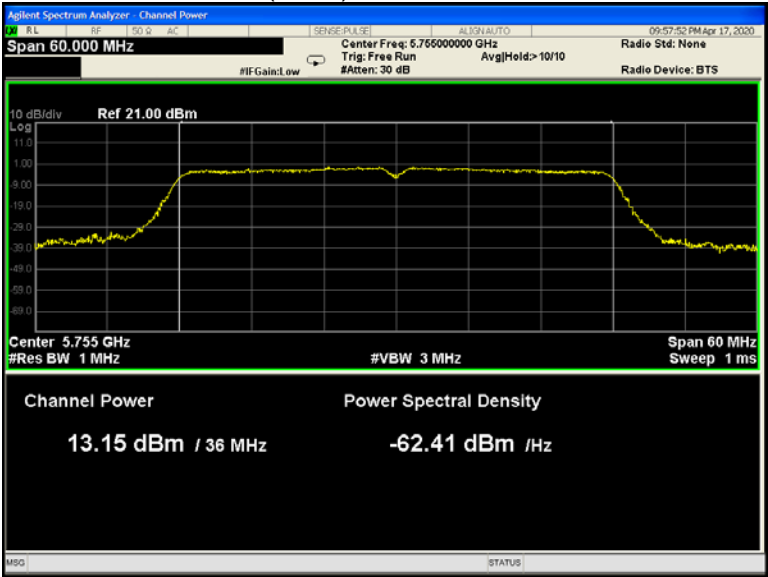
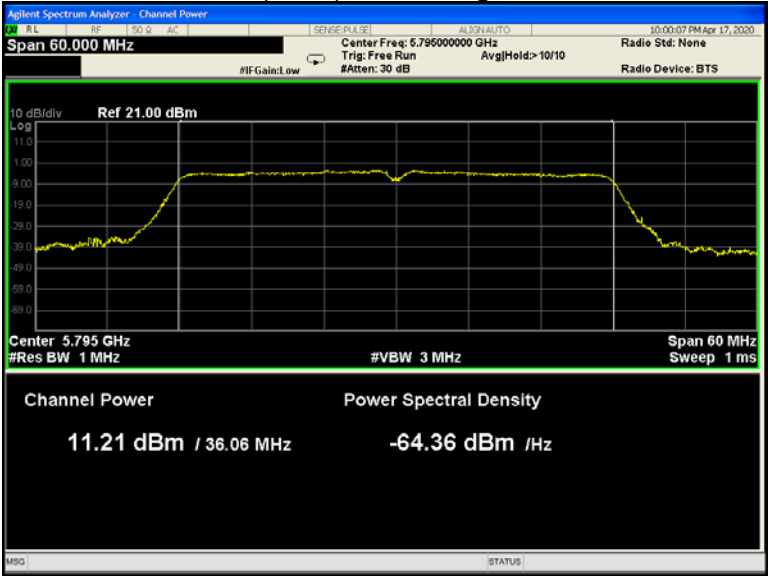


