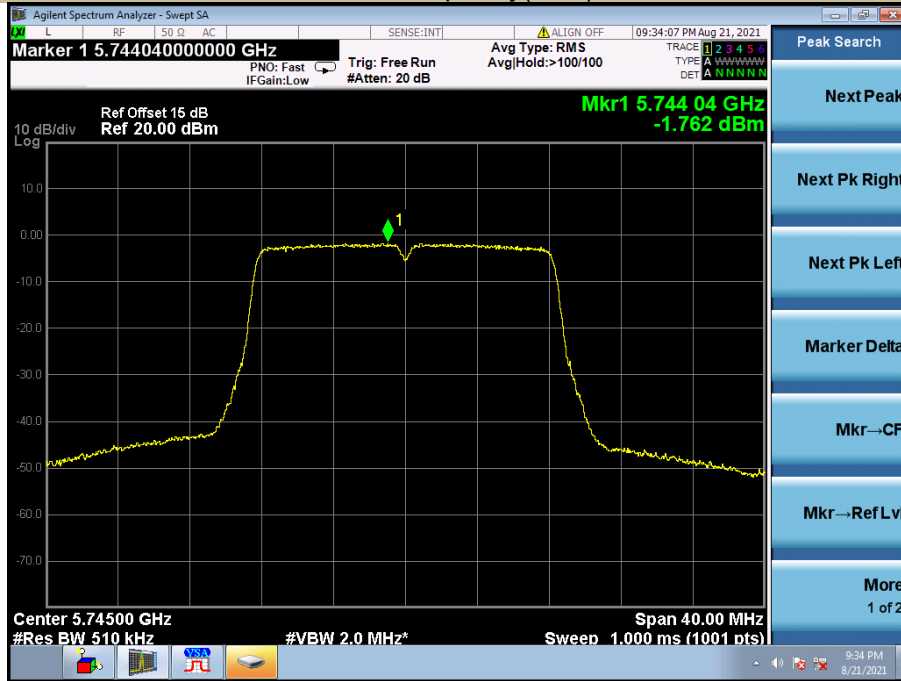


Power Spectral Density
Test Model 802.11a

U-NII - 3
Frequency(MHz)

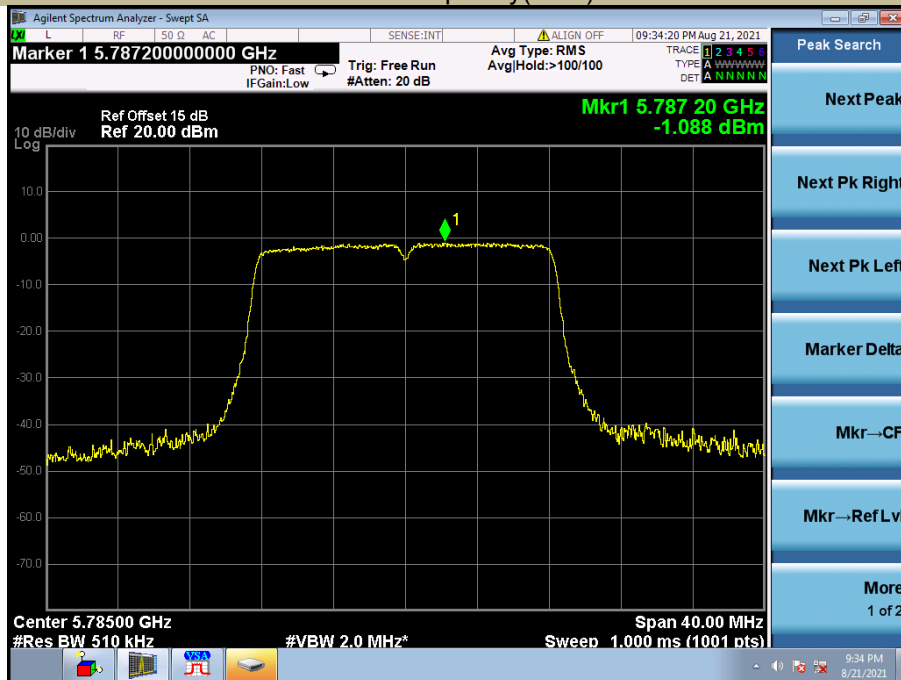
5745



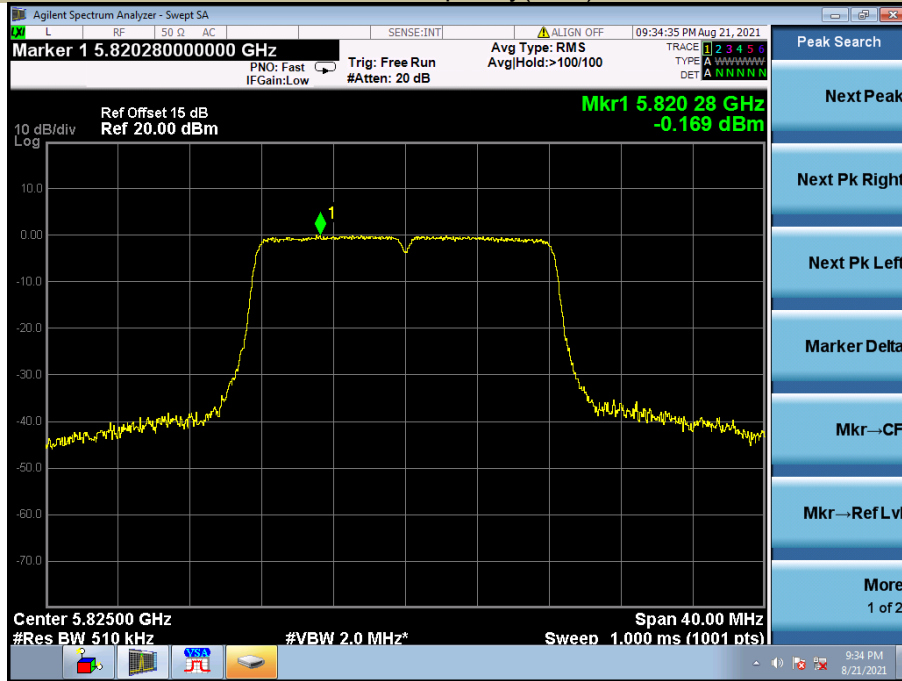
Power Spectral Density
Test Model 802.11a

U-NII - 3
Frequency(MHz)

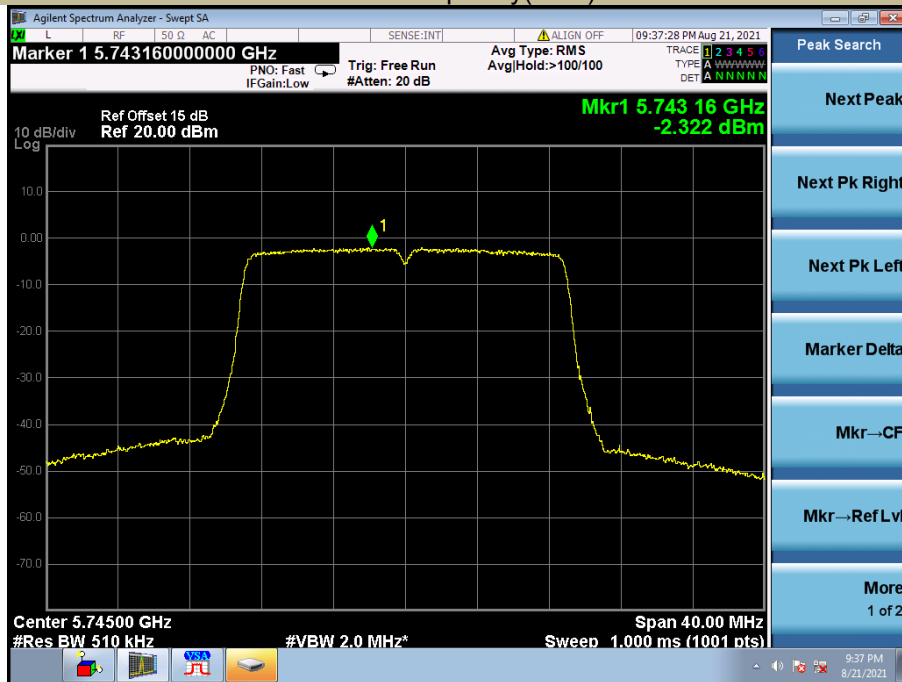
5785



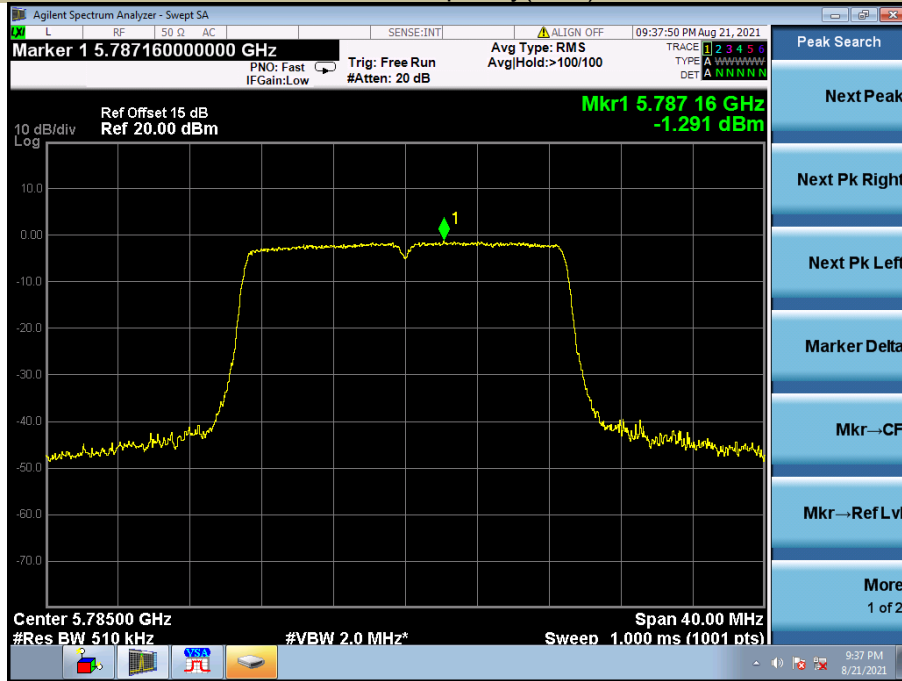
Power Spectral Density U-NII - 3
 Test Model 802.11a Frequency(MHz) 5825



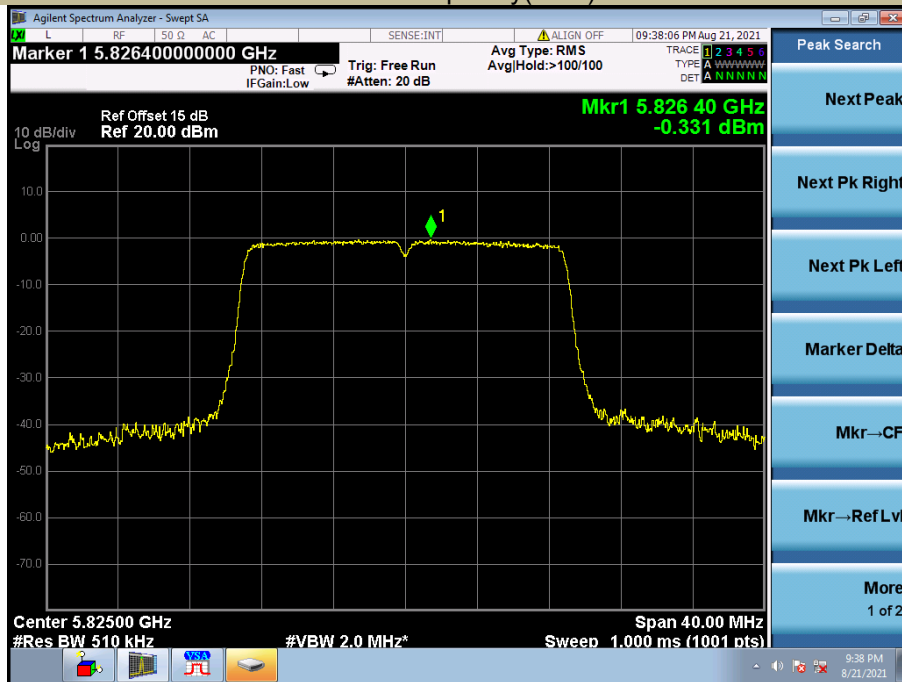
Power Spectral Density U-NII - 3
 Test Model 802.11n-HT20 Frequency(MHz) 5745



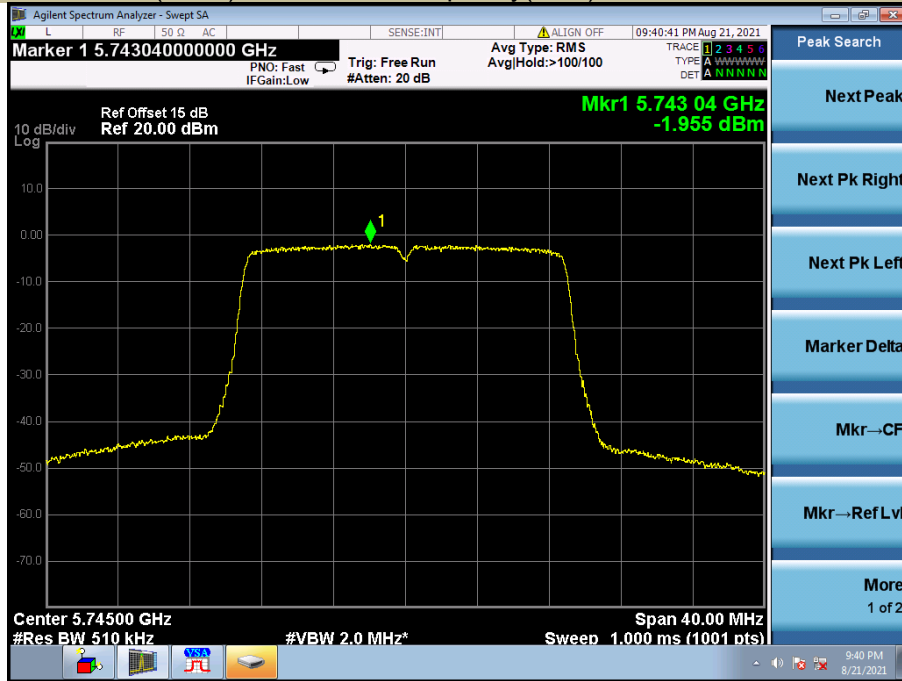
Power Spectral Density U-NII - 3
 Test Model 802.11n-HT20 Frequency(MHz) 5785



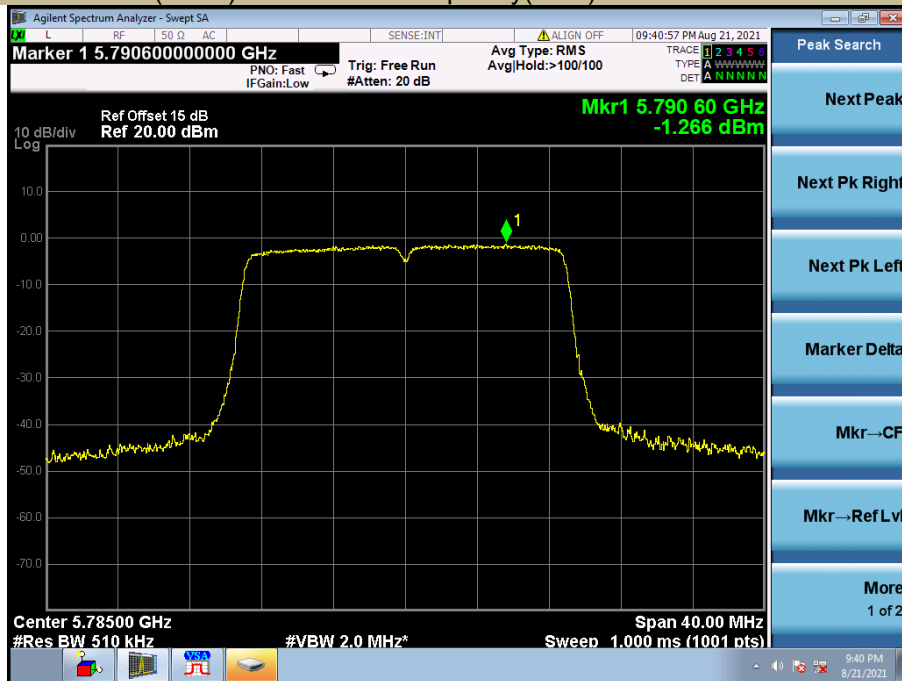
Power Spectral Density U-NII - 3
 Test Model 802.11n-HT20 Frequency(MHz) 5825



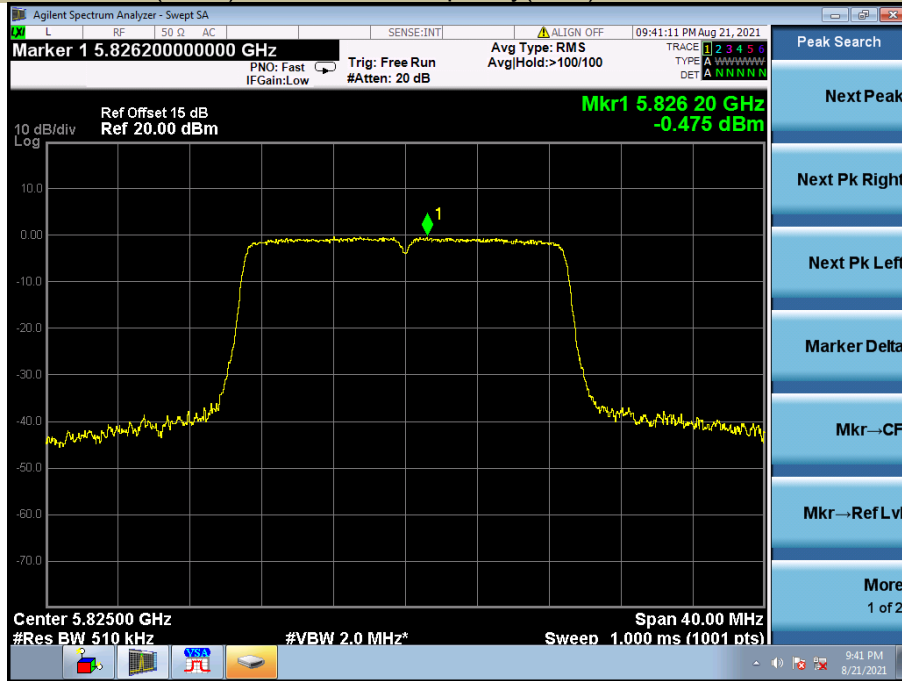
Power Spectral Density U-NII - 3
 Test Model 802.11ac(HT20) Frequency(MHz) 5745



