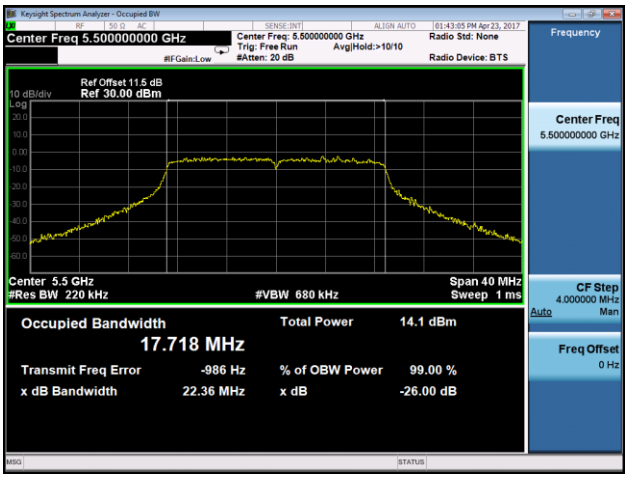
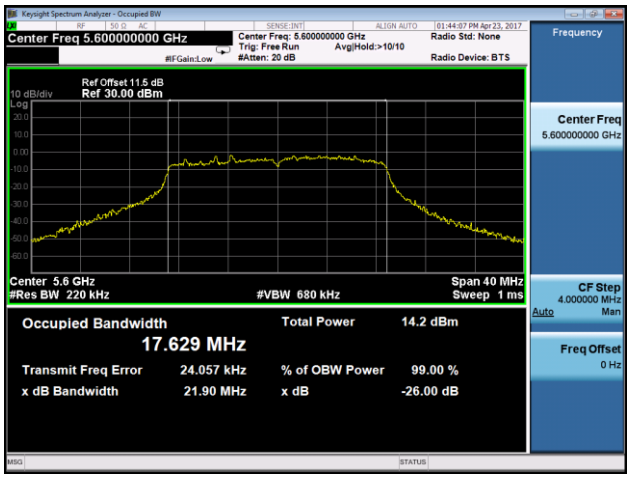
802.11ac-VHT20 26dB Bandwidth & 99% Bandwidth - Ant 1 / Ant 0 +1

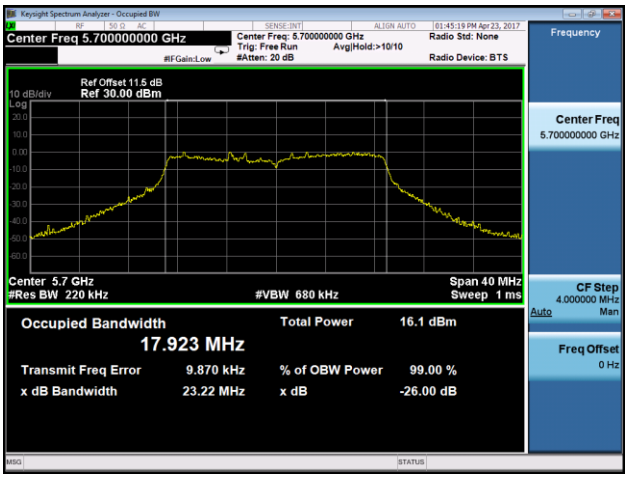
Channel 100 (5500MHz)



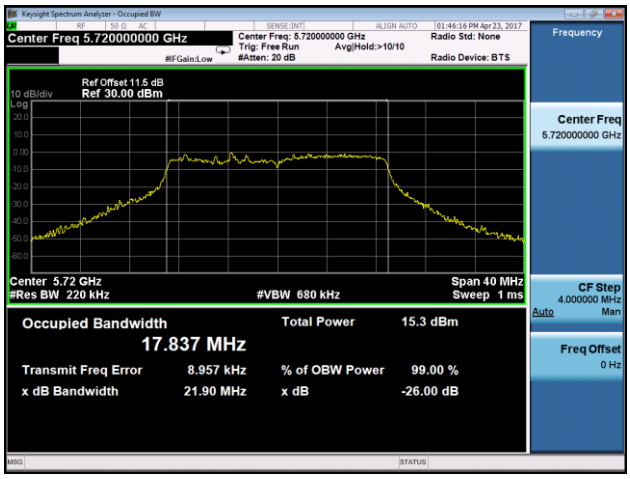
Channel 120 (5600MHz)



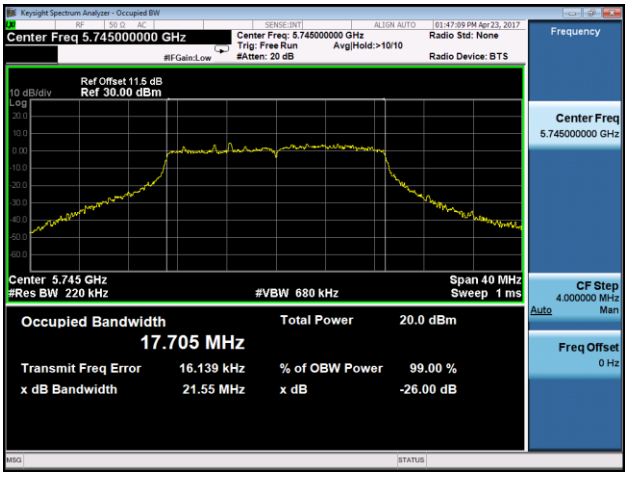
Channel 140 (5700MHz)



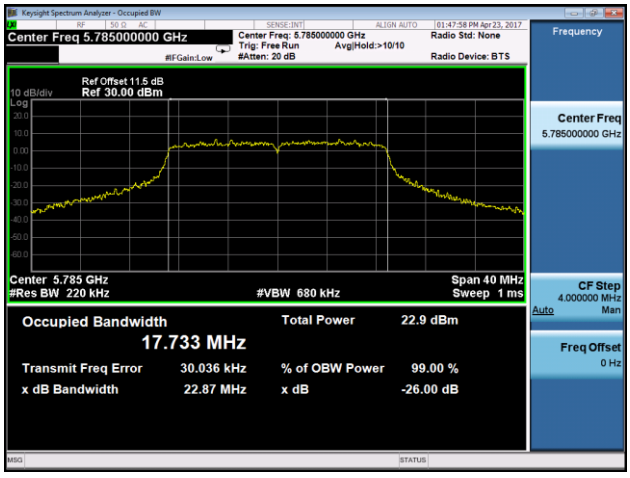
Channel 144 (5720MHz)

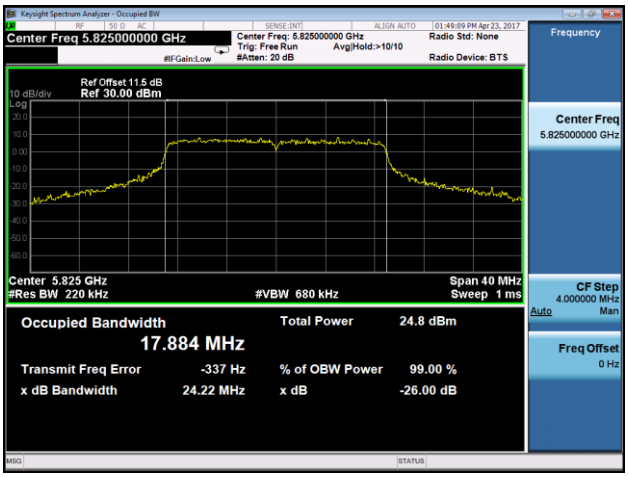


Channel 149 (5745MHz)



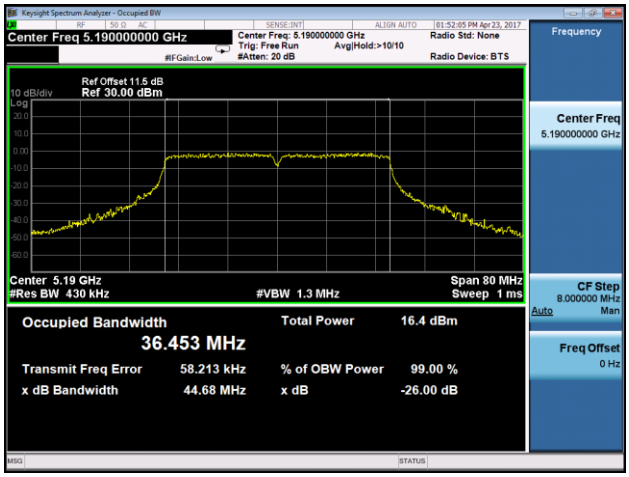
Channel 157 (5785MHz)



802.11ac-VHT20 26dB Bandwidth & 99% Bandwidth - Ant 1 / Ant 0 +1	
Channel 165 (5825MHz)	
	

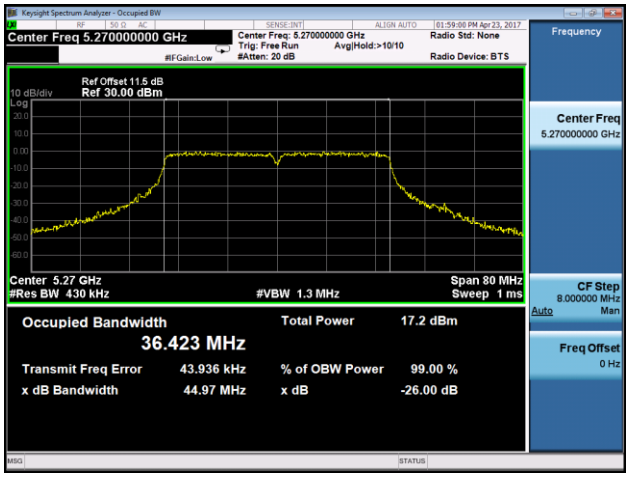
802.11ac-VHT40 26dB Bandwidth & 99% Bandwidth - Ant 1 / Ant 0 +1

Channel 38 (5190MHz)

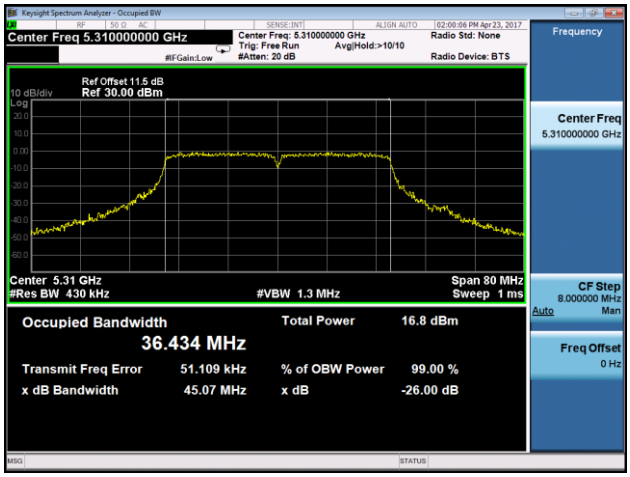


Channel 46 (5230MHz)

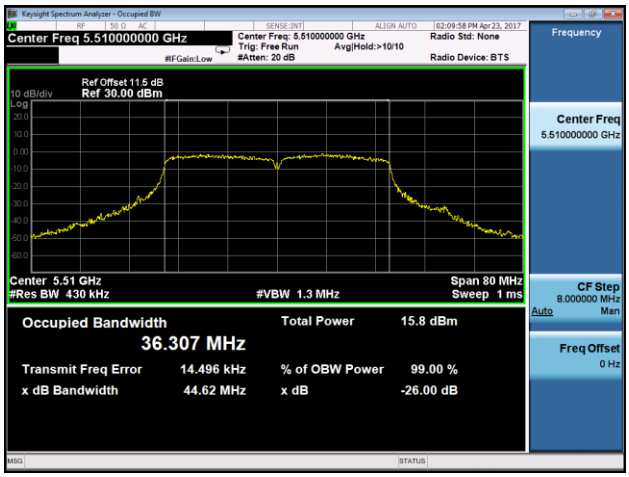
Channel 54 (5270MHz)