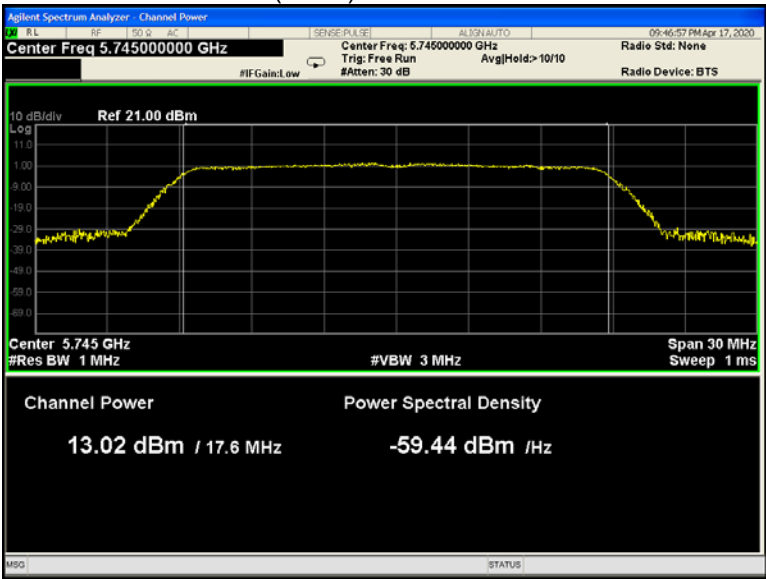
802.11n(HT40) U-NII-3 Low channel



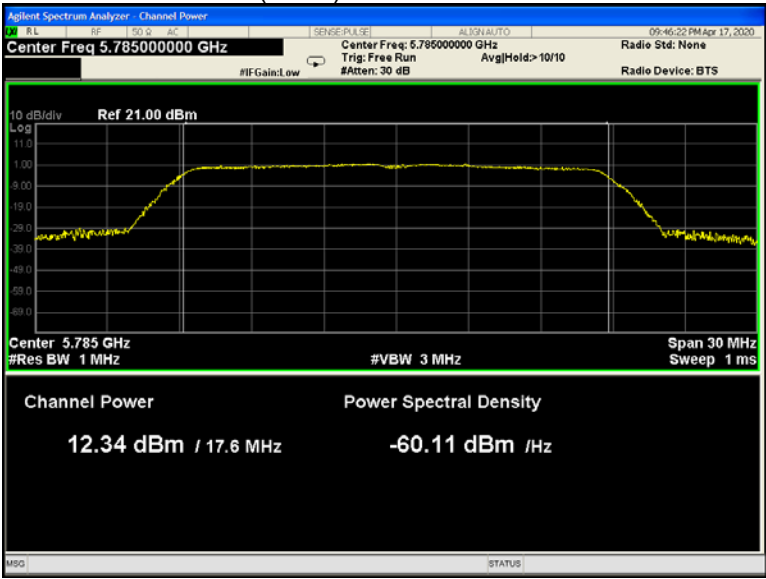
802.11n(HT40) U-NII-3 High channel



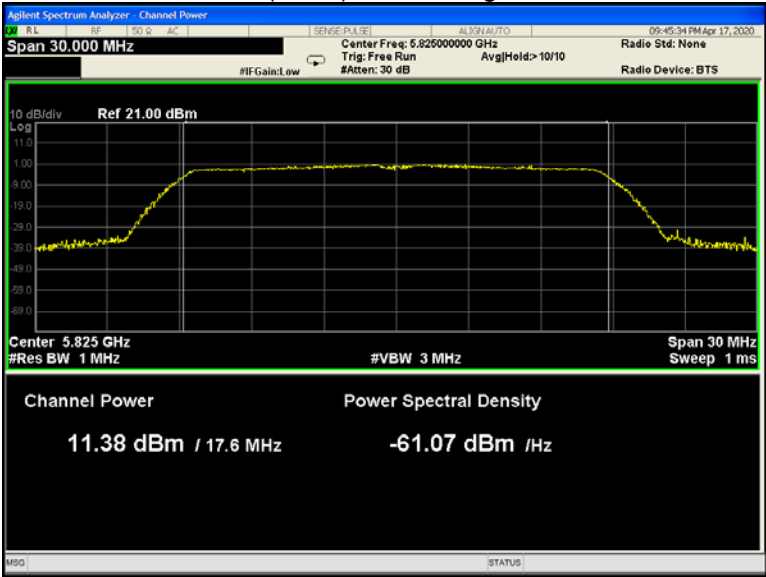
802.11ac(HT20) U-NII-3 Low channel



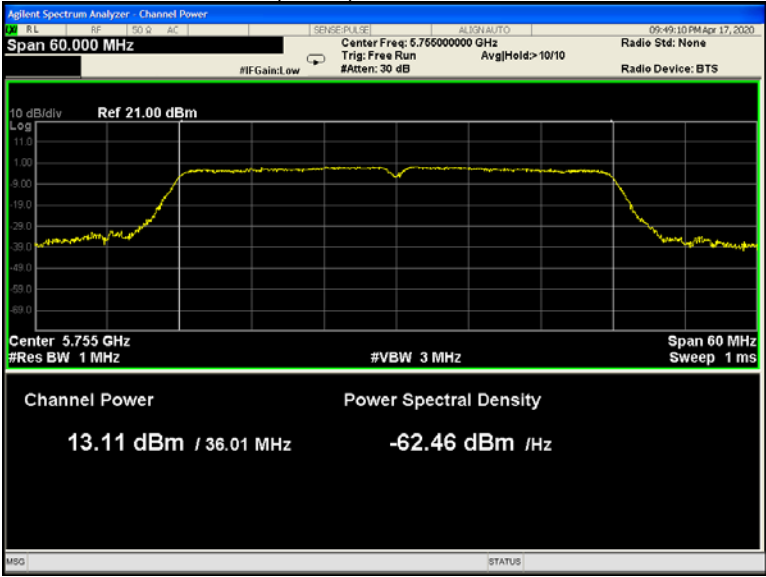
802.11ac(HT20) U-NII-3 Middle channel



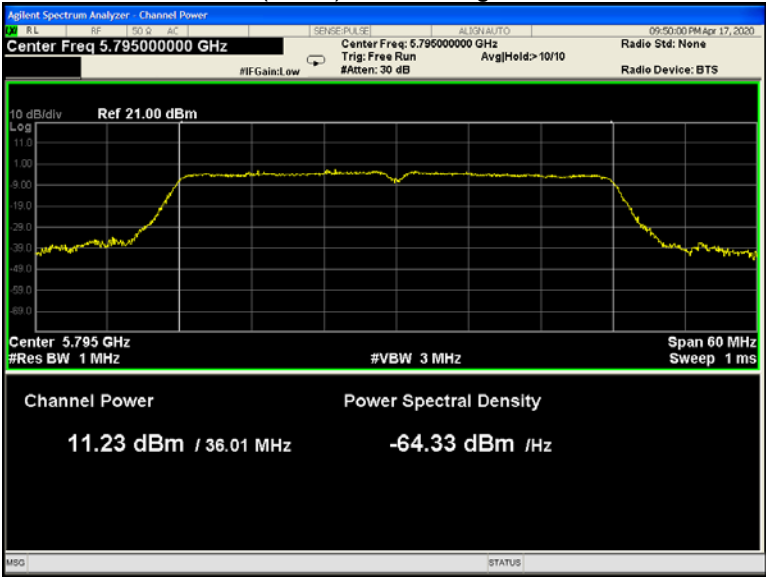
802.11ac(HT20) U-NII-3 High channel



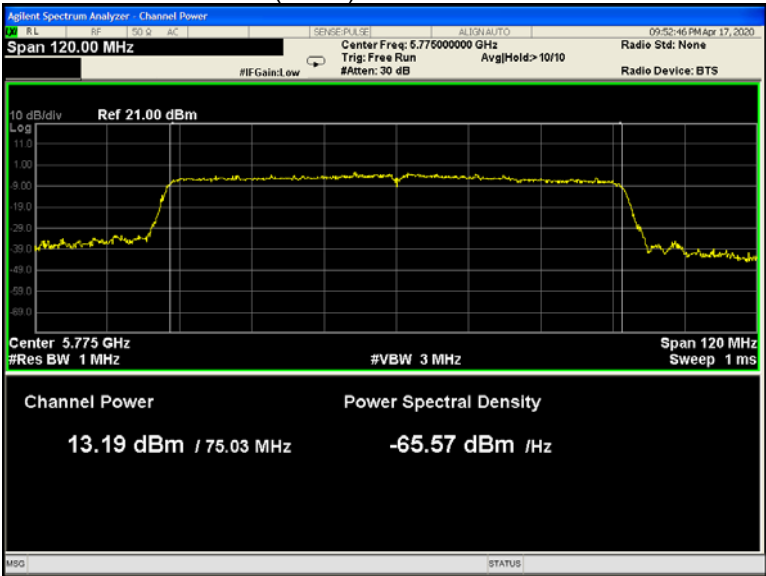
802.11ac(HT40) U-NII-3 Low channel



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

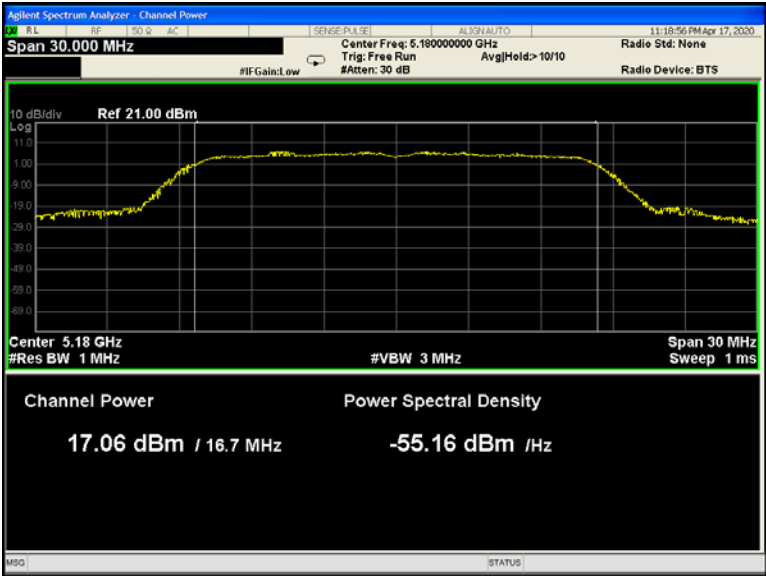


802.11ac(HT80) U-NII-3 Low channel

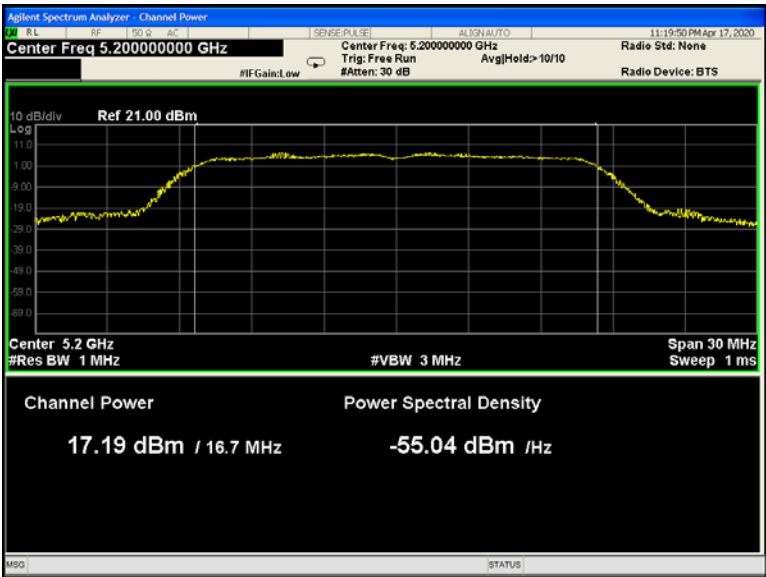


ANT 2

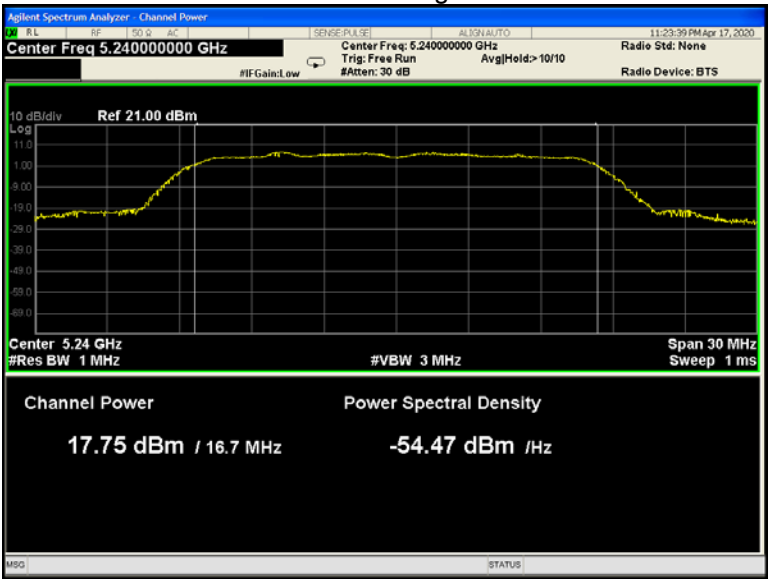
802.11a U-NII-1 Low channel



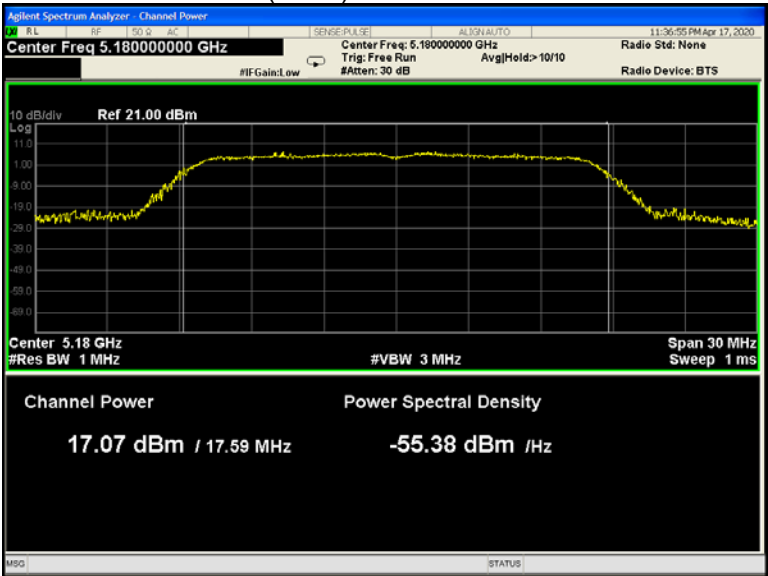
802.11a U-NII-1 Middle channel



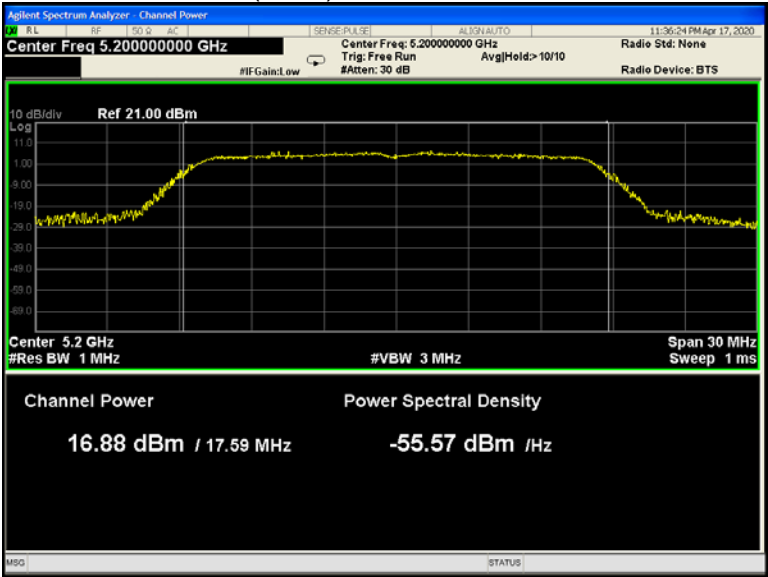
802.11a U-NII-1 High channel



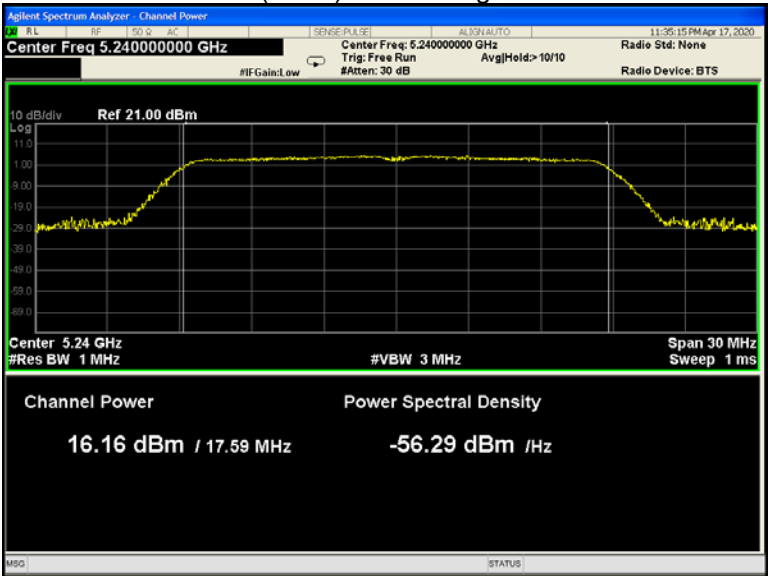
802.11n(HT20) U-NII-1 Low channel



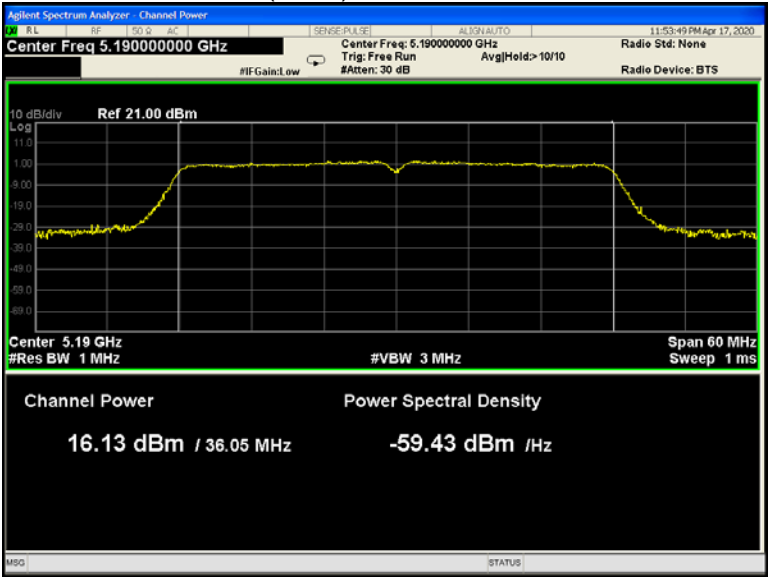
802.11n(HT20) U-NII-1 Middle channel



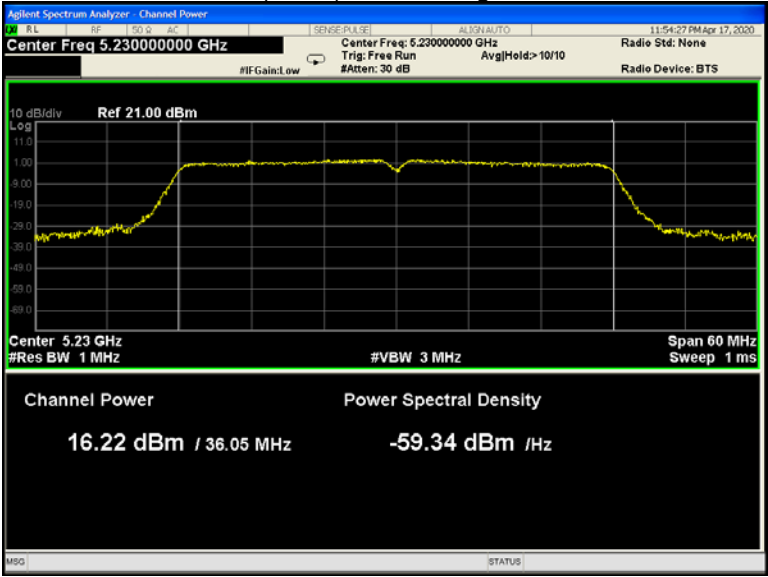
802.11n(HT20) U-NII-1 High channel



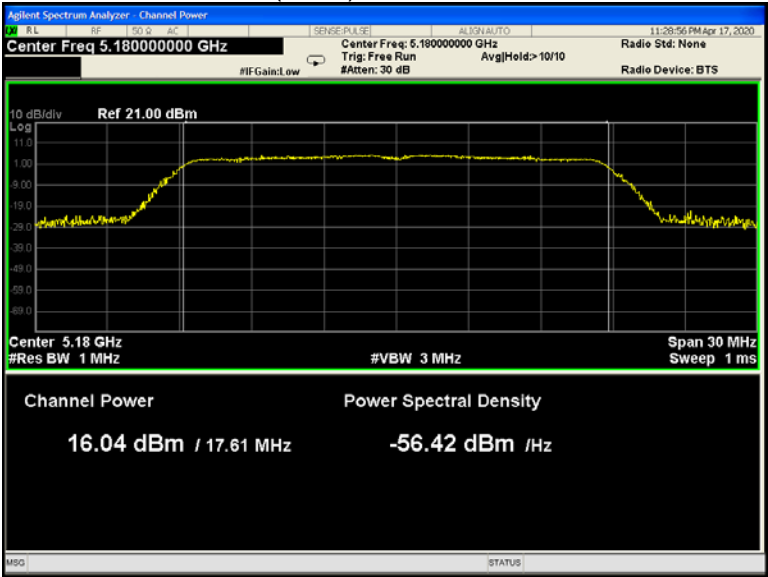
802.11n(HT40) U-NII-1 Low channel



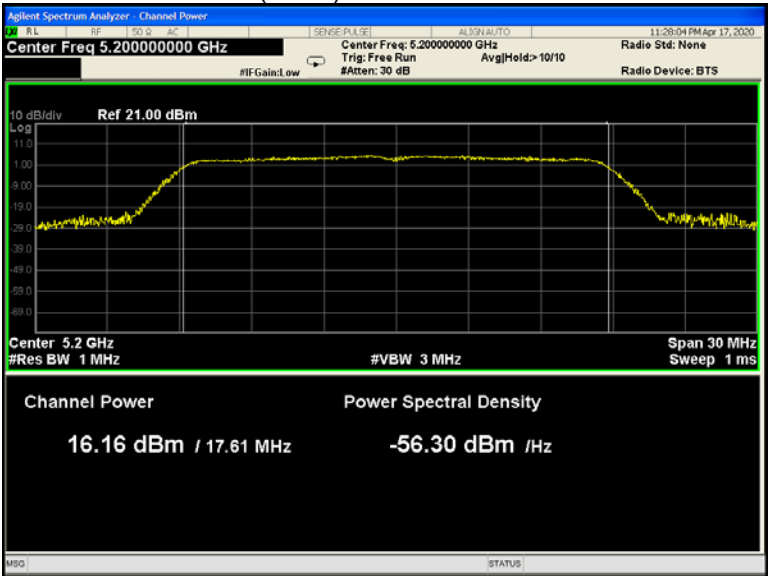
802.11n(HT40) U-NII-1 High channel



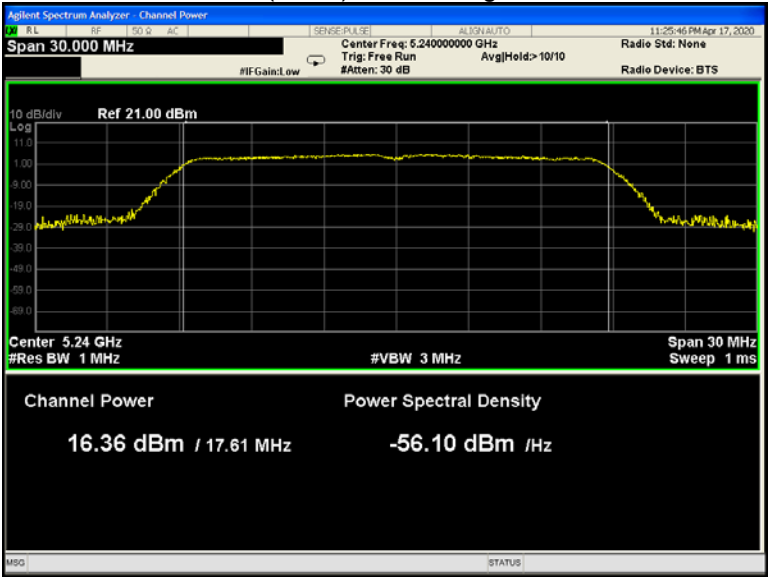
802.11ac(HT20) U-NII-1 Low channel



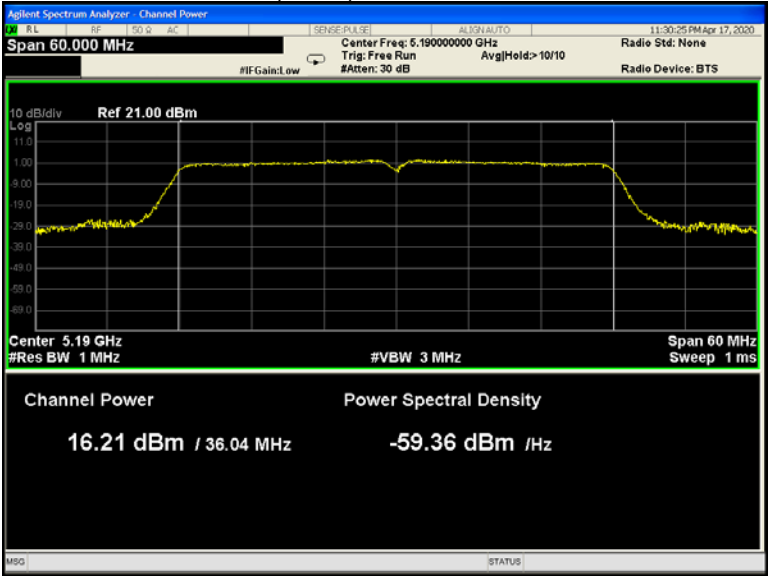
802.11ac(HT20) U-NII-1 Middle channel



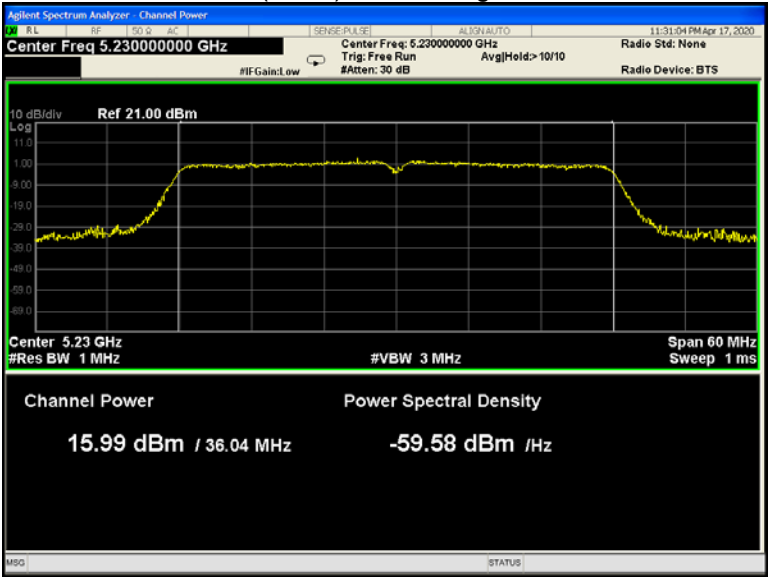
802.11ac(HT20) U-NII-1 High channel



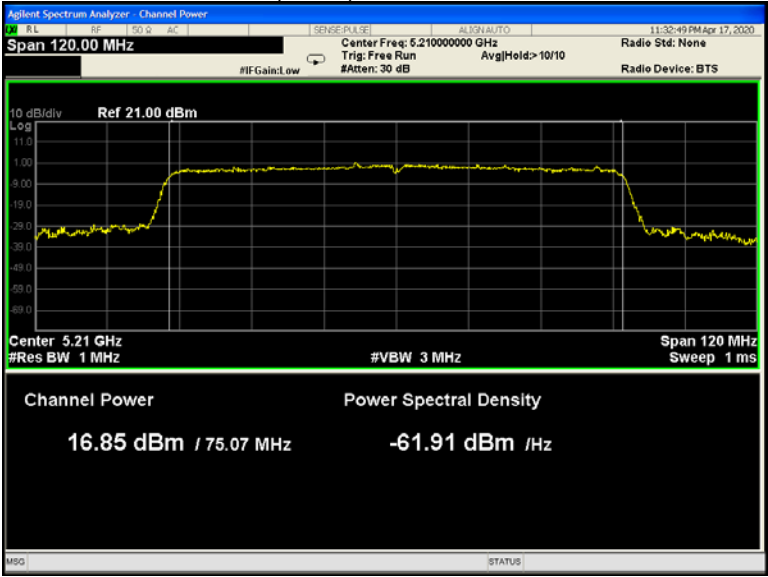
802.11ac(HT40) U-NII-1 Low channel



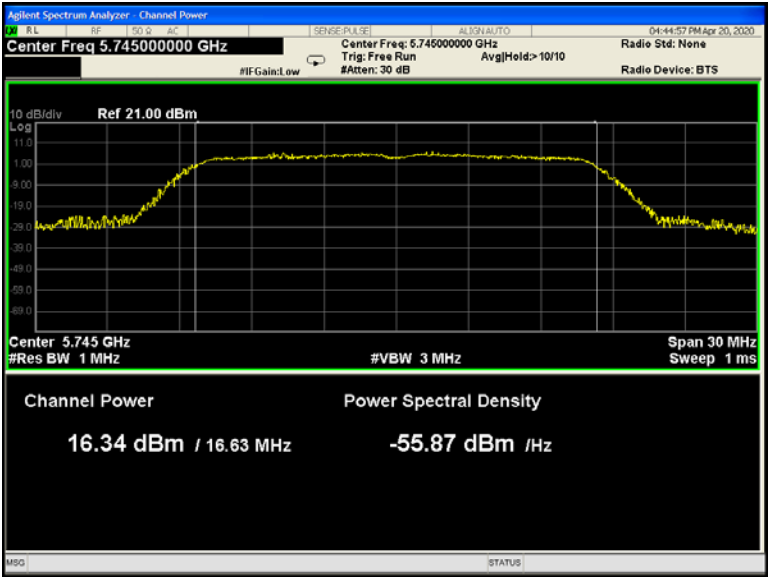
802.11n(HT40) U-NII-1 High channel



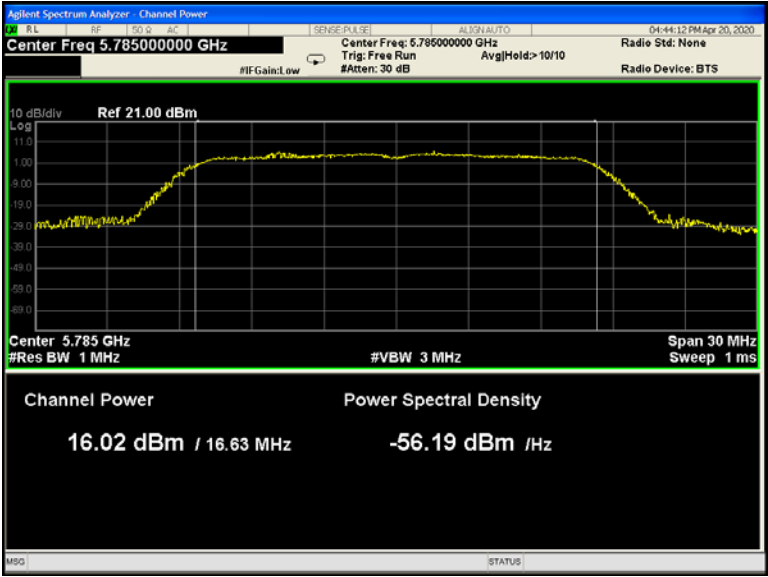
802.11ac(HT80) U-NII-1 Low channel



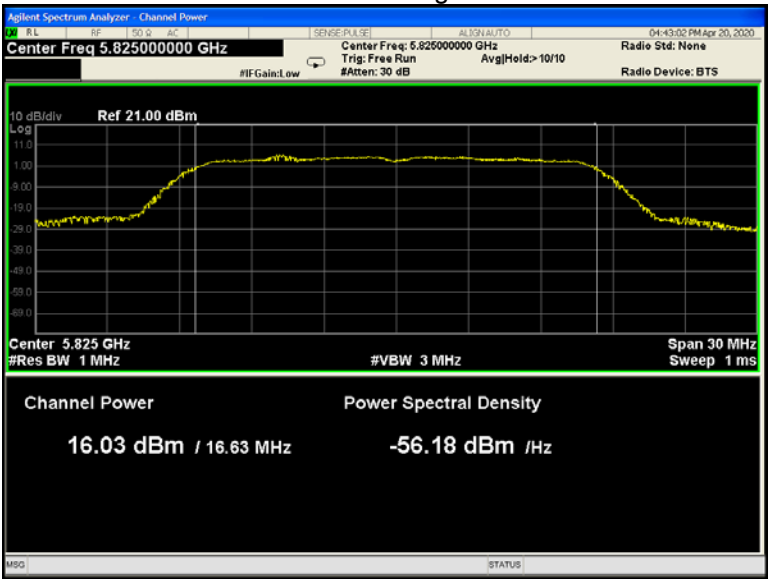
