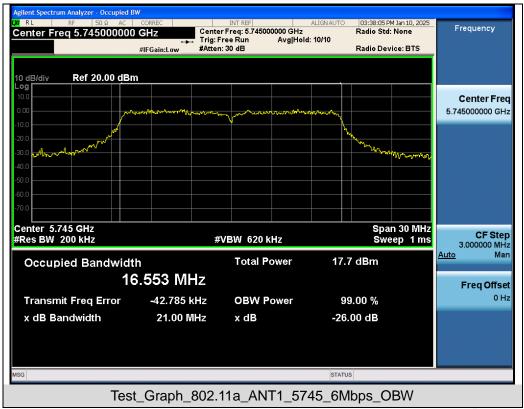
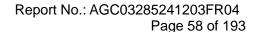


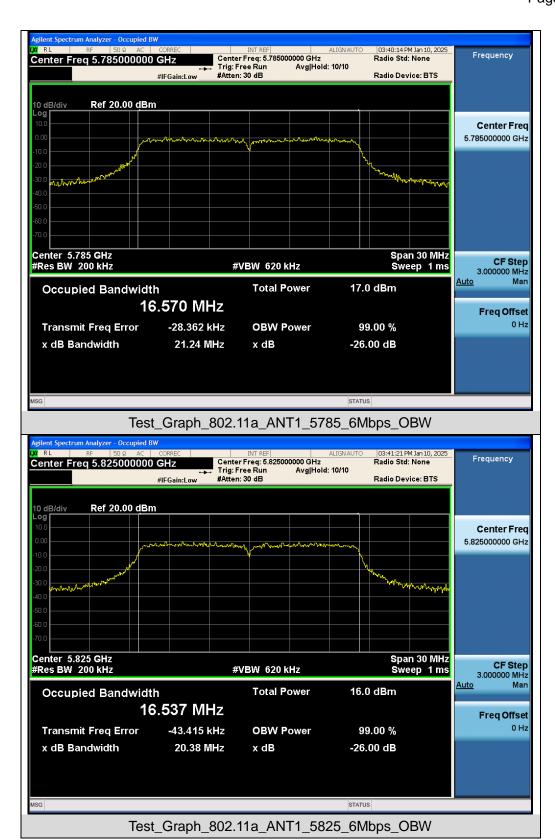
## Test Graphs of Occupied Bandwidth and -26dB Bandwidth for band 5.745-5.825 GHz

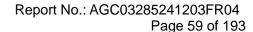


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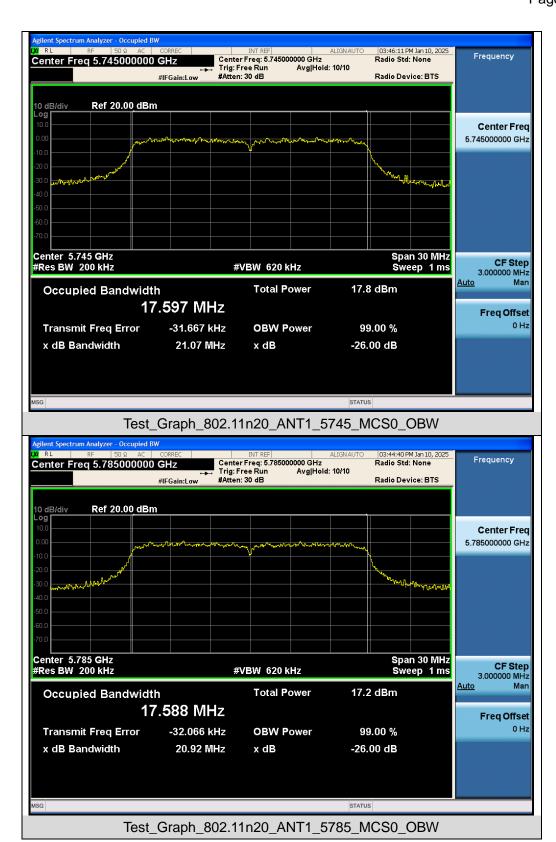


