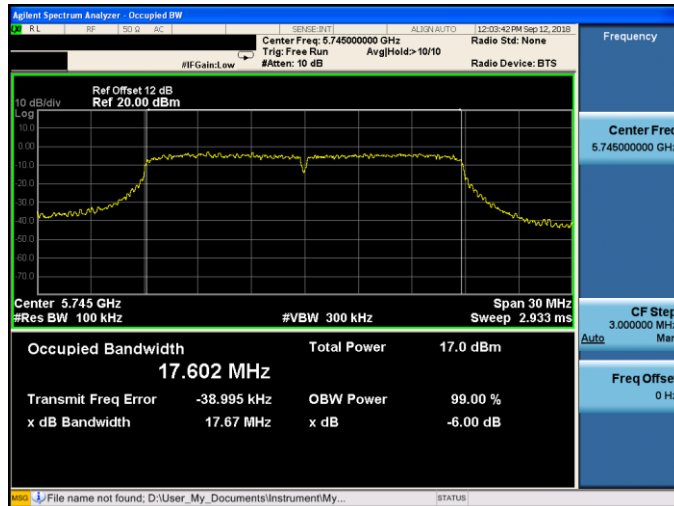




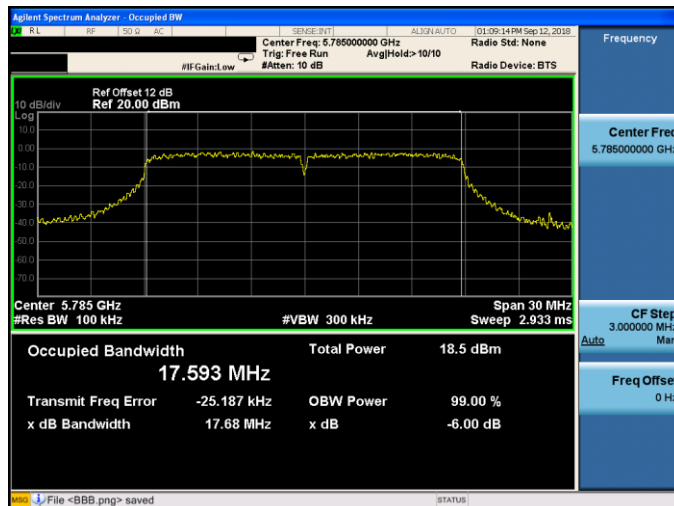
Beamforming on

Mode 3: IEEE 802.11ac 20 MHz Continuous TX mode_ANT-0

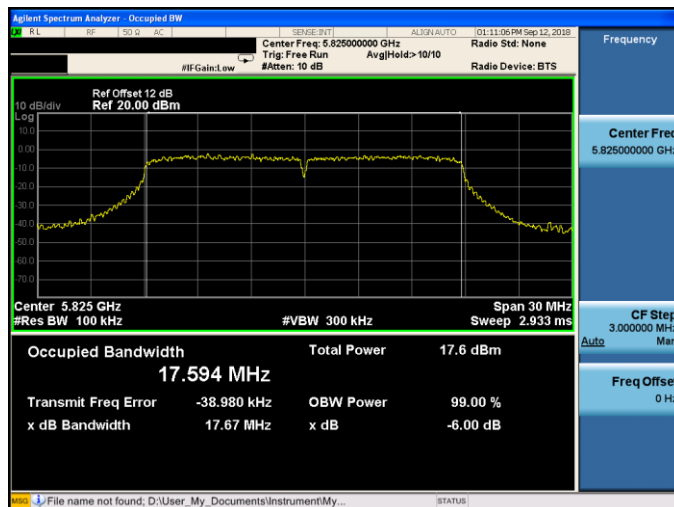
5745 MHz



5785 MHz



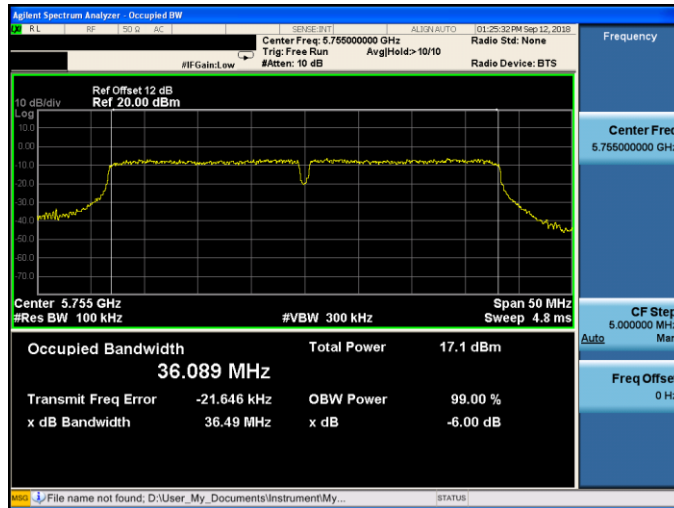
5825 MHz



