



RF TEST REPORT

Applicant Nokia Shanghai Bell Co., Ltd.
FCC ID 2ADZRXS2426GA
Product Nokia ONT
Model XS-2426G-A
Report No. R2011B0188-R2
Issue Date January 21, 2021

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15E (2019)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Summary of measurement results

Number	Test Case	Clause in FCC rules	Verdict
1	Average conducted 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: August 20, 2020~ August 31, 2020 and November 27,2020~January 20,2021			
Note: 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.			

XS-2426G-A (Report No.: R2011B0188-R2) is a variant model of G-2426G-A (Report No.: Report No.: R2007B0119-R2V3). The variant updated the information of product and two adapters, and add new test results of Antenna Type #2. Test values partial duplicated from original for variant. For Antenna Type #1, only the worst case of original was recorded in this report. The detailed product change description please refers to the Declaration Letters.



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 measurements.

A2LA (Certificate Number: 3857.01)

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

1.3. Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
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City: Shanghai
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E-mail: xukai@ta-shanghai.com

2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

Applicant	Nokia Shanghai Bell Co., Ltd.
Applicant address	No. 388, Ningqiao Rd. Pilot Free Trade Zone, Shanghai, China
Manufacturer	T&W
Manufacturer address	89# Jiang Nan Road, Loudong Street, Taicang, Shanghai, China

2.2. General information

EUT Description					
Model	XS-2426G-A				
SN	1#				
Hardware Version	PEM2				
Software Version	FJH.L48p139				
Power Supply	AC adapter				
Antenna Type	Internal Antenna				
Directional Gain	Without Beamforming Mode for Power	Frequency (MHz)	5150	5550	5850
		Gain (dBi)	2.6	2.8	2.8
	Without Beamforming Mode for PSD	Frequency (MHz)	5150	5550	5850
		Gain (dBi)	5.6	5.8	5.8
	Beamforming Mode	Frequency (MHz)	5150	5550	5850
		Gain (dBi)	2.9	3	3
Test Mode(s)	U-NII-1(5150MHz-5250MHz) U-NII-2A(5250MHz-5350MHz) U-NII-2C(5470MHz-5600MHz, 5650MHz-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	29.34 dBm				
Operating Frequency Range(s)	U-NII-1: 5150MHz-5250MHz U-NII-2A: 5250MHz -5350MHz U-NII-2C: 5470MHz-5600MHz, 5650MHz-5725MHz U-NII-3: 5725MHz -5850MHz				
Extreme temperature	-20 ° C to 50° C				



range:	
Extreme voltage range:	10.2V to 13.8V
Operating temperature range:	-5 ° C to 45° C
Operating voltage range:	10V to 14V
State DC voltage:	12V
EUT Accessory	
Adapter 1	Manufacturer: Dongguan Shilong Fuhua Electronic Co., Ltd. Model: UES36WU-120300SPA
Adapter 2	Manufacturer: ShenZhen SOY Technology Co.,Ltd Model: SOY-1200300US-050
Antenna Type #1	Antenna 1:RFDPA051106IM5B9C4 Antenna 2:RFDPA051118IM5B9C2 Antenna 3:RFPCA400814IMAB9C1 Antenna 4:RFPCA400822IMAB9C1
Antenna Type #2	Antenna 1: 6011F00211 Antenna 2: 6011F00212 Antenna 3: 6011F00209 Antenna 4: 6011F00210
Note:1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant. 2. There is more than one Adapter, each one should be applied throughout the compliance test respectively, and however, only the worst case (Adapter 1) will be recorded in this report.	

Information of Configuration:

No.	Name	Model/Code No.	Edition	Serial No. or Quantity
1	EMA-XS-2426G-A	3FE49348AA	PEM2	PEM
2	Power adapter	FUHUA: UES36WU-120300SPA	A/0	--
3	Power adapter	SOY: SOY-1200300US-050	A/0	--

ONT Mnemonic	Kit Code	EMA Code	Part Description	Power Adaptor and UPS
XS-2426G-A	3FE49351AA	3FE49348AA	XS-2426G-A, XGS-PON ONT, 2 POTS, 4xGE, 2x2 11n + 2x2 11ax.1 USB 3.0, US	FUHUA:UES36WU-12030 SPA SOY:SOY-1200300US-050

**Auxiliary equipment details:**

No.	Name	Brand name	Model	NSB code	Valid Until
1	Test Center	Spirent	DE48E0	DC2228	No Cal. Required
2	PC	Lenovo	T61	7661MC4L3KW965	No Cal. Required
3	PC	Lenovo	T61	7661MC4L3KW959	No Cal. Required
4	OLT	NOKIA	7360	N.A	No Cal. Required

Information of Ports:

No.	Port name	Number	Shielded or unshielded	Cable type (optic, twisted pair, etc.)	Max. Cable length
1	AC port	1	Unshielded	--	--
2	GE	4	Unshielded	--	--
3	USB	1	shielded	--	--
4	POTS	2	Unshielded	--	--



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 (2019) 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.

Band	Data Rate
	MIMO
802.11a	6 Mbps
802.11n HT20	MCS8
802.11n HT40	MCS8
802.11ac VHT20	MCS8
802.11ac VHT40	MCS8
802.11ac VHT80	MCS8
802.11ax HE20	MCS8
802.11ax HE40	MCS8
802.11ax HE80	MCS8

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

Test Cases	MIMO
Average conducted output power	802.11n HT20/40 802.11ac VHT20/40/80 802.11ax HE20/40/80
Occupied bandwidth	802.11n HT20/40 802.11ac VHT20/40/80 802.11ax HE20/40/80
Frequency stability	802.11n HT20/40 802.11ac VHT20/40/80 802.11ax HE20/40/80
Power Spectral Density	802.11n HT20/40 802.11ac VHT20/40/80 802.11ax HE20/40/80
Unwanted Emissions	802.11n HT20/40 802.11ac VHT20/40/80



	802.11ax HE20/40/80
Conducted Emissions	802.11n HT20/40 802.11ac VHT20/40/80 802.11ax HE20/40/80
Note: "O": test all bands	

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
			132	5660MHz
			136	5680MHz
			140	5700MHz
		40 MHz	102	5510MHz
			110	5550MHz
			134	5670MHz
			142	5710MHz
		80 MHz	106	5530MHz
			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.

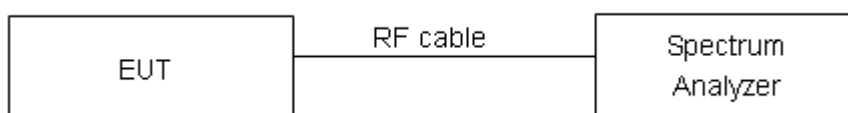
For U-NII-1/U-NII-2A/U-NII-2C, set RBW $\approx$ 1% OCB kHz, VBW $\geq 3 \times$ RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB relative to the maximum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

For U-NII-3, Set RBW = 100 kHz, VBW $\geq 3 \times$ 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:
Antenna Type #1:
U-NII-1

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5180	16.395	21.88	PASS
	5200	16.376	19.89	PASS
	5240	16.392	19.95	PASS
802.11n-HT20	5180	17.479	19.57	PASS
	5200	17.440	20.02	PASS
	5240	17.450	19.67	PASS
802.11n-HT40	5190	35.737	41.52	PASS
	5230	36.271	45.39	PASS
802.11ac-VHT20	5180	17.456	19.91	PASS
	5200	17.439	21.04	PASS
	5240	17.481	22.32	PASS
802.11ac-VHT40	5190	36.292	50.20	PASS
	5230	36.377	52.47	PASS
802.11ac-VHT80	5210	74.778	79.30	PASS
802.11ax-HE20	5180	18.845	21.56	PASS
	5200	18.847	21.56	PASS
	5240	18.844	23.59	PASS
802.11ax-HE40	5190	37.552	39.23	PASS
	5230	37.816	57.39	PASS
802.11ax-HE 80	5210	76.603	79.77	PASS



U-NII-2A

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5260	16.279	19.19	PASS
	5300	16.271	18.98	PASS
	5320	16.274	19.27	PASS
802.11n-HT20	5260	17.464	19.74	PASS
	5300	17.492	19.49	PASS
	5320	17.476	19.90	PASS
802.11n-HT40	5270	35.763	39.19	PASS
	5310	35.851	39.31	PASS
802.11ac-VHT20	5260	17.481	19.88	PASS
	5300	17.496	19.72	PASS
	5320	17.467	19.71	PASS
802.11ac-VHT40	5270	35.717	39.19	PASS
	5310	35.769	39.07	PASS
802.11ac-VHT80	5290	74.965	79.09	PASS
802.11ax-HE20	5260	18.831	21.05	PASS
	5300	18.863	21.08	PASS
	5320	18.809	21.32	PASS
802.11ax-HE40	5270	37.432	39.36	PASS
	5310	37.455	39.29	PASS
802.11ax-HE 80	5290	76.513	80.08	PASS

U-NII-2C

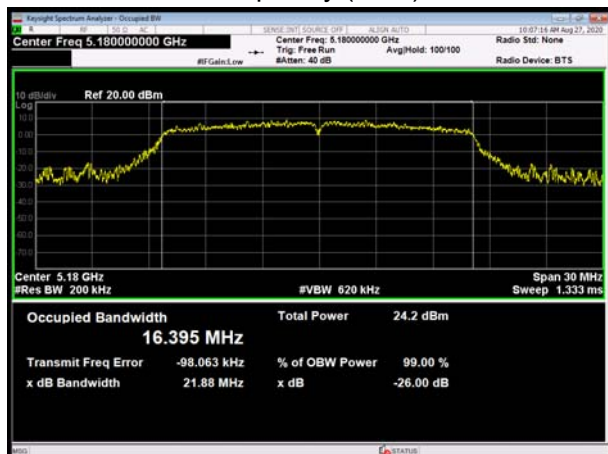
Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5500	16.285	18.85	PASS
	5580	16.273	18.99	PASS
	5700	16.283	18.92	PASS
	5720	16.299	19.01	PASS
802.11n-HT20	5500	17.493	19.56	PASS
	5580	17.449	19.68	PASS
	5700	17.441	19.73	PASS
	5720	17.455	19.92	PASS
802.11n-HT40	5510	35.927	39.80	PASS
	5550	35.882	39.93	PASS
	5670	35.899	39.68	PASS
	5710	35.808	39.62	PASS
802.11ac-VHT20	5500	17.465	19.97	PASS
	5580	17.449	19.75	PASS
	5700	17.460	19.75	PASS
	5720	17.462	19.68	PASS
802.11ac-VHT40	5510	35.895	40.01	PASS
	5550	35.842	39.95	PASS
	5670	35.867	40.26	PASS
	5710	35.829	40.06	PASS
802.11ac-VHT80	5530	75.007	78.97	PASS
	5690	74.972	79.20	PASS
802.11ax-HE20	5500	18.835	20.85	PASS
	5580	18.806	20.96	PASS
	5700	18.836	20.45	PASS
	5720	18.832	21.02	PASS
802.11ax-HE40	5510	37.530	39.25	PASS
	5550	37.434	39.40	PASS
	5670	37.576	39.32	PASS
	5710	37.451	39.32	PASS
802.11ax-HE80	5530	76.639	79.82	PASS
	5690	76.636	80.06	PASS



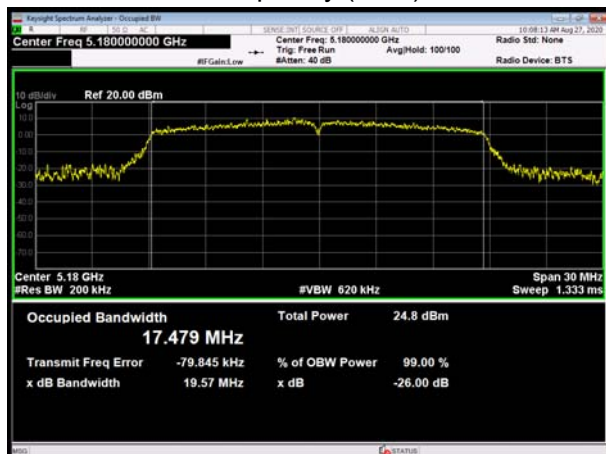
U-NII-3

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11a	5745	16.630	13.16	500	PASS
	5785	16.525	13.85	500	PASS
	5825	16.528	12.21	500	PASS
802.11-HT20	5745	17.635	16.15	500	PASS
	5785	17.575	15.94	500	PASS
	5825	17.599	12.63	500	PASS
802.11-HT40	5755	36.278	30.04	500	PASS
	5795	36.160	32.49	500	PASS
802.11ac-VHT20	5745	17.641	13.13	500	PASS
	5785	17.602	14.97	500	PASS
	5825	17.634	16.27	500	PASS
802.11ac-VHT40	5755	36.361	33.82	500	PASS
	5795	36.226	32.55	500	PASS
802.11ac-VHT80	5775	75.784	72.52	500	PASS
802.11ax-HE20	5745	18.917	15.51	500	PASS
	5785	18.903	15.03	500	PASS
	5825	18.912	16.21	500	PASS
802.11ax-HE40	5755	37.822	35.06	500	PASS
	5795	37.770	35.68	500	PASS
802.11ax-HE80	5775	77.421	70.05	500	PASS

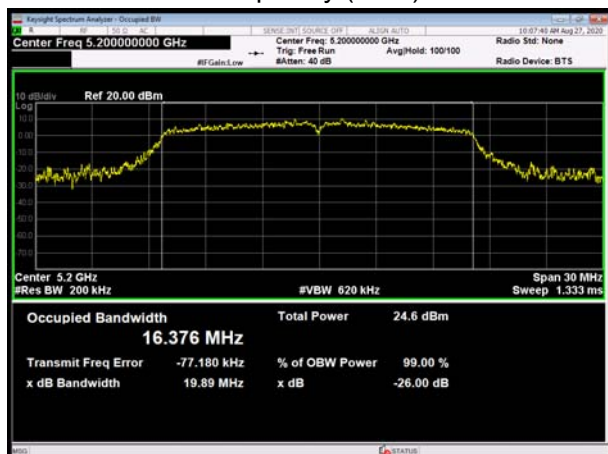
U-NII-1, 802.11a
Carrier frequency (MHz): 5180



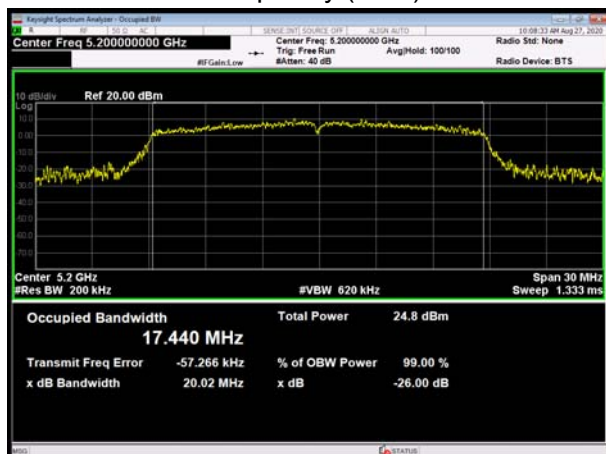
U-NII-1, 802.11n HT20
Carrier frequency (MHz): 5180



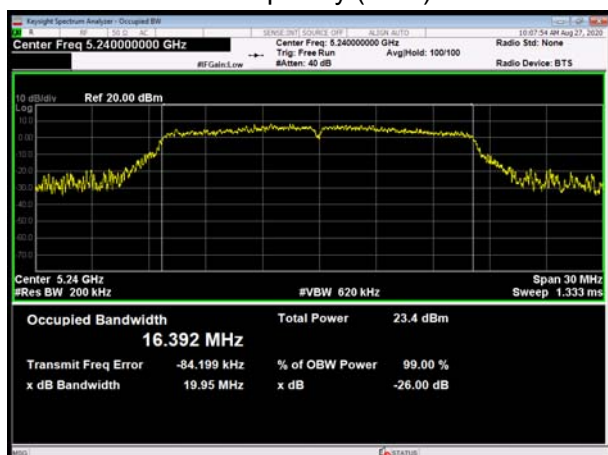
U-NII-1, 802.11a
Carrier frequency (MHz): 5200



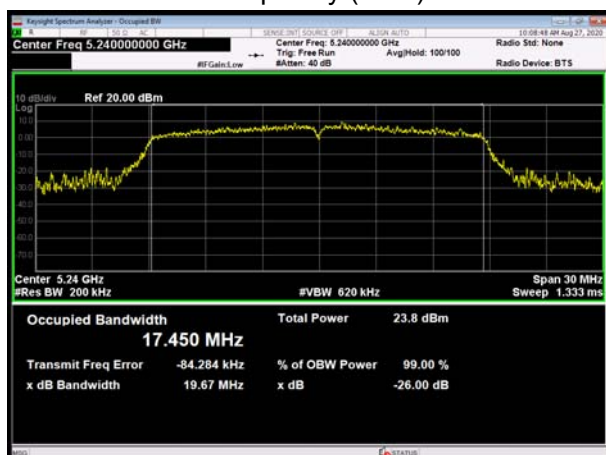
U-NII-1, 802.11n HT20
Carrier frequency (MHz): 5200



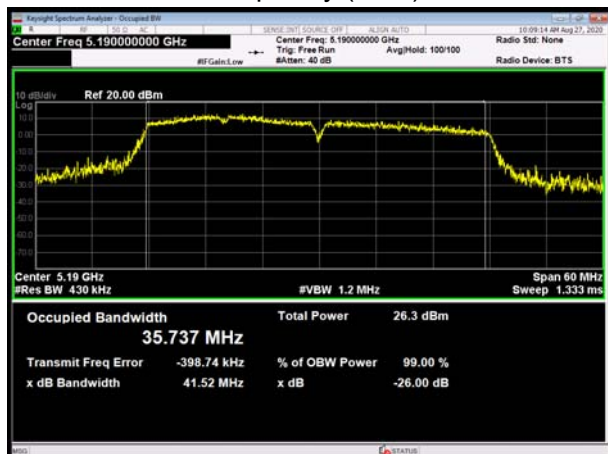
U-NII-1, 802.11a
Carrier frequency (MHz): 5240



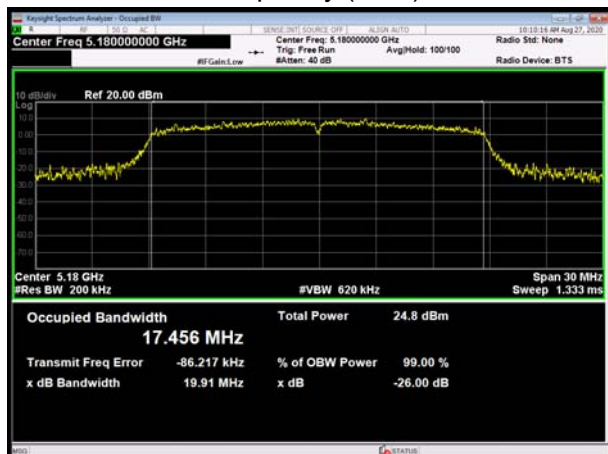
U-NII-1, 802.11n HT20
Carrier frequency (MHz): 5240



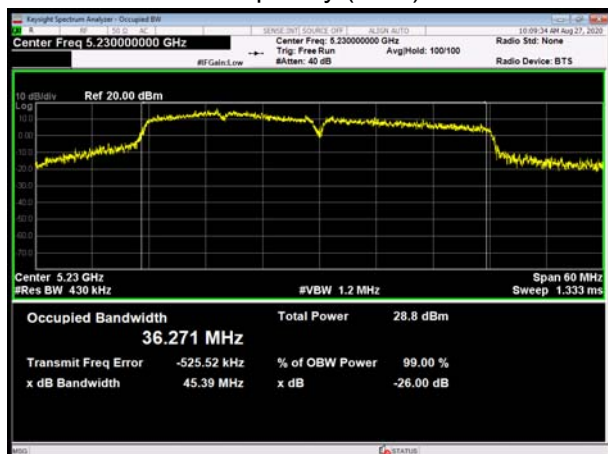
U-NII-1, 802.11n HT40 Carrier frequency (MHz): 5190



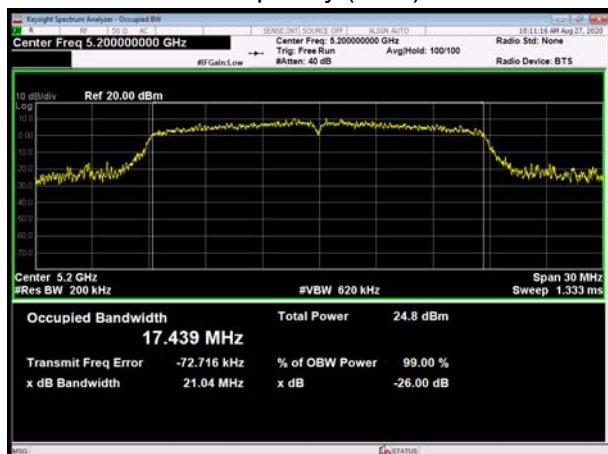
U-NII-1, 802.11ac VHT20 Carrier frequency (MHz): 5180



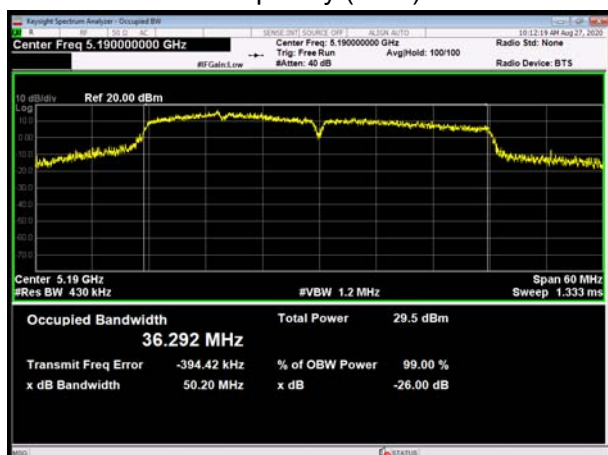
U-NII-1, 802.11n HT40 Carrier frequency (MHz): 5230



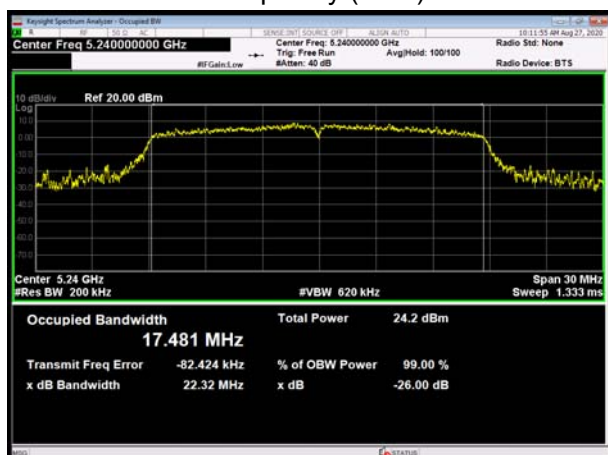
U-NII-1, 802.11ac VHT20 Carrier frequency (MHz): 5200



U-NII-1, 802.11ac VHT40 Carrier frequency (MHz): 5190



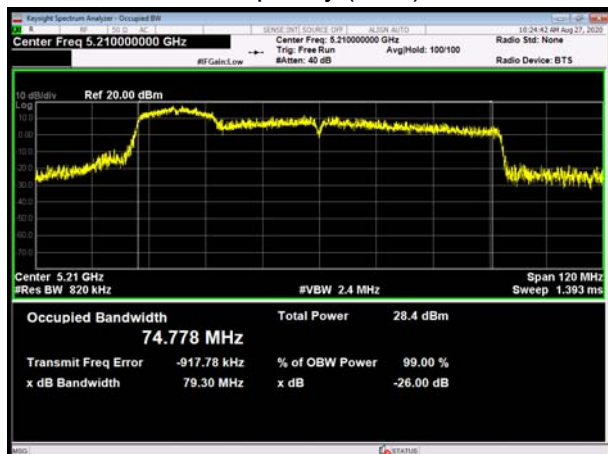
U-NII-1, 802.11ac VHT20 Carrier frequency (MHz): 5240



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



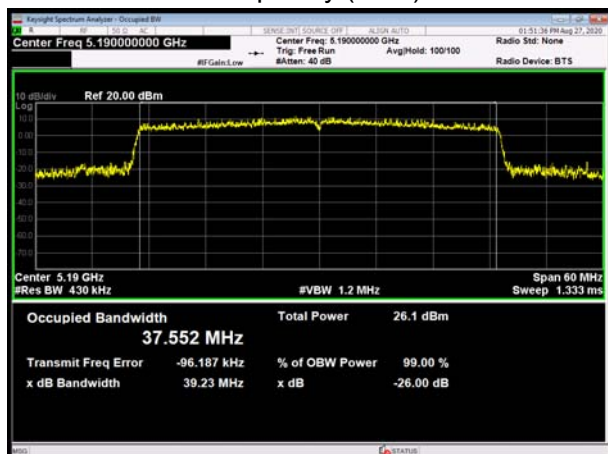
U-NII-1, 802.11ac VHT80 Carrier frequency (MHz): 5210



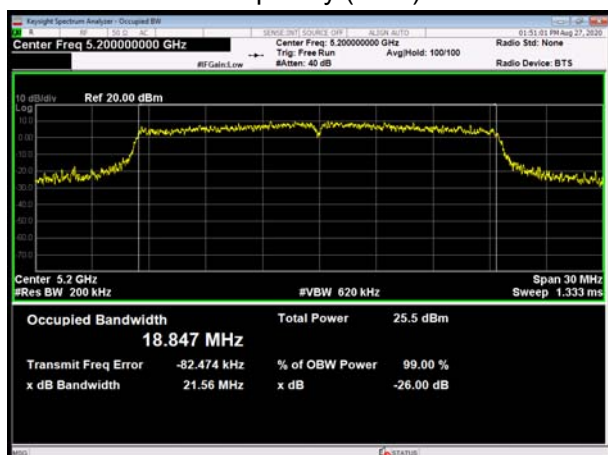
U-NII-1, 802.11ax HE20 Carrier frequency (MHz): 5180



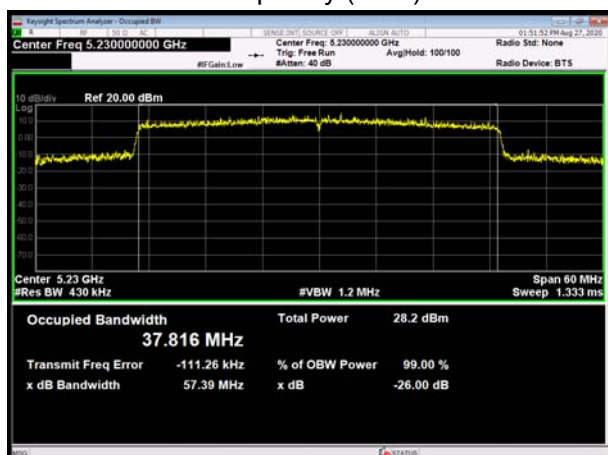
U-NII-1, 802.11ax HE40 Carrier frequency (MHz): 5190



