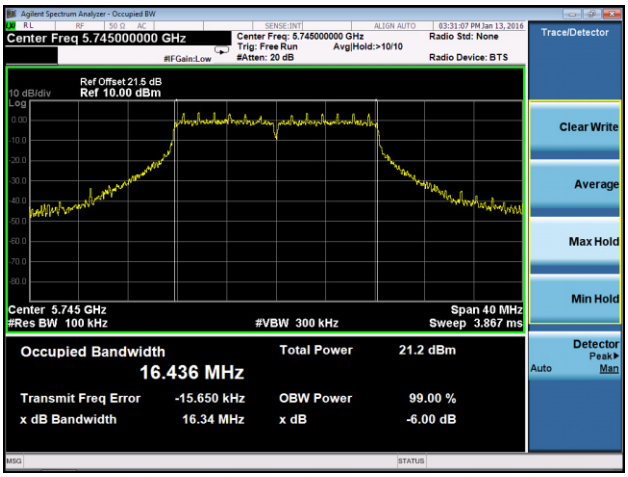
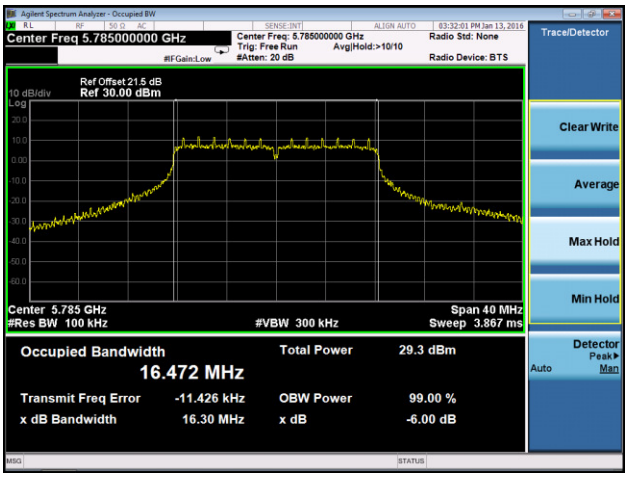
802.11a 6dB Bandwidth - Ant 2

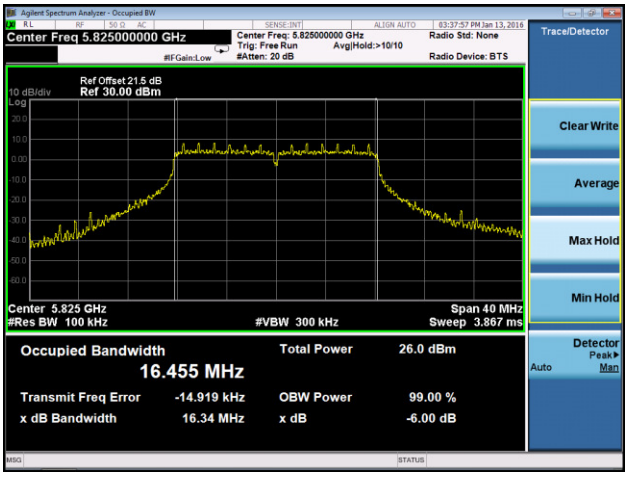
Channel 149 (5745MHz)



Channel 157 (5785MHz)

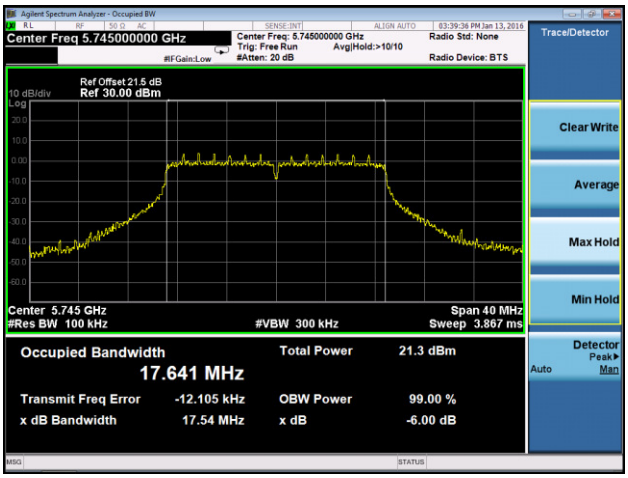


Channel 165 (5825MHz)

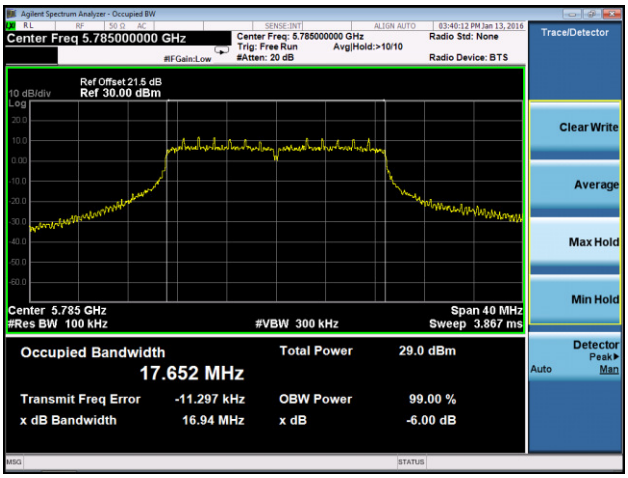


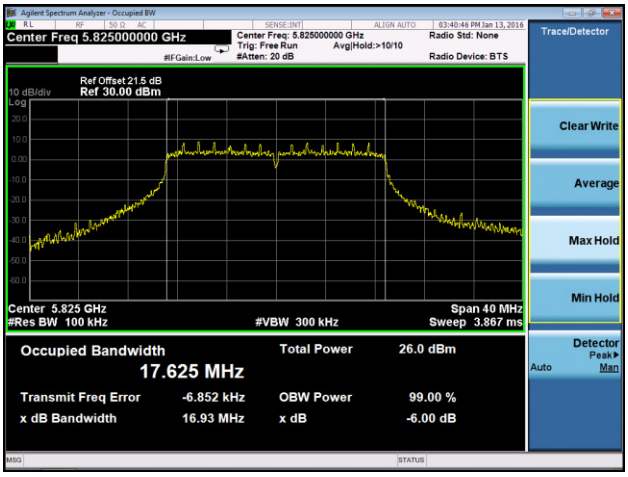
802.11n-HT20 6dB Bandwidth - Ant 2

Channel 149 (5745MHz)

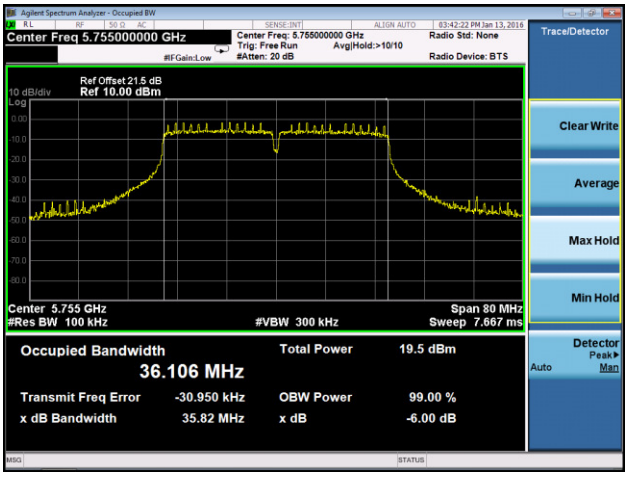
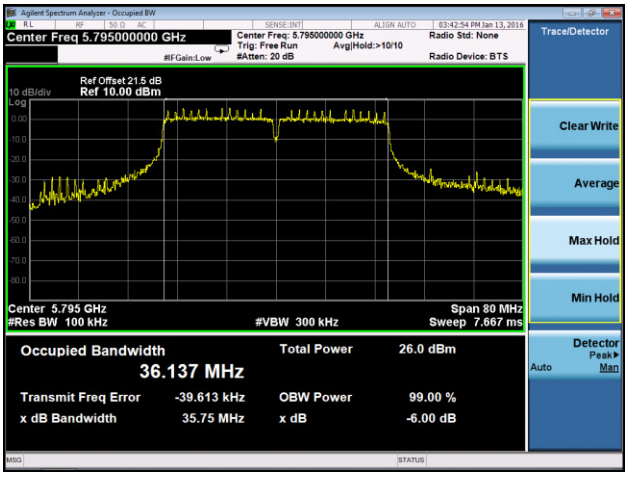


Channel 157 (5785MHz)

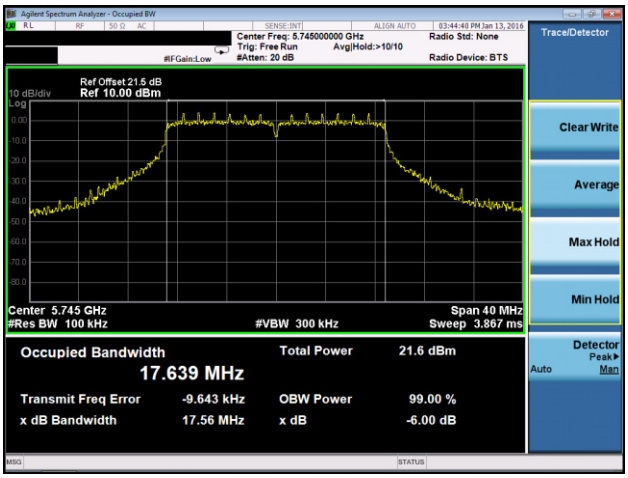
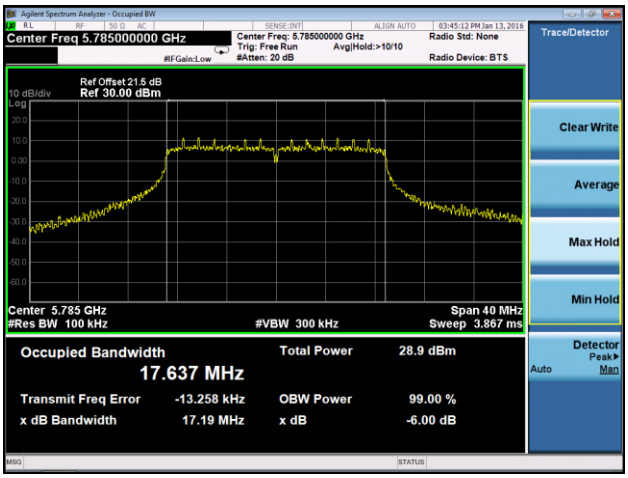


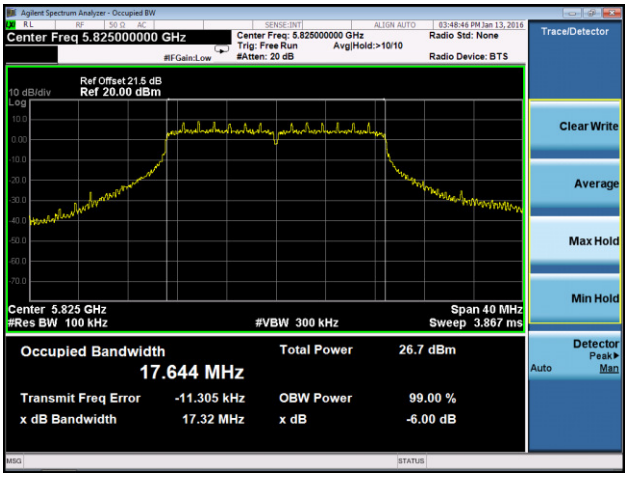
Channel 165 (5825MHz)	
	

802.11n-HT40 6dB Bandwidth - Ant 2

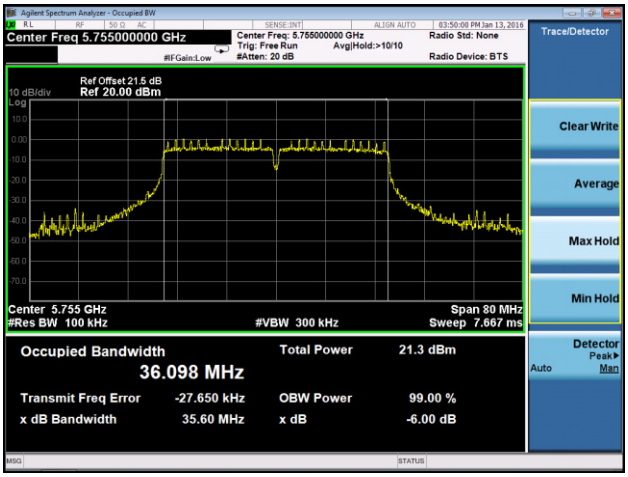
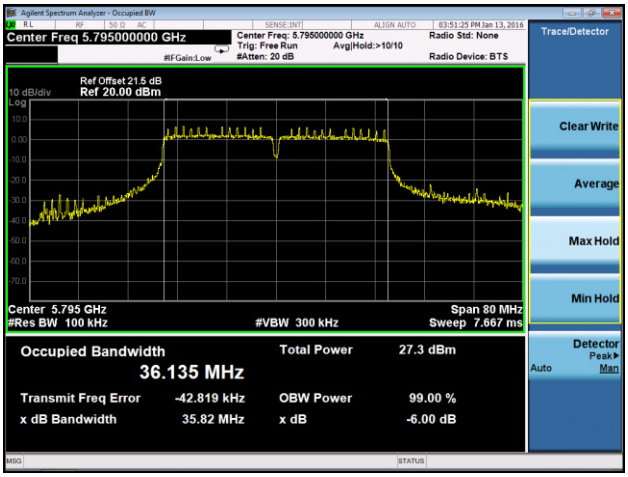
Channel 151 (5755MHz)	Channel 159 (5795MHz)
	