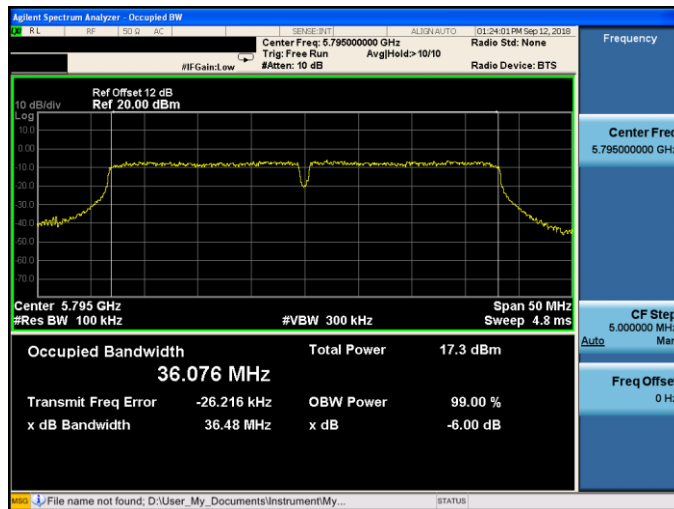


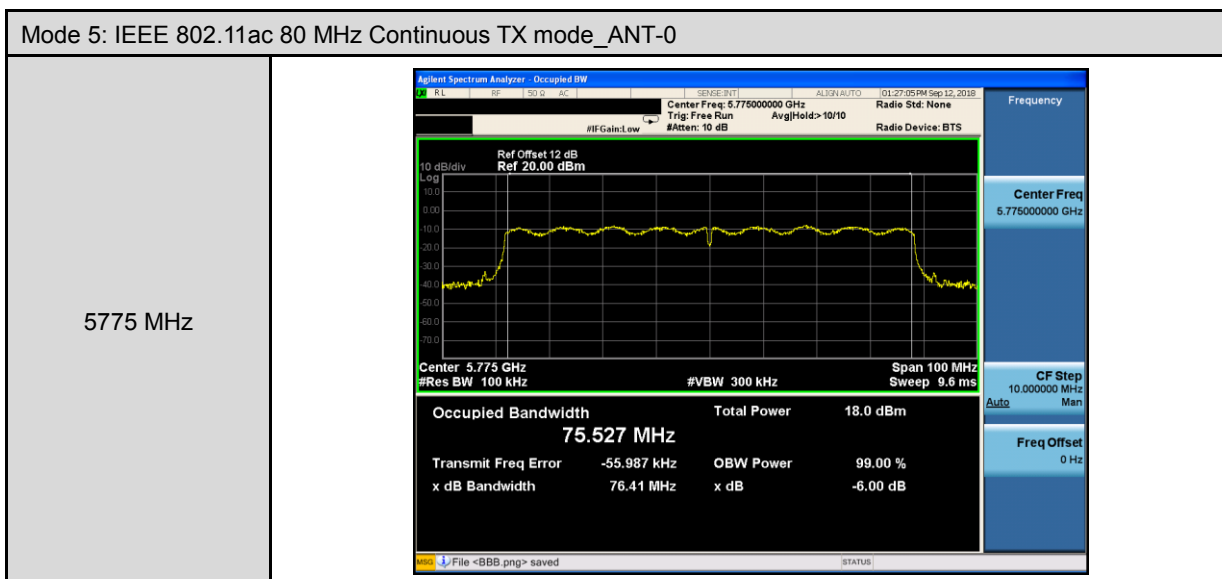
Mode 4: IEEE 802.11ac 40 MHz Continuous TX mode_ANT-0

5755 MHz



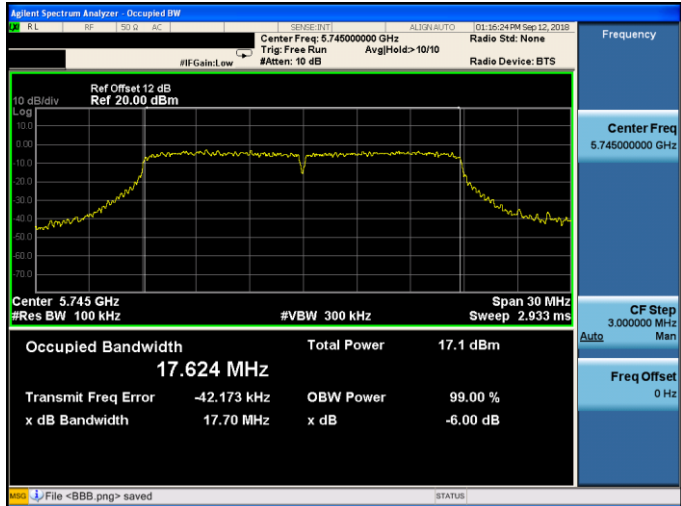
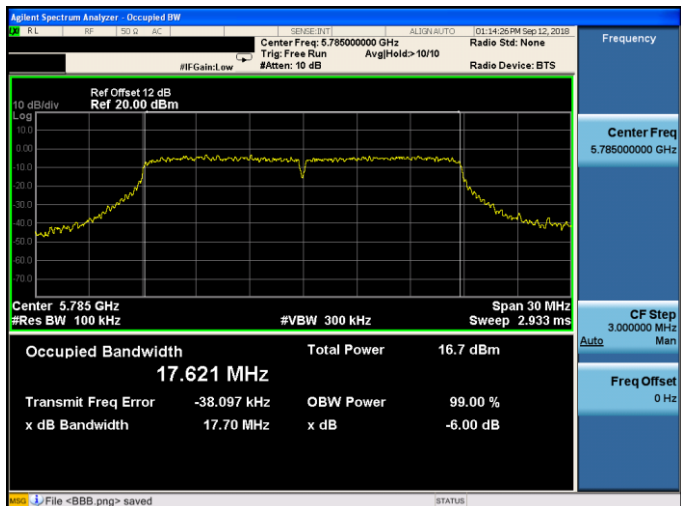
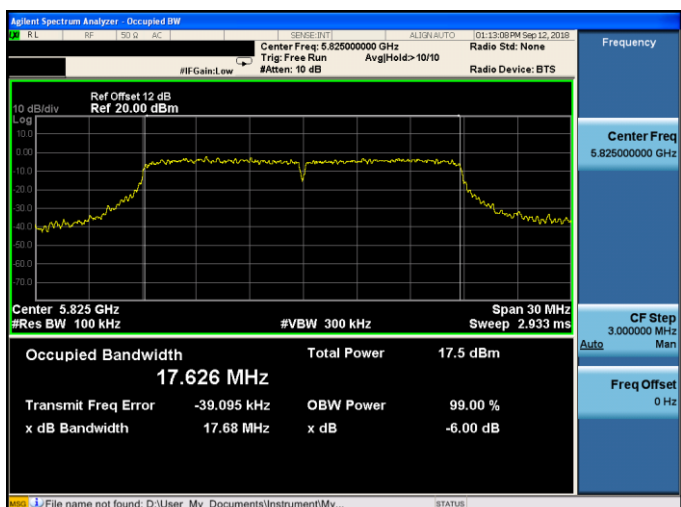
5795 MHz







