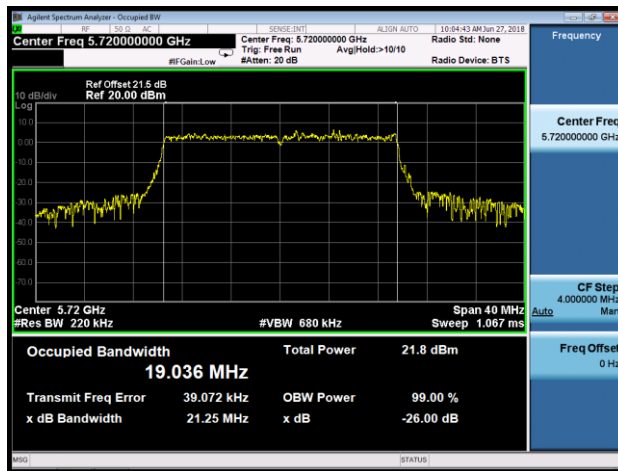


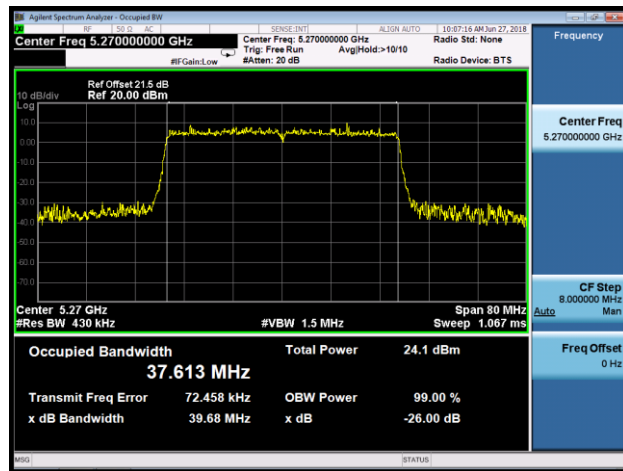
802.11ax-HE20 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 144 (5720MHz)

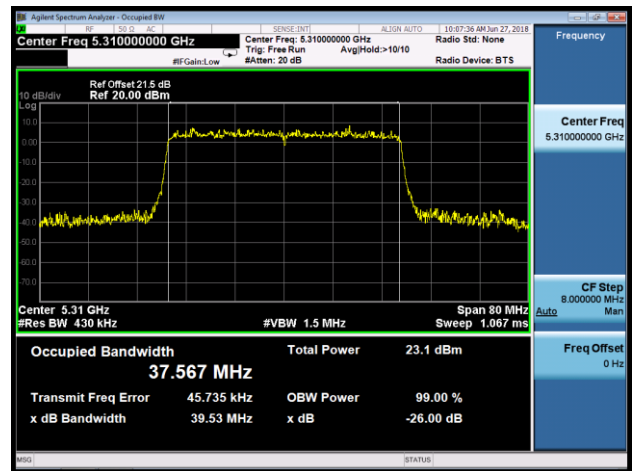


802.11ax-HE40 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

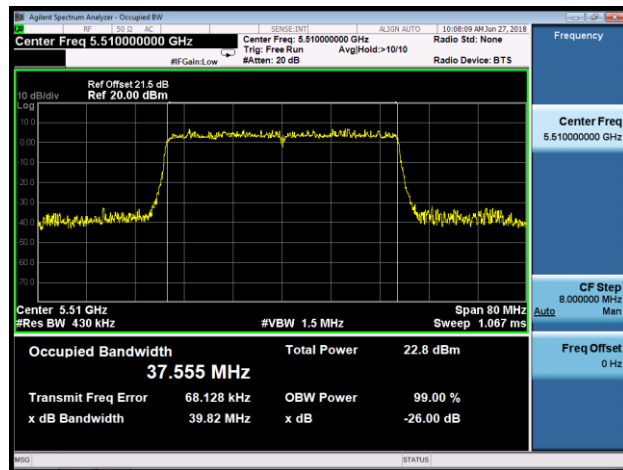
Channel 54 (5270MHz)



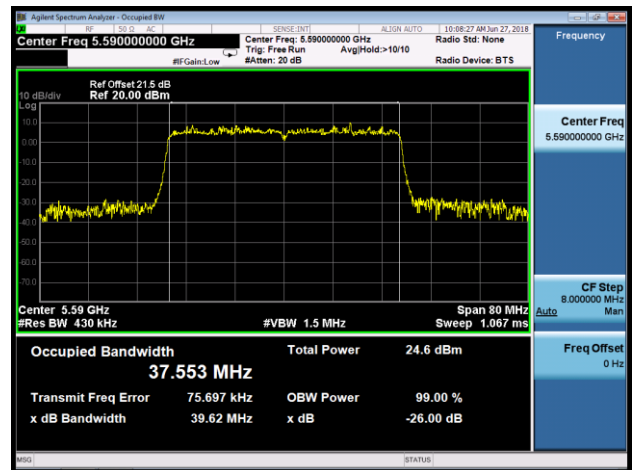
Channel 62 (5310MHz)



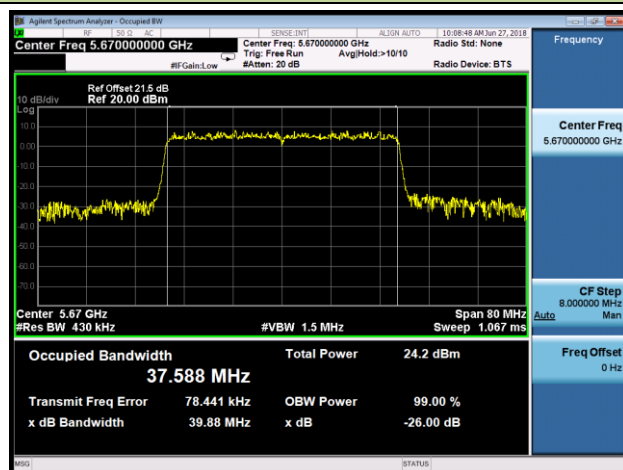
Channel 102 (5510MHz)



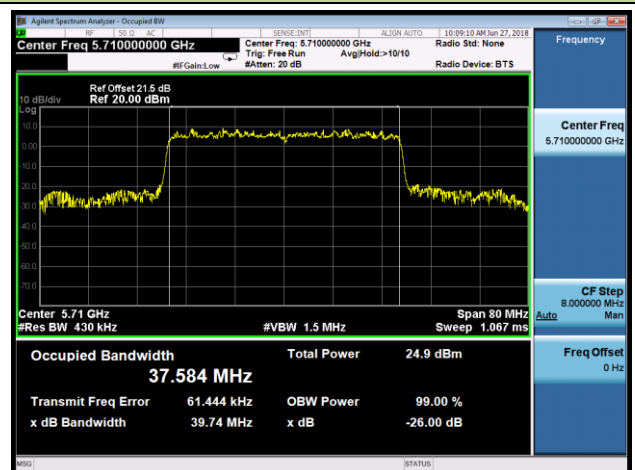
Channel 118 (5590MHz)



Channel 134 (5670MHz)

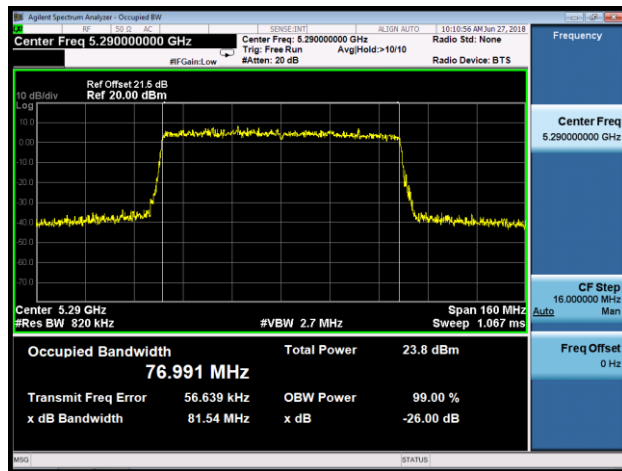


Channel 142 (5710MHz)

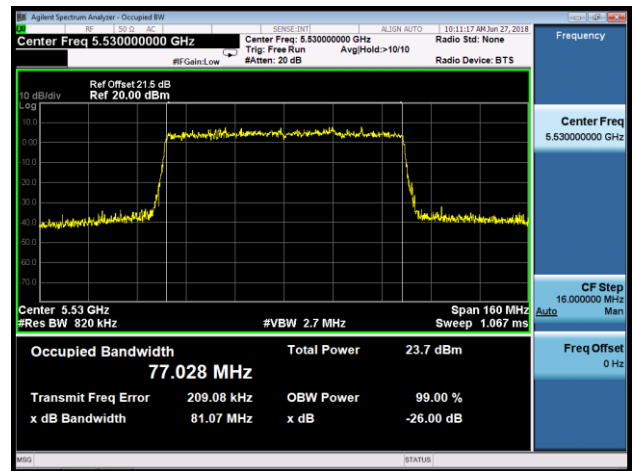


802.11ax-HE80 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

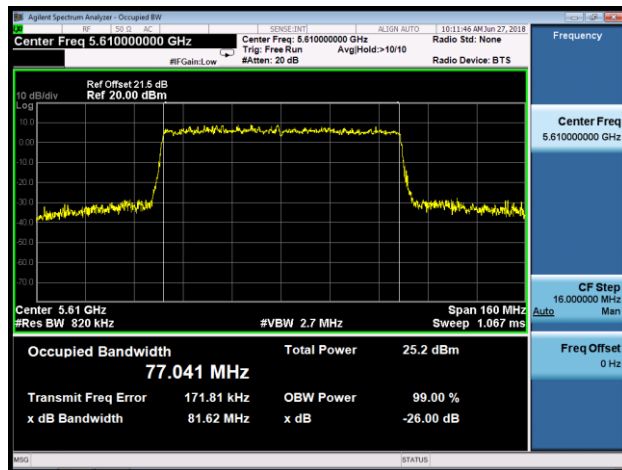
Channel 58 (5290MHz)



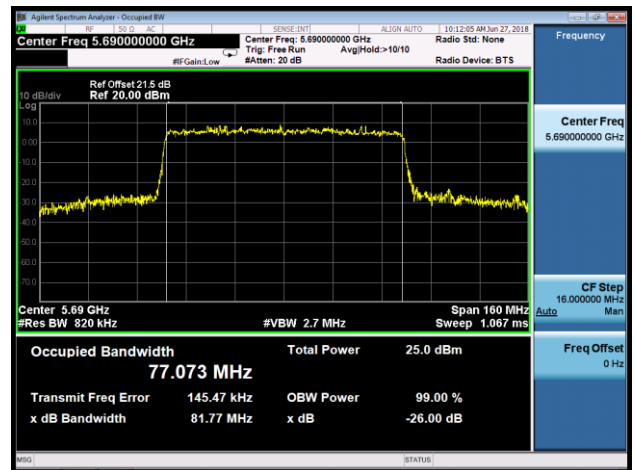
Channel 106 (5530MHz)



Channel 122 (5610MHz)

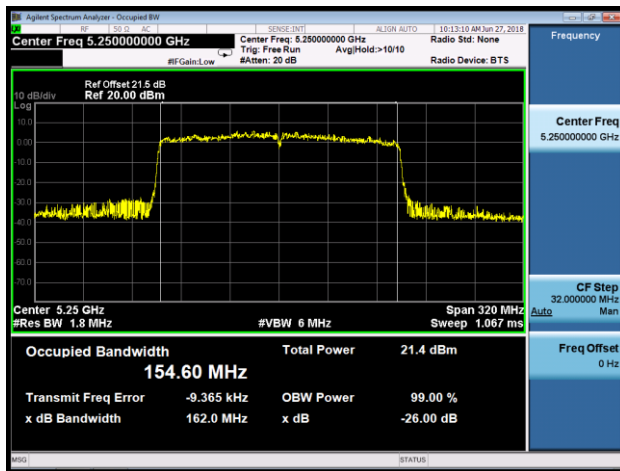


Channel 138 (5690MHz)

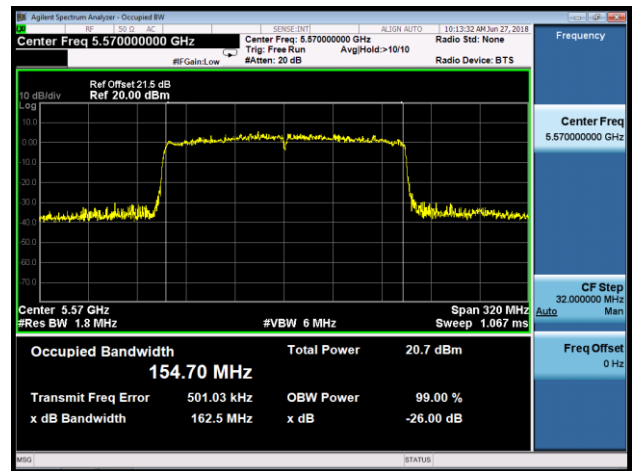


802.11ax-HE160 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 50 (5250MHz)



Channel 114 (5570MHz)



7.3. Output Power Measurement

7.3.1. Test Limit

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 or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz.