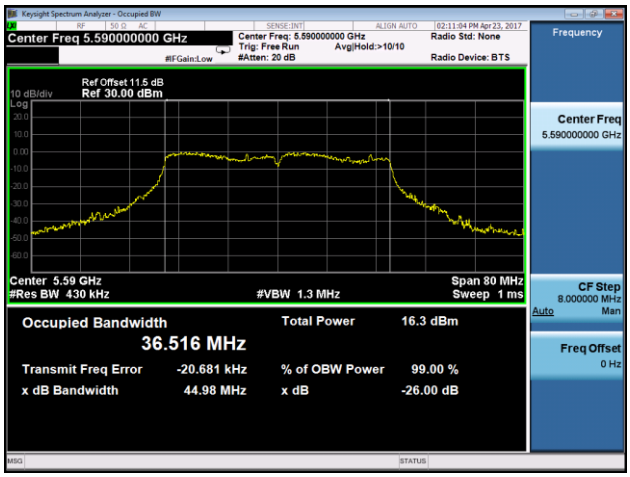
Channel 62 (5310MHz)

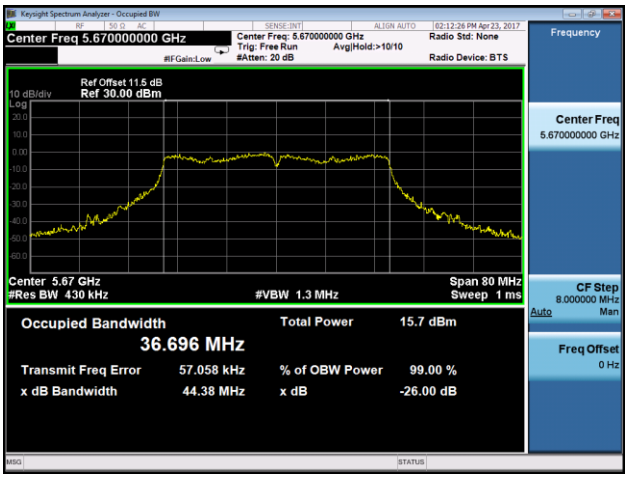
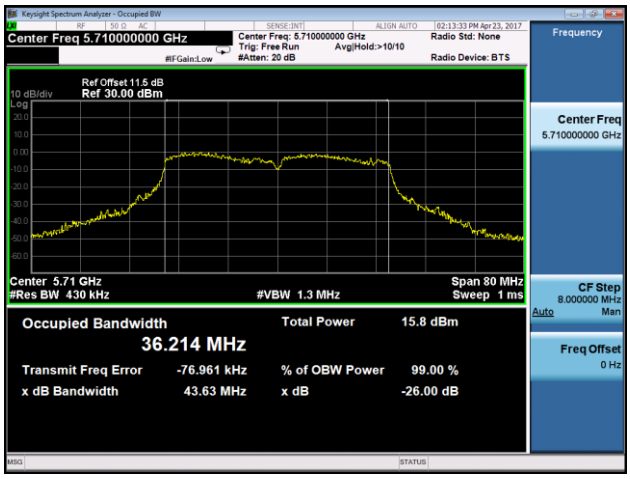
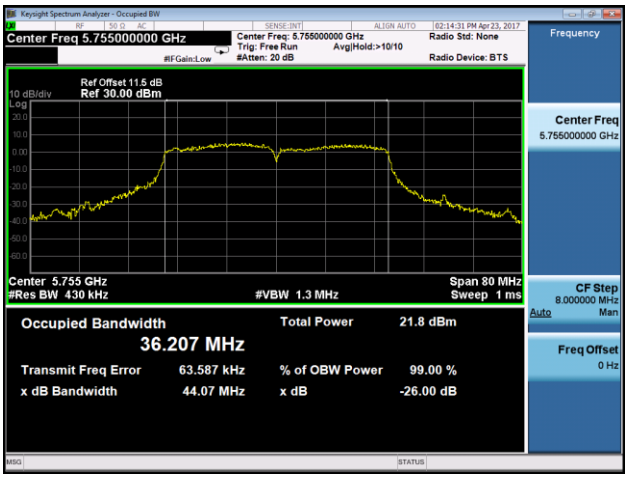
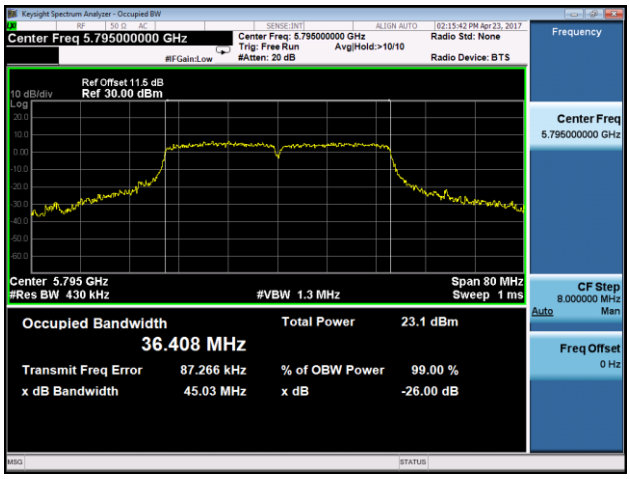


Channel 102 (5510MHz)



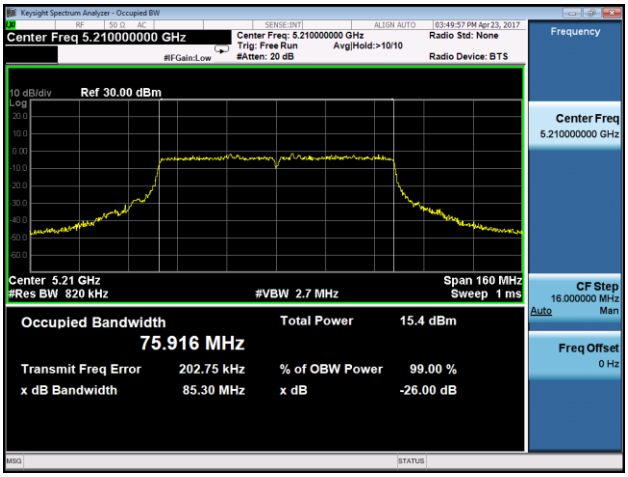
Channel 118 (5590MHz)



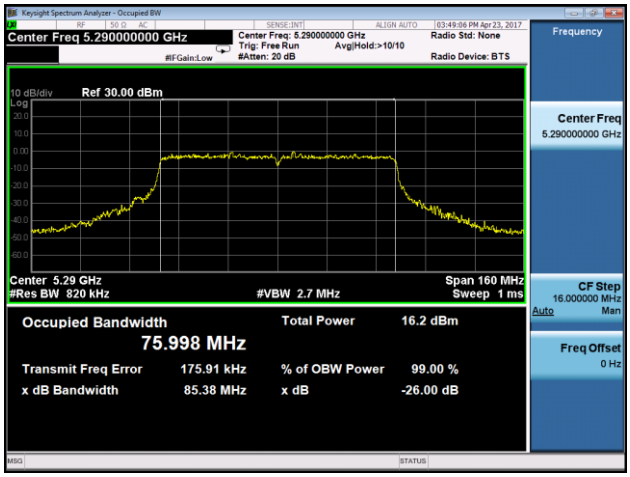
802.11ac-VHT40 26dB Bandwidth & 99% Bandwidth - Ant 1 / Ant 0 +1	
Channel 134 (5670MHz)	**Channel 142 (5710MHz)**
	
Channel 151 (5755MHz)	**Channel 159 (5795MHz)**
	

802.11ac-VHT80 26dB Bandwidth & 99% Bandwidth - Ant 1 / Ant 0 +1

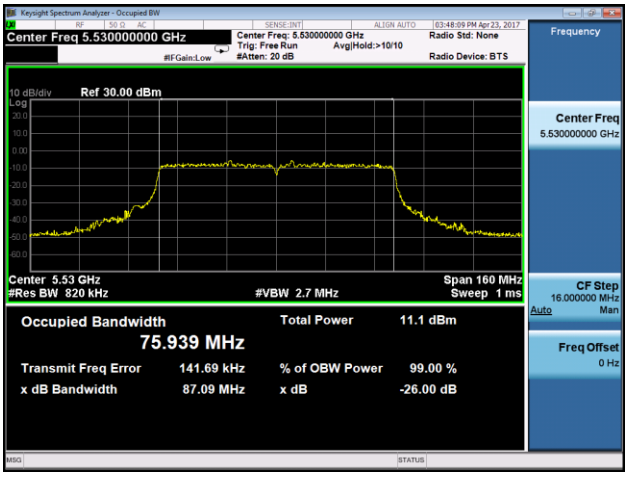
Channel 42 (5210MHz)



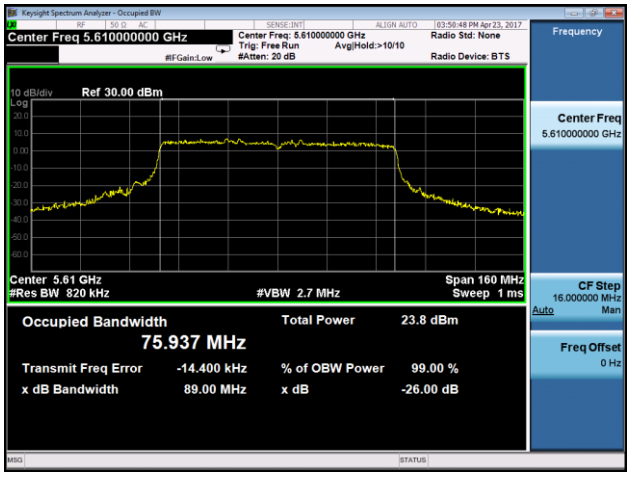
Channel 58 (5290MHz)



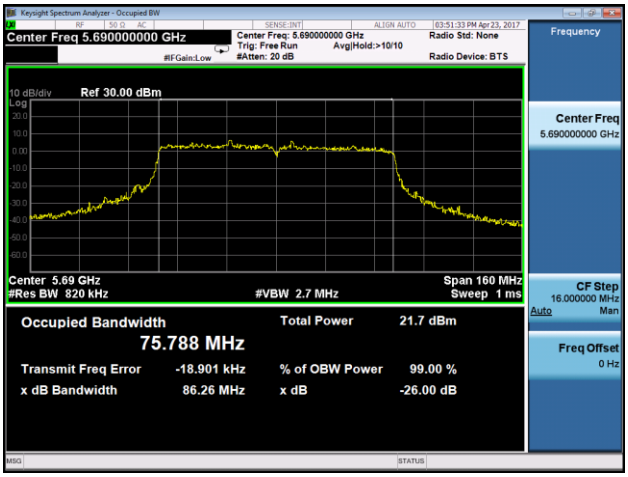
Channel 106 (5530MHz)



