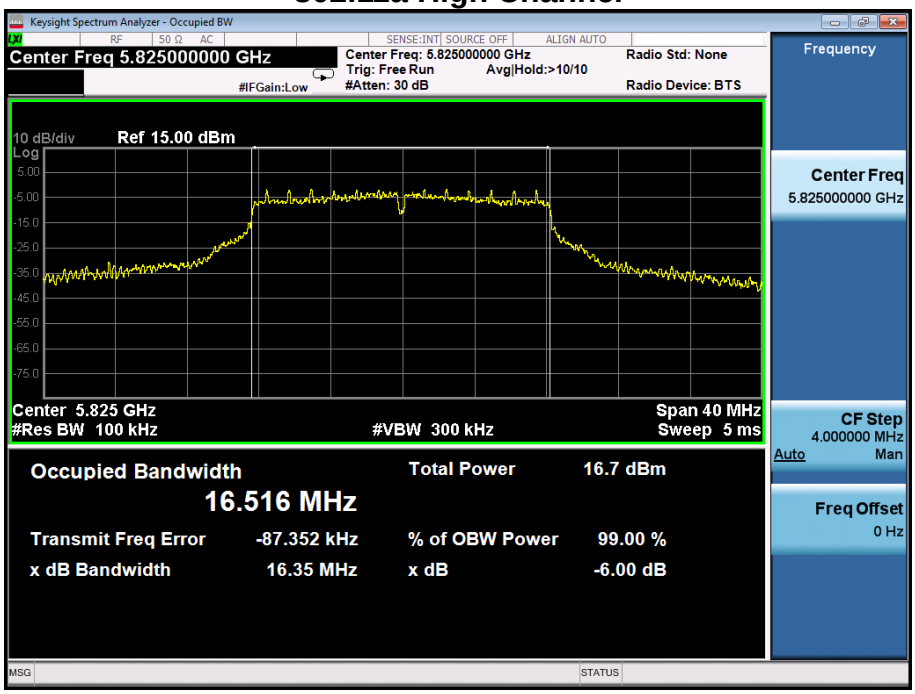
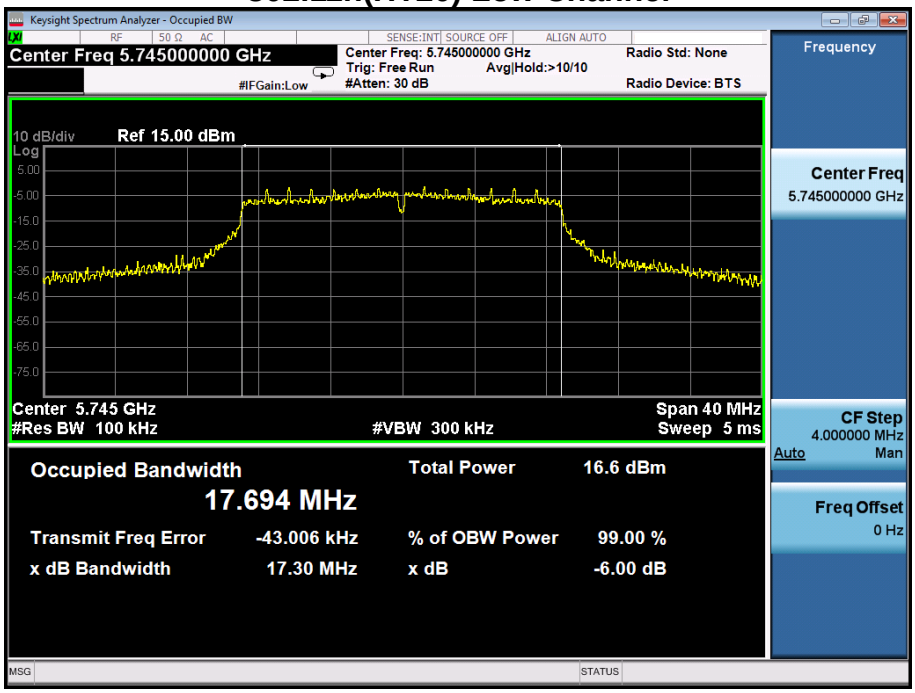
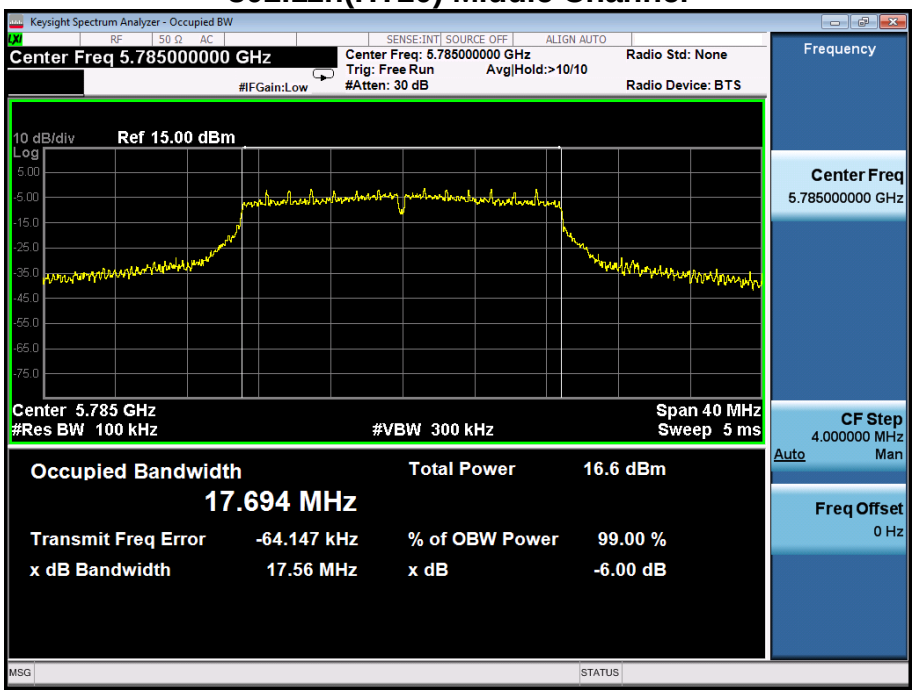
802.11a High Channel



