

**IEEE802.11n HT20 mode****5250~5350MHz****Low Channel****Mid Channel**

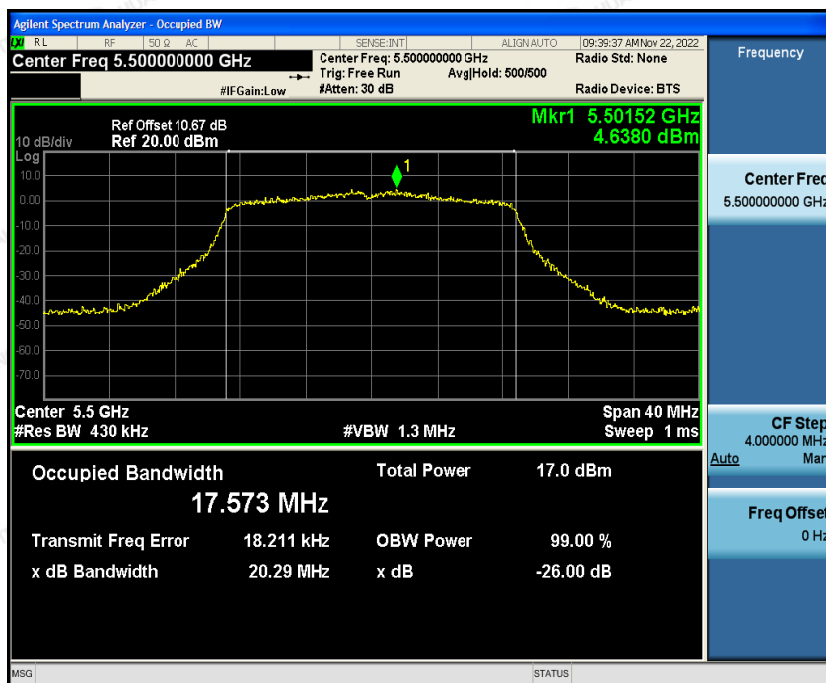


High Channel



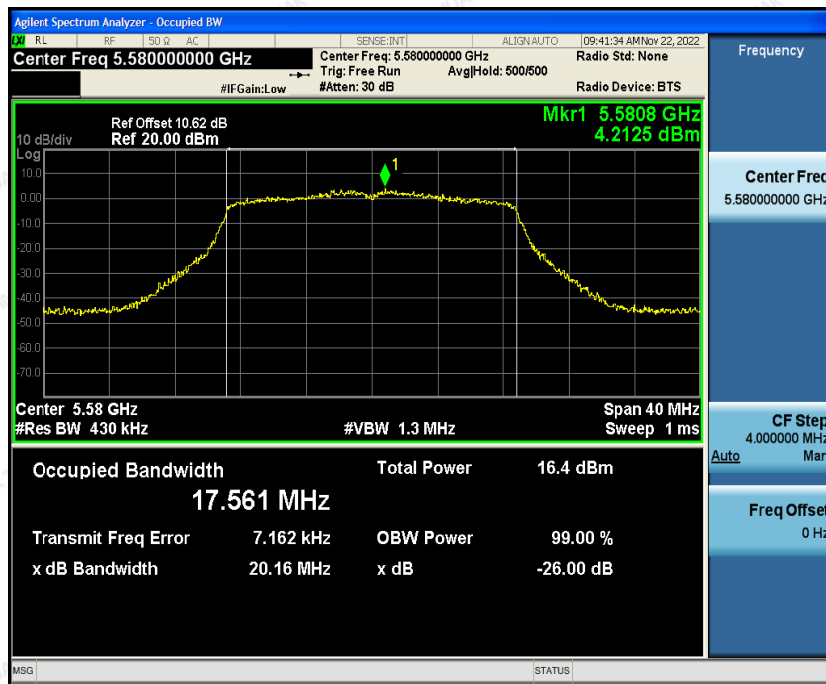
5470~5725MHz

Low Channel



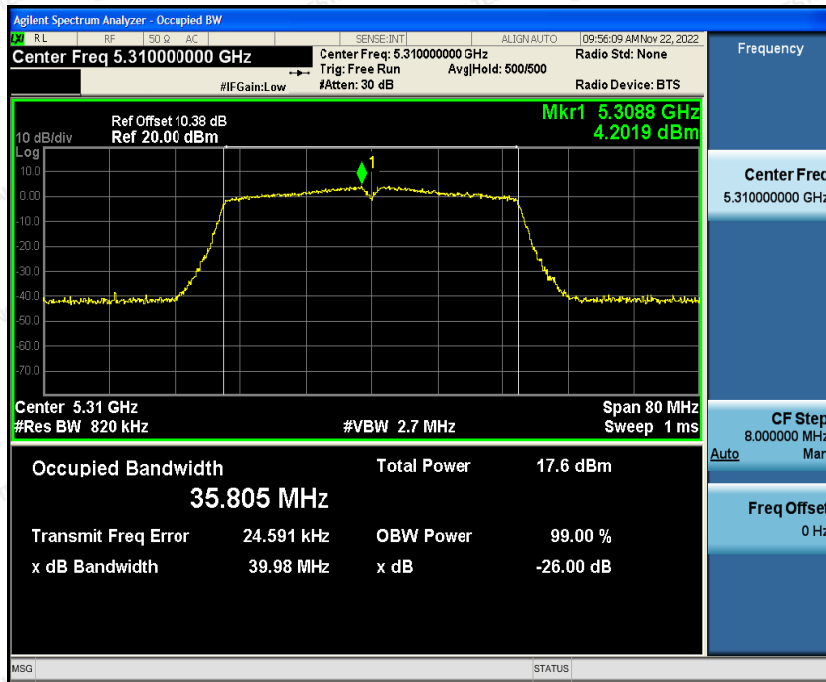


Mid Channel



High Channel

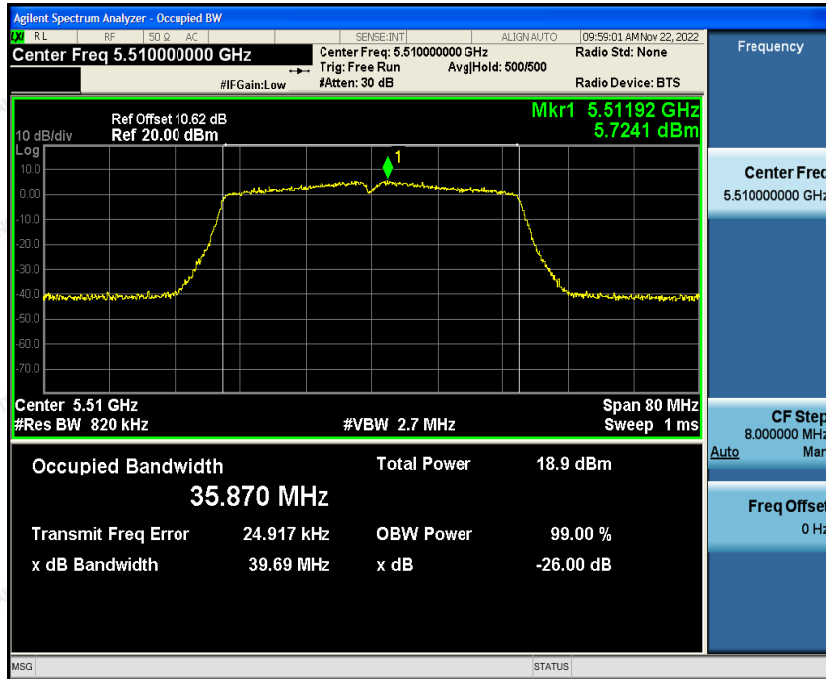


**IEEE802.11n HT40 mode****5250~5350MHz****Low Channel****High Channel**

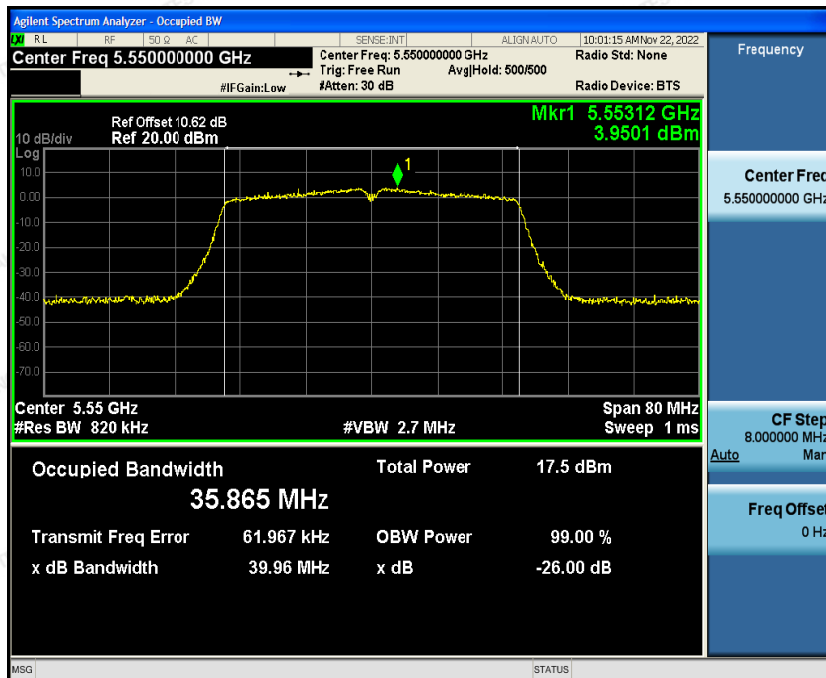


5470~5725MHz

Low Channel

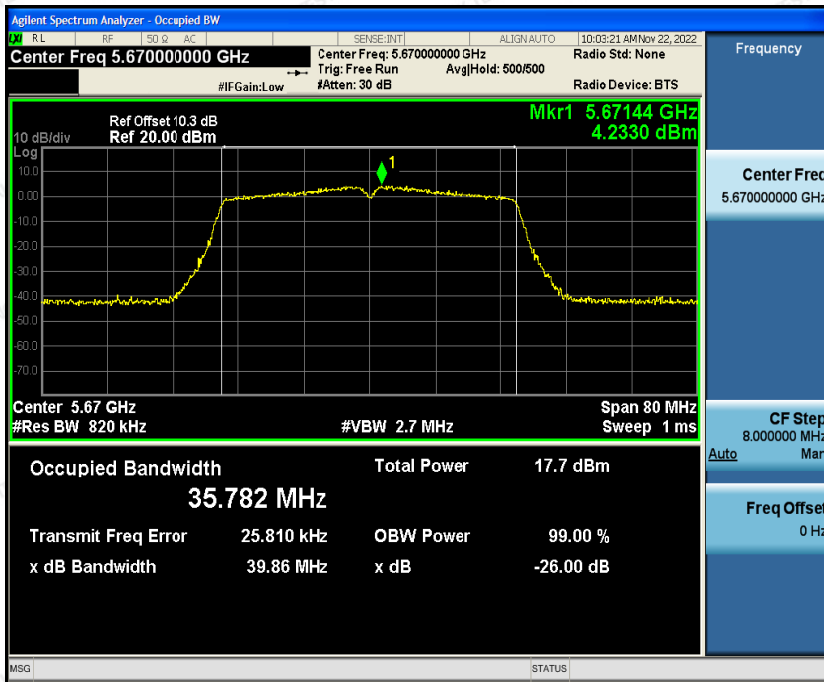


Mid Channel





High Channel



**IEEE802.11ac HT20 mode****5250~5350MHz****Low Channel****Mid Channel**

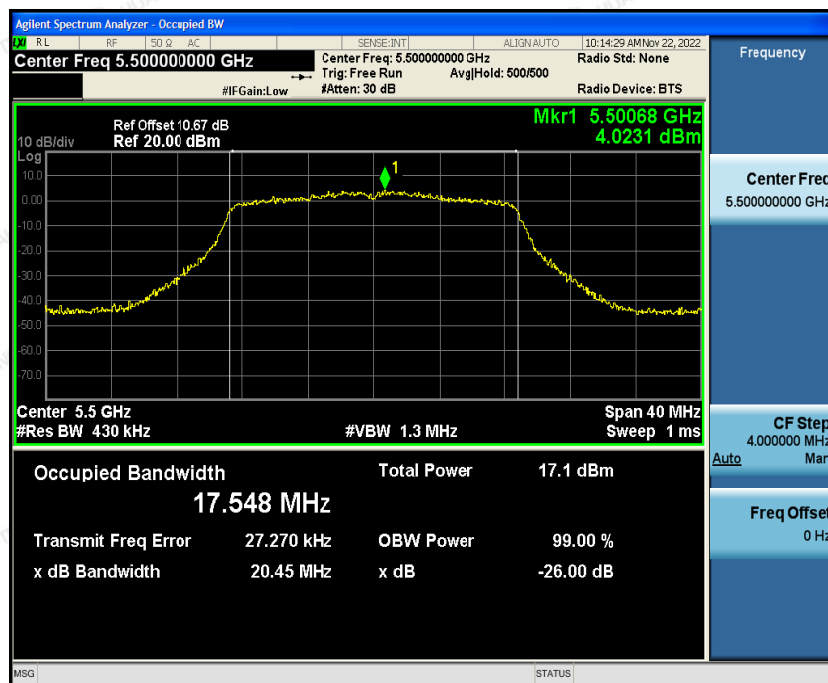


High Channel



5470~5725MHz

Low Channel





Mid Channel



High Channel





IEEE802.11ac HT40 mode

5250~5350MHz

Low Channel



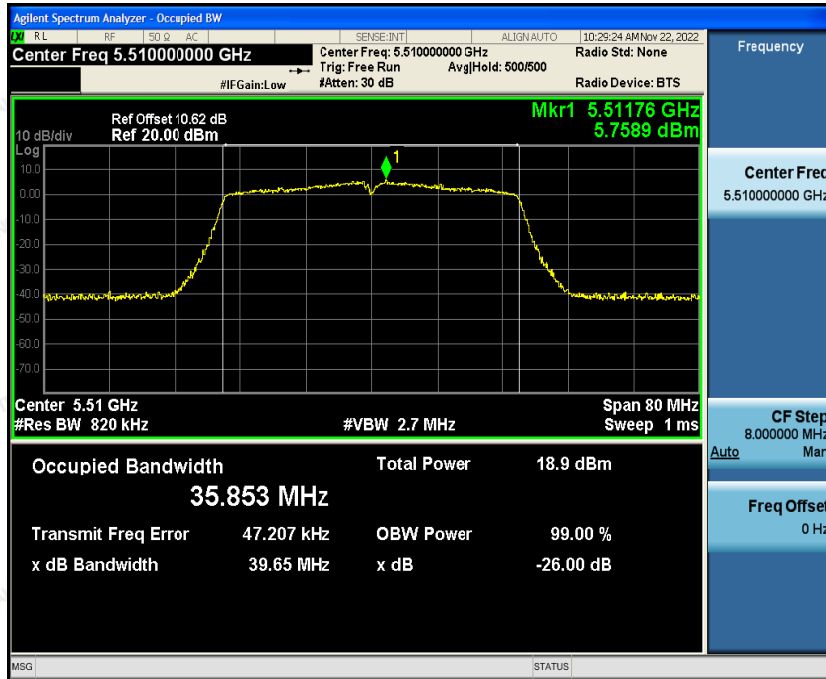
High Channel





5470~5725MHz

Low Channel

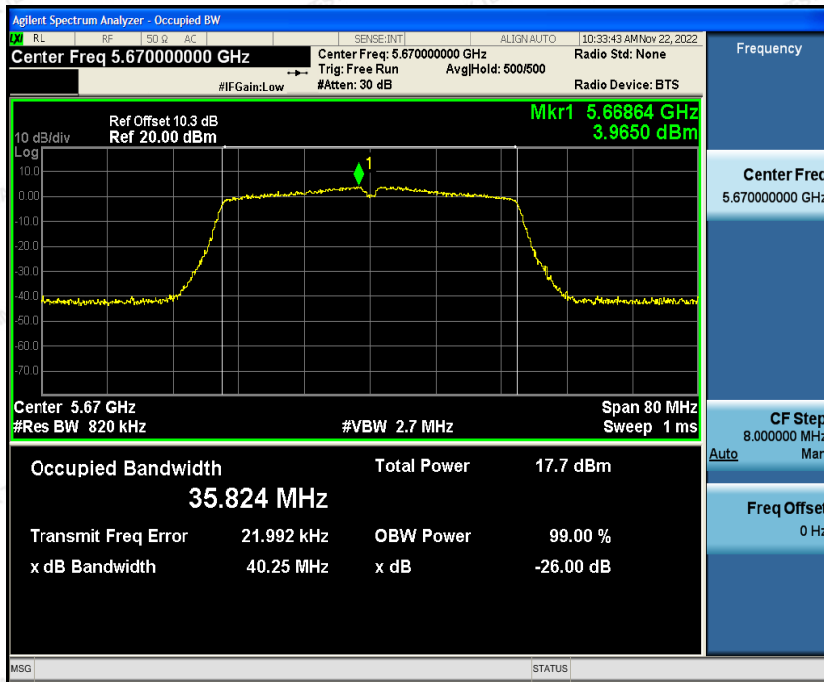


Mid Channel





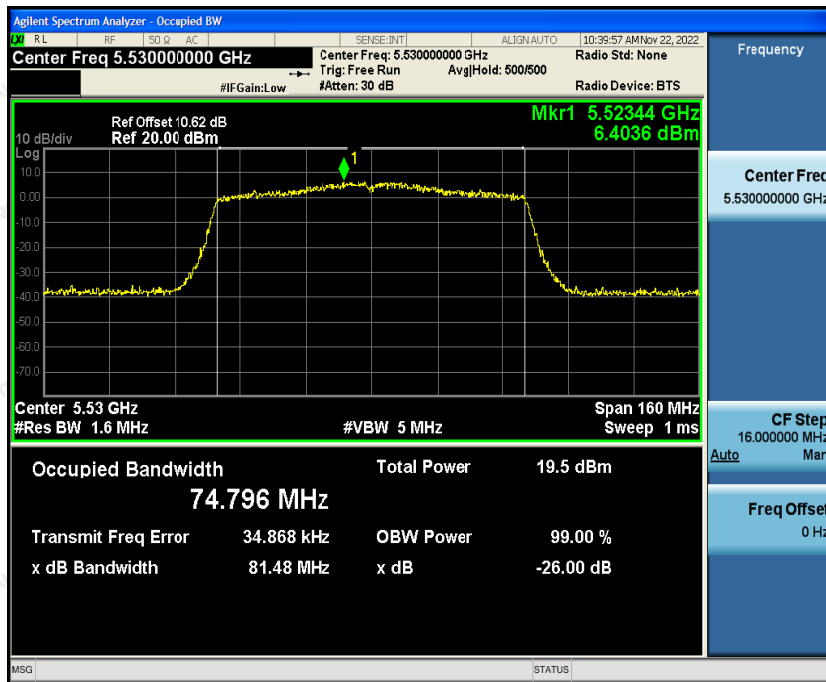
High Channel



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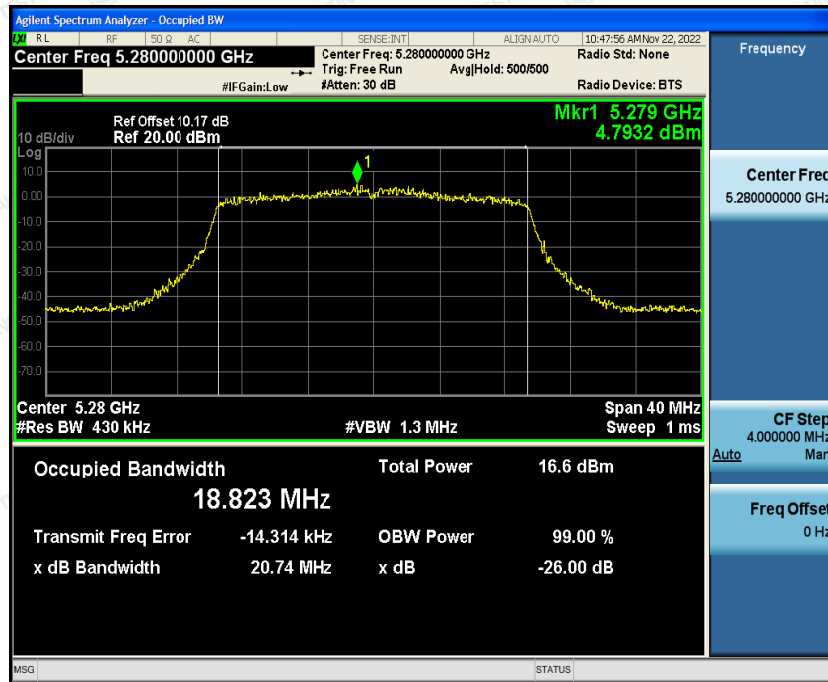
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**IEEE802.11ac HT80 mode****5250~5350MHz****5470~5725MHz****Low Channel**



