Nemko Korea Co., Ltd.

165-51, Yurim-ro, Cheoin-gu, Yongin-si, Gyeonggi-do,17042, Republic of Korea
TEL:+82 31 330-1700 FAX:+82 31 322 2332

FCC EVALUATION REPORT FOR CERTIFICATION

Project No. : NK-24-R-410
Applicant : SOLUM CO., LTD.
4, 5, 6th F, 357, Guseong-ro, Giheung-gu, Yongin-si, Gyeonggi-do, South Korea

Dates of receipt : September 26, 2024
Dates of Issue : March 16, 2025
Test Site :
Nemko Korea Co., Ltd.

FCC ID :	**2AFWNWT10FACNDW0HSM**
Applicant :	**SOLUM CO., LTD.**
Brand Name :	**SOLUM**

Model:	**WT10FACNDW0HSM**
Additional Model(s):	**WT10FACNDU0HSM** **WT10FACNDW1HSM, WT10FACNDU1HSM** **WT10FACNDW2HSM, WT10FACNDU2HSM** **WT10FACNDW3HSM, WT10FACNDU3HSM**
EUT Type:	**Information Technology Audio Video**
Classification:	**Unlicensed National Information Infrastructure (NII)**
Date of Test:	**October 24, 2024 ~ December 27, 2024**
Applied Standard:	**FCC 47 CFR Part 15.407**

The device bearing the brand name and model specified above has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013. The client should not use it to claim product endorsement by TAF or any government agencies. The test results in the report only apply to the tested sample.

I attest to the accuracy of data and all measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Tested By : Yonghwan Kim
Test Engineer

Reviewed By : Hoonpyo Lee
Technical Manager

Revision History

Rev.	Issue Date	Revisions	Revised By
00	March 16, 2025	Initial issue	Yonghwan Kim

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1. INTRODUCTION

1.1 Test facility

The measurement procedure described in American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz (ANSI C63.4-2014), the American National Standard for Testing Unlicensed Wireless Devices (ANSI C63.10-2013) was used in determining radiated and conducted emissions emanating.

These measurement tests were conducted at **Nemko Korea Co., Ltd.**
The site address 165-51, Yurim-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, 17042, Rep. of Korea.

1.2 Accreditation and listing

Accreditation type		Accreditation number
	CAB Accreditation for DOC	Designation No. KR0026
	KOLAS Accredited Lab. (Korea Laboratory Accreditation Scheme)	Registration No. KT155
Industry Canada	Canada IC Registered site	Site No. 29506
	VCCI registration site(RE/CE/Telecom CE)	Member No. 2118
	EMC CBTL	TL124
	KCC(RRL)Designated Lab.	Registration No. KR0026

2. EUT INFORMATION & TEST CONDITIONS

2.1 EUT Information

2.1.1 Specifications

EUT Type	Information Technology Audio Video
Model Name	WT10FACNDW0HSM
Frequency of Operation	For U-NII-1 Band 5 180 MHz to 5 240 MHz : 802.11a,n,ac (20 MHz) 5 190 MHz to 5 230 MHz : 802.11n,ac (40 MHz) For U-NII-2A Band 5 260 MHz to 5 320 MHz : 802.11a,n,ac (20 MHz) 5 270 MHz to 5 310 MHz : 802.11n,ac (40 MHz) For U-NII-2C Band 5 500 MHz to 5 700 MHz : 802.11a,n,ac (20 MHz) 5 510 MHz to 5 670 MHz : 802.11n,ac (40 MHz) For U-NII-3 Band 5 745 MHz to 5 825 MHz : 802.11a,n,ac (20 MHz) 5 755 MHz to 5 795 MHz : 802.11n,ac (40 MHz)
Maximum Conducted Output Power	802.11a : 12.22 dBm 802.11n (20 MHz) : 12.02 dBm 802.11n (40 MHz) : 12.08 dBm 802.11ac (20 MHz) : 12.06 dBm 802.11ac (40 MHz) : 12.12 dBm
Number of Channels	For U-NII-1 Band 802.11a,n,ac (20 MHz) : 4 ch 802.11n,ac (40 MHz) : 2 ch For U-NII-2A Band 802.11a,n,ac(20 MHz): 4ch 802.11n,ac(40 MHz): 2ch For U-NII-2C Band 802.11a,n,ac(20 MHz): 11ch 802.11n,ac(40 MHz): 5ch For U-NII-3 Band 802.11a,n,ac (20 MHz) : 5 ch 802.11n,ac (40 MHz) : 2 ch
Modulations	BPSK, QPSK, 16QAM, 64QAM, 256QAM
Antenna Gain (peak)	U-NII-1 : -0.73 dBi U-NII-2A : 0.65 dBi U-NII-2C : 2.89 dBi U-NII-3 : 3.15 dBi
Antenna Setup	1TX / 1RX
EUT Rated Voltage	DC 9 V ~ 24 V
EUT Test Voltage	DC 12 V

HVIN (Hardware Version Number)	WT10FACNDW0HSM
FVIN (Firmware Version Identification Number)	V1.1
Remarks	-

2.2 Operation During Test

The EUT is the transceiver which is module supporting the 802.11a/n,ac(20 MHz)/n,ac(40 MHz)mode.
The Laptop PC was used to control the EUT to transmit the wanted TX channel by the testing program (CMD) and testing command supported by manufacturer.
The operating voltage of EUT was 12 Vdc supplied from AC/DC Adapter.

The EUT was tested at the lowest, middle and the highest channels with the maximum output power in accordance with the manufacturer's specifications. The worst data were recorded in the report.

2.2.1 Table of Test power setting

Frequency [MHz]	Mode	Power setting Level
5 180	802.11a	default
5 220		
5 240		
5 180	802.11n HT20	default
5 220		
5 240		
5 180	802.11ac VHT20	default
5 220		
5 240		
5 190	802.11n HT40	default
5 230		
5 190	802.11ac VHT40	default
5 230		

Frequency [MHz]	Mode	Power setting Level
5 260	802.11a	default
5 300		
5 320		
5 260	802.11n HT20	default
5 300		
5 320		
5 260	802.11ac VHT20	default
5 300		
5 320		
5 270	802.11n HT40	default
5 310		
5 270	802.11ac VHT40	default
5 310		
5 500	802.11a	default
5 600		
5 700		
5 500	802.11n HT20	default
5 600		
5 700		
5 500	802.11ac VHT20	default
5 600		
5 700		
5 510	802.11n HT40	default
5 590		
5 670		
5 510	802.11ac VHT40	default
5 590		
5 670		

Frequency [MHz]	Mode	Power setting Level
5 745	802.11a	default
5 785		
5 825		
5 745	802.11n HT20	default
5 785		
5 825		
5 745	802.11ac VHT20	default
5 785		
5 825		
5 755	802.11n HT40	default
5 795		
5 755	802.11ac VHT40	default
5 795		

2.2.2 Table of Test frequency

Frequency band	Modulation	Test Channel (CH)	Frequency (MHz)
U-NII-1	802.11a,n,ac(20 MHz)	36	5 180
		44	5 220
		48	5 240
	802.11n,ac(40 MHz)	38	5 190
		46	5 230
U-NII-2A	802.11a,n,ac(20 MHz)	52	5 260
		60	5 300
		64	5 320
	802.11n,ac(40 MHz)	54	5 270
		62	5 310

Frequency band	Modulation	Test Channel (CH)	Frequency (MHz)
U-NII-2C	802.11a,n,ac(20 MHz)	100	5 500
		120	5 600
		140	5 700
	802.11n,ac(40 MHz)	102	5 510
		118	5 590
		134	5 670
U-NII-3	802.11a,n,ac(20 MHz)	149	5 745
		157	5 785
		165	5 825
	802.11n,ac(40 MHz)	151	5 755
		159	5 795

2.2.3 Antenna Information

Frequency band	Mode	Data rate	Antenna TX mode	Support CDD	Support MIMO
5 GHz	802.11a	All	■ 1TX, □ 2TX	□ Yes, ■ No	□ Yes, ■ No
	802.11n (20MHz)	MCS 0~7	■ 1TX, □ 2TX	□ Yes, ■ No	□ Yes, ■ No
	802.11n (40MHz)	MCS 0~7	■ 1TX, □ 2TX	□ Yes, ■ No	□ Yes, ■ No
	802.11ac (20MHz)	NSS1MCS0~ NSS1MCS8	■ 1TX, □ 2TX	□ Yes, ■ No	□ Yes, ■ No
	802.11ac (40MHz)	NSS1MCS0~ NSS1MCS9	■ 1TX, □ 2TX	□ Yes, ■ No	□ Yes, ■ No

2.2.4 Additional Information Related to Testing

The cable and attenuator loss from 30 MHz to 26.5 GHz was reflected in spectrum analyzer with correction factor for all conducted testing.

2.2.5 Worst-case Configuration and Mode

Radiated emission below 1GHz was performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.
Radiated emission above 1GHz was performed with the EUT set to transmit low/mid/high channels.
The emissions (Band-edge & spurious emissions) were investigated in three orthogonal orientations X, Y and Z.
Accordingly, the orientation was determined and tested as shown in the table below:

Test Items	X	Y	Z
Band-edge	O	-	-
Spurious emissions	O	-	-

2.2.6 Additional model covered by this report

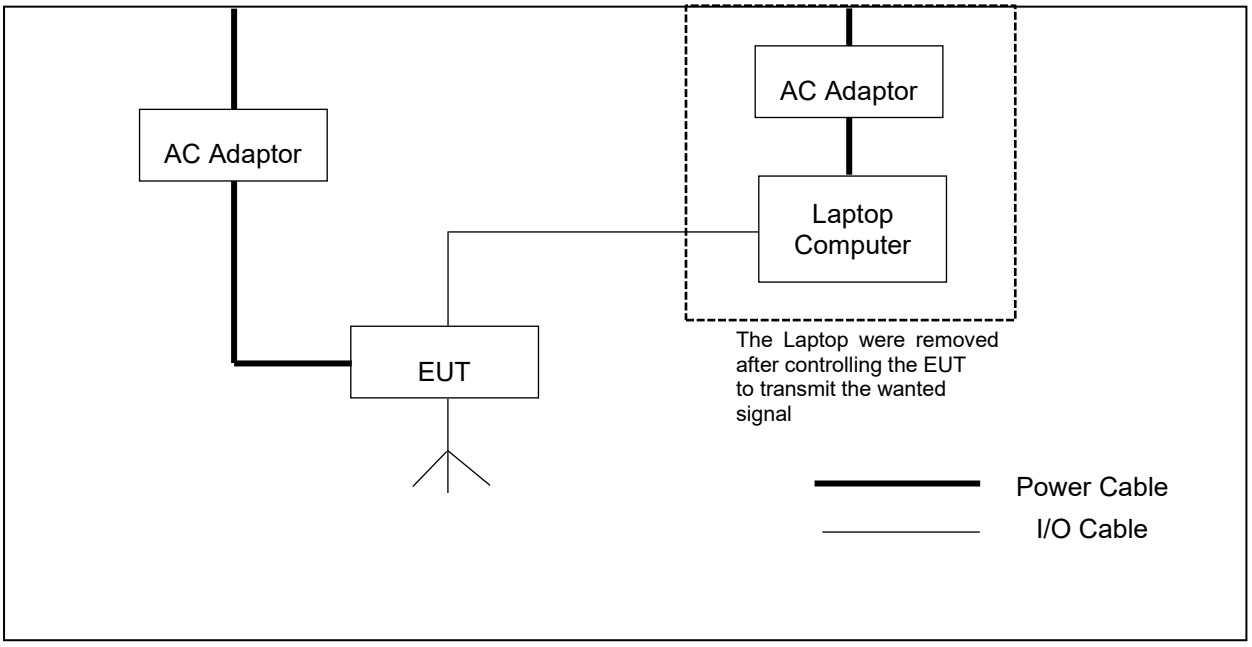
- The variant models shell use electric circuits that are the same as the basic model.
- The difference between basic and variant models are as below table.

<table>
<tr><td colspan="2">Basic model name</td><td colspan="2">Description</td></tr>
<tr><td colspan="2">WT10FACNDW0HSM</td><td colspan="2">Dual display</td></tr>
<tr><td>Variant model name</td><td>Description</td><td>Variant model name</td><td>Description</td></tr>
<tr><td>WT10FACNDU0HSM</td><td rowspan="3">- Dual display
- Purpose for marketing</td><td>WT10FACNDW1HSM</td><td rowspan="4">- Single display
- Purpose for marketing</td></tr>
<tr><td>WT10FACNDW2HSM</td><td>WT10FACNDU1HSM</td></tr>
<tr><td>WT10FACNDU2HSM</td><td>WT10FACNDW3HSM</td></tr>
<tr><td>-</td><td>-</td><td>WT10FACNDU3HSM</td></tr>
</table>

2.3 Support Equipment

EUT	SOLUM CO., LTD. Model : WT10FACNDW0HSM	S/N: N/A
Laptop Computer	HP Model : G62-355TU	FCC DOC S/N : CNF0489WDT
AC Adapter	HP Model : PPP009D	FCC DOC S/N : WBGSV0ACXZH162

2.4 Setup Drawing



3. ANTENNA REQUIREMENTS

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission under FCC part 15.

§15.203 of the FCC Rules part 15 Subpart C

: 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 shall be considered sufficient to comply with the provisions of this section.

The antenna of the EUT and there are no provisions for connection to an external antenna. It complies with the requirement of §15.203.

The transmitter has attached FPC antenna (Internal antenna) inside the EUT case.

Used Antenna	
Model name	5 150 MHz ~ 5 850 MHz
	Max. peak gain (dBi)
WT10FACNDW0HSM	U-NII-1 : -0.73 U-NII-2A : 0.65 U-NII-2C : 2.89 U-NII-3 : 3.15

4. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specification:

Name of Test	FCC Paragraph No.	Test Condition	Result	Remark
26dB Bandwidth	15.407(a)	Conducted	Complies	-
6dB Bandwidth	15.407(e)		Complies	-
Occupied Bandwidth	-			-
Conducted Output Power	15.407(a)		Complies	-
Power Spectral Density	15.407(a)		Complies	-
Radiated Spurious Emission	15.407(b) 15.205, 15.209	Radiated	Complies	-
AC Line Conducted Emission	15.207	Line Conducted	Complies	-

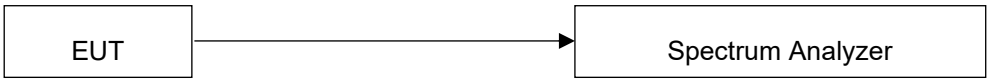
5. TEST METHODOLOGY

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 15.
3. KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
4. ANSI C63.10-2013.

6. DESCRIPTION OF TESTS

6.1 6 dB Bandwidth / 26 dB Bandwidth / Occupied Bandwidth

Test Setup



Test Measurement Method

ANSI C63.10-2013, Section 12.4
KDB 789033 D02 v02r01, Section C

Test Procedure

- 6 dB Bandwidth
EUTs 6 dB bandwidth is measured at low, middle, high channels with a spectrum analyzer connected to the antenna terminal while the EUTs operating at its maximum power control level.
The spectrum analyzer setting is as follows.
RBW = 100 kHz
VBW > 3 x RBW
Detector = Peak
Trace mode = max hold
Sweep = auto couple
Allow trace to fully stabilize.
The bandwidth measurement function on the spectrum analyzer is used to measure the 6 dB bandwidth.

- 26 dB Bandwidth
EUTs 26 dB bandwidth is measured at low, middle, high channels with a spectrum analyzer connected to the antenna terminal while the EUTs operating at its maximum power control level.
The spectrum analyzer setting is as follows.
RBW = approximately 1 % of the emission bandwidth
VBW > RBW
Detector = Peak
Trace mode = max hold
The bandwidth measurement function on the spectrum analyzer is used to measure the 26 dB bandwidth and 99% occupied bandwidth.

6.2 Maximum Conducted Output Power(average)

Test Setup

Test Measurement Method

ANSI C63.10-2013, Section 12.3
KDB 789033 D02 v02r01, Section E

Test Procedure

EUTs Maximum Conducted Output Power(average) is measured at low, middle, high channels with a spectrum analyzer connected to the antenna terminal while the EUTs operating at its maximum power control level.
The spectrum analyzer setting is as follows.
Measure the duty cycle, x, of the transmitter output signal.
Span to encompass the entire 26 dB EBW or 99% OBW of the signal.
RBW = 1 MHz
VBW ≥ 3 MHz
Number of points in sweep ≥ 2 x span / RBW
Sweep time ≥ [10 × (number of points in sweep) × (total ON/OFF period of the transmitted signal)].
Detector = RMS
Trace average at least 100 traces in power averaging mode.
Add 10 log(1/x), where x is the duty cycle.
Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with band limits set equal to the OBW band edges.

6.3 Power Spectral Density

Test Setup

Test Measurement Method

ANSI C63.10-2013, Section 12.5
KDB 789033 D02 v02r01, Section F

Test Procedure

EUTs Power Spectral Density is measured at low, middle, high channels with a spectrum analyzer connected to the antenna terminal while the EUTs operating at its maximum power control level.
The spectrum analyzer setting is as follows.
Measure the duty cycle, x, of the transmitter output signal
Center frequency = Channel center frequency
Span = encompass the EBW of the signal
RBW ≥ 1 MHz for UNII-1, 2A, 2C band or 500 kHz for UNII-3 band
VBW ≥ 3 x RBW
Detector = RMS
Sweep time = auto couple
Trace average at least 100 traces in power averaging mode
Allow the trace to stabilize.
The peak search function on the spectrum analyzer is used to determine the maximum amplitude level within the RBW.

6.4 Radiated Emissions

Test Measurement Method

ANSI C63.10-2013, Section 6.6.4.3, Section 12.7
KDB 789033 D02 v02r01, Section G

Test Procedure

The measurement was performed at the test site that is specified in accordance with ANSI C63.10-2013. The spurious emission was scanned from 9 kHz to 30 MHz using Loop Antenna and 30 to 1000 MHz using Trilog broadband test antenna. Above 1 GHz, Horn antenna was used.
For emissions testing at below 1GHz, The test equipment was placed on turntable with 0.8 m above ground. For emission measurements above 1 GHz, The test equipment was placed on turntable with 1.5 m above ground. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The EUT, cable, wire arrangement and mode of operation that has the highest amplitude relative to the limit was selected. Then, the turn table was rotated from 0˚ to 360˚ and an antenna mast was moved from 1 m to 4 m height to maximize the suspected highest amplitude signal. The final maximized level was recorded.

At frequencies below 1000 MHz, measurements performed using the CISPR quasi-peak detection. At frequencies above 1000 MHz, measurements performed using the peak and average measurement procedures described in ANSI 63.10-2013 section 12.7. Peak emission levels were measured by setting the analyzer RBW = 1 MHz, VBW = 3 MHz, Detector = Peak, Trace mode = max hold. Average emission levels were measured by setting the analyzer RBW = 1 MHz, VBW = 10 kHz, Detector = Peak, Trace mode = max hold. Allow max hold to run for at least 50 times (1/duty cycle) traces.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100	3
88–216	150	3
216–960	200	3
Above 960	500	3

Radiated Emissions Limits per 47 CFR 15.209(a)

6.5 AC Line Conducted Emissions

Test Measurement Method

ANSI C63.10-2013, Section 6.2

Test Procedure

The Line conducted emission test facility is located inside a 4 x 7 x 2.5 meter shielded enclosure.
It is manufactured by EM engineering. The shielding effectiveness of the shielded room is in accordance with MIL-STD-285 or NSA 65-6. A 1 m x 1.5 m wooden table 0.8 m height is placed 0.4 m away from the vertical wall and 1.5 m away from the side of wall of the shielded room. Rohde & Schwarz (ENV216) of the 50 ohm/50 μH Line Impedance Stabilization Network (LISN) are bonded to the shielded room. The EUT is powered from the Rohde & Schwarz LISN. Power to the LISNs are filtered by high-current high insertion loss Power line filters. The purpose of filter is to attenuate ambient signal interference and this filter is also bonded to shielded enclosure. All electrical cables are shielded by tinned copper zipper tubing with inner diameter of 1 / 2 ”. If DC power device, power will be derived from the source power supply it normally will be powered from and this supply lines will be connected to the LISNs, All interconnecting cables more than 1 meter were shortened by non-inductive bundling (serpentine fashion) to a 1 meter length. Sufficient time for EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer to determine the frequency producing the maximum EME from the EUT. The spectrum was scanned from 150 kHz to 30 MHz with 200 msec sweep time. The frequency producing the maximum level was re-examined using the EMI test receiver. (Rohde & Schwarz ESR3). The detector functions were set to CISPR quasi-peak mode & average mode. The bandwidth of receiver was set to 9 kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each EME emission. Each emission was maximized by; switching power lines; varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and of support equipment, and powering the monitor from the floor mounted outlet box and computer aux AC outlet, if applicable; whichever determined the worst case emission.
Each EME reported was calibrated using the R&S signal generator.

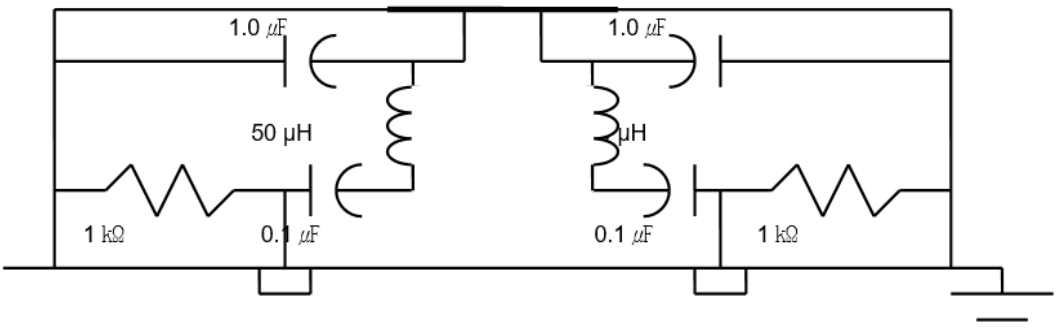


Fig. 2. LISN Schematic Diagram

7. TEST DATA

7.1 6 dB Bandwidth / 26 dB Bandwidth / Occupied Bandwidth

7.1.1 26 dB Bandwidth / Occupied Bandwidth U-NII-1 Band

FCC §15.407(a)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11a mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 180	24.75	16.92
Middle	5 220	24.59	16.96
Highest	5 240	24.58	16.93

802.11n(20MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 180	26.01	18.13
Middle	5 220	26.16	18.14
Highest	5 240	25.52	18.14

802.11ac(20MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 180	25.14	18.11
Middle	5 220	25.85	18.17
Highest	5 240	25.62	18.12

802.11n(40MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 190	47.26	36.57
Highest	5 230	48.52	36.57

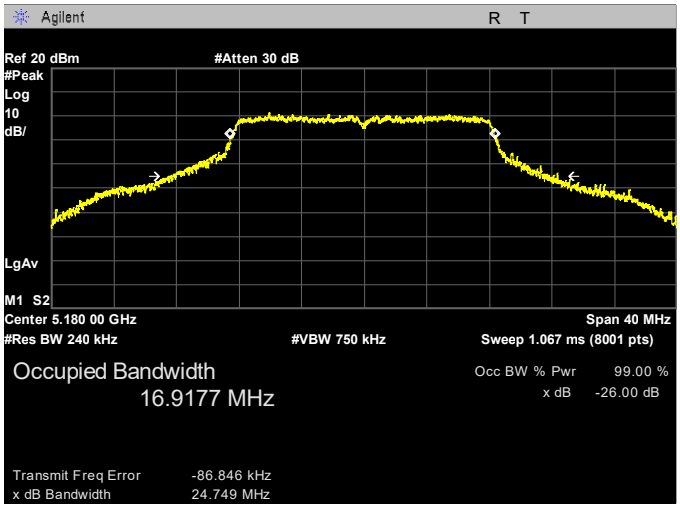
802.11ac(40MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 190	48.13	36.68
Highest	5 230	47.01	36.55

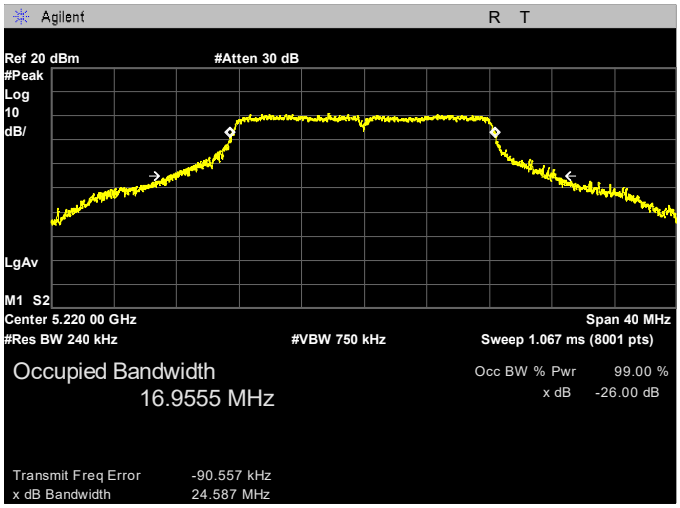
PLOTS OF EMISSIONS

802.11a mode_26dB Bandwidth, Occupied Bandwidth

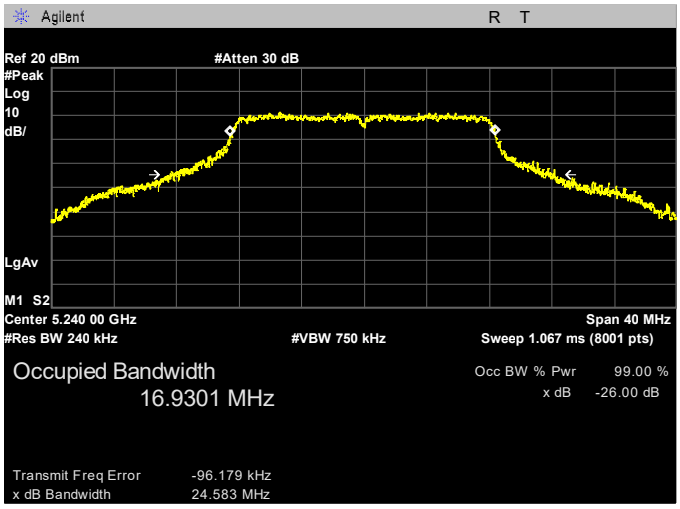
Lowest Channel (5 180 MHz)



Middle Channel (5 220 MHz)

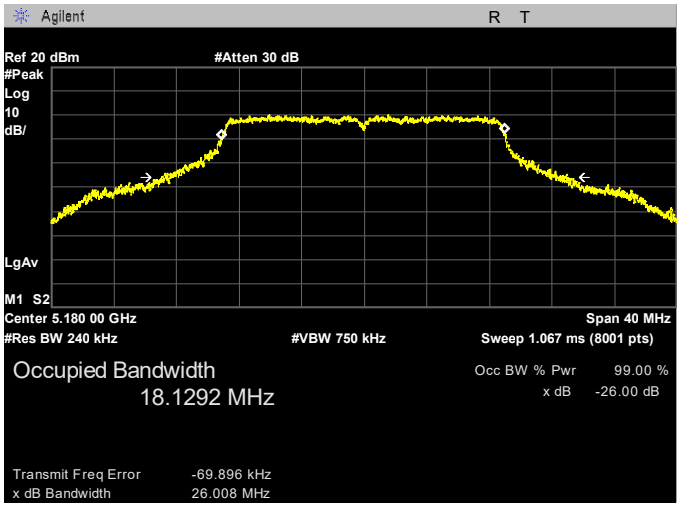


Highest Channel (5 240 MHz)

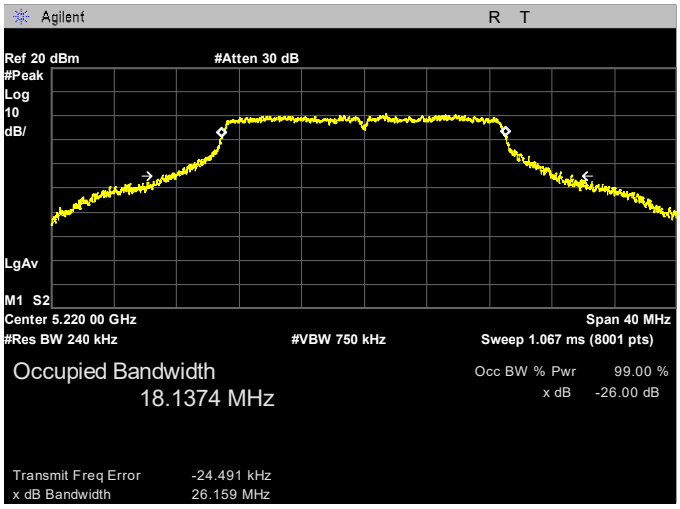


802.11n(20 MHz) mode_26dB Bandwidth, Occupied Bandwidth

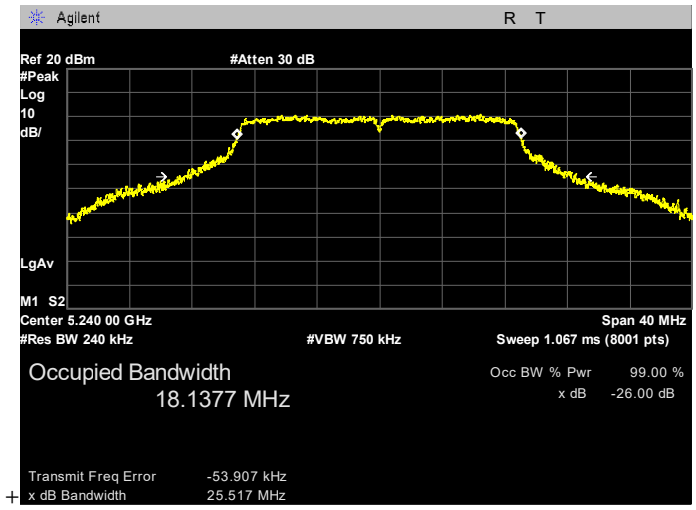
Lowest Channel (5 180 MHz)



