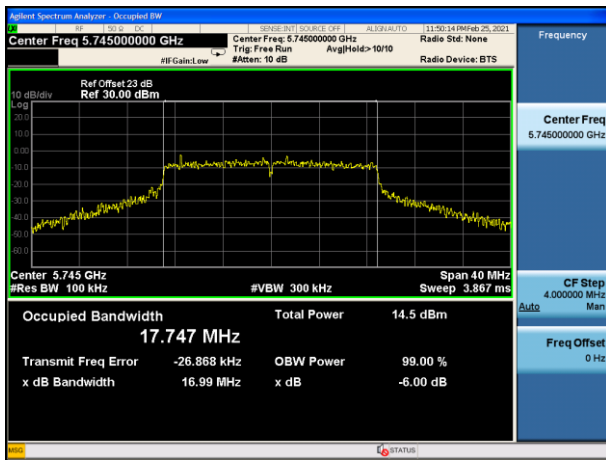
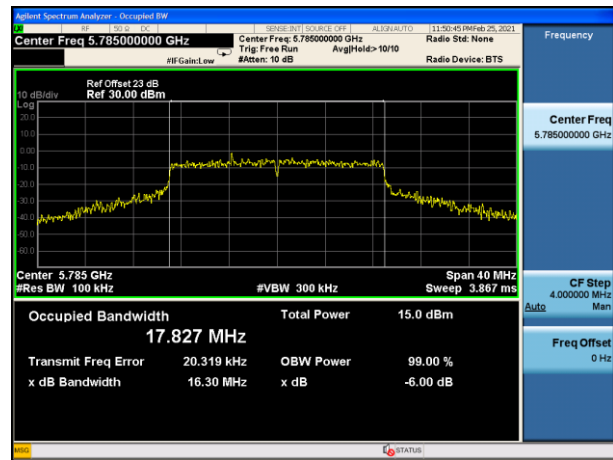


802.11ac-VHT20 6dB Bandwidth - Ant 0

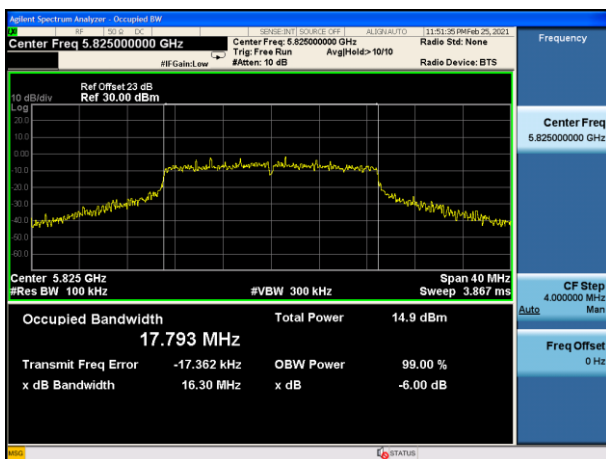
Channel 149 (5745MHz)



Channel 157 (5785MHz)

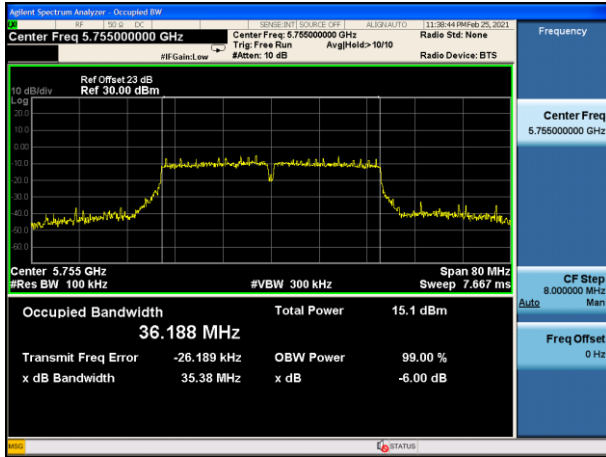


Channel 165 (5825MHz)

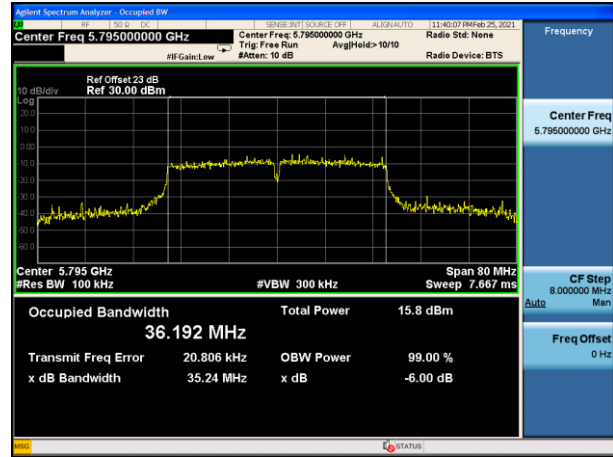


802.11n-HT40 6dB Bandwidth - Ant 0

Channel 151 (5755MHz)

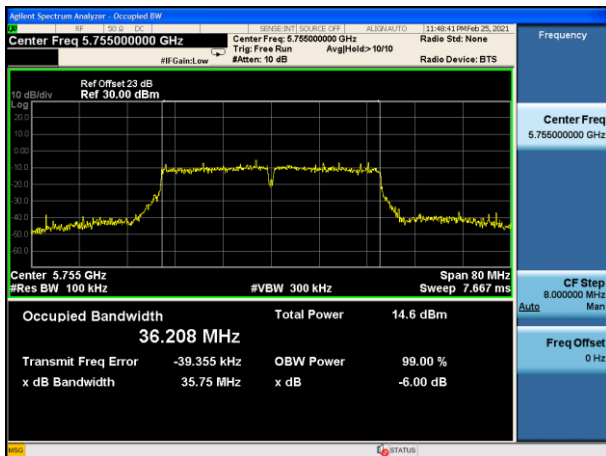


Channel 159 (5795MHz)

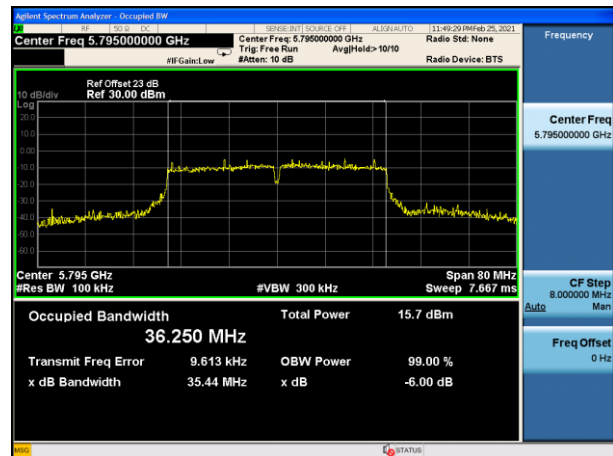


802.11ac-VHT40 6dB Bandwidth - Ant 0

Channel 151 (5755MHz)

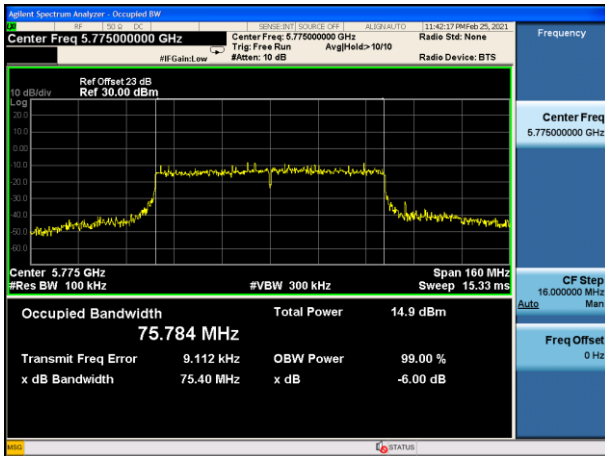


Channel 159 (5795MHz)



802.11ac-VHT80 6dB Bandwidth - Ant 0

Channel 155 (5775MHz)



7.4. Output Power Measurement

7.4.1. Test Limit

For FCC Power Measurement Limit

For client operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 250mW.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (23.98dBm) or $11\text{dBm} + 10 \log(26\text{dB BW})$.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm).

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

For IC Power Measurement Limit

For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW (23.01dBm) or $10 + 10 \cdot \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed 250 mW (23.98dBm) or $11 + 10 \log_{10} B$, dBm, whichever power is less. The maximum e.i.r.p. shall not exceed 1.0 W (30dBm) or $17 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

For the 5.725-5.85 GHz band, the maximum conducted output power shall not exceed 1 W.

