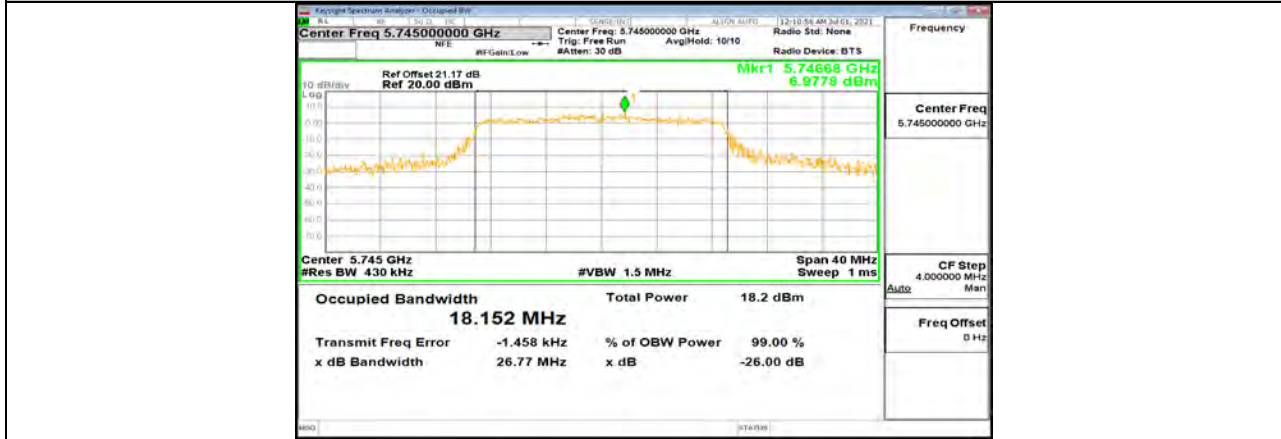
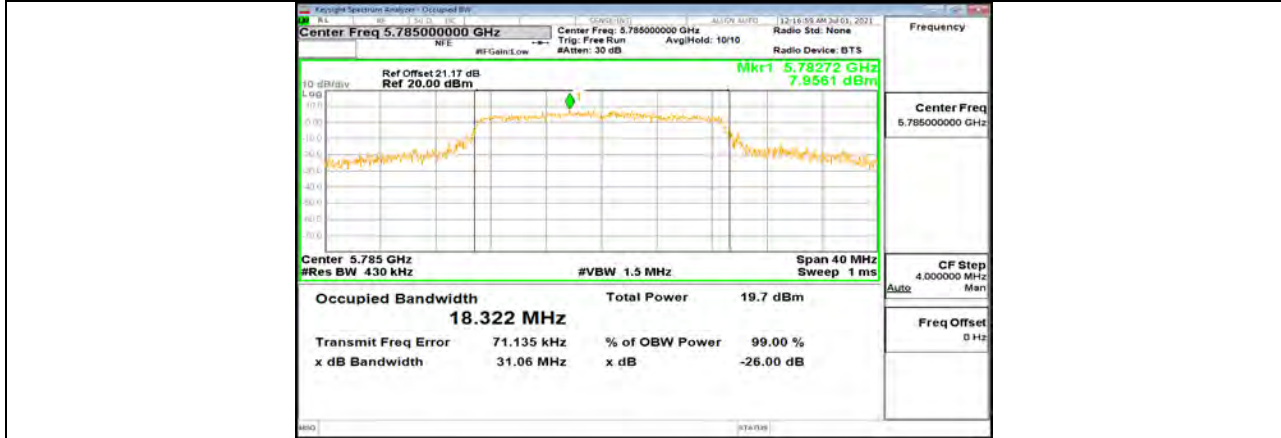


