TEST REPORT

Reference No.	:	WTF22D11240326W005
FCC ID	:	BRWSPMR6420
Applicant	:	Horizon Hobby, LLC.
Address	:	2904 Research Rd., Champaign, IL, 61822 United States
Manufacturer	:	Horizon Hobby, LLC.
Address	:	2904 Research Rd., Champaign, IL, 61822 United States
Product Name	:	Surface Radio Transmitter
Part Number	:	SPM6420, SPMR6420
Model(s)	:	iXSR
Standards	:	FCC 47CFR Part 15 Section 15.407
Date of Receipt sample	:	2022-11-30
Date of Test	:	2022-11-30 to 2023-08-03
Date of Issue	:	2023-08-18
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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2 Contents

3 Revision History

Test Report No.	Date of Receipt Sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTF22D11240326W005	2022-11-30	2022-11-30 to 2023-08-03	2023-08-18	Original	-	Valid

4 General Information

4.1 General Description of E.U.T.

Product:	Surface Radio Transmitter
Part Number:	SPM6420, SPMR6420
Model(s):	iXSR
Model Description:	N/A
Wi-Fi Specification:	2.4G-802.11b/g/n HT20 5G-802.11a/ n(HT20/40)/ac(VHT20/40/80)
Bluetooth Version:	Bluetooth v5.0
DSMR	GFSK
Hardware Version:	V1.0
Software Version:	3.00.01

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: 15.90dBm U-NII-2A: 17.29dBm U-NII-2C: 14.82dBm U-NII-3: 15.24dBm
Type of Modulation:	OFDM
Antenna installation:	FPC antenna
Antenna Gain:	U-NII-1: 2.25dBi U-NII-2A: 2.24dBi U-NII-2C: 2.28dBi U-NII-3: 2.24dBi

Note:
#: The antenna gain is provided by the applicant, and the applicant should be responsible for its authenticity, WALTEK lab has not verified the authenticity of its information.

Ratings:	Input: DC 5V or DC 3.7V by Li-ion Battery
Battery:	DC 3.7V, 10500mAh, 38.85Wh

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 2023-07-27	2023-07-27 2024-07-26
2.	LISN	R&S	ENV216	100115	2022-08-01 2023-07-27	2023-07-27 2024-07-26
3.	Cable	Top	TYPE16(3.5M)	-	2022-08-01 2023-07-27	2023-07-27 2024-07-26
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	2022-04-25 2023-04-24	2023-04-24 2024-04-23
2	Amplifier	Agilent	8447D	2944A10178	2022-08-01 2023-07-27	2023-07-27 2024-07-26
3	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	336	2022-08-07	2023-08-06
4	Coaxial Cable (below 1GHz)	Top	TYPE16(13M)	-	2022-04-25 2023-04-24	2023-04-24 2024-04-23
5	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	2022-02-03 2023-02-02	2023-02-02 2024-02-01
6	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9170	335	2022-08-01 2023-07-27	2023-07-27 2024-07-26
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	2022-02-03 2023-02-02	2023-02-02 2024-02-01
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	2022-04-25 2023-04-24	2023-04-24 2024-04-23
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	2022-04-25 2023-04-24	2023-04-24 2024-04-23
3	Active Loop Antenna	Com-Power Corp.	AL-130R	10160007	2022-05-08 2023-05-07	2023-05-07 2024-05-06
4	Amplifier	ANRITSU	MH648A	M43381	2022-04-25 2023-04-24	2023-04-24 2024-04-23
5	Cable	HUBER+SUHNER	CBL2	525178	2022-04-25 2023-04-24	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 2023-07-27	2023-07-27 2024-07-26
2.	EXA Signal Analyzer	Malaysia Keysight	N9010A	MY50520207	2022-04-25 2023-04-24	2023-04-24 2024-04-23

Test Software:

Test Item	Software name	Software version
Conduction disturbance Radiated Emission(3m)	EZ-EMC	EZ-EMC(RA-03A1-1)

5.2 Description of Support Units

Equipment	Manufacturer	Model No.	Series No.
/	/	/	/

5.3 Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	± 1 x 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 (dBμV)	
	Quasi-peak	Average
0.15 to 0.5	66 to 56	56 to 46
0.5 to 5	56	46
5 o 30	60	50

7.1 E.U.T. Operation

Operating Environment **:**

Temperature: 21.5 °C

Humidity: 51.9 % RH

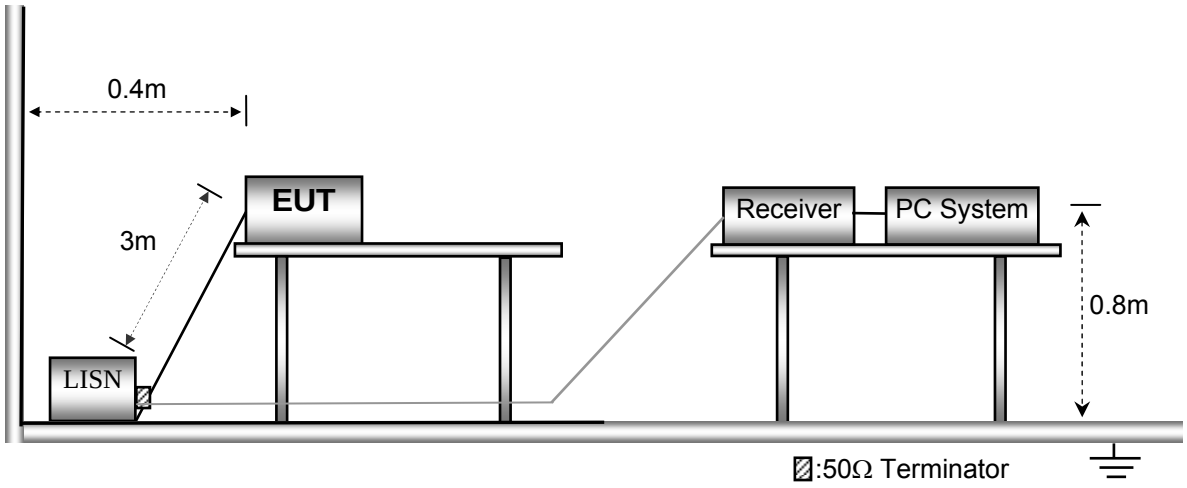
Atmospheric Pressure: 101.2kPa

EUT Operation :

The test was performed in TX 11n20 High channel 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.



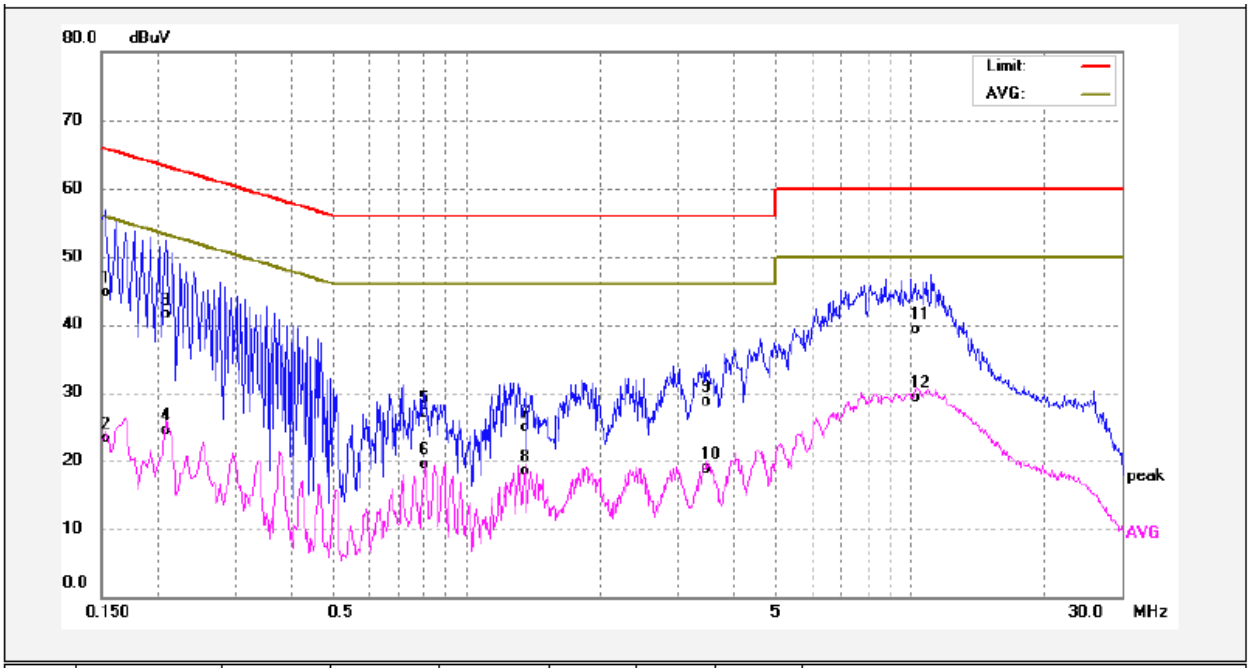
7.3 Measurement Description

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

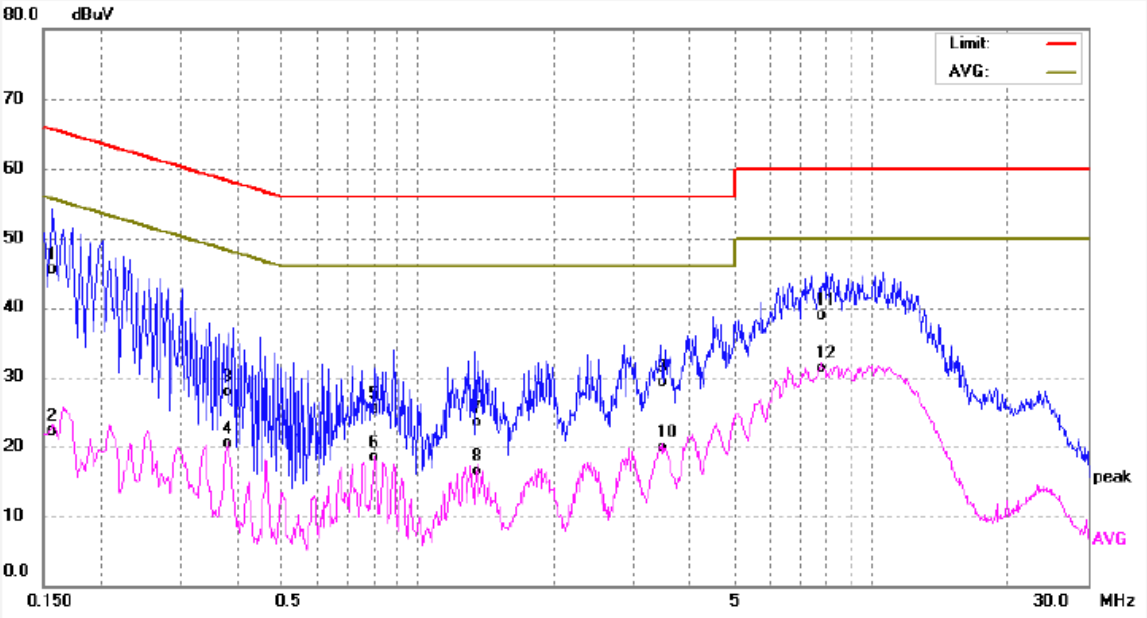
Remark: only the worst data (TX 11n20 High channel mode) were reported

Live line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1539	35.07	9.62	44.69	65.78	-21.09	QP	
2	0.1539	13.70	9.62	23.32	55.78	-32.46	AVG	
3	0.2100	31.91	9.63	41.54	63.20	-21.66	QP	
4	0.2100	14.85	9.63	24.48	53.20	-28.72	AVG	
5	0.8059	17.33	9.76	27.09	56.00	-28.91	QP	
6	0.8059	9.73	9.76	19.49	46.00	-26.51	AVG	
7	1.3540	15.19	9.70	24.89	56.00	-31.11	QP	
8	1.3540	8.75	9.70	18.45	46.00	-27.55	AVG	
9	3.4780	18.89	9.77	28.66	56.00	-27.34	QP	
10	3.4780	9.14	9.77	18.91	46.00	-27.09	AVG	
11	10.3819	29.31	9.98	39.29	60.00	-20.71	QP	
12	10.3819	19.37	9.98	29.35	50.00	-20.65	AVG	

Neutral line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1580	35.91	9.65	45.56	65.56	-20.00	QP	
2	0.1580	12.70	9.65	22.35	55.56	-33.21	AVG	
3	0.3820	18.26	9.66	27.92	58.23	-30.31	QP	
4	0.3820	10.84	9.66	20.50	48.23	-27.73	AVG	
5	0.8059	15.75	9.77	25.52	56.00	-30.48	QP	
6	0.8059	8.83	9.77	18.60	46.00	-27.40	AVG	
7	1.3540	13.73	9.71	23.44	56.00	-32.56	QP	
8	1.3540	6.89	9.71	16.60	46.00	-29.40	AVG	
9	3.4780	19.52	9.78	29.30	56.00	-26.70	QP	
10	3.4780	10.04	9.78	19.82	46.00	-26.18	AVG	
11	7.7899	29.05	9.94	38.99	60.00	-21.01	QP	
12	7.7899	21.29	9.94	31.23	50.00	-18.77	AVG	

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(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
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

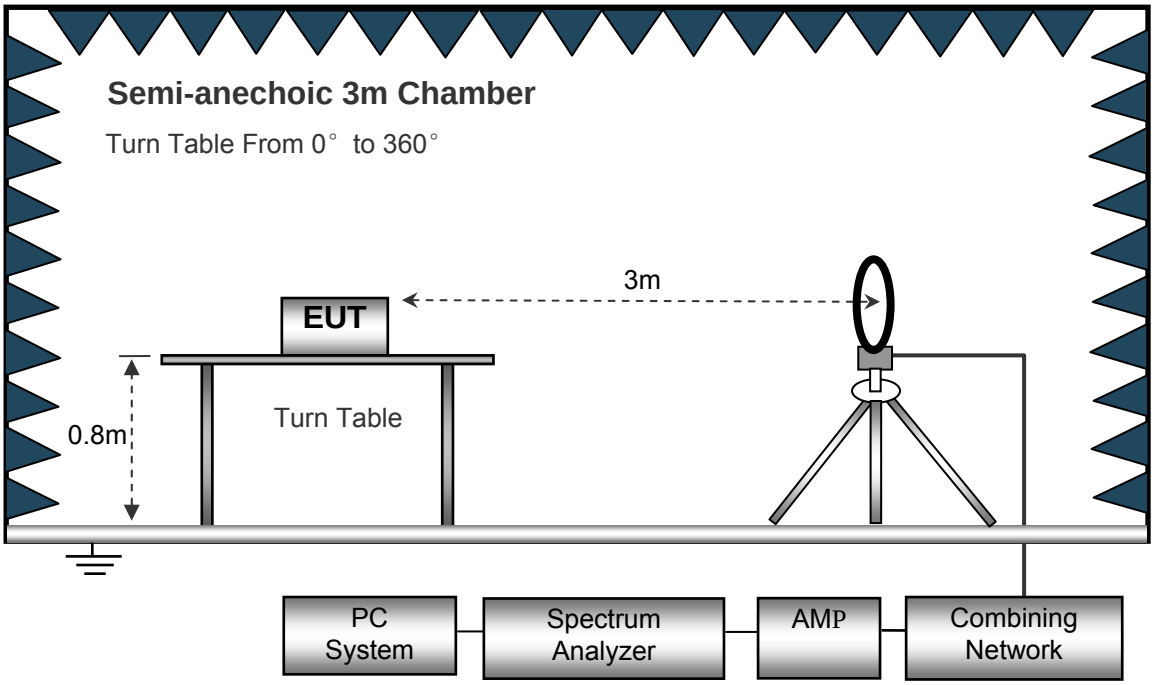
EUT Operation :

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

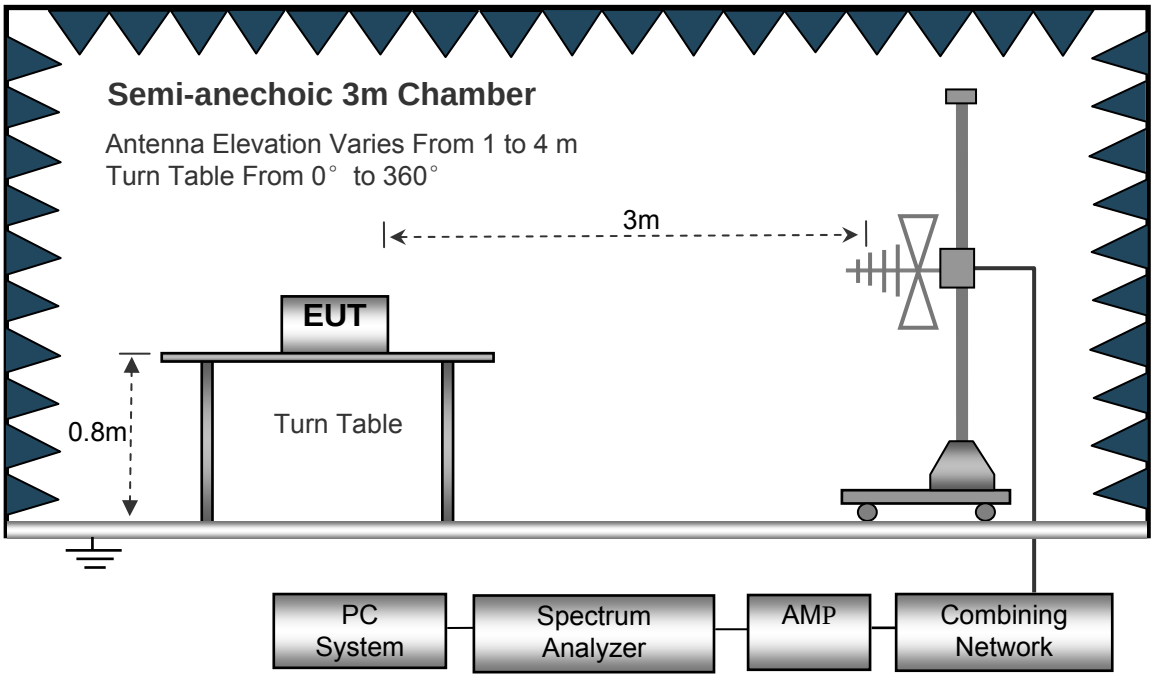
8.2 Test Setup

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

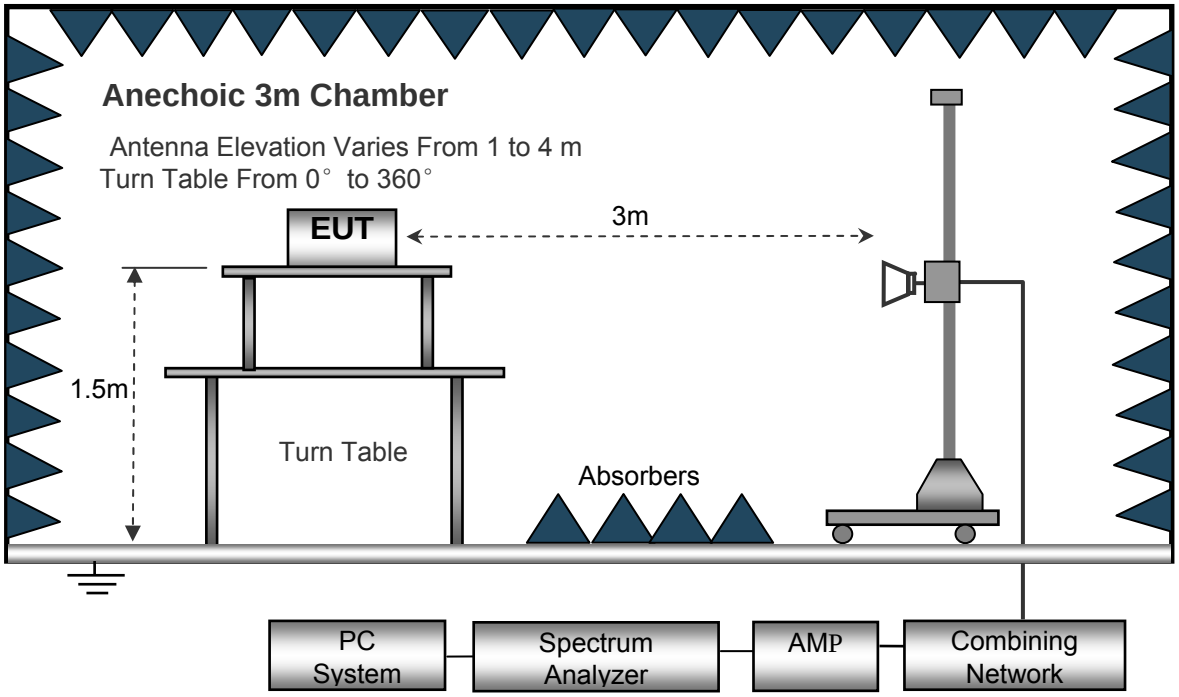
The test setup for emission measurement below 30MHz.