Middle Channel (5 220 MHz)

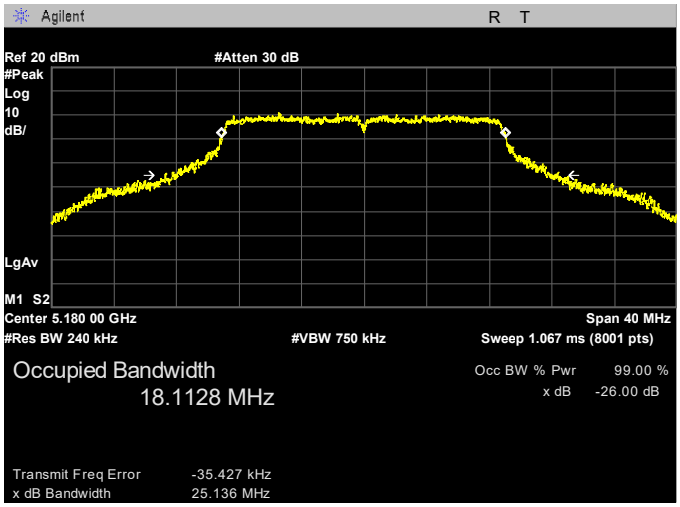


Highest Channel (5 240 MHz)

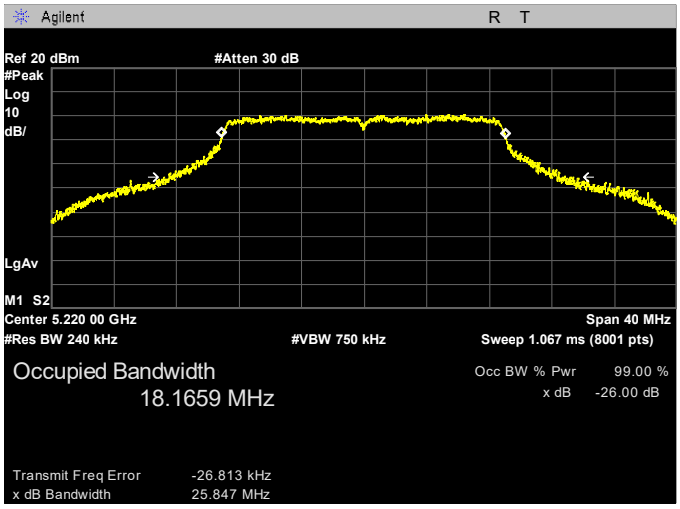


802.11ac(20 MHz) mode_26dB Bandwidth, Occupied Bandwidth

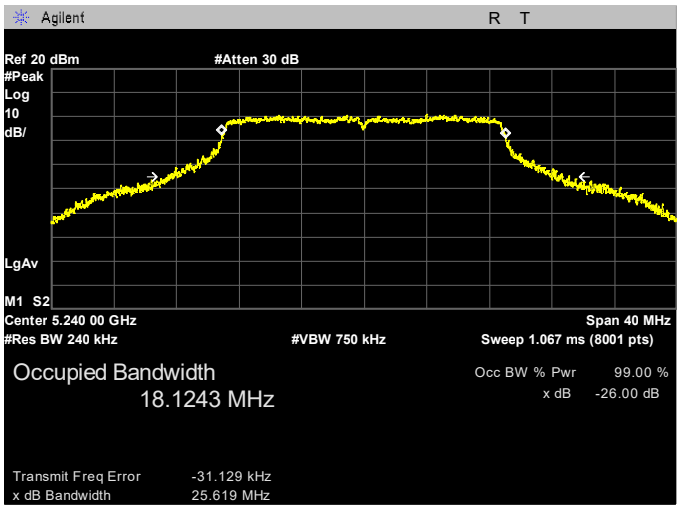
Lowest Channel (5 180 MHz)



Middle Channel (5 220 MHz)

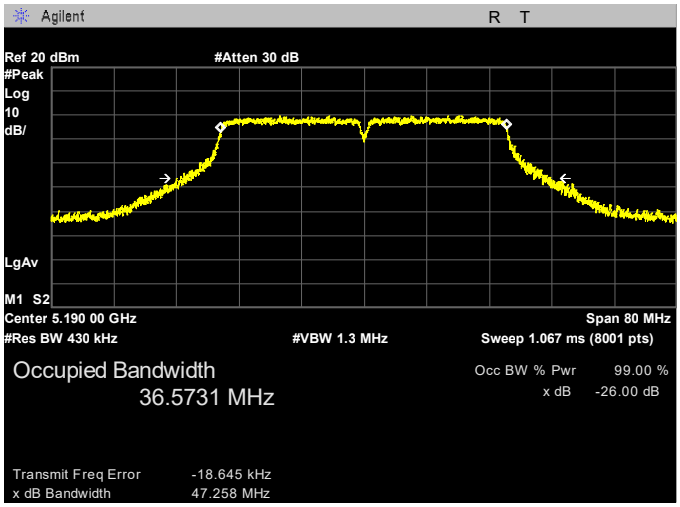


Highest Channel (5 240 MHz)

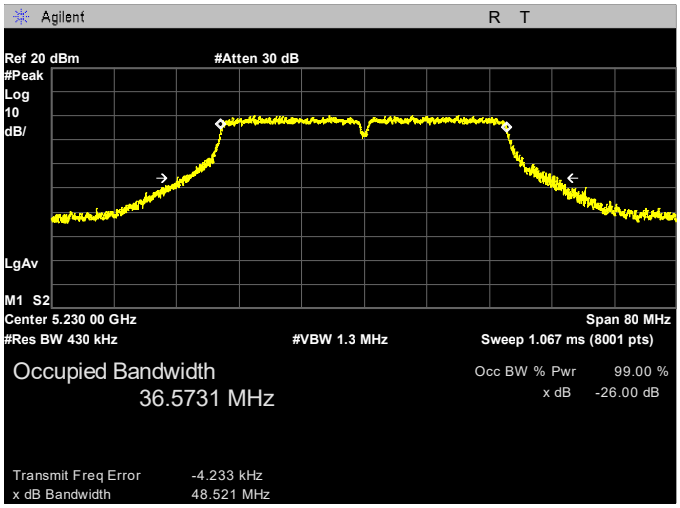


802.11n(40 MHz) mode_26dB Bandwidth, Occupied Bandwidth

Lowest Channel (5 190 MHz)

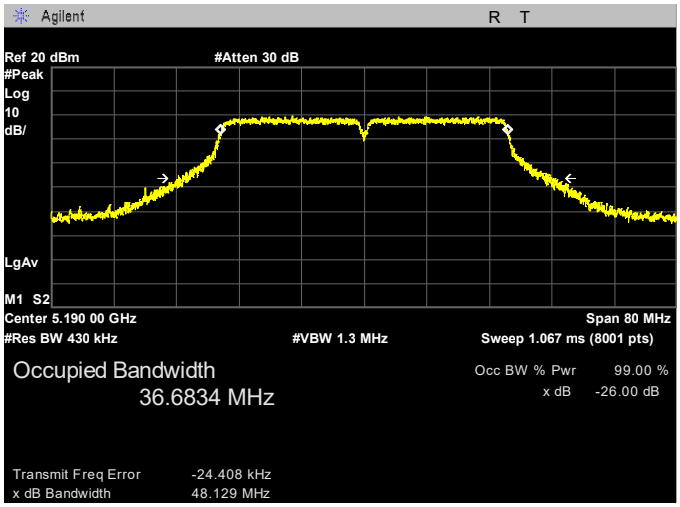


Highest Channel (5 230 MHz)

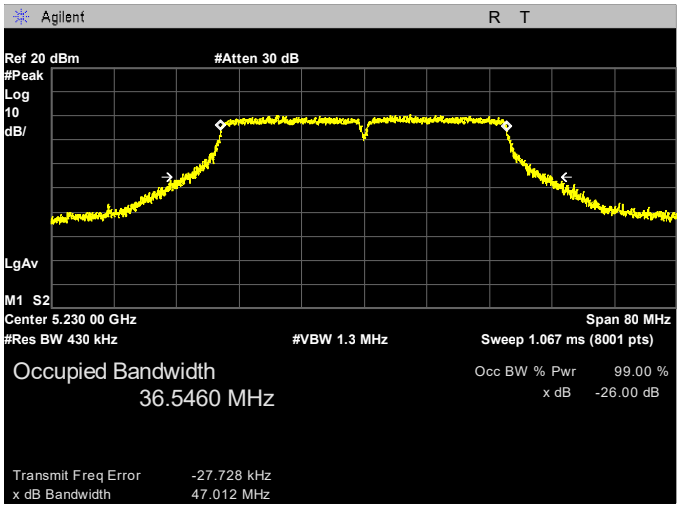


802.11ac(40 MHz) mode_26dB Bandwidth, Occupied Bandwidth

Lowest Channel (5 190 MHz)



Highest Channel (5 230 MHz)



7.1.2 26 dB Bandwidth / Occupied Bandwidth U-NII-2A Band

FCC §15.407(a)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11a mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 260	25.31	16.93
Middle	5 300	24.55	17.01
Highest	5 320	25.15	16.94

802.11n(20MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 260	25.70	18.14
Middle	5 300	26.12	18.14
Highest	5 320	25.86	18.14

802.11ac(20MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 260	26.28	18.11
Middle	5 300	25.46	18.16
Highest	5 320	25.69	18.14

802.11n(40MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 270	46.72	36.56
Highest	5 310	46.66	36.62

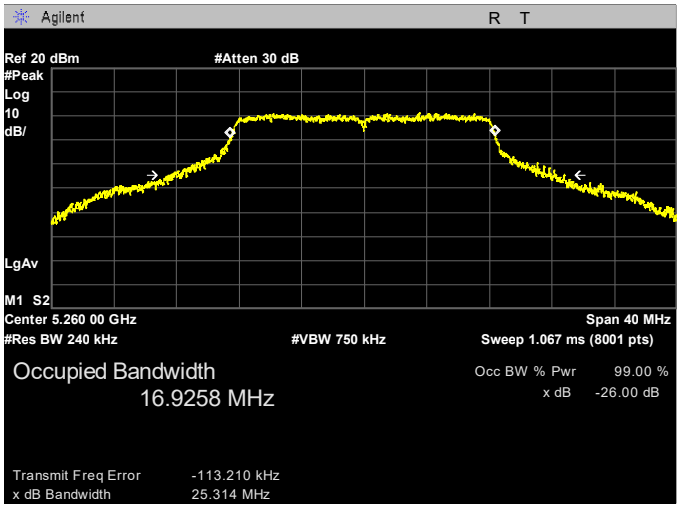
802.11ac(40MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 270	46.86	36.58
Highest	5 310	47.14	36.61

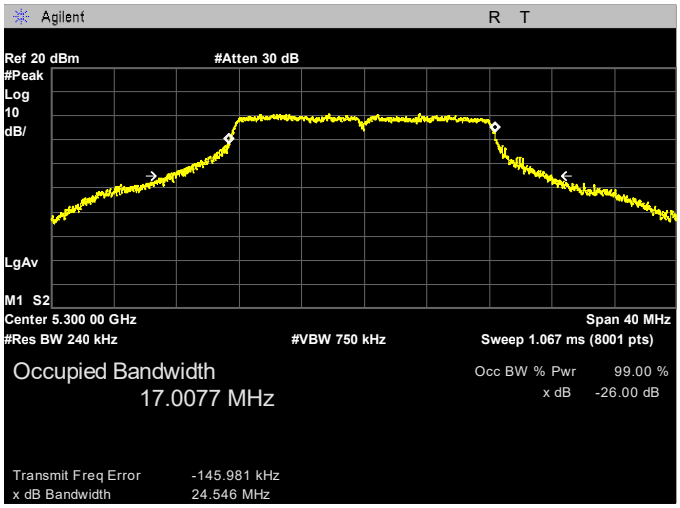
PLOTS OF EMISSIONS

802.11a mode_26dB Bandwidth, Occupied Bandwidth

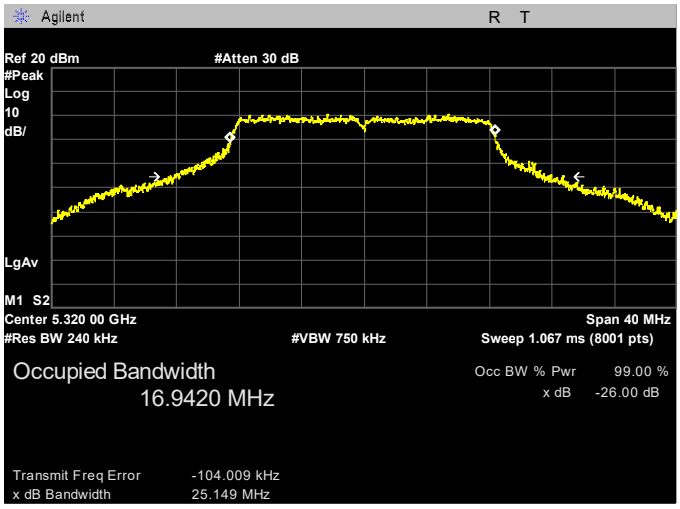
Lowest Channel (5 260 MHz)



Middle Channel (5 300 MHz)

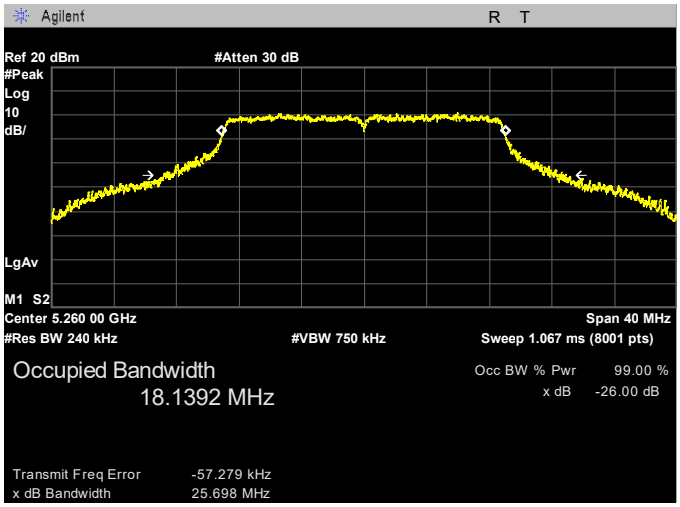


Highest Channel (5 320 MHz)

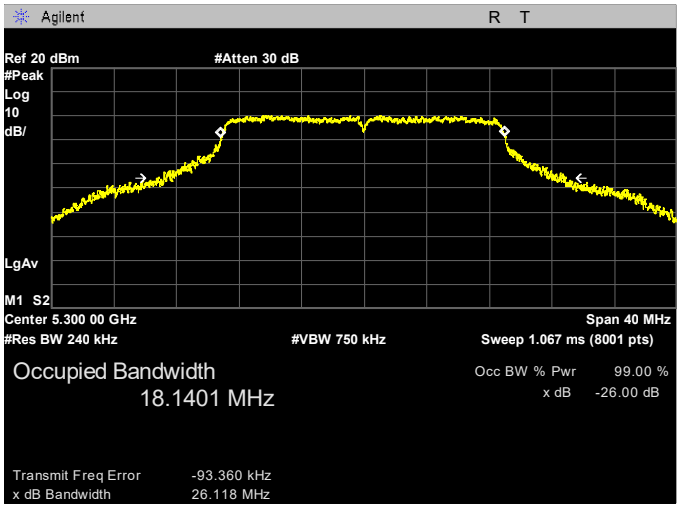


802.11n(20 MHz) mode_26dB Bandwidth, Occupied Bandwidth

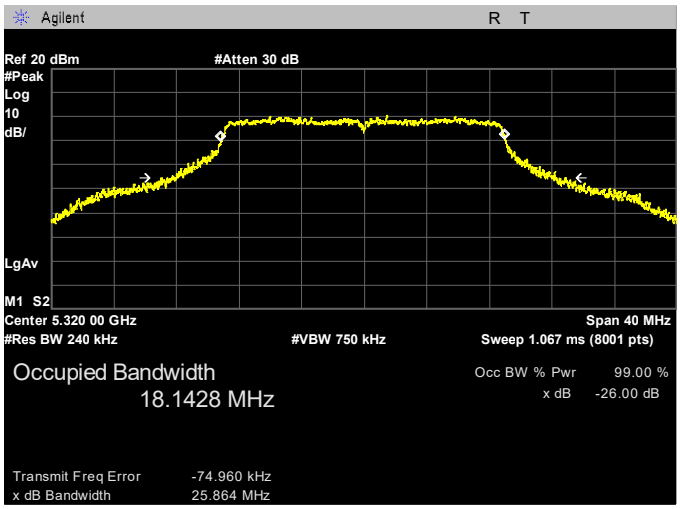
Lowest Channel (5 260 MHz)



Middle Channel (5 300 MHz)

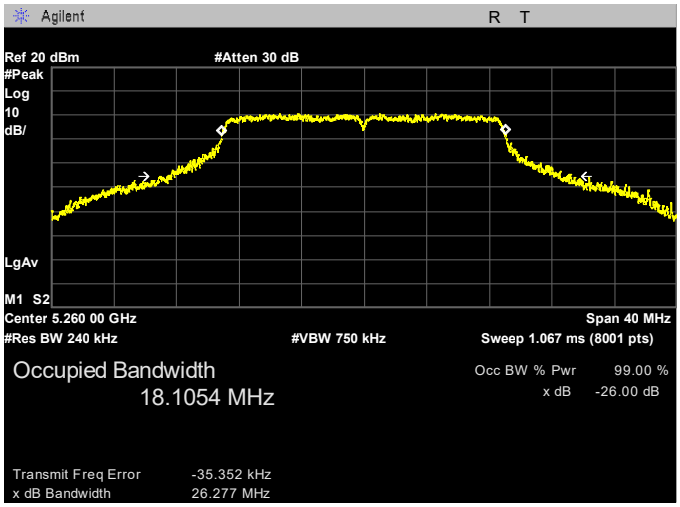


Highest Channel (5 320 MHz)

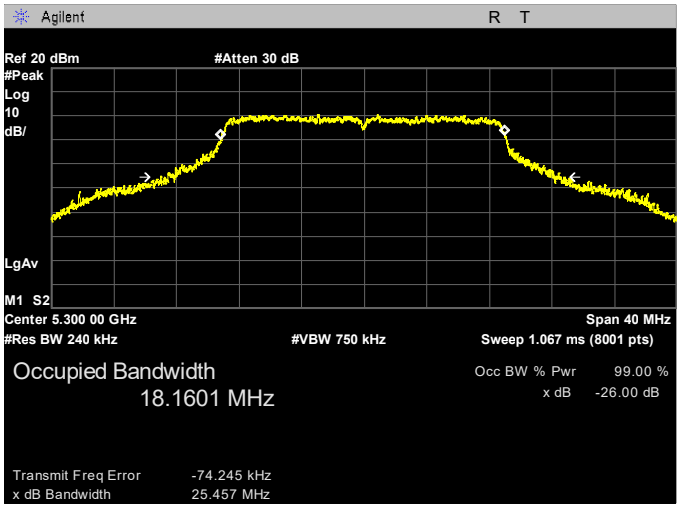


802.11ac(20 MHz) mode_26dB Bandwidth, Occupied Bandwidth

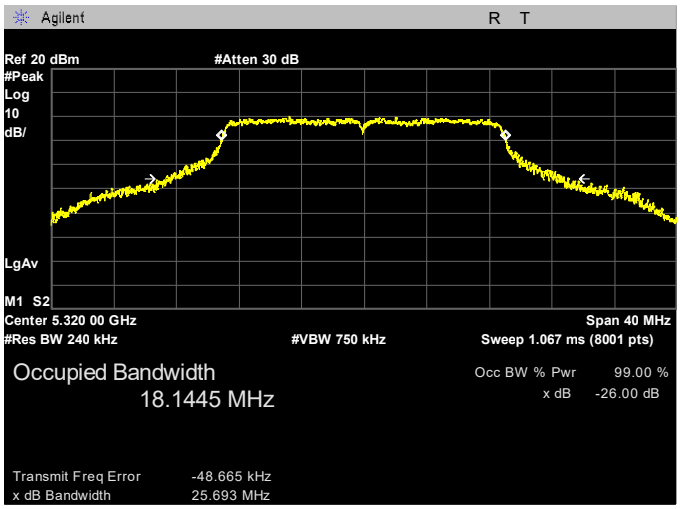
Lowest Channel (5 260 MHz)



Middle Channel (5 300 MHz)

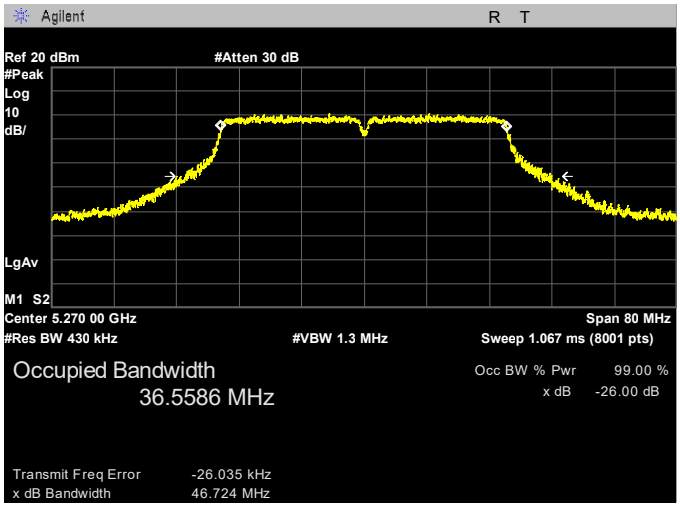


Highest Channel (5 320 MHz)

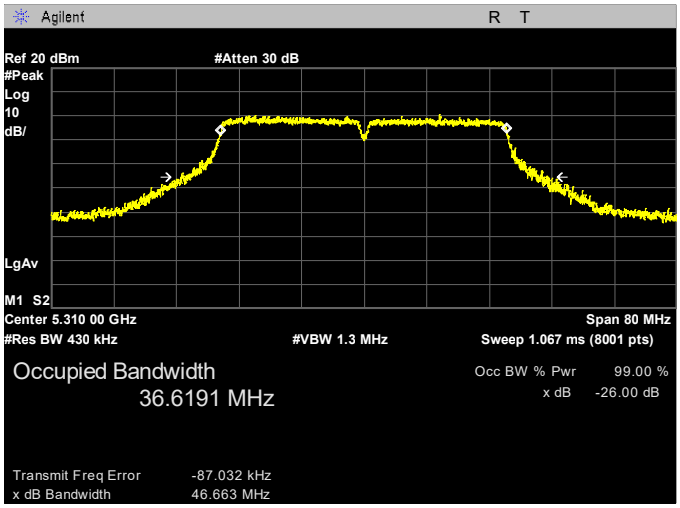


802.11n(40 MHz) mode_26dB Bandwidth, Occupied Bandwidth

Lowest Channel (5 270 MHz)

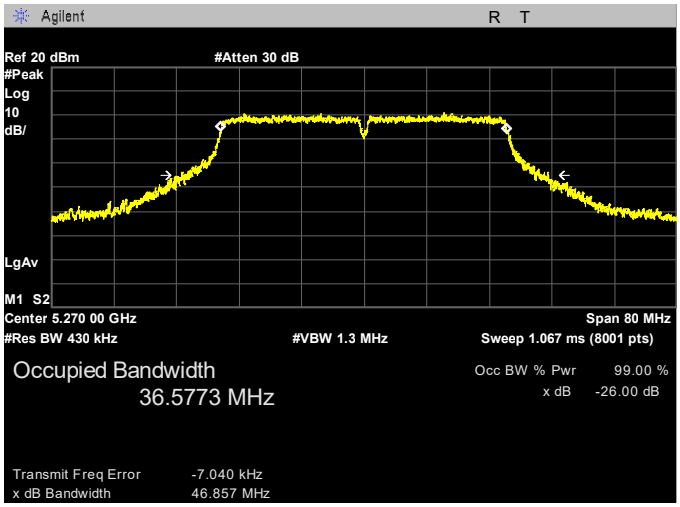


Highest Channel (5 310 MHz)

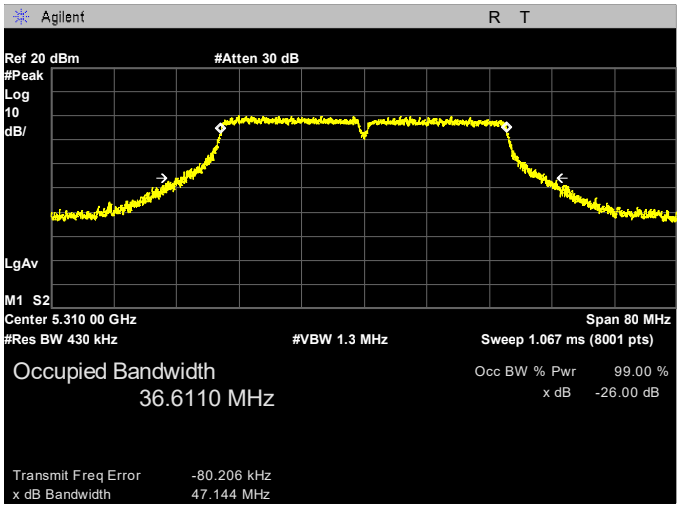


802.11ac(40 MHz) mode_26dB Bandwidth, Occupied Bandwidth

Lowest Channel (5 270 MHz)



Highest Channel (5 310 MHz)



7.1.3 26 dB Bandwidth / Occupied Bandwidth U-NII-2C Band

FCC §15.407(a)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11a mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 500	25.11	16.92
Middle	5 600	24.53	16.94
Highest	5 700	25.41	16.95

802.11n(20MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 500	26.05	18.18
Middle	5 600	24.96	18.10
Highest	5 700	25.47	18.14

802.11ac(20MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 500	25.71	18.12
Middle	5 600	25.36	18.18
Highest	5 700	25.07	18.15

802.11n(40MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 510	47.17	36.57
Middle	5 590	47.50	36.60
Highest	5 670	48.46	36.63

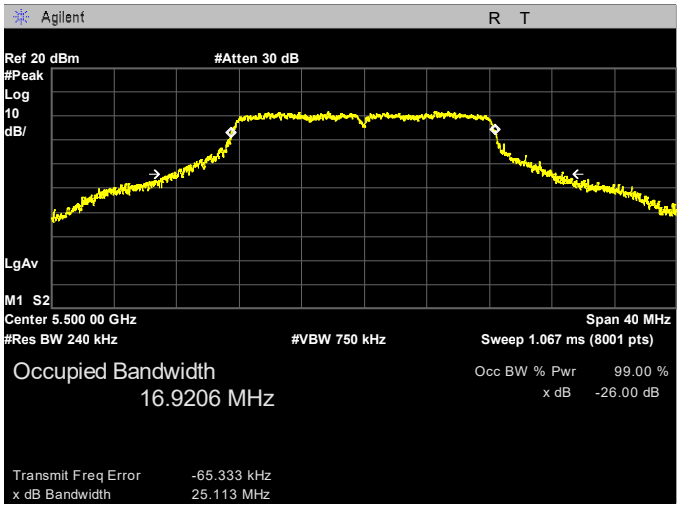
802.11ac(40MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 510	46.41	36.54
Middle	5 590	47.14	36.55
Highest	5 670	47.67	36.62

