RF TEST REPORT

Applicant	Quectel Wireless Solutions Co., Ltd.
FCC ID	XMR202103FG50V
Product	Wi-Fi & BT Module
Brand	Quectel
Model	FG50V
Report No.	R2102A0150-R3
Issue Date	May 25, 2021

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15E (2020)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Prepared by: Peng Tao

Approved by: Kai Xu

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Summary of measurement results

Number	Test Case	Clause in FCC rules	Verdict
1	Average output power	15.407(a)	PASS
2	Occupied bandwidth	15.407(e)	PASS
3	Frequency stability	15.407(g)	PASS
4	Power spectral density	15.407(a)	PASS
5	Unwanted Emissions	15.407(b)	PASS
6	Conducted Emissions	15.207	PASS
Date of Testing: March 3, 2021 ~ March 18, 2021 Date of Sample Received: February 24, 2021			
Note: PASS: The EUT complies with the essential requirements in the standard. FAIL: The EUT does not comply with the essential requirements in the standard. All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

1. Test Laboratory

1.1. Notes of the test report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2. Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

1.3. Testing Location

Company:	TA Technology (Shanghai) Co., Ltd.
Address:	No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City:	Shanghai
Post code:	201201
Country:	P. R. China
Contact:	Xu Kai
Telephone:	+86-021-50791141/2/3
Fax:	+86-021-50791141/2/3-8000
Website:	http://www.ta-shanghai.com
E-mail:	xukai@ta-shanghai.com

2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

Applicant	Quectel Wireless Solutions Co., Ltd.
Applicant address	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China, 200233
Manufacturer	Quectel Wireless Solutions Co., Ltd.
Manufacturer address	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China, 200233

2.2. General information

EUT Description	
Model	FG50V
SN	P1Q20LJ4C000067
Hardware Version	R1.0
Software Version	FG50VAAMD
Power Supply	External power supply
Antenna Type	External Antenna
Antenna Gain	Max 5.05 dBi
Directional Gain	Without Beamforming Mode: 5.05 dBi PSD Direction Gain: 8.06dBi
Test Band	U-NII-1(5150MHz-5250MHz) U-NII-2A(5250MHz-5350MHz) U-NII-2C(5470MHz-5725MHz U-NII-3(5725MHz-5850MHz)
Modulation Type	802.11a/n (HT20/HT40) : OFDM 802.11ac (VHT20/VHT40/VHT80): OFDM 802.11ax (HE20/HE40/HE80): OFDMA, OFDM
Max. Conducted Power	21.04dBm
Operating Frequency Range(s)	U-NII-1: 5150MHz-5250MHz U-NII-2A:5250MHz -5350MHz U-NII-2C:5470MHz-5725MHz U-NII-3: 5725MHz -5850MHz
Extreme temperature range:	-40 ° C to 85° C
Operating voltage range:	3.3V to 4.3 V
State DC voltage:	3.8V
Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.	

3. Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards:

FCC CFR47 Part 15E (2020) Unlicensed National Information Infrastructure Devices

ANSI C63.10 (2013)

Reference standard:

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

4. Test Configuration

Test Mode

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate. Preliminary tests have been done on all the configuration for confirming worst case. Data rate below means worst-case rate of each test item.

Worst-case data rates are shown as following table.

Mode	Data Rate		
	Antenna 1	Antenna 2	MIMO
802.11a	6 Mbps	6 Mbps	6 Mbps
802.11n HT20	MCS0	MCS0	MCS0
802.11n HT40	MCS0	MCS0	MCS0
802.11ac VHT20	MCS0	MCS0	MCS0
802.11ac VHT40	MCS0	MCS0	MCS0
802.11ac VHT80	MCS0	MCS0	MCS0
802.11ax HE20	MCS0	MCS0	MCS0
802.11ax HE40	MCS0	MCS0	MCS0
802.11ax HE80	MCS0	MCS0	MCS0

The worst case Antenna mode for each of the following tests for Wi-Fi:

Test Cases	Antenna 1	Antenna 2	MIMO without Beamforming	MIMO with Beamforming
Average conducted output power	O	O	O	802.11n HT20/40 802.11ac VHT20/40/80 802.11ax HE20/40/80
Occupied bandwidth	--	--	O	--
Frequency stability	--	--	O	--
Power Spectral Density	O	O	O	802.11n HT20/40 802.11ac VHT20/40/80 802.11ax HE20/40/80
Unwanted Emissions	--	--	O	--
Conducted Emissions	--	--	O	--
Note：“O”: test all bands				

According to RF Output power results in chapter 5.1, MIMO without Beamforming was selected as the worst antenna.

Wireless Technology and Frequency Range

Wireless Technology		Bandwidth	Channel	Frequency
Wi-Fi	U-NII-1	20 MHz	36	5180MHz
			40	5200MHz
			44	5220MHz
			48	5240MHz
		40 MHz	38	5190MHz
			46	5230MHz
		80 MHz	42	5210MHz
	U-NII-2A	20 MHz	52	5260MHz
			56	5280MHz
			60	5300MHz
			64	5320MHz
		40 MHz	54	5270MHz
			62	5310MHz
		80 MHz	58	5290MHz
	U-NII-2C	20 MHz	100	5500MHz
			104	5520MHz
			108	5540MHz
			112	5560MHz
			116	5580MHz
			120	5600MHz
			124	5620MHz
			128	5640MHz
			132	5660MHz
			136	5680MHz
			140	5700MHz
		40 MHz	102	5510MHz
			110	5550MHz
			118	5590MHz
			126	5630MHz
			134	5670MHz
			142	5710MHz
		80 MHz	106	5530MHz
			122	5610MHz
			138	5690MHz
	U-NII-3	20 MHz	149	5745MHz
			153	5765MHz
			157	5785MHz
			161	5805MHz
			165	5825MHz
		40 MHz	151	5755MHz
			159	5795MHz

		80 MHz	155	5775MHz
Does this device support TPC Function? ☒Yes ☐No				
Does this device support TDWR Band? ☒Yes ☐No				

5. Test Case Results

5.1. Occupied Bandwidth

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

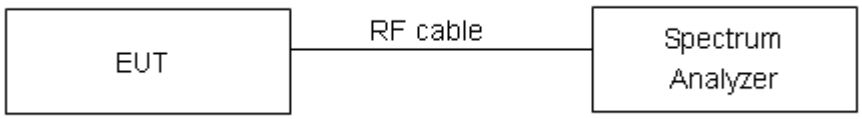
For U-NII-1/U-NII-2A/U-NII-2C, set RBW ≈1% OCB kHz, VBW ≥ 3 × RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB relative to the maximum level measured in the fundamental emission.

For U-NII-3, Set RBW = 100 kHz, VBW ≥ 3 × RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

Use the 99 % power bandwidth function of the instrument

Test Setup



Limits

Rule FCC Part §15.407(e)

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

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 936 Hz.

Test Results:

U-NII-1

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5180	16.318	18.55	PASS
	5200	16.323	18.54	PASS
	5240	16.324	18.60	PASS
802.11n HT20	5180	17.506	19.52	PASS
	5200	17.496	19.56	PASS
	5240	17.508	19.60	PASS
802.11n HT40	5190	35.891	39.08	PASS
	5230	35.967	39.14	PASS
802.11ac VHT20	5180	17.502	19.57	PASS
	5200	17.493	19.71	PASS
	5240	17.514	19.77	PASS
802.11ac VHT40	5190	35.947	39.10	PASS
	5230	35.979	39.22	PASS
802.11ac VHT80	5210	75.210	80.70	PASS
802.11ax HE20	5180	18.861	20.50	PASS
	5200	18.878	20.51	PASS
	5240	18.873	20.40	PASS
802.11ax HE40	5190	37.568	39.77	PASS
	5230	37.633	40.02	PASS
802.11ax HE80	5210	76.873	81.00	PASS

U-NII-2A

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5260	16.321	18.67	PASS
	5300	16.333	18.50	PASS
	5320	16.344	18.74	PASS
802.11n HT20	5260	17.517	19.61	PASS
	5300	17.503	19.82	PASS
	5320	17.501	19.75	PASS
802.11n HT40	5270	35.891	39.10	PASS
	5310	35.903	39.28	PASS
802.11ac VHT20	5260	17.493	19.67	PASS
	5300	17.495	19.54	PASS
	5320	17.500	19.72	PASS

802.11ac VHT40	5270	35.919	39.22	PASS
	5310	35.931	39.20	PASS
802.11ac VHT80	5290	75.285	81.25	PASS
802.11ax HE20	5260	18.877	20.52	PASS
	5300	18.864	20.59	PASS
	5320	18.853	20.92	PASS
802.11ax HE40	5270	37.627	39.67	PASS
	5310	37.610	40.03	PASS
802.11ax HE80	5290	76.961	81.49	PASS

U-NII-2C

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5500	16.322	18.57	PASS
	5600	16.349	18.71	PASS
	5700	16.340	18.84	PASS
	5720	16.352	18.88	PASS
802.11n HT20	5500	17.509	19.65	PASS
	5600	17.522	20.02	PASS
	5700	17.511	19.80	PASS
	5720	17.527	19.81	PASS
802.11n HT40	5510	35.930	39.09	PASS
	5590	35.972	39.14	PASS
	5670	35.969	39.23	PASS
	5710	35.991	39.63	PASS
802.11ac VHT20	5500	17.482	19.62	PASS
	5600	17.521	19.49	PASS
	5700	17.493	19.57	PASS
	5720	17.509	19.77	PASS
802.11ac VHT40	5510	35.965	39.14	PASS
	5590	35.968	39.24	PASS
	5670	35.937	39.22	PASS
	5710	36.008	39.49	PASS
802.11ac VHT80	5610	75.416	80.98	PASS
	5690	75.235	81.73	PASS
802.11ax HE20	5500	18.851	20.55	PASS
	5600	18.871	20.39	PASS
	5700	18.877	20.79	PASS

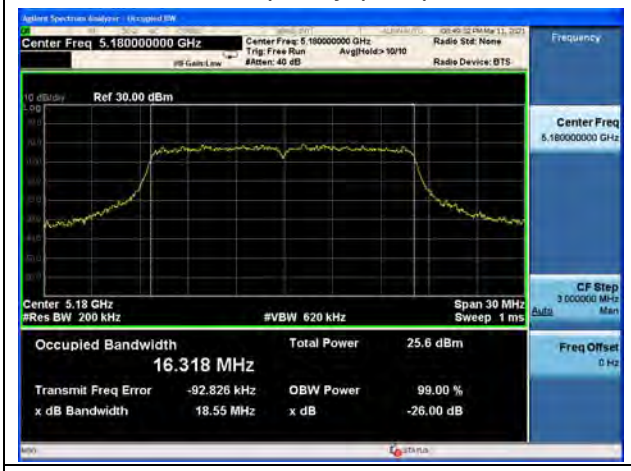
	5720	18.881	20.74	PASS
802.11ax HE40	5510	37.617	39.98	PASS
	5590	37.652	40.02	PASS
	5670	37.595	39.90	PASS
	5710	37.623	39.93	PASS
802.11ax HE80	5610	77.235	82.37	PASS
	5690	76.990	80.89	PASS

U-NII-3

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11a	5745	16.337	15.91	500	PASS
	5785	16.338	16.32	500	PASS
	5825	16.355	16.35	500	PASS
802.11n HT20	5745	17.523	16.87	500	PASS
	5785	17.511	17.21	500	PASS
	5825	17.534	16.98	500	PASS
802.11n HT40	5755	35.962	34.45	500	PASS
	5795	35.891	35.29	500	PASS
802.11ac VHT20	5745	17.522	17.58	500	PASS
	5785	17.518	16.30	500	PASS
	5825	17.522	17.09	500	PASS
802.11ac VHT40	5755	35.923	34.68	500	PASS
	5795	35.977	35.43	500	PASS
802.11ac VHT80	5775	75.218	72.60	500	PASS
802.11ax HE20	5745	18.873	18.32	500	PASS
	5785	18.880	18.97	500	PASS
	5825	18.896	18.50	500	PASS
802.11ax HE40	5755	37.638	36.45	500	PASS
	5795	37.711	37.68	500	PASS
802.11ax HE80	5775	77.062	76.28	500	PASS

U-NII-1, 802.11a

Carrier frequency (MHz): 5180



U-NII-1, 802.11n HT20

Carrier frequency (MHz): 5180

U-NII-1, 802.11a

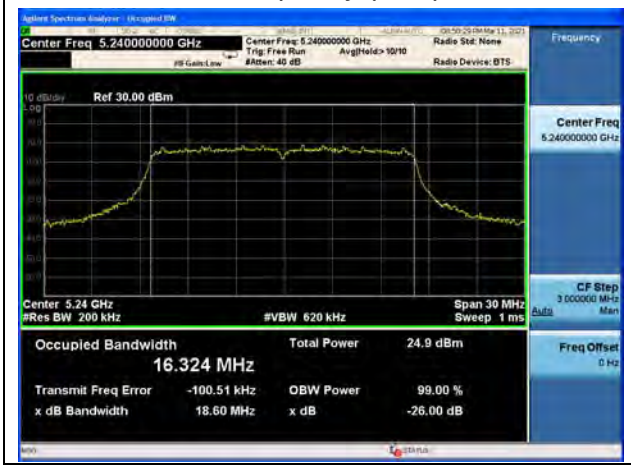
Carrier frequency (MHz): 5200

U-NII-1, 802.11n HT20

Carrier frequency (MHz): 5200

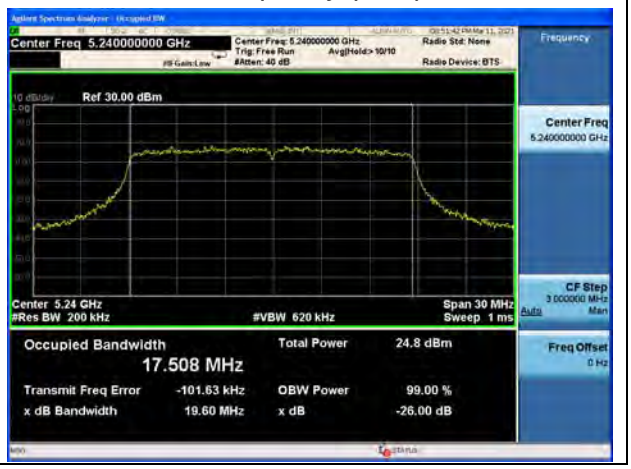
U-NII-1, 802.11a

Carrier frequency (MHz):5240



U-NII-1, 802.11n HT20

Carrier frequency (MHz):5240

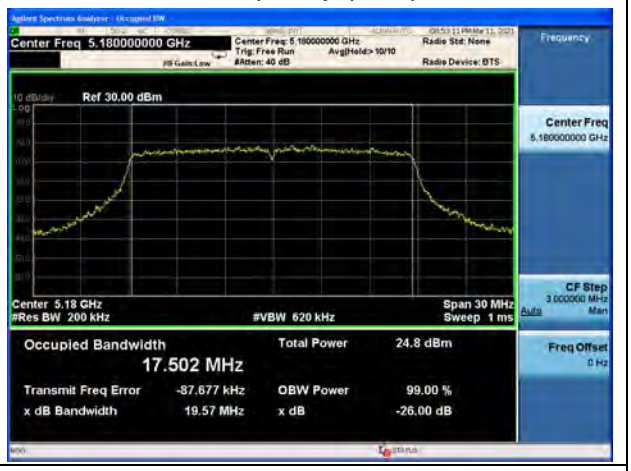


U-NII-1, 802.11n HT40

Carrier frequency (MHz): 5190

U-NII-1, 802.11ac VHT20

Carrier frequency (MHz): 5180

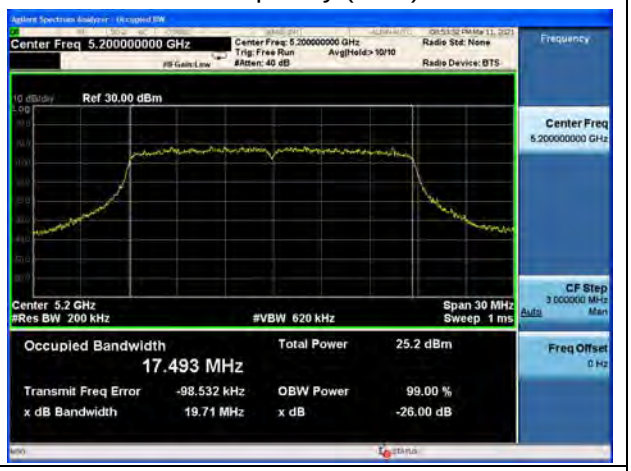


U-NII-1, 802.11n HT40

Carrier frequency (MHz): 5230

U-NII-1, 802.11ac VHT20

Carrier frequency (MHz): 5200



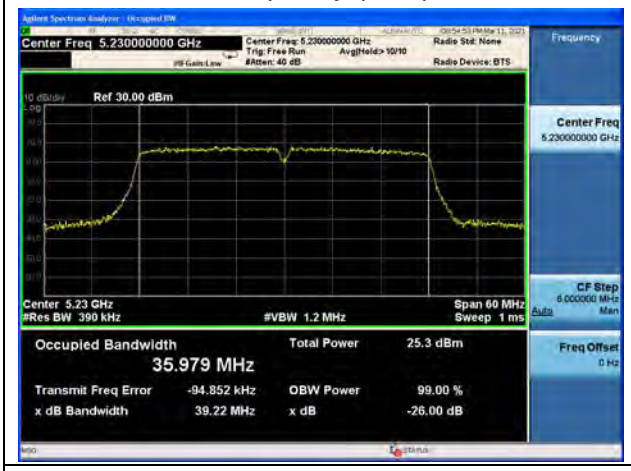
U-NII-1, 802.11ac VHT40

Carrier frequency (MHz): 5190

U-NII-1, 802.11ac VHT20

Carrier frequency (MHz):5240

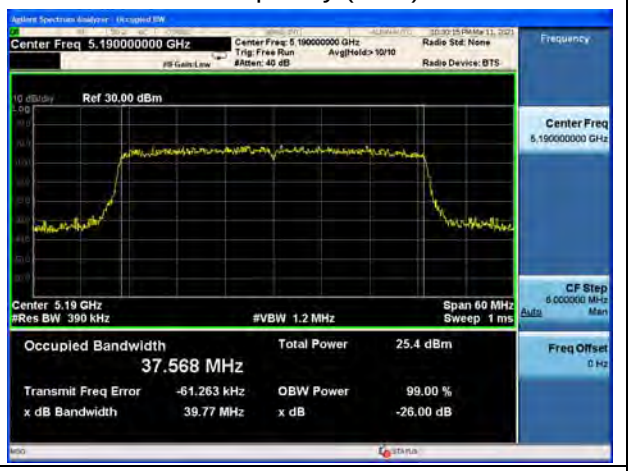
U-NII-1, 802.11ac VHT40
Carrier frequency (MHz): 5230



U-NII-1, 802.11ac VHT80
Carrier frequency (MHz): 5210

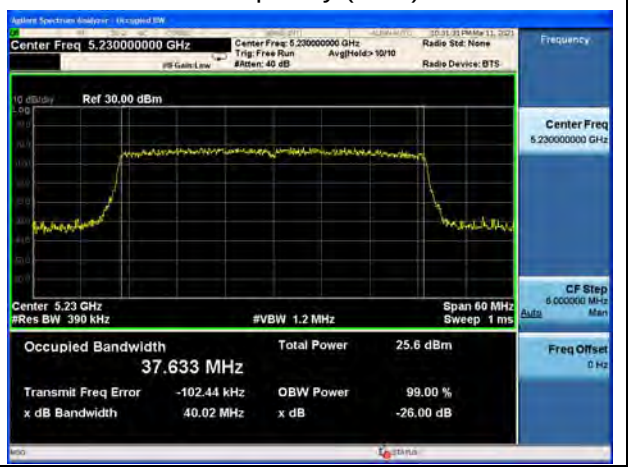
U-NII-1, 802.11ax HE20
Carrier frequency (MHz): 5180

U-NII-1, 802.11ax HE40
Carrier frequency (MHz): 5190



U-NII-1, 802.11ax HE20
Carrier frequency (MHz): 5200

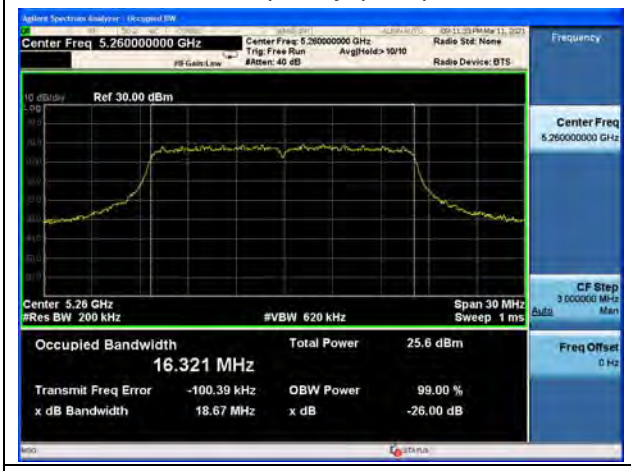
U-NII-1, 802.11ax HE40
Carrier frequency (MHz): 5230



U-NII-1, 802.11ax HE20 Carrier frequency (MHz):5240	U-NII-1, 802.11ax HE80 Carrier frequency (MHz): 5210
	

