

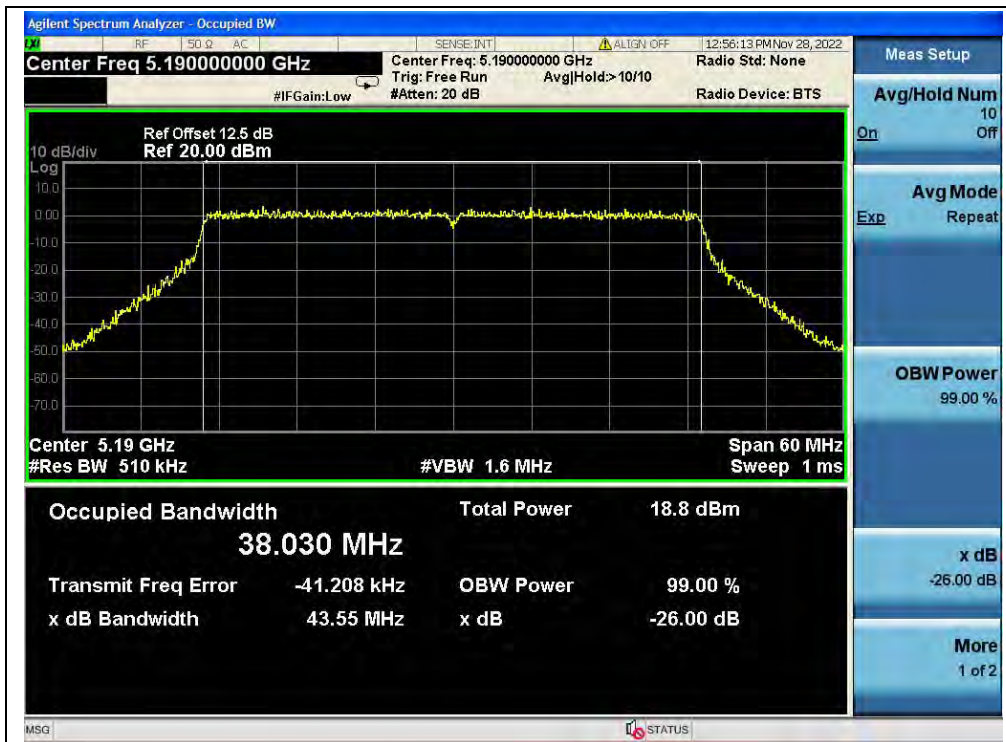


802.11ax (HEW40) Mode

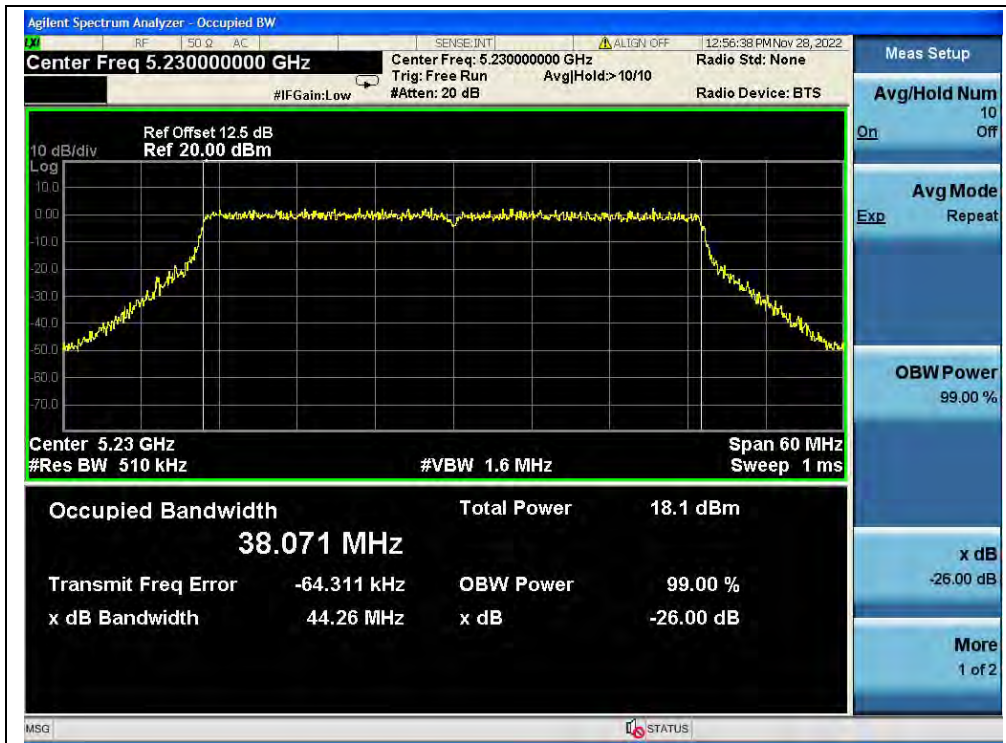
A. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
38	5190	43.55
46	5230	44.26
54	5270	43.85
62	5310	43.30
102	5510	43.47
126	5630	44.33
142	5710	43.60
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
142	5710	38.15
151	5755	38.24
159	5795	38.29

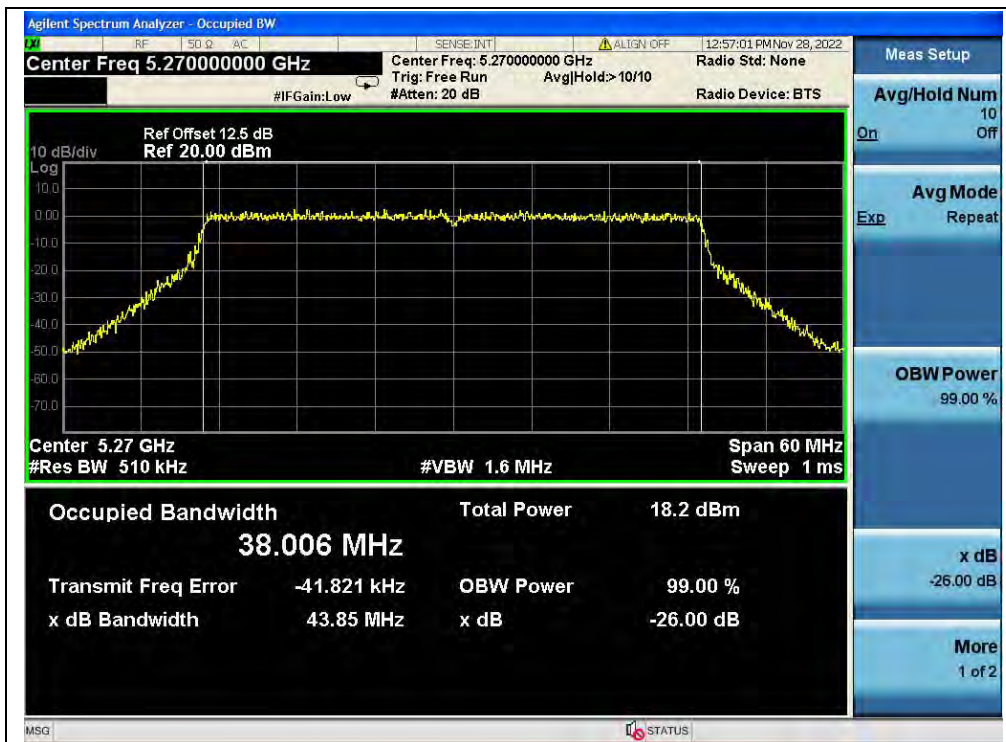
B. Test Plot:



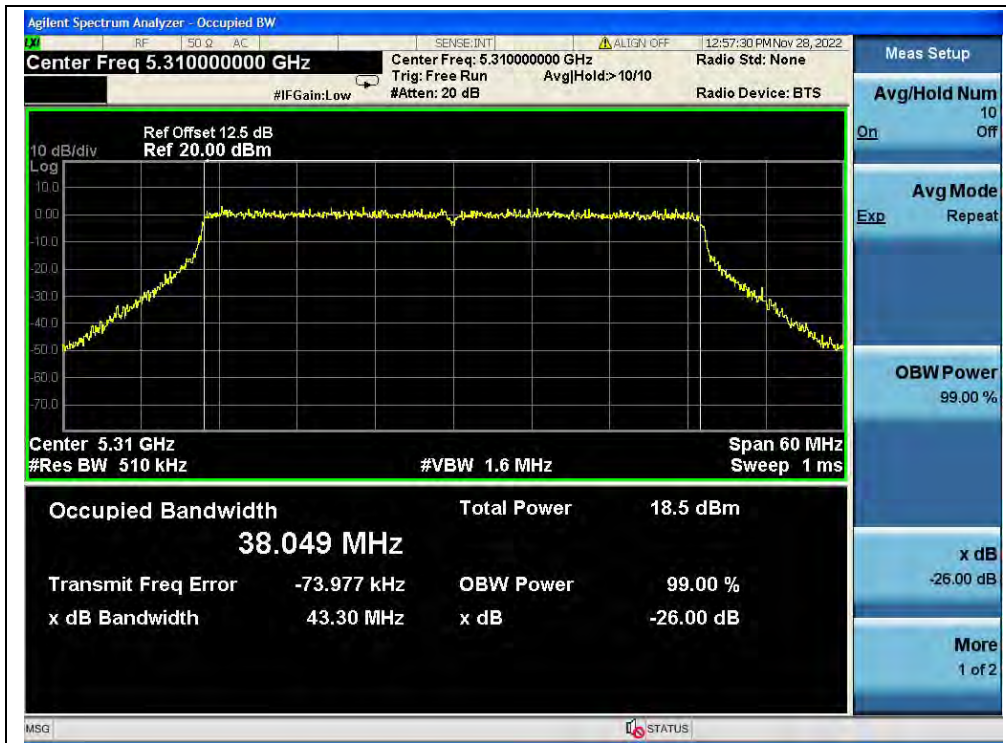
(Channel 38, 5190MHz, 802.11ax (HEW40))