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

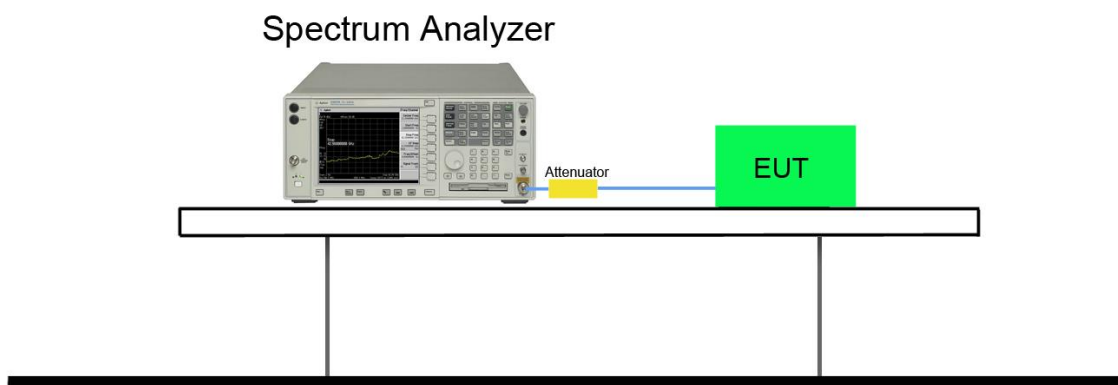
7.4.2. Test Procedure Used

KDB 789033 D02v02r01 - Section E) 3) b) Method PM-G

7.4.3. Test Setting

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

7.4.4. Test Setup



7.4.5. Test Result

Product	Handheld Data Terminal	Test Engineer	Eric
Test Site	SR2	Test Date	2021/1/26
Test Item	Output Power		

802.11a – Antenna 0										
Channel No.	Frequency (MHz)	Average Power								Required Limit (dBm)
		For different Data Rate (Mbps)								
		6	9	12	18	24	36	48	54	
36	5180	13.46	--	--	--	--	--	--	--	≤ 24
44	5220	13.13	13.01	12.90	12.78	12.67	12.49	12.01	11.77	≤ 24
48	5240	12.93	--	--	--	--	--	--	--	≤ 24
52	5260	13.23	--	--	--	--	--	--	--	≤ 24
60	5300	13.40	13.18	12.93	12.82	12.72	12.44	12.21	11.97	≤ 24
64	5320	13.39	--	--	--	--	--	--	--	≤ 24
100	5500	13.01	--	--	--	--	--	--	--	≤ 24
120	5600	13.15	13.04	12.80	12.71	12.62	12.34	12.00	11.80	≤ 24
140	5700	13.26	--	--	--	--	--	--	--	≤ 24
144	5720	13.25	--	--	--	--	--	--	--	≤ 24
149	5745	13.36	--	--	--	--	--	--	--	≤ 30
157	5785	13.27	12.92	12.71	12.62	12.43	11.96	11.32	11.16	≤ 30
165	5825	13.32	--	--	--	--	--	--	--	≤ 30

Note: Output power = Reading value on power meter + duty cycle factor + cable loss.

802.11a – Antenna 1

Channel No.	Frequency (MHz)	Average Power								Required Limit (dBm)
		For different Data Rate (Mbps)								
		6	9	12	18	24	36	48	54	
36	5180	13.34	--	--	--	--	--	--	--	≤ 24
44	5220	13.35	13.28	13.19	13.16	13.13	12.77	12.35	12.00	≤ 24
48	5240	13.37	--	--	--	--	--	--	--	≤ 24
52	5260	13.22	--	--	--	--	--	--	--	≤ 24
60	5300	13.36	13.19	13.09	13.00	12.88	12.71	12.38	12.08	≤ 24
64	5320	13.28	--	--	--	--	--	--	--	≤ 24
100	5500	13.54	--	--	--	--	--	--	--	≤ 24
120	5600	13.24	13.08	12.91	12.82	12.73	12.31	11.92	11.55	≤ 24
140	5700	13.08	--	--	--	--	--	--	--	≤ 24
144	5720	13.14	--	--	--	--	--	--	--	≤ 24
149	5745	13.29	--	--	--	--	--	--	--	≤ 30
157	5785	13.46	13.32	13.16	13.10	13.05	12.71	12.51	12.17	≤ 30
165	5825	13.24	--	--	--	--	--	--	--	≤ 30

Note: Output power =Reading value on power meter + duty cycle factor + cable loss.

802.11a – Antenna 0+1										
Channel No.	Frequency (MHz)	Average Power								Required Limit (dBm)
		For different Data Rate (Mbps)								
		6	9	12	18	24	36	48	54	
36	5180	16.41	--	--	--	--	--	--	--	≤ 24
44	5220	16.25	16.16	16.06	15.99	15.92	15.65	15.20	14.90	≤ 24
48	5240	16.17	--	--	--	--	--	--	--	≤ 24
52	5260	16.24	--	--	--	--	--	--	--	≤ 24
60	5300	16.39	16.20	16.02	15.92	15.81	15.59	15.31	15.04	≤ 24
64	5320	16.35	--	--	--	--	--	--	--	≤ 24
100	5500	16.30	--	--	--	--	--	--	--	≤ 24
120	5600	16.21	16.07	15.87	15.78	15.69	15.34	14.97	14.69	≤ 24
140	5700	16.18	--	--	--	--	--	--	--	≤ 24
144	5720	16.21	--	--	--	--	--	--	--	≤ 24
149	5745	16.34	--	--	--	--	--	--	--	≤ 30
157	5785	16.38	16.14	15.95	15.88	15.76	15.36	14.97	14.71	≤ 30
165	5825	16.29	--	--	--	--	--	--	--	≤ 30

Note: Output power = $10 \cdot \log\{10^{\text{Ant 0 RF Output Power} / 10} + 10^{\text{Ant 1 RF Output Power} / 10}\}$ (dBm).

802.11n-20M – Antenna 0

Channel No.	Frequency (MHz)	Average Power								Required Limit (dBm)
		For different Data Rate (Mbps)								
		MCS8	MCS9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15	
36	5180	12.34	--	--	--	--	--	--	--	≤ 24
44	5220	12.51	12.10	11.67	11.39	11.30	11.17	11.14	11.11	≤ 24
48	5240	12.17	--	--	--	--	--	--	--	≤ 24
52	5260	12.00	--	--	--	--	--	--	--	≤ 24
60	5300	12.38	12.26	11.83	11.50	11.07	10.90	10.73	10.64	≤ 24
64	5320	12.16	--	--	--	--	--	--	--	≤ 24
100	5500	11.98	--	--	--	--	--	--	--	≤ 24
120	5600	12.34	12.17	12.07	12.01	11.87	11.76	11.63	11.53	≤ 24
140	5700	12.41	--	--	--	--	--	--	--	≤ 24
144	5720	12.26	--	--	--	--	--	--	--	≤ 24
149	5745	12.34	--	--	--	--	--	--	--	≤ 30
157	5785	12.07	11.71	11.17	10.79	10.37	10.34	10.30	10.23	≤ 30
165	5825	12.32	--	--	--	--	--	--	--	≤ 30

Note: Output power =Reading value on power meter + duty cycle factor + cable loss.

802.11n-20M – Antenna 1

Channel No.	Frequency (MHz)	Average Power								Required Limit (dBm)
		For different Data Rate (Mbps)								
		MCS8	MCS9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15	
36	5180	12.06	--	--	--	--	--	--	--	≤ 24
44	5220	12.19	12.11	12.08	12.05	12.01	11.86	11.69	11.59	≤ 24
48	5240	12.21	--	--	--	--	--	--	--	≤ 24
52	5260	12.17	--	--	--	--	--	--	--	≤ 24
60	5300	12.27	12.23	12.10	12.07	12.04	11.91	11.83	11.68	≤ 24
64	5320	12.23	--	--	--	--	--	--	--	≤ 24
100	5500	12.00	--	--	--	--	--	--	--	≤ 24
120	5600	12.41	12.25	12.04	11.90	11.82	11.75	11.63	11.49	≤ 24
140	5700	12.39	--	--	--	--	--	--	--	≤ 24
144	5720	12.68	--	--	--	--	--	--	--	≤ 24
149	5745	12.44	--	--	--	--	--	--	--	≤ 30
157	5785	12.46	12.27	12.13	11.89	11.81	11.73	11.61	11.52	≤ 30
165	5825	12.21	--	--	--	--	--	--	--	≤ 30

Note: Output power =Reading value on power meter + duty cycle factor + cable loss.

802.11n-20M – Antenna 0+1

Channel No.	Frequency (MHz)	Average Power								Required Limit (dBm)
		For different Data Rate (Mbps)								
		MCS8	MCS9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15	
36	5180	15.21	--	--	--	--	--	--	--	≤ 24
44	5220	15.36	15.12	14.89	14.74	14.68	14.54	14.43	14.37	≤ 24
48	5240	15.20	--	--	--	--	--	--	--	≤ 24
52	5260	15.10	--	--	--	--	--	--	--	≤ 24
60	5300	15.34	15.26	14.98	14.81	14.59	14.45	14.33	14.20	≤ 24
64	5320	15.21	--	--	--	--	--	--	--	≤ 24
100	5500	15.00	--	--	--	--	--	--	--	≤ 24
120	5600	15.39	15.22	15.07	14.97	14.86	14.77	14.64	14.52	≤ 24
140	5700	15.41	--	--	--	--	--	--	--	≤ 24
144	5720	15.49	--	--	--	--	--	--	--	≤ 24
149	5745	15.40	--	--	--	--	--	--	--	≤ 30
157	5785	15.28	15.01	14.69	14.39	14.16	14.10	14.02	13.93	≤ 30
165	5825	15.28	--	--	--	--	--	--	--	≤ 30

Note: Output power = $10 \cdot \log\{10^{\text{Ant 0 RF Output Power} / 10} + 10^{\text{Ant 1 RF Output Power} / 10}\}$ (dBm).

802.11ac-20M – Antenna 0												
Channel No.	Frequency (MHz)	Average Power										Required Limit (dBm)
		For different Data Rate (Mbps)										
		2-MCS0	2-MCS1	2-MCS2	2-MCS3	2-MCS4	2-MCS5	2-MCS6	2-MCS7	2-MCS8	2-MCS9	
36	5180	12.27	--	--	--	--	--	--	--	--	--	≤ 24
44	5220	12.56	12.50	12.48	12.44	12.38	12.05	11.82	11.65	11.46	11.34	≤ 24
48	5240	12.28	--	--	--	--	--	--	--	--	--	≤ 24
52	5260	12.14	--	--	--	--	--	--	--	--	--	≤ 24
60	5300	12.39	12.28	12.16	11.98	11.83	11.73	11.55	11.34	11.08	10.96	≤ 24
64	5320	12.21	--	--	--	--	--	--	--	--	--	≤ 24
100	5500	12.09	--	--	--	--	--	--	--	--	--	≤ 24
120	5600	12.15	12.12	12.10	12.07	12.05	11.73	11.57	11.34	11.17	11.00	≤ 24
140	5700	11.95	--	--	--	--	--	--	--	--	--	≤ 24
144	5720	11.97	--	--	--	--	--	--	--	--	--	≤ 24
149	5745	11.87	--	--	--	--	--	--	--	--	--	≤ 30
157	5785	11.60	11.50	11.38	11.30	11.26	10.99	10.80	10.55	10.37	10.28	≤ 30
165	5825	11.71	--	--	--	--	--	--	--	--	--	≤ 30

Note: Output power =Reading value on power meter + duty cycle factor + cable loss.