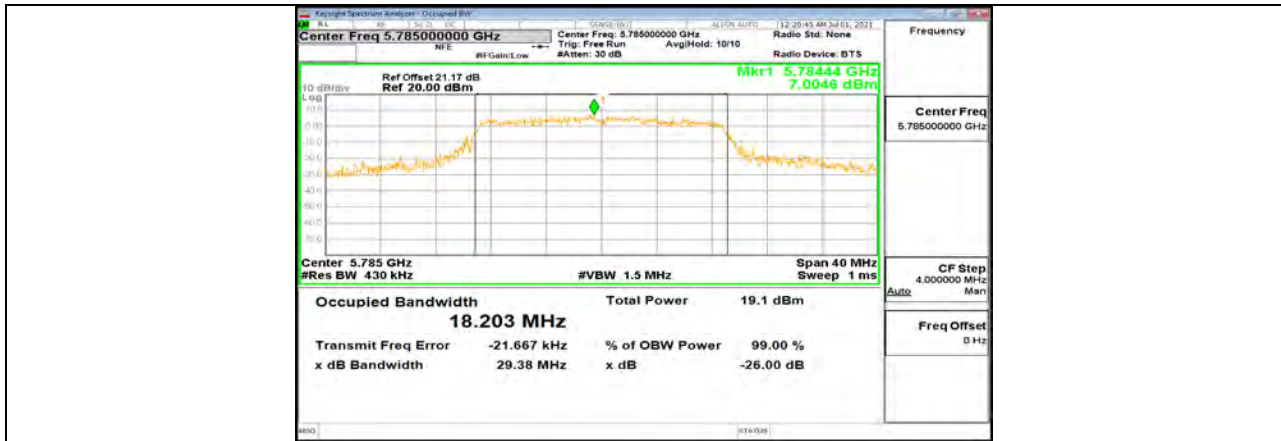
11N20MIMO\_Ant1\_5745



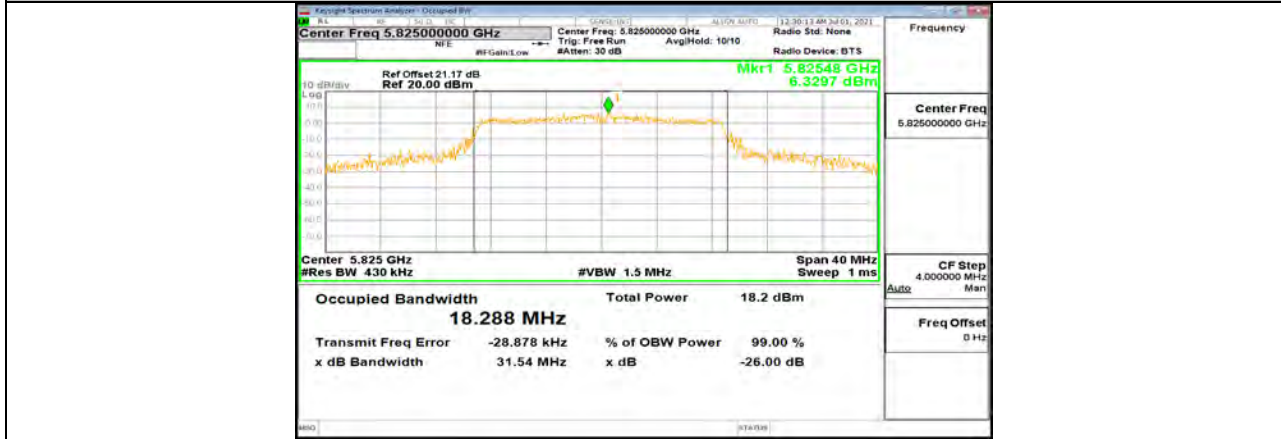
11N20MIMO\_Ant2\_5745



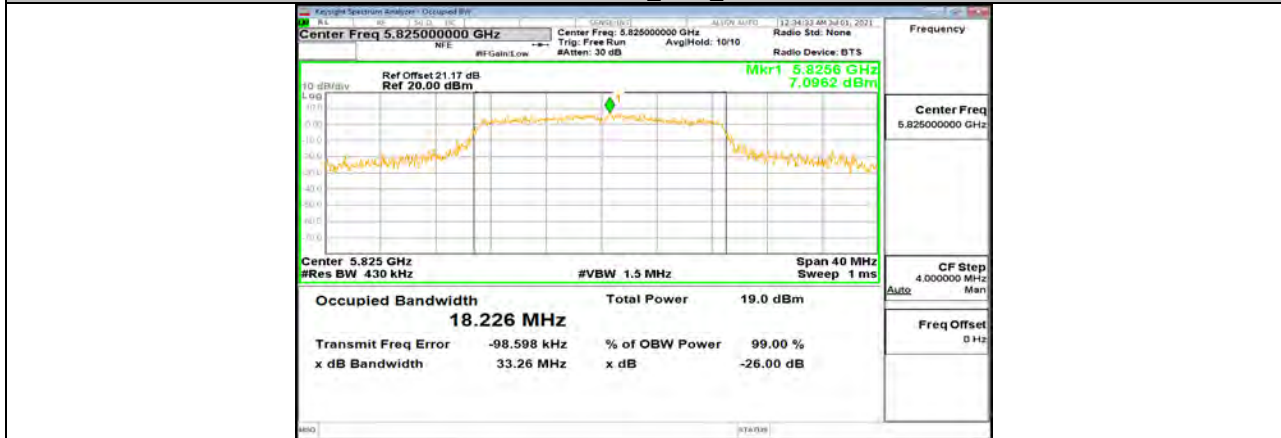
11N20MIMO\_Ant1\_5785



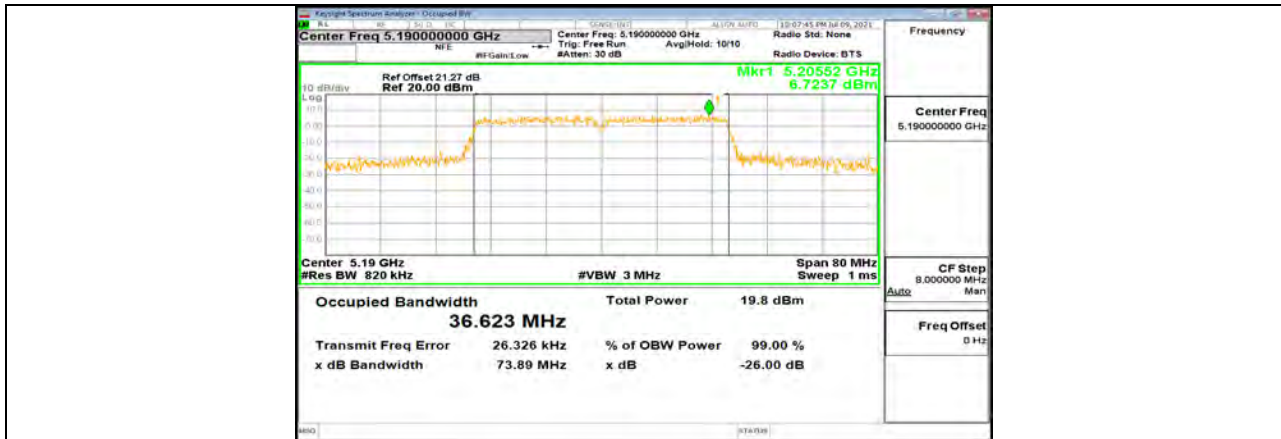
11N20MIMO\_Ant2\_5785



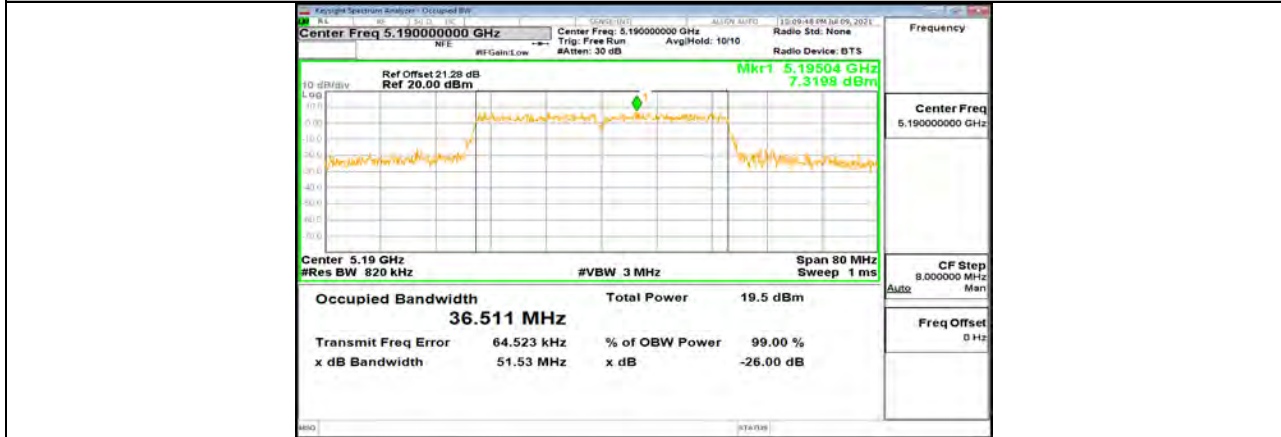
11N20MIMO\_Ant1\_5825



