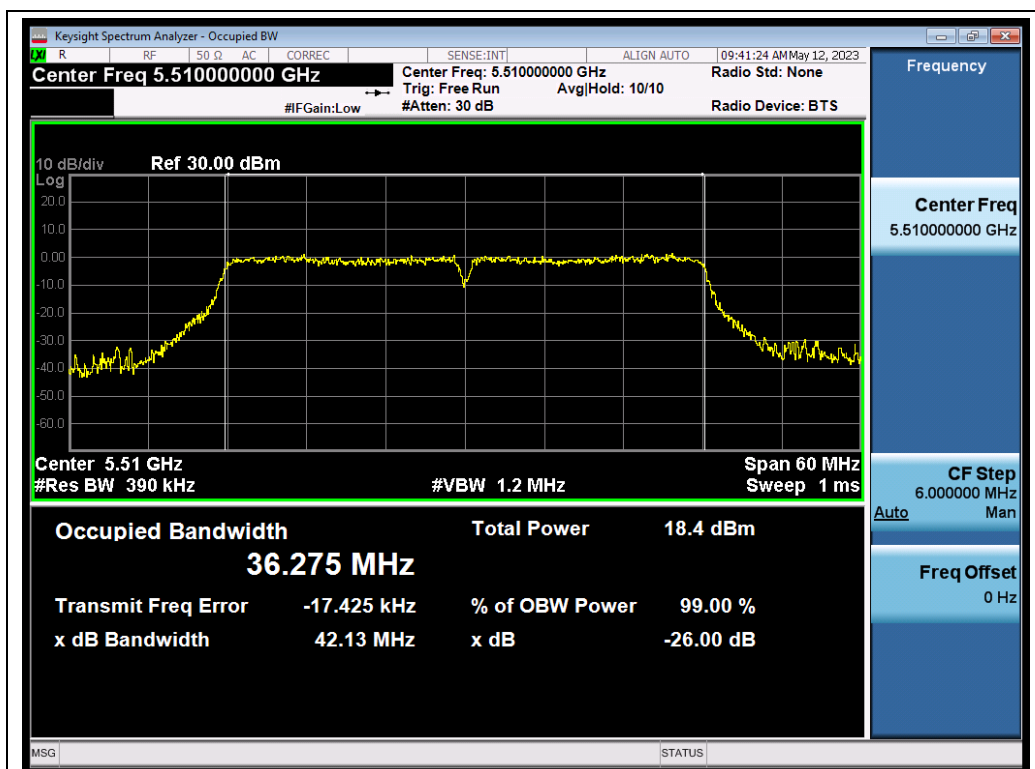
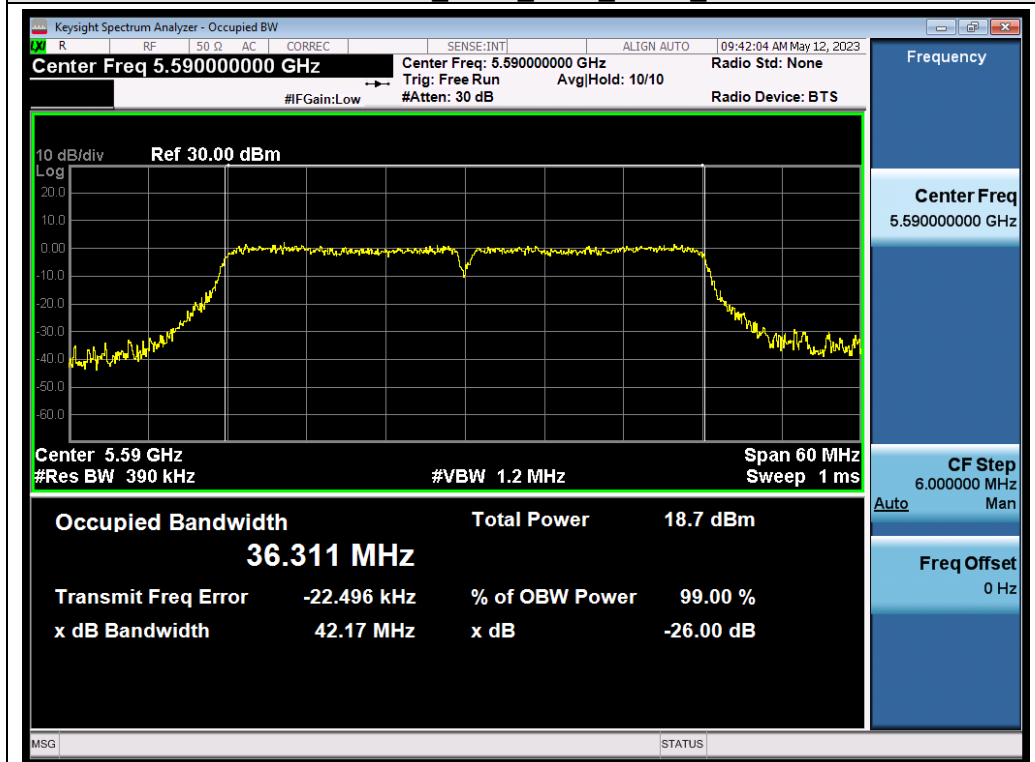
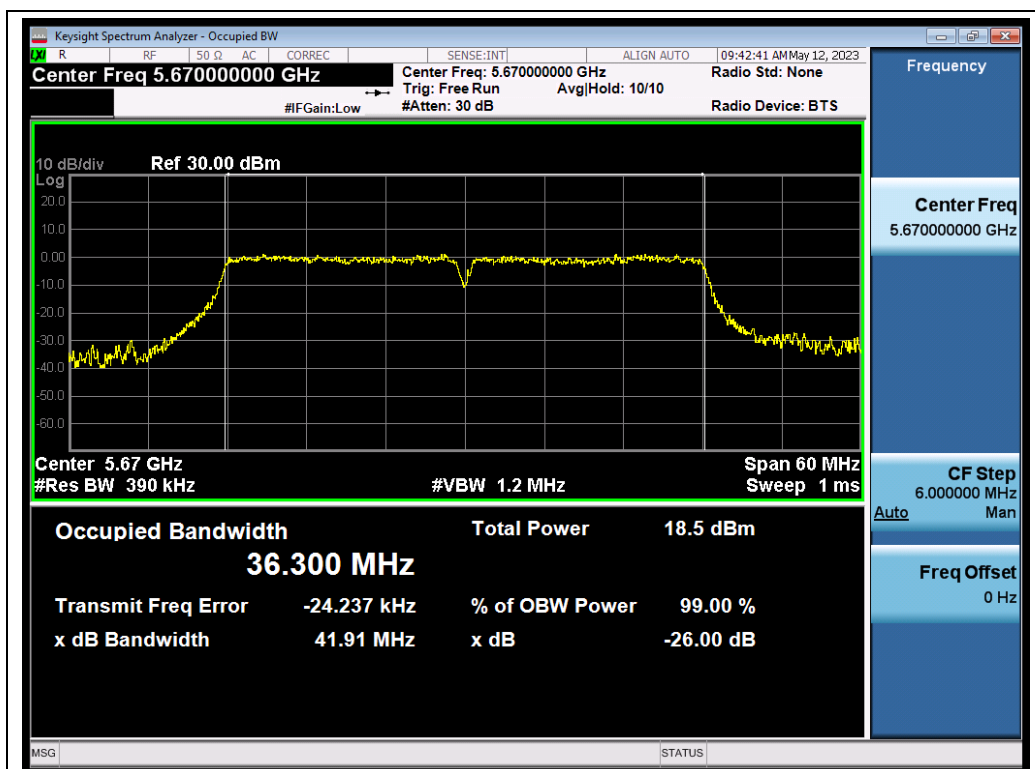




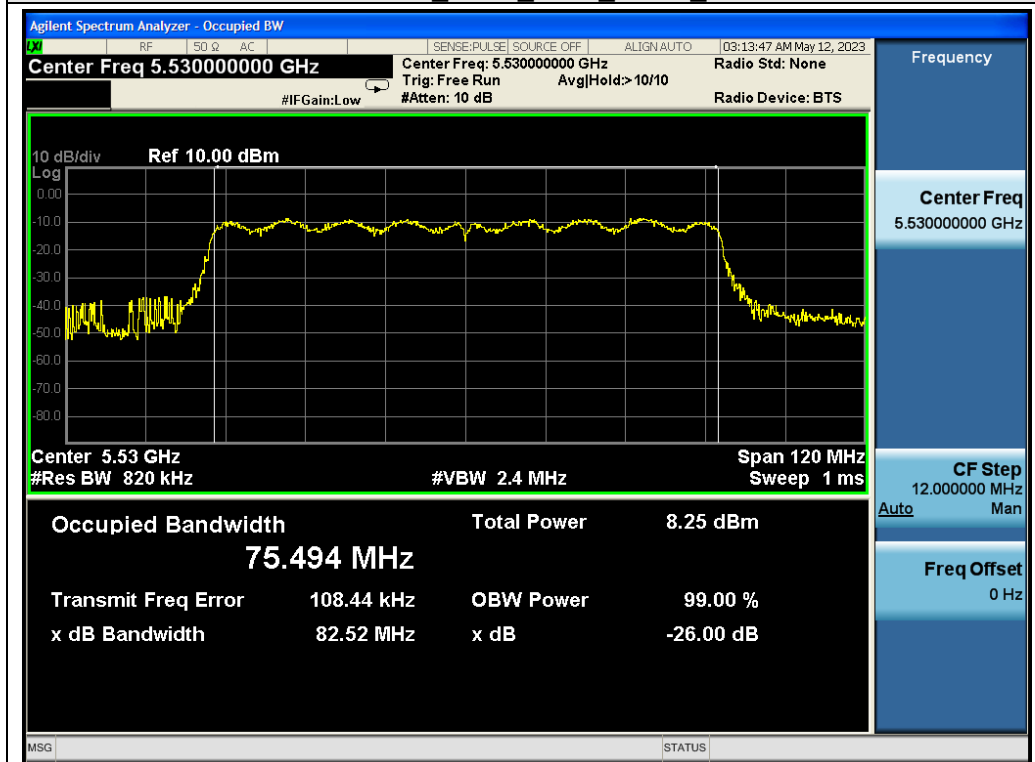
802.11ac40 ANT1 5510 MCS0 OBW



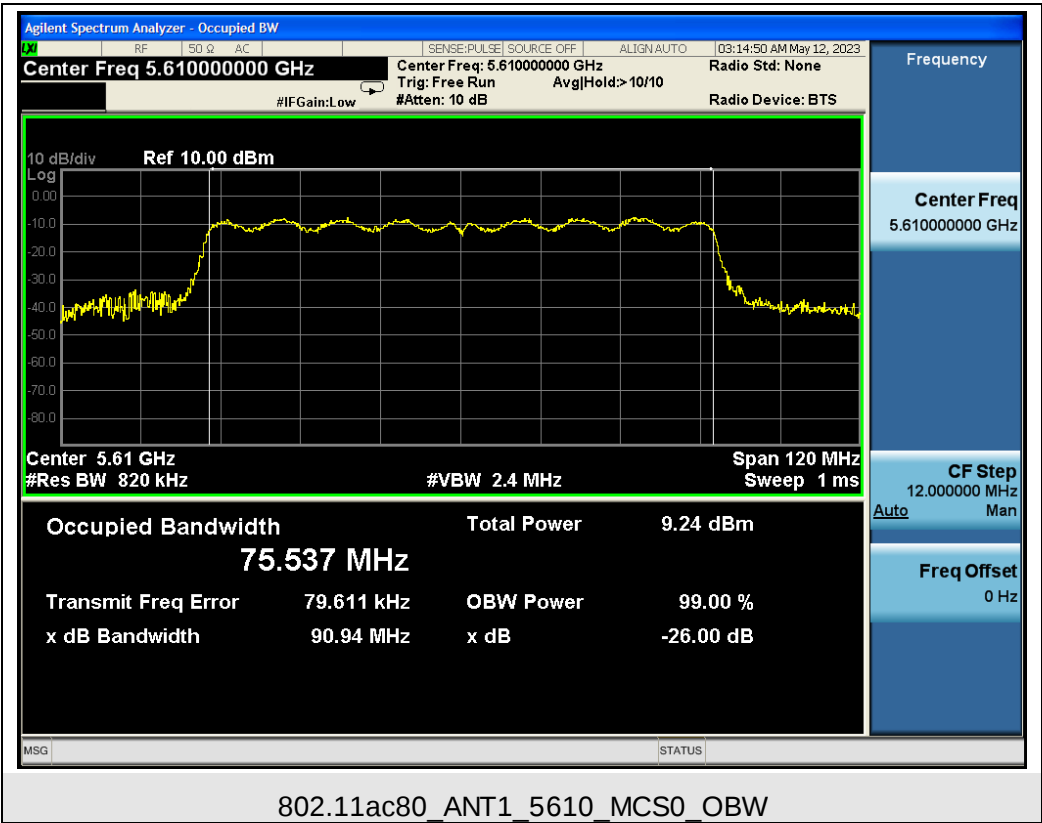
802.11ac40 ANT1 5590 MCS0 OBW



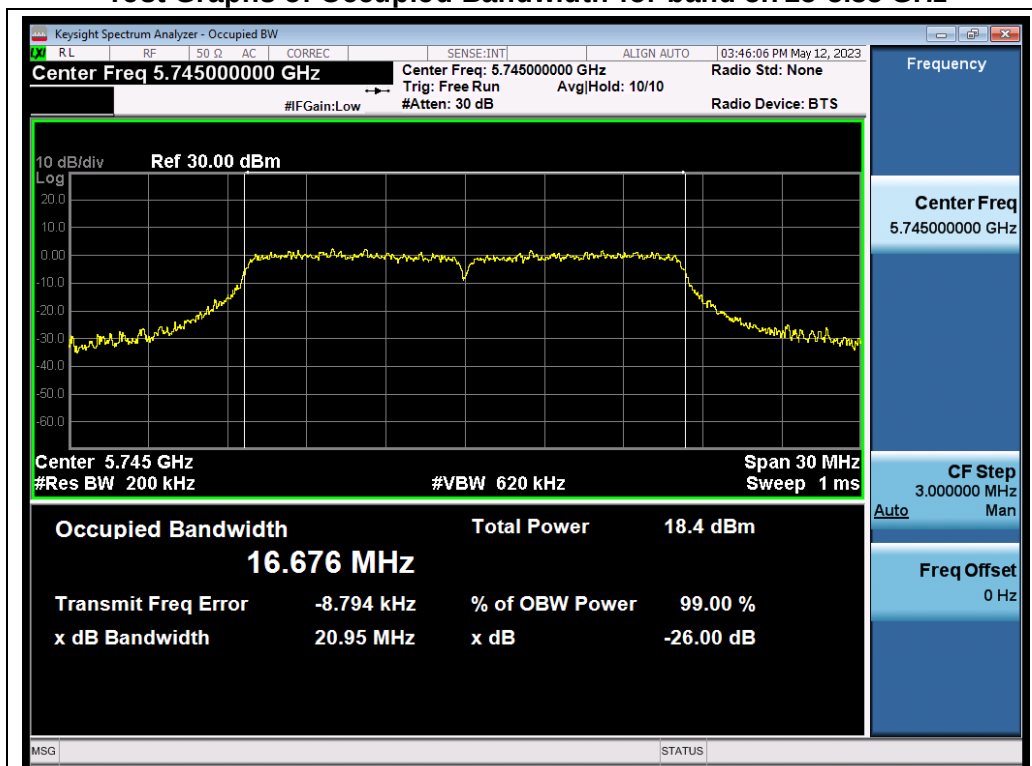
802.11ac40 ANT1_5670_MCS0_OBW



802.11ac80 ANT1_5530_MCS0_OBW



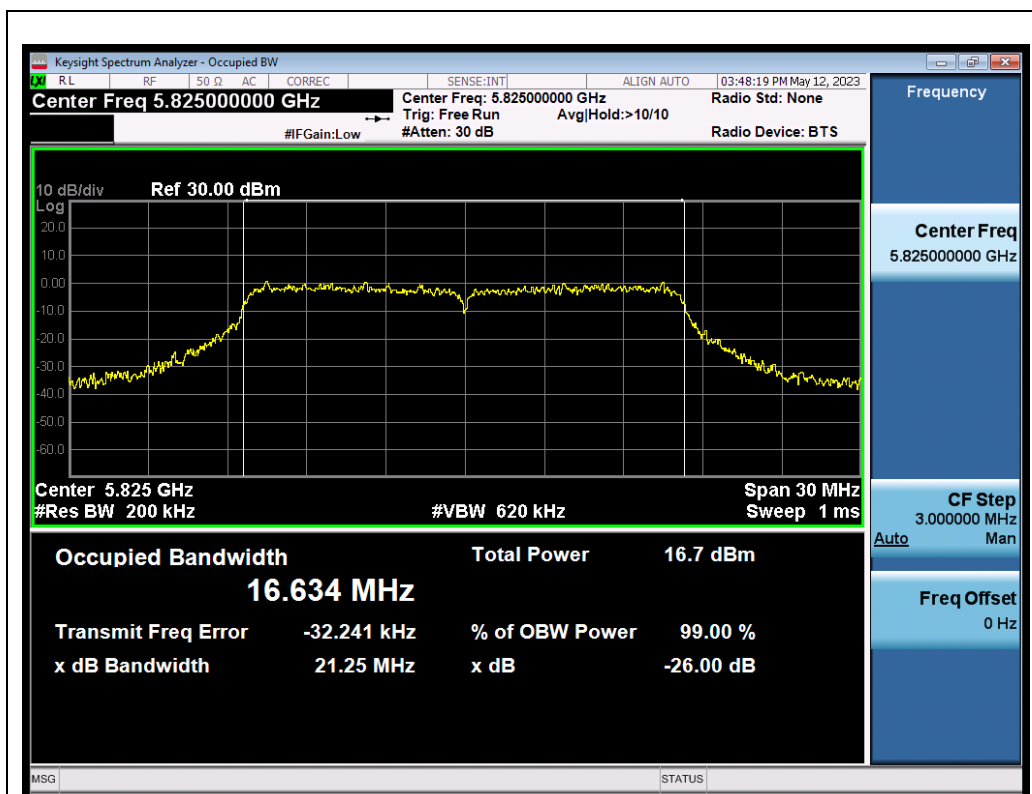
Test Graphs of Occupied Bandwidth for band 5.725-5.85 GHz