802.11ac-VHT20 6dB Bandwidth - Ant 2

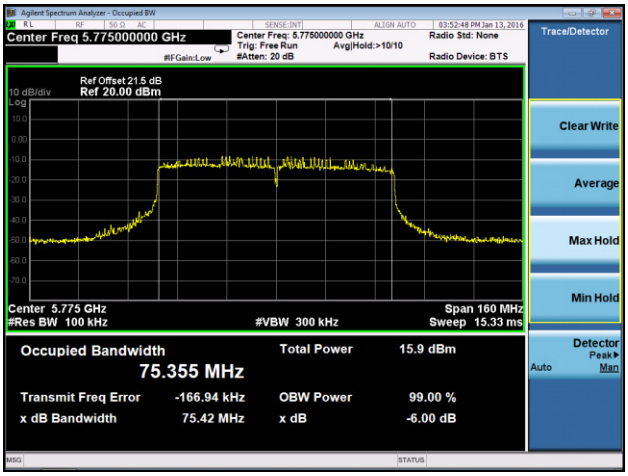
Channel 149 (5745MHz)	Channel 157 (5785MHz)
	

Channel 165 (5825MHz)	
	

802.11ac-VHT40 6dB Bandwidth - Ant 2

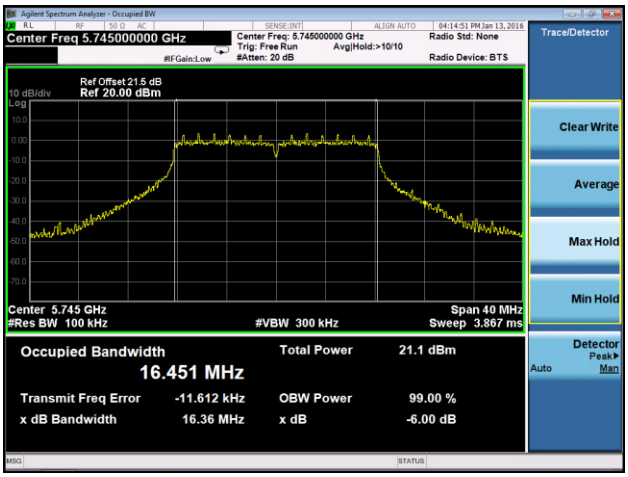
Channel 151 (5755MHz)	Channel 159 (5795MHz)
	

802.11ac-VHT80 6dB Bandwidth - Ant 2

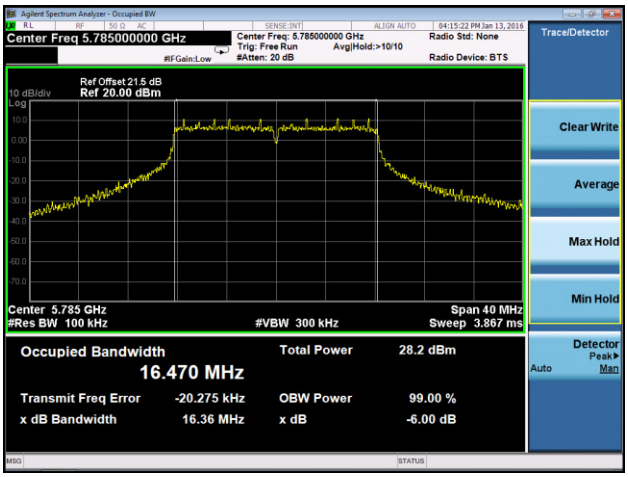
Channel 155 (5775MHz)	
	

802.11a 6dB Bandwidth - Ant 1 / Ant 1 + 2

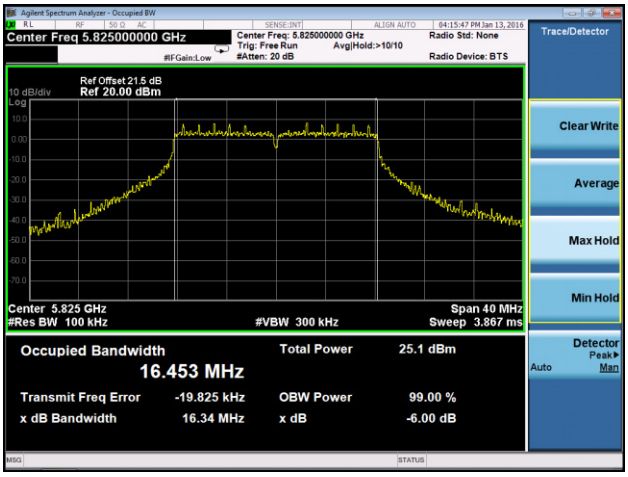
Channel 149 (5745MHz)



Channel 157 (5785MHz)

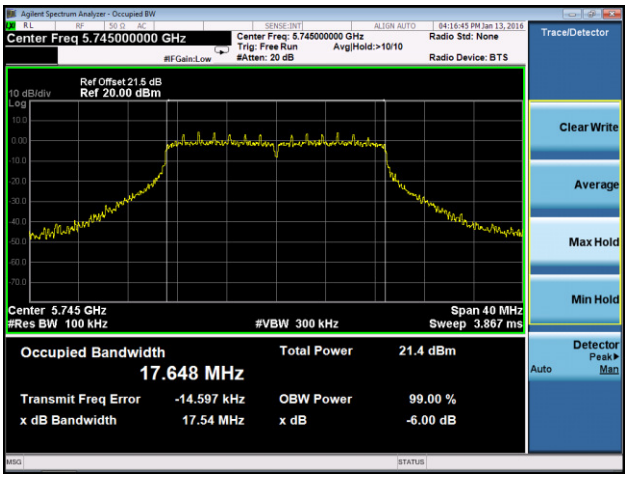


Channel 165 (5825MHz)

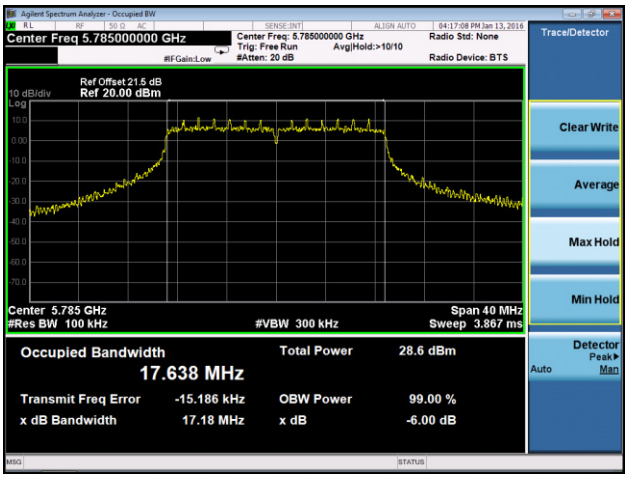


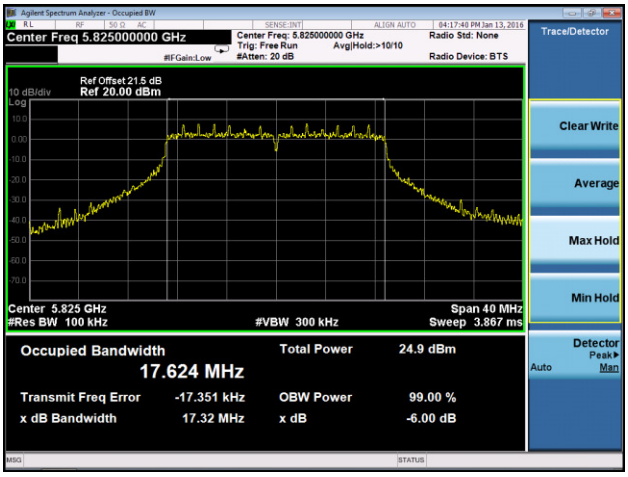
802.11n-HT20 6dB Bandwidth - Ant 1 / Ant 1 + 2

Channel 149 (5745MHz)

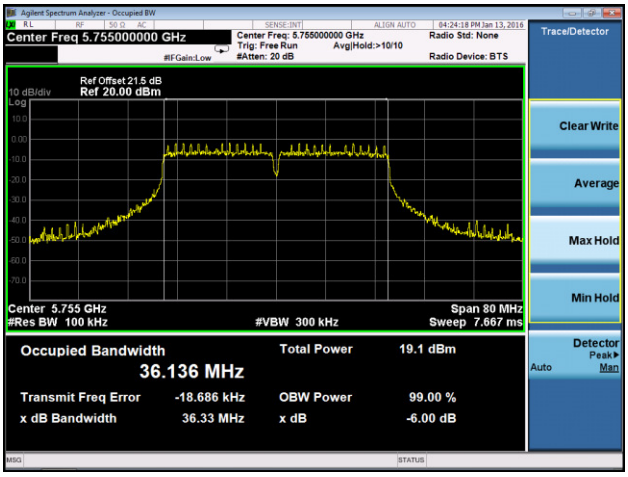
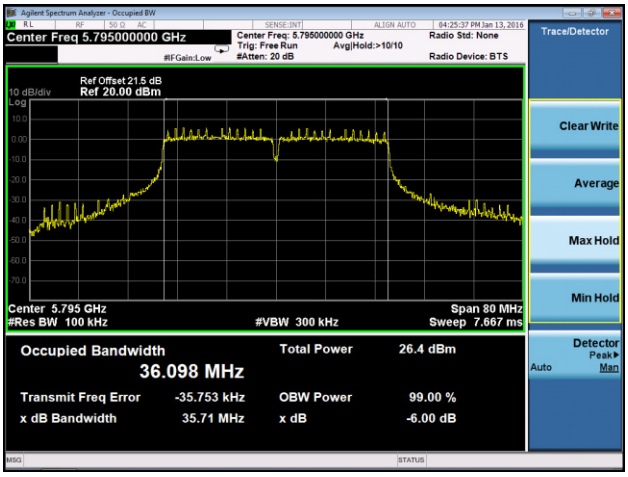


Channel 157 (5785MHz)

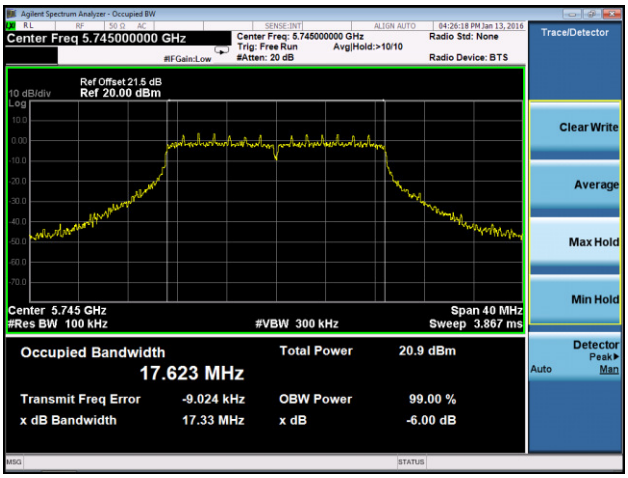
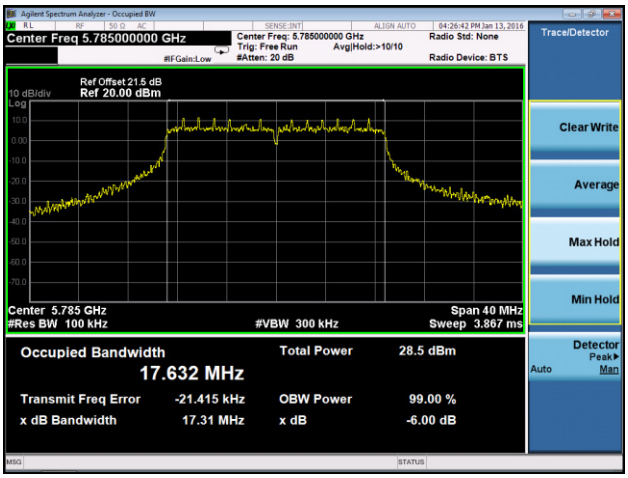