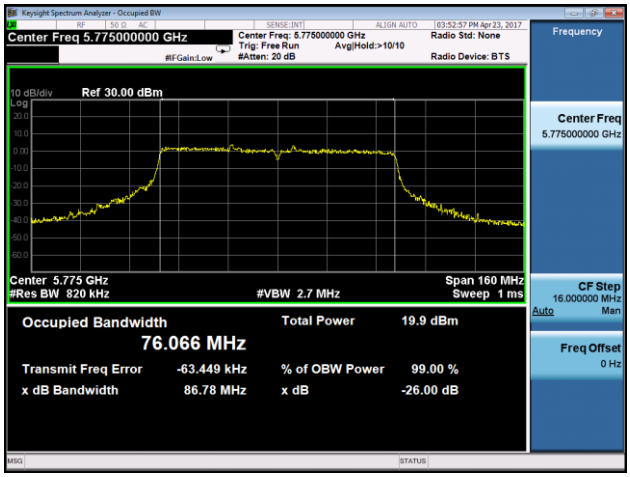
Channel 122 (5610MHz)



Channel 138 (5690MHz)



Channel 155 (5775MHz)



7.3. 6dB Bandwidth Measurement

7.3.1. Test Limit

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

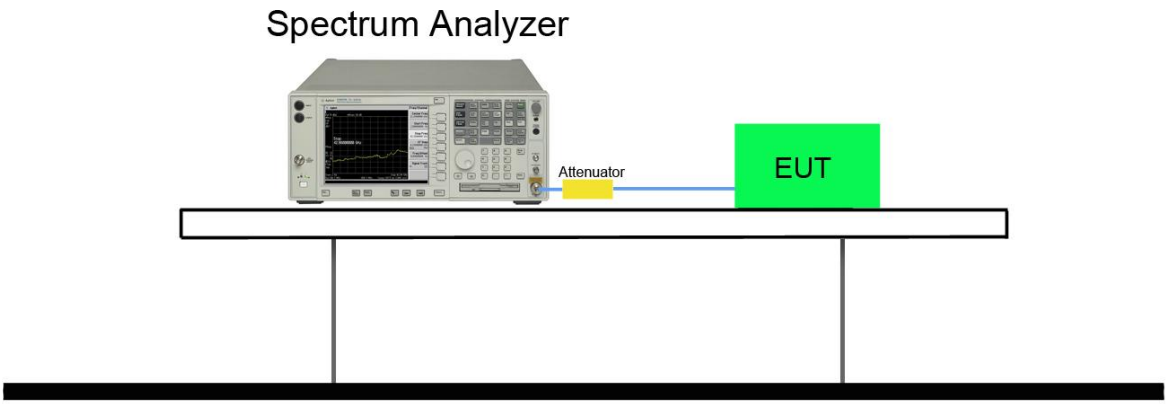
7.3.2. Test Procedure used

KDB 789033 D02v01r03 - 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 ≥ 3 × 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

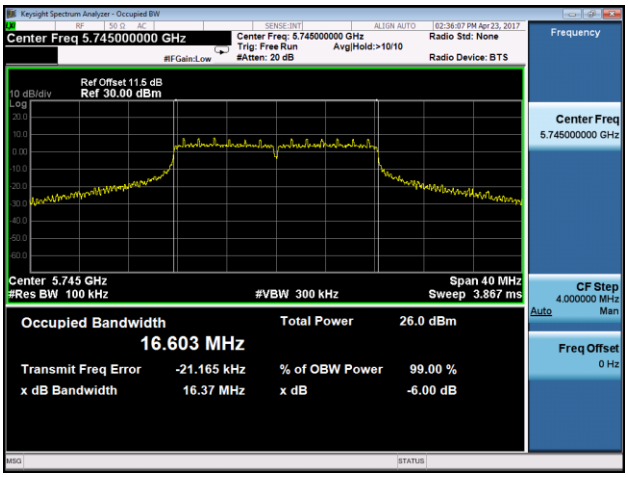
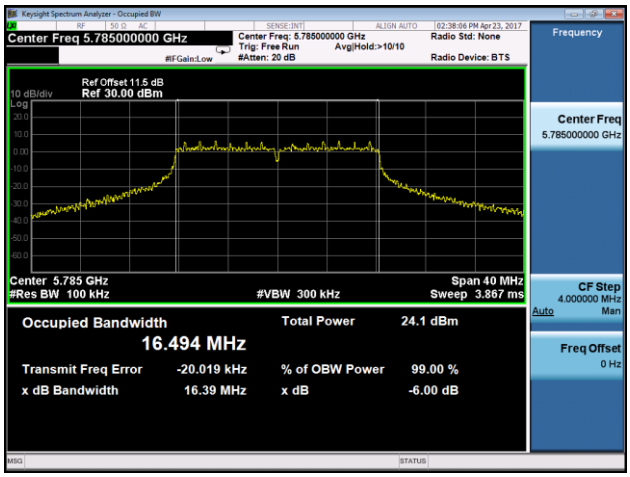
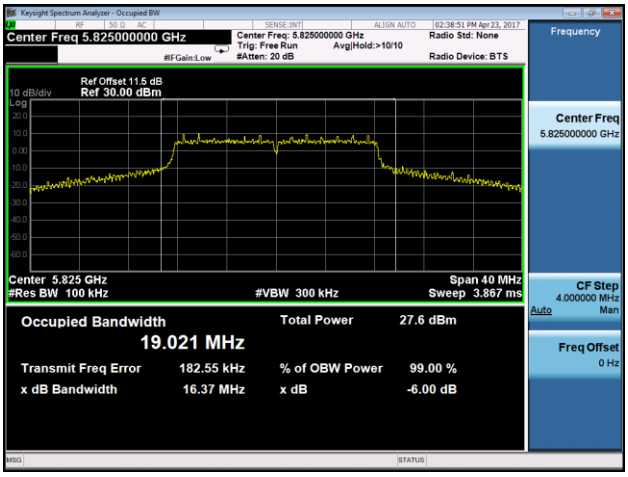
Product	802.11ac Dual Band Module	Temperature	23°C
Test Engineer	Bruce Wang	Relative Humidity	52%
Test Site	TR3	Test Date	2017/04/15

1TX

Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
Ant 0						
802.11a	6	149	5745	16.37	≥ 0.5	Pass
802.11a	6	157	5785	16.39	≥ 0.5	Pass
802.11a	6	165	5825	16.37	≥ 0.5	Pass
Ant 1						
802.11a	6	149	5745	16.39	≥ 0.5	Pass
802.11a	6	157	5785	16.39	≥ 0.5	Pass
802.11a	6	165	5825	16.38	≥ 0.5	Pass

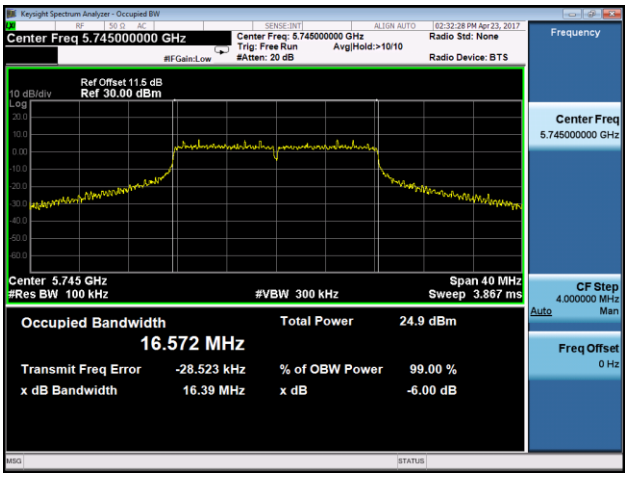
2TX

Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
Ant 1/Ant 0+1						
802.11n-HT20	13	149	5745	16.95	≥ 0.5	Pass
802.11n-HT20	13	157	5785	17.61	≥ 0.5	Pass
802.11n-HT20	13	165	5825	17.62	≥ 0.5	Pass
802.11n-HT40	27	151	5755	35.77	≥ 0.5	Pass
802.11n-HT40	27	159	5795	36.36	≥ 0.5	Pass
802.11ac-VHT20	13	149	5745	16.15	≥ 0.5	Pass
802.11ac-VHT20	13	157	5785	17.62	≥ 0.5	Pass
802.11ac-VHT20	13	165	5825	17.60	≥ 0.5	Pass
802.11ac-VHT40	27	151	5755	35.25	≥ 0.5	Pass
802.11ac-VHT40	27	159	5795	36.35	≥ 0.5	Pass
802.11ac-VHT80	58.6	155	5775	75.84	≥ 0.5	Pass

802.11a 6dB Bandwidth - Ant 0	
Channel 149 (5745MHz)	**Channel 157 (5785MHz)**
	
Channel 165 (5825MHz)	
	

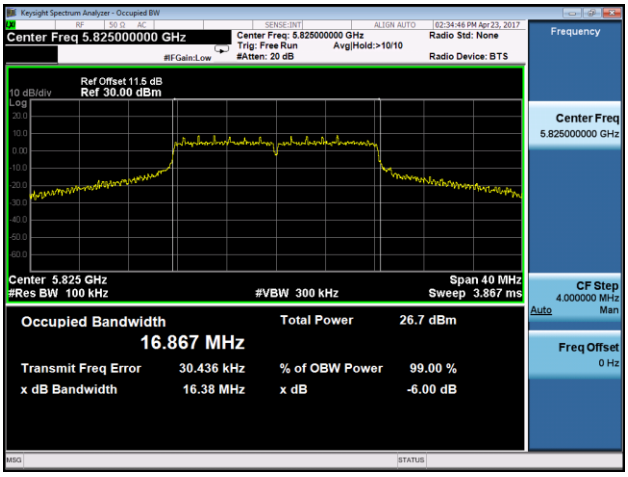
802.11a 6dB Bandwidth - Ant 1

Channel 149 (5745MHz)



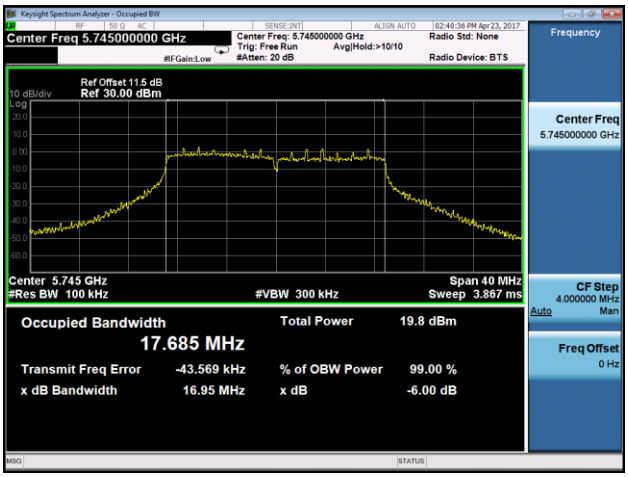
Channel 157 (5785MHz)

Channel 165 (5825MHz)