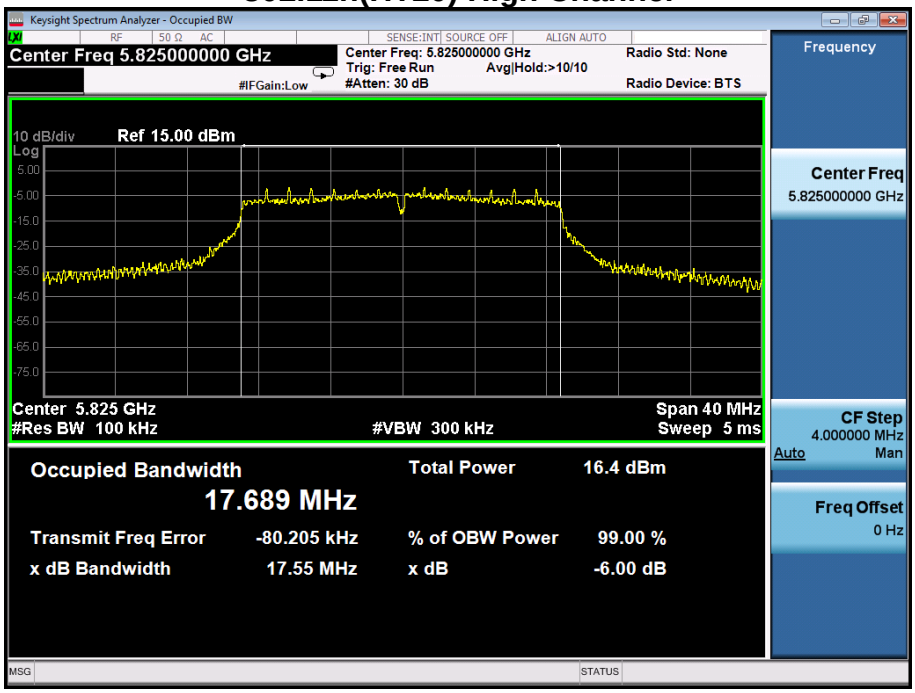
802.11n(HT20) Low Channel



802.11n(HT20) Middle Channel

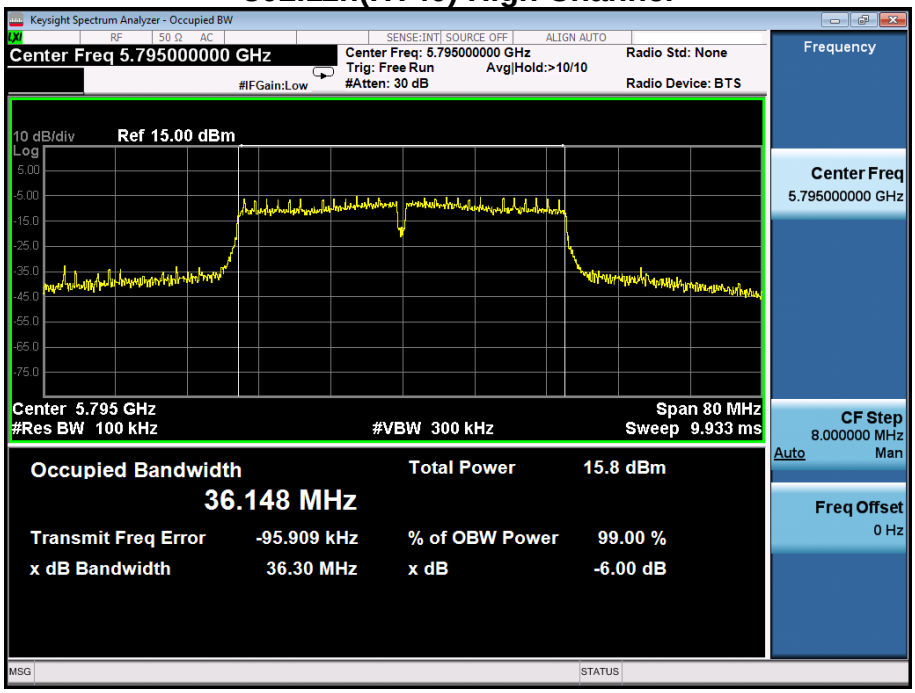


802.11n(HT20) High Channel

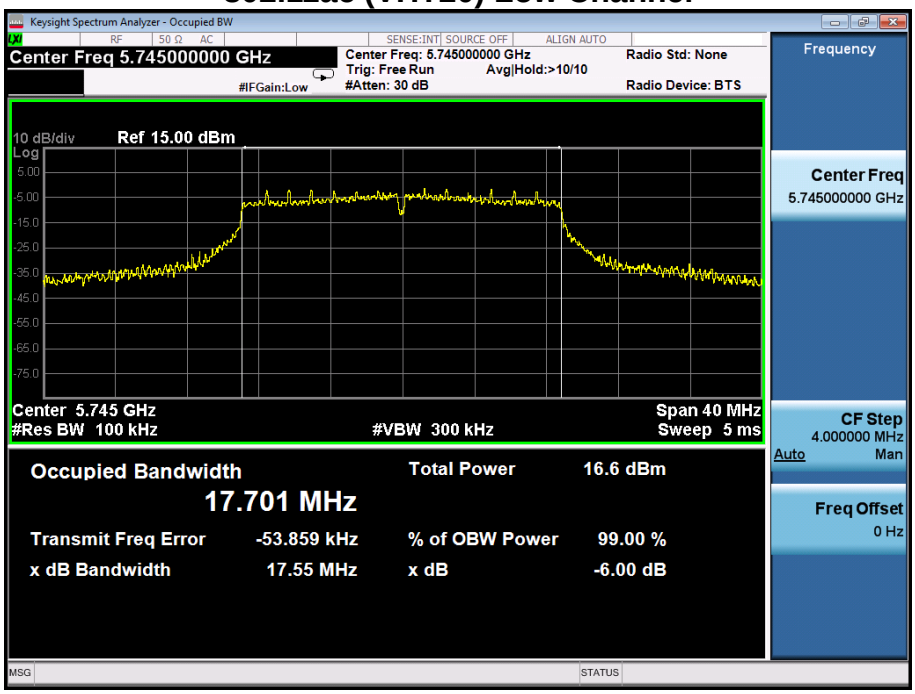


802.11n(HT40) Low Channel

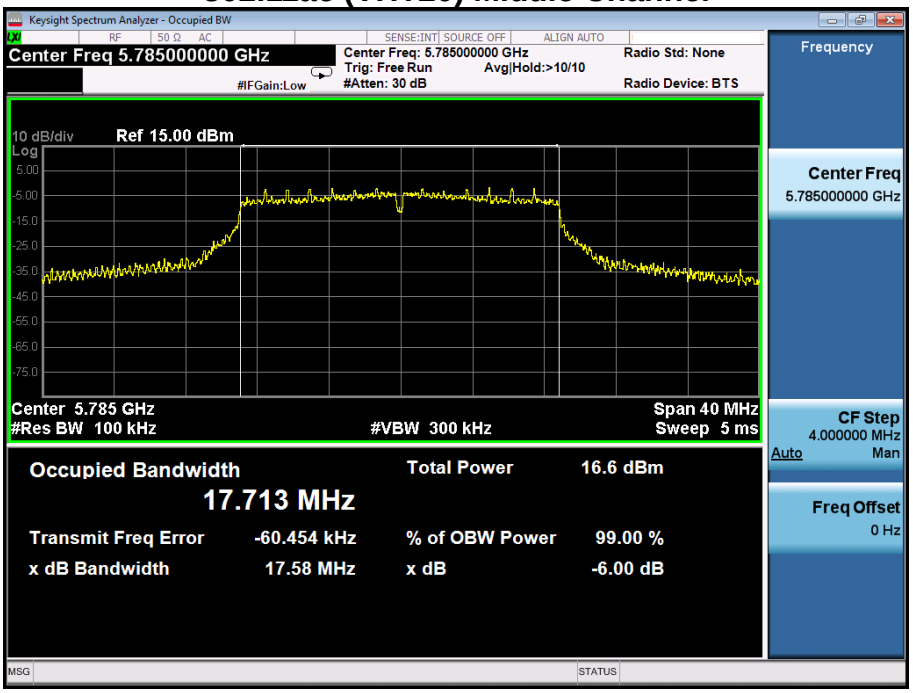
802.11n(HT40) High Channel



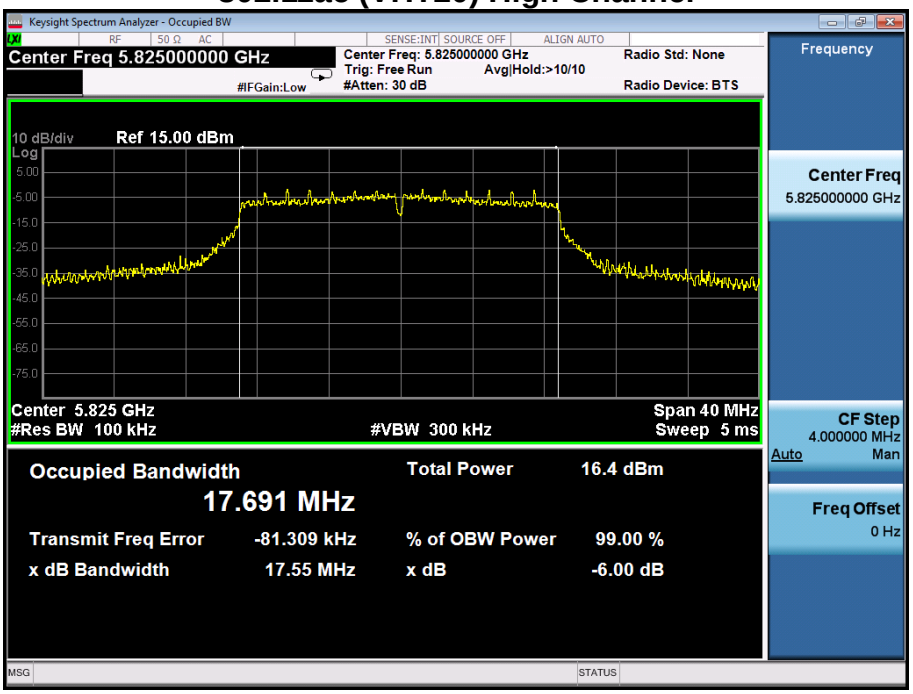
802.11ac (VHT20) Low Channel



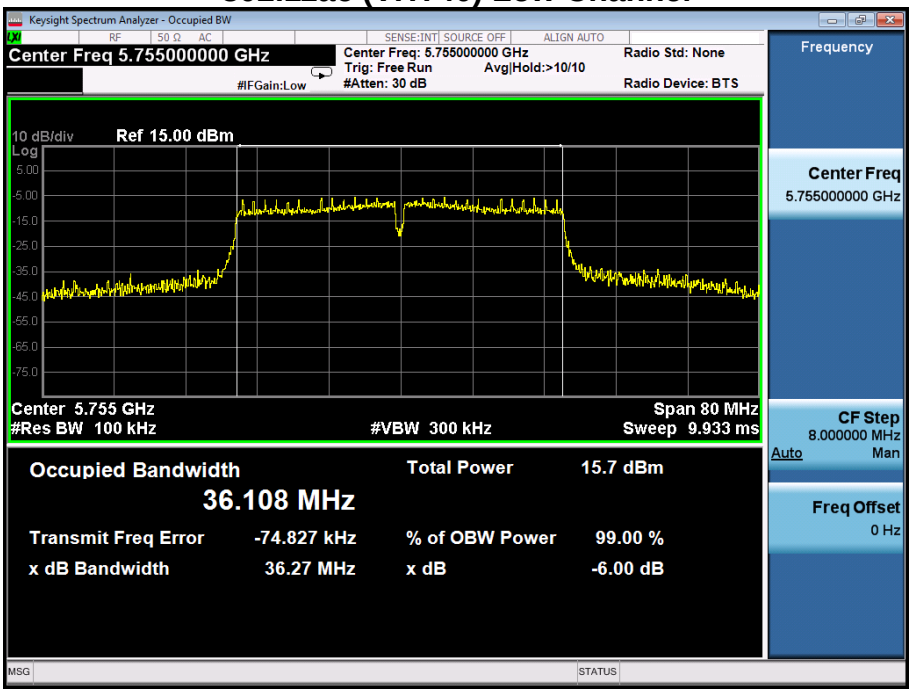
802.11ac (VHT20) Middle Channel



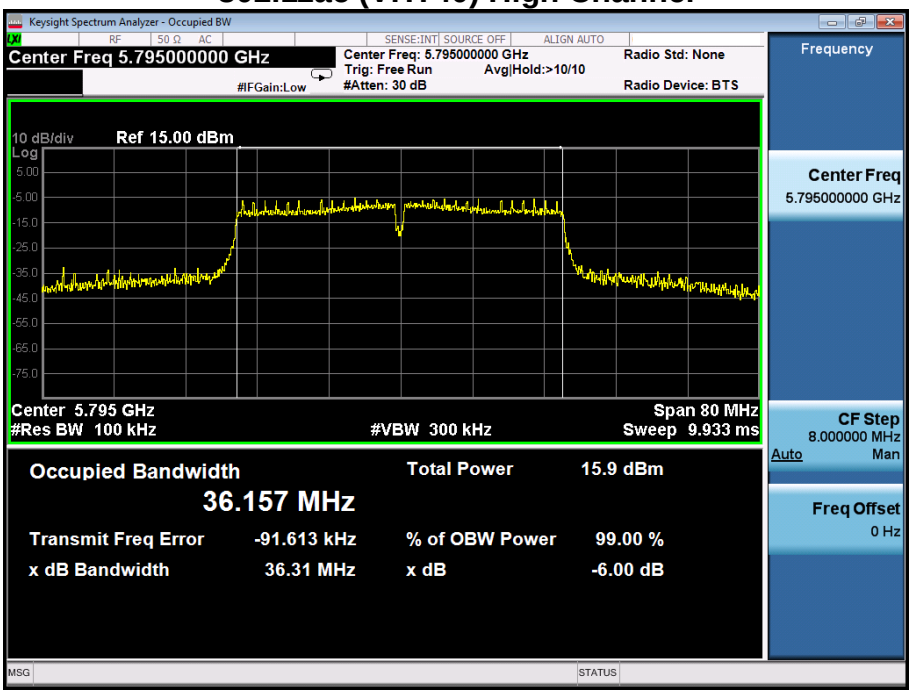
802.11ac (VHT20) High Channel



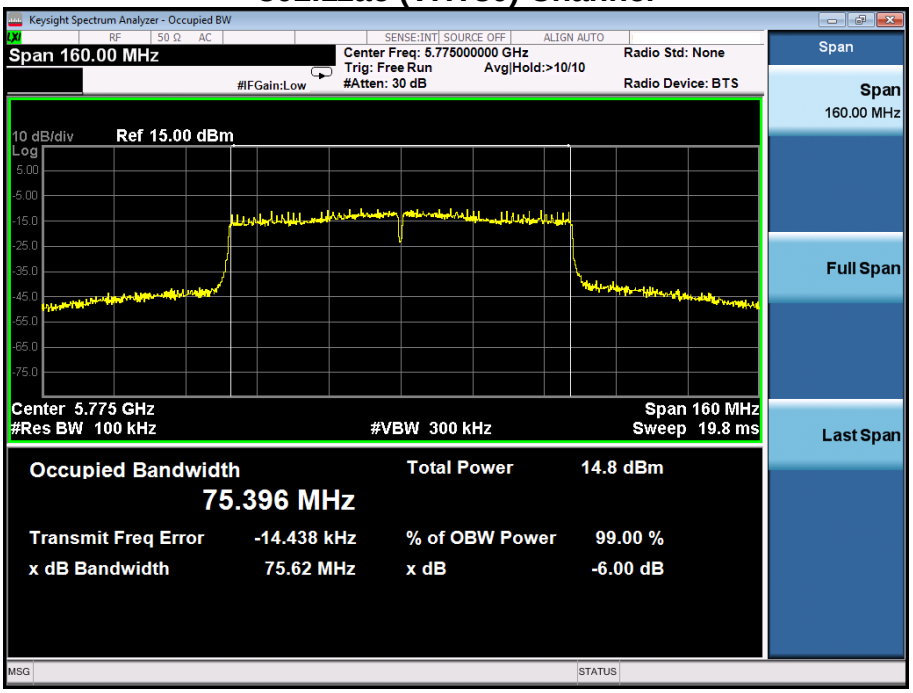
802.11ac (VHT40) Low Channel



802.11ac (VHT40) High Channel



802.11ac (VHT80) Channel

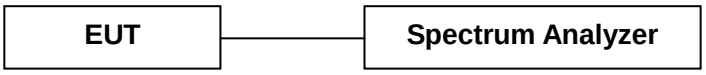


6. 26dB Bandwidth & 99% Occupied Bandwidth

6.1 Limits

No restriction limits.

6.2 Test SET-UP (Block Diagram of Configuration)



6.3 Test Procedure

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer was set as below according to FCC KDB789033(v01r03):

1. For 26dB bandwidth, Set the RBW = Approximately 1% of the emission bandwidth
2. Set the VBW ＞ RBW
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. 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 26 dB relative to the maximum level measured in the fundamental emission.

1. For 99% occupied bandwidth, Set the RBW = 1% to 5% of the OBW
2. Set the VBW ≥ 3 x RBW
3. Detector = peak.
4. Span = 1.5 times to 5.0 times the OBW
5. Sweep time = auto couple.
6. Trace mode = max hold. Allow trace to fully stabilize.
7. Use the 99% power bandwidth function of the spectrum analyzer measure the occupied bandwidth.

6.4 Measurement Results

Pass

Please refer to following table and plots.

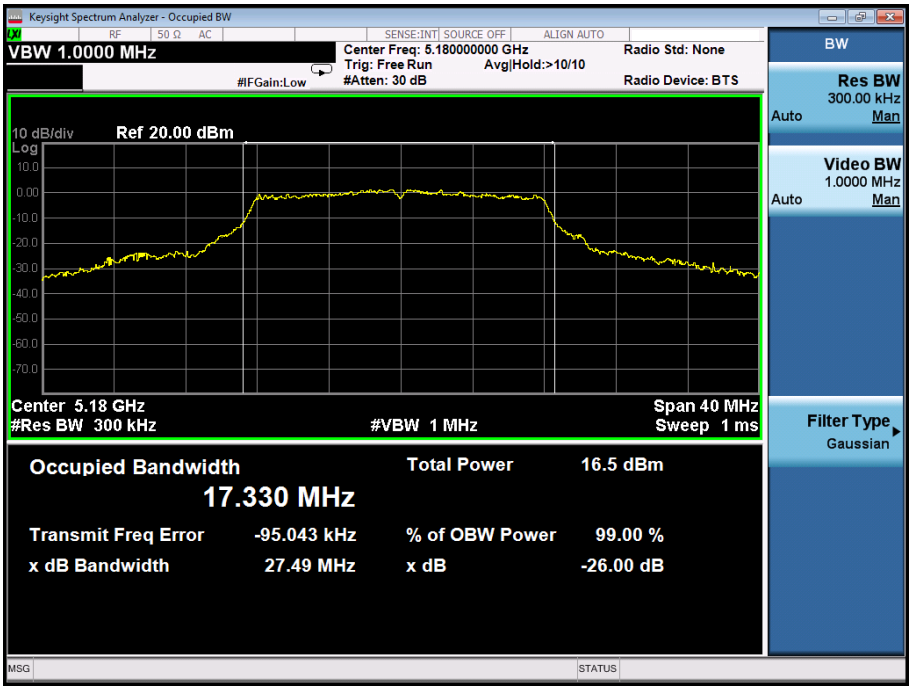
Band 1: 5180~5240MHz

Temperature :	21 ℃	Humidity : 54 %	
Test By:	Sance	Test Date : November 15, 2018	
Test Result:	PASS		
Frequency MHz	Data Rate Mbps	26dB Bandwidth MHz	99% Occupied Bandwidth MHz
IEEE 802.11a Mode (OFDM)			
Low Channel: 5180	6	27.49	17.33
Middle Channel: 5200	6	27.24	17.25
High Channel: 5240	6	27.47	17.23
IEEE 802.11n(HT20) Mode (OFDM)			
Low Channel: 5180	MCS0	28.05	18.19
Middle Channel: 5200	MCS0	27.84	18.24
High Channel: 5240	MCS0	26.03	18.25
IEEE 802.11n(HT40) Mode (OFDM)			
Low Channel: 5190	MCS0	54.84	36.95
High Channel: 5230	MCS0	56.35	36.86
IEEE 802.11ac (VHT20) Mode (OFDM)			
Low Channel: 5180	MCS0	30.09	18.24
Middle Channel: 5200	MCS0	30.81	18.19
High Channel: 5240	MCS0	27.74	18.31
IEEE 802.11ac (VHT40) Mode (OFDM)			
Low Channel: 5190	MCS0	56.19	36.88
High Channel: 5230	MCS0	52.71	36.96
IEEE 802.11ac (VHT80) Mode (OFDM)			
Channel: 5210	MCS0	90.44	75.93

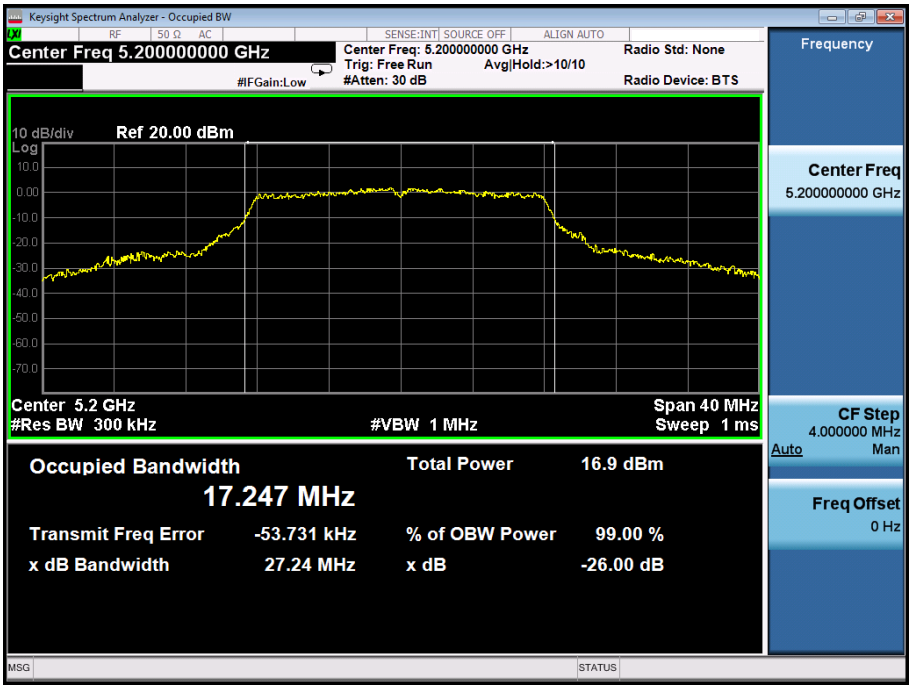
Band 4: 5745~5825MHz

Temperature :	23 ℃	Humidity : 53 %	
Test By:	Sance	Test Date : November 15, 2018	
Test Result:	PASS		
Frequency MHz	Data Rate Mbps	26dB Bandwidth MHz	99% Occupied Bandwidth MHz
IEEE 802.11a Mode (OFDM)			
Low Channel: 5745	6	25.78	17.09
Middle Channel: 5785	6	22.11	17.06
High Channel: 5825	6	24.24	17.02
IEEE 802.11n(HT20) Mode (OFDM)			
Low Channel: 5745	MCS0	24.06	18.10
Middle Channel: 5785	MCS0	26.07	18.10
High Channel: 5825	MCS0	26.14	18.12
IEEE 802.11n(HT40) Mode (OFDM)			
Low Channel: 5755	MCS0	50.76	36.81
High Channel: 5795	MCS0	48.98	36.76
IEEE 802.11ac (VHT20) Mode (OFDM)			
Low Channel: 5745	MCS0	27.63	18.10
Middle Channel: 5785	MCS0	26.77	18.16
High Channel: 5825	MCS0	25.78	18.10
IEEE 802.11ac (VHT40) Mode (OFDM)			
Low Channel: 5755	MCS0	49.55	36.73
High Channel: 5795	MCS0	50.90	36.79
IEEE 802.11ac (VHT80) Mode (OFDM)			
Channel: 5775	MCS0	92.21	75.84

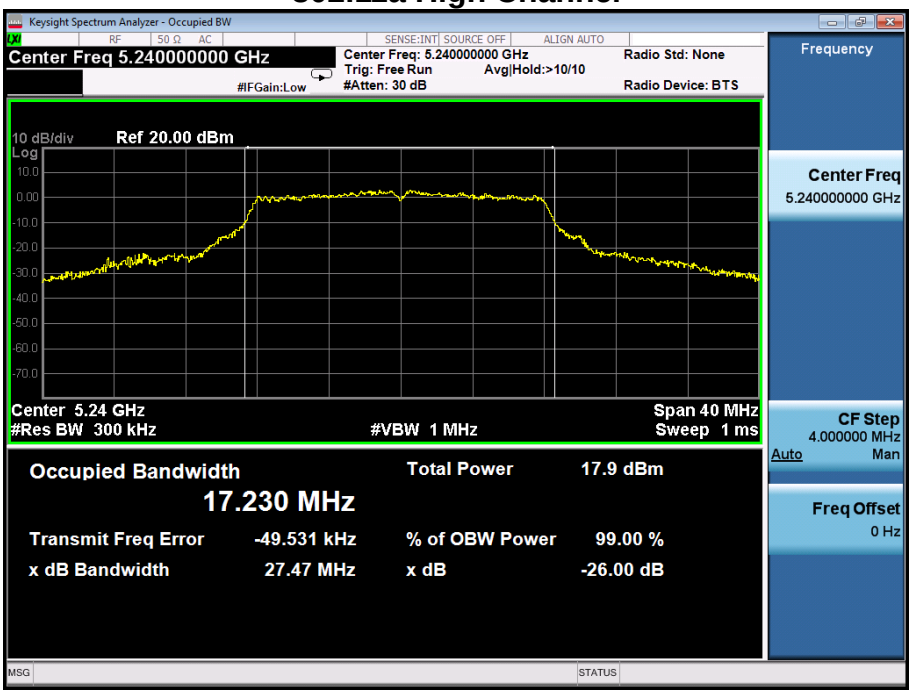
Band 5180-5240MHz
26dB&99% Bandwidth
802.11a Low Channel



