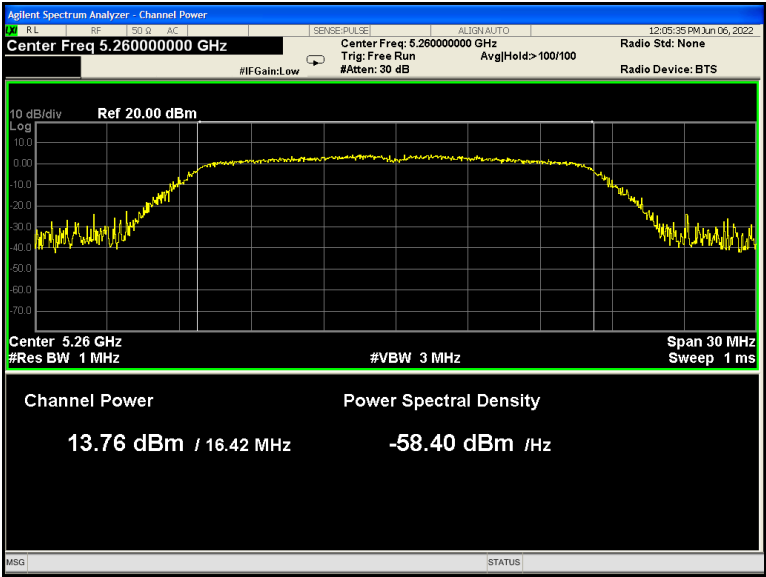
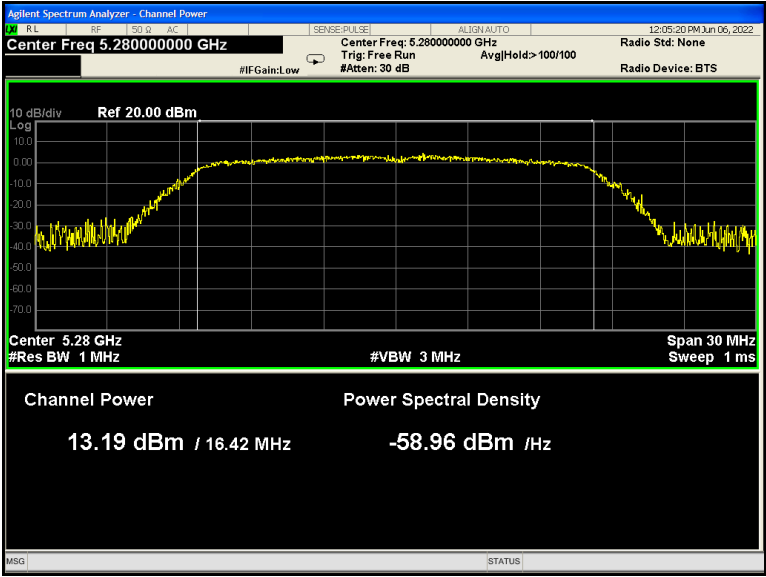