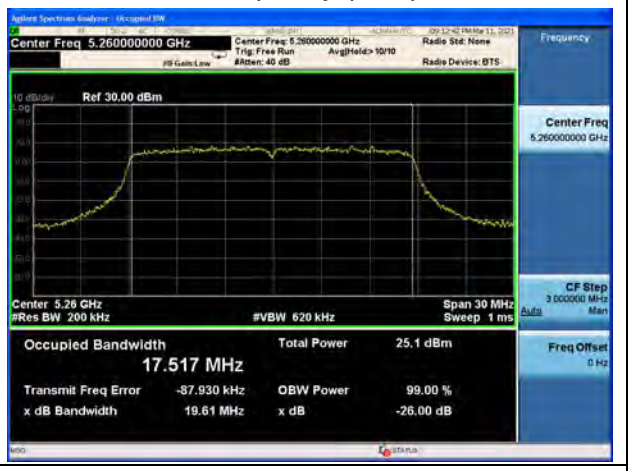
U-NII-2A, 802.11a

Carrier frequency (MHz): 5260



U-NII-2A, 802.11n HT20

Carrier frequency (MHz): 5260

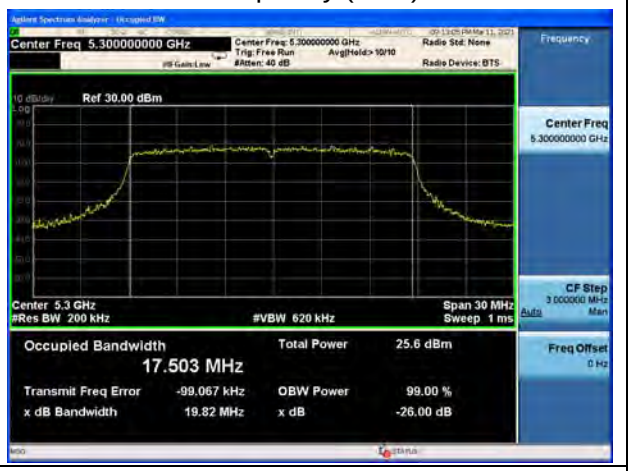


U-NII-2A, 802.11a

Carrier frequency (MHz): 5300

U-NII-2A, 802.11n HT20

Carrier frequency (MHz): 5300

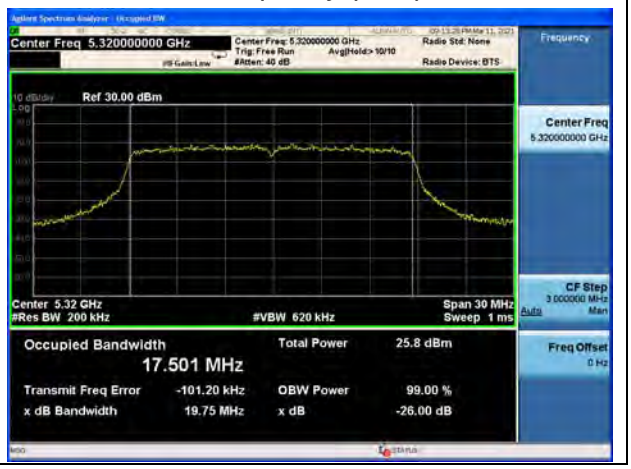


U-NII-2A, 802.11a

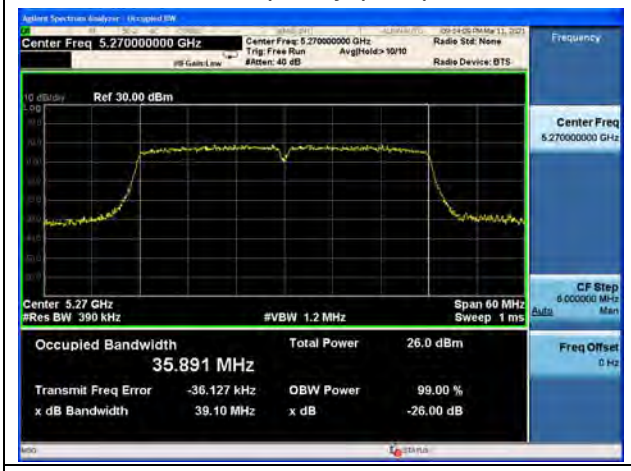
Carrier frequency (MHz):5320

U-NII-2A, 802.11n HT20

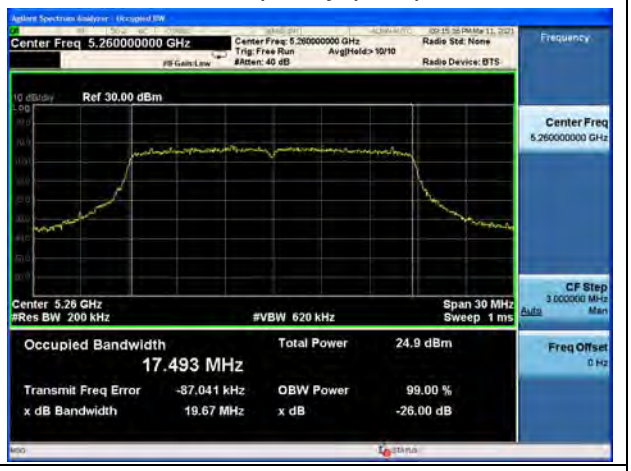
Carrier frequency (MHz):5320



U-NII-2A, 802.11n HT40
Carrier frequency (MHz): 5270



U-NII-2A, 802.11ac VHT20
Carrier frequency (MHz):5260

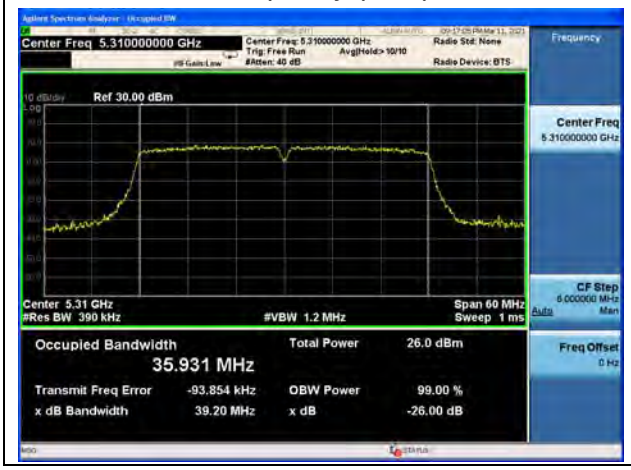


U-NII-2A, 802.11n HT40
Carrier frequency (MHz): 5310

U-NII-2A, 802.11ac VHT20
Carrier frequency (MHz): 5300

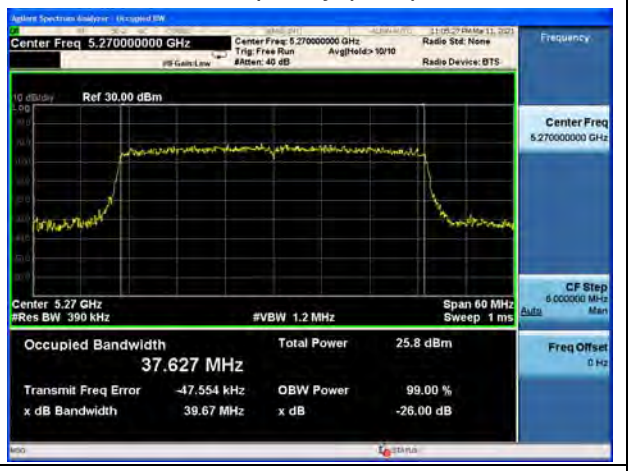
U-NII-2A, 802.11ac VHT40
Carrier frequency (MHz): 5270

U-NII-2A, 802.11ac VHT20
Carrier frequency (MHz):5320

U-NII-2A, 802.11ac VHT40 Carrier frequency (MHz): 5310	U-NII-2A, 802.11ac VHT80 Carrier frequency (MHz): 5290
	

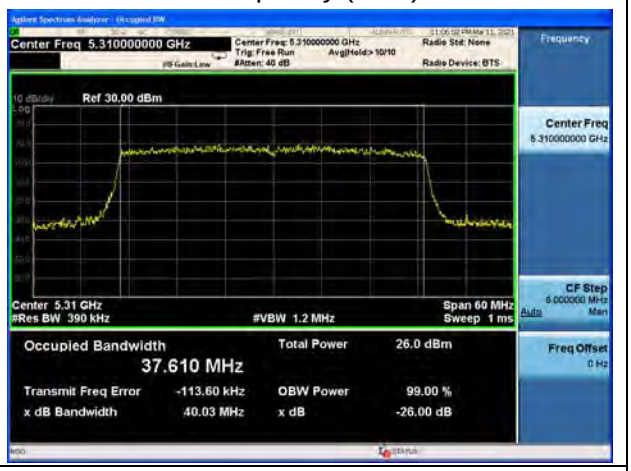
U-NII-2A, 802.11ax HE20
Carrier frequency (MHz):5260

U-NII-2A, 802.11ax HE40
Carrier frequency (MHz): 5270



U-NII-2A, 802.11ax HE20
Carrier frequency (MHz): 5300

U-NII-2A, 802.11ax HE40
Carrier frequency (MHz): 5310

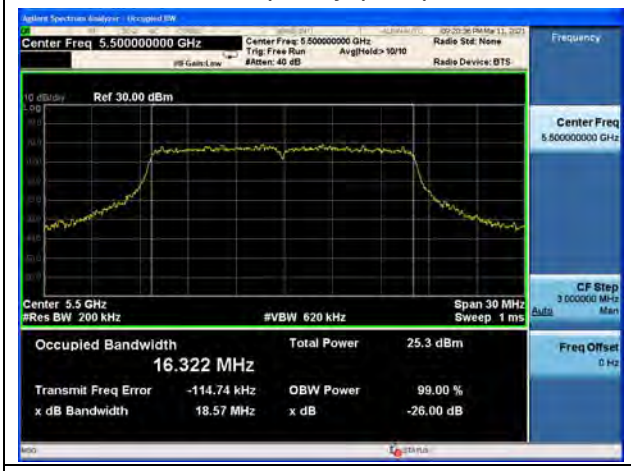


U-NII-2A, 802.11ax HE20
Carrier frequency (MHz):5320

U-NII-2A, 802.11ax 80
Carrier frequency (MHz): 5290

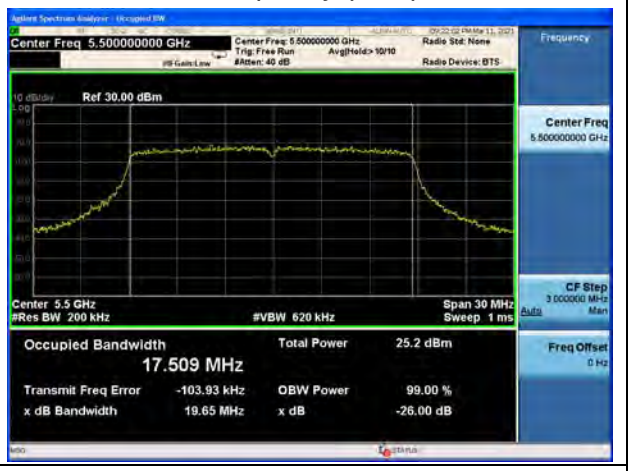
U-NII-2C, 802.11a

Carrier frequency (MHz): 5500



U-NII-2C, 802.11n HT20

Carrier frequency (MHz): 5500



U-NII-2C, 802.11a

Carrier frequency (MHz): 5600

U-NII-2C, 802.11n HT20

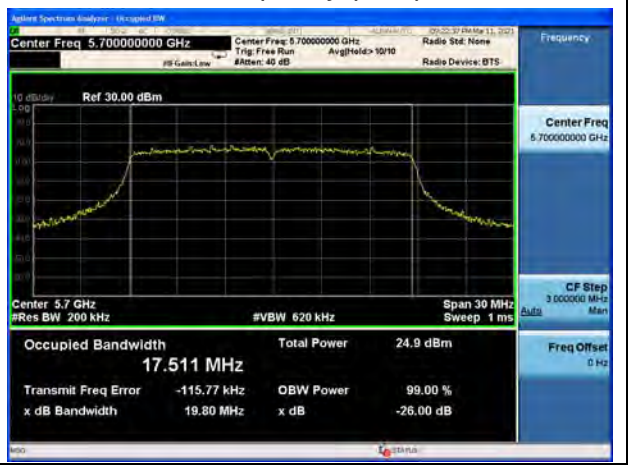
Carrier frequency (MHz): 5600

U-NII-2C, 802.11a

Carrier frequency (MHz):5700

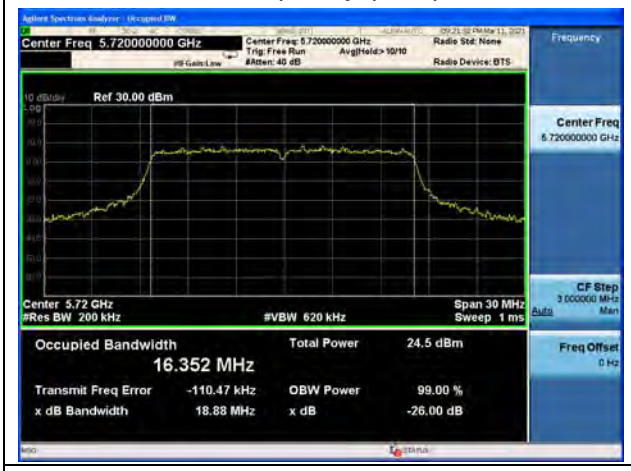
U-NII-2C, 802.11n HT20

Carrier frequency (MHz):5700



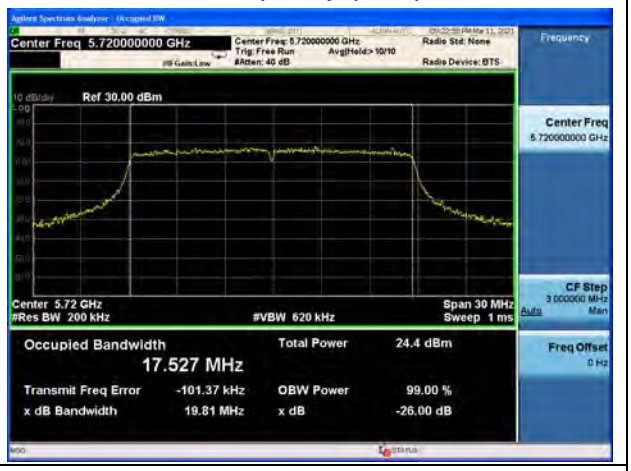
U-NII-2C, 802.11a

Carrier frequency (MHz):5720



U-NII-2C, 802.11n HT20

Carrier frequency (MHz):5720

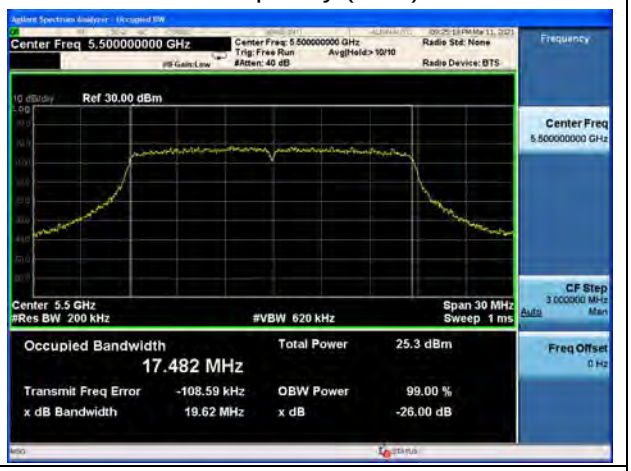


U-NII-2C, 802.11n HT40

Carrier frequency (MHz): 5510

U-NII-2C, 802.11ac VHT20

Carrier frequency (MHz): 5500



U-NII-2C, 802.11n HT40

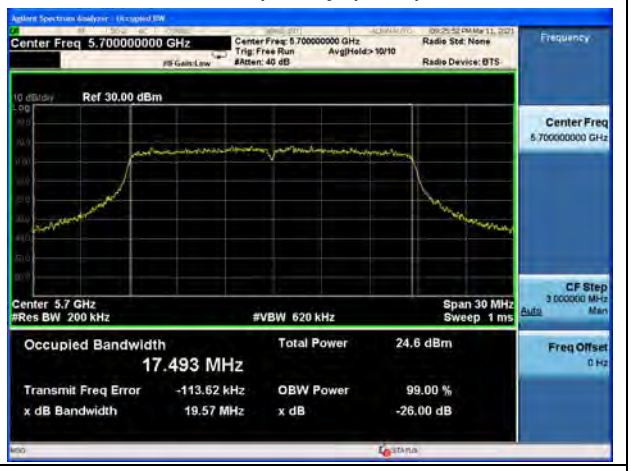
Carrier frequency (MHz): 5590

U-NII-2C, 802.11ac VHT20

Carrier frequency (MHz): 5600

U-NII-2C, 802.11n HT40
Carrier frequency (MHz): 5670

U-NII-2C, 802.11ac VHT20
Carrier frequency (MHz):5700

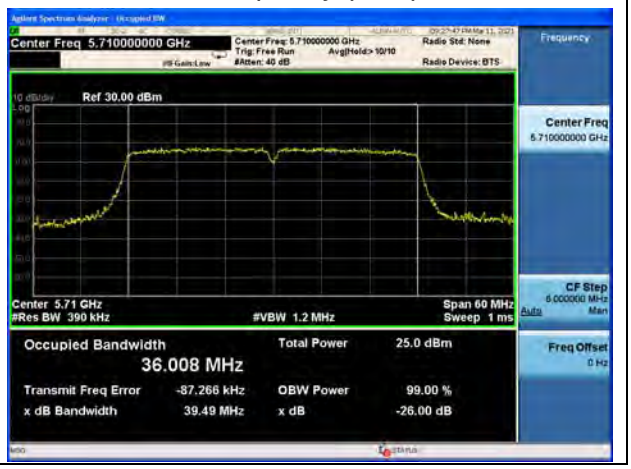


U-NII-2C, 802.11n HT40
Carrier frequency (MHz): 5710

U-NII-2C, 802.11ac VHT20
Carrier frequency (MHz):5720

U-NII-2C, 802.11ac VHT40
Carrier frequency (MHz): 5510

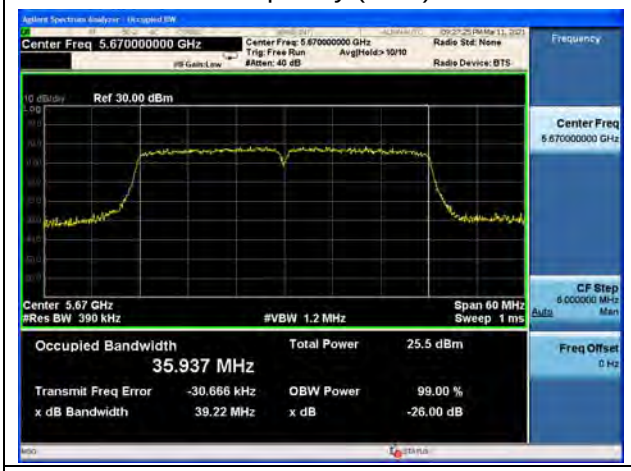
U-NII-2C, 802.11ac VHT40
Carrier frequency (MHz): 5710



U-NII-2C, 802.11ac VHT40
Carrier frequency (MHz): 5590

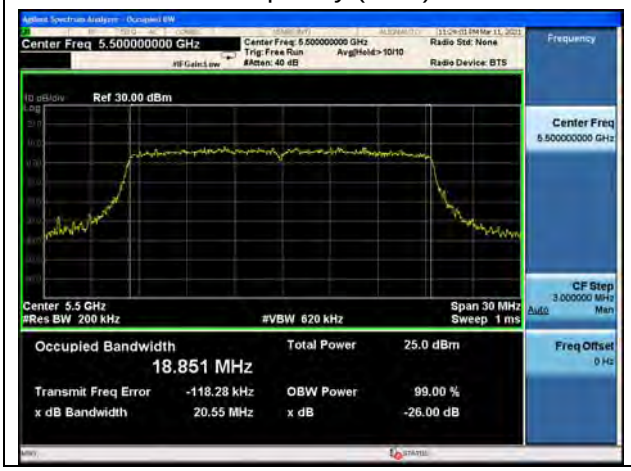
U-NII-2C, 802.11ac VHT80
Carrier frequency (MHz): 5530

U-NII-2C, 802.11ac VHT40
Carrier frequency (MHz): 5670



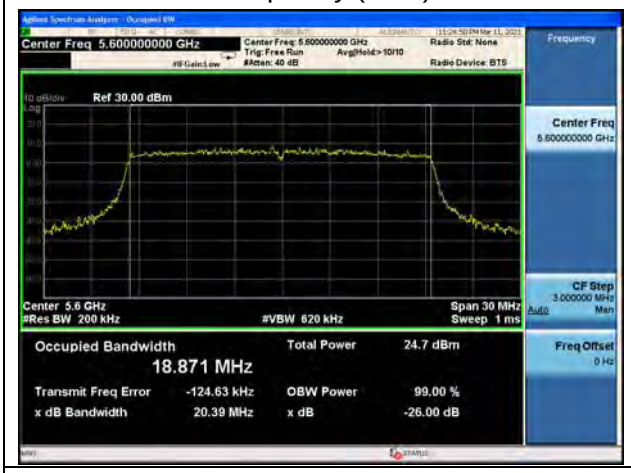
U-NII-2C, 802.11ac VHT80
Carrier frequency (MHz): 5610

U-NII-2C, 802.11ax HE20
Carrier frequency (MHz): 5500

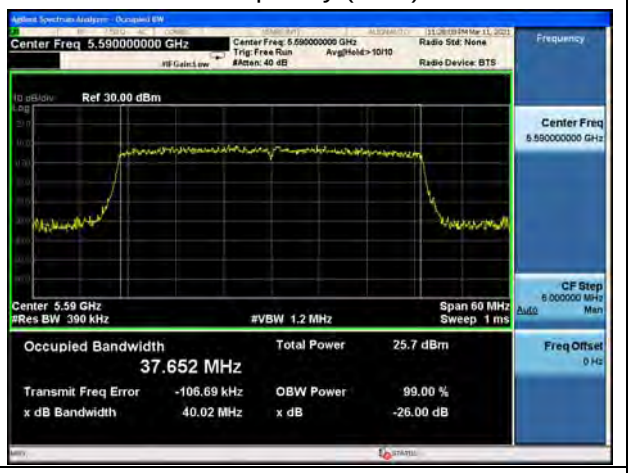


U-NII-2C, 802.11ax HE40
Carrier frequency (MHz): 5510

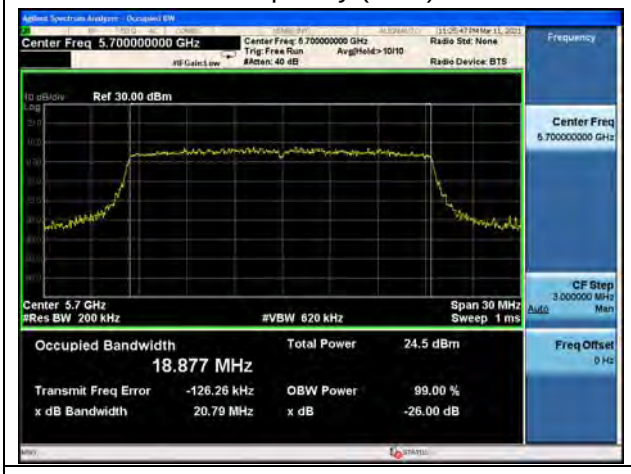
U-NII-2C, 802.11ax HE20
Carrier frequency (MHz): 5600



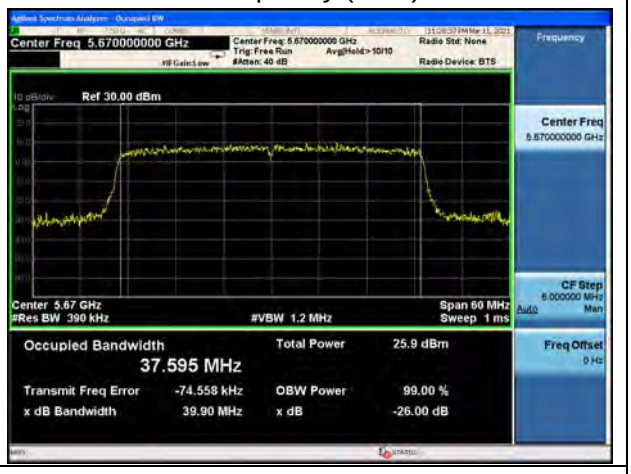
U-NII-2C, 802.11ax HE40
Carrier frequency (MHz): 5590



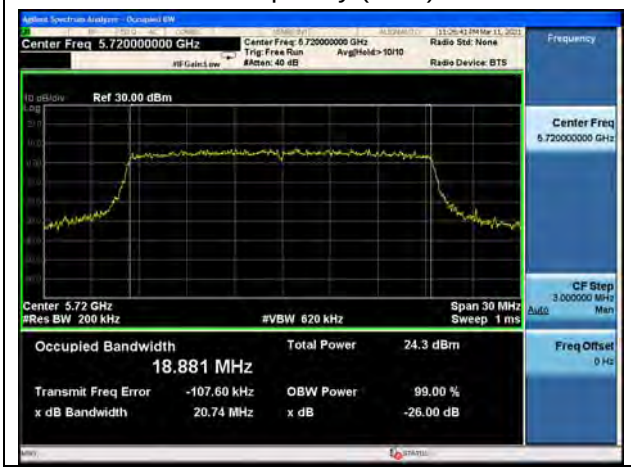
U-NII-2C, 802.11ax HE20
Carrier frequency (MHz):5700



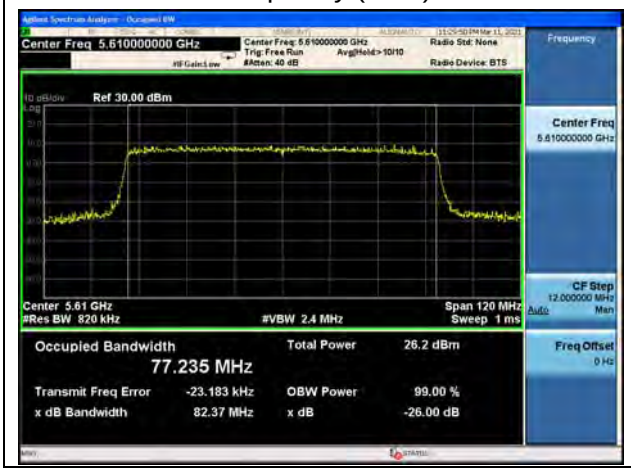
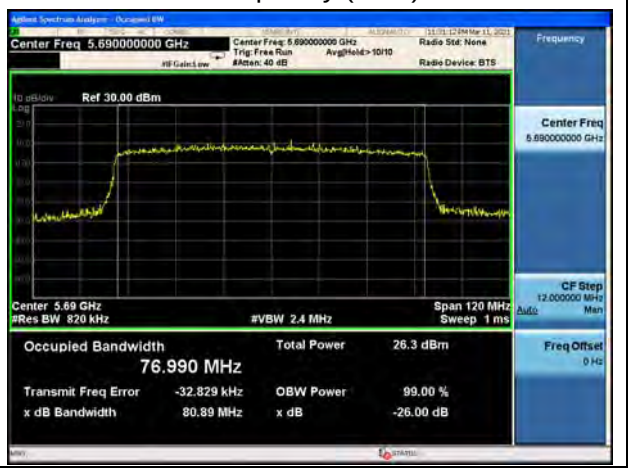
U-NII-2C, 802.11ax HE40
Carrier frequency (MHz): 5670