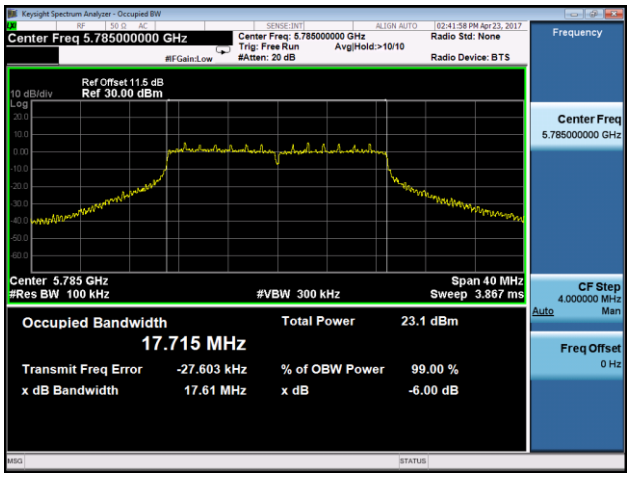


802.11n-HT20 6dB Bandwidth - Ant 1 / Ant 0 + 1

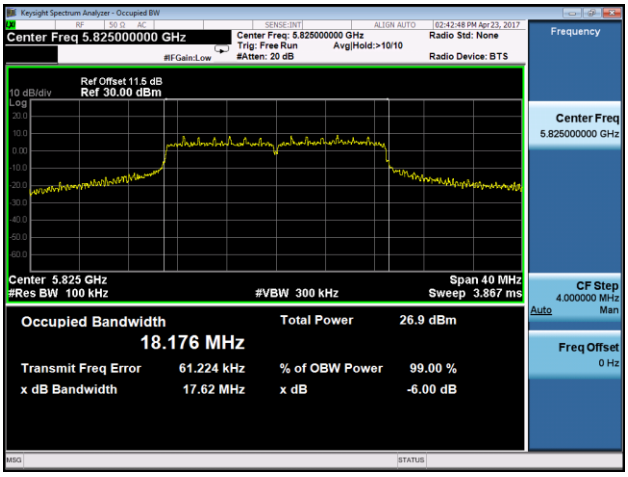
Channel 149 (5745MHz)



Channel 157 (5785MHz)

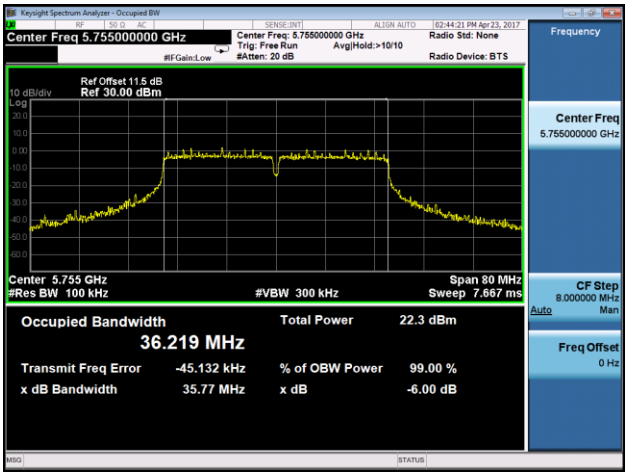


Channel 165 (5825MHz)

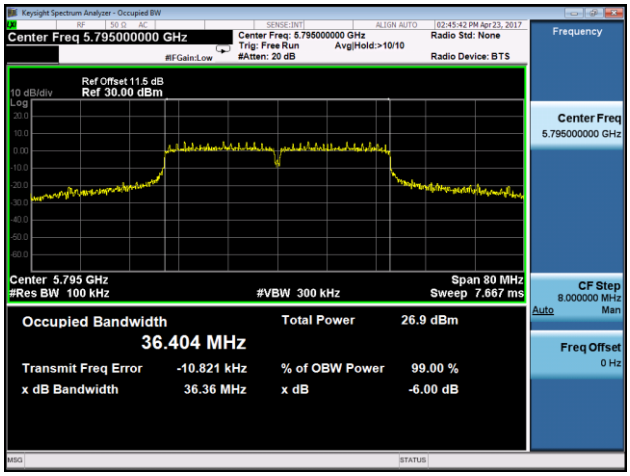


802.11n-HT40 6dB Bandwidth - Ant 1 / Ant 0 + 1

Channel 151 (5755MHz)

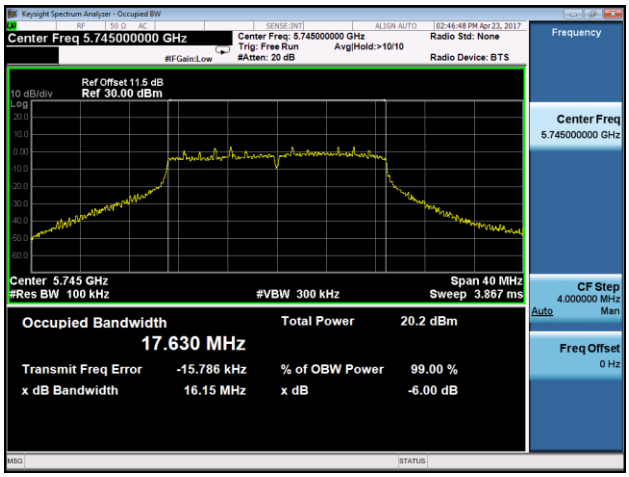


Channel 159 (5795MHz)

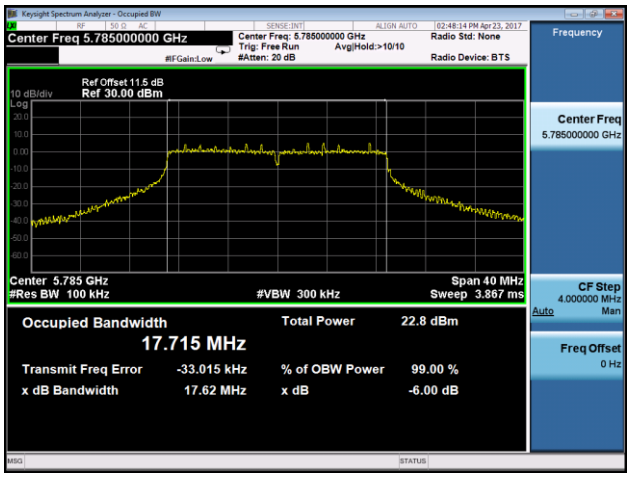


802.11ac-VHT20 6dB Bandwidth - Ant 1 / Ant 0 + 1

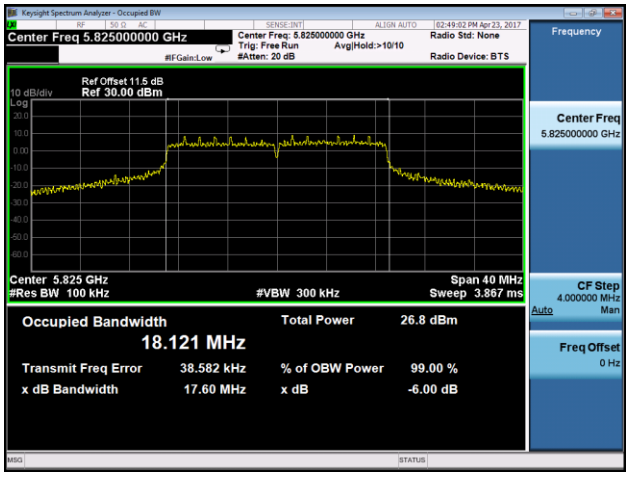
Channel 149 (5745MHz)



Channel 157 (5785MHz)

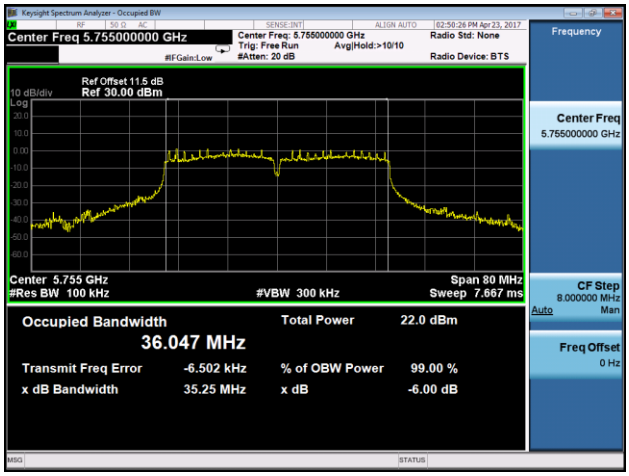


Channel 165 (5825MHz)

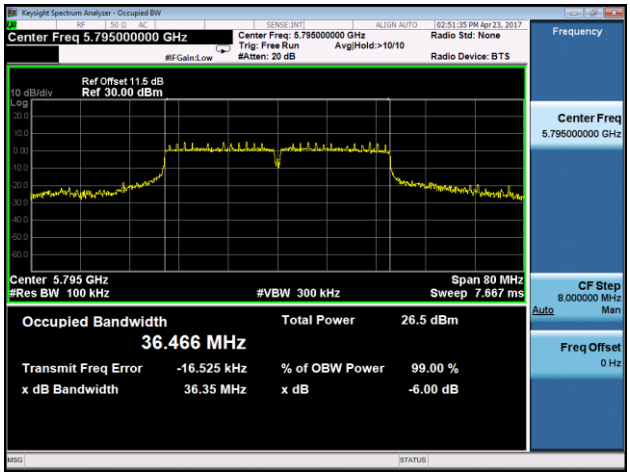


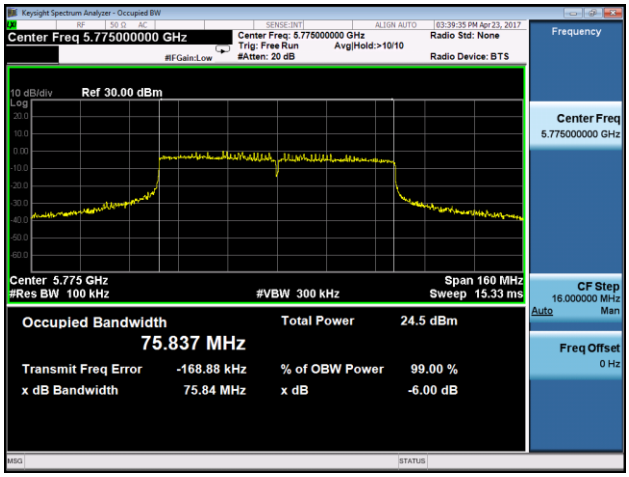
802.11ac-VHT40 6dB Bandwidth - Ant 1 / Ant 0 + 1

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 fixed point-to-point access points in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. 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.

5150~5250MHz: Limit (dBm) = 30dBm

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).

5250~5350MHz: Limit (dBm) = 23.98dBm - (18dBi - 6dBi) = 11.98dBm

5470~5725MHz: Limit (dBm) = 23.98dBm - (18dBi - 6dBi) = 11.98dBm

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).