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

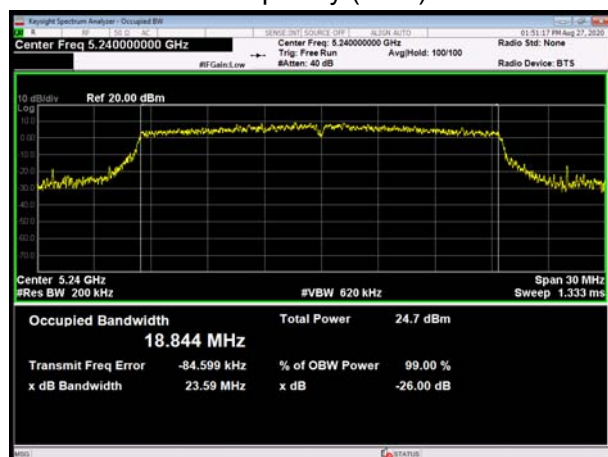


U-NII-1, 802.11ax HE40 Carrier frequency (MHz): 5230

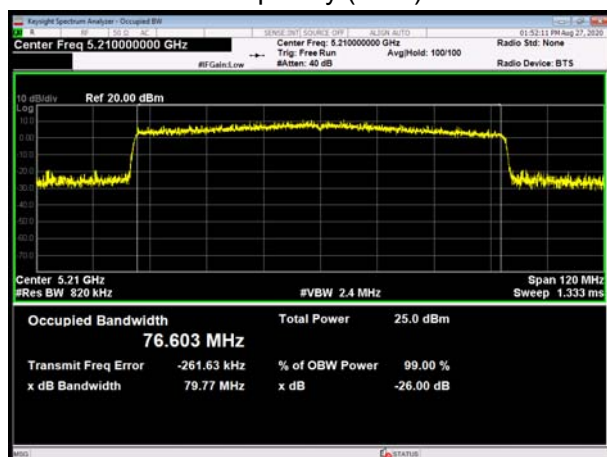




U-NII-1, 802.11ax HE20
Carrier frequency (MHz):5240

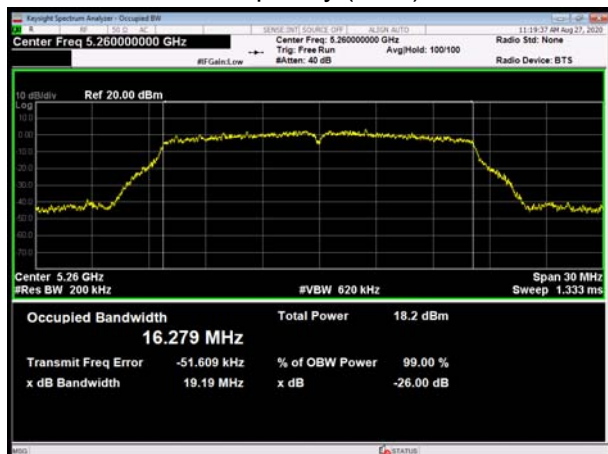


U-NII-1, 802.11ax HE80
Carrier frequency (MHz): 5210





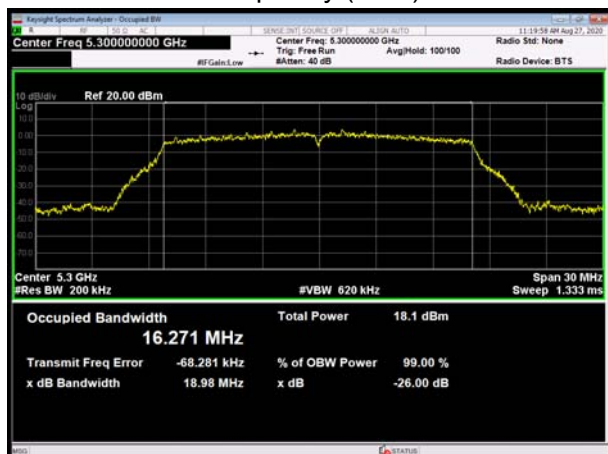
U-NII-2A, 802.11a
Carrier frequency (MHz): 5260



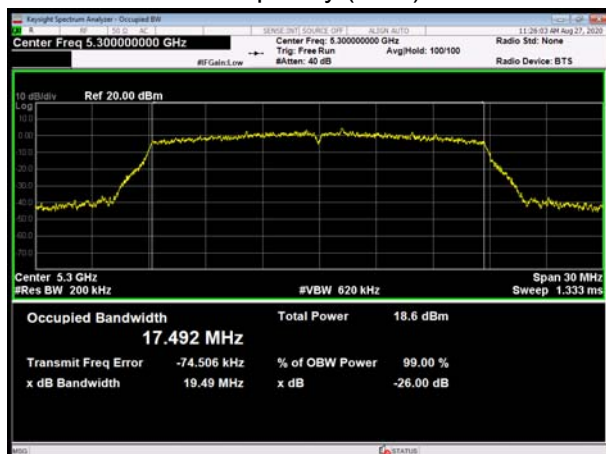
U-NII-2A, 802.11n HT20
Carrier frequency (MHz): 5260



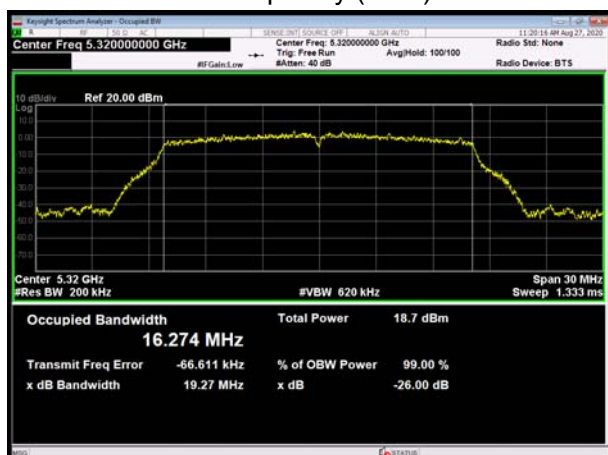
U-NII-2A, 802.11a
Carrier frequency (MHz): 5300



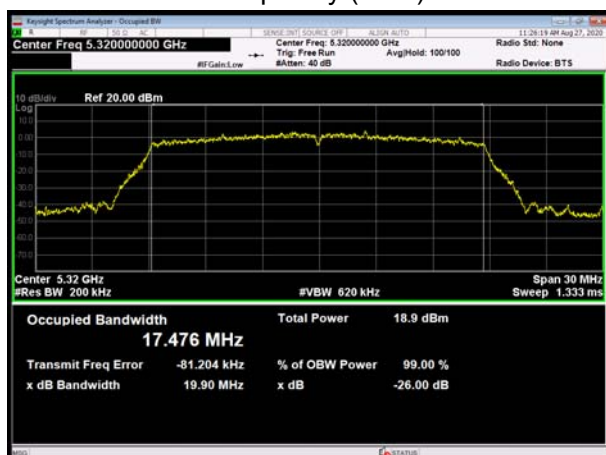
U-NII-2A, 802.11n HT20
Carrier frequency (MHz): 5300



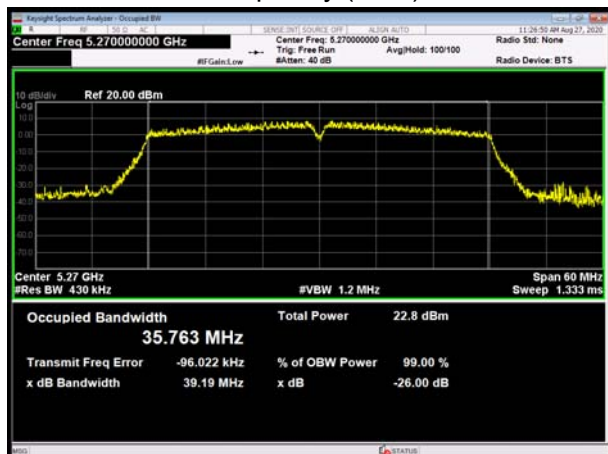
U-NII-2A, 802.11a
Carrier frequency (MHz): 5320



U-NII-2A, 802.11n HT20
Carrier frequency (MHz): 5320



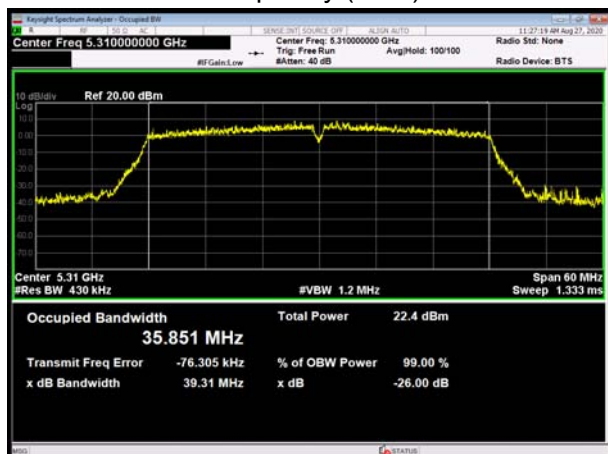
U-NII-2A, 802.11n HT40 Carrier frequency (MHz): 5270



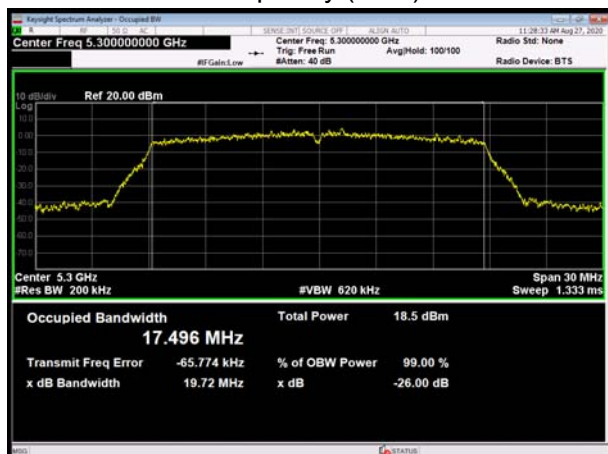
U-NII-2A, 802.11ac VHT20 Carrier frequency (MHz): 5260



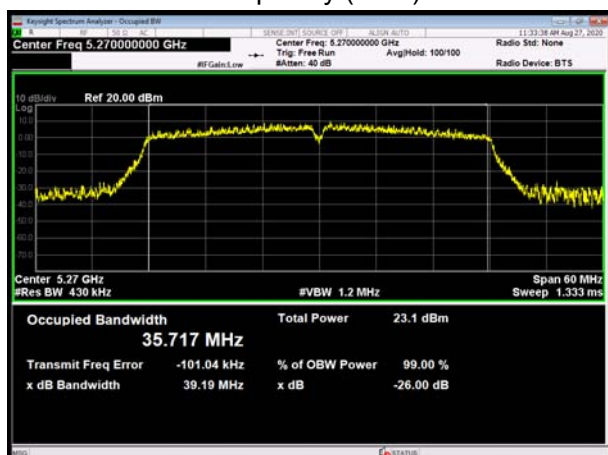
U-NII-2A, 802.11n HT40 Carrier frequency (MHz): 5310



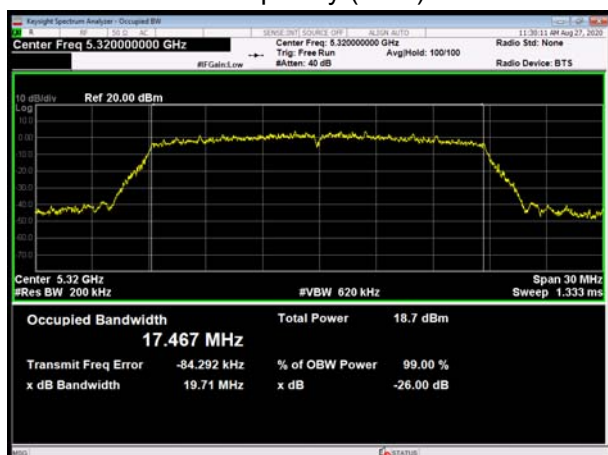
U-NII-2A, 802.11ac VHT20 Carrier frequency (MHz): 5300



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

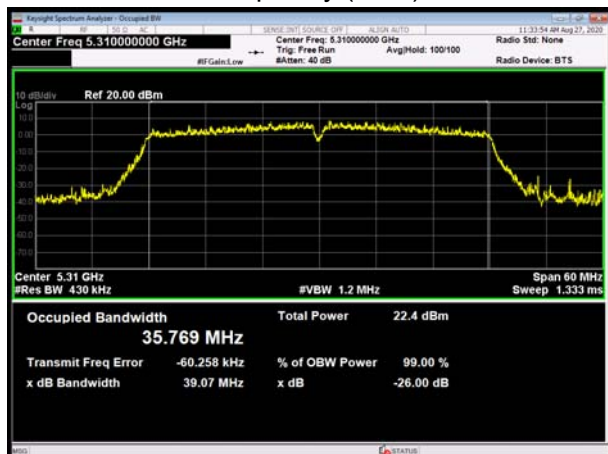


U-NII-2A, 802.11ac VHT20 Carrier frequency (MHz): 5320

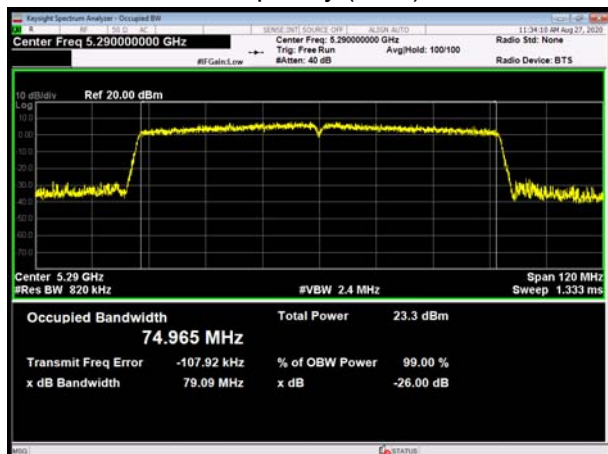




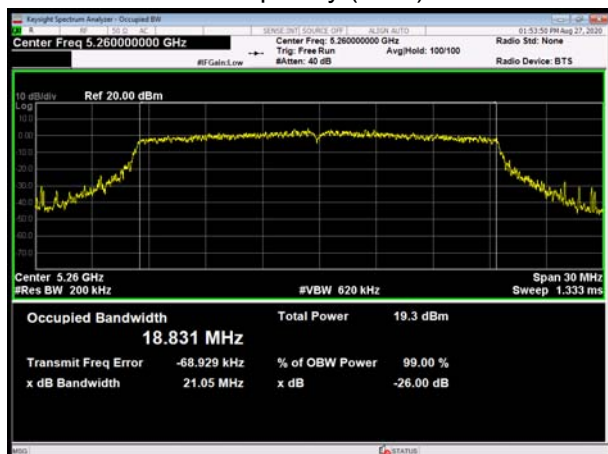
U-NII-2A, 802.11ac VHT40 Carrier frequency (MHz): 5310



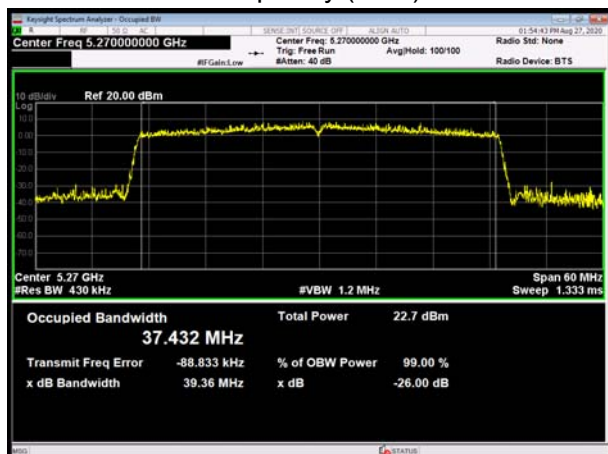
U-NII-2A, 802.11ac VHT80 Carrier frequency (MHz): 5290



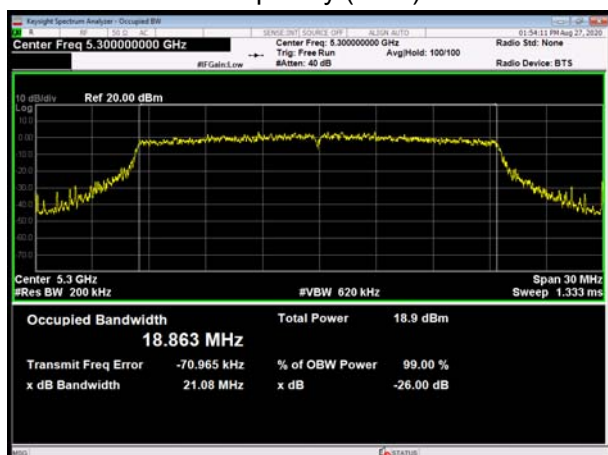
U-NII-2A, 802.11ax HE20 Carrier frequency (MHz): 5260



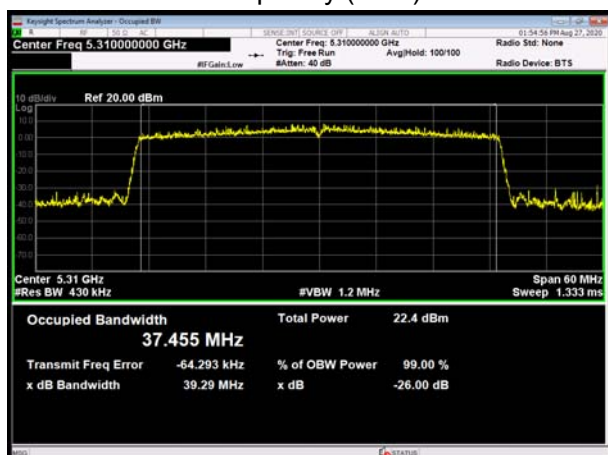
U-NII-2A, 802.11ax HE40 Carrier frequency (MHz): 5270



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

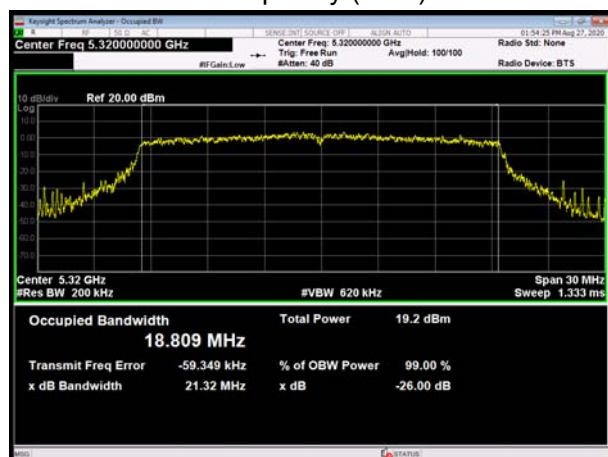


U-NII-2A, 802.11ax HE40 Carrier frequency (MHz): 5310

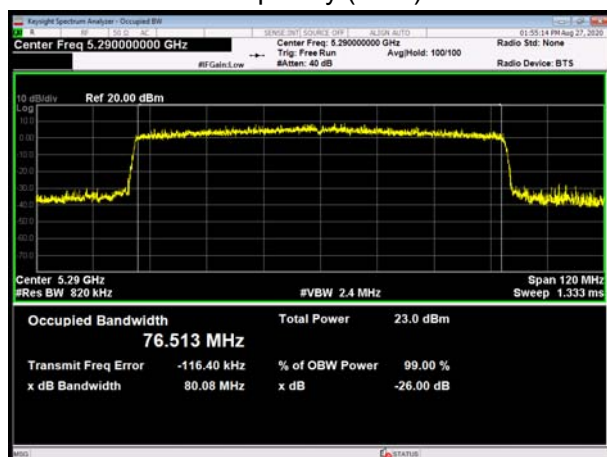




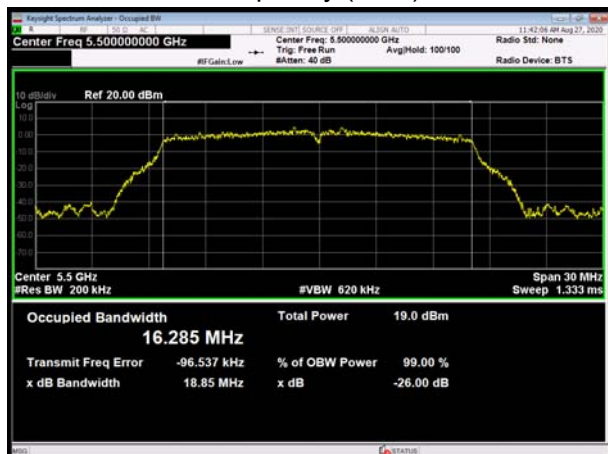
U-NII-2A, 802.11ax HE20
Carrier frequency (MHz):5320



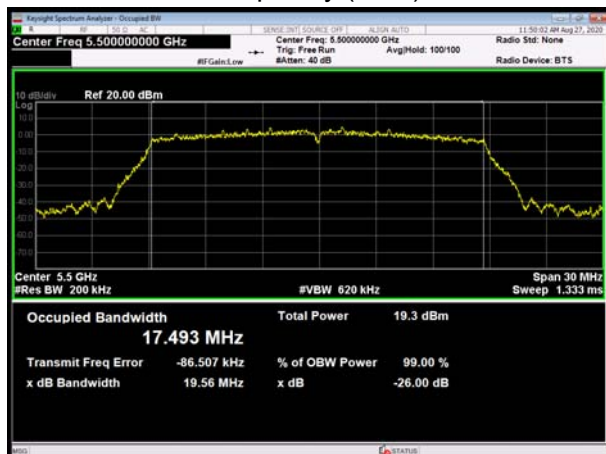
U-NII-2A, 802.11ax HE80
Carrier frequency (MHz): 5290



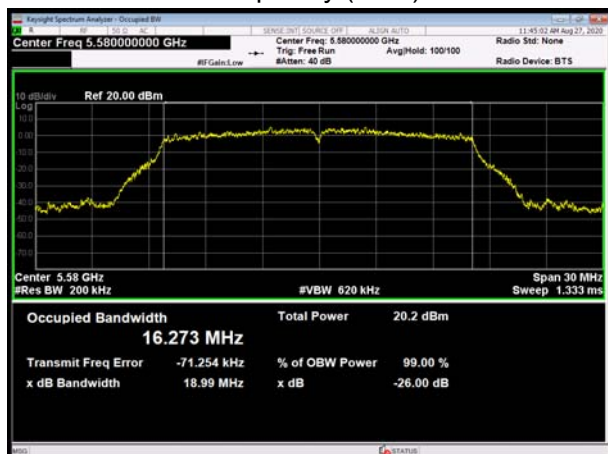
U-NII-2C, 802.11a Carrier frequency (MHz): 5500



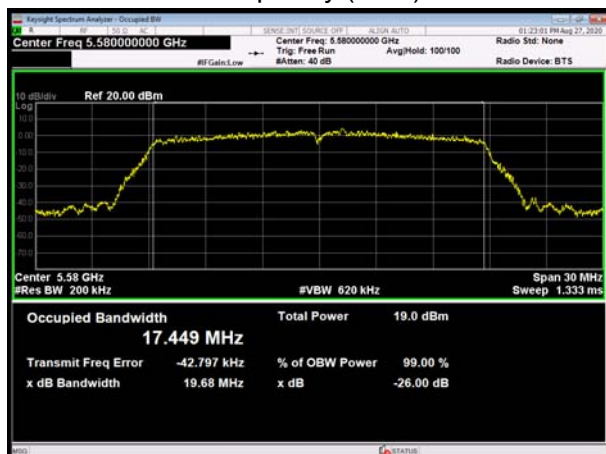
U-NII-2C, 802.11n HT20 Carrier frequency (MHz): 5500



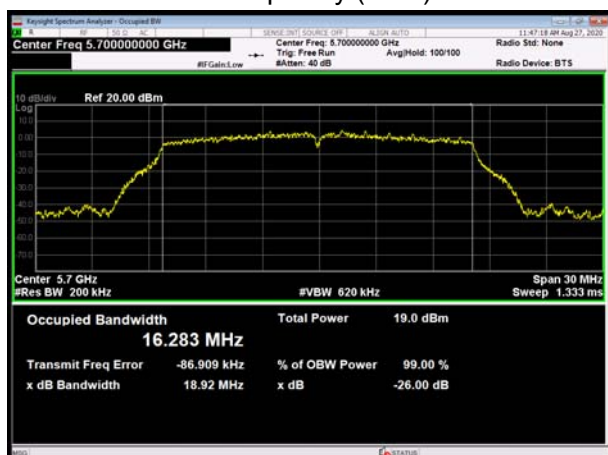
U-NII-2C, 802.11a Carrier frequency (MHz): 5580



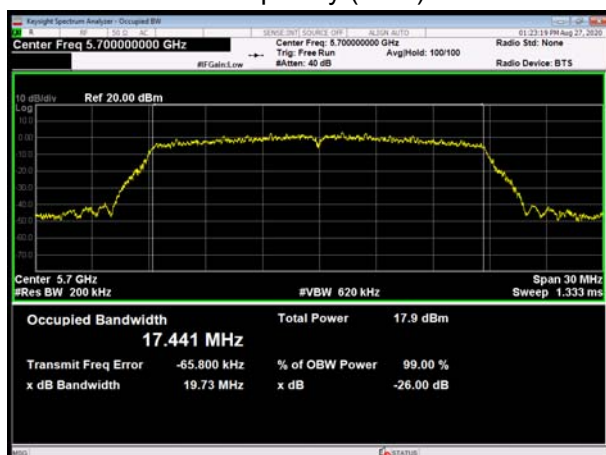
U-NII-2C, 802.11n HT20 Carrier frequency (MHz): 5580



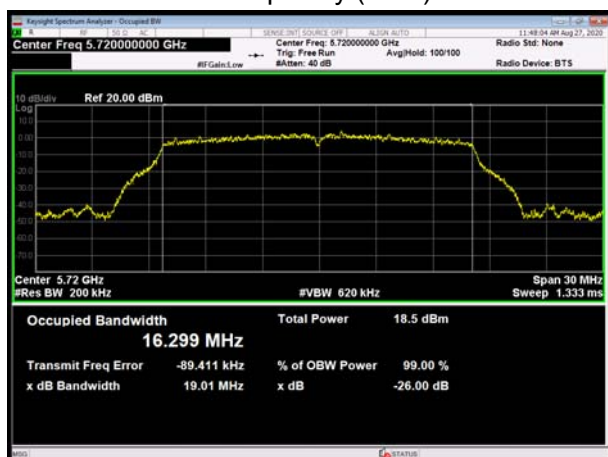
U-NII-2C, 802.11a Carrier frequency (MHz): 5700



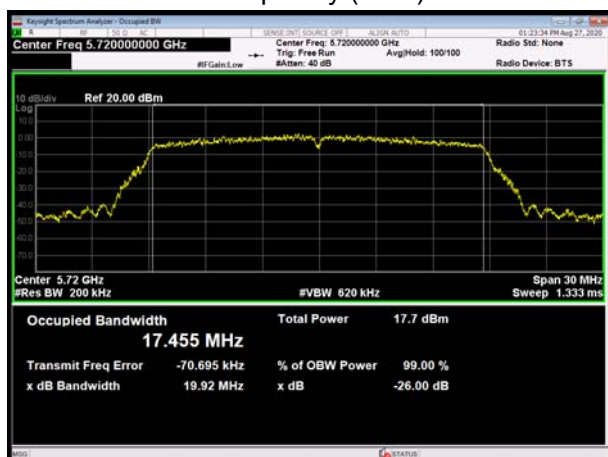
U-NII-2C, 802.11n HT20 Carrier frequency (MHz): 5700



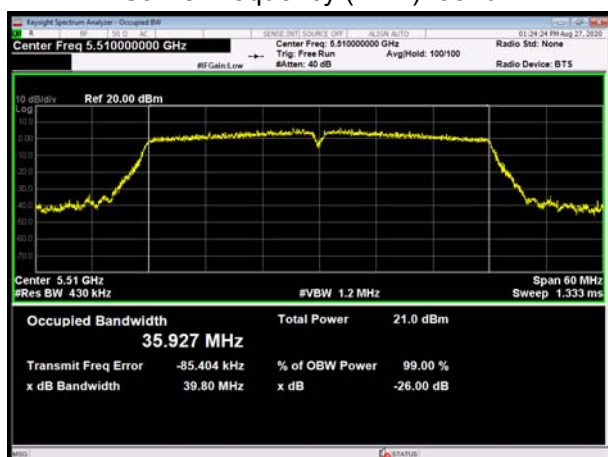
U-NII-2C, 802.11a Carrier frequency (MHz):5720



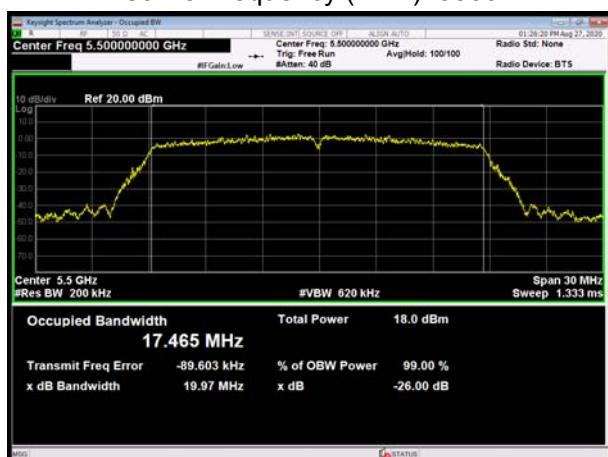
U-NII-2C, 802.11n HT20 Carrier frequency (MHz):5720