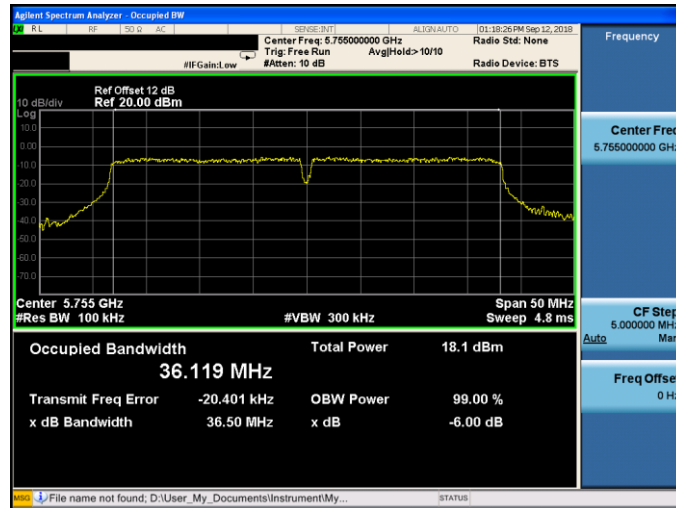
Mode 3: IEEE 802.11ac 20 MHz Continuous TX mode_ANT-1

5745 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.74500000 GHz Trig: Free Run Avg/Hold: 10/10 Radio Std: None Radio Device: BTS Ref Offset 12 dB Ref 20.00 dBm Center 5.745 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.624 MHz Total Power 17.1 dBm Transmit Freq Error -42.173 kHz OBW Power 99.00 % x dB Bandwidth 17.70 MHz x dB -6.00 dB File <BBB.png> saved
5785 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.78500000 GHz Trig: Free Run Avg/Hold: 10/10 Radio Std: None Radio Device: BTS Ref Offset 12 dB Ref 20.00 dBm Center 5.785 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.621 MHz Total Power 16.7 dBm Transmit Freq Error -38.097 kHz OBW Power 99.00 % x dB Bandwidth 17.70 MHz x dB -6.00 dB File <BBB.png> saved
5825 MHz	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 5.82500000 GHz Trig: Free Run Avg/Hold: 10/10 Radio Std: None Radio Device: BTS Ref Offset 12 dB Ref 20.00 dBm Center 5.825 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.626 MHz Total Power 17.5 dBm Transmit Freq Error -39.095 kHz OBW Power 99.00 % x dB Bandwidth 17.68 MHz x dB -6.00 dB File name not found; D:\User_My_Documents\Instrument\My...

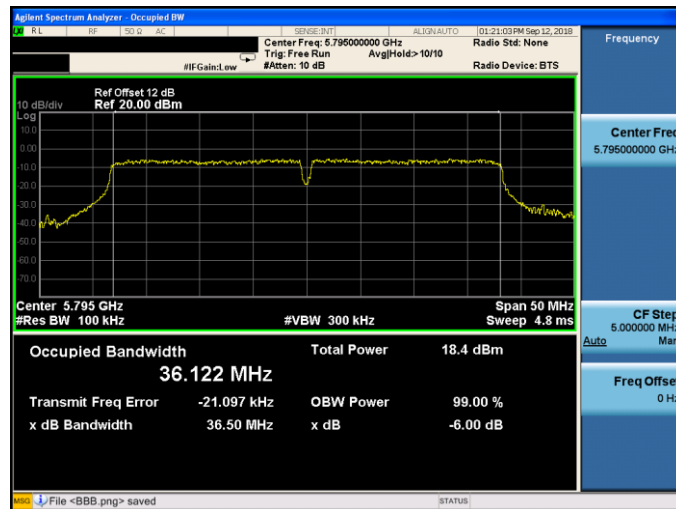


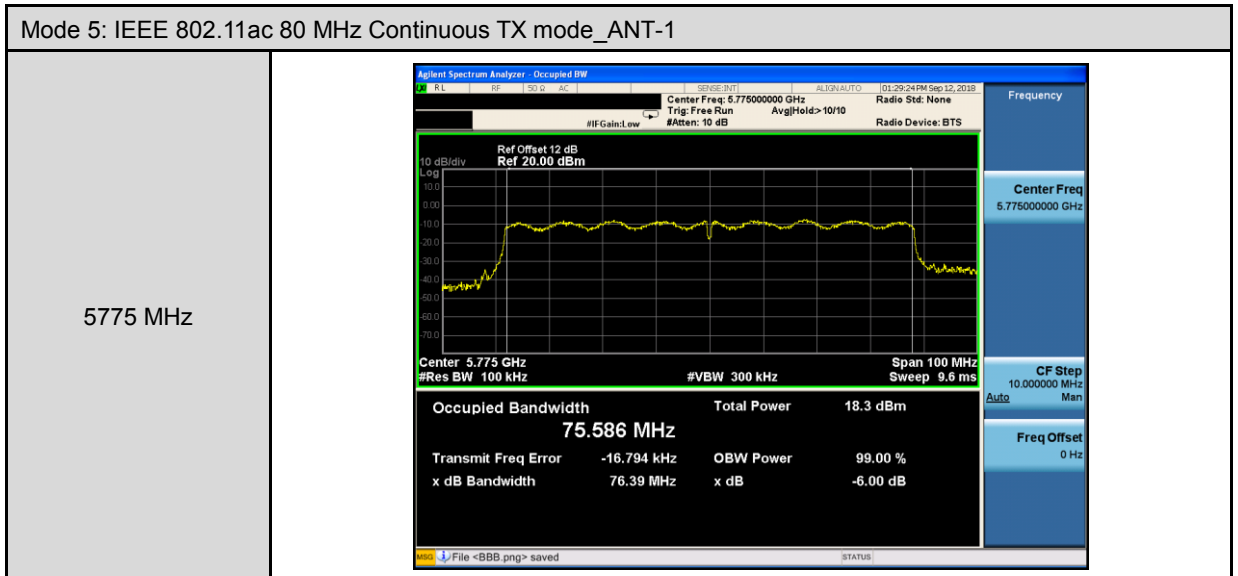
Mode 4: IEEE 802.11ac 40 MHz Continuous TX mode_ANT-1