High Channel



**IEEE802.11ax HT20 mode****5250~5350MHz****Low Channel****Mid Channel**

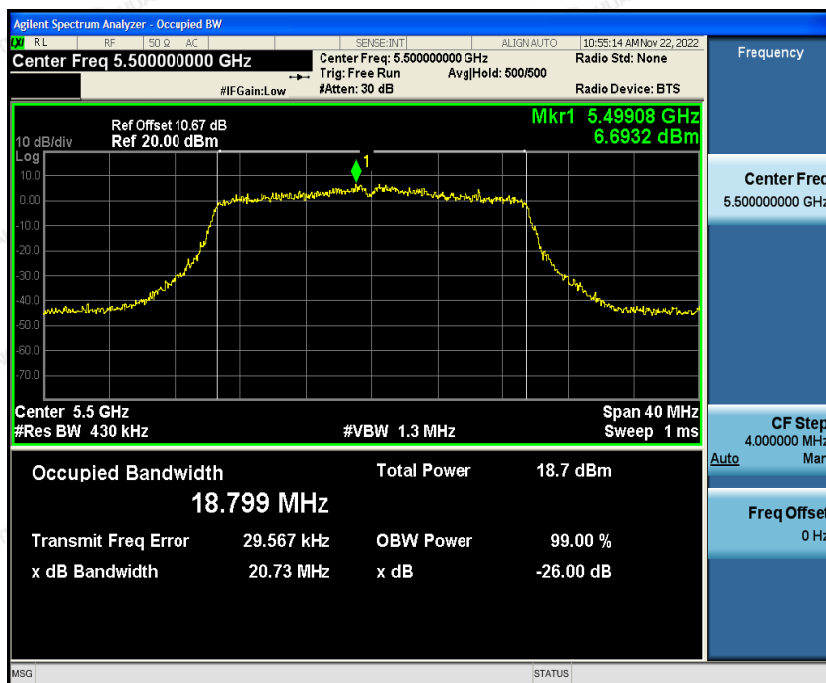


High Channel



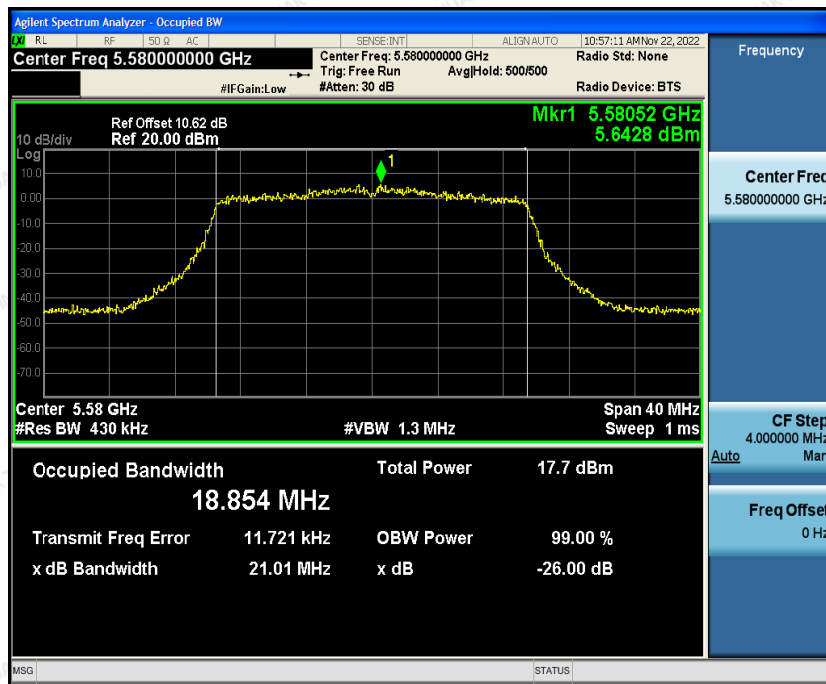
5470~5725MHz

Low Channel

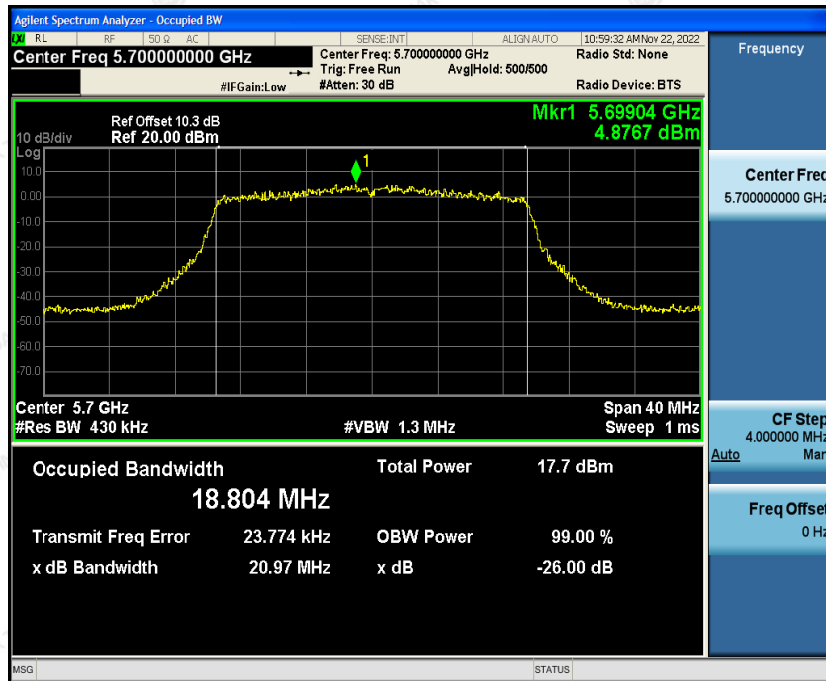


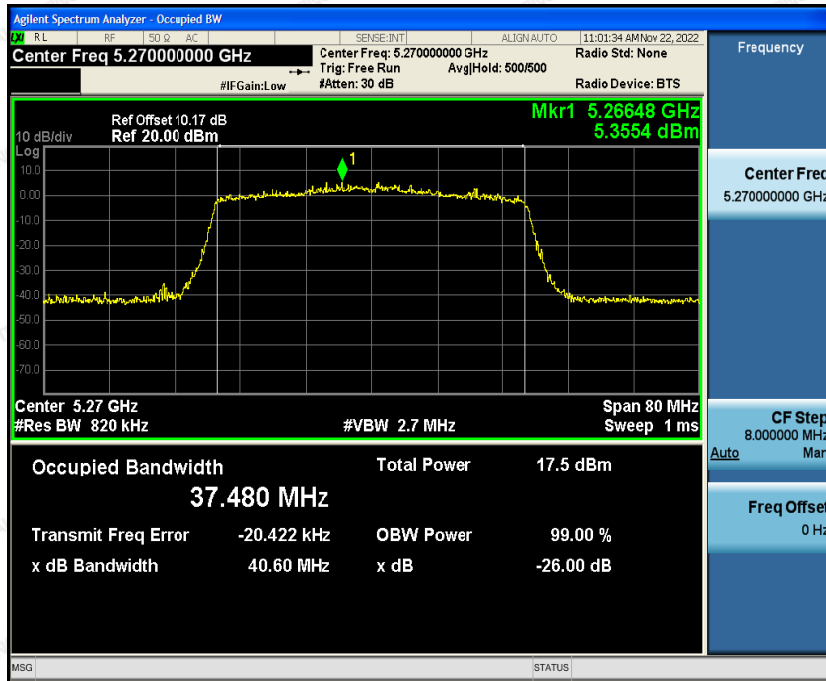
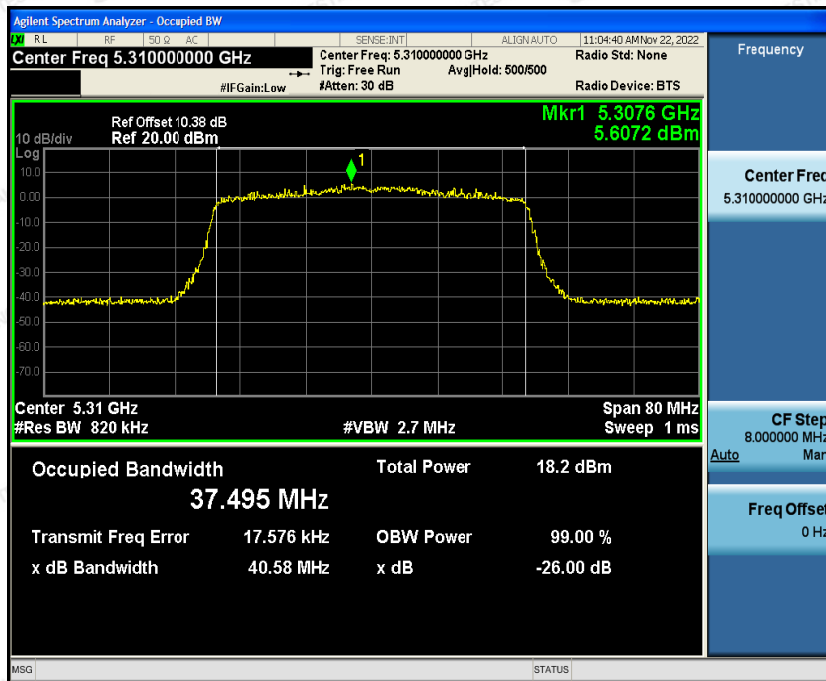


Mid Channel



High Channel

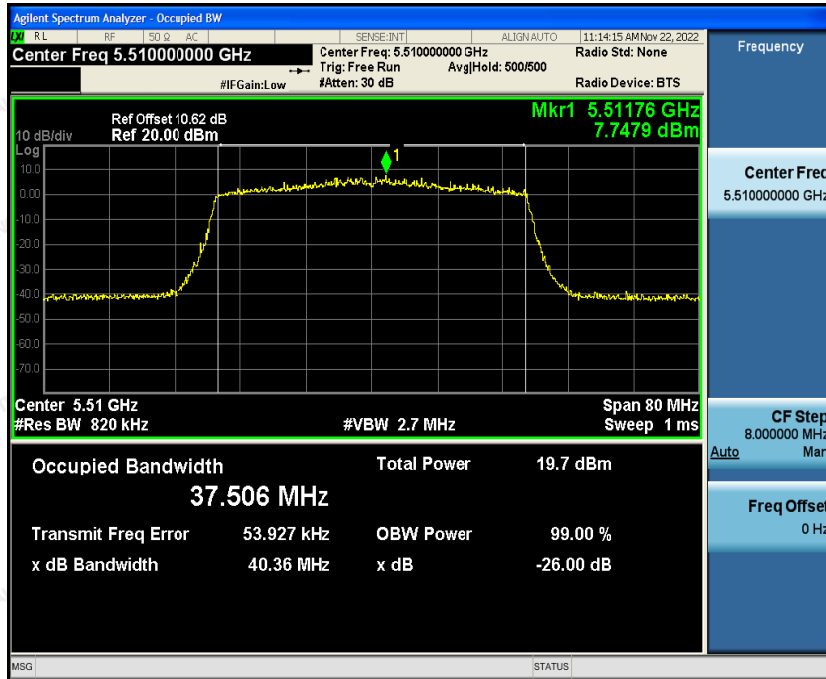


**IEEE802.11ax HT40 mode****5250~5350MHz****Low Channel****High Channel**



5470~5725MHz

Low Channel

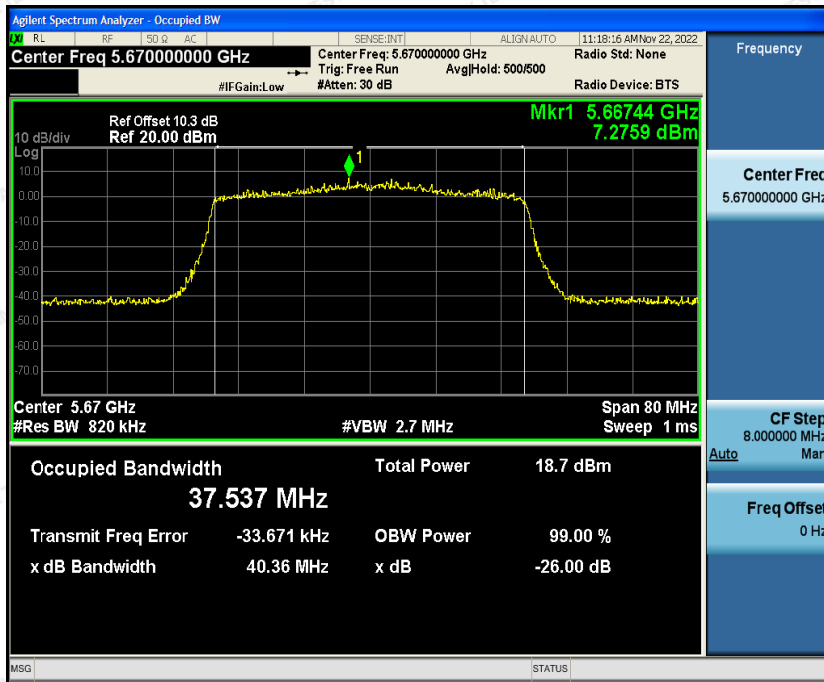


Mid Channel





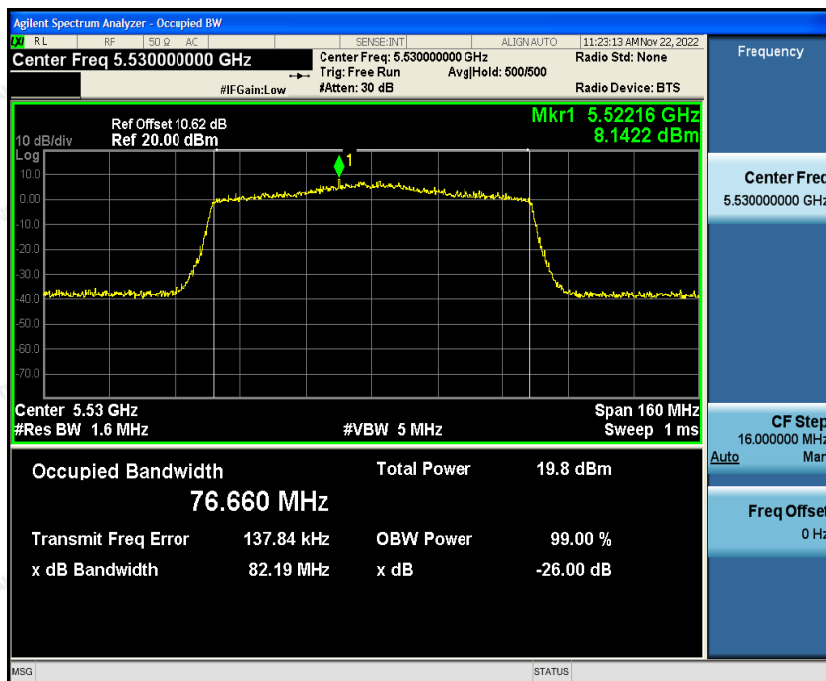
High Channel



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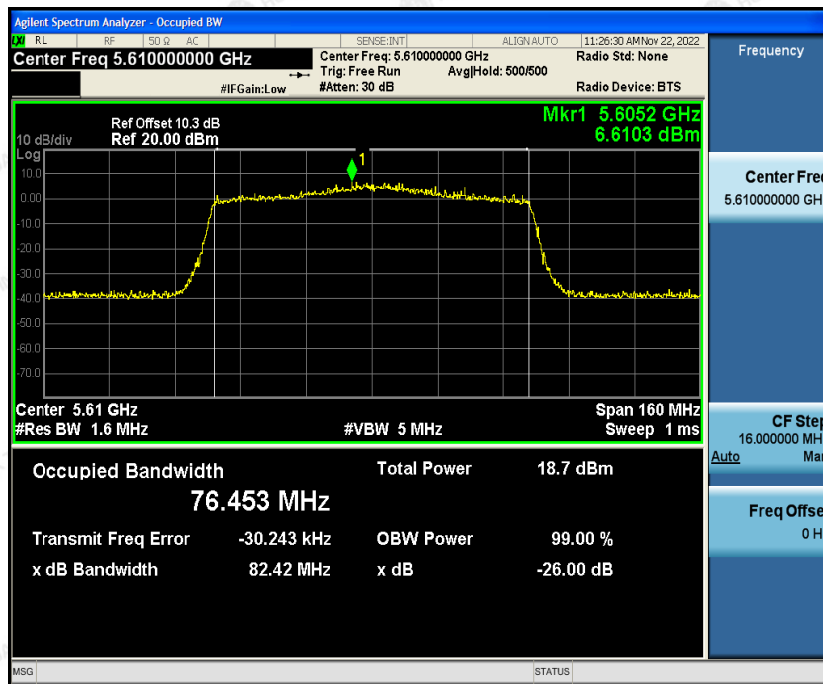
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**IEEE802.11ax HT80 mode****5250~5350MHz****5470~5725MHz****Low Channel**



High Channel



**Antenna 2****Testmode:IEEE802.11a mode****5250~5350MHz**

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	16.368
Mid	5280	16.384
High	5320	16.359

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	16.381
Mid	5580	16.364
High	5700	16.390

Testmode:IEEE802.11n HT20 mode**5250~5350MHz**

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	17.540
Mid	5280	17.560
High	5320	17.542

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	17.557
Mid	5580	17.545
High	5700	17.557

Testmode:IEEE802.11n HT40 mode**5250~5350MHz**

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5270	35.818
High	5310	35.776

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	35.868
Mid	5550	35.859
High	5670	35.796



Testmode:IEEE802.11ac HT20 mode

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	17.550
Mid	5280	17.549
High	5320	17.523

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	17.550
Mid	5580	17.537
High	5700	17.552

Testmode:IEEE802.11ac HT40 mode

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5270	35.825
High	5310	35.826

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	35.868
Mid	5550	35.903
High	5670	35.775

Testmode:IEEE802.11ac HT80 mode

5250~5350MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
--	5290	74.909

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5530	74.871
High	5610	74.806

**Testmode:IEEE802.11ax HT20 mode****5250~5350MHz**

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	18.820
Mid	5280	18.823
High	5320	18.814

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	18.809
Mid	5580	18.852
High	5700	18.843

Testmode:IEEE802.11ax HT40 mode**5250~5350MHz**

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5270	37.371
High	5310	37.549

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	37.471
Mid	5550	37.658
High	5670	37.504

Testmode:IEEE802.11ax HT80 mode**5250~5350MHz**

Channel	Frequency (MHz)	Bandwidth (MHz)
--	5290	76.560

5470~5725MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5530	76.521
High	5610	76.781