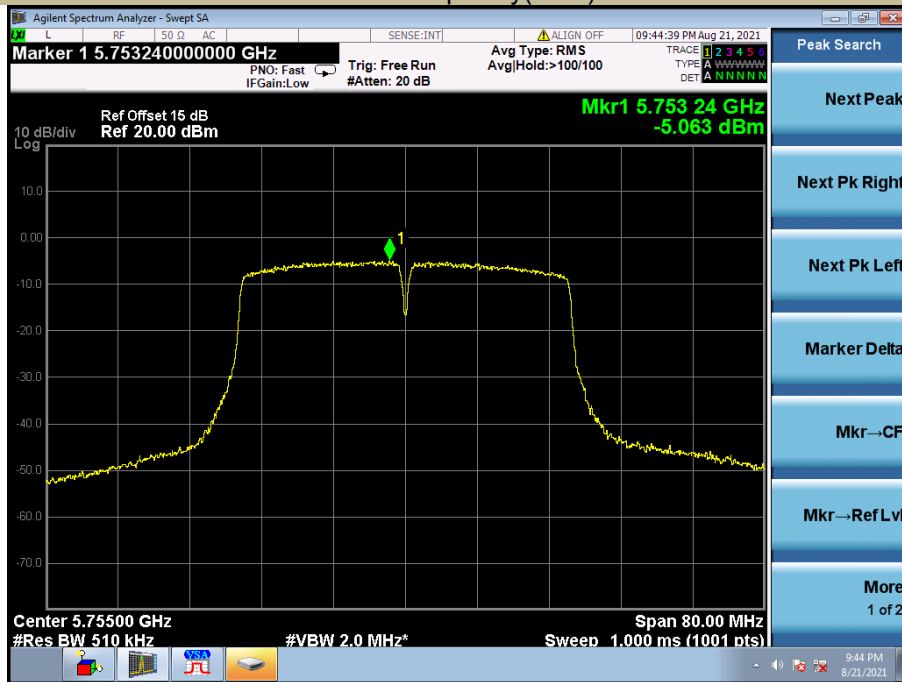
Power Spectral Density U-NII - 3
 Test Model 802.11ac(HT20) Frequency(MHz) 5785



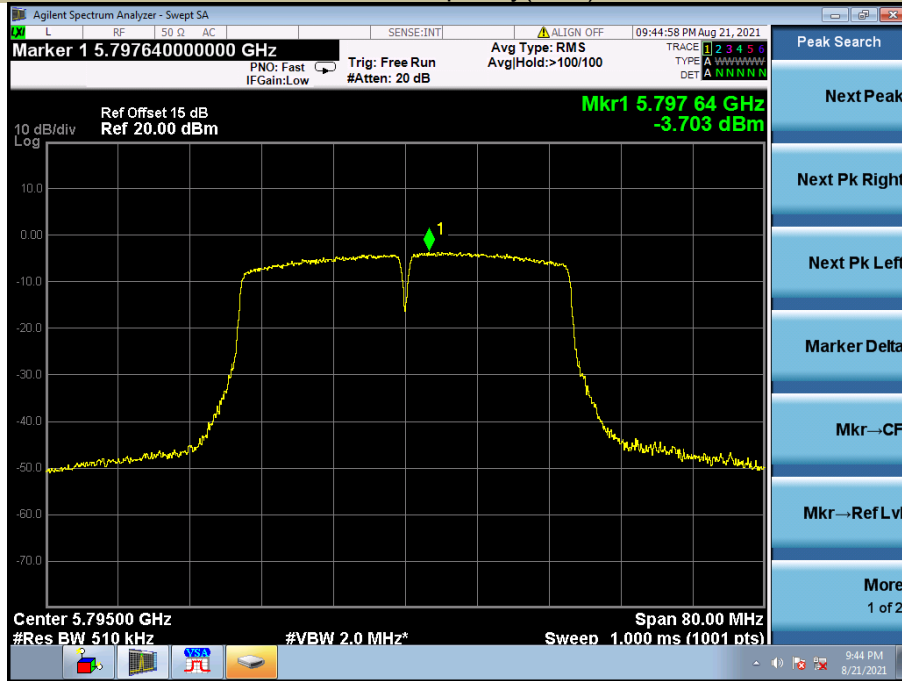
Power Spectral Density U-NII - 3
 Test Model 802.11ac(HT20) Frequency(MHz) 5825



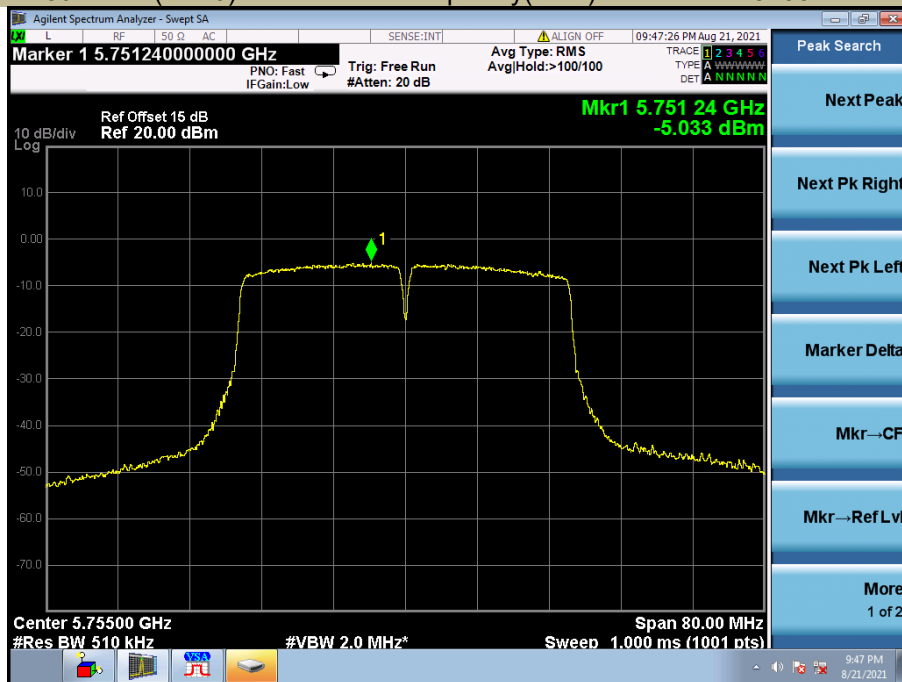
Power Spectral Density U-NII - 3
 Test Model 802.11n-HT40 Frequency(MHz) 5755



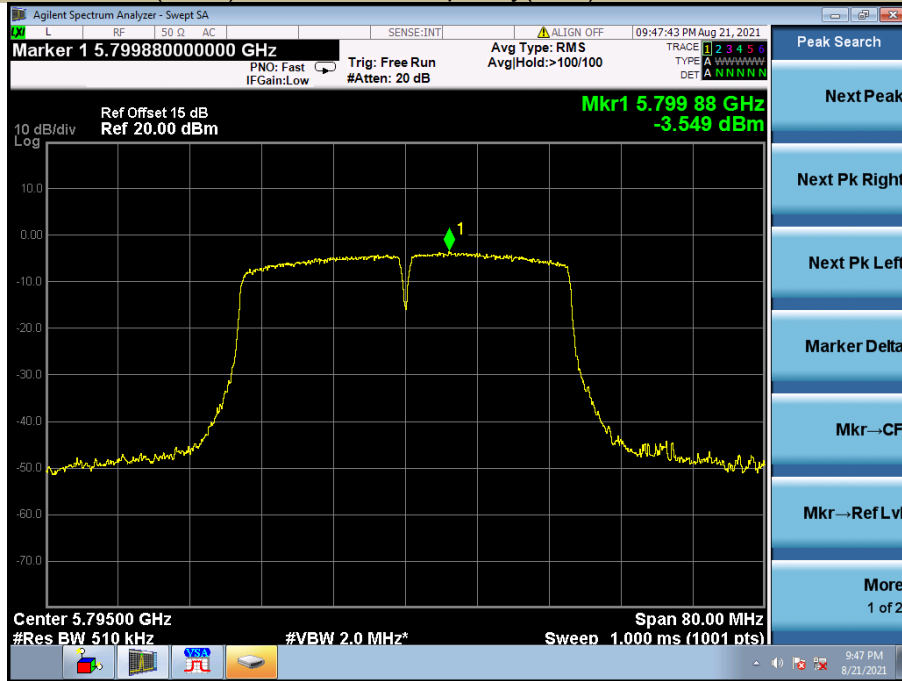
Power Spectral Density U-NII - 3
 Test Model 802.11n-HT40 Frequency(MHz) 5795



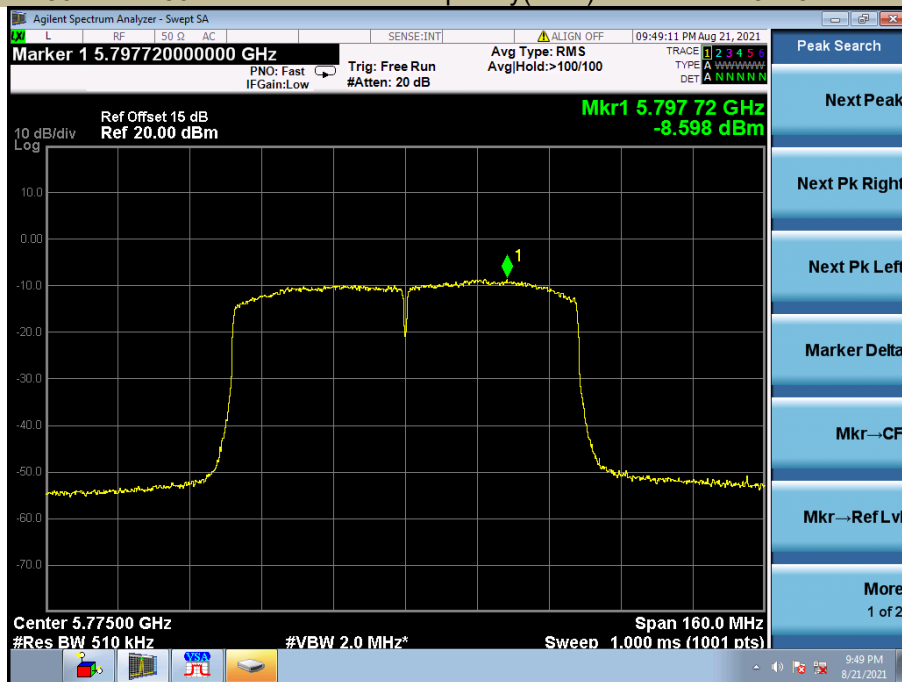
Power Spectral Density U-NII - 3
 Test Model 802.11ac(HT40) Frequency(MHz) 5755



Power Spectral Density U-NII - 3
 Test Model 802.11ac(HT40) Frequency(MHz) 5795



Power Spectral Density U-NII - 3
 Test Model 802.11ac 80 Frequency(MHz) 5775

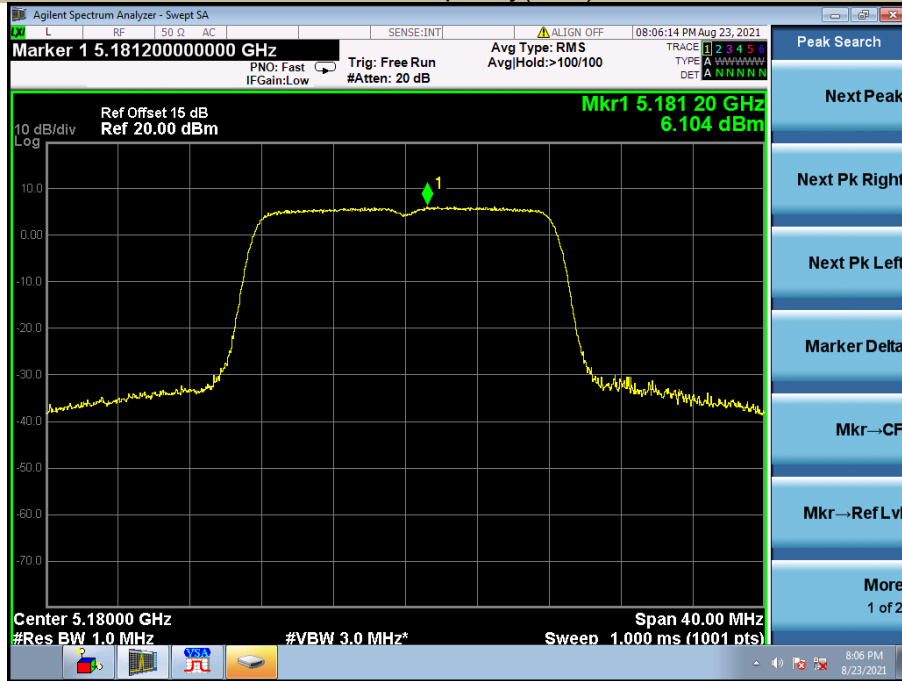


For 1T1R-Antenna 2

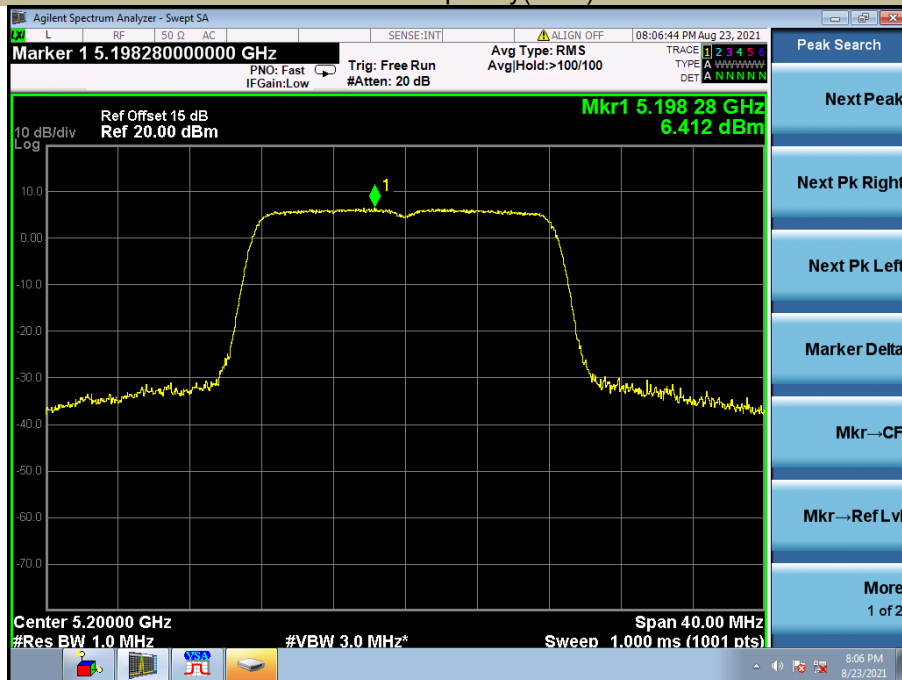
5150-5250MHz

Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5180	6.10	11
	5200	6.41	11
	5240	6.33	11
802.11n-HT20	5180	5.93	11
	5200	6.14	11
	5240	6.14	11
802.11ac(HT20)	5180	6.13	11
	5200	6.15	11
	5240	6.08	11
802.11n-HT40	5190	2.86	11
	5230	2.58	11
802.11ac(HT40)	5190	3.08	11
	5230	2.70	11
802.11ac(HT80)	5210	-1.67	11

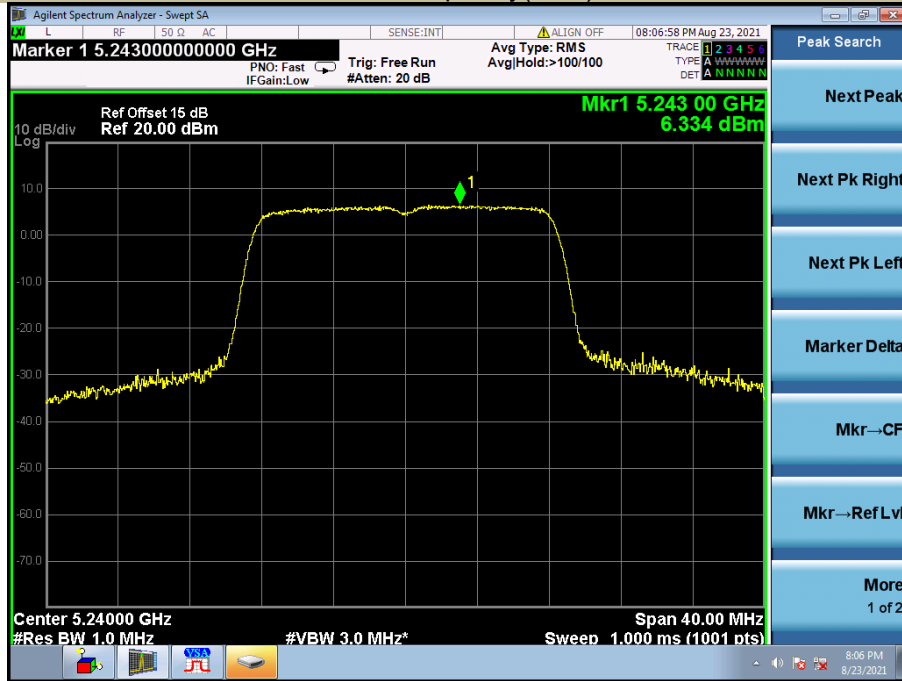
Power Spectral Density U-NII - 1
 Test Model 802.11a Frequency(MHz) 5180



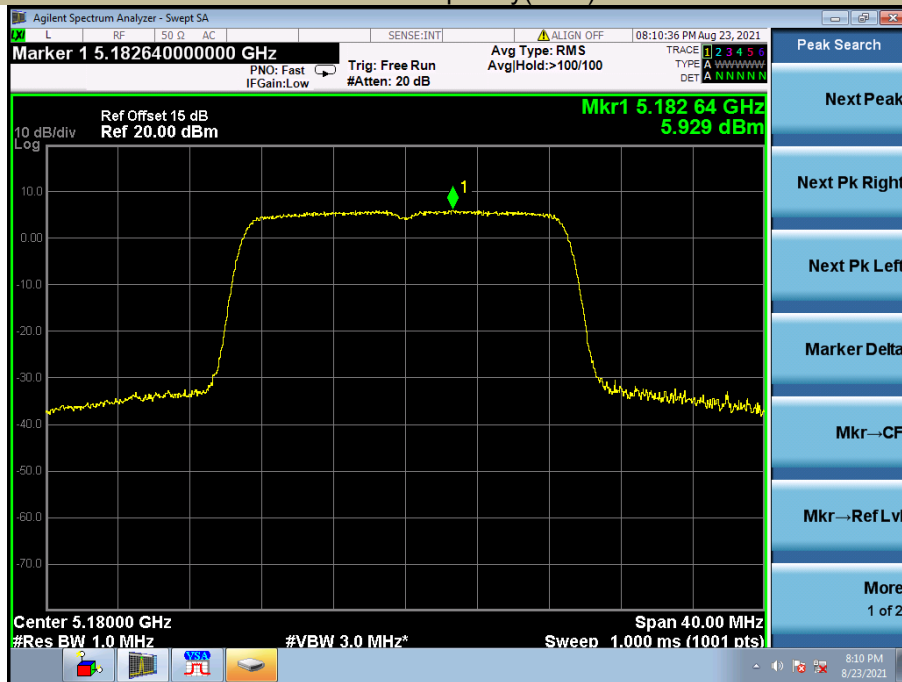
Power Spectral Density U-NII - 1
 Test Model 802.11a Frequency(MHz) 5200