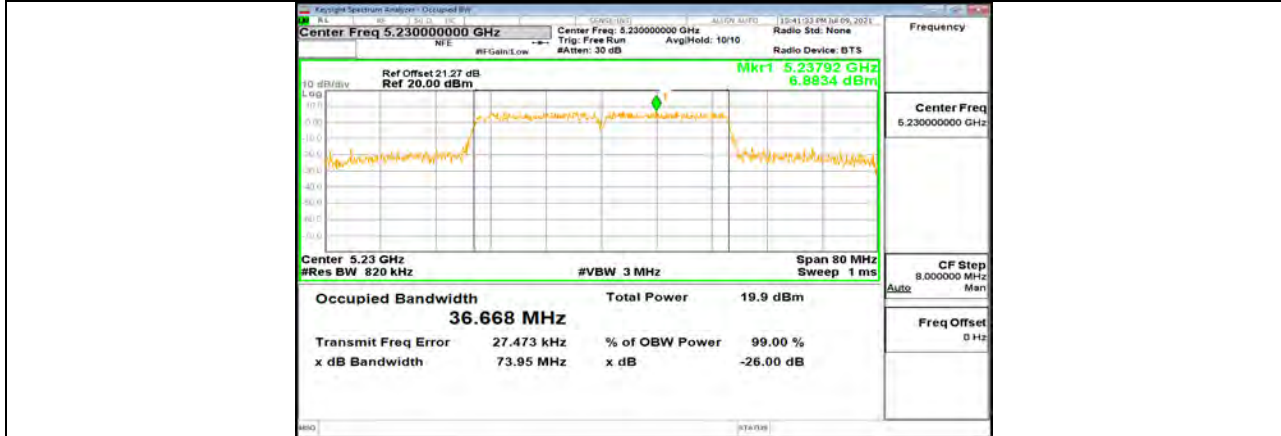
11N20MIMO\_Ant2\_5825



11N40MIMO\_Ant1\_5190

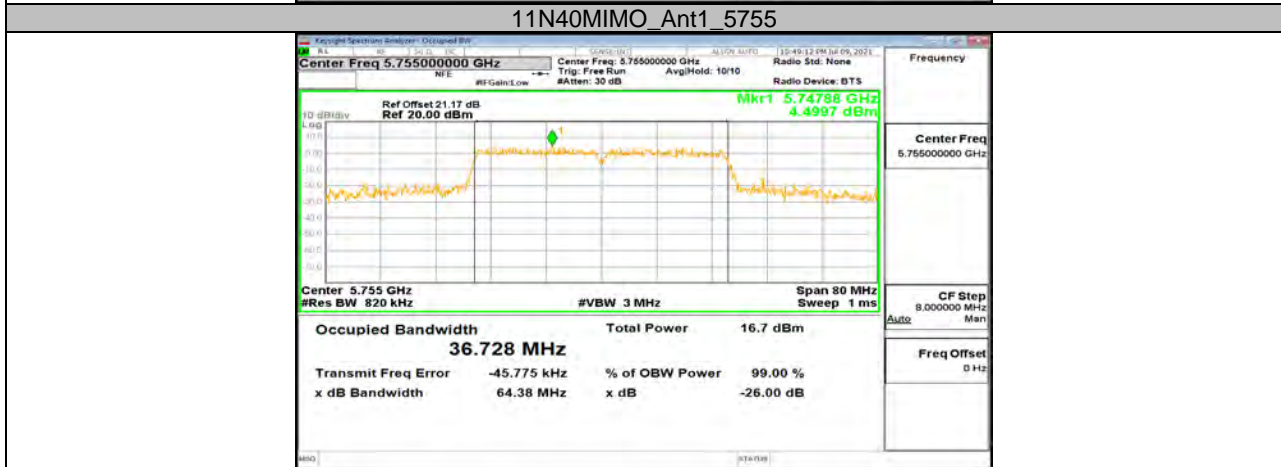
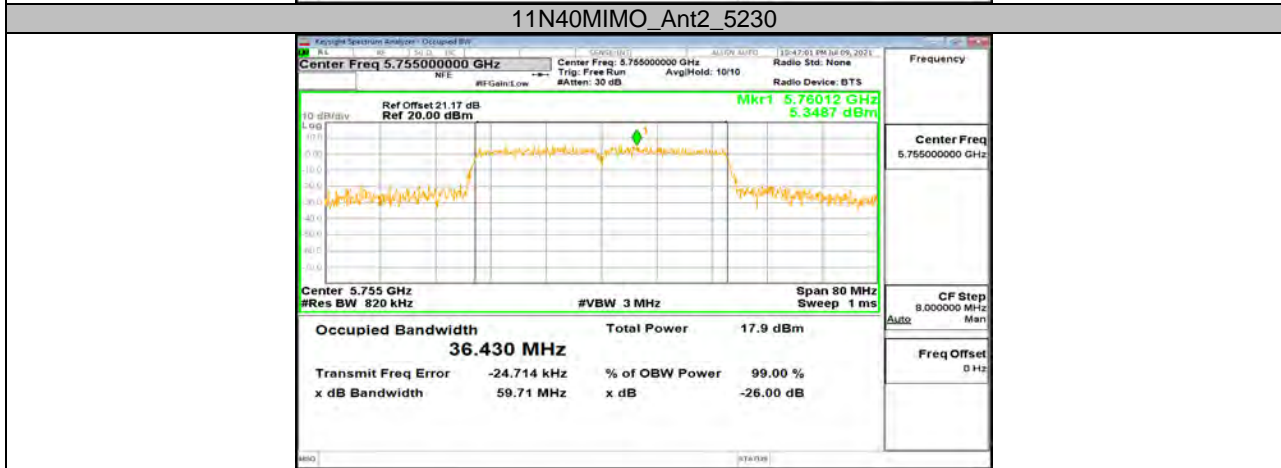
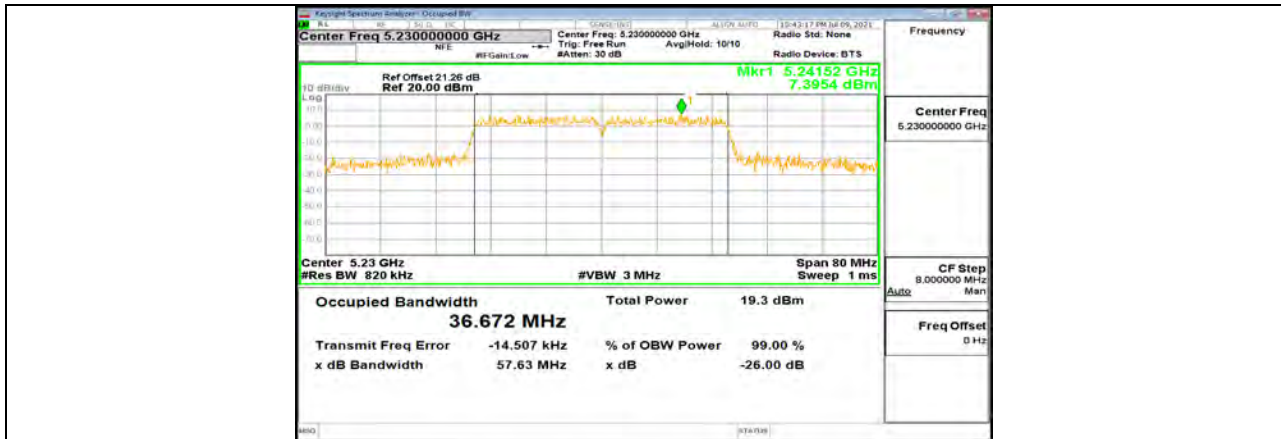


11N40MIMO\_Ant2\_5190

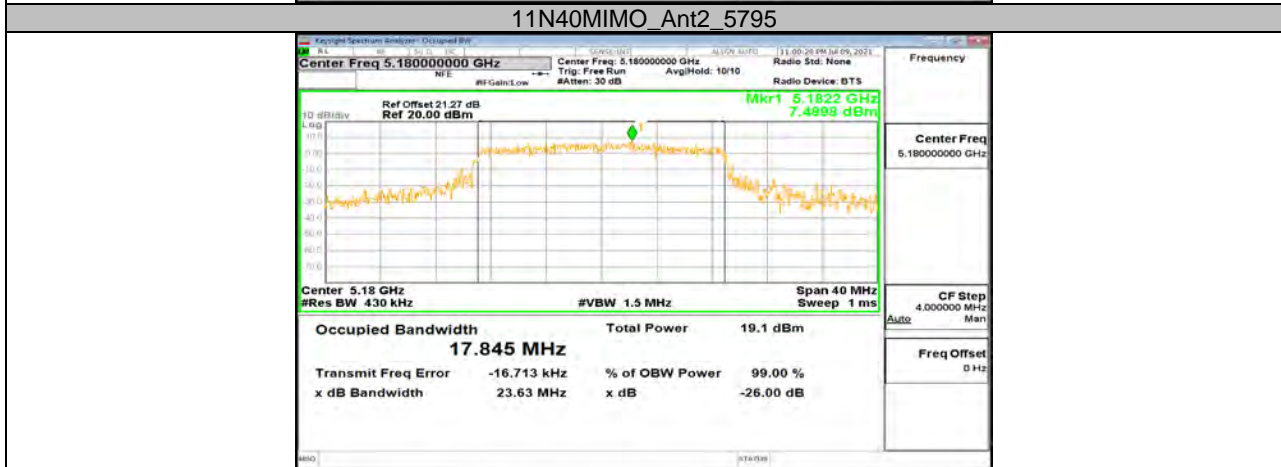
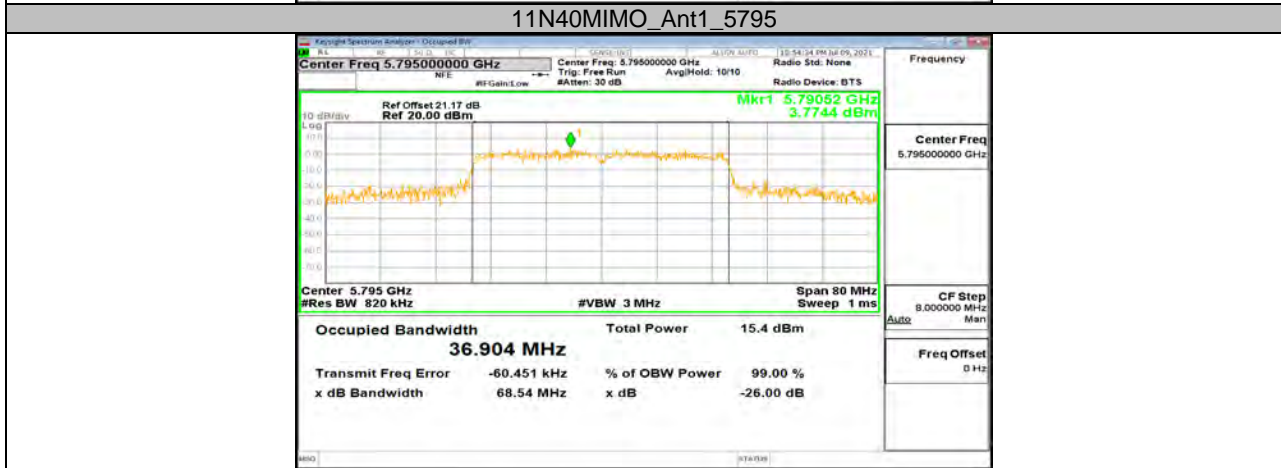
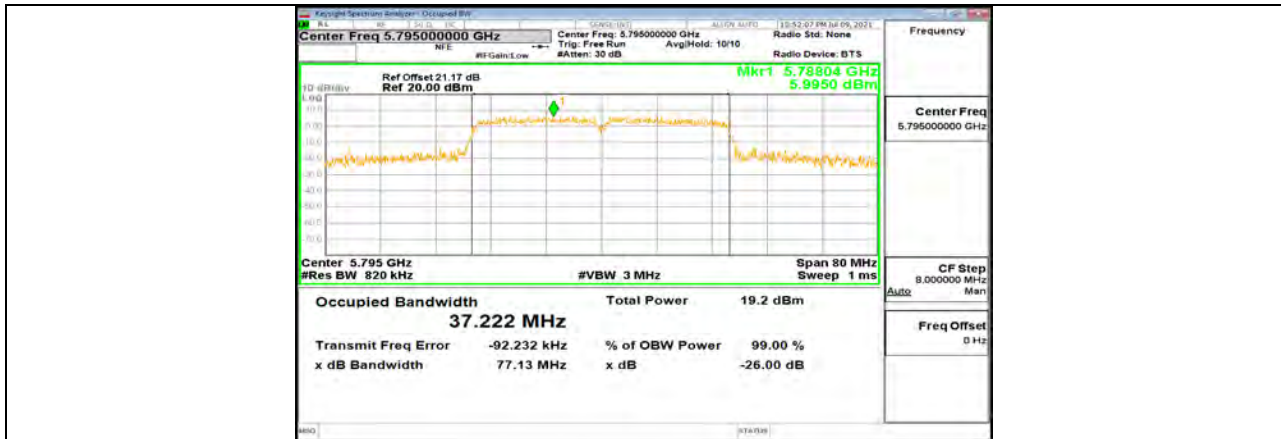