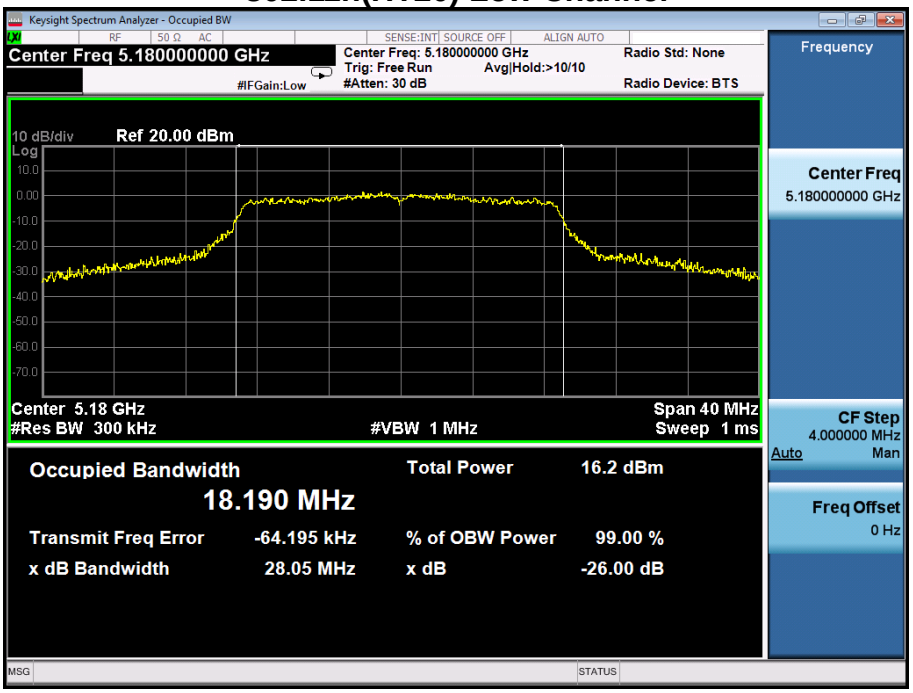
802.11a Middle Channel



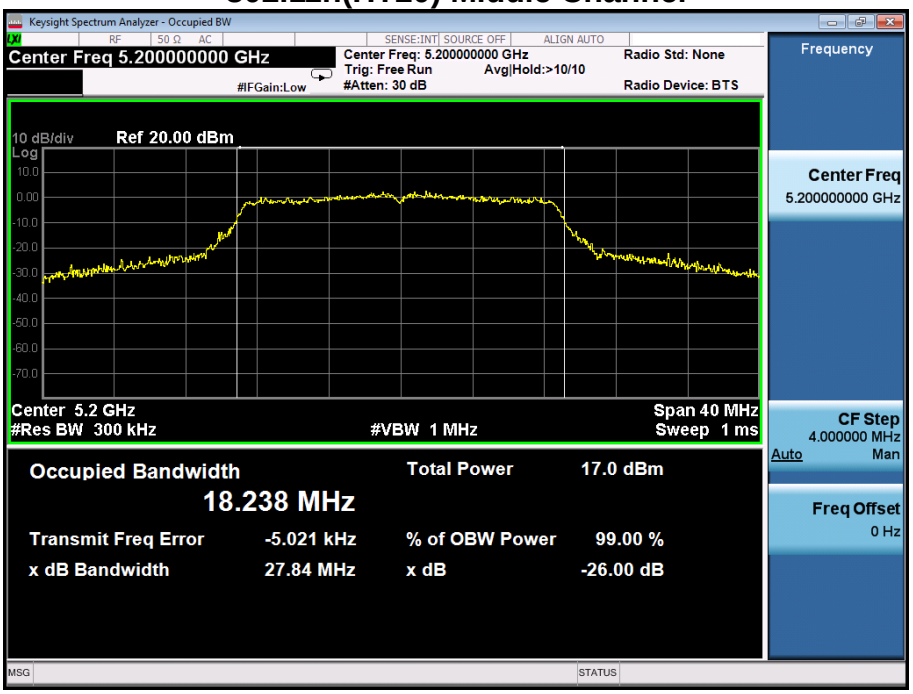
802.11a High Channel



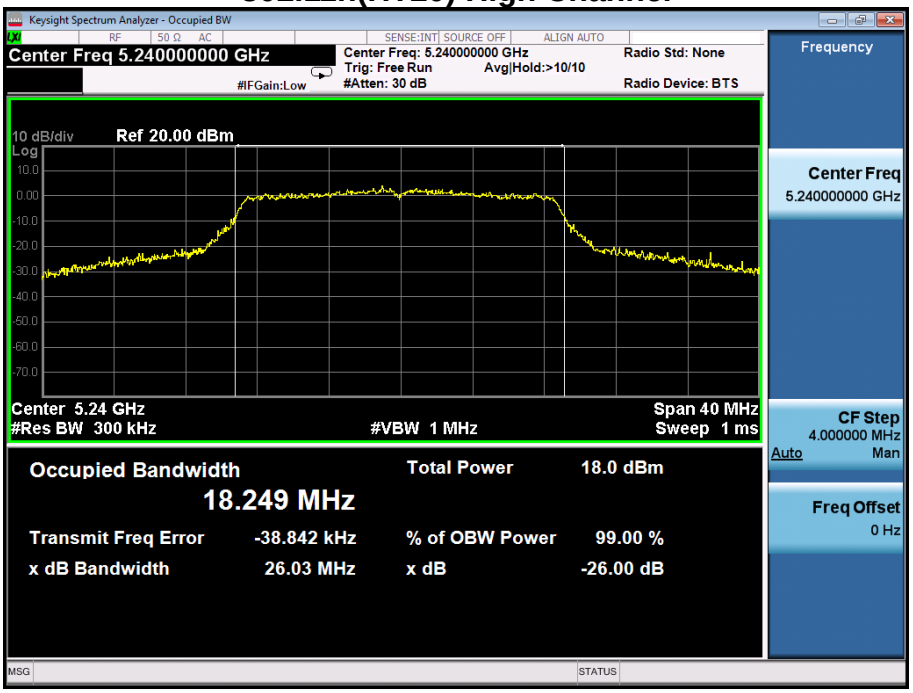
802.11n(HT20) Low Channel



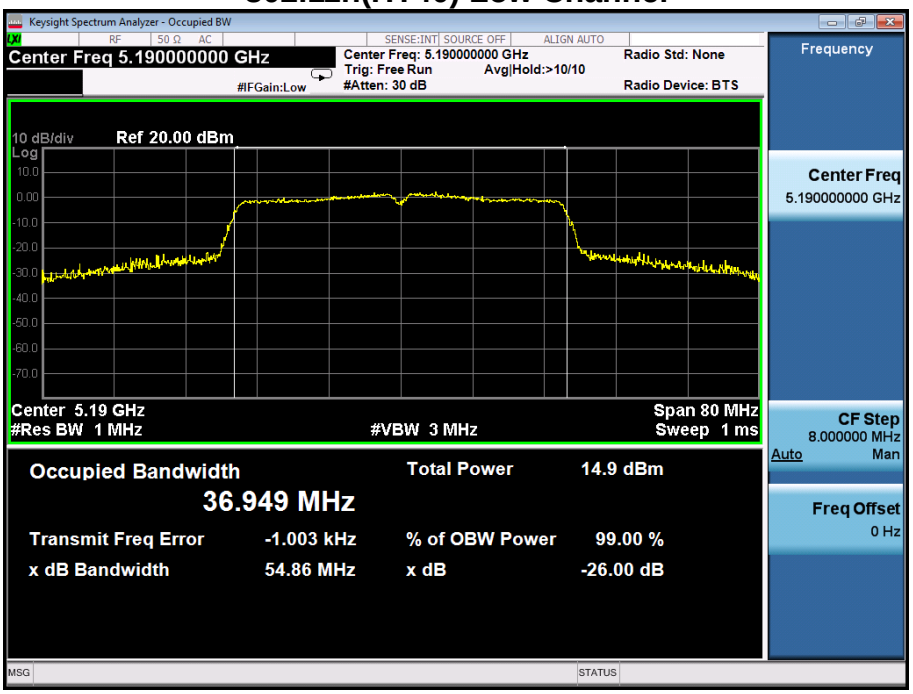
802.11n(HT20) Middle Channel



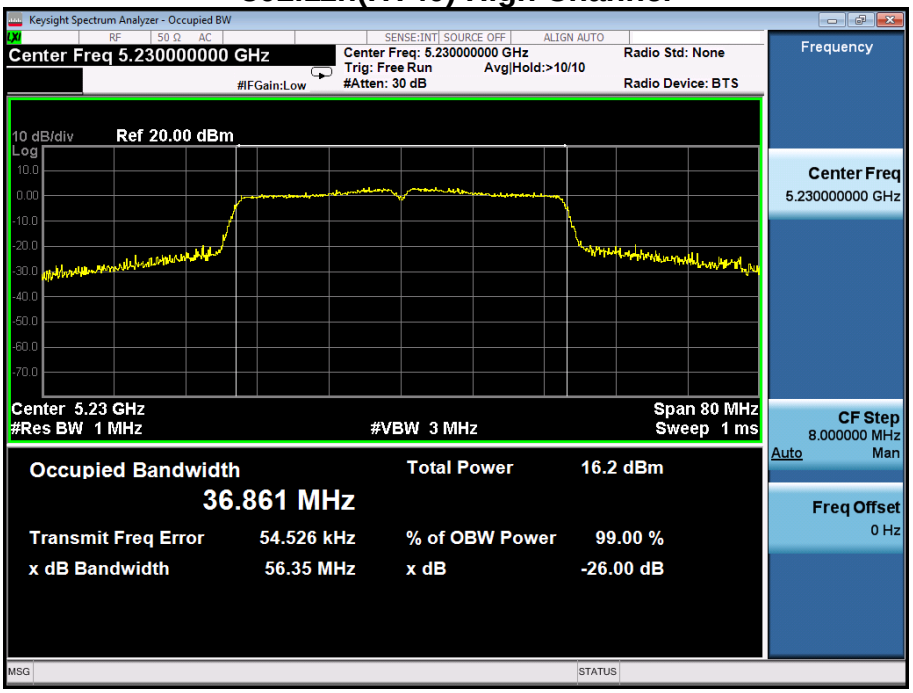
802.11n(HT20) High Channel



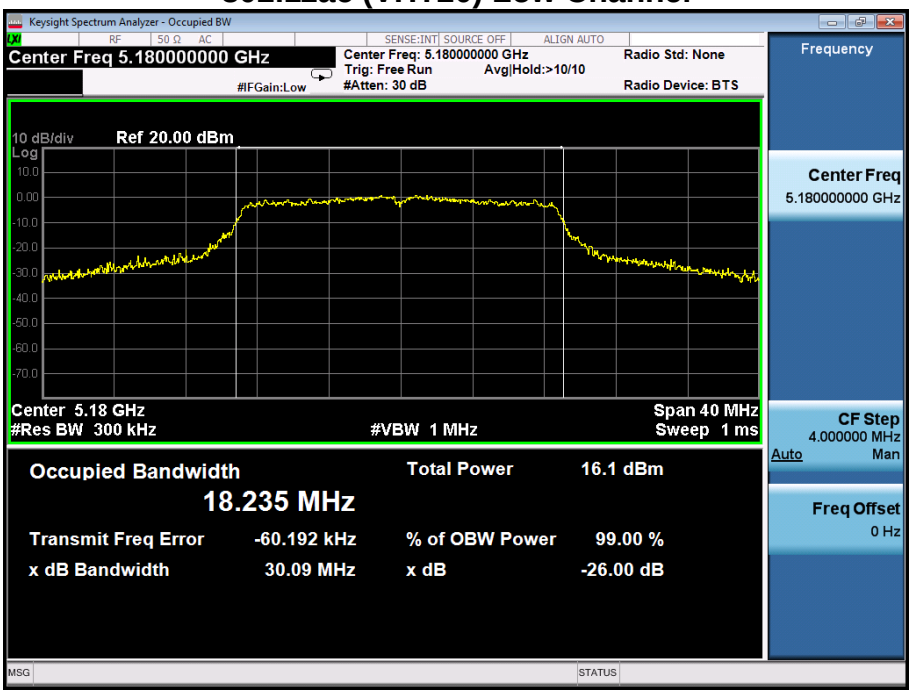
802.11n(HT40) Low Channel



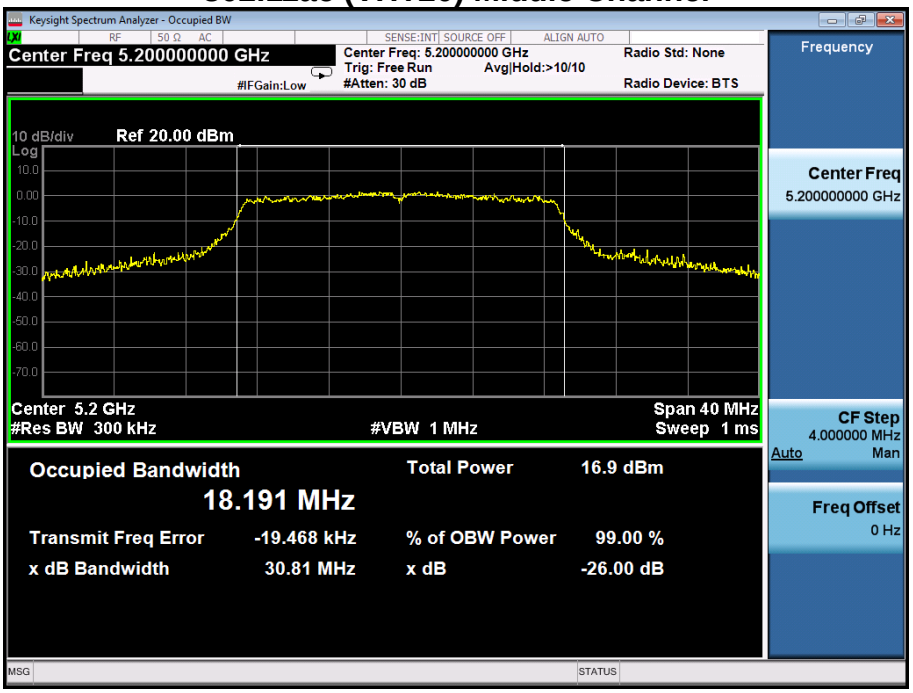
802.11n(HT40) High Channel



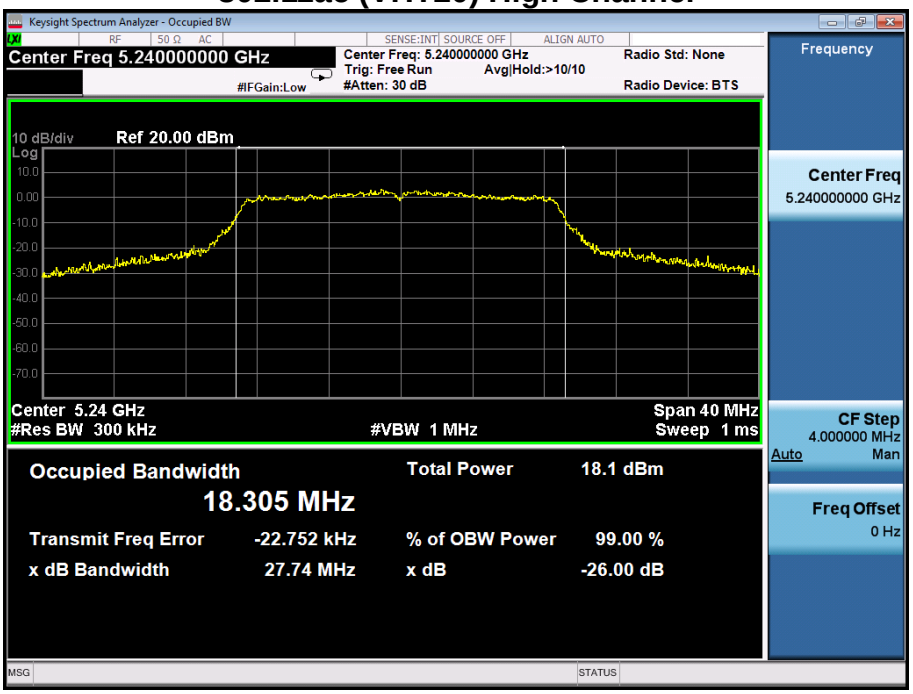
802.11ac (VHT20) Low Channel



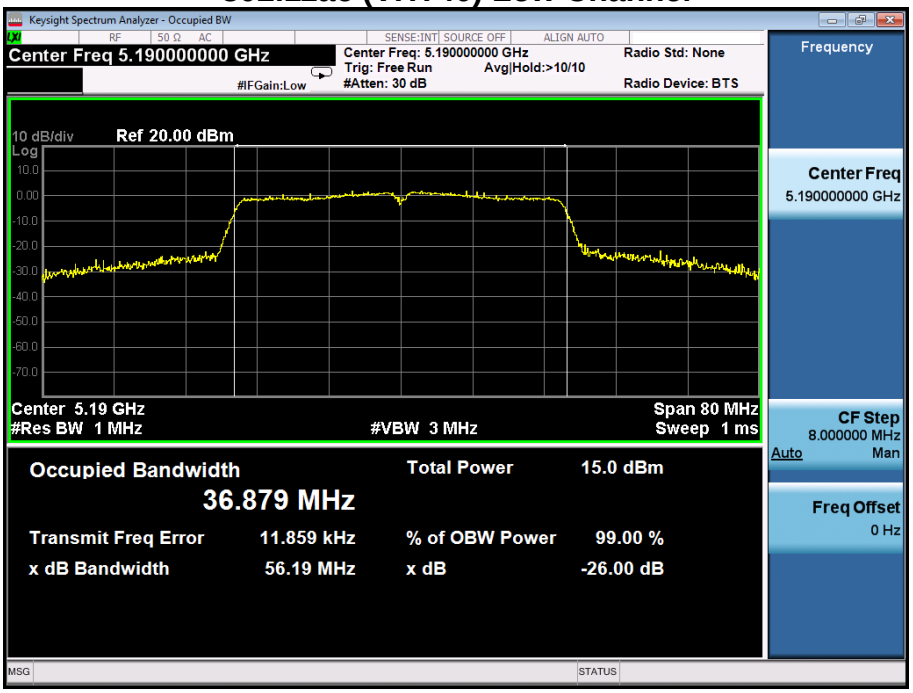
802.11ac (VHT20) Middle Channel



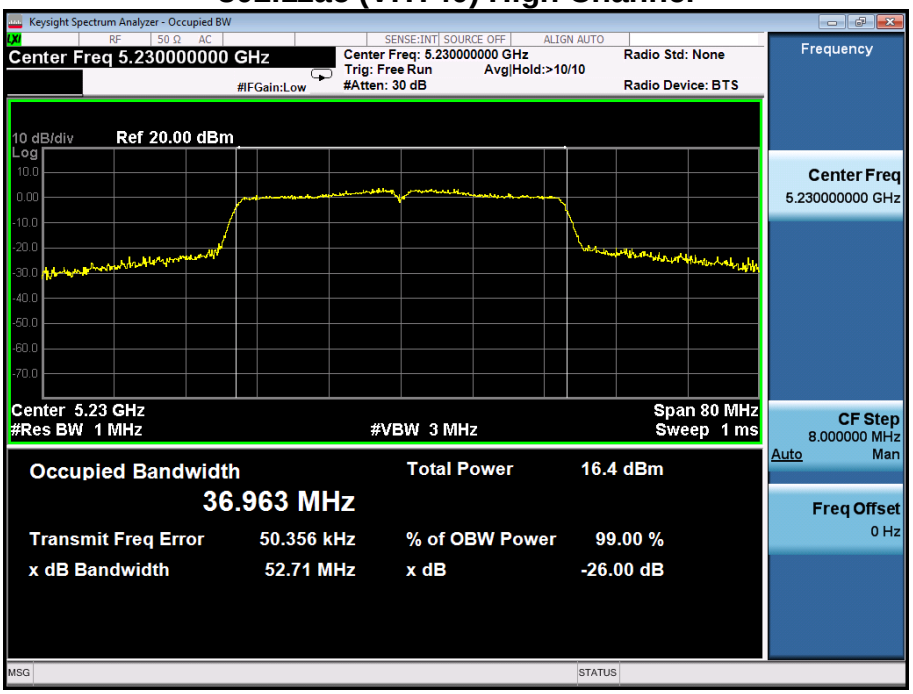
802.11ac (VHT20) High Channel



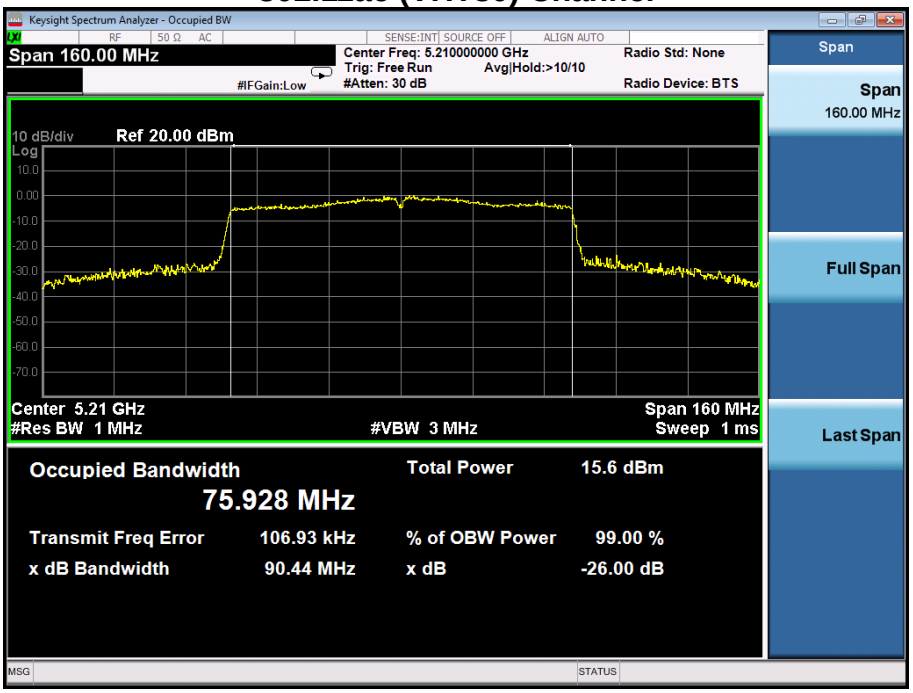
802.11ac (VHT40) Low Channel



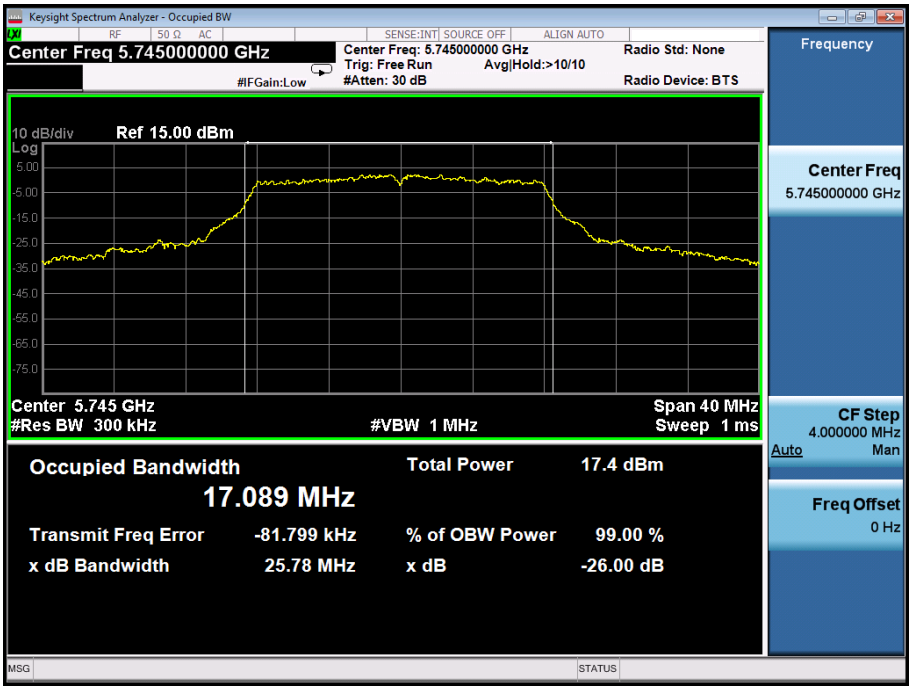
802.11ac (VHT40) High Channel



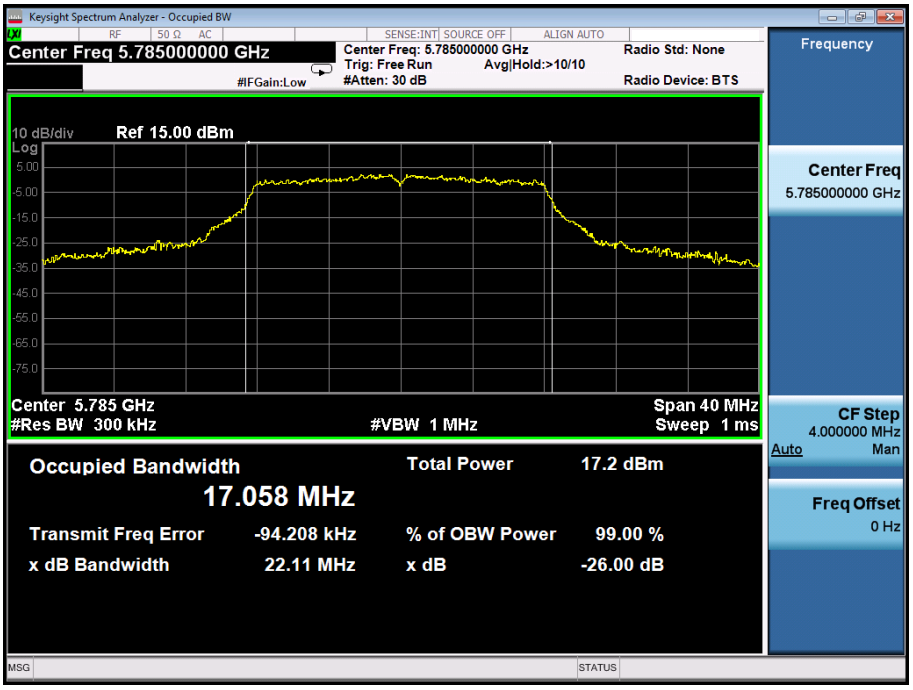
802.11ac (VHT80) Channel



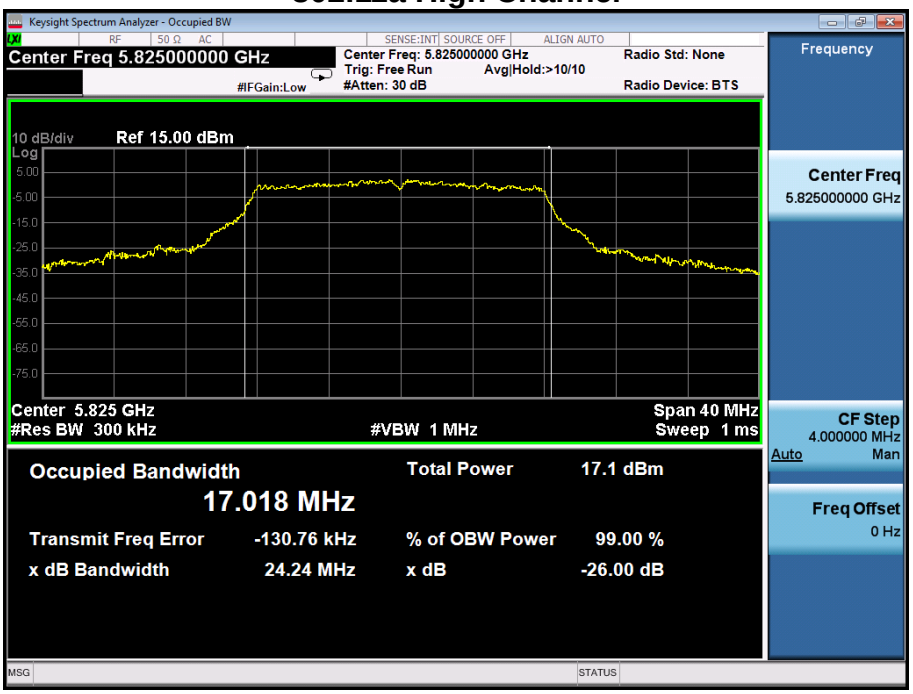
Band 5745-5825MHz
26dB&99% Bandwidth
802.11a Low Channel