Test Plot

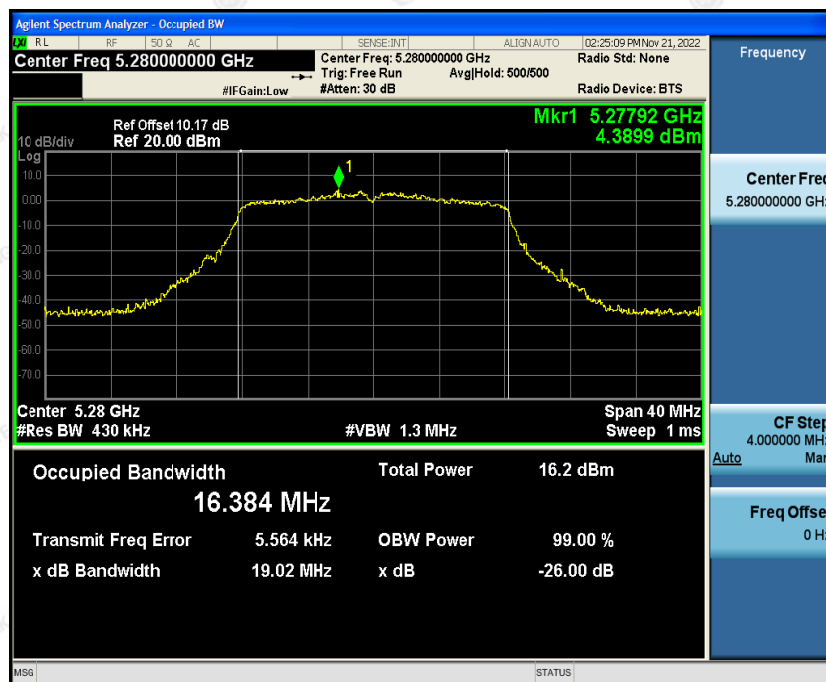
IEEE802.11a mode:

5250~5350MHz

Low Channel

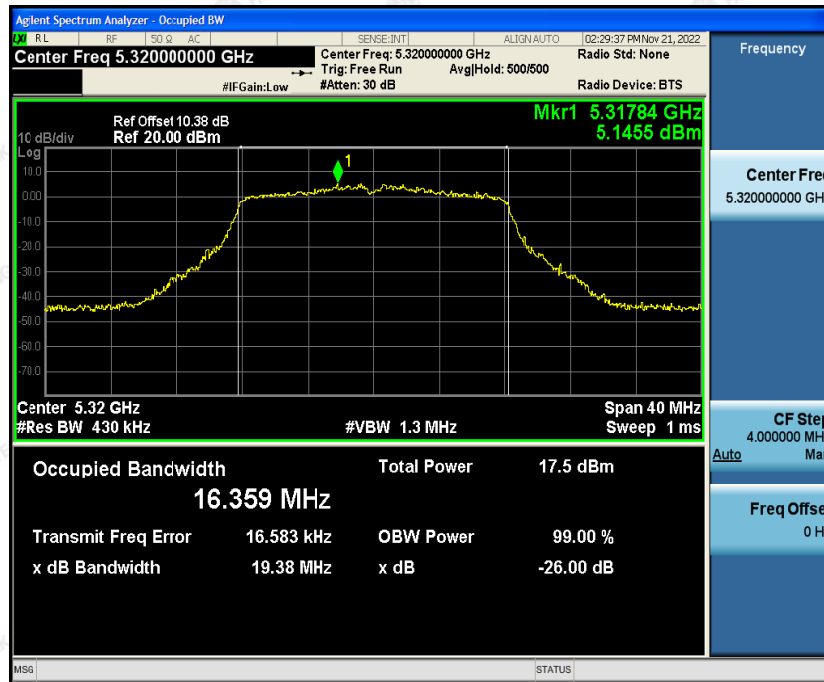


Mid Channel





High Channel



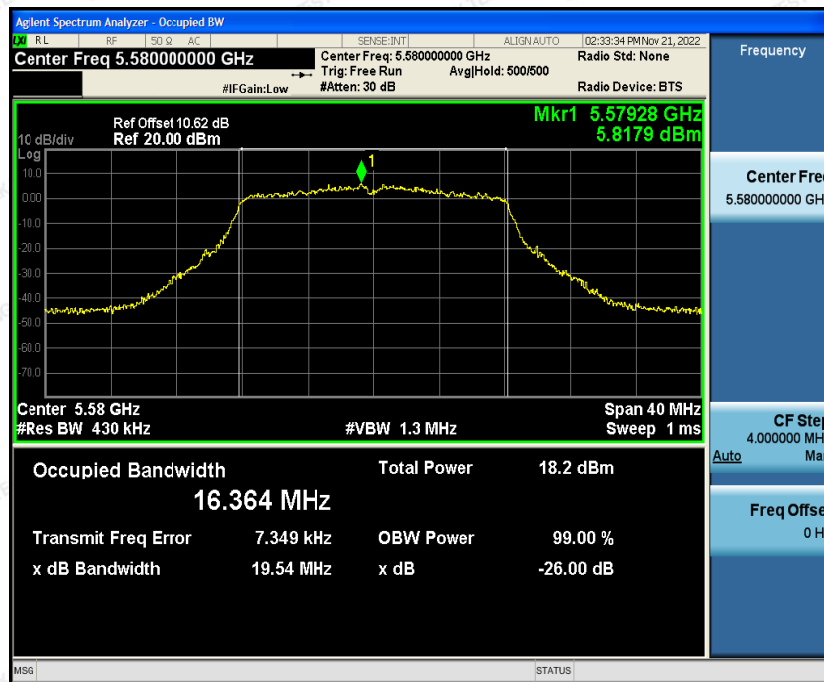
5470~5725MHz

Low Channel





Mid Channel



High Channel



**IEEE802.11n HT20 mode****5250~5350MHz****Low Channel****Mid Channel**



High Channel



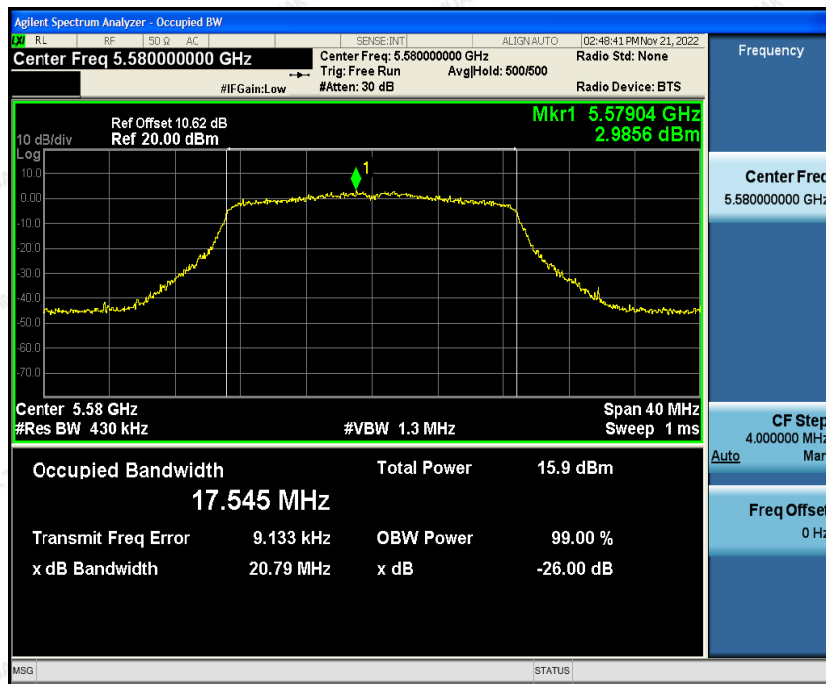
5470~5725MHz

Low Channel





Mid Channel



High Channel

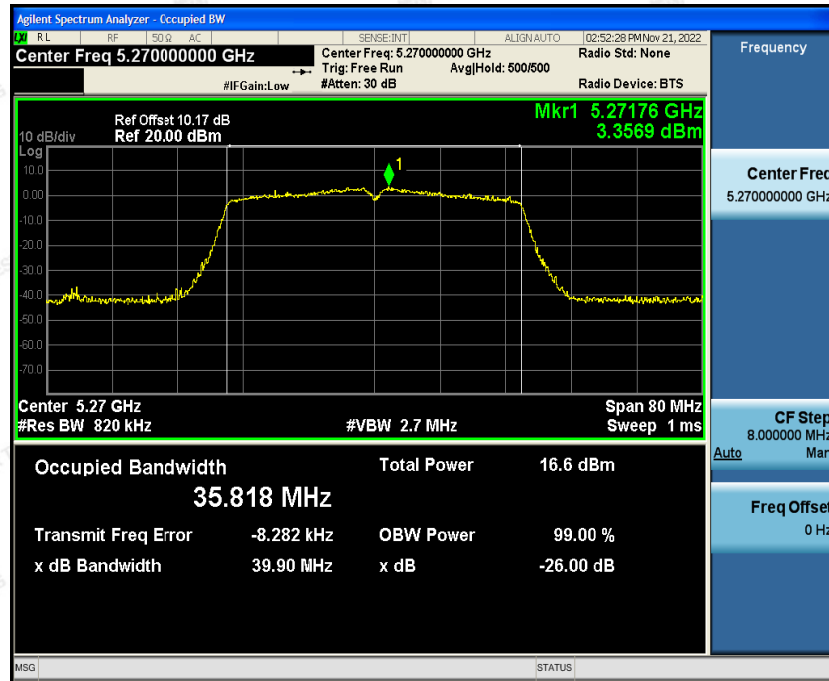




IEEE802.11n HT40 mode

5250~5350MHz

Low Channel



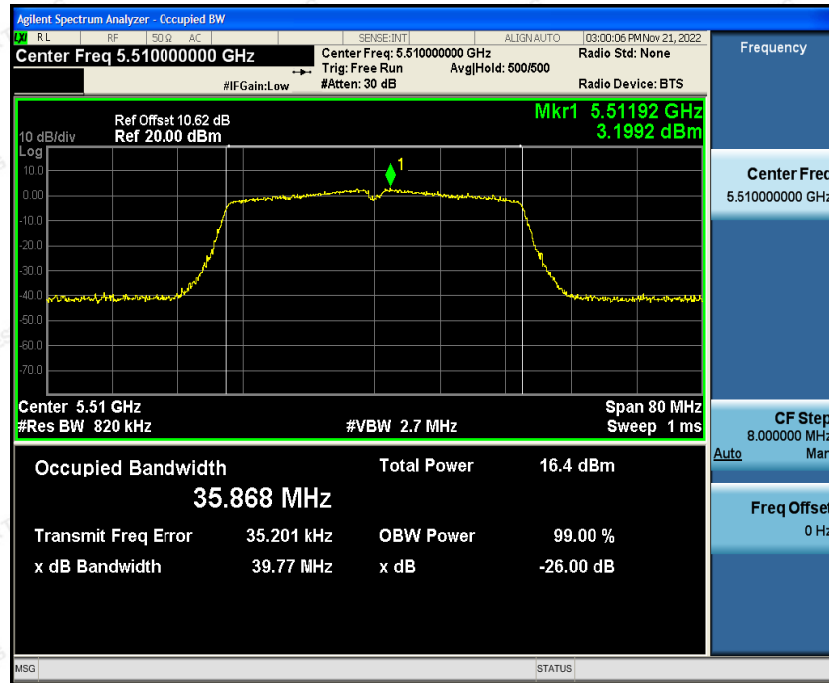
High Channel



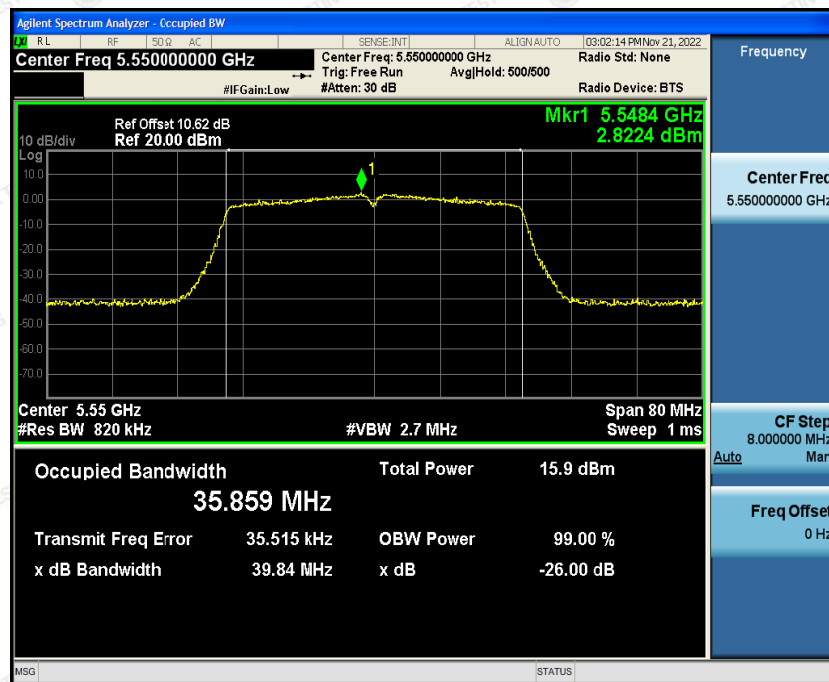


5470~5725MHz

Low Channel

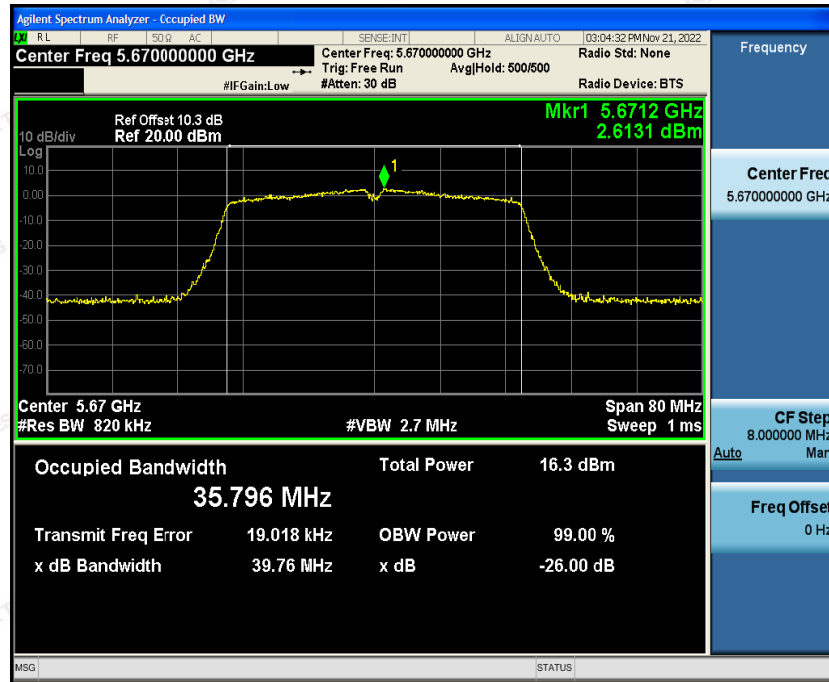


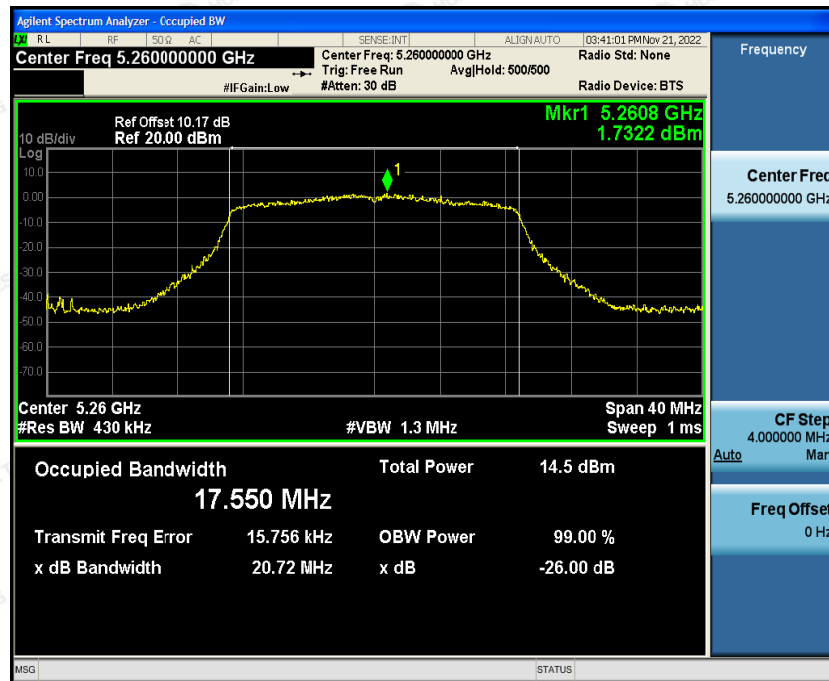
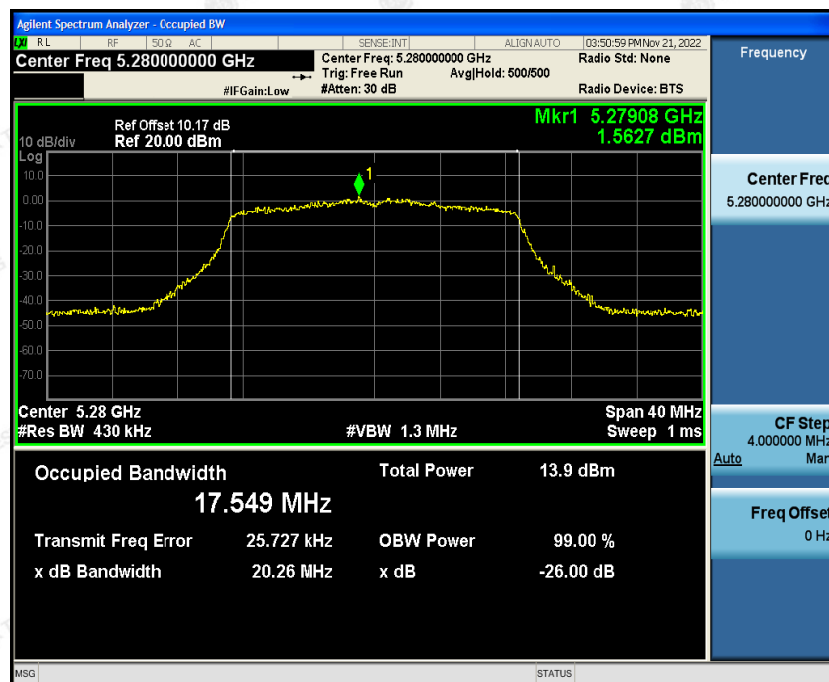
Mid Channel





