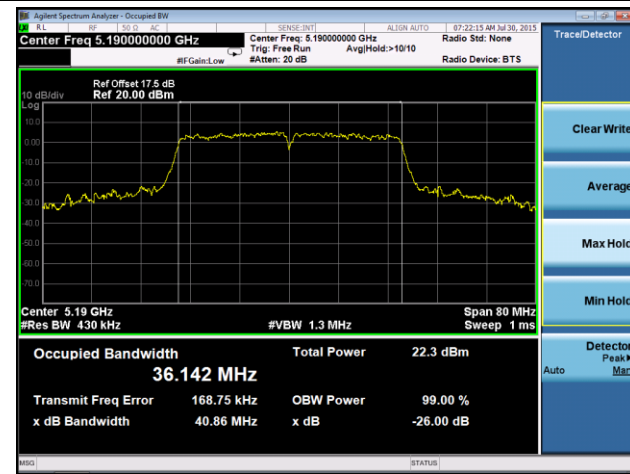
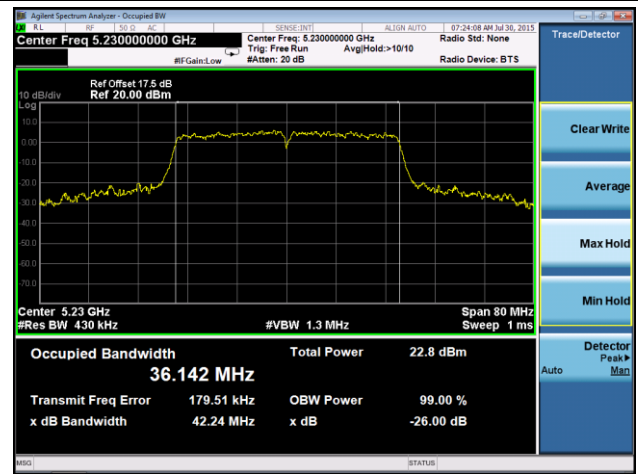


802.11ac-VHT40 26dB Bandwidth & 99% Bandwidth - Ant 1 / Ant 0 + 1

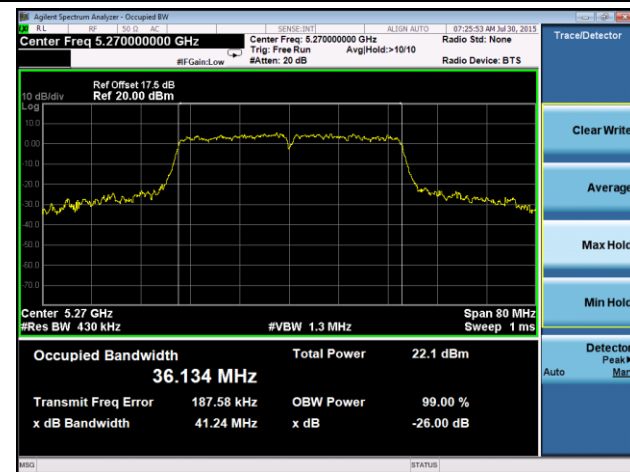
Channel 38 (5190MHz)



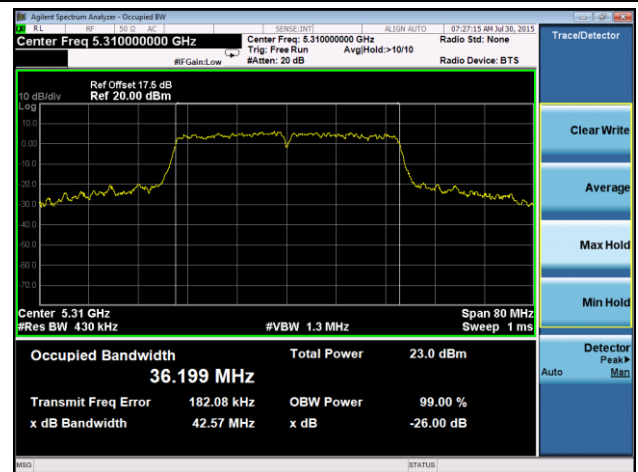
Channel 46 (5230MHz)



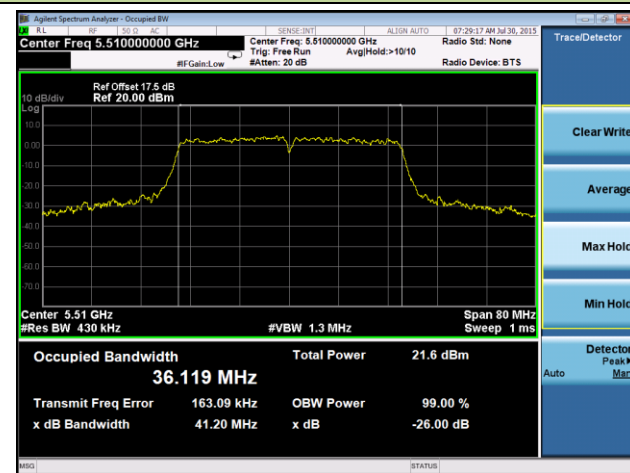
Channel 54 (5270MHz)



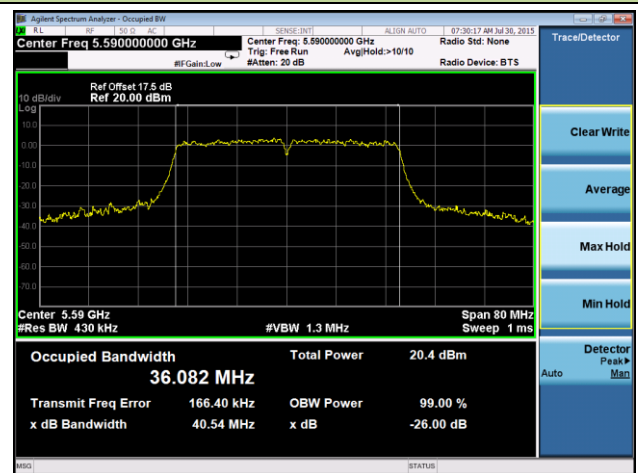
Channel 62 (5310MHz)



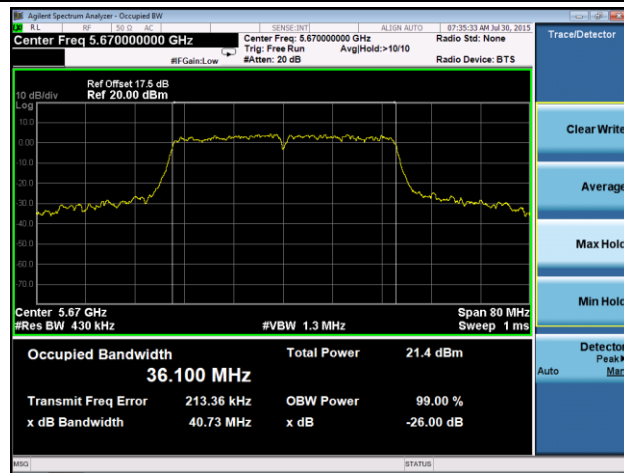
Channel 102 (5510MHz)



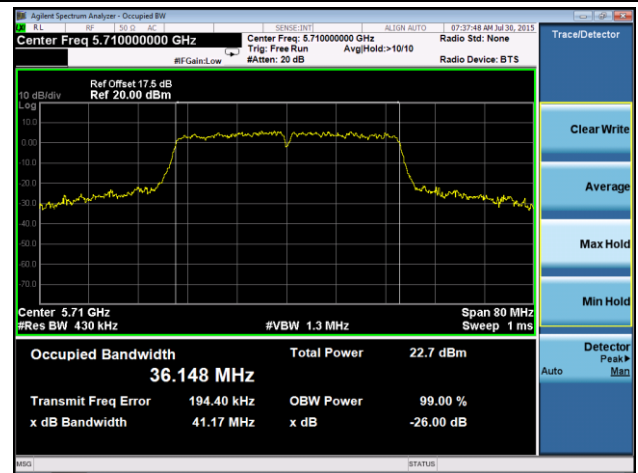
Channel 118 (5590MHz)



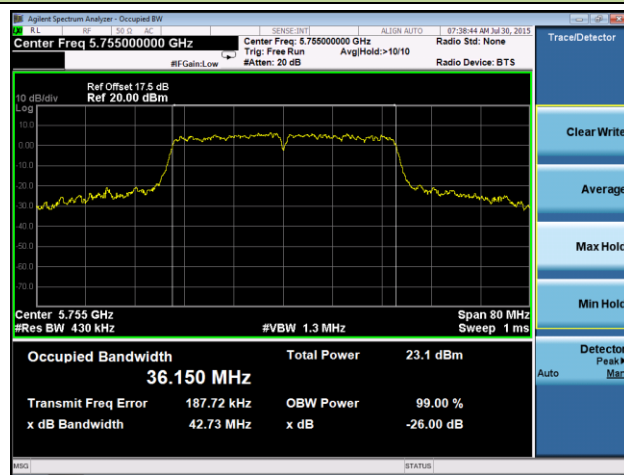
Channel 134 (5670MHz)



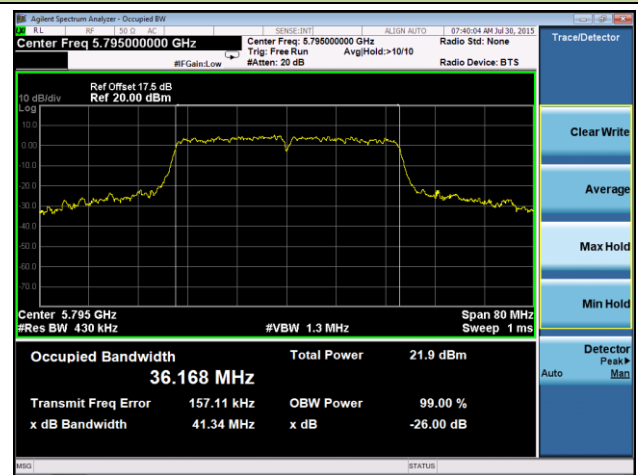
Channel 142 (5710MHz)

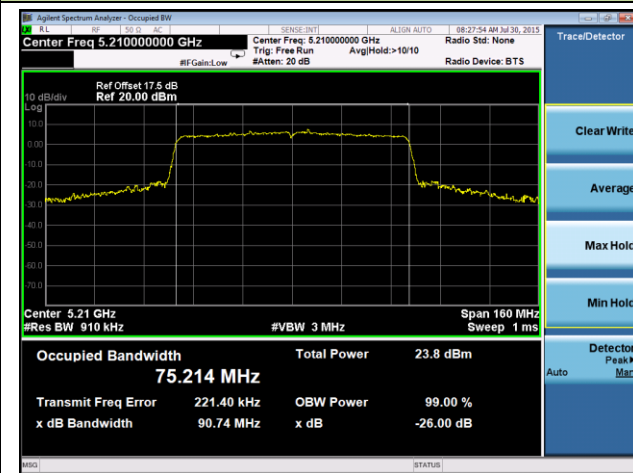
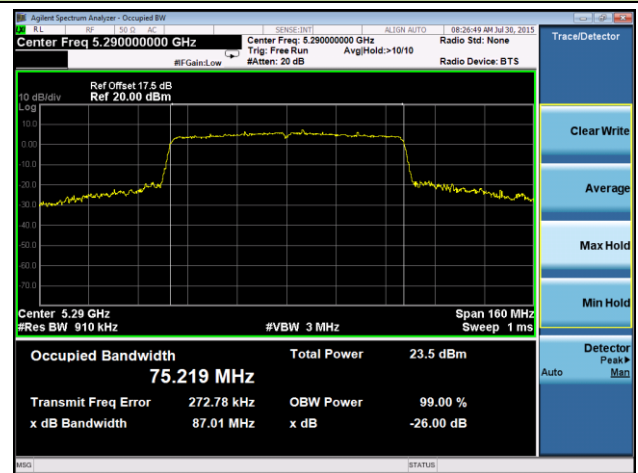


