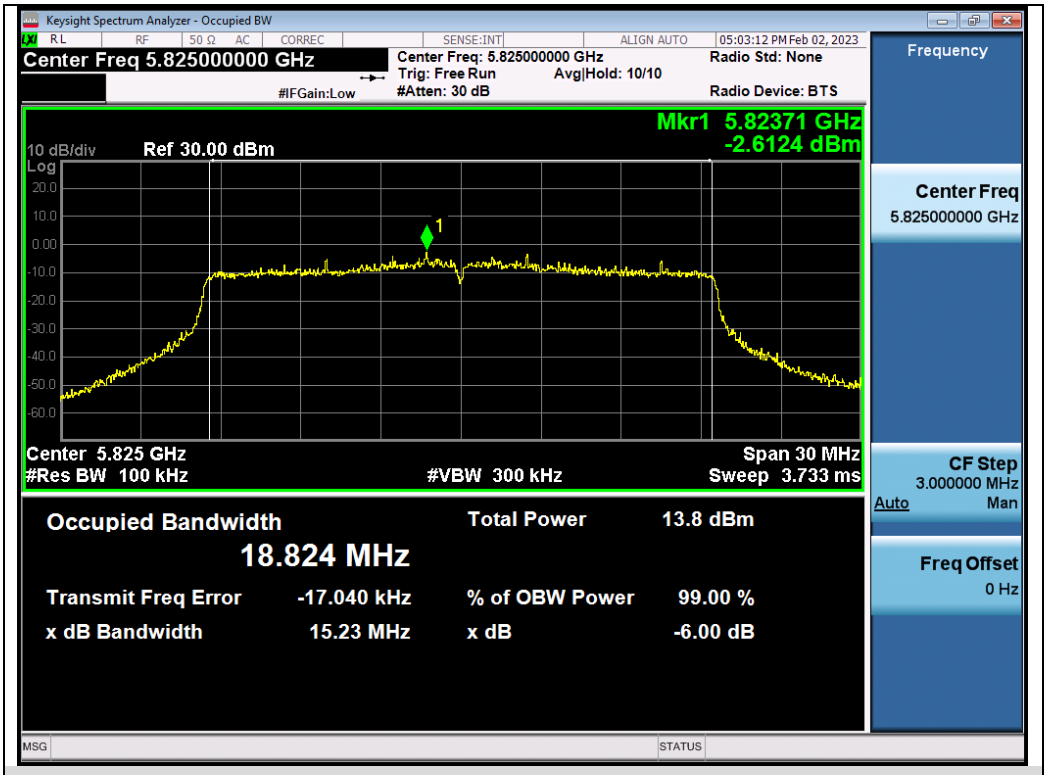
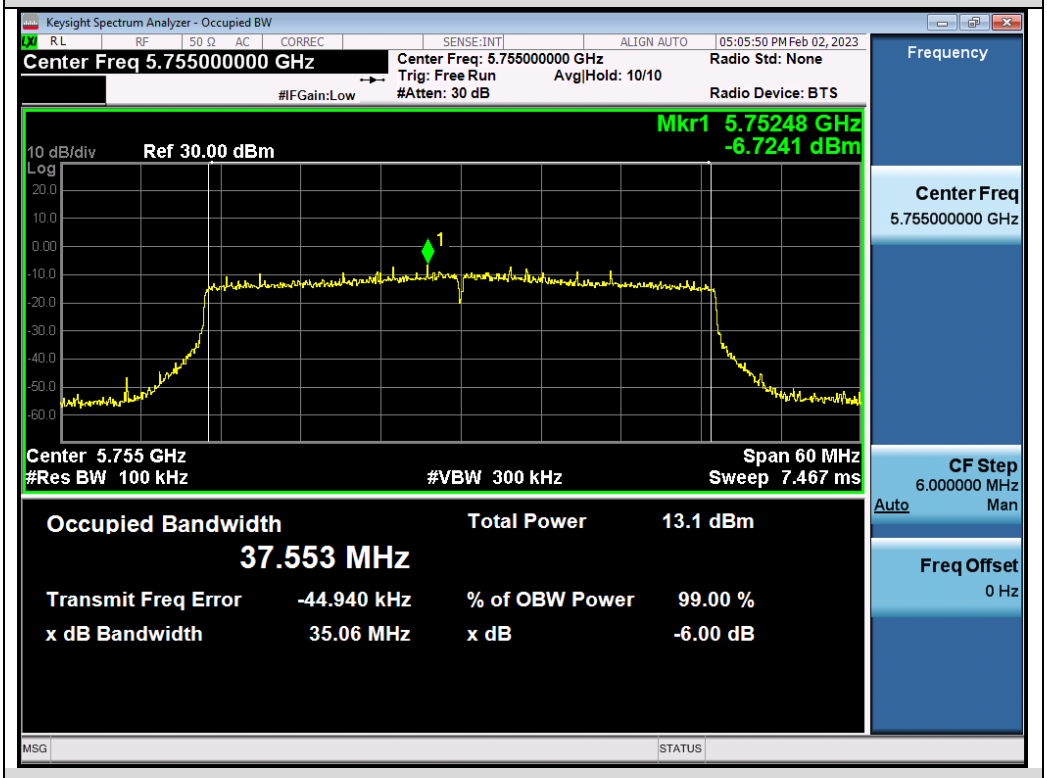
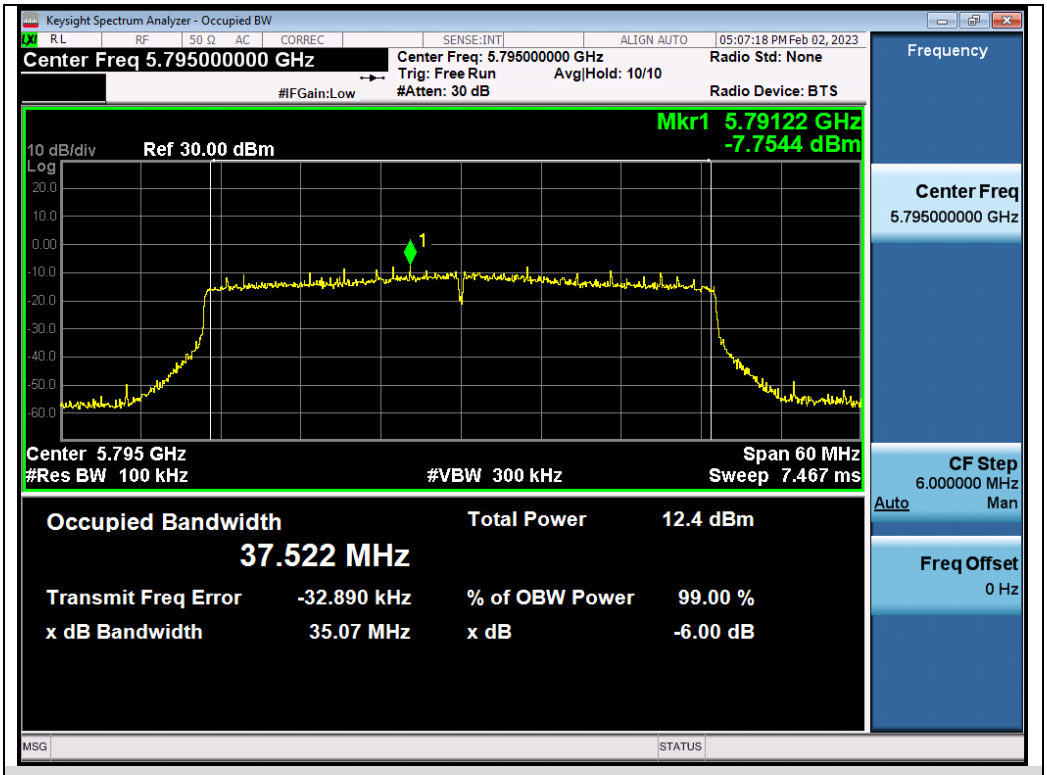


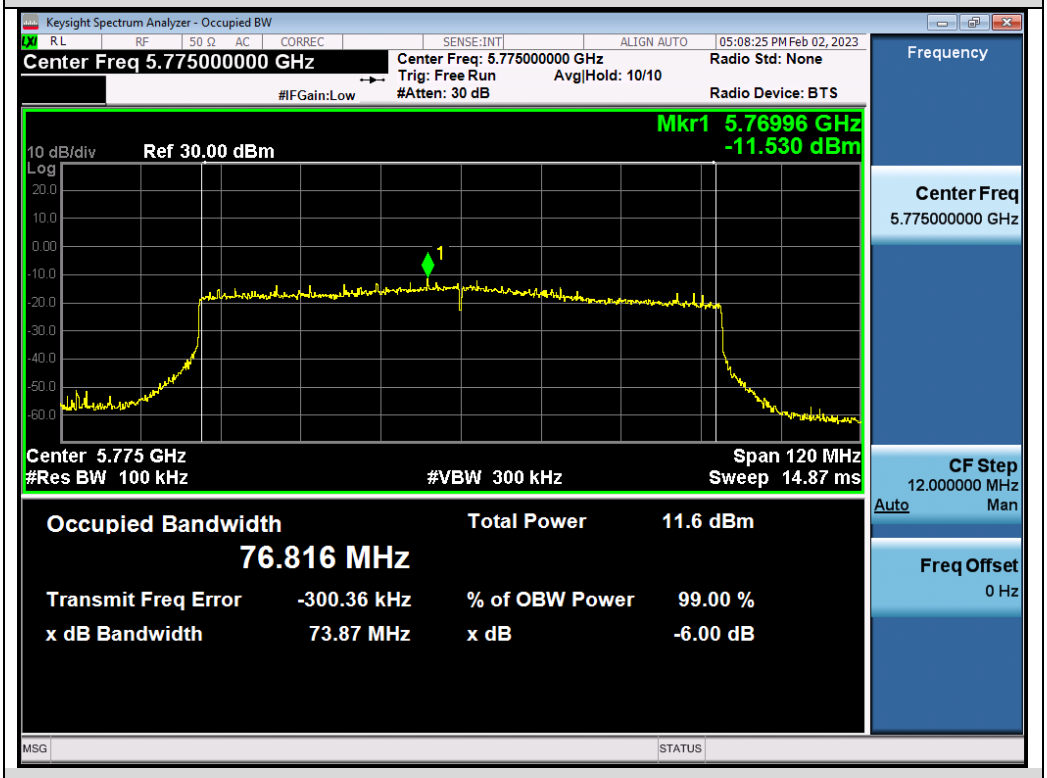
Test_Graph_802.11ax20_ANT1_5825_MCS0_DTSBW



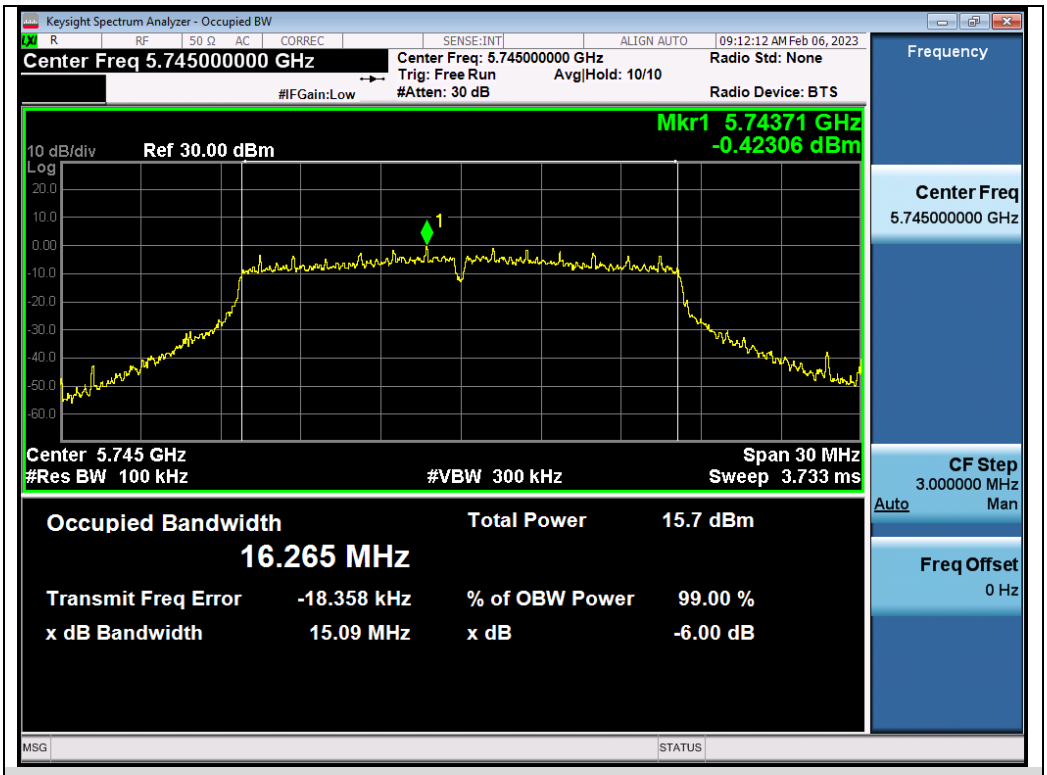
Test_Graph_802.11ax40_ANT1_5755_MCS0_DTSBW



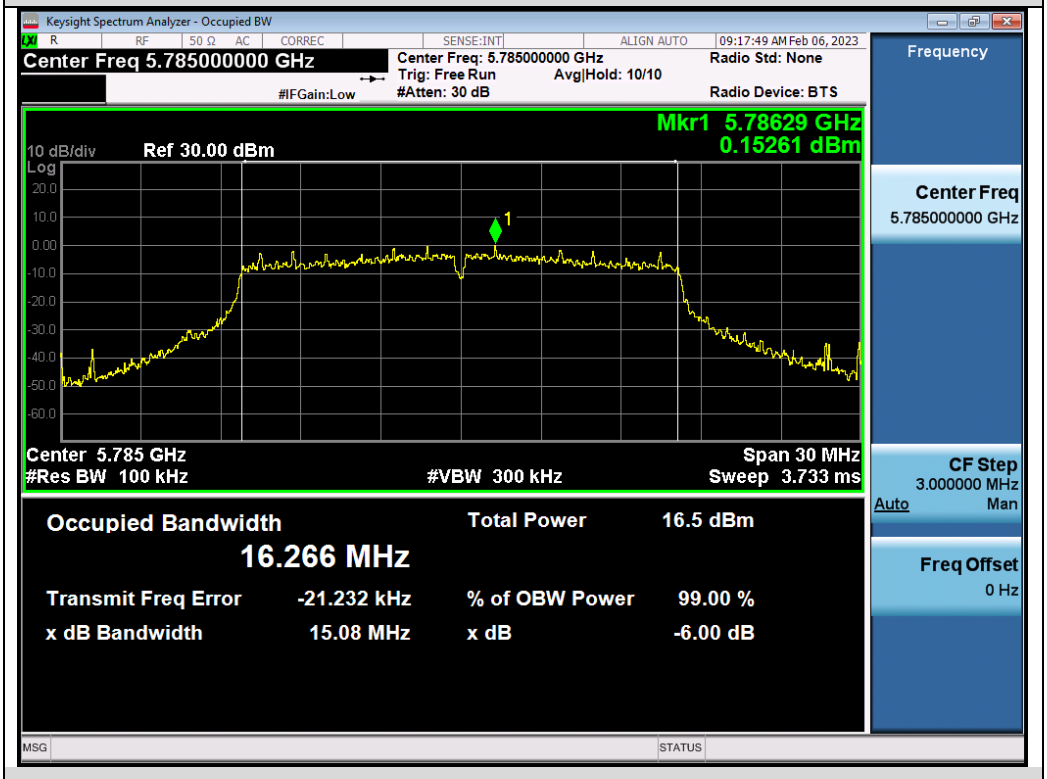
Test_Graph_802.11ax40_ANT1_5795_MCS0_DTSBW



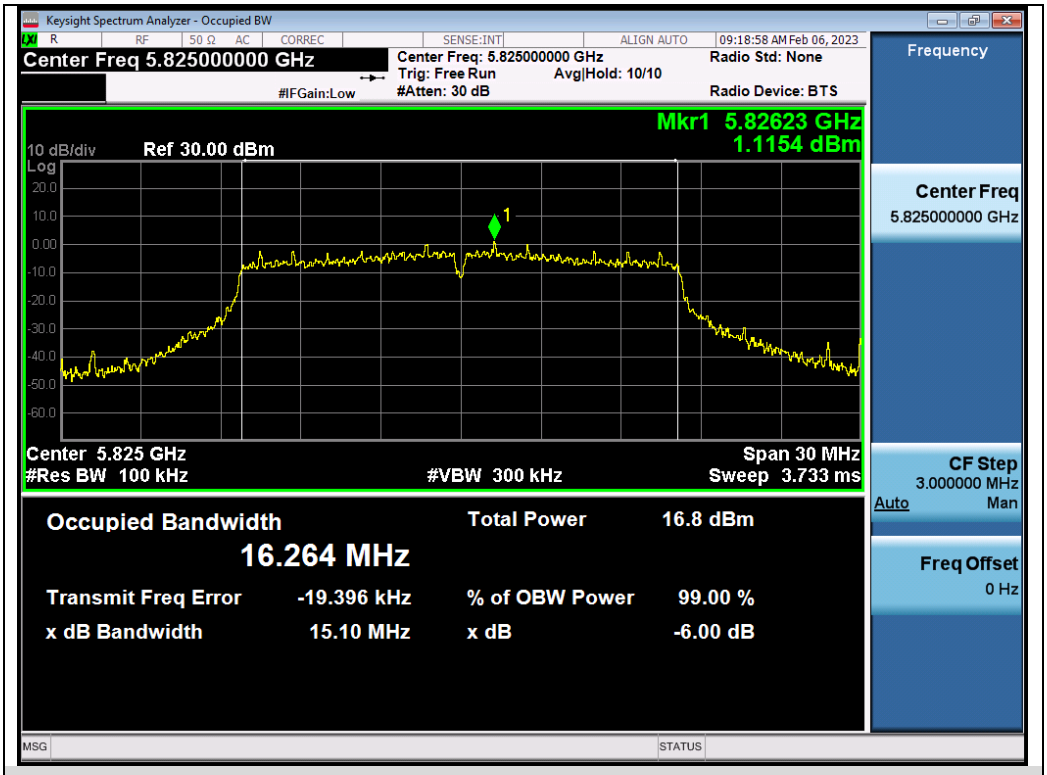
Test_Graph_802.11ax80_ANT1_5775_MCS0_DTSBW



