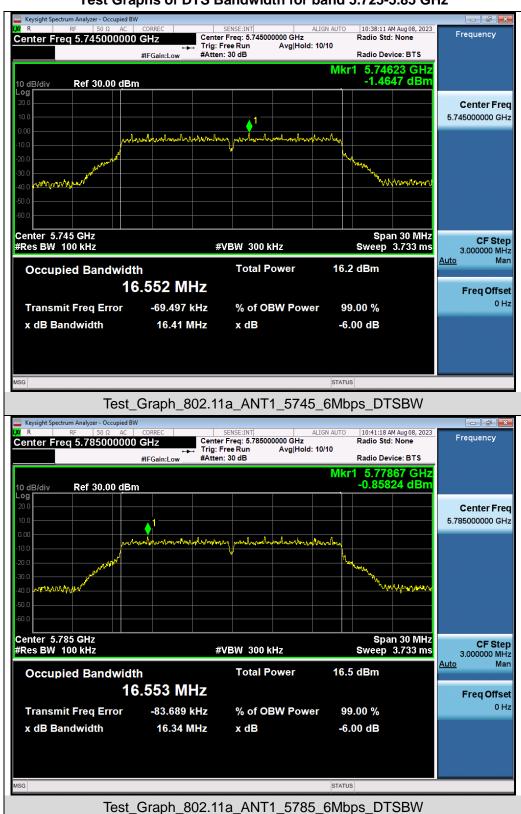
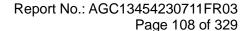


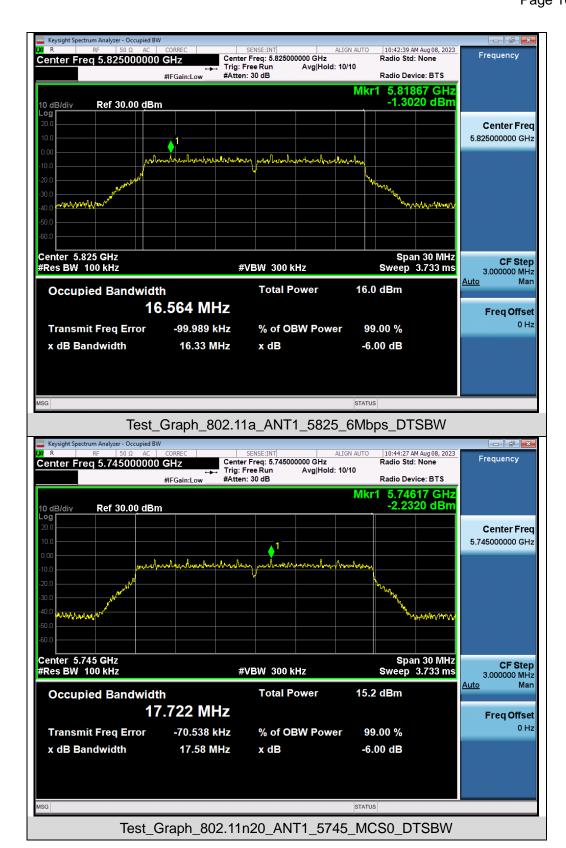


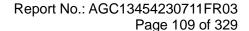
# Test Graphs of DTS Bandwidth for band 5.725-5.85 GHz