High Channel



**IEEE802.11ac HT20 mode****5250~5350MHz****Low Channel****Mid Channel**

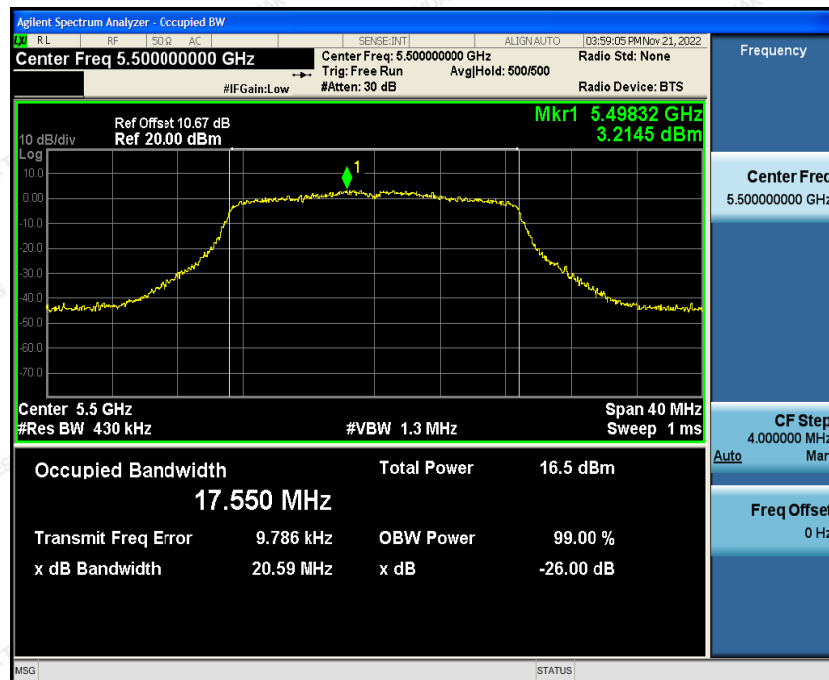


High Channel



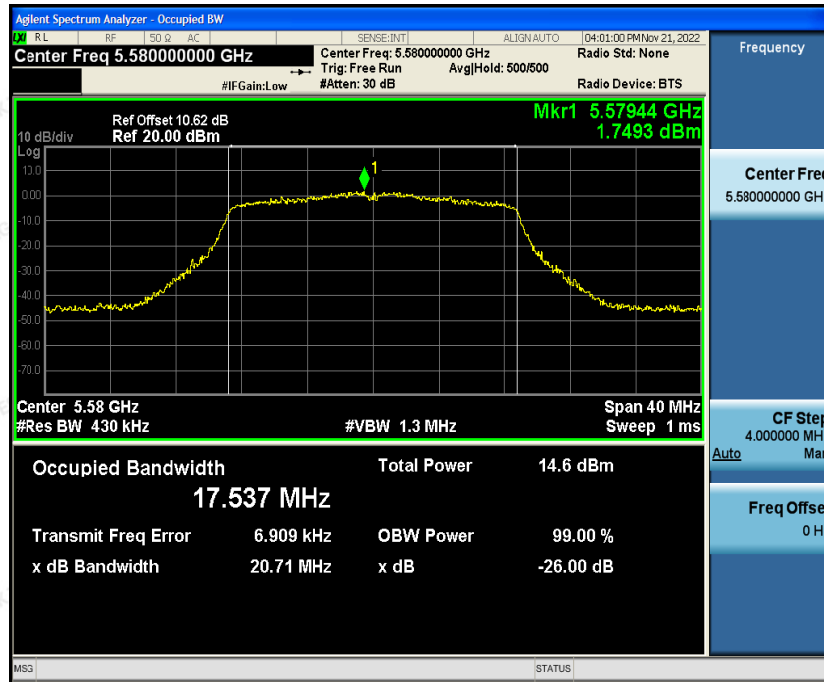
5470~5725MHz

Low Channel



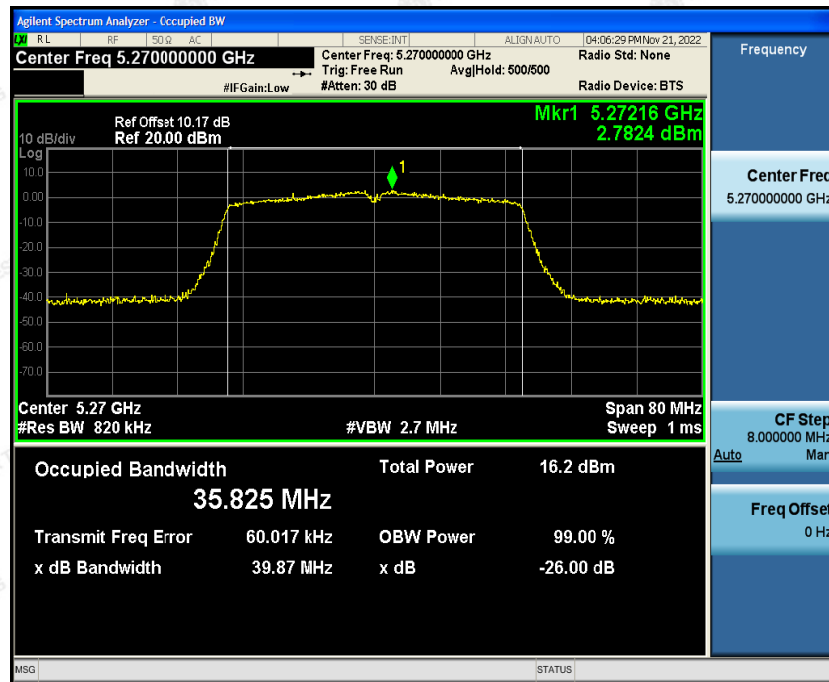
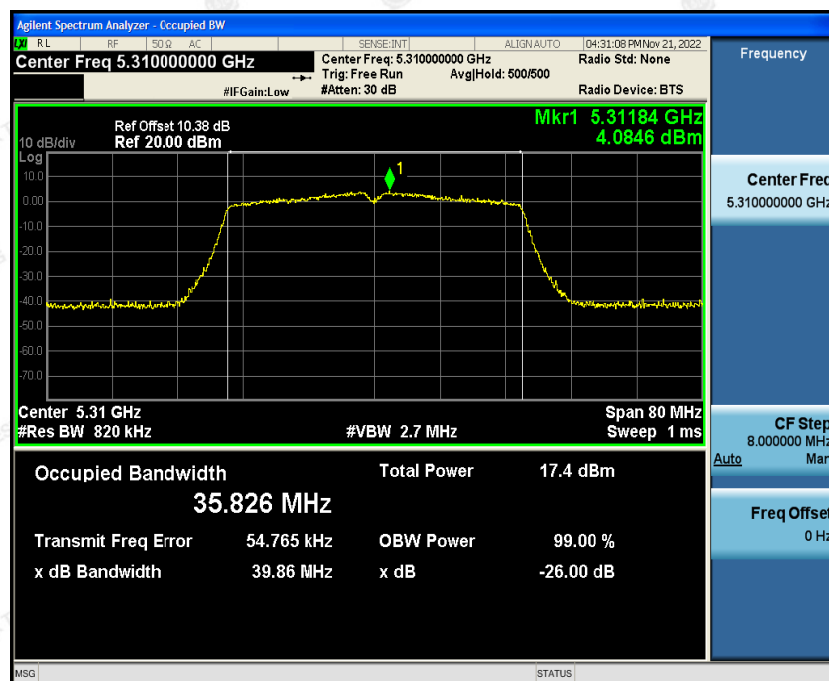


Mid Channel



High Channel



**IEEE802.11ac HT40 mode****5250~5350MHz****Low Channel****High Channel**

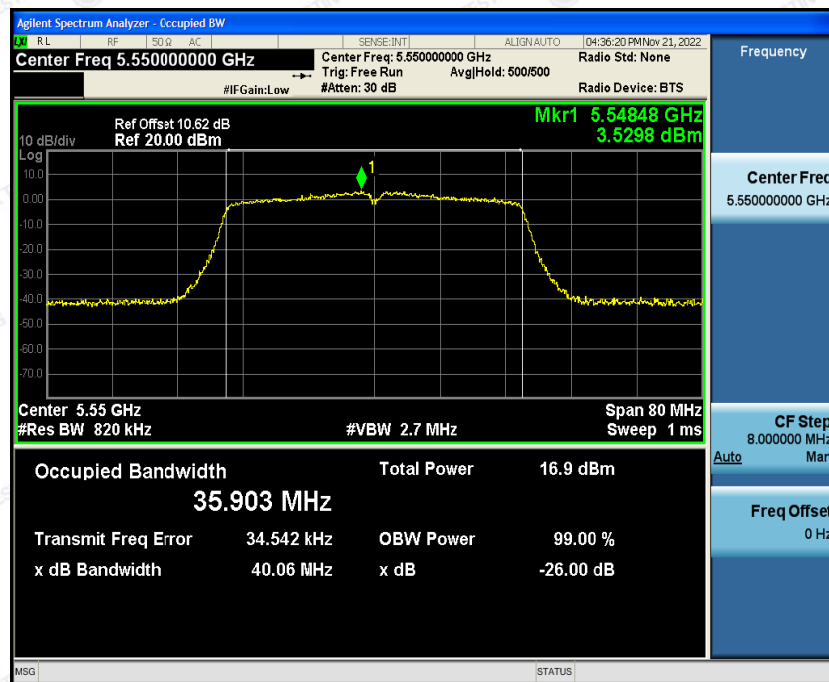


5470~5725MHz

Low Channel

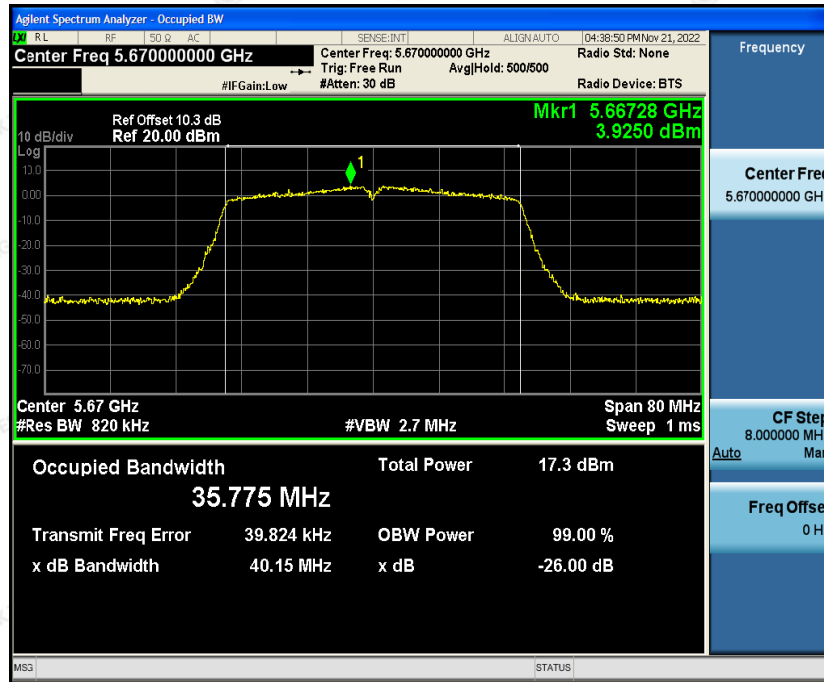


Mid Channel





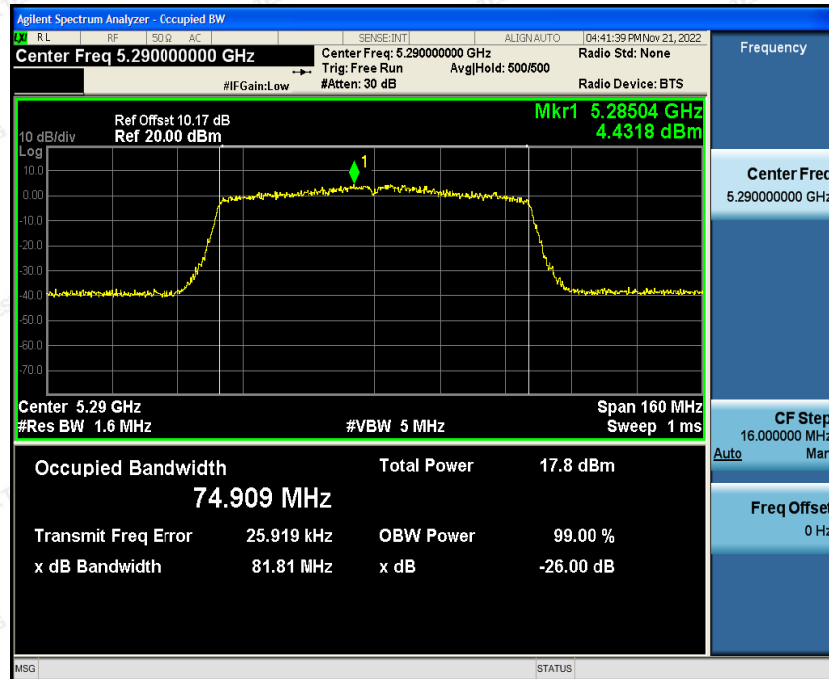
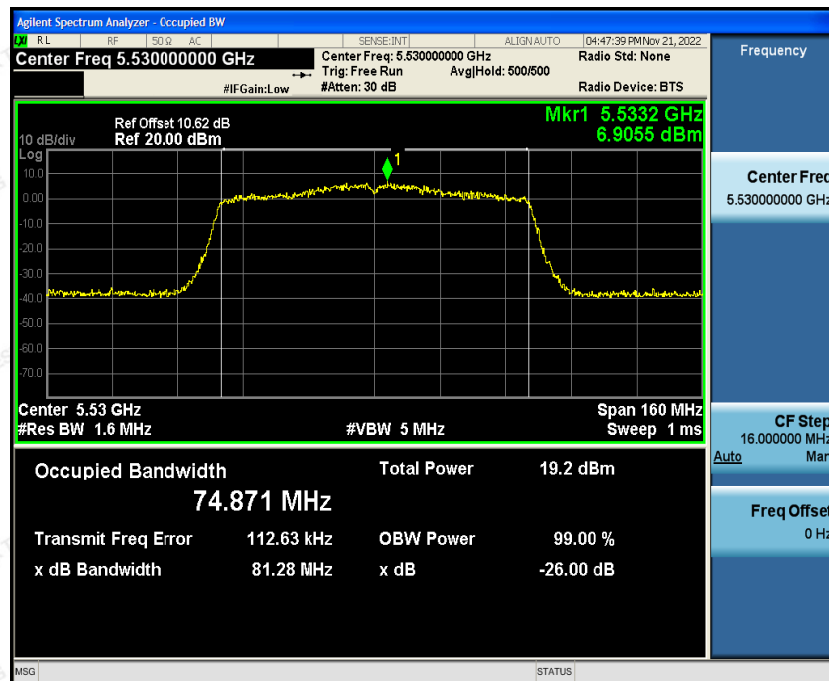
High Channel



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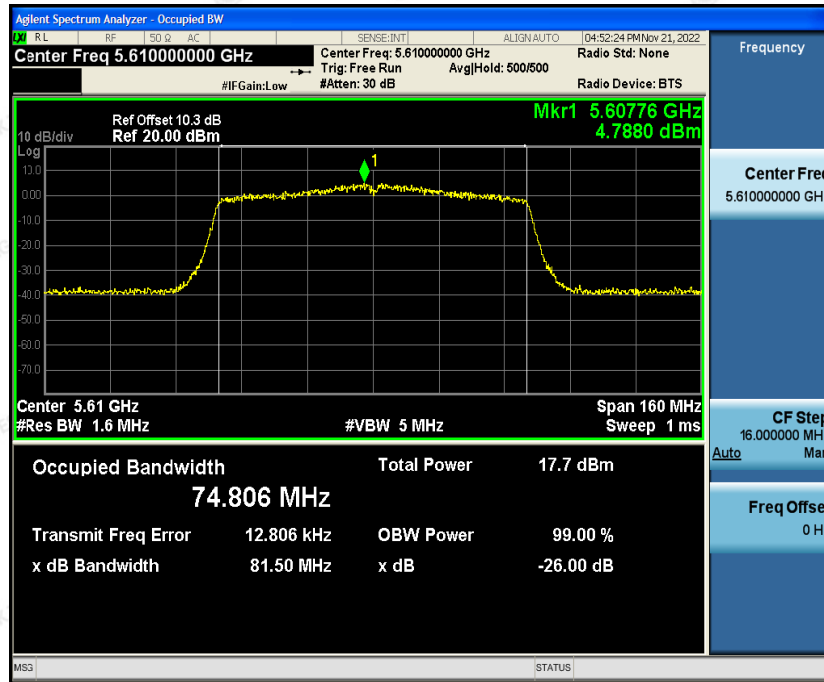
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**IEEE802.11ac HT80 mode****5250~5350MHz****5470~5725MHz****Low Channel**



