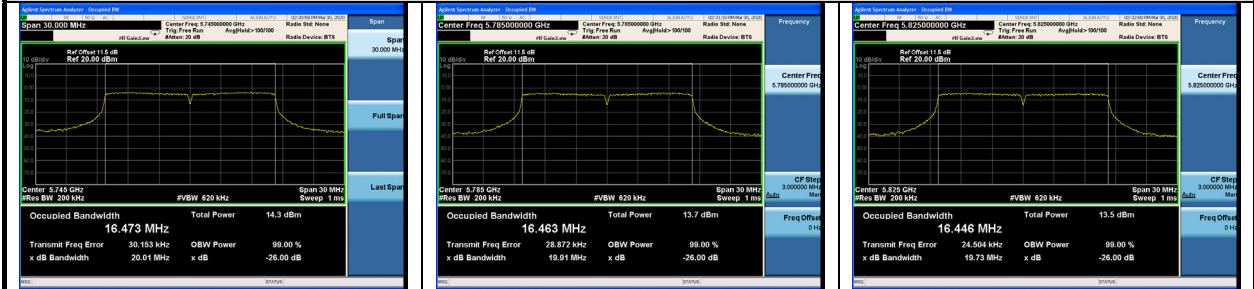


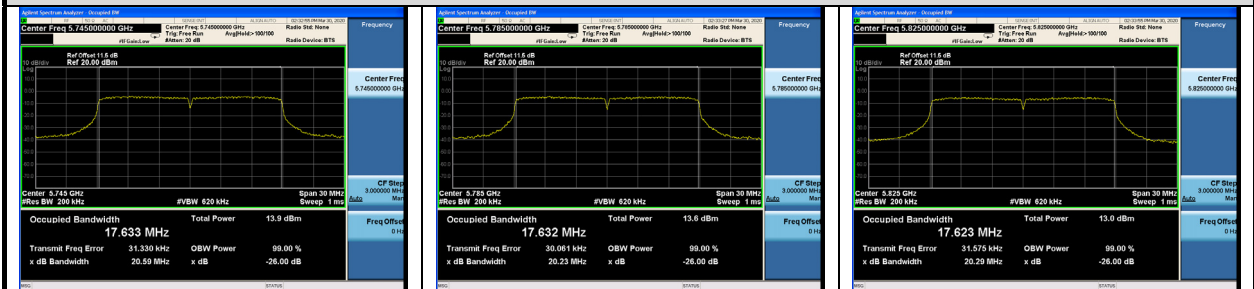
26dB bandwidth & 99% Occupied bandwidth

U-NII-3 Band: ANTB

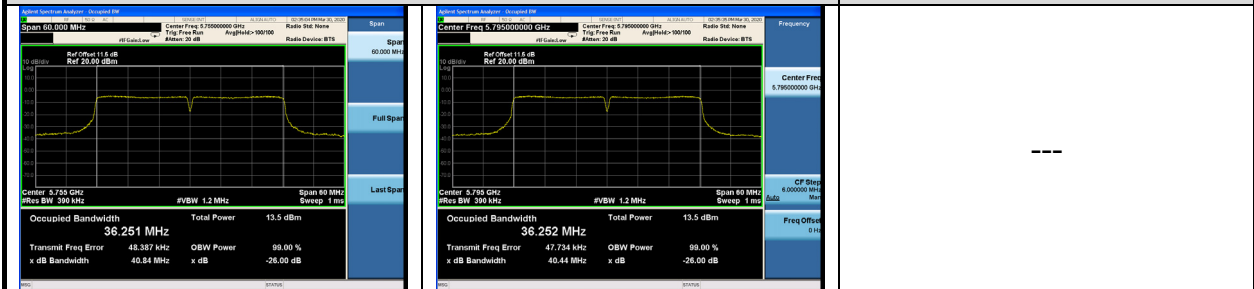
IEEE 802.11a



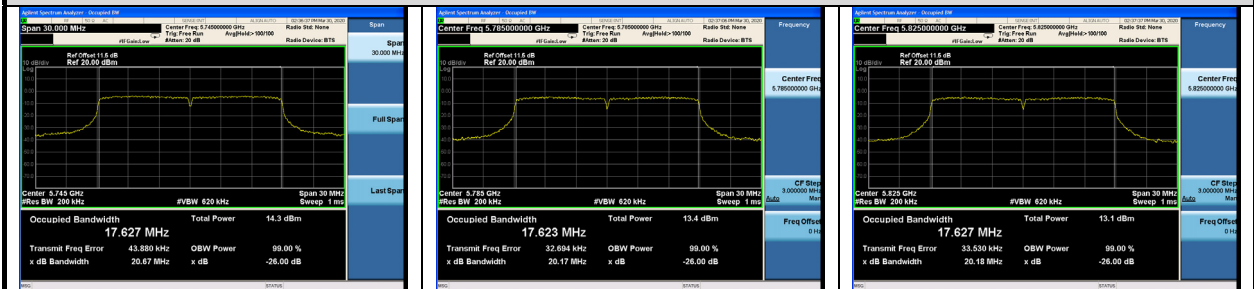
IEEE 802.11n HT20



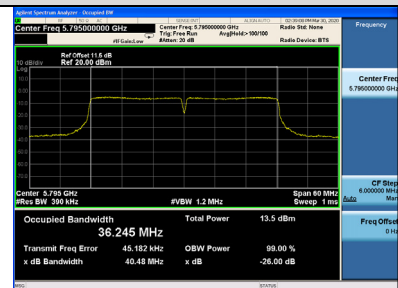
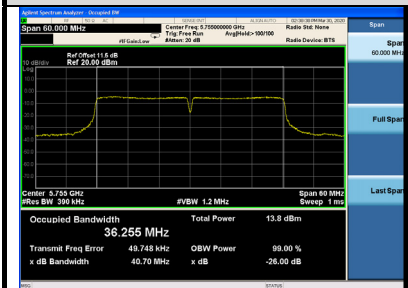
IEEE 802.11n HT40



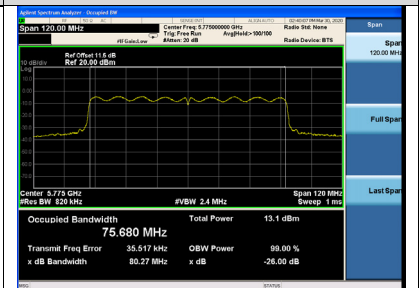
IEEE 802.11ac VHT20



IEEE 802.11ac VHT40



IEEE 802.11ac VHT80



## 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	Jun.30,19	1 Year
2.	Power meter	HP	436A	2016A07891	Oct.13,19	1 Year
3.	Power sensor	Agilent	8482B	MY41090514	Oct.13,19	1 Year
4.	Attenuator	Agilent	8491B	MY39269201	Oct.13,19	1 Year
5.	RF Cable	EMCI	EMC102-KM-KM 3500	170702	May.13,19	1 Year
6.	RF Cable	EMCI	EMC102-KM-KM 3500	170702	Apr.12,20	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 ANSI C63.10 clause 12.3 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