802.11a U-NII-3 Low channel



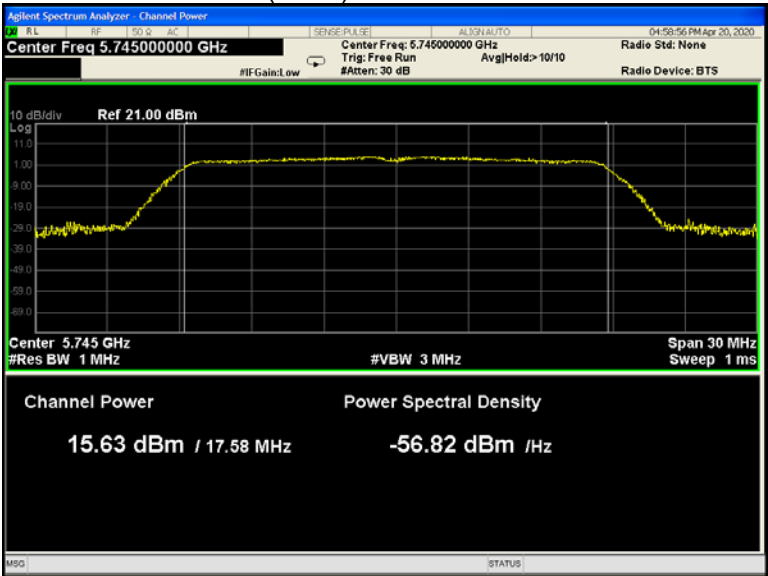
802.11a U-NII-3 Middle channel



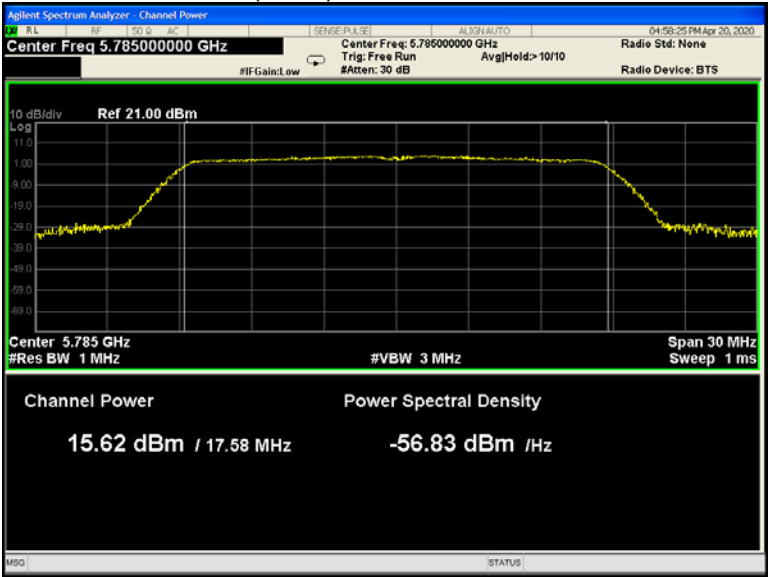
802.11a U-NII-3 High channel



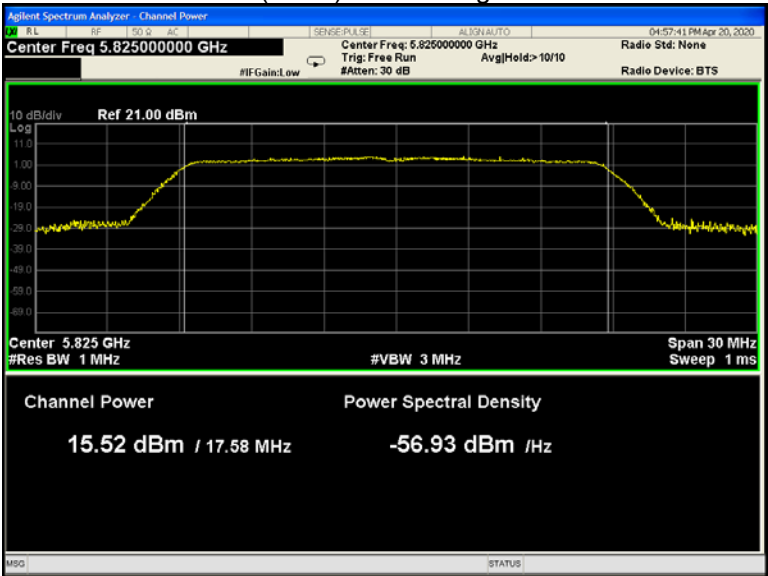
802.11n(HT20) U-NII-3 Low channel



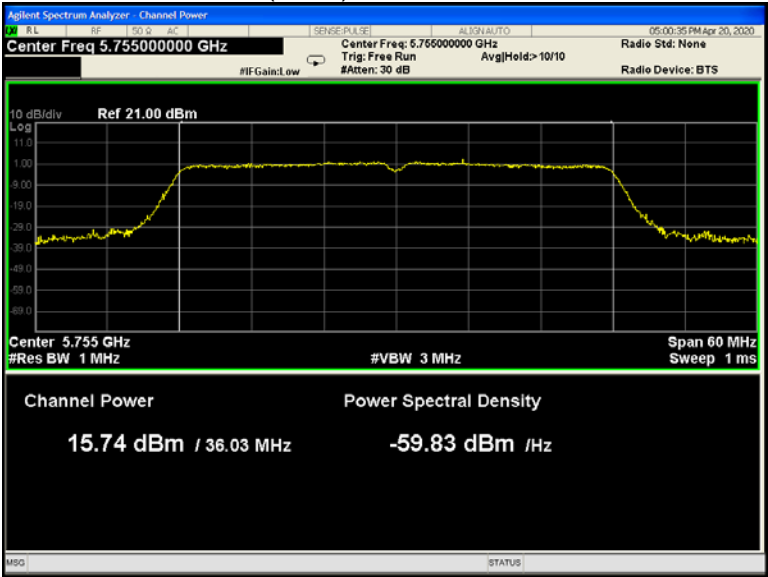
802.11n(HT20) U-NII-3 Middle channel



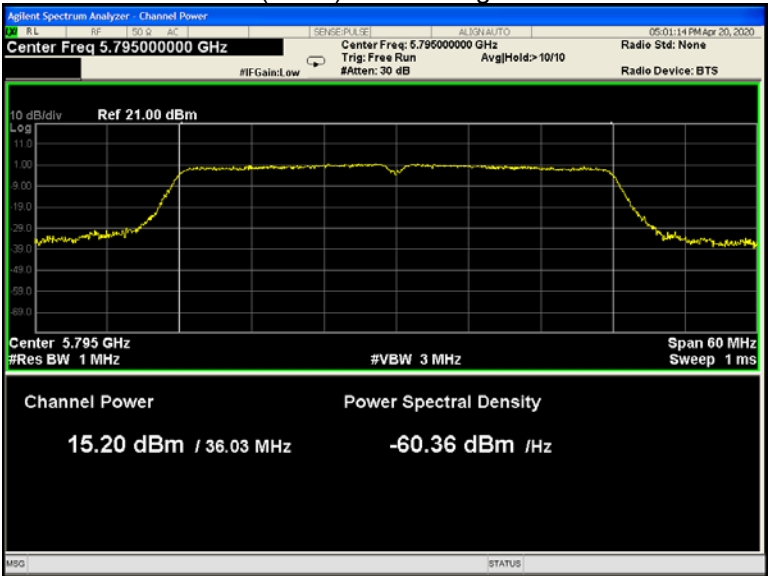
802.11n(HT20) U-NII-3 High channel



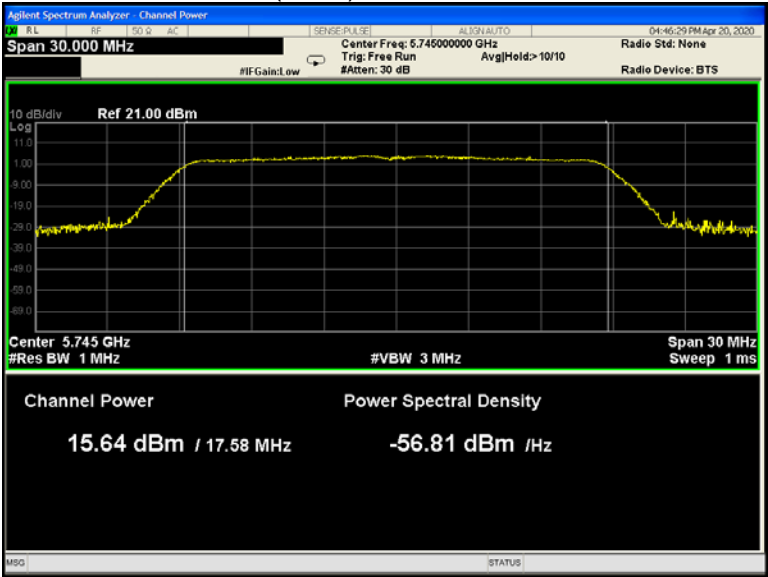
802.11n(HT40) U-NII-3 Low channel



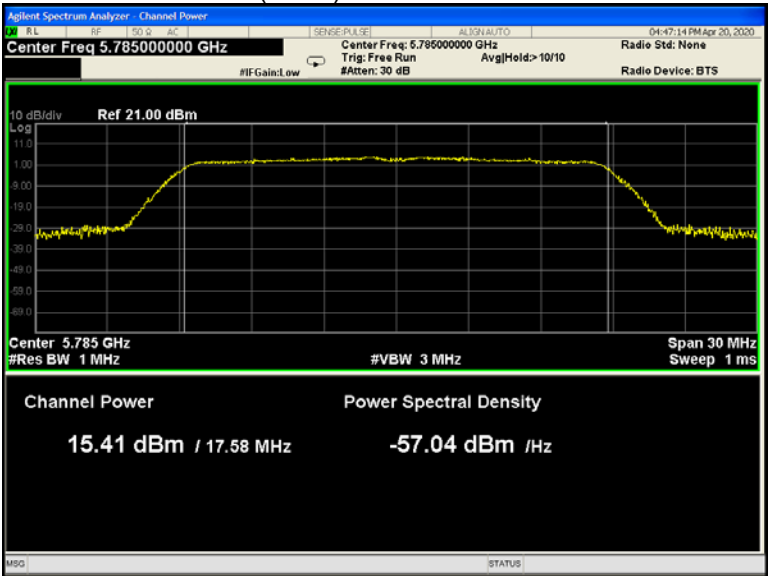
802.11n(HT40) U-NII-3 High channel



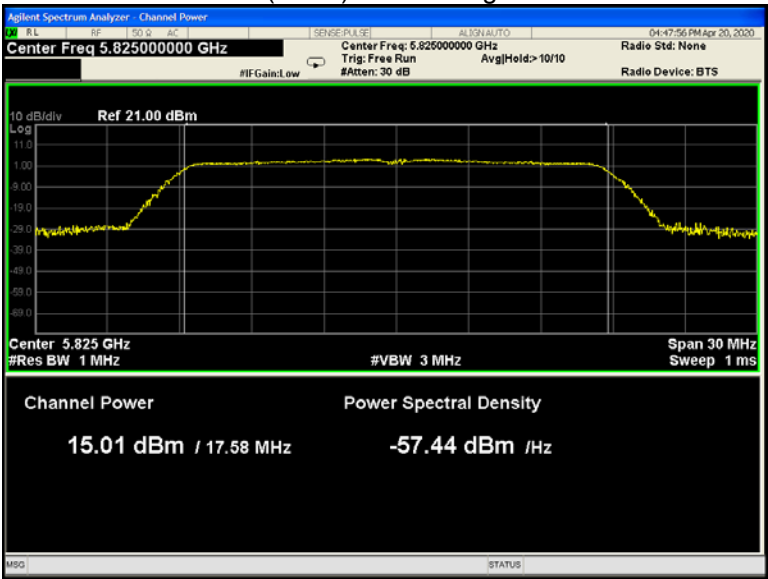
802.11ac(HT20) U-NII-3 Low channel



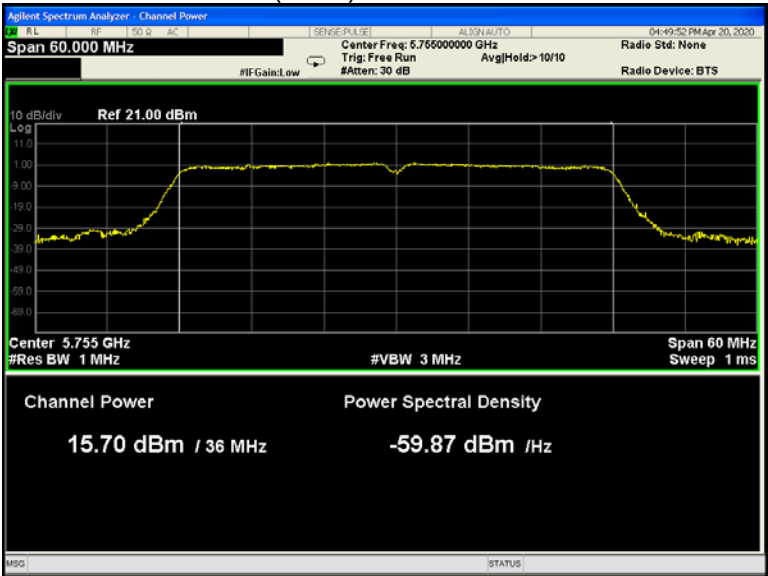
802.11ac(HT20) U-NII-3 Middle channel



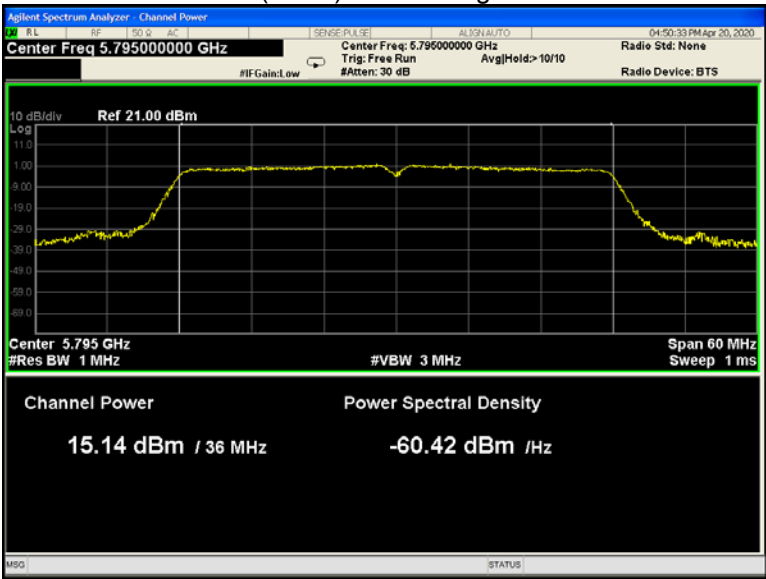
802.11ac(HT20) U-NII-3 High channel



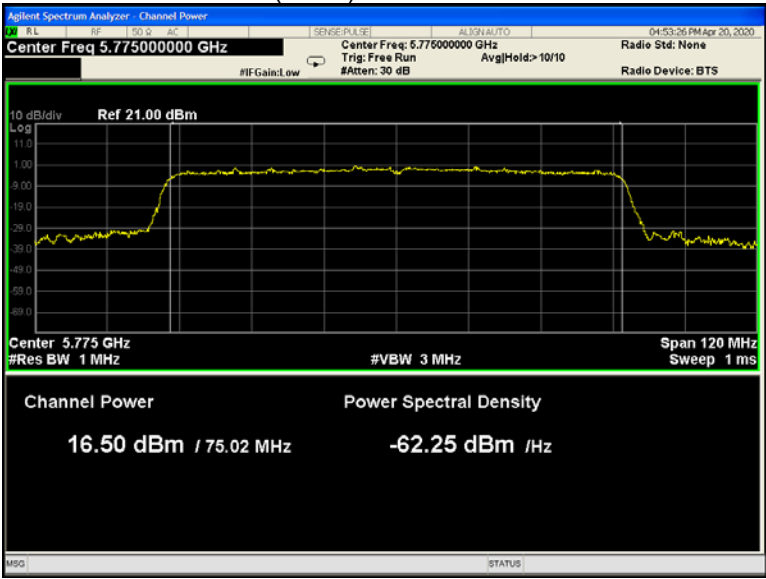
802.11ac(HT40) U-NII-3 Low channel



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



802.11ac(HT80) U-NII-3 Low channel



14 Power Spectral density

Test Requirement:	FCC CFR47 Part 15 Section 15.407(a) KDB662911 D01 Multiple Transmitter Output v02r01
Test Method:	KDB789033 D02 General U-NII Test Procedures New Rules v02r01, Section F
Test Limit:	$\leq 11.00\text{dBm/MHz}$ for Operation in the U-NII-1(5150MHz-5250MHz)of mobile device $\leq 30.00\text{dBm/500KHz}$ for Operation in the U-NII-3(5725MHz- 5850MHz)of device
Test Result:	PASS

14.1 Test Procedure:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer:
U-NII-1
RBW = 1MHz, VBW $\geq 3 \times$ RBW Sweep = auto; Detector Function = Peak. Trace = Max hold.
U-NII-3
RBW = 510KHz, VBW $\geq 3 \times$ RBW Sweep = auto; Detector Function = Peak. Trace = Max hold.
3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section
Submit this plot.