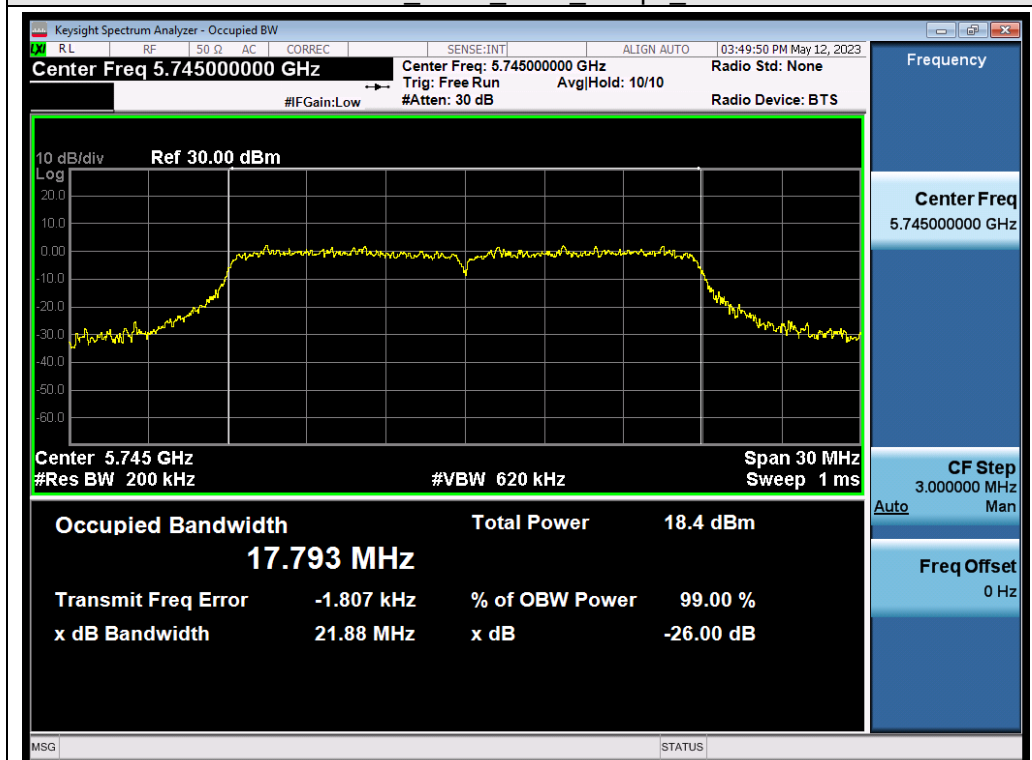
802.11a ANT1 5745 6Mbps OBW



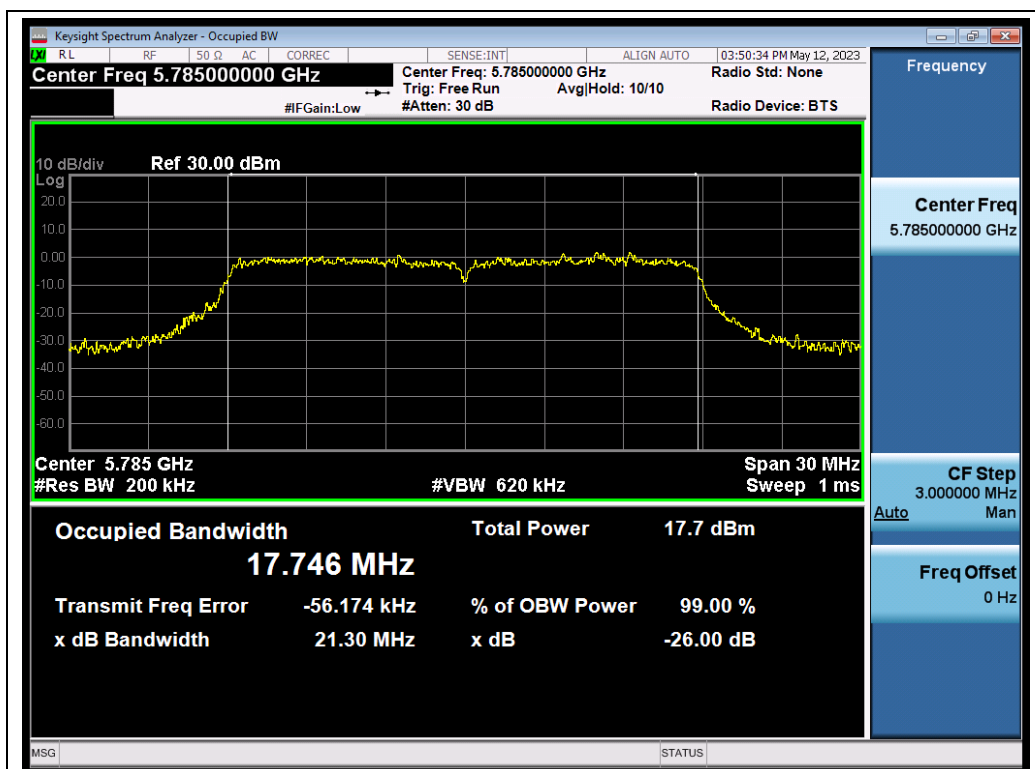
802.11a ANT1 5785 6Mbps OBW



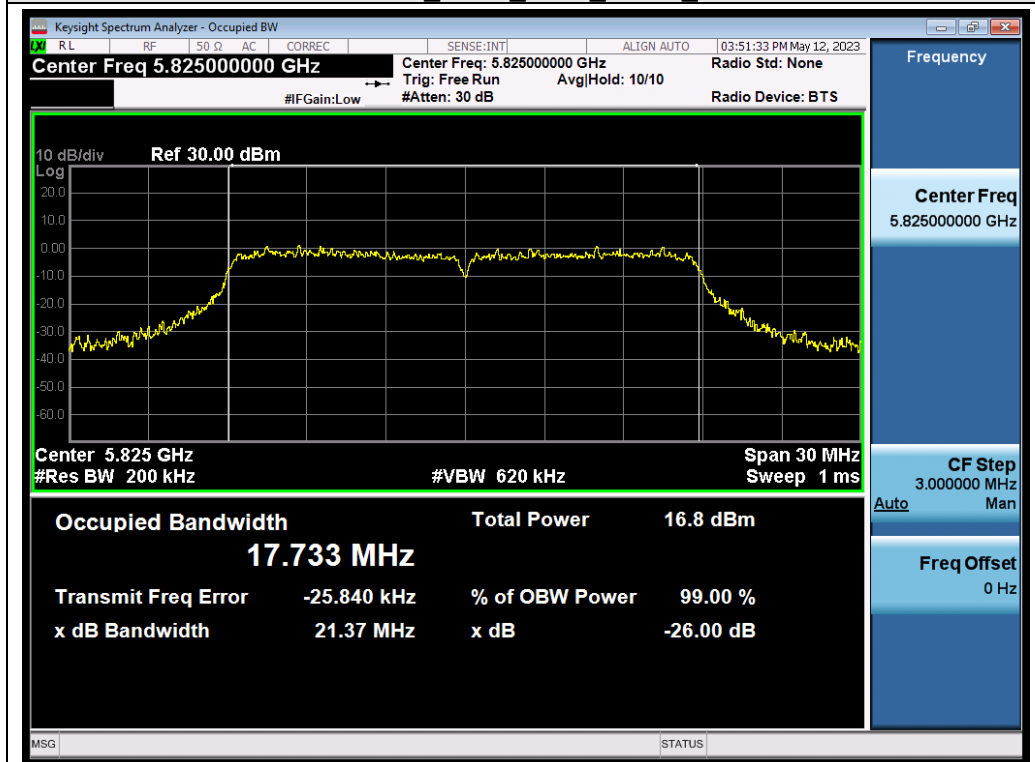
802.11a ANT1 5825 6Mbps OBW



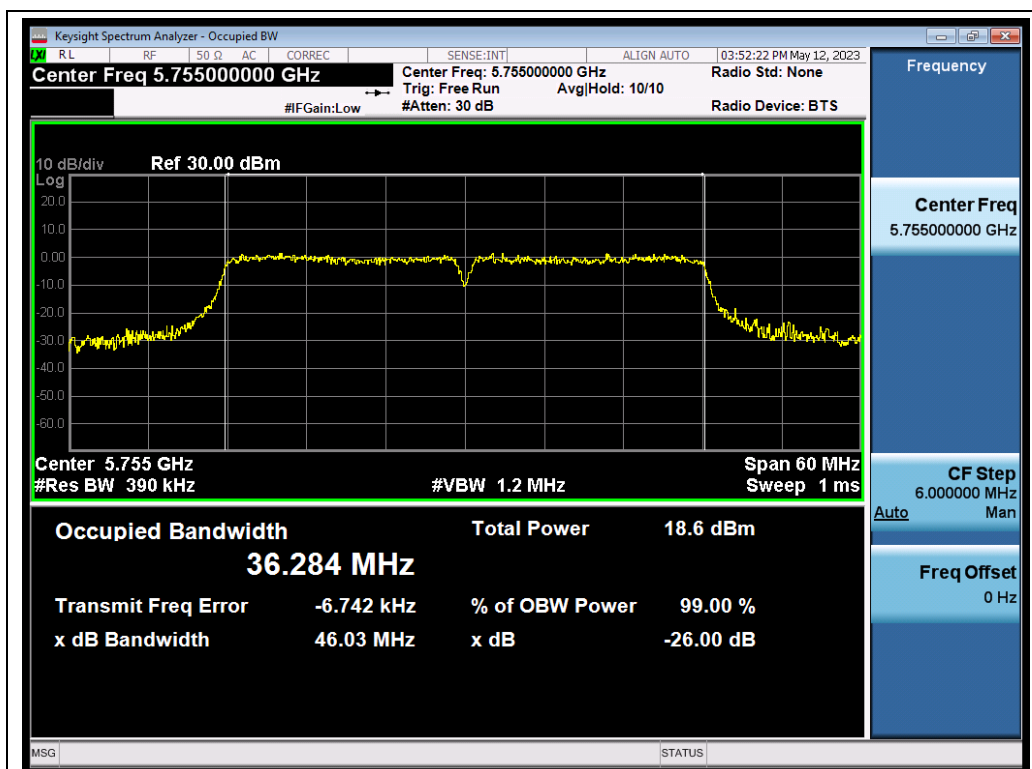
802.11n20 ANT1 5745 MCS0 OBW



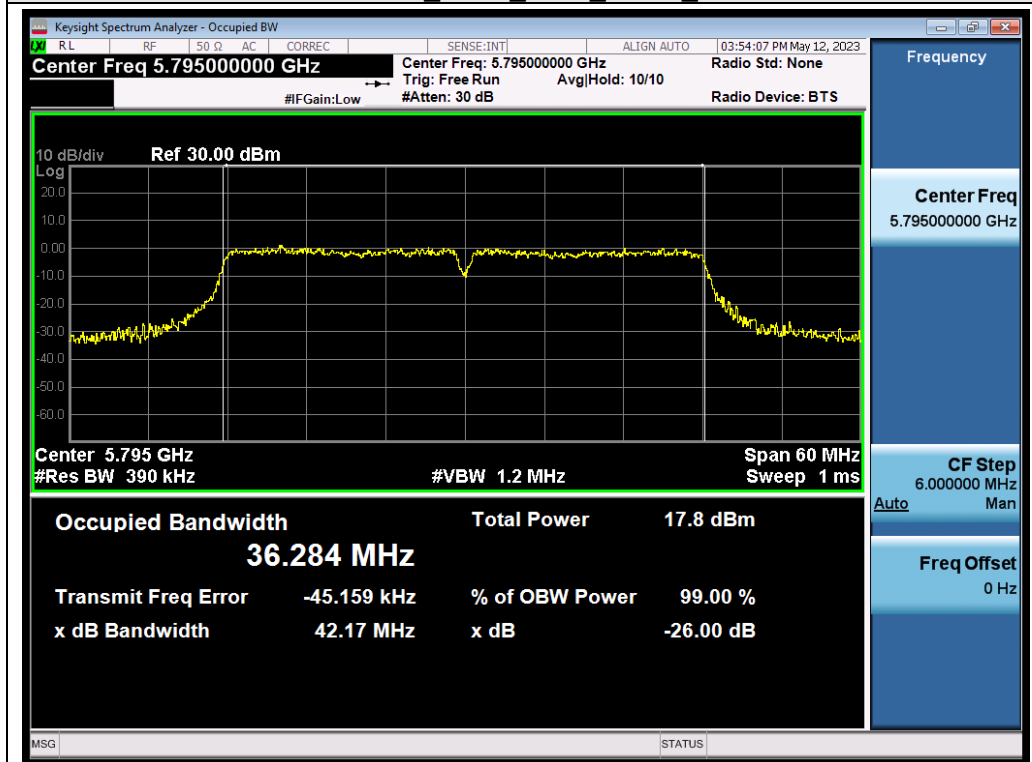
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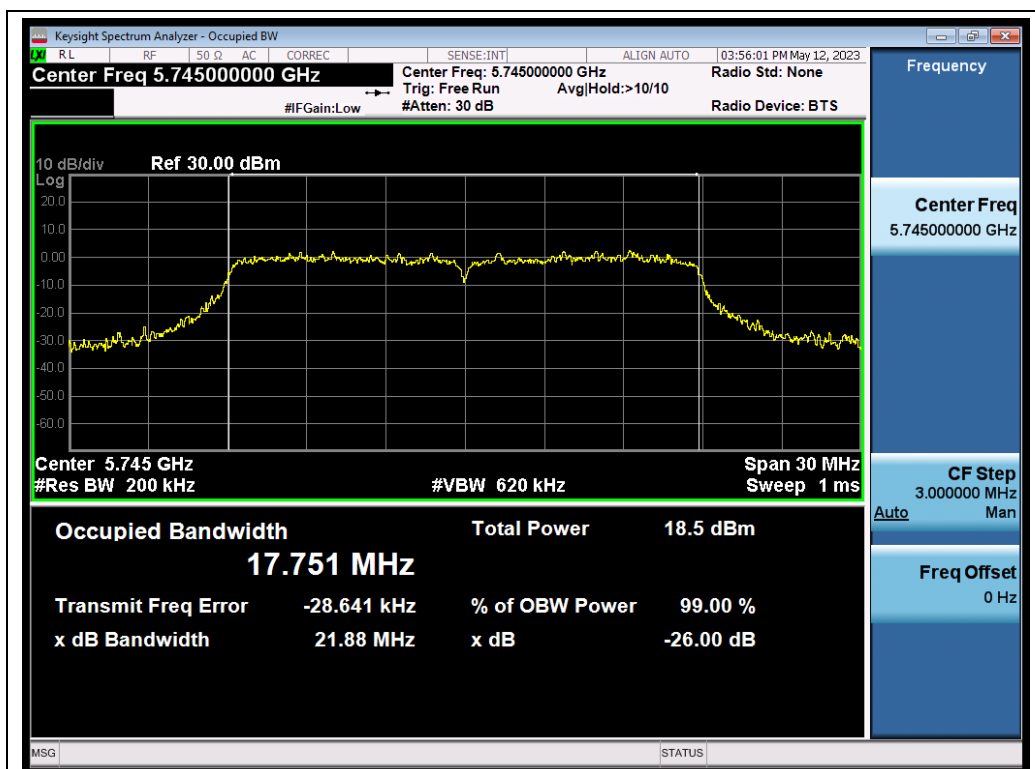
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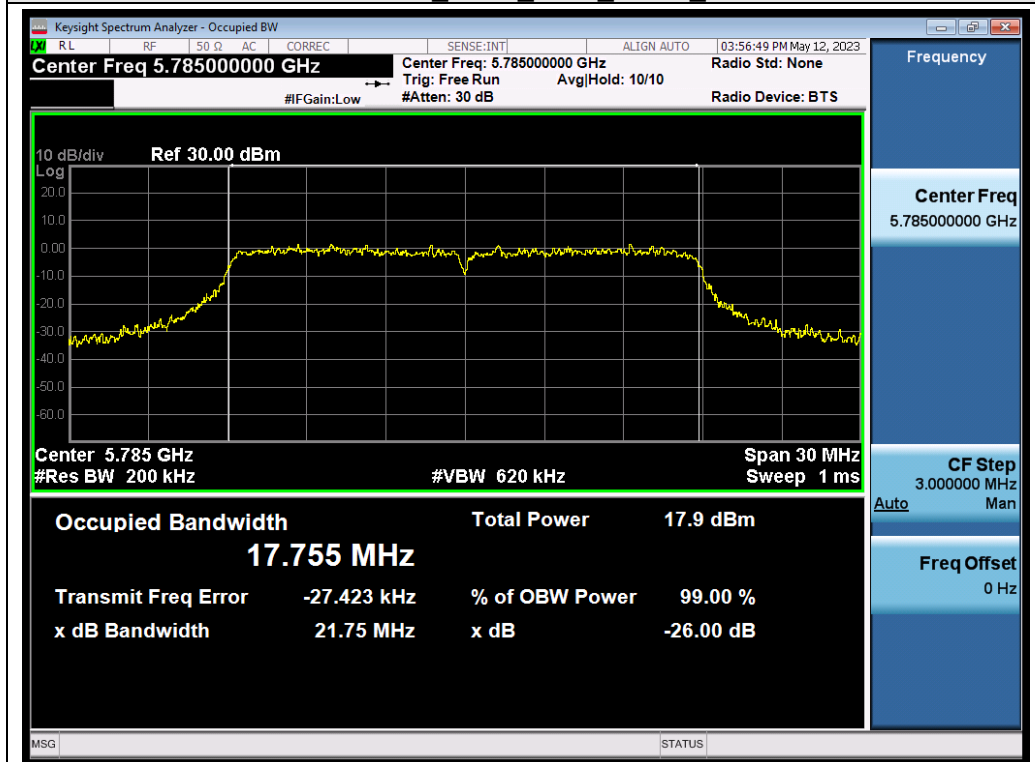
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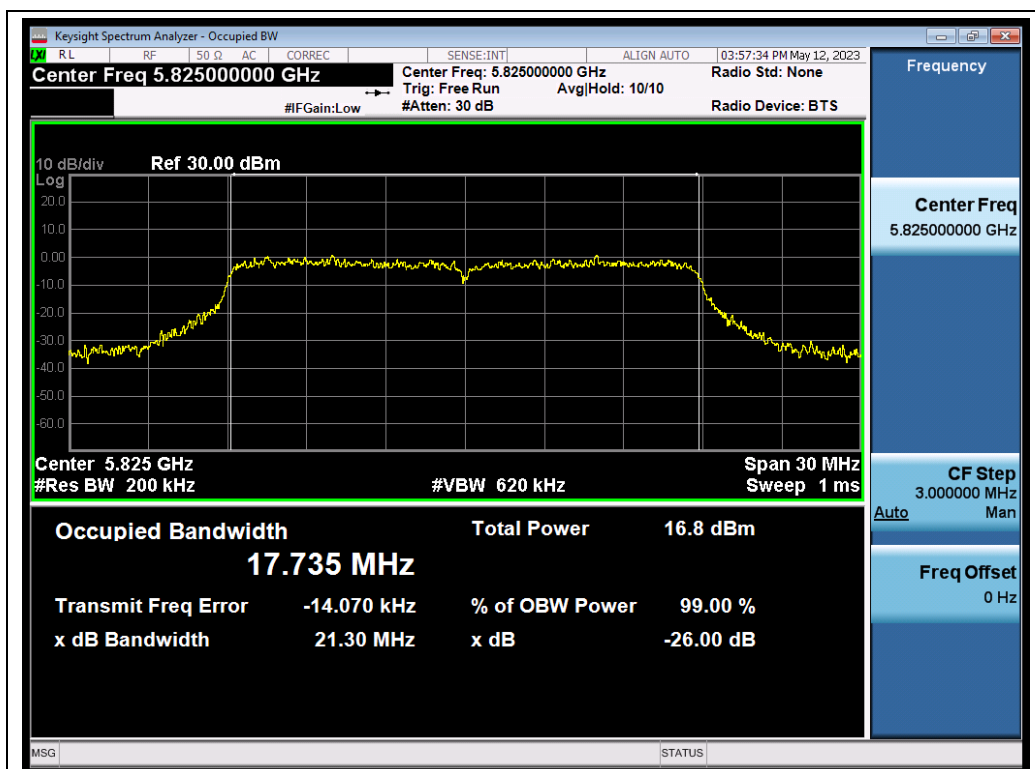
802.11n40 ANT1 5795 MCS0 OBW



802.11ac20 ANT1_5745_MCS0_OBW



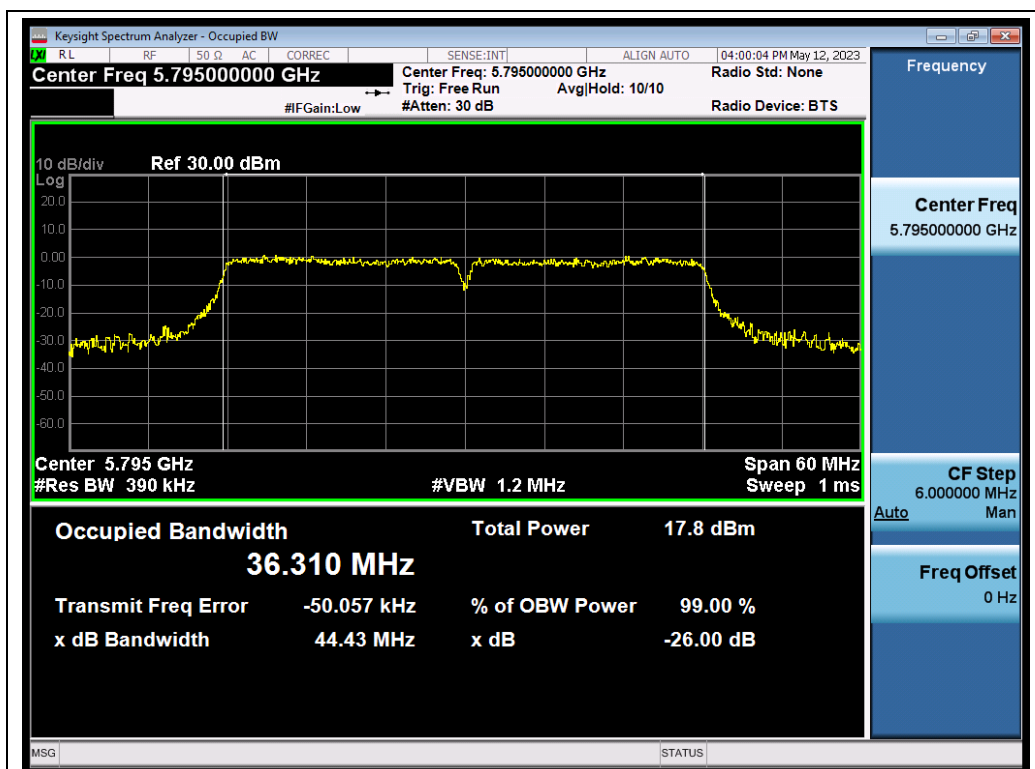
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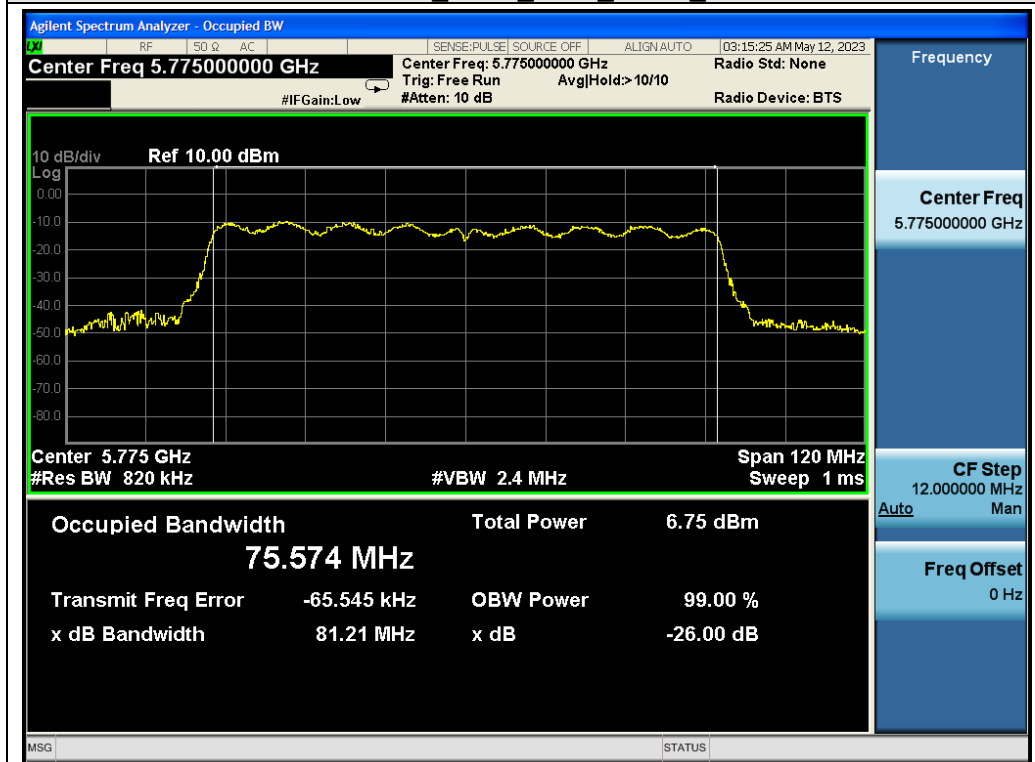
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802.11ac40 ANT1_5755_MCS0_OBW



802.11ac40 ANT1_5795_MCS0_OBW

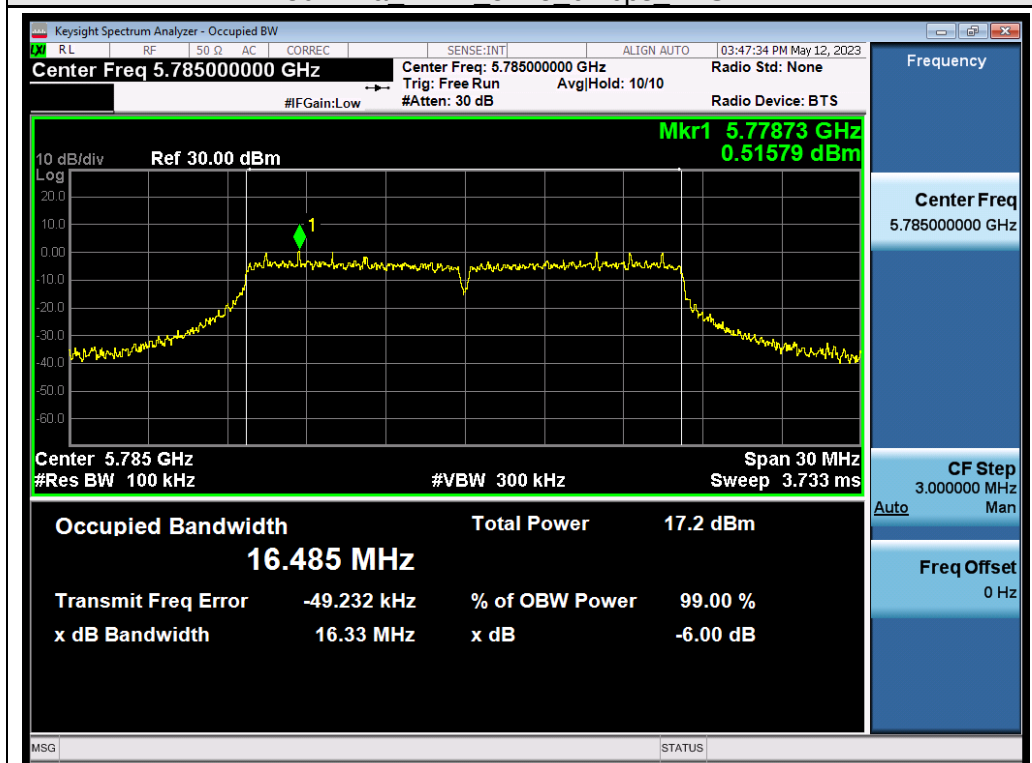


802.11ac80 ANT1_5775_MCS0_OBW

Test Graphs of DTS Bandwidth for band 5.725-5.85 GHz



802.11a ANT1 5745 6Mbps DTSBW



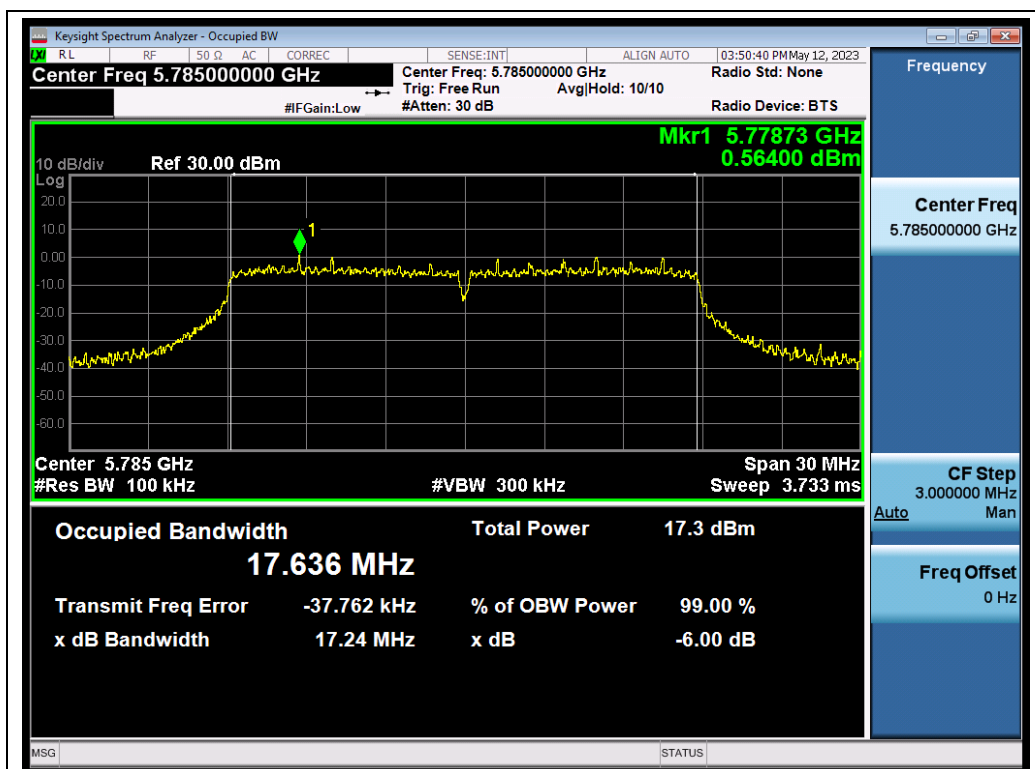
802.11a ANT1 5785 6Mbps DTSBW



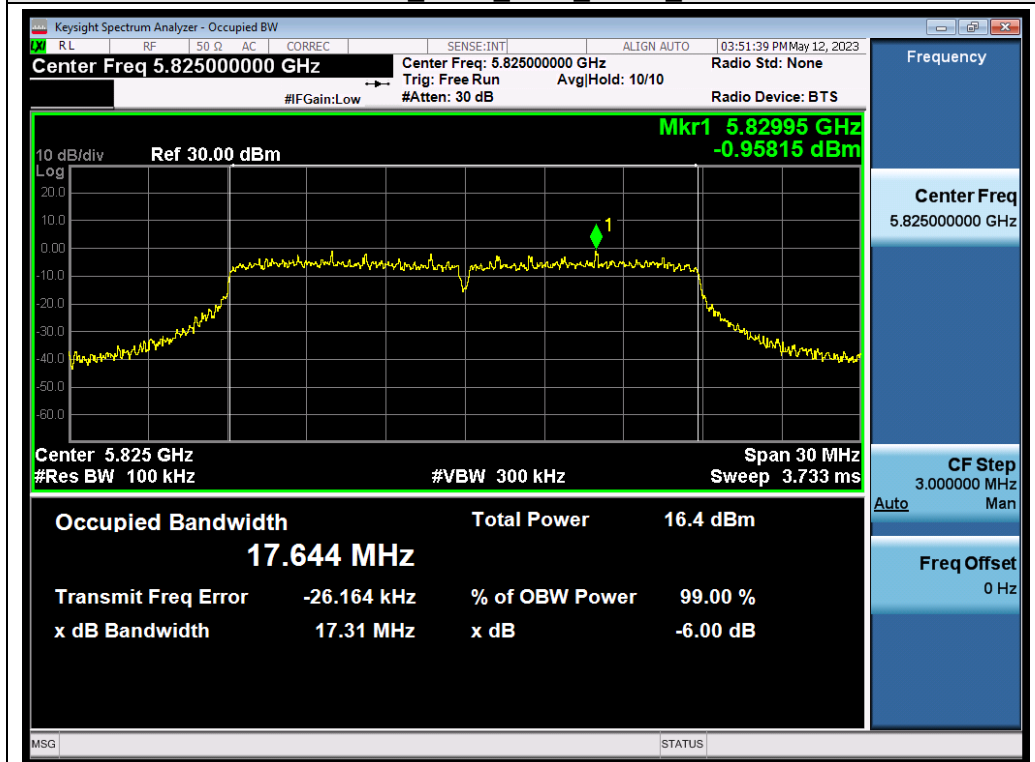
802.11a ANT1 5825 6Mbps DTSBW



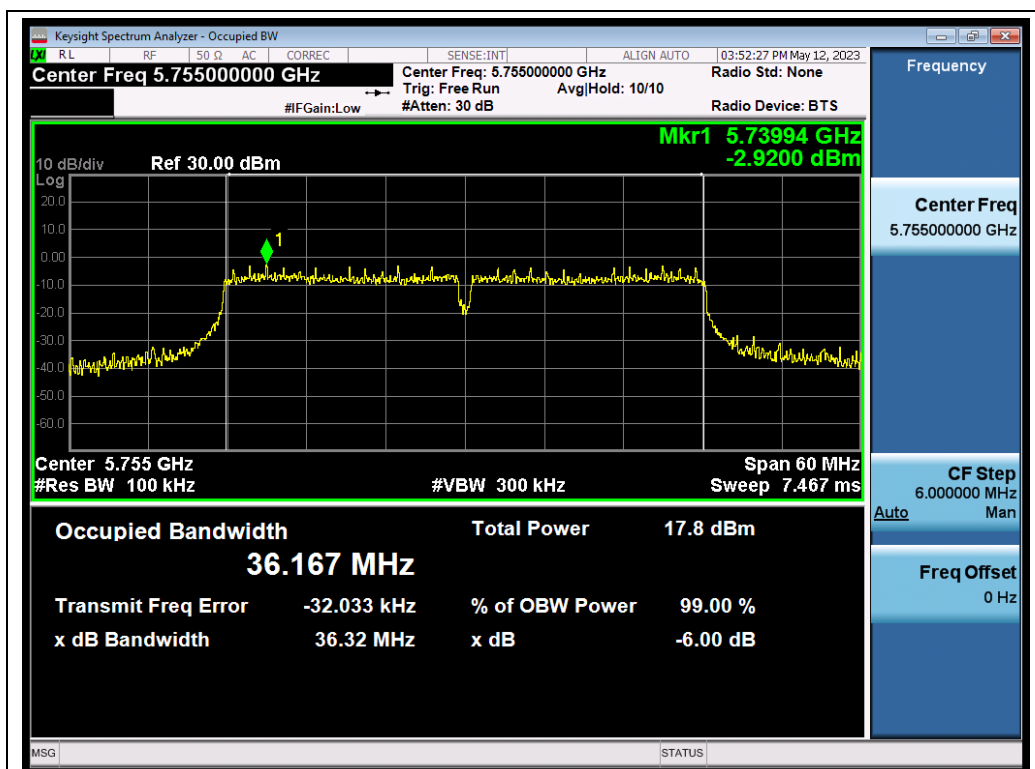
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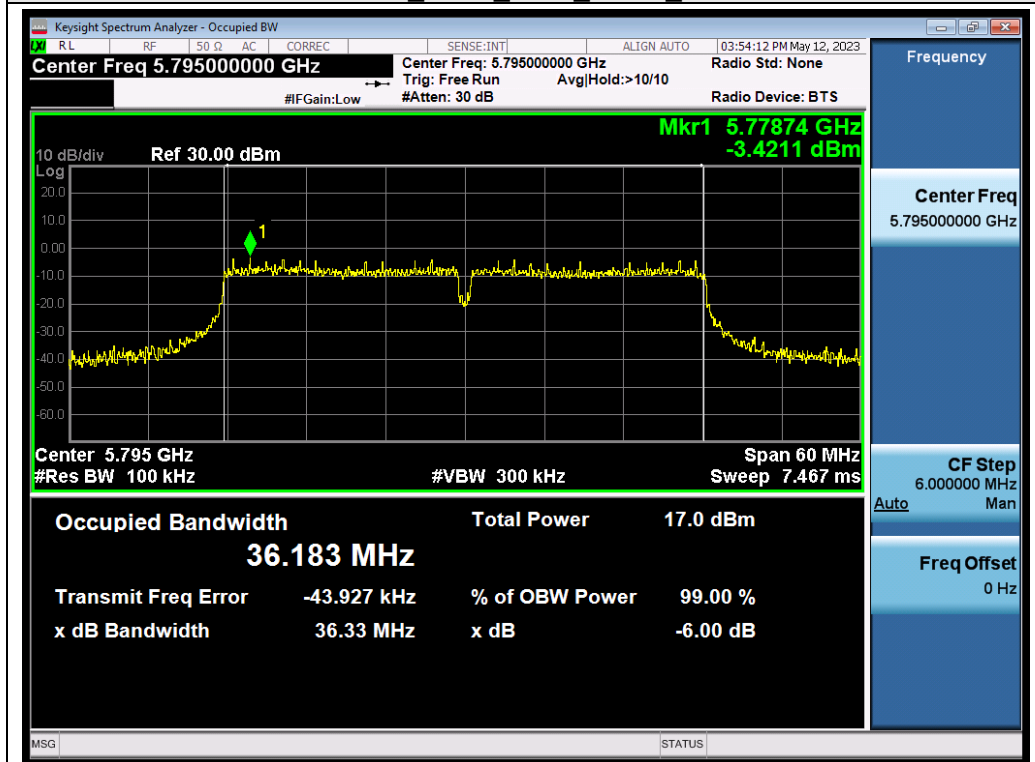
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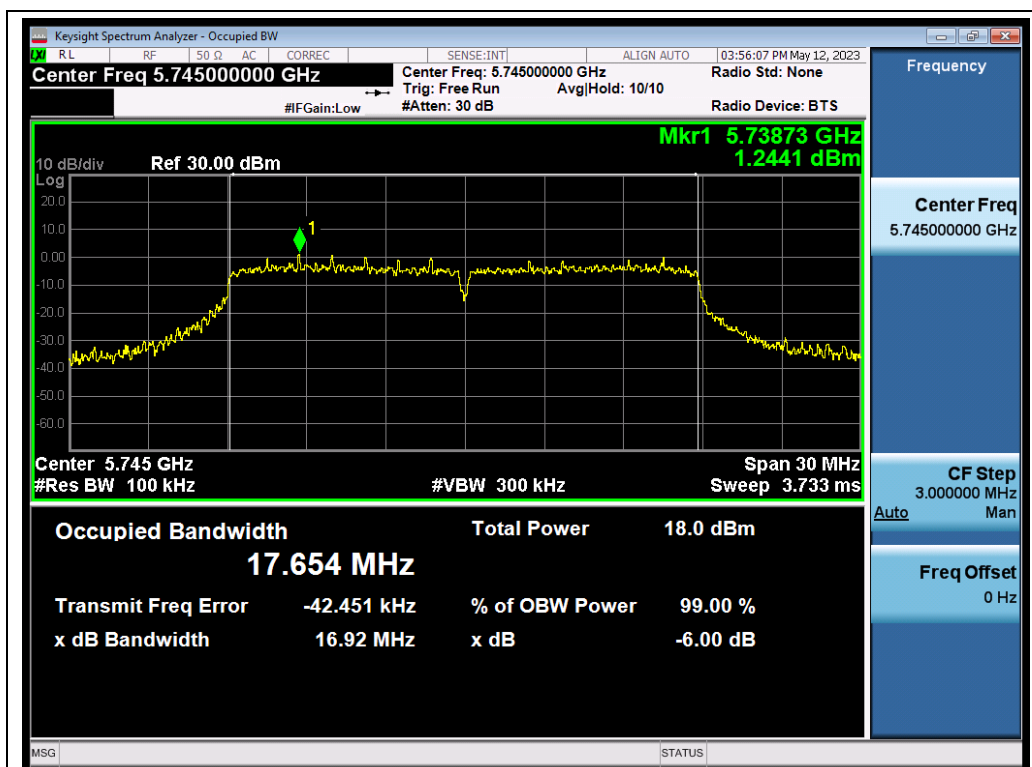
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802.11n40 ANT1 5755 MCS0 DTSBW



