

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	MY53311015	Oct.15,17	1 Year
2.	Power meter	Anritsu	ML2487A	6K00002472	Apr.22,17	1 Year
3.	Power sensor	Anritsu	MA2491A	0033005	Apr.22,17	1 Year
4.	Attenuator (20dB)	Agilent	8491B	MY39262165	Apr.22,17	1 Year
5.	RF Cable	Marvelous Microwave Inc	SFL402105FLEX	NO.1	Oct.15,17	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: Gemini		
M/N: Gemini 4G		
Test date: 2018-01-18	Pressure: 102.8±1.0 kpa	Humidity: 53.2±3.0%
Tested by: Kayle	Test site: RF site	Temperature: 23.6±0.6 °C

Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)	Limit (dBm)
11a	5180	13.27	23.98
	5200	13.40	23.98
	5240	13.17	23.98
11n HT20	5180	12.74	23.98
	5200	13.24	23.98
	5240	12.90	23.98
11n HT40	5190	13.36	23.98
	5230	13.17	23.98
11ac VHT20	5180	13.08	23.98
	5200	13.21	23.98
	5240	12.97	23.98
11ac VHT40	5190	13.41	23.98
	5230	13.24	23.98
11ac VHT80	5210	13.37	23.98
Conclusion: PASS			

Note: Antenna Gain= 0.42dBi<6dBi.

5745-5825MHz Band:

EUT: Gemini		
M/N: Gemini 4G		
Test date: 2018-01-19	Pressure: 102.8±1.0 kpa	Humidity:53.2±3.0%
Tested by: Kayle	Test site: RF site	Temperature:23.6±0.6 °C

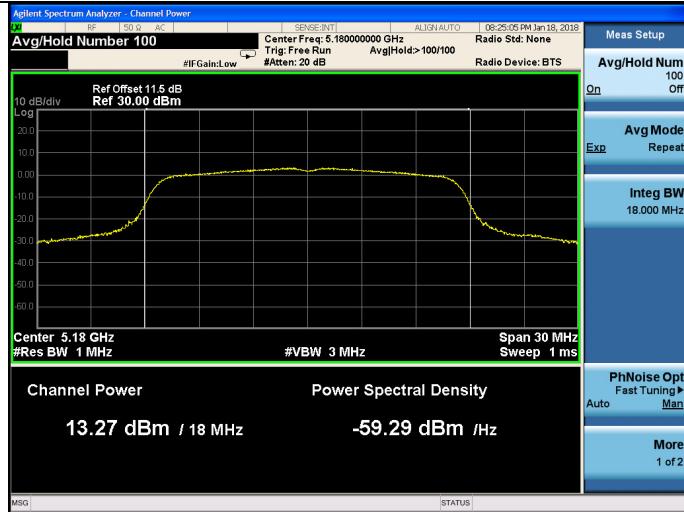
Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)	Limit (dBm)
11a	5745	13.34	30
	5785	14.07	30
	5825	13.63	30
11n HT20	5745	13.29	30
	5785	13.65	30
	5825	13.41	30
11n HT40	5755	13.51	30
	5795	13.93	30
11ac VHT20	5745	13.32	30
	5785	13.73	30
	5825	13.44	30
11ac VHT40	5755	13.50	30
	5795	13.86	30
11ac VHT80	5775	13.47	30
Conclusion: PASS			

Note: Antenna Gain= 0.42dBi<6dBi.

5180-5240MHz Band:

11a

5180MHz

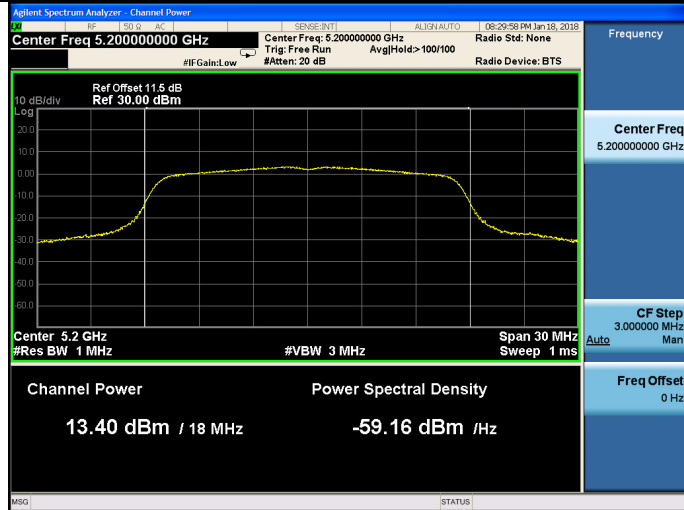


11n HT20

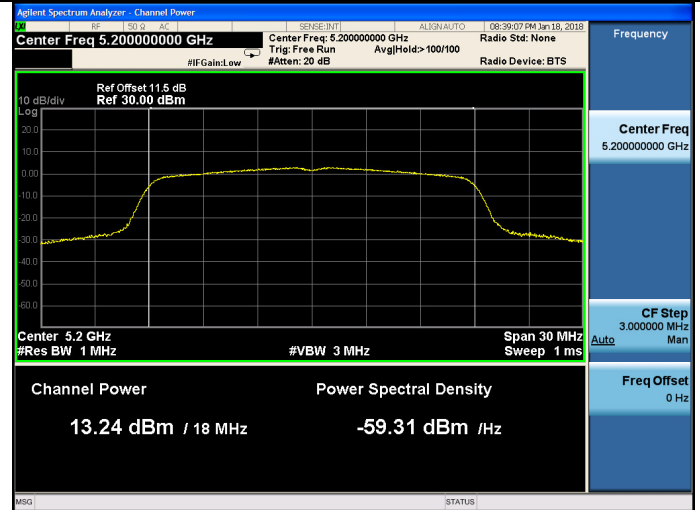
5180MHz



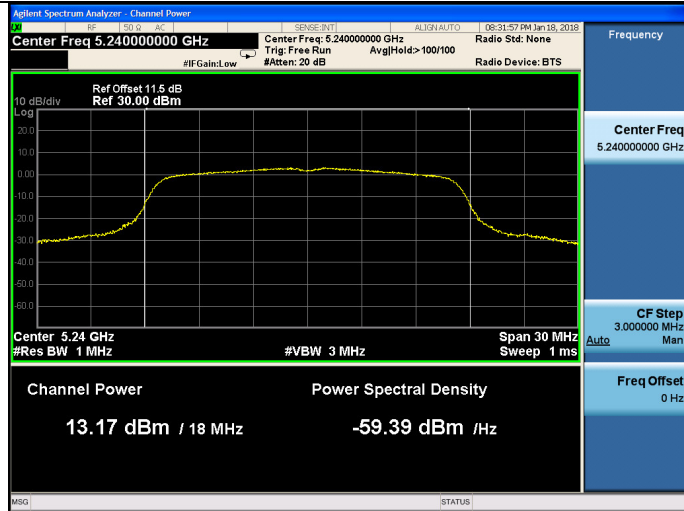
5200MHz



5200MHz



5240MHz

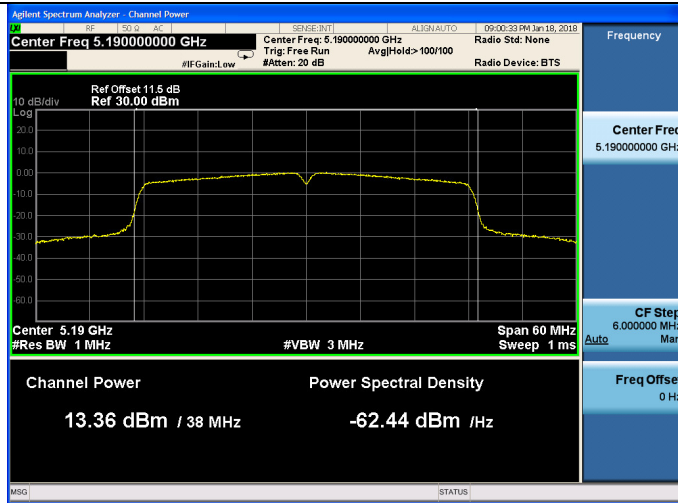