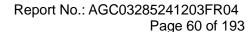




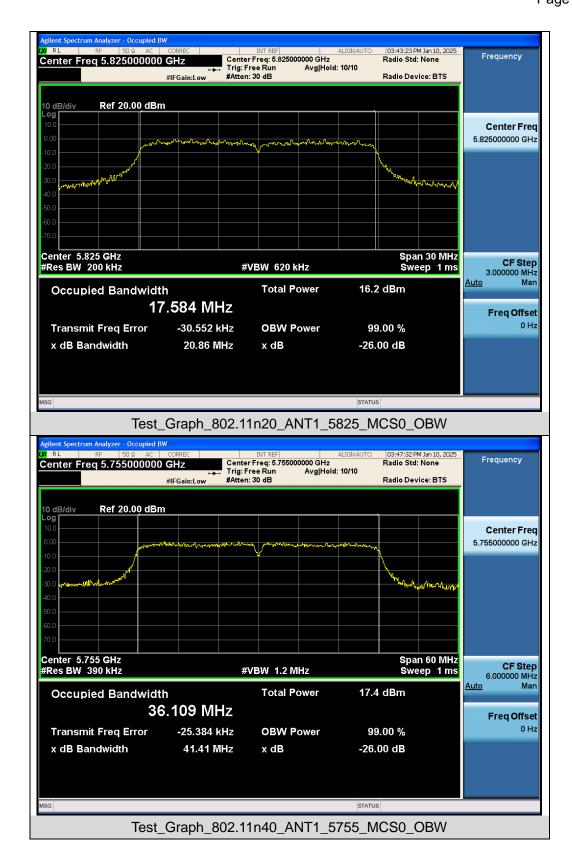


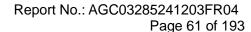




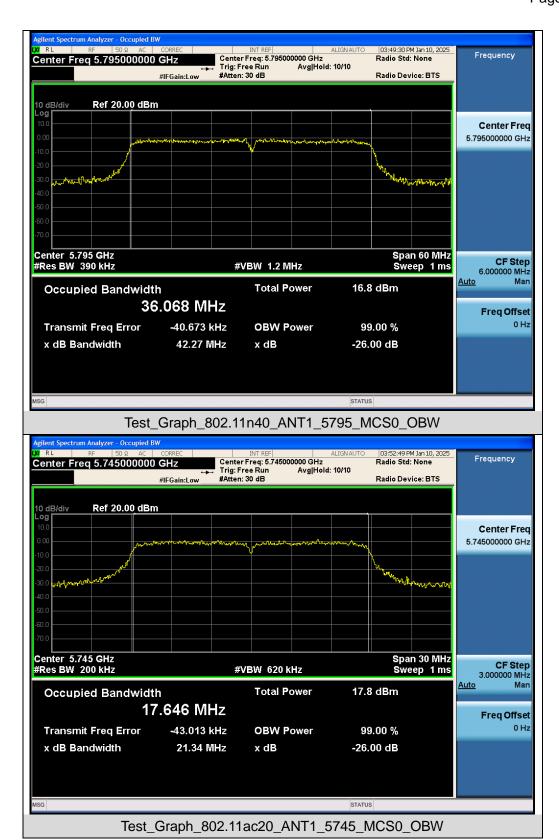


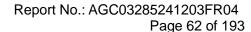




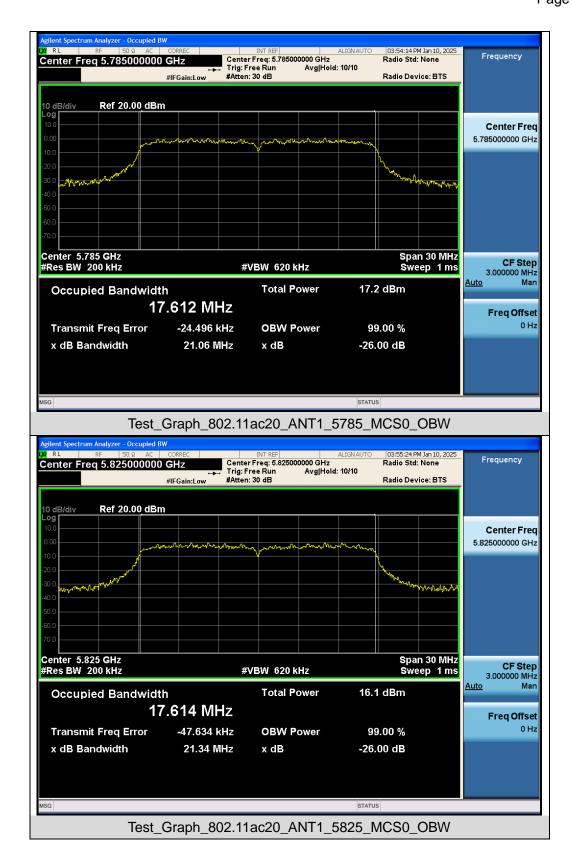


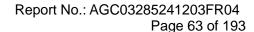




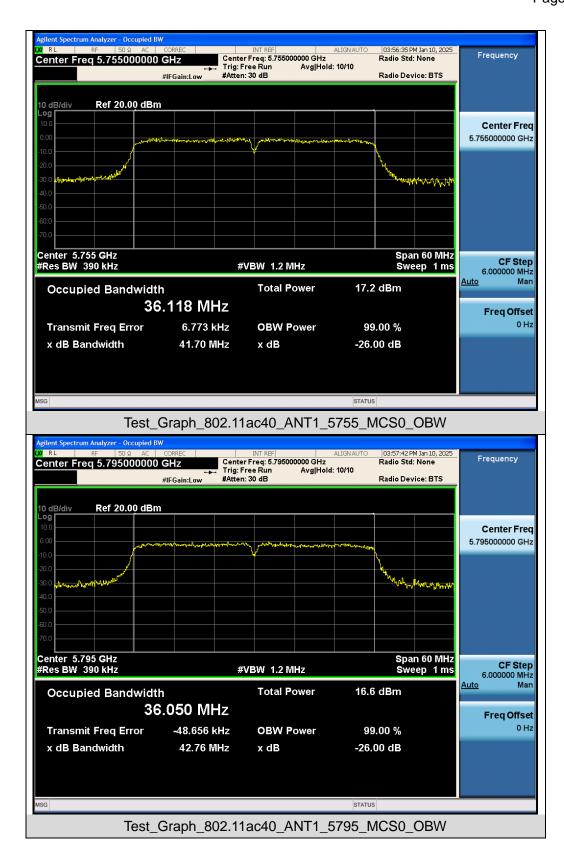


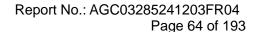




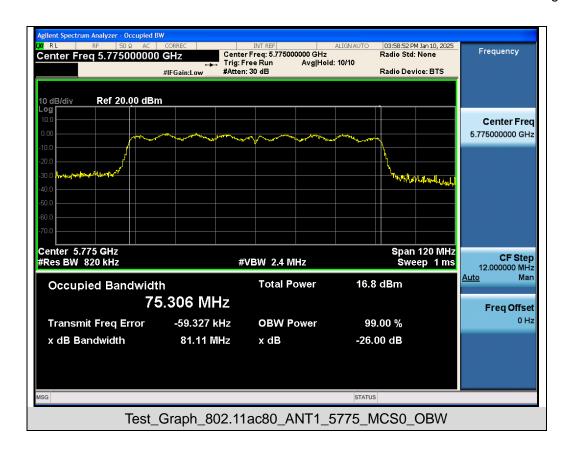




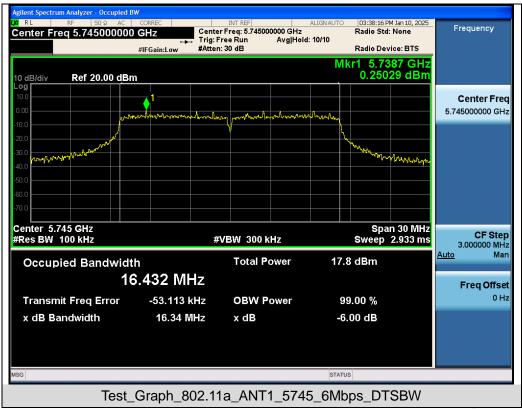




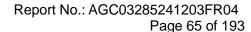




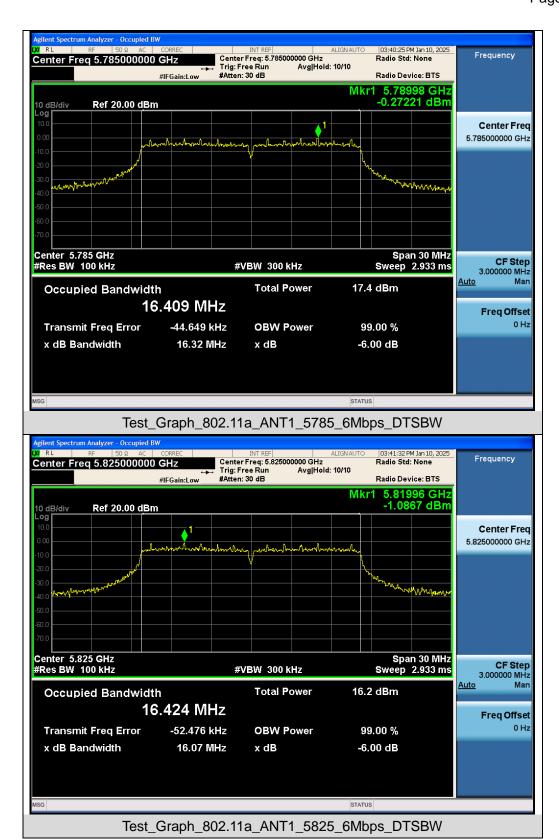
## Test Graphs of DTS Bandwidth for band 5.725-5.85 GHz

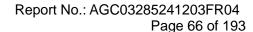


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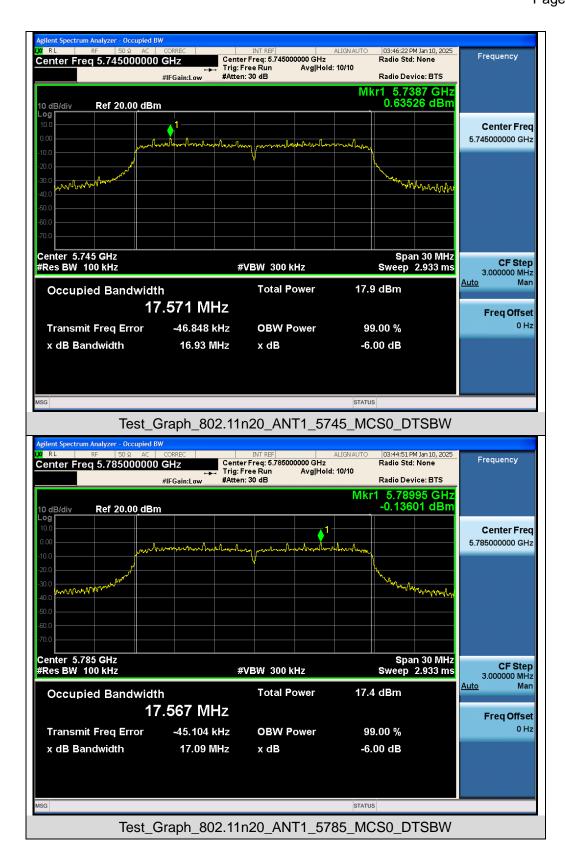