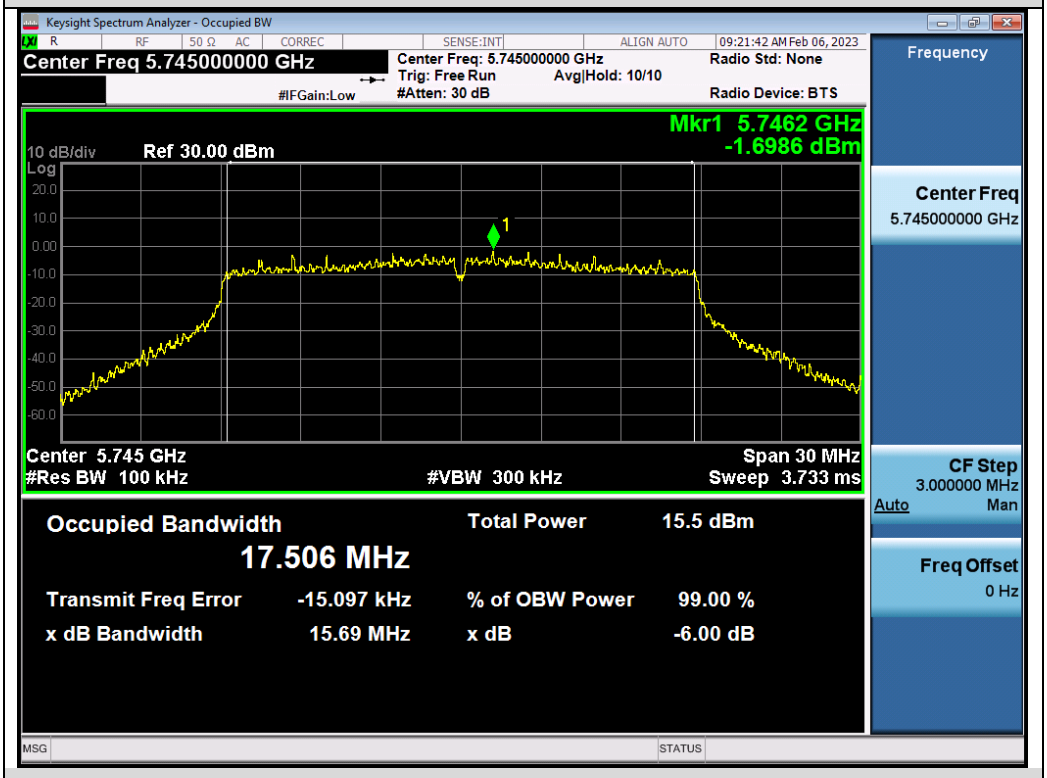
Test_Graph_802.11a_ANT2_5745_6Mbps_DTSBW



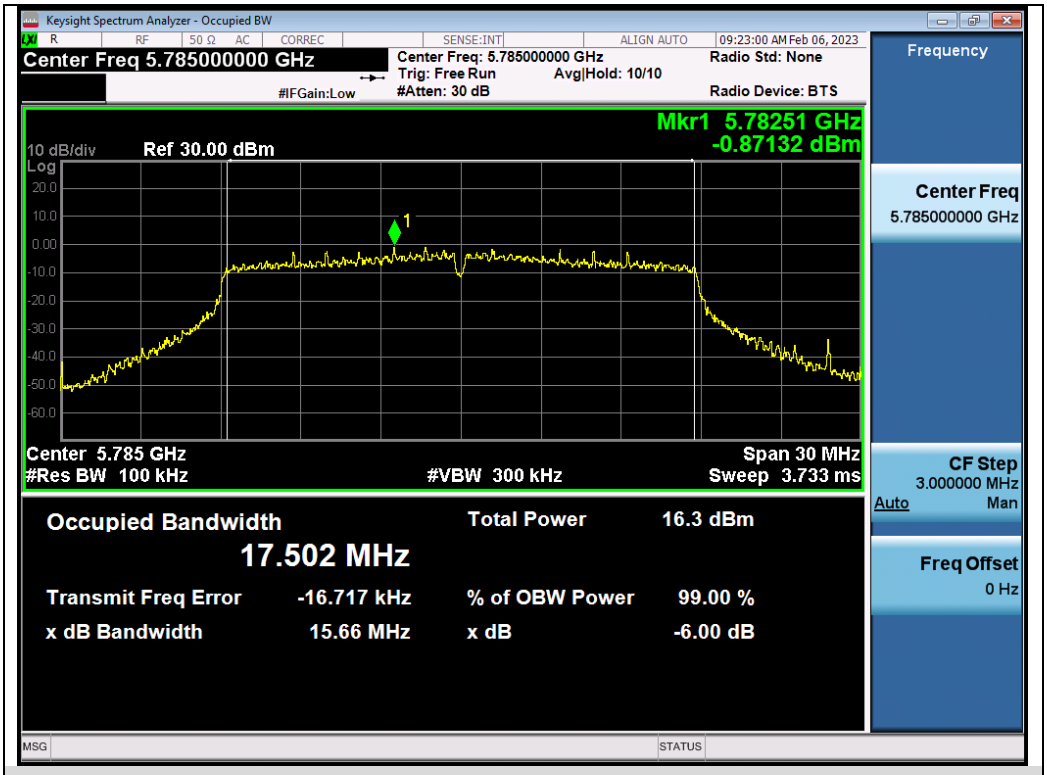
Test_Graph_802.11a_ANT2_5785_6Mbps_DTSBW



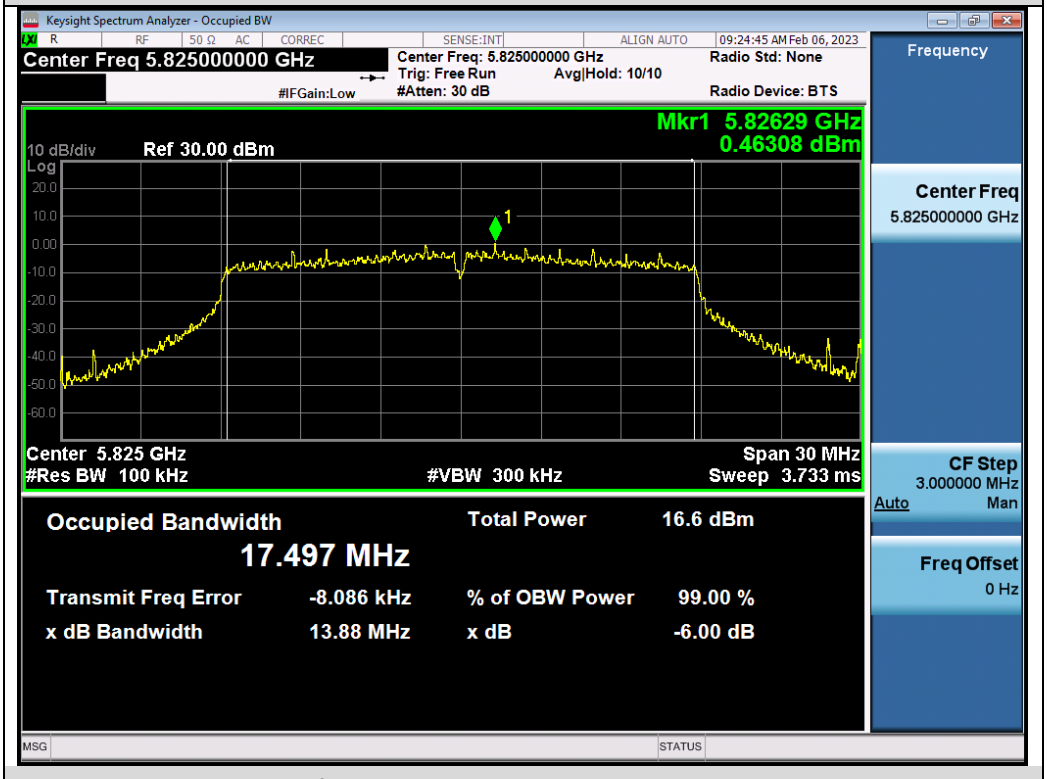
Test_Graph_802.11a_ANT2_5825_6Mbps_DTSBW



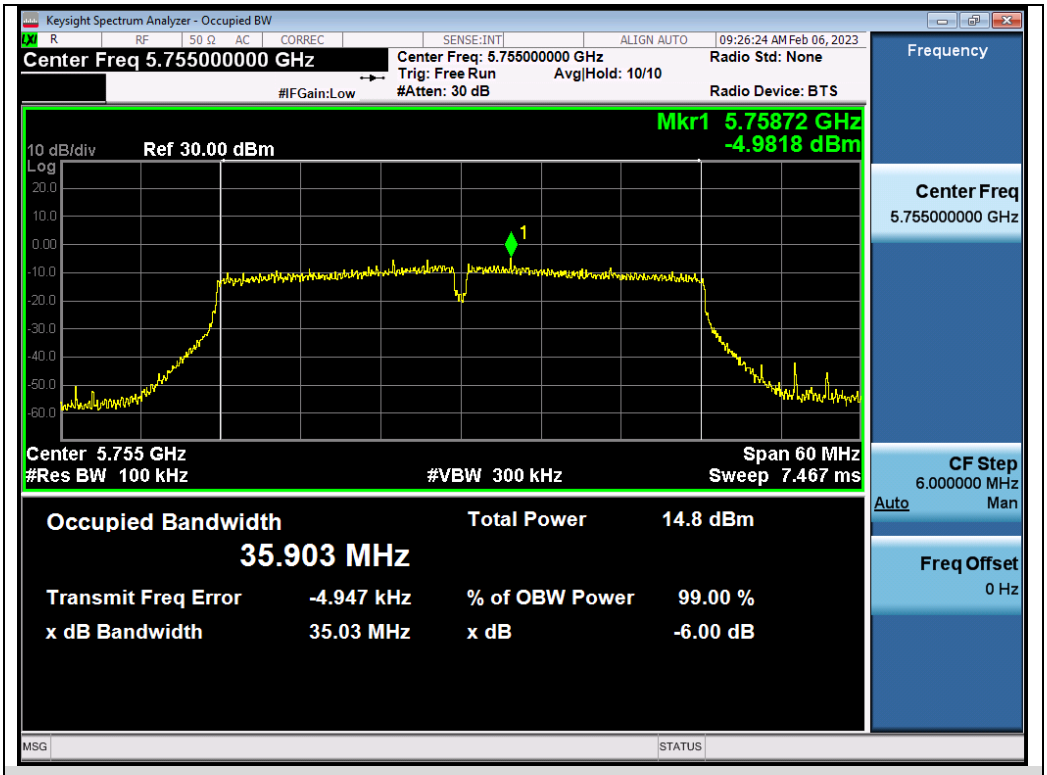
Test_Graph_802.11n20_ANT2_5745_MCS0_DTSBW



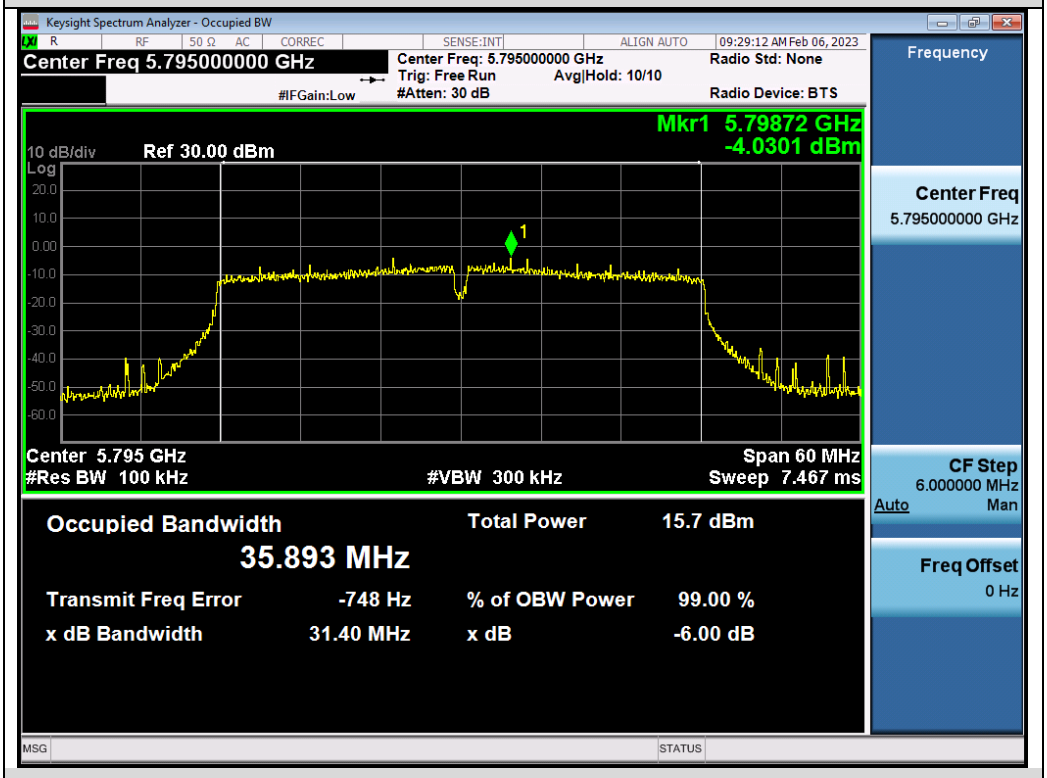
Test_Graph_802.11n20_ANT2_5785_MCS0_DTSBW



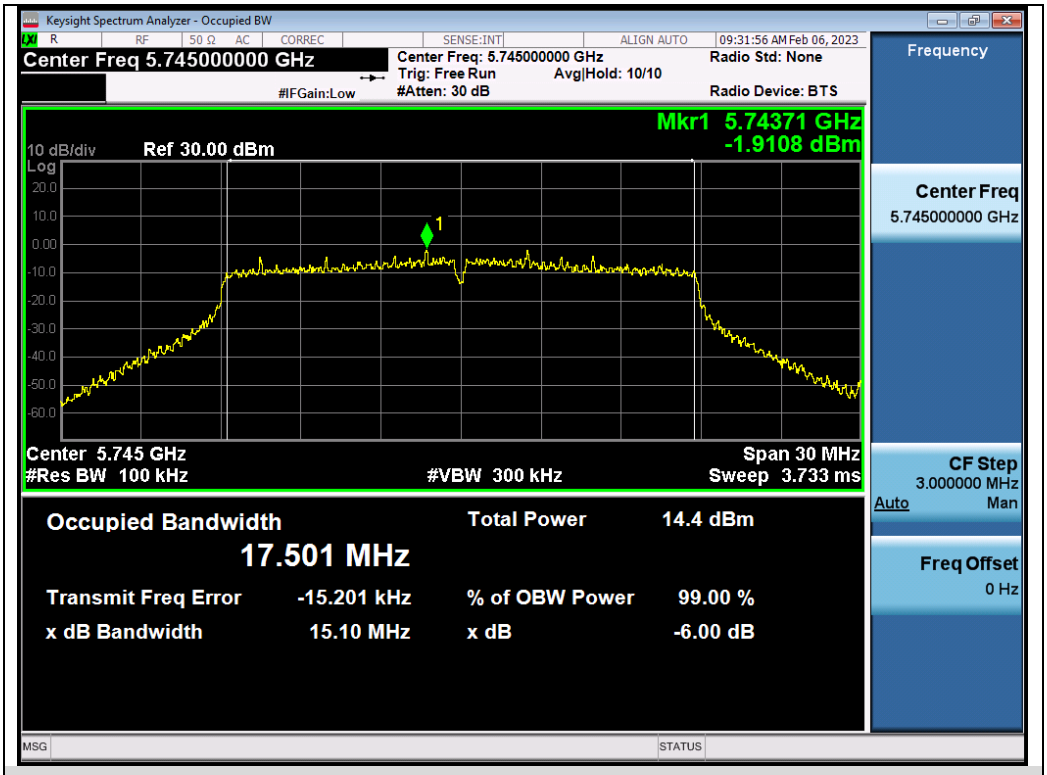
Test_Graph_802.11n20_ANT2_5825_MCS0_DTSBW



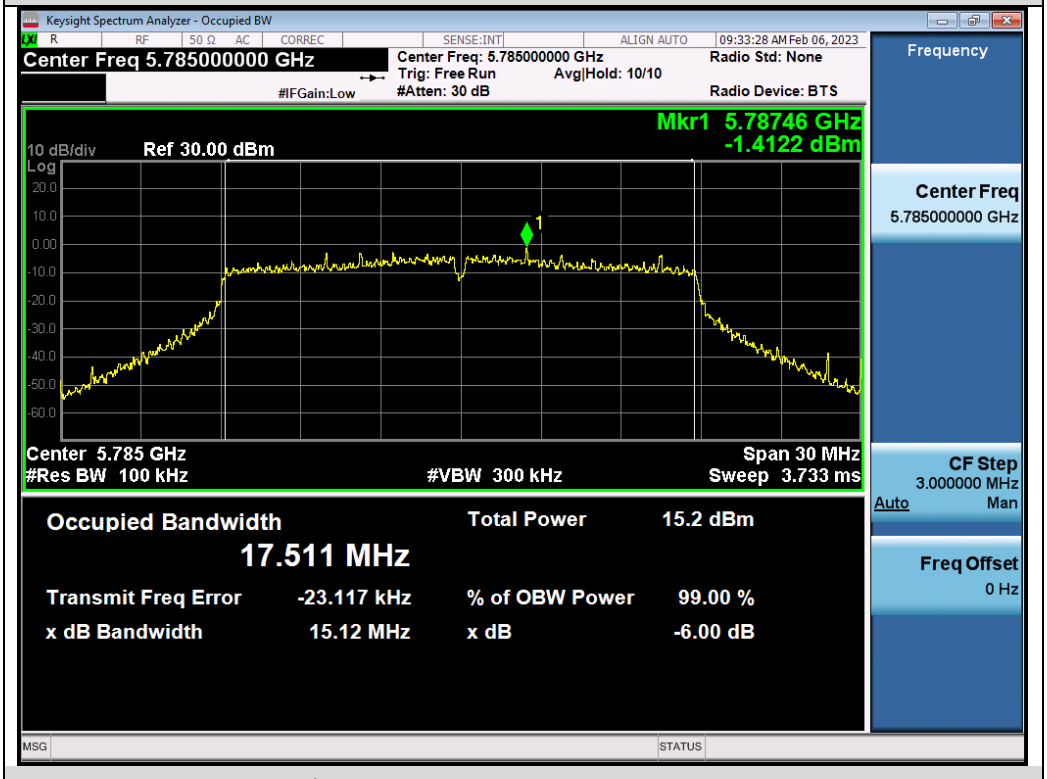
Test_Graph_802.11n40_ANT2_5755_MCS0_DTSBW