5725~5850MHz: Limit (dBm) = 30dBm

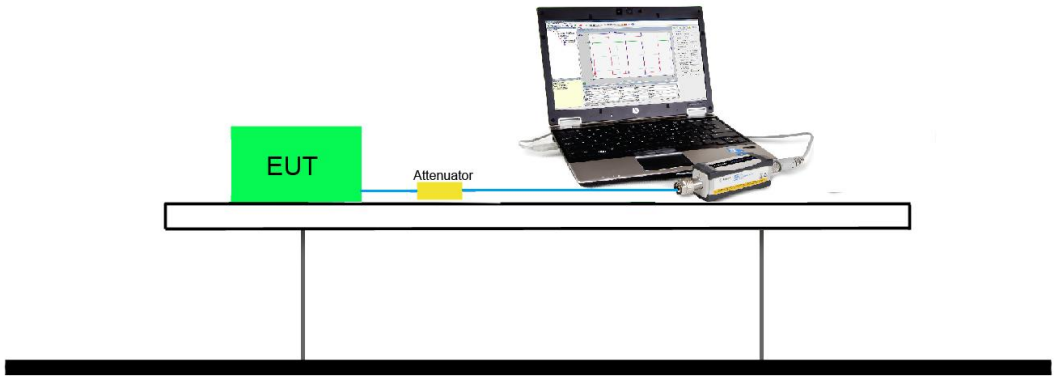
7.4.2. Test Procedure Used

KDB 789033 D02v01r03 - 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

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 port:

Test Mode	Bandwidth	Channel	Frequency (MHz)	Data Rate (Mbps)	Average Power (dBm)
802.11a	20	36	5180	6	11.77
				24	11.45
				54	11.23
802.11n	20	36	5180	13.0	9.43
				14.4	9.35
				52.0	9.12
				57.8	9.06
				130.0	8.87
				144.0	8.78
802.11n	40	38	5190	27.0	8.48
				30.0	8.43
				108.0	8.12
				120.0	8.02
				270.0	7.89
				300.0	7.82
802.11ac	20	36	5180	13.0	9.66
				14.4	9.54
				78.0	9.12
				86.6	9.03
				156.0	8.73
				173.4	8.68
802.11ac	40	38	5190	27.0	10.35
				30.0	10.21
				216.0	10.02
				240.0	9.89
				360.0	9.65
				400.0	9.63

802.11ac	80	42	5210	58.6	7.82
				65.0	7.78
				468.0	7.45
				522.0	7.41
				780.0	7.12
				866.6	7.08

Product	802.11ac Dual Band Module	Temperature	22°C
Test Engineer	Bruce Wang	Relative Humidity	54%
Test Site	TR3	Test Date	2017/04/18

1Tx

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Average Power (dBm)		Limit (dBm)	Result
				Ant 0	Ant 1		
11a	6	36	5180	11.77	12.13	≤ 30.00	Pass
11a	6	44	5220	10.62	12.50	≤ 30.00	Pass
11a	6	48	5240	11.86	12.82	≤ 30.00	Pass
11a	6	52	5260	10.18	9.57	≤ 11.98	Pass
11a	6	60	5300	10.15	9.55	≤ 11.98	Pass
11a	6	64	5320	9.33	9.34	≤ 11.98	Pass
11a	6	100	5500	9.68	9.48	≤ 11.98	Pass
11a	6	120	5600	10.38	9.62	≤ 11.98	Pass
11a	6	140	5700	10.56	9.66	≤ 11.98	Pass
11a	6	149	5745	18.93	18.73	≤ 30.00	Pass
11a	6	157	5785	16.72	16.83	≤ 30.00	Pass
11a	6	165	5825	20.33	20.02	≤ 30.00	Pass

2TX

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Average Power (dBm)		Total Average Power (dBm)	Limit (dBm)	Result
				Ant 0	Ant 0			
11n-HT20	13	36	5180	9.43	9.93	12.70	≤ 30.00	Pass
11n-HT20	13	44	5220	9.42	9.56	12.50	≤ 30.00	Pass
11n-HT20	13	48	5240	10.01	10.20	13.12	≤ 30.00	Pass
11n-HT20	13	52	5260	6.46	6.58	9.53	≤ 11.98	Pass
11n-HT20	13	60	5300	6.38	6.46	9.43	≤ 11.98	Pass
11n-HT20	13	64	5320	6.81	6.40	9.62	≤ 11.98	Pass
11n-HT20	13	100	5500	7.96	7.78	10.88	≤ 11.98	Pass
11n-HT20	13	120	5600	6.61	6.57	9.60	≤ 11.98	Pass
11n-HT20	13	140	5700	5.68	5.36	8.53	≤ 11.98	Pass
11n-HT20	13	149	5745	13.21	13.02	16.13	≤ 30.00	Pass
11n-HT20	13	157	5785	16.85	16.93	19.90	≤ 30.00	Pass
11n-HT20	13	165	5825	19.63	19.94	22.80	≤ 30.00	Pass
11n-HT40	27	38	5190	8.48	9.58	12.08	≤ 30.00	Pass
11n-HT40	27	46	5230	14.36	14.44	17.41	≤ 30.00	Pass
11n-HT40	27	54	5270	9.25	8.62	11.96	≤ 11.98	Pass
11n-HT40	27	62	5310	9.12	8.81	11.98	≤ 11.98	Pass
11n-HT40	27	102	5510	8.2	8.01	11.12	≤ 11.98	Pass
11n-HT40	27	118	5590	8.93	8.58	11.77	≤ 11.98	Pass
11n-HT40	27	134	5670	8.92	8.71	11.83	≤ 11.98	Pass
11n-HT40	27	151	5755	15.23	15.05	18.15	≤ 30.00	Pass
11n-HT40	27	159	5795	19.95	19.57	22.77	≤ 30.00	Pass

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Average Power (dBm)		Total Average Power (dBm)	Limit (dBm)	Result
				Ant 0	Ant 1			
11ac-VHT20	13	36	5180	9.66	9.94	12.81	≤ 30.00	Pass
11ac-VHT20	13	44	5220	10.01	10.22	13.13	≤ 30.00	Pass
11ac-VHT20	13	48	5240	10.03	10.11	13.08	≤ 30.00	Pass
11ac-VHT20	13	52	5260	6.79	6.51	9.66	≤ 11.98	Pass
11ac-VHT20	13	60	5300	7.19	6.87	10.04	≤ 11.98	Pass
11ac-VHT20	13	64	5320	7.12	6.26	9.72	≤ 11.98	Pass
11ac-VHT20	13	100	5500	7.06	6.77	9.93	≤ 11.98	Pass
11ac-VHT20	13	120	5600	7.31	7.42	10.38	≤ 11.98	Pass
11ac-VHT20	13	140	5700	8.56	9.16	11.88	≤ 11.98	Pass
11ac-VHT20	13	144	5720	7.98	8.54	11.28	≤ 11.98	Pass
11ac-VHT20	13	149	5745	13.97	14.14	17.07	≤ 30.00	Pass
11ac-VHT20	13	157	5785	16.14	16.64	19.41	≤ 30.00	Pass
11ac-VHT20	13	165	5825	19.06	18.55	21.82	≤ 30.00	Pass
11ac-VHT40	27	38	5190	10.35	10.34	13.36	≤ 30.00	Pass
11ac-VHT40	27	46	5230	14.88	14.62	17.76	≤ 30.00	Pass
11ac-VHT40	27	54	5270	8.97	8.83	11.91	≤ 11.98	Pass
11ac-VHT40	27	62	5310	8.96	8.37	11.69	≤ 11.98	Pass
11ac-VHT40	27	102	5510	7.43	6.76	10.12	≤ 11.98	Pass
11ac-VHT40	27	118	5590	8.52	7.95	11.25	≤ 11.98	Pass
11ac-VHT40	27	134	5670	7.21	7.97	10.62	≤ 11.98	Pass
11ac-VHT40	27	142	5710	7.57	7.21	10.40	≤ 11.98	Pass
11ac-VHT40	27	151	5755	14.84	14.23	17.56	≤ 30.00	Pass
11ac-VHT40	27	159	5795	19.89	18.26	22.16	≤ 30.00	Pass
11ac-VHT80	58.6	42	5210	7.82	8.14	10.99	≤ 30.00	Pass
11ac-VHT80	58.6	58	5290	9.21	8.51	11.88	≤ 11.98	Pass
11ac-VHT80	58.6	106	5530	6.17	5.52	8.87	≤ 11.98	Pass
11ac-VHT80	58.6	122	5610	8.58	8.01	11.31	≤ 11.98	Pass
11ac-VHT80	58.6	138	5690	8.65	8.24	11.46	≤ 11.98	Pass
11ac-VHT80	58.6	155	5775	16.37	15.65	19.04	≤ 30.00	Pass

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

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.

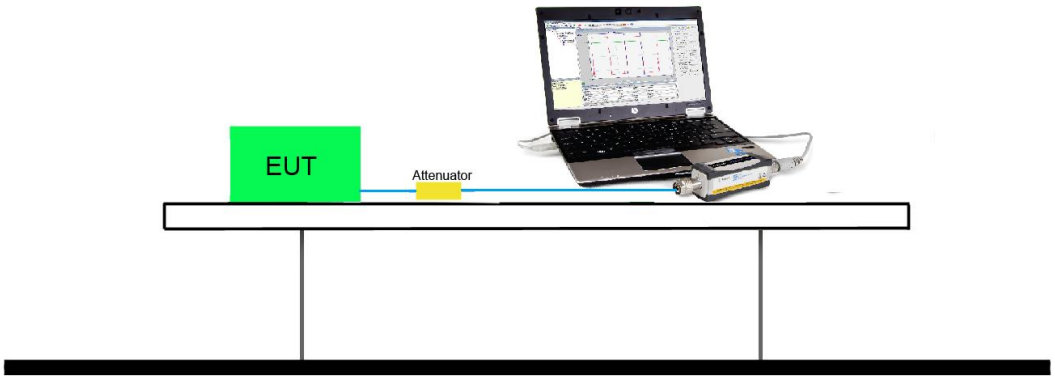
7.5.2. Test Procedure Used

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

7.5.3. Test Setting

Average power measurements were 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

Product	802.11ac Dual Band Module	Temperature	22°C
Test Engineer	Bruce Wang	Relative Humidity	54%
Test Site	TR3	Test Date	2017/04/20

1TX

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	TPC Power (dBm)	EIRP TPC Power (dBm)	Limit (dBm)	Result
Ant 0							
802.11a	6	52	5260	5.73	23.73	≤ 24	Pass
802.11a	6	60	5300	5.76	23.76	≤ 24	Pass
802.11a	6	64	5320	5.56	23.56	≤ 24	Pass
802.11a	6	100	5500	5.68	23.68	≤ 24	Pass
802.11a	6	120	5600	5.88	23.88	≤ 24	Pass
802.11a	6	140	5700	5.84	23.84	≤ 24	Pass
Ant 1							
802.11a	6	52	5260	5.70	23.70	≤ 24	Pass
802.11a	6	60	5300	5.79	23.79	≤ 24	Pass
802.11a	6	64	5320	5.78	23.78	≤ 24	Pass
802.11a	6	100	5500	5.95	23.95	≤ 24	Pass
802.11a	6	120	5600	5.54	23.54	≤ 24	Pass
802.11a	6	140	5700	5.69	23.69	≤ 24	Pass

Note: EIRP TPC Power (dBm) = TPC Power (dBm) + Antenna Gain (dBi).