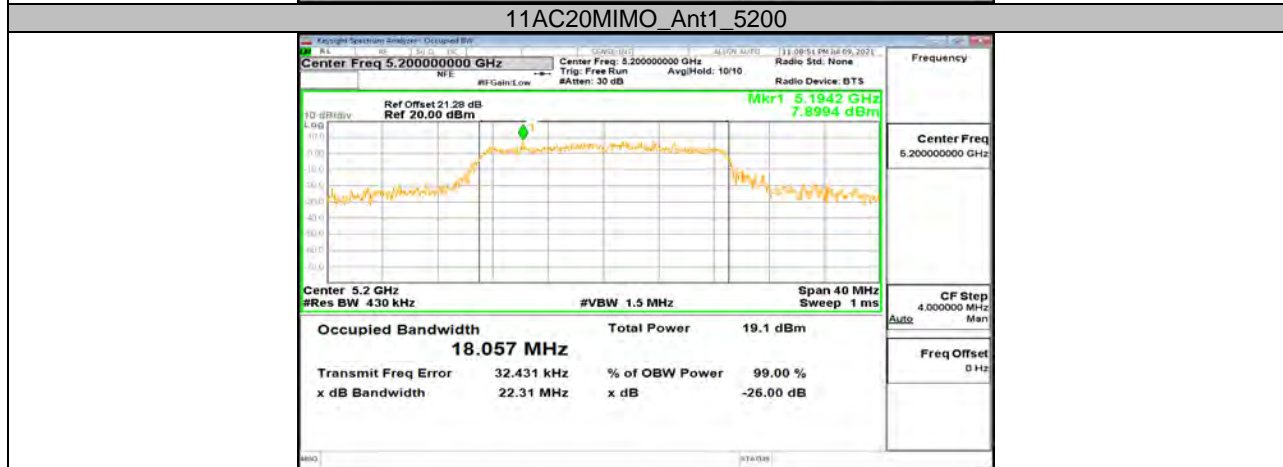
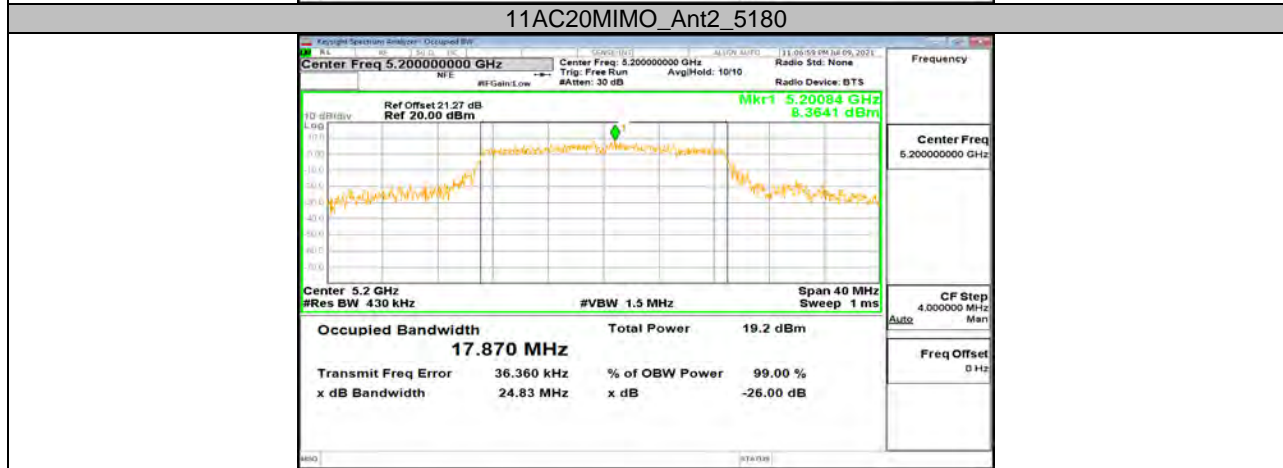
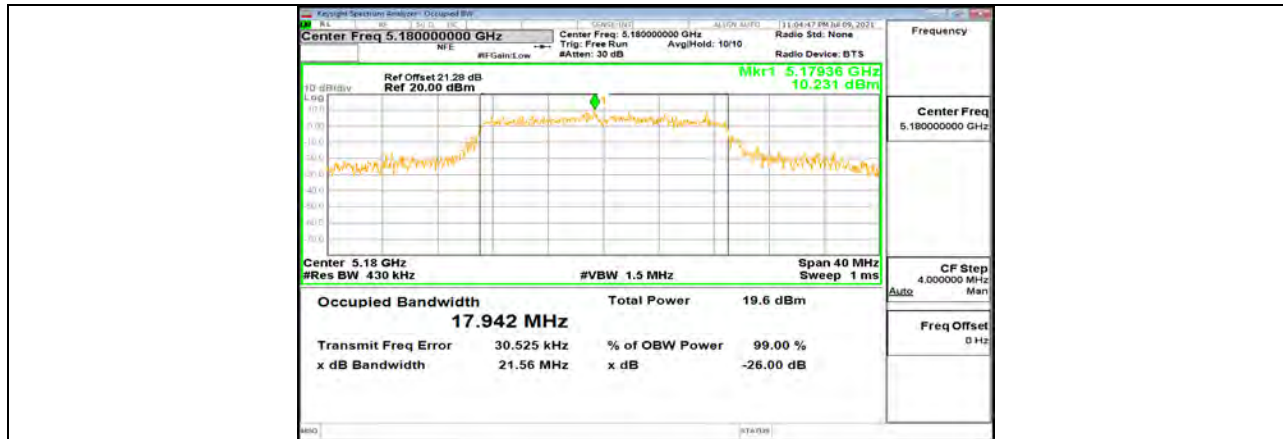
11N40MIMO\_Ant1\_5230