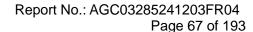




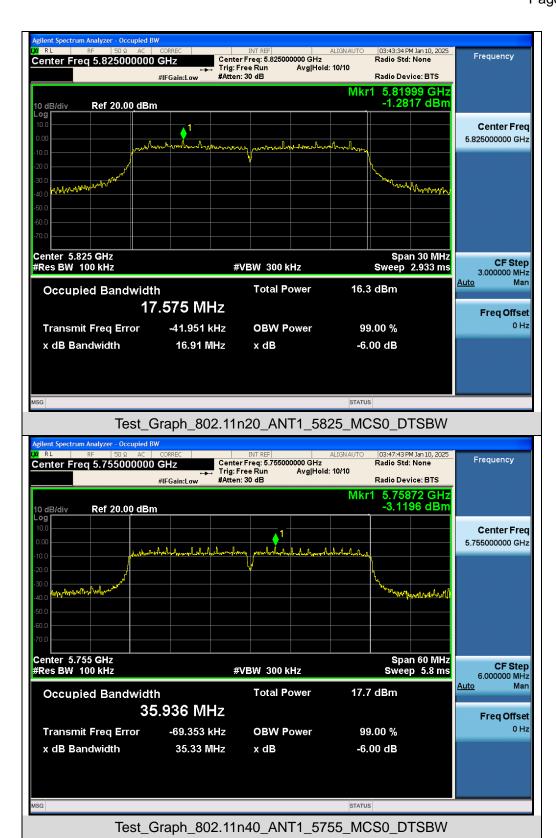


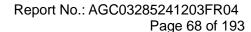




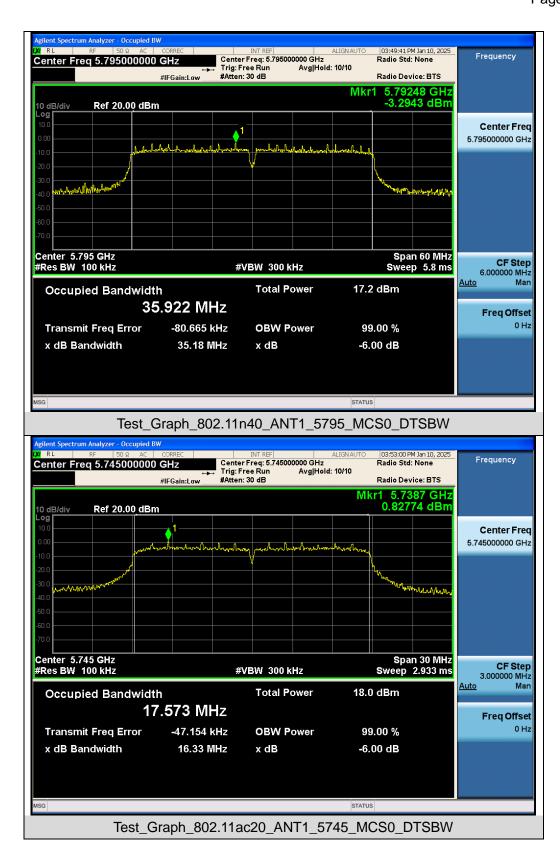


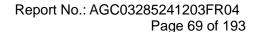




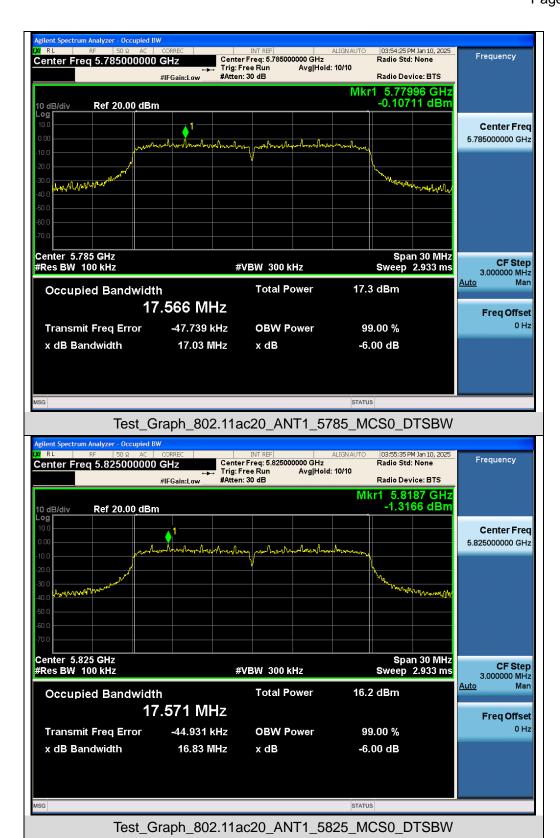


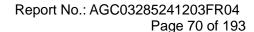




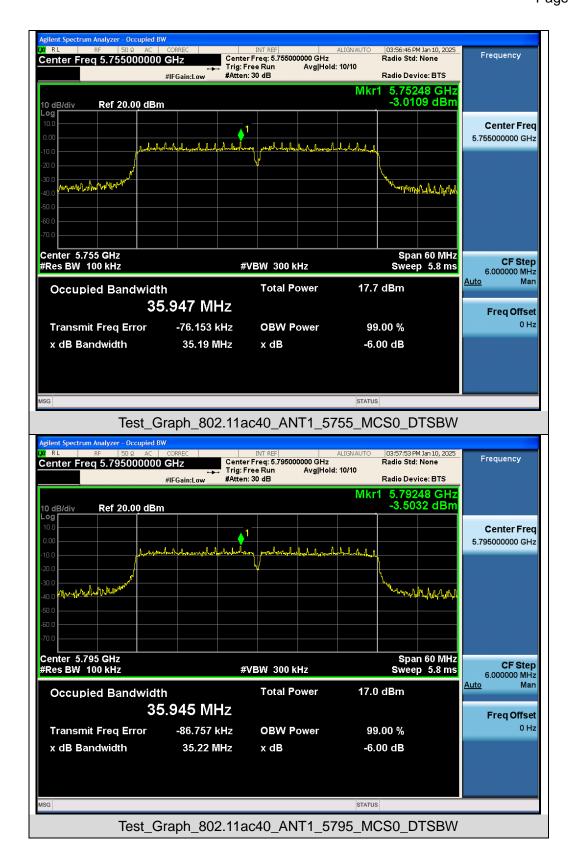


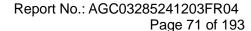




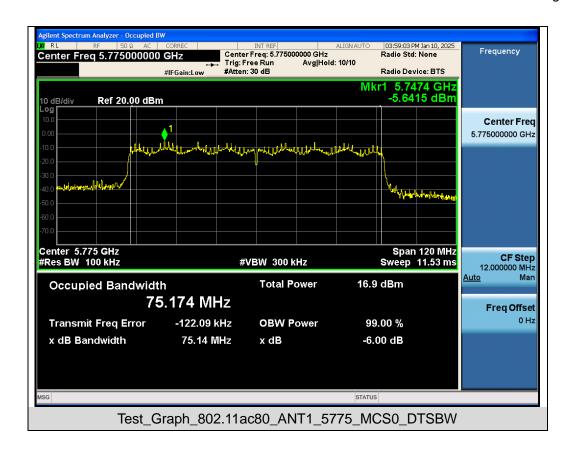














# 9. Power Spectral Density Measurement

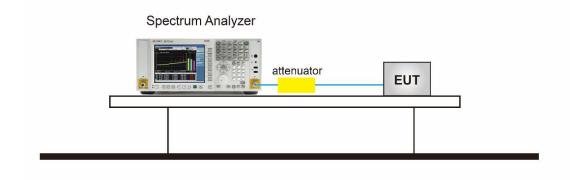
## 9.1 Provisions Applicable

Operation Band	EUT Category		LIMIT		
U-NII-1		Outdoor Access Point	17dBm/ MHz		
		Fixed point-to-point Access Point	17dBm/ MHz		
		Indoor Access Point	17dBm/ MHz		
	$\boxtimes$	Client devices	11dBm/ MHz		
U-NII-2A	/		11dBm/ MHz		
U-NII-2C	/		/ 11dBm/ MHz		11dBm/ MHz
U-NII-3	/		30 dBm/500kHz		

#### 9.2 Measurement Procedure

- Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator.
- 2. Span was set to encompass the entire 26dB EBW of the signal.
- 3. RBW = 1MHz.
- 4. If measurement bandwidth of Maximum PSD is specified in 500 kHz, RBW = 100KHz
- 5. Set VBW≥[3×RBW].
- 6. Sweep Time=Auto couple.
- 7. Detector function=RMS (i.e., power averaging).
- 8. Trace average at least 100 traces in power averaging (rms) mode.
- 9. When the measurement bandwidth of Maximum PSD is specified in 100 kHz, add a constant factor 10\*log(500kHz/100kHz) = 6.99 dB to the measured result.
- 10. Determine according to the duty cycle of the equipment: when it is less than 98%, follow the steps below.
- 11. Add [10 log (1/D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and OFF times of the transmission). For example, add [10 log (1/0.25)] = 6 dB if the duty cycle is 25%.
- 12. The final test results have been increased by the duty cycle factor and recorded in the report

#### 9.3 Measurement Setup (Block Diagram of Configuration)

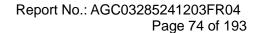




### 9.4 Measurement Result

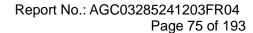
Test Data of Conducted Output Power Density for band 5.15-5.25 GHz					
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail	
	5180	-0.600	11	Pass	
802.11a	5200	0.257	11	Pass	
	5240	1.262	11	Pass	
802.11n20	5180	-0.583	11	Pass	
	5200	-0.122	11	Pass	
	5240	1.150	11	Pass	
802.11n40	5190	-3.872	11	Pass	
	5230	-1.953	11	Pass	
802.11ac20	5180	-0.884	11	Pass	
	5200	0.065	11	Pass	
	5240	1.244	11	Pass	
802.11ac40	5190	-3.421	11	Pass	
	5230	-2.095	11	Pass	
802.11ac80	5210	-4.717	11	Pass	

Test Data of Conducted Output Power Density for band 5.25-5.35 GHz					
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail	
	5260	0.478	11	Pass	
802.11a	5300	0.775	11	Pass	
	5320	1.151	11	Pass	
	5260	0.395	11	Pass	
802.11n20	5300	0.929	11	Pass	
	5320	0.855	11	Pass	
802.11n40	5270	-2.679	11	Pass	
	5310	-2.611	11	Pass	
802.11ac20	5260	0.189	11	Pass	
	5300	1.009	11	Pass	
	5320	0.988	11	Pass	
802.11ac40	5270	-2.808	11	Pass	
	5310	-2.448	11	Pass	
802.11ac80	5290	-4.995	11	Pass	





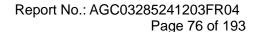
Test Data of Conducted Output Power Density for band 5.470-5.725 GHz					
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail	
	5500	-1.153	11	Pass	
802.11a	5600	0.568	11	Pass	
	5700	0.018	11	Pass	
	5500	-1.633	11	Pass	
802.11n20	5600	-0.222	11	Pass	
	5700	-0.510	11	Pass	
	5510	-4.567	11	Pass	
802.11n40	5590	-2.027	11	Pass	
	5670	-1.668	11	Pass	
	5500	-0.543	11	Pass	
802.11ac20	5600	0.964	11	Pass	
	5700	0.542	11	Pass	
	5510	-3.038	11	Pass	
802.11ac40	5590	-2.471	11	Pass	
	5670	-1.560	11	Pass	
000 11 000	5530	-5.250	11	Pass	
802.11ac80	5610	-4.201	11	Pass	