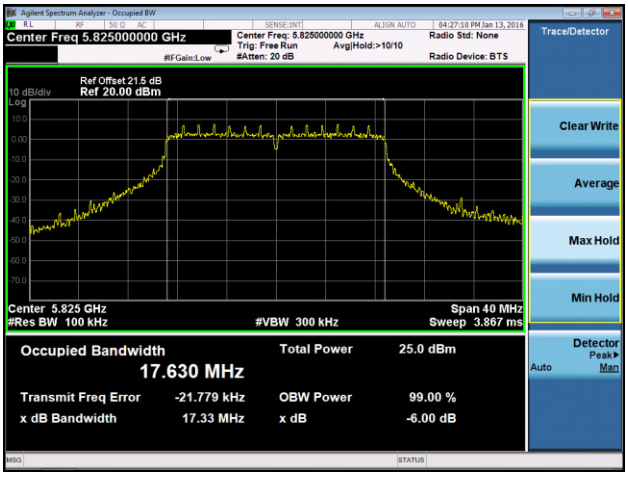
Channel 165 (5825MHz)	
	

802.11n-HT40 6dB Bandwidth - Ant 1 / Ant 1 + 2

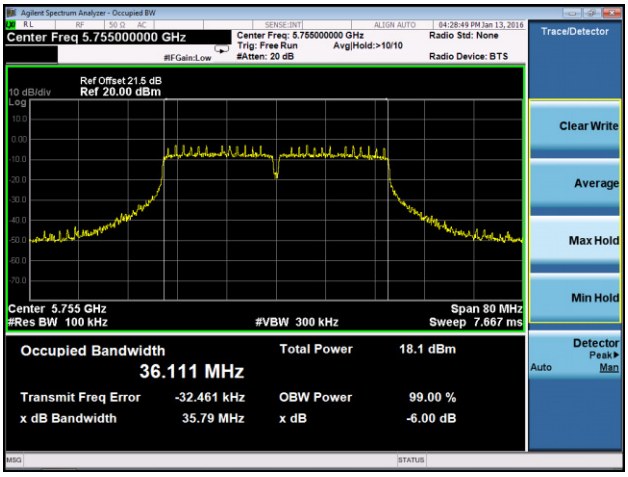
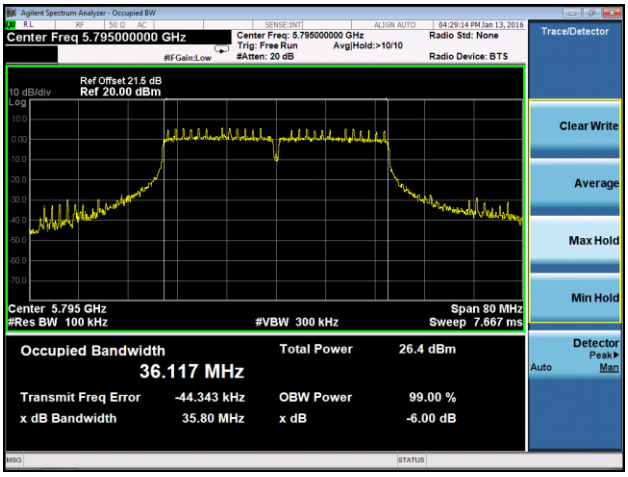
Channel 151 (5755MHz)	Channel 159 (5795MHz)
	

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

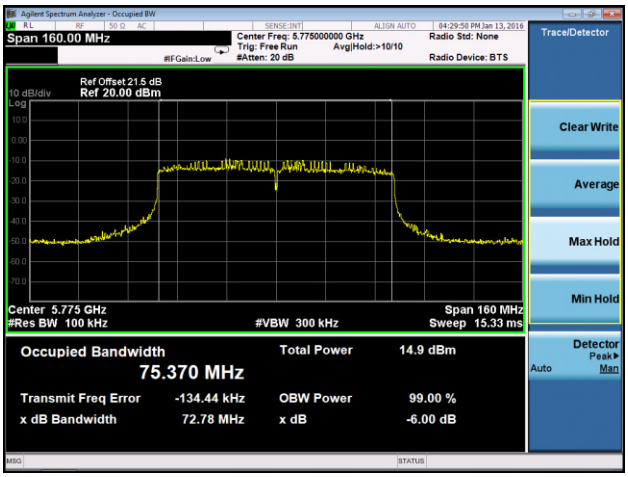
Channel 149 (5745MHz)	Channel 157 (5785MHz)
	

Channel 165 (5825MHz)	
	

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

Channel 151 (5755MHz)	Channel 159 (5795MHz)
	

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

Channel 155 (5775MHz)	
	

7.4. Output Power Measurement

7.4.1. Test Limit

For an outdoor and fixed point-to-point access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm).

For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.

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).

Fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.

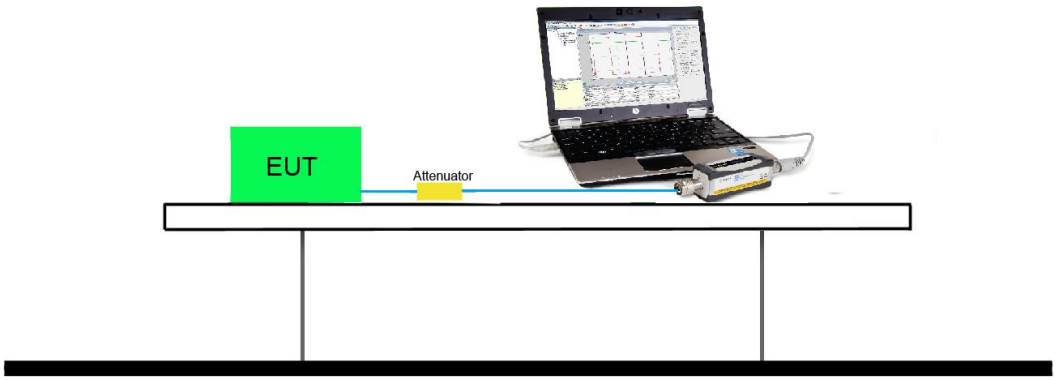
7.4.2. Test Procedure Used

KDB 789033 D02v01r01 - Section E) 3) b) Method PM-G

7.4.3. Test Setting

Average power measurements were perform 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

Output power at various data rates for Ant 1

Test Mode	Bandwidth (MHz)	Channel	Frequency (MHz)	Data Rate (Mbps)	Average Power (dBm)
802.11a	20	36	5180	6	20.89
				24	20.37
				54	20.05
802.11n	20	36	5180	6.5	22.16
				7.2	22.01
				39.0	21.83
				43.3	21.69
				65.0	21.41
				72.2	21.09
802.11n	40	38	5190	13.5	18.21
				15.0	18.03
				81.0	17.88
				90.0	17.62
				135.0	17.41
				150.0	17.22
802.11ac	20	36	5180	6.5	22.39
				7.2	22.17
				39.0	22.01
				43.3	21.79
				78.0	21.58
				86.7	21.37
802.11ac	40	38	5190	13.5	18.15
				15.0	18.02
				81.0	17.78
				90.0	17.53
				180.0	17.36
				200.0	17.17

802.11ac	80	42	5210	29.3	17.83
				32.5	17.59
				175.5	17.36
				195.0	17.18
				390.0	17.06
				433.3	16.89

5GHz Card #1

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Total Average Power (dBm)	Limit (dBm)	Result
Ant 1								
11a	6	36	5180	20.29	--	20.29	≤ 30	Pass
11a	6	44	5220	27.03	--	27.03	≤ 30	Pass
11a	6	48	5240	26.62	--	26.62	≤ 30	Pass
11a	6	149	5745	19.21	--	19.21	≤ 30	Pass
11a	6	157	5785	24.19	--	24.19	≤ 30	Pass
11a	6	165	5825	23.15	--	23.15	≤ 30	Pass
11n-HT20	6.5	36	5180	20.02	--	20.02	≤ 30	Pass
11n-HT20	6.5	44	5220	26.81	--	26.81	≤ 30	Pass
11n-HT20	6.5	48	5240	26.32	--	26.32	≤ 30	Pass
11n-HT20	6.5	149	5745	18.11	--	18.11	≤ 30	Pass
11n-HT20	6.5	157	5785	23.89	--	23.89	≤ 30	Pass
11n-HT20	6.5	165	5825	22.84	--	22.84	≤ 30	Pass
11n-HT40	13.5	38	5190	17.83	--	17.83	≤ 30	Pass
11n-HT40	13.5	46	5230	25.96	--	25.96	≤ 30	Pass
11n-HT40	13.5	151	5755	12.30	--	12.30	≤ 30	Pass
11n-HT40	13.5	159	5795	23.59	--	23.59	≤ 30	Pass
11ac-VHT20	6.5	36	5180	21.89	--	21.89	≤ 30	Pass
11ac-VHT20	6.5	44	5220	26.91	--	26.91	≤ 30	Pass
11ac-VHT20	6.5	48	5240	26.48	--	26.48	≤ 30	Pass
11ac-VHT20	6.5	149	5745	19.03	--	19.03	≤ 30	Pass
11ac-VHT20	6.5	157	5785	24.03	--	24.03	≤ 30	Pass
11ac-VHT20	6.5	165	5825	22.01	--	22.01	≤ 30	Pass
11ac-VHT40	13.5	38	5190	18.15	--	18.15	≤ 30	Pass
11ac-VHT40	13.5	46	5230	26.03	--	26.03	≤ 30	Pass
11ac-VHT40	13.5	151	5755	11.03	--	11.03	≤ 30	Pass
11ac-VHT40	13.5	159	5795	23.56	--	23.56	≤ 30	Pass
11ac-VHT80	29.3	42	5210	16.23	--	16.23	≤ 30	Pass
11ac-VHT80	29.3	155	5775	9.09	--	9.09	≤ 30	Pass

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Total Average Power (dBm)	Limit (dBm)	Result
Ant 2								
11a	6	36	5180	--	20.78	20.78	≤ 30	Pass
11a	6	44	5220	--	25.85	25.85	≤ 30	Pass
11a	6	48	5240	--	25.78	25.78	≤ 30	Pass
11a	6	149	5745	--	18.67	18.67	≤ 30	Pass
11a	6	157	5785	--	24.28	24.28	≤ 30	Pass
11a	6	165	5825	--	22.73	22.73	≤ 30	Pass
11n-HT20	6.5	36	5180	--	20.04	20.04	≤ 30	Pass
11n-HT20	6.5	44	5220	--	25.83	25.83	≤ 30	Pass
11n-HT20	6.5	48	5240	--	25.71	25.71	≤ 30	Pass
11n-HT20	6.5	149	5745	--	18.61	18.61	≤ 30	Pass
11n-HT20	6.5	157	5785	--	24.26	24.26	≤ 30	Pass
11n-HT20	6.5	165	5825	--	22.73	22.73	≤ 30	Pass
11n-HT40	13.5	38	5190	--	17.89	17.89	≤ 30	Pass
11n-HT40	13.5	46	5230	--	25.56	25.56	≤ 30	Pass
11n-HT40	13.5	151	5755		12.17	12.17	≤ 30	Pass
11n-HT40	13.5	159	5795		23.58	23.58	≤ 30	Pass
11ac-VHT20	6.5	36	5180	--	21.19	21.19	≤ 30	Pass
11ac-VHT20	6.5	44	5220	--	25.83	25.83	≤ 30	Pass
11ac-VHT20	6.5	48	5240	--	25.72	25.72	≤ 30	Pass
11ac-VHT20	6.5	149	5745	--	18.43	18.43	≤ 30	Pass
11ac-VHT20	6.5	157	5785	--	24.16	24.16	≤ 30	Pass
11ac-VHT20	6.5	165	5825	--	22.88	22.88	≤ 30	Pass
11ac-VHT40	13.5	38	5190	--	18.34	18.34	≤ 30	Pass
11ac-VHT40	13.5	46	5230	--	25.30	25.30	≤ 30	Pass
11ac-VHT40	13.5	151	5755	--	11.03	11.03	≤ 30	Pass
11ac-VHT40	13.5	159	5795	--	23.63	23.63	≤ 30	Pass
11ac-VHT80	29.3	42	5210	--	17.55	17.55	≤ 30	Pass
11ac-VHT80	29.3	155	5775	--	9.01	9.01	≤ 30	Pass