(Channel 46, 5230MHz, 802.11ax (HEW40))



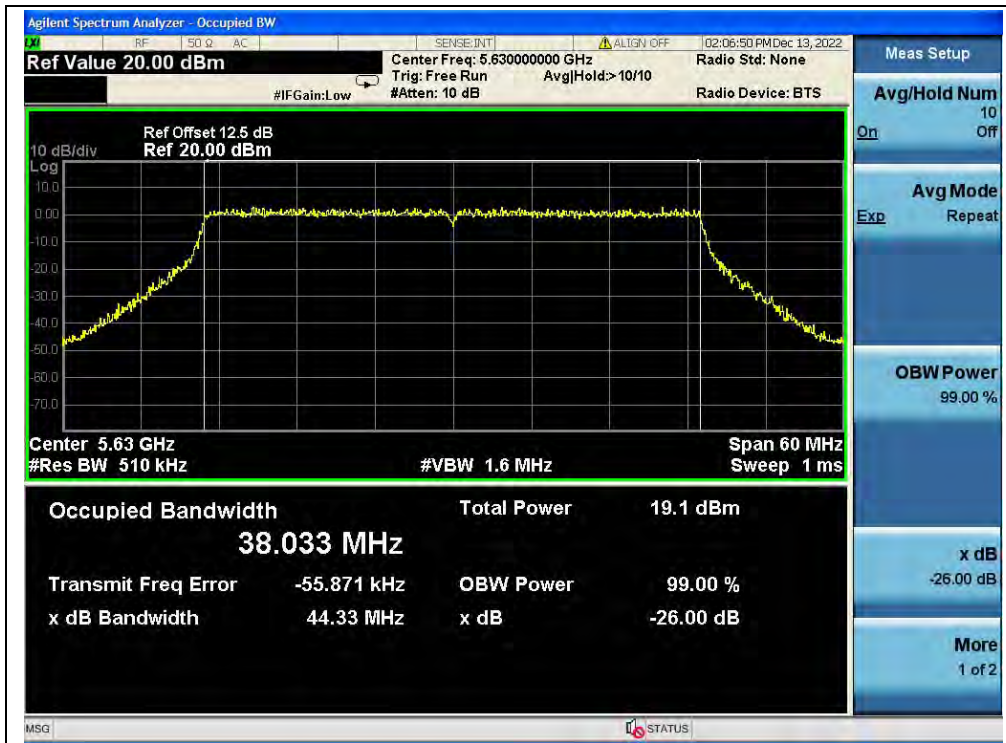
(Channel 54, 5270MHz, 802.11ax (HEW40))



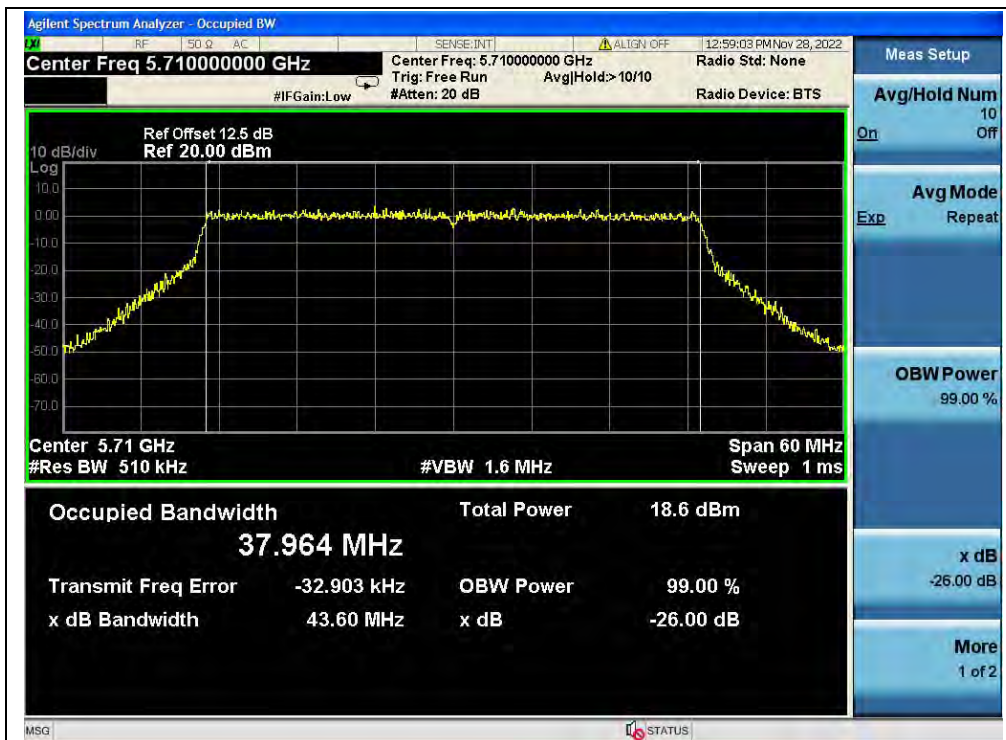
(Channel 62, 5310MHz, 802.11ax (HEW40))



(Channel 102, 5510MHz, 802.11ax (HEW40))



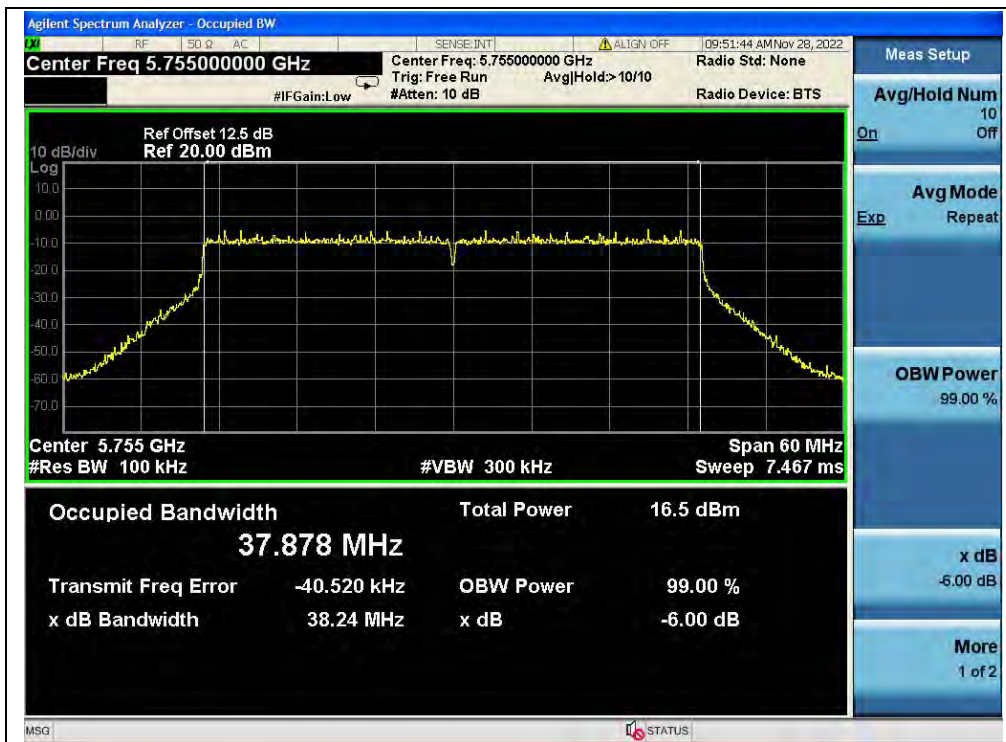
(Channel 126, 5630MHz, 802.11ax (HEW40))



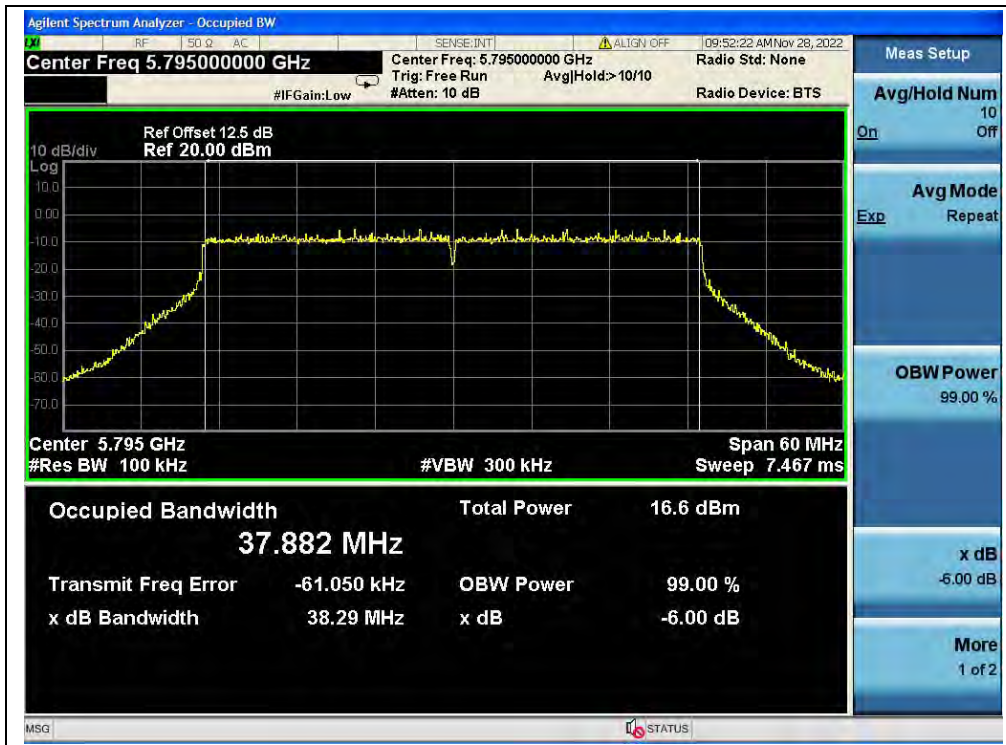
(Channel 142, 5710MHz, 802.11ax (HEW40))