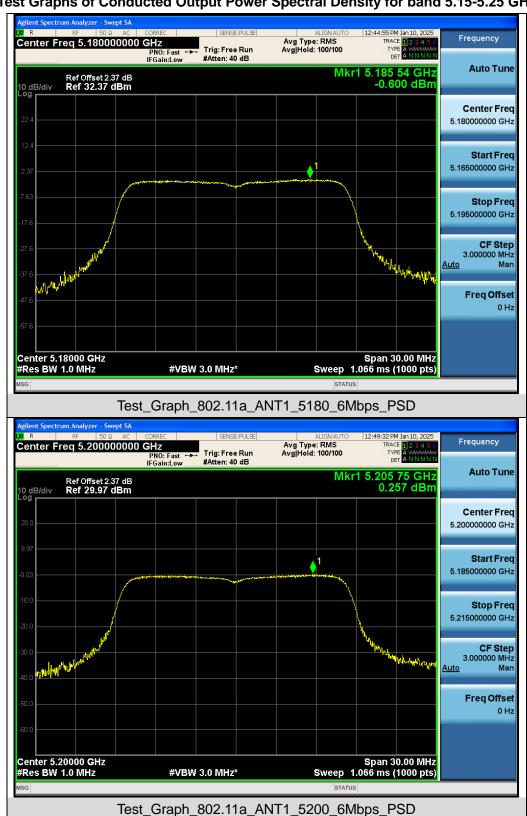
Test Data of Conducted Output Power Density for band 5.725-5.85 GHz					
Test Mode	Test Channel (MHz)	Average Power Density (dBm/100kHz)	Average Power Density (dBm/500kHz)	Limits (dBm/500kHz)	Pass or Fail
802.11a	5745	-8.37	-1.380	30	Pass
	5785	-9.375	-2.385	30	Pass
	5825	-10.196	-3.206	30	Pass
802.11n20	5745	-8.856	-1.866	30	Pass
	5785	-9.397	-2.407	30	Pass
	5825	-10.361	-3.371	30	Pass
902 11540	5755	-11.311	-4.321	30	Pass
802.11n40	5795	-12.084	-5.094	30	Pass
802.11ac20	5745	-8.527	-1.537	30	Pass
	5785	-9.685	-2.695	30	Pass
	5825	-10.826	-3.836	30	Pass
802.11ac40	5755	-12.343	-5.353	30	Pass
	5795	-11.237	-4.247	30	Pass
802.11ac80	5775	-14.837	-7.847	30	Pass

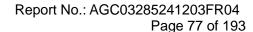
Note:1.Power density(dBm/500kHz) = Power density(dBm/100kHz)+10\*log(500/100).



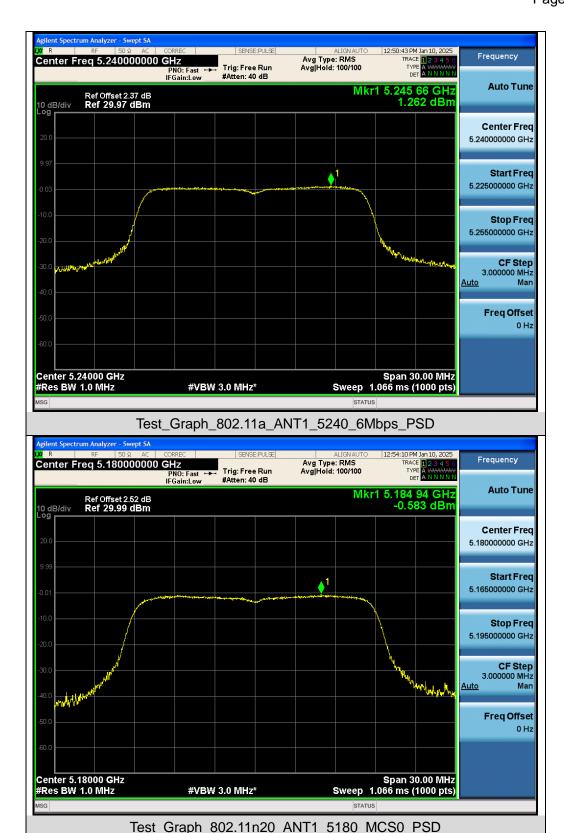


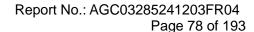
## Test Graphs of Conducted Output Power Spectral Density for band 5.15-5.25 GHz







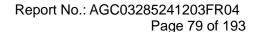
















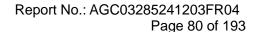
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Test Graph 802.11n40 ANT1 5230 MCS0 PSD

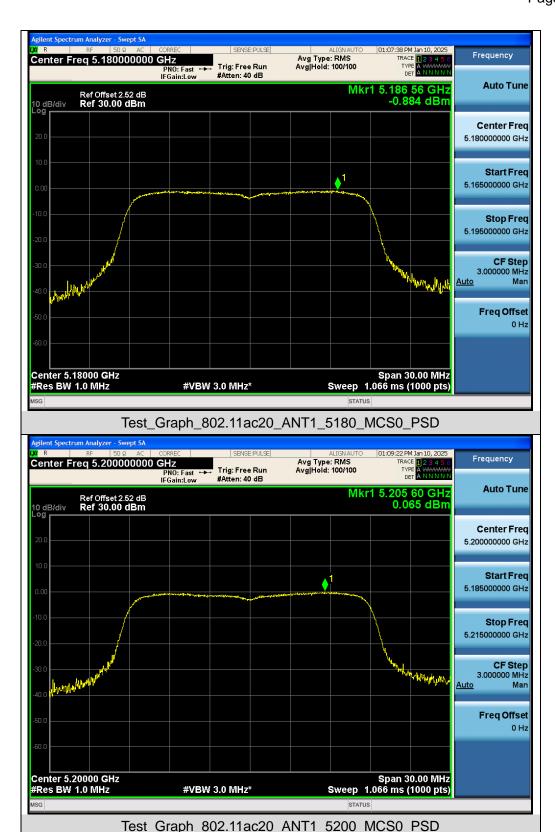
#VBW 3.0 MHz\*

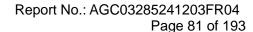
Span 60.00 MHz Sweep 1.066 ms (1000 pts)