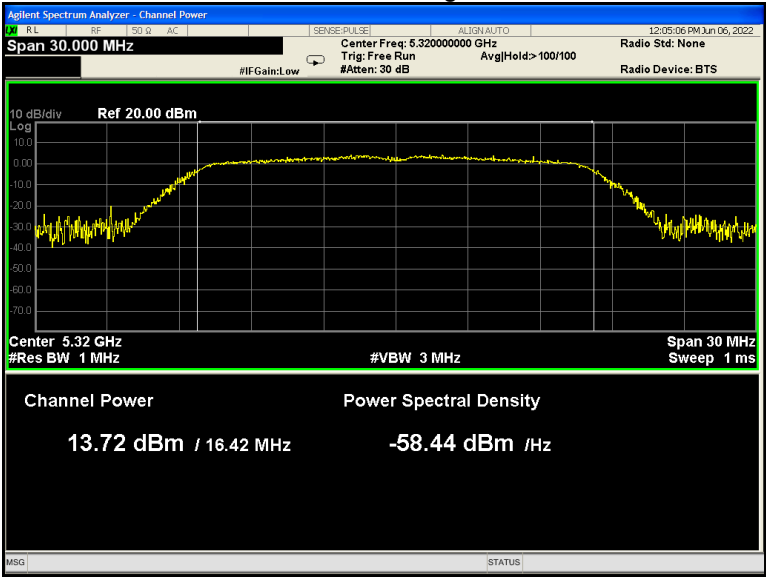
802.11a U-NII-2A Low channel



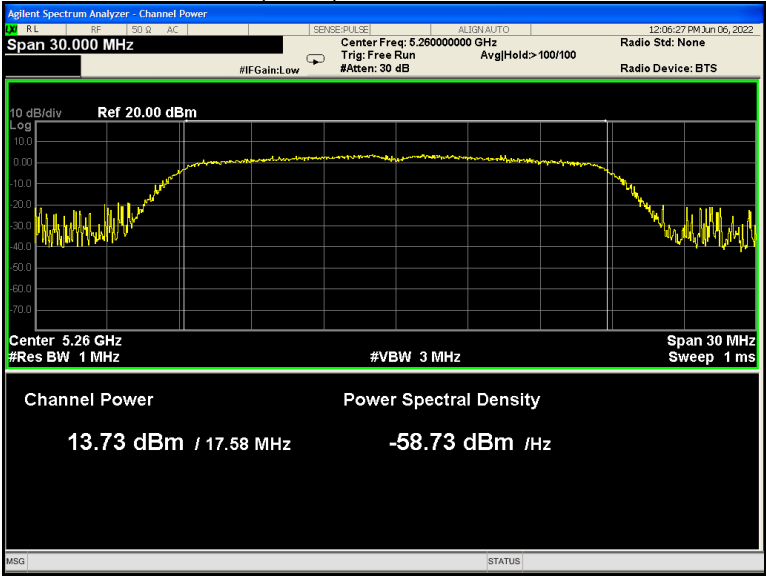
802.11a U-NII-2A Middle channel



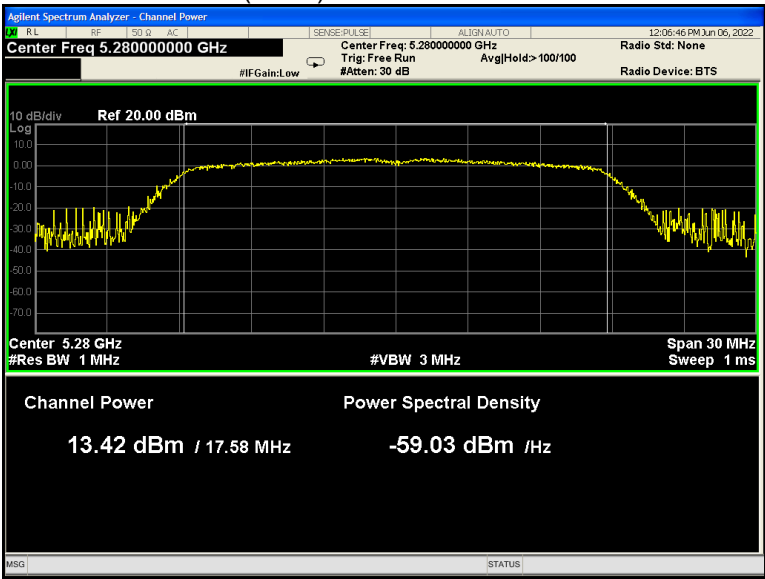
802.11a U-NII-2A High channel



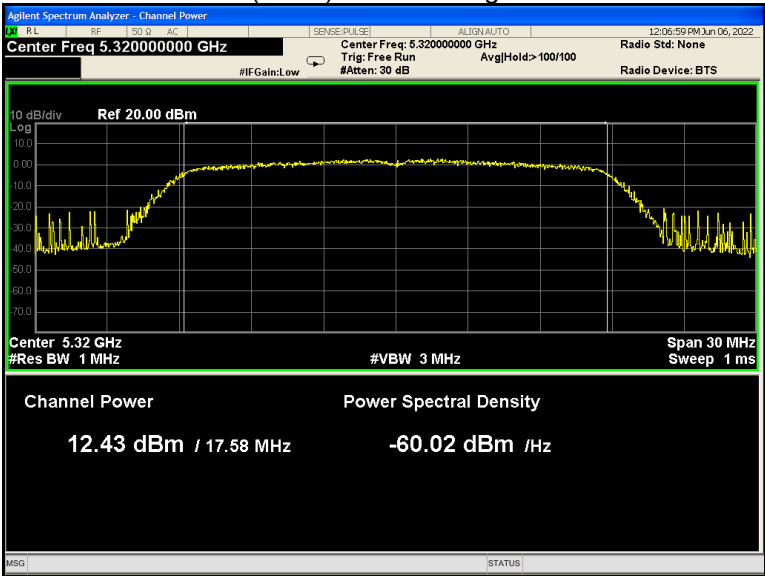
802.11n(HT20) U-NII-2A Low channel



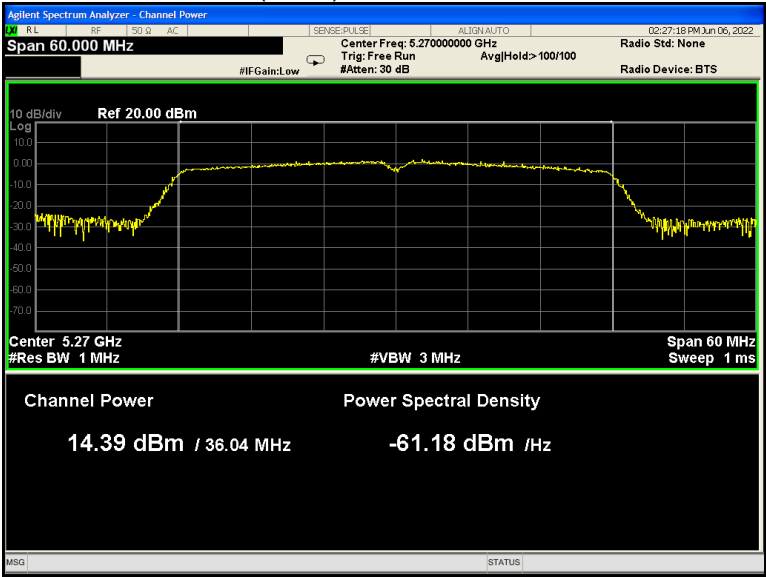
802.11n(HT20) U-NII-2A Middle channel



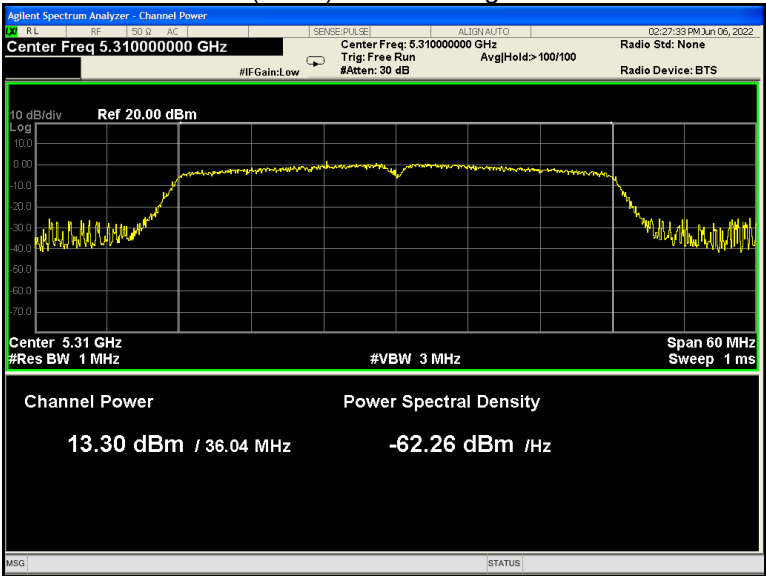
802.11n(HT20) U-NII-2A High channel



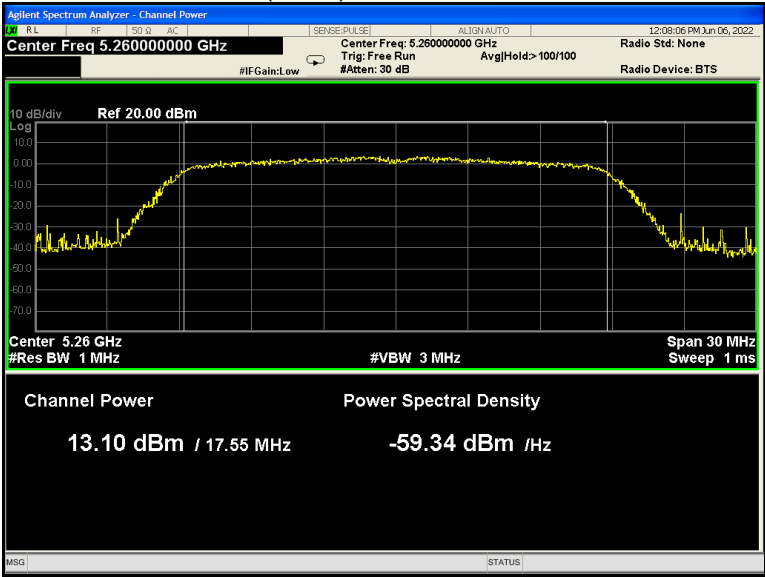
802.11n(HT40) U-NII-2A Low channel



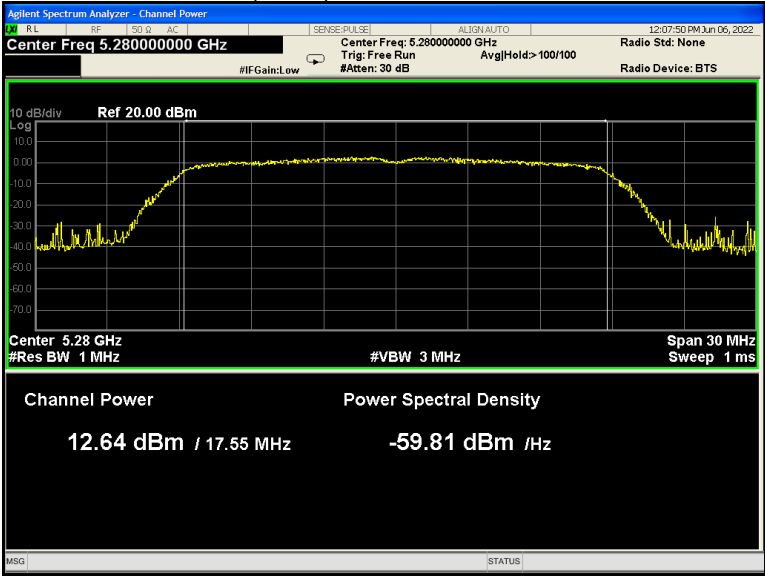
802.11n(HT40) U-NII-2A High channel



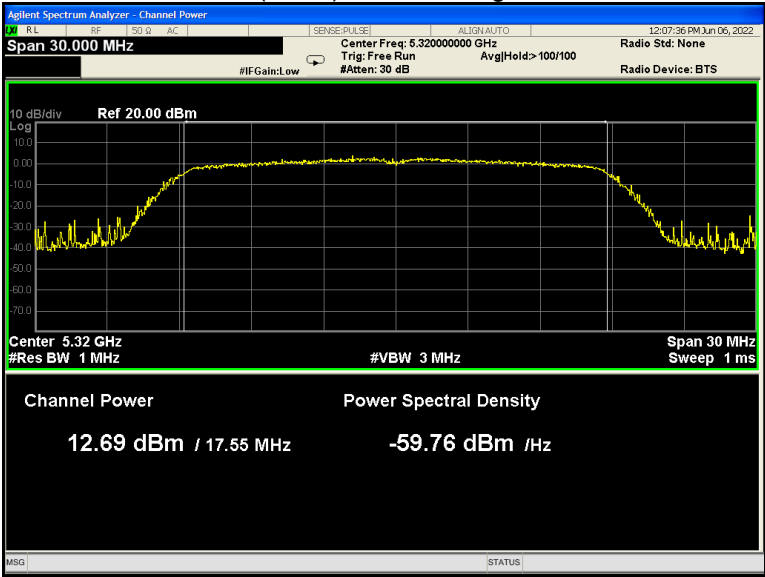
802.11ac(HT20) U-NII-2A Low channel



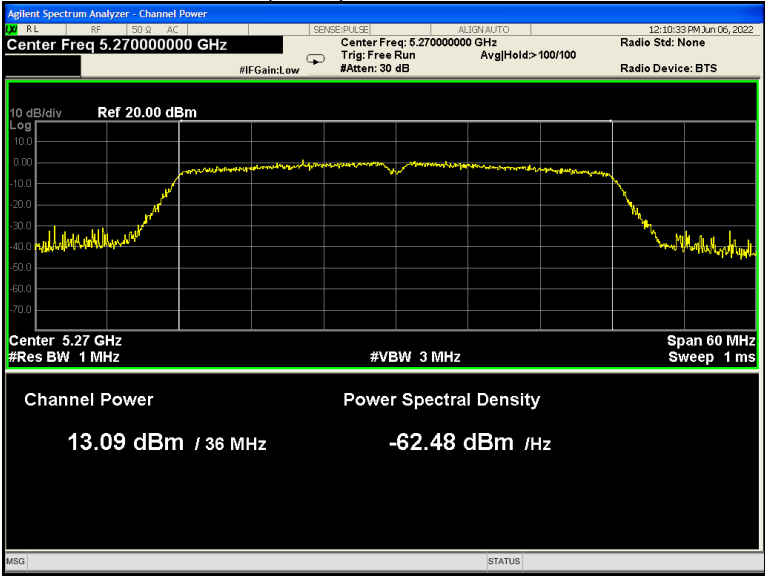
802.11ac(HT20) U-NII-2A Middle channel



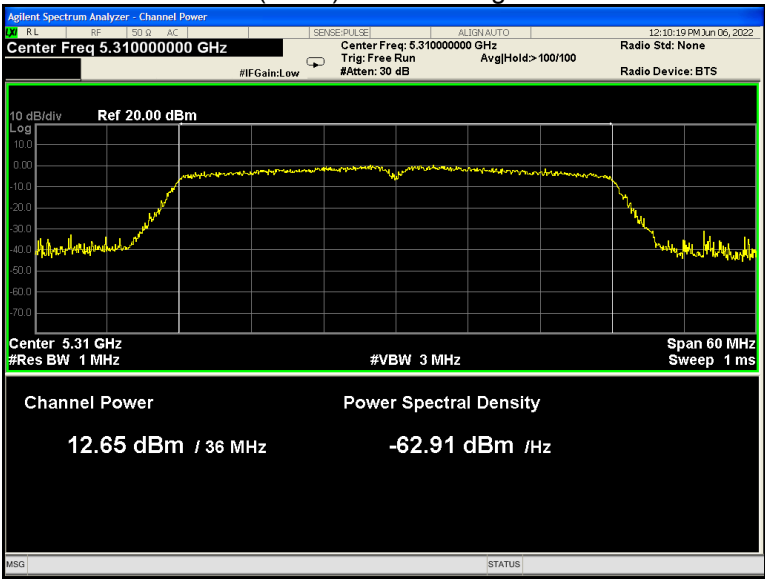
802.11ac(HT20) U-NII-2A High channel



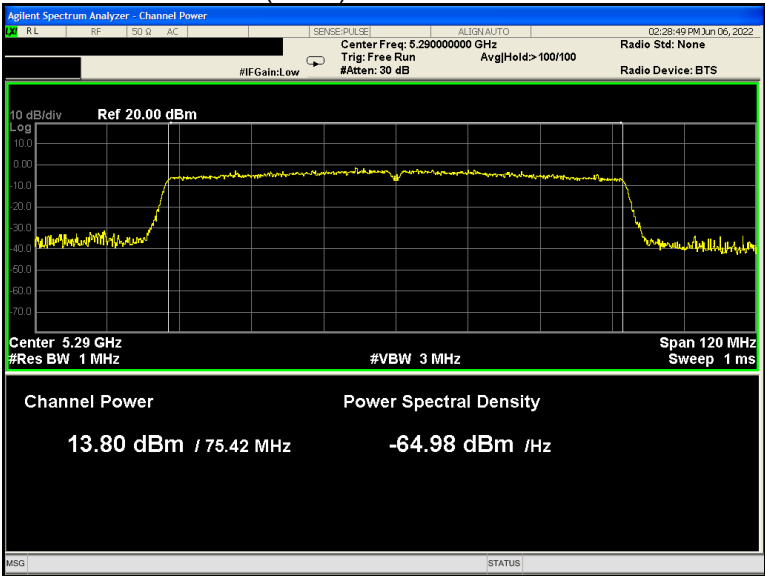
802.11ac(HT40) U-NII-2A Low channel



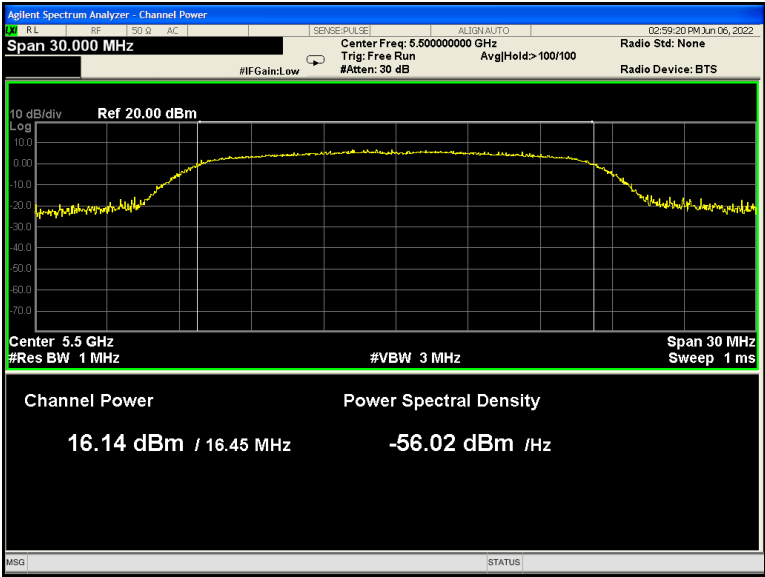
802.11ac(HT40) U-NII-2A High channel



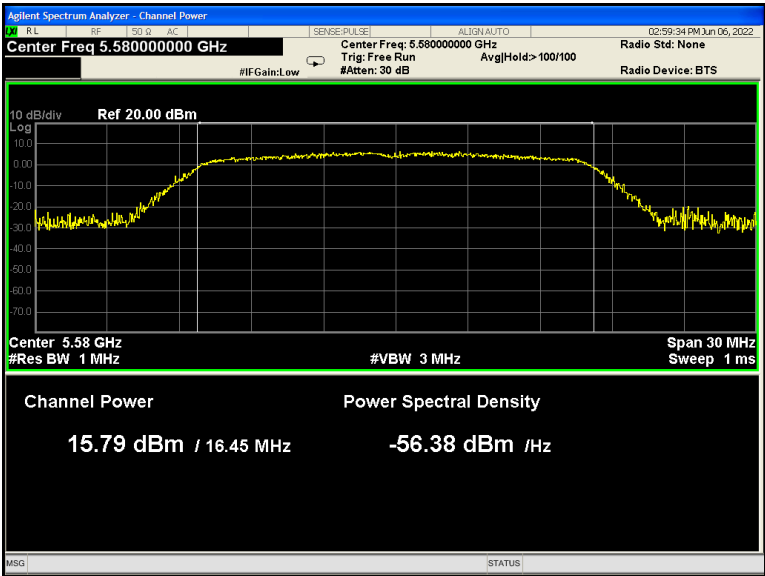
802.11ac(HT80) U-NII-2A Low channel



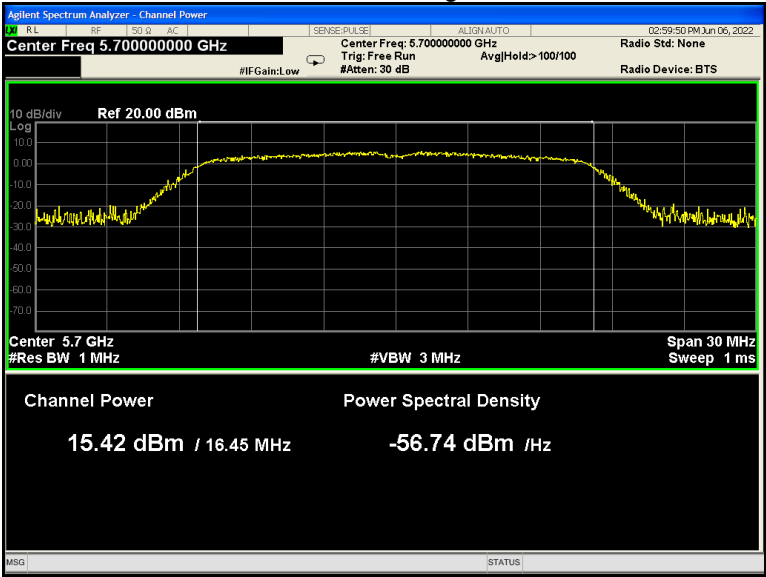
802.11a U-NII-2C Low channel



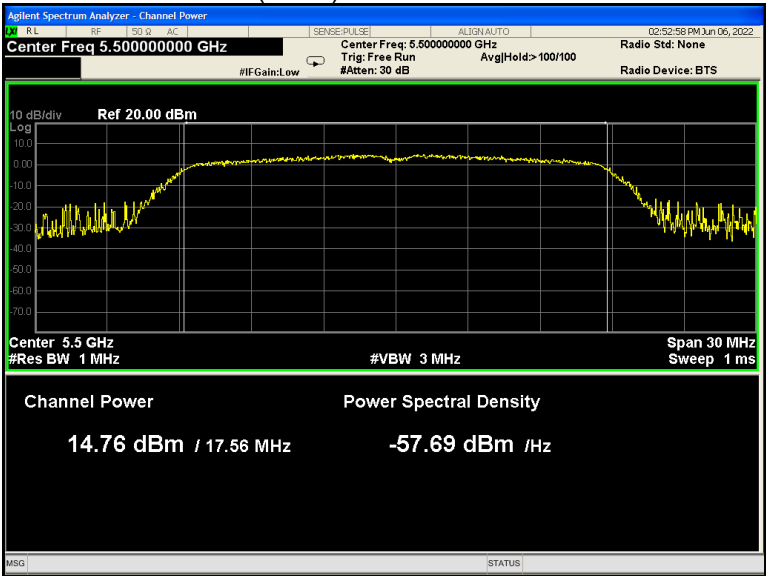
802.11a U-NII-2C Middle channel



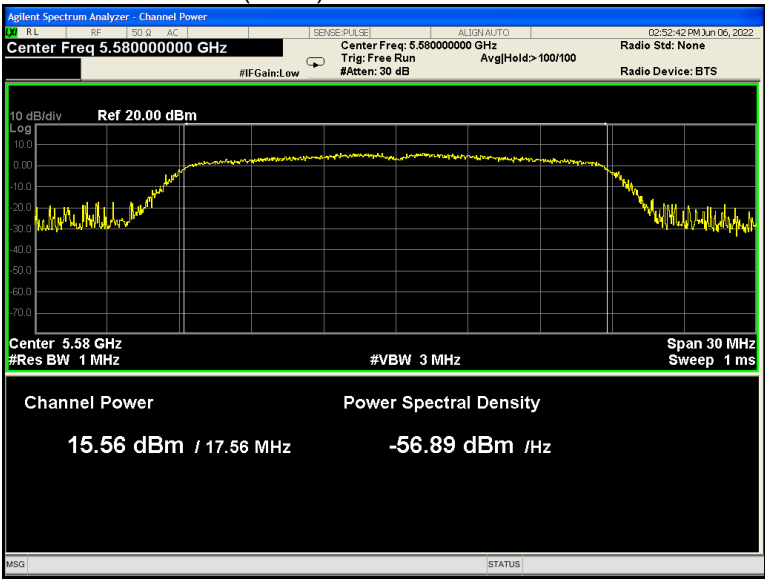
802.11a U-NII-2C High channel



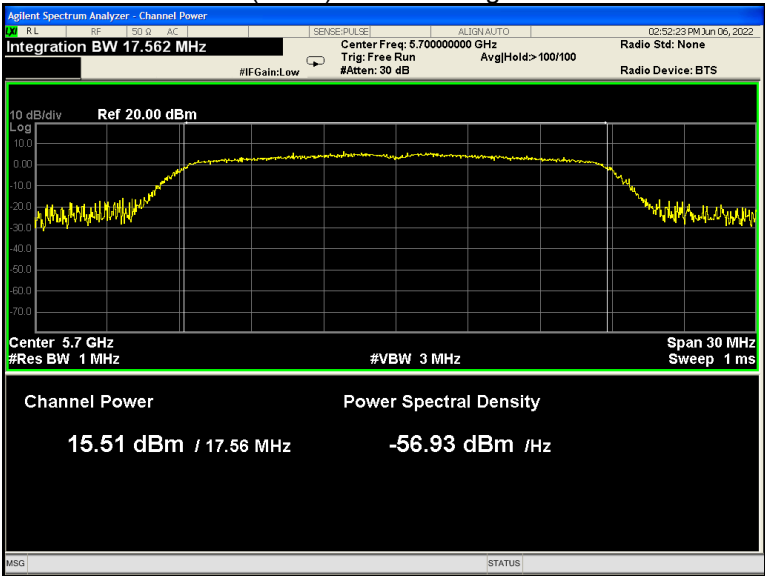
802.11n(HT20) U-NII-2C Low channel



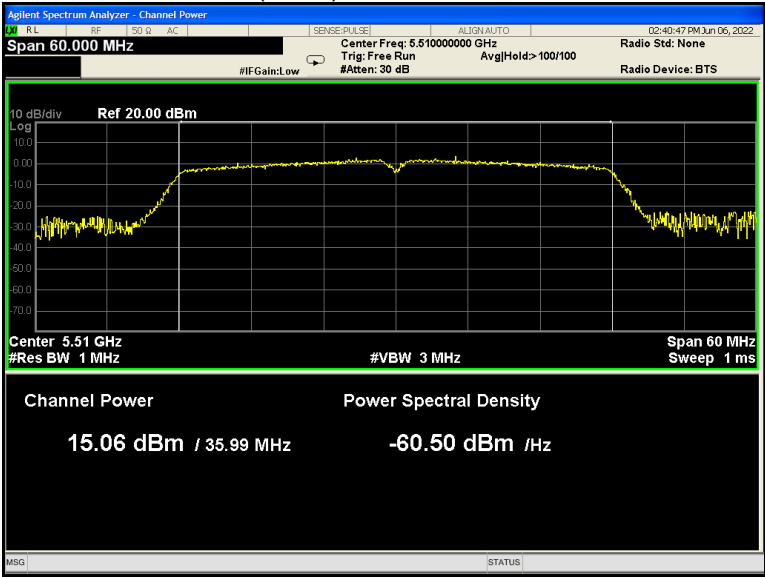
802.11n(HT20) U-NII-2C Middle channel



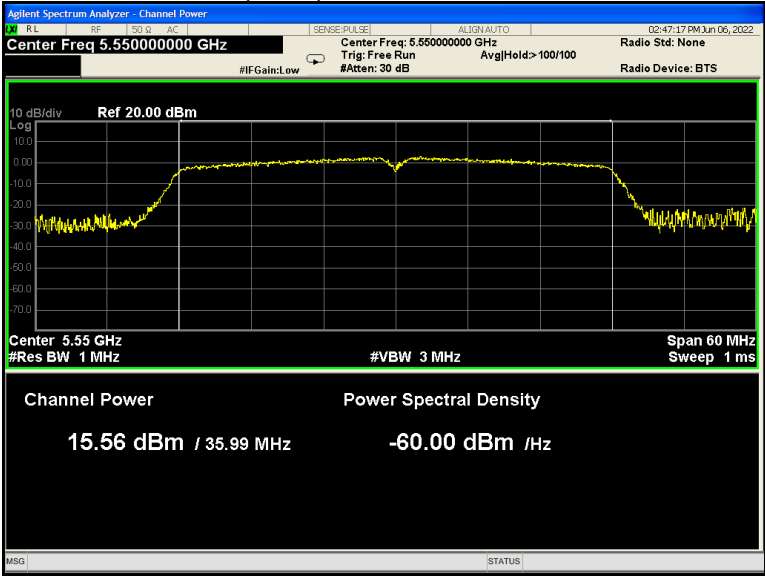
802.11n(HT20) U-NII-2C High channel

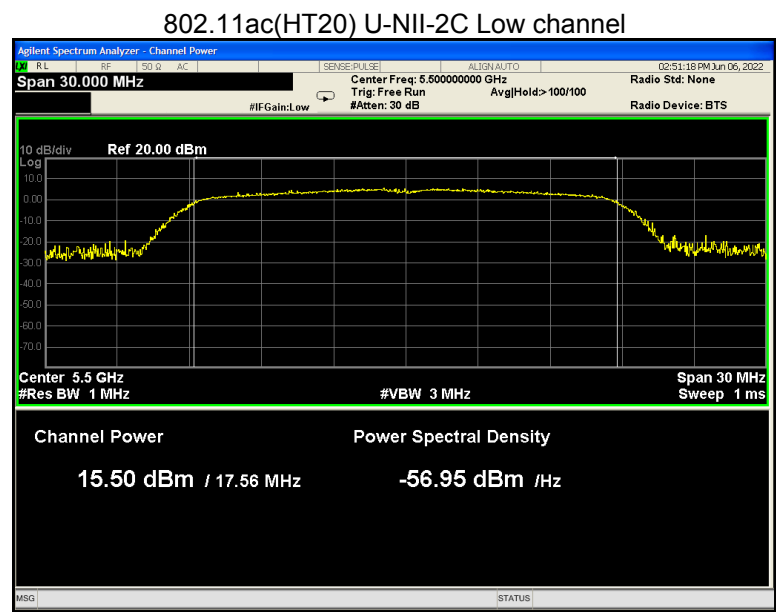
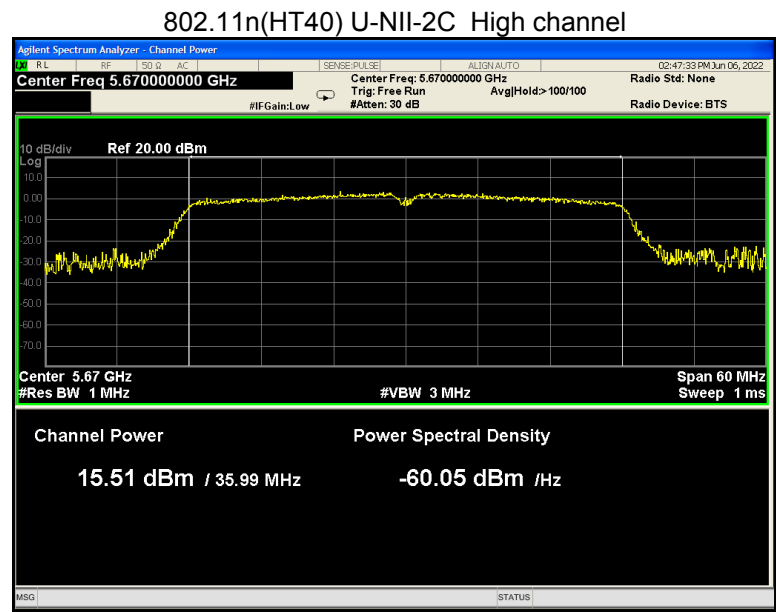