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.

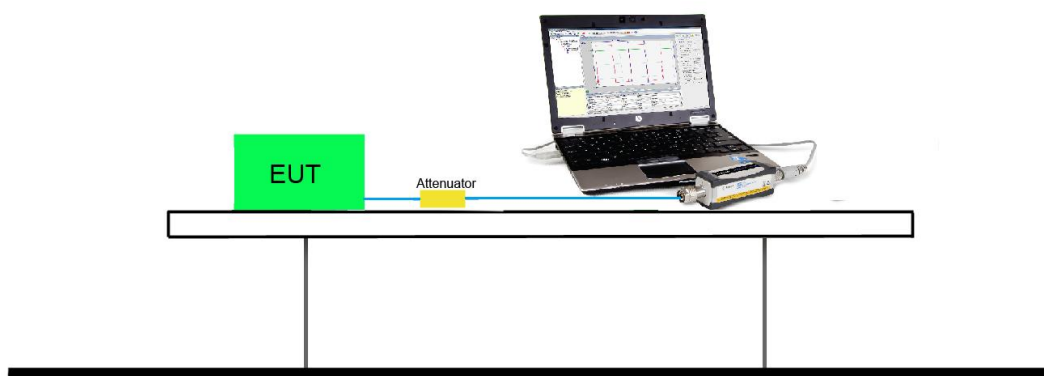
7.3.2. Test Procedure Used

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

7.3.3. 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.

7.3.4. Test Setup



7.3.5.Test Result

Power output test was verified over all data rates of each mode shown as below table, and then choose the maximum power output (yellow marker) for final test of each channel.

For Ant 2 / Ant 0 + 1 + 2 + 3 port of APIN0514:

Test Mode	Bandwidth	Channel	Frequency (MHz)	Data Rate/ MCS	Average Power (dBm)
802.11a	20	64	5320	6Mbps	13.73
				24Mbps	13.67
				54Mbps	13.59
802.11ac	20	64	5320	MCS0	14.14
				MCS4	14.06
				MCS8	13.95
802.11ac	40	62	5310	MCS0	16.83
				MCS4	16.76
				MCS9	16.58
802.11ac	80	58	5290	MCS0	15.69
				MCS4	15.61
				MCS9	15.54
802.11ac	160	50	5250	MCS0	12.44
				MCS4	12.38
				MCS9	12.31
802.11ax	20	64	5320	MCS0	14.45
				MCS5	14.37
				MCS11	14.27
802.11ax	40	62	5310	MCS0	15.34
				MCS5	15.26
				MCS11	15.18
802.11ax	80	58	5290	MCS0	15.72
				MCS5	15.67
				MCS11	15.57
802.11ax	160	50	5250	MCS0	8.64
				MCS5	8.31
				MCS11	8.13

Product	ACCESS POINT	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	59%
Test Site	SR1	Test Date	2018/06/20
Model No.	APIN0514	Test Item	Output Power

Test Mode	Data Rate/ MCS	Ch. No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
802.11a	6Mbps	52	5260	12.85	13.36	13.61	13.01	19.24	≤ 23.98	Pass
802.11a	6Mbps	60	5300	13.04	13.36	13.72	12.98	19.31	≤ 23.98	Pass
802.11a	6Mbps	64	5320	13.13	13.44	13.73	13.23	19.41	≤ 23.98	Pass
802.11a	6Mbps	100	5500	13.08	13.49	13.66	12.97	19.33	≤ 23.98	Pass
802.11a	6Mbps	120	5600	12.62	13.44	13.20	12.86	19.06	≤ 23.98	Pass
802.11a	6Mbps	140	5700	13.36	14.45	13.67	13.79	19.86	≤ 23.98	Pass
802.11a	6Mbps	144	5720	13.27	14.31	13.63	13.61	19.74	≤ 22.95	Pass
802.11ac-VHT20	MCS0	52	5260	13.46	14.00	14.34	13.63	19.89	≤ 23.98	Pass
802.11ac-VHT20	MCS0	60	5300	13.44	13.93	14.04	13.43	19.74	≤ 23.98	Pass
802.11ac-VHT20	MCS0	64	5320	13.54	13.89	14.14	13.62	19.82	≤ 23.98	Pass
802.11ac-VHT20	MCS0	100	5500	13.43	13.73	14.05	13.30	19.66	≤ 23.98	Pass
802.11ac-VHT20	MCS0	120	5600	13.08	13.89	13.44	13.46	19.50	≤ 23.98	Pass
802.11ac-VHT20	MCS0	140	5700	13.53	14.58	13.87	13.90	20.01	≤ 23.98	Pass
802.11ac-VHT20	MCS0	144	5720	13.50	14.62	13.93	13.91	20.03	≤ 22.95	Pass
802.11ac-VHT40	MCS0	54	5270	16.18	16.10	16.81	16.11	22.33	≤ 23.98	Pass
802.11ac-VHT40	MCS0	62	5310	16.31	16.57	16.83	16.31	22.53	≤ 23.98	Pass
802.11ac-VHT40	MCS0	102	5510	15.81	16.38	16.44	15.96	22.18	≤ 23.98	Pass
802.11ac-VHT40	MCS0	118	5590	15.97	16.68	16.48	15.91	22.29	≤ 23.98	Pass
802.11ac-VHT40	MCS0	134	5670	16.63	17.28	16.68	16.41	22.78	≤ 23.98	Pass
802.11ac-VHT40	MCS0	142	5710	16.26	17.15	16.52	16.34	22.60	≤ 23.98	Pass
802.11ac-VHT80	MCS0	58	5290	15.39	15.10	15.69	14.95	21.31	≤ 23.98	Pass
802.11ac-VHT80	MCS0	106	5530	12.82	12.87	13.26	12.42	18.87	≤ 23.98	Pass
802.11ac-VHT80	MCS0	122	5610	16.13	16.35	16.43	16.32	22.33	≤ 23.98	Pass
802.11ac-VHT80	MCS0	138	5690	16.28	16.41	16.33	16.09	22.30	≤ 23.98	Pass

Test Mode	Data Rate/ MCS	Ch. No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
802.11ax-HE20	MCS0	52	5260	13.52	14.02	14.36	13.68	19.93	≤ 23.98	Pass
802.11ax-HE20	MCS0	60	5300	13.66	14.13	14.37	13.89	20.04	≤ 23.98	Pass
802.11ax-HE20	MCS0	64	5320	13.69	14.06	14.45	13.79	20.03	≤ 23.98	Pass
802.11ax-HE20	MCS0	100	5500	13.86	14.00	14.24	13.47	19.92	≤ 23.98	Pass
802.11ax-HE20	MCS0	120	5600	13.23	14.15	13.76	13.68	19.74	≤ 23.98	Pass
802.11ax-HE20	MCS0	140	5700	13.87	14.85	14.25	14.17	20.32	≤ 23.98	Pass
802.11ax-HE20	MCS0	144	5720	13.72	14.75	14.15	14.20	20.24	≤ 22.94	Pass
802.11ax-HE40	MCS0	54	5270	16.29	16.55	16.64	16.34	22.48	≤ 23.98	Pass
802.11ax-HE40	MCS0	62	5310	15.06	14.95	15.34	15.10	21.14	≤ 23.98	Pass
802.11ax-HE40	MCS0	102	5510	14.13	14.32	14.41	14.01	20.24	≤ 23.98	Pass
802.11ax-HE40	MCS0	118	5590	15.79	16.07	16.01	15.83	21.95	≤ 23.98	Pass
802.11ax-HE40	MCS0	134	5670	16.88	17.10	16.60	16.51	22.80	≤ 23.98	Pass
802.11ax-HE40	MCS0	142	5710	16.54	16.72	16.53	16.35	22.56	≤ 23.98	Pass
802.11ax-HE80	MCS0	58	5290	15.42	15.45	15.72	15.17	21.46	≤ 23.98	Pass
802.11ax-HE80	MCS0	106	5530	14.47	14.44	15.12	14.41	20.64	≤ 23.98	Pass
802.11ax-HE80	MCS0	122	5610	16.25	16.37	16.22	16.33	22.31	≤ 23.98	Pass
802.11ax-HE80	MCS0	138	5690	17.35	17.66	17.51	17.36	23.49	≤ 23.98	Pass

Test Mode	Data Rate/ MCS	Ch. No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
802.11ac-VHT160 Straddle 5.15-5.25GHz	MCS0	50	5250	8.64	9.39	9.14	8.88	15.04	≤ 30.00	Pass
802.11ac-VHT160 Straddle 5.25-5.35GHz	MCS0	50	5250	7.87	8.30	9.04	7.83	14.31	≤ 23.98	Pass
11ac-VHT160	MCS0	50	5250	--	--	--	--	17.70	--	--
Note: The total power was calculated through formula and recorded the value for reference only.										
802.11ax-HE160 Straddle 5.15-5.25GHz	MCS0	50	5250	9.05	9.52	9.54	9.10	15.33	≤ 30.00	Pass
802.11ax-HE160 Straddle 5.25-5.35GHz	MCS0	50	5250	8.22	8.64	9.26	8.15	14.61	≤ 23.98	Pass
802.11ax-HE160	MCS0	50	5250	--	--	--	--	18.00	--	--
Note: The total power was calculated through formula and recorded the value for reference only.										

Note 1: Total Average Power (dBm) = $10 \cdot \log \{ 10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)} + 10^{(\text{Ant 2 Average Power} / 10)} + 10^{(\text{Ant 3 Average Power} / 10)} \}$.

Note 2: Average Power Limit Calculation as below:

For BW = 160MHz, Channel 50 Straddle 5.15-5.25GHz, Limit = 30.00dBm.

For 5250 - 5350MHz, 5470 - 5725MHz, Limit = 23.98dBm.