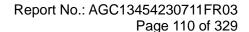




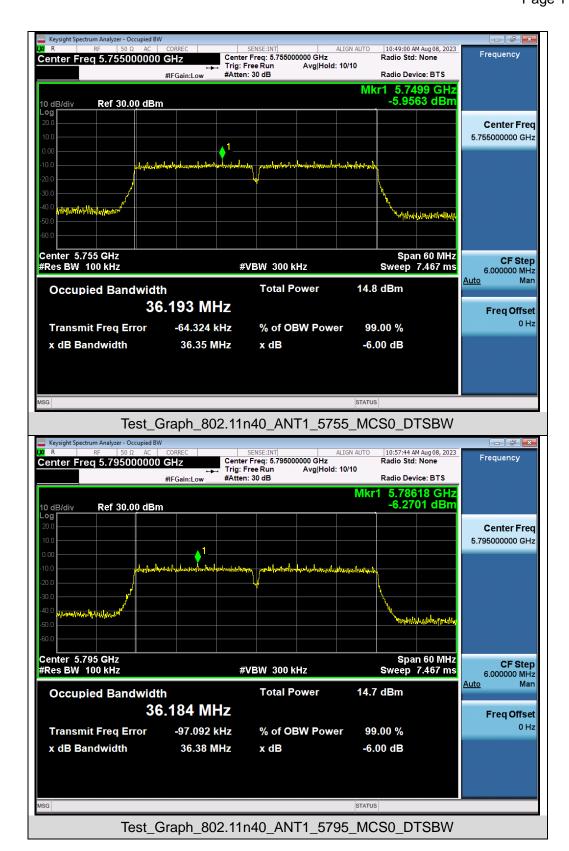


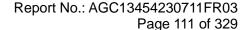




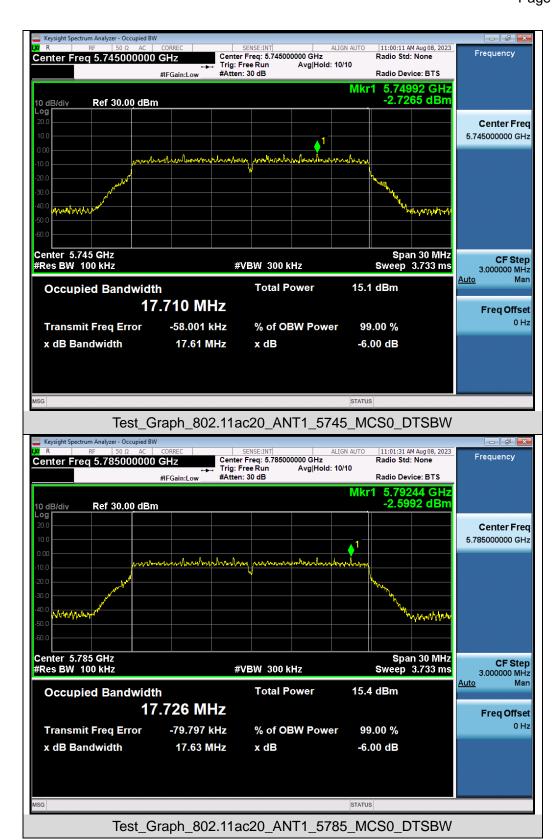


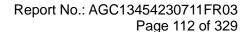




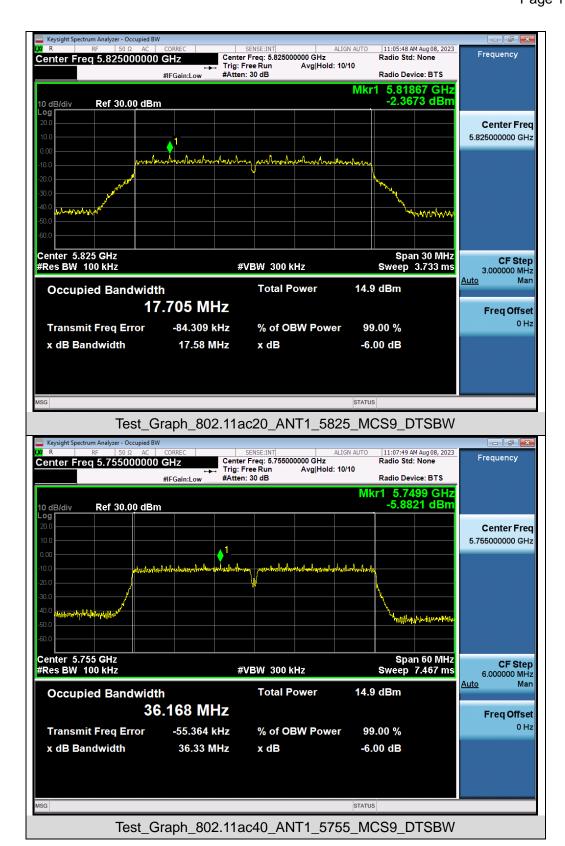


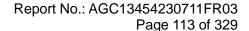




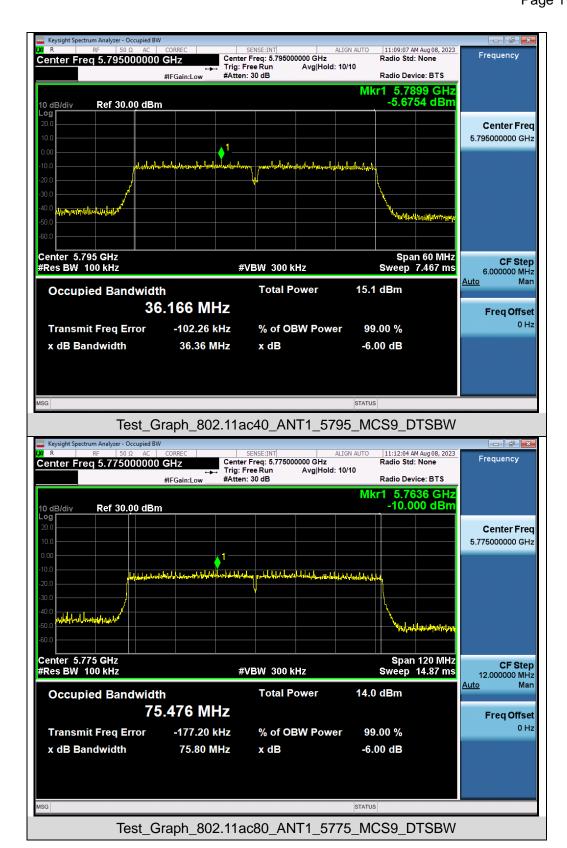


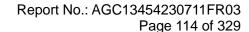






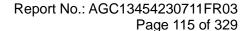




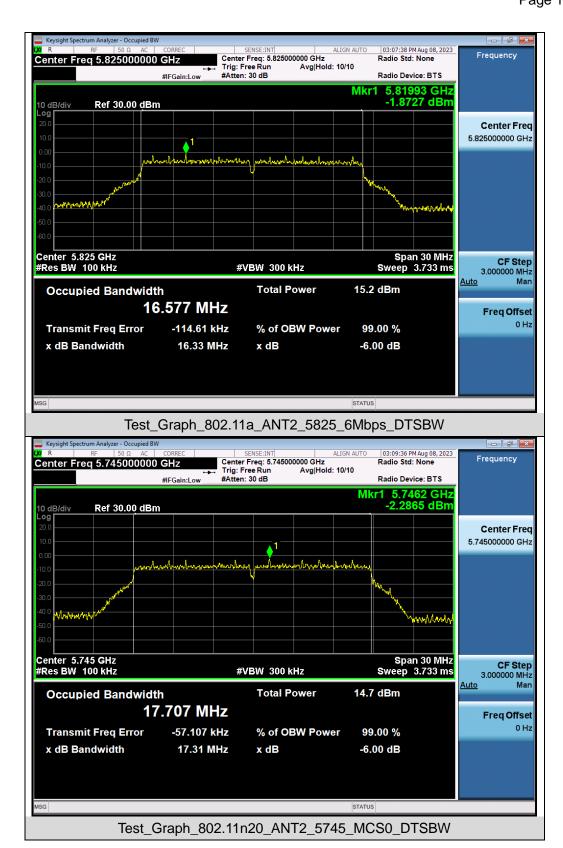


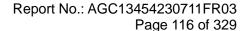