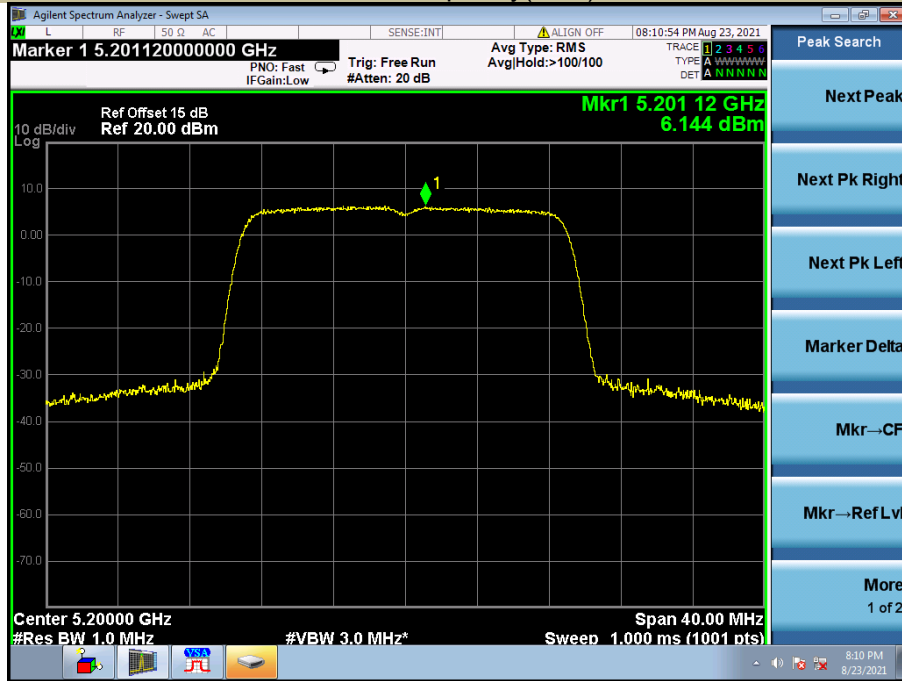
Power Spectral Density U-NII - 1
 Test Model 802.11a Frequency(MHz) 5240



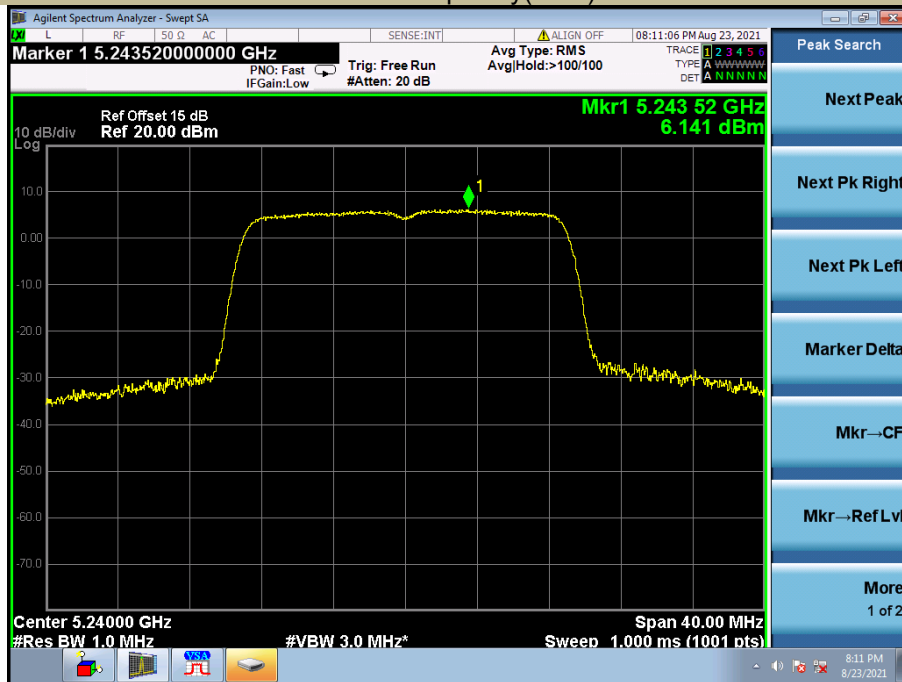
Power Spectral Density U-NII - 1
 Test Model 802.11n-HT20 Frequency(MHz) 5180



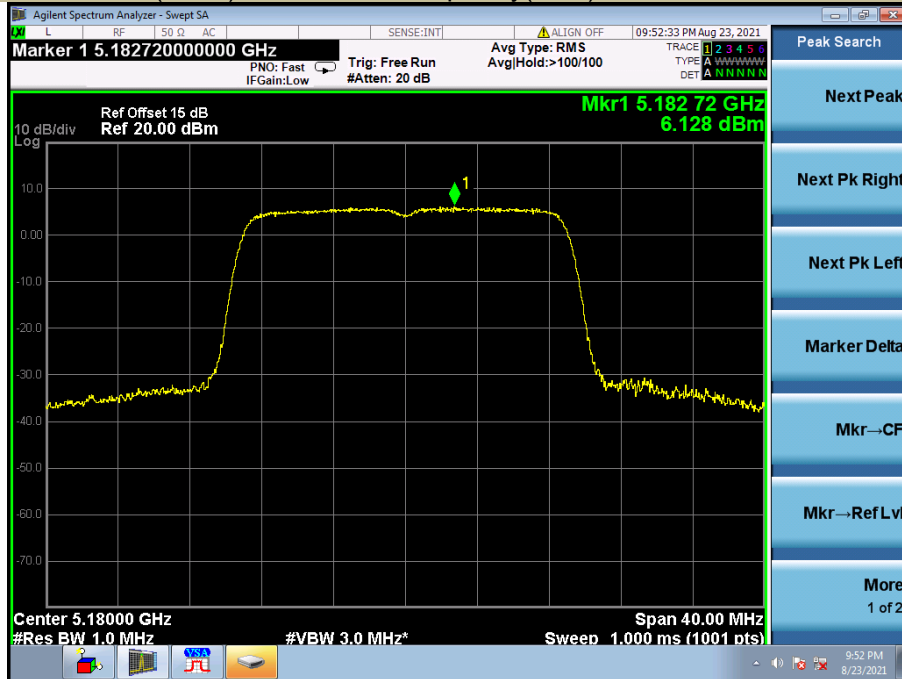
Power Spectral Density U-NII - 1
 Test Model 802.11n-HT20 Frequency(MHz) 5200



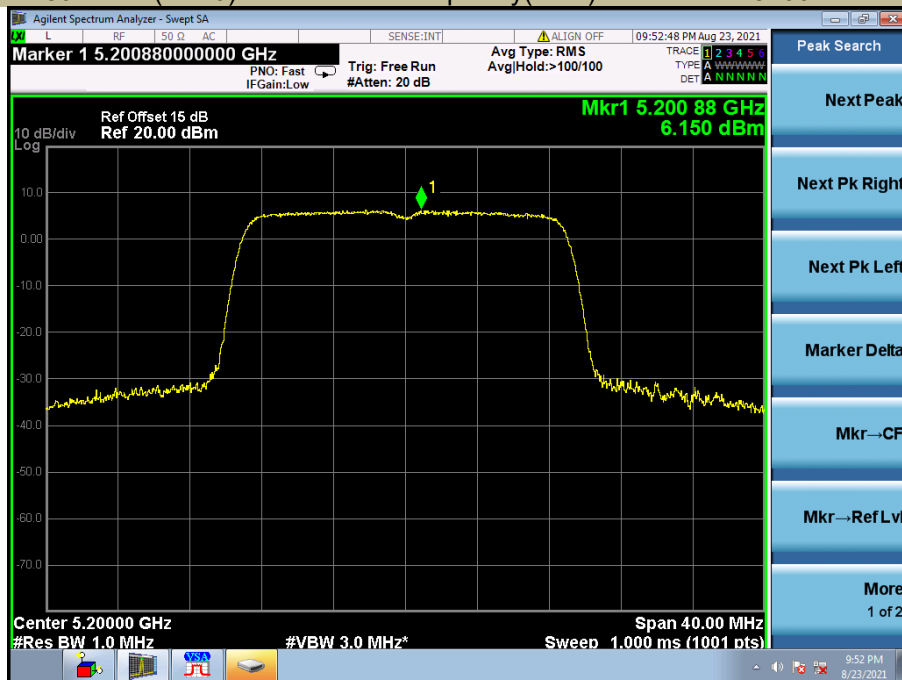
Power Spectral Density U-NII - 1
 Test Model 802.11n-HT20 Frequency(MHz) 5240



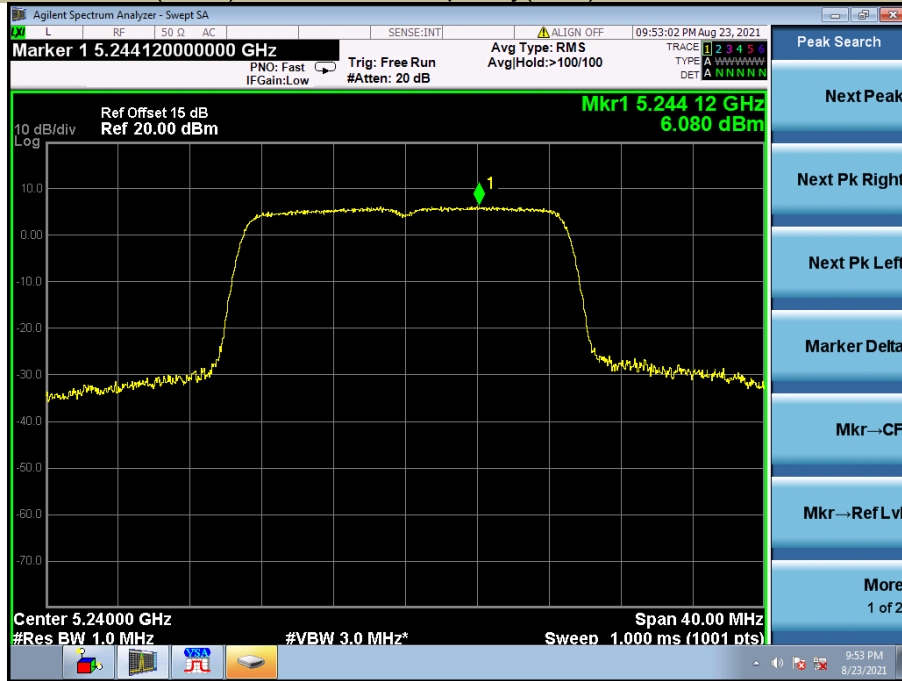
Power Spectral Density U-NII - 1
 Test Model 802.11ac(HT20) Frequency(MHz) 5180



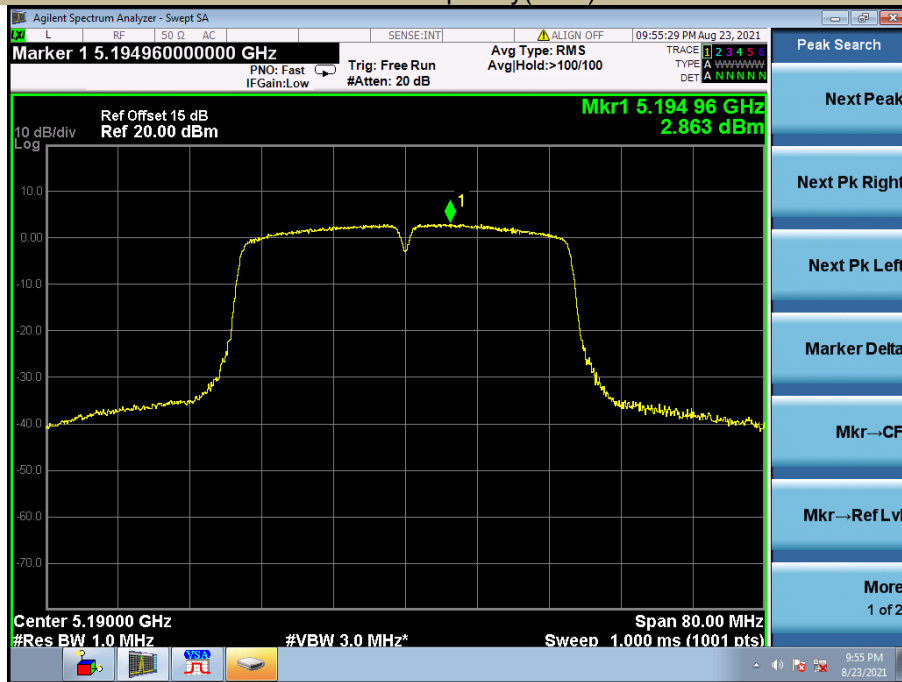
Power Spectral Density U-NII - 1
 Test Model 802.11ac(HT20) Frequency(MHz) 5200



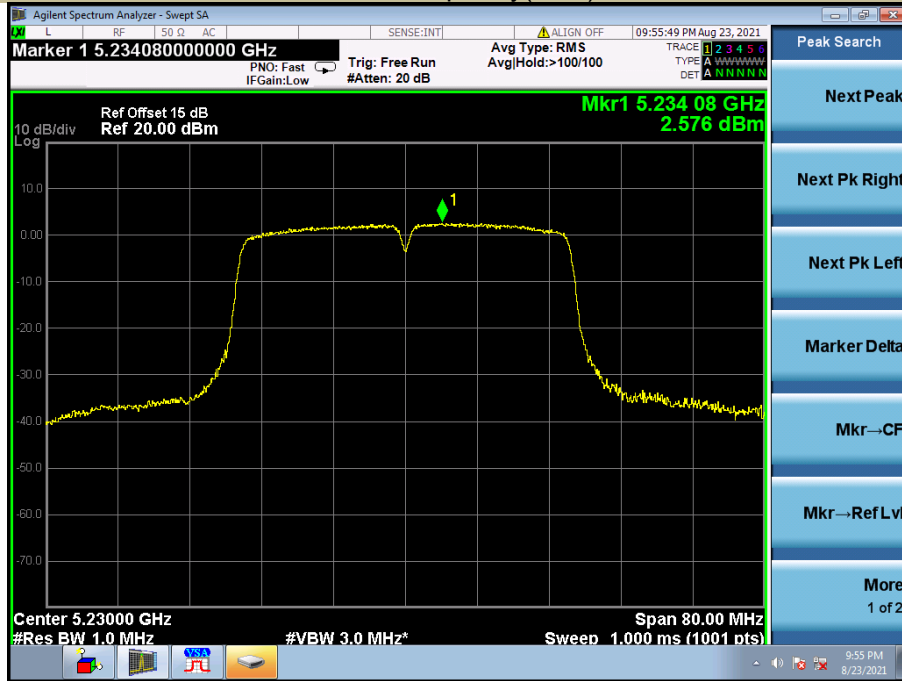
Power Spectral Density U-NII - 1
 Test Model 802.11ac(HT20) Frequency(MHz) 5240



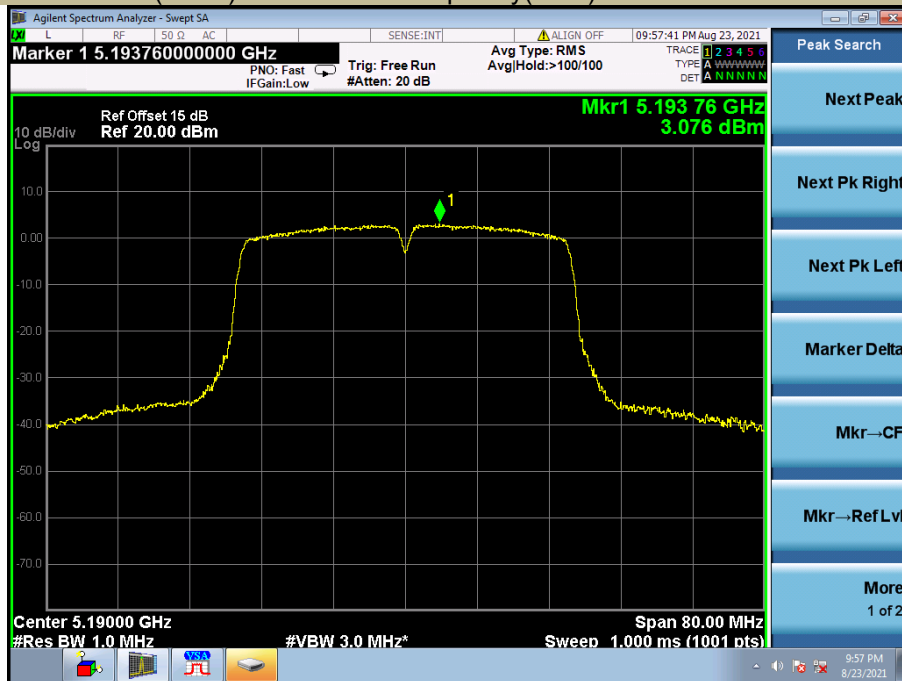
Power Spectral Density U-NII - 1
 Test Model 802.11n-HT40 Frequency(MHz) 5190



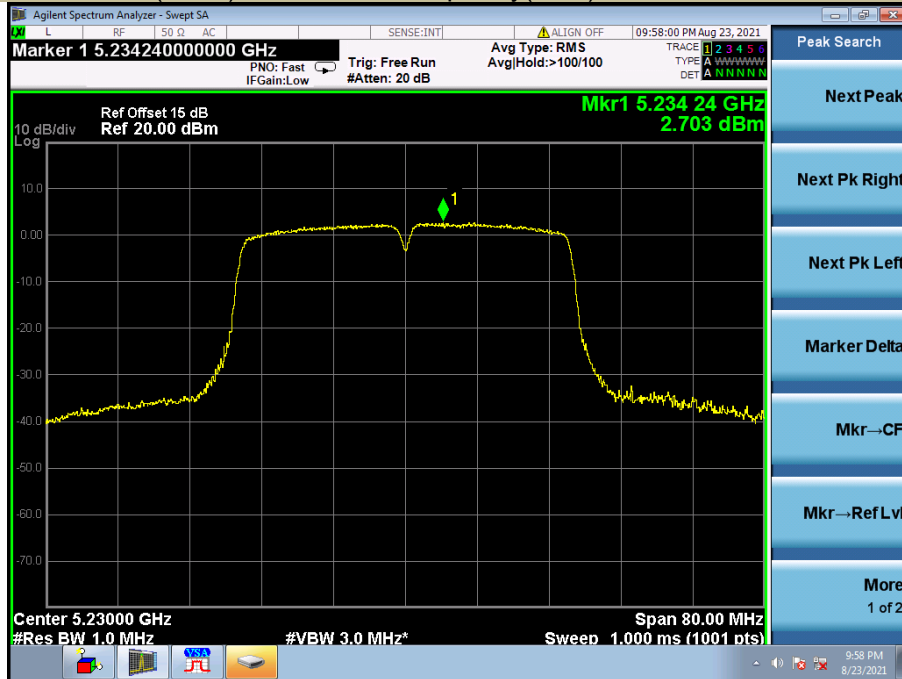
Power Spectral Density U-NII - 1
 Test Model 802.11n-HT40 Frequency(MHz) 5230