14.2 Test Result:

ANT 1

Band	Operation mode	Power Spectral Density (dBm/MHz)		
		Low	Middle	High
U-NII-1	802.11a	7.358	7.172	7.485
	802.11n(HT20)	6.474	6.954	7.110
	802.11n(HT40)	3.360	/	4.117
	802.11ac(HT20)	6.458	6.360	6.630
	802.11ac(HT40)	3.938	/	4.396
	802.11ac(HT80)	1.500	/	/
	Limit	≤11.00dBm/MHz		

Band	Operation mode	Power Spectral Density (dBm/MHz)		
		Low	Middle	High
U-NII-3	802.11a	6.432	5.975	5.351
	802.11n(HT20)	4.354	3.153	3.193
	802.11n(HT40)	1.445	/	-0.104
	802.11ac(HT20)	4.313	3.163	3.008
	802.11ac(HT40)	1.448	/	0.318
	802.11ac(HT80)	-0.132	/	/
	Limit	≤30.00dBm/500kHz		

ANT 2

Band	Operation mode	Power Spectral Density (dBm/MHz)		
		Low	Middle	High
U-NII-1	802.11a	7.659	7.630	7.408
	802.11n(HT20)	7.796	7.766	7.734
	802.11n(HT40)	4.617	/	5.068
	802.11ac(HT20)	7.662	7.846	7.600
	802.11ac(HT40)	4.582	/	5.309
	802.11ac(HT80)	3.088	/	/
	Limit	≤11.00dBm/MHz		

Band	Operation mode	Power Spectral Density (dBm/MHz)		
		Low	Middle	High
U-NII-3	802.11a	9.081	8.654	8.776
	802.11n(HT20)	6.996	6.563	6.475
	802.11n(HT40)	3.897	/	3.959
	802.11ac(HT20)	7.258	6.669	6.187
	802.11ac(HT40)	4.760	/	3.664
	802.11ac(HT80)	2.207	/	/
	Limit	$\leq 30.00\text{dBm}/500\text{kHz}$		

ANT 1 + ANT2

Band	Operation mode	Power Spectral Density (dBm/MHz)		
		Low	Middle	High
U-NII-1	802.11a	10.520	10.420	10.460
	802.11n(HT20)	10.200	10.390	10.440
	802.11n(HT40)	7.040	/	7.630
	802.11ac(HT20)	10.110	10.180	10.150
	802.11ac(HT40)	7.280	/	7.890
	802.11ac(HT80)	5.380	/	/
	Limit	$\leq 11.00\text{dBm}/\text{MHz}$		

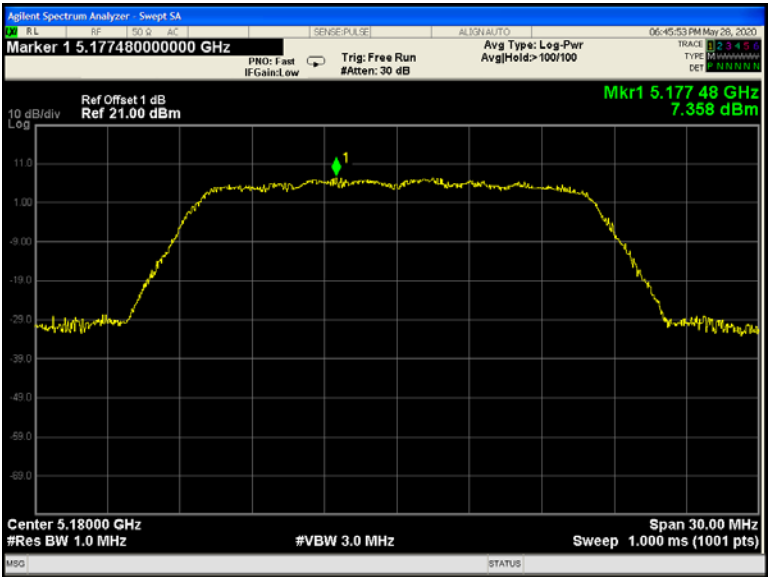
Band	Operation mode	Power Spectral Density (dBm/MHz)		
		Low	Middle	High
U-NII-3	802.11a	10.970	10.530	10.400
	802.11n(HT20)	8.880	8.190	8.150
	802.11n(HT40)	5.850	/	5.400
	802.11ac(HT20)	9.040	8.270	7.890
	802.11ac(HT40)	6.420	/	5.320
	802.11ac(HT80)	4.200	/	/
	Limit	$\leq 30.00\text{dBm}/500\text{kHz}$		

* All transmit signals are completely uncorrelated with each other, Directional gain = G_{ANT} which is less than 6dBi. So the limit does not be reduced.

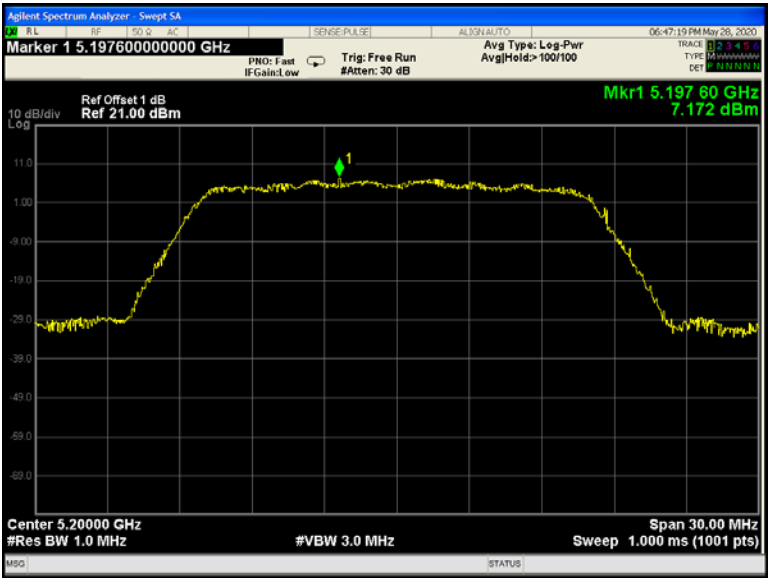
Test result plots shown as follows:

ANT 1

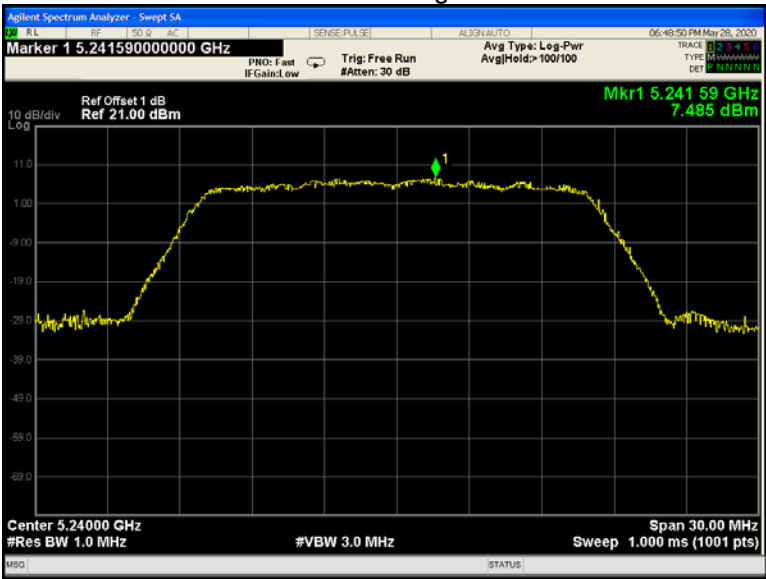
802.11a U-NII-1 Low channel



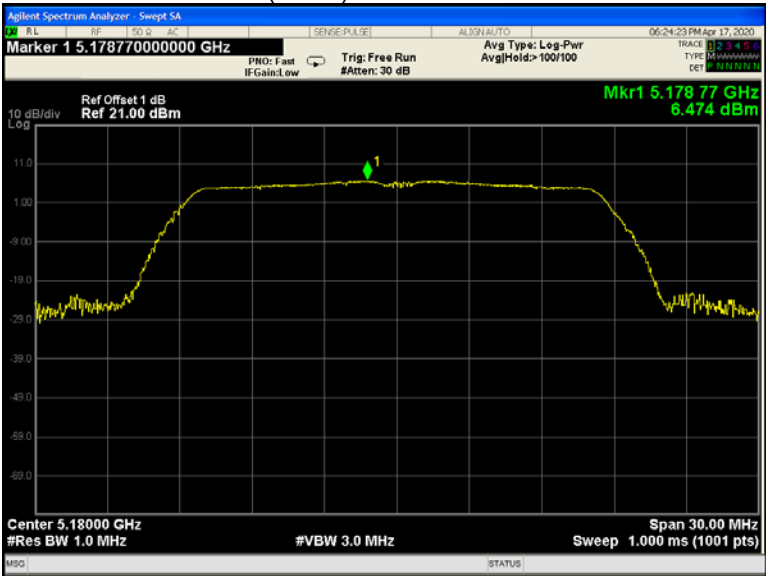
802.11a U-NII-1 Middle channel



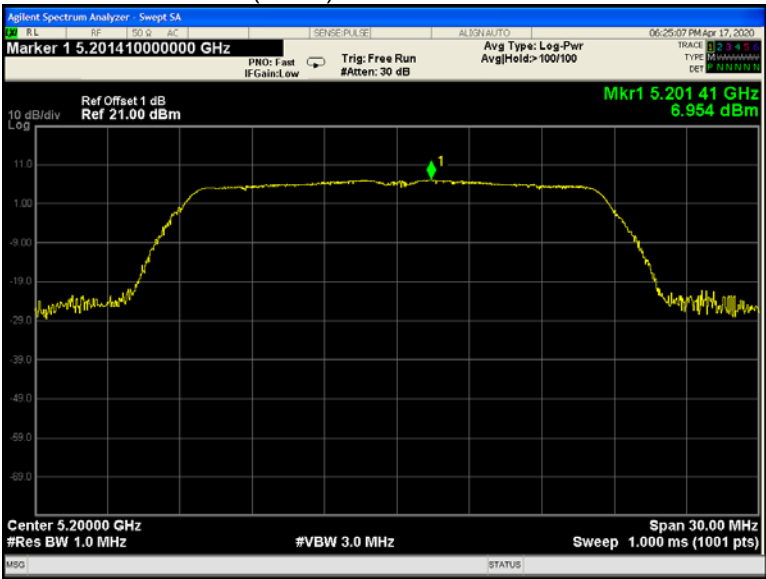
802.11a U-NII-1 High channel



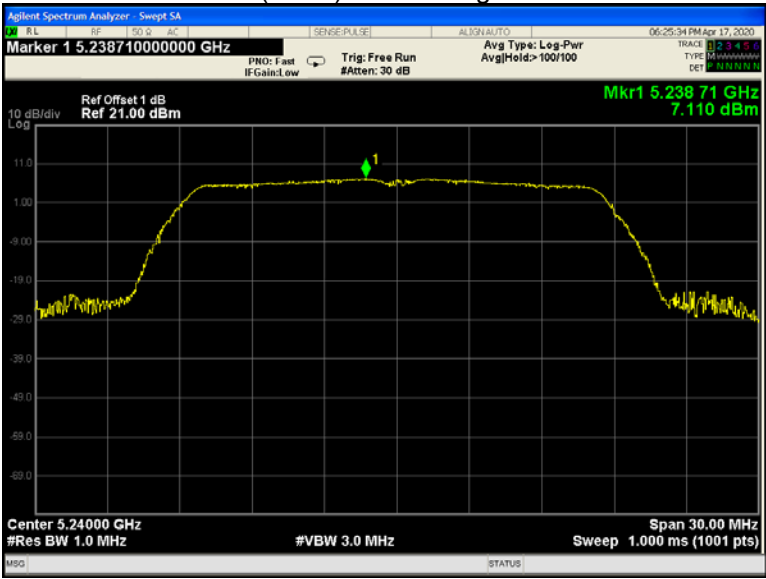
802.11n(HT20) U-NII-1 Low channel



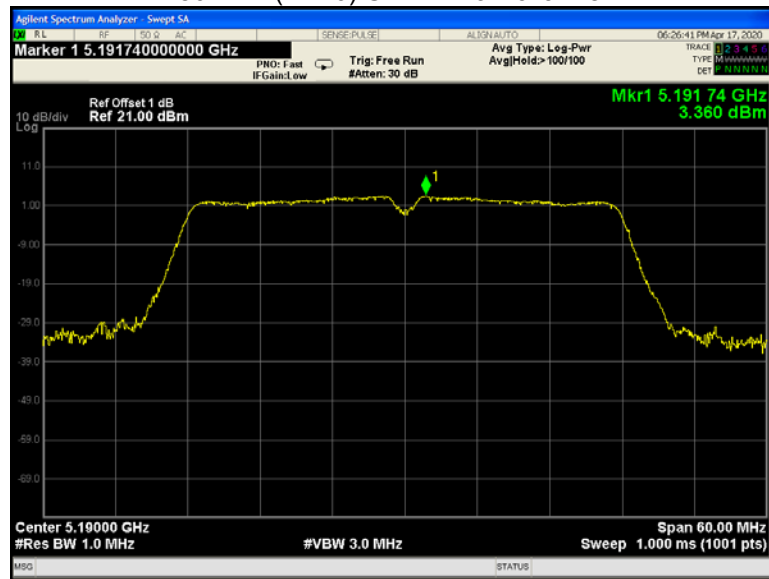
802.11n(HT20) U-NII-1 Middle channel



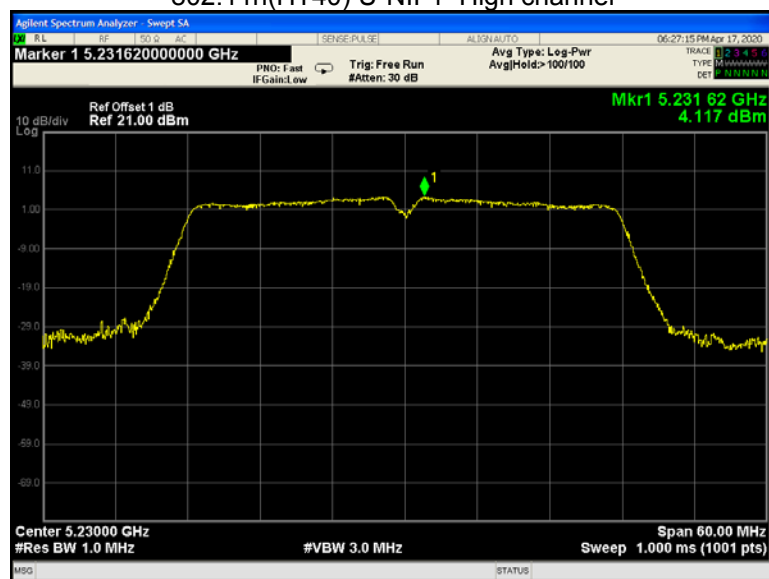
802.11n(HT20) U-NII-1 High channel



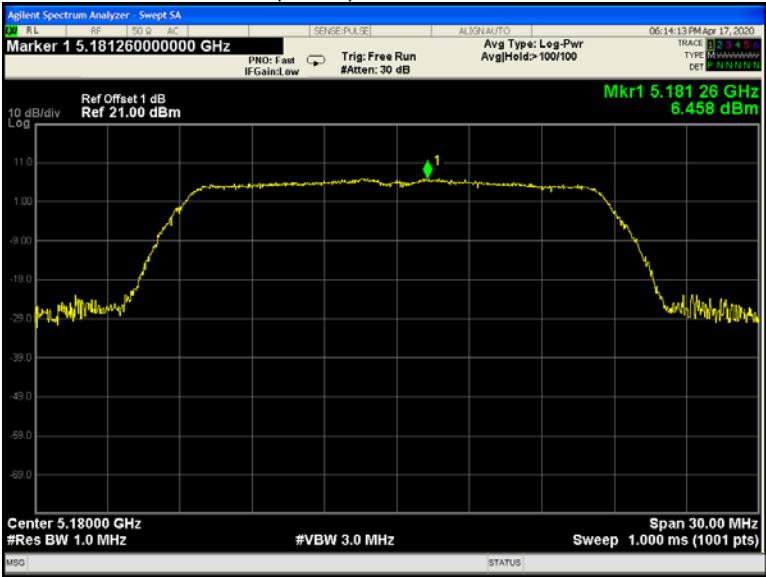
802.11n(HT40) U-NII-1 Low channel



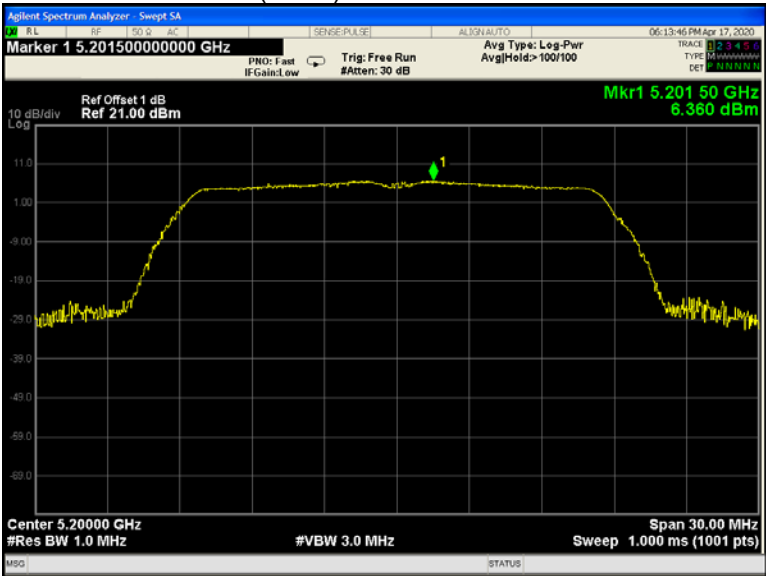
802.11n(HT40) U-NII-1 High channel



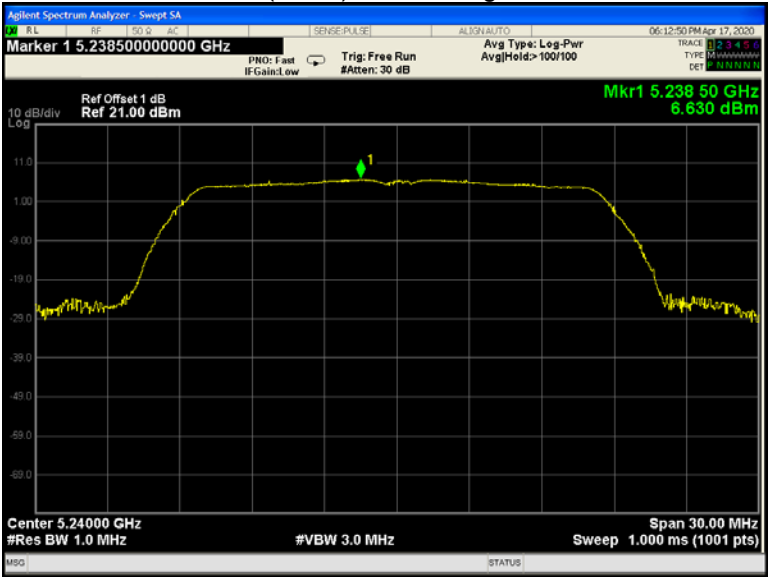
802.11ac(HT20) U-NII-1 Low channel



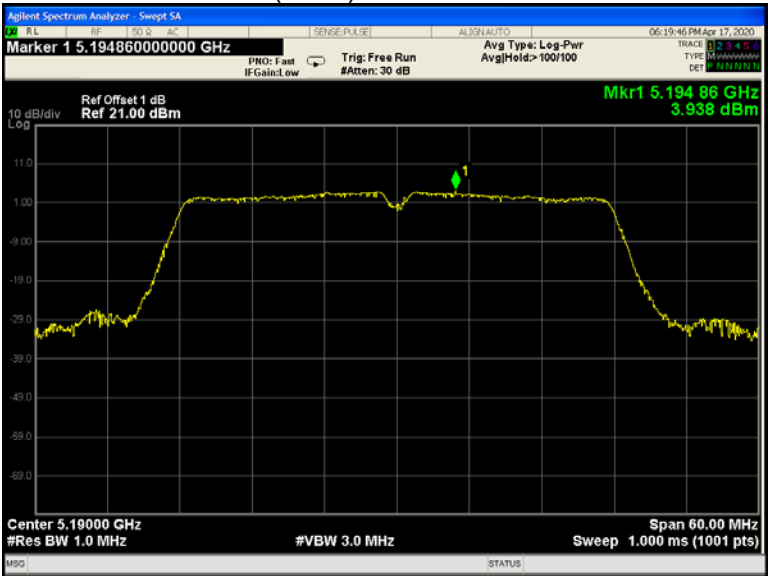
802.11ac(HT20) U-NII-1 Middle channel



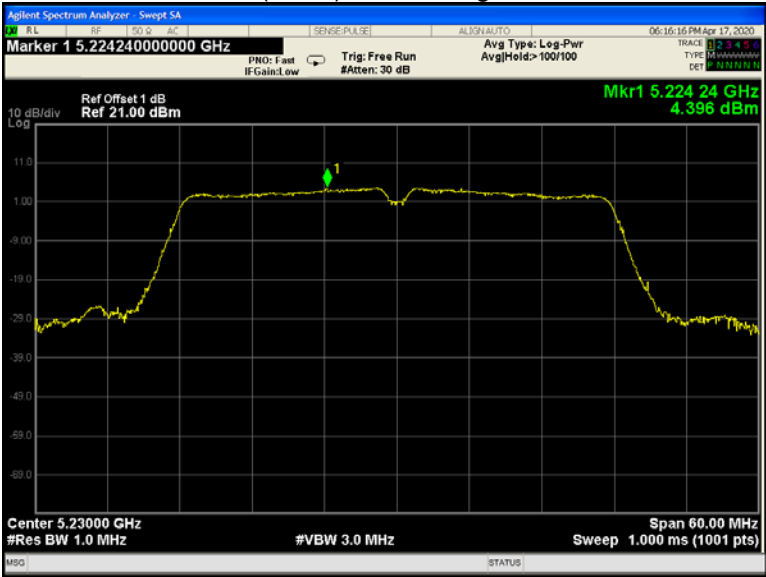
802.11ac(HT20) U-NII-1 High channel



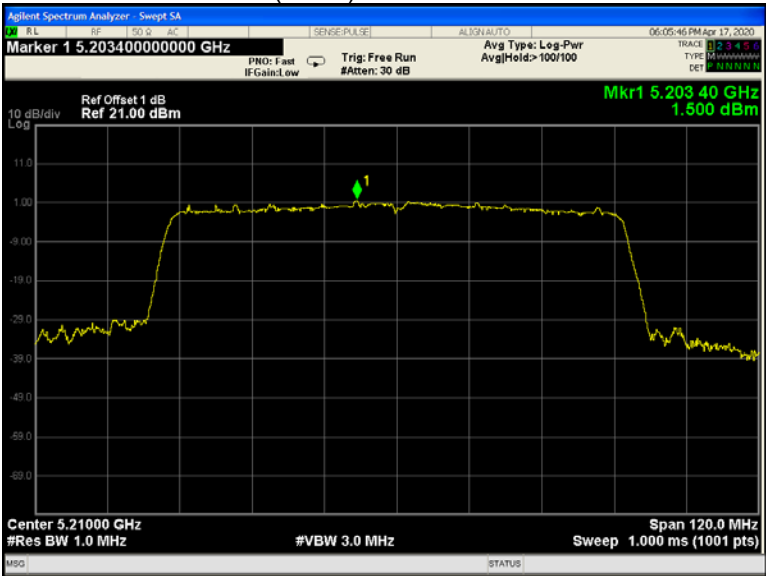
802.11ac(HT40) U-NII-1 Low channel



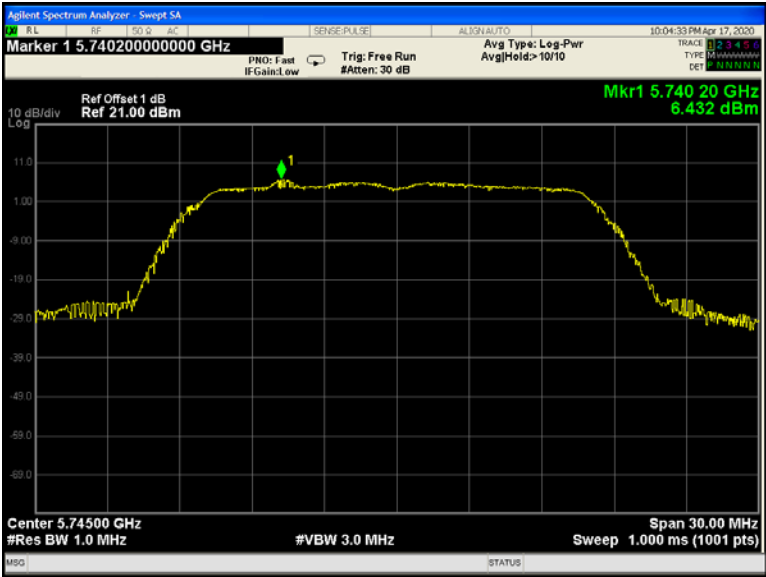
802.11n(HT40) U-NII-1 High channel



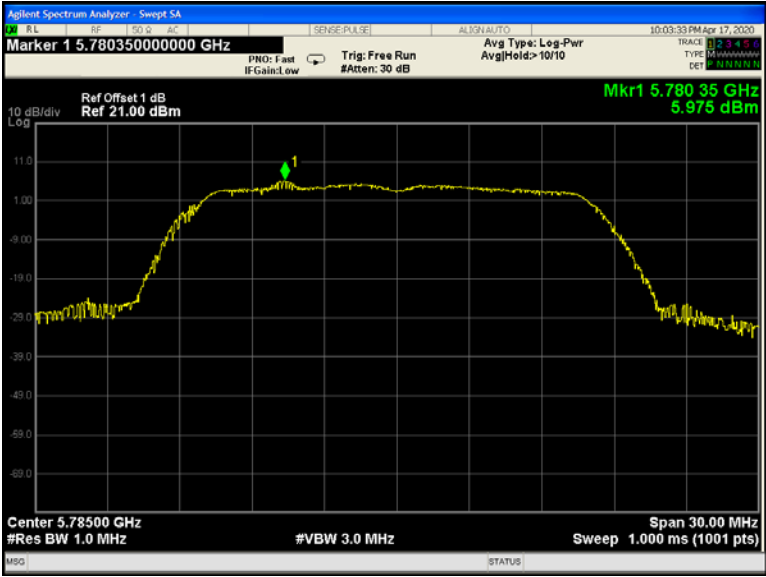
802.11ac(HT80) U-NII-1 Low channel



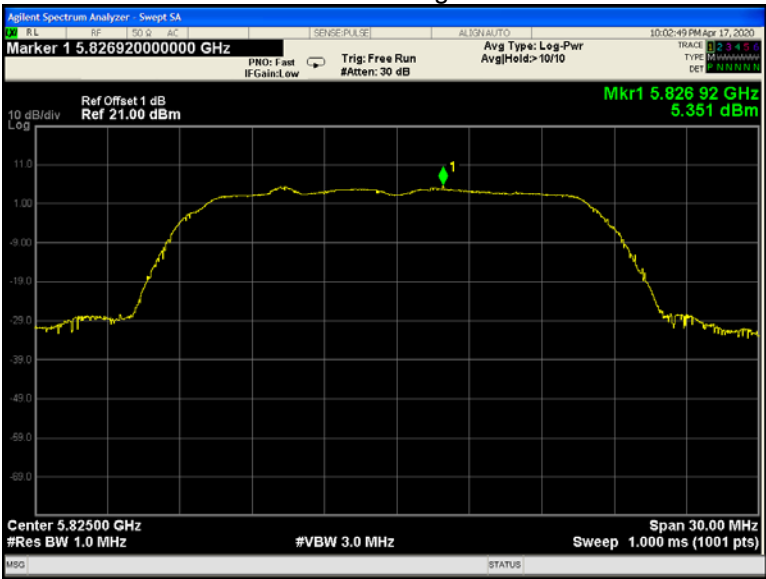
802.11a U-NII-3 Low channel



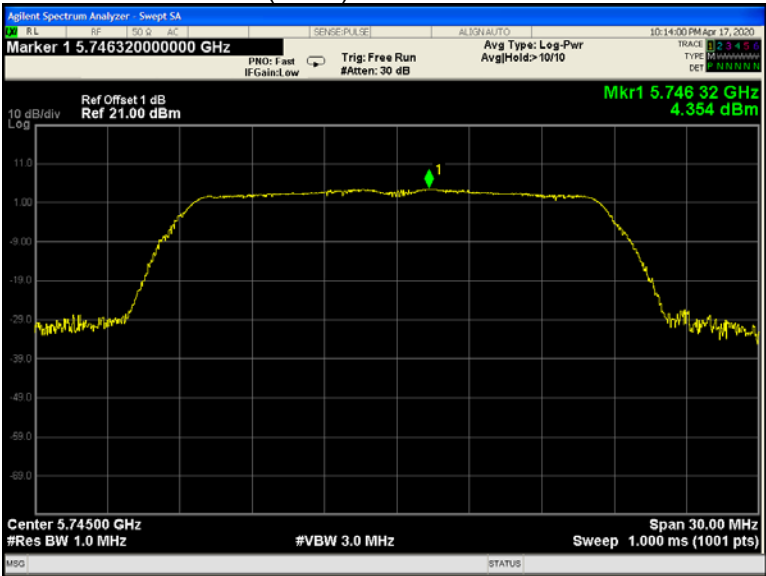
802.11a U-NII-3 Middle channel



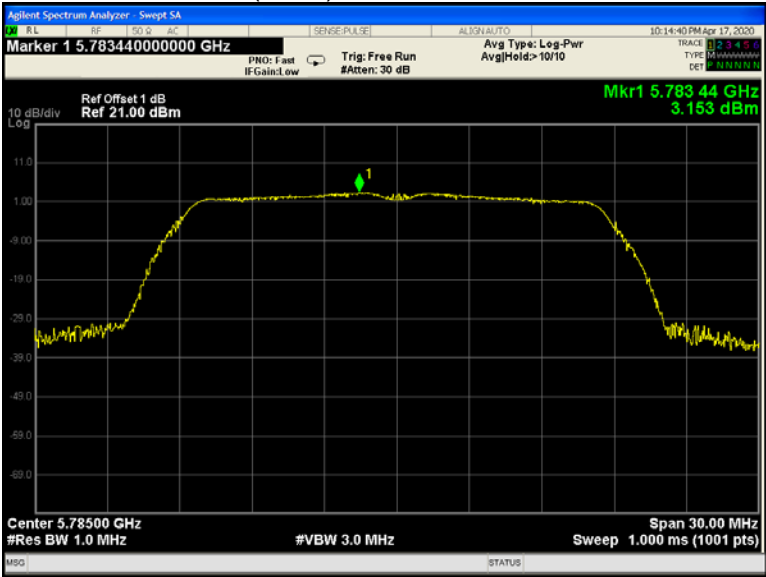
802.11a U-NII-3 High channel



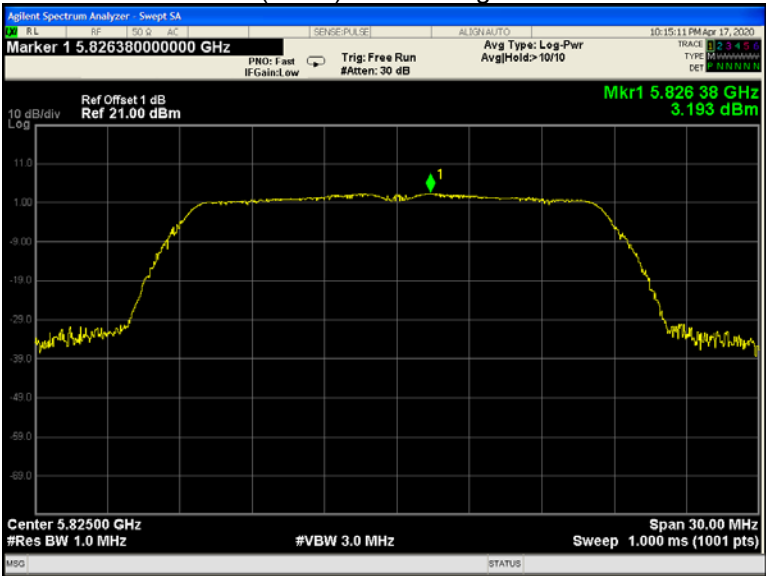
802.11n(HT20) U-NII-3 Low channel



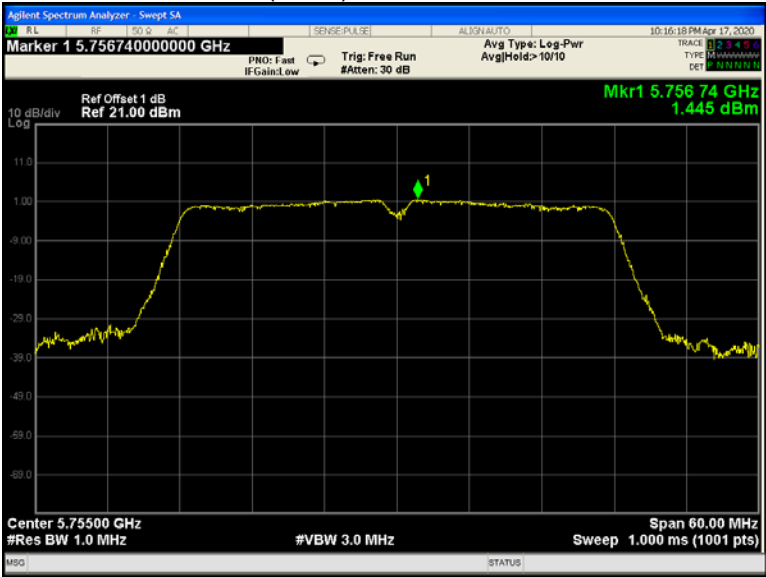
802.11n(HT20) U-NII-3 Middle channel



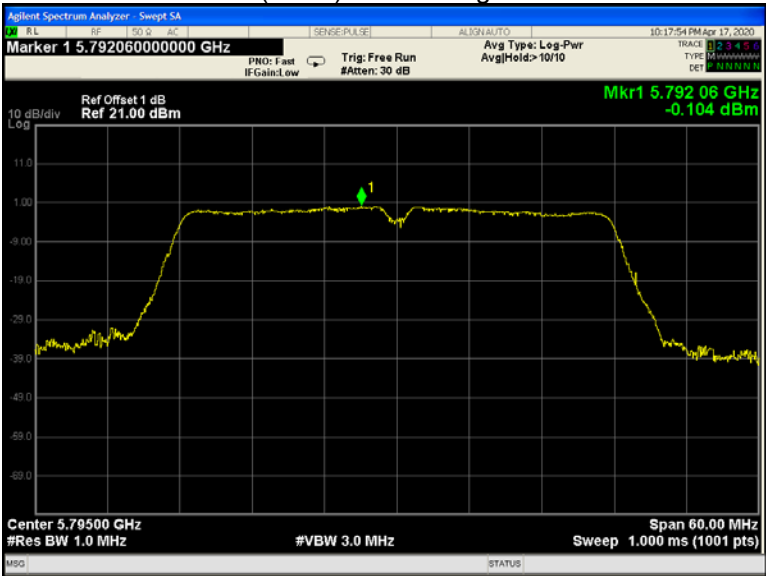
802.11n(HT20) U-NII-3 High channel



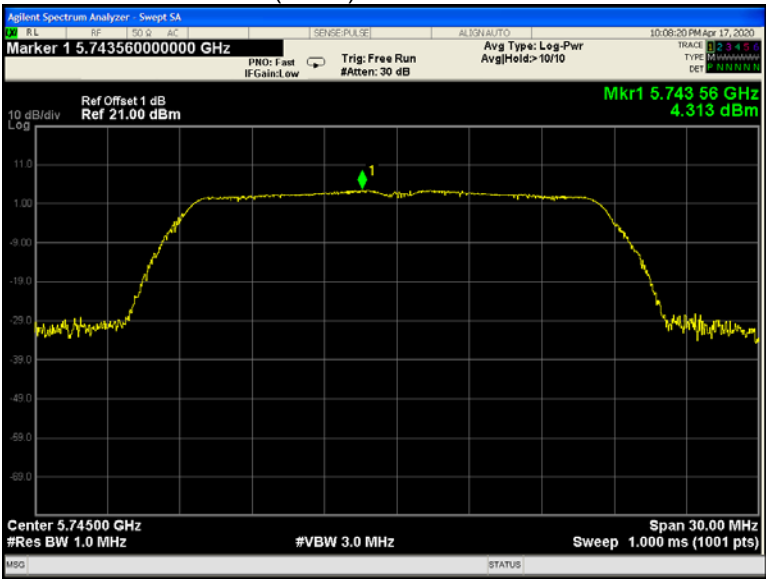
802.11n(HT40) U-NII-3 Low channel



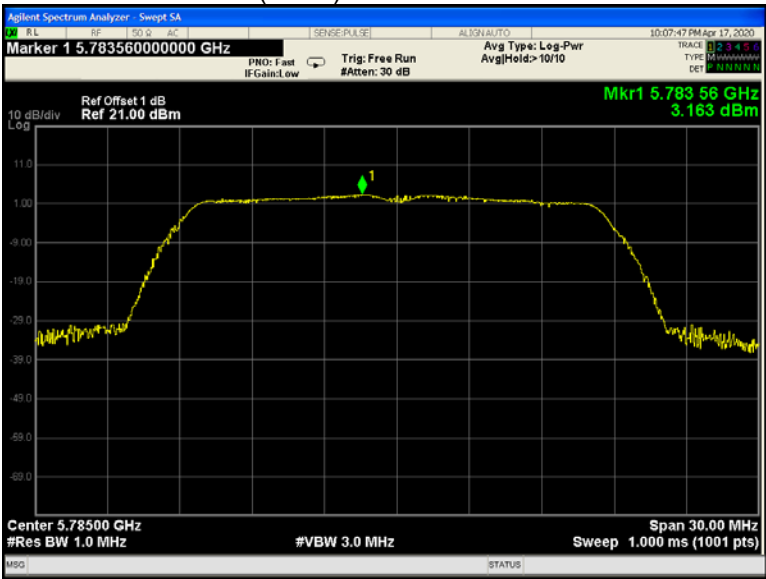
802.11n(HT40) U-NII-3 High channel



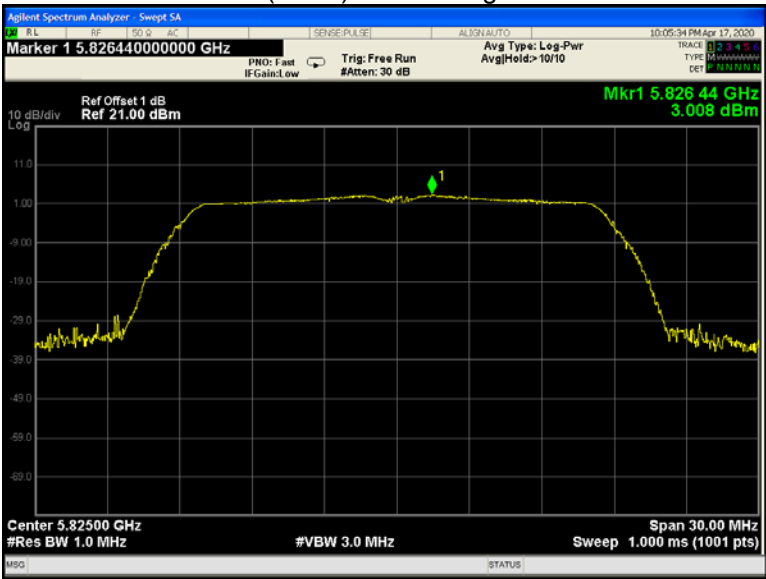
802.11ac(HT20) U-NII-3 Low channel



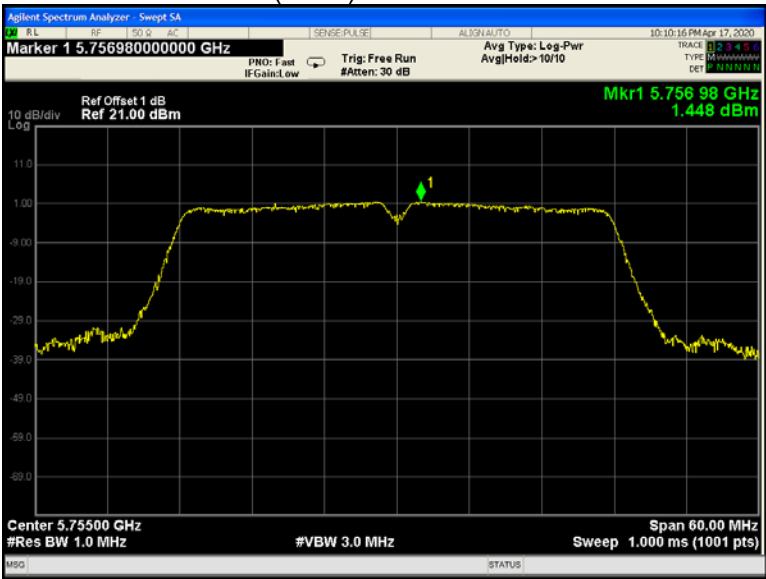
802.11ac(HT20) U-NII-3 Middle channel



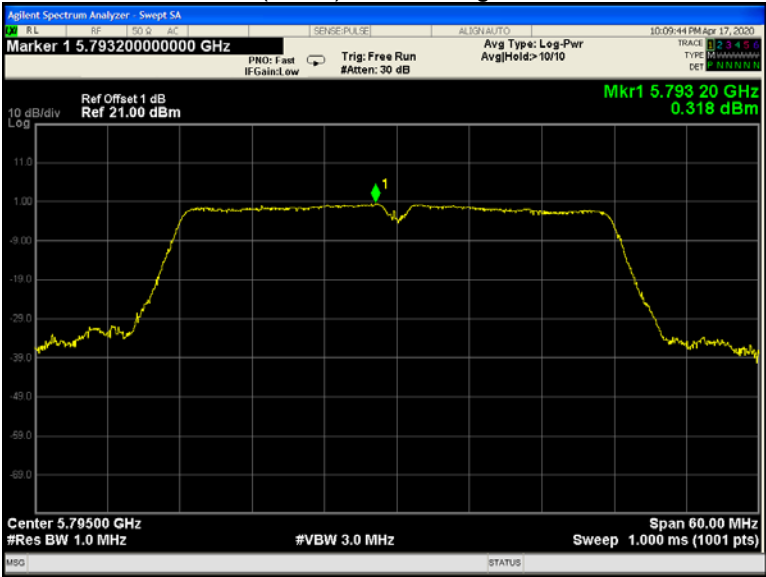
802.11ac(HT20) U-NII-3 High channel



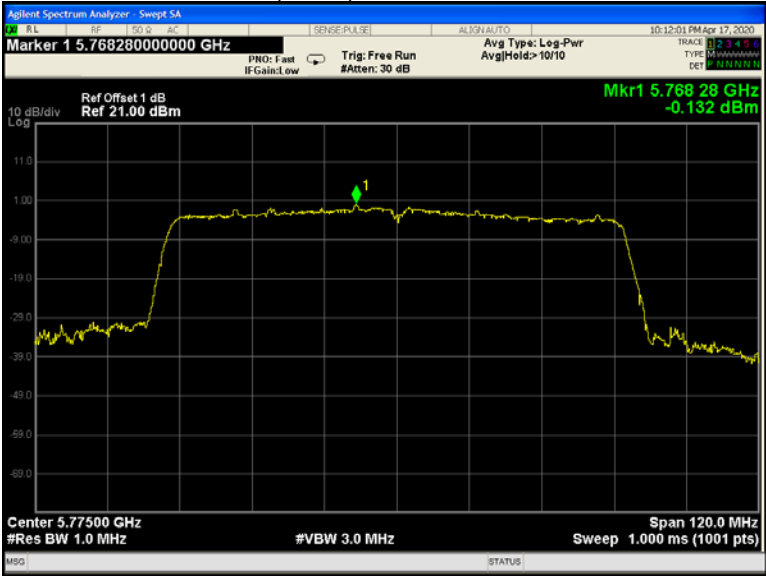
802.11ac(HT40) U-NII-3 Low channel



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

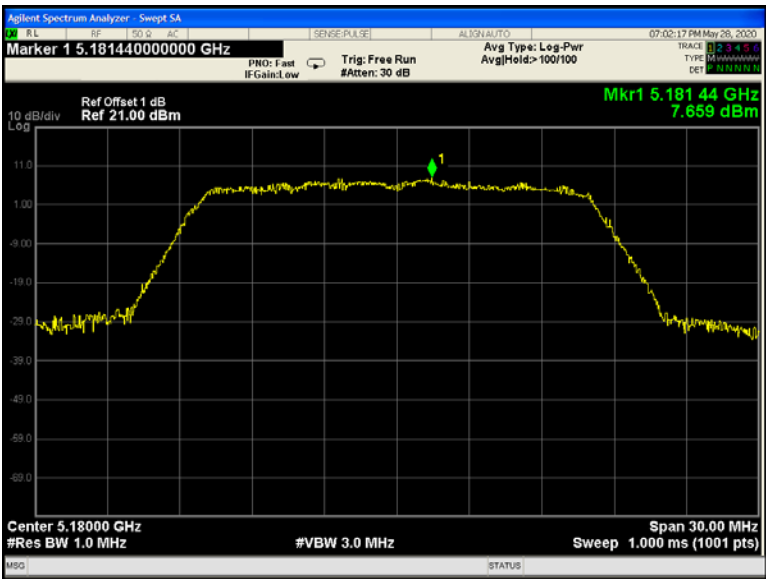


802.11ac(HT80) U-NII-3 Low channel

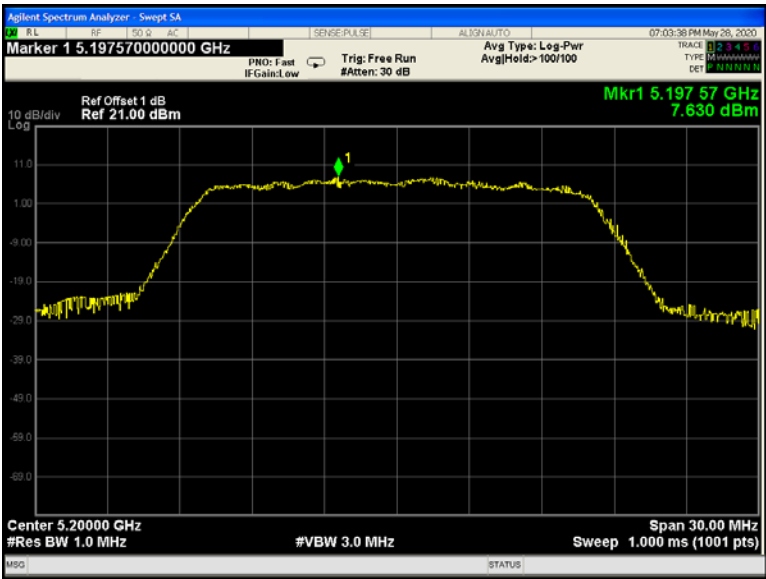


ANT 2