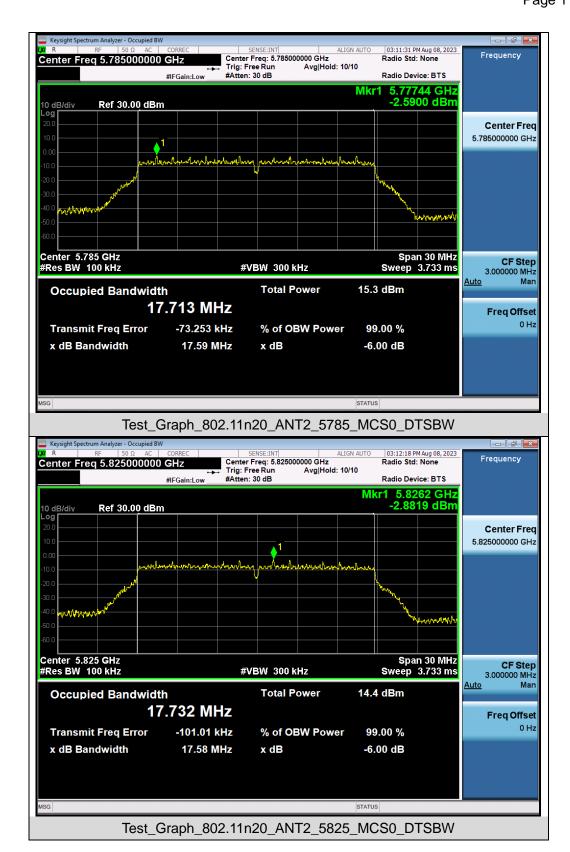


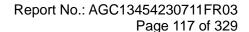




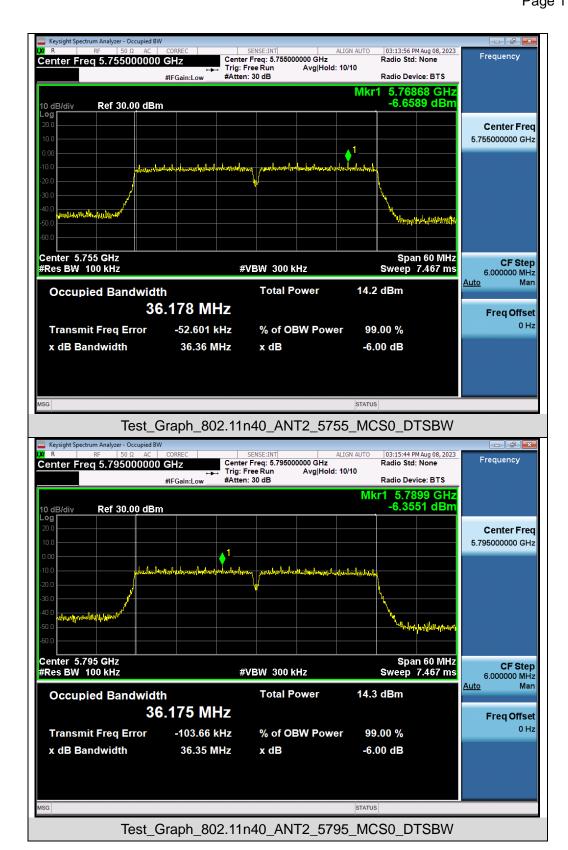




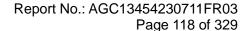




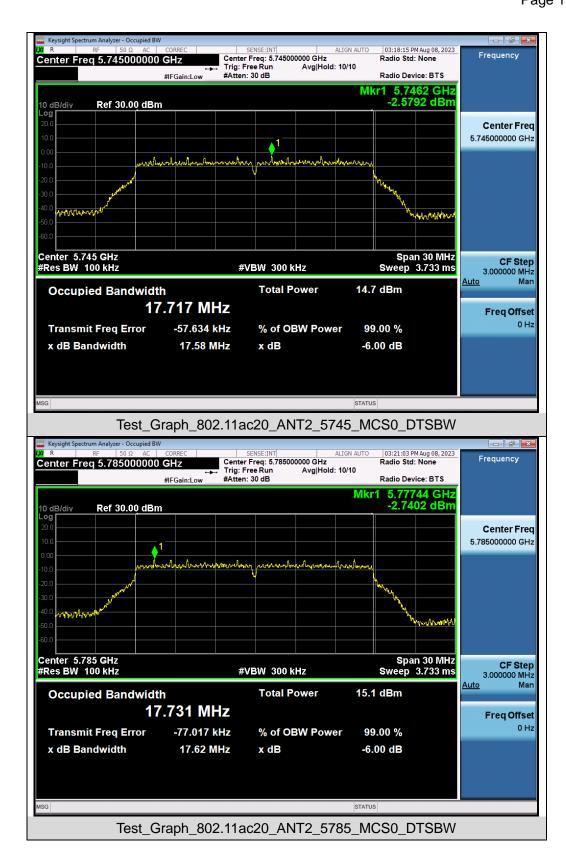


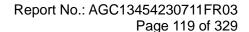


Web: http://www.agccert.com/

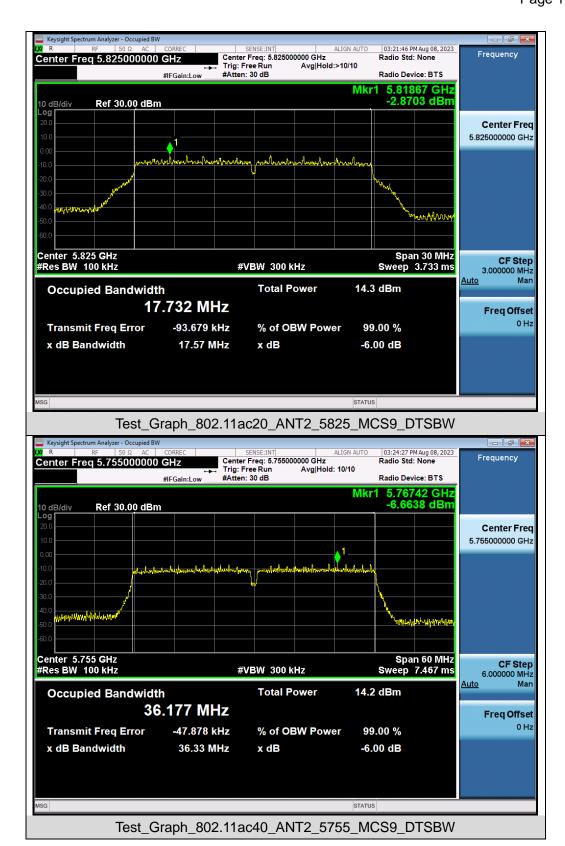


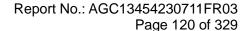




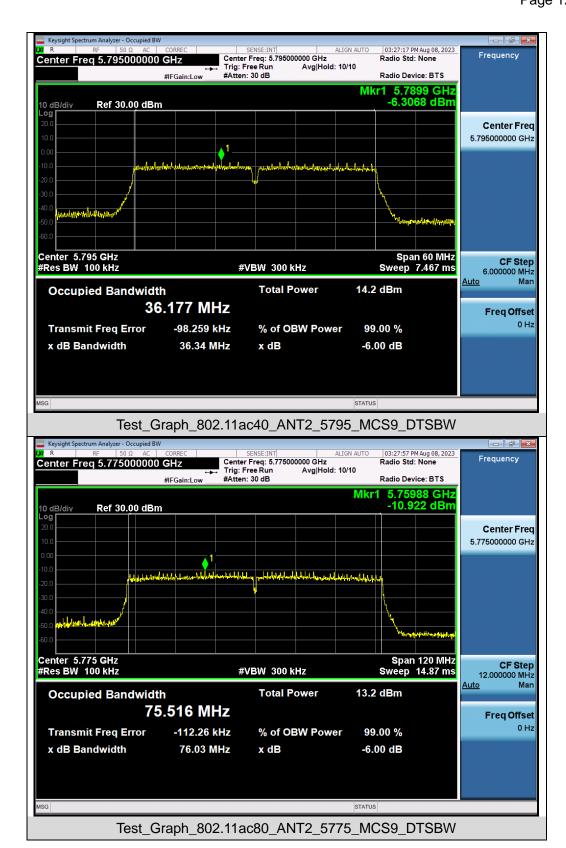














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### 8. POWER SPECTRAL DENSITY MEASUREMENT

