

TEST REPORT

Reference No. : WTD23D04092587W004
FCC ID..... : 2AEPIBLACK3
Applicant..... : COLOMBIANA DE COMERCIO S.A.
Address : Car. 43E No 8-71, Medellin, Colombia
Manufacturer : Sichuan Koobee Communication Equipment Co., Ltd.
Address : 3 Floor, Building 2, 69 Gangyuan Road West Section, Lingang
Development Zone, Yibin City, Sichuan Province, China
Product Name : Smart Phone
Model No. : BLACK 3
Brand..... : Kalley
Standards..... : FCC 47CFR Part 15 Section 15.407
Date of Receipt sample..... : 2023-05-08
Date of Test..... : 2023-05-08 to 2023-05-19
Date of Issue : 2023-05-22
Test Result : **Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company.

The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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3 Revision History

Test Report No.	Date of Receipt Sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTD23D04092587W004	2023-05-08	2023-05-08 to 2023-05-19	2023-05-22	original	-	Valid

4 General Information

4.1 General Description of E.U.T.

Product:	Smart Phone
Model(s):	BLACK 3
GSM Band(s):	GSM 850/900/1800/1900MHz
GPRS/EGPRS Class:	12
WCDMA Band(s):	FDD Band II/IV/V
LTE Band(s):	F FDD Band 2/4/5/7/12/13/66
Wi-Fi Specification:	2.4G-802.11b/g/n HT20/n HT40 5G-802.11a/ n(HT20/40)/ac(HT20/40/80)
Bluetooth Version:	Bluetooth v5.2 with BLE
GPS:	Support
Hardware Version:	KS33NF_02
Software Version:	KL_S33NF6.FHDJ.T.LALBPTPGSMLJSQNR.0329_2019.V1.01
Highest frequency (Exclude Radio):	2.2GHz
Storage Location:	Internal Storage

4.2 Details of E.U.T.

Operation Frequency:	802.11a/n/ac (VHT20): U-NII-1: 5150-5250MHz, U-NII-2A: 5250-5350MHz(DFS), U-NII-2C: 5470-5725MHz(DFS), U-NII-3: 5725-5850MHz 802.11n/ac (VHT40): U-NII-1: 5190-5230MHz, U-NII-2A: 5270-5310MHz(DFS), U-NII-2C: 5510-5670MHz(DFS), U-NII-3: 5755-5795MHz 802.11ac (VHT80): U-NII-1: 5210MHz, U-NII-2A: 5290MHz(DFS), U-NII-2C: 5530-5610MHz(DFS), U-NII-3: 5775MHz
Max. RF output power:	U-NII-1: 13.95dBm U-NII-2A: 14.06dBm U-NII-2C: 12.94dBm U-NII-3: 10.61dBm
Type of Modulation:	OFDM
Antenna installation:	internal permanent antenna
Antenna Gain:	U-NII-1: 0.59dBi U-NII-2A: 3.25dBi U-NII-2C: 3.2dBi U-NII-3: 1.94dBi
Ratings:	Battery: DC 3.87V, 4900mAh DC 5V, 3A charging from adapter
Adapter:	Model No.: HJ-FC001K7-US Input: 100-240V~, 50/60Hz, 0.6A Output: 5.0V==3.0A

Or 9.0V $\Rightarrow$ 2.0AOr 12.0V $\Rightarrow$ 1.5A, 18.0W

Manufacturer: Shenzhen Huajin Electronic Co., Ltd.

4.3 Channel List

U-NII-1 (5.15-5.25GHz)			
channel	Frequency(MHz)	channel	Frequency(MHz)
36	5180	38	5190
40	5200	42	5210
44	5220	46	5230
48	5240		

U-NII-2A (5.25-5.35GHz)			
channel	Frequency(MHz)	channel	Frequency(MHz)
52	5260	54	5270
56	5280	58	5290
60	5300	62	5310
64	5320		

U-NII-2C (5.47-5.725GHz)			
channel	Frequency(MHz)	channel	Frequency(MHz)
100	5500	102	5510
104	5520	106	5530
108	5540	110	5550
112	5560	116	5580
118	5590	120	5600
122	5610	124	5620
126	5630	128	5640
132	5660	134	5670
136	5680	140	5700

U-NII-3 (5.725-5.85GHz)			
channel	Frequency(MHz)	channel	Frequency(MHz)
149	5745	151	5755
153	5765	155	5775
157	5785	159	5795
161	5805	165	5825

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

For 802.11a/n/ac(VHT20):

channel	Frequency(MHz)	channel	Frequency(MHz)
36	5180	40	5200
48	5240		

channel	Frequency(MHz)	channel	Frequency(MHz)
52	5260	56	5280
64	5320		

channel	Frequency(MHz)	channel	Frequency(MHz)
100	5500	120	5600
140	5700		

channel	Frequency(MHz)	channel	Frequency(MHz)
149	5745	157	5785
165	5825		

For 802.11n/ac(VHT40):

channel	Frequency(MHz)	channel	Frequency(MHz)
38	5190	46	5230

channel	Frequency(MHz)	channel	Frequency(MHz)
54	5270	62	5310

channel	Frequency(MHz)	channel	Frequency(MHz)
102	5510	110	5550
134	5670		

channel	Frequency(MHz)	channel	Frequency(MHz)
151	5755	159	5795

For 802.11ac(VHT80):

channel	Frequency(MHz)	channel	Frequency(MHz)
42	5210		

channel	Frequency(MHz)	channel	Frequency(MHz)
58	5290		

channel	Frequency(MHz)	channel	Frequency(MHz)
106	5530	122	5610

channel	Frequency(MHz)	channel	Frequency(MHz)
155	5775		

4.4 Test Mode Description

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Transmitting duty cycle is no less 98%.

The software is TermAssist and SecureCRT tool Use together.

Test Items	Mode	Data Rate	TX/RX
Radiated Emissions	802.11a (HT20)	6 Mbps	TX
	802.11n/ac(HT20/40/80)	MCS0	TX
Duty Cycle	802.11a (HT20)	6 Mbps	TX
	802.11n/ac(HT20/40/80)	MCS0	TX
Band Edge	802.11a (HT20)	6 Mbps	TX
	802.11n/ac(HT20/40/80)	MCS0	TX
6dB Bandwidth	802.11a (HT20)	6 Mbps	TX
	802.11n/ac(HT20/40/80)	MCS0	TX
26dB Bandwidth and 99% Occupied Bandwidth	802.11a (HT20)	6 Mbps	TX
	802.11n/ac(HT20/40/80)	MCS0	TX
Conducted Output Power	802.11a (HT20)	6 Mbps	TX
	802.11n/ac(HT20/40/80)	MCS0	TX
Power Spectral Density	802.11a (HT20)	6 Mbps	TX
	802.11n/ac(HT20/40/80)	MCS0	TX
Frequency Stability	Un-modulation	/	TX

4.5 Test Facility

The test facility has a test site registered with the following organizations:

ISED CAB identifier: CN0013. Test Firm Registration No.: 7760A.

Waltek Testing Group Co., Ltd. Has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files.

Registration number 7760A, October 15, 2016.

FCC Designation No.: CN1201. Test Firm Registration No.: 523476.

Waltek Testing Group Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration number 523476, September 10, 2019.

5 Equipment Used during Test

5.1 Equipments List

Conducted Emissions Test Site 1#						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1.	EMI Test Receiver	R&S	ESCI	100947	2022-08-01	2023-07-31
2.	LISN	R&S	ENV216	100115	2022-08-01	2023-07-31
3.	Cable	Top	TYPE16(3.5M)	-	2022-08-01	2023-07-31
3m Semi-anechoic Chamber for Radiation Emissions Test site 1#						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	Spectrum Analyzer	R&S	FSP30	100091	2023-04-24	2024-04-23
2	Amplifier	Agilent	8447D	2944A10178	2022-08-01	2023-07-31
3	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	336	2022-08-01	2023-07-31
4	Coaxial Cable (below 1GHz)	Top	TYPE16(13M)	-	2022-08-07	2023-08-06
5	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	2023-02-02	2024-02-01
6	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9170	335	2023-04-24	2024-04-23
7	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	2022-08-08	2023-08-07
8	Coaxial Cable (above 1GHz)	ZT26-NJ-NJ-8M/FA	1GHz-18GHz	NA	2023-04-24	2024-04-23
3m Semi-anechoic Chamber for Radiation Emissions Test site 2#						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	Test Receiver	R&S	ESCI	101296	2023-04-24	2024-04-23
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	2022-10-30	2023-10-29
3	Active Loop Antenna	Com-Power Corp.	AL-130R	10160007	2022-05-02	2023-05-01
4	Amplifier	ANRITSU	MH648A	M43381	2023-04-24	2024-04-23
5	Cable	HUBER+SUHNER	CBL2	525178	2023-04-24	2024-04-23
RF Conducted Testing						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1.	Spectrum Analyzer	R&S	FSP40	100501	2022-08-01	2023-07-31
2.	EXA Signal Analyzer	Malaysia Keysight	N9010A	MY50520207	2023-04-24	2024-04-23

5.2 Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-6}$
RF Power	± 1.0 dB
RF Power Density	± 2.2 dB
Radiated Spurious Emissions test	± 5.03 dB (30M~1000MHz)
	± 5.47 dB (1000M~25000MHz)
Conducted Spurious Emissions test	± 3.64 dB (AC mains 150KHz~30MHz)

6 Test Summary

Test Items	Test Requirement	Result
Conducted Emissions	15.207(a)	PASS
Radiated Emissions	15.407(a) 15.205(a) 15.209(a)	PASS
Duty Cycle	KDB 789033	PASS
6dB Bandwidth	15.407(a)	PASS
26 dB Emission Bandwidth & 99% Occupied Bandwidth	15.407(a)	PASS
Maximum Conducted Output Power	15.407(a)	PASS
Power Spectral Density	15.407(a)	PASS
Restricted bands around fundamental frequency	15.407(a)	PASS
Antenna Requirement	15.203	PASS
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	1.1307(b)(1)	PASS

7 Conducted Emission

Test Requirement: FCC 47CFR Part 15 Section 15.207

Test Method: ANSI C63.10:2013

Test Result: PASS

Frequency Range: 150kHz to 30MHz

Limit:

Frequency (MHz)	Limit (dB μ V)	
	Quasi-peak	Average
0.15 to 0.5	66 to 56	56 to 46
0.5 to 5	56	46
5 to 30	60	50

7.1 E.U.T. Operation

Operating Environment :

Temperature: 25.6 °C

Humidity: 56.9 % RH

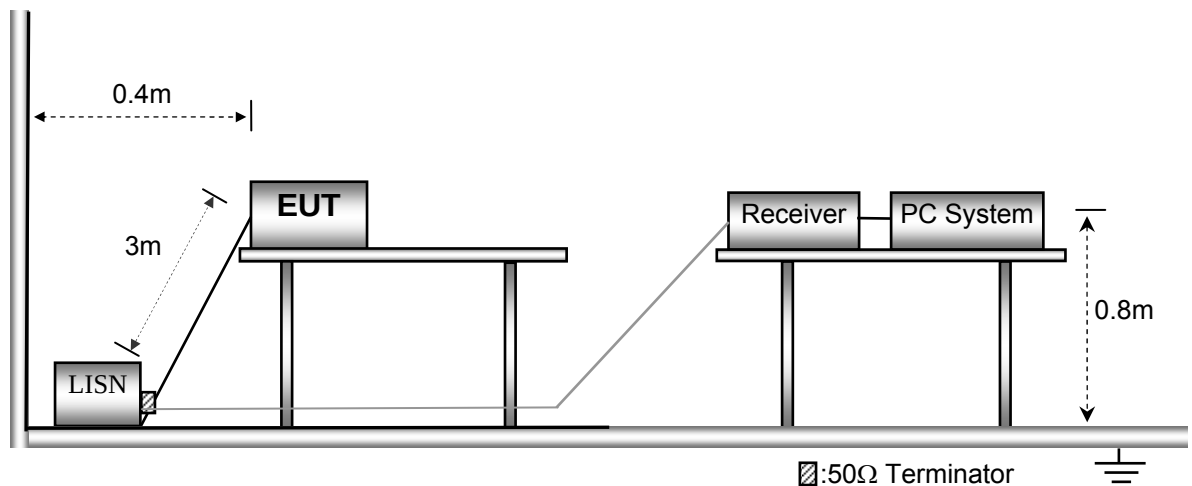
Atmospheric Pressure: 101.2kPa

EUT Operation :

The test was performed in transmitting mode, the test data were shown in the report.

7.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10:2013.



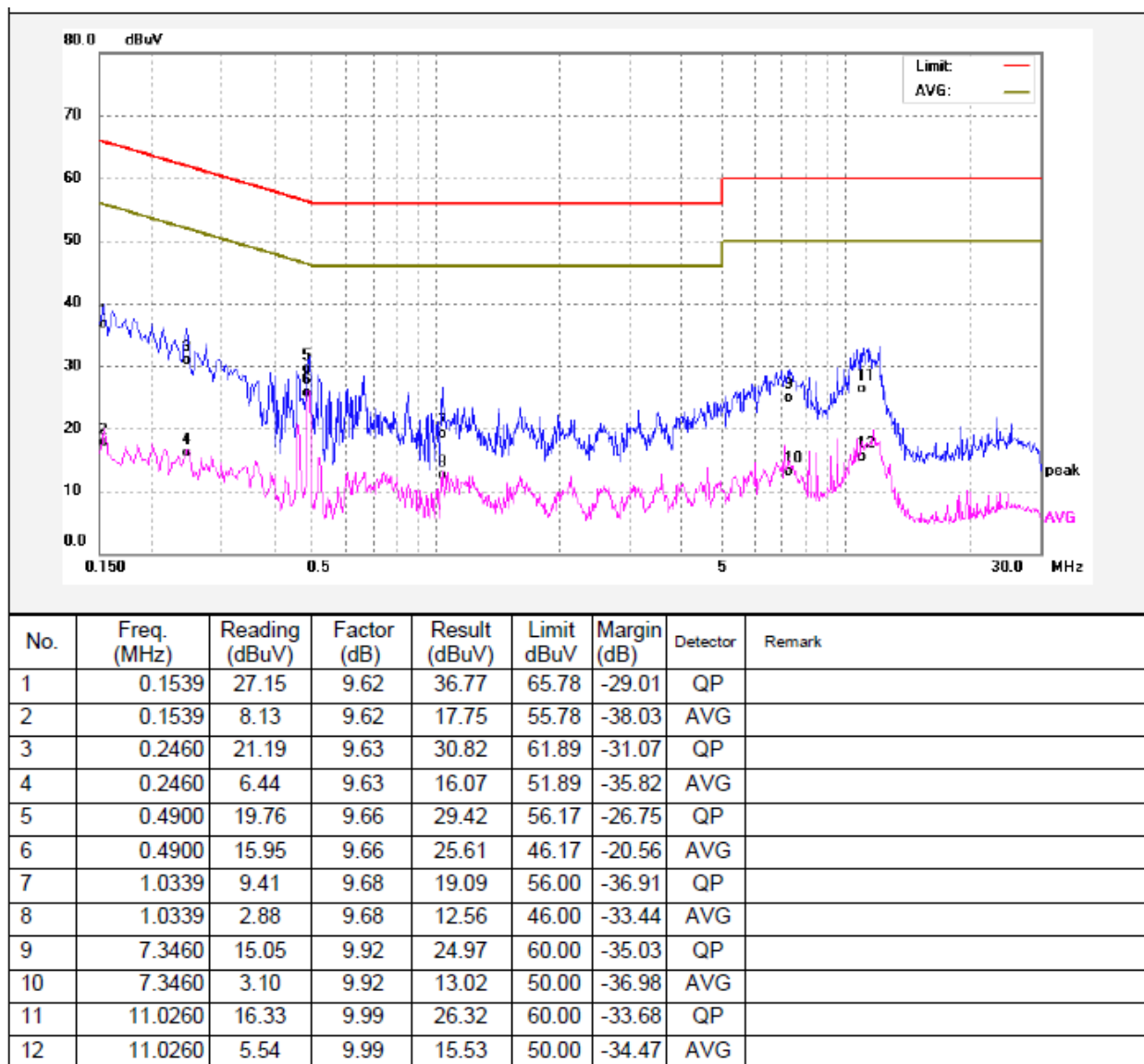
7.3 Measurement Description

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

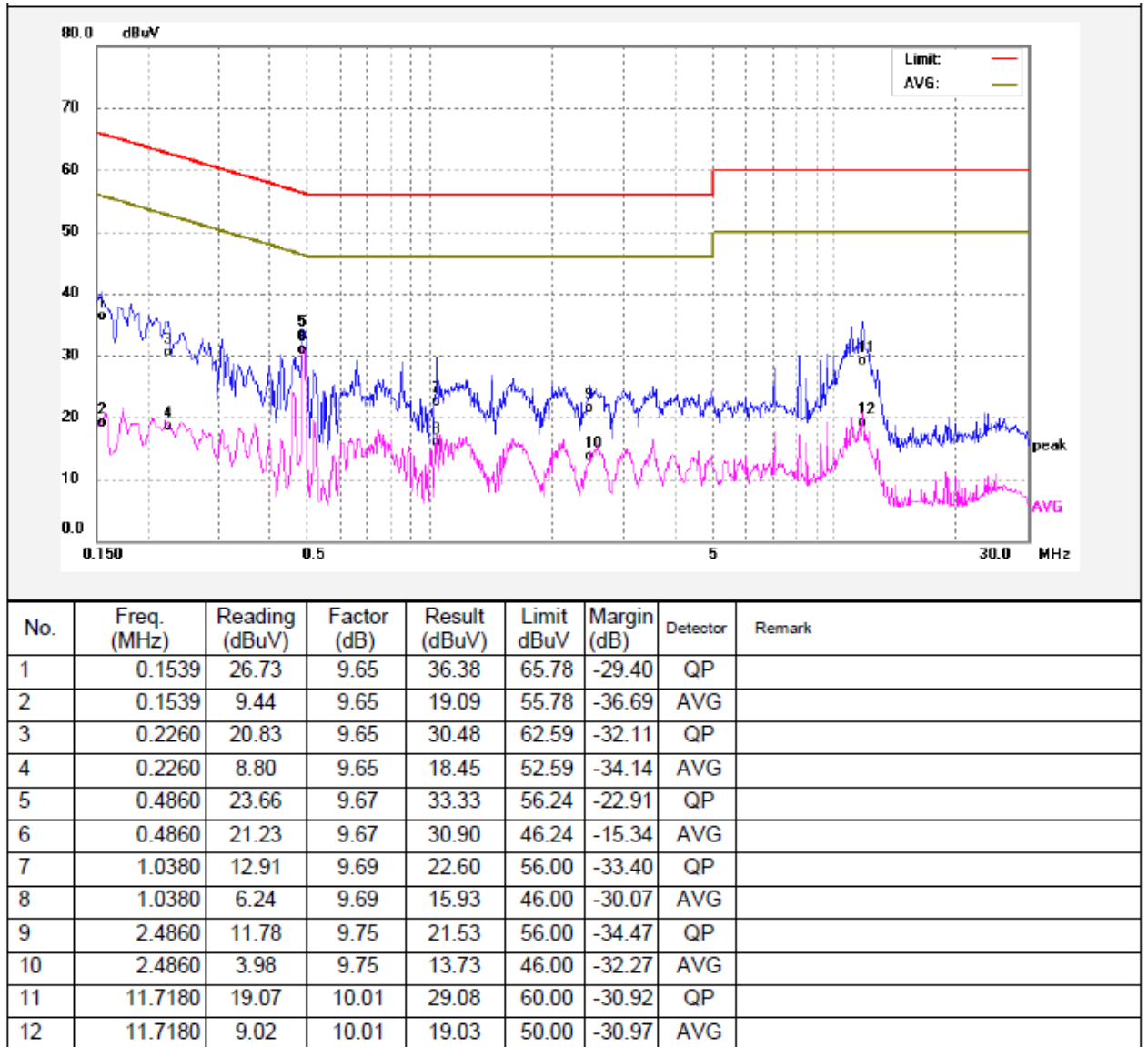
7.4 Conducted Emission Test Result

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

Live line:



Neutral line:



8 Radiated Emissions

Test Requirement: FCC 47CFR Part 15 Section 15.209 & 15.407

Test Method: ANSI C63.10:2013

Test Result: PASS

Measurement Distance: 3m

Limit:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Distance	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	$2400/F(\text{kHz})$	300	$10000 * 2400/F(\text{kHz})$	$20\log^{(2400/F(\text{kHz}))} + 80$
0.490 ~ 1.705	$24000/F(\text{kHz})$	30	$100 * 24000/F(\text{kHz})$	$20\log^{(24000/F(\text{kHz}))} + 40$
1.705 ~ 30	30	30	$100 * 30$	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

8.1 EUT Operation

Operating Environment :

Temperature: 23.5 °C

Humidity: 52.1 % RH

Atmospheric Pressure: 101.2kPa

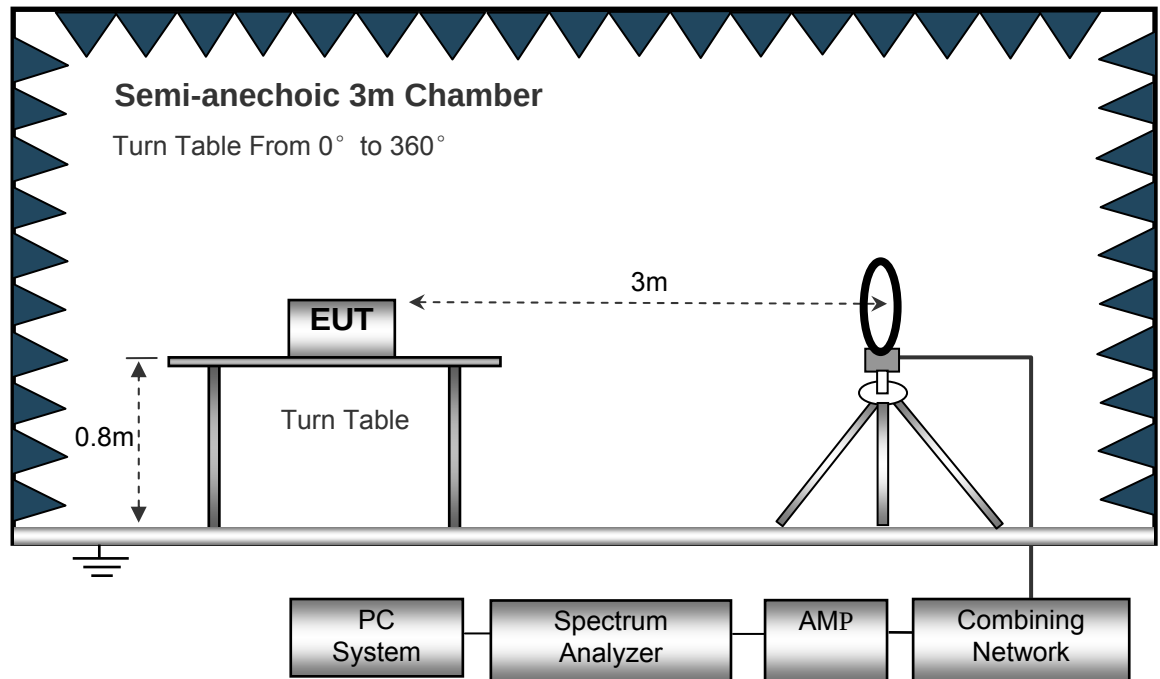
EUT Operation :

The test was performed in transmitting mode, the test data were shown in the report.

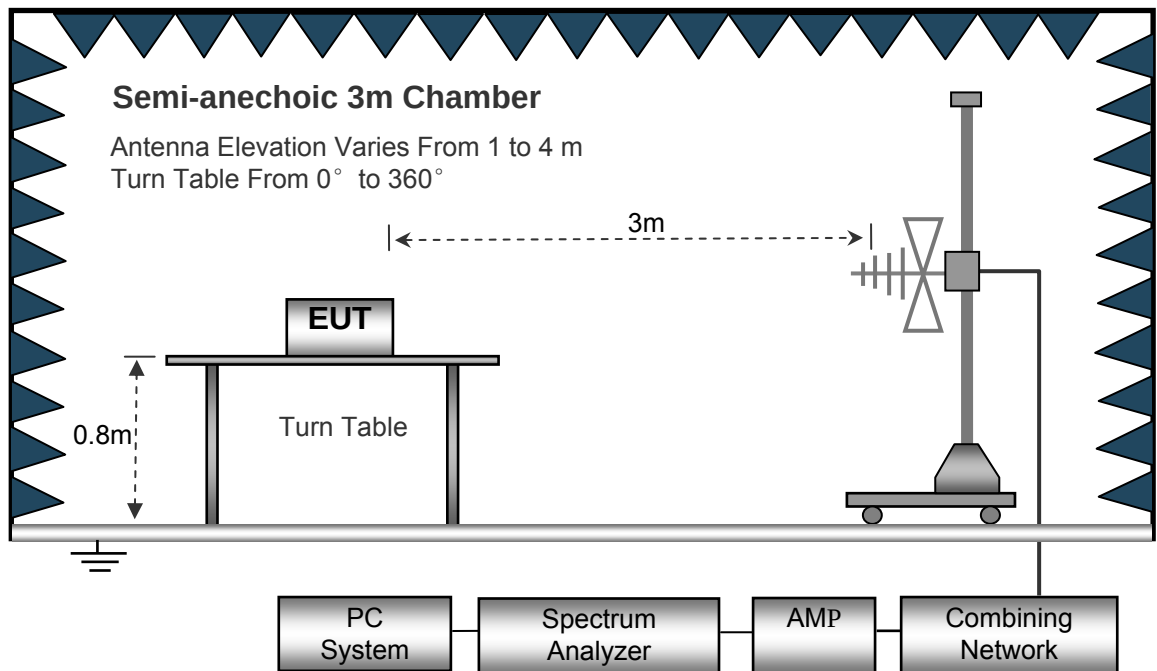
8.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10: 2013.