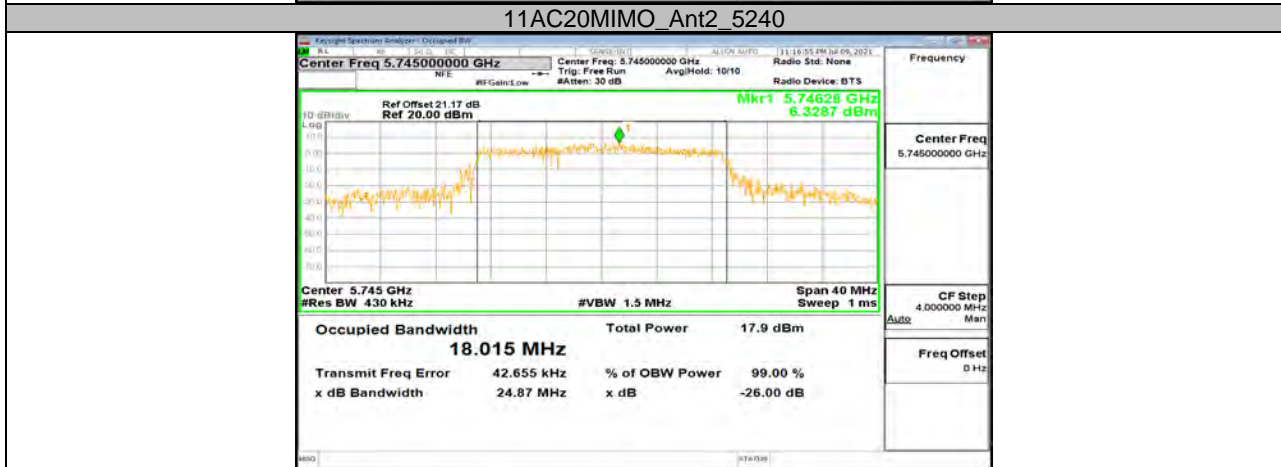
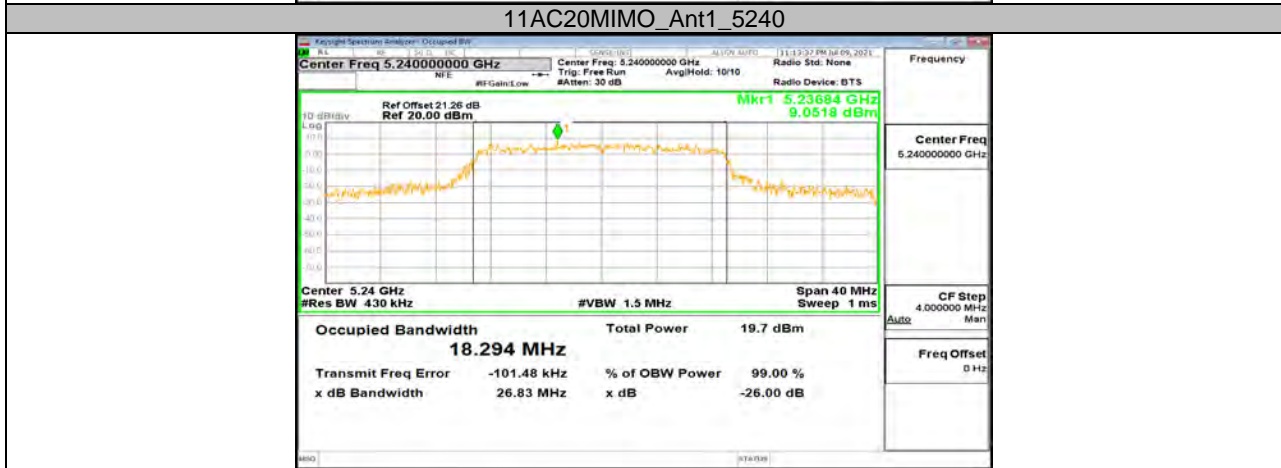
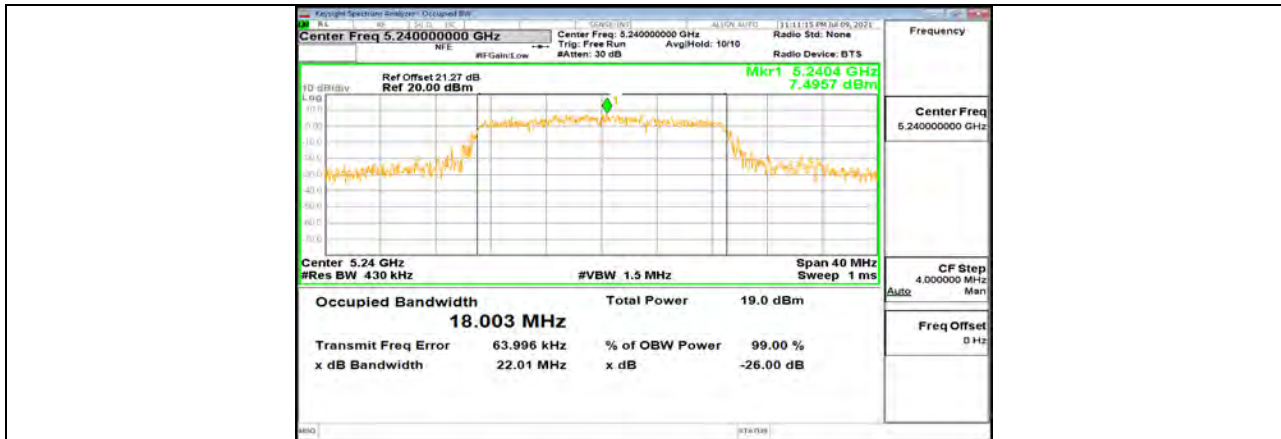




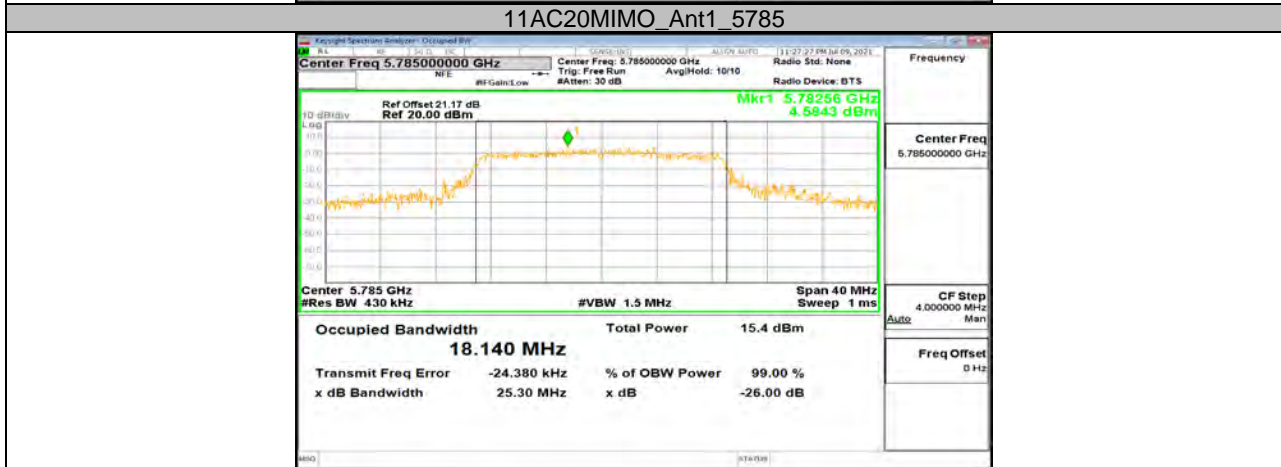
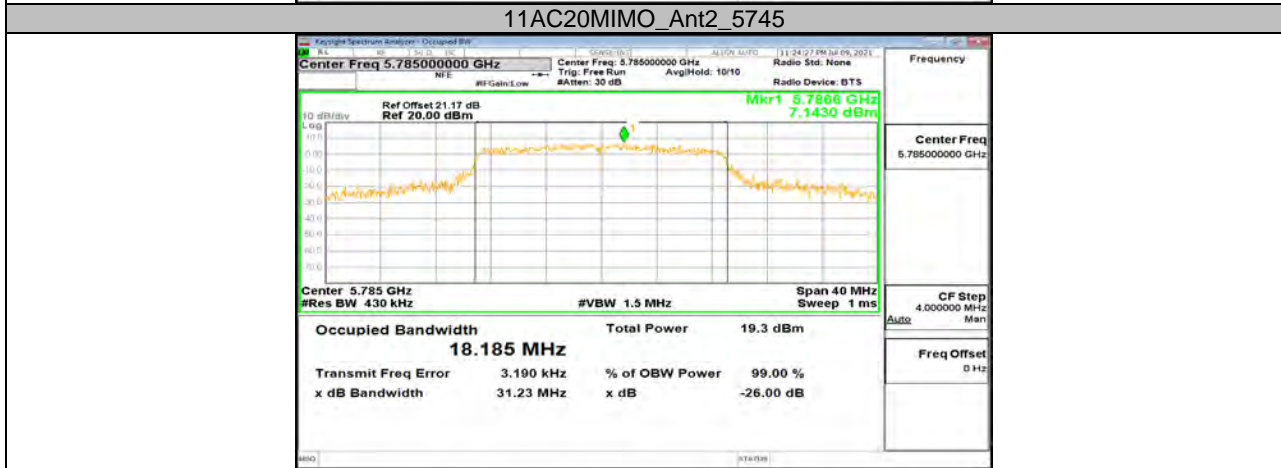
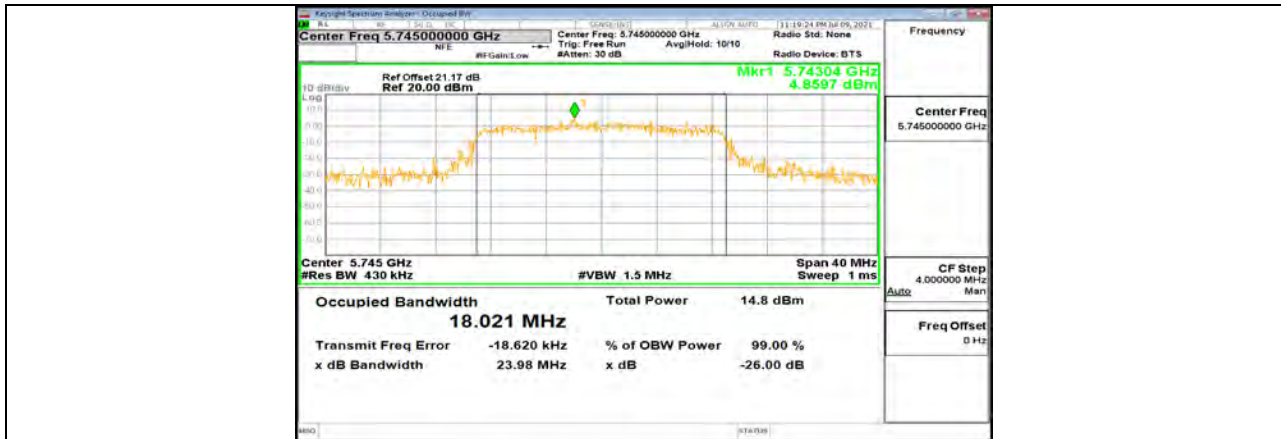
11N40MIMO\_Ant2\_5755

