

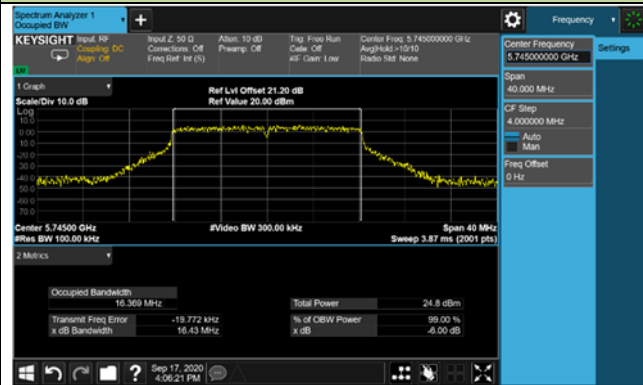
### 6.3.5. Test Result

Product	HAN Access Point, AP311	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	56%
Test Site	SR1	Test Date	2020/09/17
Test Mode	AP311 (U-NII-3)		

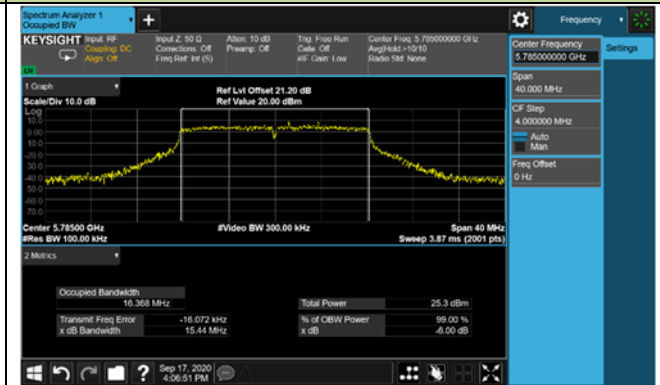
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
Ant 1 / Ant 0 + 1						
802.11a	6Mbps	149	5745	16.43	≥ 0.5	Pass
802.11a	6Mbps	157	5785	15.44	≥ 0.5	Pass
802.11a	6Mbps	165	5825	15.41	≥ 0.5	Pass
802.11ac-VHT20	MCS0	149	5745	17.54	≥ 0.5	Pass
802.11ac-VHT20	MCS0	157	5785	17.56	≥ 0.5	Pass
802.11ac-VHT20	MCS0	165	5825	15.26	≥ 0.5	Pass
802.11ac-VHT40	MCS0	151	5755	36.49	≥ 0.5	Pass
802.11ac-VHT40	MCS0	159	5795	35.92	≥ 0.5	Pass
802.11ac-VHT80	MCS0	155	5775	75.37	≥ 0.5	Pass
802.11ax-HE20	MCS0	149	5745	16.16	≥ 0.5	Pass
802.11ax-HE20	MCS0	157	5785	14.29	≥ 0.5	Pass
802.11ax-HE20	MCS0	165	5825	16.88	≥ 0.5	Pass
802.11ax-HE40	MCS0	151	5755	37.20	≥ 0.5	Pass
802.11ax-HE40	MCS0	159	5795	37.35	≥ 0.5	Pass
802.11ax-HE80	MCS0	155	5775	77.81	≥ 0.5	Pass

802.11a 6dB Bandwidth

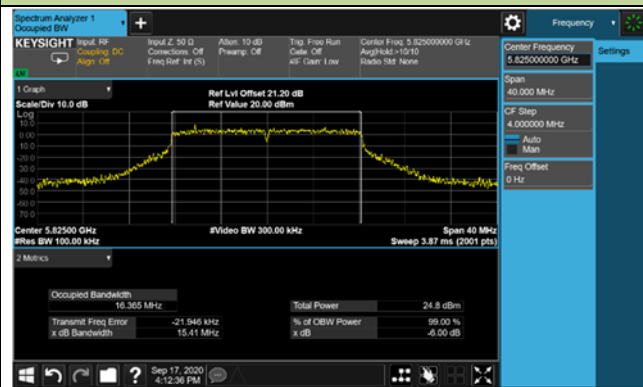
Channel 149 (5745MHz)



Channel 157 (5785MHz)

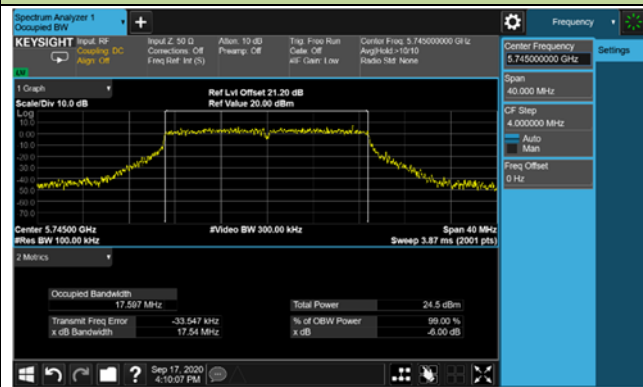


Channel 165 (5825MHz)

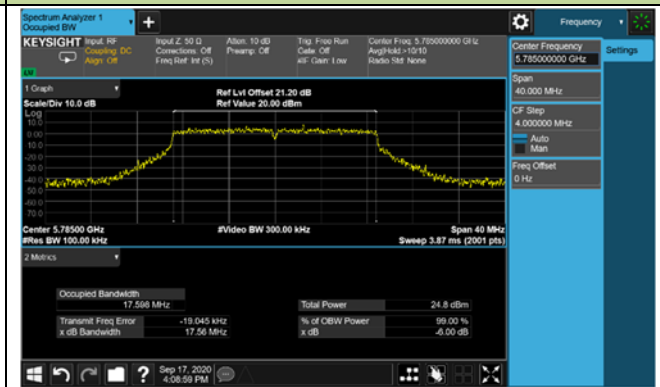


802.11ac-VHT20 6dB Bandwidth

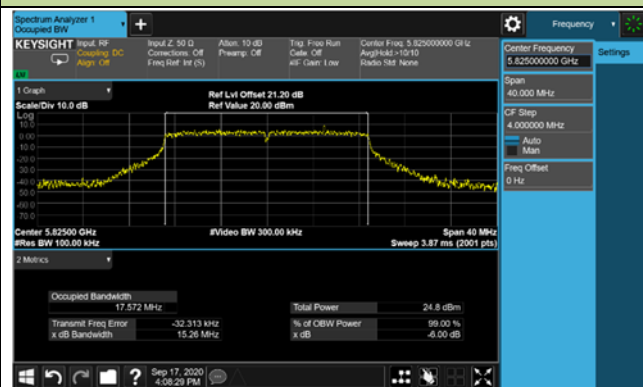
Channel 149 (5745MHz)



Channel 157 (5785MHz)

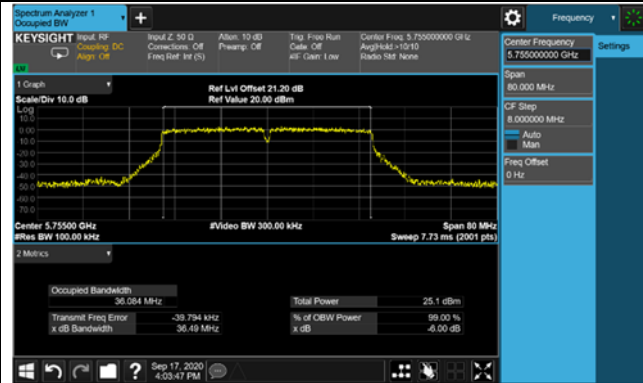


Channel 165 (5825MHz)

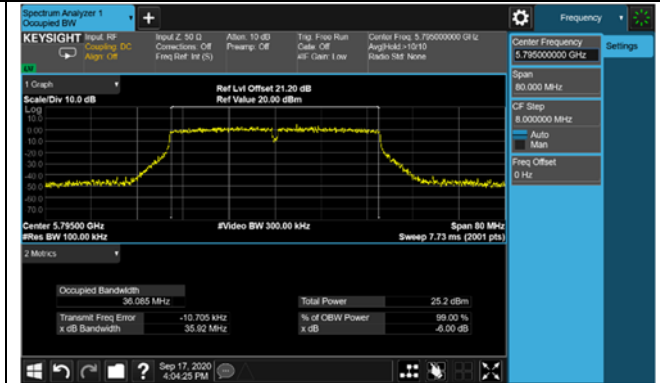


802.11ac-VHT40 6dB Bandwidth

Channel 151 (5755MHz)

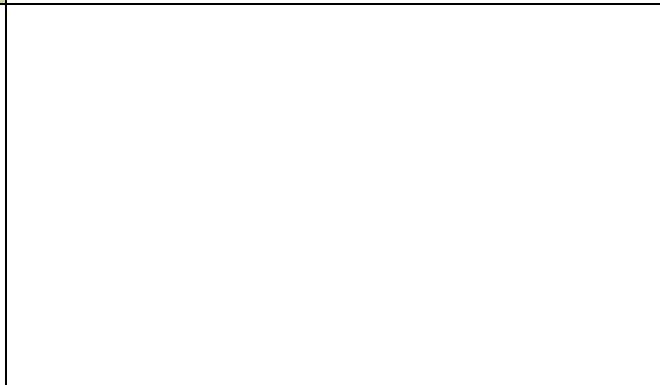
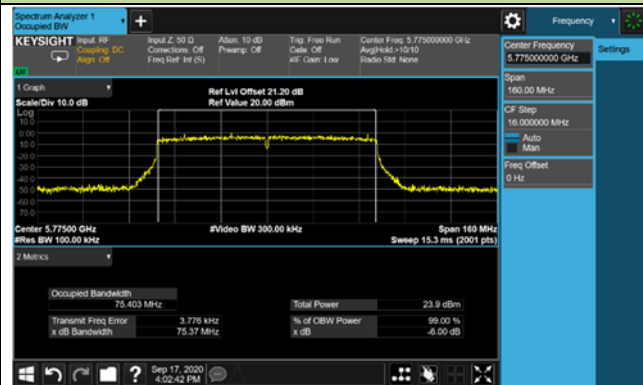


Channel 159 (5795MHz)



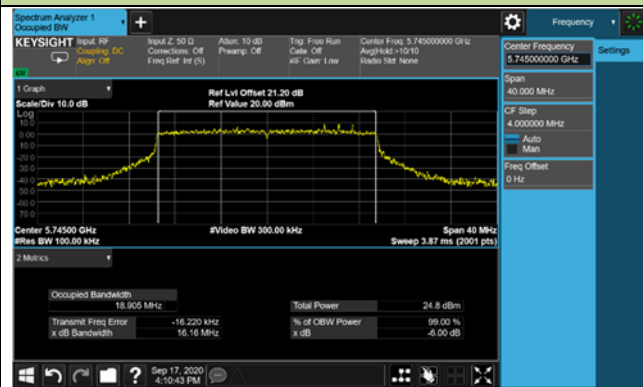
802.11ac-VHT80 6dB Bandwidth

Channel 155 (5775MHz)

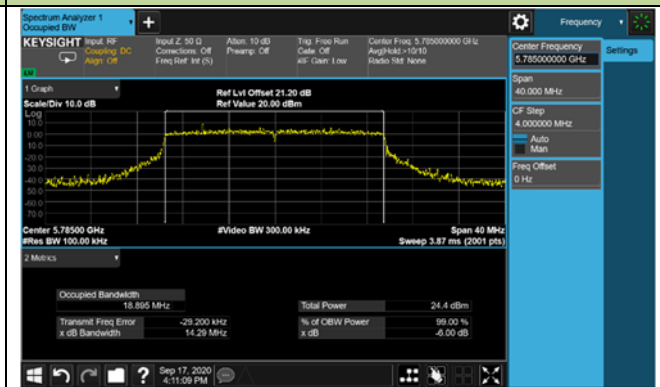


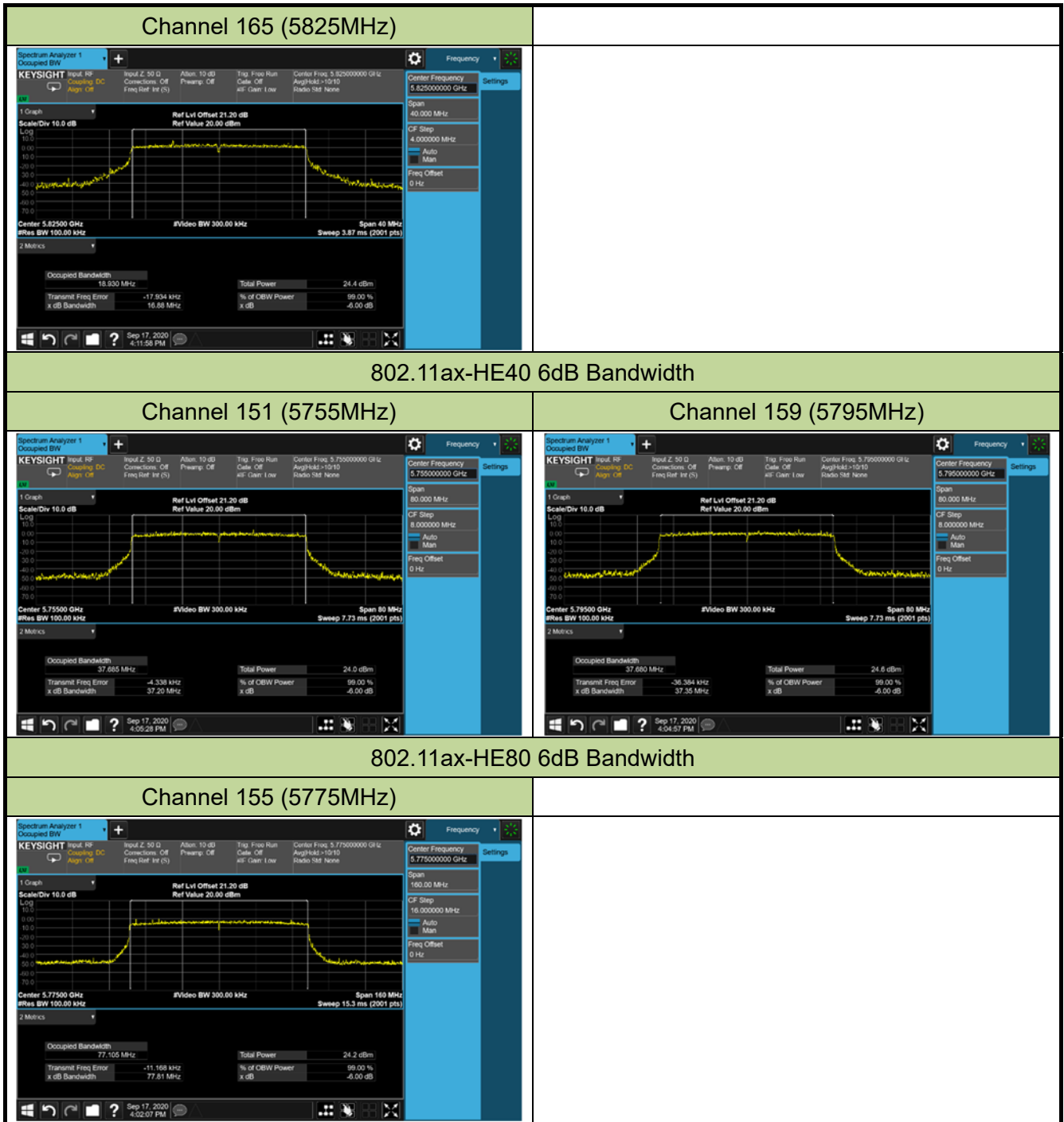
802.11ax-HE20 6dB Bandwidth

Channel 149 (5745MHz)