U-NII-2C, 802.11ax HE20
Carrier frequency (MHz):5720



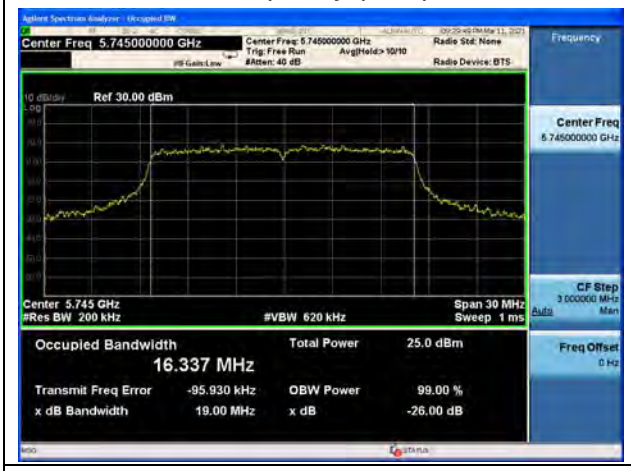
U-NII-2C, 802.11ax HE40
Carrier frequency (MHz): 5710

U-NII-2C, 802.11ax HE80 Carrier frequency (MHz): 5530	U-NII-2C, 802.11ax HE80 Carrier frequency (MHz): 5610
	

99% bandwidth

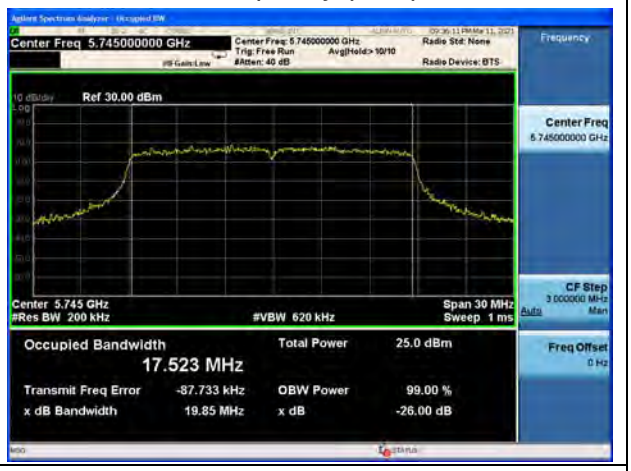
U-NII-3, 802.11a

Carrier frequency (MHz): 5745



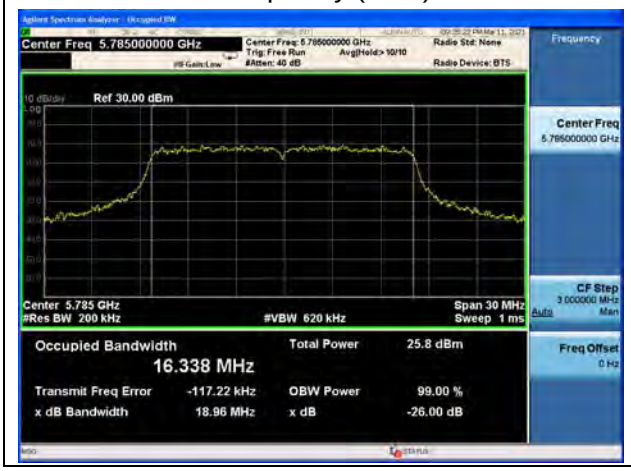
U-NII-3, 802.11n HT20

Carrier frequency (MHz): 5745



U-NII-3, 802.11a

Carrier frequency (MHz): 5785

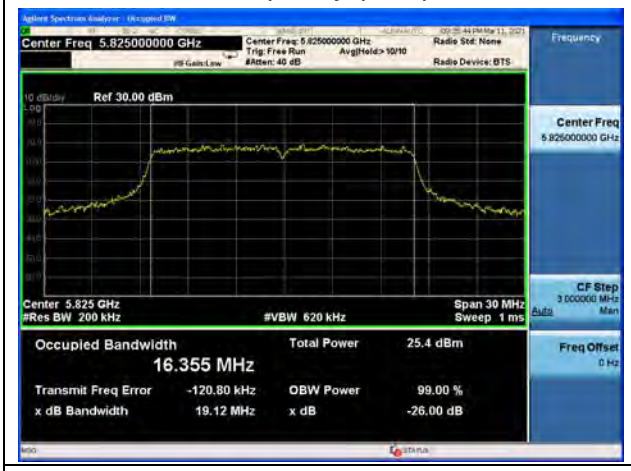


U-NII-3, 802.11n HT20

Carrier frequency (MHz): 5785

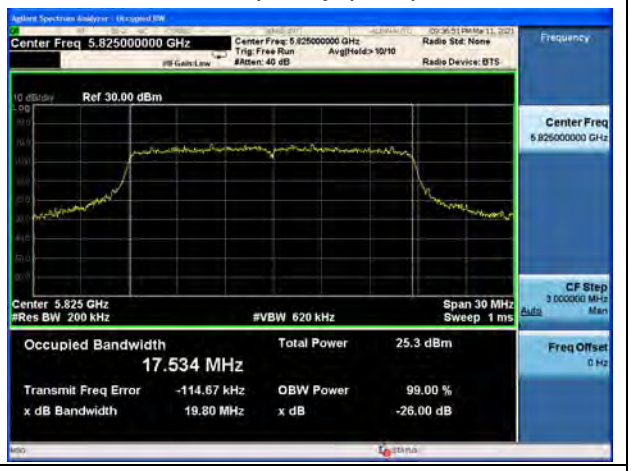
U-NII-3, 802.11a

Carrier frequency (MHz): 5825



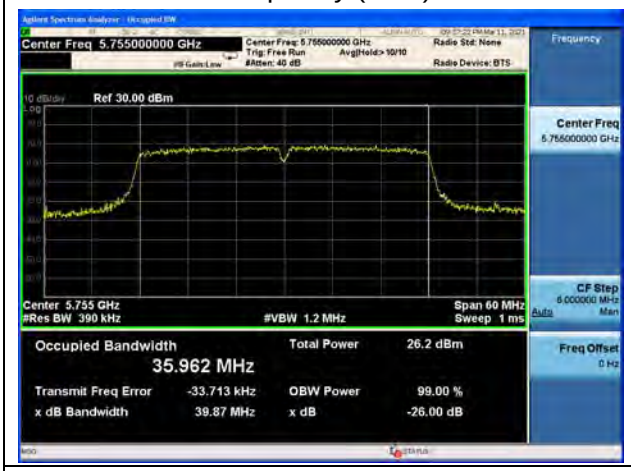
U-NII-3, 802.11n HT20

Carrier frequency (MHz): 5825



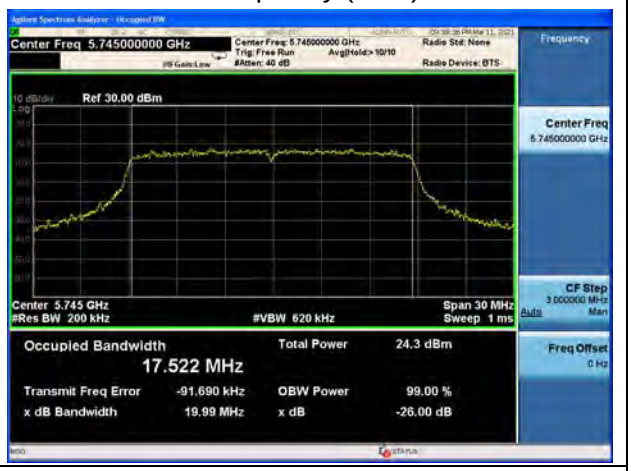
U-NII-3, 802.11n HT40

Carrier frequency (MHz): 5755



U-NII-3, 802.11ac VHT20

Carrier frequency (MHz): 5745

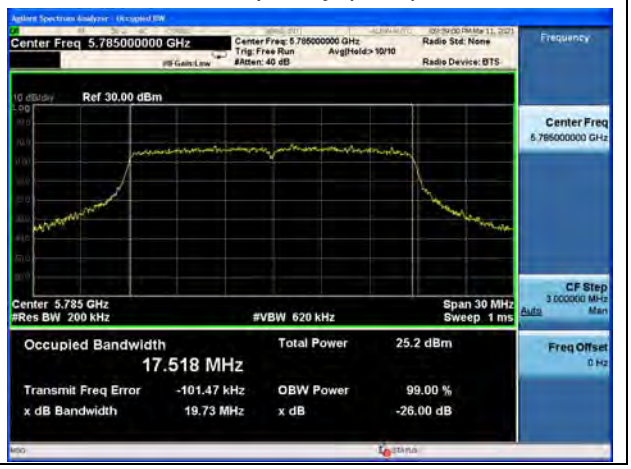


U-NII-3, 802.11n HT40

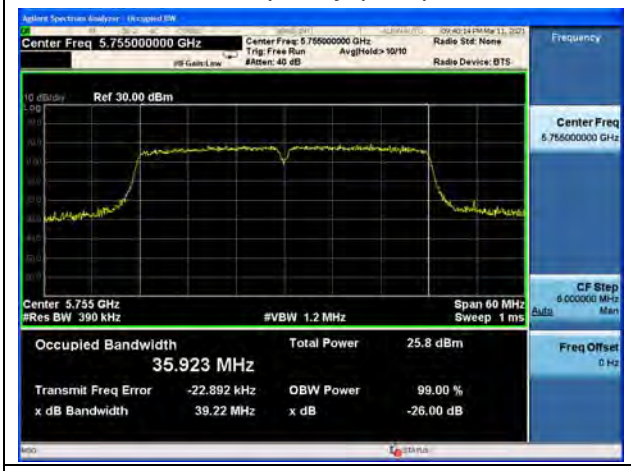
Carrier frequency (MHz): 5795

U-NII-3, 802.11ac VHT20

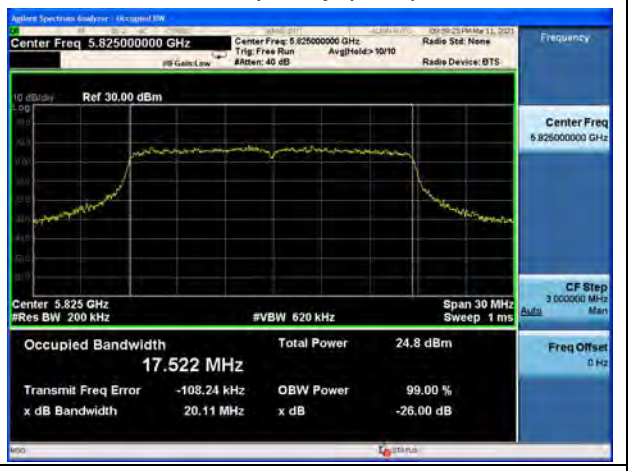
Carrier frequency (MHz): 5785



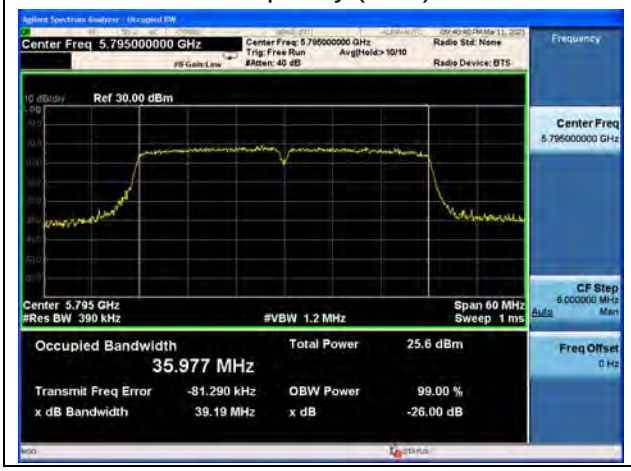
U-NII-3, 802.11ac VHT40
Carrier frequency (MHz): 5755



U-NII-3, 802.11ac VHT20
Carrier frequency (MHz): 5825

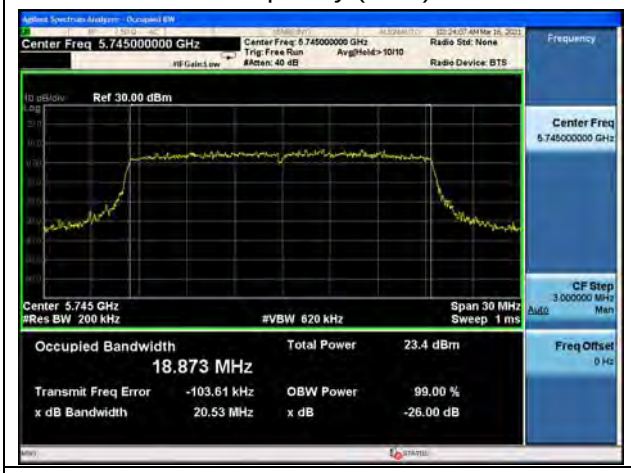


U-NII-3, 802.11ac VHT40
Carrier frequency (MHz): 5795

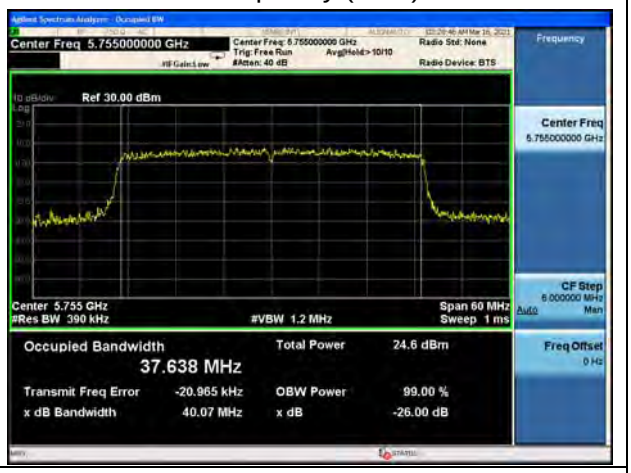


U-NII-3, 802.11ac VHT80
Carrier frequency (MHz): 5775

U-NII-3, 802.11ax HE20
Carrier frequency (MHz): 5745

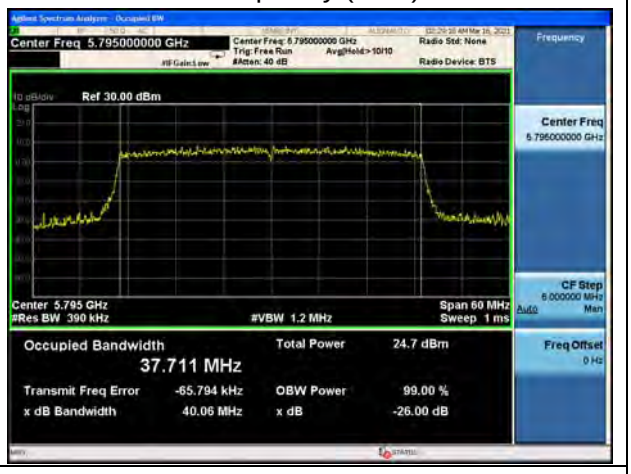


U-NII-3, 802.11ax HE40
Carrier frequency (MHz): 5755

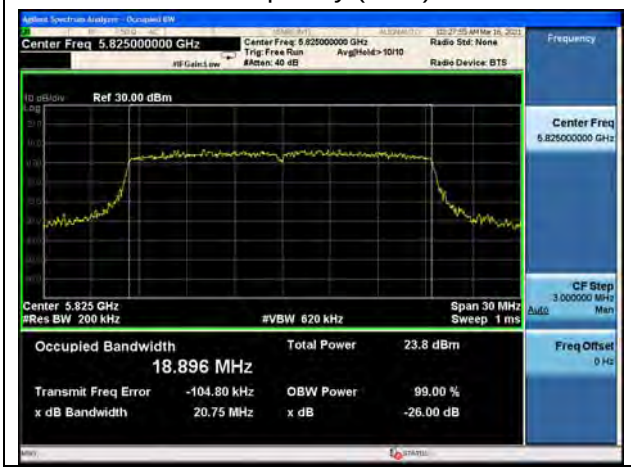


U-NII-3, 802.11ax HE20
Carrier frequency (MHz): 5785

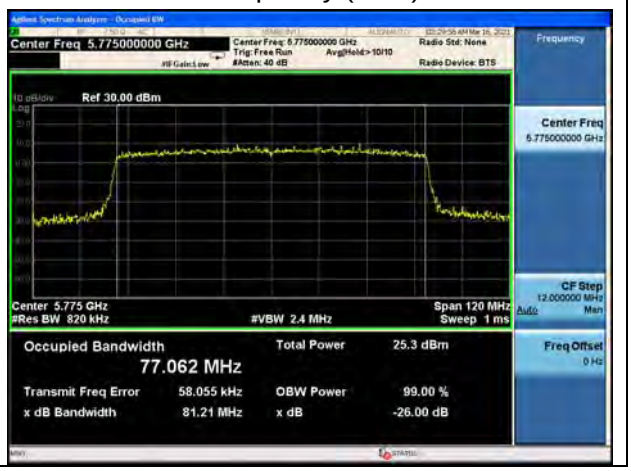
U-NII-3, 802.11ax HE40
Carrier frequency (MHz): 5795



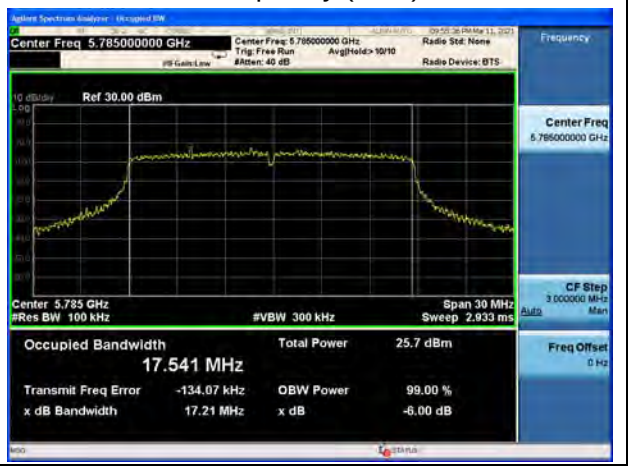
U-NII-3, 802.11ax HE20
Carrier frequency (MHz): 5825



U-NII-3, 802.11ax HE80
Carrier frequency (MHz): 5775



Minimum 6 dB bandwidth

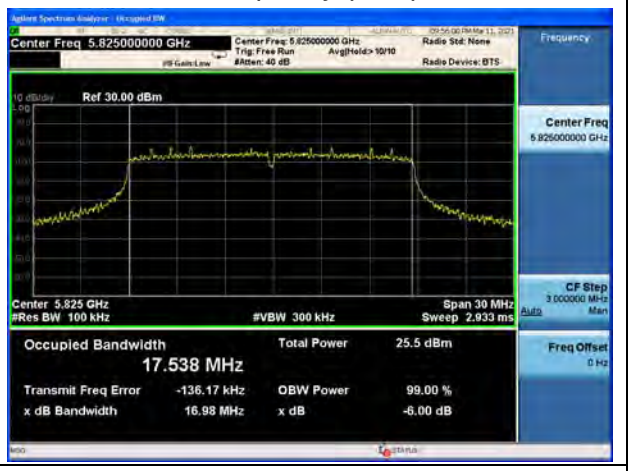
U-NII-3, 802.11a Carrier frequency (MHz): 5745	U-NII-3, 802.11n HT20 Carrier frequency (MHz): 5745
	
U-NII-3, 802.11a Carrier frequency (MHz): 5785	U-NII-3, 802.11n HT20 Carrier frequency (MHz): 5785
	

U-NII-3, 802.11a

Carrier frequency (MHz): 5825

U-NII-3, 802.11n HT20

Carrier frequency (MHz): 5825



U-NII-3, 802.11n HT40

Carrier frequency (MHz): 5755

U-NII-3, 802.11ac VHT20

Carrier frequency (MHz): 5745

U-NII-3, 802.11n HT40

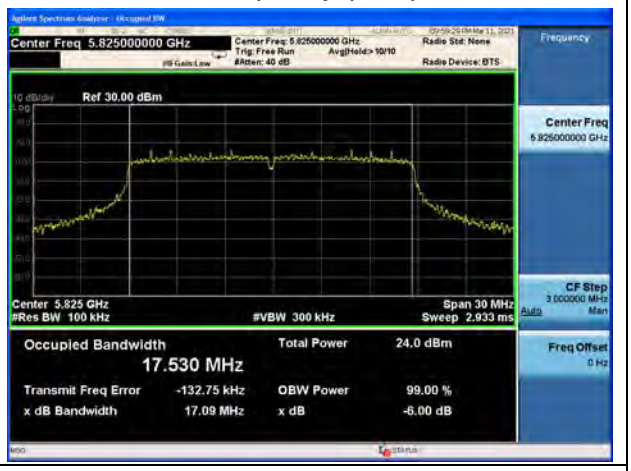
Carrier frequency (MHz): 5795

U-NII-3, 802.11ac VHT20

Carrier frequency (MHz): 5785

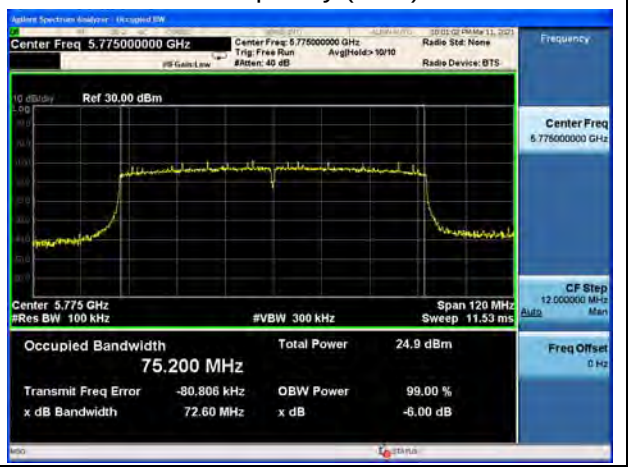
U-NII-3, 802.11ac VHT40
Carrier frequency (MHz): 5755

U-NII-3, 802.11ac VHT20
Carrier frequency (MHz): 5825

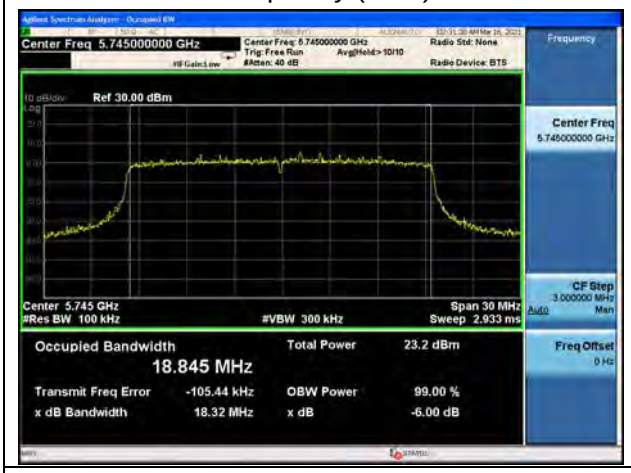


U-NII-3, 802.11ac VHT40
Carrier frequency (MHz): 5795

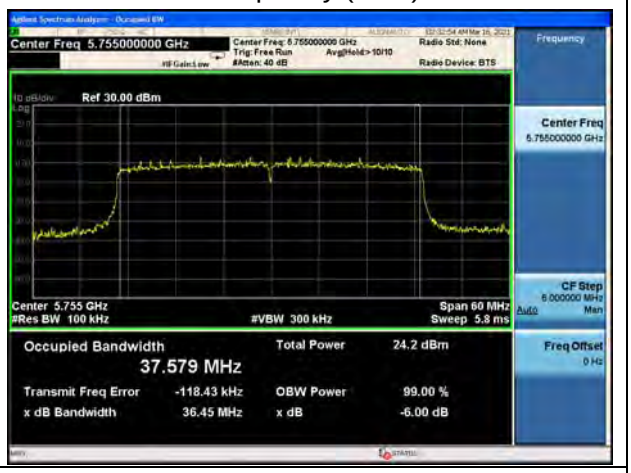
U-NII-3, 802.11ac VHT80
Carrier frequency (MHz): 5775



