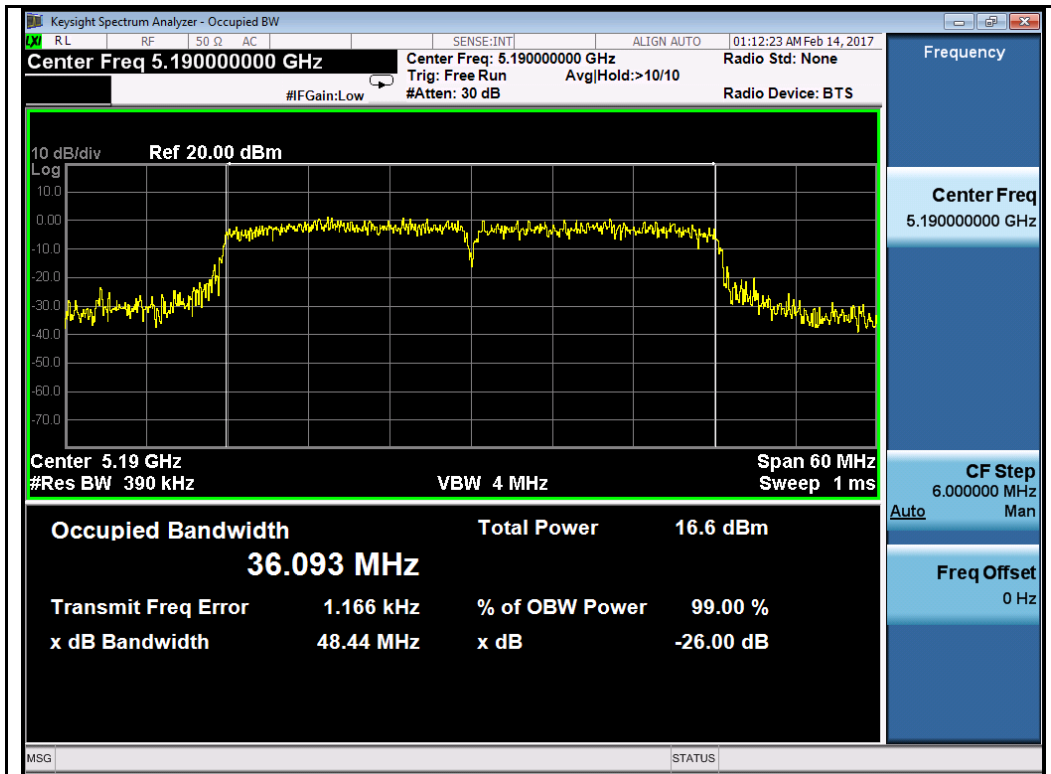
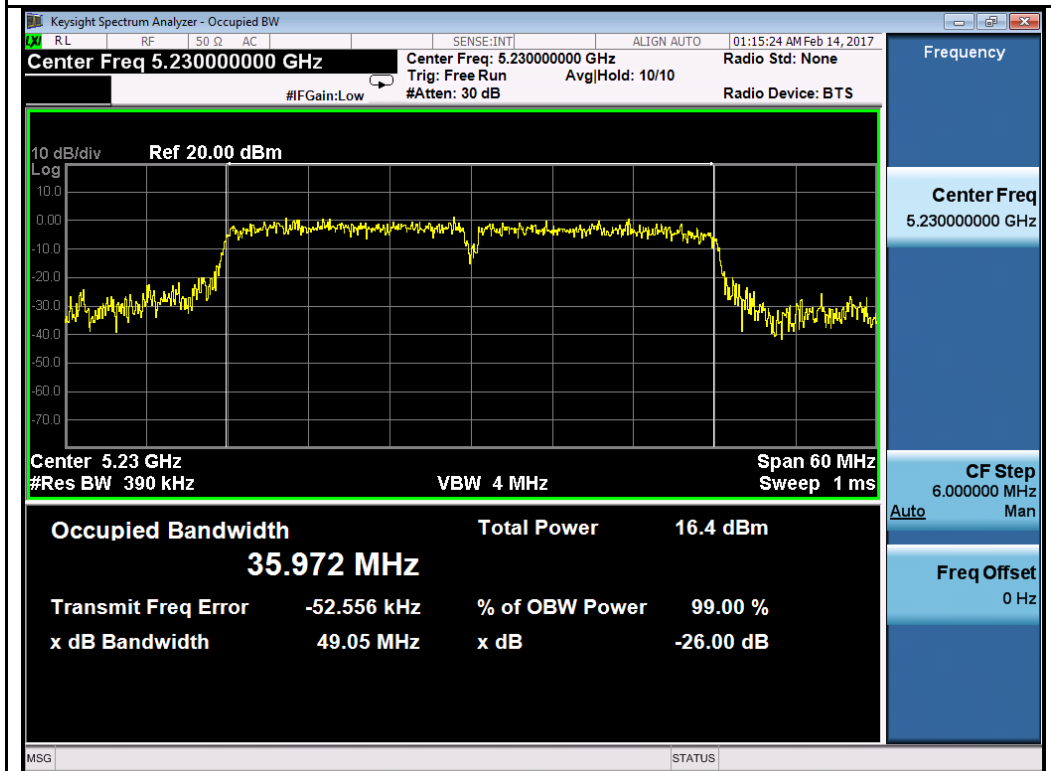




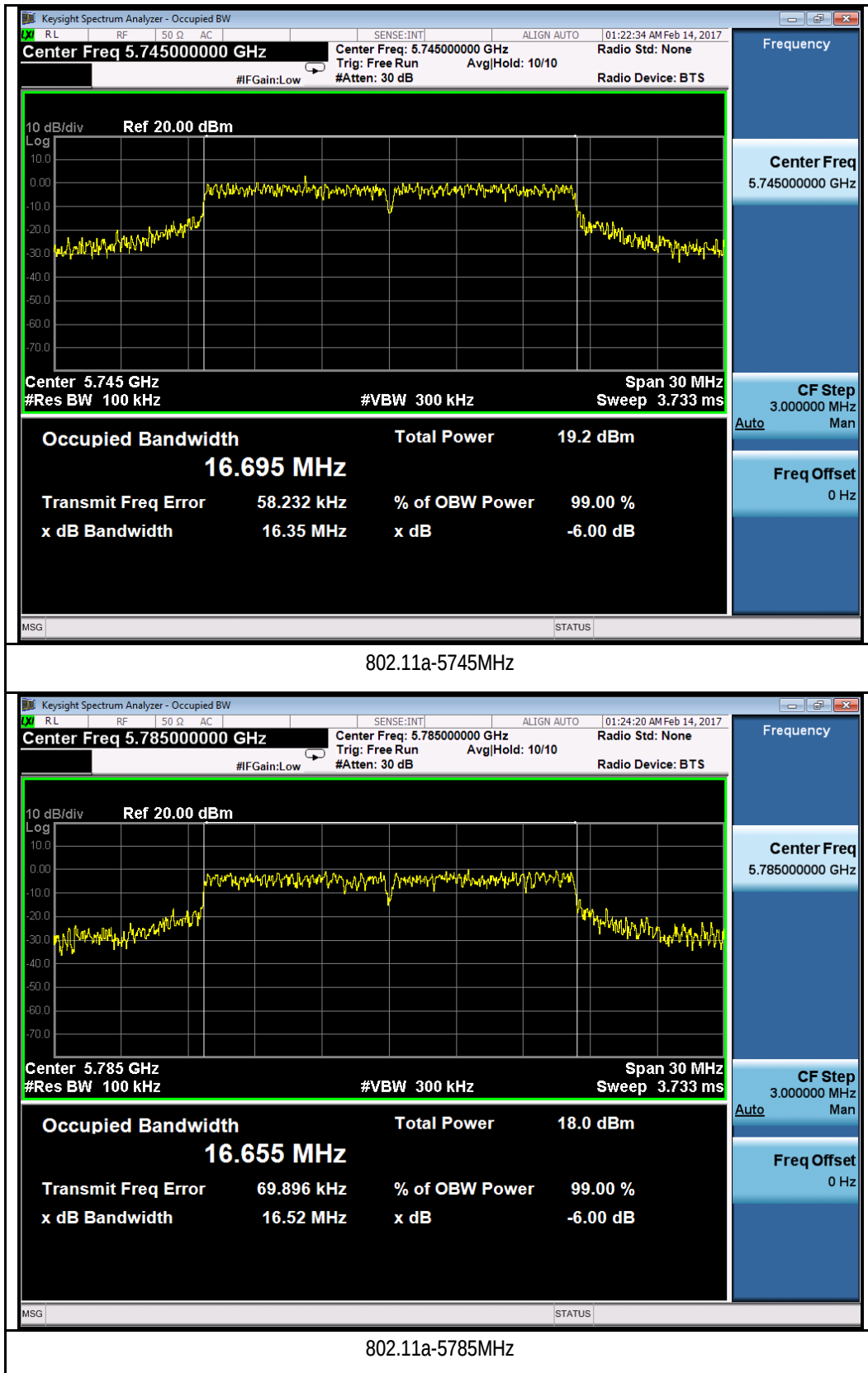
802.11n-HT40-5190MHz

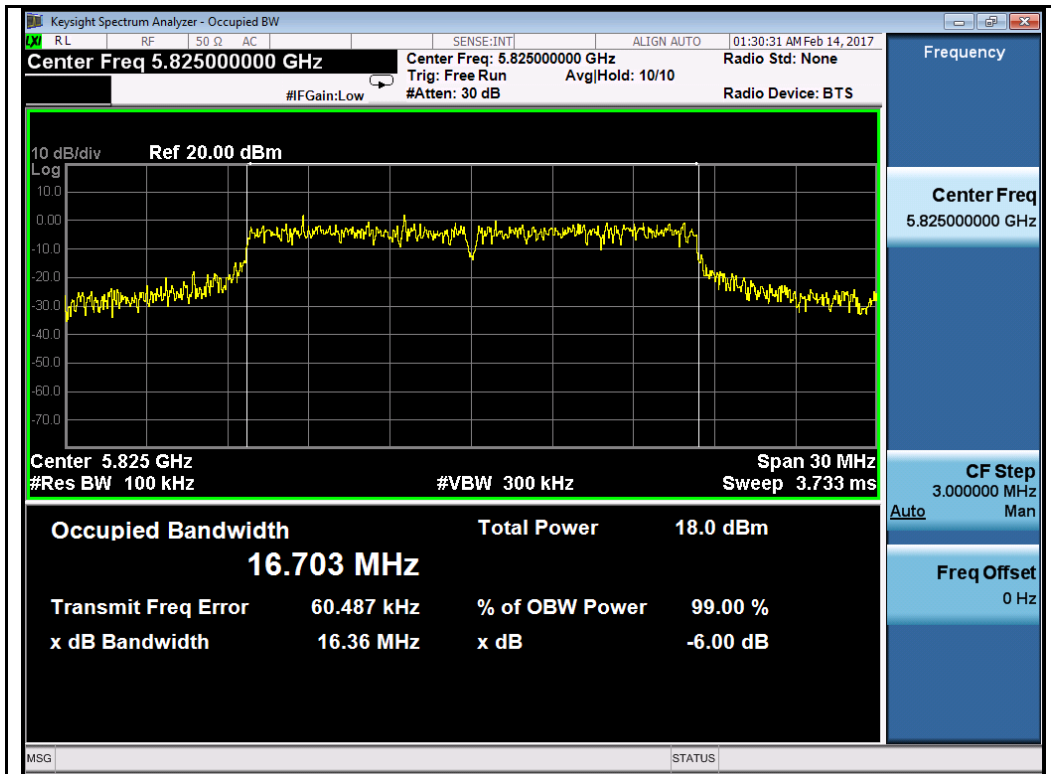


802.11n-HT40-5230MHz

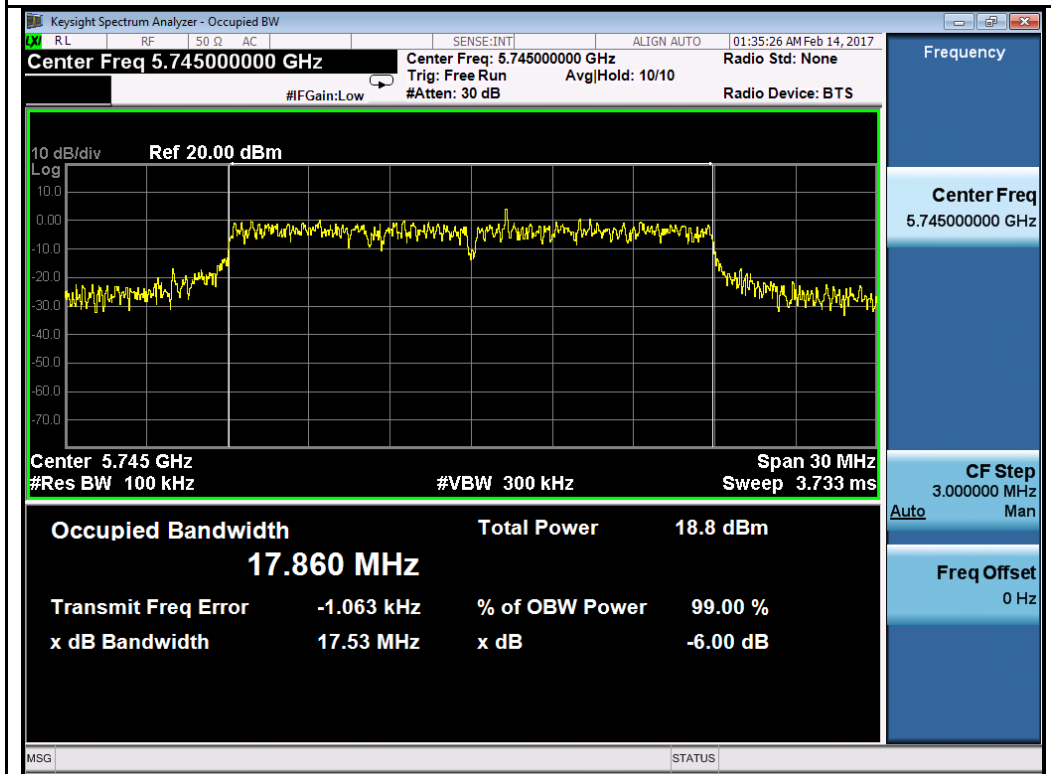
6dB Bandwidth Test Plots

W58:

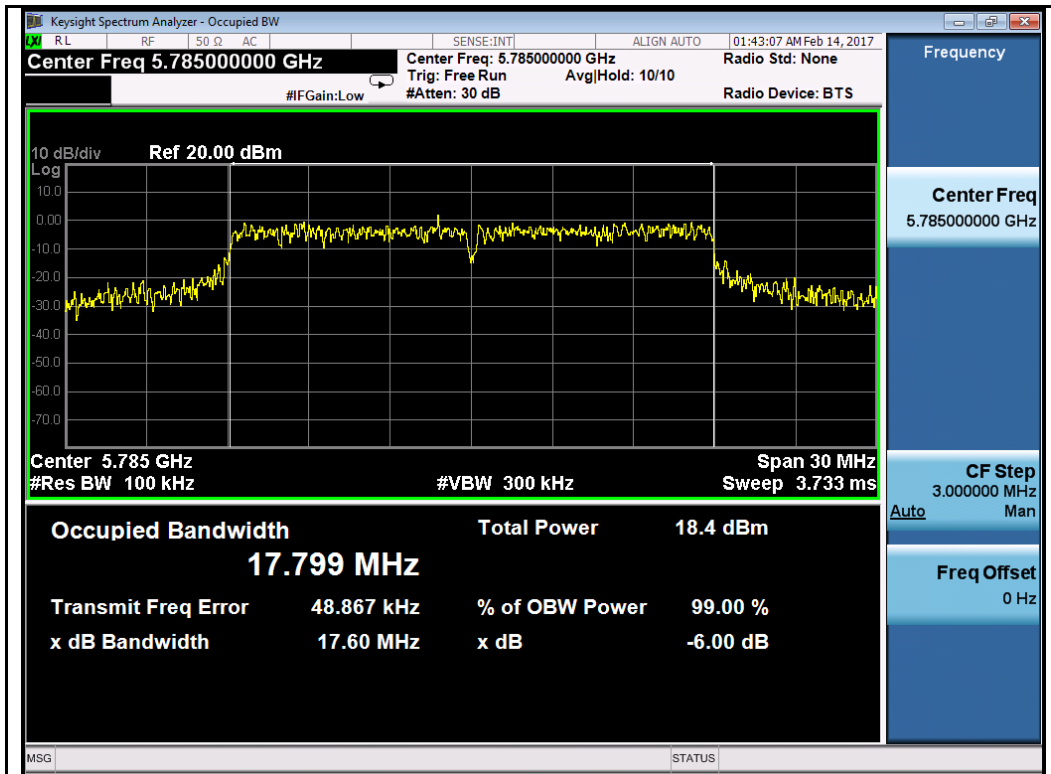




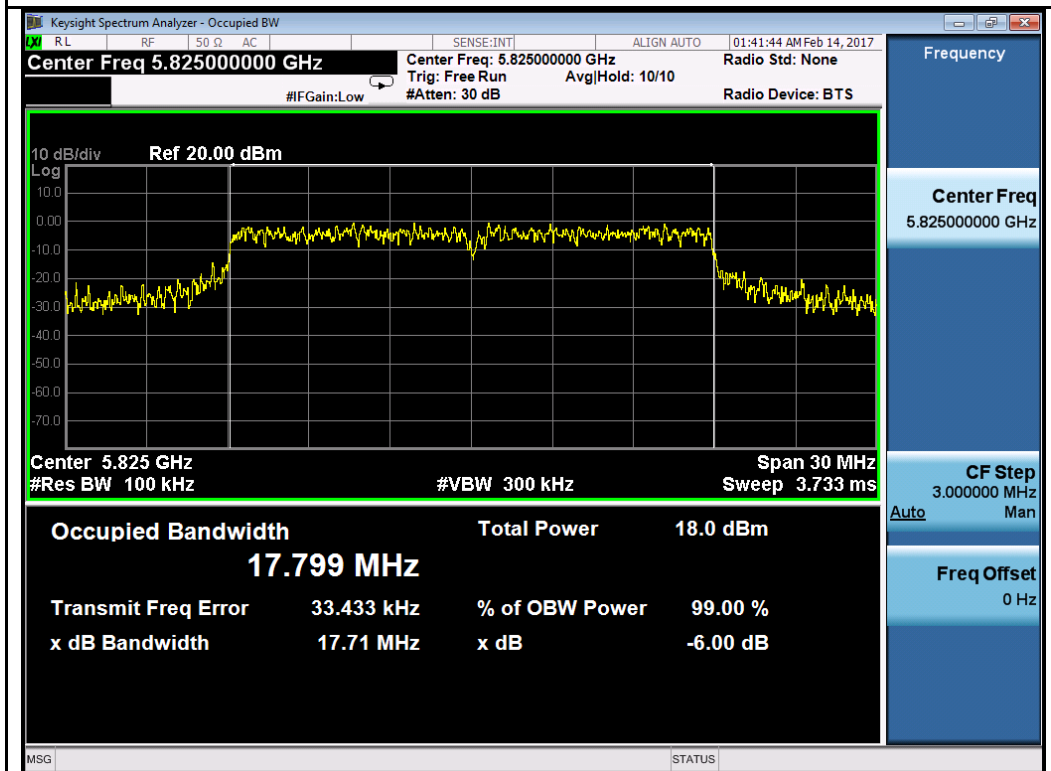
802.11a-5825MHz



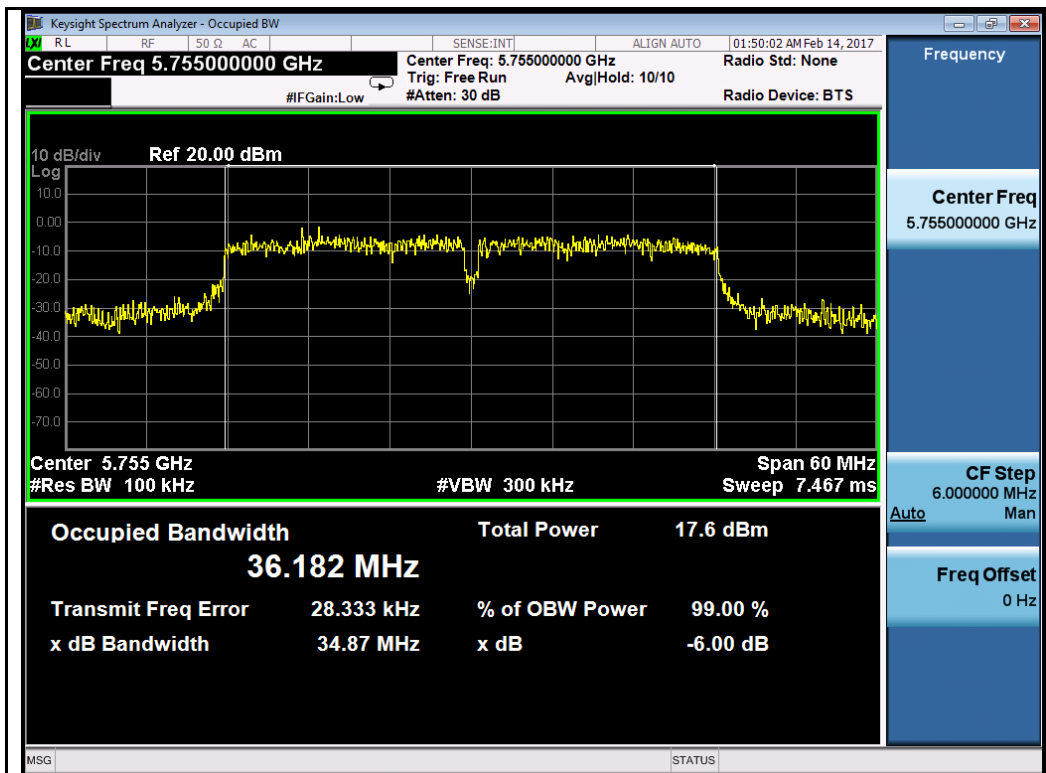
802.11n-HT20-5745MHz



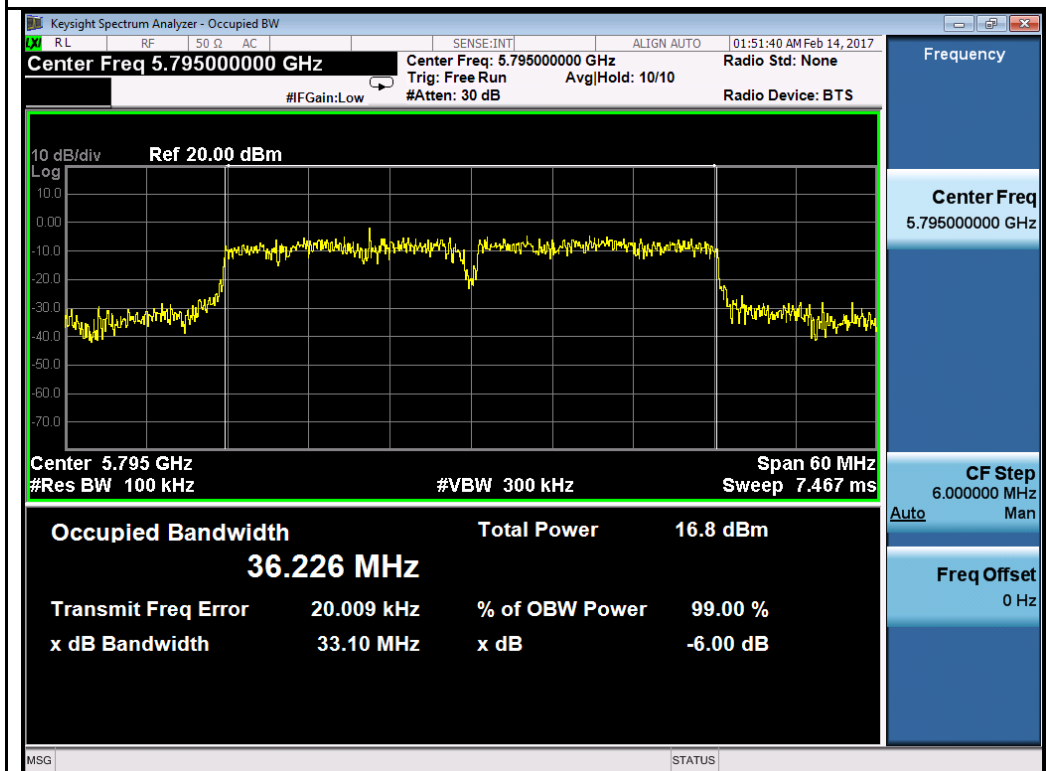
802.11n-HT20-5785MHz



802.11n-HT20-5825MHz



802.11n-HT40-5755MHz

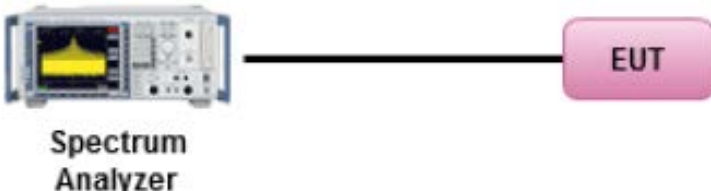


802.11n-HT40-5795MHz

10.3 Output Power

Requirement(s):

Spec	Item	Requirement	Applicable
§ 15.407	a)(1)(ii)	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.	☒
	a)(3)	For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.	☒

Test Setup	 Spectrum Analyzer ————— EUT		
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Test Procedure	789033 D02 General UNII Test Procedures New Rules v01r02		
	<u>Measurement using a Spectrum Analyzer or EMI Receiver (SA)</u> Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep): (i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal. (ii) Set RBW = 1 MHz (iii) Set VBW = 3 MHz (iv) Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$. (This ensures that bin-to-bin spacing is $\leq \text{RBW}/2$, so that narrowband signals are not lost between frequency bins.) (v) Sweep time = auto. (vi) Detector = power averaging (rms), if available. Otherwise, use sample detector mode. (vii) If transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle $\geq 98\%$, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run." (viii) Trace average at least 100 traces in power averaging (rms) mode. (ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.		

Test Date	02/15/2017	Environmental condition	Temperature 21°C Relative Humidity 40% Atmospheric Pressure 1019mbar
Remark	-		
Result	☒ Pass ☐ Fail		

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test was done by Rachana Khanduri at RF test site.

Output Power measurement result for 5.2GHz

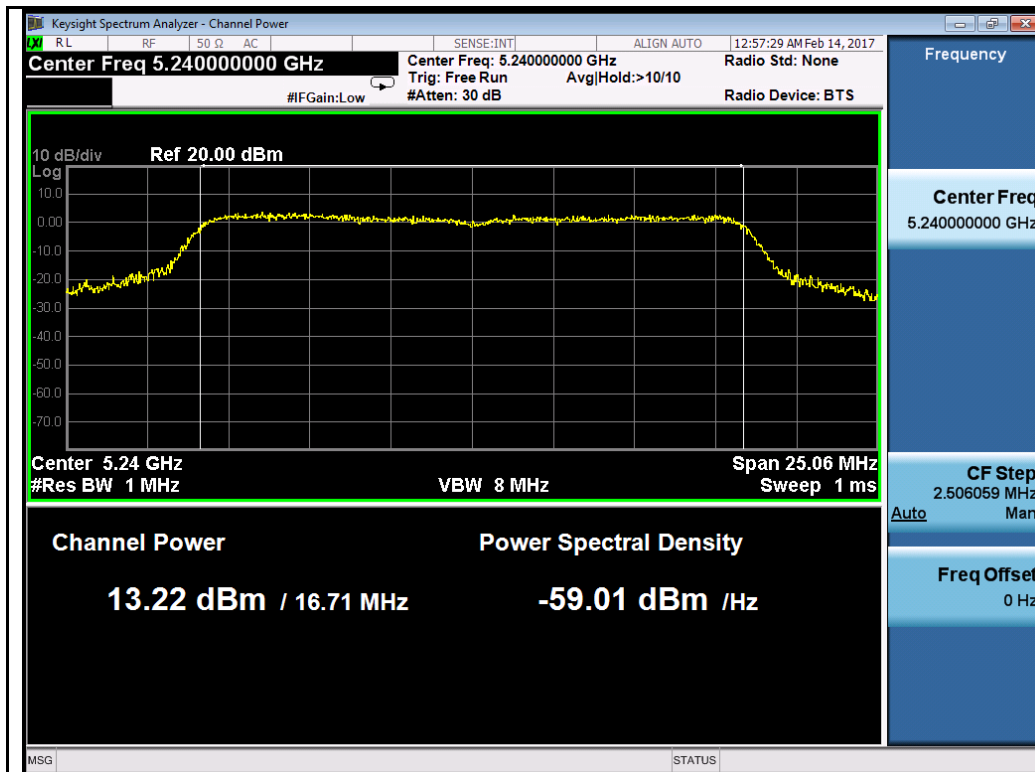
Type	Test mode	Freq (MHz)	CH	Conducted Power (dBm)	Limit (dBm)	Result
Output Power	802.11a	5180	Low	13.81	30	Pass
	802.11a	5200	Mid	13.18	30	Pass
	802.11a	5240	High	13.22	30	Pass
	802.11n-20M	5180	Low	14.20	30	Pass
	802.11n-20M	5200	Mid	13.77	30	Pass
	802.11n-20M	5240	High	13.32	30	Pass
	802.11n-40M	5190	Low	12.29	30	Pass
	802.11n-40M	5230	High	12.11	30	Pass

Output Power measurement result for 5.8GHz

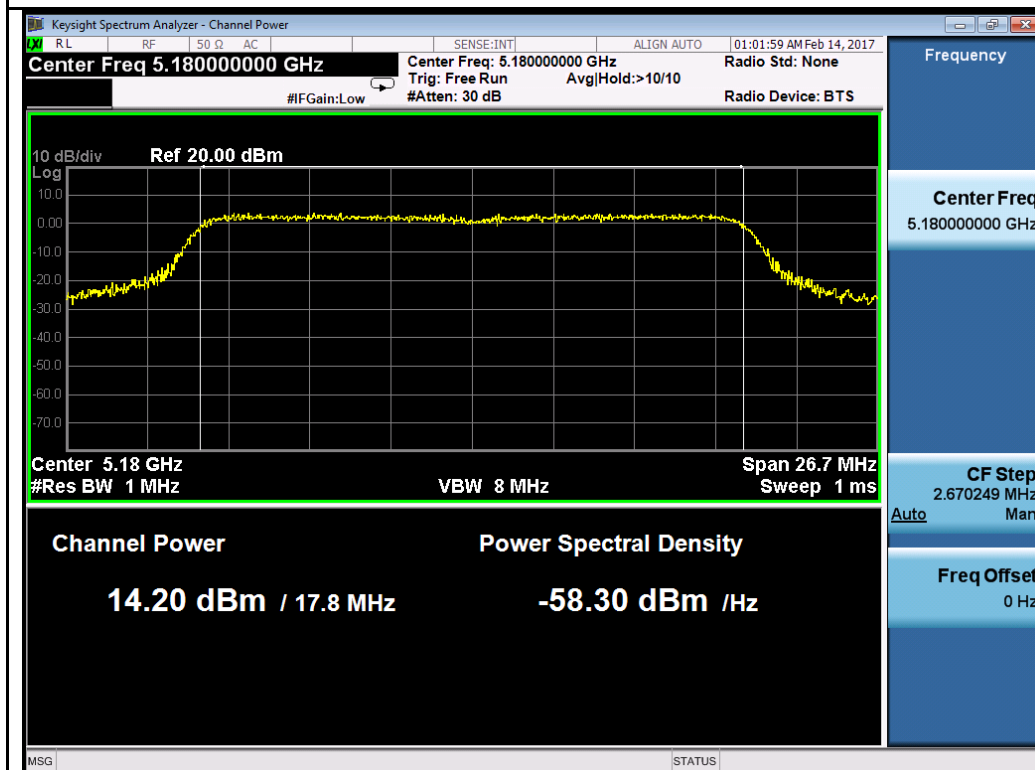
Type	Test mode	Freq (MHz)	CH	Conducted Power (dBm)	Limit (dBm)	Result
Output Power	802.11a	5745	Low	15.48	30	Pass
	802.11a	5785	Mid	14.88	30	Pass
	802.11a	5825	High	14.85	30	Pass
	802.11n-20M	5745	Low	14.86	30	Pass
	802.11n-20M	5785	Mid	14.95	30	Pass
	802.11n-20M	5825	High	13.91	30	Pass
	802.11n-40M	5755	Low	13.95	30	Pass
	802.11n-40M	5795	High	13.44	30	Pass

Test Plot for W52:

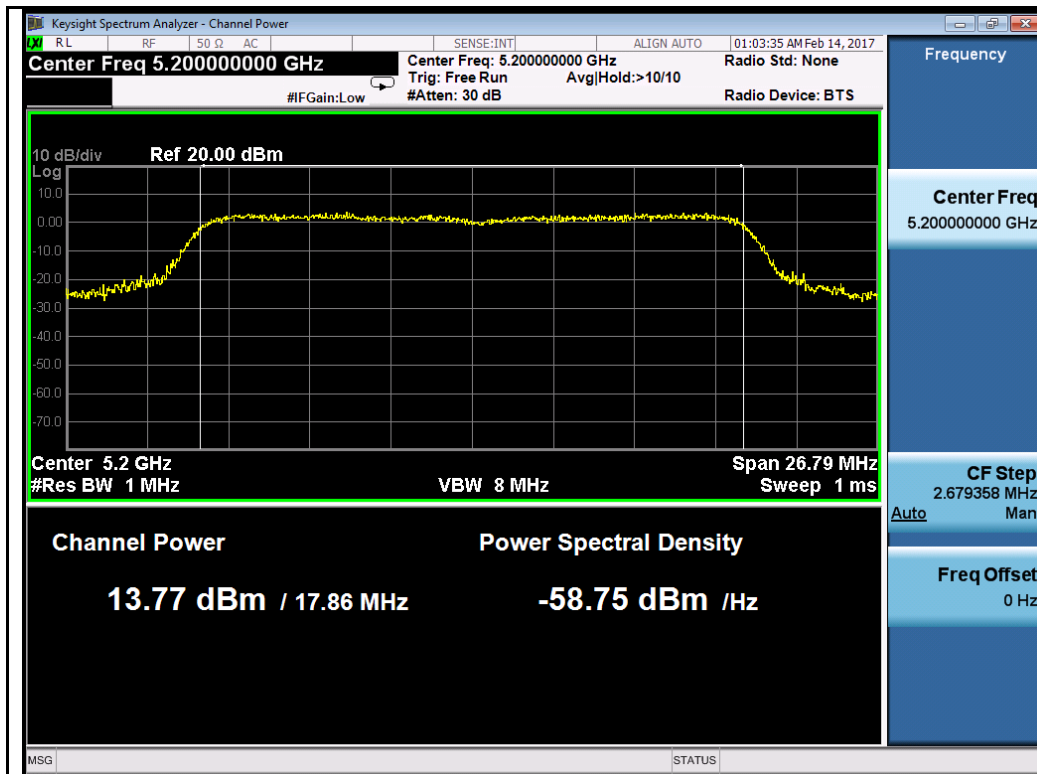




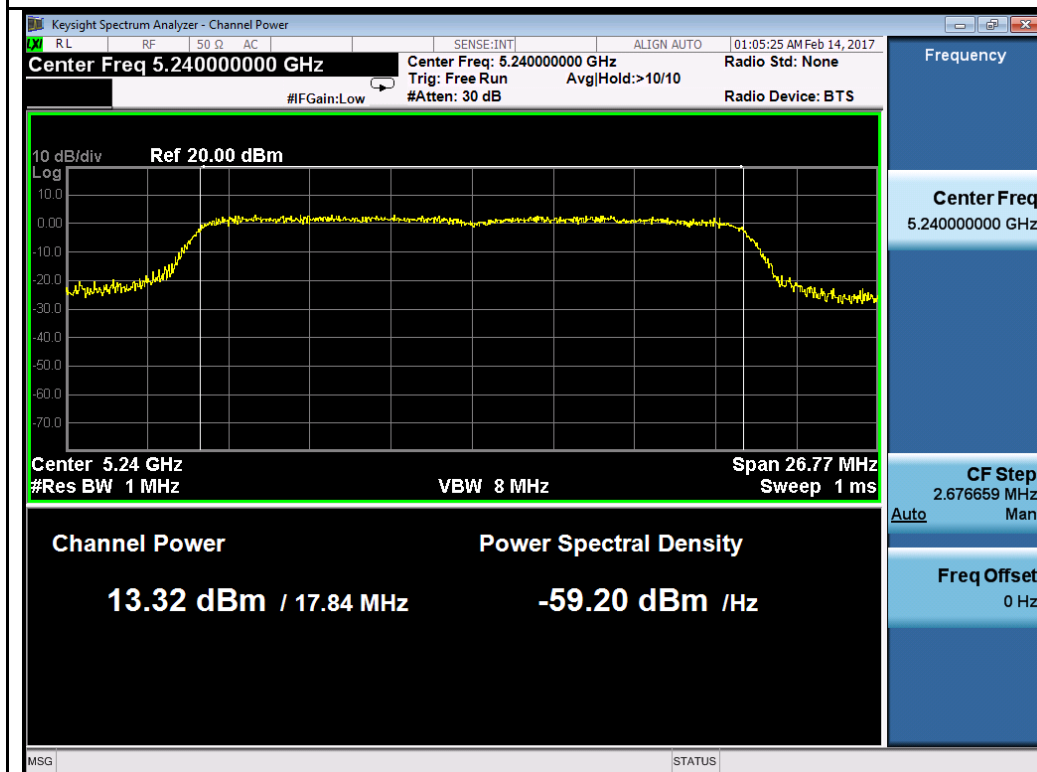
802.11a-5240M



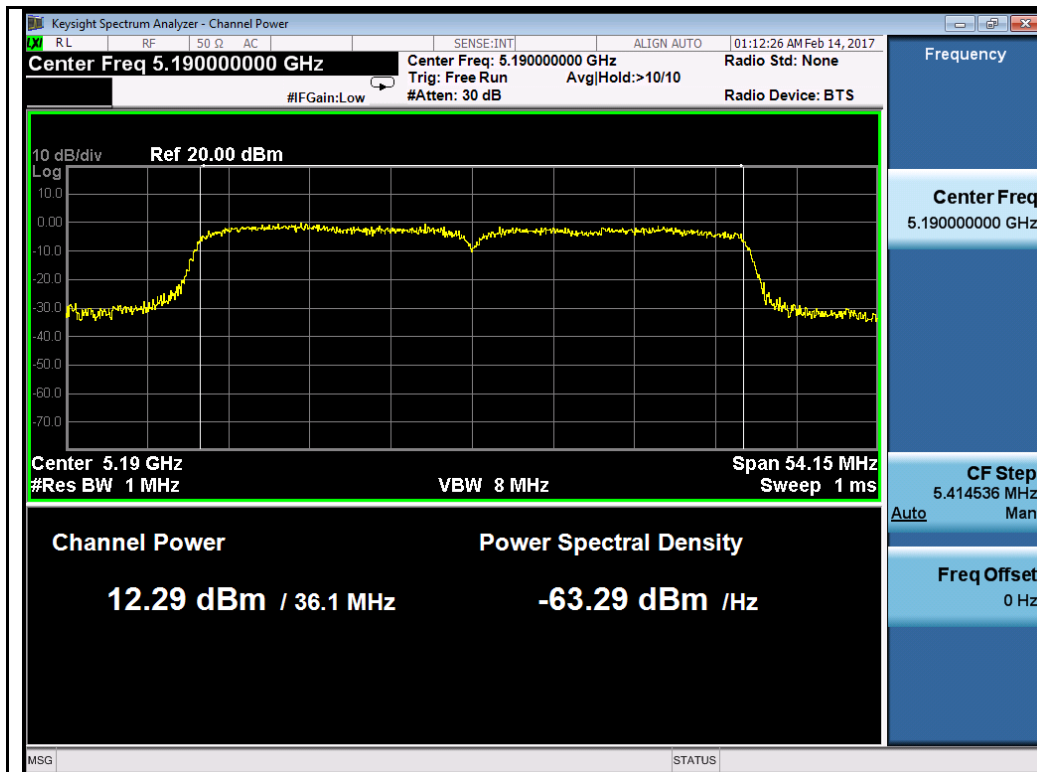
802.11n-HT20 5180M



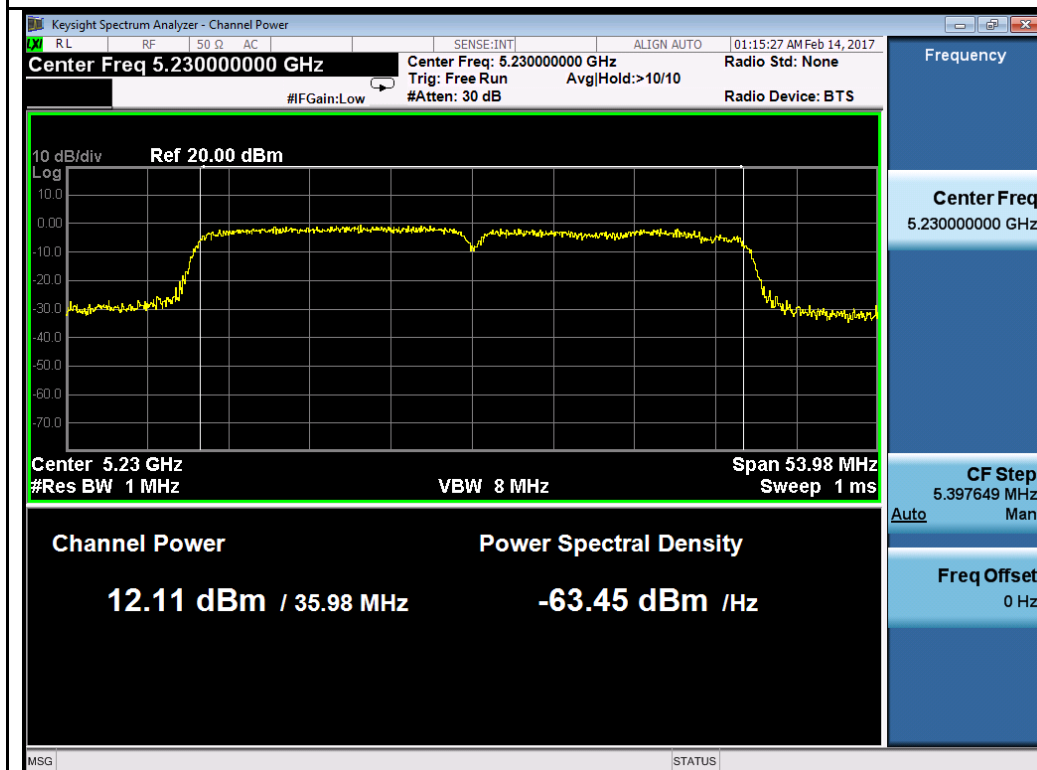
802.11n-HT20 5200M



802.11n-HT20 5240M

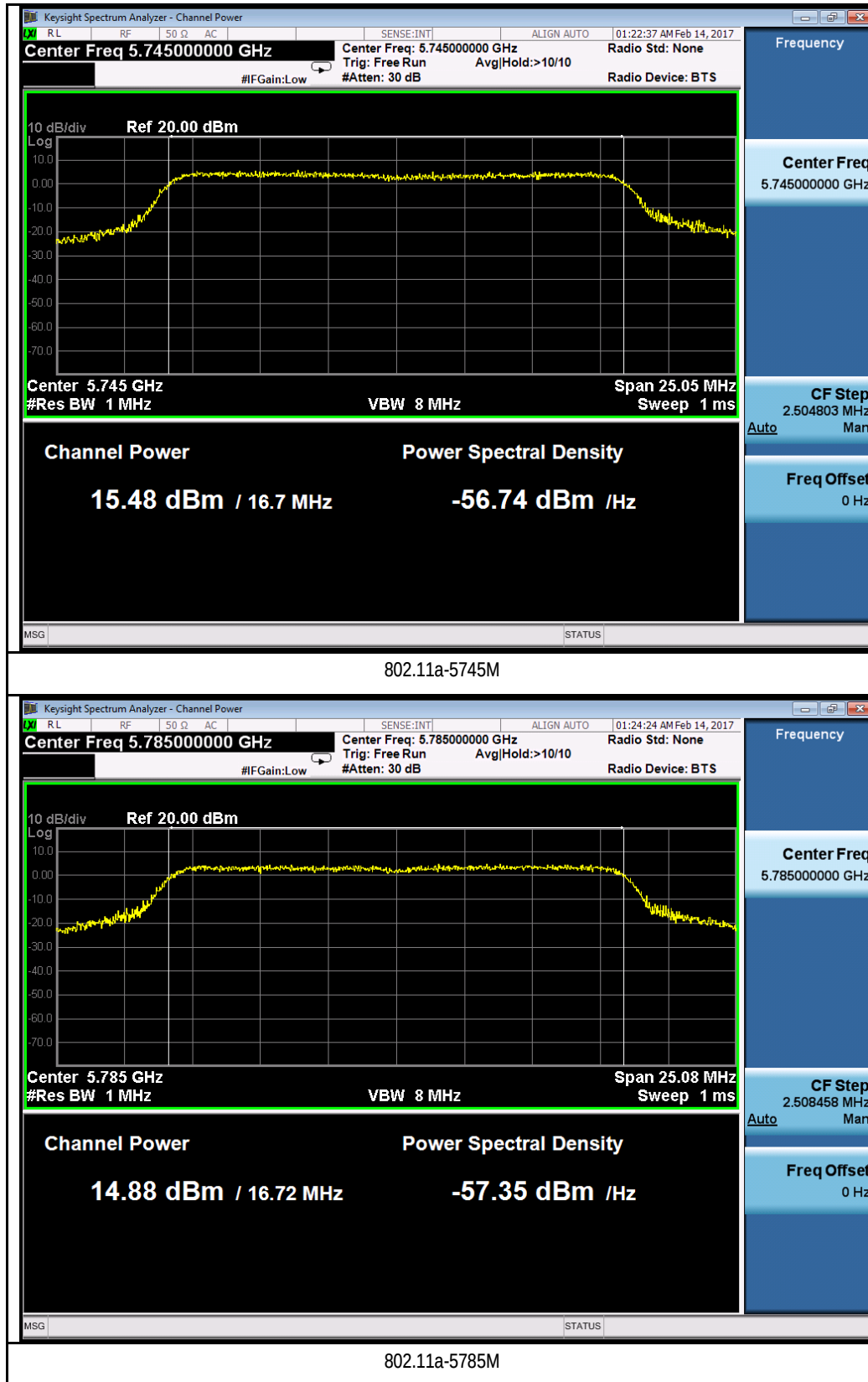


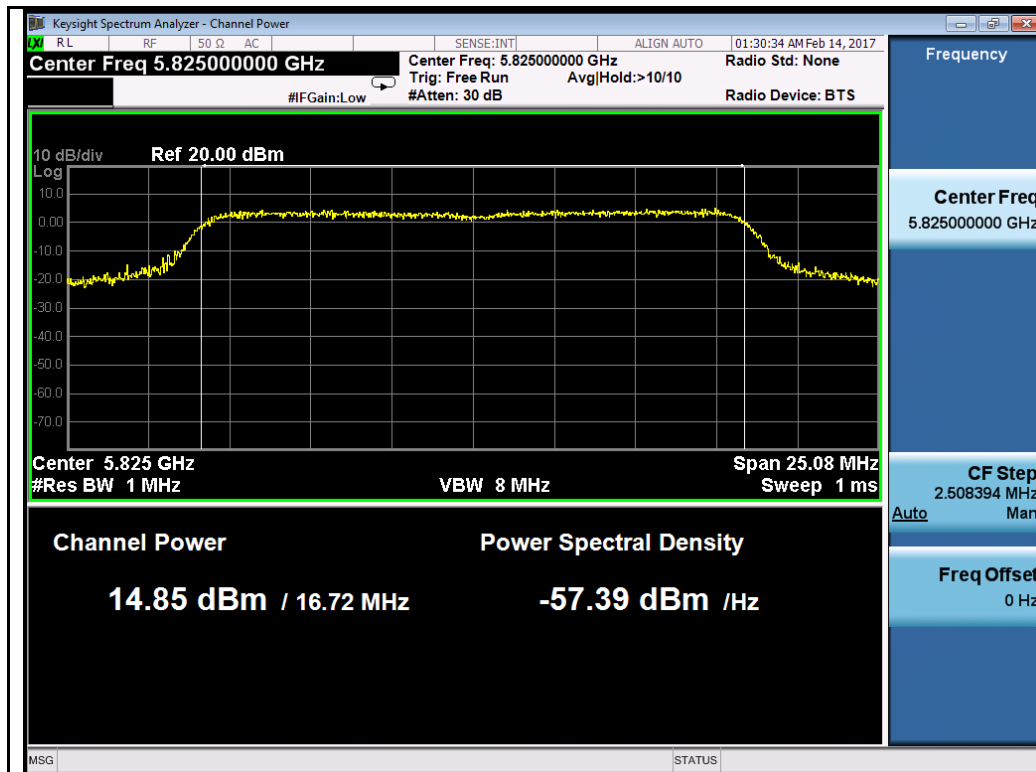
802.11n-HT40 5190M



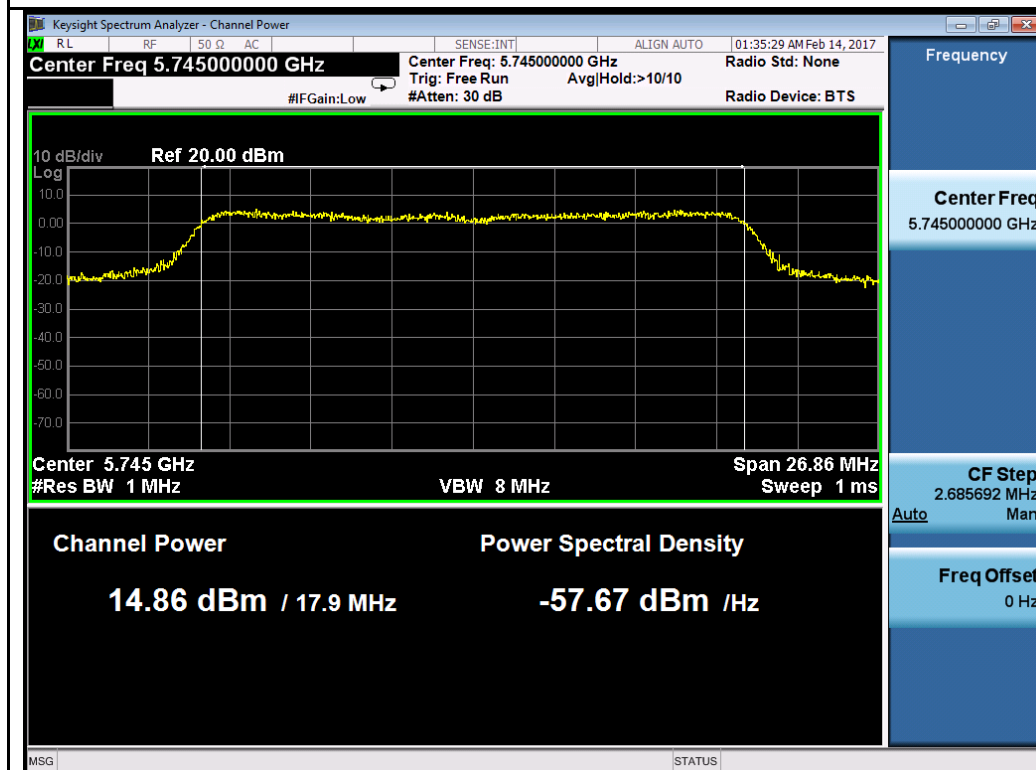
802.11n-HT40 5230M

Test Plot for W58:

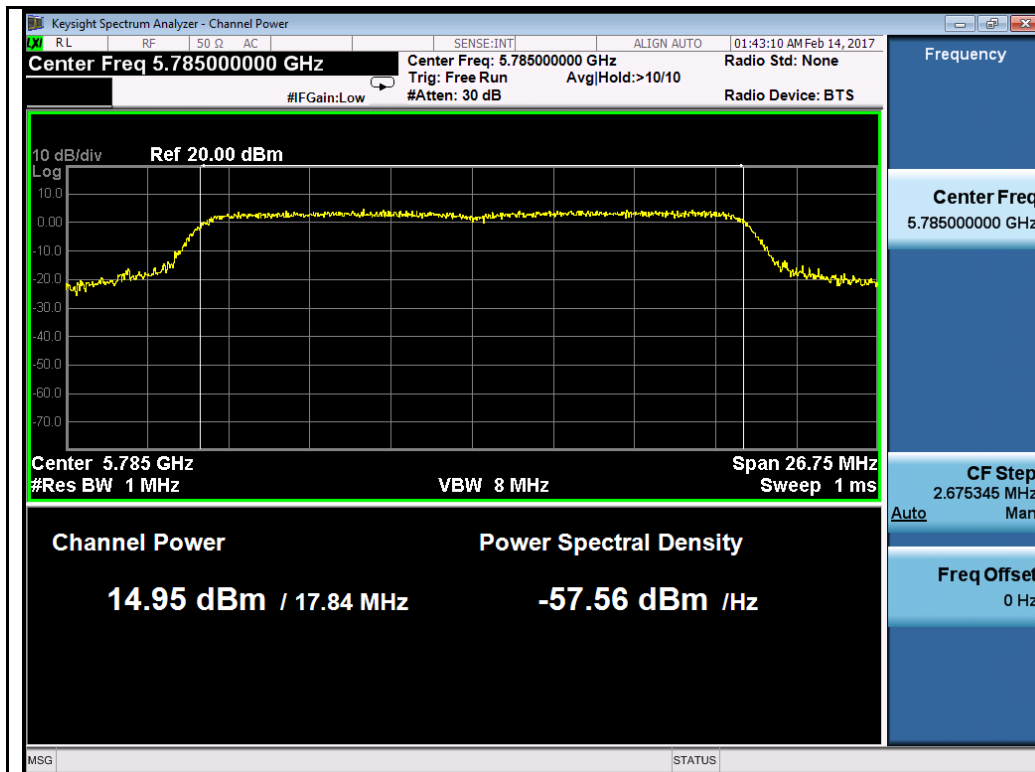




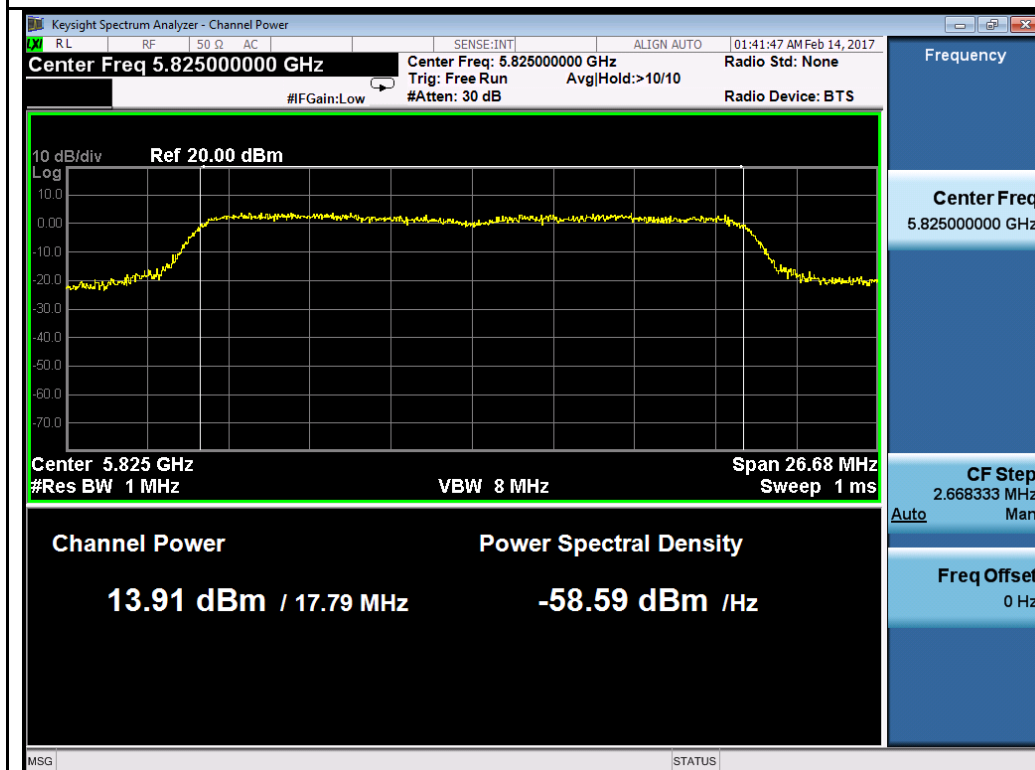
802.11a-5825M



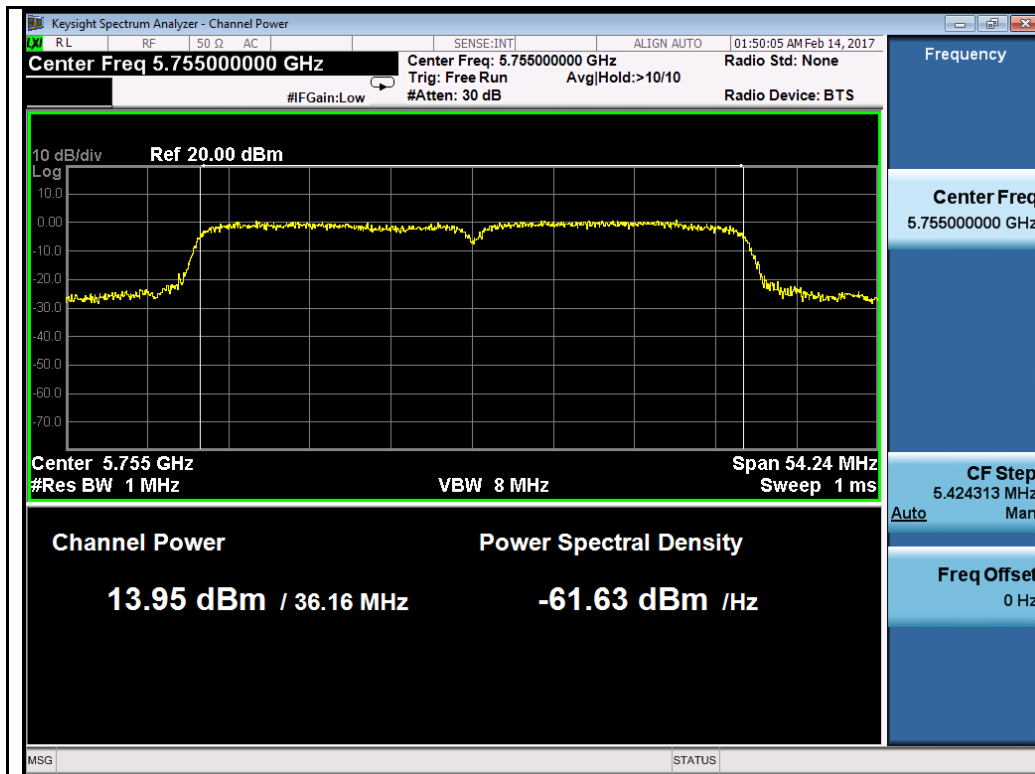
802.11n-HT20 5745M



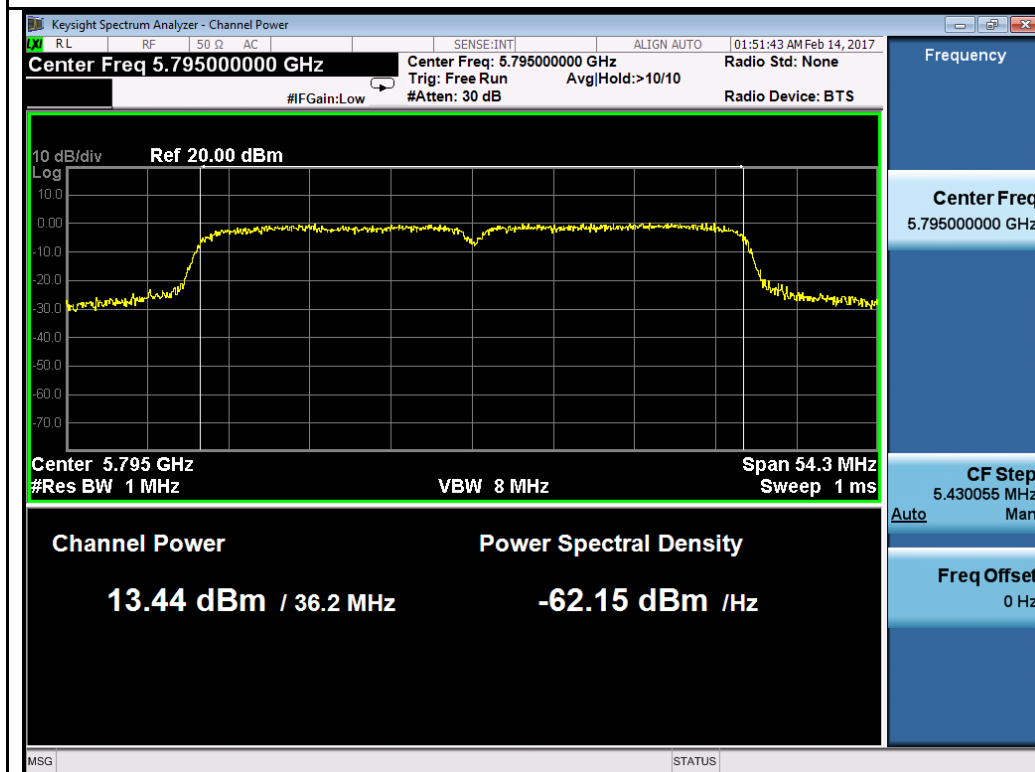
802.11n-HT20 5785M



802.11n-HT20 5825M



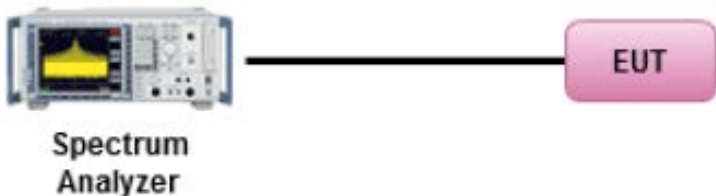
802.11n-HT40 5755M



802.11n-HT40 5795M

10.4 Peak Spectral Density

Requirement(s):

Spec	Item	Requirement	Applicable
§ 15.407	a)(1)(i)	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.	☒
	a)(3)	For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.	☒
Test Setup			
Test Procedure	789033 D02 General UNII Test Procedures New Rules v01r02, II.F. Method SA-1 <u>Maximum spectral density measurement procedure</u> - Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal. - Set RBW = 1 MHz - Set VBW ≥ 3 MHz - Detector = RMS. - Sweep time = auto couple. - Trace mode = max hold. - Trace average at least 100 traces in power averaging - Use the peak marker function to determine the maximum amplitude level within the RBW. Apply correction to the result if different RBW is used.		
Test Date	02/15/2017	Environmental condition	Temperature 22°C Relative Humidity 42% Atmospheric Pressure 1020mbar
Remark	-		
Result	☒ Pass ☐ Fail		

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test was done by Rachana Khanduri at RF test site.