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Total Average Power (dBm)	Limit (dBm)	Result
Ant 1 + 2								
11a	6	36	5180	21.52	20.06	23.86	≤ 30	Pass
11a	6	44	5220	26.63	25.95	29.31	≤ 30	Pass
11a	6	48	5240	26.58	25.91	29.27	≤ 30	Pass
11a	6	149	5745	18.66	18.03	21.37	≤ 30	Pass
11a	6	157	5785	24.22	24.18	27.21	≤ 30	Pass
11a	6	165	5825	22.62	23.13	25.89	≤ 30	Pass
11n-HT20	13	36	5180	22.39	21.51	24.98	≤ 30	Pass
11n-HT20	13	44	5220	26.45	25.89	29.19	≤ 30	Pass
11n-HT20	13	48	5240	26.47	25.61	29.07	≤ 30	Pass
11n-HT20	13	149	5745	19.06	18.62	21.86	≤ 30	Pass
11n-HT20	13	157	5785	24.11	24.32	27.23	≤ 30	Pass
11n-HT20	13	165	5825	23.14	23.38	26.27	≤ 30	Pass
11n-HT40	27	38	5190	17.84	18.03	20.95	≤ 30	Pass
11n-HT40	27	46	5230	25.64	25.28	28.47	≤ 30	Pass
11n-HT40	27	151	5755	11.92	12.23	15.09	≤ 30	Pass
11n-HT40	27	159	5795	23.24	23.73	26.50	≤ 30	Pass
11ac-VHT20	13	36	5180	21.99	21.31	24.67	≤ 30	Pass
11ac-VHT20	13	44	5220	26.48	25.98	29.25	≤ 30	Pass
11ac-VHT20	13	48	5240	26.52	26.03	29.29	≤ 30	Pass
11ac-VHT20	13	149	5745	19.11	18.69	21.92	≤ 30	Pass
11ac-VHT20	13	157	5785	24.16	24.29	27.24	≤ 30	Pass
11ac-VHT20	13	165	5825	22.61	22.95	25.79	≤ 30	Pass
11ac-VHT40	27	38	5190	18.31	17.97	21.15	≤ 30	Pass
11ac-VHT40	27	46	5230	26.08	25.19	28.67	≤ 30	Pass
11ac-VHT40	27	151	5755	14.63	14.21	17.44	≤ 30	Pass
11ac-VHT40	27	159	5795	23.87	23.72	26.81	≤ 30	Pass
11ac-VHT80	58.6	42	5210	17.97	17.71	20.85	≤ 30	Pass
11ac-VHT80	58.6	155	5775	8.99	9.11	12.06	≤ 30	Pass

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

5GHz Card #2

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Total Average Power (dBm)	Limit (dBm)	Result
Ant 1								
11a	6	36	5180	20.46	--	20.46	≤ 30	Pass
11a	6	44	5220	23.20	--	23.20	≤ 30	Pass
11a	6	48	5240	24.02	--	24.02	≤ 30	Pass
11a	6	149	5745	14.22	--	14.22	≤ 30	Pass
11a	6	157	5785	23.19	--	23.19	≤ 30	Pass
11a	6	165	5825	18.34	--	18.34	≤ 30	Pass
11n-HT20	6.5	36	5180	20.39	--	20.39	≤ 30	Pass
11n-HT20	6.5	44	5220	24.22	--	24.22	≤ 30	Pass
11n-HT20	6.5	48	5240	24.02	--	24.02	≤ 30	Pass
11n-HT20	6.5	149	5745	14.39	--	14.39	≤ 30	Pass
11n-HT20	6.5	157	5785	25.41	--	25.41	≤ 30	Pass
11n-HT20	6.5	165	5825	18.04	--	18.04	≤ 30	Pass
11n-HT40	13.5	38	5190	16.92	--	16.92	≤ 30	Pass
11n-HT40	13.5	46	5230	23.77	--	23.77	≤ 30	Pass
11n-HT40	13.5	151	5755	11.39	--	11.39	≤ 30	Pass
11n-HT40	13.5	159	5795	21.05	--	21.05	≤ 30	Pass
11ac-VHT20	6.5	36	5180	20.39	--	20.39	≤ 30	Pass
11ac-VHT20	6.5	44	5220	24.18	--	24.18	≤ 30	Pass
11ac-VHT20	6.5	48	5240	24.09	--	24.09	≤ 30	Pass
11ac-VHT20	6.5	149	5745	14.49	--	14.49	≤ 30	Pass
11ac-VHT20	6.5	157	5785	23.69	--	23.69	≤ 30	Pass
11ac-VHT20	6.5	165	5825	17.31	--	17.31	≤ 30	Pass
11ac-VHT40	13.5	38	5190	16.17	--	16.17	≤ 30	Pass
11ac-VHT40	13.5	46	5230	23.54	--	23.54	≤ 30	Pass
11ac-VHT40	13.5	151	5755	10.59	--	10.59	≤ 30	Pass
11ac-VHT40	13.5	159	5795	18.89	--	18.89	≤ 30	Pass
11ac-VHT80	29.3	42	5210	11.32	--	11.32	≤ 30	Pass
11ac-VHT80	29.3	155	5775	9.31	--	9.31	≤ 30	Pass

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Total Average Power (dBm)	Limit (dBm)	Result
Ant 2								
11a	6	36	5180	--	19.93	19.93	≤ 30	Pass
11a	6	44	5220	--	25.74	25.74	≤ 30	Pass
11a	6	48	5240	--	25.57	25.57	≤ 30	Pass
11a	6	149	5745	--	14.88	14.88	≤ 30	Pass
11a	6	157	5785	--	21.68	21.68	≤ 30	Pass
11a	6	165	5825	--	19.17	19.17	≤ 30	Pass
11n-HT20	6.5	36	5180	--	19.81	19.81	≤ 30	Pass
11n-HT20	6.5	44	5220	--	26.66	26.66	≤ 30	Pass
11n-HT20	6.5	48	5240	--	25.41	25.41	≤ 30	Pass
11n-HT20	6.5	149	5745	--	14.85	14.85	≤ 30	Pass
11n-HT20	6.5	157	5785	--	24.13	24.13	≤ 30	Pass
11n-HT20	6.5	165	5825	--	19.58	19.58	≤ 30	Pass
11n-HT40	13.5	38	5190	--	15.01	15.01	≤ 30	Pass
11n-HT40	13.5	46	5230	--	25.15	25.15	≤ 30	Pass
11n-HT40	13.5	151	5755		12.31	12.31	≤ 30	Pass
11n-HT40	13.5	159	5795		19.12	19.12	≤ 30	Pass
11ac-VHT20	6.5	36	5180	--	19.31	19.31	≤ 30	Pass
11ac-VHT20	6.5	44	5220	--	25.63	25.63	≤ 30	Pass
11ac-VHT20	6.5	48	5240	--	25.47	25.47	≤ 30	Pass
11ac-VHT20	6.5	149	5745	--	14.86	14.86	≤ 30	Pass
11ac-VHT20	6.5	157	5785	--	24.16	24.16	≤ 30	Pass
11ac-VHT20	6.5	165	5825	--	19.61	19.61	≤ 30	Pass
11ac-VHT40	13.5	38	5190	--	15.51	15.51	≤ 30	Pass
11ac-VHT40	13.5	46	5230	--	25.18	25.18	≤ 30	Pass
11ac-VHT40	13.5	151	5755	--	11.81	11.81	≤ 30	Pass
11ac-VHT40	13.5	159	5795	--	20.21	20.21	≤ 30	Pass
11ac-VHT80	29.3	42	5210	--	11.78	11.78	≤ 30	Pass
11ac-VHT80	29.3	155	5775	--	8.4	8.4	≤ 30	Pass

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 Average Power (dBm)	Ant 2 Average Power (dBm)	Total Average Power (dBm)	Limit (dBm)	Result
Ant 1 + 2								
11a	6	36	5180	17.93	18.01	17.93	≤ 30	Pass
11a	6	44	5220	25.33	25.83	25.33	≤ 30	Pass
11a	6	48	5240	25.19	25.59	25.19	≤ 30	Pass
11a	6	149	5745	14.49	14.61	14.49	≤ 30	Pass
11a	6	157	5785	23.98	24.39	23.98	≤ 30	Pass
11a	6	165	5825	19.12	19.46	19.12	≤ 30	Pass
11n-HT20	13	36	5180	18.91	18.99	18.91	≤ 30	Pass
11n-HT20	13	44	5220	25.18	25.81	28.52	≤ 30	Pass
11n-HT20	13	48	5240	25.10	25.65	25.10	≤ 30	Pass
11n-HT20	13	149	5745	14.89	15.04	14.89	≤ 30	Pass
11n-HT20	13	157	5785	23.87	24.42	23.87	≤ 30	Pass
11n-HT20	13	165	5825	18.47	18.94	18.47	≤ 30	Pass
11n-HT40	27	38	5190	15.77	15.70	15.77	≤ 30	Pass
11n-HT40	27	46	5230	24.71	25.34	24.71	≤ 30	Pass
11n-HT40	27	151	5755	10.81	11.04	10.81	≤ 30	Pass
11n-HT40	27	159	5795	19.48	19.99	19.48	≤ 30	Pass
11ac-VHT20	13	36	5180	19.45	19.47	19.45	≤ 30	Pass
11ac-VHT20	13	44	5220	25.30	25.82	25.30	≤ 30	Pass
11ac-VHT20	13	48	5240	25.16	25.62	25.16	≤ 30	Pass
11ac-VHT20	13	149	5745	14.42	14.59	14.42	≤ 30	Pass
11ac-VHT20	13	157	5785	23.94	24.41	23.94	≤ 30	Pass
11ac-VHT20	13	165	5825	18.52	18.98	18.52	≤ 30	Pass
11ac-VHT40	27	38	5190	15.89	15.62	15.89	≤ 30	Pass
11ac-VHT40	27	46	5230	24.80	25.32	24.80	≤ 30	Pass
11ac-VHT40	27	151	5755	11.35	12.19	11.35	≤ 30	Pass
11ac-VHT40	27	159	5795	19.57	20.82	19.57	≤ 30	Pass
11ac-VHT80	58.6	42	5210	11.28	11.29	11.28	≤ 30	Pass
11ac-VHT80	58.6	155	5775	6.47	7.32	6.47	≤ 30	Pass

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

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.

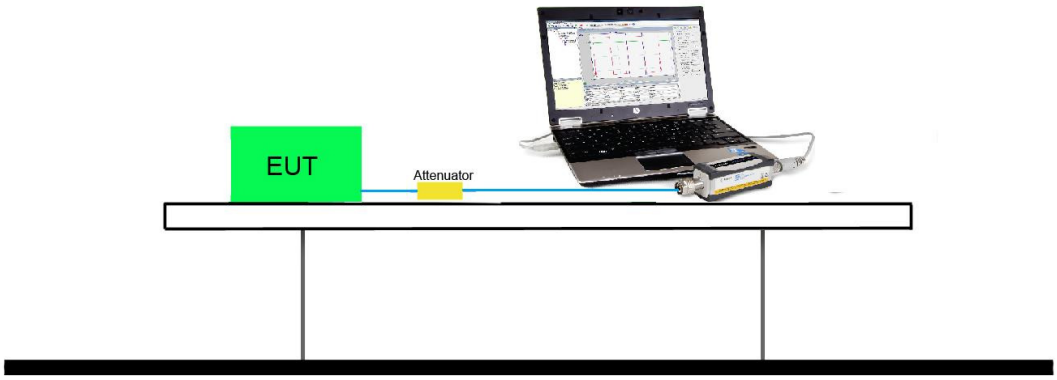
7.5.2. Test Procedure Used

KDB 789033 D02v01r01 - Section E) 3) b) Method PM-G

7.5.3. Test Setting

Average power measurements were perform 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

U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. No applicable for this device.

7.6. Power Spectral Density Measurement

7.6.1. Test 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 fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.

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.

