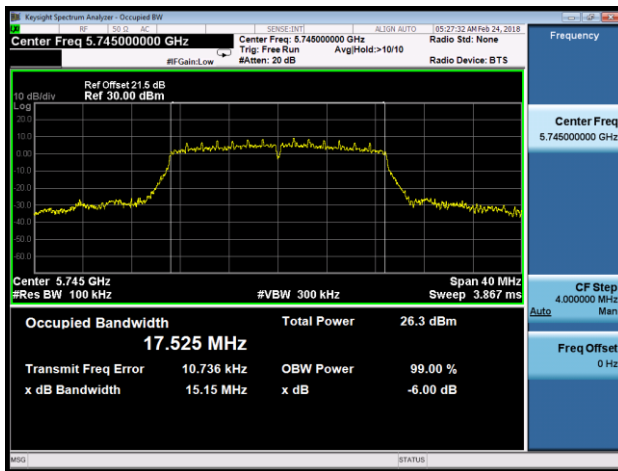
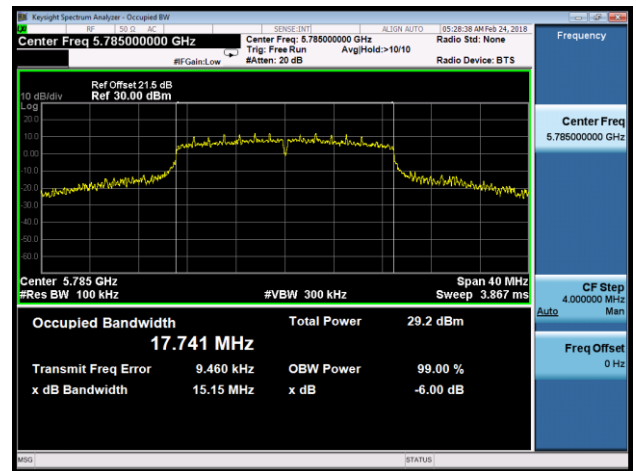


802.11ac-VHT20 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

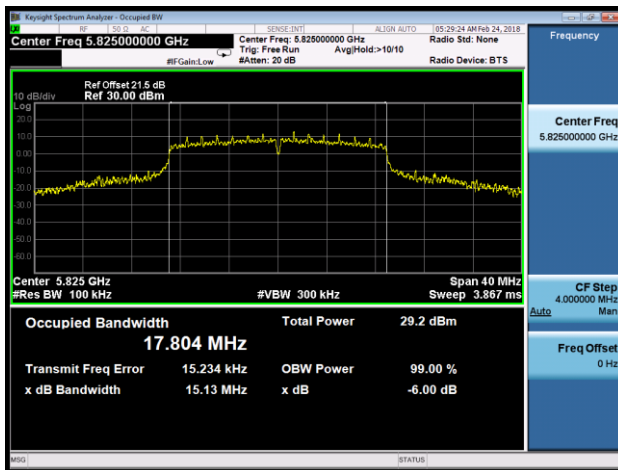
Channel 149 (5745MHz)



Channel 157 (5785MHz)

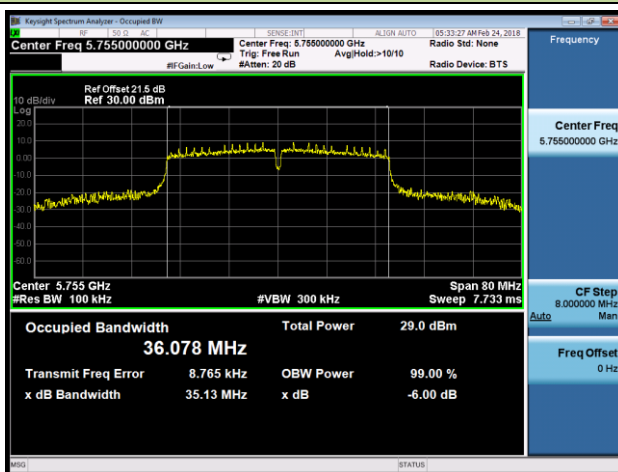


Channel 165 (5825MHz)

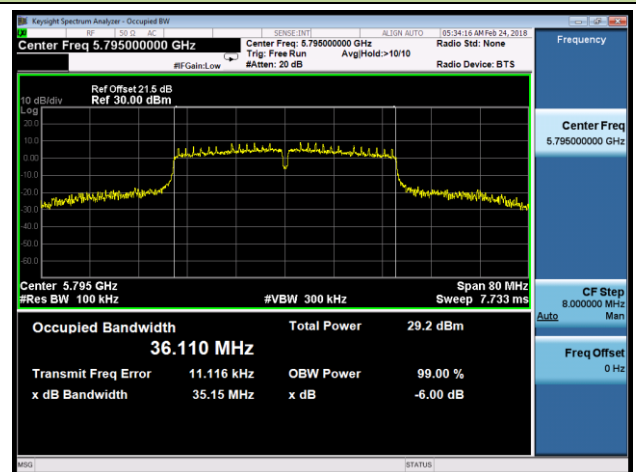


802.11ac-VHT40 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 151 (5755MHz)

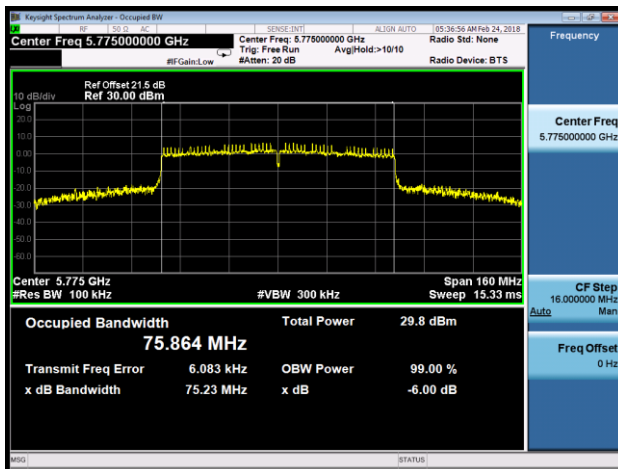


Channel 159 (5795MHz)



802.11ac-VHT80 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 155 (5775MHz)



5.6. 最大功率頻譜密度

5.6.1. 適用標準

依據國家通訊傳播委員會低功率射頻電機技術規範之第4.7.2(1)(2)(3)節

使用於5.15 GHz~5.25 GHz 頻段，供室內操作使用，在任何1 MHz 頻帶中最大功率頻譜密度應小於或等於17 dBm。

使用頻率於5.25 GHz~5.35 GHz 與5.470 GHz~5.725 GHz 頻段，最大功率頻譜密度在任何1 MHz 頻帶中應小於或等於11 dBm。

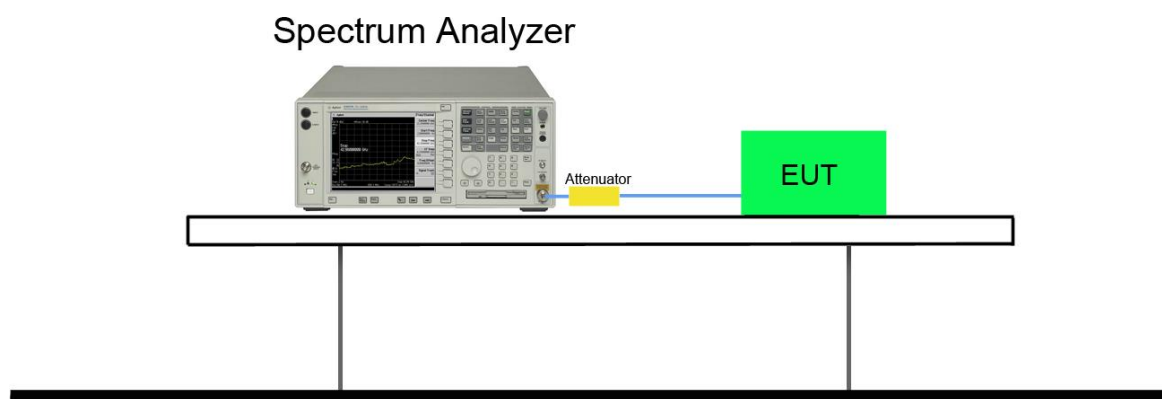
使用頻率於5.725 GHz~5.850 GHz 頻段，在任何500 kHz 頻帶中最大功率頻譜密度應小於或等於30 dBm。

