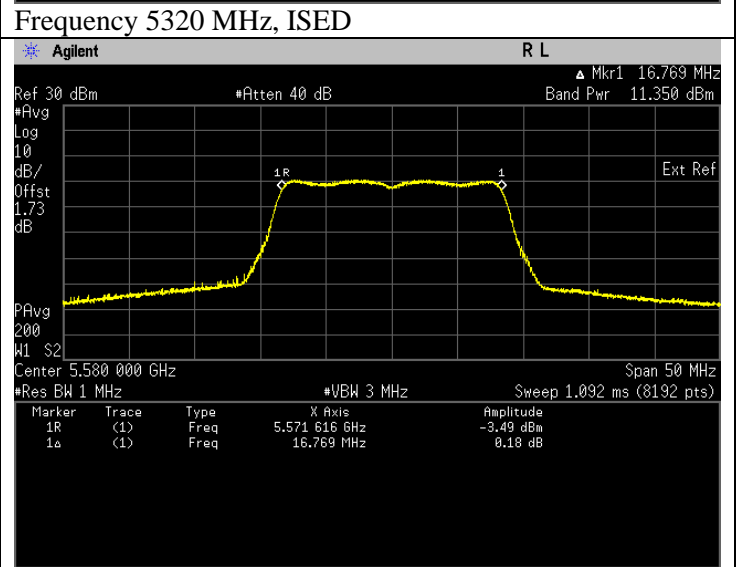
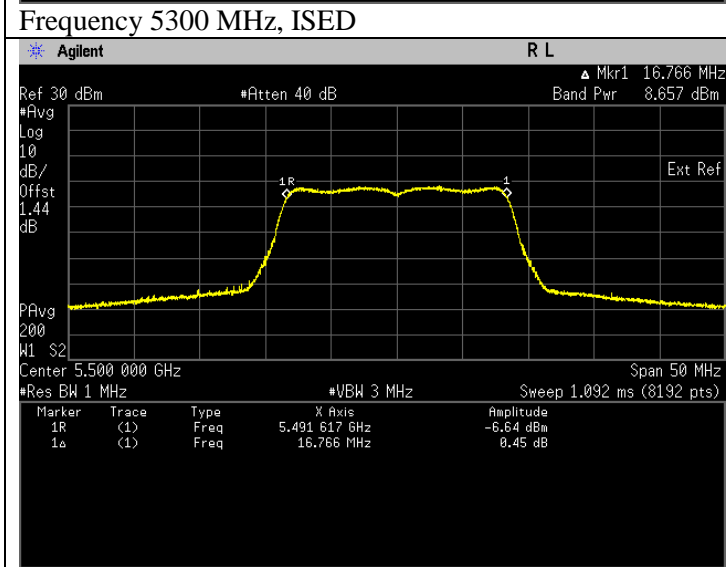
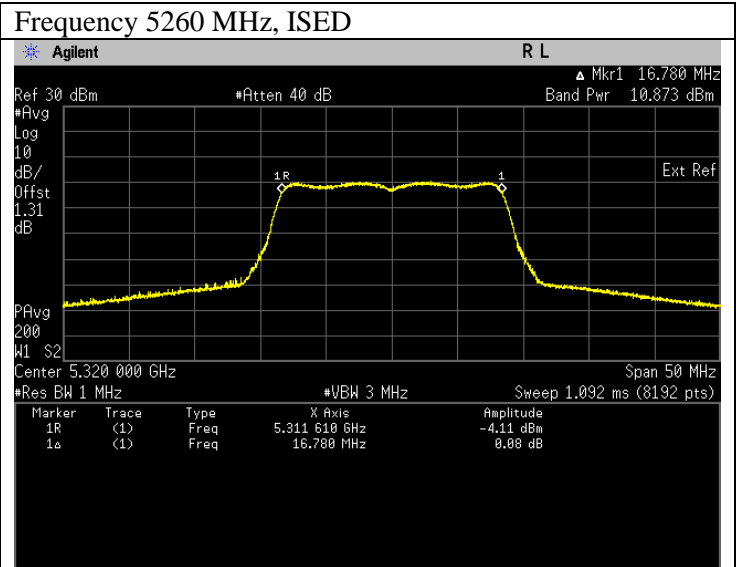
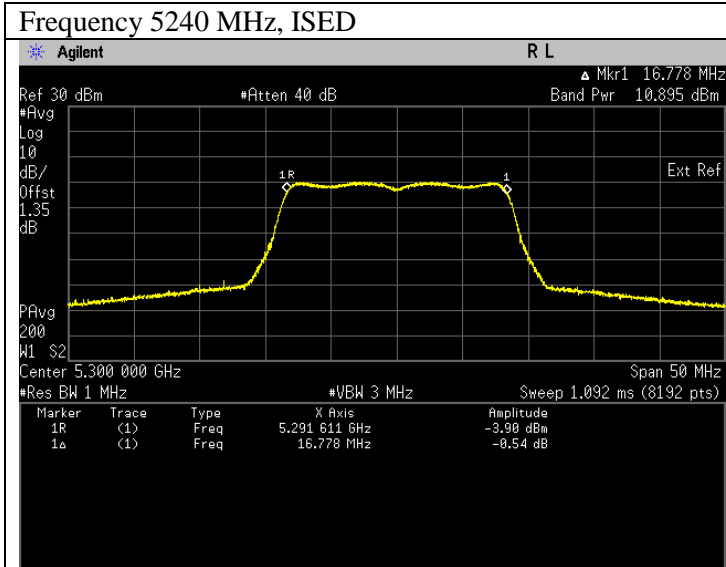


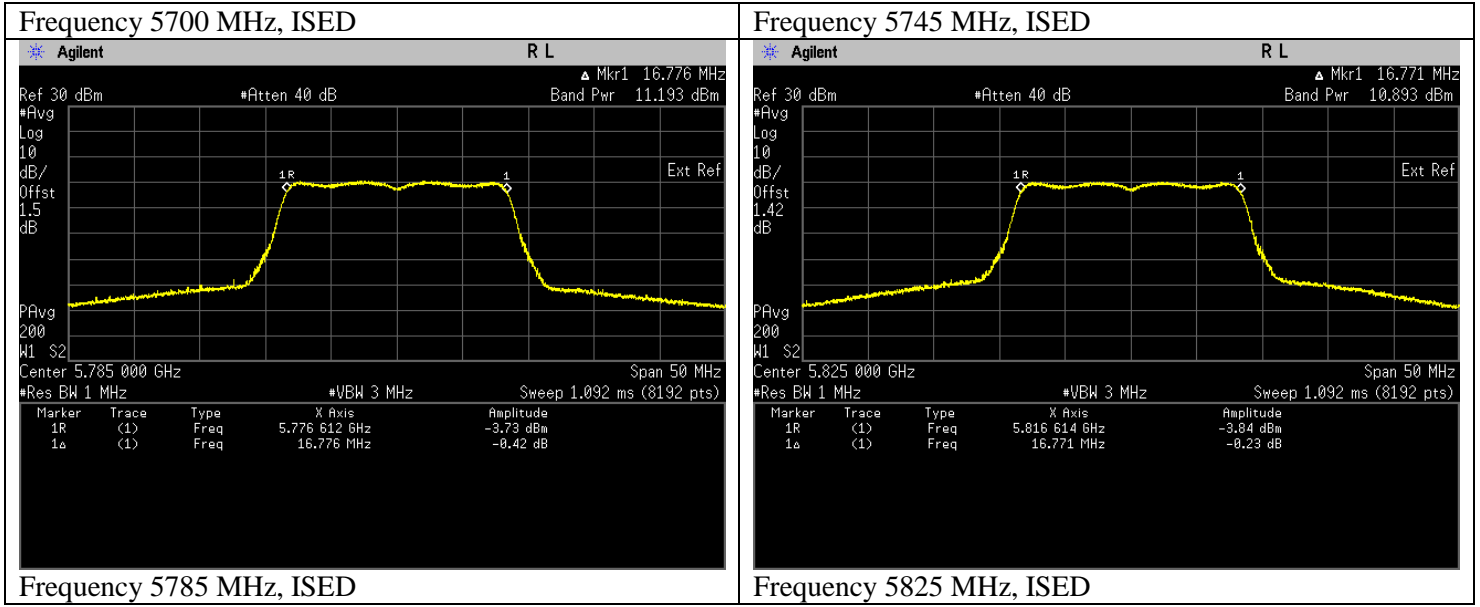
Frequency 5180 MHz, ISED



Frequency 5220 MHz, ISED

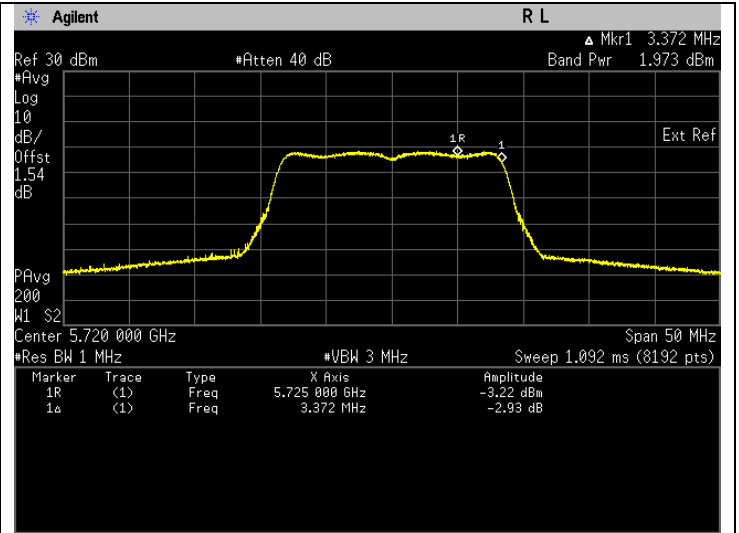
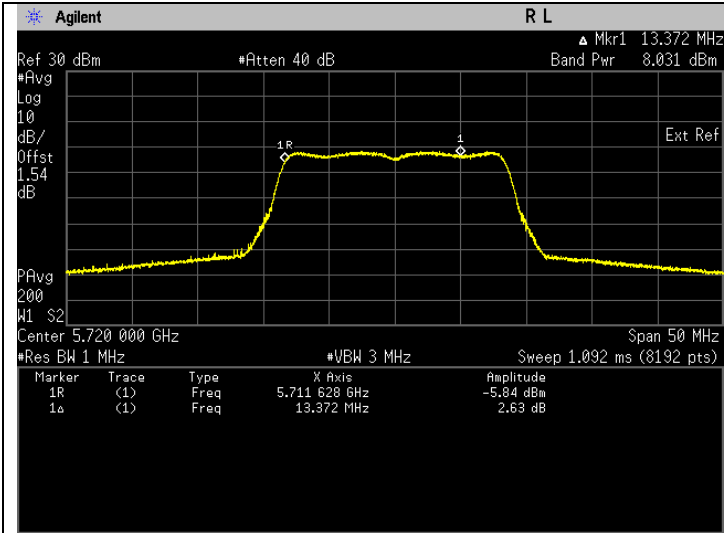






Straddle Frequency

Freq. (MHz)	Test Conditions	Results				
		U-NII- 2C				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5720	BPSK, Data Rate: 6	6.553	8.164	Pass	12.264	Pass
		U-NII-3				
5720	BPSK, Data Rate: 6	1.624	2.106	Pass	6.206	Pass

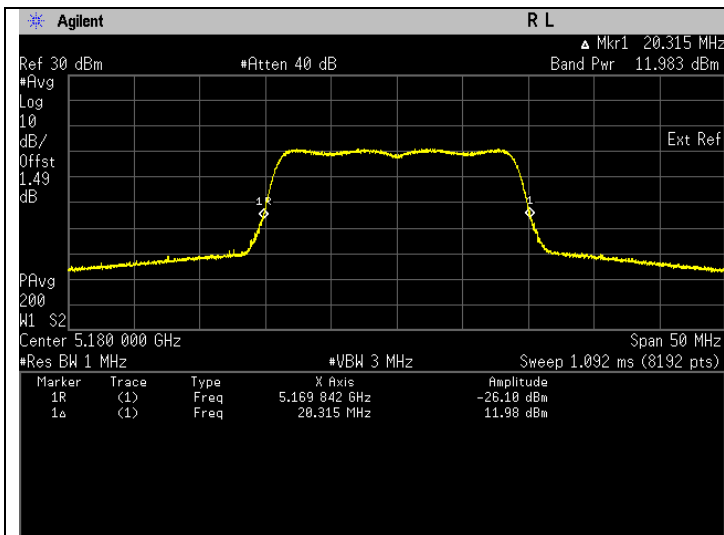


Frequency 5720 MHz, ISED, U-NII-2C. *Note: The band power is captured before the 5725 MHz.

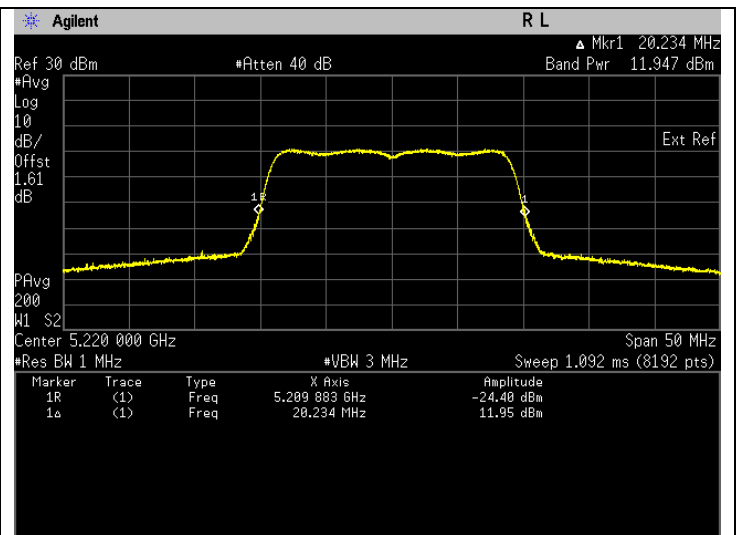
Frequency 5720 MHz, ISED, U-NII-3. *Note: The band power is captured after the 5725 MHz.