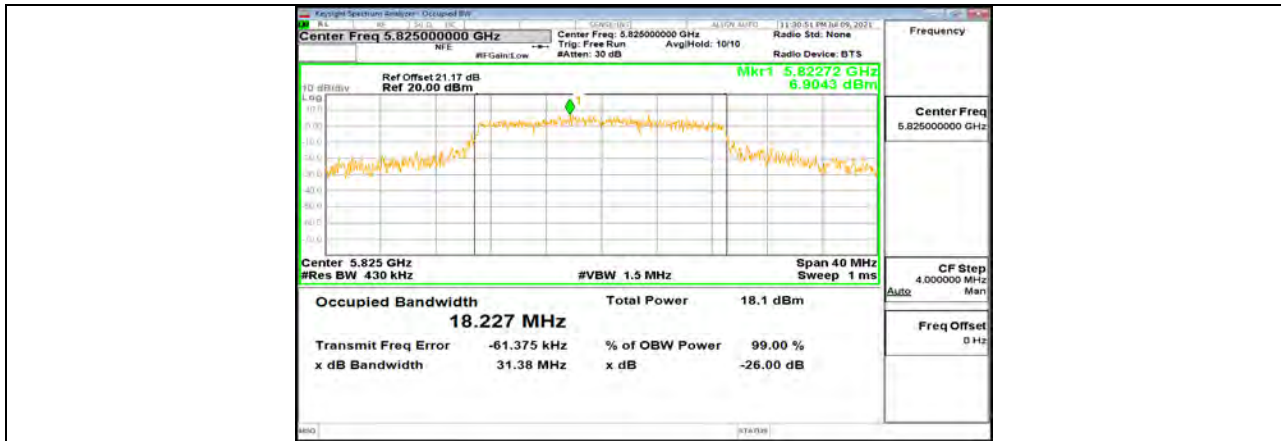




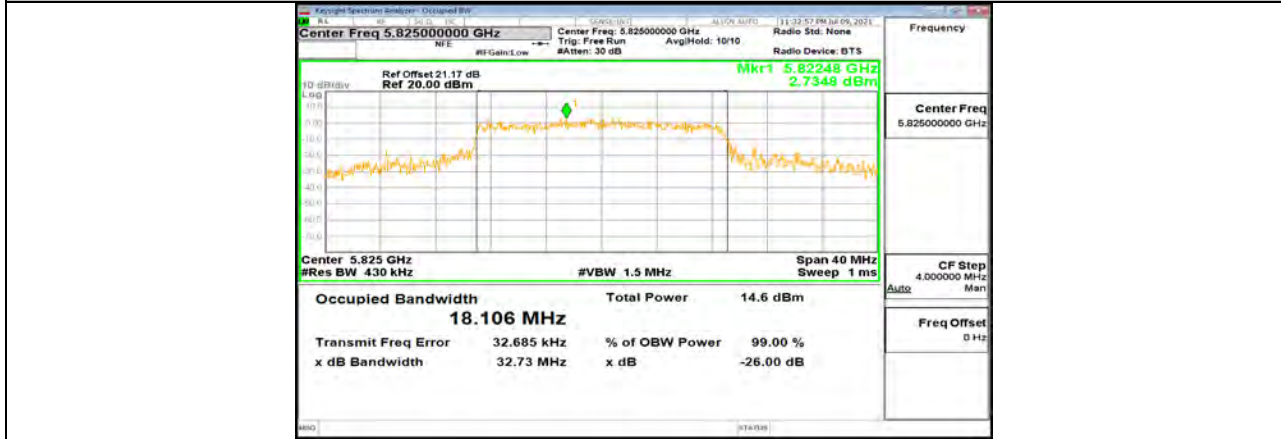




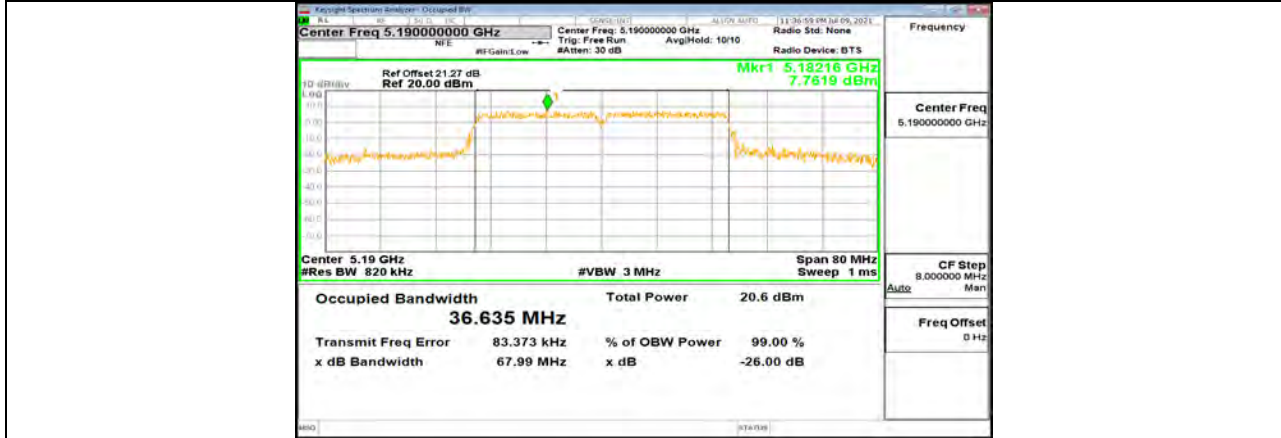




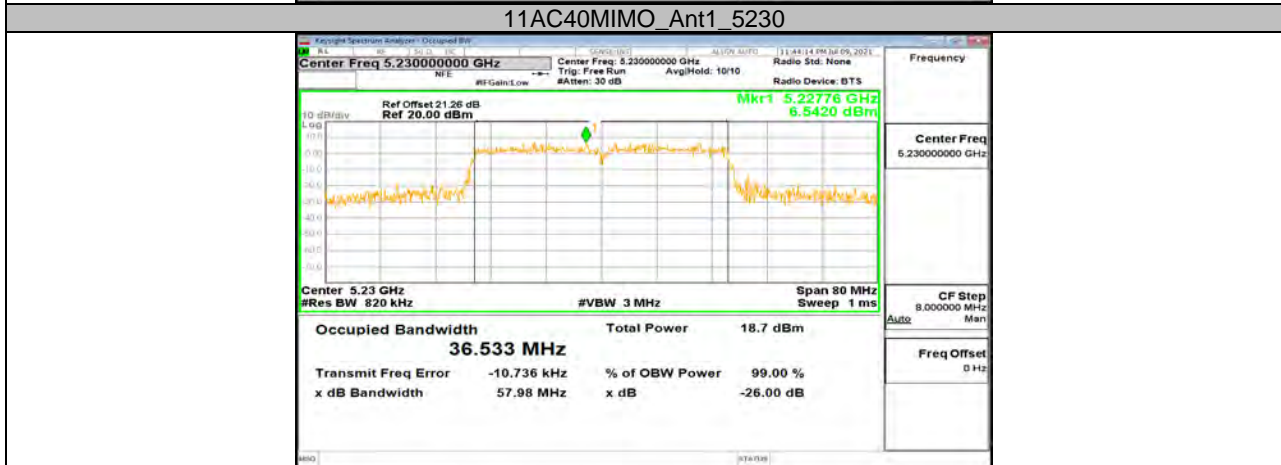
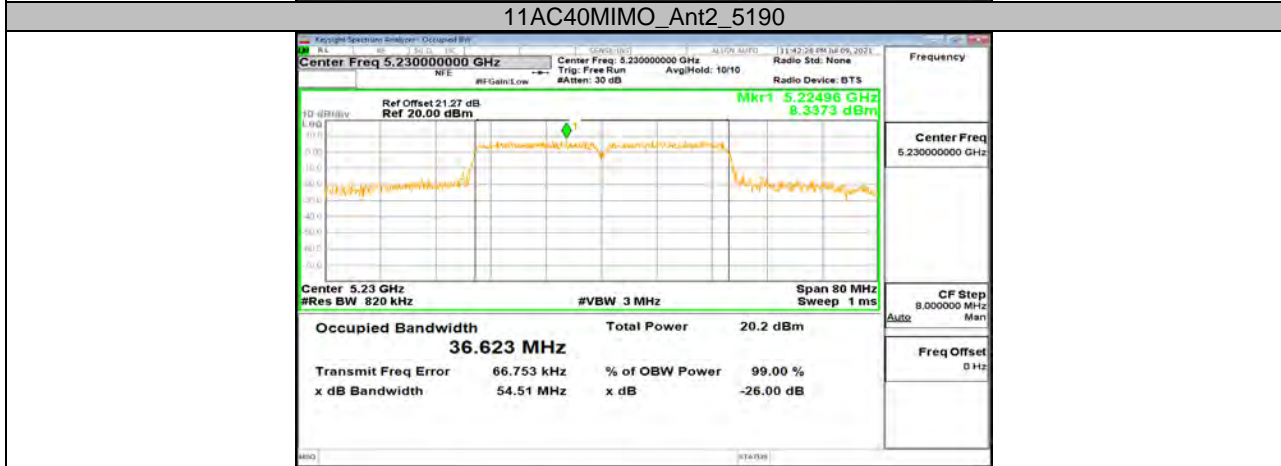