Test_Graph_802.11n40_ANT2_5795_MCS0_DTSBW

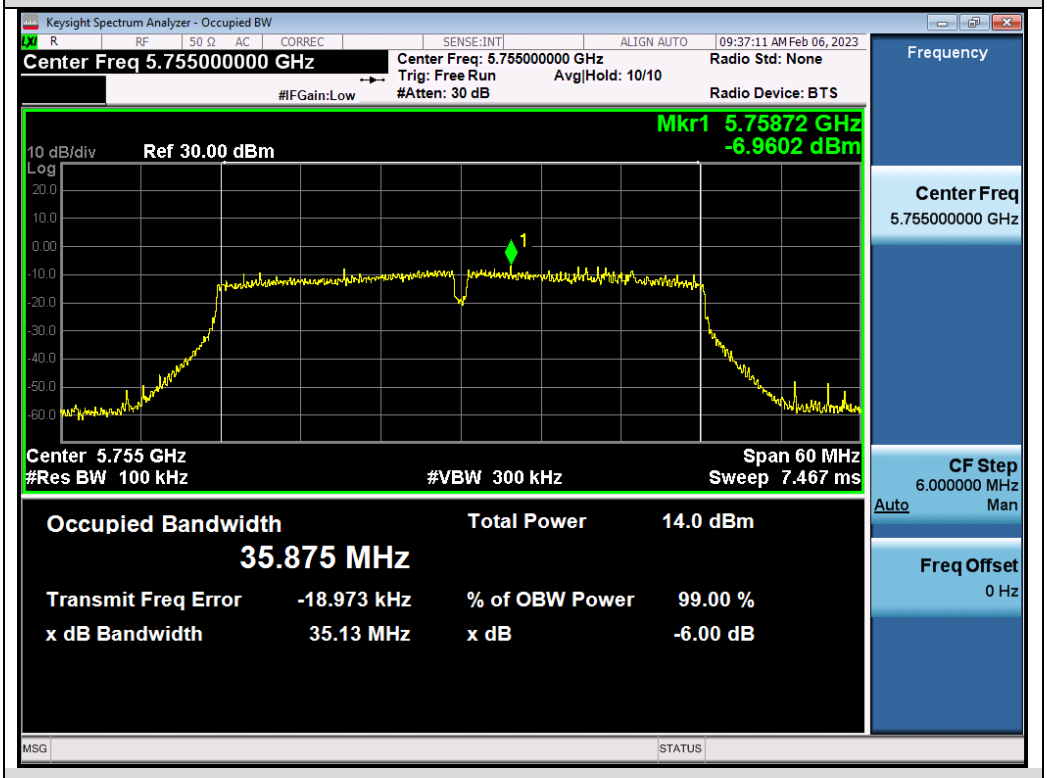


Test_Graph_802.11ac20_ANT2_5745_MCS0_DTSBW

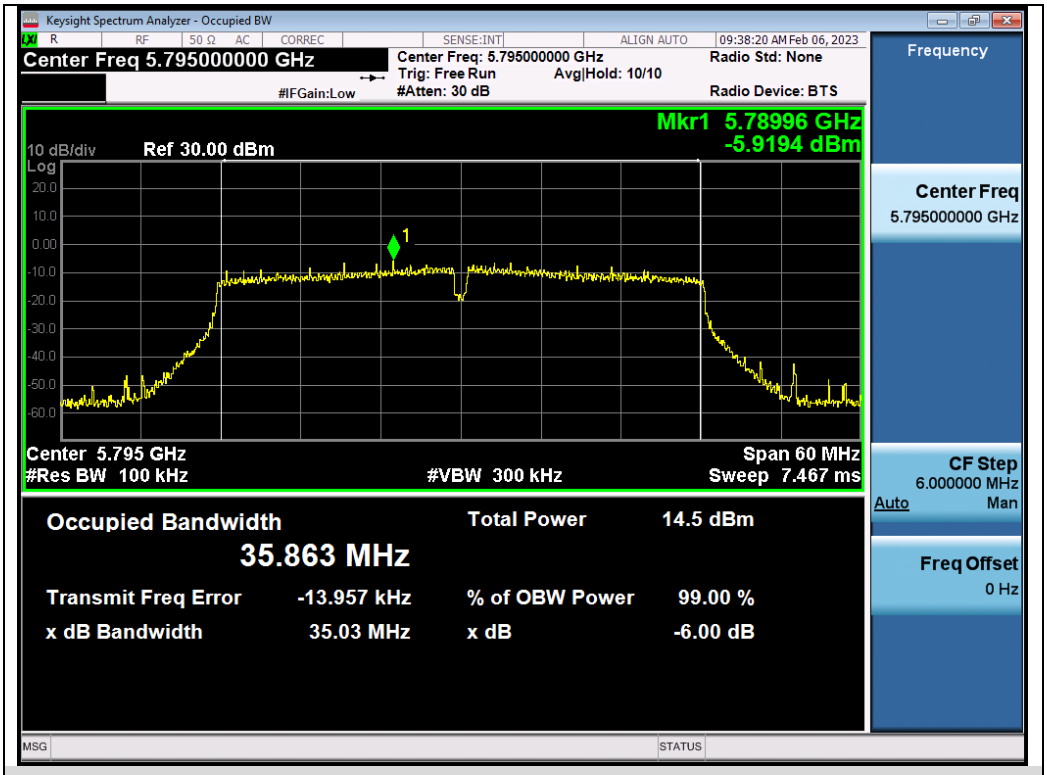


Test_Graph_802.11ac20_ANT2_5785_MCS0_DTSBW

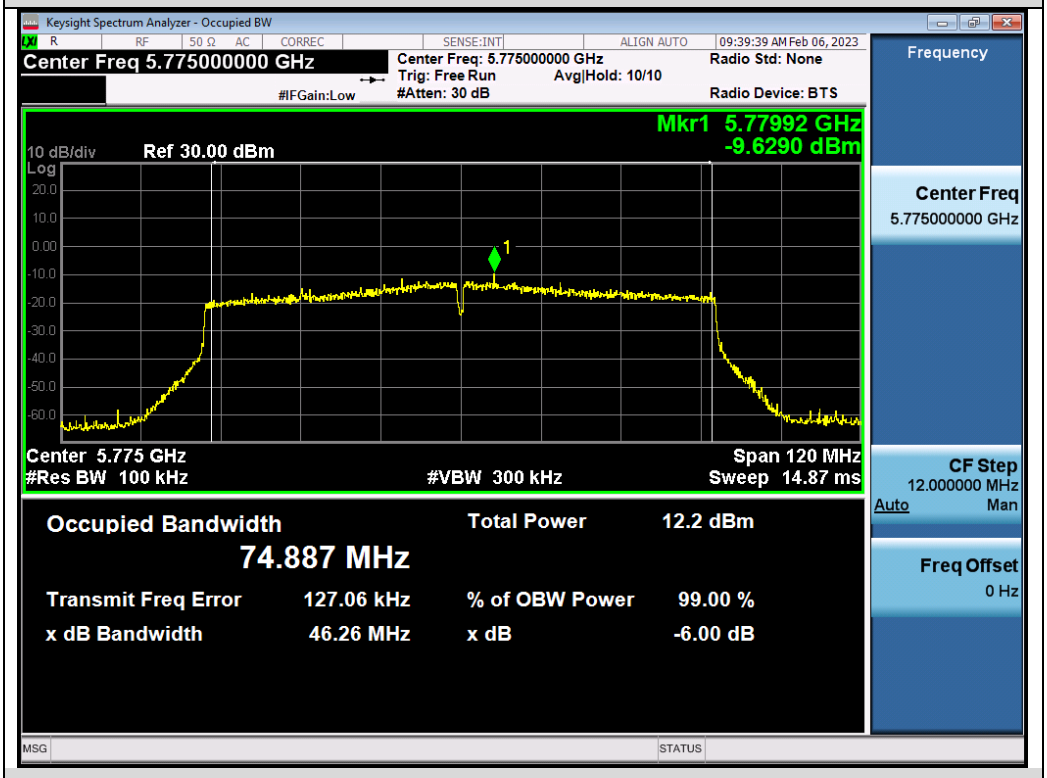
Test_Graph_802.11ac20_ANT2_5825_MCS9_DTSBW



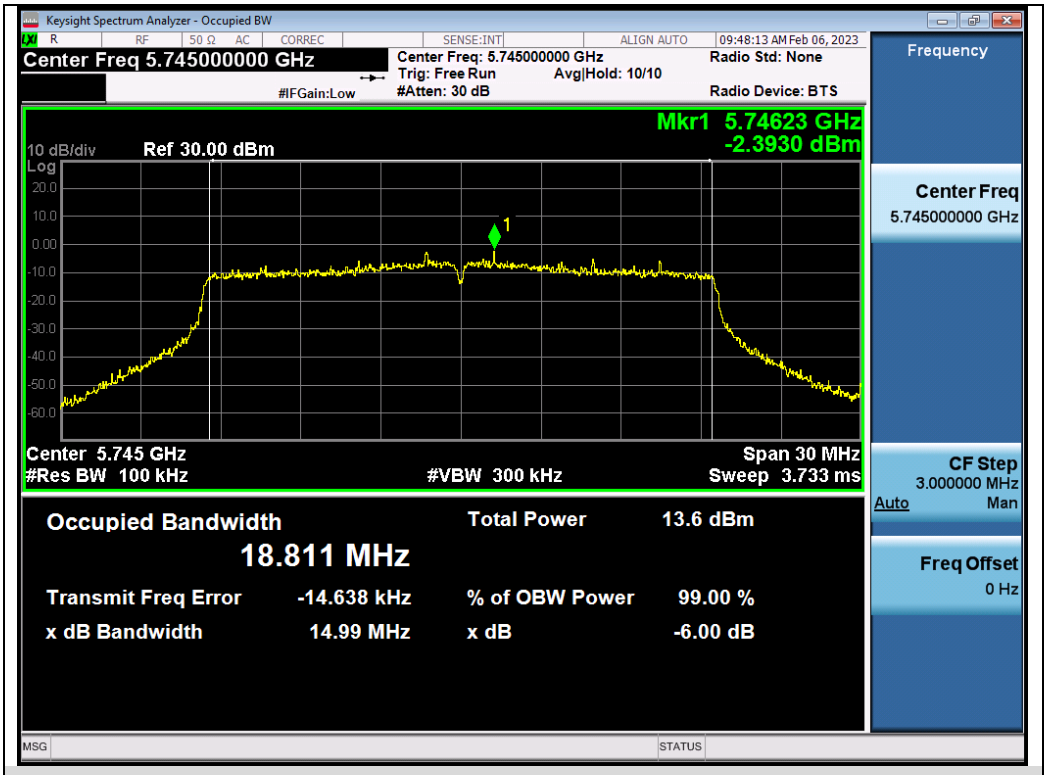
Test_Graph_802.11ac40_ANT2_5755_MCS9_DTSBW



Test_Graph_802.11ac40_ANT2_5795_MCS9_DTSBW

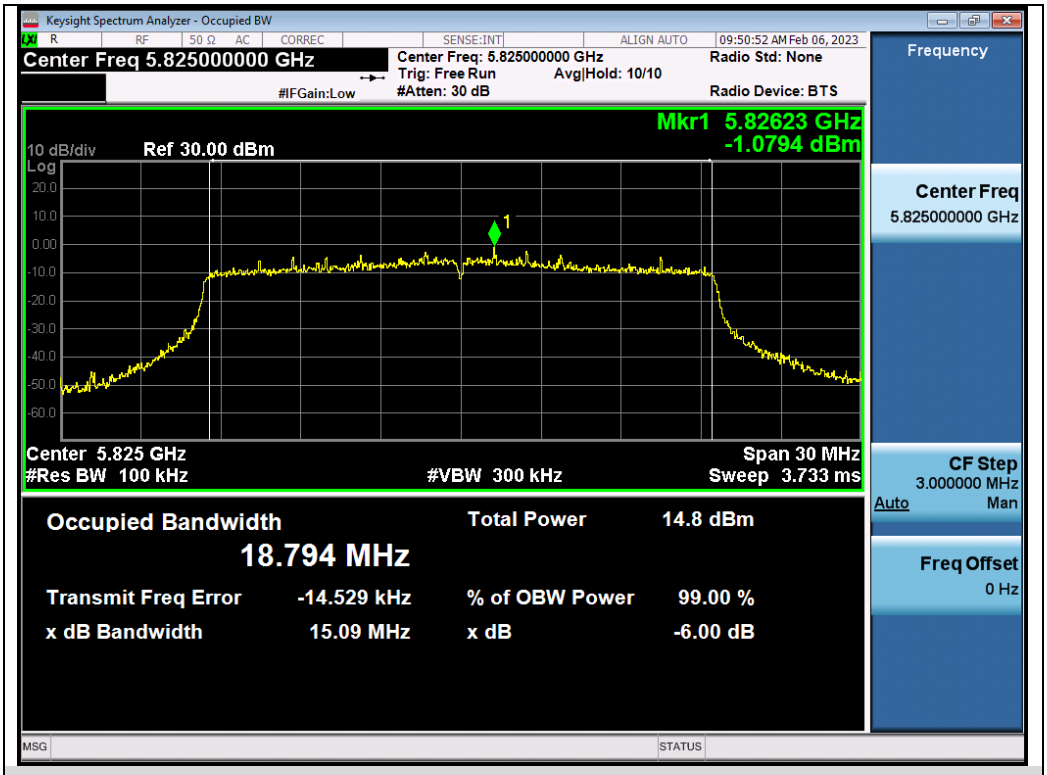


Test_Graph_802.11ac80_ANT2_5775_MCS9_DTSBW

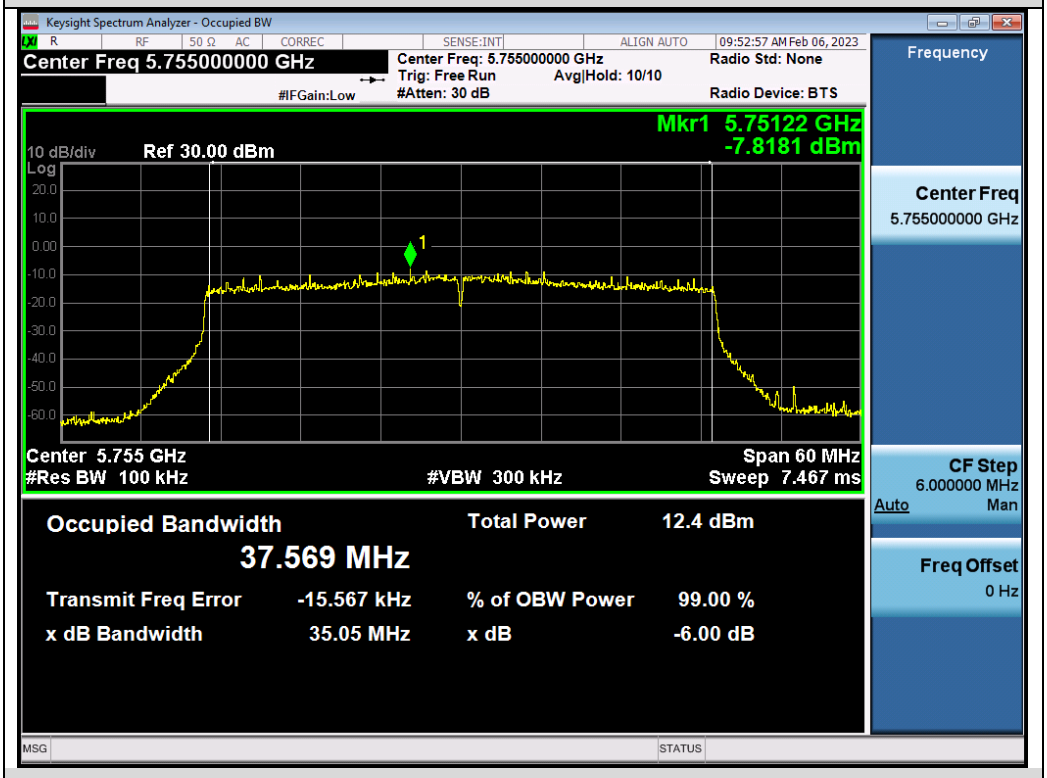


Test_Graph_802.11ax20_ANT2_5745_MCS0_DTSBW

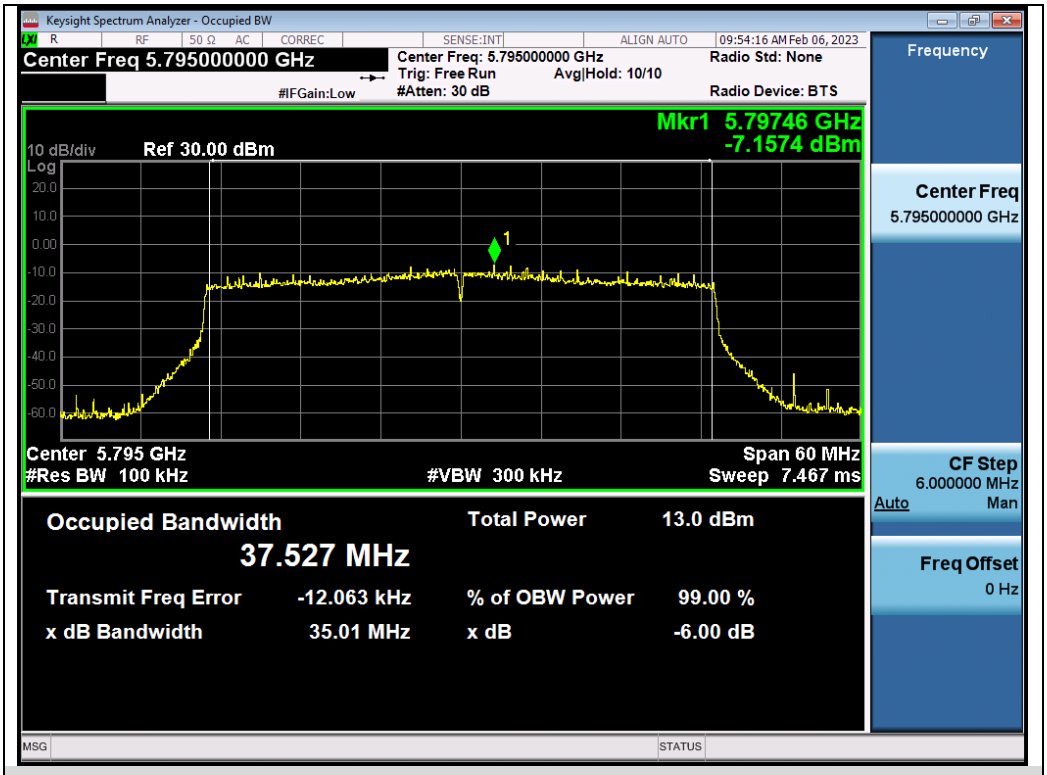
Test_Graph_802.11ax20_ANT2_5785_MCS0_DTSBW