802.11n (HT20)(26dB EBW)

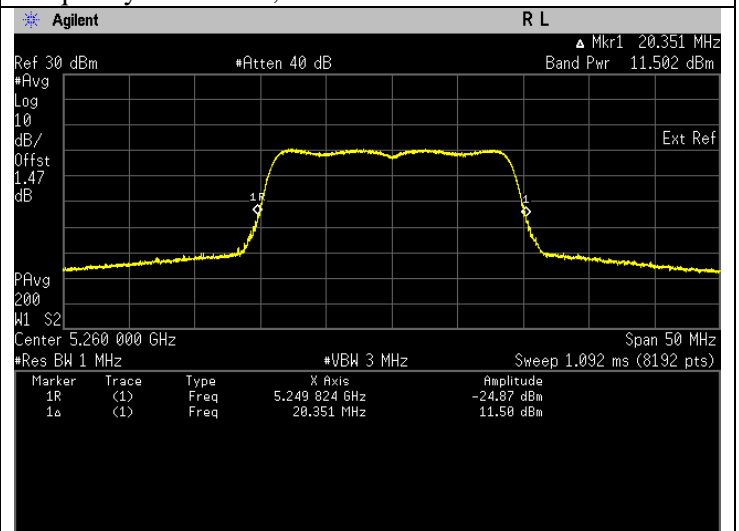
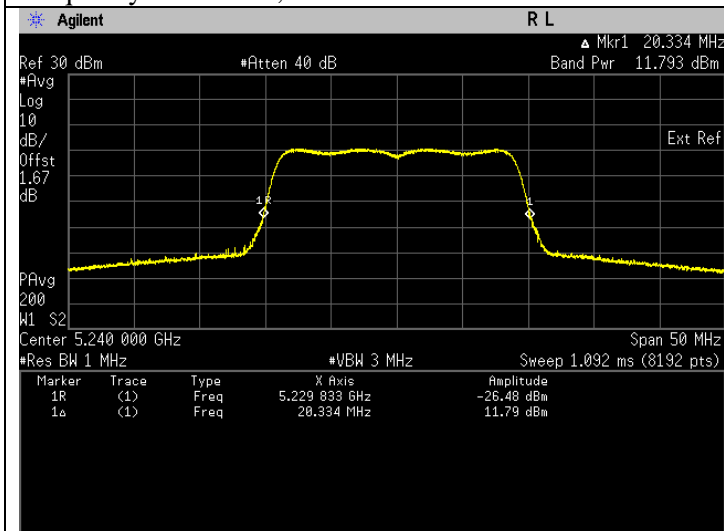
Freq. (MHz)	Test Conditions	Results		
		Power (mW)	Power (dBm)	Status
5180	BPSK, Data Rate: MCS0 (6.5)	16.114	12.072	Pass
5220	BPSK, Data Rate: MCS0 (6.5)	15.981	12.036	Pass
5240	BPSK, Data Rate: MCS0 (6.5)	15.424	11.882	Pass
5260	BPSK, Data Rate: MCS0 (6.5)	14.425	11.591	Pass
5300	BPSK, Data Rate: MCS0 (6.5)	13.360	11.258	Pass
5320	BPSK, Data Rate: MCS0 (6.5)	13.706	11.369	Pass
5500	BPSK, Data Rate: MCS0 (6.5)	8.162	9.118	Pass
5580	BPSK, Data Rate: MCS0 (6.5)	15.181	11.813	Pass
5700	BPSK, Data Rate: MCS0 (6.5)	8.104	9.087	Pass
5745	BPSK, Data Rate: MCS0 (6.5)	13.499	11.303	Pass
5785	BPSK, Data Rate: MCS0 (6.5)	14.372	11.575	Pass
5825	BPSK, Data Rate: MCS0 (6.5)	13.599	11.335	Pass

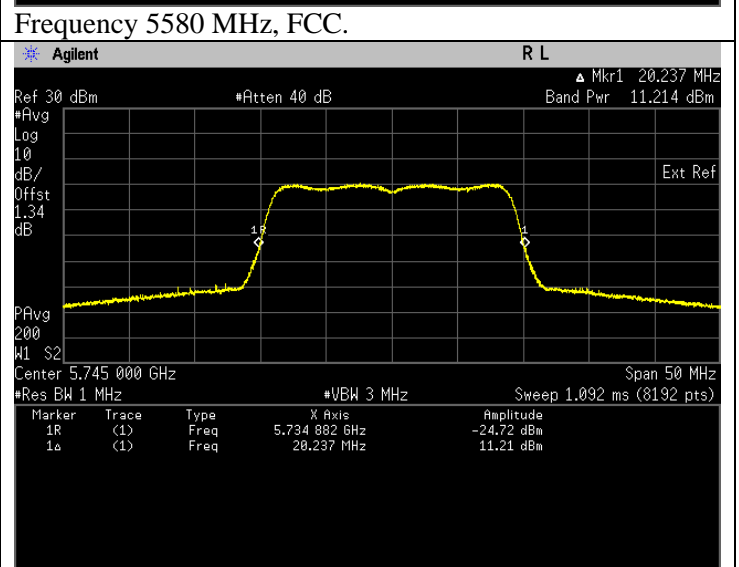
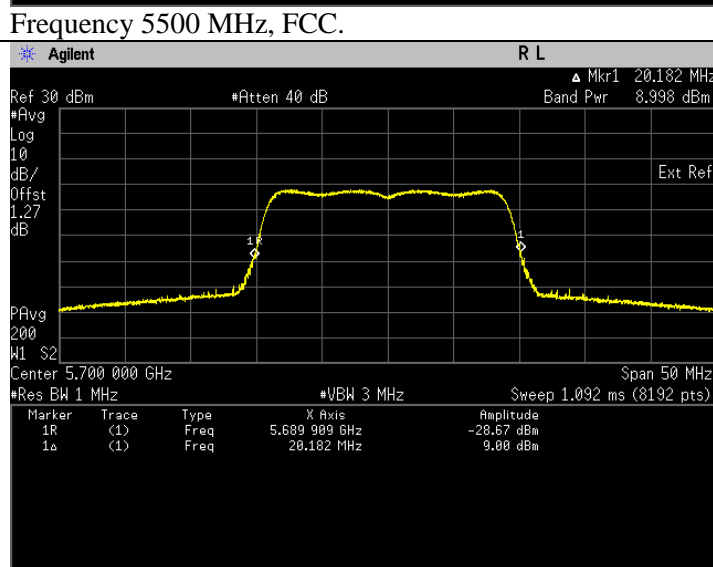
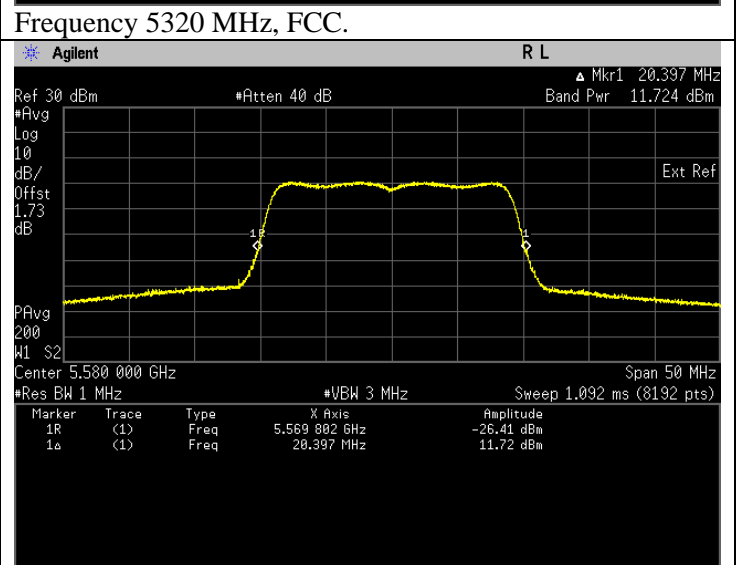
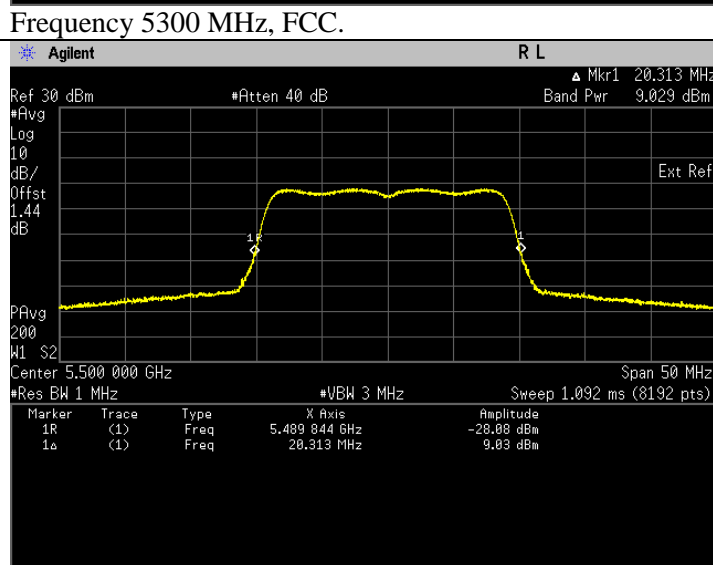
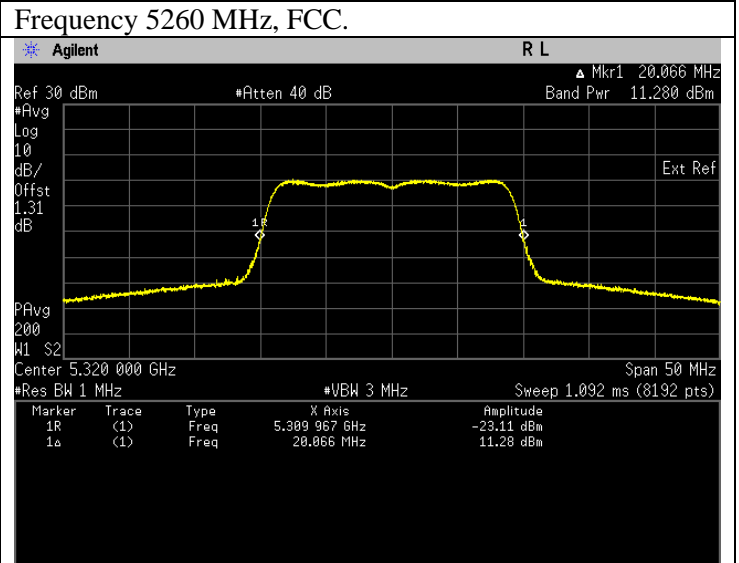
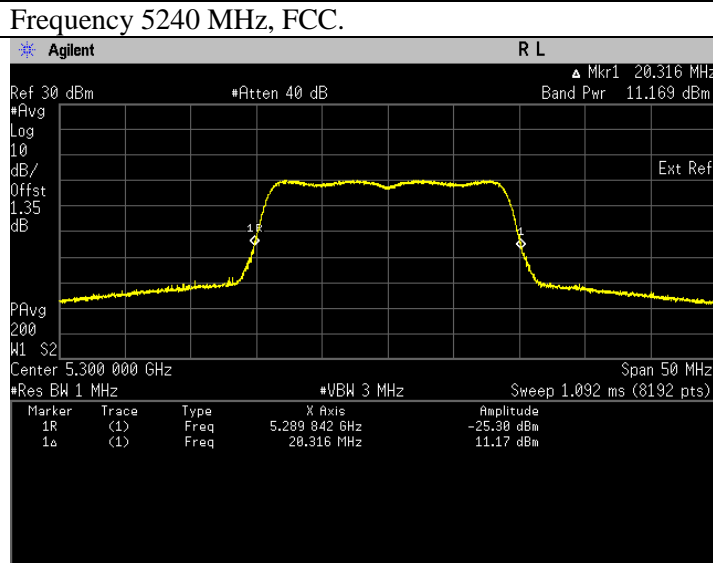


Frequency 5180 MHz, FCC.

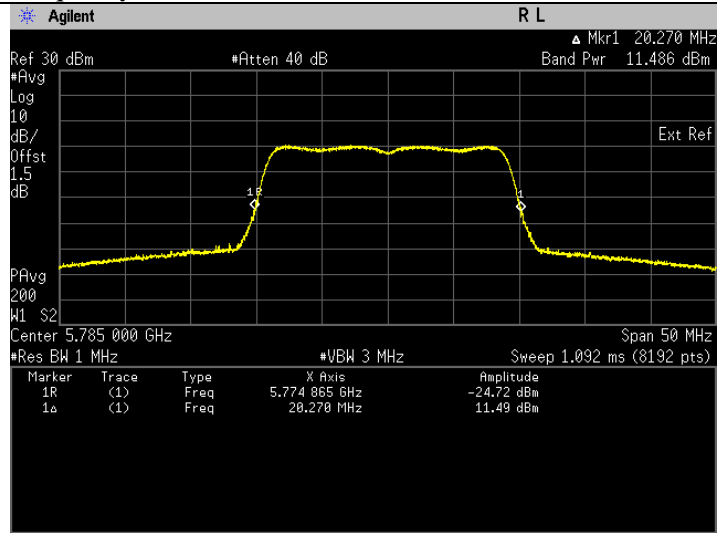


Frequency 5220 MHz, FCC.

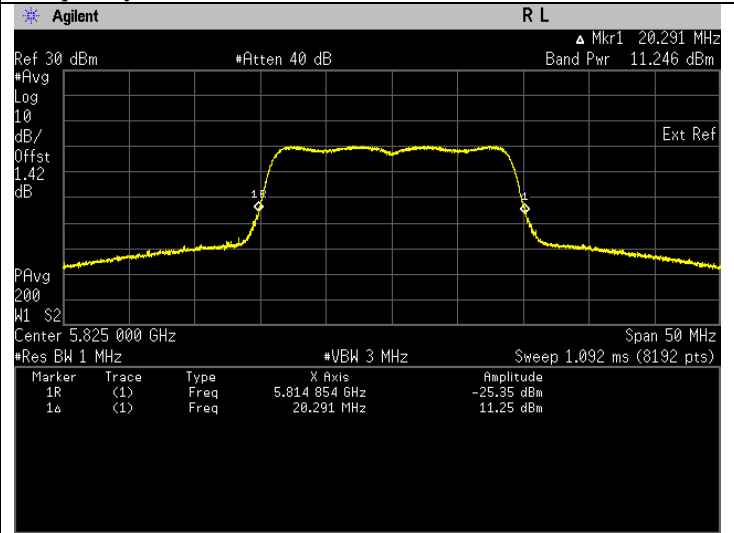




Frequency 5700 MHz, FCC.



Frequency 5745 MHz, FCC.

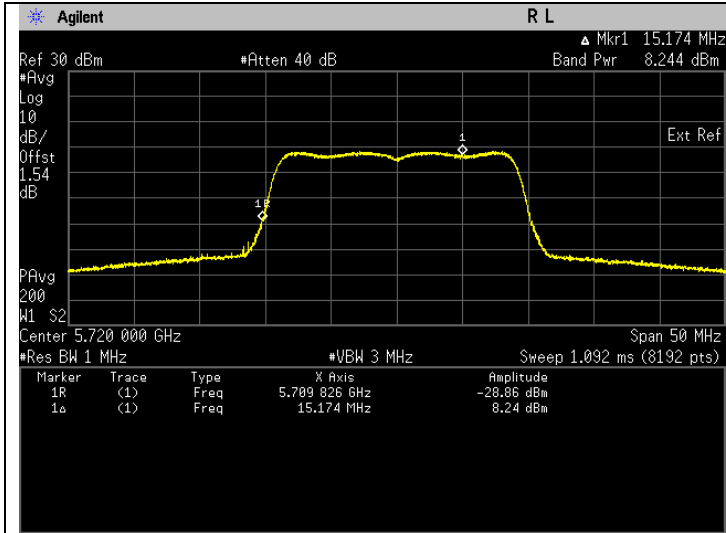


Frequency 5785 MHz, FCC.