2TX

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 0 TPC Power (dBm)	Ant 1 TPC Power (dBm)	Total EIRP TPC Power (dBm)	Limit (dBm)	Result
802.11n-HT20	13	52	5260	2.71	2.86	23.80	≤ 24	Pass
802.11n-HT20	13	60	5300	2.84	2.48	23.67	≤ 24	Pass
802.11n-HT20	13	64	5320	3.01	2.48	23.76	≤ 24	Pass
802.11n-HT20	13	100	5500	3.15	2.43	23.82	≤ 24	Pass
802.11n-HT20	13	120	5600	2.42	2.91	23.68	≤ 24	Pass
802.11n-HT20	13	140	5700	2.30	2.79	23.56	≤ 24	Pass
802.11n-HT40	27	54	5270	2.90	2.28	23.61	≤ 24	Pass
802.11n-HT40	27	62	5310	3.08	2.21	23.68	≤ 24	Pass
802.11n-HT40	27	102	5510	2.90	2.82	23.87	≤ 24	Pass
802.11n-HT40	27	118	5590	2.38	2.96	23.69	≤ 24	Pass
802.11n-HT40	27	134	5670	2.58	2.86	23.73	≤ 24	Pass
802.11ac-VHT20	13	52	5260	2.07	2.44	23.27	≤ 24	Pass
802.11ac-VHT20	13	60	5300	2.13	2.20	23.18	≤ 24	Pass
802.11ac-VHT20	13	64	5320	2.28	2.15	23.23	≤ 24	Pass
802.11ac-VHT20	13	100	5500	2.50	3.11	23.83	≤ 24	Pass
802.11ac-VHT20	13	120	5600	2.39	3.12	23.78	≤ 24	Pass
802.11ac-VHT20	13	140	5700	1.86	2.96	23.46	≤ 24	Pass
802.11ac-VHT20	13	144	5720	2.06	2.22	23.15	≤ 24	Pass
802.11ac-VHT40	27	54	5270	2.16	1.88	23.03	≤ 24	Pass
802.11ac-VHT40	27	62	5310	1.86	2.35	23.12	≤ 24	Pass
802.11ac-VHT40	27	102	5510	2.43	2.21	23.33	≤ 24	Pass
802.11ac-VHT40	27	118	5590	2.86	2.48	23.68	≤ 24	Pass
802.11ac-VHT40	27	134	5670	2.03	2.23	23.14	≤ 24	Pass
802.11ac-VHT40	27	142	5710	2.23	1.96	23.11	≤ 24	Pass
802.11ac-VHT80	58.6	58	5290	2.15	2.53	23.35	≤ 24	Pass
802.11ac-VHT80	58.6	106	5530	2.11	2.36	23.25	≤ 24	Pass
802.11ac-VHT80	58.6	122	5610	2.23	2.63	23.44	≤ 24	Pass
802.11ac-VHT80	58.6	138	5690	2.34	2.42	23.39	≤ 24	Pass

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

7.6. Power Spectral Density Measurement

7.6.1. Test Limit

For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band.

5150~5250MHz: Limit (dBm/MHz) = 17dBm/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.

5250~5350MHz: Limit (dBm/MHz) = 11dBm/MHz - (18dBi - 6dBi) = -1dBm/MHz

5470~5725MHz: Limit (dBm/MHz) = 11dBm/MHz - (18dBi - 6dBi) = -1dBm/MHz

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

5725~5850MHz: Limit (dBm/500KHz) = 30dBm/500KHz

7.6.2. Test Procedure Used

KDB 789033 D02v01r03 - Section F

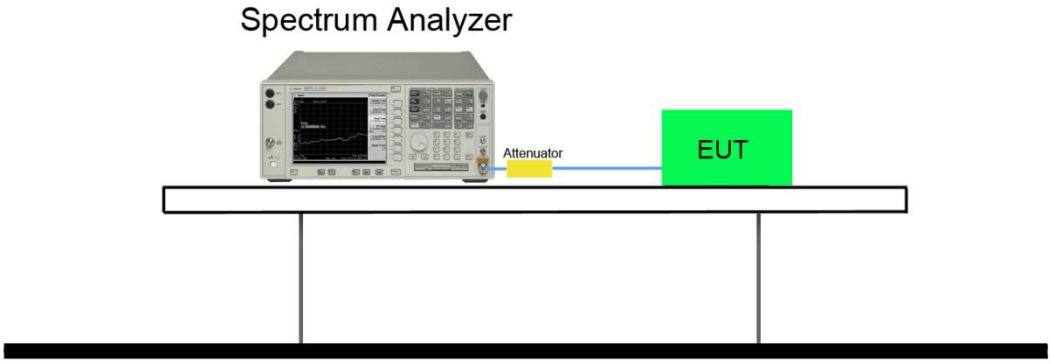
7.6.3. Test Setting

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 (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*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

Product	802.11ac Dual Band Module	Temperature	22°C
Test Engineer	Bruce Wang	Relative Humidity	54%
Test Site	TR3	Test Date	2017/04/29

1TX

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	PSD (dBm/ MHz)	Duty Cycle (%)	Final PSD (dBm/ MHz)	PSD Limit (dBm/MHz)	Result
Ant 0								
11a	6	36	5180	0.65	95.32	0.86	≤ 17.00	Pass
11a	6	44	5220	-0.27	95.32	-0.06	≤ 17.00	Pass
11a	6	48	5240	0.70	95.32	0.91	≤ 17.00	Pass
11a	6	52	5260	-1.23	95.32	-1.02	≤ -1.00	Pass
11a	6	60	5300	-1.34	95.32	-1.13	≤ -1.00	Pass
11a	6	64	5320	-1.43	95.32	-1.22	≤ -1.00	Pass
11a	6	100	5500	-1.57	95.32	-1.36	≤ -1.00	Pass
11a	6	120	5600	-1.23	95.32	-1.02	≤ -1.00	Pass
11a	6	140	5700	-1.40	95.32	-1.19	≤ -1.00	Pass
Ant 1								
11a	6	36	5180	0.44	95.32	0.65	≤ 17.00	Pass
11a	6	44	5220	1.25	95.32	1.46	≤ 17.00	Pass
11a	6	48	5240	1.15	95.32	1.36	≤ 17.00	Pass
11a	6	52	5260	-1.82	95.32	-1.61	≤ -1.00	Pass
11a	6	60	5300	-1.48	95.32	-1.27	≤ -1.00	Pass
11a	6	64	5320	-1.42	95.32	-1.21	≤ -1.00	Pass
11a	6	100	5500	-1.28	95.32	-1.07	≤ -1.00	Pass
11a	6	120	5600	-1.44	95.32	-1.23	≤ -1.00	Pass
11a	6	140	5700	-1.66	95.32	-1.45	≤ -1.00	Pass

Note 1: When EUT duty cycle ≥ 98%, the Final PSD (dBm/MHz) = PSD (dBm/MHz).

Note 2: When EUT duty cycle < 98%, the Final PSD (dBm/MHz) = PSD (dBm/MHz) + 10*log(1/Duty Cycle).

2TX

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
11n-HT20	13	36	5180	-1.24	-3.33	92.66	1.18	≤ 17.00	Pass
11n-HT20	13	44	5220	-1.57	-3.46	92.66	0.93	≤ 17.00	Pass
11n-HT20	13	48	5240	-1.14	-3.05	92.66	1.35	≤ 17.00	Pass
11n-HT20	13	52	5260	-4.41	-4.46	92.66	-1.09	≤ -1.00	Pass
11n-HT20	13	60	5300	-4.81	-5.21	92.66	-1.66	≤ -1.00	Pass
11n-HT20	13	64	5320	-4.45	-5.38	92.66	-1.55	≤ -1.00	Pass
11n-HT20	13	100	5500	-4.52	-4.34	92.66	-1.09	≤ -1.00	Pass
11n-HT20	13	120	5600	-4.46	-4.53	92.66	-1.15	≤ -1.00	Pass
11n-HT20	13	140	5700	-4.35	-5.09	92.66	-1.36	≤ -1.00	Pass
11n-HT40	27	38	5190	-6.57	-5.17	81.75	-1.93	≤ 17.00	Pass
11n-HT40	27	46	5230	0.16	-0.77	81.75	3.61	≤ 17.00	Pass
11n-HT40	27	54	5270	-5.05	-5.34	81.75	-1.31	≤ -1.00	Pass
11n-HT40	27	62	5310	-5.19	-5.54	81.75	-1.48	≤ -1.00	Pass
11n-HT40	27	102	5510	-7.03	-6.62	81.75	-2.93	≤ -1.00	Pass
11n-HT40	27	118	5590	-4.97	-4.47	81.75	-0.83	≤ -1.00	Pass
11n-HT40	27	134	5670	-5.44	-5.31	81.75	-1.49	≤ -1.00	Pass
11ac-VHT20	13	36	5180	-1.58	-2.20	90.11	1.58	≤ 17.00	Pass
11ac-VHT20	13	44	5220	-1.09	-2.98	90.11	1.53	≤ 17.00	Pass
11ac-VHT20	13	48	5240	-1.25	-1.82	90.11	1.94	≤ 17.00	Pass
11ac-VHT20	13	52	5260	-5.14	-4.92	90.11	-1.57	≤ -1.00	Pass
11ac-VHT20	13	60	5300	-4.86	-4.83	90.11	-1.38	≤ -1.00	Pass
11ac-VHT20	13	64	5320	-4.35	-4.98	90.11	-1.19	≤ -1.00	Pass
11ac-VHT20	13	100	5500	-4.43	-4.64	90.11	-1.07	≤ -1.00	Pass
11ac-VHT20	13	120	5600	-4.72	-4.41	90.11	-1.10	≤ -1.00	Pass
11ac-VHT20	13	140	5700	-6.08	-8.64	90.11	-3.71	≤ -1.00	Pass
11ac-VHT20	13	144	5720	-4.95	-4.29	90.11	-1.14	≤ -1.00	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-VHT40	27	38	5190	-5.59	-5.79	82.60	-1.85	≤ 17.00	Pass
11ac-VHT40	27	46	5230	0.82	0.20	82.60	4.36	≤ 17.00	Pass
11ac-VHT40	27	54	5270	-6.12	-6.55	82.60	-2.49	≤ -1.00	Pass
11ac-VHT40	27	62	5310	-6.46	-6.33	82.60	-2.55	≤ -1.00	Pass
11ac-VHT40	27	102	5510	-6.66	-7.13	82.60	-3.05	≤ -1.00	Pass
11ac-VHT40	27	118	5590	-4.82	-5.00	82.60	-1.07	≤ -1.00	Pass
11ac-VHT40	27	134	5670	-5.85	-5.62	82.60	-1.89	≤ -1.00	Pass
11ac-VHT40	27	142	5710	-5.77	-5.24	82.60	-1.66	≤ -1.00	Pass
11ac-VHT80	58.6	42	5210	-11.08	-11.08	80.51	-7.13	≤ 17.00	Pass
11ac-VHT80	58.6	58	5290	-9.85	-9.89	80.51	-5.92	≤ -1.00	Pass
11ac-VHT80	58.6	106	5530	-14.59	-11.91	80.51	-9.09	≤ -1.00	Pass
11ac-VHT80	58.6	122	5610	-8.47	-8.92	80.51	-4.74	≤ -1.00	Pass
11ac-VHT80	58.6	138	5690	-8.35	-8.38	80.51	-4.41	≤ -1.00	Pass

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

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

1TX

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	PSD (dBm/ 100KHz)	Duty Cycle (%)	Constant Factor	Final PSD (dBm/ MHz)	PSD Limit (dBm/MHz)	Result
Ant 0									
11a	6	149	5745	-1.59	95.32	6.99	5.61	≤ 30.00	Pass
11a	6	157	5785	-3.30	95.32	6.99	3.90	≤ 30.00	Pass
11a	6	165	5825	-0.06	95.32	6.99	7.14	≤ 30.00	Pass
Ant 1									
11a	6	149	5745	-1.63	95.32	6.99	5.57	≤ 30.00	Pass
11a	6	157	5785	-4.25	95.32	6.99	2.95	≤ 30.00	Pass
11a	6	165	5825	-0.39	95.32	6.99	6.81	≤ 30.00	Pass

Note 1: When EUT duty cycle ≥ 98%, the Final PSD (dBm/MHz) = PSD (dBm/MHz) + Constant Factor.

Note 2: When EUT duty cycle < 98%, the Total PSD (dBm/MHz) = PSD (dBm/MHz) + 10*log(1/Duty Cycle) + Constant Factor.