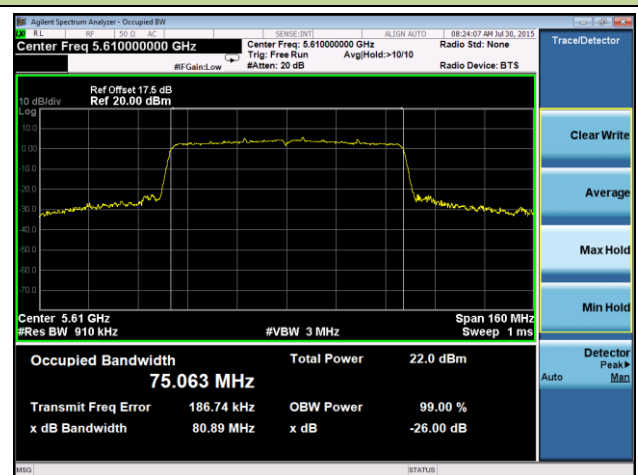
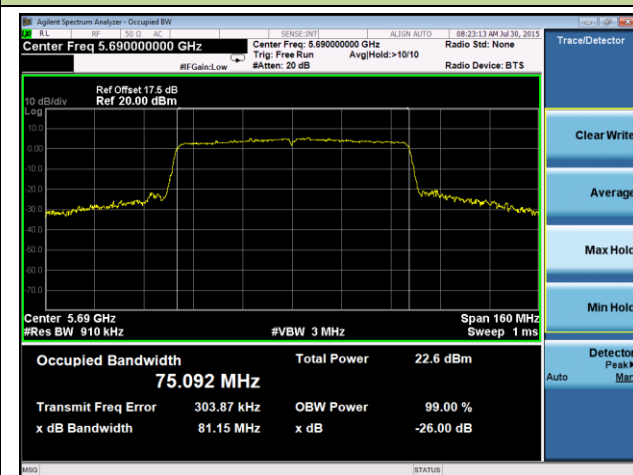
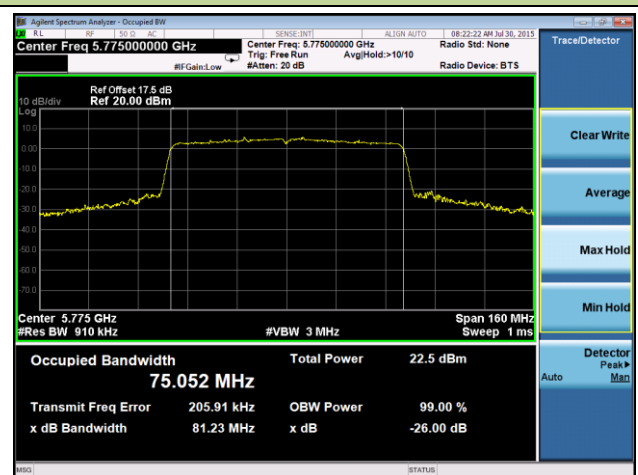
Channel 151 (5755MHz)



Channel 159 (5795MHz)



802.11ac-VHT80 26dB Bandwidth & 99% Bandwidth - Ant 1 / Ant 0 + 1
Channel 42 (5210MHz)

Channel 58 (5290MHz)

Channel 106 (5530MHz)

Channel 122 (5610MHz)

Channel 138 (5690MHz)

Channel 155 (5755MHz)


7.3. 6dB Bandwidth Measurement

7.3.1. Test Limit

The minimum 6dB bandwidth shall be at least 500 kHz.

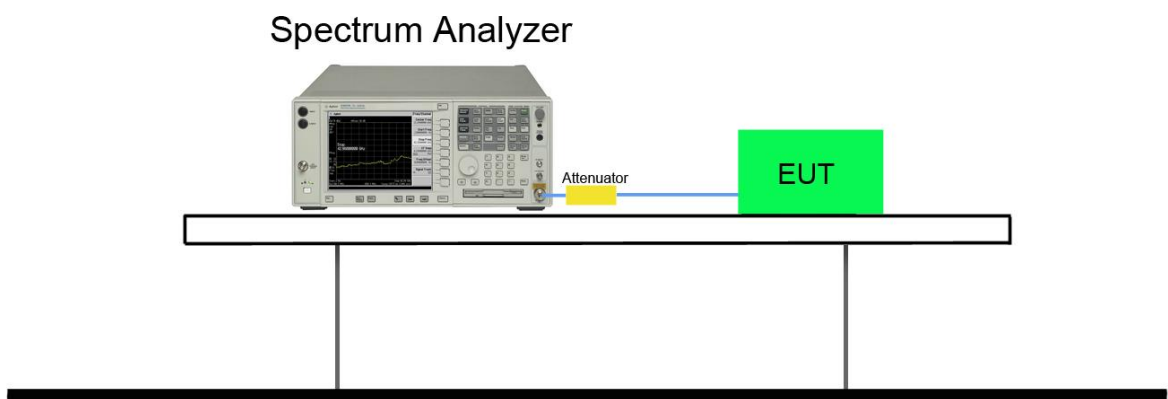
7.3.2. Test Procedure used

KDB 789033 D02v01 – Section C.2

7.3.3. Test Setting

1. Set center frequency to the nominal EUT channel center frequency.
2. RBW = 100 kHz.
3. VBW $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize.
8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

7.3.4. Test Setup

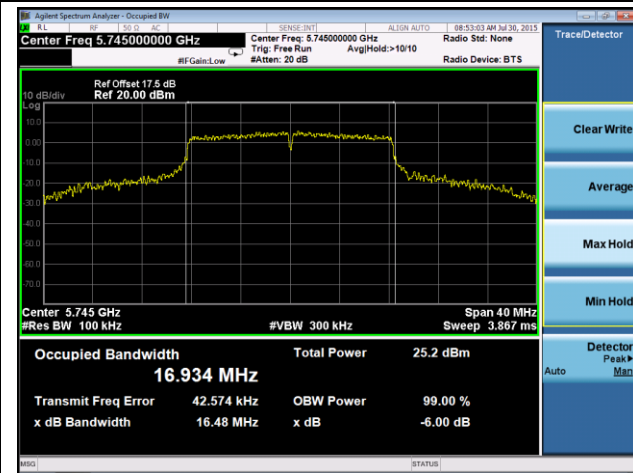


7.3.5. Test Result

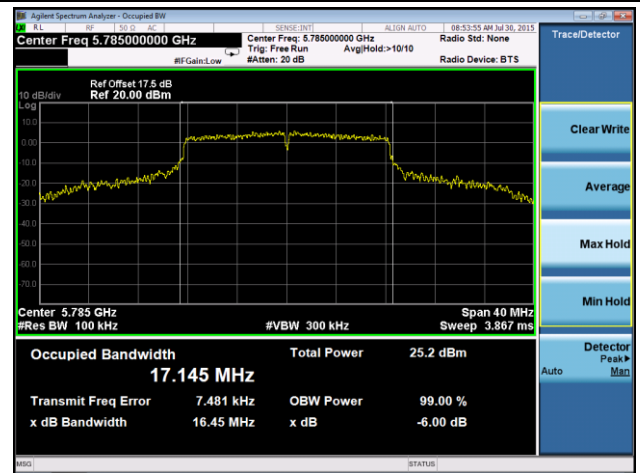
Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
Ant 0 / Ant 0 + 1						
802.11a	6	149	5745	16.48	≥ 0.5	Pass
802.11a	6	157	5785	16.45	≥ 0.5	Pass
802.11a	6	165	5825	16.47	≥ 0.5	Pass
802.11n-HT20	13	149	5745	17.65	≥ 0.5	Pass
802.11n-HT20	13	157	5785	17.66	≥ 0.5	Pass
802.11n-HT20	13	165	5825	17.66	≥ 0.5	Pass
802.11n-HT40	27	151	5755	36.34	≥ 0.5	Pass
802.11n-HT40	27	159	5795	36.36	≥ 0.5	Pass
802.11ac-VHT20	13	149	5745	17.67	≥ 0.5	Pass
802.11ac-VHT20	13	157	5785	17.65	≥ 0.5	Pass
802.11ac-VHT20	13	165	5825	17.66	≥ 0.5	Pass
802.11ac-VHT40	27	151	5755	36.44	≥ 0.5	Pass
802.11ac-VHT40	27	159	5795	36.44	≥ 0.5	Pass
802.11ac-VHT80	58.6	155	5775	75.88	≥ 0.5	Pass
Ant 1 / Ant 0 + 1						
802.11a	6	149	5745	16.44	≥ 0.5	Pass
802.11a	6	157	5785	16.44	≥ 0.5	Pass
802.11a	6	165	5825	16.46	≥ 0.5	Pass
802.11n-HT20	13	149	5745	17.63	≥ 0.5	Pass
802.11n-HT20	13	157	5785	17.64	≥ 0.5	Pass
802.11n-HT20	13	165	5825	17.64	≥ 0.5	Pass
802.11n-HT40	27	151	5755	35.94	≥ 0.5	Pass
802.11n-HT40	27	159	5795	35.76	≥ 0.5	Pass
802.11ac-VHT20	13	149	5745	17.66	≥ 0.5	Pass
802.11ac-VHT20	13	157	5785	17.66	≥ 0.5	Pass
802.11ac-VHT20	13	165	5825	17.66	≥ 0.5	Pass
802.11ac-VHT40	27	151	5755	36.43	≥ 0.5	Pass
802.11ac-VHT40	27	159	5795	36.43	≥ 0.5	Pass
802.11ac-VHT80	58.6	155	5775	75.81	≥ 0.5	Pass

802.11a 6dB Bandwidth - Ant 0 / Ant 0 + 1

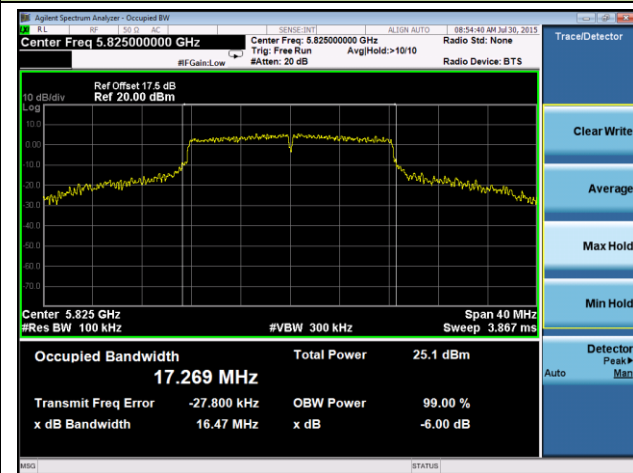
Channel 149 (5745MHz)

