6. 6dB &26dB & 99% Bandwidth Test

6.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Sep.08,18	1Year
2.	Attenuator	Agilent	8491B	MY39269170	Oct.14,18	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX106	505239/6	Apr.23,18	1 Year
4.	RF Cable	EMCI	EMC102-KM-KM 3500	170702	May.13,19	1 Year

6.2.Limit

6dB Bandwidth should be not less than 500kHz

6.3.Test Procedure

6dB Bandwidth:
The transmitter output was connected to a spectrum analyzer, The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 300 KHz VBW for signal width below 20MHz and 300KHz RBW ,1MHz VBW for Above 20MHz signal Bandwidth.

26dB Bandwidth:
(a) Set RBW = approximately 1% of the emission bandwidth.
(b) Set the VBW > RBW.
(c) Detector = Peak.
(d) Trace mode = max hold.
(e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

99% Occupied bandwidth:

Use the test method descried in ANSI C63.10 Section 6.9.2:

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.

b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.

c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.

d) Step a) through step c) might require iteration to adjust within the specified range.

e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.

f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.

g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.

h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

6.4.Test Results

5180-5240MHz Band

EUT: BCM dual band 2*2 WiFi		
M/N: 50-0102-BC-22		
Test date: 2019-01-16	Pressure: 102.5±1.0 kpa	Humidity: 53.1±3.0%
Tested by: Garry	Test site: RF site	Temperature:22.6±0.6 ℃

26dB bandwidth:

Test Mode	Frequency（MHz）	26dB Bandwidth (MHz)		Limit (KHz)
		ANT0	ANT1	
11a	5180	21.41	21.38	N/A
	5200	21.33	21.43	N/A
	5240	21.33	21.41	N/A
11n HT20	5180	21.75	21.71	N/A
	5200	21.46	21.08	N/A
	5240	21.59	21.19	N/A
11n HT40	5190	40.02	39.62	N/A
	5230	39.77	39.69	N/A
11ac VHT20	5180	21.70	21.31	N/A
	5200	21.68	21.19	N/A
	5240	21.55	21.11	N/A
11ac VHT40	5190	40.12	40.02	N/A
	5230	39.88	40.25	N/A
11ac VHT80	5210	81.58	81.56	N/A
Conclusion: PASS				

99% Occupied bandwidth:

Test Mode	Frequency（MHz）	99% bandwidth (MHz)		Limit (KHz)
		ANT0	ANT1	
11a	5180	16.865	16.873	N/A
	5200	16.892	16.777	N/A
	5240	16.857	16.805	N/A
11n HT20	5180	17.910	17.906	N/A
	5200	17.903	17.875	N/A
	5240	17.883	17.804	N/A
11n HT40	5190	36.296	36.291	N/A
	5230	36.328	36.345	N/A
11ac VHT20	5180	17.923	17.808	N/A
	5200	17.881	17.915	N/A
	5240	17.871	17.869	N/A
11ac VHT40	5190	36.312	36.361	N/A
	5230	36.309	36.337	N/A
11ac VHT80	5210	75.711	75.744	N/A
Conclusion: PASS				

5260-5320MHz Band:
26dB bandwidth

EUT: BCM dual band 2*2 WiFi		
M/N: 50-0102-BC-22		
Test date: 2019-01-16~23	Pressure: 102.3±1.0 kpa	Humidity: 51.6±3.0%
Tested by: Garry	Test site: RF site	Temperature:22.5±0.6 ℃

Test Mode	Frequency（MHz）	26dB Bandwidth (MHz)		Limit (KHz)
		ANT0	ANT1	
11a	5260	21.30	21.07	N/A
	5300	21.33	21.38	N/A
	5320	21.33	21.26	N/A
11n HT20	5260	21.54	21.53	N/A
	5300	21.49	21.80	N/A
	5320	21.73	21.71	N/A
11n HT40	5270	39.64	40.05	N/A
	5310	39.56	40.26	N/A
11ac VHT20	5260	21.56	21.45	N/A
	5300	21.62	21.41	N/A
	5320	21.65	21.80	N/A
11ac VHT40	5270	39.86	40.14	N/A
	5310	39.83	40.03	N/A
11ac VHT80	5290	81.35	81.73	N/A
Conclusion: PASS				

5500-5700MHz Band:
26dB bandwidth

EUT: BCM dual band 2*2 WiFi		
M/N: 50-0102-BC-22		
Test date: 2019-01-23	Pressure: 102.3±1.0 kpa	Humidity: 51.6±3.0%
Tested by: Garry	Test site: RF site	Temperature:22.5±0.6 ℃

Test Mode	Frequency (MHz)	26dB Bandwidth (MHz)		Limit (KHz)
		ANT0	ANT1	
11a	5500	21.15	21.47	N/A
	5600	21.32	21.45	N/A
	5700	21.29	21.39	N/A
11n HT20	5500	21.77	21.63	N/A
	5600	21.45	21.62	N/A
	5700	21.65	21.46	N/A
11n HT40	5510	39.66	39.92	N/A
	5590	39.49	39.99	N/A
	5670	39.66	40.13	N/A
11ac VHT20	5500	21.42	21.60	N/A
	5600	21.55	21.80	N/A
	5700	21.43	21.85	N/A
11ac VHT40	5510	39.74	39.93	N/A
	5590	39.71	40.18	N/A
	5670	39.60	40.29	N/A
11ac VHT80	5530	81.10	82.08	N/A
	5610	81.75	82.37	N/A
Conclusion: PASS				

5745-5825MHz Band:
6dB bandwidth

EUT: BCM dual band 2*2 WiFi		
M/N: 50-0102-BC-22		
Test date: 2019-02-19	Pressure: 102.7±1.0 kpa	Humidity: 54.1±3.0%
Tested by: Garry	Test site: RF site	Temperature:23.4±0.6 ℃

Test Mode	Frequency（MHz）	6dB Bandwidth (MHz)		Limit (KHz)
		ANT0	ANT1	
11a	5745	16.36	16.34	≧500
	5785	16.37	16.33	≧500
	5825	16.37	16.32	≧500
11n HT20	5745	17.59	17.56	≧500
	5785	17.60	17.30	≧500
	5825	17.60	17.56	≧500
11n HT40	5755	36.07	35.94	≧500
	5795	36.39	36.06	≧500
11ac VHT20	5745	17.59	17.53	≧500
	5785	17.58	17.31	≧500
	5825	17.56	17.34	≧500
11ac VHT40	5755	36.17	36.04	≧500
	5795	36.13	36.08	≧500
11ac VHT80	5775	75.62	75.41	≧500
Conclusion: PASS				

26dB bandwidth

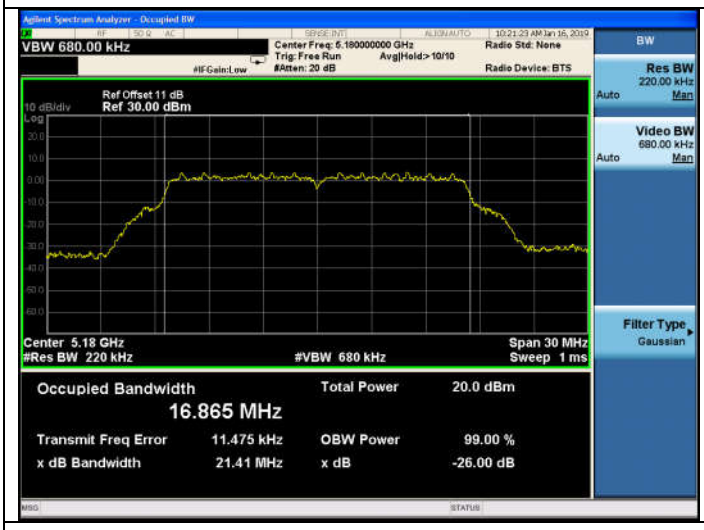
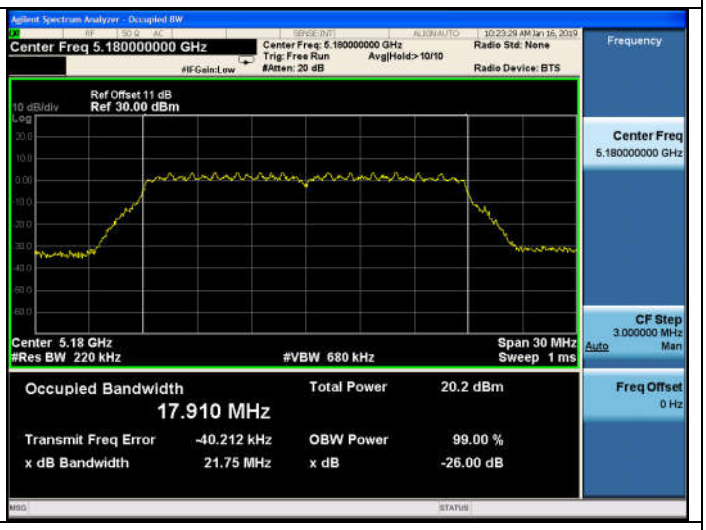
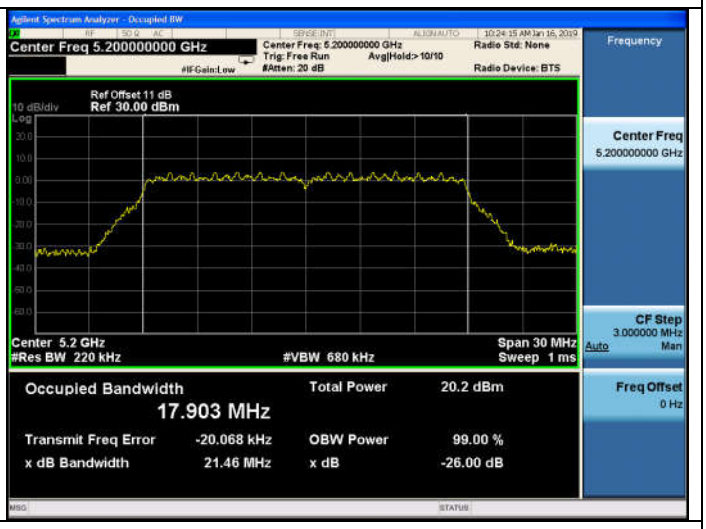
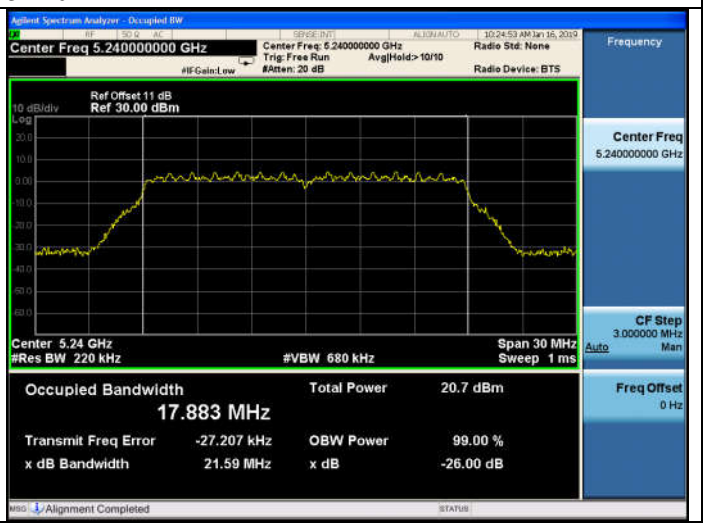
EUT: BCM dual band 2*2 WiFi		
M/N: 50-0102-BC-22		
Test date: 2019-01-23	Pressure: 102.7±1.0 kpa	Humidity: 54.1±3.0%
Tested by: Garry	Test site: RF site	Temperature:23.4±0.6 ℃

Test Mode	Frequency（MHz）	26dB Bandwidth (MHz)		Limit (KHz)
		ANT0	ANT1	
11a	5745	21.38	21.61	N/A
	5785	21.36	21.58	N/A
	5825	21.32	21.50	N/A
11n HT20	5745	21.55	21.62	N/A
	5785	21.73	21.48	N/A
	5825	21.46	21.61	N/A
11n HT40	5755	39.65	40.32	N/A
	5795	39.73	40.29	N/A
11ac VHT20	5745	21.52	21.66	N/A
	5785	21.45	21.56	N/A
	5825	21.63	21.66	N/A
11ac VHT40	5755	39.71	40.12	N/A
	5795	39.74	40.22	N/A
11ac VHT80	5775	81.39	82.11	N/A
Conclusion: PASS				

5180-5240MHz Band:

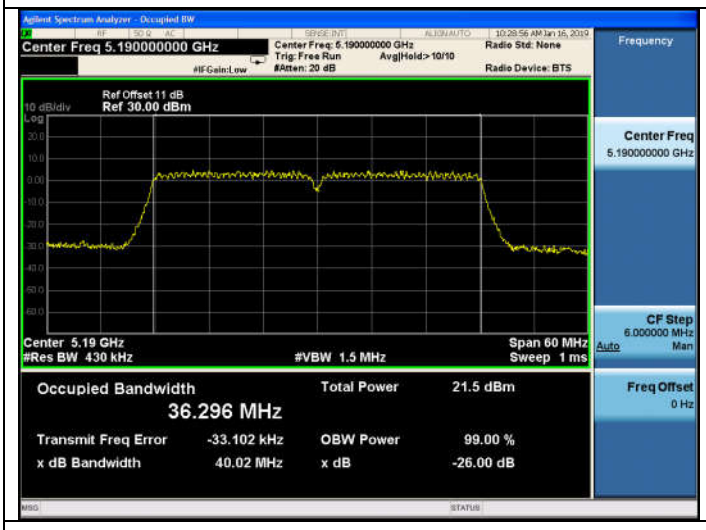
26dB bandwidth & 99% Occupied bandwidth

ANT 0

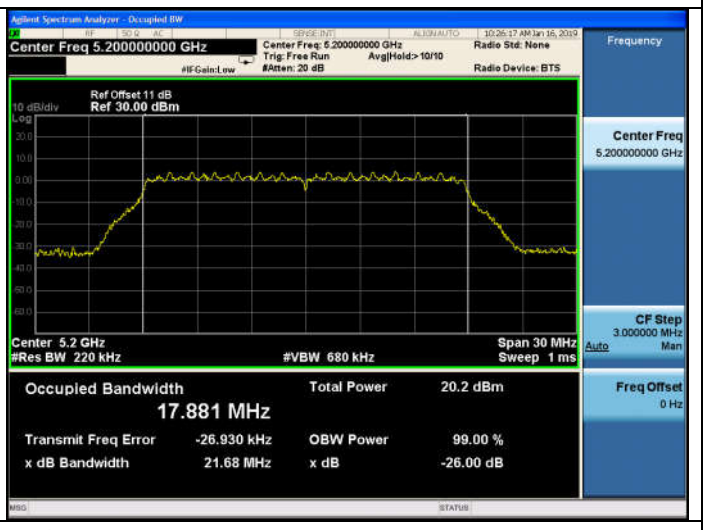
11a	**11n HT20**
5180MHz	5180MHz
	
5200MHz	5200MHz
	
5240MHz	5240MHz
	

11n HT40

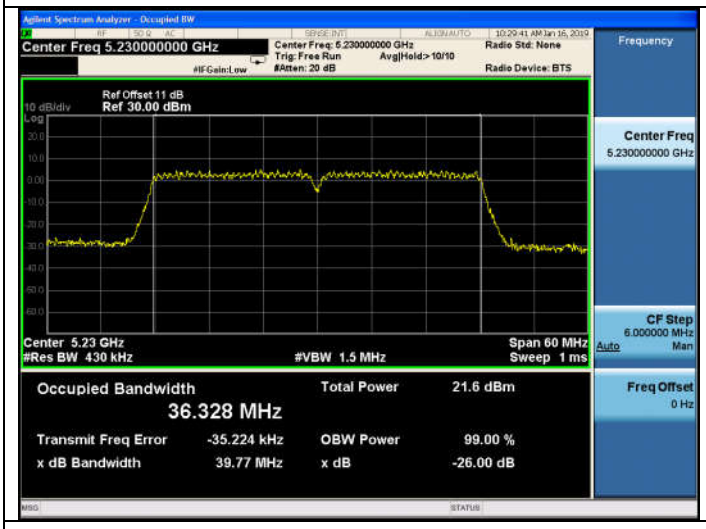
5190MHz



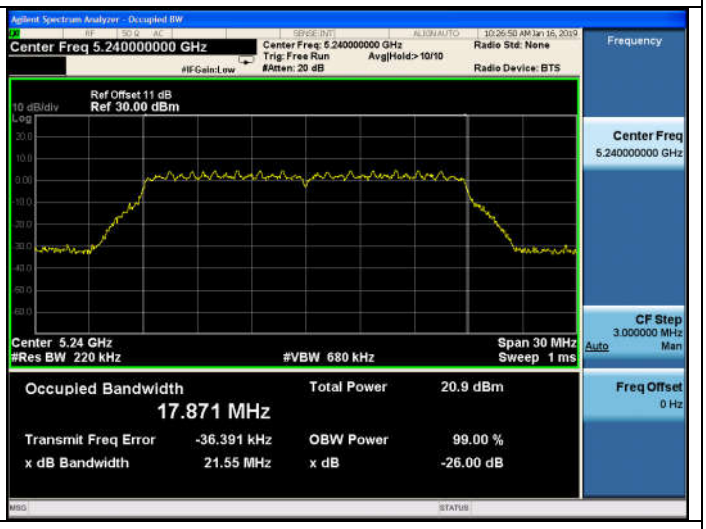
5200MHz



5230MHz

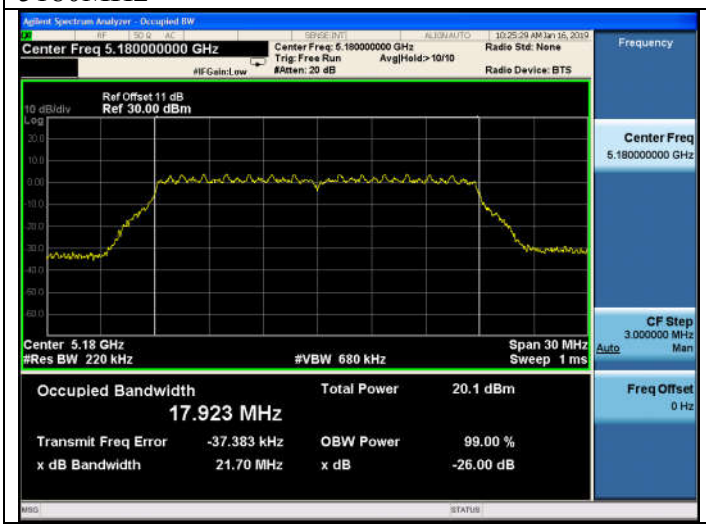


5240MHz



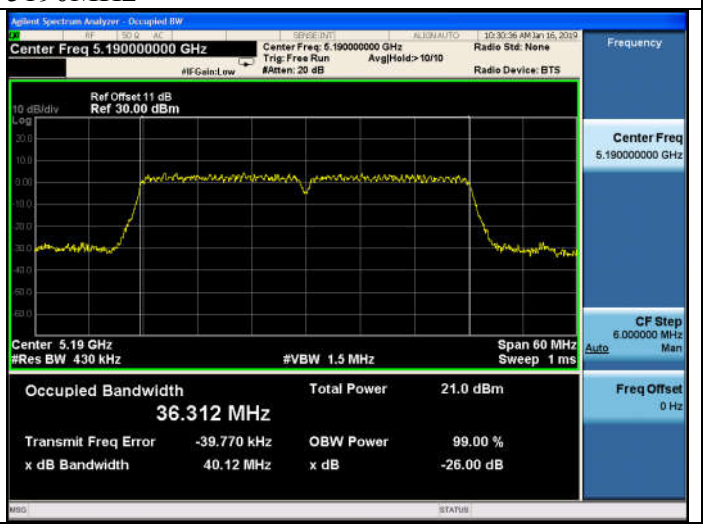
11ac VHT20

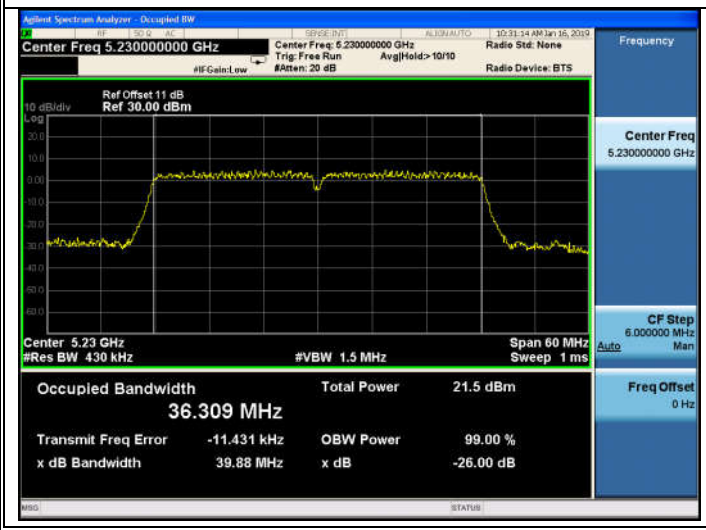
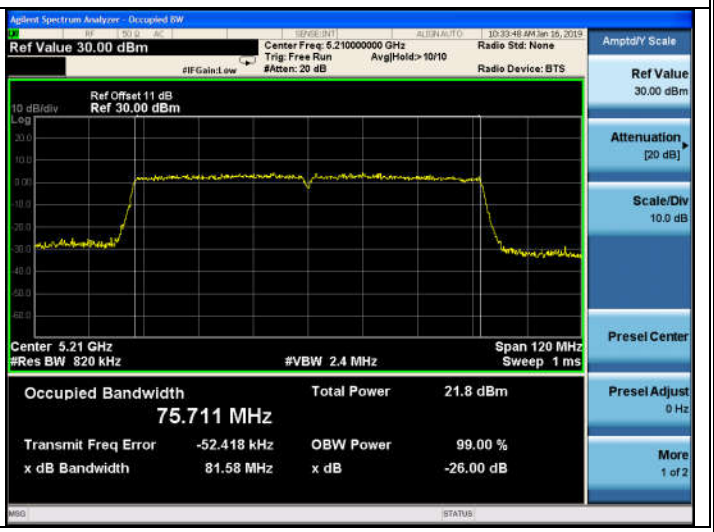
5180MHz



11ac VHT40

5190MHz

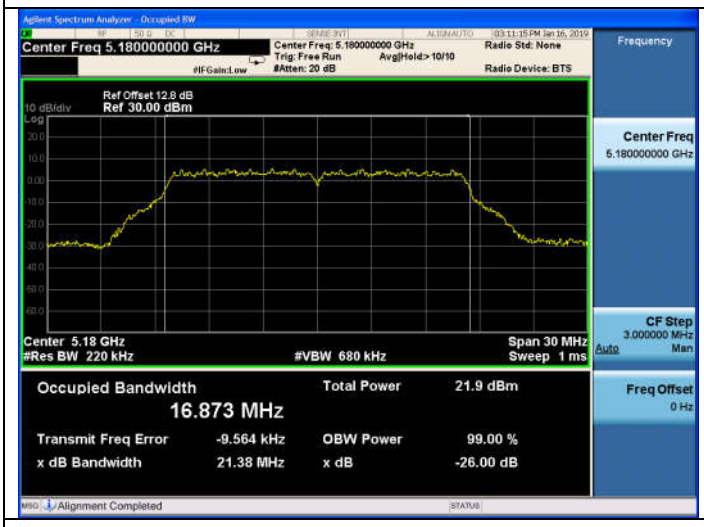
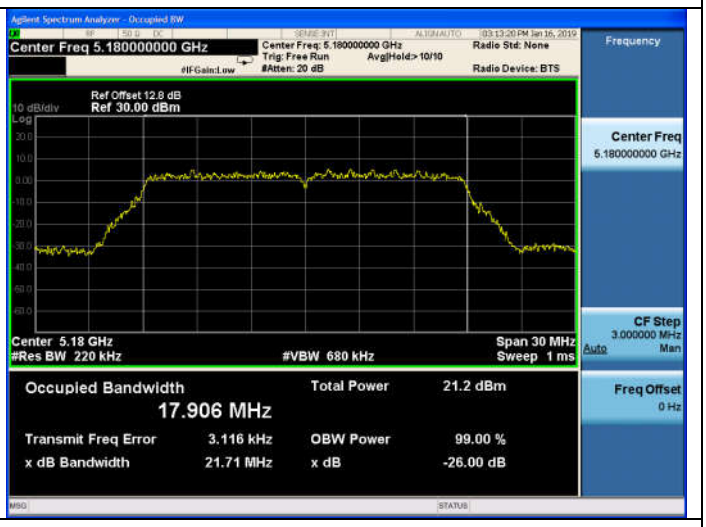
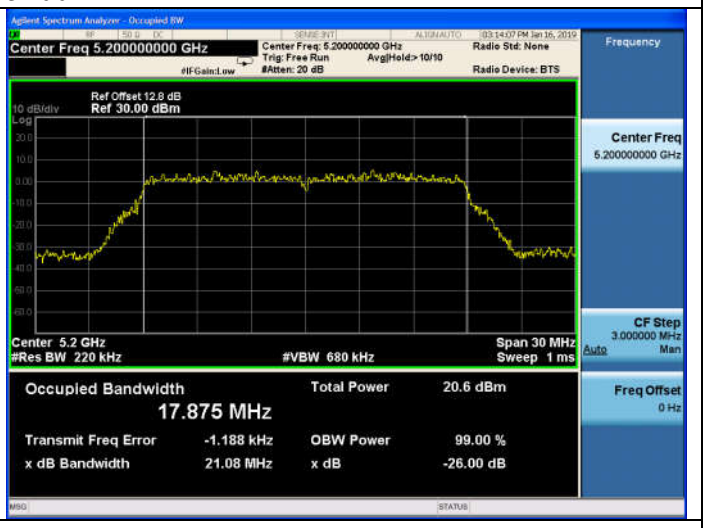
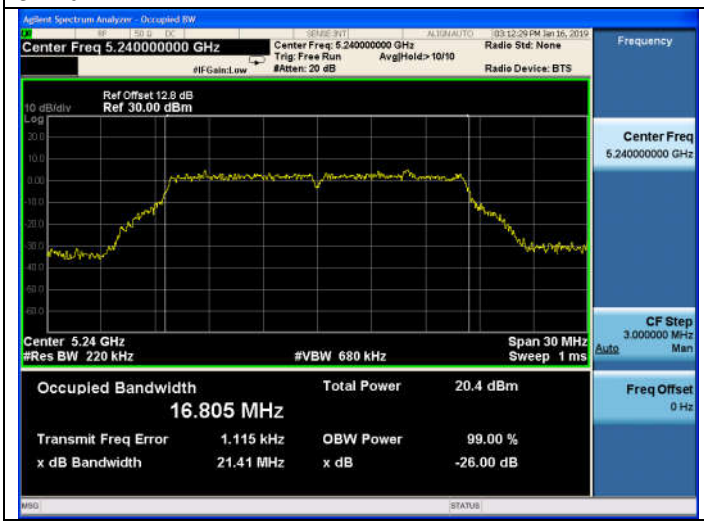
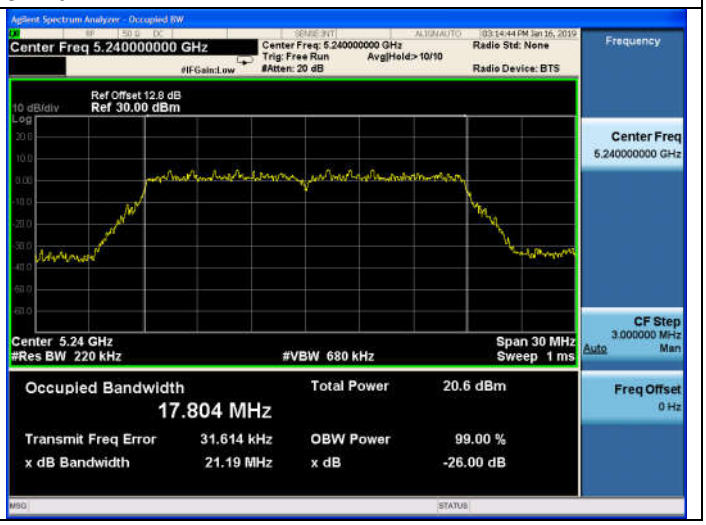


	11ac VHT80
5230MHz	5210MHz
	

5180-5240MHz Band:

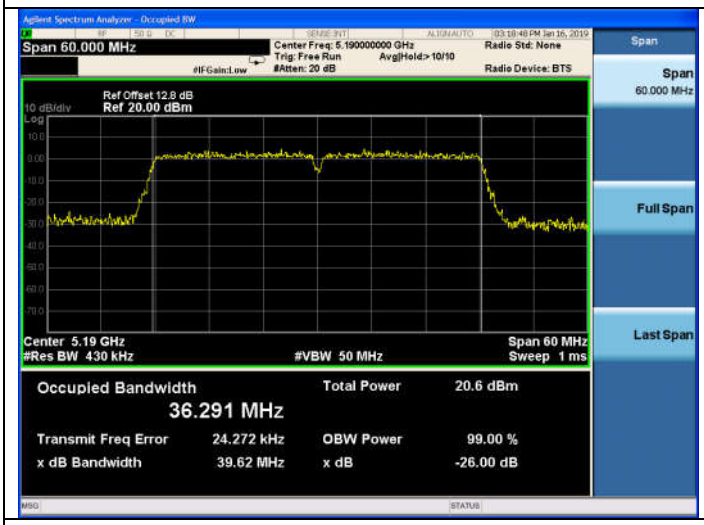
26dB bandwidth

ANT 1

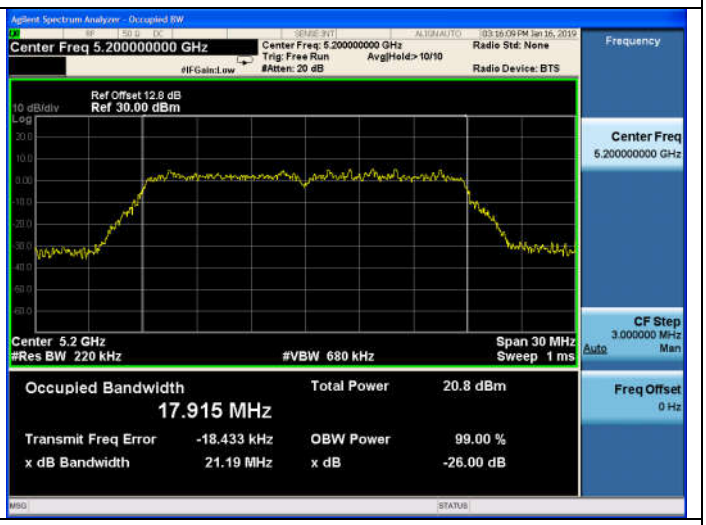
11a	**11n HT20**
5180MHz	5180MHz
	
5200MHz	5200MHz
	
5240MHz	5240MHz
	

11n HT40

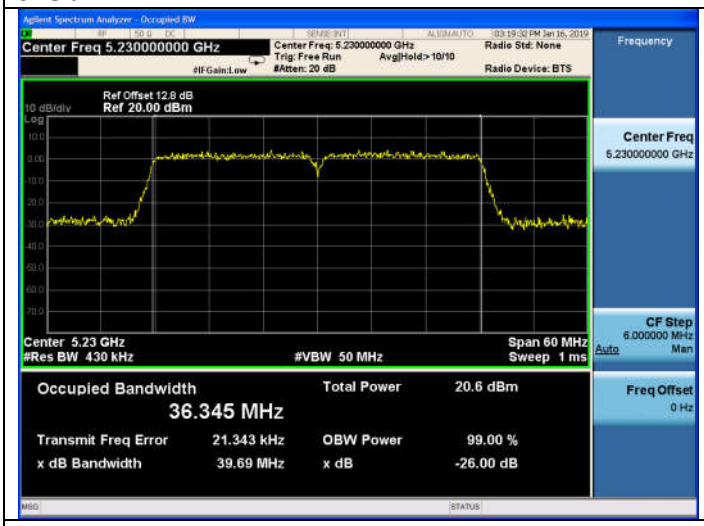
5190MHz



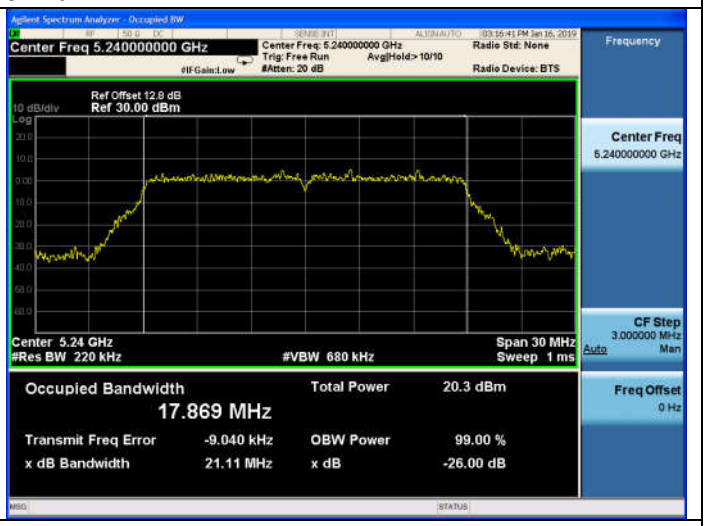
5200MHz



5230MHz

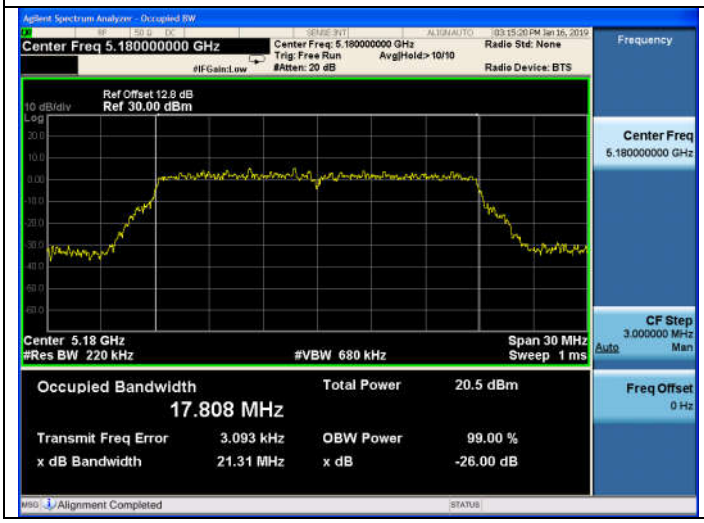


5240MHz



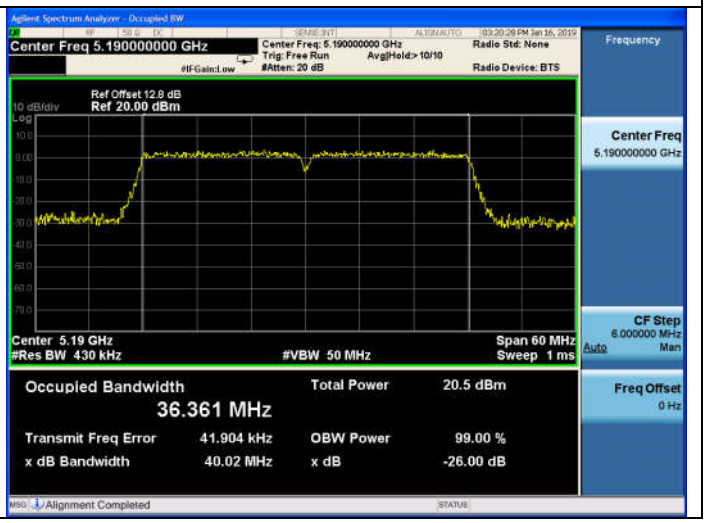
11ac VHT20

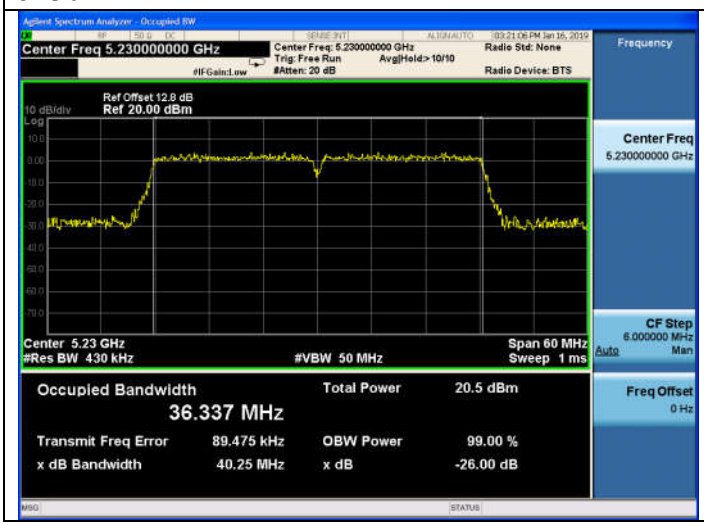
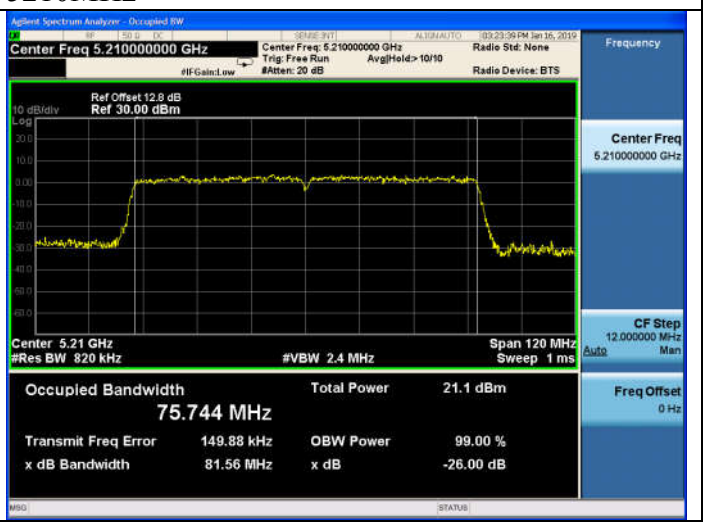
5180MHz



11ac VHT40

5190MHz

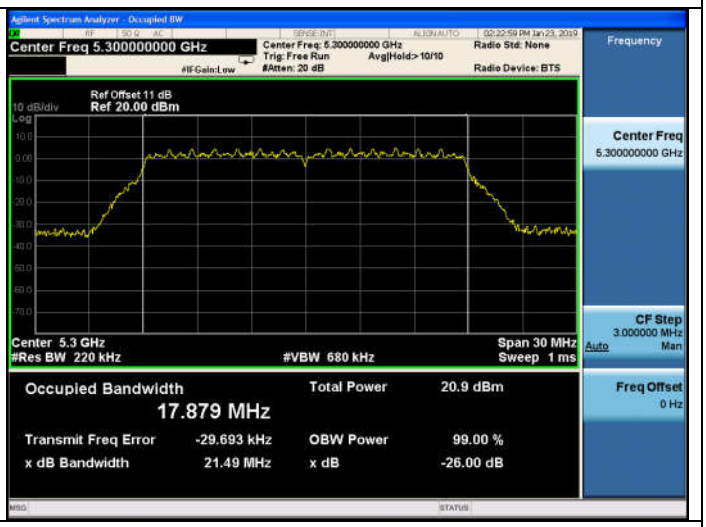
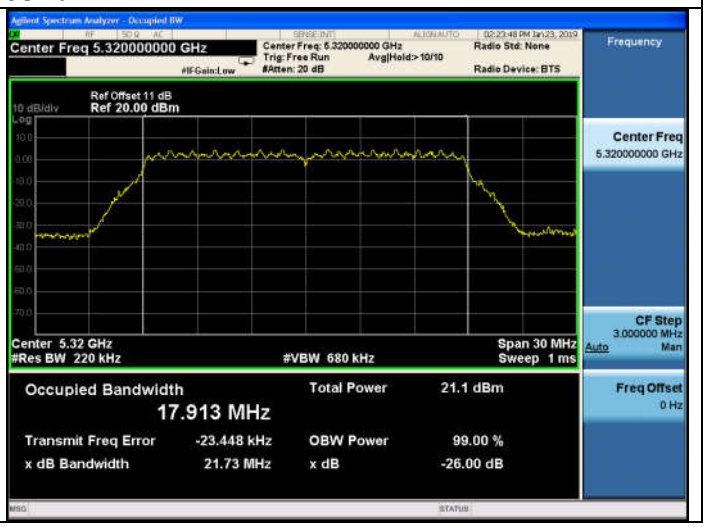


	11ac VHT80
5230MHz	5210MHz
	

5260-5320MHz Band:

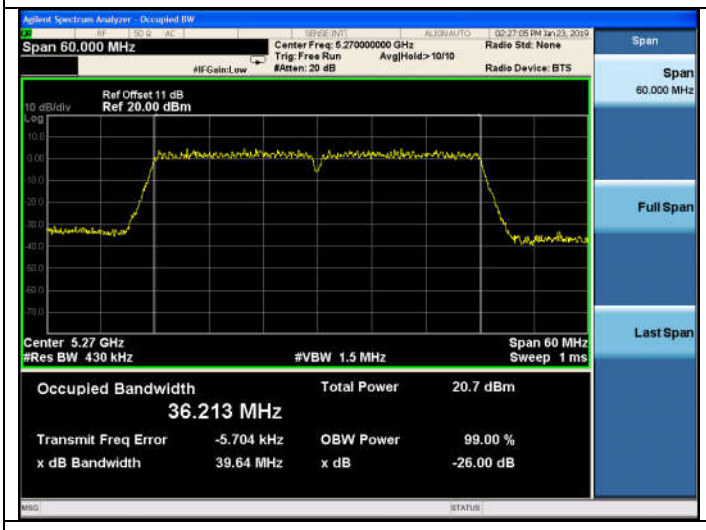
26dB bandwidth

ANT 0

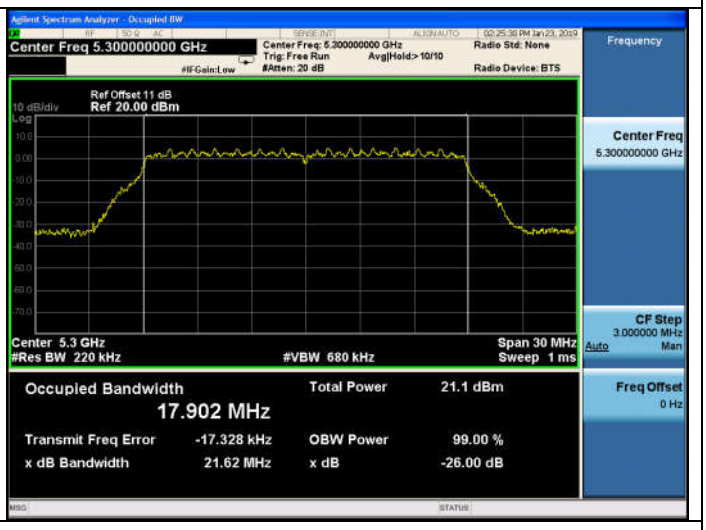
11a	**11n HT20**
5260MHz	5260MHz
5300MHz	5300MHz
	
5320MHz	5320MHz
	

11n HT40

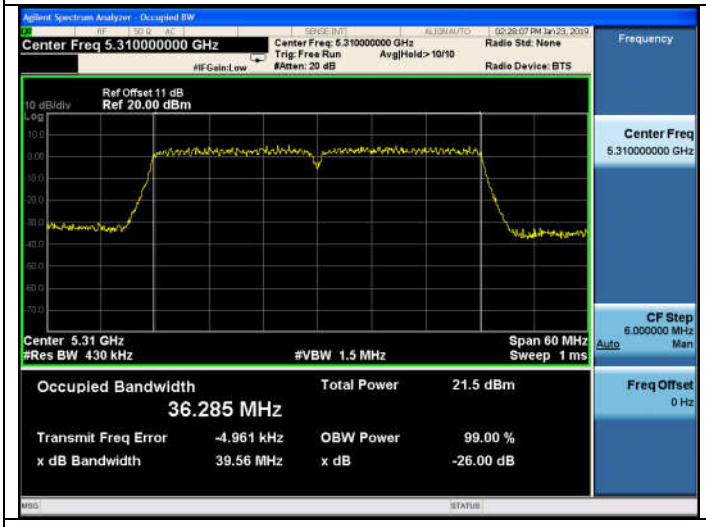
5270MHz



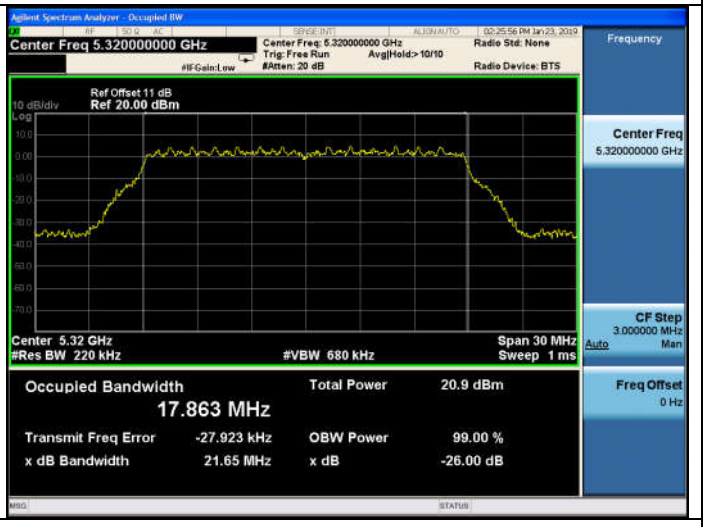
5300MHz



5310MHz

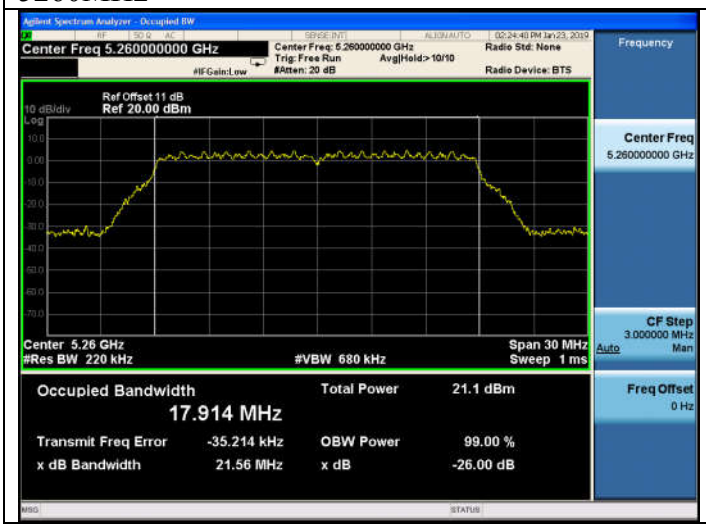


5320MHz



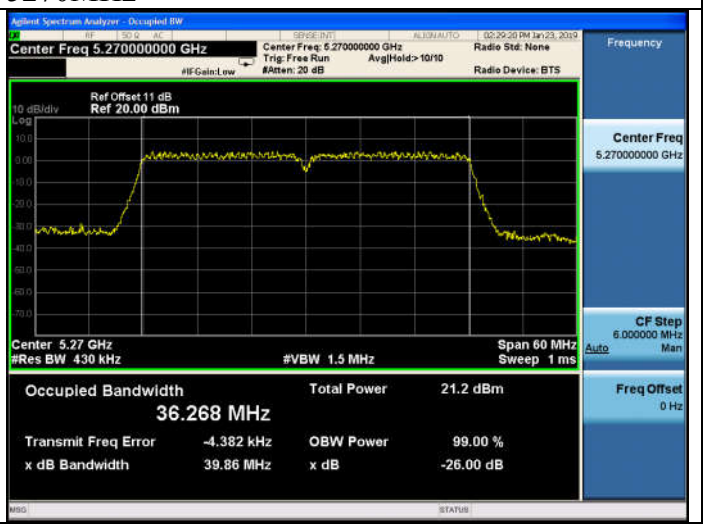
11ac VHT20

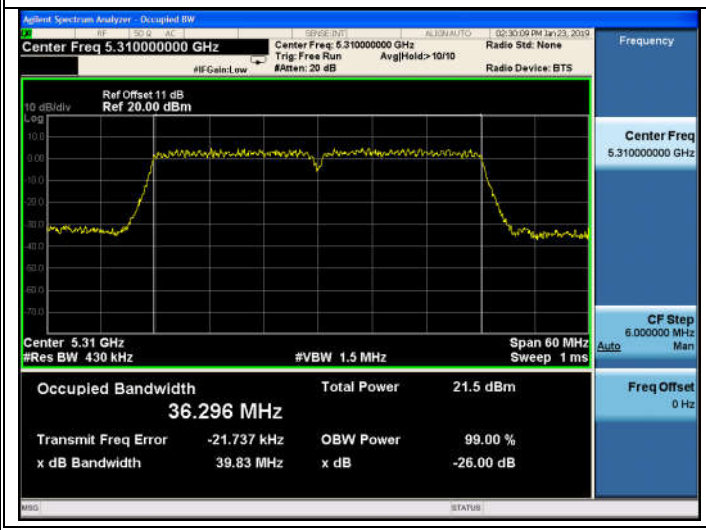
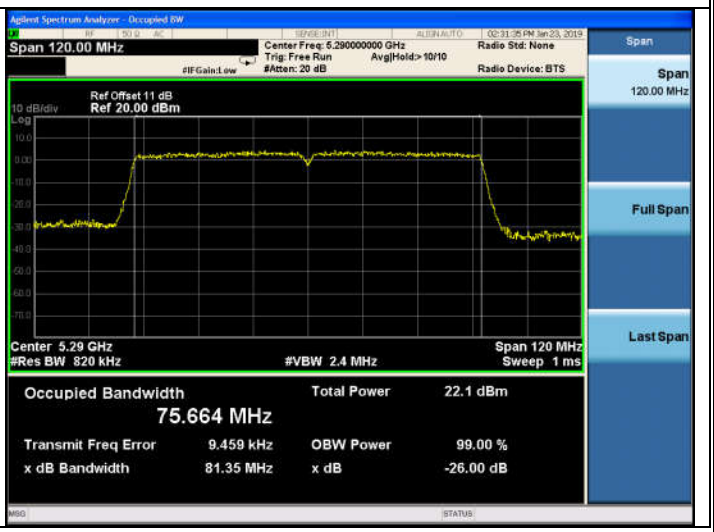
5260MHz