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
Detector ..... PK
Resolution Bandwidth..... 100kHz
Video Bandwidth..... 300kHz

Above 1GHz

Sweep Speed ..... Auto
Detector ..... PK
Resolution Bandwidth..... 1MHz
Video Bandwidth..... 3MHz
Detector ..... Ave.
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 druing 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:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - 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:

Margin = Corr. Ampl. – Limit

8.6 Summary of Test Results

Test Frequency: 9KHz~30MHz

Frequency	Measurement results dBμV @3m	Detector PK/QP	Correct factor dB/m	Extrapolation factor dB	Measurement results (calculated) dBμV/m @30m	Limits dBμV/m @30m	Margin dB
(MHz)	Measurement results	Detector	Correct factor	Extrapolation factor	Measurement results (calculated)	Limits	Margin
U-NII-1:802.11a 5180MHz							
6.534	25.71	QP	21.84	40.00	7.55	29.54	-21.99
15.948	25.76	QP	21.35	40.00	7.11	29.54	-22.43
26.300	24.69	QP	20.67	40.00	5.36	29.54	-24.18
U-NII-1:802.11n20 5180MHz							
6.950	25.23	QP	21.84	40.00	7.07	29.54	-22.47
15.915	26.07	QP	21.35	40.00	7.42	29.54	-22.12
26.189	24.62	QP	20.67	40.00	5.29	29.54	-24.25
U-NII-1:802.11ac 20 5180MHz							
6.763	25.83	QP	21.84	40.00	7.67	29.54	-21.87
15.796	26.59	QP	21.35	40.00	7.94	29.54	-21.60
26.707	25.04	QP	20.67	40.00	5.71	29.54	-23.83
U-NII-1:802.11n40 5190MHz							
6.613	26.02	QP	21.84	40.00	7.86	29.54	-21.68
16.527	26.20	QP	21.35	40.00	7.55	29.54	-21.99
26.233	24.37	QP	20.67	40.00	5.04	29.54	-24.50
U-NII-1:802.11ac40 5190MHz							
6.574	25.69	QP	21.84	40.00	7.53	29.54	-22.01
16.596	26.16	QP	21.35	40.00	7.51	29.54	-22.03
26.540	25.36	QP	20.67	40.00	6.03	29.54	-23.51
U-NII-1:802.11ac80 5210MHz							
6.409	25.53	QP	21.84	40.00	7.37	29.54	-22.17
16.156	26.74	QP	21.35	40.00	8.09	29.54	-21.45
26.762	24.97	QP	20.67	40.00	5.64	29.54	-23.90

Frequency	Measurement results dBμV @3m	Detector PK/QP	Correct factor dB/m	Extrapolation factor dB	Measurement results (calculated) dBμV/m @30m	Limits dBμV/m @30m	Margin dB
(MHz)	Measurement results	Detector	Correct factor	Extrapolation factor	Measurement results (calculated)	Limits	Margin
U-NII-2A:802.11a 5260MHz							
6.336	25.96	QP	21.84	40.00	7.80	29.54	-21.74
16.273	25.68	QP	21.35	40.00	7.03	29.54	-22.51
26.469	25.00	QP	20.67	40.00	5.67	29.54	-23.87
U-NII-2A:802.11n20 5260MHz							
6.523	25.22	QP	21.84	40.00	7.06	29.54	-22.48
16.520	26.52	QP	21.35	40.00	7.87	29.54	-21.67
26.840	24.97	QP	20.67	40.00	5.64	29.54	-23.90
U-NII-2A:802.11ac 5260MHz							
6.589	25.97	QP	21.84	40.00	7.81	29.54	-21.73
15.833	25.74	QP	21.35	40.00	7.09	29.54	-22.45
26.847	25.08	QP	20.67	40.00	5.75	29.54	-23.79
U-NII-2A:802.11n40 5270MHz							
6.569	26.13	QP	21.84	40.00	7.97	29.54	-21.57
15.936	26.47	QP	21.35	40.00	7.82	29.54	-21.72
26.542	25.21	QP	20.67	40.00	5.88	29.54	-23.66
U-NII-2A:802.11ac40 5270MHz							
6.880	26.12	QP	21.84	40.00	7.96	29.54	-21.58
16.360	26.60	QP	21.35	40.00	7.95	29.54	-21.59
26.544	24.96	QP	20.67	40.00	5.63	29.54	-23.91
U-NII-2A:802.11ac80 5290MHz							
6.940	25.40	QP	21.84	40.00	7.24	29.54	-22.30
15.963	25.94	QP	21.35	40.00	7.29	29.54	-22.25
26.492	24.39	QP	20.67	40.00	5.06	29.54	-24.48

Frequency	Measurement results dBμV @3m	Detector PK/QP	Correct factor dB/m	Extrapolation factor dB	Measurement results (calculated) dBμV/m @30m	Limits dBμV/m @30m	Margin dB
(MHz)	Measurement results	Detector	Correct factor	Extrapolation factor	Measurement results (calculated)	Limits	Margin
U-NII-2C:802.11a 5500MHz							
6.585	25.54	QP	21.84	40.00	7.38	29.54	-22.16
16.400	26.19	QP	21.35	40.00	7.54	29.54	-22.00
26.645	24.92	QP	20.67	40.00	5.59	29.54	-23.95
U-NII-2C:802.11n20 5500MHz							
6.422	25.33	QP	21.84	40.00	7.17	29.54	-22.37
16.378	25.78	QP	21.35	40.00	7.13	29.54	-22.41
26.781	24.50	QP	20.67	40.00	5.17	29.54	-24.37
U-NII-2C:802.11ac20 5500MHz							
6.892	25.20	QP	21.84	40.00	7.04	29.54	-22.50
16.033	26.70	QP	21.35	40.00	8.05	29.54	-21.49
26.455	24.41	QP	20.67	40.00	5.08	29.54	-24.46
U-NII-2C:802.11n40 5510MHz							
6.763	25.90	QP	21.84	40.00	7.74	29.54	-21.80
16.145	25.99	QP	21.35	40.00	7.34	29.54	-22.20
26.699	24.53	QP	20.67	40.00	5.20	29.54	-24.34
U-NII-2C:802.11ac40 5510MHz							
6.342	25.99	QP	21.84	40.00	7.83	29.54	-21.71
16.018	26.18	QP	21.35	40.00	7.53	29.54	-22.01
26.673	24.81	QP	20.67	40.00	5.48	29.54	-24.06
U-NII-2C:802.11ac80 5530MHz							
6.589	25.67	QP	21.84	40.00	7.51	29.54	-22.03
16.554	26.59	QP	21.35	40.00	7.94	29.54	-21.60
26.526	24.64	QP	20.67	40.00	5.31	29.54	-24.23

Frequency	Measurement results dBμV @3m	Detector PK/QP	Correct factor dB/m	Extrapolation factor dB	Measurement results (calculated) dBμV/m @30m	Limits dBμV/m @30m	Margin dB
(MHz)	Measurement results	Detector	Correct factor	Extrapolation factor	Measurement results (calculated)	Limits	Margin
U-NII-3 802.11a 5745MHz							
6.879	25.34	QP	21.84	40.00	7.18	29.54	-22.36
16.209	26.43	QP	21.35	40.00	7.78	29.54	-21.76
26.598	24.78	QP	20.67	40.00	5.45	29.54	-24.09
U-NII-3 802.11n20 5745MHz							
6.906	25.60	QP	21.84	40.00	7.44	29.54	-22.10
15.903	25.92	QP	21.35	40.00	7.27	29.54	-22.27
26.063	24.70	QP	20.67	40.00	5.37	29.54	-24.17
U-NII-3 802.11ac 5745MHz							
6.880	26.10	QP	21.84	40.00	7.94	29.54	-21.60
16.190	25.76	QP	21.35	40.00	7.11	29.54	-22.43
26.757	24.56	QP	20.67	40.00	5.23	29.54	-24.31
U-NII-3 802.11n40 5755MHz							
6.963	25.99	QP	21.84	40.00	7.83	29.54	-21.71
16.368	25.94	QP	21.35	40.00	7.29	29.54	-22.25
26.247	24.93	QP	20.67	40.00	5.60	29.54	-23.94
U-NII-3 802.11ac40 5755MHz							
6.881	25.71	QP	21.84	40.00	7.55	29.54	-21.99
16.129	26.24	QP	21.35	40.00	7.59	29.54	-21.95
26.316	24.36	QP	20.67	40.00	5.03	29.54	-24.51
U-NII-3 802.11ac80 5775MHz							
6.786	25.56	QP	21.84	40.00	7.40	29.54	-22.14
16.450	26.00	QP	21.35	40.00	7.35	29.54	-22.19
26.565	25.05	QP	20.67	40.00	5.72	29.54	-23.82

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									
303.54	42.09	QP	263	1.8	H	-11.62	30.47	46.00	-15.53
303.54	38.84	QP	111	1.4	V	-11.62	27.22	46.00	-18.78
4534.86	54.29	PK	29	1.7	H	-2.03	52.26	74.00	-21.74
4534.86	43.41	Ave	29	1.7	H	-2.03	41.38	54.00	-12.62
5146.22	53.27	PK	99	1.6	H	-1.02	52.25	74.00	-21.75
5146.22	44.26	Ave	99	1.6	H	-1.02	43.24	54.00	-10.76
10360.00	41.53	PK	211	1.9	H	5.33	46.86	74.00	-27.14
10360.00	36.87	Ave	211	1.9	H	5.33	42.20	54.00	-11.80
802.11a U-NII-1 Middle channel 5200MHz									
303.54	43.05	QP	83	1.4	H	-11.62	31.43	46.00	-14.57
303.54	38.60	QP	185	1.1	V	-11.62	26.98	46.00	-19.02
4532.39	54.09	PK	167	1.9	H	-1.94	52.15	74.00	-21.85
4532.39	44.78	Ave	167	1.9	H	-1.94	42.84	54.00	-11.16
5145.12	54.37	PK	105	1.3	H	-1.06	53.31	74.00	-20.69
5145.12	44.32	Ave	105	1.3	H	-1.06	43.26	54.00	-10.74
10400.00	42.77	PK	8	1.2	H	5.21	47.98	74.00	-26.02
10400.00	37.00	Ave	8	1.2	H	5.21	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)
802.11a U-NII-1 High channel 5240MHz									
303.54	44.27	QP	12	1.5	H	-11.62	32.65	46.00	-13.35
303.54	38.50	QP	39	1.3	V	-11.62	26.88	46.00	-19.12
4515.68	55.17	PK	359	1.6	H	-2.24	52.93	74.00	-21.07
4515.68	45.81	Ave	359	1.6	H	-2.24	43.57	54.00	-10.43
5144.45	54.83	PK	328	1.6	H	-1.09	53.74	74.00	-20.26
5144.45	44.48	Ave	328	1.6	H	-1.09	43.39	54.00	-10.61
10480.00	42.40	PK	193	1.4	H	5.14	47.54	74.00	-26.46
10480.00	36.70	Ave	193	1.4	H	5.14	41.84	54.00	-12.16
802.11a U-NII-2A Low Channel 5260MHz									
303.54	41.81	QP	78	1.9	H	-11.62	30.19	46.00	-15.81
303.54	37.86	QP	182	1.2	V	-11.62	26.24	46.00	-19.76
4502.97	50.17	PK	215	1.7	H	-2.03	48.14	74.00	-25.86
4502.97	42.04	Ave	215	1.7	H	-2.03	40.01	54.00	-13.99
5131.11	53.84	PK	95	1.3	H	-1.02	52.82	74.00	-21.18
5131.11	44.99	Ave	95	1.3	H	-1.02	43.97	54.00	-10.03
10520.00	40.33	PK	74	1.7	H	5.33	45.66	74.00	-28.34
10520.00	38.64	Ave	74	1.7	H	5.33	43.97	54.00	-10.03

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									
303.54	42.36	QP	33	1.5	H	-11.62	30.74	46.00	-15.26
303.54	38.51	QP	251	1.4	V	-11.62	26.89	46.00	-19.11
4503.19	49.52	PK	343	1.5	H	-1.94	47.58	74.00	-26.42
4503.19	42.12	Ave	343	1.5	H	-1.94	40.18	54.00	-13.82
5149.32	53.29	PK	230	1.1	H	-1.06	52.23	74.00	-21.77
5149.32	45.15	Ave	230	1.1	H	-1.06	44.09	54.00	-9.91
10560.00	41.80	PK	355	1.3	H	5.21	47.01	74.00	-26.99
10560.00	38.48	Ave	355	1.3	H	5.21	43.69	54.00	-10.31
802.11a U-NII-2A High channel 5320MHz									
303.54	43.55	QP	8	1.9	H	-11.62	31.93	46.00	-14.07
303.54	37.32	QP	48	2.0	V	-11.62	25.70	46.00	-20.30
4505.39	50.74	PK	275	1.3	H	-2.24	48.50	74.00	-25.50
4505.39	42.38	Ave	275	1.3	H	-2.24	40.14	54.00	-13.86
5127.81	53.88	PK	334	1.0	H	-1.09	52.79	74.00	-21.21
5127.81	44.53	Ave	334	1.0	H	-1.09	43.44	54.00	-10.56
10640.00	39.12	PK	190	1.4	H	5.14	44.26	74.00	-29.74
10640.00	39.48	Ave	190	1.4	H	5.14	44.62	54.00	-9.38

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									
303.54	41.23	QP	255	1.4	H	-11.62	29.61	46.00	-16.39
303.54	38.13	QP	223	1.7	V	-11.62	26.51	46.00	-19.49
4525.00	51.97	PK	111	1.3	H	-2.03	49.94	74.00	-24.06
4525.00	42.12	Ave	111	1.3	H	-2.03	40.09	54.00	-13.91
5124.82	53.16	PK	21	1.2	H	-1.02	52.14	74.00	-21.86
5124.82	44.58	Ave	21	1.2	H	-1.02	43.56	54.00	-10.44
11000.00	41.60	PK	315	1.7	H	5.33	46.93	74.00	-27.07
11000.00	37.21	Ave	315	1.7	H	5.33	42.54	54.00	-11.46
802.11a U-NII-2C Middle channel 5600MHz									
303.54	41.53	QP	29	2.0	H	-11.62	29.91	46.00	-16.09
303.54	39.39	QP	345	1.1	V	-11.62	27.77	46.00	-18.23
4511.57	53.12	PK	290	2.0	H	-1.94	51.18	74.00	-22.82
4511.57	43.05	Ave	290	2.0	H	-1.94	41.11	54.00	-12.89
5112.56	54.34	PK	49	1.2	H	-1.06	53.28	74.00	-20.72
5112.56	44.06	Ave	49	1.2	H	-1.06	43.00	54.00	-11.00
11200.00	43.01	PK	153	1.1	H	5.21	48.22	74.00	-25.78
11200.00	36.25	Ave	153	1.1	H	5.21	41.46	54.00	-12.54

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									
303.54	40.20	QP	264	1.8	H	-11.62	28.58	46.00	-17.42
303.54	40.57	QP	221	1.5	V	-11.62	28.95	46.00	-17.05
4528.61	52.18	PK	45	1.8	H	-2.24	49.94	74.00	-24.06
4528.61	44.31	Ave	45	1.8	H	-2.24	42.07	54.00	-11.93
5110.04	54.18	PK	199	1.9	H	-1.09	53.09	74.00	-20.91
5110.04	45.43	Ave	199	1.9	H	-1.09	44.34	54.00	-9.66
11400.00	41.91	PK	123	1.8	H	5.14	47.05	74.00	-26.95
11400.00	38.43	Ave	123	1.8	H	5.14	43.57	54.00	-10.43
802.11a U-NII-3 Low Channel 5745MHz									
303.54	41.94	QP	269	1.5	H	-11.62	30.32	46.00	-15.68
303.54	38.85	QP	210	1.1	V	-11.62	27.23	46.00	-18.77
4533.62	55.77	PK	243	1.1	H	-2.06	53.71	74.00	-20.29
4533.62	43.06	Ave	243	1.1	H	-2.06	41.00	54.00	-13.00
11490.00	41.17	PK	355	1.6	H	5.93	47.10	74.00	-26.90
11490.00	38.70	Ave	355	1.6	H	5.93	44.63	54.00	-9.37
5365.30	45.52	PK	110	1.5	H	-1.25	44.27	74.00	-29.73
5365.30	37.50	Ave	110	1.5	H	-1.25	36.25	54.00	-17.75

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)
802.11a U-NII-3 middle channel 5785MHz									
303.54	42.20	QP	171	1.9	H	-11.62	30.58	46.00	-15.42
303.54	37.59	QP	262	1.3	V	-11.62	25.97	46.00	-20.03
4506.36	55.35	PK	353	1.9	H	-2.03	53.32	74.00	-20.68
4506.36	43.27	Ave	353	1.9	H	-2.03	41.24	54.00	-12.76
11570.00	41.21	PK	38	1.8	H	5.81	47.02	74.00	-26.98
11570.00	38.05	Ave	38	1.8	H	5.81	43.86	54.00	-10.14
5388.35	46.35	PK	37	1.9	H	-1.22	45.13	74.00	-28.87
5388.35	37.78	Ave	37	1.9	H	-1.22	36.56	54.00	-17.44
802.11a U-NII-3 High channel 5825MHz									
303.54	41.04	QP	207	1.1	H	-11.62	29.42	46.00	-16.58
303.54	38.04	QP	147	1.9	V	-11.62	26.42	46.00	-19.58
4519.59	54.26	PK	179	1.0	H	-1.84	52.42	74.00	-21.58
4519.59	41.93	Ave	179	1.0	H	-1.84	40.09	54.00	-13.91
11650.00	41.72	PK	277	1.5	H	5.84	47.56	74.00	-26.44
11650.00	38.59	Ave	277	1.5	H	5.84	44.43	54.00	-9.57
5362.73	46.68	PK	210	1.5	H	-1.30	45.38	74.00	-28.62
5362.73	39.49	Ave	210	1.5	H	-1.30	38.19	54.00	-15.81

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									
303.54	39.91	QP	262	1.5	H	-11.62	28.29	46.00	-17.71
303.54	37.43	QP	154	1.3	V	-11.62	25.81	46.00	-20.19
4524.90	54.24	PK	258	1.8	H	-2.14	52.10	74.00	-21.90
4524.90	41.32	Ave	258	1.8	H	-2.14	39.18	54.00	-14.82
5128.27	46.89	PK	146	1.9	H	-1.06	45.83	74.00	-28.17
5128.27	40.96	Ave	146	1.9	H	-1.06	39.90	54.00	-14.10
10360.00	41.88	PK	44	1.1	H	5.33	47.21	74.00	-26.79
10360.00	36.77	Ave	44	1.1	H	5.33	42.10	54.00	-11.90
802.11n(HT20) U-NII-1 Middle channel 5200MHz									
303.54	39.31	QP	227	1.6	H	-11.62	27.69	46.00	-18.31
303.54	38.04	QP	330	1.4	V	-11.62	26.42	46.00	-19.58
4501.59	53.12	PK	226	1.4	H	-2.12	51.00	74.00	-23.00
4501.59	40.12	Ave	226	1.4	H	-2.12	38.00	54.00	-16.00
5144.02	48.39	PK	262	1.7	H	-1.06	47.33	74.00	-26.67
5144.02	40.86	Ave	262	1.7	H	-1.06	39.80	54.00	-14.20
10400.00	42.57	PK	288	1.1	H	5.21	47.78	74.00	-26.22
10400.00	38.00	Ave	288	1.1	H	5.21	43.21	54.00	-10.79

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(HT20) U-NII-1 High channel 5240MHz									
303.54	38.33	QP	10	1.7	H	-11.62	26.71	46.00	-19.29
303.54	37.62	QP	164	1.2	V	-11.62	26.00	46.00	-20.00
4527.50	52.21	PK	160	1.6	H	-1.96	50.25	74.00	-23.75
4527.50	39.18	Ave	160	1.6	H	-1.96	37.22	54.00	-16.78
5130.71	50.13	PK	96	1.6	H	-1.06	49.07	74.00	-24.93
5130.71	39.98	Ave	96	1.6	H	-1.06	38.92	54.00	-15.08
10480.00	41.28	PK	257	1.3	H	5.14	46.42	74.00	-27.58
10480.00	38.22	Ave	257	1.3	H	5.14	43.36	54.00	-10.64
802.11n(HT20) U-NII-2A Low Channel 5260MHz									
303.54	39.54	QP	266	1.8	H	-11.62	27.92	46.00	-18.08
303.54	41.65	QP	96	1.7	V	-11.62	30.03	46.00	-15.97
4505.04	35.97	PK	118	1.3	H	-2.03	33.94	74.00	-40.06
4505.04	44.25	Ave	118	1.3	H	-2.03	42.22	54.00	-11.78
5131.88	38.81	PK	241	1.0	H	-1.02	37.79	74.00	-36.21
5131.88	-0.81	Ave	241	1.0	H	-1.02	-1.83	54.00	-55.83
10520.00	46.02	PK	90	1.8	H	5.33	51.35	74.00	-22.65
10520.00	39.43	Ave	90	1.8	H	5.33	44.76	54.00	-9.24

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)
802.11n(HT20) U-NII-2A middle channel 5280MHz									
303.54	40.51	QP	158	2.0	H	-11.62	28.89	46.00	-17.11
303.54	40.91	QP	348	1.1	V	-11.62	29.29	46.00	-16.71
4533.28	36.35	PK	256	1.2	H	-1.94	34.41	74.00	-39.59
4533.28	43.49	Ave	256	1.2	H	-1.94	41.55	54.00	-12.45
5125.74	38.38	PK	243	2.0	H	-1.06	37.32	74.00	-36.68
5125.74	0.00	Ave	243	2.0	H	-1.06	-1.06	54.00	-55.06
10560.00	44.19	PK	51	1.1	H	5.21	49.40	74.00	-24.60
10560.00	38.63	Ave	51	1.1	H	5.21	43.84	54.00	-10.16
802.11n(HT20) U-NII-2A High channel 5320MHz									
303.54	40.72	QP	328	1.2	H	-11.62	29.10	46.00	-16.90
303.54	40.85	QP	266	1.6	V	-11.62	29.23	46.00	-16.77
4535.73	35.65	PK	103	1.3	H	-2.24	33.41	74.00	-40.59
4535.73	42.32	Ave	103	1.3	H	-2.24	40.08	54.00	-13.92
5120.26	39.47	PK	107	1.3	H	-1.09	38.38	74.00	-35.62
5120.26	-0.23	Ave	107	1.3	H	-1.09	-1.32	54.00	-55.32
10640.00	43.00	PK	226	1.2	H	5.14	48.14	74.00	-25.86
10640.00	36.99	Ave	226	1.2	H	5.14	42.13	54.00	-11.87

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)
802.11n(HT20) U-NII-2C Low Channel 5500MHz									
303.54	44.33	QP	107	1.6	H	-11.62	32.71	46.00	-13.29
303.54	1.19	QP	143	1.2	V	-11.62	-10.43	46.00	-56.43
4517.45	42.16	PK	162	1.8	H	-2.03	40.13	74.00	-33.87
4517.45	40.75	Ave	162	1.8	H	-2.03	38.72	54.00	-15.28
5138.17	47.14	PK	261	1.3	H	-1.02	46.12	74.00	-27.88
5138.17	38.23	Ave	261	1.3	H	-1.02	37.21	54.00	-16.79
11000.00	0.23	PK	279	1.2	H	5.33	5.56	74.00	-68.44
11000.00	37.43	Ave	279	1.2	H	5.33	42.76	54.00	-11.24
802.11n(HT20) U-NII-2C Middle channel 5600MHz									
303.54	43.12	QP	136	1.4	H	-11.62	31.50	46.00	-14.50
303.54	0.45	QP	60	1.8	V	-11.62	-11.17	46.00	-57.17
4520.47	41.70	PK	230	1.8	H	-1.94	39.76	74.00	-34.24
4520.47	39.39	Ave	230	1.8	H	-1.94	37.45	54.00	-16.55
5117.89	48.64	PK	205	1.9	H	-1.06	47.58	74.00	-26.42
5117.89	39.78	Ave	205	1.9	H	-1.06	38.72	54.00	-15.28
11200.00	0.69	PK	12	2.0	H	5.21	5.90	74.00	-68.10
11200.00	36.45	Ave	12	2.0	H	5.21	41.66	54.00	-12.34