5240MHz

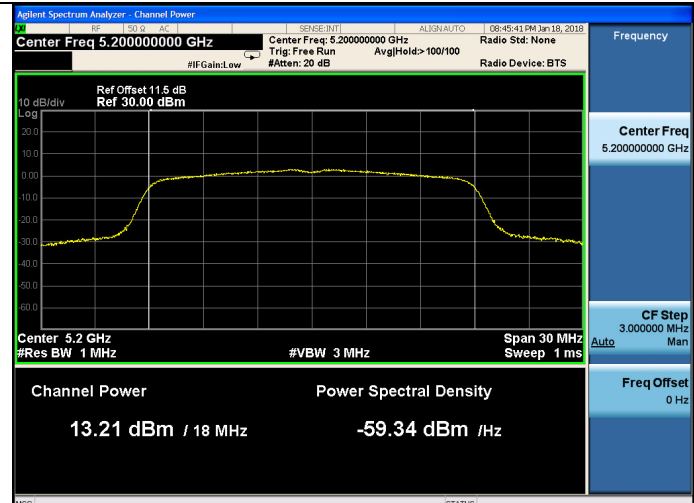


11n HT40

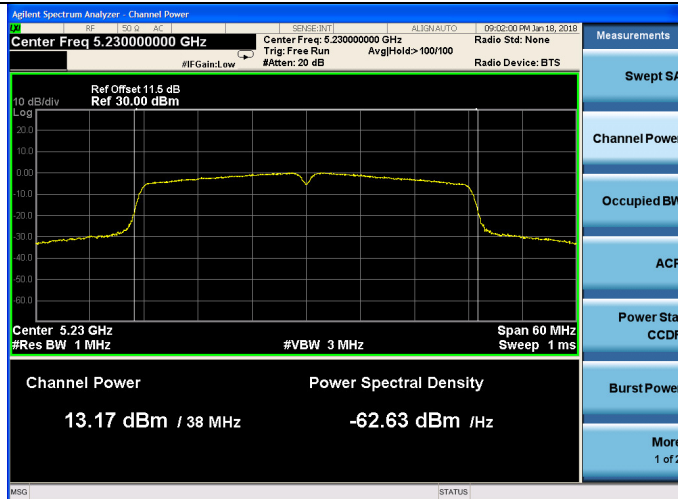
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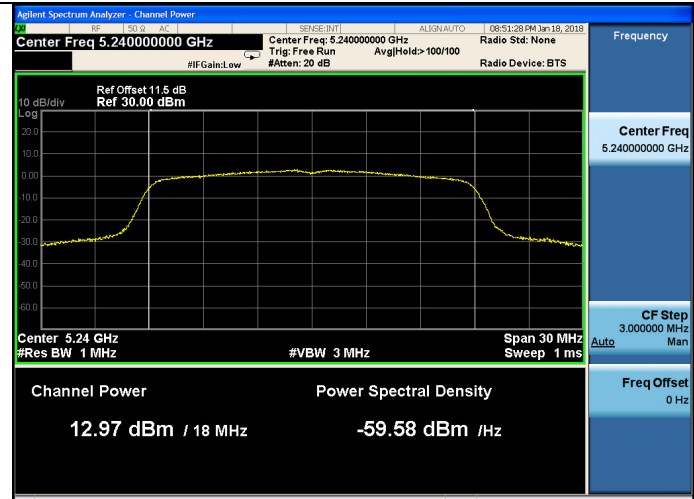
5200MHz