802.11n(HT40) U-NII-2C Low channel

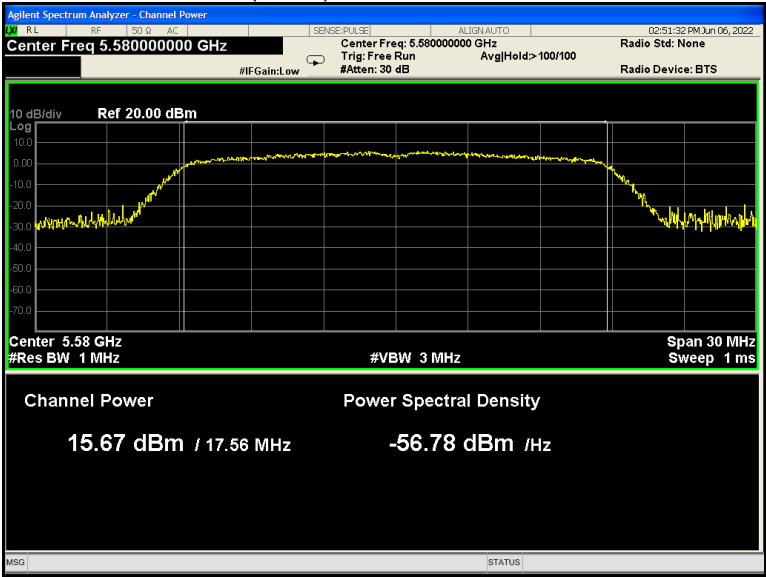


802.11n(HT40) U-NII-2C Middle channel

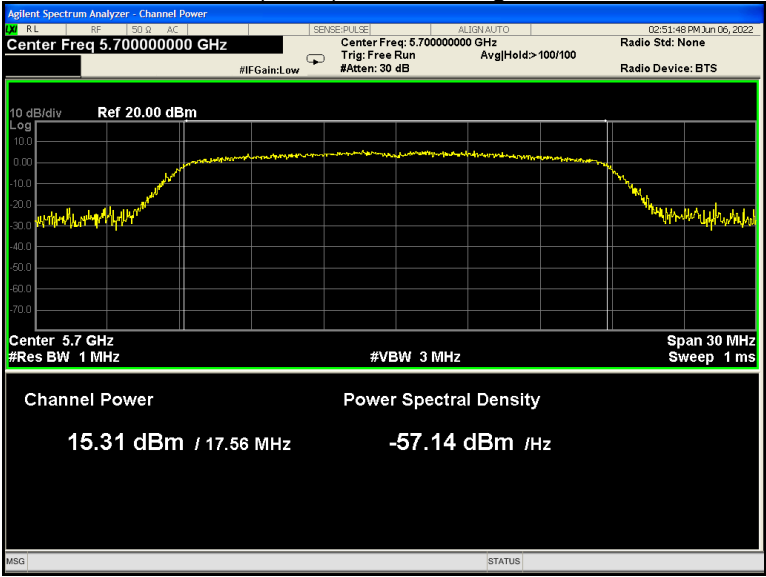




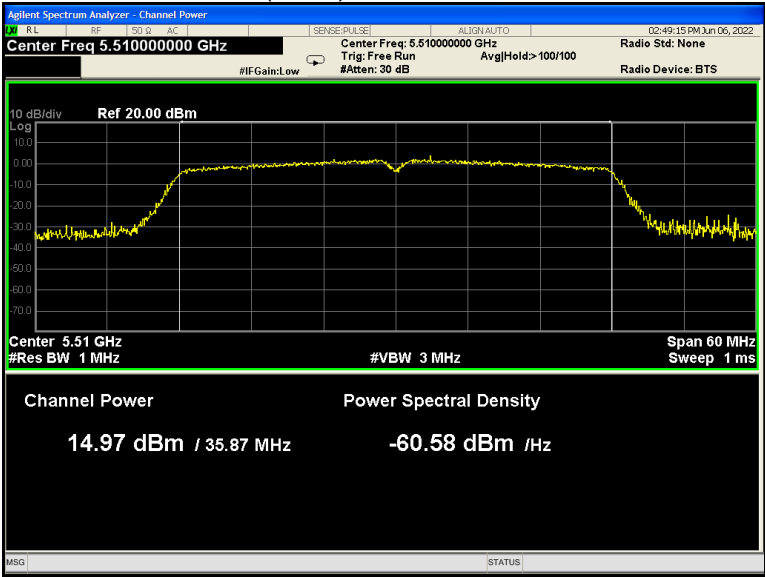
802.11ac(HT20) U-NII-2C Middle channel



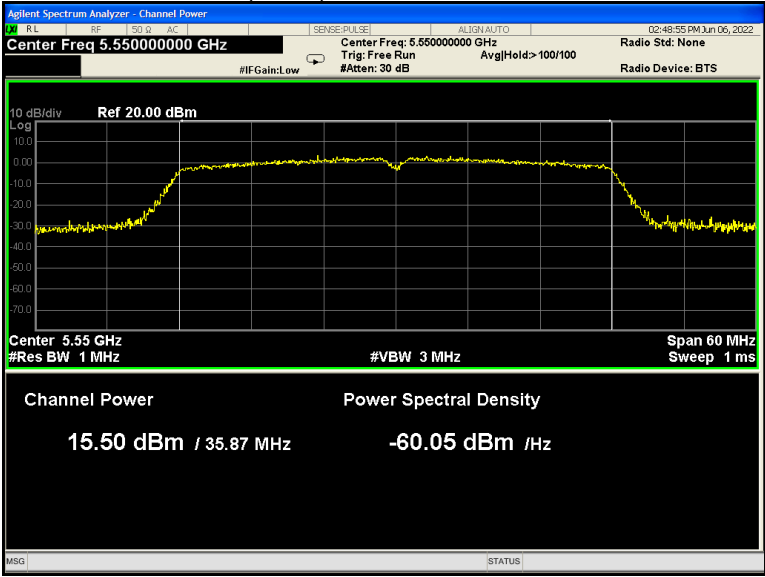
802.11ac(HT20) U-NII-2C High channel



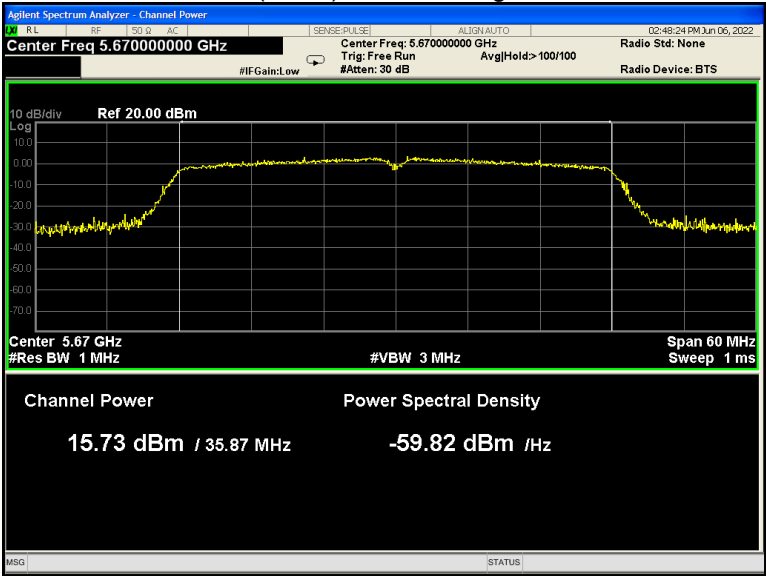
802.11ac(HT40) U-NII-2C Low channel



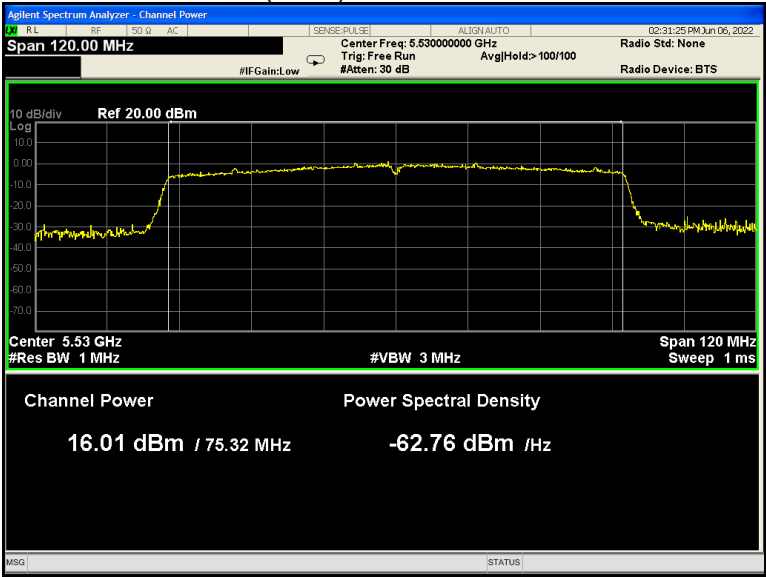
802.11ac(HT40) U-NII-2C Middle channel



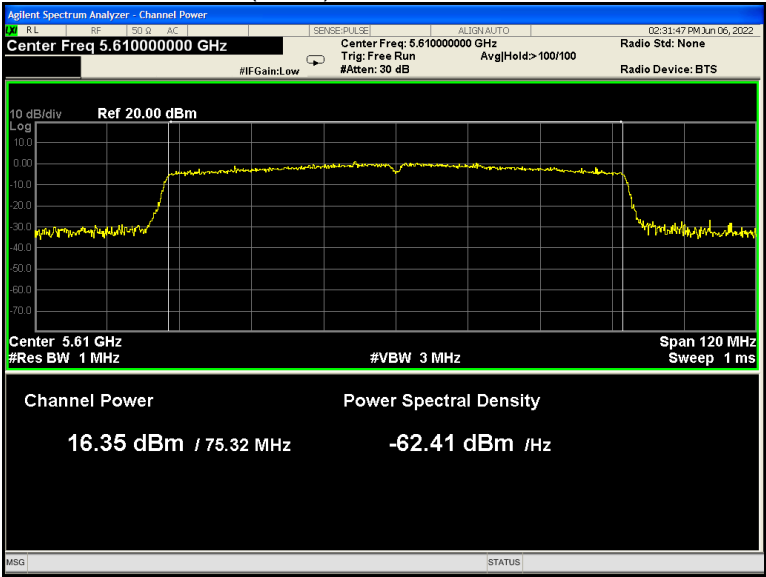
802.11ac(HT40) U-NII-2C High channel



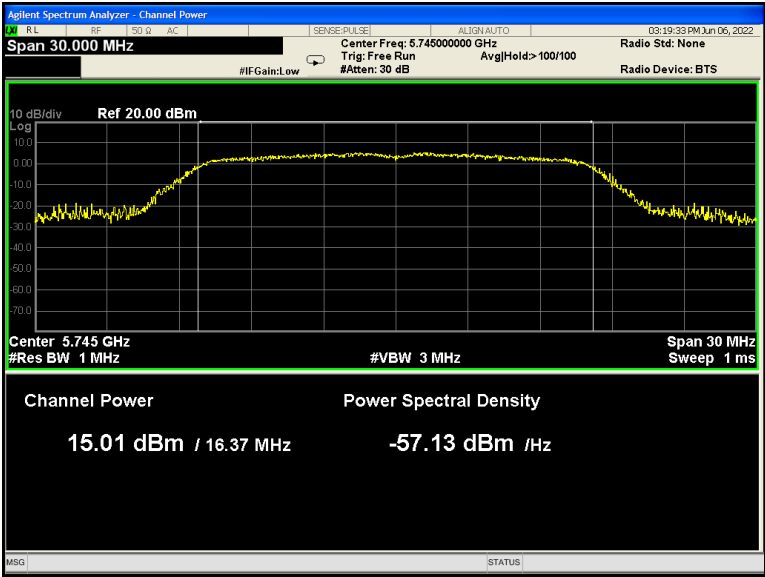
802.11ac(HT80) U-NII-2C Low channel



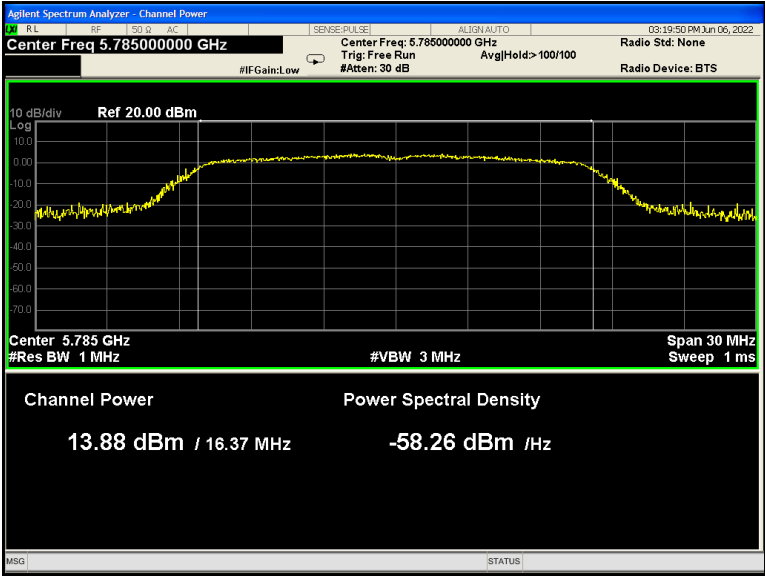
802.11ac(HT80) U-NII-2C Middle channel



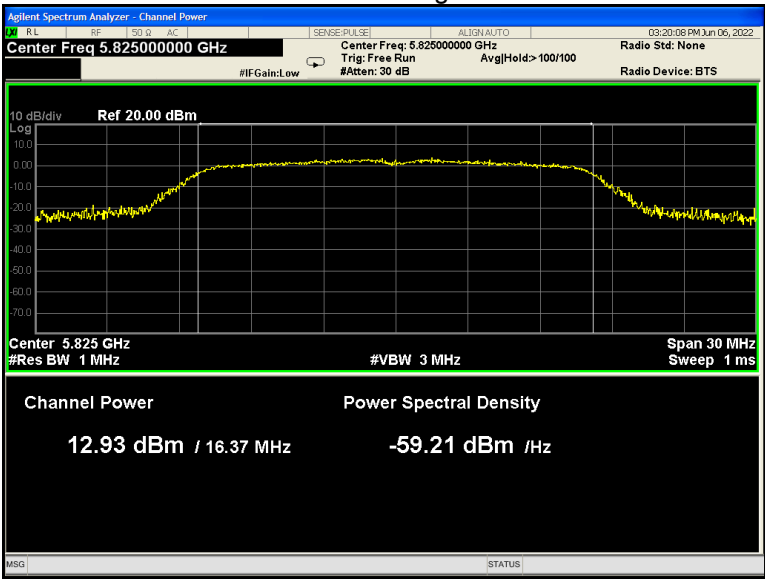
802.11a U-NII-3 Low channel



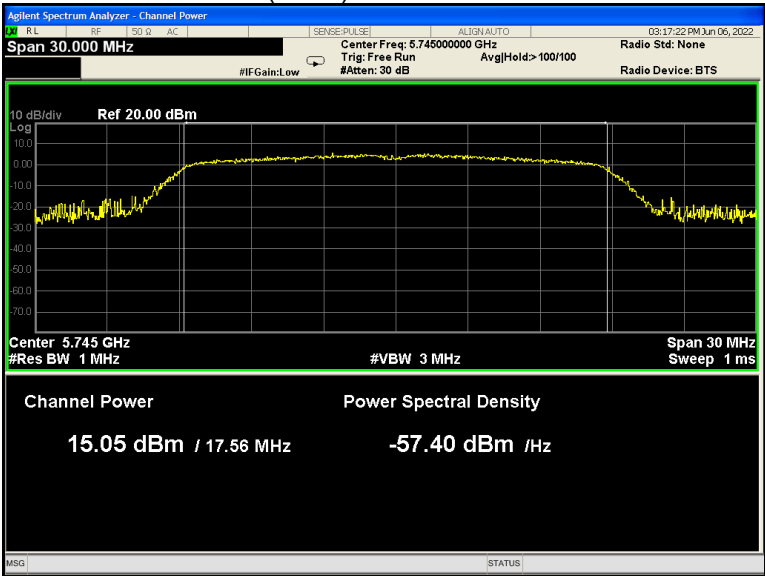
802.11a U-NII-3 Middle channel



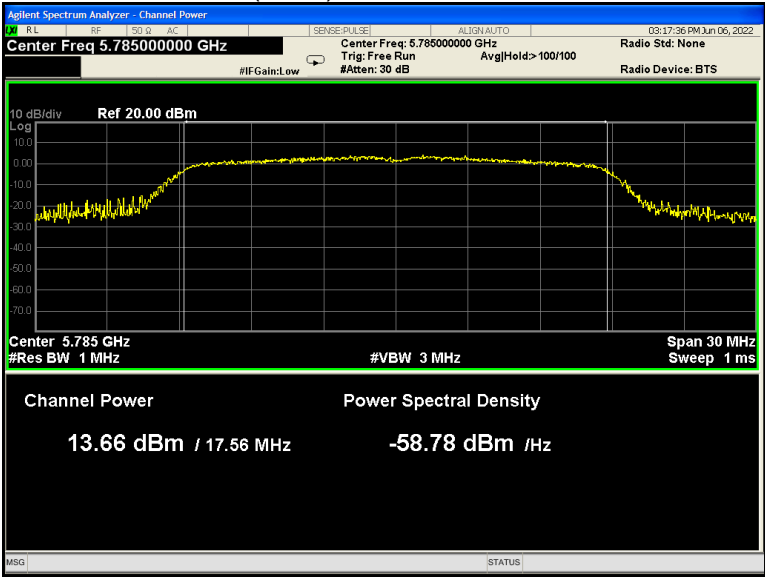
802.11a U-NII-3 High channel



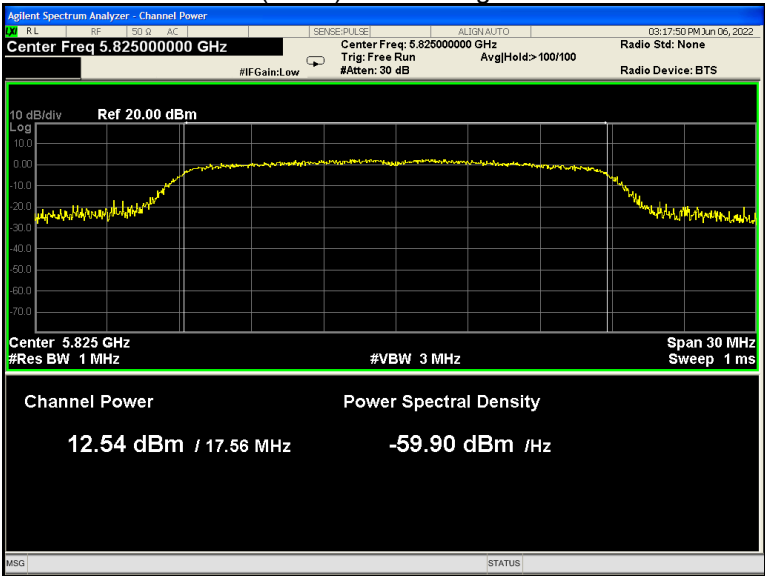
802.11n(HT20) U-NII-3 Low channel



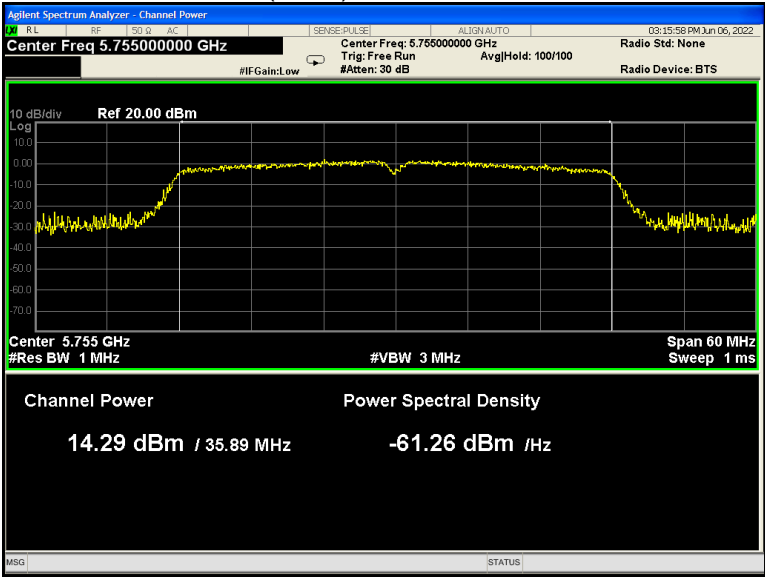
802.11n(HT20) U-NII-3 Middle channel



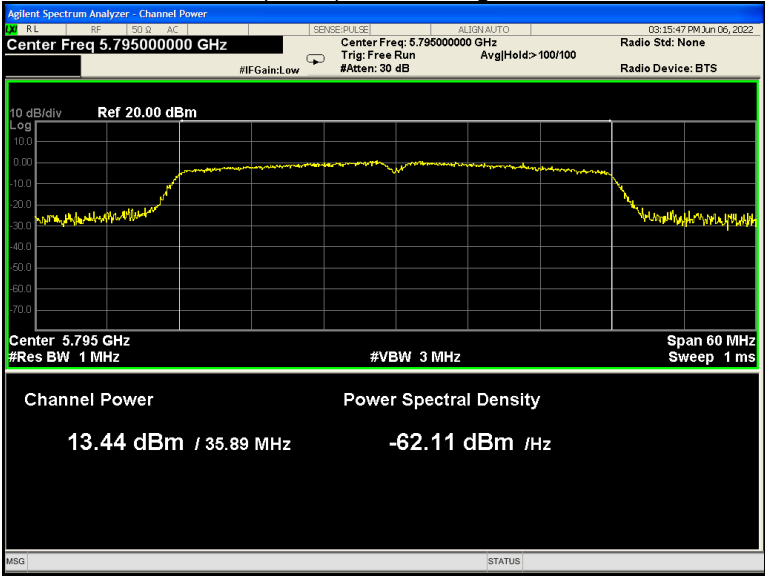
802.11n(HT20) U-NII-3 High channel



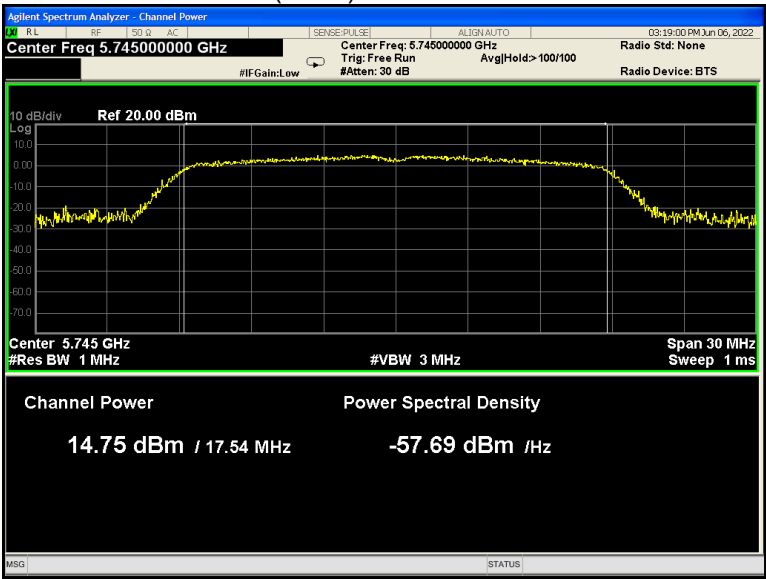
802.11n(HT40) U-NII-3 Low channel



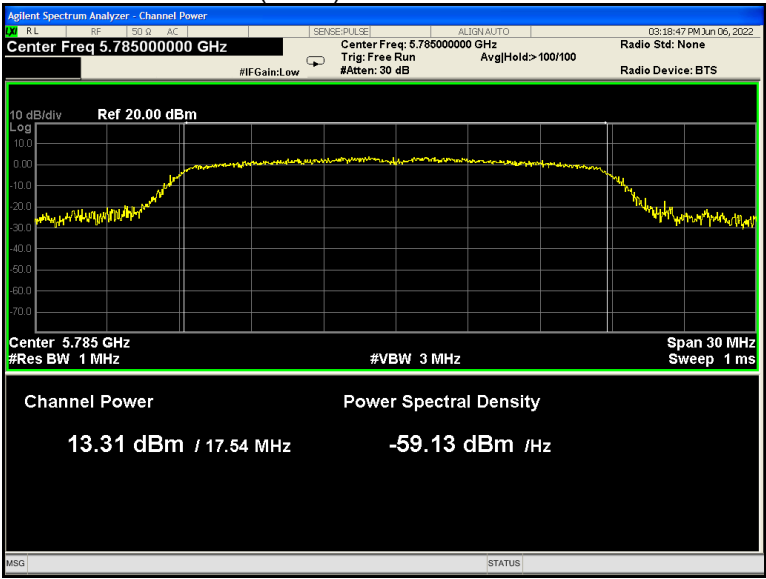
802.11n(HT40) U-NII-3 High channel



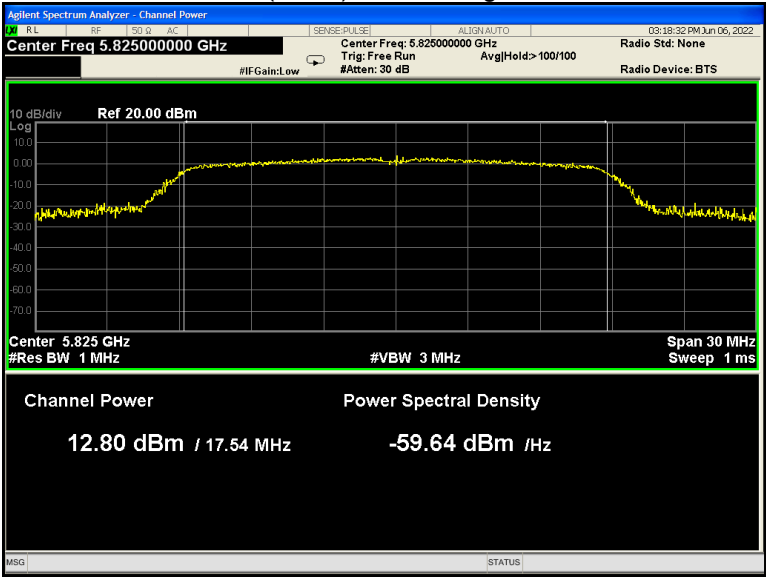
802.11ac(HT20) U-NII-3 Low channel



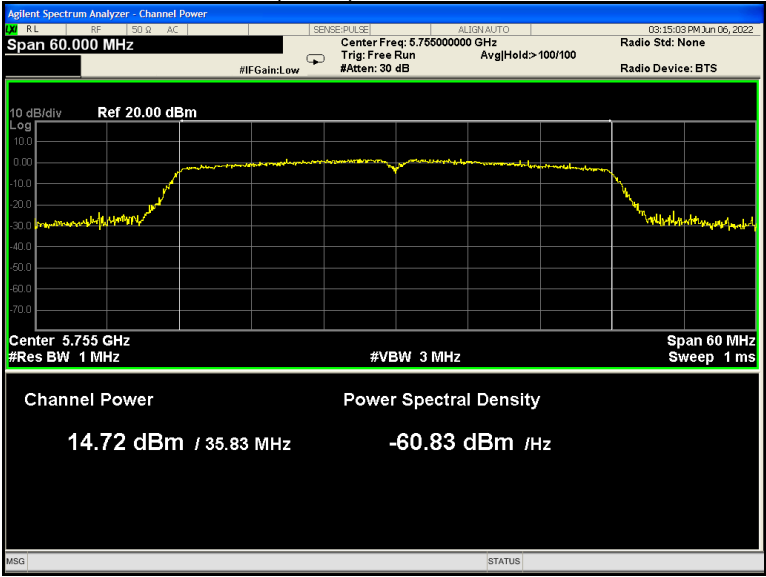
802.11ac(HT20) U-NII-3 Middle channel



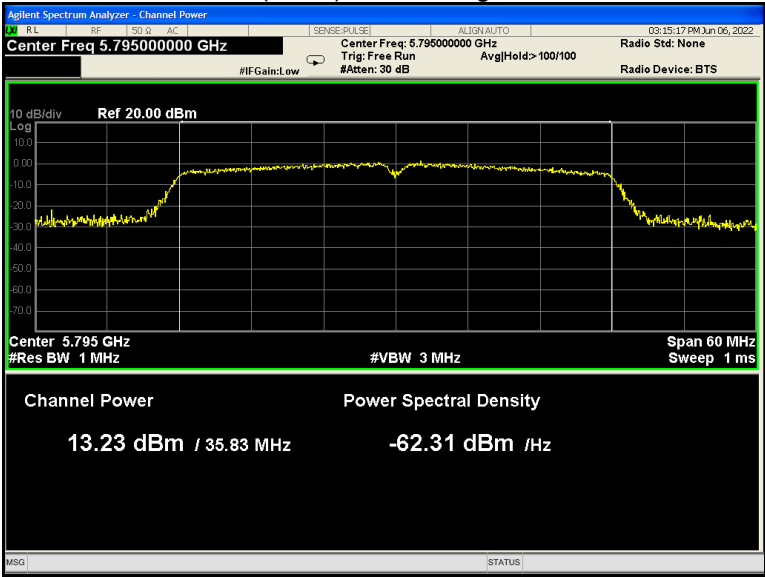
802.11ac(HT20) U-NII-3 High channel



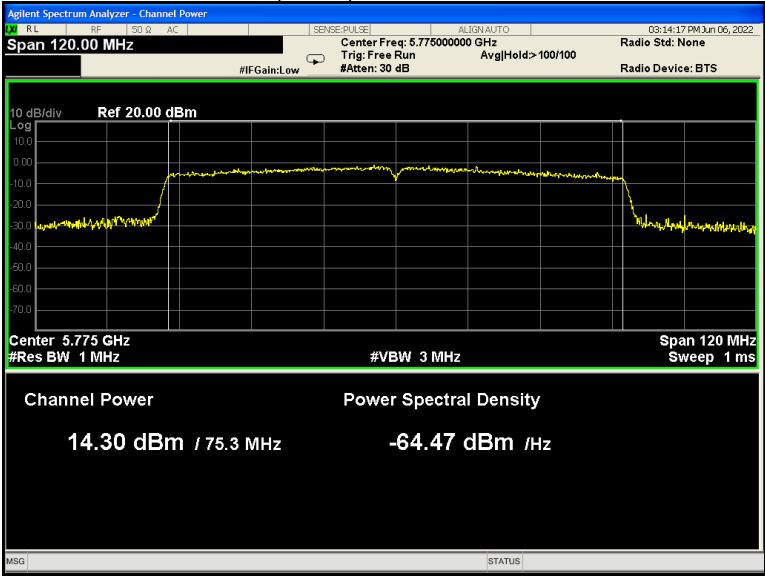
802.11ac(HT40) U-NII-3 Low channel