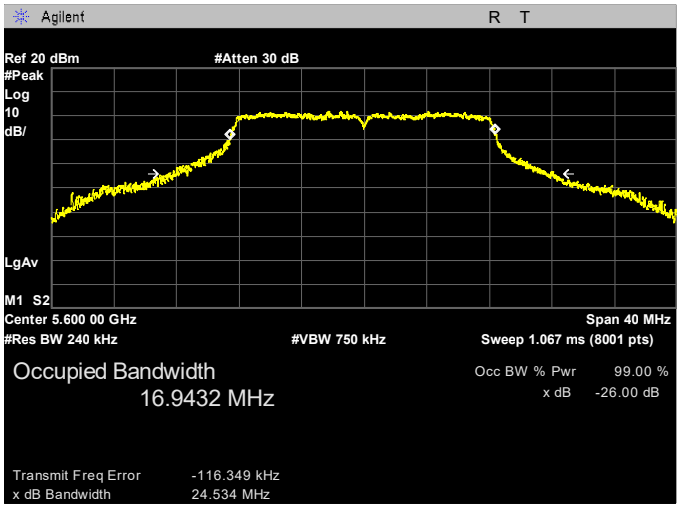
PLOTS OF EMISSIONS

802.11a mode_26dB Bandwidth, Occupied Bandwidth

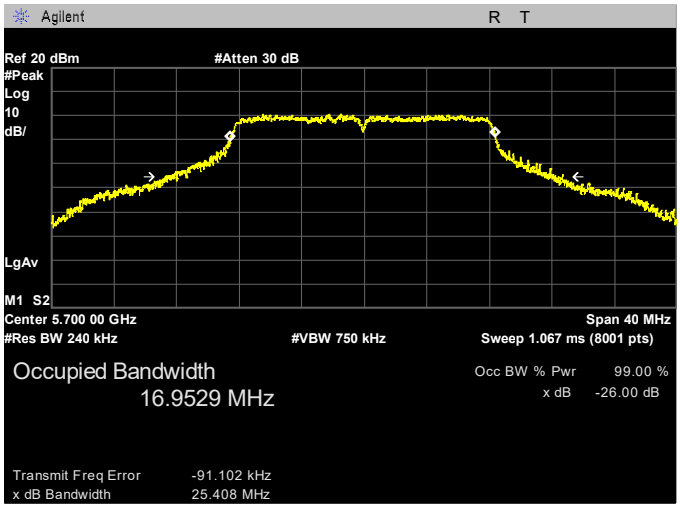
Lowest Channel (5 500 MHz)



Middle Channel (5 600 MHz)

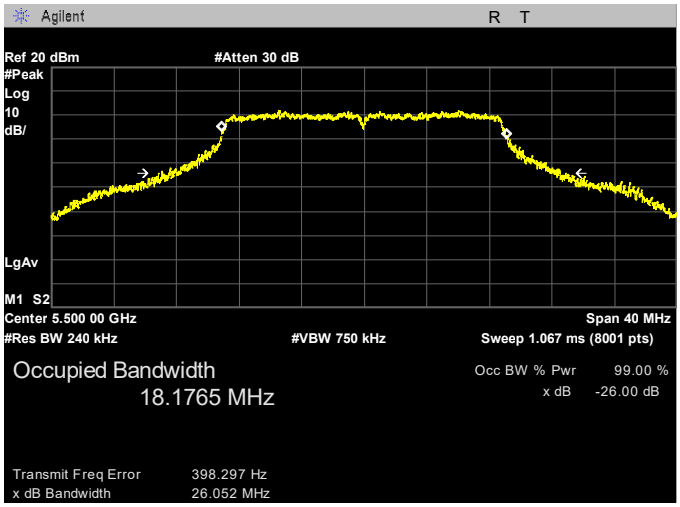


Highest Channel (5 700 MHz)

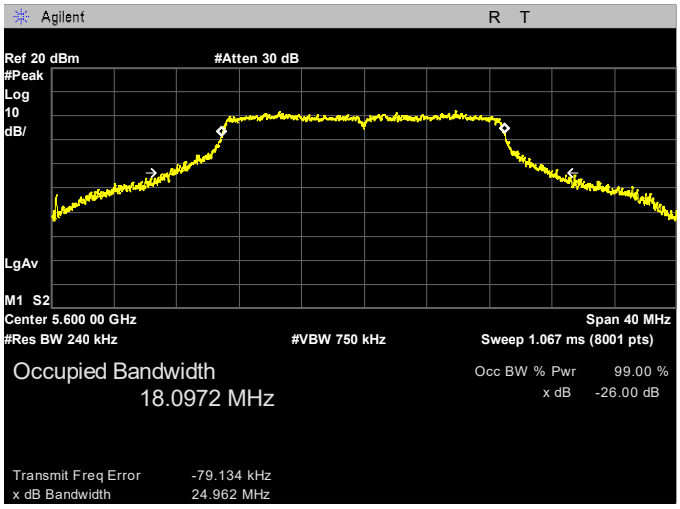


802.11n(20 MHz) mode_26dB Bandwidth, Occupied Bandwidth

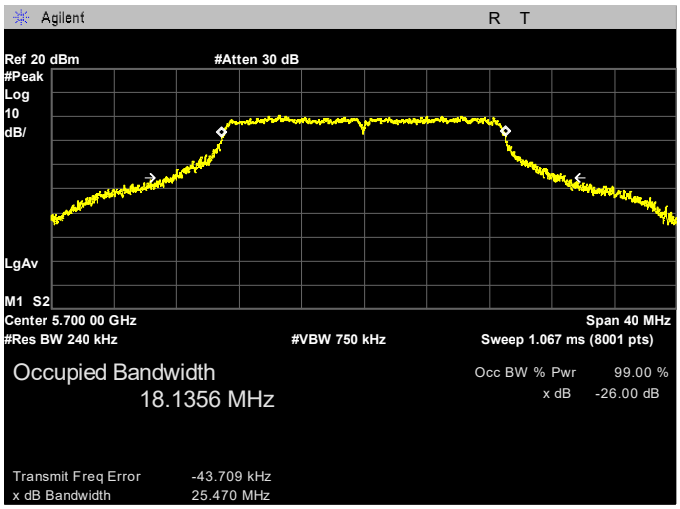
Lowest Channel (5 500 MHz)



Middle Channel (5 600 MHz)

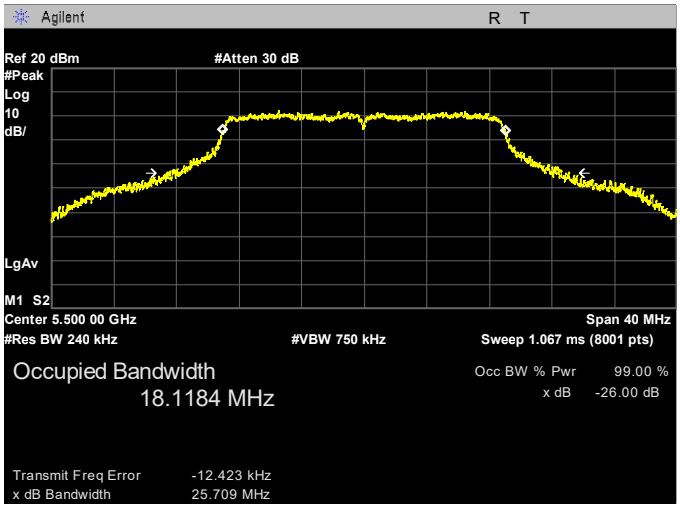


Highest Channel (5 700 MHz)

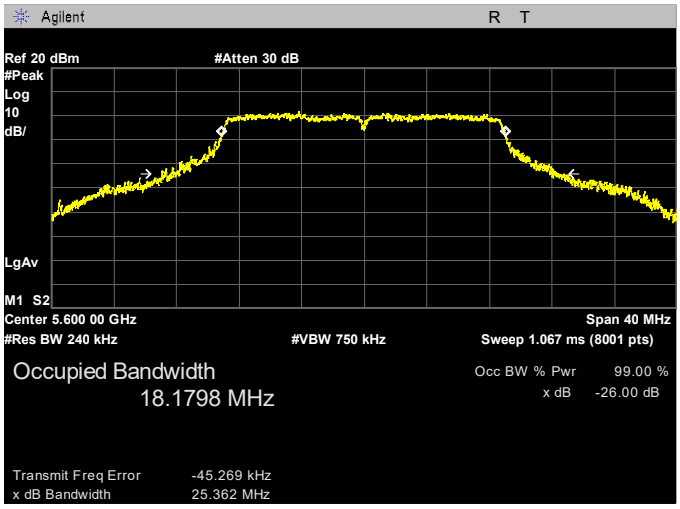


802.11ac(20 MHz) mode_26dB Bandwidth, Occupied Bandwidth

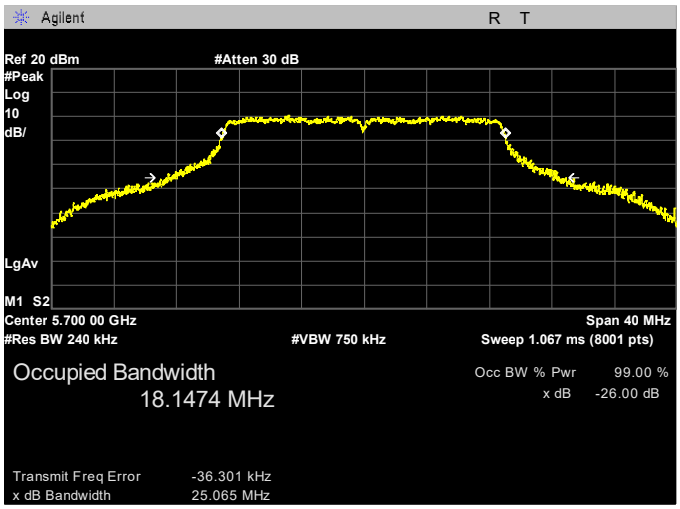
Lowest Channel (5 500 MHz)



Middle Channel (5 600 MHz)

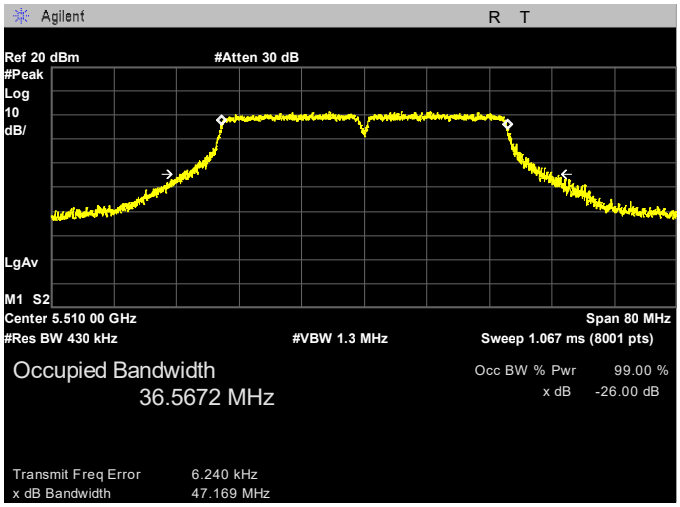


Highest Channel (5 700 MHz)

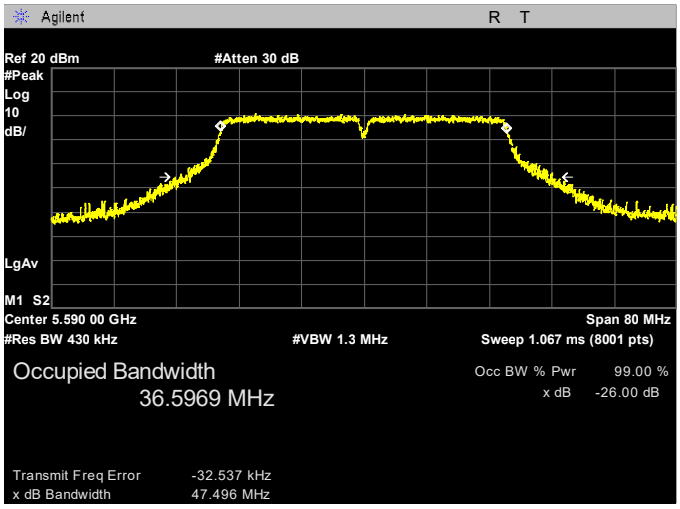


802.11n(40 MHz) mode_26dB Bandwidth, Occupied Bandwidth

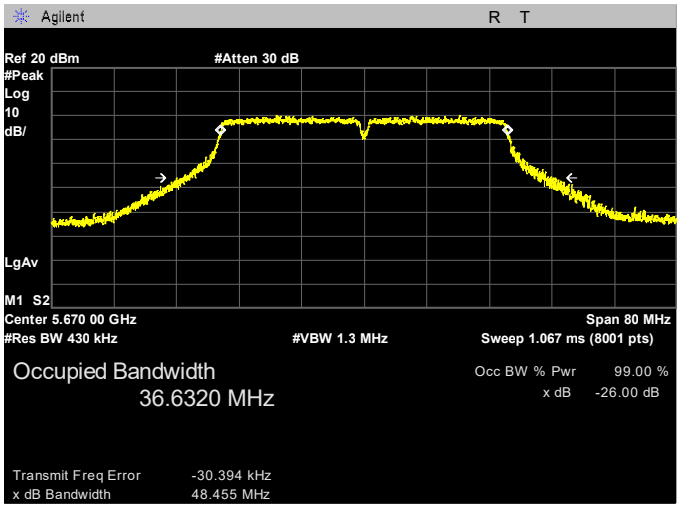
Lowest Channel (5 510 MHz)



Middle Channel (5 590 MHz)

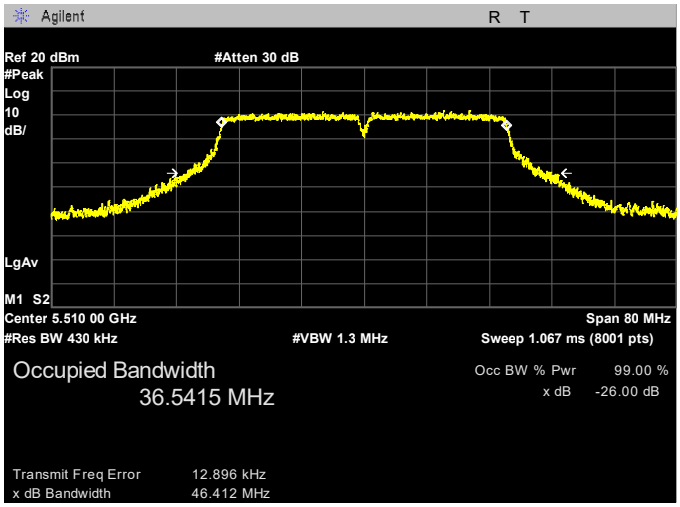


Highest Channel (5 670 MHz)

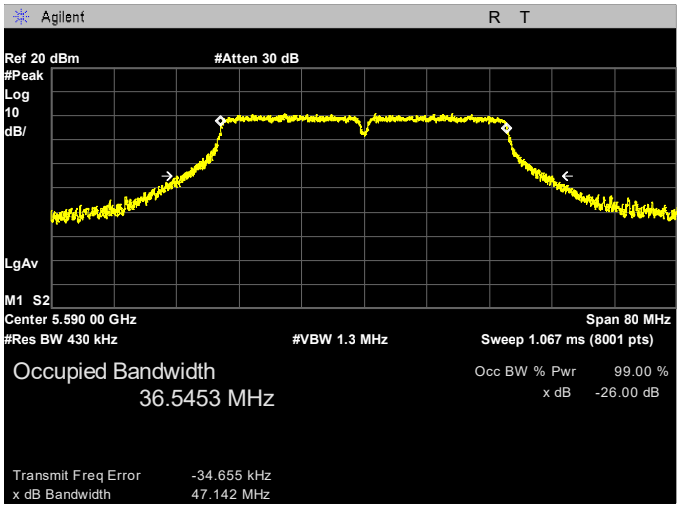


802.11ac(40 MHz) mode_26dB Bandwidth, Occupied Bandwidth

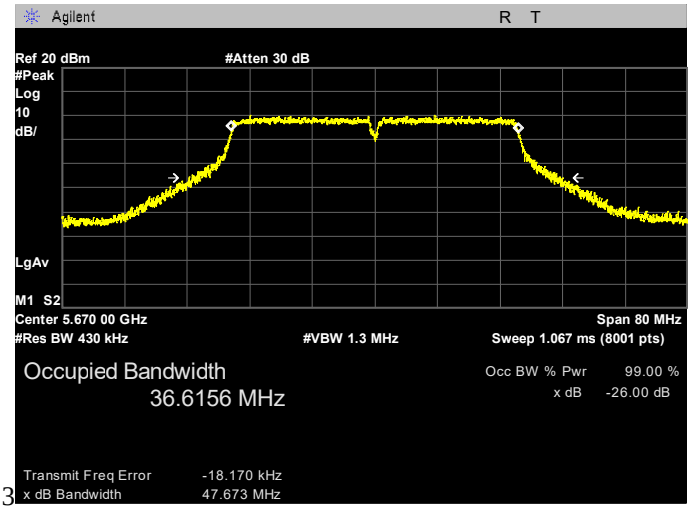
Lowest Channel (5 510 MHz)



Middle Channel (5 590 MHz)



Highest Channel (5 670 MHz)



7.1.4 26 dB Bandwidth / Occupied Bandwidth U-NII-3 Band

FCC §15.407(a)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11a mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 745	25.01	16.96
Middle	5 785	24.94	16.96
Highest	5 825	24.59	16.98

802.11n(20MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 745	25.36	18.12
Middle	5 785	25.07	18.12
Highest	5 825	24.74	18.15

802.11ac(20MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 745	25.77	18.13
Middle	5 785	26.04	18.11
Highest	5 825	26.10	18.12

802.11n(40MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 755	47.37	36.64
Highest	5 795	47.41	36.65

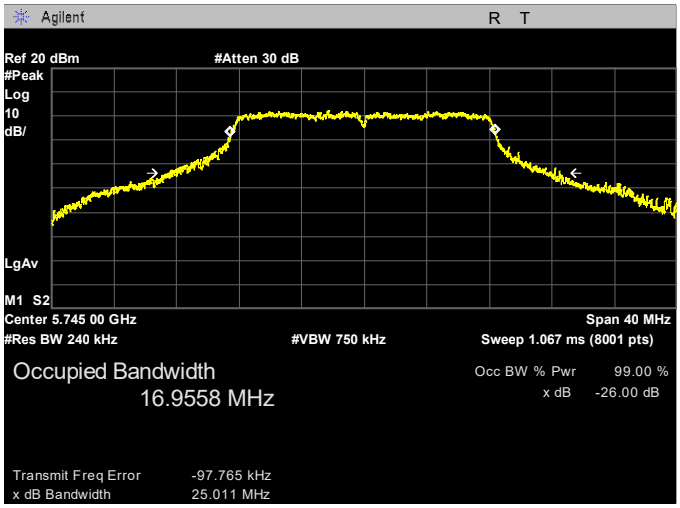
802.11ac(40MHz) mode

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Lowest	5 755	47.17	36.66
Highest	5 795	47.16	36.60

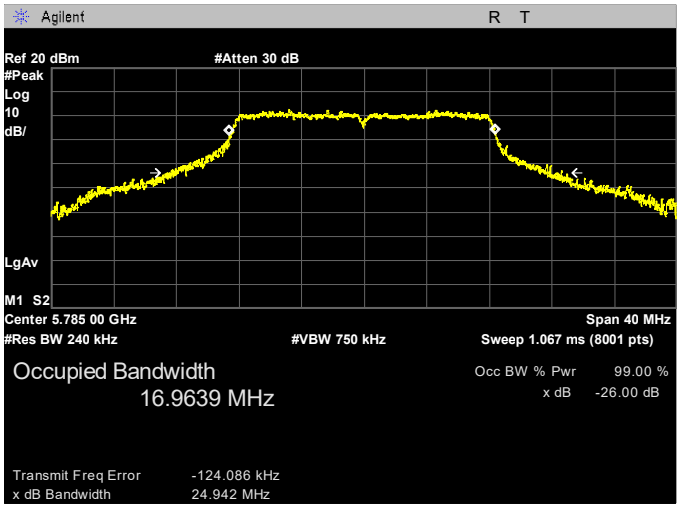
PLOTS OF EMISSIONS

802.11a mode_26dB Bandwidth, Occupied Bandwidth

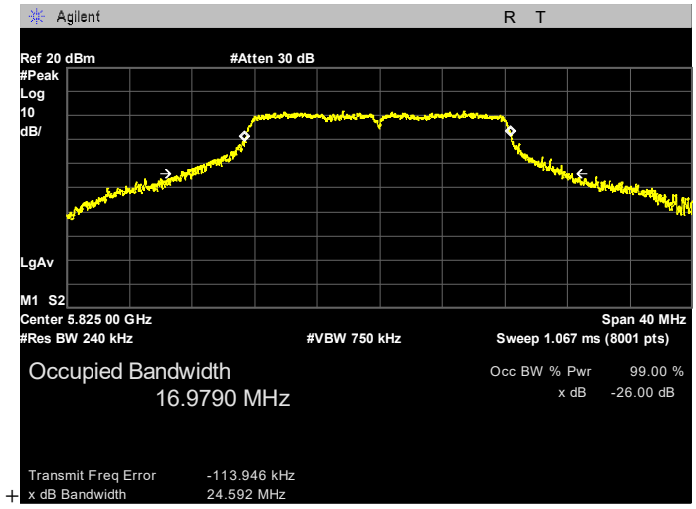
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

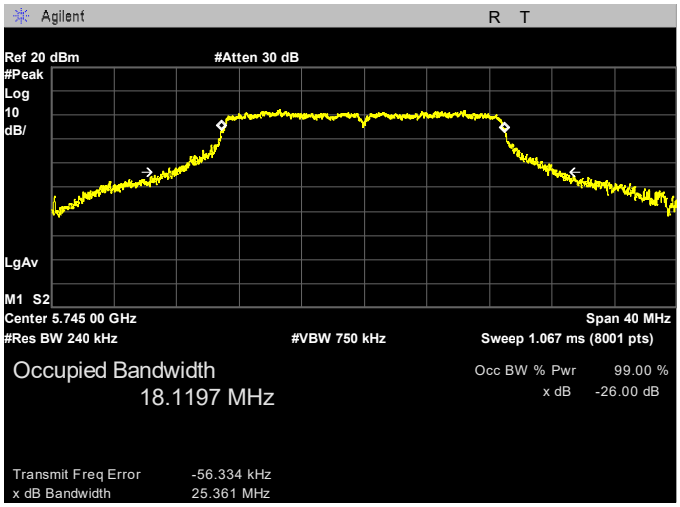


Highest Channel (5 825 MHz)

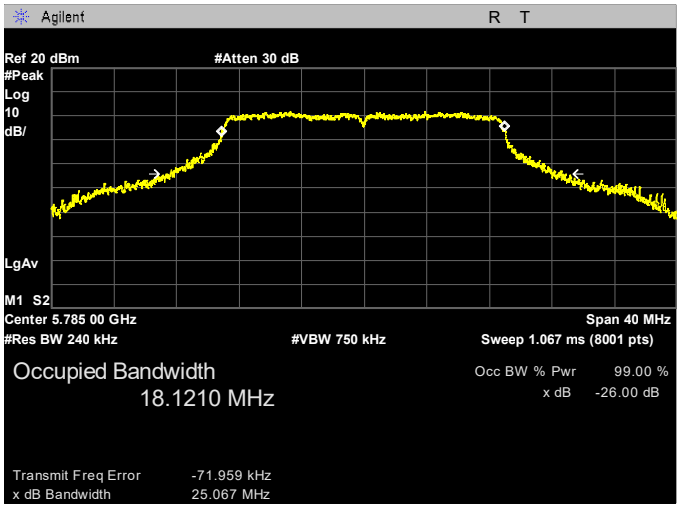


802.11n(20 MHz) mode_26dB Bandwidth, Occupied Bandwidth

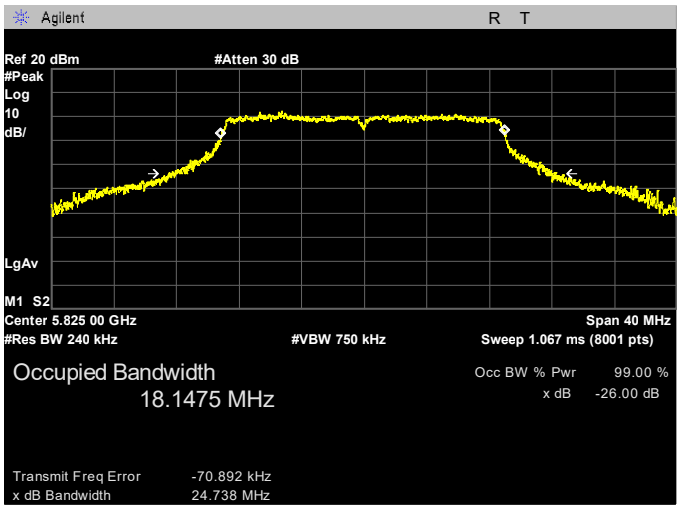
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

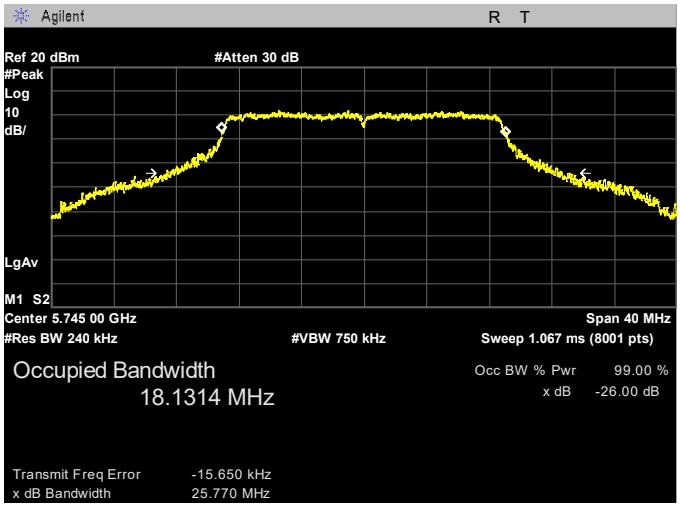


Highest Channel (5 825 MHz)

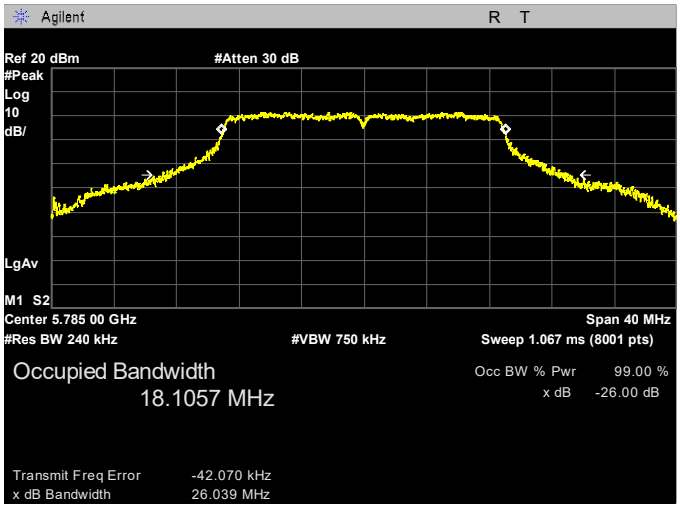


802.11ac(20 MHz) mode_26dB Bandwidth, Occupied Bandwidth

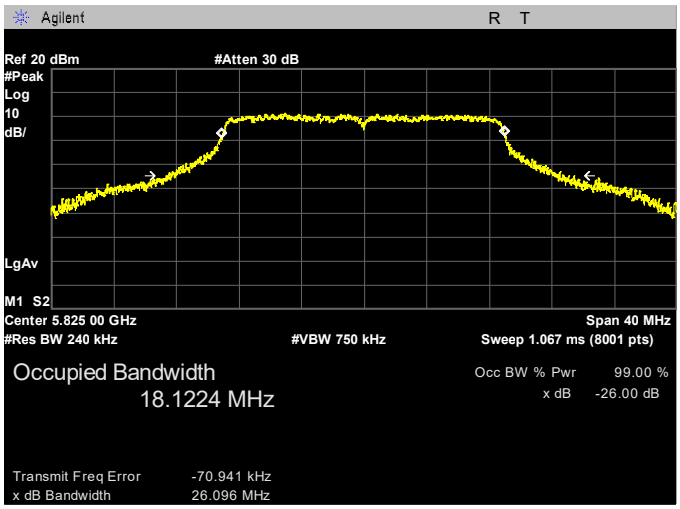
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

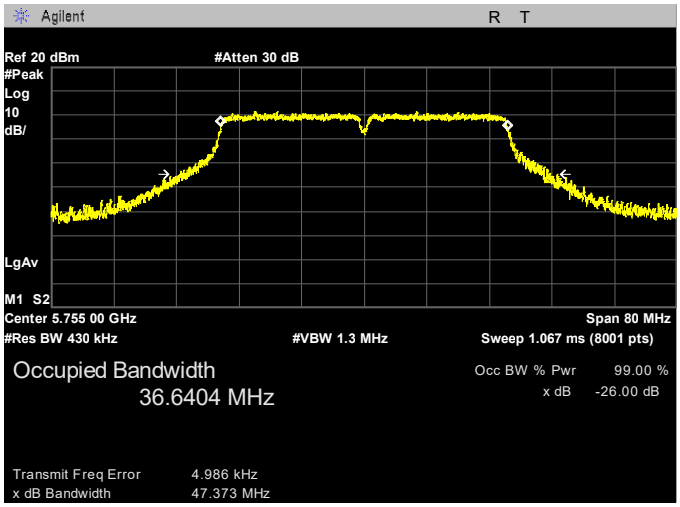


Highest Channel (5 825 MHz)