**U-NII-1 Band:**

EUT: WiFi module		
M/N: WC0SR2511		
Test date: 2020-03-30-06-17	Pressure: 102.1±1.0 kpa	Humidity: 51.1±3.0%
Tested by: Jerry	Test site: RF site	Temperature: 22.8±0.6 °C

Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)			Limit (dBm)
		ANTA	ANTB	Total	
11a	5180	13.49	12.10	15.86	23.98
	5200	13.59	12.17	15.95	
	5240	13.63	12.02	15.91	
11n HT20	5180	13.42	12.11	15.83	23.98
	5200	13.10	12.34	15.75	
	5240	13.54	12.44	16.04	
11n HT40	5190	13.37	13.19	16.29	23.98
	5230	13.39	13.44	16.43	
11ac VHT20	5180	13.39	12.20	15.85	23.98
	5200	13.53	12.33	15.98	
	5240	13.94	12.42	16.26	
11ac VHT40	5190	13.12	13.35	16.25	23.98
	5230	13.61	13.06	16.35	
11ac VHT80	5210	13.25	12.85	16.07	23.98
Conclusion: PASS					

Note: Directional Gain=  $10 \log[(10^{3.04/10} + 10^{3.06/10})/2]$  dBi = 3.05 dBi < 6 dBi.