使用超過6 dBi 方向增益之發射天線時，應依超過6 dBi 天線方向增益的dBi 總量，等量減少最大功率頻譜密度。

5.6.2. 量測方法

待測物之天線埠經由適當之衰減直接連至頻譜分析儀RF輸入端，量測定於1MHz/500kHz頻寬。

5.6.3. 測試架構圖



5.6.4. 峰值功率頻譜密度測試結果

Product	AC2300 Wireless MU-MIMO Gigabit Router	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	58%
Test Site	SR2	Test Date	2018/01/24
Test Item	Power Spectral Density (UNII-Band 1)		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/MHz)	Ant 1 PSD (dBm/MHz)	Ant 2 PSD (dBm/MHz)	Ant 3 PSD (dBm/MHz)	Duty Cycle (%)	Total PSD (dBm/MHz)	PSD Limit (dBm/MHz)	Result
Ant 0 + 1 + 2 + 3 (CDD Mode)											
11a	6Mbps	36	5180	9.51	10.05	9.53	9.47	96.14	15.84	≤ 15.98	Pass
11a	6Mbps	44	5220	9.83	9.88	9.28	9.04	96.14	15.71	≤ 15.98	Pass
11a	6Mbps	48	5240	9.56	9.78	9.22	9.19	96.14	15.64	≤ 15.98	Pass
11n-HT20	MCS0	36	5180	9.21	9.95	9.61	9.68	95.88	15.82	≤ 15.98	Pass
11n-HT20	MCS0	44	5220	9.32	9.87	8.95	9.05	95.88	15.52	≤ 15.98	Pass
11n-HT20	MCS0	48	5240	9.52	9.76	9.25	9.31	95.88	15.67	≤ 15.98	Pass
11n-HT40	MCS0	38	5190	6.14	6.63	5.81	6.17	91.72	12.59	≤ 15.98	Pass
11n-HT40	MCS0	46	5230	7.18	6.95	6.39	6.73	91.72	13.22	≤ 15.98	Pass
11ac-VHT20	MCS0	36	5180	8.91	9.57	8.93	9.27	87.74	15.77	≤ 15.98	Pass
11ac-VHT20	MCS0	44	5220	8.67	9.26	8.70	8.67	87.74	15.42	≤ 15.98	Pass
11ac-VHT20	MCS0	48	5240	8.87	9.40	8.96	8.83	87.74	15.61	≤ 15.98	Pass
11ac-VHT40	MCS0	38	5190	6.10	6.07	6.19	6.18	80.21	13.11	≤ 15.98	Pass
11ac-VHT40	MCS0	46	5230	6.21	6.35	6.10	6.81	80.21	13.35	≤ 15.98	Pass
11ac-VHT80	MCS0	42	5210	1.56	2.12	1.72	1.89	86.78	8.46	≤ 15.98	Pass

Note 1: When EUT duty cycle ≥ 98%, the total PSD (dBm/MHz) = $10 \cdot \log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/MHz).

Note 2: When EUT duty cycle < 98%, the total PSD (dBm/MHz) = $10 \cdot \log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/MHz) + $10 \cdot \log(1/\text{Duty Cycle})$.

Note 3: PSD Limit (dBm/MHz) = 17dBm/MHz - (7.02dBi- 6.00dBi) = 15.98dBm/MHz.

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/MHz)	Ant 1 PSD (dBm/MHz)	Ant 2 PSD (dBm/MHz)	Ant 3 PSD (dBm/MHz)	Duty Cycle (%)	Total PSD (dBm/MHz)	PSD Limit (dBm/MHz)	Result
Ant 0 + 1 + 2 + 3 (Beam-Forming Mode)											
11ac-VHT20	MCS0	36	5180	7.08	6.78	6.74	6.81	87.74	13.44	≤ 15.98	Pass
11ac-VHT20	MCS0	44	5220	8.91	8.87	8.24	9.07	87.74	15.37	≤ 15.98	Pass
11ac-VHT20	MCS0	48	5240	9.21	8.81	8.46	9.44	87.74	15.58	≤ 15.98	Pass
11ac-VHT40	MCS0	38	5190	8.40	8.29	8.10	8.49	80.21	15.30	≤ 15.98	Pass
11ac-VHT40	MCS0	46	5230	8.98	8.65	8.43	8.62	80.21	15.65	≤ 15.98	Pass
11ac-VHT80	MCS0	42	5210	1.71	1.59	1.22	1.69	86.78	8.19	≤ 15.98	Pass

Note 1: When EUT duty cycle ≥ 98%, the total PSD (dBm/MHz) = $10 \cdot \log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/MHz).

Note 2: When EUT duty cycle < 98%, the total PSD (dBm/MHz) = $10 \cdot \log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/MHz) + $10 \cdot \log(1/\text{Duty Cycle})$.

Note 3: PSD Limit (dBm/MHz) = 17dBm/MHz - (7.02dBi- 6.00dBi) = 15.98dBm/MHz.

Product	AC2300 Wireless MU-MIMO Gigabit Router	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	58%
Test Site	SR2	Test Date	2018/01/24
Test Item	Power Spectral Density (UNII-Band 3)		

Test Mode	Data Rate/MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/100kHz)	Ant 1 PSD (dBm/100kHz)	Ant 2 PSD (dBm/100kHz)	Ant 3 PSD (dBm/100kHz)	Duty Cycle (%)	Constant Factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
Ant 0 + 1 + 2 + 3 (CDD Mode)												
11a	6Mbps	149	5745	3.36	3.00	2.55	1.98	96.14	6.99	15.93	≤ 28.98	Pass
11a	6Mbps	157	5785	3.28	3.42	3.24	2.84	96.14	6.99	16.38	≤ 28.98	Pass
11a	6Mbps	165	5825	3.57	3.43	2.94	2.49	96.14	6.99	16.31	≤ 28.98	Pass
11n-HT20	MCS0	149	5745	2.64	3.61	2.54	3.43	95.88	6.99	16.27	≤ 28.98	Pass
11n-HT20	MCS0	157	5785	3.81	3.83	3.16	2.85	95.88	6.99	16.63	≤ 28.98	Pass
11n-HT20	MCS0	165	5825	3.07	3.53	2.93	3.50	95.88	6.99	16.46	≤ 28.98	Pass
11n-HT40	MCS0	151	5755	0.03	0.04	-0.58	-1.48	91.72	6.99	12.93	≤ 28.98	Pass
11n-HT40	MCS0	159	5795	-0.31	-0.11	-0.74	-0.19	91.72	6.99	13.06	≤ 28.98	Pass
11ac-VHT20	MCS0	149	5745	0.75	0.78	0.42	0.35	87.74	6.99	14.16	≤ 28.98	Pass
11ac-VHT20	MCS0	157	5785	4.79	4.85	4.17	3.87	87.74	6.99	18.02	≤ 28.98	Pass
11ac-VHT20	MCS0	165	5825	3.68	3.83	4.11	3.74	87.74	6.99	17.42	≤ 28.98	Pass
11ac-VHT40	MCS0	151	5755	1.26	1.02	0.76	0.18	80.21	6.99	14.79	≤ 28.98	Pass
11ac-VHT40	MCS0	159	5795	0.61	1.16	0.11	1.04	80.21	6.99	14.72	≤ 28.98	Pass
11ac-VHT80	MCS0	155	5775	-2.67	-3.06	-3.06	-3.72	86.78	6.99	10.52	≤ 28.98	Pass

Note 1: When EUT duty cycle ≥ 98%, the total PSD (dBm/500KHz) = $10 \cdot \log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100KHz) + Constant Factor.