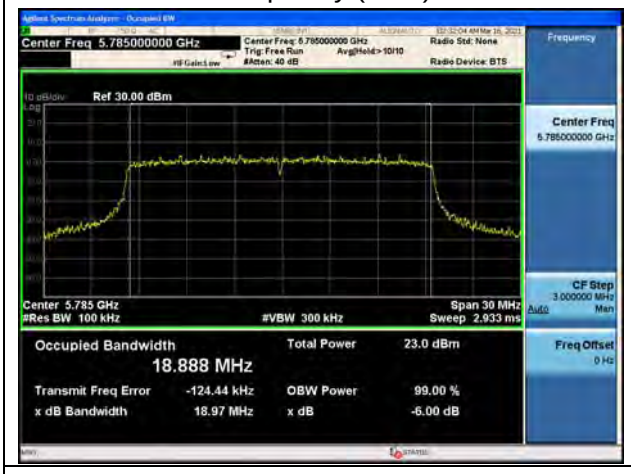
U-NII-3, 802.11ax HE20
Carrier frequency (MHz): 5745



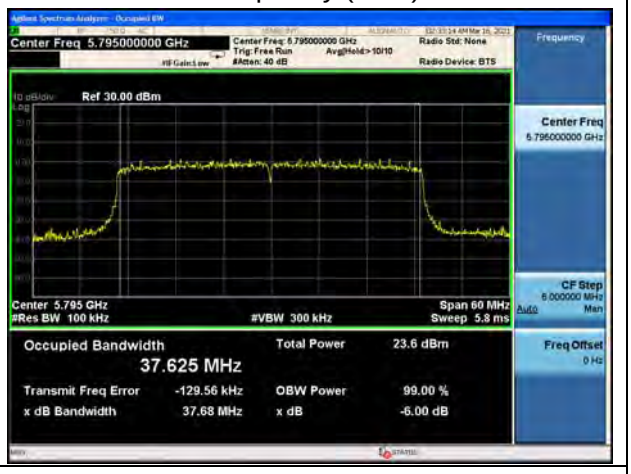
U-NII-3, 802.11ax HE40
Carrier frequency (MHz): 5755



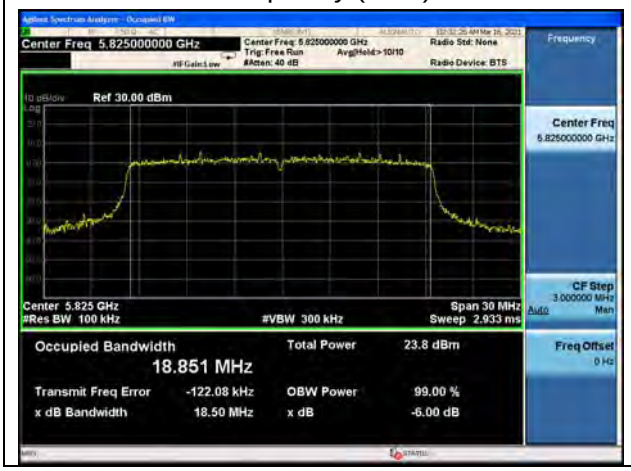
U-NII-3, 802.11ax HE20
Carrier frequency (MHz): 5785



U-NII-3, 802.11ax HE40
Carrier frequency (MHz): 5795



U-NII-3, 802.11ax HE20
Carrier frequency (MHz): 5825



U-NII-3, 802.11ax HE80
Carrier frequency (MHz): 5775

5.2. Average Power Output

Ambient condition

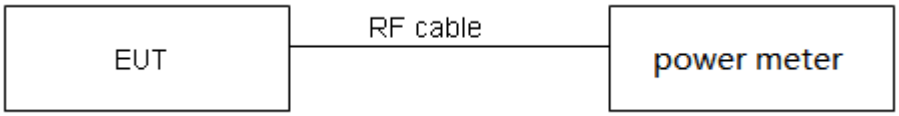
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT was connected to the average power meter through an external attenuator and a known loss cable. The EUT is max power transmission with proper modulation. We use Maximum average Conducted Output Power Level Method in KDB789033 for this test

The conducted Power is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Test Setup



Limits

Rule FCC Part 15.407(a)(1)(2)(3)
(1) For the band 5.15-5.25 GHz.
(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23

dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3)For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.44 dB.

Test Results

Mode	T_{on} (ms)	$T_{(on+off)}$ (ms)	Duty cycle	Duty cycle correction Factor(dB)
802.11a	1.00	1.00	1.00	NA
802.11n HT20	1.00	1.00	1.00	NA
802.11n HT40	1.00	1.00	1.00	NA
802.11ac VHT20	1.00	1.00	1.00	NA
802.11ac VHT40	1.00	1.00	1.00	NA
802.11ac VHT80	1.00	1.00	1.00	NA
802.11ax HE20	1.00	1.00	1.00	NA
802.11ax HE40	1.00	1.00	1.00	NA
802.11ax HE80	1.00	1.00	1.00	NA
Note: when Duty cycle≥0.98, Duty cycle correction Factor not required.				

Network Standards		Channel/Frequency (MHz)	B=26 dB bandwidth (MHz)	Limit 11 dBm + 10 log B (dBm)	Final Limit(dBm)
U-NII-2A	802.11a	52/5260	18.67	23.71<24	23.71
		60/5300	18.50	23.67<24	23.67
		64/5320	18.74	23.73<24	23.73
	802.11n HT20	52/5260	19.61	23.92<24	23.92
		60/5300	19.82	23.97<24	23.97
		64/5320	19.75	23.96<24	23.96
	802.11n HT40	54/5270	39.10	26.92>24	24.00
		62/5310	39.28	26.94>24	24.00
	802.11ac VHT20	52/5260	19.67	23.94<24	23.94
		60/5300	19.54	23.91<24	23.91
		64/5320	19.72	23.95<24	23.95
	802.11ac VHT40	54/5270	39.22	26.94>24	24.00
		62/5310	39.20	26.93>24	24.00
	802.11ac VHT80	58/5290	81.25	30.10>24	24.00
	802.11ax HE20	52/5260	20.52	24.12>24	24.00
		60/5300	20.59	24.14>24	24.00
		64/5320	20.92	24.21>24	24.00
	802.11ax HE40	54/5270	39.67	26.98>24	24.00
		62/5310	40.03	27.02>24	24.00
	802.11ax HE80	58/5290	81.49	30.11>24	24.00
U-NII-2C	802.11a	100/5500	18.57	23.69<24	23.69

		120/5600	18.71	23.72<24	23.72
		140/5700	18.84	23.75<24	23.75
		144/5720	18.88	23.76<24	23.76
	802.11n HT20	100/5500	19.65	23.93<24	23.93
		120/5600	20.02	24.01>24	24.00
		140/5700	19.80	23.97<24	23.97
		144/5720	19.81	23.97<24	23.97
	802.11n HT40	102/5510	39.09	26.92>24	24.00
		118/5590	39.14	26.93>24	24.00
		134/5670	39.23	26.94>24	24.00
		142/5710	39.63	26.98>24	24.00
	802.11ac VHT20	100/5500	19.62	23.93<24	23.93
		120/5600	19.49	23.90<24	23.90
		140/5700	19.57	23.92<24	23.92
		144/5720	19.77	23.96<24	23.96
	802.11ac VHT40	102/5510	39.14	26.93>24	24.00
		118/5590	39.24	26.94>24	24.00
		134/5670	39.22	26.94>24	24.00
		142/5710	39.49	26.96>24	24.00
	802.11ac VHT80	122/5610	80.98	30.08>24	24.00
		138/5690	81.73	30.12>24	24.00
	802.11ax HE20	100/5500	20.55	24.13>24	24.00
		120/5600	20.39	24.09>24	24.00
		140/5700	20.79	24.18>24	24.00
		144/5720	29.74	25.73>24	24.00
	802.11ax HE40	102/5510	39.98	27.02>24	24.00
		118/5590	40.02	27.02>24	24.00
		134/5670	39.90	27.01>24	24.00
		142/5710	39.93	27.01>24	24.00
	802.11ax HE80	122/5610	82.37	30.16>24	24.00
		138/5690	80.89	30.08>24	24.00
Note: 250mW=24dBm					

Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor

SISO Antenna 1

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Network Standards	Channel/ Frequency (MHz)	Power Index	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	36/5180	18	17.42	17.42	30	PASS
	40/5200	18	17.33	17.33	30	PASS
	48/5240	18	17.04	17.04	30	PASS
802.11n HT20	36/5180	18	17.22	17.22	30	PASS
	40/5200	18	17.15	17.15	30	PASS
	48/5240	18	16.58	16.58	30	PASS
802.11n HT40	38/5190	18	17.56	17.56	30	PASS
	46/5230	18	17.09	17.09	30	PASS
802.11ac VHT20	36/5180	17.5	16.53	16.53	30	PASS
	40/5200	17.5	16.78	16.78	30	PASS
	48/5240	17.5	16.10	16.10	30	PASS
802.11ac VHT40	38/5190	17.5	17.24	17.24	30	PASS
	46/5230	17.5	16.63	16.63	30	PASS
802.11ac VHT80	42/5210	17.5	17.35	17.35	30	PASS
802.11ax HE20	36/5180	17.5	16.34	16.34	30	PASS
	40/5200	17.5	16.53	16.53	30	PASS
	48/5240	17.5	15.79	15.79	30	PASS
802.11ax HE40	38/5190	17.5	16.75	16.75	30	PASS
	46/5230	17.5	16.16	16.16	30	PASS
802.11ax HE80	42/5210	17.5	17.21	17.21	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor						

U-NII-2A

Network Standards	Channel/ Frequency (MHz)	Power Index	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	52/5260	18	17.25	17.25	23.71	PASS
	60/5300	18	17.39	17.39	23.67	PASS
	64/5320	18	17.12	17.12	23.73	PASS
802.11n HT20	52/5260	18	17.03	17.03	23.92	PASS
	60/5300	18	17.21	17.21	23.97	PASS
	64/5320	18	16.96	16.96	23.96	PASS
802.11n HT40	54/5270	18	17.63	17.63	24.00	PASS
	62/5310	18	17.85	17.85	24.00	PASS
802.11ac VHT20	52/5260	17.5	16.96	16.96	23.94	PASS
	60/5300	17.5	16.89	16.89	23.91	PASS
	64/5320	17.5	16.45	16.45	23.95	PASS
802.11ac VHT40	54/5270	17.5	17.41	17.41	24.00	PASS
	62/5310	17.5	17.37	17.37	24.00	PASS
802.11ac VHT80	58/5290	17.5	17.78	17.78	24.00	PASS
802.11ax HE20	52/5260	17.5	16.39	16.39	24.00	PASS
	60/5300	17.5	16.69	16.69	24.00	PASS
	64/5320	17.5	16.63	16.63	24.00	PASS
802.11ax HE40	54/5270	17.5	16.88	16.88	24.00	PASS
	62/5310	17.5	17.03	17.03	24.00	PASS
802.11ax HE80	58/5290	17.5	17.37	17.37	24.00	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor						

U-NII-2C

Network Standards	Channel/ Frequency (MHz)	Power Index	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	100/5500	18	17.37	17.37	23.69	PASS
	120/5600	18	16.93	16.93	23.72	PASS
	140/5700	18	17.89	17.89	23.75	PASS
	144/5720	18	17.95	17.95	23.76	PASS
802.11n HT20	100/5500	18	17.38	17.38	23.93	PASS
	120/5600	18	16.84	16.84	24.00	PASS
	140/5700	18	17.88	17.88	23.97	PASS
	144/5720	18	17.76	17.76	23.97	PASS
802.11n HT40	102/5510	18	17.66	17.66	24.00	PASS
	118/5590	18	17.27	17.27	24.00	PASS
	134/5670	18	16.84	16.84	24.00	PASS
	142/5710	18	17.65	17.65	24.00	PASS
802.11ac VHT20	100/5500	17.5	17.13	17.13	23.93	PASS
	120/5600	17.5	16.69	16.69	23.90	PASS
	140/5700	17.5	17.72	17.72	23.92	PASS
	144/5720	17.5	17.64	17.64	23.96	PASS
802.11ac VHT40	102/5510	17.5	17.25	17.25	24.00	PASS
	118/5590	17.5	16.97	16.97	24.00	PASS
	134/5670	17.5	16.54	16.54	24.00	PASS
	142/5710	17.5	17.28	17.28	24.00	PASS
802.11ac VHT80	122/5610	17.5	16.79	16.79	24.00	PASS
	138/5690	17.5	17.34	17.34	24.00	PASS
802.11ax HE20	100/5500	17.5	16.79	16.79	24.00	PASS
	120/5600	17.5	16.51	16.51	24.00	PASS
	140/5700	17.5	16.75	16.75	24.00	PASS
	144/5720	17.5	16.28	16.28	24.00	PASS
802.11ax HE40	102/5510	17.5	17.01	17.01	24.00	PASS
	118/5590	17.5	17.04	17.04	24.00	PASS
	134/5670	17.5	17.49	17.49	24.00	PASS
	142/5710	17.5	16.64	16.64	24.00	PASS
802.11ax HE80	122/5610	17.5	17.19	17.19	24.00	PASS
	138/5690	17.5	17.57	17.57	24.00	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor						

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Network Standards	Channel/ Frequency (MHz)	Power Index	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	149/5745	18	17.56	17.56	30	PASS
	157/5785	18	18.05	18.05	30	PASS
	165/5825	18	18.16	18.16	30	PASS
802.11n HT20	149/5745	18	17.37	17.37	30	PASS
	157/5785	18	18.04	18.04	30	PASS
	165/5825	18	17.94	17.94	30	PASS
802.11n HT40	151/5755	18	17.66	17.66	30	PASS
	159/5795	18	17.92	17.92	30	PASS
802.11ac VHT20	149/5745	17.5	17.04	17.04	30	PASS
	157/5785	17.5	17.83	17.83	30	PASS
	165/5825	17.5	17.64	17.64	30	PASS
802.11ac VHT40	151/5755	17.5	17.22	17.22	30	PASS
	159/5795	17.5	17.56	17.56	30	PASS
802.11ac VHT80	155/5775	17.5	17.83	17.83	30	PASS
802.11ax HE20	149/5745	17.5	16.85	16.85	30	PASS
	157/5785	17.5	17.32	17.32	30	PASS
	165/5825	17.5	16.94	16.94	30	PASS
802.11ax HE40	151/5755	17.5	17.76	17.76	30	PASS
	159/5795	17.5	17.44	17.44	30	PASS
802.11ax HE80	155/5775	17.5	17.71	17.71	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor						

SISO Antenna 2

U-NII-1

Network Standards	Channel/ Frequency (MHz)	Power Index	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	36/5180	18	18.14	18.14	30	PASS
	40/5200	18	18.22	18.22	30	PASS
	48/5240	18	18.27	18.27	30	PASS
802.11n HT20	36/5180	18	18.04	18.04	30	PASS
	40/5200	18	18.08	18.08	30	PASS
	48/5240	18	18.02	18.02	30	PASS
802.11n HT40	38/5190	18	18.42	18.42	30	PASS
	46/5230	18	18.63	18.63	30	PASS
802.11ac VHT20	36/5180	17.5	17.42	17.42	30	PASS
	40/5200	17.5	17.38	17.38	30	PASS
	48/5240	17.5	17.61	17.61	30	PASS
802.11ac VHT40	38/5190	17.5	17.44	17.44	30	PASS
	46/5230	17.5	17.81	17.81	30	PASS
802.11ac VHT80	42/5210	17.5	18.30	18.30	30	PASS
802.11ax HE20	36/5180	17.5	17.39	17.39	30	PASS
	40/5200	17.5	17.23	17.23	30	PASS
	48/5240	17.5	17.21	17.21	30	PASS
802.11ax HE40	38/5190	17.5	17.37	17.37	30	PASS
	46/5230	17.5	17.83	17.83	30	PASS
802.11ax HE80	42/5210	17.5	18.11	18.11	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor						

U-NII-2A

Network Standards	Channel/ Frequency (MHz)	Power Index	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	52/5260	18	17.54	17.54	23.71	PASS
	60/5300	18	18.20	18.20	23.67	PASS
	64/5320	18	18.39	18.39	23.73	PASS
802.11n HT20	52/5260	18	17.61	17.61	23.92	PASS
	60/5300	18	18.14	18.14	23.97	PASS
	64/5320	18	18.22	18.22	23.96	PASS
802.11n HT40	54/5270	18	18.05	18.05	24.00	PASS
	62/5310	18	18.52	18.52	24.00	PASS
802.11ac VHT20	52/5260	17.5	17.02	17.02	23.94	PASS
	60/5300	17.5	17.46	17.46	23.91	PASS
	64/5320	17.5	17.51	17.51	23.95	PASS
802.11ac VHT40	54/5270	17.5	17.55	17.55	24.00	PASS
	62/5310	17.5	18.02	18.02	24.00	PASS
802.11ac VHT80	58/5290	17.5	18.11	18.11	24.00	PASS
802.11ax HE20	52/5260	17.5	16.89	16.89	24.00	PASS
	60/5300	17.5	17.41	17.41	24.00	PASS
	64/5320	17.5	17.57	17.57	24.00	PASS
802.11ax HE40	54/5270	17.5	17.38	17.38	24.00	PASS
	62/5310	17.5	17.76	17.76	24.00	PASS
802.11ax HE80	58/5290	17.5	18.11	18.11	24.00	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor						

U-NII-2C

Network Standards	Channel/ Frequency (MHz)	Power Index	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	100/5500	18	17.77	17.77	23.69	PASS
	120/5600	18	17.85	17.85	23.72	PASS
	140/5700	18	17.18	17.18	23.75	PASS
	144/5720	18	16.58	16.58	23.76	PASS
802.11n HT20	100/5500	18	17.47	17.47	23.93	PASS
	120/5600	18	17.42	17.42	24.00	PASS
	140/5700	18	16.88	16.88	23.97	PASS
	144/5720	18	16.24	16.24	23.97	PASS
802.11n HT40	102/5510	18	17.97	17.97	24.00	PASS
	118/5590	18	17.89	17.89	24.00	PASS
	134/5670	18	16.92	16.92	24.00	PASS
	142/5710	18	16.97	16.97	24.00	PASS
802.11ac VHT20	100/5500	17.5	16.85	16.85	23.93	PASS
	120/5600	17.5	16.90	16.90	23.90	PASS
	140/5700	17.5	16.32	16.32	23.92	PASS
	144/5720	17.5	15.78	15.78	23.96	PASS
802.11ac VHT40	102/5510	17.5	17.44	17.44	24.00	PASS
	118/5590	17.5	17.28	17.28	24.00	PASS
	134/5670	17.5	16.36	16.36	24.00	PASS
	142/5710	17.5	16.68	16.68	24.00	PASS
802.11ac VHT80	122/5610	17.5	17.13	17.13	24.00	PASS
	138/5690	17.5	16.66	16.66	24.00	PASS
802.11ax HE20	100/5500	17.5	17.15	17.15	24.00	PASS
	120/5600	17.5	17.20	17.20	24.00	PASS
	140/5700	17.5	16.58	16.58	24.00	PASS
	144/5720	17.5	16.03	16.03	24.00	PASS
802.11ax HE40	102/5510	17.5	17.39	17.39	24.00	PASS
	118/5590	17.5	17.26	17.26	24.00	PASS
	134/5670	17.5	16.44	16.44	24.00	PASS
	142/5710	17.5	16.39	16.39	24.00	PASS
802.11ax HE80	122/5610	17.5	17.24	17.24	24.00	PASS
	138/5690	17.5	16.68	16.68	24.00	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor						

U-NII-3

Network Standards	Channel/ Frequency (MHz)	Power Index	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	149/5745	18	16.23	16.23	30	PASS
	157/5785	18	17.39	17.39	30	PASS
	165/5825	18	16.63	16.63	30	PASS
802.11n HT20	149/5745	18	16.21	16.21	30	PASS
	157/5785	18	17.40	17.40	30	PASS
	165/5825	18	16.54	16.54	30	PASS
802.11n HT40	151/5755	18	17.36	17.36	30	PASS
	159/5795	18	17.78	17.78	30	PASS
802.11ac VHT20	149/5745	17.5	15.58	15.58	30	PASS
	157/5785	17.5	16.85	16.85	30	PASS
	165/5825	17.5	16.04	16.04	30	PASS
802.11ac VHT40	151/5755	17.5	16.86	16.86	30	PASS
	159/5795	17.5	17.38	17.38	30	PASS
802.11ac VHT80	155/5775	17.5	16.99	16.99	30	PASS
802.11ax HE20	149/5745	17.5	16.01	16.01	30	PASS
	157/5785	17.5	17.09	17.09	30	PASS
	165/5825	17.5	16.17	16.17	30	PASS
802.11ax HE40	151/5755	17.5	16.82	16.82	30	PASS
	159/5795	17.5	17.33	17.33	30	PASS
802.11ax HE80	155/5775	17.5	17.12	17.12	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor						

MIMO without Beamforming

U-NII-1

Network Standards	Channel/ Frequency (MHz)	Power Index	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
			Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	36/5180	18.00	17.21	17.21	17.91	17.91	20.58	30.00	PASS
	44/5220	18.00	17.25	17.25	17.78	17.78	20.53	30.00	PASS
	48/5240	18.00	16.87	16.87	17.74	17.74	20.34	30.00	PASS
802.11n HT20	36/5180	18.00	16.85	16.85	17.42	17.42	20.15	30.00	PASS
	44/5220	18.00	16.89	16.89	17.48	17.48	20.21	30.00	PASS
	48/5240	18.00	16.53	16.53	17.39	17.39	19.99	30.00	PASS
802.11n HT40	38/5190	18.00	17.28	17.28	17.81	17.81	20.56	30.00	PASS
	46/5230	18.00	17.02	17.02	17.96	17.96	20.53	30.00	PASS
802.11ac VHT20	36/5180	17.50	16.15	16.15	16.81	16.81	19.50	30.00	PASS
	44/5220	17.50	16.42	16.42	16.76	16.76	19.60	30.00	PASS
	48/5240	17.50	16.07	16.07	16.75	16.75	19.43	30.00	PASS
802.11ac VHT40	38/5190	17.50	16.88	16.88	17.23	17.23	20.07	30.00	PASS
	46/5230	17.50	16.67	16.67	17.28	17.28	20.00	30.00	PASS
802.11ac VHT80	42/5210	17.50	17.16	17.16	17.96	17.96	20.59	30.00	PASS
802.11ax HE20	36/5180	17.50	16.39	16.39	17.03	17.03	19.73	30.00	PASS
	40/5200	17.50	16.42	16.42	16.92	16.92	19.69	30.00	PASS
	48/5240	17.50	16.07	16.07	16.83	16.83	19.48	30.00	PASS
802.11ax HE40	38/5190	17.50	16.89	16.89	17.23	17.23	20.07	30.00	PASS
	46/5230	17.50	16.85	16.85	17.35	17.35	20.12	30.00	PASS
802.11ax HE80	42/5210	17.50	17.22	17.22	18.01	18.01	20.64	30.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power $=10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)}$

2. The manufacturer declared the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = GANT + Array Gain,

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leqslant 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths $\geqslant$ 40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT} /NSS) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geqslant 5$.

So directional gain = G_{ANT} + Array Gain =5.05+0=5.05 dBi<6dBi. So the power limt is 30dBm.