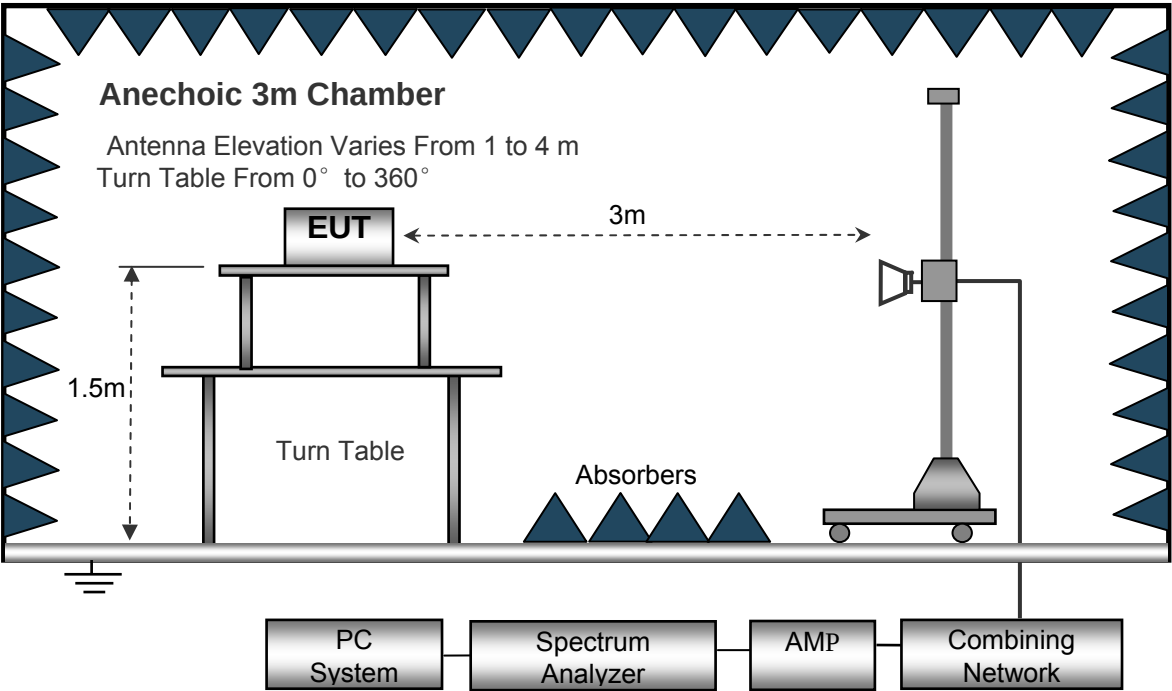
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



8.3 Spectrum Analyzer Setup

Below 30MHz

Sweep Speed Auto
IF Bandwidth.....10kHz
Video Bandwidth.....10kHz
Resolution Bandwidth.....10kHz

30MHz ~ 1GHz

Sweep Speed Auto
DetectorPK
Resolution Bandwidth.....100kHz
Video Bandwidth.....300kHz

Above 1GHz

Sweep Speed Auto
DetectorPK
Resolution Bandwidth.....1MHz
Video Bandwidth.....3MHz
DetectorAve.
Resolution Bandwidth.....1MHz
Video Bandwidth.....10Hz

8.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane for below 1GHz and 1.5m for above 1GHz.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are performed in X,Y and Z axis positioning(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand),the worst condition was tested putting the eut in X axis,so the worst data were shown as follow.
8. A 2.4GHz high –pass filter is used during radiated emissions above 1GHz measurement.

8.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{Limit}$$

8.6 Summary of Test Results

Test Frequency: 9KHz~30MHz

Frequency	Measurement results dB μ V @3m	Detector PK/QP	Correct factor dB/m	Extrapolation factor dB	Measurement results (calculated) dB μ V/m @30m	Limits dB μ V/m @30m	Margin dB
(MHz)	Measurement results	Detector	Correct factor	Extrapolation factor	Measurement results (calculated)	Limits	Margin
U-NII-1:802.11a 5180MHz							
6.470	25.38	QP	21.84	40.00	7.22	29.54	-22.32
15.858	25.67	QP	21.35	40.00	7.02	29.54	-22.52
26.403	24.59	QP	20.67	40.00	5.26	29.54	-24.28
U-NII-1:802.11n20 5180MHz							
6.552	25.94	QP	21.84	40.00	7.78	29.54	-21.76
15.991	26.33	QP	21.35	40.00	7.68	29.54	-21.86
26.169	25.22	QP	20.67	40.00	5.89	29.54	-23.65
U-NII-1:802.11ac 20 5180MHz							
6.490	26.12	QP	21.84	40.00	7.96	29.54	-21.58
16.179	25.71	QP	21.35	40.00	7.06	29.54	-22.48
26.172	24.79	QP	20.67	40.00	5.46	29.54	-24.08
U-NII-1:802.11n40 5190MHz							
6.974	26.11	QP	21.84	40.00	7.95	29.54	-21.59
16.235	25.88	QP	21.35	40.00	7.23	29.54	-22.31
26.504	24.89	QP	20.67	40.00	5.56	29.54	-23.98
U-NII-1:802.11ac40 5190MHz							
6.946	25.22	QP	21.84	40.00	7.06	29.54	-22.48
16.539	26.44	QP	21.35	40.00	7.79	29.54	-21.75
26.104	25.19	QP	20.67	40.00	5.86	29.54	-23.68
U-NII-1:802.11ac80 5210MHz							
6.364	25.73	QP	21.84	40.00	7.57	29.54	-21.97
16.147	26.04	QP	21.35	40.00	7.39	29.54	-22.15
26.159	24.86	QP	20.67	40.00	5.53	29.54	-24.01

Frequency	Measurement results dB μ V @3m	Detector PK/QP	Correct factor dB/m	Extrapolation factor dB	Measurement results (calculated) dB μ V/m @30m	Limits dB μ V/m @30m	Margin dB
(MHz)	Measurement results	Detector	Correct factor	Extrapolation factor	Measurement results (calculated)	Limits	Margin
U-NII-2A:802.11a 5260MHz							
6.720	25.19	QP	21.84	40.00	7.03	29.54	-22.51
16.307	26.49	QP	21.35	40.00	7.84	29.54	-21.70
26.235	25.19	QP	20.67	40.00	5.86	29.54	-23.68
U-NII-2A:802.11n20 5260MHz							
6.853	25.32	QP	21.84	40.00	7.16	29.54	-22.38
15.882	26.61	QP	21.35	40.00	7.96	29.54	-21.58
26.300	24.37	QP	20.67	40.00	5.04	29.54	-24.50
U-NII-2A:802.11ac 5260MHz							
6.490	25.30	QP	21.84	40.00	7.14	29.54	-22.40
16.397	26.61	QP	21.35	40.00	7.96	29.54	-21.58
26.334	24.78	QP	20.67	40.00	5.45	29.54	-24.09
U-NII-2A:802.11n40 5270MHz							
6.951	26.02	QP	21.84	40.00	7.86	29.54	-21.68
16.456	26.09	QP	21.35	40.00	7.44	29.54	-22.10
26.105	24.98	QP	20.67	40.00	5.65	29.54	-23.89
U-NII-2A:802.11ac40 5270MHz							
6.673	25.21	QP	21.84	40.00	7.05	29.54	-22.49
15.973	26.26	QP	21.35	40.00	7.61	29.54	-21.93
26.167	24.99	QP	20.67	40.00	5.66	29.54	-23.88
U-NII-2A:802.11ac80 5290MHz							
6.946	26.07	QP	21.84	40.00	7.91	29.54	-21.63
16.138	25.95	QP	21.35	40.00	7.30	29.54	-22.24
26.117	25.22	QP	20.67	40.00	5.89	29.54	-23.65

Frequency	Measurement results dB μ V @3m	Detector PK/QP	Correct factor dB/m	Extrapolation factor dB	Measurement results (calculated) dB μ V/m @30m	Limits dB μ V/m @30m	Margin dB
(MHz)	Measurement results	Detector	Correct factor	Extrapolation factor	Measurement results (calculated)	Limits	Margin
U-NII-2C:802.11a 5500MHz							
6.337	26.07	QP	21.84	40.00	7.91	29.54	-21.63
16.003	26.01	QP	21.35	40.00	7.36	29.54	-22.18
26.163	25.21	QP	20.67	40.00	5.88	29.54	-23.66
U-NII-2C:802.11n20 5500MHz							
6.497	25.70	QP	21.84	40.00	7.54	29.54	-22.00
16.168	26.44	QP	21.35	40.00	7.79	29.54	-21.75
26.412	24.85	QP	20.67	40.00	5.52	29.54	-24.02
U-NII-2C:802.11ac20 5500MHz							
6.382	25.41	QP	21.84	40.00	7.25	29.54	-22.29
16.478	25.78	QP	21.35	40.00	7.13	29.54	-22.41
26.269	25.02	QP	20.67	40.00	5.69	29.54	-23.85
U-NII-2C:802.11n40 5510MHz							
6.804	25.49	QP	21.84	40.00	7.33	29.54	-22.21
16.610	26.35	QP	21.35	40.00	7.70	29.54	-21.84
26.348	25.28	QP	20.67	40.00	5.95	29.54	-23.59
U-NII-2C:802.11ac40 5510MHz							
6.754	25.84	QP	21.84	40.00	7.68	29.54	-21.86
16.328	26.16	QP	21.35	40.00	7.51	29.54	-22.03
26.558	24.85	QP	20.67	40.00	5.52	29.54	-24.02
U-NII-2C:802.11ac80 5530MHz							
6.335	25.72	QP	21.84	40.00	7.56	29.54	-21.98
16.476	26.66	QP	21.35	40.00	8.01	29.54	-21.53
26.450	24.46	QP	20.67	40.00	5.13	29.54	-24.41

Frequency	Measurement results dB μ V @3m	Detector PK/QP	Correct factor dB/m	Extrapolation factor dB	Measurement results (calculated) dB μ V/m @30m	Limits dB μ V/m @30m	Margin dB
(MHz)	Measurement results	Detector	Correct factor	Extrapolation factor	Measurement results (calculated)	Limits	Margin
U-NII-3 802.11a 5745MHz							
6.559	26.08	QP	21.84	40.00	7.92	29.54	-21.62
15.743	26.71	QP	21.35	40.00	8.06	29.54	-21.48
26.469	24.61	QP	20.67	40.00	5.28	29.54	-24.26
U-NII-3 802.11n20 5745MHz							
6.735	25.38	QP	21.84	40.00	7.22	29.54	-22.32
15.796	26.05	QP	21.35	40.00	7.40	29.54	-22.14
26.146	25.15	QP	20.67	40.00	5.82	29.54	-23.72
U-NII-3 802.11ac 5745MHz							
6.513	25.59	QP	21.84	40.00	7.43	29.54	-22.11
15.753	26.32	QP	21.35	40.00	7.67	29.54	-21.87
26.075	25.39	QP	20.67	40.00	6.06	29.54	-23.48
U-NII-3 802.11n40 5755MHz							
6.964	25.73	QP	21.84	40.00	7.57	29.54	-21.97
16.199	26.40	QP	21.35	40.00	7.75	29.54	-21.79
26.425	24.71	QP	20.67	40.00	5.38	29.54	-24.16
U-NII-3 802.11ac40 5755MHz							
6.412	25.68	QP	21.84	40.00	7.52	29.54	-22.02
16.248	25.81	QP	21.35	40.00	7.16	29.54	-22.38
26.082	24.53	QP	20.67	40.00	5.20	29.54	-24.34
U-NII-3 802.11ac80 5775MHz							
6.802	25.28	QP	21.84	40.00	7.12	29.54	-22.42
16.545	26.03	QP	21.35	40.00	7.38	29.54	-22.16
26.195	24.55	QP	20.67	40.00	5.22	29.54	-24.32

Test Frequency : 30MHz ~ 18GHz

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11a U-NII-1 Low Channel 5180MHz									
285.49	41.49	QP	345	1.8	H	-11.62	29.87	46.00	-16.13
285.49	39.06	QP	42	1.0	V	-11.62	27.44	46.00	-18.56
4514.98	54.11	PK	99	1.7	H	-2.03	52.08	74.00	-21.92
4514.98	43.52	Ave	99	1.7	H	-2.03	41.49	54.00	-12.51
5131.38	53.13	PK	156	1.3	H	-1.02	52.11	74.00	-21.89
5131.38	44.96	Ave	156	1.3	H	-1.02	43.94	54.00	-10.06
10360.00	42.26	PK	147	1.1	H	5.33	47.59	74.00	-26.41
10360.00	37.33	Ave	147	1.1	H	5.33	42.66	54.00	-11.34
802.11a U-NII-1 Middle channel 5200MHz									
285.49	42.06	QP	183	1.2	H	-11.62	30.44	46.00	-15.56
285.49	40.32	QP	261	1.2	V	-11.62	28.70	46.00	-17.30
4508.94	53.31	PK	138	1.9	H	-1.94	51.37	74.00	-22.63
4508.94	43.86	Ave	138	1.9	H	-1.94	41.92	54.00	-12.08
5149.14	55.02	PK	10	1.1	H	-1.06	53.96	74.00	-20.04
5149.14	44.25	Ave	10	1.1	H	-1.06	43.19	54.00	-10.81
10400.00	43.69	PK	306	1.1	H	5.21	48.90	74.00	-25.10
10400.00	37.54	Ave	306	1.1	H	5.21	42.75	54.00	-11.25

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11a U-NII-1 High channel 5240MHz									
285.49	40.94	QP	241	1.7	H	-11.62	29.32	46.00	-16.68
285.49	40.89	QP	164	1.6	V	-11.62	29.27	46.00	-16.73
4517.90	51.91	PK	253	1.1	H	-2.24	49.67	74.00	-24.33
4517.90	42.92	Ave	253	1.1	H	-2.24	40.68	54.00	-13.32
5115.46	54.75	PK	122	2.0	H	-1.09	53.66	74.00	-20.34
5115.46	43.65	Ave	122	2.0	H	-1.09	42.56	54.00	-11.44
10480.00	43.38	PK	183	1.9	H	5.14	48.52	74.00	-25.48
10480.00	38.01	Ave	183	1.9	H	5.14	43.15	54.00	-10.85
802.11a U-NII-2A Low Channel 5260MHz									
223.45	42.85	QP	82	1.9	H	-11.62	31.23	46.00	-14.77
223.45	37.54	QP	112	1.1	V	-11.62	25.92	46.00	-20.08
4521.24	49.98	PK	310	1.9	H	-2.03	47.95	74.00	-26.05
4521.24	46.94	Ave	310	1.9	H	-2.03	44.91	54.00	-9.09
5148.55	54.22	PK	18	1.4	H	-1.02	53.20	74.00	-20.80
5148.55	43.89	Ave	18	1.4	H	-1.02	42.87	54.00	-11.13
10520.00	43.02	PK	28	1.9	H	5.33	48.35	74.00	-25.65
10520.00	37.54	Ave	28	1.9	H	5.33	42.87	54.00	-11.13

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11a U-NII-2A middle channel 5280MHz									
223.45	43.30	QP	319	1.5	H	-11.62	31.68	46.00	-14.32
223.45	36.69	QP	230	1.2	V	-11.62	25.07	46.00	-20.93
4512.18	49.19	PK	40	1.2	H	-1.94	47.25	74.00	-26.75
4512.18	45.78	Ave	40	1.2	H	-1.94	43.84	54.00	-10.16
5135.11	55.59	PK	78	1.4	H	-1.06	54.53	74.00	-19.47
5135.11	44.88	Ave	78	1.4	H	-1.06	43.82	54.00	-10.18
10560.00	42.00	PK	214	1.4	H	5.21	47.21	74.00	-26.79
10560.00	36.12	Ave	214	1.4	H	5.21	41.33	54.00	-12.67
802.11a U-NII-2A High channel 5320MHz									
223.45	44.00	QP	32	1.2	H	-11.62	32.38	46.00	-13.62
223.45	36.99	QP	260	1.3	V	-11.62	25.37	46.00	-20.63
4533.78	49.33	PK	37	1.7	H	-2.24	47.09	74.00	-26.91
4533.78	47.18	Ave	37	1.7	H	-2.24	44.94	54.00	-9.06
5149.75	57.46	PK	117	1.3	H	-1.09	56.37	74.00	-17.63
5149.75	46.03	Ave	117	1.3	H	-1.09	44.94	54.00	-9.06
10640.00	42.80	PK	114	1.0	H	5.14	47.94	74.00	-26.06
10640.00	36.44	Ave	114	1.0	H	5.14	41.58	54.00	-12.42

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11a U-NII-2C Low Channel 5500MHz									
223.45	40.20	QP	158	1.5	H	-11.62	28.58	46.00	-17.42
223.45	35.45	QP	177	1.7	V	-11.62	23.83	46.00	-22.17
4528.82	50.67	PK	351	1.3	H	-2.03	48.64	74.00	-25.36
4528.82	44.45	Ave	351	1.3	H	-2.03	42.42	54.00	-11.58
5138.11	53.63	PK	166	2.0	H	-1.02	52.61	74.00	-21.39
5138.11	44.96	Ave	166	2.0	H	-1.02	43.94	54.00	-10.06
11000.00	41.43	PK	266	1.1	H	5.33	46.76	74.00	-27.24
11000.00	36.44	Ave	266	1.1	H	5.33	41.77	54.00	-12.23
802.11a U-NII-2C Middle channel 5600MHz									
223.45	41.46	QP	69	1.5	H	-11.62	29.84	46.00	-16.16
223.45	38.09	QP	296	1.4	V	-11.62	26.47	46.00	-19.53
4502.31	48.70	PK	339	1.0	H	-1.94	46.76	74.00	-27.24
4502.31	44.41	Ave	339	1.0	H	-1.94	42.47	54.00	-11.53
5138.61	54.06	PK	337	1.2	H	-1.06	53.00	74.00	-21.00
5138.61	44.67	Ave	337	1.2	H	-1.06	43.61	54.00	-10.39
11200.00	40.44	PK	178	1.6	H	5.21	45.65	74.00	-28.35
11200.00	34.86	Ave	178	1.6	H	5.21	40.07	54.00	-13.93

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11a U-NII-2C High channel 5700MHz									
223.45	40.31	QP	97	1.9	H	-11.62	28.69	46.00	-17.31
223.45	37.20	QP	255	1.6	V	-11.62	25.58	46.00	-20.42
4533.01	49.26	PK	29	1.4	H	-2.24	47.02	74.00	-26.98
4533.01	43.19	Ave	29	1.4	H	-2.24	40.95	54.00	-13.05
5119.54	54.88	PK	66	1.8	H	-1.09	53.79	74.00	-20.21
5119.54	44.06	Ave	66	1.8	H	-1.09	42.97	54.00	-11.03
11400.00	40.32	PK	290	1.7	H	5.14	45.46	74.00	-28.54
11400.00	34.75	Ave	290	1.7	H	5.14	39.89	54.00	-14.11
802.11a U-NII-3 Low Channel 5745MHz									
285.49	39.73	QP	138	1.0	H	-11.62	28.11	46.00	-17.89
285.49	39.37	QP	224	1.4	V	-11.62	27.75	46.00	-18.25
4519.05	53.08	PK	175	1.3	H	-2.06	51.02	74.00	-22.98
4519.05	45.39	Ave	175	1.3	H	-2.06	43.33	54.00	-10.67
11490.00	42.36	PK	221	1.1	H	5.93	48.29	74.00	-25.71
11490.00	38.06	Ave	221	1.1	H	5.93	43.99	54.00	-10.01
5352.75	45.48	PK	335	1.9	H	-1.25	44.23	74.00	-29.77
5352.75	37.42	Ave	335	1.9	H	-1.25	36.17	54.00	-17.83

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11a U-NII-3 middle channel 5785MHz									
285.49	39.80	QP	346	1.6	H	-11.62	28.18	46.00	-17.82
285.49	37.99	QP	140	1.9	V	-11.62	26.37	46.00	-19.63
4524.70	53.57	PK	320	1.9	H	-2.03	51.54	74.00	-22.46
4524.70	45.02	Ave	320	1.9	H	-2.03	42.99	54.00	-11.01
11570.00	41.46	PK	358	1.4	H	5.81	47.27	74.00	-26.73
11570.00	36.48	Ave	358	1.4	H	5.81	42.29	54.00	-11.71
5356.26	45.20	PK	221	1.3	H	-1.22	43.98	74.00	-30.02
5356.26	38.20	Ave	221	1.3	H	-1.22	36.98	54.00	-17.02
802.11a U-NII-3 High channel 5825MHz									
285.49	38.57	QP	168	1.5	H	-11.62	26.95	46.00	-19.05
285.49	39.15	QP	206	1.3	V	-11.62	27.53	46.00	-18.47
4519.20	54.34	PK	355	1.2	H	-1.84	52.50	74.00	-21.50
4519.20	46.01	Ave	355	1.2	H	-1.84	44.17	54.00	-9.83
11650.00	40.47	PK	237	1.8	H	5.84	46.31	74.00	-27.69
11650.00	36.02	Ave	237	1.8	H	5.84	41.86	54.00	-12.14
5377.95	46.25	PK	235	1.8	H	-1.30	44.95	74.00	-29.05
5377.95	38.09	Ave	235	1.8	H	-1.30	36.79	54.00	-17.21

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11n(HT20) U-NII-1 Low Channel 5180MHz									
235.49	42.21	QP	291	1.4	H	-11.62	30.59	46.00	-15.41
235.49	37.69	QP	239	1.7	V	-11.62	26.07	46.00	-19.93
4505.70	53.48	PK	238	1.3	H	-2.14	51.34	74.00	-22.66
4505.70	45.84	Ave	238	1.3	H	-2.14	43.70	54.00	-10.30
5147.58	48.37	PK	164	1.8	H	-1.06	47.31	74.00	-26.69
5147.58	41.72	Ave	164	1.8	H	-1.06	40.66	54.00	-13.34
10360.00	42.15	PK	106	1.2	H	5.33	47.48	74.00	-26.52
10360.00	38.52	Ave	106	1.2	H	5.33	43.85	54.00	-10.15
802.11n(HT20) U-NII-1 Middle channel 5200MHz									
235.49	43.47	QP	8	1.1	H	-11.62	31.85	46.00	-14.15
235.49	37.52	QP	100	1.5	V	-11.62	25.90	46.00	-20.10
4505.69	54.94	PK	317	1.9	H	-2.12	52.82	74.00	-21.18
4505.69	44.58	Ave	317	1.9	H	-2.12	42.46	54.00	-11.54
5128.85	48.10	PK	253	1.6	H	-1.06	47.04	74.00	-26.96
5128.85	41.03	Ave	253	1.6	H	-1.06	39.97	54.00	-14.03
10400.00	42.63	PK	269	1.9	H	5.21	47.84	74.00	-26.16
10400.00	36.33	Ave	269	1.9	H	5.21	41.54	54.00	-12.46

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11n(HT20) U-NII-1 High channel 5240MHz									
235.49	42.05	QP	84	1.8	H	-11.62	30.43	46.00	-15.57
235.49	37.33	QP	116	1.4	V	-11.62	25.71	46.00	-20.29
4517.22	54.36	PK	25	1.4	H	-1.96	52.40	74.00	-21.60
4517.22	45.36	Ave	25	1.4	H	-1.96	43.40	54.00	-10.60
5134.28	48.95	PK	168	1.1	H	-1.06	47.89	74.00	-26.11
5134.28	42.01	Ave	168	1.1	H	-1.06	40.95	54.00	-13.05
10480.00	41.90	PK	84	1.7	H	5.14	47.04	74.00	-26.96
10480.00	37.78	Ave	84	1.7	H	5.14	42.92	54.00	-11.08
802.11n(HT20) U-NII-2A Low Channel 5260MHz									
235.49	43.47	QP	312	1.2	H	-11.62	31.85	46.00	-14.15
235.49	42.77	QP	72	1.3	V	-11.62	31.15	46.00	-14.85
4503.86	36.57	PK	272	1.5	H	-2.03	34.54	74.00	-39.46
4503.86	46.30	Ave	272	1.5	H	-2.03	44.27	54.00	-9.73
5141.25	37.75	PK	243	1.2	H	-1.02	36.73	74.00	-37.27
5141.25	-0.12	Ave	243	1.2	H	-1.02	-1.14	54.00	-55.14
10520.00	42.67	PK	133	1.7	H	5.33	48.00	74.00	-26.00
10520.00	37.36	Ave	133	1.7	H	5.33	42.69	54.00	-11.31