Note 3: For straddle channel 20MHz Bandwidth 5720MHz, the conducted power limit is as below:

$$802.11a = 11 + 10 \cdot \log(B) = 22.95, B = 21.37/2 + 5 = 15.69\text{MHz},$$

$$802.11ac-VHT20 = 11 + 10 \cdot \log(B) = 22.95, B = 21.34/2 + 5 = 15.67\text{MHz},$$

$$802.11ax-HE20 = 11 + 10 \cdot \log(B) = 22.94, B = 21.25/2 + 5 = 15.63\text{MHz}.$$

Note 4: For channel 5250MHz, testing was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

Product	ACCESS POINT	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	59%
Test Site	SR1	Test Date	2018/06/20
Model No.	APIN0515	Test Item	Output Power

Test Mode	Data Rate/ MCS	Ch. No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
802.11a	6Mbps	52	5260	10.93	10.88	10.97	10.71	16.89	≤ 23.98	Pass
802.11a	6Mbps	60	5300	10.75	10.60	10.93	10.79	16.79	≤ 23.98	Pass
802.11a	6Mbps	64	5320	10.78	10.73	11.05	10.68	16.83	≤ 23.98	Pass
802.11a	6Mbps	100	5500	10.52	10.77	10.33	10.74	16.61	≤ 23.98	Pass
802.11a	6Mbps	120	5600	10.69	10.63	10.97	10.50	16.72	≤ 23.98	Pass
802.11a	6Mbps	140	5700	11.02	11.41	11.37	11.24	17.28	≤ 23.98	Pass
802.11a	6Mbps	144	5720	10.90	11.18	11.41	11.10	17.17	≤ 22.95	Pass
802.11ac-VHT20	MCS0	52	5260	10.61	10.99	11.06	10.83	16.90	≤ 23.98	Pass
802.11ac-VHT20	MCS0	60	5300	11.05	11.13	11.35	11.07	17.17	≤ 23.98	Pass
802.11ac-VHT20	MCS0	64	5320	11.11	11.05	11.44	11.13	17.21	≤ 23.98	Pass
802.11ac-VHT20	MCS0	100	5500	10.76	10.88	10.99	11.00	16.93	≤ 23.98	Pass
802.11ac-VHT20	MCS0	120	5600	10.83	11.21	11.49	10.81	17.11	≤ 23.98	Pass
802.11ac-VHT20	MCS0	140	5700	10.12	11.70	10.60	11.46	17.04	≤ 23.98	Pass
802.11ac-VHT20	MCS0	144	5720	11.29	11.53	11.86	11.38	17.54	≤ 22.95	Pass
802.11ac-VHT40	MCS0	54	5270	13.28	13.45	13.64	13.45	19.48	≤ 23.98	Pass
802.11ac-VHT40	MCS0	62	5310	13.87	13.75	14.16	13.83	19.93	≤ 23.98	Pass
802.11ac-VHT40	MCS0	102	5510	13.41	13.55	13.68	13.31	19.51	≤ 23.98	Pass
802.11ac-VHT40	MCS0	118	5590	13.09	13.61	13.67	13.49	19.49	≤ 23.98	Pass
802.11ac-VHT40	MCS0	134	5670	14.13	14.47	14.26	14.22	20.29	≤ 23.98	Pass
802.11ac-VHT40	MCS0	142	5710	14.30	14.40	14.13	14.18	20.27	≤ 23.98	Pass
802.11ac-VHT80	MCS0	58	5290	16.08	16.03	16.31	16.21	22.18	≤ 23.98	Pass
802.11ac-VHT80	MCS0	106	5530	14.02	14.20	13.80	13.62	19.94	≤ 23.98	Pass
802.11ac-VHT80	MCS0	122	5610	16.56	16.62	15.85	16.18	22.33	≤ 23.98	Pass
802.11ac-VHT80	MCS0	138	5690	17.19	17.11	16.74	16.92	23.01	≤ 23.98	Pass

Test Mode	Data Rate/ MCS	Ch. No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 + 2 + 3										
802.11ax-HE20	MCS0	52	5260	11.34	11.41	11.02	11.18	17.26	≤ 23.98	Pass
802.11ax-HE20	MCS0	60	5300	11.54	11.42	11.75	11.25	17.51	≤ 23.98	Pass
802.11ax-HE20	MCS0	64	5320	11.49	11.43	11.79	11.42	17.56	≤ 23.98	Pass
802.11ax-HE20	MCS0	100	5500	11.38	11.54	11.39	11.56	17.49	≤ 23.98	Pass
802.11ax-HE20	MCS0	120	5600	11.13	11.35	11.66	11.24	17.37	≤ 23.98	Pass
802.11ax-HE20	MCS0	140	5700	11.85	12.11	11.93	11.81	17.95	≤ 23.98	Pass
802.11ax-HE20	MCS0	144	5720	11.65	11.88	12.01	11.78	17.85	≤ 22.94	Pass
802.11ax-HE40	MCS0	54	5270	14.26	14.19	14.50	14.00	20.26	≤ 23.98	Pass
802.11ax-HE40	MCS0	62	5310	14.32	14.23	14.65	14.16	20.36	≤ 23.98	Pass
802.11ax-HE40	MCS0	102	5510	14.07	14.32	14.48	14.11	20.27	≤ 23.98	Pass
802.11ax-HE40	MCS0	118	5590	14.93	14.29	14.37	14.06	20.45	≤ 23.98	Pass
802.11ax-HE40	MCS0	134	5670	14.60	14.87	14.56	14.61	20.68	≤ 23.98	Pass
802.11ax-HE40	MCS0	142	5710	14.59	14.73	14.69	14.67	20.69	≤ 23.98	Pass
802.11ax-HE80	MCS0	58	5290	17.03	16.35	16.34	16.31	22.54	≤ 23.98	Pass
802.11ax-HE80	MCS0	106	5530	14.85	15.03	14.82	14.91	20.92	≤ 23.98	Pass
802.11ax-HE80	MCS0	122	5610	16.93	17.08	16.54	16.98	22.91	≤ 23.98	Pass
802.11ax-HE80	MCS0	138	5690	17.42	17.21	16.81	17.22	23.19	≤ 23.98	Pass

Test Mode	Data Rate/ MCS	Ch. No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Ant 3 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
802.11ac-VHT160 Straddle 5.15-5.25GHz	MCS0	50	5250	11.43	11.42	11.00	11.71	17.42	≤ 30.00	Pass
802.11ac-VHT160 Straddle 5.25-5.35GHz	MCS0	50	5250	10.16	9.85	10.57	10.43	16.28	≤ 23.98	Pass
11ac-VHT160	MCS0	50	5250	--	--	--	--	19.90	--	--
Note: The total power was calculated through formula and recorded the value for reference only.										
802.11ax-HE160 Straddle 5.15-5.25GHz	MCS0	50	5250	11.31	11.17	10.92	11.34	17.21	≤ 30.00	Pass
802.11ax-HE160 Straddle 5.25-5.35GHz	MCS0	50	5250	10.18	9.79	10.60	10.23	16.23	≤ 23.98	Pass
802.11ax-HE160	MCS0	50	5250	--	--	--	--	19.76	--	--
Note: The total power was calculated through formula and recorded the value for reference only.										

Note 1: Total Average Power (dBm) = $10 \cdot \log \{ 10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)} + 10^{(\text{Ant 2 Average Power} / 10)} + 10^{(\text{Ant 3 Average Power} / 10)} \}$.

Note 2: Average Power Limit Calculation as below:

For BW = 160MHz, Channel 50 Straddle 5.15-5.25GHz, Limit = 30.00dBm.

For 5250 - 5350MHz, 5470 - 5725MHz, Limit = 23.98dBm.

Note 3: For straddle channel 20MHz Bandwidth 5720MHz, the conducted power limit is as below:

802.11a = $11 + 10 \cdot \log(B)$ = 22.95, B = 21.37/2 + 5 = 15.69MHz,

802.11ac-VHT20 = $11 + 10 \cdot \log(B)$ = 22.95, B = 21.34/2 + 5 = 15.67MHz,

802.11ax-HE20 = $11 + 10 \cdot \log(B)$ = 22.94, B = 21.25/2 + 5 = 15.63MHz.

Note 4: For channel 5250MHz, testing was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

7.4. Transmit Power Control

7.4.1. 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.

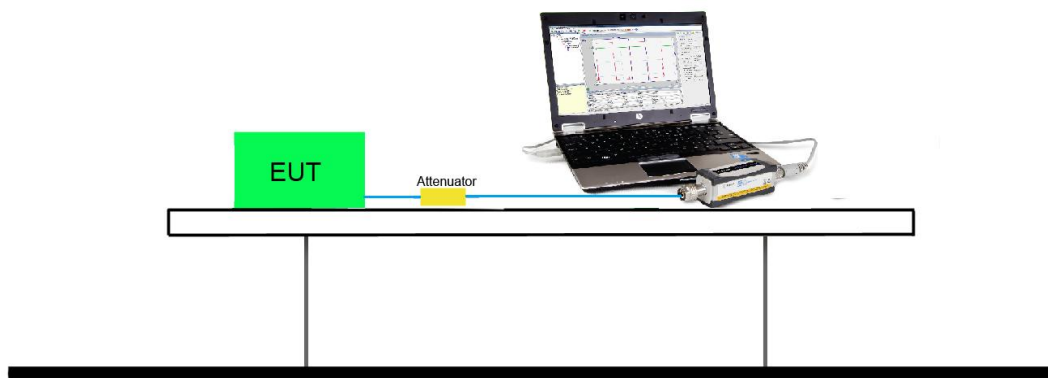
7.4.2. Test Procedure Used

KDB 789033 D02v01- 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

It gets addressed in the operational description.

7.5. Power Spectral Density Measurement

7.5.1. Test Limit

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.

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.

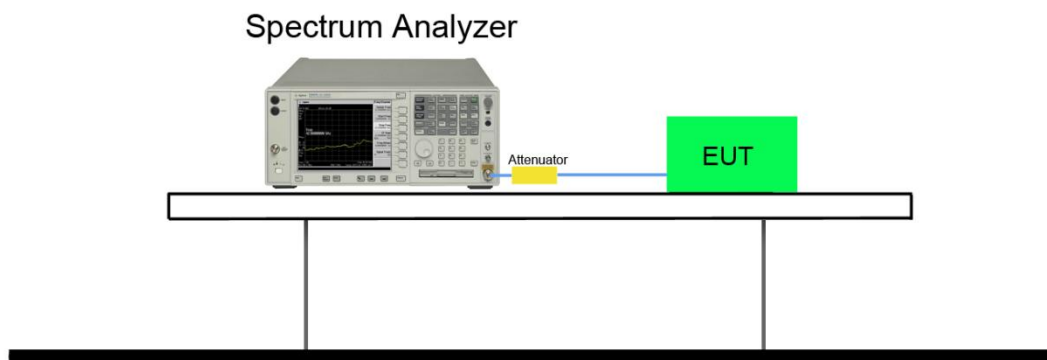
7.5.2. Test Procedure Used

KDB 789033 D02v02r01 - SectionF

7.5.3. 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,
RBW = 100 kHz
4. VBW = 3MHz
5. Number of sweep points $\geq 2 \times (\text{span} / \text{RBW})$
6. Detector = power averaging (Average)
7. Sweep time = auto
8. Trigger = free run
9. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
10. 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.
11. When the measurement bandwidth of Maximum PSD is specified in 500 kHz, add a constant factor $10 \cdot \log(500\text{kHz}/100\text{kHz}) = 6.99$ dB to the measured result.

7.5.4. Test Setup



7.5.5.Test Result

Product	ACCESS POINT	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	59%
Test Site	SR1	Test Date	2018/06/30
Test Item	Power Spectral Density	Mode No.	APIN0514

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											
802.11a	6Mbps	52	5260	2.19	2.54	2.85	1.92	94.93	8.64	≤ 8.98	Pass
802.11a	6Mbps	60	5300	2.04	2.39	2.64	2.25	94.93	8.58	≤ 8.98	Pass
802.11a	6Mbps	64	5320	2.10	2.44	2.73	2.10	94.93	8.60	≤ 8.98	Pass
802.11a	6Mbps	100	5500	2.16	2.55	2.85	2.06	94.93	8.66	≤ 8.98	Pass
802.11a	6Mbps	120	5600	2.09	2.77	2.27	2.25	94.93	8.60	≤ 8.98	Pass
802.11a	6Mbps	140	5700	1.85	3.02	2.52	2.55	94.93	8.75	≤ 8.98	Pass
802.11a	6Mbps	144	5720	1.92	3.02	2.54	2.33	94.93	8.72	≤ 8.98	Pass
802.11ac-VHT20	MCS0	52	5260	2.21	2.91	3.06	2.51	98.47	8.71	≤ 8.98	Pass
802.11ac-VHT20	MCS0	60	5300	2.05	2.77	3.00	2.33	98.47	8.57	≤ 8.98	Pass
802.11ac-VHT20	MCS0	64	5320	2.35	2.95	2.71	2.29	98.47	8.60	≤ 8.98	Pass
802.11ac-VHT20	MCS0	100	5500	2.43	2.82	3.03	2.33	98.47	8.68	≤ 8.98	Pass
802.11ac-VHT20	MCS0	120	5600	2.08	2.94	2.45	2.55	98.47	8.54	≤ 8.98	Pass
802.11ac-VHT20	MCS0	140	5700	1.98	3.42	2.25	2.41	98.47	8.57	≤ 8.98	Pass
802.11ac-VHT20	MCS0	144	5720	2.02	3.38	2.40	2.07	98.47	8.52	≤ 8.98	Pass
802.11ac-VHT40	MCS0	54	5270	2.10	2.92	2.86	2.05	96.88	8.66	≤ 8.98	Pass
802.11ac-VHT40	MCS0	62	5310	2.32	2.75	2.64	2.24	96.88	8.65	≤ 8.98	Pass
802.11ac-VHT40	MCS0	102	5510	2.15	2.65	2.63	2.12	96.88	8.55	≤ 8.98	Pass
802.11ac-VHT40	MCS0	118	5590	2.02	2.93	2.72	2.31	96.88	8.67	≤ 8.98	Pass
802.11ac-VHT40	MCS0	134	5670	2.34	3.04	2.24	2.22	96.88	8.63	≤ 8.98	Pass
802.11ac-VHT40	MCS0	142	5710	2.21	2.73	2.37	2.14	96.88	8.53	≤ 8.98	Pass