U-NII-2A

Network Standards	Channel/ Frequency (MHz)	Power Index	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
			Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	52/5260	16.85	16.85	16.85	17.28	17.28	20.08	23.71	PASS
	60/5300	17.07	17.07	17.07	17.97	17.97	20.55	23.67	PASS
	64/5320	16.78	16.78	16.78	17.82	17.82	20.34	23.73	PASS
802.11n HT20	52/5260	17.02	17.02	17.02	17.00	17.00	20.02	23.92	PASS
	60/5300	17.34	17.34	17.34	17.46	17.46	20.41	23.97	PASS
	64/5320	17.27	17.27	17.27	17.53	17.53	20.41	23.96	PASS
802.11n HT40	54/5270	17.64	17.64	17.64	17.58	17.58	20.62	24.00	PASS
	62/5310	17.92	17.92	17.92	18.13	18.13	21.04	24.00	PASS
802.11ac VHT20	52/5260	16.46	16.46	16.46	16.39	16.39	19.44	23.94	PASS
	60/5300	16.82	16.82	16.82	16.92	16.92	19.88	23.91	PASS
	64/5320	16.73	16.73	16.73	16.89	16.89	19.82	23.95	PASS
802.11ac VHT40	54/5270	17.22	17.22	17.22	17.08	17.08	20.16	24.00	PASS
	62/5310	17.31	17.31	17.31	17.44	17.44	20.39	24.00	PASS
802.11ac VHT80	58/5290	17.32	17.32	17.32	17.78	17.78	20.57	24.00	PASS
802.11ax HE20	52/5260	17.50	16.73	16.73	16.49	16.49	19.62	24.00	PASS
	60/5300	17.50	17.02	17.02	17.25	17.25	20.15	24.00	PASS
	64/5320	17.50	16.92	16.92	17.10	17.10	20.02	24.00	PASS
802.11ax HE40	54/5270	17.50	17.11	17.11	17.02	17.02	20.08	24.00	PASS
	62/5310	17.50	17.34	17.34	17.48	17.48	20.42	24.00	PASS
802.11ax HE80	58/5290	17.50	17.28	17.28	17.87	17.87	20.60	24.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power $=10\log(10^{(\text{Power antenna1 in dBm/10})}+10^{(\text{Power antenna2 in dBm/10})}$

2. The manufacturer declared the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = GANT + Array Gain,

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leqslant 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths $\geqslant$ 40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT} /NSS) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geqslant 5$.

So directional gain = G_{ANT} + Array Gain =5.05+0=5.05 dBi<6dBi.

U-NII-2C

Network Standards	Channel/ Frequency (MHz)	Power Index	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
			Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	100/5500	18.00	17.08	17.08	17.17	17.17	20.14	23.69	PASS
	120/5600	18.00	16.79	16.79	17.20	17.20	20.01	23.72	PASS
	140/5700	18.00	17.05	17.05	16.61	16.61	19.85	23.75	PASS
	144/5720	18.00	16.59	16.59	16.11	16.11	19.37	23.76	PASS
802.11n HT20	100/5500	18.00	17.48	17.48	17.17	17.17	20.34	23.93	PASS
	120/5600	18.00	17.39	17.39	17.21	17.21	20.31	24.00	PASS
	140/5700	18.00	17.33	17.33	16.75	16.75	20.06	23.97	PASS
	144/5720	18.00	16.81	16.81	16.18	16.18	19.52	23.97	PASS
802.11n HT40	102/5510	18.00	18.06	18.06	17.64	17.64	20.87	24.00	PASS
	118/5590	18.00	17.96	17.96	17.38	17.38	20.69	24.00	PASS
	134/5670	18.00	18.18	18.18	16.53	16.53	20.44	24.00	PASS
	142/5710	18.00	17.54	17.54	16.79	16.79	20.19	24.00	PASS
802.11ac VHT20	100/5500	17.50	17.21	17.21	16.73	16.73	19.99	23.93	PASS
	120/5600	17.50	16.95	16.95	16.74	16.74	19.86	23.90	PASS
	140/5700	17.50	16.87	16.87	16.27	16.27	19.59	23.92	PASS
	144/5720	17.50	16.42	16.42	15.58	15.58	19.03	23.96	PASS
802.11ac VHT40	102/5510	17.50	17.83	17.83	17.38	17.38	20.62	24.00	PASS
	118/5590	17.50	17.78	17.78	17.25	17.25	20.53	24.00	PASS
	134/5670	17.50	18.02	18.02	16.31	16.31	20.26	24.00	PASS
	142/5710	17.50	17.20	17.20	16.44	16.44	19.85	24.00	PASS
802.11ac VHT80	122/5610	17.50	17.44	17.44	17.16	17.16	20.31	24.00	PASS
	138/5690	17.50	17.79	17.79	16.82	16.82	20.34	24.00	PASS
802.11ax HE20	100/5500	17.50	17.33	17.33	16.77	16.77	20.07	24.00	PASS
	120/5600	17.50	16.91	16.91	16.76	16.76	19.85	24.00	PASS
	140/5700	17.50	16.88	16.88	16.31	16.31	19.61	24.00	PASS
	144/5720	17.50	16.36	16.36	15.68	15.68	19.04	24.00	PASS
802.11ax HE40	102/5510	17.50	17.47	17.47	17.19	17.19	20.34	24.00	PASS
	118/5590	17.50	17.54	17.54	16.93	16.93	20.26	24.00	PASS
	134/5670	17.50	17.79	17.79	16.03	16.03	20.01	24.00	PASS
	142/5710	17.50	16.92	16.92	16.13	16.13	19.55	24.00	PASS
802.11ax HE80	122/5610	17.50	16.89	16.89	17.08	17.08	20.00	24.00	PASS
	138/5690	17.50	17.46	17.46	16.73	16.73	20.12	24.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power =10log($10^{(\text{Power antenna1 in dBm/10})}$+$10^{(\text{Power antenna2 in dBm/10})}$)

2. The manufacturer declared the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = GANT + Array Gain, For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leqslant 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths $\geqslant$ 40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT} /NSS) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geqslant 5$.

So directional gain = G_{ANT} + Array Gain =5.05+0=5.05 dBi<6dBi.

U-NII-3

Network Standards	Channel/ Frequency (MHz)	Power Index	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
			Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	149/5745	18.00	17.33	17.33	16.22	16.22	19.82	30.00	PASS
	157/5785	18.00	17.87	17.87	17.56	17.56	20.73	30.00	PASS
	165/5825	18.00	17.41	17.41	16.63	16.63	20.05	30.00	PASS
802.11n HT20	149/5745	18.00	17.33	17.33	16.15	16.15	19.79	30.00	PASS
	157/5785	18.00	17.81	17.81	17.46	17.46	20.65	30.00	PASS
	165/5825	18.00	17.25	17.25	16.50	16.50	19.90	30.00	PASS
802.11n HT40	151/5755	18.00	18.24	18.24	17.28	17.28	20.80	30.00	PASS
	159/5795	18.00	17.97	17.97	17.71	17.71	20.85	30.00	PASS
802.11ac VHT20	149/5745	17.50	16.93	16.93	15.66	15.66	19.35	30.00	PASS
	157/5785	17.50	17.39	17.39	16.85	16.85	20.14	30.00	PASS
	165/5825	17.50	16.86	16.86	15.86	15.86	19.40	30.00	PASS
802.11ac VHT40	151/5755	17.50	17.96	17.96	16.88	16.88	20.46	30.00	PASS
	159/5795	17.50	17.57	17.57	17.34	17.34	20.47	30.00	PASS
802.11ac VHT80	155/5775	17.50	17.73	17.73	17.02	17.02	20.40	30.00	PASS
802.11ax HE20	149/5745	17.50	16.55	16.55	15.51	15.51	19.07	30.00	PASS
	157/5785	17.50	17.14	17.14	16.43	16.43	19.81	30.00	PASS
	165/5825	17.50	16.73	16.73	15.78	15.78	19.29	30.00	PASS
802.11ax HE40	151/5755	17.50	17.67	17.67	16.48	16.48	20.13	30.00	PASS
	159/5795	17.50	17.32	17.32	17.15	17.15	20.25	30.00	PASS
802.11ax HE80	155/5775	17.50	17.55	17.55	16.67	16.67	20.14	30.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power =10log($10^{(\text{Power antenna1 in dBm/10})}$+$10^{(\text{Power antenna2 in dBm/10})}$)

2. The manufacturer declared the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01

Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = GANT + Array Gain,
For power measurements on IEEE 802.11 devices,
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leqslant 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths $\geqslant$ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/NSS) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geqslant 5$.
So directional gain = G_{ANT} + Array Gain =5.05+0=5.05 dBi<6dBi. So the power limt is 30dBm.

MIMO with Beamforming

U-NII-1

Network Standards	Channel/ Frequency (MHz)	Power Index	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
			Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11n HT20	36/5180	18.00	16.72	16.72	17.26	17.26	20.01	27.94	PASS
	40/5200	18.00	16.76	16.76	17.32	17.32	20.06	27.94	PASS
	48/5240	18.00	16.41	16.41	17.23	17.23	19.85	27.94	PASS
802.11n HT40	38/5190	18.00	17.15	17.15	17.65	17.65	20.42	27.94	PASS
	46/5230	18.00	16.89	16.89	17.82	17.82	20.39	27.94	PASS
802.11ac VHT20	36/5180	17.50	16.02	16.02	16.65	16.65	19.36	27.94	PASS
	40/5200	17.50	16.29	16.29	16.66	16.66	19.49	27.94	PASS
	48/5240	17.50	15.94	15.94	16.59	16.59	19.29	27.94	PASS
802.11ac VHT40	38/5190	17.50	16.75	16.75	17.07	17.07	19.92	27.94	PASS
	46/5230	17.50	16.54	16.54	17.12	17.12	19.85	27.94	PASS
802.11ac VHT80	42/5210	17.50	17.03	17.03	17.80	17.80	20.44	27.94	PASS
802.11ax HE20	36/5180	17.50	16.25	16.25	16.92	16.92	19.61	27.94	PASS
	40/5200	17.50	16.28	16.28	16.81	16.81	19.56	27.94	PASS
	48/5240	17.50	15.93	15.93	16.72	16.72	19.35	27.94	PASS
802.11ax HE40	38/5190	17.50	16.75	16.75	17.12	17.12	19.95	27.94	PASS
	46/5230	17.50	16.71	16.71	17.24	17.24	19.99	27.94	PASS
802.11ax HE80	42/5210	17.50	17.08	17.08	17.90	17.90	20.52	27.94	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),
The Total Power =$10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)}$
2. The manufacturer declared the transmitter output signals is CDD mode. And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain. For PSD measurements on all devices, Array Gain=10log(N_{ANT} /Nss)dB, so directional gain= G_{ANT} +Array Gain=5.05+10log(2/1)=8.06 So the power limt is 30+6-MAX(6, directional gain)dBm=27.49dBm

U-NII-2A

Network Standards	Channel/ Frequency (MHz)	Power Index	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
			Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11n HT20	52/5260	18.00	16.79	16.79	16.81	16.81	19.81	21.86	PASS
	60/5300	18.00	17.11	17.11	17.27	17.27	20.20	21.91	PASS
	64/5320	18.00	17.04	17.04	17.34	17.34	20.20	21.90	PASS
802.11n HT40	54/5270	18.00	17.41	17.41	17.39	17.39	20.41	21.94	PASS
	62/5310	18.00	17.69	17.69	17.94	17.94	20.83	21.94	PASS
802.11ac VHT20	52/5260	17.50	16.23	16.23	16.20	16.20	19.23	21.88	PASS
	60/5300	17.50	16.59	16.59	16.73	16.73	19.67	21.85	PASS
	64/5320	17.50	16.52	16.52	16.70	16.70	19.62	21.89	PASS
802.11ac VHT40	54/5270	17.50	16.99	16.99	16.89	16.89	19.95	21.94	PASS
	62/5310	17.50	17.08	17.08	17.25	17.25	20.18	21.94	PASS
802.11ac VHT80	58/5290	17.50	17.09	17.09	17.59	17.59	20.36	21.94	PASS
802.11ax HE20	52/5260	17.50	16.58	16.58	15.59	15.59	19.12	21.94	PASS
	60/5300	17.50	16.87	16.87	16.35	16.35	19.63	21.94	PASS
	64/5320	17.50	16.77	16.77	16.20	16.20	19.50	21.94	PASS
802.11ax HE40	54/5270	17.50	16.96	16.96	16.12	16.12	19.57	21.94	PASS
	62/5310	17.50	17.19	17.19	16.58	16.58	19.91	21.94	PASS
802.11ax HE80	58/5290	17.50	17.13	17.13	16.97	16.97	20.06	21.94	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),
The Total Power $=10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)}$

2. The manufacturer declared the transmitter output signals is CDD mode. And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain. For PSD measurements on all devices, Array Gain=$10\log(N_{ANT}/Nss)$dB, so directional gain= G_{ANT} +Array Gain=5.05+10log(2/1)=8.06.

U-NII-2C

Network Standards	Channel/ Frequency (MHz)	Power Index	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
			Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11n HT20	100/5500	18.00	17.27	17.27	16.99	16.99	20.14	21.87	PASS
	120/5600	18.00	17.18	17.18	17.03	17.03	20.12	21.94	PASS
	140/5700	18.00	17.12	17.12	16.57	16.57	19.86	21.91	PASS
	144/5720	18.00	16.63	16.63	16.03	16.03	19.35	21.91	PASS
802.11n HT40	102/5510	18.00	17.85	17.85	17.46	17.46	20.67	21.94	PASS
	118/5590	18.00	17.75	17.75	17.22	17.22	20.50	21.94	PASS
	134/5670	18.00	17.97	17.97	16.35	16.35	20.25	21.94	PASS
	142/5710	18.00	17.33	17.33	16.61	16.61	20.00	21.94	PASS
802.11ac VHT20	100/5500	17.50	17.04	17.04	16.55	16.55	19.81	21.87	PASS
	120/5600	17.50	16.74	16.74	16.56	16.56	19.66	21.84	PASS
	140/5700	17.50	16.66	16.66	16.09	16.09	19.39	21.86	PASS
	144/5720	17.50	16.21	16.21	15.43	15.43	18.85	21.90	PASS
802.11ac VHT40	102/5510	17.50	17.62	17.62	17.21	17.21	20.43	21.94	PASS
	118/5590	17.50	17.57	17.57	17.07	17.07	20.34	21.94	PASS
	134/5670	17.50	17.81	17.81	16.13	16.13	20.06	21.94	PASS
	142/5710	17.50	16.99	16.99	16.26	16.26	19.65	21.94	PASS
802.11ac VHT80	122/5610	17.50	17.23	17.23	16.98	16.98	20.12	21.94	PASS
	138/5690	17.50	17.58	17.58	16.64	16.64	20.15	21.94	PASS
802.11ax HE20	100/5500	17.50	17.20	17.20	16.69	16.69	19.96	21.94	PASS
	120/5600	17.50	16.78	16.78	16.68	16.68	19.74	21.94	PASS
	140/5700	17.50	16.75	16.75	16.23	16.23	19.51	21.94	PASS
	144/5720	17.50	16.23	16.23	15.60	15.60	18.94	21.94	PASS
802.11ax HE40	102/5510	17.50	17.34	17.34	17.11	17.11	20.24	21.94	PASS
	118/5590	17.50	17.41	17.41	16.85	16.85	20.15	21.94	PASS
	134/5670	17.50	17.66	17.66	15.95	15.95	19.90	21.94	PASS
	142/5710	17.50	16.79	16.79	16.05	16.05	19.45	21.94	PASS
802.11ax HE80	122/5610	17.50	16.76	16.76	17.03	17.03	19.91	21.94	PASS
	138/5690	17.50	17.33	17.33	16.65	16.65	20.01	21.94	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),
The Total Power $=10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)}$

2. The manufacturer declared the transmitter output signals is CDD mode. And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain. For

PSD measurements on all devices, Array Gain=10log(N_{ANT} /Nss)dB, so directional gain= G_{ANT} +Array Gain=5.05+10log(2/1)=8.06.

U-NII-3

Network Standards	Channel/ Frequency (MHz)	Power Index	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
			Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11n HT20	149/5745	18.00	17.16	17.16	16.04	16.04	19.65	27.94	PASS
	157/5785	18.00	17.64	17.64	17.35	17.35	20.51	27.94	PASS
	165/5825	18.00	17.08	17.08	16.39	16.39	19.76	27.94	PASS
802.11n HT40	151/5755	18.00	18.07	18.07	17.17	17.17	20.65	27.94	PASS
	159/5795	18.00	17.83	17.83	17.60	17.60	20.73	27.94	PASS
802.11ac VHT20	149/5745	17.50	16.76	16.76	15.55	15.55	19.21	27.94	PASS
	157/5785	17.50	17.22	17.22	16.74	16.74	20.00	27.94	PASS
	165/5825	17.50	16.69	16.69	15.75	15.75	19.26	27.94	PASS
802.11ac VHT40	151/5755	17.50	17.79	17.79	16.77	16.77	20.32	27.94	PASS
	159/5795	17.50	17.41	17.41	17.23	17.23	20.33	27.94	PASS
802.11ac VHT80	155/5775	17.50	17.56	17.56	16.91	16.91	20.26	27.94	PASS
802.11ax HE20	149/5745	17.50	16.46	16.46	15.43	15.43	18.99	27.94	PASS
	157/5785	17.50	17.05	17.05	16.35	16.35	19.72	27.94	PASS
	165/5825	17.50	16.64	16.64	15.72	15.72	19.21	27.94	PASS
802.11ax HE40	151/5755	17.50	17.58	17.58	16.41	16.41	20.04	27.94	PASS
	159/5795	17.50	17.23	17.23	17.07	17.07	20.16	27.94	PASS
802.11ax HE80	155/5775	17.50	17.46	17.46	16.59	16.59	20.06	27.94	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),
The Total Power =$10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)}$

2. The manufacturer declared the transmitter output signals is CDD mode. And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain. For PSD measurements on all devices, Array Gain=10log(N_{ANT}/Nss)dB, so directional gain= G_{ANT} +Array Gain=5.05+10log(2/1)=8.06.,So the power limt is 30+6-MAX(6, directional gain)dBm=27.49dBm

5.3. Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

1. Frequency stability with respect to ambient temperature

a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in 5.6.

b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.

c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).

d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.

e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.

f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.

g) Measure the frequency at each of frequencies specified in 5.6.

h) Switch OFF the EUT but do not switch OFF the oscillator heater.

i) Lower the chamber temperature by not more that 10°C, and allow the temperature inside the chamber to stabilize.

j) Repeat step f) through step i) down to the lowest specified temperature.

2. Frequency stability when varying supply voltage

Unless otherwise specified, these tests shall be made at ambient room temperature (+15°C to +25 °C). An antenna shall be connected to the antenna output terminals of the EUT if possible. If the EUT is equipped with or uses an adjustable-length antenna, then it shall be fully extended.

a) Supply the EUT with nominal voltage or install a new or fully charged battery in the EUT. Turn ON the EUT and couple its output to a frequency counter or other frequency-measuring instrument.

b) Tune the EUT to one of the number of frequencies required in 5.6. Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).
c) Measure the frequency at each of the frequencies specified in 5.6.
d) Repeat the above procedure at 85% and 115% of the nominal supply voltage.

Limit

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

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 936Hz

Test Results

Voltage (V)	Temperature (°C)	U-NII-1 Test Results			
		5200MHz			
		1min	2min	5min	10min
3.8	-20	5200.007177	5200.006440	5200.003945	5199.999415
3.8	-10	5200.011222	5200.004492	5199.994725	5199.994273
3.8	0	5200.008870	5199.999243	5199.990470	5199.989625
3.8	10	5200.000995	5199.997909	5199.985937	5199.982913
3.8	20	5199.995663	5199.993709	5199.980866	5199.976001
3.8	30	5199.987954	5199.988038	5199.979781	5199.975879
3.8	40	5199.981246	5199.981690	5199.976336	5199.970840
3.8	50	5199.973786	5199.977291	5199.971356	5199.968722
3.3	20	5199.973319	5199.974797	5199.970243	5199.960275
4.3	20	5199.966624	5199.967192	5199.969667	5199.952492
MHz		-0.033376	-0.032808	-0.030333	-0.047508
PPM		-6.418544	-6.309244	-5.833359	-9.136105

Voltage (V)	Temperature (°C)	U-NII-2A Test Results			
		5300MHz			
		1min	2min	5min	10min
3.8	-20	5299.993513	5299.984732	5299.982257	5299.981264
3.8	-10	5299.985728	5299.981011	5299.979185	5299.980205
3.8	0	5299.979247	5299.979247	5299.969808	5299.971099
3.8	10	5299.969588	5299.976707	5299.968116	5299.968198
3.8	20	5299.969036	5299.968091	5299.960270	5299.959533
3.8	30	5299.963337	5299.965458	5299.955419	5299.958139
3.8	40	5299.961167	5299.961366	5299.950765	5299.957483
3.8	50	5299.953399	5299.957394	5299.943291	5299.956059
3.3	20	5299.950086	5299.950890	5299.936795	5299.954280
4.3	20	5299.945846	5299.943659	5299.934529	5299.951539
MHz		-0.054154	-0.056341	-0.065471	-0.048461
PPM		-10.217790	-10.630333	-12.353039	-9.143543

Voltage (V)	Temperature (°C)	U-NII-2C Test Results			
		5580MHz			
		1min	2min	5min	10min
3.8	-20	5580.005353	5580.001257	5579.995830	5579.990851
3.8	-10	5580.002355	5580.001072	5579.992146	5579.981747
3.8	0	5579.998670	5579.996312	5579.983255	5579.978502
3.8	10	5579.992245	5579.987466	5579.976287	5579.975946
3.8	20	5579.989325	5579.979711	5579.975242	5579.975676
3.8	30	5579.984886	5579.971033	5579.965399	5579.971090
3.8	40	5579.983225	5579.963373	5579.959601	5579.963741
3.8	50	5579.980202	5579.963245	5579.956404	5579.953798
3.3	20	5579.977230	5579.954151	5579.951642	5579.948759
4.3	20	5579.973014	5579.947278	5579.948376	5579.939203
MHz		-0.026986	-0.052722	-0.051624	-0.060797
PPM		-4.836188	-9.448352	-9.251567	-10.895448

Voltage (V)	Temperature (°C)	U-NII-3 Test Results			
		5785MHz			
		1min	2min	5min	10min
3.8	-20	5785.007674	5784.998521	5784.992782	5784.992100
3.8	-10	5785.000135	5784.992867	5784.985788	5784.984434
3.8	0	5784.991751	5784.991477	5784.985376	5784.981321
3.8	10	5784.985436	5784.986757	5784.981385	5784.980328
3.8	20	5784.978922	5784.977324	5784.979756	5784.971221
3.8	30	5784.973237	5784.970165	5784.971395	5784.969514
3.8	40	5784.972474	5784.968364	5784.964627	5784.962848
3.8	50	5784.969755	5784.967914	5784.955357	5784.955175
3.3	20	5784.961375	5784.967133	5784.953629	5784.946682
4.3	20	5784.953239	5784.962600	5784.948079	5784.938930
MHz		-0.046761	-0.037400	-0.051921	-0.061070
PPM		-8.083119	-6.464977	-8.975109	-10.556672

5.4. Power Spectral Density

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

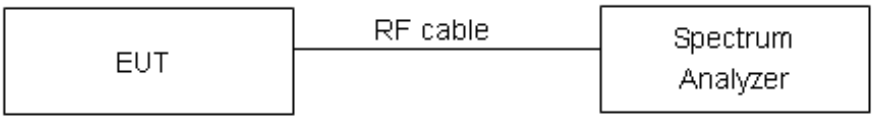
Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

Set RBW = 1MHz, VBW =3MHz for the band 5.150-5.250GHz, 5.250-5.350GHz, 5.470-5.725GHz.
Set RBW = 470kHz, VBW =1.5MHz for the band 5.725-5.850GHz

The conducted PSD is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Test setup



Limits

Rule FCC Part 15.407(a)(1)/ Part 15.407(a)(2) / Part 15.407(a)(3)
For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500kHz band. If transmittingantennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the

amount in dB that the directional gain of the antenna exceeds 6 dBi.

Frequency Bands/MHz	Limits
5150-5250	17/11dBm/MHz
5.25-5.35 GHz and 5.47-5.725 GHz	11dBm/MHz
5725-5850	30dBm/500kHz

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.75dB.