Channel 157 (5785MHz)



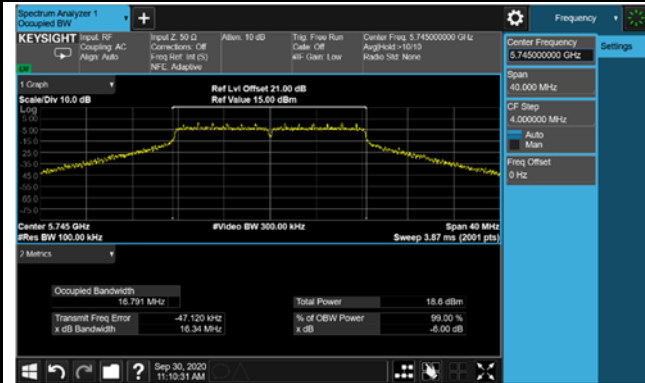


Product	HAN Access Point, AP311	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	56%
Test Site	SR1	Test Date	2020/09/30
Test Mode	AP311 Scan Antenna (U-NII-3)		

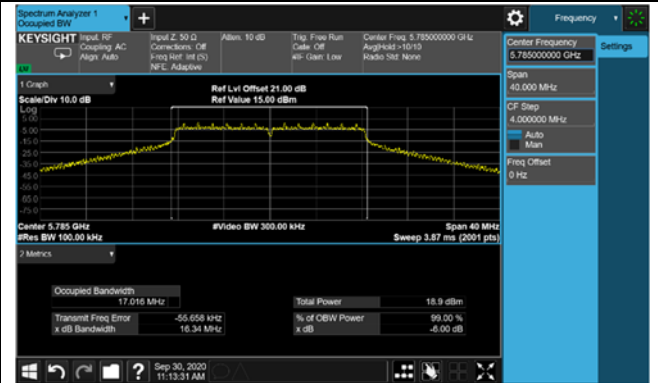
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.11a	6Mbps	149	5745	16.34	≥ 0.5	Pass
802.11a	6Mbps	157	5785	16.34	≥ 0.5	Pass
802.11a	6Mbps	165	5825	16.34	≥ 0.5	Pass

802.11a 6dB Bandwidth

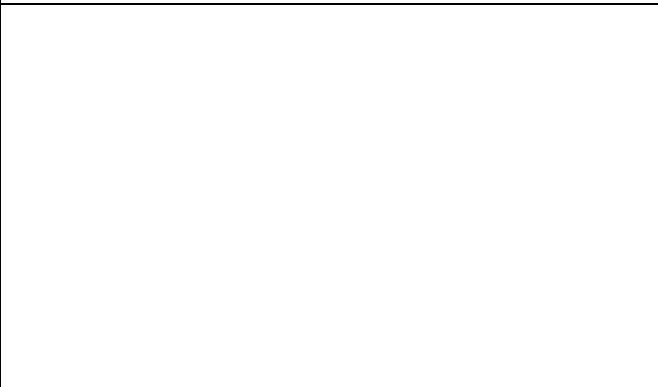
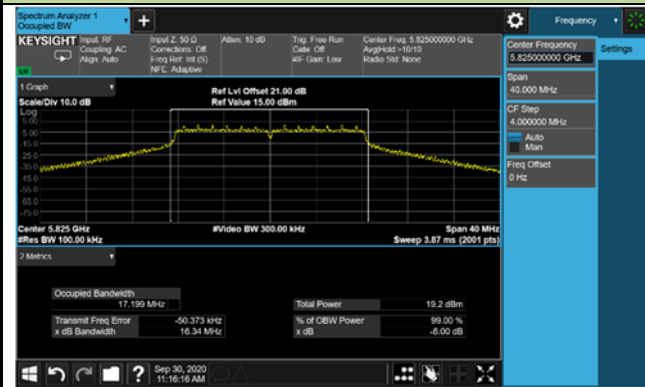
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



## 6.4. Output Power Measurement

### 6.4.1. Test Limit

For the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi.

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.

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.

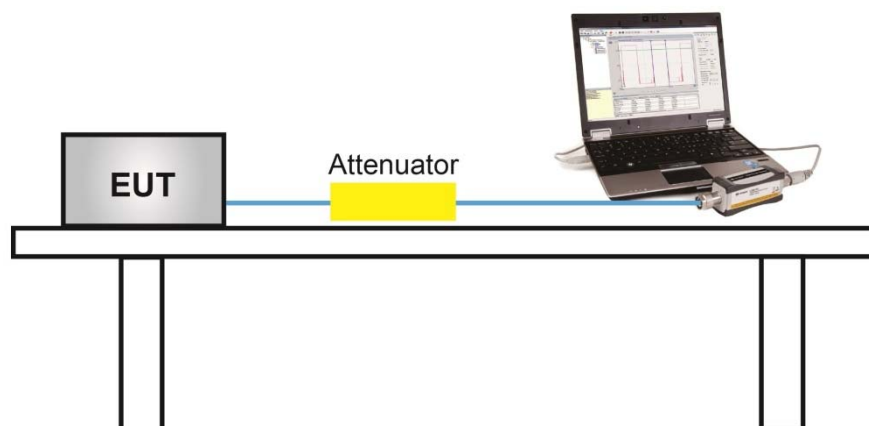
### 6.4.2. Test Procedure Used

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

### 6.4.3. 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.

### 6.4.4. Test Setup



**6.4.5.Test Result**

Product	HAN Access Point,AP311	Temperature	23 ~ 25°C
Test Engineer	Kevin Ker	Relative Humidity	46 ~ 56%
Test Site	SR1	Test Date	2020/09/17
Test Mode	AP311		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power(dBm)	Average Power Limit (dBm)	Result
11a	6Mbps	36	5180	19.93	19.13	22.56	≤ 30.00	Pass
11a	6Mbps	44	5220	20.15	19.22	22.72	≤ 30.00	Pass
11a	6Mbps	48	5240	20.32	19.43	22.91	≤ 30.00	Pass
11a	6Mbps	52	5260	18.79	18.45	21.63	≤ 23.98	Pass
11a	6Mbps	60	5300	18.00	18.16	21.09	≤ 23.98	Pass
11a	6Mbps	64	5320	17.91	18.04	20.99	≤ 23.98	Pass
11a	6Mbps	100	5500	18.68	19.28	22.00	≤ 23.98	Pass
11a	6Mbps	116	5580	17.83	18.76	21.33	≤ 23.98	Pass
11a	6Mbps	140	5700	17.77	18.60	21.22	≤ 23.98	Pass
11a	6Mbps	144	5720	17.83	18.62	21.25	≤ 23.98	Pass
11a	6Mbps	149	5745	18.88	19.94	22.45	≤ 30.00	Pass
11a	6Mbps	157	5785	19.17	20.02	22.63	≤ 30.00	Pass
11a	6Mbps	165	5825	19.05	19.97	22.54	≤ 30.00	Pass
11ac-VHT20	MCS0	36	5180	19.98	19.02	22.54	≤ 30.00	Pass
11ac-VHT20	MCS0	40	5220	20.26	19.32	22.83	≤ 30.00	Pass
11ac-VHT20	MCS0	48	5240	20.18	19.38	22.81	≤ 30.00	Pass
11ac-VHT20	MCS0	52	5260	20.08	20.03	23.07	≤ 23.98	Pass
11ac-VHT20	MCS0	60	5300	19.60	19.58	22.60	≤ 23.98	Pass
11ac-VHT20	MCS0	64	5320	19.37	19.42	22.41	≤ 23.98	Pass
11ac-VHT20	MCS0	100	5500	19.73	20.07	22.91	≤ 23.98	Pass
11ac-VHT20	MCS0	116	5580	19.83	20.05	22.95	≤ 23.98	Pass
11ac-VHT20	MCS0	140	5700	19.19	20.03	22.64	≤ 23.98	Pass
11ac-VHT20	MCS0	144	5720	19.09	20.15	22.66	≤ 23.98	Pass
11ac-VHT20	MCS0	149	5745	19.05	19.82	22.46	≤ 30.00	Pass
11ac-VHT20	MCS0	157	5785	19.01	20.12	22.61	≤ 30.00	Pass
11ac-VHT20	MCS0	165	5825	18.94	19.89	22.45	≤ 30.00	Pass



Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	TotalAverage Power(dBm)	Average Power Limit(dBm)	Result
11ac-VHT40	MCS0	38	5190	19.15	18.44	21.82	≤ 30.00	Pass
11ac-VHT40	MCS0	46	5230	20.12	19.54	22.85	≤ 30.00	Pass
11ac-VHT40	MCS0	54	5270	20.21	19.47	22.87	≤ 23.98	Pass
11ac-VHT40	MCS0	62	5310	20.29	19.88	23.10	≤ 23.98	Pass
11ac-VHT40	MCS0	102	5510	18.56	18.33	21.46	≤ 23.98	Pass
11ac-VHT40	MCS0	110	5550	19.63	20.36	23.02	≤ 23.98	Pass
11ac-VHT40	MCS0	134	5670	19.37	19.76	22.58	≤ 23.98	Pass
11ac-VHT40	MCS0	142	5710	18.69	19.88	22.34	≤ 23.98	Pass
11ac-VHT40	MCS0	151	5755	18.53	20.04	22.36	≤ 30.00	Pass
11ac-VHT40	MCS0	159	5795	18.84	20.15	22.55	≤ 30.00	Pass
11ac-VHT80	MCS0	42	5210	19.14	18.06	21.64	≤ 30.00	Pass
11ac-VHT80	MCS0	58	5290	18.85	18.64	21.76	≤ 23.98	Pass
11ac-VHT80	MCS0	106	5530	19.45	20.17	22.84	≤ 23.98	Pass
11ac-VHT80	MCS0	122	5610	18.38	17.92	21.17	≤ 23.98	Pass
11ac-VHT80	MCS0	138	5690	20.06	18.46	22.34	≤ 23.98	Pass
11ac-VHT80	MCS0	155	5775	19.76	19.24	22.52	≤ 30.00	Pass
11ax-HE20	MCS0	36	5180	19.67	19.16	22.43	≤ 30.00	Pass
11ax-HE20	MCS0	40	5220	19.85	19.08	22.49	≤ 30.00	Pass
11ax-HE20	MCS0	48	5240	19.56	18.80	22.21	≤ 30.00	Pass
11ax-HE20	MCS0	52	5260	20.31	19.88	23.11	≤ 23.98	Pass
11ax-HE20	MCS0	60	5300	20.07	19.83	22.96	≤ 23.98	Pass
11ax-HE20	MCS0	64	5320	18.86	18.85	21.87	≤ 23.98	Pass
11ax-HE20	MCS0	100	5500	19.63	19.74	22.70	≤ 23.98	Pass
11ax-HE20	MCS0	116	5580	18.82	19.44	22.15	≤ 23.98	Pass
11ax-HE20	MCS0	140	5700	18.19	18.48	21.35	≤ 23.98	Pass
11ax-HE20	MCS0	144	5720	18.50	19.72	22.16	≤ 23.98	Pass
11ax-HE20	MCS0	149	5745	18.55	19.52	22.07	≤ 30.00	Pass
11ax-HE20	MCS0	157	5785	18.68	19.81	22.29	≤ 30.00	Pass
11ax-HE20	MCS0	165	5825	18.49	19.73	22.16	≤ 30.00	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	TotalAverage Power(dBm)	Average Power Limit(dBm)	Result
11ax-HE40	MCS0	38	5190	18.87	18.68	21.79	≤ 30.00	Pass
11ax-HE40	MCS0	46	5230	19.93	19.11	22.55	≤ 30.00	Pass
11ax-HE40	MCS0	54	5270	19.74	19.48	22.62	≤ 23.98	Pass
11ax-HE40	MCS0	62	5310	19.21	19.07	22.15	≤ 23.98	Pass
11ax-HE40	MCS0	102	5510	18.27	18.11	21.20	≤ 23.98	Pass
11ax-HE40	MCS0	110	5550	19.42	20.15	22.81	≤ 23.98	Pass
11ax-HE40	MCS0	134	5670	18.35	18.60	21.49	≤ 23.98	Pass
11ax-HE40	MCS0	142	5710	18.73	19.83	22.33	≤ 23.98	Pass
11ax-HE40	MCS0	151	5755	18.72	19.64	22.21	≤ 30.00	Pass
11ax-HE40	MCS0	159	5795	18.44	19.78	22.17	≤ 30.00	Pass
11ax-HE80	MCS0	42	5210	18.44	18.14	21.30	≤ 30.00	Pass
11ax-HE80	MCS0	58	5290	18.20	18.32	21.27	≤ 23.98	Pass
11ax-HE80	MCS0	106	5530	17.50	17.02	20.28	≤ 23.98	Pass
11ax-HE80	MCS0	122	5610	19.59	20.52	23.09	≤ 23.98	Pass
11ax-HE80	MCS0	138	5690	19.23	20.24	22.77	≤ 23.98	Pass
11ax-HE80	MCS0	155	5775	18.90	19.32	22.13	≤ 30.00	Pass

Note 1:

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

Note 2:

For 5250 - 5725MHz Band: Average Power Limit (dBm) = 23.98 dBm.

