

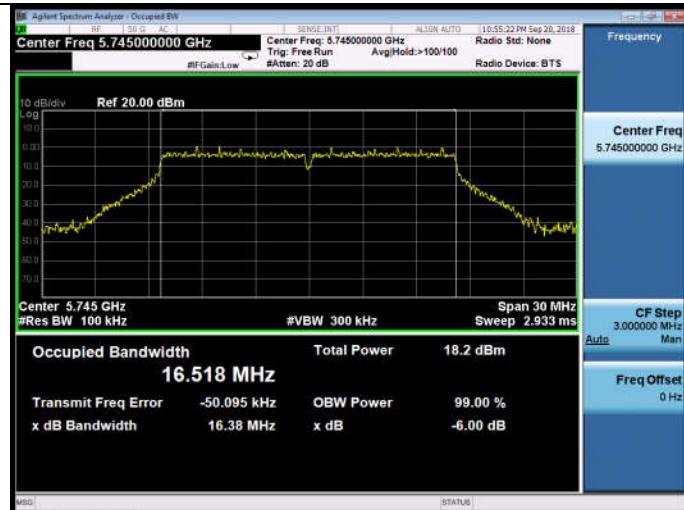
5745-5825MHz Band:

6dB bandwidth

ANT 0

11a

5745MHz

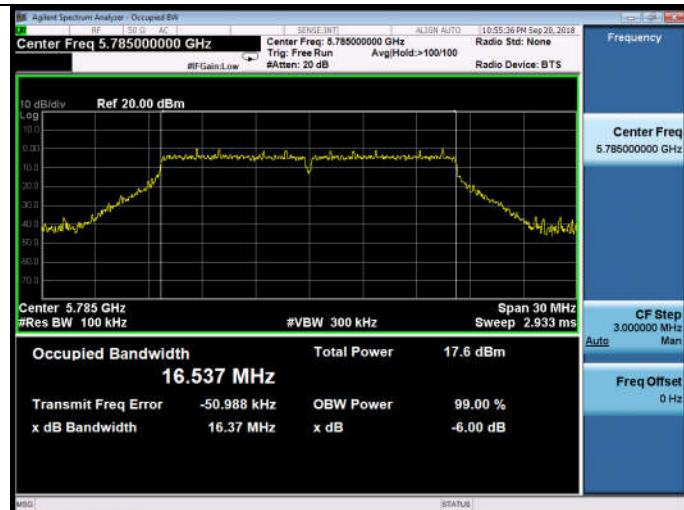


11n HT20

5745MHz



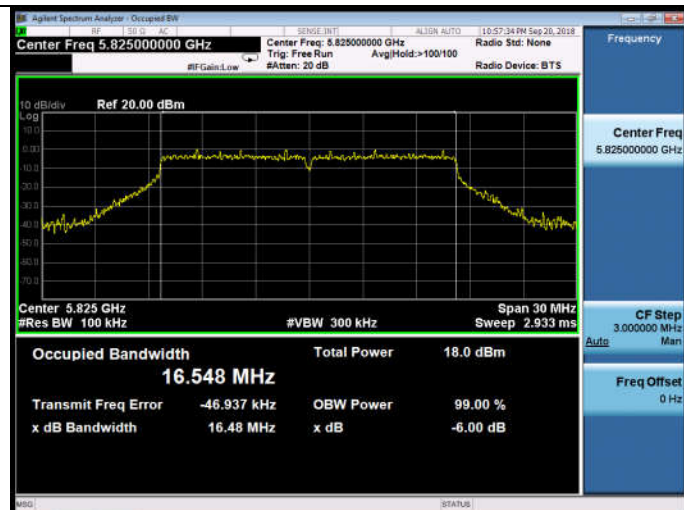
5785MHz



5785MHz



5825MHz

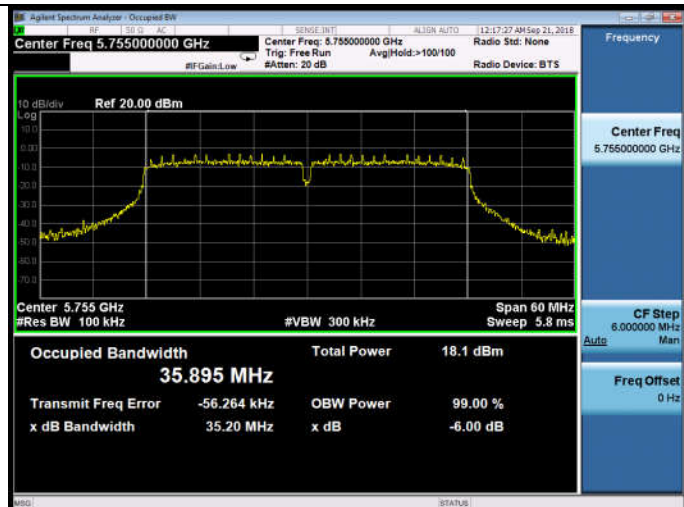


5825MHz

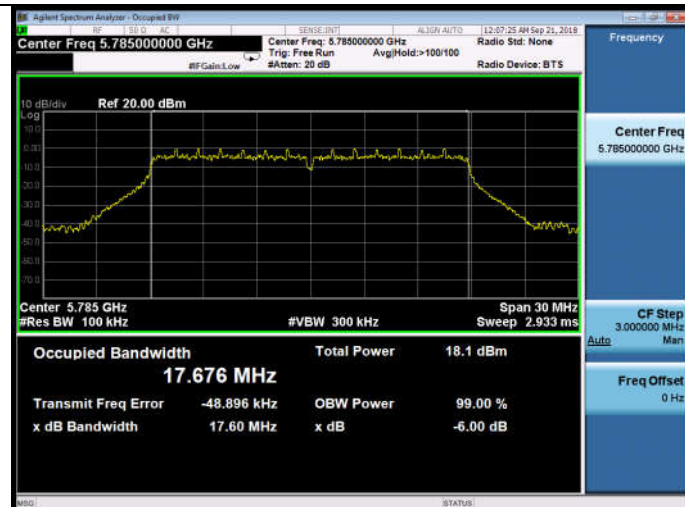


11n HT40

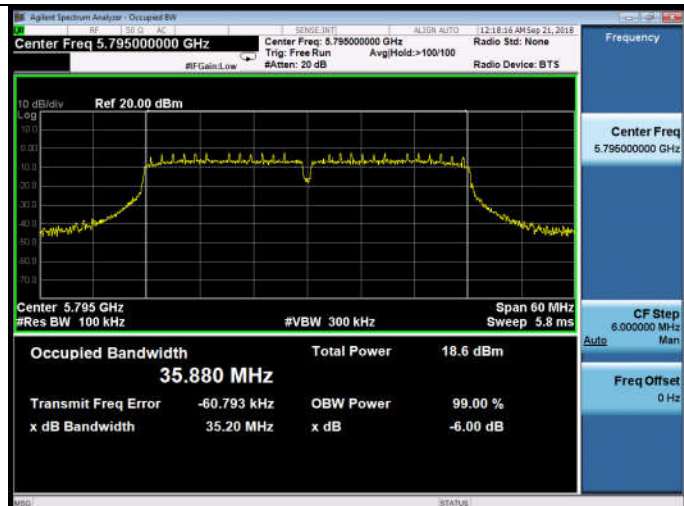
5755MHz



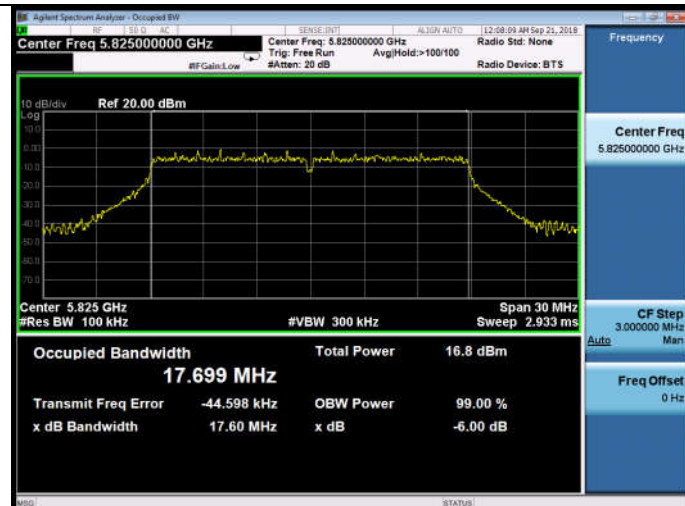
5785MHz



5795MHz

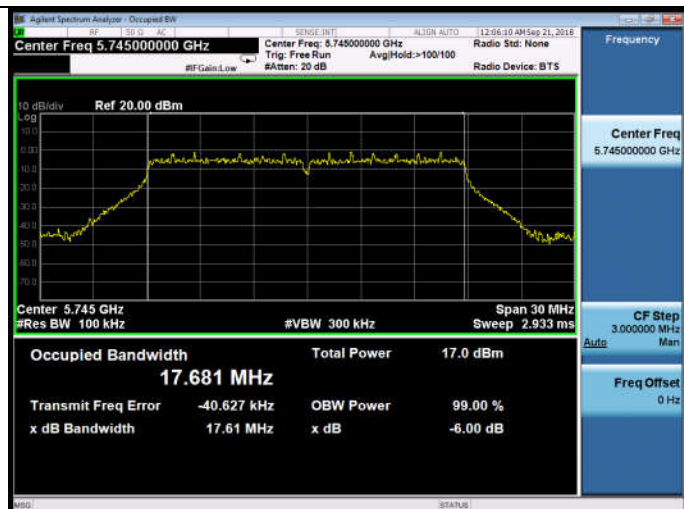


5825MHz



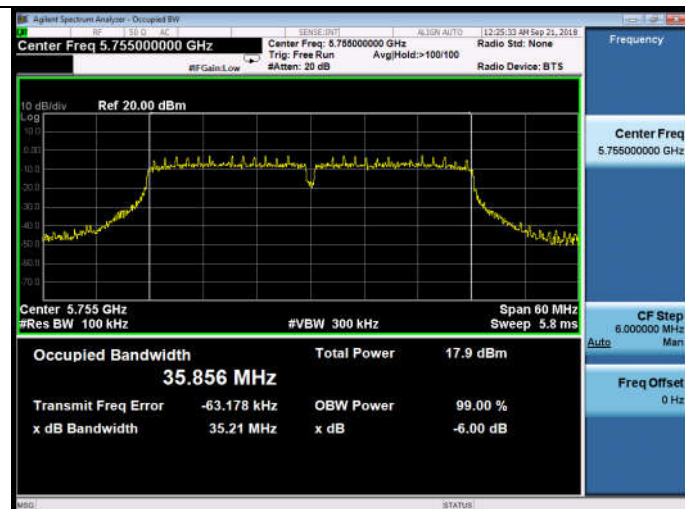
11ac VHT20

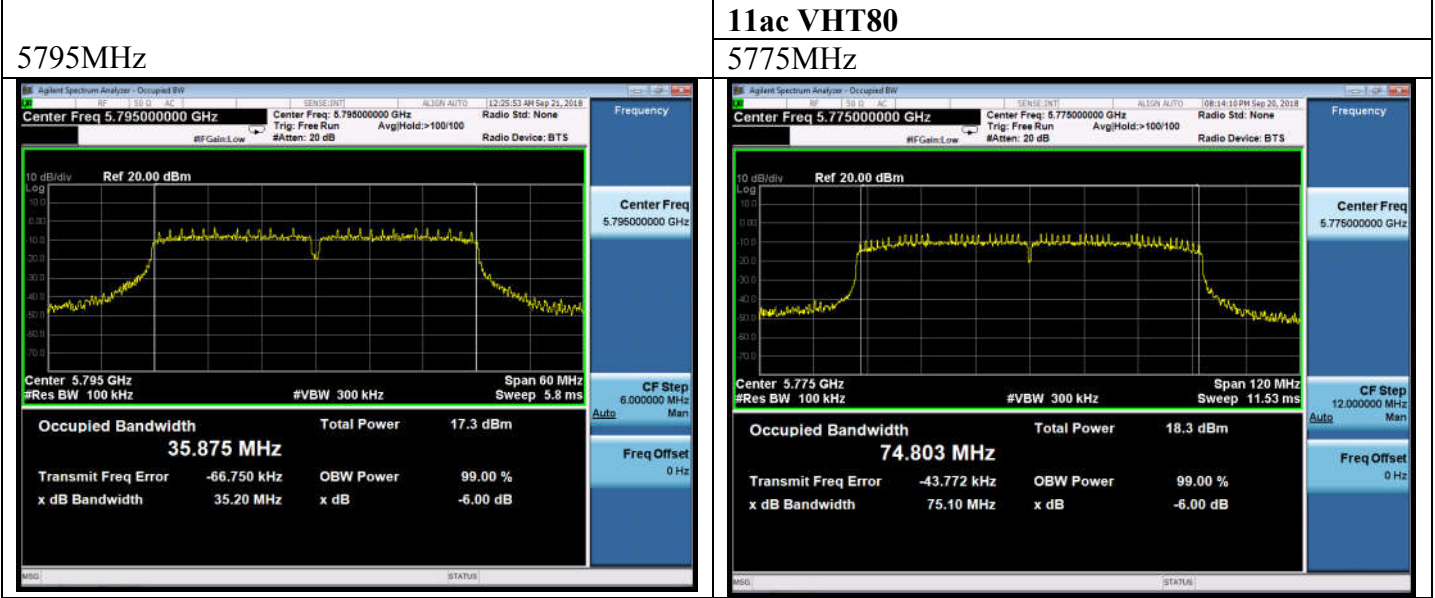
5745MHz



11ac VHT40

5755MHz





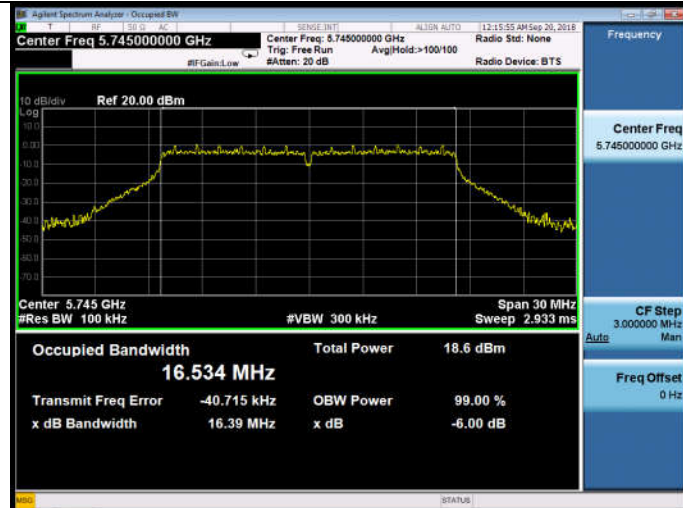
5745-5825MHz Band:

6dB bandwidth

ANT 1

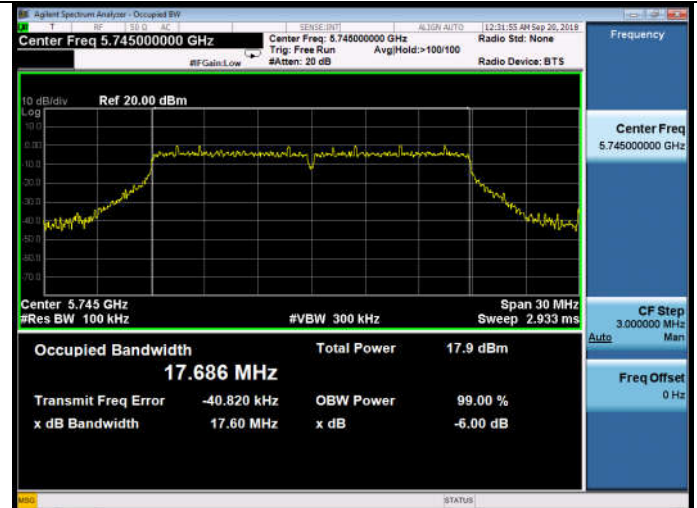
11a

5745MHz

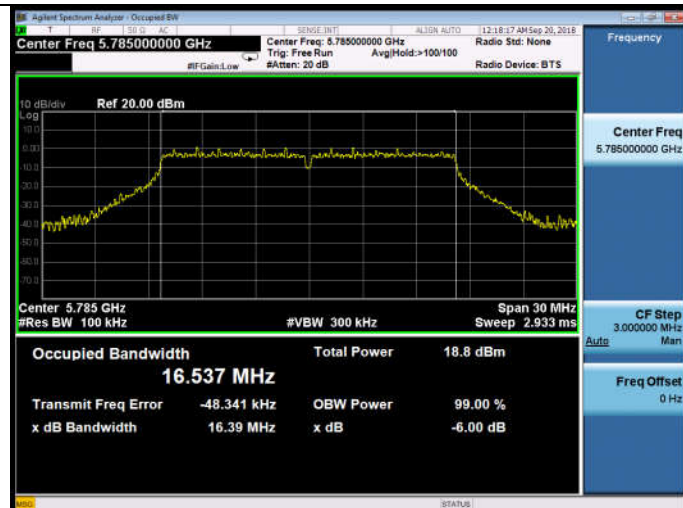


11n HT20

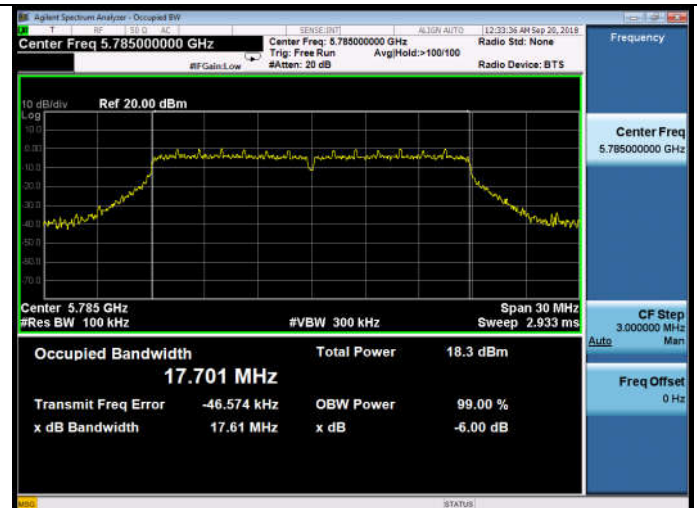
5745MHz



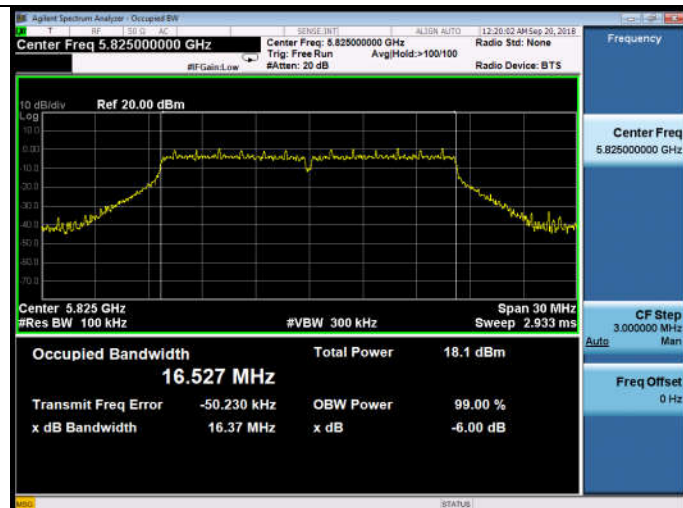
5785MHz



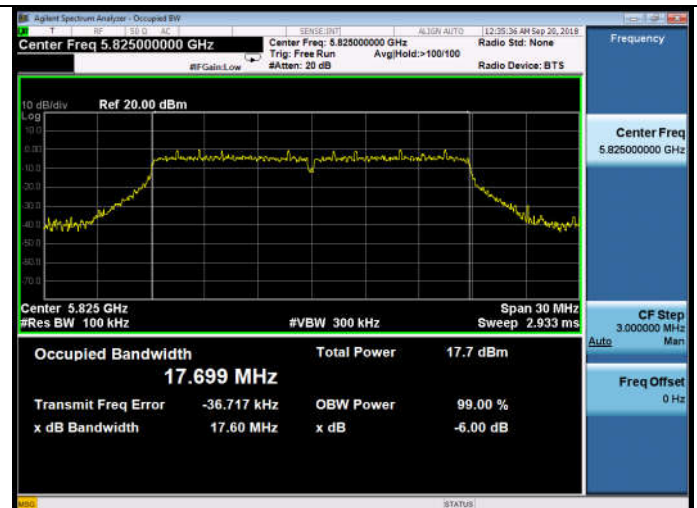
5785MHz



5825MHz

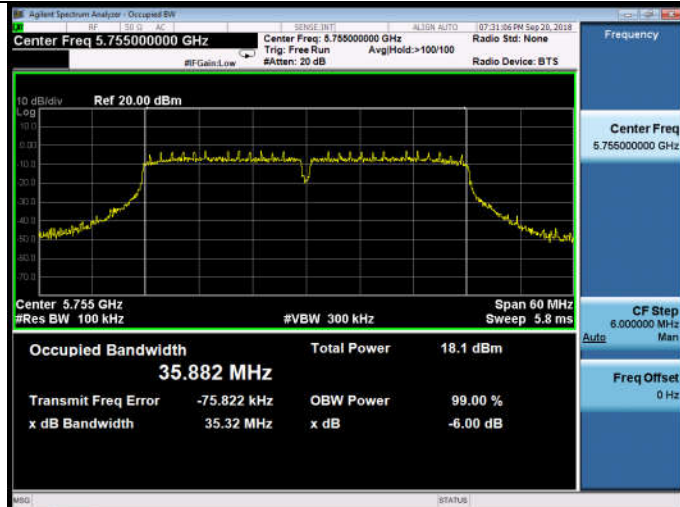


5825MHz

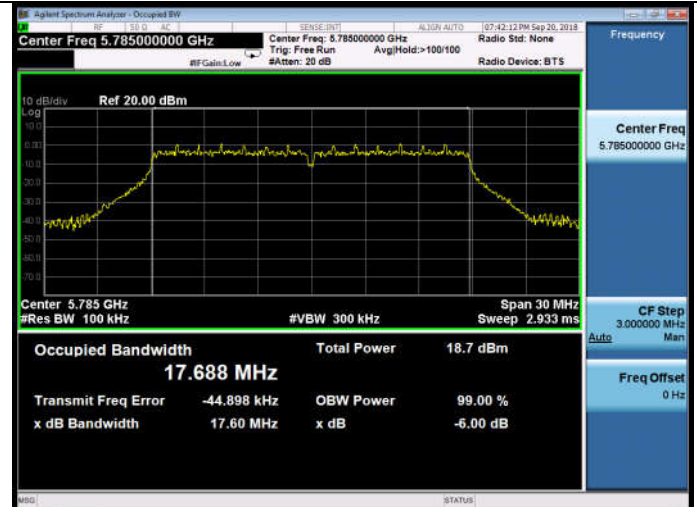


11n HT40

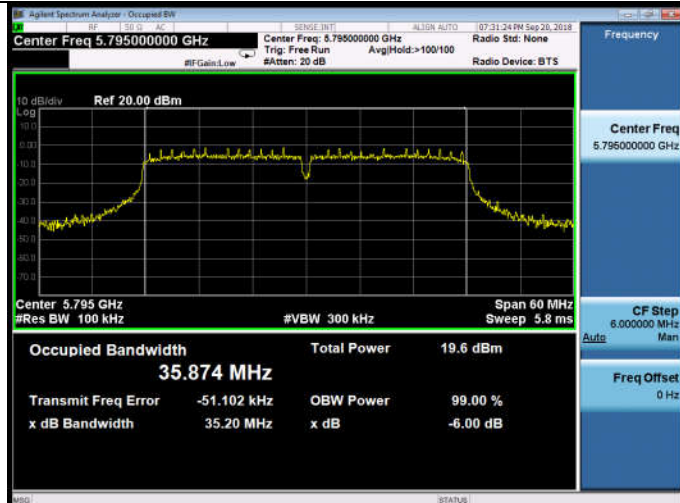
5755MHz



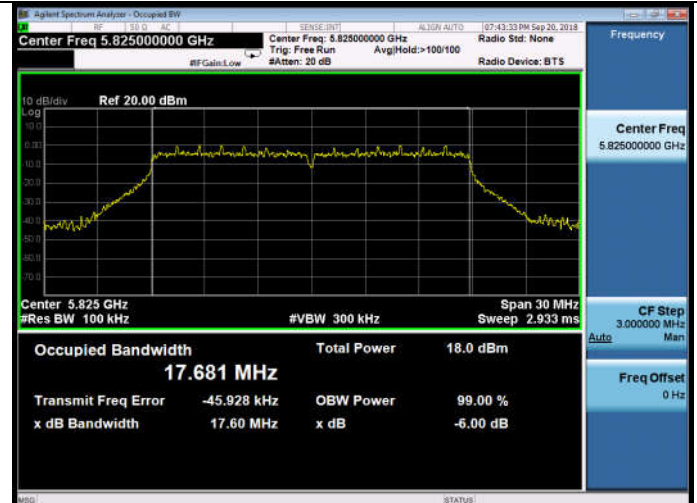
5785MHz



5795MHz

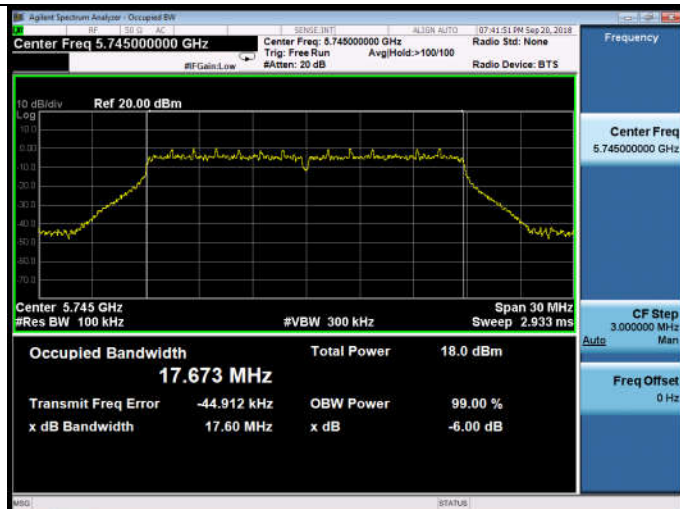


5825MHz



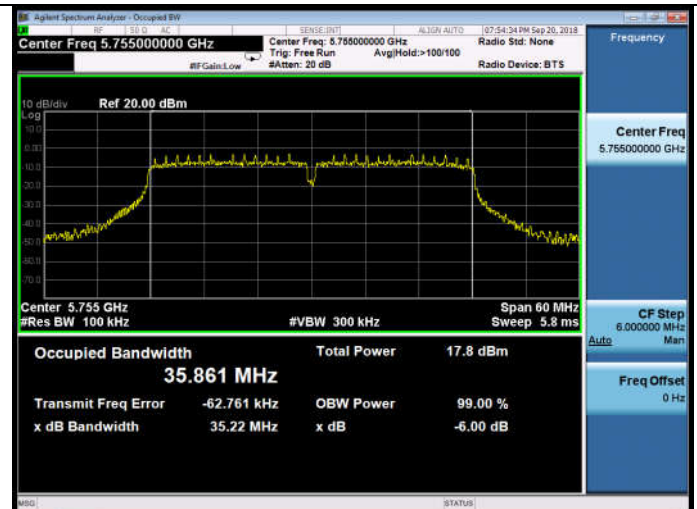
11ac VHT20

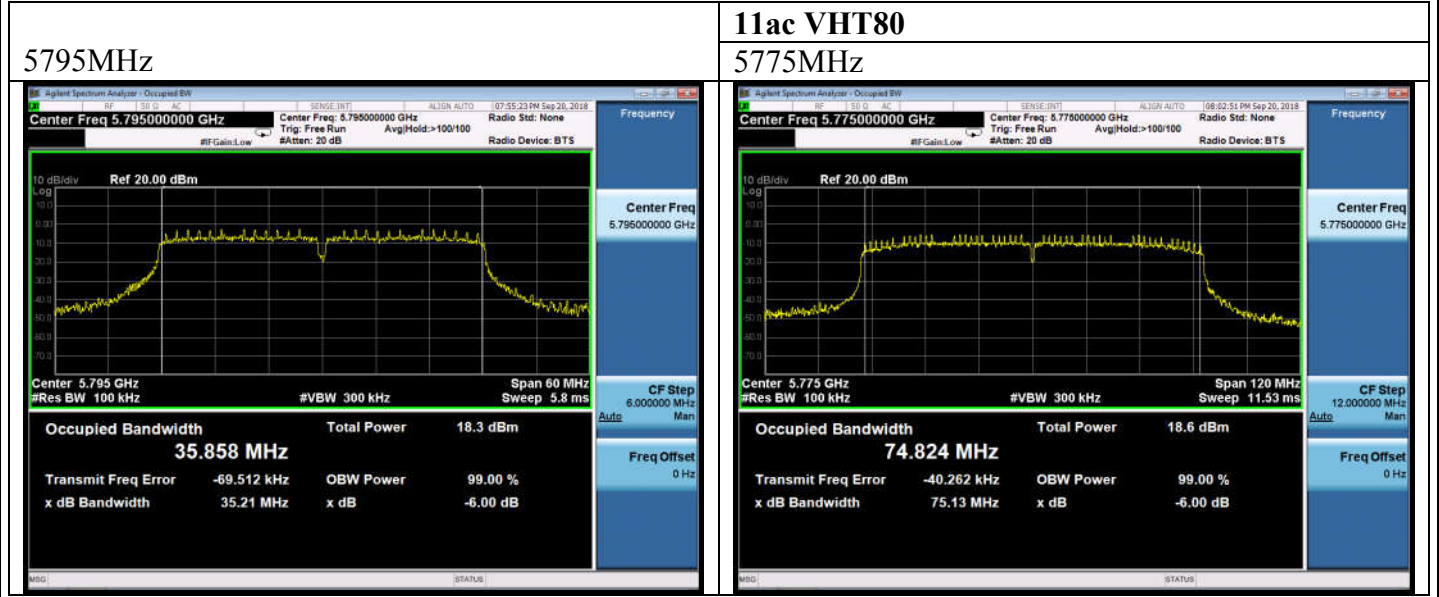
5745MHz



11ac VHT40

5755MHz





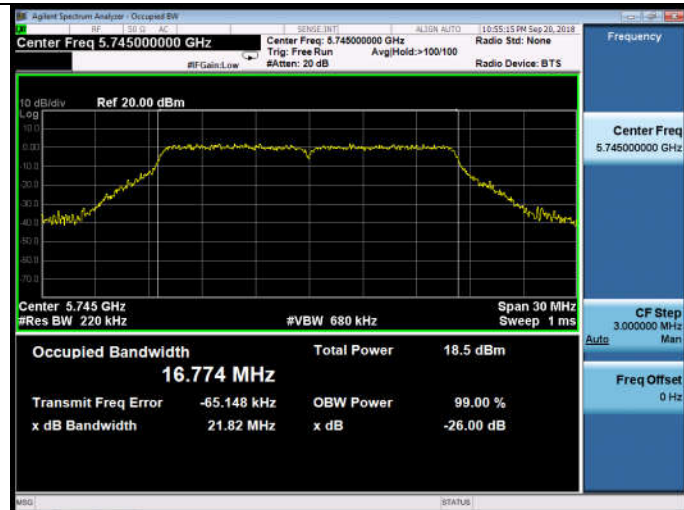
5745-5825MHz Band:

26dB bandwidth

ANT 0

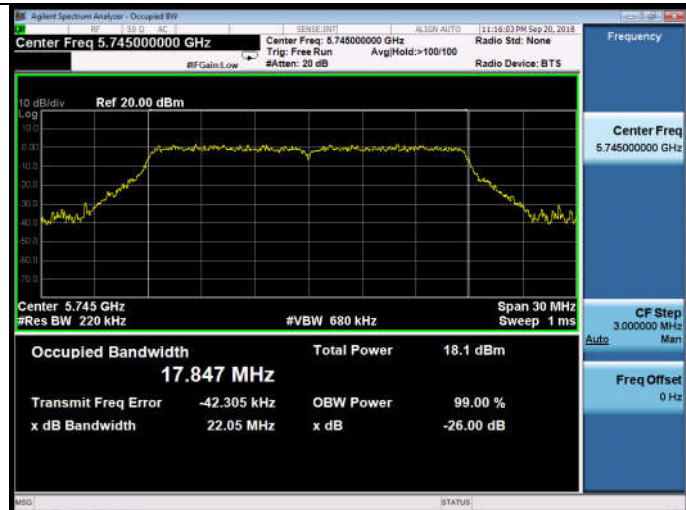
11a

5745MHz

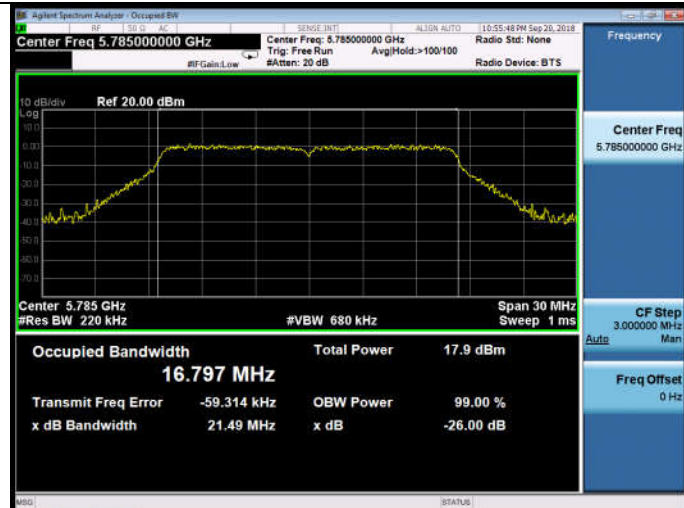


11n HT20

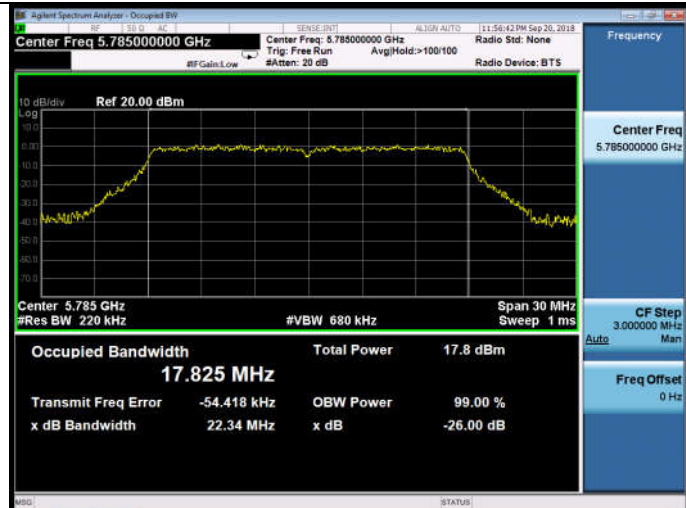
5745MHz



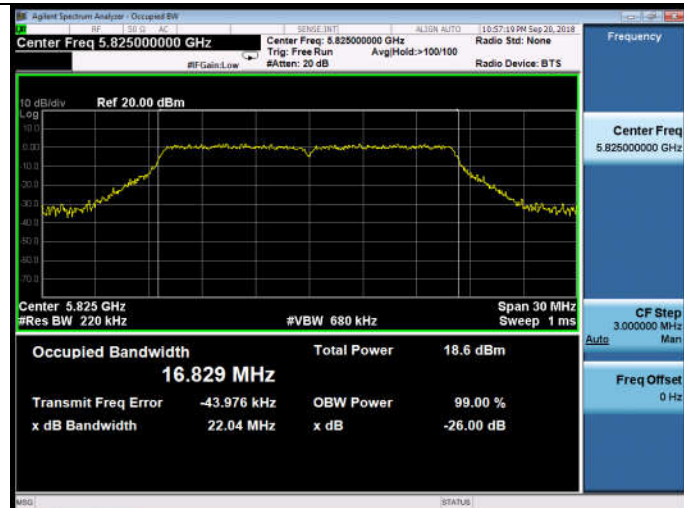
5785MHz



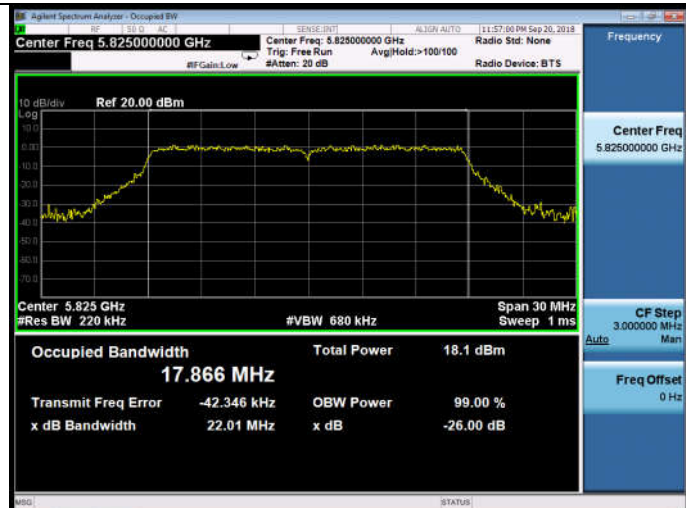
5785MHz



5825MHz

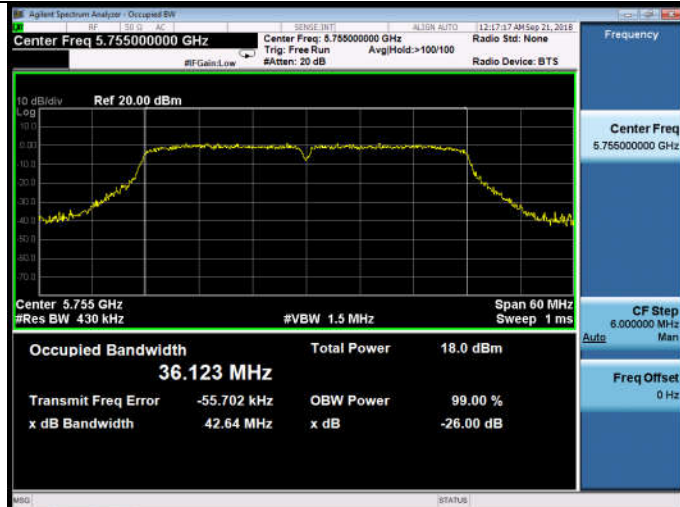


5825MHz

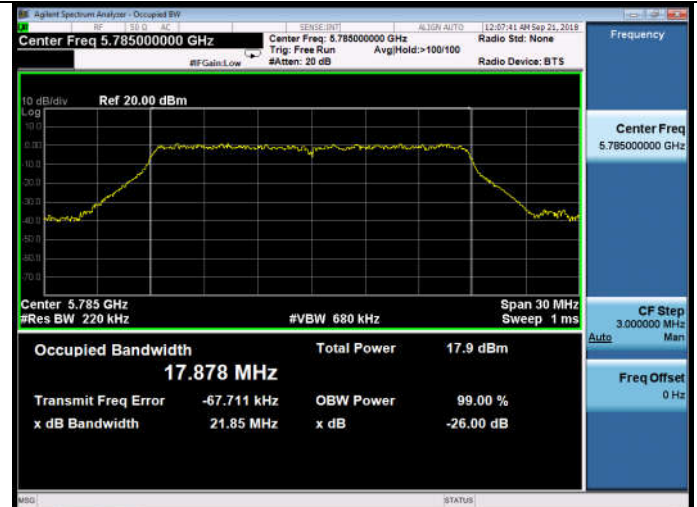


11n HT40

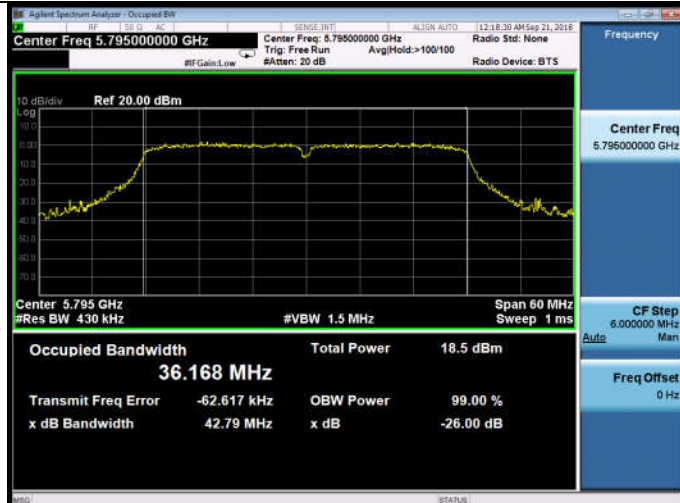
5755MHz



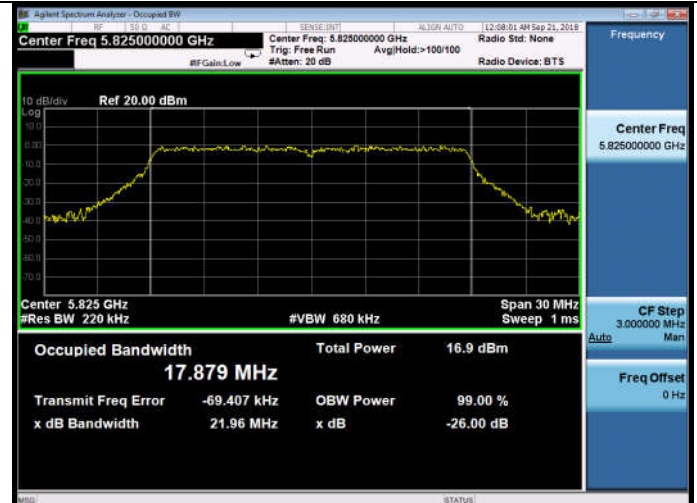
5785MHz



5795MHz

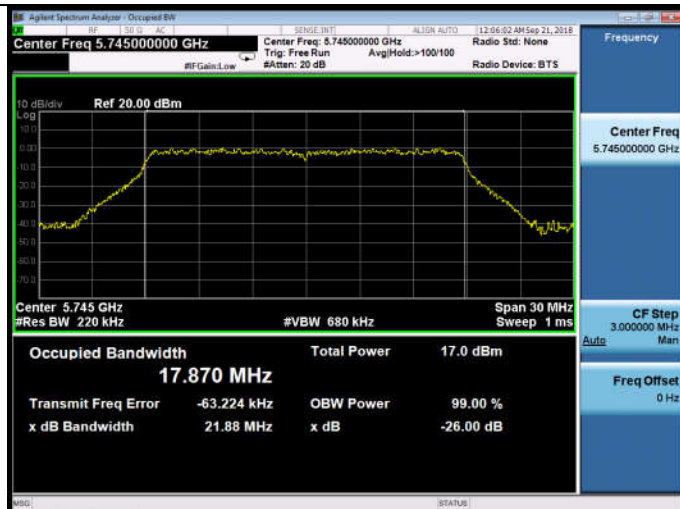


5825MHz



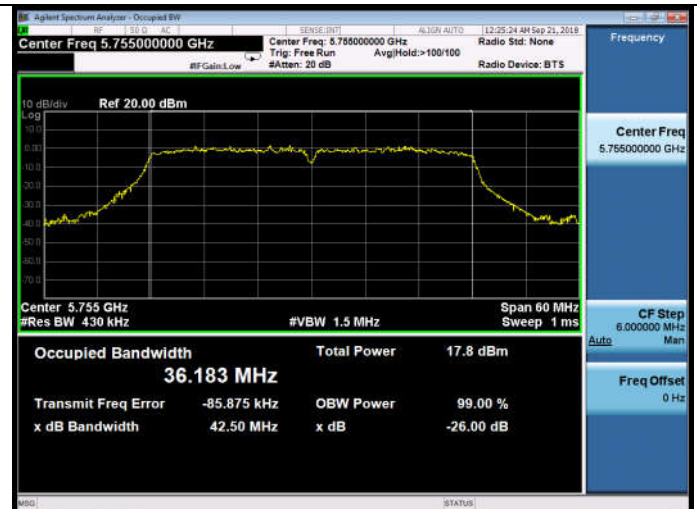
11ac VHT20

5745MHz

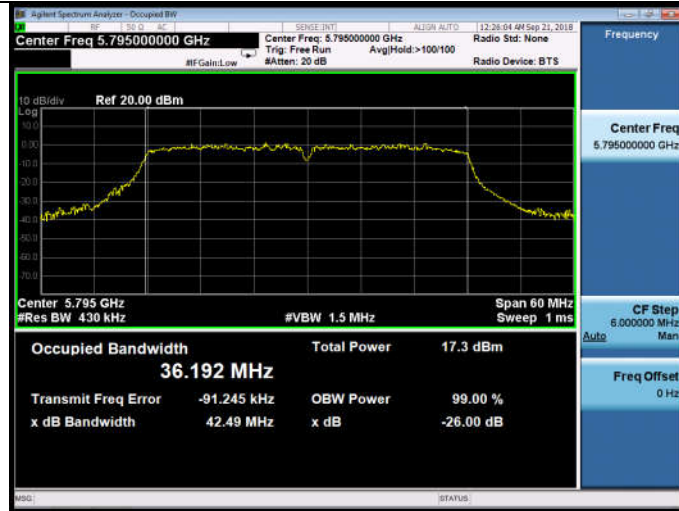


11ac VHT40

5755MHz

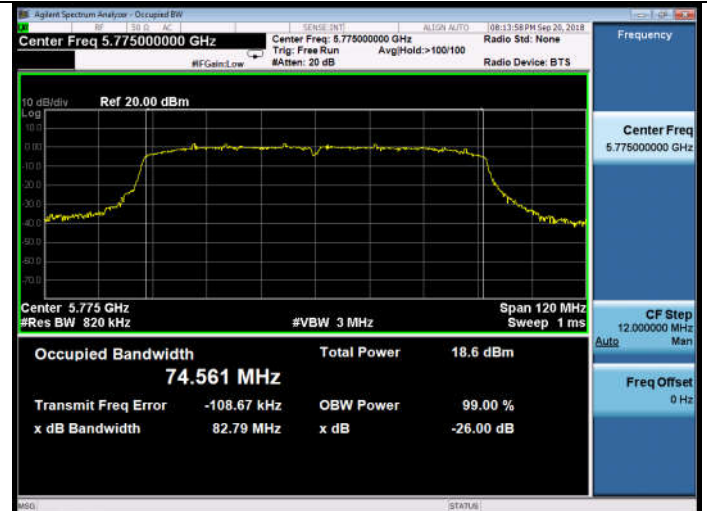


5795MHz



11ac VHT80

5775MHz



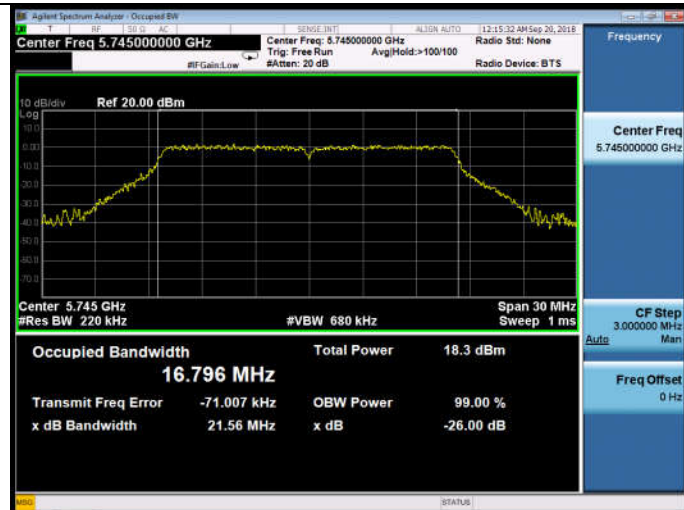
5745-5825MHz Band:

26dB bandwidth

ANT 1

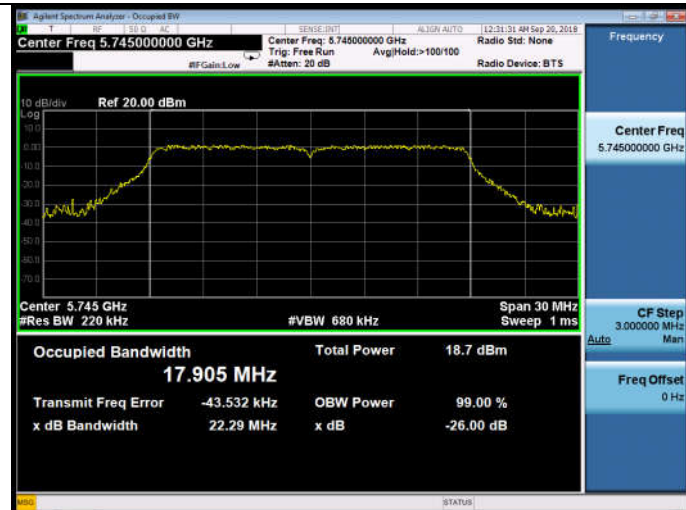
11a

5745MHz

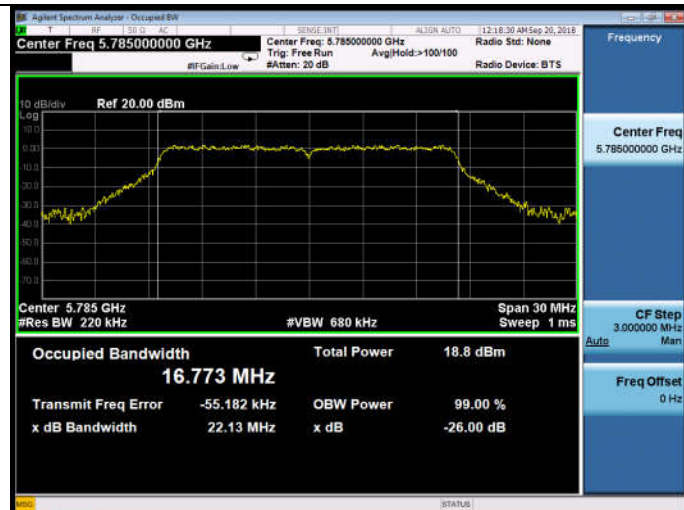


11n HT20

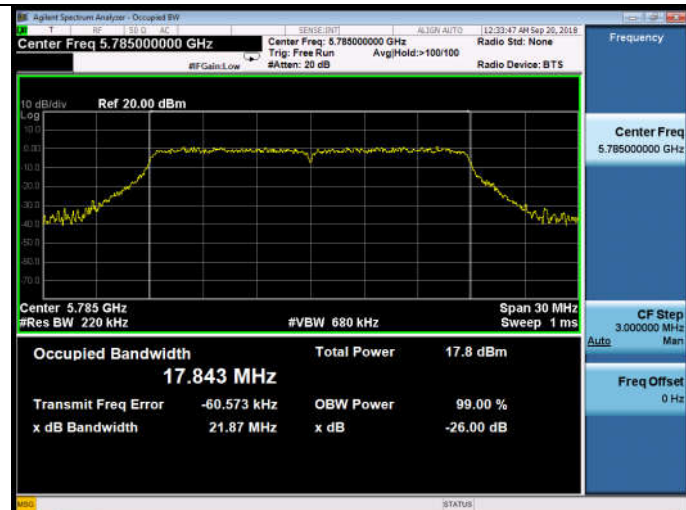
5745MHz



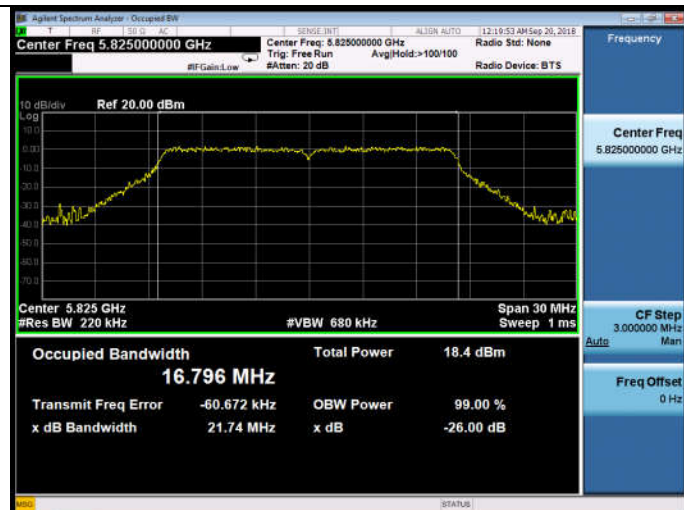
5785MHz



5785MHz



5825MHz

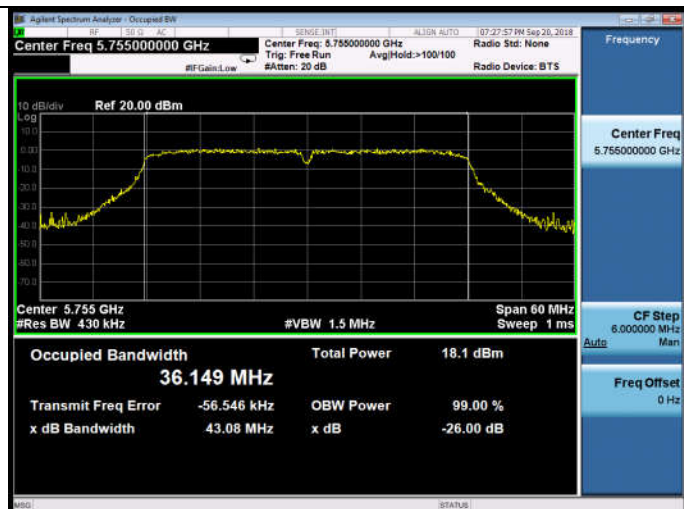


5825MHz

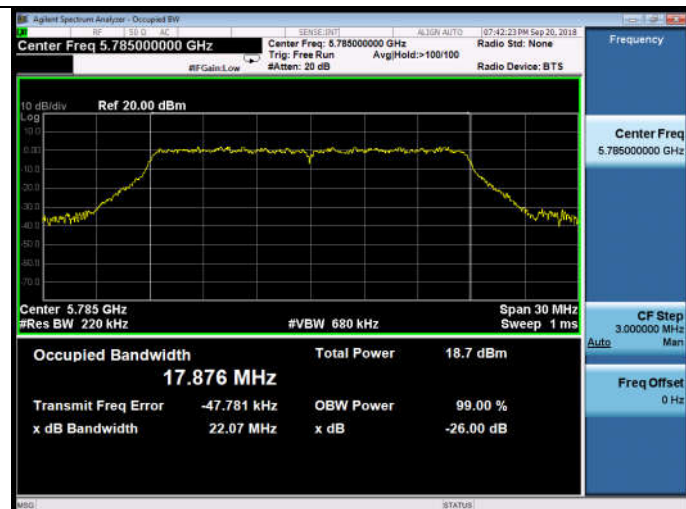


11n HT40

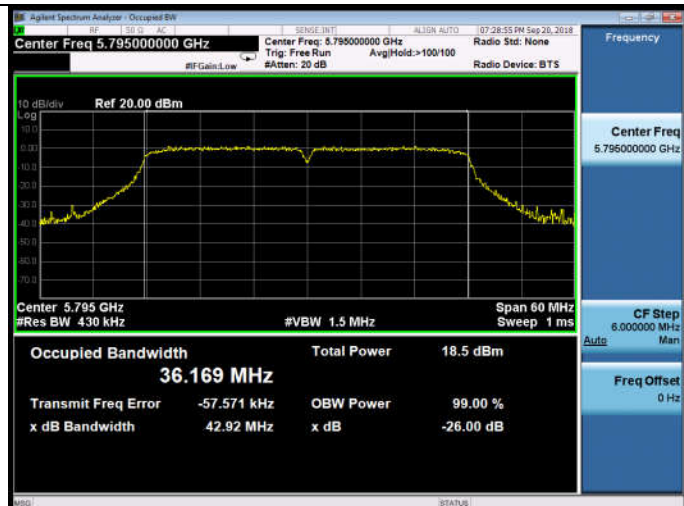
5755MHz



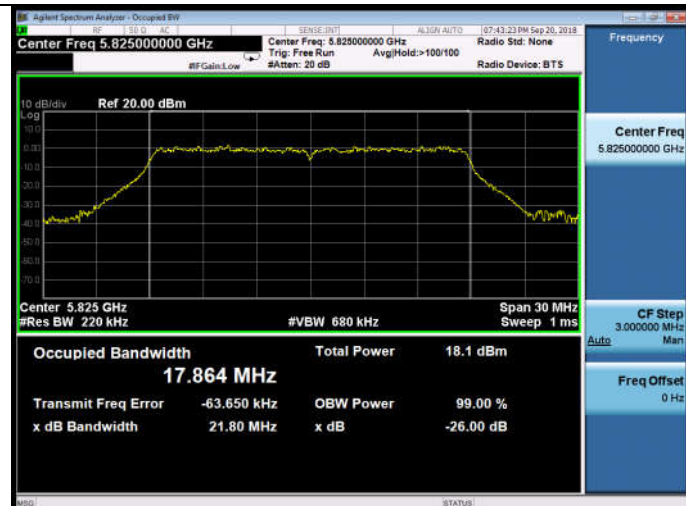
5785MHz



5795MHz

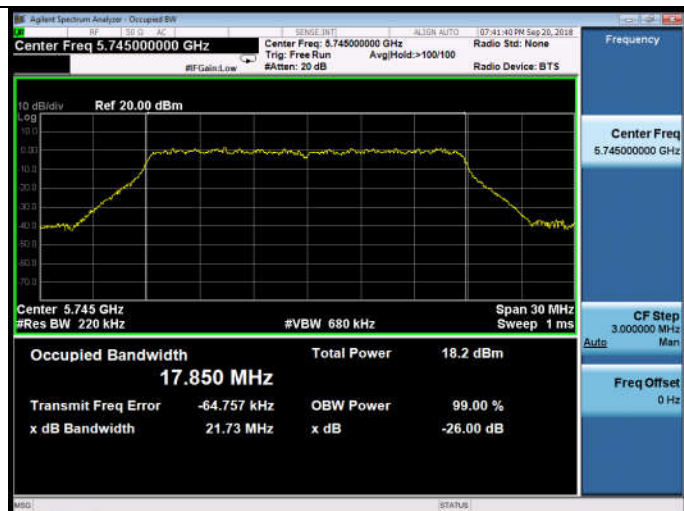


5825MHz



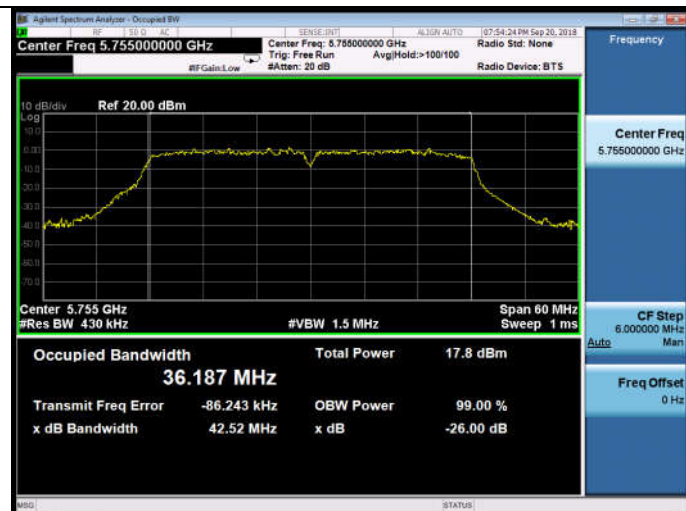
11ac VHT20

5745MHz



11ac VHT40

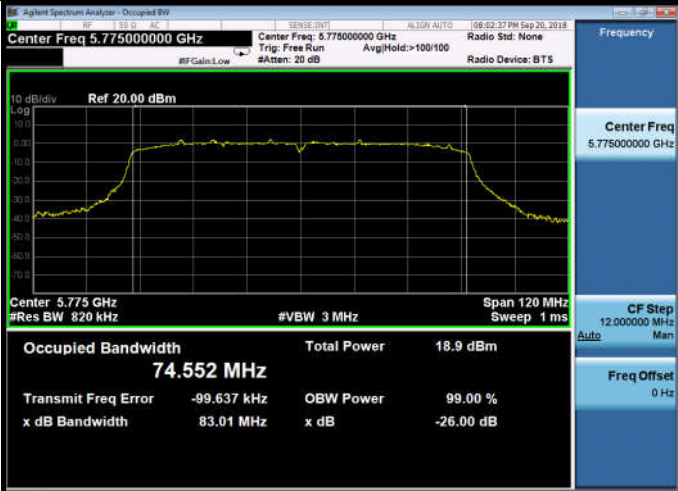
5755MHz



5795MHz

11ac VHT80

5775MHz



7. OUTPUT POWER TEST

7.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Sep.08,18	1 Year
2.	Power meter	Anritsu	ML2487A	6K00002472	Apr.23,18	1 Year
3.	Power sensor	Anritsu	MA2491A	033005	Apr.23,18	1 Year
4.	Attenuator (20dB)	Agilent	8491B	MY39262165	Oct.14,17	1 Year
5.	RF Cable	Hubersuhner	141	NO.1	Oct.14,17	1 Year

7.2. Limit

For the band 5.15–5.25 GHz.

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.

For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz.

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

7.3. Test Procedure

1. Connected the EUT's antenna port to measure device by 20dB attenuator.
2. Use the test method described in KBD789033 clause E Method SA-1
 - 1) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
 - 2) Set RBW = 1 MHz.
 - 3) Set VBW $\geq$ 3 MHz.
 - 4) Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$.
 - 5) Sweep time = auto.
 - 6) Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
 - 7) 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."
 - 8) Trace average at least 100 traces in power averaging (rms) mode.
 - 9) 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.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

7.4. Test Results

5180-5240MHz Band:

EUT: POS Terminal		
M/N: SPD1-01		
Test date: 2018-09-20~21	Pressure: 102.1±1.0 kpa	Humidity: 51.1±3.0%
Tested by: Lynn	Test site: RF site	Temperature: 22.8±0.6 °C

Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)		Limit (dBm)	
		ANT0	ANT1	ANT0	ANT1
11a	5180	11.51	11.93	23.98	23.98
	5200	12.20	12.36	23.98	23.98
	5240	11.55	11.69	23.98	23.98
11n HT20	5180	11.55	11.78	23.98	23.98
	5200	12.15	11.74	23.98	23.98
	5240	11.61	11.16	23.98	23.98
11n HT40	5190	10.60	10.36	23.98	23.98
	5230	10.79	10.43	23.98	23.98
11ac VHT20	5180	11.40	11.84	23.98	23.98
	5200	12.06	12.32	23.98	23.98
	5240	11.50	11.66	23.98	23.98
11ac VHT40	5190	10.63	10.89	23.98	23.98
	5230	10.95	10.83	23.98	23.98
11ac VHT80	5210	11.11	11.30	23.98	23.98
Conclusion: PASS					

Note: For ANT0:

Antenna Gain= 3.07dBi<6dBi.

For ANT1:

Antenna Gain= 5.05dBi<6dBi.

5260-5320MHz Band:

EUT: POS Terminal		
M/N: SPD1-01		
Test date: 2018-09-20~21	Pressure: 102.1±1.0 kpa	Humidity: 51.1±3.0%
Tested by: Lynn	Test site: RF site	Temperature: 22.8±0.6 °C

Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)		Limit (dBm)	
		ANT0	ANT1	ANT0	ANT1
11a	5260	11.77	11.92	23.98	23.98
	5300	12.20	12.26	23.98	23.98
	5320	12.52	12.33	23.98	23.98
11n HT20	5260	11.81	12.20	23.98	23.98
	5300	11.40	11.54	23.98	23.98
	5320	11.36	11.86	23.98	23.98
11n HT40	5270	11.48	11.01	23.98	23.98
	5310	11.82	11.10	23.98	23.98
11ac VHT20	5260	11.78	11.82	23.98	23.98
	5300	12.19	12.10	23.98	23.98
	5320	12.40	12.31	23.98	23.98
11ac VHT40	5270	11.44	11.33	23.98	23.98
	5310	11.83	11.52	23.98	23.98
11ac VHT80	5290	11.53	11.33	23.98	23.98
Conclusion: PASS					

Note: For ANT0:

Antenna Gain= 3.07dBi<6dBi.

For ANT1:

Antenna Gain= 5.05dBi<6dBi.

5500-5700MHz Band:

EUT: POS Terminal		
M/N: SPD1-01		
Test date: 2018-09-20~21	Pressure: 102.1±1.0 kpa	Humidity: 51.1±3.0%
Tested by: Lynn	Test site: RF site	Temperature: 22.8±0.6 °C

Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)		Limit (dBm)	
		ANT0	ANT1	ANT0	ANT1
11a	5500	11.83	11.52	23.98	23.80
	5600	12.62	12.22	23.98	23.80
	5700	12.03	12.54	23.98	23.80
11n HT20	5500	11.91	11.67	23.98	23.80
	5600	11.61	11.41	23.98	23.80
	5700	12.00	11.59	23.98	23.80
11n HT40	5510	11.40	11.60	23.98	23.80
	5590	11.35	12.07	23.98	23.80
	5670	11.17	11.23	23.98	23.80
11ac VHT20	5500	11.90	12.28	23.98	23.80
	5600	11.57	12.16	23.98	23.80
	5700	11.98	12.39	23.98	23.80
11ac VHT40	5510	11.37	12.15	23.98	23.80
	5590	11.39	11.79	23.98	23.80
	5670	11.03	11.20	23.98	23.80
11ac VHT80	5530	11.77	11.17	23.98	23.80
	5610	11.71	11.82	23.98	23.80
Conclusion: PASS					

Note: For ANT0:

Antenna Gain= 3.38dBi<6dBi.

For ANT1:

Antenna Gain= 6.18dBi>6dBi.

5745-5825MHz Band:

EUT: POS Terminal		
M/N: SPD1-01		
Test date: 2018-09-20~21	Pressure: 102.1±1.0 kpa	Humidity: 51.1±3.0%
Tested by: Lynn	Test site: RF site	Temperature: 22.8±0.6 °C

Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)		Limit (dBm)	
		ANT0	ANT1	ANT0	ANT1
11a	5745	12.00	11.69	30	29.42
	5785	11.38	12.29	30	29.42
	5825	11.82	11.70	30	29.42
11n HT20	5745	11.90	11.69	30	29.42
	5785	11.47	11.22	30	29.42
	5825	11.79	11.28	30	29.42
11n HT40	5755	11.23	11.20	30	29.42
	5795	11.62	11.52	30	29.42
11ac VHT20	5745	11.87	11.45	30	29.42
	5785	11.33	12.20	30	29.42
	5825	11.68	11.53	30	29.42
11ac VHT40	5755	11.20	11.04	30	29.42
	5795	11.61	11.50	30	29.42
11ac VHT80	5775	11.11	11.34	30	29.42
Conclusion: PASS					

Note: For ANT0:

Antenna Gain= 2.96dBi<6dBi.

For ANT1:

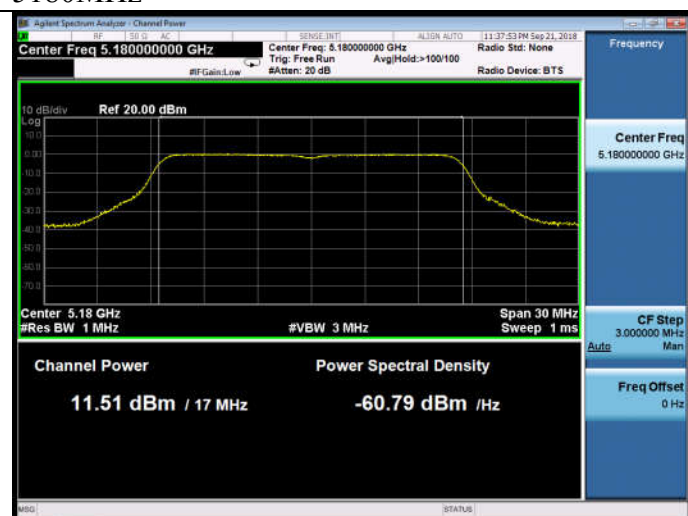
Antenna Gain= 6.58dBi>6dBi.

5180-5240MHz Band:

ANT 0

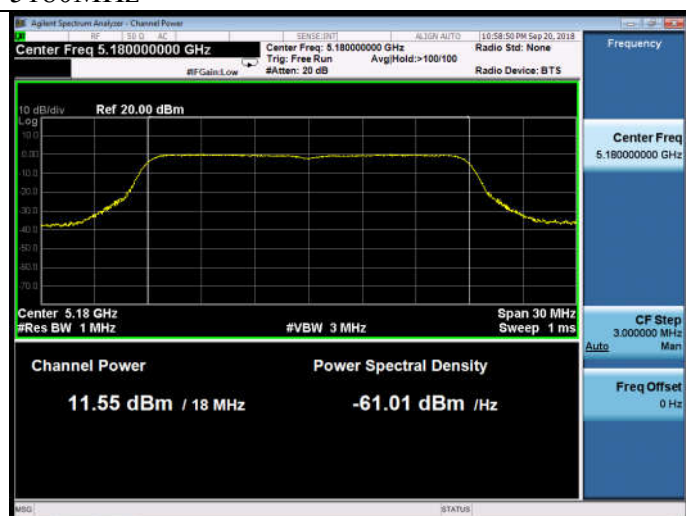
11a

5180MHz

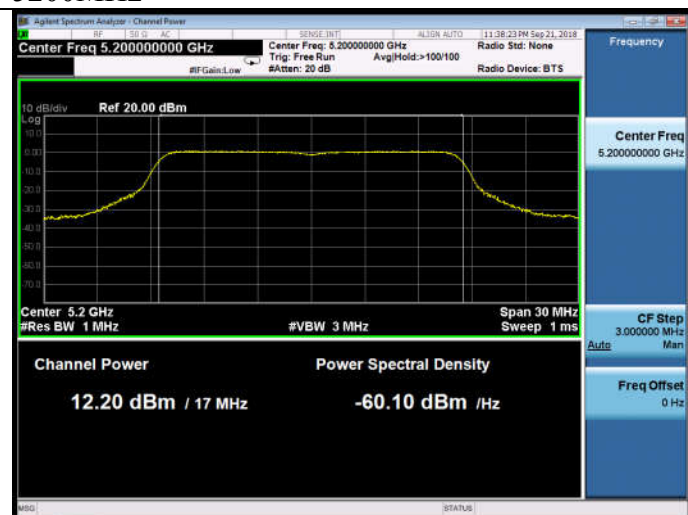


11n HT20

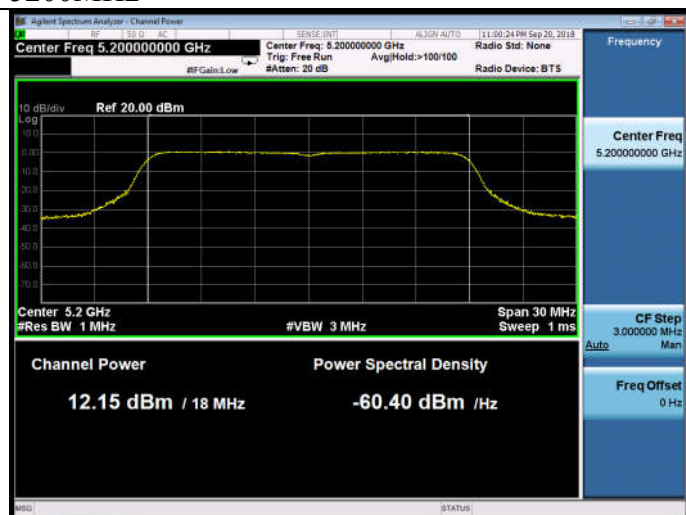
5180MHz



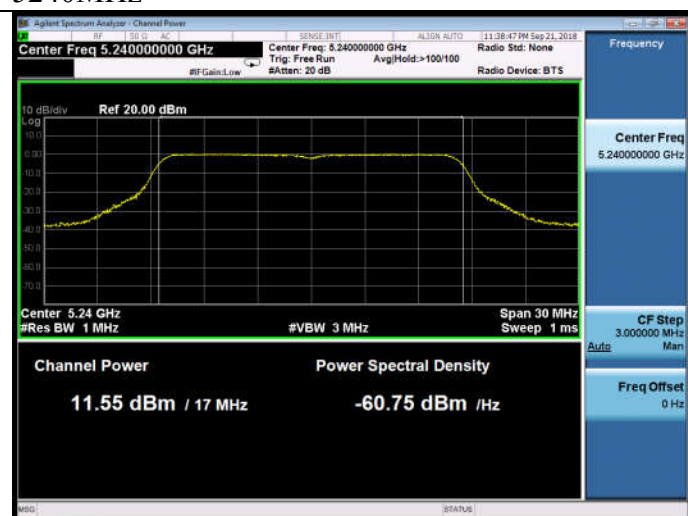
5200MHz



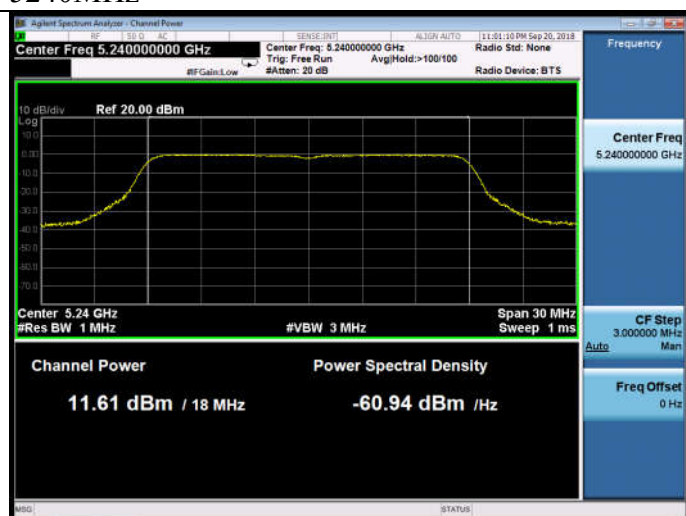
5200MHz



5240MHz

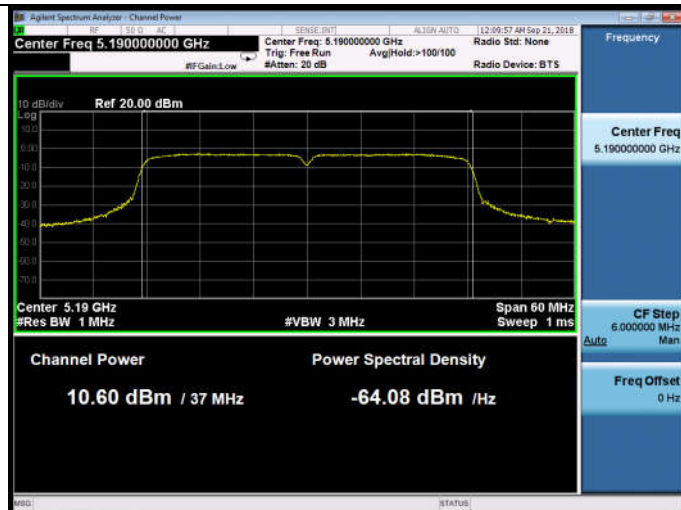


5240MHz

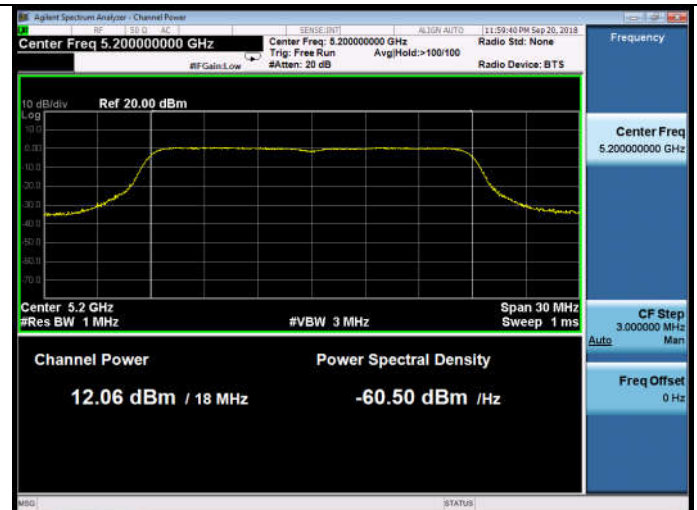


11n HT40

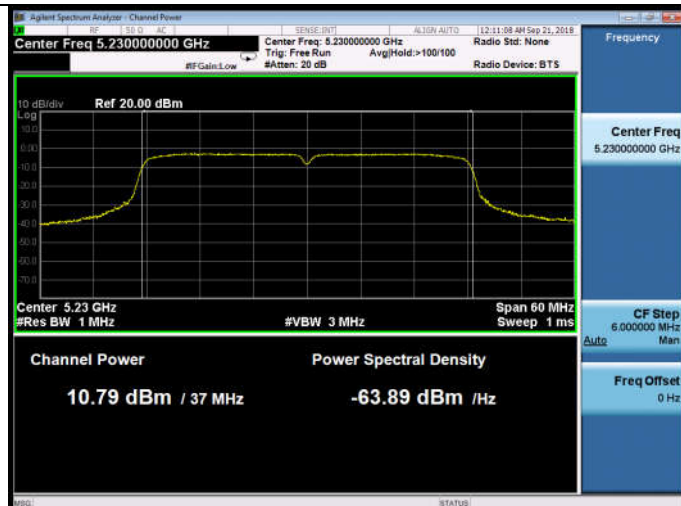
5190MHz



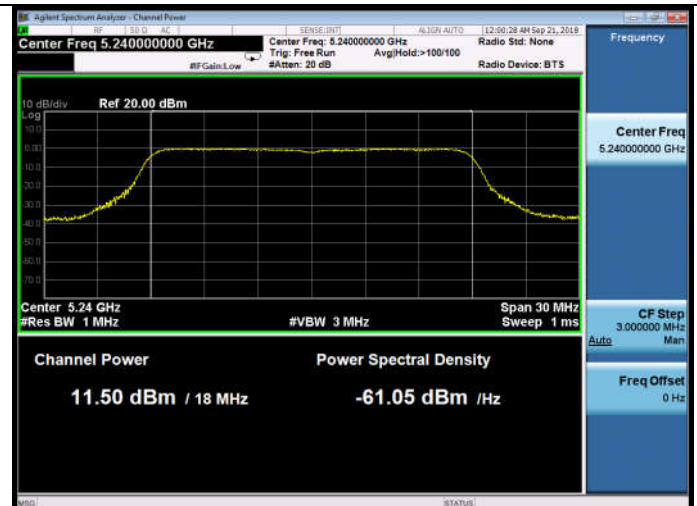
5200MHz



5230MHz

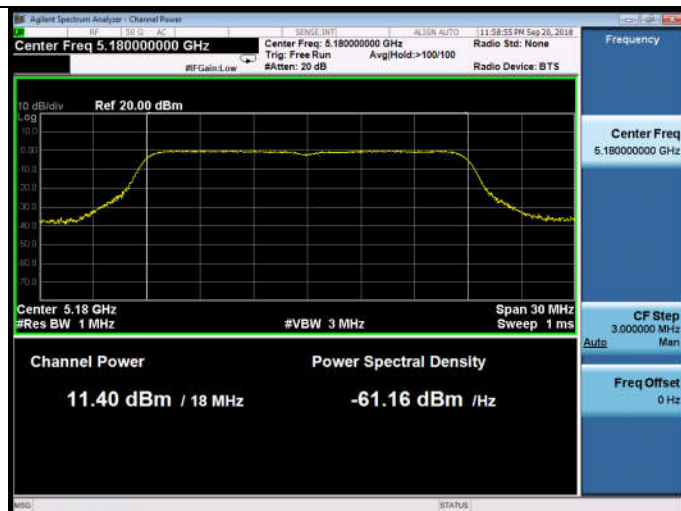


5240MHz



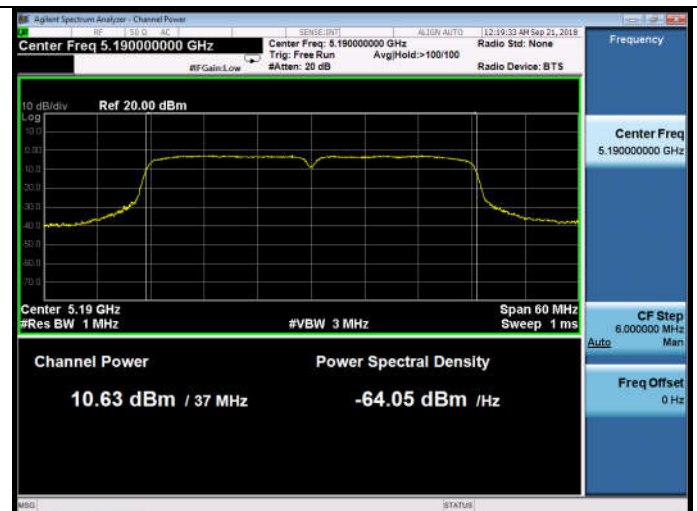
11ac VHT20

5180MHz



11ac VHT40

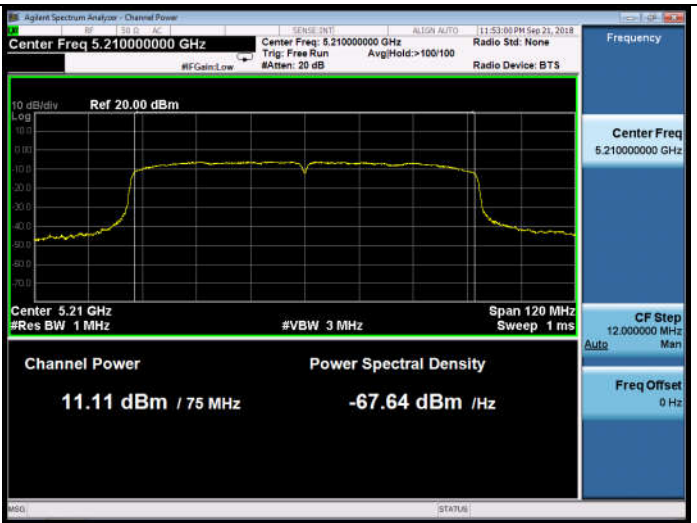
5190MHz



FCC ID: 2AF3K-SPD1

11ac VHT80
5210MHz

5230MHz

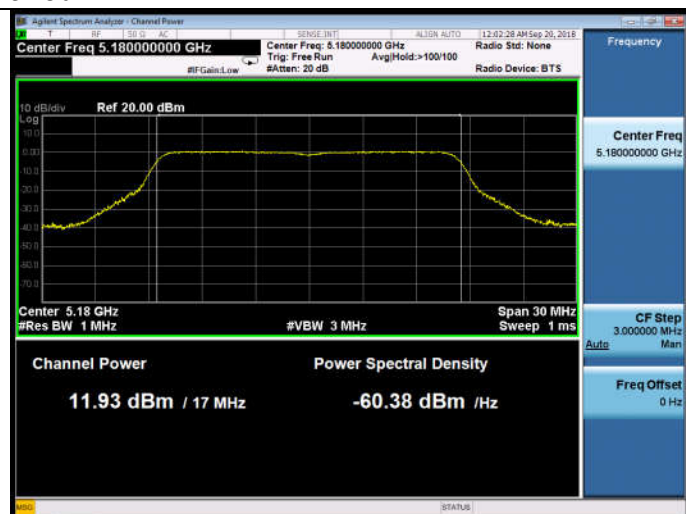


5180-5240MHz Band:

ANT 1

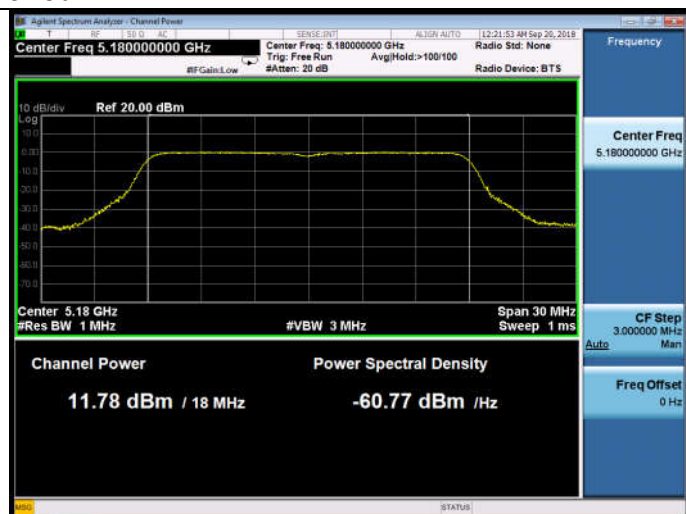
11a

5180MHz

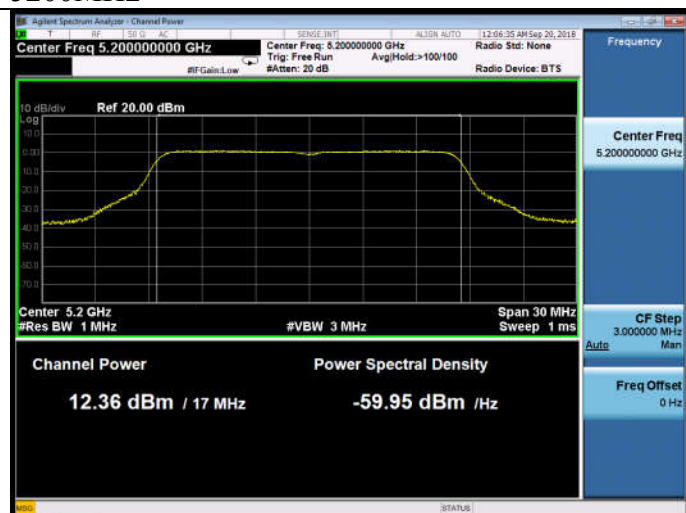


11n HT20

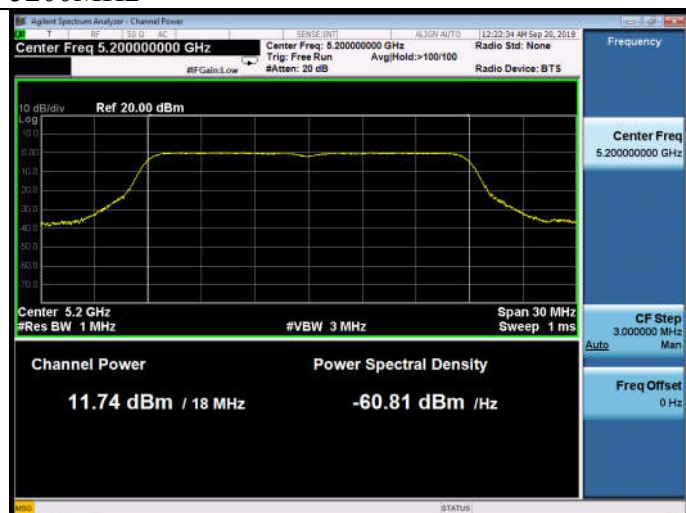
5180MHz



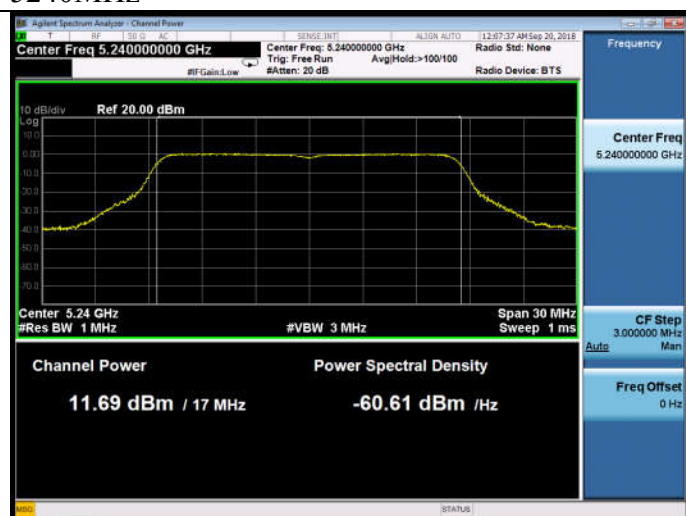
5200MHz



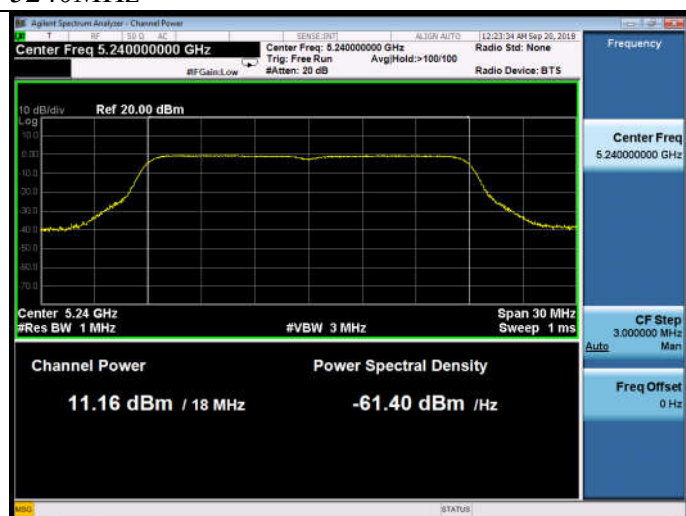
5200MHz



5240MHz

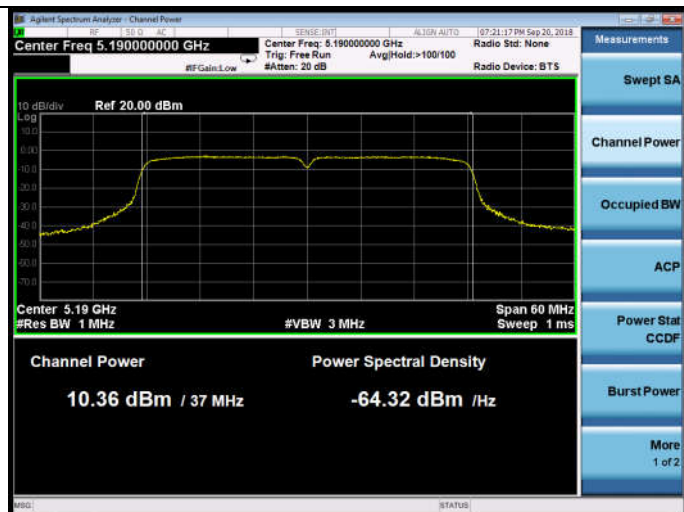


5240MHz

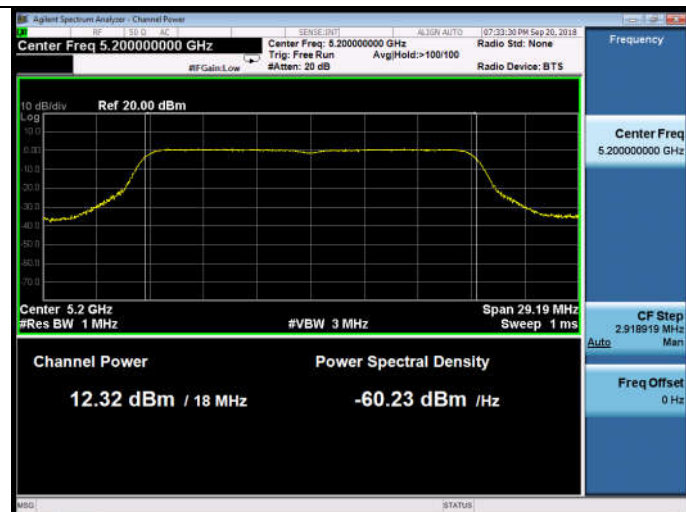


11n HT40

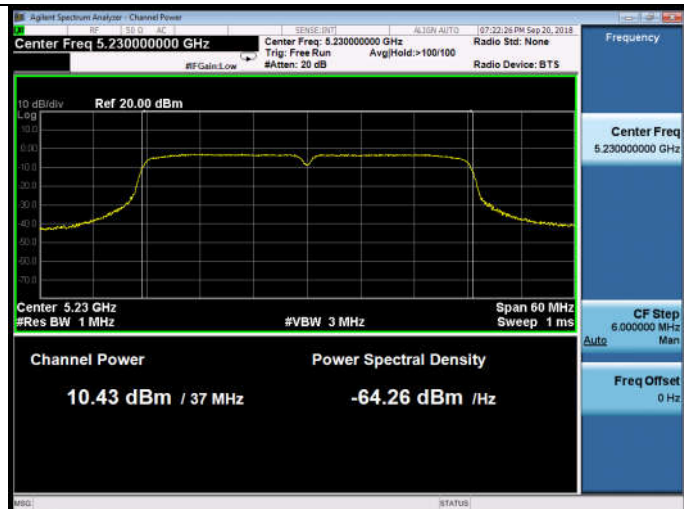
5190MHz



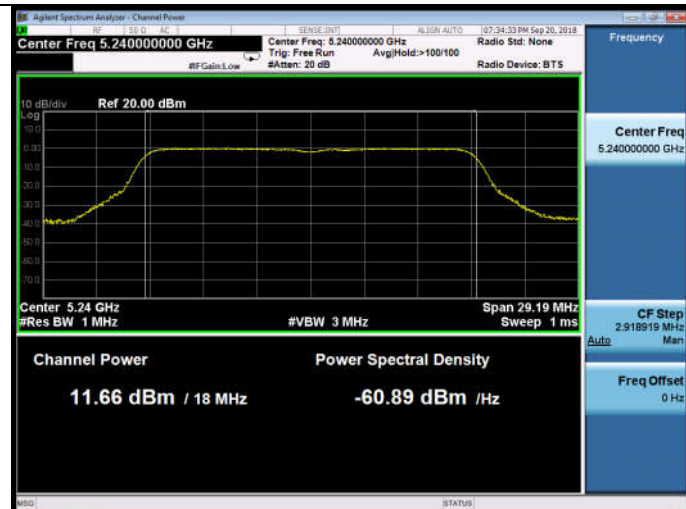
5200MHz



5230MHz

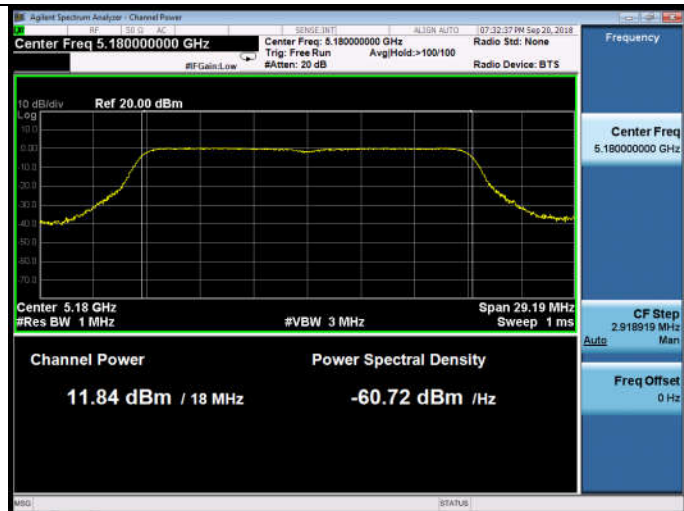


5240MHz



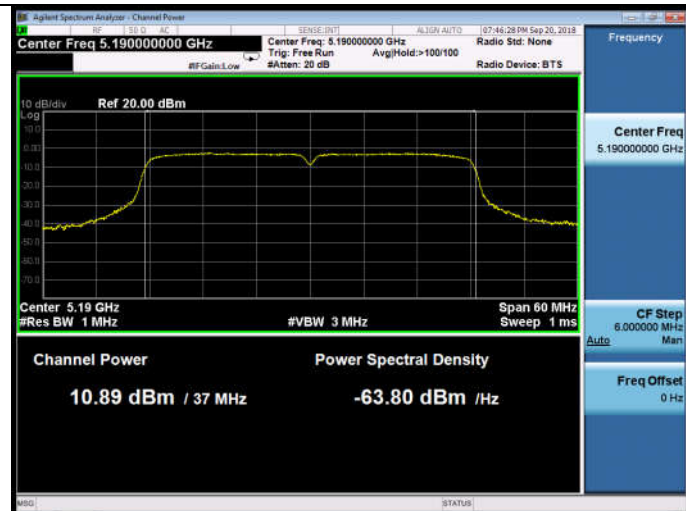
11ac VHT20

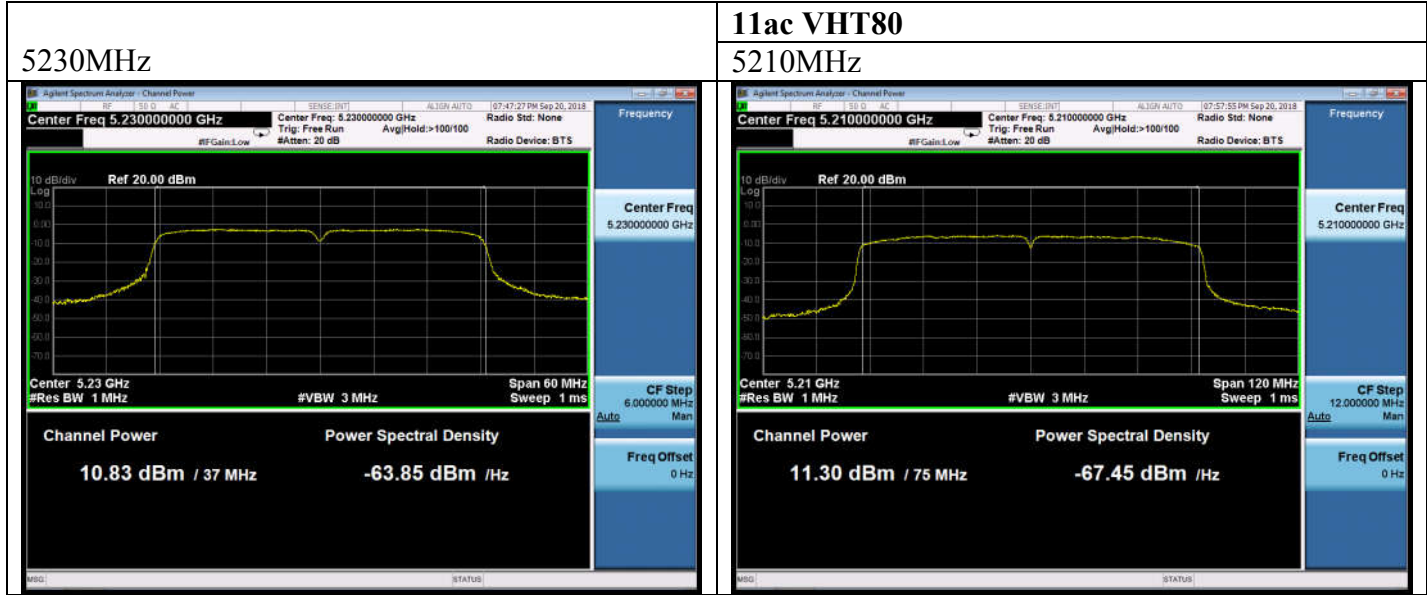
5180MHz



11ac VHT40

5190MHz



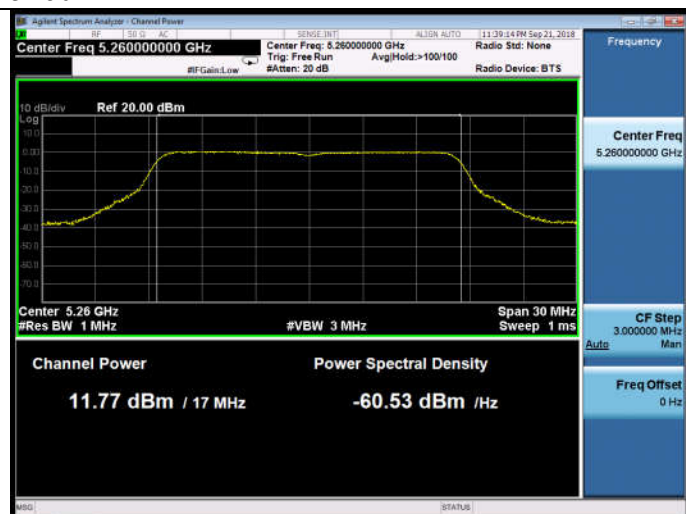


5260-5320MHz Band:

ANT 0

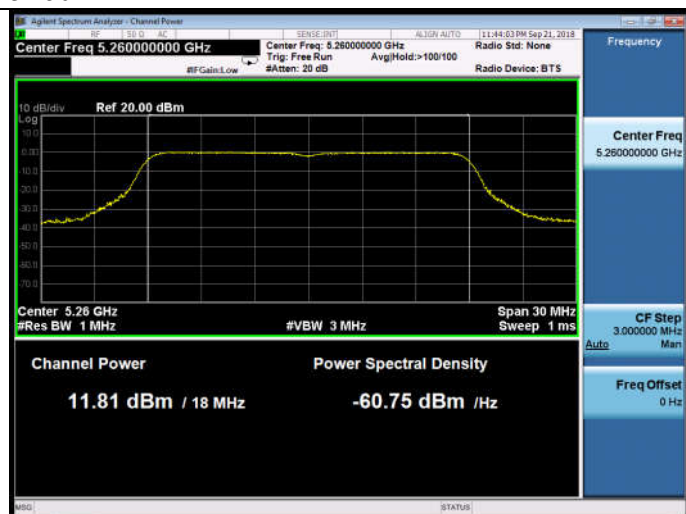
11a

5260MHz

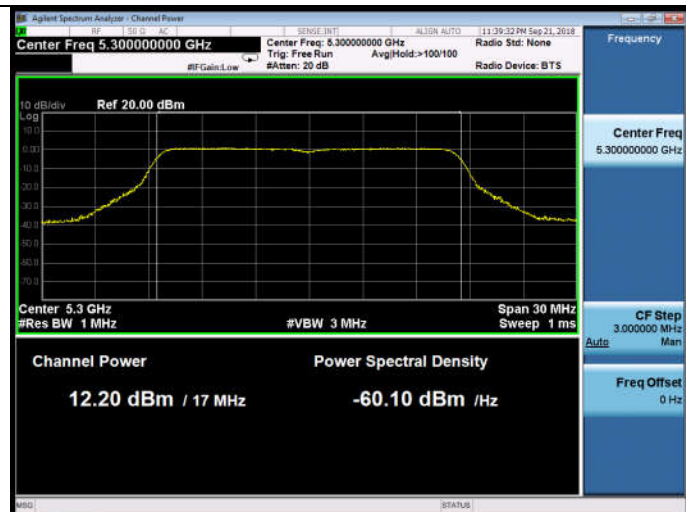


11n HT20

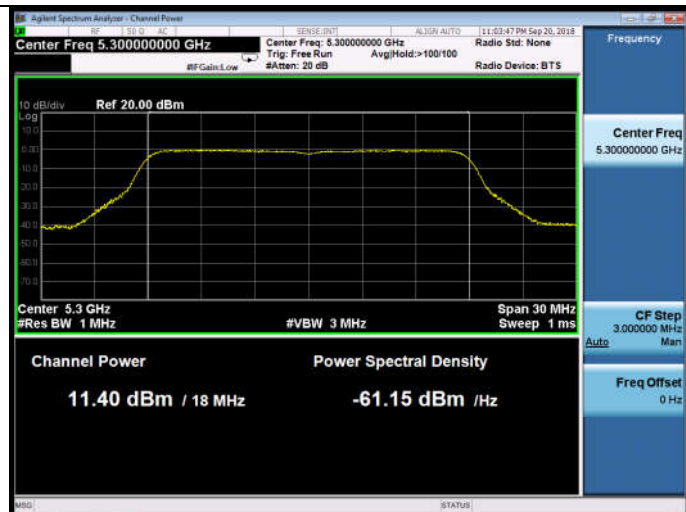
5260MHz



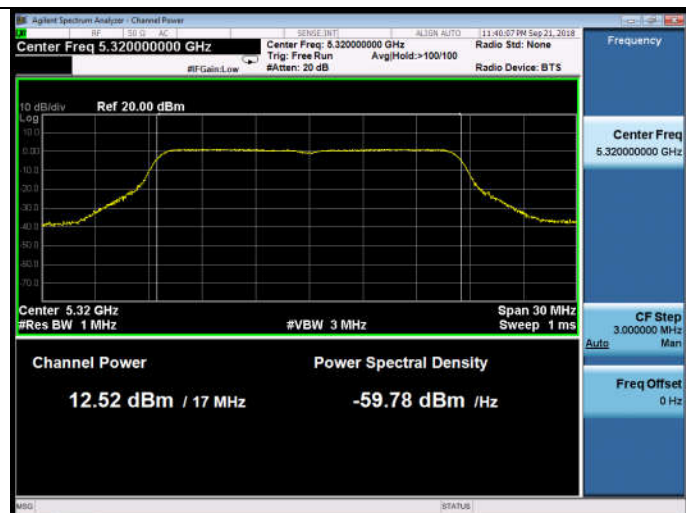
5300MHz



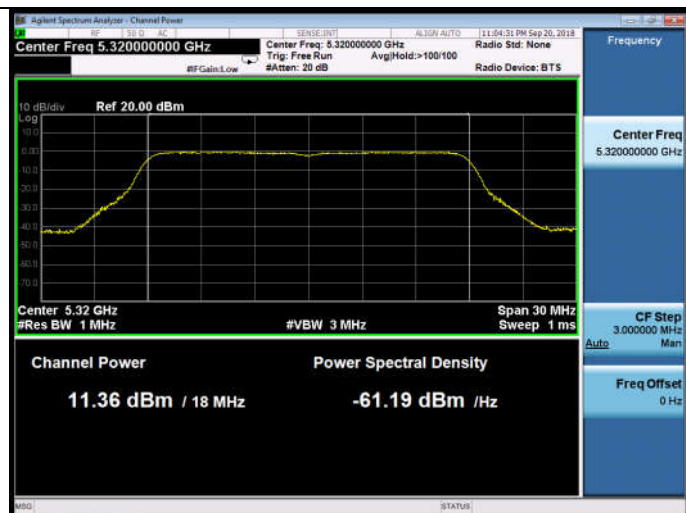
5300MHz



5320MHz

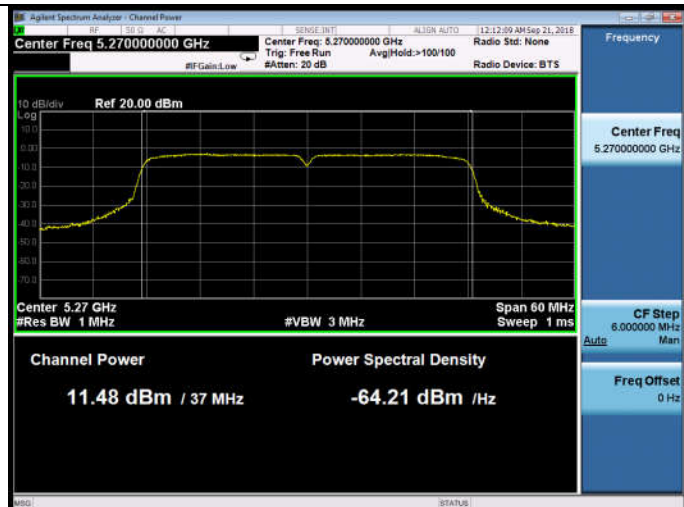


5320MHz

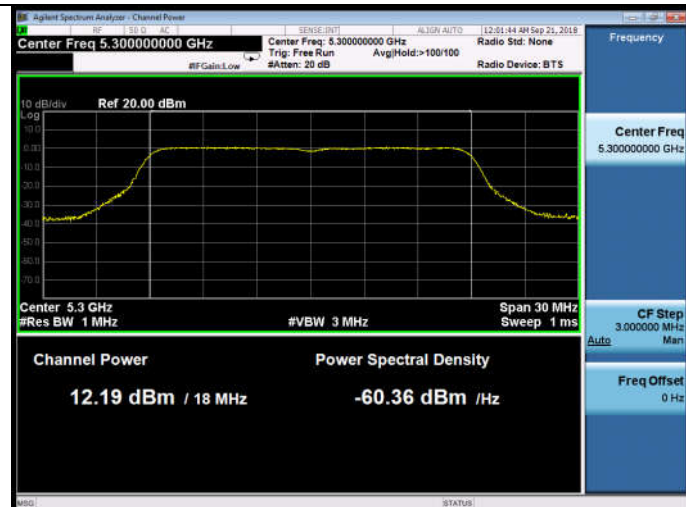


11n HT40

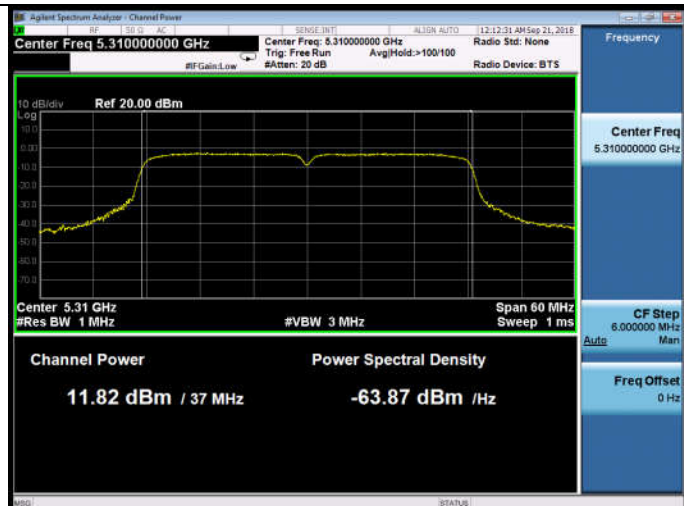
5270MHz



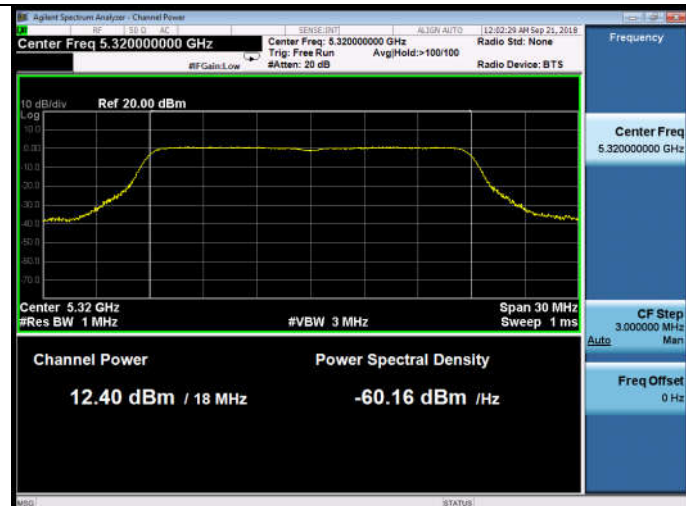
5300MHz



5310MHz

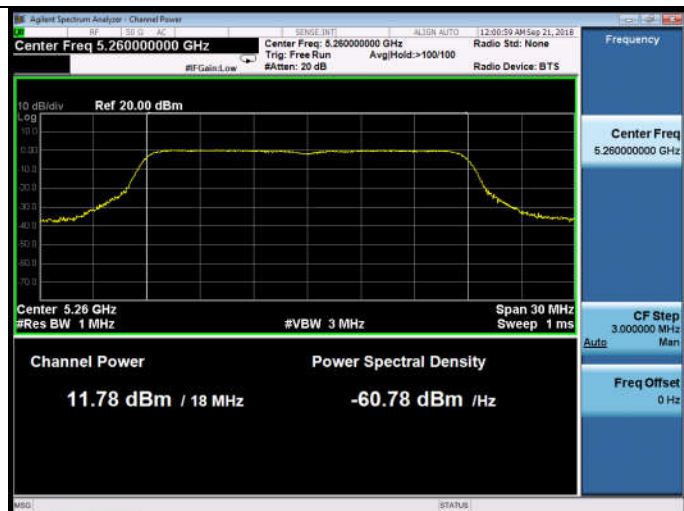


5320MHz



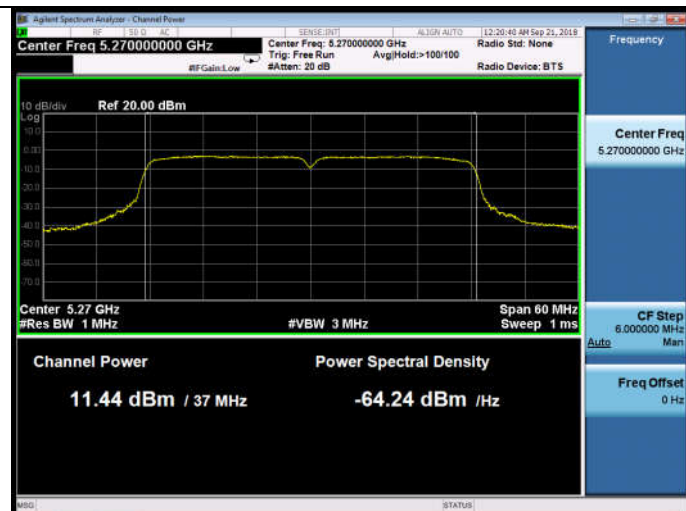
11ac VHT20

5260MHz

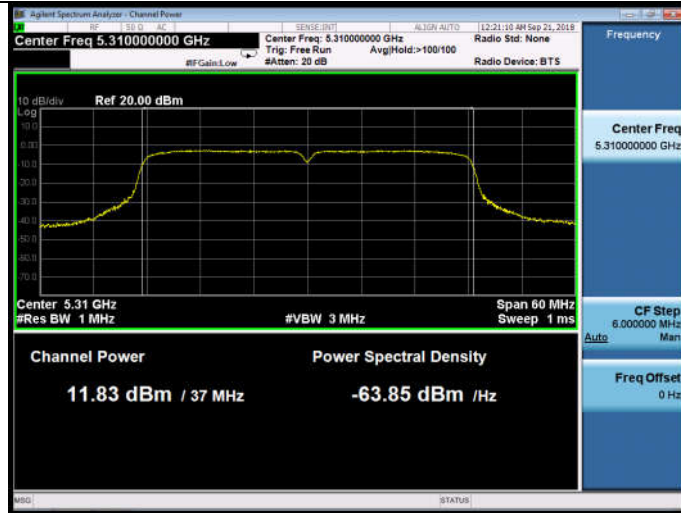


11ac VHT40

5270MHz

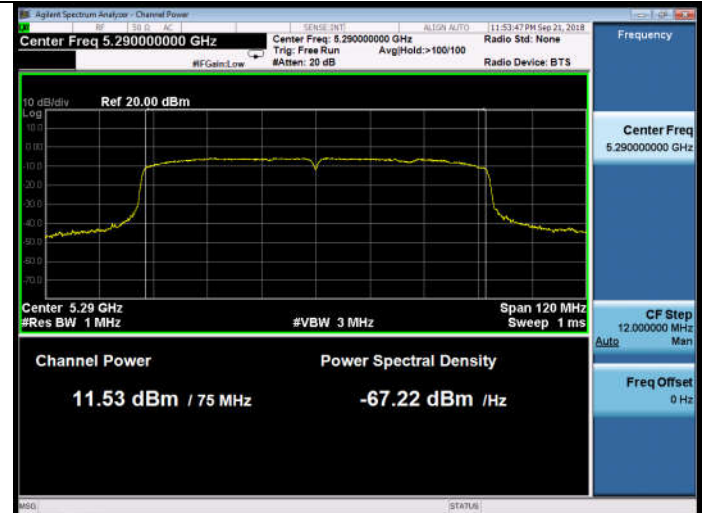


5310MHz



11ac VHT80

5290MHz

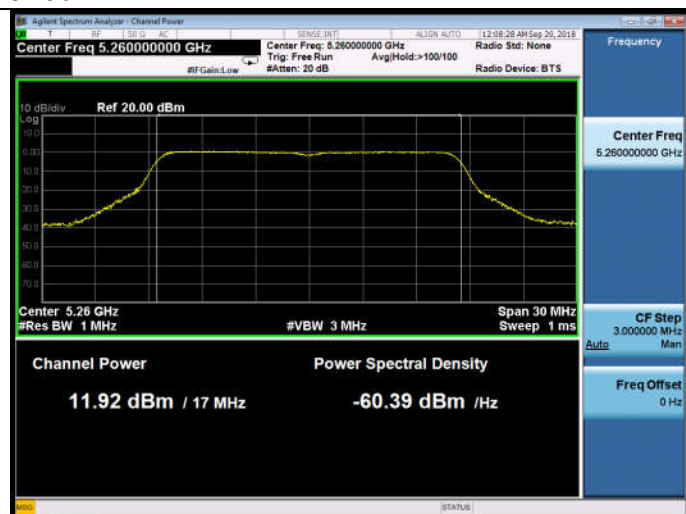


5260-5320MHz Band:

ANT 1

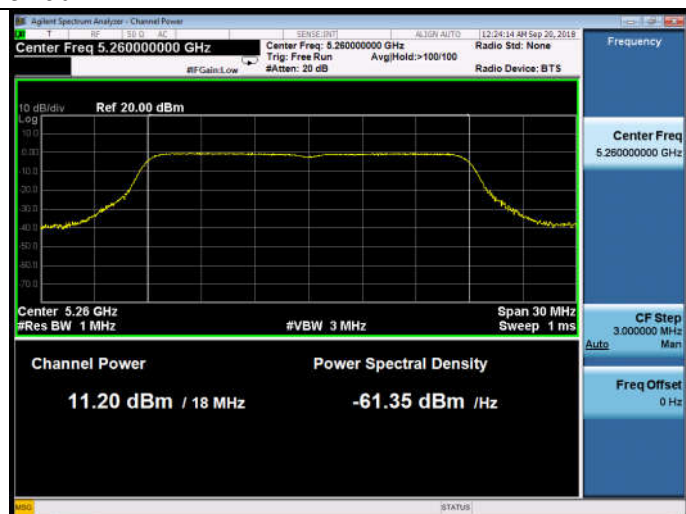
11a

5260MHz

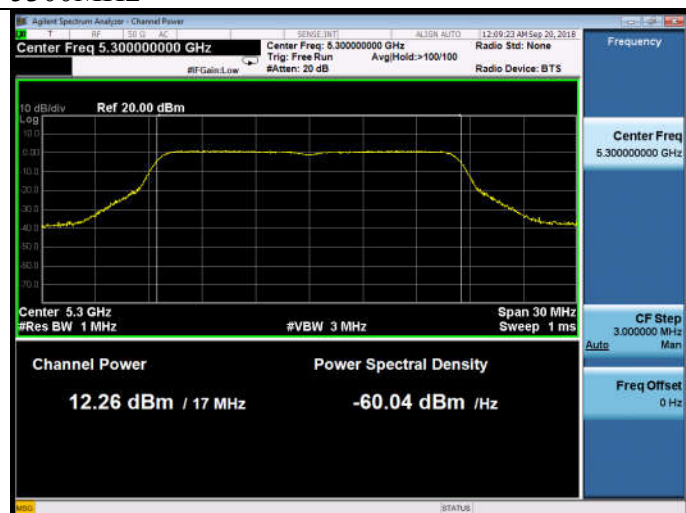


11n HT20

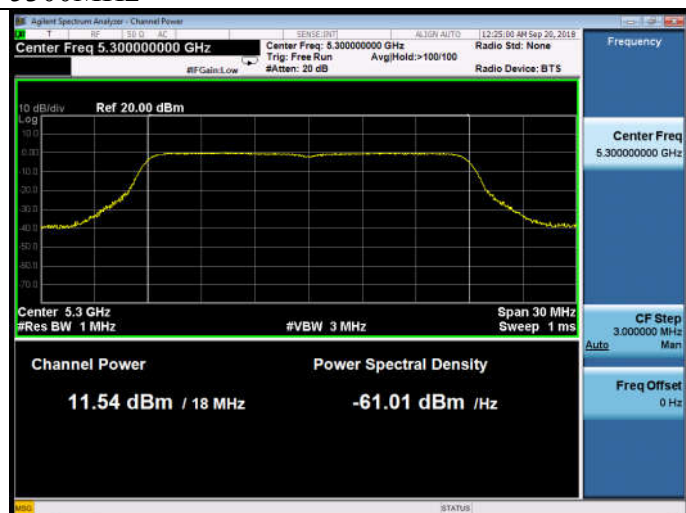
5260MHz



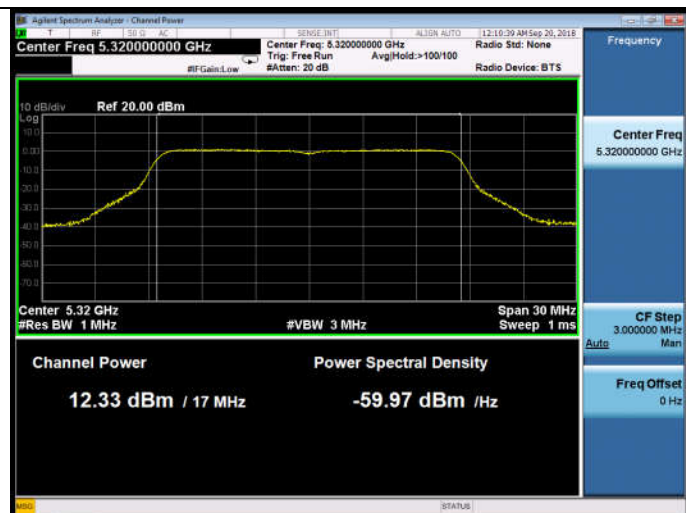
5300MHz



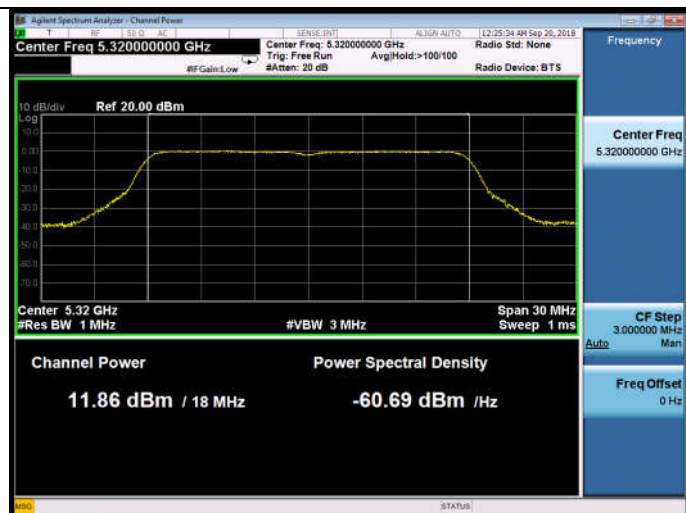
5300MHz



5320MHz

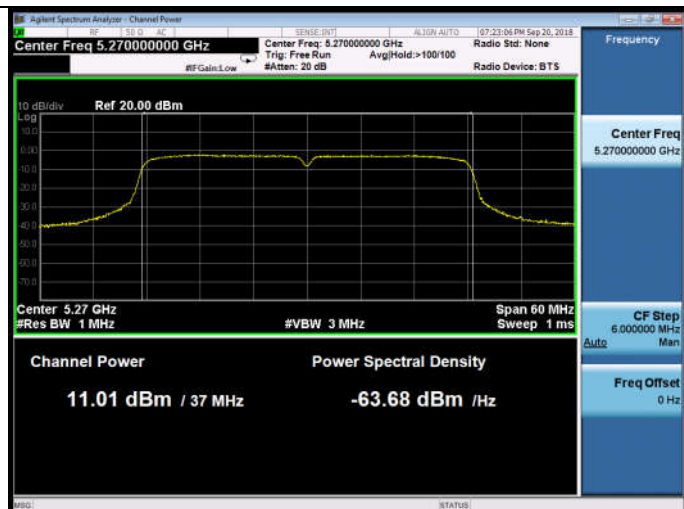


5320MHz

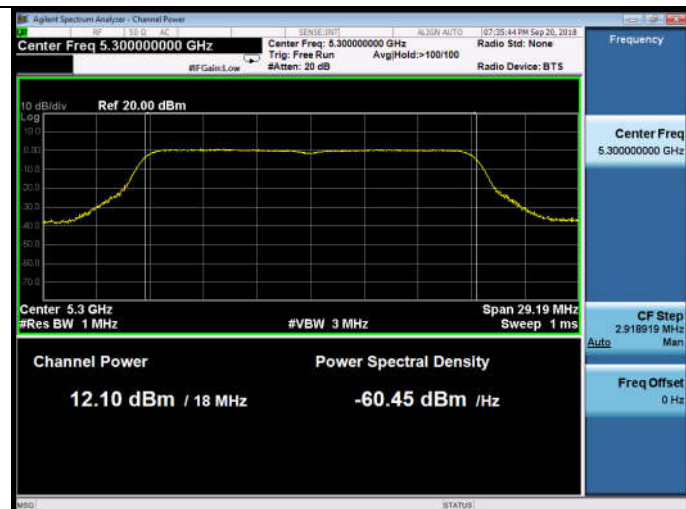


11n HT40

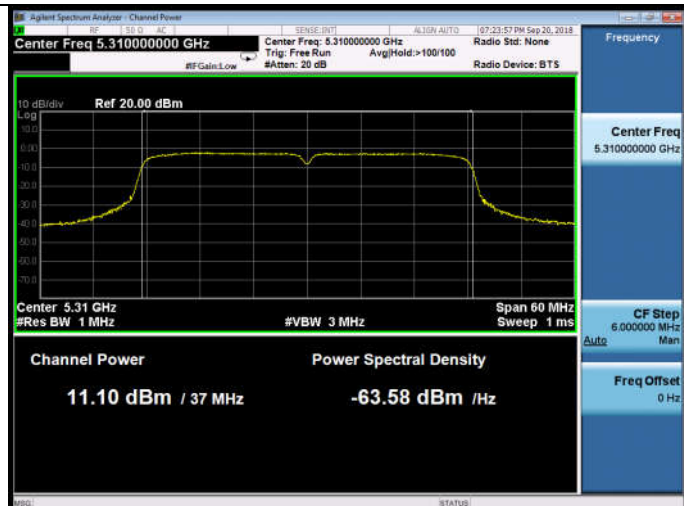
5270MHz



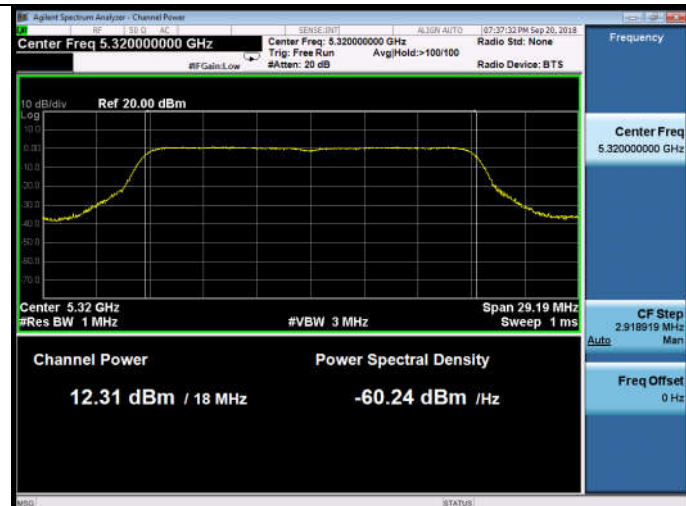
5300MHz



5310MHz

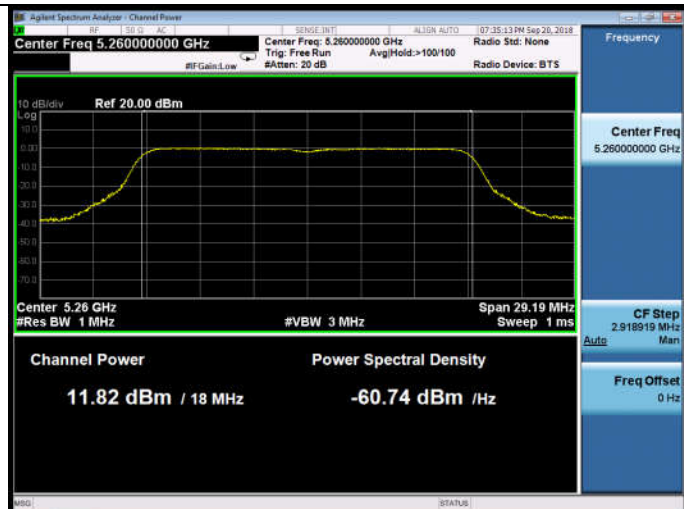


5320MHz



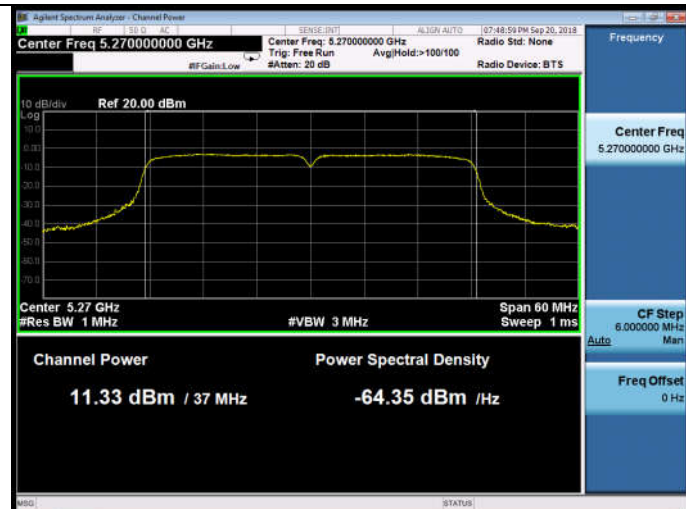
11ac VHT20

5260MHz

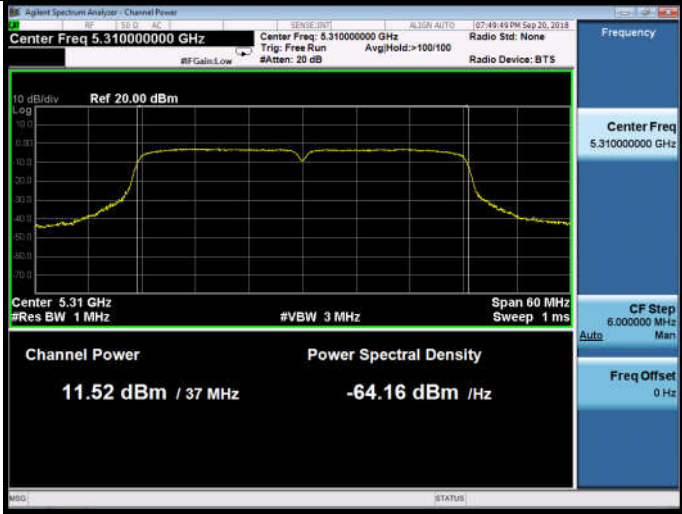


11ac VHT40

5270MHz

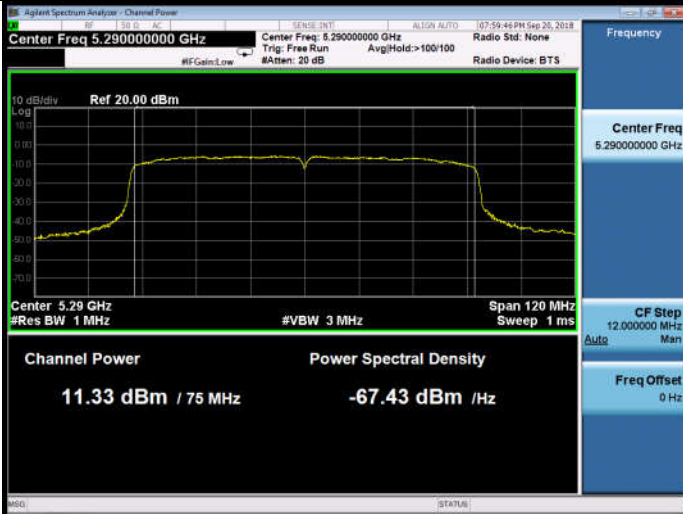


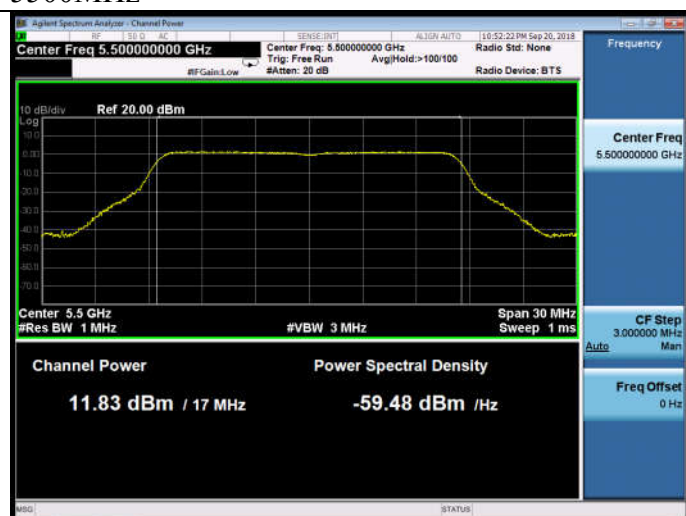
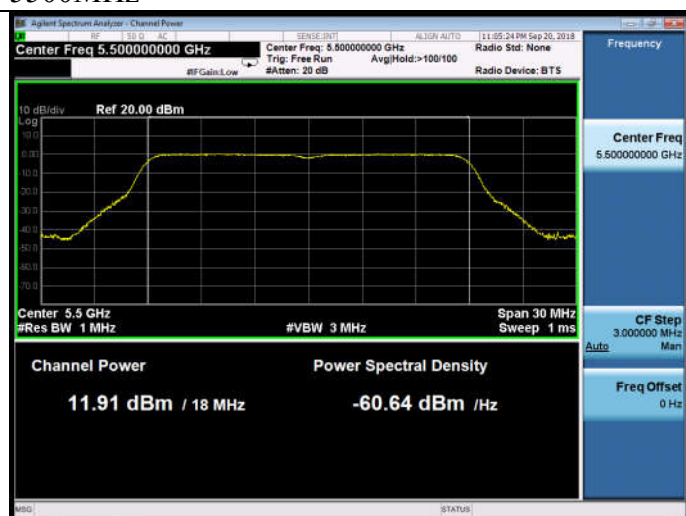
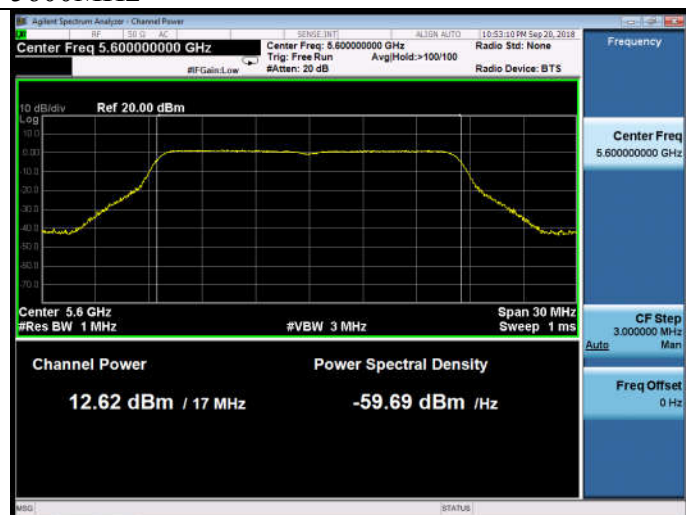
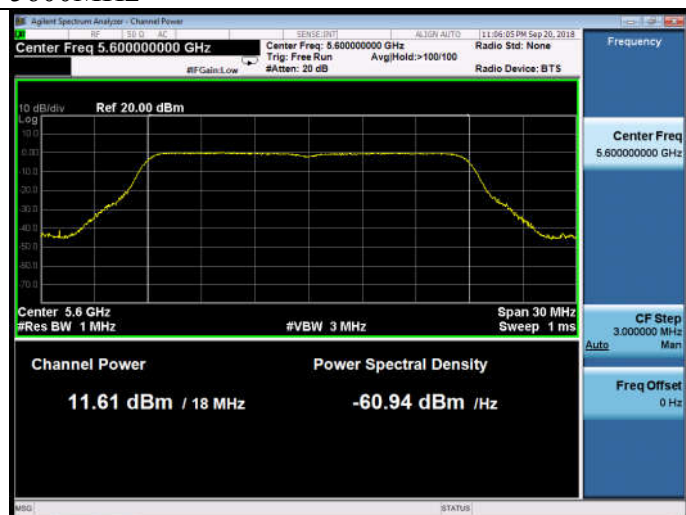
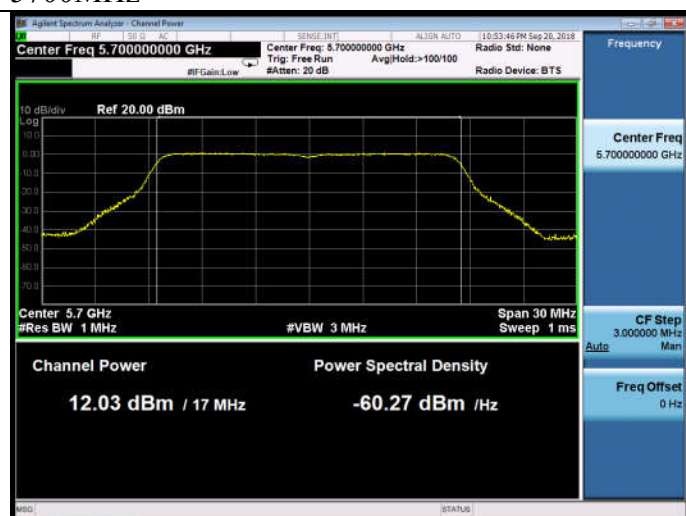
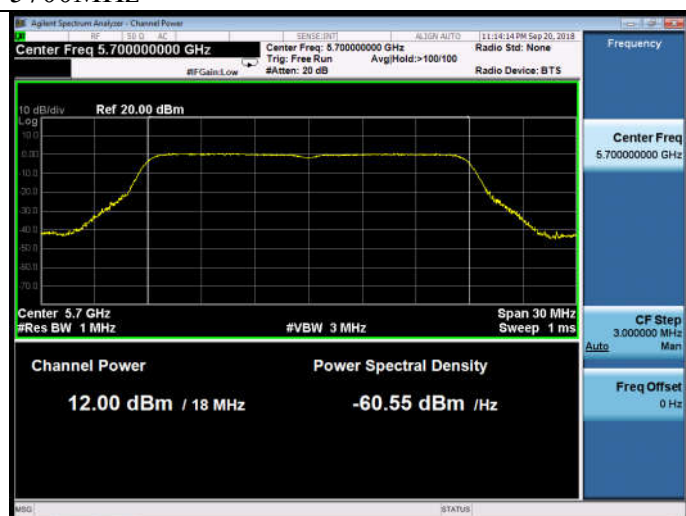
5310MHz



11ac VHT80

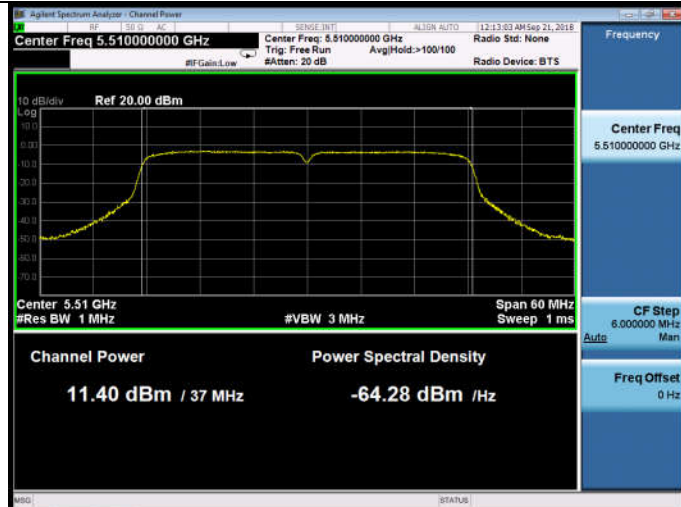
5290MHz



5500-5700MHz Band:
ANT 0
11a
5500MHz

11n HT20
5500MHz

5600MHz

5600MHz

5700MHz

5700MHz


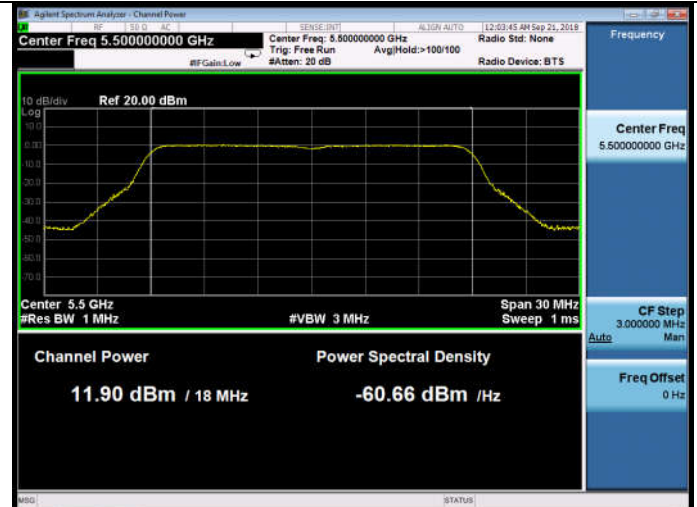
11n HT40

5510MHz

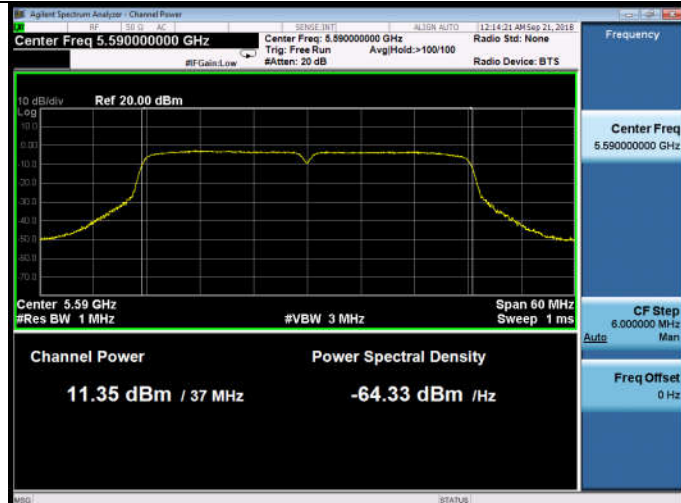


11ac VHT20

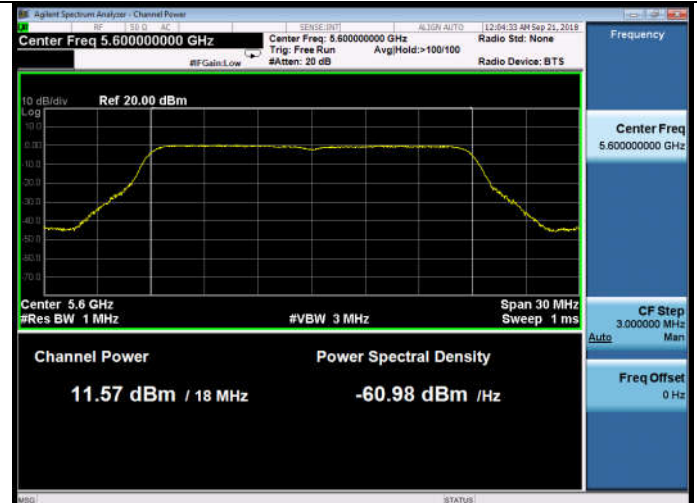
5500MHz



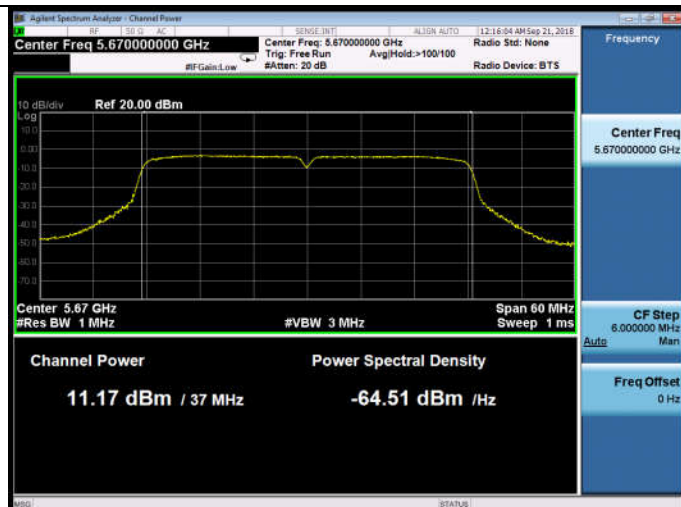
5590MHz



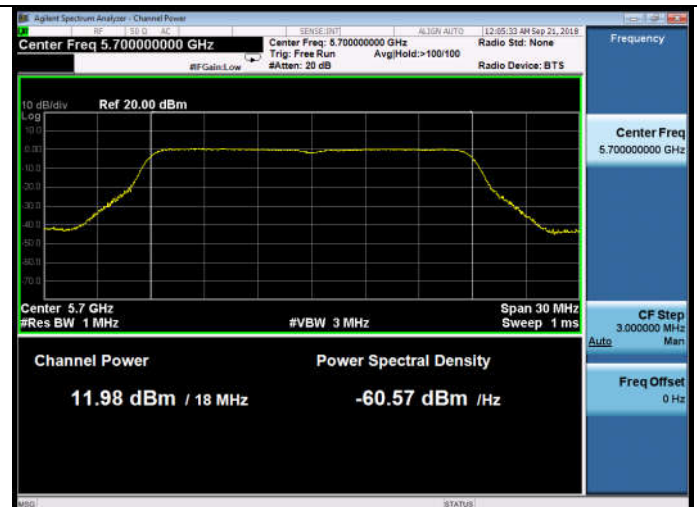
5600MHz



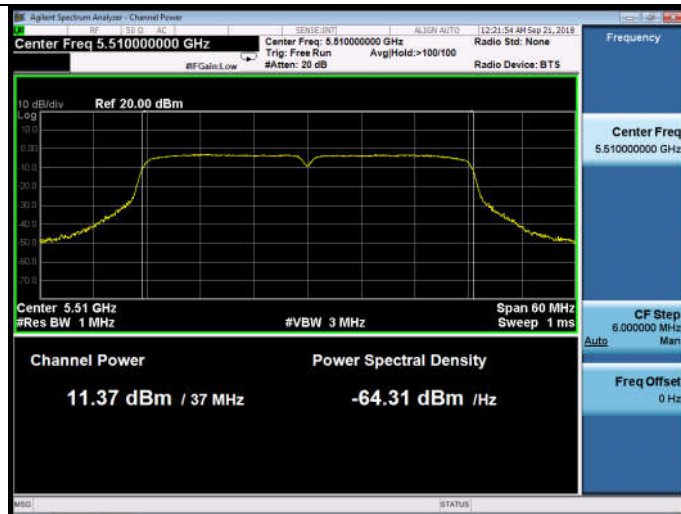
5670MHz



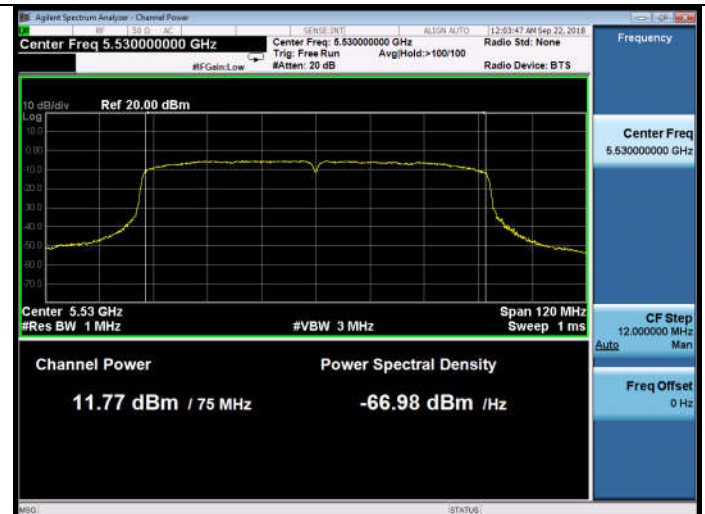
5700MHz



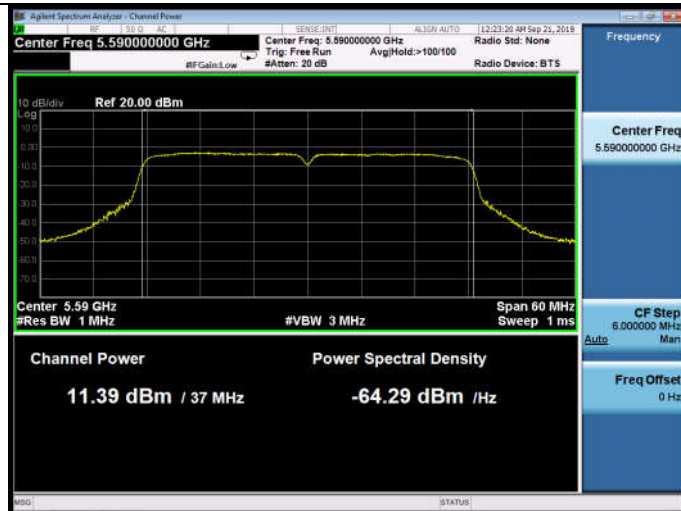
11ac VHT40 5510MHz



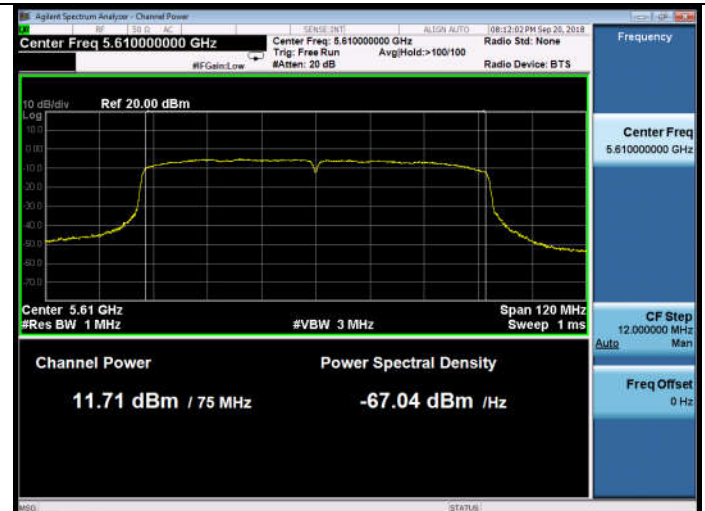
11ac VHT80 5530MHz



5590MHz



5610MHz



5670MHz