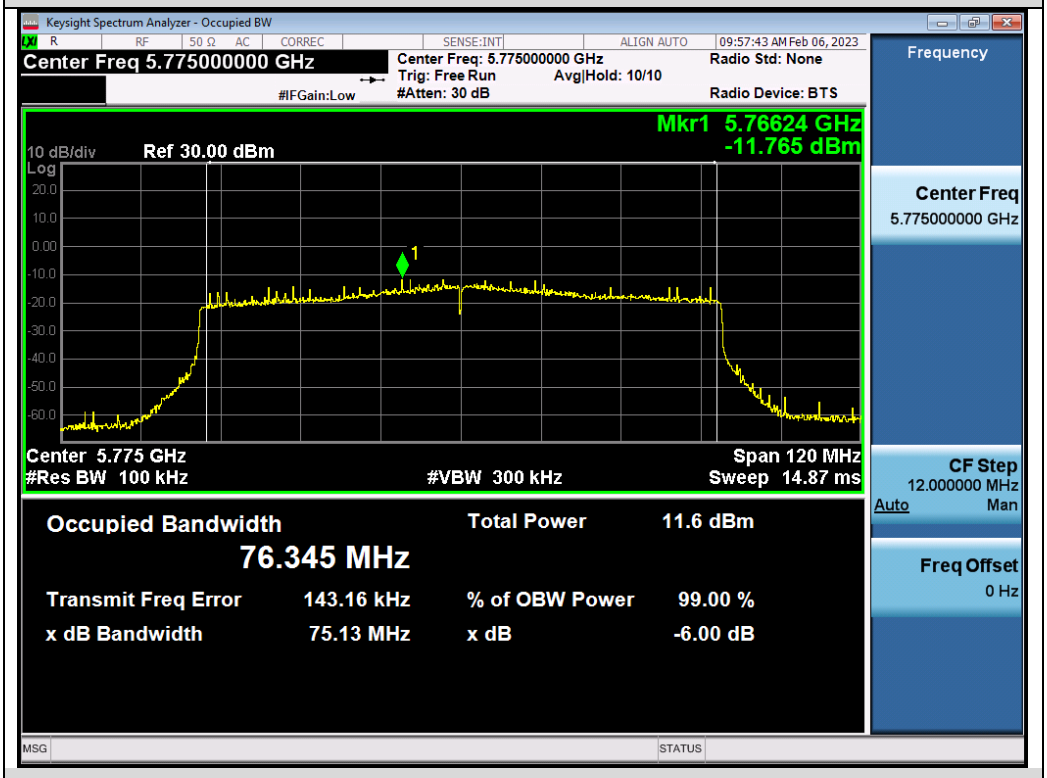
Test_Graph_802.11ax20_ANT2_5825_MCS0_DTSBW



Test_Graph_802.11ax40_ANT2_5755_MCS0_DTSBW



Test_Graph_802.11ax40_ANT2_5795_MCS0_DTSBW



Test_Graph_802.11ax80_ANT2_5775_MCS0_DTSBW

8. POWER SPECTRAL DENSITY MEASUREMENT

8.1 MEASUREMENT LIMITS

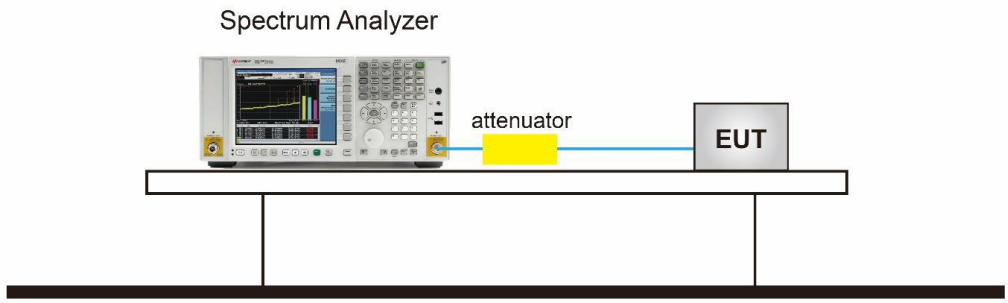
Operation Band	EUT Category		LIMIT
U-NII-1	☐	Outdoor Access Point	17dBm/ MHz
	☐	Fixed point-to-point Access Point	17dBm/ MHz
	☐	Indoor Access Point	17dBm/ MHz
	☒	Client devices	11dBm/ MHz
U-NII-2A	/		11dBm/ MHz
U-NII-2C	/		11dBm/ MHz
U-NII-3	/		30 dBm/500kHz

8.2 MEASUREMENT PROCEDURE

☒For Average power spectral density test:

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

8.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)



8.4 MEASUREMENT RESULT

Test Data of Conducted Output Power Density for band 5.15-5.25 GHz-ANT 1				
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail
802.11a	5180	2.328	11	Pass
	5200	2.692	11	Pass
	5240	2.824	11	Pass
802.11n20	5180	-0.185	11	Pass
	5200	2.218	11	Pass
	5240	2.318	11	Pass
802.11n40	5190	-2.720	11	Pass
	5230	-0.819	11	Pass
802.11ac20	5180	-0.936	11	Pass
	5200	1.043	11	Pass
	5240	1.351	11	Pass
802.11ac40	5190	-3.532	11	Pass
	5230	-1.611	11	Pass
802.11ac80	5210	-5.138	11	Pass
802.11ax20	5180	-1.334	11	Pass
	5200	-0.445	11	Pass
	5240	0.979	11	Pass
802.11ax40	5190	-4.805	11	Pass
	5230	-2.919	11	Pass
802.11ax80	5210	-7.458	11	Pass

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
802.11a	5180	2.228	11	Pass
	5200	2.406	11	Pass
	5240	1.149	11	Pass
802.11n20	5180	1.963	11	Pass
	5200	2.026	11	Pass
	5240	1.012	11	Pass
802.11n40	5190	-1.591	11	Pass
	5230	-4.444	11	Pass
802.11ac20	5180	1.209	11	Pass
	5200	0.527	11	Pass
	5240	-0.199	11	Pass
802.11ac40	5190	-2.865	11	Pass
	5230	-2.687	11	Pass
802.11ac80	5210	-7.007	11	Pass
802.11ax20	5180	-1.334	11	Pass
	5200	-0.445	11	Pass
	5240	0.979	11	Pass
802.11ax40	5190	-4.805	11	Pass
	5230	-2.919	11	Pass
802.11ax80	5210	-7.458	11	Pass

Test Data of Conducted Output Power Density for band 5.25-5.35 GHz-ANT 1				
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail
802.11a	5260	2.212	11	Pass
	5300	0.486	11	Pass
	5320	1.656	11	Pass
802.11n20	5260	1.146	11	Pass
	5300	-0.396	11	Pass
	5320	0.485	11	Pass
802.11n40	5270	-2.181	11	Pass
	5310	-2.854	11	Pass
802.11ac20	5260	0.624	11	Pass
	5300	-1.276	11	Pass
	5320	-1.056	11	Pass
802.11ac40	5270	-2.546	11	Pass
	5310	-4.146	11	Pass
802.11ac80	5290	-6.916	11	Pass
802.11ax20	5260	0.054	11	Pass
	5300	-2.127	11	Pass
	5320	-1.694	11	Pass
802.11ax40	5270	-3.845	11	Pass
	5310	-5.936	11	Pass
802.11ax80	5290	-8.236	11	Pass

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
802.11a	5260	2.090	11	Pass
	5300	1.447	11	Pass
	5320	1.450	11	Pass
802.11n20	5260	0.626	11	Pass
	5300	0.005	11	Pass
	5320	-0.353	11	Pass
802.11n40	5270	-2.492	11	Pass
	5310	-3.357	11	Pass
802.11ac20	5260	-0.463	11	Pass
	5300	-0.173	11	Pass
	5320	-0.810	11	Pass
802.11ac40	5270	-3.697	11	Pass
	5310	-3.627	11	Pass
802.11ac80	5290	-6.991	11	Pass
802.11ax20	5260	-0.926	11	Pass
	5300	-1.833	11	Pass
	5320	-1.788	11	Pass
802.11ax40	5270	-4.603	11	Pass
	5310	-5.382	11	Pass
802.11ax80	5290	-7.993	11	Pass

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
802.11a	5500	2.709	11	Pass
	5600	0.817	11	Pass
	5700	1.107	11	Pass
802.11n20	5500	0.647	11	Pass
	5600	-0.679	11	Pass
	5700	-0.470	11	Pass
802.11n40	5510	-2.270	11	Pass
	5590	-4.125	11	Pass
	5670	-0.602	11	Pass
802.11ac20	5500	0.530	11	Pass
	5600	-0.191	11	Pass
	5700	-0.089	11	Pass
802.11ac40	5510	-3.162	11	Pass
	5590	-7.124	11	Pass
	5670	2.709	11	Pass
802.11ac80	5530	0.817	11	Pass
	5610	1.107	11	Pass
802.11ax20	5500	-0.105	11	Pass
	5600	-0.568	11	Pass
	5700	0.886	11	Pass
802.11ax40	5510	-3.434	11	Pass
	5590	-3.925	11	Pass
	5670	-2.817	11	Pass
802.11ax80	5530	-7.160	11	Pass
	5610	-6.846	11	Pass

Test Data of Conducted Output Power Density for band 5.470-5.725 GHz-ANT 2				
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail
802.11a	5500	2.511	11	Pass
	5600	2.329	11	Pass
	5700	1.814	11	Pass
802.11n20	5500	1.907	11	Pass
	5600	1.642	11	Pass
	5700	0.375	11	Pass
802.11n40	5510	-1.806	11	Pass
	5590	-1.509	11	Pass
	5670	-2.862	11	Pass
802.11ac20	5500	1.217	11	Pass
	5600	0.564	11	Pass
	5700	-0.673	11	Pass
802.11ac40	5510	-2.555	11	Pass
	5590	-6.293	11	Pass
	5670	2.511	11	Pass
802.11ac80	5530	2.329	11	Pass
	5610	1.814	11	Pass
802.11ax20	5500	-0.302	11	Pass
	5600	0.187	11	Pass
	5700	-2.196	11	Pass
802.11ax40	5510	-4.064	11	Pass
	5590	-3.291	11	Pass
	5670	-5.374	11	Pass
802.11ax80	5530	-6.522	11	Pass
	5610	-7.674	11	Pass

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
802.11a	5745	2.328	-4.298	30	Pass
	5785	2.692	-4.166	30	Pass
	5825	2.824	-7.175	30	Pass
802.11n20	5745	-0.185	-4.772	30	Pass
	5785	2.218	-4.672	30	Pass
	5825	2.318	-9.71	30	Pass
802.11n40	5755	-2.720	-7.809	30	Pass
	5795	-0.819	-7.926	30	Pass
802.11ac20	5745	-0.936	-5.947	30	Pass
	5785	1.043	-5.639	30	Pass
	5825	1.351	-10.522	30	Pass
802.11ac40	5755	-3.532	-8.601	30	Pass
	5795	-1.611	-12.128	30	Pass
802.11ac80	5775	-5.138	-8.324	30	Pass
802.11ax20	5745	-1.334	-7.435	30	Pass
	5785	-0.445	-6.011	30	Pass
	5825	0.979	-11.795	30	Pass
802.11ax40	5755	-4.805	-9.909	30	Pass
	5795	-2.919	-14.448	30	Pass
802.11ax80	5775	-7.458	-4.298	30	Pass

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
802.11a	5745	2.228	-4.762	30	Pass
	5785	2.406	-4.584	30	Pass
	5825	1.149	-5.841	30	Pass
802.11n20	5745	1.963	-5.027	30	Pass
	5785	2.026	-4.964	30	Pass
	5825	1.012	-5.978	30	Pass
802.11n40	5755	-1.591	-8.581	30	Pass
	5795	-4.444	-11.434	30	Pass
802.11ac20	5745	1.209	-5.781	30	Pass
	5785	0.527	-6.463	30	Pass
	5825	-0.199	-7.189	30	Pass
802.11ac40	5755	-2.865	-9.855	30	Pass
	5795	-2.687	-9.677	30	Pass
802.11ac80	5775	-7.007	-13.997	30	Pass
802.11ax20	5745	-0.136	-7.126	30	Pass
	5785	-0.254	-7.244	30	Pass
	5825	-1.339	-8.329	30	Pass
802.11ax40	5755	-3.676	-10.666	30	Pass
	5795	-4.797	-11.787	30	Pass
802.11ax80	5775	-7.489	-14.479	30	Pass

Test Data of Conducted Output Power Density for band 5.15-5.25 GHz-MIMO				
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail
802.11n20	5180	3.54	11	Pass
	5200	4.12	11	Pass
	5240	4.51	11	Pass
802.11n40	5190	0.57	11	Pass
	5230	1.29	11	Pass
802.11ac20	5180	2.92	11	Pass
	5200	3.05	11	Pass
	5240	3.32	11	Pass
802.11ac40	5190	0.00	11	Pass
	5230	0.31	11	Pass
802.11ac80	5210	-2.93	11	Pass
802.11ax20	5180	2.60	11	Pass
	5200	1.03	11	Pass
	5240	1.27	11	Pass
802.11ax40	5190	-1.20	11	Pass
	5230	-2.64	11	Pass
802.11ax80	5210	-5.10	11	Pass

Test Data of Conducted Output Power Density for band 5.25-5.35 GHz-MIMO				
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail
802.11n20	5180	3.90	11	Pass
	5200	2.82	11	Pass
	5240	3.10	11	Pass
802.11n40	5190	0.68	11	Pass
	5230	-0.09	11	Pass
802.11ac20	5180	3.12	11	Pass
	5200	2.32	11	Pass
	5240	2.08	11	Pass
802.11ac40	5190	-0.07	11	Pass
	5230	-0.87	11	Pass
802.11ac80	5210	-3.94	11	Pass
802.11ax20	5180	2.60	11	Pass
	5200	1.03	11	Pass
	5240	1.27	11	Pass
802.11ax40	5190	-1.20	11	Pass
	5230	-2.64	11	Pass
802.11ax80	5210	-5.10	11	Pass

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
802.11n20	5500	3.65	11	Pass
	5600	2.98	11	Pass
	5700	3.65	11	Pass
802.11n40	5510	0.98	11	Pass
	5590	0.39	11	Pass
	5670	1.42	11	Pass
802.11ac20	5500	3.90	11	Pass
	5600	3.21	11	Pass
	5700	2.64	11	Pass
802.11ac40	5510	0.16	11	Pass
	5590	-3.68	11	Pass
	5670	5.62	11	Pass
802.11ac80	5530	4.65	11	Pass
	5610	4.49	11	Pass
802.11ax20	5500	2.81	11	Pass
	5600	2.84	11	Pass
	5700	2.62	11	Pass
802.11ax40	5510	-0.73	11	Pass
	5590	-0.59	11	Pass
	5670	-0.90	11	Pass
802.11ax80	5530	-3.82	11	Pass
	5610	-4.23	11	Pass

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	4.03	-1.89	30	Pass
	5785	5.13	-1.81	30	Pass
	5825	4.72	-4.44	30	Pass
802.11n40	5755	0.89	-5.17	30	Pass
	5795	0.75	-6.32	30	Pass
802.11ac20	5745	3.28	-2.85	30	Pass
	5785	3.80	-3.02	30	Pass
	5825	3.66	-5.53	30	Pass
802.11ac40	5755	-0.18	-6.17	30	Pass
	5795	0.89	-7.72	30	Pass
802.11ac80	5775	-2.96	-7.28	30	Pass
802.11ax20	5745	2.32	-4.27	30	Pass
	5785	2.66	-3.57	30	Pass
	5825	2.98	-6.71	30	Pass
802.11ax40	5755	-1.19	-7.26	30	Pass
	5795	-0.75	-9.91	30	Pass
802.11ax80	5775	-4.46	-3.90	30	Pass

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

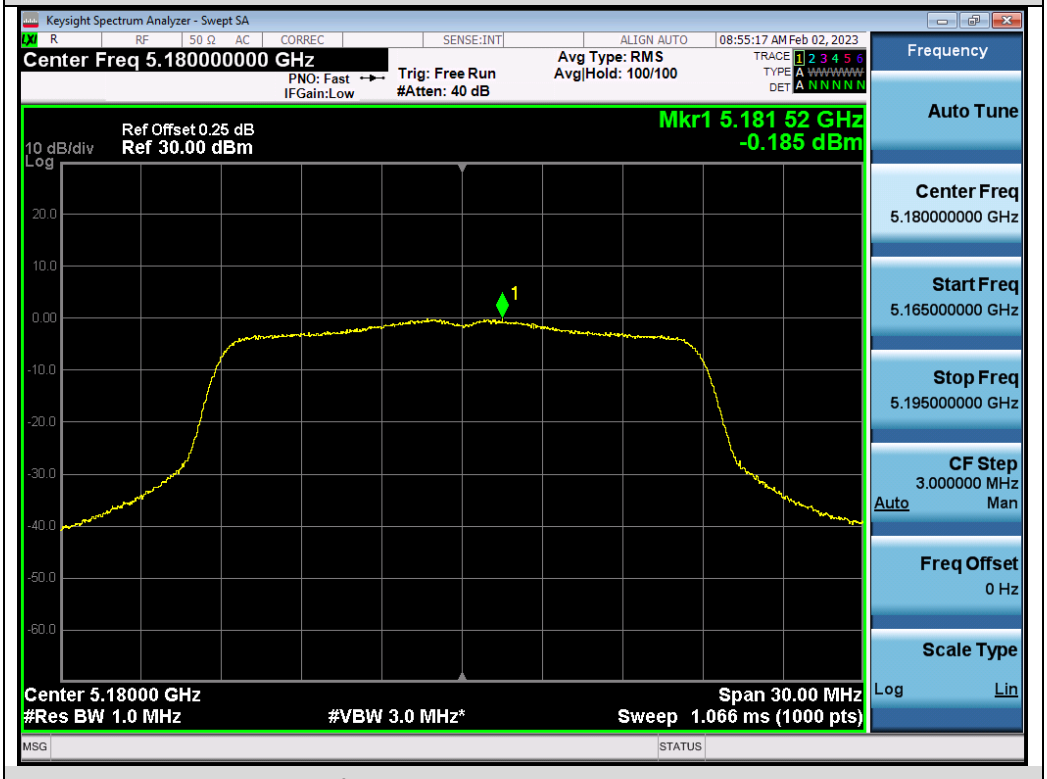
2.The Total PSD(dBm/500kHz) = 10*log $\{10^{(\text{Ant 1 PSD}/10)} + 10^{(\text{Ant 2 PSD}/10)}\}$(dBm/500kHz).