#### **8.1 MEASUREMENT LIMITS**

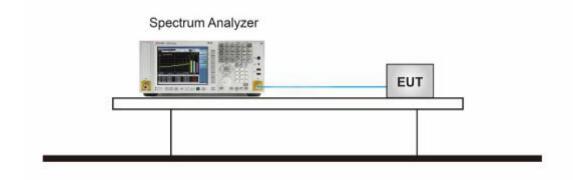
Operation Band	EUT Category		LIMIT
		Outdoor Access Point	17dBm/ MHz
U-NII-1		Fixed point-to-point Access Point	17dBm/ MHz
O-INII- I		Indoor Access Point	17dBm/ MHz
		Client devices	11dBm/ MHz
U-NII-2A		/	11dBm/ MHz
U-NII-2C		/	11dBm/ MHz
U-NII-3		/	30 dBm/500kHz

### **8.2 MEASUREMENT PROCEDURE**

⊠For Average power spectral density test:

- 1. Connect EUT RF output port to the Spectrum Analyzer.
- 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. Record the test results in the report.

## 8.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)





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### **8.4 MEASUREMENT RESULT**

	Test Data of Conducted Output Power Density for band 5.15-5.25 GHz-ANT 1					
Test Mode	Test Channel Average Power Density (MHz) (dBm/MHz)		Limits (dBm/MHz)	Pass or Fail		
	5180	-2.056	11	Pass		
802.11a	5200	-1.576	11	Pass		
	5240	-0.690	11	Pass		
	5180	-3.043	11	Pass		
802.11n20	5200	-2.588	11	Pass		
	5240	-1.548	11	Pass		
902 44 540	5190	-6.226	11	Pass		
802.11n40	5230	-4.850	11	Pass		
	5180	-2.819	11	Pass		
802.11ac20	5200	-2.528	11	Pass		
	5240	-1.406	11	Pass		
902 110010	5190	-6.014	11	Pass		
802.11ac40	5230	-4.554	11	Pass		
802.11ac80	5210	-8.376	11	Pass		



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Te	Test Data of Conducted Output Power Density for band 5.15-5.25 GHz-ANT 2					
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail		
	5180	-4.009	11	Pass		
802.11a	5200	-2.518	11	Pass		
	5240	-1.214	11	Pass		
	5180	-4.279	11	Pass		
802.11n20	5200	-3.914	11	Pass		
	5240	-2.656	11	Pass		
000 11 - 10	5190	-6.821	11	Pass		
802.11n40	5230	-5.767	11	Pass		
	5180	-4.197	11	Pass		
802.11ac20	5200	-3.607	11	Pass		
	5240	-2.665	11	Pass		
000 110010	5190	-6.681	11	Pass		
802.11ac40	5230	-5.679	11	Pass		
802.11ac80	5210	-8.955	11	Pass		



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Te	Test Data of Conducted Output Power Density for band 5.25-5.35 GHz-ANT 1					
Test Mode	Test Channel (MHz)	, , , , , , , , , , , , , , , , , , , ,		Pass or Fail		
	5260	-0.615	11	Pass		
802.11a	5300	0.471	11	Pass		
	5320	0.480	11	Pass		
	5260	-1.628	11	Pass		
802.11n20	5300	-1.225	11	Pass		
	5320	-0.908	11	Pass		
002 11 = 10	5270	-4.658	11	Pass		
802.11n40	5310	-4.005	11	Pass		
	5260	-1.973	11	Pass		
802.11ac20	5300	-1.024	11	Pass		
	5320	-0.776	11	Pass		
902 44 5540	5270	-4.223	11	Pass		
802.11ac40	5310	-3.976	11	Pass		
802.11ac80	5290	-6.785	11	Pass		



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Те	Test Data of Conducted Output Power Density for band 5.25-5.35 GHz-ANT 2					
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail		
	5260	-0.757	11	Pass		
802.11a	5300	0.217	11	Pass		
	5320	0.226	11	Pass		
	5260	-2.031	11	Pass		
802.11n20	5300	-1.112	11	Pass		
	5320	-1.030	11	Pass		
802.11n40	5270	-4.523	11	Pass		
002.111140	5310	-4.115	11	Pass		
	5260	-2.259	11	Pass		
802.11ac20	5300	-1.149	11	Pass		
	5320	-1.101	11	Pass		
902 11 0040	5270	-4.507	11	Pass		
802.11ac40	5310	-4.009	11	Pass		
802.11ac80	5290	-7.170	11	Pass		



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Tes	Test Data of Conducted Output Power Density for band 5.470-5.725 GHz-ANT 1					
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail		
	5500	-5.736	11	Pass		
802.11a	5600	-4.403	11	Pass		
	5700	-1.083	11	Pass		
	5500	-6.900	11	Pass		
802.11n20	5600	-5.493	11	Pass		
	5700	-2.284	11	Pass		
	5510	-9.647	11	Pass		
802.11n40	5590	-8.541	11	Pass		
	5670	-6.289	11	Pass		
	5500	-6.809	11	Pass		
802.11ac20	5600	-5.405	11	Pass		
	5700	-2.348	11	Pass		
	5510	-9.553	11	Pass		
802.11ac40	5590	-8.655	11	Pass		
	5670	-6.183	11	Pass		
802.11ac80	5530	-12.010	11	Pass		
802.11ac80	5610	-11.345	11	Pass		



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Test Data of Conducted Output Power Density for band 5.470-5.725 GHz-ANT 2					
Test Mode	st Mode Test Channel Average Power (MHz) (dBm/M		Limits (dBm/MHz)	Pass or Fail	
	5500	-5.223	11	Pass	
802.11a	5600	-3.896	11	Pass	
	5700	-1.385	11	Pass	
	5500	-6.598	11	Pass	
802.11n20	5600	-4.897	11	Pass	
	5700	-2.488	11	Pass	
	5510	-9.577	11	Pass	
802.11n40	5590	-8.327	11	Pass	
	5670	-6.219	11	Pass	
	5500	-6.550	11	Pass	
802.11ac20	5600	-4.978	11	Pass	
	5700	-2.316	11	Pass	
	5510	-9.256	11	Pass	
802.11ac40	5590	-7.847	11	Pass	
	5670	-6.168	11	Pass	
000 44000	5530	-12.200	11	Pass	
802.11ac80	5610	-10.984	11	Pass	