802.11ac-20M – Antenna 1												
Channel No.	Frequency (MHz)	Average Power										Required Limit (dBm)
		For different Data Rate (Mbps)										
		2-MCS0	2-MCS1	2-MCS2	2-MCS3	2-MCS4	2-MCS5	2-MCS6	2-MCS7	2-MCS8	2-MCS9	
36	5180	11.79	--	--	--	--	--	--	--	--	--	≤ 24
44	5220	11.67	11.62	11.56	11.50	11.48	11.15	10.82	10.49	10.22	10.08	≤ 24
48	5240	11.86	--	--	--	--	--	--	--	--	--	≤ 24
52	5260	11.95	--	--	--	--	--	--	--	--	--	≤ 24
60	5300	12.26	12.25	12.23	12.20	12.19	11.90	11.68	11.37	11.15	11.08	≤ 24
64	5320	11.83	--	--	--	--	--	--	--	--	--	≤ 24
100	5500	11.58	--	--	--	--	--	--	--	--	--	≤ 24
120	5600	11.80	11.59	11.40	11.33	11.29	11.02	10.86	10.45	10.16	9.96	≤ 24
140	5700	12.01	--	--	--	--	--	--	--	--	--	≤ 24
144	5720	12.20	--	--	--	--	--	--	--	--	--	≤ 24
149	5745	12.33	--	--	--	--	--	--	--	--	--	≤ 30
157	5785	12.30	12.26	12.18	12.12	12.09	11.72	11.52	11.30	10.93	10.57	≤ 30
165	5825	12.04	--	--	--	--	--	--	--	--	--	≤ 30

Note: Output power =Reading value on power meter + duty cycle factor + cable loss.

802.11ac-20M – Antenna 0+1

Channel No.	Frequency (MHz)	Average Power										Required Limit (dBm)
		For different Data Rate (Mbps)										
		2-MCS0	2-MCS1	2-MCS2	2-MCS3	2-MCS4	2-MCS5	2-MCS6	2-MCS7	2-MCS8	2-MCS9	
36	5180	15.04	--	--	--	--	--	--	--	--	--	≤ 24
44	5220	15.15	15.09	15.05	15.00	14.96	14.63	14.36	14.12	13.89	13.76	≤ 24
48	5240	15.08	--	--	--	--	--	--	--	--	--	≤ 24
52	5260	15.05	--	--	--	--	--	--	--	--	--	≤ 24
60	5300	15.33	15.27	15.20	15.10	15.02	14.82	14.62	14.36	14.12	14.03	≤ 24
64	5320	15.03	--	--	--	--	--	--	--	--	--	≤ 24
100	5500	14.85	--	--	--	--	--	--	--	--	--	≤ 24
120	5600	14.99	14.87	14.77	14.72	14.69	14.40	14.24	13.93	13.70	13.52	≤ 24
140	5700	14.99	--	--	--	--	--	--	--	--	--	≤ 24
144	5720	15.09	--	--	--	--	--	--	--	--	--	≤ 24
149	5745	15.11	--	--	--	--	--	--	--	--	--	≤ 30
157	5785	14.97	14.90	14.81	14.74	14.70	14.38	14.18	13.95	13.67	13.43	≤ 30
165	5825	14.89	--	--	--	--	--	--	--	--	--	≤ 30

Note: Output power = $10 \cdot \log\{10^{\text{Ant 0 RF Output Power} / 10} + 10^{\text{Ant 1 RF Output Power} / 10}\}$ (dBm).

802.11n-40M – Antenna 0

Channel No.	Frequency (MHz)	Average Power								Required Limit (dBm)
		For different Data Rate (Mbps)								
		MCS8	MCS9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15	
38	5190	11.93	--	--	--	--	--	--	--	≤ 24
46	5230	11.63	11.42	11.11	10.81	10.58	10.47	10.35	10.24	≤ 24
54	5270	12.44	--	--	--	--	--	--	--	≤ 24
62	5310	11.07	10.85	10.57	10.24	9.98	9.86	9.73	9.66	≤ 24
102	5510	12.02	--	--	--	--	--	--	--	≤ 24
110	5550	12.00	11.65	11.39	11.18	10.92	10.87	10.75	10.70	≤ 24
134	5670	12.18	--	--	--	--	--	--	--	≤ 24
142	5710	12.54	--	--	--	--	--	--	--	≤ 24
151	5755	12.10	--	--	--	--	--	--	--	≤ 30
159	5795	12.57	12.07	11.74	10.86	10.44	10.39	10.35	10.21	≤ 30

802.11n-40M – Antenna 1

Channel No.	Frequency (MHz)	Average Power								Required Limit (dBm)
		For different Data Rate (Mbps)								
		MCS8	MCS9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15	
38	5190	11.99	--	--	--	--	--	--	--	≤ 24
46	5230	12.17	12.07	11.99	11.85	11.71	11.59	11.45	11.39	≤ 24
54	5270	12.12	--	--	--	--	--	--	--	≤ 24
62	5310	11.31	10.97	10.71	10.44	10.20	10.04	9.93	9.81	≤ 24
102	5510	11.75	--	--	--	--	--	--	--	≤ 24
110	5550	12.08	12.03	11.99	11.90	11.80	11.57	11.49	11.43	≤ 24
134	5670	12.48	--	--	--	--	--	--	--	≤ 24
142	5710	12.39	--	--	--	--	--	--	--	≤ 24
151	5755	12.14	--	--	--	--	--	--	--	≤ 30
159	5795	12.47	12.15	11.76	11.27	11.07	10.87	10.80	10.76	≤ 30

Note: Output power = Reading value on power meter + duty cycle factor + cable loss.

802.11n-40M – Antenna 0+1

Channel No.	Frequency (MHz)	Average Power								Required Limit (dBm)
		For different Data Rate (Mbps)								
		MCS8	MCS9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15	
38	5190	14.97	--	--	--	--	--	--	--	≤ 24
46	5230	14.92	14.77	14.59	14.38	14.20	14.08	13.95	13.87	≤ 24
54	5270	15.30	--	--	--	--	--	--	--	≤ 24
62	5310	14.21	13.92	13.66	13.36	13.11	12.97	12.85	12.75	≤ 24
102	5510	14.90	--	--	--	--	--	--	--	≤ 24
110	5550	15.05	14.86	14.71	14.57	14.40	14.25	14.15	14.09	≤ 24
134	5670	15.35	--	--	--	--	--	--	--	≤ 24
142	5710	15.48	--	--	--	--	--	--	--	≤ 24
151	5755	15.13	--	--	--	--	--	--	--	≤ 30
159	5795	15.53	15.12	14.76	14.08	13.78	13.65	13.60	13.51	≤ 30

Note: Output power = $10 \cdot \log\{10^{\text{Ant 0 RF Output Power} / 10} + 10^{\text{Ant 1 RF Output Power} / 10}\}$ (dBm).

802.11ac-40M – Antenna 0												
Channel No.	Frequency (MHz)	Average Power										Required Limit (dBm)
		For different Data Rate (Mbps)										
		2-MCS0	2-MCS1	2-MCS2	2-MCS3	2-MCS4	2-MCS5	2-MCS6	2-MCS7	2-MCS8	2-MCS9	
38	5190	11.78	--	--	--	--	--	--	--	--	--	≤ 24
46	5230	11.49	10.44	10.35	10.27	10.22	10.04	9.85	9.71	9.50	9.41	≤ 24
54	5270	12.22	--	--	--	--	--	--	--	--	--	≤ 24
62	5310	10.90	10.03	9.99	9.95	9.87	9.72	9.61	9.57	9.37	9.24	≤ 24
102	5510	11.90	--	--	--	--	--	--	--	--	--	≤ 24
110	5550	11.80	10.89	10.81	10.73	10.62	10.47	10.32	10.24	10.13	10.01	≤ 24
134	5670	11.94	--	--	--	--	--	--	--	--	--	≤ 24
142	5710	12.19	--	--	--	--	--	--	--	--	--	≤ 24
151	5755	11.77	--	--	--	--	--	--	--	--	--	≤ 30
159	5795	12.10	11.19	11.15	11.06	11.02	10.86	10.65	10.47	10.33	10.28	≤ 30

Note: Output power =Reading value on power meter + duty cycle factor + cable loss.

802.11ac-40M – Antenna 1												
Channel No.	Frequency (MHz)	Average Power										Required Limit (dBm)
		For different Data Rate (Mbps)										
		2-MCS0	2-MCS1	2-MCS2	2-MCS3	2-MCS4	2-MCS5	2-MCS6	2-MCS7	2-MCS8	2-MCS9	
38	5190	11.91	--	--	--	--	--	--	--	--	--	≤ 24
46	5230	11.70	10.84	10.79	10.77	10.74	10.45	10.35	10.15	10.04	9.95	≤ 24
54	5270	11.89	--	--	--	--	--	--	--	--	--	≤ 24
62	5310	10.45	10.32	10.18	10.05	9.96	9.77	9.64	9.55	9.31	9.27	≤ 24
102	5510	11.67	--	--	--	--	--	--	--	--	--	≤ 24
110	5550	11.95	11.08	11.00	10.97	10.94	10.79	10.67	10.54	10.36	10.19	≤ 24
134	5670	12.21	--	--	--	--	--	--	--	--	--	≤ 24
142	5710	12.00	--	--	--	--	--	--	--	--	--	≤ 24
151	5755	11.84	--	--	--	--	--	--	--	--	--	≤ 30
159	5795	12.31	11.32	11.18	11.03	10.98	10.86	10.71	10.57	10.46	10.42	≤ 30

Note: Output power =Reading value on power meter + duty cycle factor + cable loss.