For 5150 - 5250MHz and 5725 - 5850MHz Bands: Average Power Limit (dBm) = 30 dBm.

Product	HAN Access Point, AP311	Temperature	23 ~ 25°C
Test Engineer	Kevin Ker	Relative Humidity	46 ~ 56%
Test Site	SR1	Test Date	2020/09/17
Test Mode	AP311-Scan Antenna		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Total Average Power(dBm)	Average Power Limit(dBm)	Result
11a	6Mbps	36	5180	11.46	≤ 30.00	Pass
11a	6Mbps	44	5220	10.96	≤ 30.00	Pass
11a	6Mbps	48	5240	10.86	≤ 30.00	Pass
11a	6Mbps	149	5745	11.43	≤ 30.00	Pass
11a	6Mbps	157	5785	11.35	≤ 30.00	Pass
11a	6Mbps	165	5825	11.59	≤ 30.00	Pass

Note :

For 5150 - 5250MHz and 5725 - 5850MHz Bands: Average Power Limit (dBm) = 30 dBm.

## 6.5. Transmit Power Control

### 6.5.1. 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.

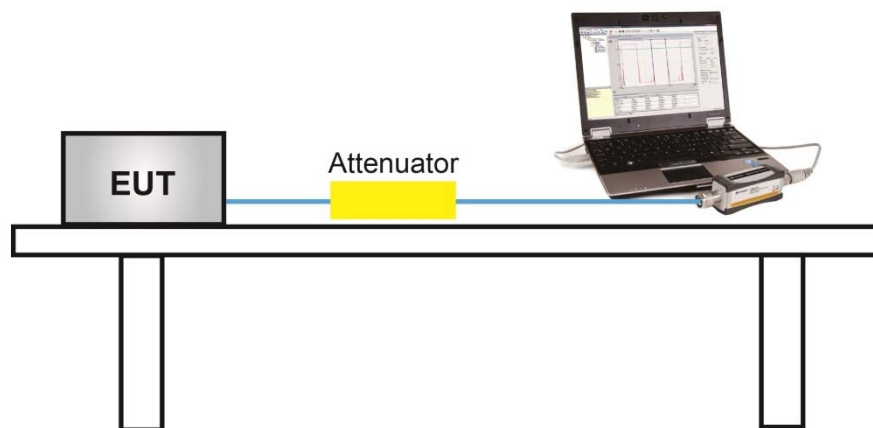
### 6.5.2. Test Procedure Used

KDB 789033 D02v01- Section E)3) b) Method PM-G

### 6.5.3. 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.

### 6.5.4. Test Setup



### 6.5.5. Test Result

Manufacturer declared that device support TPC mechanism in the operation description.

## **6.6. Power Spectral Density Measurement**

### **6.6.1. Test Limit**

For 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.

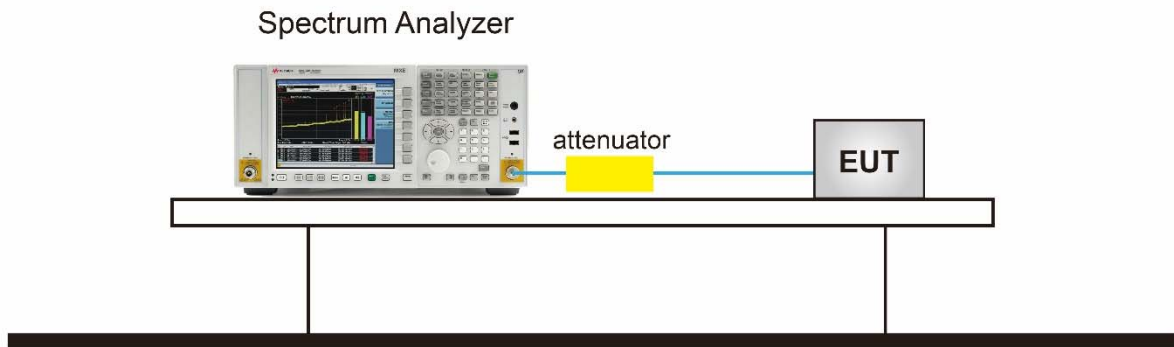
### **6.6.2. Test Procedure Used**

KDB 789033 D02v02r01-Section F

### **6.6.3. 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,  
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.

### 6.6.4. Test Setup



**6.6.5.Test Result**

Product	HAN Access Point, AP311	Temperature	23 ~ 25°C
Test Engineer	Kevin Ker	Relative Humidity	40 ~ 56%
Test Site	SR1	Test Date	2020/09/02 ~ 2020/09/20
Mode	AP311- Power Spectral Density (U-NII- 1& 2A &2C)		

Test Mode	Data Rate /MCS	Ch. No.	Freq. (MHz)	Ant 0 PSD (dBm/MHz)	Ant 1 PSD (dBm/MHz)	Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/MHz)	Result
11a	6Mbps	36	5180	8.79	8.00	91.03	11.83	≤16.69	Pass
11a	6Mbps	44	5220	8.94	8.12	91.03	11.97	≤16.69	Pass
11a	6Mbps	48	5240	8.84	8.26	91.03	11.98	≤16.69	Pass
11a	6Mbps	52	5260	7.17	6.96	91.03	10.48	≤10.69	Pass
11a	6Mbps	60	5300	6.81	7.00	91.03	10.32	≤10.69	Pass
11a	6Mbps	64	5320	6.74	7.11	91.03	10.35	≤10.69	Pass
11a	6Mbps	100	5500	6.85	7.47	91.03	10.59	≤10.69	Pass
11a	6Mbps	116	5580	6.41	7.32	91.03	10.30	≤10.69	Pass
11a	6Mbps	140	5700	6.43	7.39	91.03	10.35	≤10.69	Pass
11a	6Mbps	144	5720	6.49	7.33	91.03	10.35	≤10.69	Pass
11ac-VHT20	MCS0	36	5180	8.30	7.33	95.24	11.06	≤16.69	Pass
11ac-VHT20	MCS0	40	5220	8.14	7.63	95.24	11.11	≤16.69	Pass
11ac-VHT20	MCS0	48	5240	8.35	7.78	95.24	11.30	≤16.69	Pass
11ac-VHT20	MCS0	52	5260	7.51	7.13	95.24	10.54	≤10.69	Pass
11ac-VHT20	MCS0	60	5300	7.59	7.19	95.24	10.62	≤10.69	Pass
11ac-VHT20	MCS0	64	5320	7.27	7.13	95.24	10.42	≤10.69	Pass
11ac-VHT20	MCS0	100	5500	7.02	7.59	95.24	10.54	≤10.69	Pass
11ac-VHT20	MCS0	116	5580	6.94	7.69	95.24	10.55	≤10.69	Pass
11ac-VHT20	MCS0	140	5700	6.84	7.66	95.24	10.49	≤10.69	Pass
11ac-VHT20	MCS0	144	5720	6.81	7.83	95.24	10.57	≤10.69	Pass

Test Mode	Data Rate/ MCS	Ch. No.	Freq. (MHz)	Ant 0 PSD (dBm/MHz)	Ant 1 PSD (dBm/MHz)	Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/MHz)	Result
11ac-VHT40	MCS0	38	5190	5.07	4.39	93.72	8.03	≤16.69	Pass
11ac-VHT40	MCS0	46	5230	5.96	5.69	93.72	9.12	≤16.69	Pass
11ac-VHT40	MCS0	54	5270	6.40	6.09	93.72	9.54	≤10.69	Pass
11ac-VHT40	MCS0	62	5310	6.58	6.18	93.72	9.68	≤10.69	Pass
11ac-VHT40	MCS0	102	5510	4.92	5.58	93.72	8.56	≤10.69	Pass
11ac-VHT40	MCS0	110	5550	5.92	6.57	93.72	9.55	≤10.69	Pass
11ac-VHT40	MCS0	134	5670	5.68	6.37	93.72	9.33	≤10.69	Pass
11ac-VHT40	MCS0	142	5710	5.28	6.21	93.72	9.06	≤10.69	Pass
11ac-VHT80	MCS0	42	5210	1.42	0.89	94.68	4.41	≤16.69	Pass
11ac-VHT80	MCS0	58	5290	2.13	1.82	94.68	5.23	≤10.69	Pass
11ac-VHT80	MCS0	106	5530	2.65	3.25	94.68	6.21	≤10.69	Pass
11ac-VHT80	MCS0	122	5610	1.35	2.25	94.68	5.07	≤10.69	Pass
11ac-VHT80	MCS0	138	5690	2.63	3.45	94.68	6.31	≤10.69	Pass
11ax-HE20	MCS0	36	5180	7.78	7.10	94.74	10.70	≤16.69	Pass
11ax-HE20	MCS0	40	5220	7.83	7.30	94.74	10.81	≤16.69	Pass
11ax-HE20	MCS0	48	5240	7.86	7.39	94.74	10.87	≤16.69	Pass
11ax-HE20	MCS0	52	5260	7.46	7.00	94.74	10.48	≤10.69	Pass
11ax-HE20	MCS0	60	5300	7.40	7.17	94.74	10.53	≤10.69	Pass
11ax-HE20	MCS0	64	5320	7.32	7.18	94.74	10.49	≤10.69	Pass
11ax-HE20	MCS0	100	5500	7.13	7.55	94.74	10.59	≤10.69	Pass
11ax-HE20	MCS0	116	5580	6.86	7.38	94.74	10.37	≤10.69	Pass
11ax-HE20	MCS0	140	5700	6.61	7.75	94.74	10.46	≤10.69	Pass
11ax-HE20	MCS0	144	5720	6.75	7.81	94.74	10.56	≤10.69	Pass



Test Mode	Data Rate/ MCS	Ch. No.	Freq. (MHz)	Ant 0 PSD (dBm/MHz)	Ant 1 PSD (dBm/MHz)	Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/MHz)	Result
11ax-VHT40	MCS0	38	5190	4.87	4.04	95.24	7.70	≤16.69	Pass
11ax-VHT40	MCS0	46	5230	5.64	5.19	95.24	8.64	≤16.69	Pass
11ax-VHT40	MCS0	54	5270	5.77	5.37	95.24	8.80	≤10.69	Pass
11ax-VHT40	MCS0	62	5310	4.85	5.08	95.24	8.19	≤10.69	Pass
11ax-VHT40	MCS0	102	5510	4.05	4.69	95.24	7.60	≤10.69	Pass
11ax-VHT40	MCS0	110	5550	5.10	5.97	95.24	8.77	≤10.69	Pass
11ax-VHT40	MCS0	134	5670	4.19	4.87	95.24	7.76	≤10.69	Pass
11ax-VHT40	MCS0	142	5710	4.39	5.90	95.24	8.43	≤10.69	Pass
11ax-VHT80	MCS0	42	5210	1.19	0.76	94.71	4.23	≤16.69	Pass
11ax-VHT80	MCS0	58	5290	1.44	1.18	94.71	4.56	≤10.69	Pass
11ax-VHT80	MCS0	106	5530	-0.36	0.71	94.71	3.45	≤10.69	Pass
11ax-VHT80	MCS0	122	5610	1.24	1.89	94.71	4.82	≤10.69	Pass
11ax-VHT80	MCS0	138	5690	2.00	2.95	94.71	5.75	≤10.69	Pass

Note 1: When EUT duty cycle ≥ 98%,

The total PSD (dBm/MHz) =  $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$  (dBm/MHz).

When EUT duty cycle < 98%,

The total PSD (dBm/MHz) =  $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$  (dBm/MHz) +  $10 \cdot \log (1/\text{Duty Cycle})$ .

Note 2:

For 5150 - 5250MHz Band: PSD Limit (dBm/MHz) = 17 - (6.31 - 6) = 16.69dBm/MHz.

For 5470 - 5725MHz Band: PSD Limit (dBm/MHz) = 11 - (6.31 - 6) = 10.69dBm/MHz.

Product	HAN Access Point, AP311	Temperature	24°C
Test Engineer	Kevin Ker	Relative Humidity	58%
Test Site	SR2	Test Date	2020/09/20
Test Item	AP311-Power Spectral Density (U-NII-3)		

Test Mode	Data Rate/ MCS	Ch. No.	Freq. (MHz)	Ant 0 PSD (dBm/510KHz)	Ant 1 PSD (dBm/510KHz)	Duty Cycle (%)	Total PSD (dBm/ 510kHz)	Limit (dBm/ 500kHz)	Result
11a	6Mbps	149	5745	5.16	6.24	91.03	9.15	29.69	Pass
11a	6Mbps	157	5785	5.27	6.59	91.03	9.40	29.69	Pass
11a	6Mbps	165	5825	5.17	6.25	91.03	9.16	29.69	Pass
11ac-VHT20	MCS0	149	5745	4.78	5.59	95.24	8.42	29.69	Pass
11ac-VHT20	MCS0	157	5785	4.69	5.75	95.24	8.48	29.69	Pass
11ac-VHT20	MCS0	165	5825	4.73	5.61	95.24	8.42	29.69	Pass
11ac-VHT40	MCS0	151	5755	2.20	3.45	93.72	6.17	29.69	Pass
11ac-VHT40	MCS0	159	5795	2.22	3.49	93.72	6.19	29.69	Pass
11ac-VHT80	MCS0	155	5775	-0.21	0.91	94.68	3.63	29.69	Pass
11ax-HE20	MCS0	149	5745	3.96	5.18	94.74	7.86	29.69	Pass
11ax-HE20	MCS0	157	5785	4.36	5.34	94.74	8.12	29.69	Pass
11ax-HE20	MCS0	165	5825	4.17	5.30	94.74	8.02	29.69	Pass
11ax-HE40	MCS0	151	5755	1.96	2.90	95.24	5.68	29.69	Pass
11ax-HE40	MCS0	159	5795	1.87	3.14	95.24	5.77	29.69	Pass
11ax-HE80	MCS0	155	5775	1.27	0.23	94.71	4.03	29.69	Pass

Note 1: When EUT duty cycle  $\geq 98\%$ ,

the total PSD (dBm/510kHz) =  $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$  (dBm/510kHz).