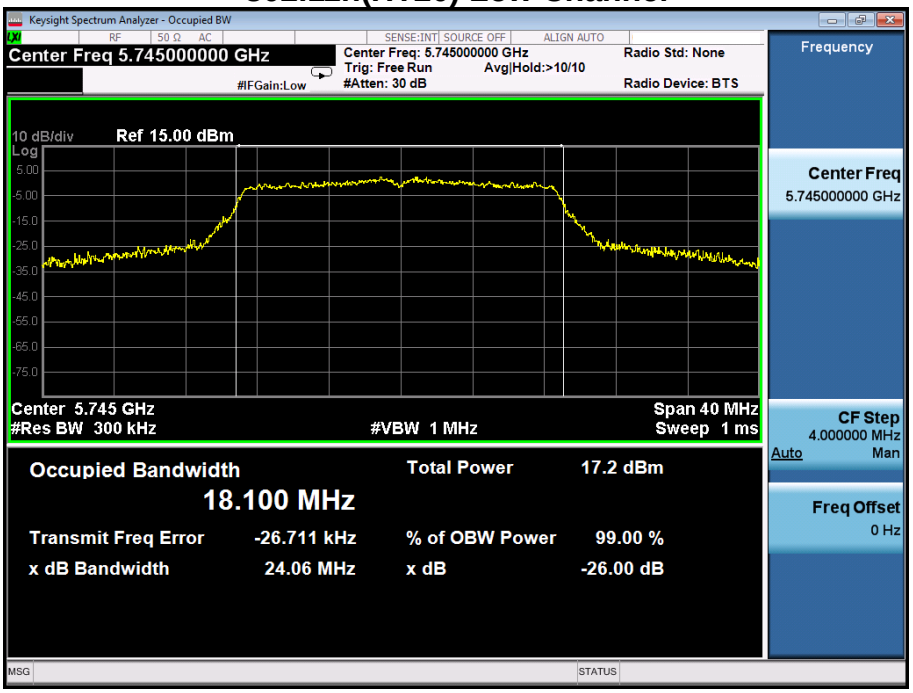
802.11a Middle Channel



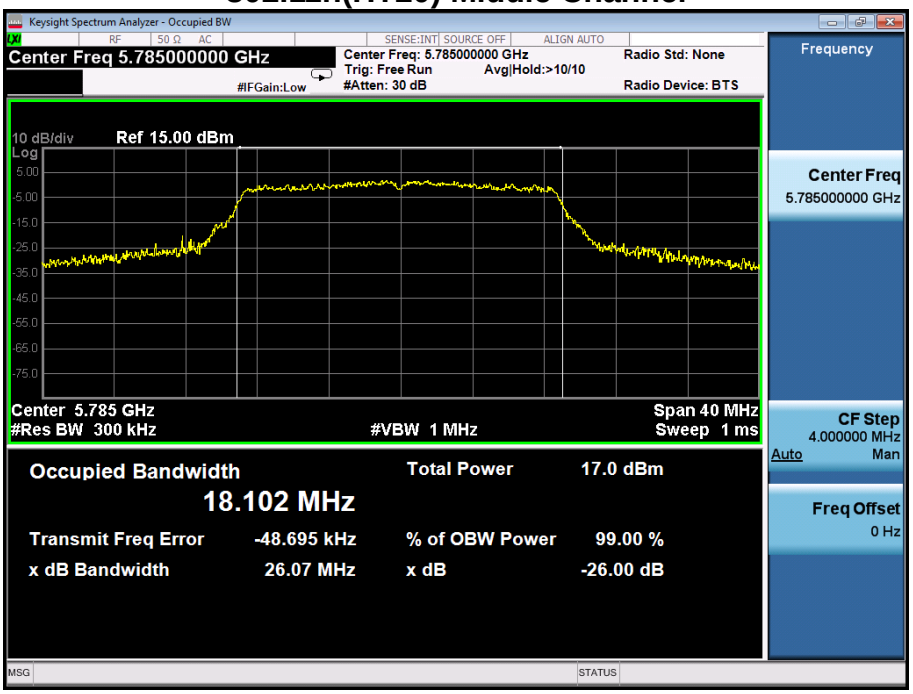
802.11a High Channel



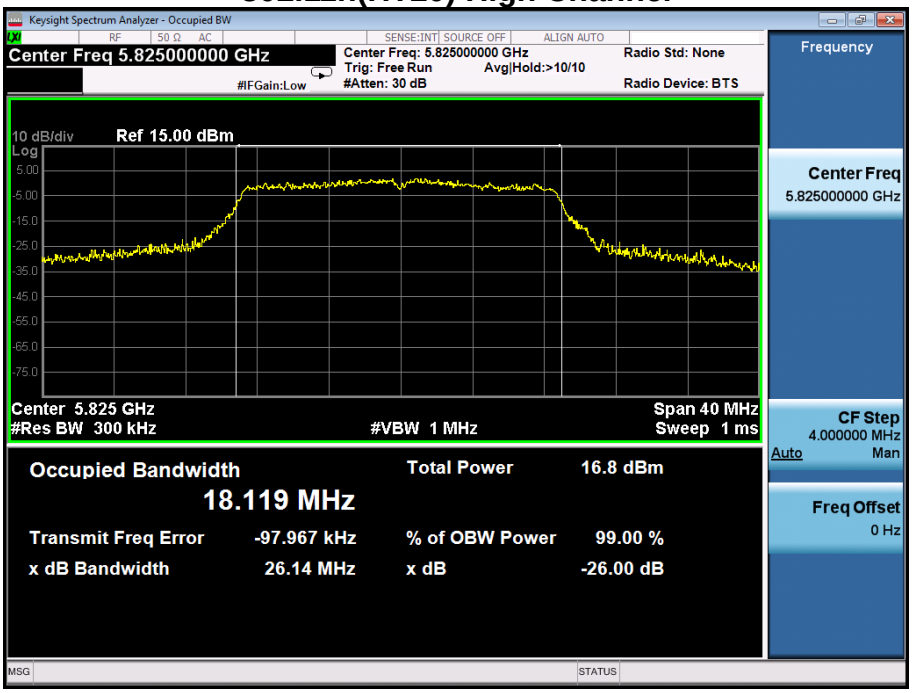
802.11n(HT20) Low Channel



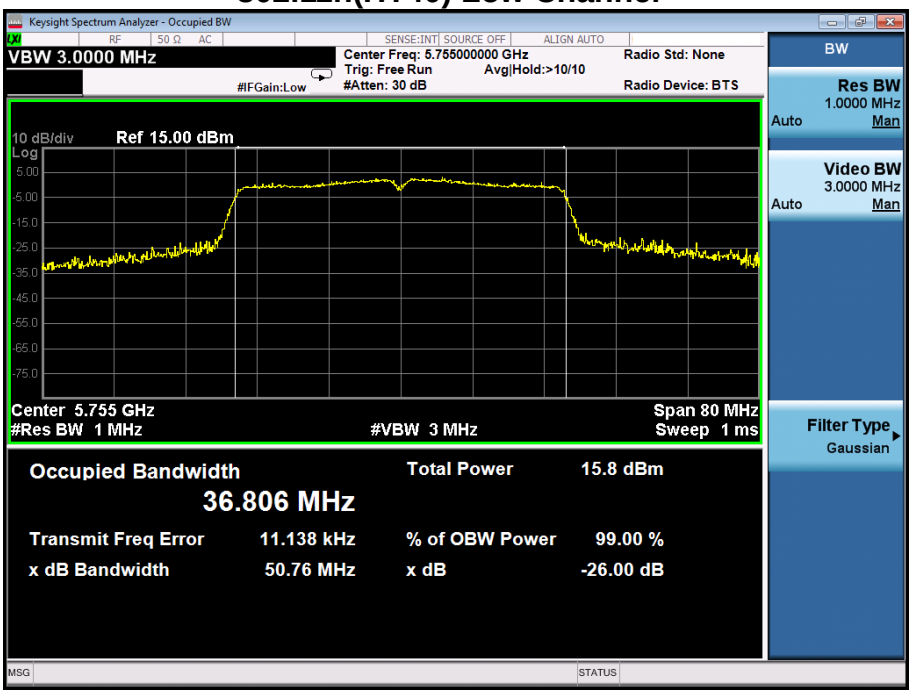
802.11n(HT20) Middle Channel



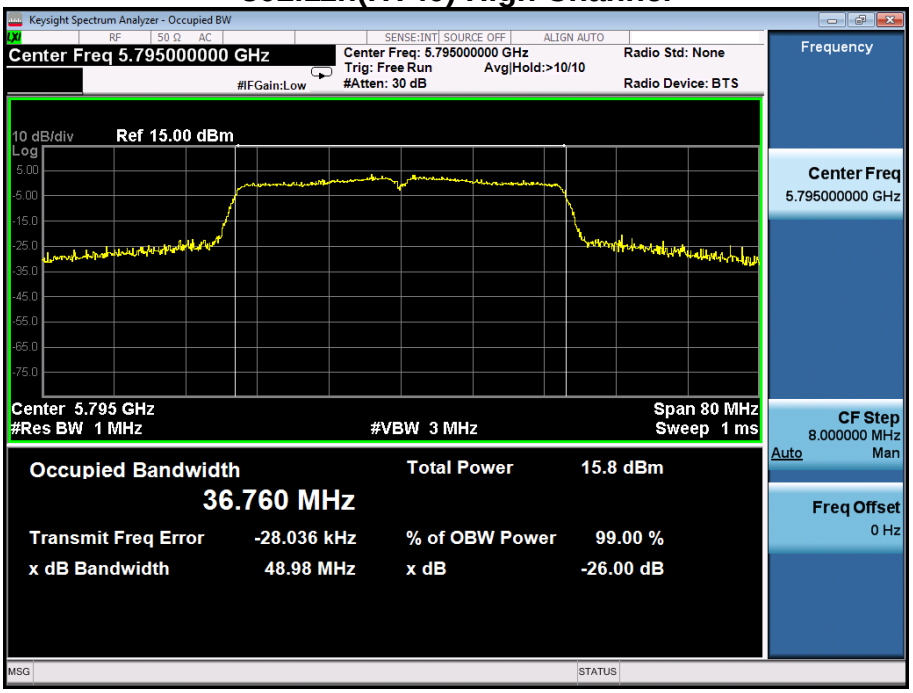
802.11n(HT20) High Channel



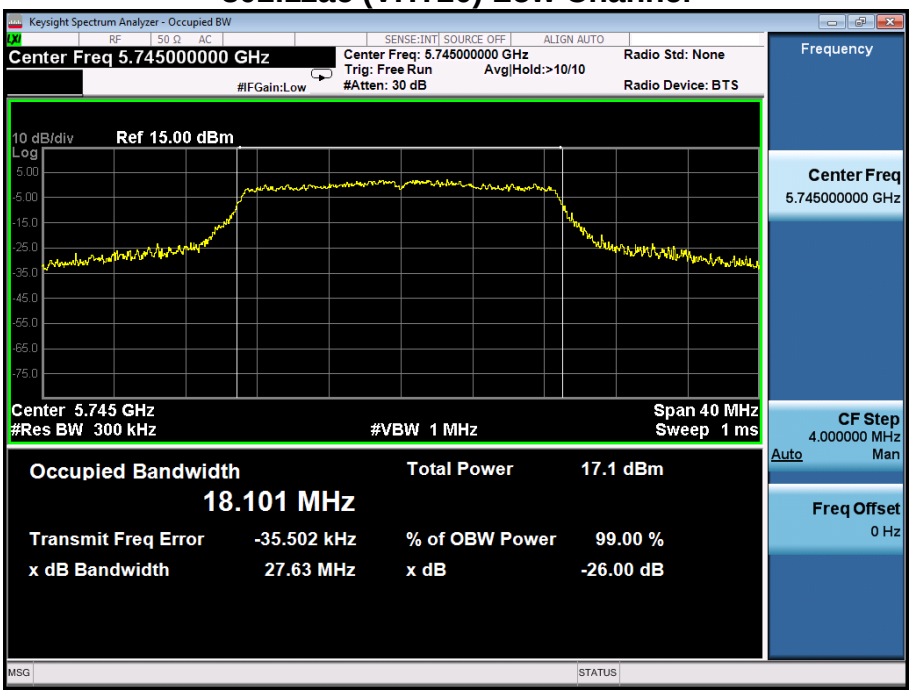
802.11n(HT40) Low Channel



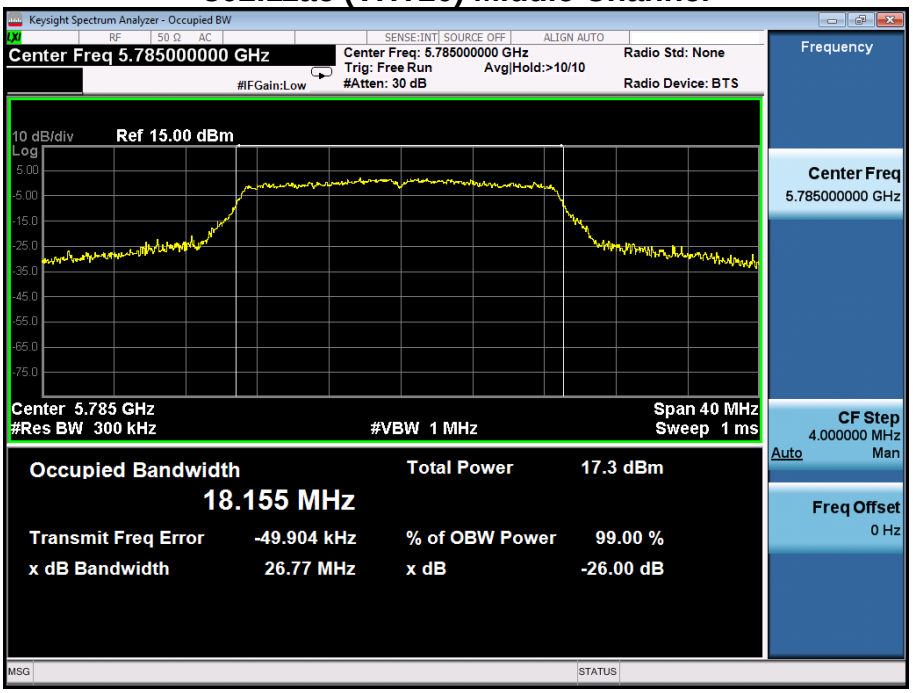
802.11n(HT40) High Channel



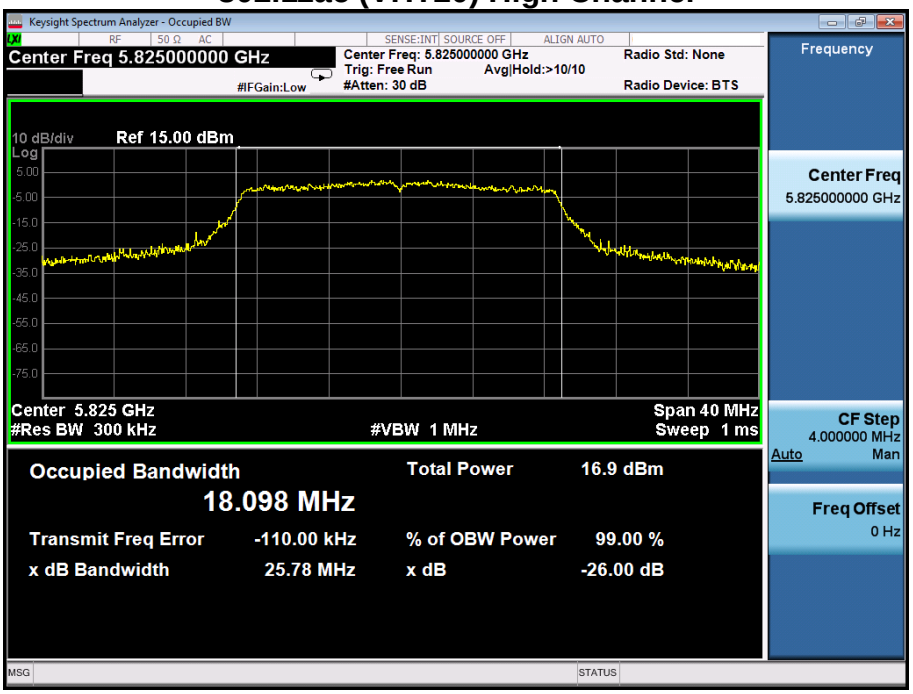
802.11ac (VHT20) Low Channel



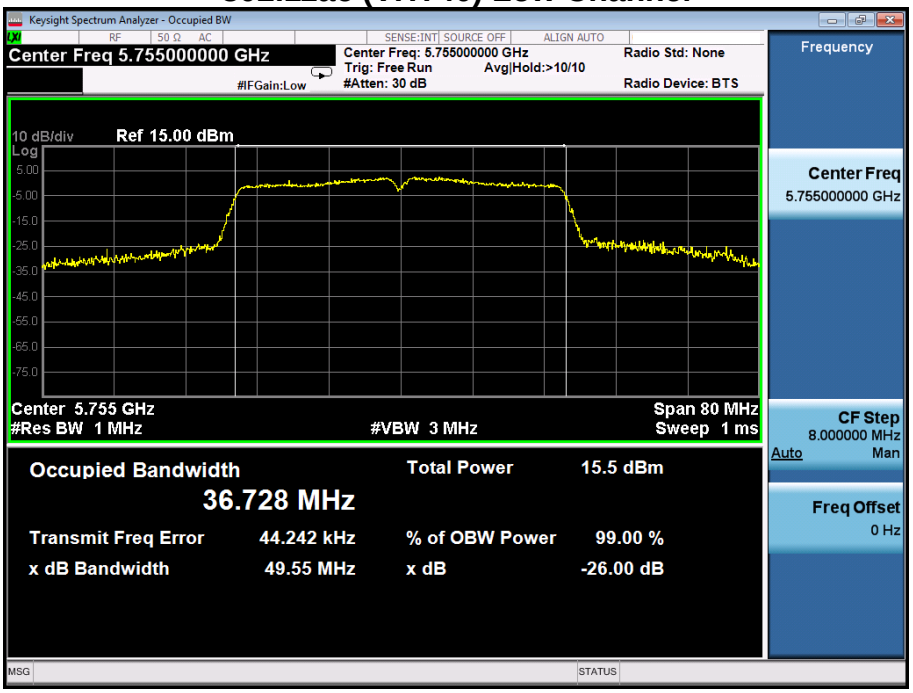
802.11ac (VHT20) Middle Channel



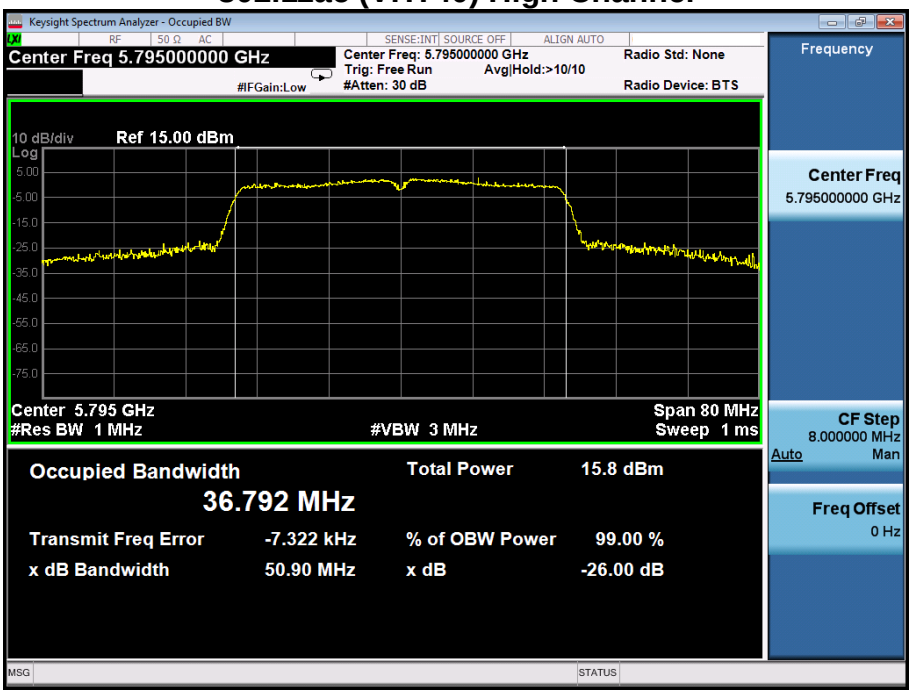
802.11ac (VHT20) High Channel



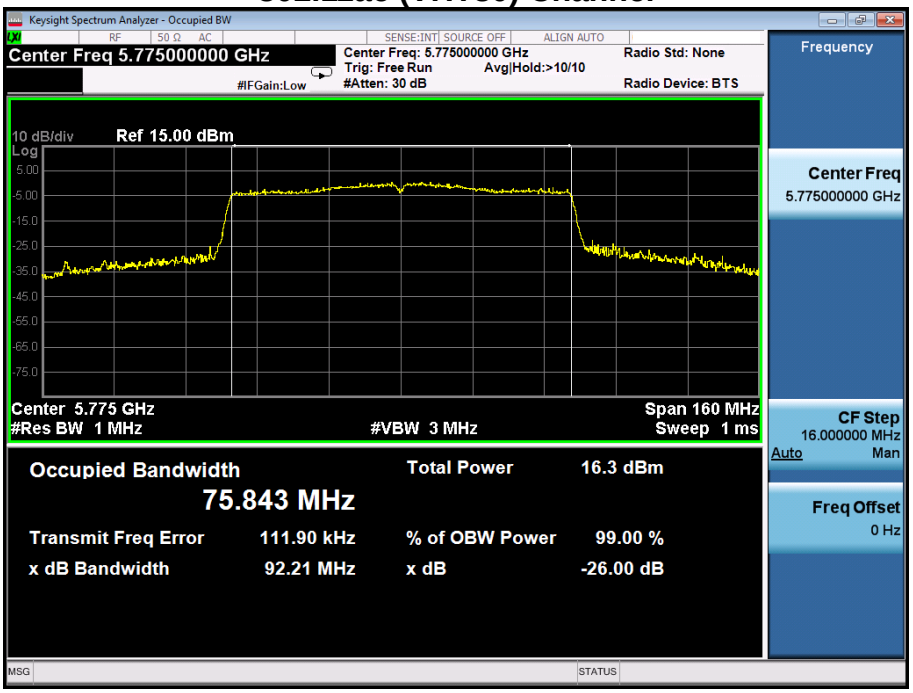
802.11ac (VHT40) Low Channel



802.11ac (VHT40) High Channel



802.11ac (VHT80) Channel

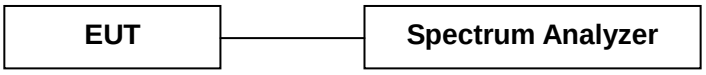


7. Power Spectral Density

7.1 Limits

Operation Band		Limit
■5150~5250MHz	□Outdoor access point	17 dBm/MHz
	□Indoor access point	17 dBm/MHz
	□Fixed point-to-point access points	17 dBm/MHz
	■Client devices	11 dBm/MHz
■5725~5850MHz		30 dBm/500kHz

7.2 Test SET-UP (Block Diagram of Configuration)

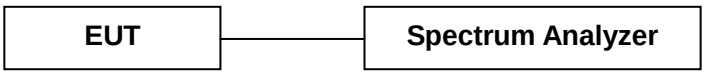


7.3 Test Procedure

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer was set as below according to FCC KDB789033 (v01r03):

1. Set analyzer center frequency to center frequency
2. Set the RBW to: 1MHz
3. Set the VBW to: 3MHz
4. Detector = RMS
5. Sweep time = auto couple
6. Trace Average = 100 times
7. If measured bandwidth of Maximum PSD is specified in 500kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (<500kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

7.4 Test SET-UP (Block Diagram of Configuration)



7.5 Measurement Results

Pass

Please refer to following table and plots.

Band 1: 5180~5240MHz

Temperature :	21 ℃	Humidity :	51 %
Test By:	Sance	Test Date :	November 15, 2018
Test Result:	PASS		
Frequency MHz	Data Rate Mbps	PSD dBm/MHz	Limit dBm/ MHz
IEEE 802.11a Mode (OFDM)			
Low Channel: 5180	6	7.746	11
Middle Channel: 5200	6	8.642	11
High Channel: 5240	6	9.074	11
IEEE 802.11n(HT20) Mode (OFDM)			
Low Channel: 5180	MCS0	7.809	11
Middle Channel: 5200	MCS0	8.231	11
High Channel: 5240	MCS0	8.999	11
IEEE 802.11n(HT40) Mode (OFDM)			
Low Channel: 5190	MCS0	4.253	11
High Channel: 5230	MCS0	6.061	11
IEEE 802.11ac (VHT20) Mode (OFDM)			
Low Channel: 5180	MCS0	7.312	11
Middle Channel: 5200	MCS0	8.210	11
High Channel: 5240	MCS0	9.524	11
IEEE 802.11ac (VHT40) (OFDM)			
Low Channel: 5190	MCS0	4.260	11
High Channel: 5230	MCS0	5.777	11
IEEE 802.11ac (VHT80) Mode (OFDM)			
Channel: 5210	MCS0	2.488	11

Band 4: 5745~5825MHz

Temperature :	23 ℃	Humidity :	53 %
Test By:	Sance	Test Date :	November 15, 2018
Test Result:	PASS		
Frequency MHz	Data Rate Mbps	PSD dBm/ 500kHz	Limit dBm/ 500kHz