2TX

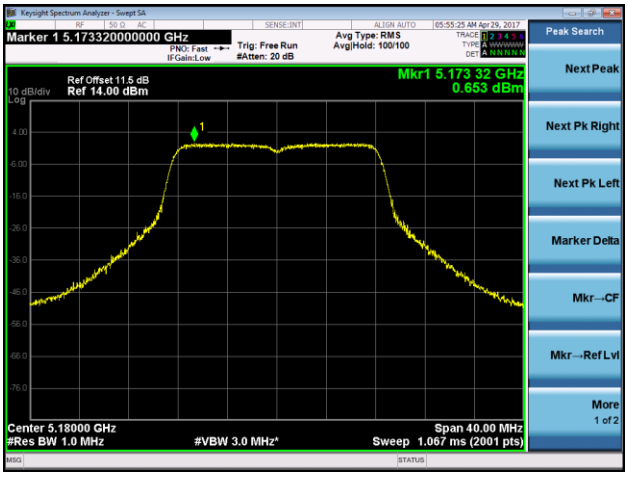
Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ 100kHz)	Ant 1 PSD (dBm/ 100kHz)	Duty Cycle (%)	Constant Factor	Total PSD (dBm/ 500kHz)	Limit (dBm/ 500kHz)	Result
11n-HT20	26	149	5745	-6.57	-6.15	92.66	6.99	-6.57	≤ 30.00	Pass
11n-HT20	26	157	5785	-2.93	-2.75	92.66	6.99	-2.93	≤ 30.00	Pass
11n-HT20	26	165	5825	-0.09	-0.21	92.66	6.99	-0.09	≤ 30.00	Pass
11n-HT40	54	151	5755	-7.79	-6.59	81.75	6.99	-7.79	≤ 30.00	Pass
11n-HT40	54	159	5795	-3.22	-3.21	81.75	6.99	-3.22	≤ 30.00	Pass
11ac-VHT20	26	149	5745	-5.55	-5.77	90.11	6.99	4.79	≤ 30.00	Pass
11ac-VHT20	26	157	5785	-3.54	-3.88	90.11	6.99	6.75	≤ 30.00	Pass
11ac-VHT20	26	165	5825	-0.43	-0.53	90.11	6.99	9.97	≤ 30.00	Pass
11ac-VHT40	54	151	5755	-7.80	-8.12	82.6	6.99	2.87	≤ 30.00	Pass
11ac-VHT40	54	159	5795	-3.59	-4.12	82.6	6.99	-3.59	≤ 30.00	Pass
11ac-VHT80	117.2	155	5775	-9.50	-8.15	80.51	6.99	-9.50	≤ 30.00	Pass

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

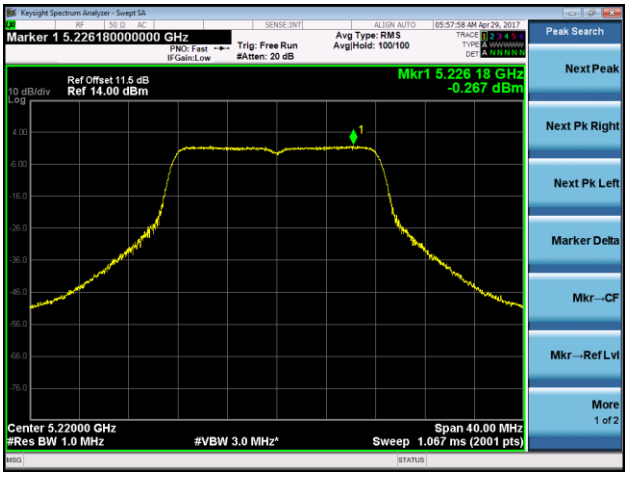
Note 2: When EUT duty cycle < 98%, the Total PSD (dBm/MHz) = $10*\log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$ + 10*log(1/Duty Cycle) + Constant Factor.

802.11a Power Spectral Density - Ant 0

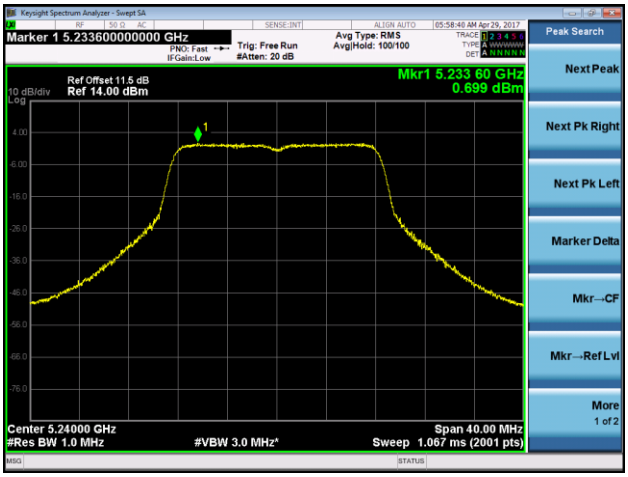
Channel 36 (5180MHz)



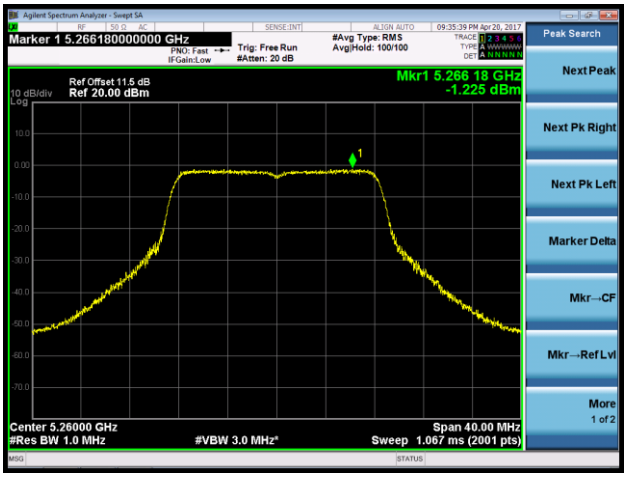
Channel 44 (5220MHz)



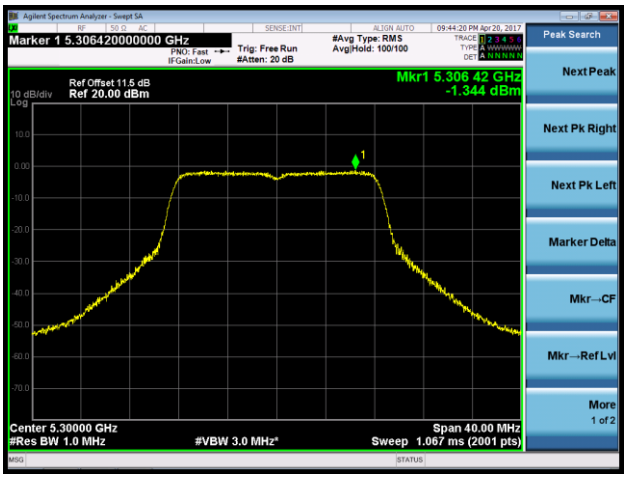
Channel 48 (5240MHz)



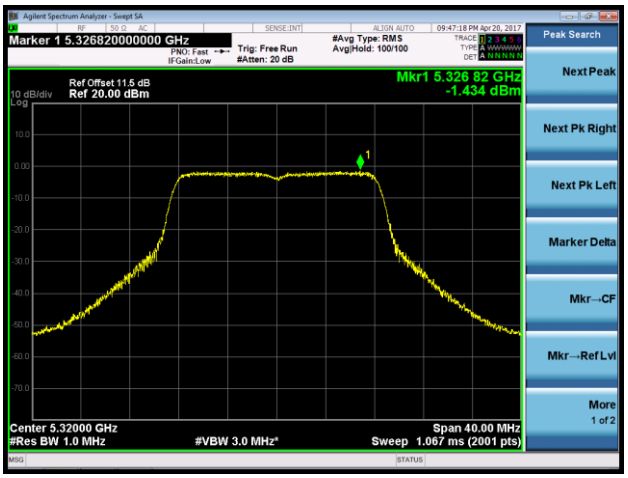
Channel 52 (5260MHz)

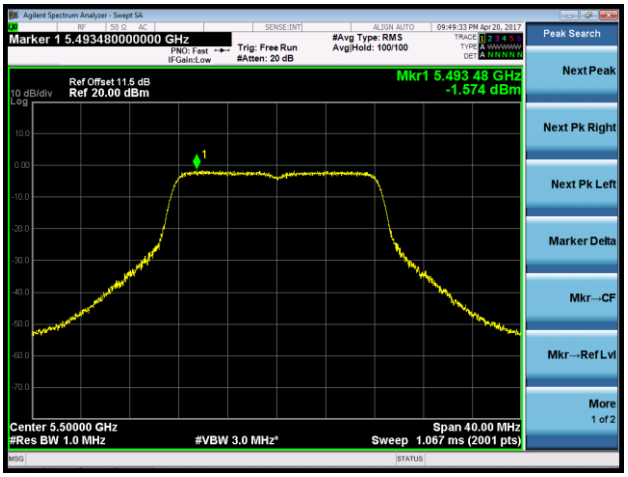
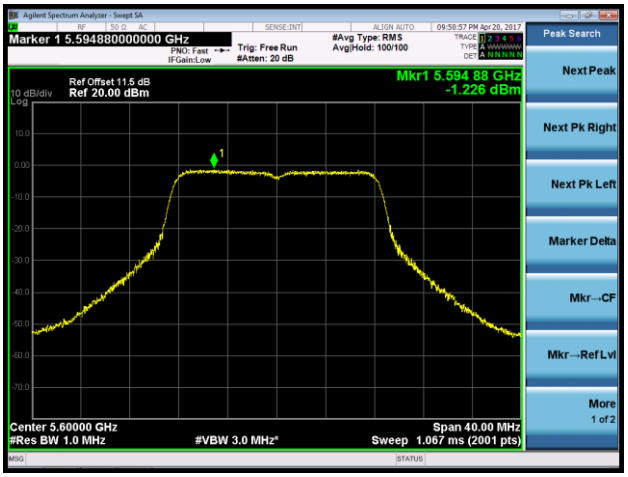
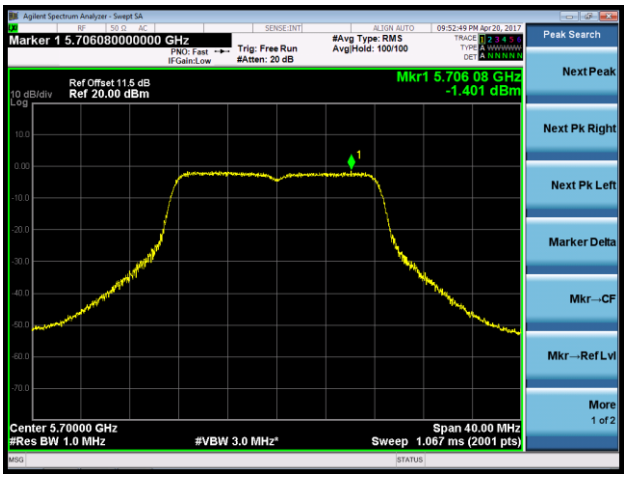
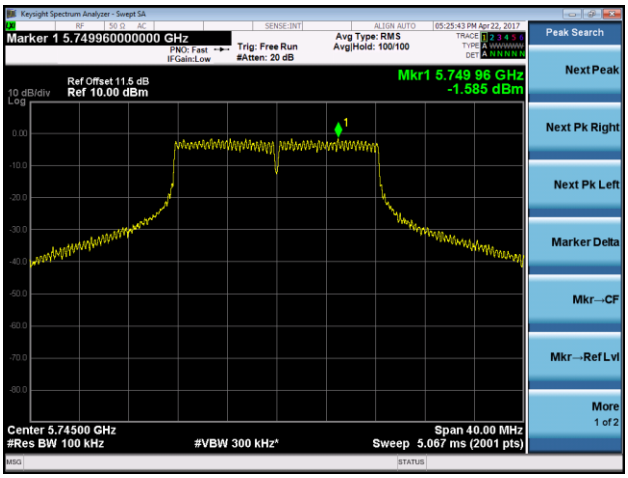
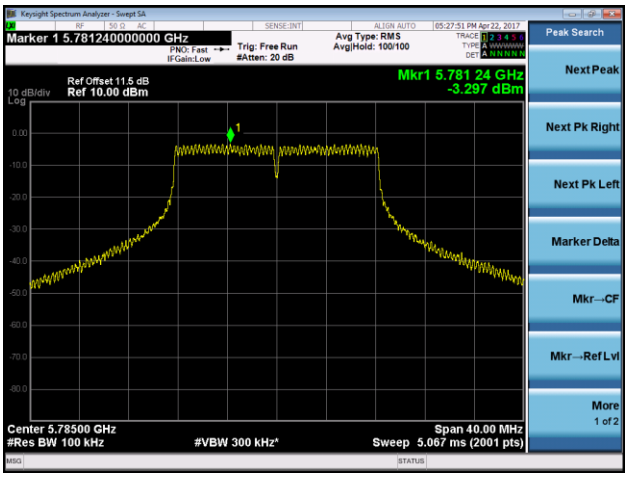
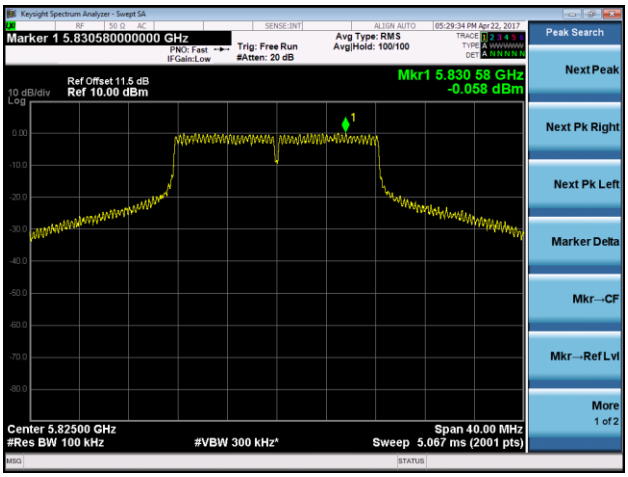