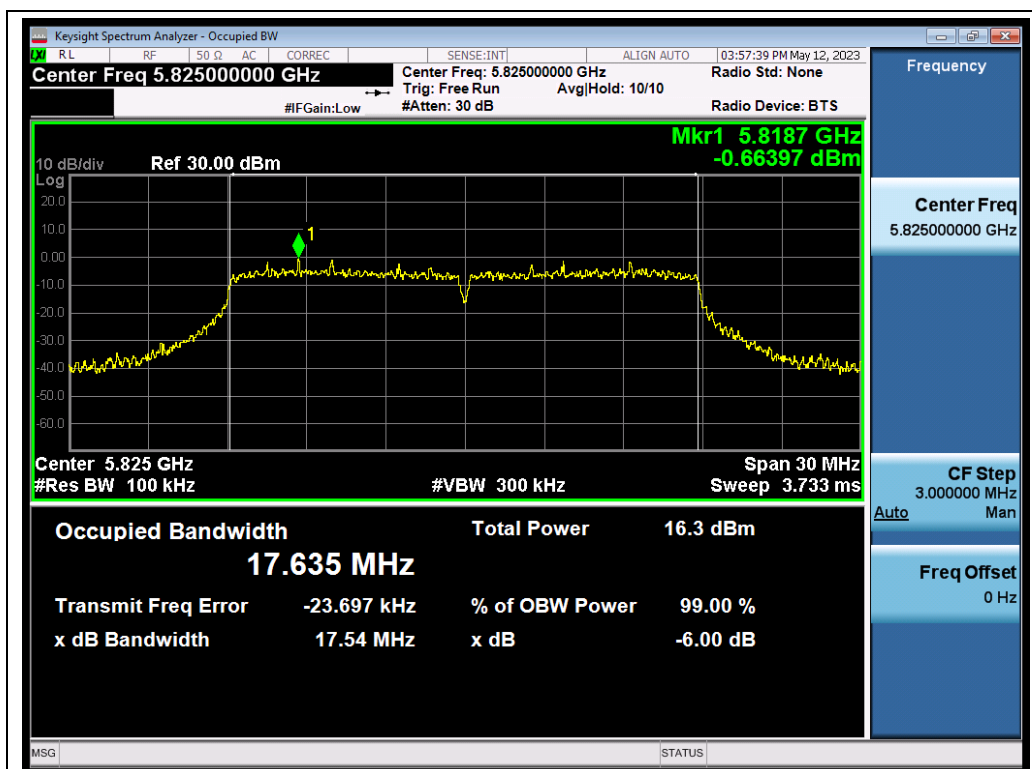
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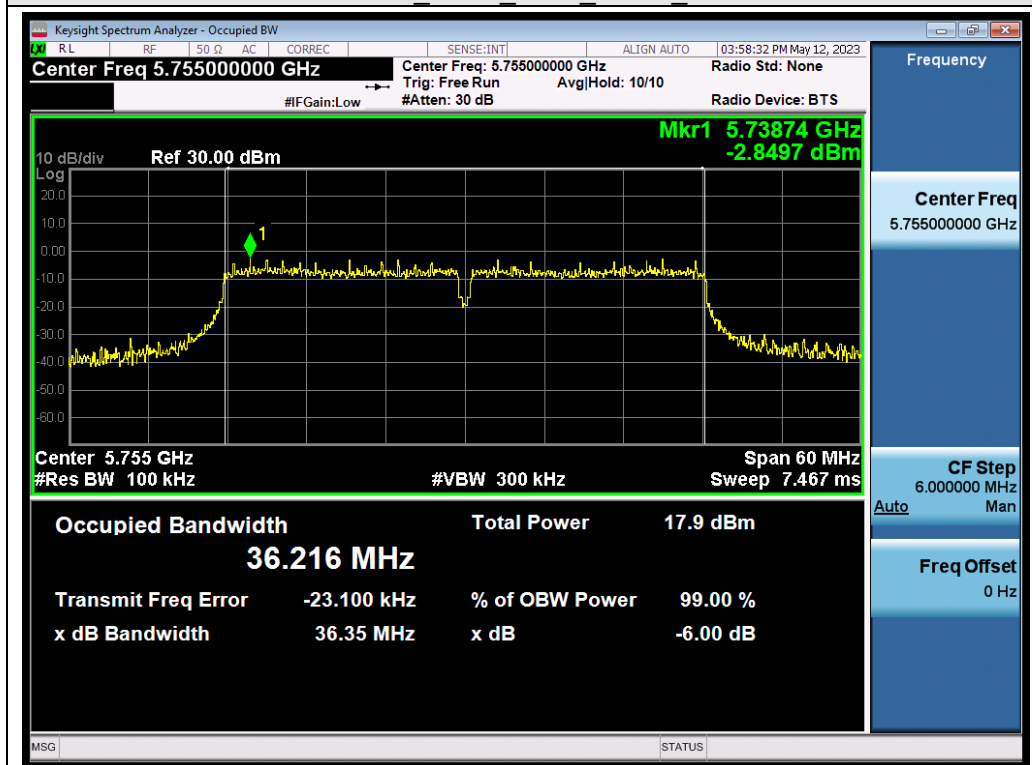
802.11ac20 ANT1_5745 MCS0_DTSBW



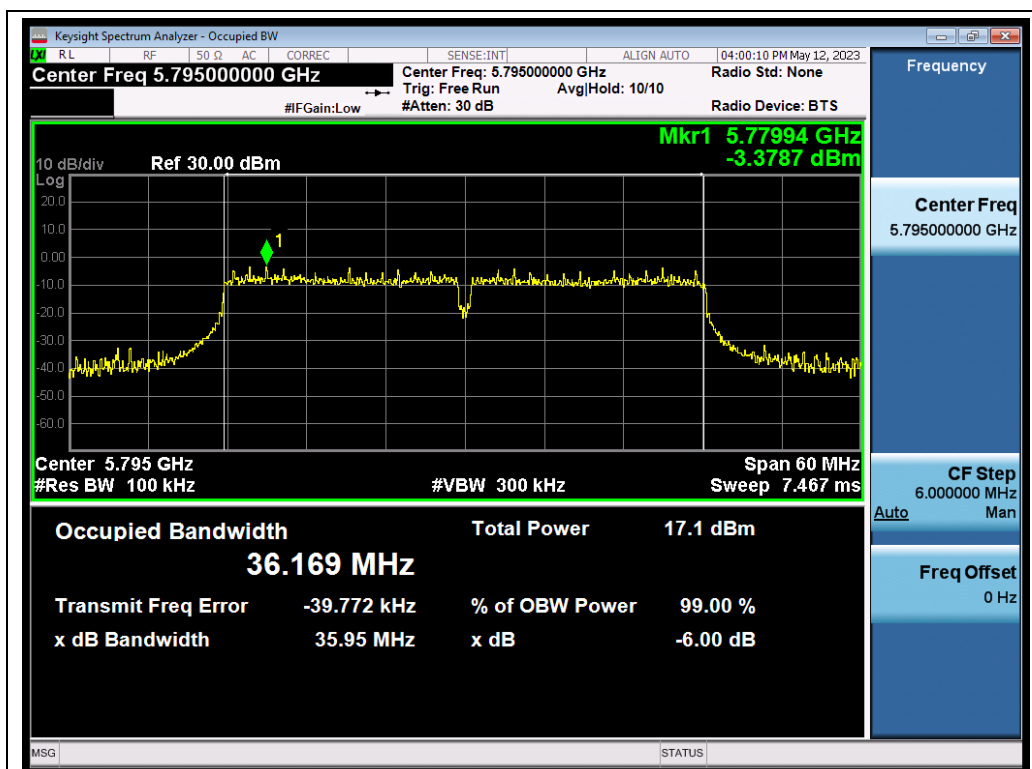
802.11ac20 ANT1_5785 MCS0_DTSBW



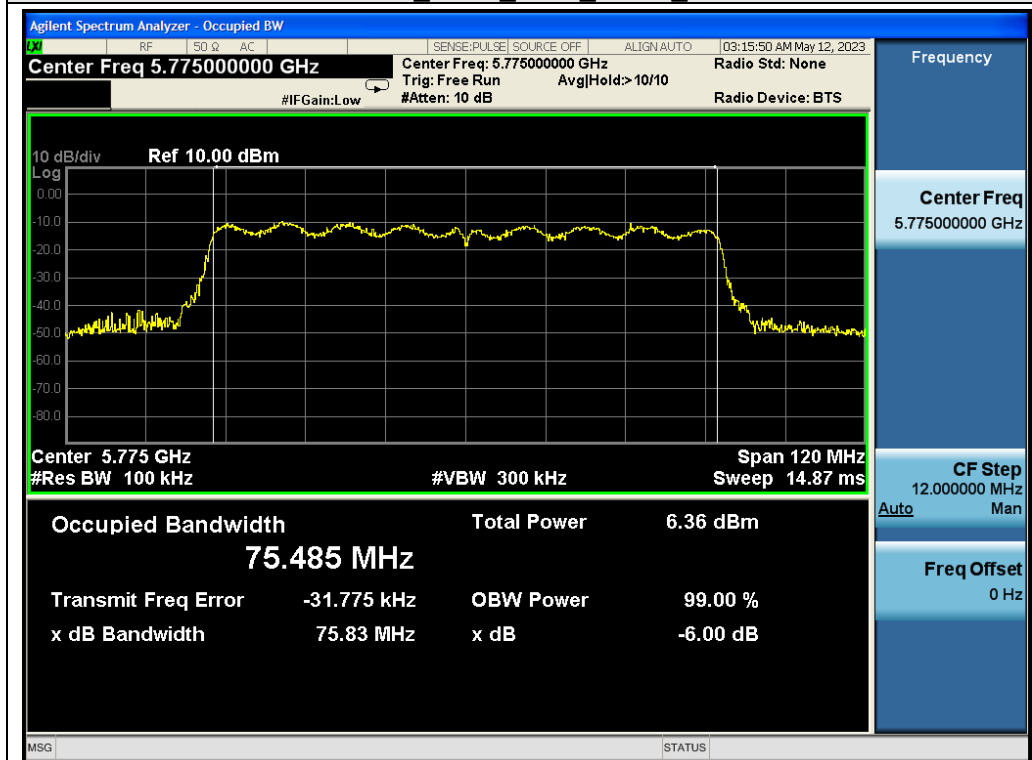
802.11ac20 ANT1_5825 MCS0_DTSBW



802.11ac40 ANT1_5755 MCS0_DTSBW



802.11ac40 ANT1_5795 MCS0 DTSBW



802.11ac80 ANT1_5775 MCS0 DTSBW

6 MAXIMUM CONDUCTED OUTPUT AVERAGE POWER SPECTRAL DENSITY

6.1 TEST LIMIT

FCC CFR Title 47 Part 15 Subpart E Section 15.407(a):

FCC Part 15 Subpart E(15.407)		
Test Item	Limit	Frequency Range(MHz)
Power Spectral Density	Outdoor AP, Indoor AP and Point-to-point AP : 17dBm/MHz Client devices : 11dBm/MHz	5150~5250
	11dBm/MHz	5250~5350
	11dBm/MHz	5470~5725
	30dBm/500kHz	5725~5850

6.2 TEST PROCEDURE

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement is according to KDB 789033 D02 General UNII Test Procedures New Rules V02r01.

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Set analyser centre frequency to transmitting frequency.
- (3) Set the span to encompass the entire emissions bandwidth (EBW)(alternatively, the entire 99% OBW) of the signal.
- (4) Set the RBW to: 1 MHz
- (5) Set the VBW to: 3 MHz
- (6) Detector: RMS
- (7) Trace: Max Hold
- (7) Sweep time: auto
- (8) Trace average at least 100 traces in power averaging.
- (9) User the peak marker function to determine the maximum amplitude level within the RBW. Apply correction to the result if different RBW is used.

NOTE: The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

6.3 TEST SET-UP

Same as 5.3.

6.4 EQUIPMENT USED

Same as Radiated Emission Measurement.

6.5 TEST RESULT

PASS

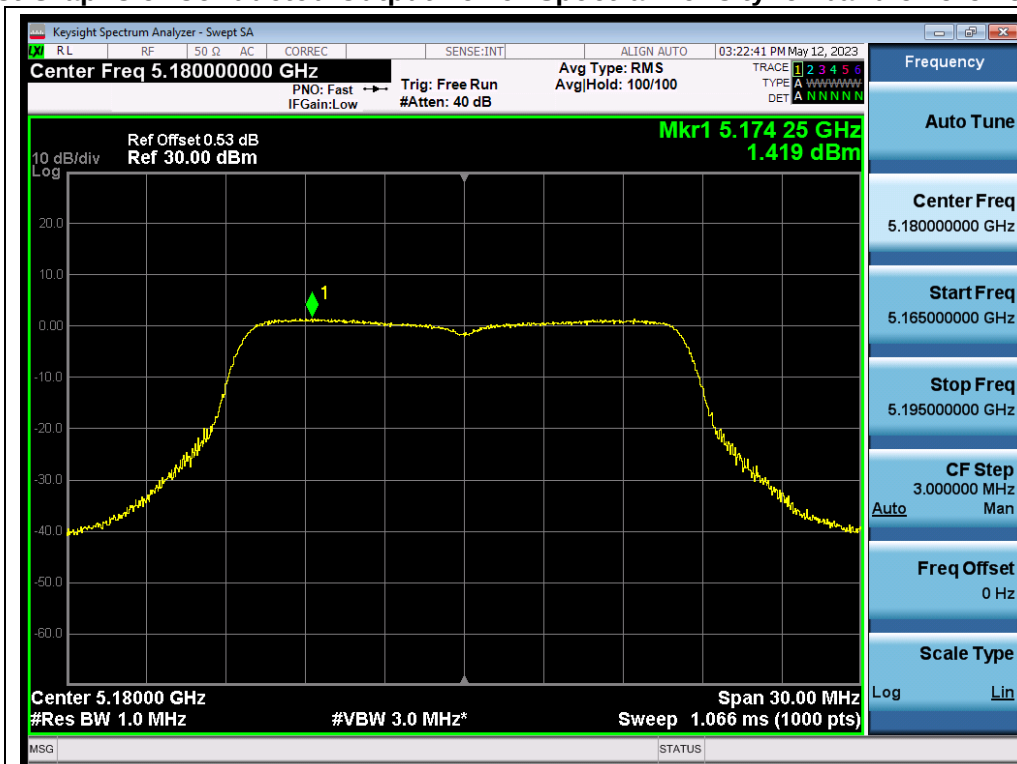
Test Data of Conducted Output Power Density for band 5.15-5.25 GHz				
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail
802.11a	5180	1.419	11	Pass
	5200	1.161	11	Pass
	5240	0.711	11	Pass
802.11n20	5180	1.164	11	Pass
	5200	1.123	11	Pass
	5240	0.778	11	Pass
802.11n40	5190	-0.955	11	Pass
	5230	-0.669	11	Pass
802.11ac20	5180	1.621	11	Pass
	5200	1.354	11	Pass
	5240	1.171	11	Pass
802.11ac40	5190	-0.275	11	Pass
	5230	-0.761	11	Pass
802.11ac80	5210	-4.877	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
802.11a	5260	2.610	11	Pass
	5300	2.805	11	Pass
	5320	2.365	11	Pass
802.11n20	5260	2.251	11	Pass
	5300	2.037	11	Pass
	5320	2.233	11	Pass
802.11n40	5270	0.553	11	Pass
	5310	0.575	11	Pass
802.11ac20	5260	0.793	11	Pass
	5300	0.679	11	Pass
	5320	1.110	11	Pass
802.11ac40	5270	-1.310	11	Pass
	5310	-0.835	11	Pass
802.11ac80	5290	-3.967	11	Pass

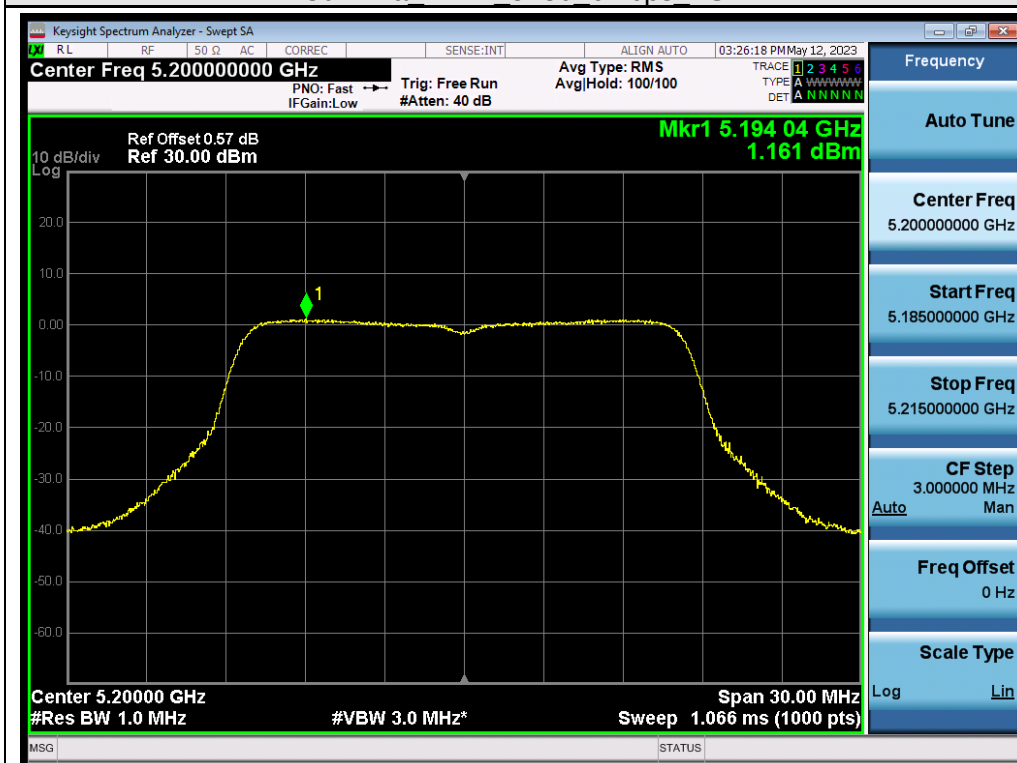
Test Data of Conducted Output Power Density for band 5.47-5.725 GHz				
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail
802.11a	5500	3.071	11	Pass
	5600	3.397	11	Pass
	5700	3.491	11	Pass
802.11n20	5500	2.168	11	Pass
	5600	2.368	11	Pass
	5700	2.603	11	Pass
802.11n40	5510	0.381	11	Pass
	5590	-0.735	11	Pass
	5670	-0.459	11	Pass
802.11ac20	5500	1.642	11	Pass
	5600	1.760	11	Pass
	5700	1.724	11	Pass
802.11ac40	5510	-0.398	11	Pass
	5590	0.191	11	Pass
	5670	-0.033	11	Pass
802.11ac80	5530	-0.926	11	Pass
	5610	-0.834	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/500kHz)	Limits (dBm/500k Hz)	Pass or Fail
802.11a	5745	-0.788	30	Pass
	5785	-1.267	30	Pass
	5825	-2.627	30	Pass
802.11n20	5745	-1.271	30	Pass
	5785	-1.812	30	Pass
	5825	-2.527	30	Pass
802.11n40	5755	-3.492	30	Pass
	5795	-4.019	30	Pass
802.11ac20	5745	-1.006	30	Pass
	5785	-1.987	30	Pass
	5825	-2.738	30	Pass
802.11ac40	5755	-3.055	30	Pass
	5795	-4.568	30	Pass
802.11ac80	5775	-1.661	30	Pass

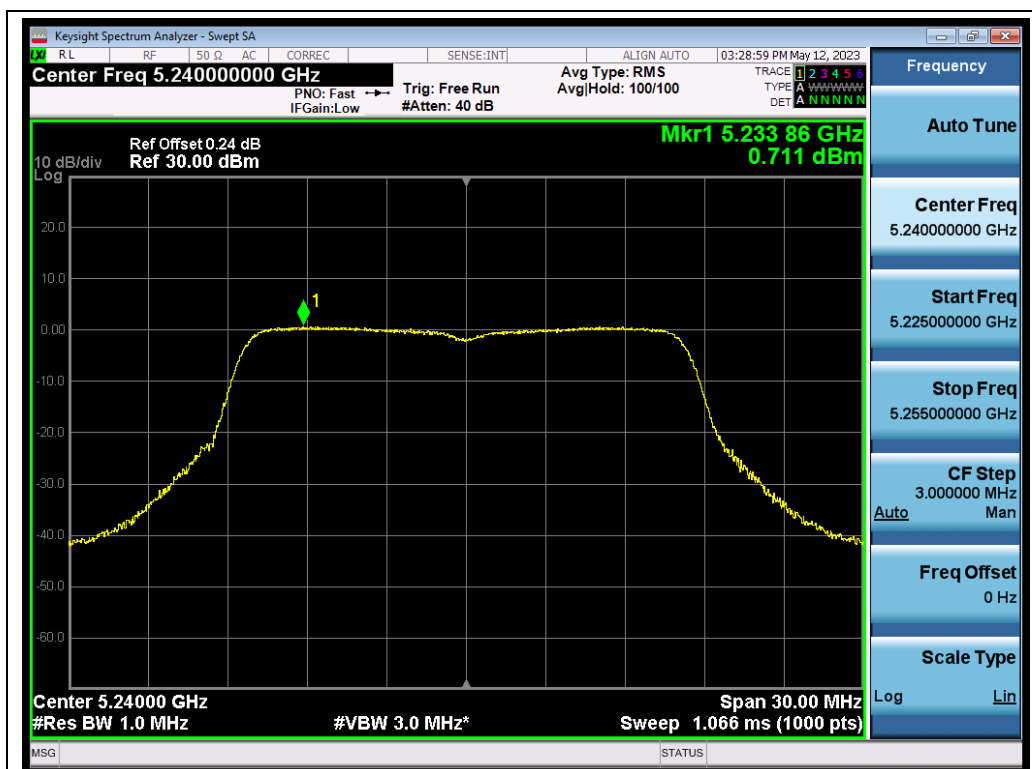
Test Graphs of Conducted Output Power Spectral Density for band 5.15-5.25 GHz