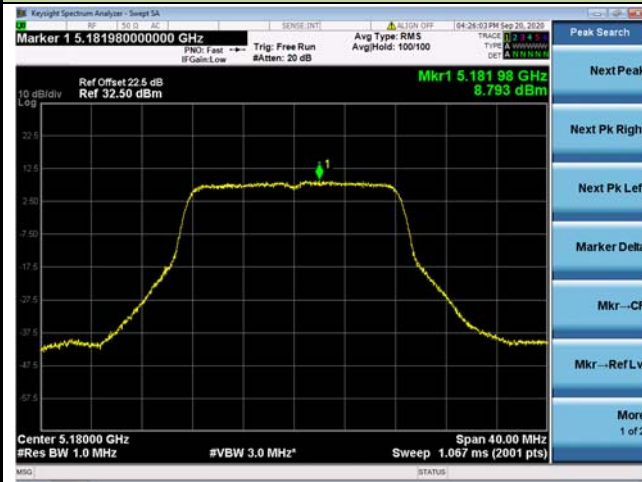
When EUT duty cycle  $< 98\%$ ,

the total PSD (dBm/510kHz) =  $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$  (dBm/510kHz) +  $10 \cdot \log (1/\text{Duty Cycle})$ .

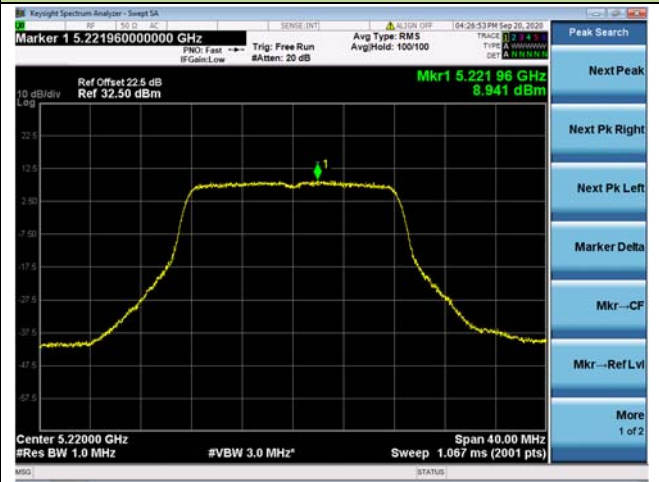
Note 2: PSD Limit (dBm/500kHz) =  $30 - (6.31 - 6) = 29.69\text{dBm}/500\text{kHz}$ .

## 802.11a Power Spectral Density - Ant 0 / Ant 0 + 1

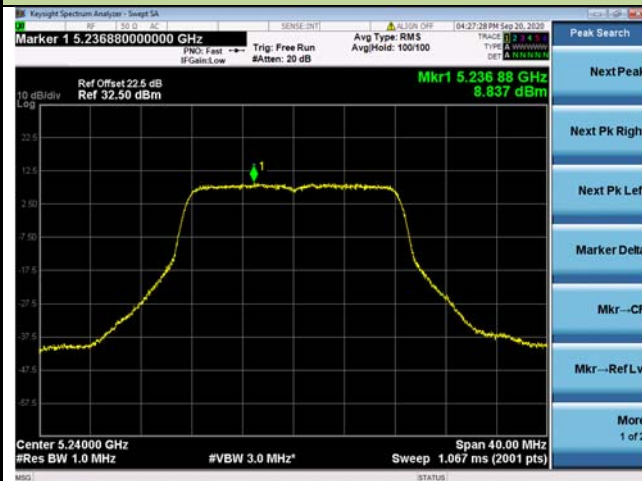
Channel 36 (5180MHz)



Channel 44 (5220MHz)



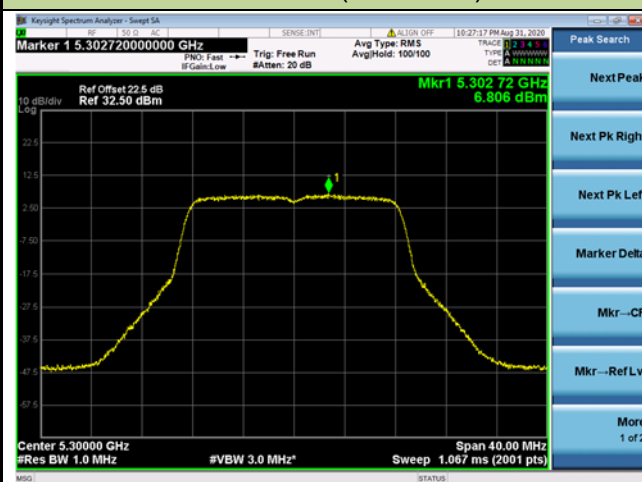
Channel 48 (5240MHz)



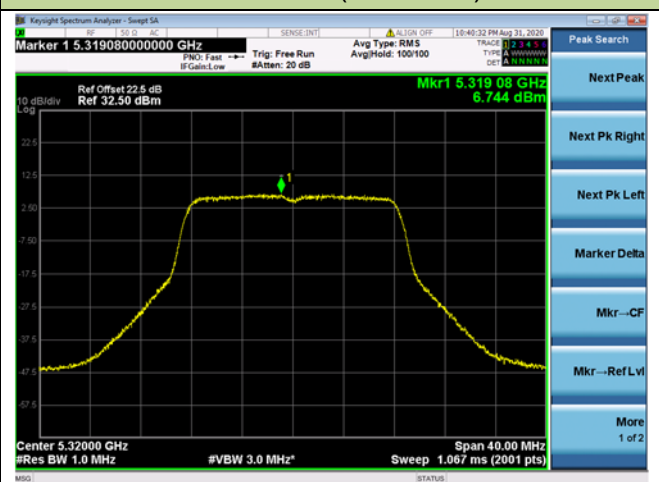
Channel 52 (5260MHz)

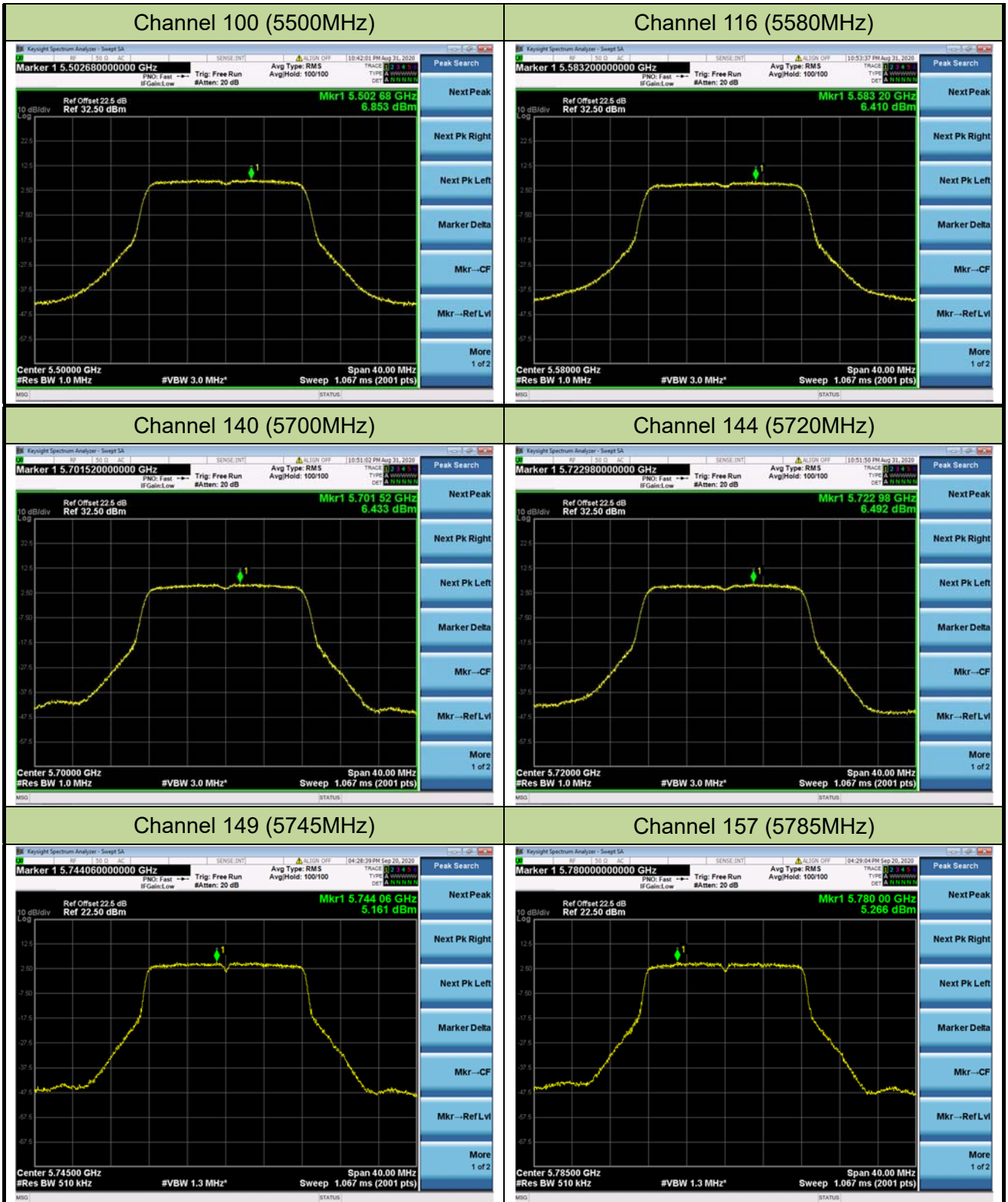


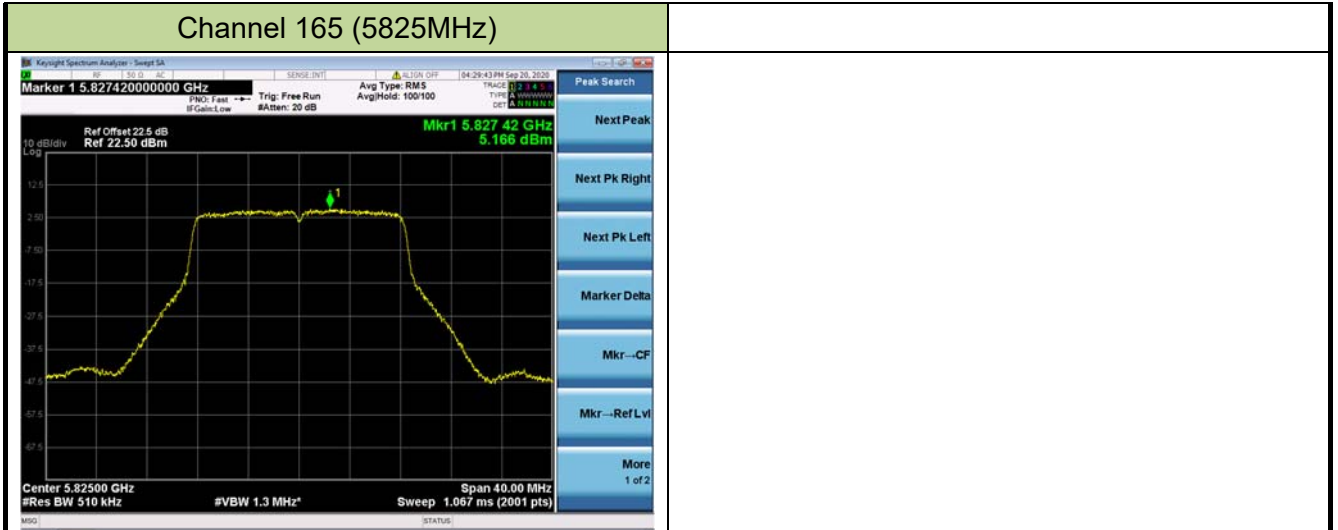
Channel 60 (5300MHz)



Channel 64 (5320MHz)



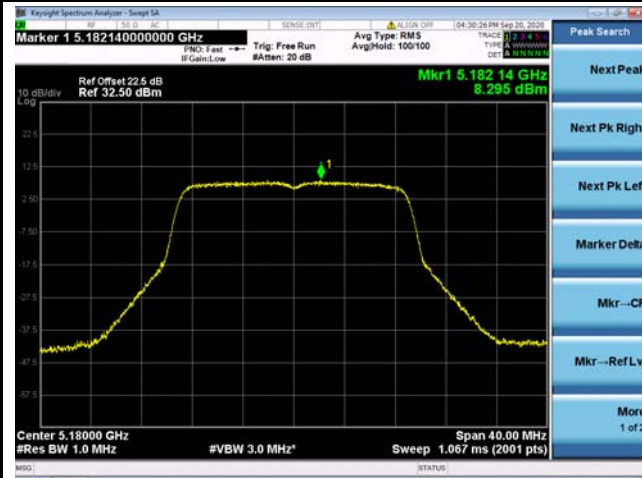




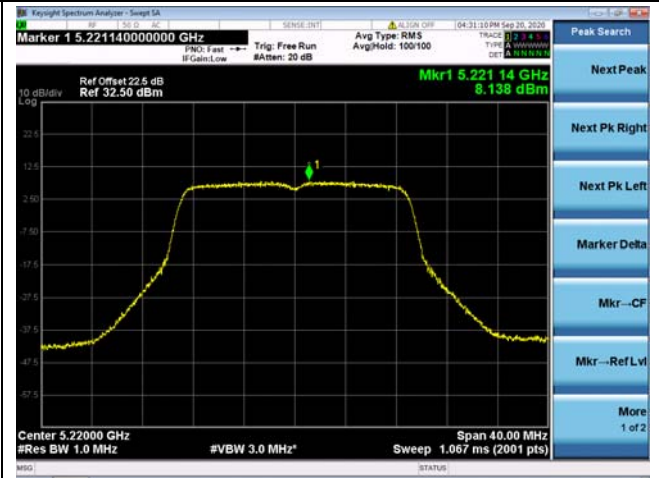


## 802.11ac-VHT20 Power Spectral Density - Ant 0 / Ant 0 + 1

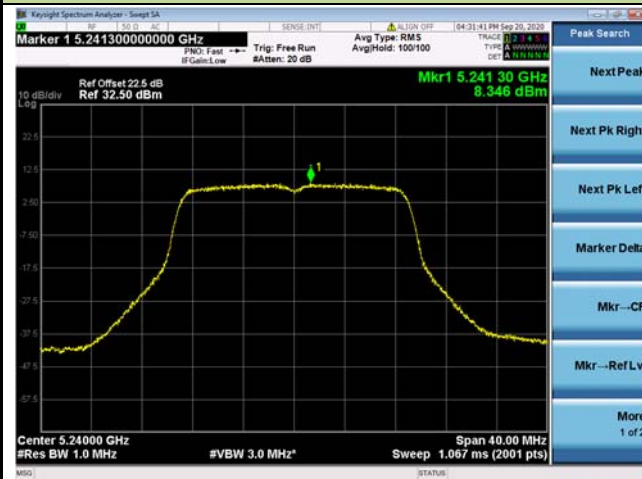
Channel 36 (5180MHz)