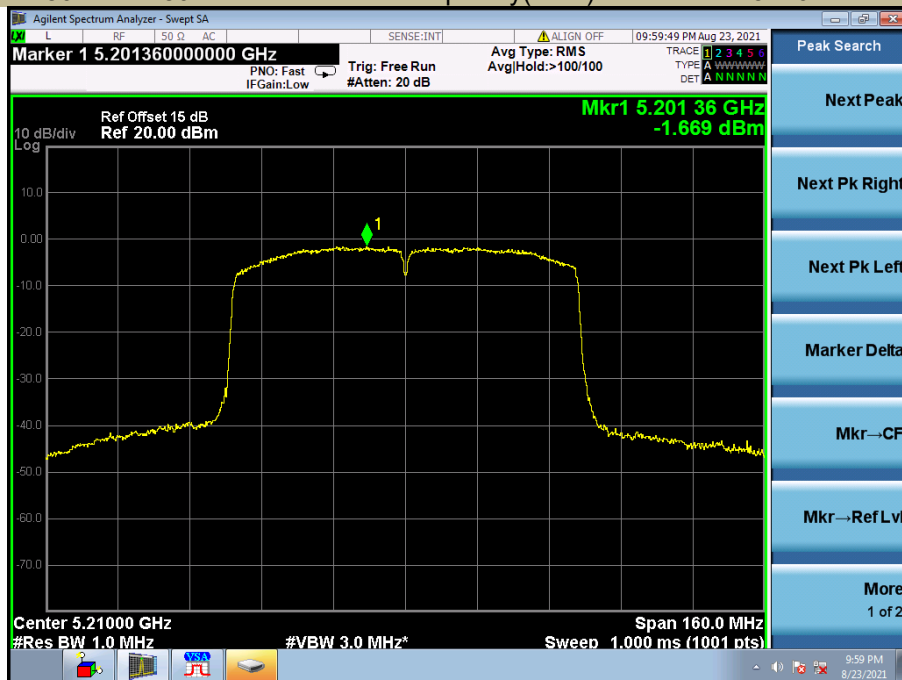
Power Spectral Density U-NII - 1
 Test Model 802.11ac(HT40) Frequency(MHz) 5190



Power Spectral Density U-NII - 1
 Test Model 802.11ac(HT40) Frequency(MHz) 5230



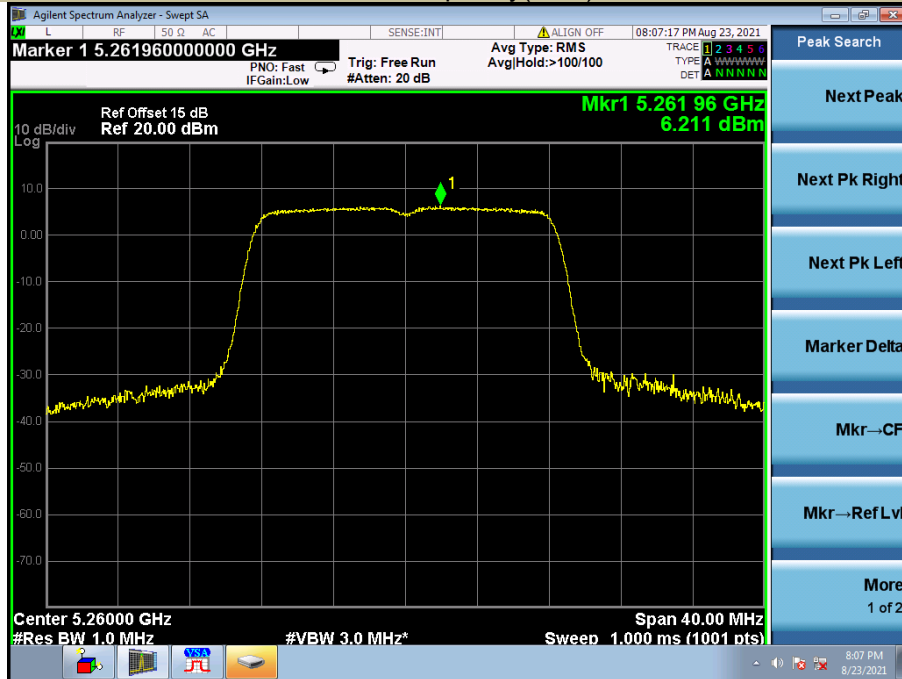
Power Spectral Density U-NII - 1
 Test Model 802.11ac 80 Frequency(MHz) 5210



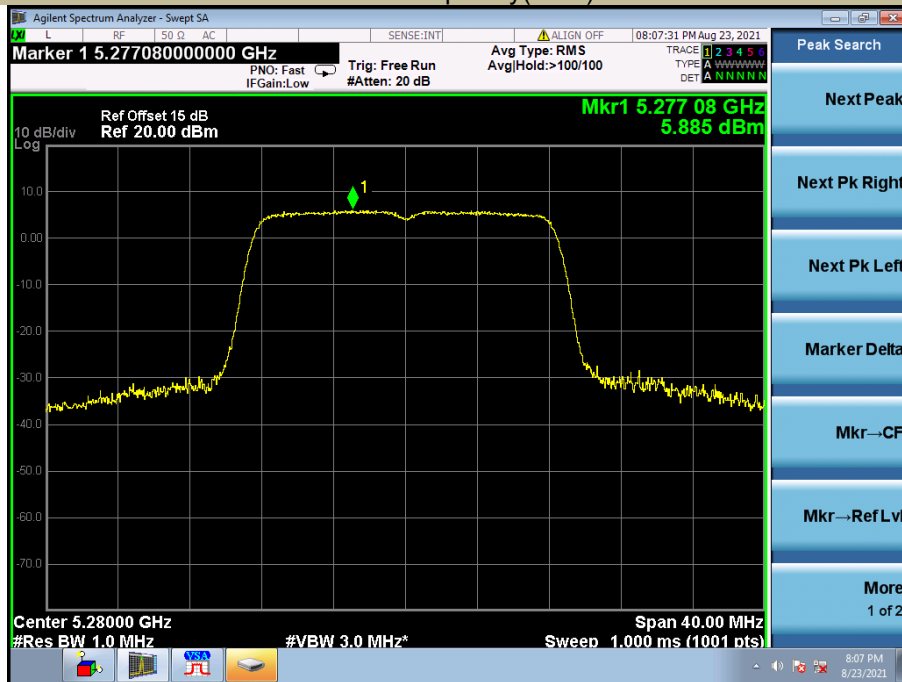
5250-5350MHz

Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5260	6.21	11
	5280	5.89	11
	5320	6.86	11
802.11n-HT20	5260	5.74	11
	5280	5.66	11
	5320	6.69	11
802.11ac(HT20)	5260	5.98	11
	5280	5.63	11
	5320	6.66	11
802.11n-HT40	5270	2.63	11
	5310	3.41	11
802.11ac(HT40)	5270	2.83	11
	5310	3.39	11
802.11ac(HT80)	5290	-1.64	11

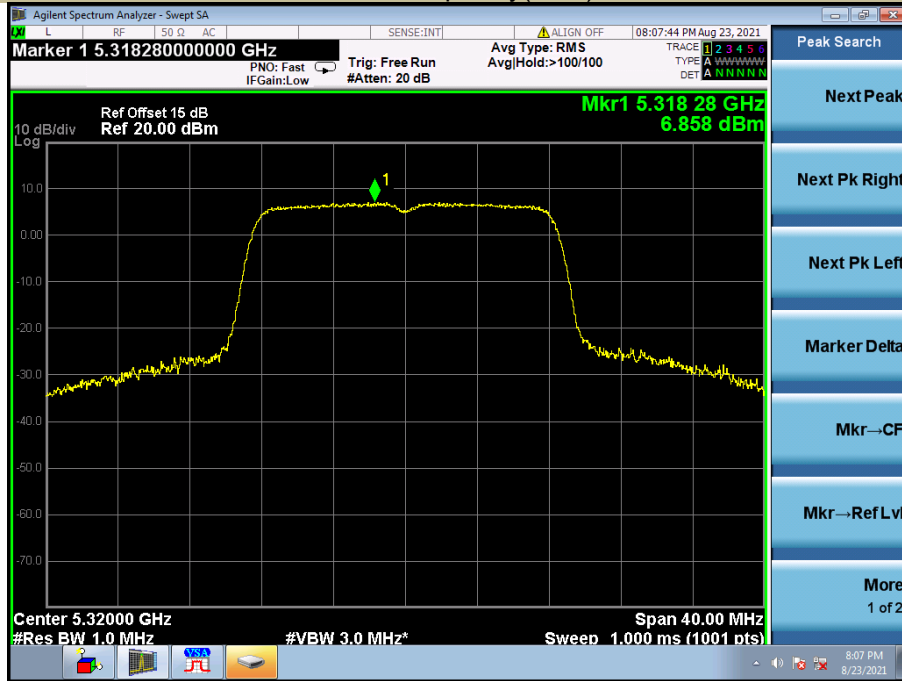
Power Spectral Density U-NII – 2A
 Test Model 802.11a Frequency(MHz) 5260



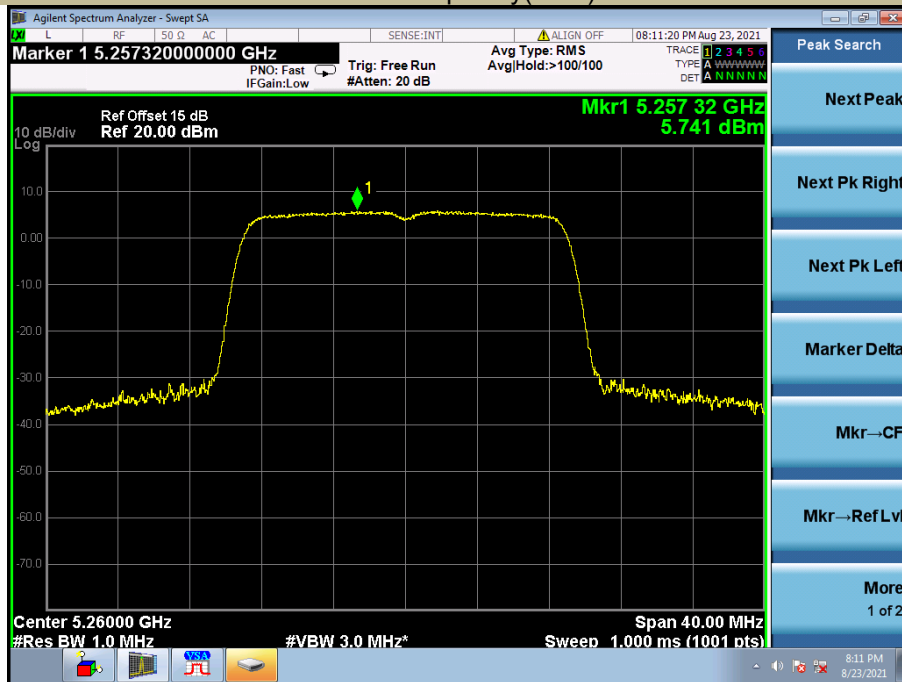
Power Spectral Density U-NII – 2A
 Test Model 802.11a Frequency(MHz) 5280



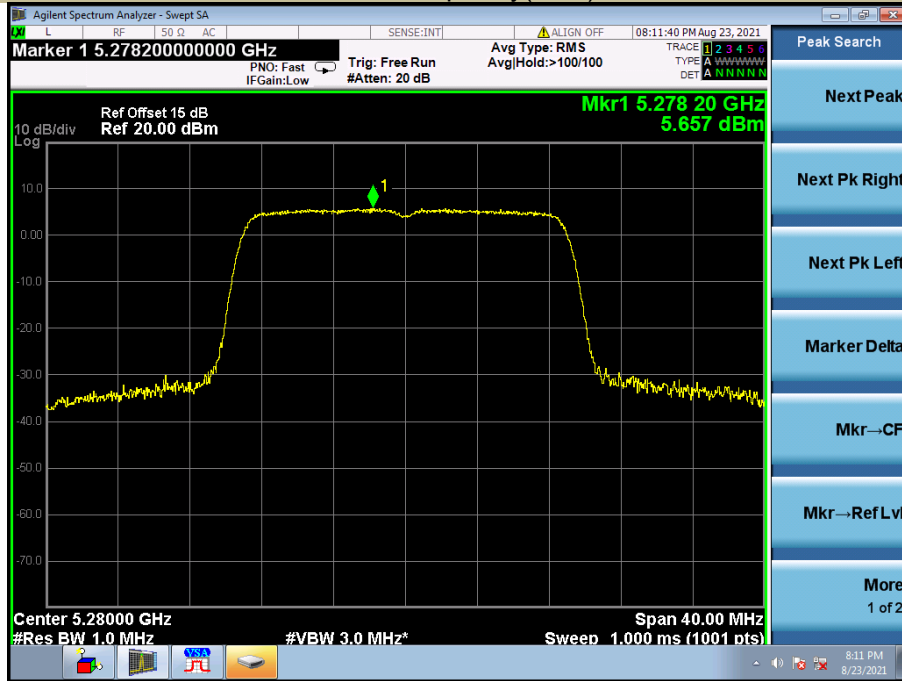
Power Spectral Density U-NII – 2A
 Test Model 802.11a Frequency(MHz) 5320



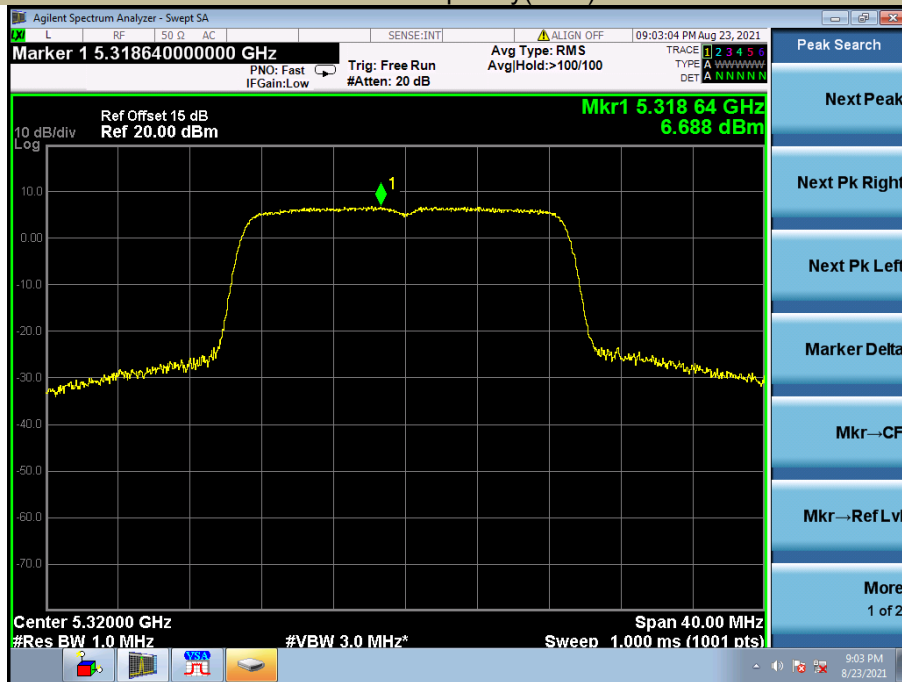
Power Spectral Density U-NII – 2A
 Test Model 802.11n-HT20 Frequency(MHz) 5260



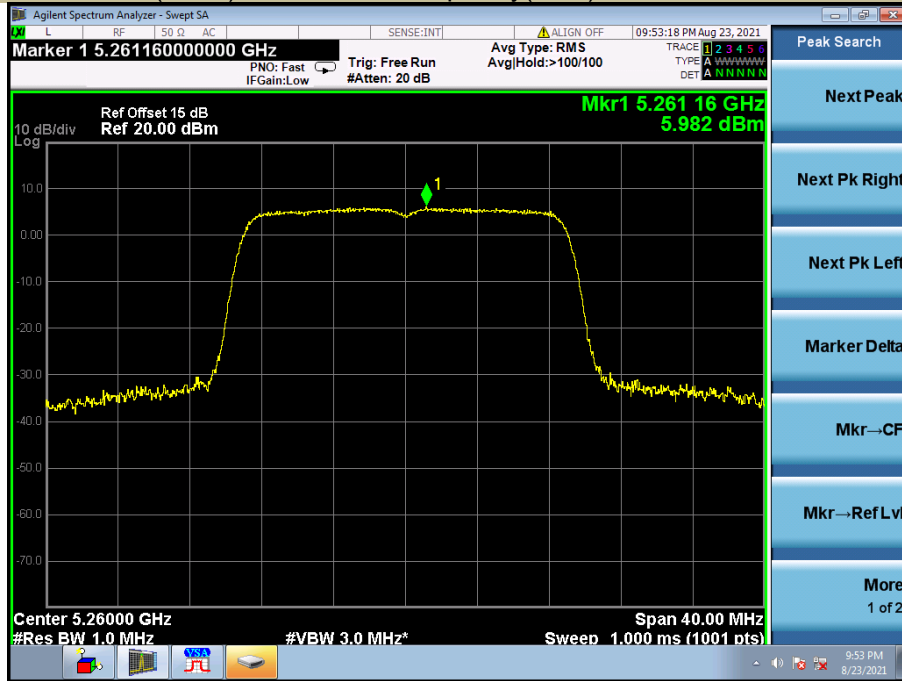
Power Spectral Density U-NII – 2A
 Test Model 802.11n-HT20 Frequency(MHz) 5280



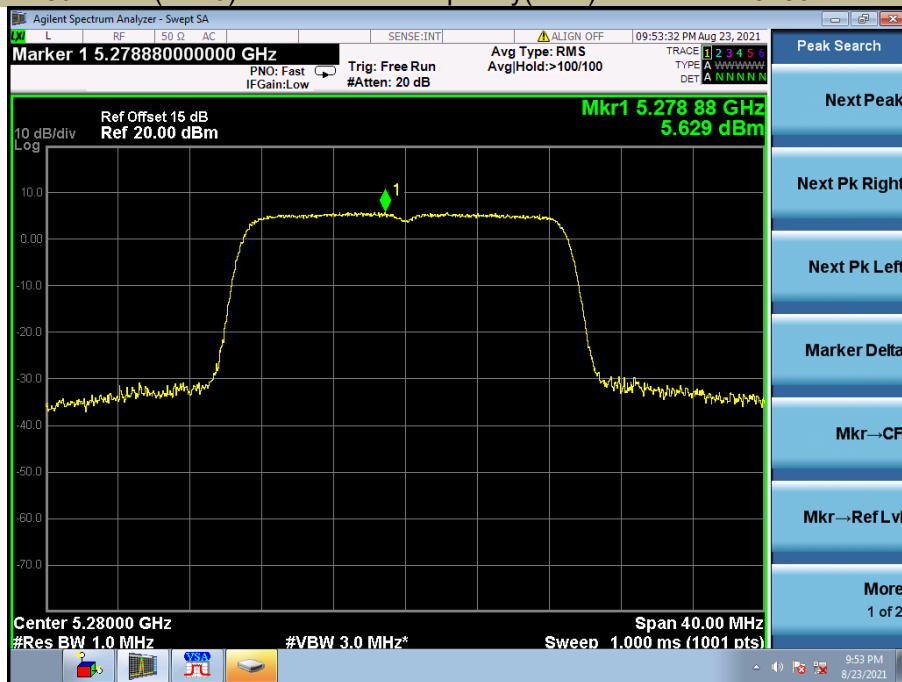
Power Spectral Density U-NII – 2A
 Test Model 802.11n-HT20 Frequency(MHz) 5320