Note 2: When EUT duty cycle < 98%, the total PSD (dBm/500KHz) = $10 \cdot \log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100KHz) + Constant Factor + $10 \cdot \log(1/\text{Duty Cycle})$.

Note 3: PSD Limit (dBm/500kHz) = 30dBm/500kHz - (7.02dBi - 6dBi) = 28.98dBm/500kHz.

Test Mode	Data Rate/MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/100kHz)	Ant 1 PSD (dBm/100kHz)	Ant 2 PSD (dBm/100kHz)	Ant 3 PSD (dBm/100kHz)	Duty Cycle (%)	Constant Factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
Ant 0 + 1 + 2 + 3 (Beam-Forming Mode)												
11ac-VHT20	MCS0	149	5745	2.97	3.66	3.11	2.82	87.74	6.99	16.73	≤ 28.98	Pass
11ac-VHT20	MCS0	157	5785	3.11	3.77	3.03	3.05	87.74	6.99	16.83	≤ 28.98	Pass
11ac-VHT20	MCS0	165	5825	2.83	3.55	2.76	3.28	87.74	6.99	16.70	≤ 28.98	Pass
11ac-VHT40	MCS0	151	5755	-0.04	0.09	0.67	-0.15	80.21	6.99	14.12	≤ 28.98	Pass
11ac-VHT40	MCS0	159	5795	0.21	-0.12	-0.15	-0.63	80.21	6.99	13.81	≤ 28.98	Pass
11ac-VHT80	MCS0	155	5775	-5.31	-4.59	-4.8	-4.64	86.78	6.99	8.80	≤ 28.98	Pass

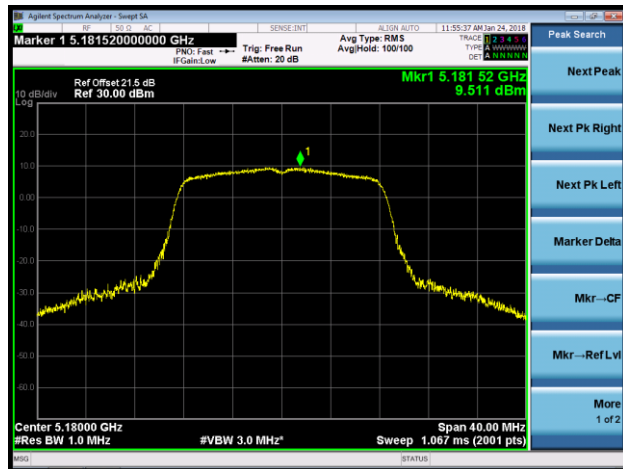
Note 1: When EUT duty cycle ≥ 98%, the total PSD (dBm/500KHz) = $10 \cdot \log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100KHz) + Constant Factor.

Note 2: When EUT duty cycle < 98%, the total PSD (dBm/500KHz) = $10 \cdot \log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)} + 10^{(\text{Ant 3 PSD}/10)}\}$ (dBm/100KHz) + Constant Factor + $10 \cdot \log(1/\text{Duty Cycle})$.

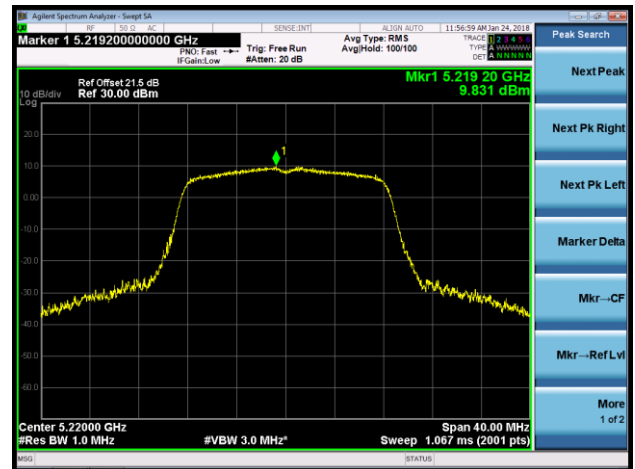
Note 3: PSD Limit (dBm/500kHz) = 30dBm/500kHz - (7.02dBi - 6dBi) = 28.98dBm/500kHz.

802.11a Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

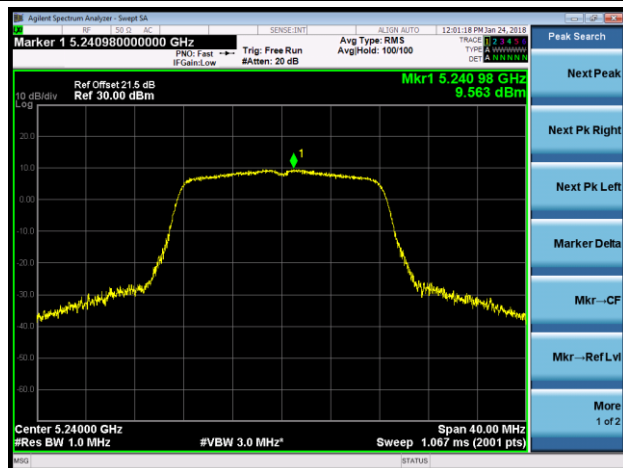
Channel 36 (5180MHz)



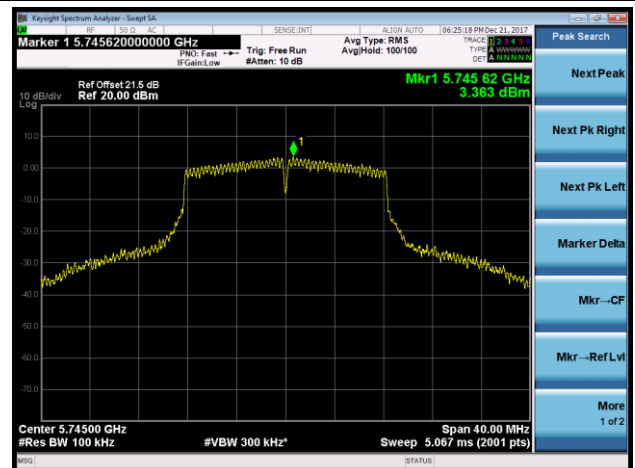
Channel 44 (5220MHz)



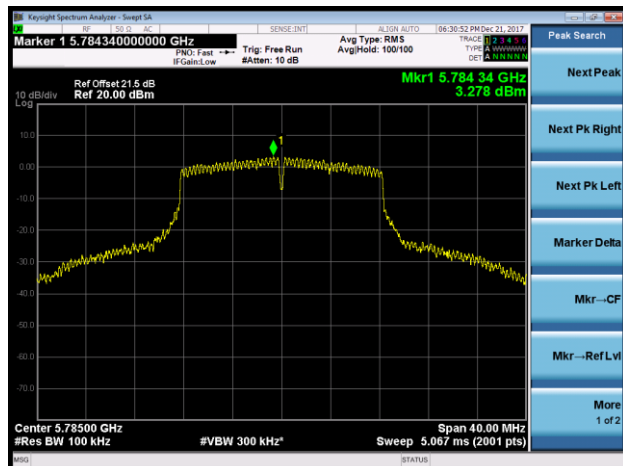
Channel 48 (5240MHz)