11ac VHT40

5270MHz

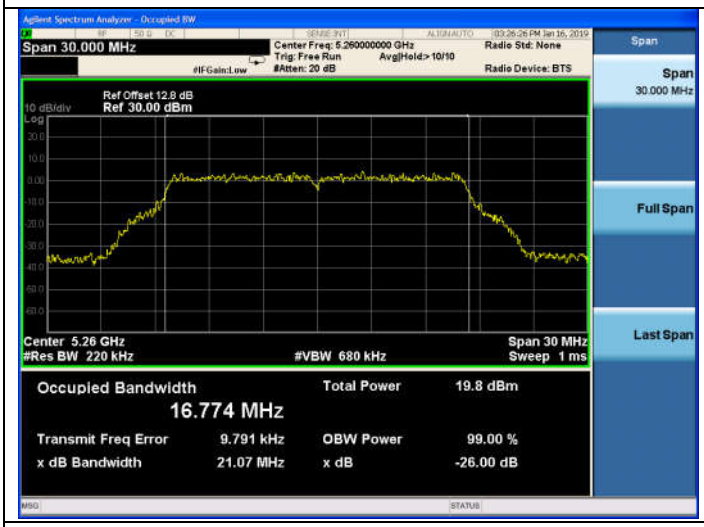
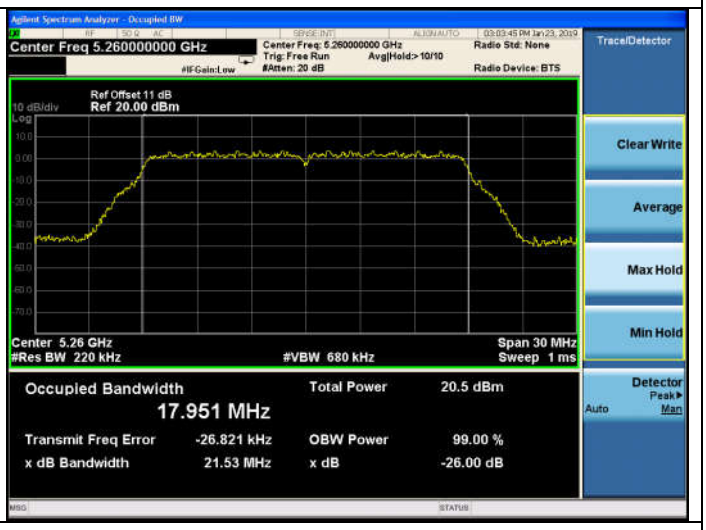
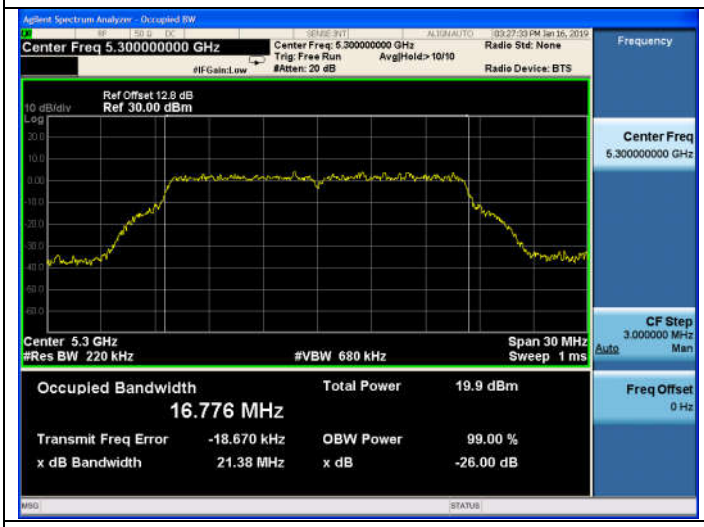
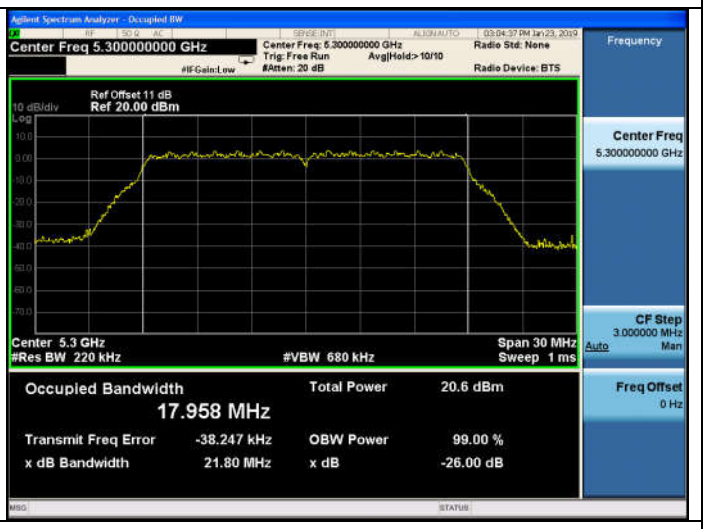
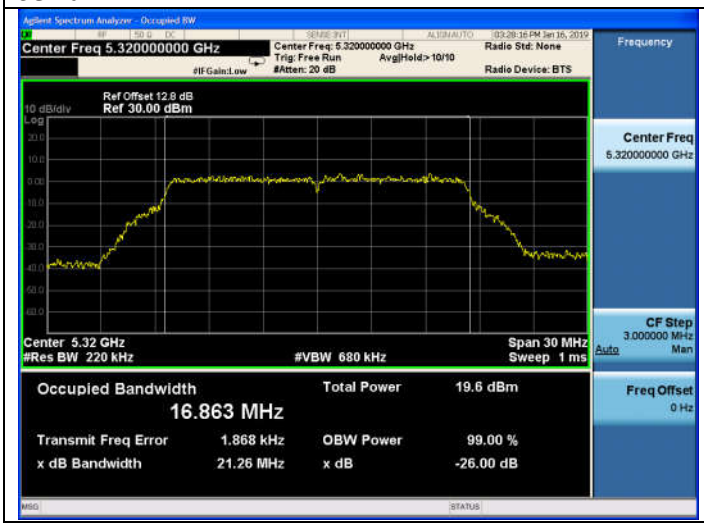
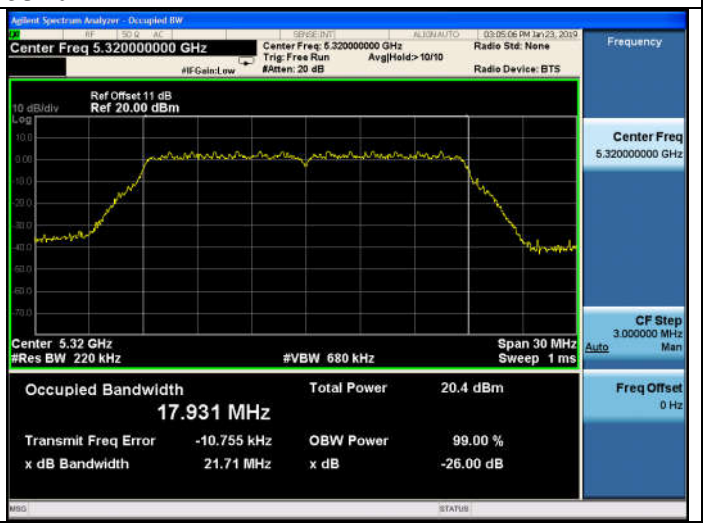


	11ac VHT80
5310MHz	5290MHz
	

5260-5320MHz Band:

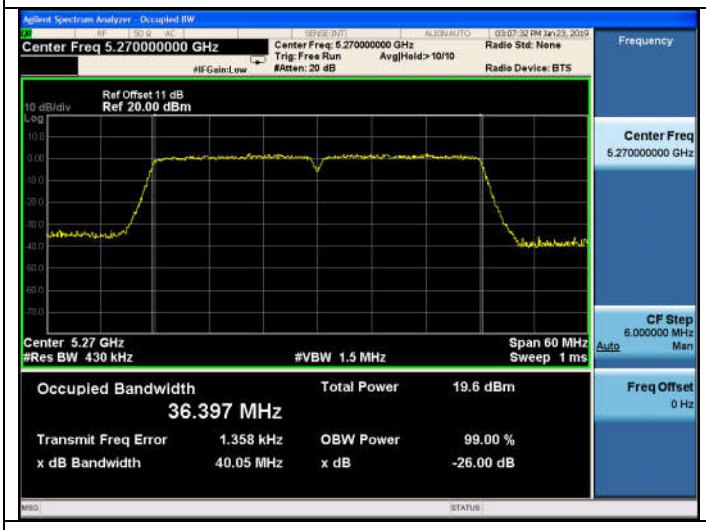
26dB bandwidth

ANT 1

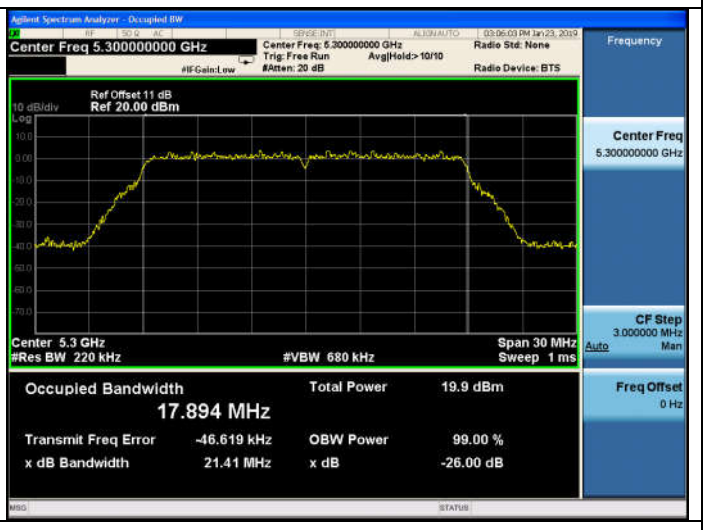
11a	**11n HT20**
5260MHz	5260MHz
	
5300MHz	5300MHz
	
5320MHz	5320MHz
	

11n HT40

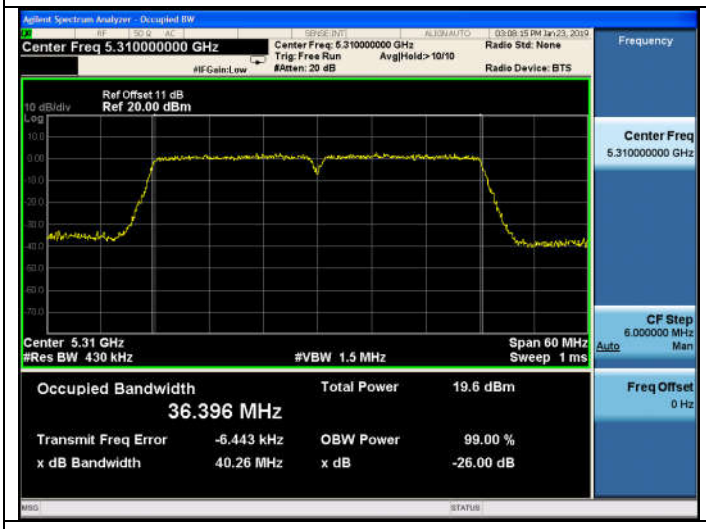
5270MHz



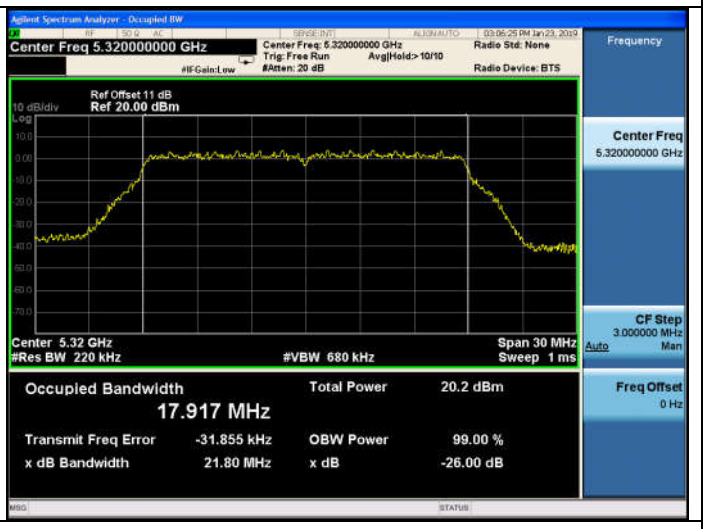
5300MHz



5310MHz



5320MHz

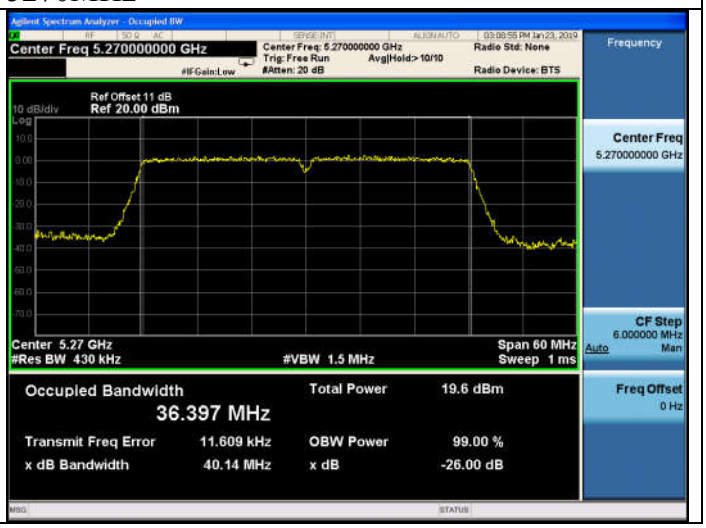


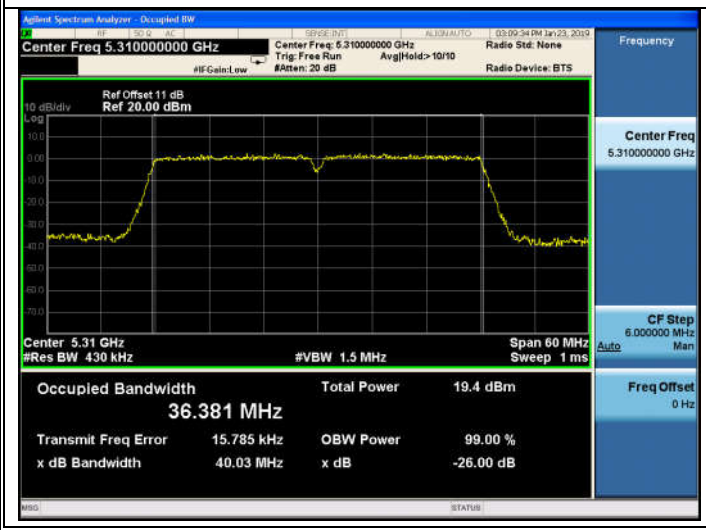
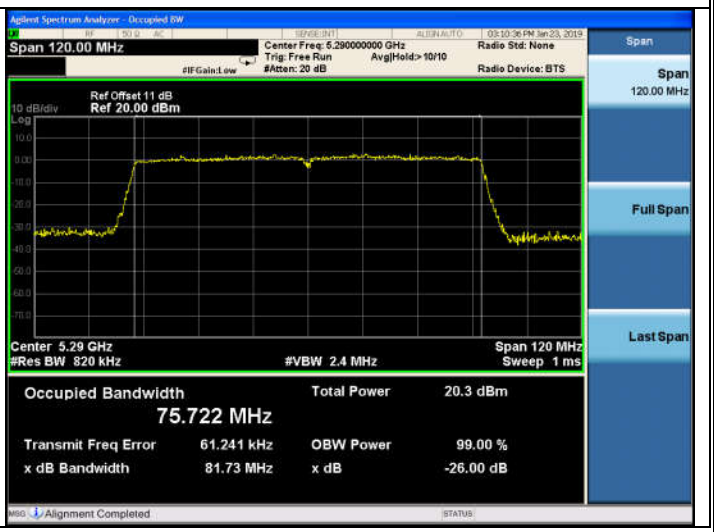
11ac VHT20