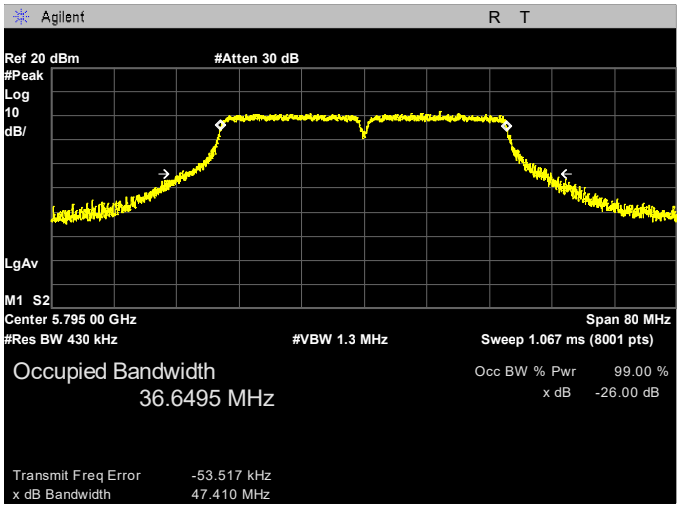


802.11n(40 MHz) mode_26dB Bandwidth, Occupied Bandwidth

Lowest Channel (5 755 MHz)

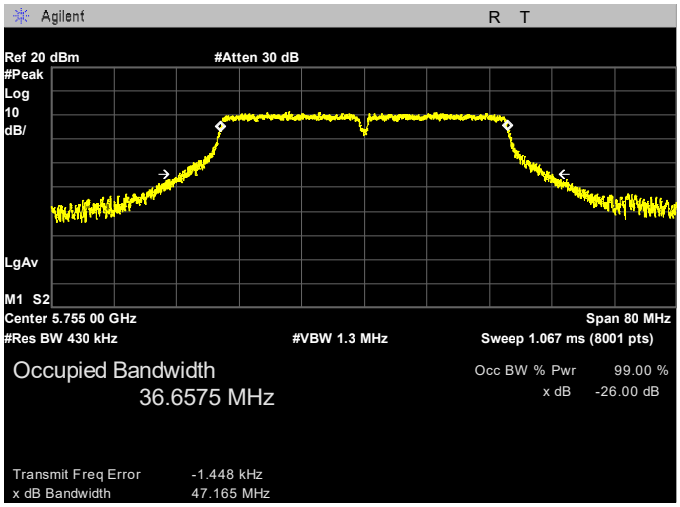


Highest Channel (5 795 MHz)

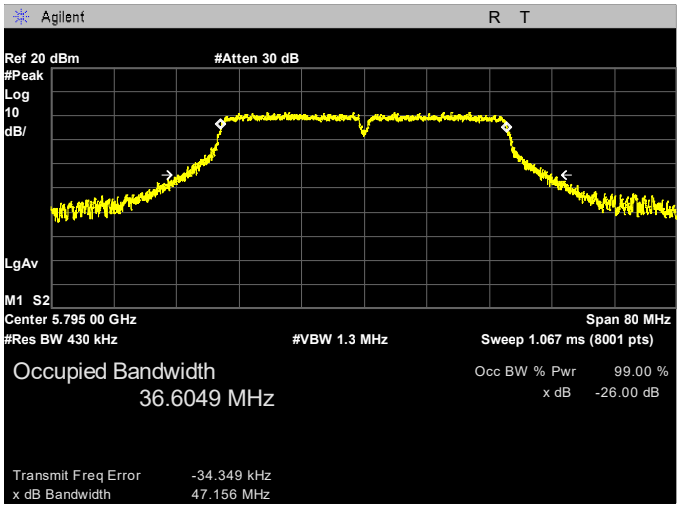


802.11ac(40 MHz) mode_26dB Bandwidth, Occupied Bandwidth

Lowest Channel (5 755 MHz)



Highest Channel (5 795 MHz)



7.1.5 6 dB Bandwidth U-NII-3 Band

FCC §15.407(e)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11a mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (kHz)
Lowest	5 745	16.35	> 500
Middle	5 785	16.34	
Highest	5 825	16.34	

802.11n(20 MHz) mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (kHz)
Lowest	5 745	17.59	> 500
Middle	5 785	17.60	
Highest	5 825	17.58	

802.11ac(20 MHz) mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (kHz)
Lowest	5 745	17.59	> 500
Middle	5 785	17.60	
Highest	5 825	17.59	

802.11n(40 MHz) mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (kHz)
Lowest	5 755	36.34	> 500
Highest	5 795	36.35	

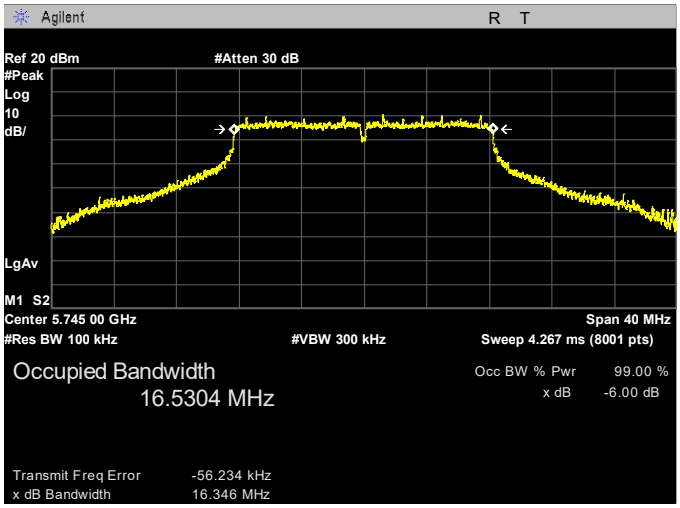
802.11ac(40 MHz) mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (kHz)
Lowest	5 755	36.35	> 500
Highest	5 795	36.33	

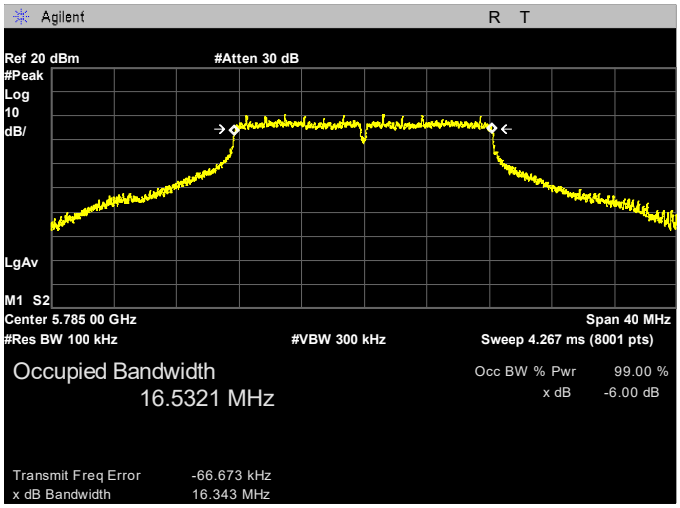
PLOTS OF EMISSIONS

802.11a mode_6dB Bandwidth

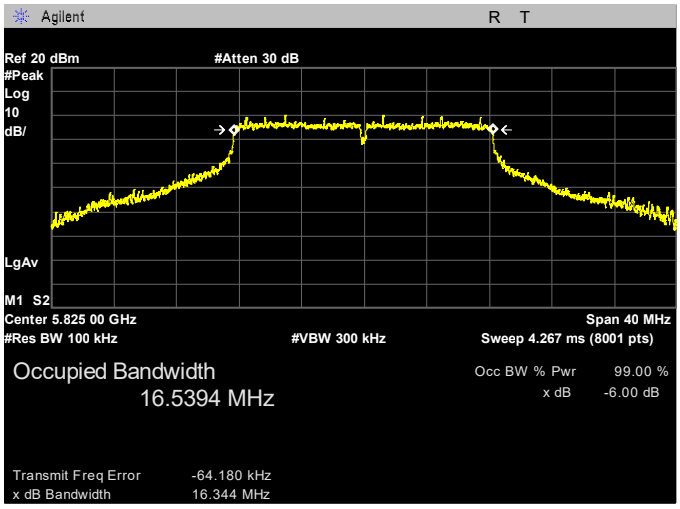
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

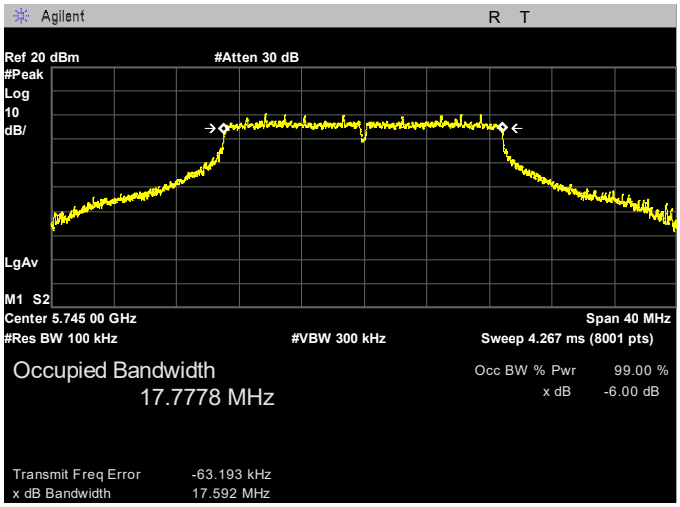


Highest Channel (5 825 MHz)

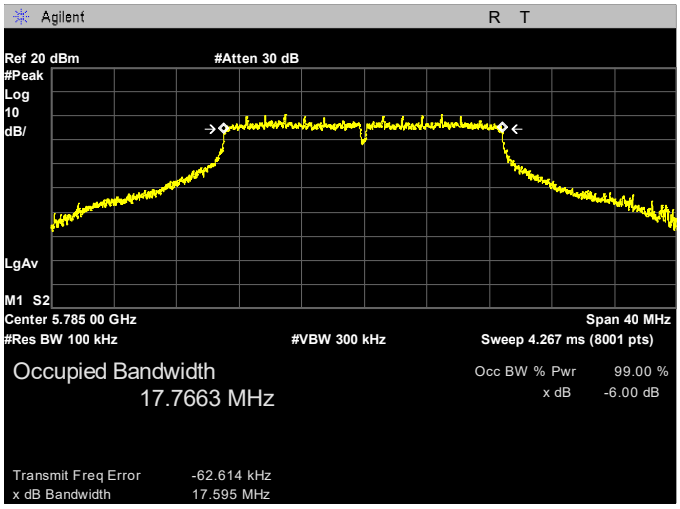


802.11n(20 MHz) mode_6dB Bandwidth

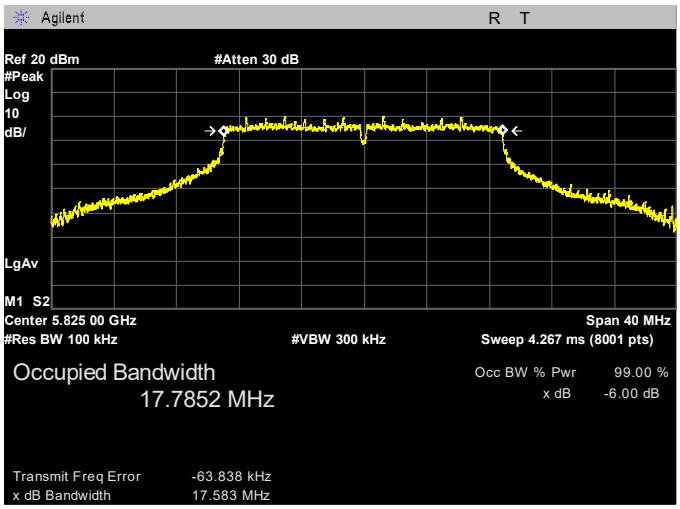
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

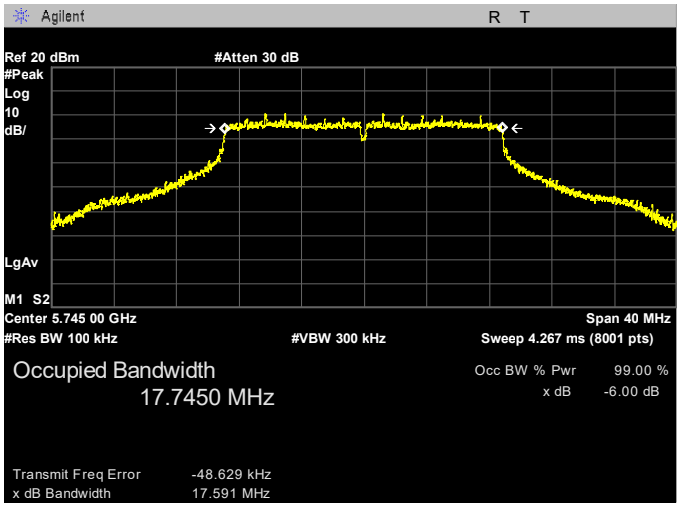


Highest Channel (5 825 MHz)

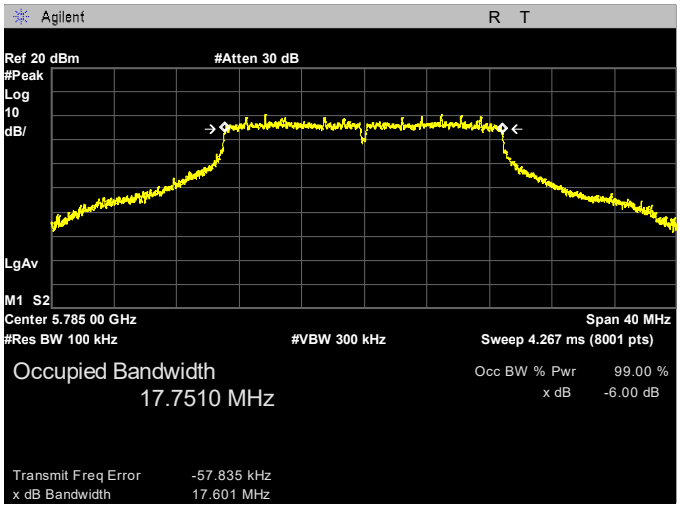


802.11ac(20 MHz) mode_6dB Bandwidth

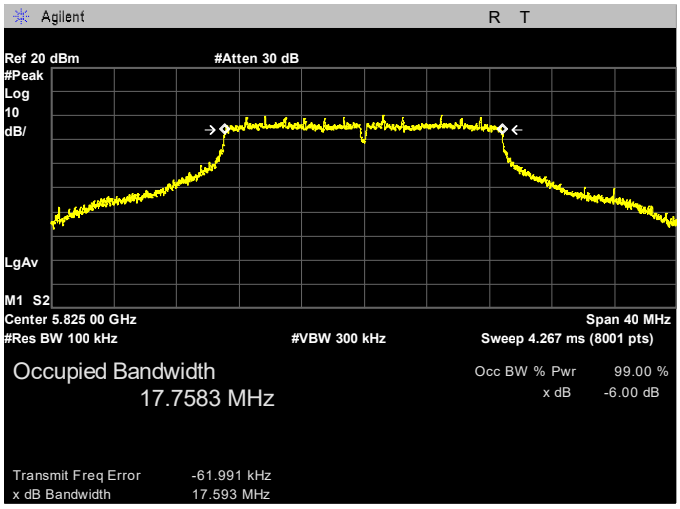
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

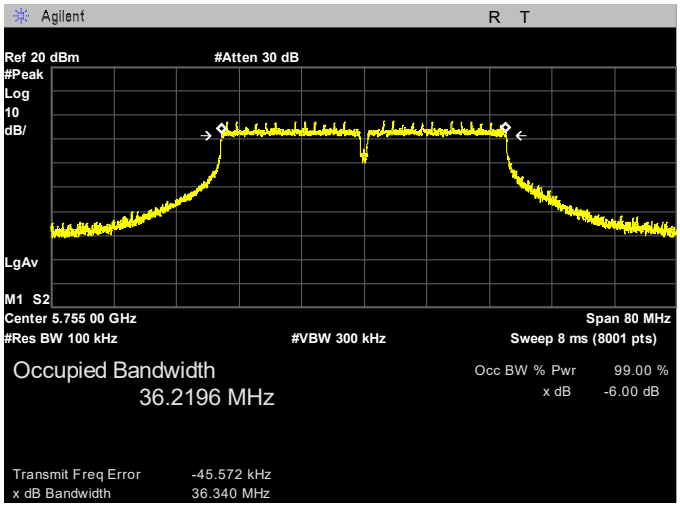


Highest Channel (5 825 MHz)

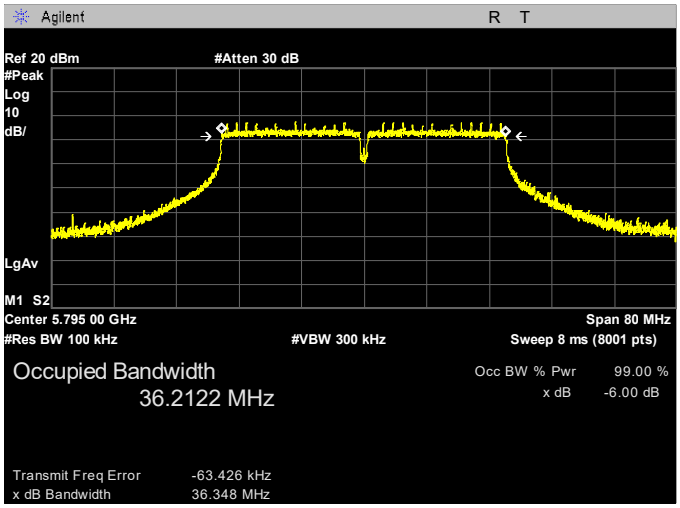


802.11n(40 MHz) mode_6dB Bandwidth

Lowest Channel (5 755 MHz)

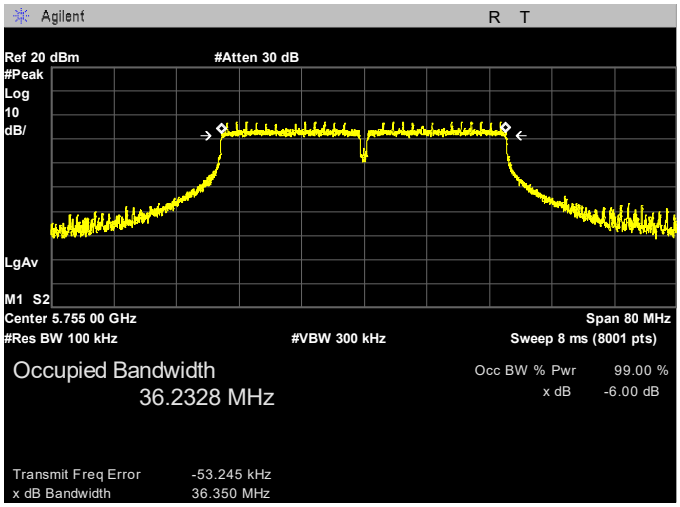


Highest Channel (5 795 MHz)

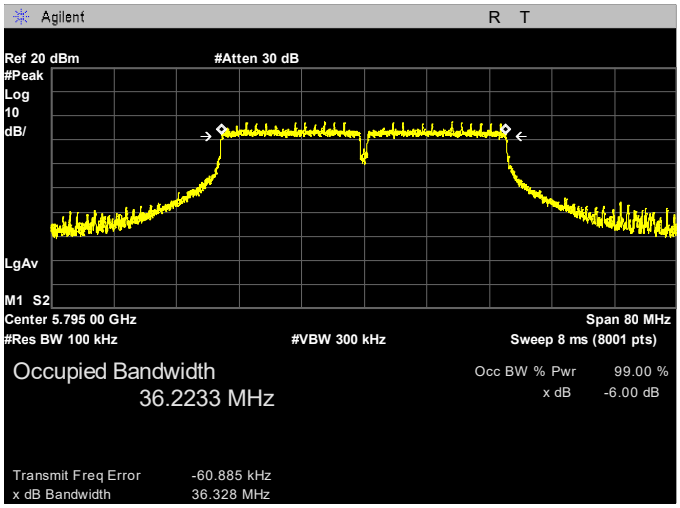


802.11ac(40 MHz) mode_6dB Bandwidth

Lowest Channel (5 755 MHz)



Highest Channel (5 795 MHz)



7.2 Maximum Conducted Output Power(average)

7.2.1 Maximum Conducted Output Power(average) – U-NII-1 Band

FCC §15.407(a)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11a mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
36	5 180	10.07	0.36	10.43	23.98
44	5 220	10.44	0.36	10.80	23.98
48	5 240	10.70	0.36	11.06	23.98

802.11n(20 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
36	5 180	10.08	0.34	10.42	23.98
44	5 220	10.46	0.34	10.80	23.98
48	5 240	10.72	0.34	11.06	23.98

802.11ac(20 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
36	5 180	9.95	0.35	10.30	23.98
44	5 220	10.30	0.35	10.65	23.98
48	5 240	10.60	0.35	10.95	23.98

802.11n(40 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
38	5 190	9.72	0.72	10.44	23.98
46	5 230	10.21	0.72	10.93	23.98

802.11ac(40 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
38	5 190	9.69	0.74	10.43	23.98
46	5 230	10.12	0.74	10.86	23.98

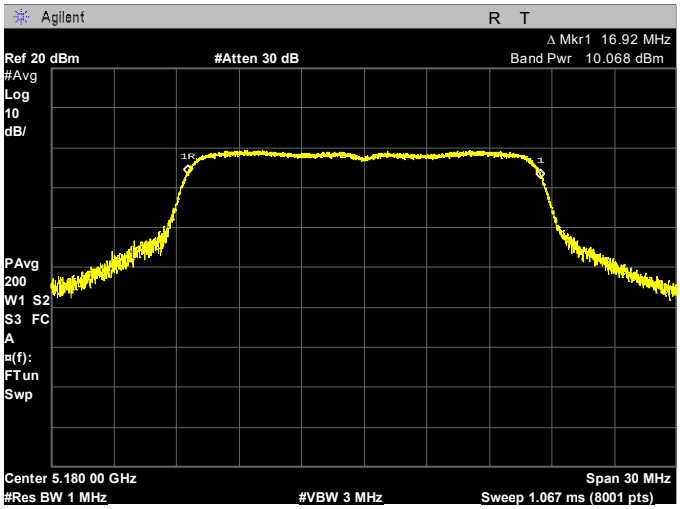
Notes:

1. *Maximum Conducted(average) Power = Measured conducted power + Duty Factor
2. The following equation was used for spectrum offset :
   Spectrum offset (dB) = Attenuator (dB) + Cable Loss (dB) + SMA Type Connector Loss (dB)

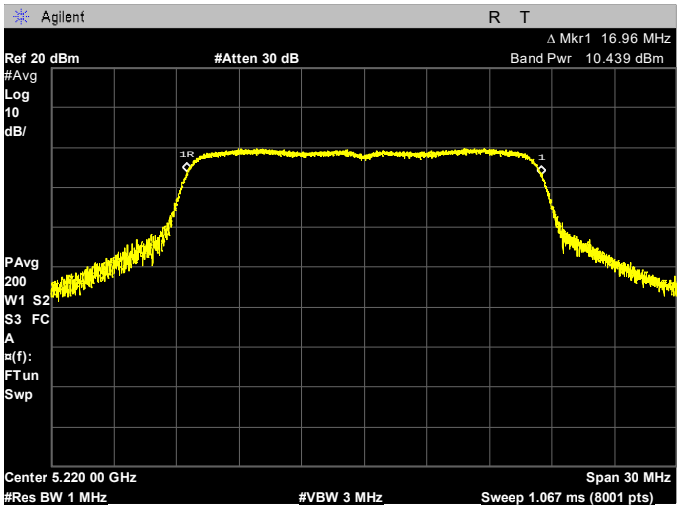
PLOTS OF EMISSIONS

802.11a mode

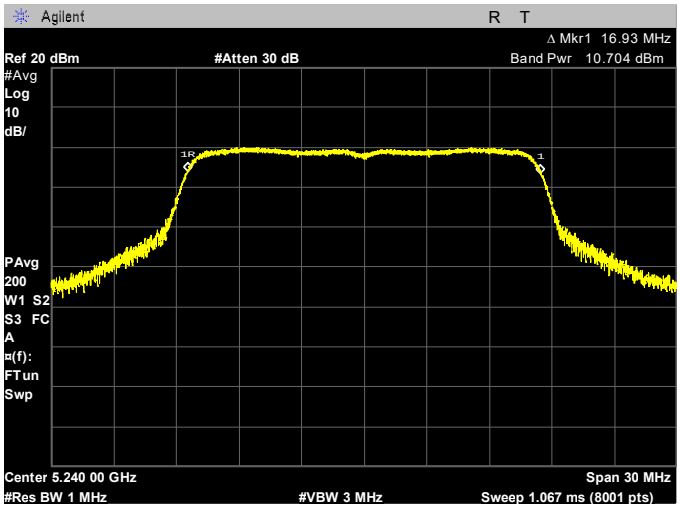
Lowest Channel (5 180 MHz)



Middle Channel (5 220 MHz)

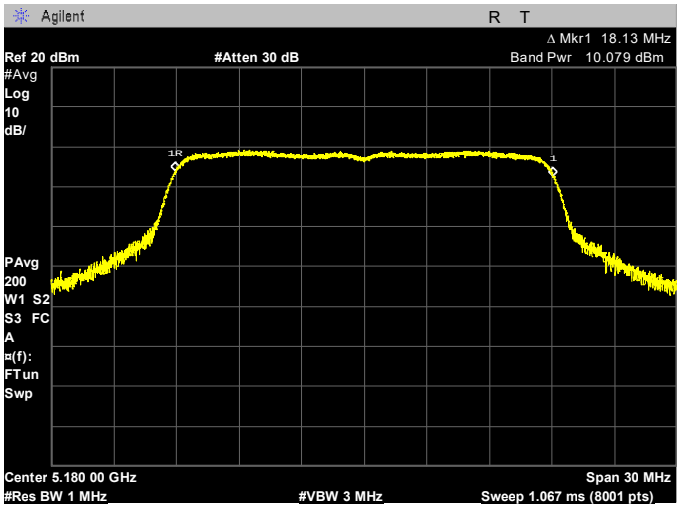


Highest Channel (5 240 MHz)

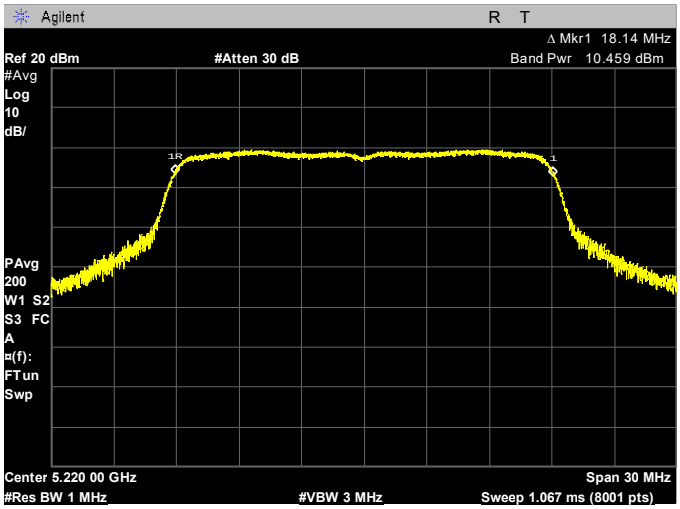


802.11n(20 MHz) mode

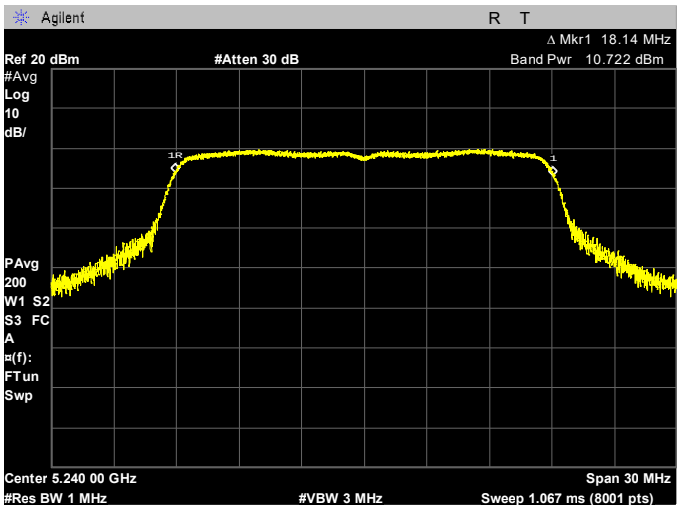
Lowest Channel (5 180 MHz)