IEEE 802.11a Mode (OFDM)			
Low Channel: 5745	6	5.263	30
Middle Channel: 5785	6	5.381	30
High Channel: 5825	6	5.077	30
IEEE 802.11n(HT20) Mode (OFDM)			
Low Channel: 5745	MCS0	6.176	30
Middle Channel: 5785	MCS0	5.511	30
High Channel: 5825	MCS0	4.822	30
IEEE 802.11n(HT40) Mode (OFDM)			
Low Channel: 5755	MCS0	1.893	30
High Channel: 5795	MCS0	1.611	30
IEEE 802.11ac (VHT20) Mode (OFDM)			
Low Channel: 5745	MCS0	5.223	30
Middle Channel: 5785	MCS0	4.775	30
High Channel: 5825	MCS0	5.494	30
IEEE 802.11ac (VHT40) (OFDM)			
Low Channel: 5755	MCS0	1.887	30
High Channel: 5795	MCS0	2.110	30
IEEE 802.11ac (VHT80) Mode (OFDM)			
Channel: 5775	MCS0	-0.631	30

Band 5180-5240MHz
802.11a Low Channel

802.11a Middle Channel

802.11a High Channel

802.11n(HT20) Low Channel

802.11n(HT20) Middle Channel

802.11n(HT20) High Channel

802.11n(HT40) Low Channel

802.11n(HT40) High Channel

802.11ac (VHT20) Low Channel

802.11ac (VHT20) Middle Channel

802.11ac (VHT20) High Channel

802.11ac (VHT40) Low Channel

802.11ac (VHT40) High Channel

802.11ac (VHT80)

Band 5745-5825MHz
802.11a Low Channel

802.11a Middle Channel

802.11a High Channel

802.11n(HT20) Low Channel

802.11n(HT20) Middle Channel

802.11n(HT20) High Channel

802.11n(HT40) Low Channel

802.11n(HT40) High Channel

802.11ac (VHT20) Low Channel

802.11ac (VHT20) Middle Channel

802.11ac (VHT20) High Channel

802.11ac (VHT40) Low Channel

802.11ac (VHT40) High Channel

802.11ac (VHT80)

8. Band Edge

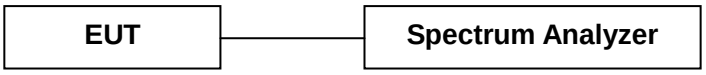
8.1 Limits

For transmitters operating in the 5.15-5.25GHz band: all emissions outside of the 5.15-5.35GHz band shall not exceed an EIRP of -27dBm

For transmitter operating in the 5.25-5.35GHz band: all emissions outside of the 5.15-5.35GHz band shall not exceed an EIRP of -27dBm/MHz. Devices operating in the 5.25-5.35GHz band generate emissions in the 5.15-5.25GHz 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 -27dBm/MHz in the 5.15-5.25GHz band.

For transmitters operating in the 5.725-5.850GHz band: all emissions shall be limited to a level of -27dBm/MHz at 75MHz or more above or below the band edge increasing linearly to 10dBm/MHz at 25MHz above or below the band edge, and from 25MHz above or below the band edge increasing linearly to a level of 15.6dBm/MHz at 5MHz above or below the band edge, and from 5MHz above or below the band increasing linearly to a level of 27dBm/MHz at the band edge.

8.2 Test SET-UP (Block Diagram of Configuration)



8.3 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibration or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 1MHz and VBW to 3MHz of spectrum analyzer.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

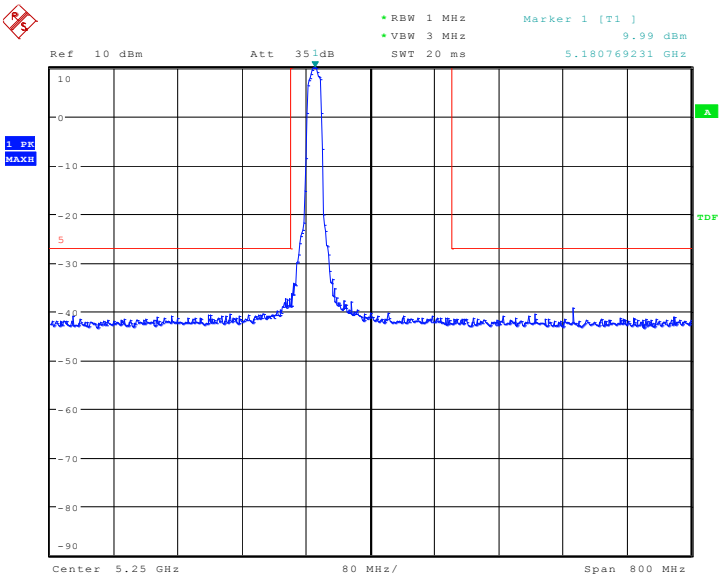
8.4 Measurement Results

Pass

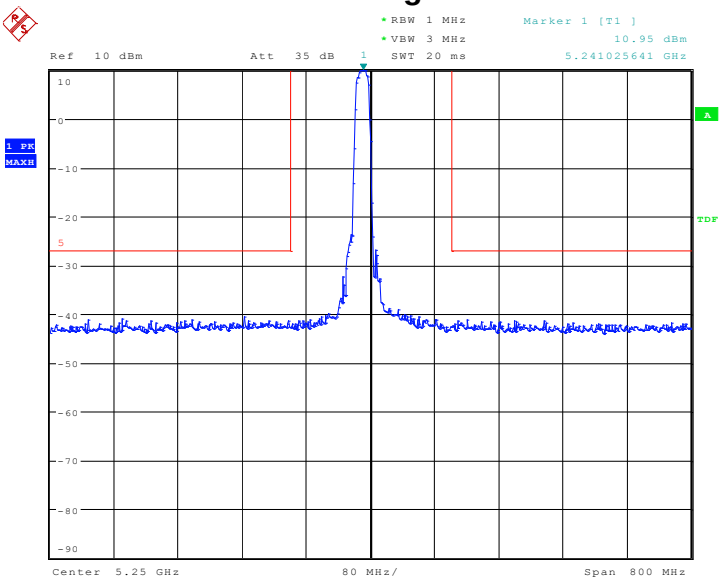
Please refer to following plots.