5230MHz

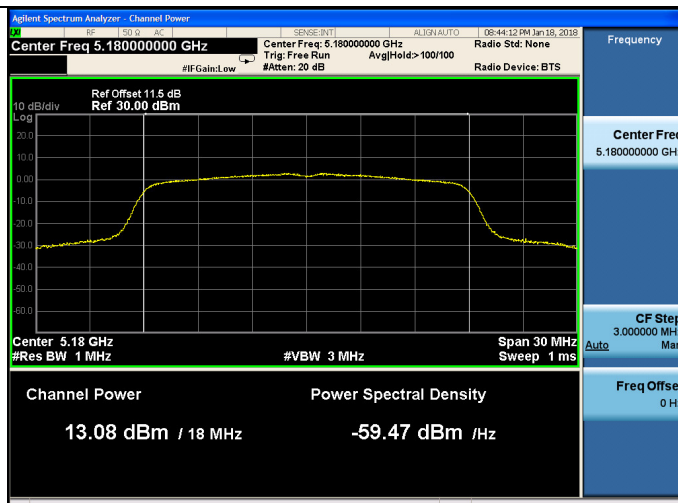


5240MHz



11ac VHT20

5180MHz

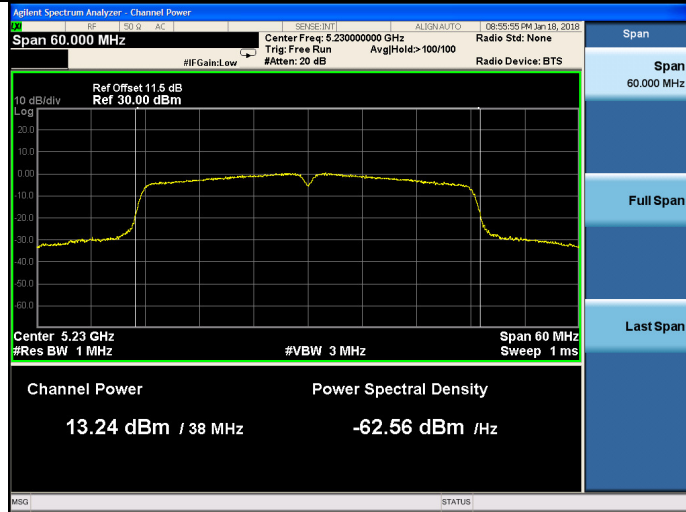


11ac VHT40

5190MHz



5230MHz



11ac VHT80

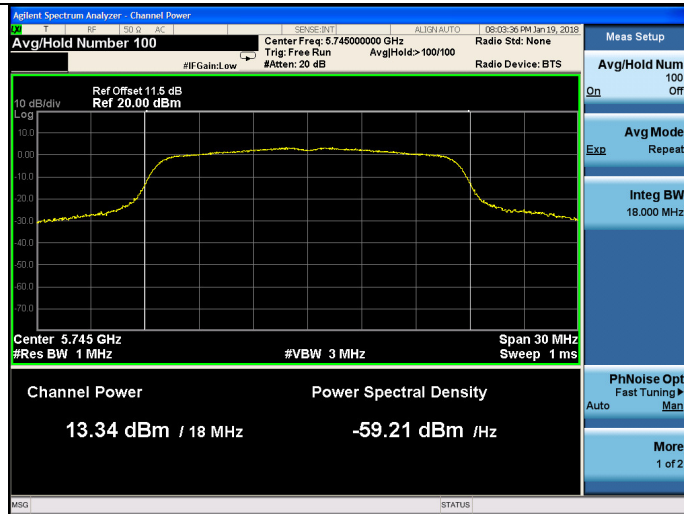
5210MHz



5745-5825MHz Band:

11a

5745MHz



11n HT20

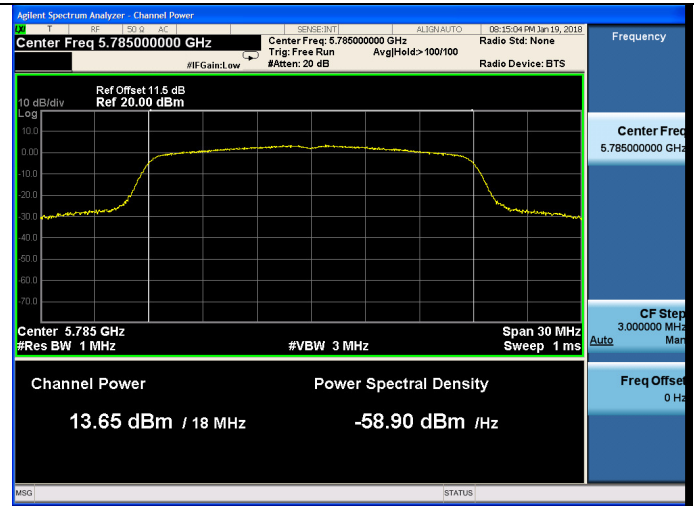
5745MHz



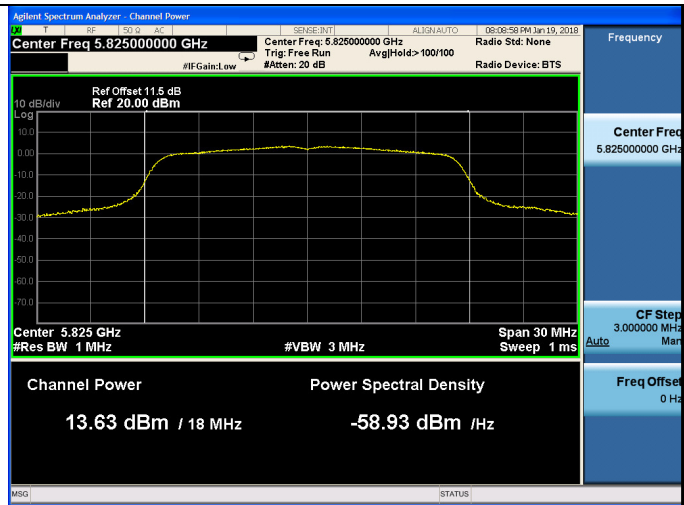
5785MHz



5785MHz



5825MHz

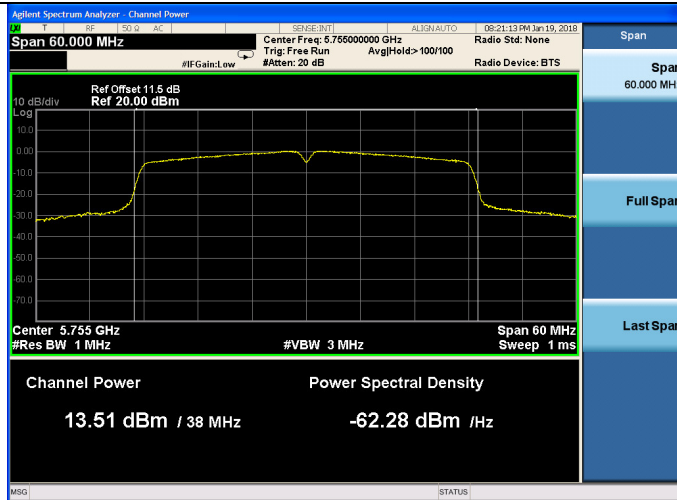


5825MHz

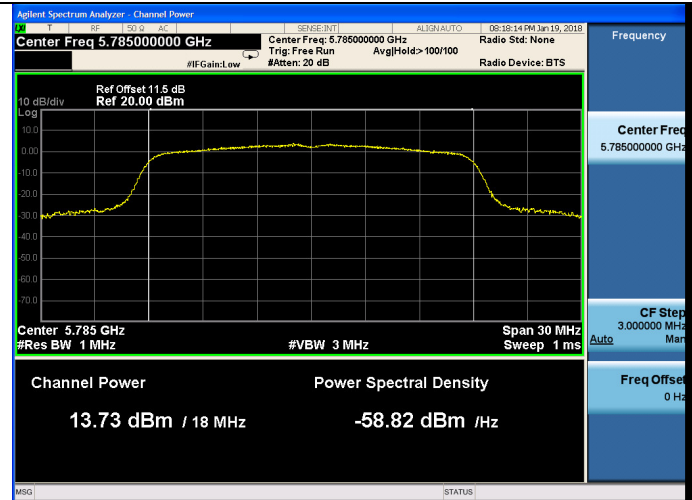


11n HT40

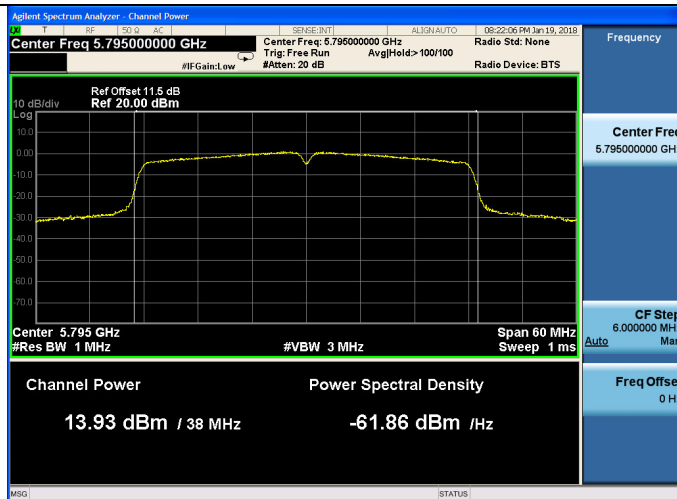