Middle Channel (5 220 MHz)

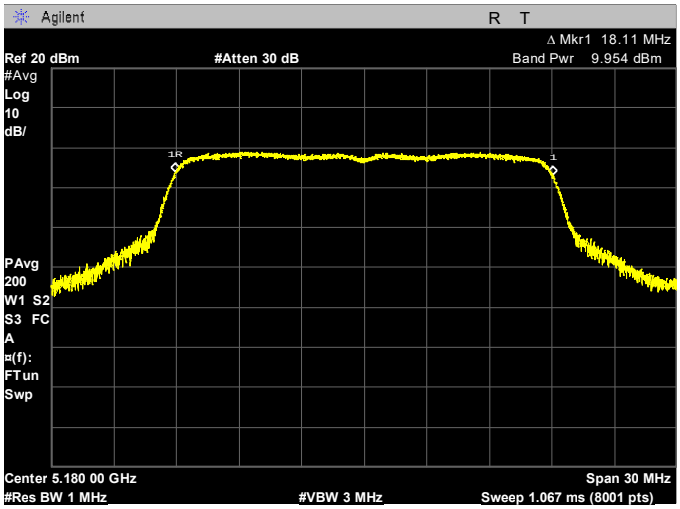


Highest Channel (5 240 MHz)

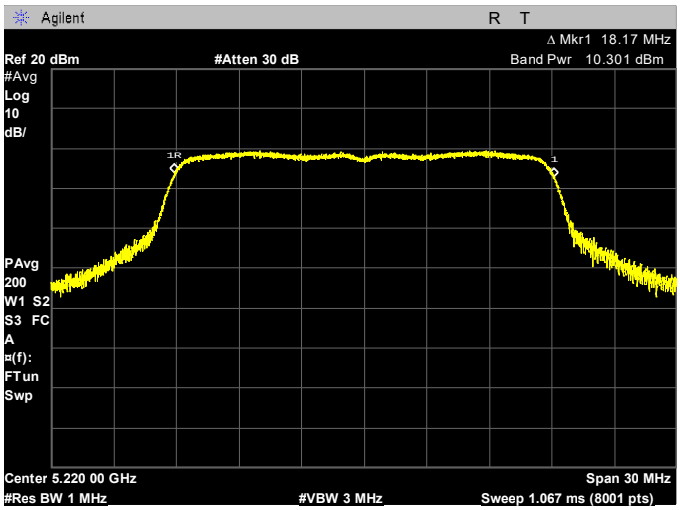


802.11ac(20 MHz) mode

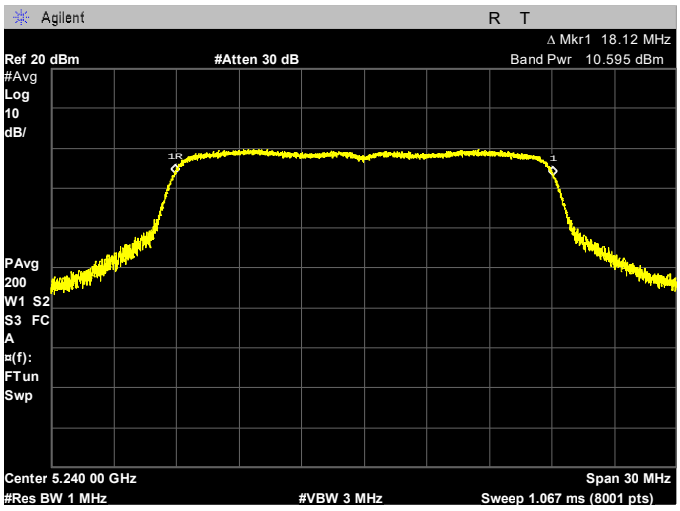
Lowest Channel (5 180 MHz)



Middle Channel (5 220 MHz)

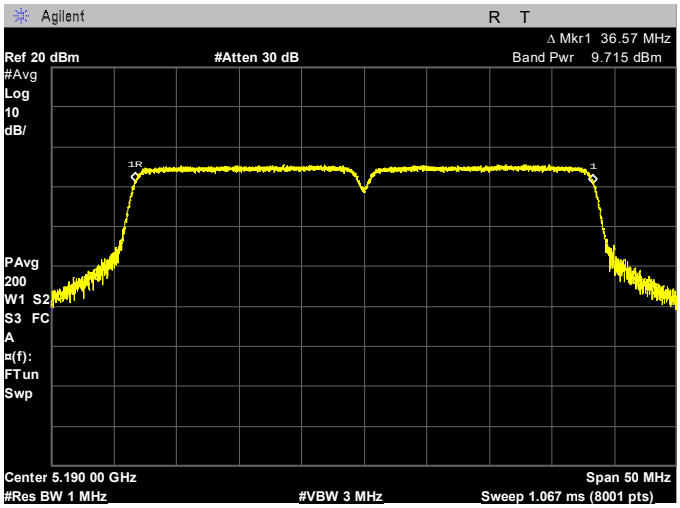


Highest Channel (5 240 MHz)

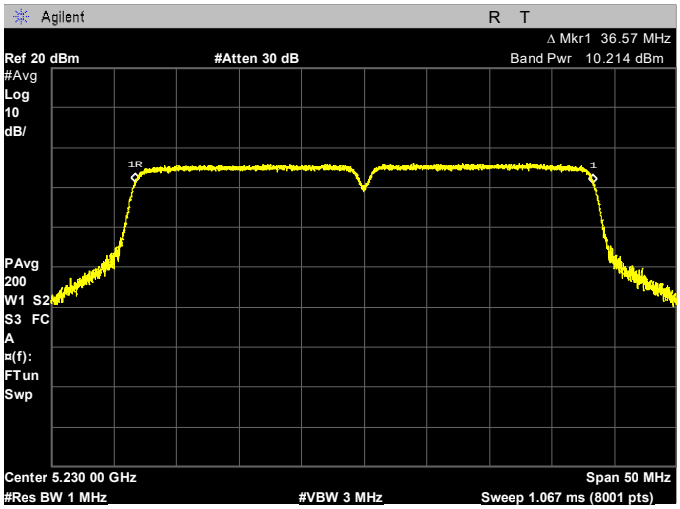


802.11n(40 MHz) mode

Lowest Channel (5 190 MHz)

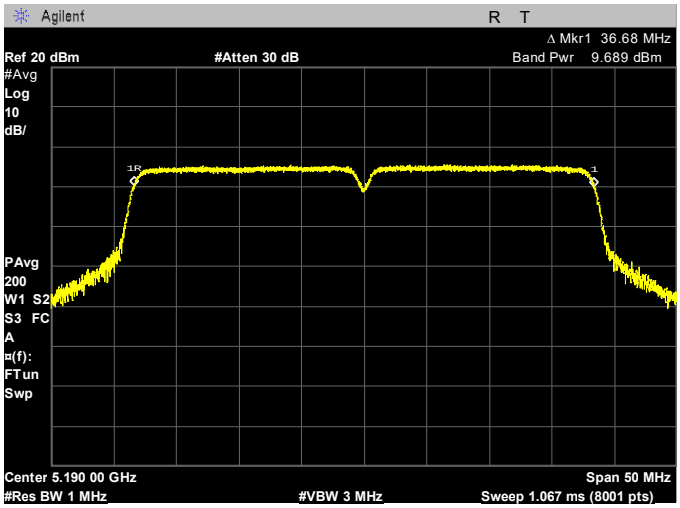


Highest Channel (5 230 MHz)

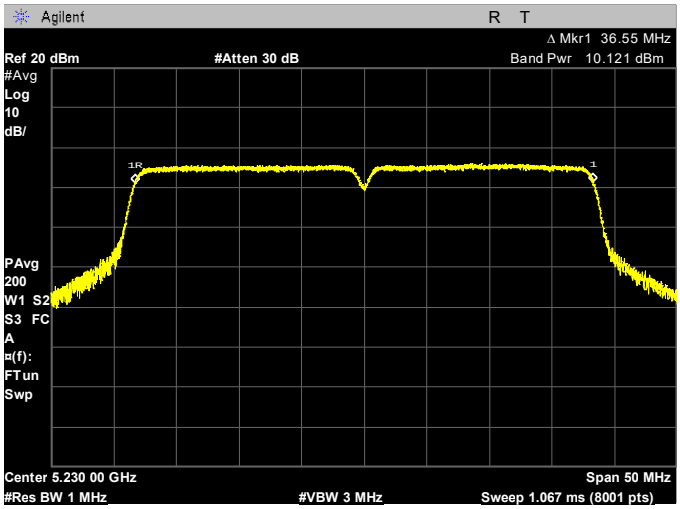


802.11ac(40 MHz) mode

Lowest Channel (5 190 MHz)



Highest Channel (5 230 MHz)



7.2.2 Maximum Conducted Output Power(average) – U-NII-2A Band

FCC §15.407(a)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11a mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
52	5 260	10.78	0.47	11.25	23.98
60	5 300	10.45	0.47	10.92	23.98
64	5 320	9.84	0.47	10.31	23.98

802.11n(20 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
52	5 260	10.65	0.38	11.03	23.98
60	5 300	10.25	0.38	10.63	23.98
64	5 320	9.80	0.38	10.18	23.98

802.11ac(20 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
52	5 260	10.61	0.39	11.00	23.98
60	5 300	10.26	0.39	10.65	23.98
64	5 320	9.74	0.39	10.13	23.98

802.11n(40 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
54	5 270	10.29	0.71	11.00	23.98
62	5 310	9.66	0.71	10.37	23.98

802.11ac(40 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
54	5 270	10.30	0.79	11.09	23.98
62	5 310	9.59	0.79	10.38	23.98

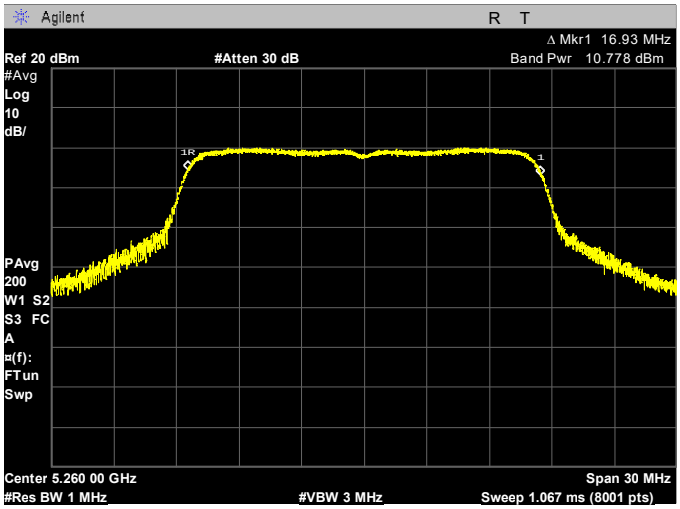
Notes:

1. *Maximum Conducted(average) Power = Measured conducted power + Duty Factor
2. The following equation was used for spectrum offset :
   Spectrum offset (dB) = Attenuator (dB) + Cable Loss (dB) + SMA Type Connector Loss (dB)

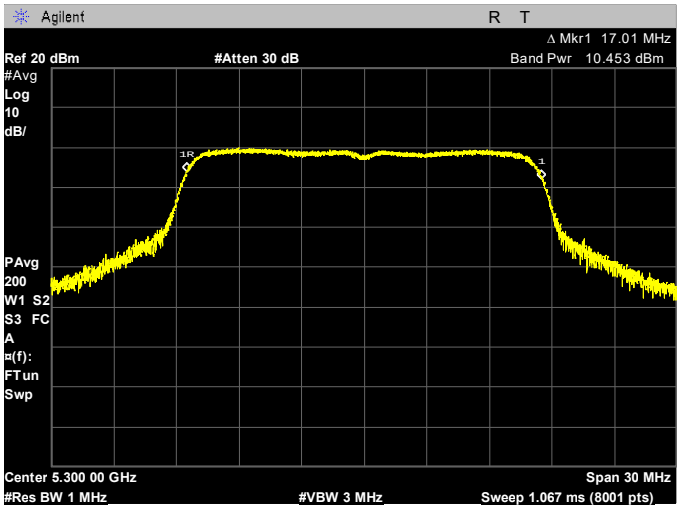
PLOTS OF EMISSIONS

802.11a mode

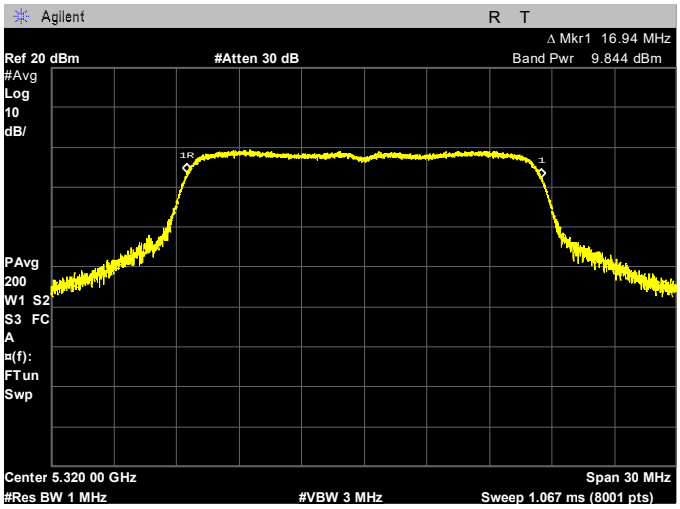
Lowest Channel (5 260 MHz)



Middle Channel (5 300 MHz)

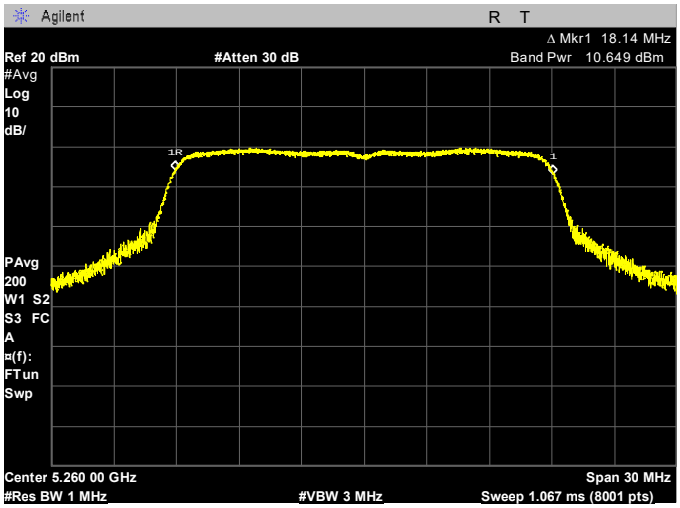


Highest Channel (5 320 MHz)

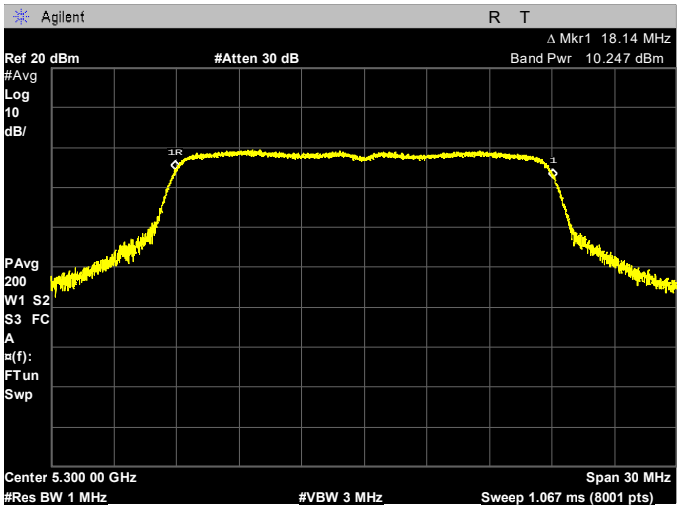


802.11n(20 MHz) mode

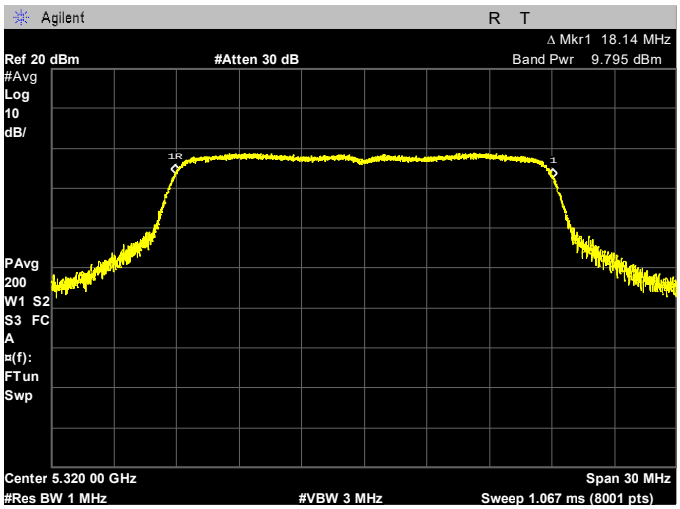
Lowest Channel (5 260 MHz)



Middle Channel (5 300 MHz)

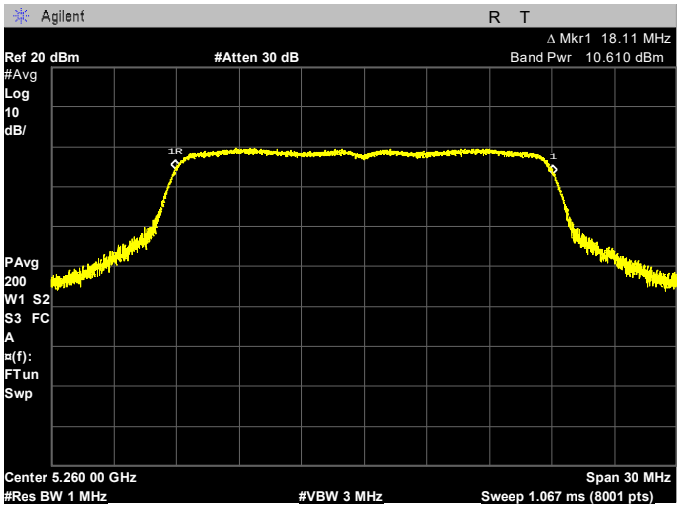


Highest Channel (5 320 MHz)

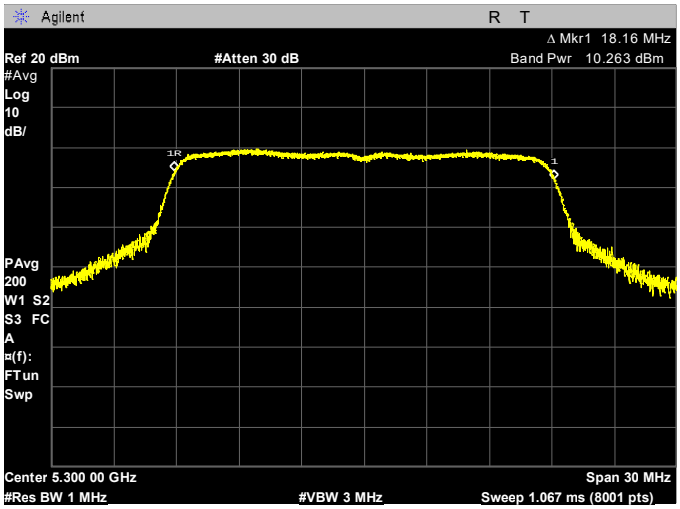


802.11ac(20 MHz) mode

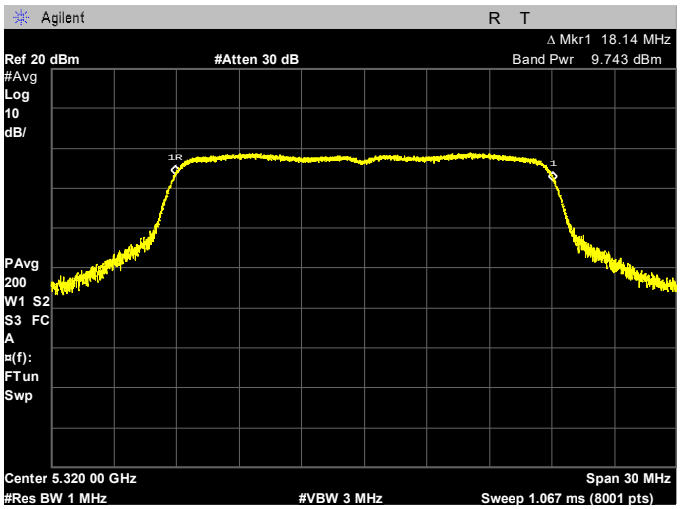
Lowest Channel (5 260 MHz)



Middle Channel (5 300 MHz)

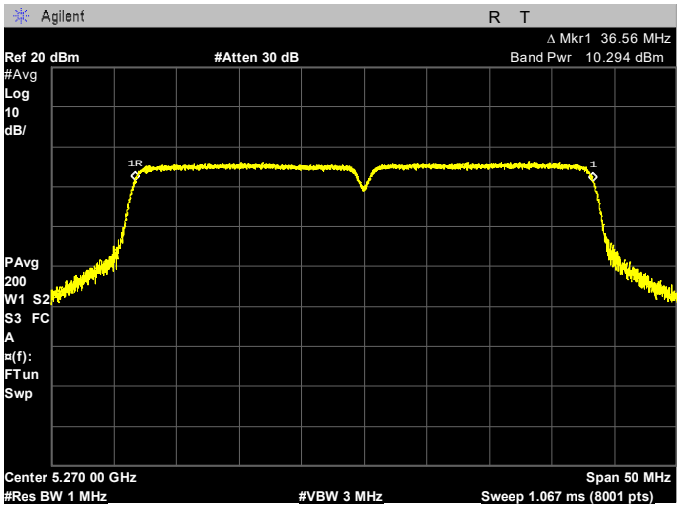


Highest Channel (5 320 MHz)

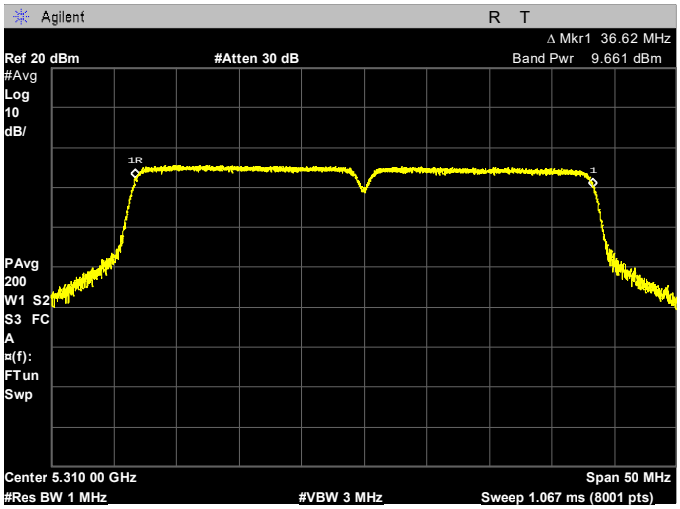


802.11n(40 MHz) mode

Lowest Channel (5 270 MHz)

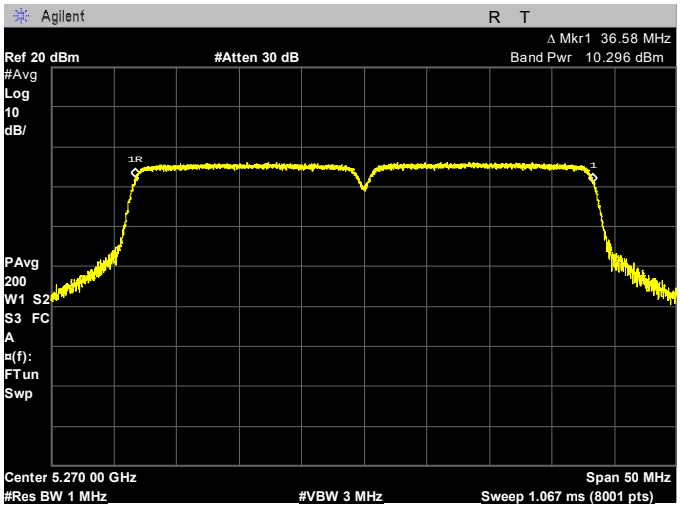


Highest Channel (5 310 MHz)

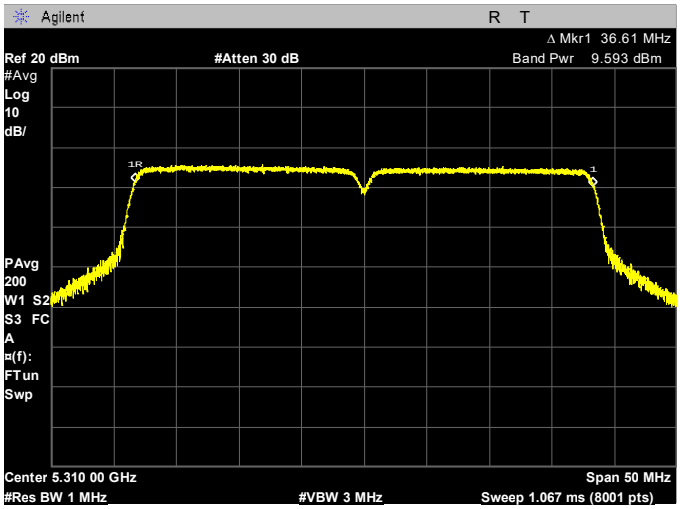


802.11ac(40 MHz) mode

Lowest Channel (5 270 MHz)



Highest Channel (5 310 MHz)



7.2.3 Maximum Conducted Output Power(average) – U-NII-2C Band

FCC §15.407(a)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11a mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
100	5 500	11.39	0.43	11.82	23.98
120	5 600	11.43	0.43	11.86	23.98
140	5 700	10.26	0.43	10.69	23.98

802.11n(20 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
100	5 500	11.41	0.36	11.77	23.98
120	5 600	11.03	0.36	11.39	23.98
140	5 700	10.17	0.36	10.53	23.98

802.11ac(20 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
100	5 500	11.52	0.45	11.97	23.98
120	5 600	11.05	0.45	11.50	23.98
140	5 700	10.34	0.45	10.79	23.98

802.11n(40 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
102	5 510	11.25	0.83	12.08	23.98
118	5 590	10.69	0.83	11.52	23.98
134	5 670	9.90	0.83	10.73	23.98

802.11ac(40 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
102	5 510	11.27	0.83	12.10	23.98
118	5 590	10.70	0.83	11.53	23.98
134	5 670	9.97	0.83	10.80	23.98

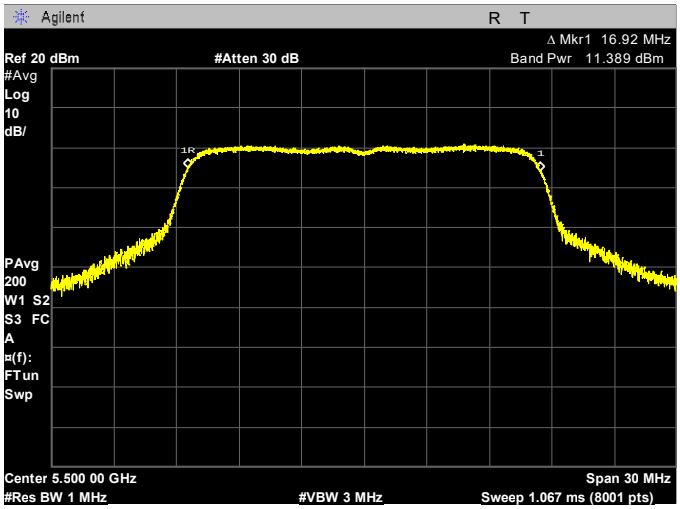
Notes:

1. *Maximum Conducted(average) Power = Measured conducted power + Duty Factor
2. The following equation was used for spectrum offset :
   Spectrum offset (dB) = Attenuator (dB) + Cable Loss (dB) + SMA Type Connector Loss (dB)