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

Test_Graph_802.11a_ANT1_5180_6Mbps_PSD

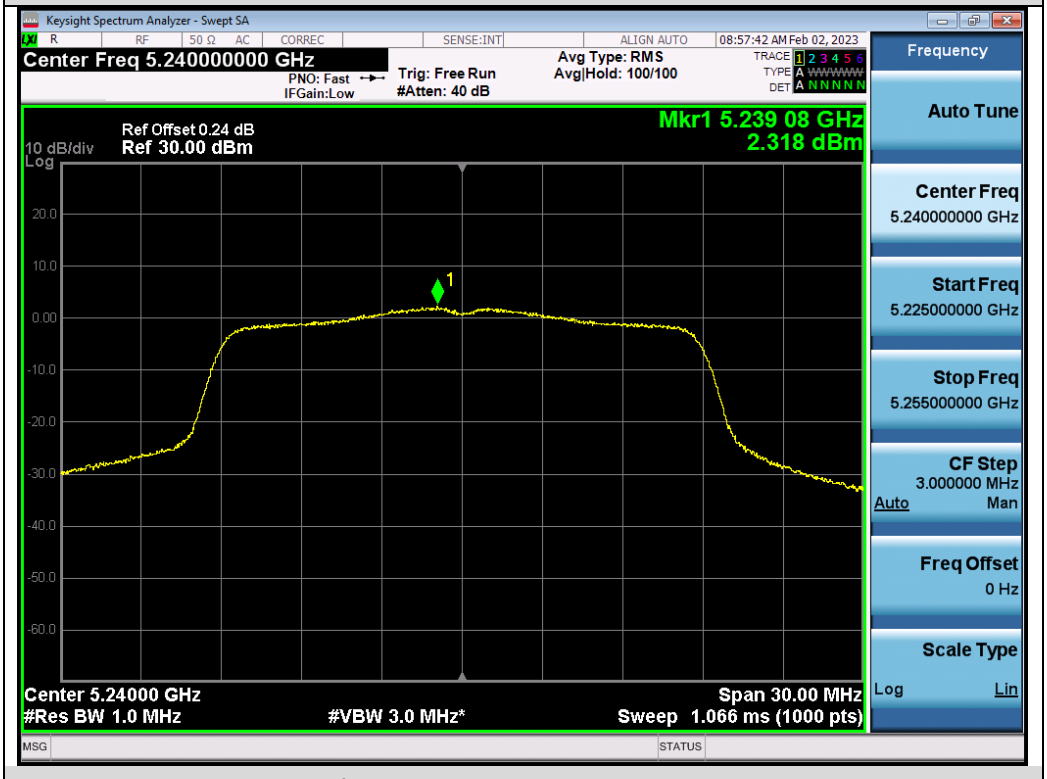
Test_Graph_802.11a_ANT1_5200_6Mbps_PSD

Test_Graph_802.11a_ANT1_5240_6Mbps_PSD



Test_Graph_802.11n20_ANT1_5180_MCS0_PSD

Test_Graph_802.11n20_ANT1_5200_MCS0_PSD



Test_Graph_802.11n20_ANT1_5240_MCS0_PSD

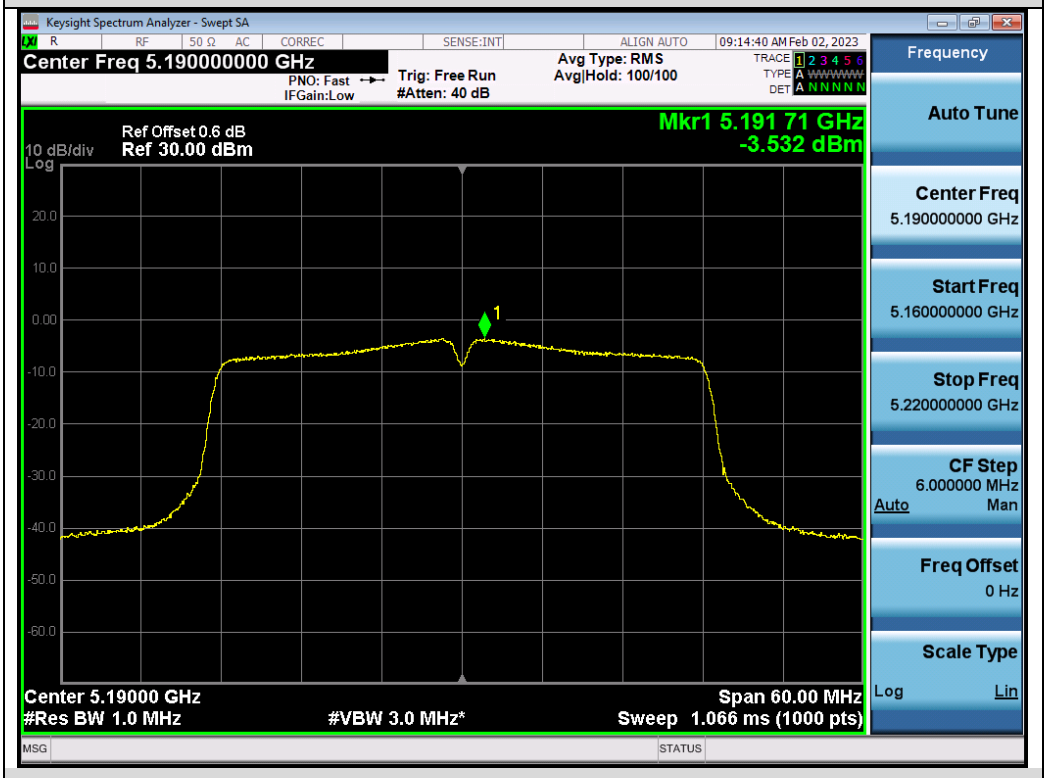
Test_Graph_802.11n40_ANT1_5190_MCS0_PSD

Test_Graph_802.11n40_ANT1_5230_MCS0_PSD

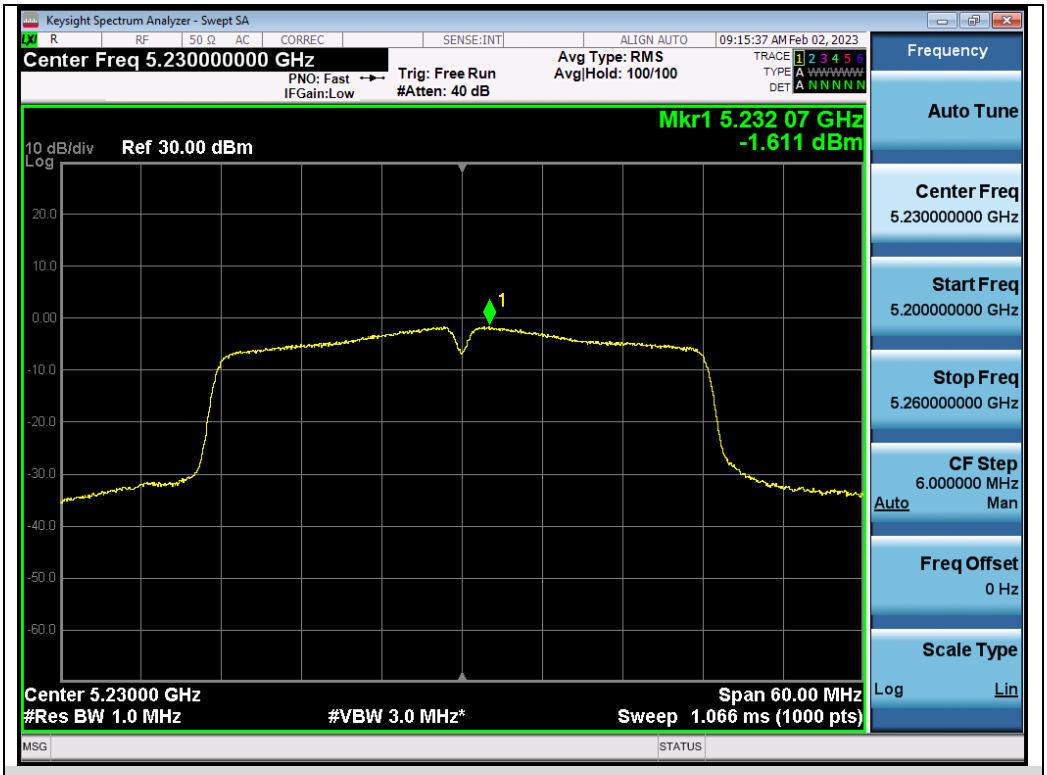
Test_Graph_802.11ac20_ANT1_5180_MCS0_PSD

Test_Graph_802.11ac20_ANT1_5200_MCS0_PSD

Test_Graph_802.11ac20_ANT1_5240_MCS9_PSD



Test_Graph_802.11ac40_ANT1_5190_MCS9_PSD



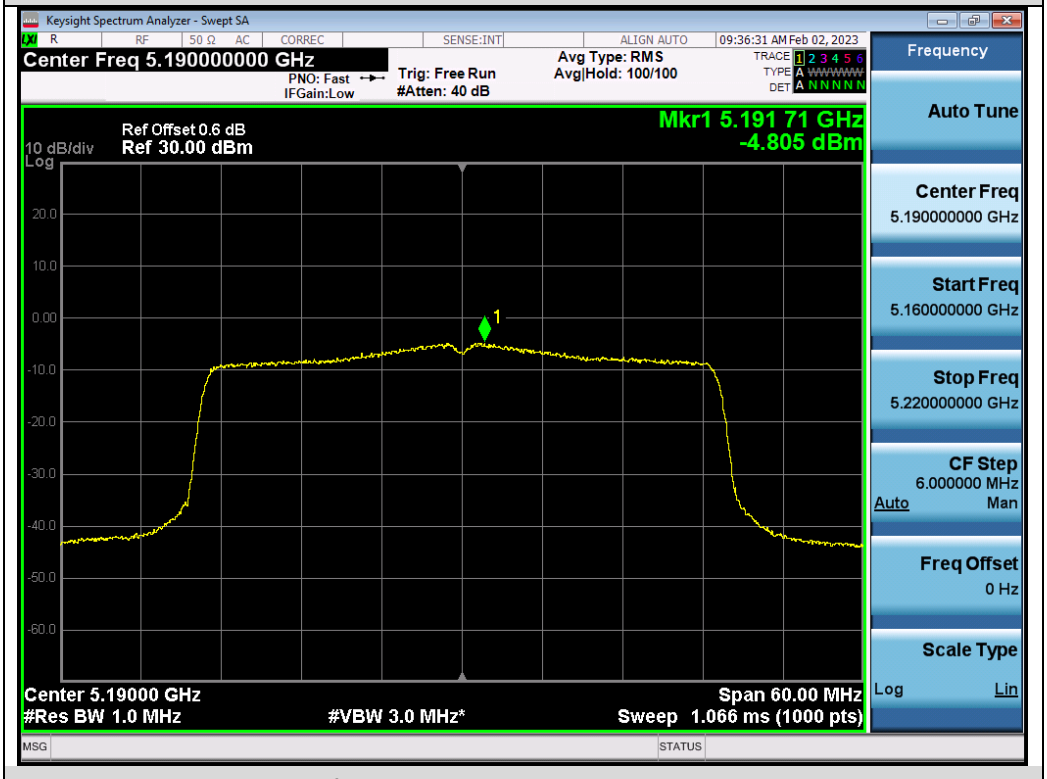
Test_Graph_802.11ac40_ANT1_5230_MCS9_PSD

Test_Graph_802.11ac80_ANT1_5210_MCS9_PSD

Test_Graph_802.11ax20_ANT1_5180_MCS0_PSD

Test_Graph_802.11ax20_ANT1_5200_MCS0_PSD

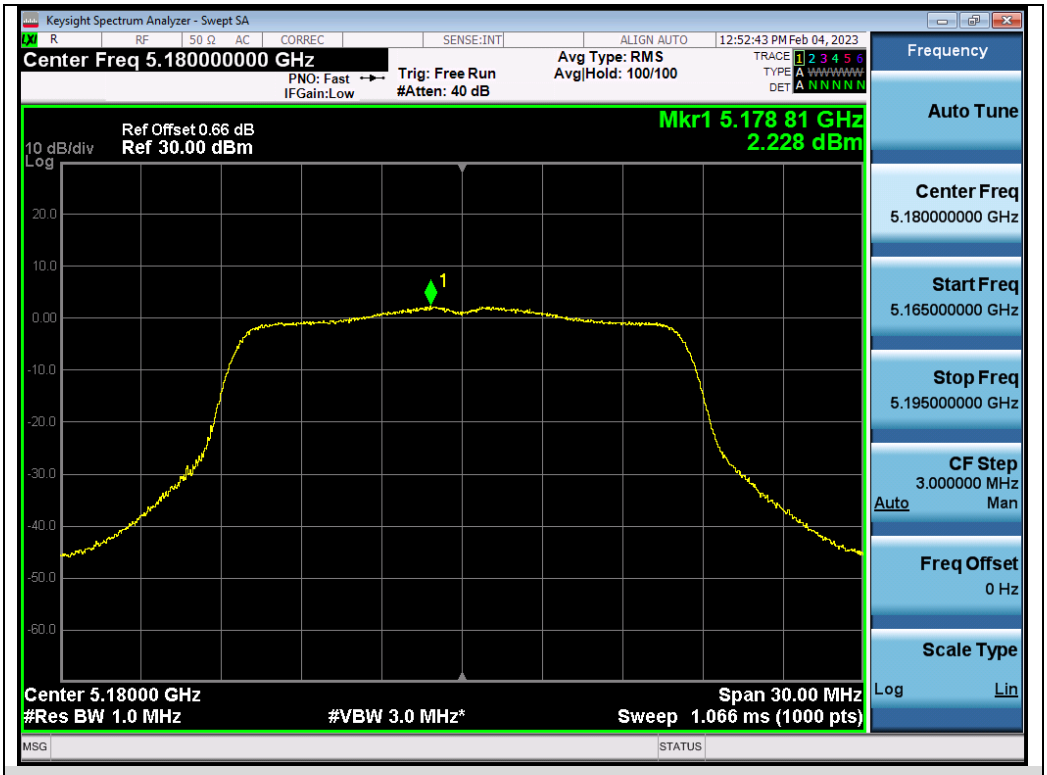
Test_Graph_802.11ax20_ANT1_5240_MCS0_PSD



Test_Graph_802.11ax40_ANT1_5190_MCS0_PSD

Test_Graph_802.11ax40_ANT1_5230_MCS0_PSD

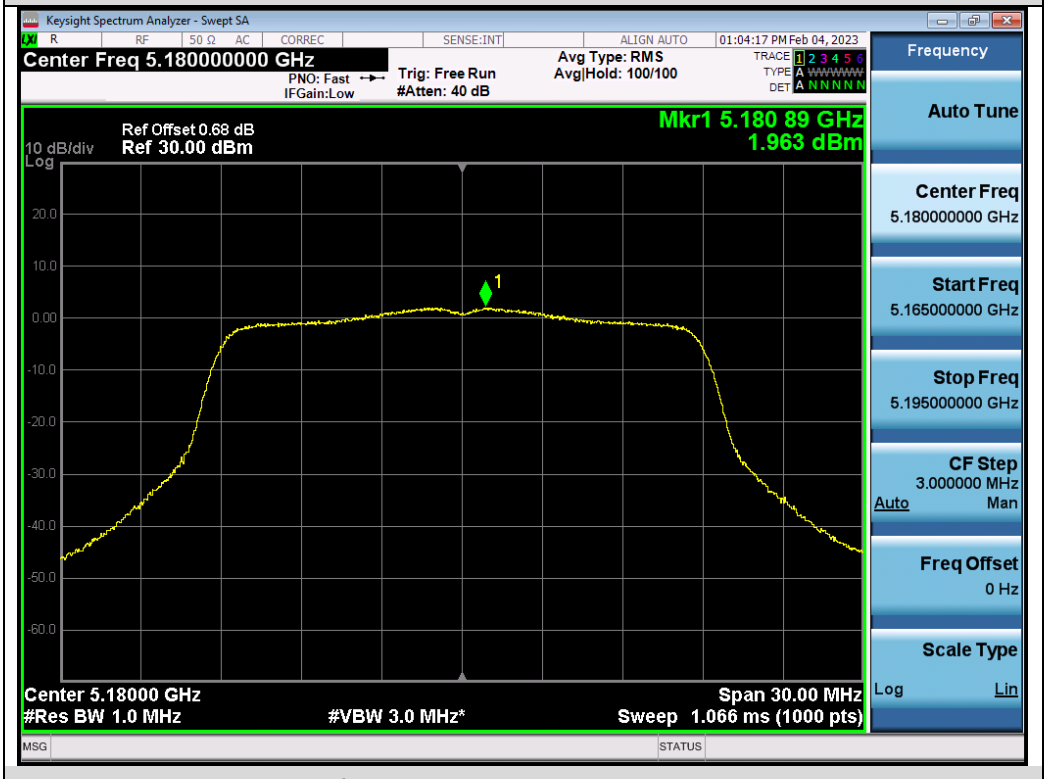
Test_Graph_802.11ax80_ANT1_5210_MCS0_PSD