802.11a ANT1 5180 6Mbps PSD



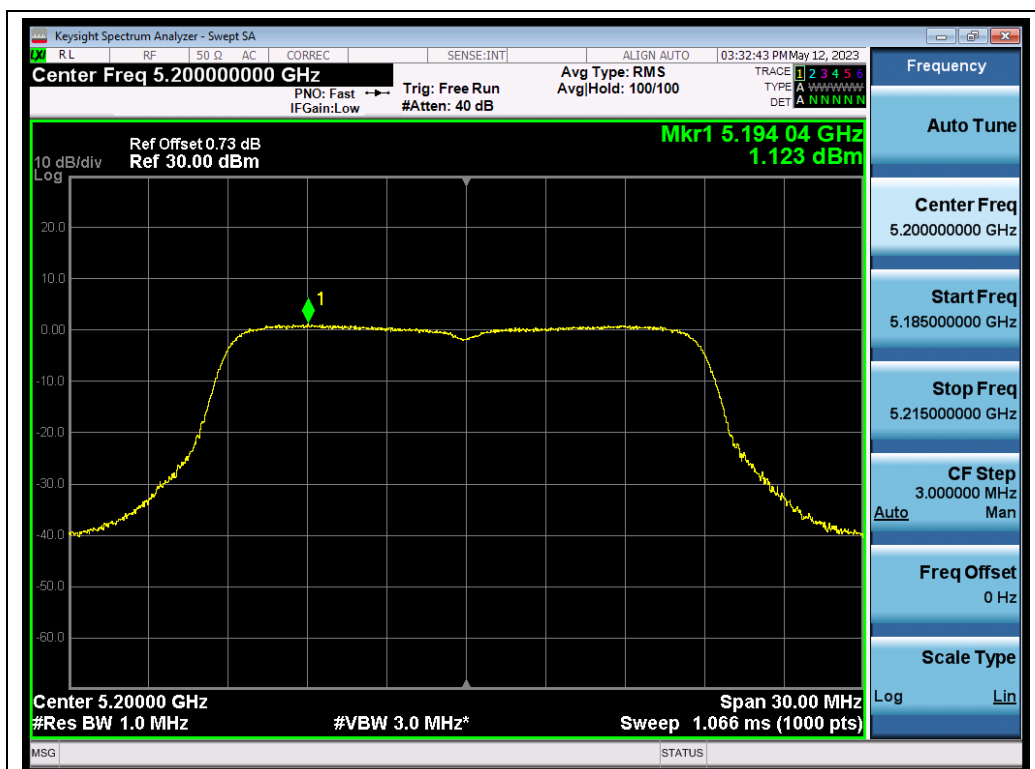
802.11a ANT1 5200 6Mbps PSD



802.11a ANT1 5240 6Mbps PSD



802.11n20 ANT1 5180 MCS0 PSD



802.11n20 ANT1_5200_MCS0_PSD



802.11n20 ANT1_5240_MCS0_PSD



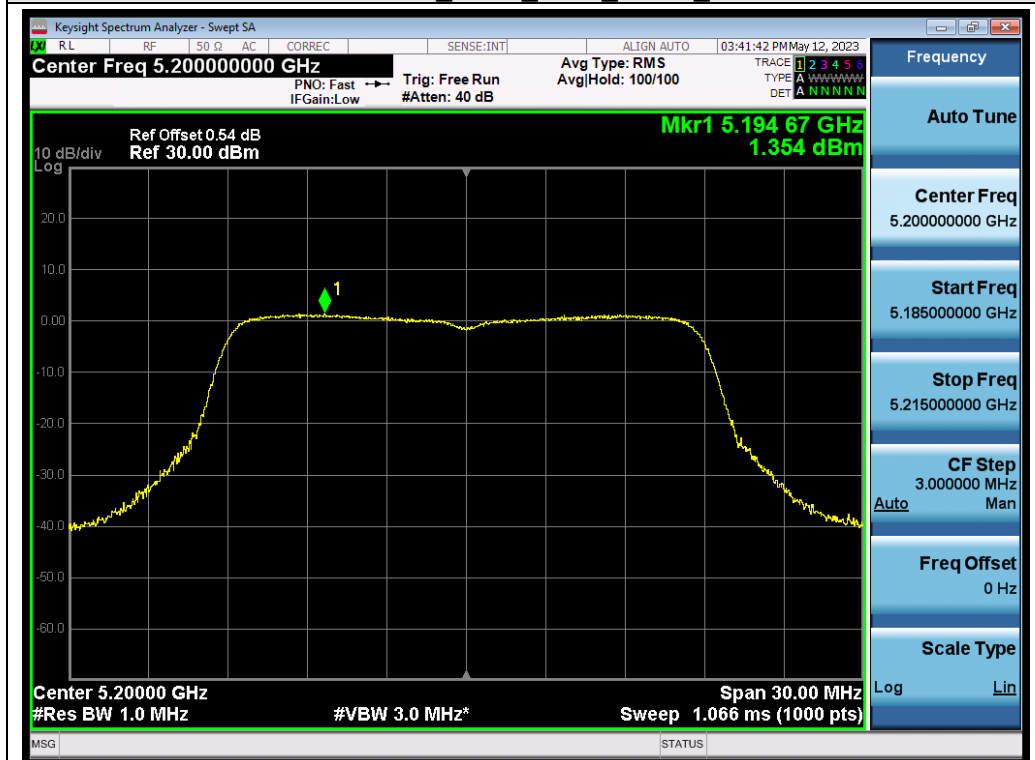
802.11n40 ANT1 5190 MCS0 PSD



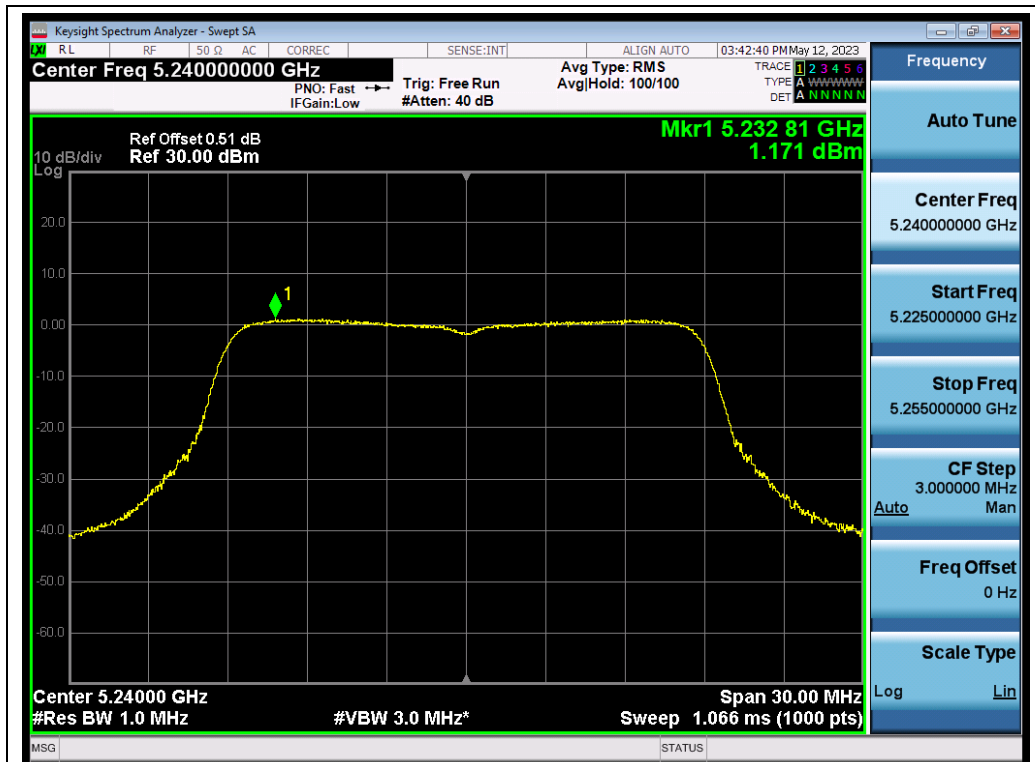
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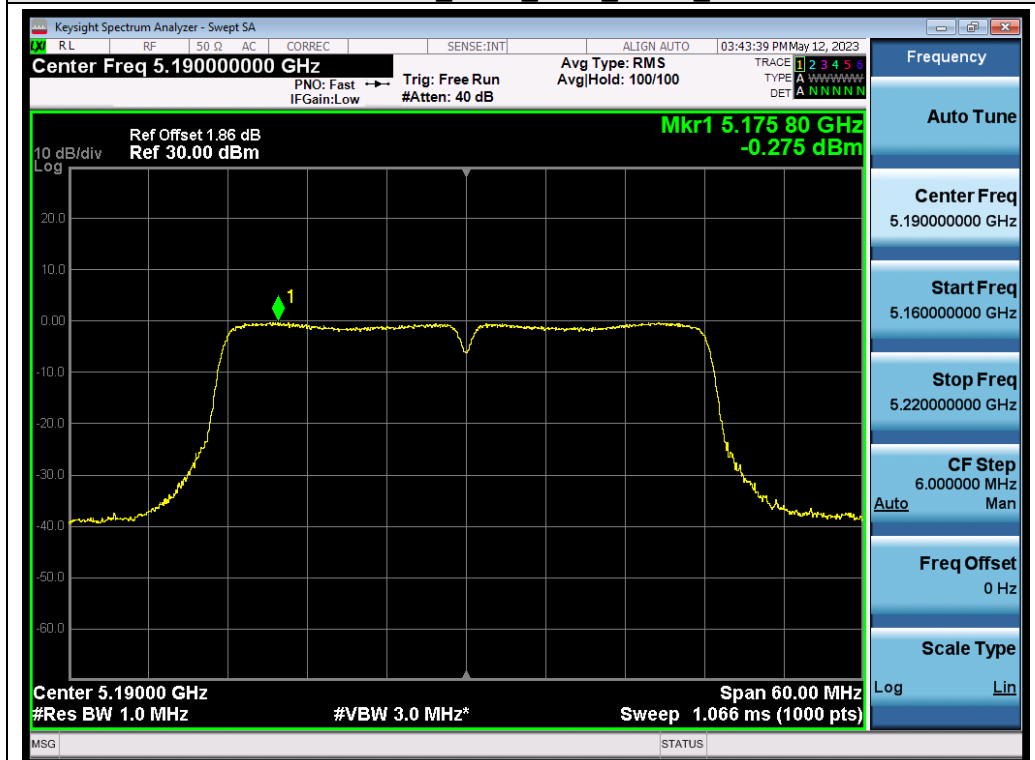
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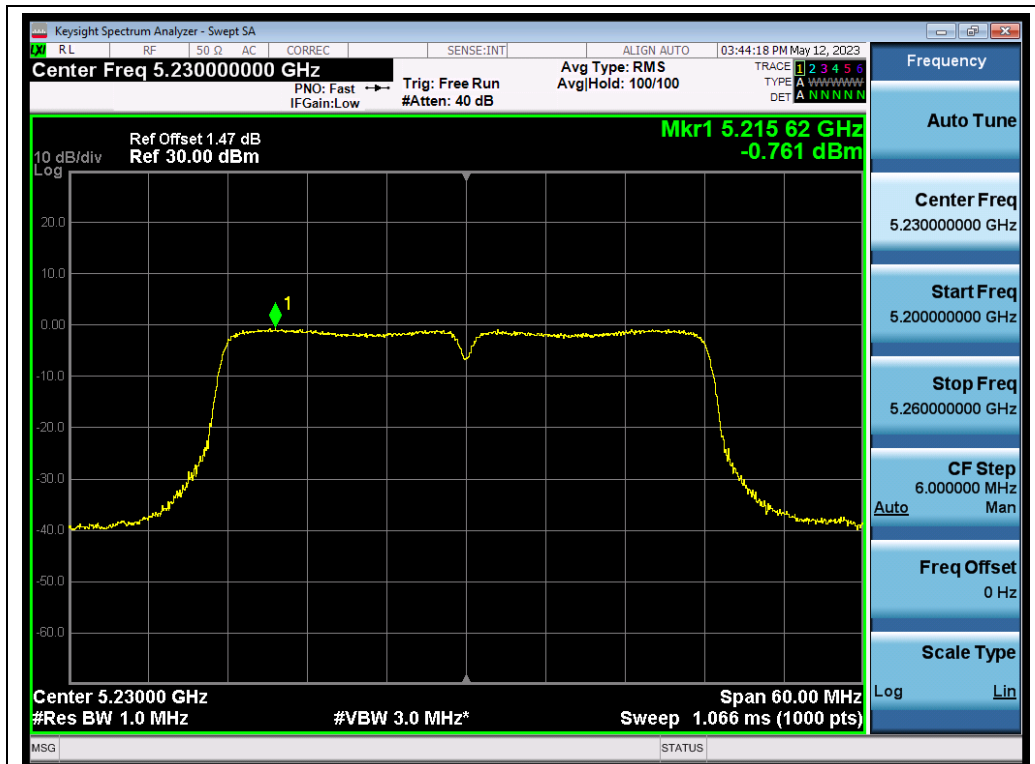
802.11ac20_ANT1_5200_MCS0_PSD



802.11ac20_ANT1_5240_MCS0_PSD



802.11ac40_ANT1_5190_MCS0_PSD



802.11ac40_ANT1_5230_MCS0_PSD

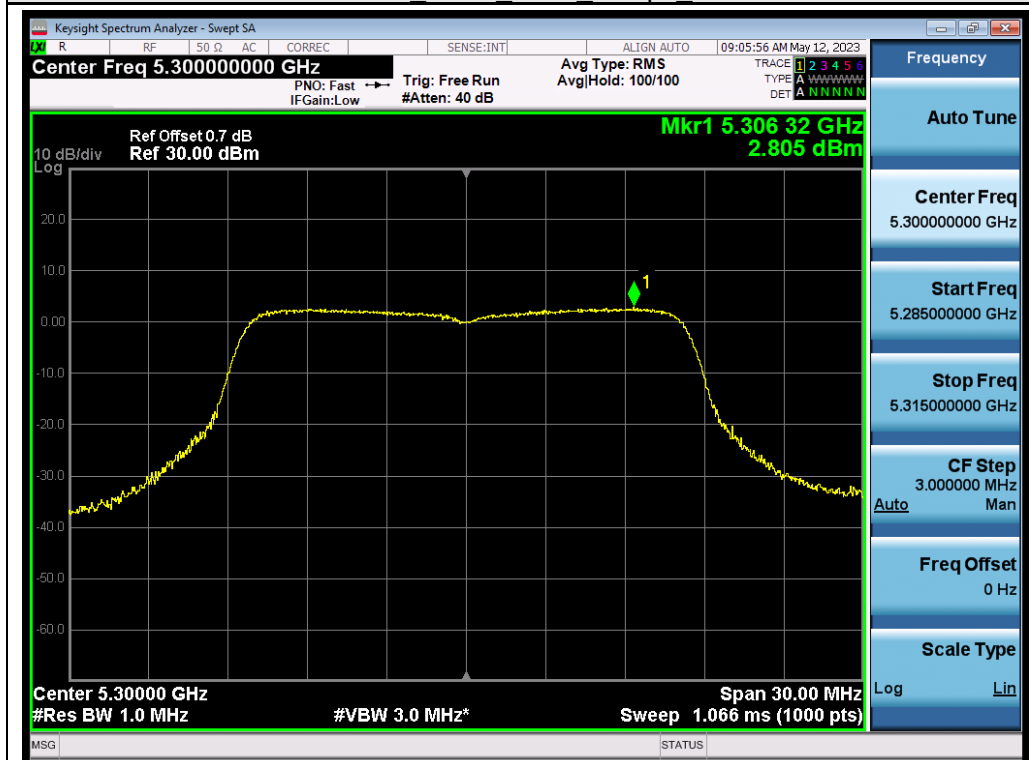


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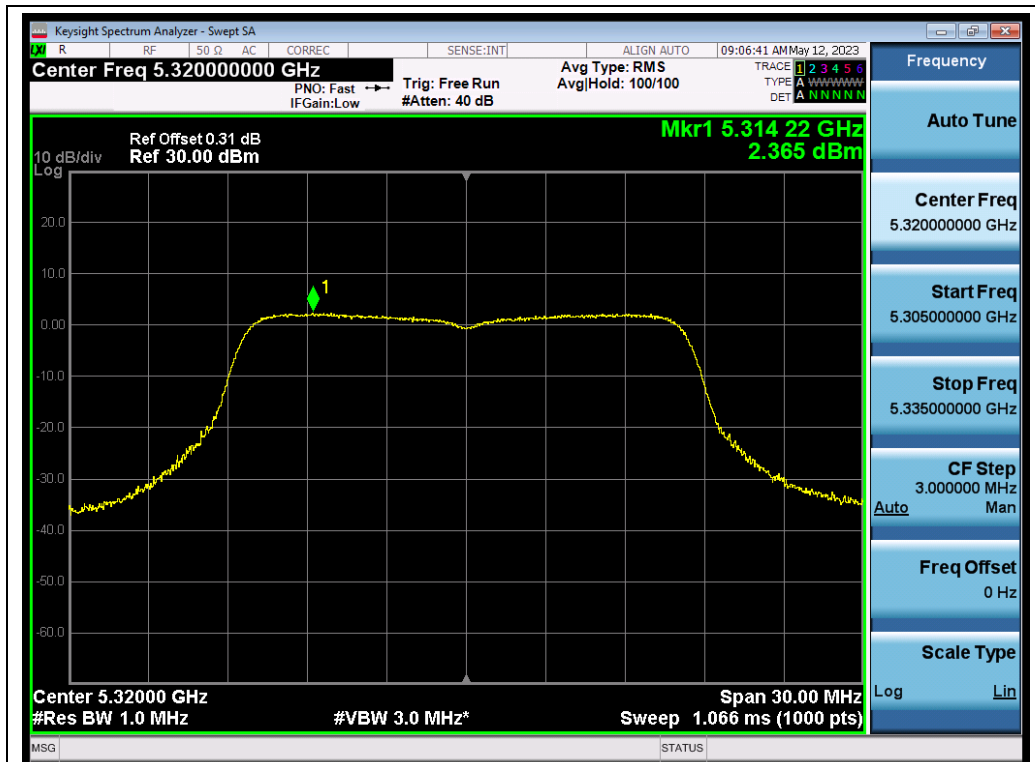
Test Graphs of Conducted Output Power Spectral Density for band 5.25-5.35 GHz



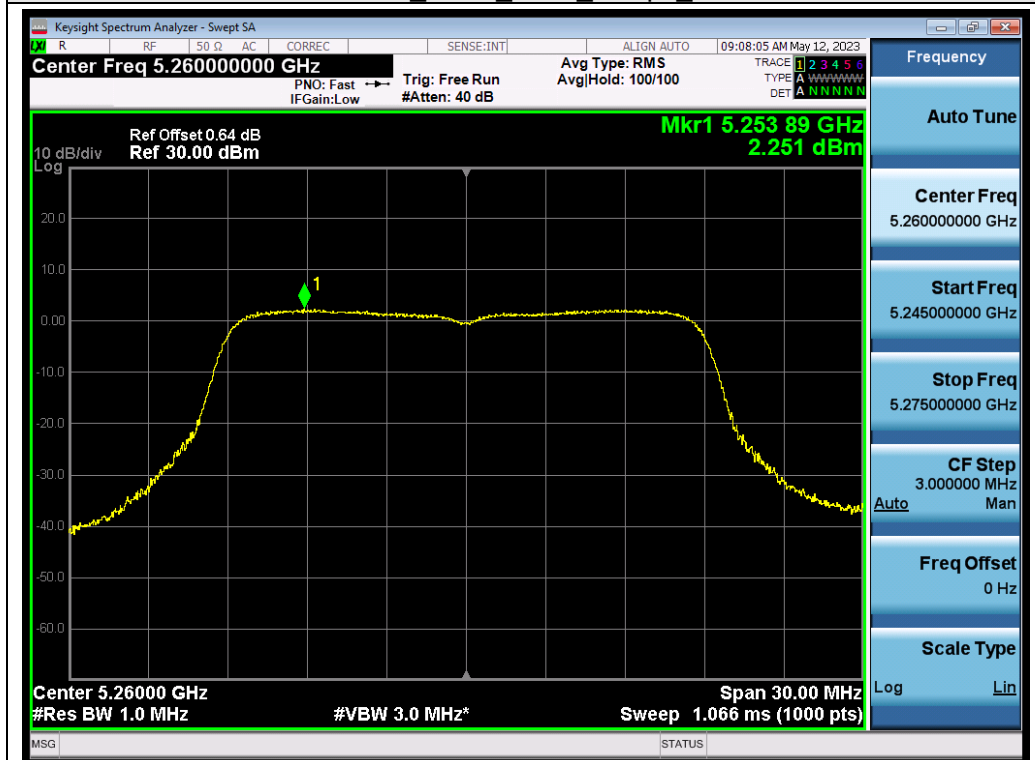
802.11a ANT1 5260 6Mbps PSD



802.11a ANT1 5300 6Mbps PSD



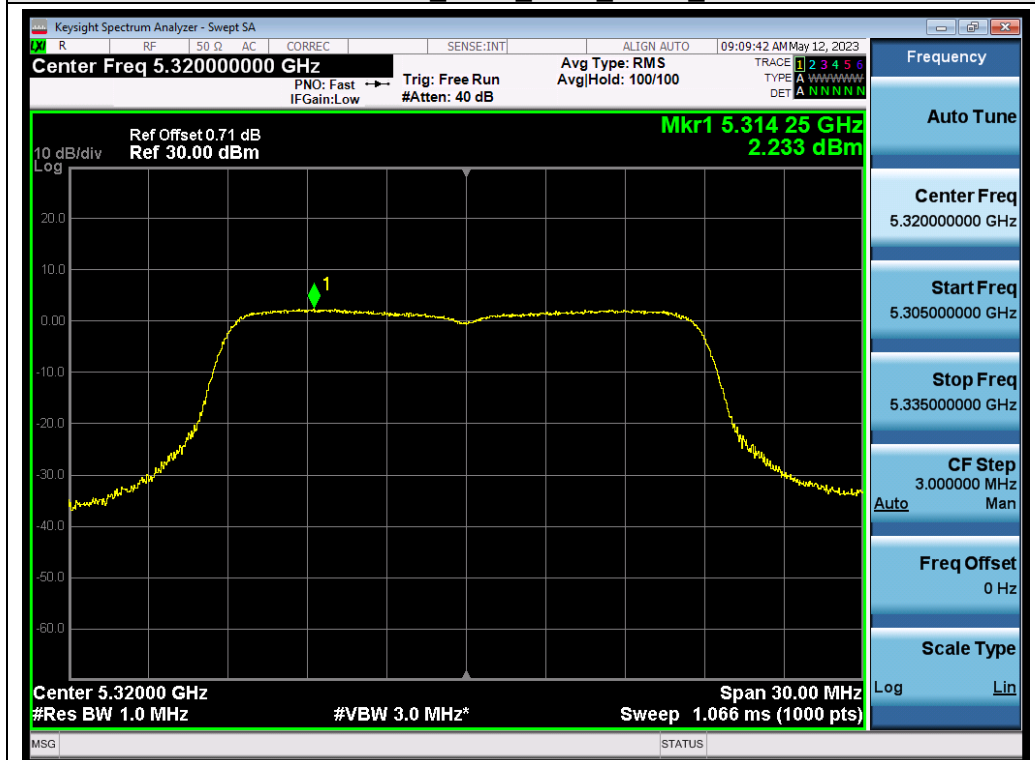
802.11a ANT1 5320 6Mbps PSD



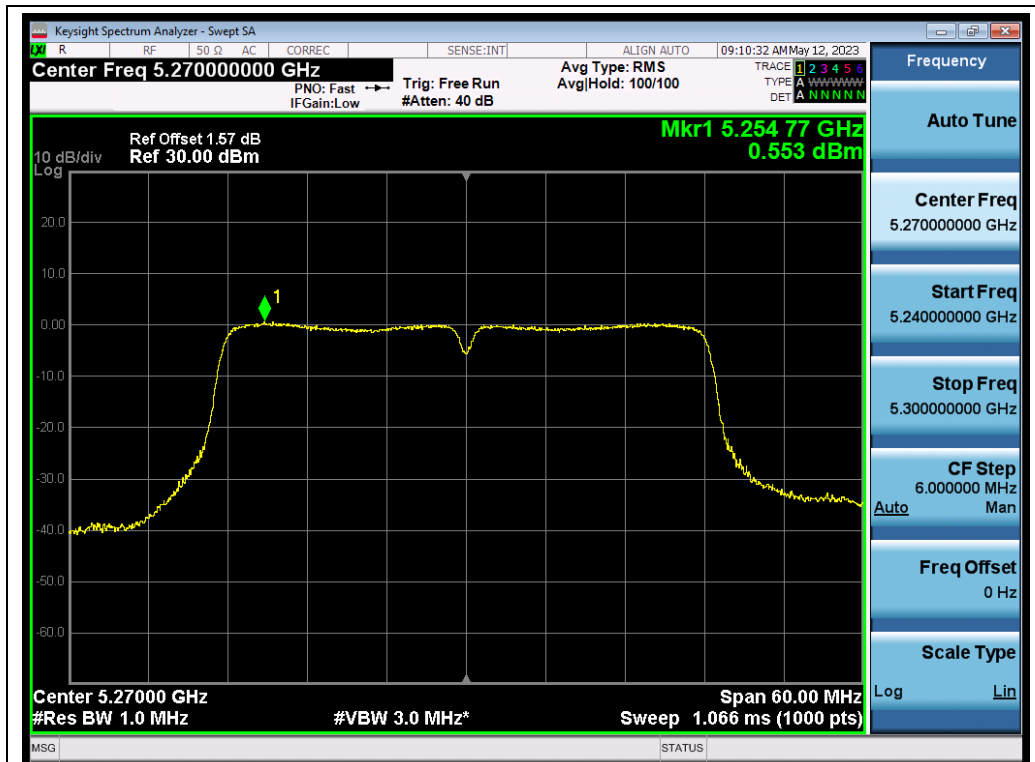
802.11n20 ANT1 5260 MCS0 PSD



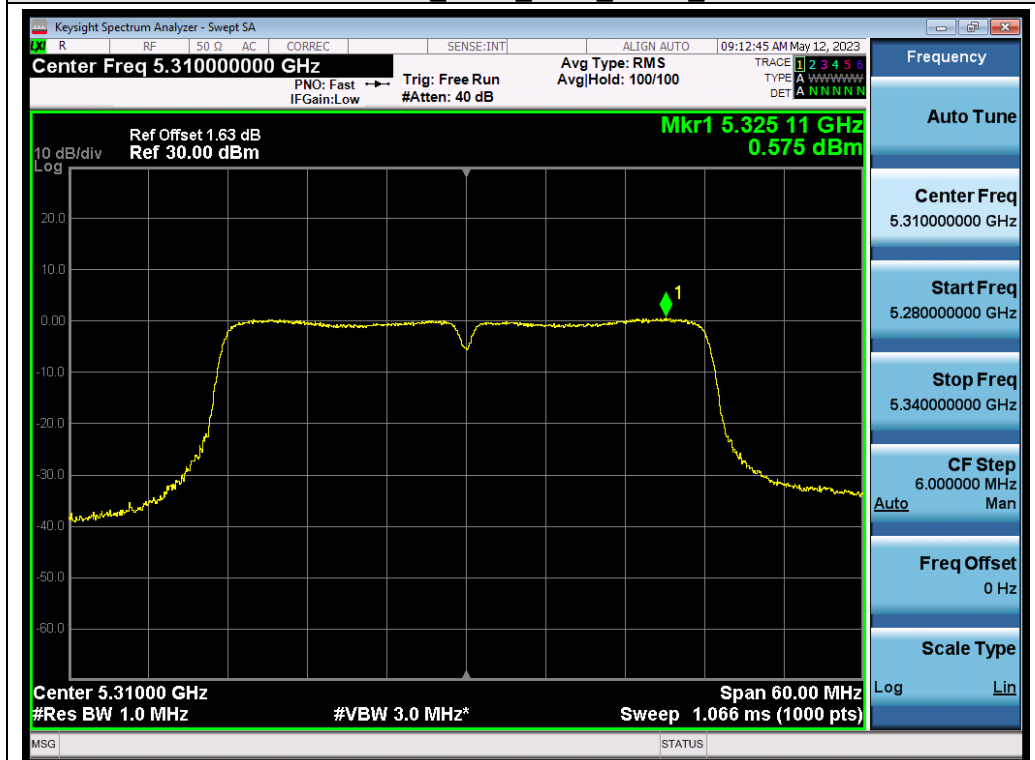
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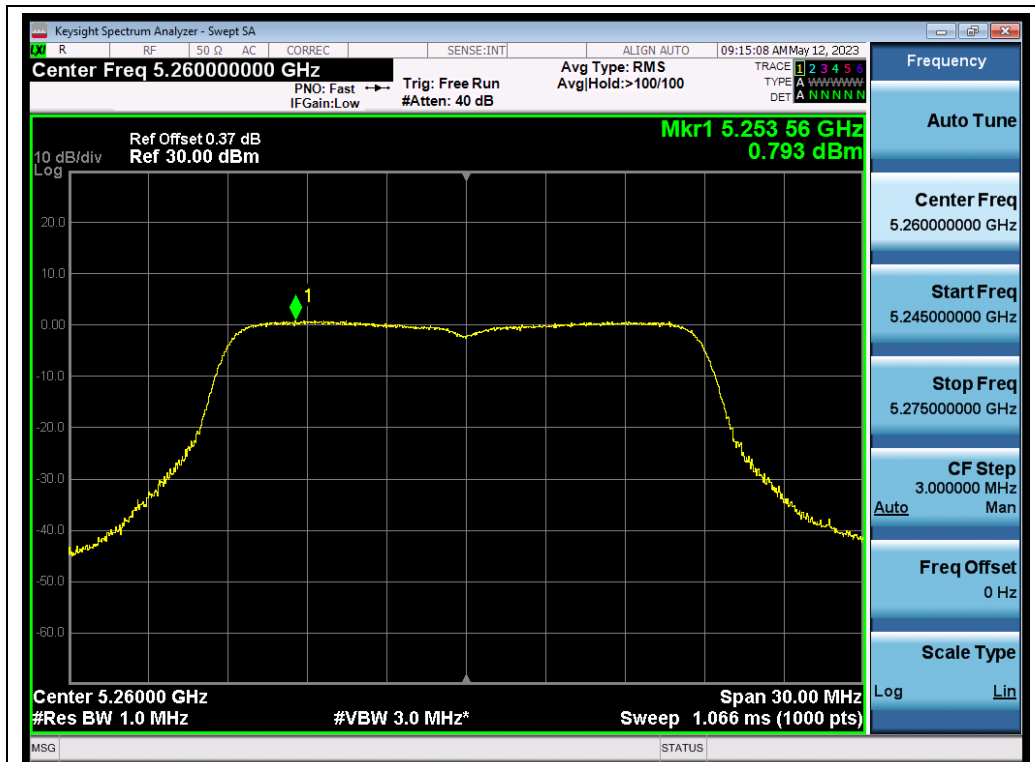
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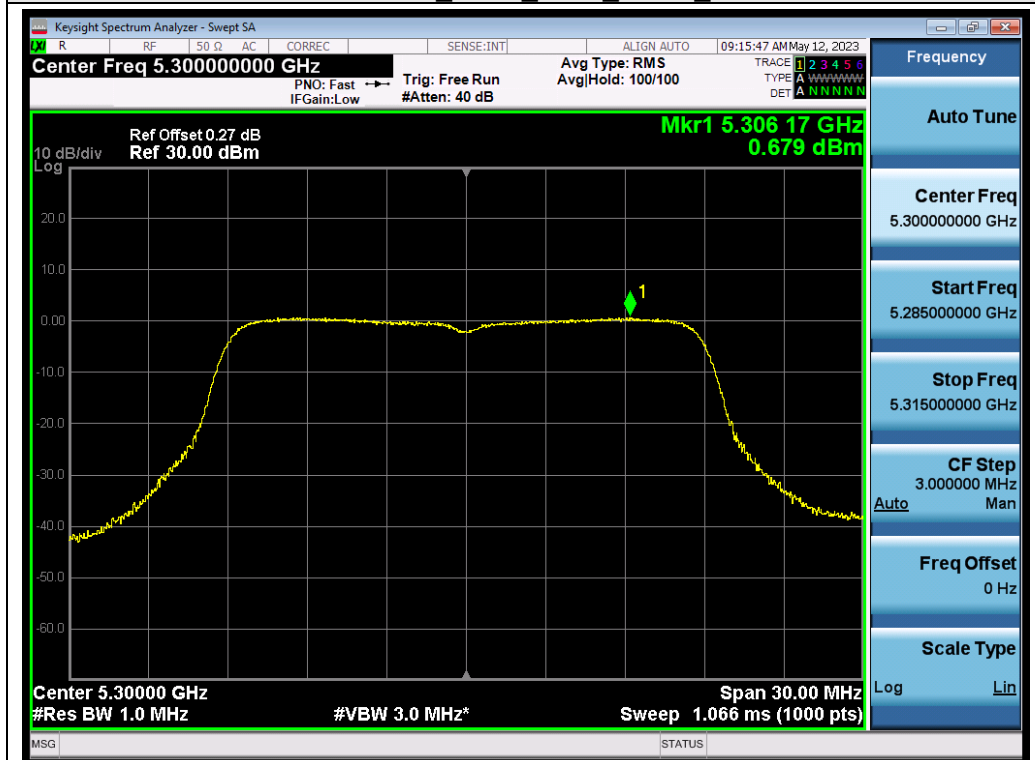
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802.11n40 ANT1_5310_MCS0_PSD