Center 5.23000 GHz #Res BW 1.0 MHz

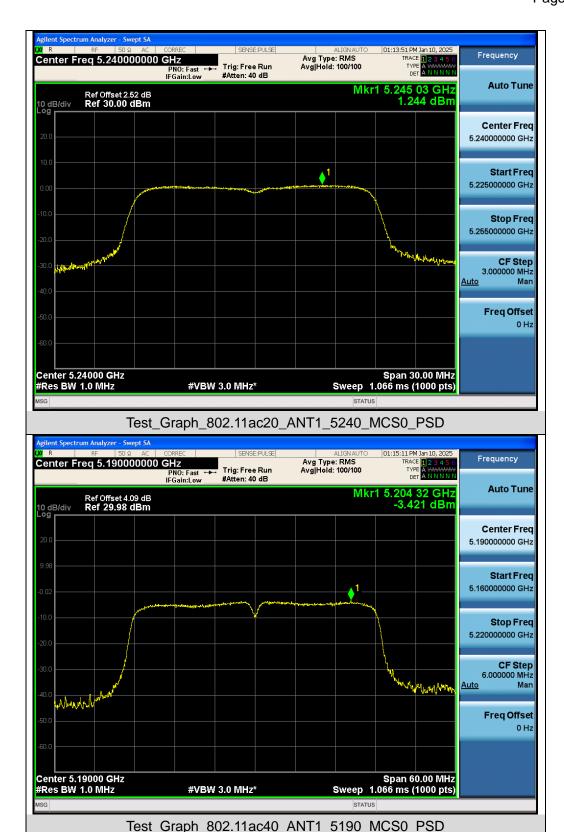


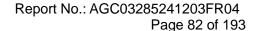




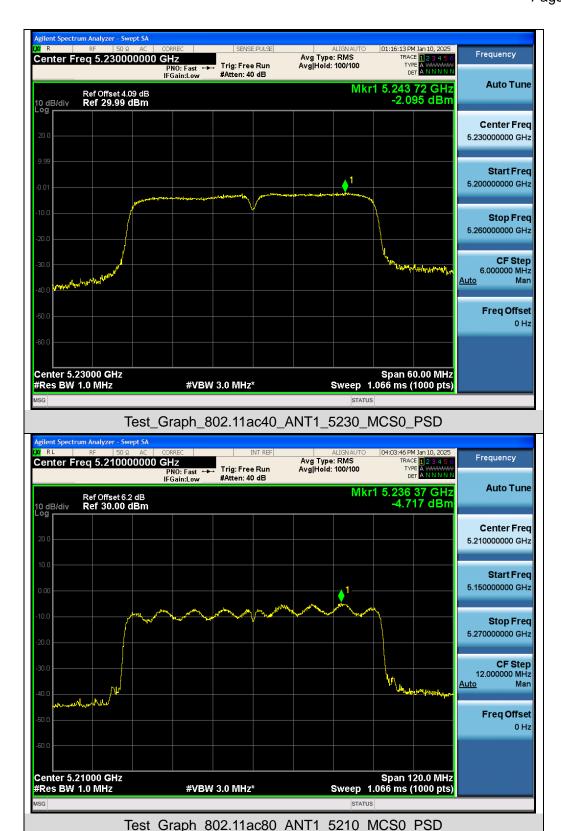


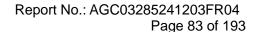






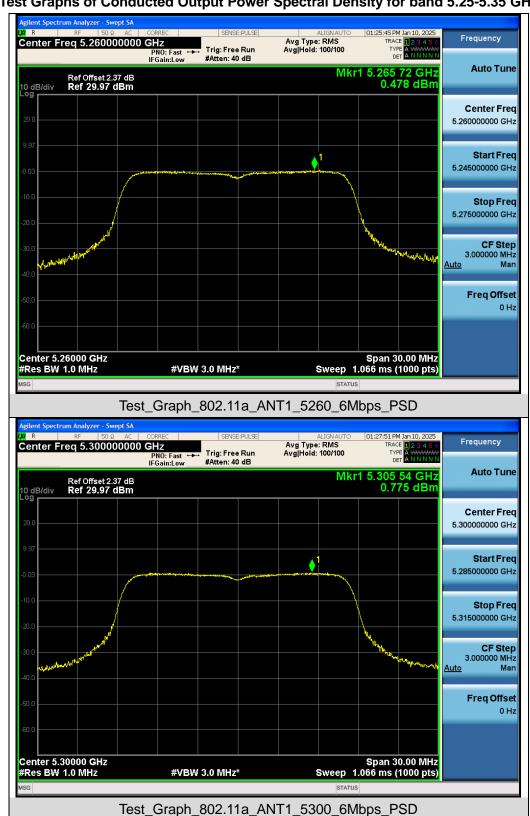


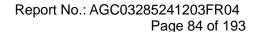




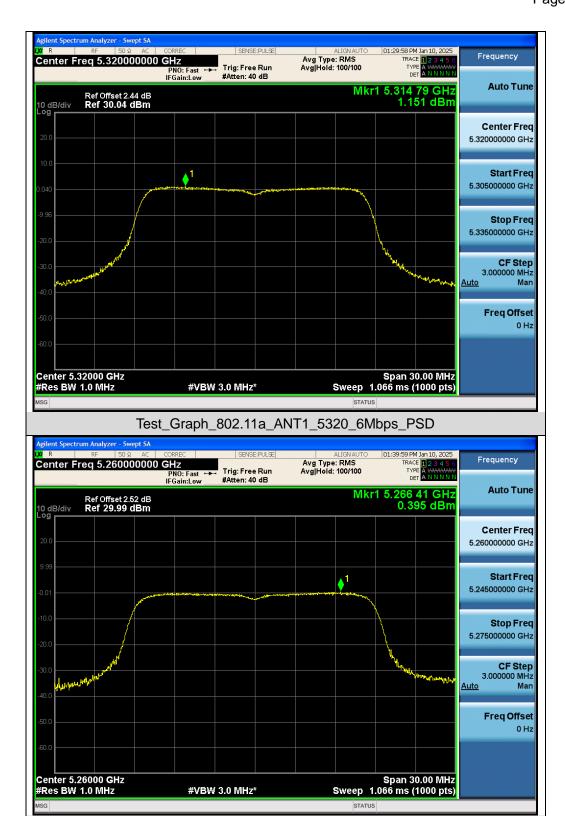


## Test Graphs of Conducted Output Power Spectral Density for band 5.25-5.35 GHz

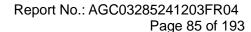








Test Graph 802.11n20 ANT1 5260 MCS0 PSD



Freq Offset 0 Hz

Span 30.00 MHz Sweep 1.066 ms (1000 pts)



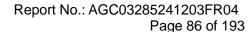


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Test Graph 802.11n20 ANT1 5320 MCS0 PSD

#VBW 3.0 MHz\*

Center 5.32000 GHz #Res BW 1.0 MHz





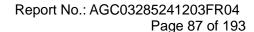


Test Graph 802.11n40 ANT1 5310 MCS0 PSD

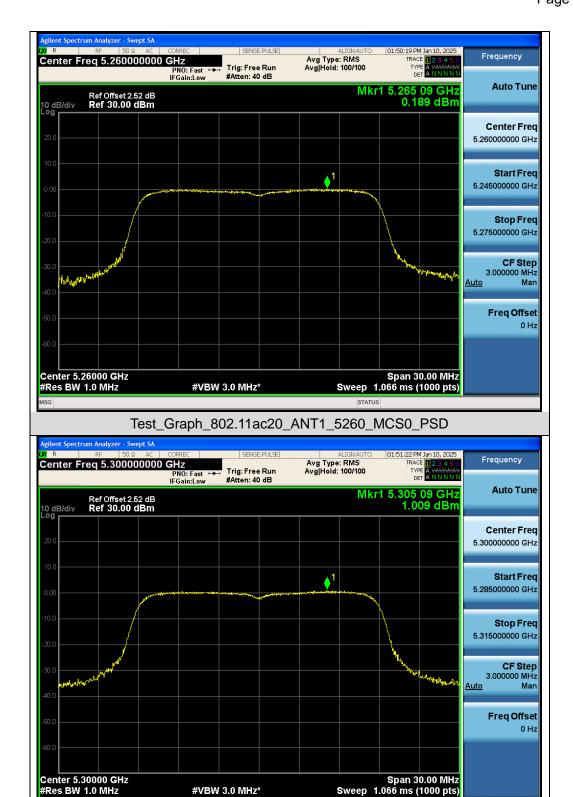
#VBW 3.0 MHz\*

Span 60.00 MHz Sweep 1.066 ms (1000 pts)

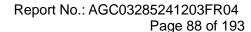
Center 5.31000 GHz #Res BW 1.0 MHz



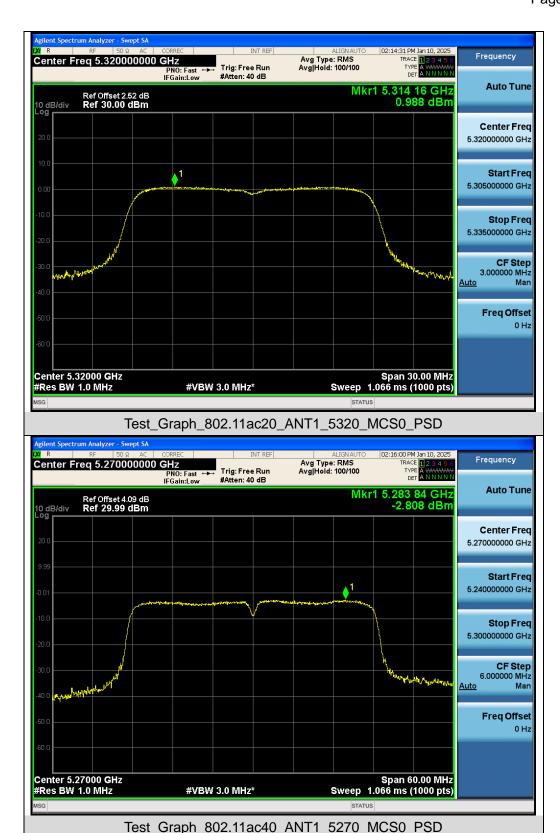


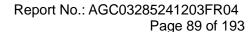


Test Graph 802.11ac20 ANT1 5300 MCS0 PSD

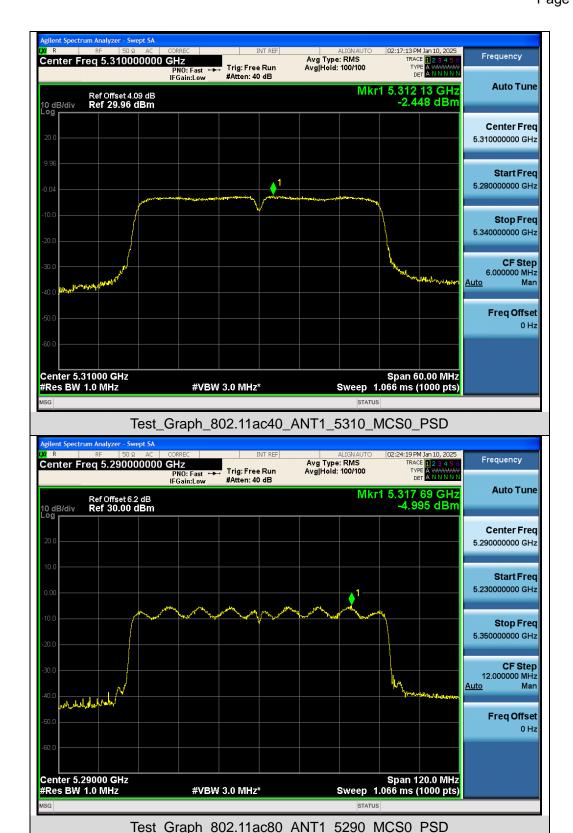


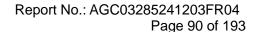














### Test Graphs of Conducted Output Power Spectral Density for band 5.470-5.725 GHz



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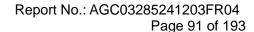
Test\_Graph\_802.11a\_ANT1\_5600\_6Mbps\_PSD