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											
802.11ac-VHT80	MCS0	58	5290	-1.95	-1.52	-1.80	-2.26	94.10	4.41	≤ 8.98	Pass
802.11ac-VHT80	MCS0	106	5530	-4.22	-3.58	-3.50	-4.28	94.10	2.40	≤ 8.98	Pass
802.11ac-VHT80	MCS0	122	5610	-0.90	-0.69	-0.87	-0.95	94.10	5.43	≤ 8.98	Pass
802.11ac-VHT80	MCS0	138	5690	-1.39	-0.94	-1.65	-1.72	94.10	4.87	≤ 8.98	Pass
802.11ac-VHT160 Straddle 5.15-5.25GHz	MCS0	50	5250	-8.26	-7.62	-7.24	-8.04	89.74	-1.28	≤ 14.98	Pass
802.11ac-VHT160 Straddle 5.25-5.35GHz	MCS0	50	5250	-8.71	-7.98	-7.24	-8.46	89.74	-1.57	≤ 8.98	Pass
802.11ax-HE20	MCS0	52	5260	2.11	2.94	2.98	2.31	97.89	8.71	≤ 8.98	Pass
802.11ax-HE20	MCS0	60	5300	2.34	2.77	3.26	2.47	97.89	8.84	≤ 8.98	Pass
802.11ax-HE20	MCS0	64	5320	2.28	2.92	3.09	2.56	97.89	8.84	≤ 8.98	Pass
802.11ax-HE20	MCS0	100	5500	2.45	2.76	2.87	2.30	97.89	8.71	≤ 8.98	Pass
802.11ax-HE20	MCS0	120	5600	2.15	2.90	2.53	2.49	97.89	8.64	≤ 8.98	Pass
802.11ax-HE20	MCS0	140	5700	2.14	2.97	2.36	2.41	97.89	8.59	≤ 8.98	Pass
802.11ax-HE20	MCS0	144	5720	2.01	3.03	2.65	2.45	97.89	8.66	≤ 8.98	Pass
802.11ax-HE40	MCS0	54	5270	2.18	2.57	2.79	2.09	96.18	8.61	≤ 8.98	Pass
802.11ax-HE40	MCS0	62	5310	0.82	1.14	1.17	1.03	96.18	7.23	≤ 8.98	Pass
802.11ax-HE40	MCS0	102	5510	-0.22	0.36	0.33	-0.26	96.18	6.25	≤ 8.98	Pass
802.11ax-HE40	MCS0	118	5590	1.97	2.58	2.58	2.09	96.18	8.50	≤ 8.98	Pass
802.11ax-HE40	MCS0	134	5670	1.83	2.39	2.10	1.77	96.18	8.22	≤ 8.98	Pass
802.11ax-HE40	MCS0	142	5710	2.27	2.68	2.25	1.97	96.18	8.49	≤ 8.98	Pass
802.11ax-HE80	MCS0	58	5290	-1.68	-1.57	-1.47	-2.18	92.59	4.64	≤ 8.98	Pass
802.11ax-HE80	MCS0	106	5530	-2.72	-2.35	-2.12	-2.75	92.59	3.88	≤ 8.98	Pass
802.11ax-HE80	MCS0	122	5610	-0.72	-0.01	-0.40	-0.62	92.59	5.93	≤ 8.98	Pass
802.11ax-HE80	MCS0	138	5690	-0.56	0.01	-0.61	-0.68	92.59	5.90	≤ 8.98	Pass

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											
802.11ax-HE160 Straddle 5.15-5.25GHz	MCS0	50	5250	-8.05	-7.31	-7.25	-8.17	88.53	-1.13	≤ 14.98	Pass
802.11ax-HE160 Straddle 5.25-5.35GHz	MCS0	50	5250	-8.26	-8.02	-7.27	-8.25	88.53	-1.38	≤ 8.98	Pass

Note 1: When EUT duty cycle ≥ 98%, 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%, 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: For BW = 160MHz, Channel 50 Straddle 5.15-5.25GHz, PSD Limit = 17dBm/MHz - (8.02dBi - 6dBi) = 14.98dBm/MHz.

For Band 5250 - 5725MHz PSD Limit = 11dBm/MHz - (8.02dBi - 6dBi) = 8.98dBm/MHz.

Product	ACCESS POINT	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	59%
Test Site	SR1	Test Date	2018/06/30
Test Item	Power Spectral Density	Mode No.	APIN0515

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											
802.11a	6Mbps	52	5260	-0.34	-0.19	-0.11	-0.46	94.76	5.98	≤ 6.48	Pass
802.11a	6Mbps	60	5300	-0.28	-0.21	0.02	-0.22	94.76	6.08	≤ 6.48	Pass
802.11a	6Mbps	64	5320	-0.27	-0.28	-0.24	-0.33	94.76	5.97	≤ 6.48	Pass
802.11a	6Mbps	100	5500	-0.29	-0.17	-0.21	-0.27	94.76	6.02	≤ 6.48	Pass
802.11a	6Mbps	120	5600	-0.28	0.06	0.15	-0.25	94.76	6.18	≤ 6.48	Pass
802.11a	6Mbps	140	5700	-0.47	-0.14	-0.16	-0.30	94.76	5.99	≤ 6.48	Pass
802.11a	6Mbps	144	5720	-0.32	-0.15	-0.22	-0.40	94.76	5.98	≤ 6.48	Pass
802.11ac-VHT20	MCS0	52	5260	-0.27	0.01	-0.10	-0.10	97.96	6.00	≤ 6.48	Pass
802.11ac-VHT20	MCS0	60	5300	-0.09	0.15	0.15	-0.04	97.96	6.15	≤ 6.48	Pass
802.11ac-VHT20	MCS0	64	5320	0.30	0.01	0.14	-0.24	97.96	6.17	≤ 6.48	Pass
802.11ac-VHT20	MCS0	100	5500	-0.17	0.11	0.16	-0.13	97.96	6.11	≤ 6.48	Pass
802.11ac-VHT20	MCS0	120	5600	-0.11	0.13	0.22	-0.22	97.96	6.12	≤ 6.48	Pass
802.11ac-VHT20	MCS0	140	5700	-0.24	0.13	0.14	-0.16	97.96	6.08	≤ 6.48	Pass
802.11ac-VHT20	MCS0	144	5720	-0.39	0.10	0.23	-0.28	97.96	6.03	≤ 6.48	Pass
802.11ac-VHT40	MCS0	54	5270	-0.32	-0.16	0.17	-0.23	96.90	6.03	≤ 6.48	Pass
802.11ac-VHT40	MCS0	62	5310	-0.30	-0.13	-0.02	-0.25	96.90	5.98	≤ 6.48	Pass
802.11ac-VHT40	MCS0	102	5510	-0.26	0.14	0.21	0.03	96.90	6.19	≤ 6.48	Pass
802.11ac-VHT40	MCS0	118	5590	-0.28	0.09	0.20	0.06	96.90	6.18	≤ 6.48	Pass
802.11ac-VHT40	MCS0	134	5670	-0.11	0.23	-0.06	0.09	96.90	6.20	≤ 6.48	Pass
802.11ac-VHT40	MCS0	142	5710	-0.23	0.36	0.08	-0.03	96.90	6.21	≤ 6.48	Pass

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											
802.11ac-VHT80	MCS0	58	5290	-0.15	-0.56	-0.91	-0.60	93.85	5.75	≤ 6.48	Pass
802.11ac-VHT80	MCS0	106	5530	-3.14	-2.53	-2.78	-2.87	93.85	3.47	≤ 6.48	Pass
802.11ac-VHT80	MCS0	122	5610	-0.33	0.07	-0.36	-0.29	93.85	6.07	≤ 6.48	Pass
802.11ac-VHT80	MCS0	138	5690	-0.42	0.26	-0.24	-0.06	93.85	6.19	≤ 6.48	Pass
802.11ac-VHT160 Straddle 5.15-5.25GHz	MCS0	50	5250	-6.30	-6.01	-6.23	-5.93	89.46	0.39	≤ 12.48	Pass
802.11ac-VHT160 Straddle 5.25-5.35GHz	MCS0	50	5250	-6.57	-6.58	-6.29	-6.46	89.46	0.03	≤ 6.48	Pass
802.11ax-HE20	MCS0	52	5260	-0.05	-0.30	-0.12	0.13	97.50	6.05	≤ 6.48	Pass
802.11ax-HE20	MCS0	60	5300	-0.11	0.01	0.15	-0.07	97.50	6.13	≤ 6.48	Pass
802.11ax-HE20	MCS0	64	5320	-0.04	-0.08	0.03	0.02	97.50	6.11	≤ 6.48	Pass
802.11ax-HE20	MCS0	100	5500	-0.05	0.09	0.07	0.28	97.50	6.23	≤ 6.48	Pass
802.11ax-HE20	MCS0	120	5600	-0.25	0.27	0.33	-0.08	97.50	6.20	≤ 6.48	Pass
802.11ax-HE20	MCS0	140	5700	-0.25	0.34	0.25	-0.12	97.50	6.19	≤ 6.48	Pass
802.11ax-HE20	MCS0	144	5720	-0.25	0.35	0.28	-0.18	97.50	6.19	≤ 6.48	Pass
802.11ax-HE40	MCS0	54	5270	-0.12	-0.33	0.14	-0.36	95.89	6.04	≤ 6.48	Pass
802.11ax-HE40	MCS0	62	5310	-0.15	0.16	0.28	-0.35	95.89	6.19	≤ 6.48	Pass
802.11ax-HE40	MCS0	102	5510	-0.23	0.21	0.16	-0.39	95.89	6.15	≤ 6.48	Pass
802.11ax-HE40	MCS0	118	5590	-0.13	0.24	0.20	-0.26	95.89	6.22	≤ 6.48	Pass
802.11ax-HE40	MCS0	134	5670	-0.17	0.24	0.17	-0.28	95.89	6.20	≤ 6.48	Pass
802.11ax-HE40	MCS0	142	5710	-0.30	0.31	0.13	-0.18	95.89	6.20	≤ 6.48	Pass
802.11ax-HE80	MCS0	58	5290	-0.88	-0.91	-1.08	-0.64	92.59	5.48	≤ 6.48	Pass
802.11ax-HE80	MCS0	106	5530	-2.26	-2.30	-2.04	-2.03	92.59	4.20	≤ 6.48	Pass
802.11ax-HE80	MCS0	122	5610	-0.32	-0.14	-0.45	-0.28	92.59	6.06	≤ 6.48	Pass
802.11ax-HE80	MCS0	138	5690	-0.41	-0.24	-0.43	-0.14	92.59	6.05	≤ 6.48	Pass

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											
802.11ax-HE160 Straddle 5.15-5.25GHz	MCS0	50	5250	-6.15	-6.13	-6.15	-5.96	88.11	0.47	≤ 12.48	Pass
802.11ax-HE160 Straddle 5.25-5.35GHz	MCS0	50	5250	-6.49	-6.82	-6.32	-6.63	88.11	0.01	≤ 6.48	Pass

Note 1: When EUT duty cycle ≥ 98%, 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%, 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) + $10 \cdot \log (1/\text{Duty Cycle})$.

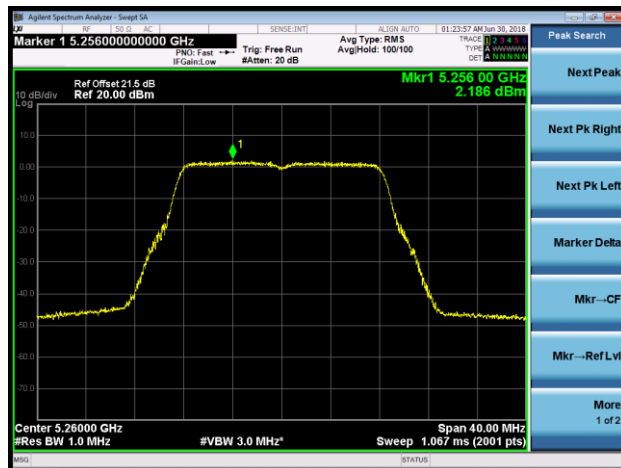
Note 3: For BW = 160MHz, Channel 50 Straddle 5.15-5.25GHz, PSD Limit = 17dBm/MHz - (10.52dBi - 6dBi) = 12.48dBm/MHz.