Test Results:

Note: Power Spectral Density =Read Value+Duty cycle correction factor

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U-NII-1

Mode	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	36/5180	7.182	7.18	17	PASS
	40/5200	7.78	7.78	17	PASS
	48/5240	7.245	7.25	17	PASS
802.11n HT20	36/5180	7.665	7.67	17	PASS
	40/5200	7.435	7.44	17	PASS
	48/5240	7.022	7.02	17	PASS
802.11n HT40	38/5190	5.351	5.35	17	PASS
	46/5230	4.565	4.57	17	PASS
802.11ac VHT20	36/5180	7.076	7.08	17	PASS
	40/5200	7.502	7.50	17	PASS
	48/5240	6.576	6.58	17	PASS
802.11ac VHT40	38/5190	5.118	5.12	17	PASS
	46/5230	4.182	4.18	17	PASS
802.11ac VHT80	42/5210	2.143	2.14	17	PASS
802.11ax HE20	36/5180	5.27	5.27	11	PASS
	40/5200	5.91	5.91	11	PASS
	48/5240	4.87	4.87	11	PASS
802.11ax HE40	38/5190	2.98	2.98	11	PASS
	46/5230	2.97	2.97	11	PASS
802.11ax HE80	42/5210	0.71	0.71	11	PASS

U-NII-2A

Mode	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	52/5260	7.703	7.70	11	PASS
	60/5300	7.911	7.91	11	PASS
	64/5320	7.771	7.77	11	PASS
802.11n HT20	52/5260	7.058	7.06	11	PASS
	60/5300	7.700	7.70	11	PASS

	64/5320	7.736	7.74	11	PASS
802.11n HT40	54/5270	4.935	4.94	11	PASS
	62/5310	5.738	5.74	11	PASS
802.11ac VHT20	52/5260	6.709	6.71	11	PASS
	60/5300	7.303	7.30	11	PASS
	64/5320	7.339	7.34	11	PASS
802.11ac VHT40	54/5270	3.994	3.99	11	PASS
	62/5310	4.92	4.92	11	PASS
802.11ac VHT80	58/5290	2.134	2.13	11	PASS
802.11ax HE20	52/5260	5.55	5.55	11	PASS
	60/5300	5.88	5.88	11	PASS
	64/5320	5.92	5.92	11	PASS
802.11ax HE40	54/5270	3.11	3.11	11	PASS
	62/5310	3.22	3.22	11	PASS
802.11ax HE80	58/5290	0.84	0.84	11	PASS

U-NII-2C

Mode	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	100/5500	5.884	5.88	11	PASS
	120/5600	4.638	4.64	11	PASS
	140/5700	5.202	5.20	11	PASS
	144/5720	4.974	4.97	11	PASS
802.11n HT20	100/5500	7.569	7.57	11	PASS
	120/5600	7.222	7.22	11	PASS
	140/5700	7.209	7.21	11	PASS
	144/5720	5.991	5.99	11	PASS
802.11n HT40	102/5510	4.915	4.92	11	PASS
	118/5590	4.494	4.49	11	PASS
	134/5670	4.782	4.78	11	PASS
	142/5710	3.698	3.70	11	PASS
802.11ac VHT20	100/5500	7.237	7.24	11	PASS
	120/5600	6.682	6.68	11	PASS
	140/5700	6.610	6.61	11	PASS
	144/5720	5.745	5.75	11	PASS

802.11ac VHT40	102/5510	4.536	4.54	11	PASS
	118/5590	4.444	4.44	11	PASS
	134/5670	4.348	4.35	11	PASS
	142/5710	3.575	3.58	11	PASS
802.11ac VHT80	122/5610	0.887	0.89	11	PASS
	138/5690	1.028	1.03	11	PASS
802.11ax HE20	100/5500	5.78	5.78	11	PASS
	120/5600	5.44	5.44	11	PASS
	140/5700	5.92	5.92	11	PASS
	144/5720	5.00	5.00	11	PASS
802.11ax HE40	102/5510	2.66	2.66	11	PASS
	118/5590	2.98	2.98	11	PASS
	134/5670	3.21	3.21	11	PASS
	142/5710	1.85	1.85	11	PASS
802.11ax HE80	122/5610	-0.27	-0.27	11	PASS
	138/5690	0.05	0.05	11	PASS

U-NII-3

Mode	Channel Number	Read Value (dBm/470kHz)	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Conclusion
802.11a	149/5745	2.71	2.98	30	PASS
	157/5785	2.91	3.18	30	PASS
	165/5825	2.48	2.75	30	PASS
802.11n HT20	149/5745	2.03	2.30	30	PASS
	157/5785	2.28	2.55	30	PASS
	165/5825	2.44	2.71	30	PASS
802.11n HT40	151/5755	0.41	0.68	30	PASS
	159/5795	0.07	0.34	30	PASS
802.11ac VHT20	149/5745	2.00	2.27	30	PASS
	157/5785	1.64	1.91	30	PASS
	165/5825	1.96	2.23	30	PASS
802.11ac VHT40	151/5755	-0.36	-0.09	30	PASS
	159/5795	-1.12	-0.85	30	PASS
802.11ac VHT80	155/5775	-3.76	-3.49	30	PASS

802.11ax HE20	149/5745	1.06	1.33	30	PASS
	157/5785	1.59	1.86	30	PASS
	165/5825	1.76	2.03	30	PASS
802.11ax HE40	151/5755	-0.80	-0.53	30	PASS
	159/5795	-1.16	-0.89	30	PASS
802.11ax HE80	155/5775	-4.08	-3.81	30	PASS
Note:PSD=Read Value+Duty cycle+10*LOG(500/470) correction factor					

SISO Antenna 2

U-NII-1

Mode	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	36/5180	7.29	7.29	11	PASS
	40/5200	7.79	7.79	11	PASS
	48/5240	7.35	7.35	11	PASS
802.11n HT20	36/5180	7.02	7.02	11	PASS
	40/5200	7.01	7.01	11	PASS
	48/5240	7.41	7.41	11	PASS
802.11n HT40	38/5190	4.39	4.39	11	PASS
	46/5230	4.66	4.66	11	PASS
802.11ac VHT20	36/5180	6.84	6.84	11	PASS
	40/5200	6.70	6.70	11	PASS
	48/5240	6.28	6.28	11	PASS
802.11ac VHT40	38/5190	3.70	3.70	11	PASS
	46/5230	3.91	3.91	11	PASS
802.11ac VHT80	42/5210	1.39	1.39	11	PASS
802.11ax HE20	36/5180	5.93	5.93	11	PASS
	40/5200	5.08	5.08	11	PASS
	48/5240	5.14	5.14	11	PASS
802.11ax HE40	38/5190	3.07	3.07	11	PASS
	46/5230	2.52	2.52	11	PASS
802.11ax HE80	42/5210	0.40	0.40	11	PASS

U-NII-2A

Mode	Channel	Read Value	Power Spectral	Limit	Conclusion

	Number	(dBm /MHz)	Density (dBm /MHz)	(dBm /MHz)	
802.11a	52/5260	7.02	7.02	11	PASS
	60/5300	7.99	7.99	11	PASS
	64/5320	7.75	7.75	11	PASS
802.11n HT20	52/5260	6.89	6.89	11	PASS
	60/5300	7.44	7.44	11	PASS
	64/5320	7.63	7.63	11	PASS
802.11n HT40	54/5270	4.28	4.28	11	PASS
	62/5310	5.42	5.42	11	PASS
802.11ac VHT20	52/5260	7.05	7.05	11	PASS
	60/5300	7.51	7.51	11	PASS
	64/5320	7.57	7.57	11	PASS
802.11ac VHT40	54/5270	3.70	3.70	11	PASS
	62/5310	4.66	4.66	11	PASS
802.11ac VHT80	58/5290	1.16	1.16	11	PASS
802.11ax HE20	52/5260	5.34	5.34	11	PASS
	60/5300	5.36	5.36	11	PASS
	64/5320	5.39	5.39	11	PASS
802.11ax HE40	54/5270	2.91	2.91	11	PASS
	62/5310	3.26	3.26	11	PASS
802.11ax HE80	58/5290	0.55	0.55	11	PASS

U-NII-2C

Mode	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	100/5500	6.98	6.98	11	PASS
	120/5600	6.84	6.84	11	PASS
	140/5700	6.17	6.17	11	PASS
	144/5720	5.58	5.58	11	PASS
802.11n HT20	100/5500	6.68	6.68	11	PASS
	120/5600	6.49	6.49	11	PASS
	140/5700	5.79	5.79	11	PASS
	144/5720	5.24	5.24	11	PASS
802.11n	102/5510	4.32	4.32	11	PASS

HT40	118/5590	4.01	4.01	11	PASS
	134/5670	2.69	2.69	11	PASS
	142/5710	3.40	3.40	11	PASS
802.11ac VHT20	100/5500	6.05	6.05	11	PASS
	120/5600	5.83	5.83	11	PASS
	140/5700	5.41	5.41	11	PASS
	144/5720	4.91	4.91	11	PASS
802.11ac VHT40	102/5510	3.54	3.54	11	PASS
	118/5590	3.38	3.38	11	PASS
	134/5670	2.32	2.32	11	PASS
	142/5710	2.30	2.30	11	PASS
802.11ac VHT80	122/5610	-0.06	-0.06	11	PASS
	138/5690	0.02	0.02	11	PASS
802.11ax HE20	100/5500	3.89	3.89	11	PASS
	120/5600	4.22	4.22	11	PASS
	140/5700	4.05	4.05	11	PASS
	144/5720	3.15	3.15	11	PASS
802.11ax HE40	102/5510	2.60	2.60	11	PASS
	118/5590	1.83	1.83	11	PASS
	134/5670	0.50	0.50	11	PASS
	142/5710	0.05	0.05	11	PASS
802.11ax HE80	122/5610	-1.55	-1.55	11	PASS
	138/5690	-1.73	-1.73	11	PASS

U-NII-3

Mode	Channel Number	Read Value (dBm/470kHz)	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Conclusion
802.11a	149/5745	2.27	2.54	30	PASS
	157/5785	2.94	3.21	30	PASS
	165/5825	2.15	2.42	30	PASS
802.11n HT20	149/5745	1.15	1.42	30	PASS
	157/5785	2.15	2.42	30	PASS
	165/5825	1.59	1.86	30	PASS
802.11n	151/5755	-0.38	-0.11	30	PASS

HT40	159/5795	-0.80	-0.53	30	PASS
802.11ac VHT20	149/5745	0.92	1.19	30	PASS
	157/5785	1.73	2.00	30	PASS
	165/5825	1.22	1.49	30	PASS
802.11ac VHT40	151/5755	-0.71	-0.44	30	PASS
	159/5795	-0.82	-0.55	30	PASS
802.11ac VHT80	155/5775	-3.92	-3.65	30	PASS
802.11ax HE20	149/5745	0.31	0.58	30	PASS
	157/5785	0.98	1.25	30	PASS
	165/5825	0.78	1.05	30	PASS
802.11ax HE40	151/5755	-1.63	-1.36	30	PASS
	159/5795	-0.97	-0.70	30	PASS
802.11ax HE80	155/5775	-4.51	-4.24	30	PASS
Note:PSD=Read Value+Duty cycle+10*LOG(500/470) correction factor					

MIMO without Beamforming

U-NII-1

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total Power (dBm /MHz)		
		Read Value (dBm/MHz)	PSD (dBm /MHz)	Read Value (dBm/MHz)	PSD (dBm /MHz)			
802.11a	36/5180	7.67	7.67	7.15	7.15	10.43	14.94	PASS
	40/5200	7.54	7.54	7.79	7.79	10.67	14.94	PASS
	48/5240	6.42	6.42	7.49	7.49	10.00	14.94	PASS
802.11n HT20	36/5180	6.68	6.68	6.61	6.61	9.66	14.94	PASS
	40/5200	6.54	6.54	6.30	6.30	9.43	14.94	PASS
	48/5240	5.77	5.77	6.86	6.86	9.36	14.94	PASS
802.11n HT40	38/5190	4.00	4.00	3.63	3.63	6.83	14.94	PASS
	46/5230	2.97	2.97	4.00	4.00	6.53	14.94	PASS
802.11ac VHT20	36/5180	6.18	6.18	5.92	5.92	9.06	14.94	PASS
	40/5200	6.34	6.34	5.78	5.78	9.08	14.94	PASS
	48/5240	5.14	5.14	6.22	6.22	8.72	14.94	PASS
802.11ac VHT40	38/5190	3.35	3.35	3.02	3.02	6.20	14.94	PASS
	46/5230	2.31	2.31	3.42	3.42	5.91	14.94	PASS
802.11ac VHT80	42/5210	-0.28	-0.28	0.01	0.01	2.88	14.94	PASS
802.11ax	36/5180	5.82	5.82	6.26	6.26	9.05	14.94	PASS

HE20	40/5200	6.03	6.03	6.44	6.44	9.25	14.94	PASS
	48/5240	6.01	6.01	6.01	6.01	9.02	14.94	PASS
802.11ax HE40	38/5190	3.47	3.47	4.49	4.49	7.02	14.94	PASS
	46/5230	3.83	3.83	2.17	2.17	6.09	14.94	PASS
802.11ax HE80	42/5210	1.67	1.67	0.78	0.78	4.26	14.94	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),the power spectral density=10log($10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})}+10^{(\text{PSD antenna3 in dBm/10})}$)

3. The manufacturer declared the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = GANT + Array Gain, For PSD measurements on all devices,Array Gain=10log(Nant/Nss)dB,so directional gain=GANT+Array Gain=5.05+10log（2/1)=8.06>6 dBi. So the PSD limt is 17-(directional gain-6 dBi) =17-(8.06-6)=14.94 dBm.

U-NII-2A

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total Power (dBm /MHz)		
		Read Value (dBm/MHz)	PSD (dBm /MHz)	Read Value (dBm/MHz)	PSD (dBm /MHz)			
802.11a	52/5260	5.43	5.43	5.38	5.38	8.41	8.94	PASS
	60/5300	5.54	5.54	5.17	5.17	8.37	8.94	PASS
	64/5320	5.44	5.44	5.13	5.13	8.30	8.94	PASS
802.11n HT20	52/5260	5.37	5.37	5.66	5.66	8.53	8.94	PASS
	60/5300	5.42	5.42	5.72	5.72	8.58	8.94	PASS
	64/5320	5.38	5.38	5.58	5.58	8.49	8.94	PASS
802.11n HT40	54/5270	4.99	4.99	4.36	4.36	7.70	8.94	PASS
	62/5310	4.86	4.86	5.22	5.22	8.05	8.94	PASS
802.11ac VHT20	52/5260	4.59	4.59	3.91	3.91	7.27	8.94	PASS
	60/5300	4.68	4.68	4.32	4.32	7.52	8.94	PASS
	64/5320	4.82	4.82	4.78	4.78	7.81	8.94	PASS
802.11ac VHT40	54/5270	3.01	3.01	3.09	3.09	6.06	8.94	PASS
	62/5310	3.49	3.49	3.60	3.60	6.56	8.94	PASS
802.11ac VHT80	58/5290	0.82	0.82	0.54	0.54	3.70	8.94	PASS
802.11ax HE20	52/5260	5.26	5.26	4.64	4.64	7.97	8.94	PASS
	60/5300	5.64	5.64	4.56	4.56	8.15	8.94	PASS
	64/5320	5.87	5.87	5.82	5.82	8.86	8.94	PASS
802.11ax	54/5270	2.66	2.66	2.62	2.62	5.65	8.94	PASS

HE40	62/5310	2.96	2.96	2.65	2.65	5.82	8.94	PASS
802.11ax HE80	58/5290	0.36	0.36	0.24	0.24	3.31	8.94	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),the power spectral density=$10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})}+10^{(\text{PSD antenna3 in dBm/10})})$

3. The manufacturer declared the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = GANT + Array Gain, For PSD measurements on all devices,Array Gain=10log(Nant/Nss)dB,so directional gain=GANT+Array Gain=5.05+10log（2/1)=8.06>6 dBi. So the PSD limt is 11-(directional gain-6 dBi) =11-(8.06-6)=8.94dBm.

U-NII-2C

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total Power (dBm /MHz)		
		Read Value (dBm/MHz)	PSD (dBm /MHz)	Read Value (dBm/MHz)	PSD (dBm /MHz)			
802.11a	100/5500	4.43	4.43	4.17	4.17	7.31	8.94	PASS
	120/5600	4.47	4.47	4.48	4.48	7.48	8.94	PASS
	140/5700	5.65	5.65	5.56	5.56	8.62	8.94	PASS
	144/5720	5.33	5.33	5.17	5.17	8.26	8.94	PASS
802.11n HT20	100/5500	4.90	4.90	4.59	4.59	7.76	8.94	PASS
	120/5600	5.20	5.20	5.22	5.22	8.22	8.94	PASS
	140/5700	5.78	5.78	5.32	5.32	8.57	8.94	PASS
	144/5720	4.61	4.61	5.24	5.24	7.95	8.94	PASS
802.11n HT40	102/5510	2.92	2.92	3.33	3.33	6.14	8.94	PASS
	118/5590	2.67	2.67	2.64	2.64	5.67	8.94	PASS
	134/5670	1.65	1.65	1.91	1.91	4.79	8.94	PASS
	142/5710	1.98	1.98	1.80	1.80	4.90	8.94	PASS
802.11ac VHT20	100/5500	5.06	5.06	5.74	5.74	8.42	8.94	PASS
	120/5600	5.56	5.56	5.36	5.36	8.47	8.94	PASS
	140/5700	4.26	4.26	4.14	4.14	7.21	8.94	PASS
	144/5720	4.31	4.31	3.77	3.77	7.06	8.94	PASS
802.11ac VHT40	102/5510	1.64	1.64	2.09	2.09	4.88	8.94	PASS
	118/5590	2.18	2.18	2.95	2.95	5.59	8.94	PASS
	134/5670	2.12	2.12	1.86	1.86	5.00	8.94	PASS
	142/5710	2.35	2.35	2.22	2.22	5.30	8.94	PASS
802.11ac VHT80	122/5610	-0.46	-0.46	-0.17	-0.17	2.70	8.94	PASS
	138/5690	-0.46	-0.46	-0.68	-0.68	2.44	8.94	PASS
802.11ax HE20	100/5500	5.54	5.54	5.05	5.05	8.31	8.94	PASS
	120/5600	5.00	5.00	4.85	4.85	7.93	8.94	PASS
	140/5700	4.79	4.79	4.38	4.38	7.60	8.94	PASS
	144/5720	4.62	4.62	3.70	3.70	7.19	8.94	PASS
802.11ax HE40	102/5510	2.66	2.66	2.56	2.56	5.62	8.94	PASS
	118/5590	2.90	2.90	2.22	2.22	5.59	8.94	PASS
	134/5670	2.21	2.21	2.53	2.53	5.39	8.94	PASS
	142/5710	2.87	2.87	2.61	2.61	5.75	8.94	PASS
802.11ax HE80	122/5610	0.50	0.50	0.11	0.11	3.32	8.94	PASS
	138/5690	0.35	0.35	0.75	0.75	3.56	8.94	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),the power

spectral density=10log($10^{(PSD\ antenna1\ in\ dBm/10)}$+$10^{(PSD\ antenna2\ in\ dBm/10)}$+$10^{(PSD\ antenna3\ in\ dBm/10)}$)

3. The manufacturer declared the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = GANT + Array Gain, For PSD measurements on all devices,Array Gain=10log(Nant/Nss)dB,so directional gain=GANT+Array Gain=5.05+10log（2/1)=8.06>6 dBi. So the PSD limt is 11-(directional gain-6 dBi) =11-(8.06-6)=8.94dBm.

U-NII-3

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total Power (dBm /MHz)		
		Read Value (dBm/MHz)	PSD (dBm /MHz)	Read Value (dBm/MHz)	PSD (dBm /MHz)			
802.11a	149/5745	1.45	1.72	1.41	1.68	4.71	27.94	PASS
	157/5785	2.52	2.79	2.84	3.11	5.96	27.94	PASS
	165/5825	2.77	3.04	2.89	3.16	6.11	27.94	PASS
802.11n HT20	149/5745	2.47	2.74	1.91	2.18	5.48	27.94	PASS
	157/5785	2.70	2.97	2.19	2.46	5.73	27.94	PASS
	165/5825	2.63	2.90	2.20	2.47	5.70	27.94	PASS
802.11n HT40	151/5755	-0.01	0.26	0.20	0.47	3.37	27.94	PASS
	149/5745	-0.41	-0.14	-0.48	-0.21	2.84	27.94	PASS
802.11ac VHT20	157/5785	1.28	1.55	1.51	1.78	4.68	27.94	PASS
	165/5825	1.98	2.25	1.83	2.10	5.19	27.94	PASS
	151/5755	1.85	2.12	1.82	2.09	5.11	27.94	PASS
802.11ac VHT40	159/5795	-0.55	-0.28	-0.30	-0.03	2.86	27.94	PASS
	149/5745	-0.66	-0.39	-1.16	-0.89	2.38	27.94	PASS
802.11ac VHT80	157/5785	-3.46	-3.19	-3.85	-3.58	-0.37	27.94	PASS
802.11ax HE20	149/5745	2.39	2.66	3.18	3.45	6.09	27.94	PASS
	157/5785	3.52	3.79	2.73	3.00	6.42	27.94	PASS
	165/5825	2.98	3.25	2.22	2.49	5.89	27.94	PASS
802.11ax HE40	151/5755	0.60	0.87	0.47	0.74	3.81	27.94	PASS
	149/5745	0.32	0.59	0.05	0.32	3.47	27.94	PASS
802.11ax HE80	157/5785	-3.04	-2.77	-2.90	-2.63	0.31	27.94	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),the power spectral density=10log($10^{(PSD\ antenna1\ in\ dBm/10)}$+$10^{(PSD\ antenna2\ in\ dBm/10)}$+$10^{(PSD\ antenna3\ in\ dBm/10)}$)

3. The manufacturer declared the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = GANT + Array Gain, For PSD measurements on all devices,Array

Gain=10log(Nant/Nss)dB,so directional gain=GANT+Array Gain=4+10log（5.05/1)=8.06>6 dBi. So the PSD limt is 30-(directional gain-6 dBi) =30-(8.06-6) =27.94dBm.

MIMO with Beamforming

U-NII-1

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total Power (dBm /MHz)		
		Read Value (dBm/MHz)	PSD (dBm /MHz)	Read Value (dBm/MHz)	PSD (dBm /MHz)			
802.11n HT20	36/5180	6.21	6.21	6.52	6.52	9.38	14.94	PASS
	40/5200	6.63	6.63	6.56	6.56	9.60	14.94	PASS
	48/5240	6.74	6.74	6.03	6.03	9.41	14.94	PASS
802.11n HT40	38/5190	3.57	3.57	3.42	3.42	6.51	14.94	PASS
	46/5230	3.71	3.71	3.79	3.79	6.76	14.94	PASS
802.11ac VHT20	36/5180	5.58	5.58	5.73	5.73	8.66	14.94	PASS
	40/5200	5.64	5.64	5.32	5.32	8.49	14.94	PASS
	48/5240	5.40	5.40	4.98	4.98	8.21	14.94	PASS
802.11ac VHT40	38/5190	2.92	2.92	2.59	2.59	5.77	14.94	PASS
	46/5230	2.75	2.75	2.38	2.38	5.58	14.94	PASS
802.11ac VHT80	42/5210	0.61	0.61	0.37	0.37	3.50	14.94	PASS
802.11ax HE20	36/5180	6.07	6.07	5.97	5.97	9.03	14.94	PASS
	40/5200	6.29	6.29	5.39	5.39	8.87	14.94	PASS
	48/5240	5.91	5.91	5.75	5.75	8.84	14.94	PASS
802.11ax HE40	38/5190	3.86	3.86	3.32	3.32	6.61	14.94	PASS
	46/5230	4.00	4.00	3.17	3.17	6.61	14.94	PASS
802.11ax HE80	42/5210	1.608	1.61	1.10	1.10	4.37	14.94	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),the power spectral density=$10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})}+10^{(\text{PSD antenna3 in dBm/10})})$

3. The manufacturer declared the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = GANT + Array Gain, For PSD measurements on all devices,Array Gain=10log(Nant/Nss)dB,so directional gain=GANT+Array Gain=5.05+10log（2/1)=8.06>6 dBi. So the PSD limt is 17-(directional gain-6 dBi) =17-(18.063-6)=14.94dBm.