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)
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Test Limit:	$\leq 11\text{dBm/MHz}$ for Operation in the U-NII-1(5150MHz-5250MHz, 5250-5350MHz and 5470-5725MHz) of device; $\leq 30\text{dBm/500kHz}$ 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:

Band	Operation mode	Power Spectral Density (dBm/MHz)		
		Low	Middle	High
U-NII-1	802.11a	6.257	6.169	5.483
	802.11n(HT20)	8.116	5.459	6.152
	802.11n(HT40)	4.500	/	3.752
	802.11ac(HT20)	6.139	6.199	6.107
	802.11ac(HT40)	4.475	/	4.491
	802.11ac(HT80)	-0.736	/	/
	Limit	≤11.00dBm/MHz		

Band	Operation mode	Power Spectral Density (dBm/MHz)		
		Low	Middle	High
U-NII-2A	802.11a	5.214	4.766	4.750
	802.11n(HT20)	5.461	4.727	4.958
	802.11n(HT40)	2.084	/	1.323
	802.11ac(HT20)	4.812	5.350	4.415
	802.11ac(HT40)	2.226	/	1.381
	802.11ac(HT80)	-1.078	/	/
	Limit	≤11.00dBm/MHz		

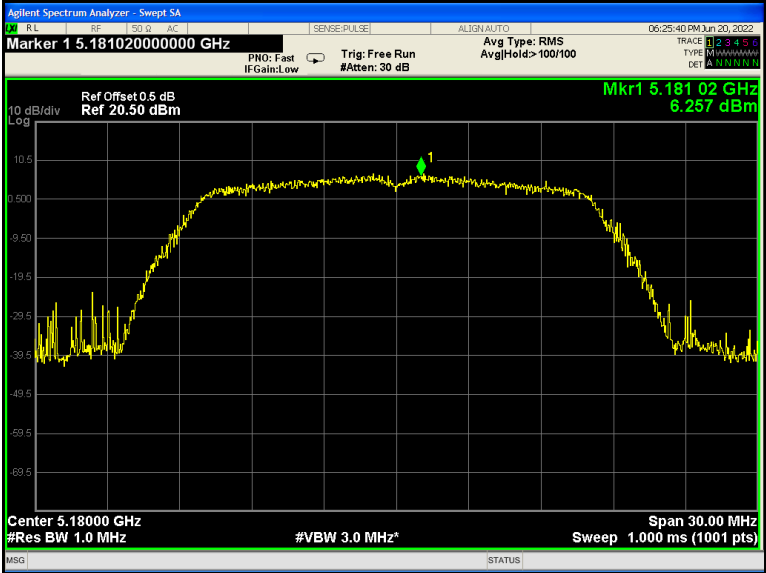
Band	Operation mode	Power Spectral Density (dBm/MHz)		
		Low	Middle	High
U-NII-2C	802.11a	5.798	6.706	6.617
	802.11n(HT20)	5.859	6.502	7.545
	802.11n(HT40)	2.363	3.344	3.656
	802.11ac(HT20)	5.705	5.614	7.067
	802.11ac(HT40)	3.092	3.105	3.504
	802.11ac(HT80)	0.496	/	1.081
	Limit	≤11.00dBm/MHz		

Band	Operation mode	Power Spectral Density (dBm/MHz)		
		Low	Middle	High
U-NII-3	802.11a	5.653	3.596	2.404
	802.11n(HT20)	4.325	3.102	2.474
	802.11n(HT40)	1.115	/	0.092
	802.11ac(HT20)	4.553	3.280	3.091
	802.11ac(HT40)	1.841	/	0.479
	802.11ac(HT80)	-2.128	/	/
	Limit	$\leq 30.00 \text{ dBm/500kHz}$		

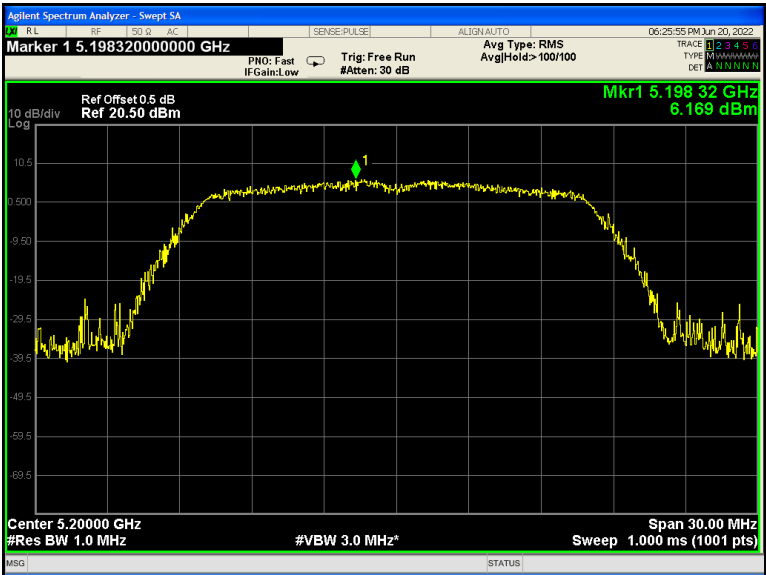
* All transmit signals are completely uncorrelated with each other, Directional gain = G_{ANT} which is less than 6dBi. So the limit does not be reduced.