Test_Graph_802.11a_ANT2_5180_6Mbps_PSD

Test_Graph_802.11a_ANT2_5200_6Mbps_PSD

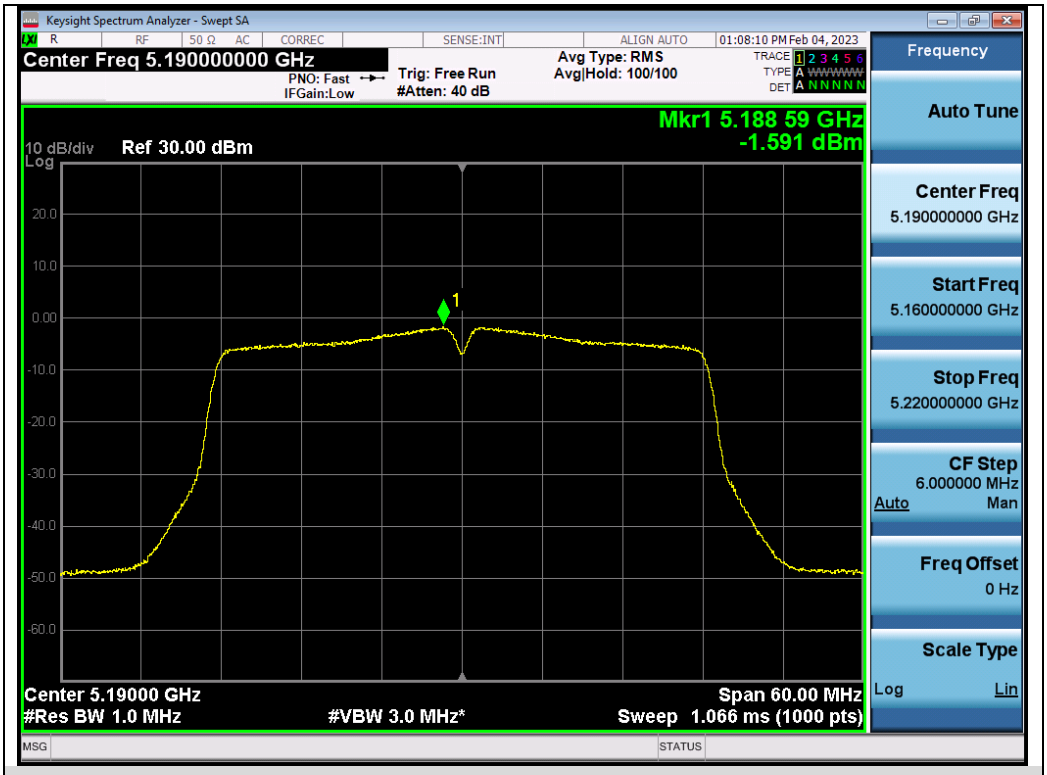
Test_Graph_802.11a_ANT2_5240_6Mbps_PSD



Test_Graph_802.11n20_ANT2_5180_MCS0_PSD

Test_Graph_802.11n20_ANT2_5200_MCS0_PSD

Test_Graph_802.11n20_ANT2_5240_MCS0_PSD



Test_Graph_802.11n40_ANT2_5190_MCS0_PSD

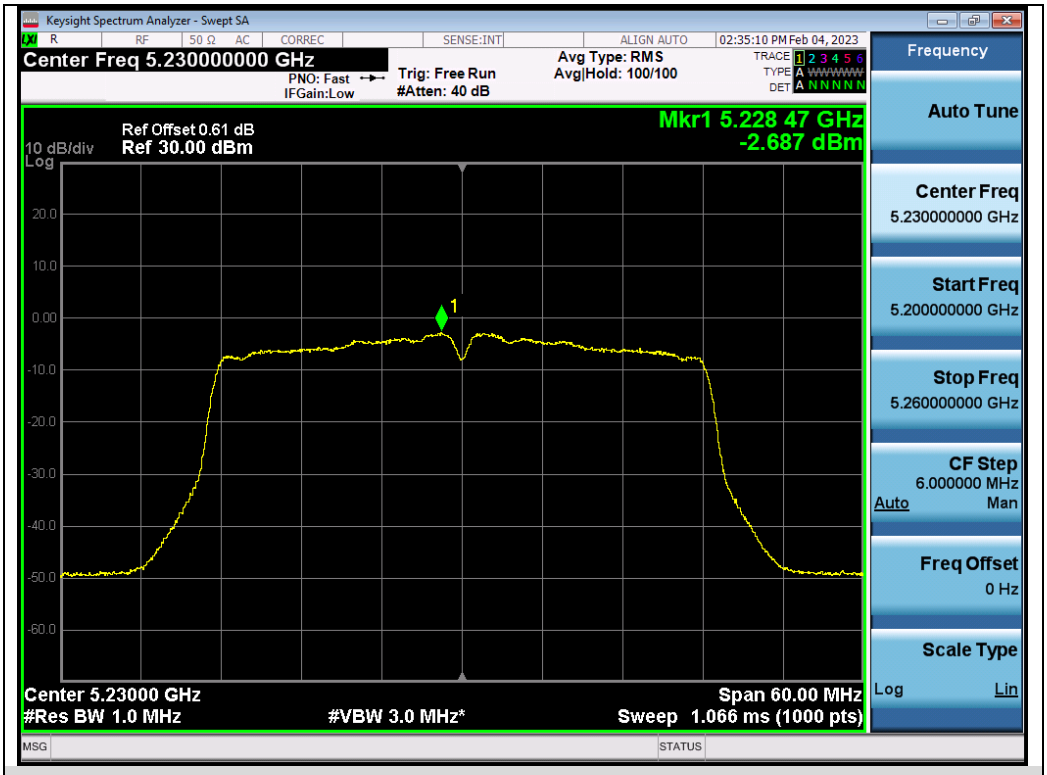
Test_Graph_802.11n40_ANT2_5230_MCS0_PSD

Test_Graph_802.11ac20_ANT2_5180_MCS0_PSD

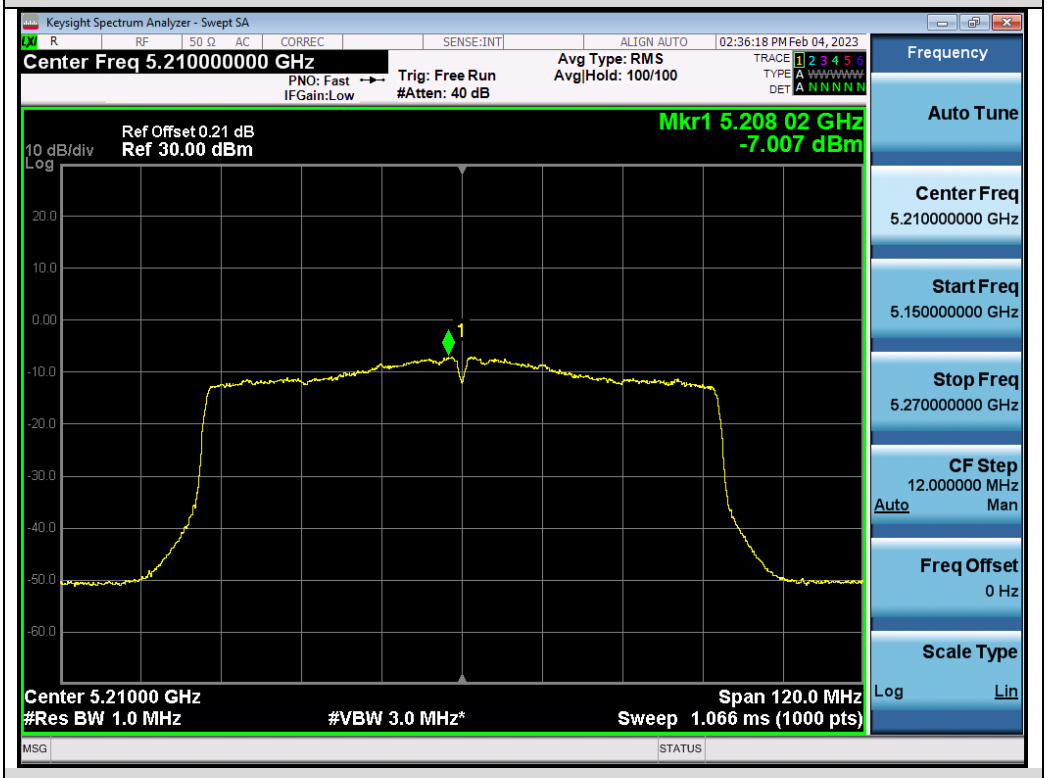
Test_Graph_802.11ac20_ANT2_5200_MCS0_PSD

Test_Graph_802.11ac20_ANT2_5240_MCS9_PSD

Test_Graph_802.11ac40_ANT2_5190_MCS9_PSD



Test_Graph_802.11ac40_ANT2_5230_MCS9_PSD

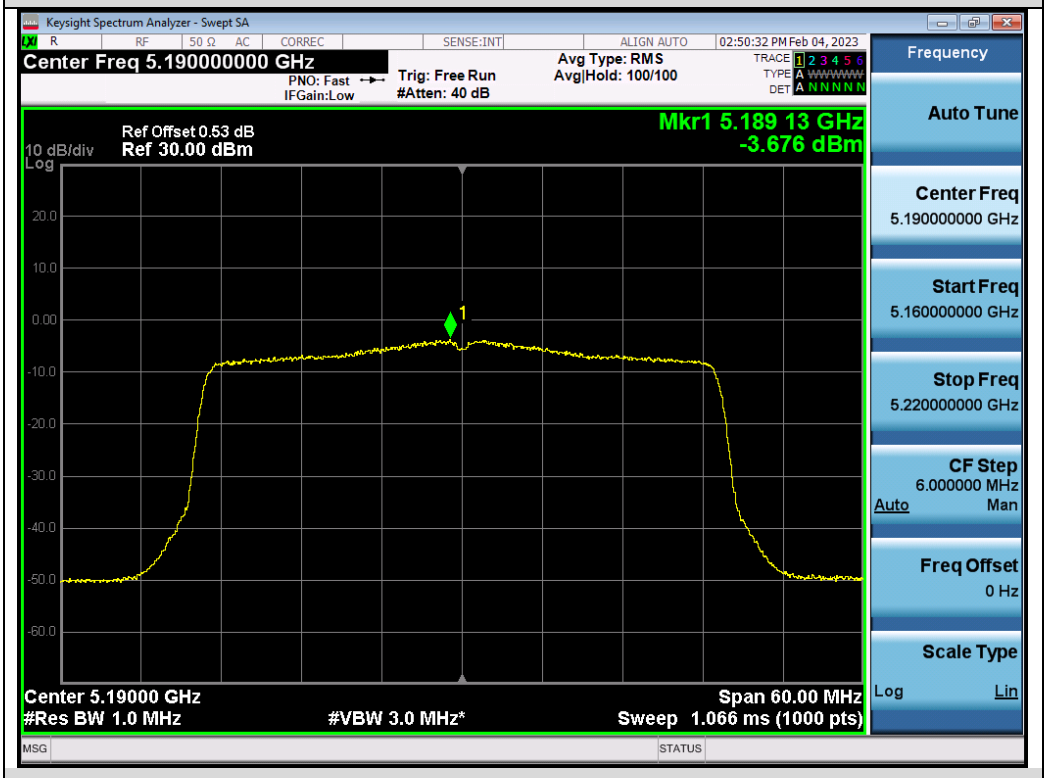


Test_Graph_802.11ac80_ANT2_5210_MCS9_PSD

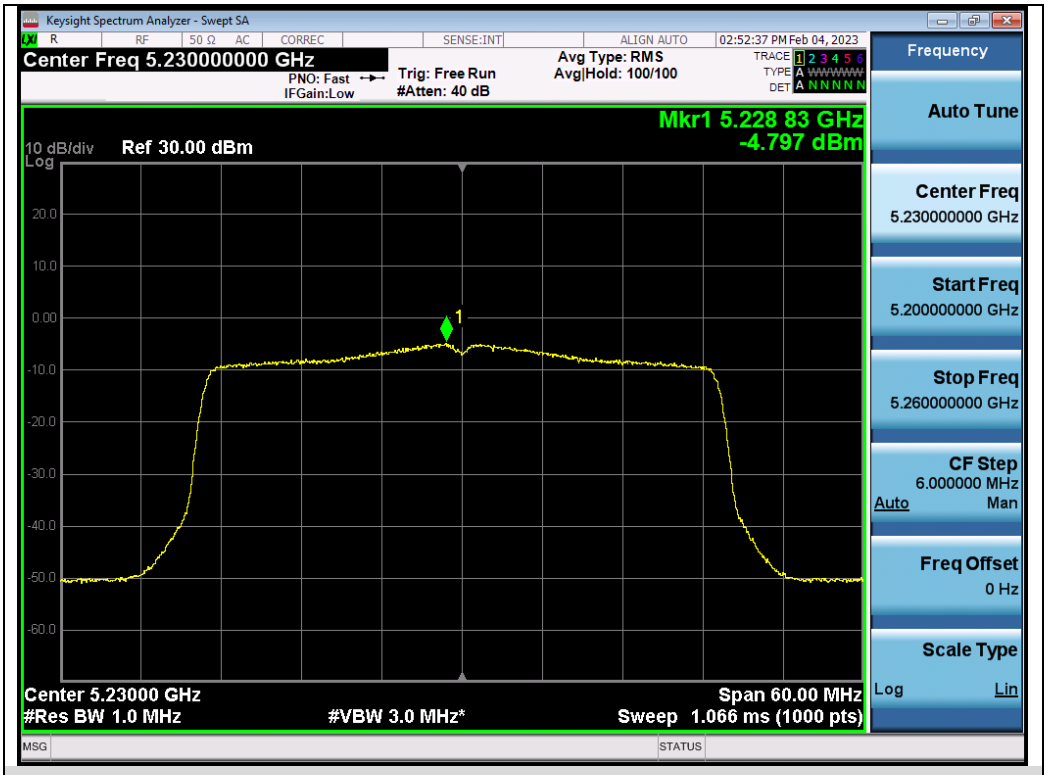
Test_Graph_802.11ax20_ANT2_5180_MCS0_PSD

Test_Graph_802.11ax20_ANT2_5200_MCS0_PSD

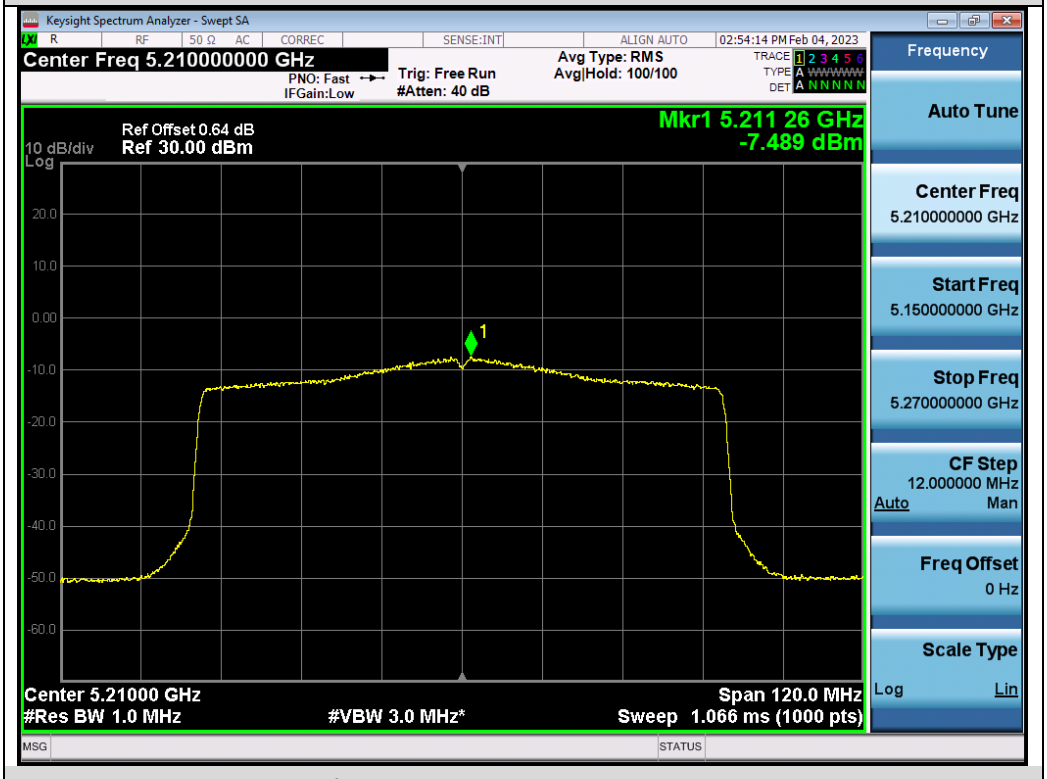
Test_Graph_802.11ax20_ANT2_5240_MCS0_PSD



Test_Graph_802.11ax40_ANT2_5190_MCS0_PSD



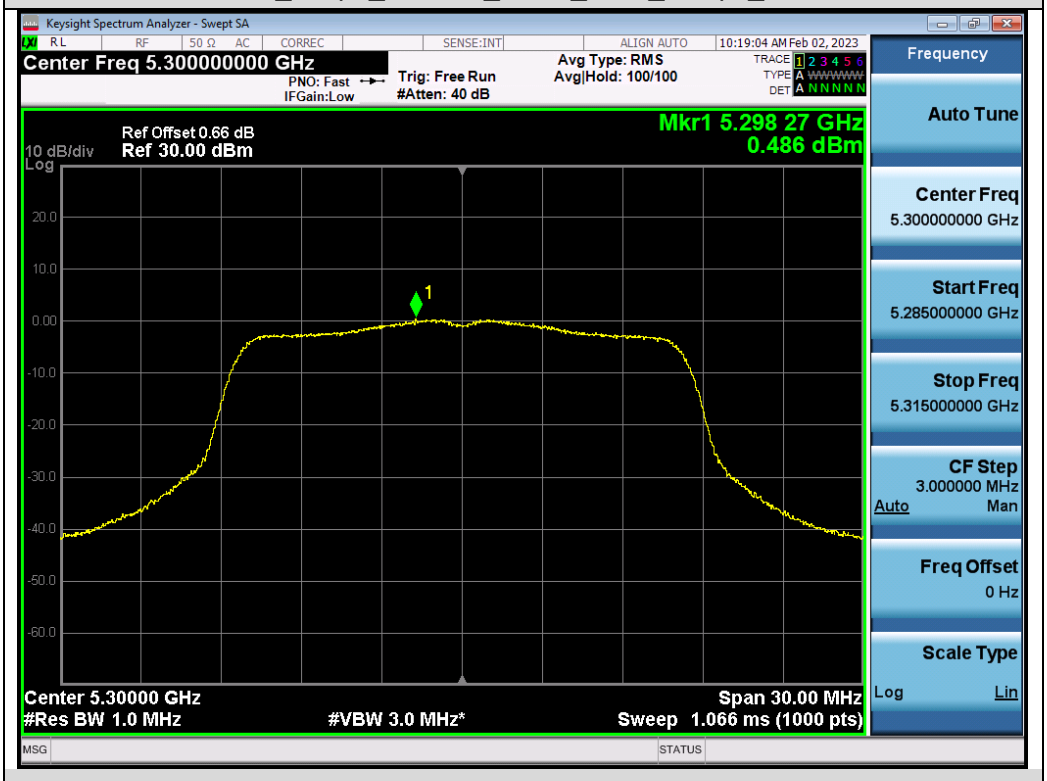
Test_Graph_802.11ax40_ANT2_5230_MCS0_PSD