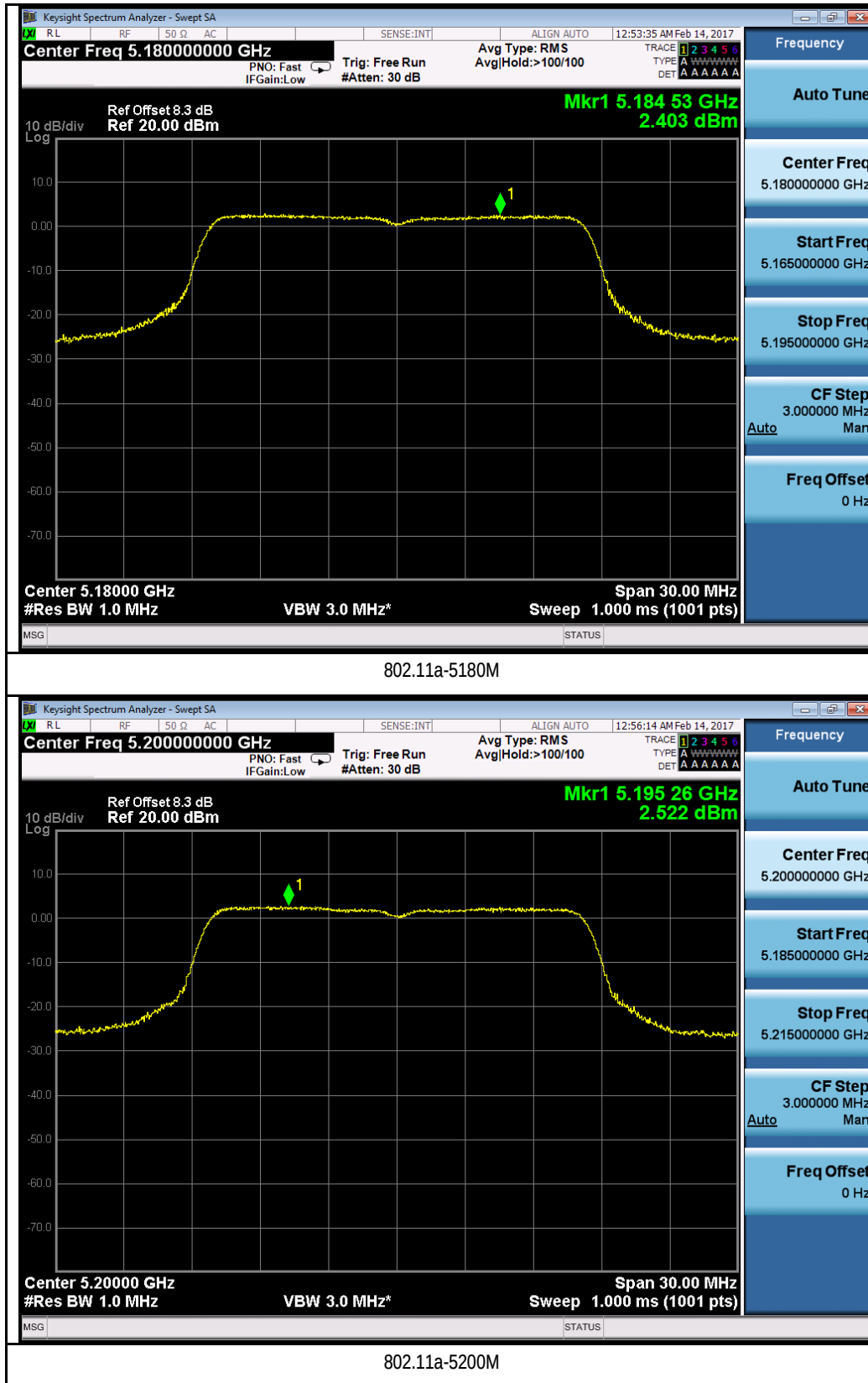
PSD measurement result for 5.2GHz

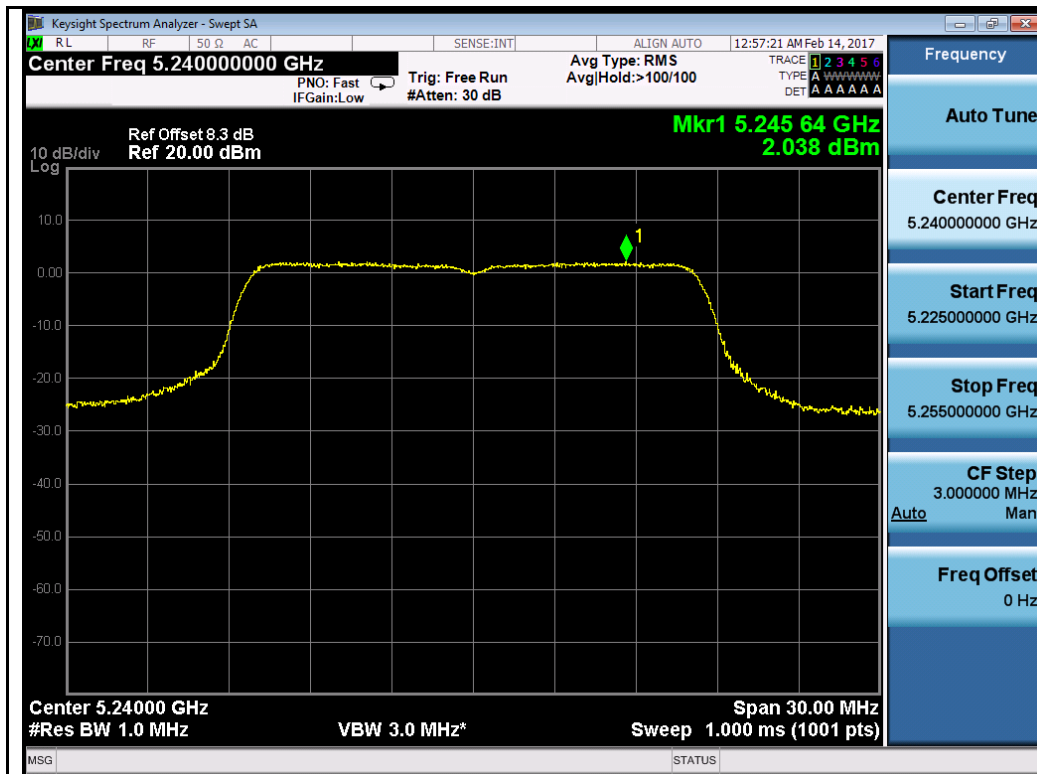
Type	Test mode	Freq (MHz)	CH	Conducted PSD (dBm/MHz)	Limit (dBm)	Result
PSD	802.11a	5180	Low	2.40	17	Pass
	802.11a	5200	Mid	2.52	17	Pass
	802.11a	5240	High	2.04	17	Pass
	802.11n-20	5180	Low	2.19	17	Pass
	802.11n-20	5200	Mid	2.12	17	Pass
	802.11n-20	5240	High	1.71	17	Pass
	802.11n-40	5190	Low	-2.33	17	Pass
	802.11n-40	5230	High	-2.05	17	Pass

PSD measurement result for 5.8GHz

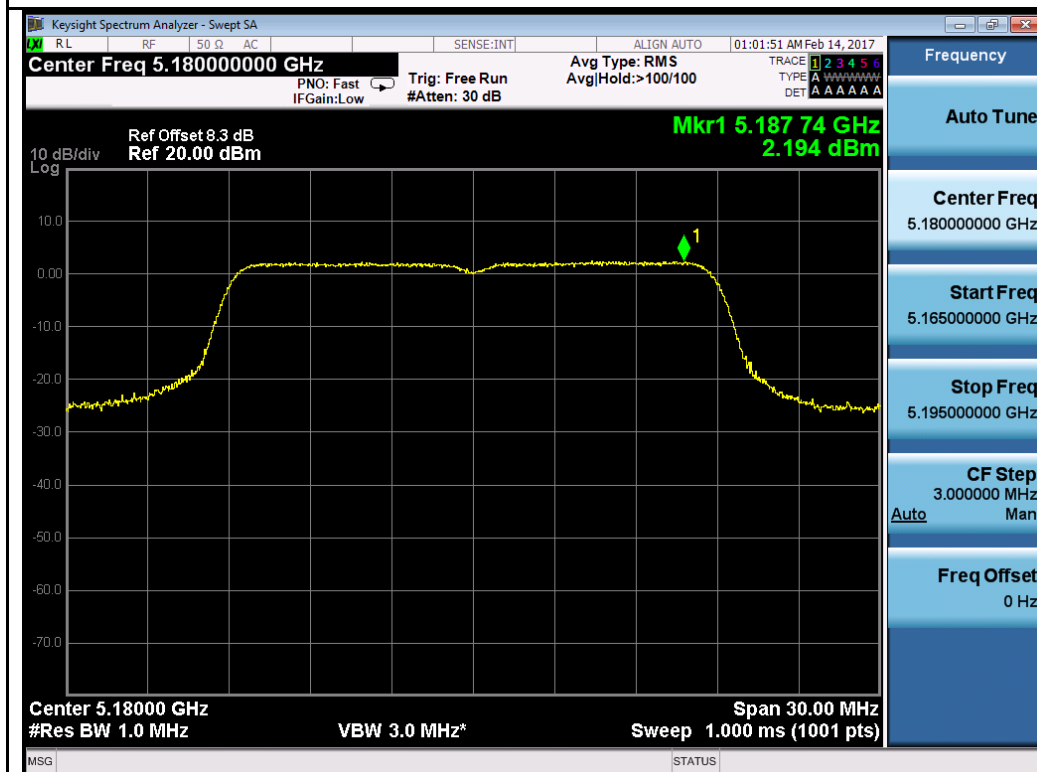
Test mode	Freq (MHz)	CH	Conducted PSD (dBm/100kHz)	Correction factor (dB)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
802.11a	5745	Low	-5	6.99	1.99	30	Pass
	5785	Mid	-4.94	6.99	2.05	30	Pass
	5825	High	-5.75	6.99	1.24	30	Pass
802.11n-20	5745	Low	-5.02	6.99	1.97	30	Pass
	5785	Mid	-5.35	6.99	1.64	30	Pass
	5825	High	-6.27	6.99	0.72	30	Pass
802.11n-40	5755	Low	-9.29	6.99	-2.30	30	Pass
	5795	High	-9.83	6.99	-2.84	30	Pass
Note	BW correction factor = $10\log(500\text{kHz}/\text{RBW})$, RBW was set to 100kHz during test.						

Test Plot for W52:

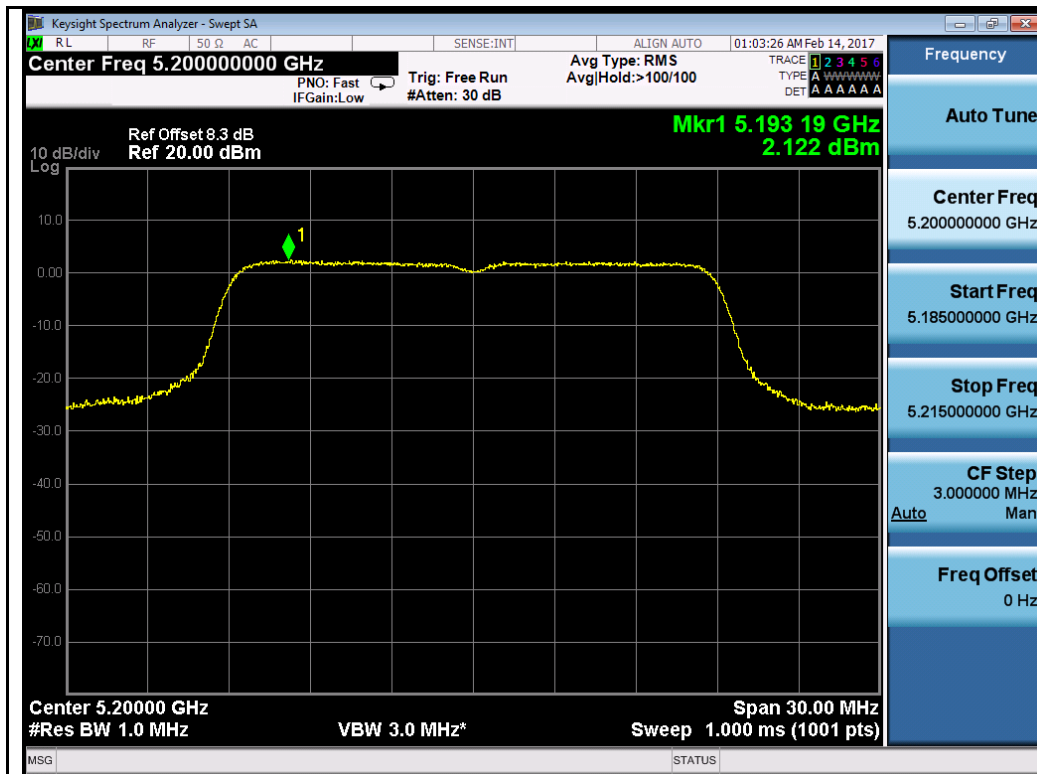




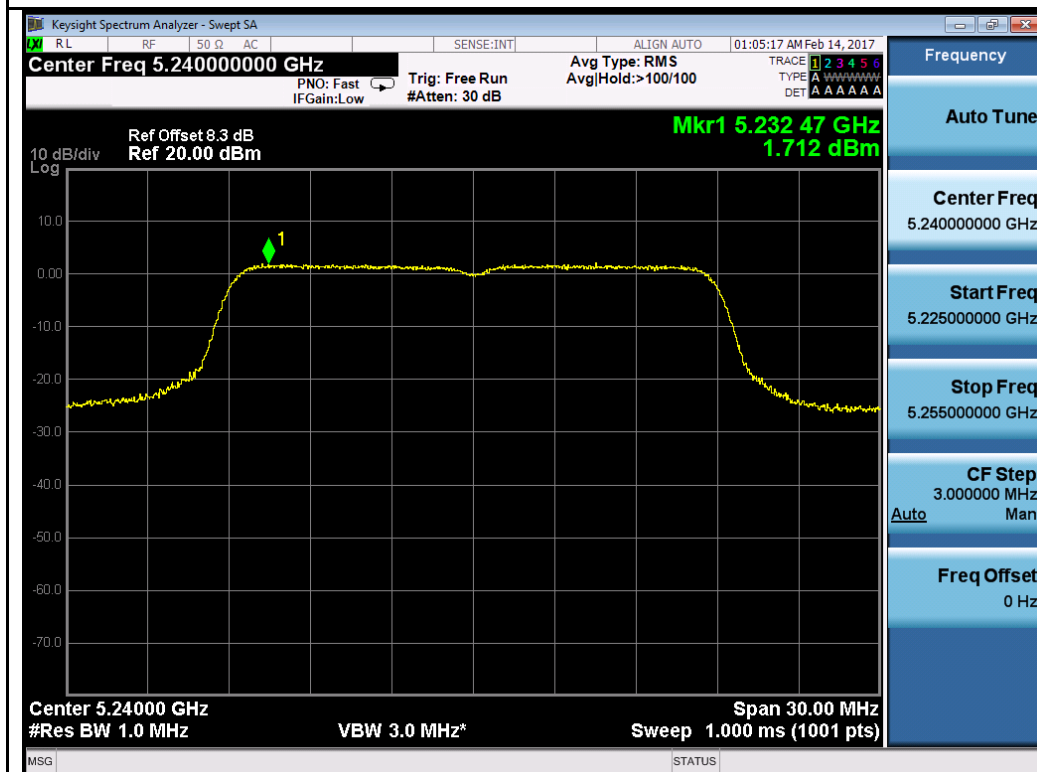
802.11a-5240M



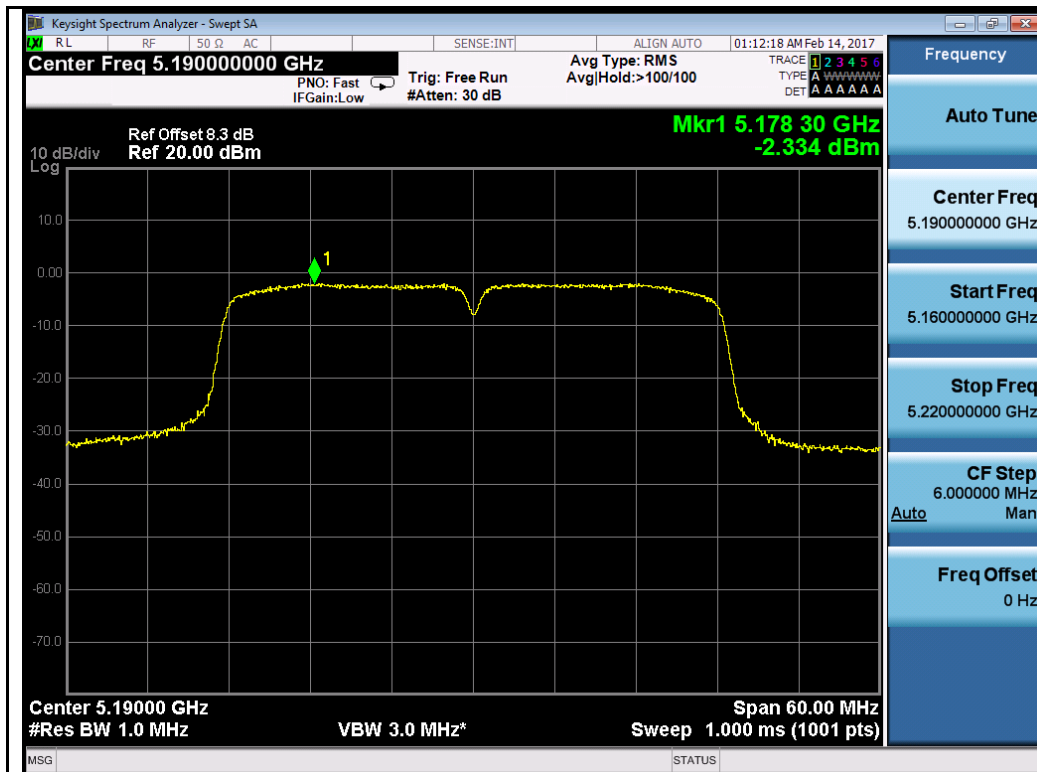
802.11n-HT20 5180M



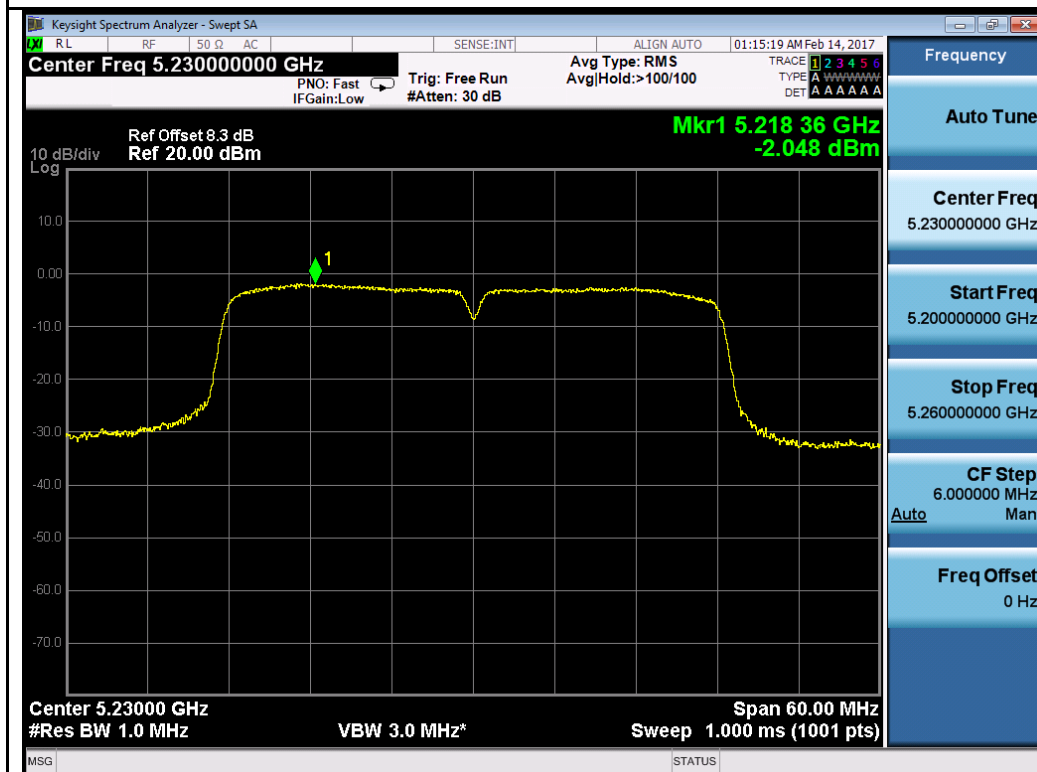
802.11n-HT20 5200M



802.11n-HT20 5240M

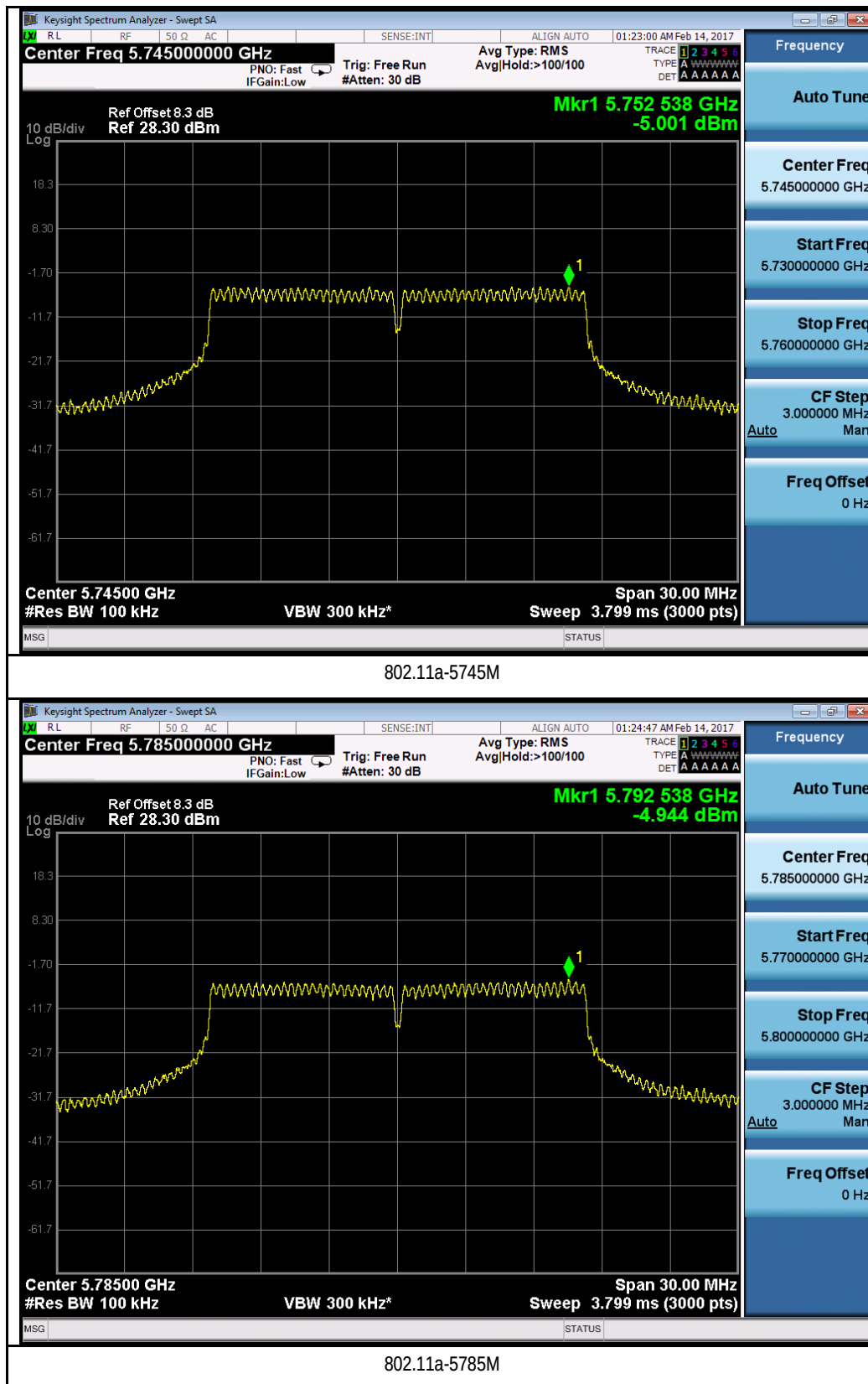


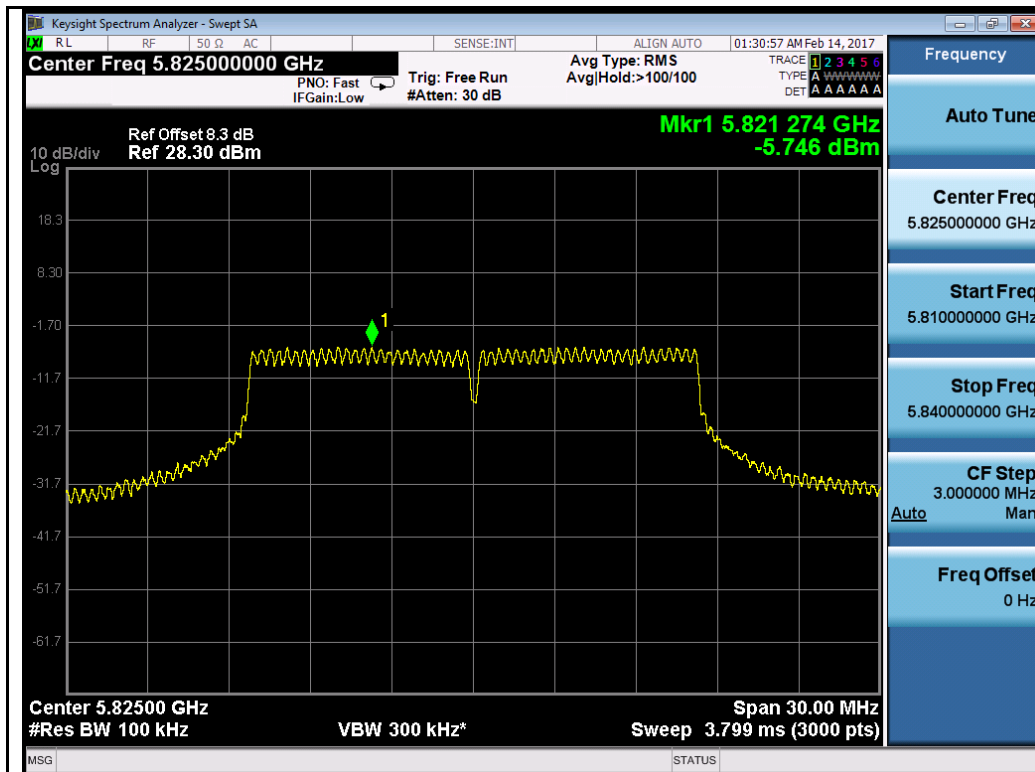
802.11n-HT40 5190M



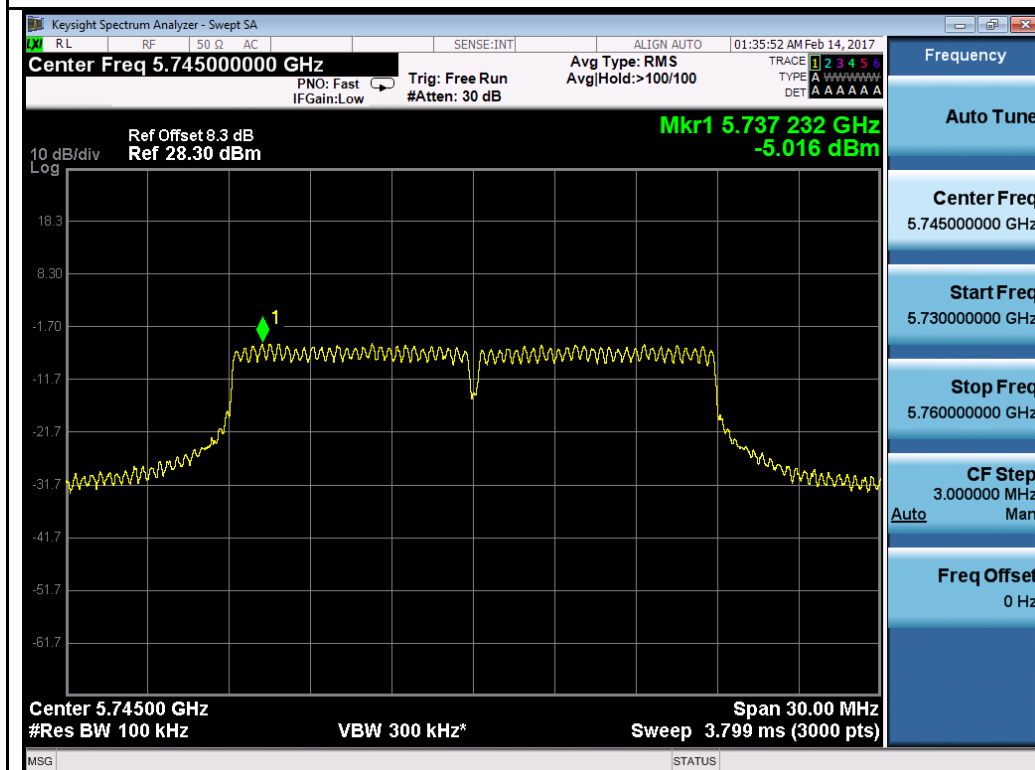
802.11n-HT40 5230M

Test Plot for W58:

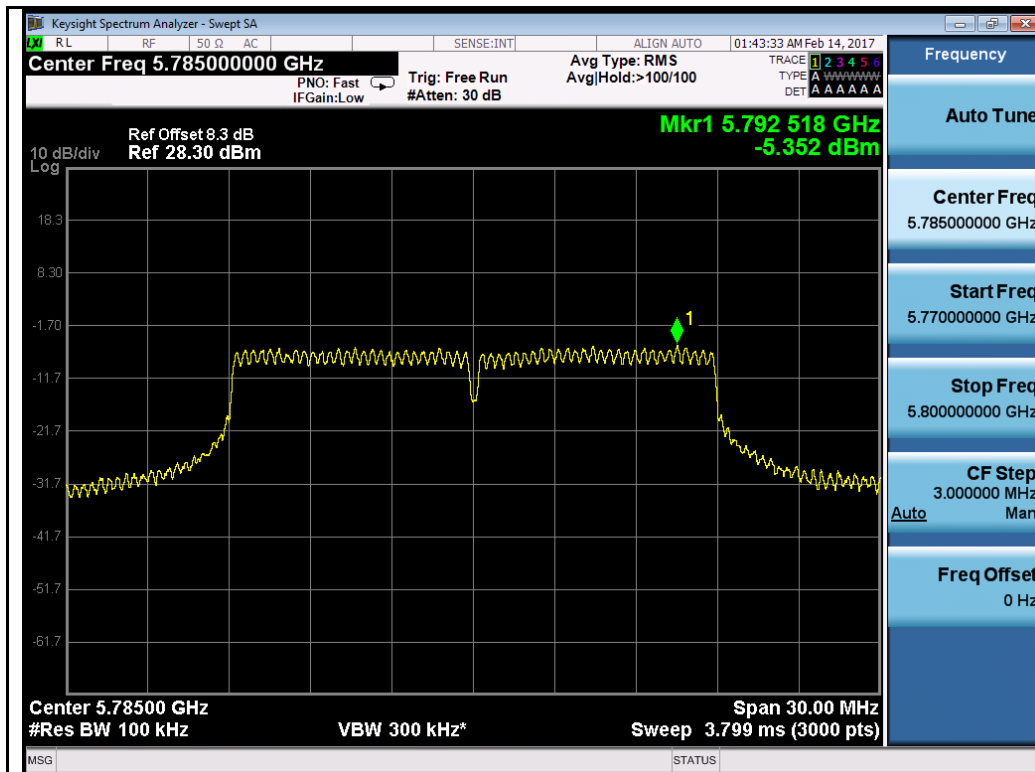




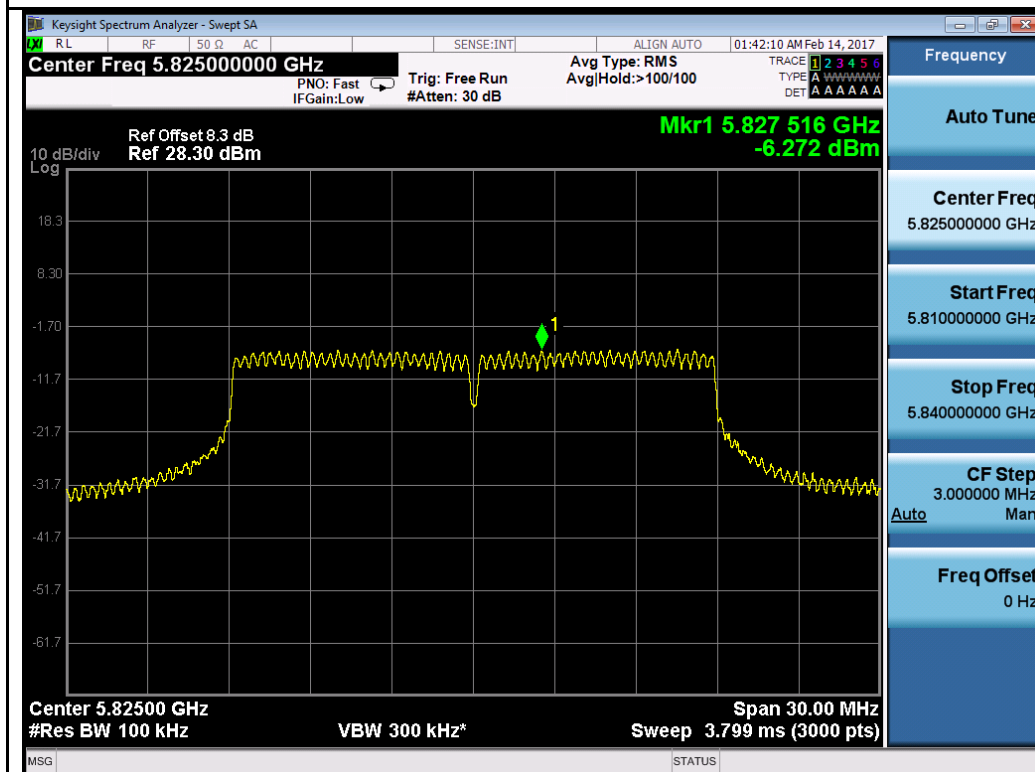
802.11a-5825M



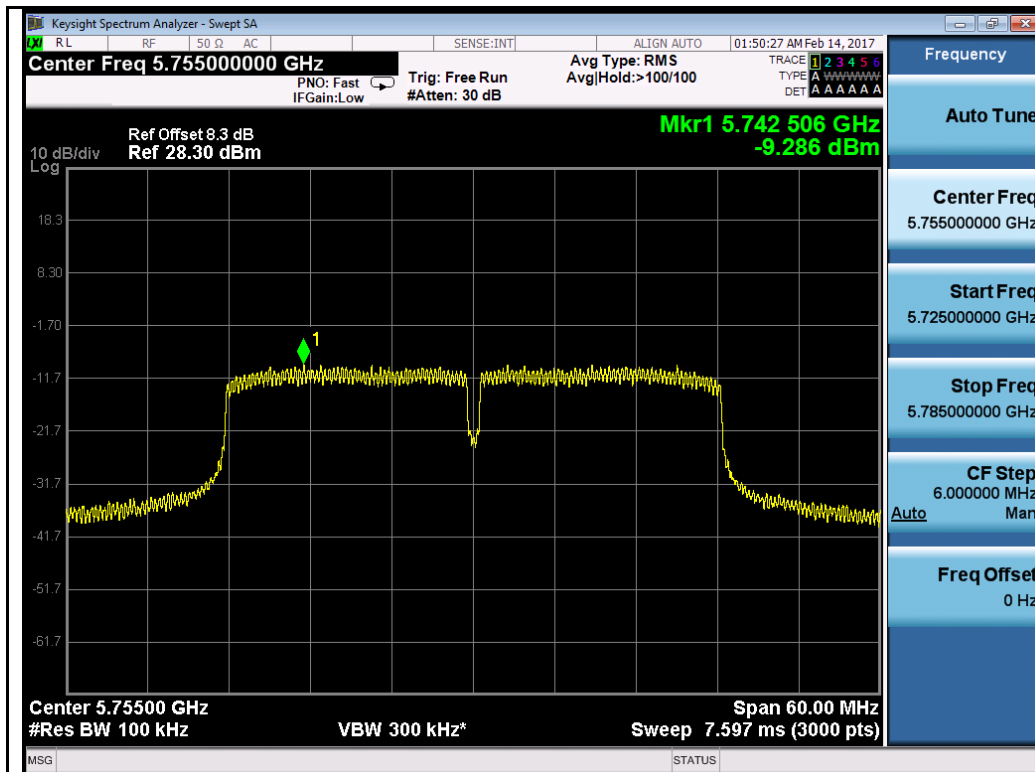
802.11n-HT20 5745M



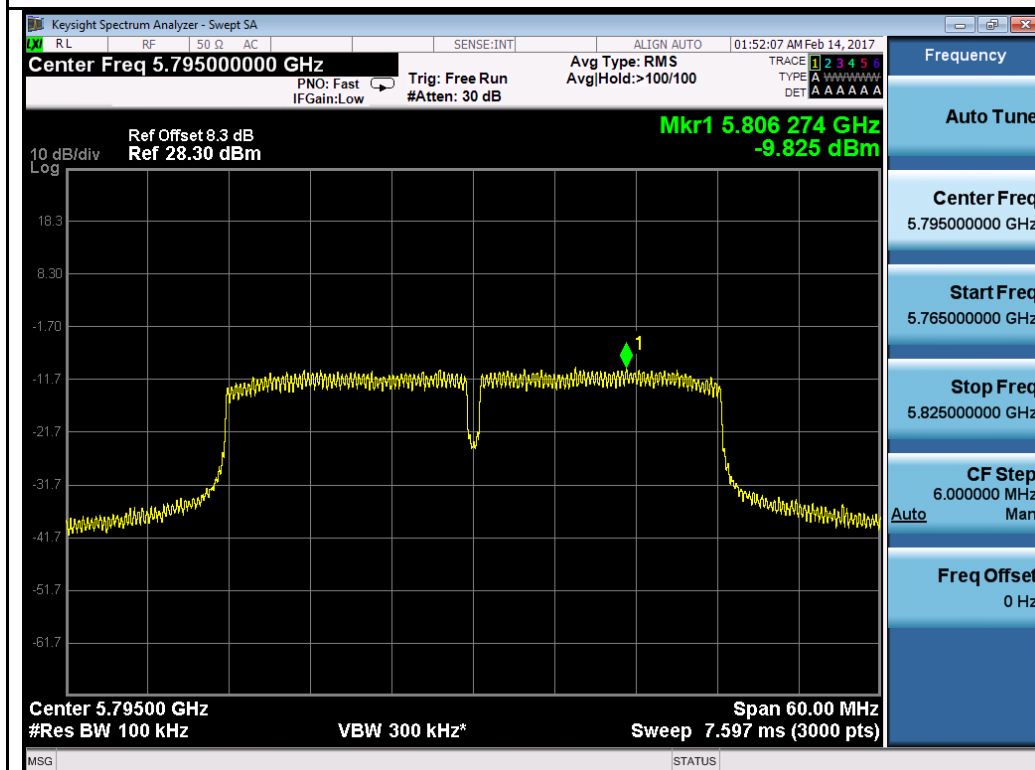
802.11n-HT20 5785M



802.11n-HT20 5825M



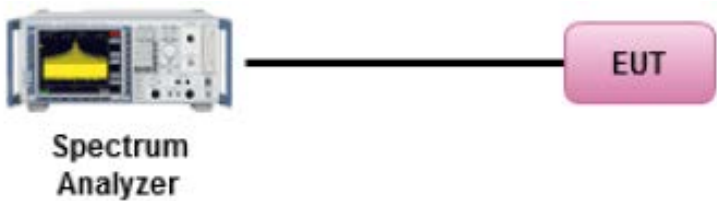
802.11n-HT40 5755M



802.11n-HT40 5795M

10.5 Band Edge and Emission Mask Measurement

Requirement(s):