Power Spectral Density U-NII – 2A
 Test Model 802.11ac(HT20) Frequency(MHz) 5260

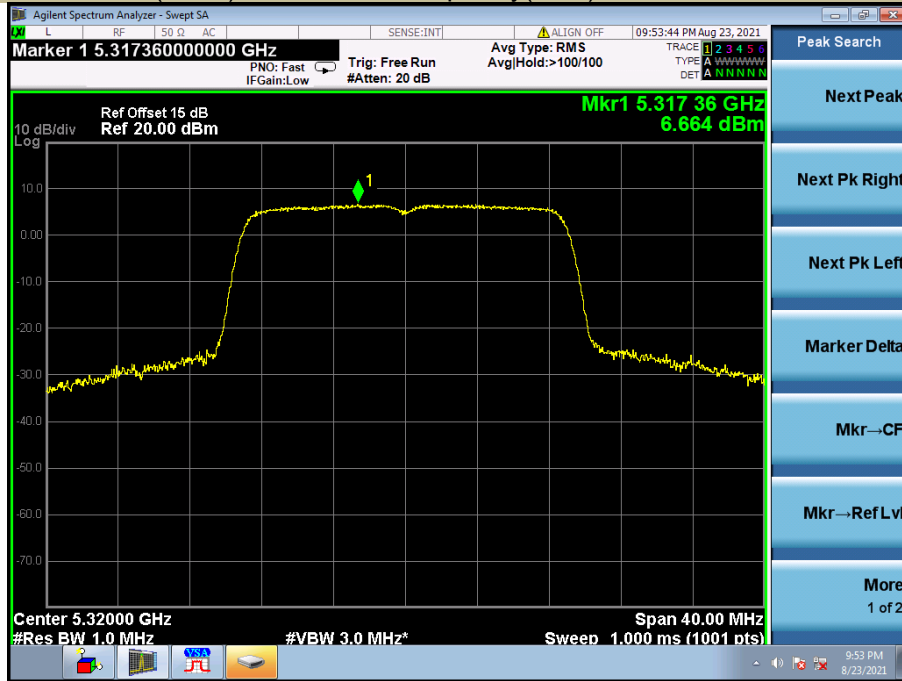


Power Spectral Density U-NII – 2A
 Test Model 802.11ac(HT20) Frequency(MHz) 5280



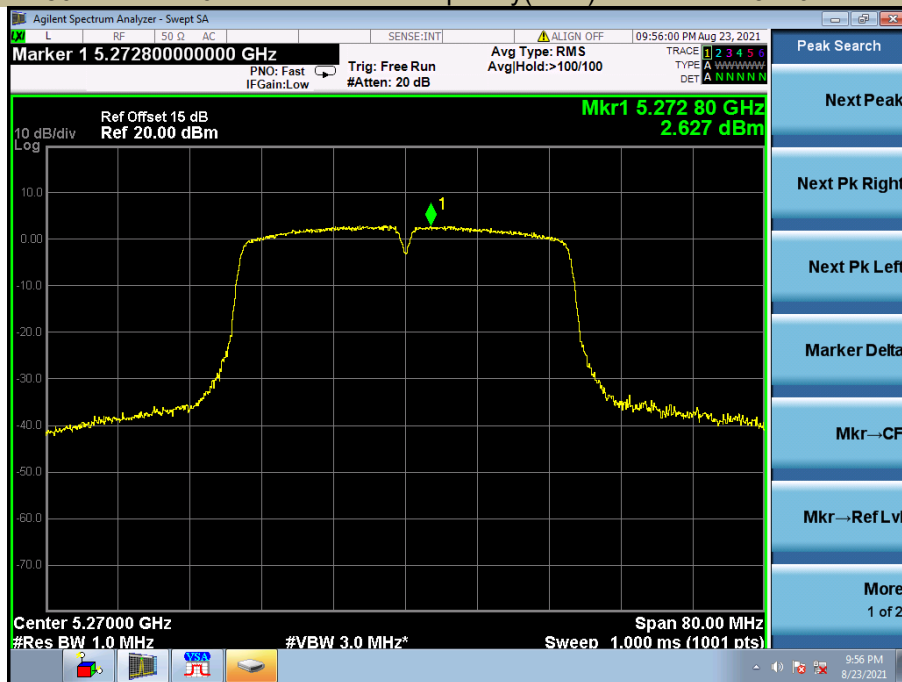
Power Spectral Density
Test Model 802.11ac(HT20)

U-NII – 2A
Frequency(MHz) 5320

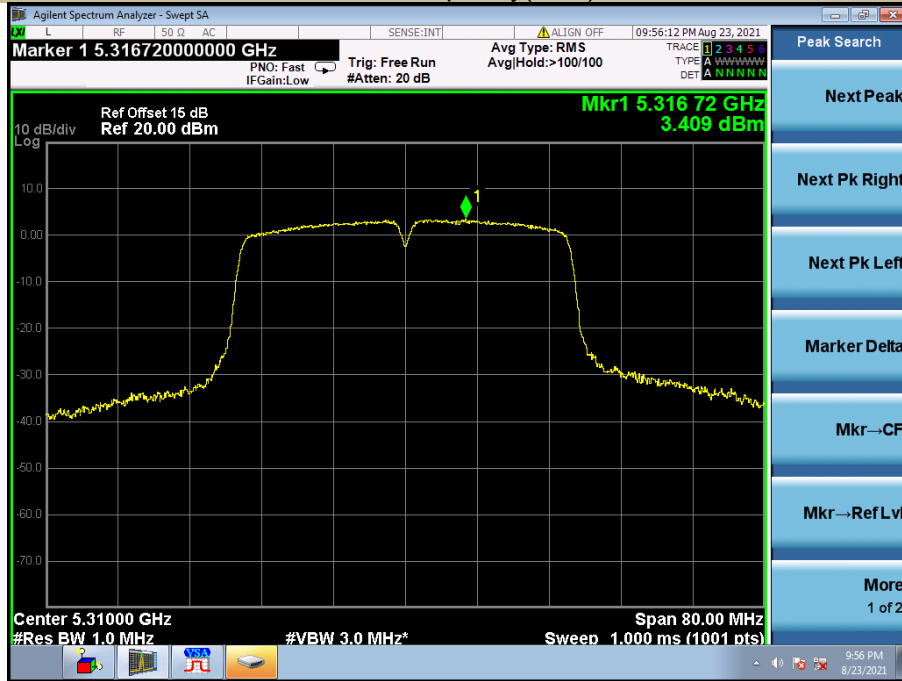


Power Spectral Density
Test Model 802.11n-HT40

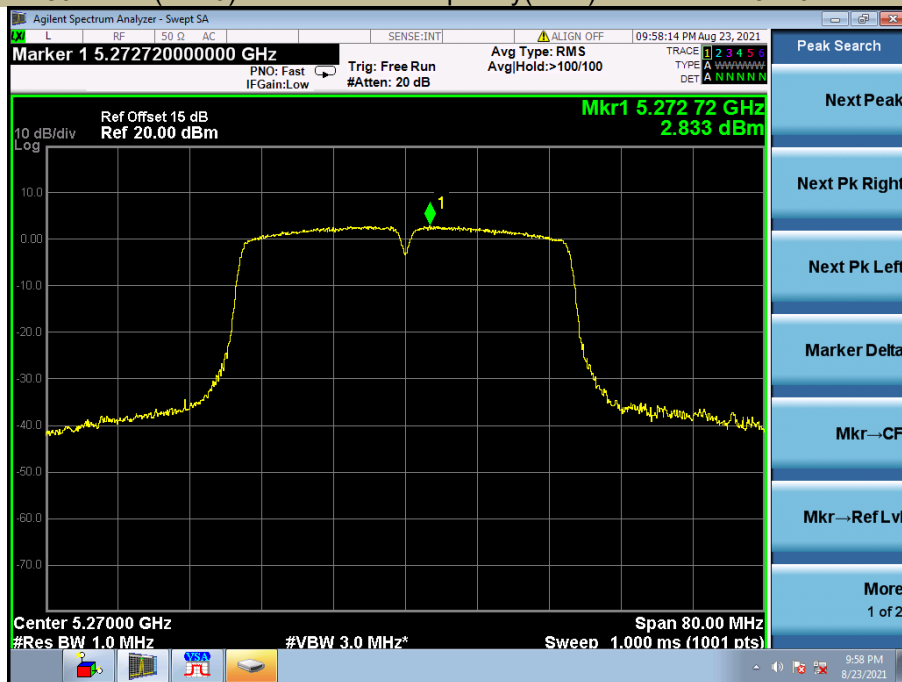
U-NII – 2A
Frequency(MHz) 5270



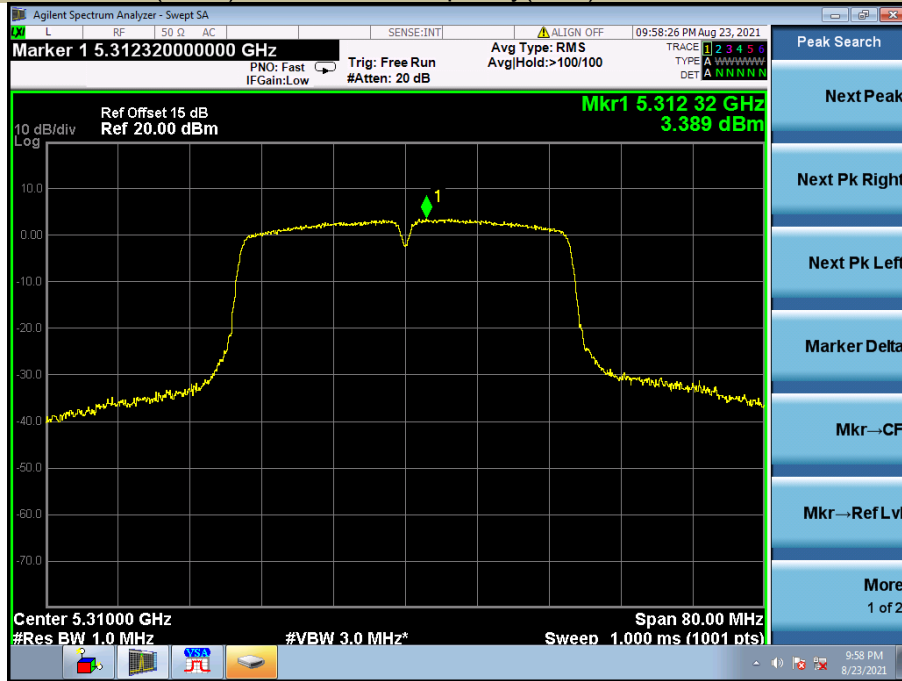
Power Spectral Density U-NII – 2A
 Test Model 802.11n-HT40 Frequency(MHz) 5310



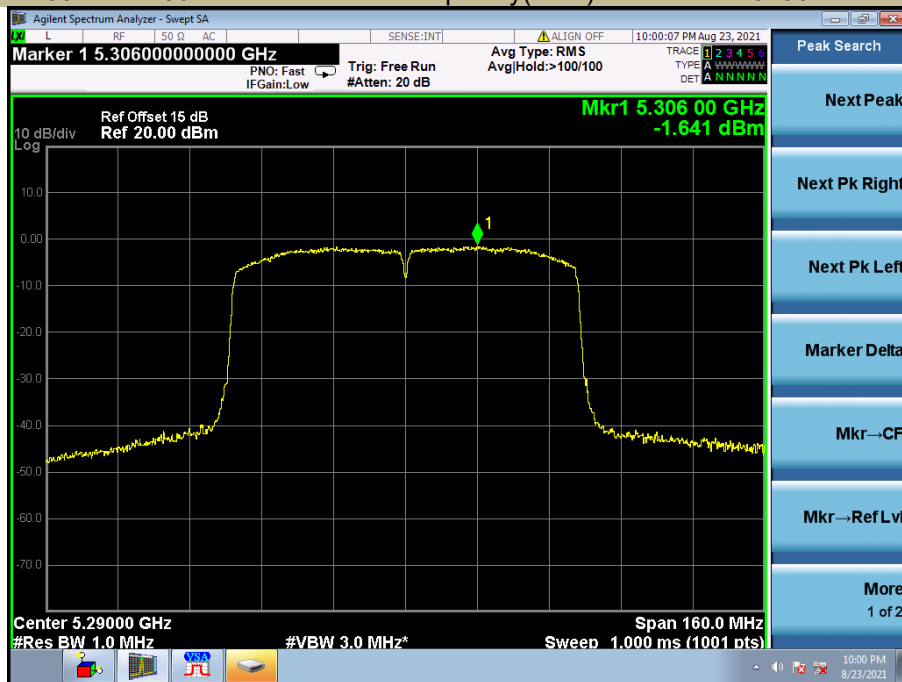
Power Spectral Density U-NII – 2A
 Test Model 802.11ac(HT40) Frequency(MHz) 5270



Power Spectral Density U-NII – 2A
 Test Model 802.11ac(HT40) Frequency(MHz) 5310



Power Spectral Density U-NII – 2A
 Test Model 802.11ac 80 Frequency(MHz) 5290

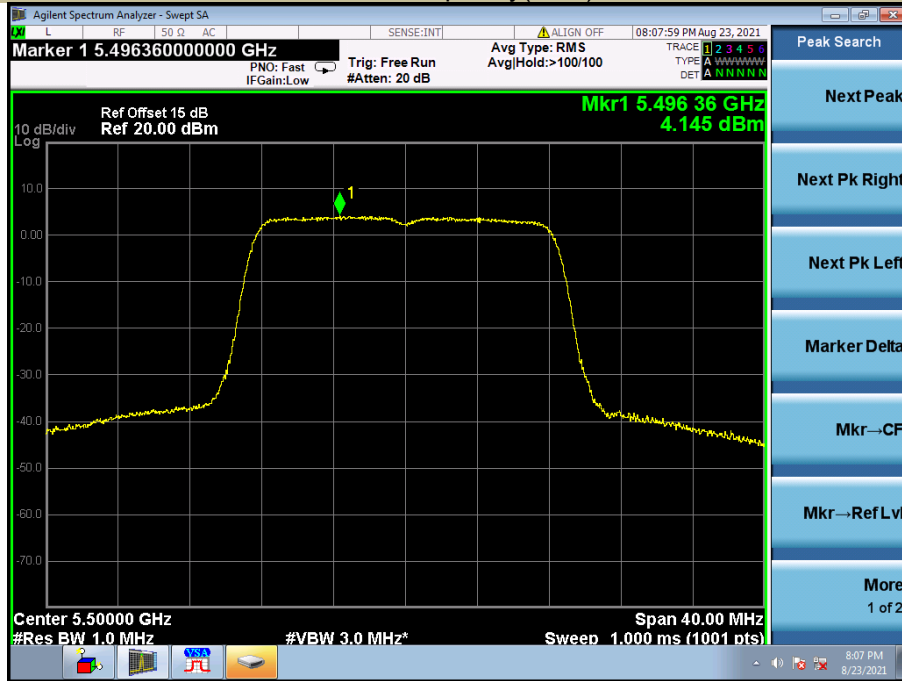


5470-5725MHz

Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5500	4.15	11
	5600	3.02	11
	5700	2.28	11
802.11n-HT20	5500	3.79	11
	5600	2.66	11
	5700	1.69	11
802.11ac(HT20)	5500	3.70	11
	5600	2.71	11
	5700	1.63	11
802.11n-HT40	5510	0.80	11
	5670	-1.05	11
802.11ac(HT40)	5510	0.76	11
	5670	-1.01	11
802.11ac(HT80)	5530	-3.36	11

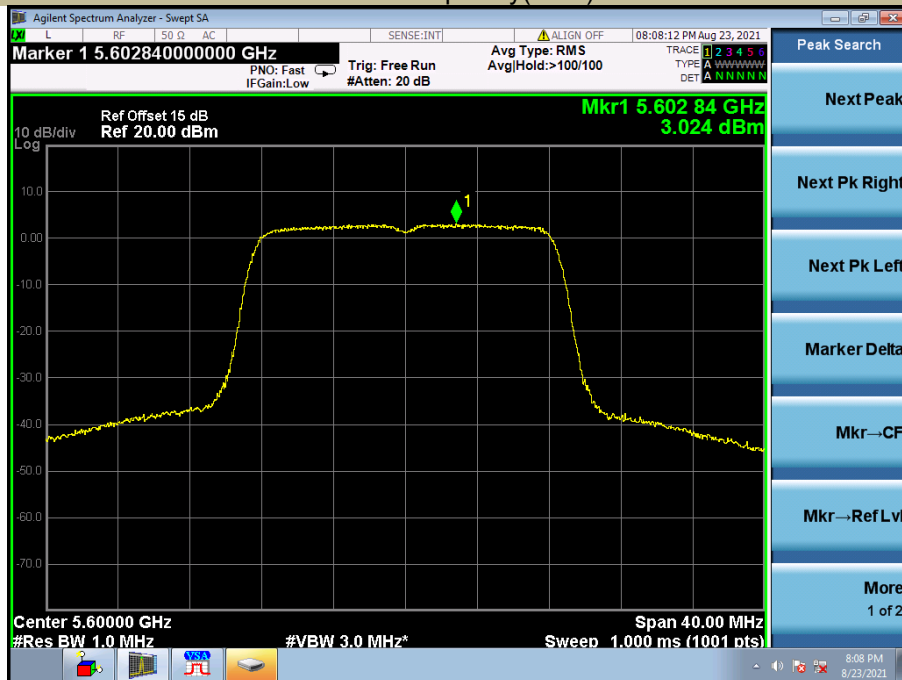
Power Spectral Density
Test Model 802.11a