#VBW 3.0 MHz\*

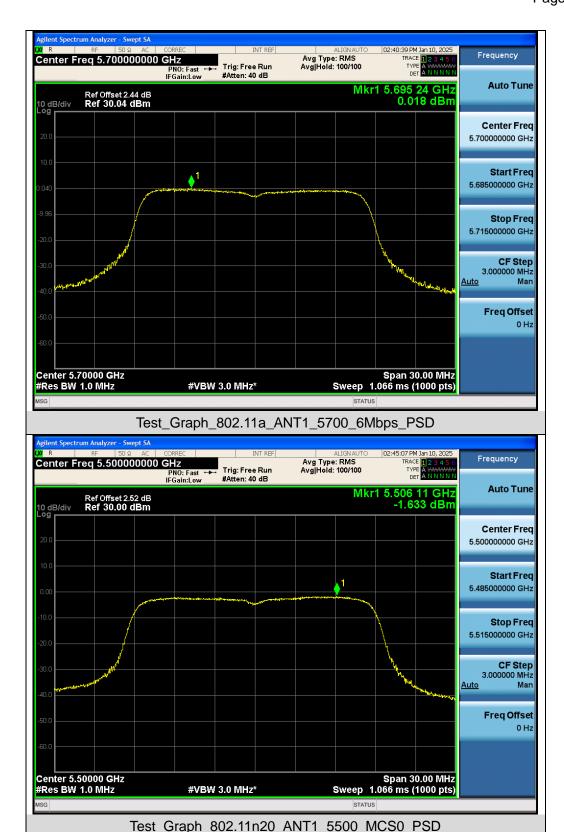
Span 30.00 MHz Sweep 1.066 ms (1000 pts)

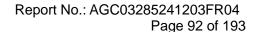
Center 5.60000 GHz

#Res BW 1.0 MHz

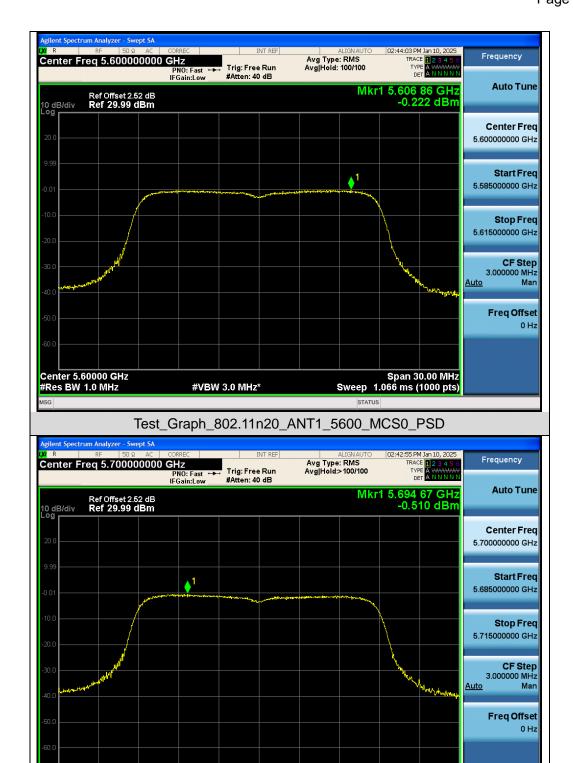










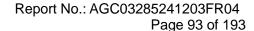


Test Graph 802.11n20 ANT1 5700 MCS0 PSD

#VBW 3.0 MHz\*

Span 30.00 MHz Sweep 1.066 ms (1000 pts)

Center 5.70000 GHz #Res BW 1.0 MHz

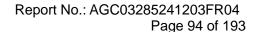






Test Graph 802.11n40 ANT1 5590 MCS0 PSD

#VBW 3.0 MHz\*





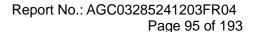


Test Graph 802.11ac20 ANT1 5500 MCS0 PSD

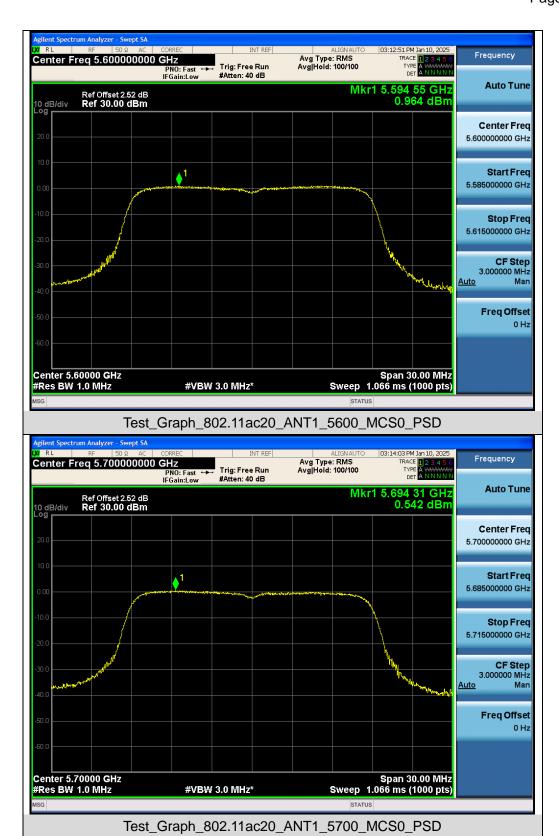
#VBW 3.0 MHz\*

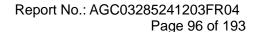
Span 30.00 MHz Sweep 1.066 ms (1000 pts)