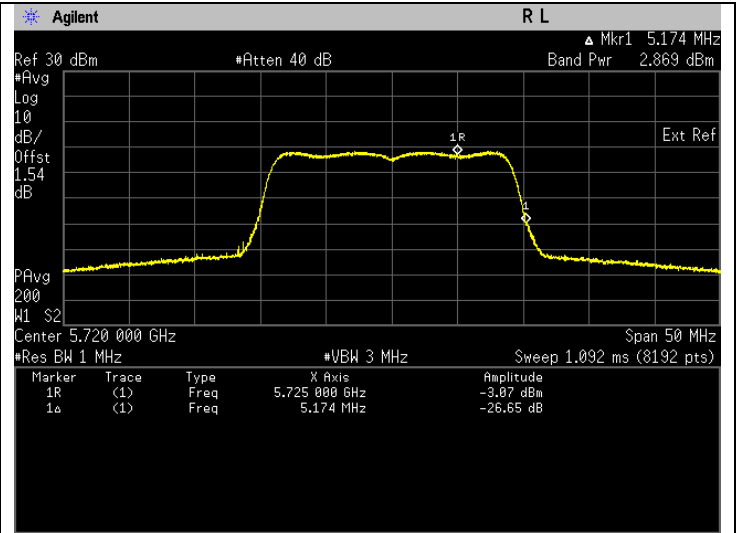
Frequency 5825 MHz, FCC.

Straddle Frequency

Freq. (MHz)	Test Conditions	Results		
		U-NII- 2C		
		Power (mW)	Power (dBm)	Status
5720	BPSK, Data Rate: MCS0 (6.5)	6.813	8.333	Pass
		U-NII-3		
5720	BPSK, Data Rate: MCS0 (6.5)	1.976	2.958	Pass



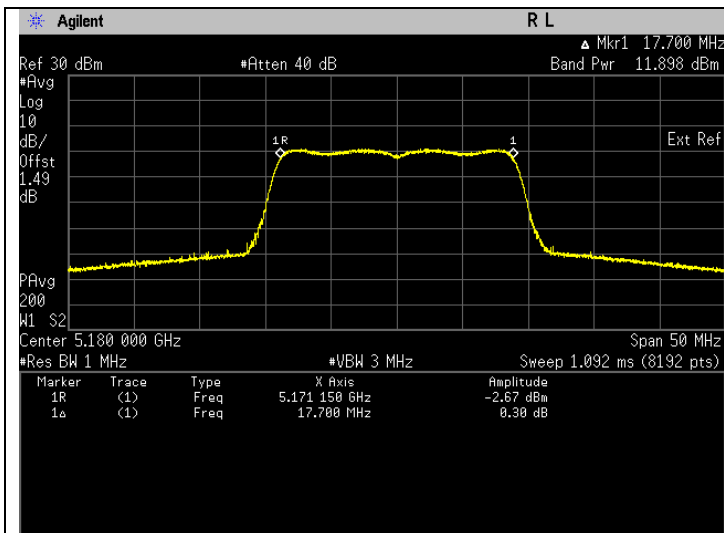
Frequency 5720 MHz, FCC, U-NII-2C. *Note: The band power is captured before the 5725 MHz.



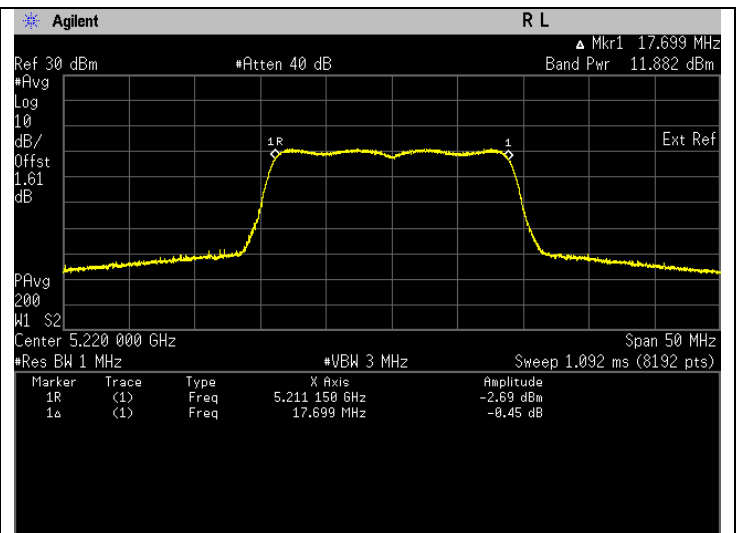
Frequency 5720 MHz, FCC, U-NII-3. *Note: The band power is captured after the 5725 MHz.

802.11n (HT20)(99% EBW)

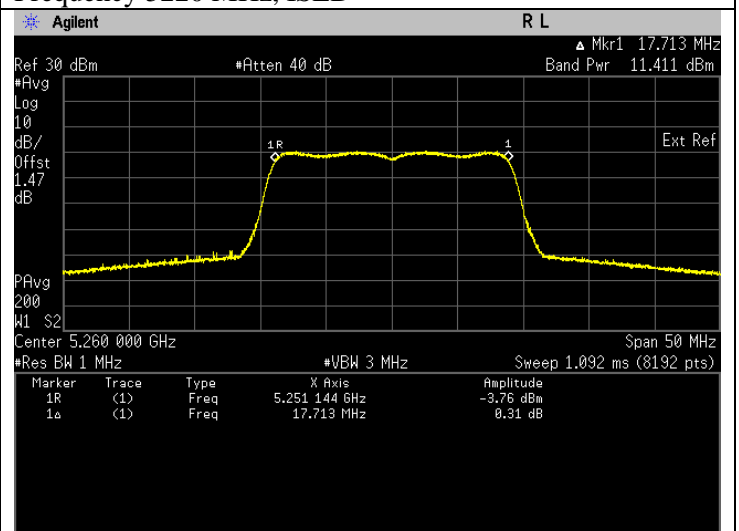
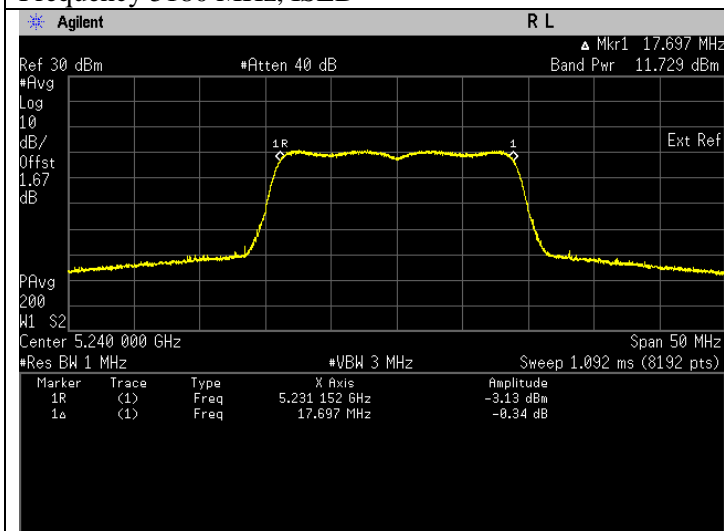
Freq. (MHz)	Test Conditions	Results				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5180	BPSK, Data Rate: MCS0 (6.5)	15.802	11.987	Pass	16.087	Pass
5220	BPSK, Data Rate: MCS0 (6.5)	15.744	11.971	Pass	16.071	Pass
5240	BPSK, Data Rate: MCS0 (6.5)	15.199	11.818	Pass	15.918	Pass
5260	BPSK, Data Rate: MCS0 (6.5)	14.126	11.500	Pass	15.6	Pass
5300	BPSK, Data Rate: MCS0 (6.5)	13.098	11.172	Pass	15.272	Pass
5320	BPSK, Data Rate: MCS0 (6.5)	13.342	11.252	Pass	15.352	Pass
5500	BPSK, Data Rate: MCS0 (6.5)	7.971	9.015	Pass	13.115	Pass
5580	BPSK, Data Rate: MCS0 (6.5)	14.904	11.733	Pass	15.833	Pass
5700	BPSK, Data Rate: MCS0 (6.5)	7.914	8.984	Pass	13.084	Pass
5745	BPSK, Data Rate: MCS0 (6.5)	13.394	11.269	Pass	15.369	Pass
5785	BPSK, Data Rate: MCS0 (6.5)	13.929	11.439	Pass	15.539	Pass
5825	BPSK, Data Rate: MCS0 (6.5)	13.280	11.232	Pass	15.332	Pass

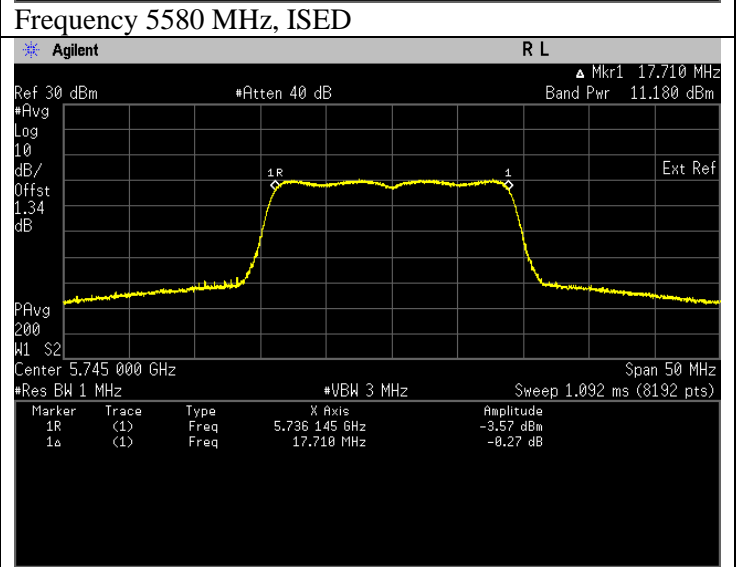
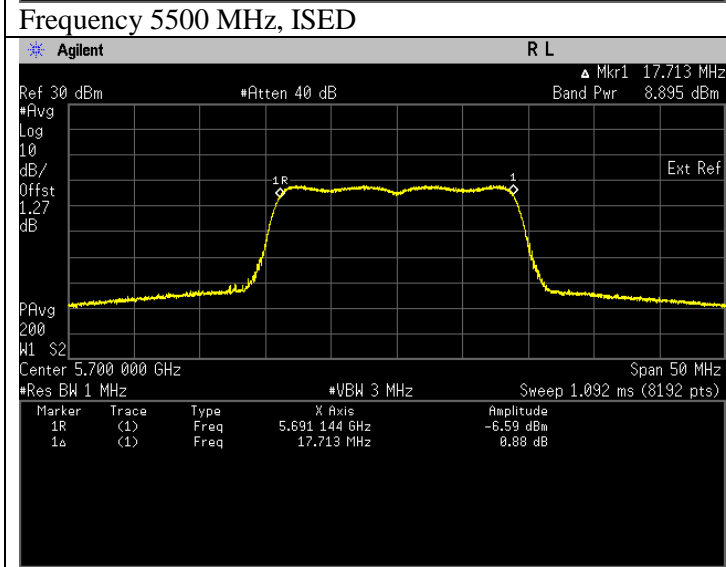
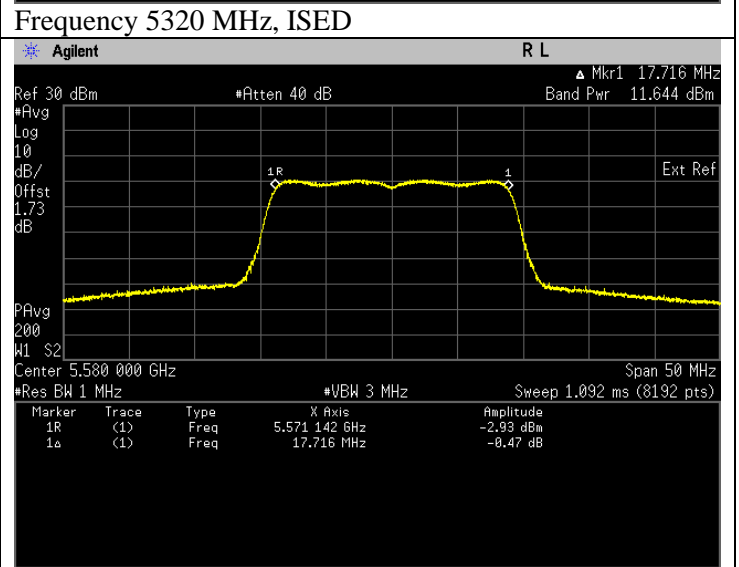
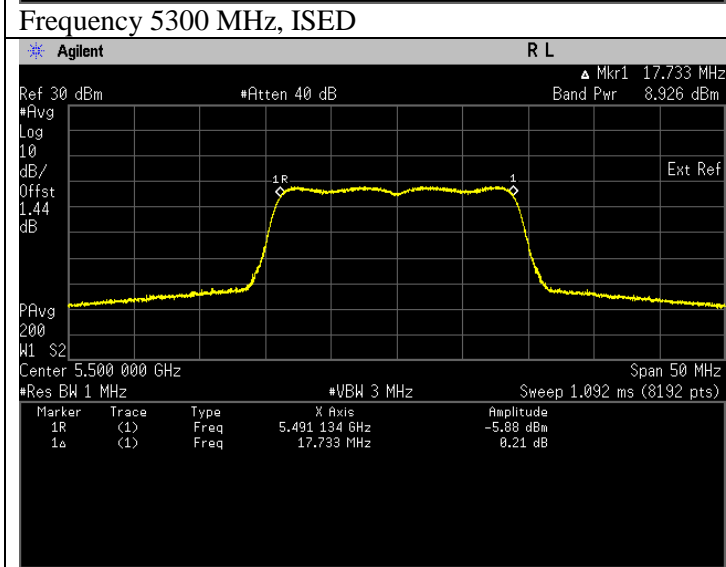
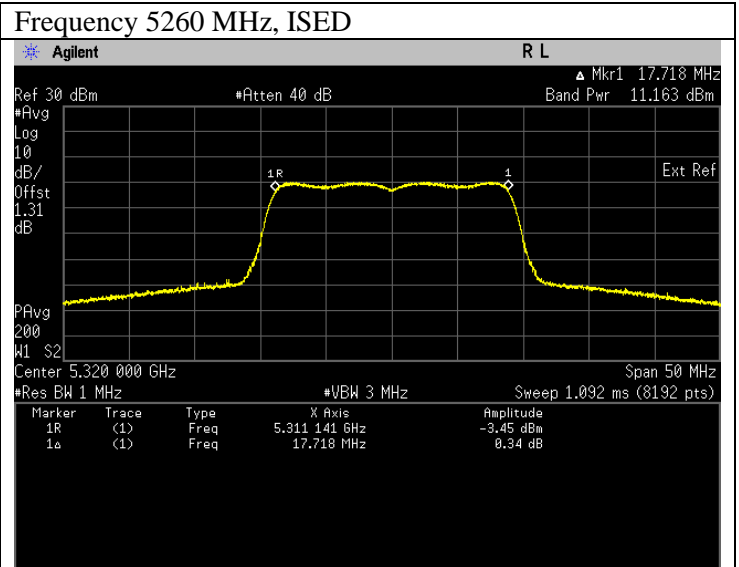
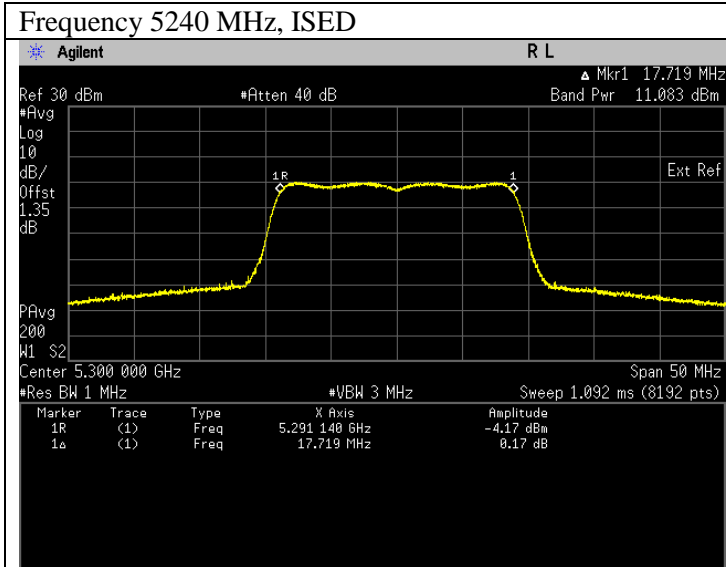