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									
303.54	43.04	QP	289	1.7	H	-11.62	31.42	46.00	-14.58
303.54	-0.82	QP	286	1.5	V	-11.62	-12.44	46.00	-58.44
4506.16	41.36	PK	201	1.8	H	-2.24	39.12	74.00	-34.88
4506.16	40.33	Ave	201	1.8	H	-2.24	38.09	54.00	-15.91
5142.44	49.18	PK	48	1.5	H	-1.09	48.09	74.00	-25.91
5142.44	41.25	Ave	48	1.5	H	-1.09	40.16	54.00	-13.84
11400.00	1.28	PK	89	1.2	H	5.14	6.42	74.00	-67.58
11400.00	36.64	Ave	89	1.2	H	5.14	41.78	54.00	-12.22
802.11n(HT20) U-NII-3 Low Channel 5745MHz									
303.54	38.91	QP	249	1.2	H	-11.62	27.29	46.00	-18.71
303.54	48.30	QP	110	1.0	V	-11.62	36.68	46.00	-9.32
4510.81	45.05	PK	323	1.6	H	-2.06	42.99	74.00	-31.01
4510.81	41.49	Ave	323	1.6	H	-2.06	39.43	54.00	-14.57
11490.00	38.99	PK	304	1.3	H	5.93	44.92	74.00	-29.08
11490.00	37.87	Ave	304	1.3	H	5.93	43.80	54.00	-10.20
5380.61	45.94	PK	13	1.4	H	-1.25	44.69	74.00	-29.31
5380.61	38.31	Ave	13	1.4	H	-1.25	37.06	54.00	-16.94

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									
303.54	39.97	QP	156	1.9	H	-11.62	28.35	46.00	-17.65
303.54	42.94	QP	188	1.3	V	-11.62	31.32	46.00	-14.68
4535.30	46.30	PK	345	1.1	H	-2.03	44.27	74.00	-29.73
4535.30	40.58	Ave	345	1.1	H	-2.03	38.55	54.00	-15.45
11570.00	38.35	PK	166	1.5	H	5.81	44.16	74.00	-29.84
11570.00	38.57	Ave	166	1.5	H	5.81	44.38	54.00	-9.62
5384.73	45.07	PK	344	1.5	H	-1.22	43.85	74.00	-30.15
5384.73	38.33	Ave	344	1.5	H	-1.22	37.11	54.00	-16.89
802.11n(HT20) U-NII-3 High channel 5825MHz									
303.54	39.40	QP	358	1.1	H	-11.62	27.78	46.00	-18.22
303.54	43.92	QP	68	1.9	V	-11.62	32.30	46.00	-13.70
4528.87	47.45	PK	258	1.6	H	-1.84	45.61	74.00	-28.39
4528.87	41.09	Ave	258	1.6	H	-1.84	39.25	54.00	-14.75
11650.00	37.13	PK	188	1.3	H	5.84	42.97	74.00	-31.03
11650.00	41.42	Ave	188	1.3	H	5.84	47.26	54.00	-6.74
5381.06	45.25	PK	7	1.6	H	-1.30	43.95	74.00	-30.05
5381.06	38.93	Ave	7	1.6	H	-1.30	37.63	54.00	-16.37

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)
802.11ac(VHT20) U-NII-1 Low Channel 5180MHz									
303.54	35.84	QP	103	1.0	H	-11.62	24.22	46.00	-21.78
303.54	40.79	QP	209	1.6	V	-11.62	29.17	46.00	-16.83
4528.27	45.04	PK	295	1.5	H	-1.86	43.18	74.00	-30.82
4528.27	39.08	Ave	295	1.5	H	-1.86	37.22	54.00	-16.78
5140.88	41.80	PK	63	1.0	H	-1.06	40.74	74.00	-33.26
5140.88	39.06	Ave	63	1.0	H	-1.06	38.00	54.00	-16.00
10360.00	46.49	PK	356	1.7	H	5.33	51.82	74.00	-22.18
10360.00	38.29	Ave	356	1.7	H	5.33	43.62	54.00	-10.38
802.11ac(VHT20) U-NII-1 Middle channel 5200MHz									
303.54	35.86	QP	253	1.1	H	-11.62	24.24	46.00	-21.76
303.54	40.94	QP	21	1.3	V	-11.62	29.32	46.00	-16.68
4518.26	44.42	PK	214	1.2	H	-1.82	42.60	74.00	-31.40
4518.26	39.53	Ave	214	1.2	H	-1.82	37.71	54.00	-16.29
5126.91	43.14	PK	249	1.0	H	-1.06	42.08	74.00	-31.92
5126.91	38.69	Ave	249	1.0	H	-1.06	37.63	54.00	-16.37
10400.00	42.98	PK	302	2.0	H	5.21	48.19	74.00	-25.81
10400.00	37.72	Ave	302	2.0	H	5.21	42.93	54.00	-11.07

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									
303.54	35.12	QP	343	2.0	H	-11.62	23.50	46.00	-22.50
303.54	40.44	QP	31	1.1	V	-11.62	28.82	46.00	-17.18
4504.22	43.98	PK	50	1.7	H	-1.81	42.17	74.00	-31.83
4504.22	40.11	Ave	50	1.7	H	-1.81	38.30	54.00	-15.70
5148.83	44.89	PK	129	1.5	H	-1.06	43.83	74.00	-30.17
5148.83	39.88	Ave	129	1.5	H	-1.06	38.82	54.00	-15.18
10480.00	42.73	PK	78	1.5	H	5.14	47.87	74.00	-26.13
10480.00	37.21	Ave	78	1.5	H	5.14	42.35	54.00	-11.65
802.11ac(VHT20) U-NII-2A Low Channel 5260MHz									
303.54	43.86	QP	134	1.9	H	-11.62	32.24	46.00	-13.76
303.54	41.20	QP	225	1.4	V	-11.62	29.58	46.00	-16.42
4537.41	43.23	PK	350	1.8	H	-2.03	41.20	74.00	-32.80
4537.41	37.46	Ave	350	1.8	H	-2.03	35.43	54.00	-18.57
5148.21	46.29	PK	64	1.5	H	-1.02	45.27	74.00	-28.73
5148.21	38.36	Ave	64	1.5	H	-1.02	37.34	54.00	-16.66
10520.00	41.19	PK	65	1.4	H	5.33	46.52	74.00	-27.48
10520.00	37.58	Ave	65	1.4	H	5.33	42.91	54.00	-11.09

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(VHT20) U-NII-2A middle channel 5280MHz									
303.54	43.57	QP	270	1.3	H	-11.62	31.95	46.00	-14.05
303.54	42.63	QP	1	2.0	V	-11.62	31.01	46.00	-14.99
4526.18	41.77	PK	174	1.7	H	-1.94	39.83	74.00	-34.17
4526.18	36.40	Ave	174	1.7	H	-1.94	34.46	54.00	-19.54
5122.83	47.89	PK	245	1.2	H	-1.06	46.83	74.00	-27.17
5122.83	38.49	Ave	245	1.2	H	-1.06	37.43	54.00	-16.57
10560.00	41.56	PK	77	1.7	H	5.21	46.77	74.00	-27.23
10560.00	38.49	Ave	77	1.7	H	5.21	43.70	54.00	-10.30
802.11ac(VHT20) U-NII-2A High channel 5320MHz									
303.54	42.15	QP	47	1.3	H	-11.62	30.53	46.00	-15.47
303.54	41.14	QP	338	1.6	V	-11.62	29.52	46.00	-16.48
4517.23	40.71	PK	23	1.3	H	-2.24	38.47	74.00	-35.53
4517.23	36.93	Ave	23	1.3	H	-2.24	34.69	54.00	-19.31
5131.45	49.31	PK	221	1.3	H	-1.09	48.22	74.00	-25.78
5131.45	37.76	Ave	221	1.3	H	-1.09	36.67	54.00	-17.33
10640.00	41.90	PK	350	1.0	H	5.14	47.04	74.00	-26.96
10640.00	37.26	Ave	350	1.0	H	5.14	42.40	54.00	-11.60

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									
303.54	45.31	QP	224	2.0	H	-11.62	33.69	46.00	-12.31
303.54	41.23	QP	35	1.9	V	-11.62	29.61	46.00	-16.39
4521.52	38.94	PK	359	1.8	H	-2.03	36.91	74.00	-37.09
4521.52	35.50	Ave	359	1.8	H	-2.03	33.47	54.00	-20.53
5141.84	44.61	PK	217	1.3	H	-1.02	43.59	74.00	-30.41
5141.84	39.15	Ave	217	1.3	H	-1.02	38.13	54.00	-15.87
11000.00	0.85	PK	16	1.2	H	5.33	6.18	74.00	-67.82
11000.00	35.90	Ave	16	1.2	H	5.33	41.23	54.00	-12.77
802.11ac(VHT20) U-NII-2C Middle channel 5600MHz									
303.54	46.24	QP	19	1.1	H	-11.62	34.62	46.00	-11.38
303.54	40.50	QP	184	1.7	V	-11.62	28.88	46.00	-17.12
4533.18	38.47	PK	220	1.9	H	-1.94	36.53	74.00	-37.47
4533.18	34.37	Ave	220	1.9	H	-1.94	32.43	54.00	-21.57
5141.92	46.05	PK	203	1.6	H	-1.06	44.99	74.00	-29.01
5141.92	38.18	Ave	203	1.6	H	-1.06	37.12	54.00	-16.88
11200.00	0.27	PK	325	1.5	H	5.21	5.48	74.00	-68.52
11200.00	35.48	Ave	325	1.5	H	5.21	40.69	54.00	-13.31

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)
802.11ac(VHT20) U-NII-2C High channel 5700MHz									
303.54	46.92	QP	219	1.0	H	-11.62	35.30	46.00	-10.70
303.54	41.30	QP	177	1.5	V	-11.62	29.68	46.00	-16.32
4516.46	37.52	PK	347	1.4	H	-2.24	35.28	74.00	-38.72
4516.46	33.88	Ave	347	1.4	H	-2.24	31.64	54.00	-22.36
5132.44	46.47	PK	121	1.8	H	-1.09	45.38	74.00	-28.62
5132.44	38.82	Ave	121	1.8	H	-1.09	37.73	54.00	-16.27
11400.00	1.71	PK	13	1.2	H	5.14	6.85	74.00	-67.15
11400.00	36.26	Ave	13	1.2	H	5.14	41.40	54.00	-12.60
802.11ac(VHT20) U-NII-3 Low Channel 5745MHz									
303.54	36.86	QP	342	1.9	H	-11.62	25.24	46.00	-20.76
303.54	41.55	QP	48	1.6	V	-11.62	29.93	46.00	-16.07
4512.49	42.26	PK	67	1.6	H	-1.92	40.34	74.00	-33.66
4512.49	38.37	Ave	67	1.6	H	-1.92	36.45	54.00	-17.55
11490.00	39.48	PK	266	1.0	H	5.93	45.41	74.00	-28.59
11490.00	36.54	Ave	266	1.0	H	5.93	42.47	54.00	-11.53
5371.66	46.86	PK	104	1.9	H	-1.03	45.83	74.00	-28.17
5371.66	38.63	Ave	104	1.9	H	-1.03	37.60	54.00	-16.40

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									
303.54	37.84	QP	226	1.4	H	-11.62	26.22	46.00	-19.78
303.54	40.64	QP	9	1.8	V	-11.62	29.02	46.00	-16.98
4515.74	41.65	PK	157	1.7	H	-1.97	39.68	74.00	-34.32
4515.74	37.83	Ave	157	1.7	H	-1.97	35.86	54.00	-18.14
11570.00	41.95	PK	6	1.1	H	5.81	47.76	74.00	-26.24
11570.00	37.84	Ave	6	1.1	H	5.81	43.65	54.00	-10.35
5381.73	46.59	PK	116	1.2	H	-1.05	45.54	74.00	-28.46
5381.73	37.77	Ave	116	1.2	H	-1.05	36.72	54.00	-17.28
802.11ac(VHT20) U-NII-3 High channel 5825MHz									
303.54	38.62	QP	231	1.1	H	-11.62	27.00	46.00	-19.00
303.54	41.07	QP	300	1.7	V	-11.62	29.45	46.00	-16.55
4530.84	40.69	PK	221	1.4	H	-1.88	38.81	74.00	-35.19
4530.84	38.07	Ave	221	1.4	H	-1.88	36.19	54.00	-17.81
11650.00	42.34	PK	60	1.2	H	5.84	48.18	74.00	-25.82
11650.00	37.39	Ave	60	1.2	H	5.84	43.23	54.00	-10.77
5370.32	45.78	PK	272	1.5	H	-1.06	44.72	74.00	-29.28
5370.32	38.98	Ave	272	1.5	H	-1.06	37.92	54.00	-16.08

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									
303.54	37.58	QP	224	1.6	H	-11.62	25.96	46.00	-20.04
303.54	41.10	QP	346	1.9	V	-11.62	29.48	46.00	-16.52
4520.67	39.04	PK	120	1.4	H	-1.89	37.15	74.00	-36.85
4520.67	36.49	Ave	120	1.4	H	-1.89	34.60	54.00	-19.40
5133.60	47.49	PK	237	1.4	H	-1.06	46.43	74.00	-27.57
5133.60	38.83	Ave	237	1.4	H	-1.06	37.77	54.00	-16.23
10380.00	40.07	PK	172	1.1	H	5.26	45.33	74.00	-28.67
10380.00	34.90	Ave	172	1.1	H	5.26	40.16	54.00	-13.84
802.11n(HT40) U-NII-1 High channel 5230MHz									
303.54	36.64	QP	126	1.8	H	-11.62	25.02	46.00	-20.98
303.54	40.31	QP	258	1.4	V	-11.62	28.69	46.00	-17.31
4506.53	38.64	PK	81	1.3	H	-1.94	36.70	74.00	-37.30
4506.53	35.72	Ave	81	1.3	H	-1.94	33.78	54.00	-20.22
5141.79	47.48	PK	166	1.8	H	-1.06	46.42	74.00	-27.58
5141.79	40.75	Ave	166	1.8	H	-1.06	39.69	54.00	-14.31
10460.00	41.25	PK	260	1.4	H	5.28	46.53	74.00	-27.47
10460.00	36.97	Ave	260	1.4	H	5.28	42.25	54.00	-11.75

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)
802.11n(HT40) U-NII-2A Low Channel 5270MHz									
303.54	46.39	QP	10	1.5	H	-11.62	34.77	46.00	-11.23
303.54	36.62	QP	75	1.6	V	-11.62	25.00	46.00	-21.00
4513.48	40.78	PK	34	1.1	H	-1.89	38.89	74.00	-35.11
4513.48	38.08	Ave	34	1.1	H	-1.89	36.19	54.00	-17.81
5146.40	48.17	PK	90	1.8	H	-1.06	47.11	74.00	-26.89
5146.40	38.00	Ave	90	1.8	H	-1.06	36.94	54.00	-17.06
10540.00	47.28	PK	348	1.5	H	5.26	52.54	74.00	-21.46
10540.00	38.23	Ave	348	1.5	H	5.26	43.49	54.00	-10.51
802.11n(HT40) U-NII-2A High channel 5310MHz									
303.54	47.21	QP	255	1.4	H	-11.62	35.59	46.00	-10.41
303.54	35.85	QP	174	2.0	V	-11.62	24.23	46.00	-21.77
4524.35	40.24	PK	246	1.0	H	-1.94	38.30	74.00	-35.70
4524.35	38.63	Ave	246	1.0	H	-1.94	36.69	54.00	-17.31
5138.60	48.57	PK	197	1.5	H	-1.06	47.51	74.00	-26.49
5138.60	37.91	Ave	197	1.5	H	-1.06	36.85	54.00	-17.15
10620.00	41.18	PK	192	1.4	H	5.28	46.46	74.00	-27.54
10620.00	35.89	Ave	192	1.4	H	5.28	41.17	54.00	-12.83

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)
802.11n(HT40) U-NII-2C Low Channel 5510MHz									
303.54	46.37	QP	347	1.6	H	-11.62	34.75	46.00	-11.25
303.54	39.34	QP	195	1.1	V	-11.62	27.72	46.00	-18.28
4505.10	42.36	PK	151	1.7	H	-1.89	40.47	74.00	-33.53
4505.10	37.61	Ave	151	1.7	H	-1.89	35.72	54.00	-18.28
5113.65	45.85	PK	202	1.6	H	-1.06	44.79	74.00	-29.21
5113.65	39.16	Ave	202	1.6	H	-1.06	38.10	54.00	-15.90
11020.00	43.29	PK	298	1.9	H	5.26	48.55	74.00	-25.45
11020.00	36.62	Ave	298	1.9	H	5.26	41.88	54.00	-12.12
802.11n(HT40) U-NII-2C Middle channel 5550MHz									
303.54	47.18	QP	170	1.6	H	-11.62	35.56	46.00	-10.44
303.54	39.06	QP	348	1.9	V	-11.62	27.44	46.00	-18.56
4508.18	41.47	PK	49	1.0	H	-1.94	39.53	74.00	-34.47
4508.18	37.25	Ave	49	1.0	H	-1.94	35.31	54.00	-18.69
5132.69	45.66	PK	259	1.4	H	-1.06	44.60	74.00	-29.40
5132.69	38.75	Ave	259	1.4	H	-1.06	37.69	54.00	-16.31
11100.00	45.37	PK	111	1.1	H	5.28	50.65	74.00	-23.35
11100.00	37.14	Ave	111	1.1	H	5.28	42.42	54.00	-11.58
802.11n(HT40) U-NII-2C High channel 5670MHz									
303.54	47.50	QP	206	1.2	H	-11.62	35.88	46.00	-10.12
303.54	38.62	QP	273	1.1	V	-11.62	27.00	46.00	-19.00
4527.41	41.95	PK	153	1.7	H	-1.94	40.01	74.00	-33.99
4527.41	37.24	Ave	153	1.7	H	-1.94	35.30	54.00	-18.70
5134.28	47.05	PK	319	1.5	H	-1.06	45.99	74.00	-28.01
5134.28	39.05	Ave	319	1.5	H	-1.06	37.99	54.00	-16.01
11340.00	39.98	PK	256	1.6	H	5.28	45.26	74.00	-28.74
11340.00	36.87	Ave	256	1.6	H	5.28	42.15	54.00	-11.85

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									
303.54	36.85	QP	186	1.2	H	-11.62	25.23	46.00	-20.77
303.54	41.50	QP	265	1.4	V	-11.62	29.88	46.00	-16.12
4539.70	40.37	PK	143	1.5	H	-1.96	38.41	74.00	-35.59
4539.70	32.04	Ave	143	1.5	H	-1.96	30.08	54.00	-23.92
11510.00	39.74	PK	359	1.9	H	5.88	45.62	74.00	-28.38
11510.00	34.98	Ave	359	1.9	H	5.88	40.86	54.00	-13.14
5372.19	45.21	PK	198	1.6	H	-1.01	44.20	74.00	-29.80
5372.19	39.85	Ave	198	1.6	H	-1.01	38.84	54.00	-15.16
802.11n(HT40) U-NII-3 High Channel 5795MHz									
303.54	37.78	QP	344	1.3	H	-11.62	26.16	46.00	-19.84
303.54	41.63	QP	110	1.3	V	-11.62	30.01	46.00	-15.99
4538.94	40.52	PK	353	1.4	H	-1.92	38.60	74.00	-35.40
4538.94	31.69	Ave	353	1.4	H	-1.92	29.77	54.00	-24.23
11590.00	41.86	PK	220	1.4	H	5.63	47.49	74.00	-26.51
11590.00	36.71	Ave	220	1.4	H	5.63	42.34	54.00	-11.66
5388.47	46.35	PK	299	1.8	H	-1.04	45.31	74.00	-28.69
5388.47	39.19	Ave	299	1.8	H	-1.04	38.15	54.00	-15.85

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									
303.54	36.77	QP	284	1.7	H	-11.62	25.15	46.00	-20.85
303.54	40.48	QP	44	1.7	V	-11.62	28.86	46.00	-17.14
4506.85	38.35	PK	322	1.7	H	-1.91	36.44	74.00	-37.56
4506.85	29.57	Ave	322	1.7	H	-1.91	27.66	54.00	-26.34
5110.49	46.41	PK	243	1.9	H	-1.06	45.35	74.00	-28.65
5110.49	39.90	Ave	243	1.9	H	-1.06	38.84	54.00	-15.16
10380.00	40.29	PK	258	1.5	H	5.26	45.55	74.00	-28.45
10380.00	34.46	Ave	258	1.5	H	5.26	39.72	54.00	-14.28
802.11ac(VHT40) U-NII-1 High channel 5230MHz									
303.54	36.90	QP	167	1.2	H	-11.62	25.28	46.00	-20.72
303.54	40.88	QP	151	1.4	V	-11.62	29.26	46.00	-16.74
4531.26	38.28	PK	294	1.8	H	-1.93	36.35	74.00	-37.65
4531.26	29.59	Ave	294	1.8	H	-1.93	27.66	54.00	-26.34
5111.71	45.50	PK	180	1.5	H	-1.06	44.44	74.00	-29.56
5111.71	40.70	Ave	180	1.5	H	-1.06	39.64	54.00	-14.36
10460.00	43.32	PK	13	1.8	H	5.28	48.60	74.00	-25.40
10460.00	37.97	Ave	13	1.8	H	5.28	43.25	54.00	-10.75

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-2A Low Channel 5270MHz									
303.54	48.85	QP	22	1.8	H	-11.62	37.23	46.00	-8.77
303.54	40.93	QP	285	1.0	V	-11.62	29.31	46.00	-16.69
4517.72	42.05	PK	318	1.6	H	-1.89	40.16	74.00	-33.84
4517.72	36.64	Ave	318	1.6	H	-1.89	34.75	54.00	-19.25
5143.89	45.38	PK	197	2.0	H	-1.06	44.32	74.00	-29.68
5143.89	38.87	Ave	197	2.0	H	-1.06	37.81	54.00	-16.19
10540.00	40.94	PK	161	1.6	H	5.26	46.20	74.00	-27.80
10540.00	40.63	Ave	161	1.6	H	5.26	45.89	54.00	-8.11
802.11ac(VHT40) U-NII-2A High channel 5310MHz									
303.54	47.35	QP	76	1.7	H	-11.62	35.73	46.00	-10.27
303.54	38.35	QP	265	1.1	V	-11.62	26.73	46.00	-19.27
4510.87	40.97	PK	216	1.3	H	-1.94	39.03	74.00	-34.97
4510.87	36.52	Ave	216	1.3	H	-1.94	34.58	54.00	-19.42
5119.97	48.59	PK	34	1.2	H	-1.06	47.53	74.00	-26.47
5119.97	38.00	Ave	34	1.2	H	-1.06	36.94	54.00	-17.06
10620.00	0.98	PK	91	1.8	H	5.28	6.26	74.00	-67.74
10620.00	42.21	Ave	91	1.8	H	5.28	47.49	54.00	-6.51