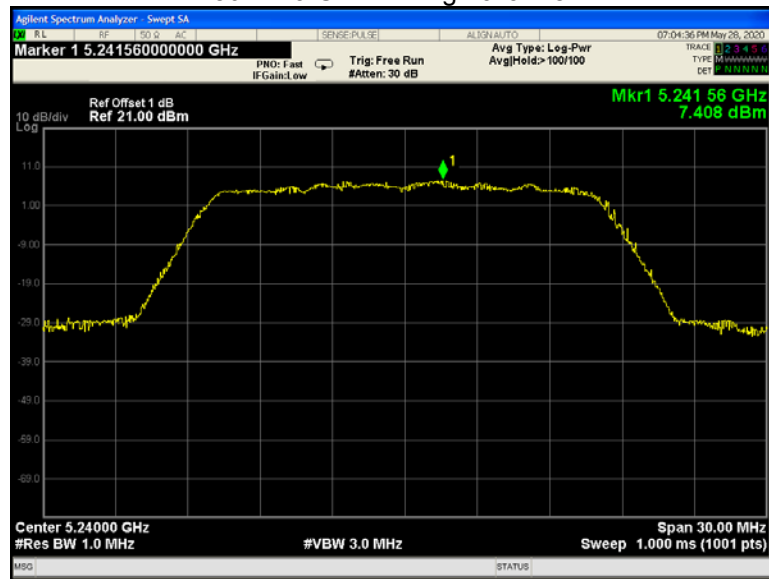
802.11a U-NII-1 Low channel



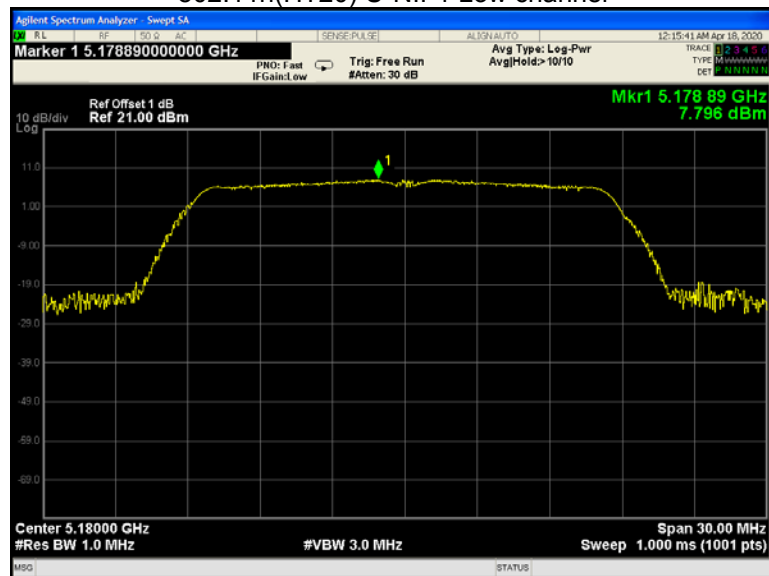
802.11a U-NII-1 Middle channel



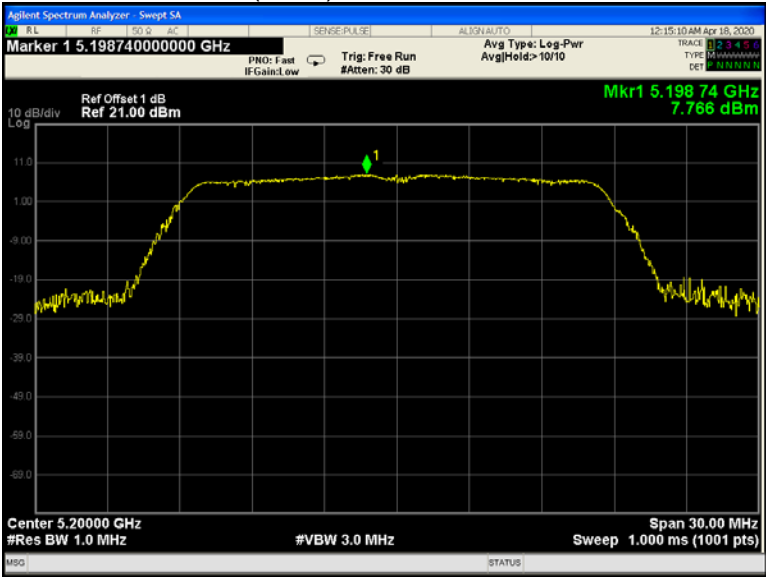
802.11a U-NII-1 High channel



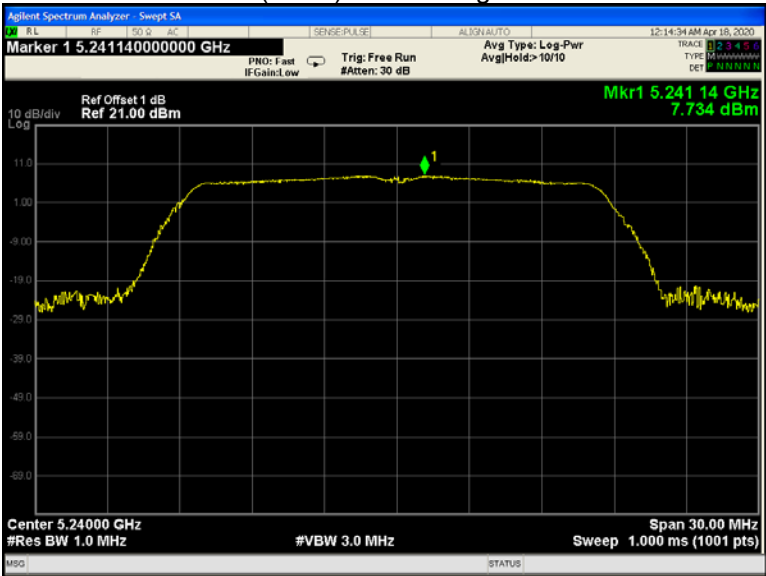
802.11n(HT20) U-NII-1 Low channel



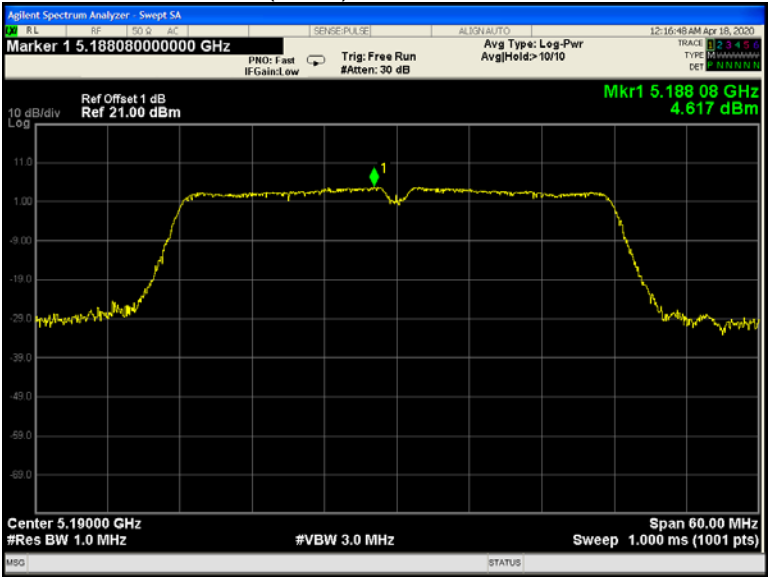
802.11n(HT20) U-NII-1 Middle channel



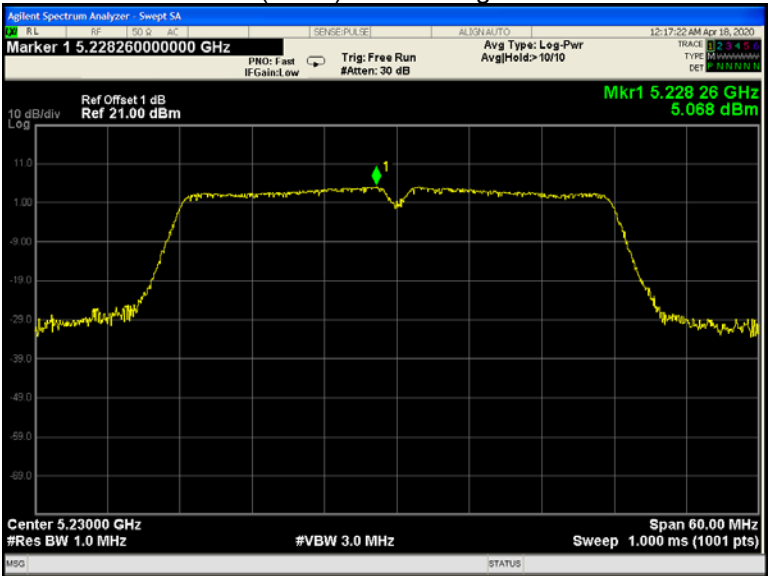
802.11n(HT20) U-NII-1 High channel



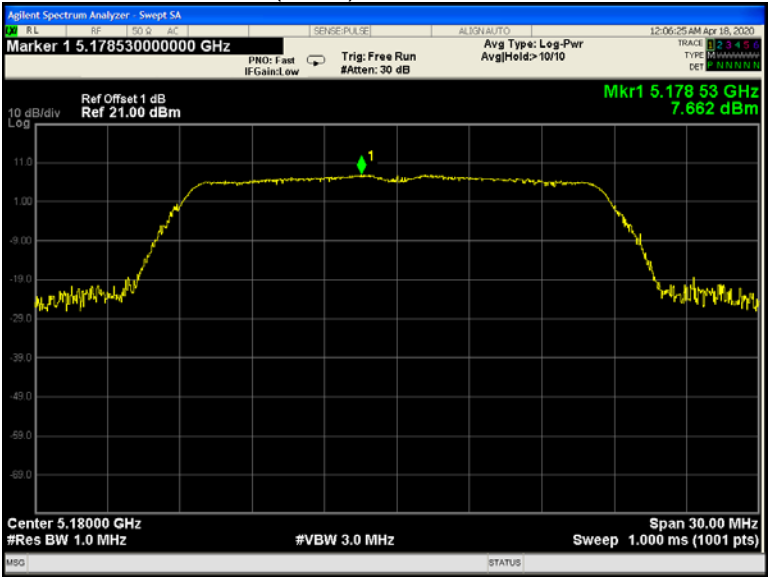
802.11n(HT40) U-NII-1 Low channel



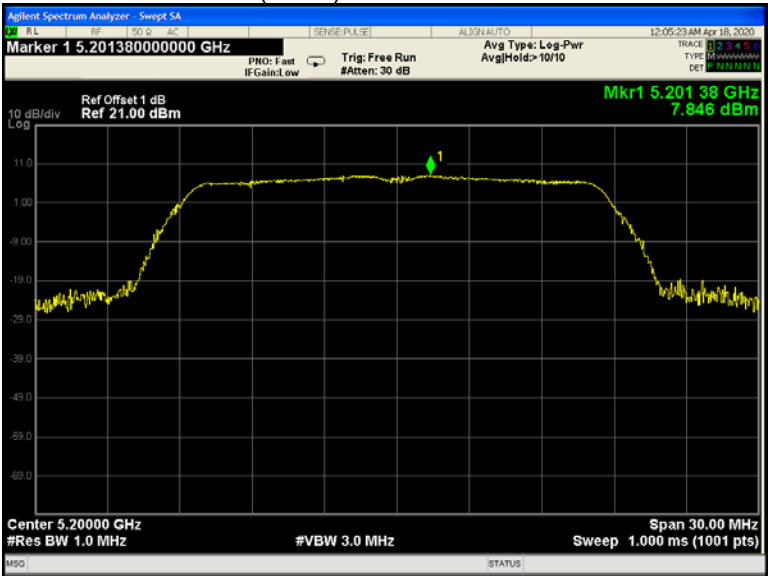
802.11n(HT40) U-NII-1 High channel



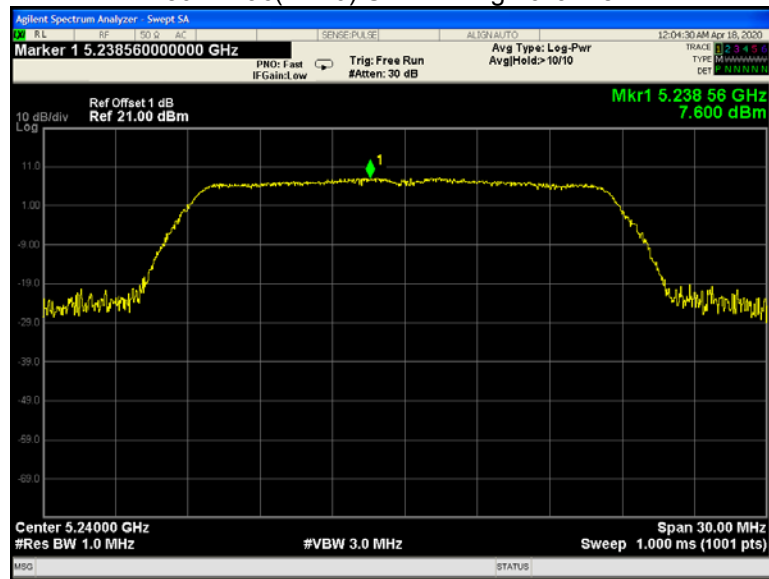
802.11ac(HT20) U-NII-1 Low channel



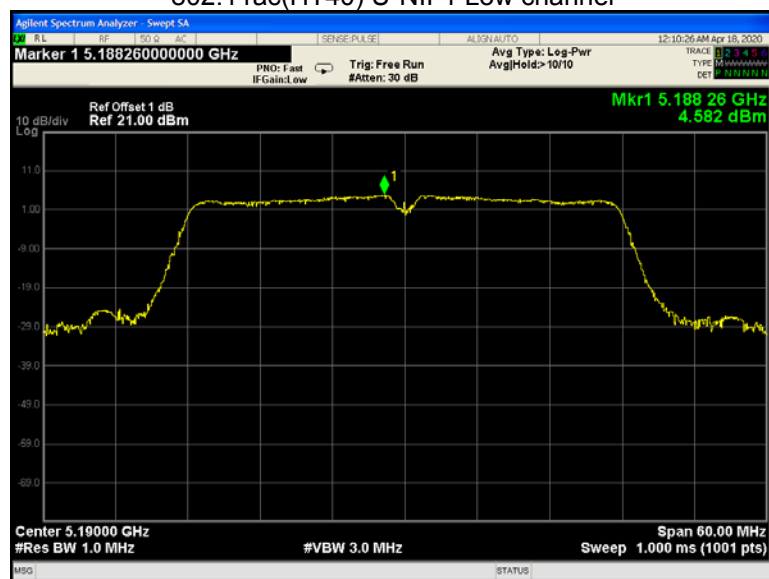
802.11ac(HT20) U-NII-1 Middle channel



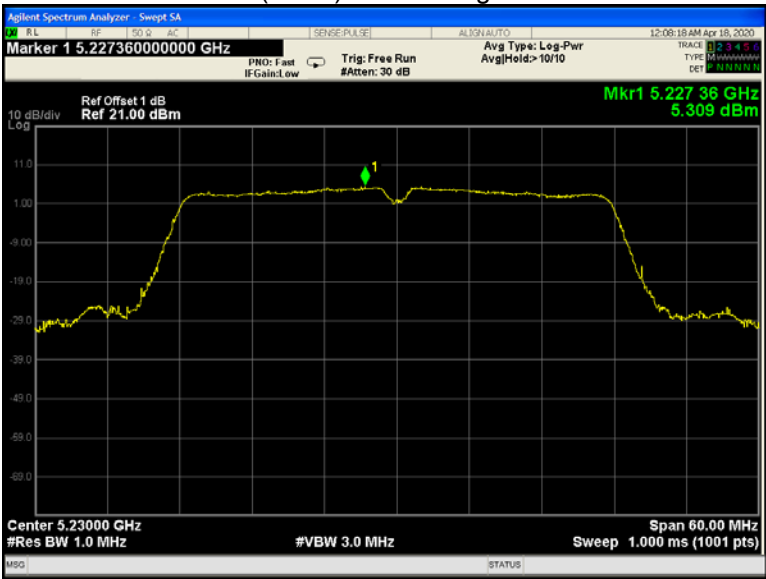
802.11ac(HT20) U-NII-1 High channel



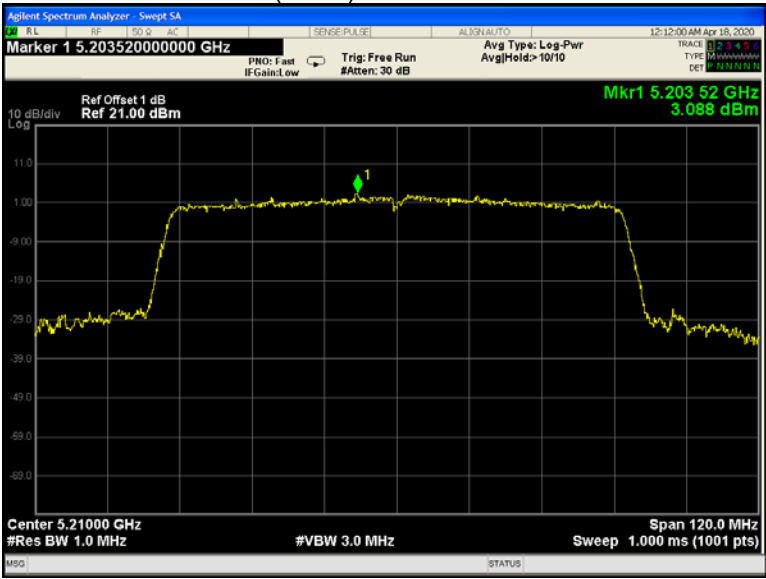
802.11ac(HT40) U-NII-1 Low channel



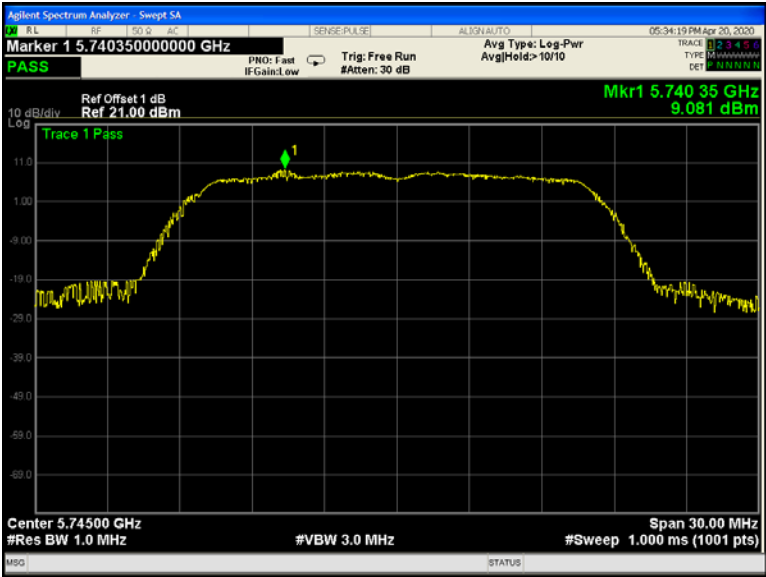
802.11n(HT40) U-NII-1 High channel



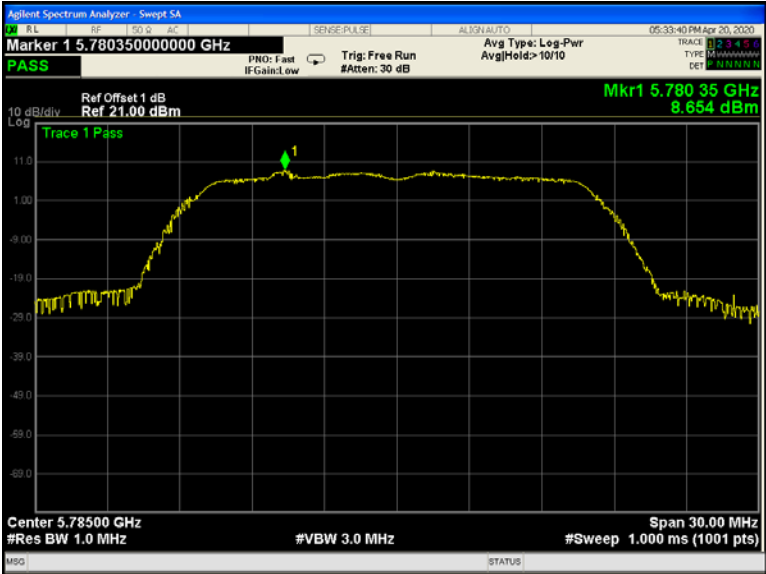
802.11ac(HT80) U-NII-1 Low channel



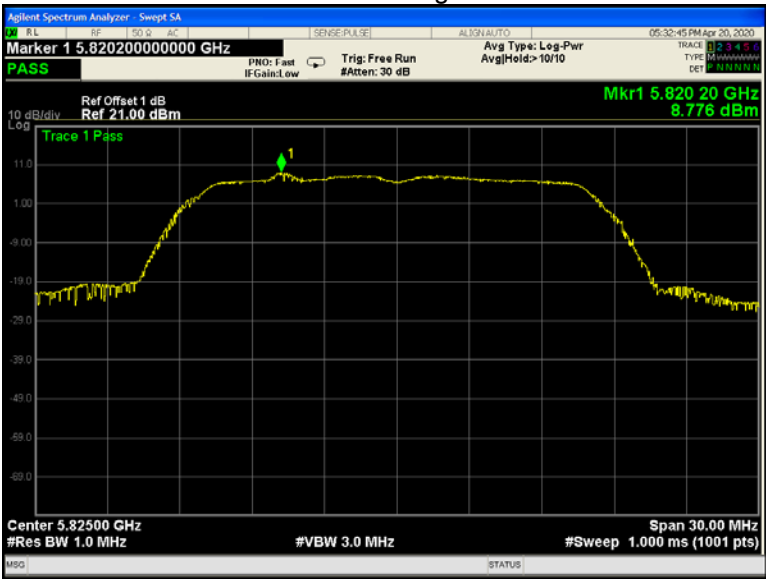
802.11a U-NII-3 Low channel



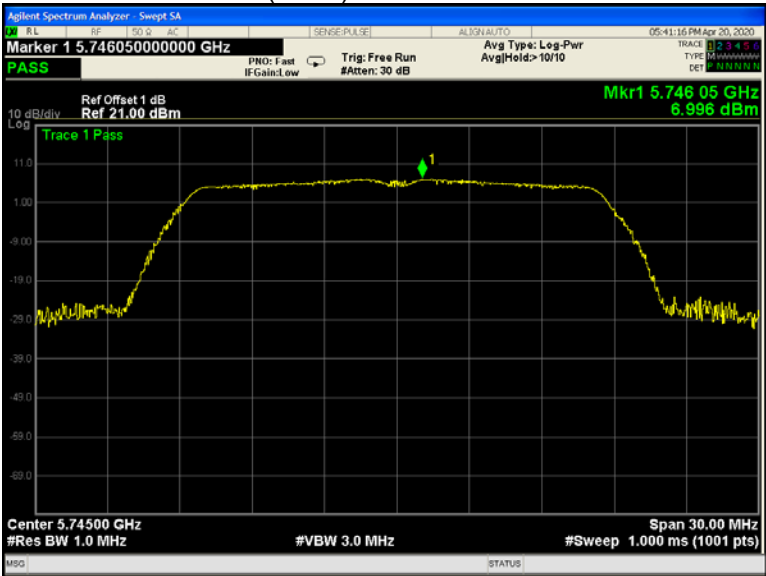
802.11a U-NII-3 Middle channel



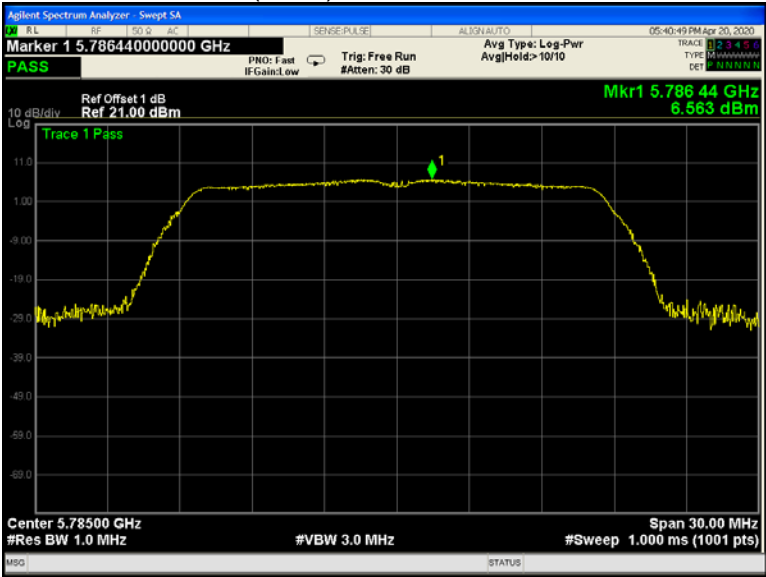
802.11a U-NII-3 High channel



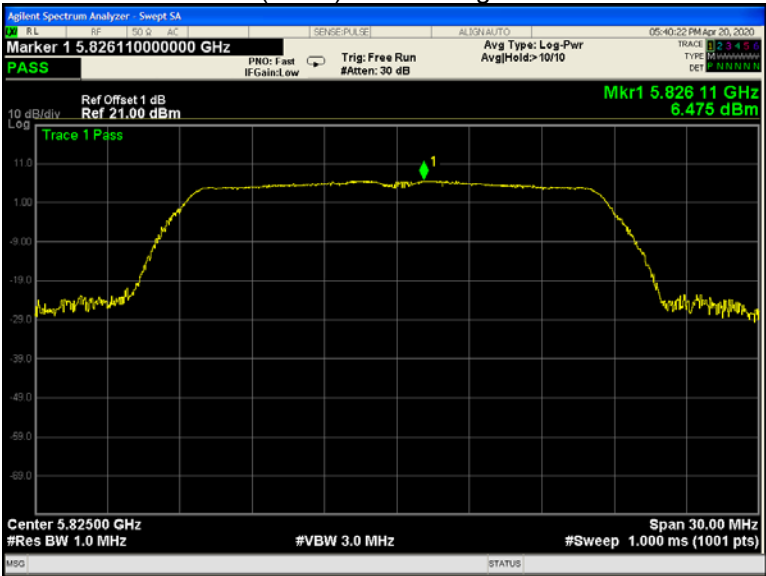
802.11n(HT20) U-NII-3 Low channel



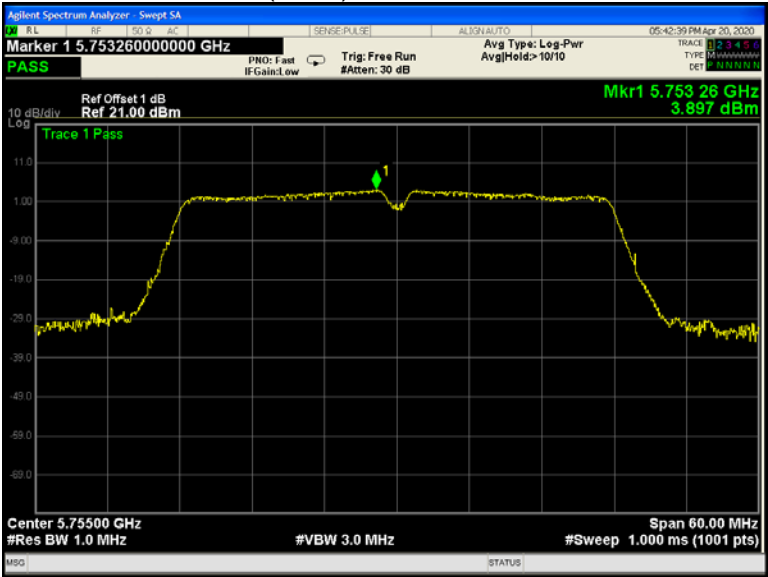
802.11n(HT20) U-NII-3 Middle channel



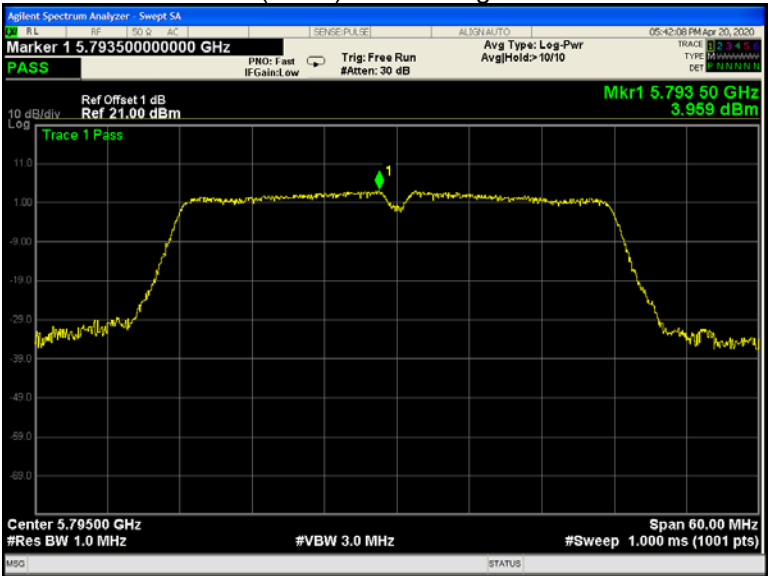
802.11n(HT20) U-NII-3 High channel



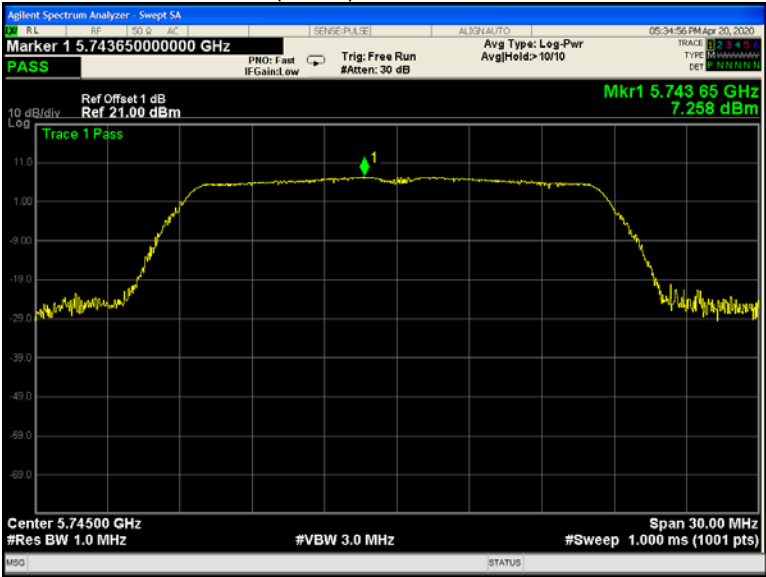
802.11n(HT40) U-NII-3 Low channel



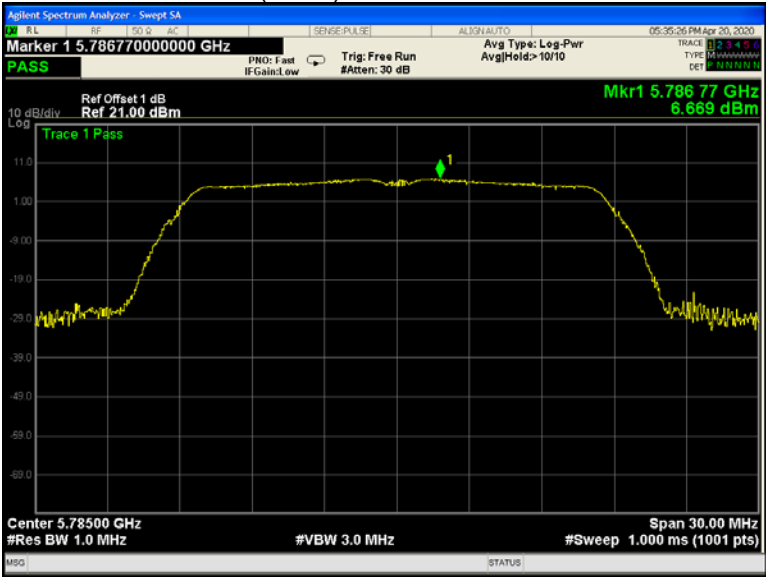
802.11n(HT40) U-NII-3 High channel



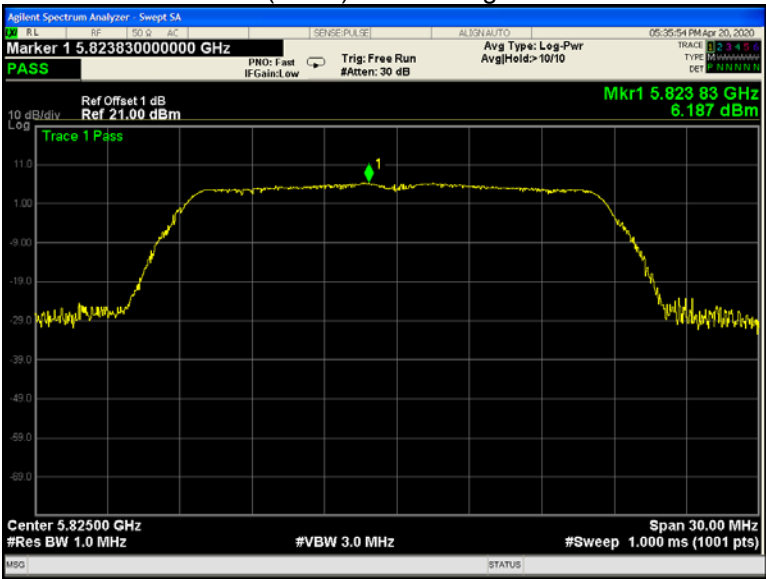
802.11ac(HT20) U-NII-3 Low channel



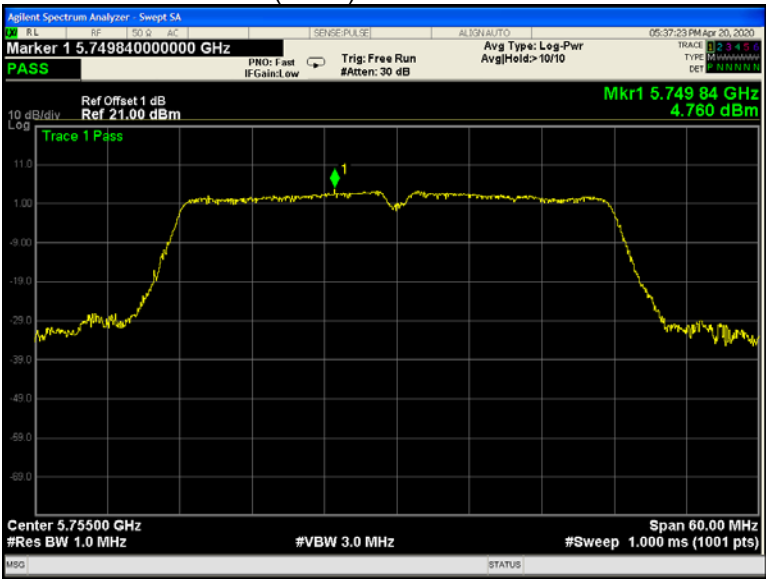
802.11ac(HT20) U-NII-3 Middle channel



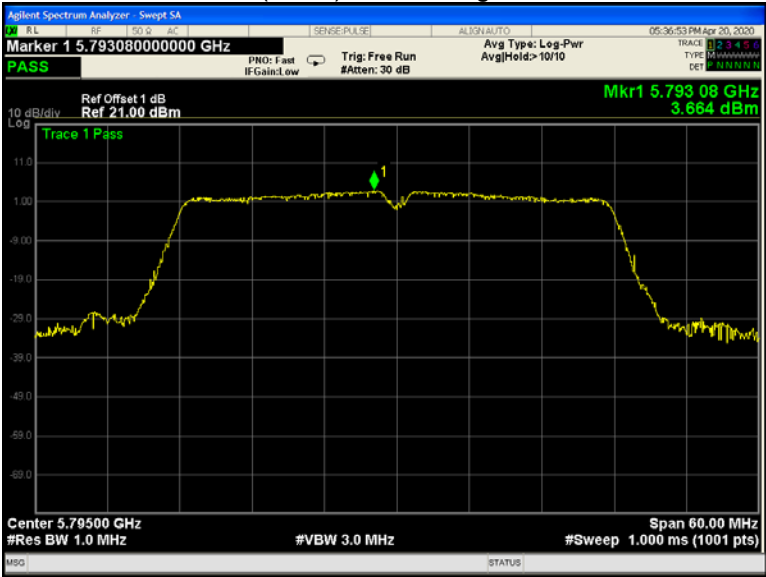
802.11ac(HT20) U-NII-3 High channel



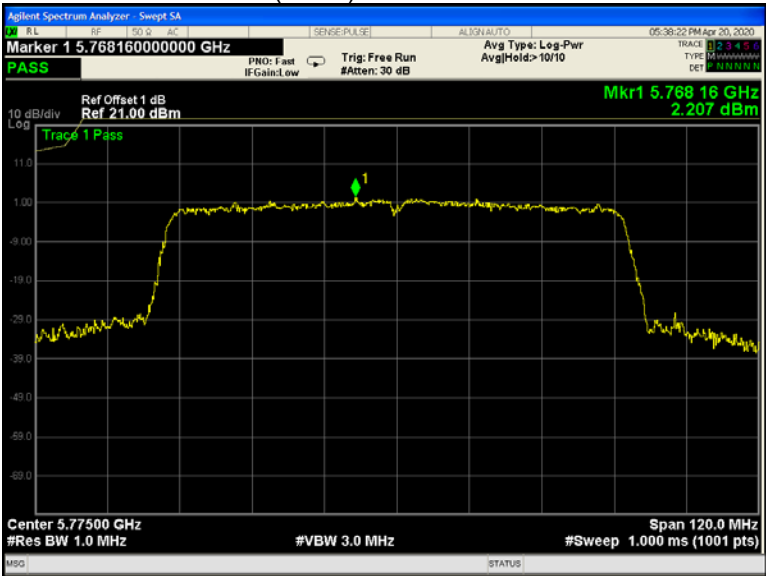
802.11ac(HT40) U-NII-3 Low channel



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



802.11ac(HT80) U-NII-3 Low channel



15 Frequency Stability

Test Requirement:	FCC CFR47 Part 15 Section 15.407(g)
Test Method:	ANSI C63.10:2013