Test_Graph_802.11ax80_ANT2_5210_MCS0_PSD

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

Test_Graph_802.11a_ANT1_5260_6Mbps_PSD



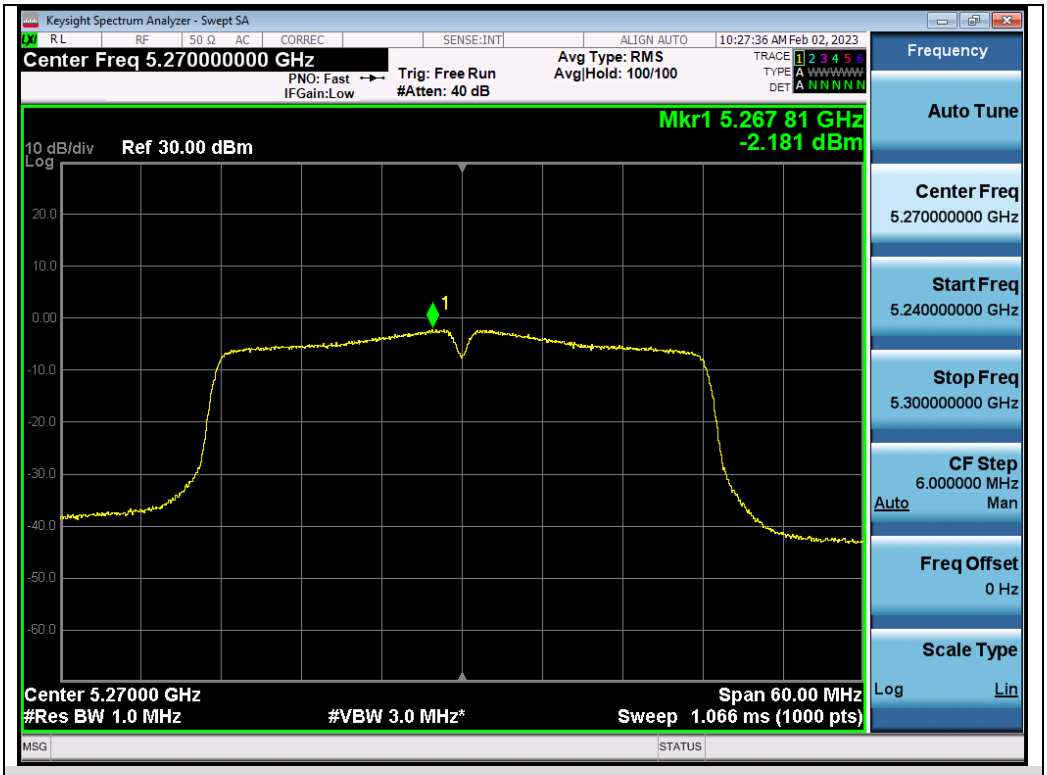
Test_Graph_802.11a_ANT1_5300_6Mbps_PSD

Test_Graph_802.11a_ANT1_5320_6Mbps_PSD

Test_Graph_802.11n20_ANT1_5260_MCS0_PSD

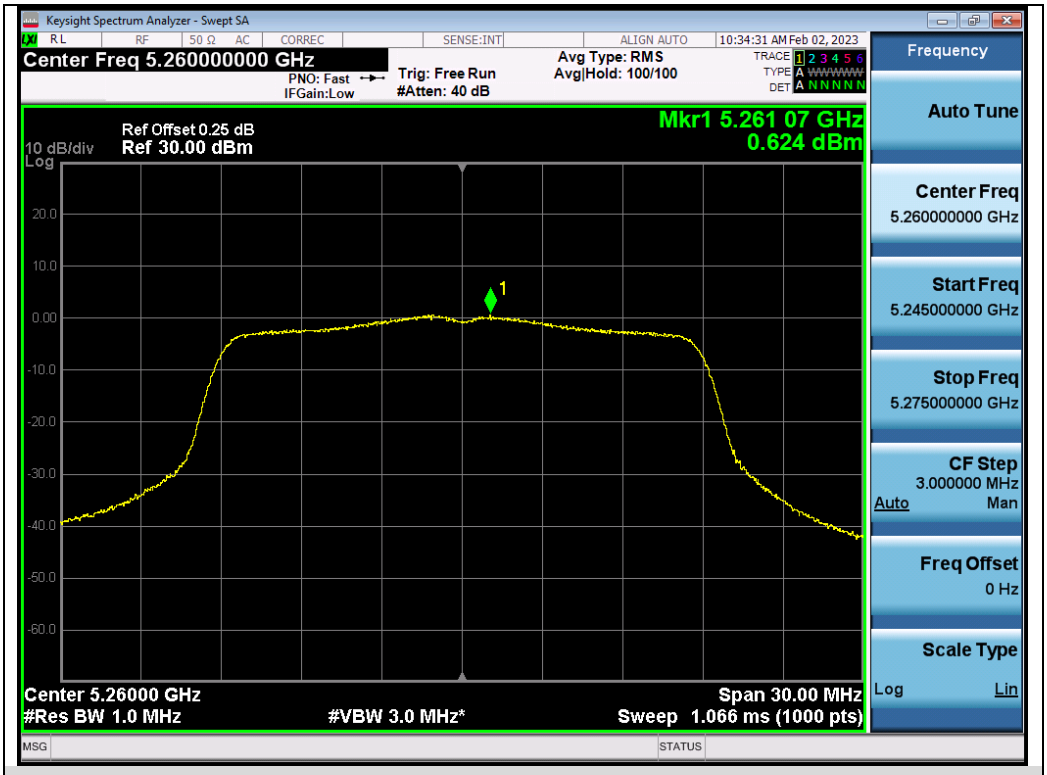
Test_Graph_802.11n20_ANT1_5300_MCS0_PSD

Test_Graph_802.11n20_ANT1_5320_MCS0_PSD

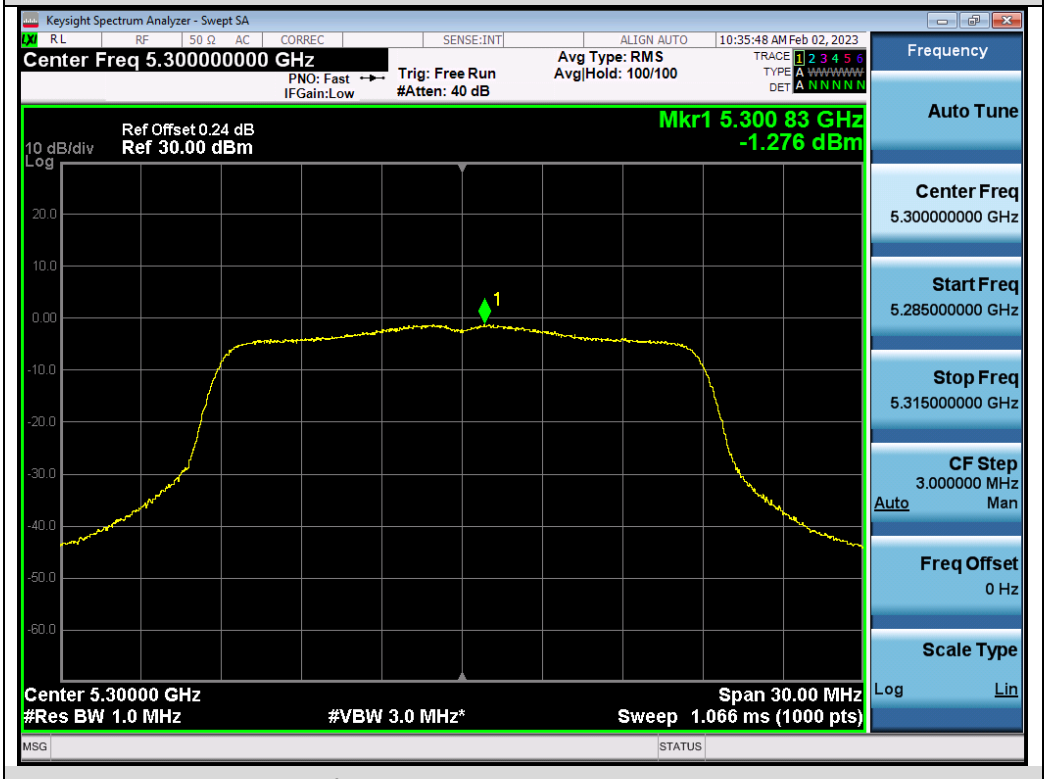


Test_Graph_802.11n40_ANT1_5270_MCS0_PSD

Test_Graph_802.11n40_ANT1_5310_MCS0_PSD

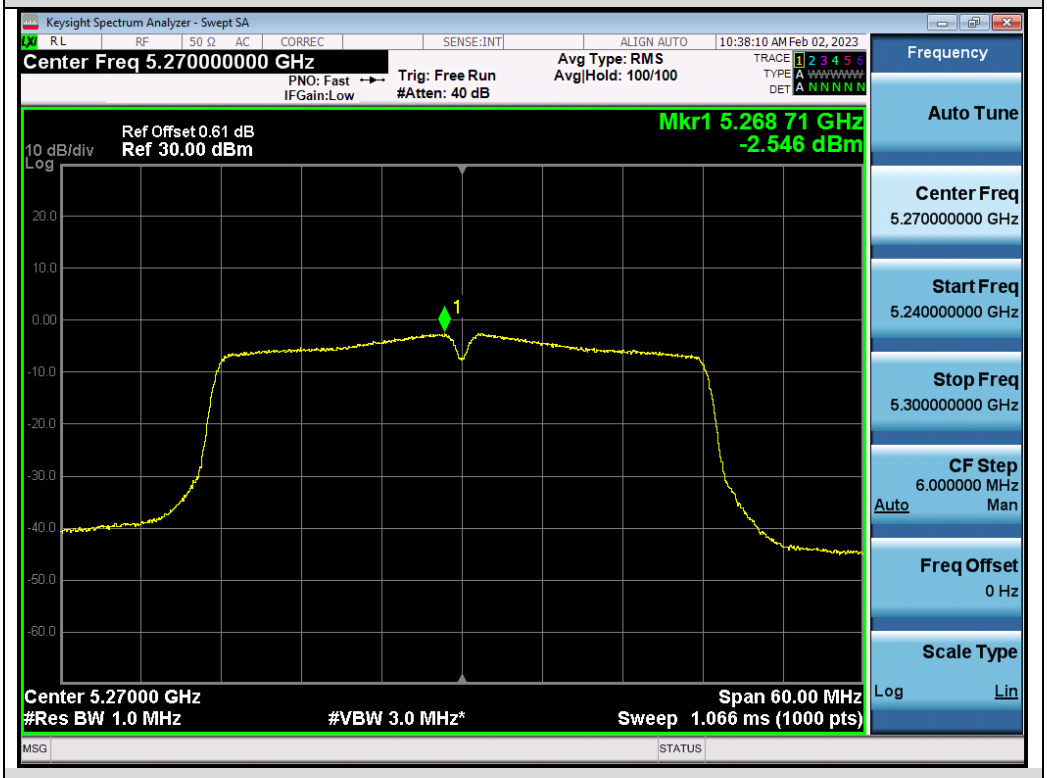


Test_Graph_802.11ac20_ANT1_5260_MCS0_PSD



Test_Graph_802.11ac20_ANT1_5300_MCS0_PSD

Test_Graph_802.11ac20_ANT1_5320_MCS9_PSD



Test_Graph_802.11ac40_ANT1_5270_MCS9_PSD

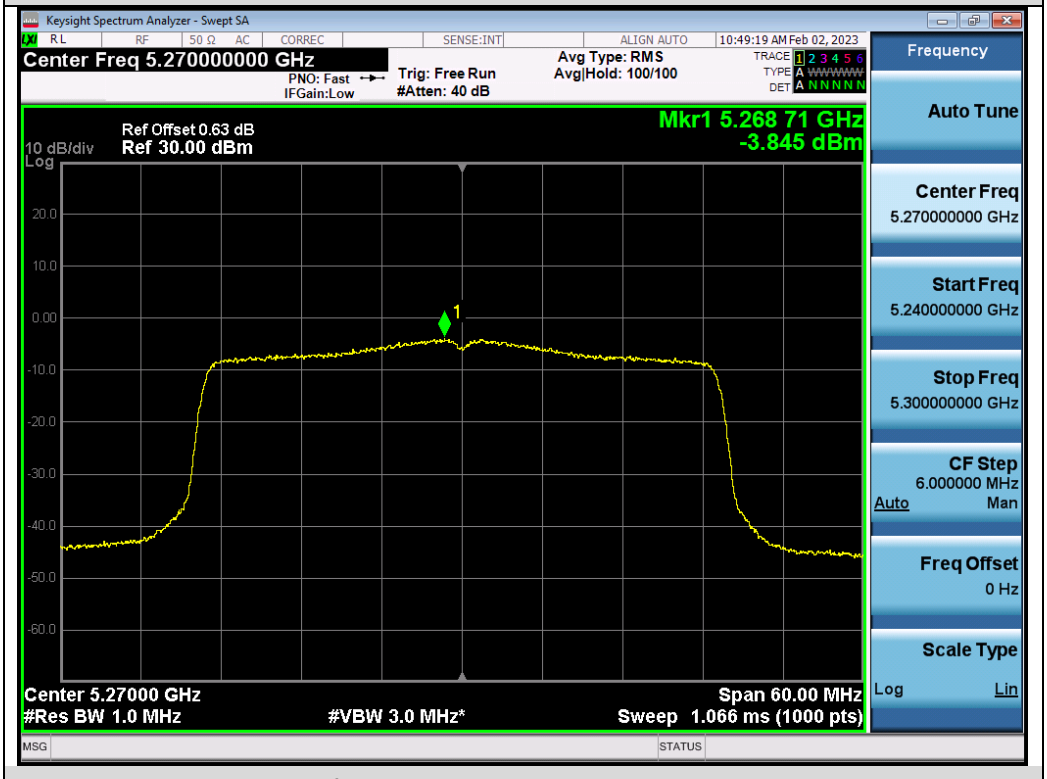
Test_Graph_802.11ac40_ANT1_5310_MCS9_PSD

Test_Graph_802.11ac80_ANT1_5290_MCS9_PSD

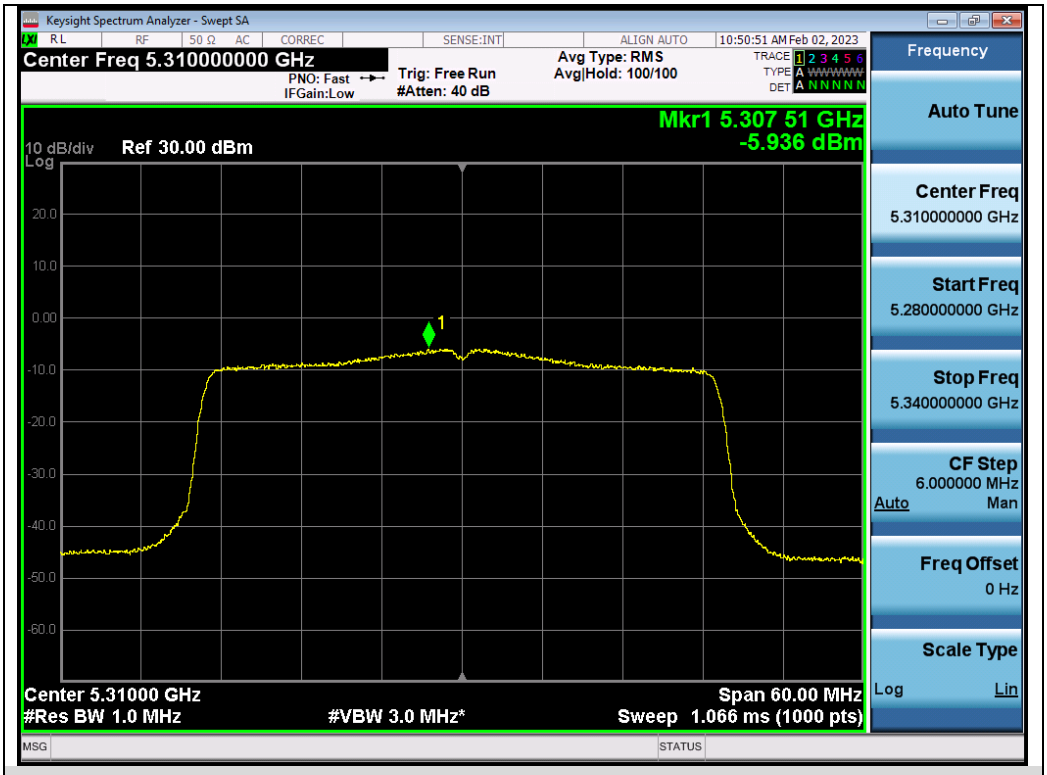
Test_Graph_802.11ax20_ANT1_5260_MCS0_PSD