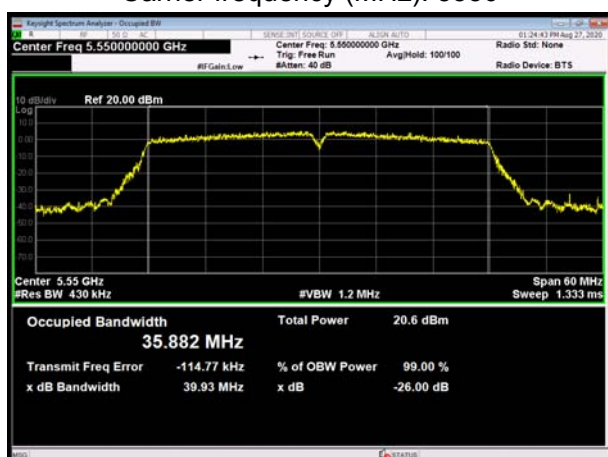
U-NII-2C, 802.11n HT40 Carrier frequency (MHz): 5510



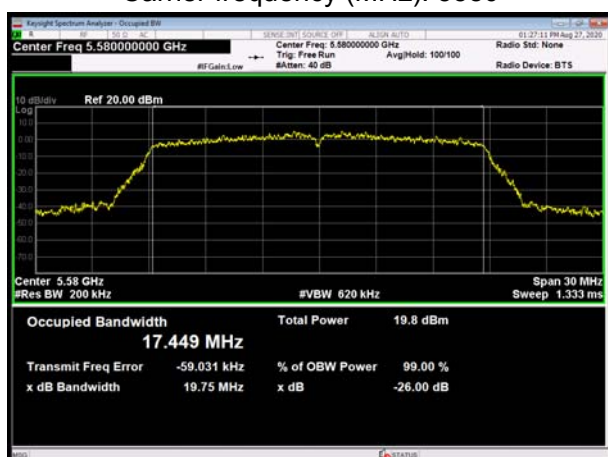
U-NII-2C, 802.11ac VHT20 Carrier frequency (MHz): 5500



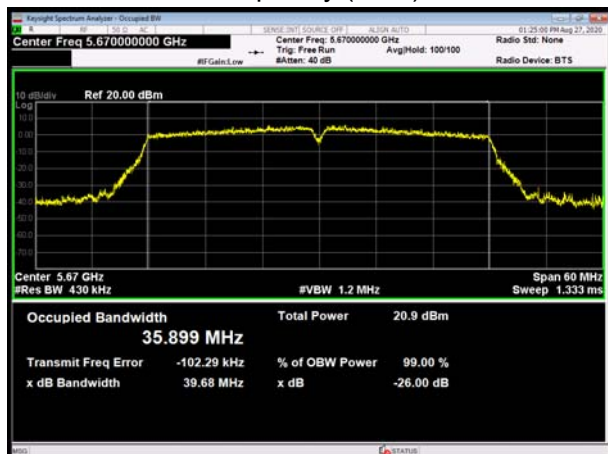
U-NII-2C, 802.11n HT40 Carrier frequency (MHz): 5550



U-NII-2C, 802.11ac VHT20 Carrier frequency (MHz): 5580



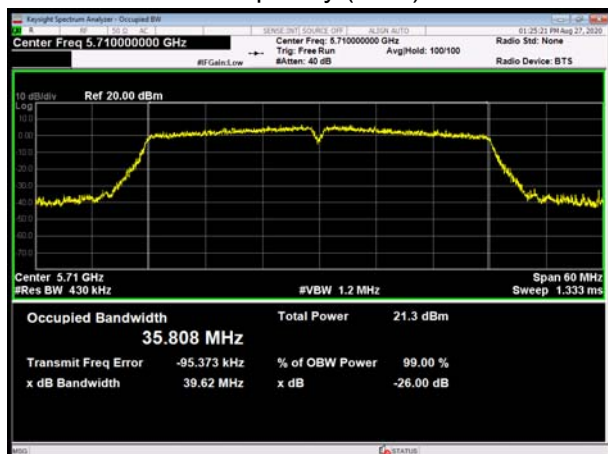
U-NII-2C, 802.11n HT40 Carrier frequency (MHz): 5670



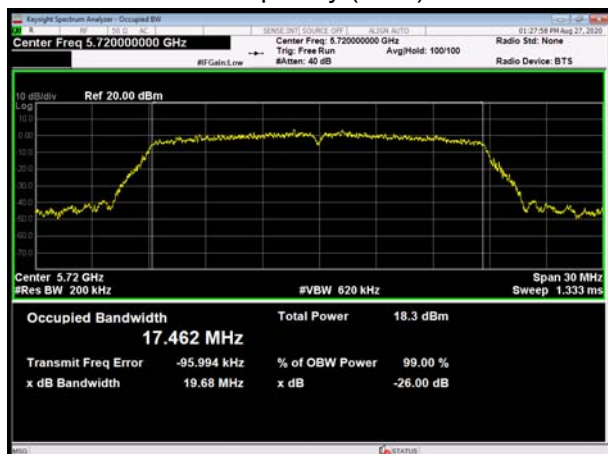
U-NII-2C, 802.11ac VHT20 Carrier frequency (MHz): 5700



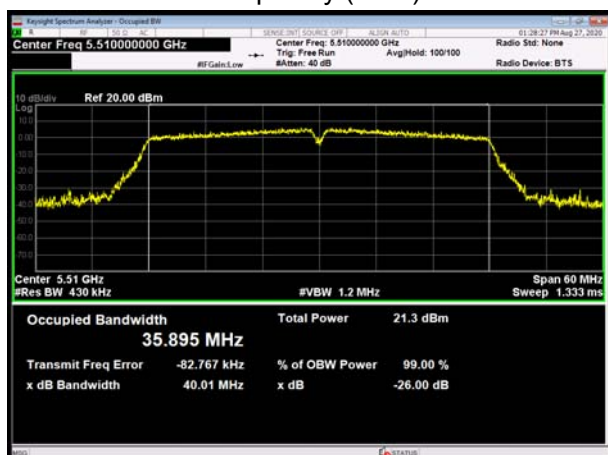
U-NII-2C, 802.11n HT40 Carrier frequency (MHz): 5710



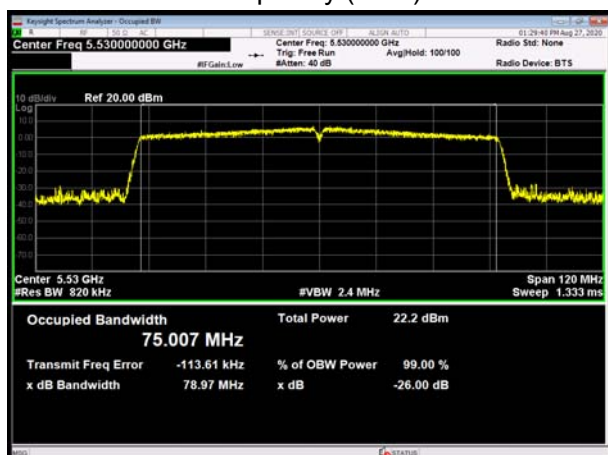
U-NII-2C, 802.11ac VHT20 Carrier frequency (MHz): 5720



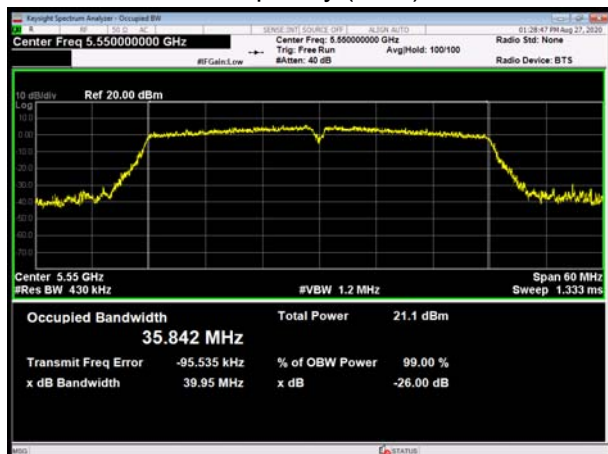
U-NII-2C, 802.11ac VHT40 Carrier frequency (MHz): 5510



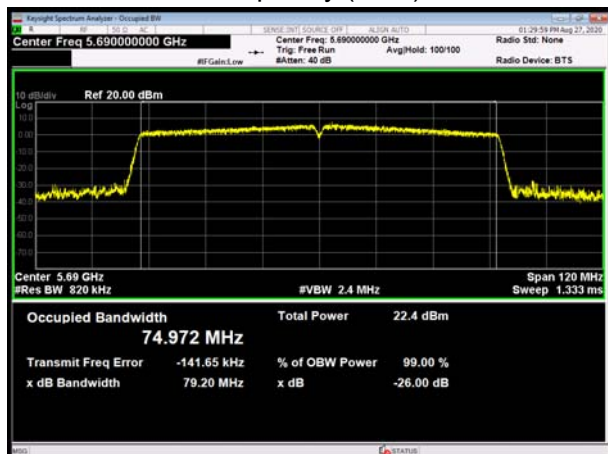
U-NII-2C, 802.11ac VHT80 Carrier frequency (MHz): 5530



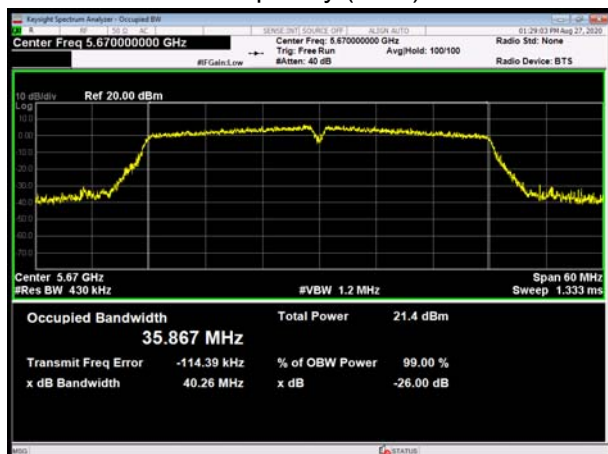
U-NII-2C, 802.11ac VHT40 Carrier frequency (MHz): 5550



U-NII-2C, 802.11ac VHT80 Carrier frequency (MHz): 5690



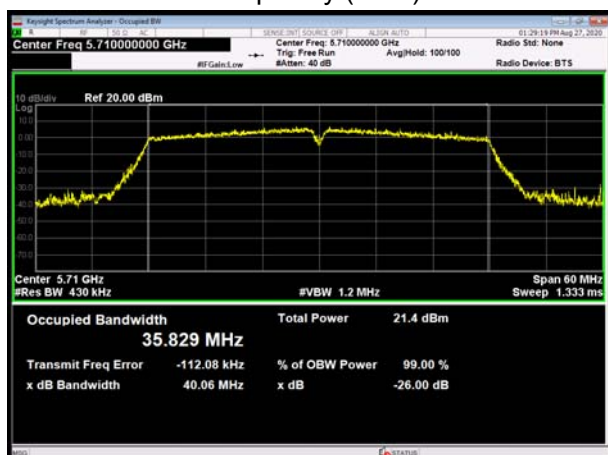
U-NII-2C, 802.11ac VHT40 Carrier frequency (MHz): 5670



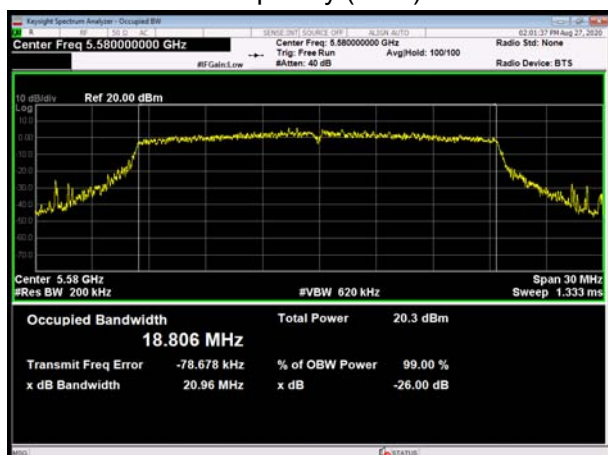
U-NII-2C, 802.11ax HE20 Carrier frequency (MHz): 5500



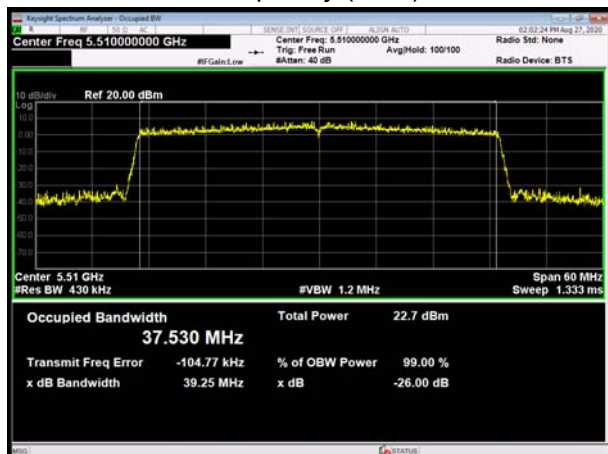
U-NII-2C, 802.11ac VHT40 Carrier frequency (MHz): 5710



U-NII-2C, 802.11ax HE20 Carrier frequency (MHz): 5580



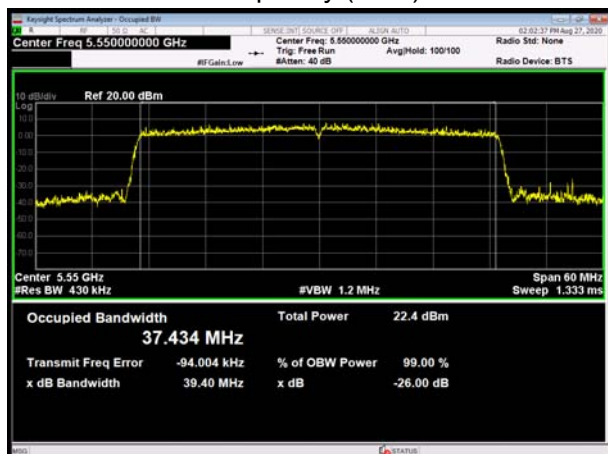
U-NII-2C, 802.11ax HE40 Carrier frequency (MHz): 5510



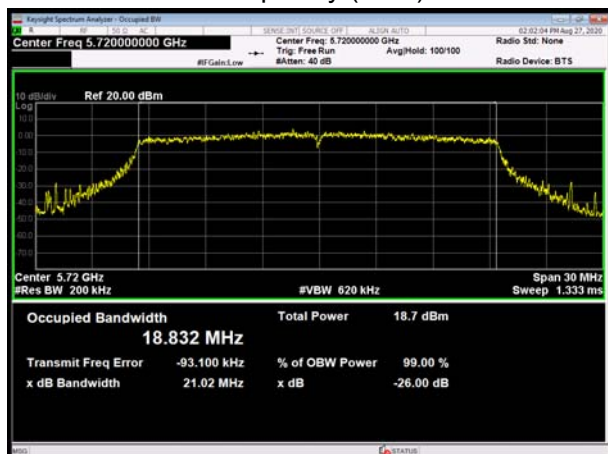
U-NII-2C, 802.11ax HE20 Carrier frequency (MHz): 5700



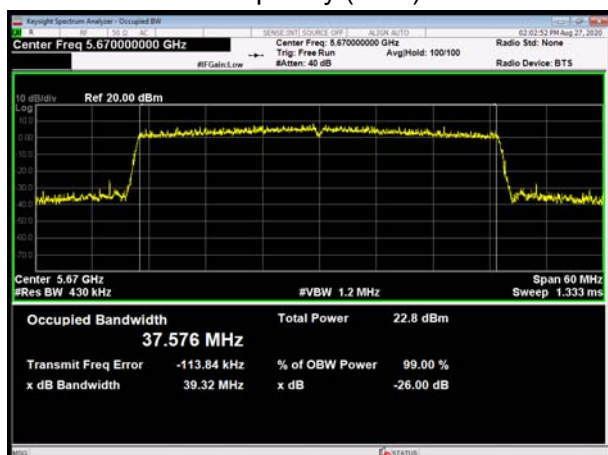
U-NII-2C, 802.11ax HE40 Carrier frequency (MHz): 5550



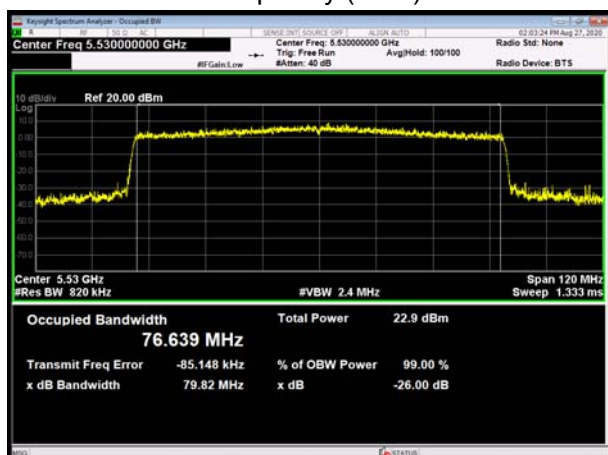
U-NII-2C, 802.11ax HE20 Carrier frequency (MHz): 5720



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

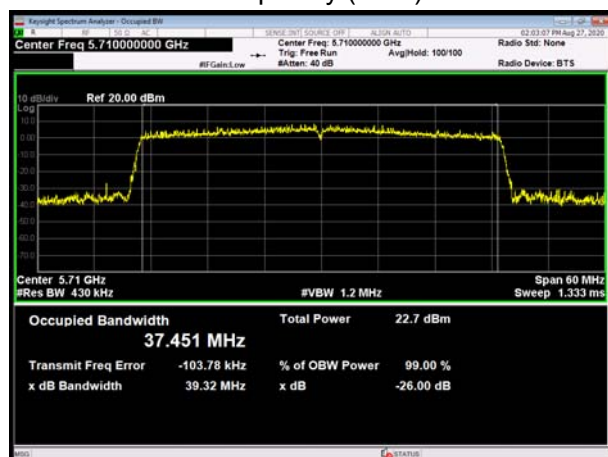


U-NII-2C, 802.11ax HE80 Carrier frequency (MHz): 5530

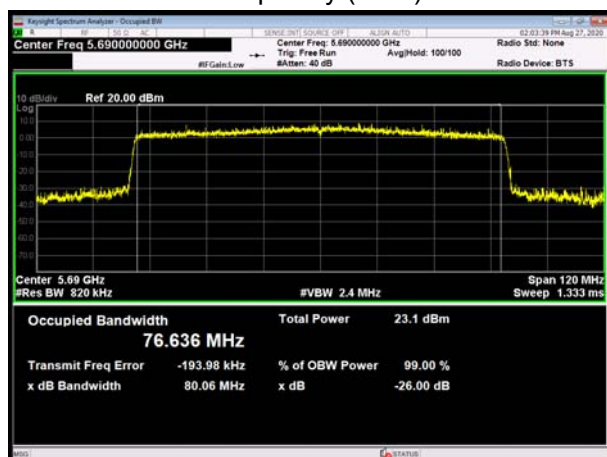




U-NII-2C, 802.11ax HE40
Carrier frequency (MHz): 5710



U-NII-2C, 802.11ax HE80
Carrier frequency (MHz): 5690





99% bandwidth

U-NII-3, 802.11a

Carrier frequency (MHz): 5745



U-NII-3, 802.11n HT20

Carrier frequency (MHz): 5745



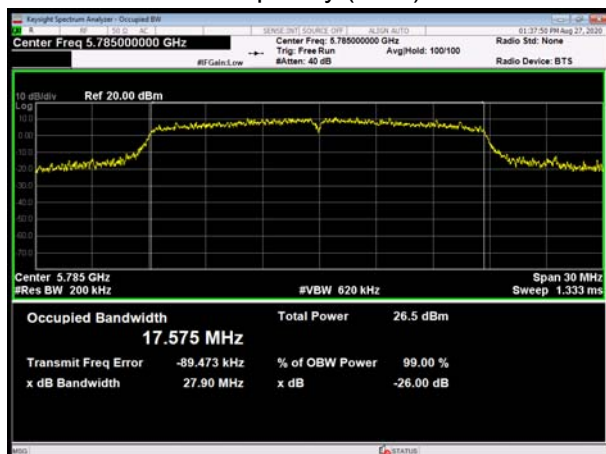
U-NII-3, 802.11a

Carrier frequency (MHz): 5785



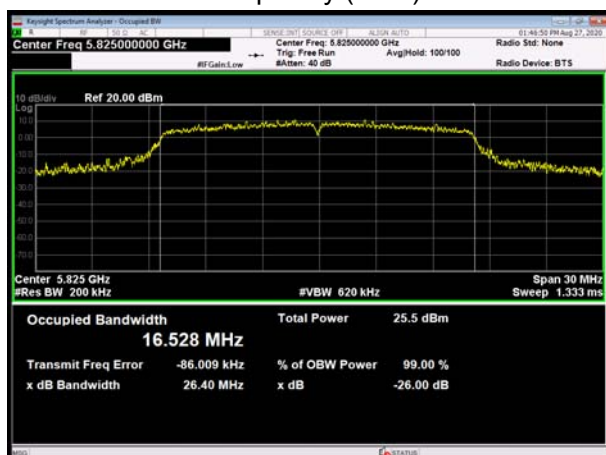
U-NII-3, 802.11n HT20

Carrier frequency (MHz): 5785



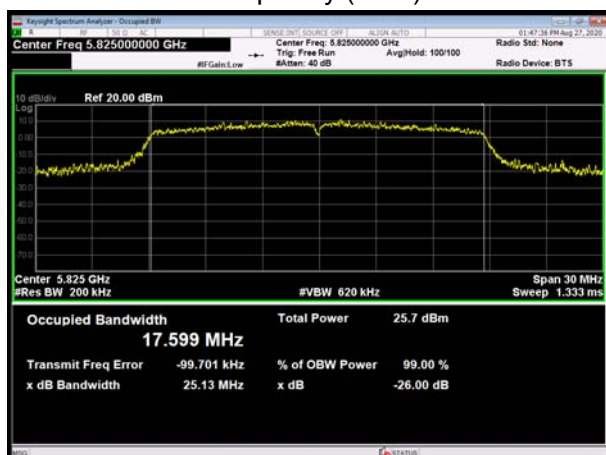
U-NII-3, 802.11a

Carrier frequency (MHz): 5825



U-NII-3, 802.11n HT20

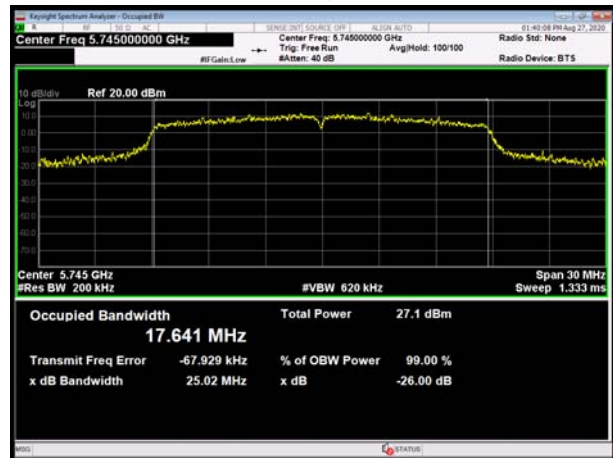
Carrier frequency (MHz): 5825



U-NII-3, 802.11n HT40 Carrier frequency (MHz): 5755



U-NII-3, 802.11ac VHT20 Carrier frequency (MHz): 5745



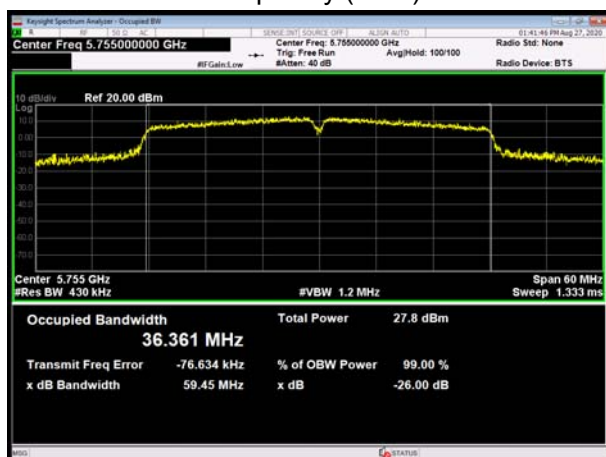
U-NII-3, 802.11n HT40 Carrier frequency (MHz): 5795



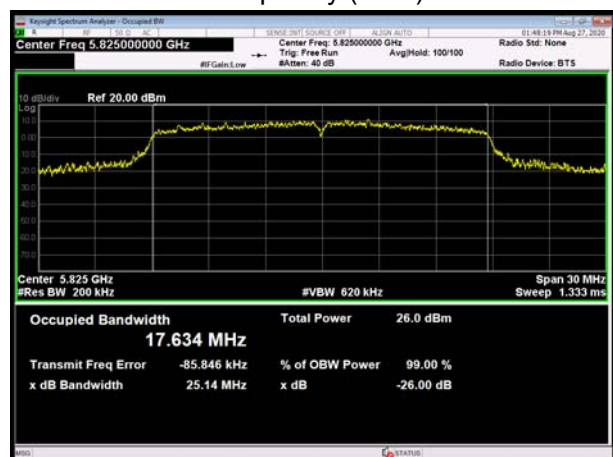
U-NII-3, 802.11ac VHT20 Carrier frequency (MHz): 5785



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

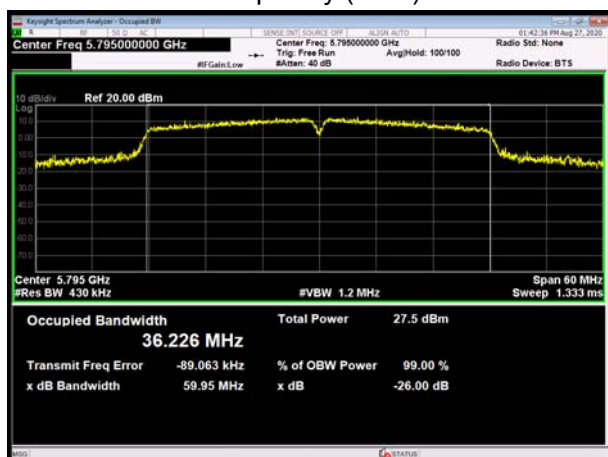


U-NII-3, 802.11ac VHT20 Carrier frequency (MHz): 5825

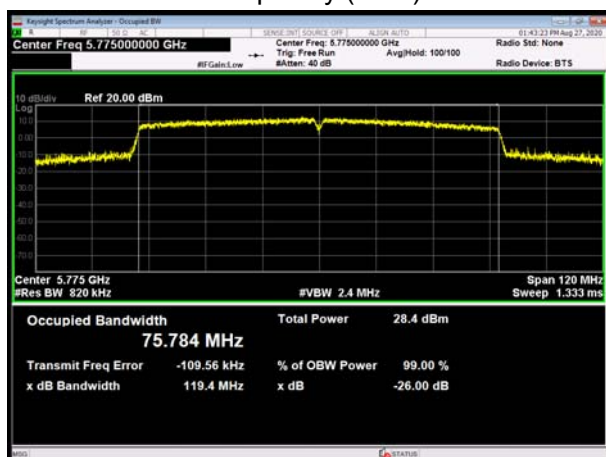




U-NII-3, 802.11ac VHT40 Carrier frequency (MHz): 5795



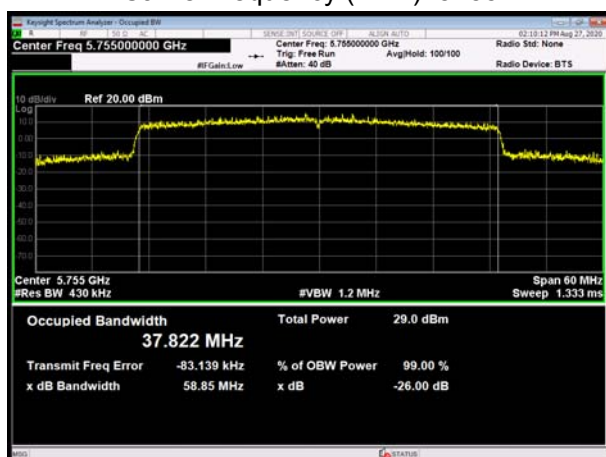
U-NII-3, 802.11ac VHT80 Carrier frequency (MHz): 5775