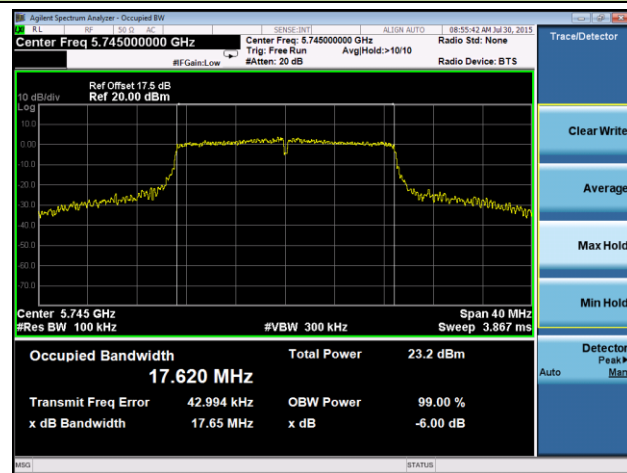
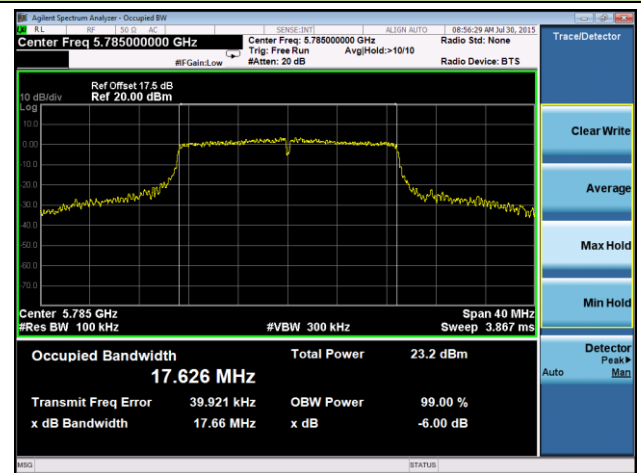
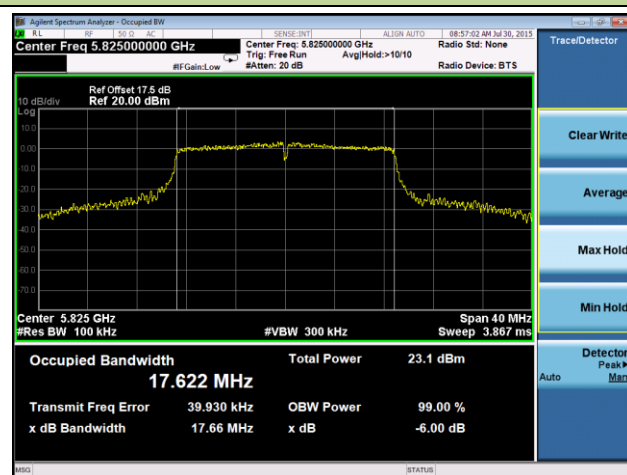
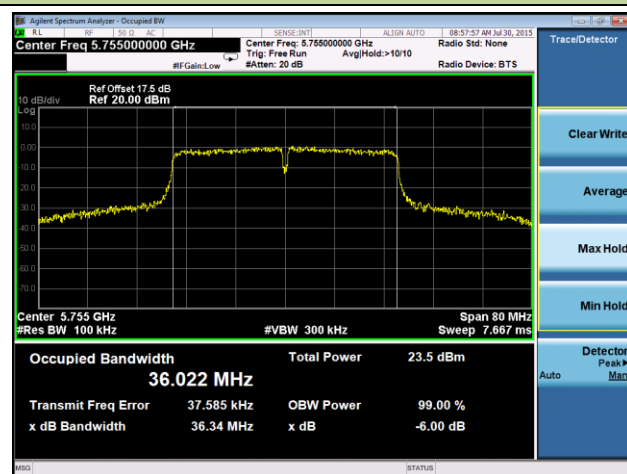
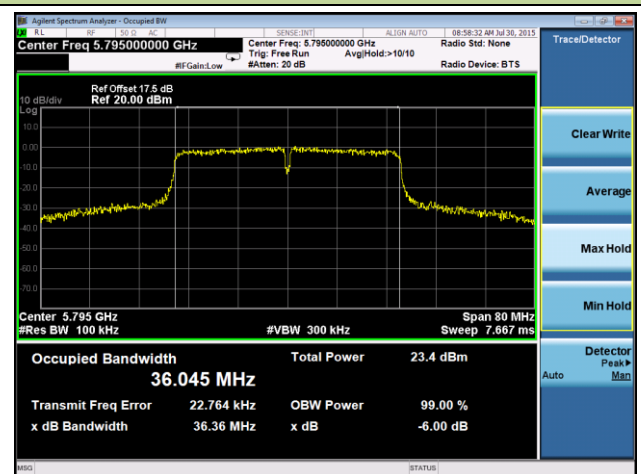


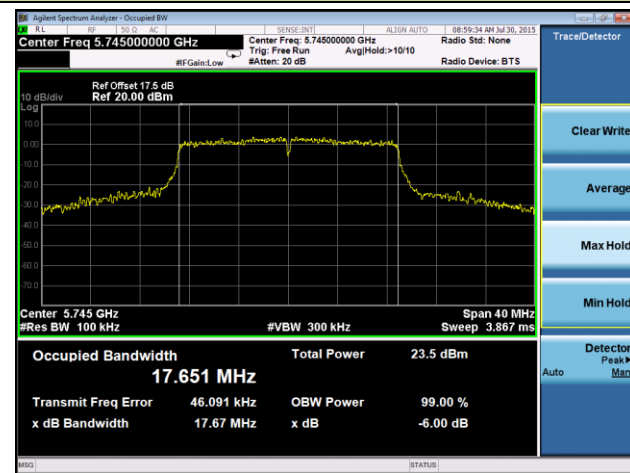
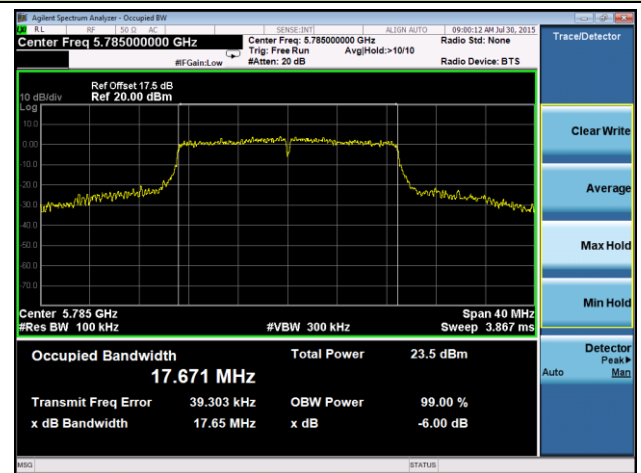
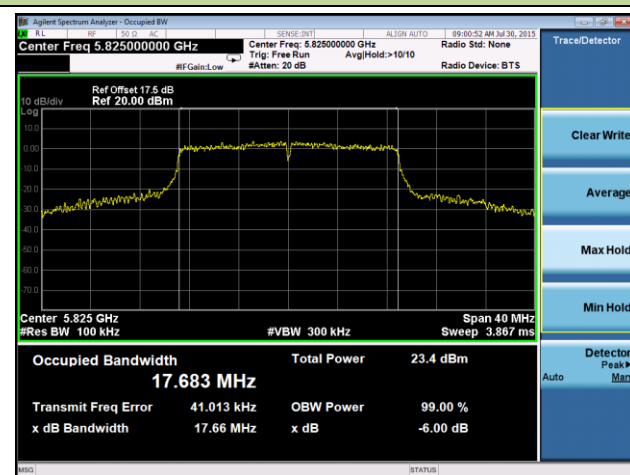
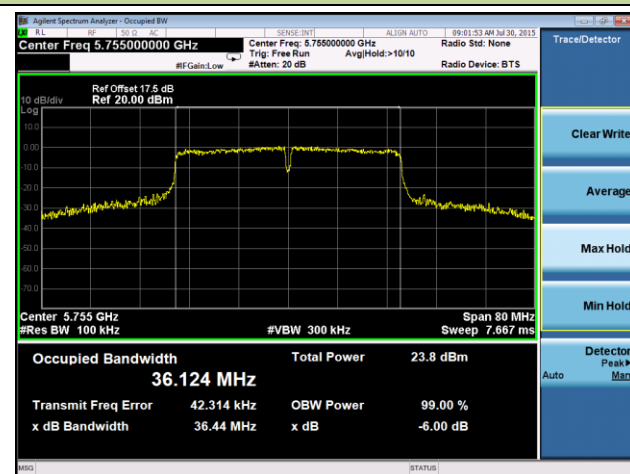
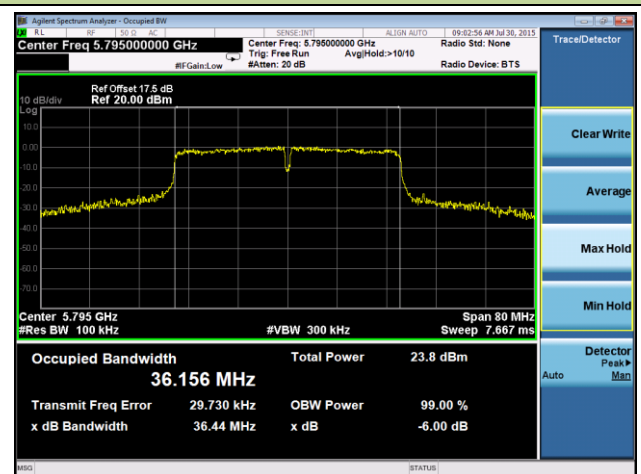
Channel 157 (5785MHz)



Channel 165 (5825MHz)

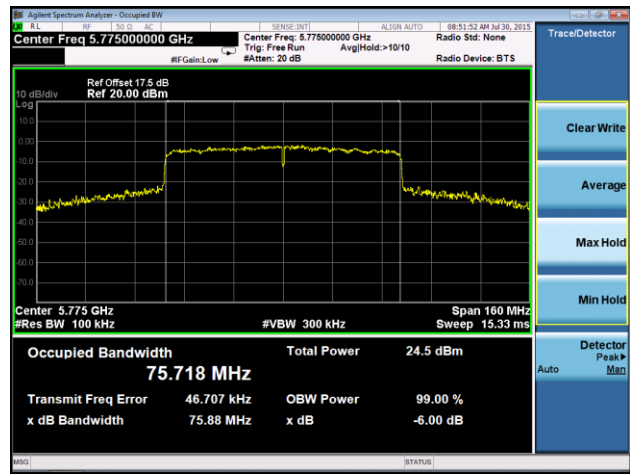


802.11n-HT20 6dB Bandwidth - Ant 0 / Ant 0 + 1
Channel 149 (5745MHz)