Channel 44 (5220MHz)



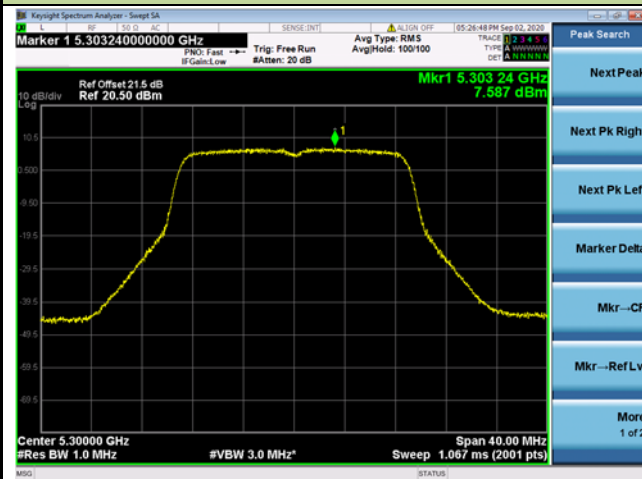
Channel 48 (5240MHz)



Channel 52 (5260MHz)

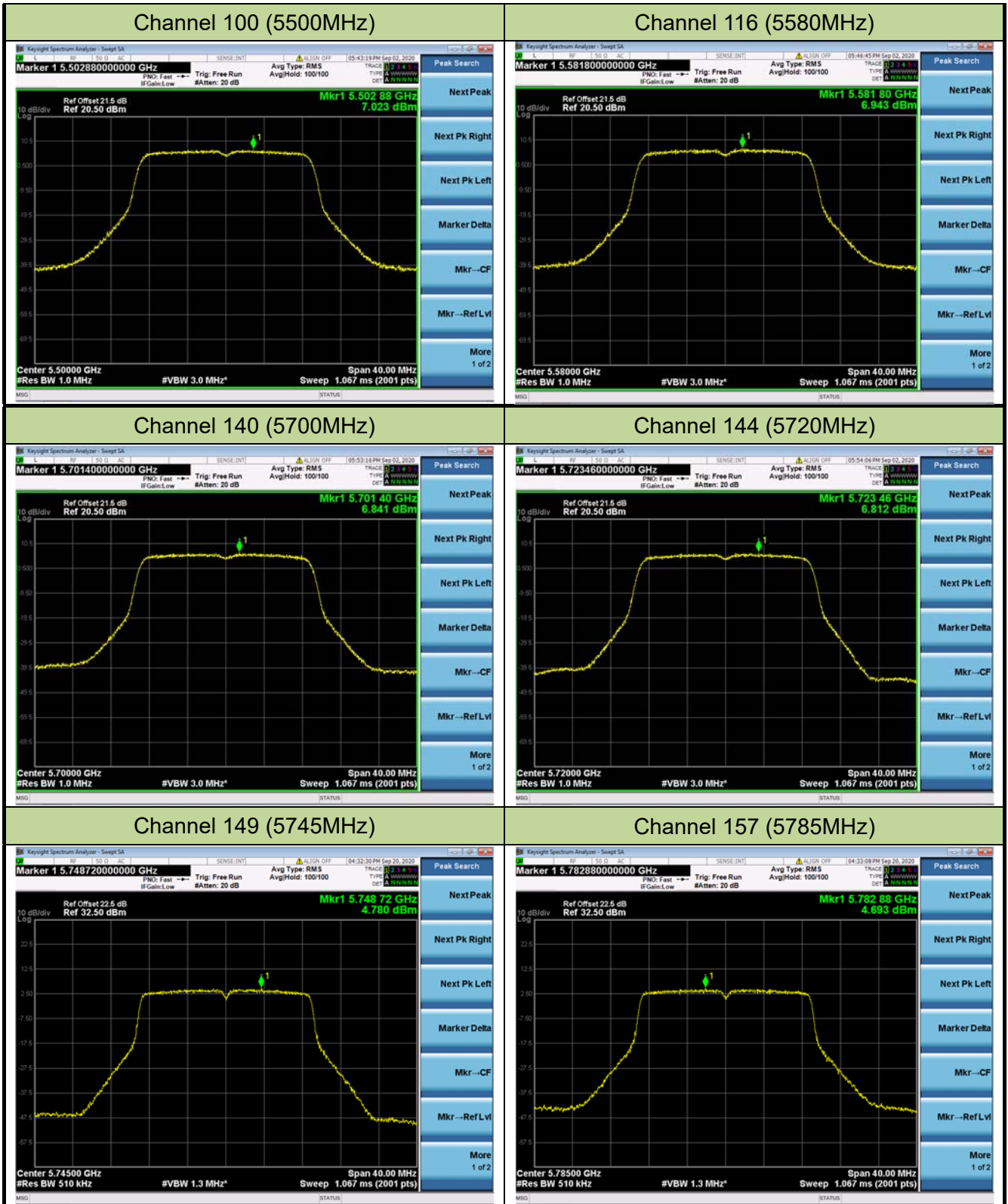


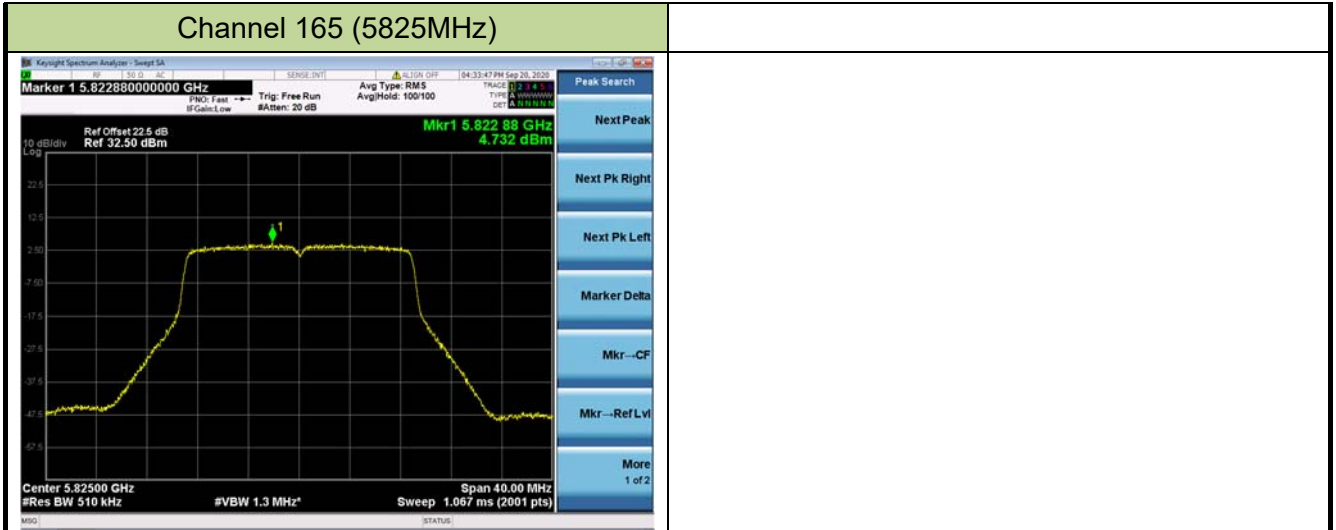
Channel 60 (5300MHz)



Channel 64 (5320MHz)



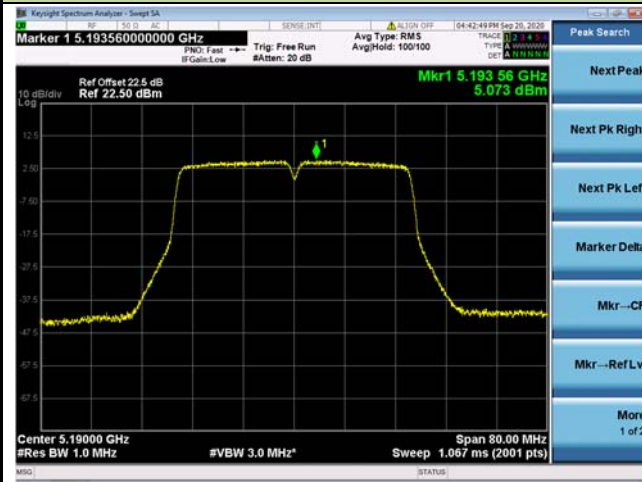




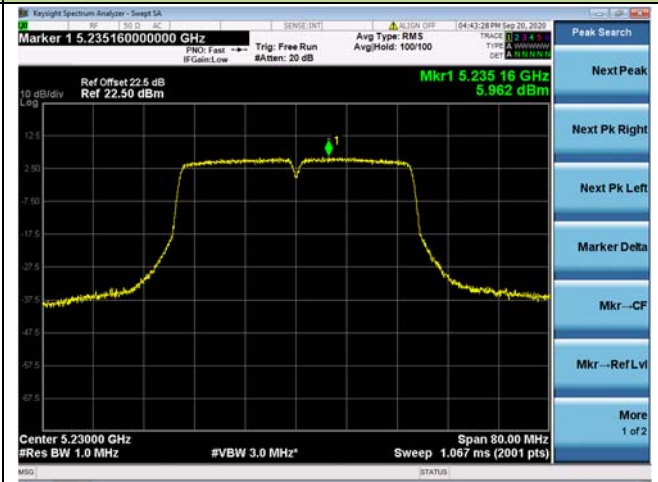


802.11ac-VHT40 Power Spectral Density - Ant 0 / Ant 0 + 1

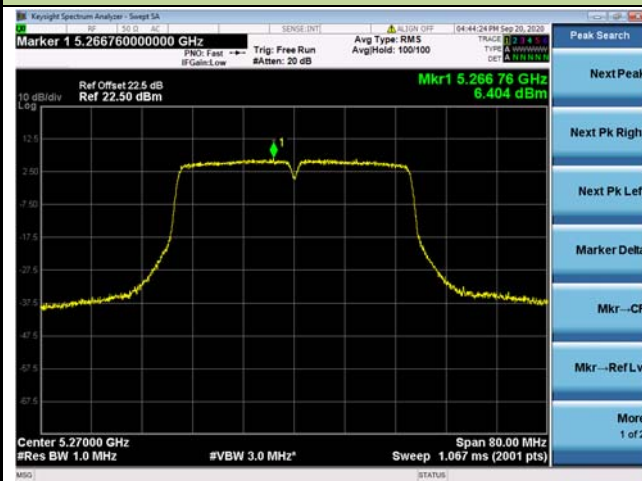
Channel 38 (5190MHz)



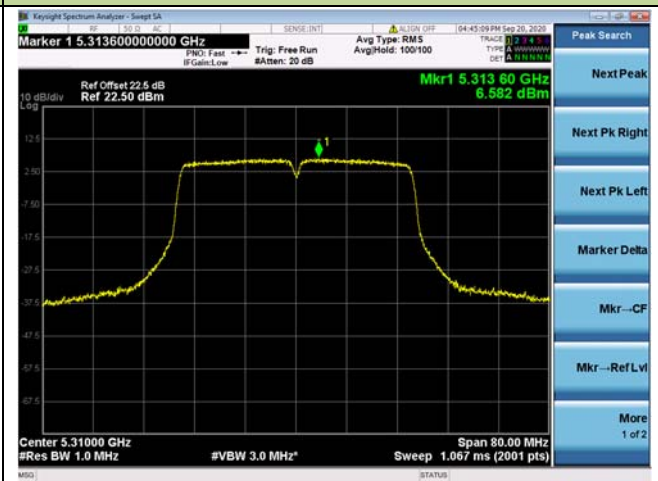
Channel 46 (5230MHz)



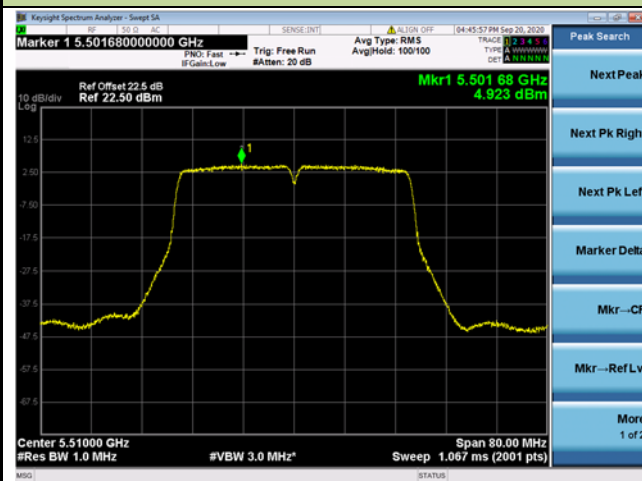
Channel 54 (5270MHz)



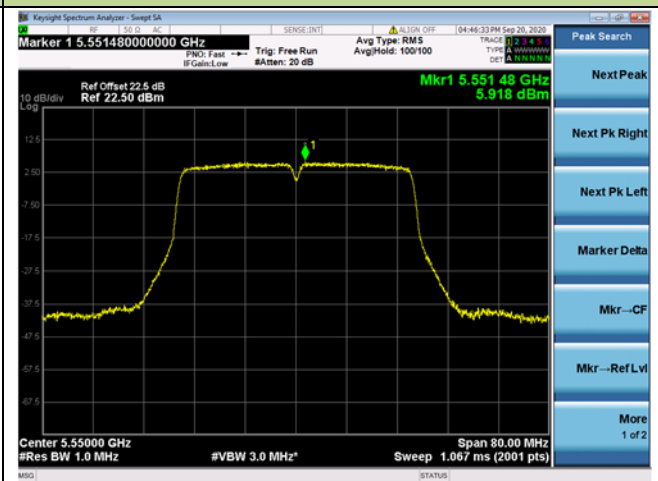
Channel 62 (5310MHz)