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)
802.11ac(VHT40) U-NII-2C Low Channel 5510MHz									
303.54	45.95	QP	253	1.1	H	-11.62	34.33	46.00	-11.67
303.54	42.09	QP	126	1.6	V	-11.62	30.47	46.00	-15.53
4521.55	-0.86	PK	64	1.6	H	-1.89	-2.75	74.00	-76.75
4521.55	43.91	Ave	64	1.6	H	-1.89	42.02	54.00	-11.98
5137.69	46.42	PK	250	1.2	H	-1.06	45.36	74.00	-28.64
5137.69	39.06	Ave	250	1.2	H	-1.06	38.00	54.00	-16.00
11020.00	37.34	PK	81	1.1	H	5.26	42.60	74.00	-31.40
11020.00	44.72	Ave	81	1.1	H	5.26	49.98	54.00	-4.02
802.11ac(VHT40) U-NII-2C Middle channel 5550MHz									
303.54	45.66	QP	47	1.2	H	-11.62	34.04	46.00	-11.96
303.54	43.05	QP	323	1.1	V	-11.62	31.43	46.00	-14.57
4514.93	-1.43	PK	88	1.8	H	-1.94	-3.37	74.00	-77.37
4514.93	43.17	Ave	88	1.8	H	-1.94	41.23	54.00	-12.77
5132.37	45.55	PK	288	1.3	H	-1.06	44.49	74.00	-29.51
5132.37	39.79	Ave	288	1.3	H	-1.06	38.73	54.00	-15.27
11100.00	38.60	PK	175	2.0	H	5.28	43.88	74.00	-30.12
11100.00	45.44	Ave	175	2.0	H	5.28	50.72	54.00	-3.28
802.11ac(VHT40) U-NII-2C High channel 5670MHz									
303.54	46.31	QP	232	1.0	H	-11.62	34.69	46.00	-11.31
303.54	43.90	QP	280	1.3	V	-11.62	32.28	46.00	-13.72
4519.82	-1.00	PK	137	1.7	H	-1.94	-2.94	74.00	-76.94
4519.82	43.68	Ave	137	1.7	H	-1.94	41.74	54.00	-12.26
5138.38	45.52	PK	164	1.6	H	-1.06	44.46	74.00	-29.54
5138.38	39.68	Ave	164	1.6	H	-1.06	38.62	54.00	-15.38
11340.00	0.66	PK	85	1.7	H	5.28	5.94	74.00	-68.06
11340.00	44.52	Ave	85	1.7	H	5.28	49.80	54.00	-4.20

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									
303.54	36.86	QP	330	1.5	H	-11.62	25.24	46.00	-20.76
303.54	38.93	QP	356	1.3	V	-11.62	27.31	46.00	-18.69
4501.23	37.19	PK	31	1.5	H	-1.92	35.27	74.00	-38.73
4501.23	23.73	Ave	31	1.5	H	-1.92	21.81	54.00	-32.19
11510.00	38.99	PK	121	1.0	H	5.88	44.87	74.00	-29.13
11510.00	34.28	Ave	121	1.0	H	5.88	40.16	54.00	-13.84
5374.65	45.57	PK	283	1.3	H	-1.07	44.50	74.00	-29.50
5374.65	38.51	Ave	283	1.3	H	-1.07	37.44	54.00	-16.56
802.11ac(VHT40) U-NII-3 High Channel 5795MHz									
303.54	36.63	QP	173	1.1	H	-11.62	25.01	46.00	-20.99
303.54	38.28	QP	53	1.9	V	-11.62	26.66	46.00	-19.34
4529.31	36.50	PK	234	1.9	H	-1.86	34.64	74.00	-39.36
4529.31	22.88	Ave	234	1.9	H	-1.86	21.02	54.00	-32.98
11590.00	40.77	PK	213	1.5	H	5.63	46.40	74.00	-27.60
11590.00	37.66	Ave	213	1.5	H	5.63	43.29	54.00	-10.71
5385.22	46.74	PK	218	1.0	H	-1.03	45.71	74.00	-28.29
5385.22	38.36	Ave	218	1.0	H	-1.03	37.33	54.00	-16.67

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									
303.54	42.40	QP	230	1.7	H	-11.62	30.78	46.00	-15.22
303.54	36.05	QP	98	1.6	V	-11.62	24.43	46.00	-21.57
4513.83	24.59	PK	113	2.0	H	-1.88	22.71	74.00	-51.29
4513.83	43.60	Ave	113	2.0	H	-1.88	41.72	54.00	-12.28
5120.91	39.40	PK	142	1.3	H	-1.06	38.34	74.00	-35.66
5120.91	47.03	Ave	142	1.3	H	-1.06	45.97	54.00	-8.03
10420.00	41.23	PK	200	1.6	H	4.65	45.88	74.00	-28.12
10420.00	38.08	Ave	200	1.6	H	4.65	42.73	54.00	-11.27
802.11ac(VHT80) U-NII-2A Low Channel 5290MHz									
303.54	38.55	QP	112	1.4	H	-11.62	26.93	46.00	-19.07
303.54	26.12	QP	302	1.7	V	-11.62	14.50	46.00	-31.50
4520.21	40.37	PK	247	1.8	H	-1.88	38.49	74.00	-35.51
4520.21	37.33	Ave	247	1.8	H	-1.88	35.45	54.00	-18.55
5134.22	47.59	PK	53	1.4	H	-1.06	46.53	74.00	-27.47
5134.22	40.94	Ave	53	1.4	H	-1.06	39.88	54.00	-14.12
10580.00	36.73	PK	126	1.1	H	4.65	41.38	74.00	-32.62
10580.00	44.65	Ave	126	1.1	H	4.65	49.30	54.00	-4.70

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									
303.54	29.10	QP	110	1.0	H	-11.62	17.48	46.00	-28.52
303.54	42.93	QP	136	1.4	V	-11.62	31.31	46.00	-14.69
4533.32	36.51	PK	359	1.5	H	-1.88	34.63	74.00	-39.37
4533.32	44.44	Ave	359	1.5	H	-1.88	42.56	54.00	-11.44
5118.29	43.45	PK	335	1.5	H	-1.06	42.39	74.00	-31.61
5118.29	36.72	Ave	335	1.5	H	-1.06	35.66	54.00	-18.34
11060.00	46.03	PK	178	1.8	H	4.65	50.68	74.00	-23.32
11060.00	40.65	Ave	178	1.8	H	4.65	45.30	54.00	-8.70
802.11ac(VHT80) U-NII-3 Low channel 5775MHz									
303.54	36.67	QP	53	1.6	H	-11.62	25.05	46.00	-20.95
303.54	29.82	QP	292	1.6	V	-11.62	18.20	46.00	-27.80
4514.56	43.29	PK	75	1.3	H	-1.85	41.44	74.00	-32.56
4514.56	43.77	Ave	75	1.3	H	-1.85	41.92	54.00	-12.08
11550.00	42.48	PK	96	1.9	H	4.83	47.31	74.00	-26.69
11550.00	36.96	Ave	96	1.9	H	4.83	41.79	54.00	-12.21
5388.94	45.38	PK	290	1.4	H	-1.14	44.24	74.00	-29.76
5388.94	39.94	Ave	290	1.4	H	-1.14	38.80	54.00	-15.20

Test Frequency: 12GHz~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

Type of Modulation	On time ms	Period ms	Duty Cycle linear	Duty Cycle %	Duty Cycle Factor(dB)	Average Factor(dB)
U-NII-1 802.11a	0.1760	0.2790	0.63	63.08	2.00	-4.00
U-NII-1 802.11n(HT20)	0.1620	0.2660	0.61	60.90	2.15	-4.31
U-NII-1 802.11n(HT40)	0.1000	0.2020	0.50	49.50	3.05	-6.11
U-NII-1 802.11ac (VHT20)	0.1470	0.2500	0.59	58.80	2.31	-4.61
U-NII-1 802.11ac (VHT40)	0.0880	0.1900	0.46	46.32	3.34	-6.69
U-NII-1 802.11ac (VHT80)	0.0630	0.1645	0.38	38.30	4.17	-8.34
U-NII-2A 802.11a	0.1760	0.2790	0.63	63.08	2.00	-4.00
U-NII-2A 802.11n(HT20)	0.1620	0.2660	0.61	60.90	2.15	-4.31
U-NII-2A 802.11n(HT40)	0.1000	0.2020	0.50	49.50	3.05	-6.11
U-NII-2A 802.11ac (VHT20)	0.1470	0.2500	0.59	58.80	2.31	-4.61
U-NII-2A 802.11ac (VHT40)	0.0880	0.1900	0.46	46.32	3.34	-6.69
U-NII-2A 802.11ac (VHT80)	0.0630	0.1645	0.38	38.30	4.17	-8.34
U-NII-2C 802.11a	0.1760	0.2790	0.63	63.08	2.00	-4.00
U-NII-2C 802.11n(HT20)	0.1620	0.2660	0.61	60.90	2.15	-4.31
U-NII-2C 802.11n(HT40)	0.1000	0.2020	0.50	49.50	3.05	-6.11
U-NII-2C 802.11ac (VHT20)	0.1470	0.2500	0.59	58.80	2.31	-4.61
U-NII-2C 802.11ac (VHT40)	0.0880	0.1900	0.46	46.32	3.34	-6.69
U-NII-2C 802.11ac (VHT80)	0.0630	0.1645	0.38	38.30	4.17	-8.34

U-NII-3 802.11a	0.1760	0.2790	0.63	63.08	2.00	-4.00
U-NII-3 802.11n(HT20)	0.1620	0.2660	0.61	60.90	2.15	-4.31
U-NII-3 802.11n(HT40)	0.1000	0.2020	0.50	49.50	3.05	-6.11
U-NII-3 802.11ac (VHT20)	0.1470	0.2500	0.59	58.80	2.31	-4.61
U-NII-3 802.11ac (VHT40)	0.0880	0.1900	0.46	46.32	3.34	-6.69
U-NII-3 802.11ac (VHT80)	0.0630	0.1645	0.38	38.30	4.17	-8.34

Remark:

Duty cycle=On Time/period;

Duty cycle factor=10*log (1/Duty cycle);

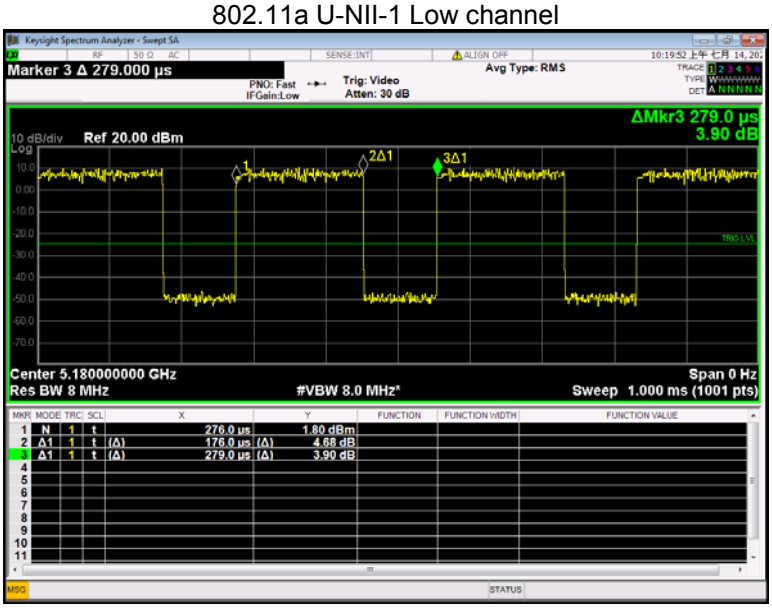
Average factor=$20\log_{10}$Duty cycle

Test result plots shown as follows:

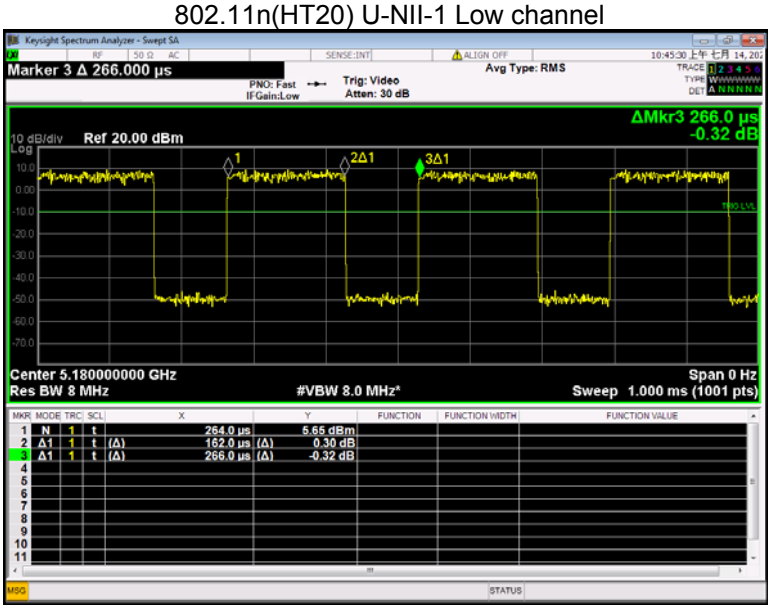
Test result plots shown as follows:

Test result plots shown as follows:

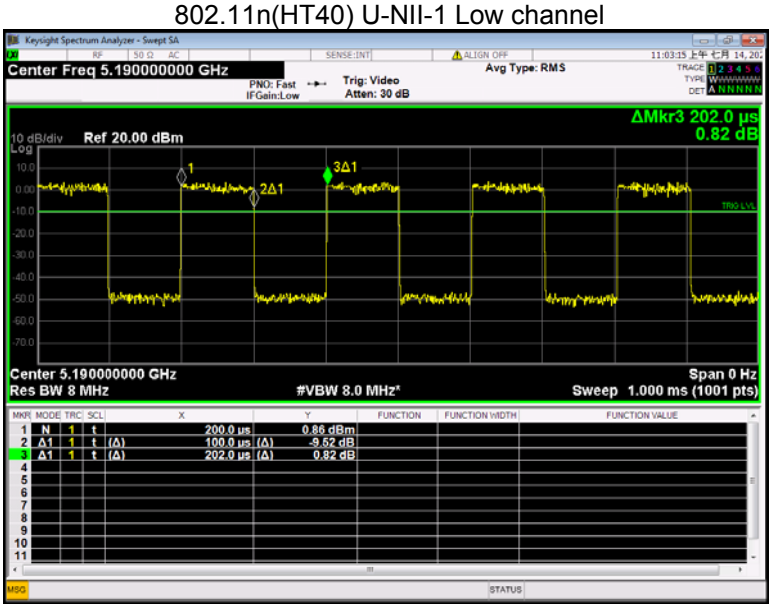
802.11a U-NII-1 Low channel



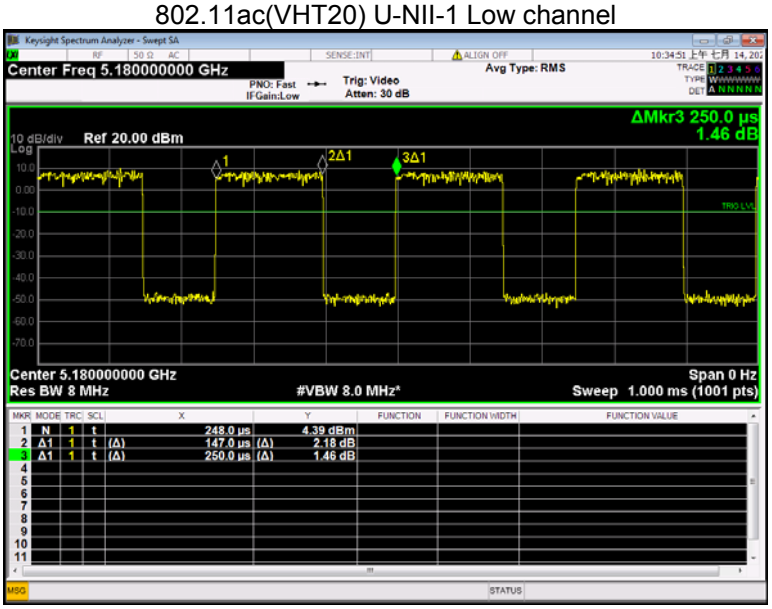
802.11n(HT20) U-NII-1 Low channel



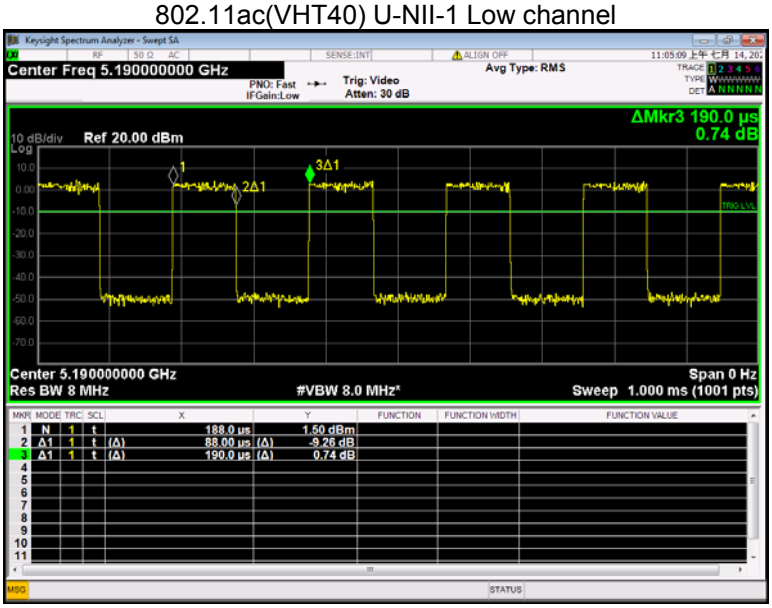
802.11n(HT40) U-NII-1 Low channel



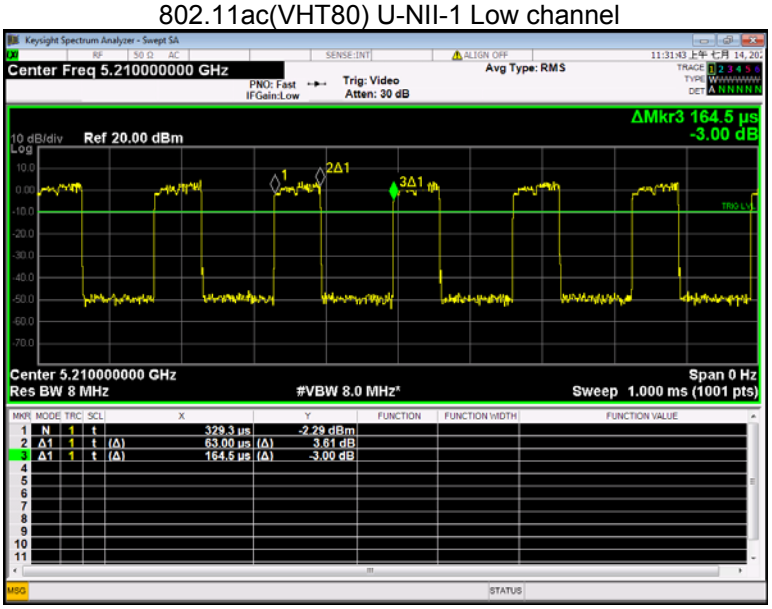
802.11ac(VHT20) U-NII-1 Low channel



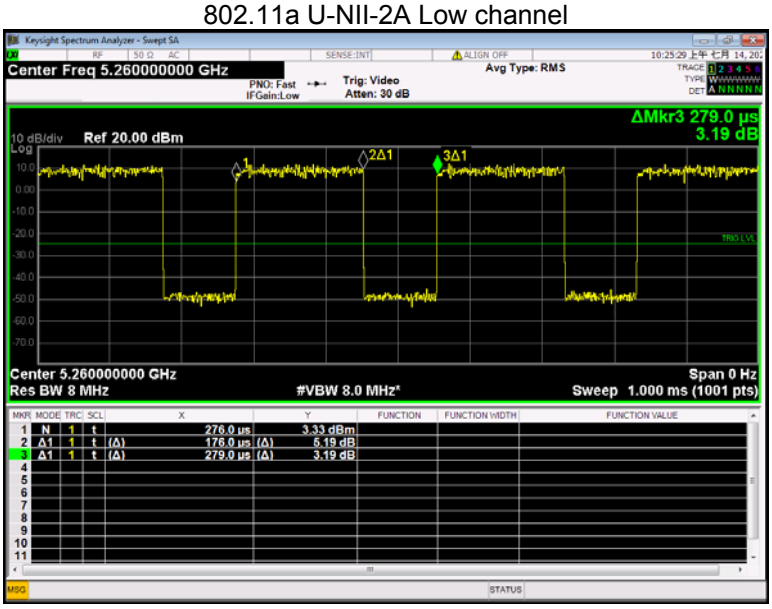
802.11ac(VHT40) U-NII-1 Low channel



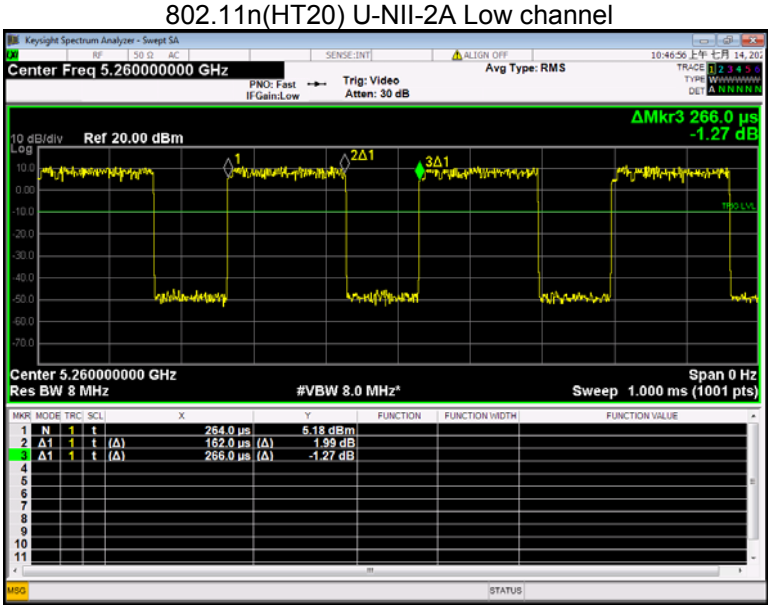
802.11ac(VHT80) U-NII-1 Low channel



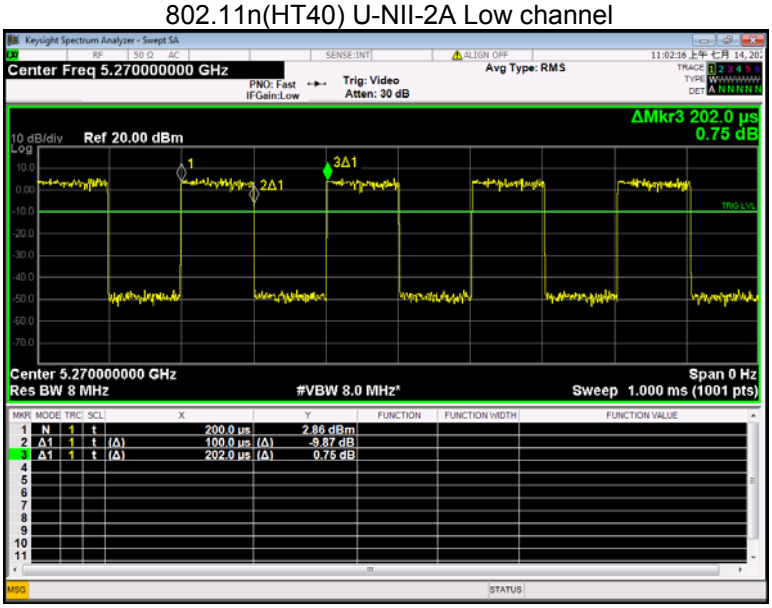
802.11a U-NII-2A Low channel



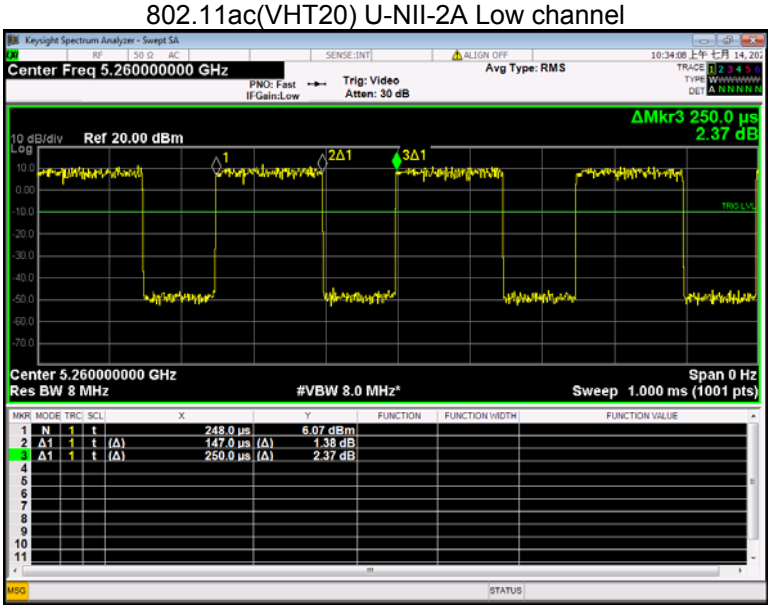
802.11n(HT20) U-NII-2A Low channel



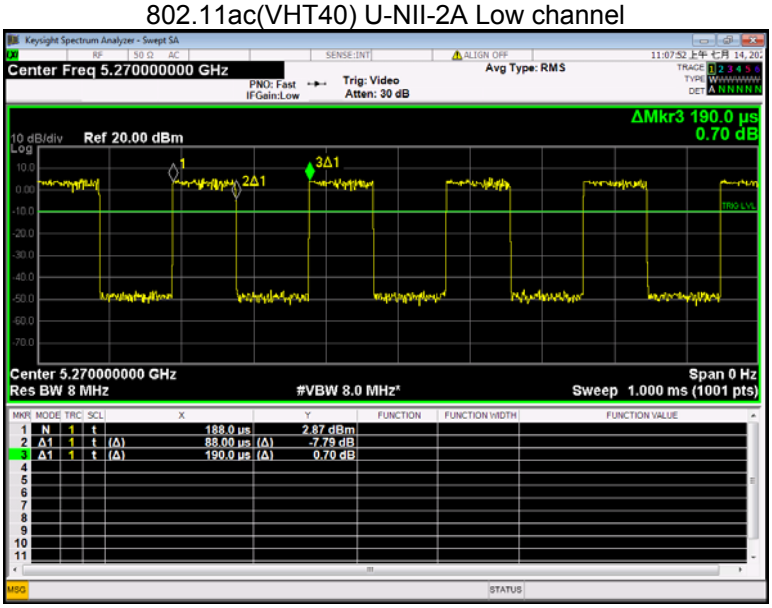
802.11n(HT40) U-NII-2A Low channel



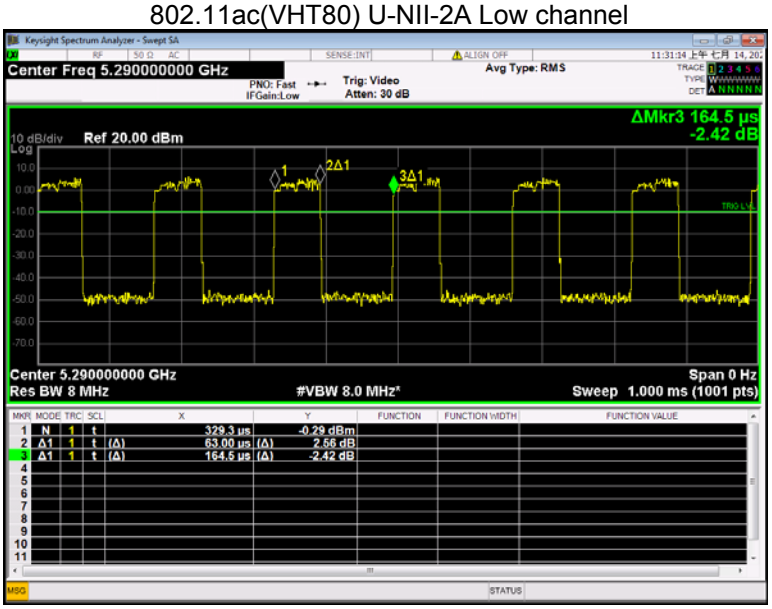
802.11ac(VHT20) U-NII-2A Low channel



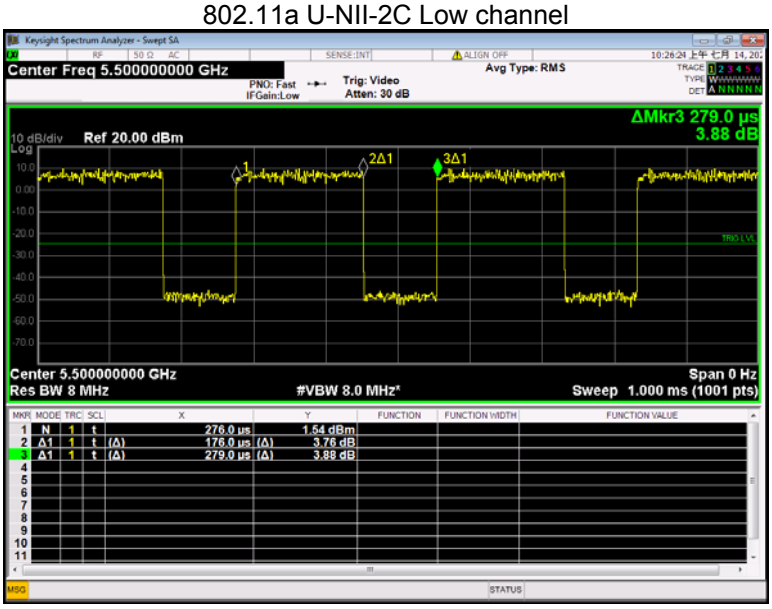
802.11ac(VHT40) U-NII-2A Low channel



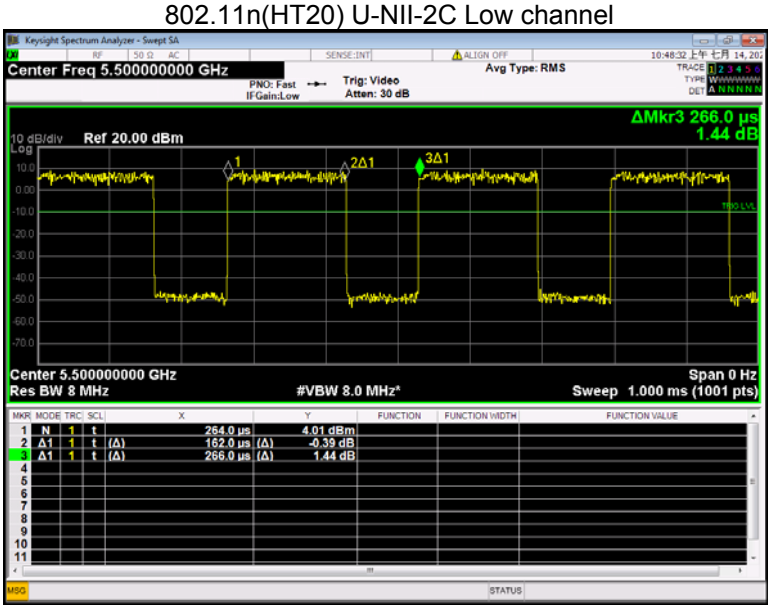
802.11ac(VHT80) U-NII-2A Low channel



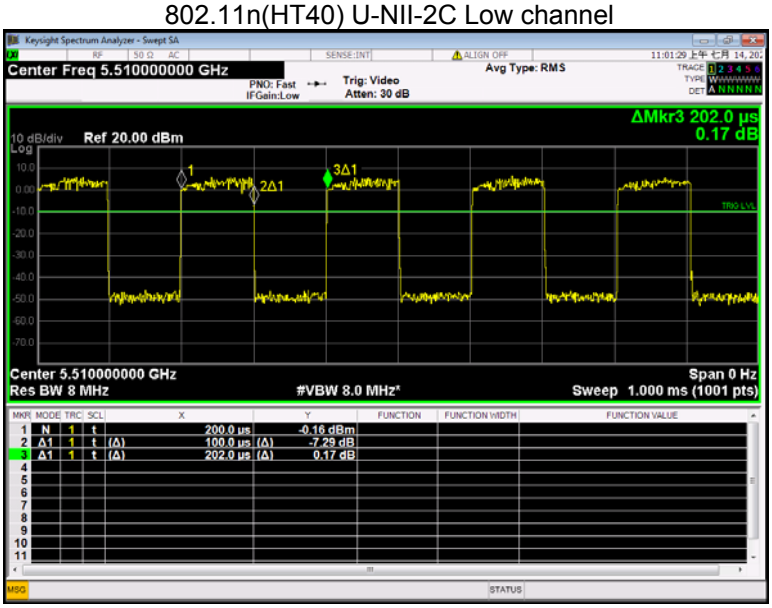
802.11a U-NII-2C Low channel



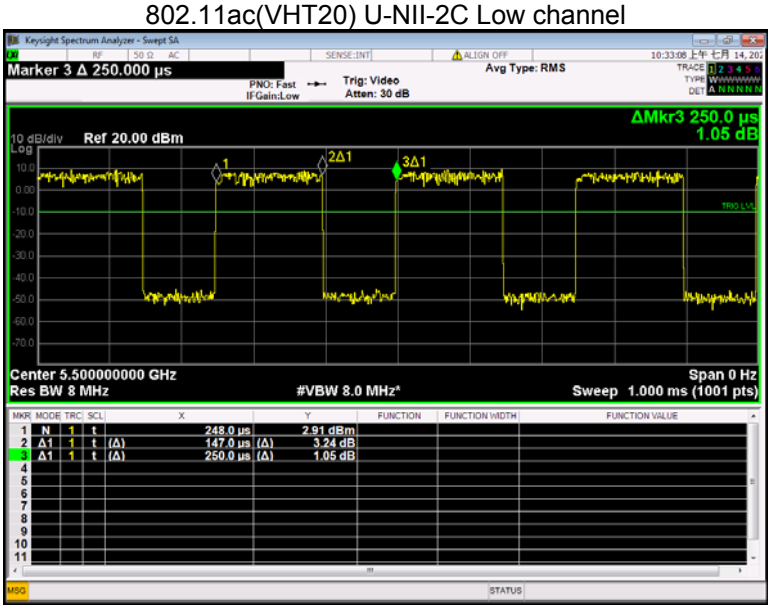
802.11n(HT20) U-NII-2C Low channel



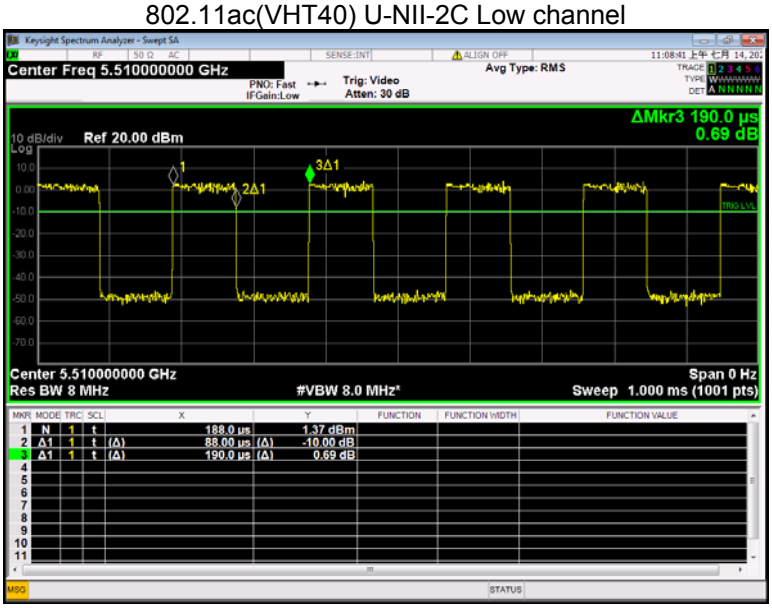
802.11n(HT40) U-NII-2C Low channel



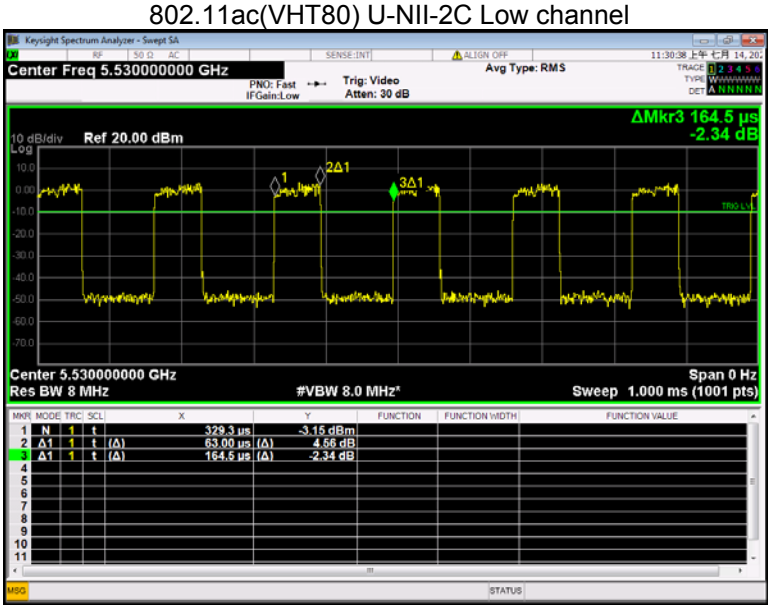
802.11ac(VHT20) U-NII-2C Low channel



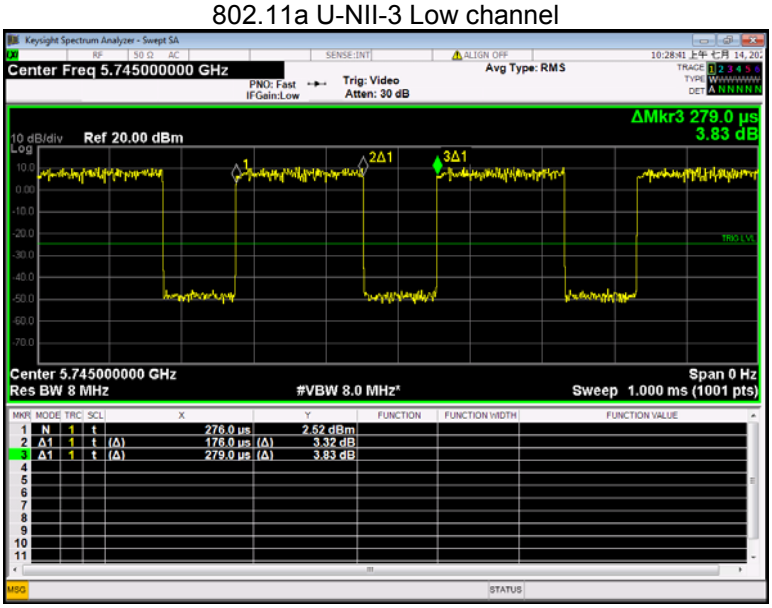
802.11ac(VHT40) U-NII-2C Low channel



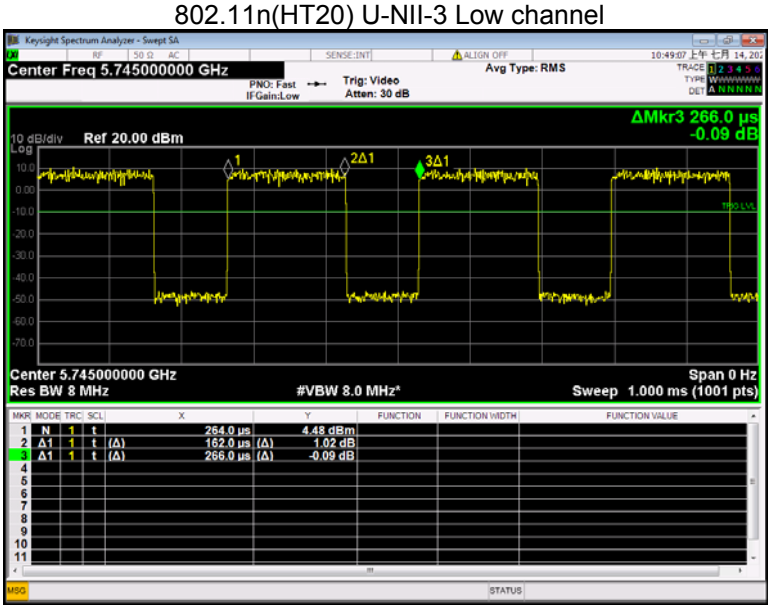
802.11ac(VHT80) U-NII-2C Low channel



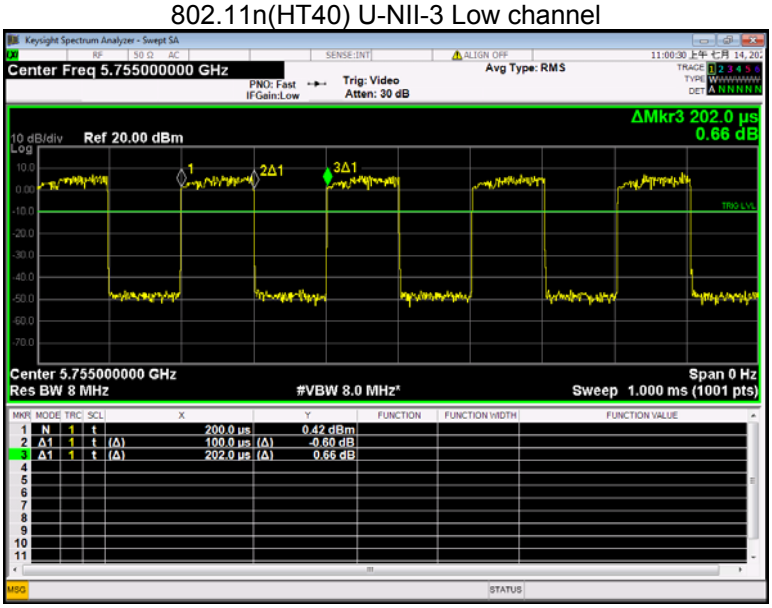
802.11a U-NII-3 Low channel



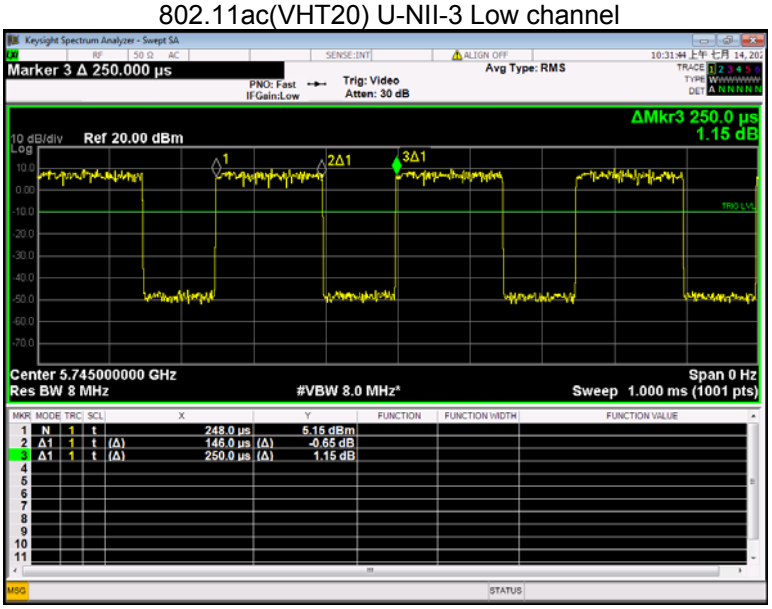
802.11n(HT20) U-NII-3 Low channel



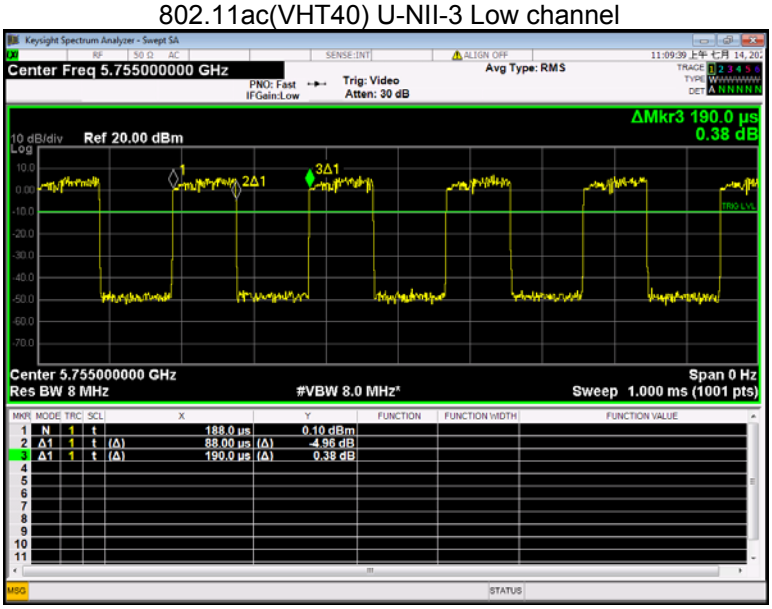
802.11n(HT40) U-NII-3 Low channel



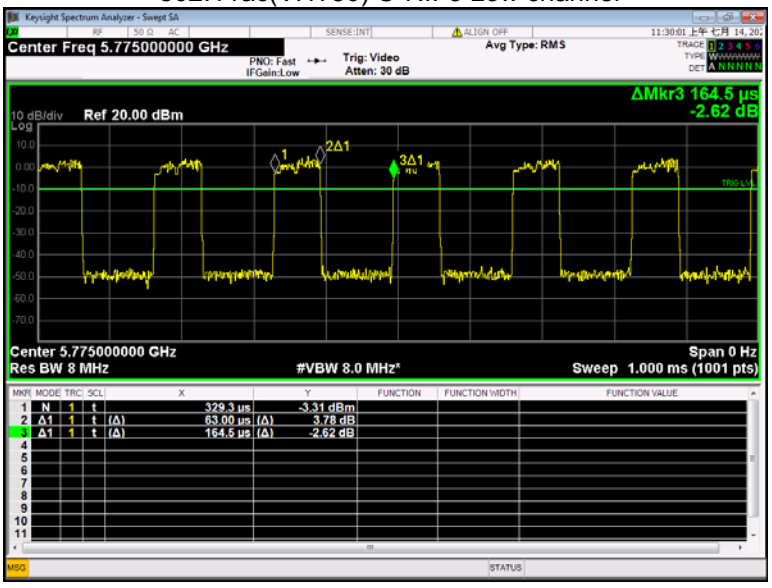
802.11ac(VHT20) U-NII-3 Low channel



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

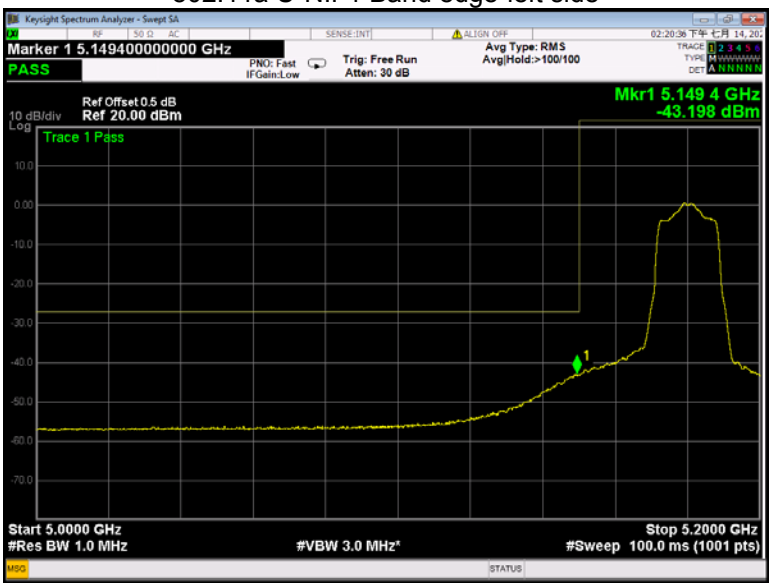
10.1 Test Produce

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.