Test 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 or 20ppm.
Test Result:	PASS

15.1 Test Procedure:

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
EUT have transmitted absence of unmodulation signal and fixed channelise. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f)/f_c \times 10^6$ ppm and the limit is less than ± 20 ppm. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.
2. Extreme temperature rule is $-15^{\circ}\text{C} \sim 45^{\circ}\text{C}$.

15.2 Test Result:

Remark: All channel have been tested for all mode , only the low channel were shown follow up:

802.11a U-NII-1

U-NII-1 Test Frequency:5180MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
45	120	1800	0.3475	20
30		1813	0.3500	20
20		1811	0.3496	20
10		1806	0.3486	20
0		1808	0.3490	20
-10		1813	0.3500	20
-15		1802	0.3479	20
20	108	1813	0.3500	20
20	132	1801	0.3477	20

802.11a U-NII-3

U-NII-3 Test Frequency:5745MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
45	120	1928	0.3356	20
30		1921	0.3344	20
20		1928	0.3356	20
10		1923	0.3347	20
0		1925	0.3351	20
-10		1917	0.3337	20
-15		1922	0.3346	20
20	108	1928	0.3356	20
20	132	1924	0.3349	20

802.11n(HT20) U-NII-1

U-NII-1 Test Frequency:5180MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
45	120	1708	0.3297	20
30		1720	0.3320	20
20		1719	0.3319	20
10		1712	0.3305	20
0		1711	0.3303	20
-10		1716	0.3313	20
-15		1716	0.3313	20
20	108	1710	0.3301	20
20	132	1705	0.3292	20

802.11 n(HT20) U-NII-3

U-NII-3 Test Frequency:5745MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
45	120	1813	0.3156	20
30		1814	0.3158	20
20		1804	0.3140	20
10		1807	0.3145	20
0		1807	0.3145	20
-10		1809	0.3149	20
-15		1807	0.3145	20
20	108	1812	0.3154	20
20	132	1804	0.3140	20

802.11ac(HT20) U-NII-1

U-NII-1 Test Frequency:5180MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
45	120	1810	0.3494	20
30		1800	0.3475	20
20		1799	0.3473	20
10		1805	0.3485	20
0		1807	0.3488	20
-10		1804	0.3483	20
-15		1798	0.3471	20
20	108	1812	0.3498	20
20	132	1804	0.3483	20

802.11 ac(HT20) U-NII-3

U-NII-3 Test Frequency:5745MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
45	120	1842	0.3206	20
30		1831	0.3187	20
20		1836	0.3196	20
10		1837	0.3198	20