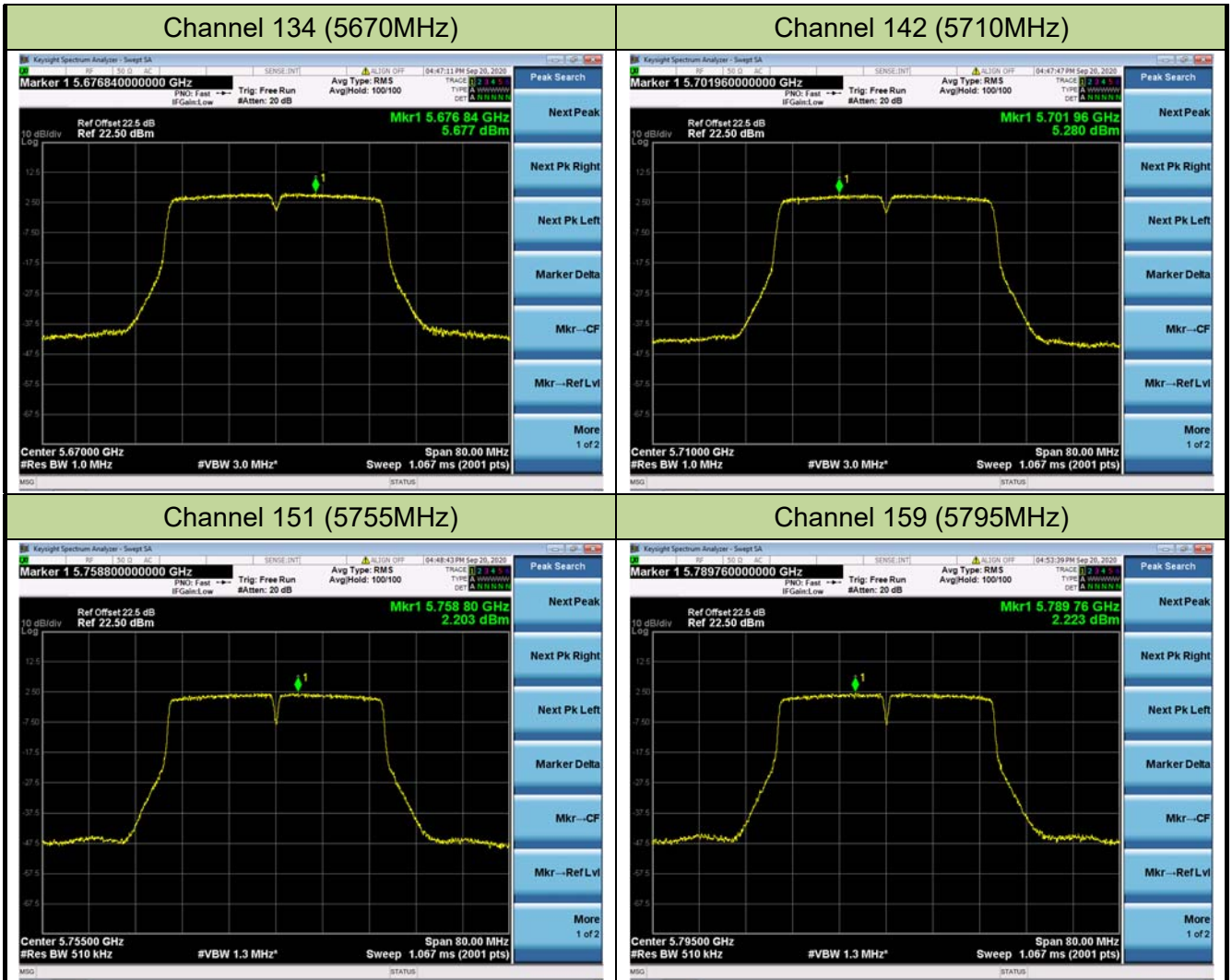


Channel 102 (5510MHz)



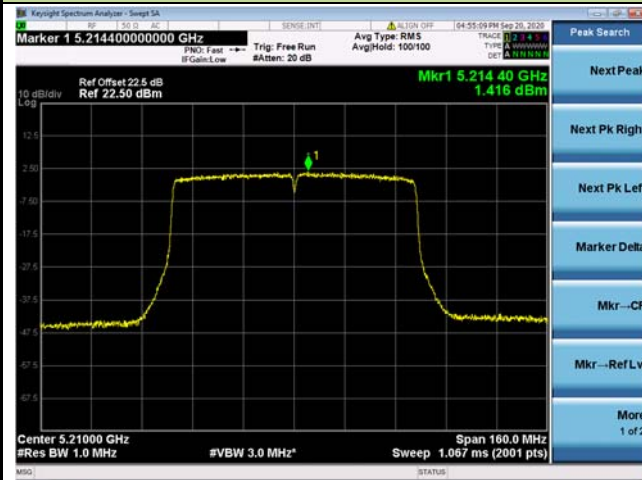
Channel 110 (5550MHz)



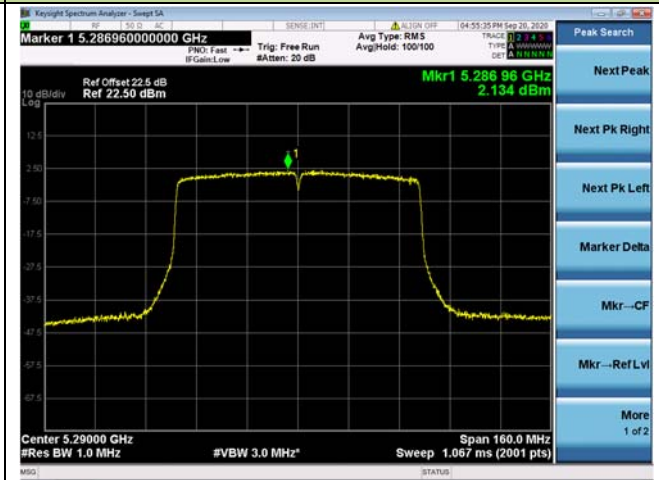


802.11ac-VHT80 Power Spectral Density - Ant 0 / Ant 0 + 1

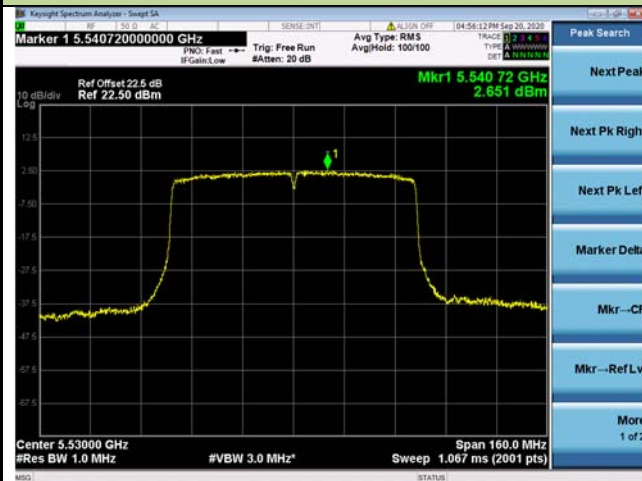
Channel 42 (5210MHz)



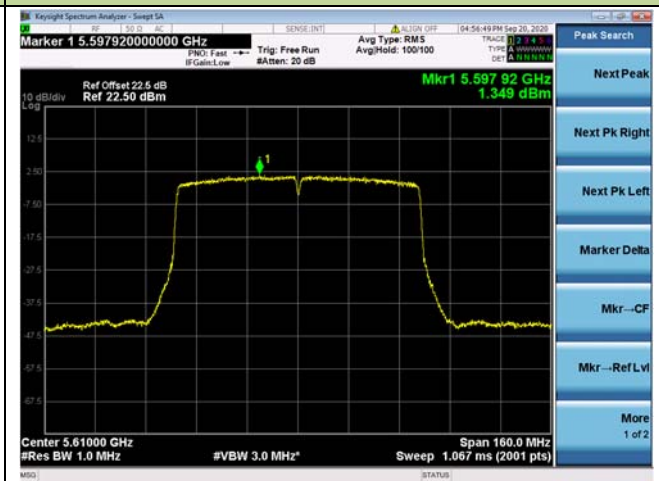
Channel 58 (5290MHz)



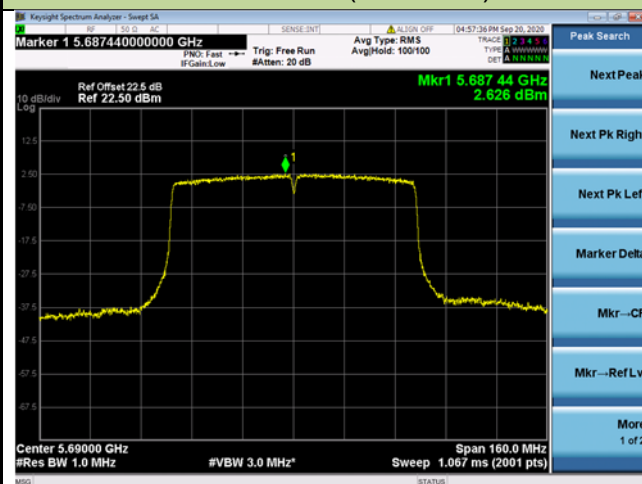
Channel 106 (5530MHz)



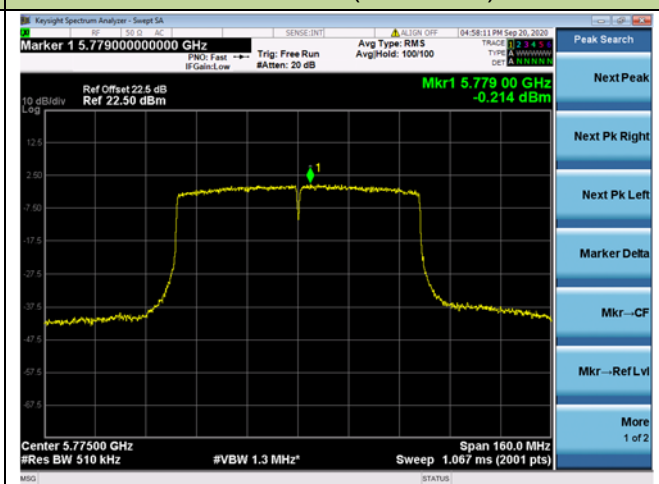
Channel 122 (5610MHz)



Channel 138 (5690MHz)



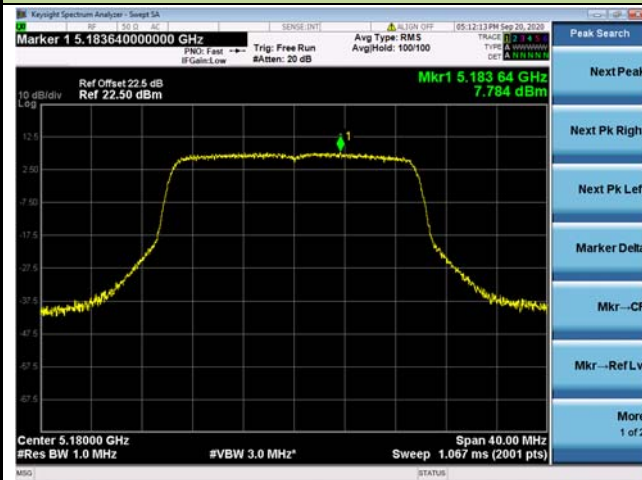
Channel 155 (5775MHz)



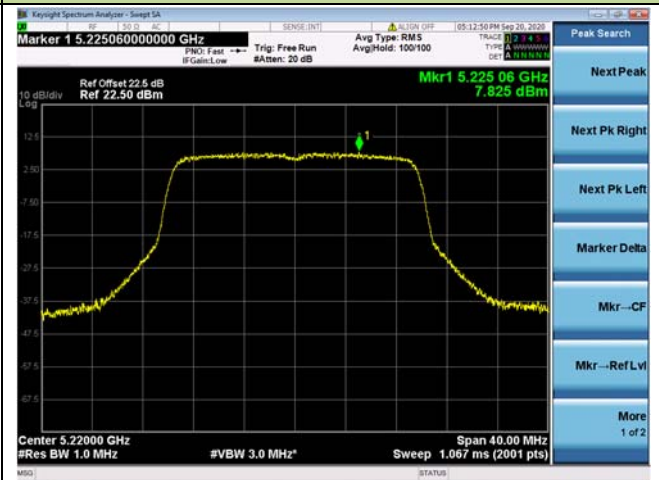


## 802.11ax-HE20 Power Spectral Density - Ant 0 / Ant 0 + 1

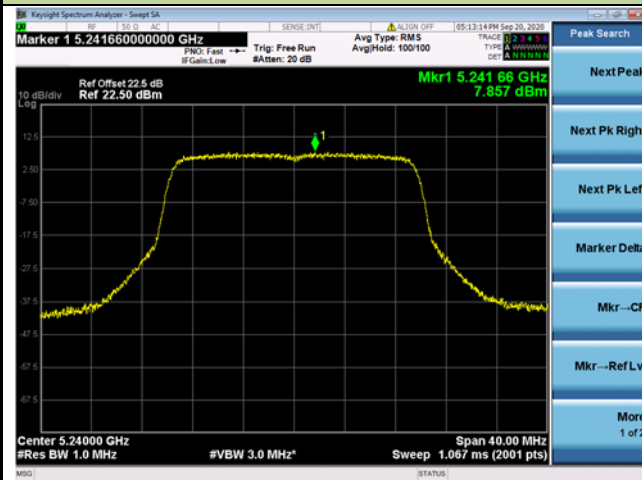
Channel 36 (5180MHz)



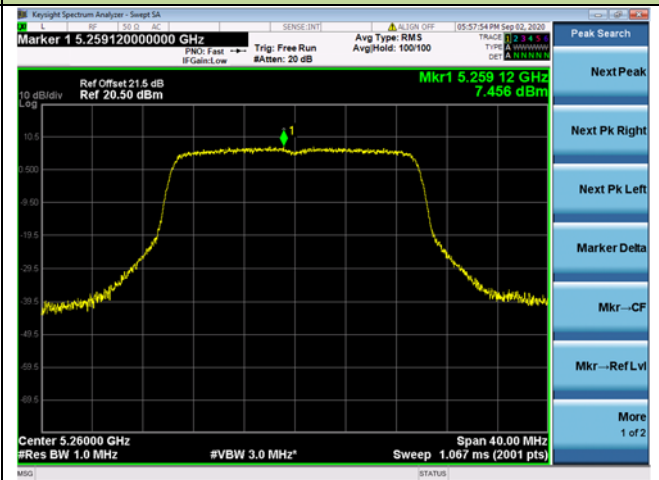
Channel 44 (5220MHz)