Channel 157 (5785MHz)

Channel 165 (5825MHz)

802.11n-HT40 6dB Bandwidth - Ant 0 / Ant 0 + 1
Channel 151 (5755MHz)

Channel 159 (5795MHz)


802.11ac-VHT20 6dB Bandwidth - Ant 0 / Ant 0 + 1
Channel 149 (5745MHz)

Channel 157 (5785MHz)

Channel 165 (5825MHz)

802.11ac-VHT40 6dB Bandwidth - Ant 0 / Ant 0 + 1
Channel 151 (5755MHz)

Channel 159 (5795MHz)


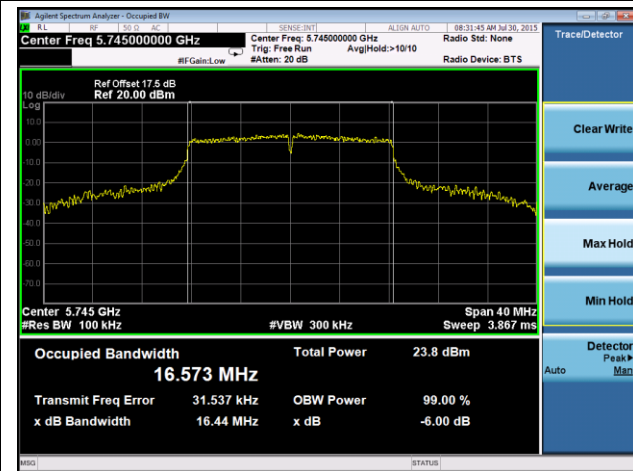
802.11ac-VHT80 6dB Bandwidth - Ant 0 / Ant 0 + 1

Channel 155 (5775MHz)

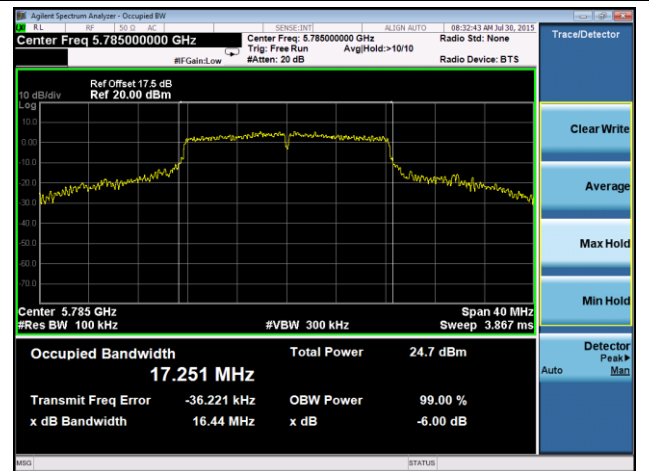


802.11a 6dB Bandwidth - Ant 1 / Ant 0 + 1

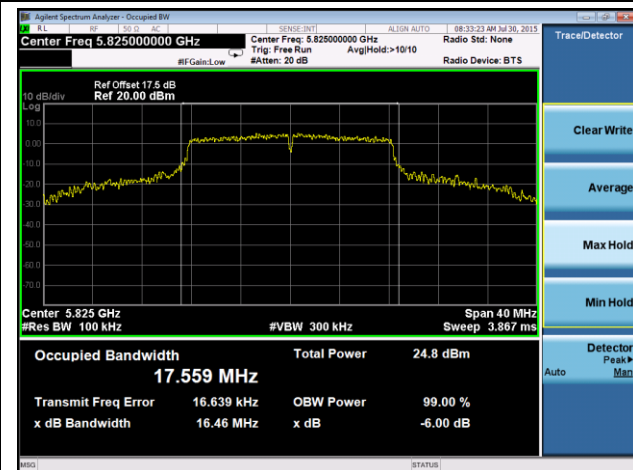
Channel 149 (5745MHz)



Channel 157 (5785MHz)

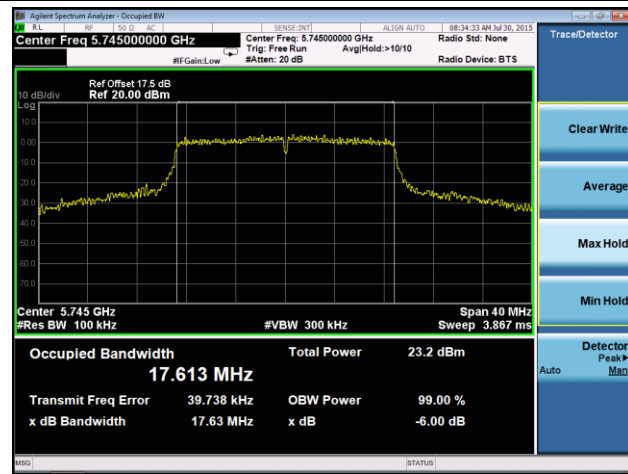


Channel 165 (5825MHz)

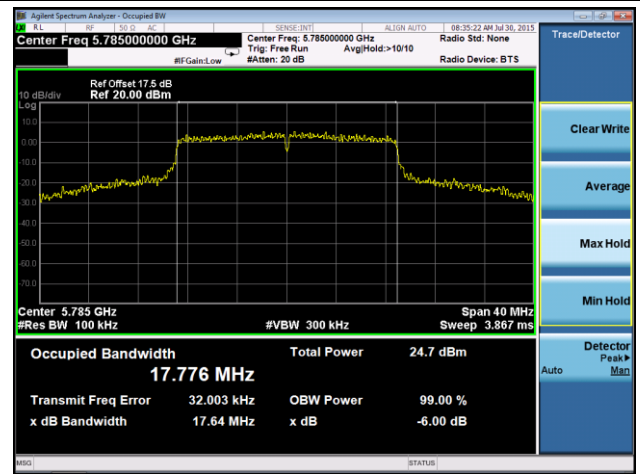


802.11n-HT20 6dB Bandwidth - Ant 1 / Ant 0 + 1

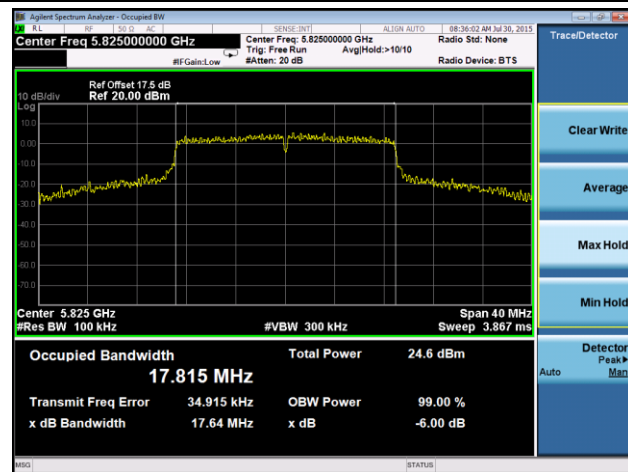
Channel 149 (5745MHz)



Channel 157 (5785MHz)

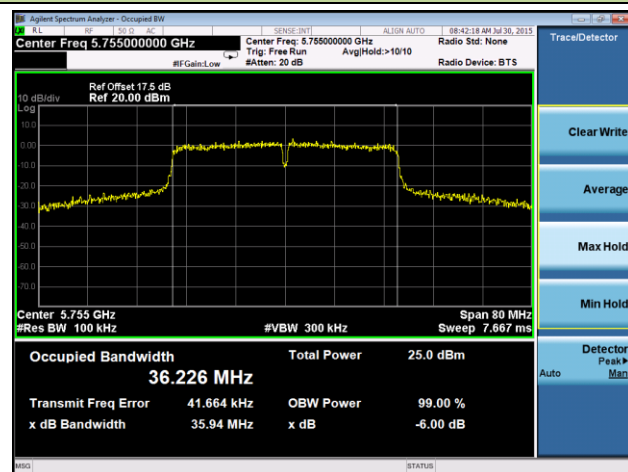


Channel 165 (5825MHz)