PSD Limit = 11dBm/MHz - (10.52dBi - 6dBi) = 6.48dBm/MHz.

Product	ACCESS POINT	Temperature	22°C
Test Engineer	Kevin Ker	Test Date	2018/06/30
Model No.	APIN0514	Model No.	APIN0514

802.11a Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

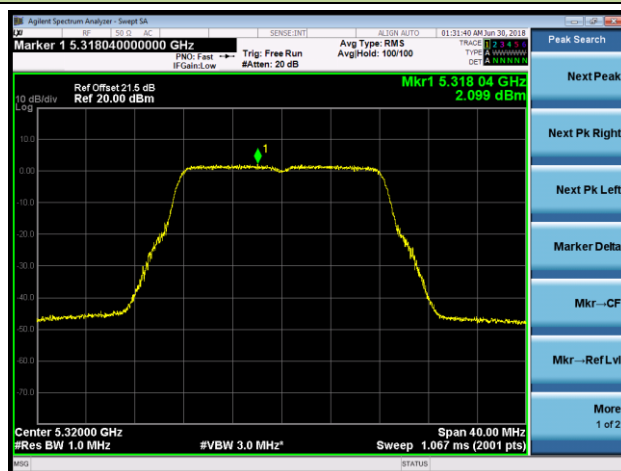
Channel 52 (5260MHz)



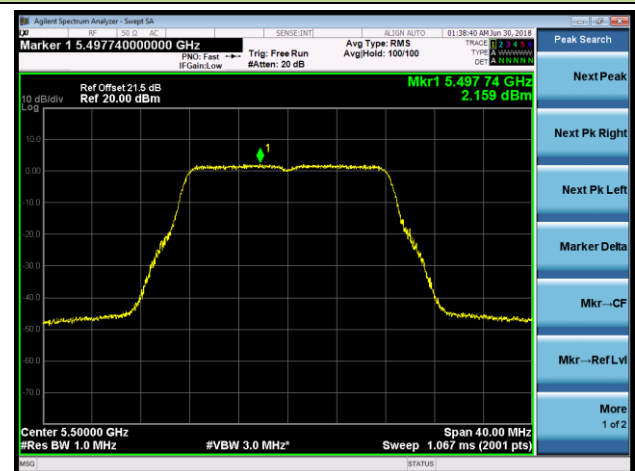
Channel 60 (5300MHz)



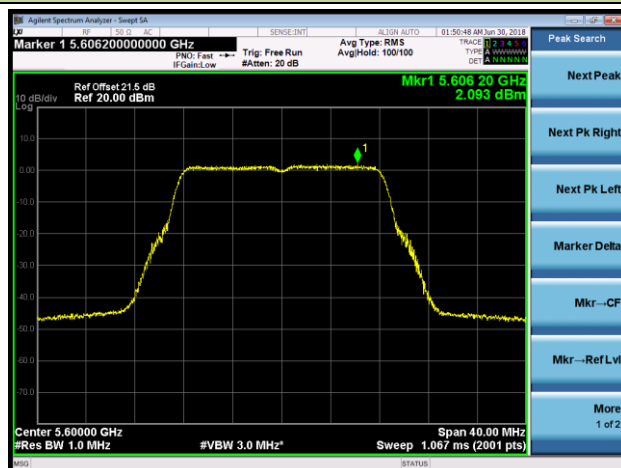
Channel 64 (5320MHz)



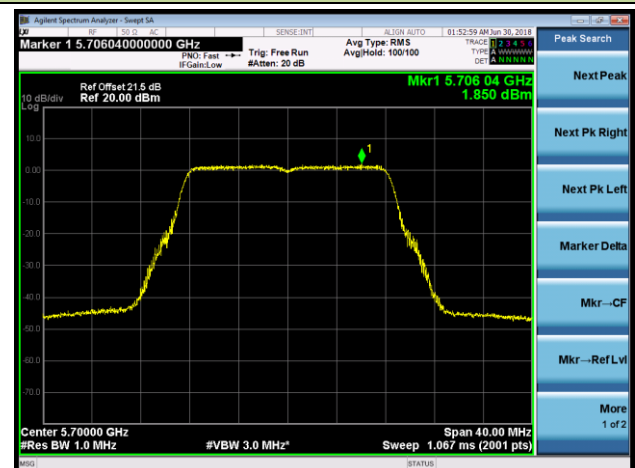
Channel 100 (5500MHz)



Channel 120 (5600MHz)

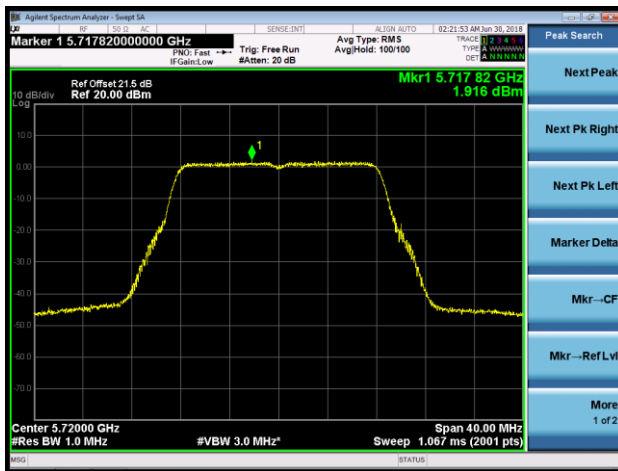


Channel 140 (5700MHz)



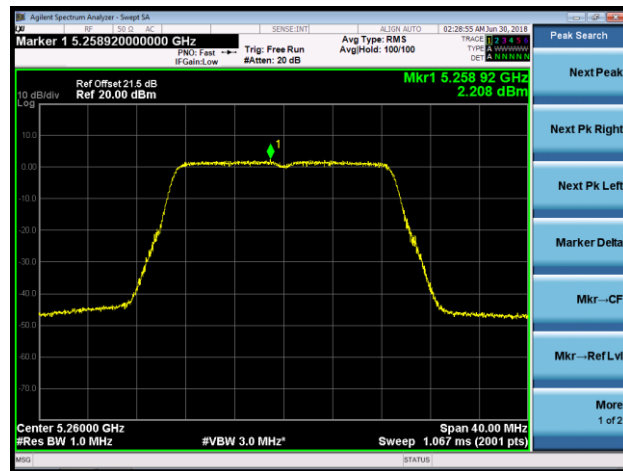
802.11a Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 144 (5720MHz)

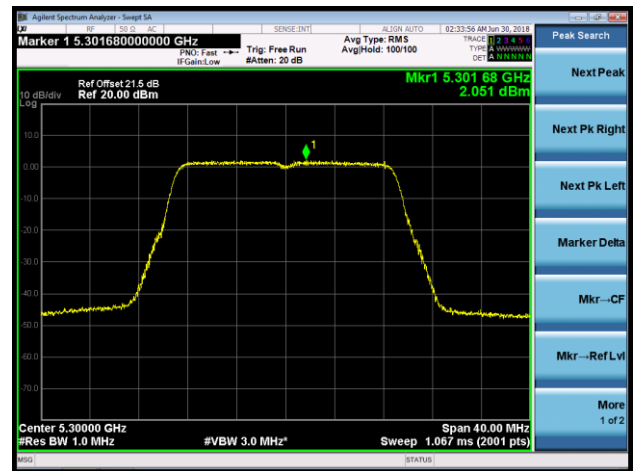


802.11ac-VHT20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

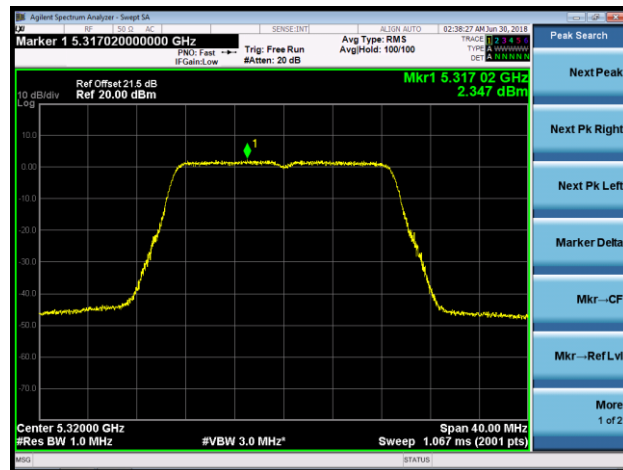
Channel 52 (5260MHz)



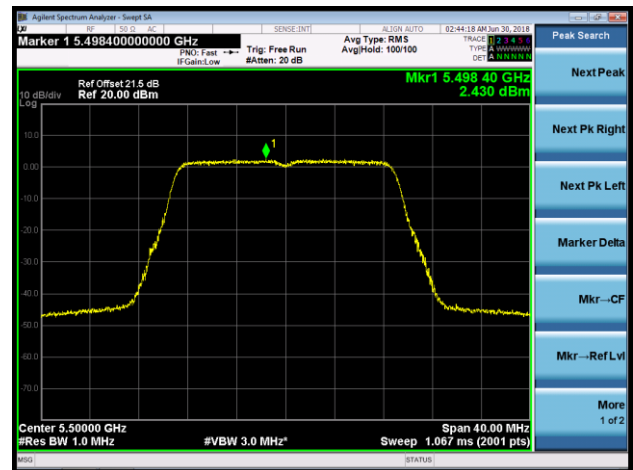
Channel 60 (5300MHz)



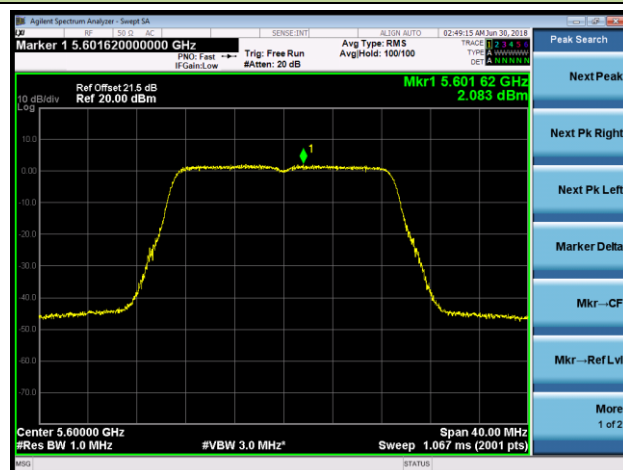
Channel 64 (5320MHz)



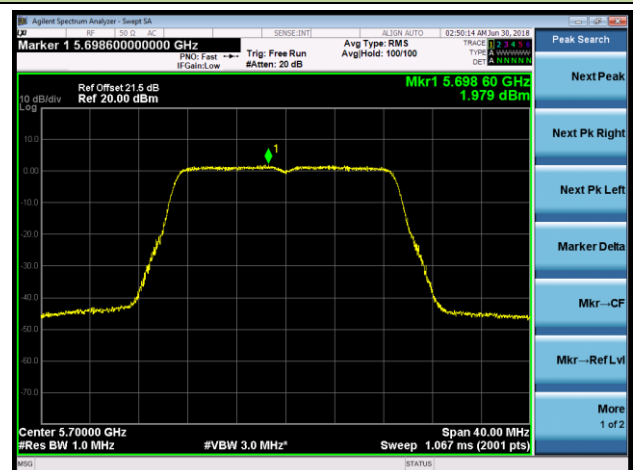
Channel 100 (5500MHz)



Channel 120 (5600MHz)

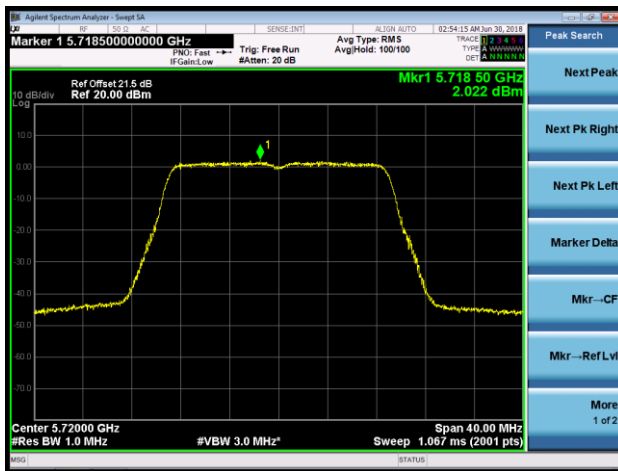


Channel 140 (5700MHz)