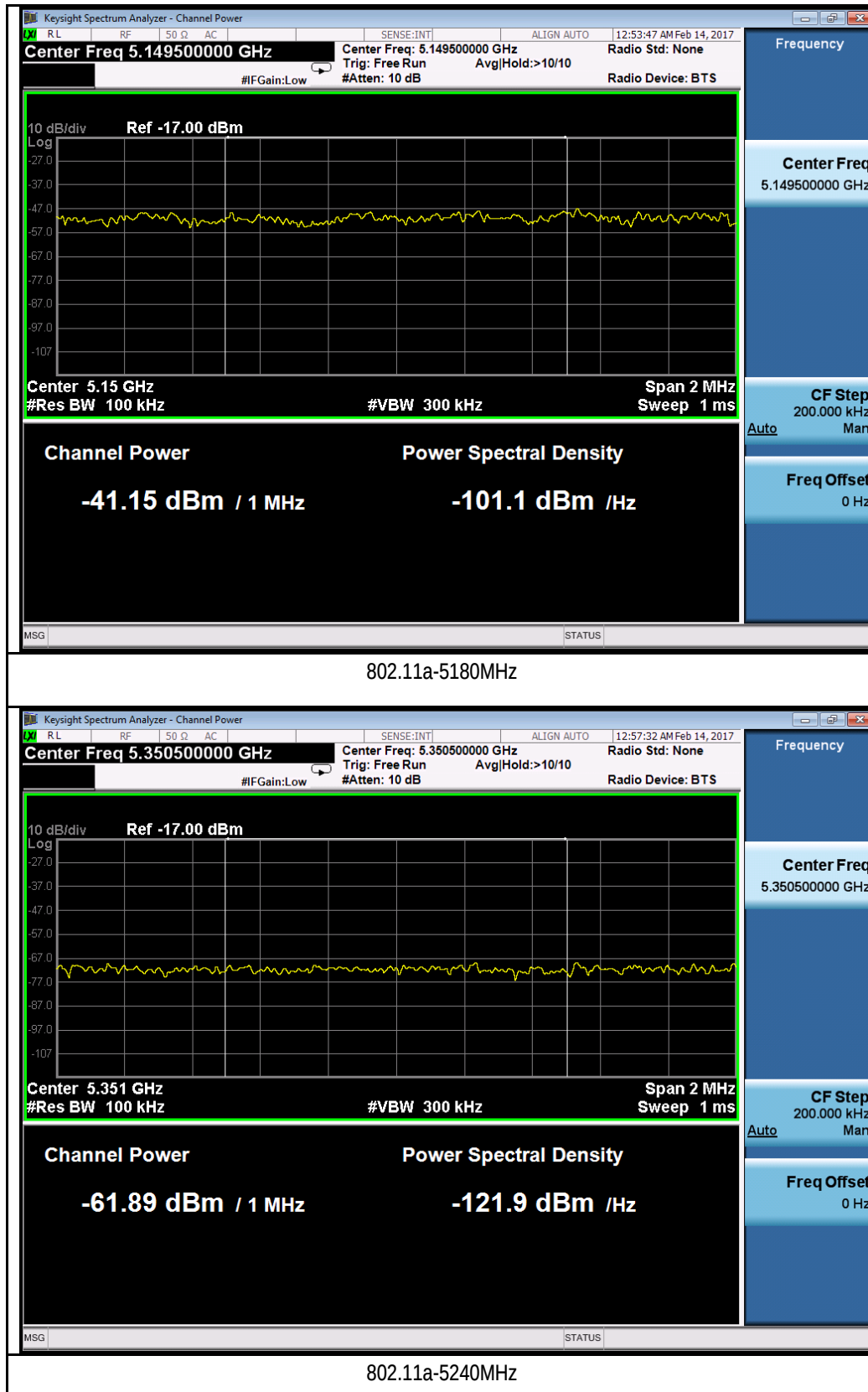
Spec	Item	Requirement	Applicable
47CFR§ 15.407(b)(2), 15.407(b)(6)	(1)	For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.	☒
	(4)	For transmitters operating in the 5.725-5.825 GHz band: all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	☒
Test Setup			
Procedure	789033 D02 General UNII Test Procedures New Rules v01r02, II.F. Method SA-1 <u>Band Edge measurement:</u> - For average emissions measurements, follow the procedures described in section II.G.6., "Procedures for Average Unwanted Emissions Measurements above 1000 MHz", except for the following changes: - Set RBW=100kHz - Set VBW=300kHz - Perform a band-power integration across the 1 MHz bandwidth in which the band-edge emission level is to be measured.		
Remark	Antenna gain was added to the offset.		
Result	☒ Pass ☐ Fail		

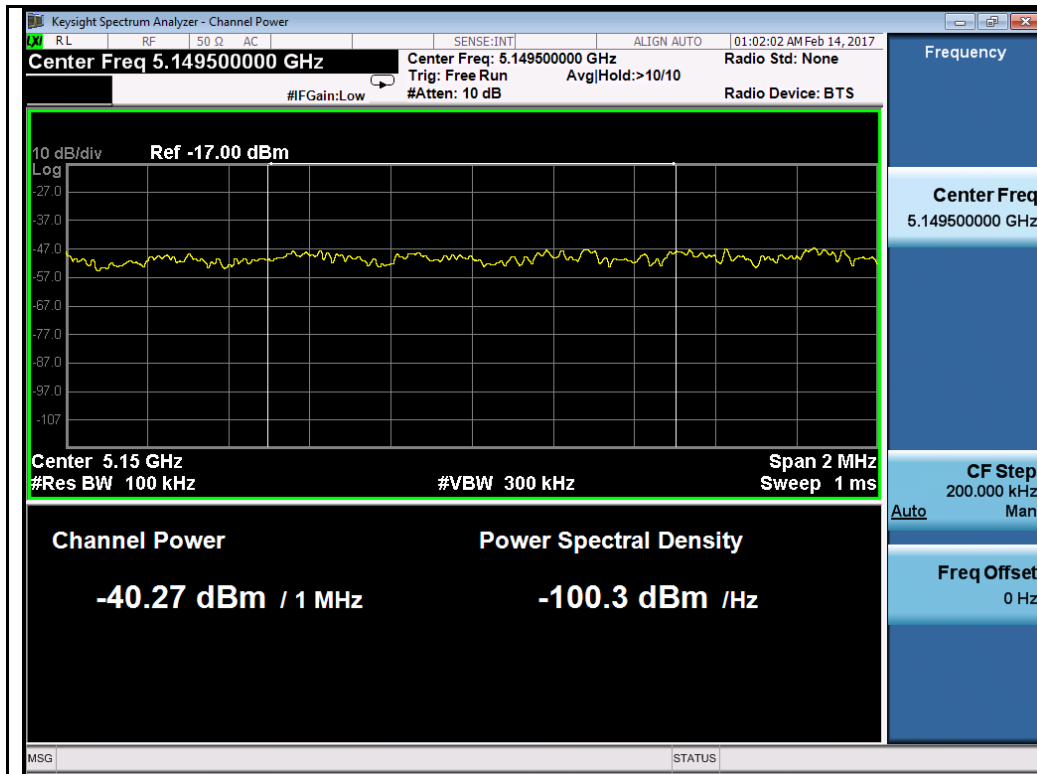
Test Data ☐ Yes (See below) ☒ N/A

Test Plot ☒ Yes (See below) ☐ N/A

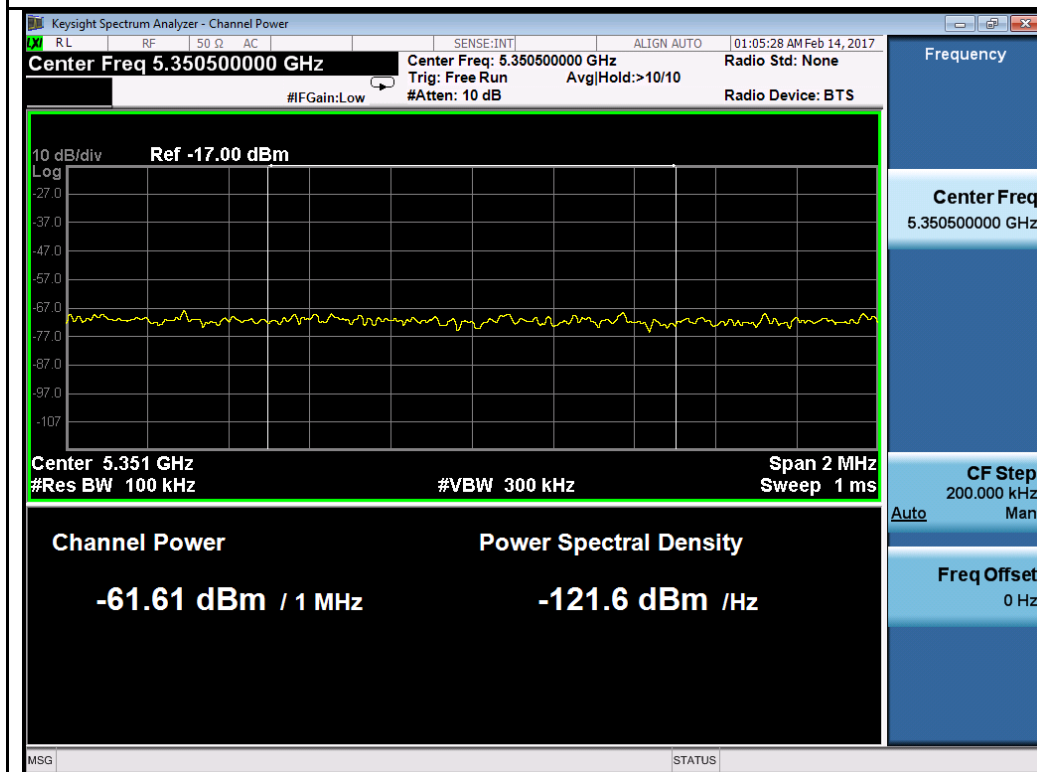
Test was done by Rachana Khanduri at RF test site.

Test Plots for W52:

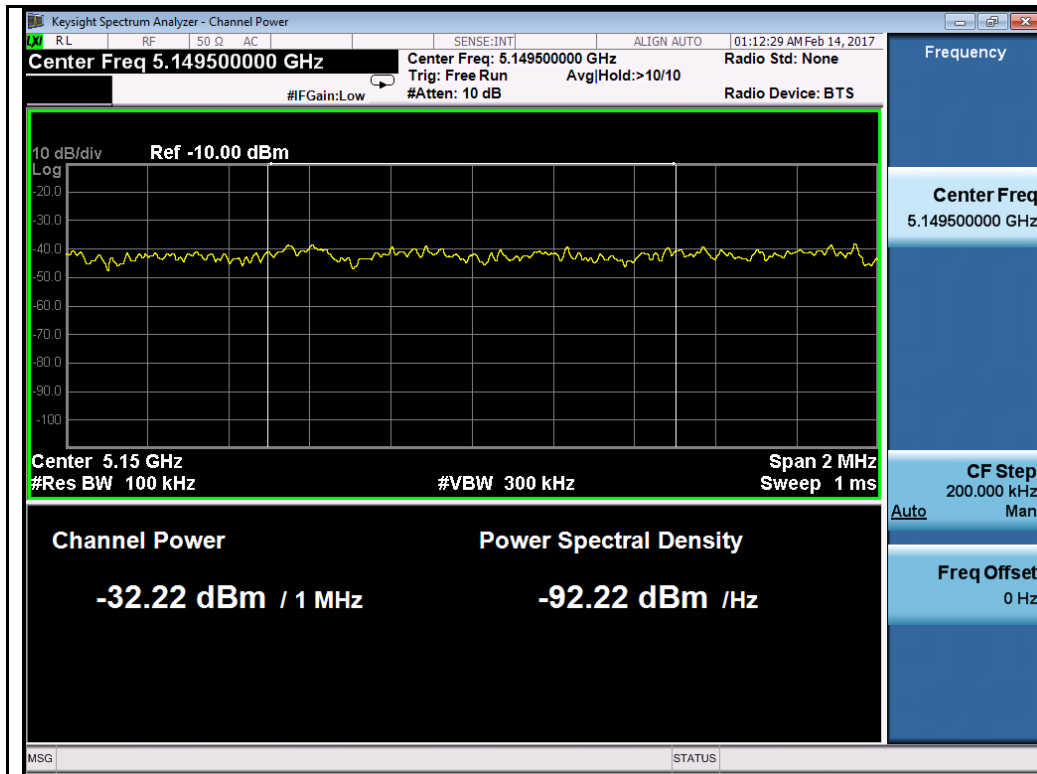




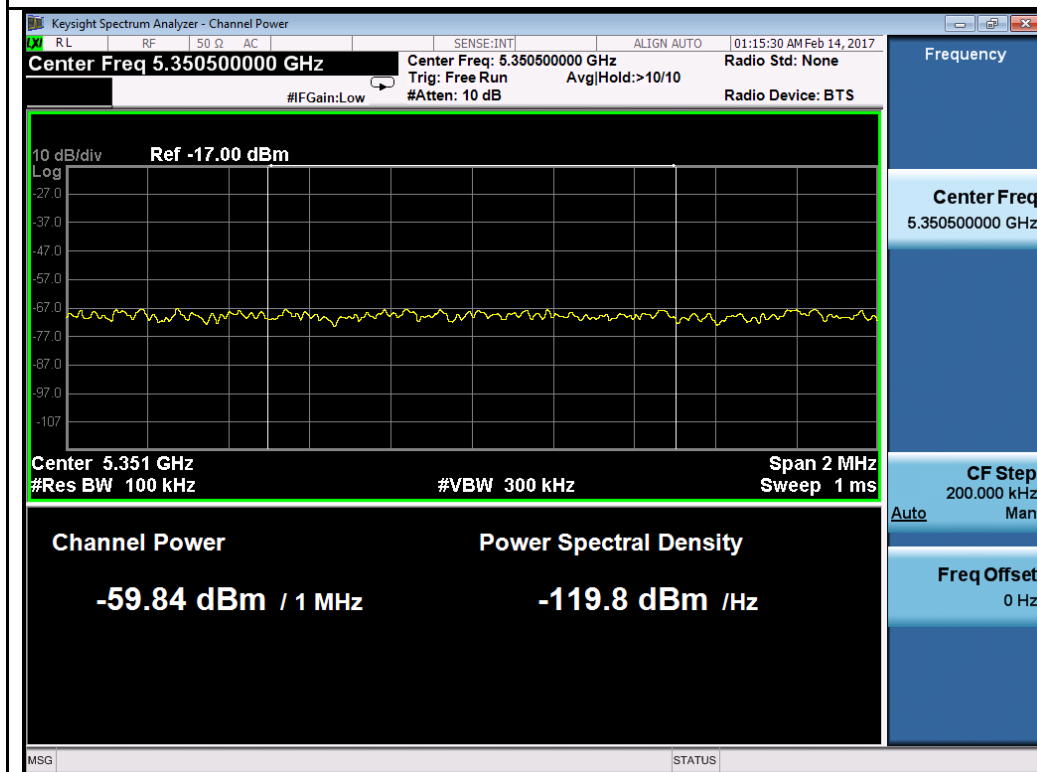
802.11n-HT20-5180MHz



802.11n-HT20-5240MHz

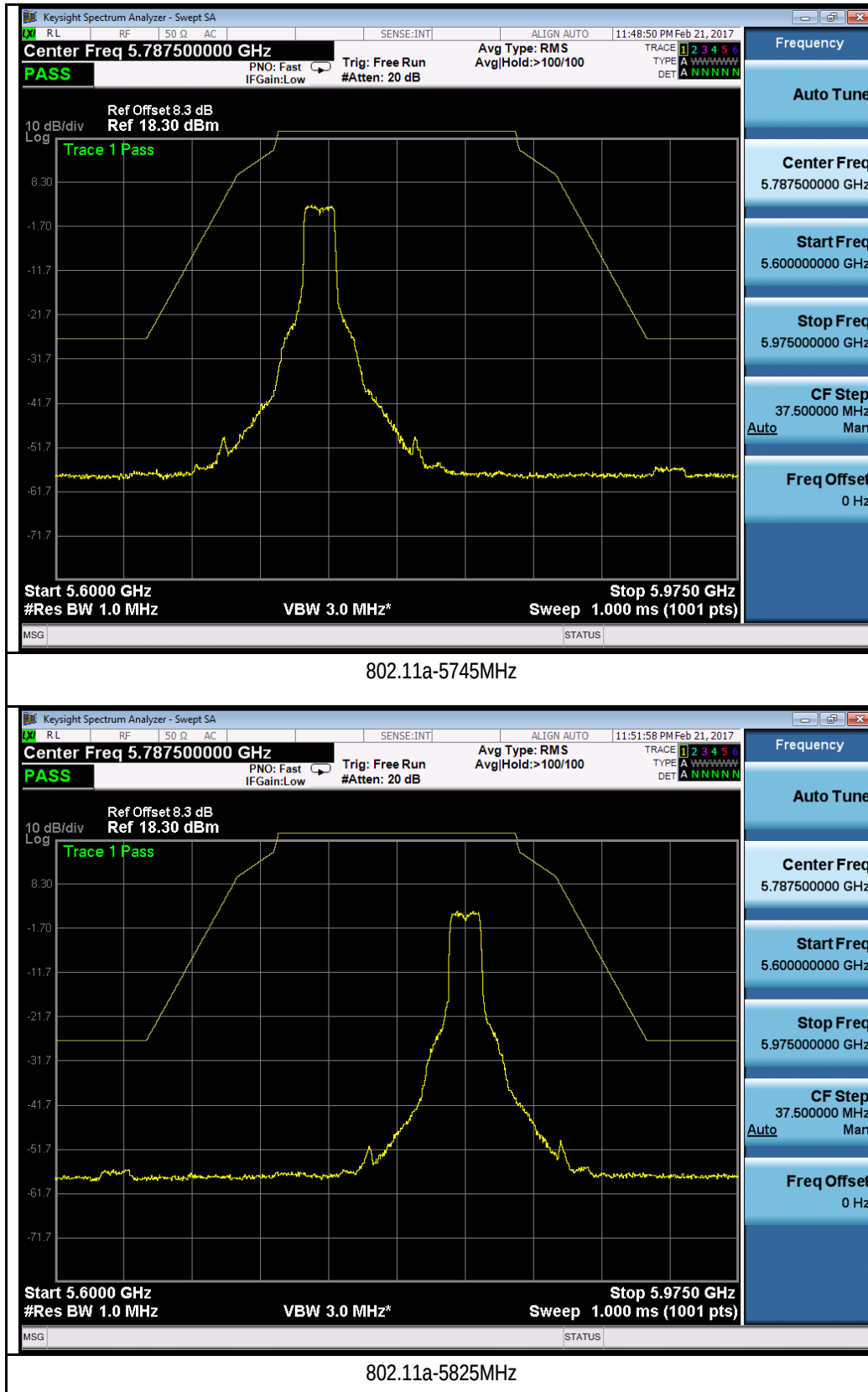


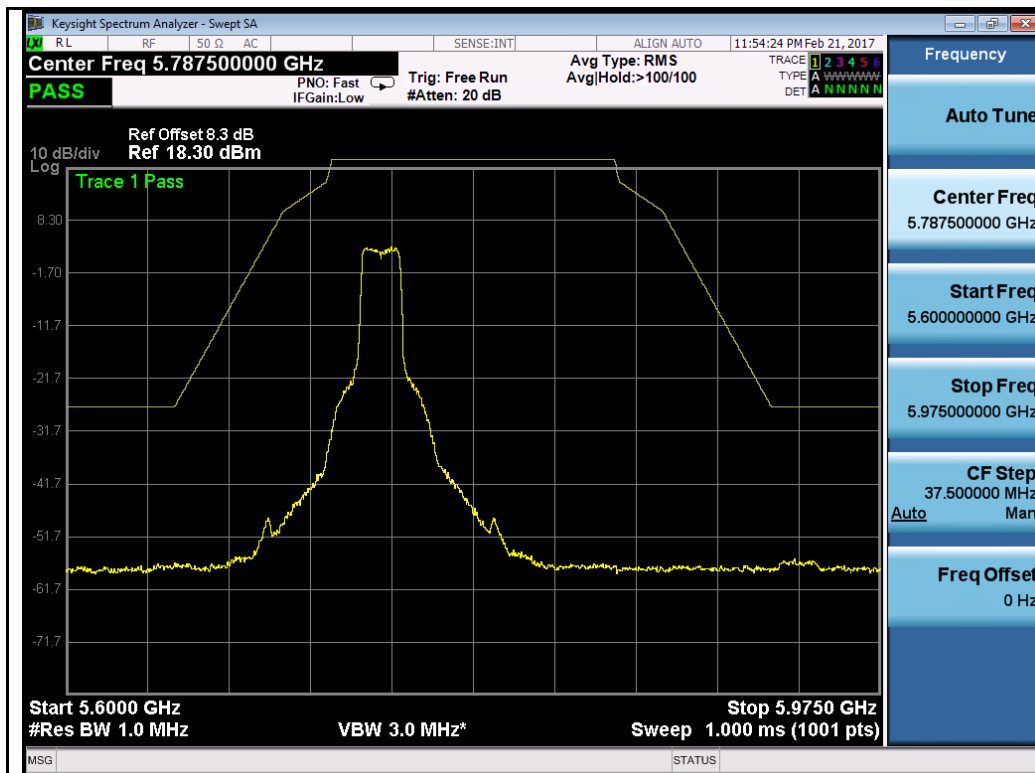
802.11n-HT40-5190MHz



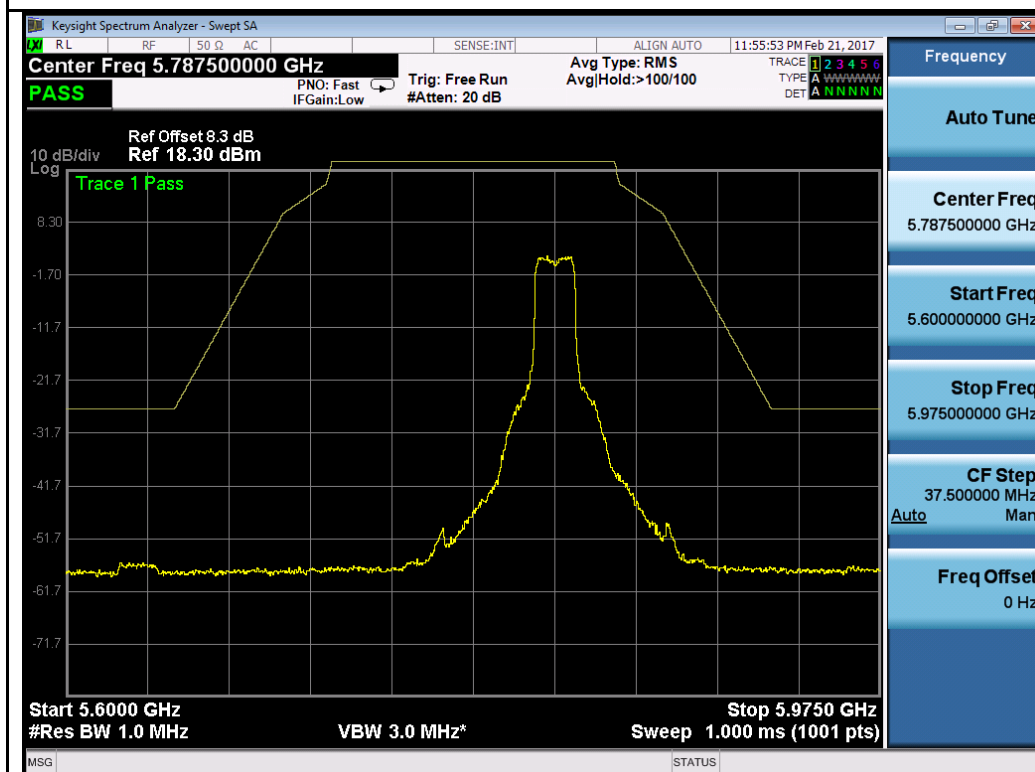
802.11n-HT40-5230MHz

Test Plots for W58:

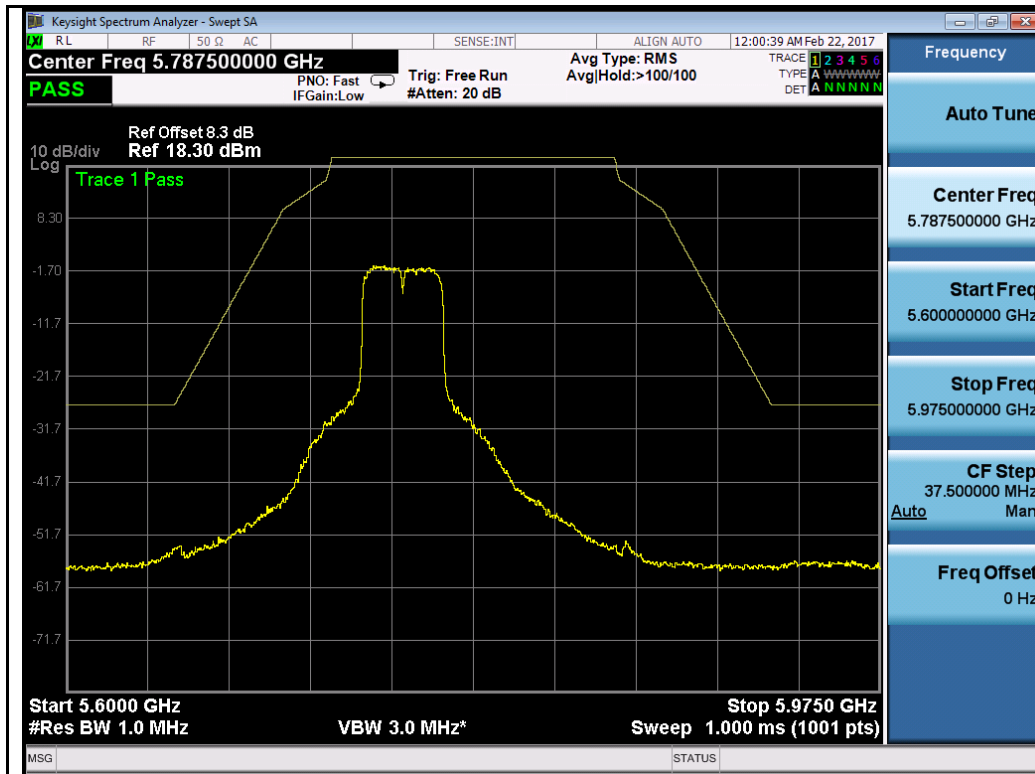




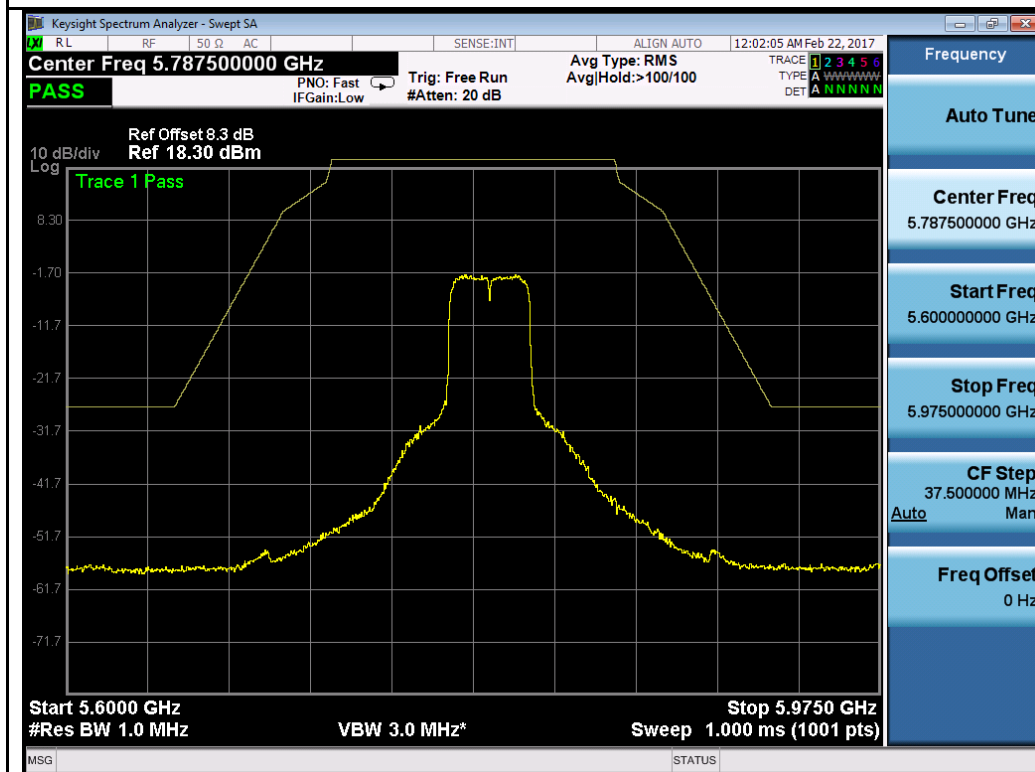
802.11n-HT20-5745MHz



802.11n-HT20-5825MHz



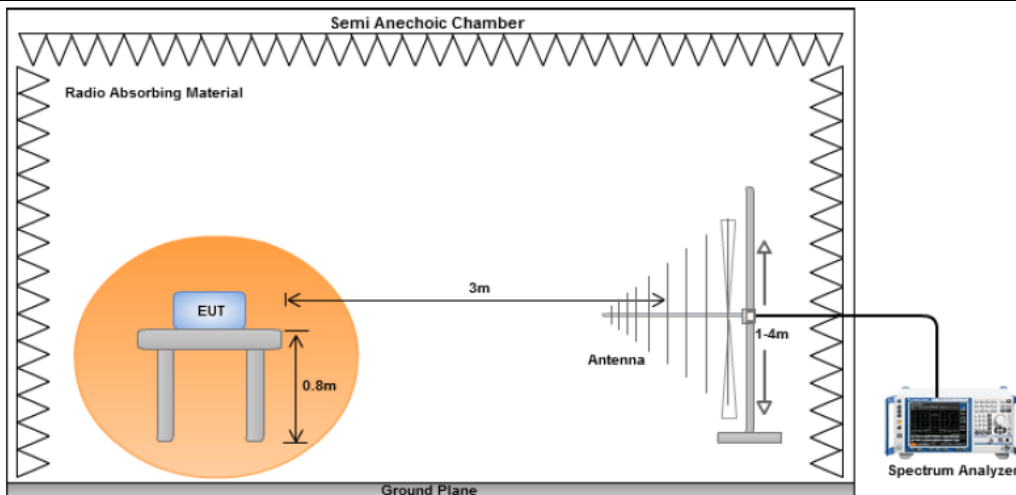
802.11n-HT40-5755MHz



802.11n-HT40-5795MHz

10.6 Radiated Emissions below 1GHz

Requirement(s):

Spec	Requirement	Applicable										
47CFR§ 15.407(b) 15.209 (a)	Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges <table><tr><th>Frequency range (MHz)</th><th>Field Strength (uV/m)</th></tr><tr><td>30 – 88</td><td>100</td></tr><tr><td>88 – 216</td><td>150</td></tr><tr><td>216 960</td><td>200</td></tr><tr><td>Above 960</td><td>500</td></tr></table>	Frequency range (MHz)	Field Strength (uV/m)	30 – 88	100	88 – 216	150	216 960	200	Above 960	500	☒
Frequency range (MHz)	Field Strength (uV/m)											
30 – 88	100											
88 – 216	150											
216 960	200											
Above 960	500											
Test Setup												
Procedure	1. The EUT was switched on and allowed to warm up to its normal operating condition. 2. The test was carried out at the selected frequency points obtained from the EUT characterisation. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner: a. Vertical or horizontal polarisation (whichever gave the higher emission level over a full rotation of the EUT) was chosen. b. The EUT was then rotated to the direction that gave the maximum emission. c. Finally, the antenna height was adjusted to the height that gave the maximum emission. 3. A Quasi-peak measurement was then made for that frequency point. 4. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.											
Remark	The EUT was scanned up to 1GHz. Both horizontal and vertical polarities were investigated. The results show only the worst case.											
Result	☒ Pass ☐ Fail											

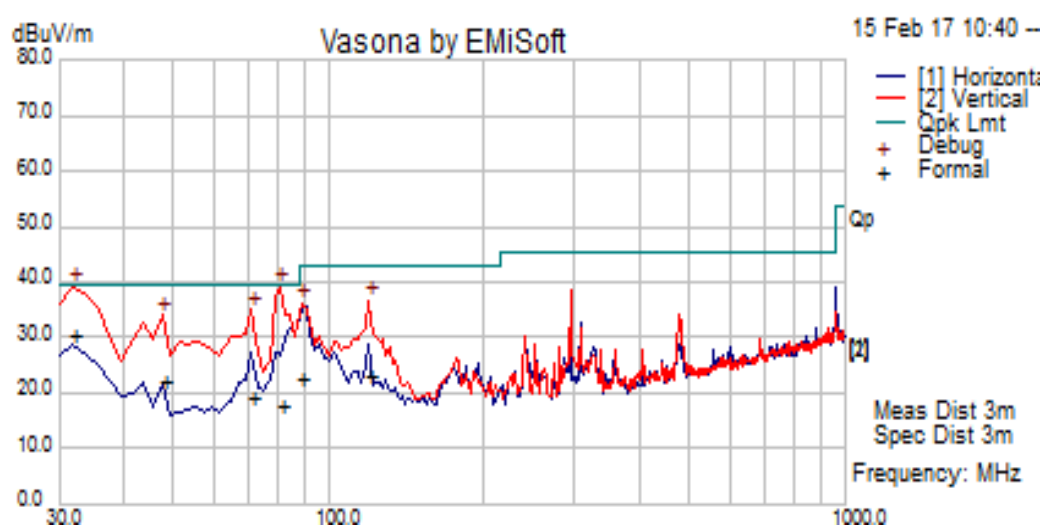
Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test was done by Rachana Khanduri at 10m chamber.

Radiated Emission Test Results (Below 1GHz)

Test specification	below 1GHz				
Environmental Conditions:	Temp (°C):	26	Res ult	Pass	
	Humidity (%)	47			
	Atmospheric (mbar):	1020			
Mains Power:	120VAC, 60Hz				
Tested by:	Rachana Khanduri				
Test Date:	02/15/2017				
Remarks:	802.11n40, 5755MHz				

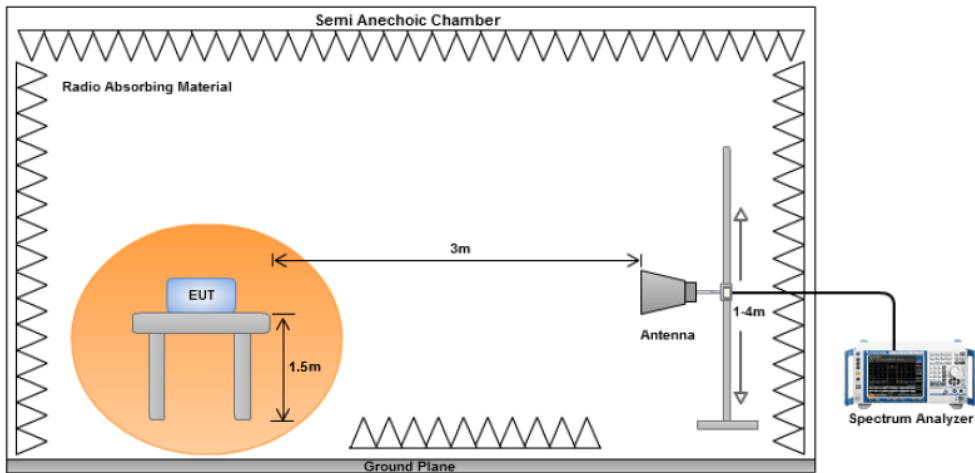


Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
31.94	45.02	1.03	-15.61	30.44	Quasi Max	V	179	93	39.50	-9.06	Pass
80.63	44.44	1.53	-28.46	17.50	Quasi Max	V	337	152	39.50	-22.00	Pass
70.99	45.71	1.48	-28.16	19.03	Quasi Max	V	118	205	39.50	-20.47	Pass
47.74	47.48	1.29	-26.49	22.27	Quasi Max	V	104	289	39.50	-17.23	Pass
119.39	43.91	1.80	-22.76	22.95	Quasi Max	V	211	59	43.00	-20.05	Pass
88.46	49.19	1.58	-28.11	22.66	Quasi Max	V	196	188	43.00	-20.34	Pass

Note: Both horizontal and vertical polarities were investigated. The results above show only the worst case.