High Channel

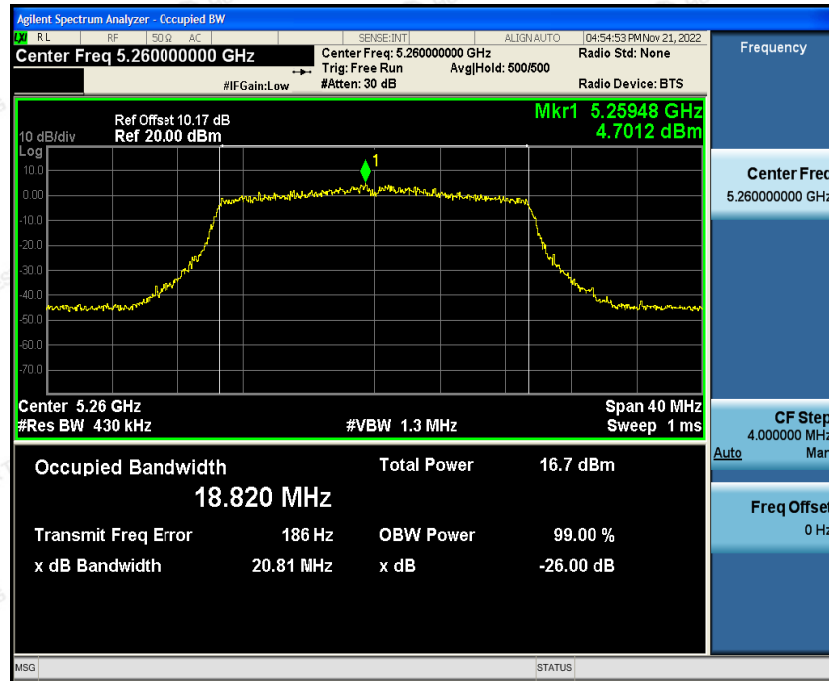




IEEE802.11ax HT20 mode

5250~5350MHz

Low Channel



Mid Channel



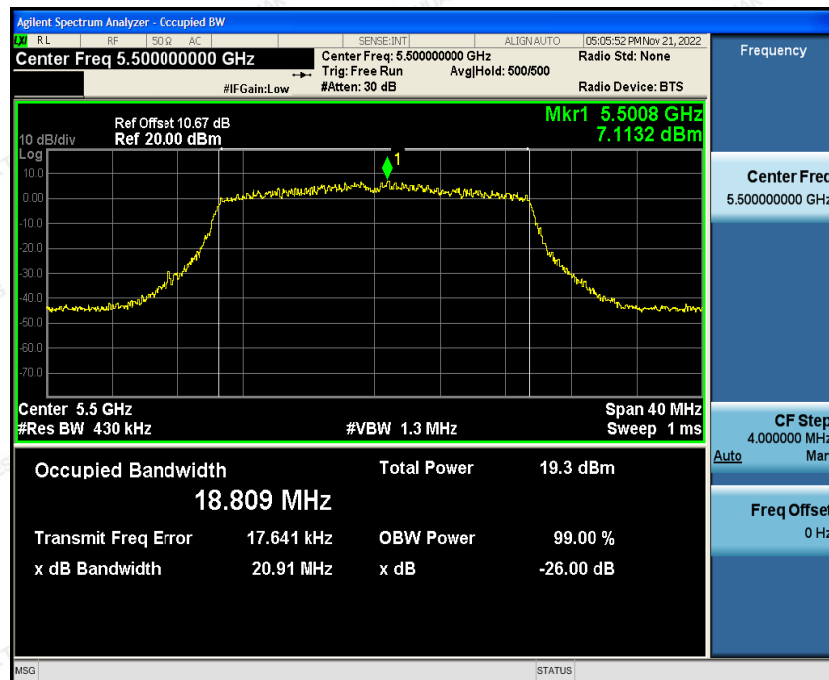


High Channel



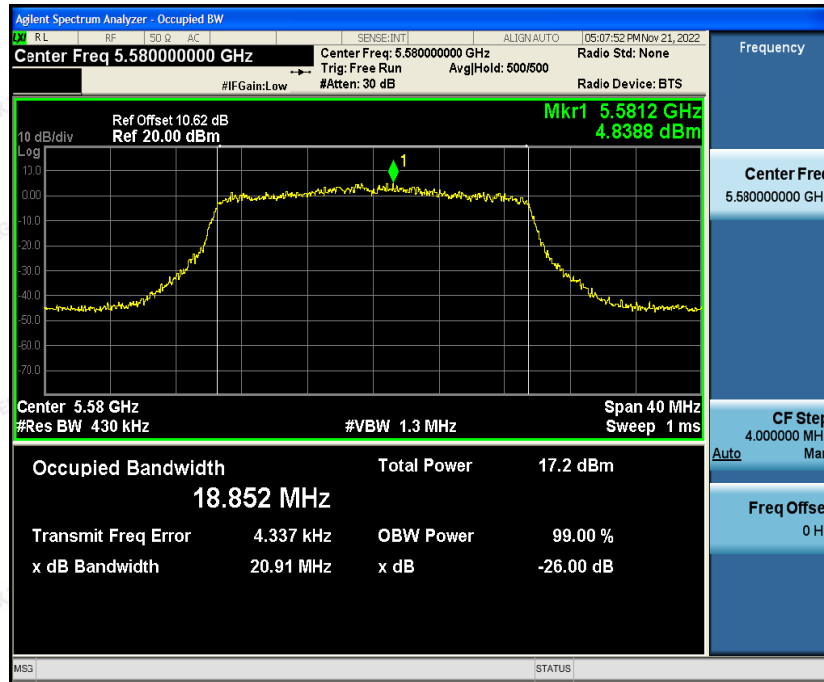
5470~5725MHz

Low Channel





Mid Channel



High Channel

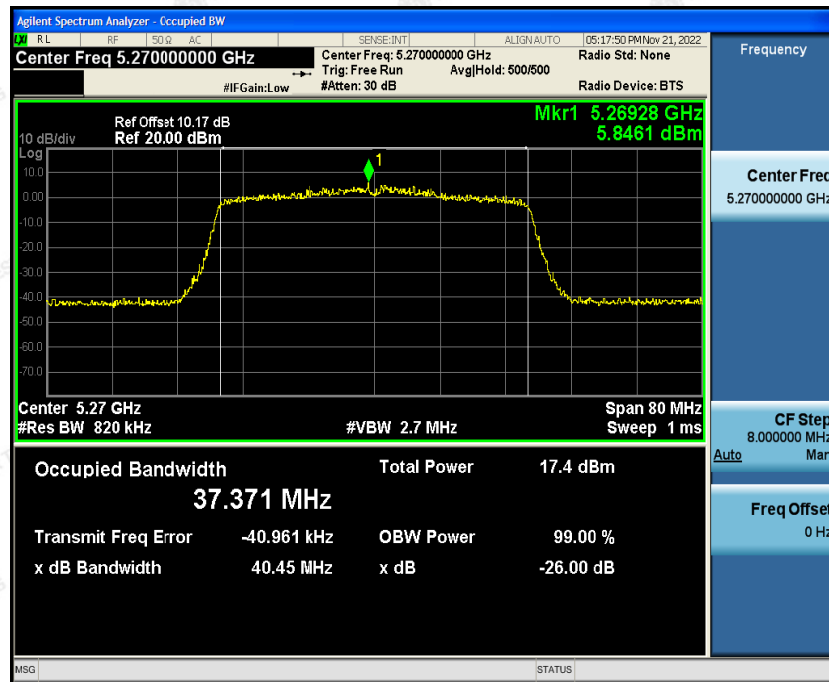




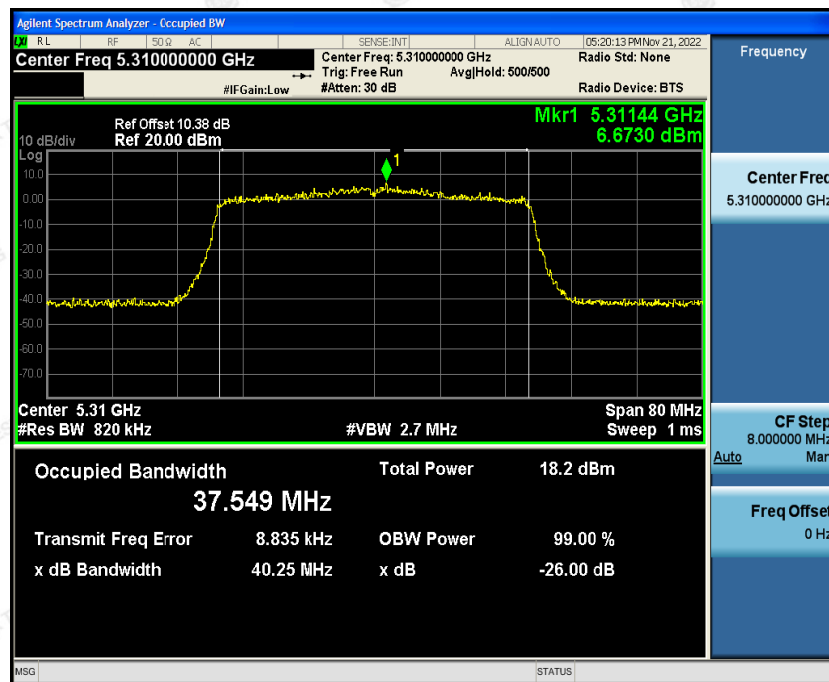
IEEE802.11ax HT40 mode

5250~5350MHz

Low Channel



High Channel



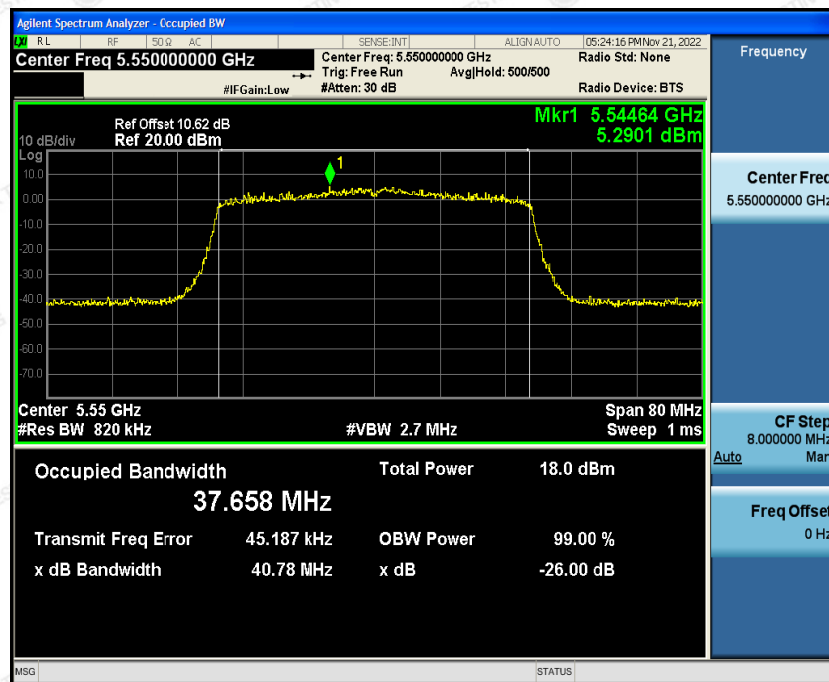


5470~5725MHz

Low Channel

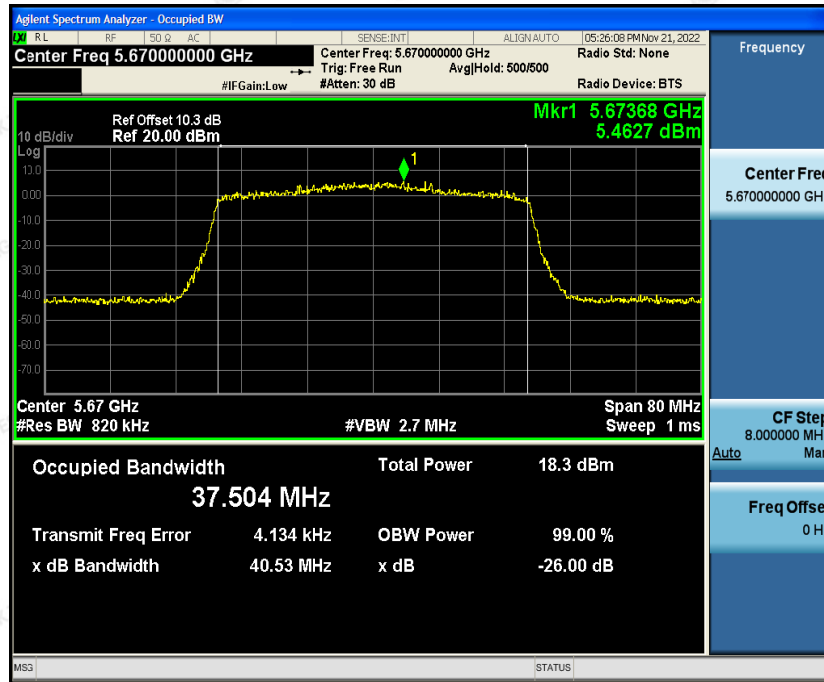


Mid Channel





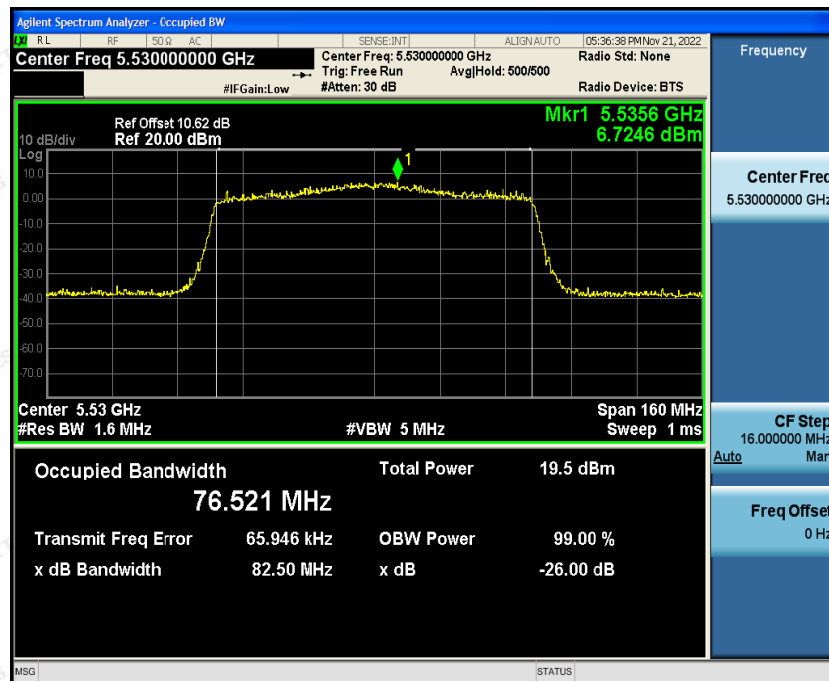
High Channel



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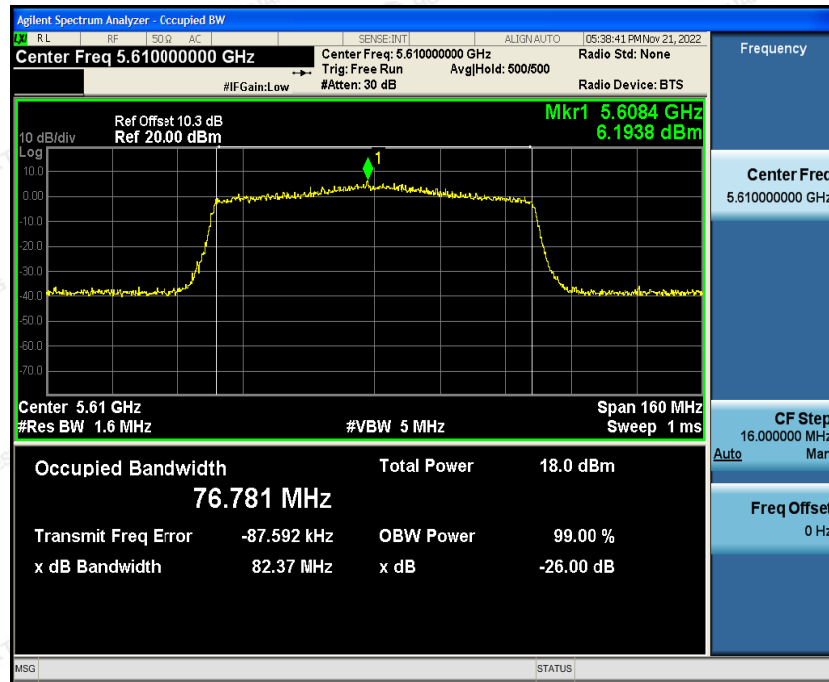
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**IEEE802.11ax HT80 mode****5250~5350MHz****5470~5725MHz****Low Channel**



High Channel



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6.3 MAXIMUM CONDUCTED OUTPUT POWER

LIMIT

According to §15.407(a),

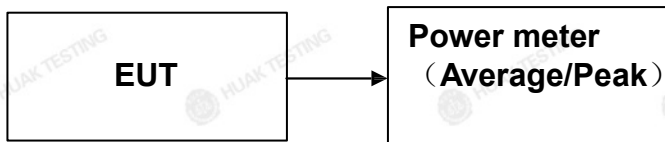
(iv) For the 5.25-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250mW or $11\text{dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz.

If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Note that U-NII-2 band, devices with a maximum e.i.r.p. greater than 500mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W

The peak power shall not exceed the limit as follow:

Test Configuration



The EUT was connected to a spectrum analyzer through a 50Ω RF cable.

TEST PROCEDURE

The testing follows Method PM of FCC KDB789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM (Measurement using an RF peak power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.

TEST RESULTS

No non-compliance noted

TEST RESULTS

No non-compliance noted

**Test Data****Testmode:IEEE802.11a mode****5250~5350MHz**

Channel	Frequency (MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5260	5.79	3.81	/	6.70
Mid	5280	3.25	4.21	/	6.69
High	5320	3.44	2.79	/	6.69

5470~5725MHz

Channel	Frequency (MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5500	3.48	3.84	/	6.70
Mid	5580	3.61	2.49	/	6.70
High	5700	2.36	2.67	/	6.70

Testmode:IEEE802.11n HT20 mode**5250~5350MHz**

Channel	Frequency(MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5260	0.75	0.95	3.86	3.96
Mid	5280	0.81	0.35	3.60	3.97
High	5320	0.17	1.06	3.65	3.94

5470~5725MHz

Channel	Frequency (MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5500	0.81	0.63	3.73	3.97
Mid	5580	1.12	0.28	3.73	3.95
High	5700	0.91	0.75	3.84	3.98



Testmode:IEEE802.11n HT40 mode

5250~5350MHz

Channel	Frequency (MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5270	0.78	0.65	3.73	3.98
Mid	5310	0.48	0.81	3.66	3.98

5470~5725MHz

Channel	Frequency (MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5510	0.42	0.71	3.58	3.98
Mid	5550	0.62	0.37	3.51	3.98
High	5670	0.85	0.65	3.76	3.98

Testmode:IEEE802.11ac HT20 mode

5250~5350MHz

Channel	Frequency(MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5260	0.84	0.65	3.76	3.98
Mid	5280	0.77	0.16	3.49	3.89
High	5320	0.63	0.54	3.60	3.98

5470~5725MHz

Channel	Frequency (MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5500	0.77	0.61	3.70	3.96
Mid	5580	0.82	0.49	3.67	3.98
High	5700	0.57	0.61	3.60	3.95



Testmode:IEEE802.11ac HT40 mode

5250~5350MHz

Channel	Frequency (MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5270	0.67	0.63	3.66	3.98
Mid	5310	0.81	0.75	3.79	3.98

5470~5725MHz

Channel	Frequency (MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5510	0.71	0.65	3.69	3.98
Mid	5550	0.24	0.36	3.31	3.98
High	5670	0.91	0.75	3.84	3.98

Testmode:IEEE802.11ac HT80 mode

5250~5350MHz

Channel	Frequency (MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
--	5270	0.45	0.76	3.62	3.98

5470~5725MHz

Channel	Frequency (MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5510	0.47	0.82	3.66	3.98
High	5670	0.64	0.66	3.66	3.98



Testmode:IEEE802.11ax HT20 mode

5250~5350MHz

Channel	Frequency(MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5260	0.77	0.82	3.81	3.98
Mid	5280	0.91	0.32	3.64	3.98
High	5320	0.46	0.59	3.54	3.98

5470~5725MHz

Channel	Frequency (MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5500	0.74	0.62	3.69	3.98
Mid	5580	0.82	0.49	3.67	3.98
High	5700	0.48	0.61	3.56	3.98

Testmode:IEEE802.11ax HT40 mode

5250~5350MHz

Channel	Frequency (MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5270	0.41	0.63	3.53	3.98
Mid	5310	0.27	0.33	3.31	3.98

5470~5725MHz

Channel	Frequency (MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5510	0.81	0.64	3.74	3.98
Mid	5550	0.58	0.91	3.76	3.98
High	5670	0.77	0.25	3.53	3.98

**Testmode:IEEE802.11ax HT80 mode****5250~5350MHz**

Channel	Frequency (MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
--	5270	0.24	0.31	3.29	3.98

5470~5725MHz

Channel	Frequency (MHz)	Peak Output Power (dBm)		Mimo	Limit(dBm)
		Ant1	Ant2		
Low	5510	0.43	0.28	3.37	3.98
High	5670	0.31	0.41	3.37	3.98



6.4 BAND EDGES MEASUREMENT

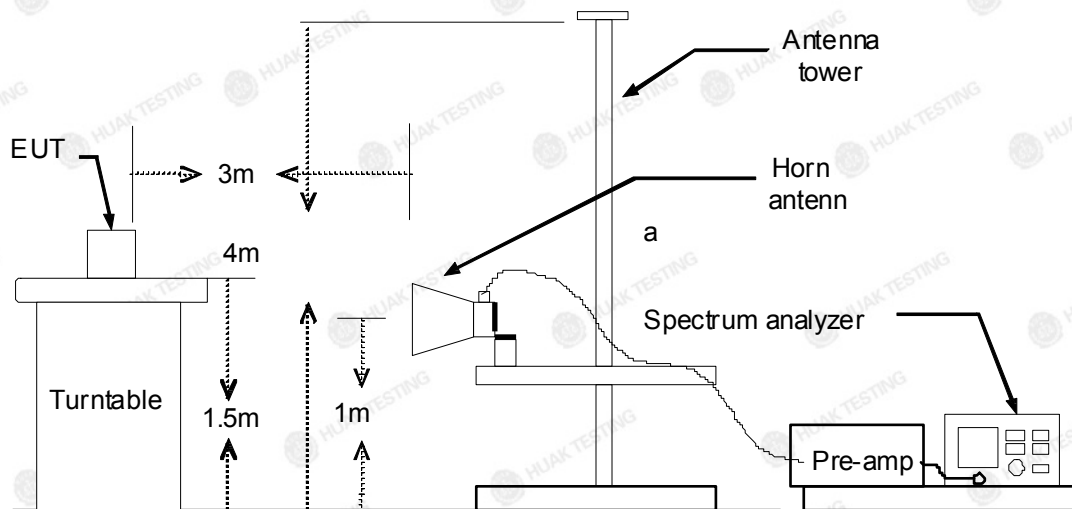
LIMIT

According to §15.407(b),

(1) The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

(2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.

Test Configuration



TESTPROCEDURE

1. The EUT is placed on a turntable, which is 1.5m above the ground plane.
2. The turntable shall be rotated for 360degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
 - (b) AVERAGE: RBW=1MHz / Sweep=AUTO

VBW=10Hz, when duty cycle is no less than 98 percent.

VBW $\geq 1/T$, when duty cycle is less than 98 percent, where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
IEEE 802.11 a	100	-	-	10Hz
IEEE 802.11n/ac/ax HT20	100	-	-	10Hz
IEEE 802.11n/ac/ax HT40	100	-	-	10Hz
IEEE 802.11ac/ax HT80	100	-	-	10Hz

TESTRESULTS

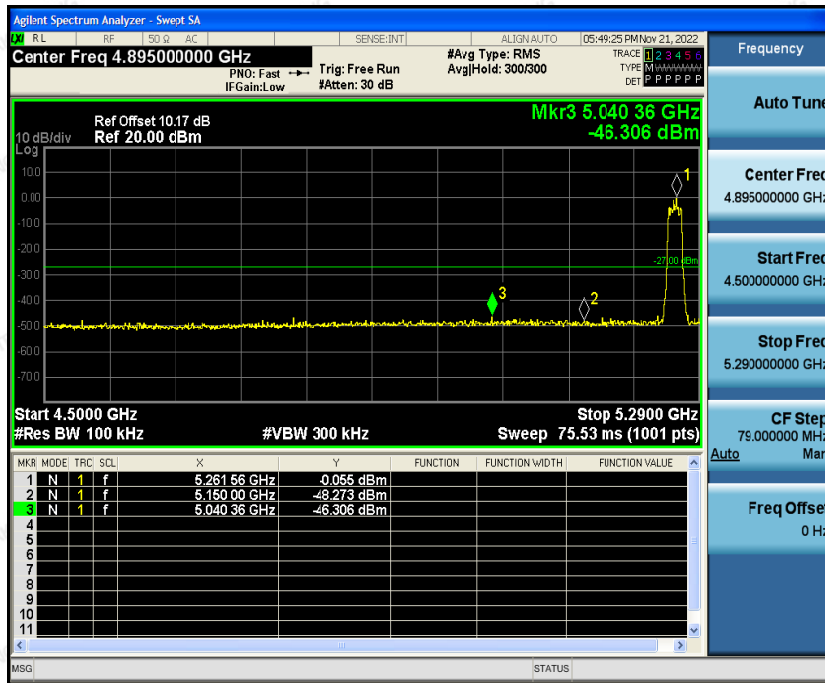
Refer to attach spectrum analyzer data chart.