0		1834	0.3192	20
-10		1846	0.3213	20
-15		1842	0.3206	20
20	108	1835	0.3194	20
20	132	1831	0.3187	20

802.11n(HT40) U-NII-1

U-NII-1 Test Frequency:5190MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
45	120	1811	0.3489	20
30		1803	0.3474	20
20		1817	0.3501	20
10		1811	0.3489	20
0		1812	0.3491	20
-10		1819	0.3505	20
-15		1817	0.3501	20
20	108	1808	0.3484	20
20	132	1806	0.3480	20

802.11 n(HT40) U-NII-3

U-NII-3 Test Frequency:5755MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
45	120	1831	0.3182	20
30		1814	0.3152	20
20		1822	0.3166	20
10		1822	0.3166	20
0		1825	0.3171	20
-10		1819	0.3161	20
-15		1824	0.3169	20
20	108	1816	0.3156	20
20	132	1826	0.3173	20

802.11ac(HT40) U-NII-1

U-NII-1 Test Frequency:5190MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
45	120	1780	0.3430	20
30		1786	0.3441	20
20		1783	0.3435	20
10		1786	0.3441	20
0		1792	0.3453	20
-10		1779	0.3428	20
-15		1789	0.3447	20
20	108	1781	0.3432	20
20	132	1779	0.3428	20

802.11 ac(HT40) U-NII-3

U-NII-3 Test Frequency:5755MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
45	120	1844	0.3204	20
30		1857	0.3227	20
20		1857	0.3227	20
10		1849	0.3213	20
0		1851	0.3216	20
-10		1845	0.3206	20
-15		1845	0.3206	20
20	108	1853	0.3220	20
20	132	1850	0.3215	20

802.11ac(HT80) U-NII-1

U-NII-1 Test Frequency:5210MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
45	120	1844	0.3539	20
30		1837	0.3526	20
20		1843	0.3537	20
10		1841	0.3534	20
0		1833	0.3518	20
-10		1841	0.3534	20
-15		1845	0.3541	20
20	108	1844	0.3539	20
20	132	1848	0.3547	20

802.11 ac(HT80) U-NII-3

U-NII-3 Test Frequency:5775MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
45	120	1843	0.3191	20
30		1845	0.3195	20
20		1842	0.3190	20
10		1849	0.3202	20
0		1843	0.3191	20
-10		1851	0.3205	20
-15		1855	0.3212	20
20	108	1858	0.3217	20
20	132	1847	0.3198	20

16 Antenna Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

This device uses an anti-helix interface antenna to the intentional radiator. Antenna connectors complied with the requirement.

17 RF Exposure

Remark: refer to MPE test report: WTF20S04018829W003.

18 Photographs of test setup and EUT.

Note: Please refer to appendix: Appendix- AUR524/WRC-1-Photos.

=====End of Report=====