5260MHz

11ac VHT40

5270MHz

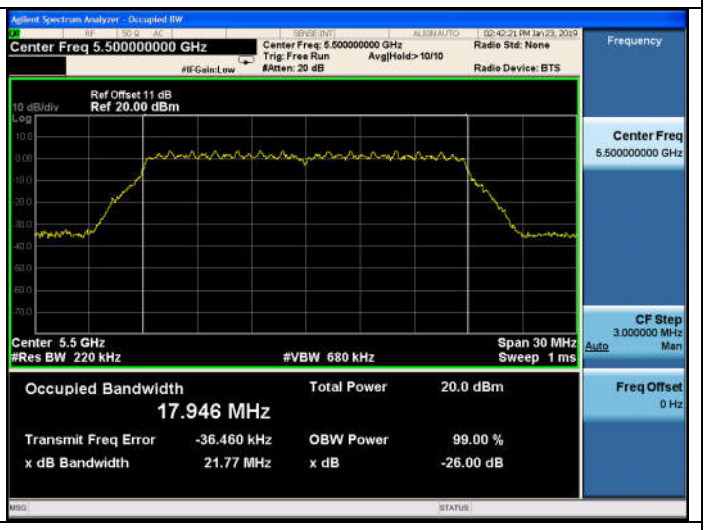
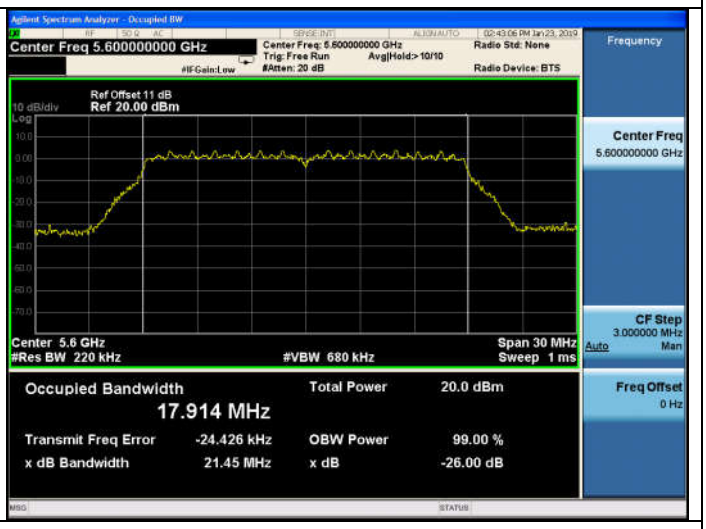
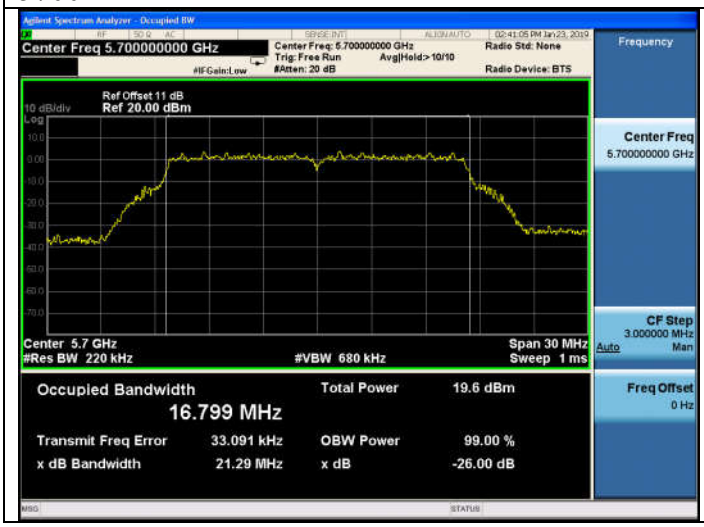
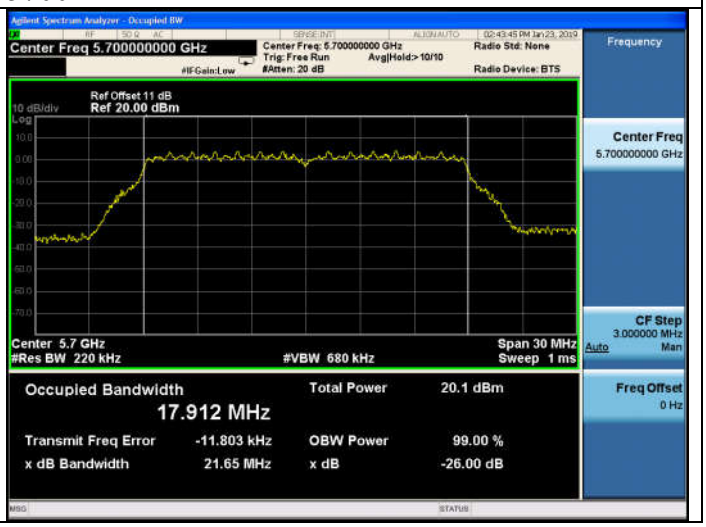


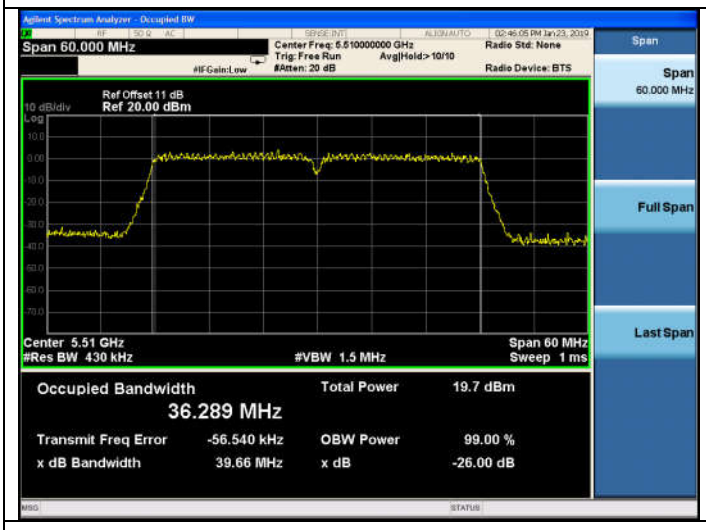
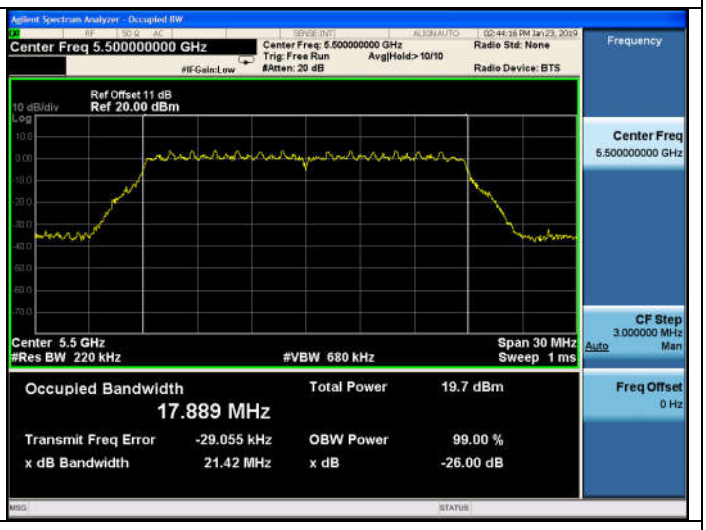
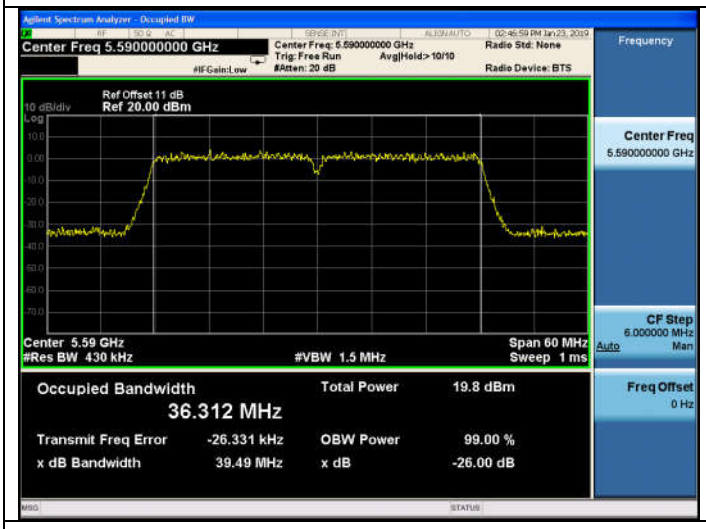
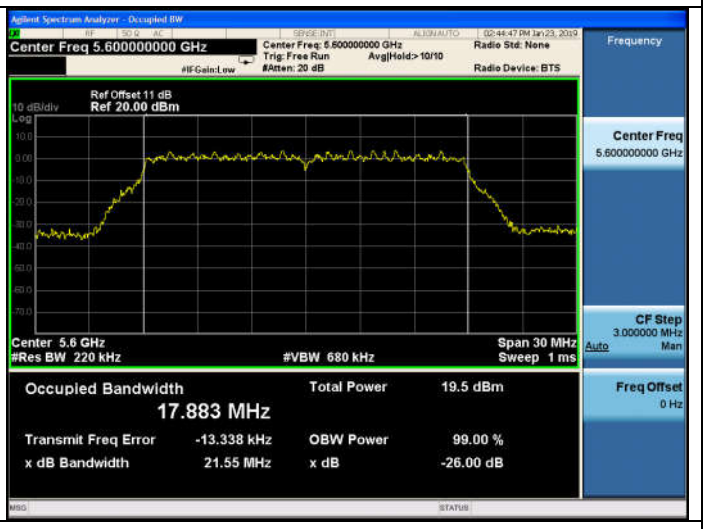
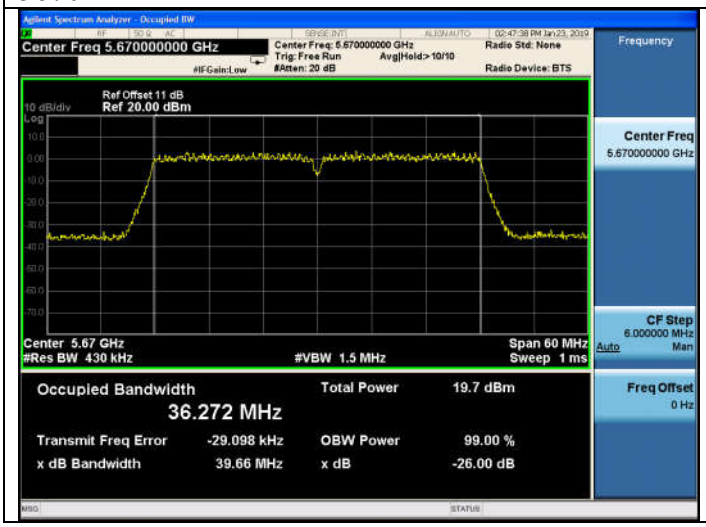
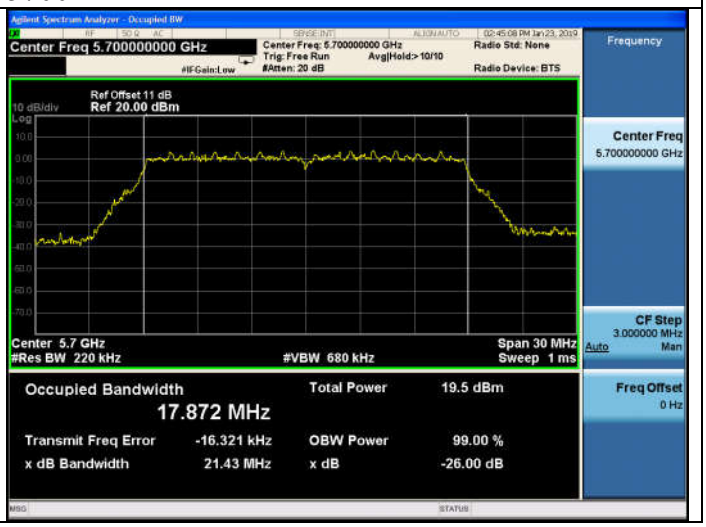
	11ac VHT80
5310MHz	5290MHz
	

5500-5700MHz Band:

26dB bandwidth

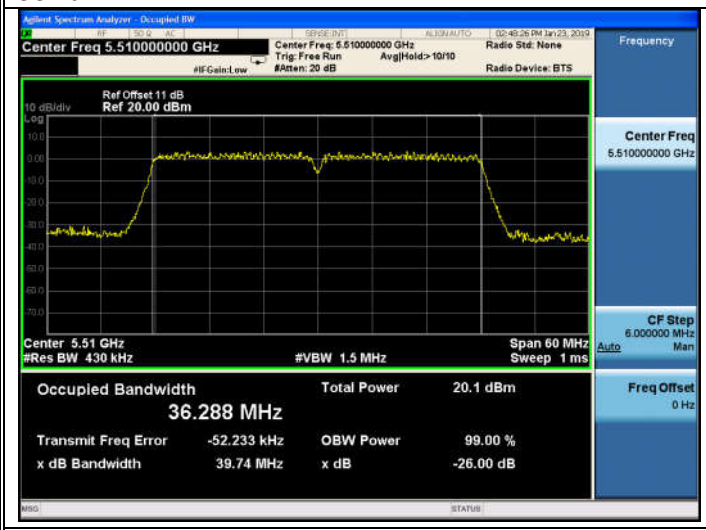
ANT 0

11a	**11n HT20**
5500MHz	5500MHz
	
5600MHz	5600MHz
	
5700MHz	5700MHz
	

11n HT40	11ac VHT20
5510MHz	5500MHz
	
5590MHz	5600MHz
	
5670MHz	5700MHz
	

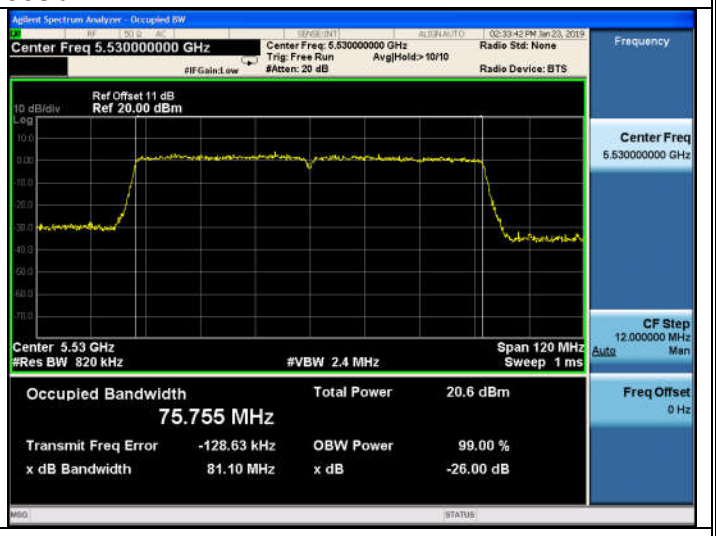
11ac VHT40

5510MHz

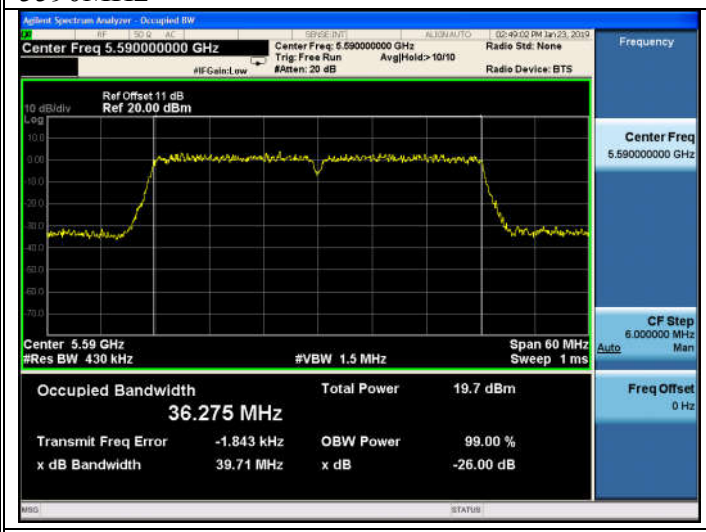


11ac VHT80

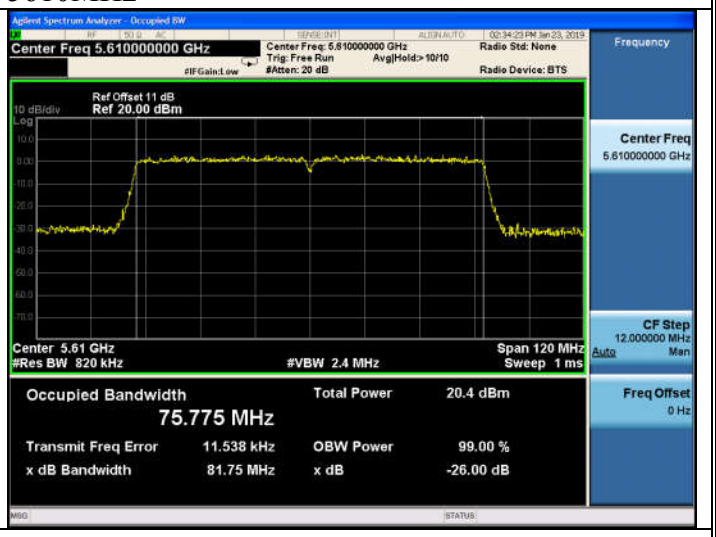
5530MHz



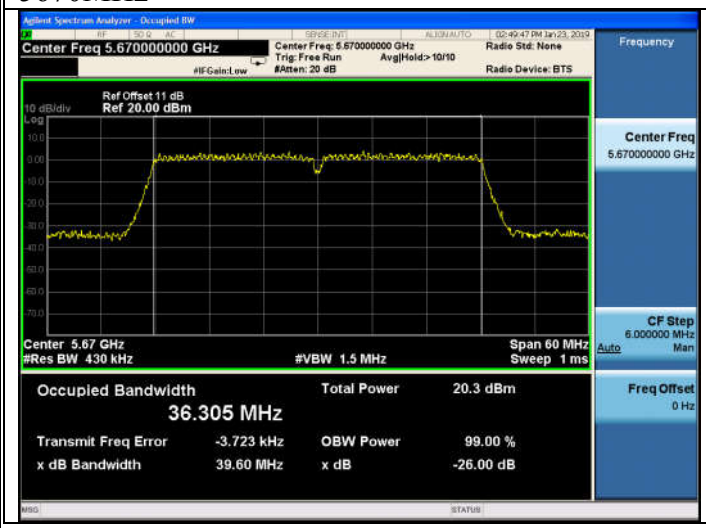
5590MHz



5610MHz



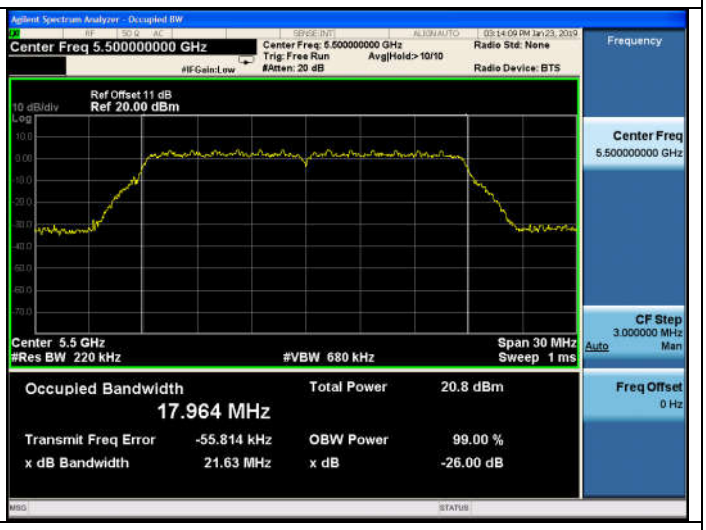
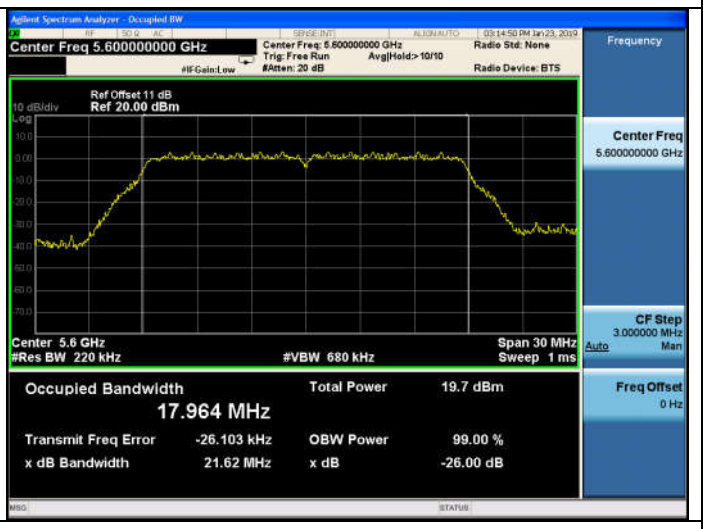
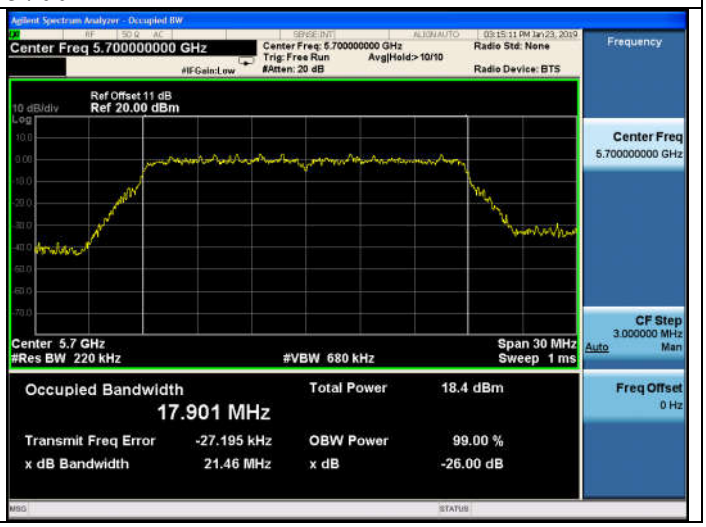
5670MHz

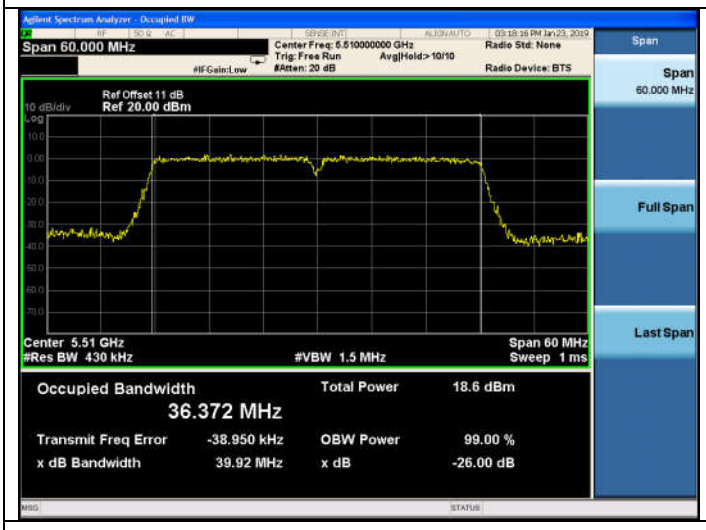
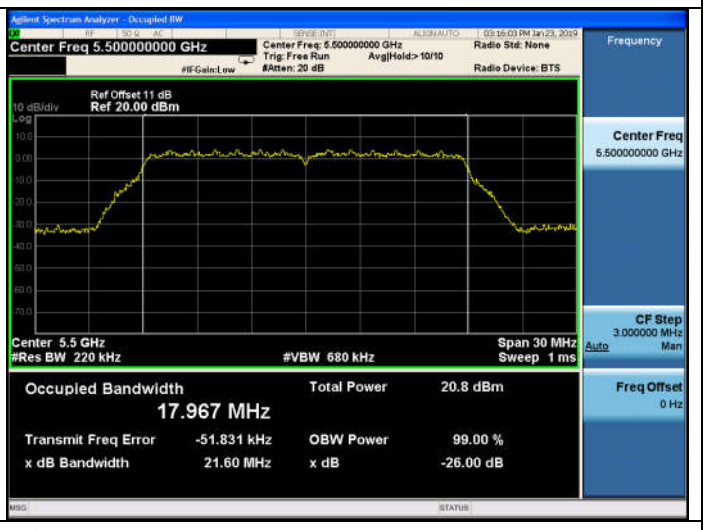
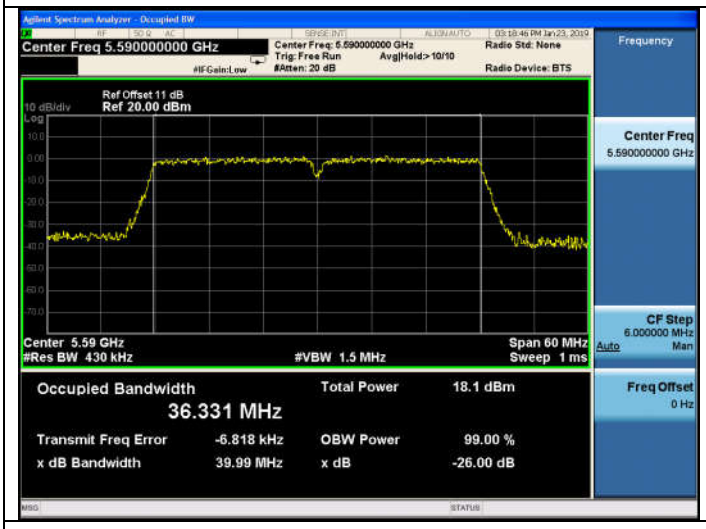
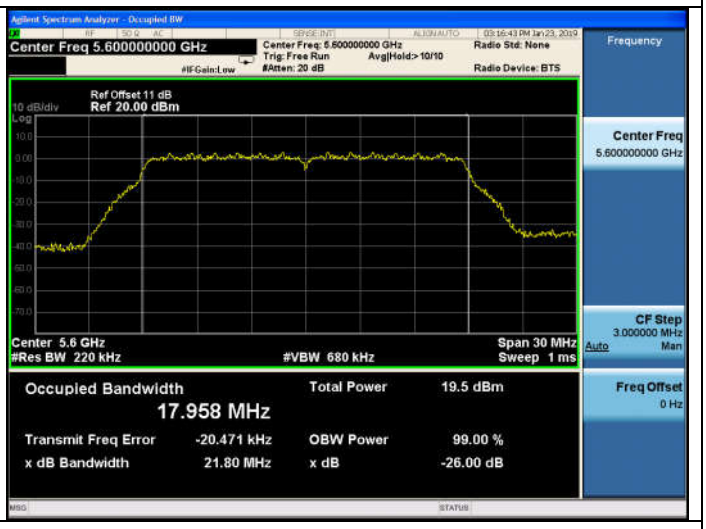
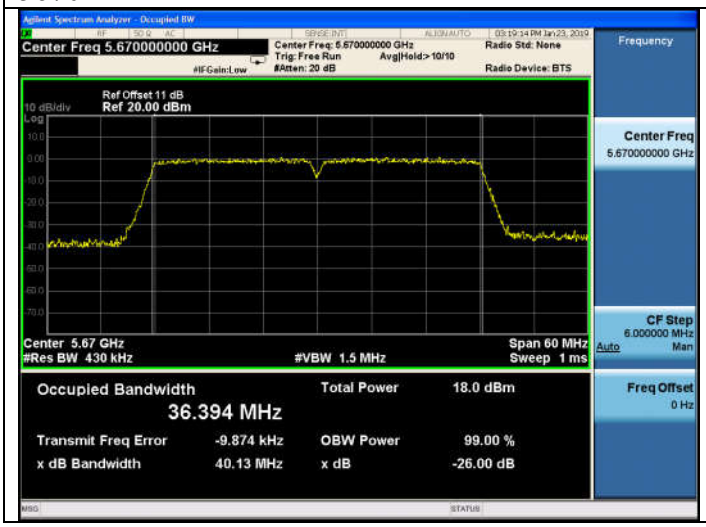
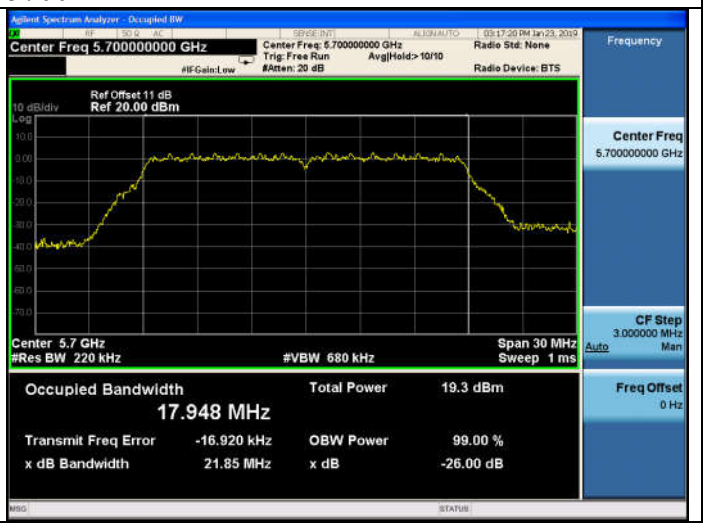


5500-5700MHz Band:

26dB bandwidth

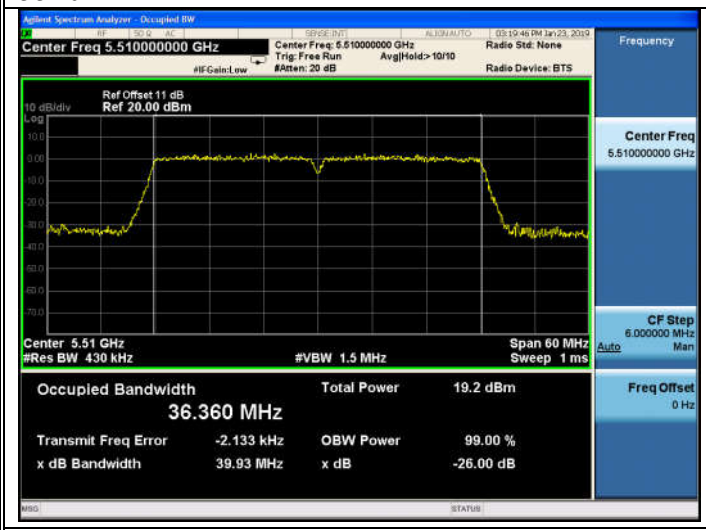
ANT 1

11a	**11n HT20**
5500MHz	5500MHz
	
5600MHz	5600MHz
	
5700MHz	5700MHz
	

11n HT40	11ac VHT20
5510MHz	5500MHz
	
5590MHz	5600MHz
	
5670MHz	5700MHz
	

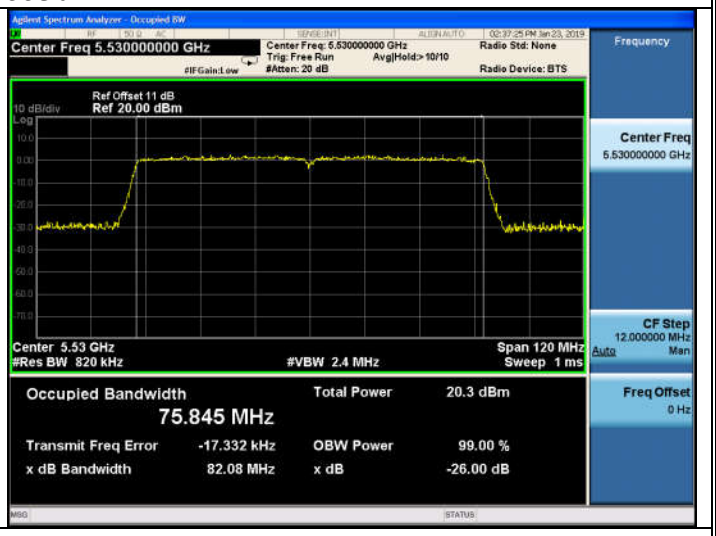
11ac VHT40

5510MHz



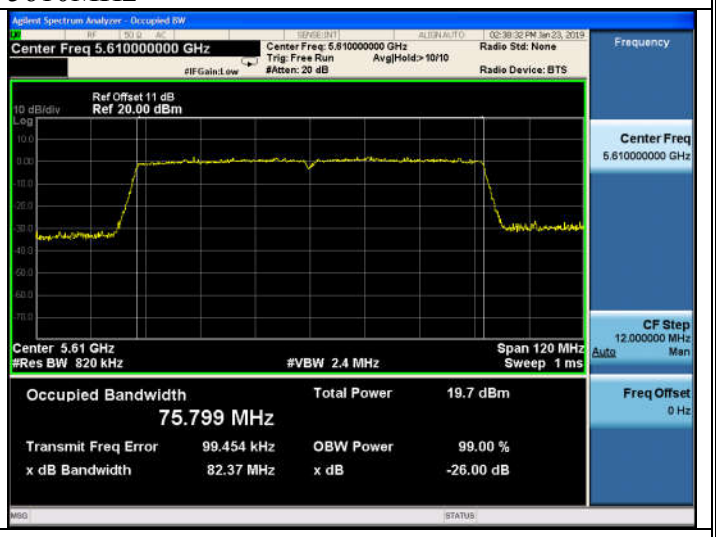
11ac VHT80

5530MHz



5590MHz

5610MHz



5670MHz

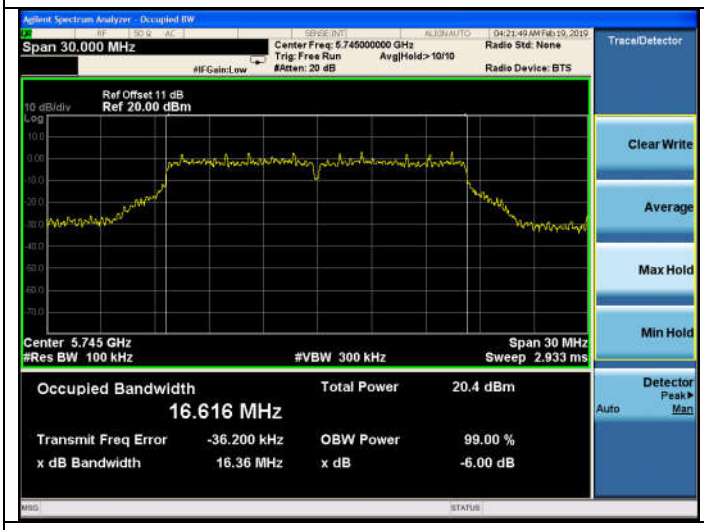
5745-5825MHz Band:

6dB bandwidth

ANT 0

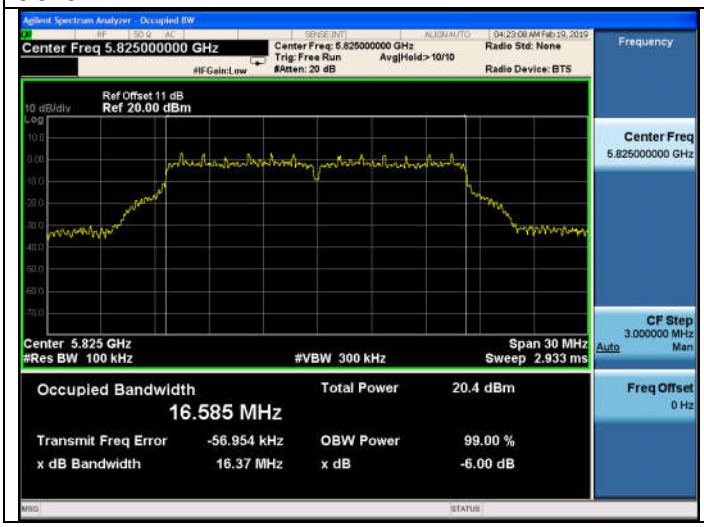
11a

5745MHz



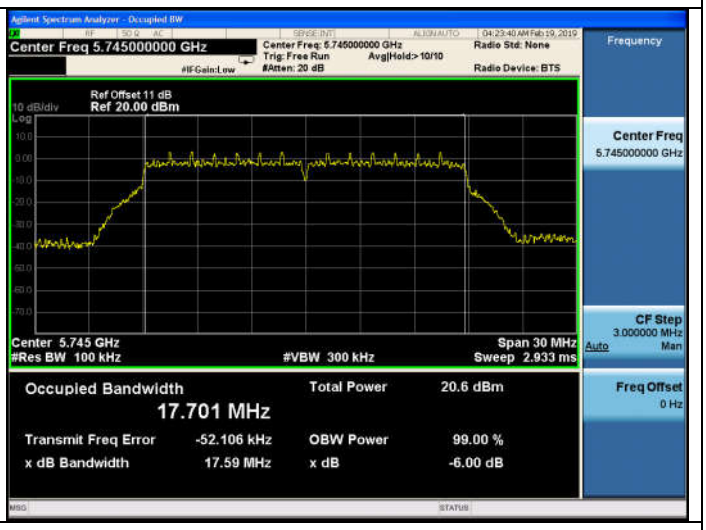
5785MHz

5825MHz

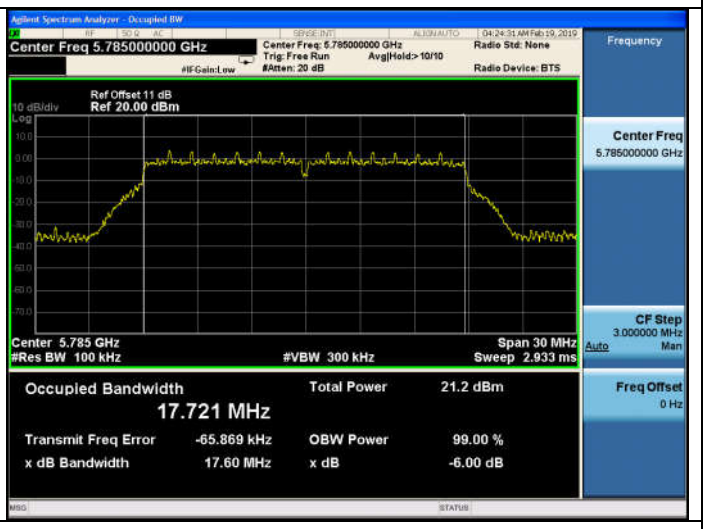


11n HT20

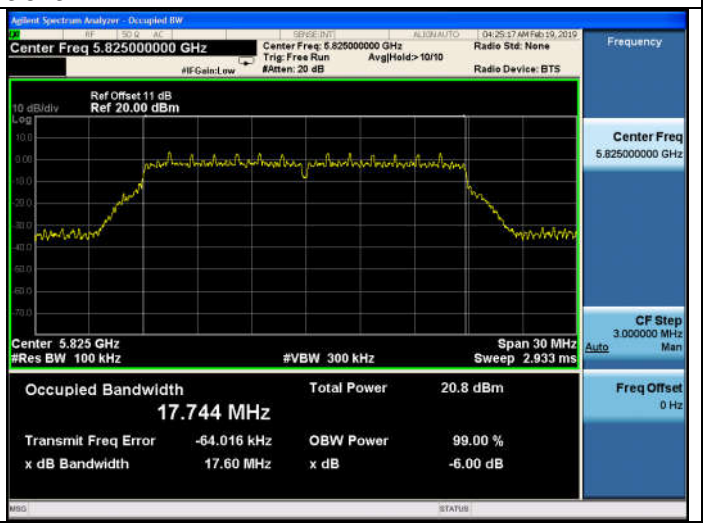
5745MHz



5785MHz

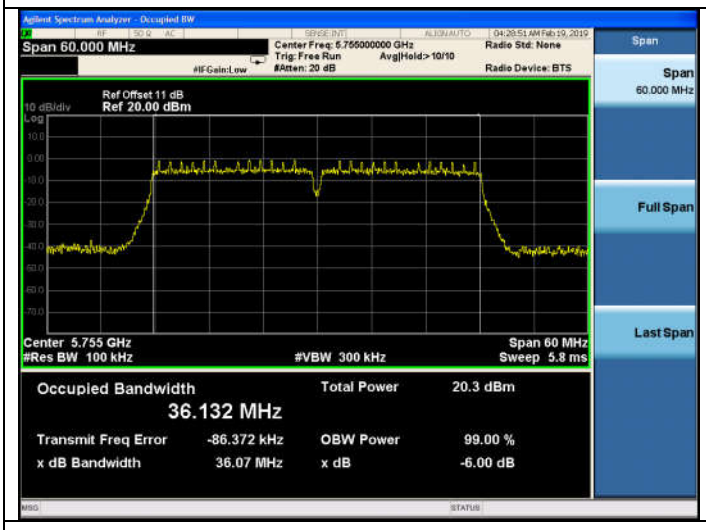


5825MHz

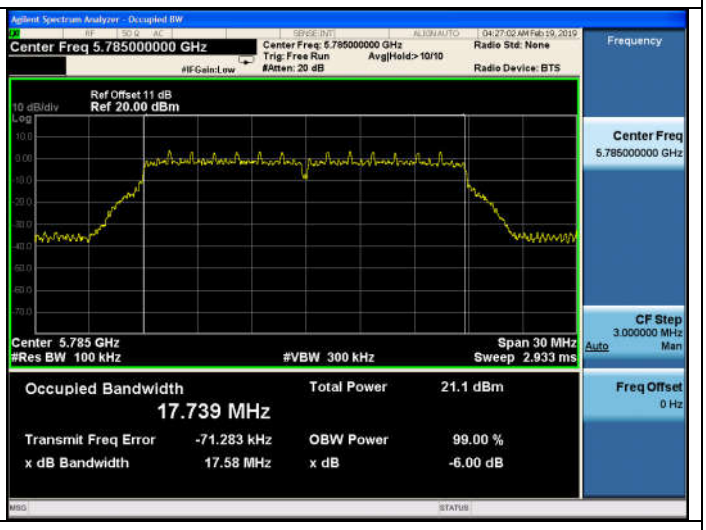


11n HT40

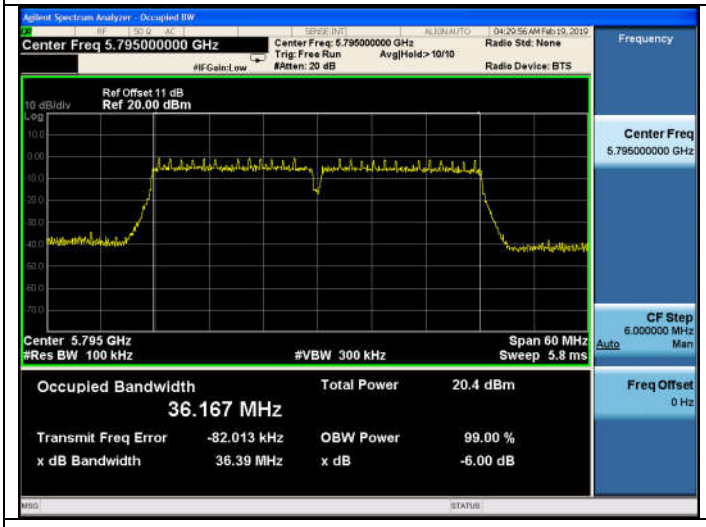
5755MHz



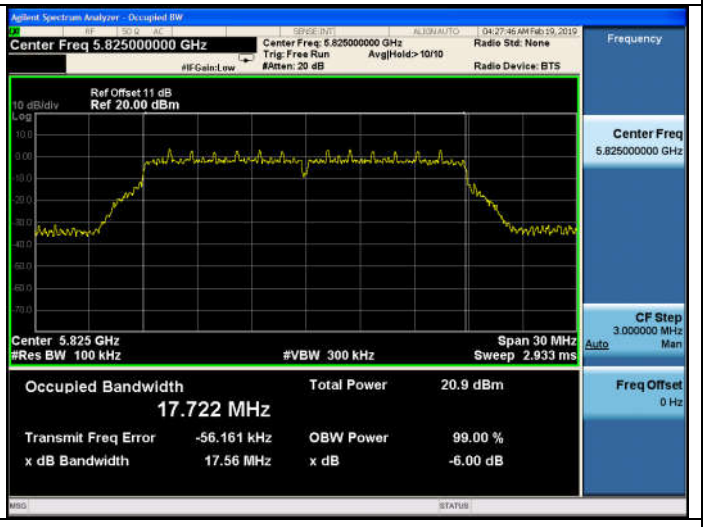
5785MHz



5795MHz

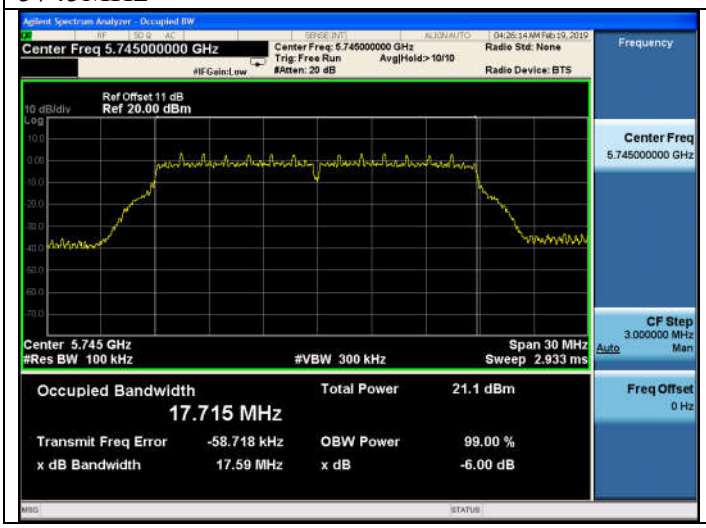


5825MHz



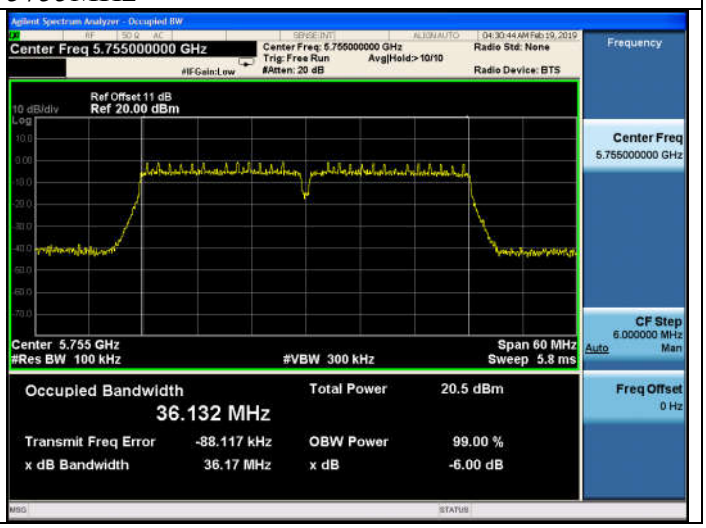
11ac VHT20

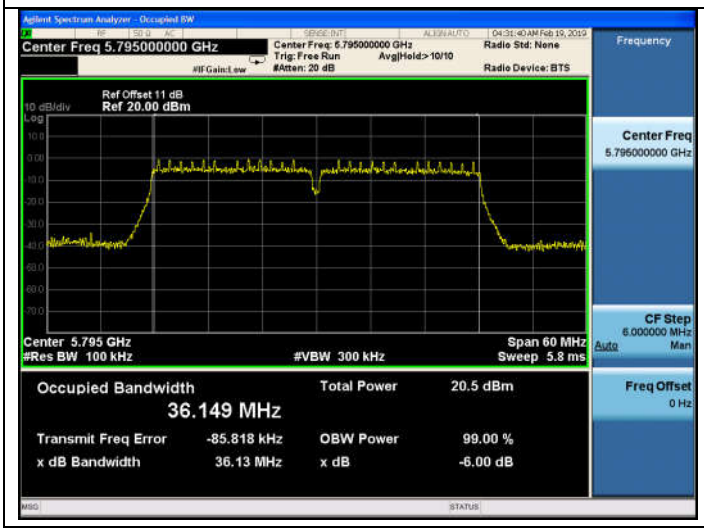
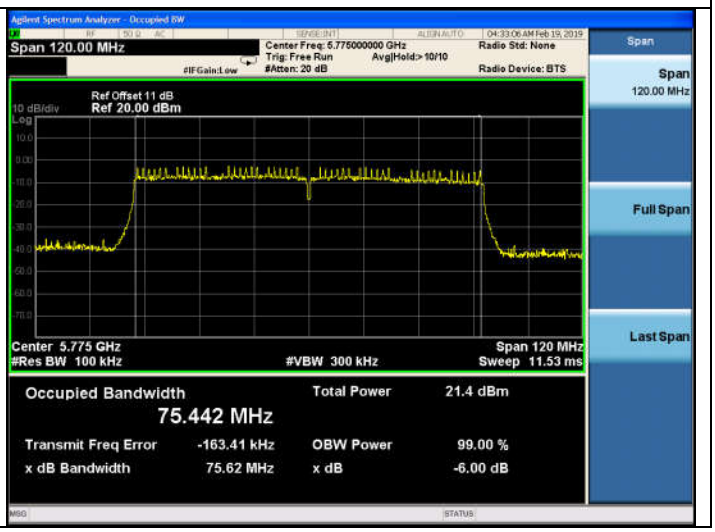
5745MHz