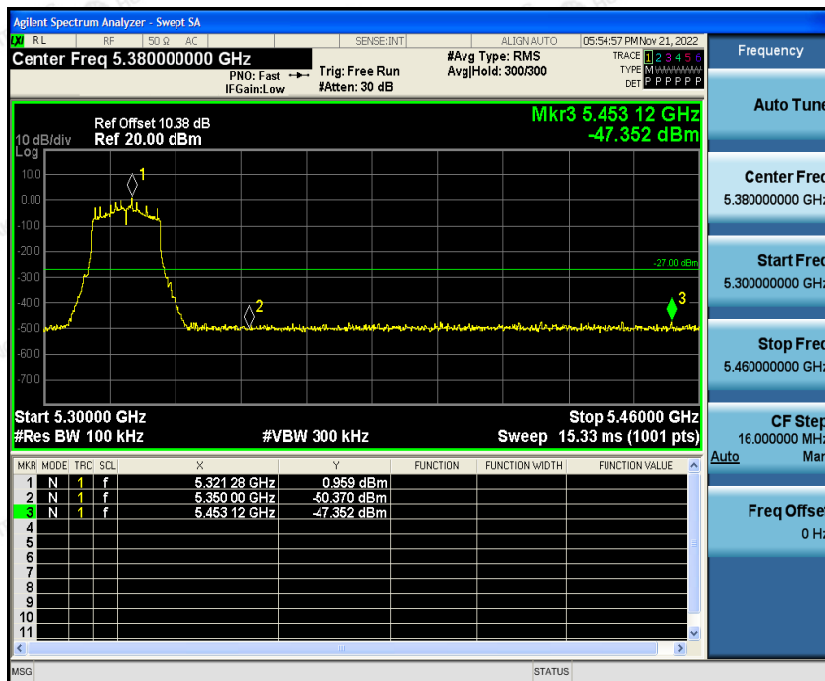
Antenna1

Band Edges(IEEE802.11a mode)

5260MHz

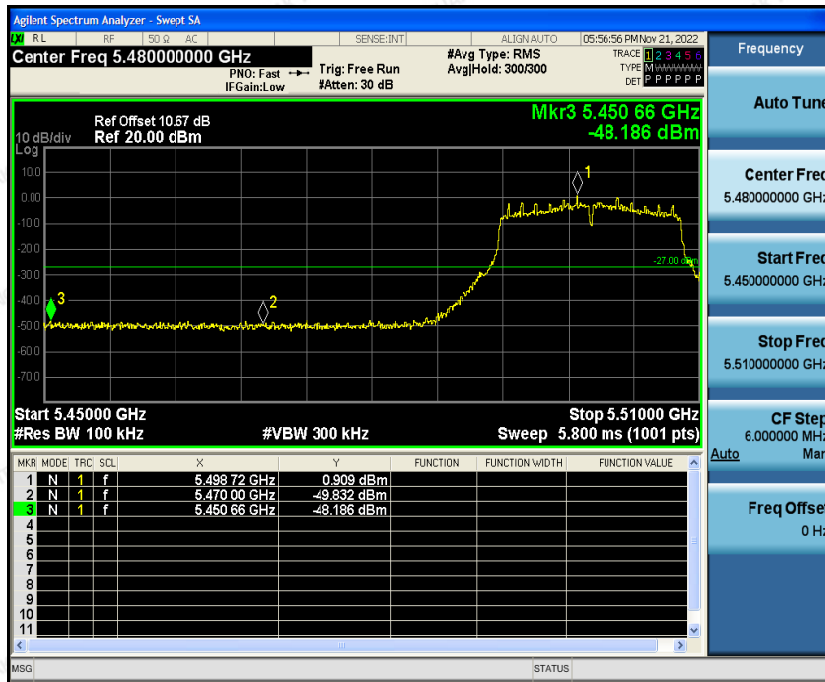


5320MHz

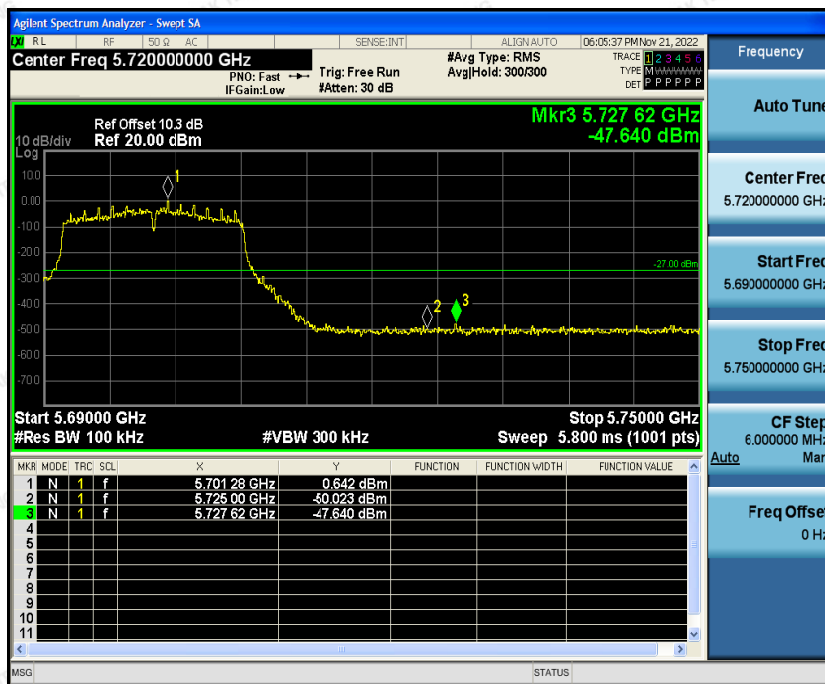




5500MHz



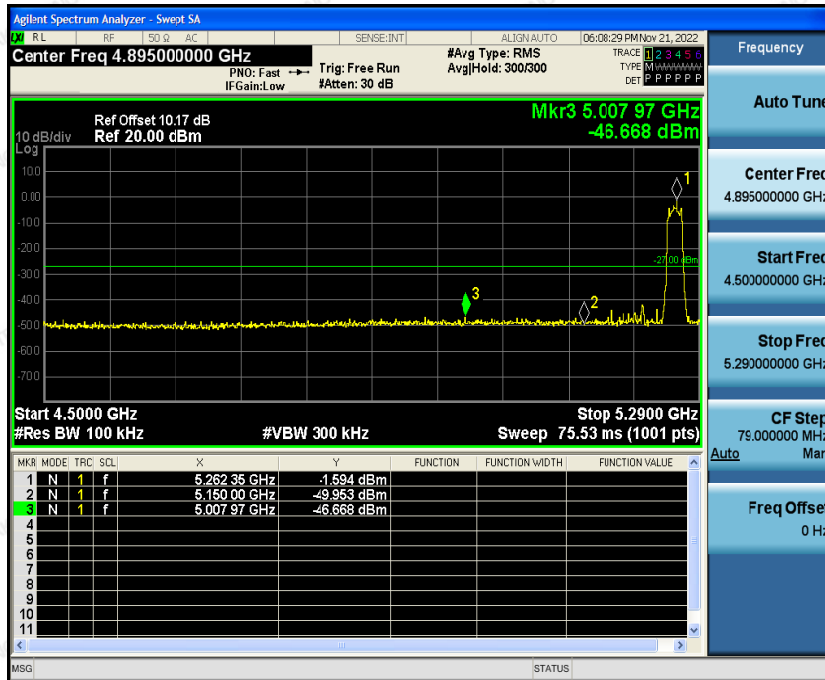
5700MHz



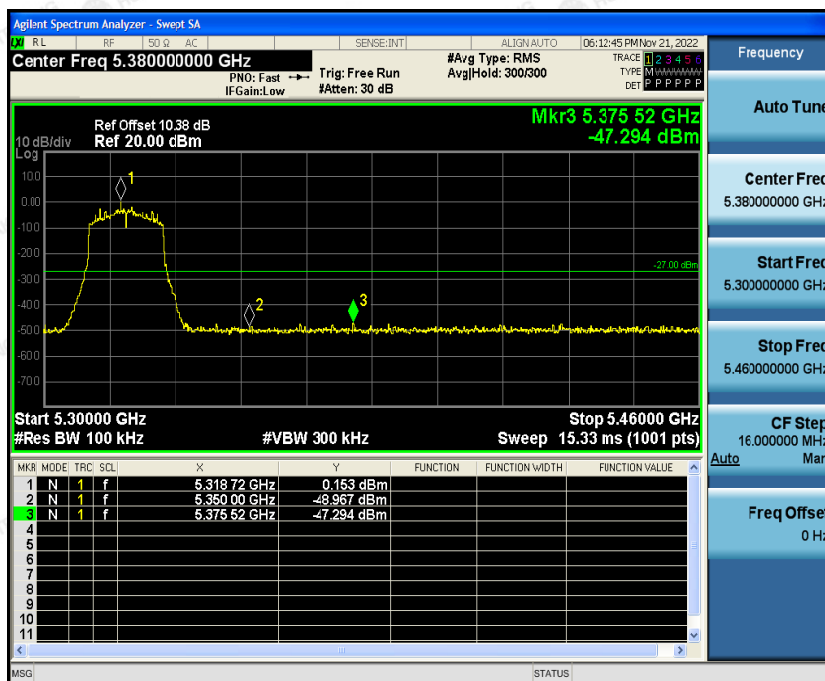


Band Edges(IEEE802.11n HT20 mode)

5260MHz

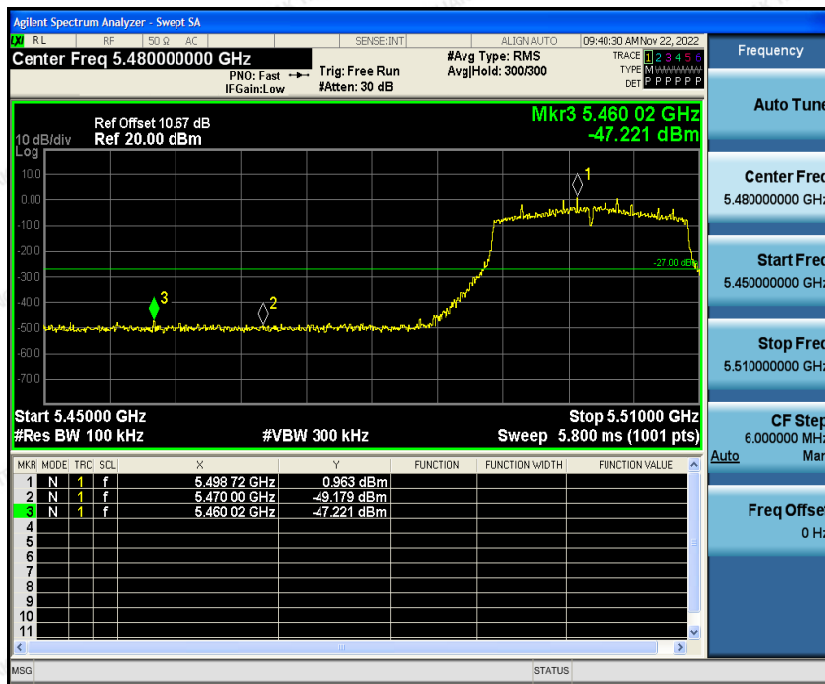


5320MHz

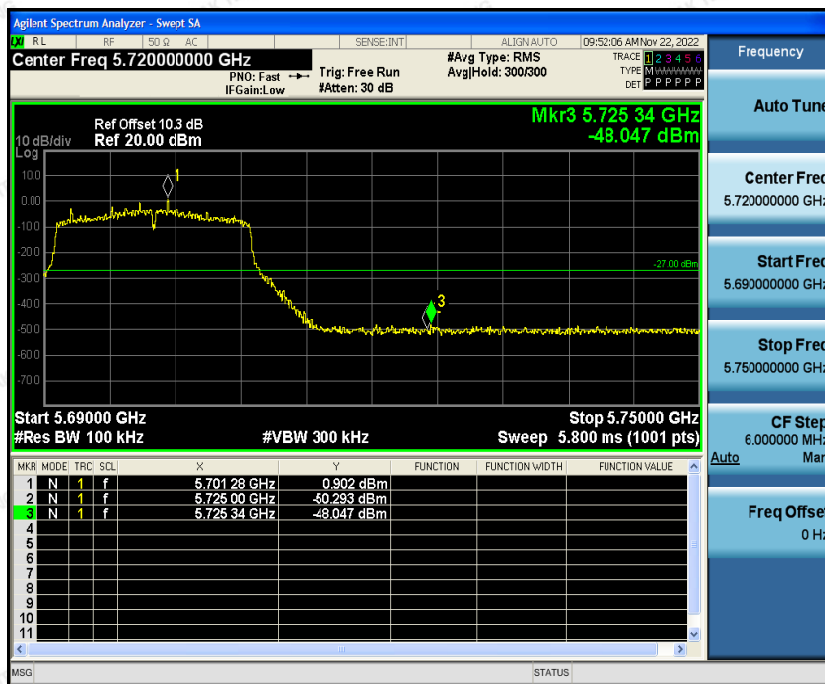




5500MHz



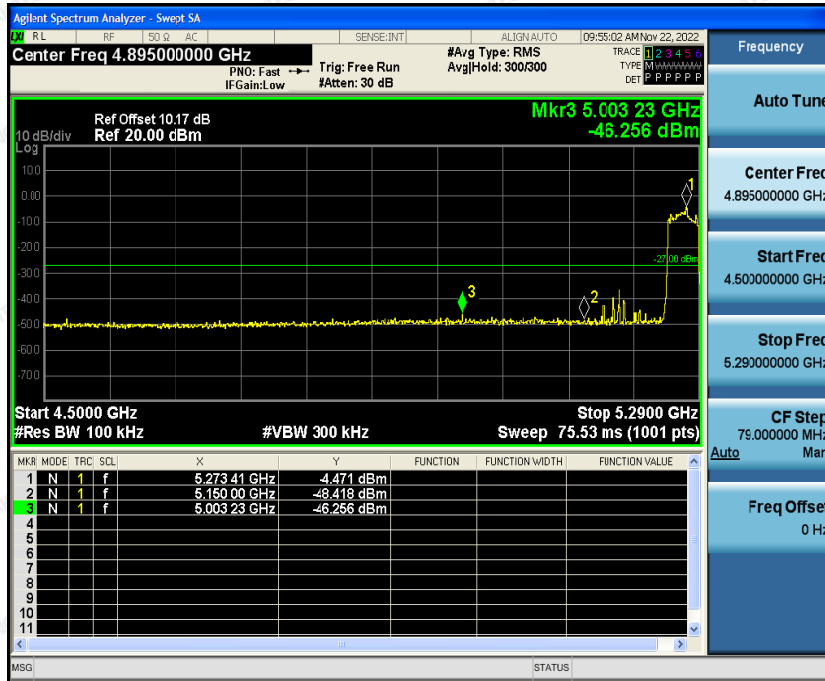
5700MHz



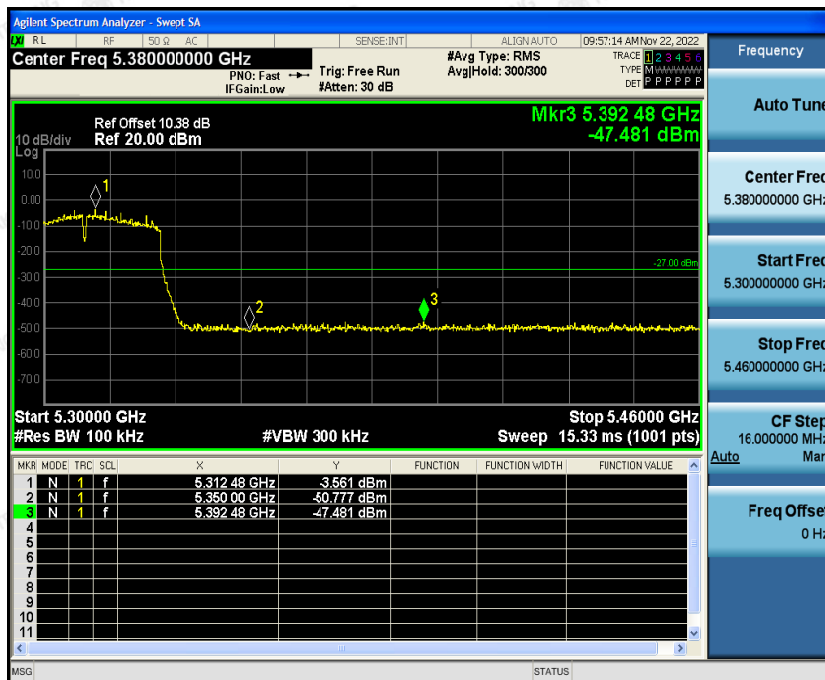


Band Edges(IEEE802.11n HT40 mode)