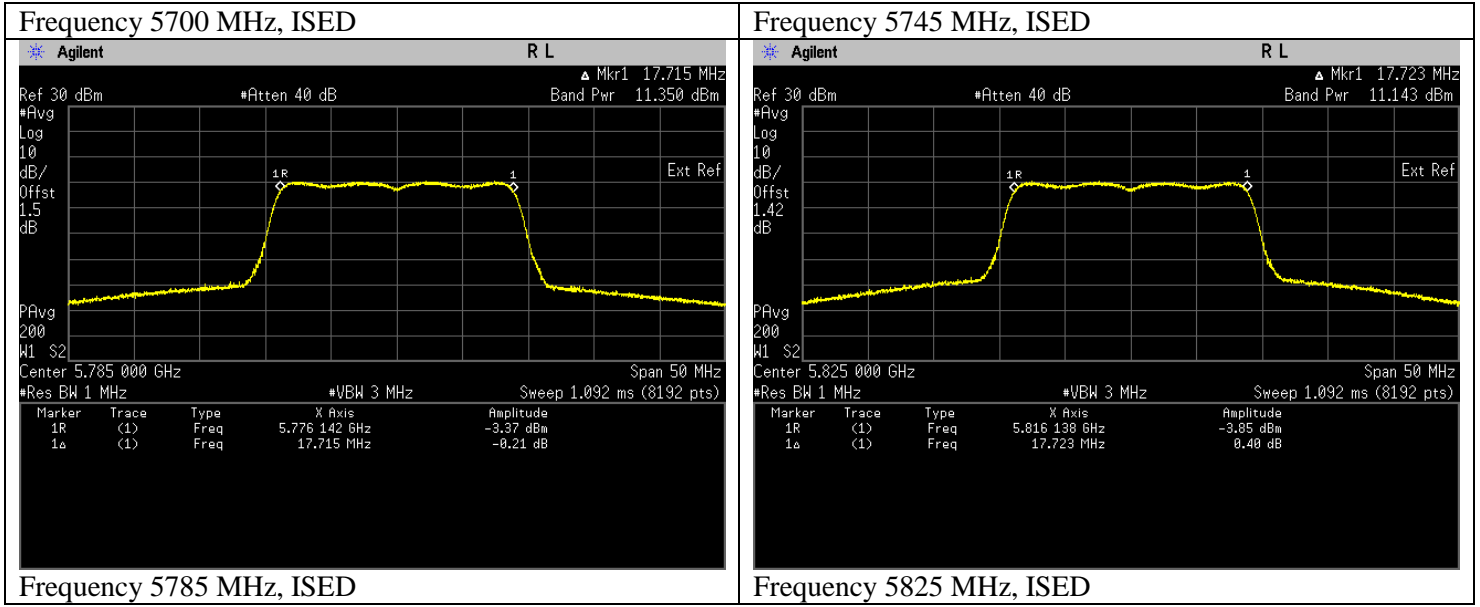
Frequency 5180 MHz, ISED



Frequency 5220 MHz, ISED

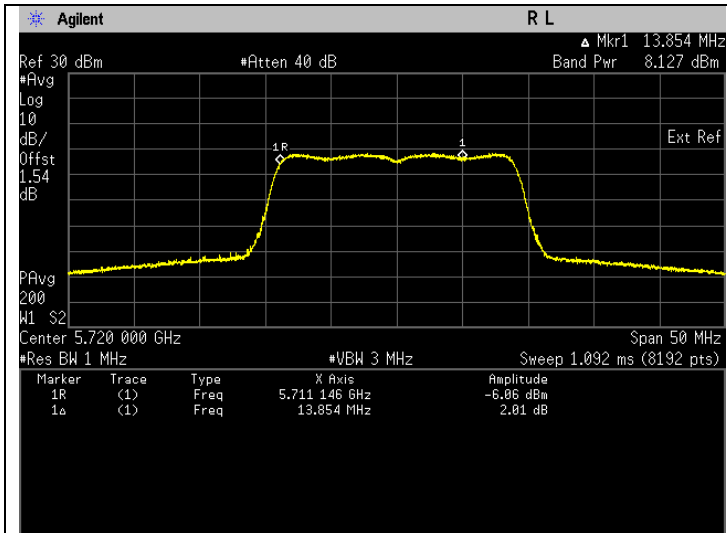




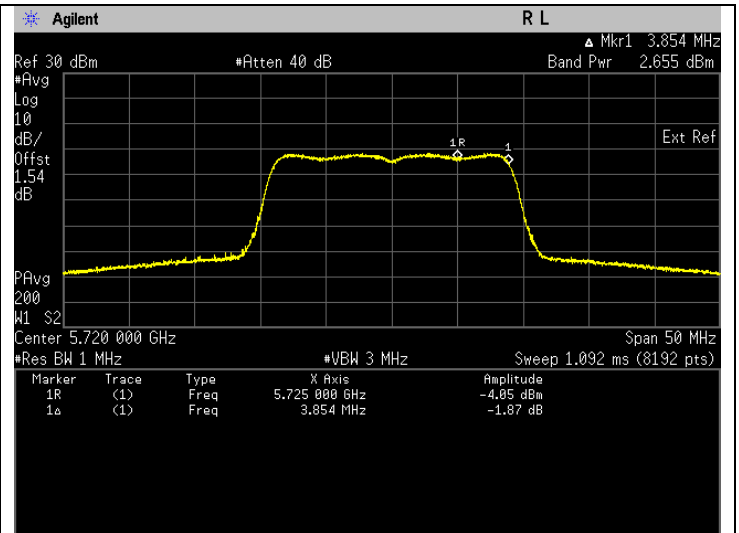


Straddle Frequency

Freq. (MHz)	Test Conditions	Results				
		U-NII- 2C				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5720	BPSK, Data Rate: MCS0 (6.5)	6.631	8.216	Pass	12.316	Pass
		U-NII-3				
5720	BPSK, Data Rate: MCS0 (6.5)	1.881	2.744	Pass	6.844	Pass



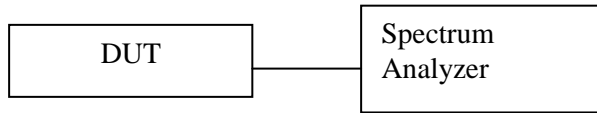
Frequency 5720 MHz, ISED, U-NII-2C. *Note: The band power is captured before the 5725 MHz.



Frequency 5720 MHz, ISED, U-NII-3. *Note: The band power is captured after the 5725 MHz.

7.3. Maximum Power Spectral Density

7.3.1. Test Setup



- a) Test setup as per illustrated above.
- b) Set DUT to transmit at desire transmit frequency.
- c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- d) Setting of Spectrum analyzer :
 - Span to encompass the entire 26dB EBW or 99% occupied bandwidth.
 - RBW = 1 MHz (5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz) / 500 kHz (5.725-5.85 GHz)
 - VBW ≥ 3·RBW
 - Detector = power averaging (RMS)
 - Trace = Max hold
 - Number of points in sweep ≥ 2 × span / RBW
 - Sweep time = auto
 - Trace average at least 100 traces in power averaging (rms) mode
- e) Use the peak search function on the instrument to find the peak of the spectrum and record its value.
- f) Add 10 log (1/x), where x is the duty cycle, to the peak of the spectrum.
- g) The measurement method follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04 under clause F) Method SA-2.
- h) The Maximum power spectral density results are included duty cycle correction factor.

7.3.2. Test Limits

FCC 15.407(a)

Range (GHz)	Condition	Limit
5.15-5.25	Outdoor AP	17dBm/ 1MHz
	Indoor AP	17dBm/ 1MHz
	Fixed Point to Point AP	17dBm/ 1MHz
	√ Mobile and Portable Client Devices	11dBm/ 1MHz
5.25-5.35	√	11dBm/ 1MHz
5.47-5.525	√	11dBm/ 1MHz
5.725-5.85	√	30dBm/ 500kHz

RSS-247 6.2

Range(GHz)	Condition	Limit
5.15-5.25	Indoor Operation Only	EIRP: 10dBm/ 1MHz
5.25-5.35		11dBm/ 1MHz
5.47-5.6 5.6-5.525		11dBm/ 1MHz
5.725-5.85		30dBm/ 500kHz

7.3.3. Additional Info

Antenna	Gain (dBi)
Antenna 1	4.1
Duty Cycle Correction Factor	
802.11a	0.133
802.11n (HT20)	0.089

7.3.4.

7.3.4.1. Test Data

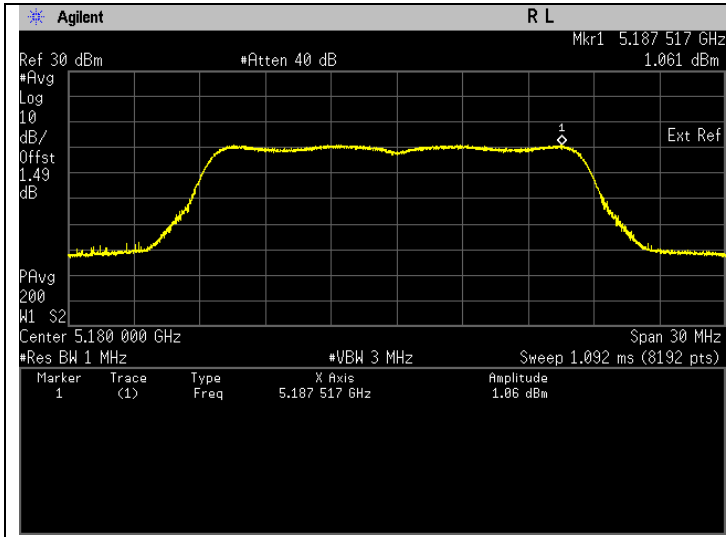
802.11a (26dB EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
5180	BPSK, Data Rate: 6	1.194	Pass
5220	BPSK, Data Rate: 6	1.444	Pass
5240	BPSK, Data Rate: 6	0.933	Pass
5260	BPSK, Data Rate: 6	0.641	Pass
5300	BPSK, Data Rate: 6	0.570	Pass
5320	BPSK, Data Rate: 6	0.659	Pass
5500	BPSK, Data Rate: 6	-1.854	Pass
5580	BPSK, Data Rate: 6	1.224	Pass
5700	BPSK, Data Rate: 6	-1.719	Pass
Freq. (MHz)	Test Conditions	Power/Frequency (dBm/500kHz)	Status
5745	BPSK, Data Rate: 6	-2.217	Pass
5785	BPSK, Data Rate: 6	-1.976	Pass
5825	BPSK, Data Rate: 6	-2.169	Pass

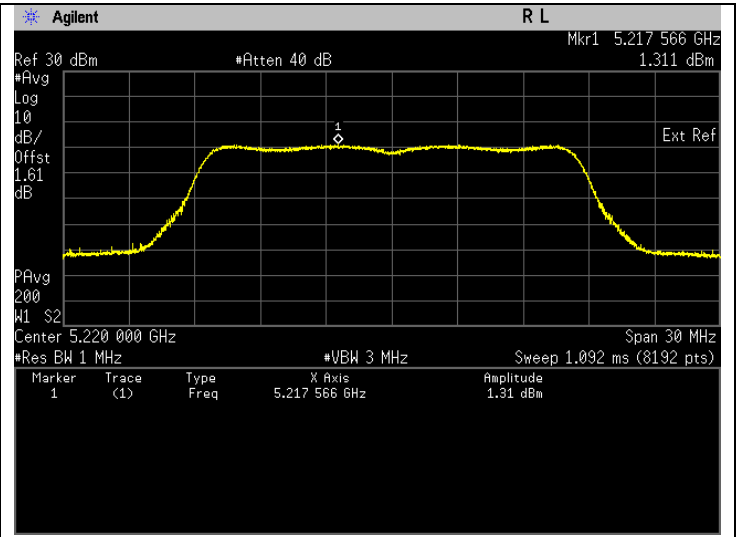
802.11a (99% EBW)

Freq. (MHz)	Test Conditions	Results			
		Power/Frequency (dBm/MHz)	Status	EIRP (dBm/MHz)	Status
5180	BPSK, Data Rate: 6	1.194	Pass	5.294	Pass
5220	BPSK, Data Rate: 6	1.444	Pass	5.544	Pass
5240	BPSK, Data Rate: 6	0.933	Pass	5.033	Pass
5260	BPSK, Data Rate: 6	0.641	Pass	4.741	Pass
5300	BPSK, Data Rate: 6	0.570	Pass	4.67	Pass
5320	BPSK, Data Rate: 6	0.659	Pass	4.759	Pass
5500	BPSK, Data Rate: 6	-1.854	Pass	2.246	Pass
5580	BPSK, Data Rate: 6	1.224	Pass	5.324	Pass
5700	BPSK, Data Rate: 6	-1.719	Pass	2.381	Pass
Freq. (MHz)	Test Conditions	Power/Frequency (dBm/500kHz)	Status		
5745	BPSK, Data Rate: 6	-2.217	Pass	1.883	Pass
5785	BPSK, Data Rate: 6	-1.976	Pass	2.124	Pass
5825	BPSK, Data Rate: 6	-2.169	Pass	1.931	Pass

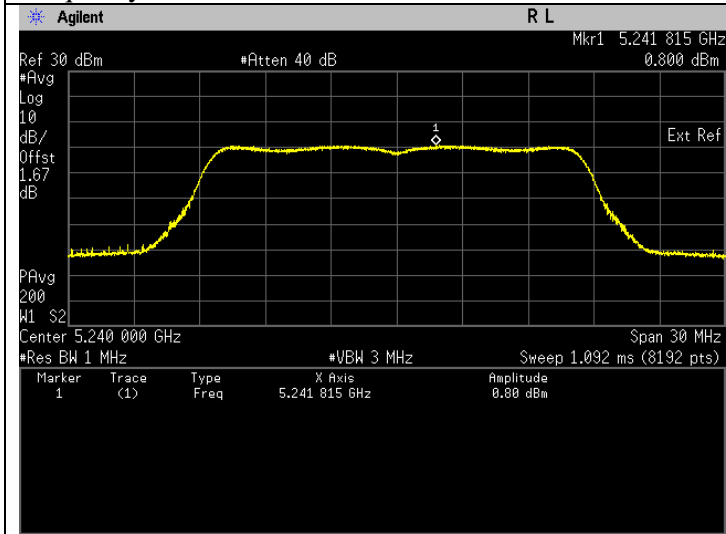
Plots for 802.11a (26dB EBW & 99% EBW)



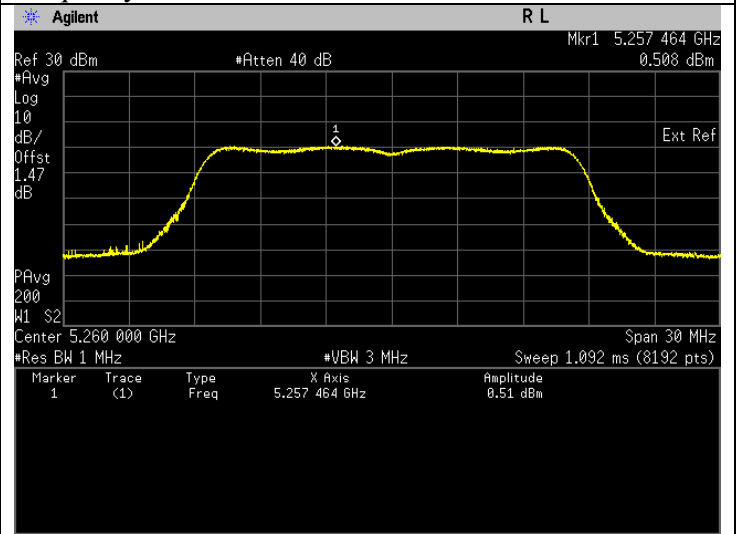
Frequency 5180 MHz, FCC & ISSED.