Test result plots shown as follows:

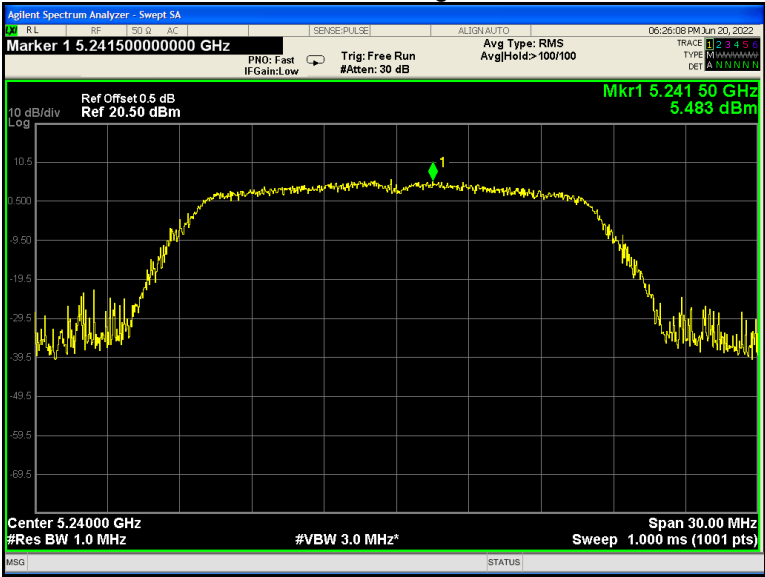
802.11a U-NII-1 Low channel



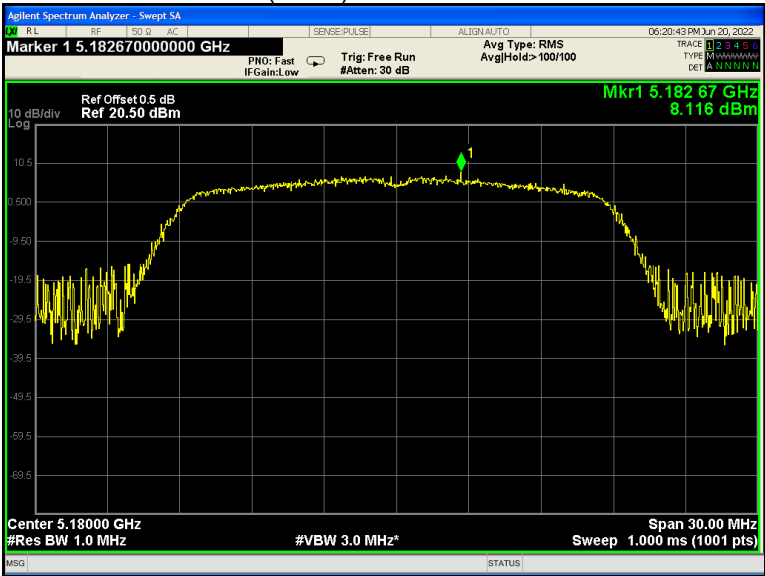
802.11a U-NII-1 Middle channel



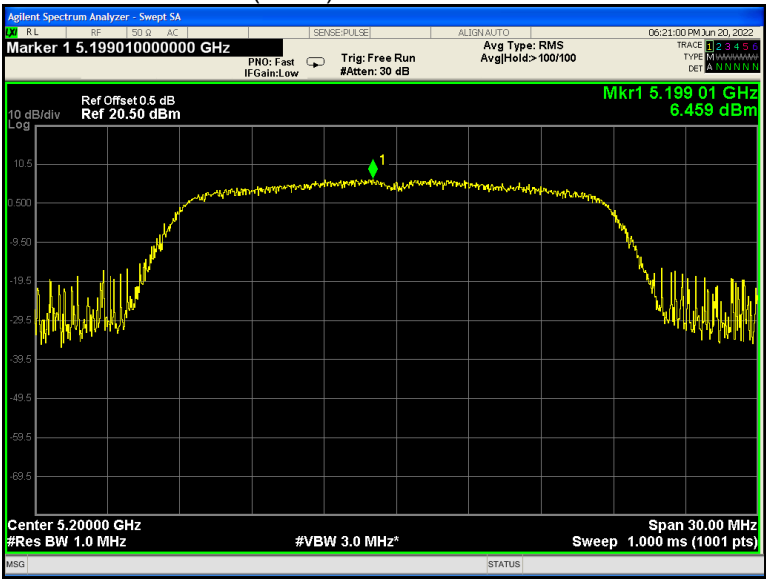
802.11a U-NII-1 High channel



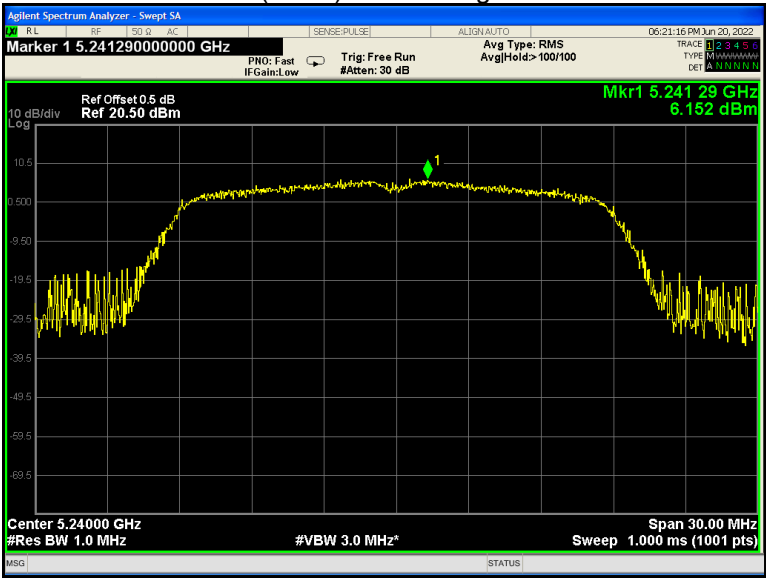
802.11n(HT20) U-NII-1 Low channel



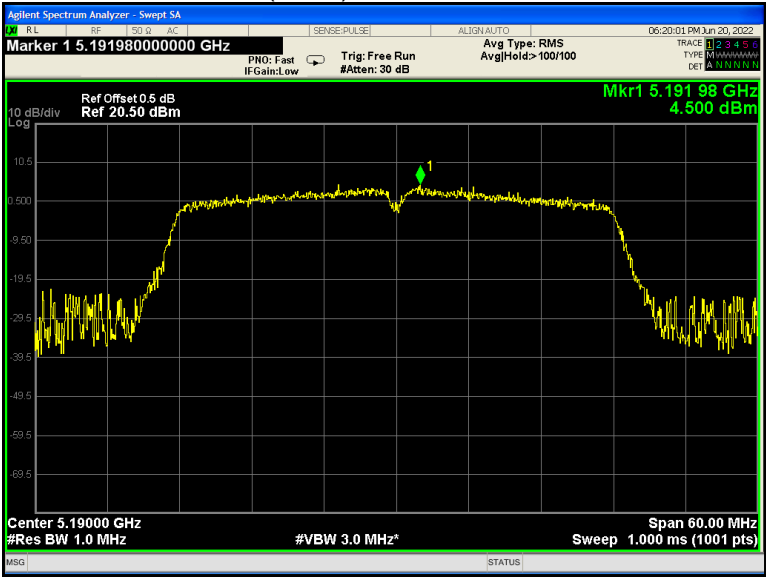
802.11n(HT20) U-NII-1 Middle channel



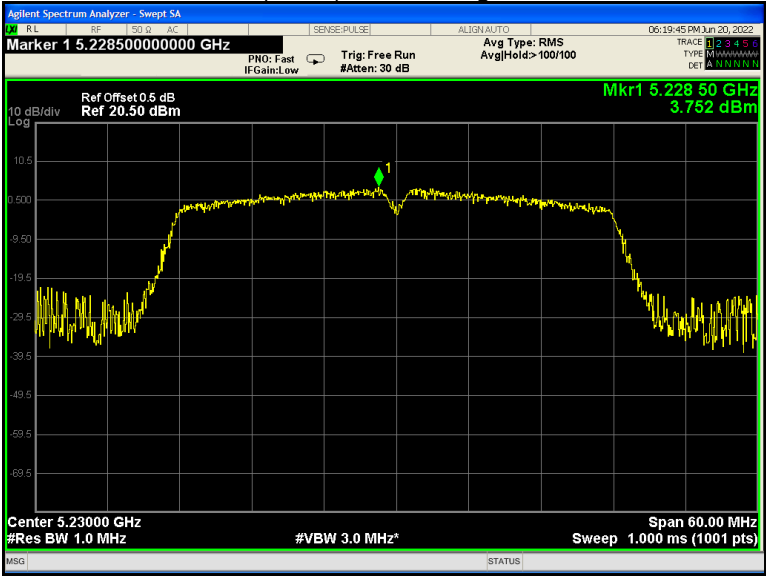
802.11n(HT20) U-NII-1 High channel



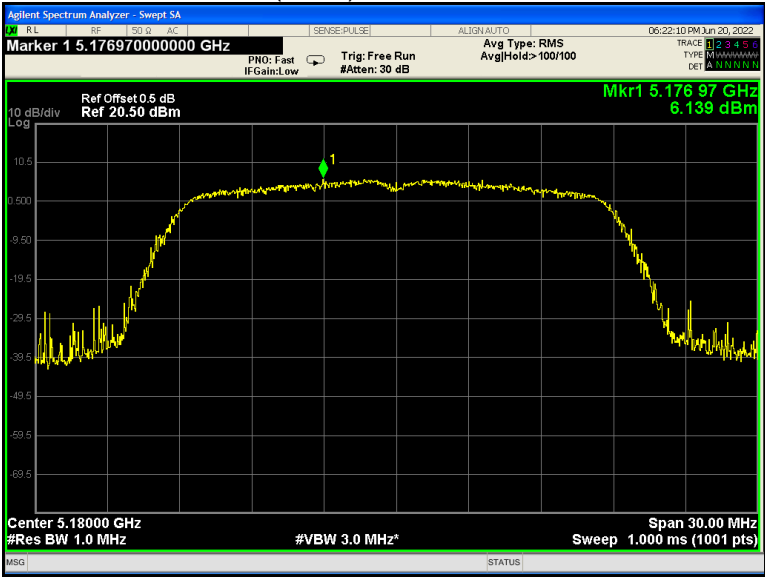
802.11n(HT40) U-NII-1 Low channel



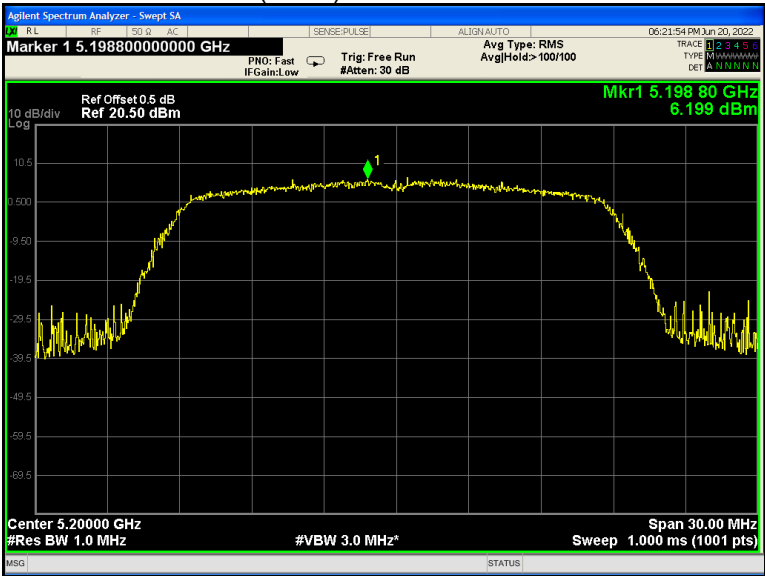
802.11n(HT40) U-NII-1 High channel



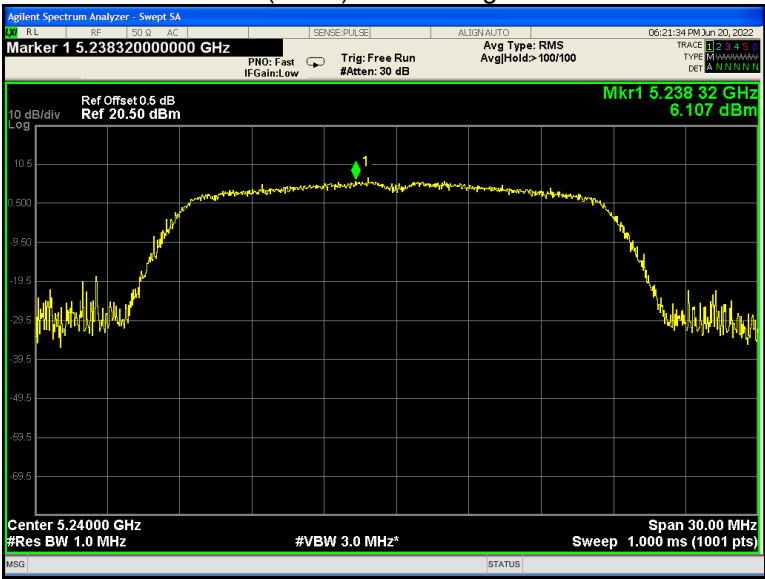
802.11ac(HT20) U-NII-1 Low channel



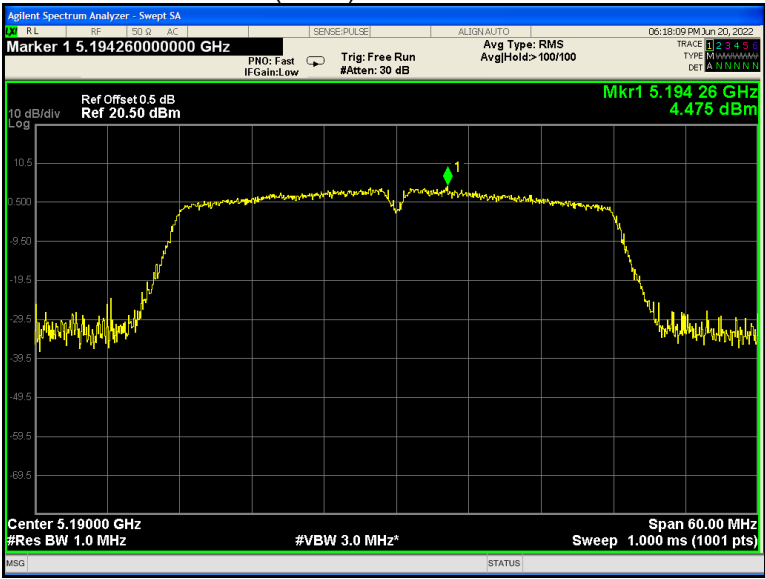
802.11ac(HT20) U-NII-1 Middle channel



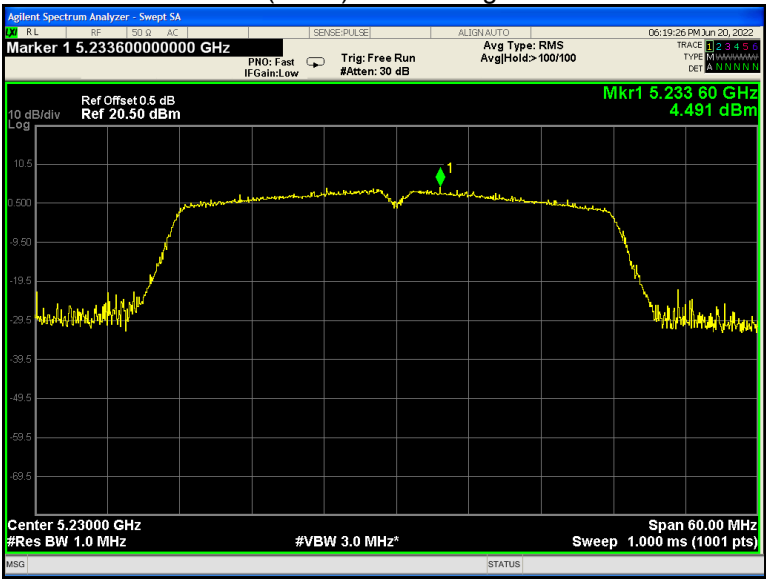
802.11ac(HT20) U-NII-1 High channel



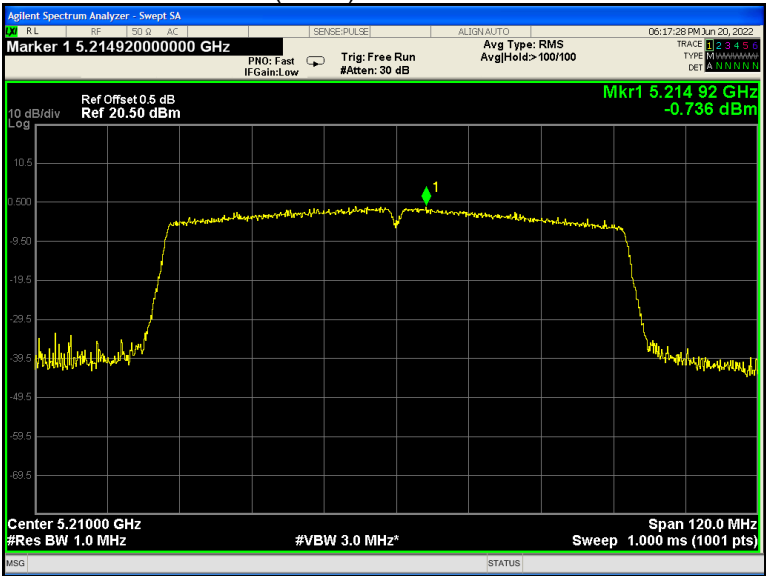
802.11ac(HT40) U-NII-1 Low channel



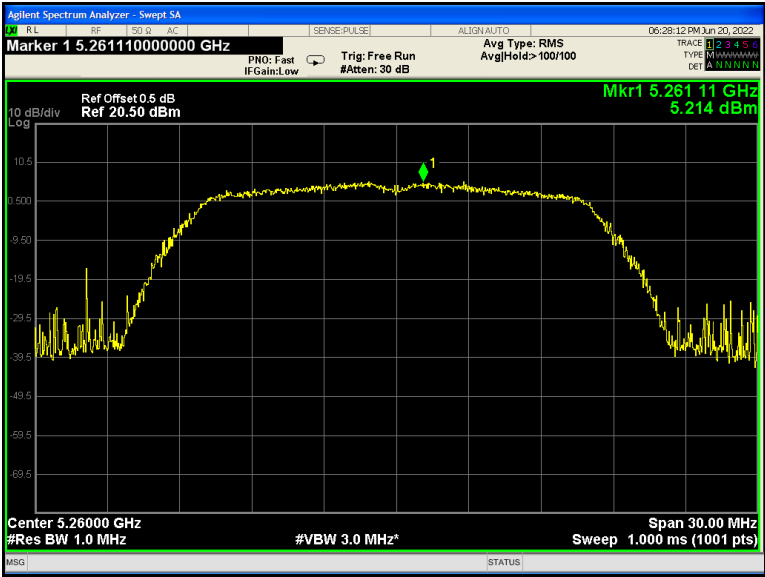
802.11ac(HT40) U-NII-1 High channel



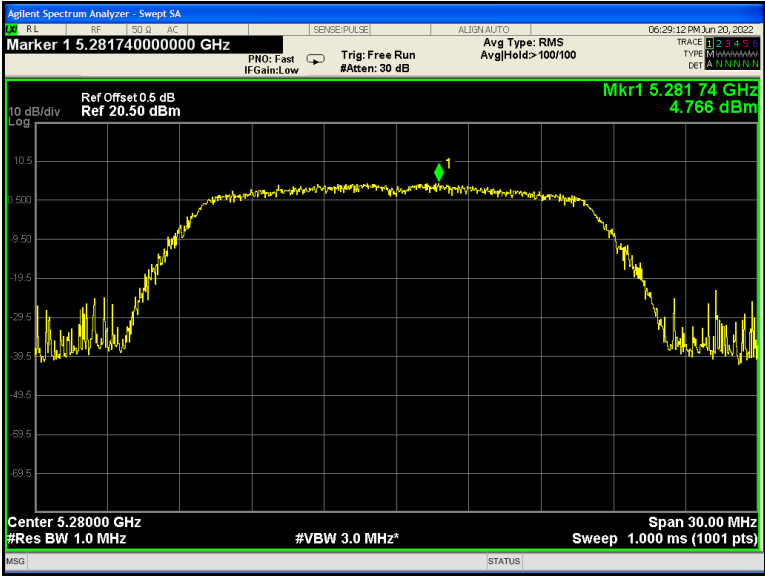
802.11ac(HT80) U-NII-1 Low channel



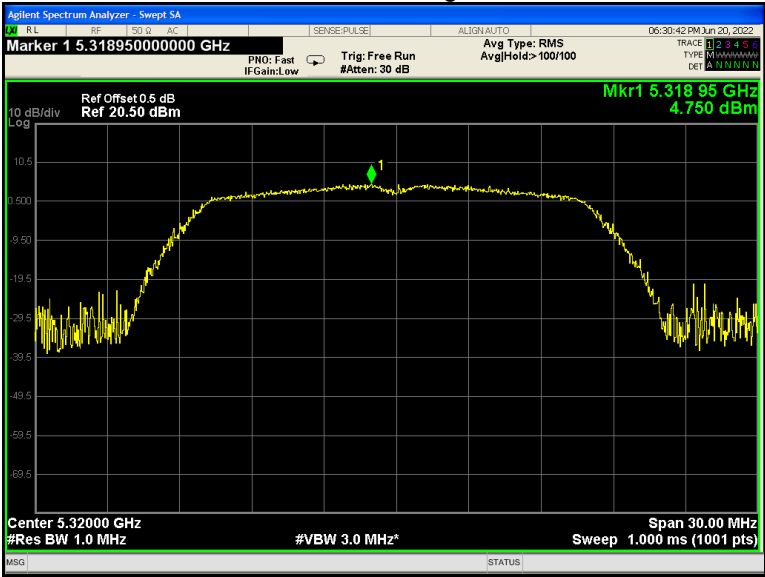
802.11a U-NII-2A Low channel



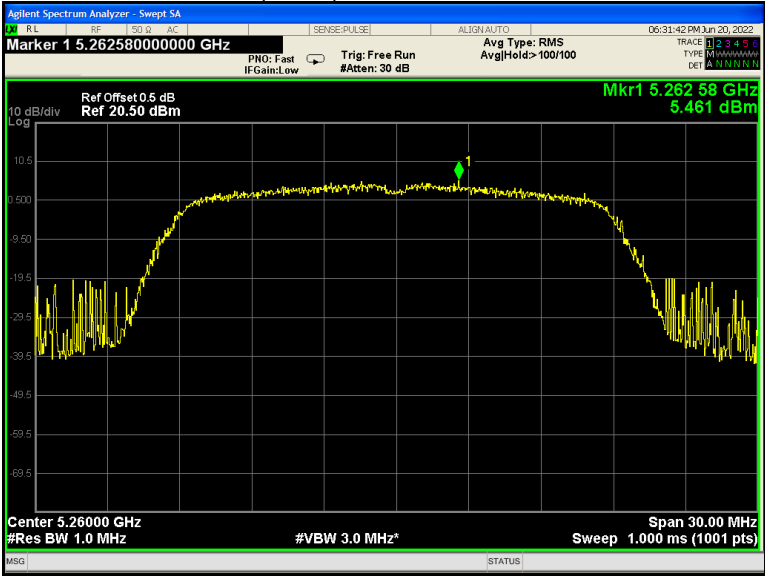
802.11a U-NII-2A Middle channel



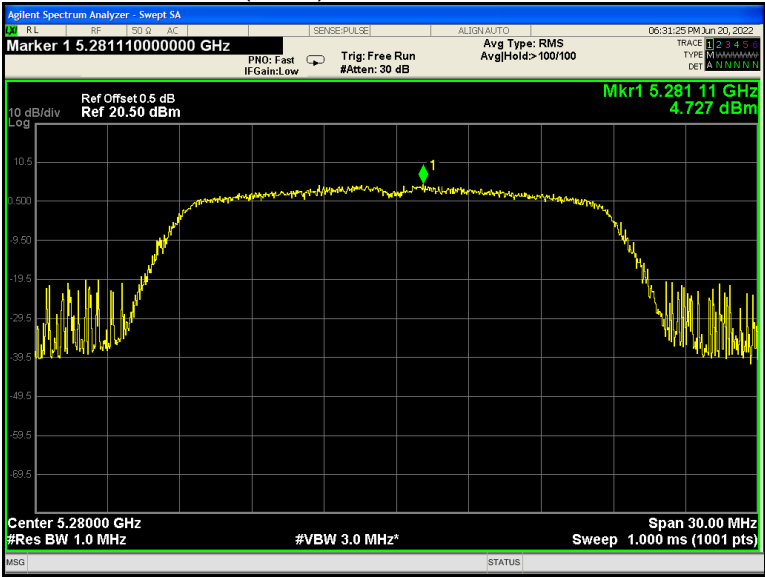
802.11a U-NII-2A High channel



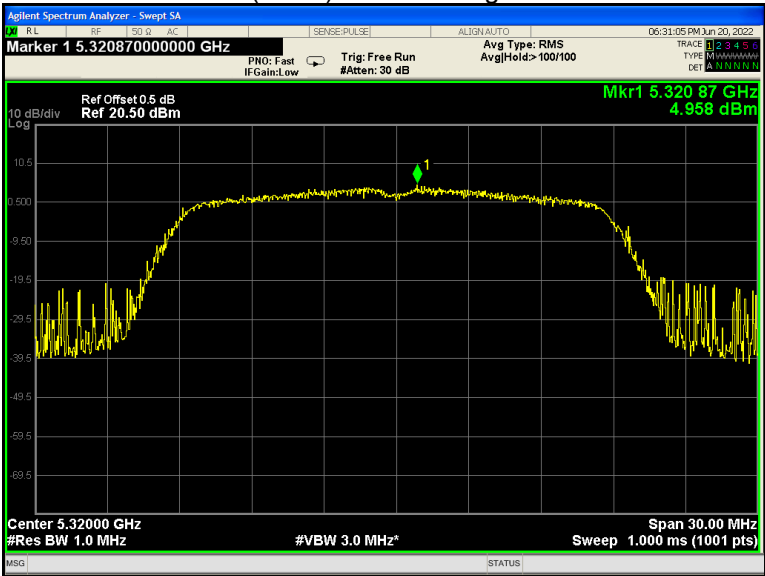
802.11n(HT20) U-NII-2A Low channel



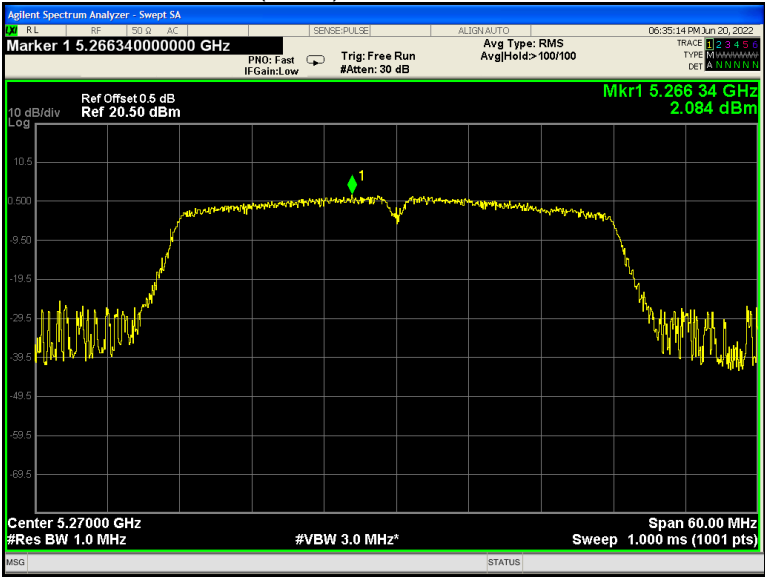