5270MHz

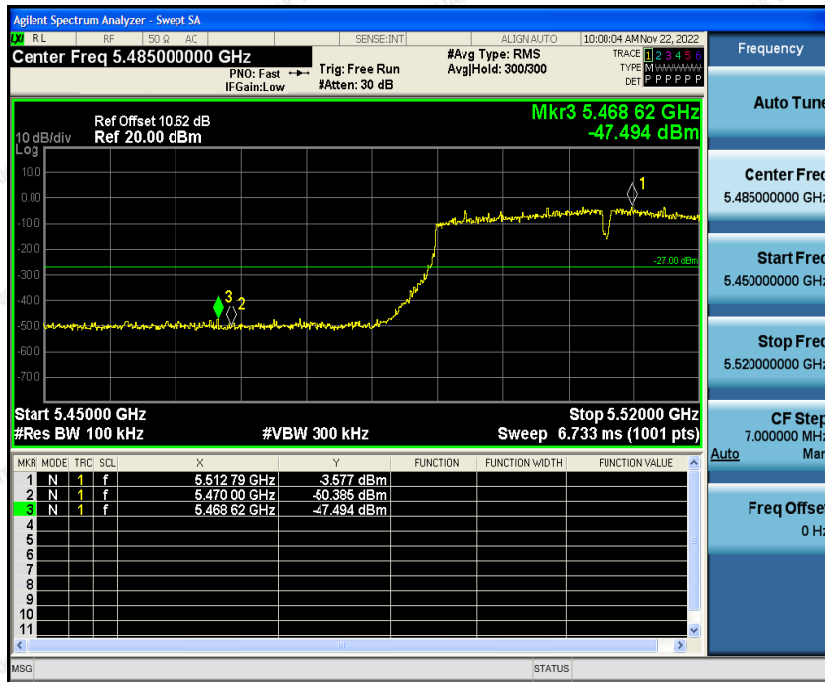


5310MHz

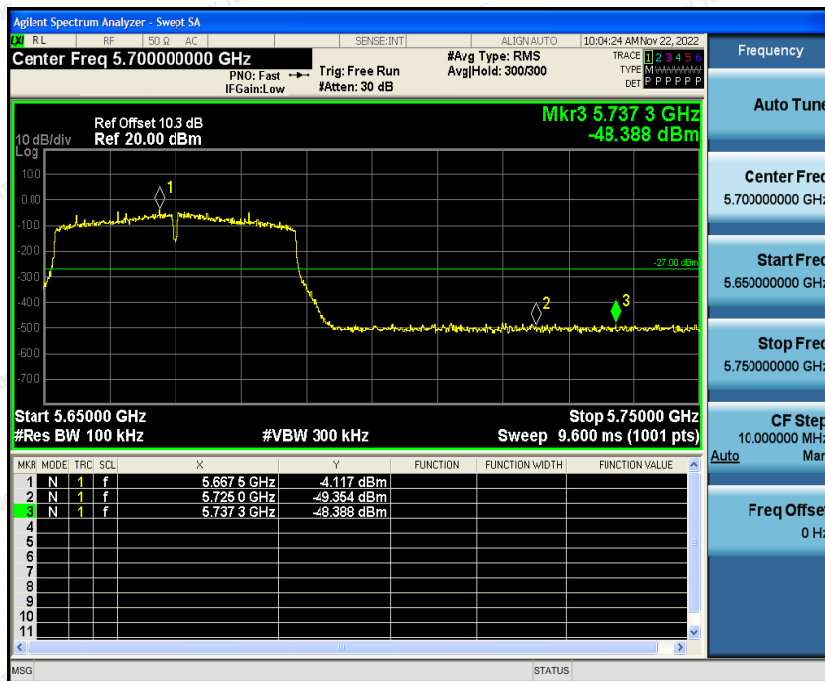




5510MHz



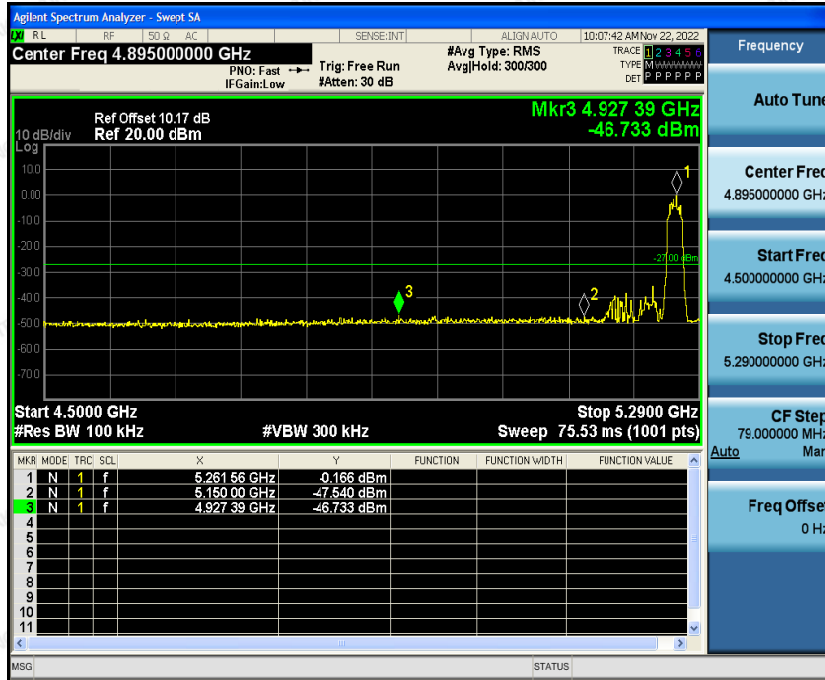
5670MHz



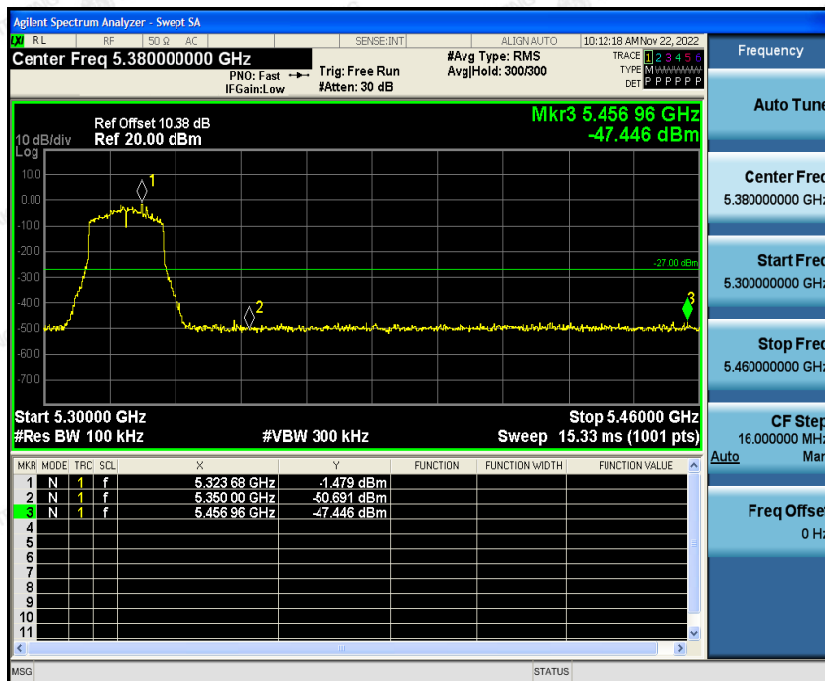


Band Edges(IEEE802.11ac HT20 mode)

5260MHz

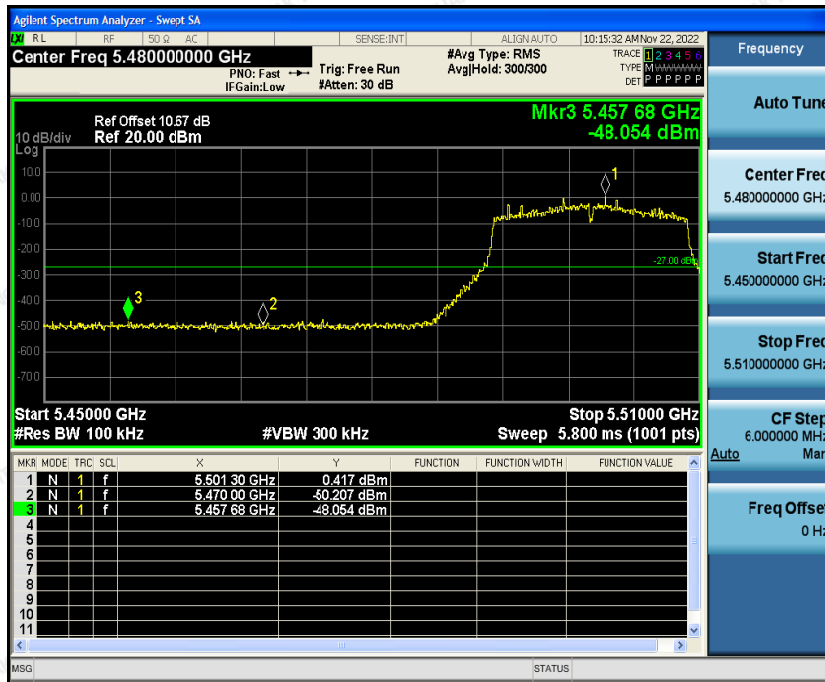


5320MHz

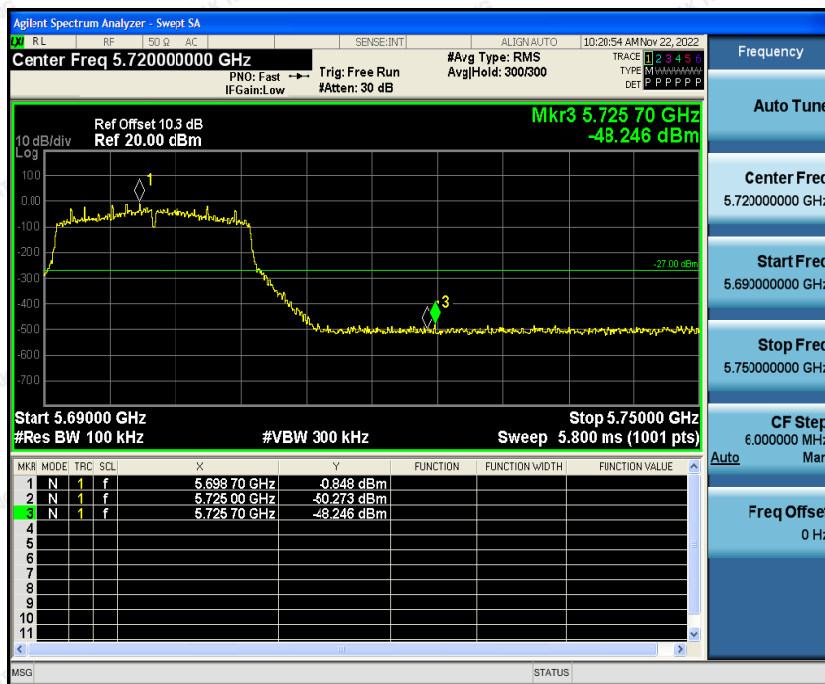




5500MHz



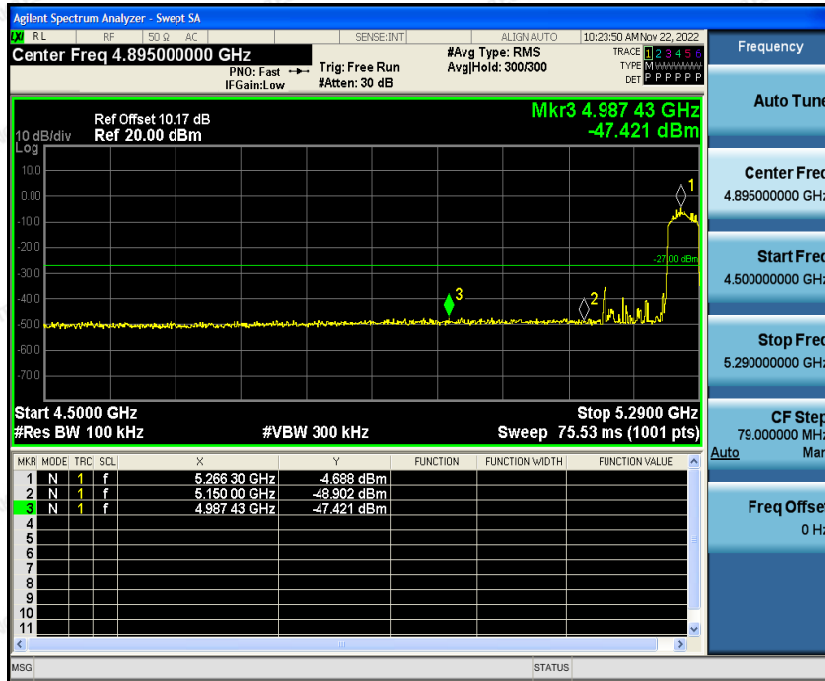
5700MHz



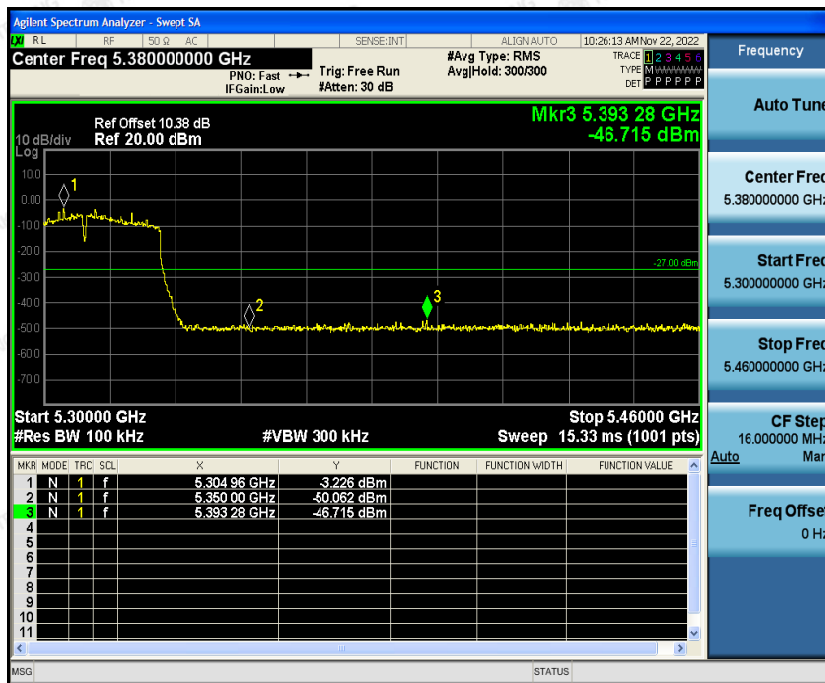


Band Edges(IEEE802.11ac HT40 mode)

5270MHz

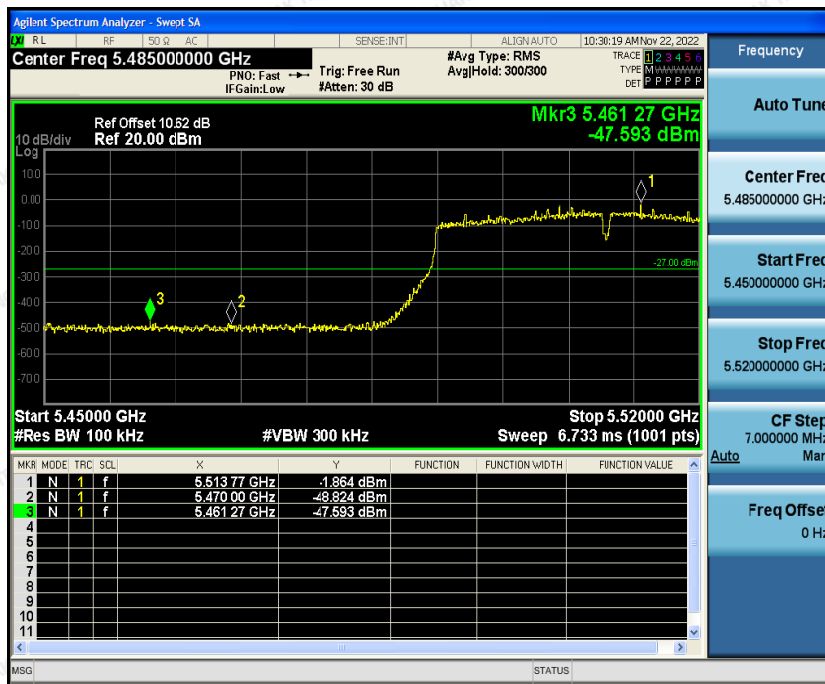


5310MHz

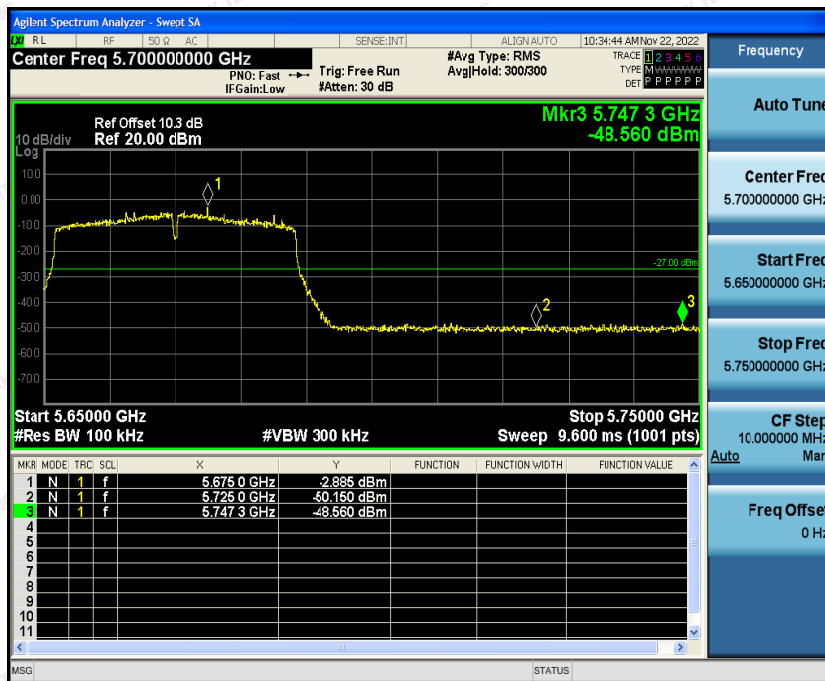




5510MHz



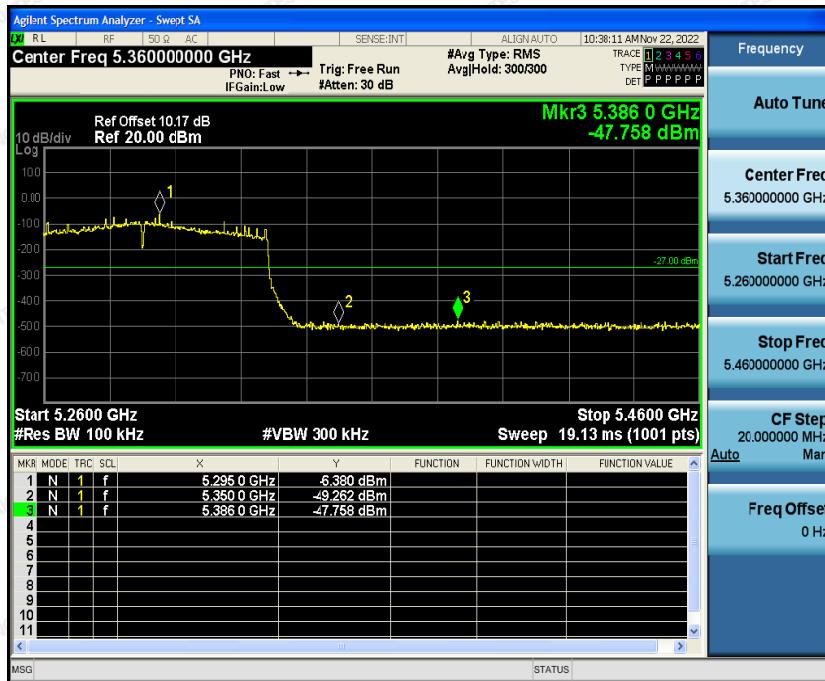
5670MHz



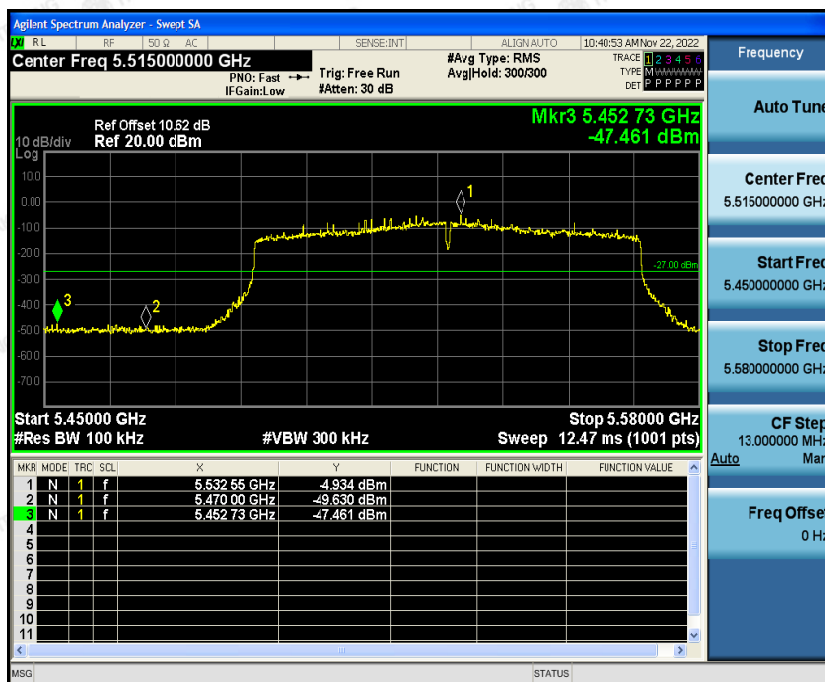


Band Edges(IEEE802.11ac HT80 mode)