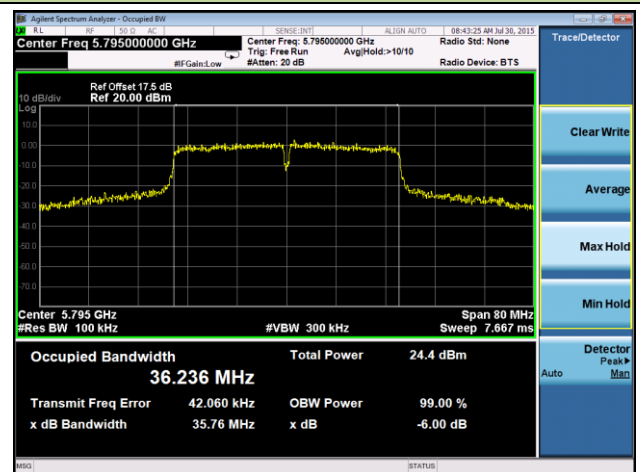


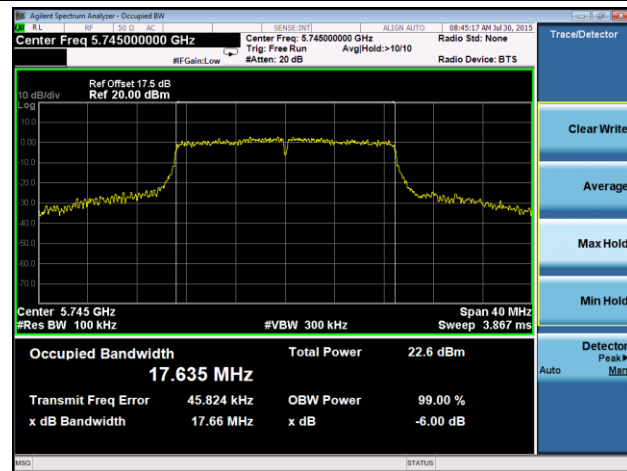
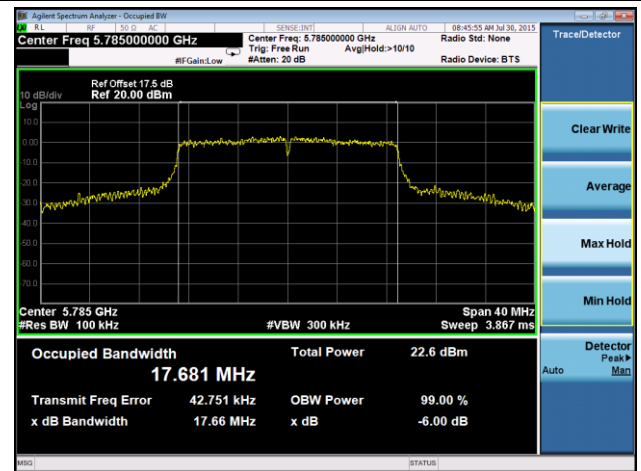
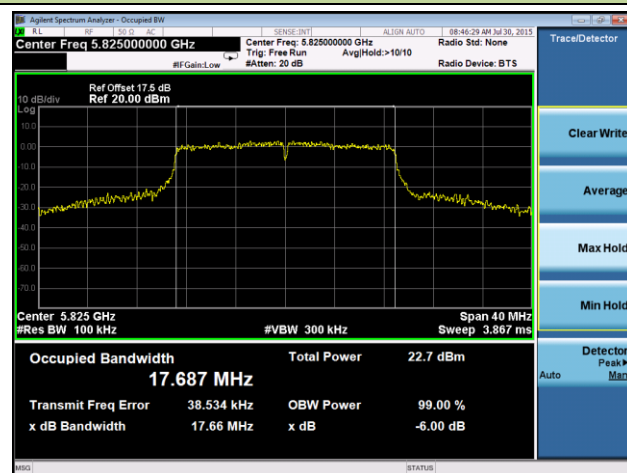
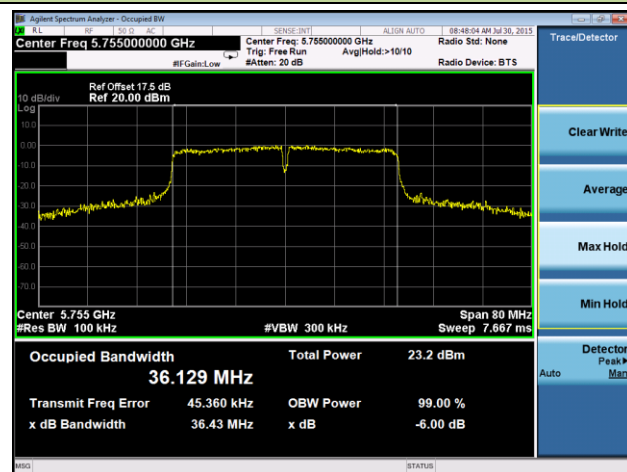
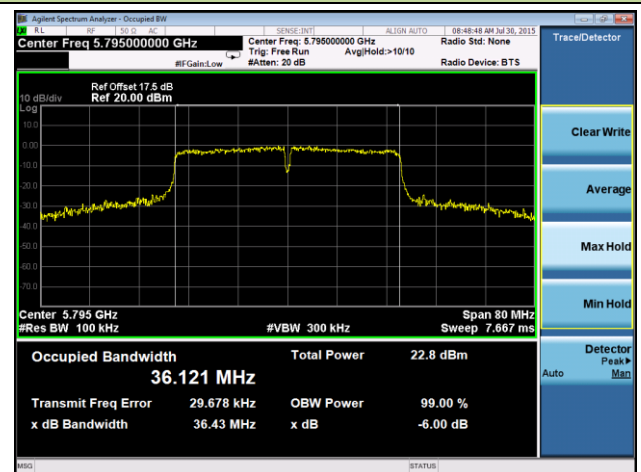
802.11n-HT40 6dB Bandwidth - Ant 1 / Ant 0 + 1

Channel 151 (5755MHz)



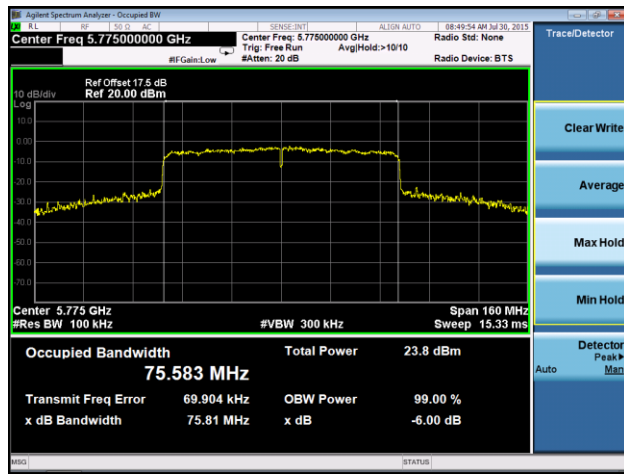
Channel 159 (5795MHz)



802.11ac-VHT20 6dB Bandwidth - Ant 1 / Ant 0 + 1
Channel 149 (5745MHz)

Channel 157 (5785MHz)

Channel 165 (5825MHz)

802.11ac-VHT40 6dB Bandwidth - Ant 1 / Ant 0 + 1
Channel 151 (5755MHz)

Channel 159 (5795MHz)


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

Channel 155 (5775MHz)



7.4. Output Power Measurement

7.4.1. Test Limit

For an indoor 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 provided the maximum antenna gain does not exceed 6 dBi.

$$5150\sim 5250\text{MHz: Limit (dBm)} = 30\text{dBm} - (6.73\text{dBi} - 6\text{dBi}) = 29.27\text{dBm}$$

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

$$5250\sim 5350\text{MHz: Limit (dBm)} = 30\text{dBm} - (6.66\text{dBi} - 6\text{dBi}) = 29.34\text{dBm}$$

$$5470\sim 5725\text{MHz: Limit (dBm)} = 30\text{dBm} - (6.89\text{dBi} - 6\text{dBi}) = 29.11\text{dBm}$$

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).

$$5725\sim 5850\text{MHz: Limit (dBm)} = 30\text{dBm} - (7.19\text{dBi} - 6\text{dBi}) = 28.81\text{dBm}$$

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

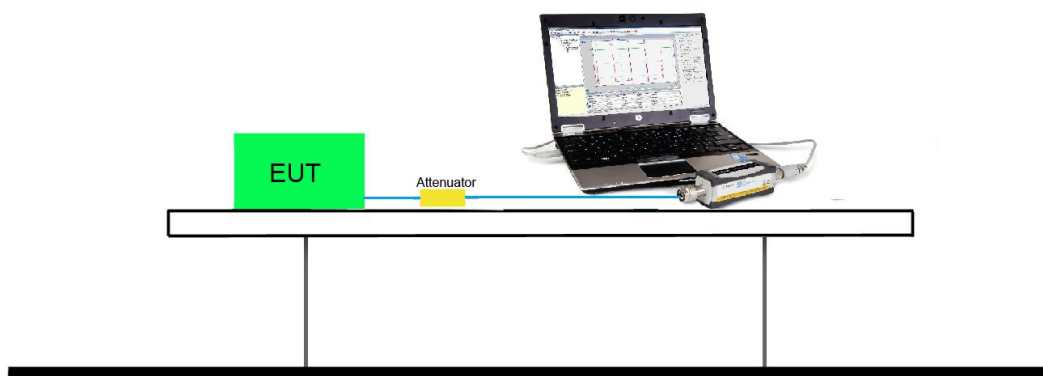
7.4.2. Test Procedure Used

KDB 789033 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

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

N _{Tx}	802.11a	MCS Index for 802.11n	Data Rate (Mbps)			
			20MHz Bandwidth		40MHz Bandwidth	
			800ns GI	400ns GI	800ns GI	400ns GI
2	6	8	13.0	14.4	27.0	30.0
2	9	9	26.0	28.9	54.0	60.0
2	12	10	39.0	43.3	81.0	90.0
2	18	11	52.0	57.8	108.0	120.0
2	24	12	78.0	86.7	162.0	180.0
2	36	13	104.0	115.6	216.0	240.0
2	48	14	117.0	130.0	243.0	270.0
2	54	15	130.0	144.0	270.0	300.0

N _{Tx}	MCS Index for 802.11ac	Data Rate (Mbps)					
		20MHz Bandwidth		40MHz Bandwidth		80MHz Bandwidth	
		800ns GI	400ns GI	800ns GI	400ns GI	800ns GI	400ns GI
2	0	13.0	14.4	27.0	30.0	58.6	65.0
2	1	26.0	28.8	54.0	60.0	117.0	130.0
2	2	39.0	43.4	81.0	90.0	175.6	195.0
2	3	52.0	57.8	108.0	120.0	234.0	260.0
2	4	78.0	86.6	162.0	180.0	351.0	390.0
2	5	104.0	115.6	216.0	240.0	468.0	520.0
2	6	117.0	130.0	243.0	270.0	526.6	585.0
2	7	130.0	144.4	270.0	300.0	585.0	650.0
2	8	156.0	173.4	324.0	360.0	702.0	780.0
2	9	--	--	360.0	400.0	780.0	866.6

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

Output power at various data rates for Ant 0 / Ant 0 + 1:

Test Mode	Bandwidth (MHz)	Channel	Frequency (MHz)	Data Rate (Mbps)	Average Power (dBm)
802.11a	20	60	5300	6	18.00
				24	17.83
				54	17.62
802.11n	20	60	5300	13	17.57
				14.4	17.50
				78	17.28
				86.7	17.24
				130	17.07
				144	17.02
802.11n	40	62	5310	27	15.08
				30	14.99
				162	14.73
				180	14.69
				270	14.42
				300	14.38
802.11ac	20	60	5300	13	17.97
				14.4	17.88
				78	17.58
				86.6	17.52
				156	17.33
				173.4	17.29
802.11ac	40	62	5310	27	17.30
				30	17.25
				162	17.09
				180	17.05
				360	16.86
				400	16.80

802.11ac	80	58	5290	58.6	17.08
				65	16.94
				351	16.70
				390	16.66
				780	16.48
				866.6	16.45

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
802.11a	6	36	5180	17.69	16.67	20.22	≤ 29.27	Pass
802.11a	6	44	5220	19.72	18.35	22.10	≤ 29.27	Pass
802.11a	6	48	5240	20.05	18.37	22.30	≤ 29.27	Pass
802.11a	6	52	5260	17.81	16.68	20.29	≤ 23.34	Pass
802.11a	6	60	5300	18.00	17.12	20.59	≤ 23.34	Pass
802.11a	6	64	5320	16.72	15.94	19.36	≤ 23.34	Pass
802.11a	6	100	5500	17.73	15.34	19.70	≤ 23.11	Pass
802.11a	6	120	5600	17.35	15.29	19.45	≤ 23.11	Pass
802.11a	6	140	5700	17.92	16.17	20.14	≤ 23.11	Pass
802.11a	6	149	5745	18.56	17.03	20.88	≤ 28.81	Pass
802.11a	6	157	5785	19.82	18.35	22.16	≤ 28.81	Pass
802.11a	6	165	5825	19.73	18.86	22.33	≤ 28.81	Pass
802.11n-HT20	13	36	5180	18.88	17.75	21.36	≤ 29.27	Pass
802.11n-HT20	13	44	5220	18.98	17.79	21.44	≤ 29.27	Pass
802.11n-HT20	13	48	5240	18.54	17.72	21.16	≤ 29.27	Pass
802.11n-HT20	13	52	5260	17.53	16.59	20.10	≤ 23.34	Pass
802.11n-HT20	13	60	5300	17.57	16.71	20.17	≤ 23.34	Pass
802.11n-HT20	13	64	5320	18.14	16.80	20.53	≤ 23.34	Pass
802.11n-HT20	13	100	5500	17.18	16.25	19.75	≤ 23.11	Pass
802.11n-HT20	13	120	5600	16.88	15.51	19.26	≤ 23.11	Pass
802.11n-HT20	13	140	5700	15.52	13.84	17.77	≤ 23.11	Pass
802.11n-HT20	13	149	5745	16.28	15.26	18.81	≤ 28.81	Pass
802.11n-HT20	13	157	5785	18.80	18.18	21.51	≤ 28.81	Pass
802.11n-HT20	13	165	5825	18.88	17.68	21.33	≤ 28.81	Pass