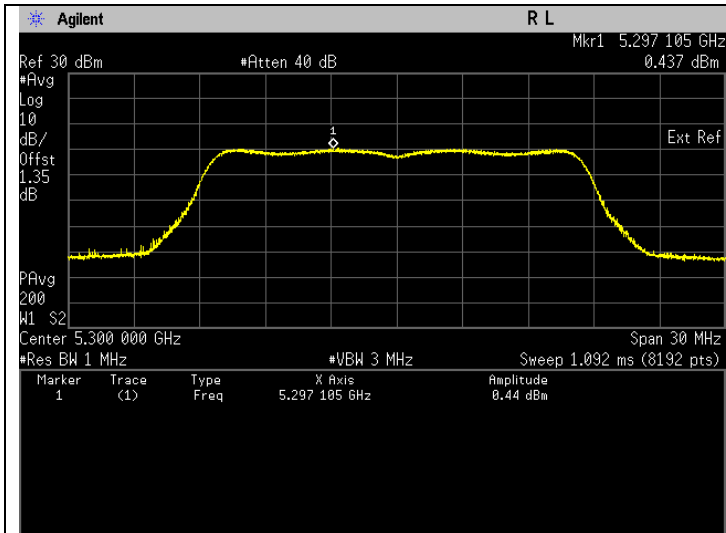
Frequency 5220 MHz, FCC & ISSED.



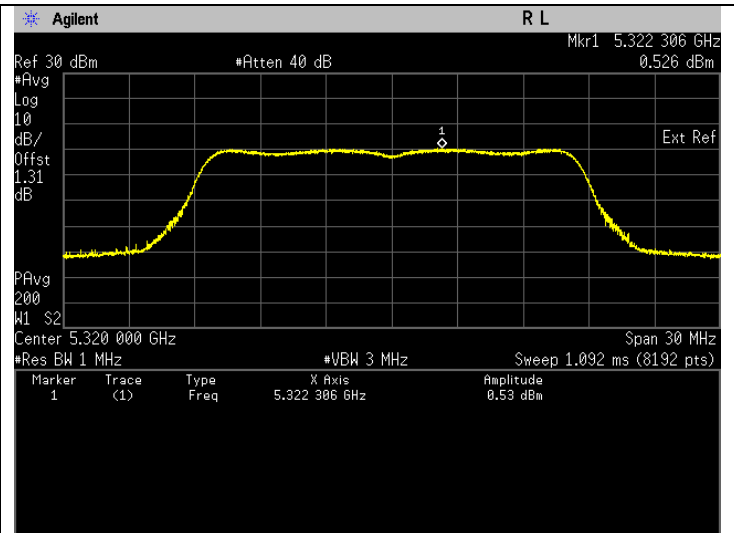
Frequency 5240 MHz, FCC & ISSED.



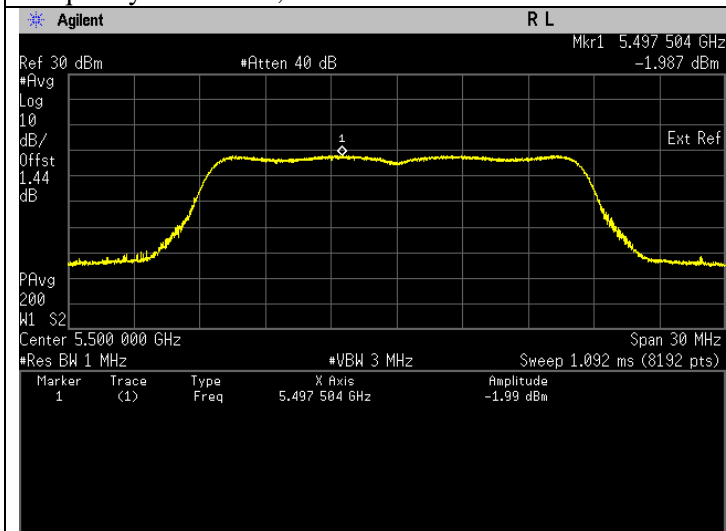
Frequency 5260 MHz, FCC & ISSED.



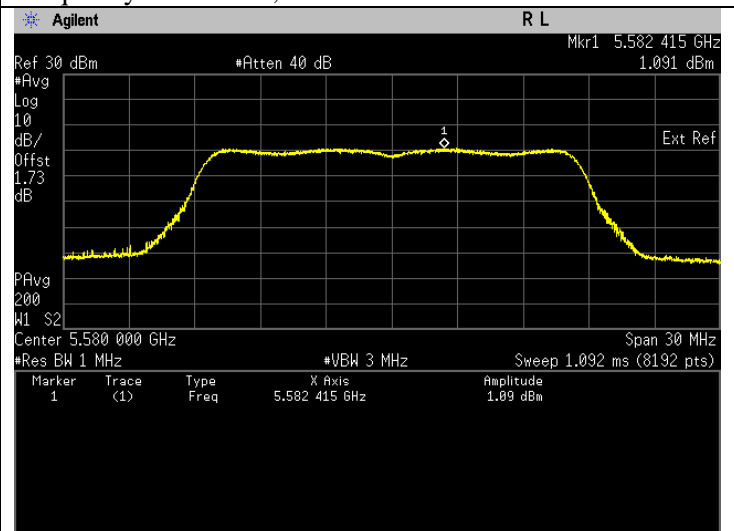
Frequency 5300 MHz, FCC & ISSED.



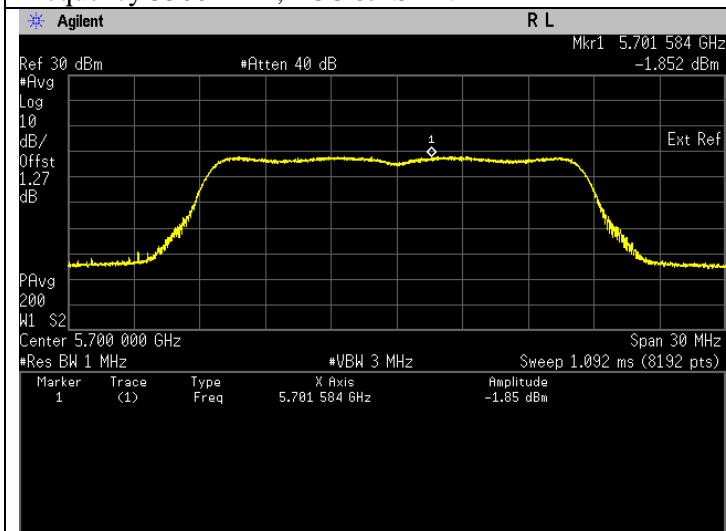
Frequency 5320 MHz, FCC & ISSED.



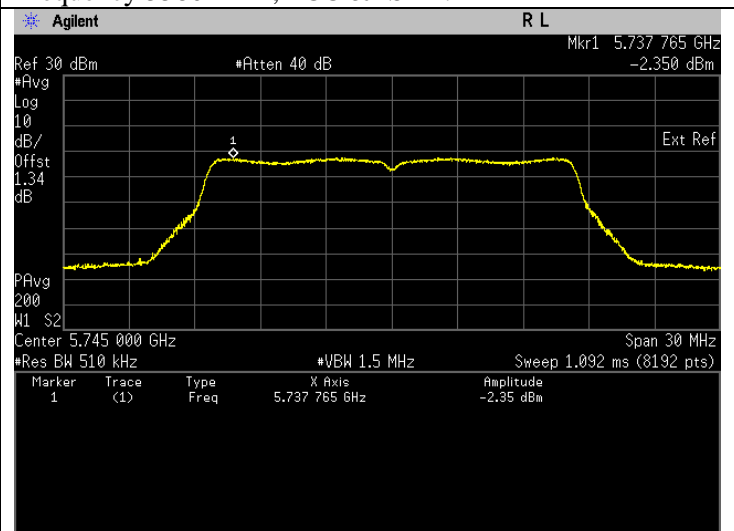
Frequency 5500 MHz, FCC & ISSED.



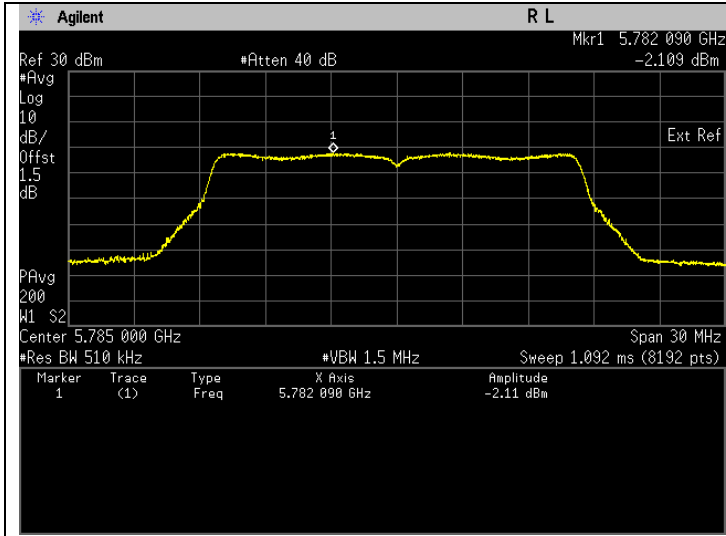
Frequency 5580 MHz, FCC & ISSED.



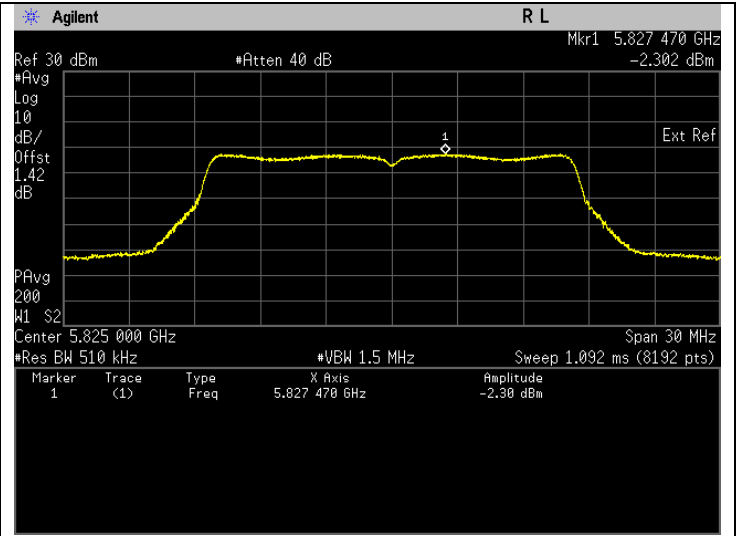
Frequency 5700 MHz, FCC & ISSED.



Frequency 5745 MHz, FCC & ISSED.



Frequency 5785 MHz, FCC & ISSED.



Frequency 5825 MHz, FCC & ISSED.

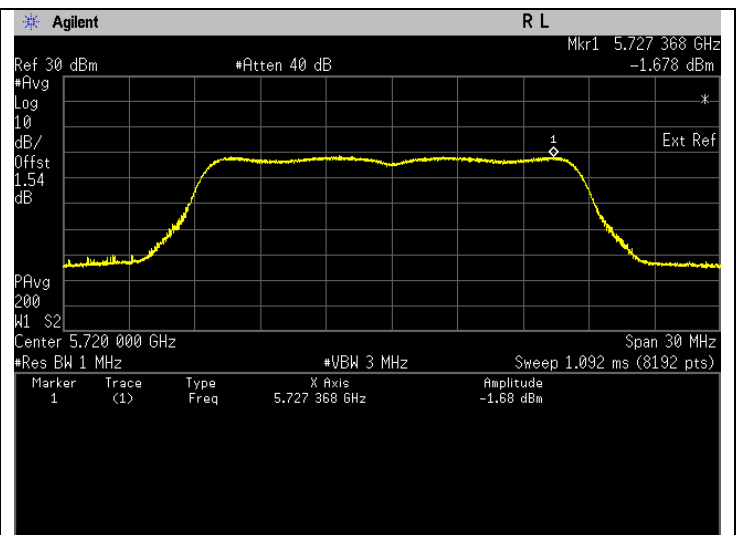
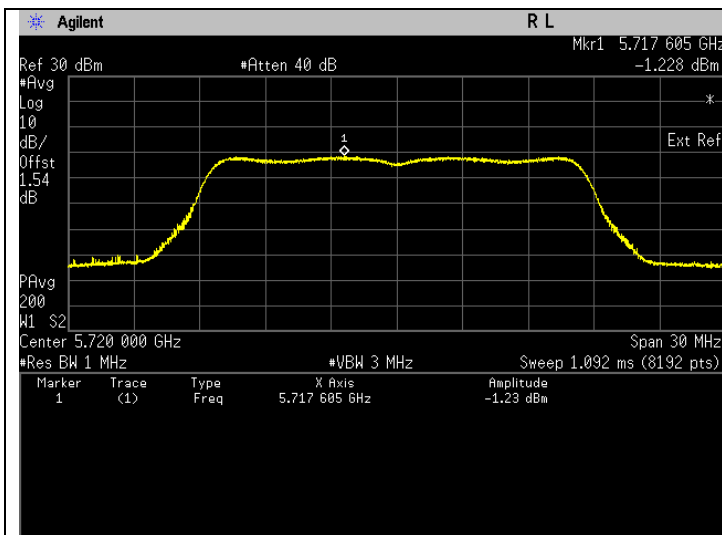
Straddle Frequency for 802.11a (26dB EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
5720	BPSK, Data Rate: 6	-1.095	Pass
		U-NII- 2C	
Freq. (MHz)	Test Conditions	U-NII-3	
		Power/Frequency (dBm/500kHz)	Status
5720	BPSK, Data Rate: 6	-1.545	Pass

Straddle Frequency for 802.11n (HT20) (99% EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
5720	BPSK, Data Rate: 6	-1.095	Pass
		U-NII- 2C	
Freq. (MHz)	Test Conditions	U-NII-3	
		Power/Frequency (dBm/500kHz)	Status
5720	BPSK, Data Rate: 6	-1.545	Pass

Plots for 802.11a Straddle Frequency (26dB EBW & 99% EBW)



Frequency 5720 MHz, FCC & ISSED,U-NII-2C. *Note: The highest spectral density is captured before the 5725 MHz.