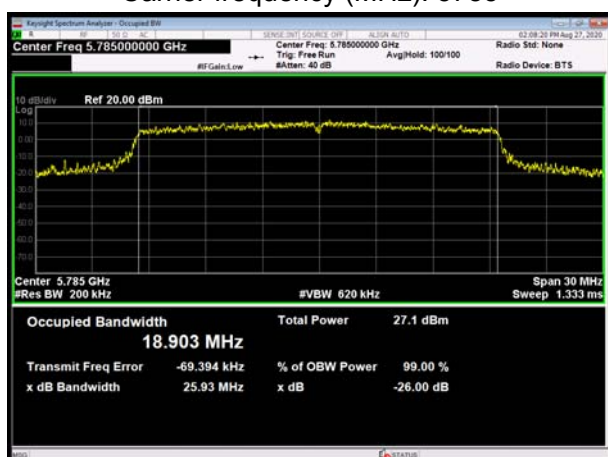
U-NII-3, 802.11ax HE20 Carrier frequency (MHz): 5745



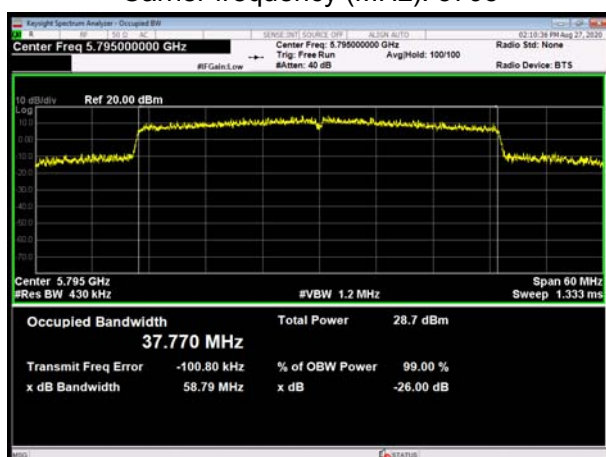
U-NII-3, 802.11ax HE40 Carrier frequency (MHz): 5755



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

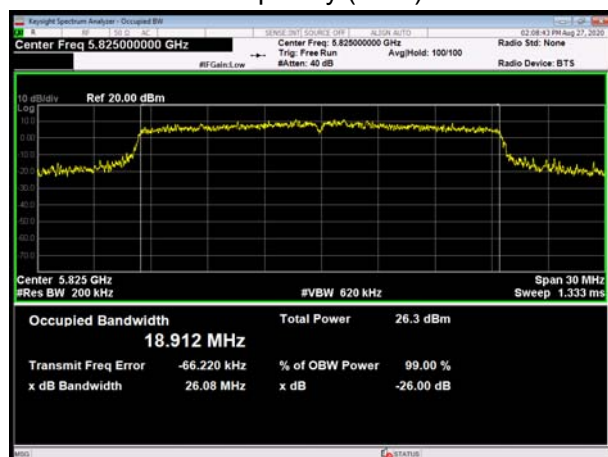


U-NII-3, 802.11ax HE40 Carrier frequency (MHz): 5795

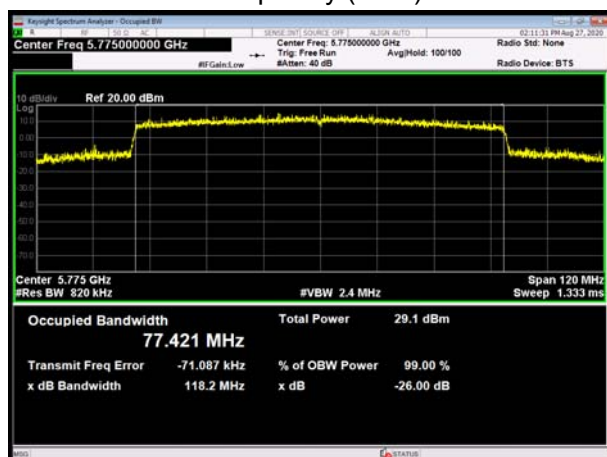




U-NII-3, 802.11ax HE20
Carrier frequency (MHz): 5825



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

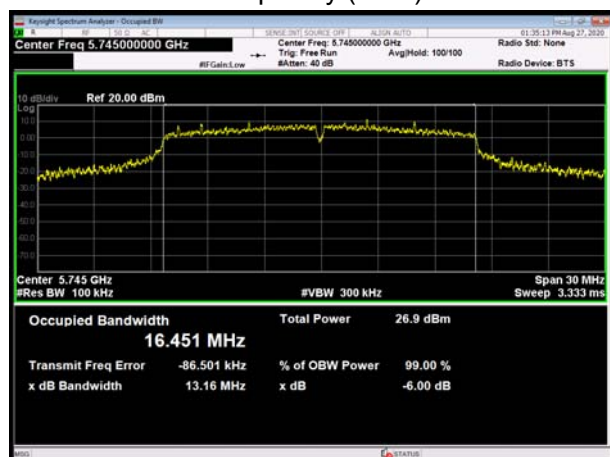




Minimum 6 dB bandwidth

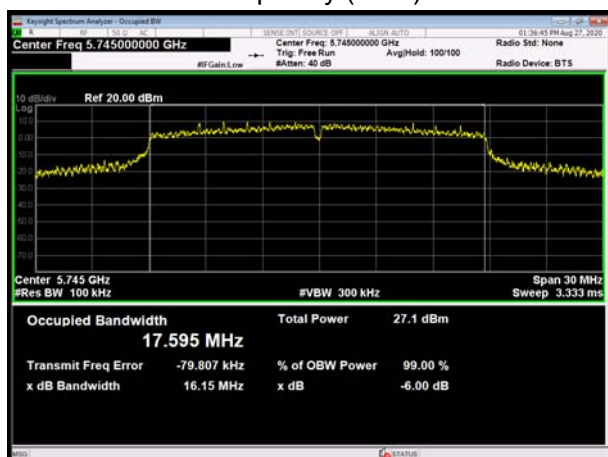
U-NII-3, 802.11a

Carrier frequency (MHz): 5745



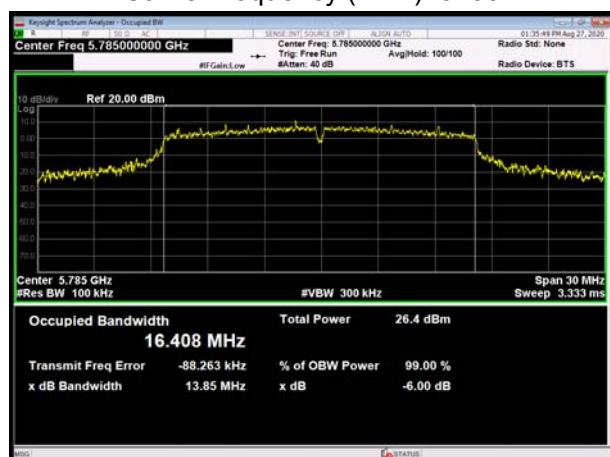
U-NII-3, 802.11n HT20

Carrier frequency (MHz): 5745



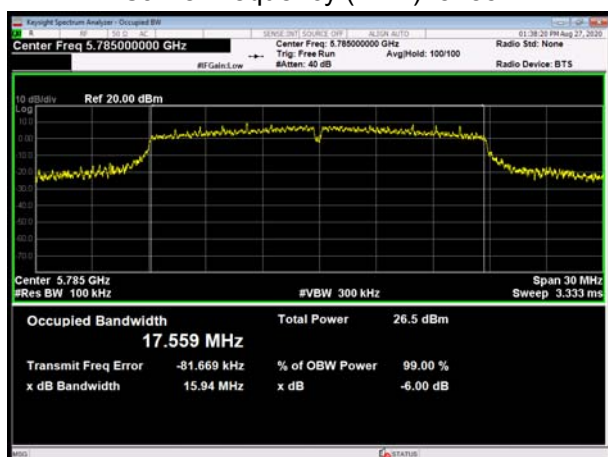
U-NII-3, 802.11a

Carrier frequency (MHz): 5785



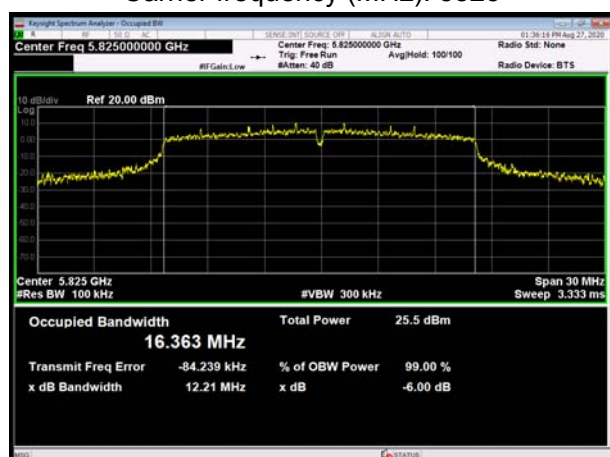
U-NII-3, 802.11n HT20

Carrier frequency (MHz): 5785



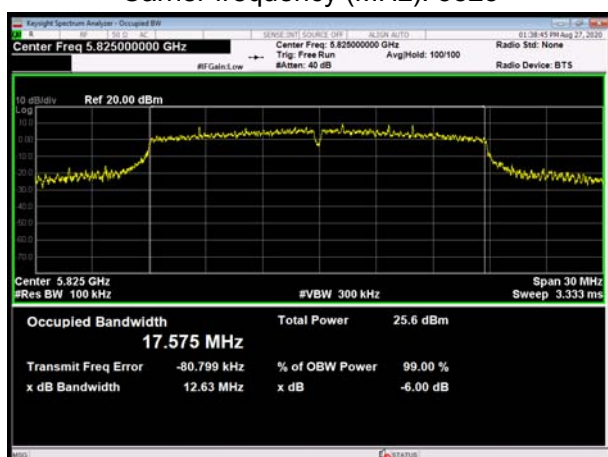
U-NII-3, 802.11a

Carrier frequency (MHz): 5825

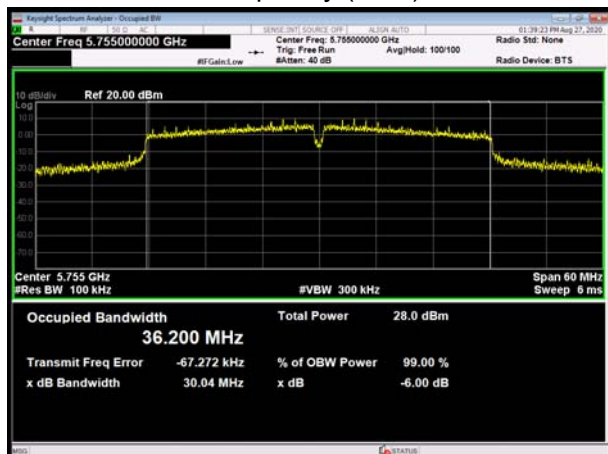


U-NII-3, 802.11n HT20

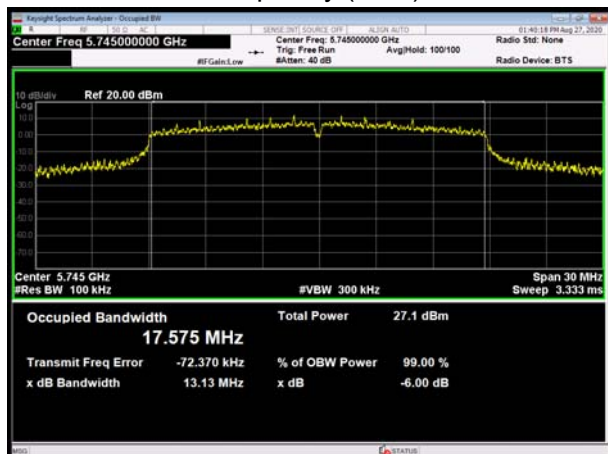
Carrier frequency (MHz): 5825



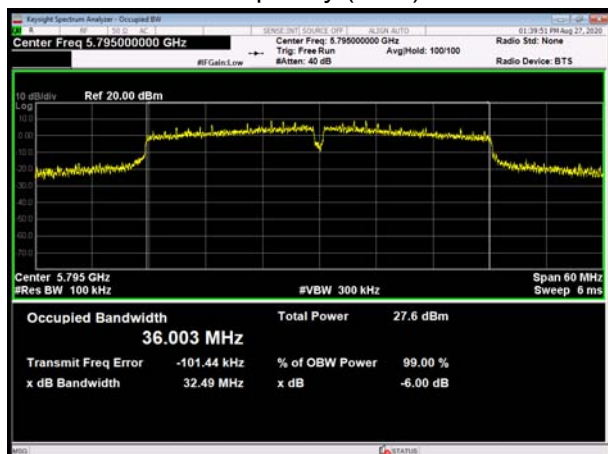
U-NII-3, 802.11n HT40 Carrier frequency (MHz): 5755



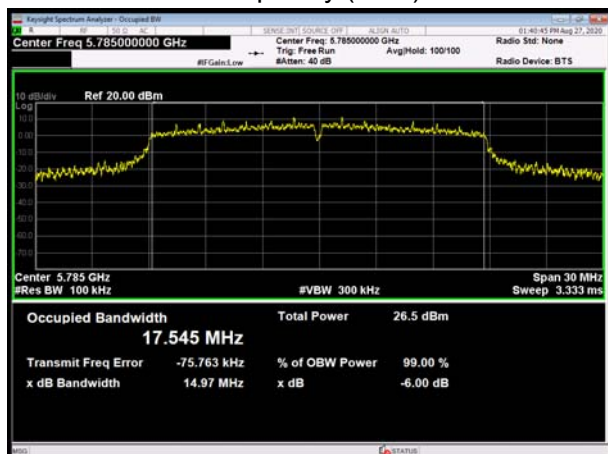
U-NII-3, 802.11ac VHT20 Carrier frequency (MHz): 5745



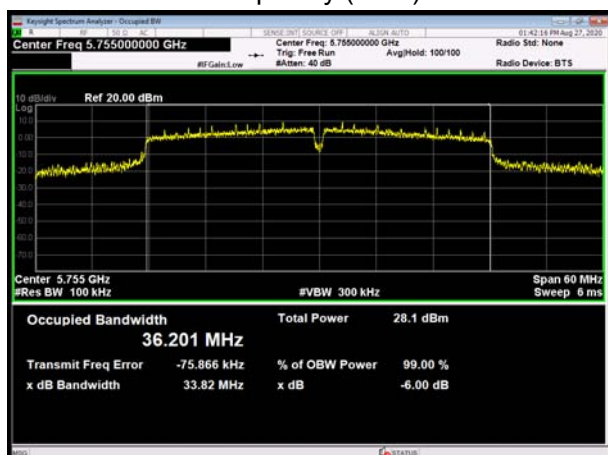
U-NII-3, 802.11n HT40 Carrier frequency (MHz): 5795



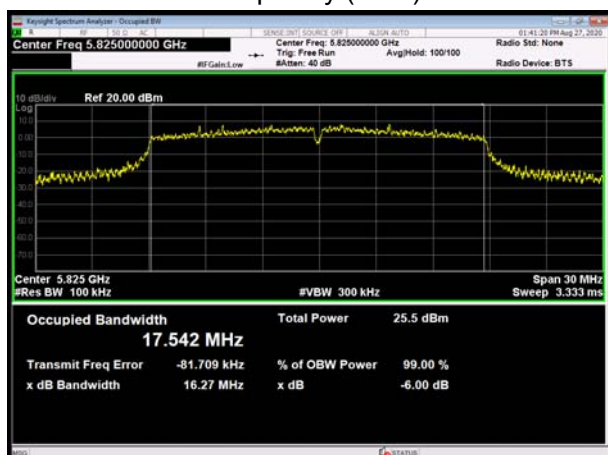
U-NII-3, 802.11ac VHT20 Carrier frequency (MHz): 5785



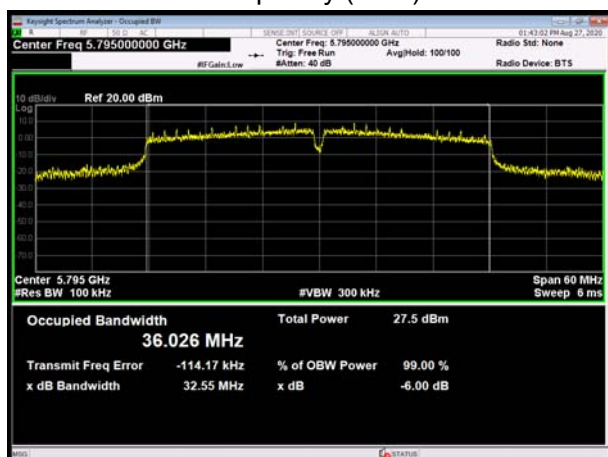
U-NII-3, 802.11ac VHT40 Carrier frequency (MHz): 5755



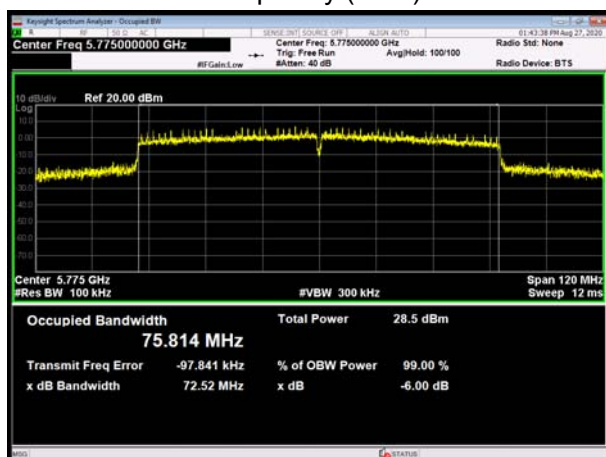
U-NII-3, 802.11ac VHT20 Carrier frequency (MHz): 5825



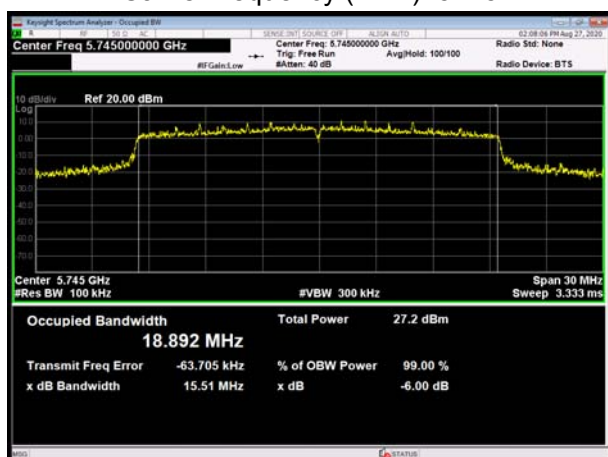
U-NII-3, 802.11ac VHT40 Carrier frequency (MHz): 5795



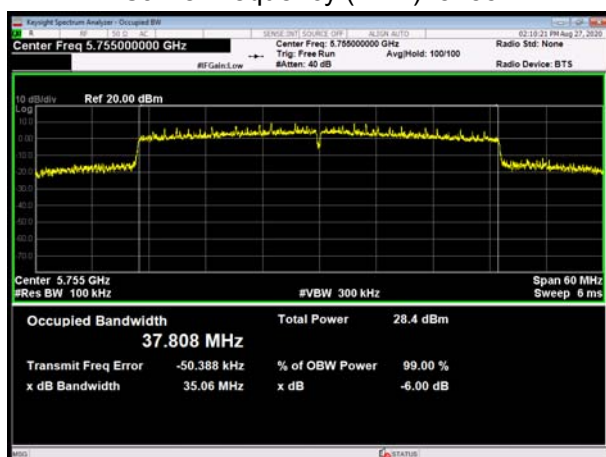
U-NII-3, 802.11ac VHT80 Carrier frequency (MHz): 5775



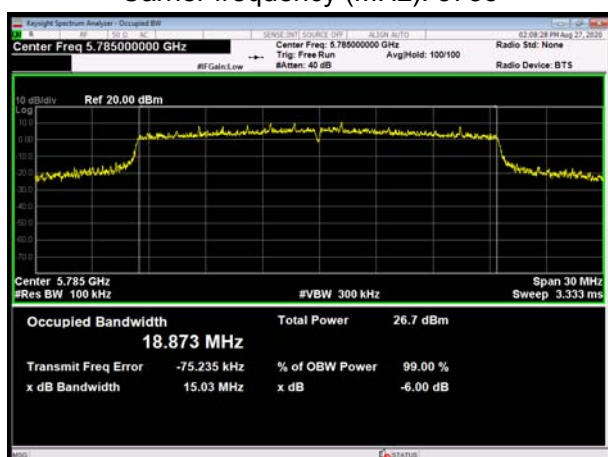
U-NII-3, 802.11ax HE20 Carrier frequency (MHz): 5745



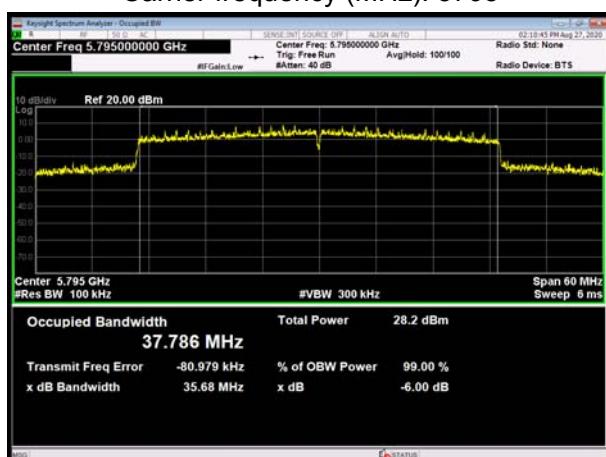
U-NII-3, 802.11ax HE40 Carrier frequency (MHz): 5755



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

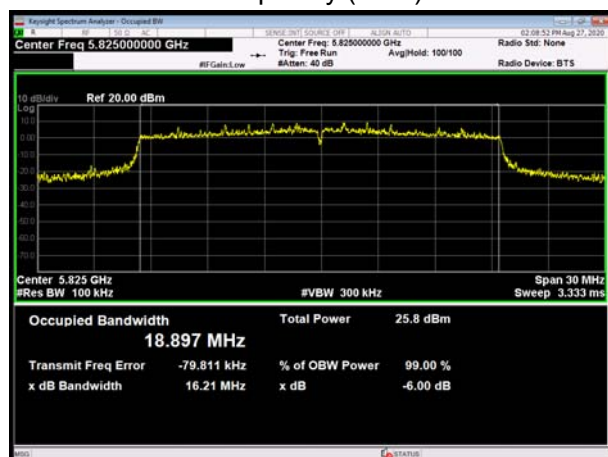


U-NII-3, 802.11ax HE40 Carrier frequency (MHz): 5795

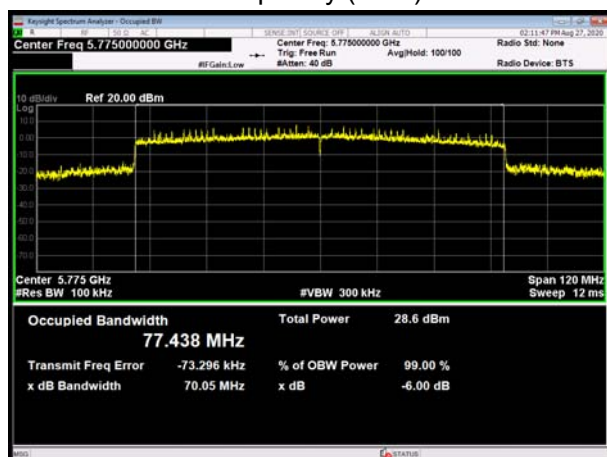




U-NII-3, 802.11ax HE20
Carrier frequency (MHz): 5825



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



5.2. Average Power Output –Conducted

Ambient condition

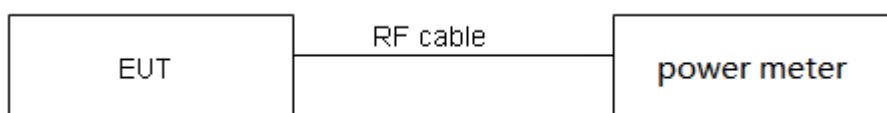
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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 $11 \text{ dBm} + 10 \log B$, 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 $k = 2$, $U = 0.44 \text{ dB}$.

Test Results

Band	T _{on} (ms)	T _(on+off) (ms)	Duty cycle	Duty cycle correction Factor(dB)
802.11a	1.40	1.46	0.96	0.17
802.11n HT20	1.30	1.35	0.96	0.18
802.11n HT40	0.63	0.70	0.91	0.42
802.11ac VHT20	1.31	1.37	0.96	0.18
802.11ac VHT40	0.66	0.71	0.92	0.36
802.11ac VHT80	0.33	0.38	0.85	0.68
802.11ax HE20	1.02	1.07	0.95	0.23
802.11ax HE40	0.54	0.60	0.91	0.43
802.11ax HE80	0.29	0.35	0.82	0.87
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	19.19	23.83<24	23.83
		60/5300	18.98	23.78<24	23.78
		64/5320	19.27	23.85<24	23.85
	802.11n HT20	52/5260	19.74	23.95<24	23.95
		60/5300	19.49	23.90<24	23.90
		64/5320	19.90	23.99<24	23.99
	802.11n HT40	54/5270	39.19	26.93>24	24.00
		62/5310	39.31	26.95>24	24.00
	802.11ac VHT20	52/5260	19.88	23.98<24	23.98
		60/5300	19.72	23.95<24	23.95
		64/5320	19.71	23.95<24	23.95
	802.11ac VHT40	54/5270	39.19	26.93>24	24.00
		62/5310	39.07	26.92>24	24.00
	802.11ac VHT80	58/5290	79.09	29.98>24	24.00
	802.11ax HE20	52/5260	21.05	24.23>24	24.00
		60/5300	21.08	24.24>24	24.00
		64/5320	21.32	24.29>24	24.00
	802.11ax HE40	54/5270	39.36	26.95>24	24.00
		62/5310	39.29	26.94>24	24.00
	802.11ax HE80	58/5290	80.08	30.04>24	24.00
U-NII-2C	802.11a	100/5500	18.85	23.75<24	23.75



		116/5580	18.99	23.79<24	23.79
		140/5700	18.92	23.77<24	23.77
		144/5720	19.01	23.79<24	23.79
	802.11n HT20	100/5500	19.56	23.91<24	23.91
		116/5580	19.68	23.94<24	23.94
		140/5700	19.73	23.95<24	23.95
		140/5700	19.92	23.99<24	23.99
	802.11n HT40	102/5510	39.80	27.00>24	24.00
		110/5550	39.93	27.01>24	24.00
		134/5670	39.68	26.99>24	24.00
		142/5710	39.62	26.98>24	24.00
	802.11ac VHT20	100/5500	19.97	24.00>24	24.00
		116/5580	19.75	23.96<24	23.96
		140/5700	19.75	23.96<24	23.96
		144/5720	19.68	23.94<24	23.94
	802.11ac VHT40	100/5500	40.01	27.02>24	24.00
		110/5550	39.95	27.02>24	24.00
		134/5670	40.26	27.05>24	24.00
		142/5710	40.06	27.03>24	24.00
	802.11ac VHT80	106/5530	78.97	29.97>24	24.00
		138/5690	79.20	29.99>24	24.00
	802.11ax HE20	100/5500	20.85	24.19>24	24.00
		116/5580	20.96	24.21>24	24.00
		140/5700	20.45	24.11>24	24.00
		144/5720	21.02	24.23>24	24.00
	802.11ax HE40	100/5500	39.25	26.94>24	24.00
		110/5550	39.40	26.95>24	24.00
		134/5670	39.32	26.95>24	24.00
		142/5710	39.32	26.95>24	24.00
	802.11ax HE80	106/5530	79.82	30.02>24	24.00
		138/5690	80.06	30.03>24	24.00

Note: 250mW=24dBm

**Antenna Type #1:****MIMO(Without beamforming)****U-NII-1**

Network Standards	Channel/ Frequency (MHz)	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	22.68	22.85	22.52	22.69	25.78	30.00	PASS
	40/5200	23.14	23.31	22.95	23.12	26.23	30.00	PASS
	48/5240	22.94	23.11	22.81	22.98	26.06	30.00	PASS
802.11n HT20	36/5180	23.44	23.62	23.21	23.39	26.52	30.00	PASS
	40/5200	23.24	23.42	23.19	23.37	26.41	30.00	PASS
	48/5240	23.18	23.36	23.85	24.03	26.72	30.00	PASS
802.11n HT40	38/5190	18.03	18.45	17.35	17.77	21.13	30.00	PASS
	46/5230	25.74	26.16	25.49	25.91	29.05	30.00	PASS
802.11ac VHT20	36/5180	23.58	23.76	23.47	23.65	26.72	30.00	PASS
	40/5200	23.23	23.41	23.11	23.29	26.36	30.00	PASS
	48/5240	23.14	23.32	23.93	24.11	26.74	30.00	PASS
802.11ac VHT40	38/5190	25.46	25.82	25.29	25.65	28.74	30.00	PASS
	46/5230	25.41	25.77	25.16	25.52	28.65	30.00	PASS
802.11ac VHT80	42/5210	16.63	17.31	16.30	16.98	20.16	30.00	PASS
802.11ax HE20	36/5180	23.32	23.55	23.01	23.24	26.41	30.00	PASS
	40/5200	23.28	23.51	23.15	23.38	26.46	30.00	PASS
	48/5240	23.15	23.38	23.89	24.12	26.78	30.00	PASS
802.11ax HE40	38/5190	19.60	20.03	18.25	18.68	22.41	30.00	PASS
	46/5230	25.65	26.08	25.37	25.80	28.95	30.00	PASS
802.11ax HE 80	42/5210	15.84	16.71	16.10	16.97	19.85	30.00	PASS

Note:

1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor
2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$.
3. Directional gain <6dBi. So the power limit is 30dBm.