802.11ac-40M – Antenna 0+1

Channel No.	Frequency (MHz)	Average Power										Required Limit (dBm)
		For different Data Rate (Mbps)										
		2-MCS0	2-MCS1	2-MCS2	2-MCS3	2-MCS4	2-MCS5	2-MCS6	2-MCS7	2-MCS8	2-MCS9	
38	5190	14.86	--	--	--	--	--	--	--	--	--	≤ 24
46	5230	14.61	13.66	13.59	13.54	13.50	13.26	13.12	12.95	12.79	12.70	≤ 24
54	5270	15.07	--	--	--	--	--	--	--	--	--	≤ 24
62	5310	13.69	13.19	13.10	13.01	12.93	12.76	12.64	12.57	12.35	12.27	≤ 24
102	5510	14.80	--	--	--	--	--	--	--	--	--	≤ 24
110	5550	14.89	14.00	13.92	13.87	13.80	13.65	13.51	13.41	13.26	13.12	≤ 24
134	5670	15.09	--	--	--	--	--	--	--	--	--	≤ 24
142	5710	15.11	--	--	--	--	--	--	--	--	--	≤ 24
151	5755	14.82	--	--	--	--	--	--	--	--	--	≤ 30
159	5795	15.22	14.27	14.18	14.06	14.01	13.87	13.69	13.53	13.41	13.37	≤ 30

Note: Output power = $10 \cdot \log\{10^{\text{Ant 0 RF Output Power} / 10} + 10^{\text{Ant 1 RF Output Power} / 10}\}$ (dBm).

802.11ac-80M – Antenna 0

Channel No.	Frequency (MHz)	Average Power										Required Limit (dBm)
		For different Data Rate (Mbps)										
		2-MCS0	2-MCS1	2-MCS2	2-MCS3	2-MCS4	2-MCS5	2-MCS6	2-MCS7	2-MCS8	2-MCS9	
42	5210	11.14	10.99	10.74	10.45	10.19	10.03	9.95	9.89	9.77	9.71	≤ 24
58	5290	9.52	9.41	9.14	8.85	8.65	8.47	8.34	8.26	8.16	8.09	≤ 24
106	5530	11.17	--	--	--	--	--	--	--	--	--	≤ 24
122	5610	11.38	11.14	10.88	10.55	10.23	10.14	10.10	10.06	9.99	9.93	≤ 24
138	5690	11.15	--	--	--	--	--	--	--	--	--	≤ 24
155	5775	11.15	10.79	10.27	9.65	9.30	9.11	9.02	8.93	8.87	8.80	≤ 30

802.11ac-80M – Antenna 1

Channel No.	Frequency (MHz)	Average Power										Required Limit (dBm)
		For different Data Rate (Mbps)										
		2-MCS0	2-MCS1	2-MCS2	2-MCS3	2-MCS4	2-MCS5	2-MCS6	2-MCS7	2-MCS8	2-MCS9	
42	5210	11.16	11.12	11.08	11.00	10.93	10.81	10.69	10.59	10.46	10.43	≤ 24
58	5290	9.64	9.39	9.10	8.95	8.81	8.67	8.54	8.42	8.35	8.30	≤ 24
106	5530	11.61	--	--	--	--	--	--	--	--	--	≤ 24
122	5610	11.54	11.37	11.27	11.19	11.02	10.90	10.73	10.68	10.57	10.48	≤ 24
138	5690	11.66	--	--	--	--	--	--	--	--	--	≤ 24
155	5775	11.24	10.99	10.63	10.35	10.14	10.04	9.89	9.80	9.67	9.63	≤ 30

802.11ac-80M – Antenna 0+1

Channel No.	Frequency (MHz)	Average Power										Required Limit (dBm)
		For different Data Rate (Mbps)										
		2-MCS0	2-MCS1	2-MCS2	2-MCS3	2-MCS4	2-MCS5	2-MCS6	2-MCS7	2-MCS8	2-MCS9	
42	5210	14.16	14.06	13.92	13.74	13.58	13.44	13.34	13.26	13.13	13.09	≤ 24
58	5290	12.59	12.41	12.13	11.91	11.74	11.58	11.45	11.35	11.26	11.20	≤ 24
106	5530	14.40	--	--	--	--	--	--	--	--	--	≤ 24
122	5610	14.47	14.26	14.09	13.89	13.65	13.54	13.43	13.39	13.30	13.22	≤ 24
138	5690	14.42	--	--	--	--	--	--	--	--	--	≤ 24
155	5775	14.20	13.90	13.46	13.02	12.75	12.61	12.48	12.39	12.29	12.24	≤ 30

Note: Output power = $10 \cdot \log\{10^{\text{Ant 0 RF Output Power} / 10} + 10^{\text{Ant 1 RF Output Power} / 10}\}$ (dBm).

802.11a EIRP Power:

Test Mode	Channel No.	Freq. (MHz)	EIRP (dBm)	EIRP Limit (dBm)	Result
Antenna 0+1					
802.11a	36	5180	17.73	≤ 30	Pass
802.11a	40	5220	17.57	≤ 30	Pass
802.11a	48	5240	17.49	≤ 30	Pass
802.11a	52	5260	17.56	≤ 30	Pass
802.11a	56	5300	17.71	≤ 30	Pass
802.11a	64	5320	17.67	≤ 30	Pass
802.11a	100	5500	17.62	≤ 30	Pass
802.11a	120	5600	17.53	≤ 30	Pass
802.11a	140	5700	17.50	≤ 30	Pass
802.11a	144	5720	17.53	≤ 30	Pass
802.11a	149	5745	17.66	≤ 36	Pass
802.11a	157	5785	17.70	≤ 36	Pass
802.11a	165	5825	17.61	≤ 36	Pass

Note: EIRP Power = Output Power + Antenna Gain.

802.11n20 EIRP Power:

Test Mode	Channel No.	Freq. (MHz)	EIRP (dBm)	EIRP Limit (dBm)	Result
Antenna 0+1					
802.11a	36	5180	16.53	≤ 30	Pass
802.11a	40	5220	16.68	≤ 30	Pass
802.11a	48	5240	16.52	≤ 30	Pass
802.11a	52	5260	16.42	≤ 30	Pass
802.11a	56	5300	16.66	≤ 30	Pass
802.11a	64	5320	16.53	≤ 30	Pass
802.11a	100	5500	16.32	≤ 30	Pass
802.11a	120	5600	16.71	≤ 30	Pass
802.11a	140	5700	16.73	≤ 30	Pass
802.11a	144	5720	16.81	≤ 30	Pass
802.11a	149	5745	16.72	≤ 36	Pass
802.11a	157	5785	16.60	≤ 36	Pass
802.11a	165	5825	16.60	≤ 36	Pass

Note: EIRP Power = Output Power + Antenna Gain.

802.11ac20 EIRP Power:

Test Mode	Channel No.	Freq. (MHz)	EIRP (dBm)	EIRP Limit (dBm)	Result
Antenna 0+1					
802.11a	36	5180	16.36	≤ 30	Pass
802.11a	40	5220	16.47	≤ 30	Pass
802.11a	48	5240	16.40	≤ 30	Pass
802.11a	52	5260	16.37	≤ 30	Pass
802.11a	56	5300	16.65	≤ 30	Pass
802.11a	64	5320	16.35	≤ 30	Pass
802.11a	100	5500	16.17	≤ 30	Pass
802.11a	120	5600	16.31	≤ 30	Pass
802.11a	140	5700	16.31	≤ 30	Pass
802.11a	144	5720	16.41	≤ 30	Pass
802.11a	149	5745	16.43	≤ 36	Pass
802.11a	157	5785	16.29	≤ 36	Pass
802.11a	165	5825	16.21	≤ 36	Pass

Note: EIRP Power = Output Power + Antenna Gain.

802.11n40 EIRP Power:

Test Mode	Channel No.	Freq. (MHz)	EIRP (dBm)	EIRP Limit (dBm)	Result
Antenna 0+1					
802.11n40	38	5190	16.29	≤ 30	Pass
802.11n40	46	5230	16.24	≤ 30	Pass
802.11n40	54	5270	16.62	≤ 30	Pass
802.11n40	62	5310	15.53	≤ 30	Pass
802.11n40	102	5510	16.22	≤ 30	Pass
802.11n40	110	5550	16.37	≤ 30	Pass
802.11n40	134	5670	16.67	≤ 30	Pass
802.11n40	142	5710	16.80	≤ 30	Pass
802.11n40	151	5755	16.45	≤ 36	Pass
802.11n40	159	5795	16.85	≤ 36	Pass

Note: EIRP Power = Output Power + Antenna Gain.

802.11ac40 EIRP Power:

Test Mode	Channel No.	Freq. (MHz)	EIRP (dBm)	EIRP Limit (dBm)	Result
Antenna 0+1					
802.11n40	38	5190	16.18	≤ 30	Pass
802.11n40	46	5230	15.93	≤ 30	Pass
802.11n40	54	5270	16.39	≤ 30	Pass
802.11n40	62	5310	15.43	≤ 30	Pass
802.11n40	102	5510	16.12	≤ 30	Pass
802.11n40	110	5550	16.21	≤ 30	Pass
802.11n40	134	5670	16.41	≤ 30	Pass
802.11n40	142	5710	16.43	≤ 30	Pass
802.11n40	151	5755	16.14	≤ 36	Pass
802.11n40	159	5795	16.54	≤ 36	Pass

Note: EIRP Power = Output Power + Antenna Gain.