(Channel 142, 5710MHz, 802.11ax (HEW40))



(Channel 151, 5755MHz, 802.11ax (HEW40))



(Channel 159, 5795MHz, 802.11ax (HEW40))

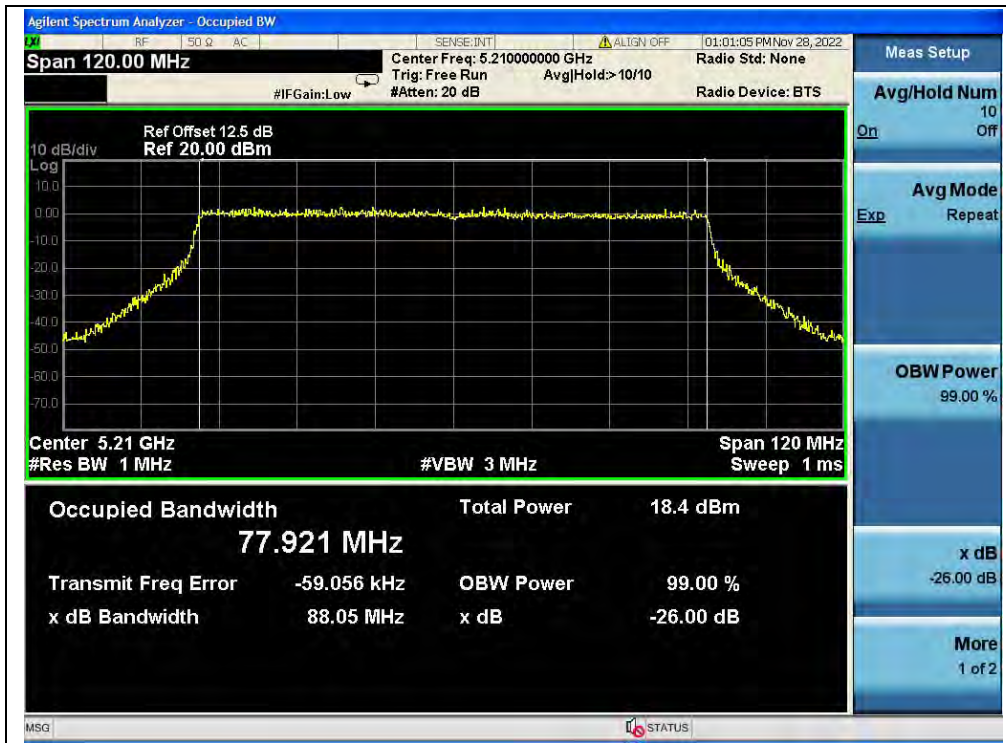


802.11ax (HEW80) Mode

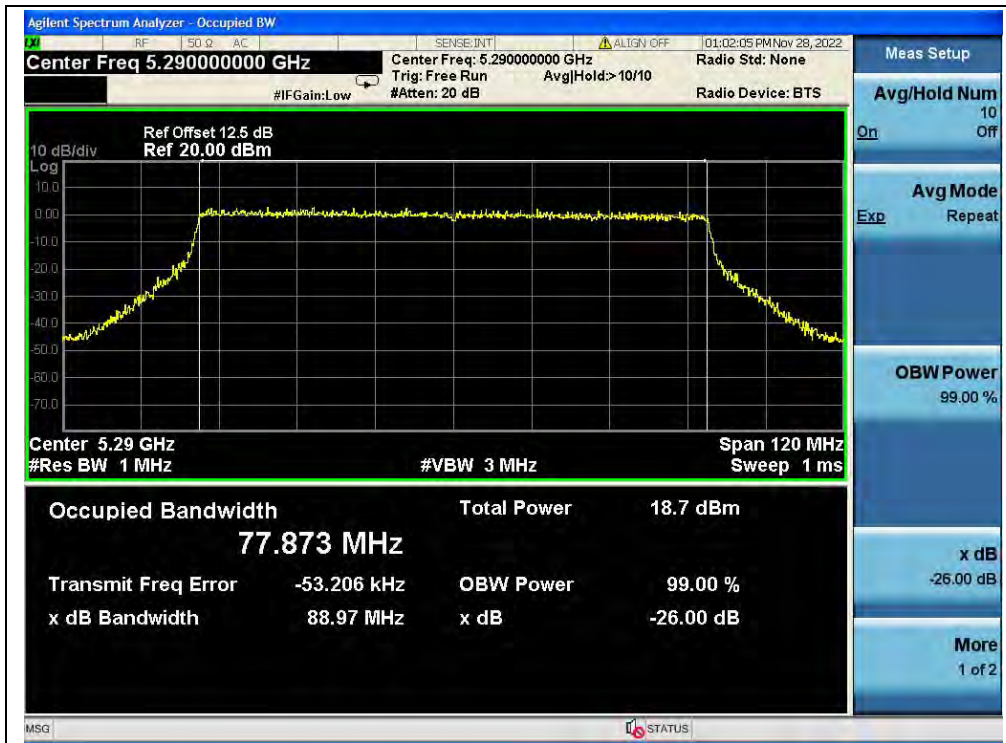
A. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
42	5210	88.05
58	5290	88.97
106	5530	86.67
122	5610	87.47
138	5690	86.85
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)
138	5690	78.27
155	5775	78.14

B. Test Plot:



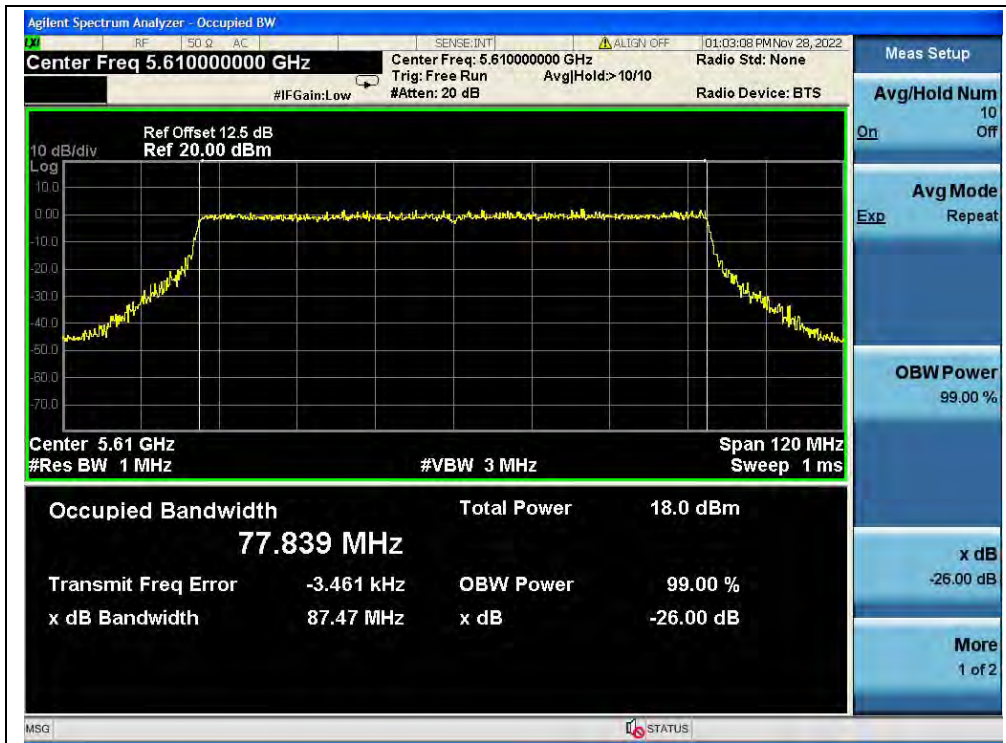
(Channel 42, 5210MHz, 802.11ax (HEW80))