U-NII-2A

Network Standards	Channel/ Frequency (MHz)	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	17.37	17.54	17.21	17.38	20.47	23.83	PASS
	60/5300	17.33	17.50	17.15	17.32	20.42	23.78	PASS
	64/5320	17.27	17.44	17.03	17.20	20.33	23.85	PASS
802.11n HT20	52/5260	17.39	17.57	17.12	17.30	20.45	23.95	PASS
	60/5300	17.43	17.61	17.24	17.42	20.53	23.90	PASS
	64/5320	17.28	17.46	17.01	17.19	20.34	23.99	PASS
802.11n HT40	54/5270	19.94	20.36	19.55	19.97	23.18	24.00	PASS
	62/5310	19.87	20.29	19.61	20.03	23.17	24.00	PASS
802.11ac VHT20	52/5260	17.42	17.60	17.25	17.43	20.53	23.98	PASS
	60/5300	17.35	17.53	17.18	17.36	20.46	23.95	PASS
	64/5320	17.47	17.65	17.23	17.41	20.54	23.95	PASS
802.11ac VHT40	54/5270	19.88	20.24	19.61	19.97	23.11	24.00	PASS
	62/5310	19.83	20.19	19.73	20.09	23.15	24.00	PASS
802.11ac VHT80	58/5290	19.67	20.35	19.36	20.04	23.21	24.00	PASS
802.11ax HE20	52/5260	17.66	17.89	17.27	17.50	20.71	24.00	PASS
	60/5300	17.85	18.08	17.44	17.67	20.89	24.00	PASS
	64/5320	17.53	17.76	17.29	17.52	20.65	24.00	PASS
802.11ax HE40	54/5270	19.98	20.41	19.45	19.88	23.16	24.00	PASS
	62/5310	19.86	20.29	19.46	19.89	23.10	24.00	PASS
802.11ax HE 80	58/5290	19.76	20.63	19.42	20.29	23.48	24.00	PASS

Note:

1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor
2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$.
3. Directional gain <6dBi. So the power limit is 24dBm.



U-NII-2C

Network Standards	Channel/ Frequency (MHz)	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	17.46	17.63	17.24	17.41	20.53	23.75	PASS
	116/5580	17.63	17.80	17.54	17.71	20.77	23.79	PASS
	140/5700	17.68	17.85	17.44	17.61	20.74	23.77	PASS
	144/5720	17.54	17.71	17.27	17.44	20.59	23.79	PASS
802.11n HT20	100/5500	17.53	17.71	17.06	17.24	20.50	23.91	PASS
	116/5580	17.48	17.66	17.15	17.33	20.51	23.94	PASS
	140/5700	17.58	17.76	17.13	17.31	20.55	23.95	PASS
	144/5720	17.41	17.59	17.03	17.21	20.42	23.99	PASS
802.11n HT40	102/5510	19.12	19.54	19.03	19.45	22.50	24.00	PASS
	110/5550	20.11	20.53	19.73	20.15	23.35	24.00	PASS
	134/5670	20.45	20.87	19.68	20.10	23.51	24.00	PASS
	142/5710	20.15	20.57	19.62	20.04	23.32	24.00	PASS
802.11ac VHT20	100/5500	17.42	17.60	17.08	17.26	20.45	24.00	PASS
	116/5580	17.53	17.71	17.26	17.44	20.59	23.96	PASS
	140/5700	17.49	17.67	17.18	17.36	20.53	23.96	PASS
	144/5720	17.25	17.43	17.02	17.20	20.33	23.94	PASS
802.11ac VHT40	102/5510	20.23	20.59	19.84	20.20	23.41	24.00	PASS
	110/5550	19.95	20.31	19.67	20.03	23.18	24.00	PASS
	134/5670	20.28	20.64	19.75	20.11	23.39	24.00	PASS
	142/5710	20.03	20.39	19.69	20.05	23.23	24.00	PASS
802.11ac VHT80	106/5530	18.82	19.50	18.57	19.25	22.39	24.00	PASS
	138/5690	20.26	20.94	19.94	20.62	23.80	24.00	PASS
802.11ax HE20	100/5500	17.56	17.79	17.35	17.58	20.70	24.00	PASS
	116/5580	17.46	17.69	17.29	17.52	20.62	24.00	PASS
	140/5700	17.49	17.72	17.16	17.39	20.57	24.00	PASS
	144/5720	17.37	17.60	17.13	17.36	20.49	24.00	PASS
802.11ax HE40	102/5510	14.86	15.29	14.72	15.15	18.23	24.00	PASS
	110/5550	20.12	20.55	19.88	20.31	23.44	24.00	PASS
	134/5670	20.09	20.52	19.67	20.10	23.32	24.00	PASS
	142/5710	20.11	20.54	19.92	20.35	23.45	24.00	PASS
802.11ax HE 80	106/5530	18.32	19.19	18.25	19.12	22.17	24.00	PASS
	138/5690	19.89	20.76	19.54	20.41	23.60	24.00	PASS



Note:

1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor
2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$.
3. Directional gain <6dBi. So the power limit is 24dBm.

U-NII-3

Network Standards	Channel/Frequency (MHz)	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	24.86	25.03	24.54	24.71	27.88	30.00	PASS
	157/5785	24.79	24.96	24.46	24.63	27.81	30.00	PASS
	165/5825	24.76	24.93	24.64	24.81	27.88	30.00	PASS
802.11n HT20	149/5745	24.65	24.83	24.53	24.71	27.78	30.00	PASS
	157/5785	24.35	24.53	24.28	24.46	27.51	30.00	PASS
	165/5825	24.21	24.39	24.03	24.21	27.31	30.00	PASS
802.11n HT40	151/5755	25.77	26.19	25.56	25.98	29.10	30.00	PASS
	159/5795	25.71	26.13	25.52	25.94	29.05	30.00	PASS
802.11ac VHT20	149/5745	24.73	24.91	24.53	24.71	27.82	30.00	PASS
	157/5785	24.35	24.53	24.19	24.37	27.46	30.00	PASS
	165/5825	24.18	24.36	23.93	24.11	27.25	30.00	PASS
802.11ac VHT40	151/5755	25.79	26.15	25.57	25.93	29.05	30.00	PASS
	159/5795	25.75	26.11	25.63	25.99	29.06	30.00	PASS
802.11ac VHT80	155/5775	21.33	22.01	21.16	21.84	24.94	30.00	PASS
802.11ax HE20	149/5745	25.02	25.25	24.84	25.07	28.17	30.00	PASS
	157/5785	24.48	24.71	24.27	24.50	27.62	30.00	PASS
	165/5825	24.22	24.45	24.01	24.24	27.36	30.00	PASS
802.11ax HE40	151/5755	26.02	26.45	25.79	26.22	29.34	30.00	PASS
	159/5795	25.72	26.15	25.49	25.92	29.04	30.00	PASS
802.11ax HE 80	155/5775	16.98	17.85	15.38	16.25	20.14	30.00	PASS

Note:

1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor
2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$.
3. Directional gain <6dBi. So the power limit is 30dBm.

**MIMO(With beamforming)****U-NII-1**

Network Standards	Channel/ Frequency (MHz)	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	23.42	23.60	23.18	23.36	26.50	30.00	PASS
	40/5200	23.21	23.39	23.15	23.33	26.37	30.00	PASS
	48/5240	23.17	23.35	23.83	24.01	26.71	30.00	PASS
802.11n HT40	38/5190	17.96	18.38	17.21	17.63	21.03	30.00	PASS
	46/5230	25.73	26.15	25.47	25.89	29.03	30.00	PASS
802.11ac VHT20	36/5180	23.52	23.70	23.44	23.62	26.67	30.00	PASS
	40/5200	23.22	23.40	23.10	23.28	26.35	30.00	PASS
	48/5240	23.11	23.29	23.91	24.09	26.72	30.00	PASS
802.11ac VHT40	38/5190	25.45	25.81	25.25	25.61	28.72	30.00	PASS
	46/5230	25.40	25.76	25.14	25.50	28.64	30.00	PASS
802.11ac VHT80	42/5210	16.59	17.27	16.21	16.89	20.10	30.00	PASS
802.11ax HE20	36/5180	23.25	23.48	22.89	23.12	26.32	30.00	PASS
	40/5200	23.22	23.45	23.02	23.25	26.36	30.00	PASS
	48/5240	23.08	23.31	23.79	24.02	26.69	30.00	PASS
802.11ax HE40	38/5190	19.52	19.95	18.16	18.59	22.33	30.00	PASS
	46/5230	25.54	25.97	25.32	25.75	28.87	30.00	PASS
802.11ax HE 80	42/5210	15.73	16.60	16.02	16.89	19.76	30.00	PASS

Note:

1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor
2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$.
3. Directional gain <6dBi. So the power limit is 30dBm.



U-NII-2A

Network Standards	Channel/ Frequency (MHz)	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	17.38	17.56	17.11	17.29	20.44	23.95	PASS
	60/5300	17.41	17.59	17.22	17.40	20.51	23.90	PASS
	64/5320	17.26	17.44	17.00	17.18	20.33	23.99	PASS
802.11n HT40	54/5270	19.87	20.29	19.52	19.94	23.13	24.00	PASS
	62/5310	19.84	20.26	19.58	20.00	23.14	24.00	PASS
802.11ac VHT20	52/5260	17.38	17.56	17.22	17.40	20.49	23.98	PASS
	60/5300	17.34	17.52	17.16	17.34	20.44	23.95	PASS
	64/5320	17.43	17.61	17.21	17.39	20.51	23.95	PASS
802.11ac VHT40	54/5270	19.86	20.22	19.57	19.93	23.08	24.00	PASS
	62/5310	19.81	20.17	19.71	20.07	23.13	24.00	PASS
802.11ac VHT80	58/5290	19.63	20.31	19.35	20.03	23.19	24.00	PASS
802.11ax HE20	52/5260	17.63	17.86	17.25	17.48	20.69	24.00	PASS
	60/5300	17.81	18.04	17.42	17.65	20.86	24.00	PASS
	64/5320	17.46	17.69	17.25	17.48	20.60	24.00	PASS
802.11ax HE40	54/5270	19.93	20.36	19.41	19.84	23.11	24.00	PASS
	62/5310	19.84	20.27	19.43	19.86	23.08	24.00	PASS
802.11ax HE 80	58/5290	19.72	20.59	19.40	20.27	23.44	24.00	PASS

Note:

1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor
2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$.
3. Directional gain <6dBi. So the power limit is 24dBm.



U-NII-2C

Network Standards	Channel/ Frequency (MHz)	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	17.51	17.69	17.04	17.22	20.48	23.91	PASS
	116/5580	17.46	17.64	17.12	17.30	20.49	23.94	PASS
	140/5700	17.55	17.73	17.11	17.29	20.53	23.95	PASS
	144/5720	17.41	17.59	17.02	17.20	20.41	23.99	PASS
802.11n HT40	102/5510	19.06	19.48	19.01	19.43	22.46	24.00	PASS
	110/5550	20.08	20.50	19.71	20.13	23.33	24.00	PASS
	134/5670	20.44	20.86	19.65	20.07	23.49	24.00	PASS
	142/5710	20.11	20.53	19.61	20.03	23.30	24.00	PASS
802.11ac VHT20	100/5500	17.37	17.55	17.03	17.21	20.40	24.00	PASS
	116/5580	17.51	17.69	17.24	17.42	20.57	23.96	PASS
	140/5700	17.47	17.65	17.17	17.35	20.51	23.96	PASS
	144/5720	17.22	17.40	17.01	17.19	20.31	23.94	PASS
802.11ac VHT40	102/5510	20.21	20.57	19.78	20.14	23.37	24.00	PASS
	110/5550	19.94	20.30	19.65	20.01	23.16	24.00	PASS
	134/5670	20.23	20.59	19.72	20.08	23.35	24.00	PASS
	142/5710	20.02	20.38	19.66	20.02	23.21	24.00	PASS
802.11ac VHT80	106/5530	18.79	19.47	18.53	19.21	22.36	24.00	PASS
	138/5690	20.24	20.92	19.93	20.61	23.78	24.00	PASS
802.11ax HE20	100/5500	17.46	17.69	17.33	17.56	20.64	24.00	PASS
	116/5580	17.42	17.65	17.21	17.44	20.56	24.00	PASS
	140/5700	17.44	17.67	17.16	17.39	20.55	24.00	PASS
	144/5720	17.31	17.54	17.13	17.36	20.46	24.00	PASS
802.11ax HE40	102/5510	14.72	15.15	14.66	15.09	18.13	24.00	PASS
	110/5550	20.08	20.51	19.84	20.27	23.40	24.00	PASS
	134/5670	20.04	20.47	19.63	20.06	23.28	24.00	PASS
	142/5710	20.10	20.53	19.85	20.28	23.41	24.00	PASS
802.11ax HE 80	106/5530	18.26	19.13	18.17	19.04	22.10	24.00	PASS
	138/5690	19.85	20.72	19.47	20.34	23.55	24.00	PASS
Note: 1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor 2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$. 3. Directional gain <6dBi. So the power limit is 24dBm.								



U-NII-3

Network Standards	Channel/ Frequency (MHz)	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	24.64	24.82	24.51	24.69	27.77	30.00	PASS
	157/5785	24.33	24.51	24.26	24.44	27.49	30.00	PASS
	165/5825	24.20	24.38	24.01	24.19	27.30	30.00	PASS
802.11n HT40	151/5755	25.69	26.11	25.48	25.90	29.02	30.00	PASS
	159/5795	25.68	26.10	25.47	25.89	29.01	30.00	PASS
802.11ac VHT20	149/5745	24.66	24.84	24.44	24.62	27.74	30.00	PASS
	157/5785	24.31	24.49	24.12	24.30	27.41	30.00	PASS
	165/5825	24.17	24.35	23.88	24.06	27.22	30.00	PASS
802.11ac VHT40	151/5755	25.76	26.12	25.54	25.90	29.02	30.00	PASS
	159/5795	25.72	26.08	25.61	25.97	29.03	30.00	PASS
802.11ac VHT80	155/5775	21.25	21.93	21.08	21.76	24.86	30.00	PASS
802.11ax HE20	149/5745	25.01	25.24	24.77	25.00	28.13	30.00	PASS
	157/5785	24.37	24.60	24.24	24.47	27.55	30.00	PASS
	165/5825	24.18	24.41	24.00	24.23	27.33	30.00	PASS
802.11ax HE40	151/5755	26.01	26.44	25.76	26.19	29.32	30.00	PASS
	159/5795	25.68	26.11	25.46	25.89	29.01	30.00	PASS
802.11ax HE 80	155/5775	16.87	17.74	15.23	16.10	20.01	30.00	PASS

Note:

1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor
2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$.
3. Directional gain <6dBi. So the power limit is 30dBm.

**Antenna Type #2:****MIMO(Without beamforming)****U-NII-1**

Network Standards	Channel/ Frequency (MHz)	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	23.02	23.19	22.92	23.09	26.15	30.00	PASS
	40/5200	23.14	23.31	22.95	23.12	26.23	30.00	PASS
	48/5240	22.94	23.11	22.81	22.98	26.06	30.00	PASS
802.11n HT20	36/5180	23.44	23.62	23.21	23.39	26.52	30.00	PASS
	40/5200	23.24	23.42	23.19	23.37	26.41	30.00	PASS
	48/5240	23.18	23.36	23.85	24.03	26.72	30.00	PASS
802.11n HT40	38/5190	18.47	18.89	17.89	18.31	21.62	30.00	PASS
	46/5230	25.74	26.16	25.49	25.91	29.05	30.00	PASS
802.11ac VHT20	36/5180	23.58	23.76	23.47	23.65	26.72	30.00	PASS
	40/5200	23.23	23.41	23.11	23.29	26.36	30.00	PASS
	48/5240	23.14	23.32	23.93	24.11	26.74	30.00	PASS
802.11ac VHT40	38/5190	25.46	25.82	25.29	25.65	28.74	30.00	PASS
	46/5230	25.41	25.77	25.16	25.52	28.65	30.00	PASS
802.11ac VHT80	42/5210	15.72	16.40	15.48	16.16	19.30	30.00	PASS
802.11ax HE20	36/5180	21.42	21.65	20.86	21.09	24.39	30.00	PASS
	40/5200	23.28	23.51	23.15	23.38	26.46	30.00	PASS
	48/5240	23.15	23.38	23.89	24.12	26.78	30.00	PASS
802.11ax HE40	38/5190	15.32	15.75	15.14	15.57	18.67	30.00	PASS
	46/5230	25.65	26.08	25.37	25.80	28.95	30.00	PASS
802.11ax HE 80	42/5210	14.32	15.19	14.78	15.65	18.44	30.00	PASS

Note:

1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor
2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$.
3. Directional gain <6dBi. So the power limit is 30dBm.



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Network Standards	Channel/ Frequency (MHz)	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	17.37	17.54	17.21	17.38	20.47	23.83	PASS
	60/5300	17.33	17.50	17.15	17.32	20.42	23.78	PASS
	64/5320	17.27	17.44	17.03	17.20	20.33	23.85	PASS
802.11n HT20	52/5260	17.39	17.57	17.12	17.30	20.45	23.95	PASS
	60/5300	17.43	17.61	17.24	17.42	20.53	23.90	PASS
	64/5320	17.28	17.46	17.01	17.19	20.34	23.99	PASS
802.11n HT40	54/5270	19.94	20.36	19.55	19.97	23.18	24.00	PASS
	62/5310	19.87	20.29	19.61	20.03	23.17	24.00	PASS
802.11ac VHT20	52/5260	17.42	17.60	17.25	17.43	20.53	23.98	PASS
	60/5300	17.35	17.53	17.18	17.36	20.46	23.95	PASS
	64/5320	17.47	17.65	17.23	17.41	20.54	23.95	PASS
802.11ac VHT40	54/5270	19.88	20.24	19.61	19.97	23.11	24.00	PASS
	62/5310	19.83	20.19	19.73	20.09	23.15	24.00	PASS
802.11ac VHT80	58/5290	19.67	20.35	19.36	20.04	23.21	24.00	PASS
802.11ax HE20	52/5260	17.66	17.89	17.27	17.50	20.71	24.00	PASS
	60/5300	17.85	18.08	17.44	17.67	20.89	24.00	PASS
	64/5320	17.53	17.76	17.29	17.52	20.65	24.00	PASS
802.11ax HE40	54/5270	19.98	20.41	19.45	19.88	23.16	24.00	PASS
	62/5310	19.86	20.29	19.46	19.89	23.10	24.00	PASS
802.11ax HE 80	58/5290	19.76	20.63	19.42	20.29	23.48	24.00	PASS

Note:

1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor
2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$.
3. Directional gain <6dBi. So the power limit is 24dBm.



U-NII-2C

Network Standards	Channel/ Frequency (MHz)	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	17.46	17.63	17.24	17.41	20.53	23.75	PASS
	116/5580	17.63	17.80	17.54	17.71	20.77	23.79	PASS
	140/5700	17.68	17.85	17.44	17.61	20.74	23.77	PASS
	144/5720	17.54	17.71	17.27	17.44	20.59	23.79	PASS
802.11n HT20	100/5500	17.53	17.71	17.06	17.24	20.50	23.91	PASS
	116/5580	17.48	17.66	17.15	17.33	20.51	23.94	PASS
	140/5700	17.58	17.76	17.13	17.31	20.55	23.95	PASS
	144/5720	17.41	17.59	17.03	17.21	20.42	23.99	PASS
802.11n HT40	102/5510	19.63	20.05	19.56	19.98	23.02	24.00	PASS
	110/5550	20.11	20.53	19.73	20.15	23.35	24.00	PASS
	134/5670	20.45	20.87	19.68	20.10	23.51	24.00	PASS
	142/5710	20.15	20.57	19.62	20.04	23.32	24.00	PASS
802.11ac VHT20	100/5500	17.42	17.60	17.08	17.26	20.45	24.00	PASS
	116/5580	17.53	17.71	17.26	17.44	20.59	23.96	PASS
	140/5700	17.49	17.67	17.18	17.36	20.53	23.96	PASS
	144/5720	17.25	17.43	17.02	17.20	20.33	23.94	PASS
802.11ac VHT40	102/5510	20.23	20.59	19.84	20.20	23.41	24.00	PASS
	110/5550	19.95	20.31	19.67	20.03	23.18	24.00	PASS
	134/5670	20.28	20.64	19.75	20.11	23.39	24.00	PASS
	142/5710	20.03	20.39	19.69	20.05	23.23	24.00	PASS
802.11ac VHT80	106/5530	17.76	18.44	17.63	18.31	21.39	24.00	PASS
	138/5690	20.26	20.94	19.94	20.62	23.80	24.00	PASS
802.11ax HE20	100/5500	17.56	17.79	17.35	17.58	20.70	24.00	PASS
	116/5580	17.46	17.69	17.29	17.52	20.62	24.00	PASS
	140/5700	17.49	17.72	17.16	17.39	20.57	24.00	PASS
	144/5720	17.37	17.60	17.13	17.36	20.49	24.00	PASS
802.11ax HE40	102/5510	20.39	20.82	20.12	20.55	23.69	24.00	PASS
	110/5550	20.12	20.55	19.88	20.31	23.44	24.00	PASS
	134/5670	20.09	20.52	19.67	20.10	23.32	24.00	PASS
	142/5710	20.11	20.54	19.92	20.35	23.45	24.00	PASS
802.11ax HE 80	106/5530	19.57	20.44	19.39	20.26	23.36	24.00	PASS
	138/5690	19.89	20.76	19.54	20.41	23.60	24.00	PASS



Note:

1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor
2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$.
3. Directional gain <6dBi. So the power limit is 24dBm.

U-NII-3

Network Standards	Channel/Frequency (MHz)	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	24.86	25.03	24.54	24.71	27.88	30.00	PASS
	157/5785	24.79	24.96	24.46	24.63	27.81	30.00	PASS
	165/5825	24.76	24.93	24.64	24.81	27.88	30.00	PASS
802.11n HT20	149/5745	24.65	24.83	24.53	24.71	27.78	30.00	PASS
	157/5785	24.35	24.53	24.28	24.46	27.51	30.00	PASS
	165/5825	24.21	24.39	24.03	24.21	27.31	30.00	PASS
802.11n HT40	151/5755	24.12	24.54	24.32	24.74	27.65	30.00	PASS
	159/5795	25.71	26.13	25.52	25.94	29.05	30.00	PASS
802.11ac VHT20	149/5745	24.73	24.91	24.53	24.71	27.82	30.00	PASS
	157/5785	24.35	24.53	24.19	24.37	27.46	30.00	PASS
	165/5825	24.18	24.36	23.93	24.11	27.25	30.00	PASS
802.11ac VHT40	151/5755	25.79	26.15	25.57	25.93	29.05	30.00	PASS
	159/5795	25.75	26.11	25.63	25.99	29.06	30.00	PASS
802.11ac VHT80	155/5775	19.32	20.00	19.37	20.05	23.04	30.00	PASS
802.11ax HE20	149/5745	25.02	25.25	24.84	25.07	28.17	30.00	PASS
	157/5785	24.48	24.71	24.27	24.50	27.62	30.00	PASS
	165/5825	24.22	24.45	24.01	24.24	27.36	30.00	PASS
802.11ax HE40	151/5755	23.96	24.39	23.28	23.71	27.07	30.00	PASS
	159/5795	25.72	26.15	25.49	25.92	29.04	30.00	PASS
802.11ax HE 80	155/5775	18.67	19.54	17.86	18.73	22.17	30.00	PASS

Note:

1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor
2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$.
3. Directional gain <6dBi. So the power limit is 30dBm.

**MIMO(With beamforming)****U-NII-1**

Network Standards	Channel/ Frequency (MHz)	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	23.42	23.60	23.18	23.36	26.50	30.00	PASS
	40/5200	23.21	23.39	23.15	23.33	26.37	30.00	PASS
	48/5240	23.17	23.35	23.83	24.01	26.71	30.00	PASS
802.11n HT40	38/5190	18.12	18.54	17.68	18.10	21.33	30.00	PASS
	46/5230	25.73	26.15	25.47	25.89	29.03	30.00	PASS
802.11ac VHT20	36/5180	23.52	23.70	23.44	23.62	26.67	30.00	PASS
	40/5200	23.22	23.40	23.10	23.28	26.35	30.00	PASS
	48/5240	23.11	23.29	23.91	24.09	26.72	30.00	PASS
802.11ac VHT40	38/5190	25.45	25.81	25.25	25.61	28.72	30.00	PASS
	46/5230	25.40	25.76	25.14	25.50	28.64	30.00	PASS
802.11ac VHT80	42/5210	15.57	16.25	15.19	15.87	19.08	30.00	PASS
802.11ax HE20	36/5180	21.38	21.61	20.74	20.97	24.32	30.00	PASS
	40/5200	23.22	23.45	23.02	23.25	26.36	30.00	PASS
	48/5240	23.08	23.31	23.79	24.02	26.69	30.00	PASS
802.11ax HE40	38/5190	15.29	15.72	15.08	15.51	18.62	30.00	PASS
	46/5230	25.54	25.97	25.32	25.75	28.87	30.00	PASS
802.11ax HE 80	42/5210	14.28	15.15	17.63	18.50	20.15	30.00	PASS

Note:

1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor
2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$.
3. Directional gain <6dBi. So the power limit is 30dBm.