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7	Test Data of Conducted Output Power Density for band 5.725-5.85 GHz-ANT 1						
Test Mode	Test Channel (MHz)	Average Power Density (dBm/100kHz)	Average Power Density (dBm/500kHz)	Limits (dBm/500kHz)	Pass or Fail		
	5745	-8.853	-1.863	30	Pass		
802.11a	5785	-8.804	-1.814	30	Pass		
	5825	-9.341	-2.351	30	Pass		
	5745	-10.631	-3.641	30	Pass		
802.11n20	5785	-9.949	-2.959	30	Pass		
	5825	-10.658	-3.668	30	Pass		
802.11n40	5755	-13.534	-6.544	30	Pass		
802.111140	5795	-13.356	-6.366	30	Pass		
	5745	-10.878	-3.888	30	Pass		
802.11ac20	5785	-10.256	-3.266	30	Pass		
	5825	-10.753	-3.763	30	Pass		
802.11ac40	5755	-13.342	-6.352	30	Pass		
002.118040	5795	-12.713	-5.723	30	Pass		
802.11ac80	5775	-15.862	-8.872	30	Pass		



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7	Test Data of Conducted Output Power Density for band 5.725-5.85 GHz-ANT 2						
Test Mode	Test Channel (MHz)	Average Power Density (dBm/100kHz)	Average Power Density (dBm/500kHz)	Limits (dBm/500kHz)	Pass or Fail		
	5745	-9.772	-2.782	30	Pass		
802.11a	5785	-9.483	-2.493	30	Pass		
	5825	-10.217	-3.227	30	Pass		
	5745	-10.890	-3.900	30	Pass		
802.11n20	5785	-10.783	-3.793	30	Pass		
	5825	-11.130	-4.140	30	Pass		
802.11n40	5755	-13.895	-6.905	30	Pass		
002.111140	5795	-13.945	-6.955	30	Pass		
	5745	-11.060	-4.070	30	Pass		
802.11ac20	5785	-10.583	-3.593	30	Pass		
	5825	-11.111	-4.121	30	Pass		
802.11ac40	5755	-13.689	-6.699	30	Pass		
002.11a040	5795	-13.865	-6.875	30	Pass		
802.11ac80	5775	-16.573	-9.583	30	Pass		



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Test Data of Conducted Output Power Density for band 5.15-5.25 GHz-MIMO					
Test Mode	Test Channel (MHz)	- The stage is the		Pass or Fail	
	5180	-0.61	11	Pass	
802.11n20	5200	-0.19	11	Pass	
	5240	0.94	11	Pass	
802.11n40	5190	-3.50	11	Pass	
	5230	-2.27	11	Pass	
	5180	-0.44	11	Pass	
802.11ac20	5200	-0.02	11	Pass	
	5240	1.02	11	Pass	
802.11ac40	5190	-3.32	11	Pass	
	5230	-2.07	11	Pass	
802.11ac80	5210	-5.65	11	Pass	



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Test Data of Conducted Output Power Density for band 5.25-5.35 GHz-MIMO					
Test Mode	Test Channel (MHz)	- The sage is a second as a se		Pass or Fail	
	5180	1.19	11	Pass	
802.11n20	5200	1.84	11	Pass	
	5240	2.04	11	Pass	
902 11540	5190	-1.58	11	Pass	
802.11n40	5230	-1.05	11	Pass	
	5180	0.90	11	Pass	
802.11ac20	5200	1.92	11	Pass	
	5240	2.07	11	Pass	
802.11ac40	5190	-1.35	11	Pass	
	5230	-0.98	11	Pass	
802.11ac80	5210	-3.96	11	Pass	



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Test Data of Conducted Output Power Density for band 5.470-5.725 GHz-MIMO					
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail	
	5500	-3.74	11	Pass	
802.11n20	5600	-2.17	11	Pass	
	5700	0.63	11	Pass	
	5510	-6.60	11	Pass	
802.11n40	5590	-5.42	11	Pass	
	5670	-3.24	11	Pass	
	5500	-3.67	11	Pass	
802.11ac20	5600	-2.18	11	Pass	
	5700	0.68	11	Pass	
	5510	-6.39	11	Pass	
802.11ac40	5590	-5.22	11	Pass	
	5670	-3.17	11	Pass	
802.11ac80	5530	-9.09	11	Pass	
	5610	-8.15	11	Pass	

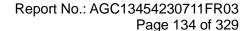


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Test Data of Conducted Output Power Density for band 5.725-5.85 GHz-MIMO					
Test Mode	Test Channel (MHz)	Average Power Density (dBm/100kHz)	Average Power Density (dBm/500kHz)	Limits (dBm/500kHz)	Pass or Fail
802.11n20	5745	-7.75	-0.76	30	Pass
	5785	-7.34	-0.35	30	Pass
	5825	-7.88	-0.89	30	Pass
802.11n40	5755	-10.70	-3.71	30	Pass
	5795	-10.63	-3.64	30	Pass
802.11ac20	5745	-7.96	-0.97	30	Pass
	5785	-7.41	-0.42	30	Pass
	5825	-7.92	-0.93	30	Pass
802.11ac40	5755	-10.50	-3.51	30	Pass
	5795	-10.24	-3.25	30	Pass
802.11ac80	5775	-13.19	-6.20	30	Pass

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

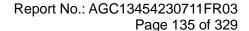
 $2. The \ Total \ PSD(dBm/500kHz) = 10*log \ \{10^{(Ant \ 1 \ PSD/10)} + \ 10^{(Ant \ 2 \ PSD/10)}\} (dBm/500kHz).$ 