7.6.2. Test Procedure Used

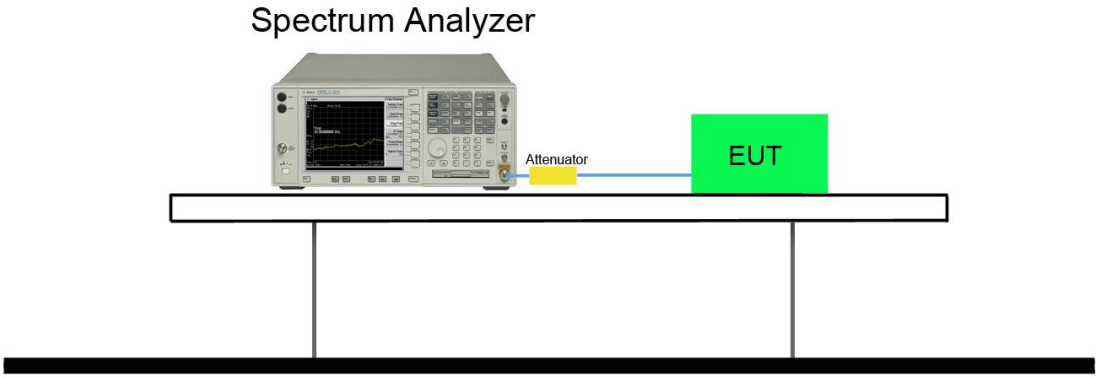
KDB 789033 D02v01r01 - Section F

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, RBW = 100 kHz
4. VBW = 3MHz
5. Number of sweep points ≥ 2 × (span / RBW)
6. Detector = power averaging (RMS)
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*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*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*log(500kHz/100kHz) = 7 dB to the measured result

7.6.4. Test Setup



7.6.5. Test Result

5GHz Card #1

Test Mode	N_{Tx}	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 PSD (dBm/MHz)	Ant 2 PSD (dBm/MHz)	Duty Cycle (%)	Total PSD (dBm/MHz)	Limit (dBm /MHz)	Result
Ant 1										
11a	1	6	36	5180	7.34	--	94.77	7.57	≤ 17.00	Pass
11a	1	6	44	5220	13.74	--	94.77	13.97	≤ 17.00	Pass
11a	1	6	48	5240	13.19	--	94.77	13.42	≤ 17.00	Pass
11n-HT20	1	6.5	36	5180	8.53	--	94.51	8.78	≤ 17.00	Pass
11n-HT20	1	6.5	44	5220	13.52	--	94.51	13.77	≤ 17.00	Pass
11n-HT20	1	6.5	48	5240	13.04	--	94.51	13.29	≤ 17.00	Pass
11n-HT40	1	13.5	38	5190	1.27	--	90.48	1.70	≤ 17.00	Pass
11n-HT40	1	13.5	46	5230	9.40	--	90.48	9.83	≤ 17.00	Pass
11ac-VHT20	1	6.5	36	5180	8.12	--	94.91	8.35	≤ 17.00	Pass
11ac-VHT20	1	6.5	44	5220	13.07	--	94.91	13.30	≤ 17.00	Pass
11ac-VHT20	1	6.5	48	5240	12.56	--	94.91	12.79	≤ 17.00	Pass
11ac-VHT40	1	13.5	38	5190	0.85	--	90.33	1.29	≤ 17.00	Pass
11ac-VHT40	1	13.5	46	5230	8.93	--	90.33	9.37	≤ 17.00	Pass
11ac-VHT80	1	29.3	42	5210	-2.59	--	81.74	-1.71	≤ 17.00	Pass
Ant 2										
11a	1	6	36	5180	--	5.75	94.77	5.98	≤ 17.00	Pass
11a	1	6	44	5220	--	12.98	94.77	13.21	≤ 17.00	Pass
11a	1	6	48	5240	--	12.07	94.77	12.30	≤ 17.00	Pass
11n-HT20	1	6.5	36	5180	--	4.69	94.51	4.94	≤ 17.00	Pass
11n-HT20	1	6.5	44	5220	--	12.34	94.51	12.59	≤ 17.00	Pass
11n-HT20	1	6.5	48	5240	--	11.77	94.51	12.02	≤ 17.00	Pass
11n-HT40	1	13.5	38	5190	--	-0.08	90.48	0.35	≤ 17.00	Pass
11n-HT40	1	13.5	46	5230	--	8.65	90.48	9.08	≤ 17.00	Pass
11ac-VHT20	1	6.5	36	5180	--	6.91	94.91	7.14	≤ 17.00	Pass
11ac-VHT20	1	6.5	44	5220	--	12.50	94.91	12.73	≤ 17.00	Pass
11ac-VHT20	1	6.5	48	5240	--	12.19	94.91	12.42	≤ 17.00	Pass
11ac-VHT40	1	13.5	38	5190	--	0.59	90.33	1.03	≤ 17.00	Pass
11ac-VHT40	1	13.5	46	5230	--	8.67	90.33	9.11	≤ 17.00	Pass
11ac-VHT80	1	29.3	42	5210	--	-4.46	81.74	-3.58	≤ 17.00	Pass

Test Mode	N_{Tx}	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 PSD (dBm/MHz)	Ant 2 PSD (dBm/MHz)	Duty Cycle (%)	Total PSD (dBm/MHz)	Limit (dBm /MHz)	Result
Ant 1 + 2										
11a	2	6	36	5180	8.77	8.05	94.77	11.67	≤ 17.00	Pass
11a	2	6	44	5220	12.75	12.46	94.77	15.85	≤ 17.00	Pass
11a	2	6	48	5240	12.87	12.42	94.77	15.89	≤ 17.00	Pass
11n-HT20	2	13	36	5180	7.03	6.38	94.51	9.97	≤ 17.00	Pass
11n-HT20	2	13	44	5220	12.41	11.98	94.51	15.46	≤ 17.00	Pass
11n-HT20	2	13	48	5240	12.67	11.74	94.51	15.49	≤ 17.00	Pass
11n-HT40	2	27	38	5190	0.74	0.42	90.48	4.03	≤ 17.00	Pass
11n-HT40	2	27	46	5230	8.91	8.47	90.48	12.14	≤ 17.00	Pass
11ac-VHT20	2	13	36	5180	7.62	6.98	94.91	10.55	≤ 17.00	Pass
11ac-VHT20	2	13	44	5220	12.51	12.04	94.91	15.52	≤ 17.00	Pass
11ac-VHT20	2	13	48	5240	12.71	12.16	94.91	15.68	≤ 17.00	Pass
11ac-VHT40	2	27	38	5190	1.05	0.88	90.33	4.42	≤ 17.00	Pass
11ac-VHT40	2	27	46	5230	8.68	8.31	90.33	11.95	≤ 17.00	Pass
11ac-VHT80	2	58.6	42	5210	-2.34	-2.92	81.74	1.27	≤ 17.00	Pass

Note: When EUT duty cycle < 98%, the total PSD = $10*\log\{10^{(\text{Ant 1 PSD}/10)}+10^{(\text{Ant 2 PSD}/10)}\} + 10*\log(1/\text{duty cycle})$

Test Mode	N_{Tx}	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 PSD (dBm/ 100kHz)	Ant 2 PSD (dBm/ 100kHz)	Duty Cycle (%)	Constant Factor	Total PSD (dBm/ 500kHz)	Limit (dBm/ 500kHz)	Result
Ant 1											
11a	1	6	149	5745	-1.87	--	94.77	7	5.37	≤ 18.00	Pass
11a	1	6	157	5785	3.89	--	94.77	7	11.12	≤ 18.00	Pass
11a	1	6	165	5825	2.60	--	94.77	7	9.84	≤ 18.00	Pass
11n-HT20	1	6.5	149	5745	-1.50	--	94.51	7	5.75	≤ 18.00	Pass
11n-HT20	1	6.5	157	5785	3.61	--	94.51	7	10.85	≤ 18.00	Pass
11n-HT20	1	6.5	165	5825	2.66	--	94.51	7	9.91	≤ 18.00	Pass
11n-HT40	1	13.5	151	5755	-12.07	--	90.48	7	-4.64	≤ 18.00	Pass
11n-HT40	1	13.5	159	5795	0.03	--	90.48	7	7.46	≤ 18.00	Pass
11ac-VHT20	1	6.5	149	5745	-1.84	--	94.91	7	5.38	≤ 18.00	Pass
11ac-VHT20	1	6.5	157	5785	3.39	--	94.91	7	10.62	≤ 18.00	Pass
11ac-VHT20	1	6.5	165	5825	1.75	--	94.91	7	8.97	≤ 18.00	Pass
11ac-VHT40	1	13.5	151	5755	-10.59	--	90.33	7	-3.14	≤ 18.00	Pass
11ac-VHT40	1	13.5	159	5795	0.07	--	90.33	7	7.51	≤ 18.00	Pass
11ac-VHT80	1	29.3	155	5775	-18.02	--	81.74	7	-10.14	≤ 18.00	Pass
Ant 2											
11a	1	6	149	5745	--	-1.62	94.77	7	5.61	≤ 18.00	Pass
11a	1	6	157	5785	--	3.85	94.77	7	11.08	≤ 18.00	Pass
11a	1	6	165	5825	--	2.82	94.77	7	10.05	≤ 18.00	Pass
11n-HT20	1	6.5	149	5745	--	-3.56	94.51	7	3.69	≤ 18.00	Pass
11n-HT20	1	6.5	157	5785	--	3.76	94.51	7	11.01	≤ 18.00	Pass
11n-HT20	1	6.5	165	5825	--	2.62	94.51	7	9.87	≤ 18.00	Pass
11n-HT40	1	13.5	151	5755	--	-10.70	90.48	7	-3.27	≤ 18.00	Pass
11n-HT40	1	13.5	159	5795	--	0.67	90.48	7	8.10	≤ 18.00	Pass
11ac-VHT20	1	6.5	149	5745	--	-2.94	94.91	7	4.29	≤ 18.00	Pass
11ac-VHT20	1	6.5	157	5785	--	3.19	94.91	7	10.42	≤ 18.00	Pass
11ac-VHT20	1	6.5	165	5825	--	1.85	94.91	7	9.08	≤ 18.00	Pass
11ac-VHT40	1	13.5	151	5755	--	-12.37	90.33	7	-4.93	≤ 18.00	Pass
11ac-VHT40	1	13.5	159	5795	--	0.48	90.33	7	7.92	≤ 18.00	Pass
11ac-VHT80	1	29.3	155	5775	--	-16.87	81.74	7	-8.99	≤ 18.00	Pass

Test Mode	N_{Tx}	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 PSD (dBm/ 100kHz)	Ant 2 PSD (dBm/ 100kHz)	Duty Cycle (%)	Constant Factor	Total PSD (dBm/ 500kHz)	Limit (dBm/ 500kHz)	Result
Ant 1 + 2											
11a	2	6	149	5745	-1.51	-1.17	94.77	7	8.91	≤ 15.00	Pass
11a	2	6	157	5785	3.58	3.97	94.77	7	14.02	≤ 15.00	Pass
11a	2	6	165	5825	1.51	1.59	94.77	7	11.79	≤ 15.00	Pass
11n-HT20	2	13	149	5745	-1.72	-1.37	94.51	7	8.71	≤ 15.00	Pass
11n-HT20	2	13	157	5785	3.60	3.77	94.51	7	13.94	≤ 15.00	Pass
11n-HT20	2	13	165	5825	1.75	2.68	94.51	7	12.50	≤ 15.00	Pass
11n-HT40	2	27	151	5755	-12.59	-11.93	90.48	7	-1.80	≤ 15.00	Pass
11n-HT40	2	27	159	5795	0.19	0.71	90.48	7	10.90	≤ 15.00	Pass
11ac-VHT20	2	13	149	5745	-1.58	-1.20	94.91	7	8.85	≤ 15.00	Pass
11ac-VHT20	2	13	157	5785	3.58	4.40	94.91	7	14.25	≤ 15.00	Pass
11ac-VHT20	2	13	165	5825	1.64	2.36	94.91	7	12.25	≤ 15.00	Pass
11ac-VHT40	2	27	151	5755	-12.65	-11.89	90.33	7	-1.80	≤ 15.00	Pass
11ac-VHT40	2	27	159	5795	-0.05	0.45	90.33	7	10.66	≤ 15.00	Pass
11ac-VHT80	2	58.6	155	5775	-17.87	-16.34	81.74	7	-6.15	≤ 15.00	Pass

Note: When EUT duty cycle < 98%, the Total PSD = $10*\log\{10^{(\text{Ant 1 PSD}/10)}+10^{(\text{Ant 2 PSD}/10)}\} + 10*\log(1/\text{duty cycle}) +$ Constant Factor.