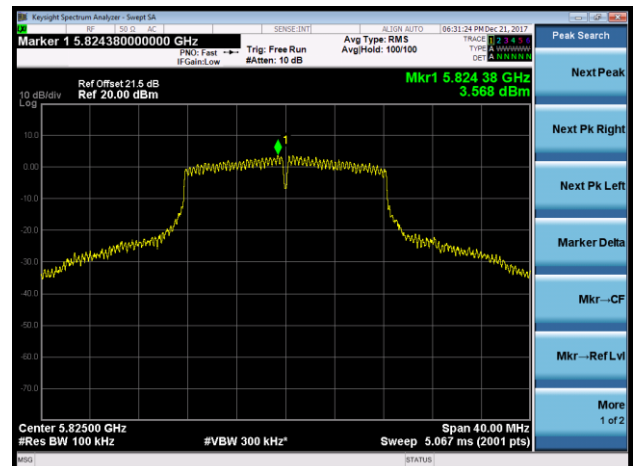
Channel 149 (5745MHz)



Channel 157 (5785MHz)

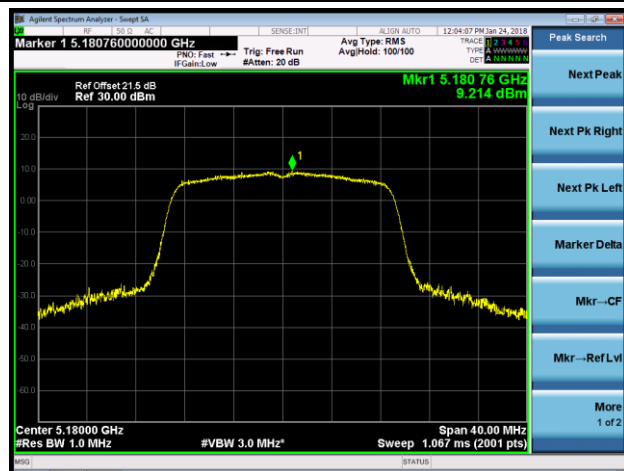


Channel 165 (5825MHz)

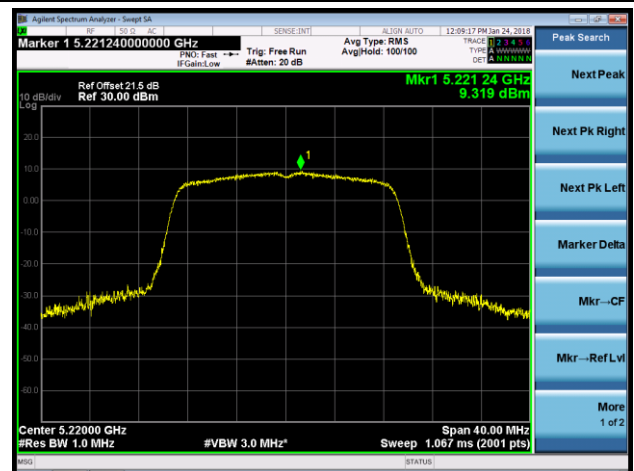


802.11n-HT20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

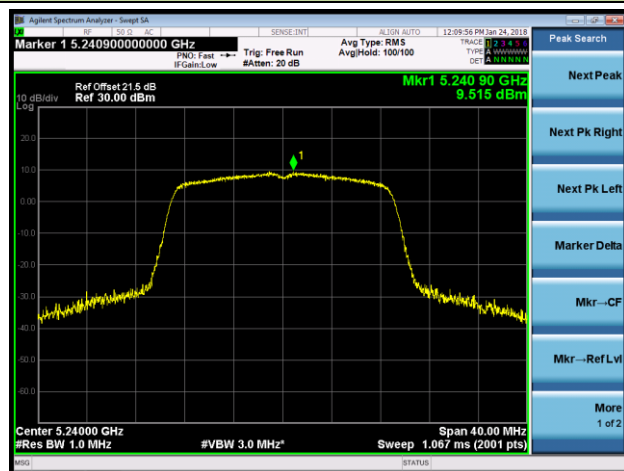
Channel 36 (5180MHz)



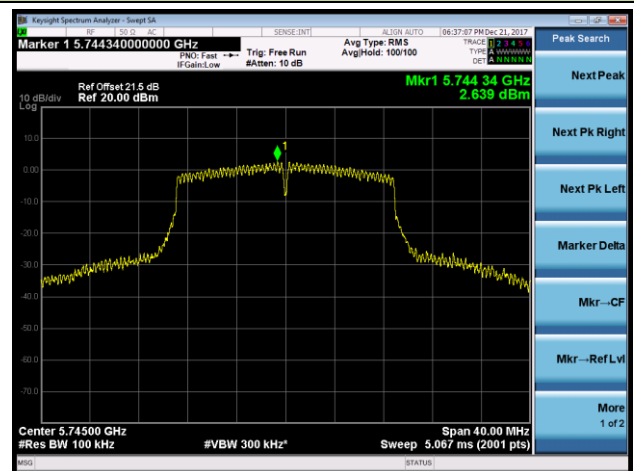
Channel 44 (5220MHz)



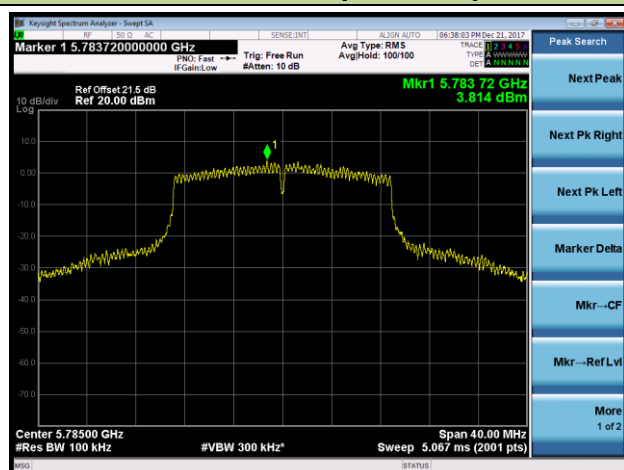
Channel 48 (5240MHz)



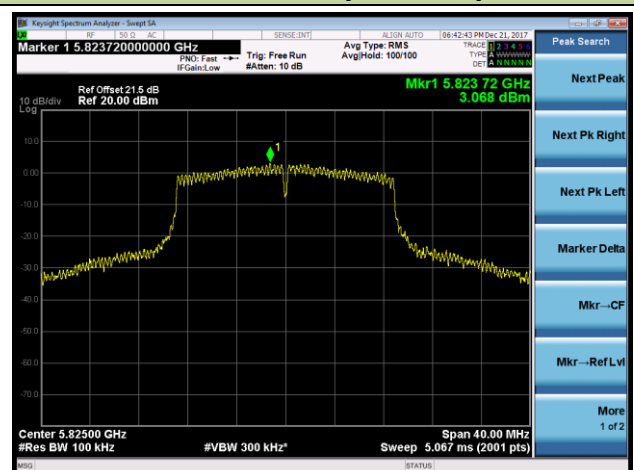
Channel 149 (5745MHz)



Channel 157 (5785MHz)