802.11ac80 EIRP Power:

Test Mode	Channel No.	Freq. (MHz)	EIRP (dBm)	EIRP Limit (dBm)	Result
Antenna 0+1					
802.11ac80	42	5210	15.48	≤ 30	Pass
802.11ac80	58	5290	13.91	≤ 30	Pass
802.11ac80	106	5530	15.72	≤ 30	Pass
802.11ac80	122	5610	15.79	≤ 30	Pass
802.11ac80	138	5690	15.74	≤ 30	Pass
802.11ac80	155	5775	15.52	≤ 36	Pass

Note: EIRP Power = Output Power + Antenna Gain.

7.5. Transmit Power Control

7.5.1. Test Limit

The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm.

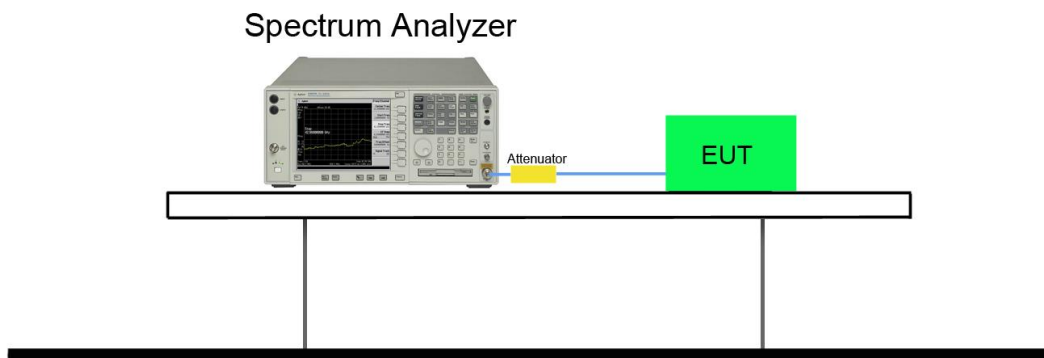
7.5.2. Test Procedure Used

KDB 789033 D02v02r01 - Section E) 3) b) Method PM-G

7.5.3. Test Setting

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

7.5.4. Test Setup



7.5.5. Test Result

Note: TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

7.6. Power Spectral Density Measurement

7.6.1. Test Limit

For FCC Power Spectral Density Limit

For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band.

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

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

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

For IC Power Spectral Density Limit

For the band 5.15-5.25 GHz, the e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

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

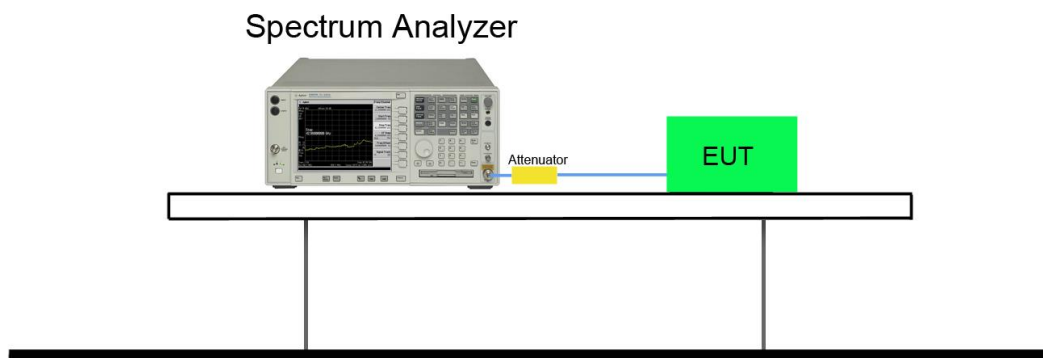
7.6.2. Test Procedure Used

KDB 789033 D02v02r01 - Section F

7.6.3. Test Setting

1. Analyzer was set to the center frequency of the UNII channel under investigation
2. Span was set to encompass the entire 26dB EBW of the signal.
3. RBW = 1MHz, if measurement bandwidth of Maximum PSD is specified in 500 kHz,
4. RBW = 100 kHz
5. VBW = 3MHz
6. Number of sweep points $\geq 2 \times (\text{span} / \text{RBW})$
7. Detector = power averaging (Average)
8. Sweep time = auto
9. Trigger = free run
10. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
11. Add $10 \cdot \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission). For example, add $10 \cdot \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.
12. When the measurement bandwidth of Maximum PSD is specified in 500 kHz, add a constant factor $10 \cdot \log(500\text{kHz}/100\text{kHz}) = 7$ dB to the measured result

7.6.4. Test Setup



7.6.5. Test Result

Product	Handheld Data Terminal	Test Engineer	Eric
Test Site	SR2	Test Date	2021/2/25
Test Item	Power Spectral Density		

U-NII-1 & U-NII-2A & U-NII-2C

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	PSD (dBm/MHz) Ant0	PSD (dBm/MHz) Ant1	Duty Cycle (%)	Total PSD (dBm/MHz)	PSD Limit (dBm/MHz)	Result
Antenna 0+1									
11a	6	36	5180	2.241	4.934	99%	6.866	≤ 11	Pass
11a	6	44	5220	2.654	5.072	99%	7.102	≤ 11	Pass
11a	6	48	5240	1.502	4.466	99%	6.305	≤ 11	Pass
11a	6	52	5260	1.432	4.590	99%	6.365	≤ 11	Pass
11a	6	60	5300	3.564	3.789	99%	6.751	≤ 11	Pass
11a	6	64	5320	1.630	3.700	99%	5.860	≤ 11	Pass
11a	6	100	5500	1.959	3.575	99%	5.915	≤ 11	Pass
11a	6	120	5600	2.768	4.421	99%	6.746	≤ 11	Pass
11a	6	140	5700	3.279	4.123	99%	6.794	≤ 11	Pass
11a	6	144	5720	3.614	3.738	99%	6.749	≤ 11	Pass
11n-HT20	6.5	36	5180	1.514	2.517	97%	5.205	≤ 11	Pass
11n-HT20	6.5	44	5220	1.875	2.444	97%	5.330	≤ 11	Pass
11n-HT20	6.5	48	5240	0.910	2.446	97%	4.907	≤ 11	Pass
11n-HT20	6.5	52	5260	-0.003	2.888	97%	4.840	≤ 11	Pass
11n-HT20	6.5	60	5300	1.206	2.127	97%	4.852	≤ 11	Pass
11n-HT20	6.5	64	5320	1.183	2.429	97%	5.012	≤ 11	Pass
11n-HT20	6.5	100	5500	0.654	1.628	97%	4.329	≤ 11	Pass
11n-HT20	6.5	120	5600	1.659	3.604	97%	5.900	≤ 11	Pass
11n-HT20	6.5	140	5700	2.259	3.448	97%	6.055	≤ 11	Pass
11n-HT20	6.5	144	5720	2.252	3.071	97%	5.842	≤ 11	Pass

Note: Total PSD (dBm/MHz) = $10 \cdot \log\{10^{\text{Ant 0 PSD} / 10} + 10^{\text{Ant 1 PSD} / 10}\}$ (dBm/MHz) + $10 \cdot \log(1/\text{duty cycle})$.

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	PSD (dBm/MHz) Ant0	PSD (dBm/MHz) Ant1	Duty Cycle (%)	Total PSD (dBm/MHz)	PSD Limit (dBm/MHz)	Result
Antenna 0+1									
11n-HT40	13.5	38	5190	-1.553	-0.825	93%	2.131	≤ 11	Pass
11n-HT40	13.5	46	5230	-1.638	-1.008	93%	1.993	≤ 11	Pass
11n-HT40	13.5	54	5270	-1.942	-0.244	93%	2.294	≤ 11	Pass
11n-HT40	13.5	62	5310	-2.794	-1.850	93%	1.008	≤ 11	Pass
11n-HT40	13.5	102	5510	-2.038	-1.001	93%	1.816	≤ 11	Pass
11n-HT40	13.5	110	5550	-1.877	-0.603	93%	2.111	≤ 11	Pass
11n-HT40	13.5	134	5670	-1.759	0.434	93%	2.779	≤ 11	Pass
11n-HT40	13.5	142	5710	-0.962	0.046	93%	2.876	≤ 11	Pass
11ac-VHT80	29.3	42	5210	-5.114	-3.742	93%	-1.058	≤ 11	Pass
11ac-VHT80	29.3	58	5290	-7.031	-6.535	93%	-3.460	≤ 11	Pass
11ac-VHT80	29.3	106	5530	-6.103	-3.901	93%	-1.548	≤ 11	Pass
11ac-VHT80	29.3	122	5610	-5.739	-3.846	93%	-1.374	≤ 11	Pass
11ac-VHT80	29.3	138	5690	-5.313	-3.766	93%	-1.155	≤ 11	Pass

Note: Total PSD (dBm/MHz) = $10 \cdot \log\{10^{\text{Ant 0 PSD}/10} + 10^{\text{Ant 1 PSD}/10}\}$ (dBm/MHz) + $10 \cdot \log(1/\text{duty cycle})$.