5GHz Card #2

Test Mode	N_{Tx}	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 PSD (dBm/MHz)	Ant 2 PSD (dBm/MHz)	Duty Cycle (%)	Total PSD (dBm/MHz)	Limit (dBm /MHz)	Result
Ant 1										
11a	1	6	36	5180	7.17	--	94.96	7.39	≤ 17.00	Pass
11a	1	6	44	5220	11.31	--	94.96	11.53	≤ 17.00	Pass
11a	1	6	48	5240	11.28	--	94.96	11.50	≤ 17.00	Pass
11n-HT20	1	6.5	36	5180	7.04	--	94.50	7.29	≤ 17.00	Pass
11n-HT20	1	6.5	44	5220	11.04	--	94.50	11.29	≤ 17.00	Pass
11n-HT20	1	6.5	48	5240	10.87	--	94.50	11.12	≤ 17.00	Pass
11n-HT40	1	13.5	38	5190	0.22	--	89.08	0.72	≤ 17.00	Pass
11n-HT40	1	13.5	46	5230	7.44	--	89.08	7.94	≤ 17.00	Pass
11ac-VHT20	1	6.5	36	5180	6.95	--	94.68	7.19	≤ 17.00	Pass
11ac-VHT20	1	6.5	44	5220	11.06	--	94.68	11.30	≤ 17.00	Pass
11ac-VHT20	1	6.5	48	5240	11.02	--	94.68	11.26	≤ 17.00	Pass
11ac-VHT40	1	13.5	38	5190	-0.31	--	90.28	0.13	≤ 17.00	Pass
11ac-VHT40	1	13.5	46	5230	7.58	--	90.28	8.02	≤ 17.00	Pass
11ac-VHT80	1	29.3	42	5210	-7.85	--	82.59	-7.02	≤ 17.00	Pass
Ant 2										
11a	1	6	36	5180	--	5.40	94.96	5.62	≤ 17.00	Pass
11a	1	6	44	5220	--	11.42	94.96	11.64	≤ 17.00	Pass
11a	1	6	48	5240	--	9.58	94.96	9.80	≤ 17.00	Pass
11n-HT20	1	6.5	36	5180	--	5.40	94.50	5.65	≤ 17.00	Pass
11n-HT20	1	6.5	44	5220	--	11.12	94.50	11.37	≤ 17.00	Pass
11n-HT20	1	6.5	48	5240	--	11.07	94.50	11.32	≤ 17.00	Pass
11n-HT40	1	13.5	38	5190	--	-2.43	89.08	-1.93	≤ 17.00	Pass
11n-HT40	1	13.5	46	5230	--	7.41	89.08	7.91	≤ 17.00	Pass
11ac-VHT20	1	6.5	36	5180	--	4.90	94.68	5.14	≤ 17.00	Pass
11ac-VHT20	1	6.5	44	5220	--	10.75	94.68	10.99	≤ 17.00	Pass
11ac-VHT20	1	6.5	48	5240	--	9.22	94.68	9.46	≤ 17.00	Pass
11ac-VHT40	1	13.5	38	5190	--	-2.19	90.28	-1.75	≤ 17.00	Pass
11ac-VHT40	1	13.5	46	5230	--	7.88	90.28	8.32	≤ 17.00	Pass
11ac-VHT80	1	29.3	42	5210	--	-9.12	82.59	-8.29	≤ 17.00	Pass

Test Mode	N_{Tx}	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 PSD (dBm/MHz)	Ant 2 PSD (dBm/MHz)	Duty Cycle (%)	Total PSD (dBm/MHz)	Limit (dBm /MHz)	Result
Ant 1 + 2										
11a	2	6	36	5180	3.72	3.86	94.96	7.03	≤ 17.00	Pass
11a	2	6	44	5220	10.40	10.75	94.96	13.81	≤ 17.00	Pass
11a	2	6	48	5240	8.62	9.24	94.96	12.18	≤ 17.00	Pass
11n-HT20	2	13	36	5180	4.45	4.37	94.50	7.67	≤ 17.00	Pass
11n-HT20	2	13	44	5220	8.96	9.35	94.50	12.42	≤ 17.00	Pass
11n-HT20	2	13	48	5240	10.78	11.45	94.50	14.38	≤ 17.00	Pass
11n-HT40	2	27	38	5190	-1.91	-2.13	89.08	1.49	≤ 17.00	Pass
11n-HT40	2	27	46	5230	7.30	7.83	89.08	11.09	≤ 17.00	Pass
11ac-VHT20	2	13	36	5180	4.87	4.92	94.68	8.14	≤ 17.00	Pass
11ac-VHT20	2	13	44	5220	10.88	11.24	94.68	14.31	≤ 17.00	Pass
11ac-VHT20	2	13	48	5240	8.77	9.04	94.68	12.15	≤ 17.00	Pass
11ac-VHT40	2	27	38	5190	-1.73	-2.11	90.28	1.54	≤ 17.00	Pass
11ac-VHT40	2	27	46	5230	7.42	7.96	90.28	11.15	≤ 17.00	Pass
11ac-VHT80	2	58.6	42	5210	-9.59	-9.69	82.59	-5.80	≤ 17.00	Pass

Note: When EUT duty cycle < 98%, the total PSD = $10*\log\{10^{(\text{Ant 1 PSD}/10)}+10^{(\text{Ant 2 PSD}/10)}\} + 10*\log(1/\text{duty cycle})$

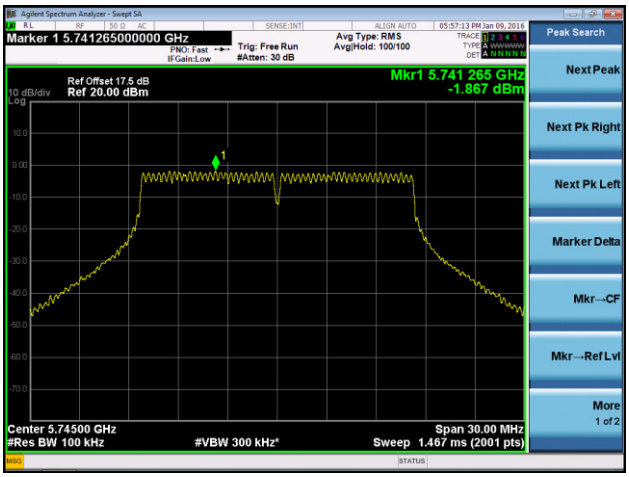
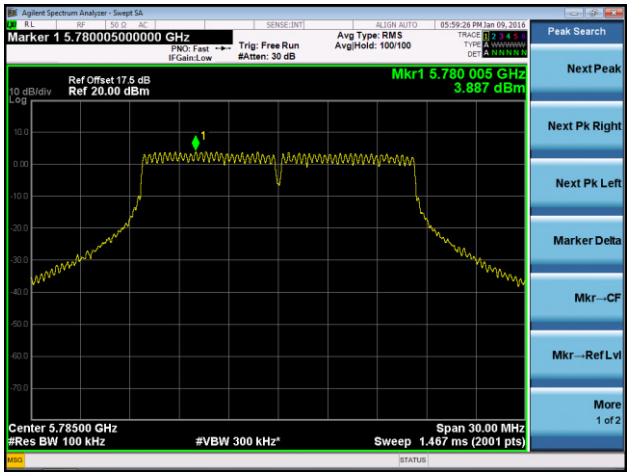
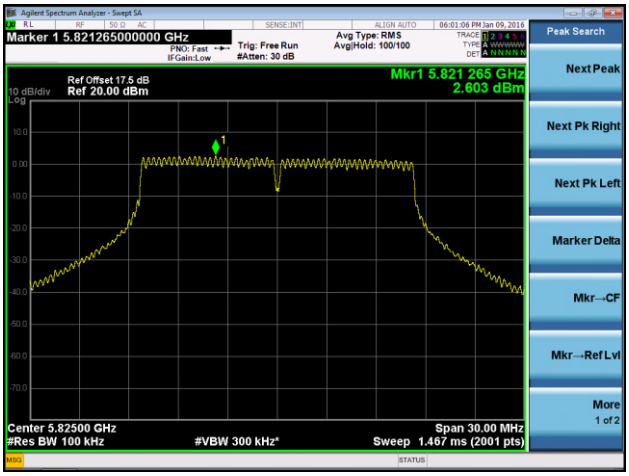
Test Mode	N_{Tx}	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 PSD (dBm/ 100kHz)	Ant 2 PSD (dBm/ 100kHz)	Duty Cycle (%)	Constant Factor	Total PSD (dBm/ 500kHz)	Limit (dBm/ 500kHz)	Result
Ant 1											
11a	1	6	149	5745	-4.85	--	94.96	7	2.37	≤ 16.00	Pass
11a	1	6	157	5785	0.51	--	94.96	7	7.73	≤ 16.00	Pass
11a	1	6	165	5825	-0.55	--	94.96	7	6.67	≤ 16.00	Pass
11n-HT20	1	6.5	149	5745	-4.93	--	94.50	7	2.32	≤ 16.00	Pass
11n-HT20	1	6.5	157	5785	0.50	--	94.50	7	7.75	≤ 16.00	Pass
11n-HT20	1	6.5	165	5825	-1.76	--	94.50	7	5.49	≤ 16.00	Pass
11n-HT40	1	13.5	151	5755	-10.89	--	89.08	7	-3.39	≤ 16.00	Pass
11n-HT40	1	13.5	159	5795	-3.22	--	89.08	7	4.28	≤ 16.00	Pass
11ac-VHT20	1	6.5	149	5745	-4.74	--	94.68	7	2.50	≤ 16.00	Pass
11ac-VHT20	1	6.5	157	5785	0.02	--	94.68	7	7.26	≤ 16.00	Pass
11ac-VHT20	1	6.5	165	5825	-1.61	--	94.68	7	5.63	≤ 16.00	Pass
11ac-VHT40	1	13.5	151	5755	-11.77	--	90.28	7	-4.33	≤ 16.00	Pass
11ac-VHT40	1	13.5	159	5795	-3.33	--	90.28	7	4.11	≤ 16.00	Pass
11ac-VHT80	1	29.3	155	5775	-15.99	--	82.59	7	-8.16	≤ 16.00	Pass
Ant 2											
11a	1	6	149	5745	--	-6.05	94.96	7	1.17	≤ 16.00	Pass
11a	1	6	157	5785	--	0.02	94.96	7	7.24	≤ 16.00	Pass
11a	1	6	165	5825	--	-1.71	94.96	7	5.51	≤ 16.00	Pass
11n-HT20	1	6.5	149	5745	--	-6.04	94.50	7	1.21	≤ 16.00	Pass
11n-HT20	1	6.5	157	5785	--	-1.20	94.50	7	6.05	≤ 16.00	Pass
11n-HT20	1	6.5	165	5825	--	-1.44	94.50	7	5.81	≤ 16.00	Pass
11n-HT40	1	13.5	151	5755	--	-11.35	89.08	7	-3.85	≤ 16.00	Pass
11n-HT40	1	13.5	159	5795	--	-4.44	89.08	7	3.06	≤ 16.00	Pass
11ac-VHT20	1	6.5	149	5745	--	-6.32	94.68	7	0.92	≤ 16.00	Pass
11ac-VHT20	1	6.5	157	5785	--	-1.63	94.68	7	5.61	≤ 16.00	Pass
11ac-VHT20	1	6.5	165	5825	--	-1.47	94.68	7	5.77	≤ 16.00	Pass
11ac-VHT40	1	13.5	151	5755	--	-12.28	90.28	7	-4.84	≤ 16.00	Pass
11ac-VHT40	1	13.5	159	5795	--	-3.74	90.28	7	3.70	≤ 16.00	Pass
11ac-VHT80	1	29.3	155	5775	--	-18.54	82.59	7	-10.71	≤ 16.00	Pass

Test Mode	N_{Tx}	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 PSD (dBm/ 100kHz)	Ant 2 PSD (dBm/ 100kHz)	Duty Cycle (%)	Constant Factor	Total PSD (dBm/ 500kHz)	Limit (dBm/ 500kHz)	Result
Ant 1 + 2											
11a	2	6	149	5745	-6.13	-5.97	94.96	7	4.19	≤ 13.00	Pass
11a	2	6	157	5785	-0.09	-0.08	94.96	7	10.15	≤ 13.00	Pass
11a	2	6	165	5825	-1.63	-0.87	94.96	7	9.00	≤ 13.00	Pass
11n-HT20	2	13	149	5745	-5.82	-5.91	94.50	7	4.39	≤ 13.00	Pass
11n-HT20	2	13	157	5785	-0.40	0.03	94.50	7	10.08	≤ 13.00	Pass
11n-HT20	2	13	165	5825	-6.20	-2.05	94.50	7	6.61	≤ 13.00	Pass
11n-HT40	2	27	151	5755	-13.18	-12.31	89.08	7	-2.21	≤ 13.00	Pass
11n-HT40	2	27	159	5795	-4.35	-4.04	89.08	7	6.32	≤ 13.00	Pass
11ac-VHT20	2	13	149	5745	-6.01	-6.43	94.68	7	4.03	≤ 13.00	Pass
11ac-VHT20	2	13	157	5785	-1.03	-0.26	94.68	7	9.62	≤ 13.00	Pass
11ac-VHT20	2	13	165	5825	-2.26	-2.01	94.68	7	8.11	≤ 13.00	Pass
11ac-VHT40	2	27	151	5755	-12.60	-12.14	90.28	7	-1.91	≤ 13.00	Pass
11ac-VHT40	2	27	159	5795	-4.07	-3.52	90.28	7	6.67	≤ 13.00	Pass
11ac-VHT80	2	58.6	155	5775	-19.04	-17.75	82.59	7	-7.51	≤ 13.00	Pass

Note: When EUT duty cycle < 98%, the Total PSD = $10*\log\{10^{(\text{Ant 1 PSD}/10)}+10^{(\text{Ant 2 PSD}/10)}\}$ + 10*log(1/duty cycle) + Constant Factor.