10.7 Radiated Spurious Emissions above 1GHz

Requirement(s):

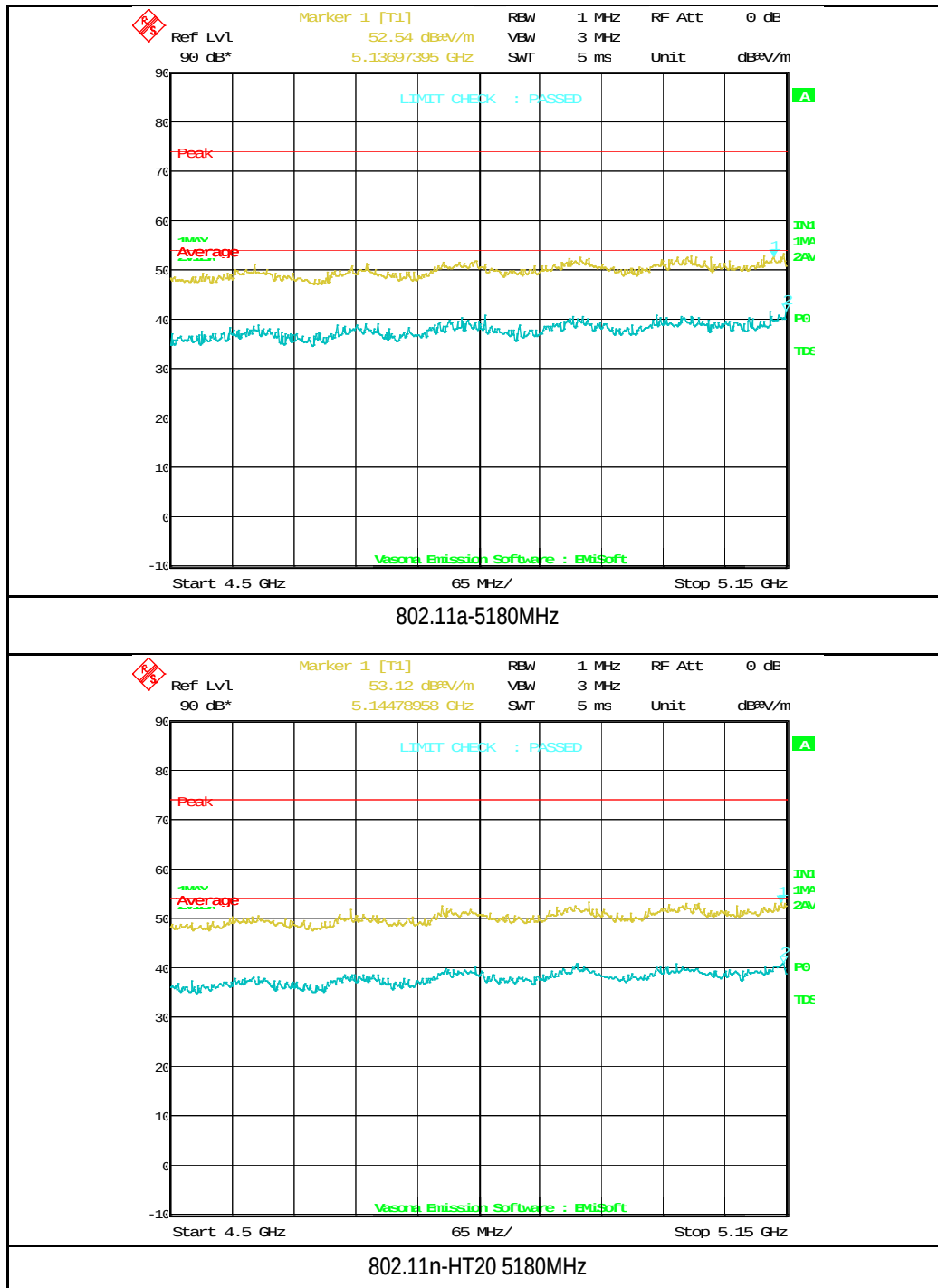
Spec	Item	Requirement	Applicable
47CFR§ 15.407(b)(2), 15.407(b)(6)	(1)	For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.	☒
	(2)	For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.	☐
	(3)	For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.	☐
	(4)	For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz.	☒
	(5)	Restricted band, emission must also comply with the radiated emission limits specified in 15.209	☒
Test Setup			
Procedure	- The EUT was switched on and allowed to warm up to its normal operating condition. - The test was carried out at the selected frequency points obtained from the EUT characterisation. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner: - Vertical or horizontal polarisation (whichever gave the higher emission level over a full rotation of the EUT) was chosen. - The EUT was then rotated to the direction that gave the maximum emission. - Finally, the antenna height was adjusted to the height that gave the maximum emission. - An average measurement was then made for that frequency point. - Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.		
Remark	The EUT was scanned up to 40GHz. Both horizontal and vertical polarities were investigated. The results show only the worst case.		
Result	☒ Pass ☐ Fail		

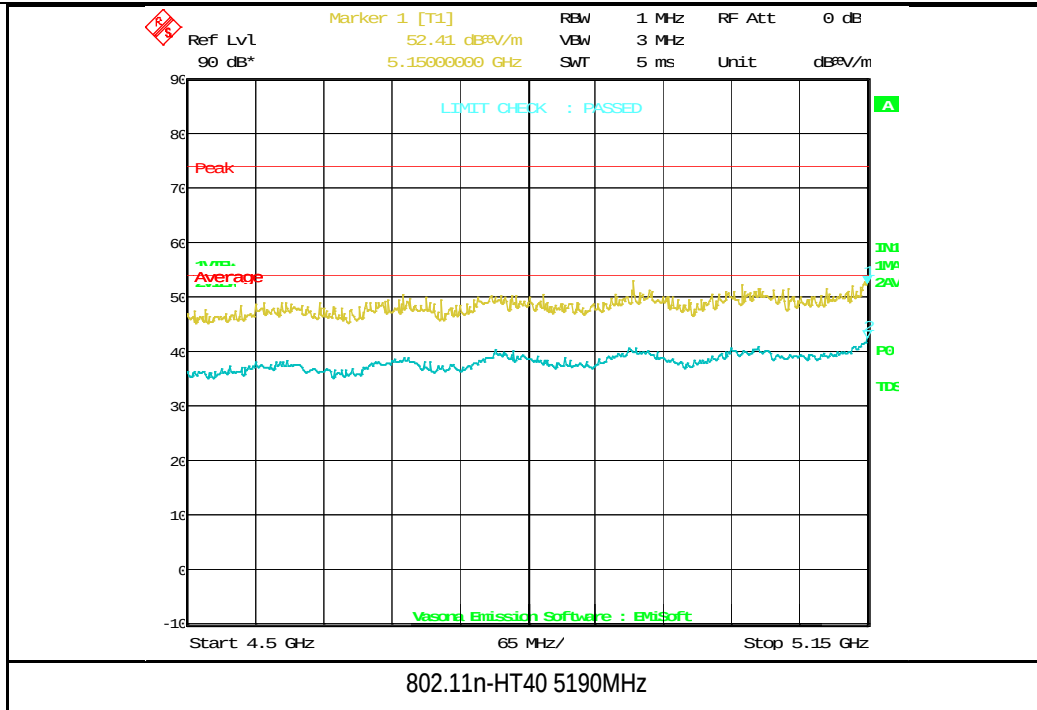
Test Data ☐ Yes (See below) ☒ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test was done by Rachana Khanduri at 10m chamber.

Restricted Band Measurement Plots:





Radiated Emission Test Results (Above 1GHz)

1GHz-40GHz – 802.11a – 5180MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17921.03	38.08	9.13	8.50	55.71	Peak Max	H	197	58	74	-18.29	Pass
1683.10	68.16	2.92	-14.14	56.94	Peak Max	H	141	63	74	-17.06	Pass
10483.50	39.62	7.23	0.34	47.19	Peak Max	H	227	306	74	-26.81	Pass
17921.03	26.26	9.13	8.50	43.89	Average Max	H	197	58	54	-10.11	Pass
1683.10	48.21	2.92	-14.14	37.00	Average Max	H	141	63	54	-17.00	Pass
10483.50	27.94	7.23	0.34	35.51	Average Max	V	383	183	54	-18.49	Pass

1GHz-40GHz – 802.11a – 5200MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17391.40	37.84	9.01	7.84	54.69	Peak Max	H	138	302	74	-19.31	Pass
1684.79	66.67	2.92	-14.12	55.47	Peak Max	H	139	353	74	-18.53	Pass
11584.83	39.94	7.55	2.01	49.50	Peak Max	V	158	164	74	-24.50	Pass
17391.40	26.02	9.01	7.84	42.87	Average Max	H	138	302	54	-11.13	Pass
1684.79	46.95	2.92	-14.12	35.76	Average Max	H	139	353	54	-18.25	Pass
11584.83	27.77	7.55	2.01	37.34	Average Max	V	158	164	54	-16.66	Pass

1GHz-40GHz – 802.11a – 5240MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17910.24	38.53	9.13	8.56	56.22	Peak Max	V	229	294	74	-17.78	Pass
1684.32	68.07	2.92	-14.12	56.87	Peak Max	H	169	43	74	-17.13	Pass
11501.18	40.01	7.60	1.80	49.41	Peak Max	H	152	357	74	-24.59	Pass
17910.24	26.17	9.13	8.56	43.86	Average Max	H	150	276	54	-10.14	Pass
1684.32	47.67	2.92	-14.12	36.47	Average Max	H	169	43	54	-17.53	Pass
11501.18	28.16	7.60	1.80	37.56	Average Max	H	152	357	54	-16.44	Pass

1GHz-40GHz – 802.11n-20M – 5180MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17947.49	37.73	9.14	8.36	55.23	Peak Max	H	267	303	74	-18.77	Pass
1684.58	67.96	2.92	-14.12	56.76	Peak Max	H	251	30	74	-17.24	Pass
10486.42	39.71	7.23	0.35	47.29	Peak Max	H	221	62	74	-26.71	Pass
17947.49	26.00	9.14	8.36	43.50	Average Max	V	386	327	54	-10.50	Pass
1684.58	47.25	2.92	-14.12	36.06	Average Max	H	251	30	54	-17.94	Pass
10486.42	28.14	7.23	0.35	35.72	Average Max	V	98	29	54	-18.28	Pass

1GHz-40GHz – 802.11n-20M – 5200MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17596.05	37.45	9.05	8.04	54.55	Peak Max	H	248	161	74	-19.46	Pass
1683.51	68.55	2.92	-14.13	57.34	Peak Max	H	139	53	74	-16.66	Pass
11203.40	39.68	7.85	2.20	49.73	Peak Max	V	353	193	74	-24.27	Pass
17596.05	25.80	9.05	8.04	42.89	Average Max	V	175	116	54	-11.11	Pass
1683.51	48.52	2.92	-14.13	37.31	Average Max	H	139	53	54	-16.69	Pass
11203.40	27.99	7.85	2.20	38.04	Average Max	H	99	343	54	-15.96	Pass

1GHz-40GHz – 802.11n-20M – 5240MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17676.43	38.60	9.07	8.39	56.06	Peak Max	H	177	83	74	-17.94	Pass
1683.47	67.80	2.92	-14.13	56.59	Peak Max	H	140	15	74	-17.41	Pass
8427.62	39.68	6.58	0	46.26	Peak Max	H	228	213	74	-27.74	Pass
17676.43	26.04	9.07	8.39	43.50	Average Max	H	177	83	54	-10.50	Pass
1683.47	47.79	2.92	-14.13	36.58	Average Max	H	140	15	54	-17.42	Pass
8427.63	28.20	6.58	0	34.78	Average Max	H	228	213	54	-19.22	Pass

1GHz-40GHz – 802.11n-40M – 5190MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17978.108	37.77	9.15	8.2	55.12	Peak Max	V	223	57	74	-18.88	Pass
1641.36	66.20	2.87	-14.6	54.48	Peak Max	H	117	121	74	-19.53	Pass
11315.236	39.86	7.75	1.89	49.5	Peak Max	H	244	217	74	-24.5	Pass
17978.108	26.01	9.15	8.2	43.35	Average Max	H	145	187	54	-10.65	Pass
1641.36	41.91	2.87	-14.6	30.18	Average Max	H	117	121	54	-23.82	Pass
11315.236	28.18	7.75	1.89	37.82	Average Max	V	143	59	54	-16.18	Pass

1GHz-40GHz – 802.11n-40M – 5230MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17753.25	38.80	9.09	8.00	55.90	Peak Max	H	146	256	74	-18.10	Pass
1682.37	67.45	2.92	-14.14	56.23	Peak Max	H	183	50	74	-17.77	Pass
11093.68	39.84	7.94	1.89	49.67	Peak Max	V	281	269	74	-24.33	Pass
17753.25	26.35	9.09	8.00	43.44	Average Max	H	146	256	54	-10.56	Pass
1682.37	46.98	2.92	-14.14	35.75	Average Max	H	183	50	54	-18.25	Pass
11093.68	27.92	7.94	1.89	37.75	Average Max	H	129	283	54	-16.25	Pass

1GHz-40GHz – 802.11a – 5745MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17878.07	37.81	9.12	8.39	55.32	Peak Max	V	345	320	74	-18.68	Pass
1683.50	66.78	2.92	-14.13	55.57	Peak Max	H	211	64	74	-18.43	Pass
7294.63	39.56	5.91	0.10	45.58	Peak Max	V	165	348	74	-28.42	Pass
17878.07	26.00	9.12	8.39	43.51	Average Max	H	108	282	54	-10.50	Pass
1683.50	46.79	2.92	-14.13	35.58	Average Max	H	211	64	54	-18.42	Pass
7294.63	27.68	5.91	0.10	33.69	Average Max	V	165	348	54	-20.31	Pass

1GHz-40GHz - 802.11a– 5785MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17715.67	37.47	9.08	8.34	54.90	Peak Max	V	259	124	74	-19.10	Pass
1683.23	68.48	2.92	-14.14	57.27	Peak Max	H	150	13	74	-16.73	Pass
8513.69	40.66	6.71	-0.17	47.20	Peak Max	H	247	289	74	-26.81	Pass
17715.67	25.84	9.08	8.34	43.27	Average Max	H	181	302	54	-10.73	Pass
1683.23	48.55	2.92	-14.14	37.33	Average Max	H	150	13	54	-16.67	Pass
8513.69	28.49	6.71	-0.17	35.03	Average Max	V	351	31	54	-18.97	Pass

1GHz-40GHz - 802.11a - 5825MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17681.66	37.77	9.07	8.41	55.25	Peak Max	V	98	262	74	-18.75	Pass
1683.69	68.20	2.92	-14.13	56.99	Peak Max	H	161	17	74	-17.01	Pass
11381.01	40.05	7.70	2.26	50.01	Peak Max	H	258	190	74	-23.99	Pass
17681.66	26.07	9.07	8.41	43.55	Average Max	H	162	169	54	-10.45	Pass
1683.69	48.12	2.92	-14.13	36.91	Average Max	H	161	17	54	-17.09	Pass
11381.01	28.24	7.70	2.26	38.2	Average Max	V	215	311	54	-15.81	Pass

1GHz-40GHz – 802.11n-20M – 5745MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17384.09	37.99	9.01	7.76	54.76	Peak Max	H	99	284	74	-19.24	Pass
1683.74	69.17	2.92	-14.13	57.96	Peak Max	H	137	36	74	-16.04	Pass
11092.24	39.61	7.94	1.89	49.44	Peak Max	V	100	131	74	-24.56	Pass
17384.09	26.30	9.01	7.76	43.07	Average Max	H	99	284	54	-10.93	Pass
1683.74	49.19	2.92	-14.13	37.98	Average Max	H	137	36	54	-16.02	Pass
11092.24	27.95	7.94	1.89	37.78	Average Max	V	100	131	54	-16.22	Pass

1GHz-40GHz - 802.11n-20M– 5785MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1681.96	61.09	2.92	-14.15	49.86	Peak Max	H	147	103	74	-24.14	Pass
17713.29	37.41	9.08	8.37	54.86	Peak Max	H	128	294	74	-19.14	Pass
11570.32	39.52	7.56	1.98	49.06	Peak Max	V	113	275	74	-24.94	Pass
1681.96	36.78	2.92	-14.15	25.56	Average Max	H	147	103	54	-28.44	Pass
17713.29	25.87	9.08	8.37	43.32	Average Max	H	128	294	54	-10.68	Pass
11570.32	27.30	7.56	1.98	36.84	Average Max	V	113	275	54	-17.16	Pass

1GHz-40GHz - 802.11n-20M - 5825MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17384.09	37.99	9.01	7.76	54.76	Peak Max	H	99	284	74	-19.24	Pass
1683.74	69.17	2.92	-14.13	57.96	Peak Max	H	137	36	74	-16.04	Pass
11092.24	39.61	7.94	1.89	49.44	Peak Max	V	100	131	74	-24.56	Pass
17384.09	26.30	9.01	7.76	43.07	Average Max	H	99	284	54	-10.93	Pass
1683.74	49.19	2.92	-14.13	37.98	Average Max	H	137	36	54	-16.02	Pass
11092.24	27.95	7.94	1.89	37.78	Average Max	V	100	131	54	-16.22	Pass

1GHz-40GHz – 802.11n-40M – 5755MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1681.96	59.56	2.92	-14.15	48.34	Peak Max	H	118	356	74	-25.66	Pass
17723.99	37.90	9.08	8.27	55.25	Peak Max	H	103	197	74	-18.75	Pass
11509.84	39.00	7.59	1.82	48.41	Peak Max	H	195	350	74	-25.59	Pass
1681.96	36.05	2.92	-14.15	24.82	Average Max	H	118	356	54	-29.18	Pass
17723.99	25.91	9.08	8.27	43.26	Average Max	H	103	197	54	-10.74	Pass
11509.84	27.33	7.59	1.82	36.75	Average Max	H	195	350	54	-17.25	Pass

1GHz-40GHz - 802.11n-40M– 5795MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1681.99	59.13	2.92	-14.15	47.90	Peak Max	H	205	110	74	-26.10	Pass
17970.00	37.84	9.15	8.24	55.23	Peak Max	H	114	252	74	-18.78	Pass
11588.49	38.81	7.55	2.02	48.39	Peak Max	H	117	42	74	-25.61	Pass
1681.99	35.64	2.92	-14.15	24.41	Average Max	H	205	110	54	-29.59	Pass
17970.00	25.96	9.15	8.24	43.34	Average Max	H	114	252	54	-10.66	Pass
11588.49	26.99	7.55	2.02	36.56	Average Max	H	117	42	54	-17.44	Pass

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Cycle	Cal Due	In use
Conducted Emissions						
R & S Receiver	ESIB 40	100179	06/08/2016	1 Year	06/08/2017	☒
CHASE LISN	MN2050B	1018	08/16/2016	1 Year	08/16/2017	☒
Radiated Emissions						
R & S Receiver	ESIB 40	1018	06/08/2016	1 Year	06/08/2017	☒
Bi-Log antenna (30MHz~2GHz)	JB1	A030702	01/13/2017	1 Year	01/13/2018	☒
Horn Antenna (1GHz~26GHz)	3115	100059	08/11/2016	1 Year	08/11/2017	☒
Pre-Amplifier (1-26.5GHz)	8449B	3008A00715	03/30/2016	1 Year	03/30/2017	☒
Preamplifier (100KHz-7GHz)	LPA-6-30	11140711	02/09/2017	1 Year	02/09/2018	☒
3 Meters SAC	3M	N/A	06/09/2016	1 Year	06/09/2017	☐
10 Meters SAC	10M	N/A	07/06/2016	1 Year	07/06/2017	☒
RF Conducted Measurement						
Spectrum Analyzer	N9010A	10SL0219	11/16/2016	1 Year	11/16/2017	☒

Annex B. SIEMIC Accreditation

Accreditations	Document	Scope / Remark
ISO 17025 (A2LA)		Please see the documents for the detailed scope
ISO Guide 65 (A2LA)		Please see the documents for the detailed scope
TCB Designation		A1 , A2 , A3 , A4 , B1 , B2 , B3 , B4 , C
FCC DoC Accreditation		FCC Declaration of Conformity Accreditation
FCC Site Registration		3 meter site
FCC Site Registration		10 meter site
IC Site Registration		3 meter site
IC Site Registration		10 meter site
EU NB		Radio & Telecommunications Terminal Equipment: EN45001 – EN ISO/IEC 17025
		Electromagnetic Compatibility: EN45001 – EN ISO/IEC 17025
Singapore iDA CB(Certification Body)		Phase I , Phase II
Vietnam MIC CAB Accreditation		Please see the document for the detailed scope
Hong Kong OFCA		(Phase II) OFCA Foreign Certification Body for Radio and Telecom
		(Phase I) Conformity Assessment Body for Radio and Telecom
Industry Canada CAB		Radio: Scope A – All Radio Standard Specification in Category I
		Telecom: CS-03 Part I, II, V, VI, VII, VIII

Japan Recognized Certification Body Designation		Radio: A1. Terminal equipment for purpose of calling Telecom: B1. Specified radio equipment specified in Article 38-2, Paragraph 1, Item 1 of the Radio Law
Korea CAB Accreditation		EMI: KCC Notice 2008-39, RRL Notice 2008-3: CA Procedures for EMI KN22: Test Method for EMI EMS: KCC Notice 2008-38, RRL Notice 2008-4: CA Procedures for EMS KN24, KN61000-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11: Test Method for EMS Radio: RRL Notice 2008-26, RRL Notice 2008-2, RRL Notice 2008-10, RRL Notice 2007-49, RRL Notice 2007-20, RRL Notice 2007-21, RRL Notice 2007-80, RRL Notice 2004-68 Telecom: President Notice 20664, RRL Notice 2007-30, RRL Notice 2008-7 with attachments 1, 3, 5, 6; President Notice 20664, RRL Notice 2008-7 with attachment 4
Taiwan NCC CAB Recognition		LP0002, PSTN01, ADSL01, ID0002, IS6100, CNS14336, PLMN07, PLMN01, PLMN08
Taiwan BSMI CAB Recognition		CNS 13438
Japan VCCI		R-3083: Radiation 3 meter site C-3421: Main Ports Conducted Interference Measurement T-1597: Telecommunication Ports Conducted Interference Measurement
Australia CAB Recognition		EMC: AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR22, AS/NZS 61000.6.3, AS/NZS 61000.6.4 Radio communications: AS/NZS 4281, AS/NZS 4268, AS/NZS 4280.1, AS/NZS 4280.2, AS/NZS 4295, AS/NZS 4582, AS/NZS 4583, AS/NZS 4769.1, AS/NZS 4769.2, AS/NZS 4770, AS/NZS 4771 Telecommunications: AS/ACIF S002:05, AS/ACIF S003:06, AS/ACIF S004:06 AS/ACIF S006:01, AS/ACIF S016:01, AS/ACIF S031:01, AS/ACIF S038:01, AS/ACIF S040:01, AS/ACIF S041:05, AS/ACIF S043.2:06, AS/ACIF S60950.1
Australia NATA Recognition		AS/ACIF S002, AS/ACIF S003, AS/ACIF S004, AS/ACIF S006, AS/ACIF S016, AS/ACIF S031, AS/ACIF S038, AS/ACIF S040, AS/ACIF S041, AS/ACIF S043.2