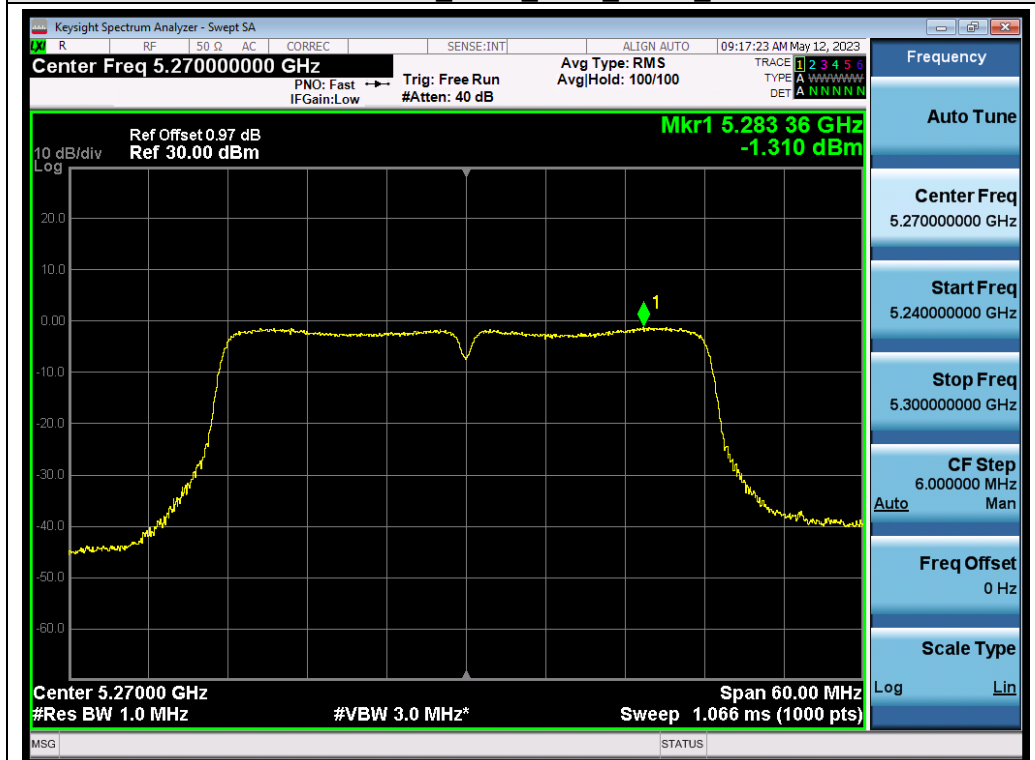
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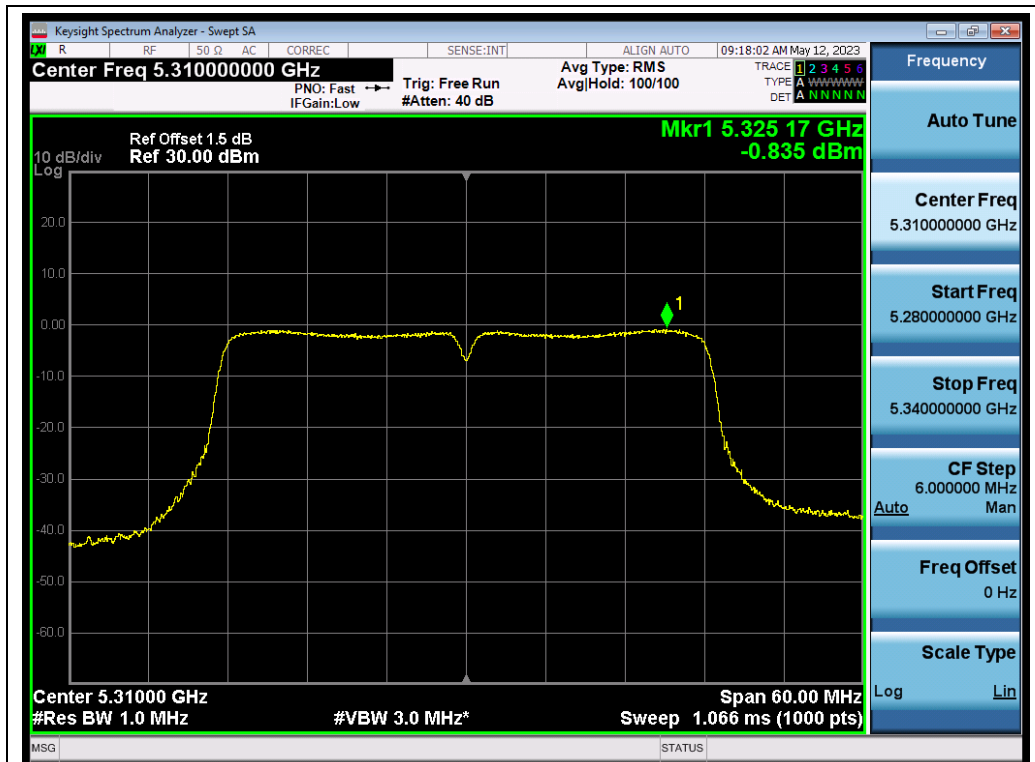
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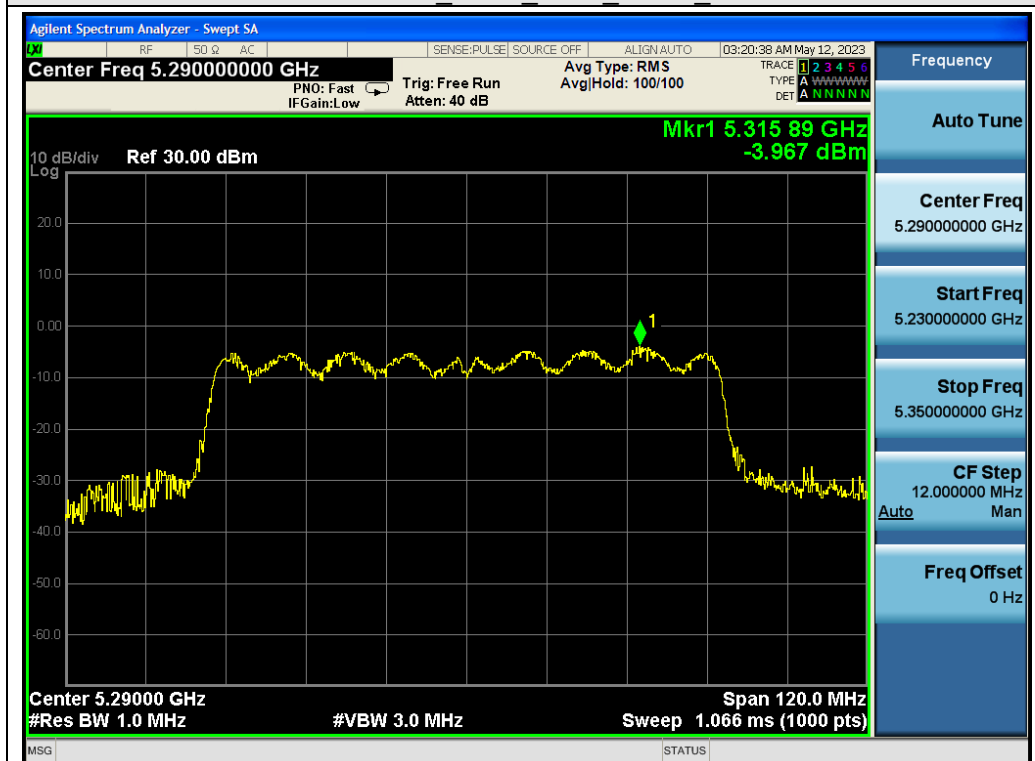
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802.11ac40_ANT1_5270_MCS0_PSD

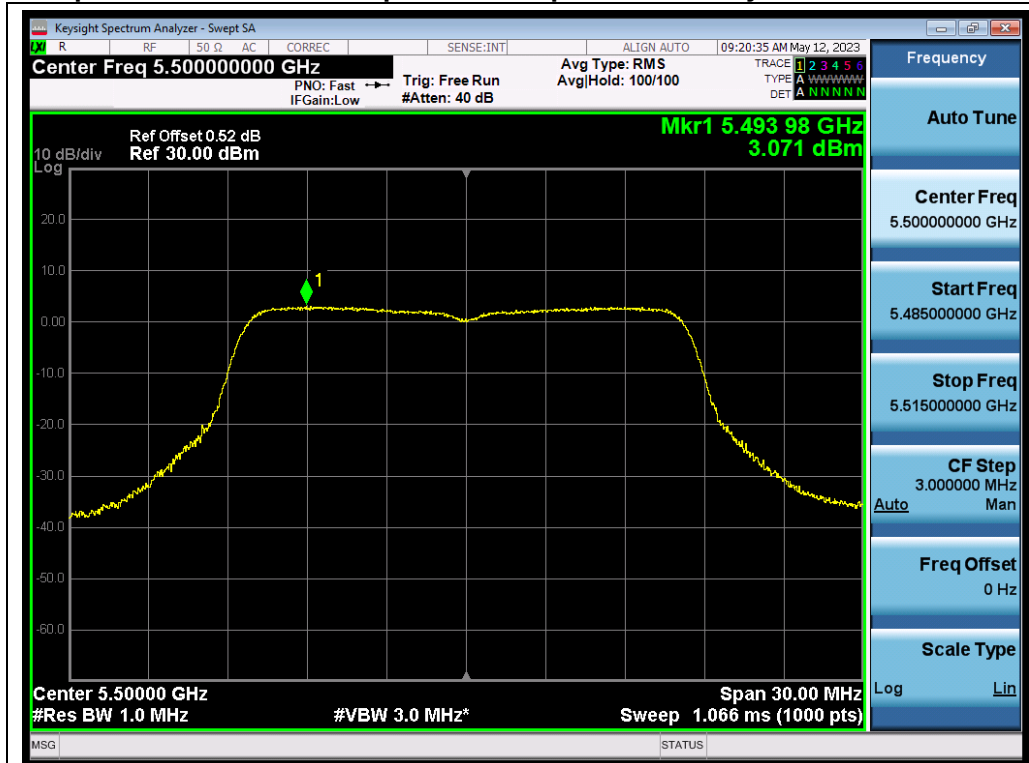


802.11ac40 ANT1 5310 MCS0 PSD

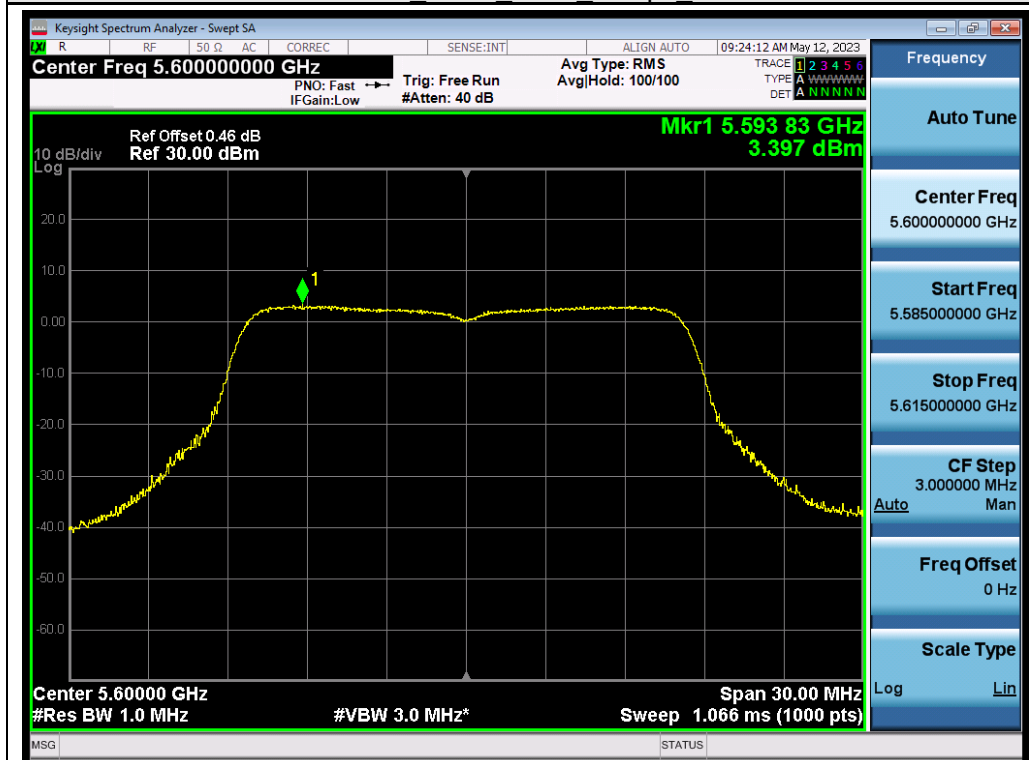


802.11ac80 ANT1 5290 MCS0 PSD

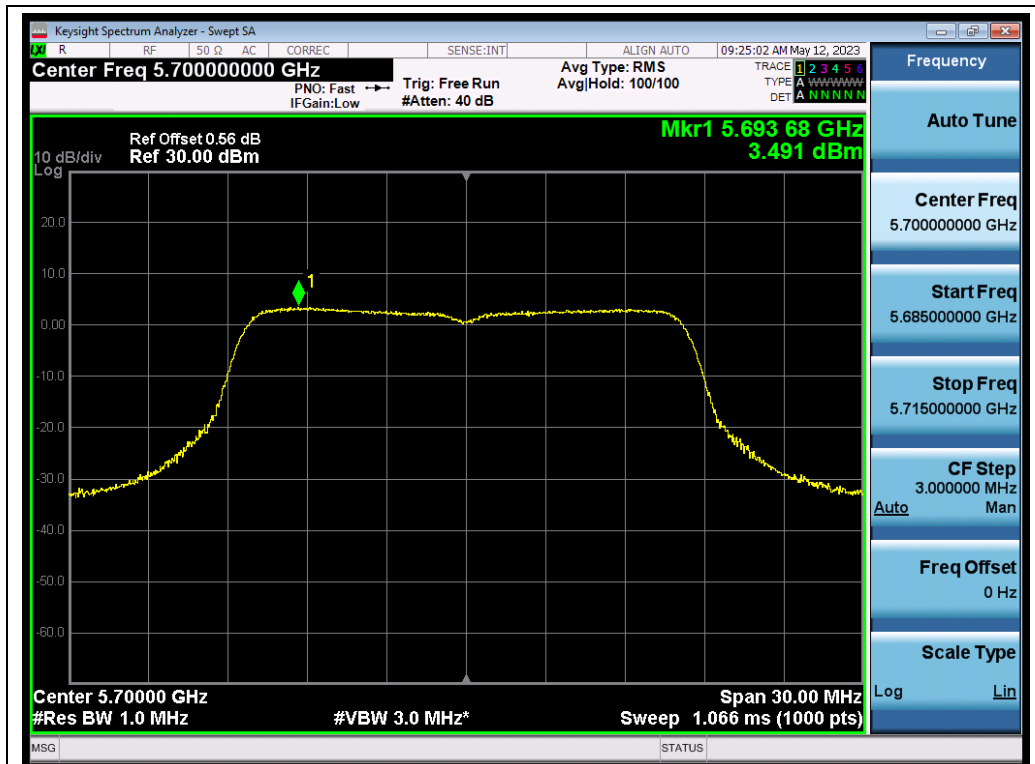
Test Graphs of Conducted Output Power Spectral Density for band 5.47-5.725 GHz