Band Edge

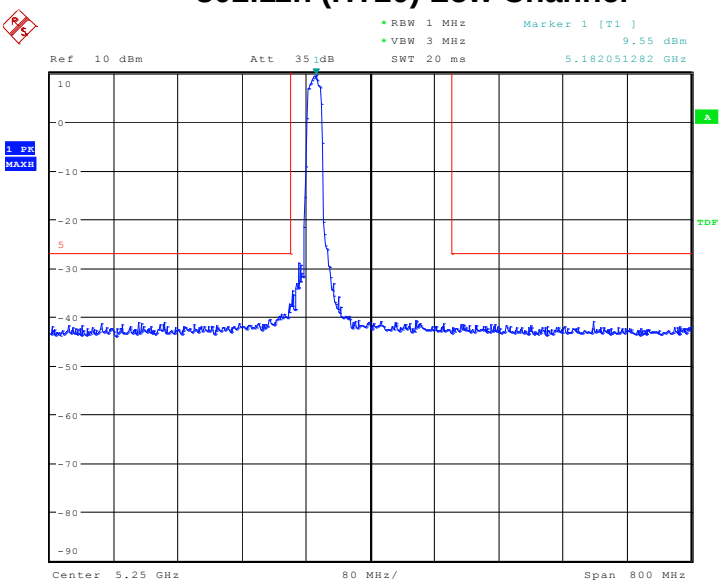
Band 5180-5240MHz
802.11a Low Channel



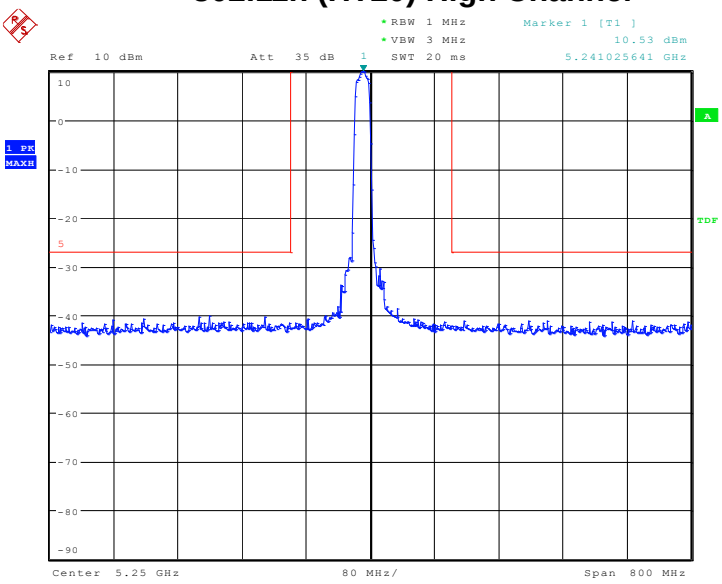
802.11a High Channel



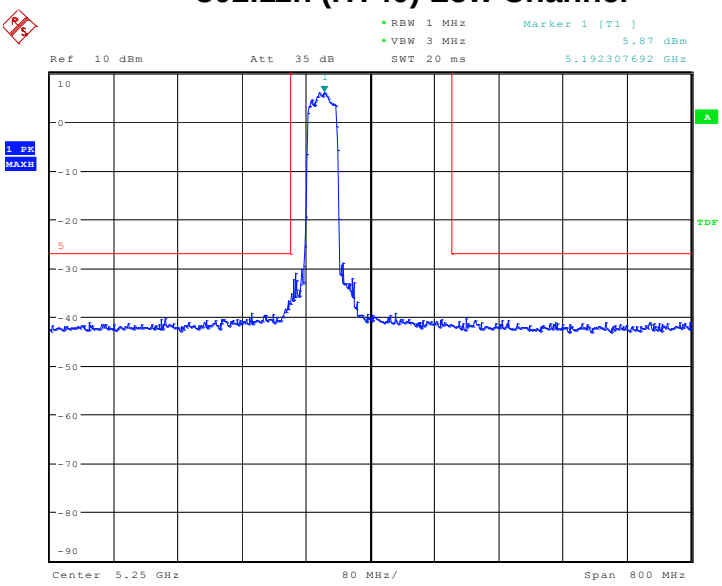
802.11n (HT20) Low Channel



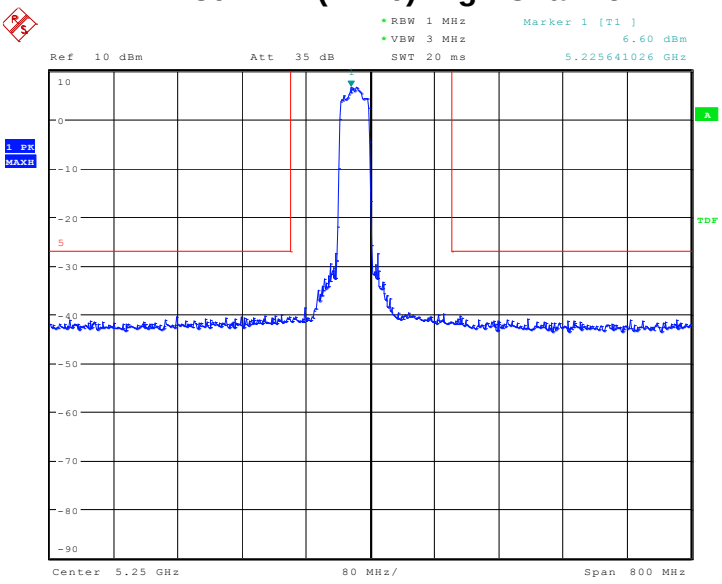
802.11n (HT20) High Channel



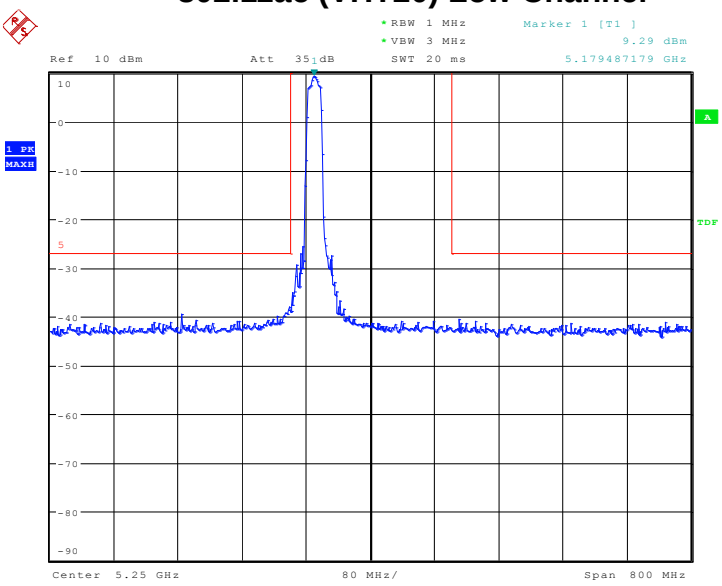
802.11n (HT40) Low Channel



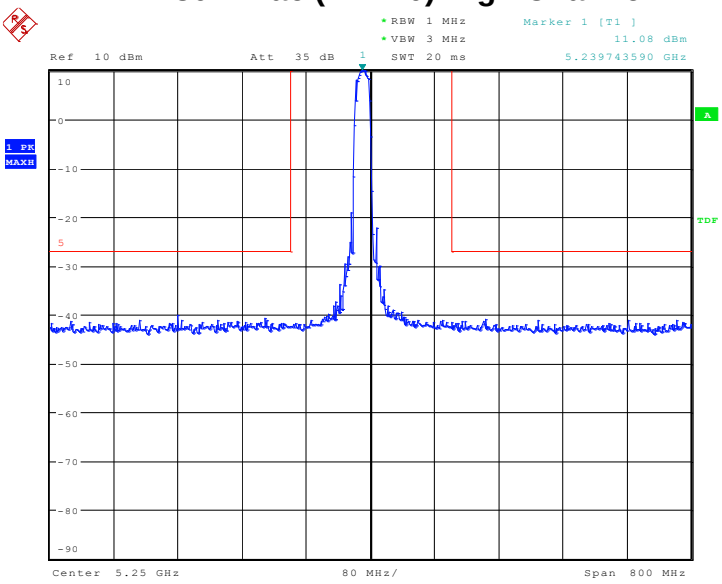
802.11n (HT40) High Channel



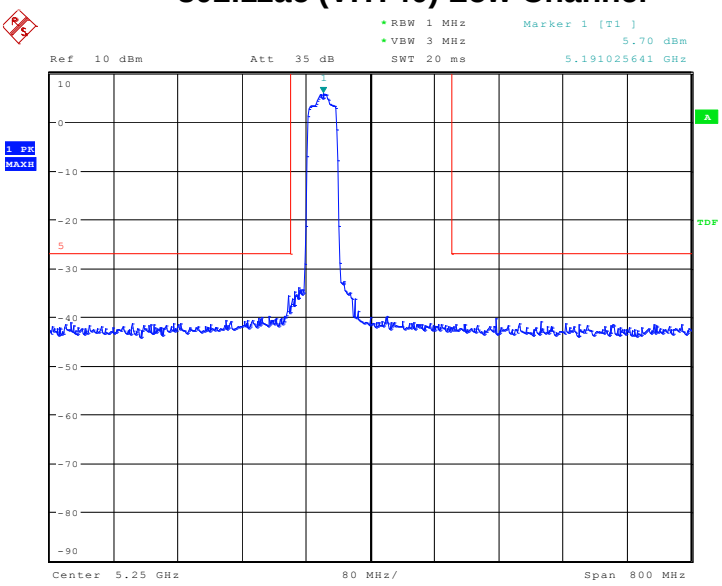
802.11ac (VHT20) Low Channel



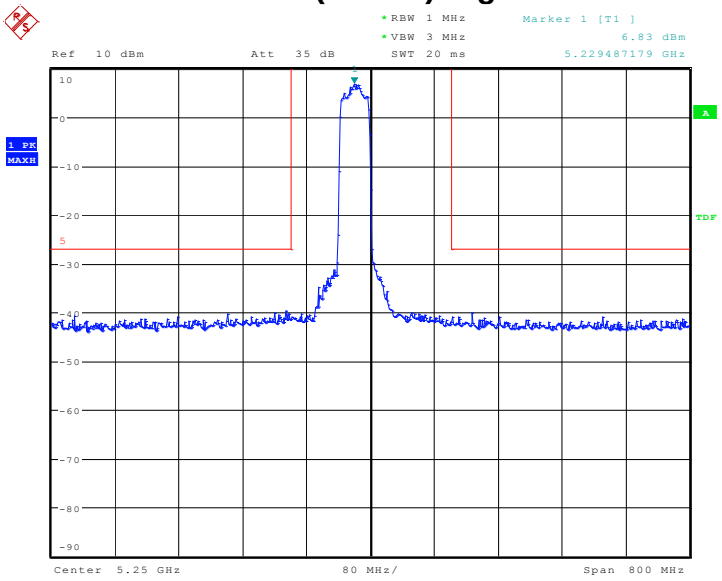
802.11ac (VHT20) High Channel



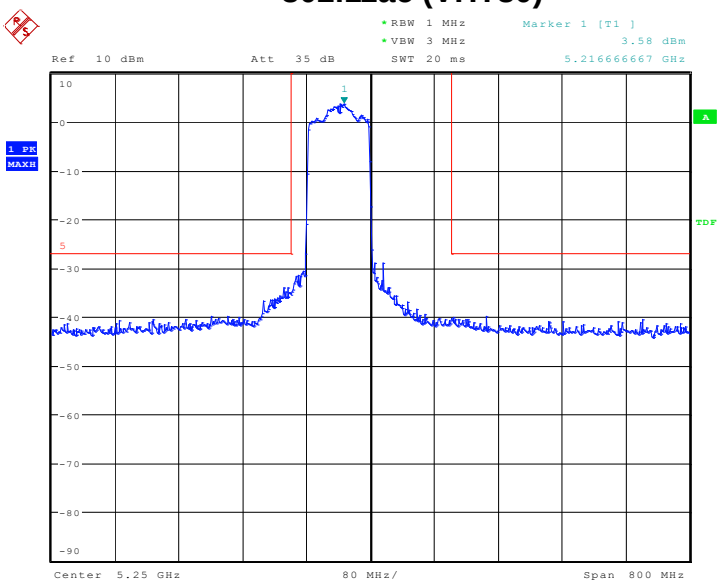
802.11ac (VHT40) Low Channel



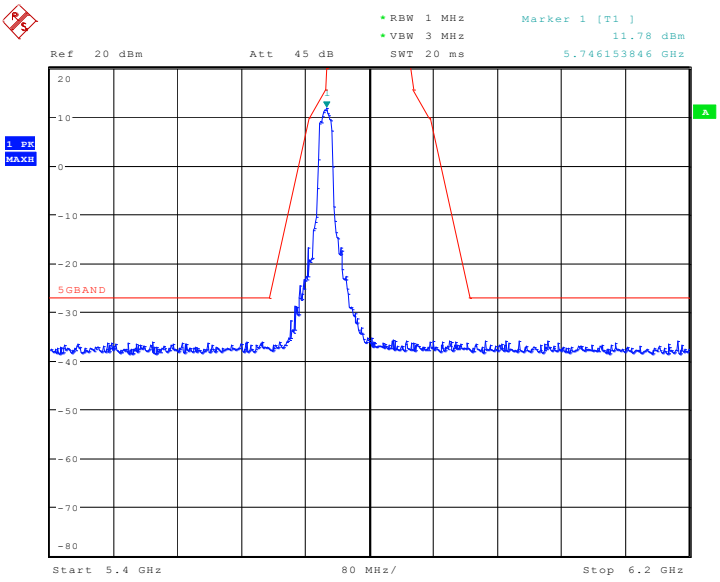
802.11ac (VHT40) High Channel



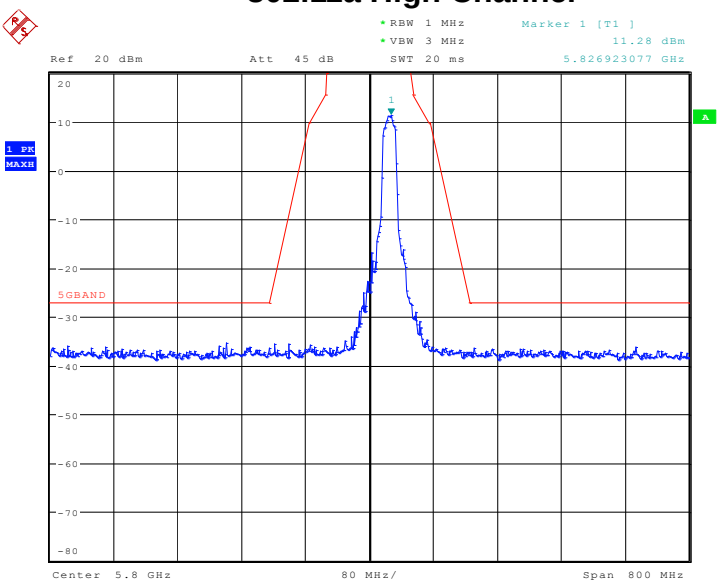
802.11ac (VHT80)