U-NII-2A

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total Power (dBm /MHz)		
		Read Value (dBm/MHz)	PSD (dBm /MHz)	Read Value (dBm/MHz)	PSD (dBm /MHz)			
802.11n HT20	52/5260	5.49	5.49	5.59	5.59	8.55	8.94	PASS
	60/5300	5.54	5.54	5.51	5.51	8.53	8.94	PASS
	64/5320	5.68	5.68	5.62	5.62	8.66	8.94	PASS
802.11n HT40	54/5270	3.23	3.23	3.93	3.93	6.60	8.94	PASS
	62/5310	3.55	3.55	3.50	3.50	6.53	8.94	PASS
802.11ac VHT20	52/5260	4.77	4.77	4.86	4.86	7.82	8.94	PASS
	60/5300	5.11	5.11	5.34	5.34	8.23	8.94	PASS
	64/5320	5.49	5.49	5.66	5.66	8.59	8.94	PASS
802.11ac VHT40	54/5270	2.73	2.73	2.63	2.63	5.69	8.94	PASS
	62/5310	3.10	3.10	2.81	2.81	5.97	8.94	PASS
802.11ac VHT80	58/5290	0.12	0.12	-0.38	-0.38	2.89	8.94	PASS
802.11ax HE20	52/5260	6.31	6.31	5.91	5.91	9.13	8.94	PASS
	60/5300	5.91	5.91	5.43	5.43	8.68	8.94	PASS
	64/5320	5.65	5.65	5.71	5.71	8.69	8.94	PASS
802.11ax HE40	54/5270	2.76	2.76	2.96	2.96	5.87	8.94	PASS
	62/5310	3.71	3.71	3.35	3.35	6.54	8.94	PASS
802.11ax HE80	58/5290	0.86	0.86	0.60	0.60	3.74	8.94	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),the power spectral density=$10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})}+10^{(\text{PSD antenna3 in dBm/10})})$

3. The manufacturer declared the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = GANT + Array Gain, For PSD measurements on all devices,Array Gain=10log(Nant/Nss)dB,so directional gain=GANT+Array Gain=5.05+10log（2/1)=8.06>6 dBi. So the PSD limt is 11-(directional gain-6 dBi) =11-(8.06-6)=8.94dBm.

U-NII-2C

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total Power (dBm /MHz)		
		Read Value (dBm/MHz)	PSD (dBm /MHz)	Read Value (dBm/MHz)	PSD (dBm /MHz)			
802.11n HT20	100/5500	5.71	5.71	5.46	5.46	8.60	8.94	PASS
	120/5600	5.35	5.35	4.83	4.83	8.11	8.94	PASS
	140/5700	4.84	4.84	4.80	4.80	7.83	8.94	PASS
	144/5720	4.56	4.56	4.22	4.22	7.40	8.94	PASS
802.11n HT40	102/5510	3.02	3.02	2.83	2.83	5.93	8.94	PASS
	118/5590	3.03	3.03	2.20	2.20	5.65	8.94	PASS
	134/5670	2.61	2.61	2.50	2.50	5.57	8.94	PASS
	142/5710	2.28	2.28	2.23	2.23	5.26	8.94	PASS
802.11ac VHT20	100/5500	5.13	5.13	5.17	5.17	8.16	8.94	PASS
	120/5600	4.78	4.78	5.06	5.06	7.93	8.94	PASS
	140/5700	5.02	5.02	4.87	4.87	7.96	8.94	PASS
	144/5720	4.68	4.68	4.33	4.33	7.52	8.94	PASS
802.11ac VHT40	102/5510	2.60	2.60	2.89	2.89	5.76	8.94	PASS
	118/5590	2.23	2.23	1.98	1.98	5.12	8.94	PASS
	134/5670	2.34	2.34	2.82	2.82	5.59	8.94	PASS
	142/5710	2.34	2.34	1.95	1.95	5.16	8.94	PASS
802.11ac VHT80	122/5610	-0.74	-0.74	-0.63	-0.63	2.33	8.94	PASS
	138/5690	-0.52	-0.52	-0.70	-0.70	2.40	8.94	PASS
802.11ax HE20	100/5500	6.07	6.07	6.04	6.04	9.07	8.94	PASS
	120/5600	5.07	5.07	5.09	5.09	8.09	8.94	PASS
	140/5700	4.76	4.76	3.81	3.81	7.32	8.94	PASS
	144/5720	4.19	4.19	3.53	3.53	6.88	8.94	PASS
802.11ax HE40	102/5510	3.16	3.16	2.73	2.73	5.96	8.94	PASS
	118/5590	2.06	2.06	2.19	2.19	5.14	8.94	PASS
	134/5670	2.48	2.48	1.67	1.67	5.10	8.94	PASS
	142/5710	2.72	2.72	1.12	1.12	5.00	8.94	PASS
802.11ax HE80	122/5610	-0.30	-0.30	-1.05	-1.05	2.35	8.94	PASS
	138/5690	-0.25	-0.25	-0.91	-0.91	2.44	8.94	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),the power spectral density=$10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})}+10^{(\text{PSD antenna3 in dBm/10})})$

3. The manufacturer declared the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = GANT + Array Gain, For PSD measurements on all devices,Array Gain=10log(Nant/Nss)dB,so directional gain=GANT+Array Gain=5.05+10log（2/1)=8.06>6 dBi. So the

PSD limt is 11-(directional gain-6 dBi) =11-(8.06-6)=8.94dBm.

U-NII-3

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total Power (dBm /MHz)		
		Read Value (dBm/MHz)	PSD (dBm /MHz)	Read Value (dBm/MHz)	PSD (dBm /MHz)			
802.11n HT20	149/5745	1.75	2.02	2.32	2.59	5.33	27.94	PASS
	157/5785	2.71	2.98	1.88	2.15	5.60	27.94	PASS
	165/5825	1.36	1.63	1.18	1.45	4.55	27.94	PASS
802.11n HT40	151/5755	0.15	0.42	-0.06	0.21	3.33	27.94	PASS
	149/5745	-0.59	-0.32	-0.79	-0.52	2.59	27.94	PASS
802.11ac VHT20	157/5785	2.45	2.72	1.99	2.26	5.51	27.94	PASS
	165/5825	2.43	2.70	3.29	3.56	6.16	27.94	PASS
	151/5755	3.06	3.33	3.32	3.59	6.47	27.94	PASS
802.11ac VHT40	159/5795	0.88	1.15	0.27	0.54	3.87	27.94	PASS
	149/5745	0.03	0.30	0.57	0.84	3.59	27.94	PASS
802.11ac VHT80	157/5785	-3.76	-3.49	-1.82	-1.55	0.60	27.94	PASS
802.11ax HE20	149/5745	1.40	1.67	1.10	1.37	4.54	27.94	PASS
	157/5785	2.18	2.45	1.45	1.72	5.11	27.94	PASS
	165/5825	2.00	2.27	1.32	1.59	4.96	27.94	PASS
802.11ax HE40	151/5755	0.08	0.35	-0.69	-0.42	2.99	27.94	PASS
	149/5745	-0.64	-0.37	-0.99	-0.72	2.47	27.94	PASS
802.11ax HE80	157/5785	-2.13	-1.86	-2.74	-2.47	0.86	27.94	PASS

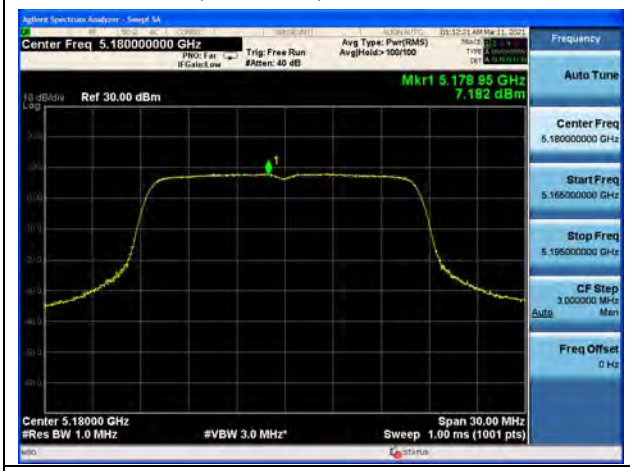
Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),the power spectral density=$10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})}+10^{(\text{PSD antenna3 in dBm/10})})$

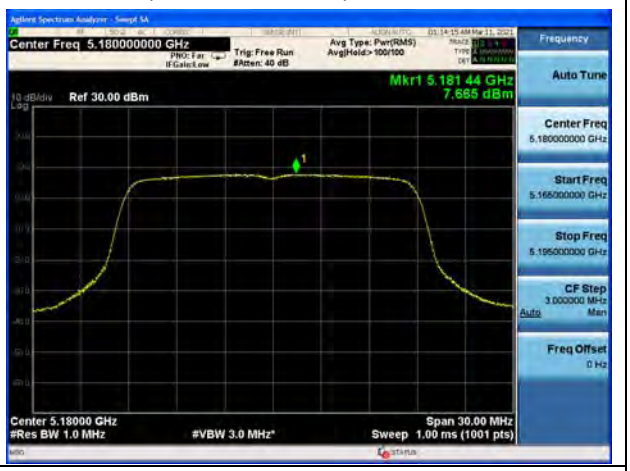
3. The manufacturer declared the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 2)f)(i): If all antennas have the same gain, Directional gain = GANT + Array Gain, For PSD measurements on all devices,Array Gain=10log(Nant/Nss)dB,so directional gain=GANT+Array Gain=4+10log（5.05/1)=8.06>6 dBi. So the PSD limt is 30-(directional gain-6 dBi) =30-(8.06-6) =27.94dBm.

SISO Antenna 1

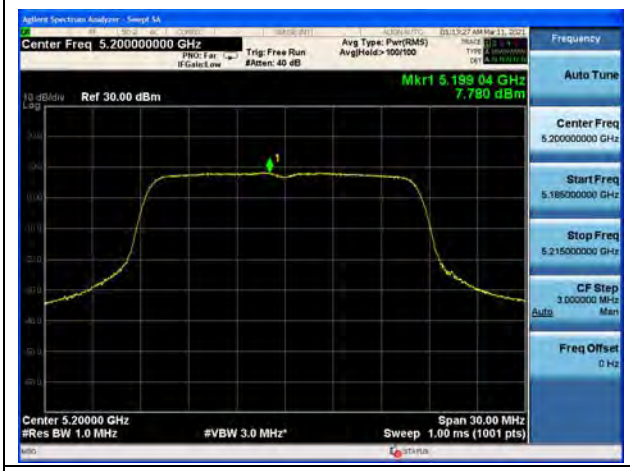
U-NII-1, 802.11a, Channel No.: 36



U-NII-1, 802.11n HT20, Channel No.: 36

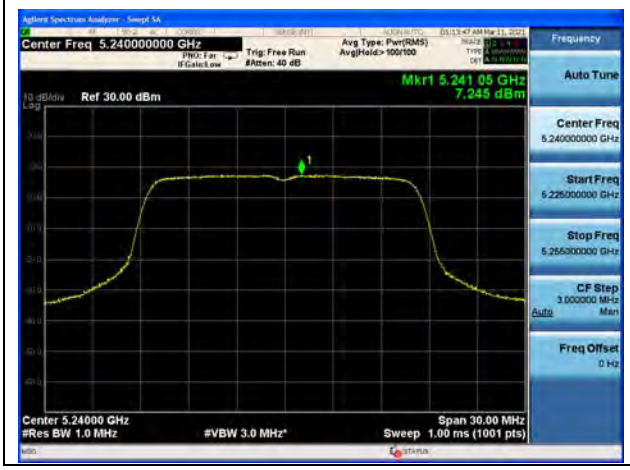


U-NII-1, 802.11a, Channel No.: 40



U-NII-1, 802.11n HT20, Channel No.: 40

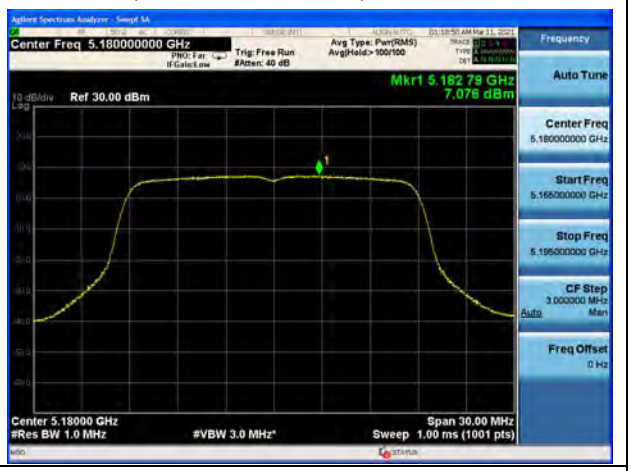
U-NII-1, 802.11a, Channel No.: 48



U-NII-1, 802.11n HT20, Channel No.: 48

U-NII-1, 802.11n HT40, Channel No.: 38

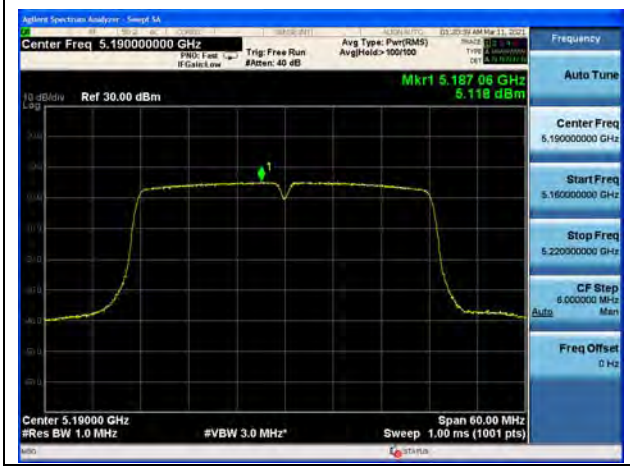
U-NII-1, 802.11ac VHT20, Channel No.: 36



U-NII-1, 802.11n HT40, Channel No.: 46

U-NII-1, 802.11ac VHT20, Channel No.: 40

U-NII-1, 802.11ac VHT40, Channel No.: 38



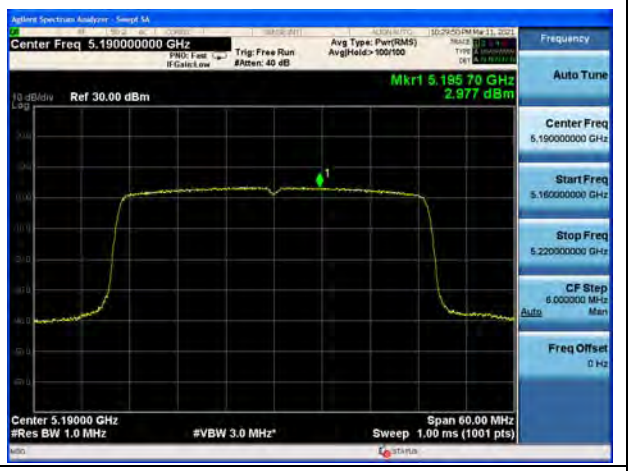
U-NII-1, 802.11ac VHT20, Channel No.: 48

U-NII-1, 802.11ac VHT40, Channel No.: 46

U-NII-1, 802.11ac VHT80, Channel No.: 42

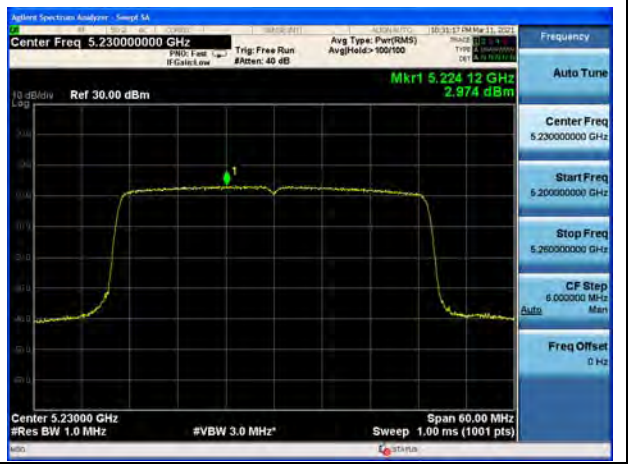
U-NII-1, 802.11ax HE20, Channel No.: 36

U-NII-1, 802.11ax HE40, Channel No.: 38



U-NII-1, 802.11ax HE20, Channel No.: 40

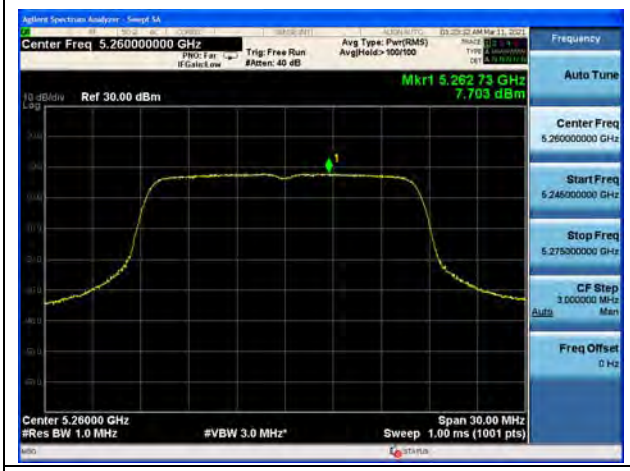
U-NII-1, 802.11ax HE40, Channel No.: 46



U-NII-1, 802.11ax HE20, Channel No.: 48

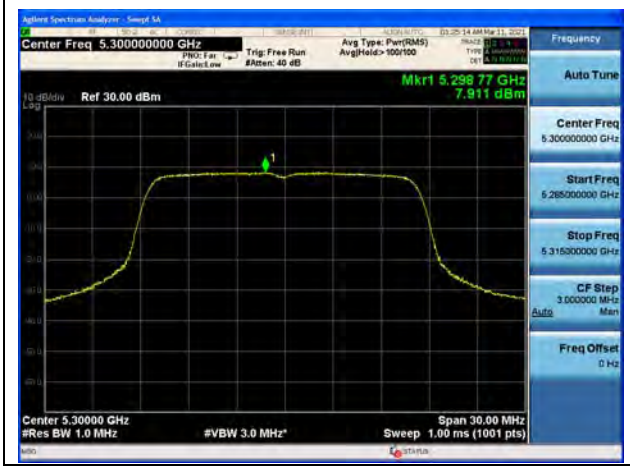
U-NII-1, 802.11ax HE80, Channel No.: 42

U-NII-2A, 802.11a, Channel No.: 52

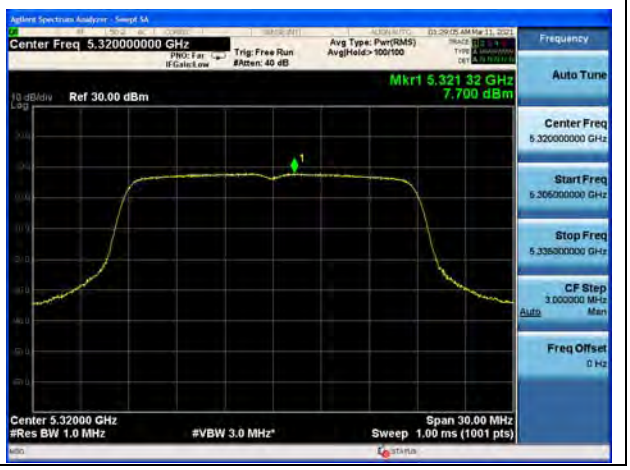


U-NII-2A, 802.11n HT20, Channel No.: 52

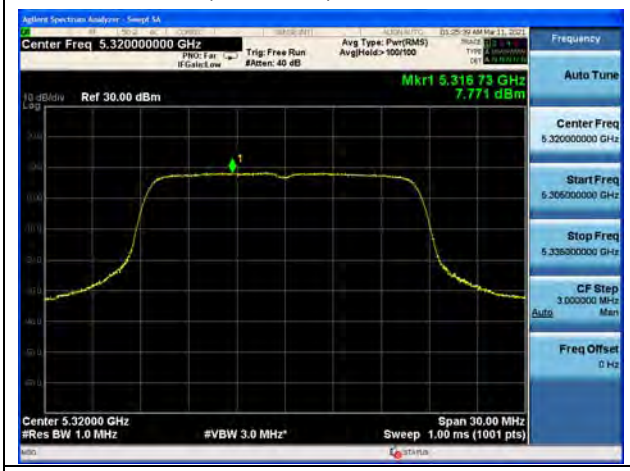
U-NII-2A, 802.11a, Channel No.: 60



U-NII-2A, 802.11n HT20, Channel No.: 60

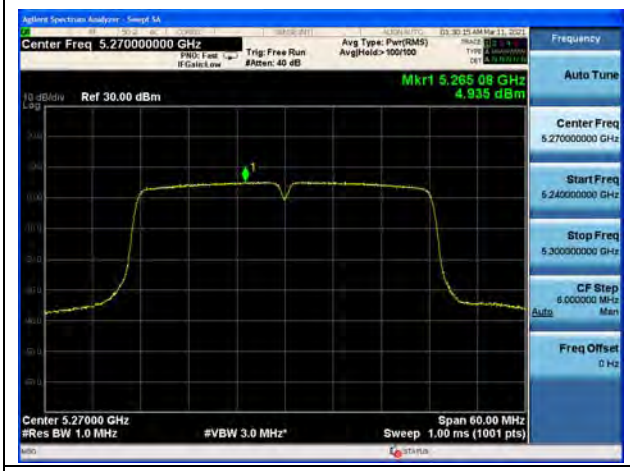


U-NII-2A, 802.11a, Channel No.: 64



U-NII-2A, 802.11n HT20, Channel No.: 64

U-NII-2A, 802.11n HT40, Channel No.: 54



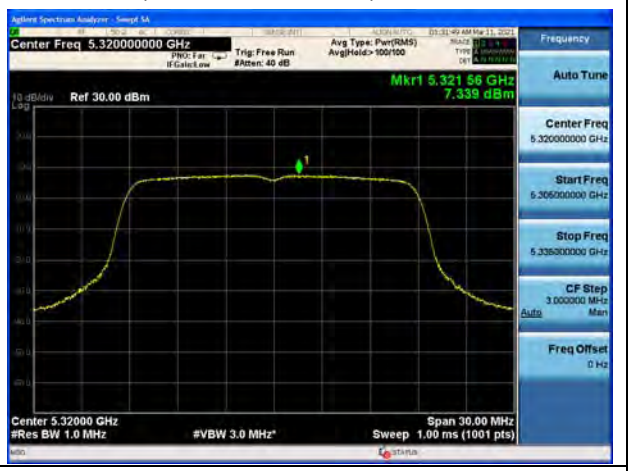
U-NII-2A, 802.11ac VHT20, Channel No.:52

U-NII-2A, 802.11n HT40, Channel No.: 62

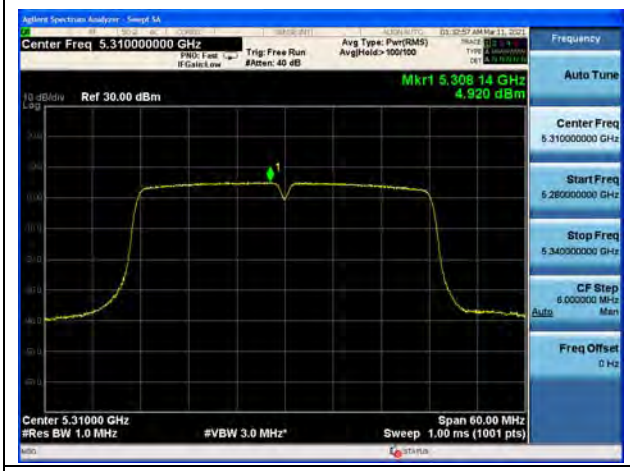
U-NII-2A, 802.11ac VHT20, Channel No.: 60