802.11a ANT1 5500 6Mbps PSD



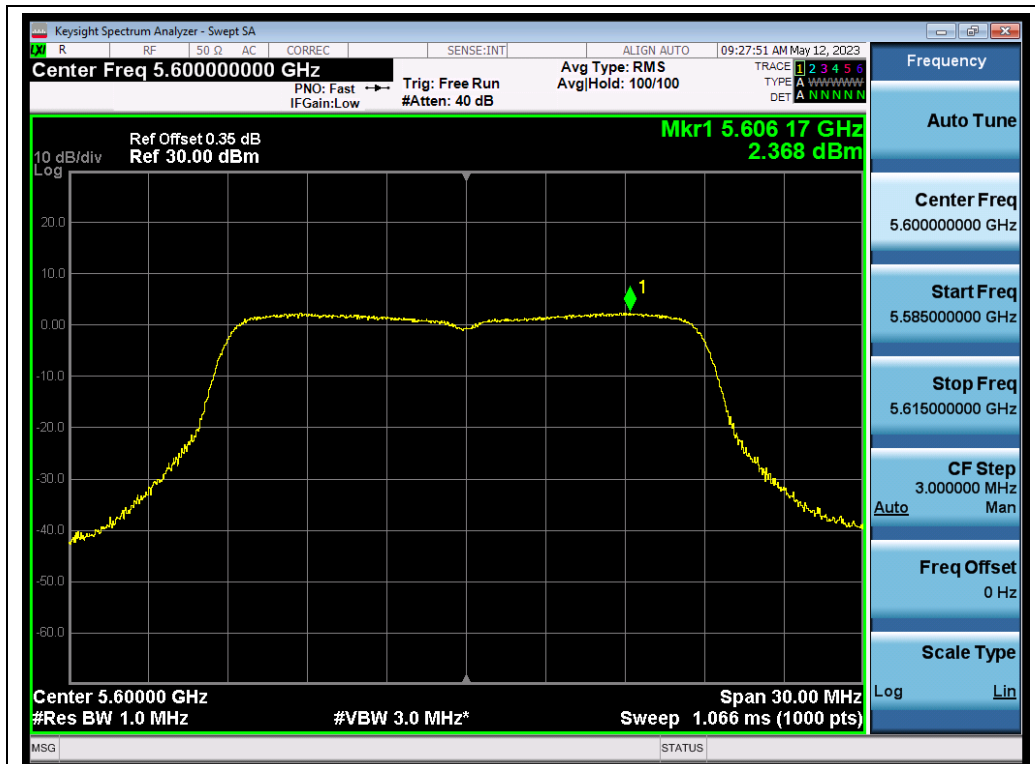
802.11a ANT1 5600 6Mbps PSD



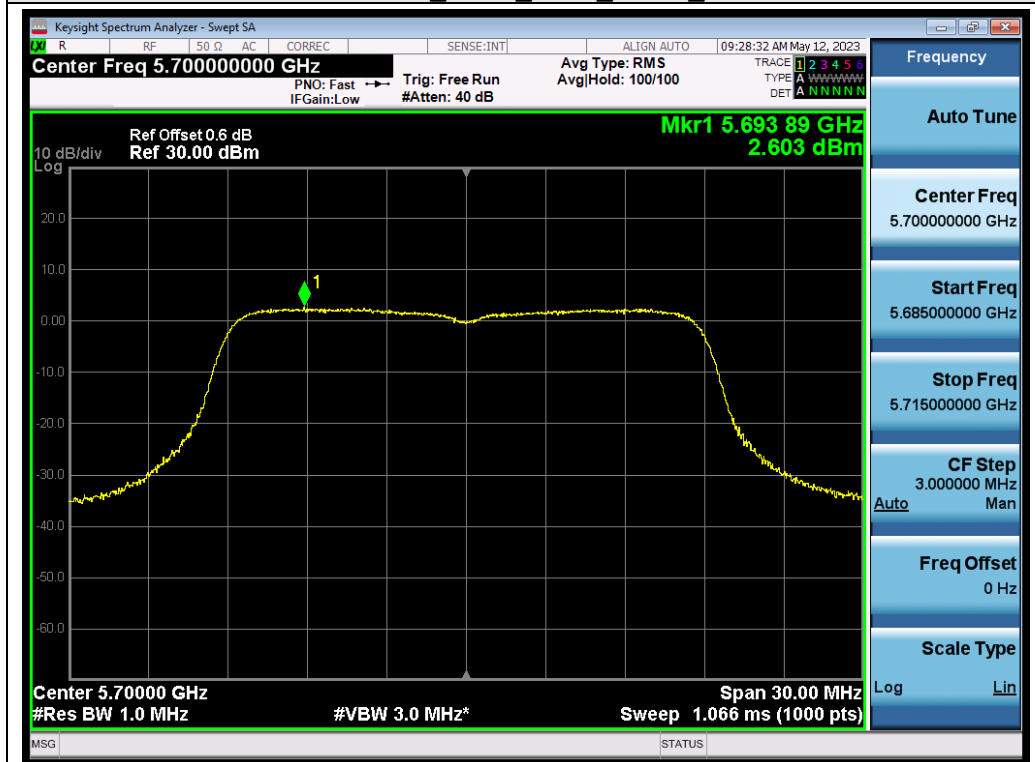
802.11a ANT1 5700 6Mbps PSD



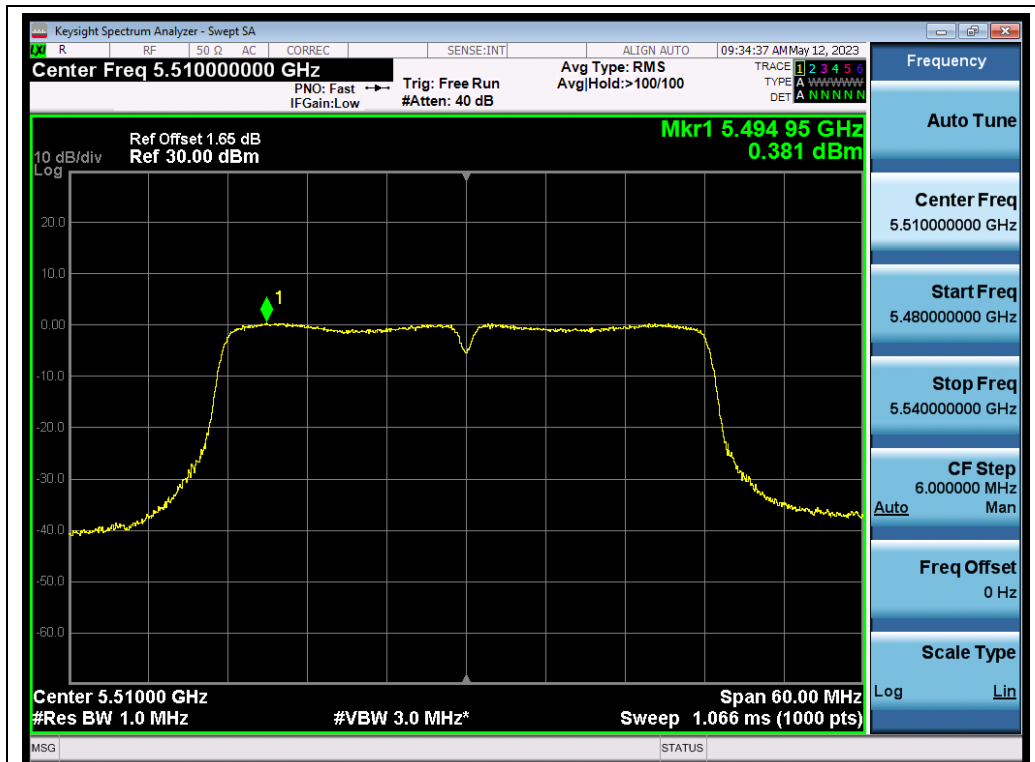
802.11n20 ANT1 5500 MCS0 PSD



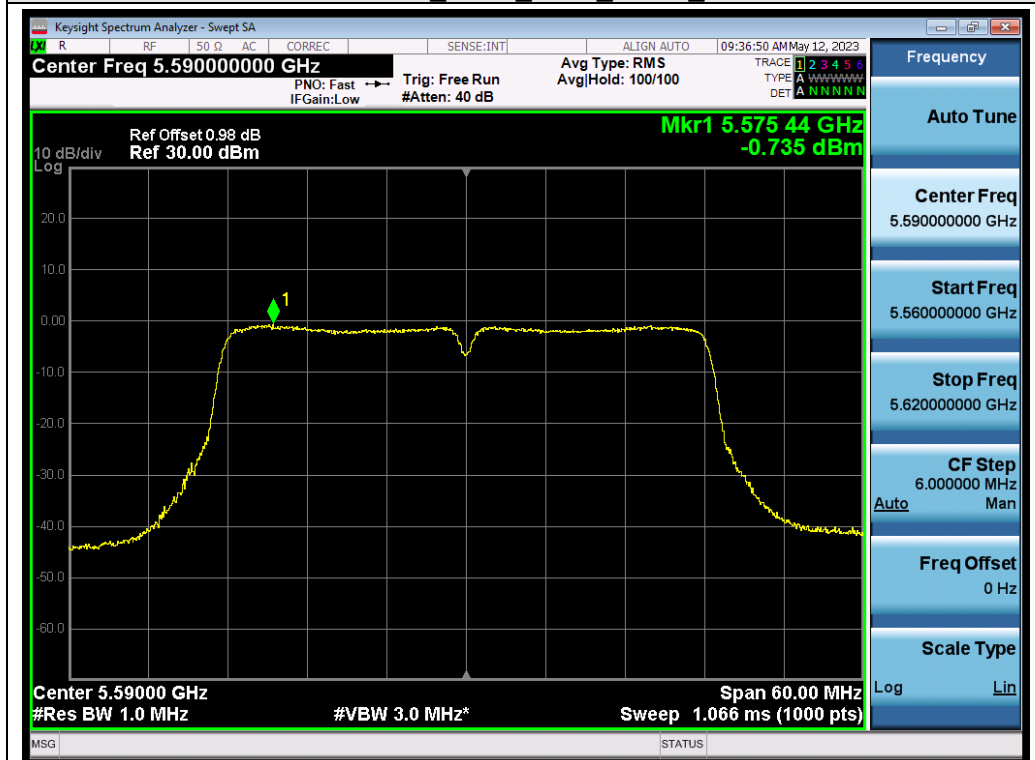
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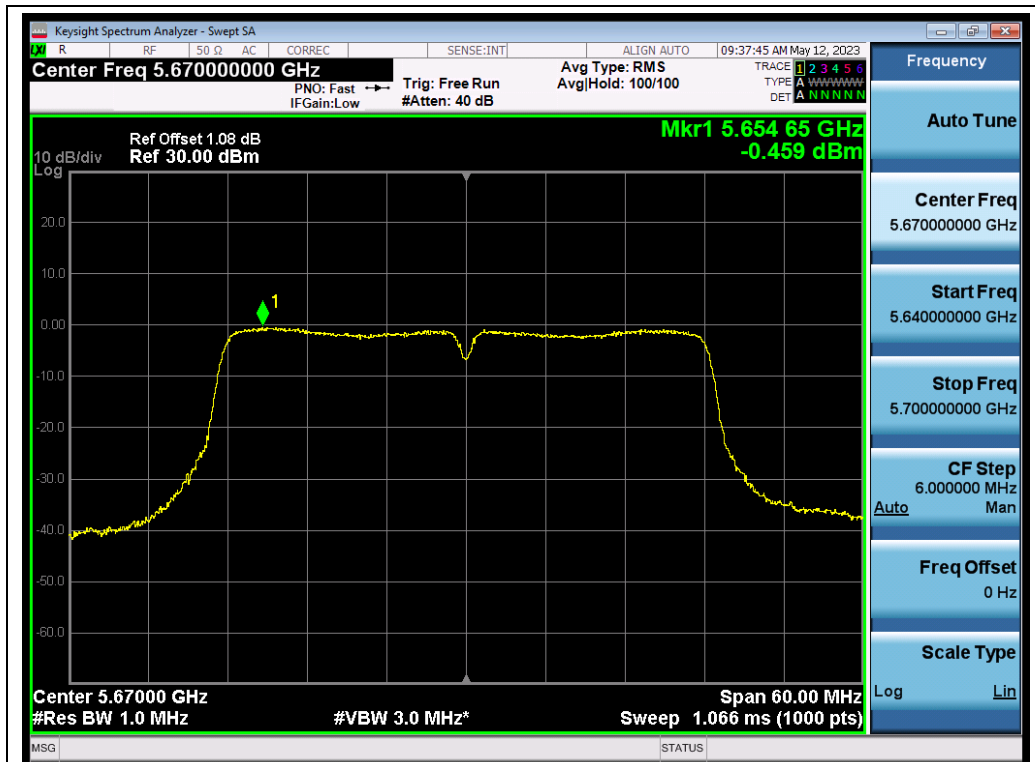
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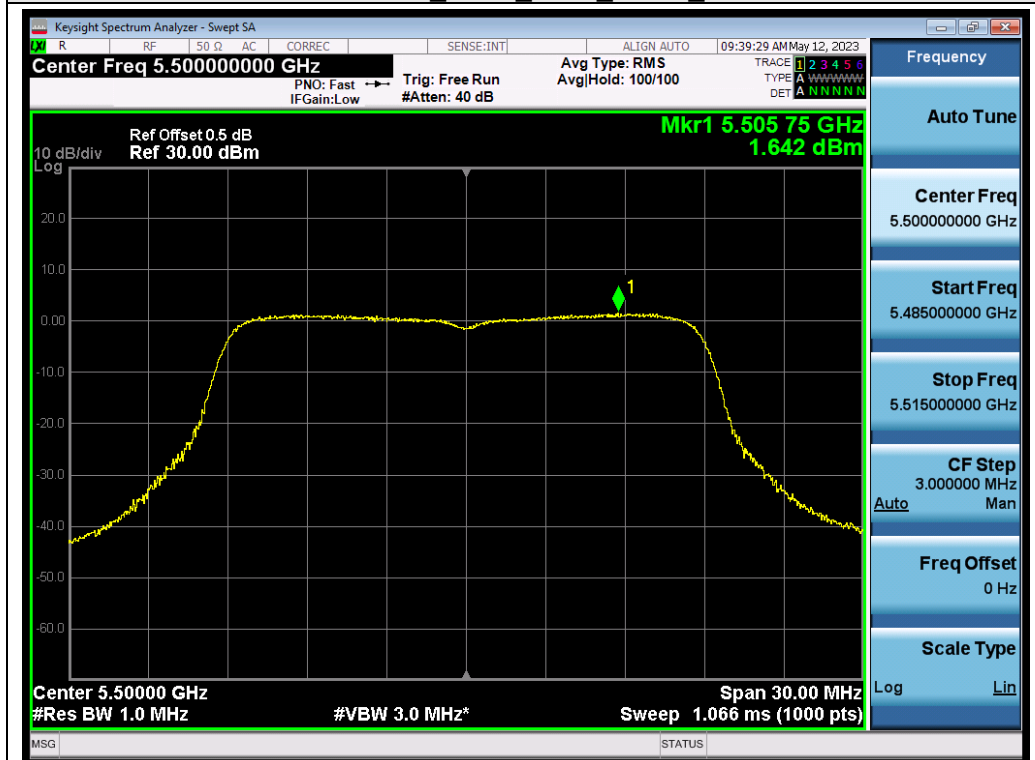
802.11n40 ANT1 5510 MCS0 PSD



802.11n40 ANT1 5590 MCS0 PSD



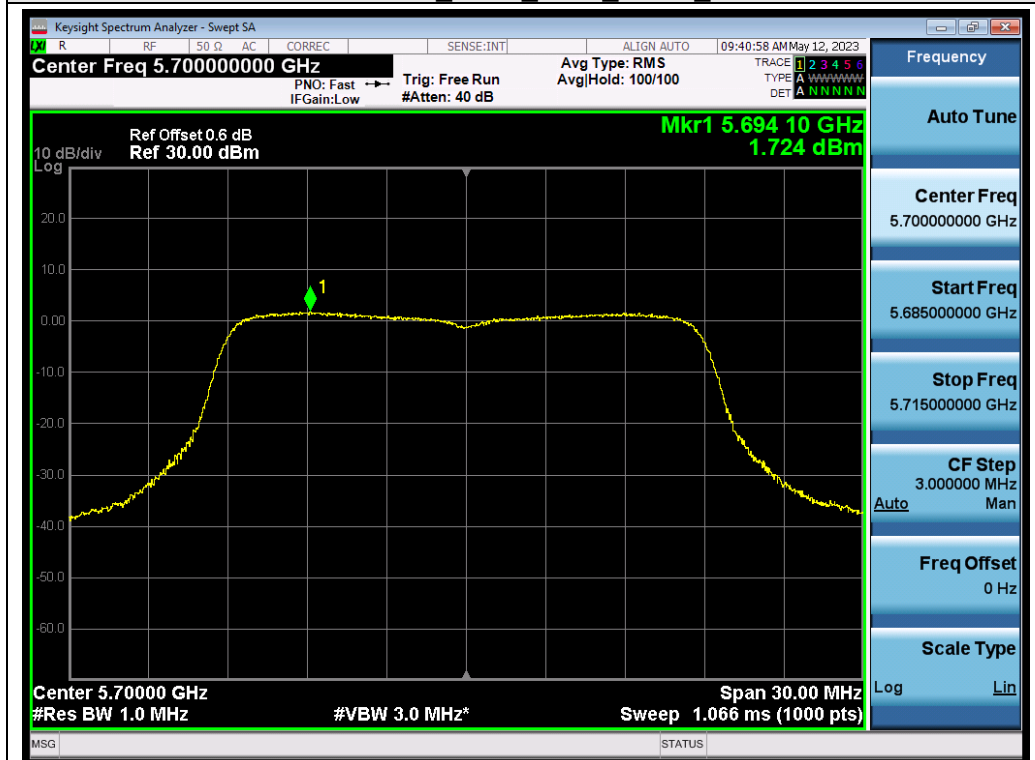
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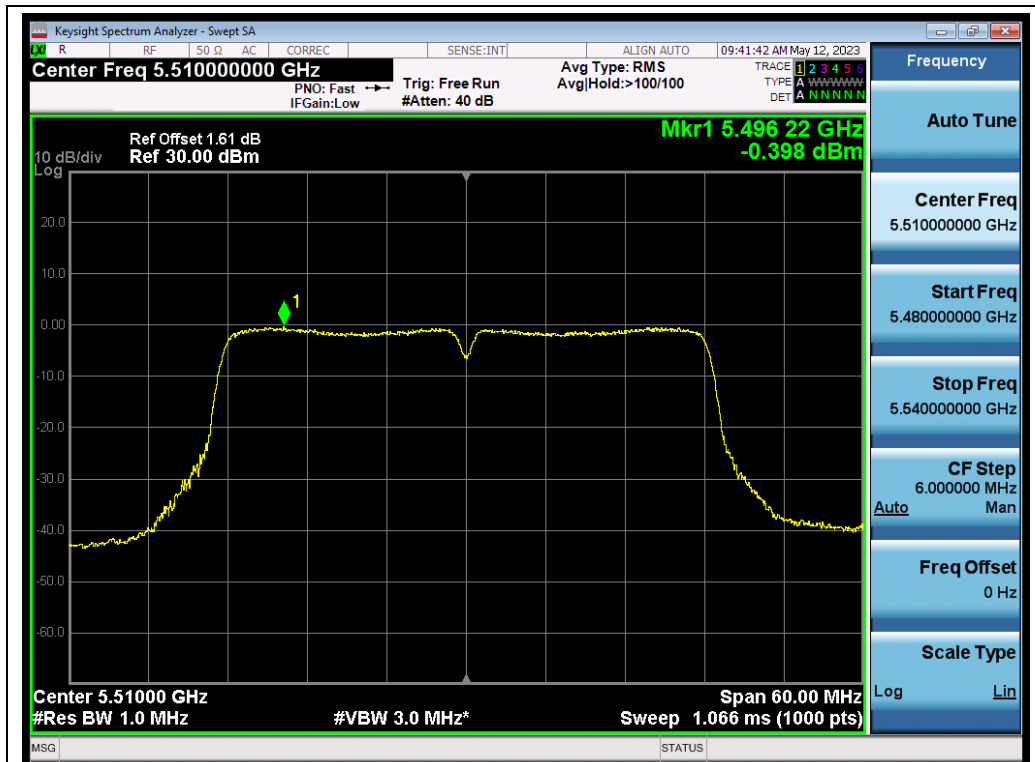
802.11ac20 ANT1_5500_MCS0_PSD



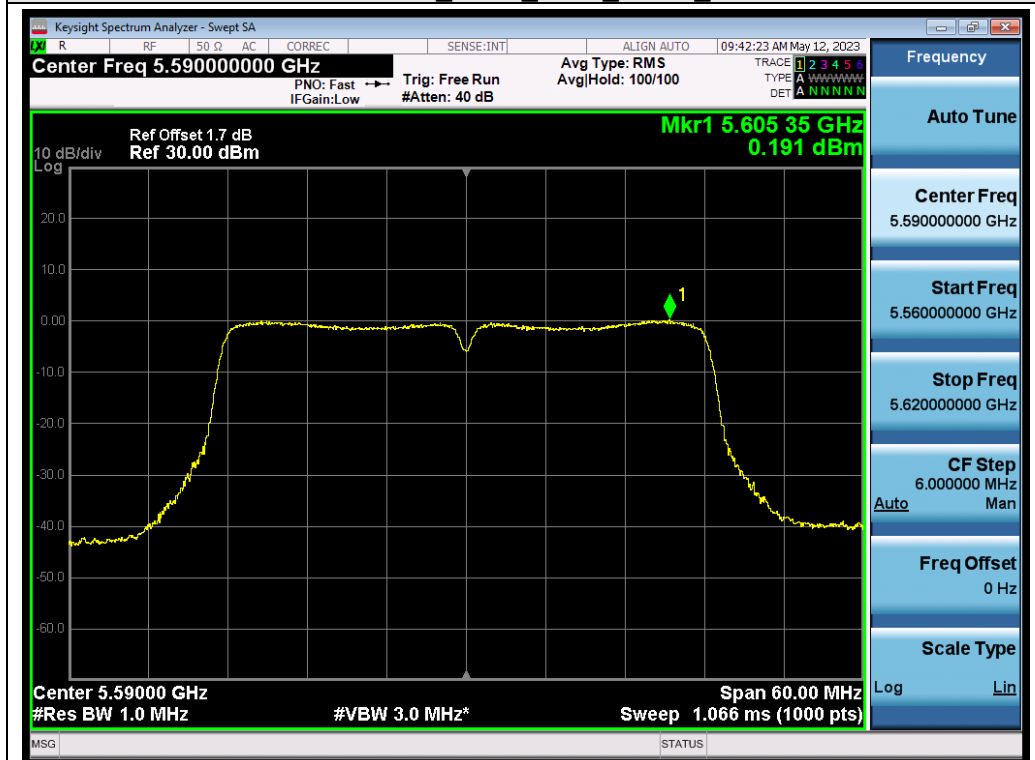
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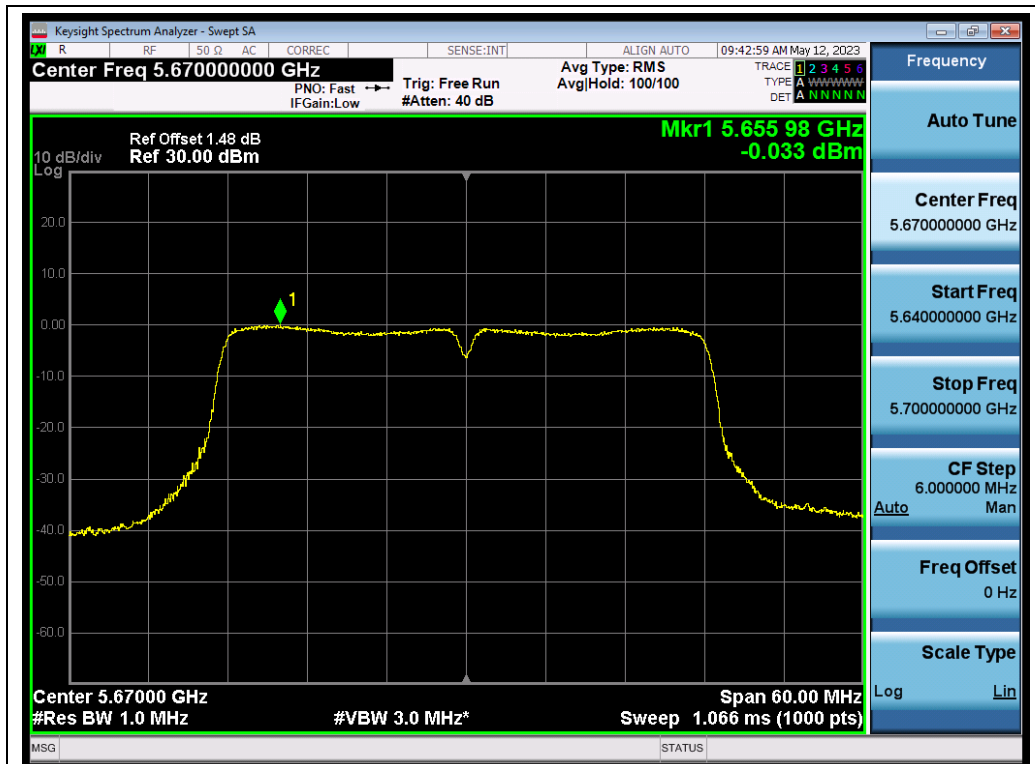
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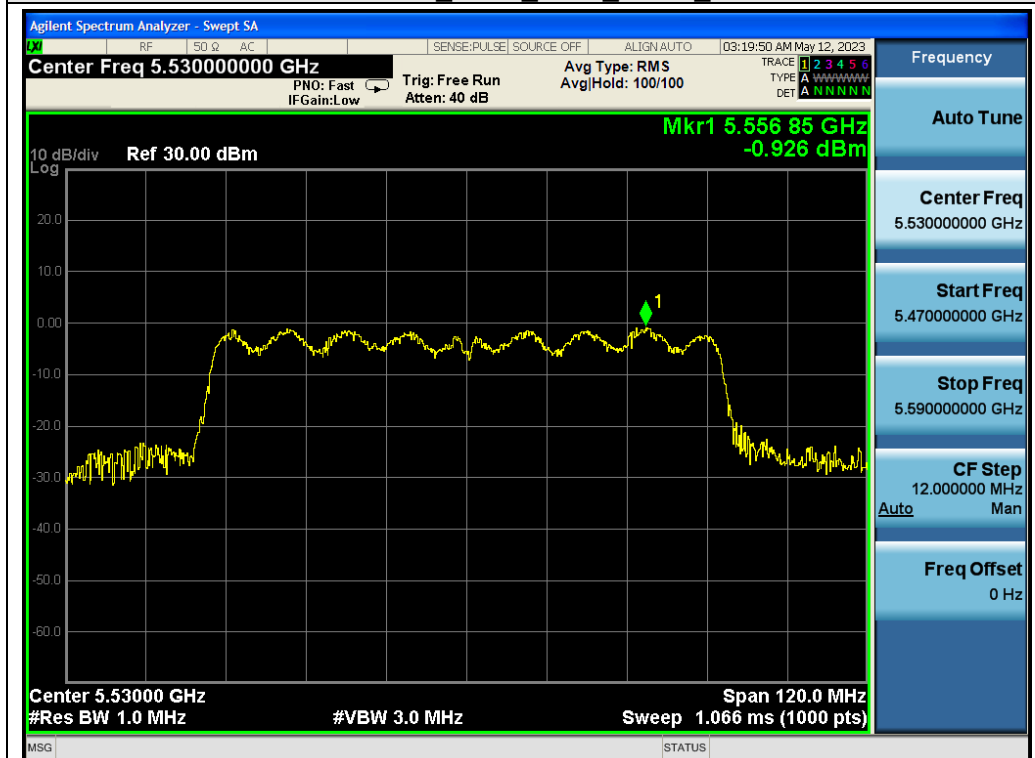
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802.11ac40_ANT1_5590_MCS0_PSD



802.11ac40_ANT1_5670_MCS0_PSD



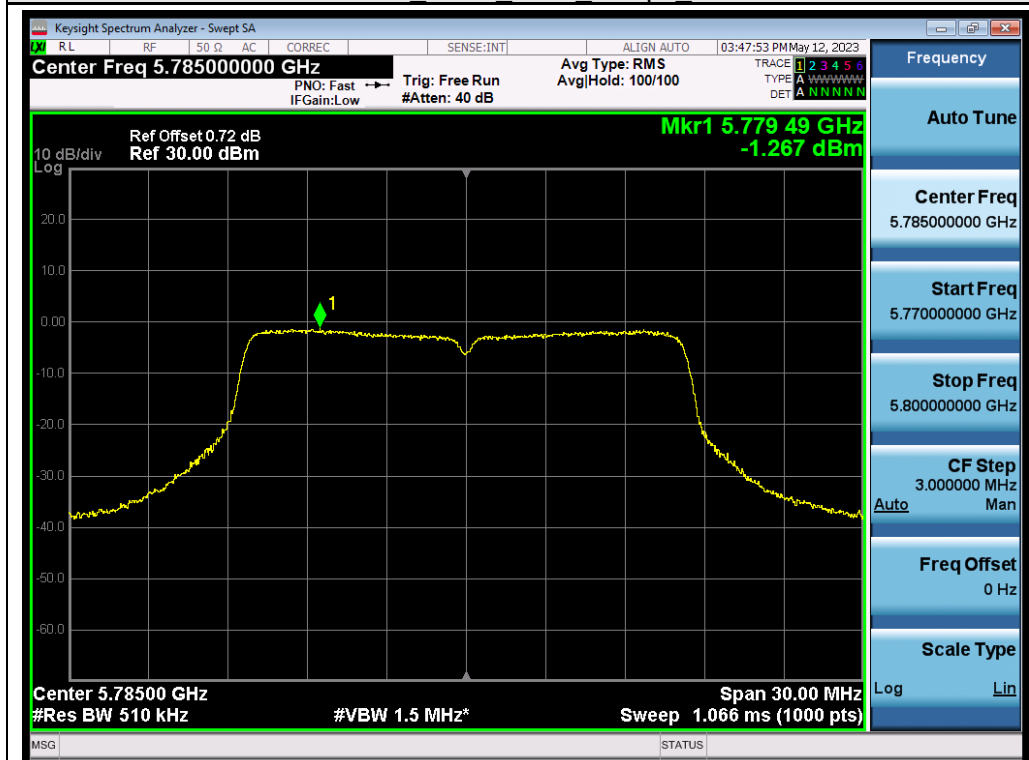
802.11ac80_ANT1_5530_MCS0_PSD



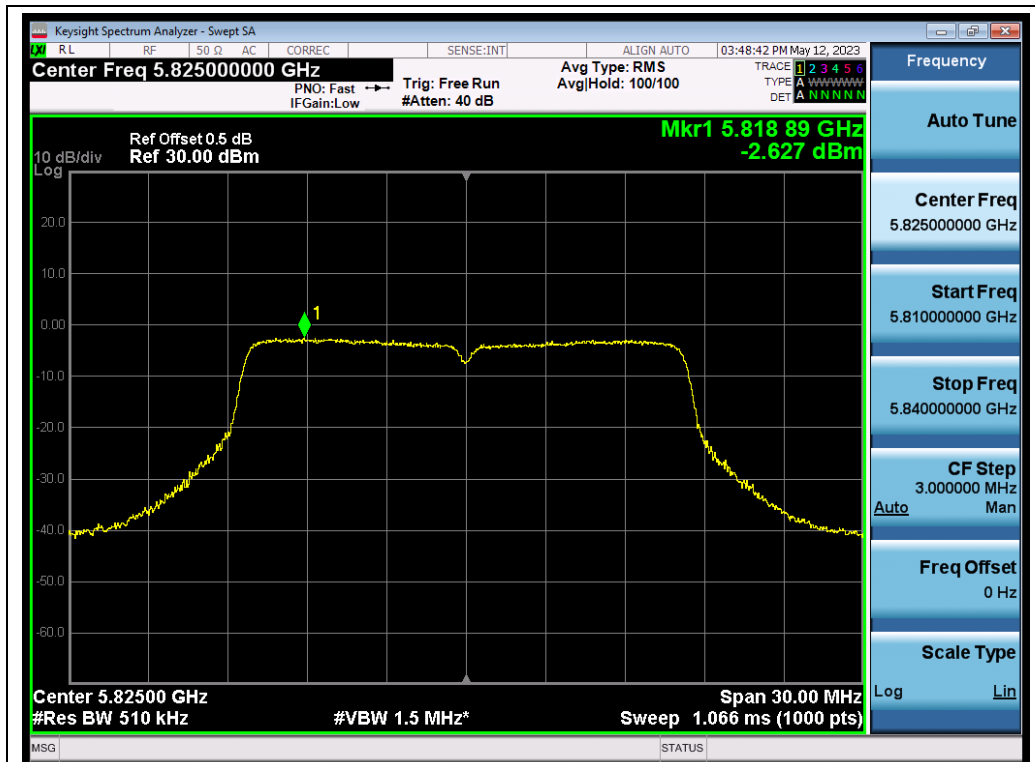
Test Graphs of Conducted Output Power Spectral Density for band 5.725-5.85 GHz