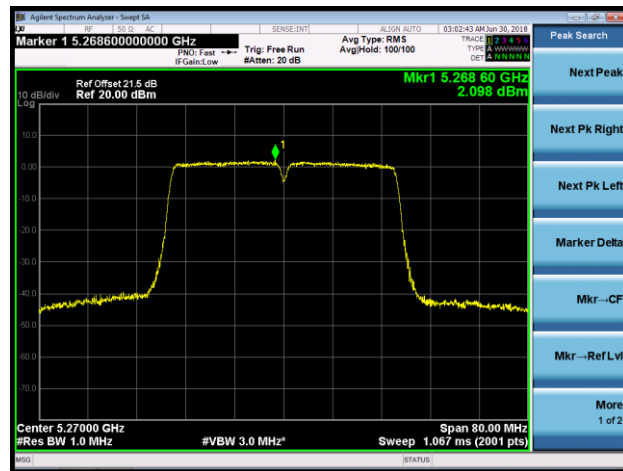
802.11ac-VHT20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 144 (5720MHz)

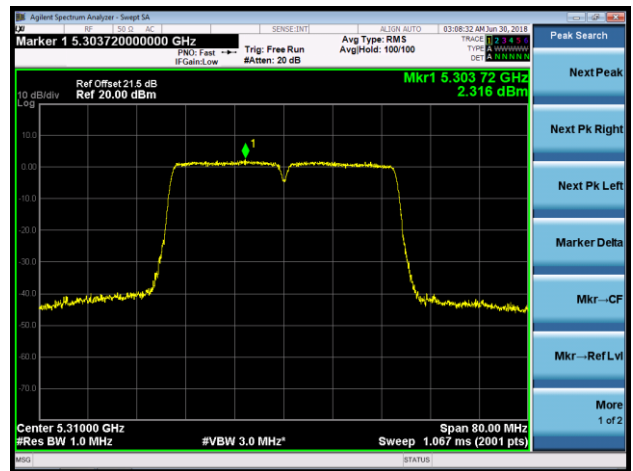


802.11ac-VHT40 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

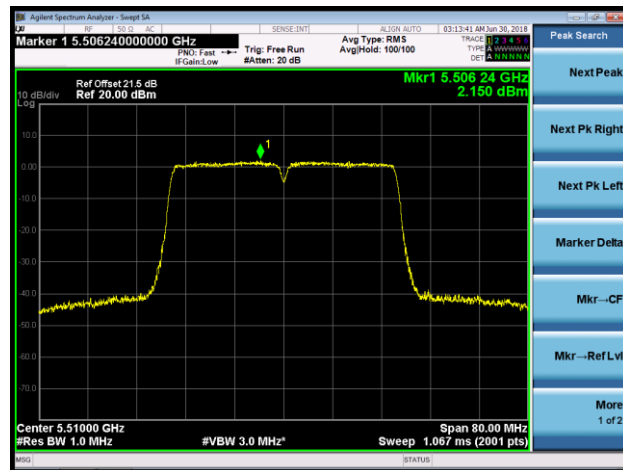
Channel 54 (5270MHz)



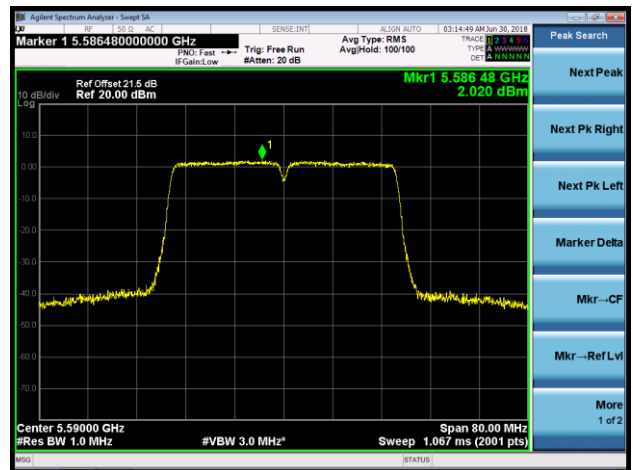
Channel 62 (5310MHz)



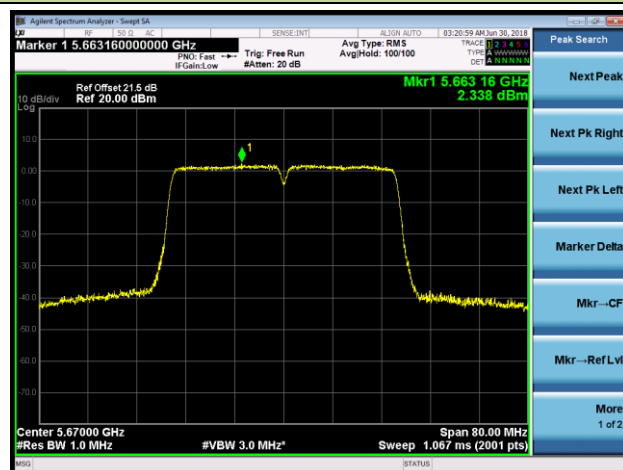
Channel 102 (5510MHz)



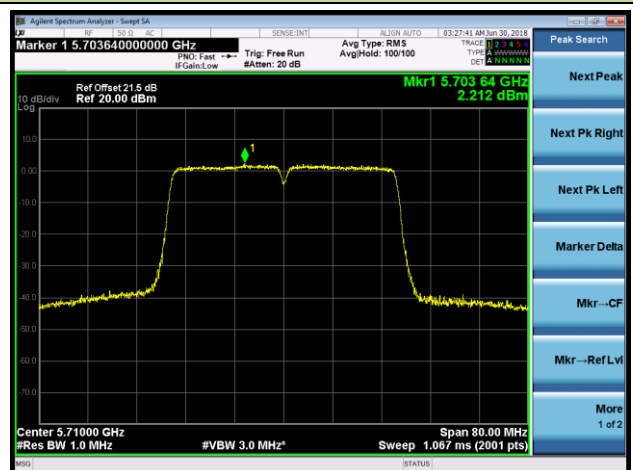
Channel 118 (5590MHz)



Channel 134 (5670MHz)

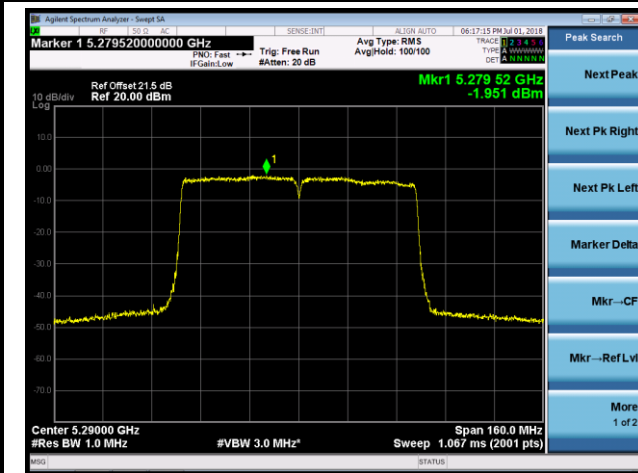


Channel 142 (5710MHz)

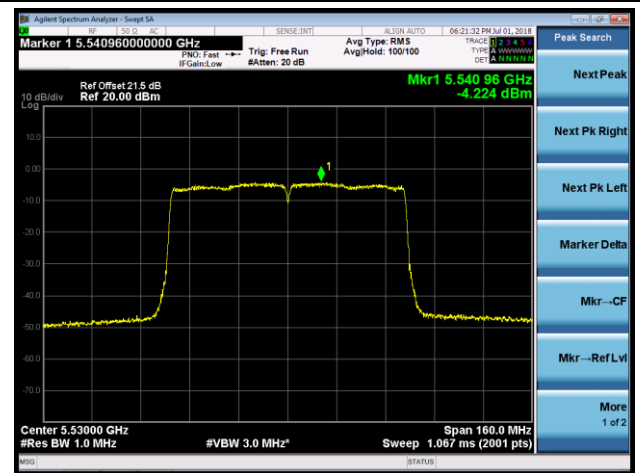


802.11ac-VHT80 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

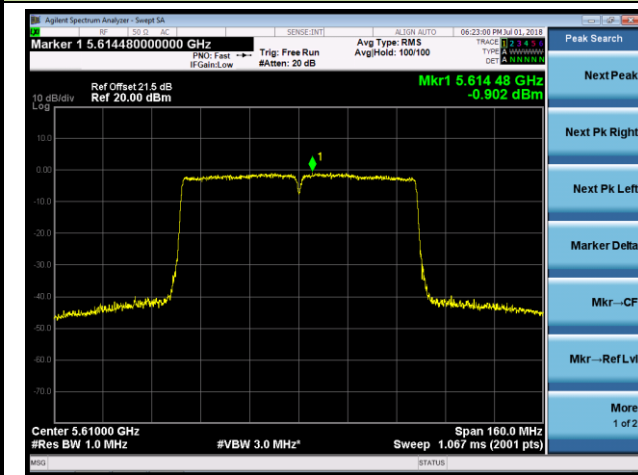
Channel 58 (5290MHz)



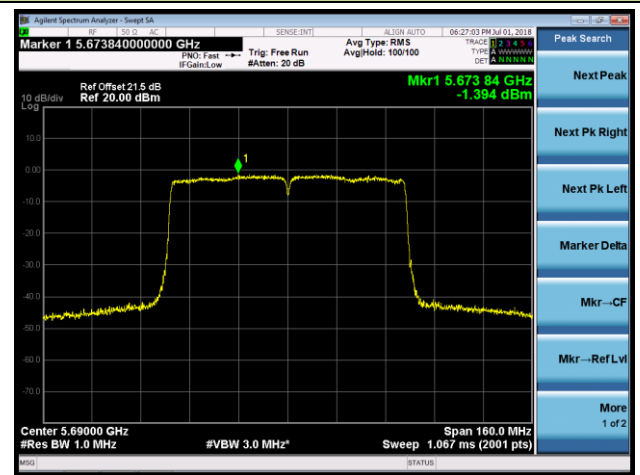
Channel 106 (5530MHz)



Channel 122 (5610MHz)

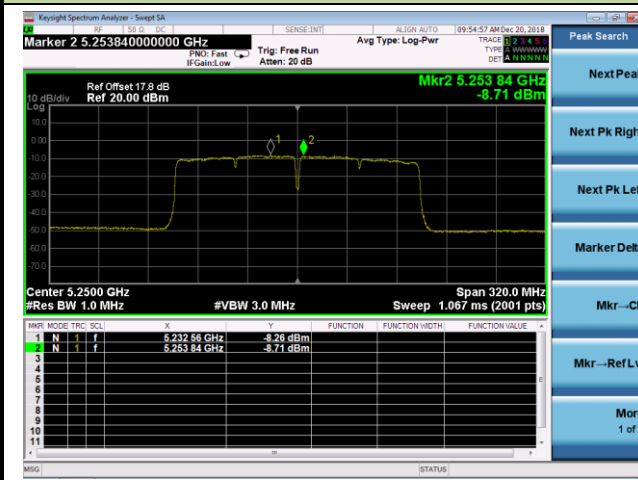


Channel 138 (5690MHz)

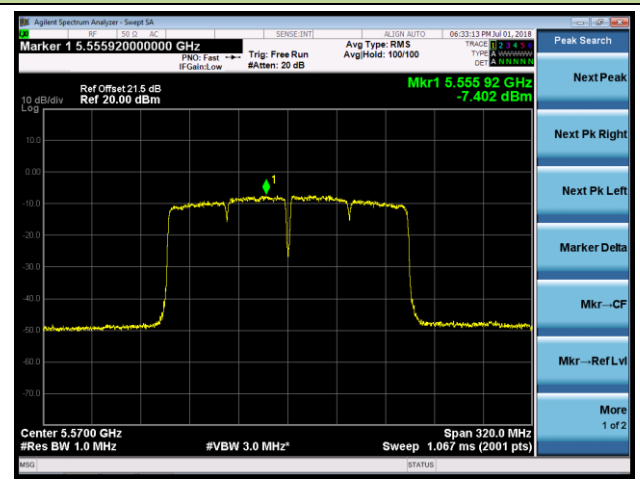


802.11ac-VHT160 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 50 (5250MHz)