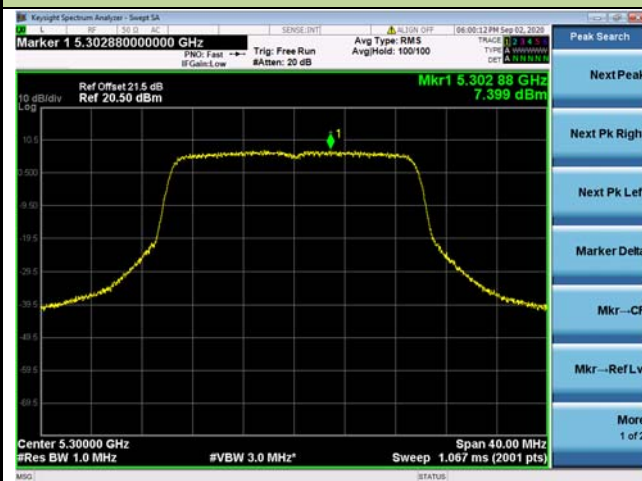
Channel 48 (5240MHz)



Channel 52 (5260MHz)

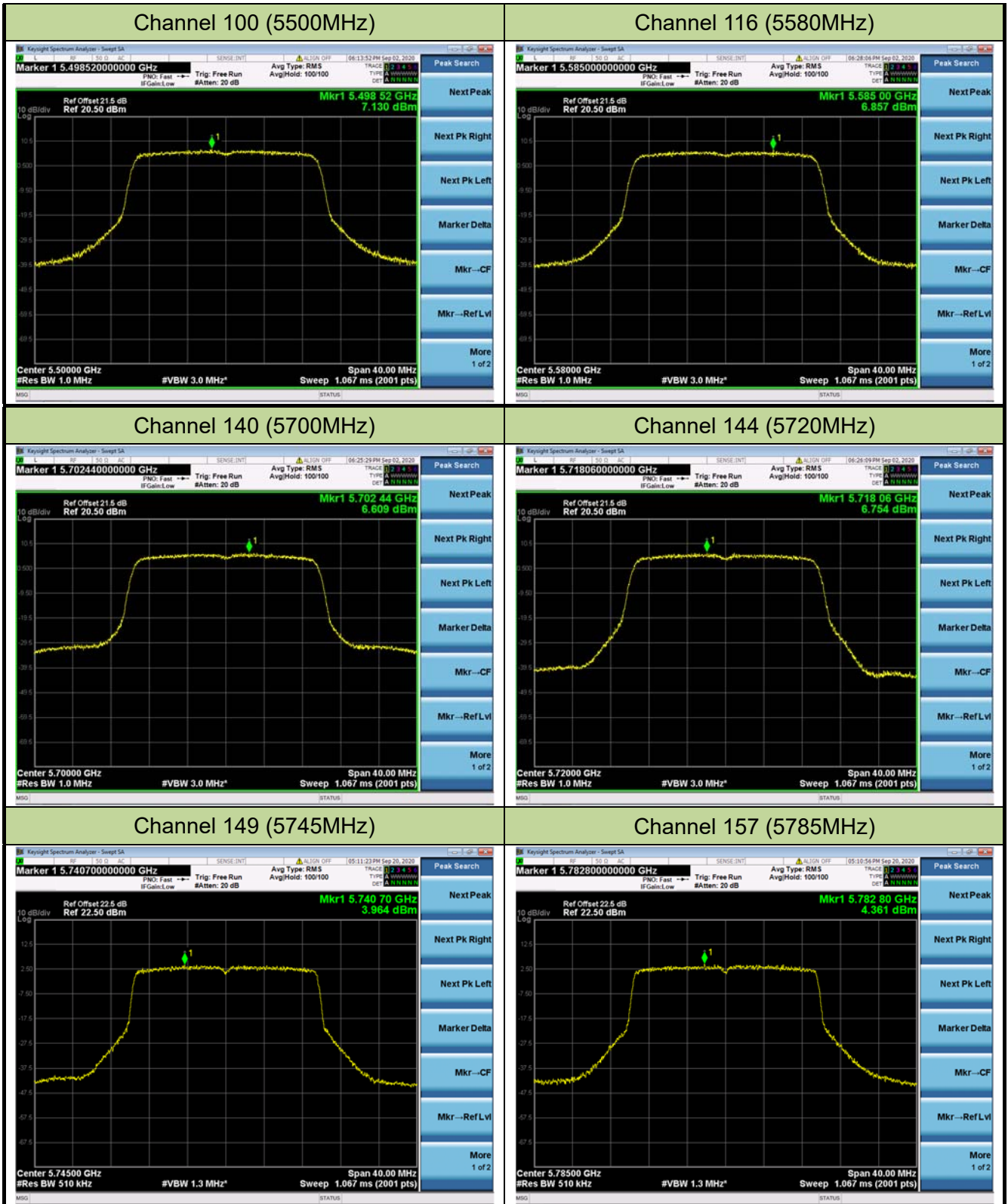


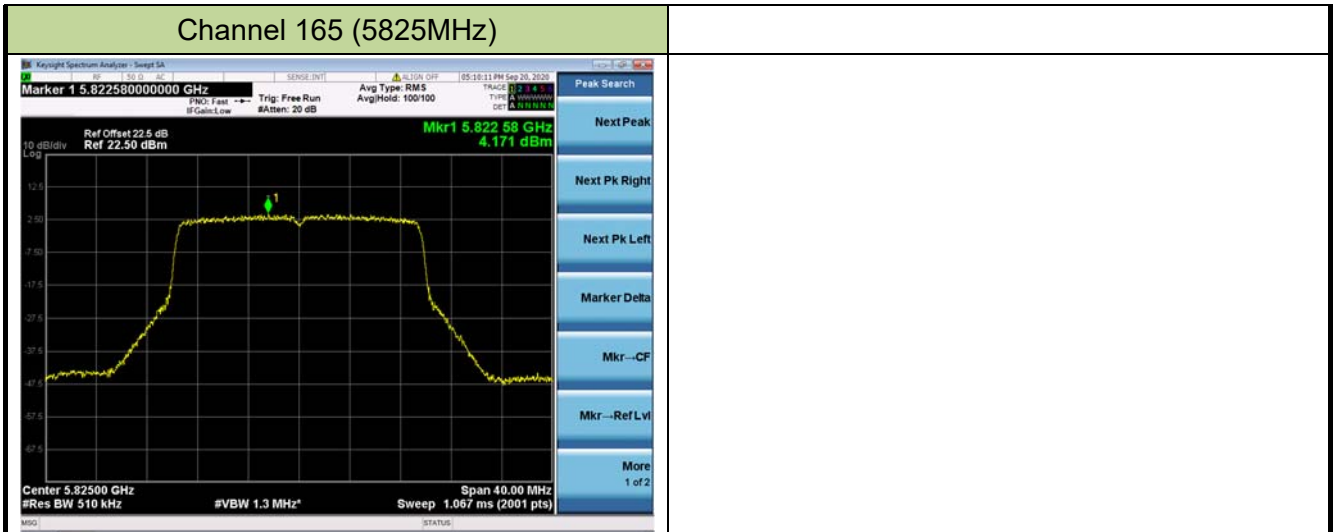
Channel 60 (5300MHz)



Channel 64 (5320MHz)

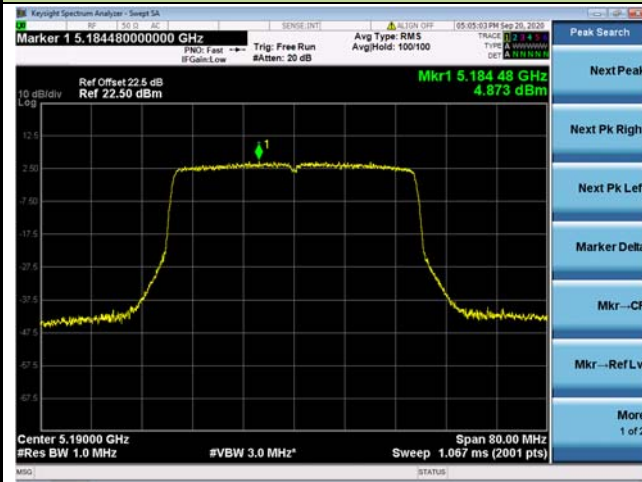




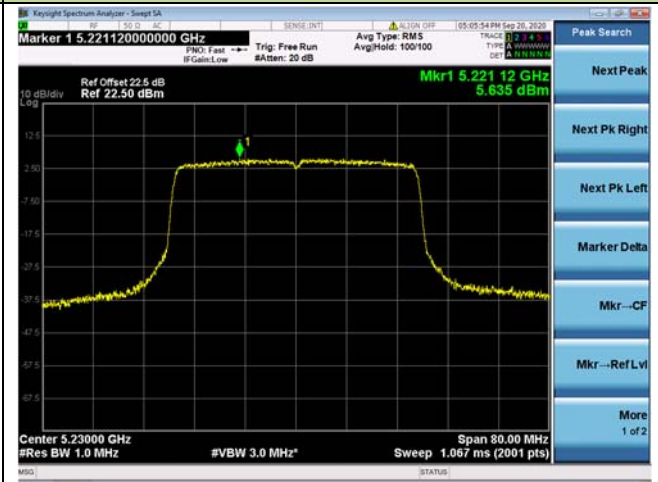


802.11ax-HE40 Power Spectral Density - Ant 0 / Ant 0 + 1

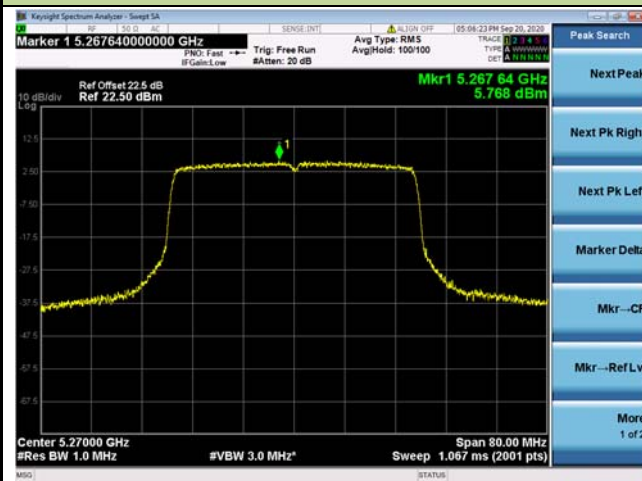
Channel 38 (5190MHz)



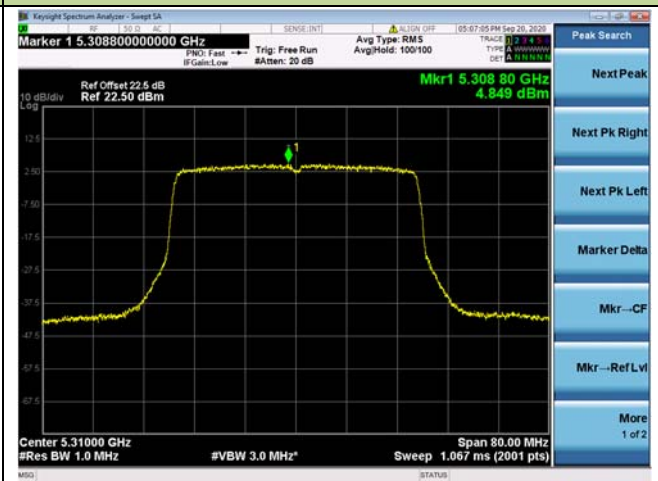
Channel 46 (5230MHz)



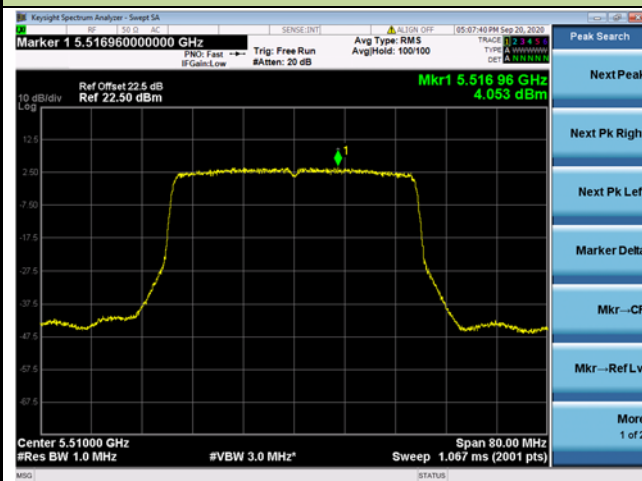
Channel 54 (5270MHz)



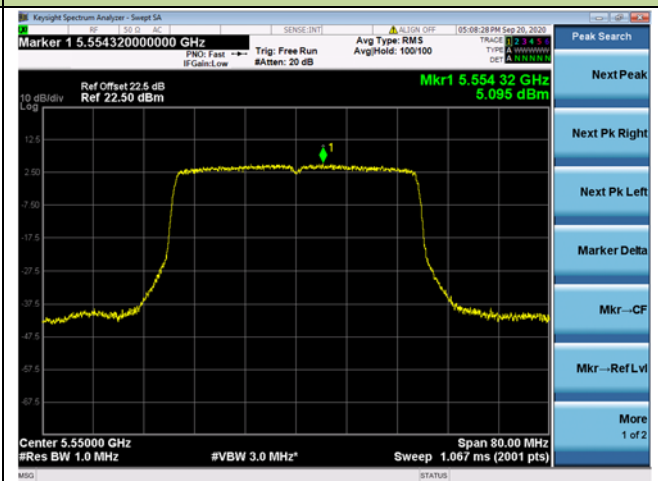
Channel 62 (5310MHz)