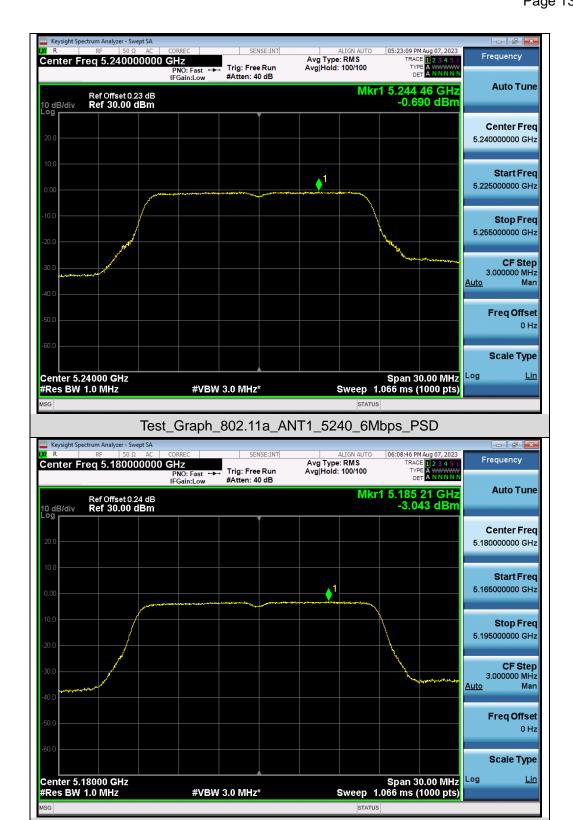


## Test Graphs of Conducted Output Power Spectral Density for band 5.15-5.25 GHz

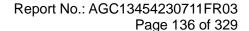






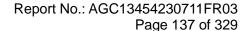


Test Graph 802.11n20 ANT1 5180 MCS0 PSD





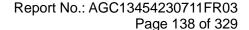




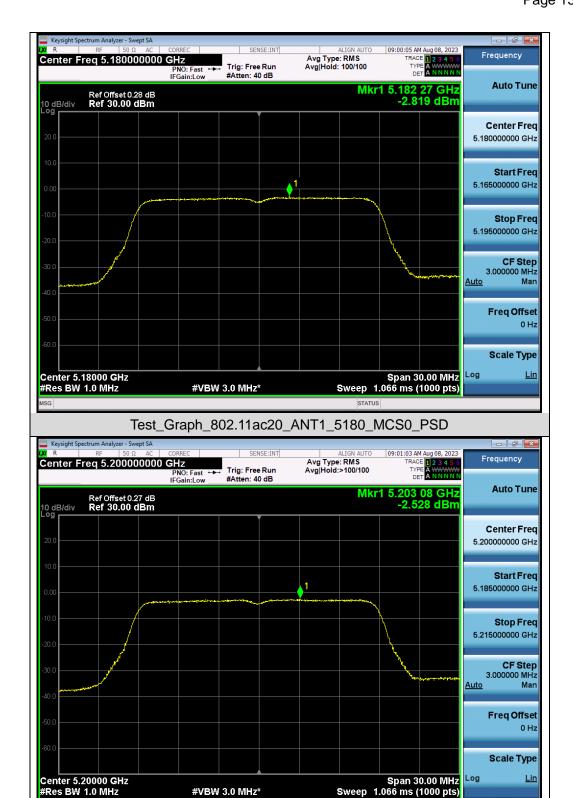




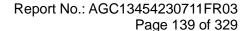
Test Graph 802.11n40 ANT1 5230 MCS0 PSD





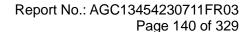


Test Graph 802.11ac20 ANT1 5200 MCS0 PSD

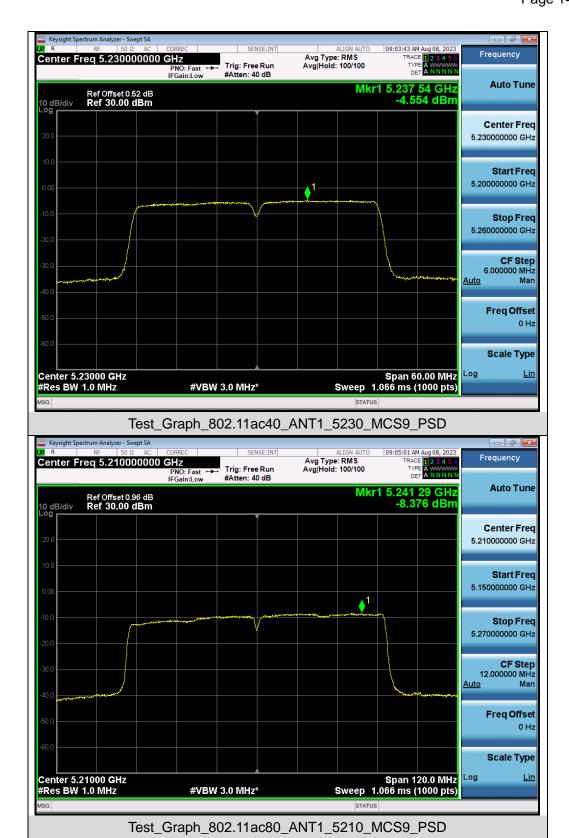


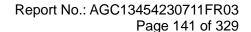




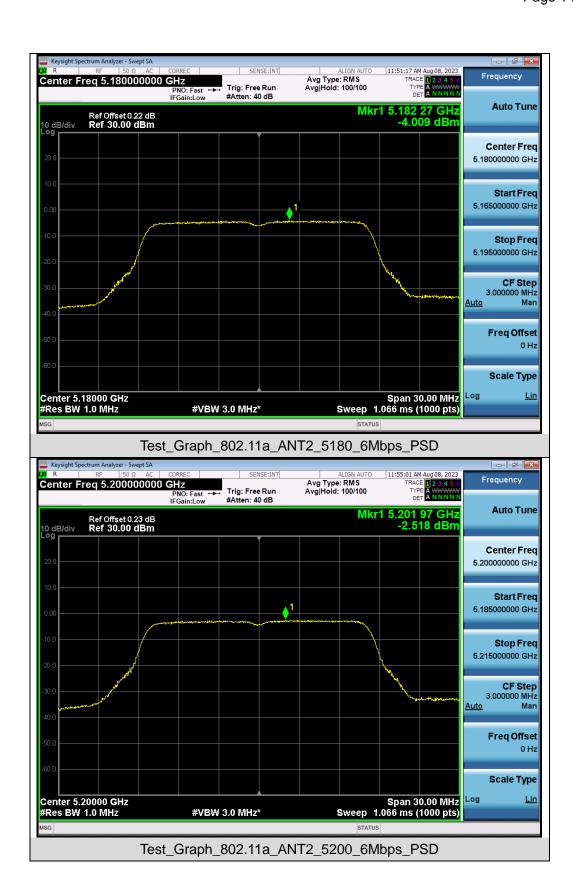


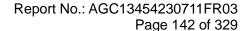




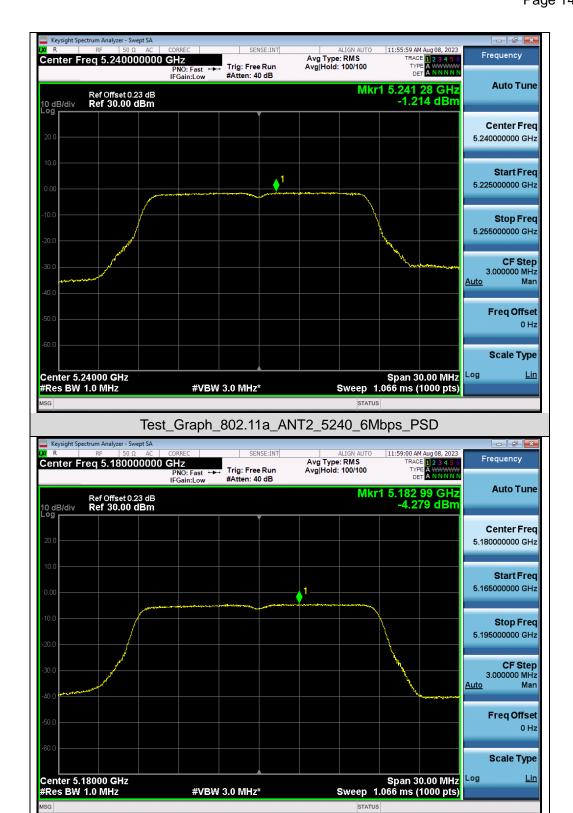




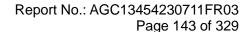








Test Graph 802.11n20 ANT2 5180 MCS0 PSD



Scale Type

Span 30.00 MHz Sweep 1.066 ms (1000 pts)