U-NII-2A

Network Standards	Channel/ Frequency (MHz)	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	17.38	17.56	17.11	17.29	20.44	23.95	PASS
	60/5300	17.41	17.59	17.22	17.40	20.51	23.90	PASS
	64/5320	17.26	17.44	17.00	17.18	20.33	23.99	PASS
802.11n HT40	54/5270	19.87	20.29	19.52	19.94	23.13	24.00	PASS
	62/5310	19.84	20.26	19.58	20.00	23.14	24.00	PASS
802.11ac VHT20	52/5260	17.38	17.56	17.22	17.40	20.49	23.98	PASS
	60/5300	17.34	17.52	17.16	17.34	20.44	23.95	PASS
	64/5320	17.43	17.61	17.21	17.39	20.51	23.95	PASS
802.11ac VHT40	54/5270	19.86	20.22	19.57	19.93	23.08	24.00	PASS
	62/5310	19.81	20.17	19.71	20.07	23.13	24.00	PASS
802.11ac VHT80	58/5290	19.63	20.31	19.35	20.03	23.19	24.00	PASS
802.11ax HE20	52/5260	17.63	17.86	17.25	17.48	20.69	24.00	PASS
	60/5300	17.81	18.04	17.42	17.65	20.86	24.00	PASS
	64/5320	17.46	17.69	17.25	17.48	20.60	24.00	PASS
802.11ax HE40	54/5270	19.93	20.36	19.41	19.84	23.11	24.00	PASS
	62/5310	19.84	20.27	19.43	19.86	23.08	24.00	PASS
802.11ax HE 80	58/5290	19.72	20.59	19.40	20.27	23.44	24.00	PASS

Note:

1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor
2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$.
3. Directional gain <6dBi. So the power limit is 24dBm.



U-NII-2C

Network Standards	Channel/ Frequency (MHz)	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	17.51	17.69	17.04	17.22	20.48	23.91	PASS
	116/5580	17.46	17.64	17.12	17.30	20.49	23.94	PASS
	140/5700	17.55	17.73	17.11	17.29	20.53	23.95	PASS
	144/5720	17.41	17.59	17.02	17.20	20.41	23.99	PASS
802.11n HT40	102/5510	19.52	19.94	19.56	19.98	22.97	24.00	PASS
	110/5550	20.08	20.50	19.71	20.13	23.33	24.00	PASS
	134/5670	20.44	20.86	19.65	20.07	23.49	24.00	PASS
	142/5710	20.11	20.53	19.61	20.03	23.30	24.00	PASS
802.11ac VHT20	100/5500	17.37	17.55	17.03	17.21	20.40	24.00	PASS
	116/5580	17.51	17.69	17.24	17.42	20.57	23.96	PASS
	140/5700	17.47	17.65	17.17	17.35	20.51	23.96	PASS
	144/5720	17.22	17.40	17.01	17.19	20.31	23.94	PASS
802.11ac VHT40	102/5510	20.21	20.57	19.78	20.14	23.37	24.00	PASS
	110/5550	19.94	20.30	19.65	20.01	23.16	24.00	PASS
	134/5670	20.23	20.59	19.72	20.08	23.35	24.00	PASS
	142/5710	20.02	20.38	19.66	20.02	23.21	24.00	PASS
802.11ac VHT80	106/5530	17.65	18.33	17.58	18.26	21.31	24.00	PASS
	138/5690	20.24	20.92	19.93	20.61	23.78	24.00	PASS
802.11ax HE20	100/5500	17.46	17.69	17.33	17.56	20.64	24.00	PASS
	116/5580	17.42	17.65	17.21	17.44	20.56	24.00	PASS
	140/5700	17.44	17.67	17.16	17.39	20.55	24.00	PASS
	144/5720	17.31	17.54	17.13	17.36	20.46	24.00	PASS
802.11ax HE40	102/5510	20.38	20.81	20.06	20.49	23.66	24.00	PASS
	110/5550	20.08	20.51	19.84	20.27	23.40	24.00	PASS
	134/5670	20.04	20.47	19.63	20.06	23.28	24.00	PASS
	142/5710	20.10	20.53	19.85	20.28	23.41	24.00	PASS
802.11ax HE 80	106/5530	19.46	20.33	19.33	20.20	23.28	24.00	PASS
	138/5690	19.85	20.72	19.47	20.34	23.55	24.00	PASS
Note: 1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor 2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$. 3. Directional gain <6dBi. So the power limit is 24dBm.								



U-NII-3

Network Standards	Channel/ Frequency (MHz)	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	24.64	24.82	24.51	24.69	27.77	30.00	PASS
	157/5785	24.33	24.51	24.26	24.44	27.49	30.00	PASS
	165/5825	24.20	24.38	24.01	24.19	27.30	30.00	PASS
802.11n HT40	151/5755	24.08	24.50	24.13	24.55	27.53	30.00	PASS
	159/5795	25.68	26.10	25.47	25.89	29.01	30.00	PASS
802.11ac VHT20	149/5745	24.66	24.84	24.44	24.62	27.74	30.00	PASS
	157/5785	24.31	24.49	24.12	24.30	27.41	30.00	PASS
	165/5825	24.17	24.35	23.88	24.06	27.22	30.00	PASS
802.11ac VHT40	151/5755	25.76	26.12	25.54	25.90	29.02	30.00	PASS
	159/5795	25.72	26.08	25.61	25.97	29.03	30.00	PASS
802.11ac VHT80	155/5775	19.27	19.95	19.26	19.94	22.96	30.00	PASS
802.11ax HE20	149/5745	25.01	25.24	24.77	25.00	28.13	30.00	PASS
	157/5785	24.37	24.60	24.24	24.47	27.55	30.00	PASS
	165/5825	24.18	24.41	24.00	24.23	27.33	30.00	PASS
802.11ax HE40	151/5755	23.92	24.35	23.21	23.64	27.02	30.00	PASS
	159/5795	25.68	26.11	25.46	25.89	29.01	30.00	PASS
802.11ax HE 80	155/5775	18.58	19.45	17.79	18.66	22.08	30.00	PASS

Note:

1. Average Power with duty factor = Average Power Measured +Duty cycle correction factor
2. The Total Power = $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)})$.
3. Directional gain <6dBi. So the power limit is 30dBm.

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 than 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 $k = 2$, $U = 936\text{Hz}$

**Test Results****Antenna Type #1:**

Voltage (V)	Temperature (°C)	U-NII-1 Test Results			
		5200MHz			
		1min	2min	5min	10min
12	-20	5200.002153	5199.997291	5199.996120	5199.986444
12	-10	5199.996859	5199.994828	5199.990576	5199.985546
12	0	5199.988416	5199.992604	5199.984487	5199.983730
12	10	5199.984964	5199.988928	5199.979343	5199.982541
12	20	5199.979325	5199.986694	5199.972836	5199.975469
12	30	5199.973204	5199.976965	5199.967512	5199.968301
12	40	5199.969392	5199.971213	5199.958889	5199.958820
12	50	5199.967237	5199.963419	5199.951032	5199.958445
10.2	20	5199.962198	5199.960950	5199.948244	5199.955105
13.8	20	5199.960054	5199.954695	5199.942607	5199.951049
MHz		-0.039946	-0.045305	-0.057393	-0.048951
PPM		-7.682010	-8.712550	-11.037103	-9.413722

Voltage (V)	Temperature (°C)	U-NII-2A Test Results			
		5300MHz			
		1min	2min	5min	10min
12	-20	5299.995850	5299.989401	5299.987010	5299.978746
12	-10	5299.992452	5299.983826	5299.982505	5299.977432
12	0	5299.989097	5299.977400	5299.973611	5299.972412
12	10	5299.982487	5299.975357	5299.971376	5299.972162
12	20	5299.973498	5299.973164	5299.970936	5299.969526
12	30	5299.973117	5299.965382	5299.966254	5299.960682
12	40	5299.967045	5299.963683	5299.957640	5299.953140
12	50	5299.960847	5299.961607	5299.953865	5299.950605
10.2	20	5299.955771	5299.959297	5299.951772	5299.942627
13.8	20	5299.953835	5299.955981	5299.945092	5299.939144
MHz		-0.046165	-0.044019	-0.054908	-0.060856
PPM		-8.710416	-8.305421	-10.360092	-11.482197



Voltage (V)	Temperature (°C)	U-NII-2C Test Results			
		5580MHz			
		1min	2min	5min	10min
12	-20	5579.999467	5579.992675	5579.987448	5579.980868
12	-10	5579.996370	5579.987043	5579.986820	5579.973018
12	0	5579.995019	5579.984912	5579.986742	5579.964257
12	10	5579.991225	5579.979451	5579.985530	5579.956453
12	20	5579.988359	5579.977851	5579.976424	5579.949603
12	30	5579.980957	5579.969894	5579.967380	5579.949191
12	40	5579.972770	5579.966553	5579.965435	5579.948647
12	50	5579.964337	5579.963076	5579.959289	5579.942047
10.2	20	5579.961212	5579.959232	5579.951789	5579.935816
13.8	20	5579.951634	5579.954091	5579.942995	5579.933533
MHz		-0.048366	-0.045909	-0.057005	-0.066467
PPM		-8.667743	-8.227421	-10.215998	-11.911577

Voltage (V)	Temperature (°C)	U-NII-3 Test Results			
		5785MHz			
		1min	2min	5min	10min
12	-20	5784.997363	5784.992362	5784.989627	5784.980303
12	-10	5784.993940	5784.990498	5784.987429	5784.977031
12	0	5784.984438	5784.983988	5784.979282	5784.969868
12	10	5784.981536	5784.977453	5784.971541	5784.967108
12	20	5784.979940	5784.974369	5784.963380	5784.959648
12	30	5784.970073	5784.973573	5784.962755	5784.950276
12	40	5784.967732	5784.970972	5784.959552	5784.948933
12	50	5784.961290	5784.966927	5784.954855	5784.940894
10.2	20	5784.952335	5784.963116	5784.947571	5784.938189
13.8	20	5784.947687	5784.953933	5784.942889	5784.930627
MHz		-0.052313	-0.046067	-0.057111	-0.069373
PPM		-9.042858	-7.963231	-9.872321	-11.991840



Antenna Type #2:

Voltage (V)	Temperature (°C)	U-NII-1 Test Results			
		5200MHz			
		1min	2min	5min	10min
12	-20	5199.993414	5199.984533	5199.980756	5199.972818
12	-10	5199.992482	5199.979126	5199.974693	5199.966794
12	0	5199.984504	5199.971517	5199.964945	5199.957313
12	10	5199.976886	5199.965740	5199.957868	5199.947881
12	20	5199.967183	5199.957233	5199.950320	5199.941111
12	30	5199.966809	5199.954558	5199.946159	5199.938986
12	40	5199.962946	5199.947289	5199.939935	5199.937865
12	50	5199.957812	5199.946414	5199.937418	5199.934426
10.2	20	5199.948342	5199.941523	5199.927930	5199.933932
13.8	20	5199.944922	5199.939864	5199.919829	5199.927411
MHz		-0.055078	-0.060136	-0.080171	-0.072589
PPM		-10.591914	-11.564662	-15.417451	-13.959347

Voltage (V)	Temperature (°C)	U-NII-2A Test Results			
		5300MHz			
		1min	2min	5min	10min
12	-20	5300.006598	5299.997795	5299.991051	5299.990516
12	-10	5300.001784	5299.997234	5299.989920	5299.989723
12	0	5299.996839	5299.987982	5299.988446	5299.988641
12	10	5299.988714	5299.987047	5299.984855	5299.986550
12	20	5299.986147	5299.981693	5299.980077	5299.985386
12	30	5299.980517	5299.980119	5299.976756	5299.984712
12	40	5299.979043	5299.977622	5299.967446	5299.979206
12	50	5299.976180	5299.974469	5299.966398	5299.973125
10.2	20	5299.971083	5299.967798	5299.962725	5299.964068
13.8	20	5299.961479	5299.966369	5299.954500	5299.956592
MHz		-0.038521	-0.033631	-0.045500	-0.043408
PPM		-7.268180	-6.345476	-8.584834	-8.190212



Voltage (V)	Temperature (°C)	U-NII-2C Test Results			
		5580MHz			
		1min	2min	5min	10min
12	-20	5580.003725	5579.999806	5579.990376	5579.984836
12	-10	5579.996917	5579.994752	5579.987993	5579.981115
12	0	5579.992661	5579.992839	5579.983307	5579.976804
12	10	5579.987737	5579.985938	5579.981887	5579.970680
12	20	5579.984582	5579.985127	5579.981664	5579.969858
12	30	5579.979487	5579.980579	5579.972061	5579.967279
12	40	5579.972337	5579.977104	5579.965834	5579.958064
12	50	5579.963343	5579.973652	5579.957223	5579.957026
10.2	20	5579.962169	5579.965252	5579.952940	5579.953652
13.8	20	5579.960293	5579.958077	5579.948161	5579.949237
MHz		-0.039707	-0.041923	-0.051839	-0.050763
PPM		-7.115952	-7.513013	-9.290223	-9.097272

Voltage (V)	Temperature (°C)	U-NII-3 Test Results			
		5785MHz			
		1min	2min	5min	10min
12	-20	5785.003871	5784.996388	5784.989818	5784.983090
12	-10	5784.996635	5784.989052	5784.986281	5784.980551
12	0	5784.993858	5784.983175	5784.977657	5784.973281
12	10	5784.985861	5784.974809	5784.971795	5784.970525
12	20	5784.978269	5784.972094	5784.965483	5784.961587
12	30	5784.969972	5784.966088	5784.957852	5784.956758
12	40	5784.961165	5784.961990	5784.953258	5784.951918
12	50	5784.953736	5784.958290	5784.948079	5784.950954
10.2	20	5784.947877	5784.958196	5784.939469	5784.944260
13.8	20	5784.939001	5784.956276	5784.936926	5784.943963
MHz		-0.060999	-0.043724	-0.063074	-0.056037
PPM		-10.544316	-7.558243	-10.902947	-9.686528

5.4. Power Spectral Density

Ambient condition

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

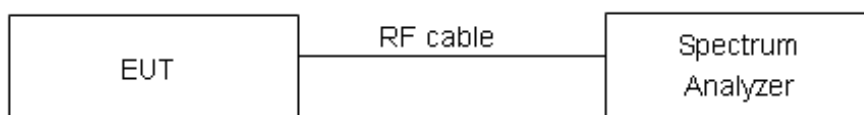
Method of Measurement

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 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 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.

Frequency Bands/MHz	Limits
5150-5250	17dBm/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 $k = 2$, $U = 0.75\text{dB}$.

**Test Results:****Antenna Type #1:****MIMO without Beamforming****U-NII-1**

Network Standards	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	13.64	13.81	13.38	13.55	16.69	17.00	PASS
	40/5200	13.53	13.70	13.59	13.76	16.74	17.00	PASS
	48/5240	13.35	13.52	13.35	13.52	16.53	17.00	PASS
802.11n HT20	36/5180	13.89	14.08	13.38	13.56	16.84	17.00	PASS
	40/5200	13.65	13.83	13.27	13.45	16.66	17.00	PASS
	48/5240	13.34	13.53	13.30	13.49	16.52	17.00	PASS
802.11n HT40	38/5190	4.56	4.98	4.62	5.04	8.02	17.00	PASS
	46/5230	11.80	12.21	11.72	12.13	15.18	17.00	PASS
802.11ac VHT20	36/5180	13.67	13.85	13.28	13.46	16.67	17.00	PASS
	40/5200	13.22	13.40	13.39	13.58	16.50	17.00	PASS
	48/5240	13.17	13.35	13.22	13.40	16.38	17.00	PASS
802.11ac VHT40	38/5190	12.42	12.77	12.22	12.57	15.68	17.00	PASS
	46/5230	12.46	12.81	12.05	12.40	15.62	17.00	PASS
802.11ac VHT80	42/5210	0.47	1.16	0.71	1.40	4.29	17.00	PASS
802.11ax HE20	36/5180	13.54	13.77	12.91	13.14	16.48	17.00	PASS
	40/5200	13.59	13.82	13.32	13.55	16.70	17.00	PASS
	48/5240	12.80	13.03	12.96	13.19	16.12	17.00	PASS
802.11ax HE40	38/5190	4.70	5.12	5.52	5.94	8.56	17.00	PASS
	46/5230	12.00	12.42	11.28	11.70	15.09	17.00	PASS
802.11ax HE80	42/5210	-0.58	0.30	-0.30	0.58	3.45	17.00	PASS

Note:

1. Power Spectral Density = Read Value + Duty cycle correction factor
2. The power spectral density = $10 \log(10^{(\text{PSD antenna1 in dBm/10})} + 10^{(\text{PSD antenna2 in dBm/10})})$
3. Directional gain < 6dBi. So the power limit is 17dBm.



U-NII-2A

Network Standards	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	7.33	7.50	7.40	7.57	10.55	11.00	PASS
	60/5300	7.18	7.35	7.21	7.38	10.37	11.00	PASS
	64/5320	7.42	7.59	7.28	7.45	10.53	11.00	PASS
802.11n HT20	52/5260	7.44	7.62	7.02	7.21	10.43	11.00	PASS
	60/5300	7.24	7.43	7.25	7.43	10.44	11.00	PASS
	64/5320	7.45	7.63	7.74	7.92	10.79	11.00	PASS
802.11n HT40	54/5270	7.57	7.99	7.38	7.80	10.91	11.00	PASS
	62/5310	7.31	7.73	7.01	7.43	10.59	11.00	PASS
802.11ac VHT20	52/5260	7.81	7.99	7.31	7.49	10.76	11.00	PASS
	60/5300	7.58	7.76	7.20	7.38	10.59	11.00	PASS
	64/5320	7.62	7.80	7.36	7.54	10.68	11.00	PASS
802.11ac VHT40	54/5270	7.34	7.70	6.76	7.11	10.43	11.00	PASS
	62/5310	7.21	7.57	6.71	7.06	10.33	11.00	PASS
802.11ac VHT80	58/5290	3.57	4.26	3.04	3.72	7.01	11.00	PASS
802.11ax HE20	52/5260	7.65	7.88	7.45	7.69	10.80	11.00	PASS
	60/5300	7.57	7.80	7.36	7.59	10.71	11.00	PASS
	64/5320	7.52	7.76	7.41	7.64	10.71	11.00	PASS
802.11ax HE40	54/5270	5.91	6.34	5.88	6.31	9.33	11.00	PASS
	62/5310	5.69	6.11	5.46	5.89	9.01	11.00	PASS
802.11ax HE80	58/5290	3.82	4.69	4.78	5.65	8.21	11.00	PASS

Note:

1. Power Spectral Density = Read Value + Duty cycle correction factor
2. The power spectral density = $10\log(10^{(\text{PSD antenna1 in dBm/10})} + 10^{(\text{PSD antenna2 in dBm/10})})$
3. Directional gain < 6dBi. So the power limit is 11dBm.



U-NII-2C

Network Standards	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	7.58	7.75	7.53	7.70	10.73	11.00	PASS
	116/5580	7.45	7.62	7.53	7.70	10.67	11.00	PASS
	140/5700	7.56	7.73	7.73	7.90	10.82	11.00	PASS
	144/5720	7.89	8.06	7.72	7.89	10.99	11.00	PASS
802.11n HT20	100/5500	7.69	7.87	7.45	7.63	10.76	11.00	PASS
	116/5580	7.69	7.88	7.33	7.51	10.71	11.00	PASS
	140/5700	7.59	7.78	7.03	7.21	10.51	11.00	PASS
	144/5720	7.36	7.54	7.10	7.28	10.42	11.00	PASS
802.11n HT40	102/5510	7.15	7.57	7.24	7.65	10.62	11.00	PASS
	110/5550	7.43	7.85	7.25	7.66	10.77	11.00	PASS
	134/5670	7.20	7.62	7.07	7.48	10.56	11.00	PASS
	142/5710	7.53	7.94	7.13	7.55	10.76	11.00	PASS
802.11ac VHT20	100/5500	7.81	7.99	7.51	7.70	10.86	11.00	PASS
	116/5580	7.61	7.79	7.40	7.58	10.70	11.00	PASS
	140/5700	7.73	7.91	7.45	7.63	10.78	11.00	PASS
	144/5720	7.65	7.83	7.50	7.69	10.77	11.00	PASS
802.11ac VHT40	102/5510	7.70	8.05	7.29	7.65	10.86	11.00	PASS
	110/5550	7.00	7.35	7.40	7.76	10.57	11.00	PASS
	134/5670	7.32	7.67	7.26	7.61	10.65	11.00	PASS
	142/5710	7.57	7.93	7.31	7.67	10.81	11.00	PASS
802.11ac VHT80	106/5530	5.08	5.76	4.28	4.97	8.39	11.00	PASS
	138/5690	4.76	5.45	4.23	4.91	8.20	11.00	PASS
802.11ax HE20	100/5500	7.31	7.54	7.16	7.39	10.48	11.00	PASS
	116/5580	7.44	7.67	7.10	7.34	10.52	11.00	PASS
	140/5700	7.43	7.66	7.25	7.49	10.58	11.00	PASS
	144/5720	7.48	7.72	7.35	7.58	10.66	11.00	PASS
802.11ax HE40	102/5510	2.79	3.21	0.32	0.75	5.16	11.00	PASS
	110/5550	7.09	7.52	7.05	7.47	10.50	11.00	PASS
	134/5670	6.81	7.24	7.05	7.48	10.37	11.00	PASS
	142/5710	7.51	7.94	7.08	7.50	10.73	11.00	PASS
802.11ax HE80	106/5530	3.51	4.38	3.60	4.47	7.43	11.00	PASS
	138/5690	3.60	4.47	3.84	4.71	7.60	11.00	PASS
Note:								
1. Power Spectral Density =Read Value+Duty cycle correction factor								



2. The power spectral density= $10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})})$
3. Directional gain <6dBi. So the power limit is 11dBm.

U-NII-3

Network Standards	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm/ 500kHz)	Conclusion
		Antenna 1		Limit (dBm/ 500kHz)		Total Power (dBm/ 500kHz)		
		Read Value (dBm/ 470kHz)	Power Spectral Density (dBm/ 500kHz)	Read Value (dBm/ 470kHz)	Power Spectral Density (dBm/ 500kHz)			
802.11a	149/5745	11.20	11.64	11.16	11.60	14.63	30.00	PASS
	157/5785	11.83	12.27	11.55	11.99	15.14	30.00	PASS
	165/5825	11.67	12.11	11.56	12.00	15.07	30.00	PASS
802.11n HT20	149/5745	11.11	11.56	10.15	10.60	14.12	30.00	PASS
	157/5785	11.81	12.26	11.52	11.98	15.13	30.00	PASS
	165/5825	11.53	11.98	11.40	11.86	14.93	30.00	PASS
802.11n HT40	151/5755	9.31	10.00	8.93	9.62	12.82	30.00	PASS
	159/5795	9.20	9.88	9.10	9.79	12.85	30.00	PASS
802.11ac VHT20	149/5745	11.17	11.62	11.01	11.46	14.55	30.00	PASS
	157/5785	11.59	12.04	11.53	11.98	15.02	30.00	PASS
	165/5825	11.61	12.06	11.55	12.00	15.04	30.00	PASS
802.11ac VHT40	151/5755	9.58	10.20	9.23	9.85	13.04	30.00	PASS
	159/5795	9.56	10.19	9.60	10.22	13.21	30.00	PASS
802.11ac VHT80	155/5775	2.65	3.60	2.08	3.03	6.34	30.00	PASS
802.11ax HE20	149/5745	11.06	11.56	11.06	11.56	14.57	30.00	PASS
	157/5785	11.23	11.73	10.81	11.31	14.54	30.00	PASS
	165/5825	10.88	11.39	11.06	11.57	14.49	30.00	PASS
802.11ax HE40	151/5755	8.85	9.54	9.18	9.87	12.72	30.00	PASS
	159/5795	9.62	10.31	8.80	9.49	12.93	30.00	PASS
802.11ax HE80	155/5775	-4.07	-2.93	-3.55	-2.41	0.35	30.00	PASS

Note:

- 1.Note:PSD=Read Value+Duty cycle+10*LOG(500/470) correction factor,
2. The power spectral density= $10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})})$
3. Directional gain <6dBi. So the power limit is 30dBm.

**MIMO with Beamforming****U-NII-1**

Network Standards	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	13.62	13.80	13.64	13.83	16.82	17.00	PASS
	40/5200	13.74	13.93	13.31	13.50	16.73	17.00	PASS
	48/5240	13.45	13.63	12.34	12.52	16.12	17.00	PASS
802.11n HT40	38/5190	4.04	4.46	4.50	4.92	7.70	17.00	PASS
	46/5230	11.78	12.20	11.57	11.99	15.11	17.00	PASS
802.11ac VHT20	36/5180	13.67	13.85	13.48	13.66	16.77	17.00	PASS
	40/5200	13.30	13.48	13.42	13.60	16.55	17.00	PASS
	48/5240	13.22	13.40	13.14	13.32	16.37	17.00	PASS
802.11ac VHT40	38/5190	12.29	12.65	12.17	12.52	15.60	17.00	PASS
	46/5230	12.13	12.49	11.80	12.16	15.34	17.00	PASS
802.11ac VHT80	42/5210	2.06	2.75	0.69	1.37	5.12	17.00	PASS
802.11ax HE20	36/5180	13.25	13.48	13.37	13.61	16.56	17.00	PASS
	40/5200	13.41	13.64	12.94	13.17	16.42	17.00	PASS
	48/5240	13.46	13.69	13.01	13.24	16.48	17.00	PASS
802.11ax HE40	38/5190	5.10	5.52	5.34	5.76	8.66	17.00	PASS
	46/5230	12.04	12.46	12.00	12.42	15.45	17.00	PASS
802.11ax HE80	42/5210	-0.57	0.30	-0.47	0.41	3.37	17.00	PASS
Note:								
1. Power Spectral Density =Read Value+Duty cycle correction factor								
2. The power spectral density= $10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})})$								
3. Directional gain <6dBi. So the power limt is 17dBm.								



U-NII-2A

Network Standards	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	7.26	7.44	6.98	7.16	10.32	11.00	PASS
	60/5300	7.35	7.54	7.31	7.50	10.53	11.00	PASS
	64/5320	7.44	7.63	7.03	7.21	10.43	11.00	PASS
802.11n HT40	54/5270	7.44	7.85	6.94	7.36	10.63	11.00	PASS
	62/5310	6.71	7.13	7.09	7.51	10.33	11.00	PASS
802.11ac VHT20	52/5260	7.30	7.48	7.12	7.30	10.40	11.00	PASS
	60/5300	7.40	7.58	7.30	7.48	10.54	11.00	PASS
	64/5320	7.38	7.56	7.27	7.45	10.52	11.00	PASS
802.11ac VHT40	54/5270	6.28	6.63	6.51	6.87	9.76	11.00	PASS
	62/5310	7.46	7.82	7.24	7.60	10.72	11.00	PASS
802.11ac VHT80	58/5290	3.36	4.04	3.51	4.19	7.13	11.00	PASS
802.11ax HE20	52/5260	7.47	7.70	7.33	7.57	10.64	11.00	PASS
	60/5300	7.30	7.54	7.01	7.24	10.40	11.00	PASS
	64/5320	7.63	7.86	7.37	7.61	10.75	11.00	PASS
802.11ax HE40	54/5270	5.90	6.33	5.84	6.26	9.31	11.00	PASS
	62/5310	5.51	5.94	5.76	6.19	9.07	11.00	PASS
802.11ax HE80	58/5290	4.70	5.57	4.54	5.41	8.50	11.00	PASS

Note:

1. Power Spectral Density =Read Value+Duty cycle correction factor
2. The power spectral density= $10\log(10^{(\text{PSD antenna1 in dBm}/10)}+10^{(\text{PSD antenna2 in dBm}/10)})$
3. Directional gain <6dBi. So the power limit is 11dBm.