5755 MHz



5795 MHz





5.6. Maximum Power Spectral Density Measurement

Test Mode	Mode 2: IEEE 802.11a Continuous TX mode				
Frequency (MHz)	ANT-0				
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)	
				Client	Master
5180	4.466	0.000	4.466	≤ 8.10	≤ 14.10
5200	4.185	0.000	4.185		
5240	4.917	0.000	4.917		
Frequency (MHz)	ANT-1				
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)	
				Client	Master
5180	4.512	0.000	4.512	≤ 8.10	≤ 14.10
5200	4.152	0.000	4.152		
5240	4.491	0.000	4.491		
Frequency (MHz)	ANT-0+1				
	Calculated (dBm/MHz)			Limit (dBm/MHz)	
				Client	Master
5180	7.499			≤ 8.10	≤ 14.10
5200	7.179				
5240	7.720				

Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Mode	Mode 2: IEEE 802.11a Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100 kHz)	Duty Factor (dB)	Calculated (dBm/500 kHz)	Limit (dBm/500 kHz)
5745	-5.70	0.000	1.29	≤ 28.81
5785	-5.73	0.000	1.26	
5825	-5.92	0.000	1.07	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100 kHz)	Duty Factor (dB)	Calculated (dBm/500 kHz)	Limit (dBm/500 kHz)
5745	-5.04	0.000	1.95	≤ 28.81
5785	-5.22	0.000	1.77	
5825	-5.43	0.000	1.56	
Frequency (MHz)	ANT-0+1			Limit (dBm/500 kHz)
	Calculated (dBm/500 kHz)			
5745	4.64			≤ 28.81
5785	4.53			
5825	4.33			

Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500 k/100 k)

Test Mode	Mode 3: IEEE 802.11ac 20 MHz Continuous TX mode				
Frequency (MHz)	ANT-0				
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)	
				Client	Master
5180	3.352	0.000	3.352	≤ 8.10	≤ 14.10
5200	3.990	0.000	3.990		
5240	4.766	0.000	4.766		
Frequency (MHz)	ANT-1				
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)	
				Client	Master
5180	3.625	0.000	3.625	≤ 8.10	≤ 14.10
5200	3.704	0.000	3.704		
5240	5.323	0.000	5.323		
Frequency (MHz)	ANT-0+1				
	Calculated (dBm/MHz)			Limit (dBm/MHz)	
				Client	Master
5180	6.501			≤ 8.10	≤ 14.10
5200	6.860				
5240	8.064				

Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Mode	Mode 3: IEEE 802.11ac 20 MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100 kHz)	Duty Factor (dB)	Calculated (dBm/500 kHz)	Limit (dBm/500 kHz)
5745	-6.11	0.000	0.88	≤ 28.81
5785	-6.09	0.000	0.90	
5825	-5.86	0.000	1.13	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100 kHz)	Duty Factor (dB)	Calculated (dBm/500 kHz)	Limit (dBm/500 kHz)
5745	-6.47	0.000	0.52	≤ 28.81
5785	-6.66	0.000	0.33	
5825	-6.27	0.000	0.72	
Frequency (MHz)	ANT-0+1			Limit (dBm/500 kHz)
	Calculated (dBm/500 kHz)			
5745	3.72			≤ 28.81
5785	3.63			
5825	3.94			

Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500 k/100 k)

Test Mode	Mode 4: IEEE 802.11ac 40 MHz Continuous TX mode				
Frequency (MHz)	ANT-0				
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)	
				Client	Master
5190	1.123	0.000	1.123	≤ 8.10	≤ 14.10
5230	1.394	0.000	1.394		
Frequency (MHz)	ANT-1				
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)	
				Client	Master
5190	1.058	0.000	1.058	≤ 8.10	≤ 14.10
5230	0.652	0.000	0.652		
Frequency (MHz)	ANT-0+1				
	Calculated (dBm/MHz)			Limit (dBm/MHz)	
				Client	Master
5190	4.101			≤ 8.10	≤ 14.10
5230	4.049				

Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Mode	Mode 4: IEEE 802.11ac 40 MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100 kHz)	Duty Factor (dB)	Calculated (dBm/500 kHz)	Limit (dBm/500 kHz)
5755	-9.66	0.000	-2.67	≤ 28.81
5795	-9.03	0.000	-2.04	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100 kHz)	Duty Factor (dB)	Calculated (dBm/500 kHz)	Limit (dBm/500 kHz)
5755	-8.03	0.000	-1.04	≤ 28.81
5795	-8.60	0.000	-1.61	
Frequency (MHz)	ANT-0+1			Limit (dBm/500 kHz)
	Calculated (dBm/500 kHz)			
5755	1.23			≤ 28.81
5795	1.19			

Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500 k/100 k)

Test Mode	Mode 5: IEEE 802.11ac 80 MHz Continuous TX mode				
Frequency (MHz)	ANT-0				
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)	
				Client	Master
5210	-1.278	0.000	-1.278	≤ 8.10	≤ 14.10
Frequency (MHz)	ANT-1				
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)	
				Client	Master
5210	-1.476	0.000	-1.476	≤ 8.10	≤ 14.10
Frequency (MHz)	ANT-0+1				
	Calculated (dBm/MHz)			Limit (dBm/MHz)	
				Client	Master
5210	1.634			≤ 8.10	≤ 14.10

Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.