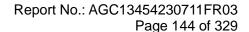


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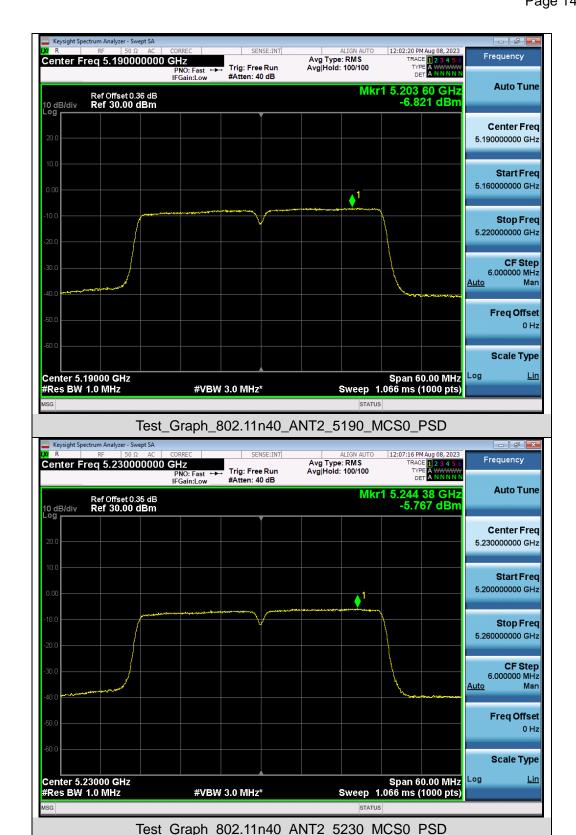
Test Graph 802.11n20 ANT2 5240 MCS0 PSD

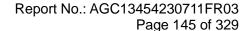
#VBW 3.0 MHz\*

Center 5.24000 GHz #Res BW 1.0 MHz





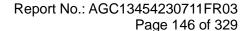






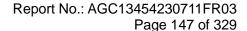


Test Graph 802.11ac20 ANT2 5200 MCS0 PSD











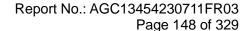


Test Graph 802.11ac80 ANT2 5210 MCS9 PSD

#VBW 3.0 MHz\*

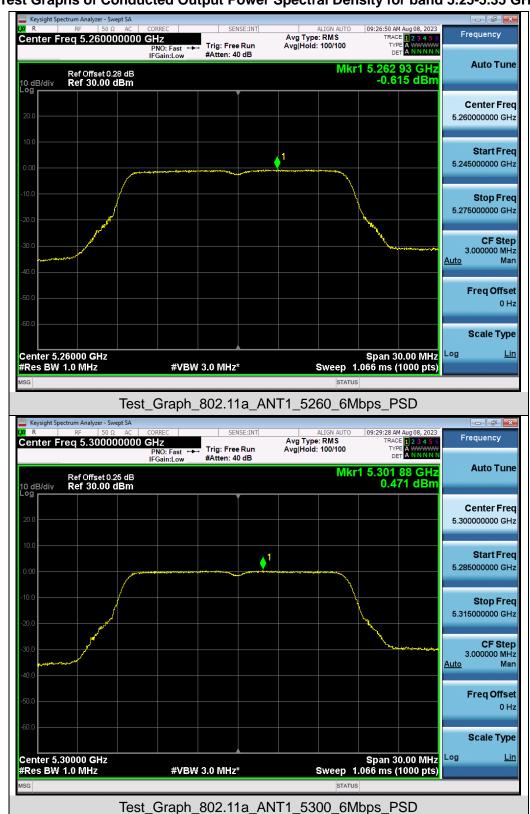
Span 120.0 MHz Sweep 1.066 ms (1000 pts)

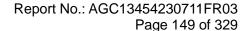
Center 5.21000 GHz #Res BW 1.0 MHz





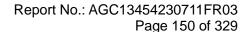
## Test Graphs of Conducted Output Power Spectral Density for band 5.25-5.35 GHz













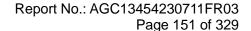


Test Graph 802.11n20 ANT1 5320 MCS0 PSD

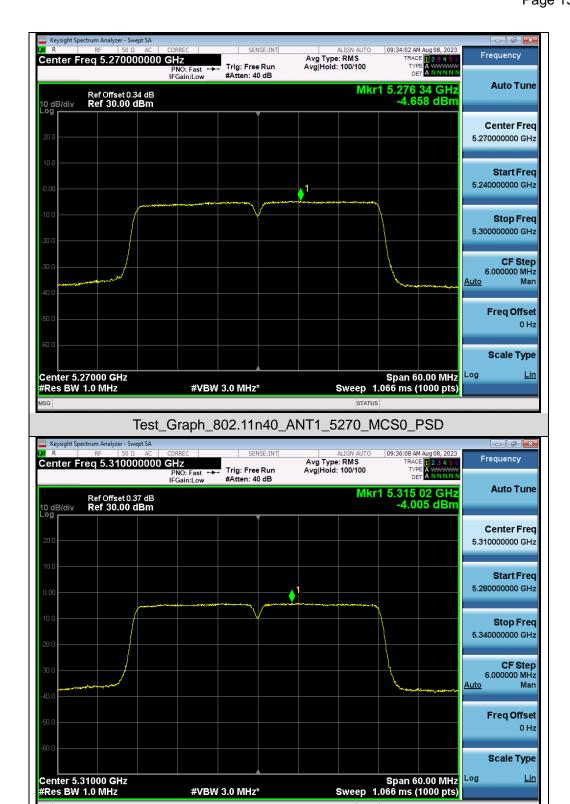
#VBW 3.0 MHz\*

Span 30.00 MHz Sweep 1.066 ms (1000 pts)