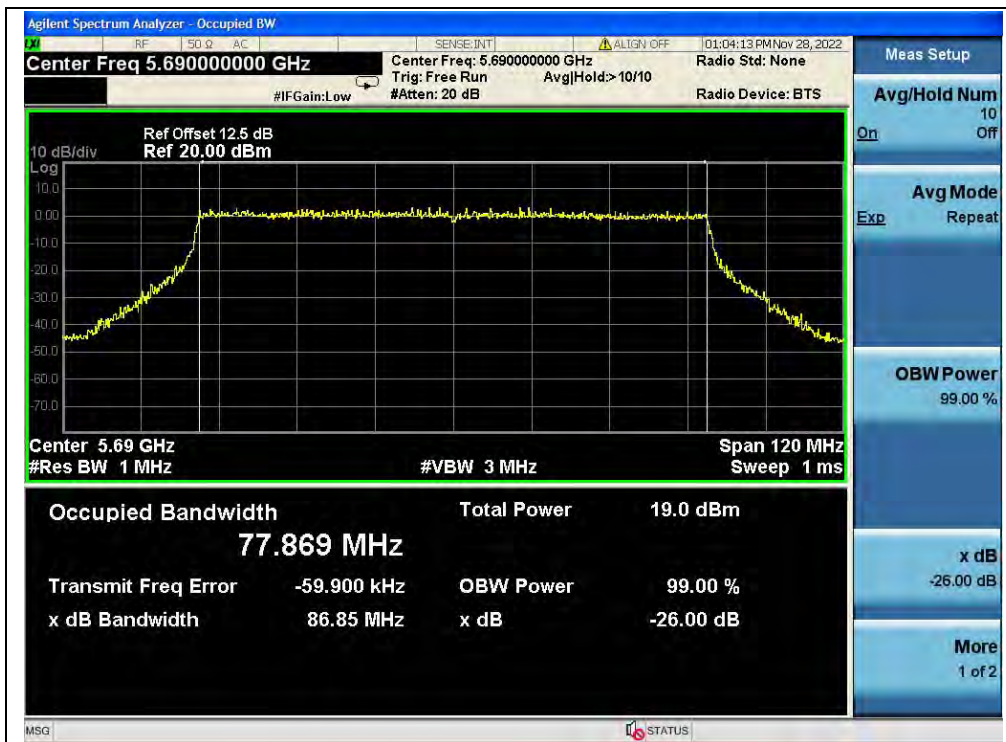
(Channel 58, 5290MHz, 802.11ax (HEW80))



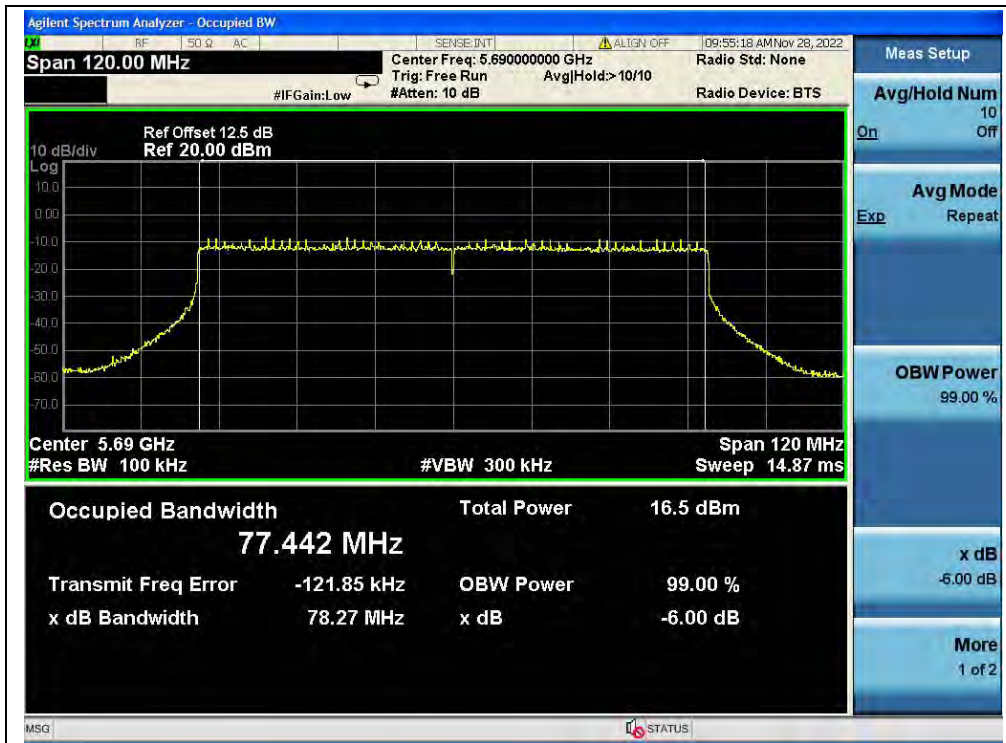
(Channel 106, 5530MHz, 802.11ax (HEW80))



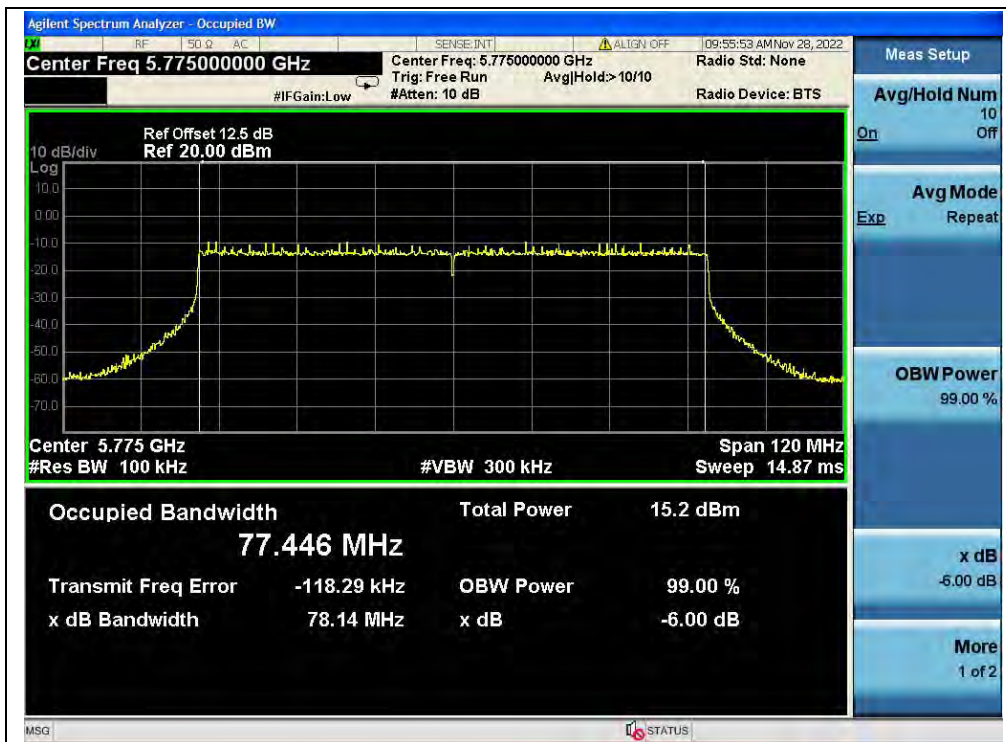
(Channel 122, 5610MHz, 802.11ax (HEW80))



(Channel 138, 5690MHz, 802.11ax (HEW80))



(Channel 138, 5690MHz, 802.11ax (HEW80))



(Channel 155, 5775MHz, 802.11ax (HEW80))

2.5. Peak Power Spectral Density

2.5.1. Requirement

(1) For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11dBm in any 1 megahertz band.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11dBm in any 1 megahertz band.

(3) For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30dBm in any 500kHz band.

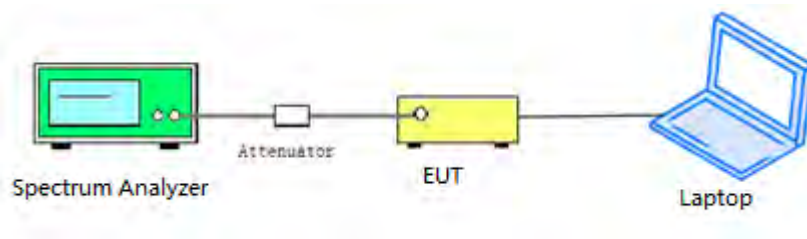
If transmitting antennas of directional gain greater than 6dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

(4) According to KDB662911D01 Measure-and-sum technique, the conducted emission level (e.g., transmit power or power in specified bandwidth) is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in units that are directly proportional to power.

(5) According to KDB 662911 D01, the directional gain = $G_{ANT} + 10\log(N_{ANT})$ dBi, where G_{ANT} is the antenna gain in dBi, N_{ANT} is the number of outputs.

2.5.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.



2.5.3. Test Procedure

KDB 789033 Section F) Maximum Power Spectral Density (PSD) Method SA-3 was used in order to prove compliance

- 1) Set span to encompass the entire 26-dB emission bandwidth
- 2) Set RBW = 1MHz. Set VBW ≥ 3MHz
- 3) Number of points in sweep ≥ 2 Span / RBW. Sweep time = auto
- 4) Detector = Average
- 5) Trace mode=Max hold
- 6) Record the max value

2.5.4. Test Result

802.11a Mode

A.Test Verdict:

Frequency (MHz)	Measured PPSD (dBm/MHz)		Duty Factor	Corrected PPSD (dBm/MHz)		Limit (dBm/MHz)	Verdict
	ANT0	ANT1		ANT0	ANT1		
5180	1.08	2.33	0.04	1.12	2.37	11	PASS
5220	0.68	1.95		0.72	1.99		
5240	1.62	1.87		1.66	1.91		
5260	1.83	1.87		1.87	1.91		
5300	2.05	1.48		2.09	1.52		
5320	1.98	1.76		2.02	1.80		
5500	1.19	0.90		1.23	0.94		
5600	1.58	1.37		1.62	1.41		
5720	1.91	1.46		1.95	1.50		
Frequency (MHz)	Measured PPSD (dBm/500KHz)		Duty Factor	Total PPSD (dBm/500KHz)		Limit (dBm/500KHz)	Verdict
	ANT0	ANT1		ANT0	ANT1		
5720	-0.98	-1.43	0.04	-0.94	-1.39	30	PASS
5745	-1.19	-1.69		-1.15	-1.65		
5785	-1.29	-1.67		-1.25	-1.63		
5825	-1.16	-1.59		-1.12	-1.55		



B.Test Plot:



(Channel 36, 5180MHz, 802.11a, ANT0)



(Channel 44, 5220MHz, 802.11a, ANT0)