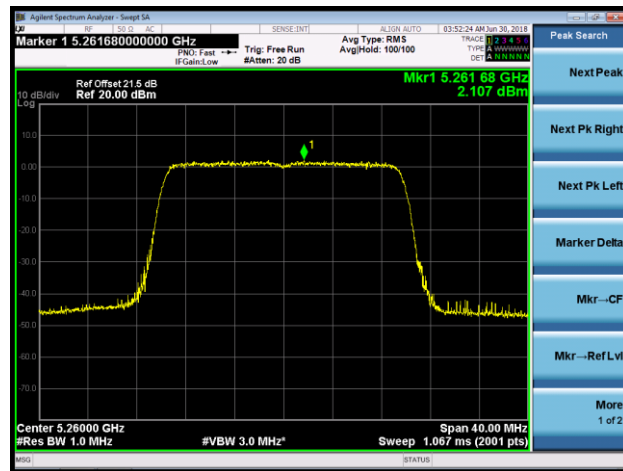


Channel 114 (5570MHz)

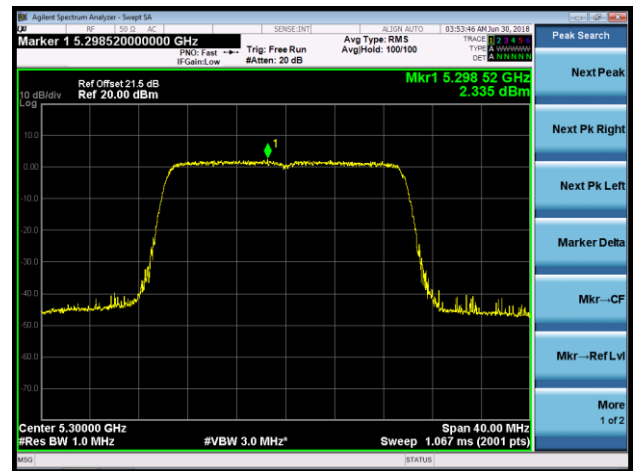


802.11ax-HE20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

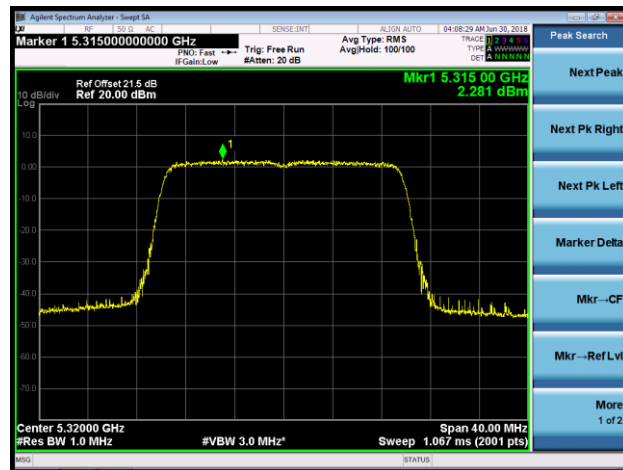
Channel 52 (5260MHz)



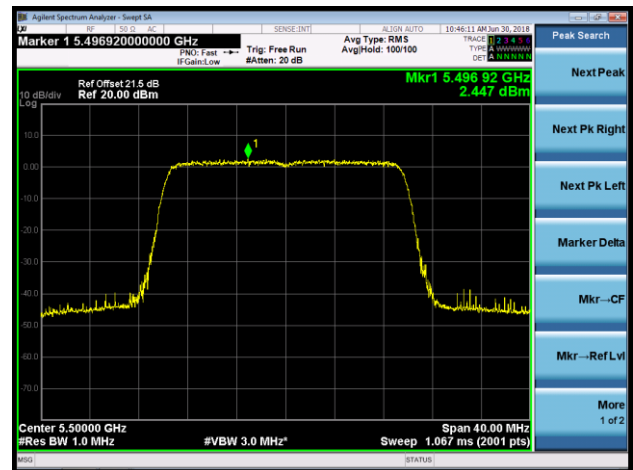
Channel 60 (5300MHz)



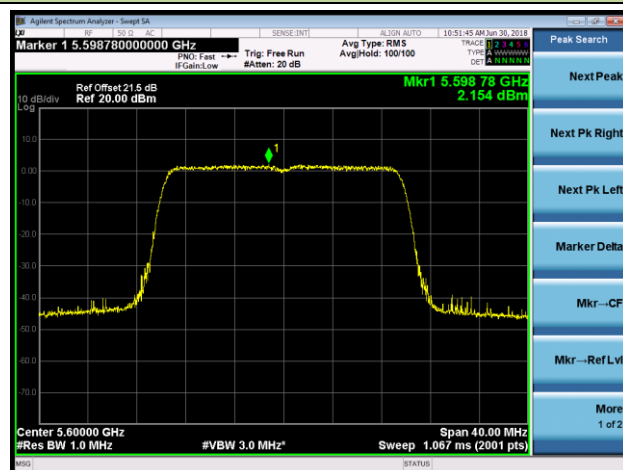
Channel 64 (5320MHz)



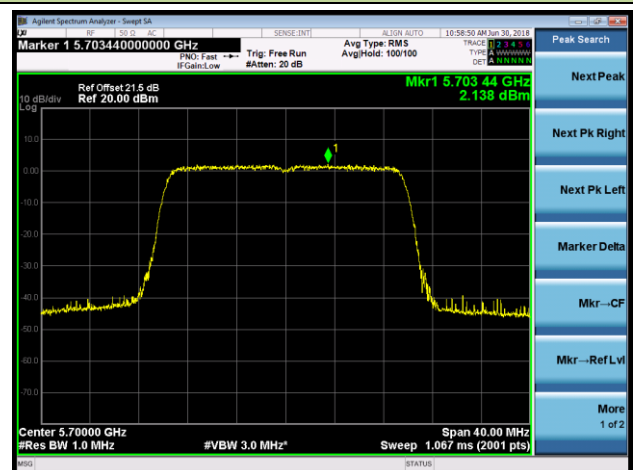
Channel 100 (5500MHz)



Channel 120 (5600MHz)

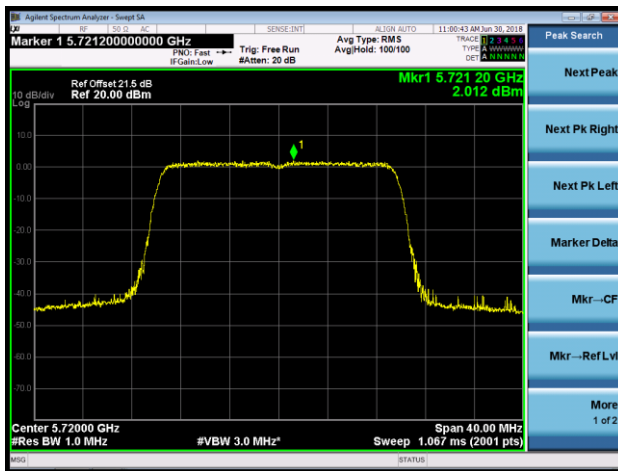


Channel 140 (5700MHz)



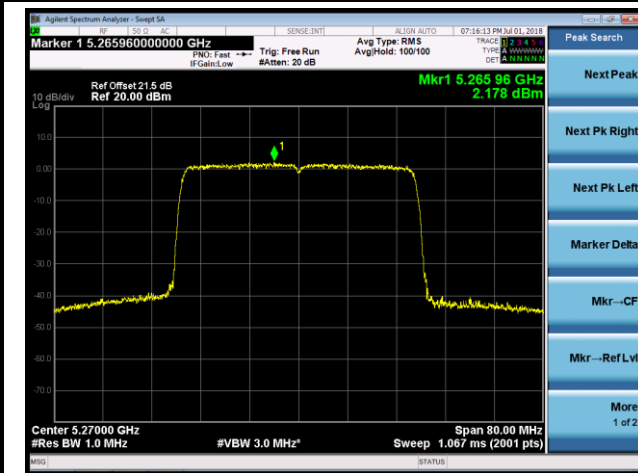
802.11ax-HE20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 144 (5720MHz)

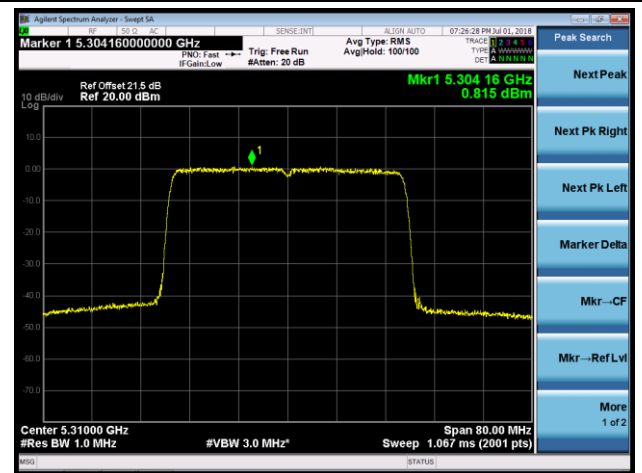


802.11ax-HE40 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

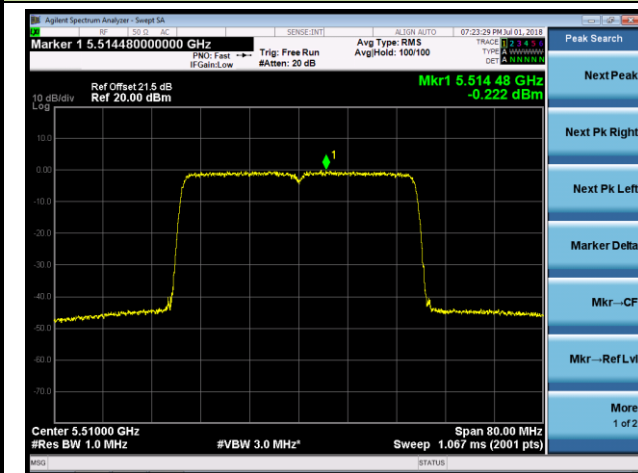
Channel 54 (5270MHz)



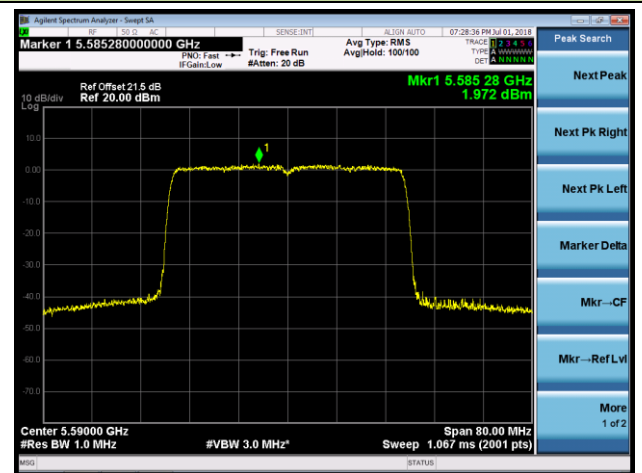
Channel 62 (5310MHz)



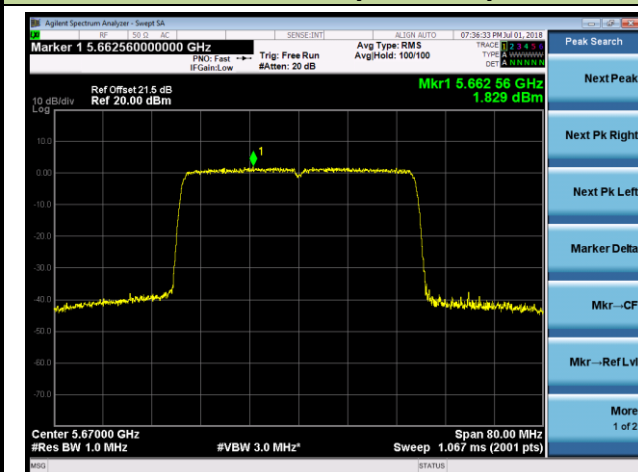
Channel 102 (5510MHz)