5GHz Card #1

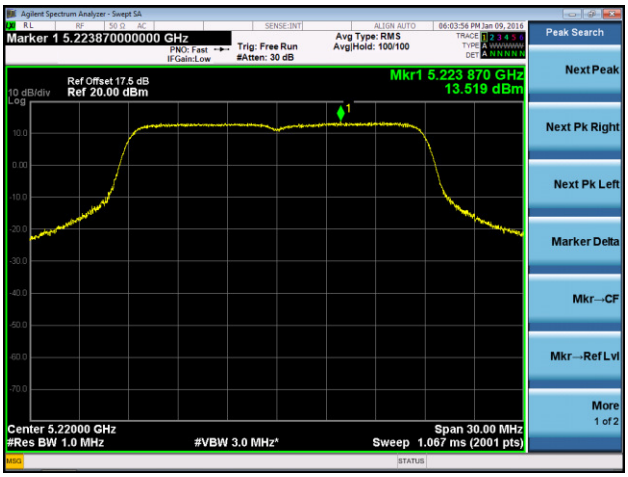
802.11a Power Spectral Density - Ant 1

Channel 36 (5180MHz)	Channel 44 (5220MHz)
Channel 48 (5240MHz)	**Channel 149 (5745MHz)**
	
Channel 157 (5785MHz)	**Channel 165 (5825MHz)**
	

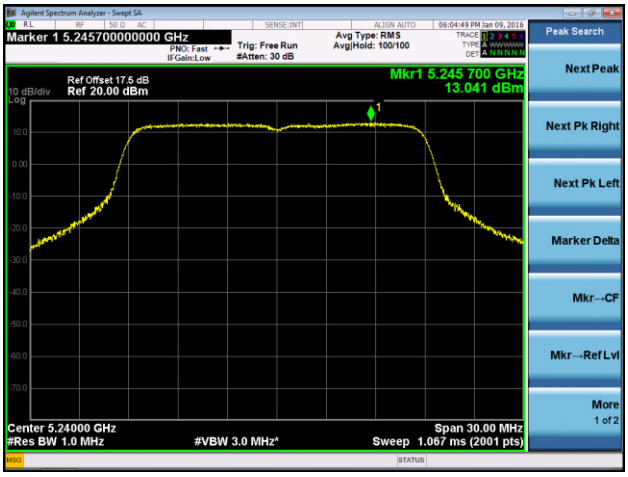
802.11n-HT20 Power Spectral Density - Ant 1

Channel 36 (5180MHz)

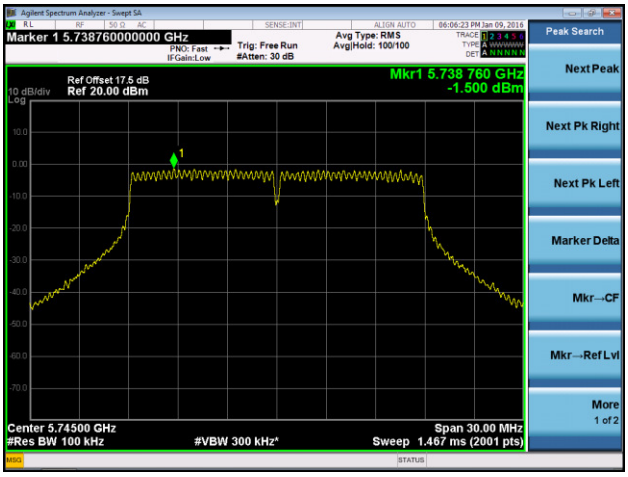
Channel 44 (5220MHz)



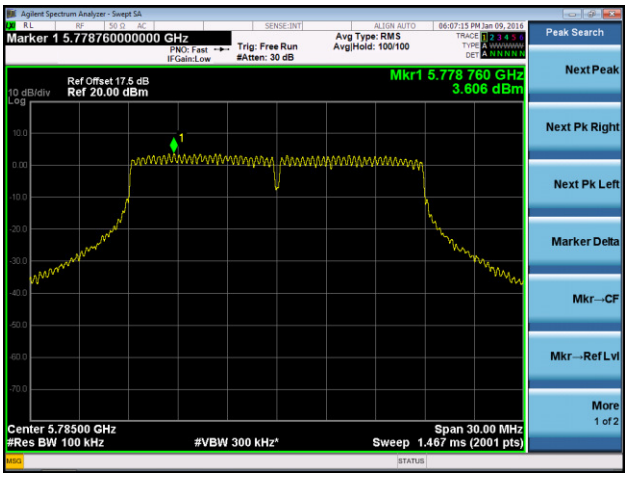
Channel 48 (5240MHz)



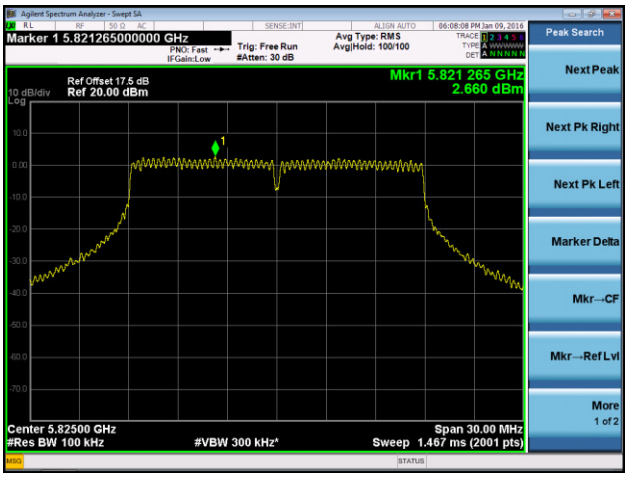
Channel 149 (5745MHz)



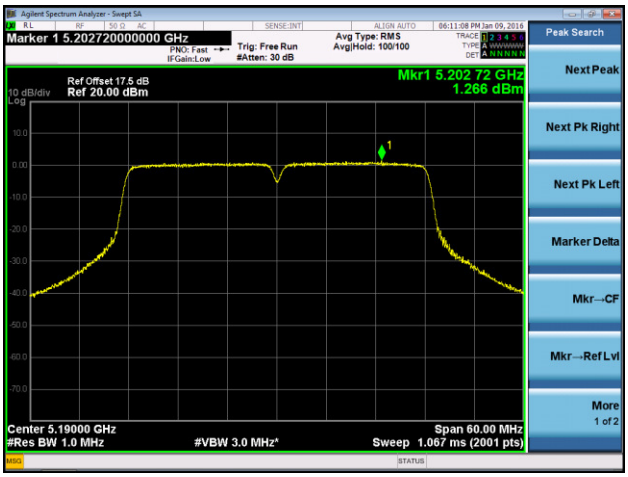
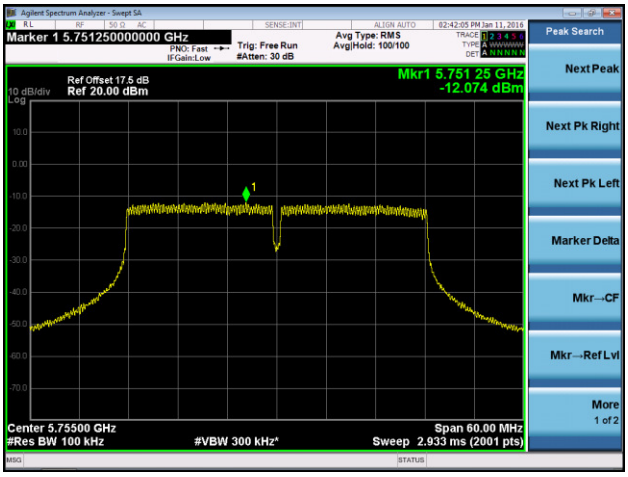
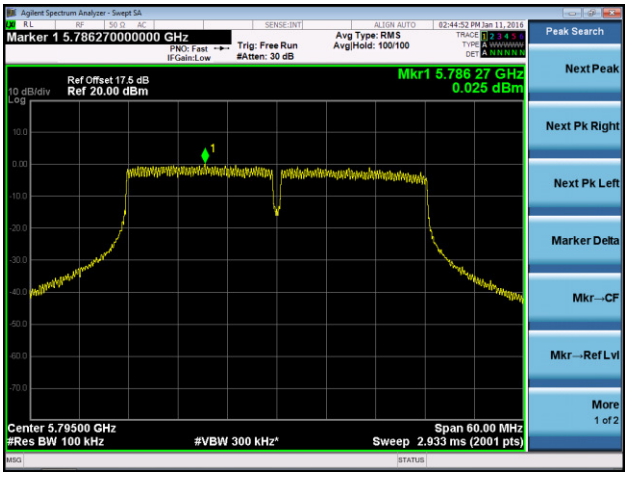
Channel 157 (5785MHz)



Channel 165 (5825MHz)

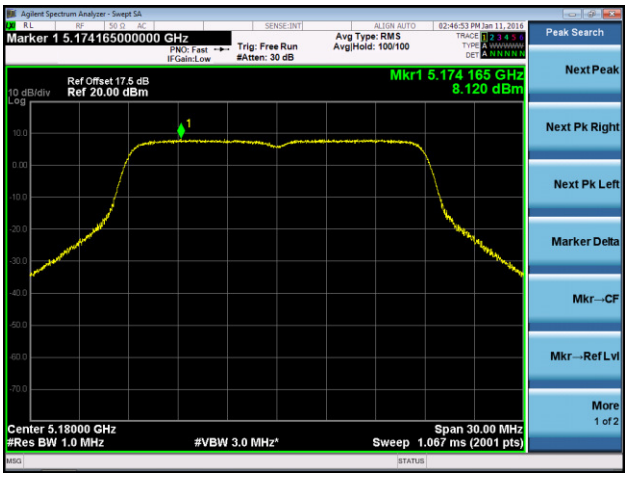


802.11n-HT40 Power Spectral Density - Ant 1

Channel 38 (5190MHz)	Channel 46 (5230MHz)
	
Channel 151 (5755MHz)	**Channel 159 (5795MHz)**
	

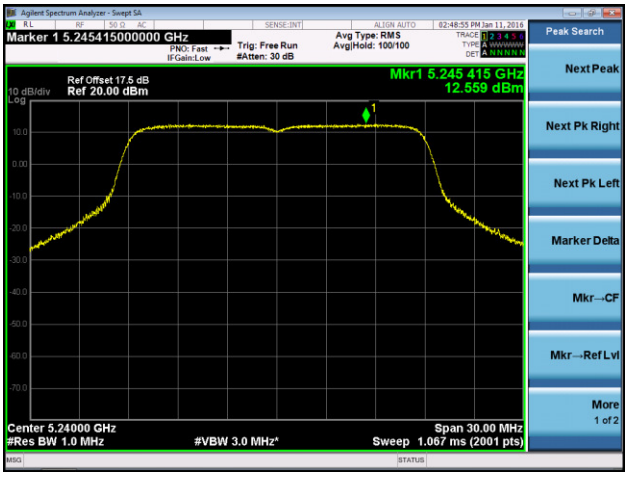
802.11ac-VHT20 Power Spectral Density - Ant 1

Channel 36 (5180MHz)

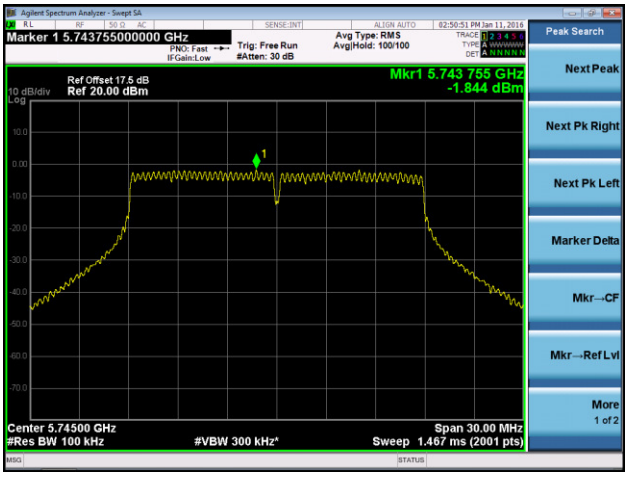


Channel 44 (5220MHz)

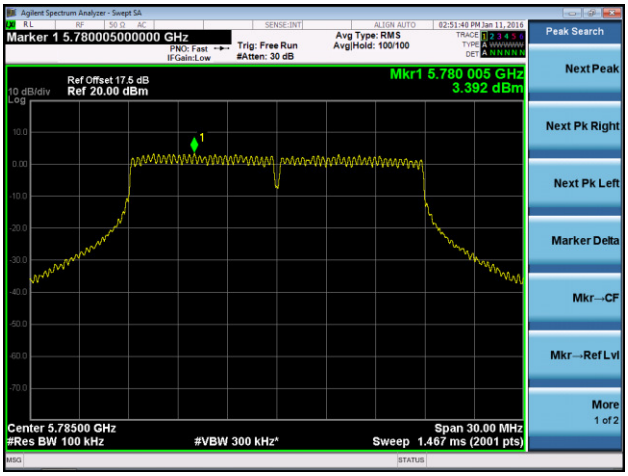
Channel 48 (5240MHz)