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11n(HT20) U-NII-2A middle channel 5280MHz									
235.49	42.69	QP	259	1.4	H	-11.62	31.07	46.00	-14.93
235.49	44.09	QP	175	1.4	V	-11.62	32.47	46.00	-13.53
4522.62	36.87	PK	122	2.0	H	-1.94	34.93	74.00	-39.07
4522.62	45.93	Ave	122	2.0	H	-1.94	43.99	54.00	-10.01
5116.85	39.67	PK	93	1.8	H	-1.06	38.61	74.00	-35.39
5116.85	0.43	Ave	93	1.8	H	-1.06	-0.63	54.00	-54.63
10560.00	43.42	PK	123	1.6	H	5.21	48.63	74.00	-25.37
10560.00	37.98	Ave	123	1.6	H	5.21	43.19	54.00	-10.81
802.11n(HT20) U-NII-2A High channel 5320MHz									
235.49	41.66	QP	319	1.8	H	-11.62	30.04	46.00	-15.96
235.49	45.01	QP	16	1.3	V	-11.62	33.39	46.00	-12.61
4501.44	37.36	PK	151	1.8	H	-2.24	35.12	74.00	-38.88
4501.44	46.59	Ave	151	1.8	H	-2.24	44.35	54.00	-9.65
5123.38	40.30	PK	230	1.3	H	-1.09	39.21	74.00	-34.79
5123.38	2.05	Ave	230	1.3	H	-1.09	0.96	54.00	-53.04
10640.00	43.25	PK	89	1.1	H	5.14	48.39	74.00	-25.61
10640.00	35.93	Ave	89	1.1	H	5.14	41.07	54.00	-12.93

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11n(HT20) U-NII-2C Low Channel 5500MHz									
235.49	35.90	QP	223	1.5	H	-11.62	24.28	46.00	-21.72
235.49	0.09	QP	75	1.8	V	-11.62	-11.53	46.00	-57.53
4516.25	38.98	PK	35	1.5	H	-2.03	36.95	74.00	-37.05
4516.25	36.37	Ave	35	1.5	H	-2.03	34.34	54.00	-19.66
5129.37	44.82	PK	200	1.4	H	-1.02	43.80	74.00	-30.20
5129.37	39.83	Ave	200	1.4	H	-1.02	38.81	54.00	-15.19
11000.00	0.97	PK	192	1.7	H	5.33	6.30	74.00	-67.70
11000.00	37.23	Ave	192	1.7	H	5.33	42.56	54.00	-11.44
802.11n(HT20) U-NII-2C Middle channel 5600MHz									
235.49	35.55	QP	347	1.8	H	-11.62	23.93	46.00	-22.07
235.49	0.81	QP	28	1.8	V	-11.62	-10.81	46.00	-56.81
4522.48	38.99	PK	337	1.2	H	-1.94	37.05	74.00	-36.95
4522.48	37.45	Ave	337	1.2	H	-1.94	35.51	54.00	-18.49
5142.36	44.85	PK	237	2.0	H	-1.06	43.79	74.00	-30.21
5142.36	41.43	Ave	237	2.0	H	-1.06	40.37	54.00	-13.63
11200.00	1.62	PK	276	1.3	H	5.21	6.83	74.00	-67.17
11200.00	37.42	Ave	276	1.3	H	5.21	42.63	54.00	-11.37

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11n(HT20) U-NII-2C High channel 5700MHz									
235.49	37.68	QP	235	1.6	H	-11.62	26.06	46.00	-19.94
235.49	-0.24	QP	356	1.6	V	-11.62	-11.86	46.00	-57.86
4539.67	39.23	PK	160	1.8	H	-2.24	36.99	74.00	-37.01
4539.67	40.21	Ave	160	1.8	H	-2.24	37.97	54.00	-16.03
5136.45	43.57	PK	129	1.7	H	-1.09	42.48	74.00	-31.52
5136.45	41.13	Ave	129	1.7	H	-1.09	40.04	54.00	-13.96
11400.00	1.03	PK	149	1.9	H	5.14	6.17	74.00	-67.83
11400.00	40.00	Ave	149	1.9	H	5.14	45.14	54.00	-8.86
802.11n(HT20) U-NII-3 Low Channel 5745MHz									
235.49	41.19	QP	224	1.0	H	-11.62	29.57	46.00	-16.43
235.49	49.87	QP	172	1.6	V	-11.62	38.25	46.00	-7.75
4520.75	44.72	PK	39	1.5	H	-2.06	42.66	74.00	-31.34
4520.75	47.02	Ave	39	1.5	H	-2.06	44.96	54.00	-9.04
11490.00	37.32	PK	326	1.1	H	5.93	43.25	74.00	-30.75
11490.00	39.48	Ave	326	1.1	H	5.93	45.41	54.00	-8.59
5375.88	46.36	PK	92	1.1	H	-1.25	45.11	74.00	-28.89
5375.88	38.28	Ave	92	1.1	H	-1.25	37.03	54.00	-16.97

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11n(HT20) U-NII-3 middle channel 5785MHz									
235.49	40.60	QP	167	1.4	H	-11.62	28.98	46.00	-17.02
235.49	45.45	QP	271	1.2	V	-11.62	33.83	46.00	-12.17
4529.59	45.07	PK	128	1.4	H	-2.03	43.04	74.00	-30.96
4529.59	48.27	Ave	128	1.4	H	-2.03	46.24	54.00	-7.76
11570.00	36.89	PK	157	1.7	H	5.81	42.70	74.00	-31.30
11570.00	40.17	Ave	157	1.7	H	5.81	45.98	54.00	-8.02
5374.98	45.96	PK	313	1.2	H	-1.22	44.74	74.00	-29.26
5374.98	39.82	Ave	313	1.2	H	-1.22	38.60	54.00	-15.40
802.11n(HT20) U-NII-3 High channel 5825MHz									
235.49	39.64	QP	236	1.1	H	-11.62	28.02	46.00	-17.98
235.49	45.71	QP	34	2.0	V	-11.62	34.09	46.00	-11.91
4523.84	46.35	PK	190	1.6	H	-1.84	44.51	74.00	-29.49
4523.84	48.87	Ave	190	1.6	H	-1.84	47.03	54.00	-6.97
11650.00	37.86	PK	29	1.3	H	5.84	43.70	74.00	-30.30
11650.00	39.57	Ave	29	1.3	H	5.84	45.41	54.00	-8.59
5384.46	46.51	PK	116	1.0	H	-1.30	45.21	74.00	-28.79
5384.46	37.25	Ave	116	1.0	H	-1.30	35.95	54.00	-18.05

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(VHT20) U-NII-1 Low Channel 5180MHz									
235.49	37.12	QP	85	1.7	H	-11.62	25.50	46.00	-20.50
235.49	38.57	QP	241	1.8	V	-11.62	26.95	46.00	-19.05
4506.55	45.07	PK	5	1.2	H	-1.86	43.21	74.00	-30.79
4506.55	36.80	Ave	5	1.2	H	-1.86	34.94	54.00	-19.06
5142.57	39.83	PK	232	1.7	H	-1.06	38.77	74.00	-35.23
5142.57	41.47	Ave	232	1.7	H	-1.06	40.41	54.00	-13.59
10360.00	46.11	PK	173	1.5	H	5.33	51.44	74.00	-22.56
10360.00	38.20	Ave	173	1.5	H	5.33	43.53	54.00	-10.47
802.11ac(VHT20) U-NII-1 Middle channel 5200MHz									
235.49	36.44	QP	231	1.5	H	-11.62	24.82	46.00	-21.18
235.49	37.78	QP	281	1.3	V	-11.62	26.16	46.00	-19.84
4505.57	45.55	PK	48	1.5	H	-1.82	43.73	74.00	-30.27
4505.57	37.68	Ave	48	1.5	H	-1.82	35.86	54.00	-18.14
5132.98	39.22	PK	49	1.0	H	-1.06	38.16	74.00	-35.84
5132.98	42.95	Ave	49	1.0	H	-1.06	41.89	54.00	-12.11
10400.00	42.36	PK	26	1.6	H	5.21	47.57	74.00	-26.43
10400.00	37.92	Ave	26	1.6	H	5.21	43.13	54.00	-10.87

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(VHT20) U-NII-1 High channel 5240MHz									
235.49	37.03	QP	310	1.2	H	-11.62	25.41	46.00	-20.59
235.49	37.64	QP	226	1.6	V	-11.62	26.02	46.00	-19.98
4521.01	45.34	PK	353	1.2	H	-1.81	43.53	74.00	-30.47
4521.01	37.25	Ave	353	1.2	H	-1.81	35.44	54.00	-18.56
5114.12	38.23	PK	60	1.7	H	-1.06	37.17	74.00	-36.83
5114.12	43.65	Ave	60	1.7	H	-1.06	42.59	54.00	-11.41
10480.00	41.30	PK	355	1.1	H	5.14	46.44	74.00	-27.56
10480.00	38.16	Ave	355	1.1	H	5.14	43.30	54.00	-10.70
802.11ac(VHT20) U-NII-2A Low Channel 5260MHz									
235.49	39.57	QP	154	1.6	H	-11.62	27.95	46.00	-18.05
235.49	43.67	QP	9	1.1	V	-11.62	32.05	46.00	-13.95
4534.51	42.55	PK	153	1.5	H	-2.03	40.52	74.00	-33.48
4534.51	39.37	Ave	153	1.5	H	-2.03	37.34	54.00	-16.66
5114.17	46.29	PK	150	1.2	H	-1.02	45.27	74.00	-28.73
5114.17	39.73	Ave	150	1.2	H	-1.02	38.71	54.00	-15.29
10520.00	40.69	PK	324	1.0	H	5.33	46.02	74.00	-27.98
10520.00	39.19	Ave	324	1.0	H	5.33	44.52	54.00	-9.48

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(VHT20) U-NII-2A middle channel 5280MHz									
235.49	40.32	QP	297	2.0	H	-11.62	28.70	46.00	-17.30
235.49	43.51	QP	312	1.4	V	-11.62	31.89	46.00	-14.11
4510.70	41.69	PK	318	1.6	H	-1.94	39.75	74.00	-34.25
4510.70	39.70	Ave	318	1.6	H	-1.94	37.76	54.00	-16.24
5125.79	47.77	PK	15	1.2	H	-1.06	46.71	74.00	-27.29
5125.79	39.68	Ave	15	1.2	H	-1.06	38.62	54.00	-15.38
10560.00	42.12	PK	7	1.1	H	5.21	47.33	74.00	-26.67
10560.00	39.13	Ave	7	1.1	H	5.21	44.34	54.00	-9.66
802.11ac(VHT20) U-NII-2A High channel 5320MHz									
235.49	39.15	QP	319	1.1	H	-11.62	27.53	46.00	-18.47
235.49	43.31	QP	109	1.1	V	-11.62	31.69	46.00	-14.31
4531.28	40.56	PK	266	1.8	H	-2.24	38.32	74.00	-35.68
4531.28	38.72	Ave	266	1.8	H	-2.24	36.48	54.00	-17.52
5147.34	49.26	PK	18	1.9	H	-1.09	48.17	74.00	-25.83
5147.34	39.05	Ave	18	1.9	H	-1.09	37.96	54.00	-16.04
10640.00	39.46	PK	278	1.8	H	5.14	44.60	74.00	-29.40
10640.00	40.25	Ave	278	1.8	H	5.14	45.39	54.00	-8.61

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(VHT20) U-NII-2C Low Channel 5500MHz									
235.49	50.54	QP	9	1.7	H	-11.62	38.92	46.00	-7.08
235.49	39.49	QP	36	1.9	V	-11.62	27.87	46.00	-18.13
4512.62	38.89	PK	313	1.9	H	-2.03	36.86	74.00	-37.14
4512.62	39.13	Ave	313	1.9	H	-2.03	37.10	54.00	-16.90
5119.53	46.45	PK	227	2.0	H	-1.02	45.43	74.00	-28.57
5119.53	38.06	Ave	227	2.0	H	-1.02	37.04	54.00	-16.96
11000.00	1.27	PK	78	1.3	H	5.33	6.60	74.00	-67.40
11000.00	38.66	Ave	78	1.3	H	5.33	43.99	54.00	-10.01
802.11ac(VHT20) U-NII-2C Middle channel 5600MHz									
235.49	50.59	QP	40	1.2	H	-11.62	38.97	46.00	-7.03
235.49	39.19	QP	88	1.2	V	-11.62	27.57	46.00	-18.43
4532.79	37.65	PK	300	1.1	H	-1.94	35.71	74.00	-38.29
4532.79	40.04	Ave	300	1.1	H	-1.94	38.10	54.00	-15.90
5131.36	46.51	PK	322	1.1	H	-1.06	45.45	74.00	-28.55
5131.36	38.14	Ave	322	1.1	H	-1.06	37.08	54.00	-16.92
11200.00	1.99	PK	222	1.9	H	5.21	7.20	74.00	-66.80
11200.00	37.22	Ave	222	1.9	H	5.21	42.43	54.00	-11.57

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(VHT20) U-NII-2C High channel 5700MHz									
235.49	50.28	QP	87	1.6	H	-11.62	38.66	46.00	-7.34
235.49	37.80	QP	80	1.3	V	-11.62	26.18	46.00	-19.82
4528.35	37.54	PK	354	1.3	H	-2.24	35.30	74.00	-38.70
4528.35	39.04	Ave	354	1.3	H	-2.24	36.80	54.00	-17.20
5117.00	46.67	PK	180	1.1	H	-1.09	45.58	74.00	-28.42
5117.00	38.28	Ave	180	1.1	H	-1.09	37.19	54.00	-16.81
11400.00	2.76	PK	290	1.5	H	5.14	7.90	74.00	-66.10
11400.00	37.78	Ave	290	1.5	H	5.14	42.92	54.00	-11.08
802.11ac(VHT20) U-NII-3 Low Channel 5745MHz									
235.49	37.31	QP	165	1.3	H	-11.62	25.69	46.00	-20.31
235.49	37.12	QP	219	1.2	V	-11.62	25.50	46.00	-20.50
4535.90	43.66	PK	116	1.6	H	-1.92	41.74	74.00	-32.26
4535.90	34.42	Ave	116	1.6	H	-1.92	32.50	54.00	-21.50
11490.00	39.68	PK	247	1.0	H	5.93	45.61	74.00	-28.39
11490.00	35.77	Ave	247	1.0	H	5.93	41.70	54.00	-12.30
5355.94	45.42	PK	301	1.4	H	-1.03	44.39	74.00	-29.61
5355.94	37.79	Ave	301	1.4	H	-1.03	36.76	54.00	-17.24

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(VHT20) U-NII-3 middle channel 5785MHz									
235.49	37.10	QP	216	1.6	H	-11.62	25.48	46.00	-20.52
235.49	38.08	QP	127	1.4	V	-11.62	26.46	46.00	-19.54
4503.07	44.51	PK	318	1.6	H	-1.97	42.54	74.00	-31.46
4503.07	34.07	Ave	318	1.6	H	-1.97	32.10	54.00	-21.90
11570.00	42.22	PK	143	1.7	H	5.81	48.03	74.00	-25.97
11570.00	37.21	Ave	143	1.7	H	5.81	43.02	54.00	-10.98
5352.51	46.46	PK	140	1.8	H	-1.05	45.41	74.00	-28.59
5352.51	39.80	Ave	140	1.8	H	-1.05	38.75	54.00	-15.25
802.11ac(VHT20) U-NII-3 High channel 5825MHz									
235.49	37.41	QP	34	1.6	H	-11.62	25.79	46.00	-20.21
235.49	37.94	QP	159	1.8	V	-11.62	26.32	46.00	-19.68
4536.85	45.15	PK	61	2.0	H	-1.88	43.27	74.00	-30.73
4536.85	33.16	Ave	61	2.0	H	-1.88	31.28	54.00	-22.72
11650.00	40.96	PK	68	1.6	H	5.84	46.80	74.00	-27.20
11650.00	37.77	Ave	68	1.6	H	5.84	43.61	54.00	-10.39
5356.04	45.04	PK	254	2.0	H	-1.06	43.98	74.00	-30.02
5356.04	37.40	Ave	254	2.0	H	-1.06	36.34	54.00	-17.66

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11n(HT40) U-NII-1 Low Channel 5190MHz									
235.49	36.24	QP	303	1.9	H	-11.62	24.62	46.00	-21.38
235.49	37.00	QP	317	1.7	V	-11.62	25.38	46.00	-20.62
4501.32	42.84	PK	0	2.0	H	-1.89	40.95	74.00	-33.05
4501.32	30.25	Ave	0	2.0	H	-1.89	28.36	54.00	-25.64
5149.59	46.17	PK	193	1.4	H	-1.06	45.11	74.00	-28.89
5149.59	38.83	Ave	193	1.4	H	-1.06	37.77	54.00	-16.23
10380.00	38.53	PK	305	1.4	H	5.26	43.79	74.00	-30.21
10380.00	36.19	Ave	305	1.4	H	5.26	41.45	54.00	-12.55
802.11n(HT40) U-NII-1 High channel 5230MHz									
235.49	36.01	QP	334	1.4	H	-11.62	24.39	46.00	-21.61
235.49	36.83	QP	269	1.2	V	-11.62	25.21	46.00	-20.79
4504.04	42.17	PK	252	1.7	H	-1.94	40.23	74.00	-33.77
4504.04	29.80	Ave	252	1.7	H	-1.94	27.86	54.00	-26.14
5141.28	45.22	PK	90	1.9	H	-1.06	44.16	74.00	-29.84
5141.28	38.46	Ave	90	1.9	H	-1.06	37.40	54.00	-16.60
10460.00	40.63	PK	17	1.8	H	5.28	45.91	74.00	-28.09
10480.00	36.93	Ave	17	1.8	H	5.28	42.21	54.00	-11.79

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11n(HT40) U-NII-2A Low Channel 5270MHz									
235.49	45.33	QP	317	1.9	H	-11.62	33.71	46.00	-12.29
235.49	37.80	QP	186	1.1	V	-11.62	26.18	46.00	-19.82
4513.09	40.97	PK	37	1.7	H	-1.89	39.08	74.00	-34.92
4513.09	36.74	Ave	37	1.7	H	-1.89	34.85	54.00	-19.15
5131.60	46.14	PK	71	1.1	H	-1.06	45.08	74.00	-28.92
5131.60	39.55	Ave	71	1.1	H	-1.06	38.49	54.00	-15.51
10540.00	45.83	PK	237	1.2	H	5.26	51.09	74.00	-22.91
10540.00	40.30	Ave	237	1.2	H	5.26	45.56	54.00	-8.44
802.11n(HT40) U-NII-2A High channel 5310MHz									
235.49	45.87	QP	345	1.6	H	-11.62	34.25	46.00	-11.75
235.49	37.15	QP	41	1.9	V	-11.62	25.53	46.00	-20.47
4527.39	40.43	PK	303	1.2	H	-1.94	38.49	74.00	-35.51
4527.39	36.03	Ave	303	1.2	H	-1.94	34.09	54.00	-19.91
5110.97	47.31	PK	146	1.8	H	-1.06	46.25	74.00	-27.75
5110.97	38.59	Ave	146	1.8	H	-1.06	37.53	54.00	-16.47
10620.00	40.62	PK	301	1.7	H	5.28	45.90	74.00	-28.10
10620.00	38.21	Ave	301	1.7	H	5.28	43.49	54.00	-10.51

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11n(HT40) U-NII-2C Low Channel 5510MHz									
235.49	46.81	QP	24	1.9	H	-11.62	35.19	46.00	-10.81
235.49	38.39	QP	302	2.0	V	-11.62	26.77	46.00	-19.23
4537.27	41.11	PK	39	1.0	H	-1.89	39.22	74.00	-34.78
4537.27	38.06	Ave	39	1.0	H	-1.89	36.17	54.00	-17.83
5114.13	45.64	PK	280	1.7	H	-1.06	44.58	74.00	-29.42
5114.13	38.45	Ave	280	1.7	H	-1.06	37.39	54.00	-16.61
11020.00	43.67	PK	348	1.7	H	5.26	48.93	74.00	-25.07
11020.00	38.17	Ave	348	1.7	H	5.26	43.43	54.00	-10.57
802.11n(HT40) U-NII-2C Middle channel 5550MHz									
235.49	47.71	QP	62	1.9	H	-11.62	36.09	46.00	-9.91
235.49	38.15	QP	100	1.5	V	-11.62	26.53	46.00	-19.47
4523.47	41.25	PK	82	1.1	H	-1.94	39.31	74.00	-34.69
4523.47	38.64	Ave	82	1.1	H	-1.94	36.70	54.00	-17.30
5114.57	46.35	PK	230	1.7	H	-1.06	45.29	74.00	-28.71
5114.57	39.49	Ave	230	1.7	H	-1.06	38.43	54.00	-15.57
11100.00	46.88	PK	345	1.1	H	5.28	52.16	74.00	-21.84
11100.00	40.41	Ave	345	1.1	H	5.28	45.69	54.00	-8.31
802.11n(HT40) U-NII-2C High channel 5670MHz									
235.49	48.49	QP	302	1.8	H	-11.62	36.87	46.00	-9.13
235.49	38.39	QP	79	1.7	V	-11.62	26.77	46.00	-19.23
4532.19	40.40	PK	173	1.6	H	-1.94	38.46	74.00	-35.54
4532.19	38.78	Ave	173	1.6	H	-1.94	36.84	54.00	-17.16
5134.18	47.29	PK	227	1.0	H	-1.06	46.23	74.00	-27.77
5134.18	40.53	Ave	227	1.0	H	-1.06	39.47	54.00	-14.53
11340.00	40.82	PK	223	1.8	H	5.28	46.10	74.00	-27.90
11340.00	36.44	Ave	223	1.8	H	5.28	41.72	54.00	-12.28

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11n(HT40) U-NII-3 Low Channel 5755MHz									
235.49	34.54	QP	103	1.1	H	-11.62	22.92	46.00	-23.08
235.49	36.71	QP	174	1.5	V	-11.62	25.09	46.00	-20.91
4533.30	40.41	PK	240	1.3	H	-1.96	38.45	74.00	-35.55
4533.30	28.69	Ave	240	1.3	H	-1.96	26.73	54.00	-27.27
11510.00	40.09	PK	60	1.2	H	5.88	45.97	74.00	-28.03
11510.00	34.69	Ave	60	1.2	H	5.88	40.57	54.00	-13.43
5372.85	46.33	PK	63	1.2	H	-1.01	45.32	74.00	-28.68
5372.85	37.53	Ave	63	1.2	H	-1.01	36.52	54.00	-17.48
802.11n(HT40) U-NII-3 High Channel 5795MHz									
235.49	35.04	QP	154	1.6	H	-11.62	23.42	46.00	-22.58
235.49	37.54	QP	255	1.5	V	-11.62	25.92	46.00	-20.08
4513.37	40.64	PK	125	1.3	H	-1.92	38.72	74.00	-35.28
4513.37	28.30	Ave	125	1.3	H	-1.92	26.38	54.00	-27.62
11590.00	42.32	PK	75	1.3	H	5.63	47.95	74.00	-26.05
11590.00	36.86	Ave	75	1.3	H	5.63	42.49	54.00	-11.51
5382.93	45.63	PK	61	1.6	H	-1.04	44.59	74.00	-29.41
5382.93	39.29	Ave	61	1.6	H	-1.04	38.25	54.00	-15.75

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(VHT40) U-NII-1 Low Channel 5190MHz									
285.49	37.79	QP	349	1.9	H	-11.62	26.17	46.00	-19.83
285.49	40.78	QP	153	1.8	V	-11.62	29.16	46.00	-16.84
4504.35	36.13	PK	321	1.4	H	-1.91	34.22	74.00	-39.78
4504.35	32.47	Ave	321	1.4	H	-1.91	30.56	54.00	-23.44
5127.69	47.95	PK	178	1.9	H	-1.06	46.89	74.00	-27.11
5127.69	38.78	Ave	178	1.9	H	-1.06	37.72	54.00	-16.28
10380.00	39.84	PK	112	1.5	H	5.26	45.10	74.00	-28.90
10380.00	36.39	Ave	112	1.5	H	5.26	41.65	54.00	-12.35
802.11ac(VHT40) U-NII-1 High channel 5230MHz									
285.49	38.09	QP	14	1.4	H	-11.62	26.47	46.00	-19.53
285.49	40.01	QP	39	1.9	V	-11.62	28.39	46.00	-17.61
4532.02	36.38	PK	239	1.5	H	-1.93	34.45	74.00	-39.55
4532.02	33.02	Ave	239	1.5	H	-1.93	31.09	54.00	-22.91
5133.19	48.14	PK	148	1.4	H	-1.06	47.08	74.00	-26.92
5133.19	38.43	Ave	148	1.4	H	-1.06	37.37	54.00	-16.63
10460.00	42.38	PK	242	1.5	H	5.28	47.66	74.00	-26.34
10460.00	37.04	Ave	242	1.5	H	5.28	42.32	54.00	-11.68