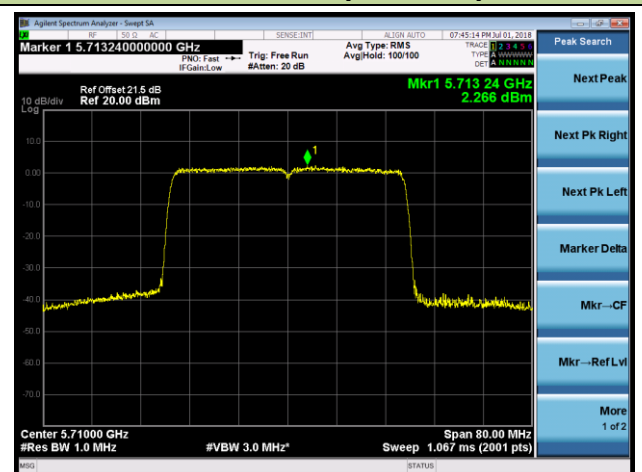
Channel 118 (5590MHz)



Channel 134 (5670MHz)

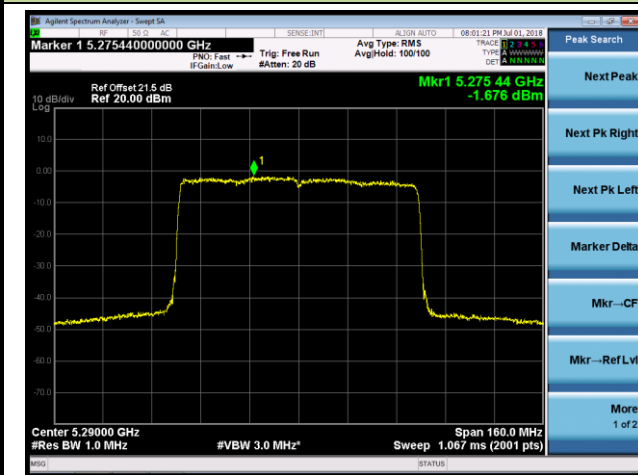


Channel 142 (5710MHz)

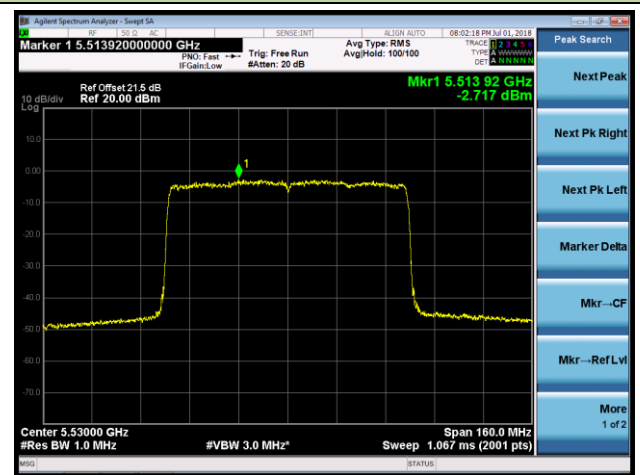


802.11ax-HE80 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

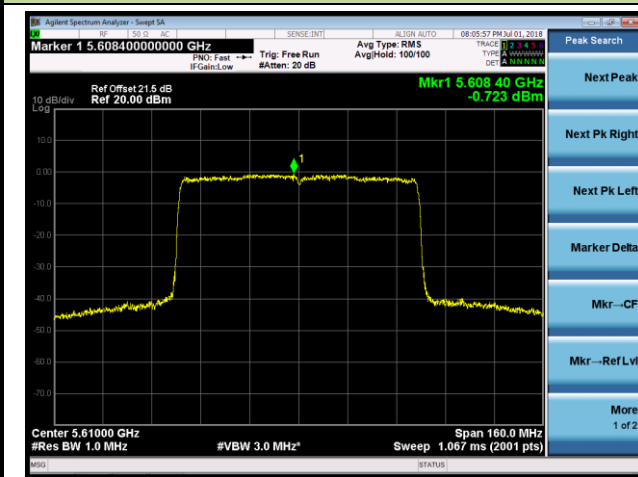
Channel 58 (5290MHz)



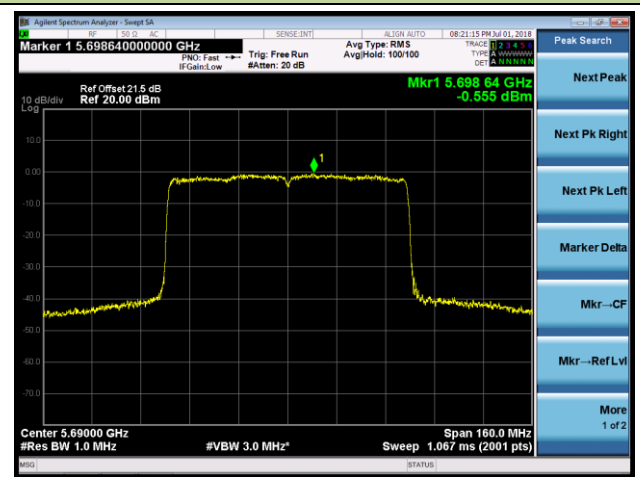
Channel 106 (5530MHz)



Channel 122 (5610MHz)

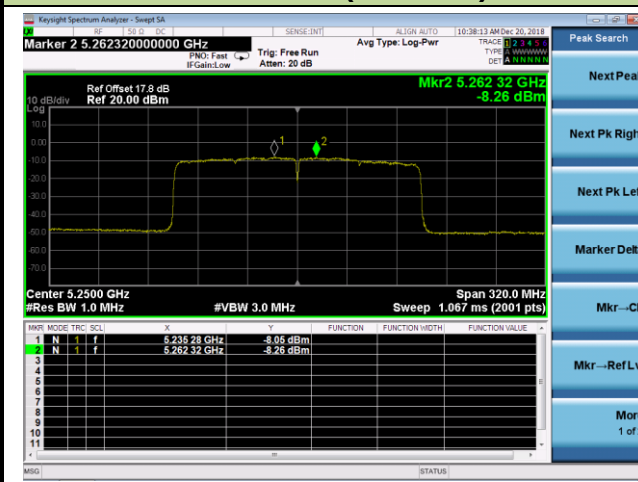


Channel 138 (5690MHz)

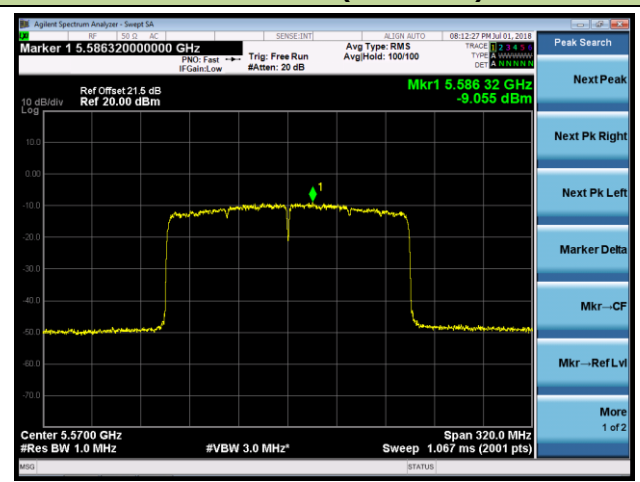


802.11ax-HE160 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3

Channel 50 (5250MHz)

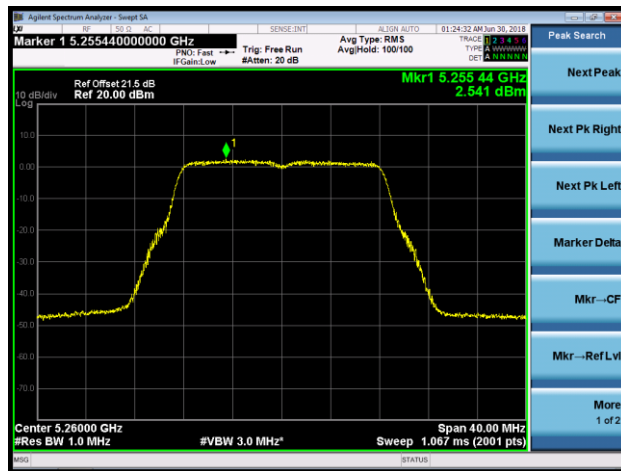


Channel 114 (5570MHz)

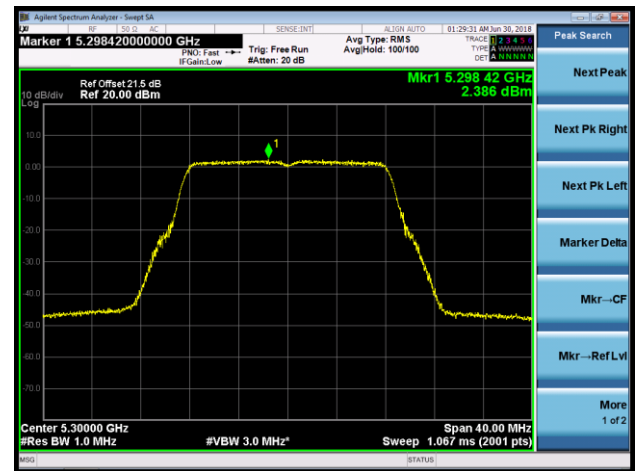


802.11a Power Spectral Density - Ant 1 / Ant 0 + 1 + 2 + 3

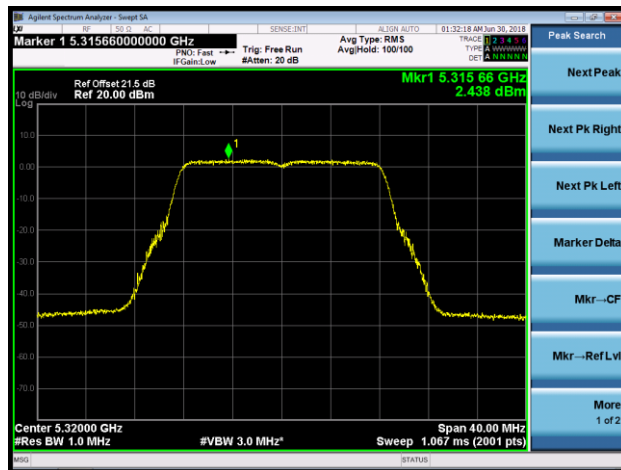
Channel 52 (5260MHz)



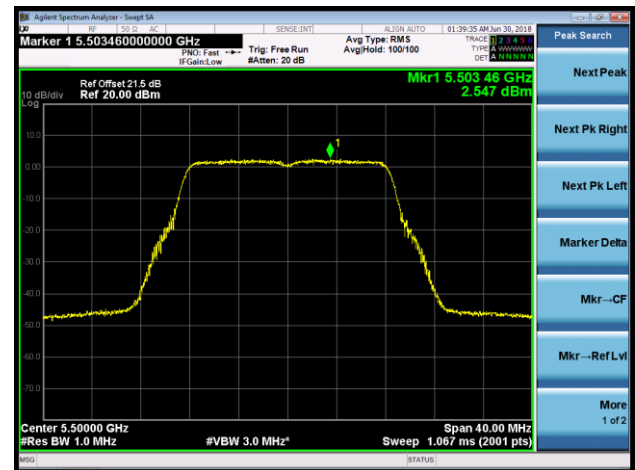
Channel 60 (5300MHz)



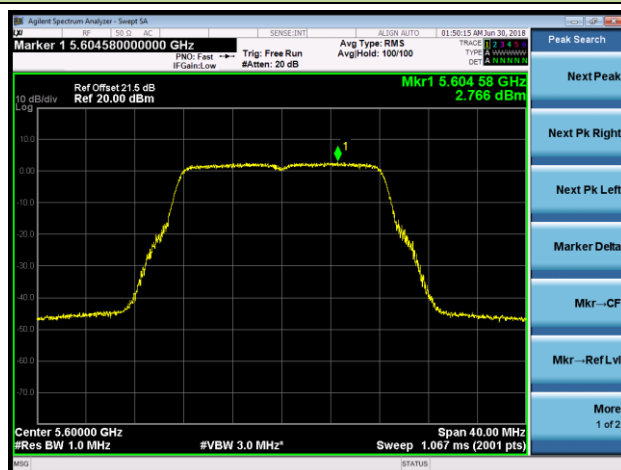
Channel 64 (5320MHz)



Channel 100 (5500MHz)



Channel 120 (5600MHz)



Channel 140 (5700MHz)