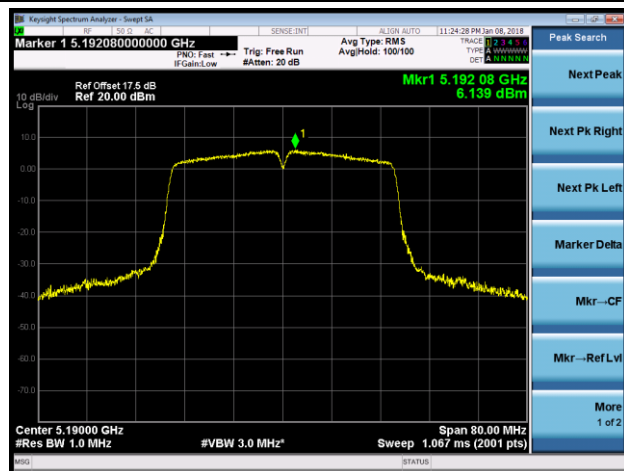


Channel 165 (5825MHz)

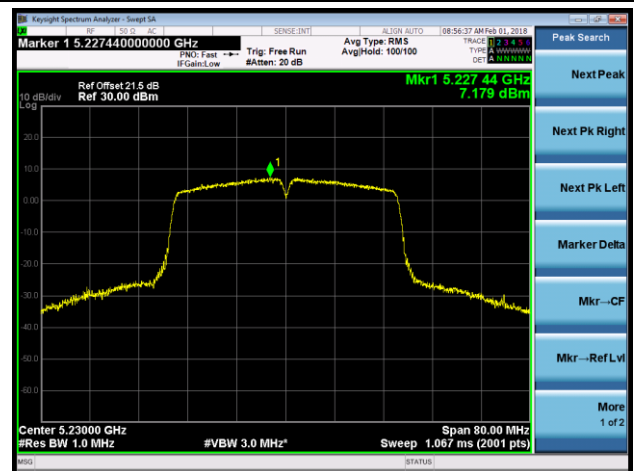


802.11n-HT40 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

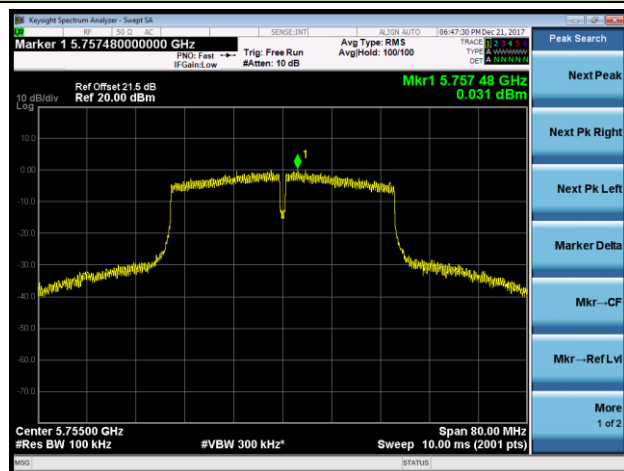
Channel 38 (5190MHz)



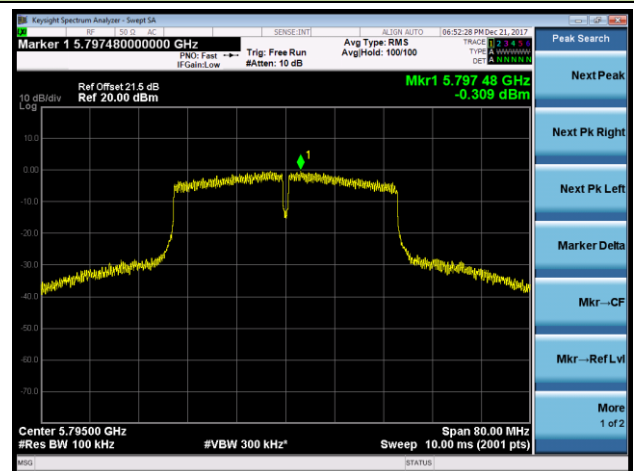
Channel 46 (5230MHz)



Channel 151 (5755MHz)

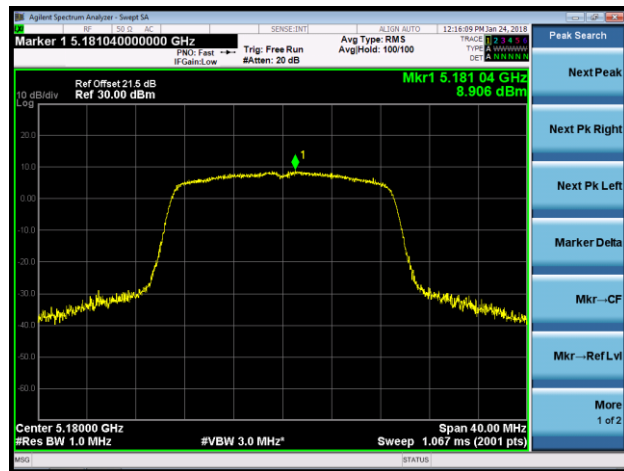


Channel 159 (5795MHz)

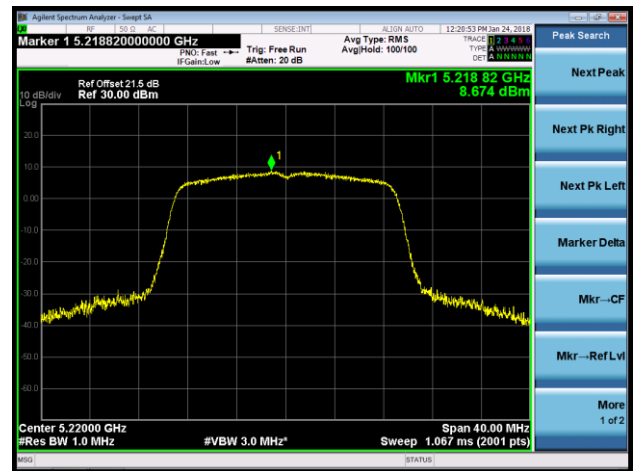


802.11ac-VHT20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

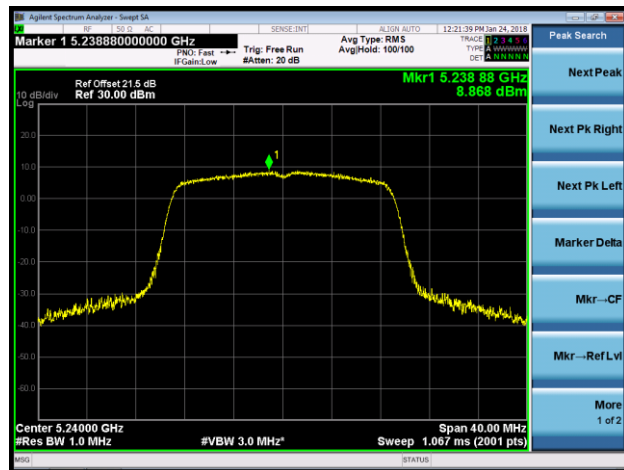
Channel 36 (5180MHz)



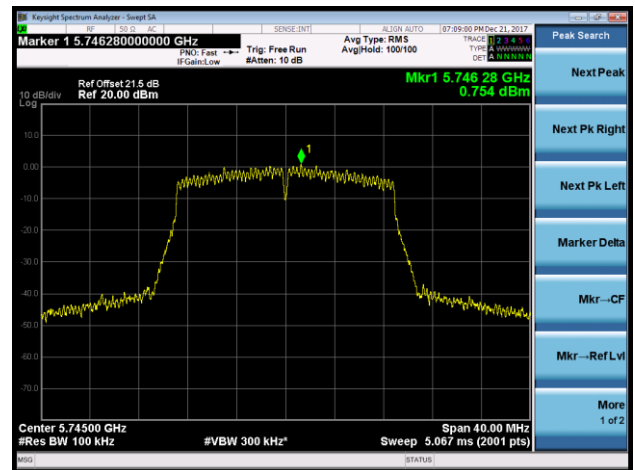
Channel 44 (5220MHz)