Channel 60 (5300MHz)



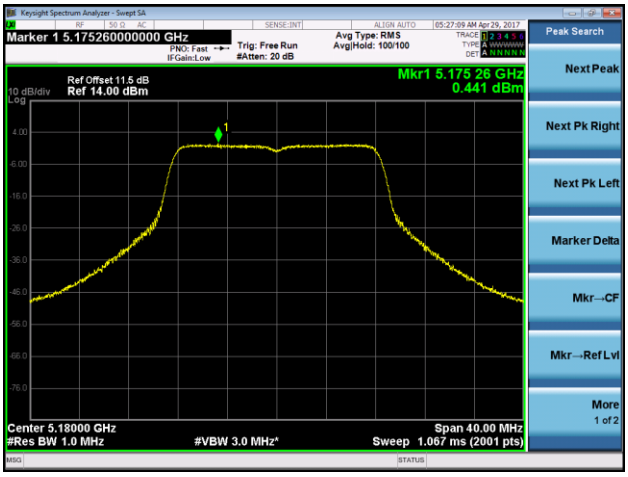
Channel 64 (5320MHz)



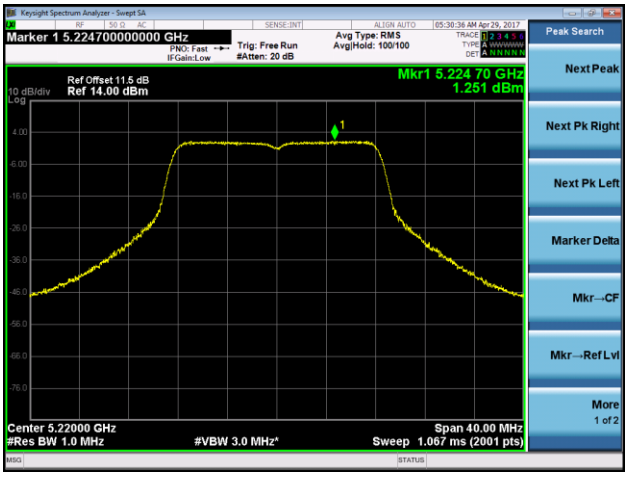
Channel 100 (5500MHz)	Channel 120 (5600MHz)
	
Channel 140 (5700MHz)	**Channel 149 (5745MHz)**
	
Channel 157 (5785MHz)	**Channel 165 (5825MHz)**
	

802.11a Power Spectral Density - Ant 1

Channel 36 (5180MHz)

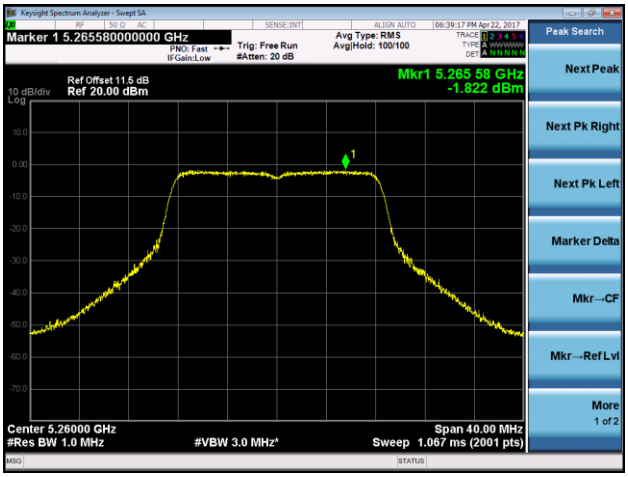


Channel 44 (5220MHz)

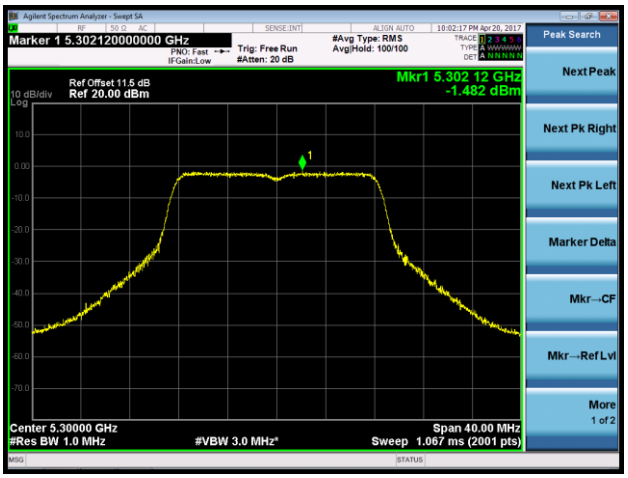


Channel 48 (5240MHz)

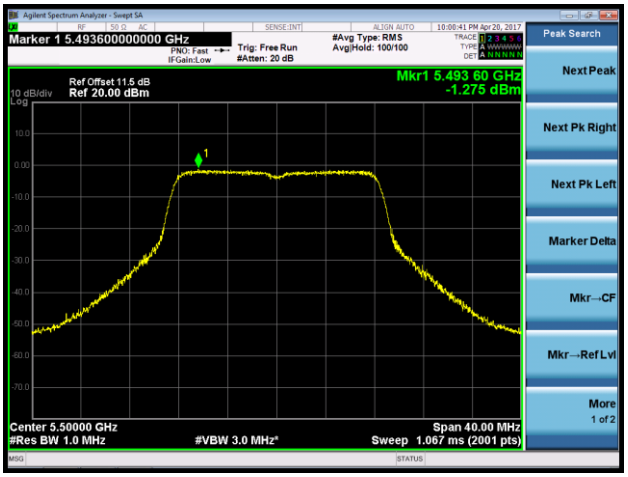
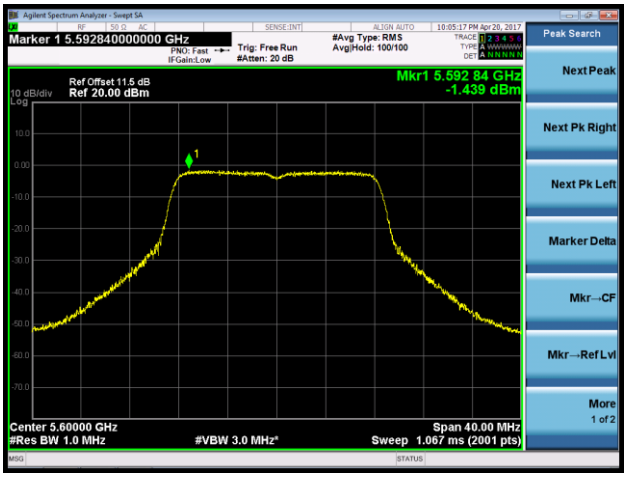
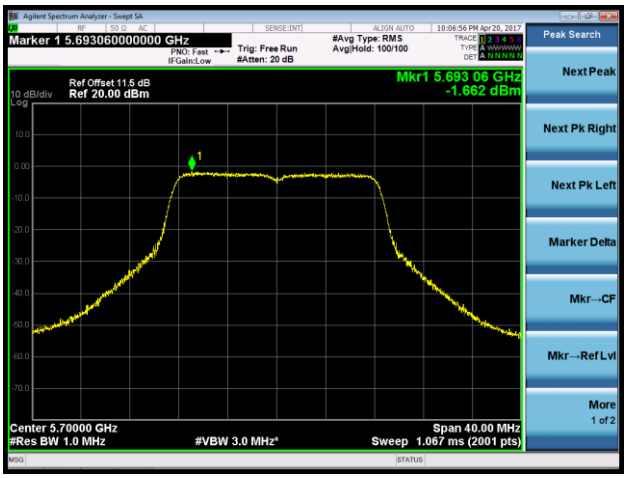
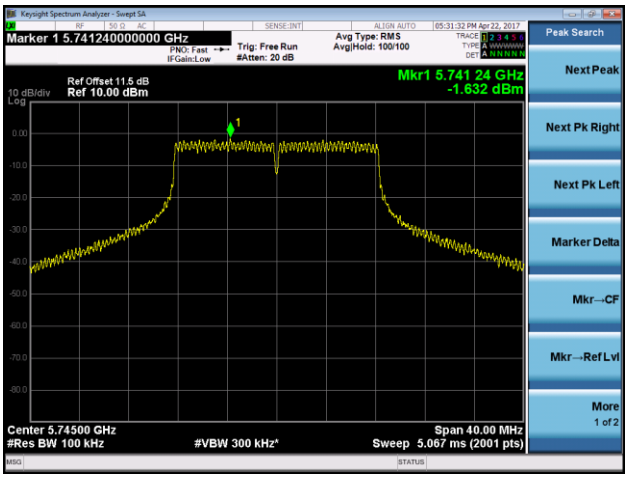
Channel 52 (5260MHz)



Channel 60 (5300MHz)



Channel 64 (5320MHz)

Channel 100 (5500MHz)	Channel 120 (5600MHz)
	
Channel 140 (5700MHz)	**Channel 149 (5745MHz)**
	
Channel 157 (5785MHz)	**Channel 165 (5825MHz)**