802.11n(HT20) U-NII-2A Middle channel



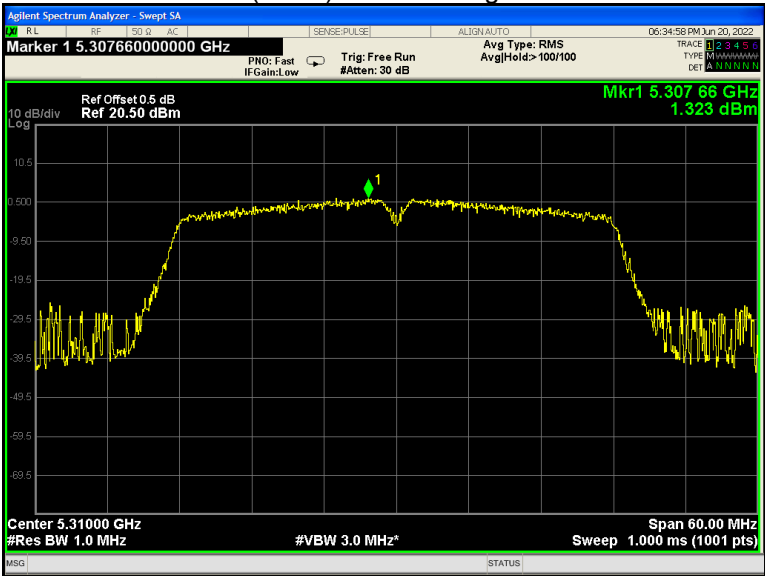
802.11n(HT20) U-NII-2A High channel



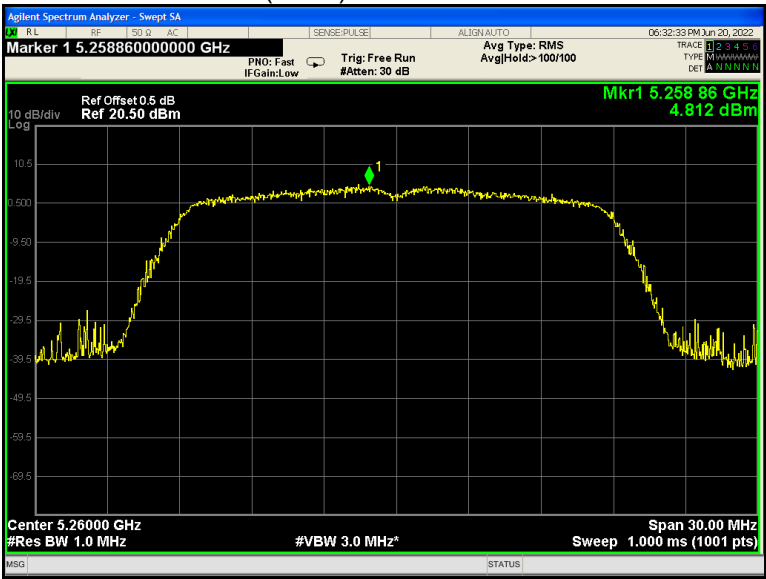
802.11n(HT40) U-NII-2A Low channel



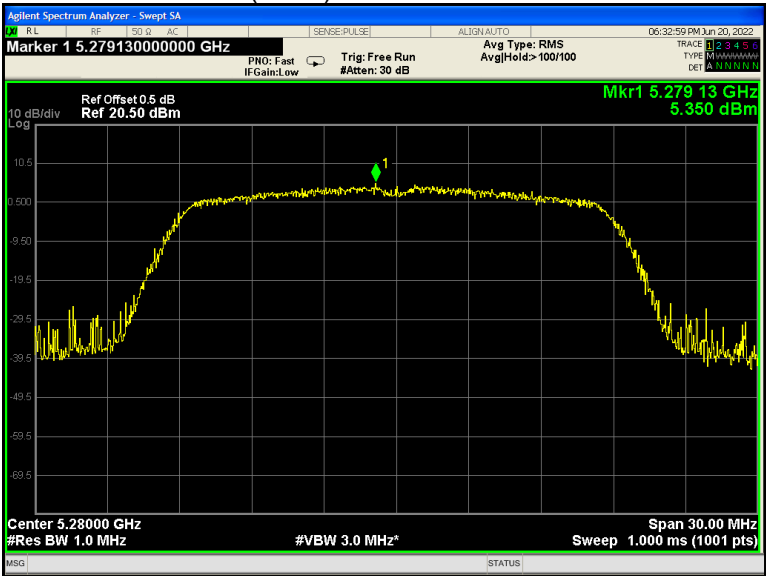
802.11n(HT40) U-NII-2A High channel



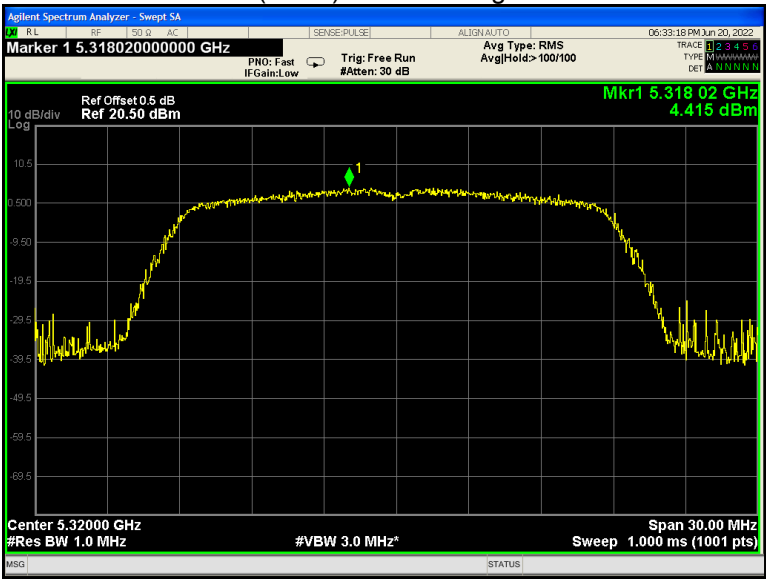
802.11ac(HT20) U-NII-2A Low channel



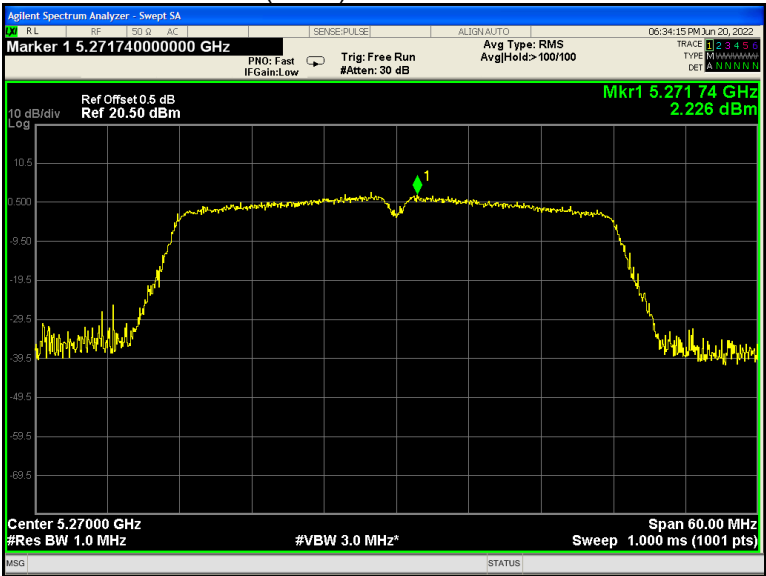
802.11ac(HT20) U-NII-2A Middle channel



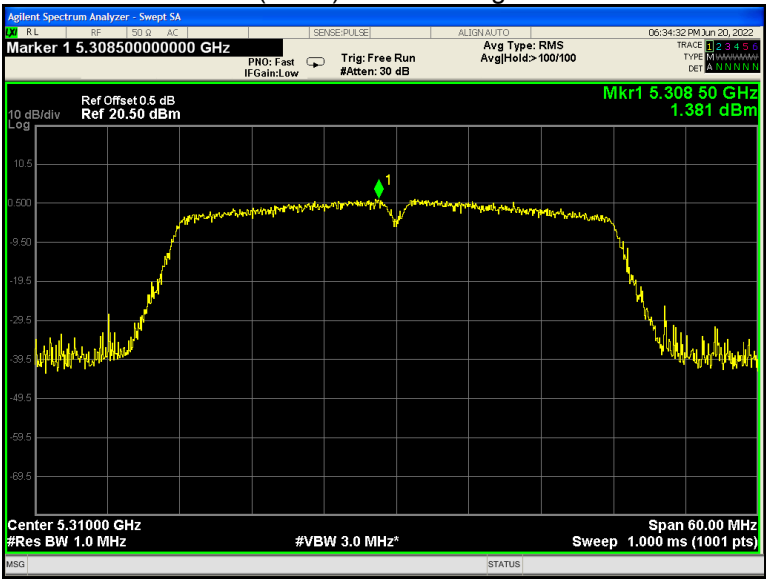
802.11ac(HT20) U-NII-2A High channel



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



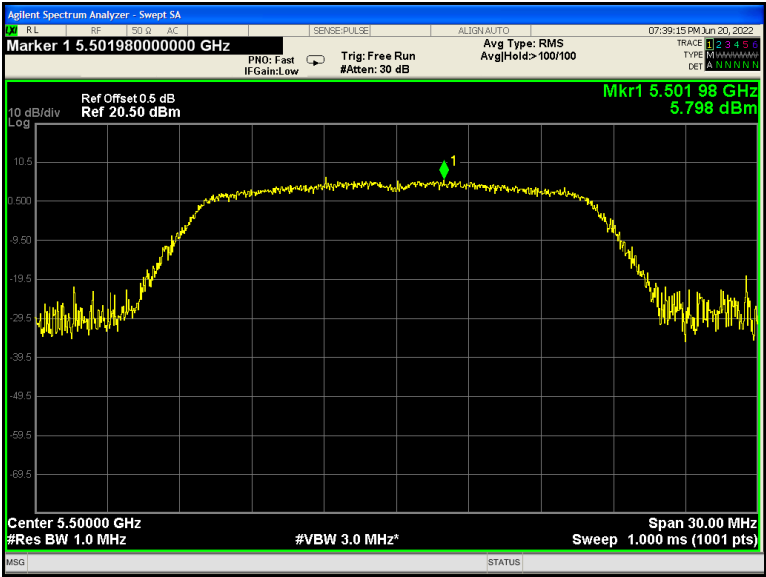
802.11ac(HT40) U-NII-2A High channel



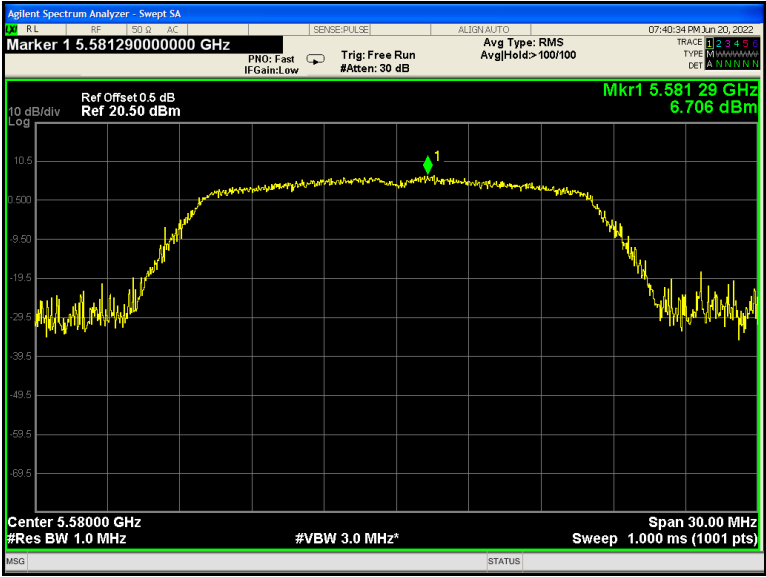
802.11ac(HT80) U-NII-2A Low channel



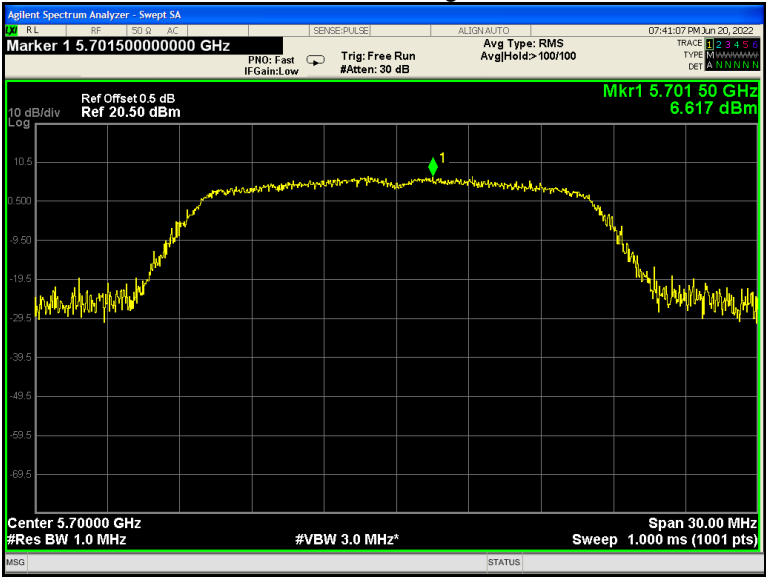
802.11a U-NII-2C Low channel



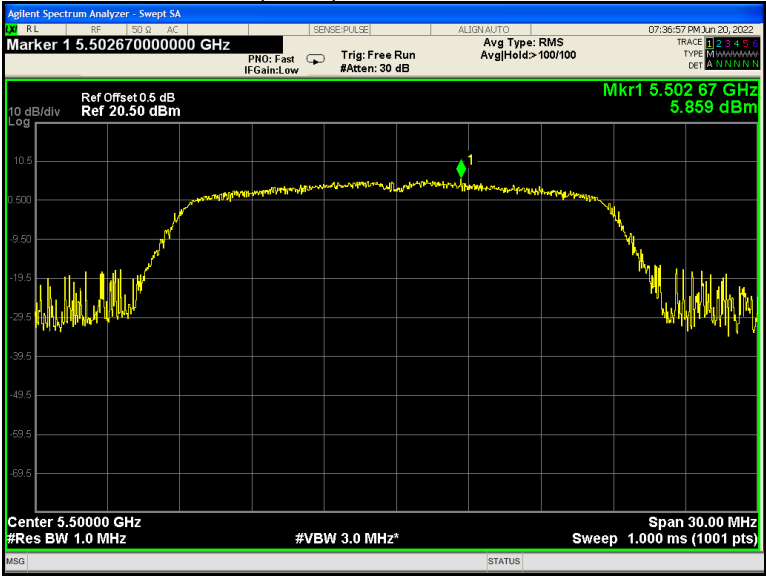
802.11a U-NII-2C Middle channel



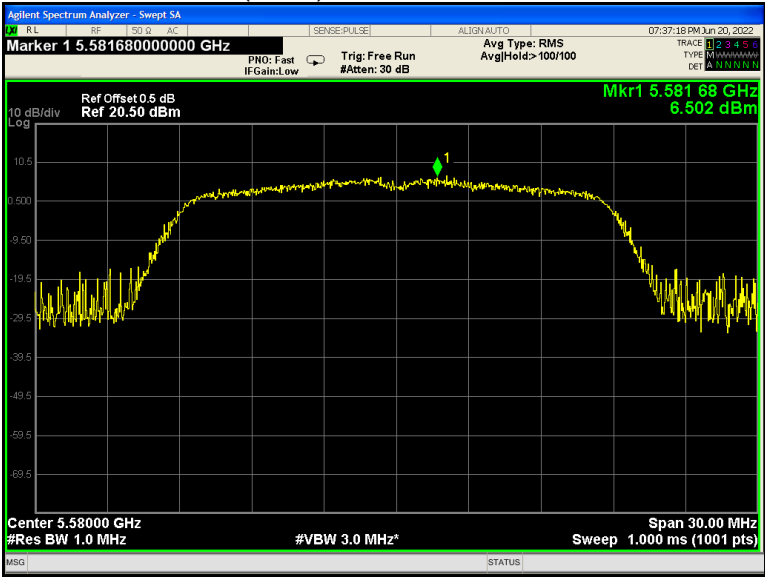
802.11a U-NII-2C High channel



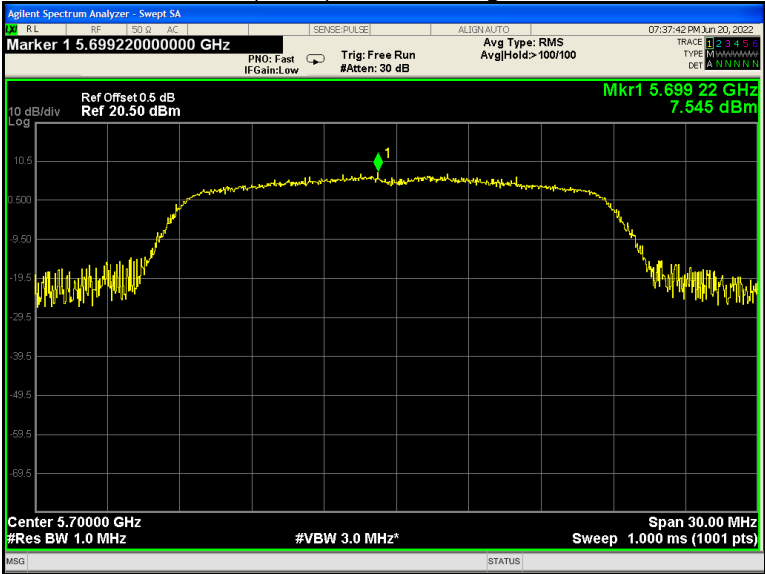
802.11n(HT20) U-NII-2C Low channel



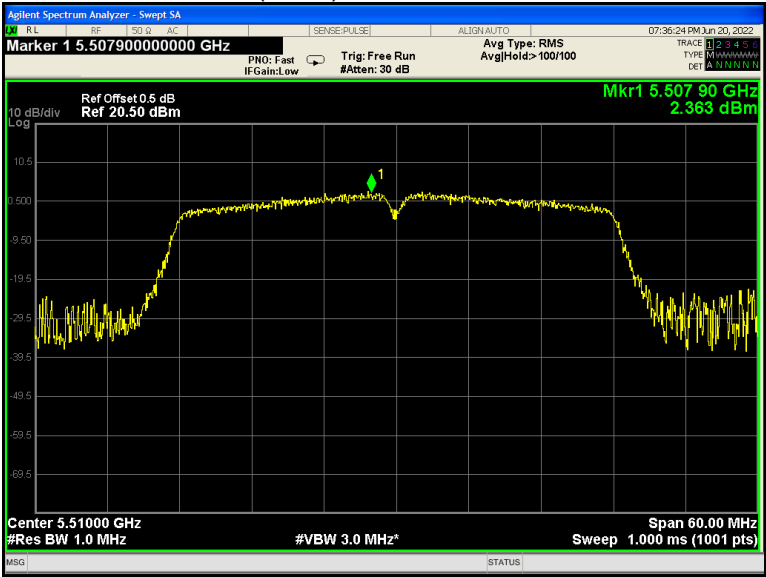
802.11n(HT20) U-NII-2C Middle channel



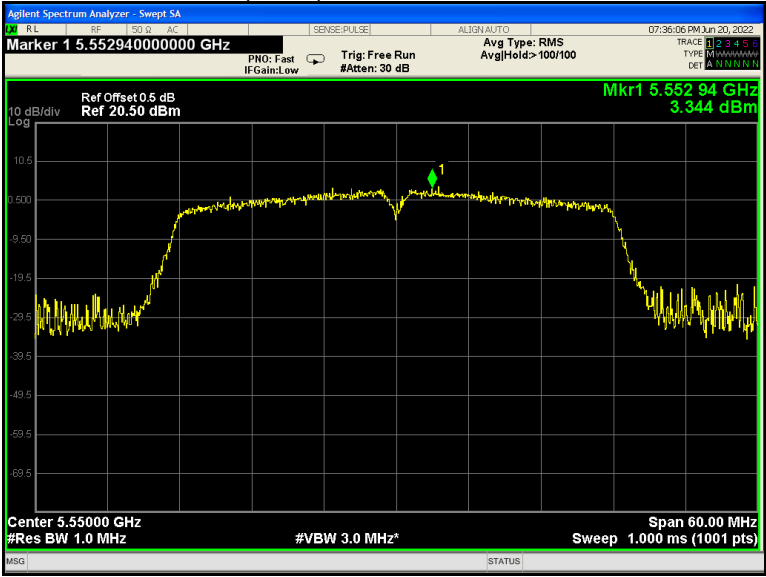
802.11n(HT20) U-NII-2C High channel



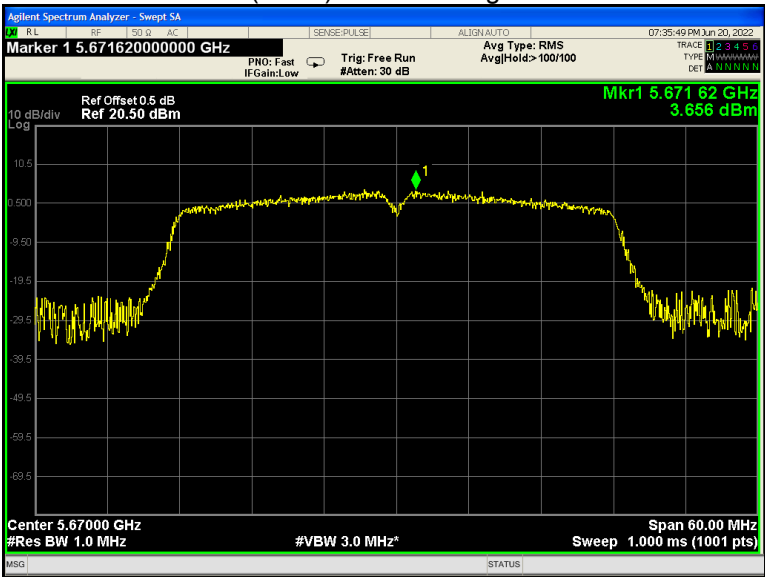
802.11n(HT40) U-NII-2C Low channel



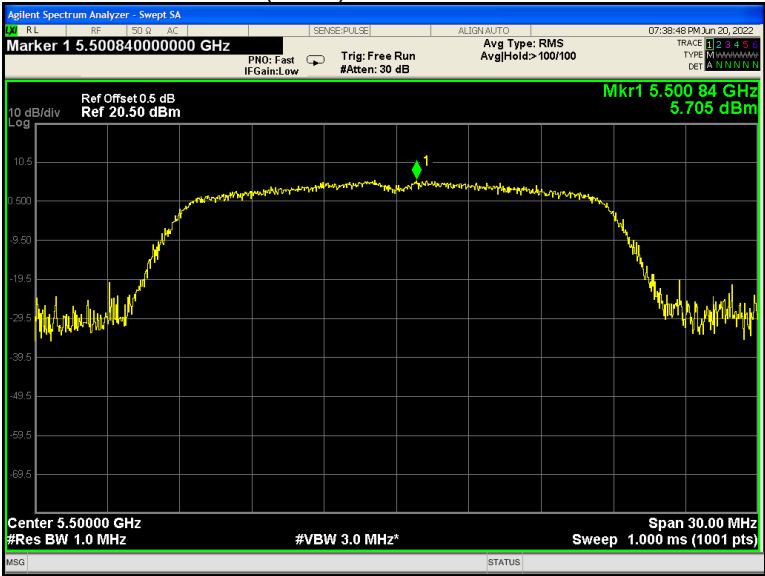
802.11n(HT40) U-NII-2C Middle channel



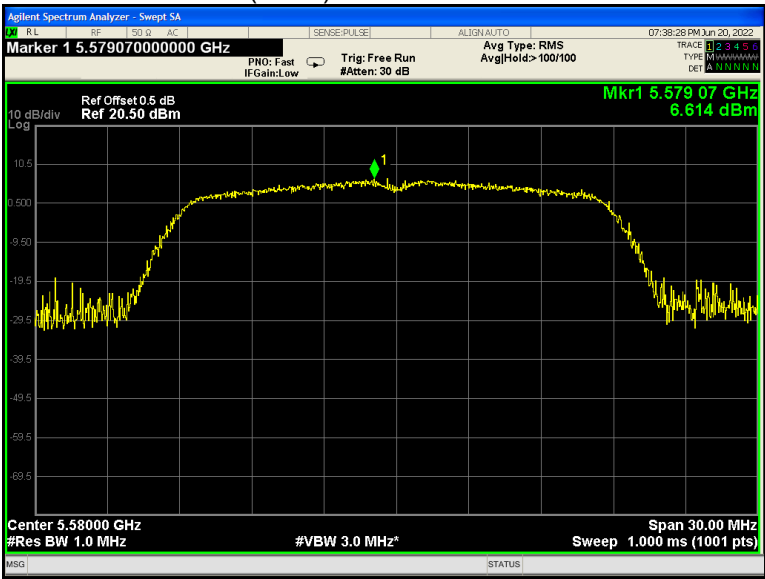
802.11n(HT40) U-NII-2C High channel



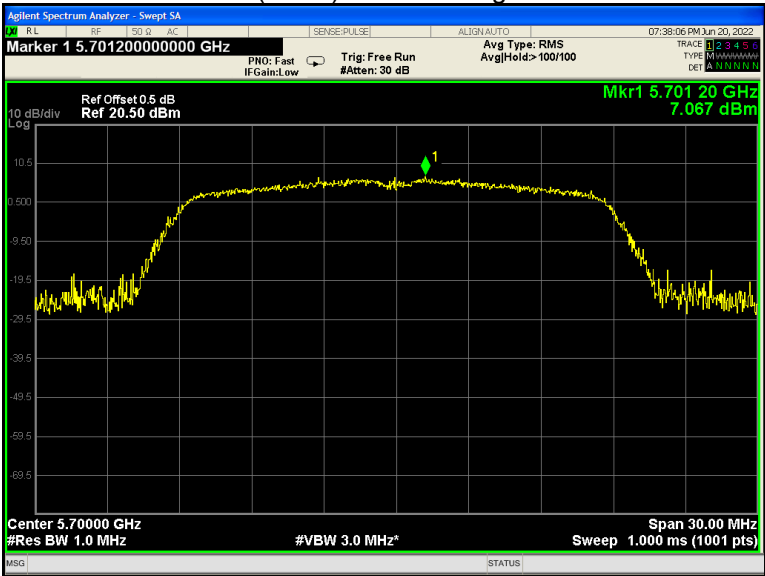