Test_Graph_802.11ax20_ANT1_5300_MCS0_PSD

Test_Graph_802.11ax20_ANT1_5320_MCS0_PSD



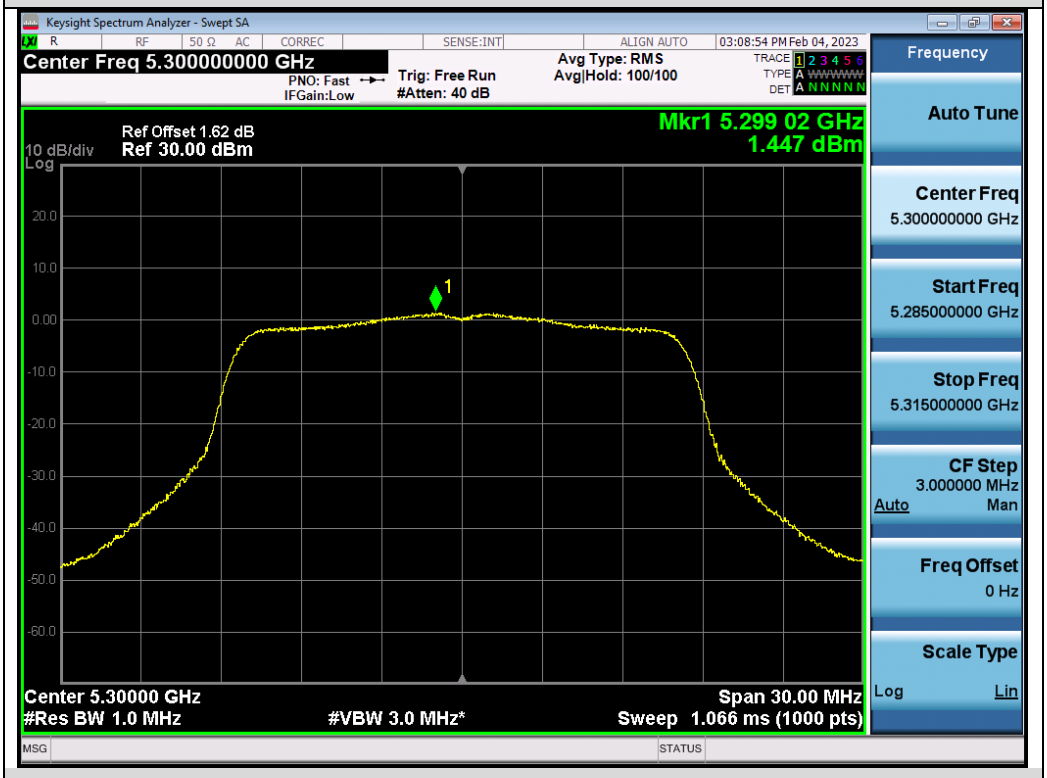
Test_Graph_802.11ax40_ANT1_5270_MCS0_PSD



Test_Graph_802.11ax40_ANT1_5310_MCS0_PSD

Test_Graph_802.11ax80_ANT1_5290_MCS0_PSD

Test_Graph_802.11a_ANT2_5260_6Mbps_PSD

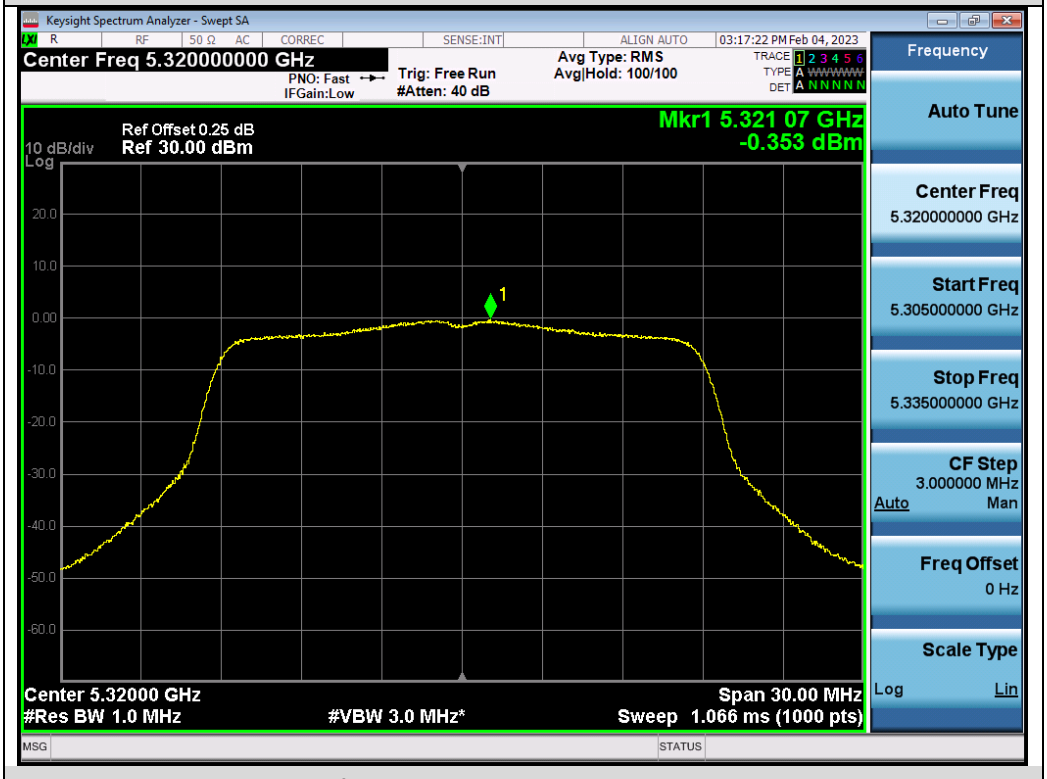


Test_Graph_802.11a_ANT2_5300_6Mbps_PSD

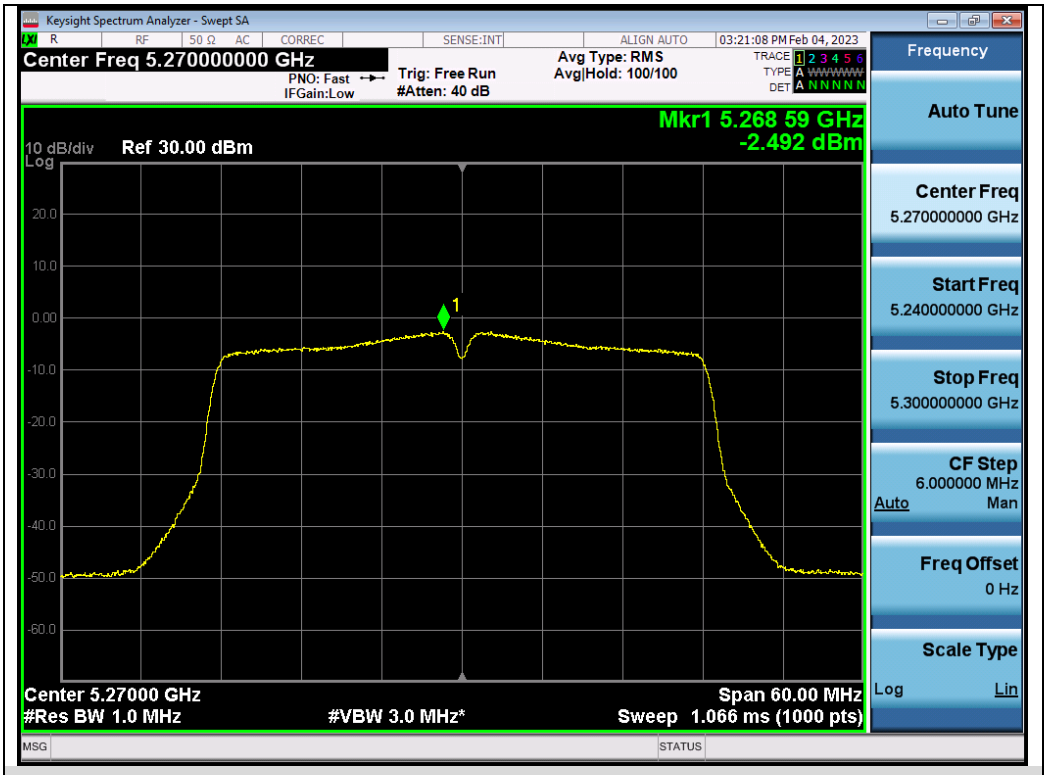
Test_Graph_802.11a_ANT2_5320_6Mbps_PSD

Test_Graph_802.11n20_ANT2_5260_MCS0_PSD

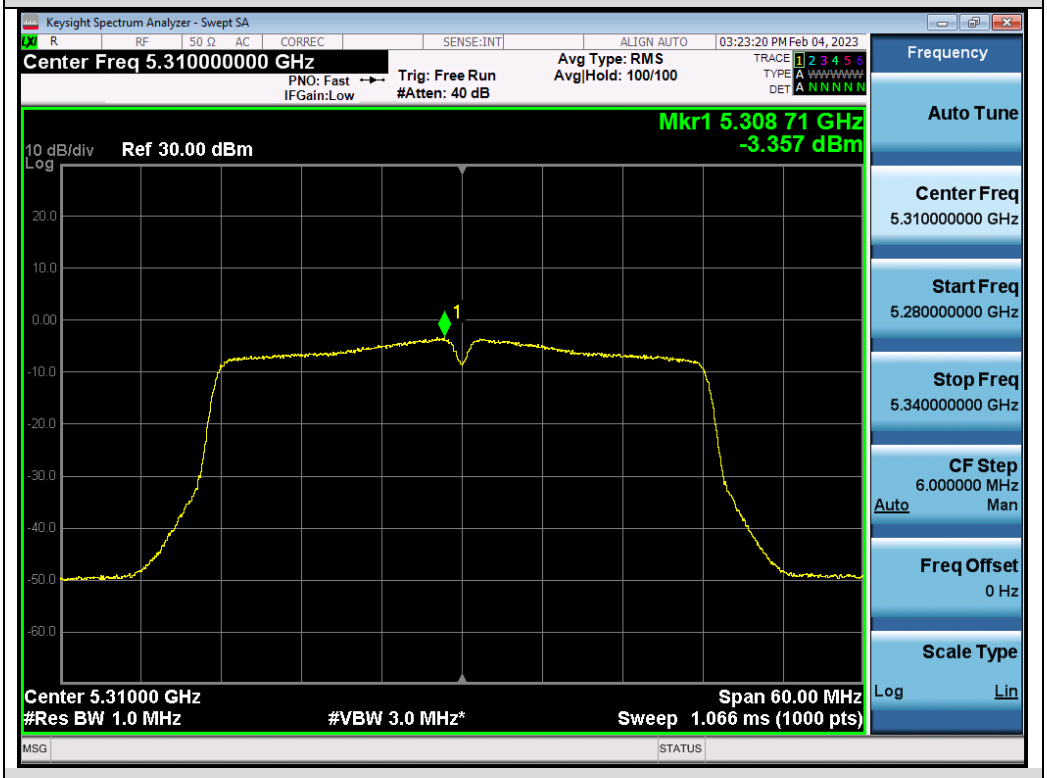
Test_Graph_802.11n20_ANT2_5300_MCS0_PSD



Test_Graph_802.11n20_ANT2_5320_MCS0_PSD

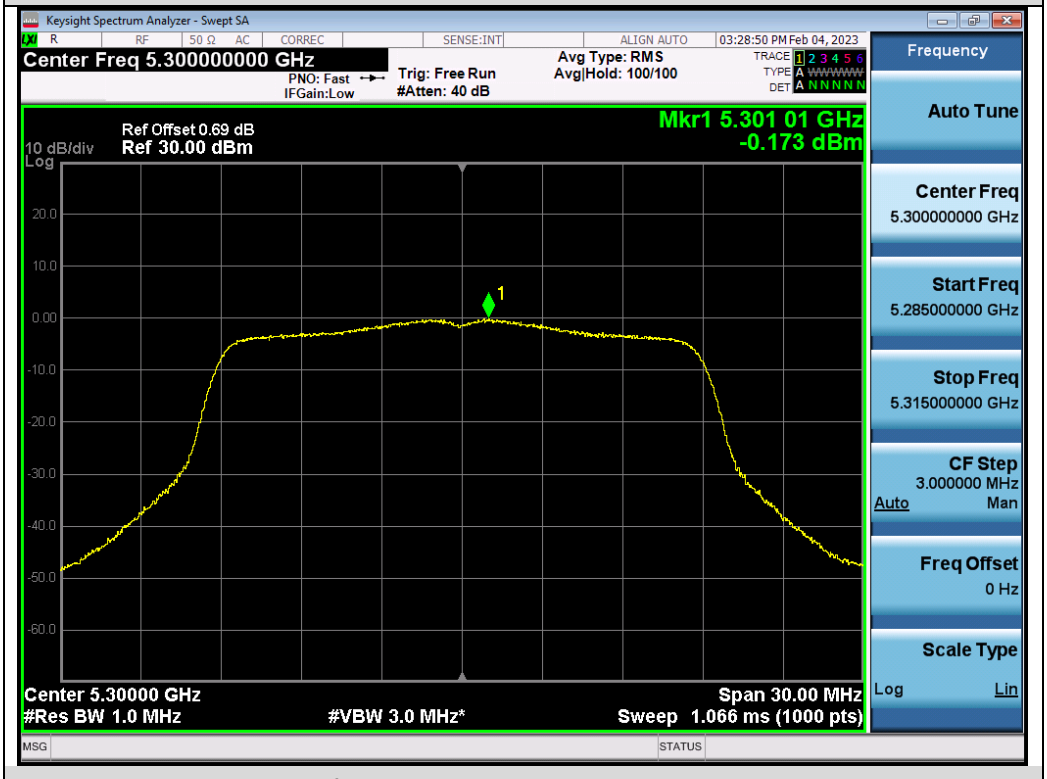


Test_Graph_802.11n40_ANT2_5270_MCS0_PSD



Test_Graph_802.11n40_ANT2_5310_MCS0_PSD

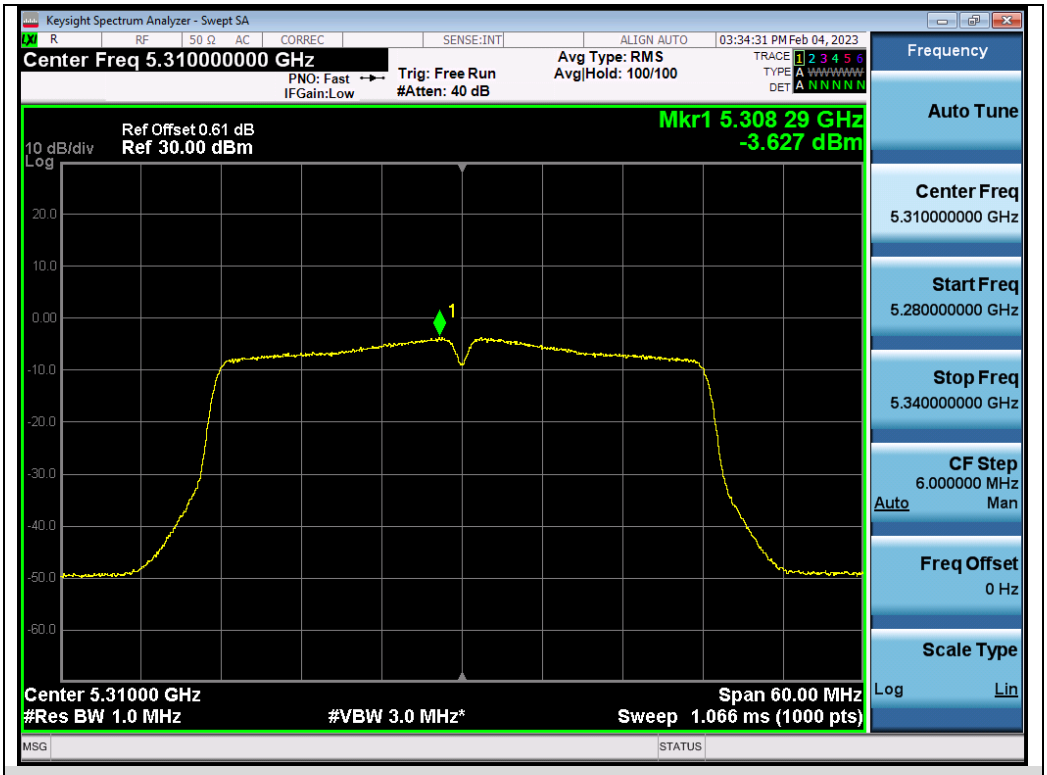
Test_Graph_802.11ac20_ANT2_5260_MCS0_PSD



Test_Graph_802.11ac20_ANT2_5300_MCS0_PSD

Test_Graph_802.11ac20_ANT2_5320_MCS9_PSD

Test_Graph_802.11ac40_ANT2_5270_MCS9_PSD

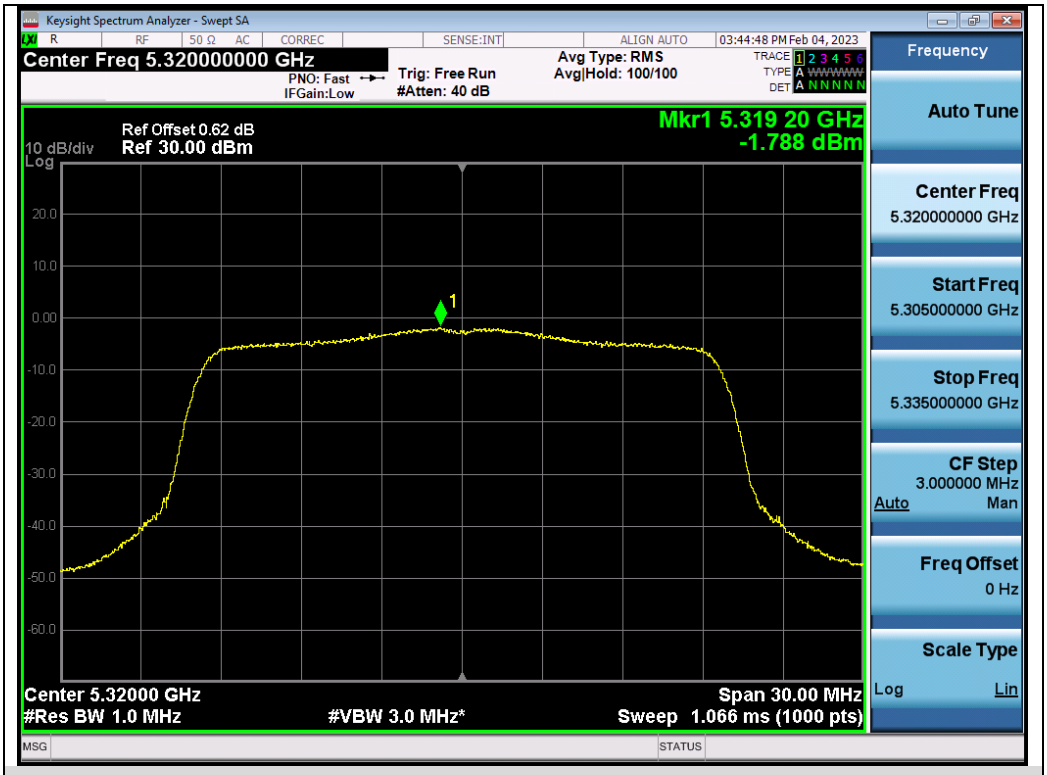


Test_Graph_802.11ac40_ANT2_5310_MCS9_PSD

Test_Graph_802.11ac80_ANT2_5290_MCS9_PSD

Test_Graph_802.11ax20_ANT2_5260_MCS0_PSD

Test_Graph_802.11ax20_ANT2_5300_MCS0_PSD



Test_Graph_802.11ax20_ANT2_5320_MCS0_PSD

Test_Graph_802.11ax40_ANT2_5270_MCS0_PSD