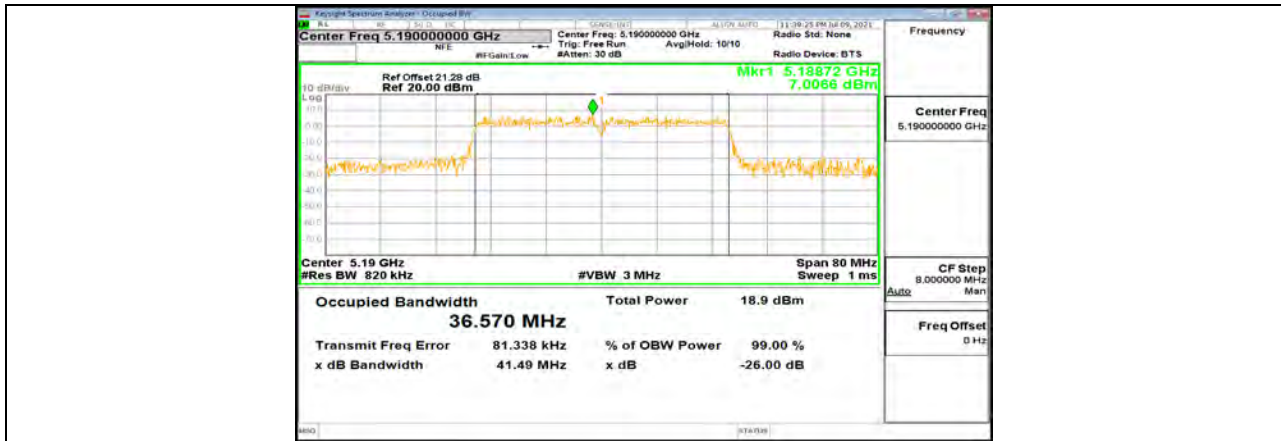
11AC20MIMO\_Ant1\_5825

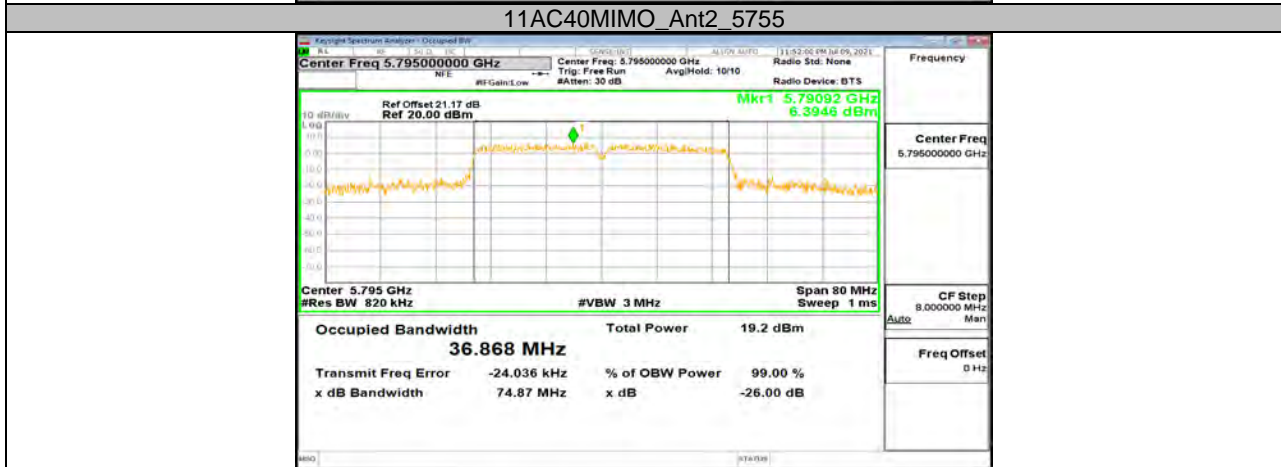
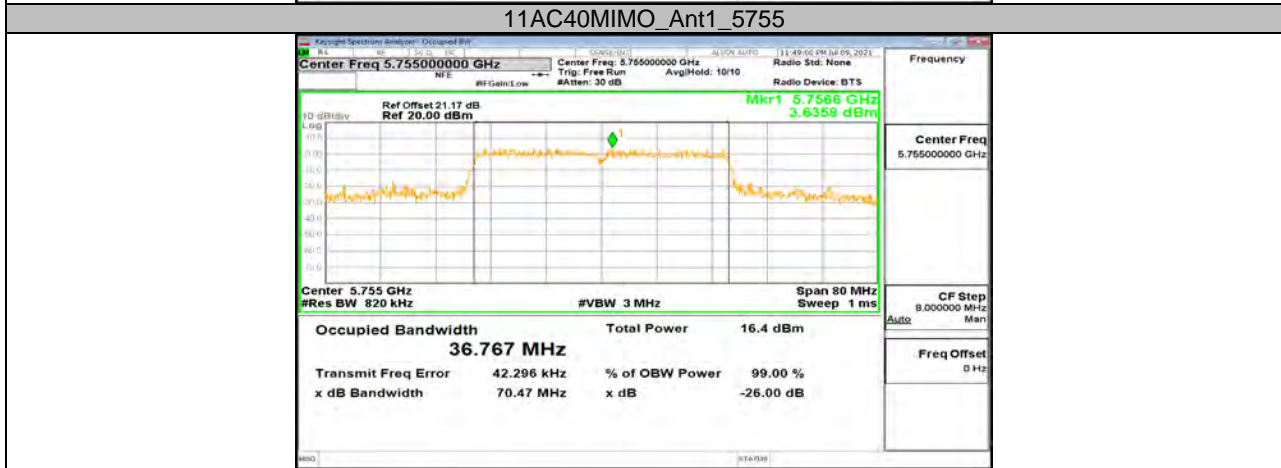
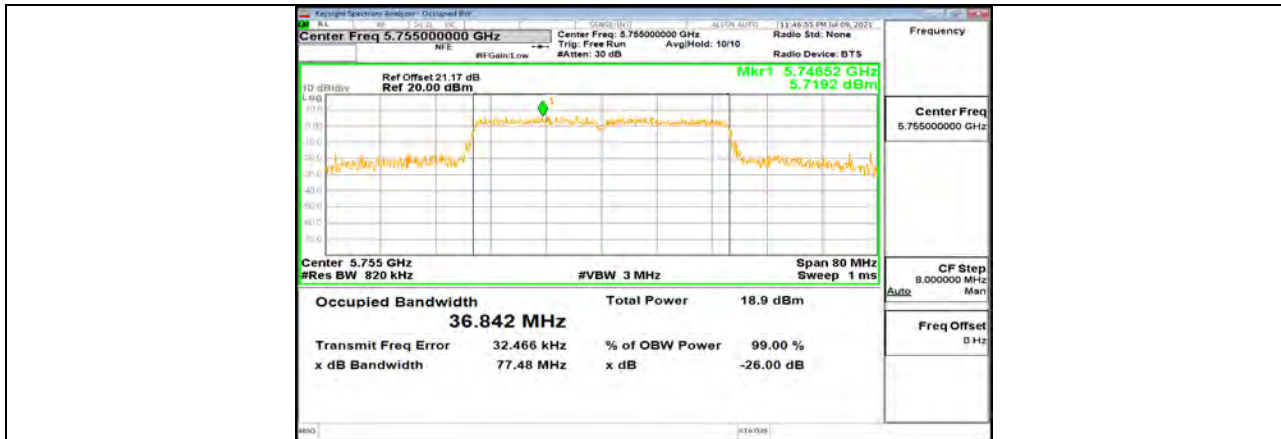