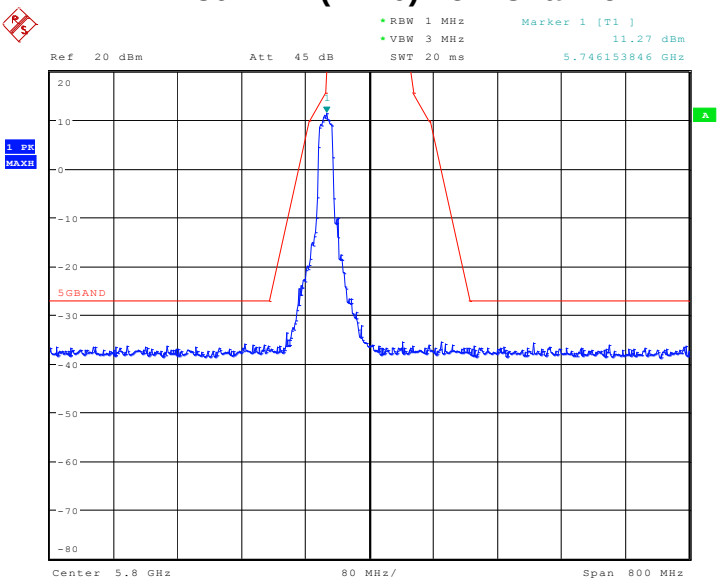
Band 5745-5825MHz
802.11a Low Channel



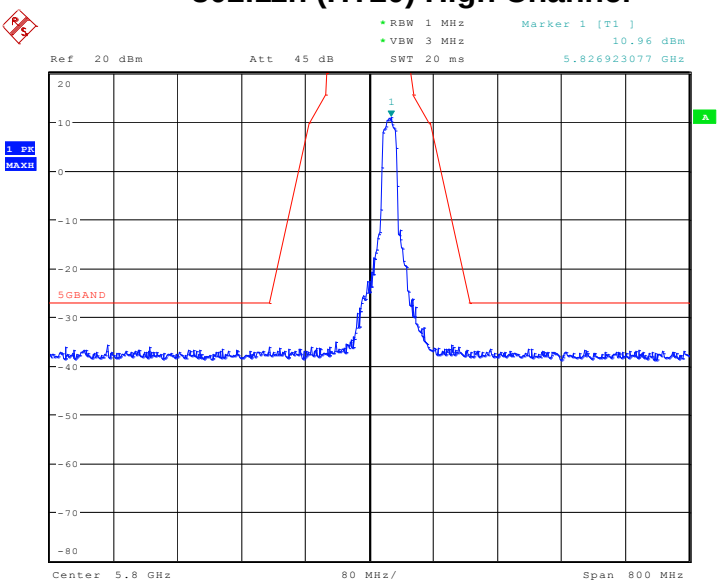
802.11a High Channel



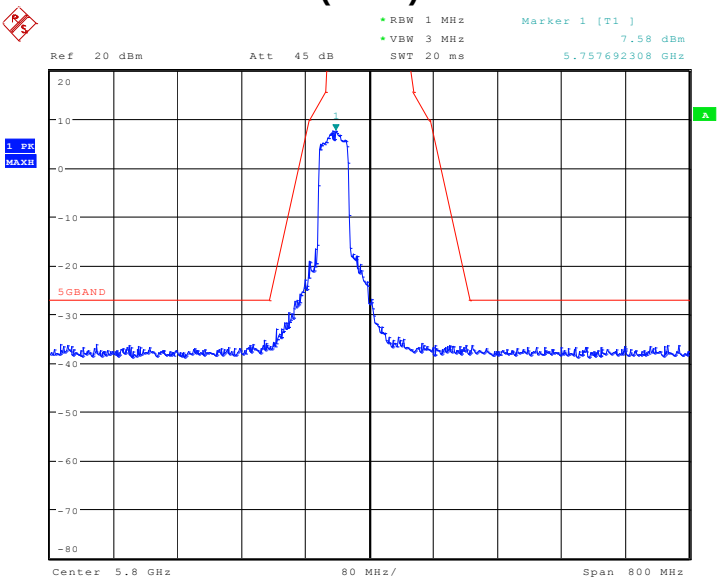
802.11n (HT20) Low Channel



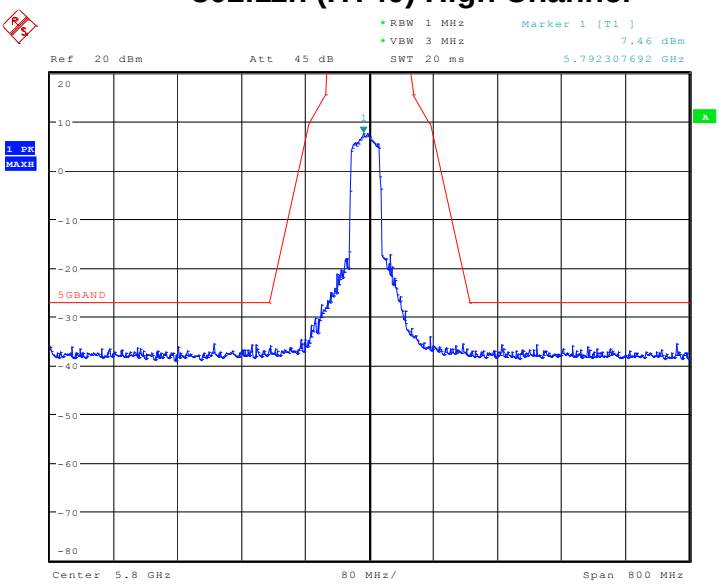
802.11n (HT20) High Channel



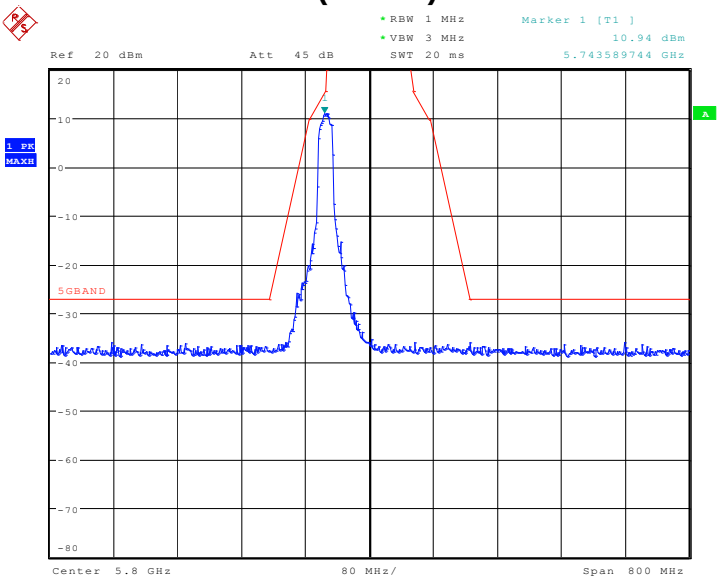
802.11n (HT40) Low Channel



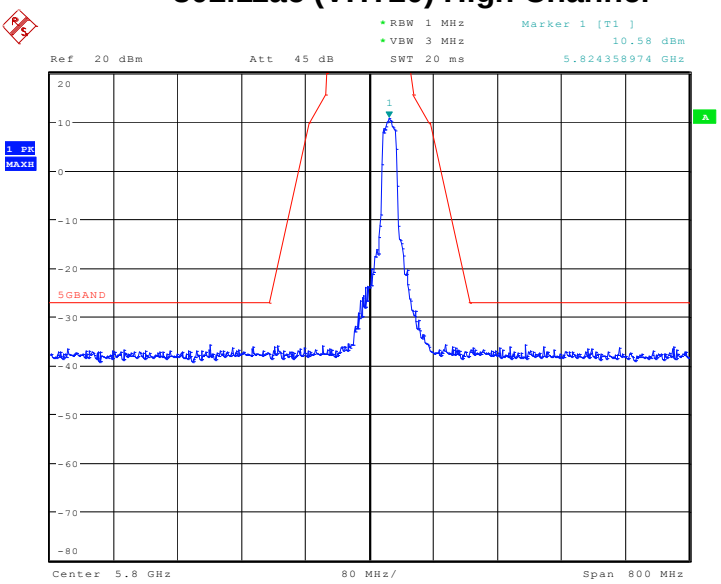
802.11n (HT40) High Channel



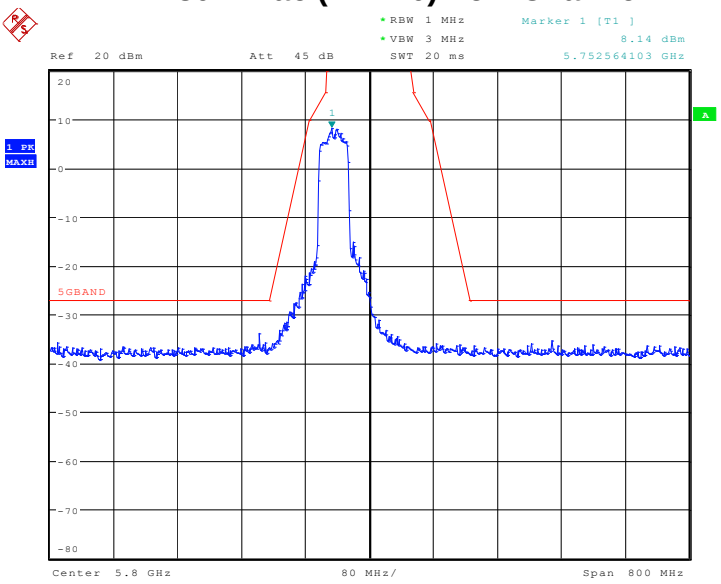
802.11ac (VHT20) Low Channel



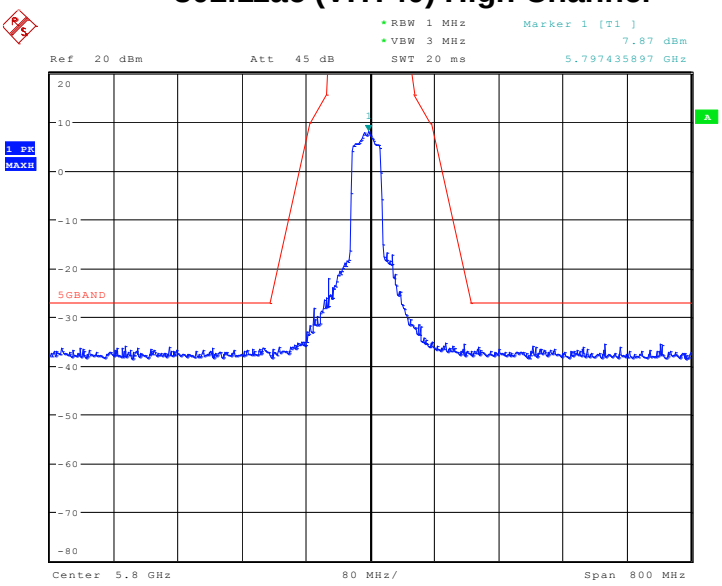
802.11ac (VHT20) High Channel



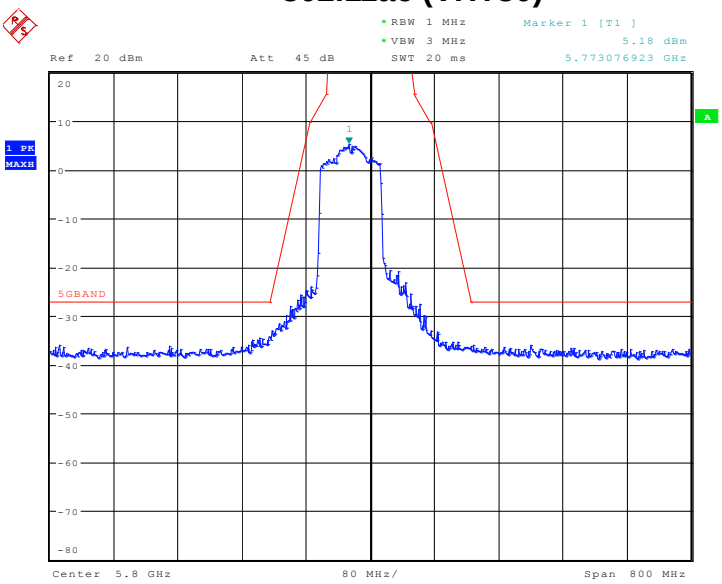
802.11ac (VHT40) Low Channel



802.11ac (VHT40) High Channel



802.11ac (VHT80)

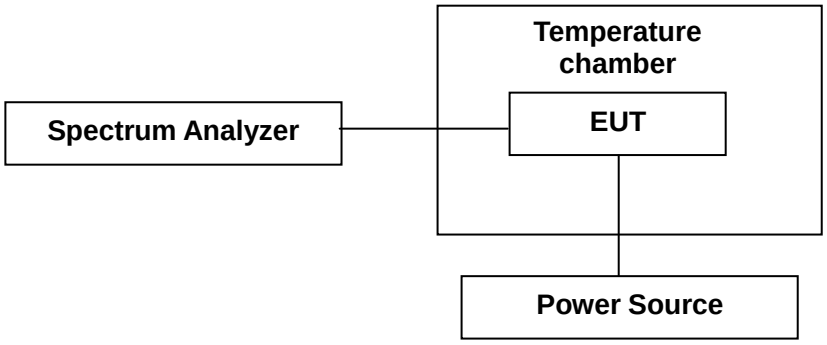


9. Frequency Stability

9.1 Limits

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

9.2 Test SET-UP (Block Diagram of Configuration)



9.3 Test Procedure

1. The EUT was placed inside the environmental test chamber and powered by Power source.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
   Note: The EUT set at un-modulation mode during frequency stability test.

9.4 Measurement Results

Pass

Please refer to following tables.

Temperature :	21 ℃	Humidity :	51 %
Test By:	Sance	Test Date :	November 15, 2018

5180~5240MHz Band

Lowest channel
5180MHz

Temperature (℃)	Power Supplied (Vdc)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
25	7.4	5180.0214	5180.0256	5180.0142	5180.0304	Pass
-5		5180.0310	5180.0234	5180.0207	5180.0237	Pass
5		5180.0203	5180.0312	5180.0214	5180.0257	Pass
15		5180.0120	5180.0320	5180.0384	5180.0224	Pass
40		5180.0225	5180.0402	5180.0430	5180.0181	Pass
20	8.5	5180.0213	5180.0316	5180.0277	5180.0254	Pass
	6.5	5180.0247	5180.0403	5180.0256	5180.0128	Pass

Note: EUT temperature working range is -5 to 40.

Temperature :	21 ℃	Humidity :	51 %
Test By:	Sance	Test Date :	November 15, 2018

5180~5240MHz Band

Highest channel
5240MHz

Temperature (℃)	Power Supplied (Vdc)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
25	7.4	5240.0114	5240.0274	5240.0277	5240.0227	Pass
-5		5240.0143	5240.0256	5240.0248	5240.0234	Pass
5		5240.0124	5240.0128	5240.0255	5240.0259	Pass
15		5240.0226	5240.0247	5240.0247	5240.0306	Pass
40		5240.0333	5240.0203	5240.0232	5240.0240	Pass
20	8.5	5240.0216	5240.0425	5240.0247	5240.0223	Pass
	6.5	5240.0404	5240.0418	5240.0253	5240.0275	Pass

Note: EUT temperature working range is -5 to 40.

Temperature :	21 ℃	Humidity :	51 %
Test By:	Sance	Test Date :	November 15, 2018

5745~5825MHz Band						
Lowest channel 5745MHz						
Temperature (℃)	Power Supplied (Vdc)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
25	7.4	5745.0224	5745.0156	5745.0145	5745.0222	Pass
-5		5745.0108	5745.0153	5745.0165	5745.0327	Pass
5		5745.0173	5745.0224	5745.0137	5745.0423	Pass
15		5745.0157	5745.0312	5745.0177	5745.0519	Pass
40		5745.0146	5745.0124	5745.0222	5745.0642	Pass
20	8.5	5745.0124	5745.0242	5745.0453	5745.0557	Pass
	6.5	5745.0141	5745.0453	5745.0272	5745.0239	Pass

Note: EUT temperature working range is -5 to 40.

Temperature :	21 ℃	Humidity :	51 %
Test By:	Sance	Test Date :	November 15, 2018

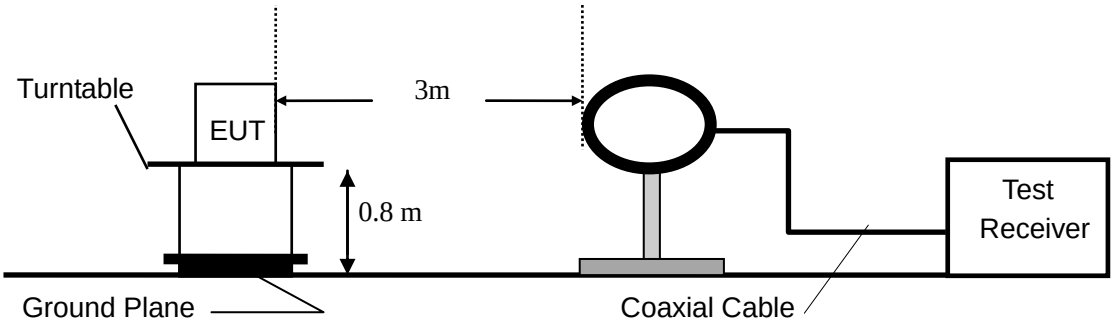
5745~5825MHz Band						
Highest channel 5825MHz						
Temperature (℃)	Power Supplied (Vdc)	Measured Frequency (MHz)				Test Result
		0 Minute	2 Minute	5 Minute	10 Minute	
25	7.4	5825.0135	5825.0162	5825.0357	5825.0257	Pass
-5		5825.0157	5825.0248	5825.0234	5825.0260	Pass
5		5825.0244	5825.0377	5825.0257	5825.0463	Pass
15		5825.0439	5825.0369	5825.0352	5825.0378	Pass
40		5825.0323	5825.0347	5825.0340	5825.0285	Pass
20	8.5	5825.0123	5825.0163	5825.0175	5825.0312	Pass
	6.5	5825.0371	5825.0337	5825.0389	5825.0163	Pass

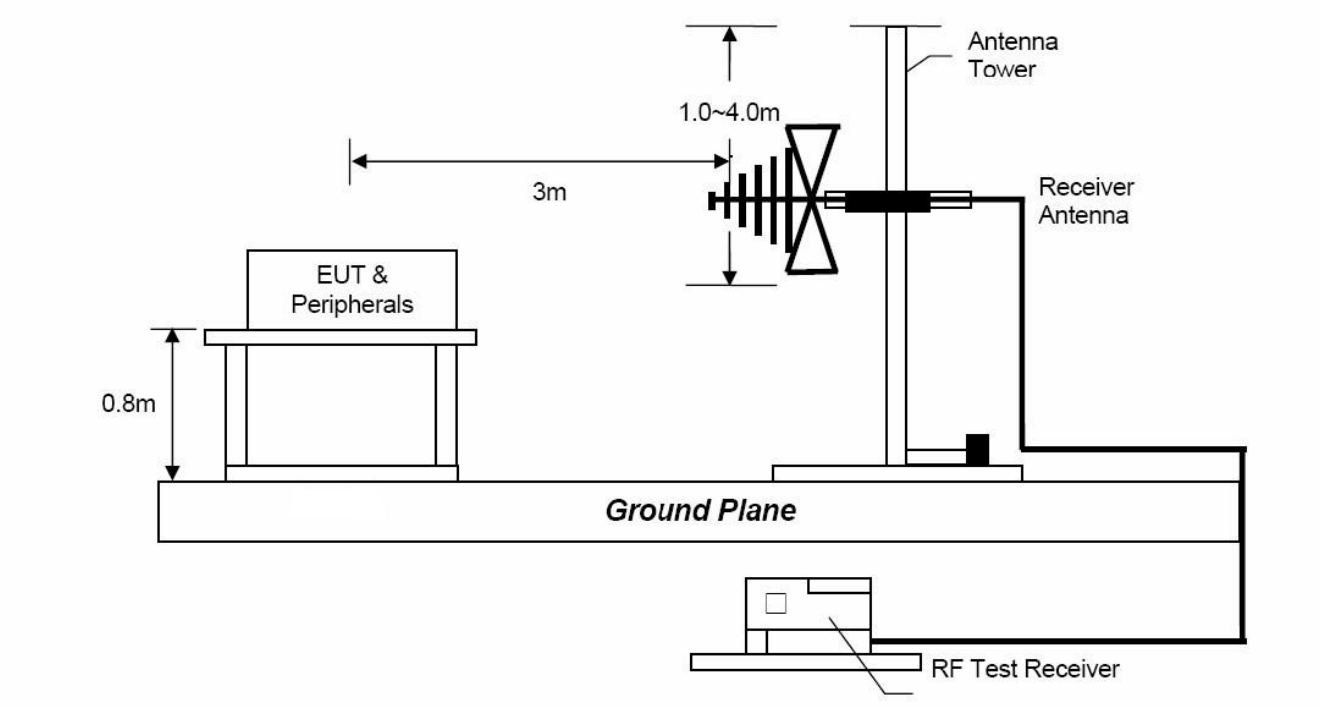
Note: EUT temperature working range is -5 to 40.

10. Radiated Spurious Emissions and Restricted Bands

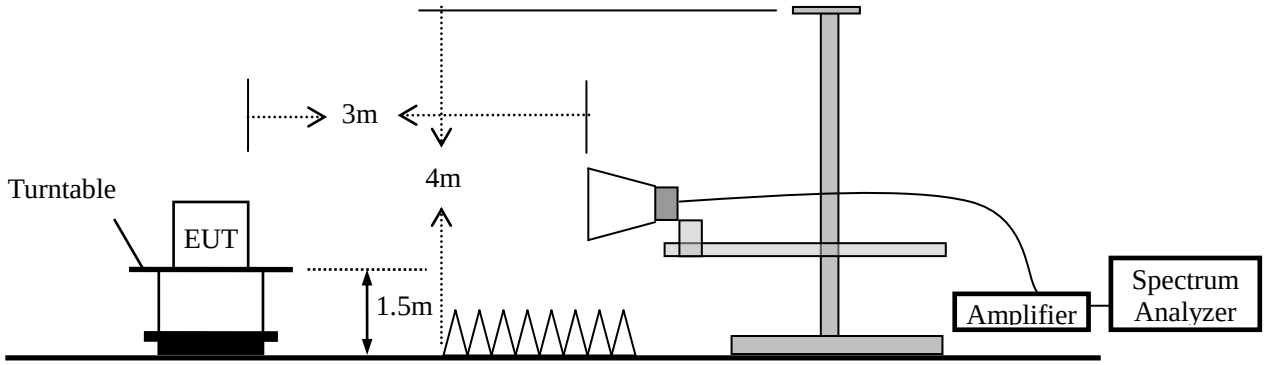
10.1 Test SET-UP (Block Diagram of Configuration)

10.1.1 Radiated Emission Test Set-Up, Frequency Below 30MHz





10.1.2 Radiated Emission Test Set-Up, Frequency above 1GHz



10.2 Measurement Procedure

a. Blow 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi- anechoic chamber room.
b. For the radiated emission test above 1GHz:
   The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter full anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
c. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
d. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to peak detect function and specified bandwidth with maximum hold mode.
f. A Quasi-peak measurement was then made for that frequency point for below 1GHz test. PK and AV for above 1GHz emission test.

During the radiated emission test, the spectrum analyzer was set with the following configurations:

Frequency Band (MHz)	Level	Resolution Bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	3 MHz
	Average	1 MHz	1/T

10.3 Limit

Frequency range MHz	Distance Meters	Field Strengths Limit (15.209)
		μV/m
0.009 ~ 0.490	300	2400/F(kHz)
0.490 ~ 1.705	30	24000/F(kHz)
1.705 ~ 30	30	30
30 ~ 88	3	100
88 ~ 216	3	150
216 ~ 960	3	200
Above 960	3	500

Remark: (1) Emission level (dB)μV = 20 log Emission level μV/m
(2) The smaller limit shall apply at the cross point between two frequency bands.
(3) As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.
(4) The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower.
(5) §15.247(d) specifies that emissions which fall in the restricted bands, as defined in §15.205 comply with radiated emission limits specified in §15.209.

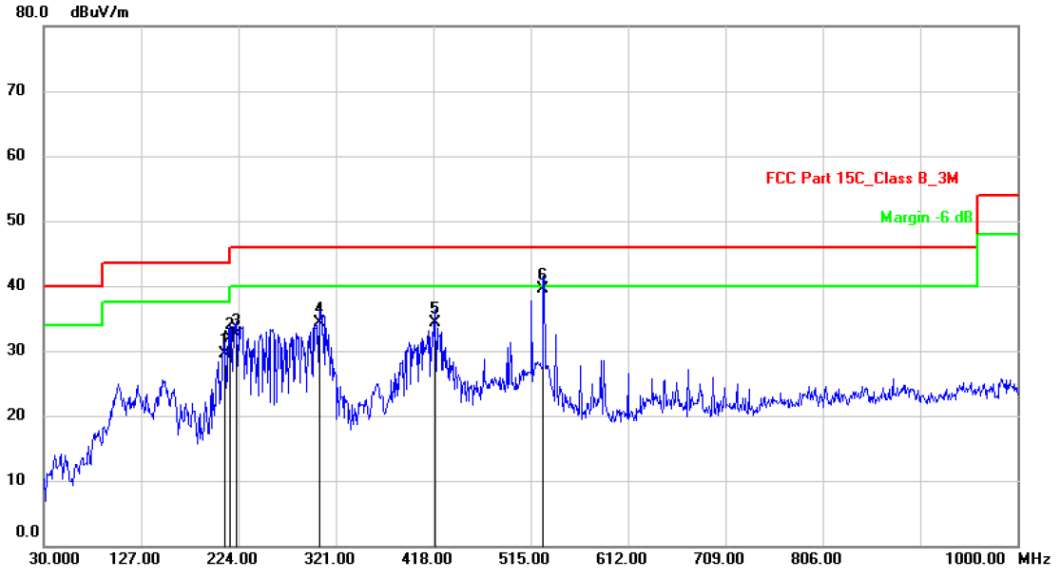
10.4 Measurement Results

Please refer to following plots of the worst case: 802.11a.