Test Mode	Mode 5: IEEE 802.11ac 80 MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100 kHz)	Duty Factor (dB)	Calculated (dBm/500 kHz)	Limit (dBm/500 kHz)
5775	-11.59	0.000	-4.60	≤ 28.81
Frequency (MHz)	ANT-1			
	Measurement (dBm/100 kHz)	Duty Factor (dB)	Calculated (dBm/500 kHz)	Limit (dBm/500 kHz)
5775	-10.06	0.000	-3.07	≤ 28.81
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/500 kHz)			Limit (dBm/500 kHz)
5775	-0.76			≤ 28.81

Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500 k/100 k)

Beamforming on

Test Mode	Mode 3: IEEE 802.11ac 20 MHz Continuous TX mode				
Frequency (MHz)	ANT-0				
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)	
				Client	Master
5180	0.279	0.000	0.279	≤ 8.10	≤ 14.10
5200	0.349	0.000	0.349		
5240	0.404	0.000	0.404		
Frequency (MHz)	ANT-1				
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)	
				Client	Master
5180	-0.348	0.000	-0.348	≤ 8.10	≤ 14.10
5200	-0.017	0.000	-0.017		
5240	1.041	0.000	1.041		
Frequency (MHz)	ANT-0+1				
	Calculated (dBm/MHz)			Limit (dBm/MHz)	
				Client	Master
5180	2.987			≤ 8.10	≤ 14.10
5200	3.180				
5240	3.744				

Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Mode	Mode 3: IEEE 802.11ac 20 MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100 kHz)	Duty Factor (dB)	Calculated (dBm/500 kHz)	Limit (dBm/500 kHz)
5745	-9.23	0.000	-2.24	≤ 28.81
5785	-8.92	0.000	-1.93	
5825	-9.58	0.000	-2.59	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100 kHz)	Duty Factor (dB)	Calculated (dBm/500 kHz)	Limit (dBm/500 kHz)
5745	-8.75	0.000	-1.76	≤ 28.81
5785	-9.48	0.000	-2.49	
5825	-9.28	0.000	-2.29	
Frequency (MHz)	ANT-0+1			Limit (dBm/500 kHz)
	Calculated (dBm/500 kHz)			
5745	1.02			≤ 28.81
5785	0.81			
5825	0.57			

Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500 k/100 k)

Test Mode	Mode 4: IEEE 802.11ac 40 MHz Continuous TX mode				
Frequency (MHz)	ANT-0				
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)	
				Client	Master
5190	-2.927	0.000	-2.927	≤ 8.10	≤ 14.10
5230	-2.999	0.000	-2.999		
Frequency (MHz)	ANT-1				
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)	
				Client	Master
5190	-3.572	0.000	-3.572	≤ 8.10	≤ 14.10
5230	-2.992	0.000	-2.992		
Frequency (MHz)	ANT-0+1				
	Calculated (dBm/MHz)			Limit (dBm/MHz)	
				Client	Master
5190	-0.227			≤ 8.10	≤ 14.10
5230	0.015				

Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Mode	Mode 4: IEEE 802.11ac 40 MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100 kHz)	Duty Factor (dB)	Calculated (dBm/500 kHz)	Limit (dBm/500 kHz)
5755	-12.31	0.000	-5.32	≤ 28.81
5795	-13.15	0.000	-6.16	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100 kHz)	Duty Factor (dB)	Calculated (dBm/500 kHz)	Limit (dBm/500 kHz)
5755	-11.02	0.000	-4.03	≤ 28.81
5795	-11.98	0.000	-4.99	
Frequency (MHz)	ANT-0+1			Limit (dBm/500 kHz)
	Calculated (dBm/500 kHz)			
5755	-1.61			≤ 28.81
5795	-2.53			

Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500 k/100 k)

Test Mode	Mode 5: IEEE 802.11ac 80 MHz Continuous TX mode				
Frequency (MHz)	ANT-0				
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)	
				Client	Master
5210	-4.209	0.000	-4.209	≤ 8.10	≤ 14.10
Frequency (MHz)	ANT-1				
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)	
				Client	Master
5210	-4.212	0.000	-4.212	≤ 8.10	≤ 14.10
Frequency (MHz)	ANT-0+1				
	Calculated (dBm/MHz)			Limit (dBm/MHz)	
				Client	Master
5210	-1.200			≤ 8.10	≤ 14.10

Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.