11ac VHT40

5755MHz

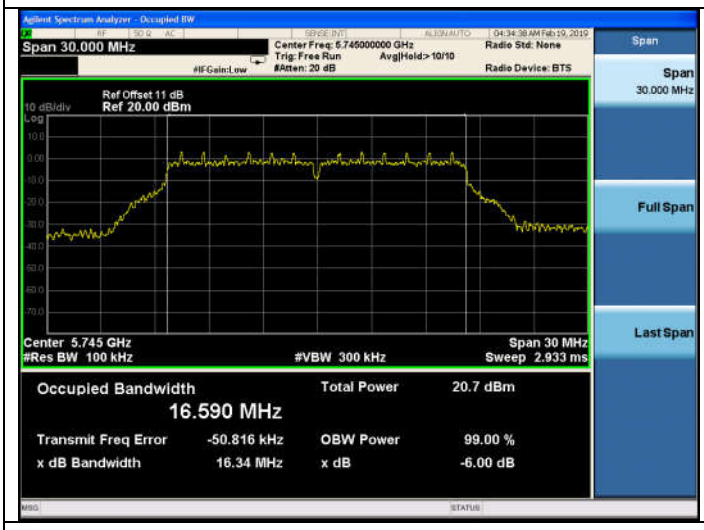
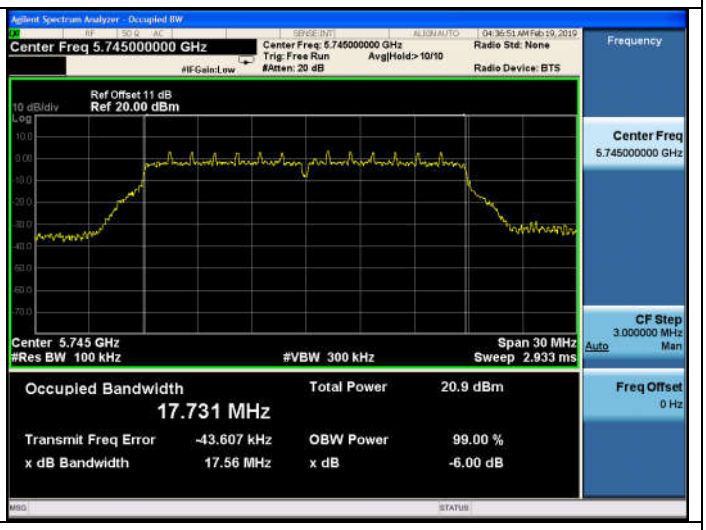
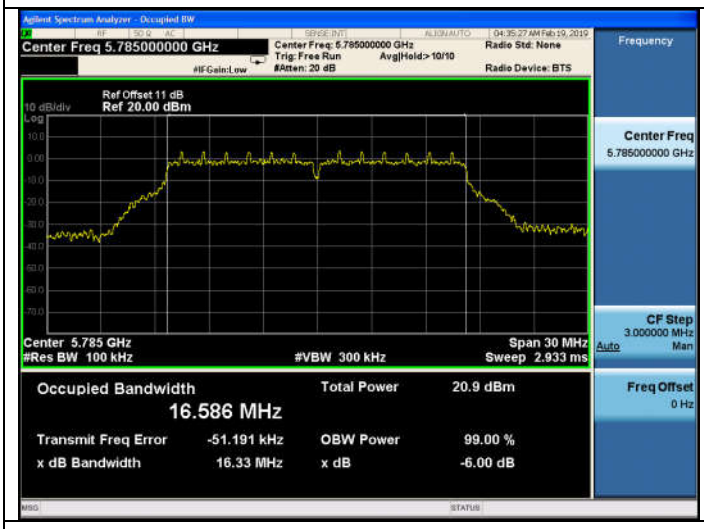
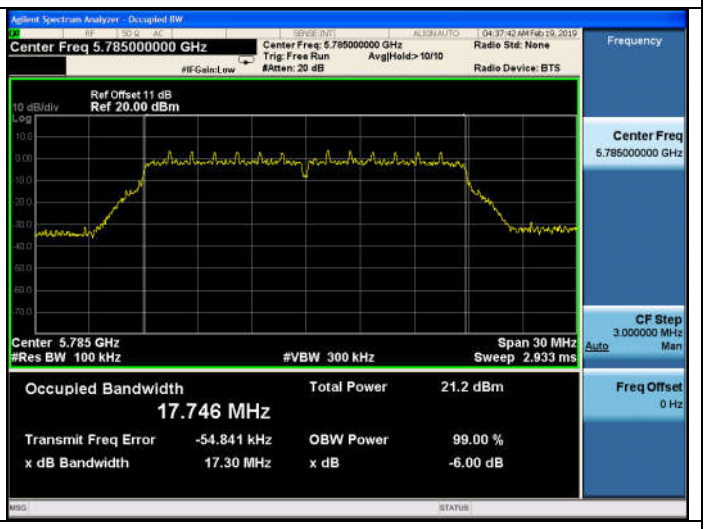
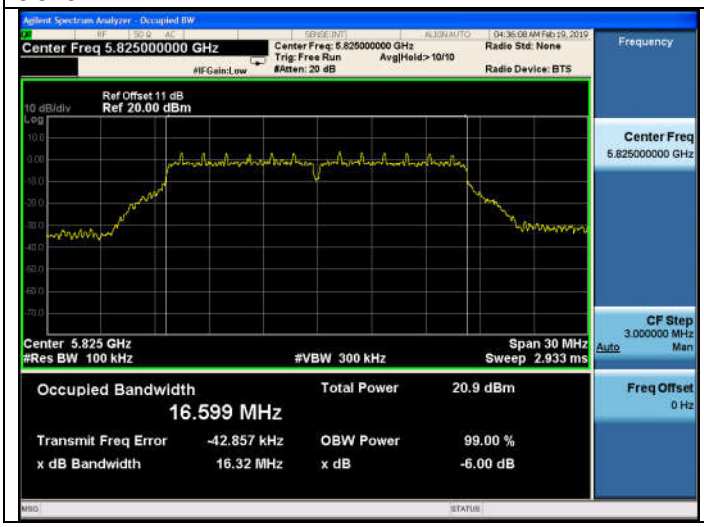
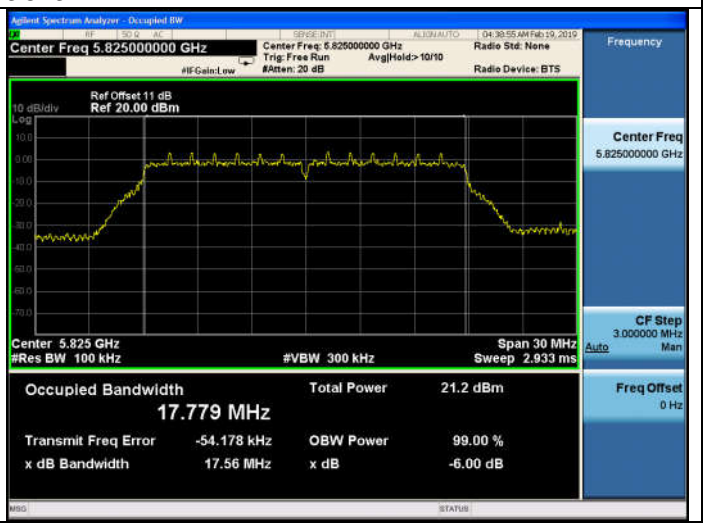


	11ac VHT80
5795MHz	5775MHz
	

5745-5825MHz Band:

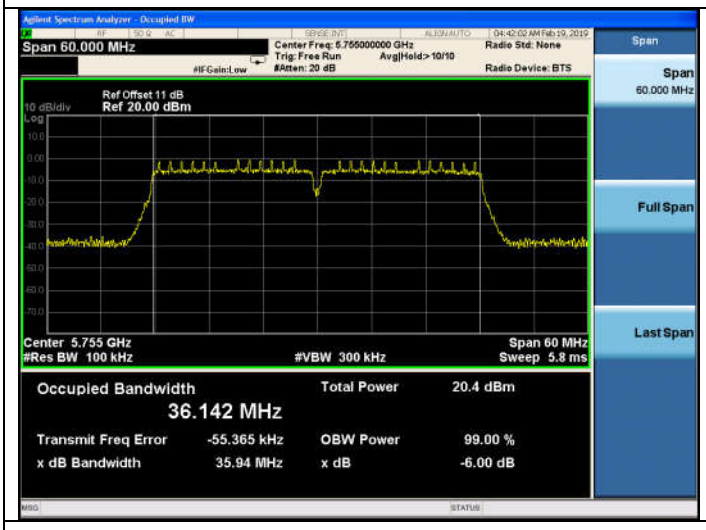
6dB bandwidth

ANT 1

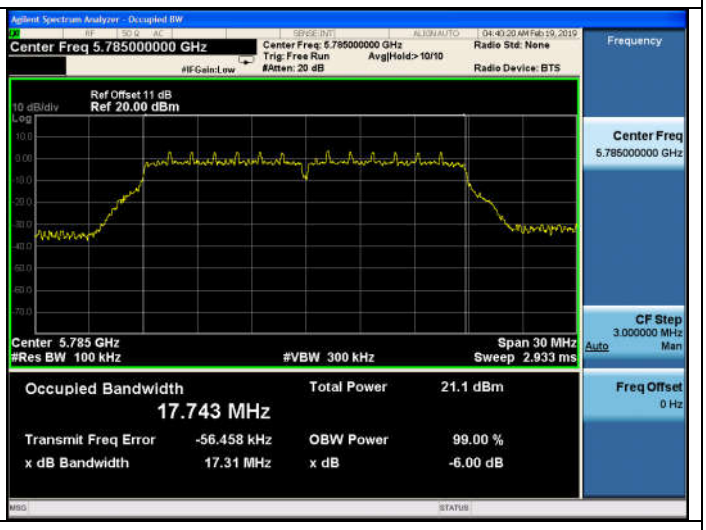
11a	11n HT20
5745MHz	5745MHz
	
5785MHz	5785MHz
	
5825MHz	5825MHz
	

11n HT40

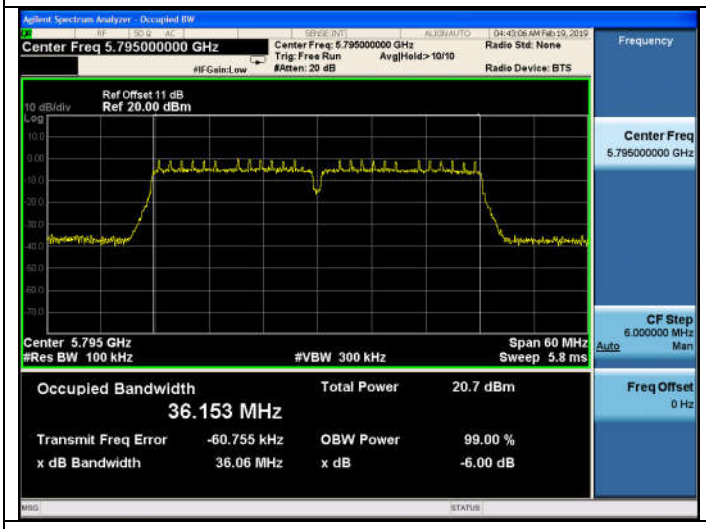
5755MHz



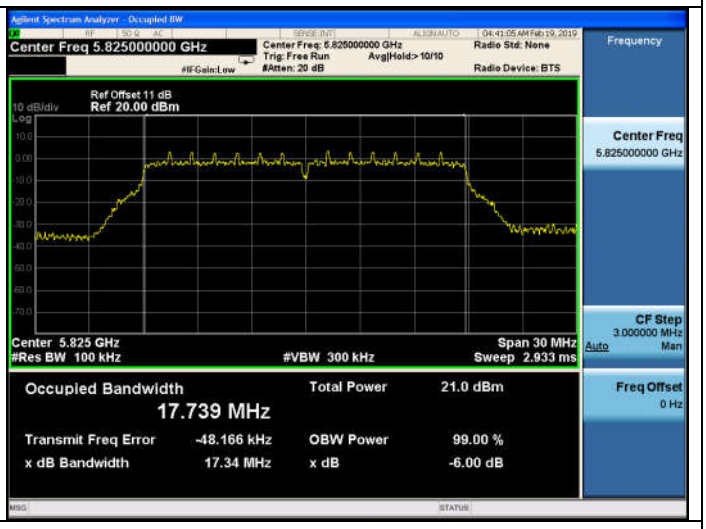
5785MHz



5795MHz

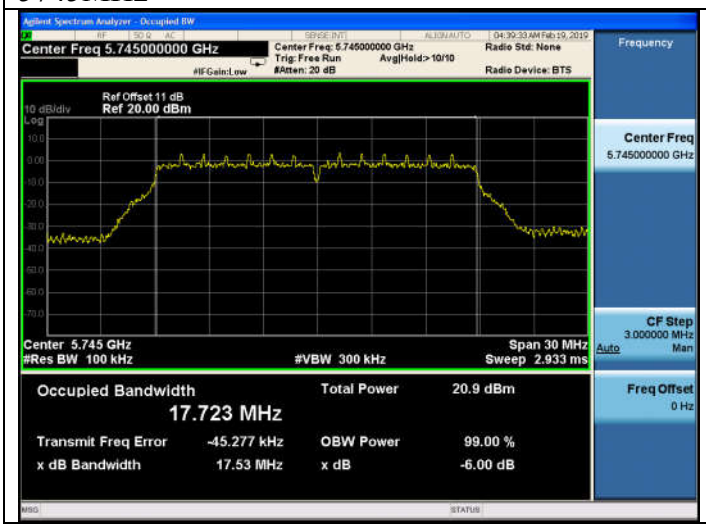


5825MHz



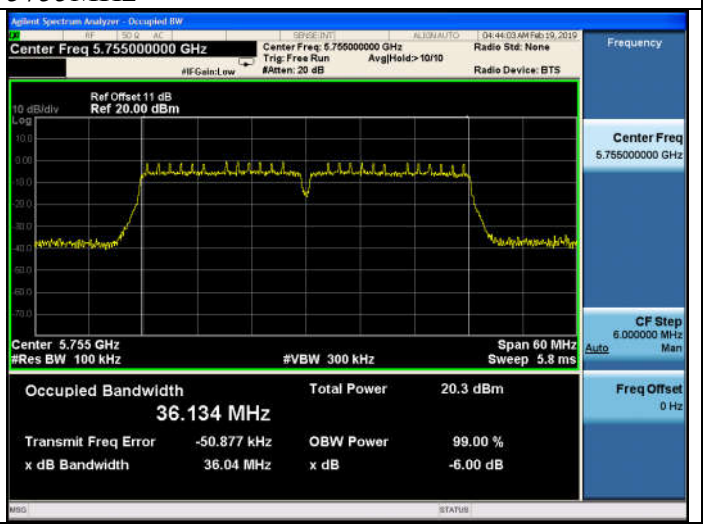
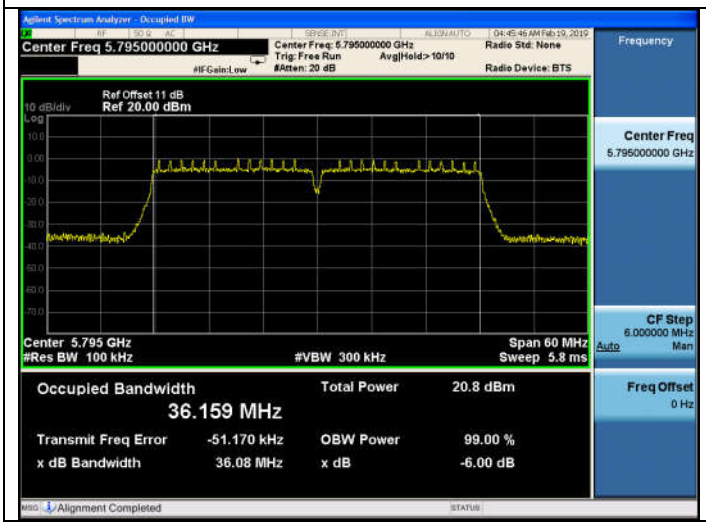
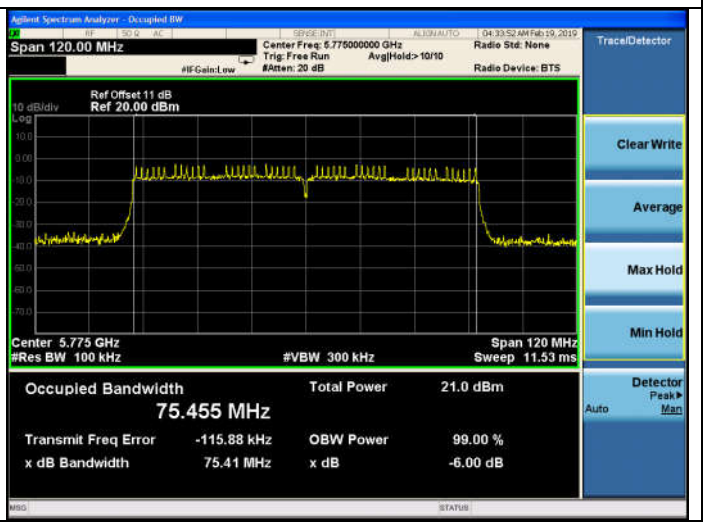
11ac VHT20

5745MHz



11ac VHT40

5755MHz



	11ac VHT80
5795MHz	5775MHz