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(VHT40) U-NII-2A Low Channel 5270MHz									
285.49	45.06	QP	188	1.8	H	-11.62	33.44	46.00	-12.56
285.49	39.65	QP	313	1.5	V	-11.62	28.03	46.00	-17.97
4536.27	42.40	PK	338	1.3	H	-1.89	40.51	74.00	-33.49
4536.27	38.60	Ave	338	1.3	H	-1.89	36.71	54.00	-17.29
5139.77	46.49	PK	103	1.2	H	-1.06	45.43	74.00	-28.57
5139.77	39.92	Ave	103	1.2	H	-1.06	38.86	54.00	-15.14
10540.00	38.85	PK	211	1.6	H	5.26	44.11	74.00	-29.89
10540.00	49.03	Ave	211	1.6	H	5.26	54.29	54.00	0.29
802.11ac(VHT40) U-NII-2A High channel 5310MHz									
285.49	44.52	QP	284	1.7	H	-11.62	32.90	46.00	-13.10
285.49	40.00	QP	183	1.9	V	-11.62	28.38	46.00	-17.62
4521.54	43.21	PK	263	1.1	H	-1.94	41.27	74.00	-32.73
4521.54	38.85	Ave	263	1.1	H	-1.94	36.91	54.00	-17.09
5136.26	47.96	PK	58	1.9	H	-1.06	46.90	74.00	-27.10
5136.26	39.35	Ave	58	1.9	H	-1.06	38.29	54.00	-15.71
10620.00	-0.62	PK	192	1.4	H	5.28	4.66	74.00	-69.34
10620.00	39.53	Ave	192	1.4	H	5.28	44.81	54.00	-9.19

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(VHT40) U-NII-2C Low Channel 5510MHz									
285.49	48.19	QP	46	1.7	H	-11.62	36.57	46.00	-9.43
285.49	39.99	QP	226	1.5	V	-11.62	28.37	46.00	-17.63
4500.97	-1.38	PK	197	1.7	H	-1.89	-3.27	74.00	-77.27
4500.97	39.52	Ave	197	1.7	H	-1.89	37.63	54.00	-16.37
5136.83	45.06	PK	160	1.4	H	-1.06	44.00	74.00	-30.00
5136.83	39.20	Ave	160	1.4	H	-1.06	38.14	54.00	-15.86
11020.00	37.29	PK	242	1.2	H	5.26	42.55	74.00	-31.45
11020.00	48.04	Ave	242	1.2	H	5.26	53.30	54.00	-0.70
802.11ac(VHT40) U-NII-2C Middle channel 5550MHz									
285.49	47.83	QP	348	1.1	H	-11.62	36.21	46.00	-9.79
285.49	40.94	QP	162	1.0	V	-11.62	29.32	46.00	-16.68
4521.06	-1.94	PK	352	1.5	H	-1.94	-3.88	74.00	-77.88
4521.06	39.32	Ave	352	1.5	H	-1.94	37.38	54.00	-16.62
5149.58	45.01	PK	170	1.9	H	-1.06	43.95	74.00	-30.05
5149.58	41.18	Ave	170	1.9	H	-1.06	40.12	54.00	-13.88
11100.00	36.57	PK	82	1.4	H	5.28	41.85	74.00	-32.15
11100.00	49.69	Ave	82	1.4	H	5.28	54.97	54.00	0.97
802.11ac(VHT40) U-NII-2C High channel 5670MHz									
285.49	47.53	QP	7	1.1	H	-11.62	35.91	46.00	-10.09
285.49	41.30	QP	120	1.2	V	-11.62	29.68	46.00	-16.32
4519.16	-1.24	PK	225	1.3	H	-1.94	-3.18	74.00	-77.18
4519.16	38.68	Ave	225	1.3	H	-1.94	36.74	54.00	-17.26
5144.29	46.42	PK	264	1.3	H	-1.06	45.36	74.00	-28.64
5144.29	40.51	Ave	264	1.3	H	-1.06	39.45	54.00	-14.55
11340.00	0.32	PK	81	1.1	H	5.28	5.60	74.00	-68.40
11340.00	39.52	Ave	81	1.1	H	5.28	44.80	54.00	-9.20

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(VHT40) U-NII-3 Low Channel 5755MHz									
285.49	40.82	QP	348	2.0	H	-11.62	29.20	46.00	-16.80
285.49	40.32	QP	8	1.6	V	-11.62	28.70	46.00	-17.30
4511.21	38.06	PK	21	1.7	H	-1.92	36.14	74.00	-37.86
4511.21	27.98	Ave	21	1.7	H	-1.92	26.06	54.00	-27.94
11510.00	40.64	PK	198	1.1	H	5.88	46.52	74.00	-27.48
11510.00	36.38	Ave	198	1.1	H	5.88	42.26	54.00	-11.74
5366.22	46.91	PK	253	1.1	H	-1.07	45.84	74.00	-28.16
5366.22	39.77	Ave	253	1.1	H	-1.07	38.70	54.00	-15.30
802.11ac(VHT40) U-NII-3 High Channel 5795MHz									
285.49	40.51	QP	228	1.8	H	-11.62	28.89	46.00	-17.11
285.49	40.74	QP	182	1.8	V	-11.62	29.12	46.00	-16.88
4509.88	37.55	PK	280	1.4	H	-1.86	35.69	74.00	-38.31
4509.88	27.43	Ave	280	1.4	H	-1.86	25.57	54.00	-28.43
11590.00	42.65	PK	350	1.2	H	5.63	48.28	74.00	-25.72
11590.00	37.60	Ave	350	1.2	H	5.63	43.23	54.00	-10.77
5374.07	46.98	PK	102	1.2	H	-1.03	45.95	74.00	-28.05
5374.07	37.37	Ave	102	1.2	H	-1.03	36.34	54.00	-17.66

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(VHT80) U-NII-1 Low Channel 5210MHz									
285.49	41.17	QP	14	1.7	H	-11.62	29.55	46.00	-16.45
285.49	38.15	QP	163	1.7	V	-11.62	26.53	46.00	-19.47
4537.21	27.57	PK	183	1.3	H	-1.88	25.69	74.00	-48.31
4537.21	43.61	Ave	183	1.3	H	-1.88	41.73	54.00	-12.27
5126.79	36.79	PK	149	1.6	H	-1.06	35.73	74.00	-38.27
5126.79	48.74	Ave	149	1.6	H	-1.06	47.68	54.00	-6.32
10420.00	41.14	PK	199	1.1	H	4.65	45.79	74.00	-28.21
10420.00	36.72	Ave	199	1.1	H	4.65	41.37	54.00	-12.63
802.11ac(VHT80) U-NII-2A Low Channel 5290MHz									
285.49	37.97	QP	3	1.1	H	-11.62	26.35	46.00	-19.65
285.49	27.35	QP	213	1.9	V	-11.62	15.73	46.00	-30.27
4539.40	43.10	PK	137	1.7	H	-1.88	41.22	74.00	-32.78
4539.40	36.23	Ave	137	1.7	H	-1.88	34.35	54.00	-19.65
5147.38	49.12	PK	249	1.7	H	-1.06	48.06	74.00	-25.94
5147.38	42.02	Ave	249	1.7	H	-1.06	40.96	54.00	-13.04
10580.00	38.84	PK	279	1.8	H	4.65	43.49	74.00	-30.51
10580.00	46.26	Ave	279	1.8	H	4.65	50.91	54.00	-3.09

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11ac(VHT80) U-NII-2C Low Channel 5530MHz									
285.49	27.94	QP	78	1.7	H	-11.62	16.32	46.00	-29.68
285.49	42.71	QP	286	1.9	V	-11.62	31.09	46.00	-14.91
4536.31	36.96	PK	347	1.2	H	-1.88	35.08	74.00	-38.92
4536.31	49.15	Ave	347	1.2	H	-1.88	47.27	54.00	-6.73
5137.79	41.41	PK	222	1.7	H	-1.06	40.35	74.00	-33.65
5137.79	38.31	Ave	222	1.7	H	-1.06	37.25	54.00	-16.75
11060.00	45.50	PK	132	1.7	H	4.65	50.15	74.00	-23.85
11060.00	40.22	Ave	132	1.7	H	4.65	44.87	54.00	-9.13
802.11ac(VHT80) U-NII-3 Low channel 5775MHz									
285.49	37.59	QP	198	1.8	H	-11.62	25.97	46.00	-20.03
285.49	27.56	QP	278	1.4	V	-11.62	15.94	46.00	-30.06
4503.06	43.11	PK	116	1.8	H	-1.85	41.26	74.00	-32.74
4503.06	41.47	Ave	116	1.8	H	-1.85	39.62	54.00	-14.38
11550.00	42.53	PK	311	1.4	H	4.83	47.36	74.00	-26.64
11550.00	38.32	Ave	311	1.4	H	4.83	43.15	54.00	-10.85
5373.94	45.24	PK	343	1.0	H	-1.14	44.10	74.00	-29.90
5373.94	38.88	Ave	343	1.0	H	-1.14	37.74	54.00	-16.26

Test Frequency: 18GHz~40GHz

The measurements were more than 20 dB below the limit and not reported.

9 Duty cycle

Test Requirement:	FCC 47CFR Part 15 Section 15.407 KDB789033 D02 General U-NII Test Procedures New Rules v02r01, Section (B)
Test Method:	ANSI C63.10: 2013
Test Limit:	N/A
Test Result:	PASS
Remark:	Through Pre-scan, and found 802.11a at lowest channel is the worst case. Only the worst case is recorded in the report.

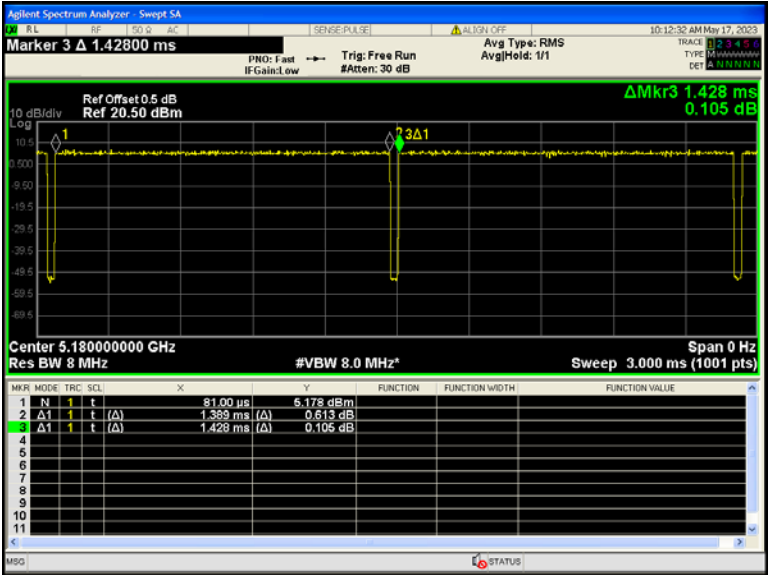
9.1 Summary of Test Results

802.11a(HT20) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
36	1.389	1.428	97.27
52	1.374	1.425	96.42
100	1.385	1.430	96.85
149	1.385	1.430	96.85
802.11n(HT20) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
36	1.296	1.335	97.08
52	1.289	1.335	96.55
100	1.290	1.335	96.63
149	1.290	1.335	96.63
802.11ac(VHT20) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
36	1.308	1.347	97.10
52	1.299	1.345	96.58
100	1.290	1.335	96.63
149	1.305	1.350	96.67
802.11n(HT40) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
38	0.645	0.682	94.57
54	0.647	0.684	94.59
102	0.644	0.682	94.43
151	0.644	0.684	94.15

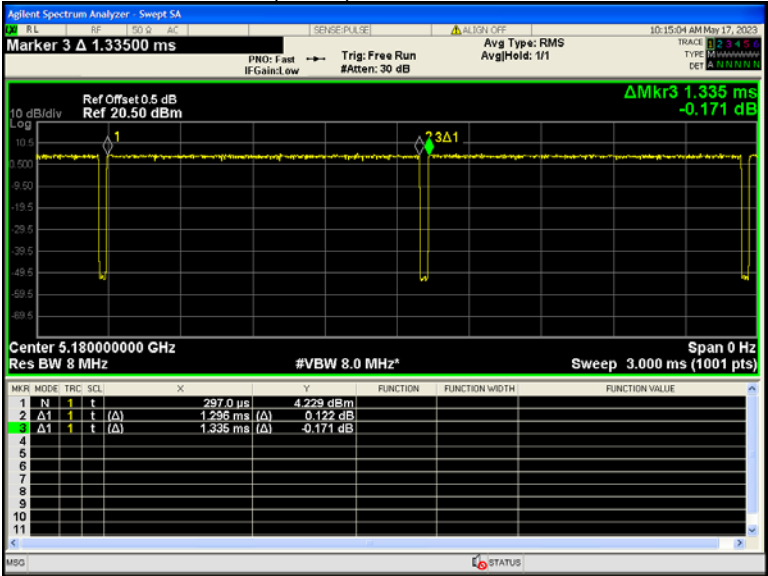
802.11ac(VHT40) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
38	0.651	0.688	94.62
54	0.649	0.686	94.61
102	0.648	0.686	94.46
151	0.648	0.686	94.46
802.11ac(VHT80) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
38	0.323	0.359	89.97
54	0.322	0.359	89.69
102	0.322	0.358	89.94
151	0.323	0.359	89.97

Test result plots shown as follows:

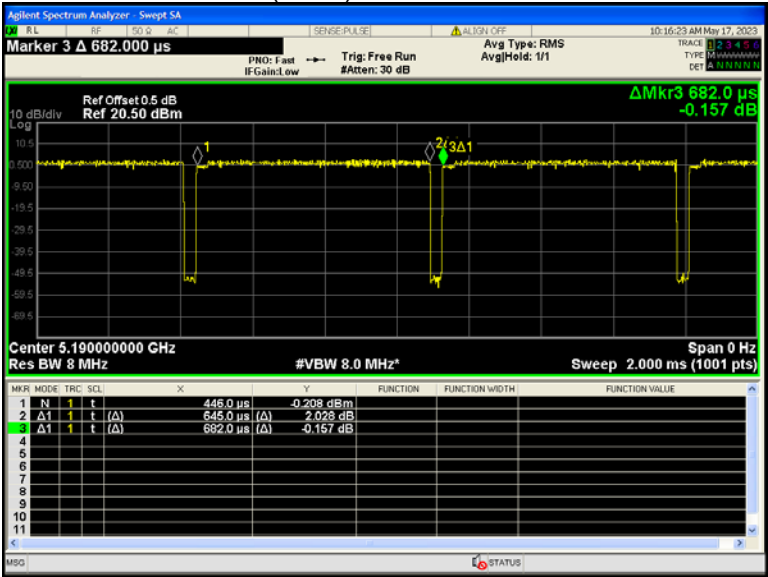
802.11a U-NII-1 Low channel



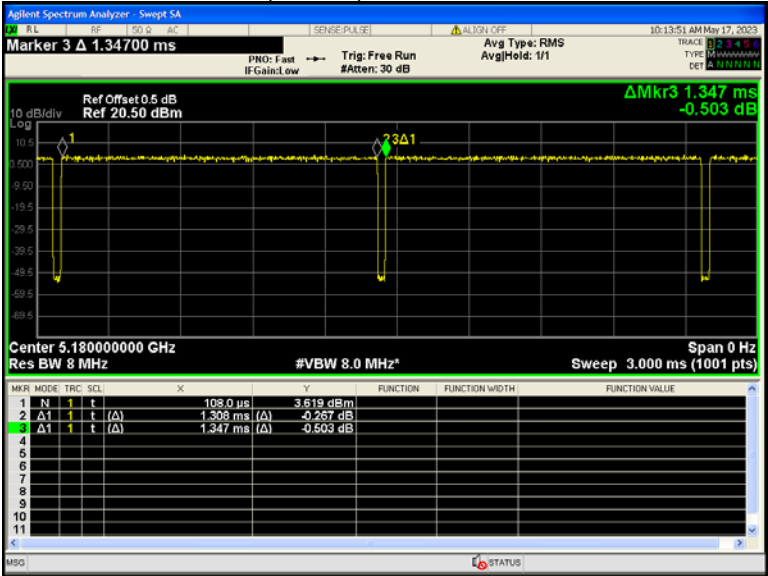
802.11n(HT20) U-NII-1 Low channel



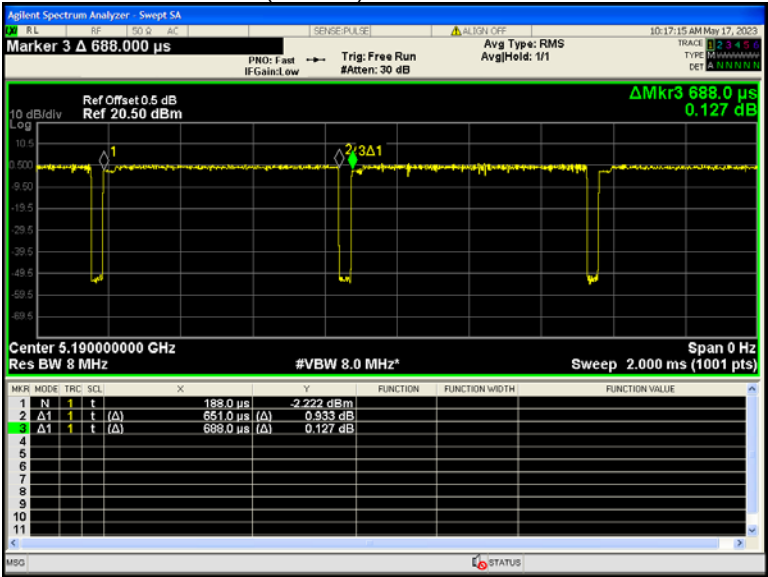
802.11n(HT40) U-NII-1 Low channel



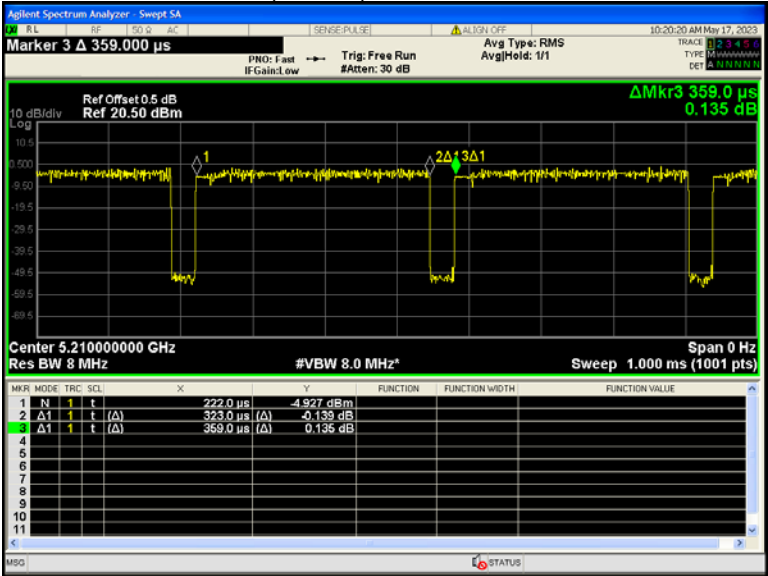
802.11ac(VHT20) U-NII-1 Low channel



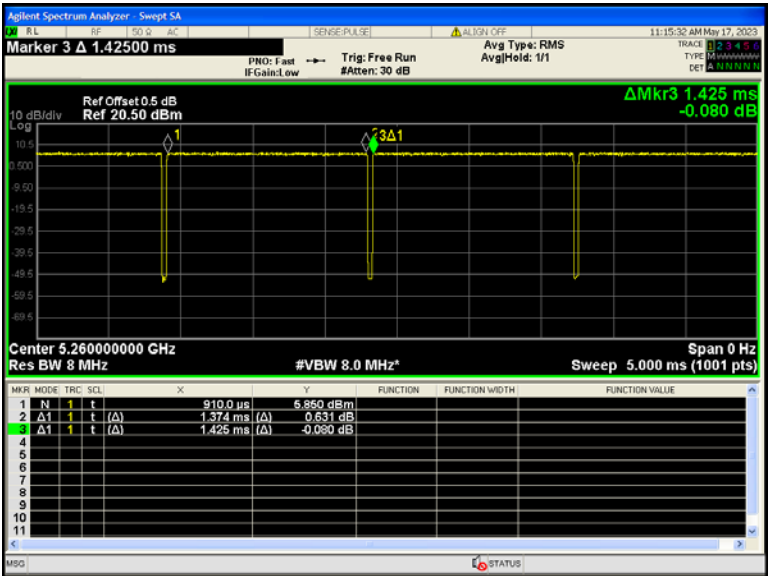
802.11ac(VHT40) U-NII-1 Low channel



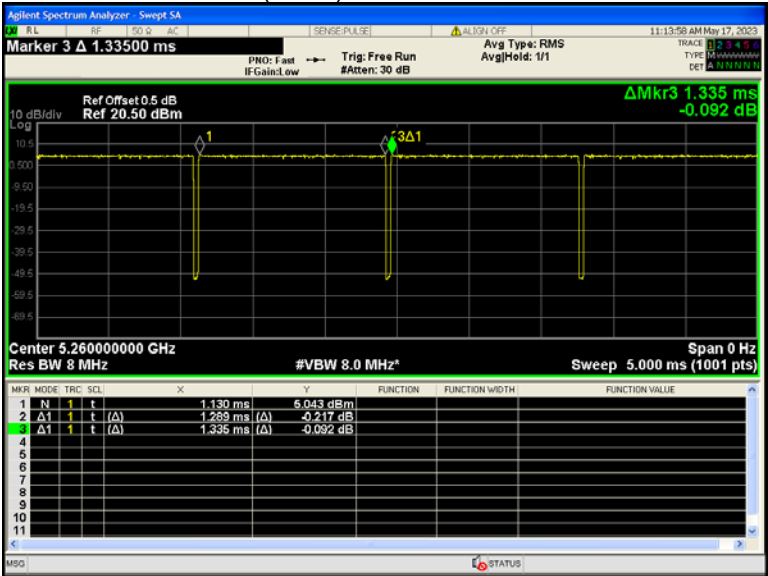
802.11ac(VHT80) U-NII-1 Low channel



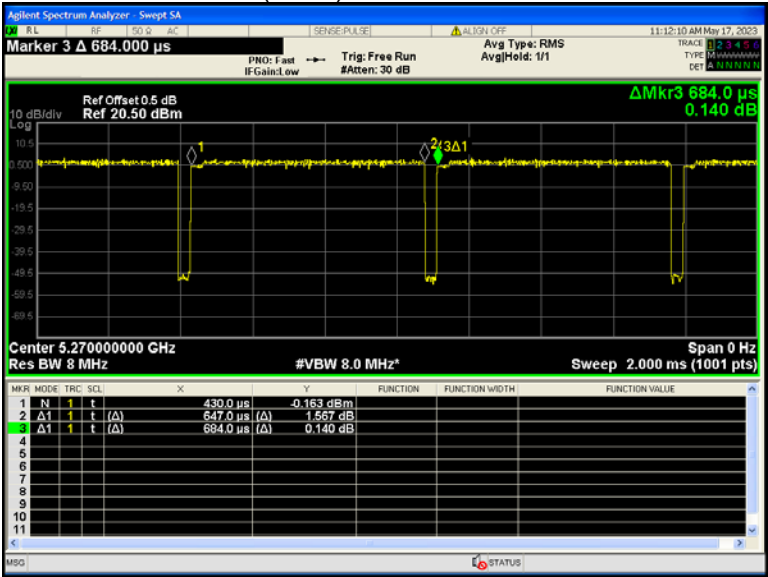
802.11a U-NII-2A Low channel



802.11n(HT20) U-NII-2A Low channel



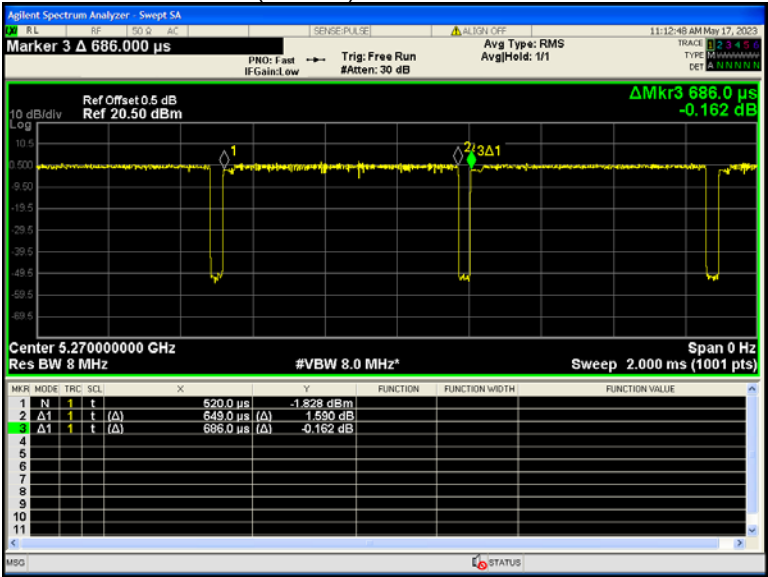
802.11n(HT40) U-NII-2A Low channel



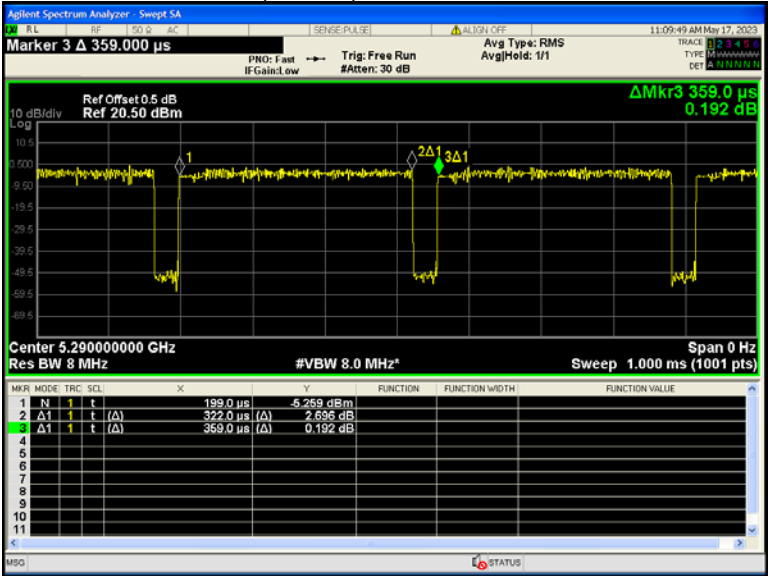
802.11ac(VHT20) U-NII-2A Low channel



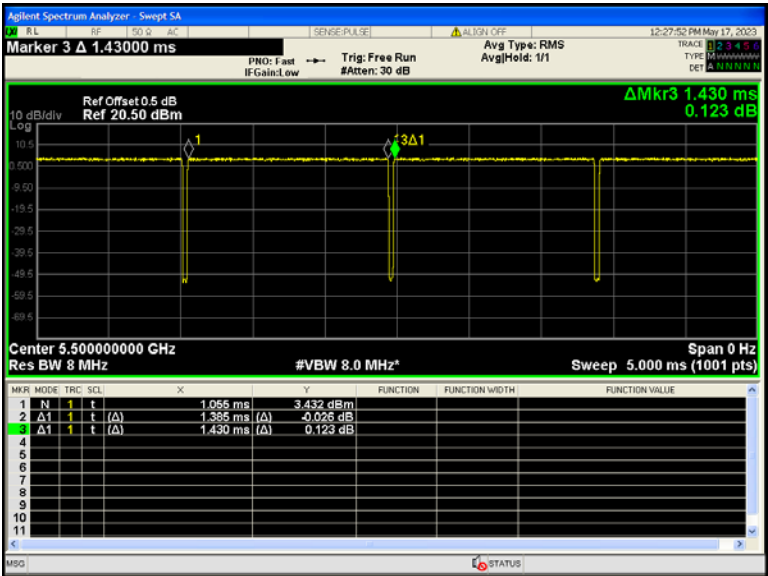
802.11ac(VHT40) U-NII-2A Low channel



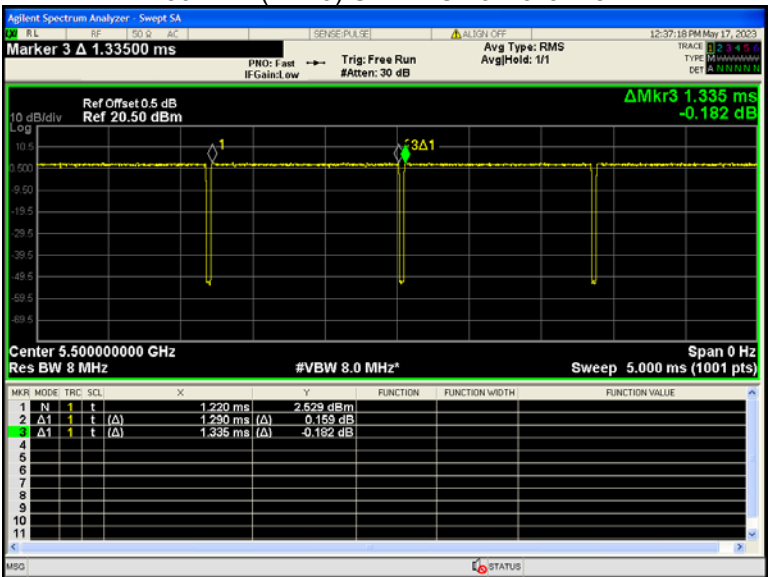
802.11ac(VHT80) U-NII-2A Low channel



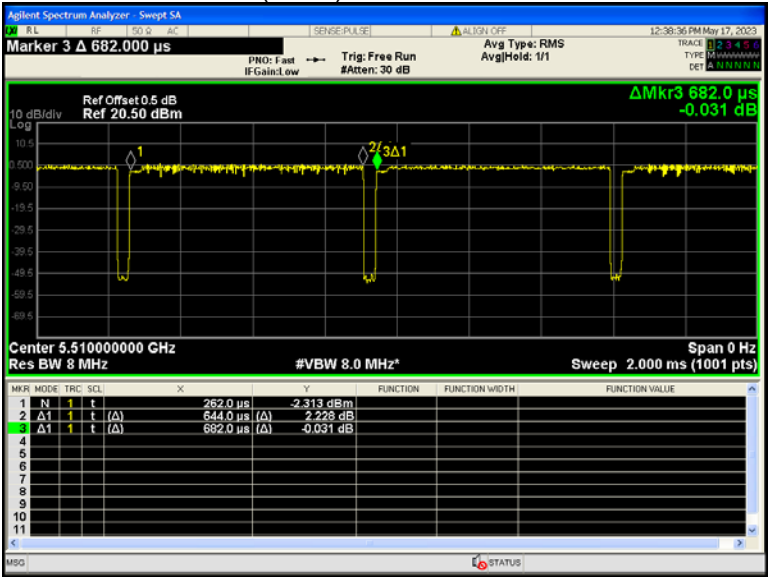
802.11a U-NII-2C Low channel



802.11n(HT20) U-NII-2C Low channel



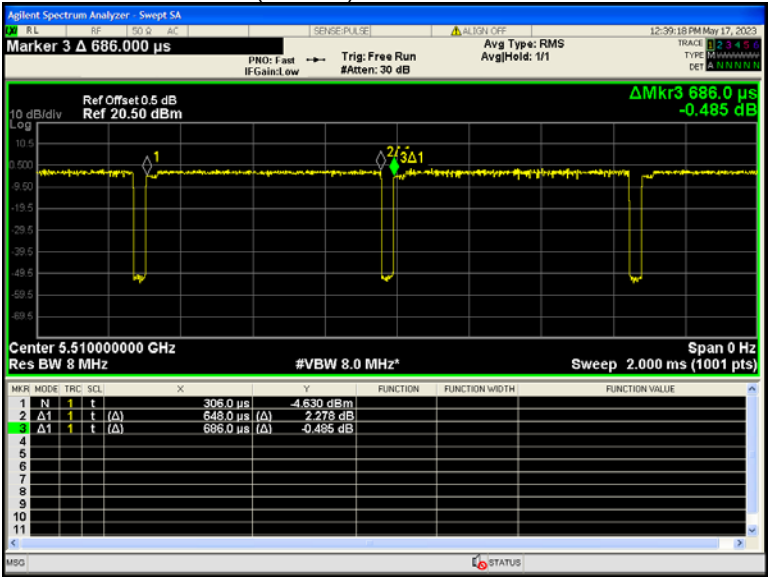
802.11n(HT40) U-NII-2C Low channel



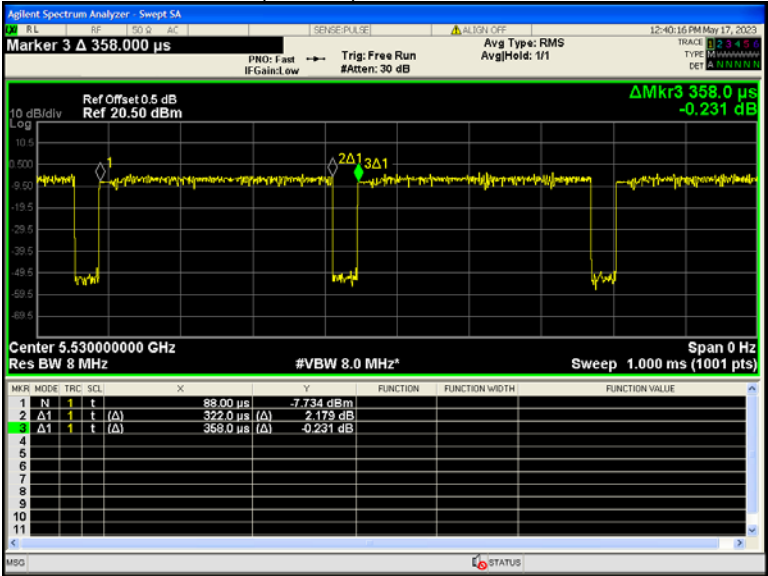
802.11ac(VHT20) U-NII-2C Low channel



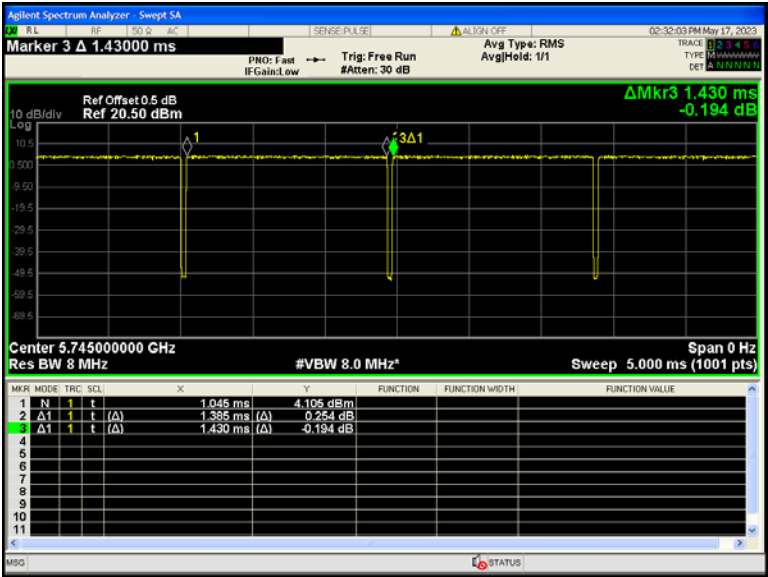
802.11ac(VHT40) U-NII-2C Low channel



802.11ac(VHT80) U-NII-2C Low channel



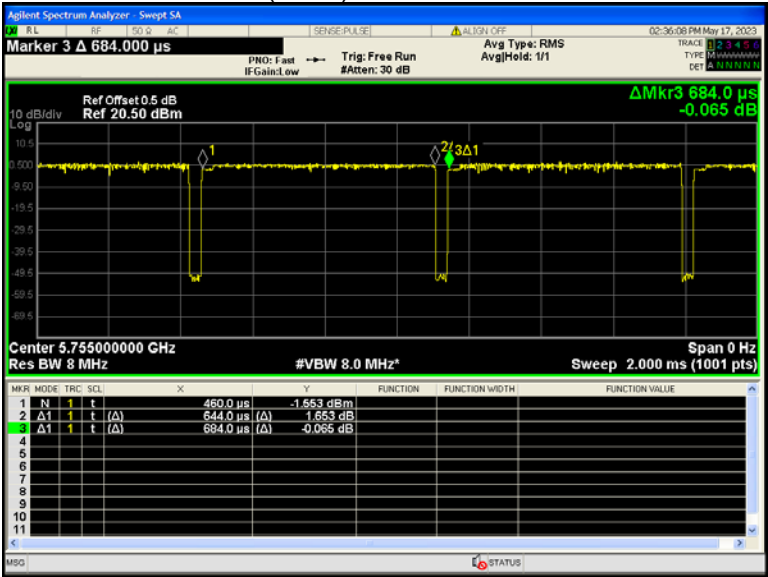
802.11a U-NII-3 Low channel



802.11n(HT20) U-NII-3 Low channel



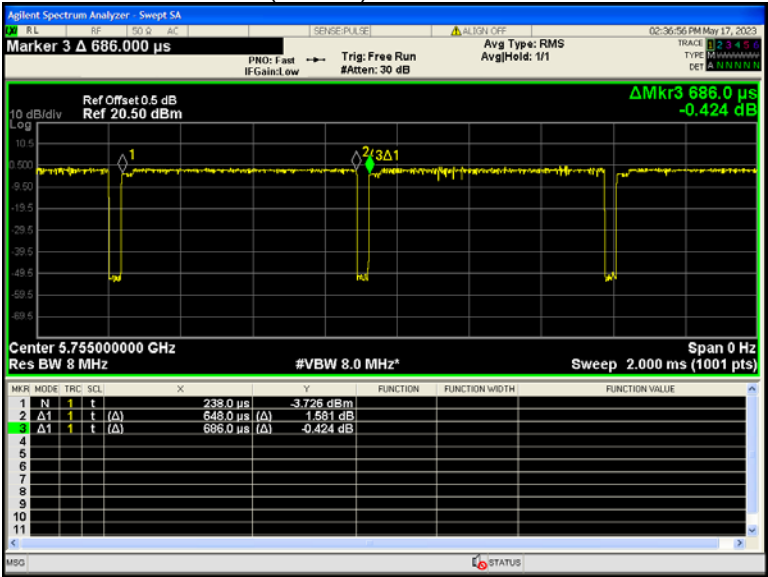
802.11n(HT40) U-NII-3 Low channel



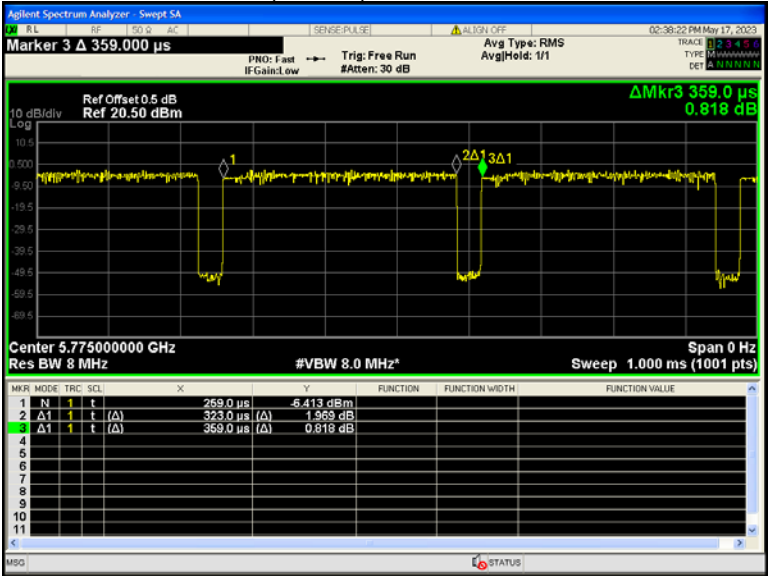
802.11ac(VHT20) U-NII-3 Low channel



802.11ac(VHT40) U-NII-3 Low channel



802.11ac(VHT80) U-NII-3 Low channel



10 Band Edge

Test Requirement:	FCC 47CFR Part 15 Section 15.407
Test Method:	ANSI C63.10 2013
Test Limit:	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27dBm/MHz. For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz. For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz. For transmitters operating in the 5.725-5.85 GHz band: (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. (ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.
Test Result:	PASS

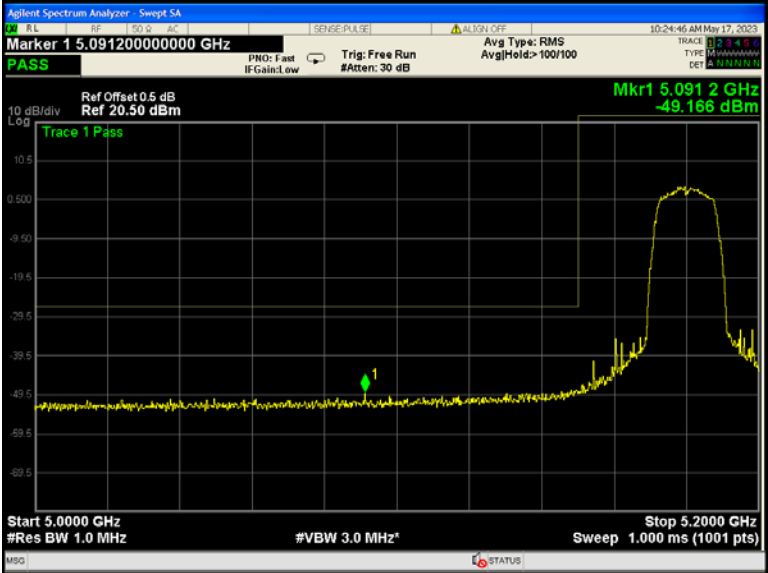
10.1 Test Produce

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

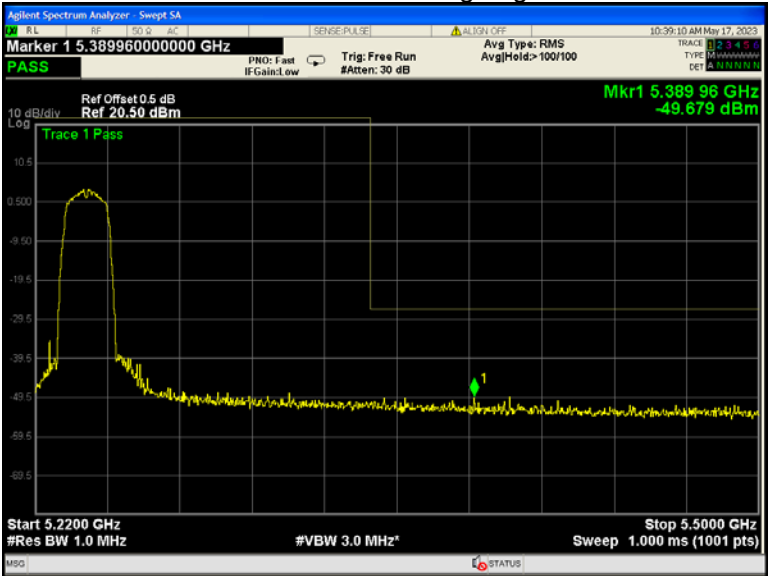
10.2 Test Result

Test result plots shown as follows:

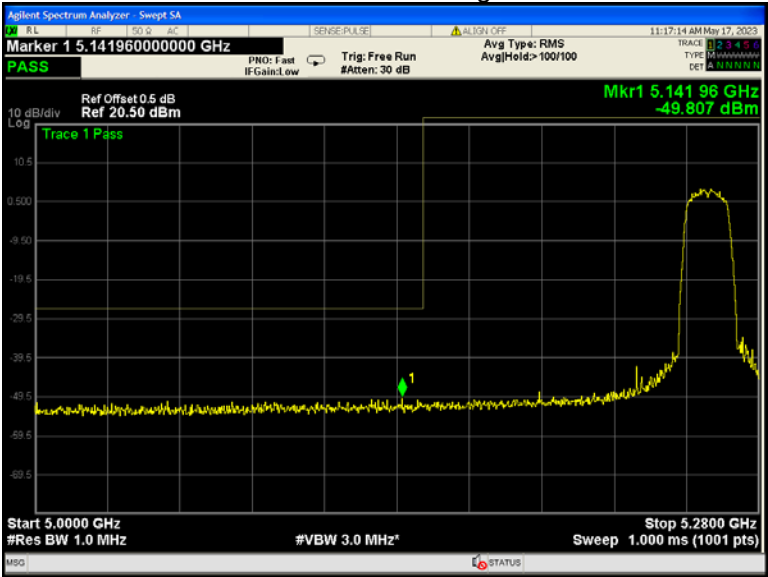
802.11a U-NII-1 Band edge-left side



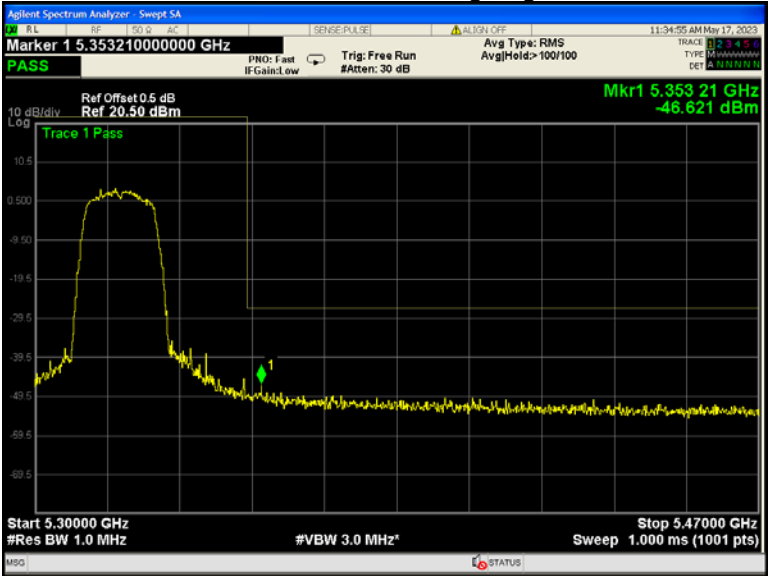
802.11a U-NII-1 Band edge-right side



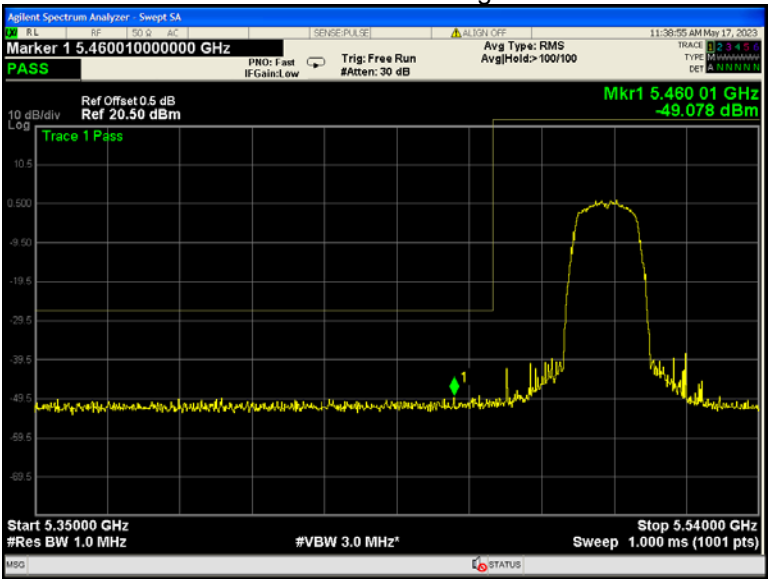
802.11a U-NII-2A Band edge-left side



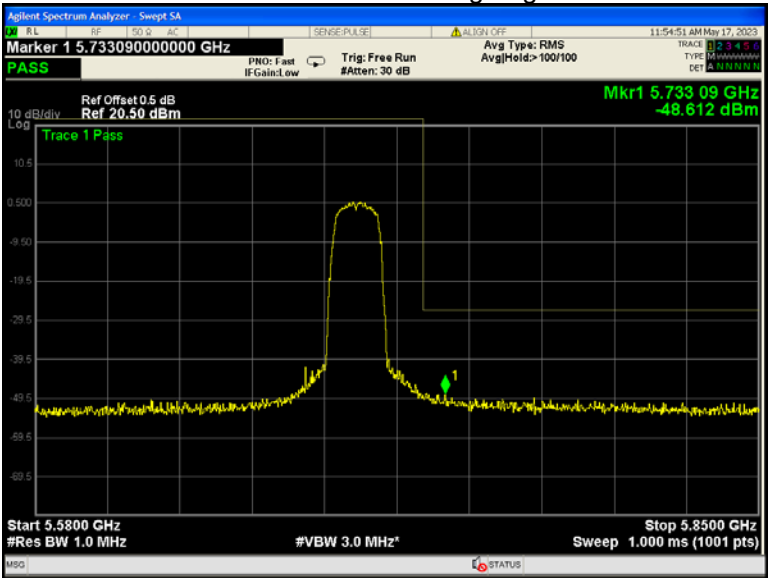
802.11a U-NII-2A Band edge-right side



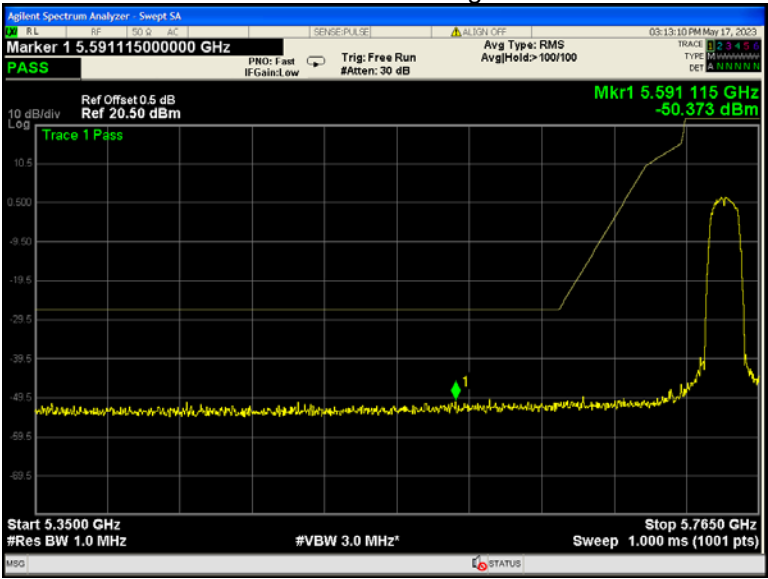
802.11a U-NII-2C Band edge-left side



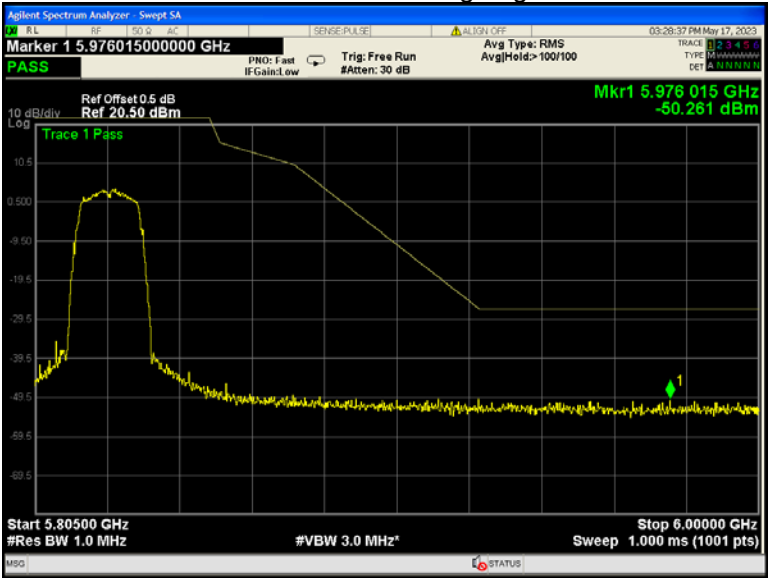
802.11a U-NII-2C Band edge-right side



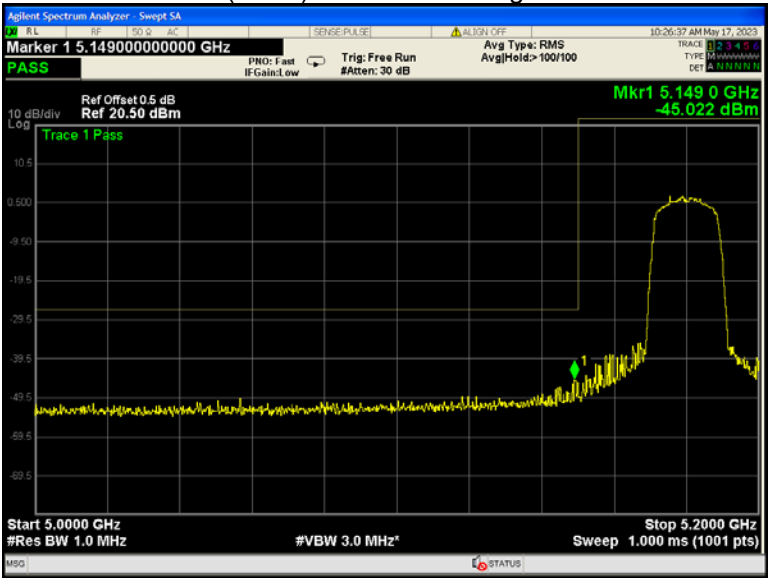
802.11a U-NII-3 Band edge-left side



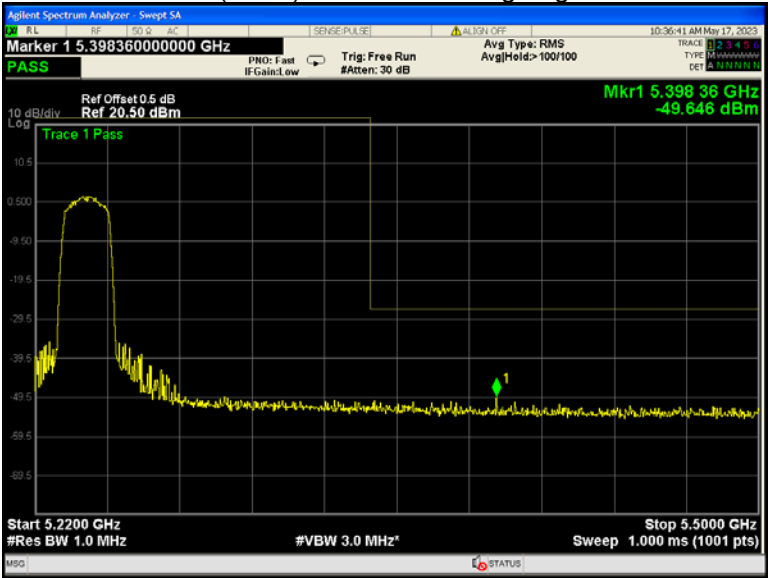
802.11a U-NII-3 Band edge-right side



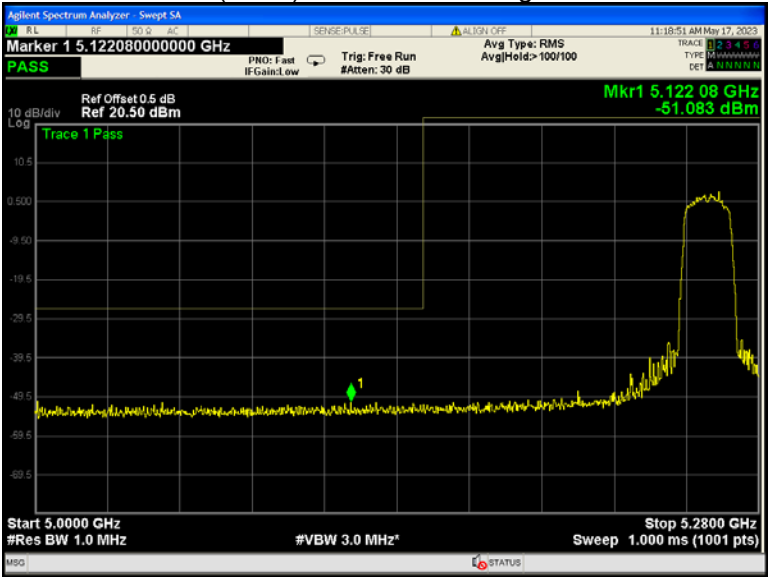
802.11n(HT20) U-NII-1 Band edge-left side



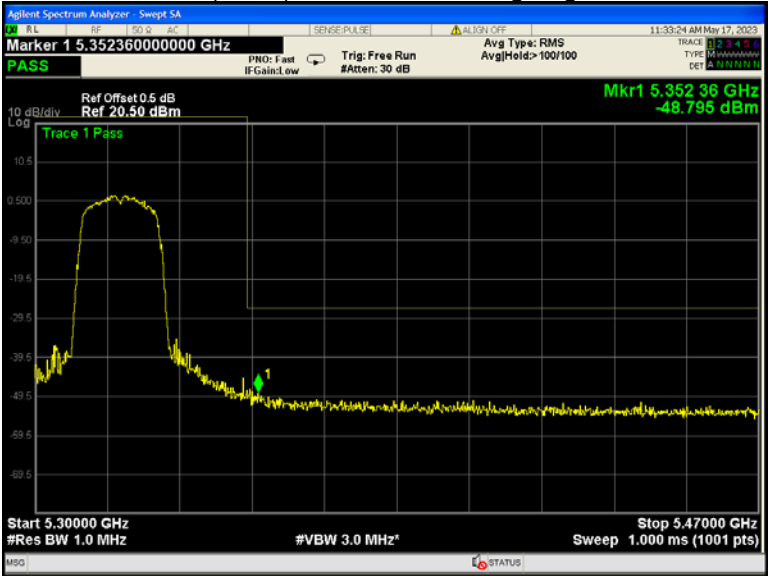
802.11n(HT20) U-NII-1 Band edge-right side



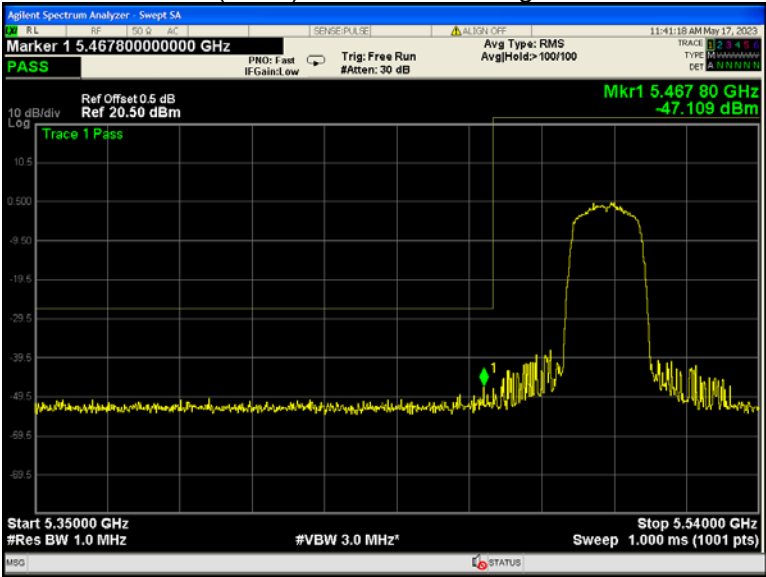
802.11n(HT20) U-NII-2A Band edge-left side



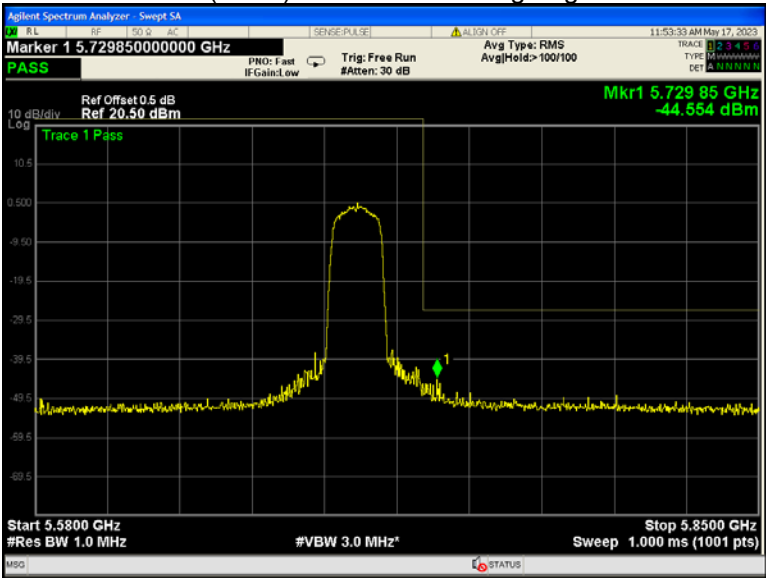
802.11n(HT20) U-NII-2A Band edge-right side



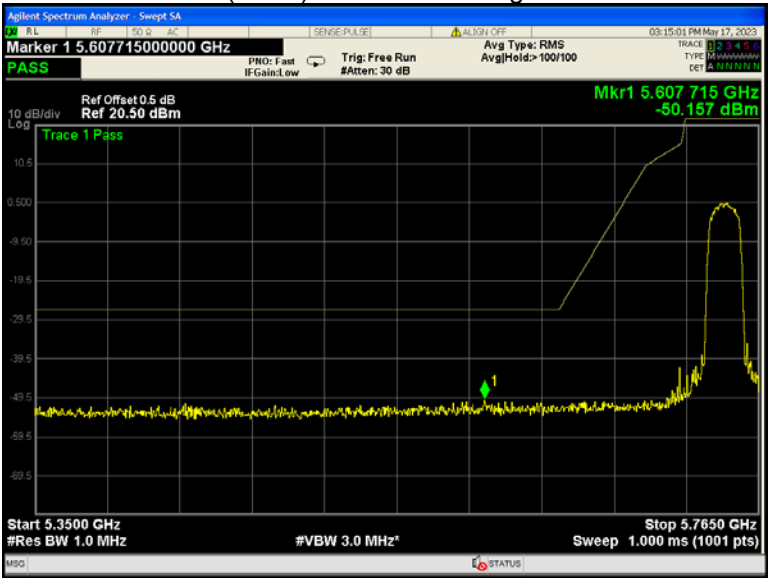
802.11n(HT20) U-NII-2C Band edge-left side



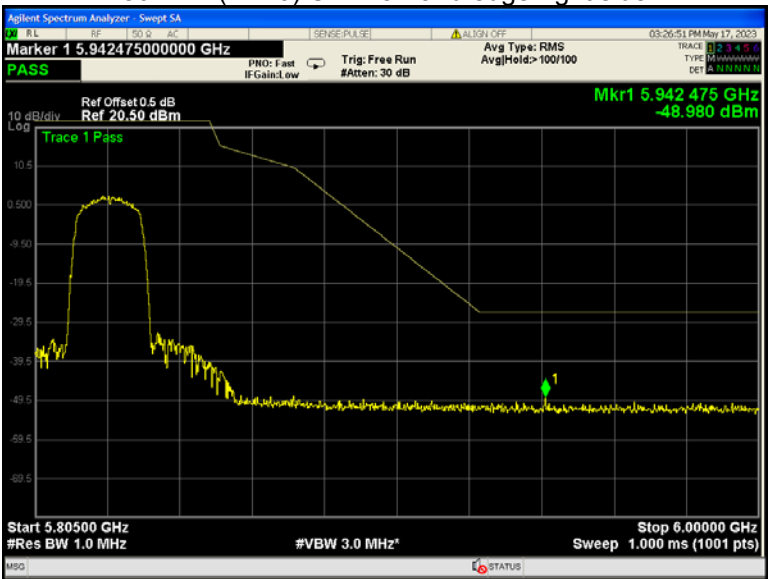
802.11n(HT20) U-NII-2C Band edge-right side



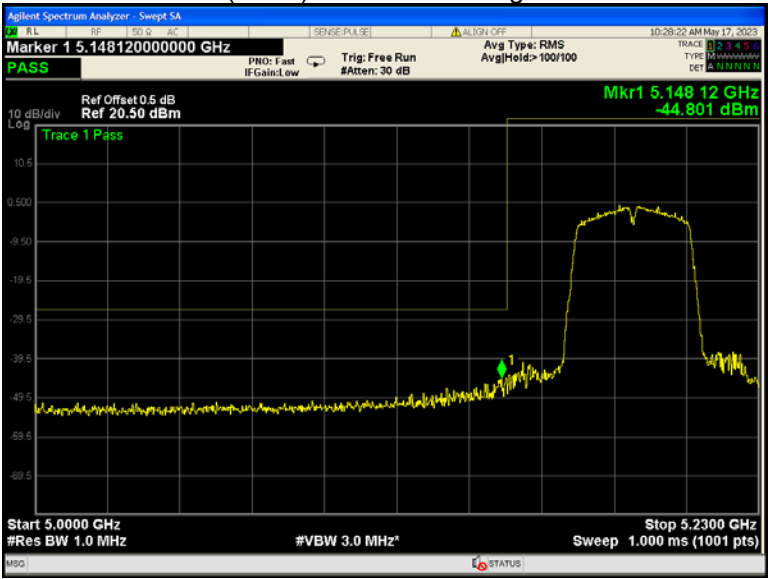
802.11n(HT20) U-NII-3 Band edge-left side



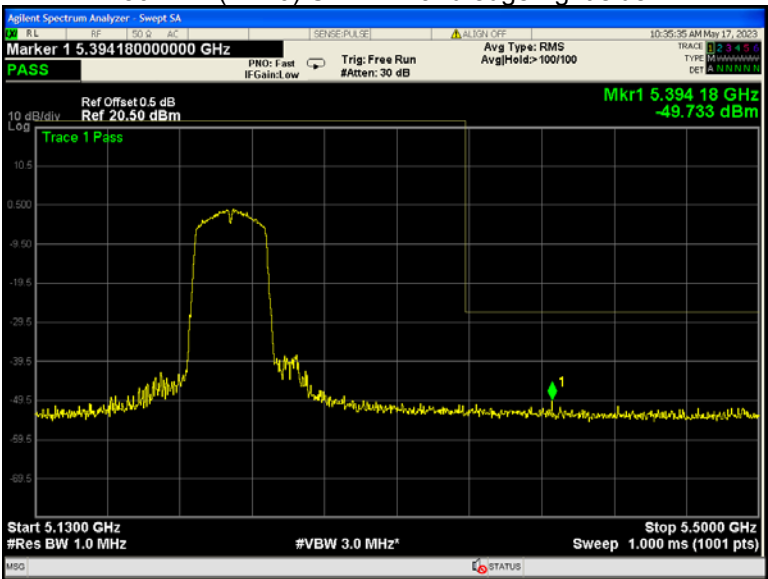
802.11n(HT20) U-NII-3 Band edge-right side



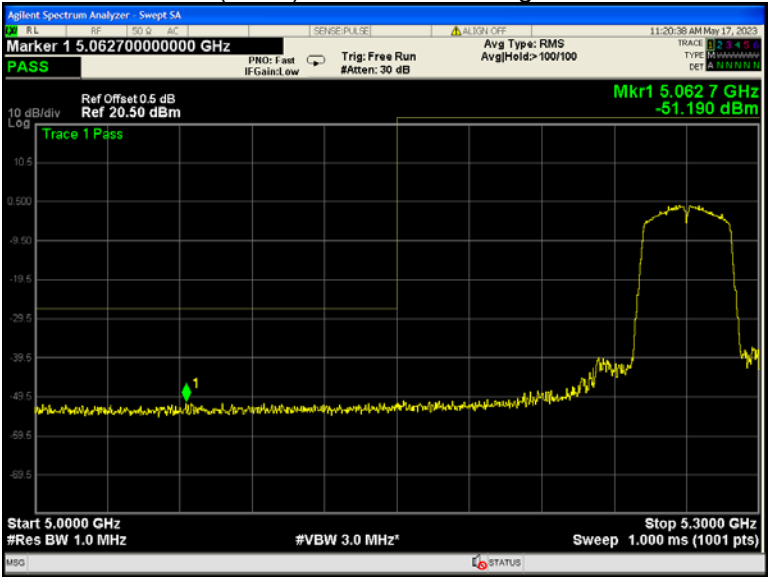
802.11n(HT40) U-NII-1 Band edge-left side



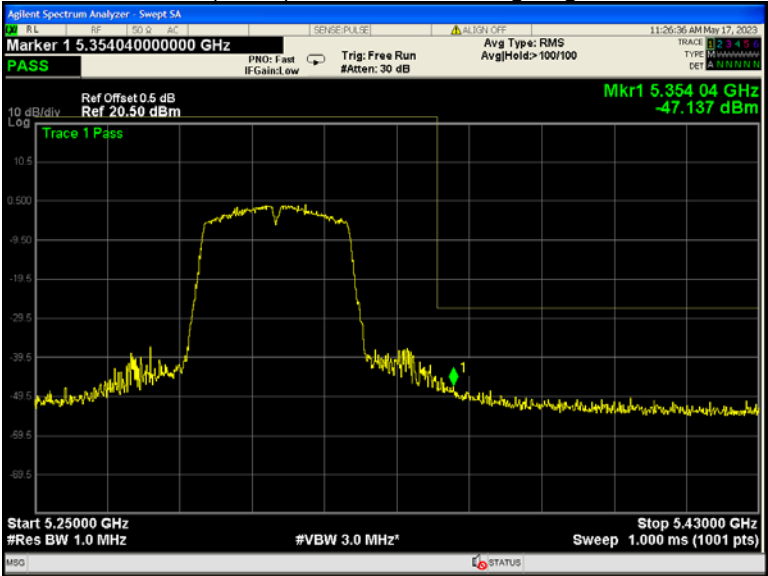
802.11n(HT40) U-NII-1 Band edge-right side



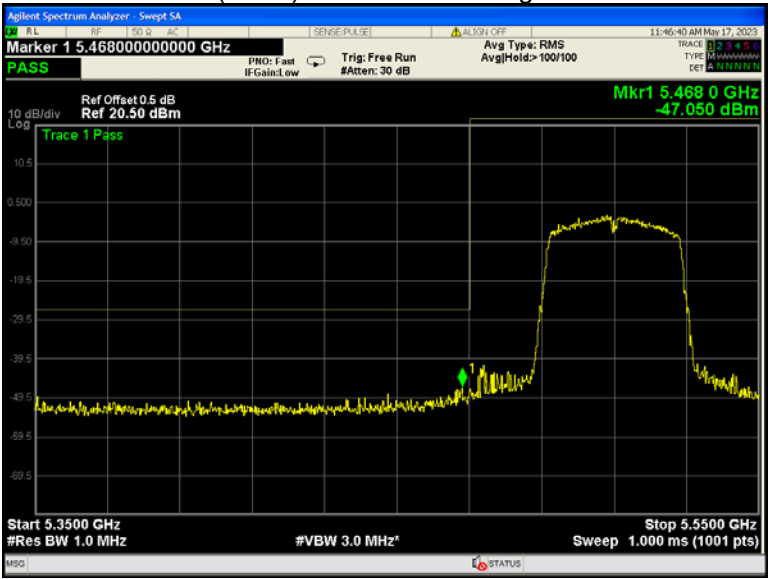
802.11n(HT40) U-NII-2A Band edge-left side



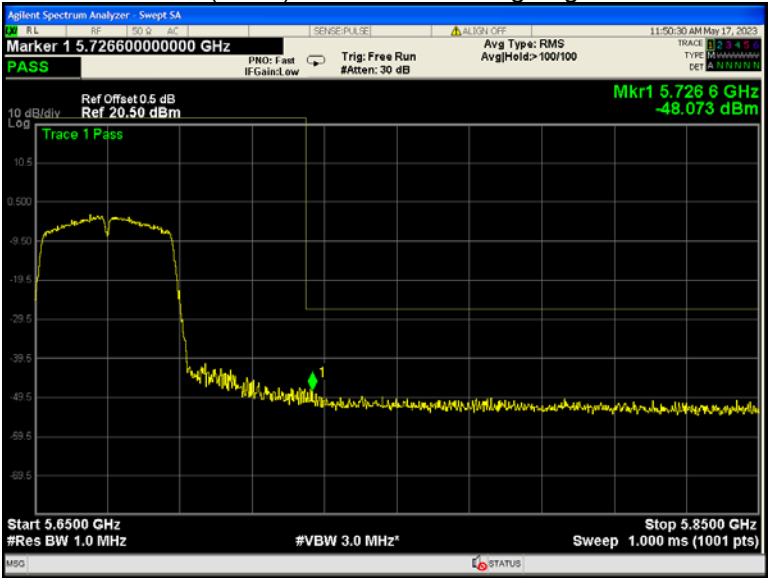
802.11n(HT40) U-NII-2A Band edge-right side



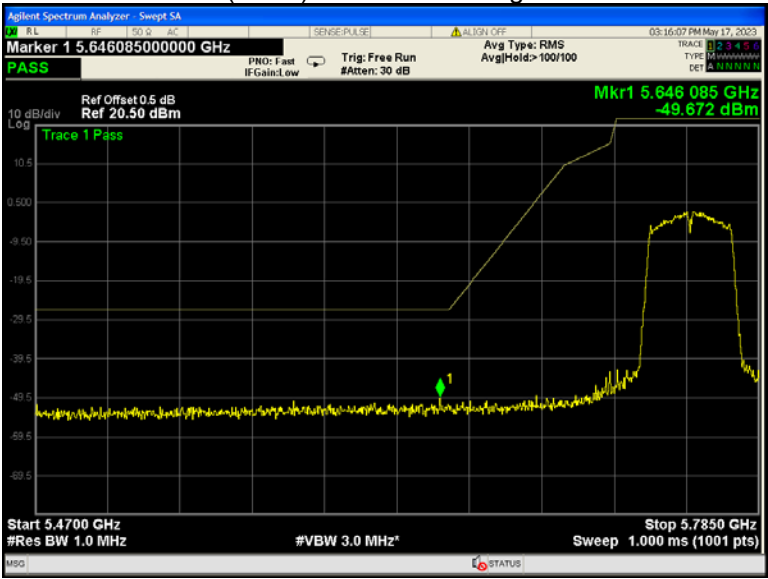
802.11n(HT40) U-NII-2C Band edge-left side



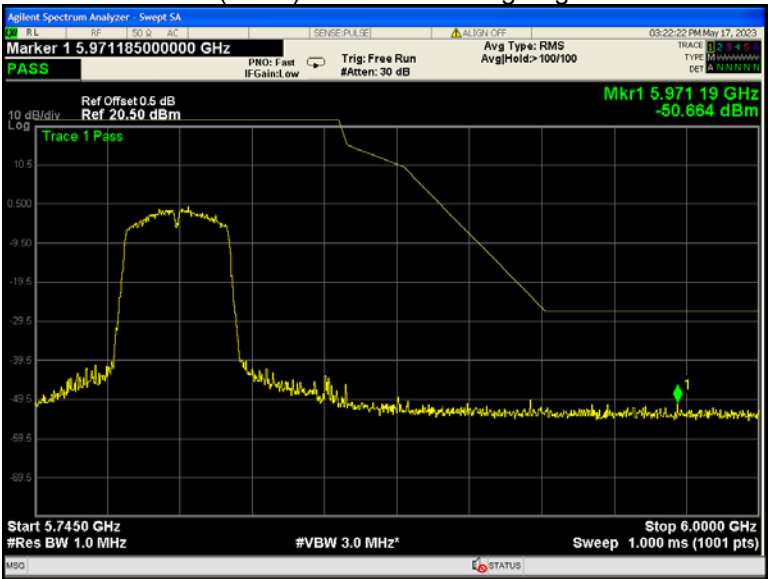
802.11n(HT40) U-NII-2C Band edge-right side