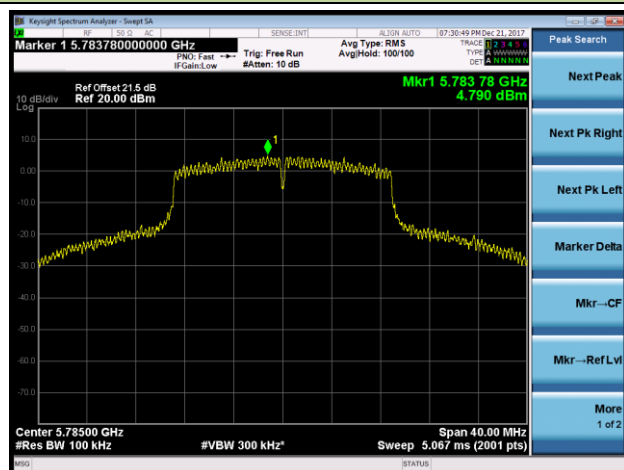
Channel 48 (5240MHz)



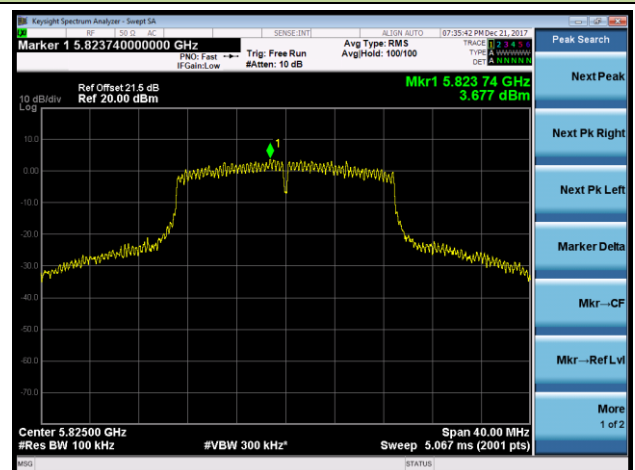
Channel 149 (5745MHz)



Channel 157 (5785MHz)

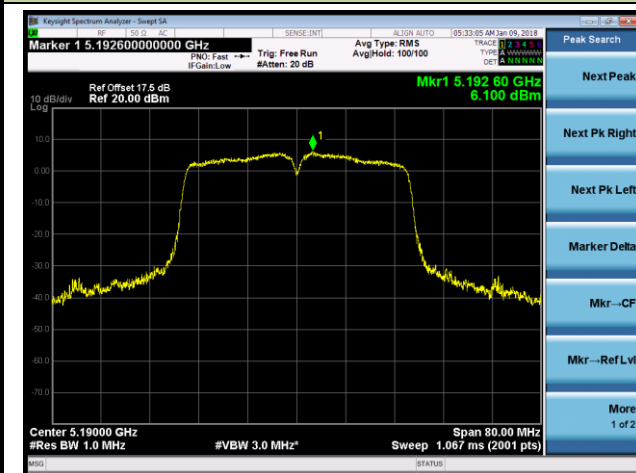


Channel 165 (5825MHz)

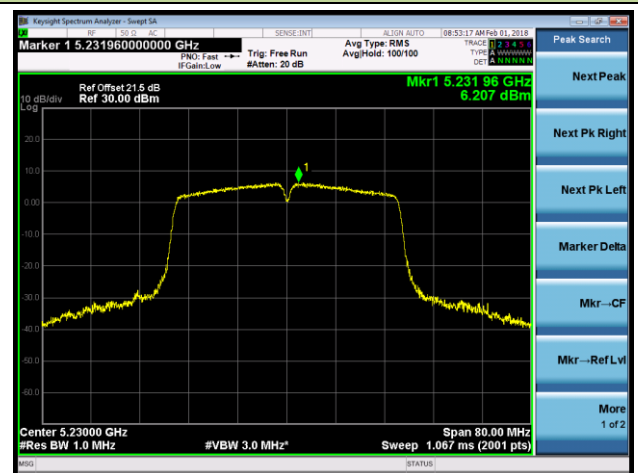


802.11ac-VHT40 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

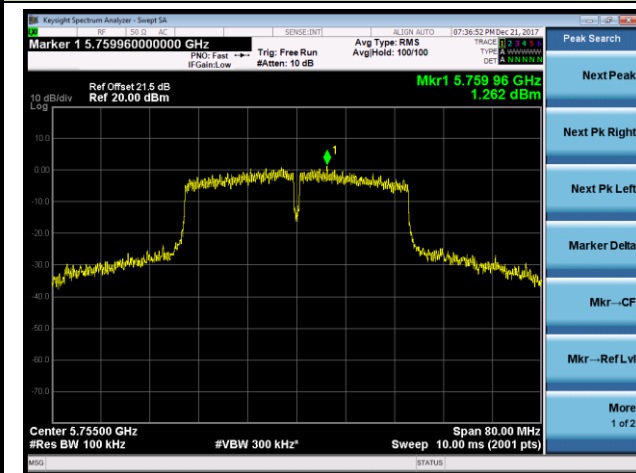
Channel 38 (5190MHz)



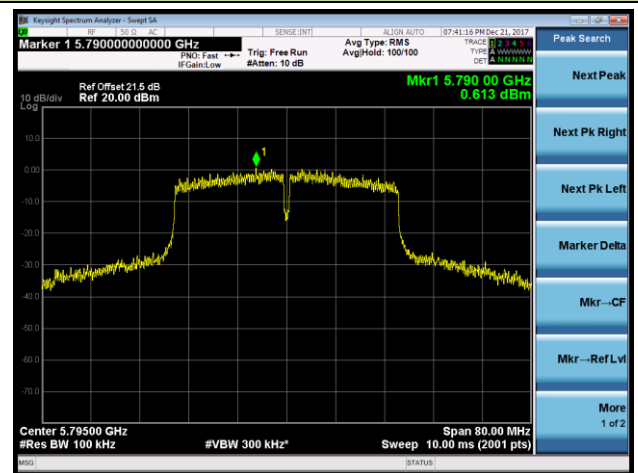
Channel 46 (5230MHz)



Channel 151 (5755MHz)

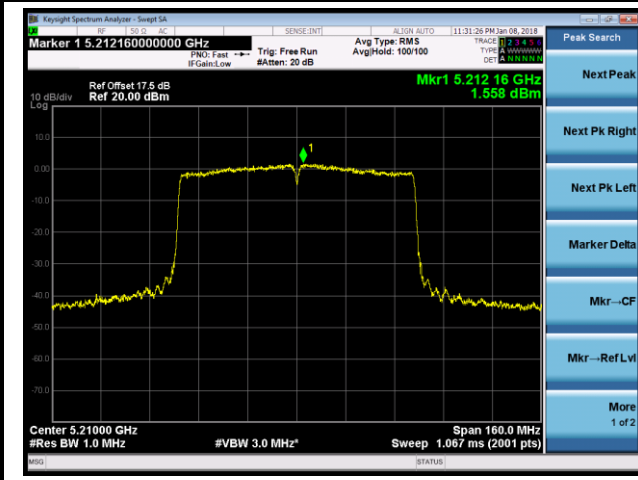


Channel 159 (5795MHz)