U-NII – 2C
Frequency(MHz) 5500

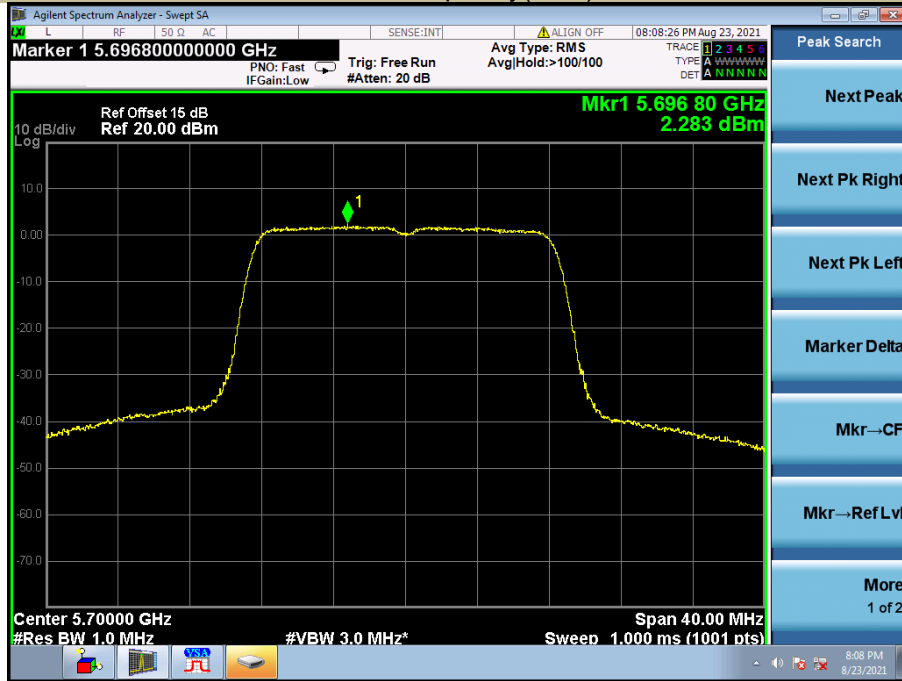


Power Spectral Density
Test Model 802.11a

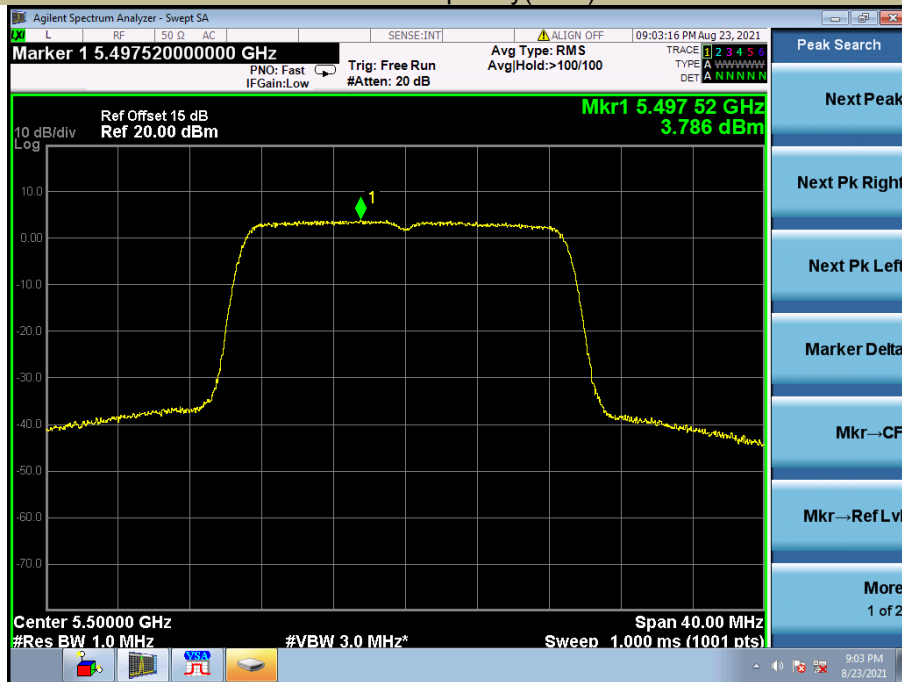
U-NII – 2C
Frequency(MHz) 5580



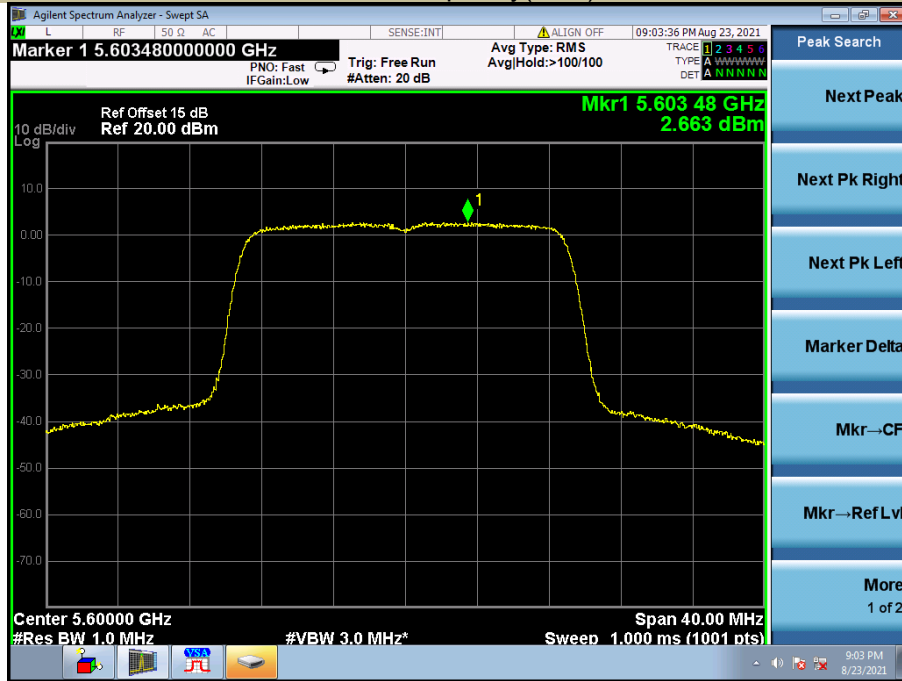
Power Spectral Density U-NII – 2C
 Test Model 802.11a Frequency(MHz) 5700



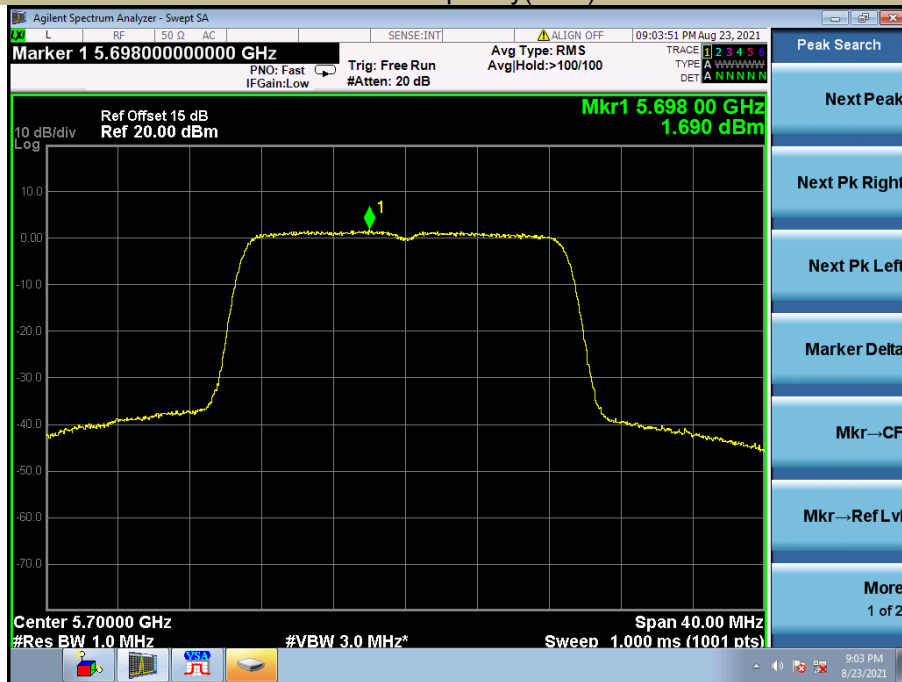
Power Spectral Density U-NII – 2C
 Test Model 802.11n-HT20 Frequency(MHz) 5500



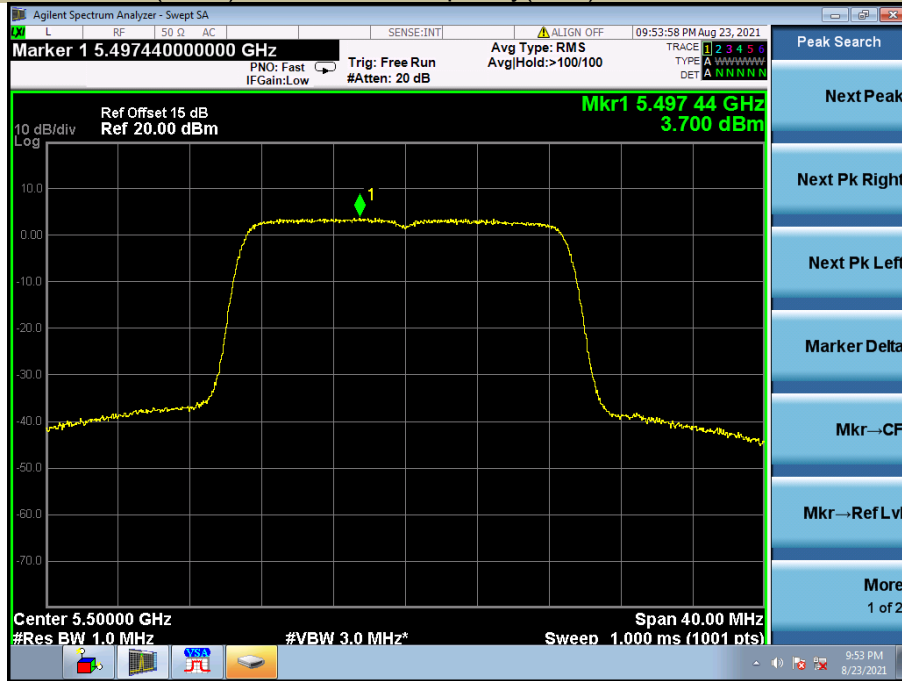
Power Spectral Density U-NII – 2C
 Test Model 802.11n-HT20 Frequency(MHz) 5580



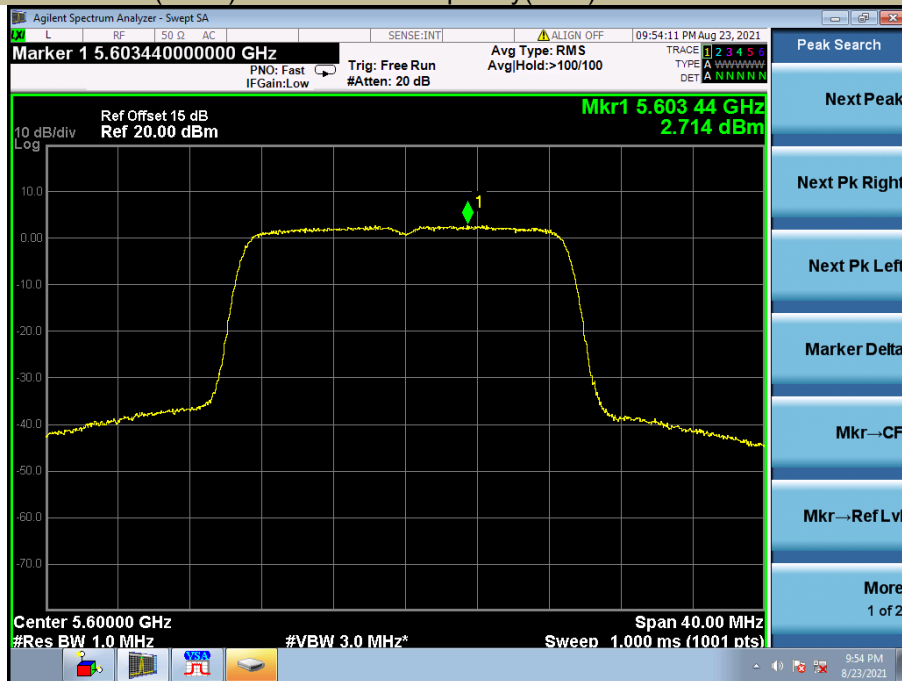
Power Spectral Density U-NII – 2C
 Test Model 802.11n-HT20 Frequency(MHz) 5700



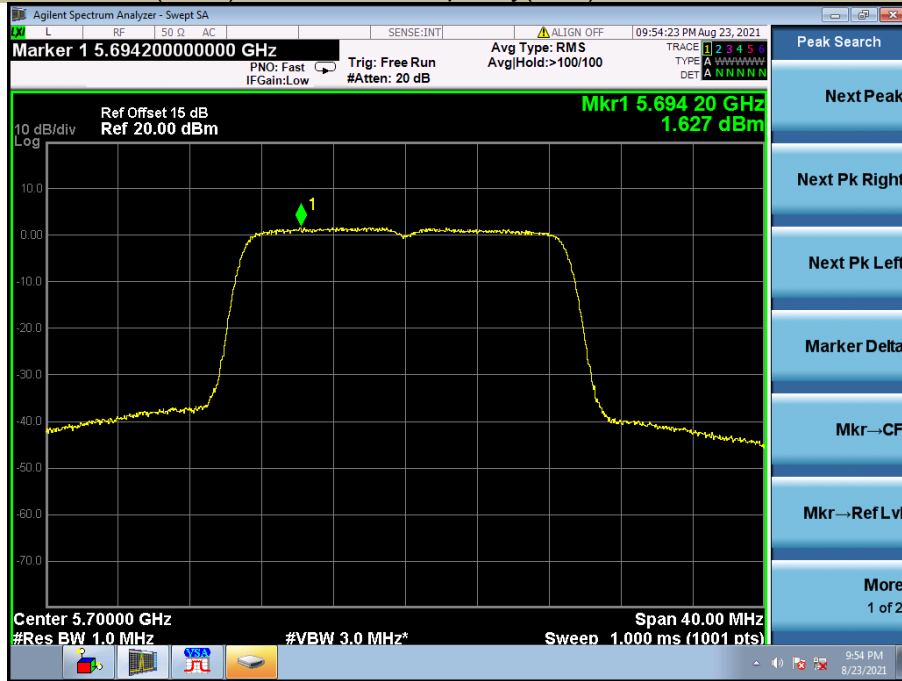
Power Spectral Density U-NII – 2C
 Test Model 802.11ac(HT20) Frequency(MHz) 5500



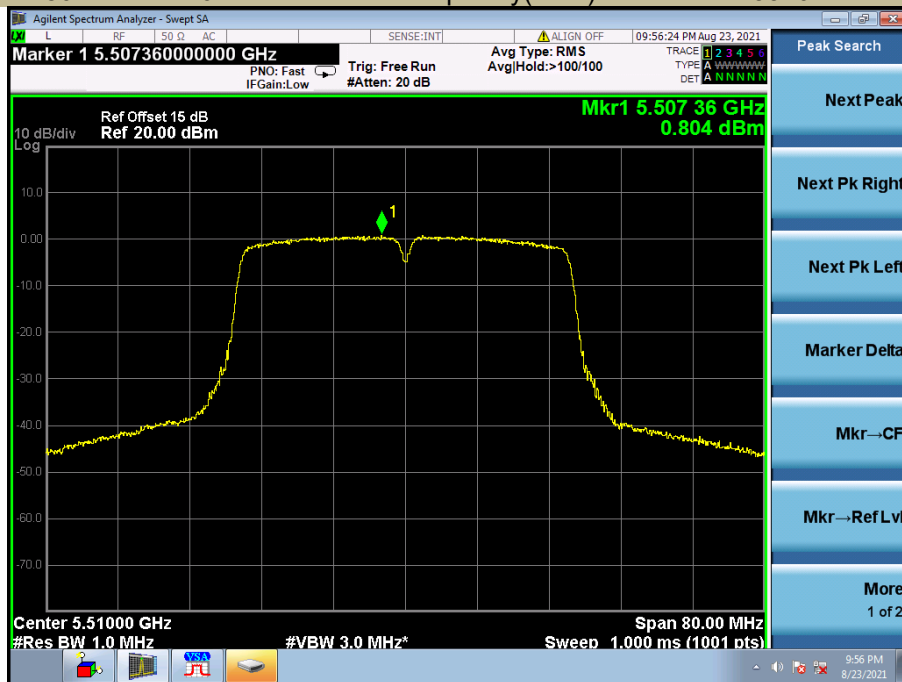
Power Spectral Density U-NII – 2C
 Test Model 802.11ac(HT20) Frequency(MHz) 5580



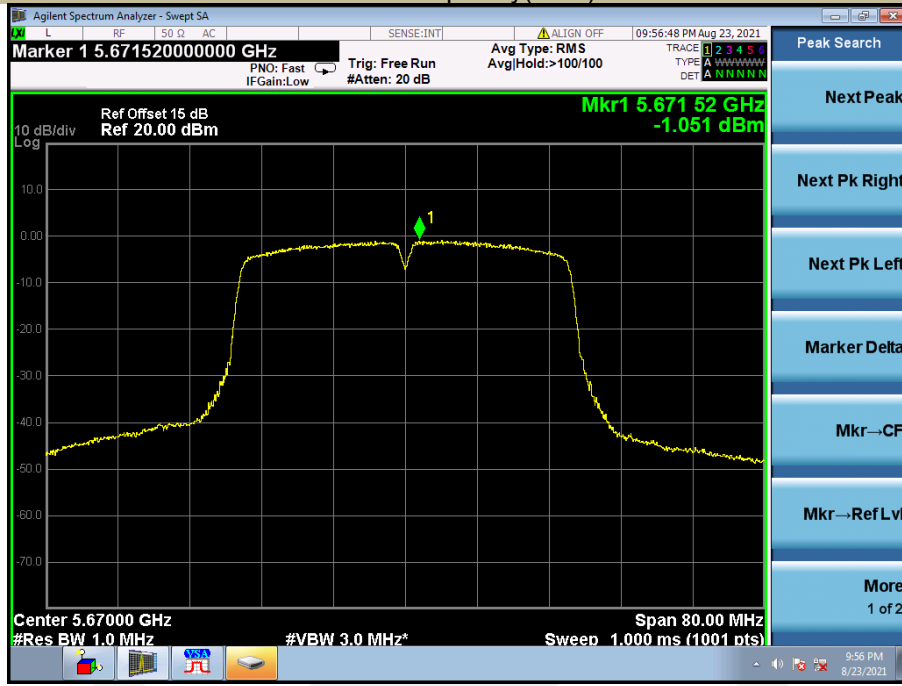
Power Spectral Density U-NII – 2C
 Test Model 802.11ac(HT20) Frequency(MHz) 5700



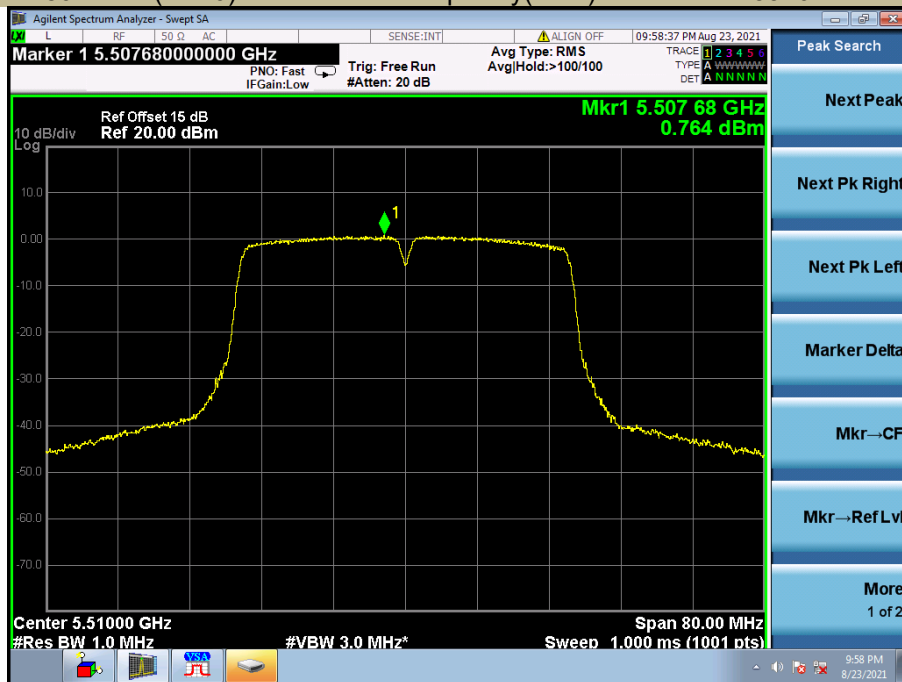
Power Spectral Density U-NII – 2C
 Test Model 802.11n-HT40 Frequency(MHz) 5510



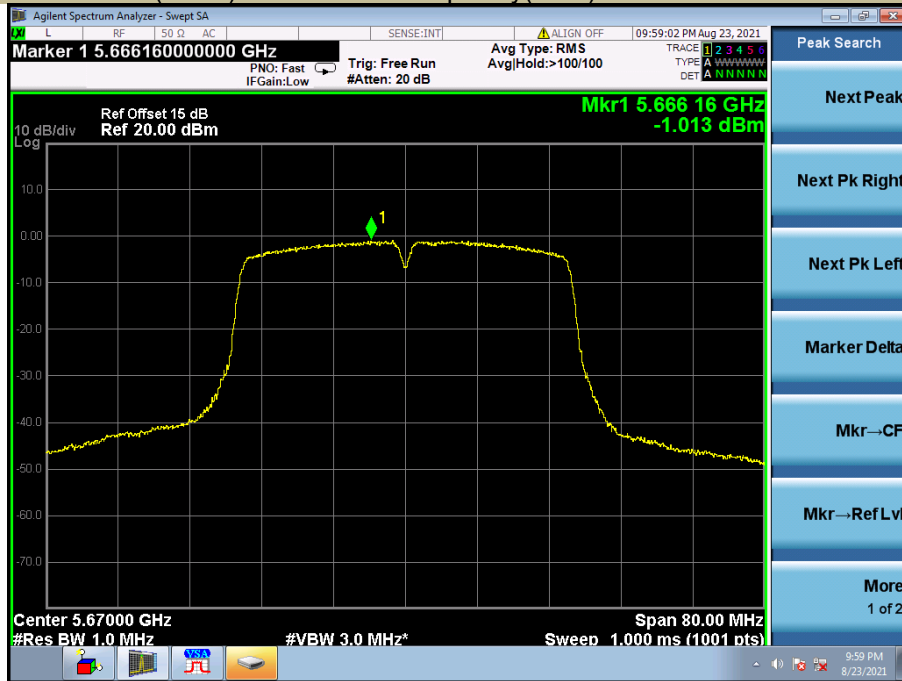
Power Spectral Density U-NII – 2C
 Test Model 802.11n-HT40 Frequency(MHz) 5670