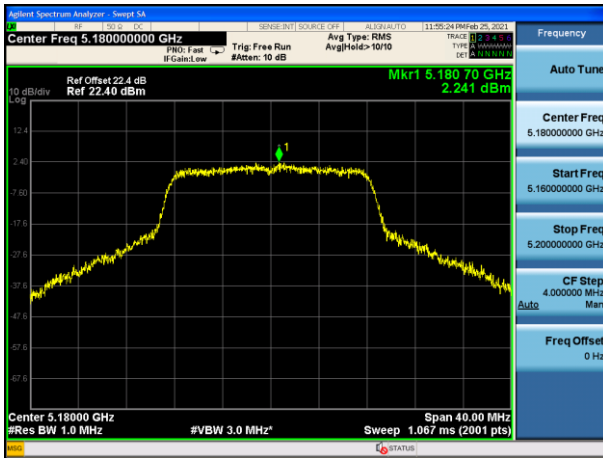
U-NII-3

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	PSD (dBm/500kHz) Ant0	PSD (dBm/500kHz) Ant1	Duty Cycle (%)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Result
Antenna 0+1									
11a	6	149	5745	1.097	0.806	99%	4.027	≤ 30	Pass
11a	6	157	5785	0.940	1.037	99%	4.062	≤ 30	Pass
11a	6	165	5825	1.123	-0.370	99%	3.513	≤ 30	Pass
11n-HT20	6.5	149	5745	-0.621	-1.058	97%	2.327	≤ 30	Pass
11n-HT20	6.5	157	5785	-0.875	-1.173	97%	2.140	≤ 30	Pass
11n-HT20	6.5	165	5825	-0.128	-1.052	97%	2.596	≤ 30	Pass
11n-HT40	13.5	151	5755	-4.306	-4.374	93%	-1.035	≤ 30	Pass
11n-HT40	13.5	159	5795	-3.475	-4.389	93%	-0.603	≤ 30	Pass
11ac-VHT80	29.3	155	5775	-7.885	-7.776	93%	-4.514	≤ 30	Pass

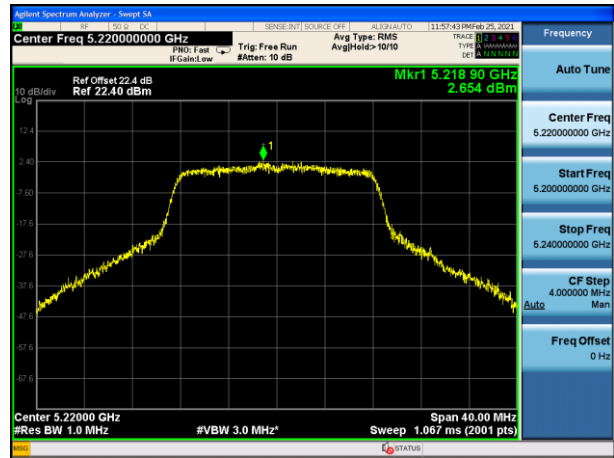
Note: Total PSD (dBm/500kHz) = $10 \cdot \log\{10^{\text{Ant 0 PSD} / 10} + 10^{\text{Ant 1 PSD} / 10}\}$ (dBm/500kHz) + $10 \cdot \log(1/\text{duty cycle})$.

802.11a Power Spectral Density - Ant 0

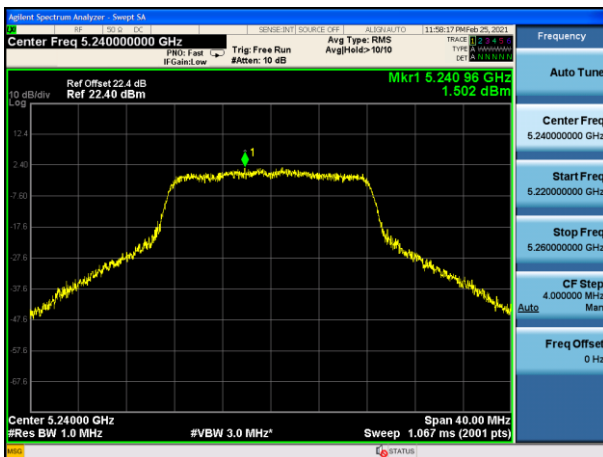
Channel 36 (5180MHz)



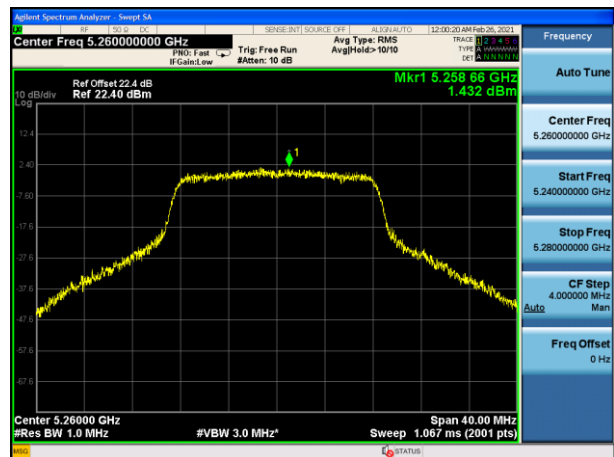
Channel 44 (5220MHz)



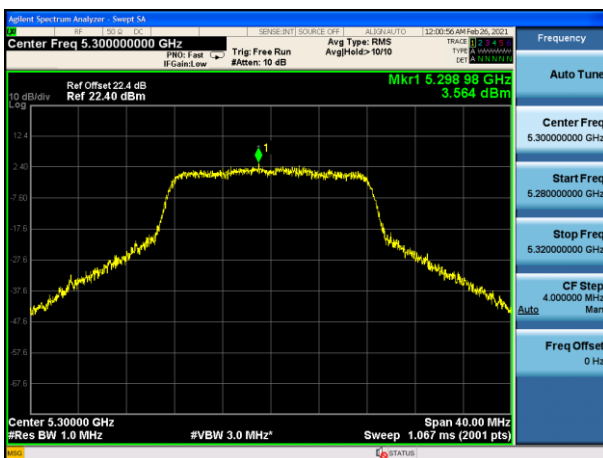
Channel 48 (5240MHz)



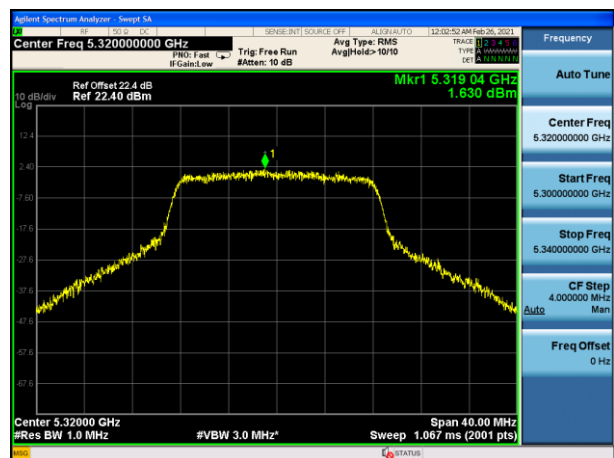
Channel 52 (5260MHz)



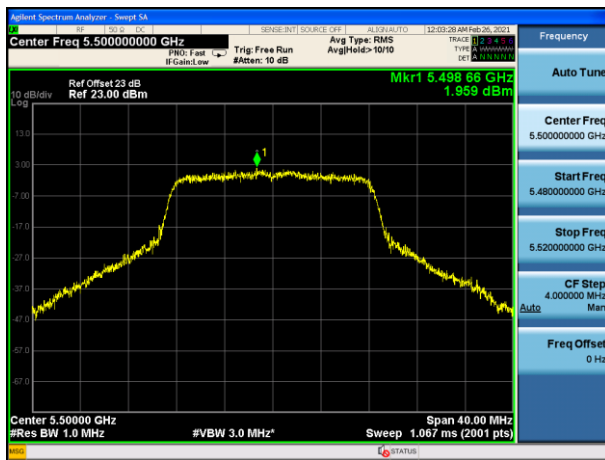
Channel 60 (5300MHz)



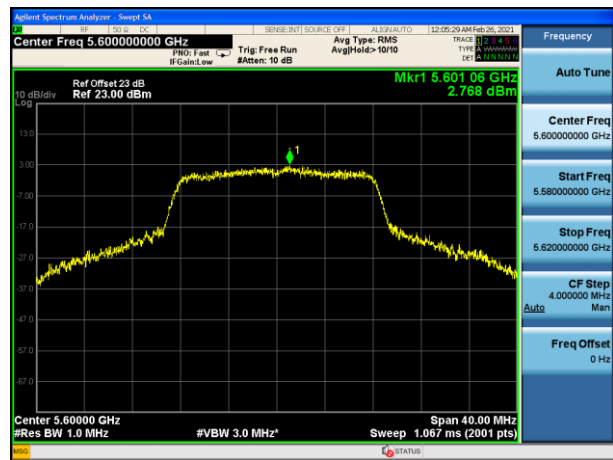
Channel 64 (5320MHz)



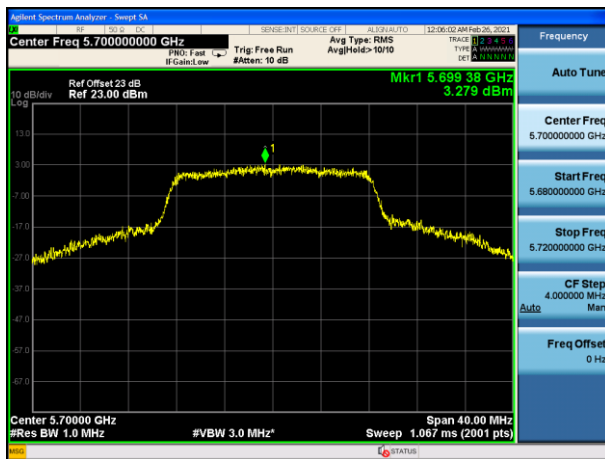
Channel 100 (5500MHz)