Frequency 5720 MHz, FCC & ISSED, U-NII-3. *Note: The highest spectral density is captured after the 5725 MHz.

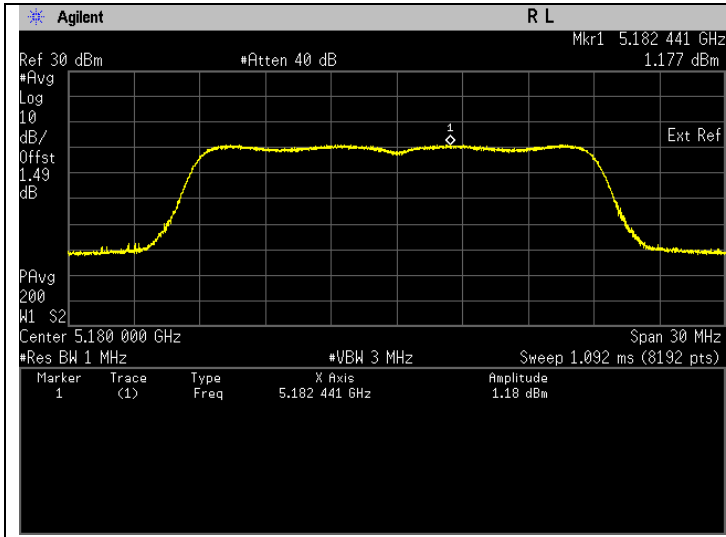
802.11n (HT20)(26dB EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
5180	BPSK, Data Rate: MCS0 (6.5)	1.266	Pass
5220	BPSK, Data Rate: MCS0 (6.5)	1.119	Pass
5240	BPSK, Data Rate: MCS0 (6.5)	1.000	Pass
5260	BPSK, Data Rate: MCS0 (6.5)	0.641	Pass
5300	BPSK, Data Rate: MCS0 (6.5)	0.383	Pass
5320	BPSK, Data Rate: MCS0 (6.5)	0.374	Pass
5500	BPSK, Data Rate: MCS0 (6.5)	-1.437	Pass
5580	BPSK, Data Rate: MCS0 (6.5)	0.957	Pass
5700	BPSK, Data Rate: MCS0 (6.5)	-1.609	Pass
Freq. (MHz)	Test Conditions	Power/Frequency (dBm/500kHz)	Status
5745	BPSK, Data Rate: MCS0 (6.5)	-2.253	Pass
5785	BPSK, Data Rate: MCS0 (6.5)	-2.322	Pass
5825	BPSK, Data Rate: MCS0 (6.5)	-2.424	Pass

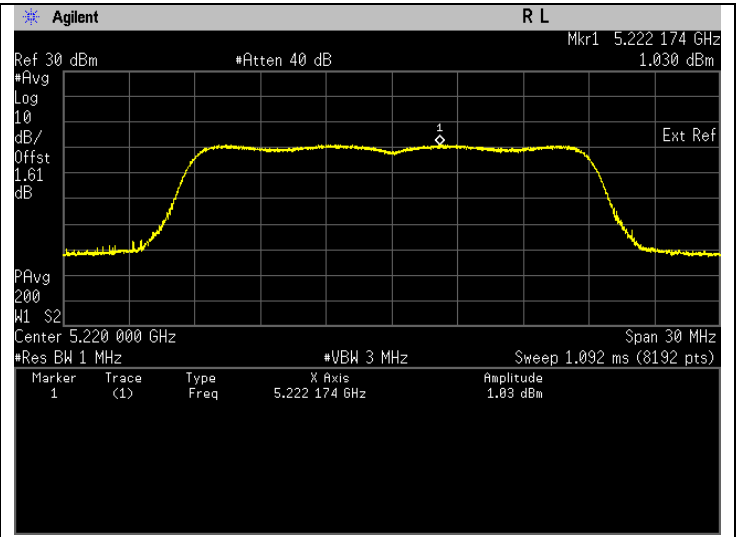
802.11n (HT20)(99% EBW)

Freq. (MHz)	Test Conditions	Results			
		Power/Frequency (dBm/MHz)	Status	EIRP (dBm/MHz)	Status
5180	BPSK, Data Rate: MCS0 (6.5)	1.266	Pass	5.366	Pass
5220	BPSK, Data Rate: MCS0 (6.5)	1.119	Pass	5.219	Pass
5240	BPSK, Data Rate: MCS0 (6.5)	1.000	Pass	5.1	Pass
5260	BPSK, Data Rate: MCS0 (6.5)	0.641	Pass	4.741	Pass
5300	BPSK, Data Rate: MCS0 (6.5)	0.383	Pass	4.483	Pass
5320	BPSK, Data Rate: MCS0 (6.5)	0.374	Pass	4.474	Pass
5500	BPSK, Data Rate: MCS0 (6.5)	-1.437	Pass	2.663	Pass
5580	BPSK, Data Rate: MCS0 (6.5)	0.957	Pass	5.057	Pass
5700	BPSK, Data Rate: MCS0 (6.5)	-1.609	Pass	2.491	Pass
Freq. (MHz)	Test Conditions	Power/Frequency (dBm/500kHz)	Status		
5745	BPSK, Data Rate: MCS0 (6.5)	-2.253	Pass	1.847	Pass
5785	BPSK, Data Rate: MCS0 (6.5)	-2.322	Pass	1.778	Pass
5825	BPSK, Data Rate: MCS0 (6.5)	-2.424	Pass	1.676	Pass

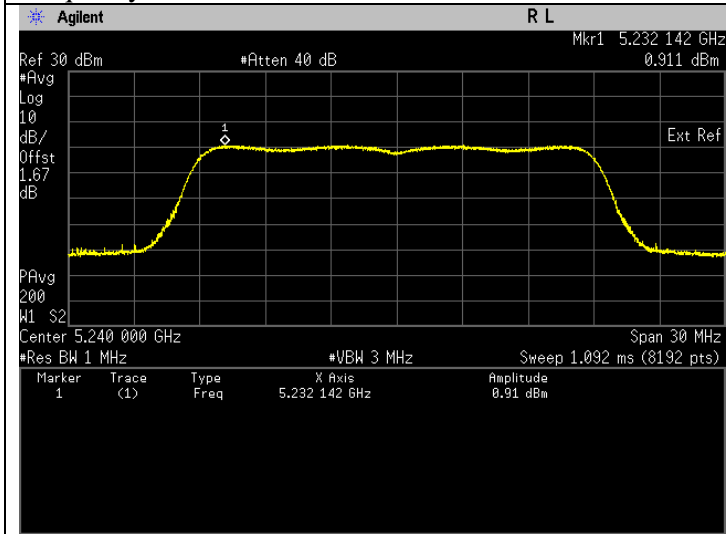
Plots for 802.11n (HT20) (26dB EBW & 99% EBW)



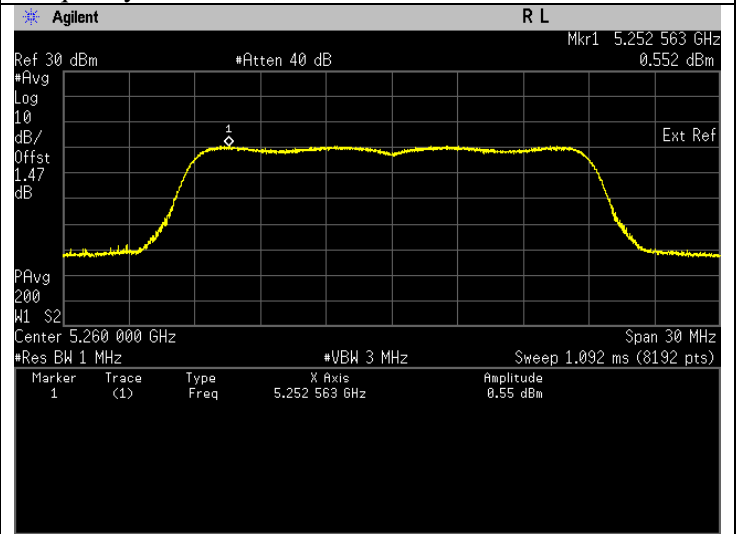
Frequency 5180 MHz, FCC & ISSED.



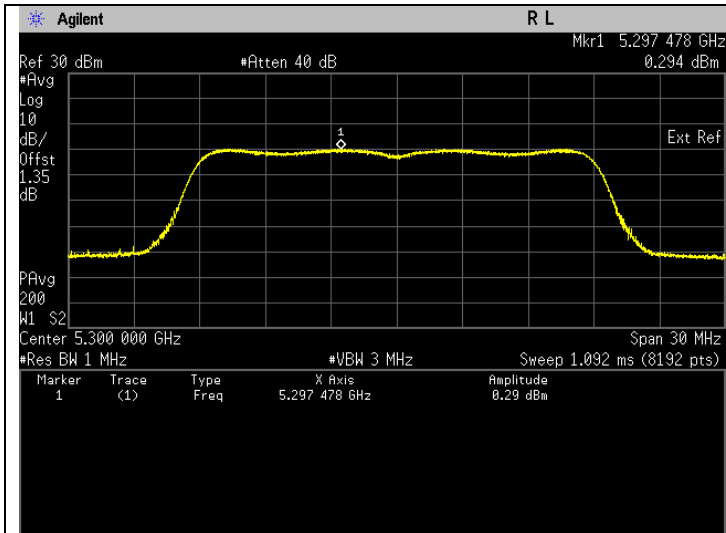
Frequency 5220 MHz, FCC & ISSED.



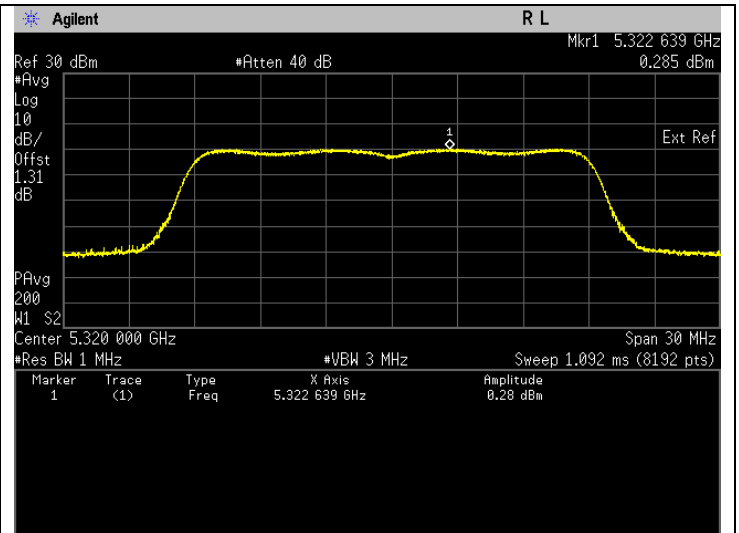
Frequency 5240 MHz, FCC & ISSED.



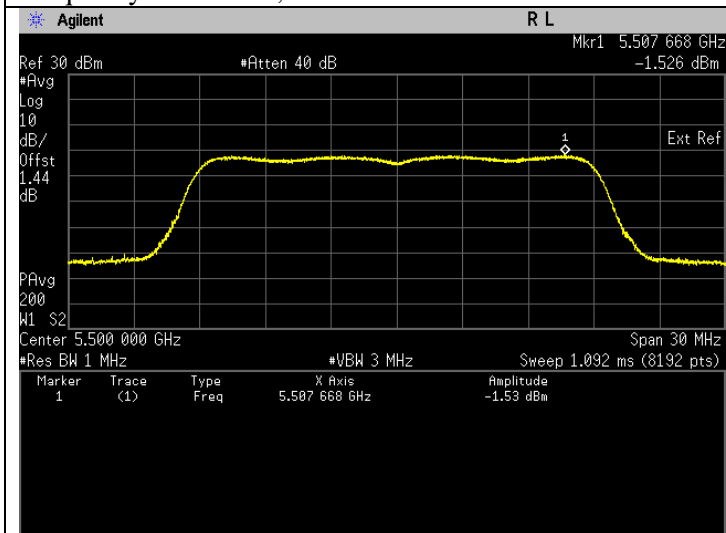
Frequency 5260 MHz, FCC & ISSED.



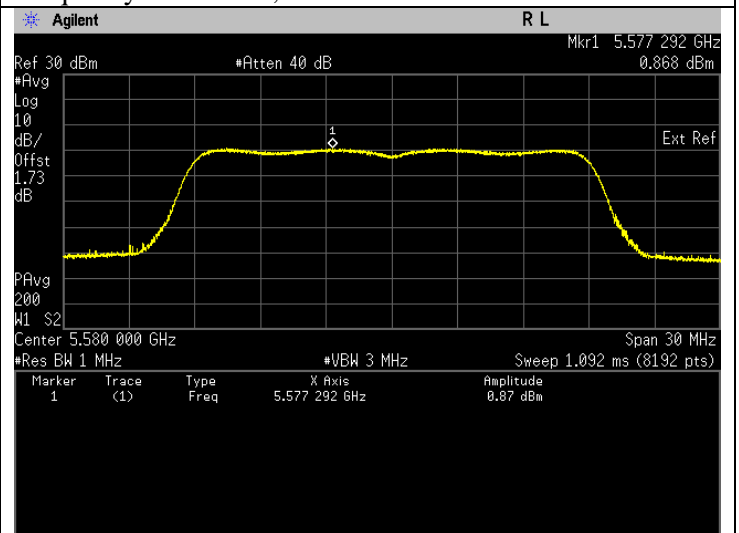
Frequency 5300 MHz, FCC & ISSED.