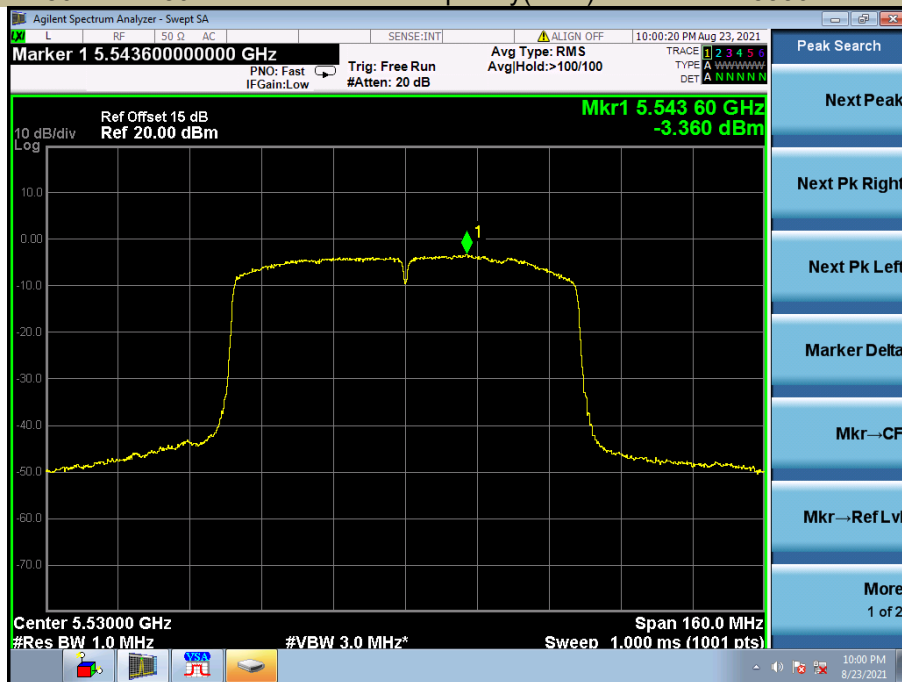
Power Spectral Density U-NII – 2C
 Test Model 802.11ac(HT40) Frequency(MHz) 5510



Power Spectral Density U-NII – 2C
 Test Model 802.11ac(HT40) Frequency(MHz) 5670



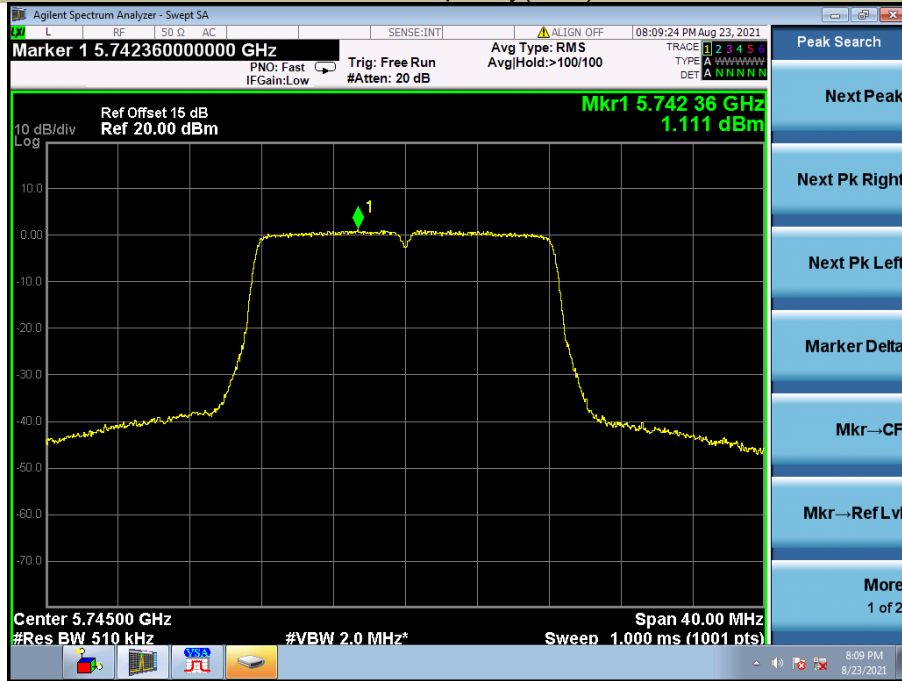
Power Spectral Density U-NII – 2C
 Test Model 802.11ac 80 Frequency(MHz) 5530



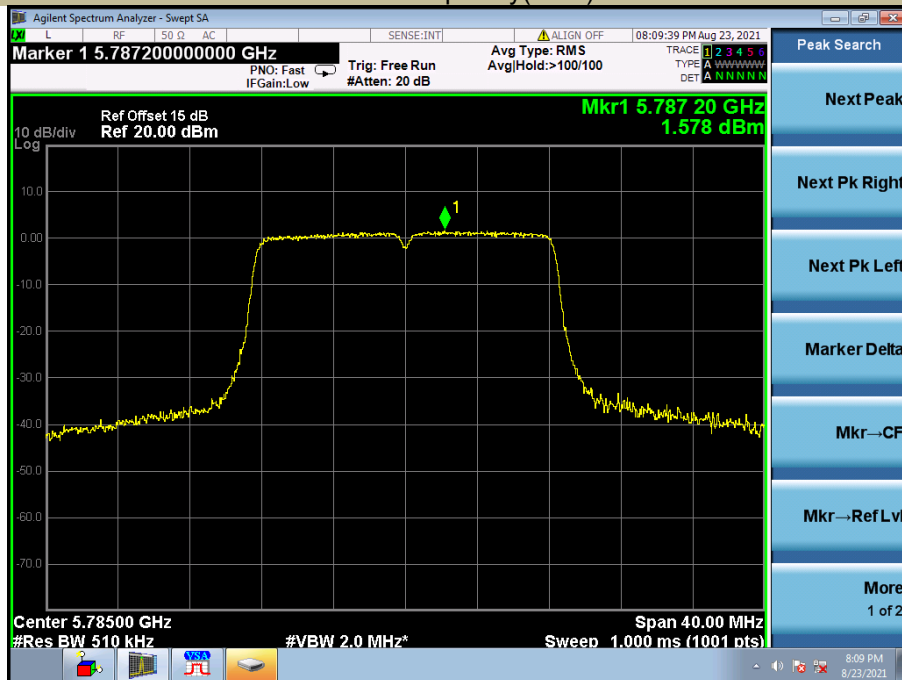
5725-5850MHz

Operating mode	Test Channel	Power Spectral Density dBm/500kHz	Limit (dBm/500kHz)
802.11a	5745	1.11	30
	5785	1.58	30
	5825	2.04	30
802.11n-HT20	5745	0.50	30
	5785	1.13	30
	5825	1.80	30
802.11ac(HT20)	5745	0.73	30
	5785	0.94	30
	5825	1.63	30
802.11n-HT40	5755	-2.63	30
	5795	-1.38	30
802.11ac(HT40)	5755	-2.23	30
	5795	-1.06	30
802.11ac(HT80)	5775	-6.43	30

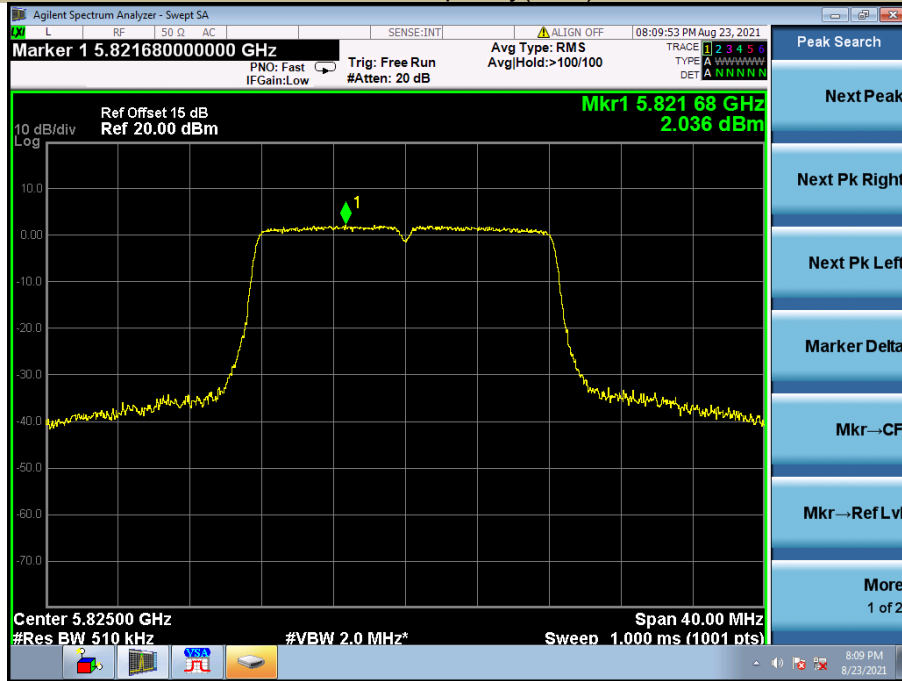
Power Spectral Density U-NII - 3
 Test Model 802.11a Frequency(MHz) 5745



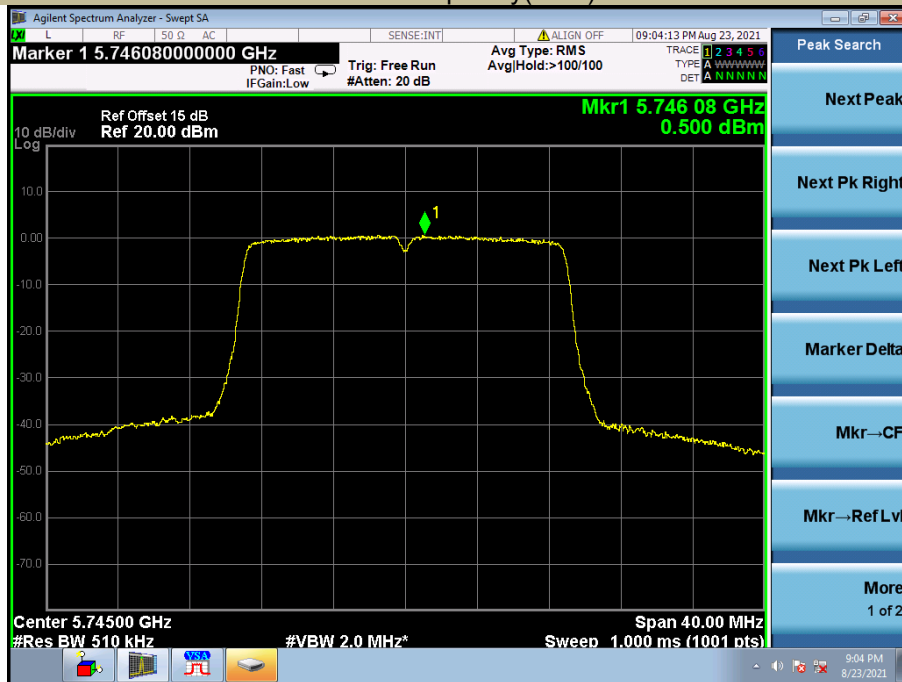
Power Spectral Density U-NII - 3
 Test Model 802.11a Frequency(MHz) 5785



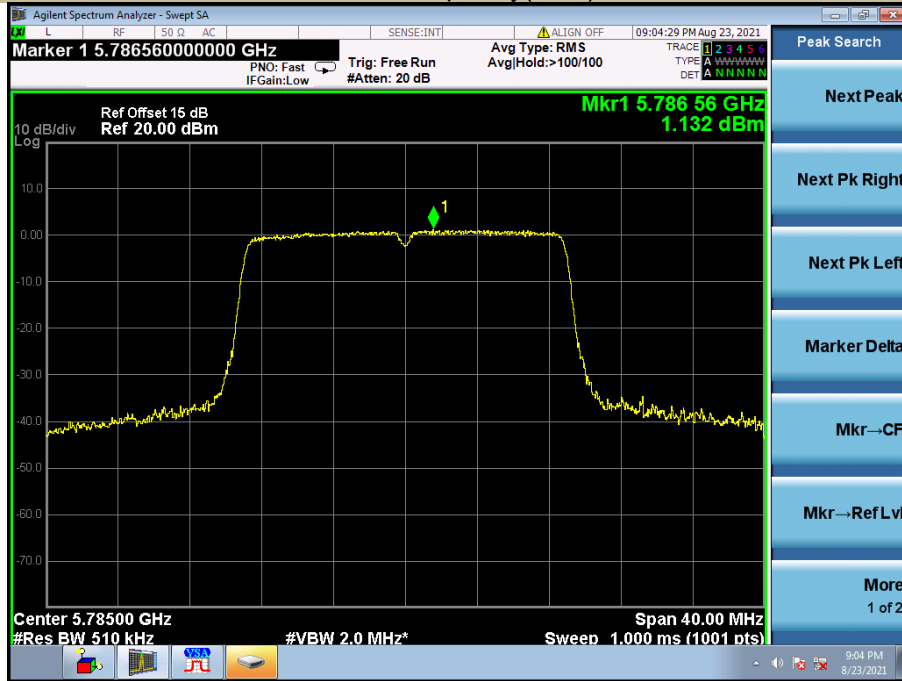
Power Spectral Density U-NII - 3
 Test Model 802.11a Frequency(MHz) 5825



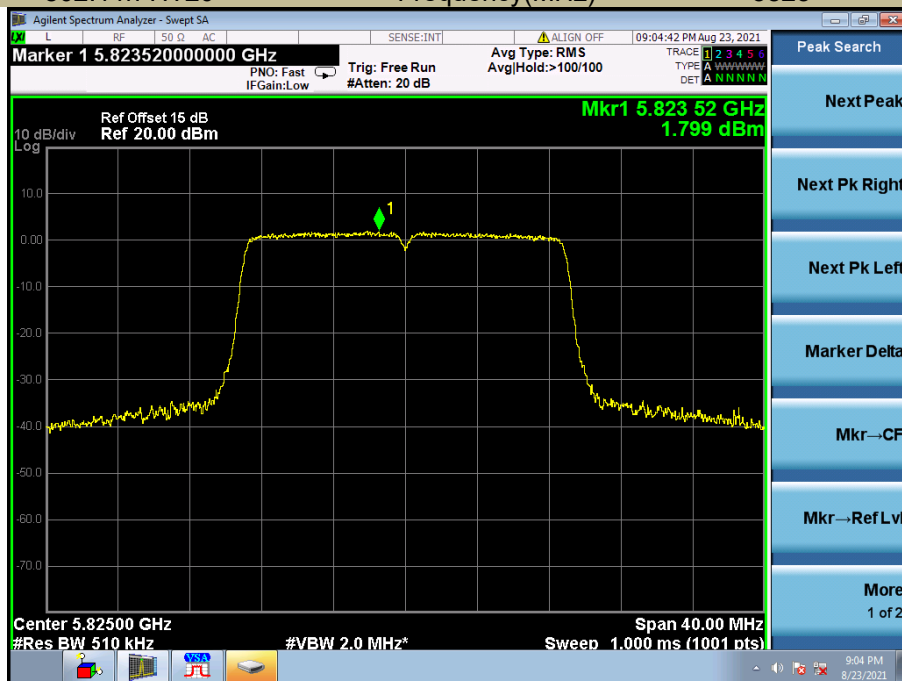
Power Spectral Density U-NII - 3
 Test Model 802.11n-HT20 Frequency(MHz) 5745



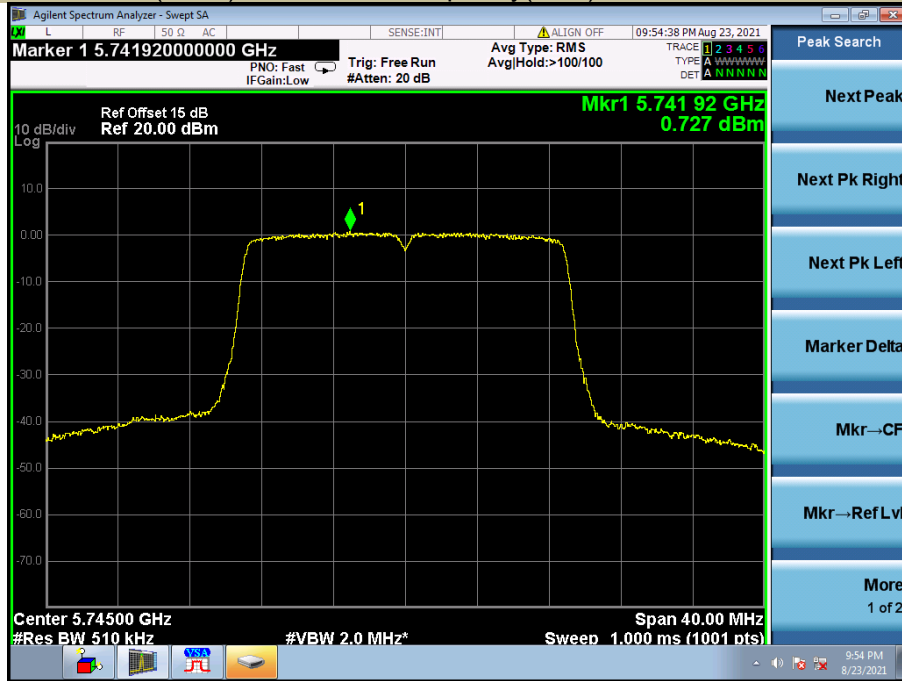
Power Spectral Density U-NII - 3
 Test Model 802.11n-HT20 Frequency(MHz) 5785



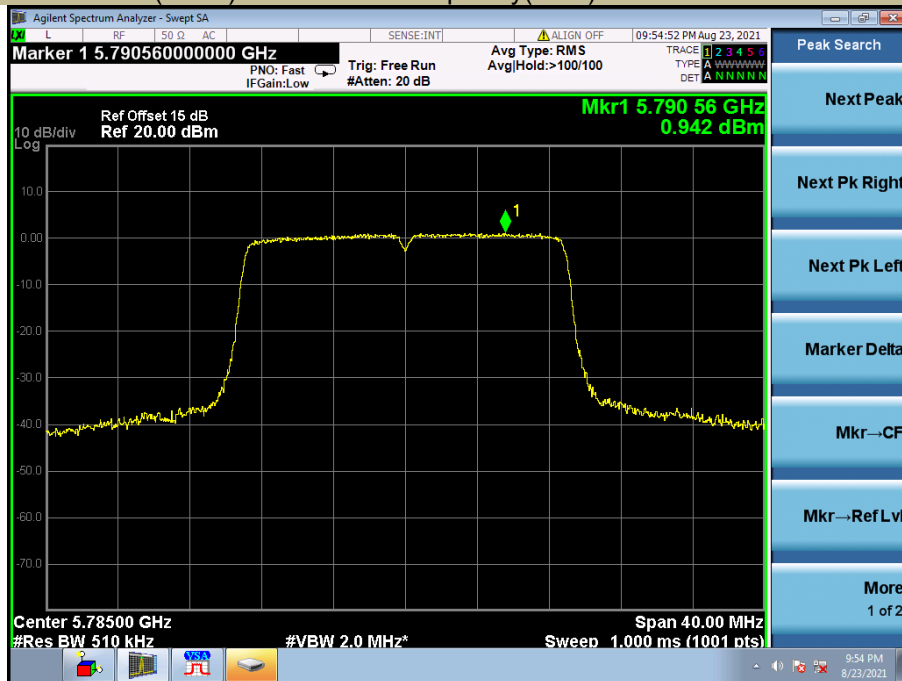
Power Spectral Density U-NII - 3
 Test Model 802.11n-HT20 Frequency(MHz) 5825