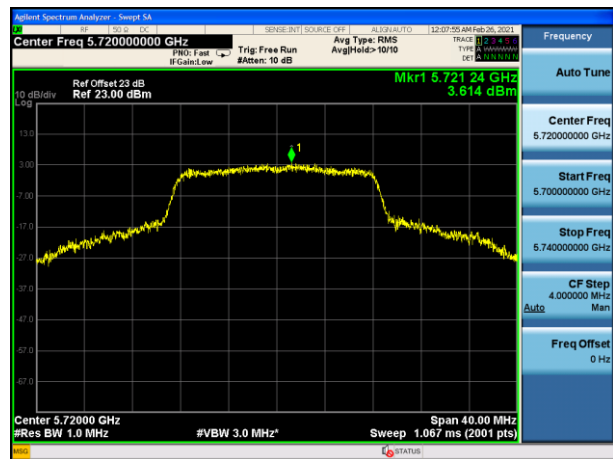
Channel 120 (5600MHz)



Channel 140 (5700MHz)



Channel 144 (5720MHz)



Channel 149 (5745MHz)



Channel 157 (5785MHz)

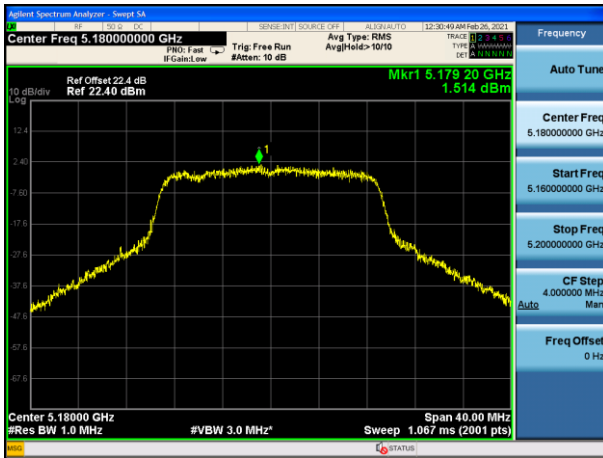


Channel 165 (5825MHz)

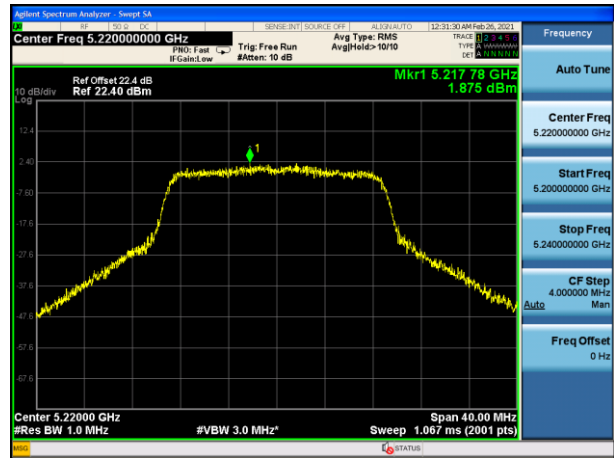


802.11n-HT20 Power Spectral Density - Ant 0

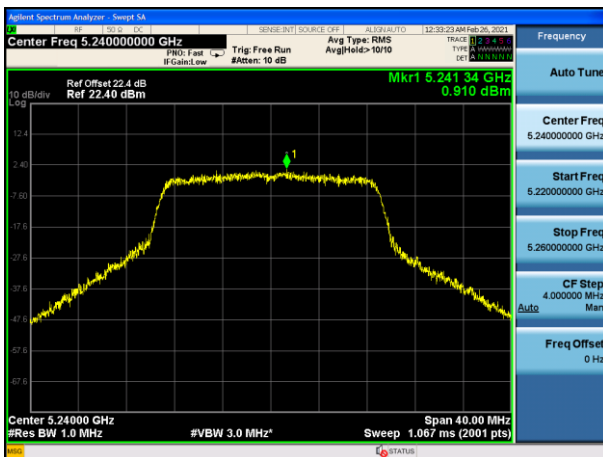
Channel 36 (5180MHz)



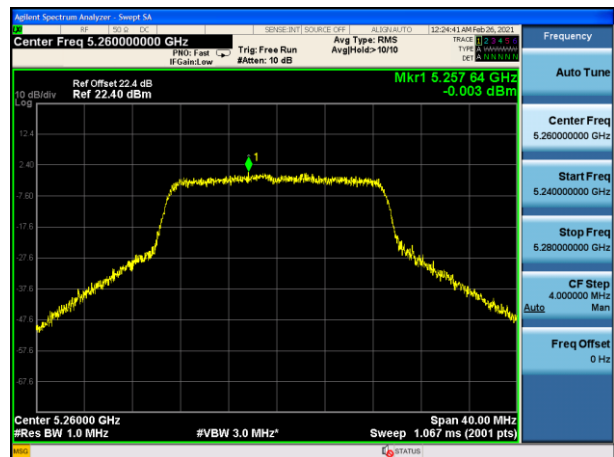
Channel 44 (5220MHz)



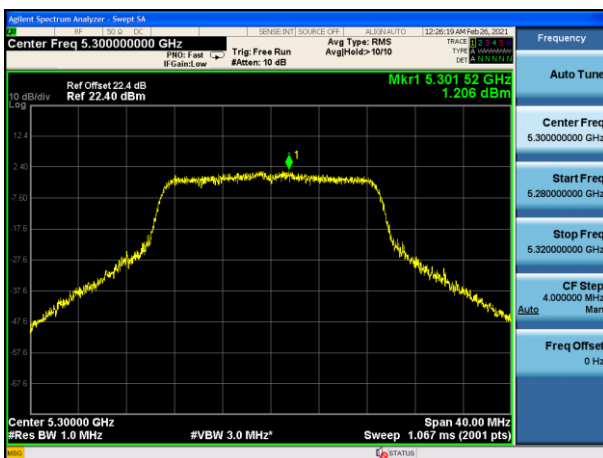
Channel 48 (5240MHz)



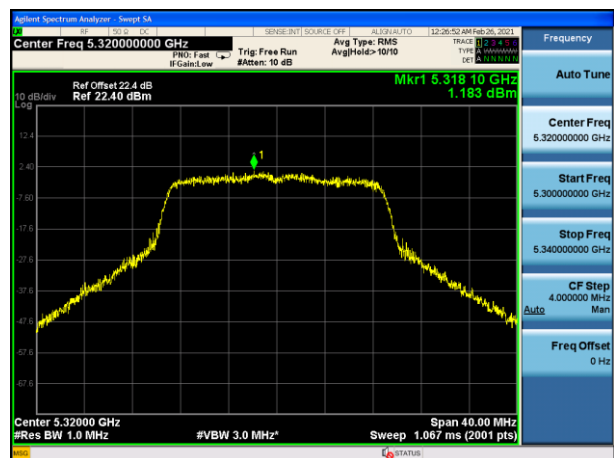
Channel 52 (5260MHz)



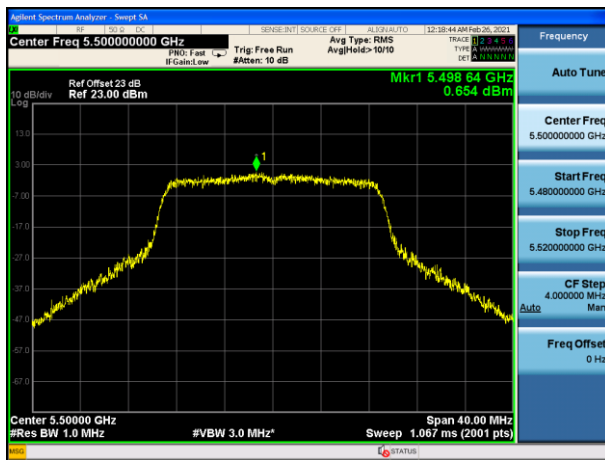
Channel 60 (5300MHz)



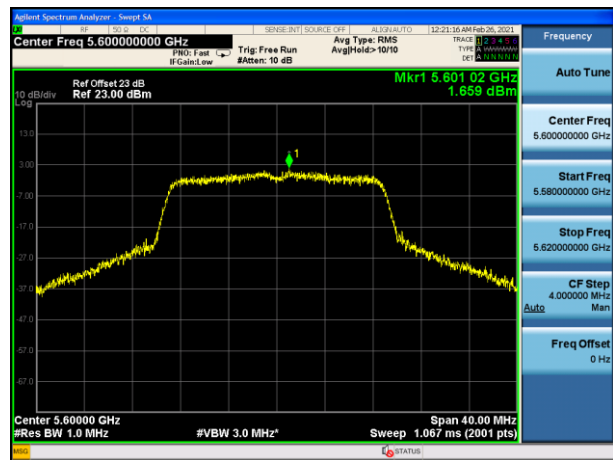
Channel 64 (5320MHz)



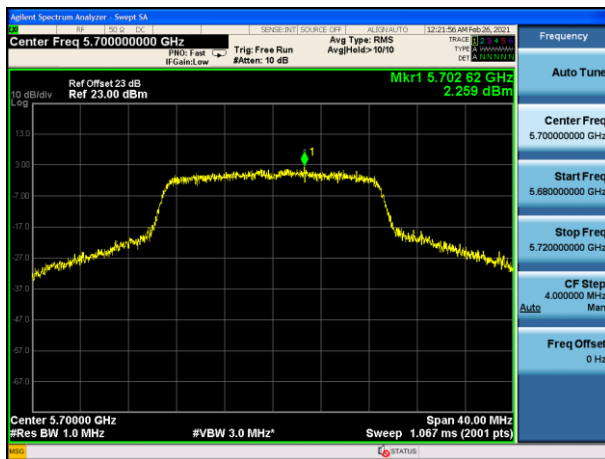
Channel 100 (5500MHz)