5290MHz

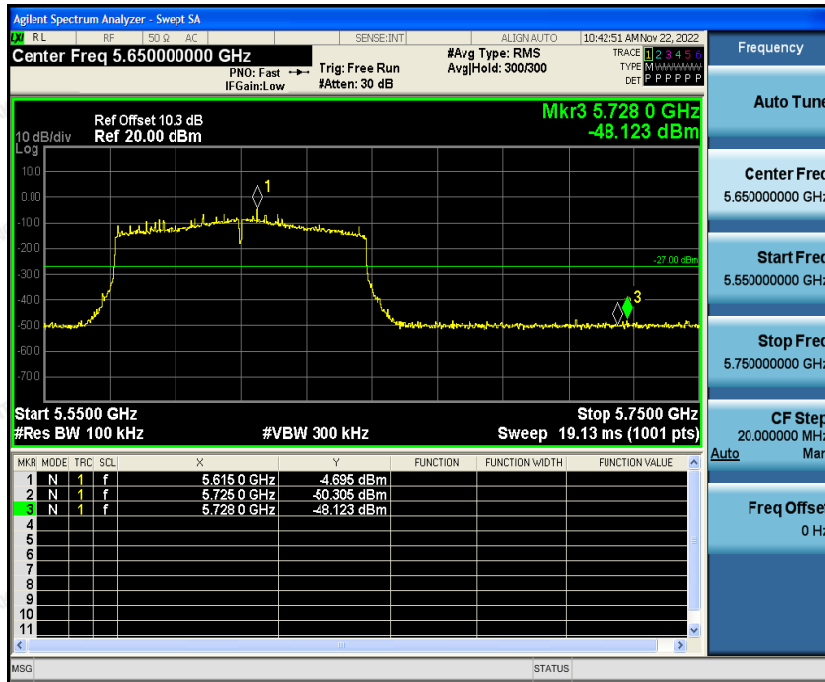


5530MHz





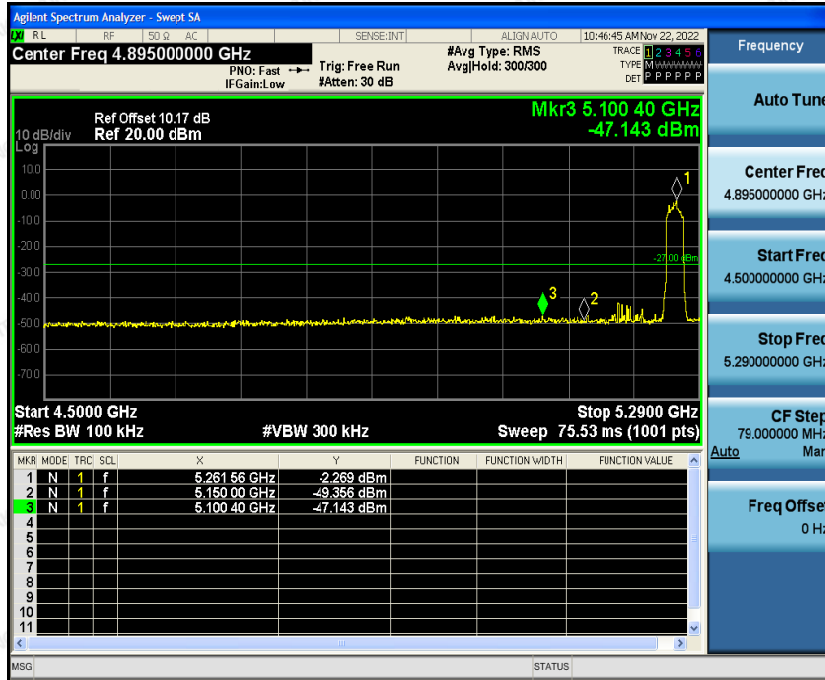
5610MHz



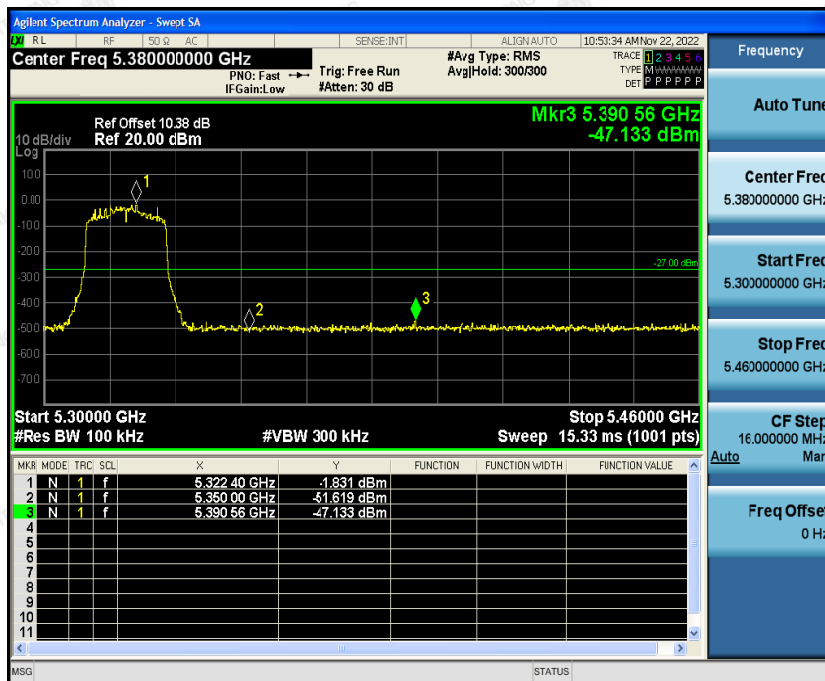


Band Edges(IEEE802.11ax HT20 mode)

5260MHz

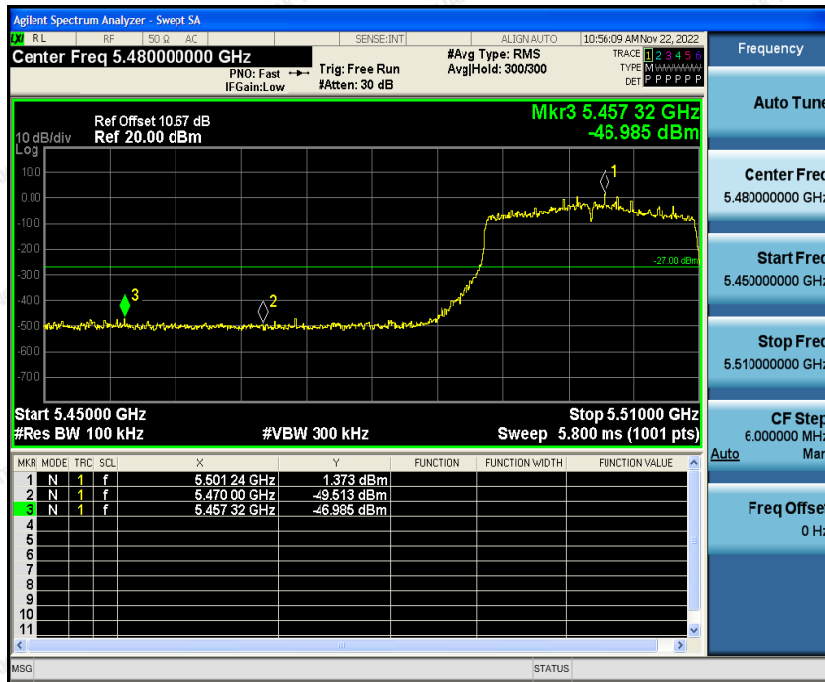


5320MHz

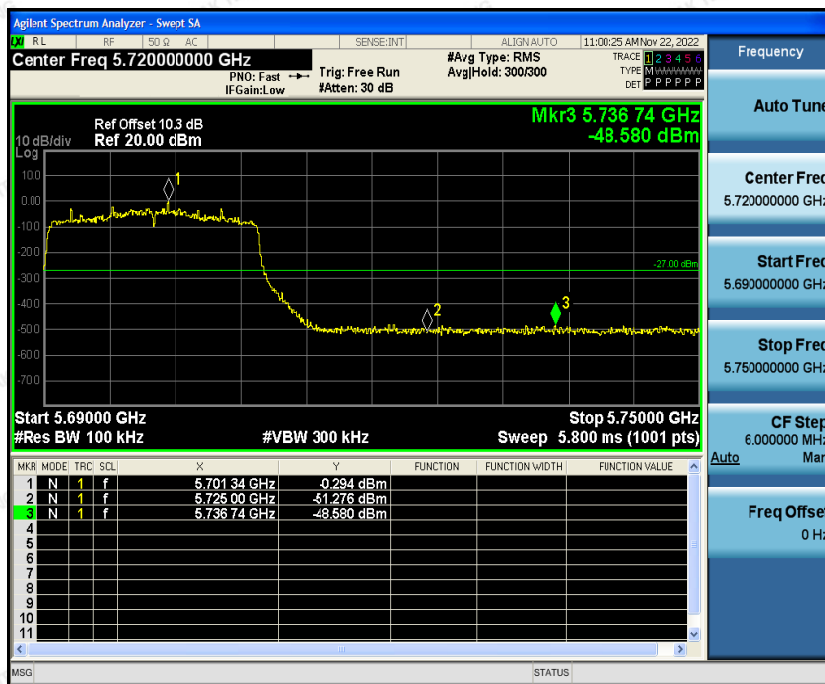




5500MHz



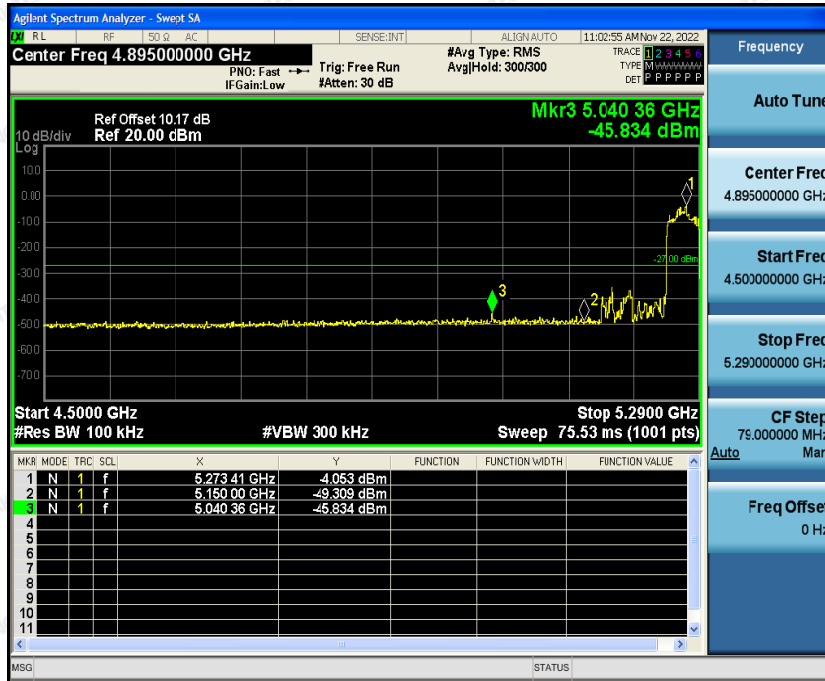
5700MHz



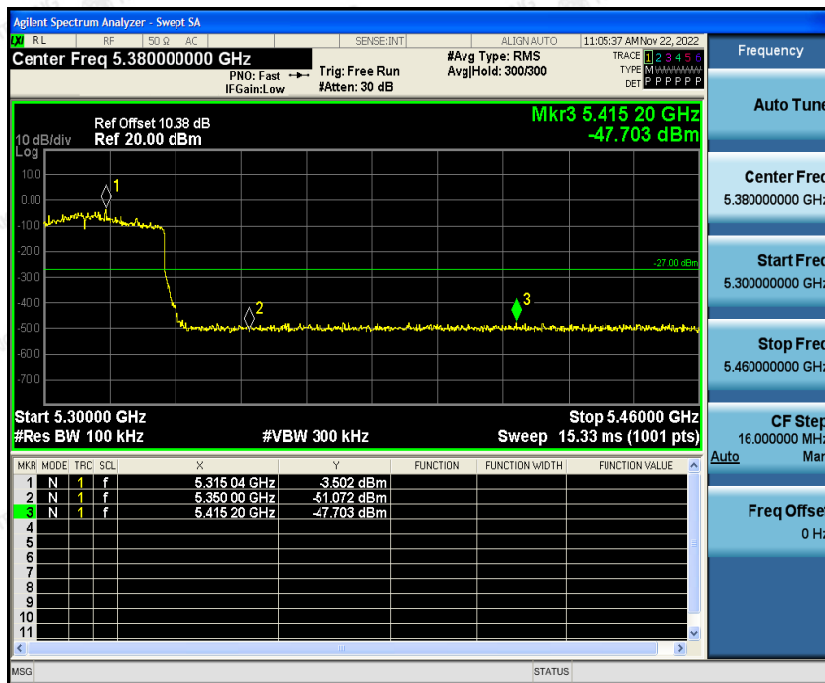


Band Edges(IEEE802.11ax HT40 mode)

5270MHz

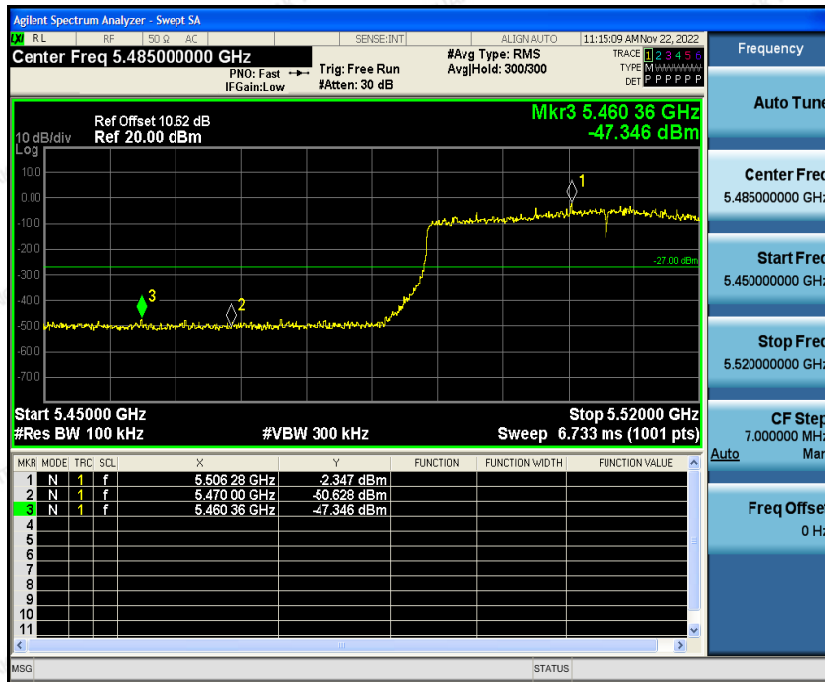


5310MHz

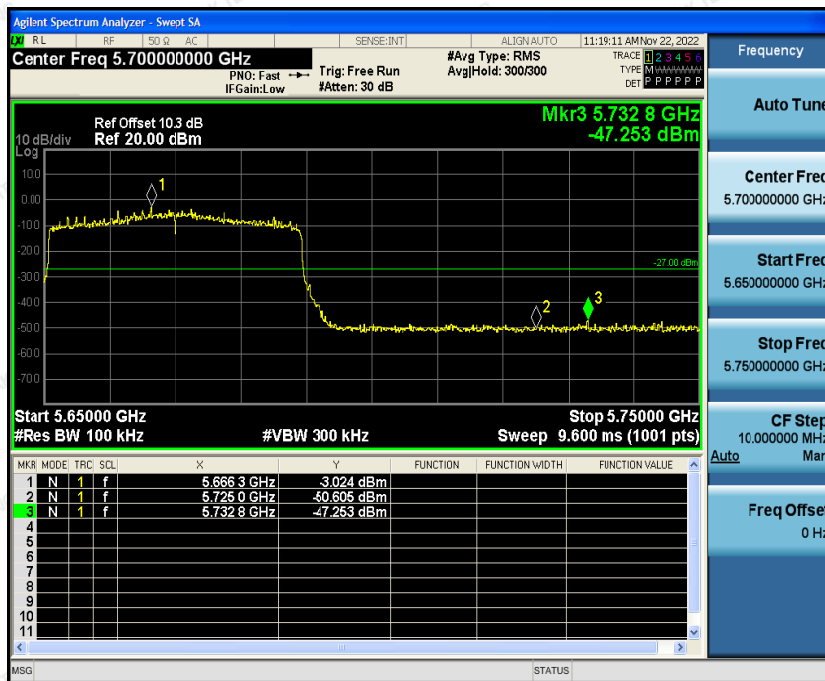




5510MHz

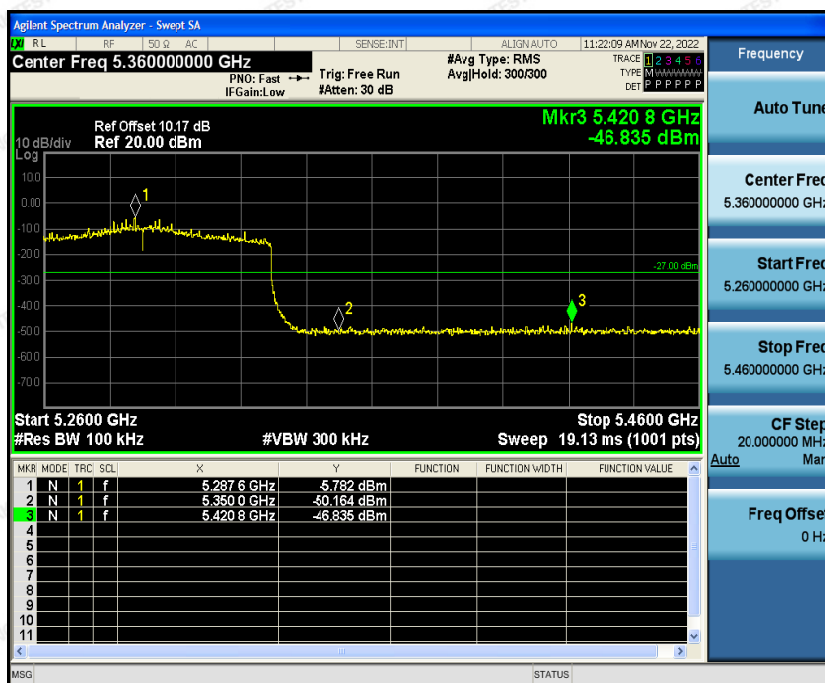


5670MHz

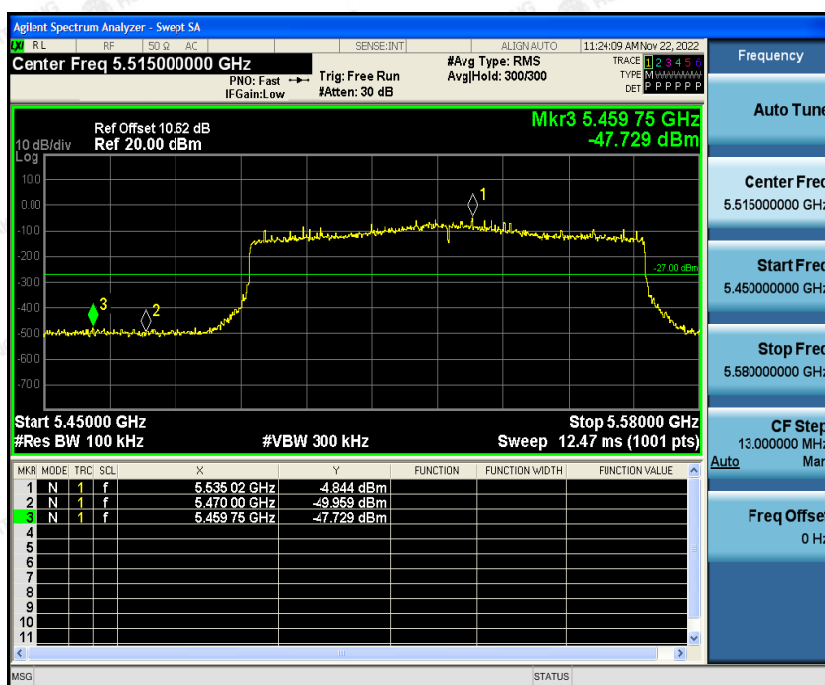


Band Edges(IEEE802.11ax HT80 mode)

5290MHz



5530MHz



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5610MHz