Test Mode	Mode 5: IEEE 802.11ac 80 MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100 kHz)	Duty Factor (dB)	Calculated (dBm/500 kHz)	Limit (dBm/500 kHz)
5775	-15.04	0.000	-8.05	≤ 28.81
Frequency (MHz)	ANT-1			
	Measurement (dBm/100 kHz)	Duty Factor (dB)	Calculated (dBm/500 kHz)	Limit (dBm/500 kHz)
5775	-13.86	0.000	-6.87	≤ 28.81
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/500 kHz)			Limit (dBm/500 kHz)
5775	-4.41			≤ 28.81

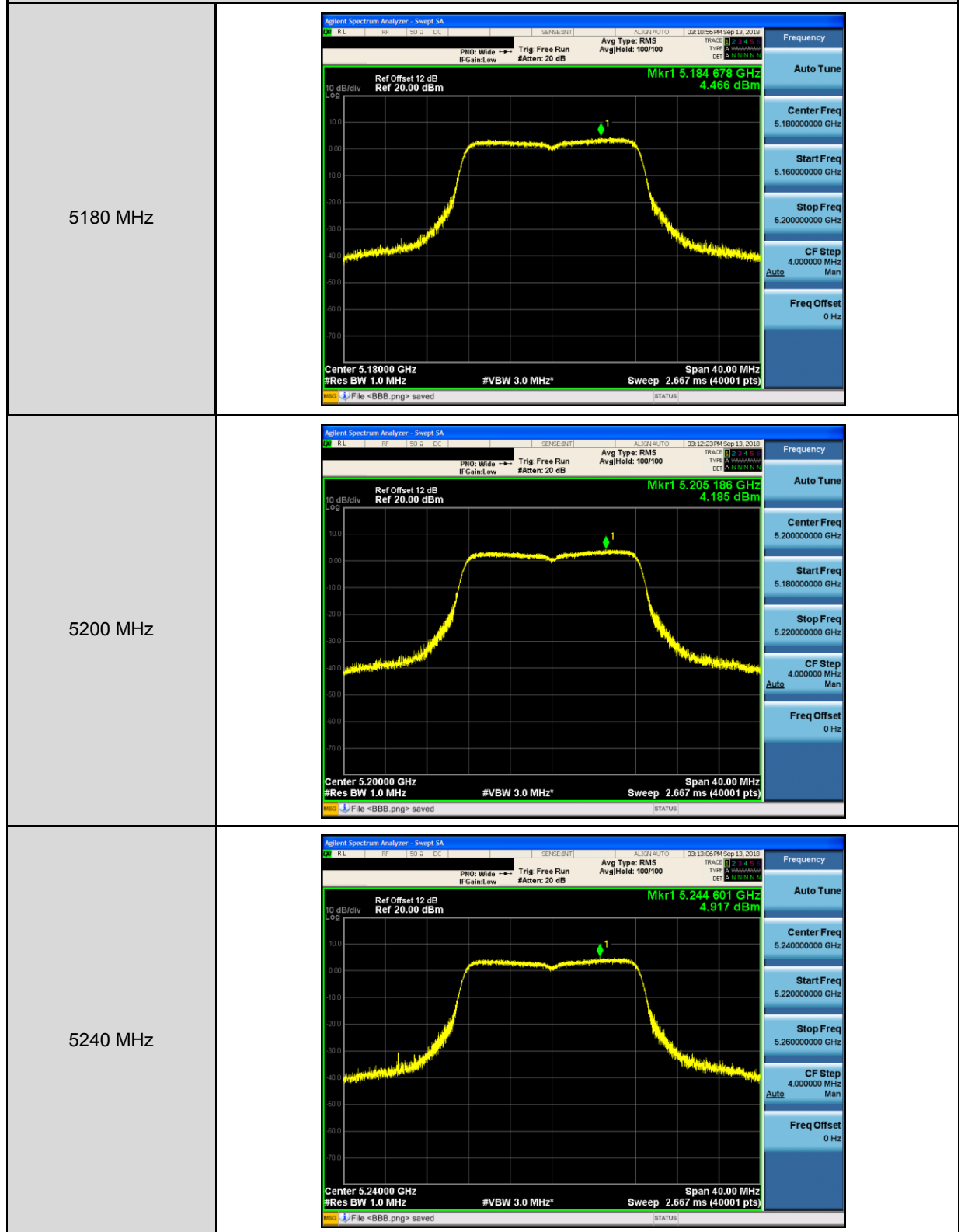
Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500 k/100 k)



■ Test Graphs

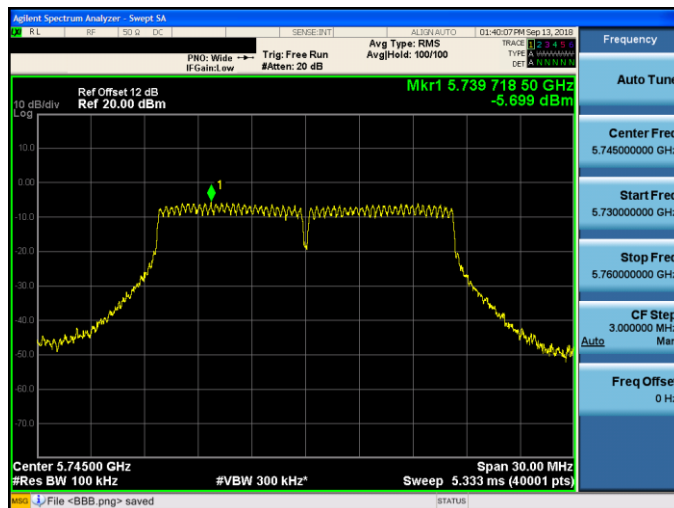
Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0