(Channel 48, 5240MHz, 802.11a, ANT0)



(Channel 52, 5260MHz, 802.11a, ANT0)



(Channel 60, 5300MHz, 802.11a, ANT0)



(Channel 64, 5320MHz, 802.11a, ANT0)



(Channel 100, 5500MHz, 802.11a, ANT0)



(Channel 120, 5600MHz, 802.11a, ANT0)



(Channel 144, 5720MHz, 802.11a, ANT0)



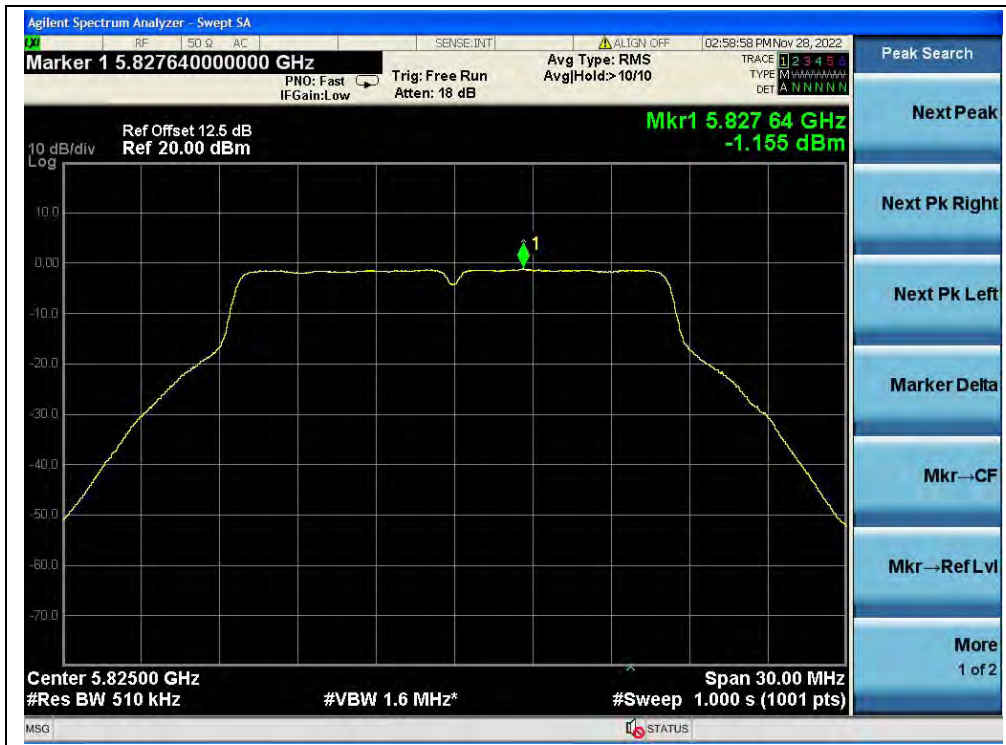
(Channel 144, 5720MHz, 802.11a, ANT0)



(Channel 149, 5745MHz, 802.11a, ANT0)



(Channel 157, 5785MHz, 802.11a, ANT0)



(Channel 165, 5825MHz, 802.11a, ANT0)



802.11n (HT20) Mode

A.Test Verdict:

Frequency (MHz)	Measured PPSD (dBm/MHz)		Duty Factor	Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
	ANT0	ANT1				
5180	1.80	1.60	0.02	4.73	11	PASS
5220	1.42	1.48		4.48		
5240	1.26	1.48		4.40		
5260	1.34	1.59		4.50		
5300	1.84	1.19		4.56		
5320	1.61	1.39		4.53		
5500	0.72	0.62		3.70		
5600	1.29	1.15		4.25		
5720	1.56	1.20		4.41		
Frequency (MHz)	Measured PPSD (dBm/500KHz)		Duty Factor	Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
	ANT0	ANT1				
5720	-1.29	-1.66	0.02	1.56	30	PASS
5745	-1.63	-1.93		1.25		
5785	-1.44	-2.00		1.32		
5825	-1.35	-1.86		1.43		
<p>Note: Directional gain $= -0.50\text{dBi} + 10\log(2) = 2.51\text{dBi} < 6\text{dBi}$, so the limit shall be 11dBm/MHz for 5.18-5.24GHz, 5.260-5.320GHz, 5.500-5.720GHz band and 30dBm/500KHz for 5.745-5.825GHz band.</p>						

B.Test Plot:



(Channel 36, 5180MHz, 802.11n (HT20), ANT0)



(Channel 44, 5220MHz, 802.11n (HT20), ANT0)



(Channel 48, 5240MHz, 802.11n (HT20), ANT0)



(Channel 52, 5260MHz, 802.11n (HT20), ANT0)



(Channel 60, 5300MHz, 802.11n (HT20), ANT0)



(Channel 64, 5320MHz, 802.11n (HT20), ANT0)



(Channel 100, 5500MHz, 802.11n (HT20), ANT0)



(Channel 120, 5600MHz, 802.11n (HT20), ANT0)



(Channel 144, 5720MHz, 802.11n (HT20), ANT0)



(Channel 144, 5720MHz, 802.11n (HT20), ANT0)



(Channel 149, 5745MHz, 802.11n (HT20), ANT0)



(Channel 157, 5785MHz, 802.11n (HT20), ANT0)



(Channel 165, 5825MHz, 802.11n (HT20), ANTO)



802.11n (HT40) Mode

A.Test Verdict:

Frequency (MHz)	Measured PPSD (dBm/MHz)		Duty Factor	Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
	ANT0	ANT1				
5190	-0.65	-0.71	0.02	2.35	11	PASS
5230	-1.10	-1.05		1.96		
5270	-0.78	-0.84		2.22		
5310	-0.53	-1.09		2.23		
5510	-1.57	-1.75		1.37		
5630	-0.58	-1.17		2.17		
5710	-0.57	-1.17		2.17		
Frequency (MHz)	Measured PPSD (dBm/500KHz)		Duty Factor	Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
	ANT0	ANT1				
5710	-3.62	-4.03	0.02	-0.79	30	PASS
5755	-4.03	-4.37		-1.17		
5795	-4.06	-4.38		-1.19		
<p>Note: Directional gain = $-0.50\text{dBi} + 10\log(2) = 2.51\text{dBi} < 6\text{dBi}$, so the limit shall be 11dBm/MHz for 5.18-5.24GHz, 5.260-5.320GHz, 5.500-5.720GHz band and 30dBm/500KHz for 5.745-5.825GHz band.</p>						

B.Test Plot:



(Channel 38, 5190MHz, 802.11n (HT40), ANT0)



(Channel 46, 5230MHz, 802.11n (HT40), ANT0)



(Channel 54, 5270MHz, 802.11n (HT40), ANT0)



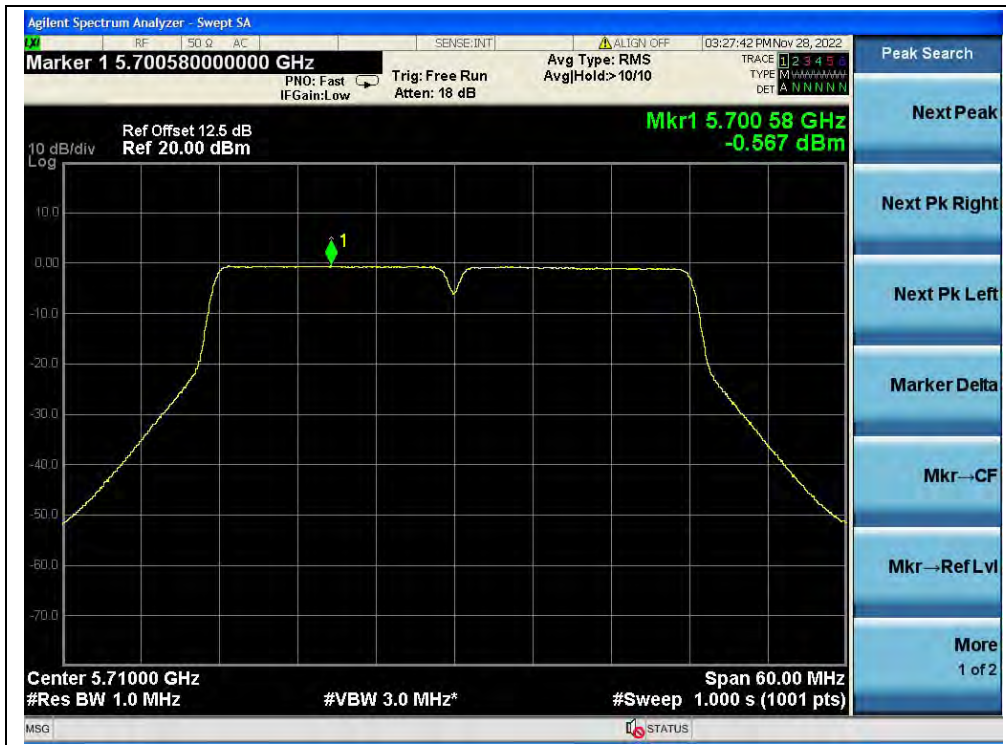
(Channel 62, 5310MHz, 802.11n (HT40), ANT0)



(Channel 102, 5510MHz, 802.11n (HT40), ANTO)



(Channel 126, 5630 MHz, 802.11n (HT40), ANTO)



(Channel 142, 5710MHz, 802.11n (HT40), ANT0)



(Channel 142, 5710MHz, 802.11n (HT40), ANT0)



(Channel 151, 5755MHz, 802.11n (HT40), ANT0)



(Channel 159, 5795MHz, 802.11n (HT40), ANT0)



802.11ac (VHT20) Mode

A.Test Verdict:

Frequency (MHz)	Measured PPSD (dBm/MHz)		Duty Factor	Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
	ANT0	ANT1				
5180	1.64	-1.44	0.02	3.40	11	PASS
5220	1.40	-1.27		3.30		
5240	1.26	-1.38		3.17		
5260	1.44	-1.33		3.30		
5300	1.68	-1.77		3.32		
5320	1.64	-1.54		3.37		
5500	0.80	-2.27		2.56		
5600	1.24	-1.85		2.99		
5720	1.64	-1.74		3.30		
Frequency (MHz)	Measured PPSD (dBm/500KHz)		Duty Factor	Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
	ANT0	ANT1				
5720	-1.28	-1.68	0.02	1.55	30	PASS
5745	-1.43	-1.95		1.35		
5785	-1.61	-2.02		1.22		
5825	-1.44	-1.95		1.34		
<p>Note: Directional gain = $-0.50\text{dBi} + 10\log(2) = 2.51\text{dBi} < 6\text{dBi}$, so the limit shall be 11dBm/MHz for 5.18-5.24GHz, 5.260-5.320GHz, 5.500-5.720GHz band and 30dBm/500KHz for 5.745-5.825GHz band.</p>						

B.Test Plot:



(Channel 36, 5180MHz, 802.11ac (VHT20), ANT0)



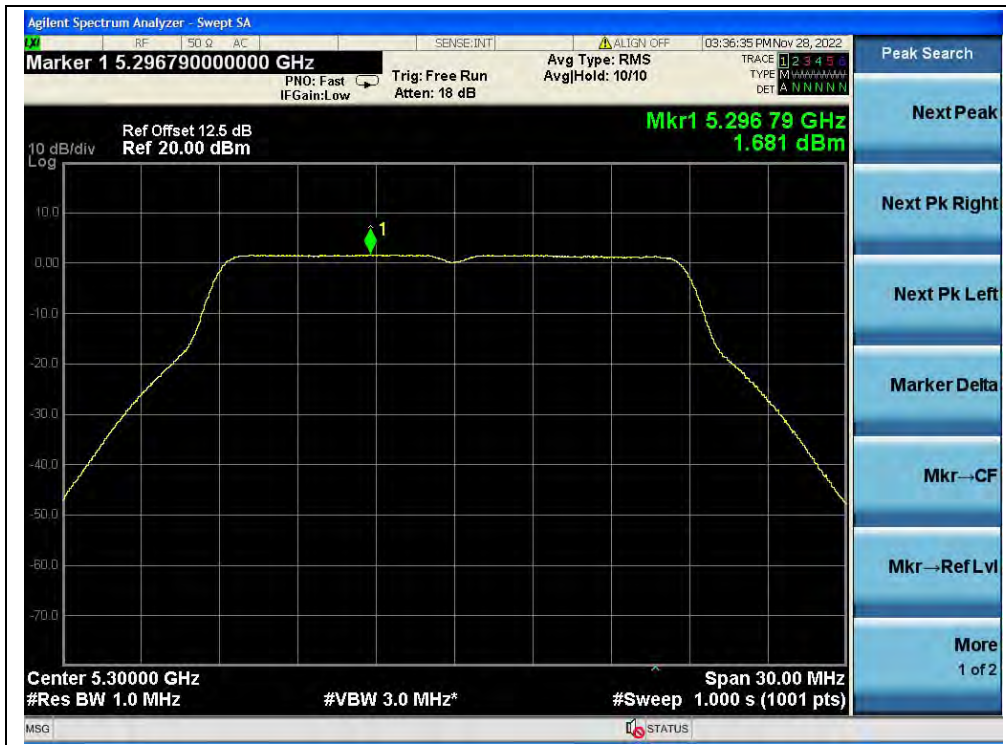
(Channel 44, 5220MHz, 802.11ac (VHT20), ANT0)



(Channel 48, 5240MHz, 802.11ac (VHT20), ANT0)



(Channel 52, 5260MHz, 802.11ac (VHT20), ANT0)



(Channel 60, 5300MHz, 802.11ac (VHT20), ANT0)



(Channel 64, 5320MHz, 802.11ac (VHT20), ANT0)



(Channel 100, 5500MHz, 802.11ac (VHT20), ANT0)



(Channel 120, 5600MHz, 802.11ac (VHT20), ANT0)



(Channel 144, 5720MHz, 802.11ac (VHT20), ANT0)



(Channel 144, 5720MHz, 802.11ac(VHT20), ANT0)



(Channel 149, 5745MHz, 802.11ac (VHT20), ANT0)



(Channel 157, 5785MHz, 802.11ac (VHT20), ANT0)



(Channel 165, 5825MHz, 802.11ac (VHT20), ANT0)



802.11ac (VHT40) Mode

A.Test Verdict:

Frequency (MHz)	Measured PPSD (dBm/MHz)		Duty Factor	Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
	ANT0	ANT1				
5190	-2.59	-2.68	0.01	0.39	11	PASS
5230	-2.99	-2.50		0.28		
5270	-2.78	-2.71		0.28		
5310	-2.73	-3.26		0.03		
5510	-3.59	-3.71		-0.63		
5630	-2.72	-3.19		0.07		
5710	-2.66	-3.33		0.04		
Frequency (MHz)	Measured PPSD (dBm/500KHz)		Duty Factor	Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
	ANT0	ANT1				
5710	-5.57	-6.14	0.01	-2.83	30	PASS
5755	-6.10	-6.42		-3.24		
5795	-6.17	-6.51		-3.32		
<p>Note: Directional gain = $-0.50\text{dBi} + 10\log(2) = 2.51\text{dBi} < 6\text{dBi}$, so the limit shall be 11dBm/MHz for 5.18-5.24GHz, 5.260-5.320GHz, 5.500-5.720GHz band and 30dBm/500KHz for 5.745-5.825GHz band.</p>						

B.Test Plot:



(Channel 38, 5190MHz, 802.11ac (VHT40), ANT0)



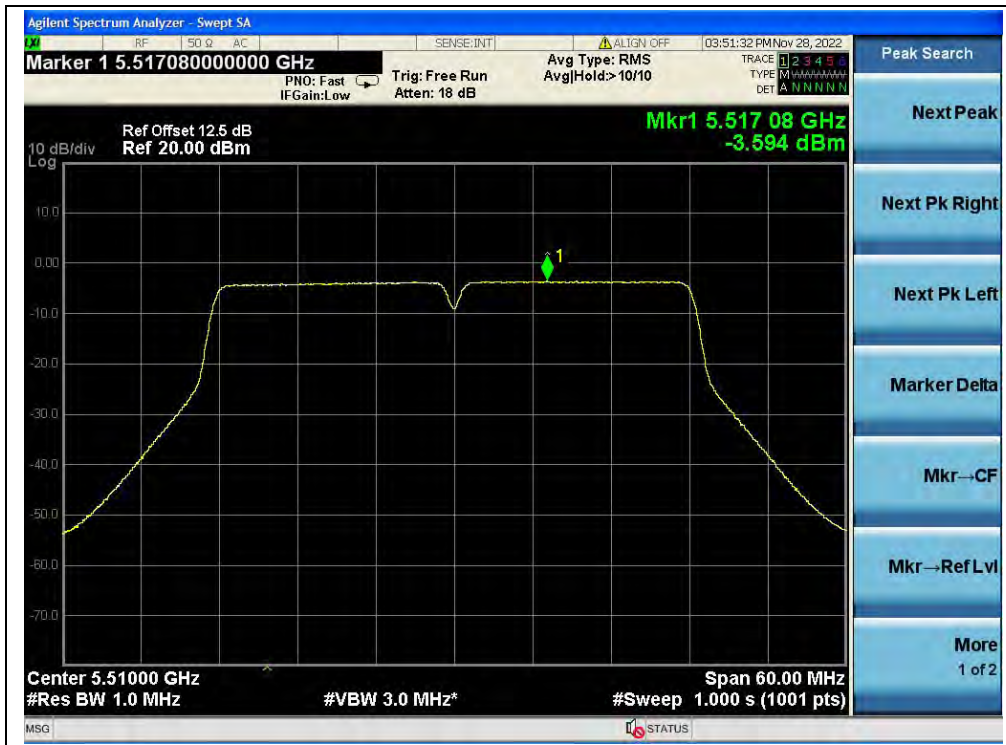
(Channel 46, 5230MHz, 802.11ac (VHT40), ANT0)



(Channel 54, 5270MHz, 802.11ac (VHT40), ANT0)



(Channel 62, 5310MHz, 802.11ac (VHT40), ANT0)



(Channel 102, 5510MHz, 802.11ac (VHT40), ANT0)



(Channel 126, 5630MHz, 802.11ac (VHT40), ANT0)



(Channel 142, 5710MHz, 802.11ac (VHT40), ANT0)



(Channel 142, 5710MHz, 802.11ac (VHT40), ANT0)



(Channel 151, 5755MHz, 802.11ac (VHT40), ANT0)



(Channel 159, 5795MHz, 802.11ac (VHT40), ANT0)



802.11ac (VHT80) Mode

A.Test Verdict:

Frequency (MHz)	Measured PPSD (dBm/MHz)		Duty Factor	Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
	ANT0	ANT1				
5210	-6.36	-6.53	0.01	-3.42	11	PASS
5290	6.15	-6.44				
5530	6.91	-7.63				
5610	6.53	-7.60				
5690	6.18	-7.31				
Frequency (MHz)	Measured PPSD (dBm/500KHz)		Duty Factor	Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
	ANT0	ANT1				
5690	9.10	-10.11	0.01	9.16	30	PASS
5775	9.57	-10.13		9.63		

Note: Directional gain = $-0.50\text{dBi} + 10\log(2) = 2.51\text{dBi} < 6\text{dBi}$, so the limit shall be 11dBm/MHz for 5.18-5.24GHz, 5.260-5.320GHz, 5.500-5.720GHz band and 30dBm/500KHz for 5.745-5.825GHz band.