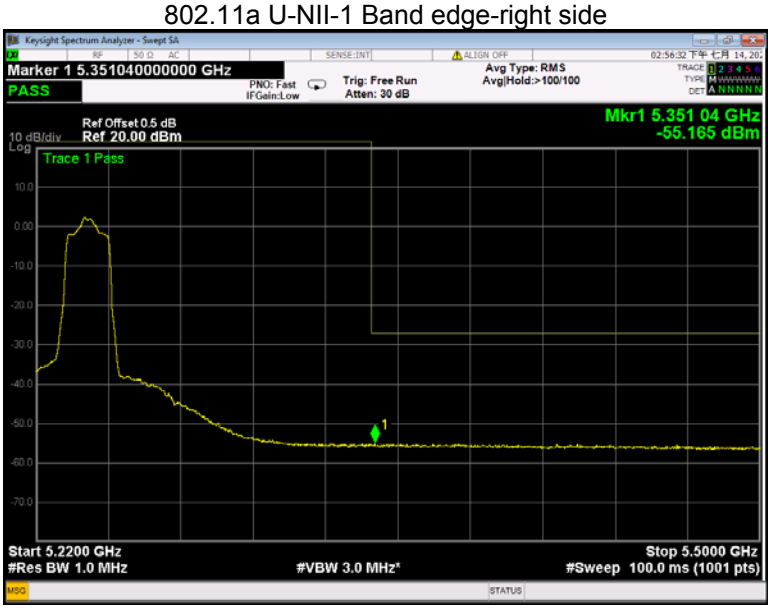
10.2 Test Result

Test result plots shown as follows:

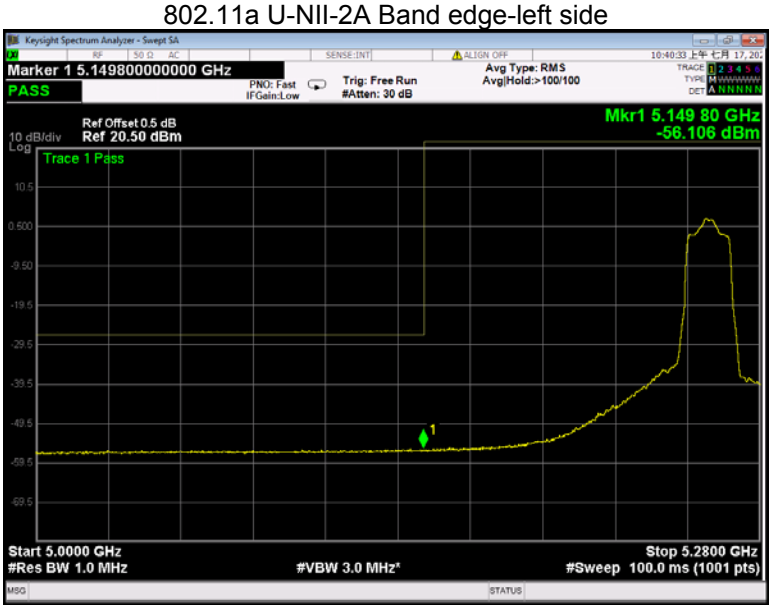
802.11a U-NII-1 Band edge-left side



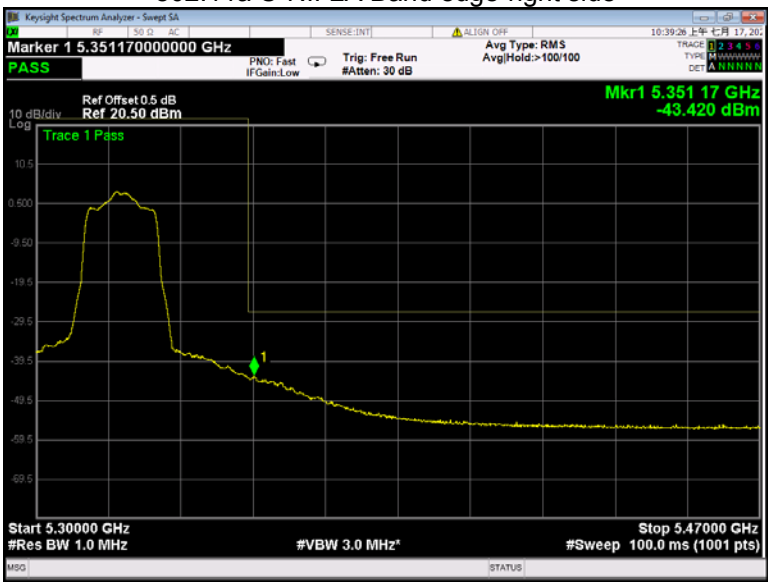
802.11a U-NII-1 Band edge-right side



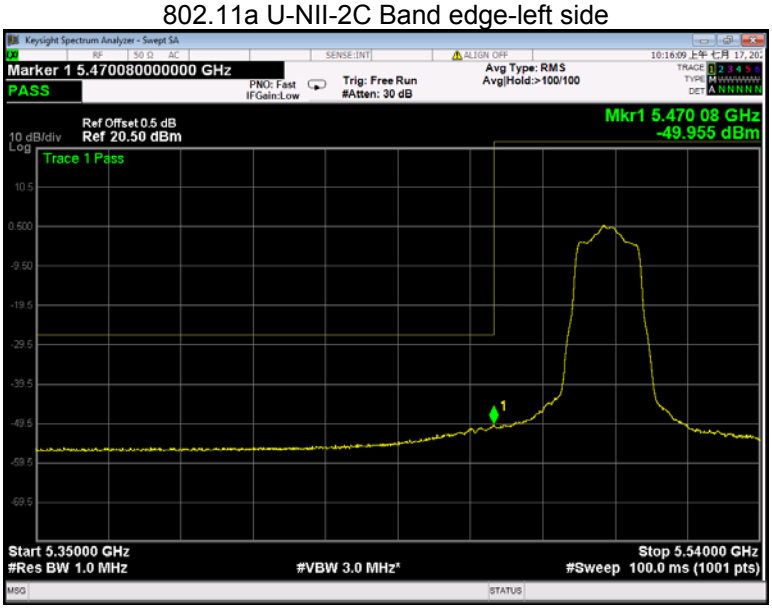
802.11a U-NII-2A Band edge-left side



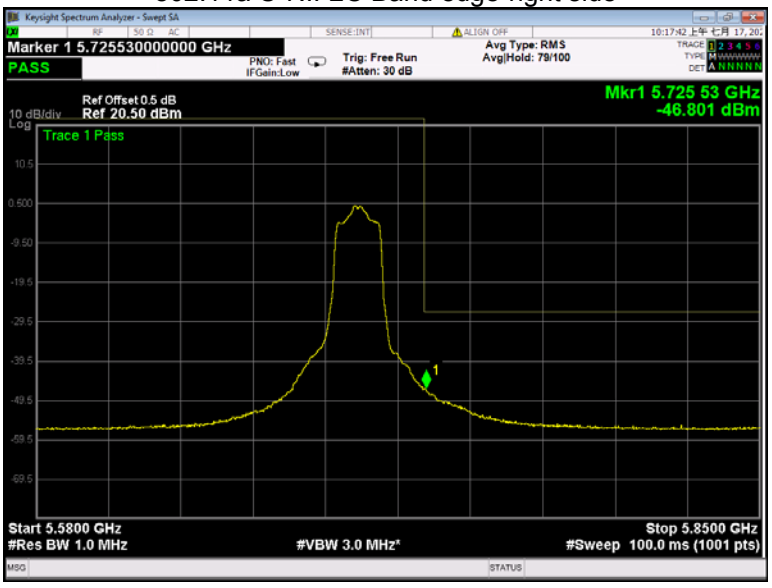
802.11a U-NII-2A Band edge-right side



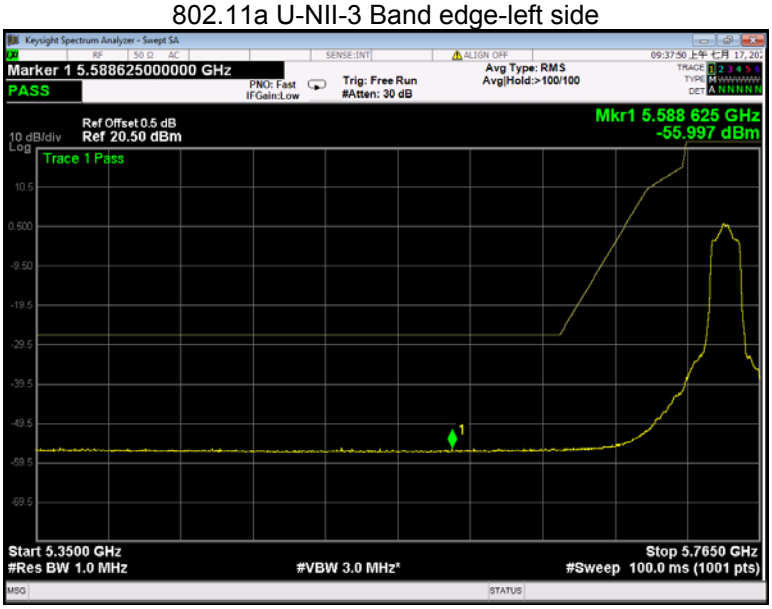
802.11a U-NII-2C Band edge-left side



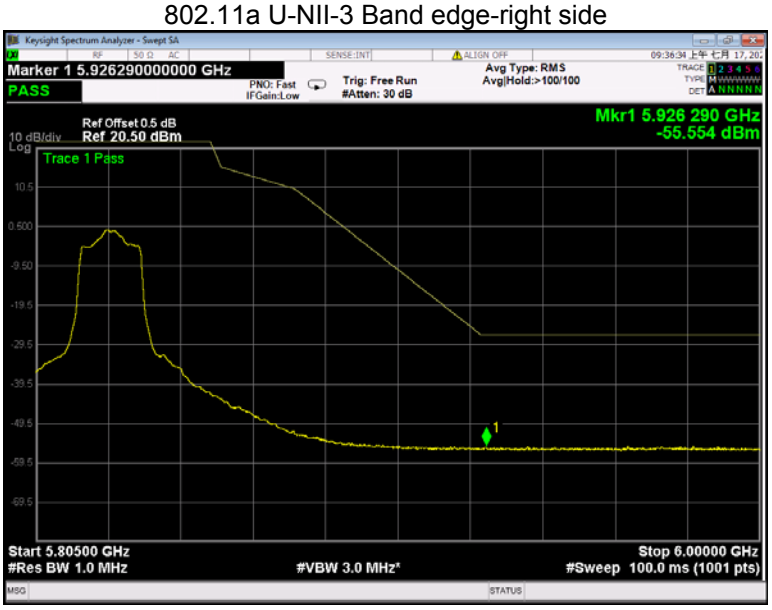
802.11a U-NII-2C Band edge-right side



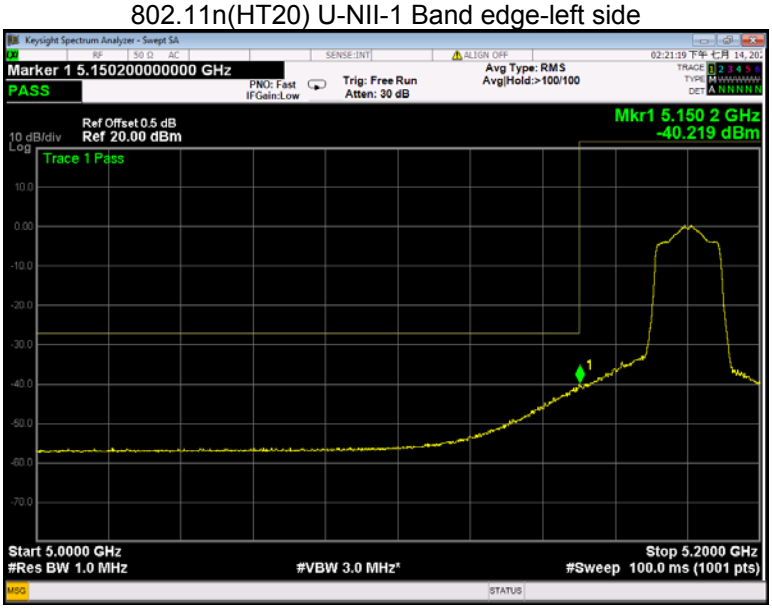
802.11a U-NII-3 Band edge-left side



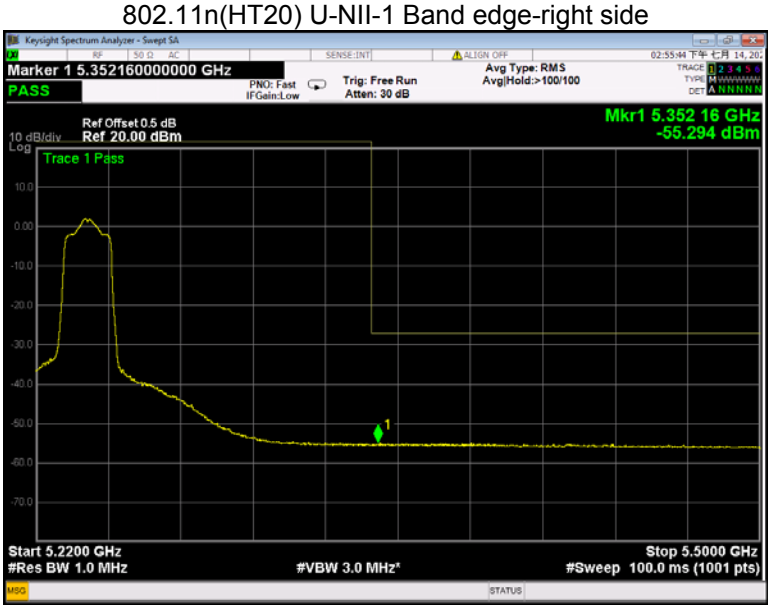
802.11a U-NII-3 Band edge-right side



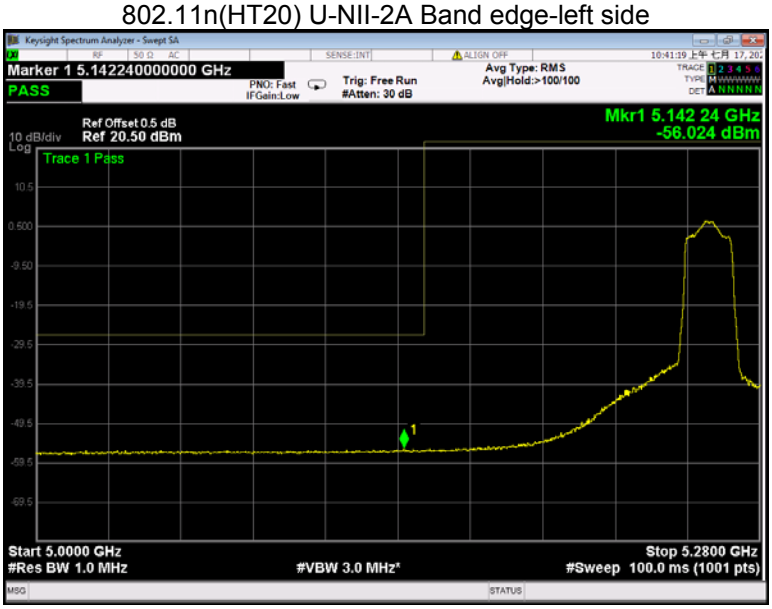
802.11n(HT20) U-NII-1 Band edge-left side



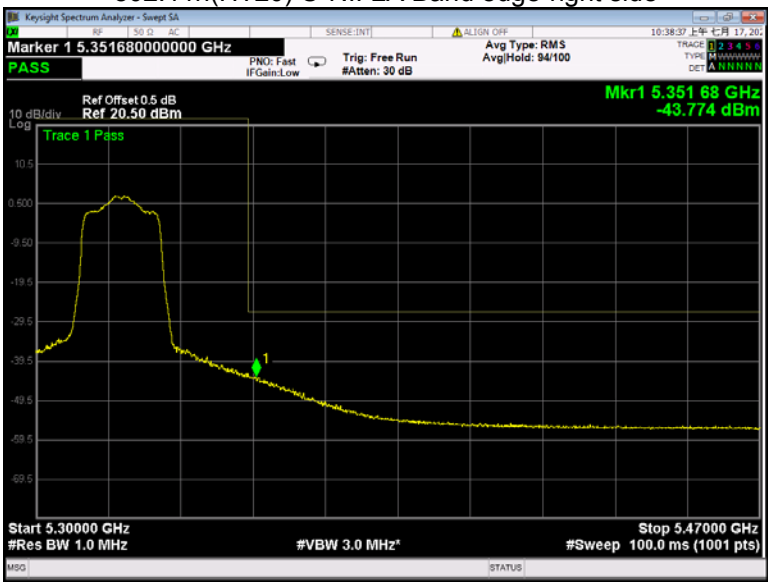
802.11n(HT20) U-NII-1 Band edge-right side



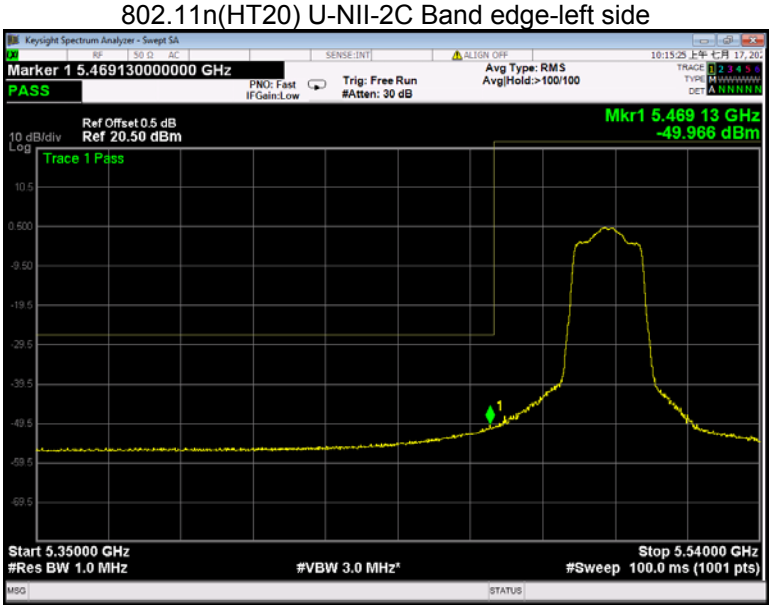
802.11n(HT20) U-NII-2A Band edge-left side



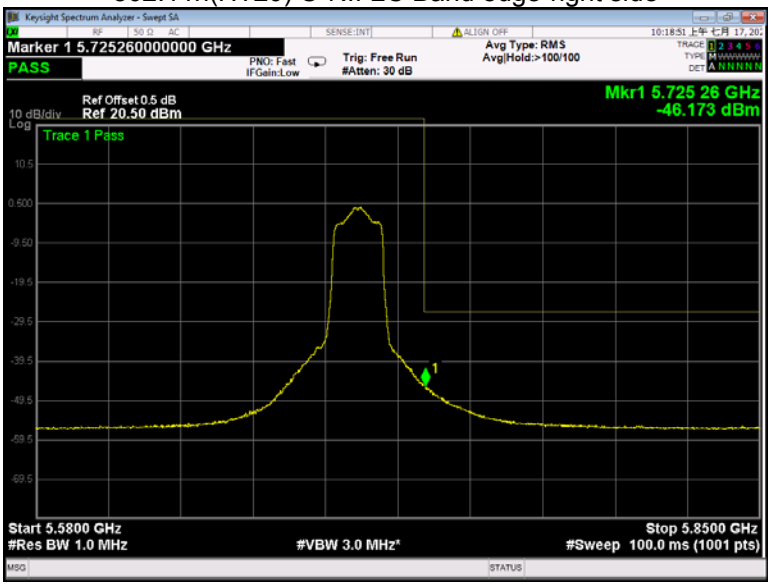
802.11n(HT20) U-NII-2A Band edge-right side