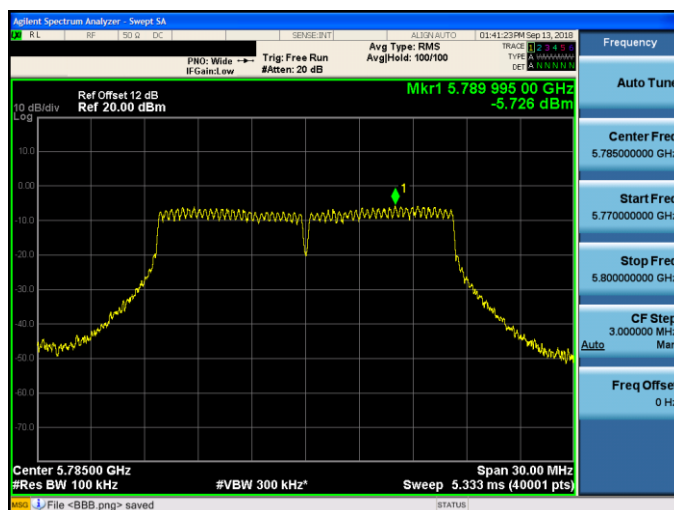


Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0

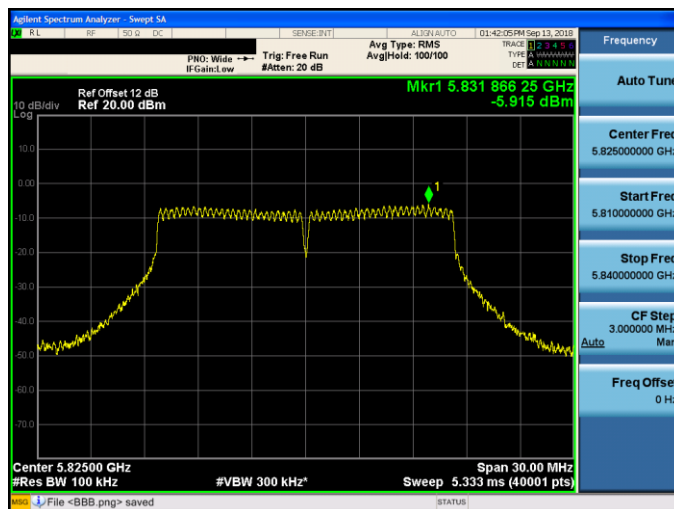
5745 MHz



5785 MHz

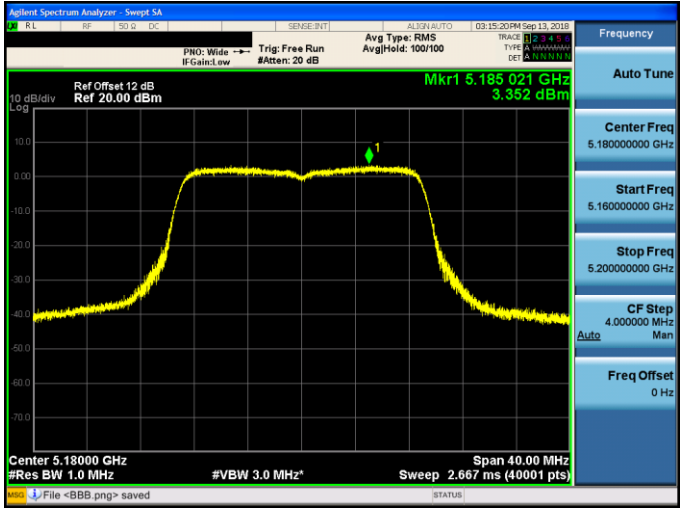
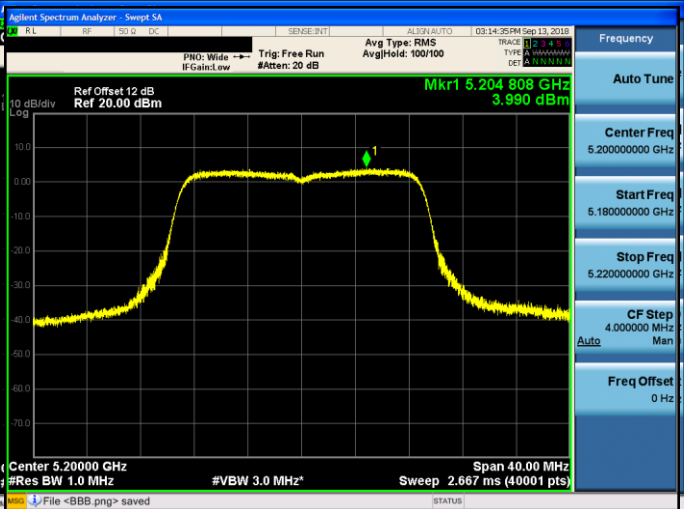
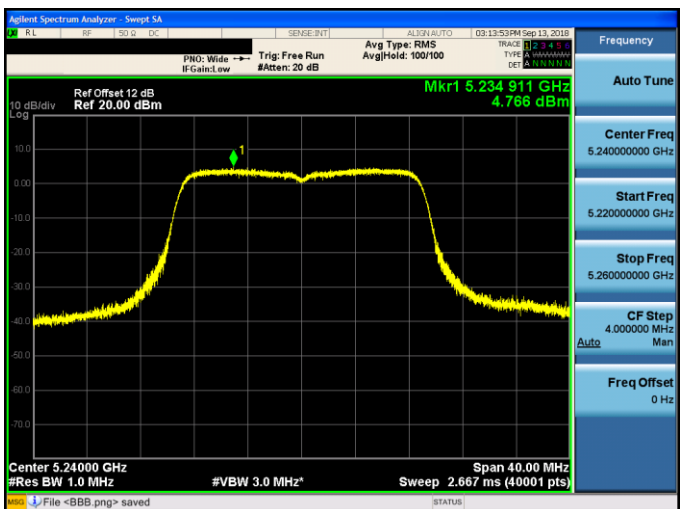