U-NII-2C

Network Standards	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	7.53	7.72	7.34	7.53	10.63	11.00	PASS
	116/5580	7.58	7.76	7.27	7.45	10.62	11.00	PASS
	140/5700	7.50	7.68	7.41	7.59	10.65	11.00	PASS
	144/5720	7.29	7.47	7.15	7.34	10.42	11.00	PASS
802.11n HT40	102/5510	7.32	7.74	7.35	7.77	10.76	11.00	PASS
	110/5550	7.77	8.19	7.34	7.75	10.99	11.00	PASS
	134/5670	7.03	7.45	7.13	7.55	10.51	11.00	PASS
	142/5710	7.89	8.31	7.07	7.49	10.93	11.00	PASS
802.11ac VHT20	100/5500	7.68	7.86	7.43	7.61	10.75	11.00	PASS
	116/5580	7.71	7.89	7.18	7.36	10.64	11.00	PASS
	140/5700	7.78	7.96	7.45	7.64	10.81	11.00	PASS
	144/5720	7.54	7.73	7.02	7.20	10.48	11.00	PASS
802.11ac VHT40	102/5510	7.55	7.90	7.46	7.81	10.87	11.00	PASS
	110/5550	6.97	7.33	7.15	7.51	10.43	11.00	PASS
	134/5670	7.20	7.56	7.17	7.52	10.55	11.00	PASS
	142/5710	7.71	8.06	7.04	7.39	10.75	11.00	PASS
802.11ac VHT80	106/5530	5.24	5.92	4.50	5.18	8.58	11.00	PASS
	138/5690	5.24	5.92	4.39	5.08	8.53	11.00	PASS
802.11ax HE20	100/5500	7.39	7.63	7.31	7.55	10.60	11.00	PASS
	116/5580	7.52	7.76	7.31	7.55	10.66	11.00	PASS
	140/5700	7.63	7.86	7.18	7.42	10.66	11.00	PASS
	144/5720	7.81	8.04	7.36	7.59	10.83	11.00	PASS
802.11ax HE40	102/5510	2.53	2.96	0.30	0.72	4.99	11.00	PASS
	110/5550	7.21	7.64	6.95	7.37	10.52	11.00	PASS
	134/5670	6.99	7.42	6.74	7.16	10.30	11.00	PASS
	142/5710	7.33	7.76	6.89	7.31	10.55	11.00	PASS
802.11ax HE80	106/5530	3.61	4.48	3.75	4.62	7.56	11.00	PASS
	138/5690	3.10	3.97	3.28	4.16	7.08	11.00	PASS

Note:

1. Power Spectral Density = Read Value + Duty cycle correction factor
2. The power spectral density = $10\log(10^{(\text{PSD antenna1 in dBm/10})} + 10^{(\text{PSD antenna2 in dBm/10})})$
3. Directional gain < 6dBi. So the power limit is 11dBm.



U-NII-3

Network Standards	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm/ 500kHz)	Conclusion
		Antenna 1		Limit (dBm/ 500kHz)		Total Power (dBm/ 500kHz)		
		Read Value (dBm/ 470kHz)	Power Spectral Density (dBm/ 500kHz)	Read Value (dBm/ 470kHz)	Power Spectral Density (dBm/ 500kHz)			
802.11n HT20	149/5745	11.41	11.86	10.32	10.77	14.36	30.00	PASS
	157/5785	11.70	12.16	11.31	11.77	14.98	30.00	PASS
	165/5825	11.56	12.02	11.40	11.86	14.95	30.00	PASS
802.11n HT40	151/5755	8.63	9.32	8.29	8.98	12.16	30.00	PASS
	159/5795	9.39	10.08	8.77	9.46	12.79	30.00	PASS
802.11ac VHT20	149/5745	11.29	11.74	11.20	11.66	14.71	30.00	PASS
	157/5785	11.73	12.18	11.43	11.88	15.04	30.00	PASS
	165/5825	11.62	12.07	11.32	11.77	14.93	30.00	PASS
802.11ac VHT40	151/5755	9.42	10.04	8.99	9.62	12.84	30.00	PASS
	159/5795	9.74	10.37	9.42	10.04	13.22	30.00	PASS
802.11ac VHT80	155/5775	2.00	2.96	2.24	3.20	6.09	30.00	PASS
802.11ax HE20	149/5745	10.74	11.24	10.30	10.80	14.04	30.00	PASS
	157/5785	11.27	11.77	10.78	11.28	14.54	30.00	PASS
	165/5825	11.02	11.52	10.70	11.21	14.38	30.00	PASS
802.11ax HE40	151/5755	9.18	9.88	9.18	9.87	12.89	30.00	PASS
	159/5795	9.50	10.19	9.19	9.89	13.05	30.00	PASS
802.11ax HE80	155/5775	-4.19	-3.04	-3.88	-2.74	0.12	30.00	PASS

Note:

- 1.Note:PSD=Read Value+Duty cycle+10*LOG(500/470) correction factor,
2. The power spectral density= $10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})})$
3. Directional gain <6dBi. So the power limit is 30dBm.

**Antenna Type #2:****MIMO without Beamforming****U-NII-1**

Network Standards	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	13.64	13.81	13.38	13.55	16.69	17.00	PASS
	40/5200	13.53	13.70	13.59	13.76	16.74	17.00	PASS
	48/5240	13.35	13.52	13.35	13.52	16.53	17.00	PASS
802.11n HT20	36/5180	13.89	14.08	13.38	13.56	16.84	17.00	PASS
	40/5200	13.65	13.83	13.27	13.45	16.66	17.00	PASS
	48/5240	13.34	13.53	13.30	13.49	16.52	17.00	PASS
802.11n HT40	38/5190	4.56	4.98	4.62	5.04	8.02	17.00	PASS
	46/5230	11.80	12.21	11.72	12.13	15.18	17.00	PASS
802.11ac VHT20	36/5180	13.67	13.85	13.28	13.46	16.67	17.00	PASS
	40/5200	13.22	13.40	13.39	13.58	16.50	17.00	PASS
	48/5240	13.17	13.35	13.22	13.40	16.38	17.00	PASS
802.11ac VHT40	38/5190	12.42	12.77	12.22	12.57	15.68	17.00	PASS
	46/5230	12.46	12.81	12.05	12.40	15.62	17.00	PASS
802.11ac VHT80	42/5210	-0.45	0.23	-0.44	0.25	3.25	17.00	PASS
802.11ax HE20	36/5180	8.49	8.72	8.71	8.94	11.84	17.00	PASS
	40/5200	13.59	13.82	13.32	13.55	16.70	17.00	PASS
	48/5240	12.80	13.03	12.96	13.19	16.12	17.00	PASS
802.11ax HE40	38/5190	2.32	2.74	1.74	2.17	5.47	17.00	PASS
	46/5230	12.00	12.42	11.28	11.70	15.09	17.00	PASS
802.11ax HE80	42/5210	-1.81	-0.94	-1.61	-0.74	2.17	17.00	PASS

Note:

1. Power Spectral Density = Read Value + Duty cycle correction factor
2. The power spectral density = $10\log(10^{(\text{PSD antenna1 in dBm/10})} + 10^{(\text{PSD antenna2 in dBm/10})})$
3. Directional gain < 6dBi. So the power limit is 17dBm.



U-NII-2A

Network Standards	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	7.33	7.50	7.40	7.57	10.55	11.00	PASS
	60/5300	7.18	7.35	7.21	7.38	10.37	11.00	PASS
	64/5320	7.42	7.59	7.28	7.45	10.53	11.00	PASS
802.11n HT20	52/5260	7.44	7.62	7.02	7.21	10.43	11.00	PASS
	60/5300	7.24	7.43	7.25	7.43	10.44	11.00	PASS
	64/5320	7.45	7.63	7.74	7.92	10.79	11.00	PASS
802.11n HT40	54/5270	7.57	7.99	7.38	7.80	10.91	11.00	PASS
	62/5310	7.31	7.73	7.01	7.43	10.59	11.00	PASS
802.11ac VHT20	52/5260	7.81	7.99	7.31	7.49	10.76	11.00	PASS
	60/5300	7.58	7.76	7.20	7.38	10.59	11.00	PASS
	64/5320	7.62	7.80	7.36	7.54	10.68	11.00	PASS
802.11ac VHT40	54/5270	7.34	7.70	6.76	7.11	10.43	11.00	PASS
	62/5310	7.21	7.57	6.71	7.06	10.33	11.00	PASS
802.11ac VHT80	58/5290	3.57	4.26	3.04	3.72	7.01	11.00	PASS
802.11ax HE20	52/5260	7.65	7.88	7.45	7.69	10.80	11.00	PASS
	60/5300	7.57	7.80	7.36	7.59	10.71	11.00	PASS
	64/5320	7.52	7.76	7.41	7.64	10.71	11.00	PASS
802.11ax HE40	54/5270	5.91	6.34	5.88	6.31	9.33	11.00	PASS
	62/5310	5.69	6.11	5.46	5.89	9.01	11.00	PASS
802.11ax HE80	58/5290	3.82	4.69	4.78	5.65	8.21	11.00	PASS

Note:

1. Power Spectral Density =Read Value+Duty cycle correction factor
2. The power spectral density= $10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})})$
3. Directional gain <6dBi. So the power limit is 11dBm.



U-NII-2C

Network Standards	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	7.58	7.75	7.53	7.70	10.73	11.00	PASS
	116/5580	7.45	7.62	7.53	7.70	10.67	11.00	PASS
	140/5700	7.56	7.73	7.73	7.90	10.82	11.00	PASS
	144/5720	7.89	8.06	7.72	7.89	10.99	11.00	PASS
802.11n HT20	100/5500	7.69	7.87	7.45	7.63	10.76	11.00	PASS
	116/5580	7.69	7.88	7.33	7.51	10.71	11.00	PASS
	140/5700	7.59	7.78	7.03	7.21	10.51	11.00	PASS
	144/5720	7.36	7.54	7.10	7.28	10.42	11.00	PASS
802.11n HT40	102/5510	7.15	7.57	7.24	7.65	10.62	11.00	PASS
	110/5550	7.43	7.85	7.25	7.66	10.77	11.00	PASS
	134/5670	7.20	7.62	7.07	7.48	10.56	11.00	PASS
	142/5710	7.53	7.94	7.13	7.55	10.76	11.00	PASS
802.11ac VHT20	100/5500	7.81	7.99	7.51	7.70	10.86	11.00	PASS
	116/5580	7.61	7.79	7.40	7.58	10.70	11.00	PASS
	140/5700	7.73	7.91	7.45	7.63	10.78	11.00	PASS
	144/5720	7.65	7.83	7.50	7.69	10.77	11.00	PASS
802.11ac VHT40	102/5510	7.70	8.05	7.29	7.65	10.86	11.00	PASS
	110/5550	7.00	7.35	7.40	7.76	10.57	11.00	PASS
	134/5670	7.32	7.67	7.26	7.61	10.65	11.00	PASS
	142/5710	7.57	7.93	7.31	7.67	10.81	11.00	PASS
802.11ac VHT80	106/5530	-0.10	0.59	-1.15	-0.47	3.10	11.00	PASS
	138/5690	4.76	5.45	4.23	4.91	8.20	11.00	PASS
802.11ax HE20	100/5500	7.31	7.54	7.16	7.39	10.48	11.00	PASS
	116/5580	7.44	7.67	7.10	7.34	10.52	11.00	PASS
	140/5700	7.43	7.66	7.25	7.49	10.58	11.00	PASS
	144/5720	7.48	7.72	7.35	7.58	10.66	11.00	PASS
802.11ax HE40	102/5510	7.12	7.55	7.01	7.43	10.50	11.00	PASS
	110/5550	7.09	7.52	7.05	7.47	10.50	11.00	PASS
	134/5670	6.81	7.24	7.05	7.48	10.37	11.00	PASS
	142/5710	7.51	7.94	7.08	7.50	10.73	11.00	PASS
802.11ax HE80	106/5530	3.51	4.38	3.60	4.47	7.43	11.00	PASS
	138/5690	3.60	4.47	3.84	4.71	7.60	11.00	PASS

Note:

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



2. The power spectral density= $10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})})$
3. Directional gain <6dBi. So the power limit is 11dBm.

U-NII-3

Network Standards	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm/ 500kHz)	Conclusion
		Antenna 1		Limit (dBm/ 500kHz)		Total Power (dBm/ 500kHz)		
		Read Value (dBm/ 470kHz)	Power Spectral Density (dBm/ 500kHz)	Read Value (dBm/ 470kHz)	Power Spectral Density (dBm/ 500kHz)			
802.11a	149/5745	11.20	11.64	11.16	11.60	14.63	30.00	PASS
	157/5785	11.83	12.27	11.55	11.99	15.14	30.00	PASS
	165/5825	11.67	12.11	11.56	12.00	15.07	30.00	PASS
802.11n HT20	149/5745	11.11	11.56	10.15	10.60	14.12	30.00	PASS
	157/5785	11.81	12.26	11.52	11.98	15.13	30.00	PASS
	165/5825	11.53	11.98	11.40	11.86	14.93	30.00	PASS
802.11n HT40	151/5755	7.67	8.36	7.14	7.82	11.11	30.00	PASS
	159/5795	9.20	9.88	9.10	9.79	12.85	30.00	PASS
802.11ac VHT20	149/5745	11.17	11.62	11.01	11.46	14.55	30.00	PASS
	157/5785	11.59	12.04	11.53	11.98	15.02	30.00	PASS
	165/5825	11.61	12.06	11.55	12.00	15.04	30.00	PASS
802.11ac VHT40	151/5755	9.58	10.20	9.23	9.85	13.04	30.00	PASS
	159/5795	9.56	10.19	9.60	10.22	13.21	30.00	PASS
802.11ac VHT80	155/5775	0.12	1.07	1.04	1.99	4.57	30.00	PASS
802.11ax HE20	149/5745	11.06	11.56	11.06	11.56	14.57	30.00	PASS
	157/5785	11.23	11.73	10.81	11.31	14.54	30.00	PASS
	165/5825	10.88	11.39	11.06	11.57	14.49	30.00	PASS
802.11ax HE40	151/5755	6.66	7.35	6.39	7.08	10.23	30.00	PASS
	159/5795	9.62	10.31	8.80	9.49	12.93	30.00	PASS
802.11ax HE80	155/5775	-0.55	0.59	-0.64	0.51	3.56	30.00	PASS

Note:

- 1.Note:PSD=Read Value+Duty cycle+10*LOG(500/470) correction factor,
2. The power spectral density= $10\log(10^{(\text{PSD antenna1 in dBm/10})}+10^{(\text{PSD antenna2 in dBm/10})})$
3. Directional gain <6dBi. So the power limit is 30dBm.

**MIMO with Beamforming****U-NII-1**

Network Standards	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	13.62	13.80	13.64	13.83	16.82	17.00	PASS
	40/5200	13.74	13.93	13.31	13.50	16.73	17.00	PASS
	48/5240	13.45	13.63	12.34	12.52	16.12	17.00	PASS
802.11n HT40	38/5190	4.04	4.46	4.50	4.92	7.70	17.00	PASS
	46/5230	11.78	12.20	11.57	11.99	15.11	17.00	PASS
802.11ac VHT20	36/5180	13.67	13.85	13.48	13.66	16.77	17.00	PASS
	40/5200	13.30	13.48	13.42	13.60	16.55	17.00	PASS
	48/5240	13.22	13.40	13.14	13.32	16.37	17.00	PASS
802.11ac VHT40	38/5190	12.29	12.65	12.17	12.52	15.60	17.00	PASS
	46/5230	12.13	12.49	11.80	12.16	15.34	17.00	PASS
802.11ac VHT80	42/5210	0.20	0.89	-0.41	0.28	3.60	17.00	PASS
802.11ax HE20	36/5180	7.98	8.22	7.94	8.17	11.20	17.00	PASS
	40/5200	13.41	13.64	12.94	13.17	16.42	17.00	PASS
	48/5240	13.46	13.69	13.01	13.24	16.48	17.00	PASS
802.11ax HE40	38/5190	2.29	2.71	2.51	2.94	5.84	17.00	PASS
	46/5230	12.04	12.46	12.00	12.42	15.45	17.00	PASS
802.11ax HE80	42/5210	-1.57	-0.70	-1.86	-0.99	2.17	17.00	PASS
Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor 2. The power spectral density= $10\log(10^{(\text{PSD antenna1 in dBm}/10)}+10^{(\text{PSD antenna2 in dBm}/10)})$ 3. Directional gain <6dBi. So the power limit is 17dBm.								



U-NII-2A

Network Standards	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	7.26	7.44	6.98	7.16	10.32	11.00	PASS
	60/5300	7.35	7.54	7.31	7.50	10.53	11.00	PASS
	64/5320	7.44	7.63	7.03	7.21	10.43	11.00	PASS
802.11n HT40	54/5270	7.44	7.85	6.94	7.36	10.63	11.00	PASS
	62/5310	6.71	7.13	7.09	7.51	10.33	11.00	PASS
802.11ac VHT20	52/5260	7.30	7.48	7.12	7.30	10.40	11.00	PASS
	60/5300	7.40	7.58	7.30	7.48	10.54	11.00	PASS
	64/5320	7.38	7.56	7.27	7.45	10.52	11.00	PASS
802.11ac VHT40	54/5270	6.28	6.63	6.51	6.87	9.76	11.00	PASS
	62/5310	7.46	7.82	7.24	7.60	10.72	11.00	PASS
802.11ac VHT80	58/5290	3.36	4.04	3.51	4.19	7.13	11.00	PASS
802.11ax HE20	52/5260	7.47	7.70	7.33	7.57	10.64	11.00	PASS
	60/5300	7.30	7.54	7.01	7.24	10.40	11.00	PASS
	64/5320	7.63	7.86	7.37	7.61	10.75	11.00	PASS
802.11ax HE40	54/5270	5.90	6.33	5.84	6.26	9.31	11.00	PASS
	62/5310	5.51	5.94	5.76	6.19	9.07	11.00	PASS
802.11ax HE80	58/5290	4.70	5.57	4.54	5.41	8.50	11.00	PASS

Note:

1. Power Spectral Density =Read Value+Duty cycle correction factor
2. The power spectral density= $10\log(10^{(\text{PSD antenna1 in dBm}/10)}+10^{(\text{PSD antenna2 in dBm}/10)})$
3. Directional gain <6dBi. So the power limit is 11dBm.



U-NII-2C

Network Standards	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	7.53	7.72	7.34	7.53	10.63	11.00	PASS
	116/5580	7.58	7.76	7.27	7.45	10.62	11.00	PASS
	140/5700	7.50	7.68	7.41	7.59	10.65	11.00	PASS
	144/5720	7.29	7.47	7.15	7.34	10.42	11.00	PASS
802.11n HT40	102/5510	7.32	7.74	7.35	7.77	10.76	11.00	PASS
	110/5550	7.77	8.19	7.34	7.75	10.99	11.00	PASS
	134/5670	7.03	7.45	7.13	7.55	10.51	11.00	PASS
	142/5710	7.89	8.31	7.07	7.49	10.93	11.00	PASS
802.11ac VHT20	100/5500	7.68	7.86	7.43	7.61	10.75	11.00	PASS
	116/5580	7.71	7.89	7.18	7.36	10.64	11.00	PASS
	140/5700	7.78	7.96	7.45	7.64	10.81	11.00	PASS
	144/5720	7.54	7.73	7.02	7.20	10.48	11.00	PASS
802.11ac VHT40	102/5510	7.55	7.90	7.46	7.81	10.87	11.00	PASS
	110/5550	6.97	7.33	7.15	7.51	10.43	11.00	PASS
	134/5670	7.20	7.56	7.17	7.52	10.55	11.00	PASS
	142/5710	7.71	8.06	7.04	7.39	10.75	11.00	PASS
802.11ac VHT80	106/5530	-1.39	-0.71	-1.97	-1.29	2.02	11.00	PASS
	138/5690	5.24	5.92	4.39	5.08	8.53	11.00	PASS
802.11ax HE20	100/5500	7.39	7.63	7.31	7.55	10.60	11.00	PASS
	116/5580	7.52	7.76	7.31	7.55	10.66	11.00	PASS
	140/5700	7.63	7.86	7.18	7.42	10.66	11.00	PASS
	144/5720	7.81	8.04	7.36	7.59	10.83	11.00	PASS
802.11ax HE40	102/5510	6.95	7.37	7.07	7.50	10.44	11.00	PASS
	110/5550	7.21	7.64	6.95	7.37	10.52	11.00	PASS
	134/5670	6.99	7.42	6.74	7.16	10.30	11.00	PASS
	142/5710	7.33	7.76	6.89	7.31	10.55	11.00	PASS
802.11ax HE80	106/5530	3.61	4.48	3.75	4.62	7.56	11.00	PASS
	138/5690	3.10	3.97	3.28	4.16	7.08	11.00	PASS

Note:

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

2. The power spectral density = $10\log(10^{(\text{PSD antenna1 in dBm/10})} + 10^{(\text{PSD antenna2 in dBm/10})})$

3. Directional gain < 6dBi. So the power limit is 11dBm.



U-NII-3

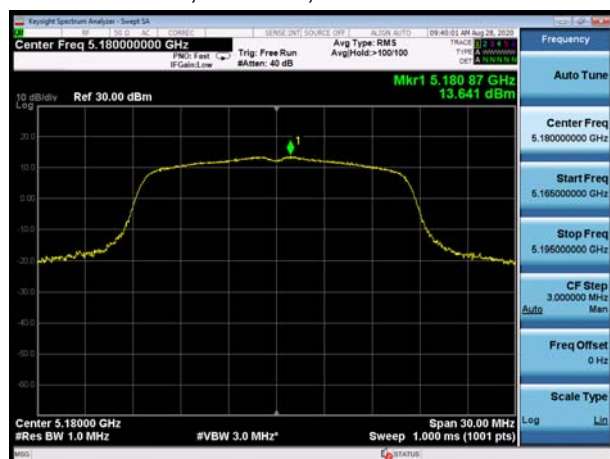
Network Standards	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm/ 500kHz)	Conclusion
		Antenna 1		Limit (dBm/ 500kHz)		Total Power (dBm/ 500kHz)		
		Read Value (dBm/ 470kHz)	Power Spectral Density (dBm/ 500kHz)	Read Value (dBm/ 470kHz)	Power Spectral Density (dBm/ 500kHz)			
802.11n HT20	149/5745	11.41	11.86	10.32	10.77	14.36	30.00	PASS
	157/5785	11.70	12.16	11.31	11.77	14.98	30.00	PASS
	165/5825	11.56	12.02	11.40	11.86	14.95	30.00	PASS
802.11n HT40	151/5755	7.33	8.02	7.19	7.88	10.96	30.00	PASS
	159/5795	9.39	10.08	8.77	9.46	12.79	30.00	PASS
802.11ac VHT20	149/5745	11.29	11.74	11.20	11.66	14.71	30.00	PASS
	157/5785	11.73	12.18	11.43	11.88	15.04	30.00	PASS
	165/5825	11.62	12.07	11.32	11.77	14.93	30.00	PASS
802.11ac VHT40	151/5755	9.42	10.04	8.99	9.62	12.84	30.00	PASS
	159/5795	9.74	10.37	9.42	10.04	13.22	30.00	PASS
802.11ac VHT80	155/5775	1.26	2.21	0.44	1.39	4.83	30.00	PASS
802.11ax HE20	149/5745	10.74	11.24	10.30	10.80	14.04	30.00	PASS
	157/5785	11.27	11.77	10.78	11.28	14.54	30.00	PASS
	165/5825	11.02	11.52	10.70	11.21	14.38	30.00	PASS
802.11ax HE40	151/5755	6.00	6.70	6.24	6.93	9.83	30.00	PASS
	159/5795	9.50	10.19	9.19	9.89	13.05	30.00	PASS
802.11ax HE80	155/5775	0.18	1.32	0.33	1.47	4.41	30.00	PASS
Note: 1.Note:PSD=Read Value+Duty cycle+10*LOG(500/470) correction factor, 2. The power spectral density= $10\log(10^{(\text{PSD antenna1 in dBm}/10)}+10^{(\text{PSD antenna2 in dBm}/10)})$ 3. Directional gain <6dBi. So the power limit is 30dBm.								



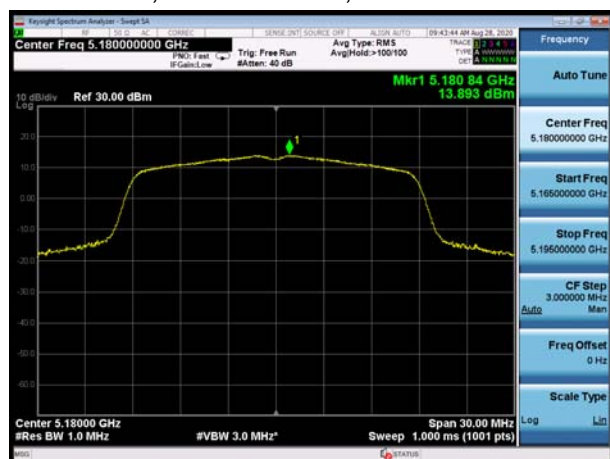
Antenna Type #1:

MIMO Antenna 1 without beamforming

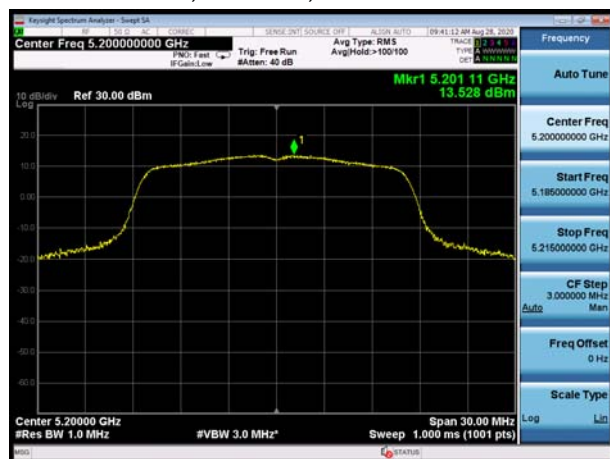
U-NII-1, 802.11a, Channel No.: 36



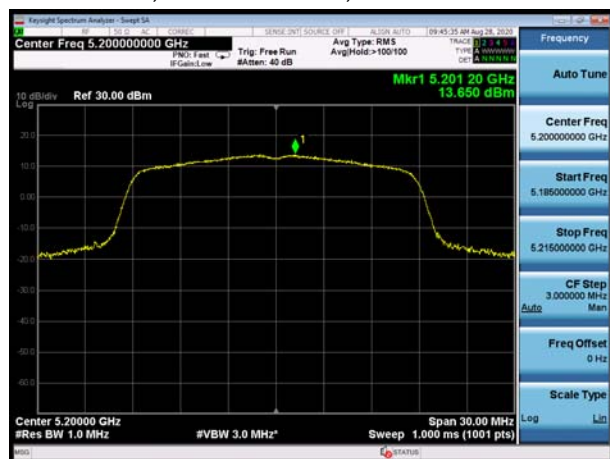
U-NII-1, 802.11n HT20, Channel No.: 36



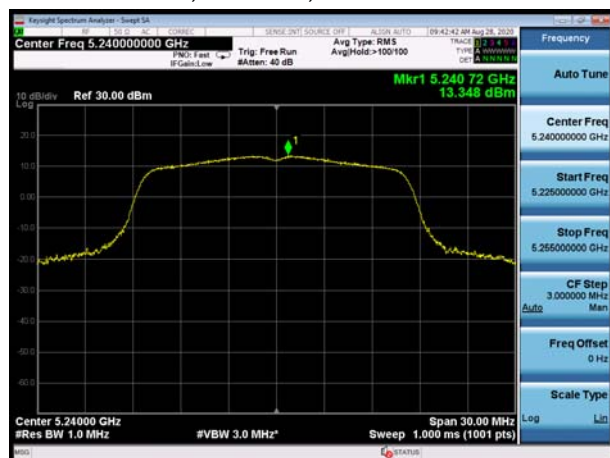
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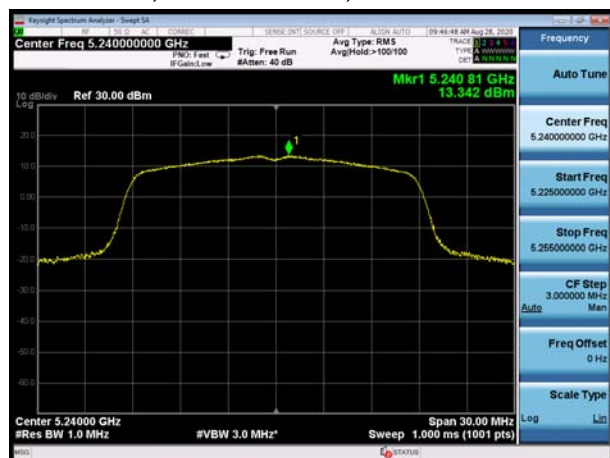
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U-NII-1, 802.11a, Channel No.: 48