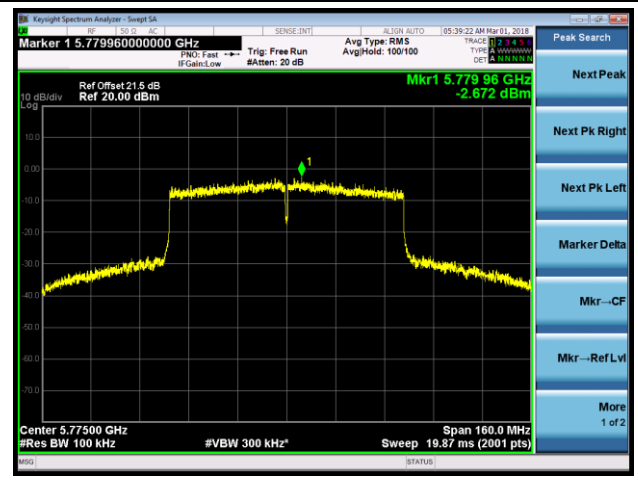


802.11ac-VHT80 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

Channel 42 (5210MHz)

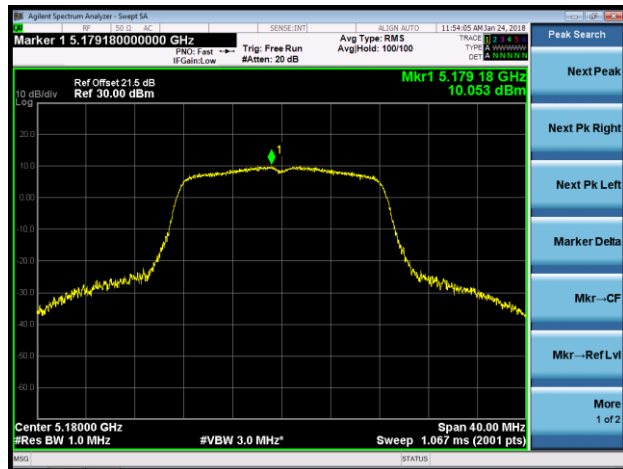


Channel 155 (5775MHz)

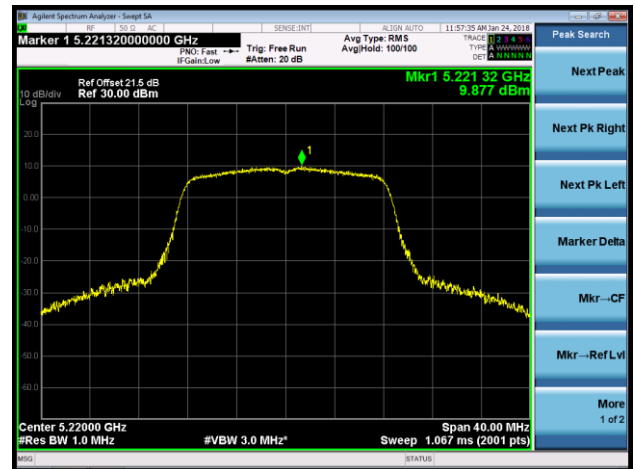


802.11a Power Spectral Density - Ant 1 / Ant 0 + 1 + 2 + 3 (CDD Mode)

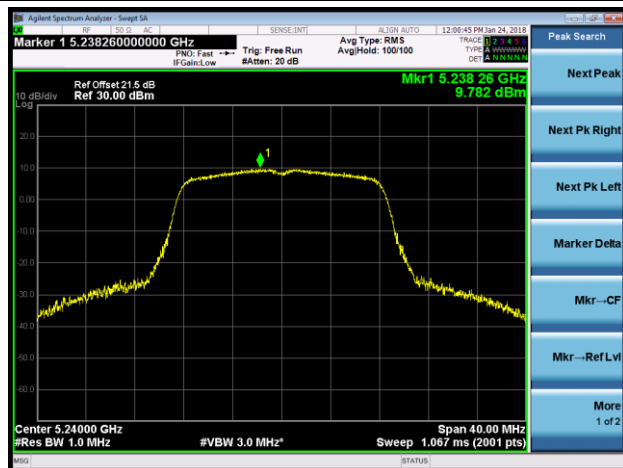
Channel 36 (5180MHz)



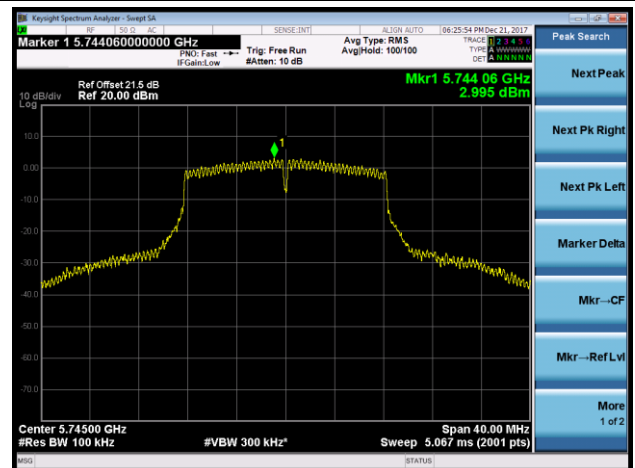
Channel 44 (5220MHz)



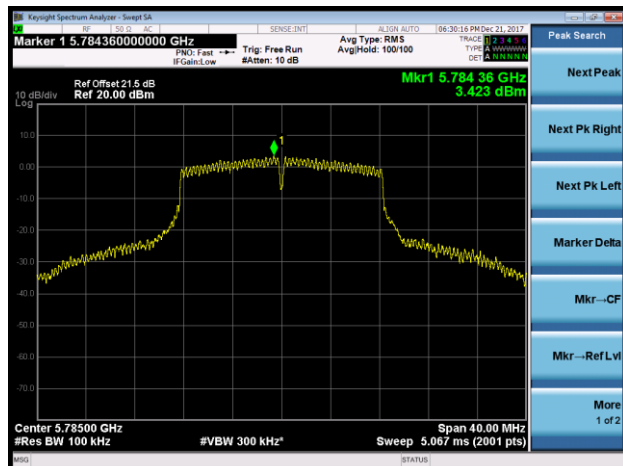
Channel 48 (5240MHz)



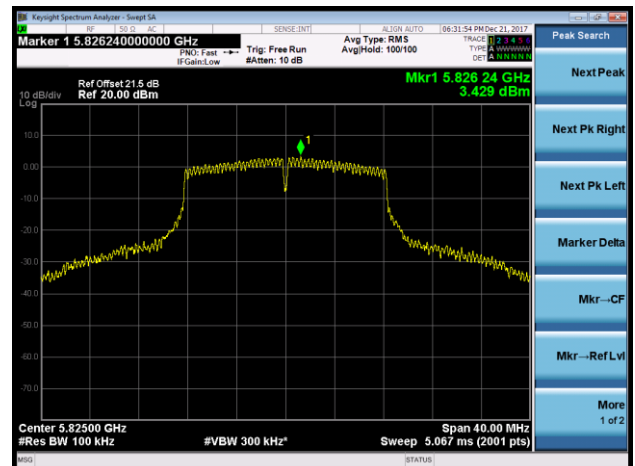
Channel 149 (5745MHz)



Channel 157 (5785MHz)

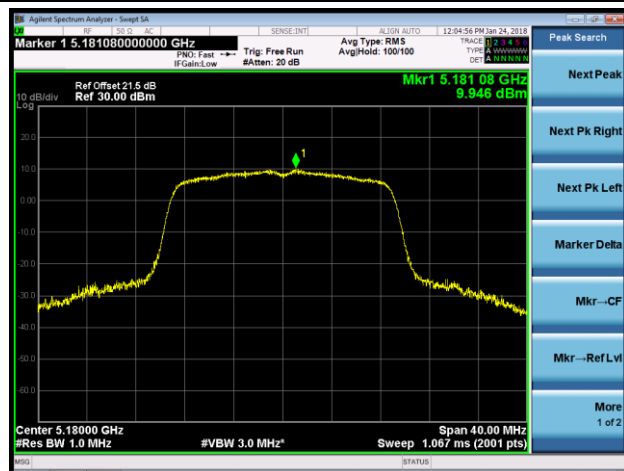


Channel 165 (5825MHz)