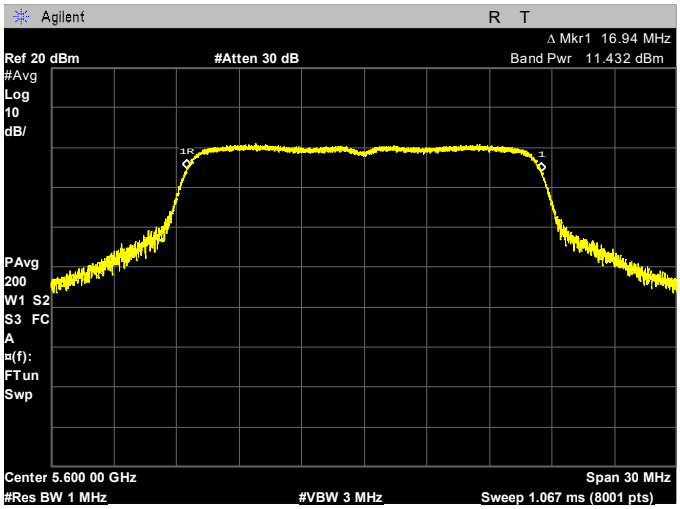
PLOTS OF EMISSIONS

802.11a mode

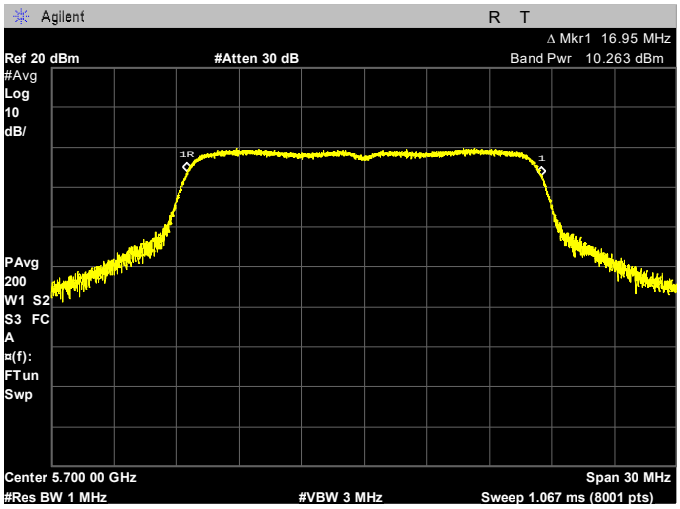
Lowest Channel (5 500 MHz)



Middle Channel (5 600 MHz)

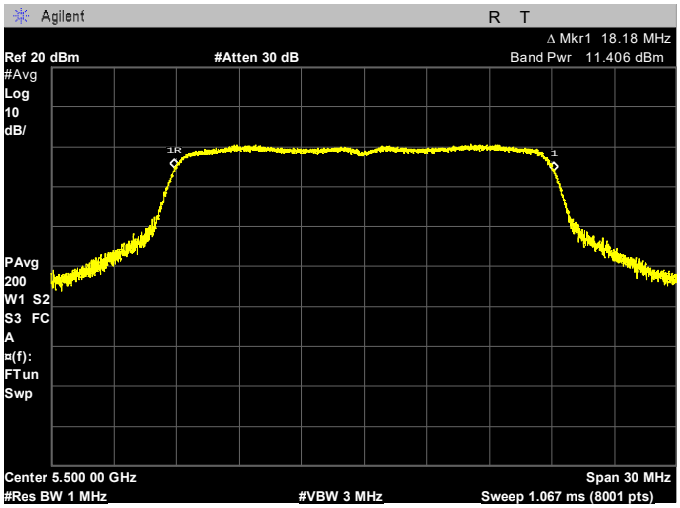


Highest Channel (5 700 MHz)

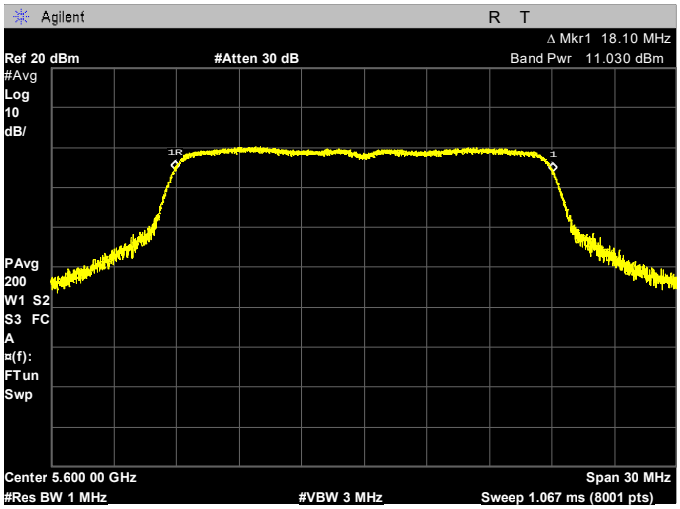


802.11n(20 MHz) mode

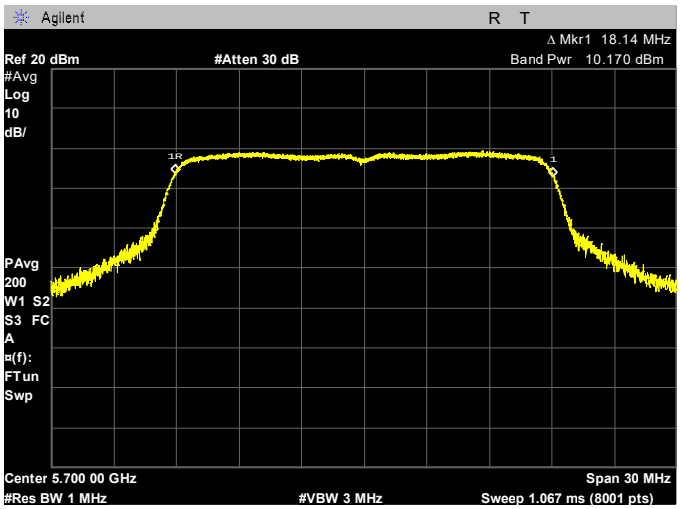
Lowest Channel (5 500 MHz)



Middle Channel (5 600 MHz)

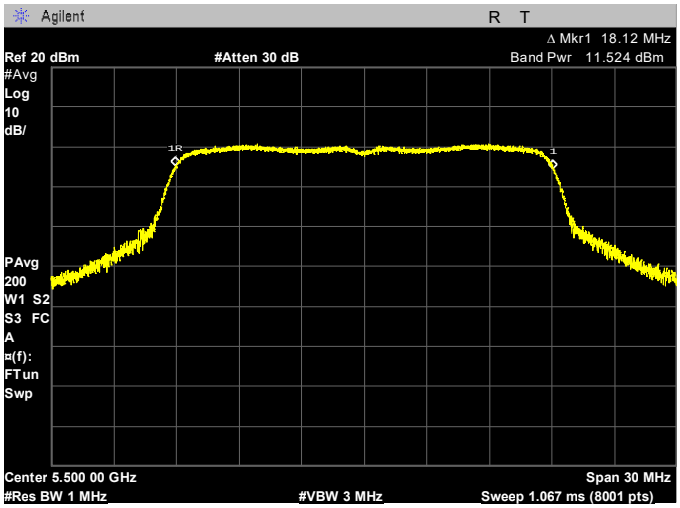


Highest Channel (5 700 MHz)

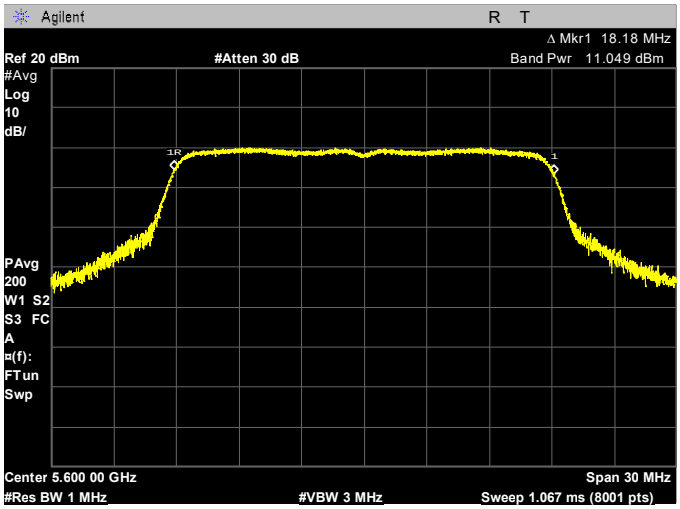


802.11ac(20 MHz) mode

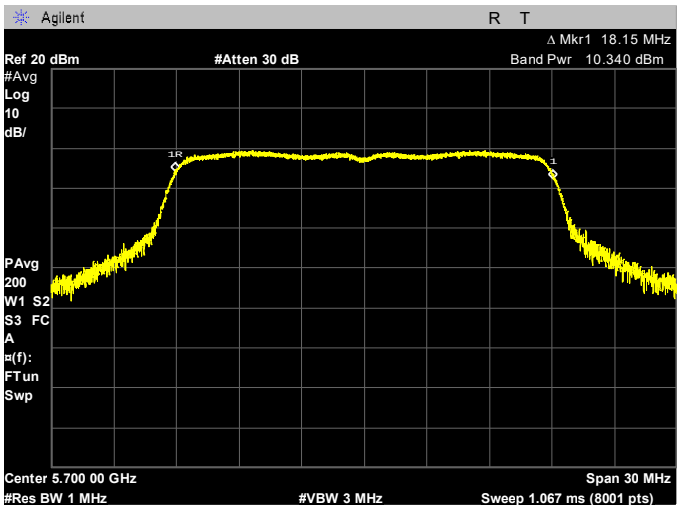
Lowest Channel (5 500 MHz)



Middle Channel (5 600 MHz)

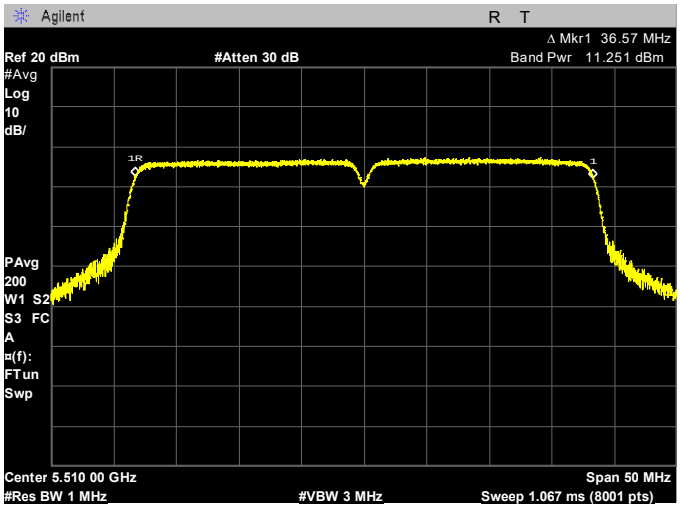


Highest Channel (5 700 MHz)

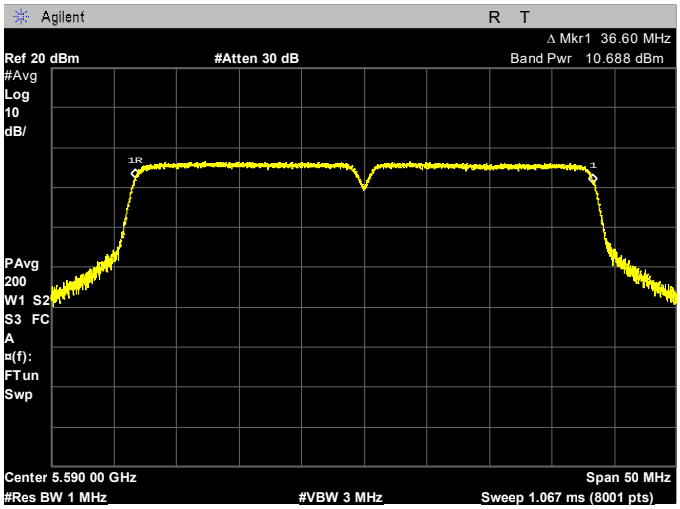


802.11n(40 MHz) mode

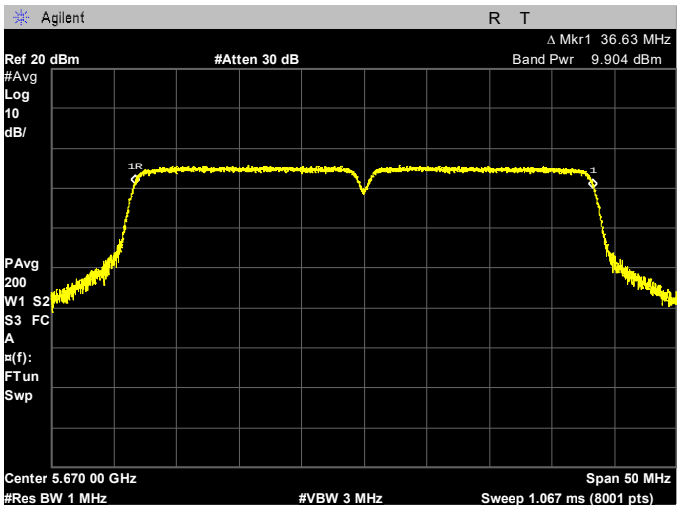
Lowest Channel (5 510 MHz)



Middle Channel (5 590 MHz)

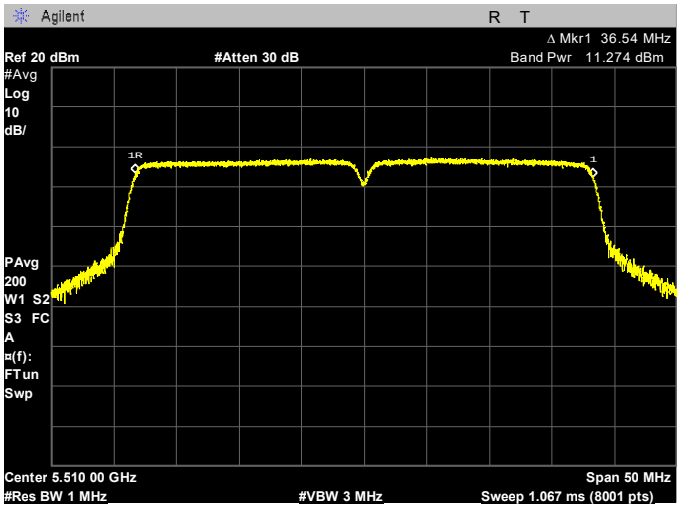


Highest Channel (5 670 MHz)

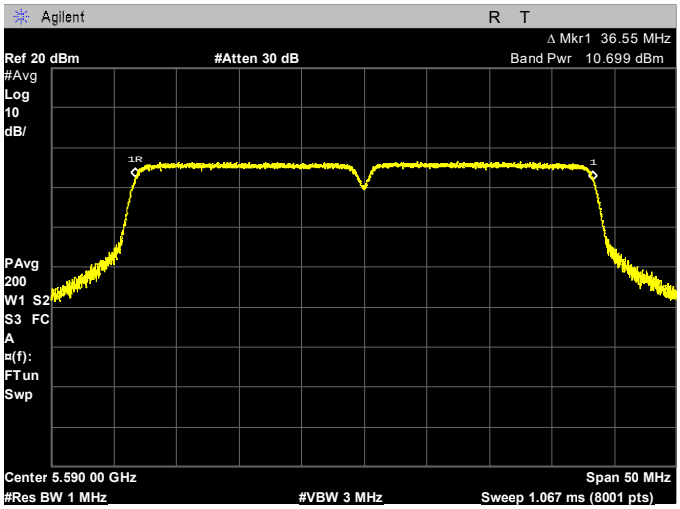


802.11ac(40 MHz) mode

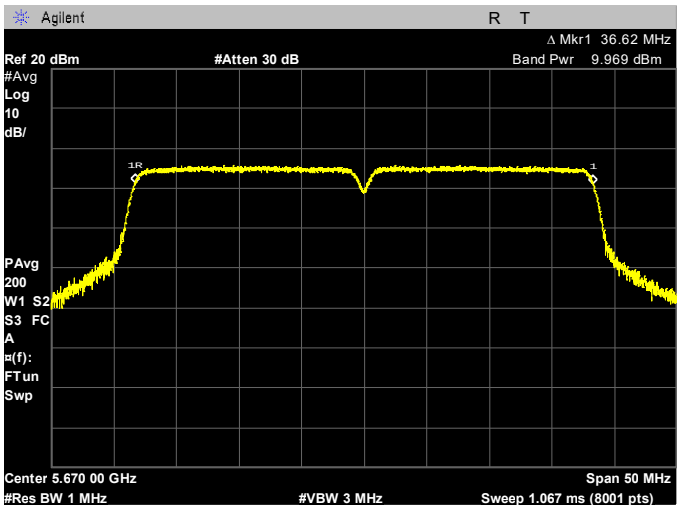
Lowest Channel (5 510 MHz)



Middle Channel (5 590 MHz)



Highest Channel (5 670 MHz)



7.2.4 Maximum Conducted Output Power(average) – U-NII-3 Band

FCC §15.407(a)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11a mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
149	5 745	11.62	0.44	12.06	30.00
157	5 785	11.78	0.44	12.22	30.00
165	5 825	11.23	0.44	11.67	30.00

802.11n(20 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
149	5 745	11.59	0.39	11.98	30.00
157	5 785	11.63	0.39	12.02	30.00
165	5 825	11.25	0.39	11.64	30.00

802.11ac(20 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
149	5 745	11.47	0.46	11.93	30.00
157	5 785	11.60	0.46	12.06	30.00
165	5 825	11.22	0.46	11.68	30.00

802.11n(40 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
151	5 755	11.14	0.83	11.97	30.00
159	5 795	10.98	0.83	11.81	30.00

802.11ac(40 MHz) mode

Ch	Frequency (MHz)	Measured Conducted Power (dBm)	Duty Factor (dB)	*Maximum Conducted Power (dBm)	FCC Limit (dBm)
151	5 755	11.19	0.92	12.11	30.00
159	5 795	11.20	0.92	12.12	30.00

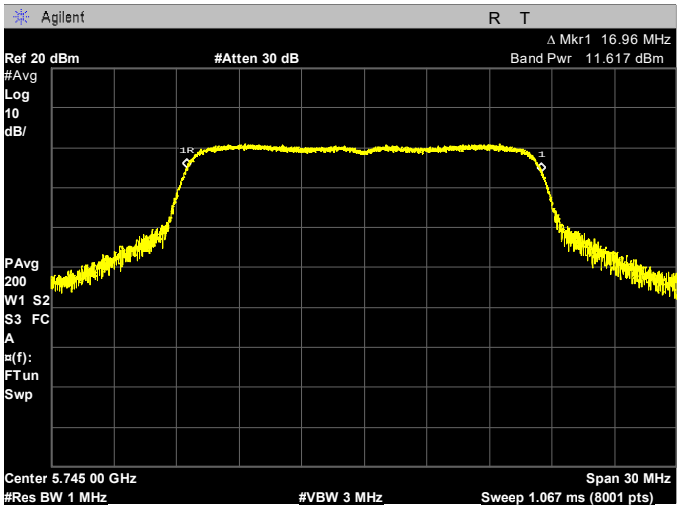
Notes:

1. *Maximum Conducted(average) Power = Measured conducted power + Duty Factor
2. The following equation was used for spectrum offset :
   Spectrum offset (dB) = Attenuator (dB) + Cable Loss (dB) + SMA Type Connector Loss (dB)

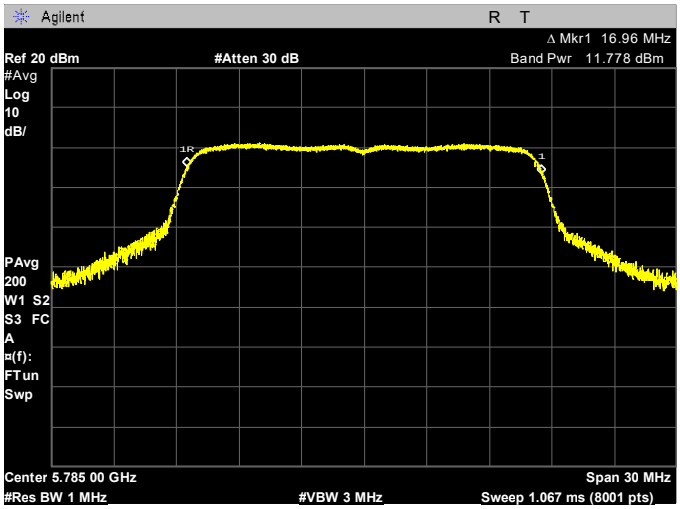
PLOTS OF EMISSIONS

802.11a mode

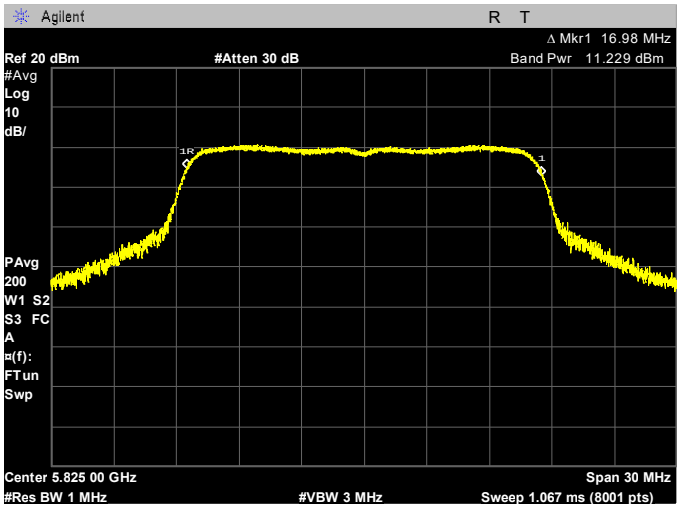
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

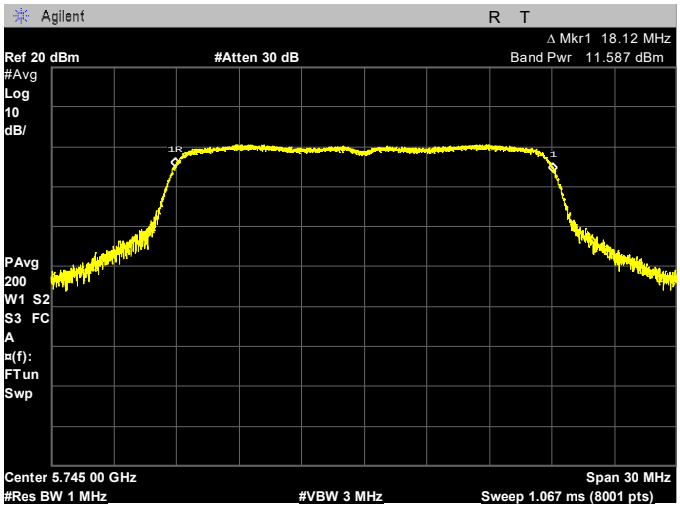


Highest Channel (5 825 MHz)

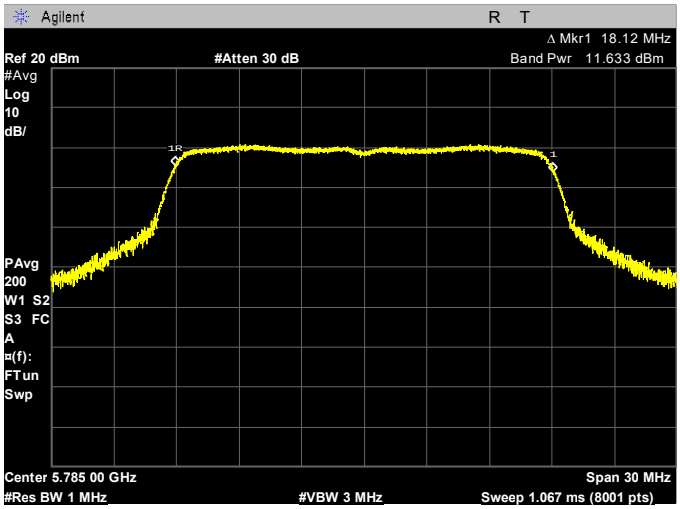


802.11n(20 MHz) mode

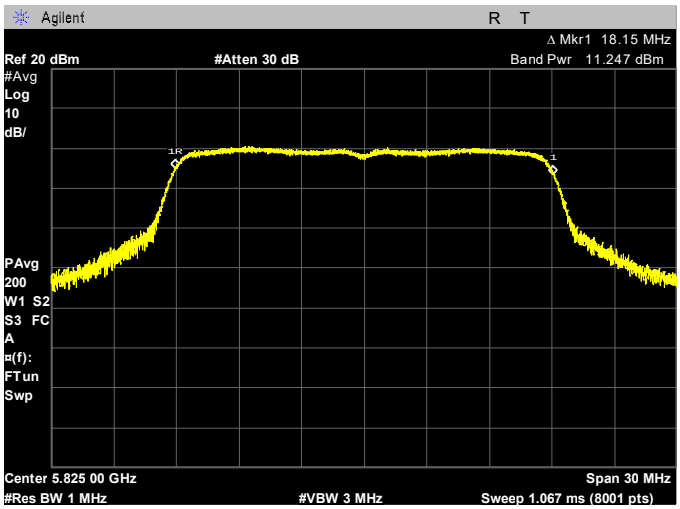
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

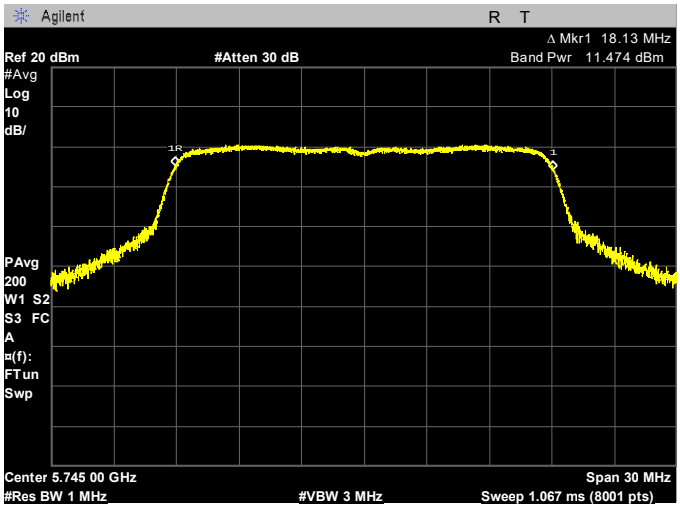


Highest Channel (5 825 MHz)

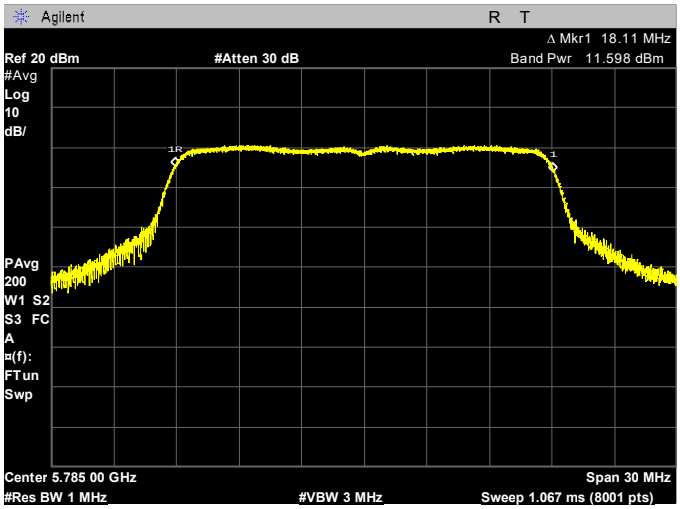


802.11ac(20 MHz) mode

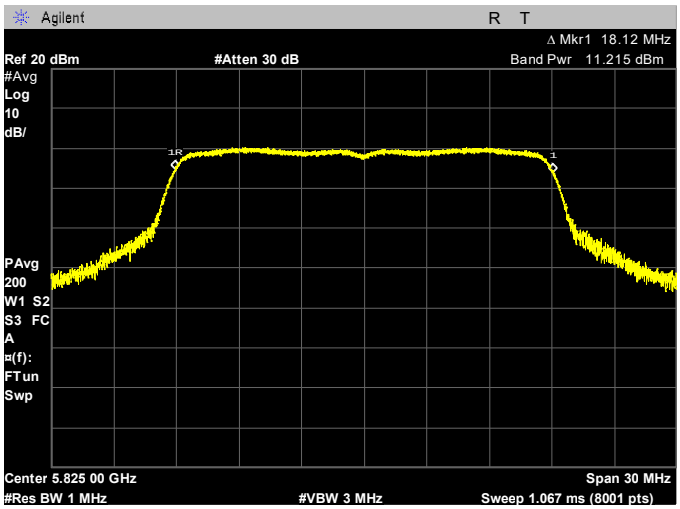
Lowest Channel (5 745 MHz)



Middle Channel (5 785 MHz)

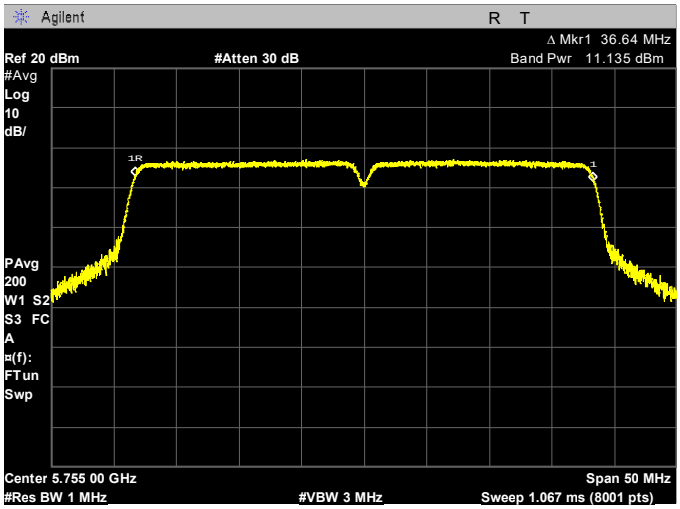


Highest Channel (5 825 MHz)