5755MHz



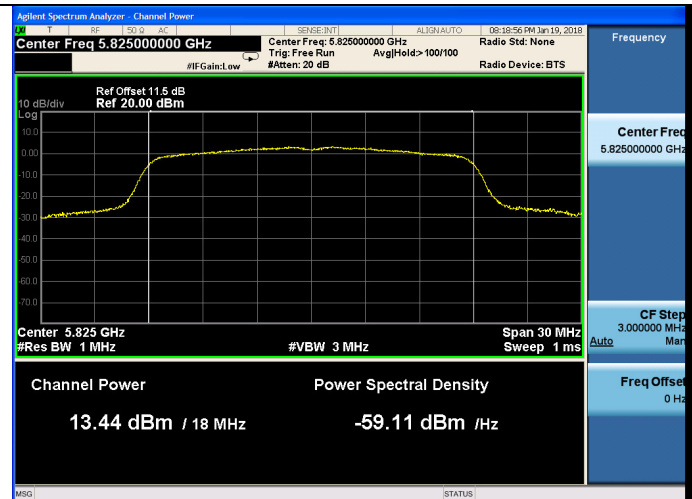
5785MHz



5795MHz

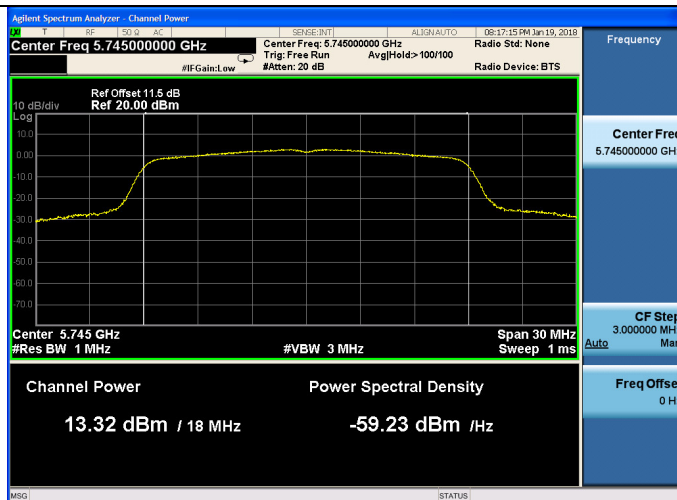


5825MHz



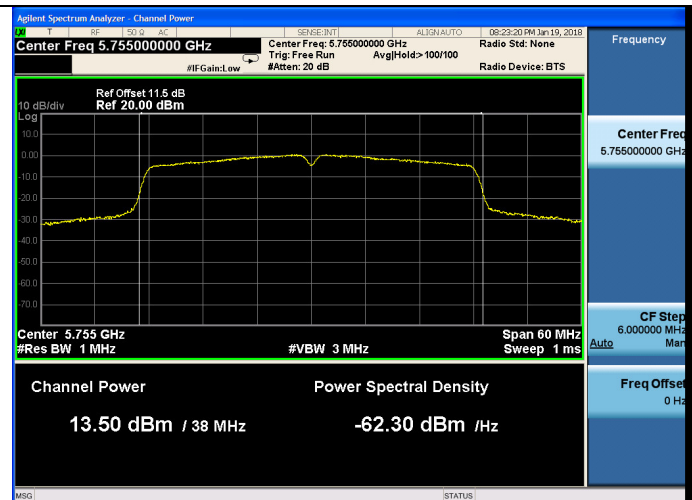
11ac VHT20

5745MHz

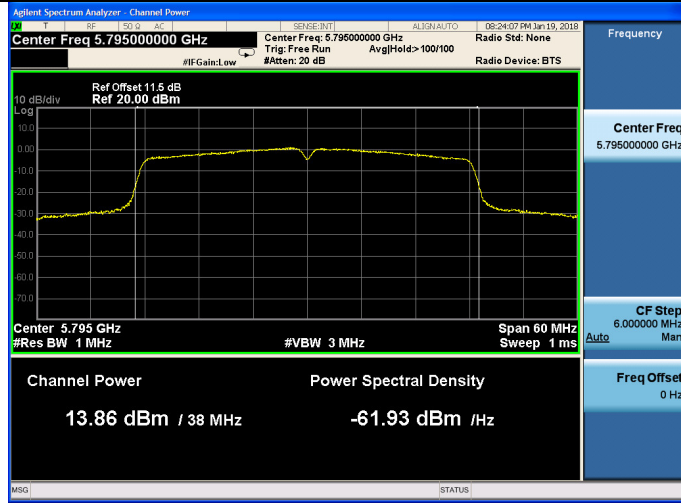


11ac VHT40

5755MHz



5795MHz



11ac VHT80

5775MHz