**U-NII-2A Band:**

EUT: WiFi module		
M/N: WC0SR2511		
Test date: 2020-03-30	Pressure: 102.1±1.0 kpa	Humidity: 51.1±3.0%
Tested by: Jerry	Test site: RF site	Temperature: 22.8±0.6 °C

Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)			Limit (dBm)
		ANTA	ANTB	Total	
11a	5260	13.63	13.49	16.57	23.92
	5300	13.25	13.78	16.53	
	5320	13.10	13.25	16.19	
11n HT20	5260	13.86	13.53	16.71	23.98
	5300	13.66	13.32	16.50	
	5320	13.56	13.30	16.44	
11n HT40	5270	13.47	13.93	16.72	23.98
	5310	13.74	13.71	16.74	
11ac VHT20	5260	12.93	13.30	16.13	23.98
	5300	12.96	13.60	16.30	
	5320	13.41	13.74	16.59	
11ac VHT40	5270	13.15	13.89	16.55	23.98
	5310	13.56	13.96	16.78	
11ac VHT80	5290	12.97	13.57	16.29	23.98

Conclusion: PASS

Notes: 1. Directional Gain=  $10 \log[(10^{3.04/10} + 10^{3.04/10})/2]$  dBi= 3.04dBi < 6dBi .

2. For 11a Mode

Limit=11 dBm + 10 log B

where B is the 26 dB emission bandwidth in megahertz.

For 11n HT20/11ac VHT20/11n HT40/11ac VHT40/ 11ac VHT80 Mode

Limit=23.98 dBm

**U-NII-2C Band:**

EUT: WiFi module		
M/N: WC0SR2511		
Test date: 2020-03-30	Pressure: 102.1±1.0 kpa	Humidity: 51.1±3.0%
Tested by: Jerry	Test site: RF site	Temperature: 22.8±0.6 °C

Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)			Limit (dBm)
		ANTA	ANTB	Total	
11a	5500	13.87	13.90	16.90	23.94
	5600	13.80	13.45	16.64	
	5700	13.86	13.66	16.77	
11n HT20	5500	15.01	13.93	17.51	23.98
	5600	13.33	13.32	16.34	
	5700	13.51	13.55	16.54	
11n HT40	5510	13.58	13.94	16.77	23.98
	5590	13.65	13.87	16.77	
	5670	13.82	13.80	16.82	
11ac VHT20	5500	13.35	13.07	16.22	23.98
	5600	13.39	13.35	16.38	
	5700	13.86	13.55	16.72	
11ac VHT40	5510	13.87	13.70	16.80	23.98
	5590	13.78	13.71	16.76	
	5670	13.87	13.87	16.88	
11ac VHT80	5530	13.32	12.73	16.05	23.98
	5610	13.69	13.09	16.41	

Conclusion: PASS

Notes: 1. Directional Gain=  $10 \log[(10^{2.87/10} + 10^{2.84/10})/2]$  dB<sub>i</sub> = 2.855 dB<sub>i</sub> < 6 dB<sub>i</sub>.

2. For 11a Mode

Limit = 11 dBm + 10 log B

where B is the 26 dB emission bandwidth in megahertz.