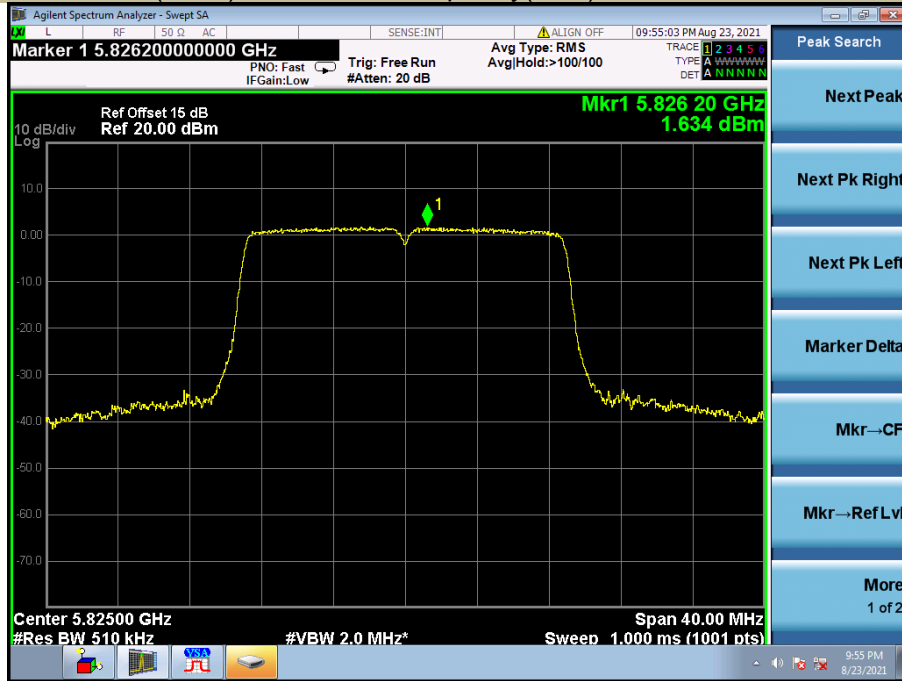
Power Spectral Density U-NII - 3
 Test Model 802.11ac(HT20) Frequency(MHz) 5745



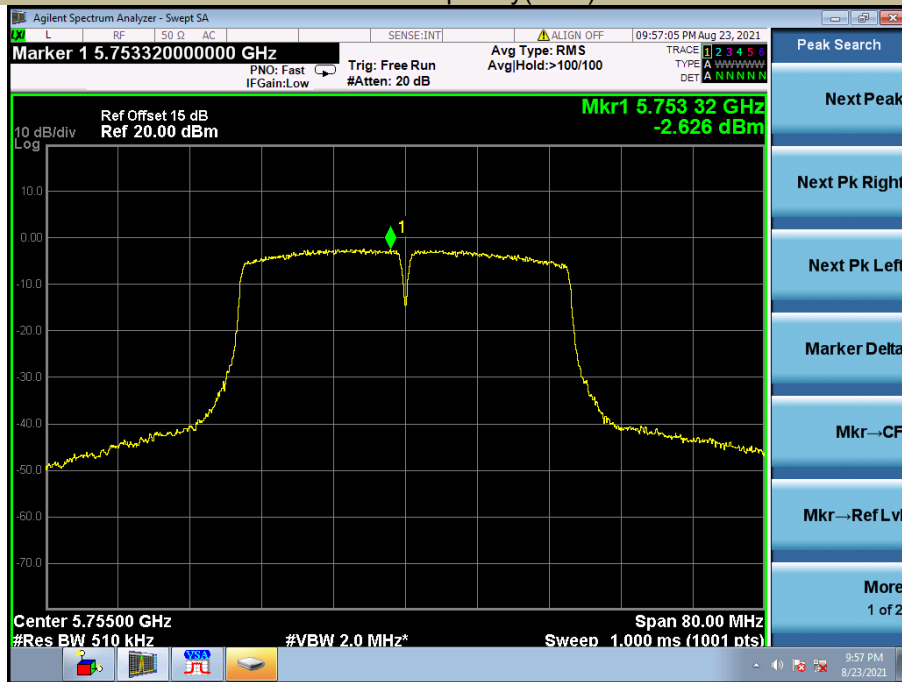
Power Spectral Density U-NII - 3
 Test Model 802.11ac(HT20) Frequency(MHz) 5785



Power Spectral Density U-NII - 3
 Test Model 802.11ac(HT20) Frequency(MHz) 5825



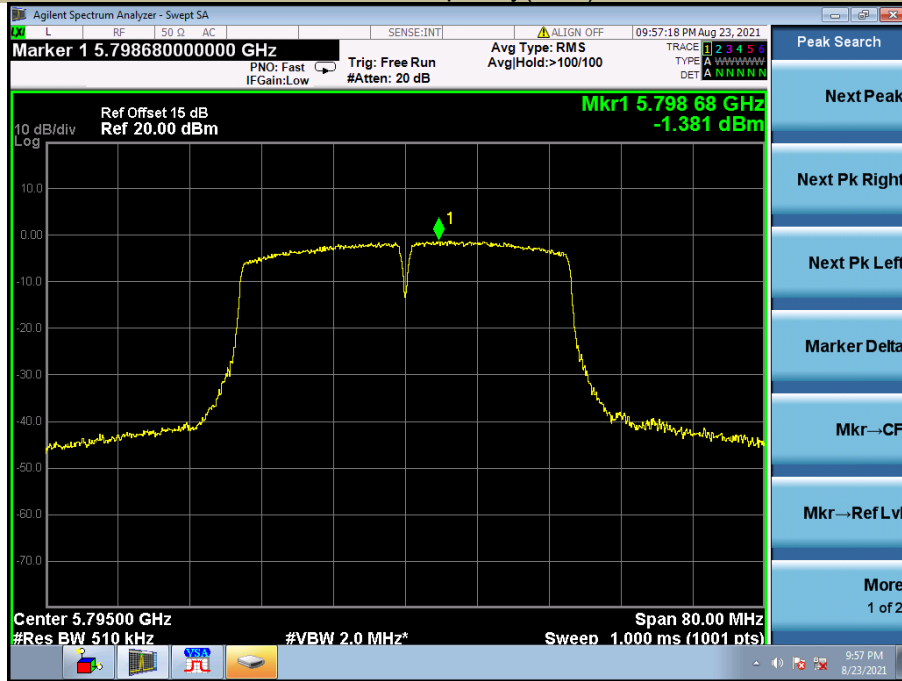
Power Spectral Density U-NII - 3
 Test Model 802.11n-HT40 Frequency(MHz) 5755



Power Spectral Density
Test Model 802.11n-HT40

U-NII - 3
Frequency(MHz)

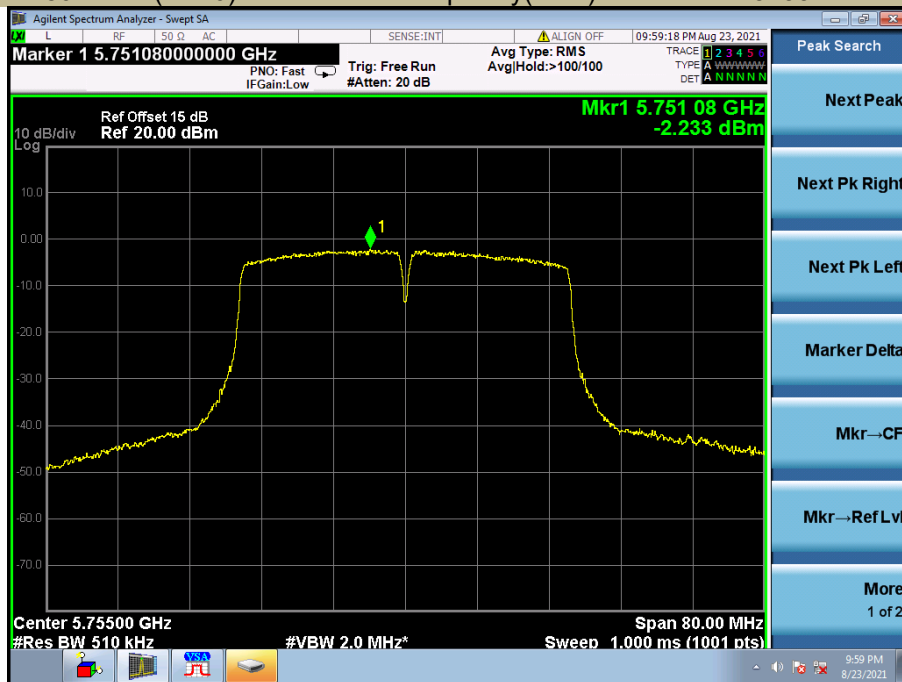
5795



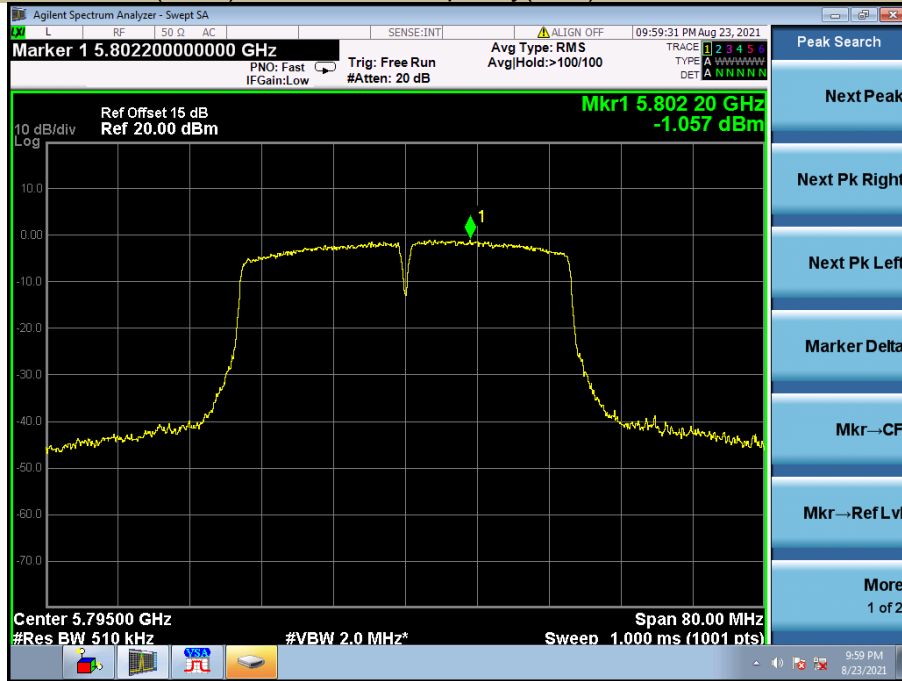
Power Spectral Density
Test Model 802.11ac(HT40)

U-NII - 3
Frequency(MHz)

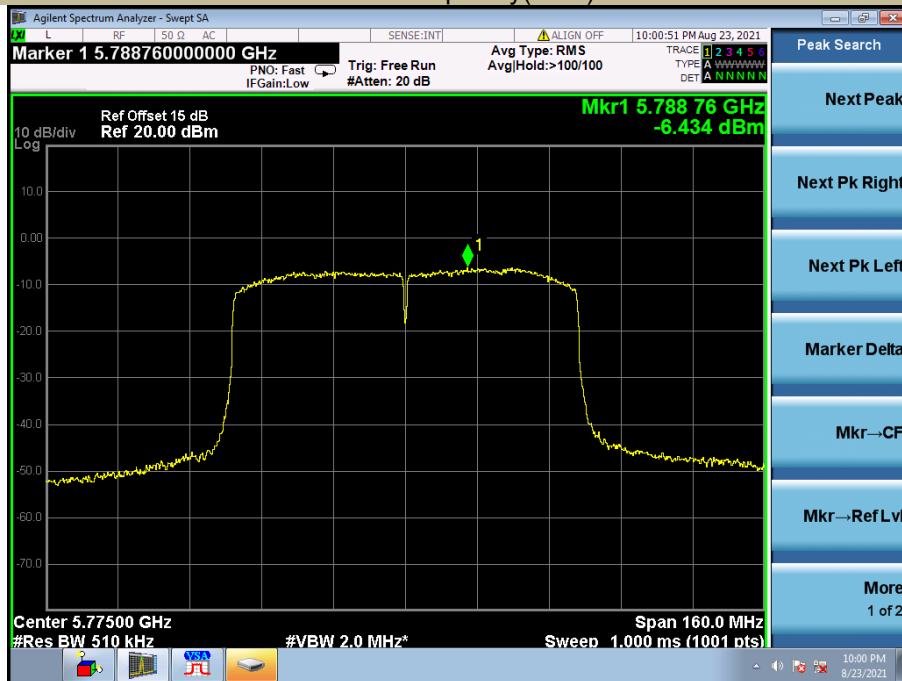
5755



Power Spectral Density U-NII - 3
 Test Model 802.11ac(HT40) Frequency(MHz) 5795



Power Spectral Density U-NII - 3
 Test Model 802.11ac 80 Frequency(MHz) 5775



For 2T2R

5150-5250MHz

Operating mode	Test Channel	Power Spectral Density dBm/MHz			Limit (dBm/MHz)
		Antenna 1	Antenna 2	Total	
802.11n-HT20	5180	6.166	5.929	9.06	9.13
	5200	6.274	6.144	9.22	9.13
	5240	6.115	6.141	9.14	9.13
802.11ac(HT20)	5180	5.871	6.128	9.01	9.13
	5200	6.276	6.15	9.22	9.13
	5240	6.201	6.08	9.15	9.13
802.11n-HT40	5190	3.062	2.863	5.97	9.13
	5230	3.092	2.576	5.85	9.13
802.11ac(HT40)	5190	3.037	3.076	6.07	9.13
	5230	2.935	2.703	5.83	9.13
802.11ac(HT80)	5210	-1.612	-1.669	1.37	9.13

5250-5250MHz

Operating mode	Test Channel	Power Spectral Density dBm/MHz			Limit (dBm/MHz)
		Antenna 1	Antenna 2	Total	
802.11n-HT20	5260	6.741	5.741	9.28	9.13
	5280	6.668	5.657	9.2	9.13
	5320	7.219	6.688	9.97	9.13
802.11ac(HT20)	5260	6.483	5.982	9.25	9.13
	5280	6.506	5.629	9.1	9.13
	5320	7.062	6.664	9.88	9.13
802.11n-HT40	5270	3.447	2.627	6.07	9.13
	5310	3.965	3.409	6.71	9.13
802.11ac(HT40)	5270	3.681	2.833	6.29	9.13
	5310	3.967	3.389	6.7	9.13
802.11ac(HT80)	5290	-0.303	-1.641	2.09	9.13

5470-5725MHz

Operating mode	Test Channel	Power Spectral Density dBm/MHz			Limit (dBm/MHz)
		Antenna 1	Antenna 2	Total	
802.11n-HT20	5500	0.514	3.786	5.46	9.13
	5600	0.849	2.663	4.86	9.13
	5700	-0.373	1.69	3.79	9.13
802.11ac(HT20)	5500	0.45	3.7	5.38	9.13
	5600	0.372	2.714	4.71	9.13
	5700	-0.39	1.627	3.74	9.13
802.11n-HT40	5510	-2.357	0.804	2.52	9.13
	5670	-2.545	-1.051	1.28	9.13
802.11ac(HT40)	5510	-2.464	0.764	2.45	9.13
	5670	-2.494	-1.013	1.32	9.13
802.11ac(HT80)	5530	-5.801	-3.36	-1.4	9.13

5725-5850MHz

Operating mode	Test Channel	Power Spectral Density dBm/500kHz			Limit (dBm/500kHz)
		Antenna 1	Antenna 2	Total	
802.11n-HT20	5745	-2.322	0.5	2.32	28.13
	5785	-1.291	1.132	3.1	28.13
	5825	-0.331	1.799	3.87	28.13
802.11ac(HT20)	5745	-1.955	0.727	2.6	28.13
	5785	-1.266	0.942	2.99	28.13
	5825	-0.475	1.634	3.72	28.13
802.11n-HT40	5755	-5.063	-2.626	-0.67	28.13
	5795	-3.703	-1.381	0.62	28.13
802.11ac(HT40)	5755	-5.033	-2.233	-0.4	28.13
	5795	-3.549	-1.057	0.88	28.13
802.11ac(HT80)	5775	-8.598	-6.434	-4.37	28.13

8.4 FREQUENCY STABILITY

8.4.1 Applicable Standard

According to FCC Part 15.407(g)
ANSI C63.10 Section 6.8

8.4.2 Conformance 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.

8.4.3 Test Configuration

Test according to clause 6.1 radio frequency test setup

8.4.4 Test Procedure

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously

Set RBW = 10 kHz.

Set Span= Entire absence of modulation emissions band

Set the video bandwidth (VBW) =30 kHz. width

Set Detector = Peak.

Set Trace mode = max hold.

Set Sweep = auto couple.

Allow the trace to stabilize.

The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.

Beginning at each temperature level specified in user manual , the frequency shall be measured within one minute after application of primary power to the transmitter and at intervals of no more than one minute thereafter until ten minutes have elapsed or until sufficient measurements are obtained to indicate clearly that the frequency has stabilized within the applicable tolerance, whichever time period is greater. During each test, the ambient temperature shall not be allowed to rise more than 10° centigrade above the respective beginning ambient temperature level

Measure and record the results in the test report.

8.4.5 Test Results

802.11a		5180		
Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5179.997	-3	Pass
	-10	5180.011	11	Pass
	0	5179.983	-17	Pass
	10	5180.005	5	Pass
	20	5179.991	-9	Pass
	30	5180.019	19	Pass
	40	5180.019	19	Pass
55	5179.983	-17	Pass	
85% Vnom	25	5180.008	8	Pass
115% Vnom	25	5179.989	-11	Pass

		5200		
Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5199.993	-7	Pass
	-10	5200.018	18	Pass
	0	5199.989	-11	Pass
	10	5199.999	-1	Pass
	20	5199.991	-9	Pass
	30	5200.01	10	Pass
	40	5200.006	6	Pass
55	5200.012	12	Pass	
85% Vnom	25	5199.987	-13	Pass
115% Vnom	25	5199.98	-20	Pass

		5240		
Voltage(V)	Temp(°C)	Test Frequency (MHz)	Max. Deviation (KHz)	Verdict
Vnom	-20	5239.988	-12	Pass
	-10	5239.984	-16	Pass
	0	5239.98	-20	Pass
	10	5240.008	8	Pass
	20	5239.99	-10	Pass
	30	5239.983	-17	Pass
	40	5240.005	5	Pass
55	5240.002	2	Pass	
85% Vnom	25	5240.011	11	Pass
115% Vnom	25	5239.988	-12	Pass