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
802.11n-HT40	27	38	5190	20.63	19.38	23.06	≤ 29.27	Pass
802.11n-HT40	27	46	5230	20.50	19.53	23.05	≤ 29.27	Pass
802.11n-HT40	27	54	5270	20.21	19.20	22.75	≤ 23.34	Pass
802.11n-HT40	27	62	5310	15.08	14.20	17.67	≤ 23.34	Pass
802.11n-HT40	27	102	5510	14.77	13.82	17.33	≤ 23.11	Pass
802.11n-HT40	27	118	5590	19.01	18.48	21.76	≤ 23.11	Pass
802.11n-HT40	27	134	5670	17.85	16.01	20.03	≤ 23.11	Pass
802.11n-HT40	27	151	5755	18.60	17.49	21.09	≤ 28.81	Pass
802.11n-HT40	27	159	5795	19.10	18.25	21.71	≤ 28.81	Pass
802.11ac-VHT20	13	36	5180	17.02	16.17	19.62	≤ 29.27	Pass
802.11ac-VHT20	13	44	5220	20.04	19.22	22.66	≤ 29.27	Pass
802.11ac-VHT20	13	48	5240	20.34	19.04	22.75	≤ 29.27	Pass
802.11ac-VHT20	13	52	5260	17.72	16.84	20.31	≤ 23.34	Pass
802.11ac-VHT20	13	60	5300	17.97	16.78	20.43	≤ 23.34	Pass
802.11ac-VHT20	13	64	5320	16.79	15.34	19.14	≤ 23.34	Pass
802.11ac-VHT20	13	100	5500	17.12	15.81	19.53	≤ 23.11	Pass
802.11ac-VHT20	13	120	5600	16.96	16.81	19.90	≤ 23.11	Pass
802.11ac-VHT20	13	140	5700	13.77	13.48	16.64	≤ 23.11	Pass
802.11ac-VHT20	13	144	5720	18.39	17.52	20.99	≤ 23.11	Pass
802.11ac-VHT20	13	149	5745	13.96	13.52	16.76	≤ 28.81	Pass
802.11ac-VHT20	13	157	5785	20.01	19.66	22.85	≤ 28.81	Pass
802.11ac-VHT20	13	165	5825	19.46	18.82	22.16	≤ 28.81	Pass

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
802.11ac-VHT40	27	38	5190	19.02	18.66	21.85	≤ 29.27	Pass
802.11ac-VHT40	27	46	5230	20.92	19.65	23.34	≤ 29.27	Pass
802.11ac-VHT40	27	54	5270	20.04	18.75	22.45	≤ 23.34	Pass
802.11ac-VHT40	27	62	5310	17.30	15.89	19.66	≤ 23.34	Pass
802.11ac-VHT40	27	102	5510	14.20	13.52	16.88	≤ 23.11	Pass
802.11ac-VHT40	27	118	5590	19.76	18.67	22.26	≤ 23.11	Pass
802.11ac-VHT40	27	134	5670	16.48	15.75	19.14	≤ 23.11	Pass
802.11ac-VHT40	27	142	5710	19.85	19.11	22.51	≤ 23.11	Pass
802.11ac-VHT40	27	151	5755	17.37	16.80	20.10	≤ 28.81	Pass
802.11ac-VHT40	27	159	5795	18.18	17.25	20.75	≤ 28.81	Pass
802.11ac-VHT80	58.6	42	5210	17.49	15.56	19.64	≤ 29.27	Pass
802.11ac-VHT80	58.6	58	5290	17.08	16.22	19.68	≤ 23.34	Pass
802.11ac-VHT80	58.6	106	5530	17.56	16.14	19.92	≤ 23.11	Pass
802.11ac-VHT80	58.6	122	5610	19.61	19.07	22.36	≤ 23.11	Pass
802.11ac-VHT80	58.6	138	5690	19.63	19.03	22.35	≤ 23.11	Pass
802.11ac-VHT80	58.6	155	5775	16.22	15.98	19.11	≤ 28.81	Pass

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

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.

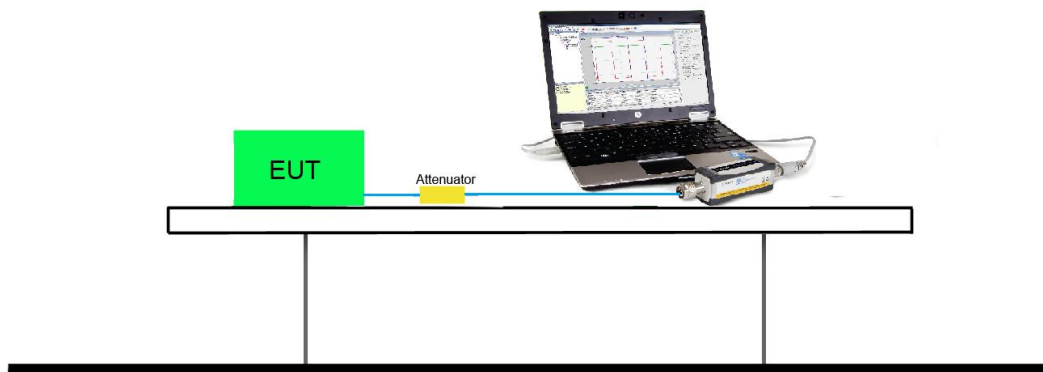
7.5.2. Test Procedure Used

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

7.5.3. Test Setting

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

7.5.4. Test Setup



7.5.5. Test Result

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 0 TPC Power (dBm)	Ant 1 TPC Power (dBm)	Total TPC Power (dBm)	Total EIRP TPC Power (dBm)	Limit (dBm)	Result
11a	6	52	5260	11.68	10.50	14.14	20.80	≤ 24.00	Pass
11a	6	60	5300	11.97	10.92	14.49	21.15	≤ 24.00	Pass
11a	6	64	5320	10.39	9.55	13.00	19.66	≤ 24.00	Pass
11a	6	100	5500	11.24	9.09	13.31	20.20	≤ 24.00	Pass
11a	6	120	5600	11.26	9.28	13.39	20.28	≤ 24.00	Pass
11a	6	140	5700	11.63	10.07	13.93	20.82	≤ 24.00	Pass
11n-HT20	13	52	5260	11.40	10.48	13.97	17.62	≤ 24.00	Pass
11n-HT20	13	60	5300	11.45	10.46	13.99	17.64	≤ 24.00	Pass
11n-HT20	13	64	5320	11.75	10.40	14.14	17.79	≤ 24.00	Pass
11n-HT20	13	100	5500	10.79	9.89	13.37	17.25	≤ 24.00	Pass
11n-HT20	13	120	5600	10.48	9.51	13.03	16.91	≤ 24.00	Pass
11n-HT20	13	140	5700	9.30	7.41	11.47	15.35	≤ 24.00	Pass
11n-HT40	27	54	5270	14.17	12.67	16.49	20.14	≤ 24.00	Pass
11n-HT40	27	62	5310	8.96	8.14	11.58	15.23	≤ 24.00	Pass
11n-HT40	27	102	5510	8.37	7.77	11.09	14.97	≤ 24.00	Pass
11n-HT40	27	118	5590	12.90	12.40	15.67	19.55	≤ 24.00	Pass
11n-HT40	27	134	5670	11.60	9.60	13.72	17.60	≤ 24.00	Pass
11ac-VHT20	13	52	5260	11.43	10.84	14.16	17.81	≤ 24.00	Pass
11ac-VHT20	13	60	5300	11.62	10.31	14.02	17.67	≤ 24.00	Pass
11ac-VHT20	13	64	5320	10.74	9.18	13.04	16.69	≤ 24.00	Pass
11ac-VHT20	13	100	5500	10.71	9.66	13.23	17.11	≤ 24.00	Pass
11ac-VHT20	13	120	5600	10.84	10.28	13.58	17.46	≤ 24.00	Pass
11ac-VHT20	13	140	5700	7.36	7.26	10.32	14.20	≤ 24.00	Pass
11ac-VHT20	13	144	5720	12.11	11.24	14.71	18.59	≤ 24.00	Pass

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 TPC Power (dBm)	Ant 2 TPC Power (dBm)	Total TPC Power (dBm)	Total EIRP TPC Power (dBm)	Limit (dBm)	Result
11ac-VHT40	27	54	5270	13.87	12.40	16.21	19.86	≤ 24.00	Pass
11ac-VHT40	27	62	5310	10.79	9.61	13.25	16.90	≤ 24.00	Pass
11ac-VHT40	27	102	5510	8.14	7.43	10.81	14.69	≤ 24.00	Pass
11ac-VHT40	27	118	5590	13.50	12.24	15.93	19.81	≤ 24.00	Pass
11ac-VHT40	27	134	5670	10.15	9.38	12.79	16.67	≤ 24.00	Pass
11ac-VHT40	27	142	5710	13.54	12.61	16.11	19.99	≤ 24.00	Pass
11ac-VHT80	58.6	58	5290	10.56	10.18	13.38	17.03	≤ 24.00	Pass
11ac-VHT80	58.6	106	5530	11.24	9.94	13.65	17.53	≤ 24.00	Pass
11ac-VHT80	58.6	122	5610	13.60	12.66	16.17	20.05	≤ 24.00	Pass
11ac-VHT80	58.6	138	5690	13.14	12.58	15.88	19.76	≤ 24.00	Pass

Note: Total EIRP TPC Power (dBm) = $10 \cdot \log\{10^{(\text{Ant 0 TPC Power}/10)} + 10^{(\text{Ant 1 TPC Power}/10)}\} + \text{Directional Antenna Gain (dBi)}$.