802.11ac(HT20) U-NII-2C Low channel



802.11ac(HT20) U-NII-2C Middle channel



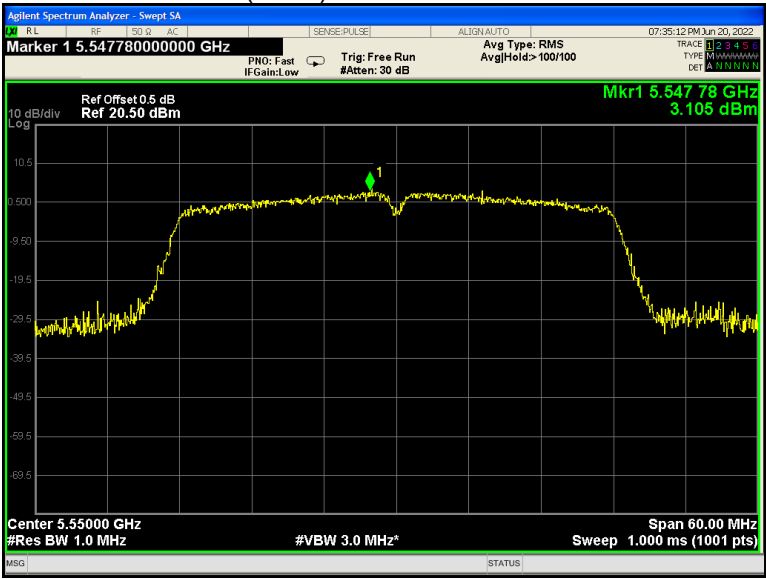
802.11ac(HT20) U-NII-2C High channel



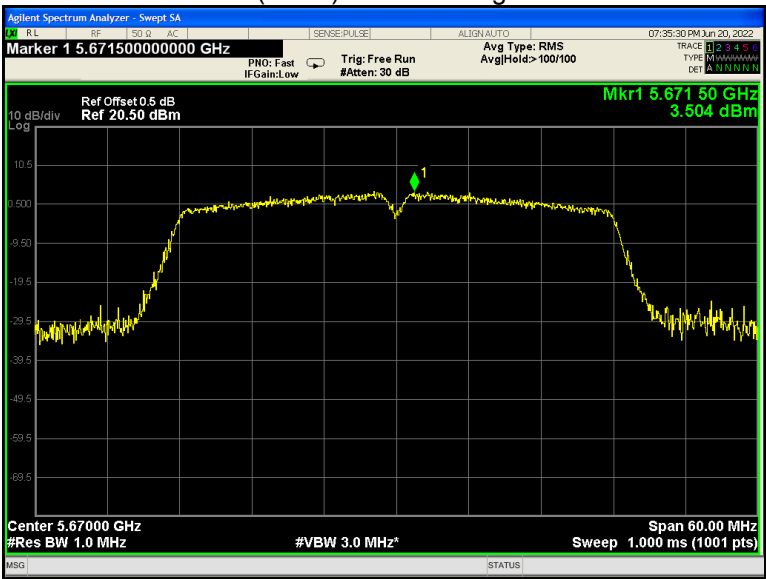
802.11ac(HT40) U-NII-2C Low channel



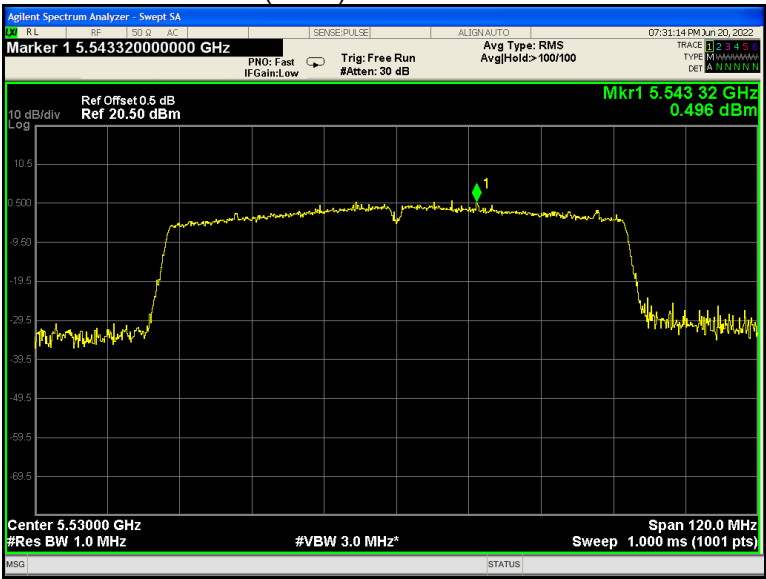
802.11ac(HT40) U-NII-2C Middle channel



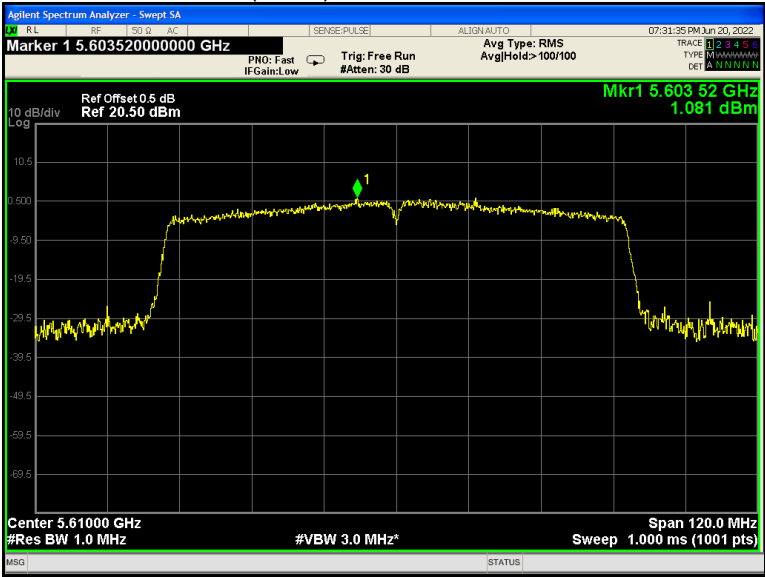
802.11ac(HT40) U-NII-2C High channel



802.11ac(HT80) U-NII-2C Low channel



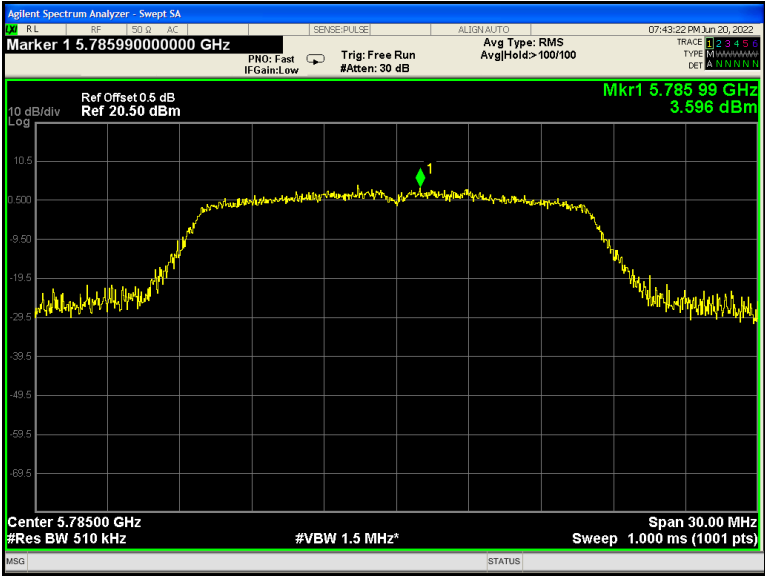
802.11ac(HT80) U-NII-2C Middle channel



802.11a U-NII-3 Low channel



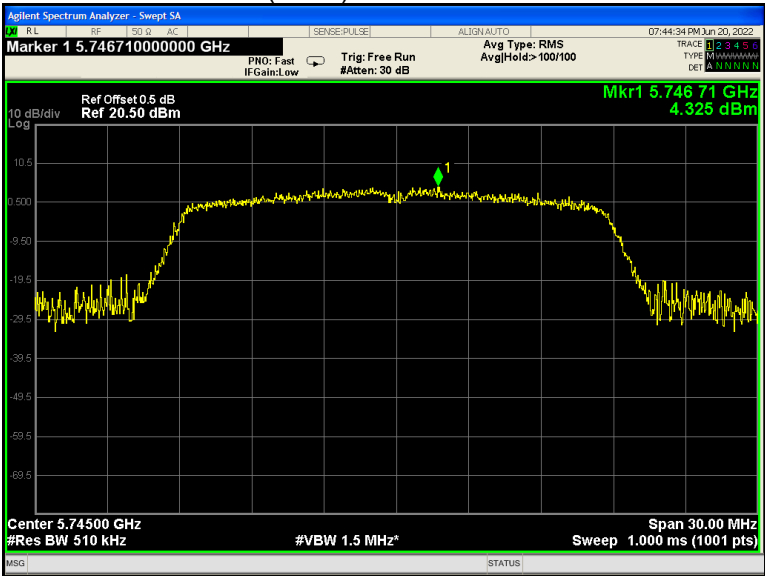
802.11a U-NII-3 Middle channel



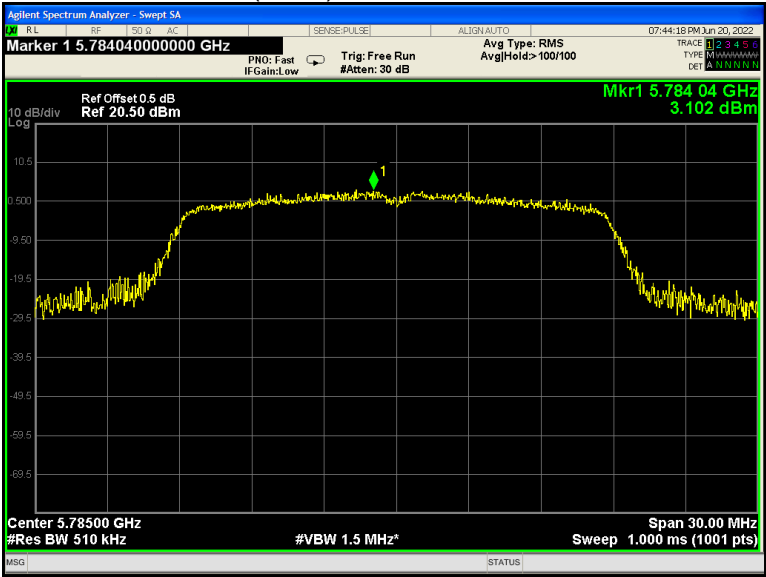
802.11a U-NII-3 High channel



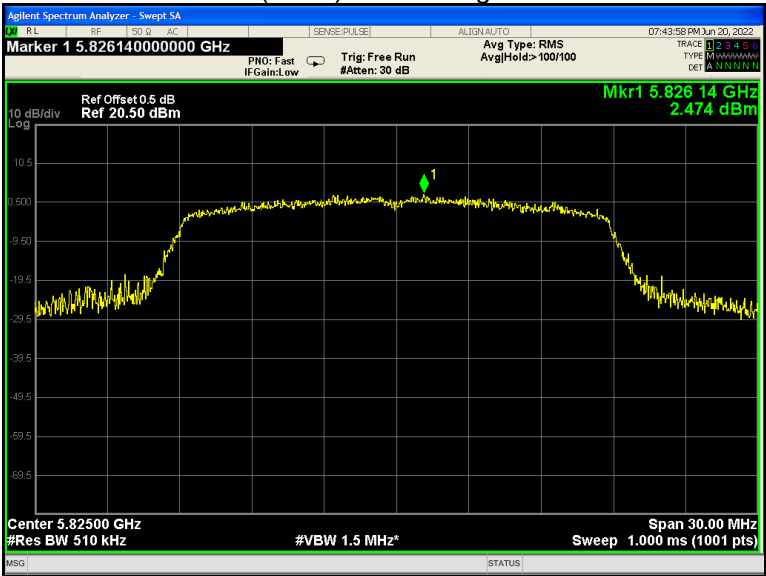
802.11n(HT20) U-NII-3 Low channel



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



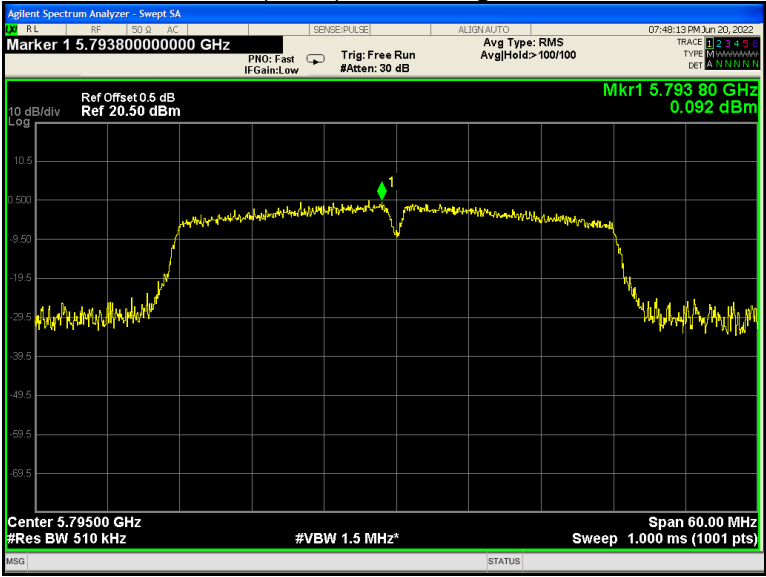
802.11n(HT20) U-NII-3 High channel



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



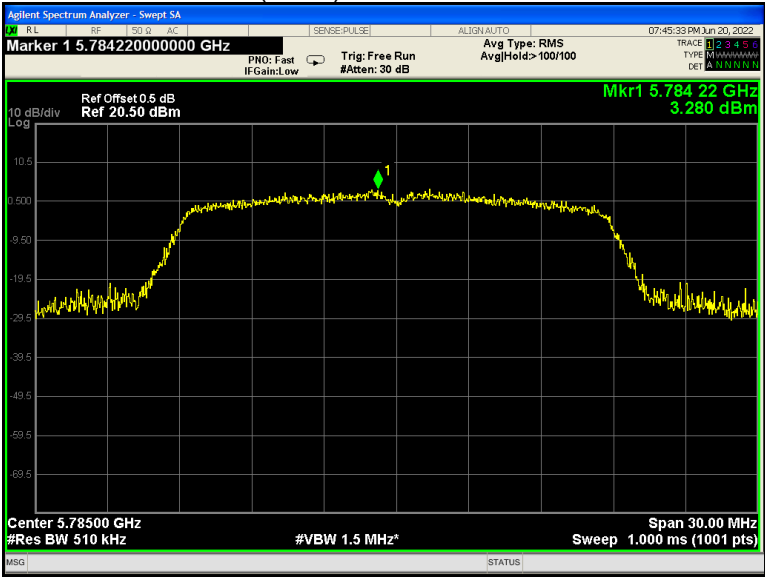
802.11n(HT40) U-NII-3 High channel



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



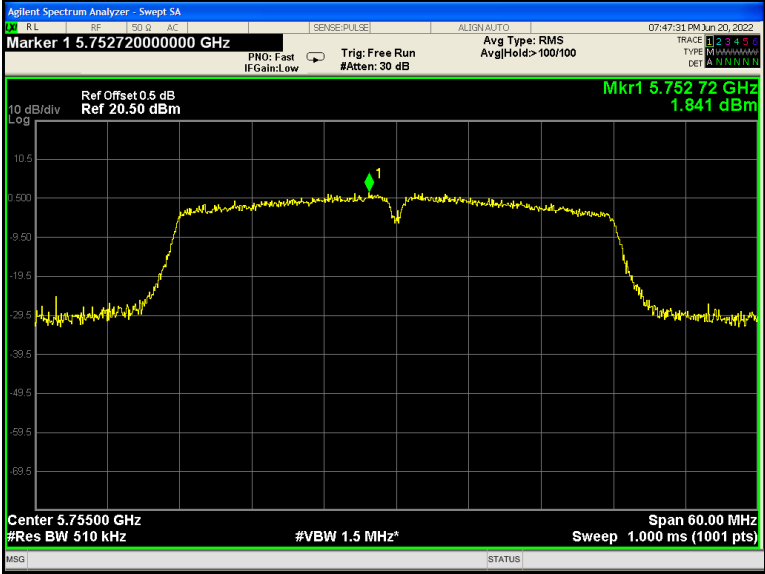
802.11ac(HT20) U-NII-3 Middle channel



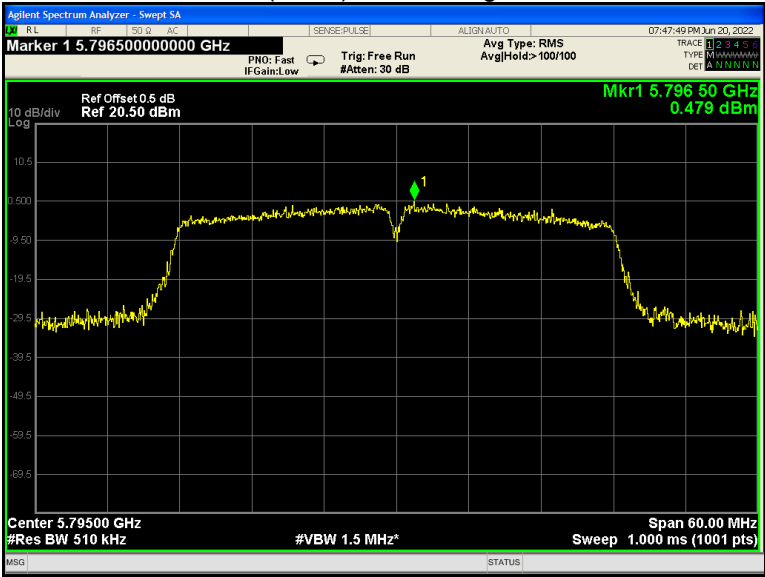
802.11ac(HT20) U-NII-3 High channel



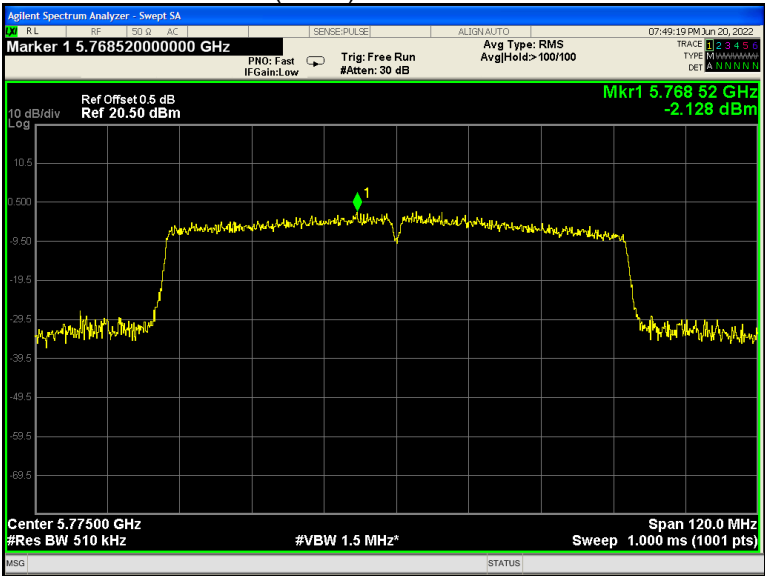
802.11ac(HT40) U-NII-3 Low channel



802.11ac(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:

U-NII-1 Test Frequency:5180MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	120	/	/	/