For 11n HT20/11ac VHT20/11n HT40/11ac VHT40/ 11ac VHT80 Mode

Limit = 23.98 dBm

**U-NII-3 Band:**

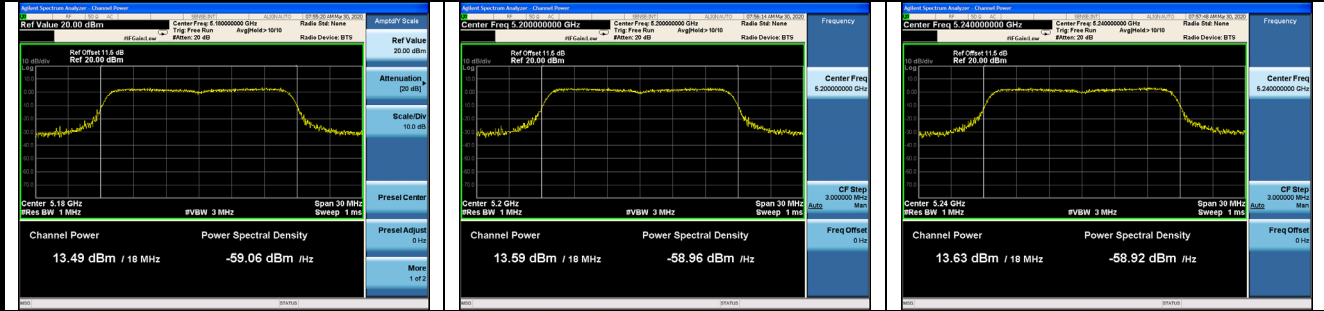
EUT: WiFi module		
M/N: WC0SR2511		
Test date: 2020-03-30	Pressure: 102.1±1.0 kpa	Humidity: 51.1±3.0%
Tested by: Jerry	Test site: RF site	Temperature: 22.8±0.6 °C

Test Mode	Frequency (MHz)	Maximum Conducted output power (dBm)			Limit (dBm)
		ANTA	ANTB	Total	
11a	5745	13.81	13.50	16.67	30
	5785	13.19	13.37	16.29	
	5825	13.20	12.89	16.06	
11n HT20	5745	13.83	13.73	16.79	30
	5785	13.58	13.13	16.37	
	5825	13.26	13.17	16.23	
11n HT40	5755	13.89	13.79	16.85	30
	5795	13.47	12.96	16.23	
11ac VHT20	5745	13.67	13.37	16.53	30
	5785	13.85	12.79	16.36	
	5825	13.39	12.81	16.12	
11ac VHT40	5755	13.95	13.63	16.80	30
	5795	13.90	13.43	16.68	
11ac VHT80	5775	13.61	13.46	16.55	30

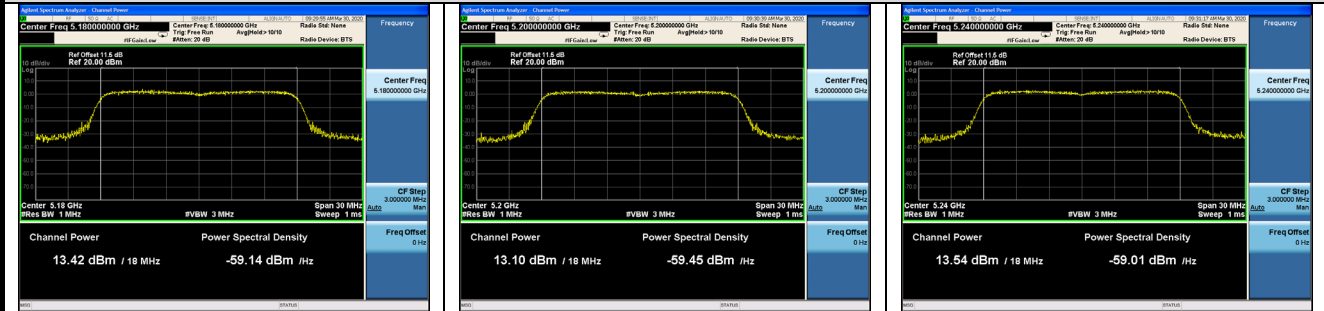
Conclusion: PASS

Note: Directional Gain=  $10 \log[(10^{3.10/10} + 10^{3.08/10})/2]$  dBi= 3.09dBi < 6dBi.