B.Test Plot:



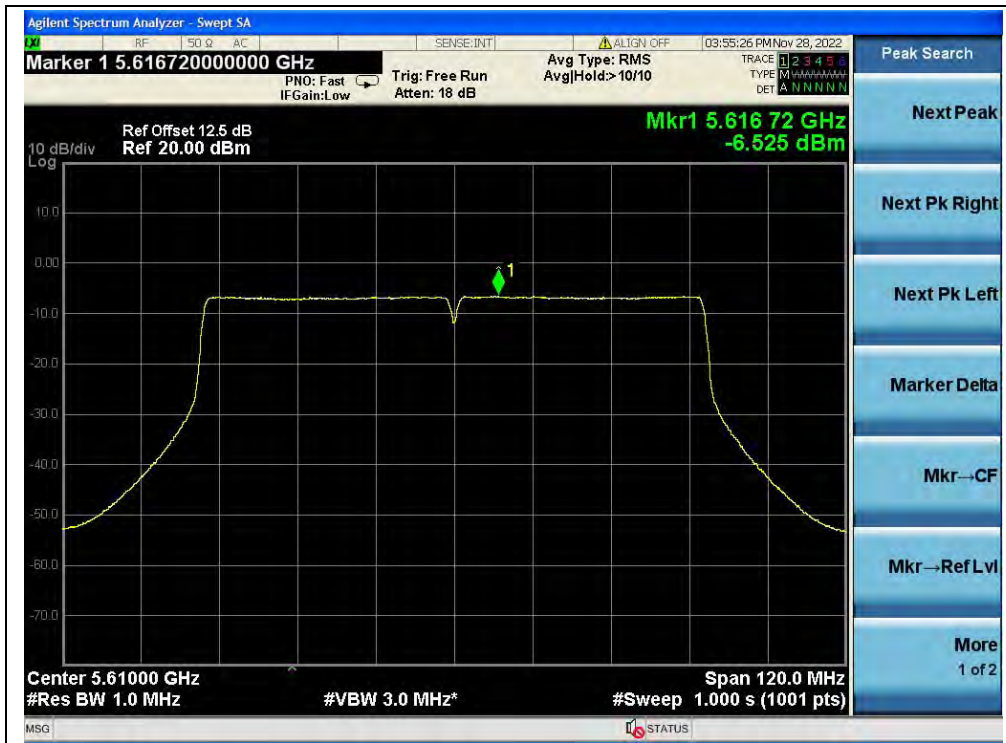
(Channel 42, 5210MHz, 802.11ac (VHT80), ANT0)



(Channel 58, 5290MHz, 802.11ac (VHT80), ANT0)



(Channel 106, 5530MHz, 802.11ac (VHT80), ANT0)



(Channel 122, 5610MHz, 802.11ac (VHT80), ANT0)



(Channel 138, 5690MHz, 802.11ac (VHT80), ANT0)



(Channel 138, 5690MHz, 802.11ac (VHT80), ANT0)



(Channel 155, 5775MHz, 802.11ac (VHT80), ANT0)



802.11ax (HEW20) Mode

A.Test Verdict:

Frequency (MHz)	Measured PPSD (dBm/MHz)		Duty Factor	Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
	ANT0	ANT1				
5180	0.57	-0.06	0.02	3.30	11	PASS
5220	0.16	0.19		3.21		
5240	-0.01	0.15		3.10		
5260	0.22	0.20		3.24		
5300	0.49	-0.09		3.24		
5320	0.43	-0.23		3.14		
5500	-0.57	-0.72		2.39		
5600	0.04	-0.85		2.65		
5720	0.38	-0.42		3.03		
Frequency (MHz)	Measured PPSD (dBm/500KHz)		Duty Factor	Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
	ANT0	ANT1				
5720	-2.52	-3.29	0.02	0.14	30	PASS
5745	-2.77	-3.32		-0.01		
5785	-2.84	-3.39		-0.08		
5825	-2.65	-3.45		0.00		
<p>Note: Directional gain = $-0.5\text{dBi} + 10\log(2) = 2.51\text{dBi} < 6\text{dBi}$, so the limit shall be 11dBm/MHz for 5.18-5.24GHz, 5.260-5.320GHz, 5.500-5.720GHz band and 30dBm/500KHz for 5.745-5.825GHz band.</p>						

B.Test Plot:



(Channel 36, 5180MHz, 802.11ax (HEW20), ANT0)



(Channel 44, 5220MHz, 802.11ax (HEW20), ANT0)



(Channel 48, 5240MHz, 802.11ax (HEW20), ANT0)



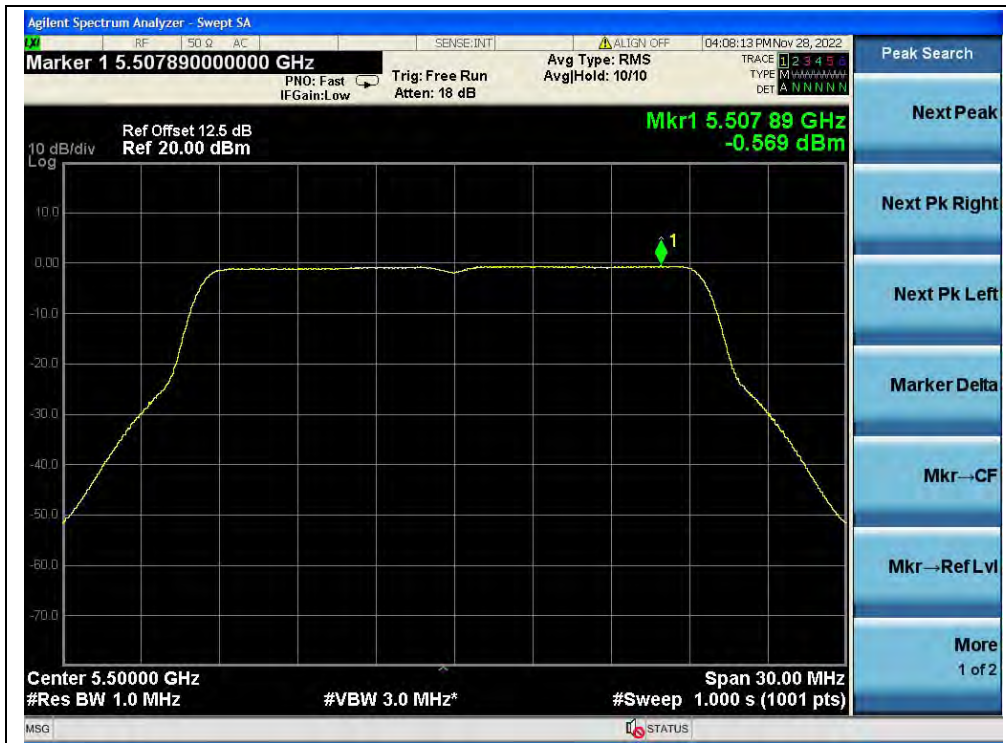
(Channel 52, 5260MHz, 802.11ax (HEW20), ANT0)



(Channel 60, 5300MHz, 802.11ax (HEW20), ANT0)



(Channel 64, 5320MHz, 802.11ax (HEW20), ANT0)



(Channel 100, 5500MHz, 802.11ax (HEW20), ANT0)



(Channel 120, 5600MHz, 802.11ax (HEW20), ANT0)



(Channel 144, 5720MHz, 802.11ax (HEW20), ANT0)



(Channel 144, 5720MHz, 802.11ax (HEW20), ANT0)



(Channel 149, 5745MHz, 802.11ax (HEW20), ANT0)



(Channel 157, 5785MHz, 802.11ax (HEW20), ANT0)



(Channel 165, 5825MHz, 802.11ax (HEW20), ANT0)



802.11ax (HEW20) RU26 Mode

A.Test Verdict:

Frequency (MHz)	Measured PPSD (dBm/MHz)		Duty Factor	Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
	ANT0	ANT1				
5180	7.28	7.15	0.17	10.40	11	PASS
5220	6.86	7.79		10.53		
5240	7.27	7.13		10.38		
5260	7.22	7.05		10.32		
5300	6.88	7.23		10.24		
5320	7.70	6.94		10.52		
5500	5.33	6.41		9.08		
5600	6.96	6.98		10.15		
5720	7.48	7.11		10.48		
Frequency (MHz)	Measured PPSD (dBm/500KHz)		Duty Factor	Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
	ANT0	ANT1				
5720	4.59	4.24	0.17	7.60	30	PASS
5745	4.42	4.15		7.47		
5785	3.76	3.96		7.04		
5825	3.71	4.02		7.05		
<p>Note: Directional gain = $-0.50\text{dBi} + 10\log(2) = 2.51\text{dBi} < 6\text{dBi}$, so the limit shall be 11dBm/MHz for 5.18-5.24GHz, 5.260-5.320GHz, 5.500-5.720GHz band and 30dBm/500KHz for 5.745-5.825GHz band.</p>						

B.Test Plot:



(Channel 36, 5180MHz, 802.11ax (HEW20) RU26, ANT0)



(Channel 44, 5220MHz, 802.11ax (HEW20) RU26, ANT0)



(Channel 48, 5240MHz, 802.11ax (HEW20) RU26, ANT0)