45		1805	0.3485	20
30		1796	0.3467	20
20		1800	0.3475	20
10		1804	0.3483	20
0		1791	0.3458	20
-10		1807	0.3488	20
-15		1805	0.3485	20
-30		/	/	/
20	108	1795	0.3465	20
20	132	1793	0.3461	20

U-NII-2A Test Frequency:5260MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	120	/	/	/
45		1798	0.3418	20
30		1795	0.3413	20
20		1800	0.3422	20
10		1809	0.3439	20
0		1808	0.3437	20
-10		1808	0.3437	20
-15		1799	0.3420	20
-30		/	/	/
20	108	1794	0.3411	20
20	132	1796	0.3414	20

U-NII-2C Test Frequency:5500MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	120	/	/	/
45		1804	0.3280	20
30		1794	0.3262	20
20		1800	0.3273	20
10		1798	0.3269	20
0		1805	0.3282	20
-10		1794	0.3262	20
-15		1800	0.3273	20
-30		/	/	/
20	108	1794	0.3262	20
20	132	1807	0.3285	20

U-NII-3 Test Frequency:5785MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	120	/	/	/
45		1803	0.3117	20
30		1791	0.3096	20
20		1800	0.3111	20
10		1803	0.3117	20
0		1794	0.3101	20
-10		1807	0.3124	20
-15		1792	0.3098	20
-30		/	/	/
20	108	1807	0.3124	20
20	132	1794	0.3101	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 of two antennas that uses a specified coupling to the intentional radiator. Antenna connectors complied with the requirement.

17 RF Exposure

Remark: refer to SAR test report: WTD22X05093708W.

18 Photographs of test setup and EUT.

Note: Please refer to appendix: Appendix-Black G 2-Photos.

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