### U-NII-1 Band: ANTA IEEE 802.11a



### IEEE 802.11n HT20



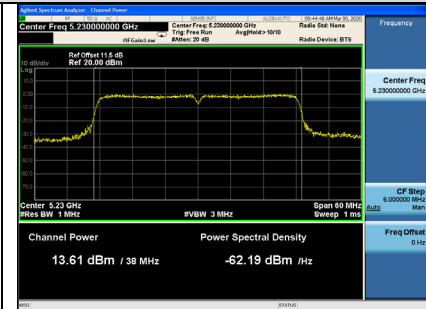
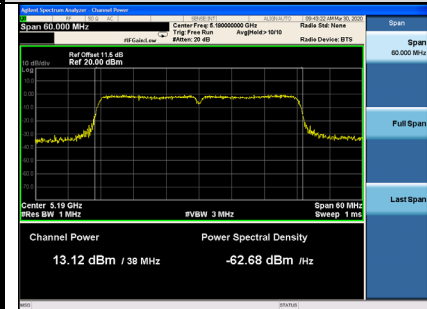
### IEEE 802.11n HT40



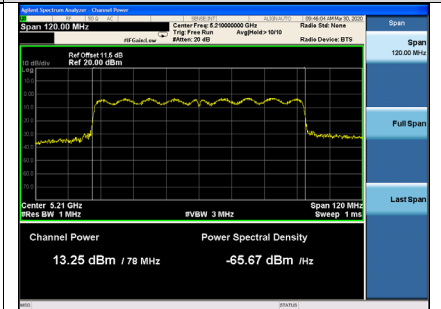
### IEEE 802.11ac VHT20



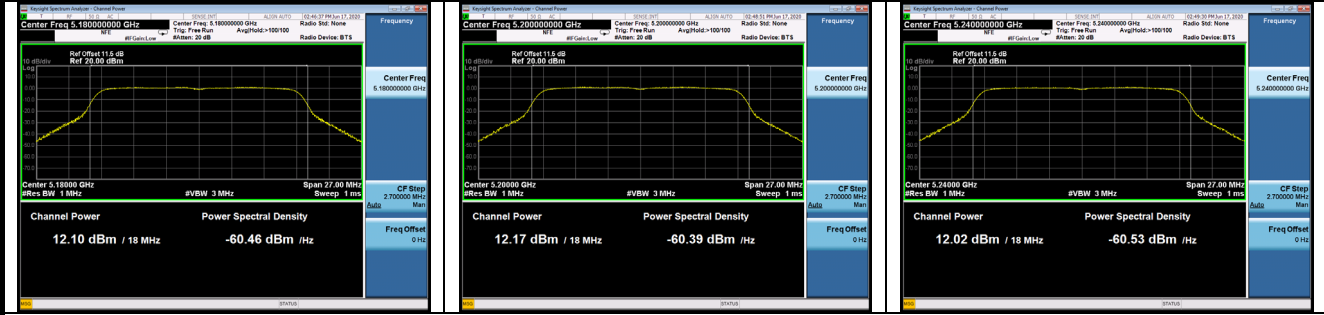
### IEEE 802.11ac VHT40



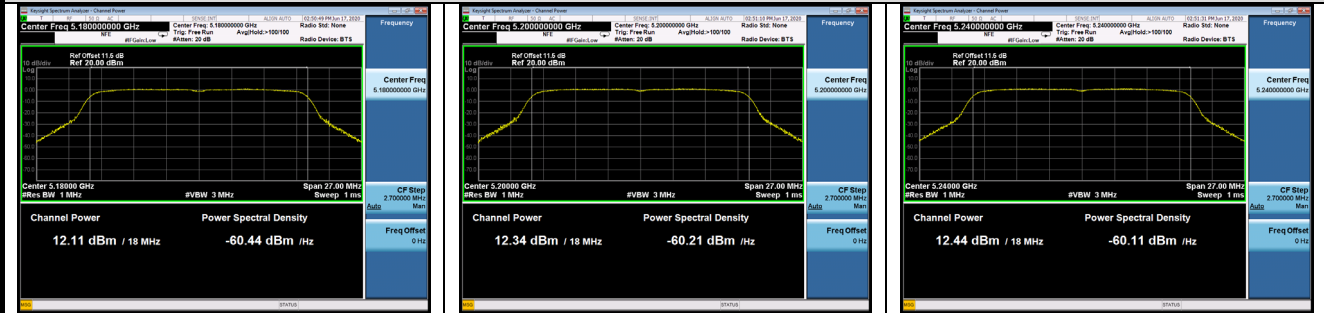