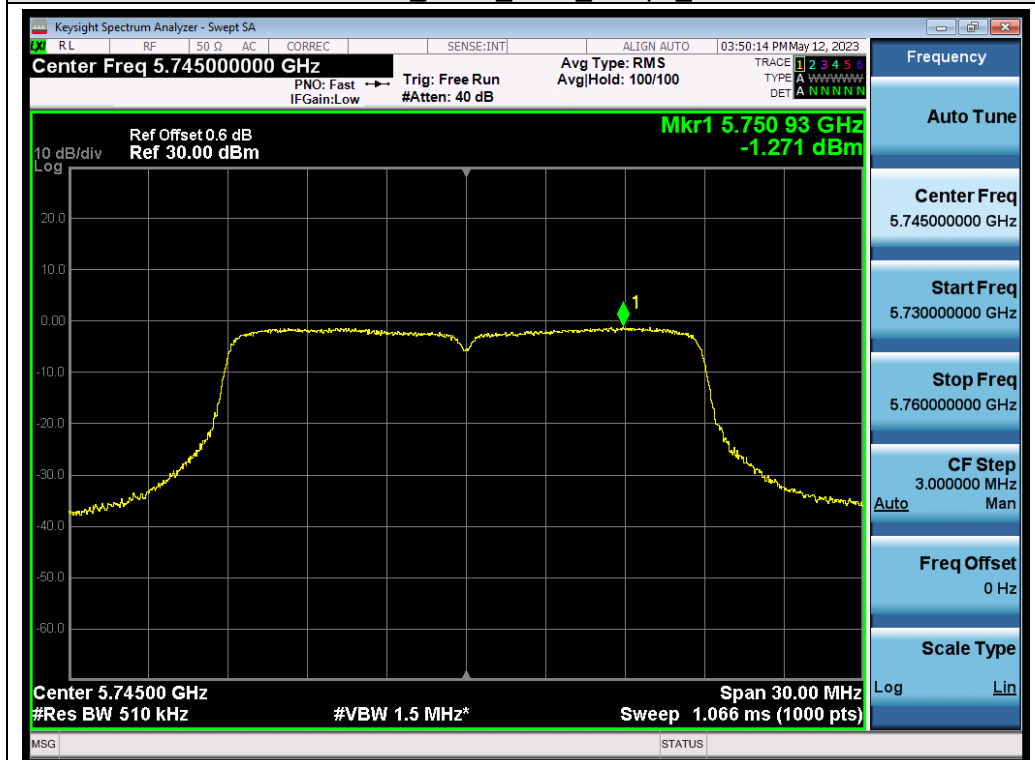
802.11a ANT1 5745 6Mbps PSD



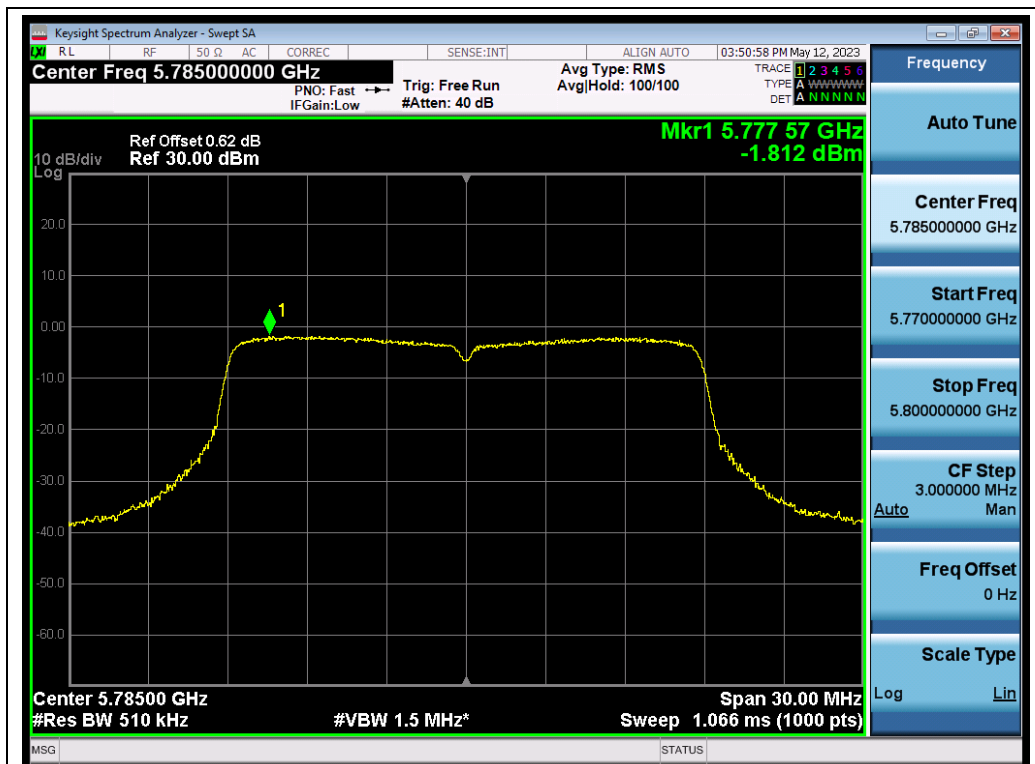
802.11a ANT1 5785 6Mbps PSD



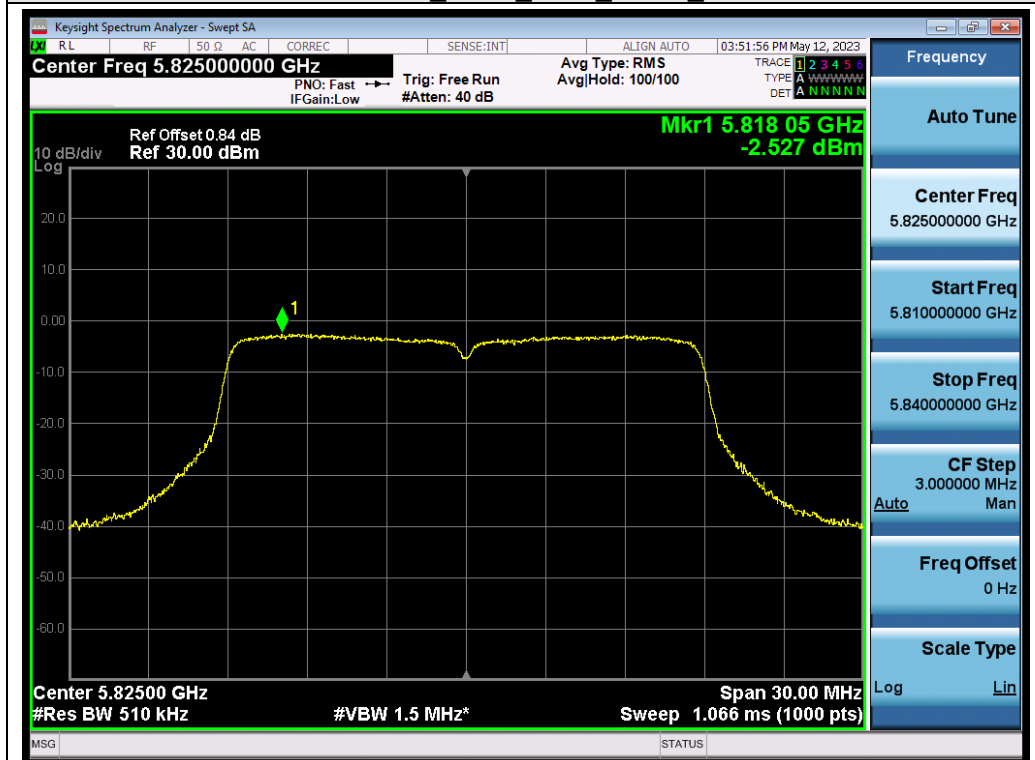
802.11a ANT1 5825 6Mbps PSD



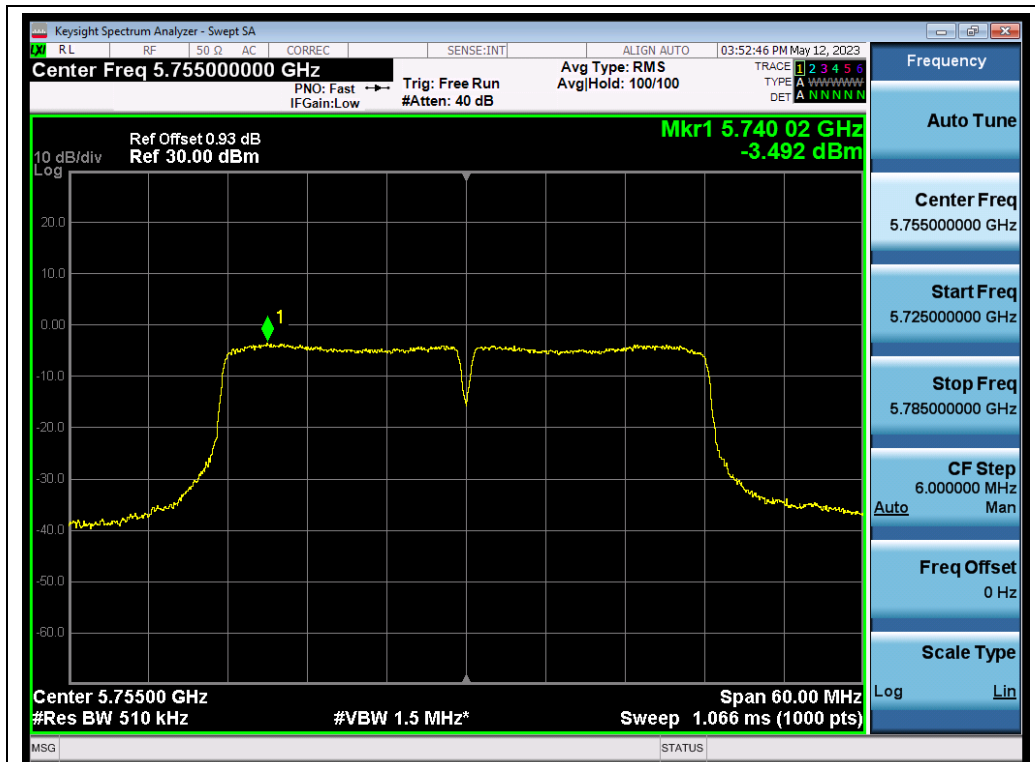
802.11n20 ANT1 5745 MCS0 PSD



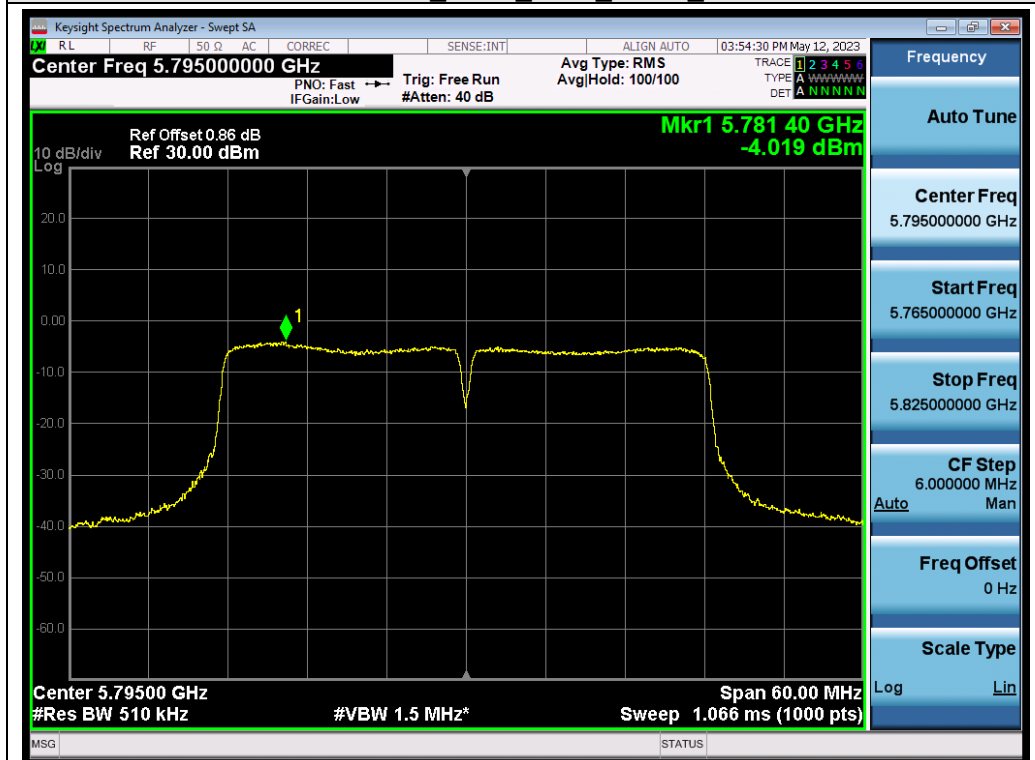
802.11n20 ANT1_5785_MCS0_PSD



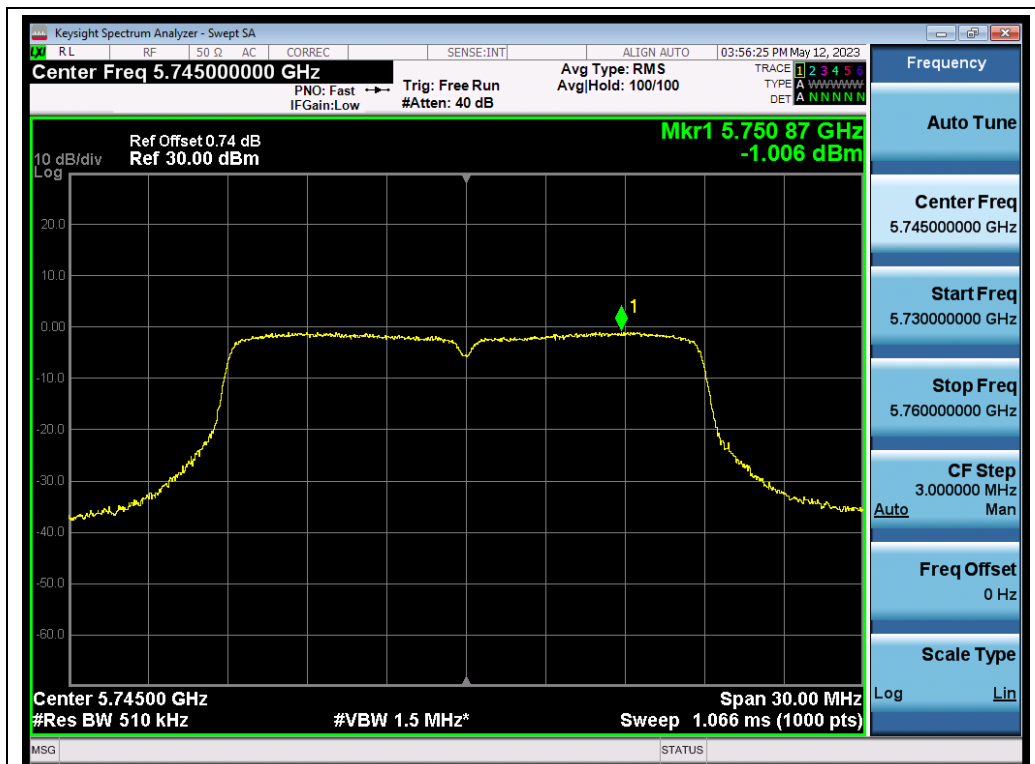
802.11n20 ANT1_5825_MCS0_PSD



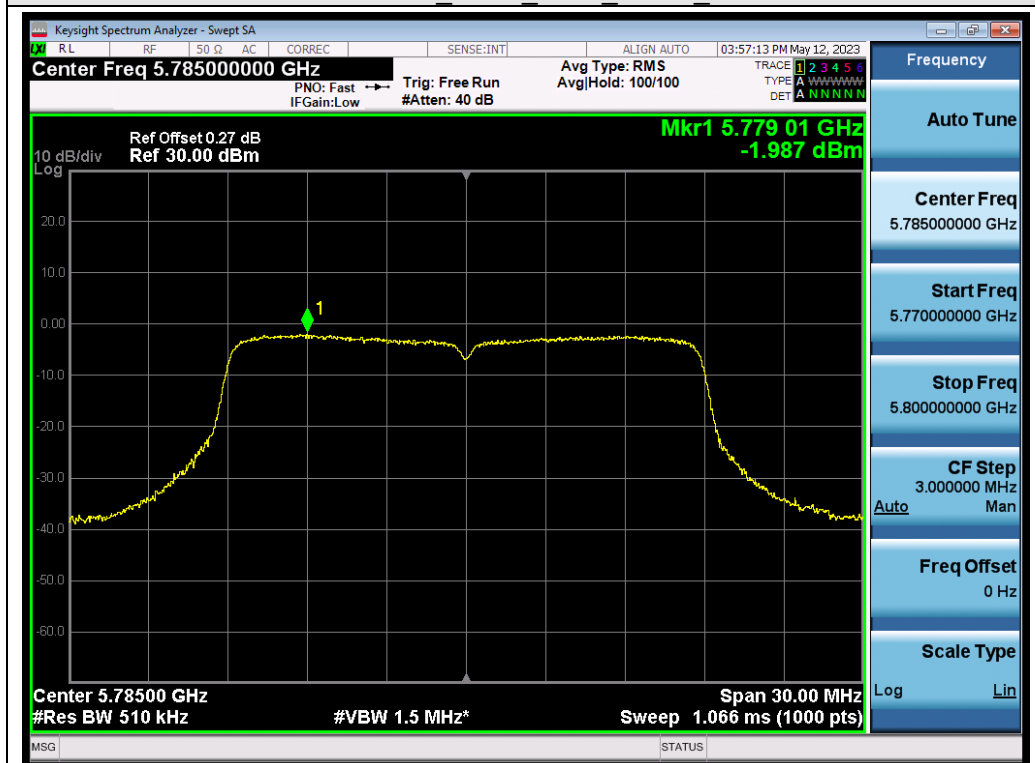
802.11n40 ANT1_5755 MCS0 PSD



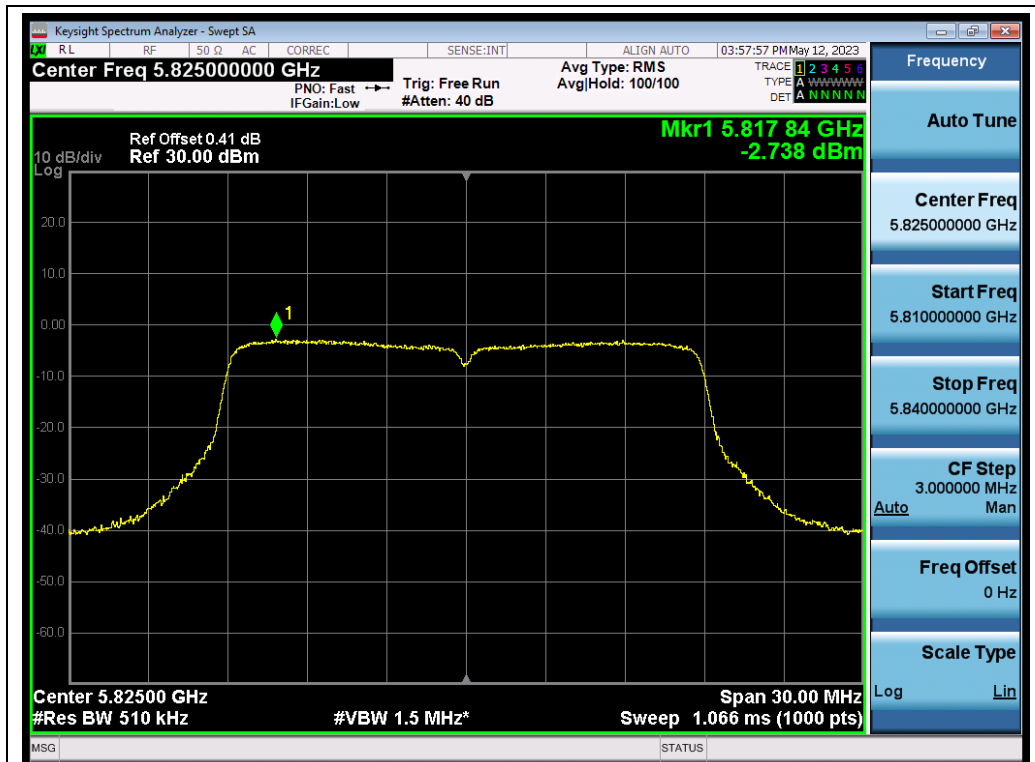
802.11n40 ANT1_5795 MCS0 PSD



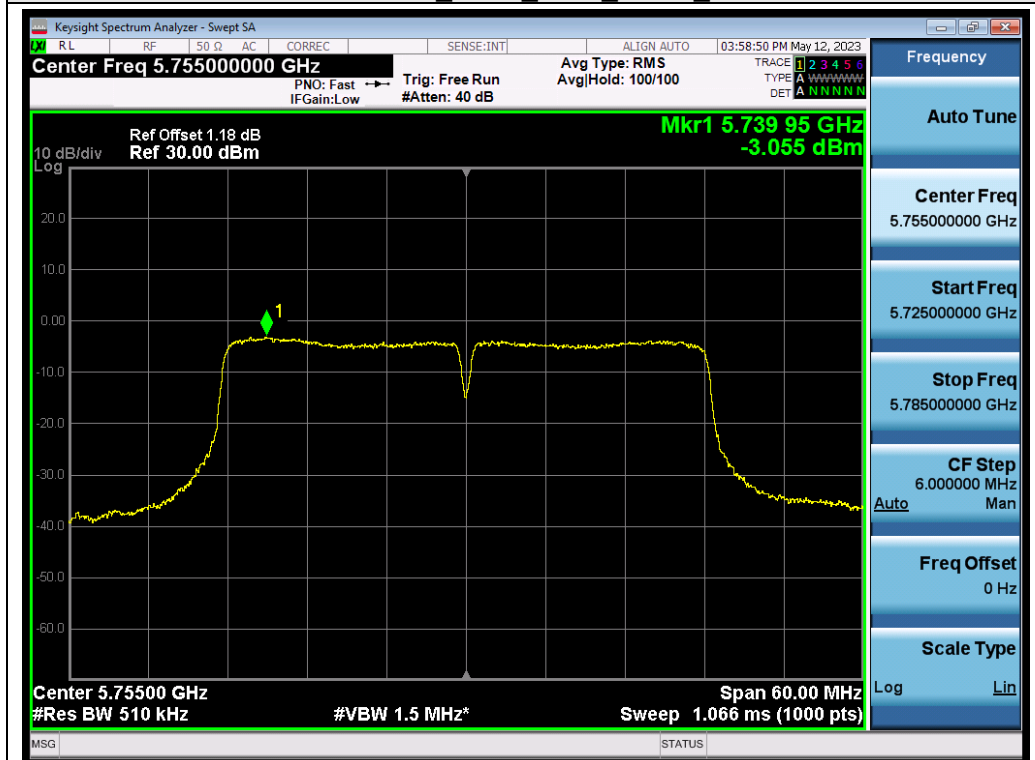
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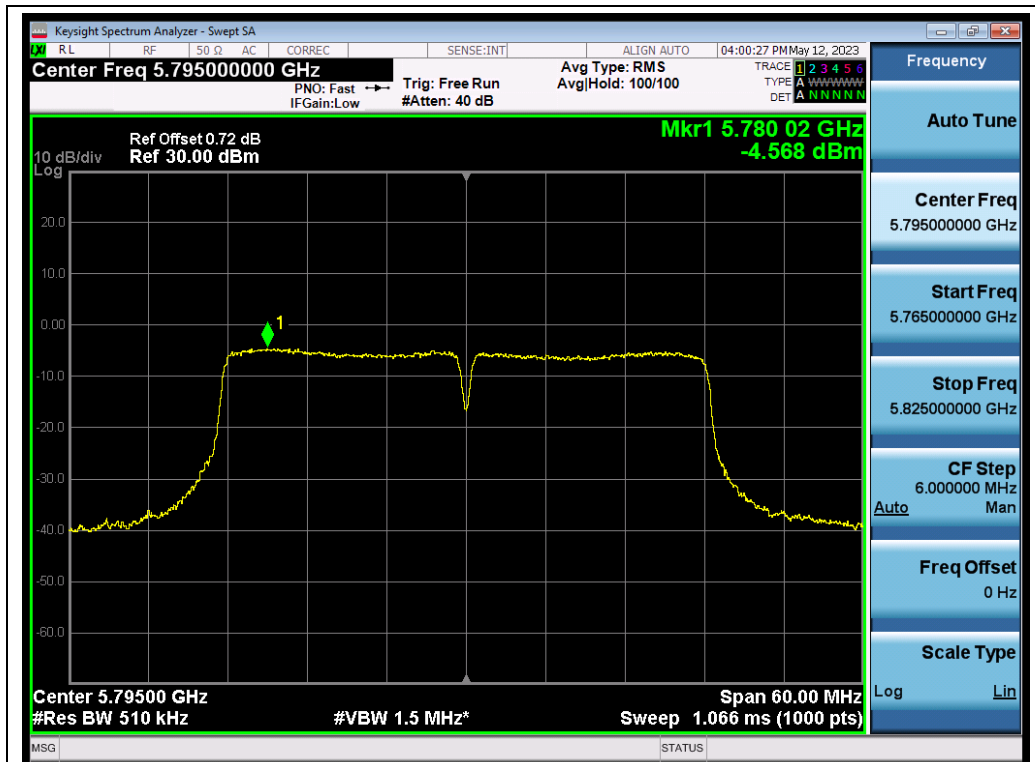
802.11ac20_ANT1_5785_MCS0_PSD



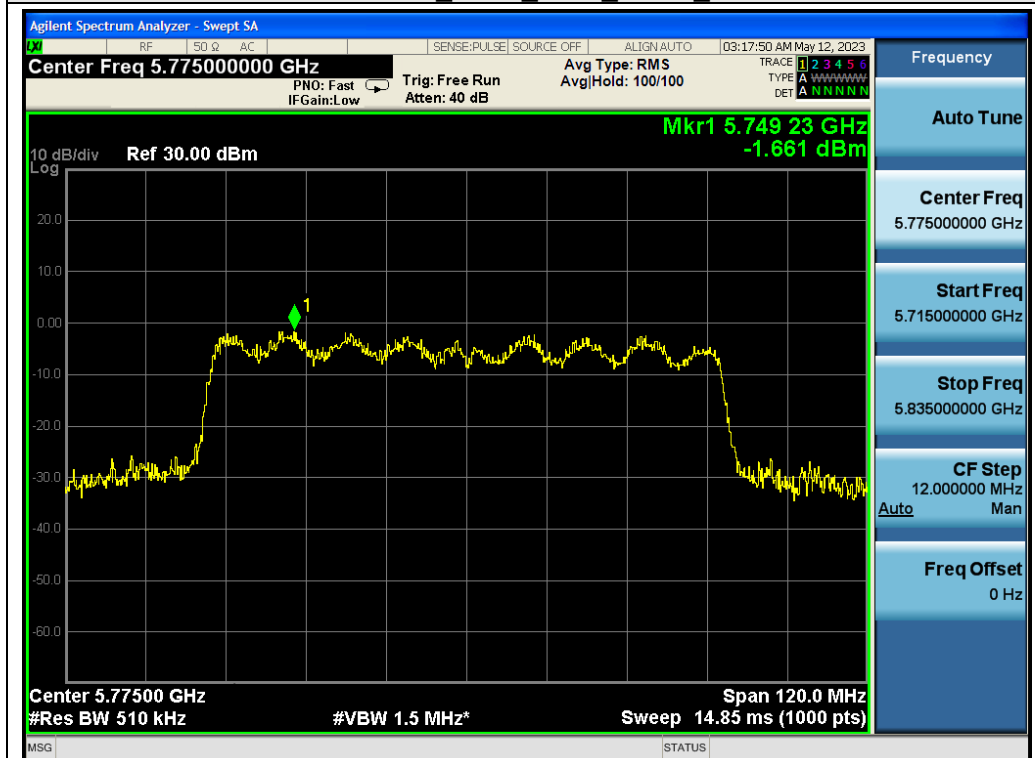
802.11ac20_ANT1_5825_MCS0_PSD



802.11ac40_ANT1_5755_MCS0_PSD



802.11ac40_ANT1_5795_MCS0_PSD



802.11ac80_ANT1_5775_MCS0_PSD

7 PEAK OUTPUT POWER

7.1 TEST LIMIT

FCC CFR Title 47 Part 15 Subpart E Section 15.407(a):

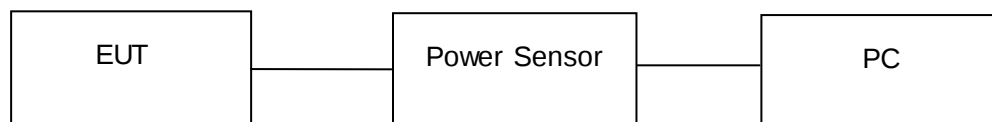
FCC Part 15 Subpart E(15.407)		
Test Item	Limit	Frequency Range(MHz)
Conducted Output Power	Outdoor AP, Indoor AP and Point-to-point AP: 1 Watt (30dBm) Client devices: 250mW (24dBm)	5150~5250
	250mW (24dBm)	5250~5350
	250mW (24dBm)	5470~5725
	1 Watt (30dBm)	5725~5850

7.2 TEST PROCEDURE

- 1.The EUT was tested according to according to section 3 of KDB 789033 D02 General UNII Test Procedures New Rules V02r01.
- 2.The maximum conducted output power may be measured using a broadband AVG RF power meter.
3. Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor.
- 4.The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.
- 5.Record the measurement data.

7.3 TEST SET-UP

AVERAGE POWER SETUP



7.4 EQUIPMENT USED

Same as Radiated Emission Measurement.