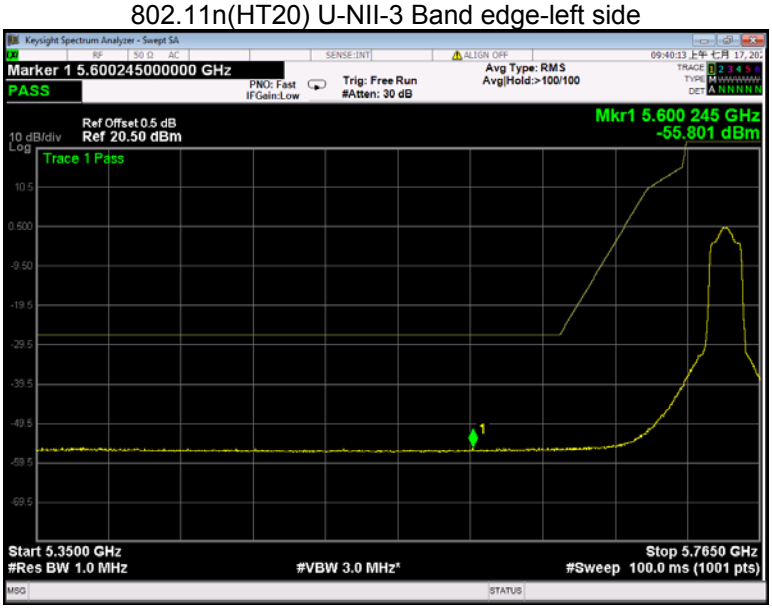
802.11n(HT20) U-NII-2C Band edge-left side



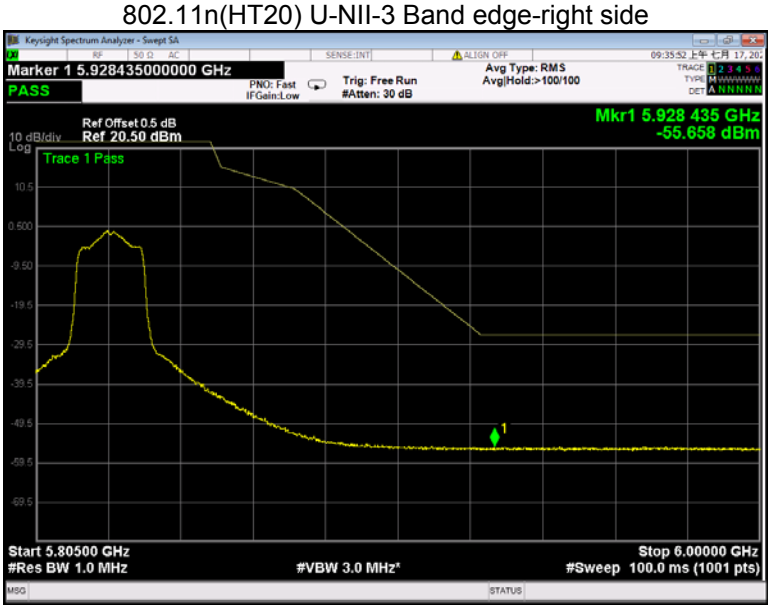
802.11n(HT20) U-NII-2C Band edge-right side



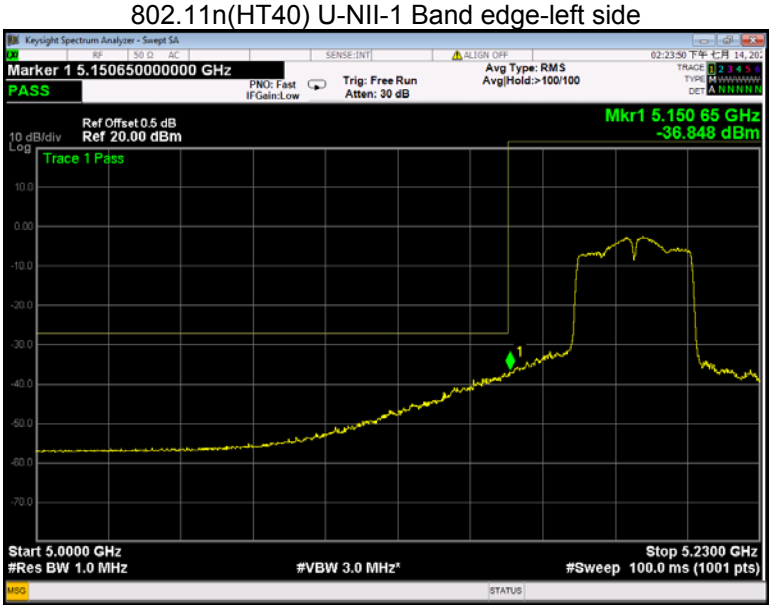
802.11n(HT20) U-NII-3 Band edge-left side



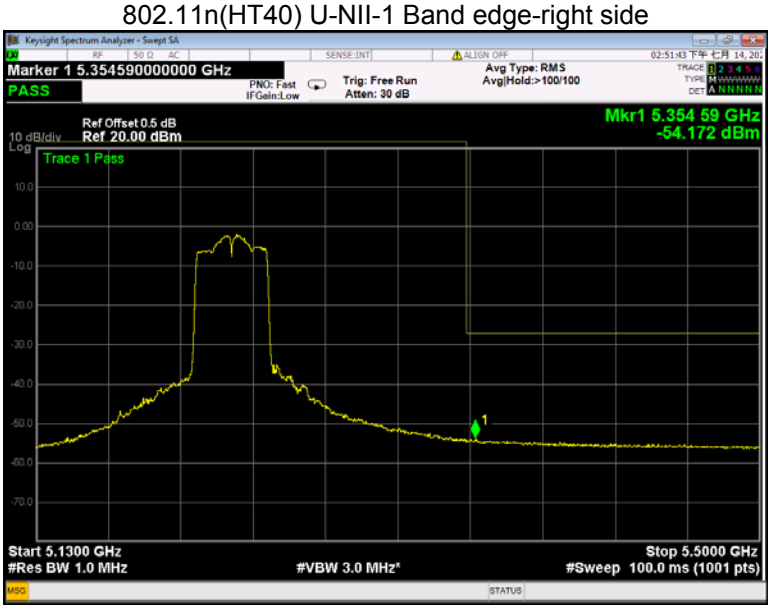
802.11n(HT20) U-NII-3 Band edge-right side



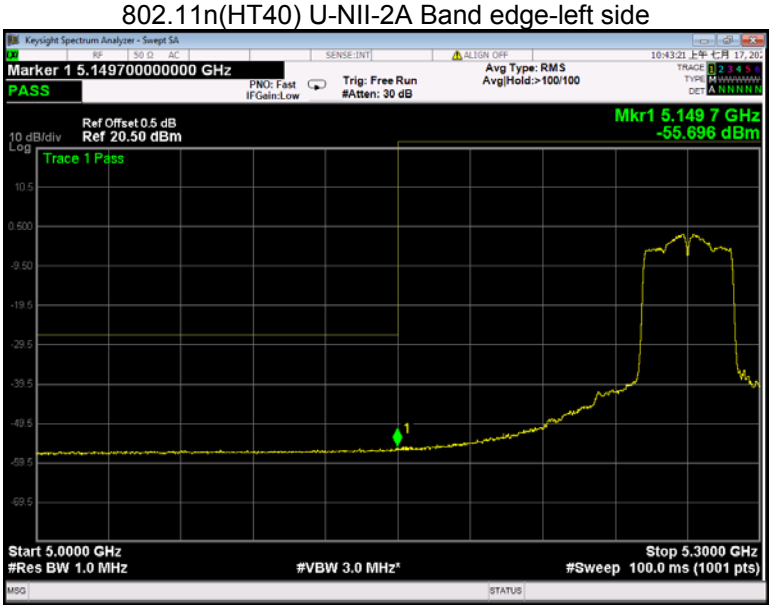
802.11n(HT40) U-NII-1 Band edge-left side



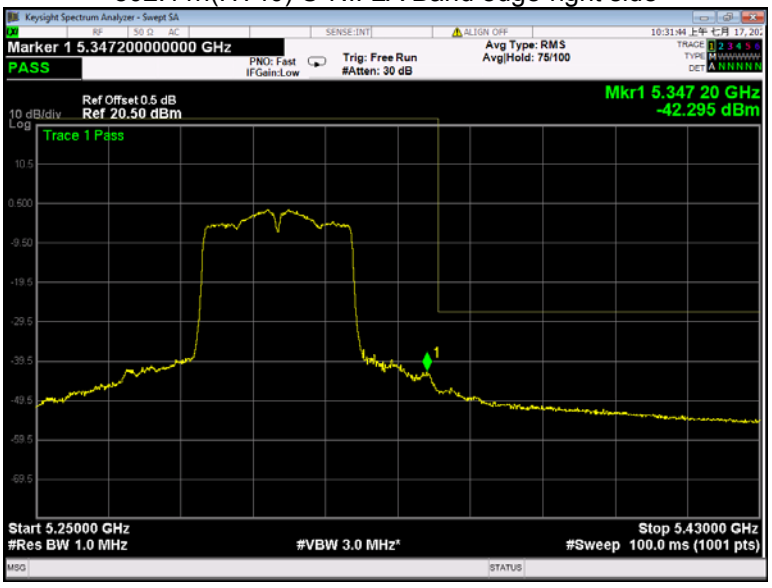
802.11n(HT40) U-NII-1 Band edge-right side



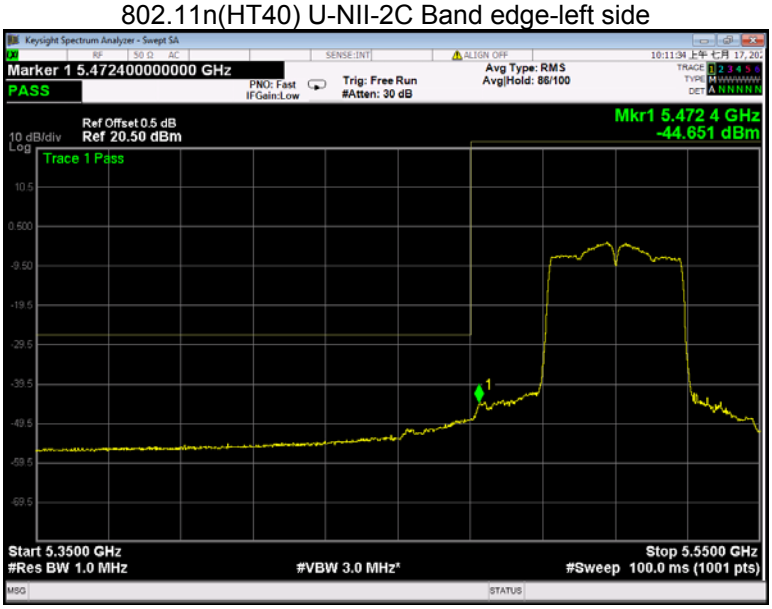
802.11n(HT40) U-NII-2A Band edge-left side



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

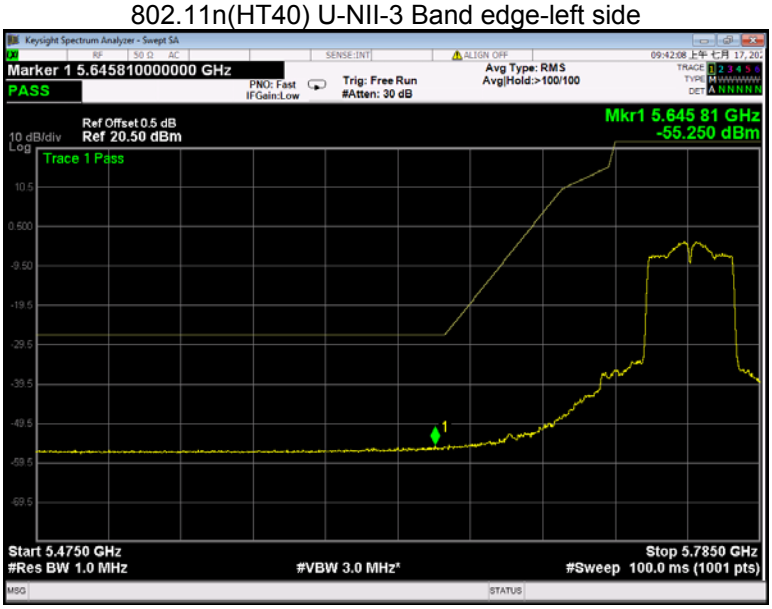


802.11n(HT40) U-NII-2C Band edge-left side

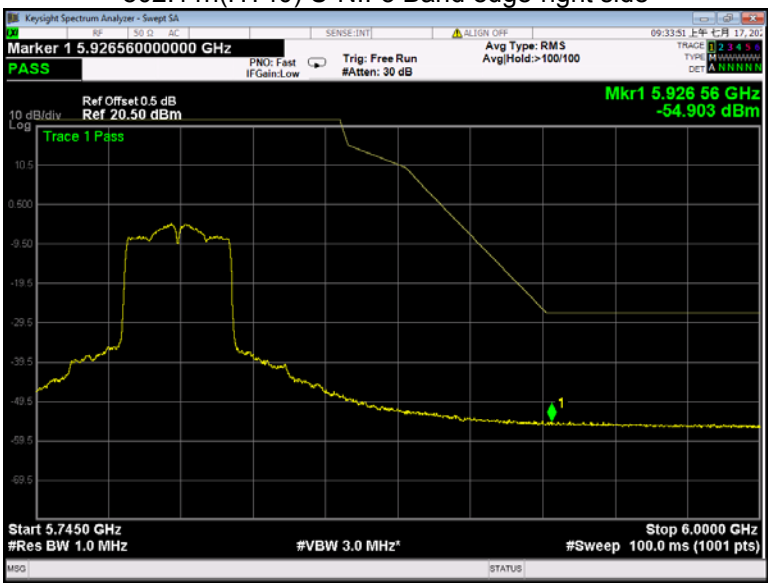


802.11n(HT40) U-NII-2C Band edge-right side

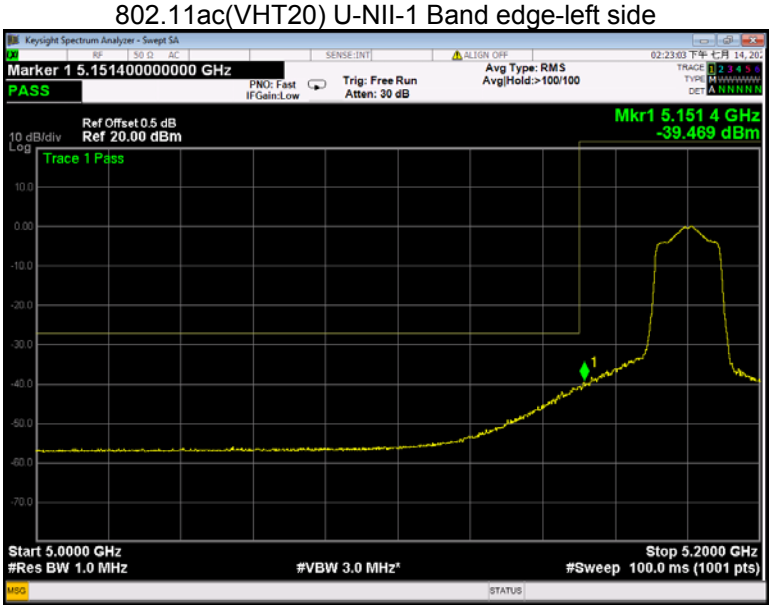
802.11n(HT40) U-NII-3 Band edge-left side



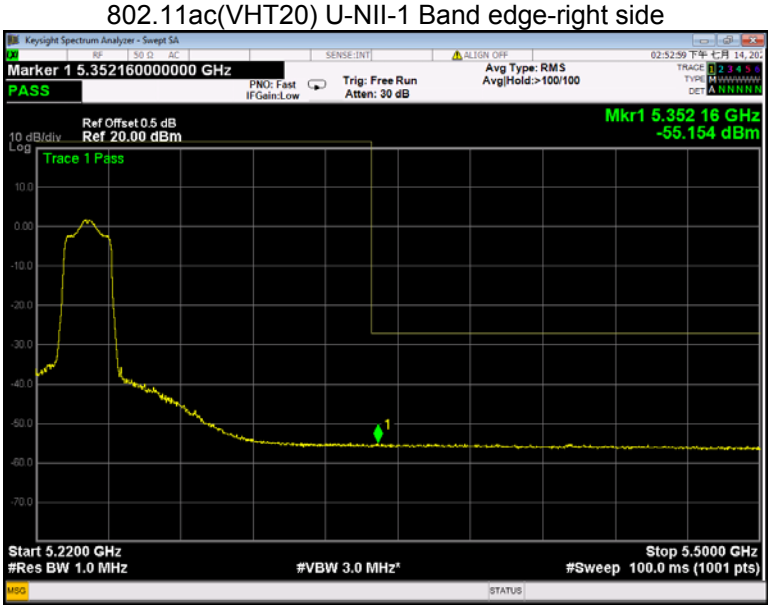
802.11n(HT40) U-NII-3 Band edge-right side



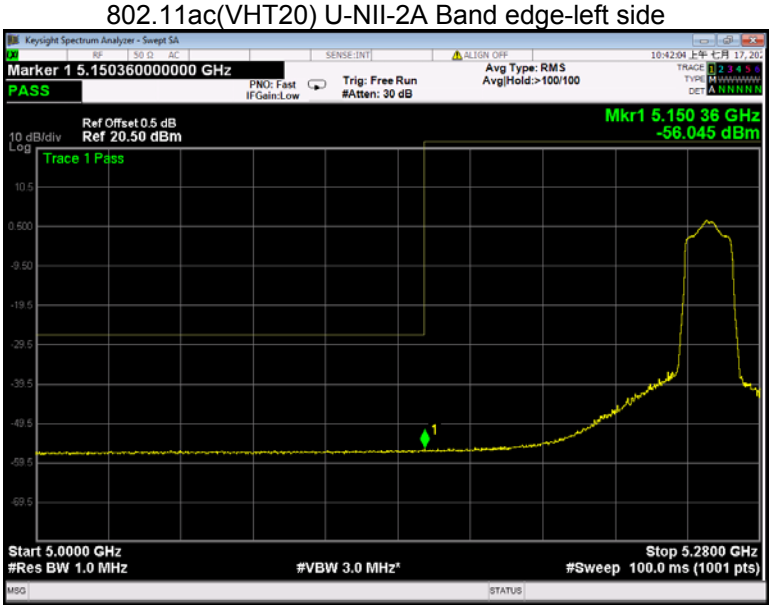
802.11ac(VHT20) U-NII-1 Band edge-left side



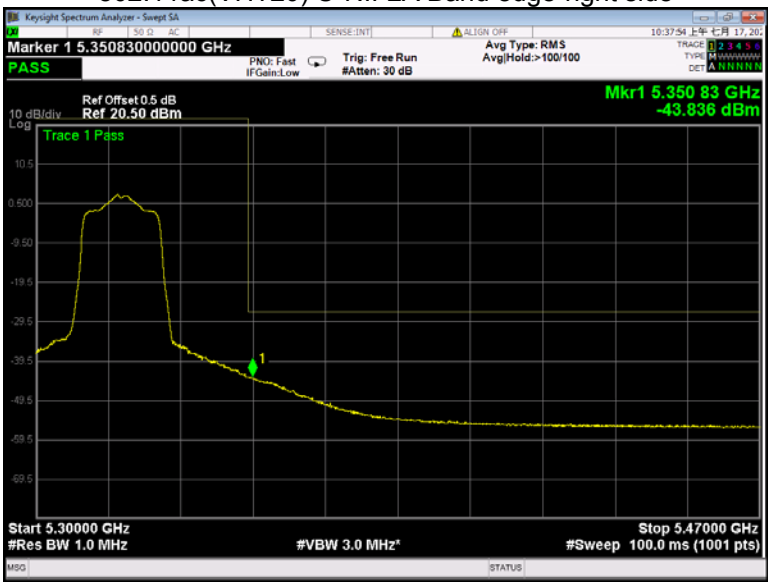
802.11ac(VHT20) U-NII-1 Band edge-right side



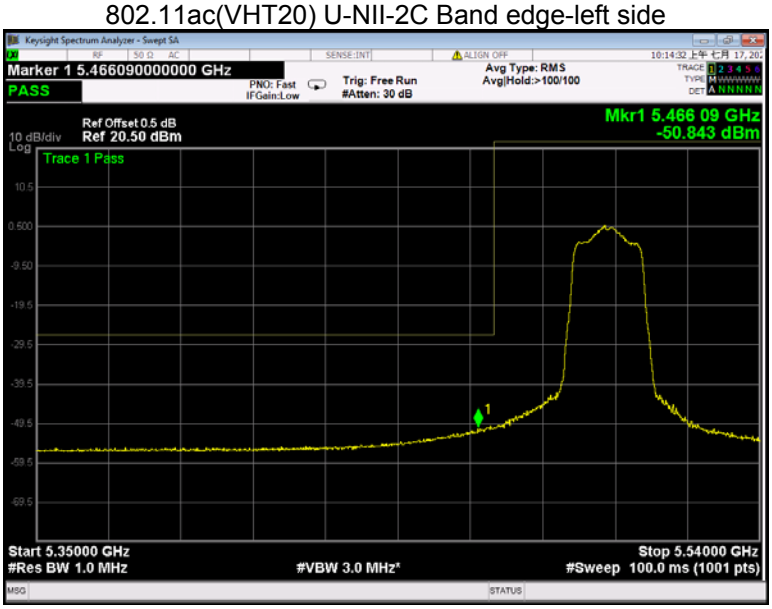
802.11ac(VHT20) U-NII-2A Band edge-left side