### IEEE 802.11ac VHT80



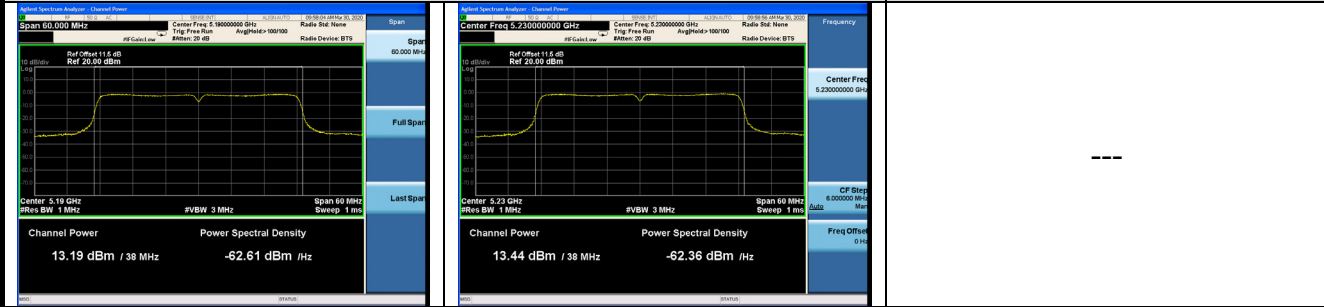
### U-NII-1 Band: ANTB IEEE 802.11a



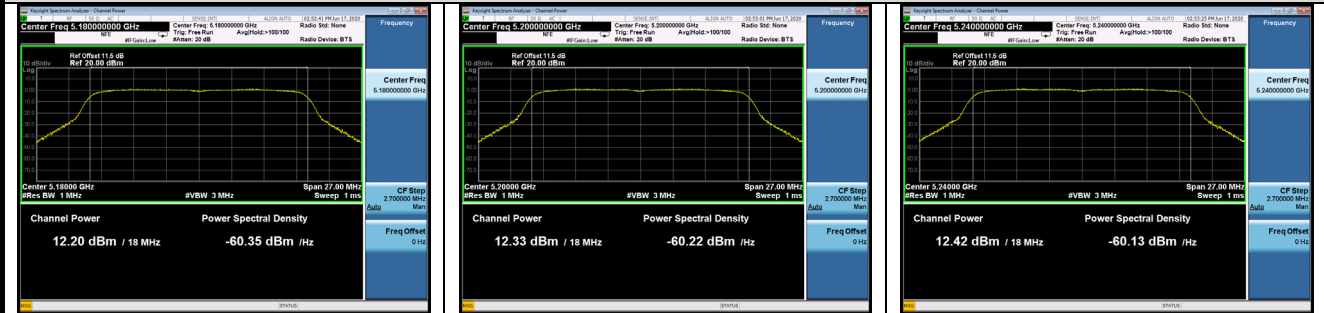
### IEEE 802.11n HT20



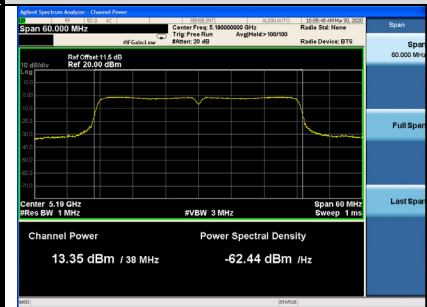
### IEEE 802.11n HT40



### IEEE 802.11ac VHT20



### IEEE 802.11ac VHT40



### IEEE 802.11ac VHT80