7.6. Power Spectral Density Measurement

7.6.1. Test Limit

For an indoor 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.

$$5150\sim 5250\text{MHz: Limit (dBm/MHz)} = 17\text{dBm} - (6.73\text{dBi} - 6\text{dBi}) = 16.27\text{dBm/MHz}$$

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.

$$5250\sim 5350\text{MHz: Limit (dBm/MHz)} = 11\text{dBm/MHz} - (6.66\text{dBi} - 6\text{dBi}) = 10.34\text{dBm/MHz}$$

$$5470\sim 5725\text{MHz: Limit (dBm/MHz)} = 11\text{dBm/MHz} - (6.89\text{dBi} - 6\text{dBi}) = 10.11\text{dBm/MHz}$$

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

$$5725\sim 5850\text{MHz: Limit (dBm/500KHz)} = 30\text{dBm/KHz} - (7.19\text{dBi} - 6\text{dBi}) = 28.81\text{dBm/500KHz}$$

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

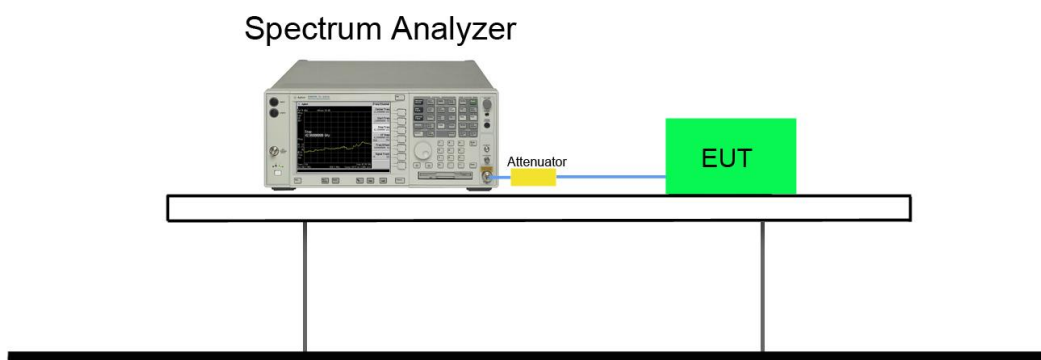
KDB 789033 D02v01 - Section F

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 $\geq 2 \times (\text{span} / \text{RBW})$
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 $10 \cdot \log(500\text{kHz}/100\text{kHz}) = 7$ dB to the measured result

7.6.4. Test Setup



7.6.5. Test Result

Test Mode	Data Rate (Mbps)	Channel 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	6	36	5180	8.45	7.69	100	11.10	≤ 16.27	Pass
11a	6	44	5220	11.23	10.41	100	13.85	≤ 16.27	Pass
11a	6	48	5240	11.66	10.44	100	14.10	≤ 16.27	Pass
11a	6	52	5260	7.27	6.04	100	9.71	≤ 10.34	Pass
11a	6	60	5300	7.45	6.26	100	9.91	≤ 10.34	Pass
11a	6	64	5320	6.85	6.21	100	9.55	≤ 10.34	Pass
11a	6	100	5500	7.08	5.63	100	9.43	≤ 10.11	Pass
11a	6	120	5600	6.60	6.48	100	9.55	≤ 10.11	Pass
11a	6	140	5700	6.82	6.69	100	9.77	≤ 10.11	Pass
11n-HT20	13	36	5180	9.00	7.73	100	11.42	≤ 16.27	Pass
11n-HT20	13	44	5220	9.71	8.46	100	12.14	≤ 16.27	Pass
11n-HT20	13	48	5240	10.01	8.68	100	12.41	≤ 16.27	Pass
11n-HT20	13	52	5260	7.00	5.72	100	9.42	≤ 10.34	Pass
11n-HT20	13	60	5300	7.06	6.11	100	9.62	≤ 10.34	Pass
11n-HT20	13	64	5320	7.09	6.08	100	9.62	≤ 10.34	Pass
11n-HT20	13	100	5500	7.16	5.89	100	9.58	≤ 10.11	Pass
11n-HT20	13	120	5600	6.77	6.66	100	9.73	≤ 10.11	Pass
11n-HT20	13	140	5700	6.98	5.91	100	9.49	≤ 10.11	Pass
11n-HT40	27	38	5190	7.18	5.98	100	9.63	≤ 16.27	Pass
11n-HT40	27	46	5230	7.08	6.23	100	9.69	≤ 16.27	Pass
11n-HT40	27	54	5270	6.56	5.10	100	8.90	≤ 10.34	Pass
11n-HT40	27	62	5310	6.62	5.90	100	9.29	≤ 10.34	Pass
11n-HT40	27	102	5510	7.08	5.99	100	9.58	≤ 10.11	Pass
11n-HT40	27	118	5590	6.90	6.29	100	9.62	≤ 10.11	Pass
11n-HT40	27	134	5670	7.09	6.26	100	9.71	≤ 10.11	Pass

Test Mode	Data Rate (Mbps)	Channel 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-VHT20	13	36	5180	5.57	4.07	100	7.89	≤ 16.27	Pass
11ac-VHT20	13	44	5220	8.84	8.27	100	11.57	≤ 16.27	Pass
11ac-VHT20	13	48	5240	9.44	8.10	100	11.83	≤ 16.27	Pass
11ac-VHT20	13	52	5260	7.09	6.14	100	9.65	≤ 10.34	Pass
11ac-VHT20	13	60	5300	7.34	6.06	100	9.76	≤ 10.34	Pass
11ac-VHT20	13	64	5320	7.56	5.77	100	9.77	≤ 10.34	Pass
11ac-VHT20	13	100	5500	6.75	5.74	100	9.28	≤ 10.11	Pass
11ac-VHT20	13	120	5600	6.16	6.06	100	9.12	≤ 10.11	Pass
11ac-VHT20	13	140	5700	6.53	5.97	100	9.27	≤ 10.11	Pass
11ac-VHT20	13	144	5720	6.72	6.38	100	9.56	≤ 10.11	Pass
11ac-VHT40	27	38	5190	3.40	2.69	100	6.07	≤ 16.27	Pass
11ac-VHT40	27	46	5230	7.16	6.26	100	9.74	≤ 16.27	Pass
11ac-VHT40	27	54	5270	5.92	5.56	100	8.75	≤ 10.34	Pass
11ac-VHT40	27	62	5310	3.72	1.93	100	5.93	≤ 10.34	Pass
11ac-VHT40	27	102	5510	0.58	-1.82	100	2.55	≤ 10.11	Pass
11ac-VHT40	27	118	5590	6.67	5.16	100	8.99	≤ 10.11	Pass
11ac-VHT40	27	134	5670	4.23	3.89	100	7.07	≤ 10.11	Pass
11ac-VHT40	27	142	5710	5.26	5.16	100	8.22	≤ 10.11	Pass
11ac-VHT80	58.6	42	5210	0.04	-1.10	100	2.52	≤ 16.27	Pass
11ac-VHT80	58.6	58	5290	0.49	-0.04	100	3.24	≤ 10.34	Pass
11ac-VHT80	58.6	106	5530	1.58	0.35	100	4.02	≤ 10.11	Pass
11ac-VHT80	58.6	122	5610	3.06	2.57	100	5.83	≤ 10.11	Pass
11ac-VHT80	58.6	138	5690	3.55	2.60	100	6.11	≤ 10.11	Pass

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

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/100kHz)	Ant 1 PSD (dBm/100kHz)	Duty Cycle (%)	Constant Factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
11a	6	149	5745	-4.79	-5.52	100	7.00	4.87	≤ 28.81	Pass
11a	6	157	5785	2.30	1.37	100	7.00	11.87	≤ 28.81	Pass
11a	6	165	5825	2.36	2.03	100	7.00	12.21	≤ 28.81	Pass
11n-HT20	13	149	5745	1.36	0.13	100	7.00	10.80	≤ 28.81	Pass
11n-HT20	13	157	5785	1.34	0.57	100	7.00	10.98	≤ 28.81	Pass
11n-HT20	13	165	5825	1.03	0.70	100	7.00	10.88	≤ 28.81	Pass
11n-HT40	27	151	5755	-2.04	-3.01	100	7.00	7.51	≤ 28.81	Pass
11n-HT40	27	159	5795	-1.49	-2.56	100	7.00	8.02	≤ 28.81	Pass
11ac-VHT20	13	149	5745	-3.46	-4.49	100	7.00	6.07	≤ 28.81	Pass
11ac-VHT20	13	157	5785	0.25	-0.56	100	7.00	9.87	≤ 28.81	Pass
11ac-VHT20	13	165	5825	-1.28	-2.83	100	7.00	8.02	≤ 28.81	Pass
11ac-VHT40	27	151	5755	-4.88	-5.85	100	7.00	4.67	≤ 28.81	Pass
11ac-VHT40	27	159	5795	-4.74	-5.73	100	7.00	4.80	≤ 28.81	Pass
11ac-VHT80	58.6	155	5775	-7.72	-8.74	100	7.00	1.81	≤ 28.81	Pass

Note: When EUT duty cycle > 98%, Total PSD (dBm/500kHz) = $10 \cdot \log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\} + \text{Constant Factor}$.

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

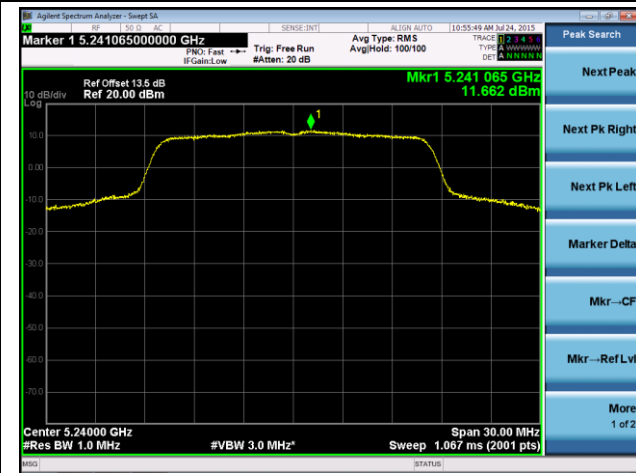
Channel 36 (5180MHz)



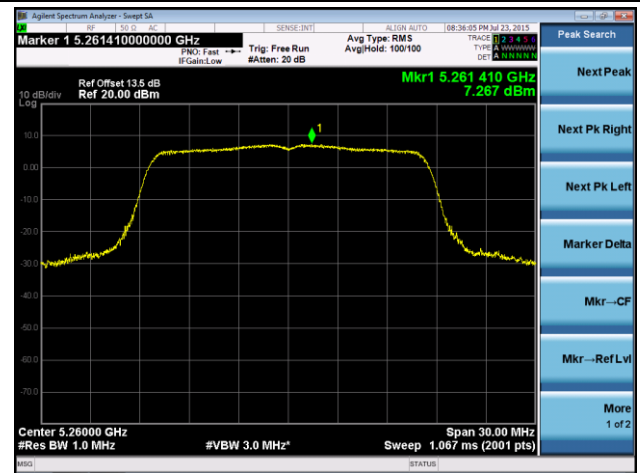
Channel 44 (5220MHz)



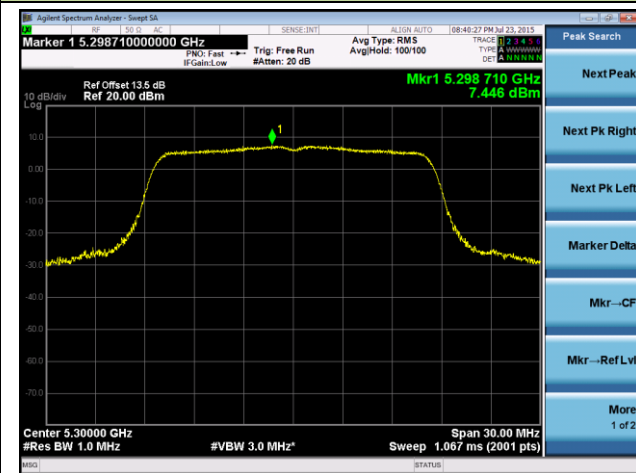
Channel 48 (5240MHz)