5825 MHz



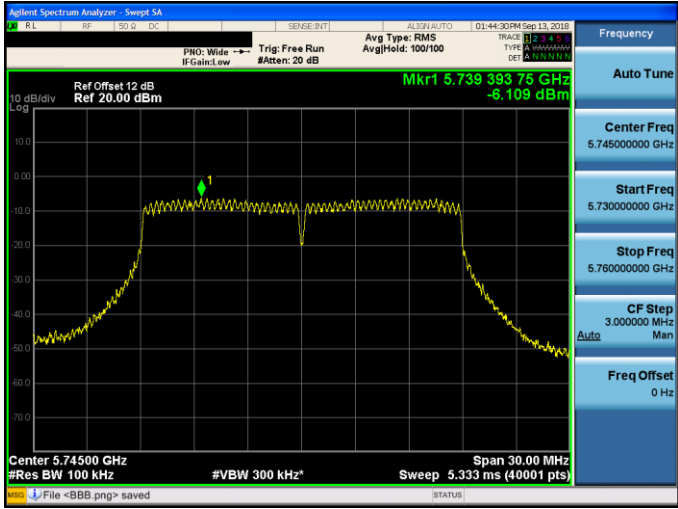
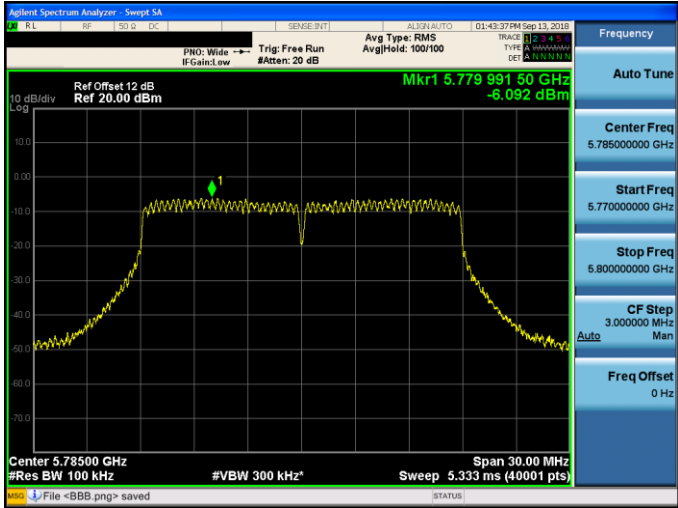
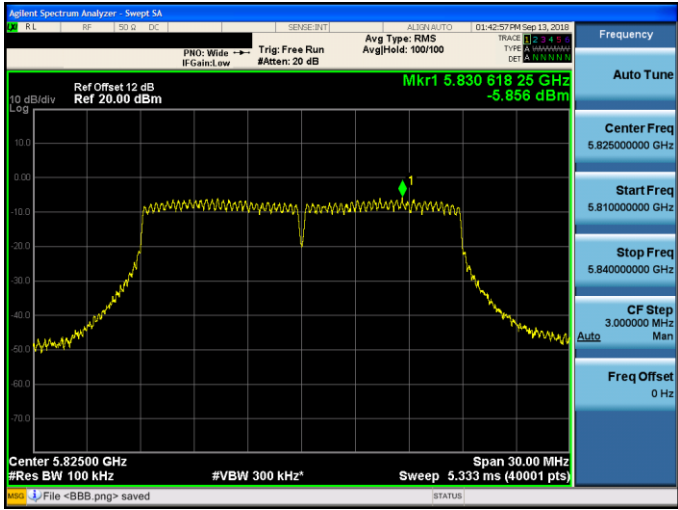


Mode 3: IEEE 802.11ac 20 MHz Continuous TX mode _ ANT-0

5180 MHz	
5200 MHz	
5240 MHz	



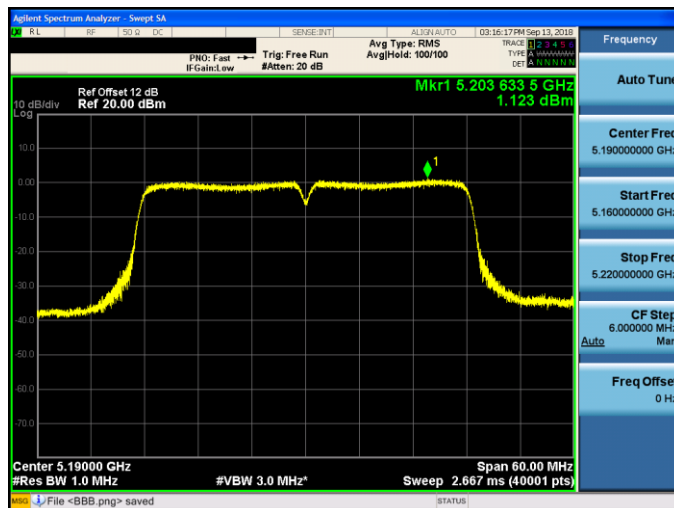
Mode 3: IEEE 802.11ac 20 MHz Continuous TX mode _ ANT-0

5745 MHz	 Agilent Spectrum Analyzer - Sweep SA Ref Offset 12 dB Ref 20.00 dBm Mkr1 5.739 393 75 GHz -6.109 dBm Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 5.333 ms (40001 pts) Span 30.00 MHz File <BBB.png> saved Frequency Auto Tune Center Freq 5.745000000 GHz Start Freq 5.730000000 GHz Stop Freq 5.760000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz
5785 MHz	 Agilent Spectrum Analyzer - Sweep SA Ref Offset 12 dB Ref 20.00 dBm Mkr1 5.779 991 50 GHz -6.092 dBm Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 5.333 ms (40001 pts) Span 30.00 MHz File <BBB.png> saved Frequency Auto Tune Center Freq 5.785000000 GHz Start Freq 5.770000000 GHz Stop Freq 5.800000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz
5825 MHz	 Agilent Spectrum Analyzer - Sweep SA Ref Offset 12 dB Ref 20.00 dBm Mkr1 5.830 618 25 GHz -6.856 dBm Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 5.333 ms (40001 pts) Span 30.00 MHz File <BBB.png> saved Frequency Auto Tune Center Freq 5.825000000 GHz Start Freq 5.810000000 GHz Stop Freq 5.840000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz



Mode 4: IEEE 802.11ac 40 MHz Continuous TX mode_ ANT-0

5190 MHz



5230 MHz