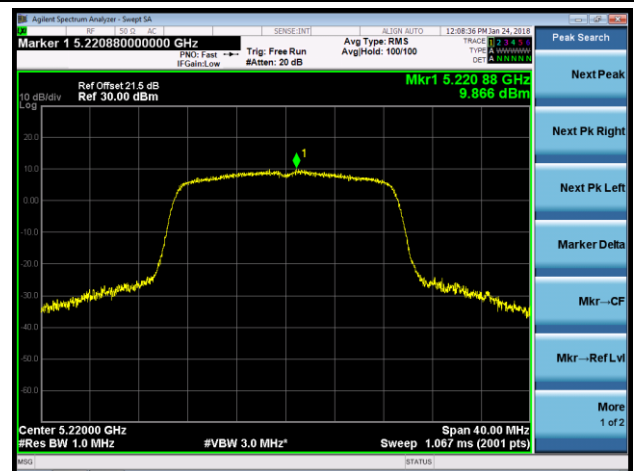


802.11n-HT20 Power Spectral Density - Ant 1 / Ant 0 + 1 + 2 + 3 (CDD Mode)

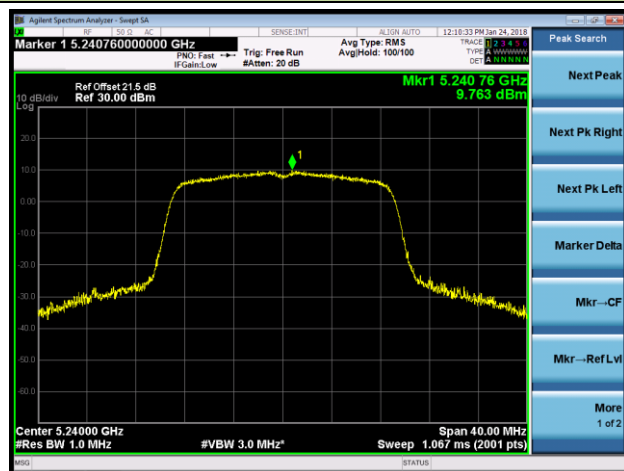
Channel 36 (5180MHz)



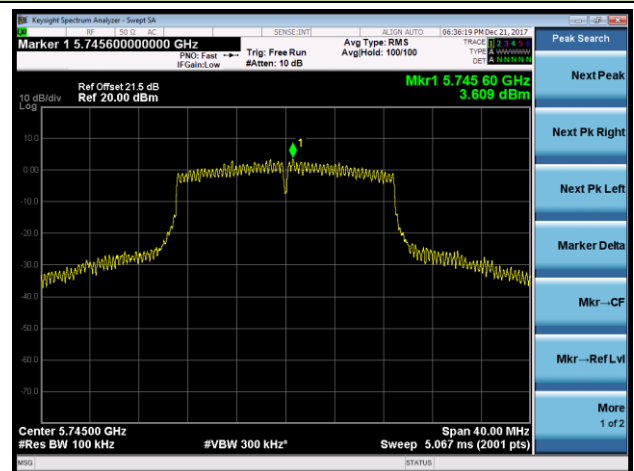
Channel 44 (5220MHz)



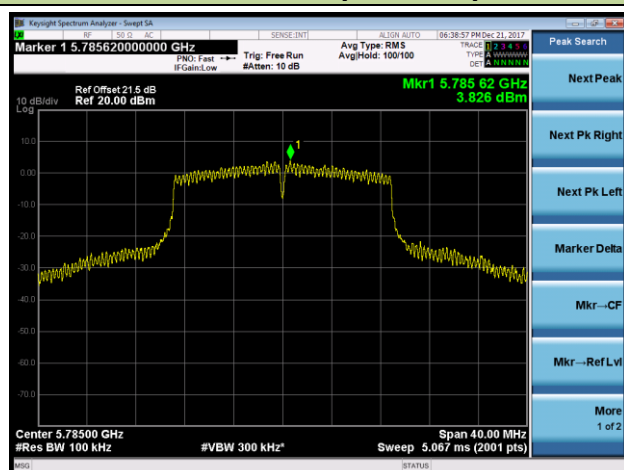
Channel 48 (5240MHz)



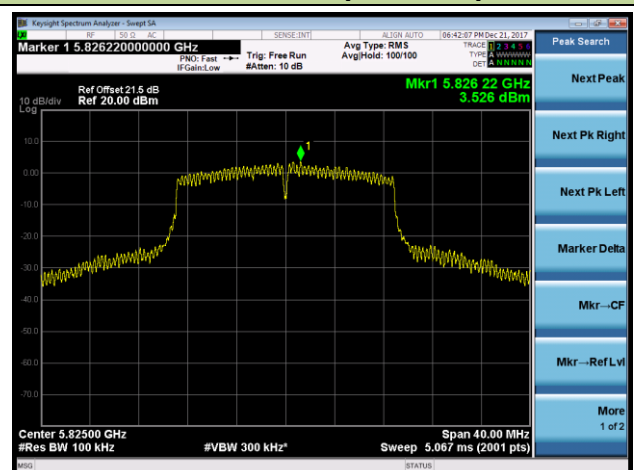
Channel 149 (5745MHz)



Channel 157 (5785MHz)

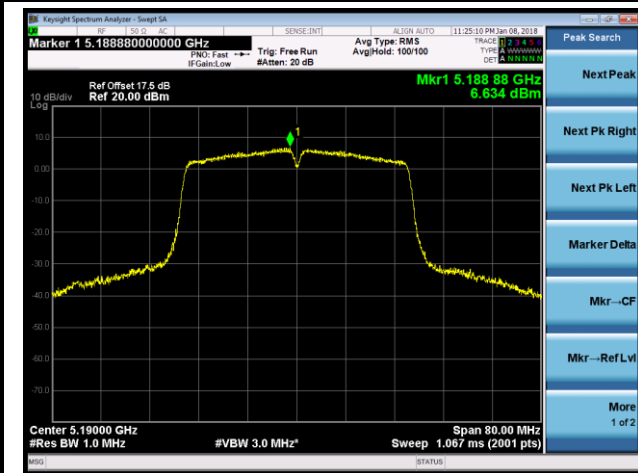


Channel 165 (5825MHz)



802.11n-HT40 Power Spectral Density - Ant 1 / Ant 0 + 1 + 2 + 3 (CDD Mode)

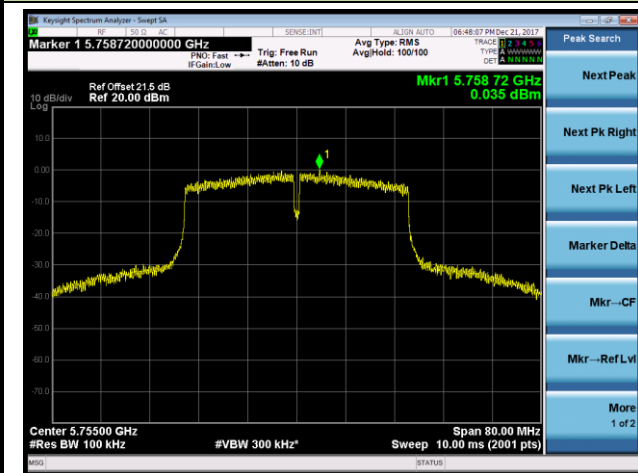
Channel 38 (5190MHz)



Channel 46 (5230MHz)



Channel 151 (5755MHz)



Channel 159 (5795MHz)