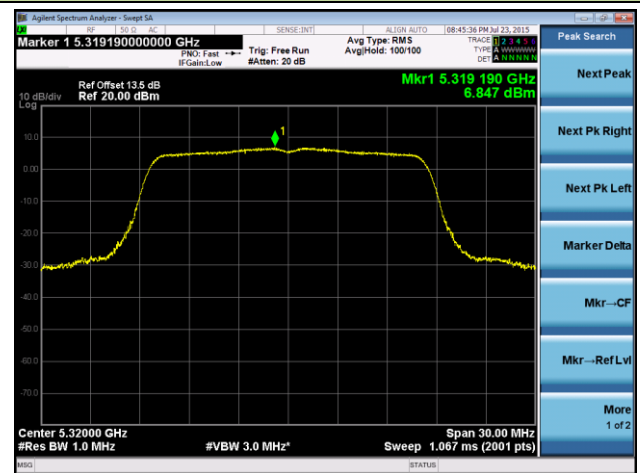
Channel 52 (5260MHz)



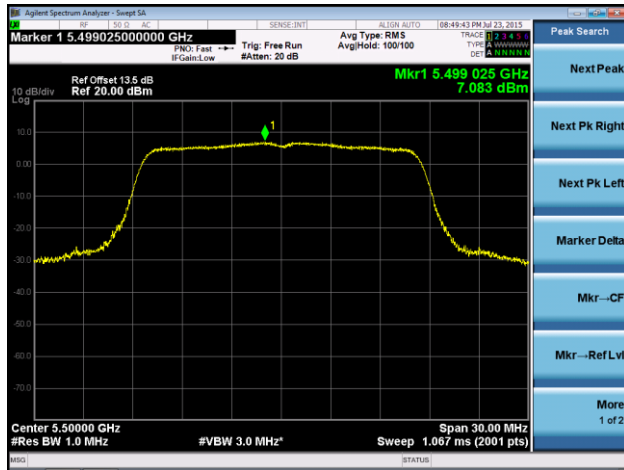
Channel 60 (5300MHz)



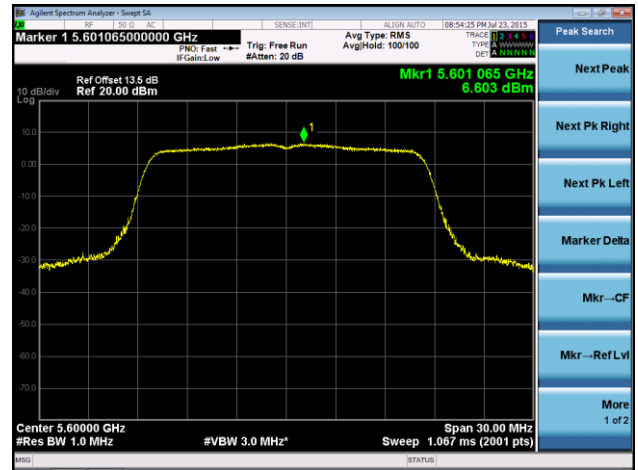
Channel 64 (5320MHz)



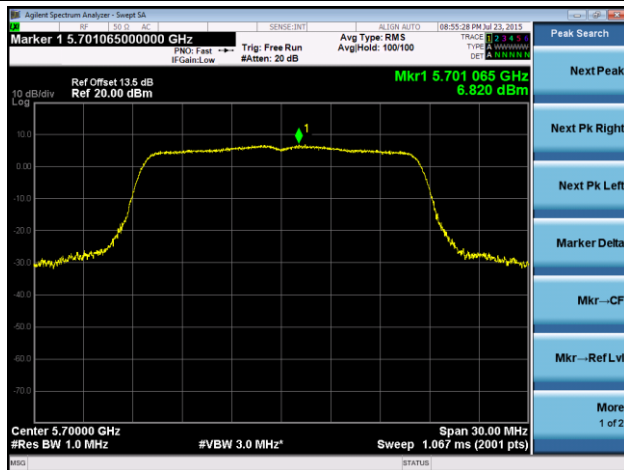
Channel 100 (5500MHz)



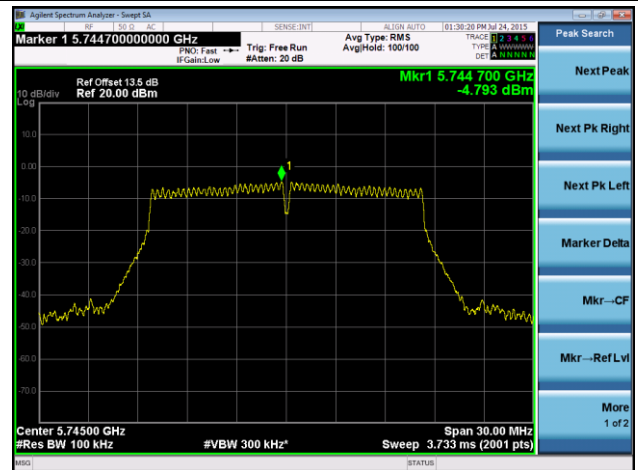
Channel 120 (5600MHz)



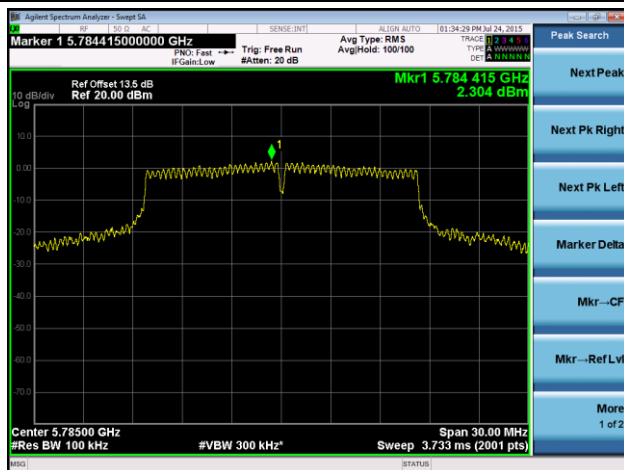
Channel 140 (5700MHz)



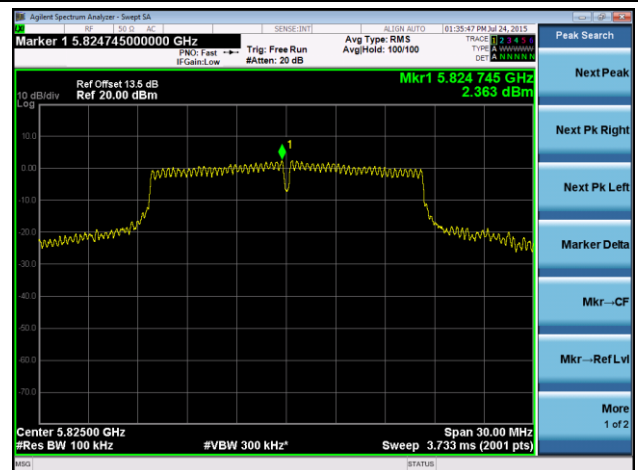
Channel 149 (5745MHz)



Channel 157 (5785MHz)

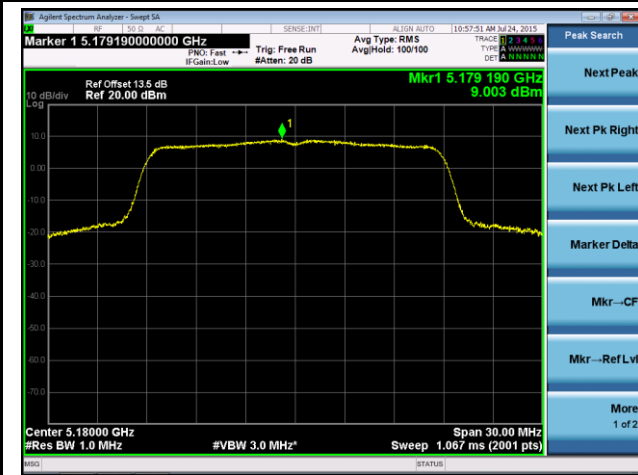


Channel 165 (5825MHz)



802.11n-HT20 Power Spectral Density - Ant 0 / Ant 0 + 1

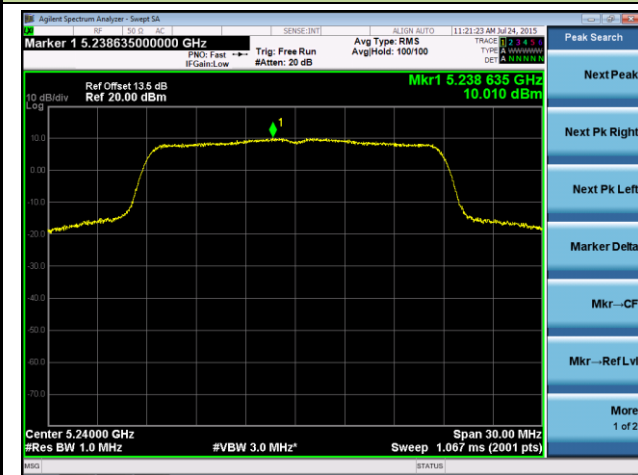
Channel 36 (5180MHz)



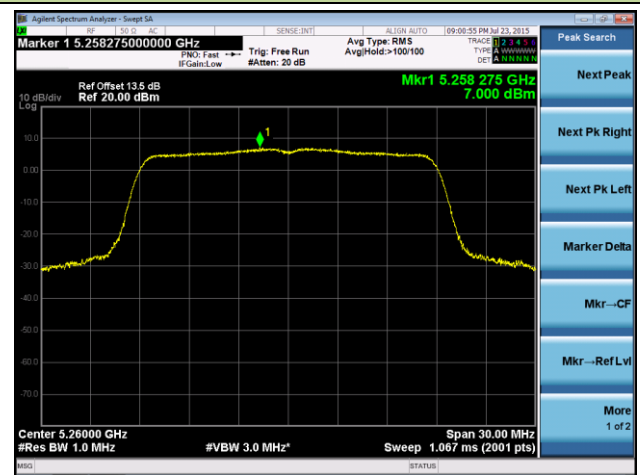
Channel 44 (5220MHz)



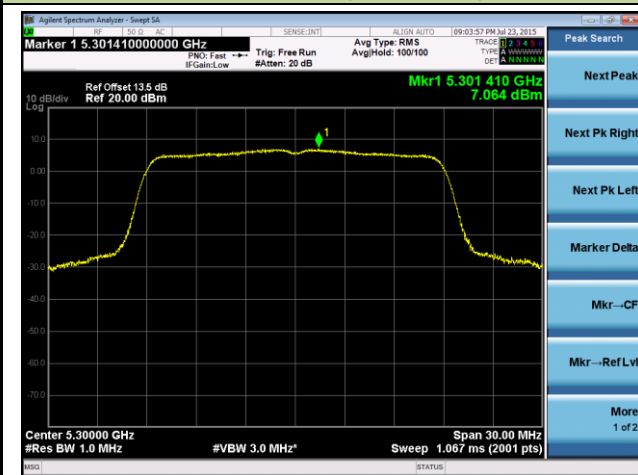
Channel 48 (5240MHz)



Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)