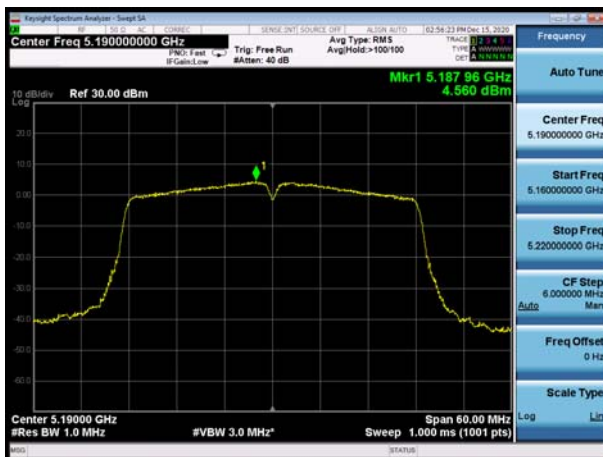


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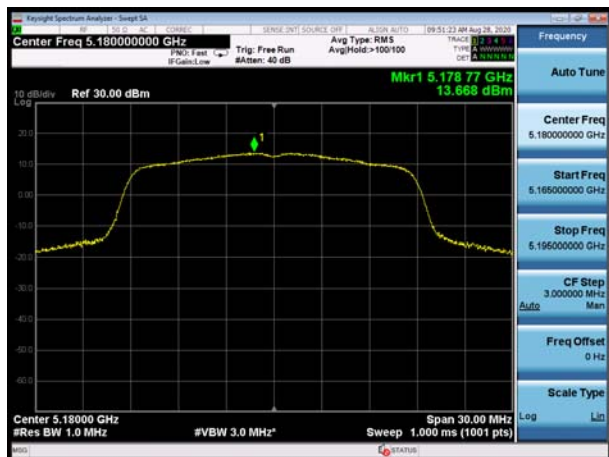




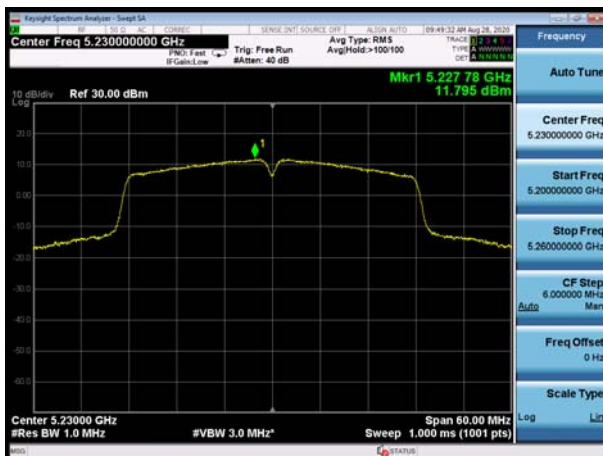
U-NII-1, 802.11n HT40, Channel No.: 38



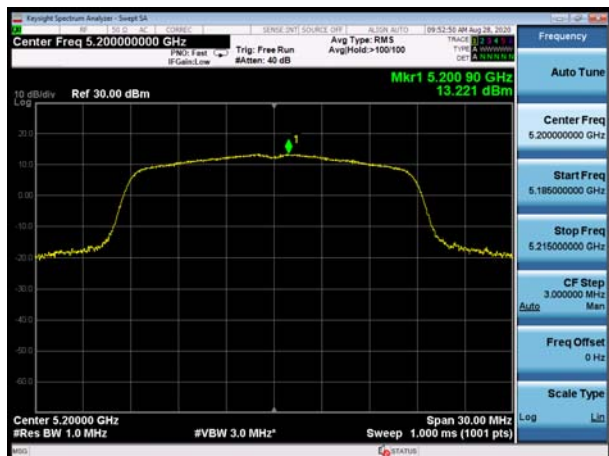
U-NII-1, 802.11ac VHT20, Channel No.: 36



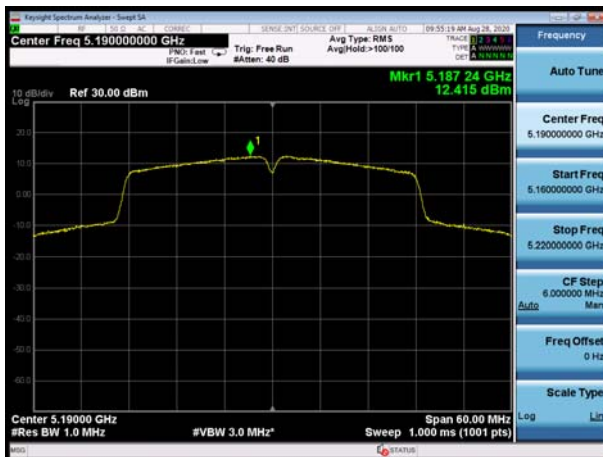
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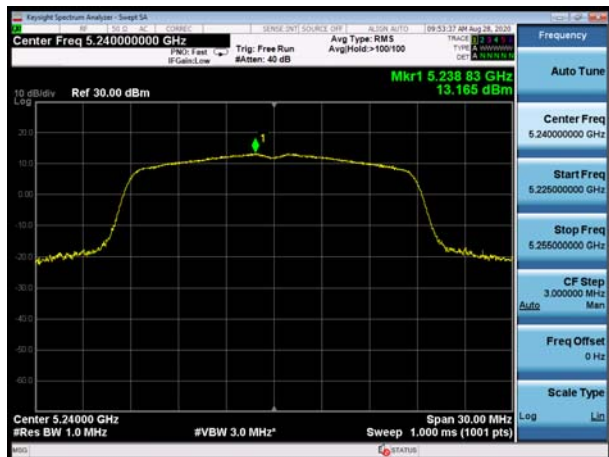
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U-NII-1, 802.11ac VHT40, Channel No.: 38

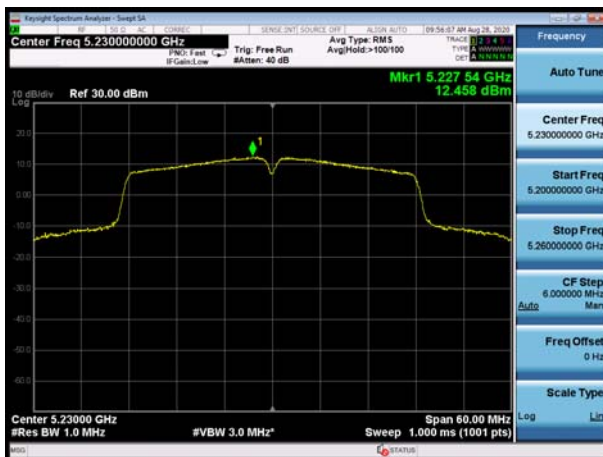


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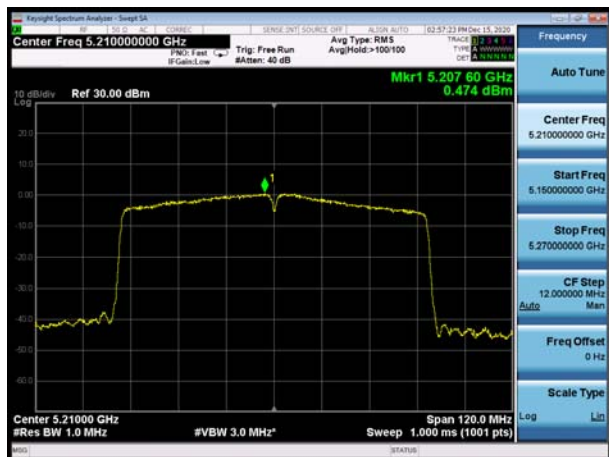




U-NII-1, 802.11ac VHT40, Channel No.: 46



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



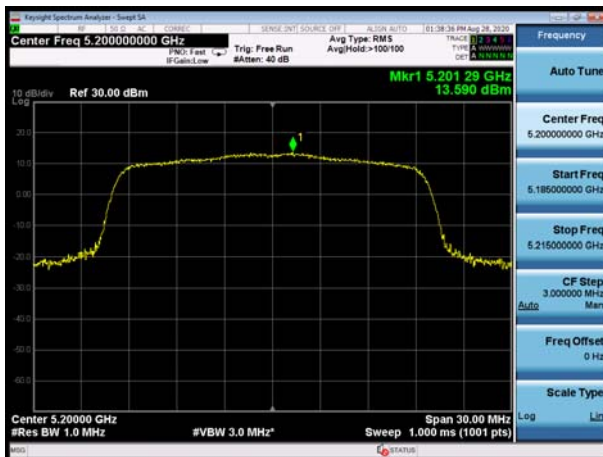
U-NII-1, 802.11ax HE20, Channel No.: 36



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



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

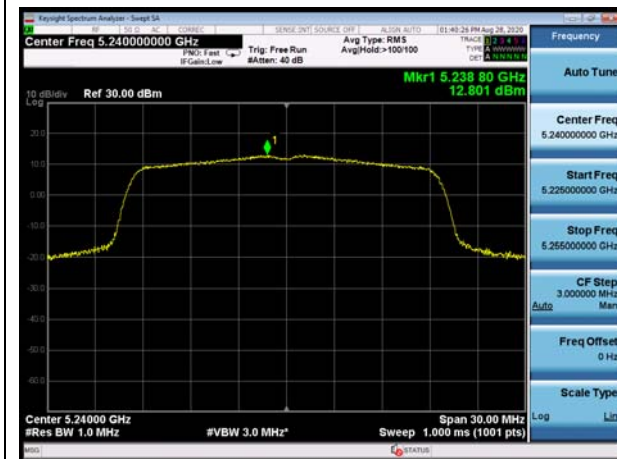


U-NII-1, 802.11ax HE40, Channel No.: 46





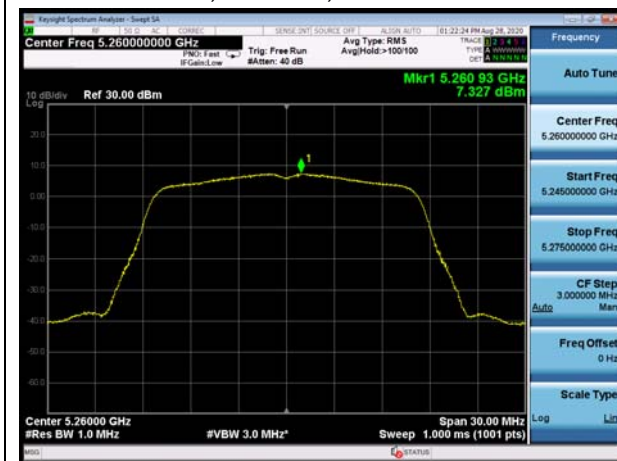
U-NII-1, 802.11ax HE20, Channel No.: 48



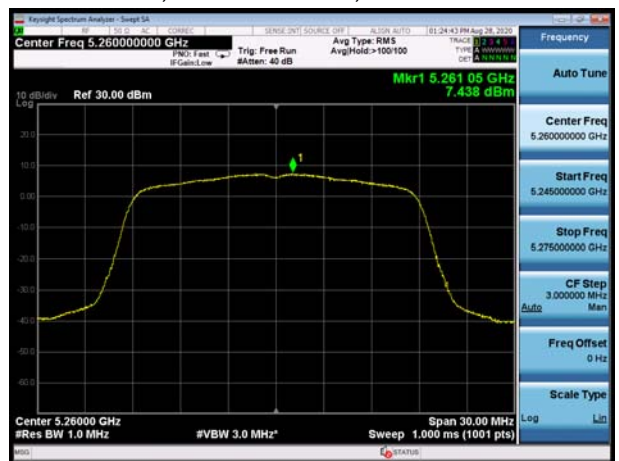
U-NII-1, 802.11ax HE80, Channel No.: 42



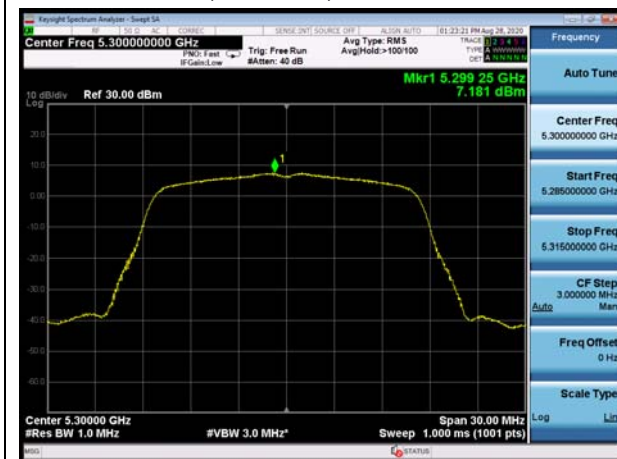
U-NII-2A, 802.11a, Channel No.: 52



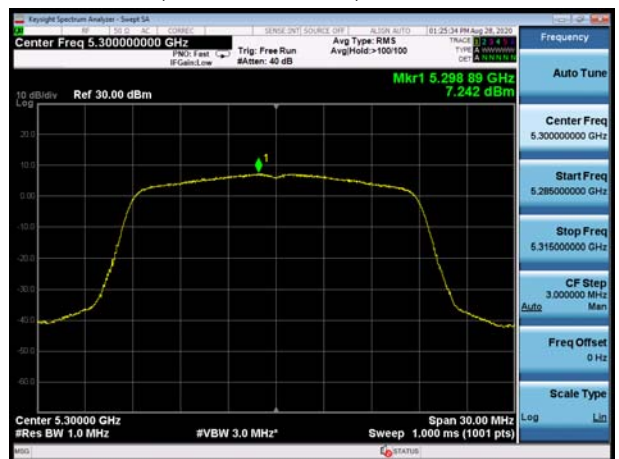
U-NII-2A, 802.11n HT20, Channel No.: 52



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



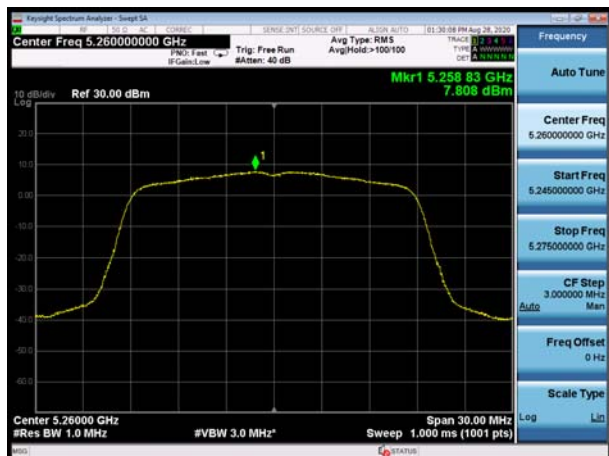
U-NII-2A, 802.11n HT20, Channel No.: 64



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

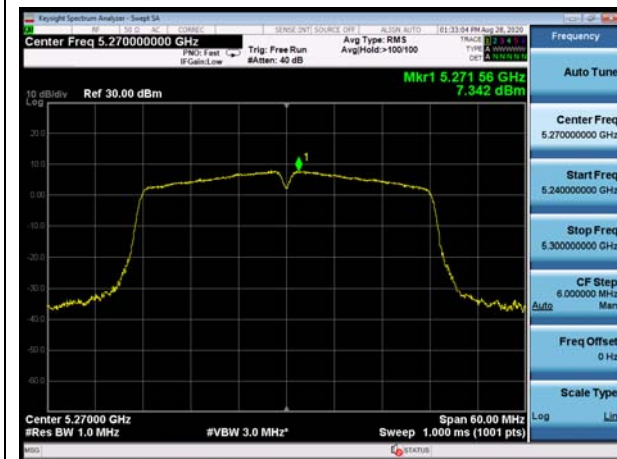


U-NII-2A, 802.11ac VHT20, Channel No.: 60

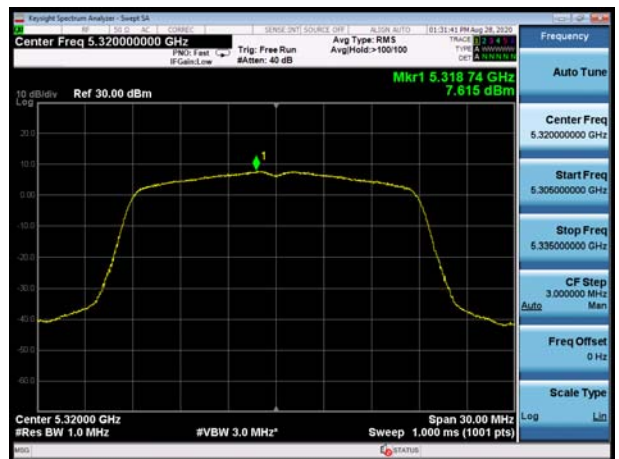




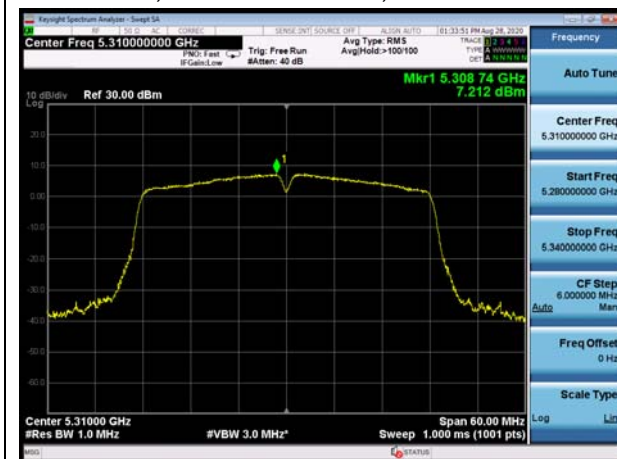
U-NII-2A, 802.11ac VHT40, Channel No.: 54



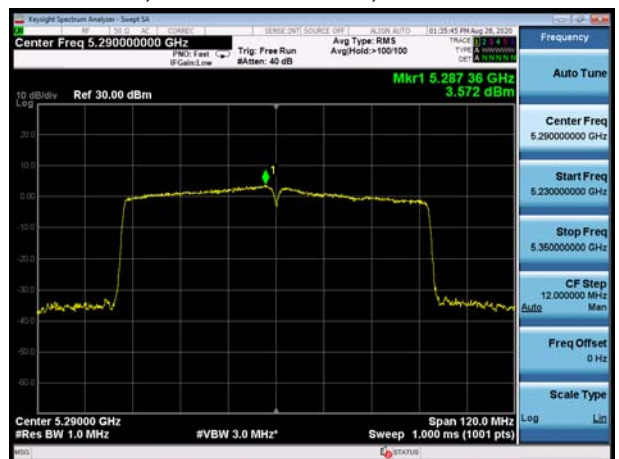
U-NII-2A, 802.11ac VHT20, Channel No.: 64



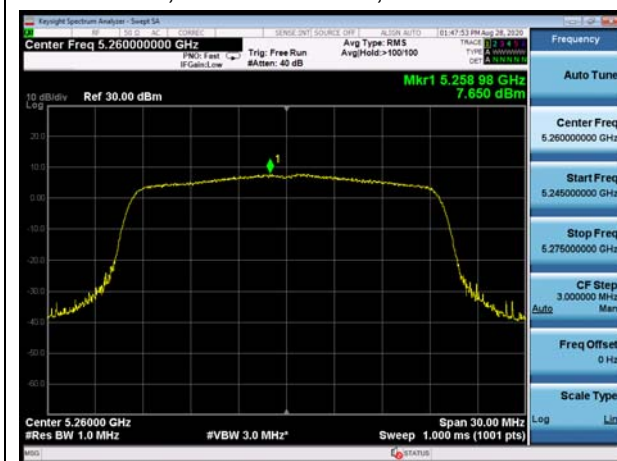
U-NII-2A, 802.11ac VHT40, Channel No.: 62



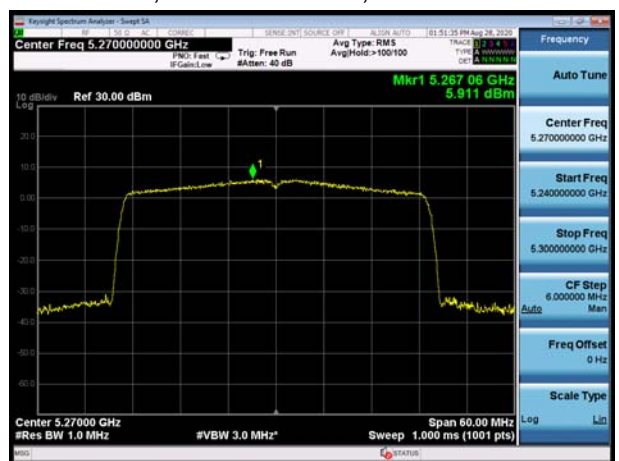
U-NII-2A, 802.11ac VHT80, Channel No.: 58



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

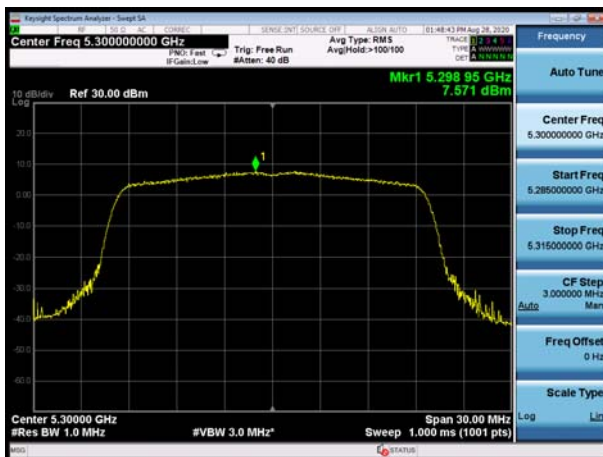


U-NII-2A, 802.11ax HE40, Channel No.: 54





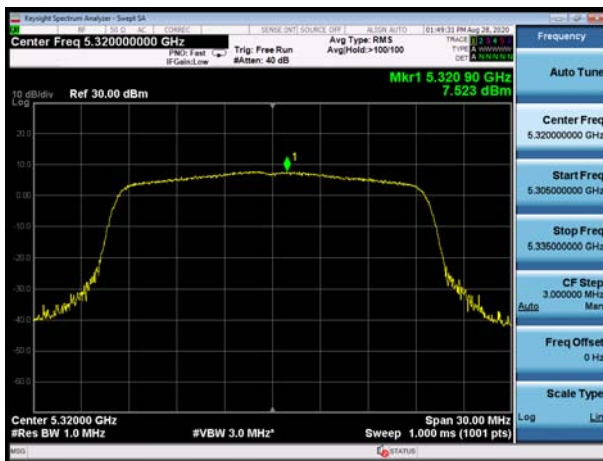
U-NII-2A, 802.11ax HE20, Channel No.: 60



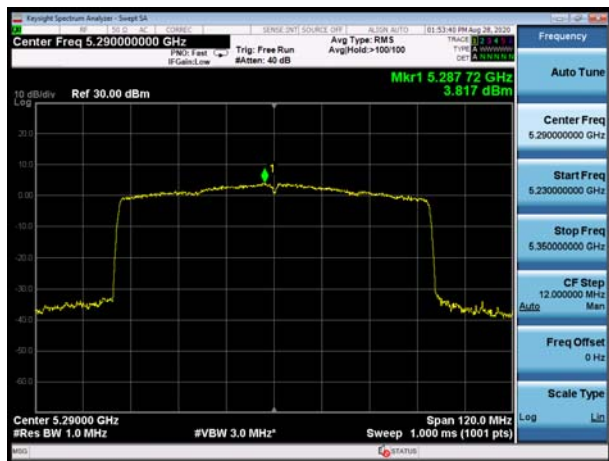
U-NII-2A, 802.11ax HE40, Channel No.: 62



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



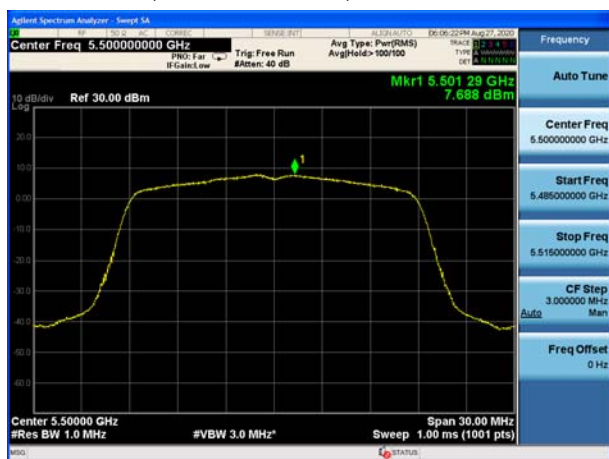
U-NII-2A, 802.11ax HE80, Channel No.: 58



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



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

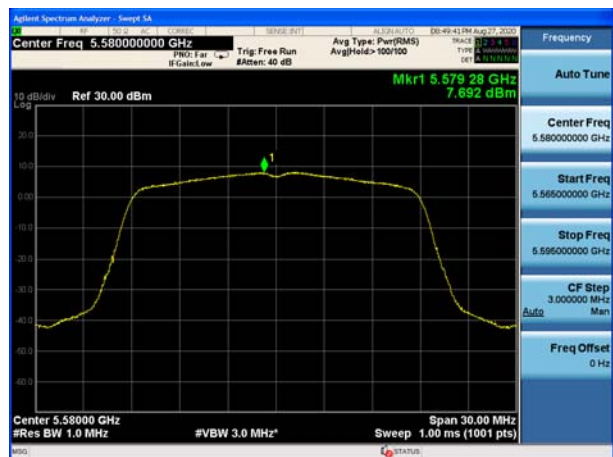




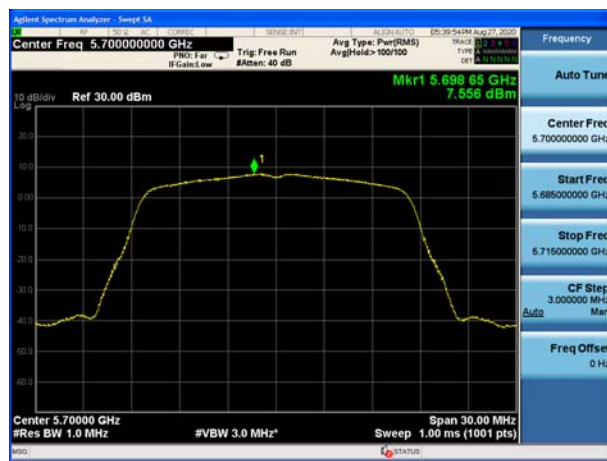
U-NII-2C, 802.11a, Channel No.: 116



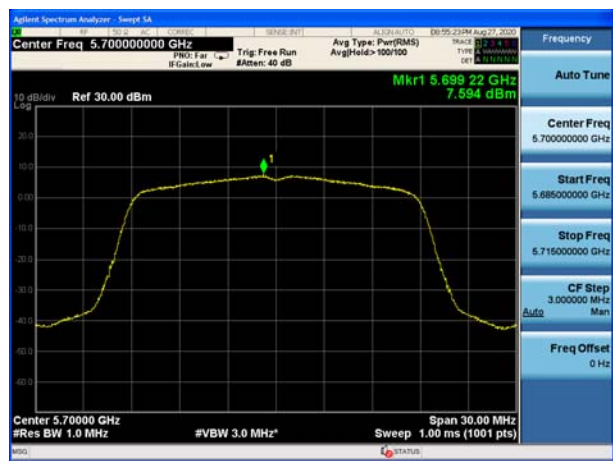
U-NII-2C, 802.11n HT20, Channel No.: 116



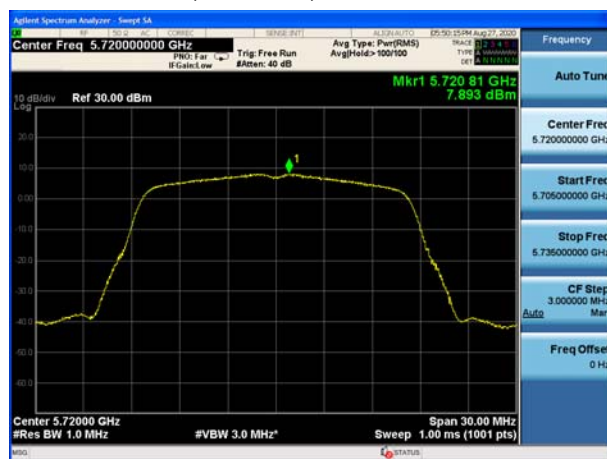
U-NII-2C, 802.11a, Channel No.: 140



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



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



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