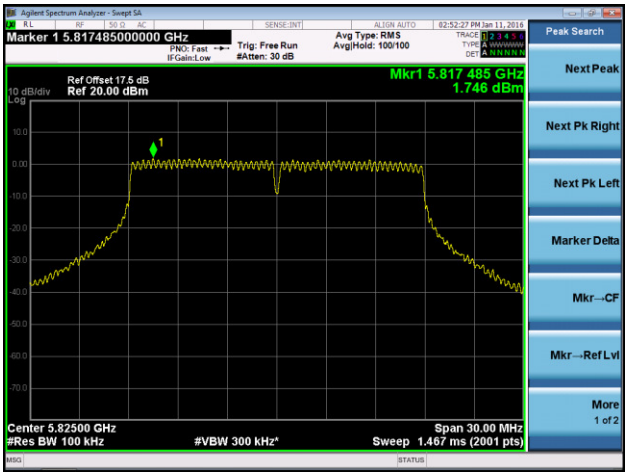
Channel 149 (5745MHz)



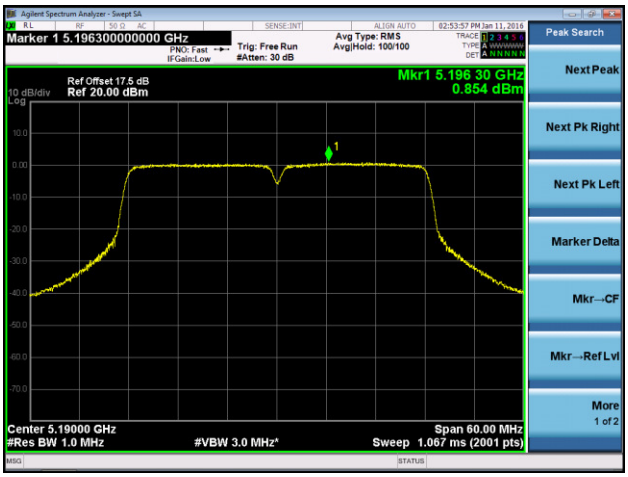
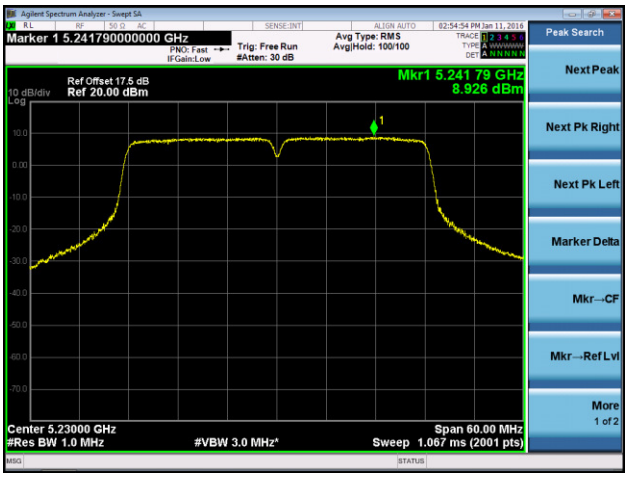
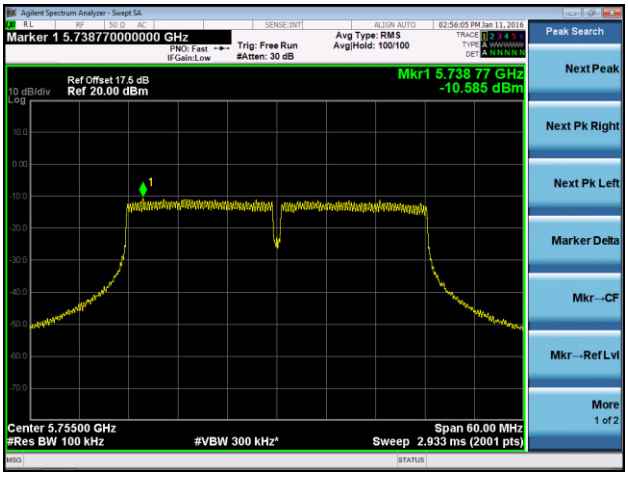
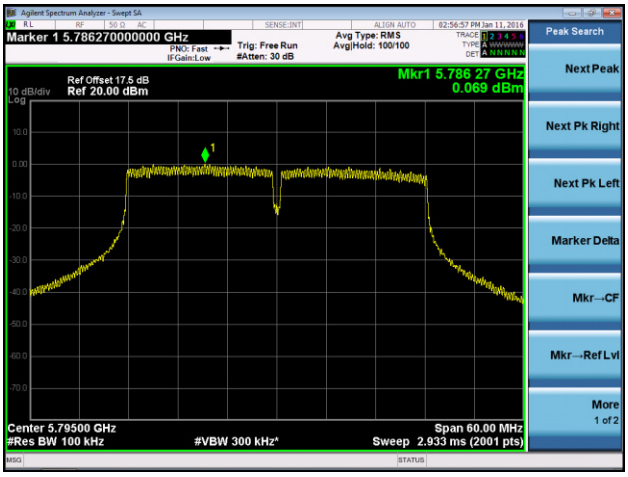
Channel 157 (5785MHz)

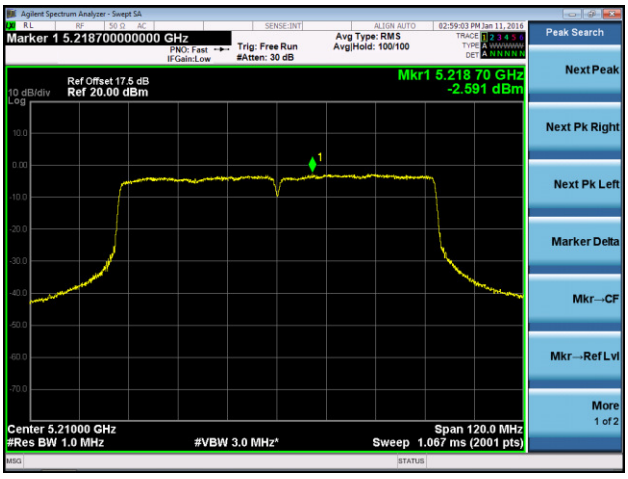
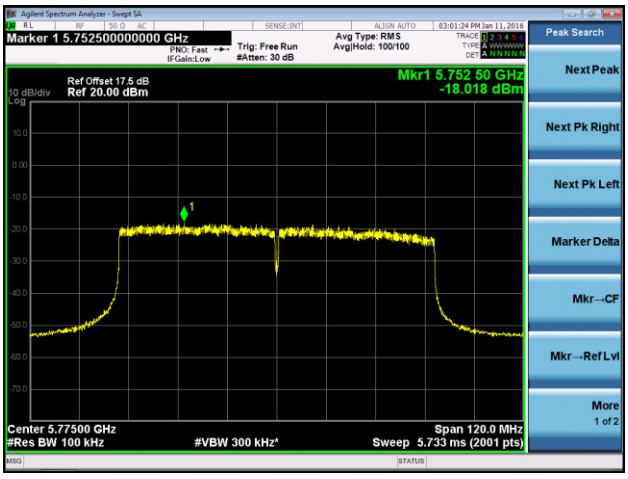


Channel 165 (5825MHz)



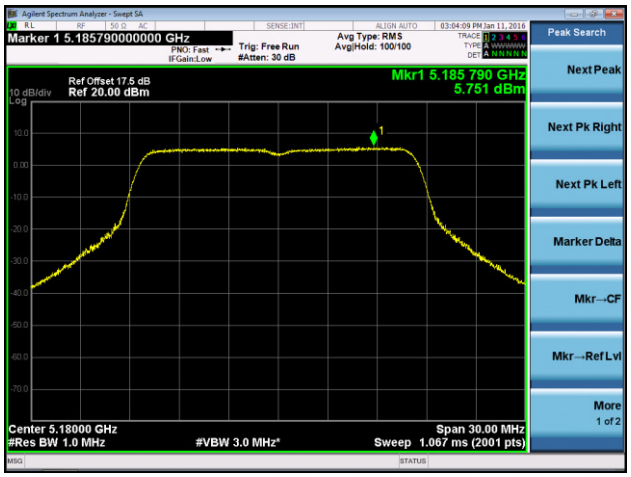
802.11ac-VHT40 Power Spectral Density - Ant 1

Channel 38 (5190MHz)	Channel 46 (5230MHz)
	
Channel 151 (5755MHz)	**Channel 159 (5795MHz)**
	

802.11ac-VHT80 Power Spectral Density - Ant 1	
Channel 42 (5210MHz)	**Channel 155 (5775MHz)**
	

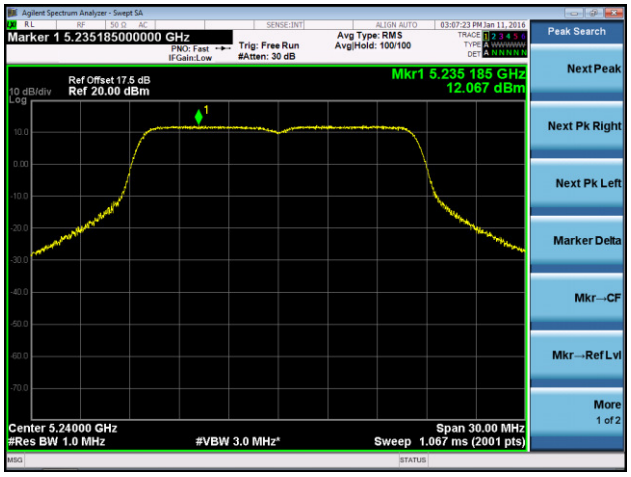
802.11a Power Spectral Density - Ant 2

Channel 36 (5180MHz)

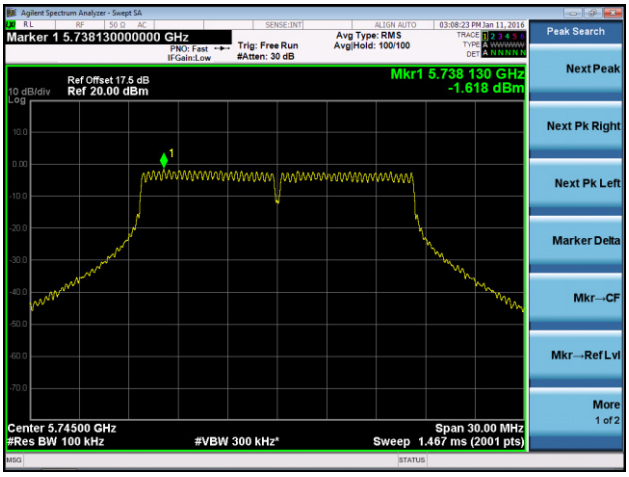


Channel 44 (5220MHz)

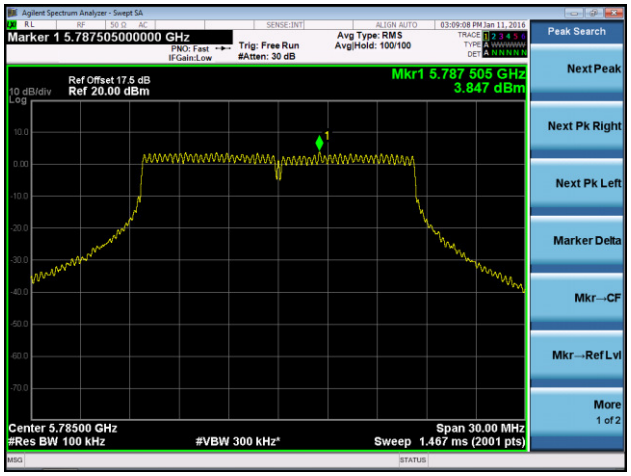
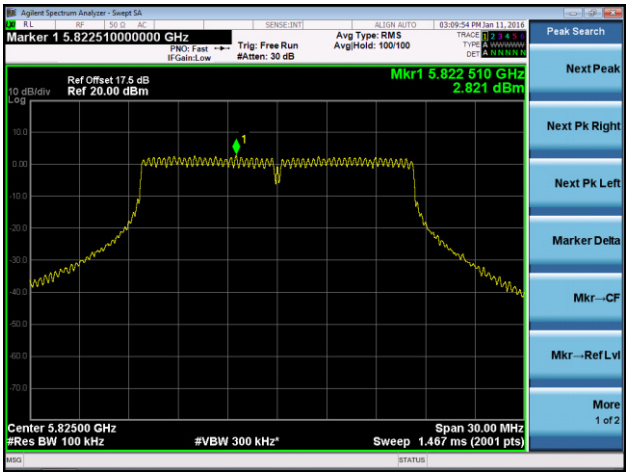
Channel 48 (5240MHz)



Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)