U-NII-2A, 802.11ac VHT40, Channel No.: 54

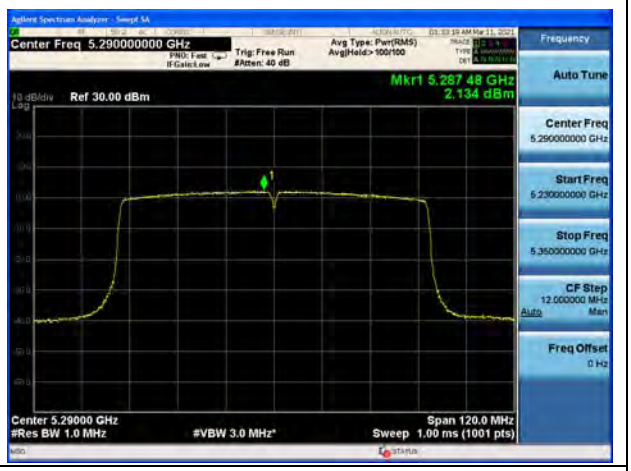
U-NII-2A, 802.11ac VHT20, Channel No.: 64



U-NII-2A, 802.11ac VHT40, Channel No.: 62

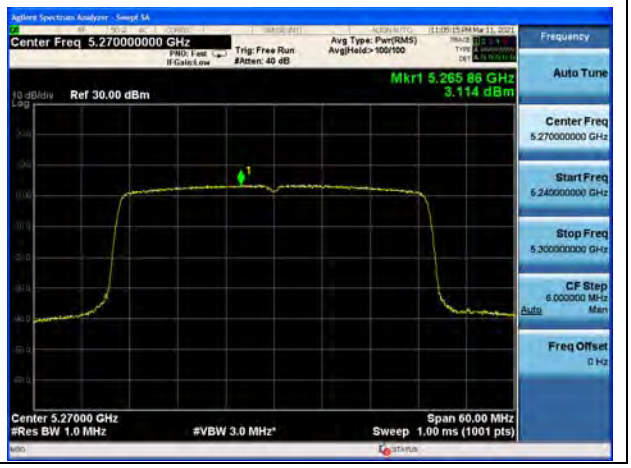


U-NII-2A, 802.11ac VHT80, Channel No.: 58



U-NII-2A 802.11ax HE20, Channel No.:52

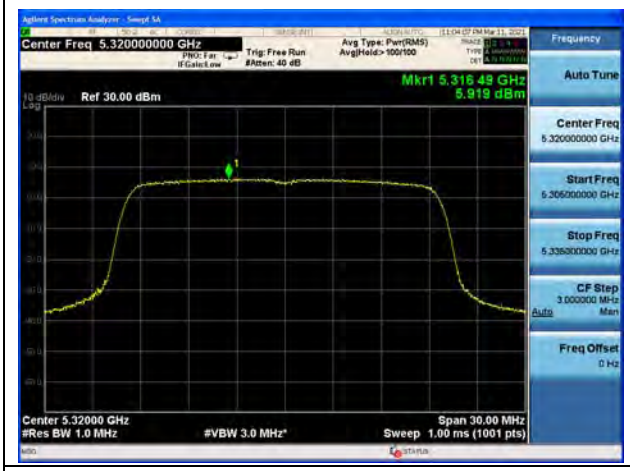
U-NII-2A, 802.11ax HE40, Channel No.: 54



U-NII-2A, 802.11ax HE20, Channel No.: 60

U-NII-2A, 802.11ax HE40, Channel No.: 62

U-NII-2A, 802.11ax HE20, Channel No.: 64



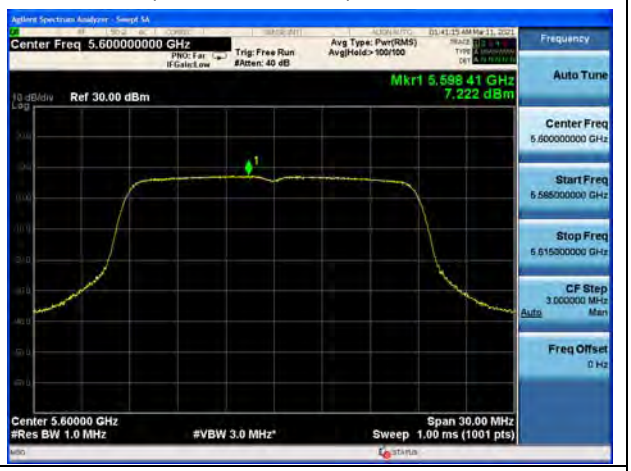
U-NII-2A, 802.11ax HE80, Channel No.: 58

U-NII-2C, 802.11a, Channel No.: 100

U-NII-2C, 802.11n HT20, Channel No.: 100

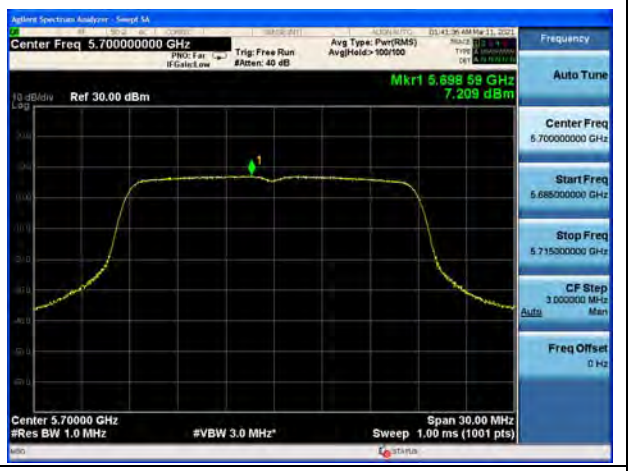
U-NII-2C, 802.11a, Channel No.: 120

U-NII-2C, 802.11n HT20, Channel No.: 120



U-NII-2C, 802.11a, Channel No.: 140

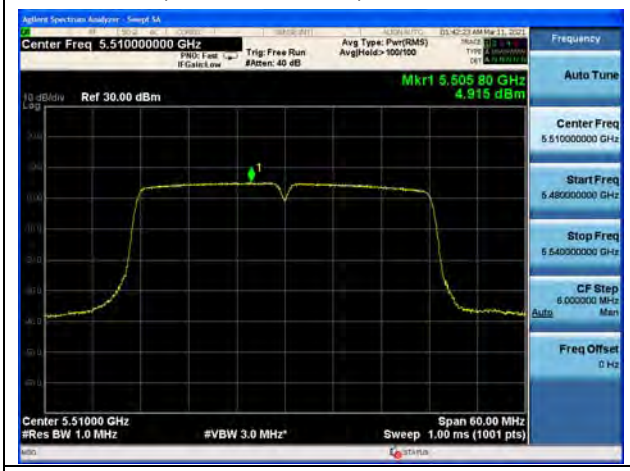
U-NII-2C, 802.11n HT20, Channel No.: 140



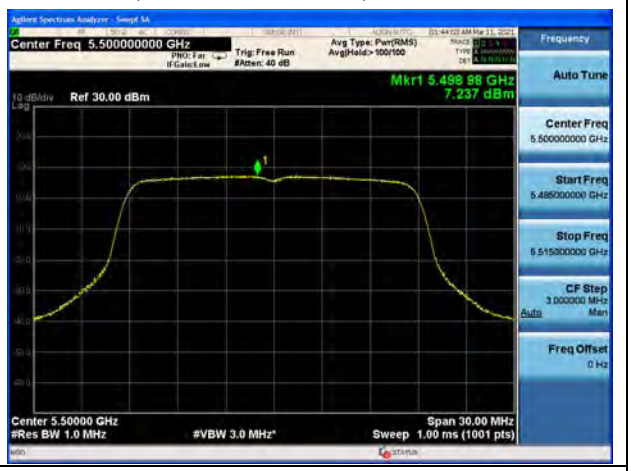
U-NII-2C, 802.11a, Channel No.: 141

U-NII-2C, 802.11n HT20, Channel No.: 144

U-NII-2C, 802.11n HT40, Channel No.: 102

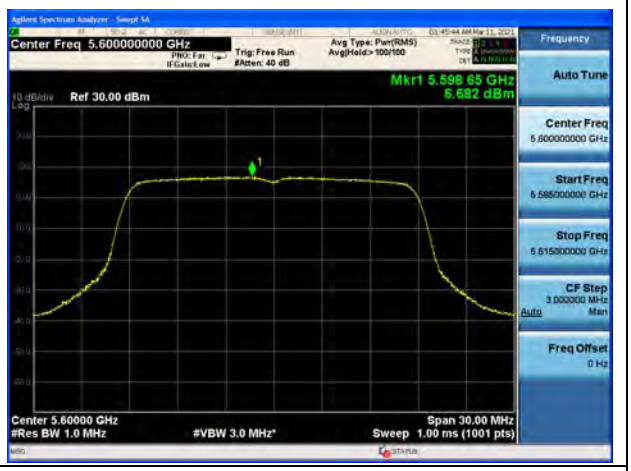


U-NII-2C, 802.11ac VHT20, Channel No.: 100

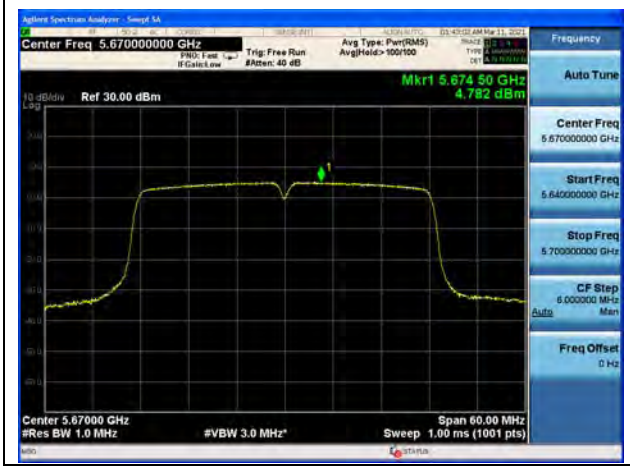


U-NII-2C, 802.11n HT40, Channel No.: 118

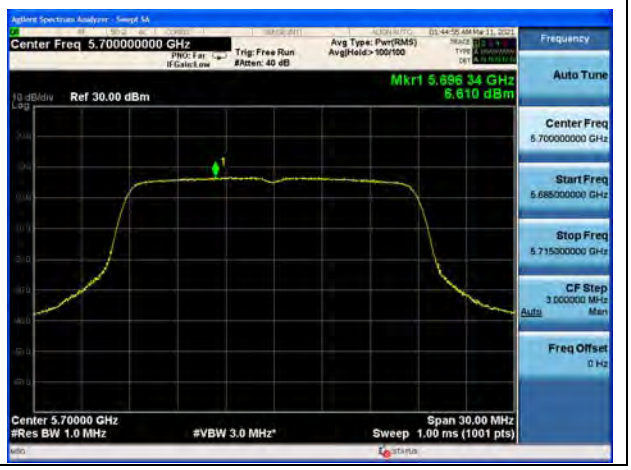
U-NII-2C, 802.11ac VHT20, Channel No.: 120



U-NII-2C, 802.11n HT40, Channel No.: 134

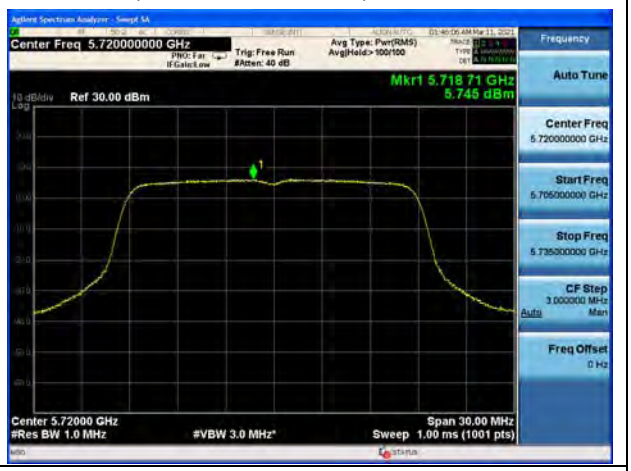


U-NII-2C, 802.11ac VHT20, Channel No.: 140

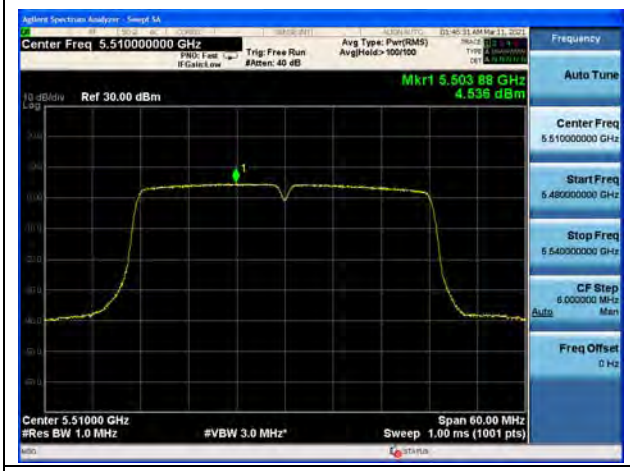


U-NII-2C, 802.11n HT40, Channel No.: 142

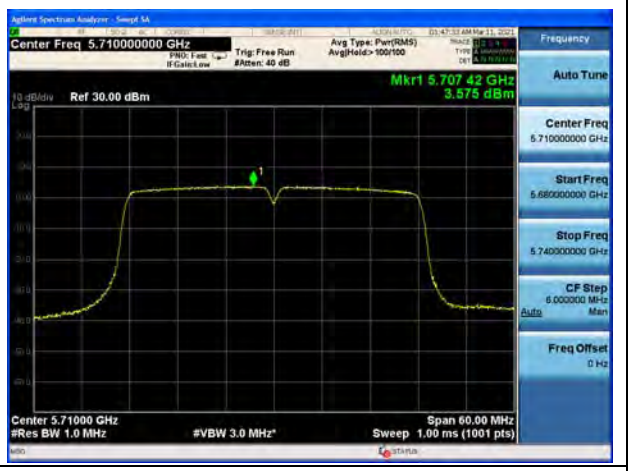
U-NII-2C, 802.11ac VHT20, Channel No.: 144



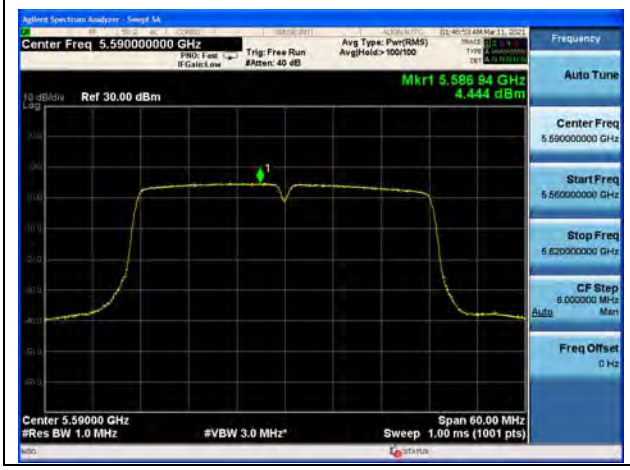
U-NII-2C, 802.11ac VHT40, Channel No.: 102



U-NII-2C, 802.11ac VHT40, Channel No.: 142



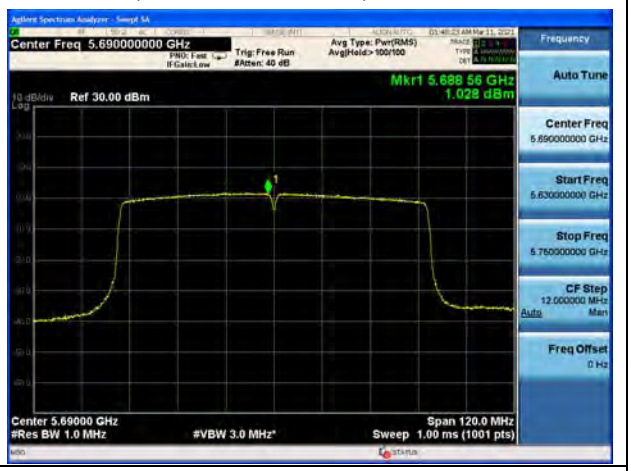
U-NII-2C, 802.11ac VHT40, Channel No.: 118



U-NII-2C, 802.11ac VHT80, Channel No.: 106

U-NII-2C, 802.11ac VHT40, Channel No.: 134

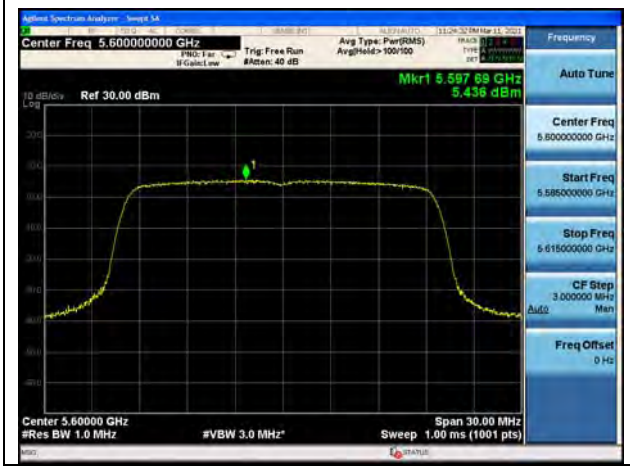
U-NII-2C, 802.11ac VHT80, Channel No.: 122



U-NII-2C, 802.11ax HE20, Channel No.: 100

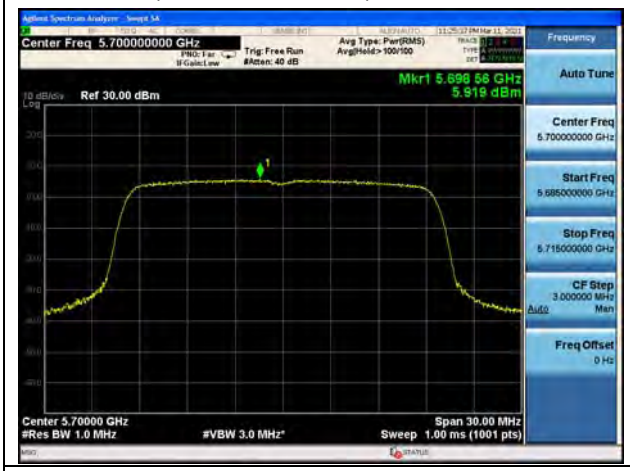
U-NII-2C, 802.11ax HE40, Channel No.: 102

U-NII-2C, 802.11ax HE20, Channel No.: 120



U-NII-2C, 802.11ax HE40, Channel No.: 118

U-NII-2C, 802.11ax HE20, Channel No.: 140



U-NII-2C, 802.11ax HE40, Channel No.: 134

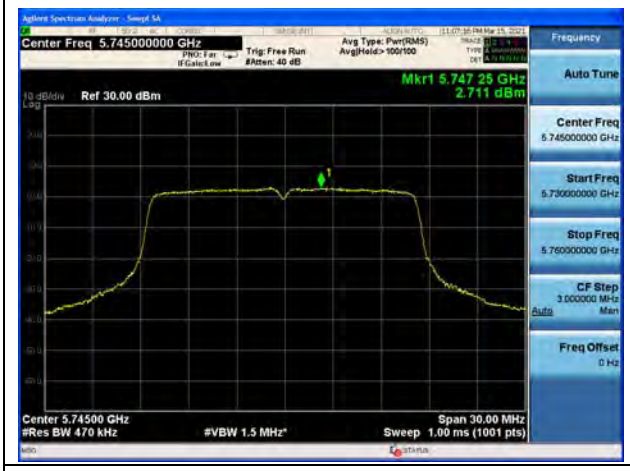
U-NII-2C, 802.11ax HE20, Channel No.: 144

U-NII-2C, 802.11ax HE40, Channel No.: 142

U-NII-2C, 802.11ax HE80, Channel No.: 122

U-NII-2C, 802.11ax HE80, Channel No.: 138

U-NII-3, 802.11a, Channel No.: 149

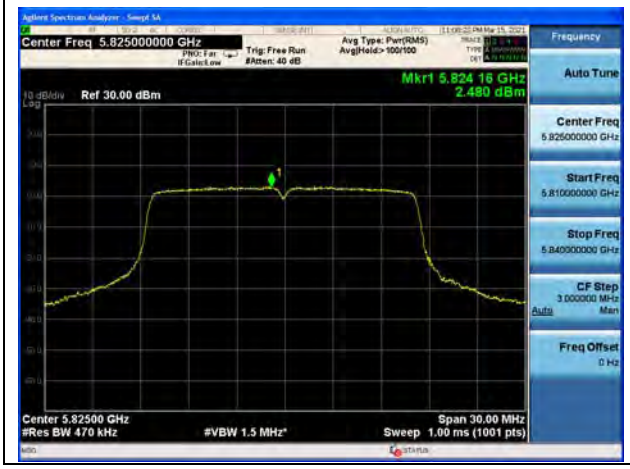


U-NII-3, 802.11n HT20, Channel No.: 149

U-NII-3, 802.11a, Channel No.: 157

U-NII-3, 802.11n HT20, Channel No.: 157

U-NII-3, 802.11a, Channel No.: 165

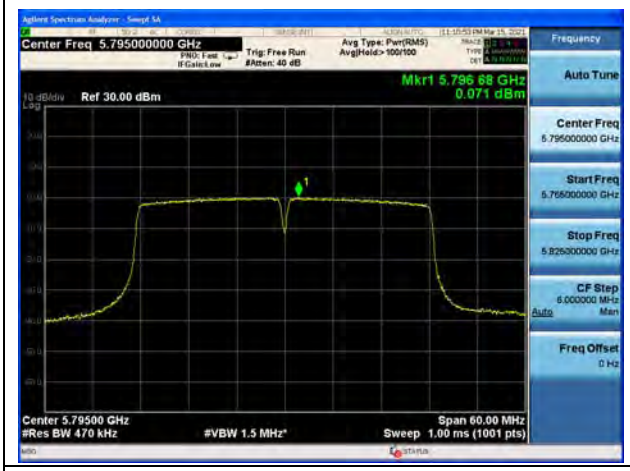


U-NII-3, 802.11n HT20, Channel No.: 165

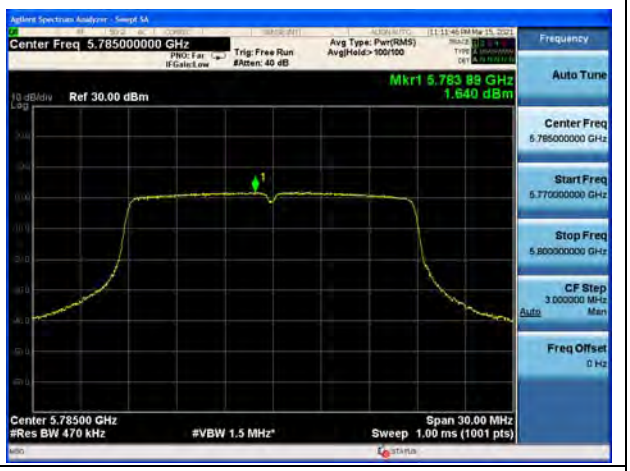
U-NII-3, 802.11n HT40, Channel No.: 151

U-NII-3, 802.11ac VHT20, Channel No.: 149

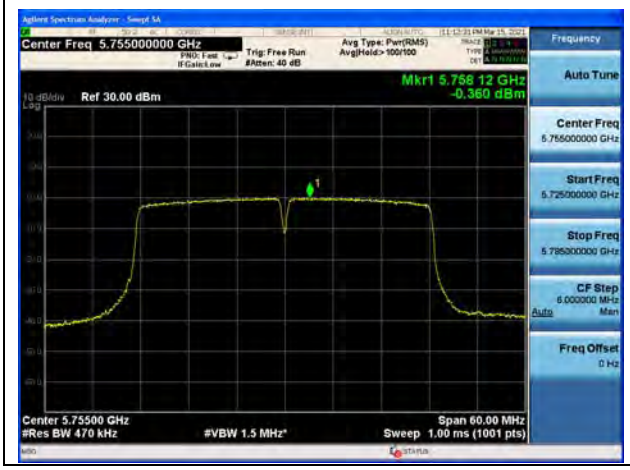
U-NII-3, 802.11n HT40, Channel No.: 159



U-NII-3, 802.11ac VHT20, Channel No.: 157



U-NII-3, 802.11ac VHT40, Channel No.: 151



U-NII-3, 802.11ac VHT20, Channel No.: 165