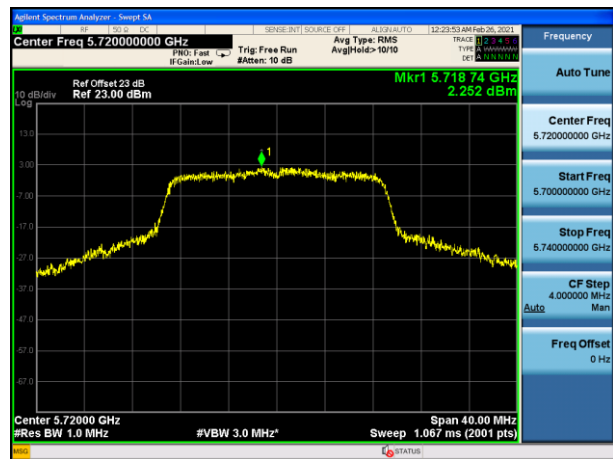
Channel 120 (5600MHz)



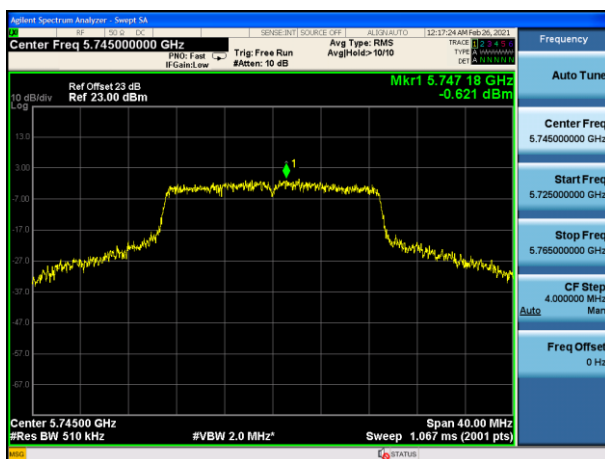
Channel 140 (5700MHz)



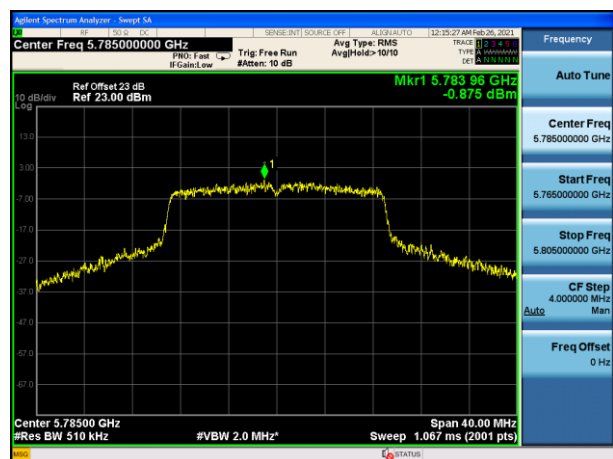
Channel 144 (5720MHz)



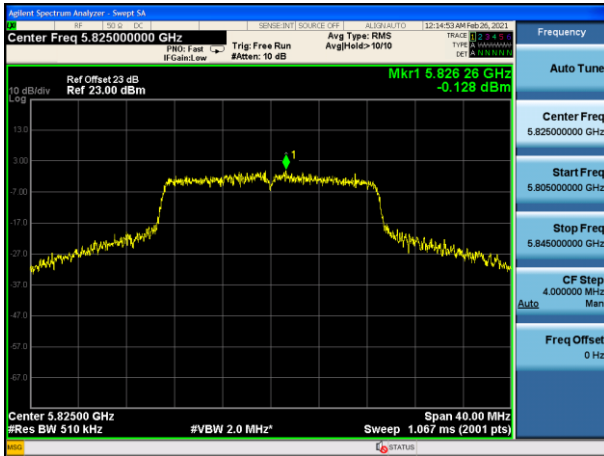
Channel 149 (5745MHz)



Channel 157 (5785MHz)

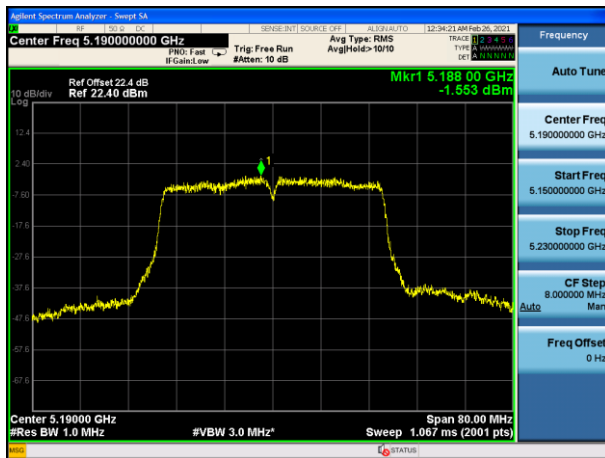


Channel 165 (5825MHz)

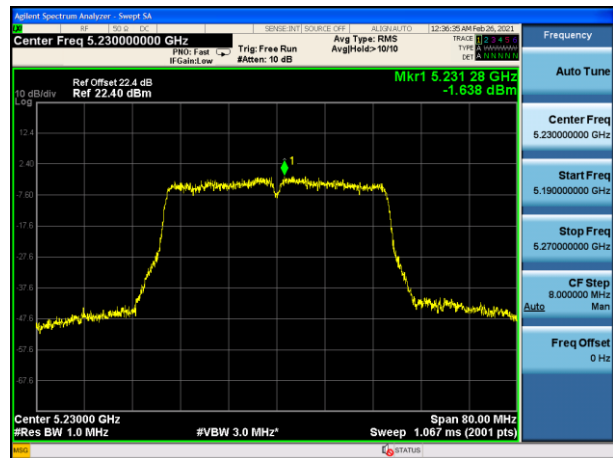


802.11n-HT40 Power Spectral Density - Ant 0

Channel 38 (5190MHz)



Channel 46 (5230MHz)



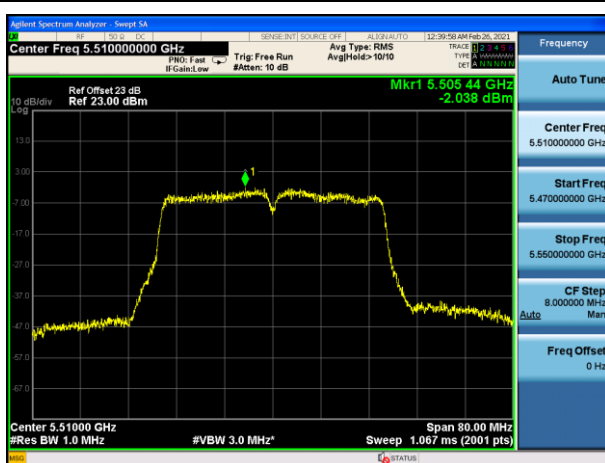
Channel 54 (5270MHz)



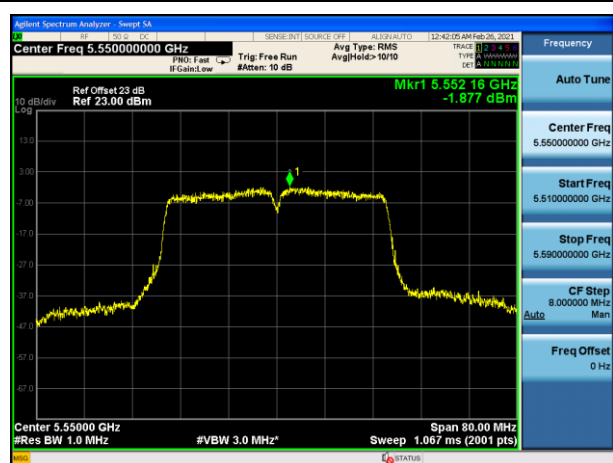
Channel 62 (5310MHz)



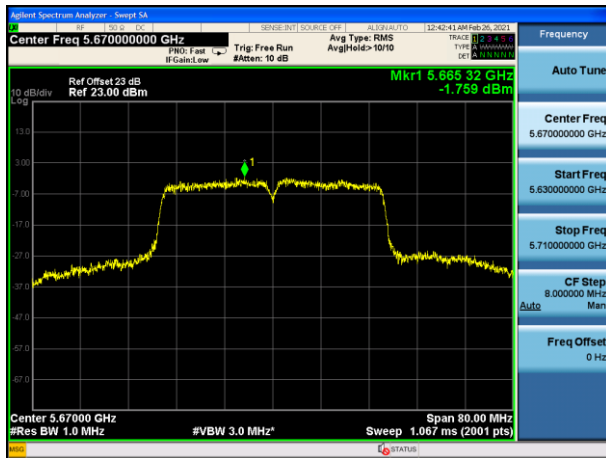
Channel 102 (5510MHz)



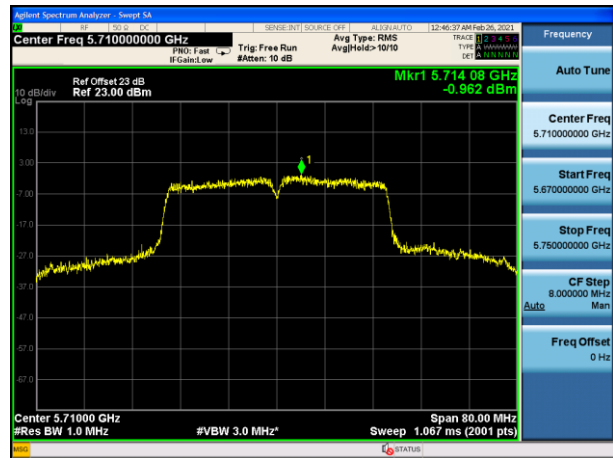
Channel 110 (5550MHz)



Channel 134 (5670MHz)



Channel 142 (5710MHz)



Channel 151 (5755MHz)



Channel 159 (5795MHz)