Center 5.50000 GHz #Res BW 1.0 MHz

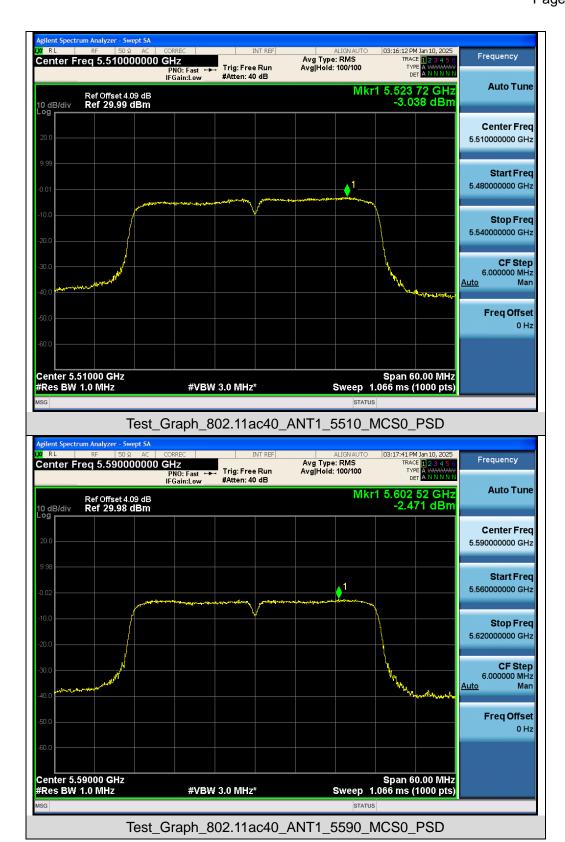


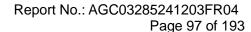




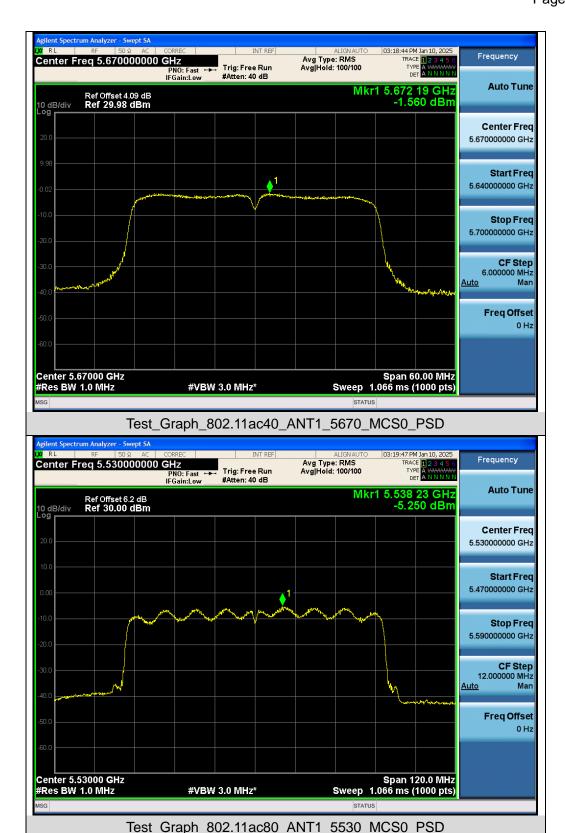


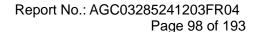




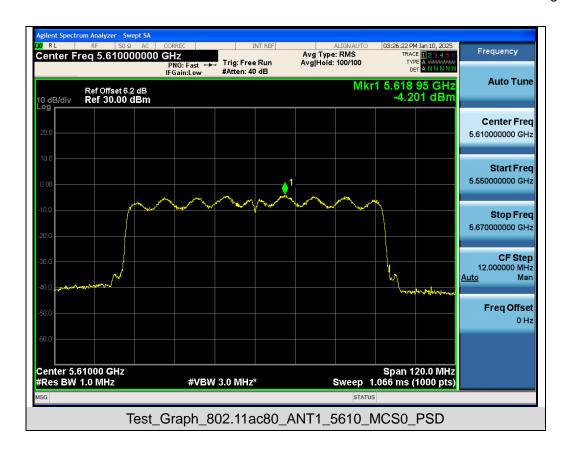




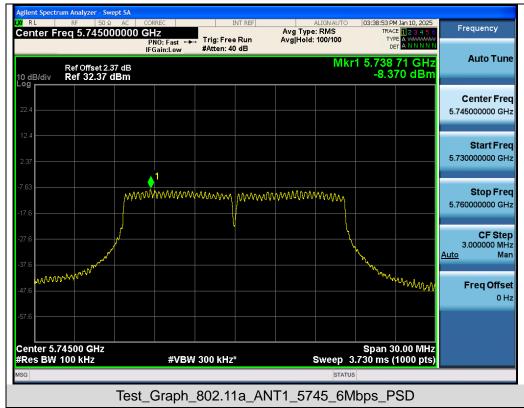


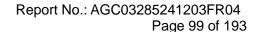




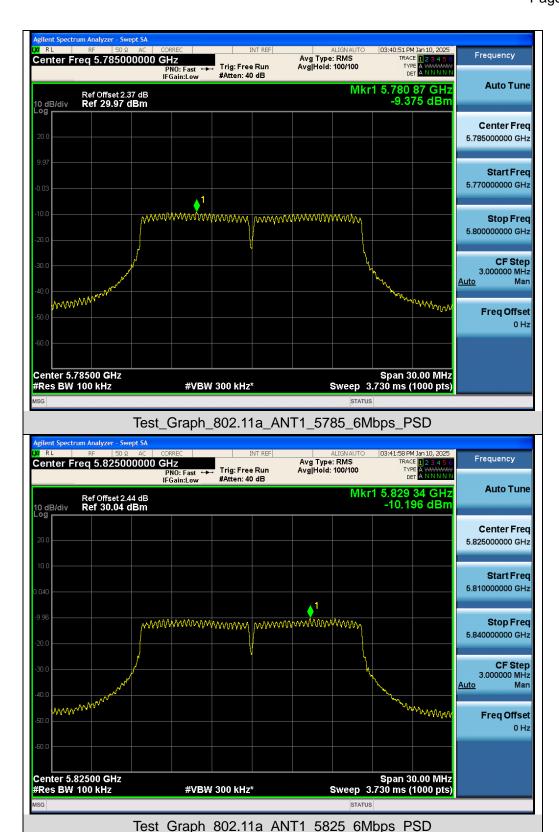


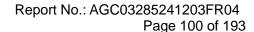
## Test Graphs of Conducted Output Power Spectral Density for band 5.725-5.85 GHz





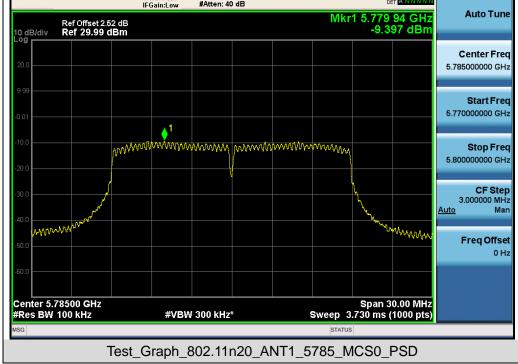


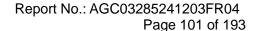




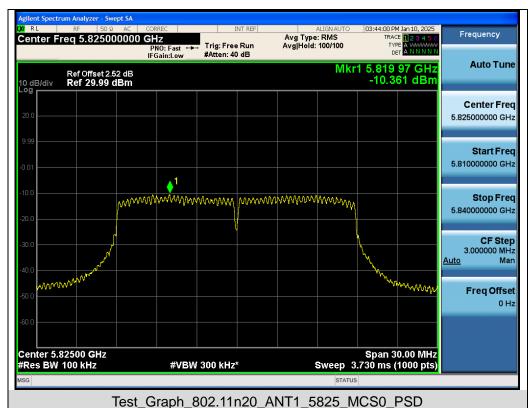




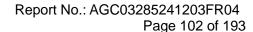




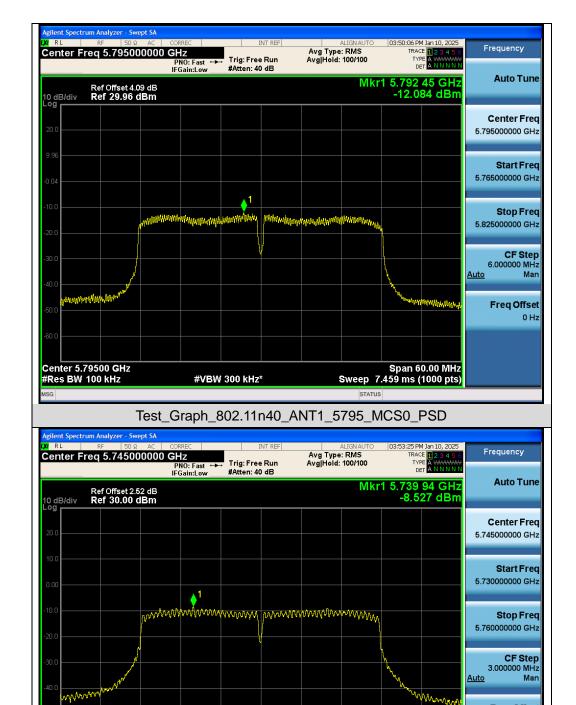












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Test Graph 802.11ac20 ANT1 5745 MCS0 PSD

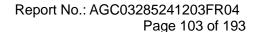
**#VBW 300 kHz\*** 

Manyor

Span 30.00 MHz Sweep 3.730 ms (1000 pts)

Freq Offset 0 Hz

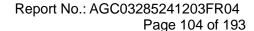
Center 5.74500 GHz #Res BW 100 kHz



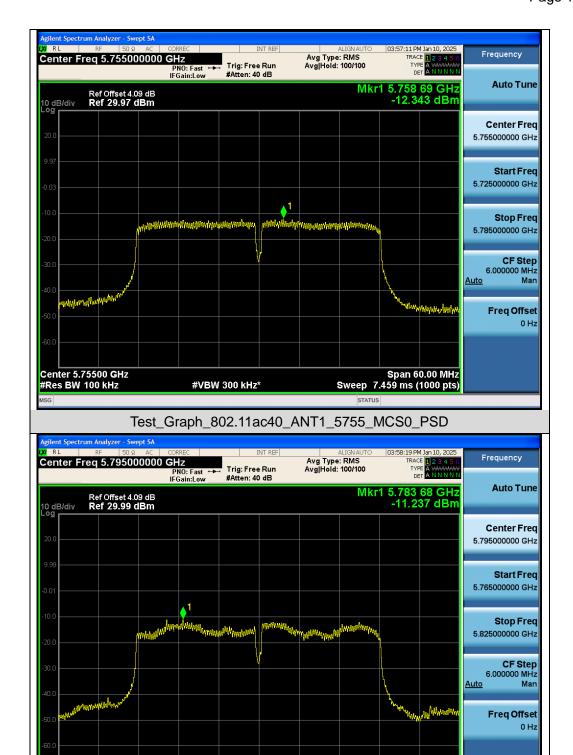




Test Graph 802.11ac20 ANT1 5825 MCS0 PSD





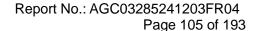


Test Graph 802.11ac40 ANT1 5795 MCS0 PSD

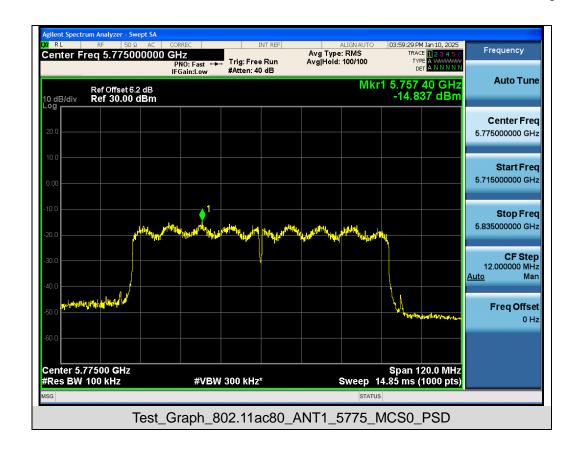
**#VBW 300 kHz\*** 

Span 60.00 MHz Sweep 7.459 ms (1000 pts)

Center 5.79500 GHz #Res BW 100 kHz









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## 10. Conducted Band Edge and Out-of-Band Emissions

## 10.1 Provisions Applicable

	Applicable to	Limit	
Restricted bands	789033 D02 General UNII Test Procedures New Rules v02r01	Field strength at 3m (dBuV/m)	
		PK: 74	AV: 54
Out of the restricted bands	Applicable to	EIRP Limit (dBm/MHz)	Equivalent field Strength at 3m (dBuV/m)
	FCC 15.407(b)(1)	PK: -27	PK: 68.2
	15.407(b)(2)		
	15.407(b)(3)		
	15.407(b)(4)	See Note 2	

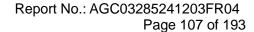
Note 1: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

E = 
$$\frac{1000000 - \sqrt{30 P}}{3}$$
 µV/m, where P is the eirp (Watts).