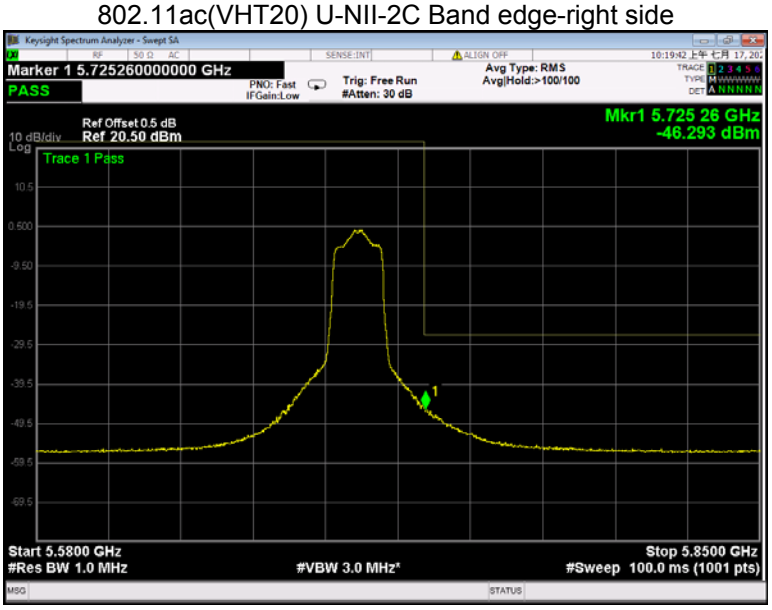
802.11ac(VHT20) U-NII-2A Band edge-right side



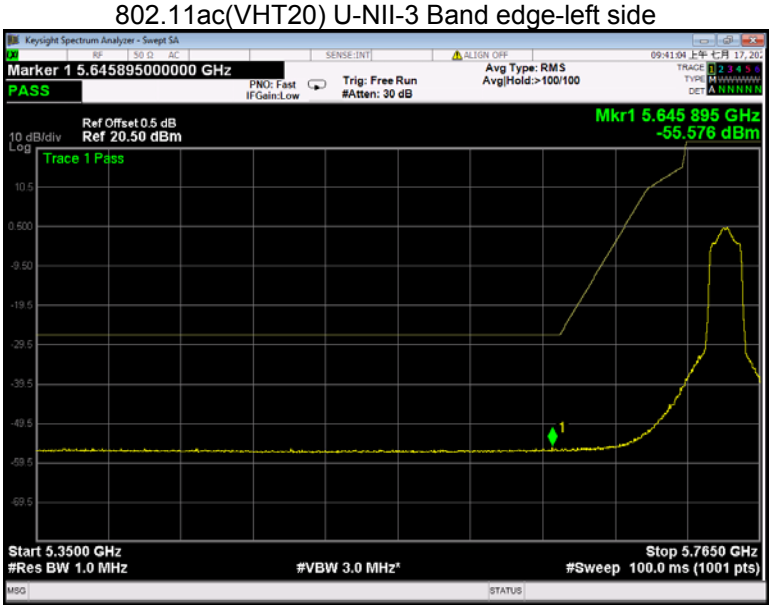
802.11ac(VHT20) U-NII-2C Band edge-left side



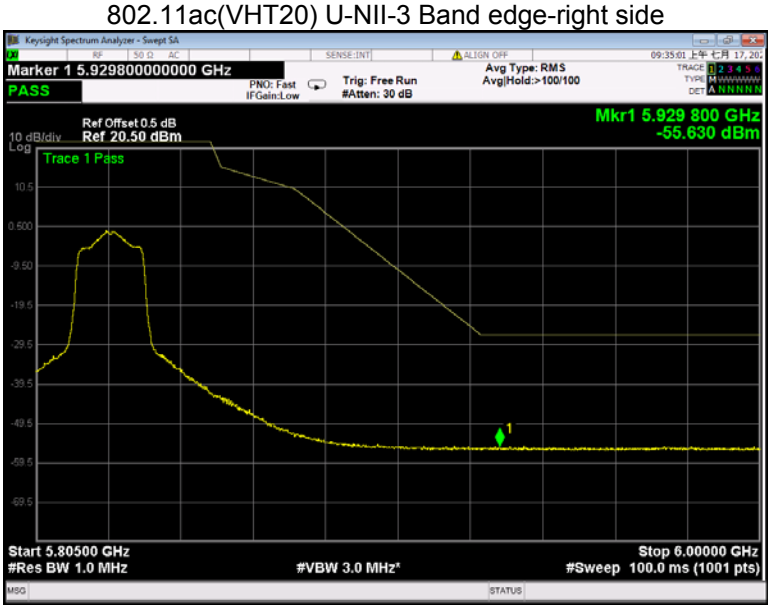
802.11ac(VHT20) U-NII-2C Band edge-right side



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

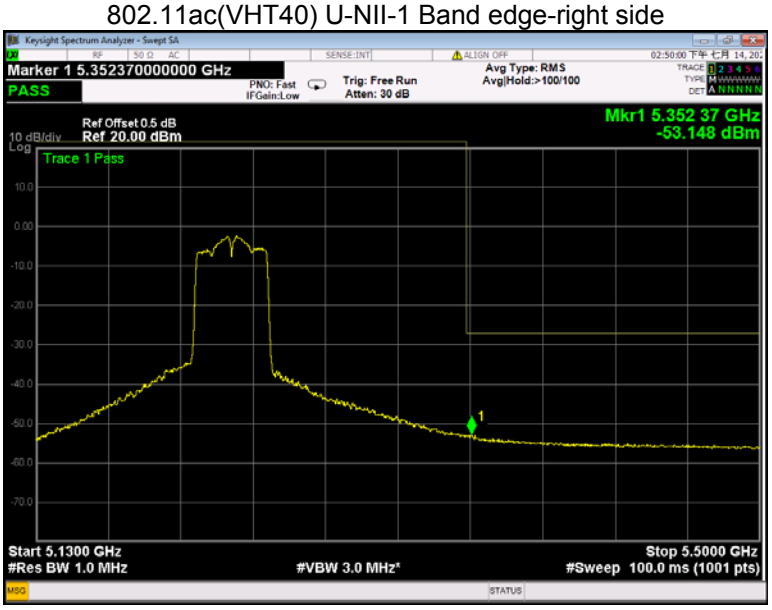


802.11ac(VHT20) U-NII-3 Band edge-right side

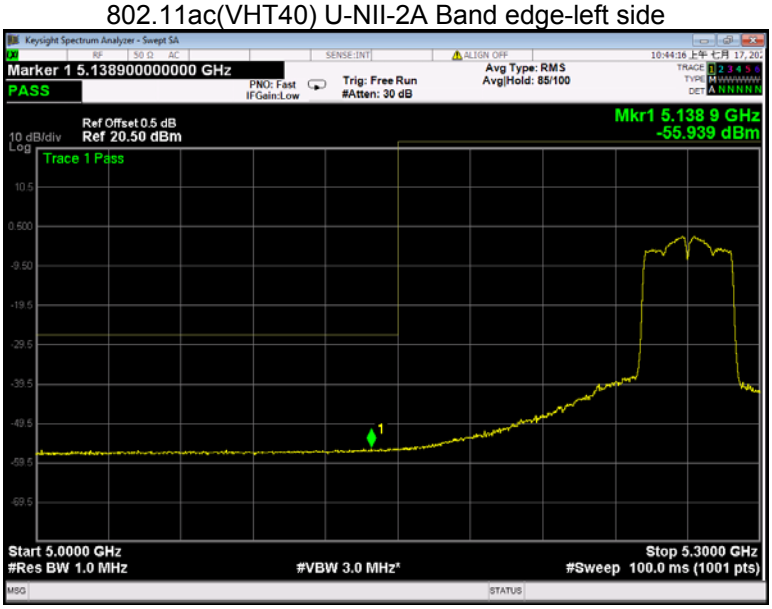


802.11ac(VHT40) U-NII-1 Band edge-left side

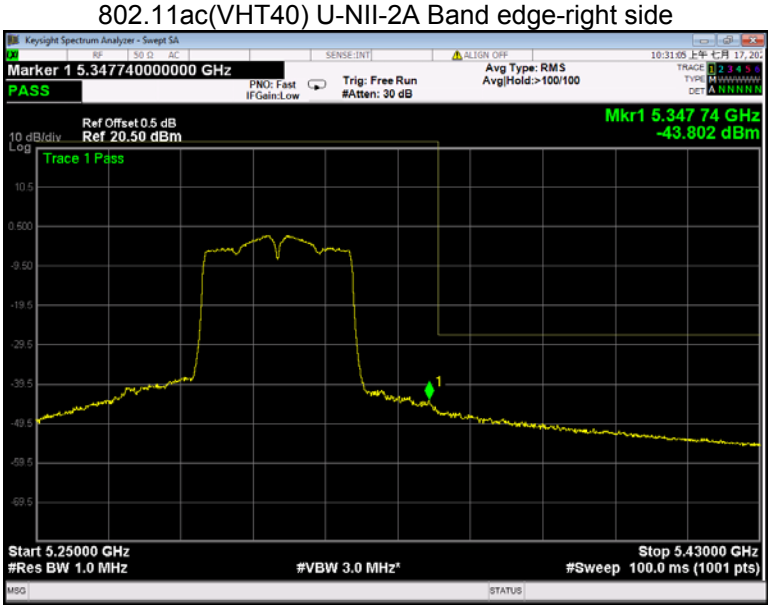
802.11ac(VHT40) U-NII-1 Band edge-right side



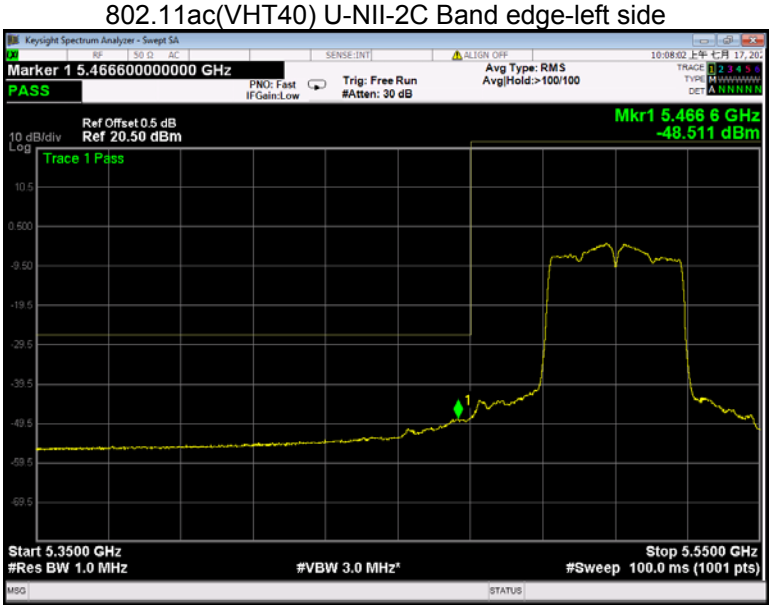
802.11ac(VHT40) U-NII-2A Band edge-left side



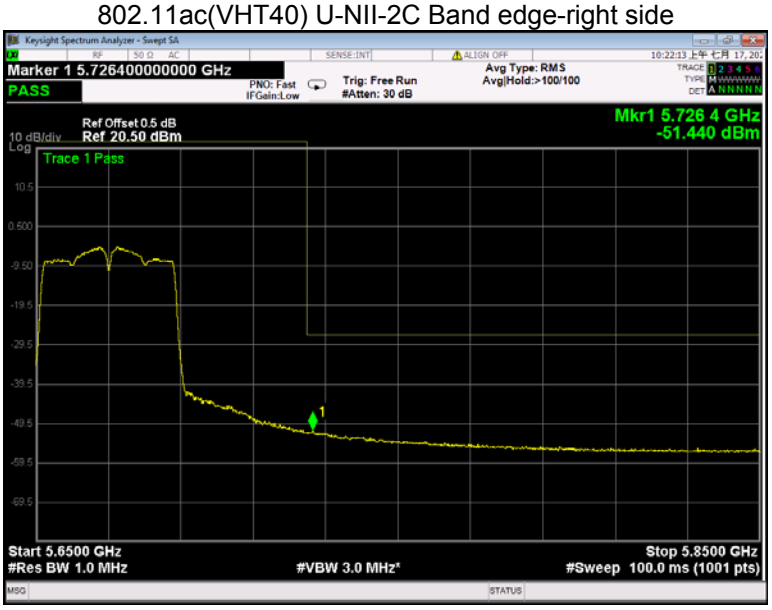
802.11ac(VHT40) U-NII-2A Band edge-right side



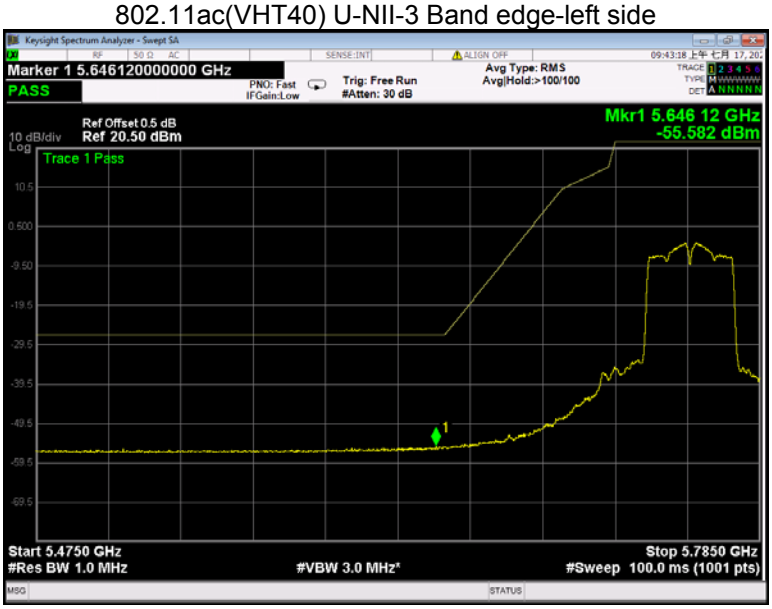
802.11ac(VHT40) U-NII-2C Band edge-left side



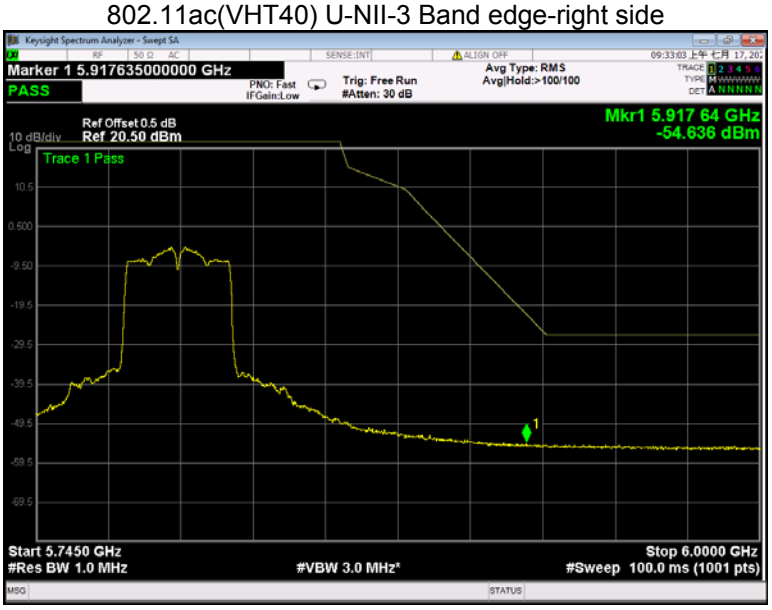
802.11ac(VHT40) U-NII-2C Band edge-right side



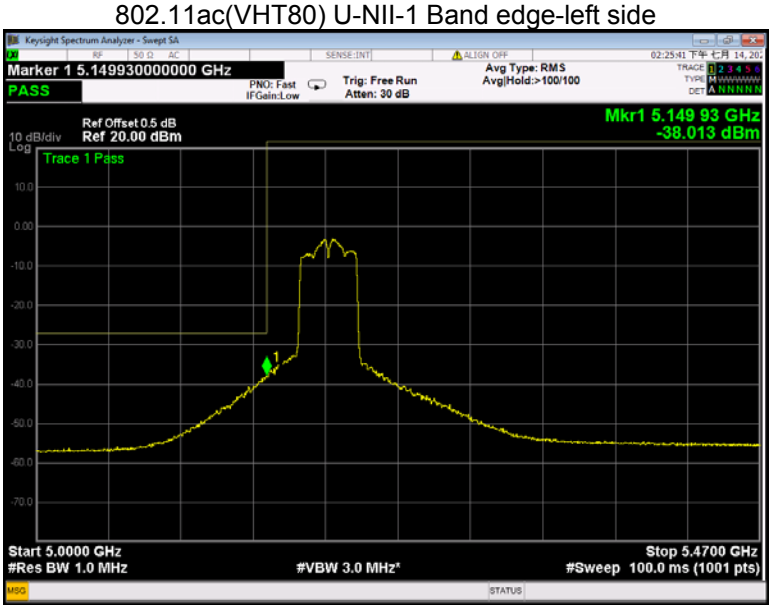
802.11ac(VHT40) U-NII-3 Band edge-left side



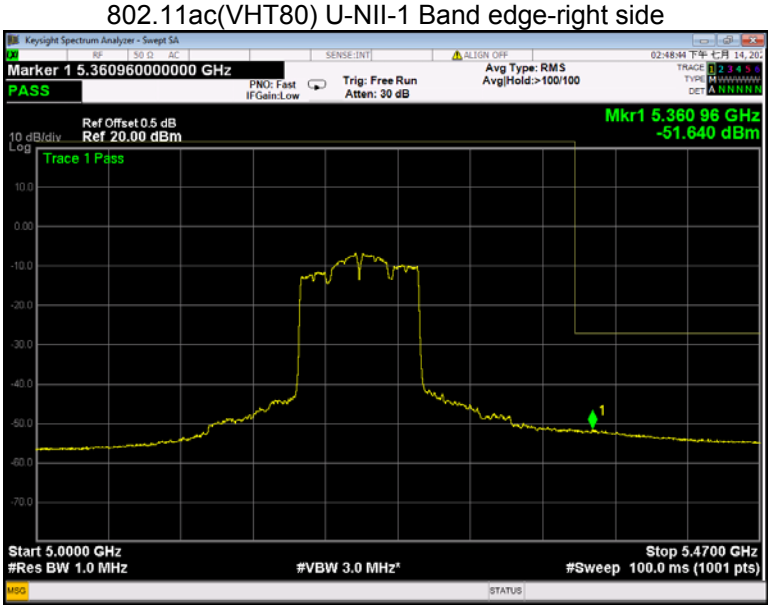
802.11ac(VHT40) U-NII-3 Band edge-right side



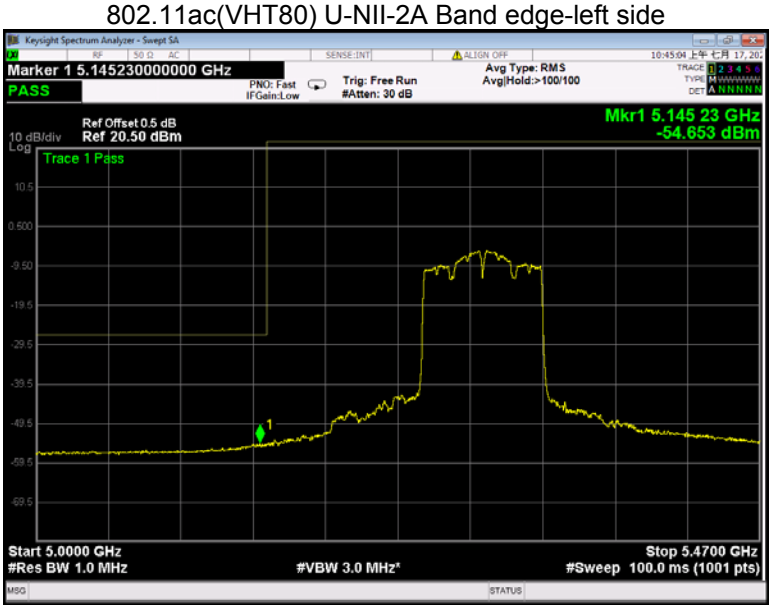
802.11ac(VHT80) U-NII-1 Band edge-left side



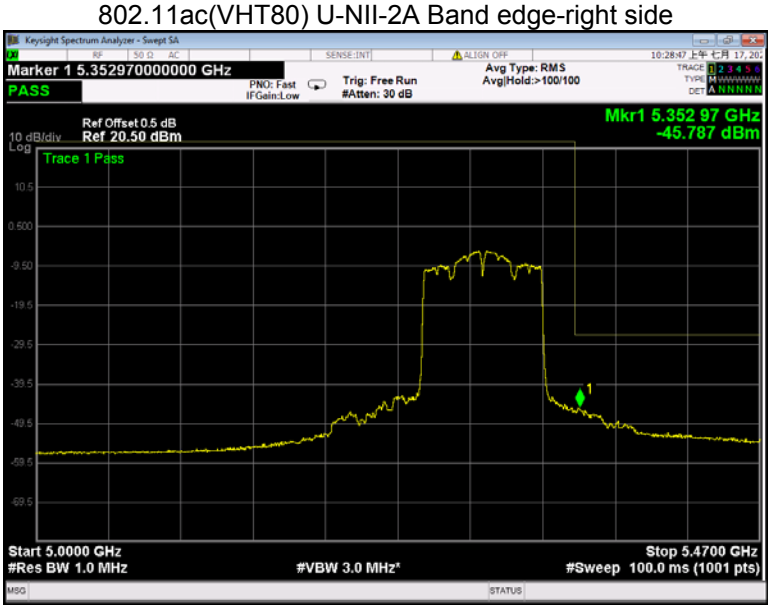
802.11ac(VHT80) U-NII-1 Band edge-right side



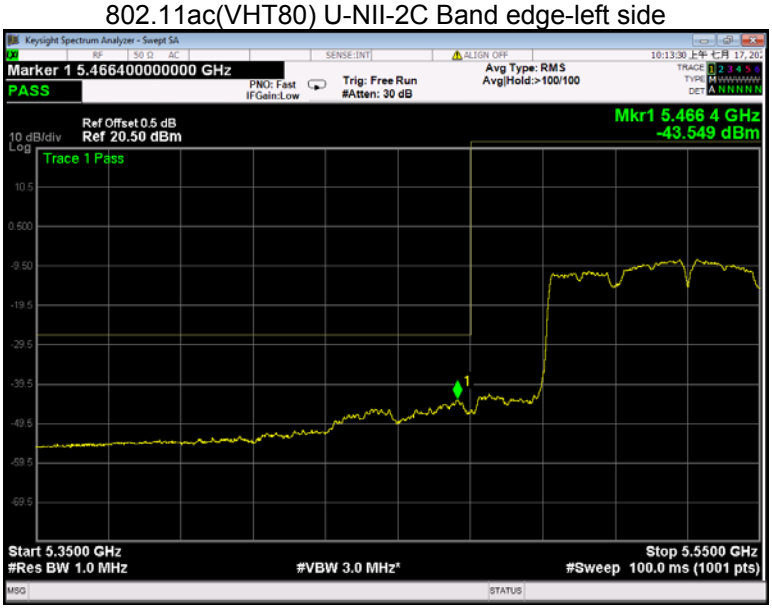
802.11ac(VHT80) U-NII-2A Band edge-left side



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