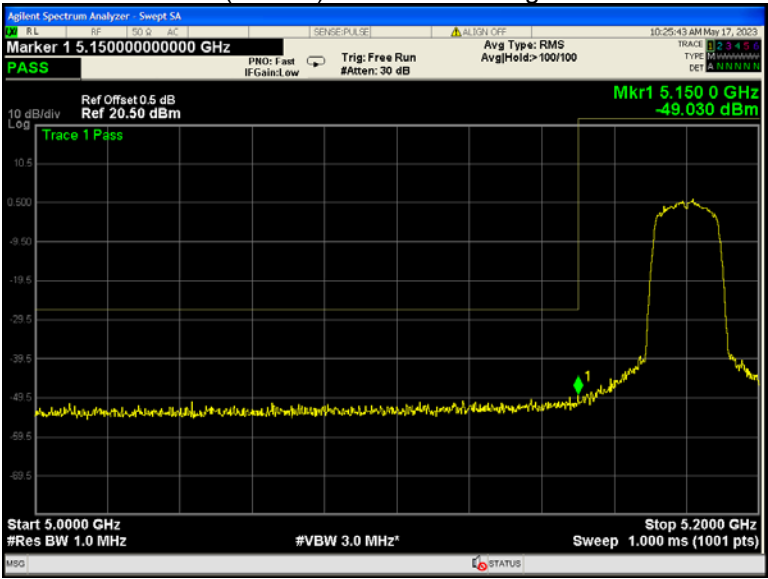
802.11n(HT40) U-NII-3 Band edge-left side



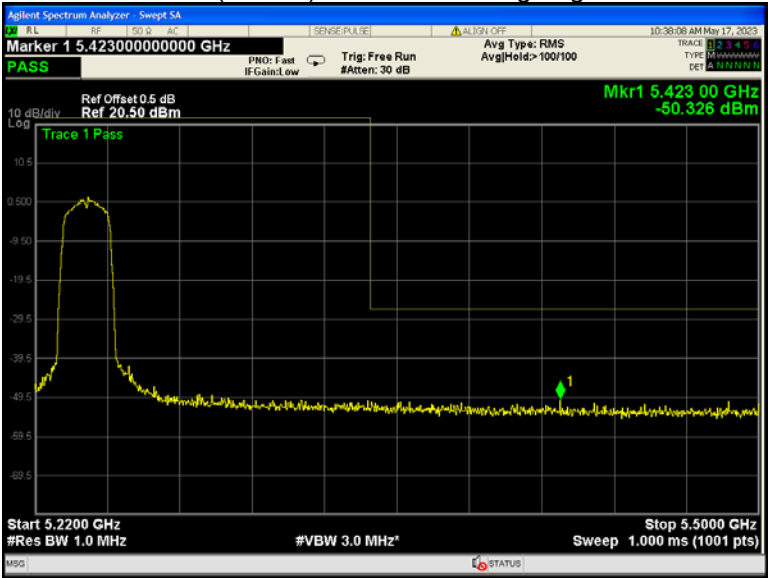
802.11n(HT40) U-NII-3 Band edge-right side



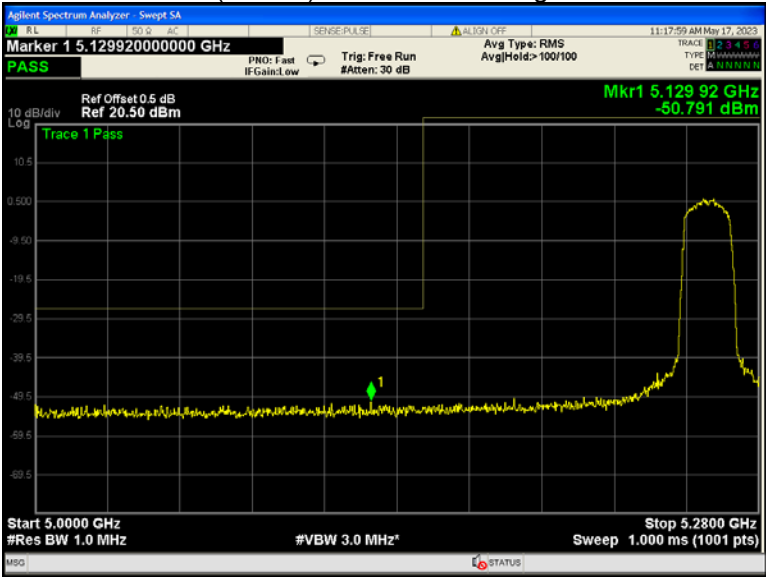
802.11ac(VHT20) U-NII-1 Band edge-left side



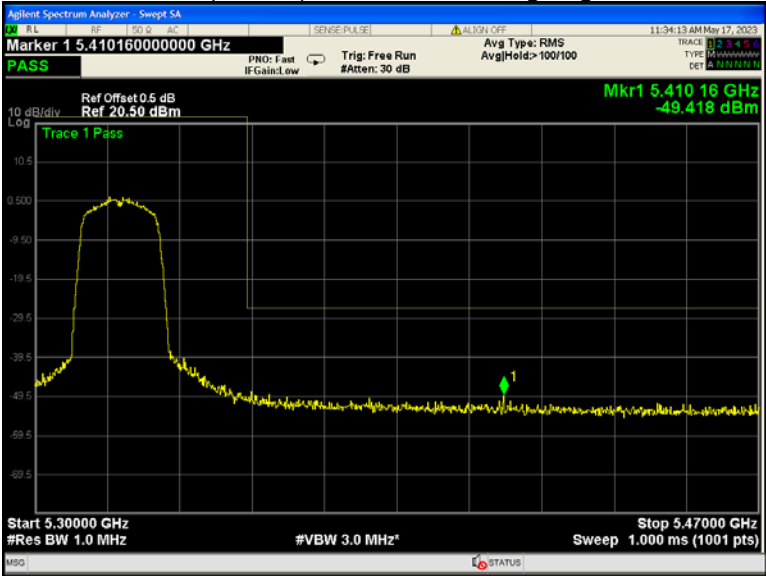
802.11ac(VHT20) U-NII-1 Band edge-right side



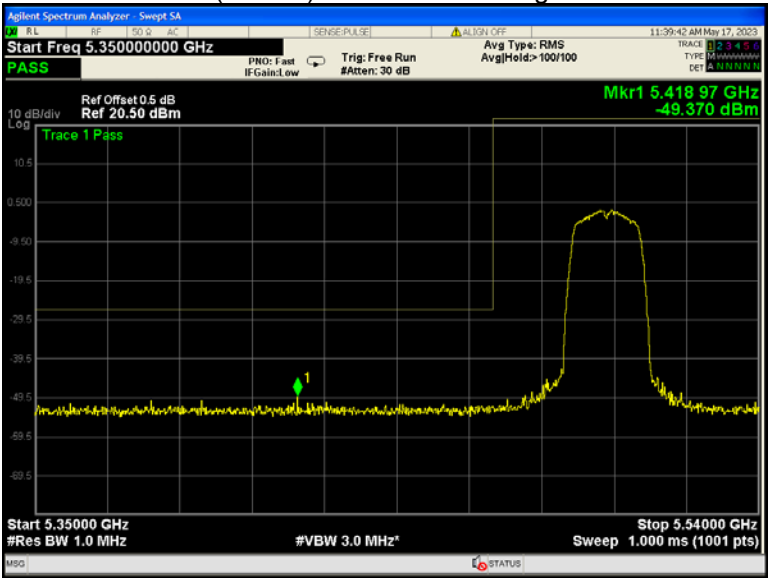
802.11ac(VHT20) U-NII-2A Band edge-left side



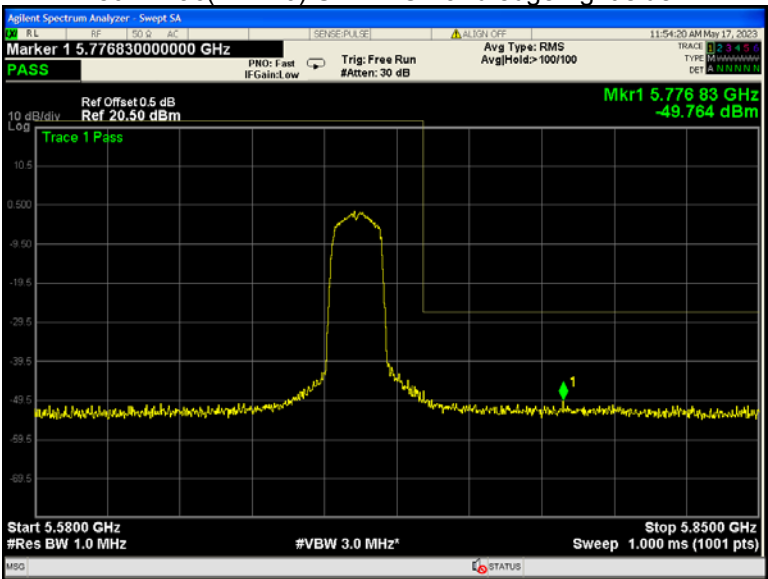
802.11ac(VHT20) U-NII-2A Band edge-right side



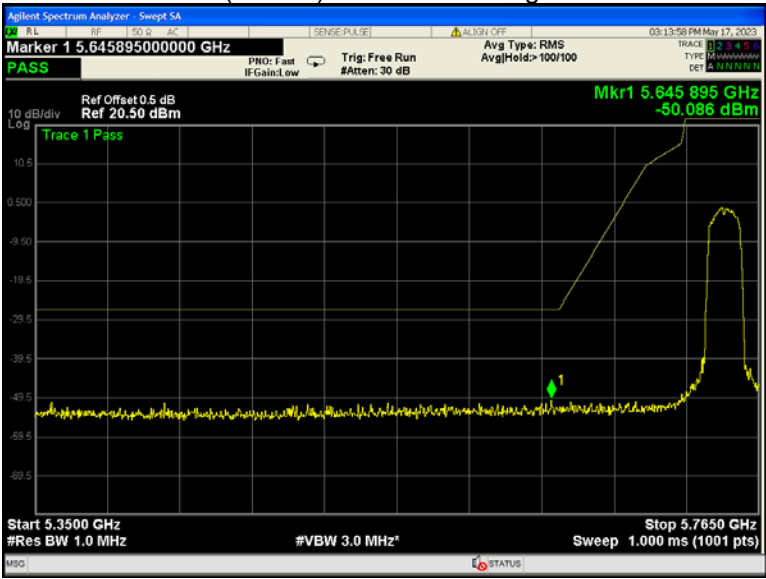
802.11ac(VHT20) U-NII-2C Band edge-left side



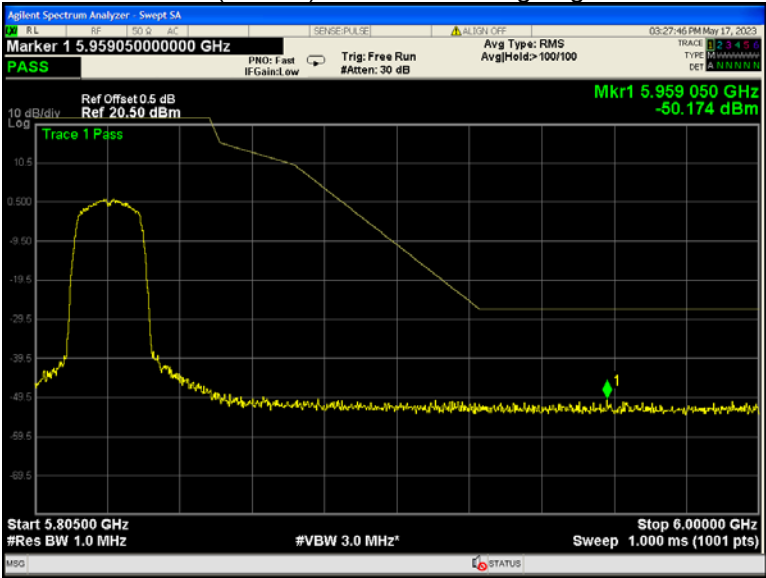
802.11ac(VHT20) U-NII-2C Band edge-right side



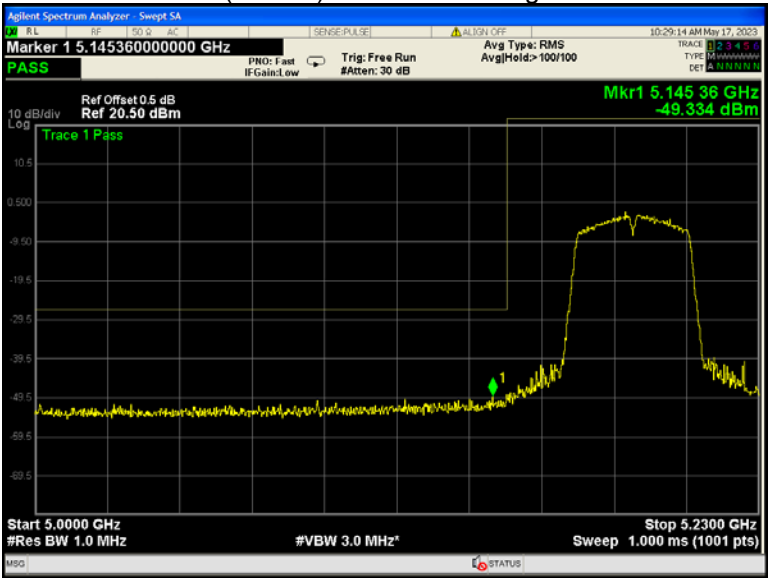
802.11ac(VHT20) U-NII-3 Band edge-left side



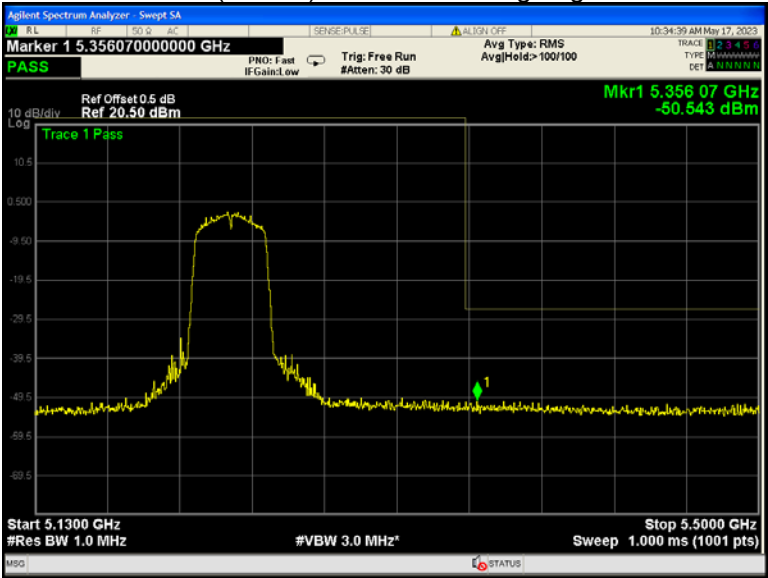
802.11ac(VHT20) U-NII-3 Band edge-right side



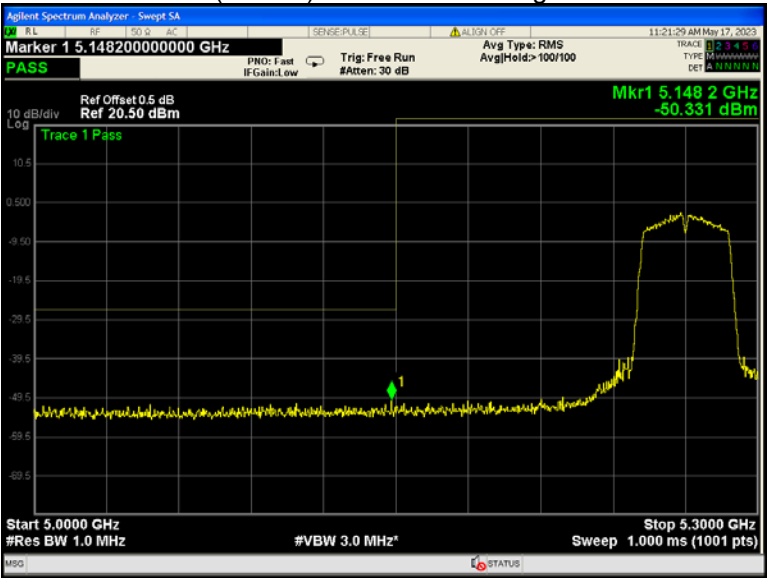
802.11ac(VHT40) U-NII-1 Band edge-left side



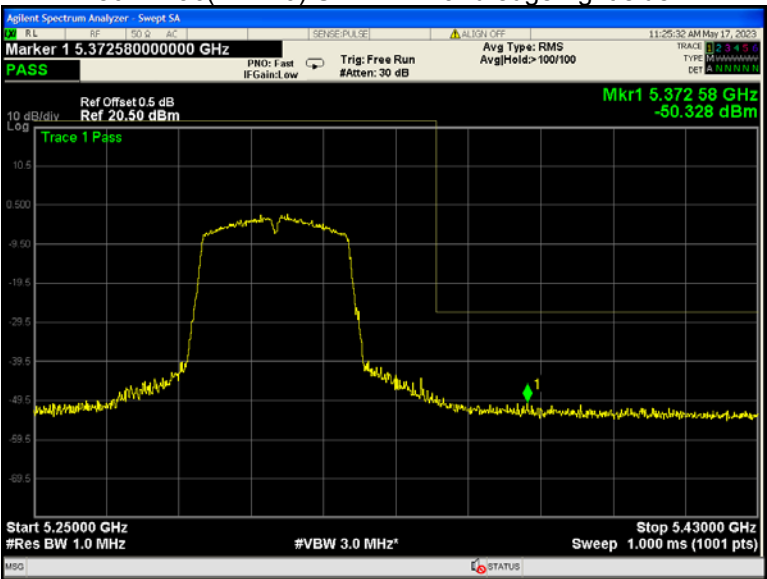
802.11ac(VHT40) U-NII-1 Band edge-right side



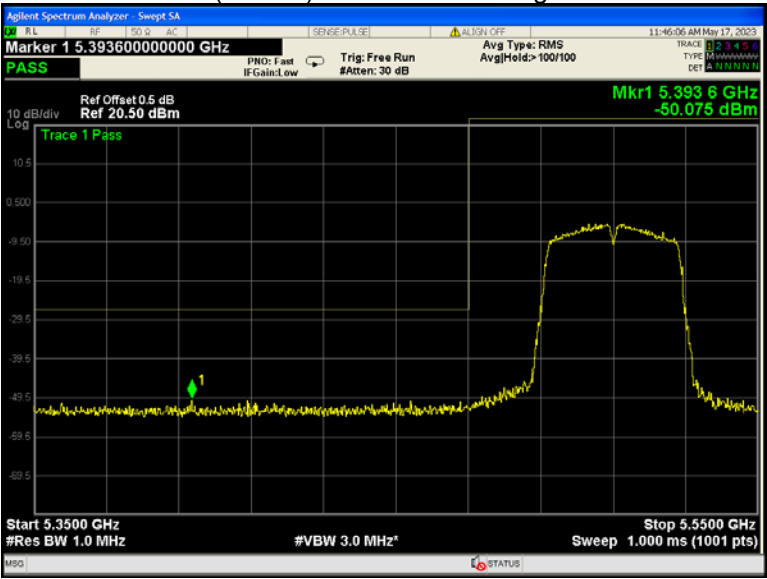
802.11ac(VHT40) U-NII-2A Band edge-left side



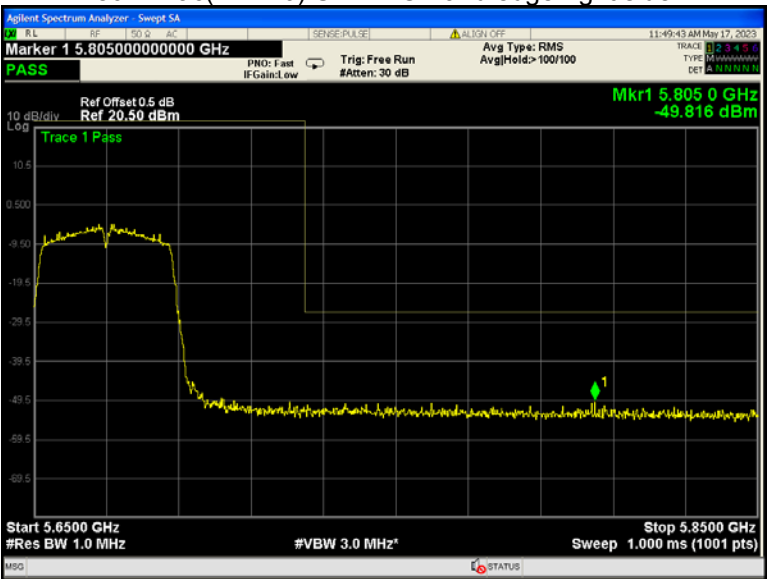
802.11ac(VHT40) U-NII-2A Band edge-right side



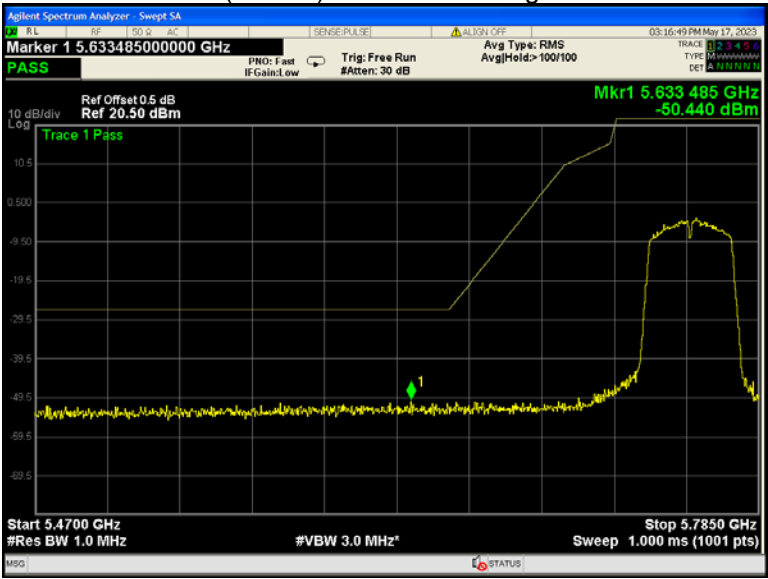
802.11ac(VHT40) U-NII-2C Band edge-left side



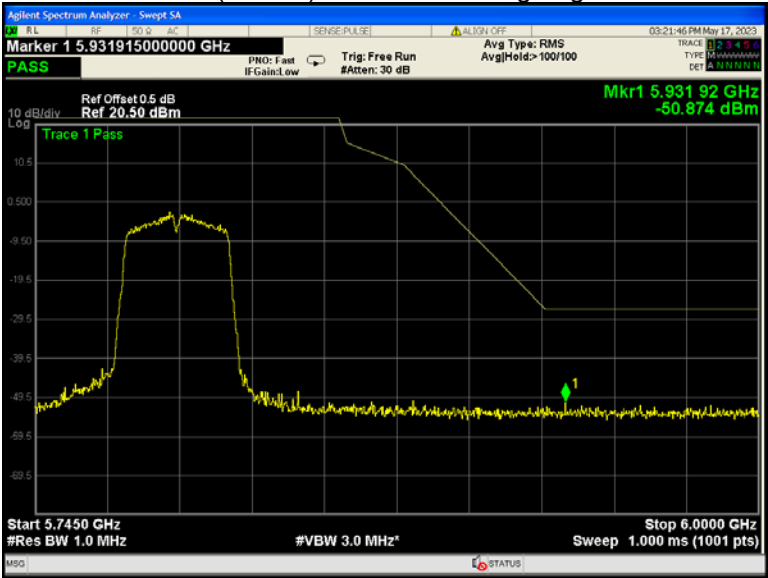
802.11ac(VHT40) U-NII-2C Band edge-right side



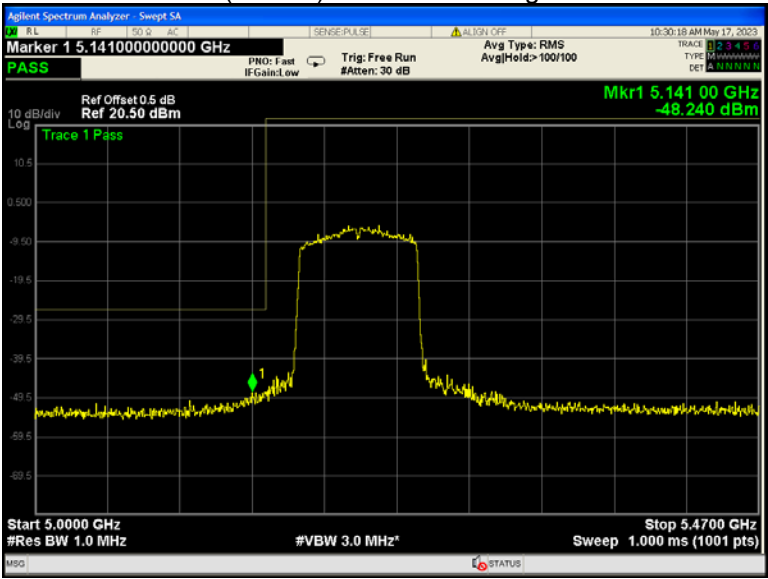
802.11ac(VHT40) U-NII-3 Band edge-left side