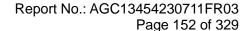
Center 5.32000 GHz #Res BW 1.0 MHz



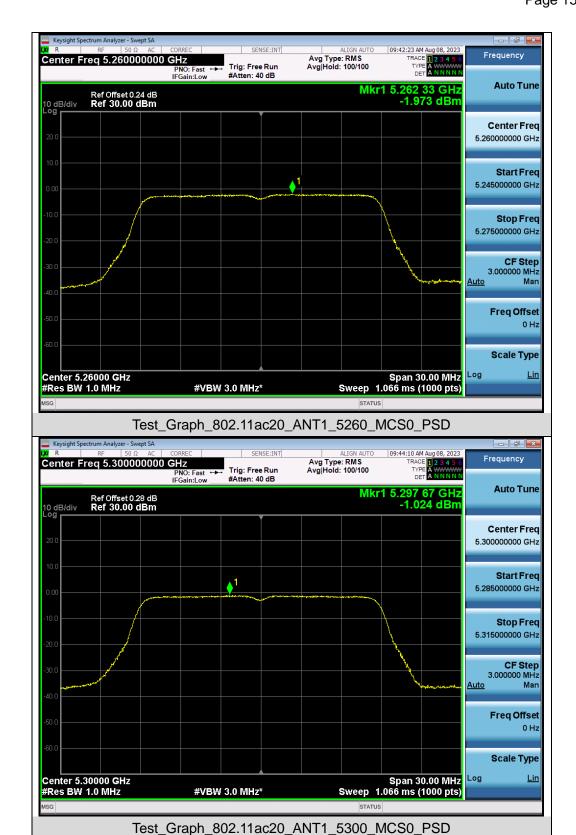


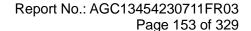


Test Graph 802.11n40 ANT1 5310 MCS0 PSD

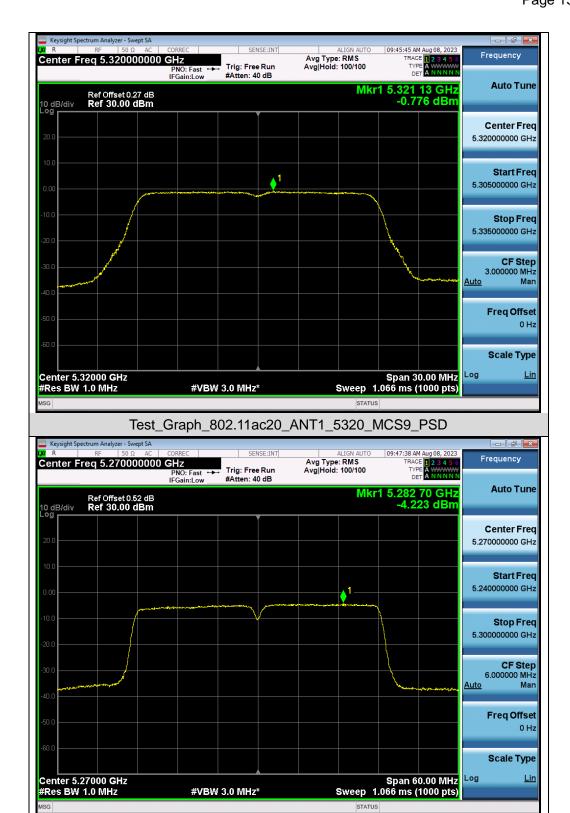




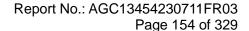




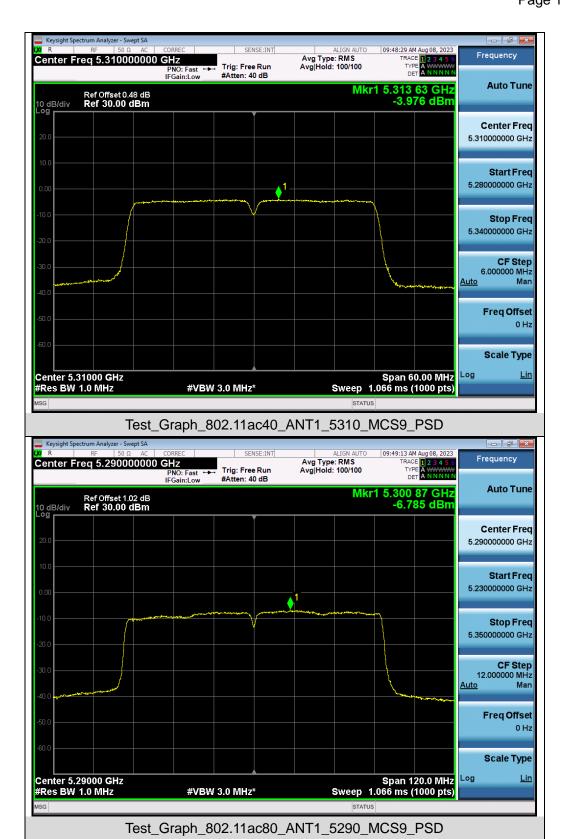


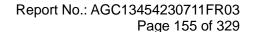


Test Graph 802.11ac40 ANT1 5270 MCS9 PSD



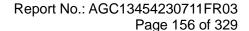






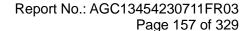




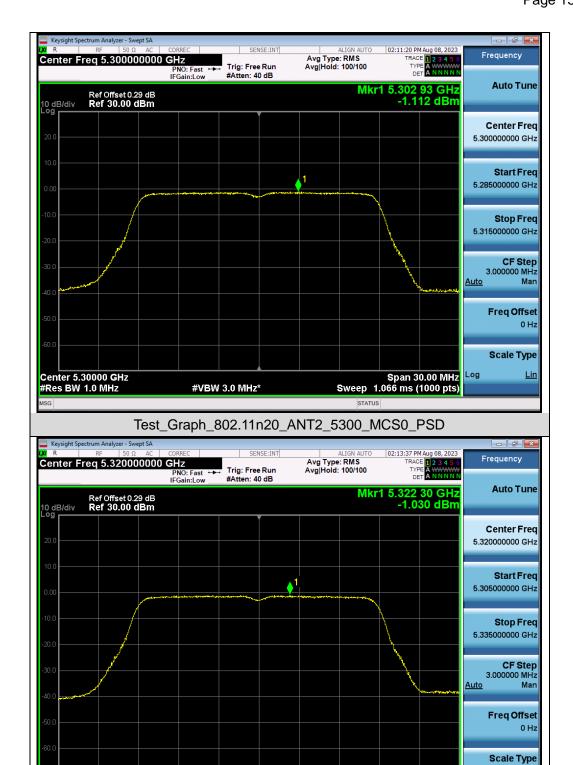










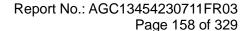


Test Graph 802.11n20 ANT2 5320 MCS0 PSD

#VBW 3.0 MHz\*

Span 30.00 MHz Sweep 1.066 ms (1000 pts)

Center 5.32000 GHz #Res BW 1.0 MHz







Test Graph 802.11n40 ANT2 5310 MCS0 PSD