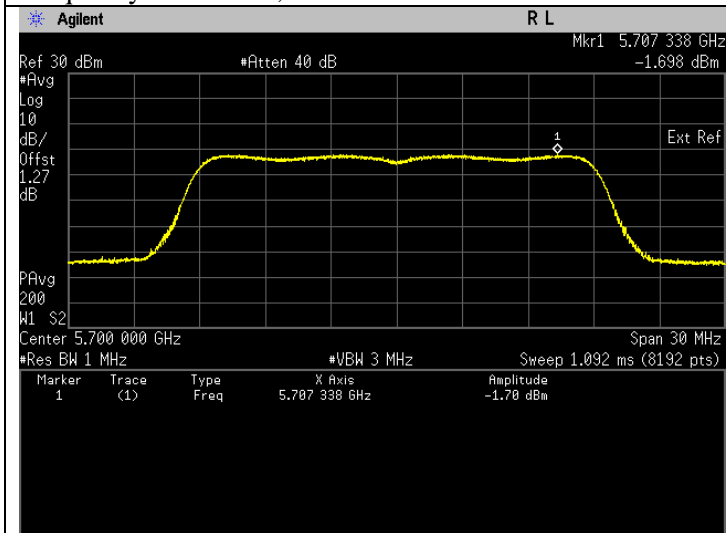
Frequency 5320 MHz, FCC & ISSED.



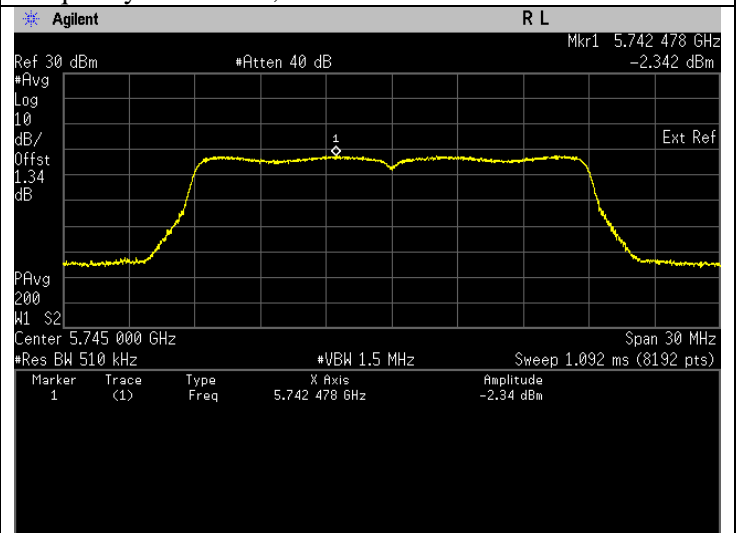
Frequency 5500 MHz, FCC & ISSED.



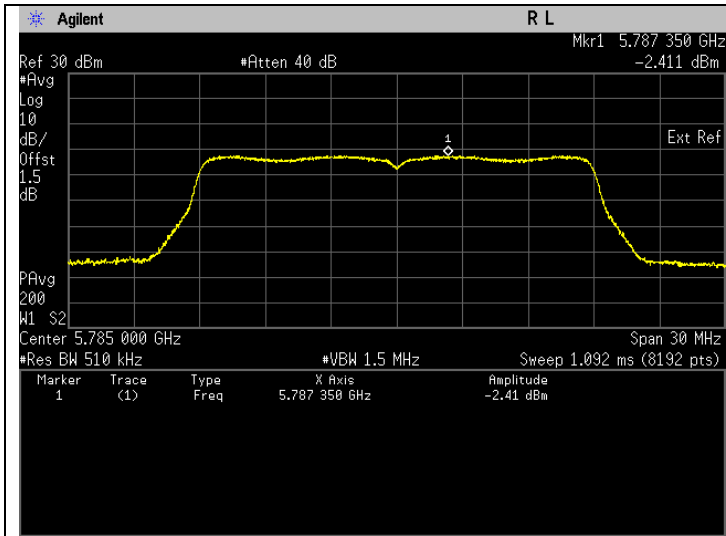
Frequency 5580 MHz, FCC & ISSED.



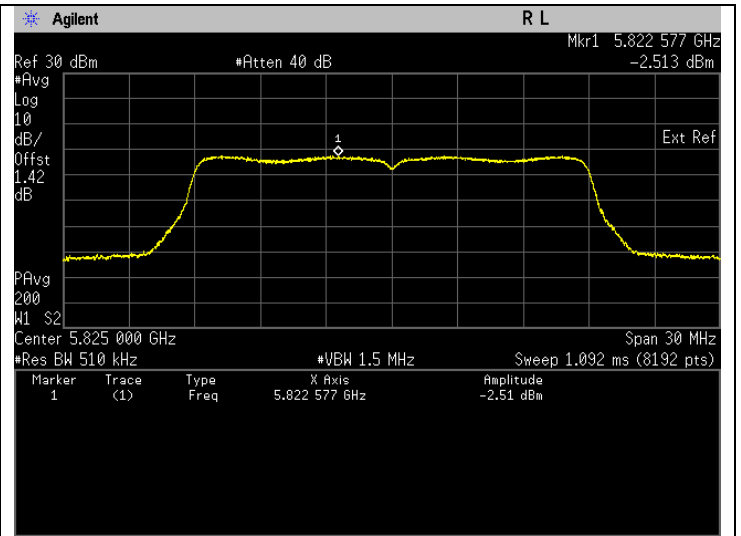
Frequency 5700 MHz, FCC & ISSED.



Frequency 5745 MHz, FCC & ISSED.



Frequency 5785 MHz, FCC & ISSED.



Frequency 5825 MHz, FCC & ISSED.

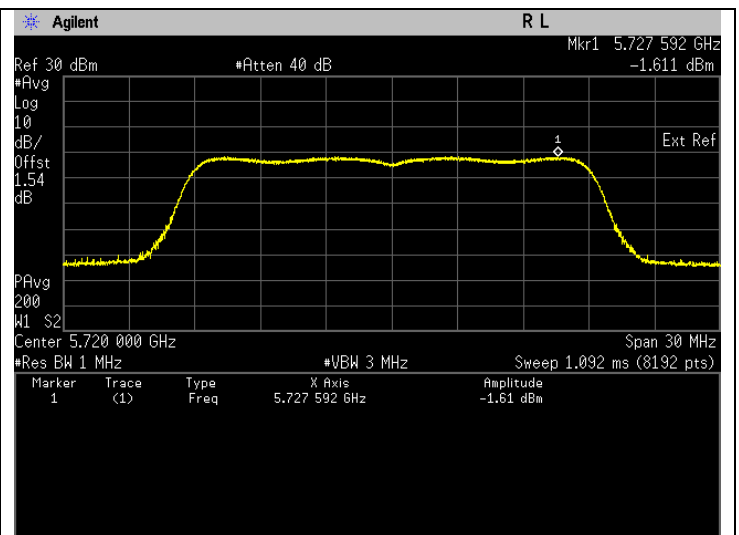
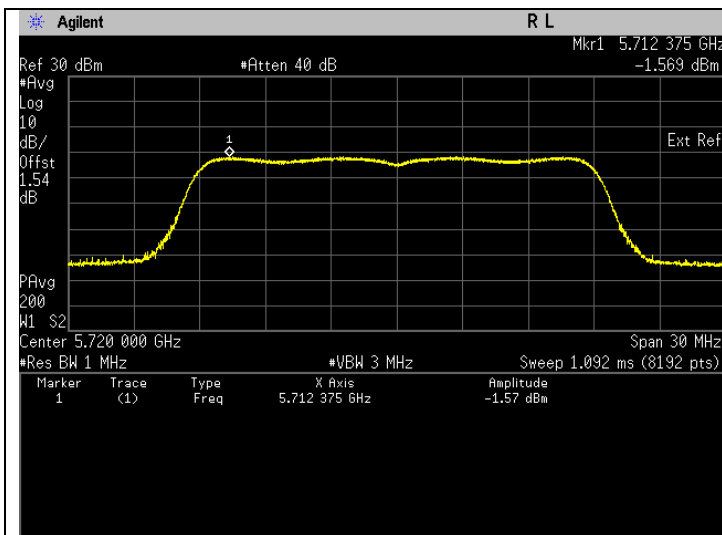
Straddle Frequency for 802.11n (HT20) (26dB EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
5720	BPSK, Data Rate: MCS0 (6.5)	-1.480	Pass
		U-NII- 2C	
Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/500kHz)	Status
5720	BPSK, Data Rate: MCS0 (6.5)	-1.522	Pass

Straddle Frequency for 802.11n (HT20) (99% EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
5720	BPSK, Data Rate: MCS0 (6.5)	-1.480	Pass
		U-NII- 2C	
Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/500kHz)	Status
5720	BPSK, Data Rate: MCS0 (6.5)	-1.522	Pass

Plots for 802.11n (HT20) Straddle Frequency (26dB EBW & 99% EBW)

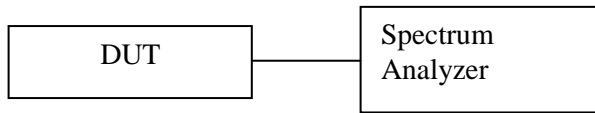


Frequency 5720 MHz, FCC & ISSED,U-NII-2C. *Note: The highest spectral density is captured before the 5725 MHz.

Frequency 5720 MHz, FCC & ISSED, U-NII-3. *Note: The highest spectral density is captured after the 5725 MHz.

7.4. 6dB Bandwidth

7.4.1. Test Setup



- a) Test setup as per illustrated above.
- b) Set DUT to transmit at desire transmit frequency.
- c) 6dB bandwidth is applicable for the band 5.725-5.85GHz only.
- d) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- e) Setting of Spectrum analyzer :
 - RBW = 100 kHz
 - VBW \geq 3·RBW
 - Detector = Peak
 - Trace = Max Hold
 - Sweep = Auto couple
- f) Allow trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
- h) The measurement method follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04 under clause C.2).

7.4.2. Test Limits

FCC 15.407(e)

Within the 5.725-5.85GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

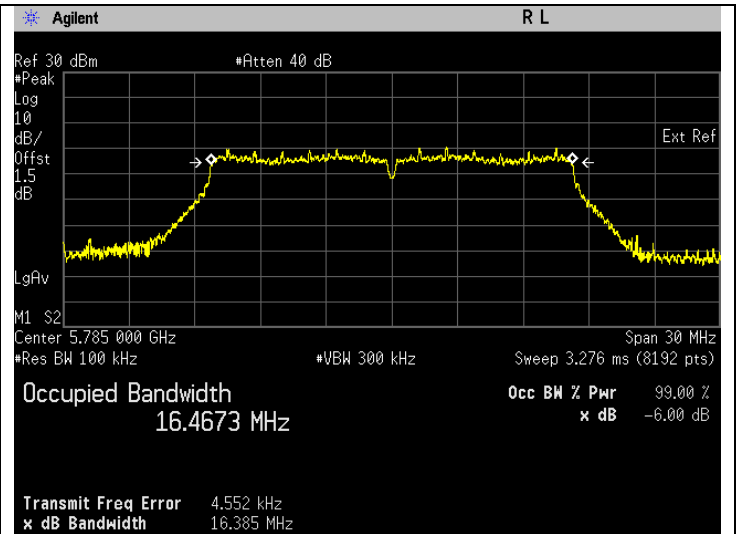
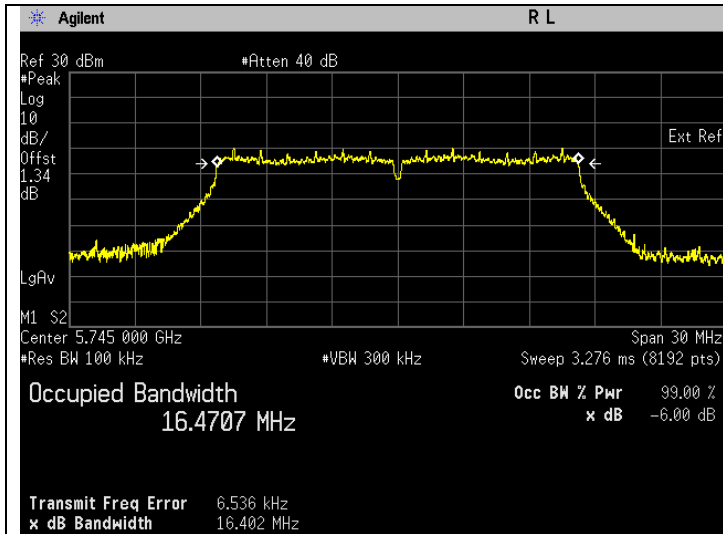
RSS 247 6.2.4

For equipment operating in the band 5725-5850 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz.

7.4.3. Test Data

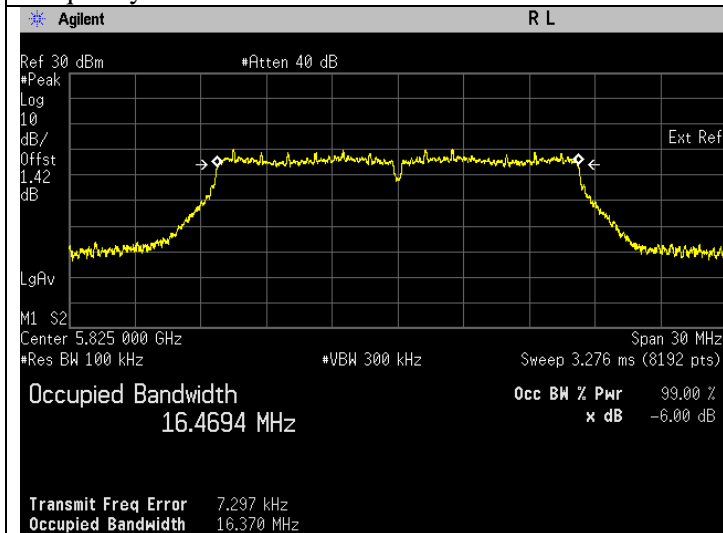
802.11a

Freq. (MHz)	Test Configuration	Results	
		Bandwidth(MHz)	Status
5745	BPSK, Data Rate: 6	16.402	Pass
5785	BPSK, Data Rate: 6	16.385	Pass
5825	BPSK, Data Rate: 6	16.370	Pass