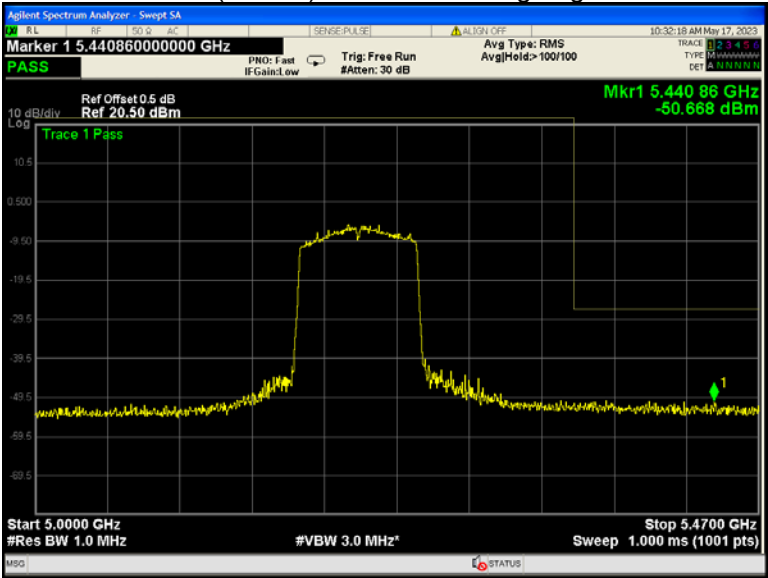
802.11ac(VHT40) U-NII-3 Band edge-right side



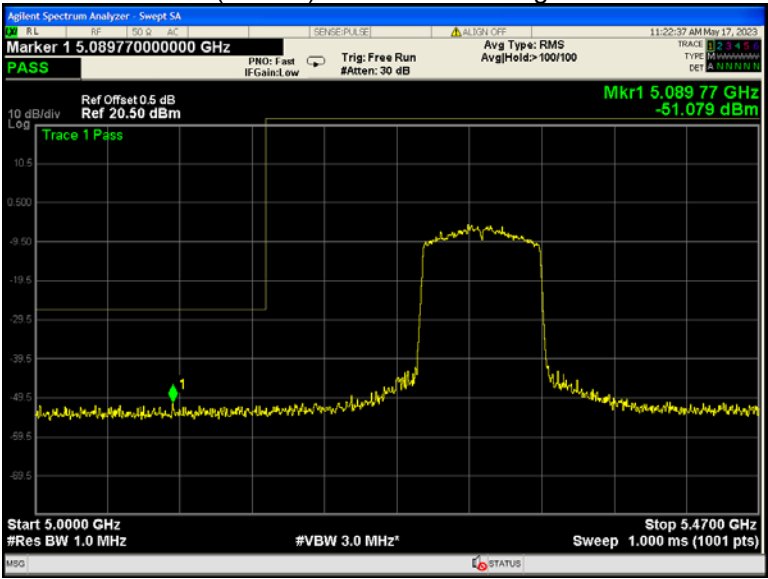
802.11ac(VHT80) U-NII-1 Band edge-left side



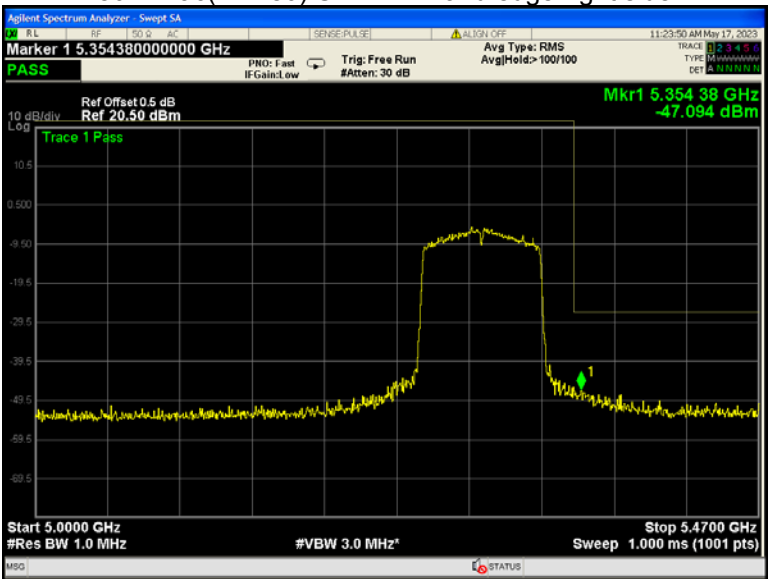
802.11ac(VHT80) U-NII-1 Band edge-right side



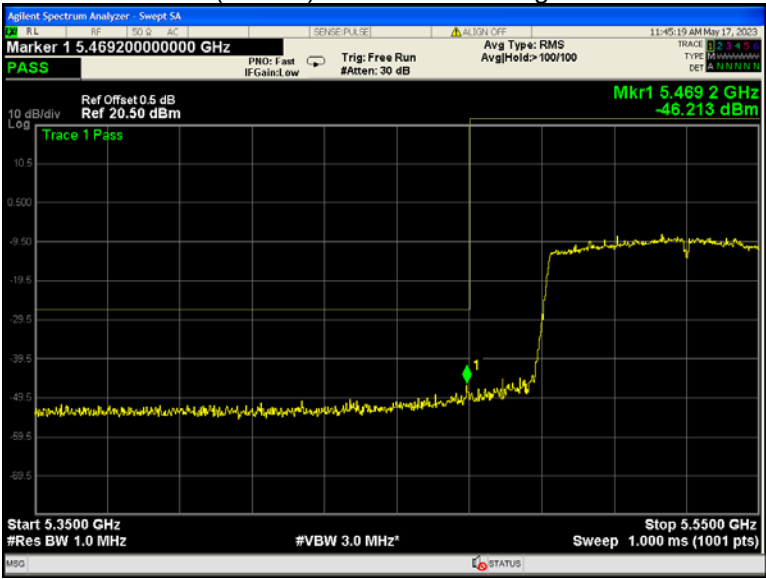
802.11ac(VHT80) U-NII-2A Band edge-left side



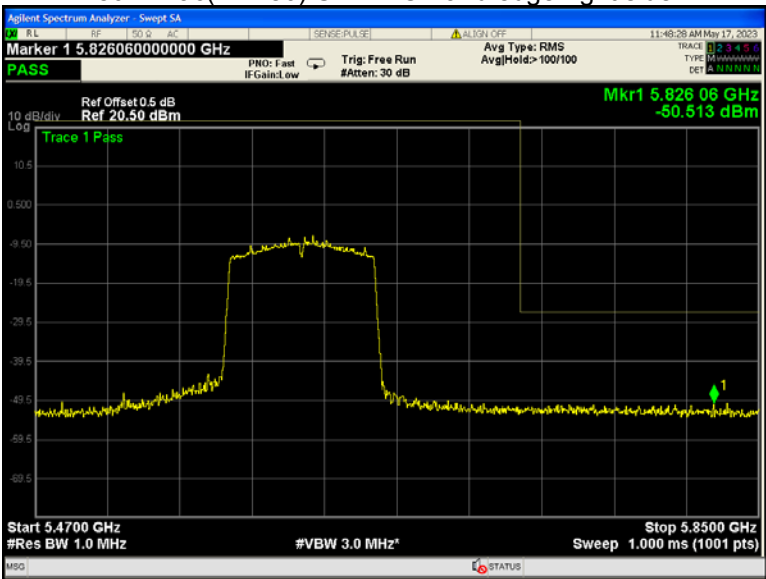
802.11ac(VHT80) U-NII-2A Band edge-right side



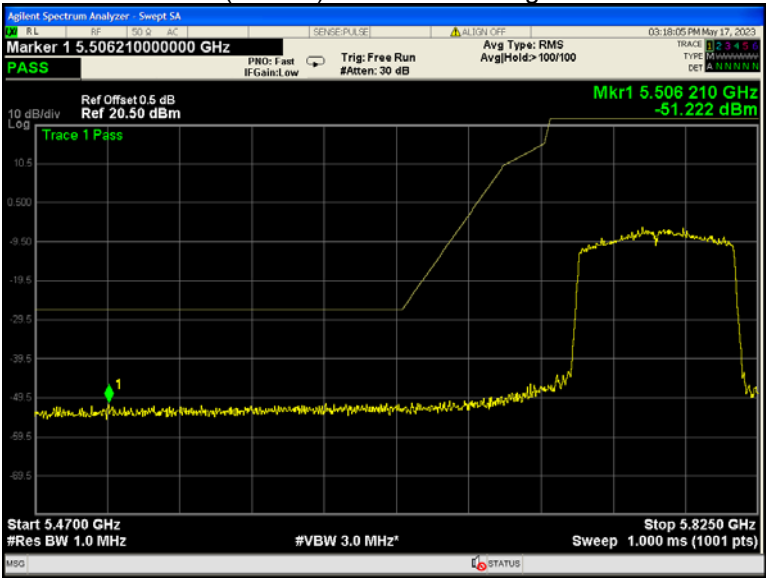
802.11ac(VHT80) U-NII-2C Band edge-left side



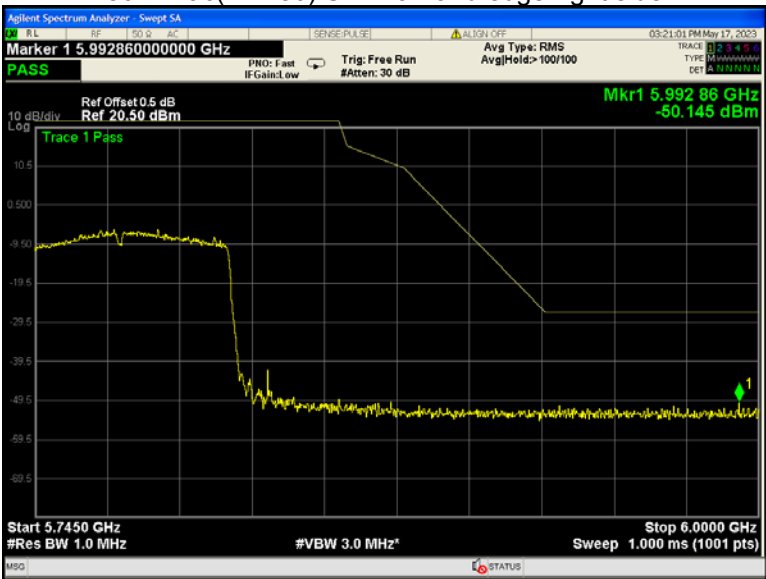
802.11ac(VHT80) U-NII-2C Band edge-right side



802.11ac(VHT80) U-NII-3 Band edge-left side



802.11ac(VHT80) U-NII-3 Band edge-right side



11 6 dB Bandwidth

Test Requirement:	FCC 47CFR Part 15 Section 15.407(e) KDB662911 D01 Multiple Transmitter Output v02r01
Test Method:	KDB789033 D02 General U-NII Test Procedures New Rules v02r01 Section C
Test Limit:	≥ 500 kHz
Test Result:	PASS

11.1 Test Procedure

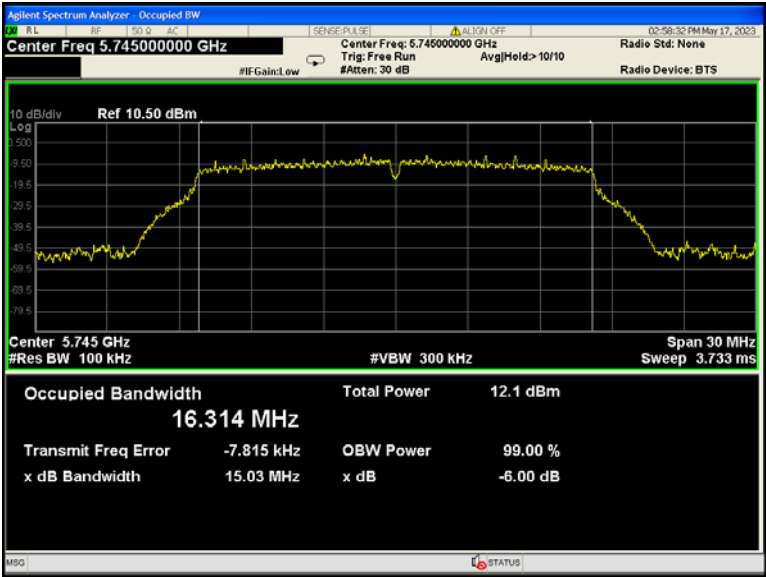
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

11.2 Test Result

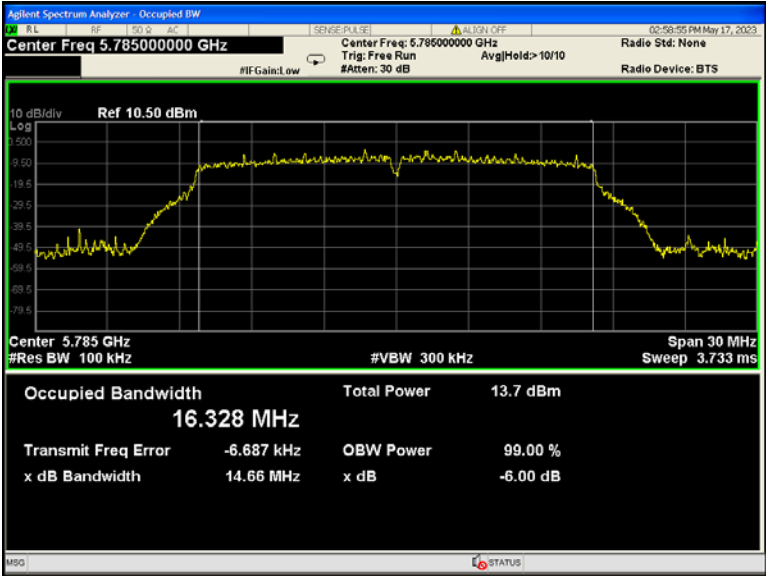
Band	Operation mode	6 dB Bandwidth (MHz)		
		Low	Middle	High
U-NII-3	802.11a	15.03	14.66	14.01
	802.11n(HT20)	15.05	15.04	15.09
	802.11n(HT40)	35.02	/	34.99
	802.11ac(VHT20)	15.07	15.12	15.09
	802.11ac(VHT40)	35.06	/	35.01
	802.11ac(VHT80)	/	75.12	/

Test result plots shown as follows:

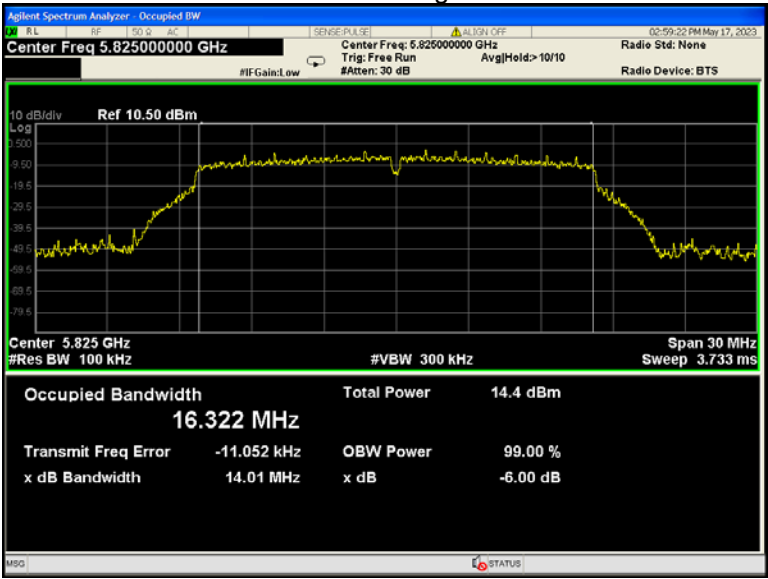
802.11a U-NII-3 Low channel



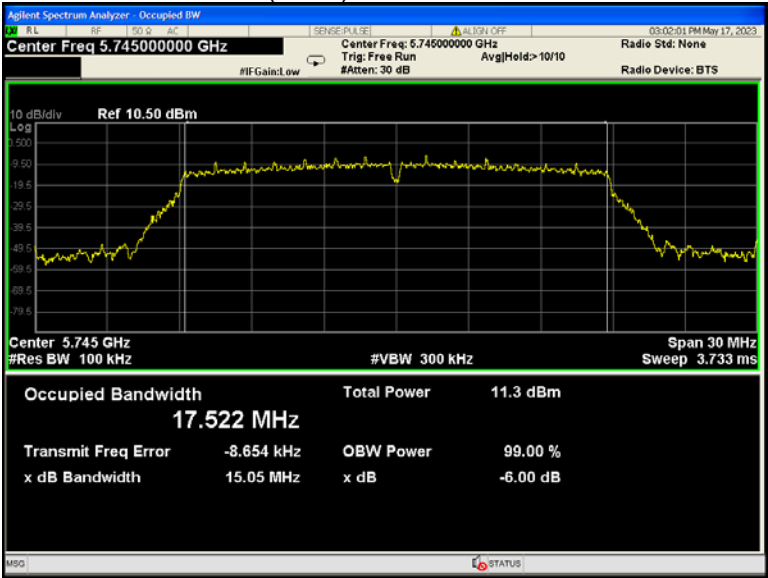
802.11a U-NII-3 Middle channel



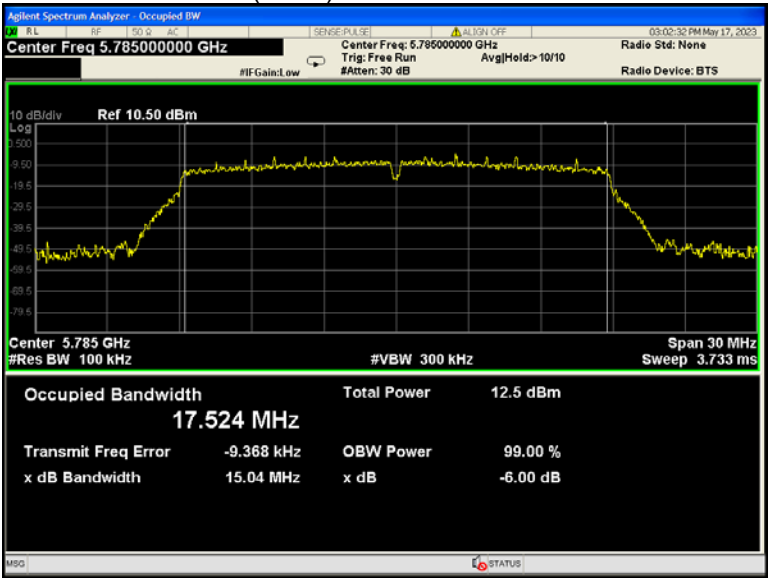
802.11a U-NII-3 High channel



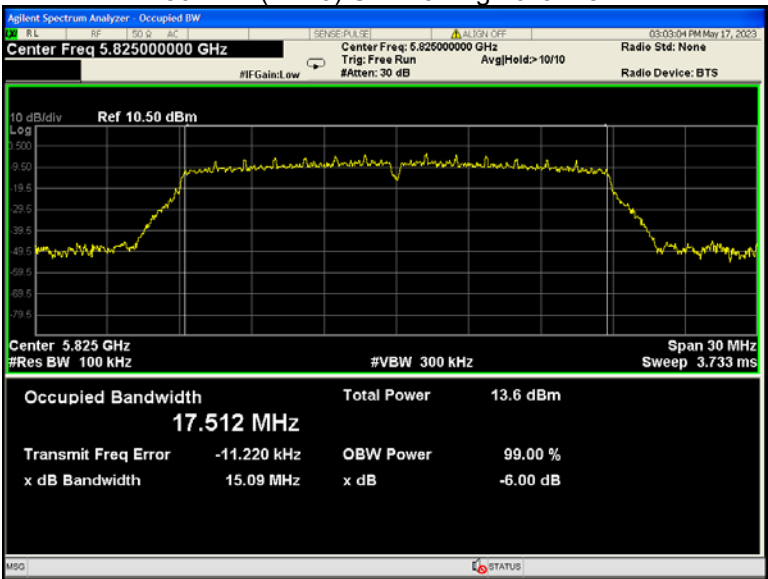
802.11n(HT20) U-NII-3 Low channel



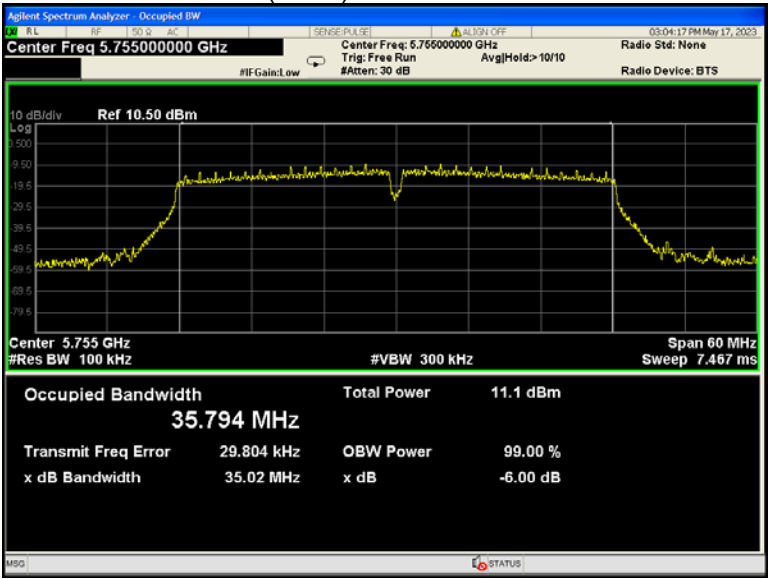
802.11n(HT20) U-NII-3 Middle channel



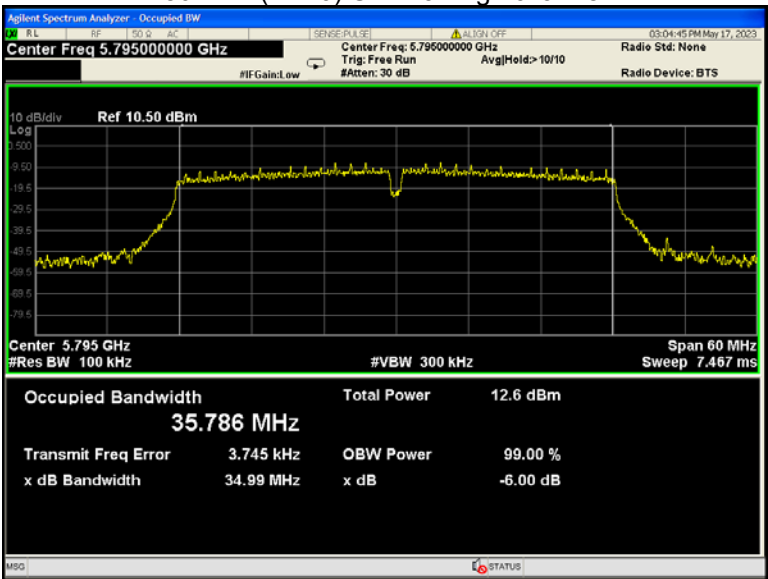
802.11n(HT20) U-NII-3 High channel



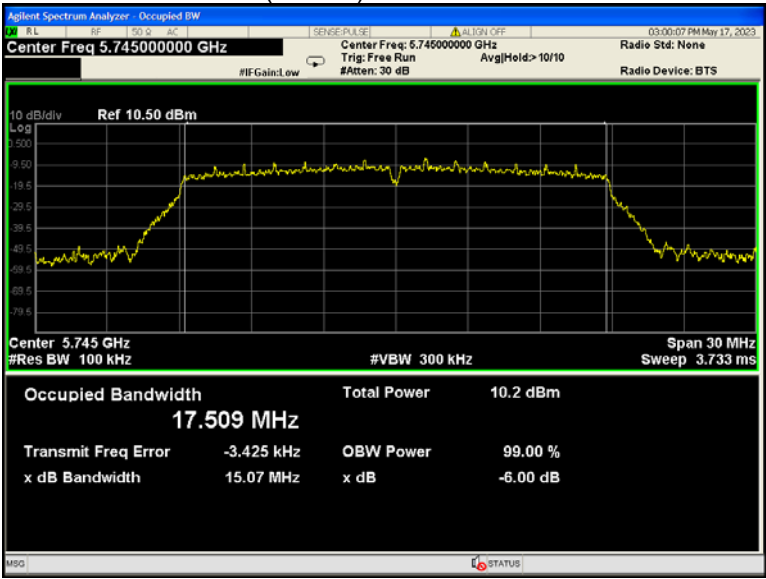
802.11n(HT40) U-NII-3 Low channel



802.11n(HT40) U-NII-3 High channel



802.11ac(VHT20) U-NII-3 Low channel



802.11ac(VHT20) U-NII-3 Middle channel