7.5 TEST RESULT

PASS

Test Data of Conducted Output Power for band 5.15-5.25 GHz				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5180	13.36	23.98	Pass
	5200	12.78	23.98	Pass
	5240	13.35	23.98	Pass
802.11n20	5180	12.22	23.98	Pass
	5200	12.36	23.98	Pass
	5240	13.03	23.98	Pass
802.11n40	5190	12.27	23.98	Pass
	5230	12.26	23.98	Pass
802.11ac20	5180	11.73	23.98	Pass
	5200	11.69	23.98	Pass
	5240	12.65	23.98	Pass
802.11ac40	5190	11.52	23.98	Pass
	5230	11.48	23.98	Pass
802.11ac80	5210	9.66	23.98	Pass

Test Data of Conducted Output Power for band 5.25-5.35 GHz				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5260	12.65	23.98	Pass
	5300	11.86	23.98	Pass
	5320	12.19	23.98	Pass
802.11n20	5260	12.26	23.98	Pass
	5300	12.46	23.98	Pass
	5320	11.85	23.98	Pass
802.11n40	5270	12.06	23.98	Pass
	5310	12.03	23.98	Pass
802.11ac20	5260	11.79	23.98	Pass
	5300	11.67	23.98	Pass
	5320	11.09	23.98	Pass
802.11ac40	5270	11.66	23.98	Pass
	5310	11.82	23.98	Pass
802.11ac80	5290	11.13	23.98	Pass

Test Data of Conducted Output Power for band 5.47-5.725 GHz				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5500	13.19	23.98	Pass
	5600	12.75	23.98	Pass
	5700	12.72	23.98	Pass
802.11n20	5500	12.60	23.98	Pass
	5600	12.46	23.98	Pass
	5700	12.37	23.98	Pass
802.11n40	5510	12.36	23.98	Pass
	5590	12.07	23.98	Pass
	5670	12.32	23.98	Pass
802.11ac20	5500	11.66	23.98	Pass
	5600	12.53	23.98	Pass
	5700	11.68	23.98	Pass
802.11ac40	5510	10.95	23.98	Pass
	5590	11.78	23.98	Pass
	5670	11.98	23.98	Pass
802.11ac80	5530	9.98	23.98	Pass
	5610	9.95	23.98	Pass

Test Data of Conducted Output Power for band 5.725-5.85 GHz				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5745	13.35	30	Pass
	5782	13.31	30	Pass
	5825	13.27	30	Pass
802.11n20	5745	12.49	30	Pass
	5782	12.35	30	Pass
	5825	12.27	30	Pass
802.11n40	5755	12.27	30	Pass
	5795	12.27	30	Pass
802.11ac20	5745	12.58	30	Pass
	5785	12.75	30	Pass
	5825	12.77	30	Pass
802.11ac40	5755	11.53	30	Pass
	5795	11.40	30	Pass
802.11ac80	5775	12.37	30	Pass

8 CONDUCTED SPURIOUS EMISSION

8.1 TEST LIMIT

Applicable Limits	Channel
-27dBm/MHz	5150MHz-5250MHz
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.	5725MHz-5850MHz

8.2 TEST SETUP

Same as 5.3

8.3 TEST PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Trace 1 Max hold, then View.

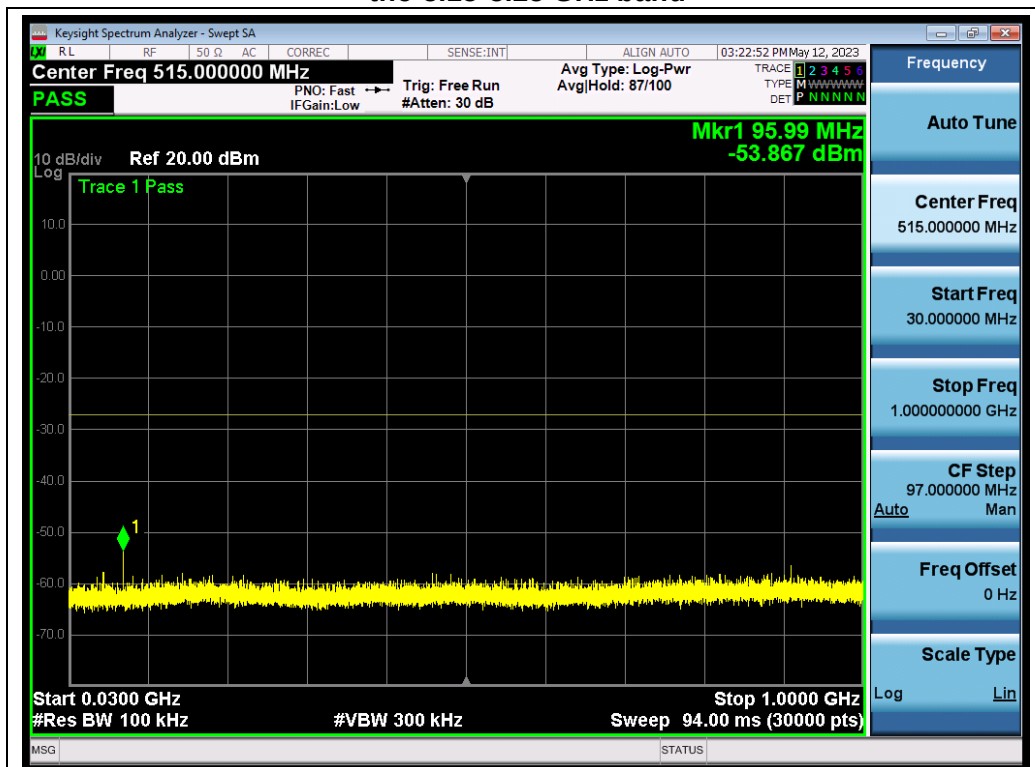
Note: The EUT was tested according to KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

8.4 TEST RESULT

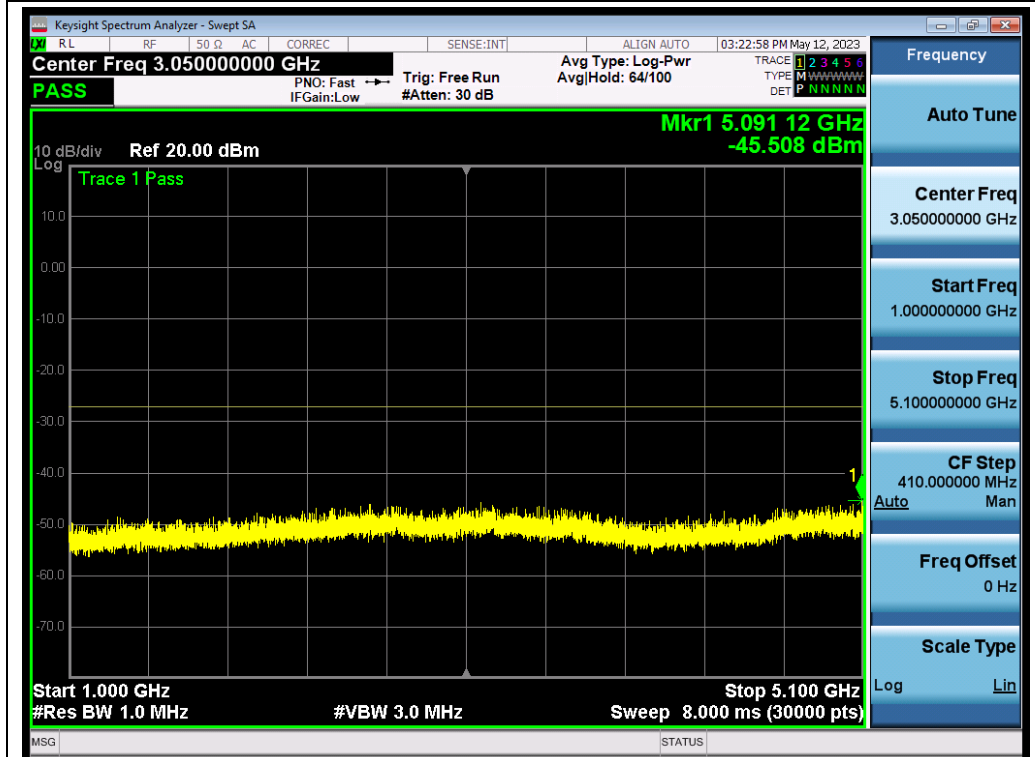
PASS

Note: All the 20MHz bandwidth modulation had been tested, the 802.11a was the worst case and record in this test report. All the 40MHz bandwidth modulation had been tested, the 802.11N40 was the worst case and record in this test report. All the 80MHz bandwidth modulation had been tested, the 802.11AC80 was the worst case and record in his test report.

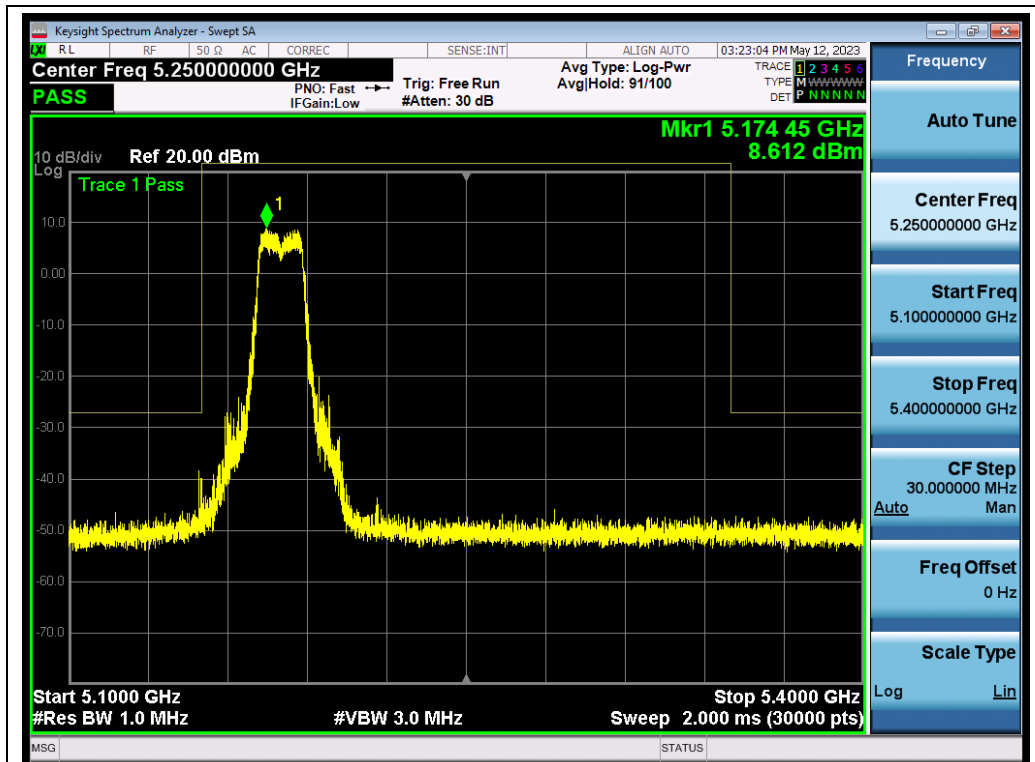
Test Graphs of Spurious Emissions outside of the 5.15-5.35 GHz band for transmitters operating in the 5.15-5.25 GHz band



802.11a_ANT1_5180_6Mbps_Frequency Band 1



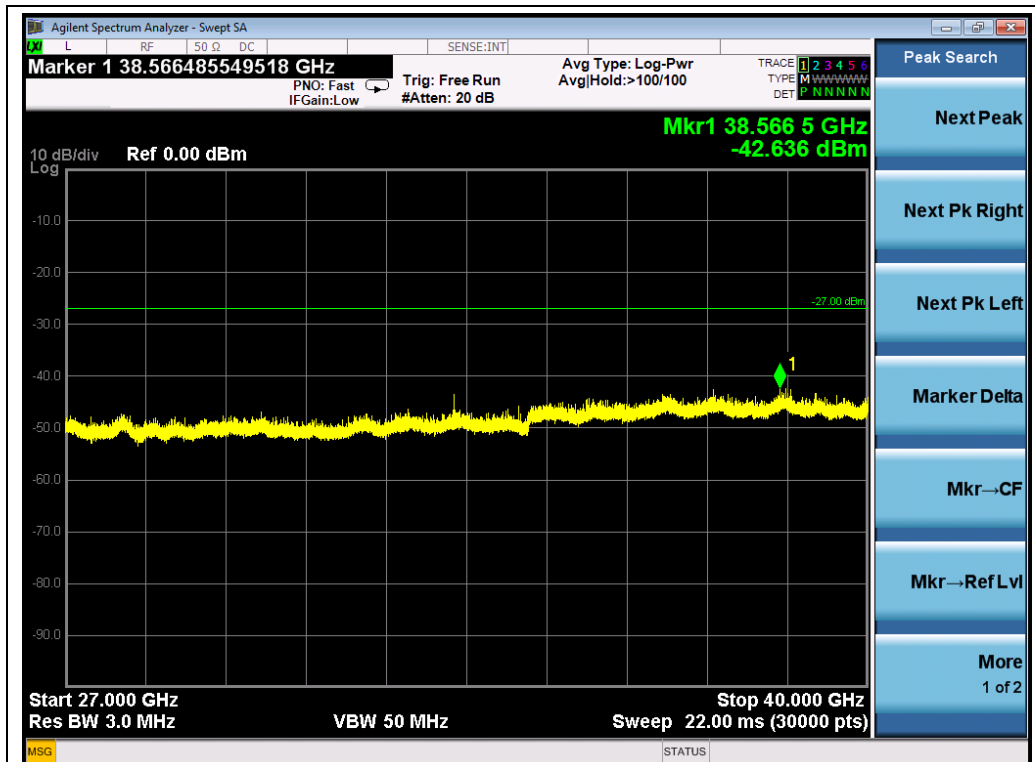
802.11a_ANT1_5180_6Mbps_Frequency Band 2



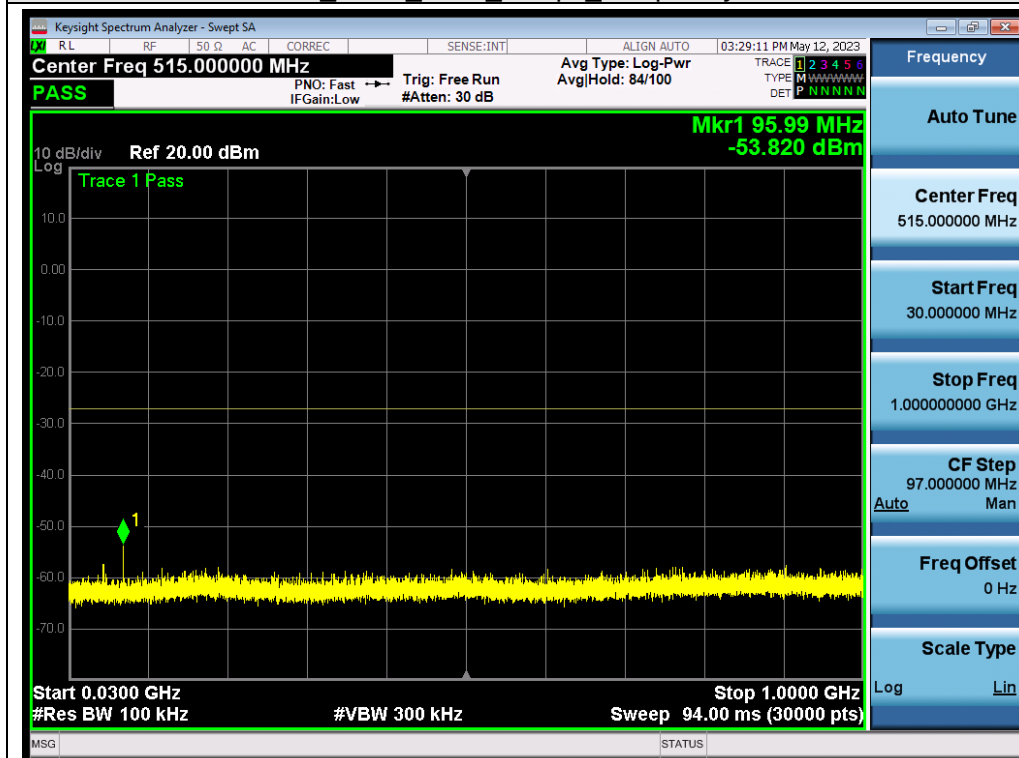
802.11a ANT1_5180_6Mbps_Frequency Band 3



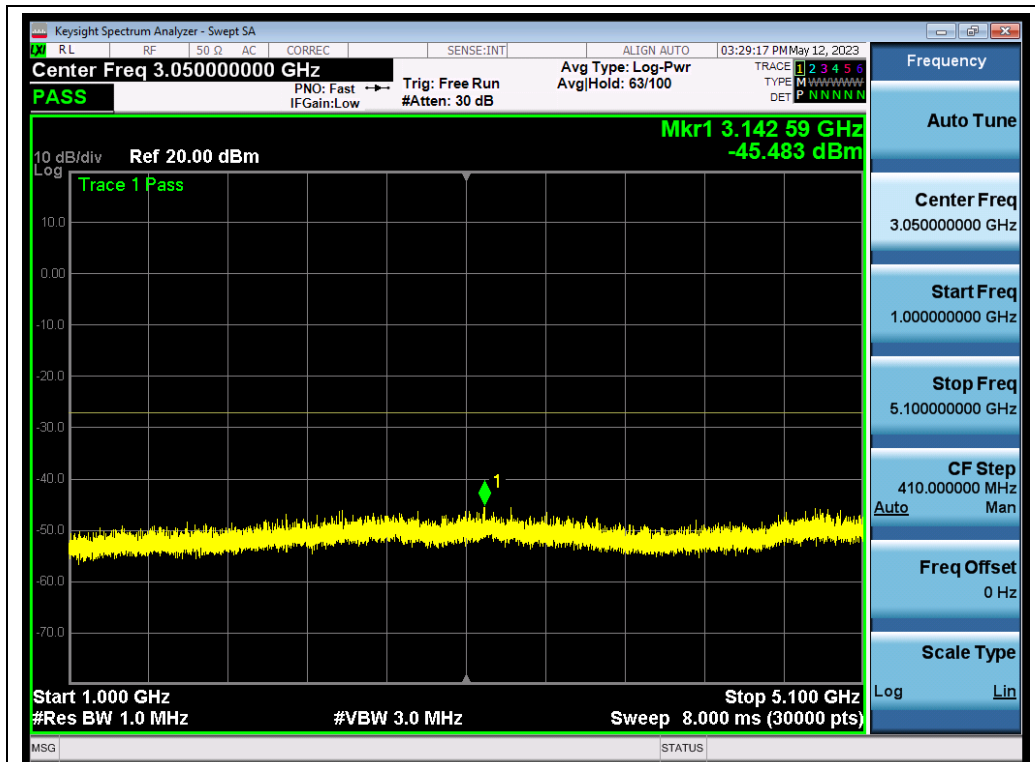
802.11a ANT1_5180_6Mbps_Frequency Band 4



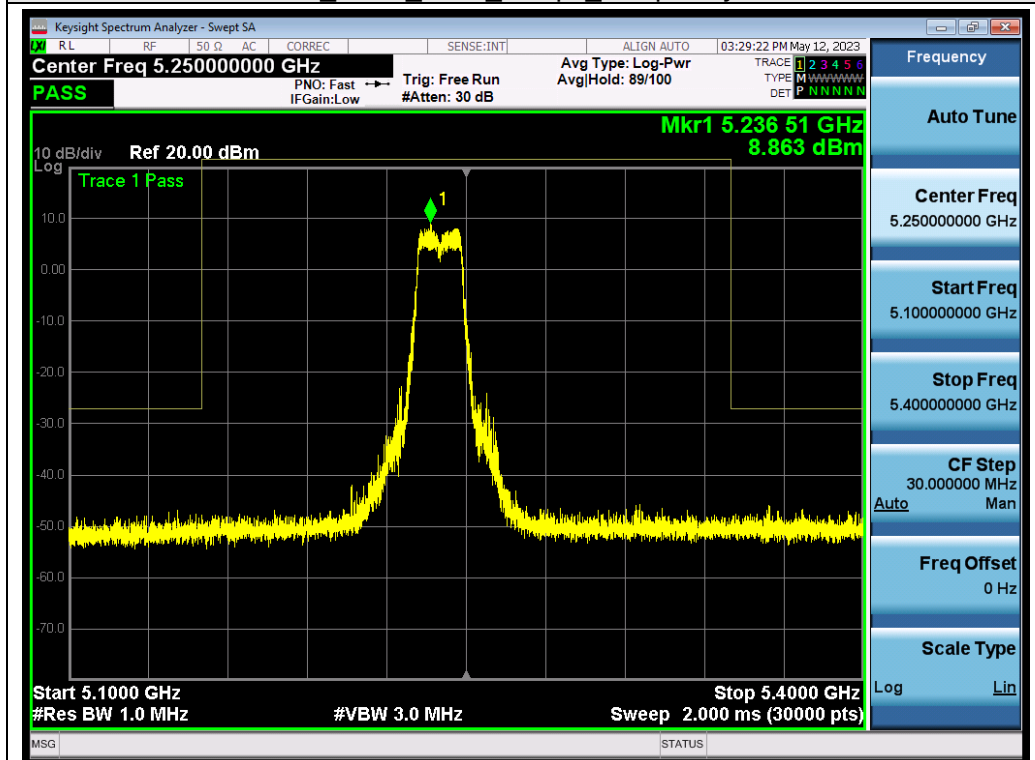
802.11a ANT1_5180_6Mbps_Frequency Band 5



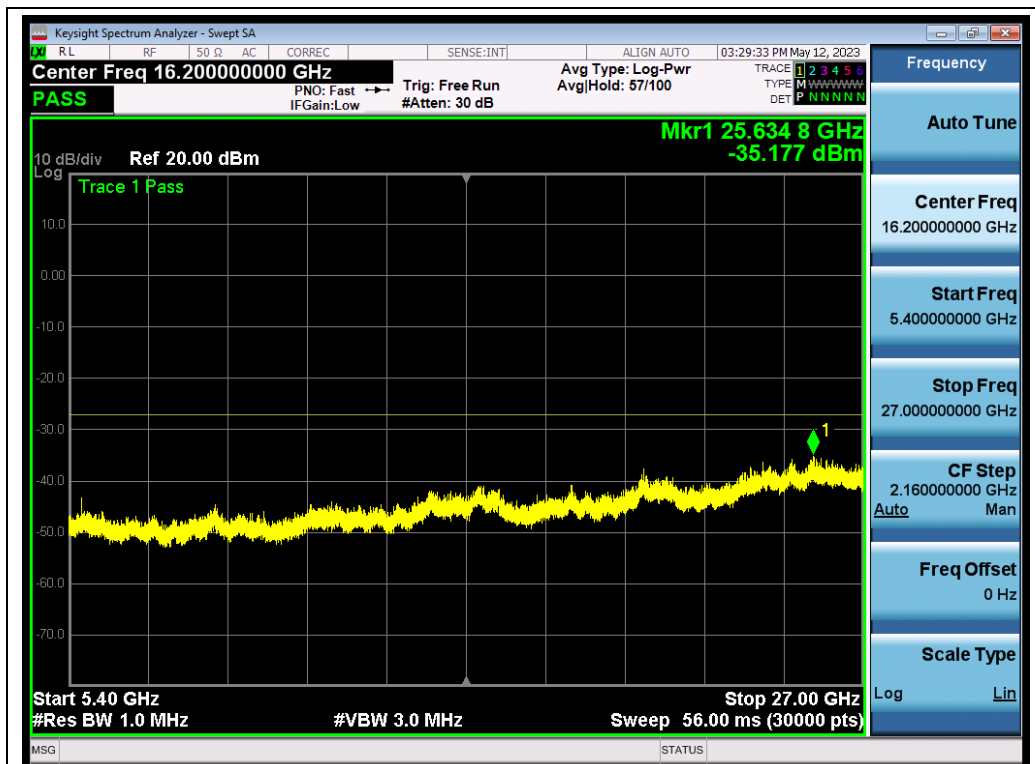
802.11a ANT1_5240_6Mbps_Frequency Band 1



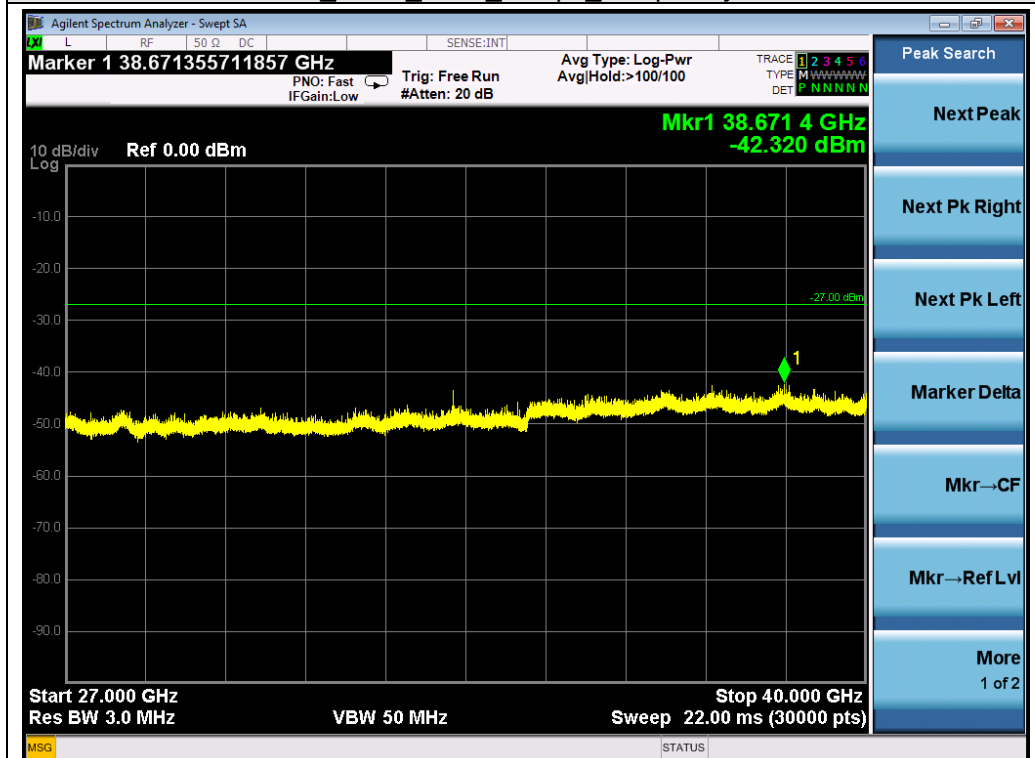
802.11a ANT1_5240_6Mbps_Frequency Band 2



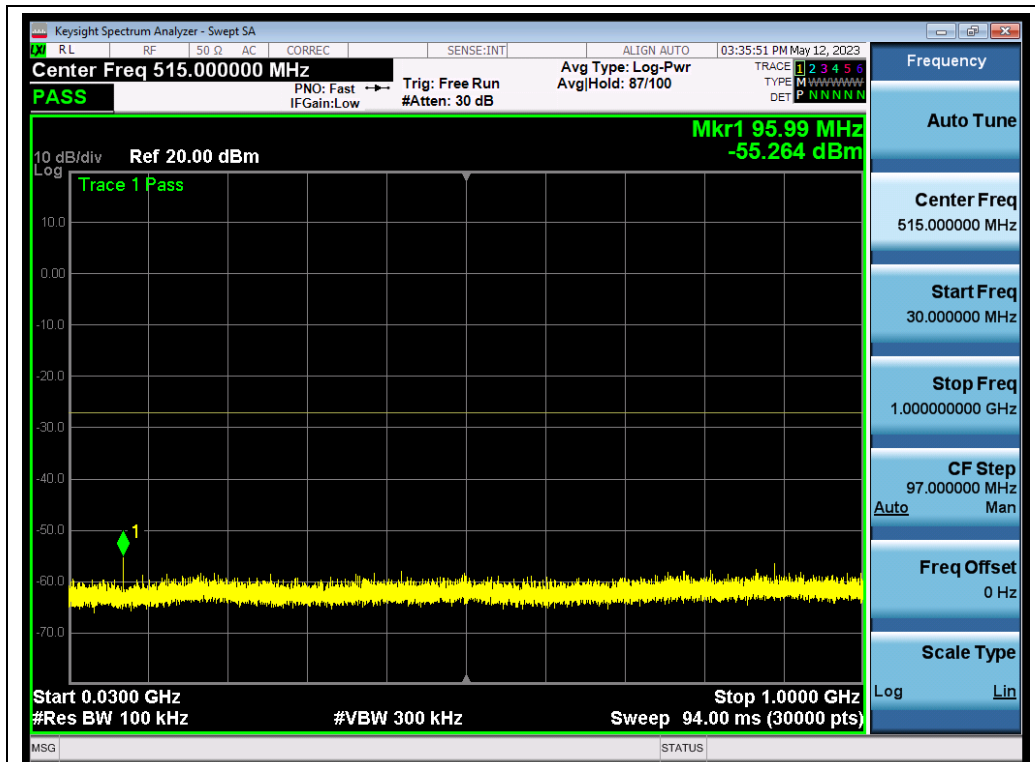
802.11a ANT1_5240_6Mbps_Frequency Band 3



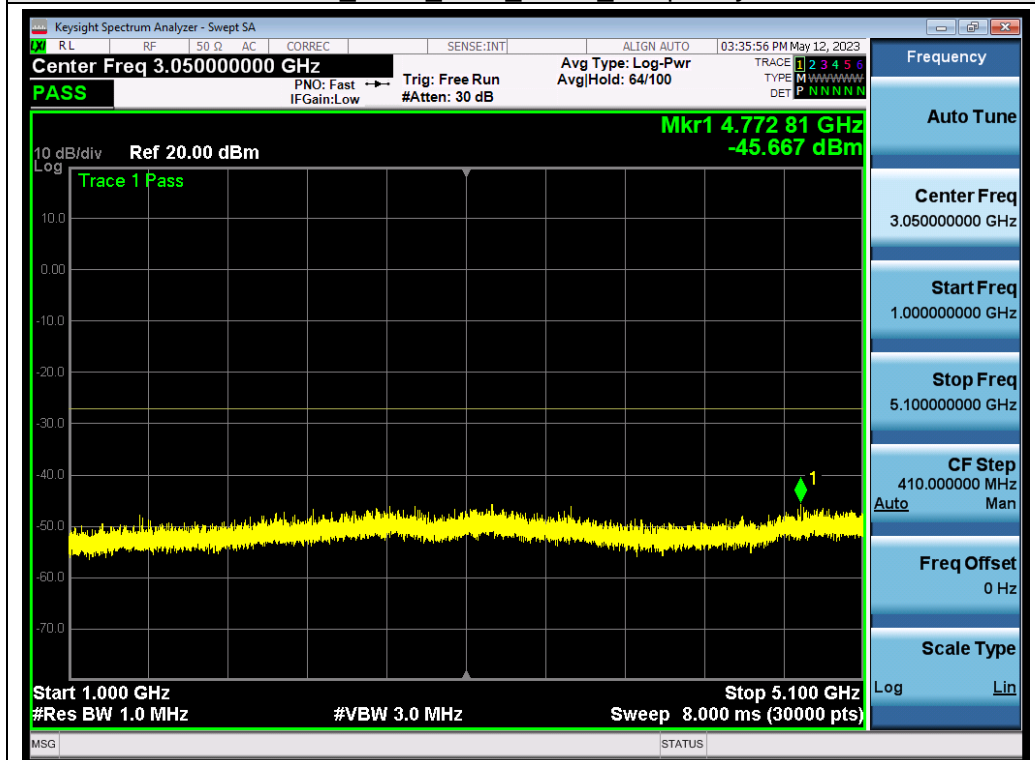
802.11a ANT1_5240_6Mbps_Frequency Band 4



802.11a ANT1_5240_6Mbps_Frequency Band 5



802.11n40_ANT1_5190_MCS0_Frequency Band 1



802.11n40_ANT1_5190_MCS0_Frequency Band 2