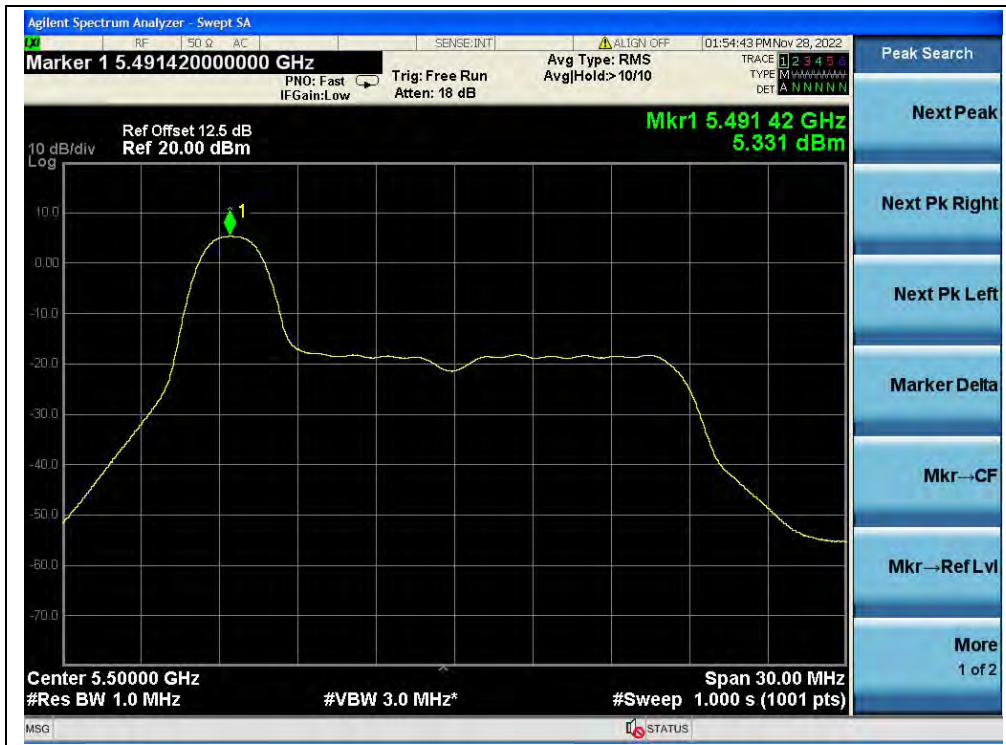
(Channel 52, 5260MHz, 802.11ax (HEW20) RU26, ANT0)



(Channel 60, 5300MHz, 802.11ax (HEW20) RU26, ANT0)



(Channel 64, 5320MHz, 802.11ax (HEW20) RU26, ANT0)



(Channel 100, 5500MHz, 802.11ax (HEW20) RU26, ANT0)



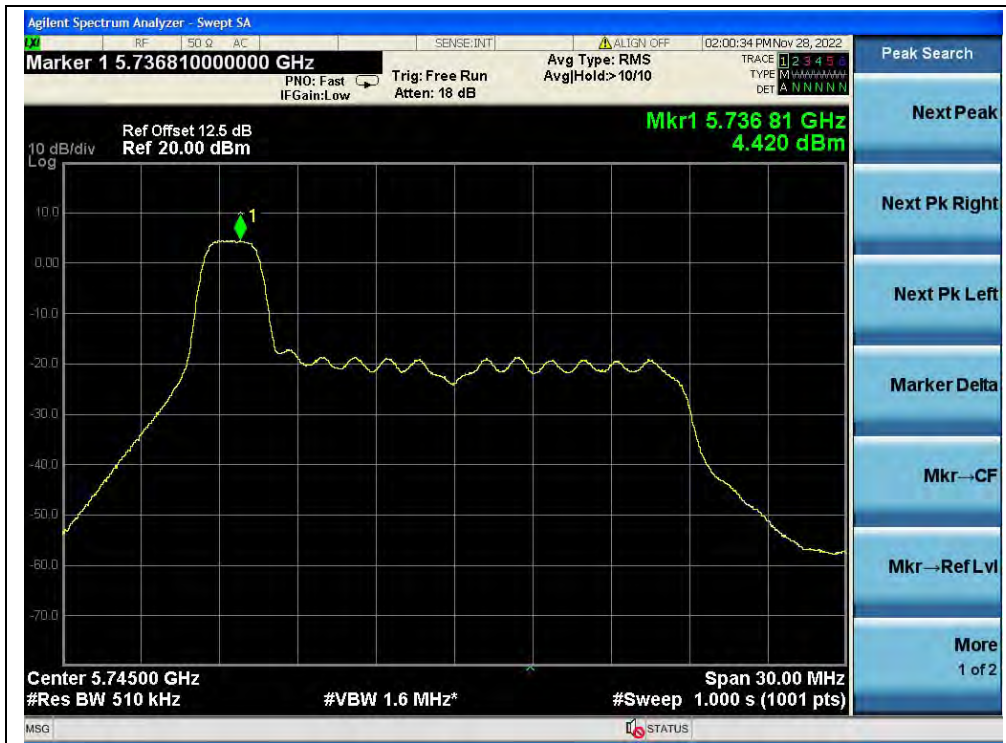
(Channel 120, 5600MHz, 802.11ax (HEW20) RU26, ANT0)



(Channel 144, 5720MHz, 802.11ax (HEW20) RU26, ANT0)



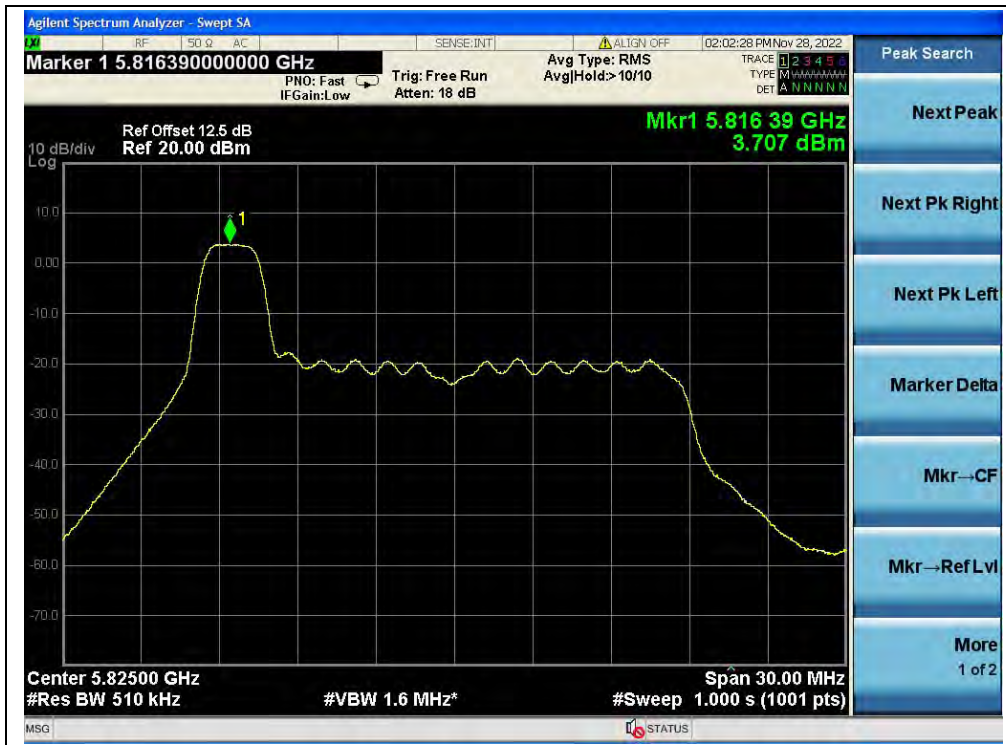
(Channel 144, 5720MHz, 802.11ax (HEW20) RU26, ANT0)



(Channel 149, 5745MHz, 802.11ax (HEW20) RU26, ANT0)



(Channel 157, 5785MHz, 802.11ax (HEW20) RU26, ANT0)



(Channel 165, 5825MHz, 802.11ax (HEW20) RU26, ANT0)



802.11ax (HEW40) Mode

A.Test Verdict:

Frequency (MHz)	Measured PPSD (dBm/MHz)		Duty Factor	Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
	ANT0	ANT1				
5190	-2.80	-3.41	0.01	-0.07	11	PASS
5230	-3.34	-2.88		-0.08		
5270	-3.05	-3.12		-0.06		
5310	-3.00	-3.39		-0.17		
5510	-3.82	-3.93		-0.85		
5630	-3.44	-4.40		-0.87		
5710	-2.90	-3.85		-0.33		
Frequency (MHz)	Measured PPSD (dBm/500KHz)		Duty Factor	Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
	ANT0	ANT1				
5710	-6.02	-6.77	0.01	-3.36	30	PASS
5755	-6.42	-6.77		-3.57		
5795	-6.42	-6.78		-3.58		
<p>Note: Directional gain = $-0.50\text{dBi} + 10\log(2) = 2.51\text{dBi} < 6\text{dBi}$, so the limit shall be 11dBm/MHz for 5.18-5.24GHz, 5.260-5.320GHz, 5.500-5.720GHz band and 30dBm/500KHz for 5.745-5.825GHz band.</p>						

B.Test Plot:



(Channel 38, 5190MHz, 802.11ax (HEW40), ANT0)



(Channel 46, 5230MHz, 802.11ax (HEW40), ANT0)



(Channel 54, 5270MHz, 802.11ax (HEW40), ANT0)



(Channel 62, 5310MHz, 802.11ax (HEW40), ANT0)



(Channel 102, 5510MHz, 802.11ax (HEW40), ANT0)



(Channel 126, 5630MHz, 802.11ax (HEW40), ANT0)