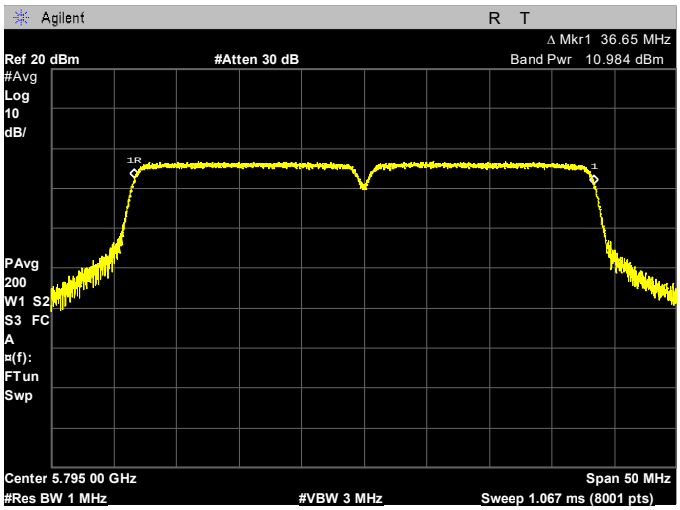


802.11n(40 MHz) mode

Lowest Channel (5 755 MHz)

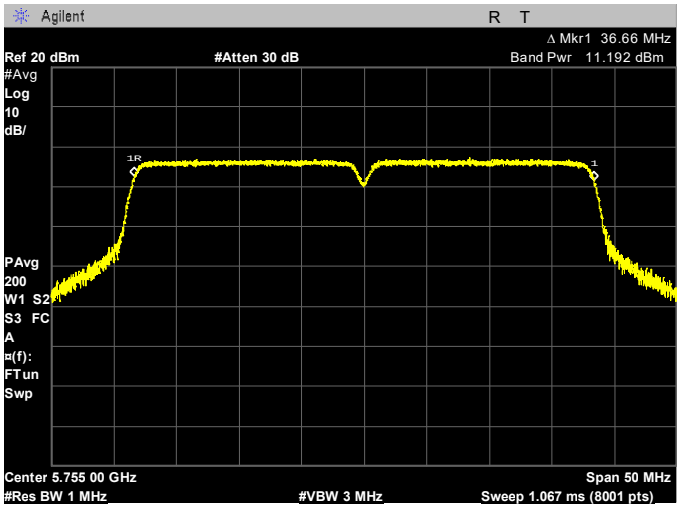


Highest Channel (5 795 MHz)

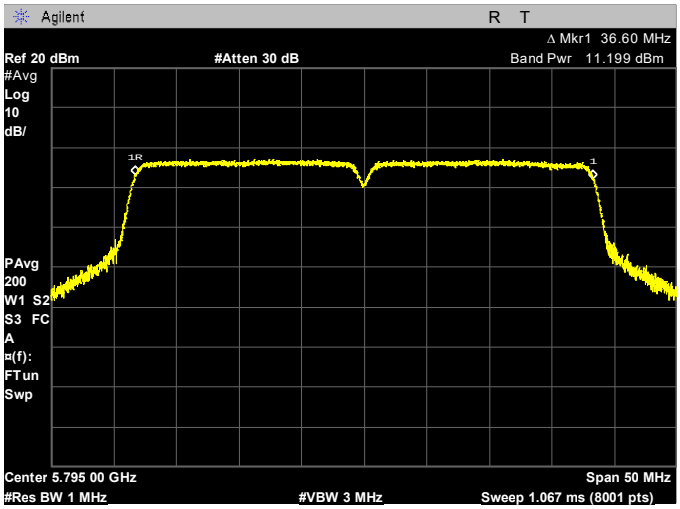


802.11ac(40 MHz) mode

Lowest Channel (5 755 MHz)



Highest Channel (5 795 MHz)



7.3 Power Spectral Density

7.3.1 Power Spectral Density – U-NII-1 Band

FCC §15.407(a)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11a mode

Ch	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor (dB)	*Maximum PSD (dBm/MHz)	FCC Limit (dBm/MHz)
36	5 180	-0.55	0.36	-0.19	11.00
44	5 220	0.09	0.36	0.45	11.00
48	5 240	0.08	0.36	0.44	11.00

802.11n(20 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor (dB)	*Maximum PSD (dBm/MHz)	FCC Limit (dBm/MHz)
36	5 180	-1.00	0.34	-0.66	11.00
44	5 220	-0.43	0.34	-0.09	11.00
48	5 240	-0.25	0.34	0.09	11.00

802.11ac(20 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor (dB)	*Maximum PSD (dBm/MHz)	FCC Limit (dBm/MHz)
36	5 180	-1.11	0.35	-0.76	11.00
44	5 220	-0.45	0.35	-0.10	11.00
48	5 240	-0.22	0.35	0.13	11.00

802.11n(40 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor (dB)	*Maximum PSD (dBm/MHz)	FCC Limit (dBm/MHz)
38	5 190	-4.57	0.72	-3.85	11.00
46	5 230	-4.10	0.72	-3.38	11.00

802.11ac(40 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor (dB)	*Maximum PSD (dBm/MHz)	FCC Limit (dBm/MHz)
38	5 190	-4.55	0.74	-3.81	11.00
46	5 230	-4.07	0.74	-3.33	11.00

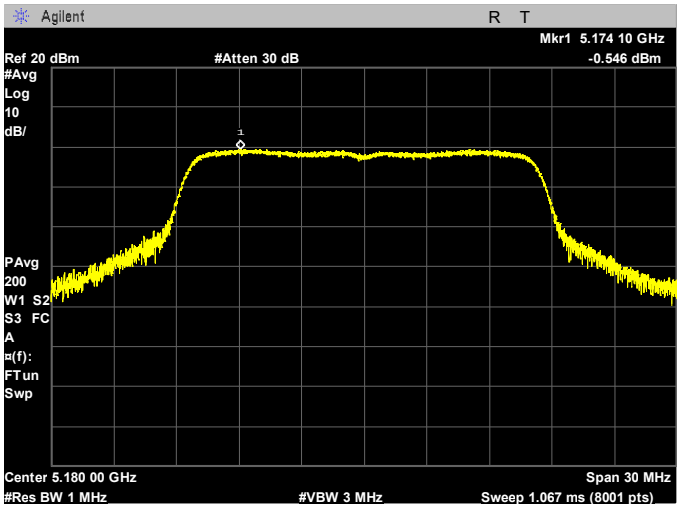
Notes:

1. * Maximum PSD = Measured PSD + Duty Factor
2. The following equation was used for spectrum offset:
   Spectrum offset (dB) = Attenuator (dB) + Cable Loss (dB) + SMA Type Connector Loss (dB)

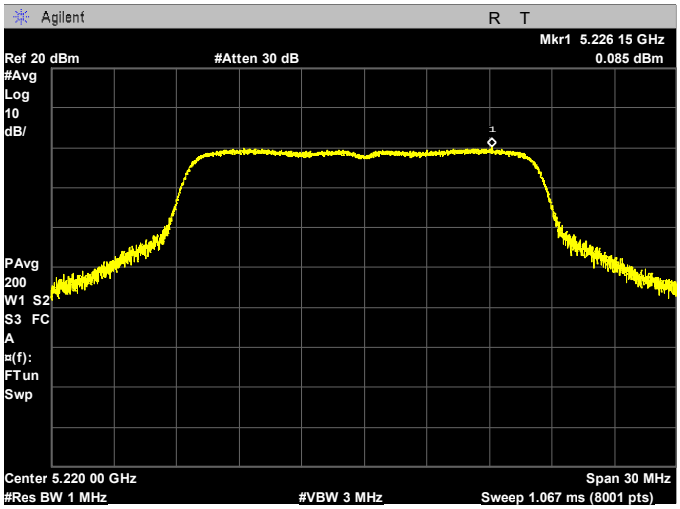
PLOTS OF EMISSIONS

802.11a mode

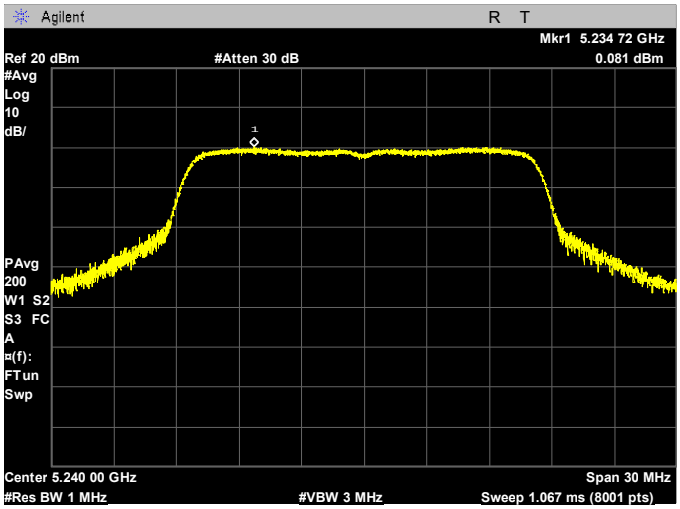
Lowest Channel (5 180 MHz)



Middle Channel (5 220 MHz)

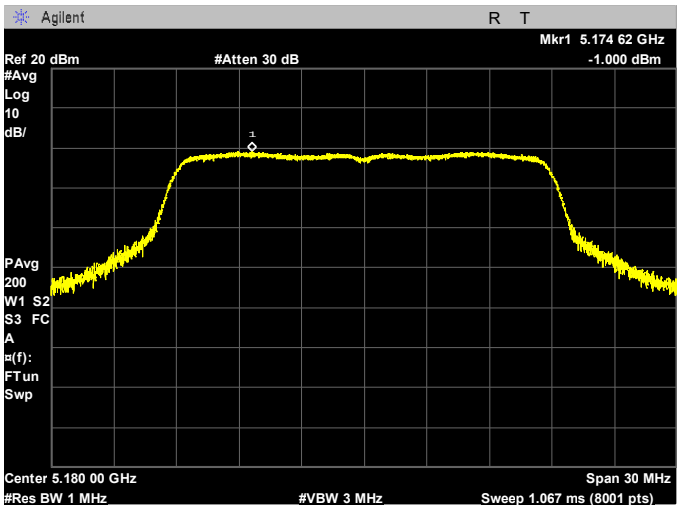


Highest Channel (5 240 MHz)

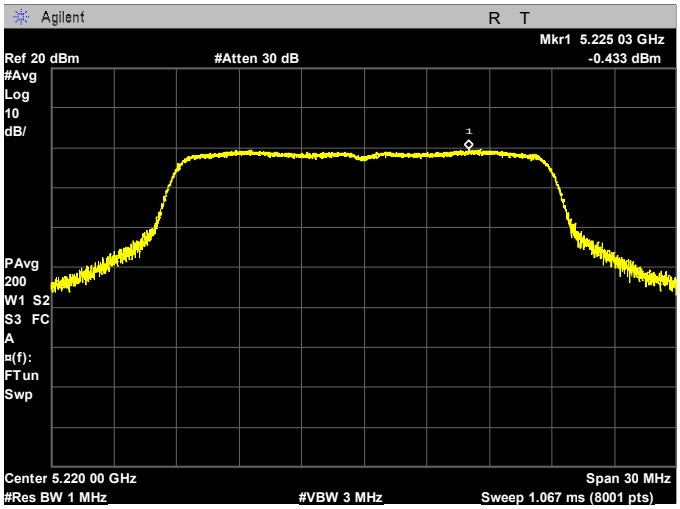


802.11n(20 MHz) mode

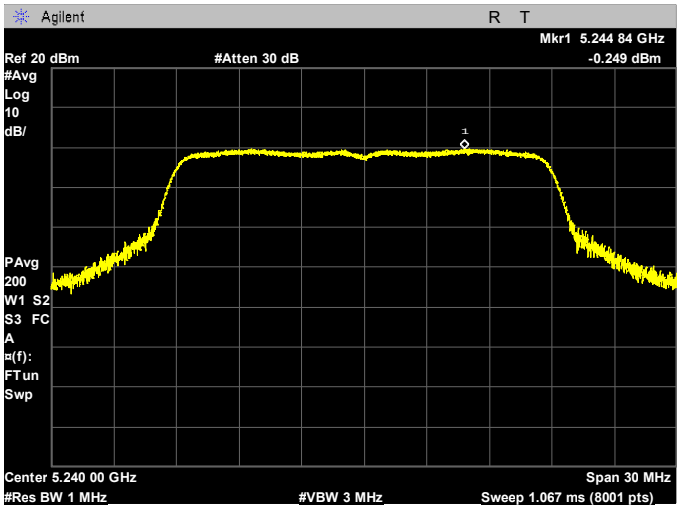
Lowest Channel (5 180 MHz)



Middle Channel (5 220 MHz)

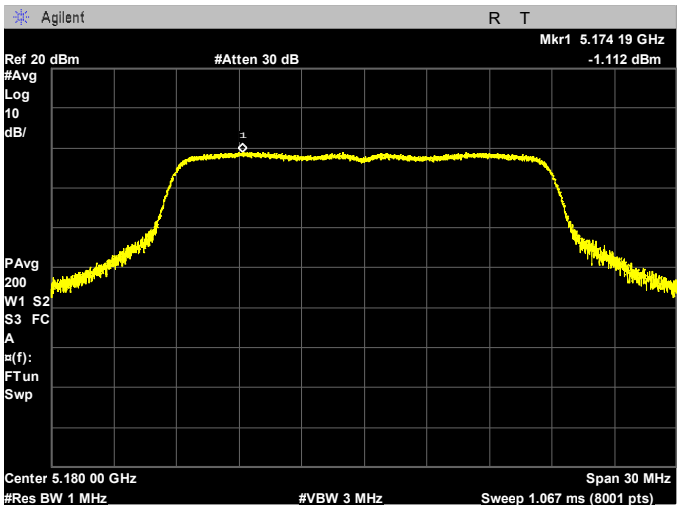


Highest Channel (5 240 MHz)

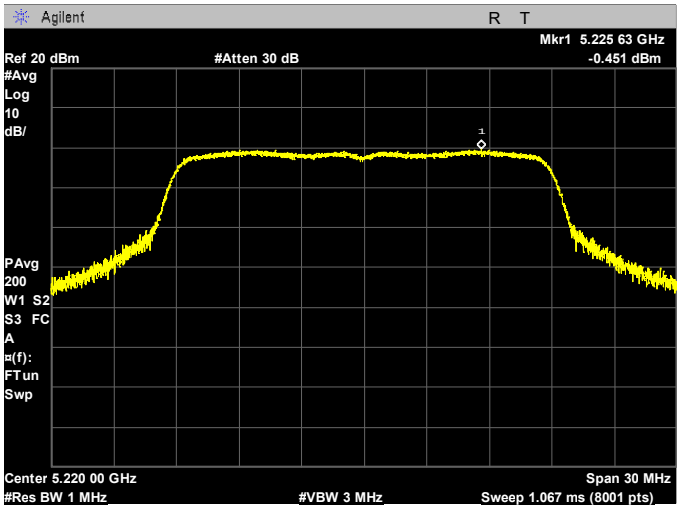


802.11ac(20 MHz) mode

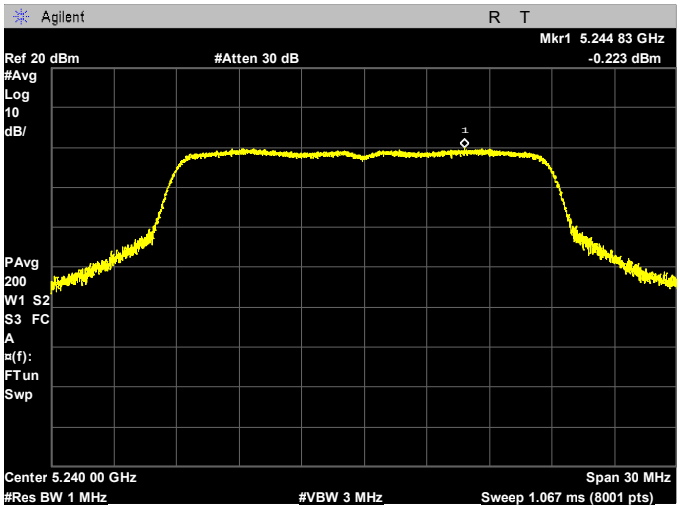
Lowest Channel (5 180MHz)



Middle Channel (5 220 MHz)

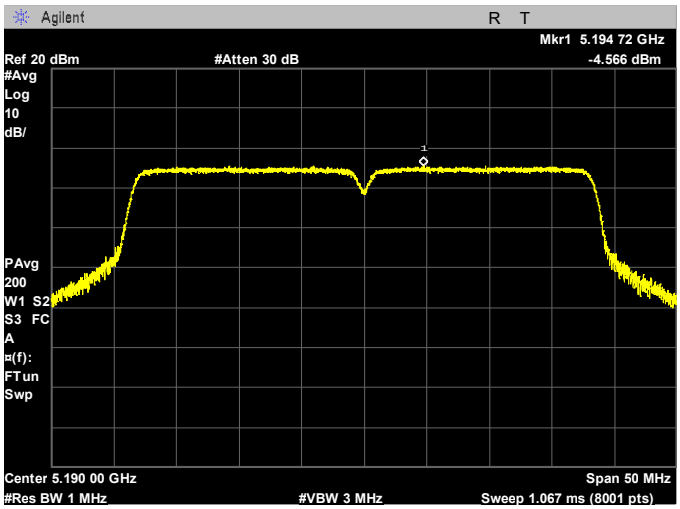


Highest Channel (5 240 MHz)

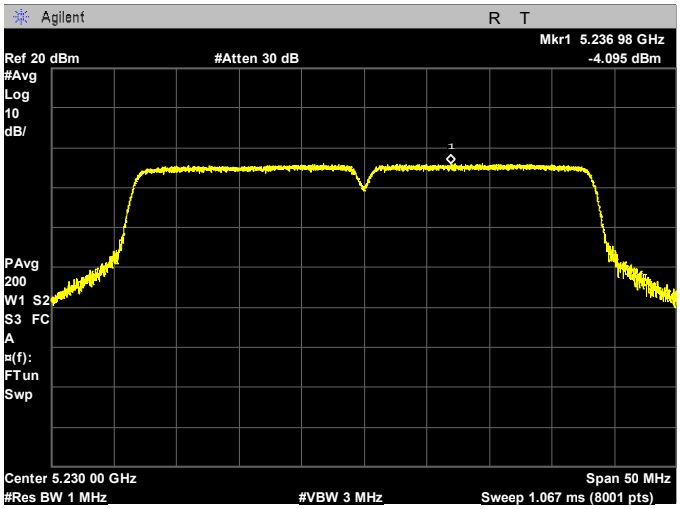


802.11n(40 MHz) mode

Lowest Channel (5 190 MHz)

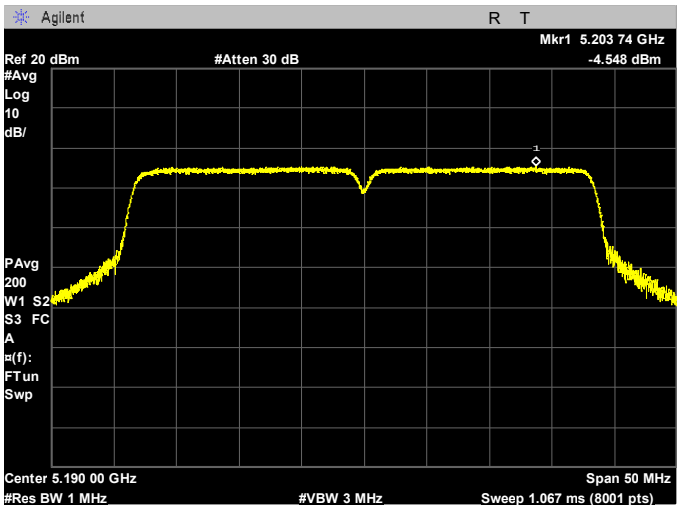


Highest Channel (5 230 MHz)

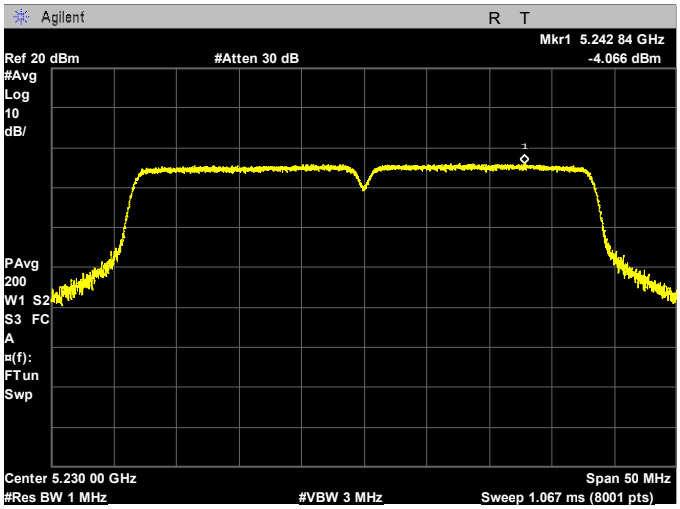


802.11ac(40 MHz) mode

Lowest Channel (5 190 MHz)



Highest Channel (5 230 MHz)



7.3.2 Power Spectral Density – U-NII-2A Band

FCC §15.407(a)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11a mode

Ch	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor (dB)	*Maximum PSD (dBm/MHz)	FCC Limit (dBm/MHz)
52	5 260	0.29	0.47	0.76	11.00
60	5 300	0.02	0.47	0.49	11.00
64	5 320	-0.79	0.47	-0.32	11.00

802.11n(20 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor (dB)	*Maximum PSD (dBm/MHz)	FCC Limit (dBm/MHz)
52	5 260	-0.27	0.38	0.11	11.00
60	5 300	-0.44	0.38	-0.06	11.00
64	5 320	-1.18	0.38	-0.80	11.00

802.11ac(20 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor (dB)	*Maximum PSD (dBm/MHz)	FCC Limit (dBm/MHz)
52	5 260	-0.17	0.39	0.22	11.00
60	5 300	-0.14	0.39	0.25	11.00
64	5 320	-1.09	0.39	-0.70	11.00

802.11n(40 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor (dB)	*Maximum PSD (dBm/MHz)	FCC Limit (dBm/MHz)
54	5 270	-4.00	0.71	-3.29	11.00
62	5 310	-4.28	0.71	-3.57	11.00

802.11ac(40 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor (dB)	*Maximum PSD (dBm/MHz)	FCC Limit (dBm/MHz)
54	5 270	-3.97	0.79	-3.18	11.00
62	5 310	-4.37	0.79	-3.58	11.00

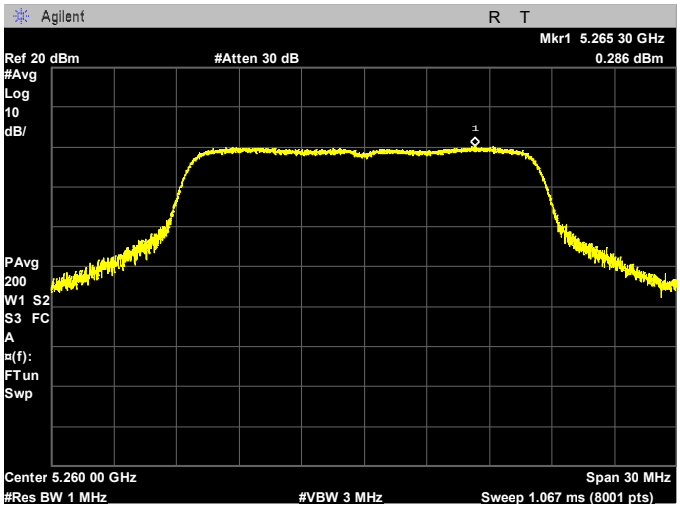
Notes:

1. * Maximum PSD = Measured PSD + Duty Factor
2. The following equation was used for spectrum offset:
   Spectrum offset (dB) = Attenuator (dB) + Cable Loss (dB) + SMA Type Connector Loss (dB)

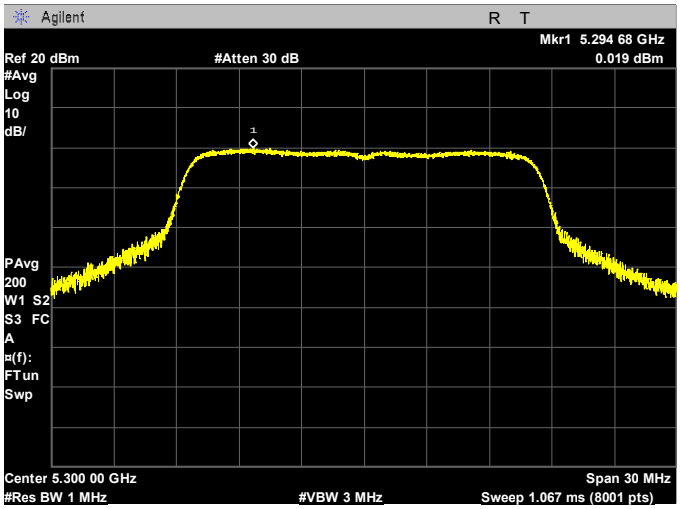
PLOTS OF EMISSIONS

802.11a mode

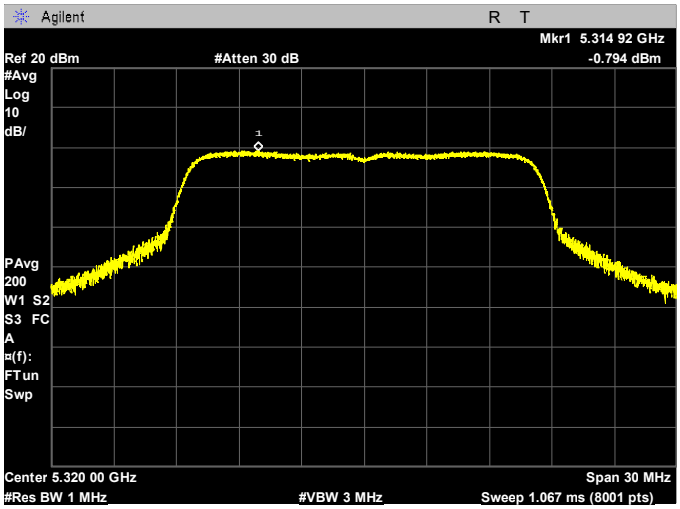
Lowest Channel (5 260 MHz)



Middle Channel (5 300 MHz)

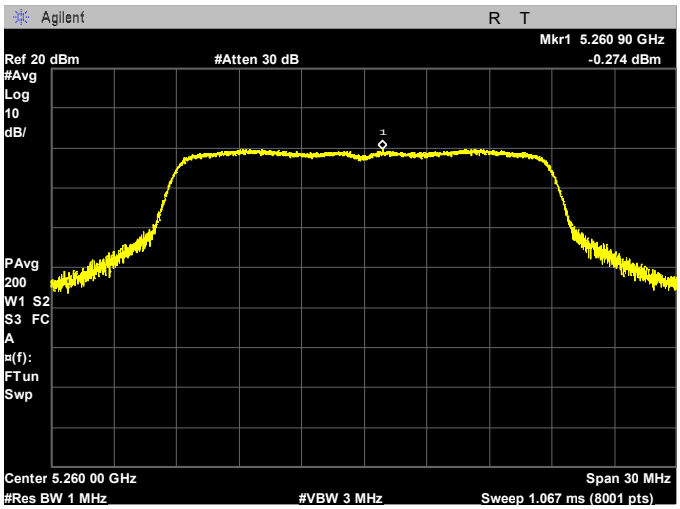


Highest Channel (5 320 MHz)