Dongguan NTC Co., Ltd.
Tel:+86-769-22022444 Fax:+86-769-22022799
Web: Http://www.ntc-c.com

Radiated Emission Measurement

File: PGI-400 Data :#89 Date: 2018-11-13 Time: 10:35:14



Site
Limit: FCC Part 15C_Class B_3M
EUT: Tablet
M/N: PGI-400
Mode: TX(5G Band 1)
Note:

Polarization: ***Horizontal***
Power: AC120V/60Hz
Distance: 3m

Temperature: 26
Humidity: 47 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		210.4200	42.73	-13.23	29.50	43.50	-14.00	QP			
2		215.2700	45.01	-13.11	31.90	43.50	-11.60	QP			
3		222.0600	45.36	-12.86	32.50	46.00	-13.50	QP			
4		304.5100	44.64	-10.34	34.30	46.00	-11.70	QP			
5		419.9400	42.94	-8.64	34.30	46.00	-11.70	QP			
6	*	527.6100	46.29	-6.69	39.60	46.00	-6.40	QP			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Note: Below 30MHz, the emissions are lower than 20dB below the allowable limit.

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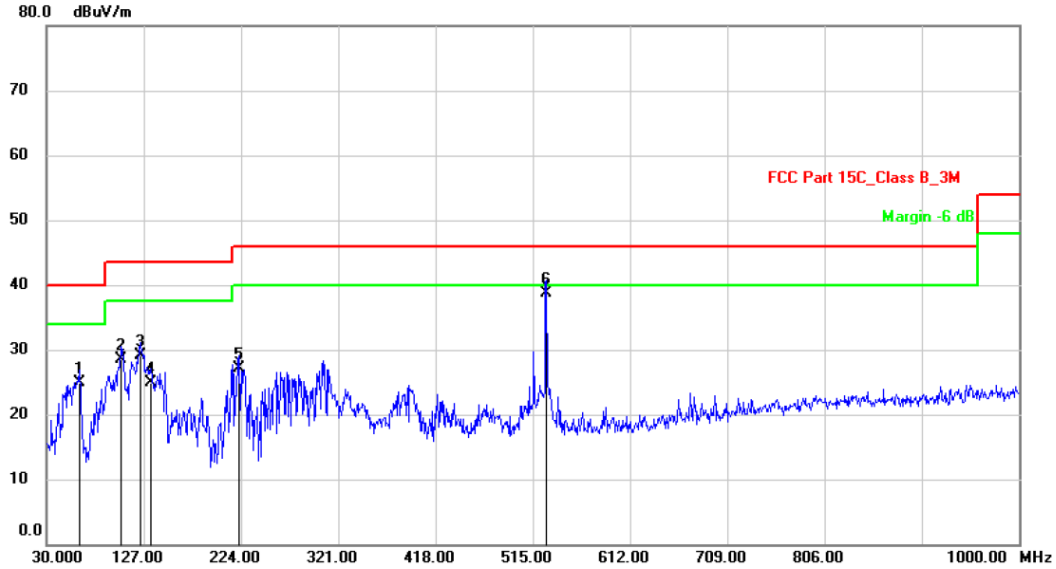
Radiated Emission Measurement

File: PGI-400 Data :#90 Date: 2018-11-13 Time: 10:43:51



Site
Limit: FCC Part 15C_Class B_3M
EUT: Tablet
M/N: PGI-400
Mode: TX(5G Band 1)
Note:

Polarization: ***Vertical***
Power: AC120V/60Hz
Distance: 3m

Temperature: 26
Humidity: 47 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		62.9800	39.97	-15.07	24.90	40.00	-15.10	QP			
2		104.6900	44.46	-15.96	28.50	43.50	-15.00	QP			
3		123.1200	46.50	-17.40	29.10	43.50	-14.40	QP			
4		133.7899	43.32	-18.32	25.00	43.50	-18.50	QP			
5		222.0600	42.96	-15.86	27.10	46.00	-18.90	QP			
6	*	528.5800	47.40	-8.70	38.70	46.00	-7.30	QP			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Note: Below 30MHz, the emissions are lower than 20dB below the allowable limit.

Test Mode:	The worst case: 802.11a	Test Date :	November 14, 2018
Frequency Range:	Above 1GHz	Temperature :	23℃
Test Result:	PASS	Humidity :	59 %
Measured Distance:	3m	Test By:	Sance

Band 5140-5240 MHz

Freq. (MHz)	Ant.Pol. (H/V)	Reading Level(dBuV)		Factor (dB/m)	Emission Level (dBuV)		Limit 3m (dBuV/m)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
Operation Mode: TX Mode (Low)										
10360	V	46.57	31.95	14.04	60.61	45.99	74.00	54.00	-13.39	-8.01
15540	V	42.11	27.53	19.00	61.11	46.53	74.00	54.00	-12.89	-7.47

10360	H	47.04	31.70	14.04	61.08	45.74	74.00	54.00	-12.92	-8.26
15540	H	42.33	27.88	19.00	63.45	49.00	74.00	54.00	-10.55	-5.00

Operation Mode: TX Mode (Mid)										
10400	V	46.81	31.64	14.12	60.93	45.76	74.00	54.00	-13.07	-8.24
15600	V	42.73	28.00	20.20	61.79	47.06	74.00	54.00	-12.21	-6.94

10400	H	46.65	31.63	14.12	60.77	45.75	74.00	54.00	-13.23	-8.25
15600	H	42.29	28.26	20.20	63.11	49.08	74.00	54.00	-10.89	-4.92

Operation Mode: TX Mode (High)										
10480	V	46.26	31.42	14.29	60.55	45.71	74.00	54.00	-13.45	-8.29
15720	V	43.83	28.55	20.82	62.99	47.71	74.00	54.00	-11.01	-6.29

10480	H	45.96	31.39	14.29	60.25	45.68	74.00	54.00	-13.75	-8.32
15720	H	39.36	28.59	20.82	59.56	48.79	74.00	54.00	-14.44	-5.21

Note: (1) All Readings are Peak Value and AV.
(2) Emission Level= Reading Level + Factor
(3) Factor= Antenna Gain + Cable Loss – Amplifier Gain
(4) Data of measurement within this frequency range shown " ---" in the table above means the reading of emissions are attenuated more than 10dB below the permissible limits.
(5) Measurement uncertainty : ±3.7dB.
(6) Horn antenna used for the emission over 1000MHz.

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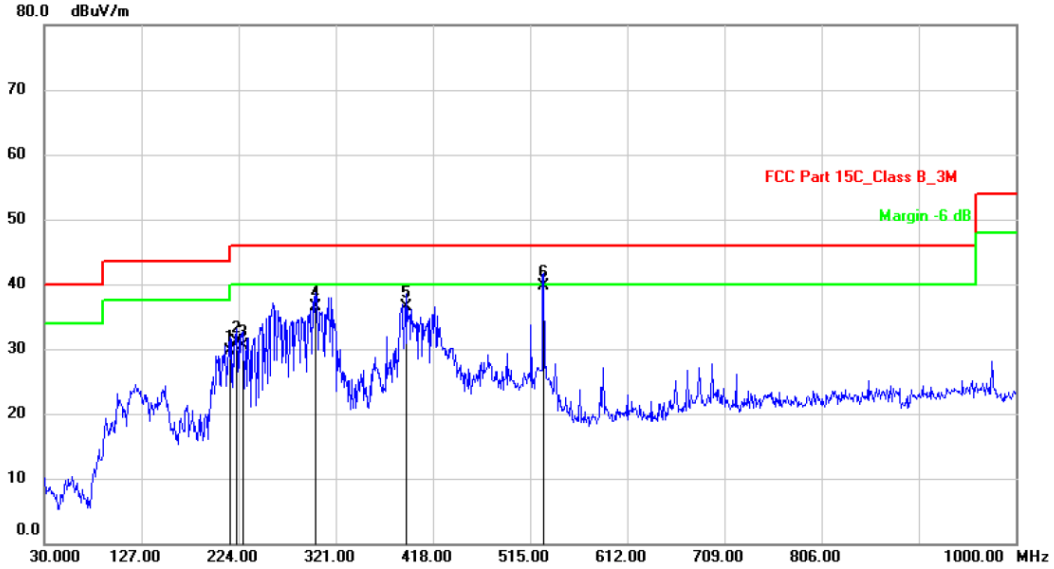
Radiated Emission Measurement

File: PGI-400 Data :#92 Date: 2018-11-13 Time: 10:57:46



Site
Limit: FCC Part 15C_Class B_3M
EUT: Tablet
M/N: PGI-400
Mode: TX(5G Band 4)
Note:

Polarization: ***Horizontal***
Power: AC120V/60Hz
Distance: 3m

Temperature: 26
Humidity: 47 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		215.2700	42.91	-13.11	29.80	43.50	-13.70	QP			
2		222.0600	43.96	-12.86	31.10	46.00	-14.90	QP			
3		228.8500	43.12	-12.52	30.60	46.00	-15.40	QP			
4		300.6300	47.05	-10.45	36.60	46.00	-9.40	QP			
5		391.8100	45.64	-9.14	36.50	46.00	-9.50	QP			
6	*	528.5800	46.40	-6.70	39.70	46.00	-6.30	QP			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Note: Below 30MHz, the emissions are lower than 20dB below the allowable limit.

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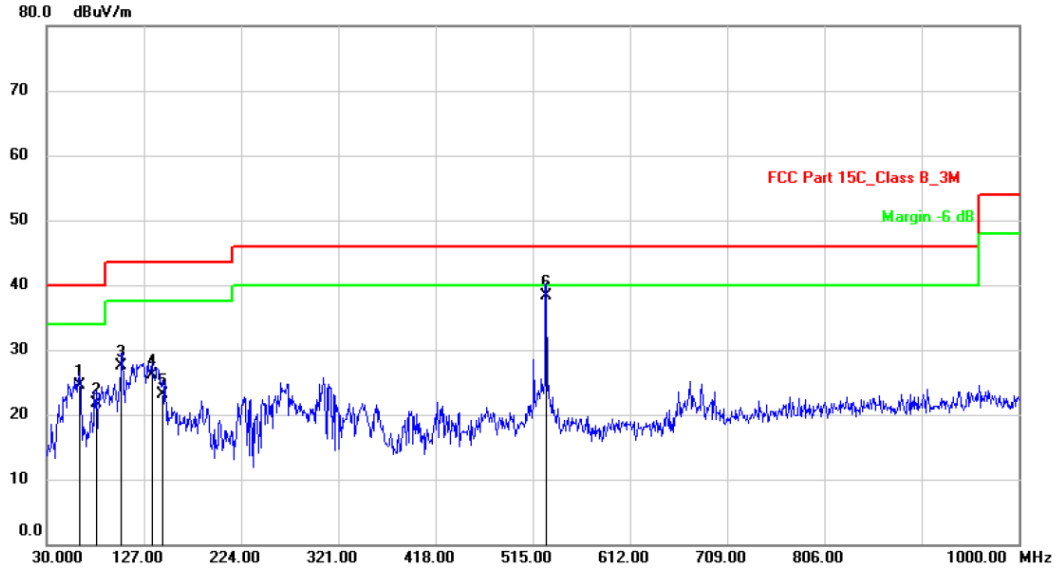
Radiated Emission Measurement

File: PGI-400 Data :#91 Date: 2018-11-13 Time: 10:50:13



Site
Limit: FCC Part 15C_Class B_3M
EUT: Tablet
M/N: PGI-400
Mode: TX(5G Band 4)
Note:

Polarization: ***Vertical***
Power: AC120V/60Hz
Distance: 3m

Temperature: 26
Humidity: 47 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		62.9800	39.57	-15.07	24.50	40.00	-15.50	QP			
2		79.4700	40.92	-19.12	21.80	40.00	-18.20	QP			
3		104.6900	43.46	-15.96	27.50	43.50	-16.00	QP			
4		134.7600	44.56	-18.36	26.20	43.50	-17.30	QP			
5		145.4299	41.79	-18.59	23.20	43.50	-20.30	QP			
6	*	528.5800	47.10	-8.70	38.40	46.00	-7.60	QP			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Note: Below 30MHz, the emissions are lower than 20dB below the allowable limit.

Test Mode:	The worst case: 802.11a	Test Date :	November 14, 2018
Frequency Range:	Above 1GHz	Temperature :	23℃
Test Result:	PASS	Humidity :	59 %
Measured Distance:	3m	Test By:	Sance

Band 5745-5825 MHz

Freq. (MHz)	Ant.Pol. (H/V)	Reading Level(dBuV)		Factor (dB/m)	Emission Level (dBuV)		Limit 3m (dBuV/m)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
Operation Mode: TX Mode (Low)										
11490	V	45.55	31.31	16.86	62.41	48.17	74.00	54.00	-11.59	-5.83
17235	V	46.05	28.04	22.23	68.28	50.27	74.00	54.00	-5.72	-3.73

11490	H	45.95	31.30	16.86	62.81	48.16	74.00	54.00	-11.19	-5.84
17235	H	45.25	27.73	22.23	67.48	49.96	74.00	54.00	-6.52	-4.04

Operation Mode: TX Mode (Mid)										
11570	V	45.30	30.88	17.01	62.31	47.89	74.00	54.00	-11.69	-6.11
17355	V	44.86	26.59	22.62	67.48	49.21	74.00	54.00	-6.52	-4.79

11570	H	45.80	30.88	17.01	62.81	47.89	74.00	54.00	-11.19	-6.11
17355	H	45.22	27.48	22.62	67.84	50.10	74.00	54.00	-6.16	-3.90

Operation Mode: TX Mode (High)										
11650	V	44.81	30.60	17.16	61.97	47.76	74.00	54.00	-12.03	-6.24
17475	V	46.09	27.80	23.01	69.10	50.81	74.00	54.00	-4.90	-3.19

11650	H	44.77	30.60	17.16	61.93	47.76	74.00	54.00	-12.07	-6.24
17475	H	46.52	27.75	23.01	69.53	50.76	74.00	54.00	-4.47	-3.24

Note: (1) All Readings are Peak Value and AV.
(2) Emission Level= Reading Level + Factor
(3) Factor= Antenna Gain + Cable Loss – Amplifier Gain
(4) Data of measurement within this frequency range shown " ---" in the table above means the reading of emissions are attenuated more than 10dB below the permissible limits.
(5) Measurement uncertainty : ±3.7dB.
(6) Horn antenna used for the emission over 1000MHz.

11. Antenna Application

11.1 Antenna requirement

According to of FCC part 15C section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section 15.203 of the rules.

And according to 47 CFR section 15.407(a), if the transmitting antennas of directional gain greater than 6dBi are used, the transmit power and power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

11.2 Measurement Results

The antenna is FPC antenna that no antenna other than furnished by the responsible party shall be used with the device, and the best case gain of the antenna is 1.5dBi, So, the antenna is consider meet the requirement.

12. Test Equipment List

No.	Equipment	Manufacturer	Model No.	Serial No.	Characteristics	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI7	100837	9KHz~7GHz	Mar. 14, 2018	Mar. 13, 2019
2.	Antenna	Schwarzbeck	VULB9162	VULB9162-010	30MHz~7GHz	Mar. 23, 2018	Mar. 22, 2019
3.	Spectrum Analyzer	Rohde & Schwarz	FSU26	200409	20Hz~26.5GHz	Mar. 14, 2018	Mar. 13, 2019
4.	Spectrum Analyzer	Keysight	N9020A	MY54200831	20Hz~26.5GHz	Apr. 24 2018	Apr. 23, 2019
5.	Spectrum Analyzer	Rohde & Schwarz	FSV40	101003	10Hz~40GHz	Apr. 24, 2018	Apr. 23, 2019
6.	Horn Antenna	Schwarzbeck	BBHA9170	9170-372	15GHz~40GHz	Mar. 23, 2018	Mar. 22, 2019
7.	Pre-Amplifier	EMCI	EMC 184045	980102	18GHz~40GHz	Apr. 24, 2018	Apr. 23, 2019
8.	Power Sensor	DARE	RPR3006W	15I00041SNO64	100MHz~6GHz	Mar. 14, 2018	Mar. 13, 2019
9.	Communication Tester	Rohde & Schwarz	CMW500	149004	70MHz~6GHz	Mar. 14, 2018	Mar. 13, 2019
10.	Horn Antenna	COM-Power	AH-118	071078	500MHz~18GHz	Mar. 23, 2018	Mar. 22, 2019
11.	Pre-Amplifier	HP	HP 8449B	3008A00964	1GHz~26.5GHz	Mar. 14, 2018	Mar. 13, 2019
12.	Pre-Amplifier	HP	HP 8447D	1145A00203	100KHz~1.3GHz	Mar. 14, 2018	Mar. 13, 2019
13.	Loop Antenna	Schwarzbeck	FMZB 1513	1513#272	9KHz~30MHz	Apr. 24, 2018	Apr. 23, 2019
14.	Temperature & Humidity Chamber	REMAFEE	SYHR-225L	N/A	-40~150℃	Apr. 25, 2018	Apr. 23, 2019
15.	DC Source	MY	MY8811	N/A	0~30V	Mar. 23, 2018	Mar. 22, 2019
16.	Temporary antenna connector	TESCOM	SS402	N/A	9KHz~25GHz	N/A	N/A
17.	Power Meter	Anritsu	ML2495A	1139001	100k-65GHz	Apr. 24, 2018	Apr. 23, 2019
18.	Power Sensor	Anritsu	MA2411B	100345	300M-40GHz	Apr. 24, 2018	Apr. 23, 2019
19.	Test Receiver	Rohde & Schwarz	ESCI	101152	9KHz~3GHz	Mar. 14, 2018	Mar. 13, 2019
20.	L.I.S.N	Rohde & Schwarz	ENV 216	101317	N/A	Mar. 14, 2018	Mar. 13, 2019
21.	L.I.S.N	Schwarzbeck	NNLK8129	8129212	N/A	Mar. 07, 2018	Mar. 06, 2019
22.	RF Switching Unit	Compliance Direction Systems Inc.	RSU-M2	38311	N/A	Mar. 14, 2018	Mar. 13, 2019
23.	Test Software	EZ	EZ_EMC	N/A	N/A	N/A	N/A

Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

---End---