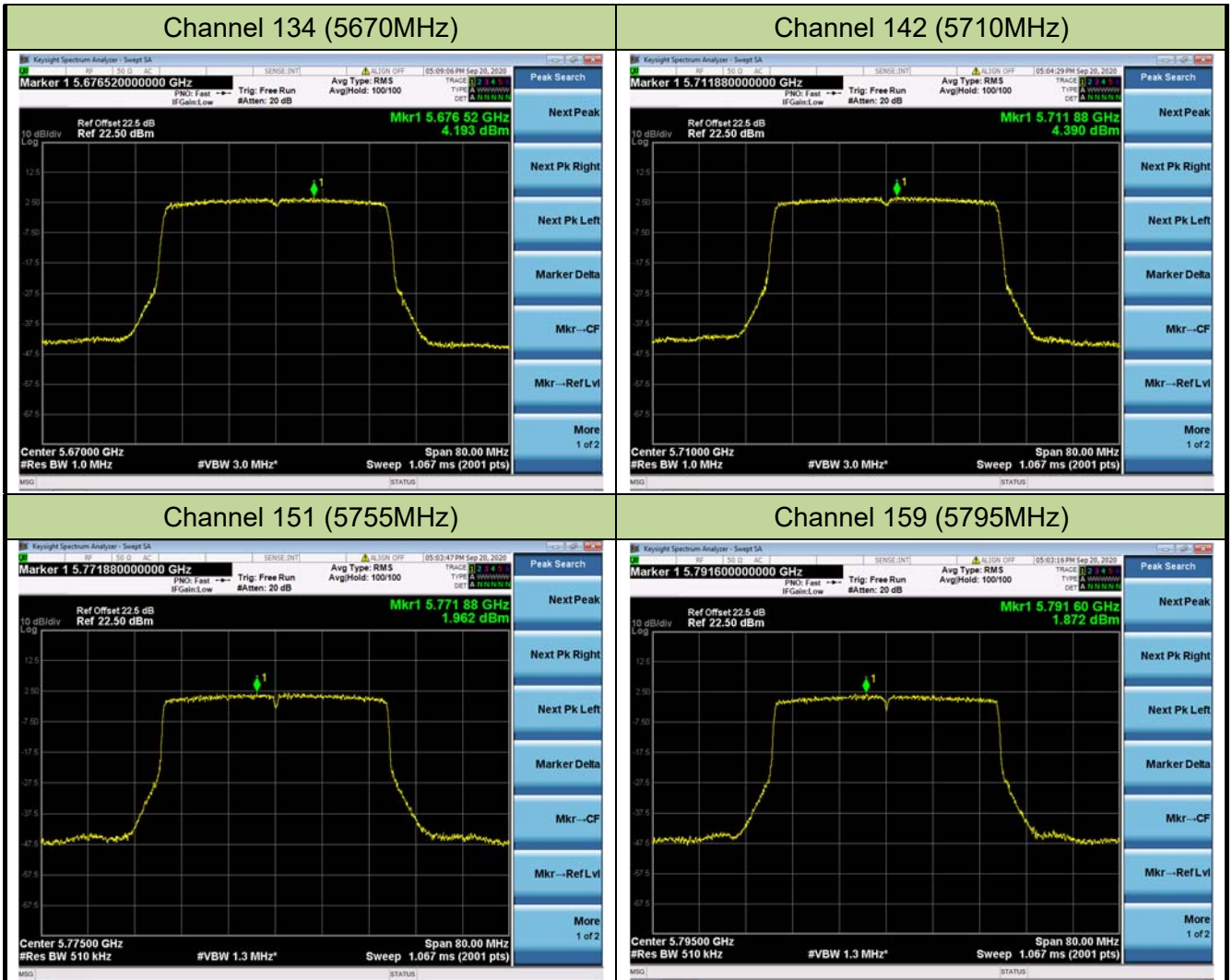
Channel 102 (5510MHz)



Channel 110 (5550MHz)



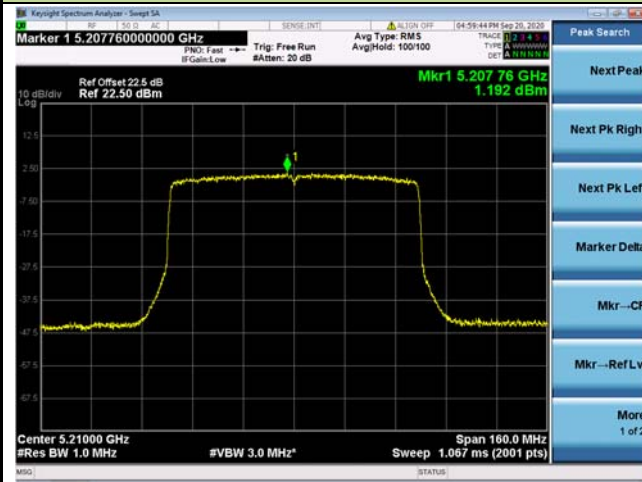




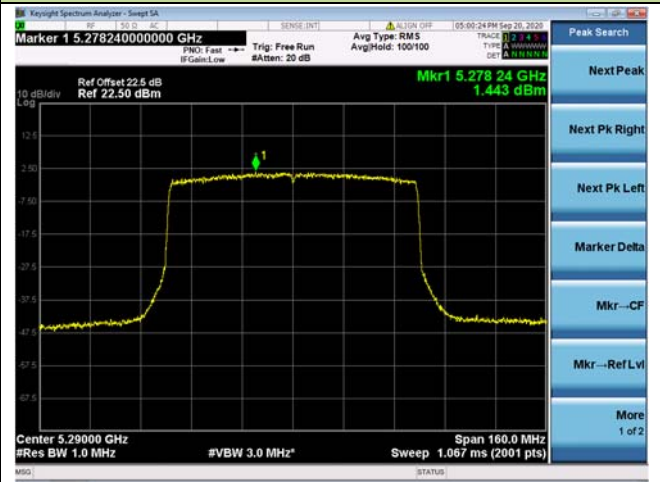


## 802.11ax-HE80 Power Spectral Density - Ant 0 / Ant 0 + 1

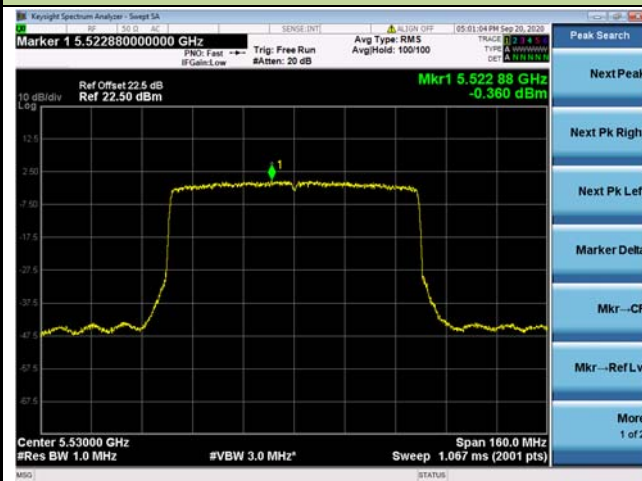
Channel 42 (5210MHz)



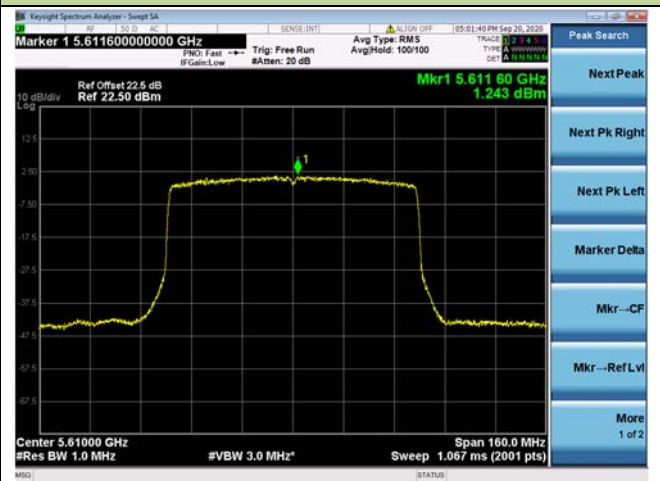
Channel 58 (5290MHz)



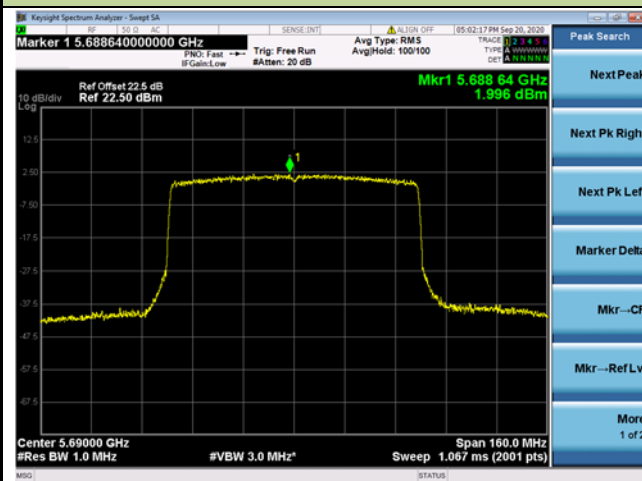
Channel 106 (5530MHz)



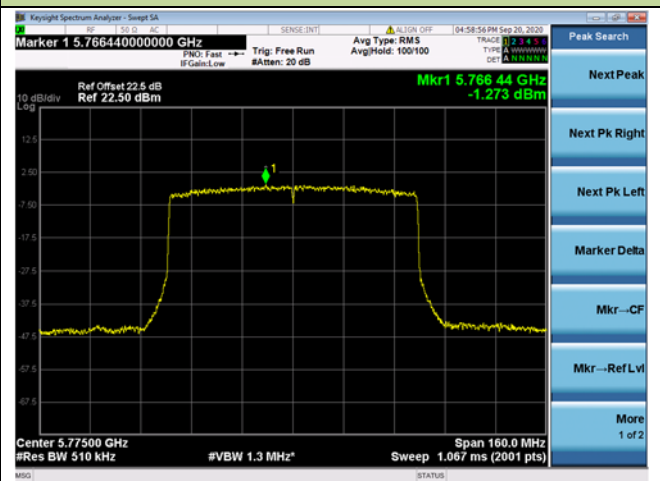
Channel 122 (5610MHz)



Channel 138 (5690MHz)

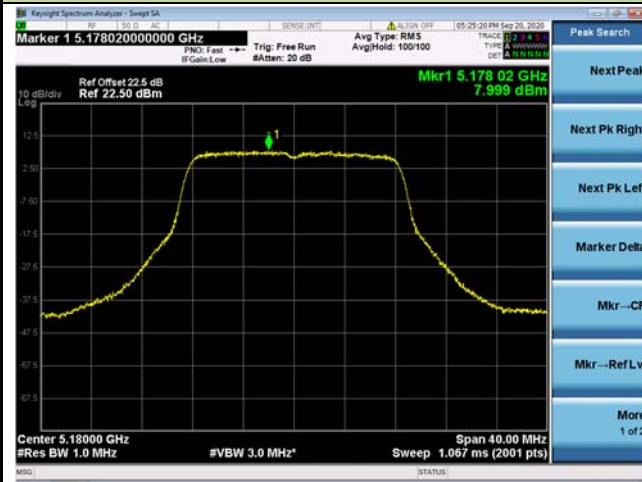


Channel 155 (5775MHz)

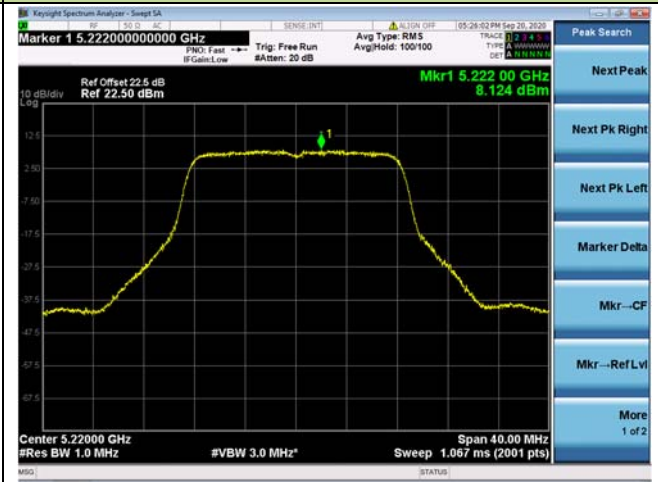


802.11a Power Spectral Density - Ant 1 / Ant 0 + 1

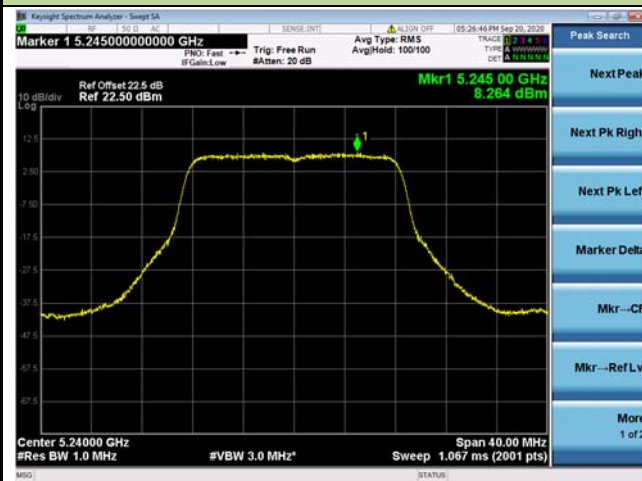
Channel 36 (5180MHz)



Channel 44 (5220MHz)



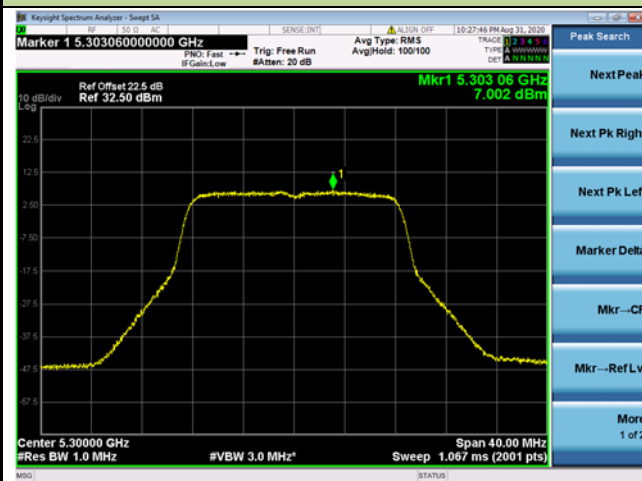
Channel 48 (5240MHz)



Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)