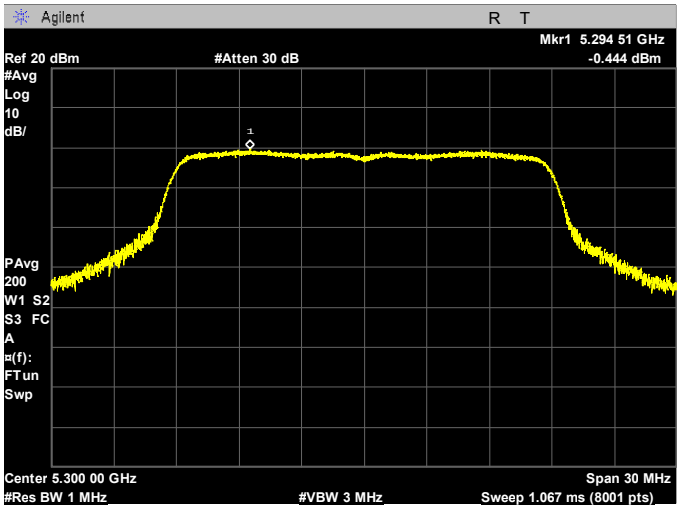


802.11n(20 MHz) mode

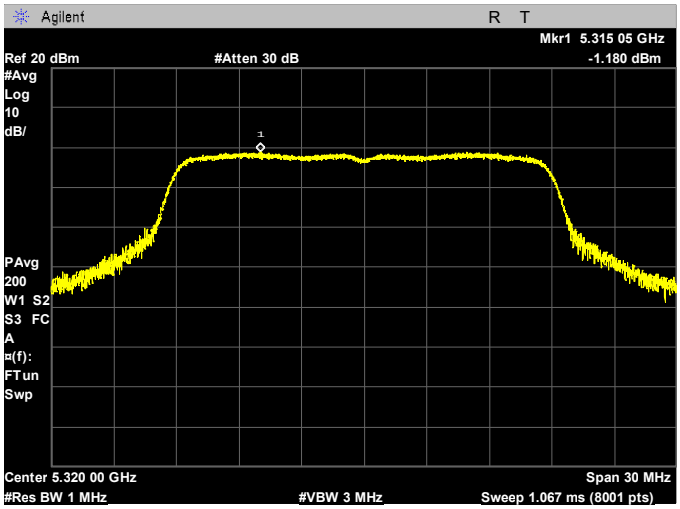
Lowest Channel (5 260 MHz)



Middle Channel (5 300 MHz)

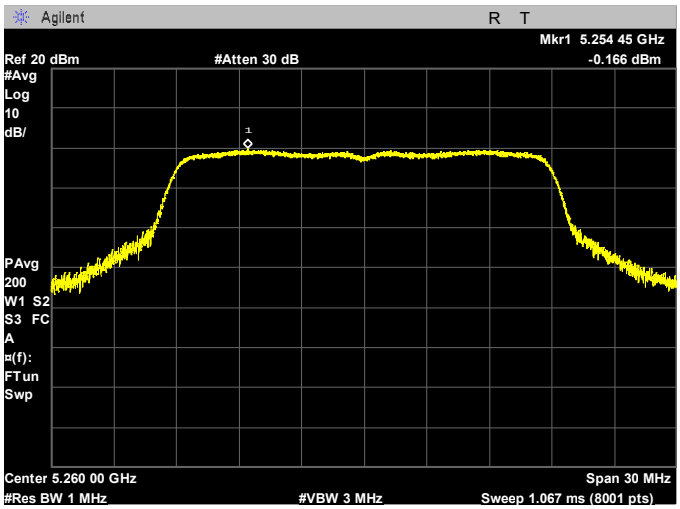


Highest Channel (5 320 MHz)

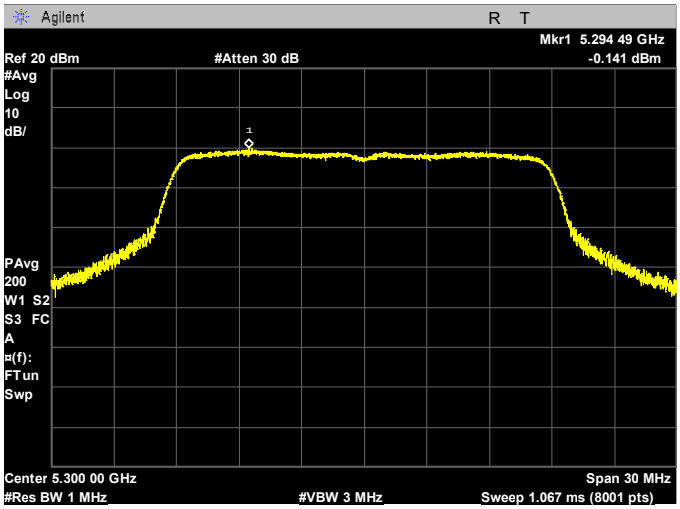


802.11ac(20 MHz) mode

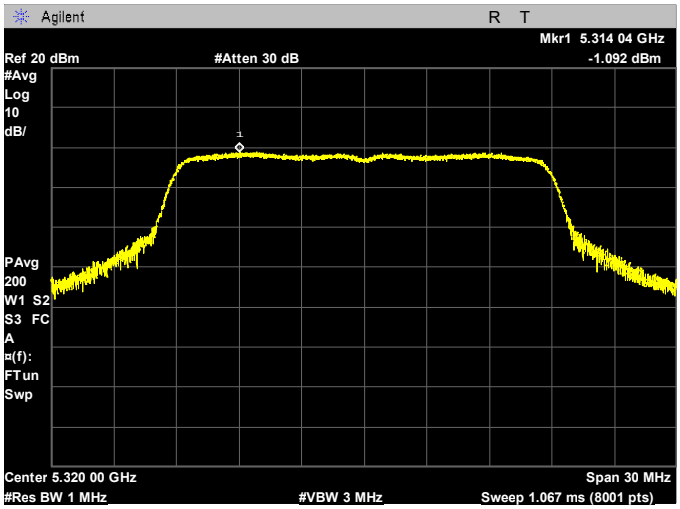
Lowest Channel (5 260 MHz)



Middle Channel (5 300 MHz)

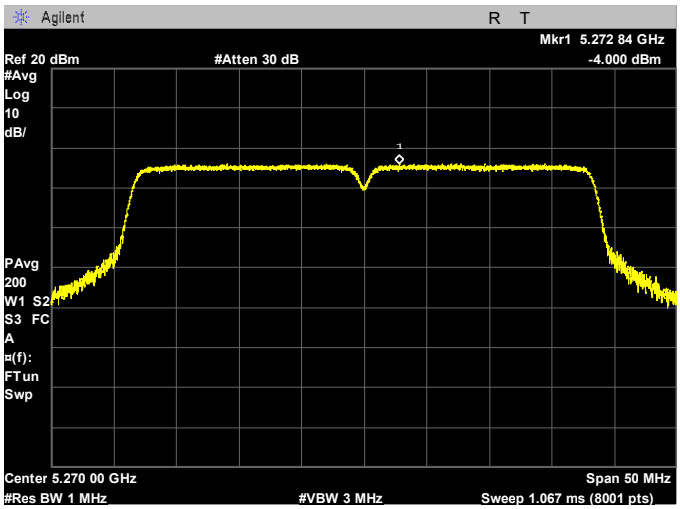


Highest Channel (5 320 MHz)

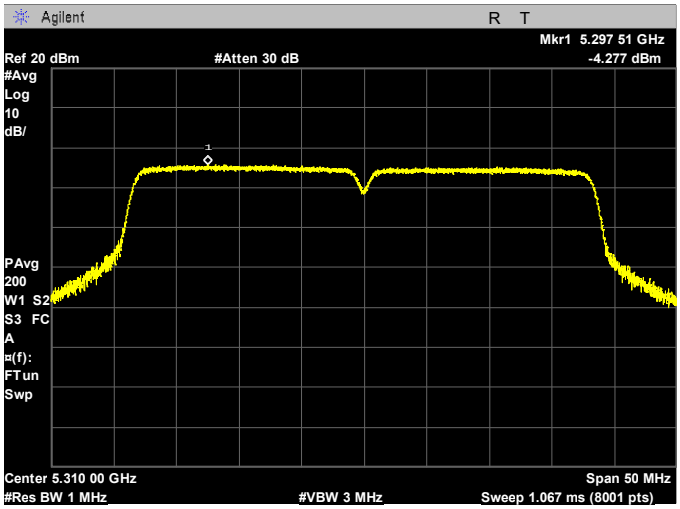


802.11n(40 MHz) mode

Lowest Channel (5 270 MHz)

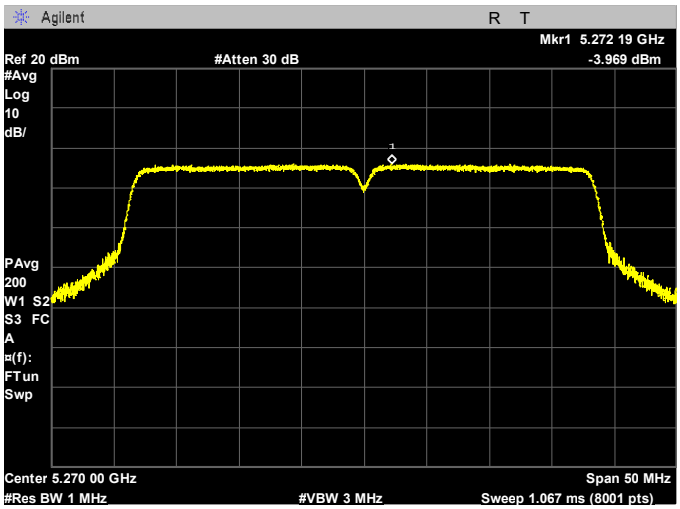


Highest Channel (5 310 MHz)

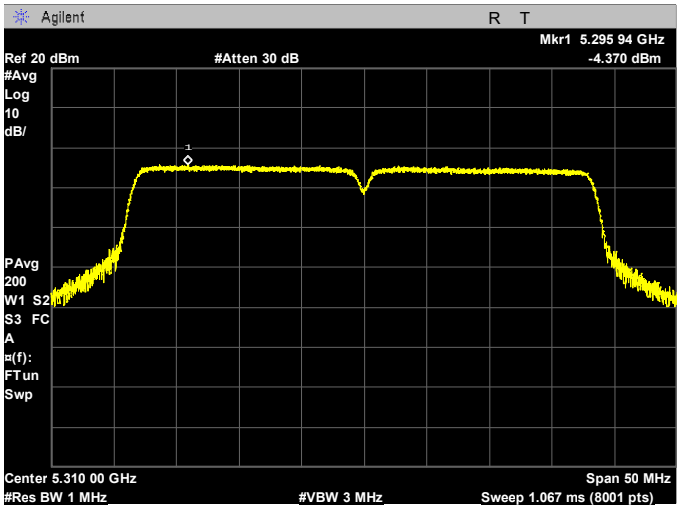


802.11ac(40 MHz) mode

Lowest Channel (5 270 MHz)



Highest Channel (5 310 MHz)



7.3.3 Power Spectral Density – U-NII-2C Band

FCC §15.407(a)

Test Mode : Set to Lowest channel, Middle channel and Highest channel

Result

802.11a mode

Ch	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor (dB)	*Maximum PSD (dBm/MHz)	FCC Limit (dBm/MHz)
100	5 500	0.66	0.43	1.09	11.00
120	5 600	0.79	0.43	1.22	11.00
140	5 700	-0.43	0.43	0.00	11.00

802.11n(20 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor (dB)	*Maximum PSD (dBm/MHz)	FCC Limit (dBm/MHz)
100	5 500	0.31	0.36	0.67	11.00
120	5 600	0.23	0.36	0.59	11.00
140	5 700	-0.69	0.36	-0.33	11.00

802.11ac(20 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor (dB)	*Maximum PSD (dBm/MHz)	FCC Limit (dBm/MHz)
100	5 500	0.72	0.45	1.17	11.00
120	5 600	0.31	0.45	0.76	11.00
140	5 700	-0.63	0.45	-0.18	11.00

802.11n(40 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor (dB)	*Maximum PSD (dBm/MHz)	FCC Limit (dBm/MHz)
102	5 510	-3.01	0.83	-2.18	11.00
118	5 590	-3.58	0.83	-2.75	11.00
134	5 670	-4.58	0.83	-3.75	11.00

802.11ac(40 MHz) mode

Ch	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor (dB)	*Maximum PSD (dBm/MHz)	FCC Limit (dBm/MHz)
102	5 510	-2.88	0.83	-2.05	11.00
118	5 590	-3.42	0.83	-2.59	11.00
134	5 670	-4.28	0.83	-3.45	11.00

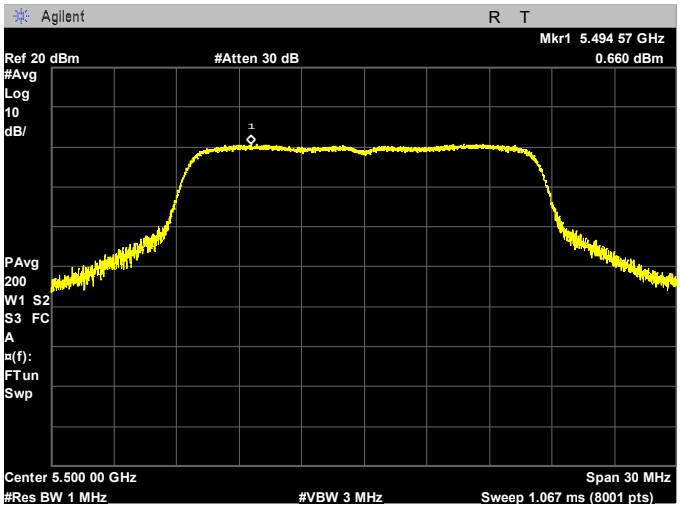
Notes:

1. * Maximum PSD = Measured PSD + Duty Factor
2. The following equation was used for spectrum offset:
   Spectrum offset (dB) = Attenuator (dB) + Cable Loss (dB) + SMA Type Connector Loss (dB)

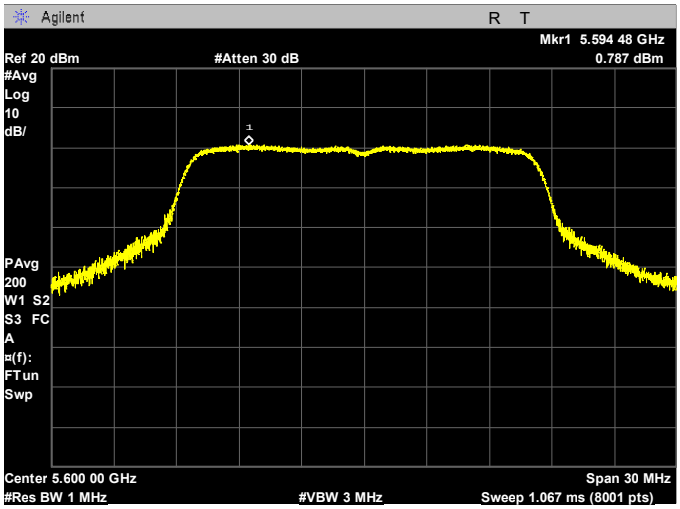
PLOTS OF EMISSIONS

802.11a mode

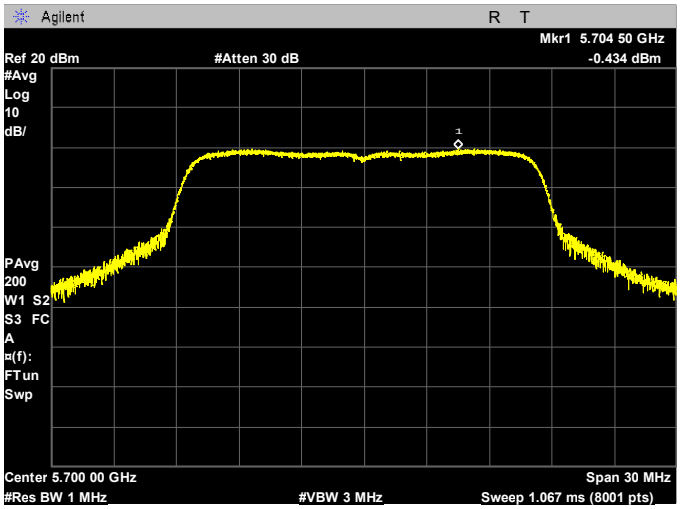
Lowest Channel (5 500 MHz)



Middle Channel (5 600 MHz)

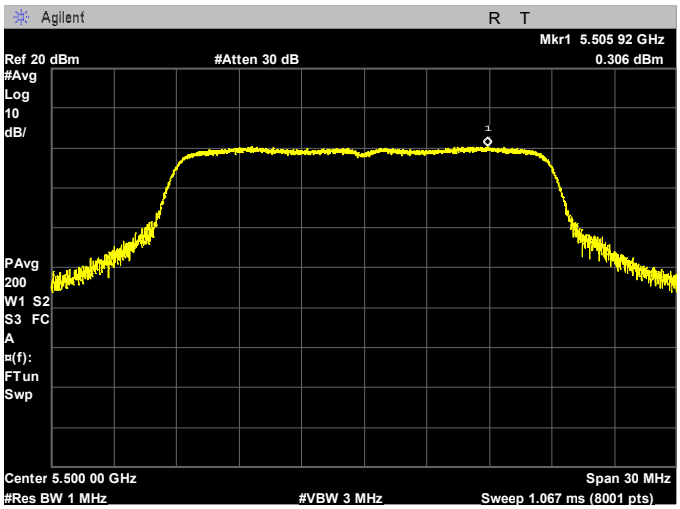


Highest Channel (5 700 MHz)

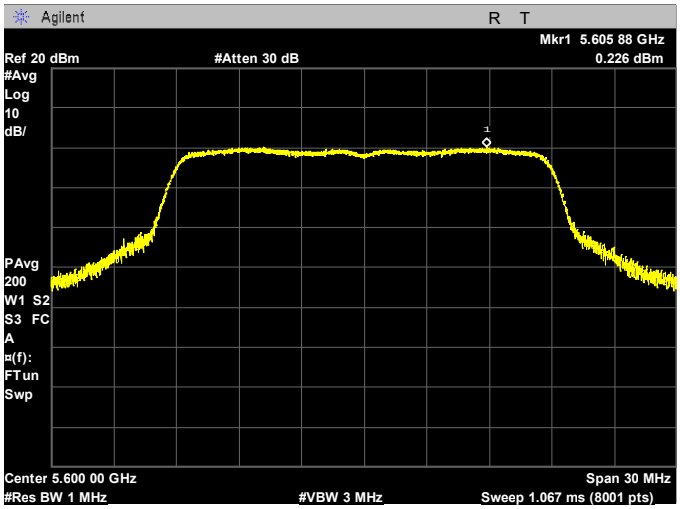


802.11n(20 MHz) mode

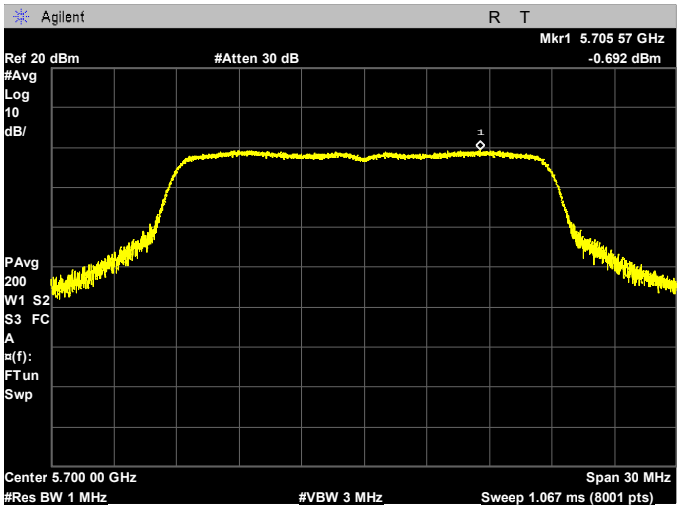
Lowest Channel (5 500 MHz)



Middle Channel (5 600 MHz)

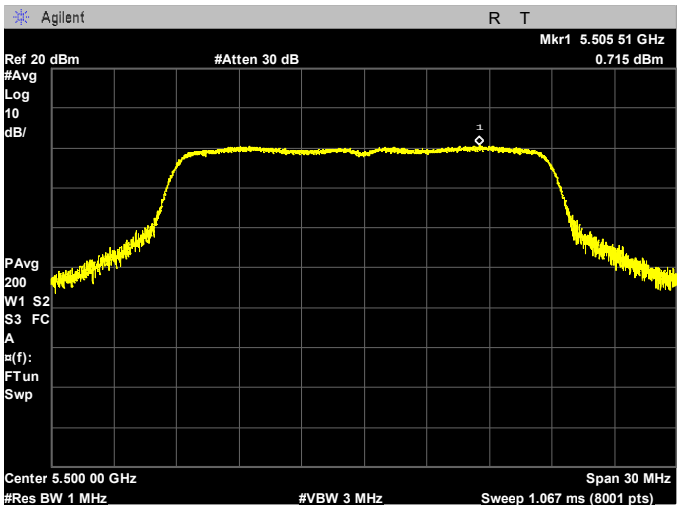


Highest Channel (5 700 MHz)

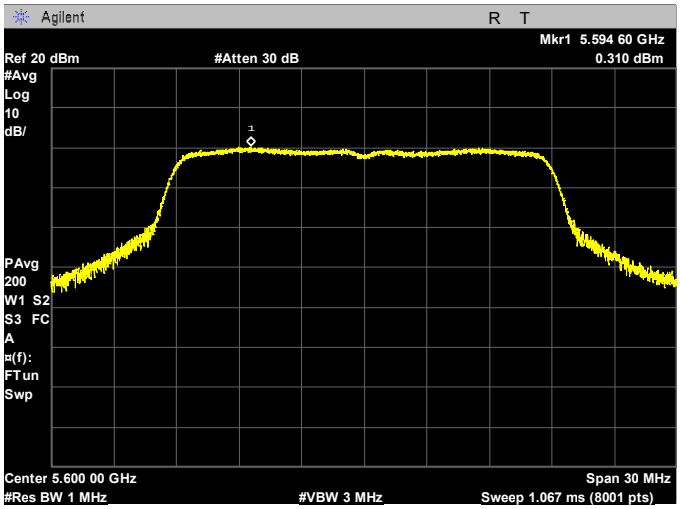


802.11ac(20 MHz) mode

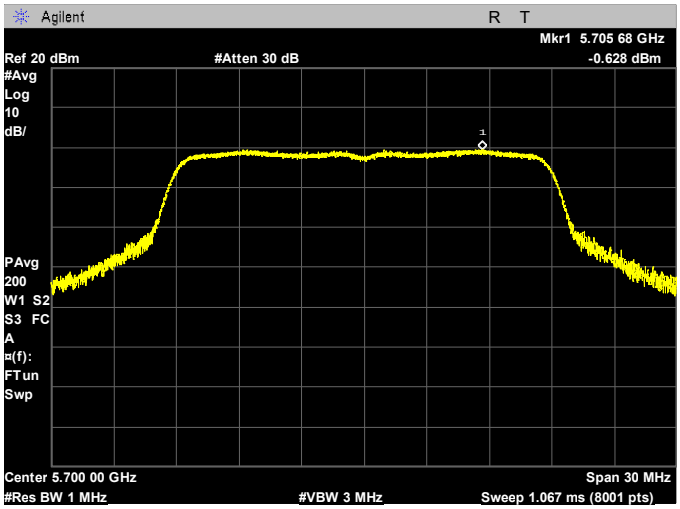
Lowest Channel (5 500 MHz)



Middle Channel (5 600 MHz)

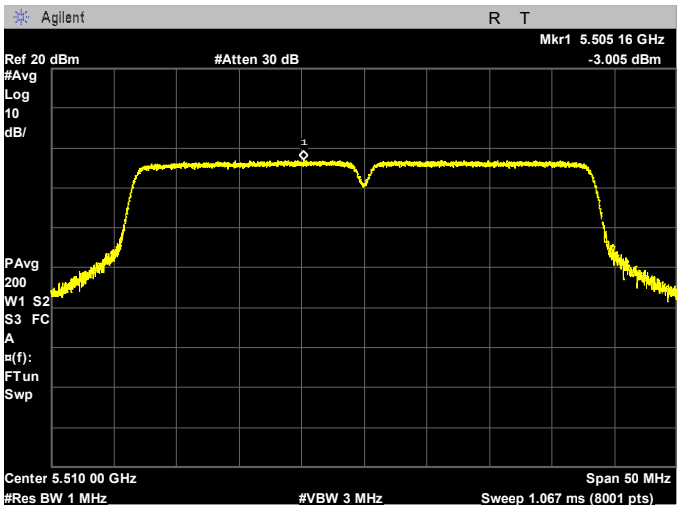


Highest Channel (5 700 MHz)

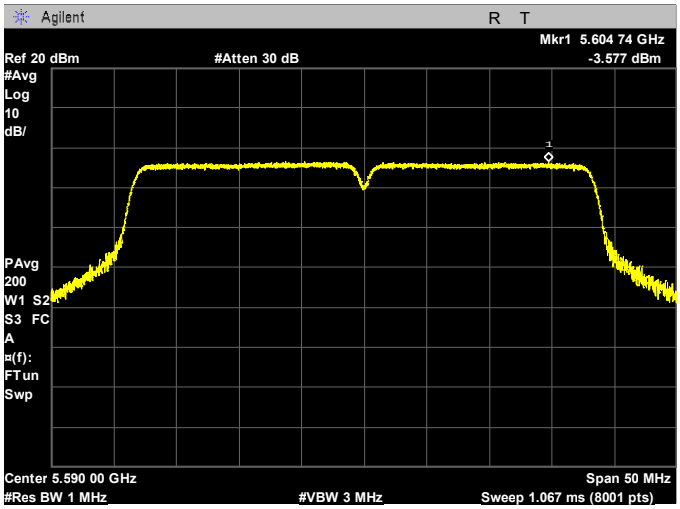


802.11n(40 MHz) mode

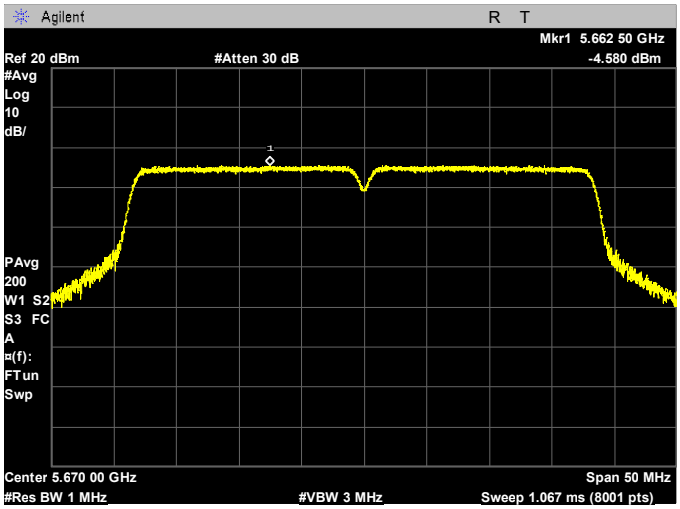
Lowest Channel (5 510 MHz)



Middle Channel (5 590 MHz)

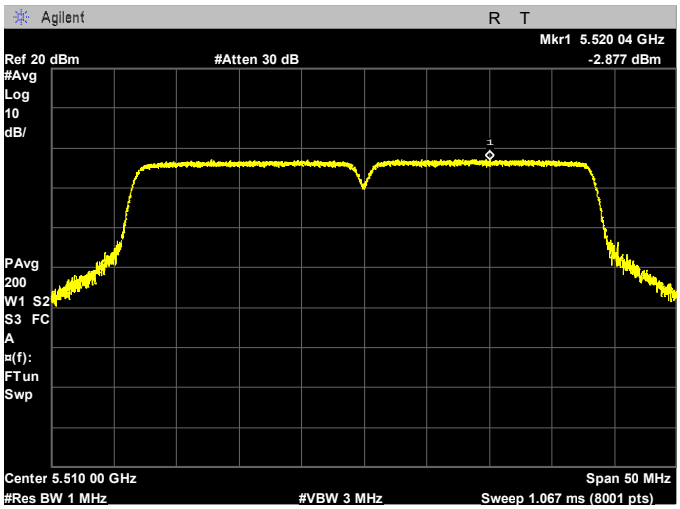


Highest Channel (5 670 MHz)

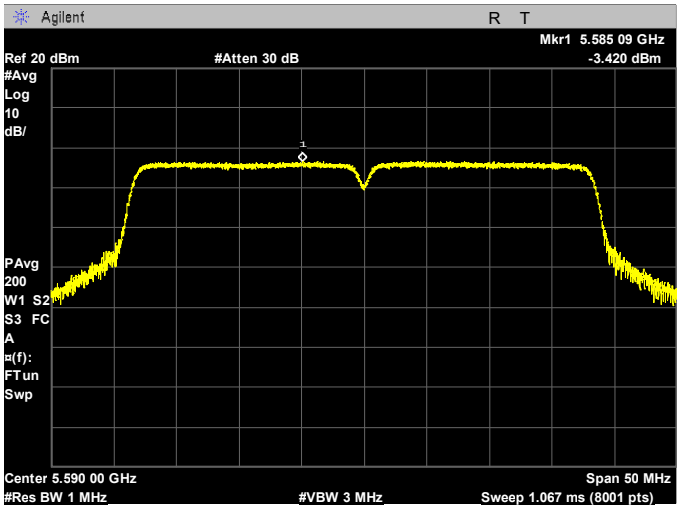


802.11ac(40 MHz) mode

Lowest Channel (5 510 MHz)



Middle Channel (5 590 MHz)



Highest Channel (5 670 MHz)