Note 2: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

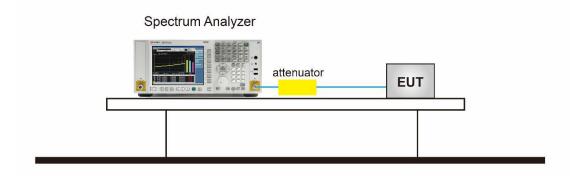
#### **10.2 Measurement Procedure**

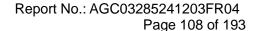
- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the Span = wide enough to capture the peak level of the in-band emission and all spurious emissions from the lowest frequency generated in the EUT up through the 10th harmonic.
- 3. RBW = 1MHz; VBW= 3MHz; Sweep = auto; Detector function = Peak. (Test frequency below 1GHz)
- 4. RBW = 1 MHz; VBW= 3 MHz; Sweep = auto; Detector function = Peak. (Test frequency Above 1GHz)
- 5. Set SPA Trace 1 Max hold, then View.
- 6. Antenna gain and path loss have been compensated to the Correction factor.
- 7. Mark the maximum useless stray point and compare it with the limit value to record the result.





# 10.3 Measurement Setup (Block Diagram of Configuration)

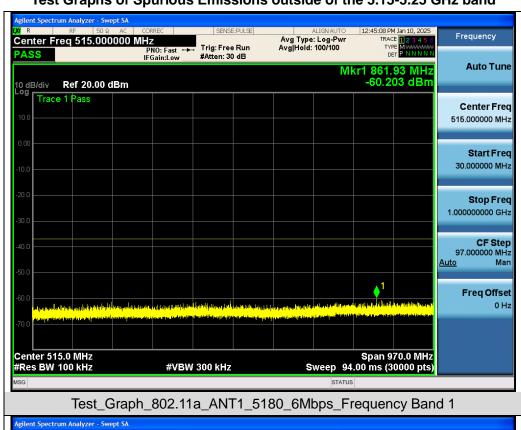


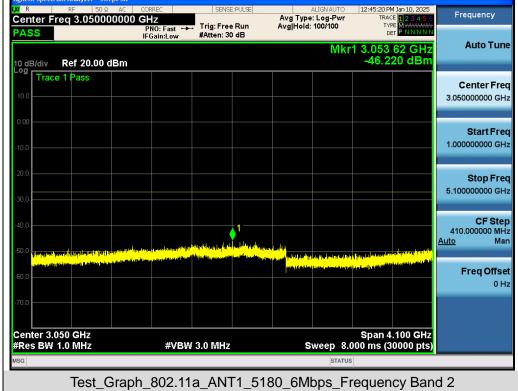


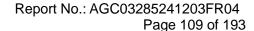


### 10.4 Measurement Results

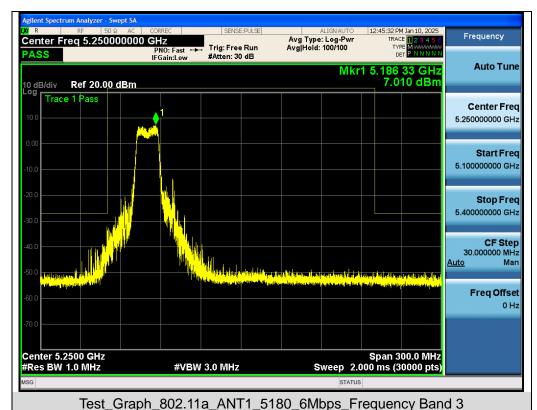
## Test Graphs of Spurious Emissions outside of the 5.15-5.25 GHz band



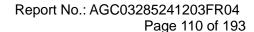




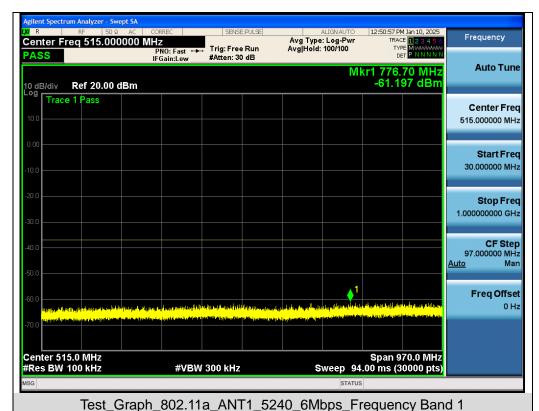




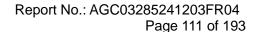




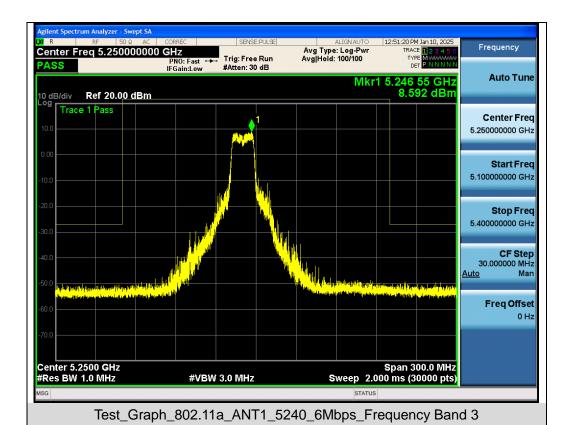






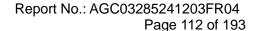




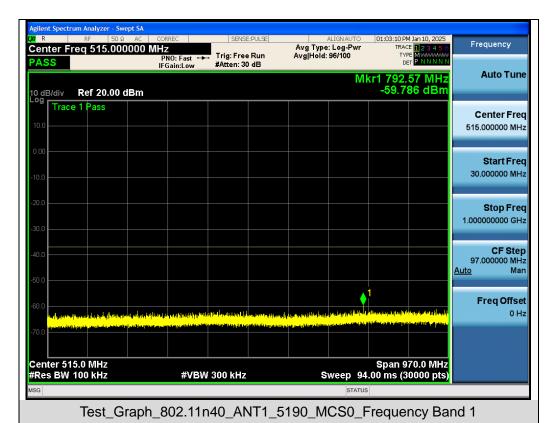




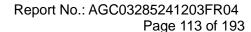
Test Graph 802.11a ANT1 5240 6Mbps Frequency Band 4



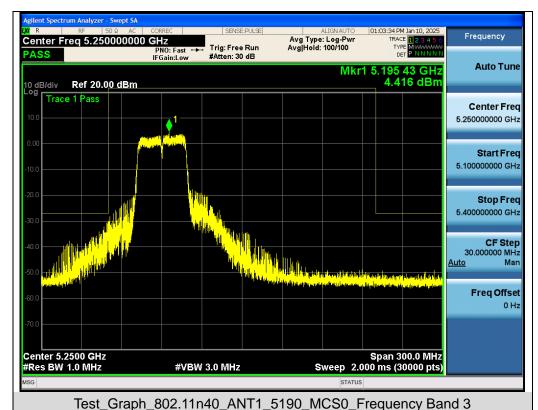




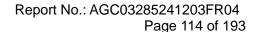




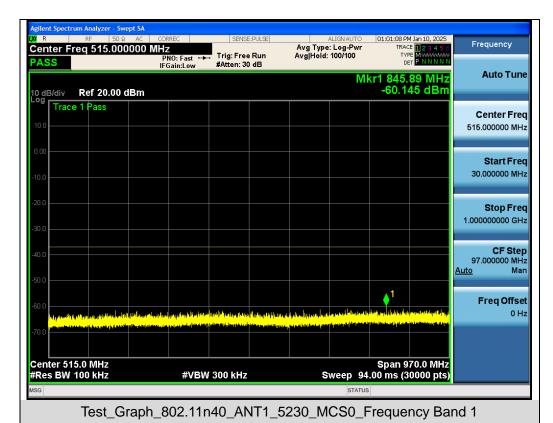














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