Frequency 5745 MHz

Frequency 5785 MHz

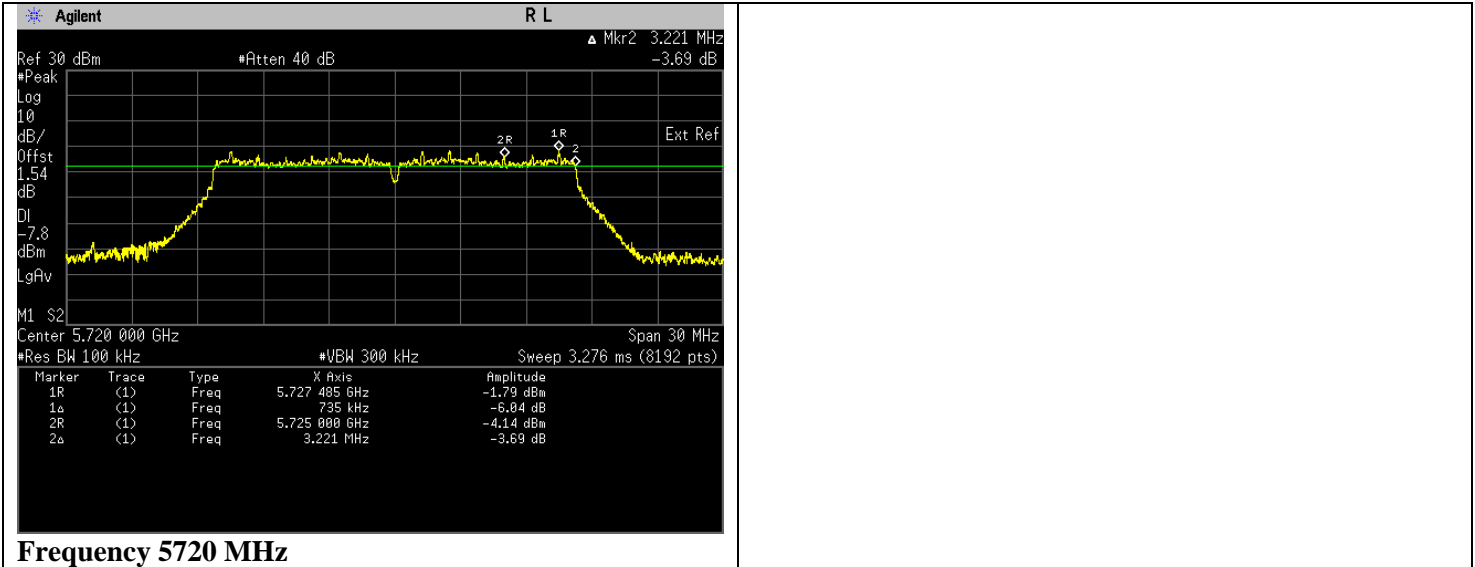


Frequency 5825 MHz

Straddle Frequency for 802.11a

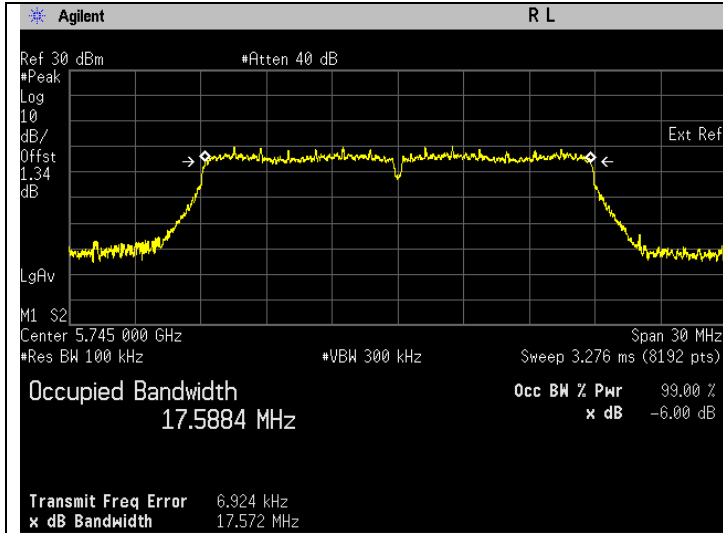
Freq. (MHz)	Test Conditions	Results	
		Power/Freq. (dBm/MHz)	Status
		U-NII- 3	
5720	BPSK, Data Rate: 6	3.221	Pass

Plots for 802.11a Straddle Frequency

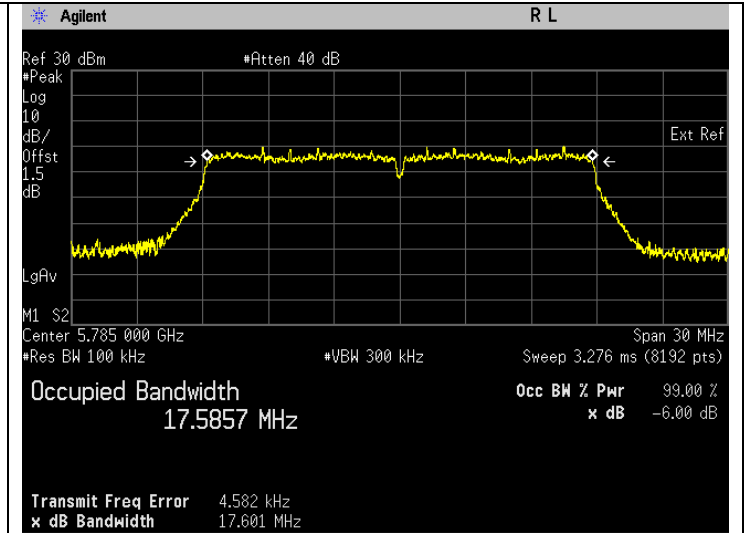


802.11n (HT20)

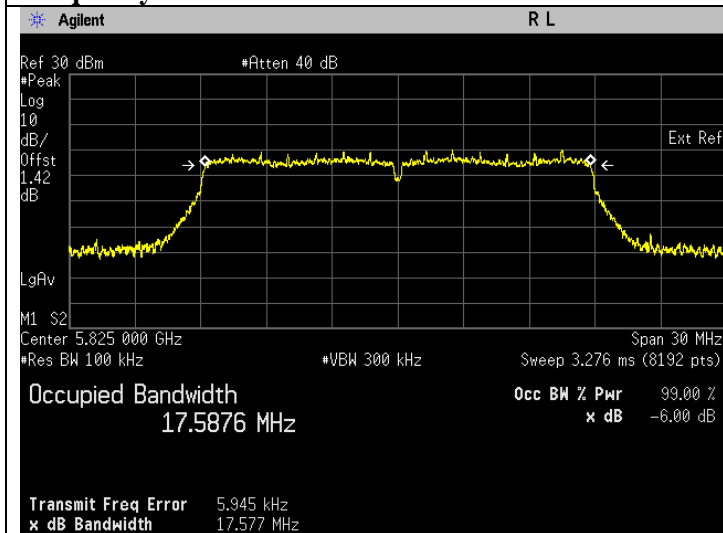
Freq. (MHz)	Test Configuration	Results	
		Bandwidth(MHz)	Status
5745	BPSK, Data Rate: MCS0 (6.5)	17.572	Pass
5785	BPSK, Data Rate: MCS0 (6.5)	17.601	Pass
5825	BPSK, Data Rate: MCS0 (6.5)	17.577	Pass



Frequency 5745 MHz



Frequency 5785 MHz

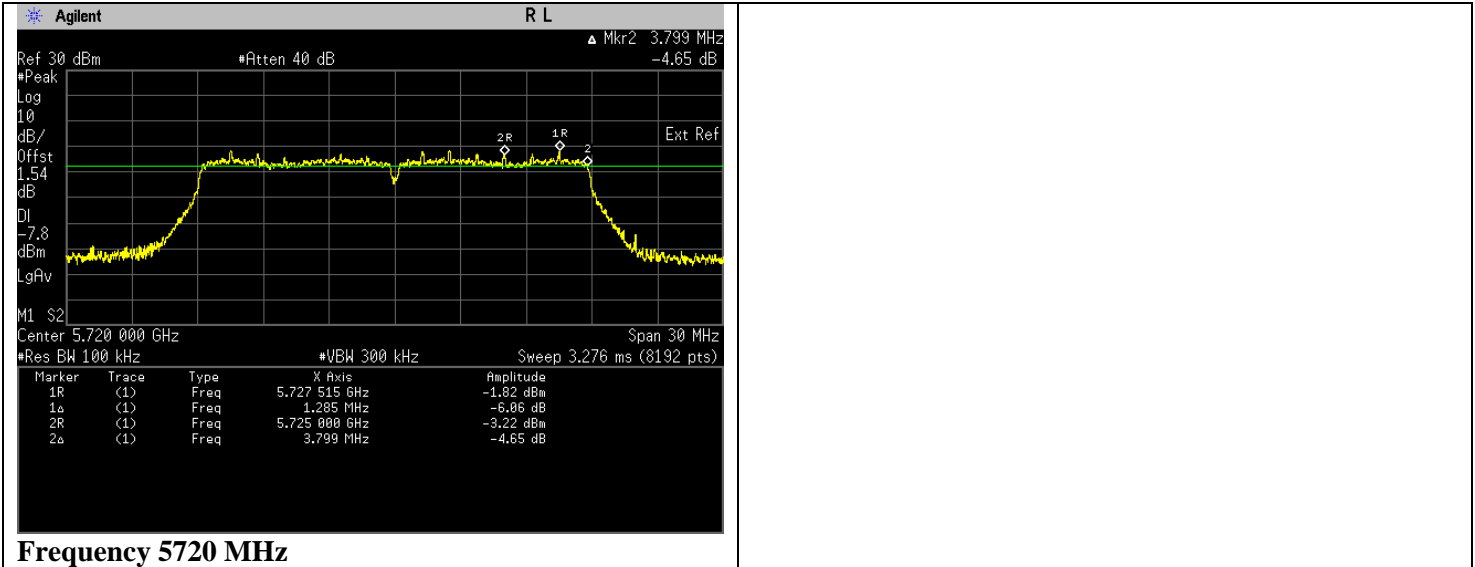


Frequency 5825 MHz

Straddle Frequency for 802.11n (HT20)

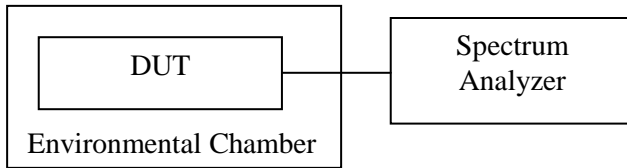
Freq. (MHz)	Test Conditions	Results	
		Power/Freq. (dBm/MHz)	Status
		U-NII- 3	
5720	BPSK, Data Rate: MCS0 (6.5)	3.799	Pass

Plots for 802.11n (HT20) Straddle Frequency



7.5. Frequency Stability

7.5.1. Test Setup



- a) Test setup as per illustrated above.
- b) Set DUT to transmit un-modulated signal at desire transmit frequency.
- c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- d) The DUT was operated at the maximum output power, and spectrum which is set to maximum hold function and peak detector.
- e) The peak value of the power envelope was measured and noted.
- f) Test was conducted from temperature range from -30°C to 50°C with step size of 10°C on manufacturer's rated supply voltage.
- g) At temperature of 20°C , $\pm 15\%$ of manufacturer's rated voltage are to be applied.
- h) The frequency stability is measured and recorded of frequency deviation due to temperature and supply voltage variations as mentioned at condition f) & g) above.

7.5.2. Test Limits

FCC 15.407(g)

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

RSS-GEN 6.11

7.5.3. Test Data

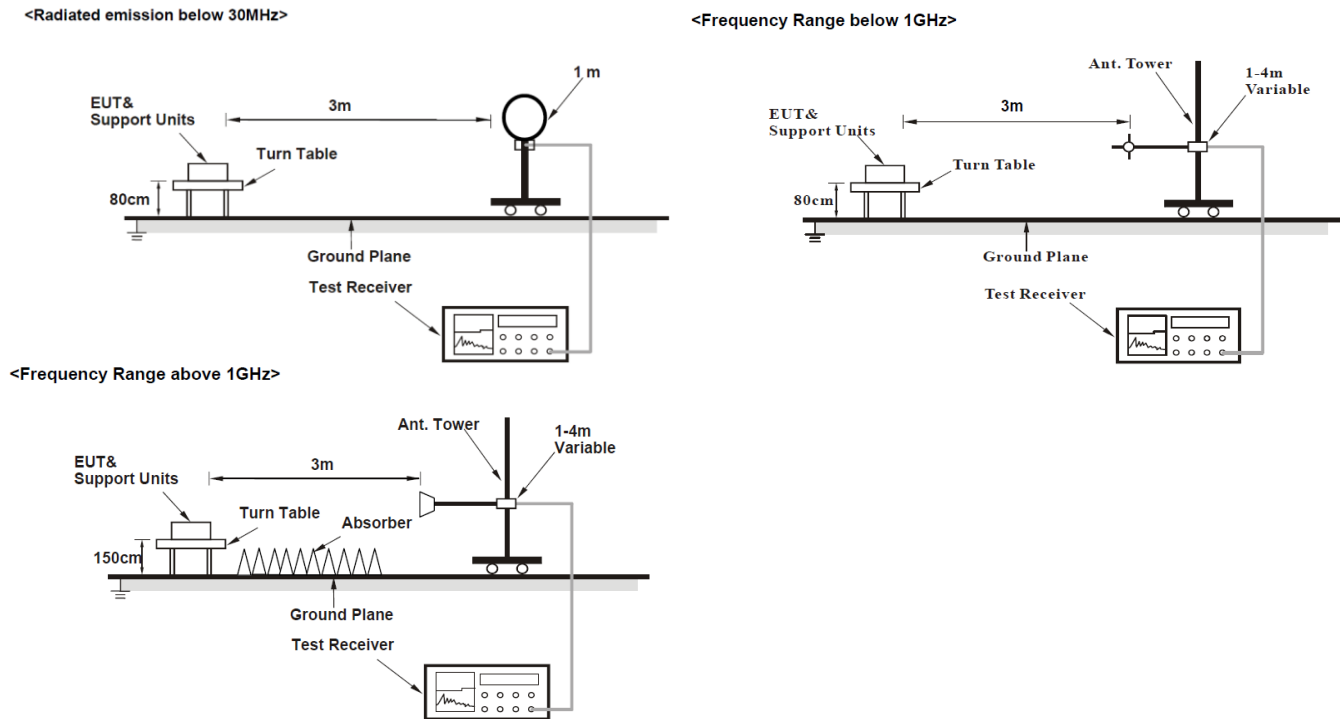
802.11a

Test Configuration	Test Frequency
	Tx (MHz)
BPSK, Data Rate: 6	5180

Temperature(°C)	Voltage	Results			
		Measured Frequency(MHz)	Frequency Error(kHz)	Frequency Error(%)	Status
20	+15%	5179.997495	2.505000	0.000048	Pass
	±0%	5179.998192	1.808000	0.000035	Pass
	-15%	5179.999024	0.976000	0.000019	Pass
-30		5179.999848	0.152000	0.000003	Pass
-20		5180.000444	0.444000	0.000009	Pass
-10		5180.001043	1.043000	0.000020	Pass
0		5180.001483	1.483000	0.000029	Pass
10		5180.001177	1.177000	0.000023	Pass
30		5180.000544	0.544000	0.000011	Pass
40		5180.000526	0.526000	0.000010	Pass
50		5180.000519	0.519000	0.000010	Pass

7.6. Band Edge Radiated Spurious Emission Measurement

7.6.1. Test Setup



1. The EUT is placed on the top of a rotating table 0.8m/1.5m above the ground at a 3m semi-anechoic chamber. The table is rotated 360 degrees to determine the position of the highest radiation.
2. The EUT is set 3m away from the interference-receiving antenna, which is mounted on the top of a variable-height antenna tower.
3. The antenna is Bilog/Horn antenna depend on which frequency range uses, and its 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.
4. For each suspected emission, the EUT is arranged to its worst case and then the antenna is tuned to heights from 1m to 4m and the rotatable table is turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system is set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode is fall within the range of 10dB from the limit specified, the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. Otherwise, the testing could be stopped and the peak values of the EUT would be reported.