11AC20MIMO\_Ant2\_5825

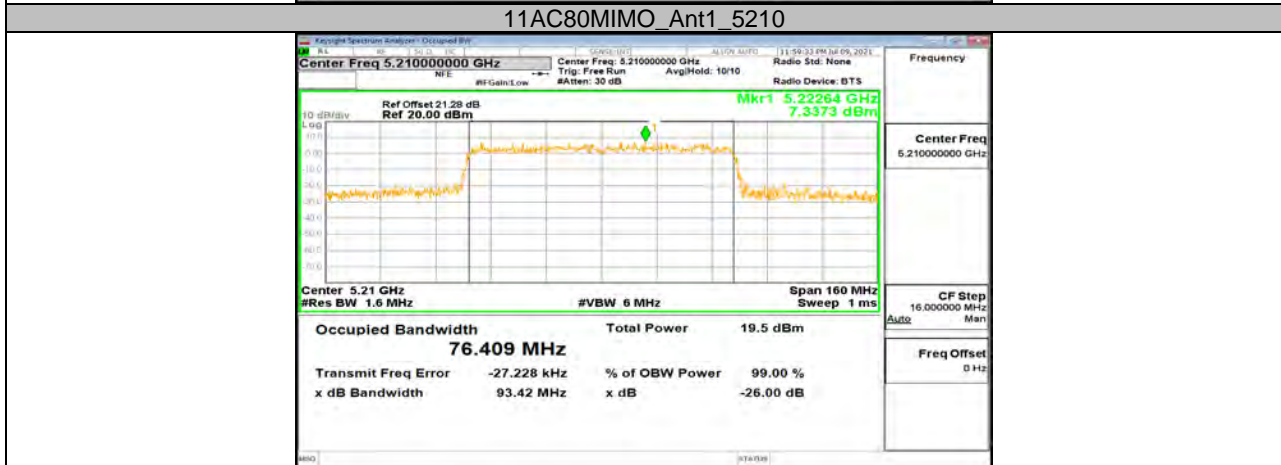
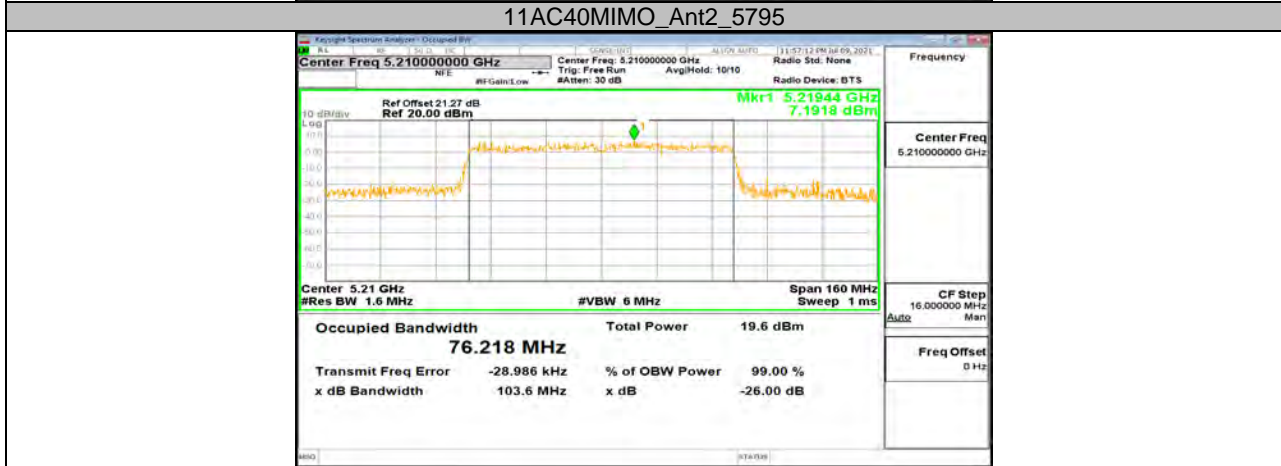
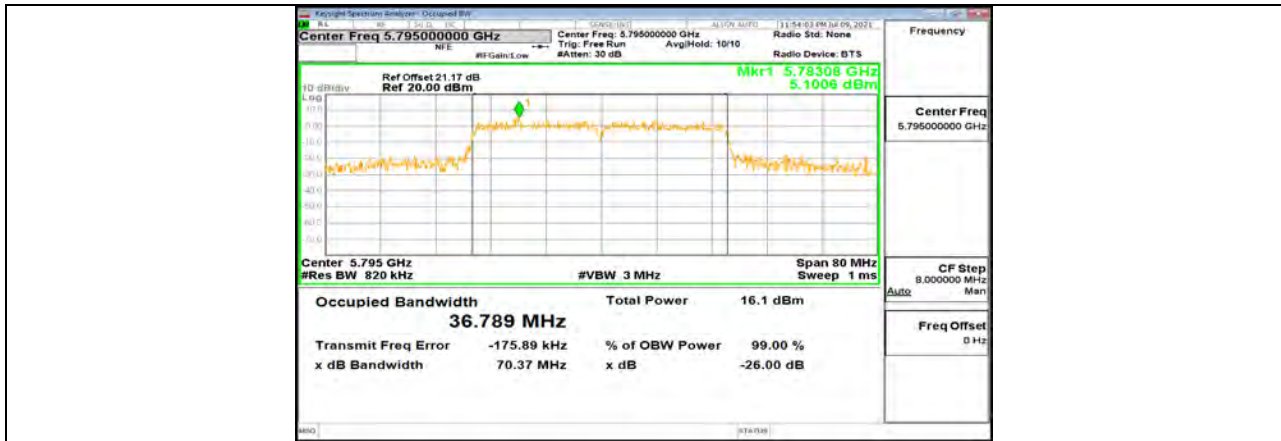


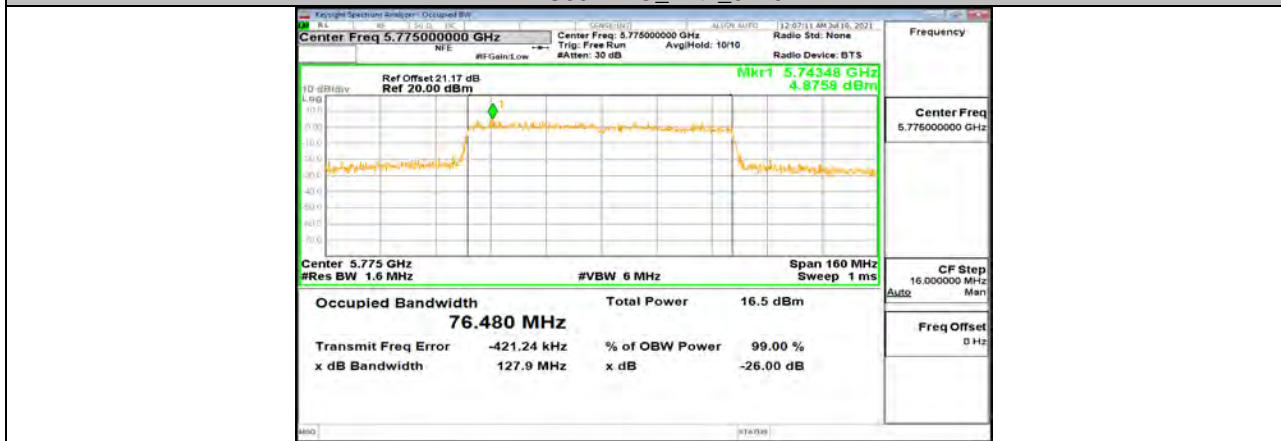
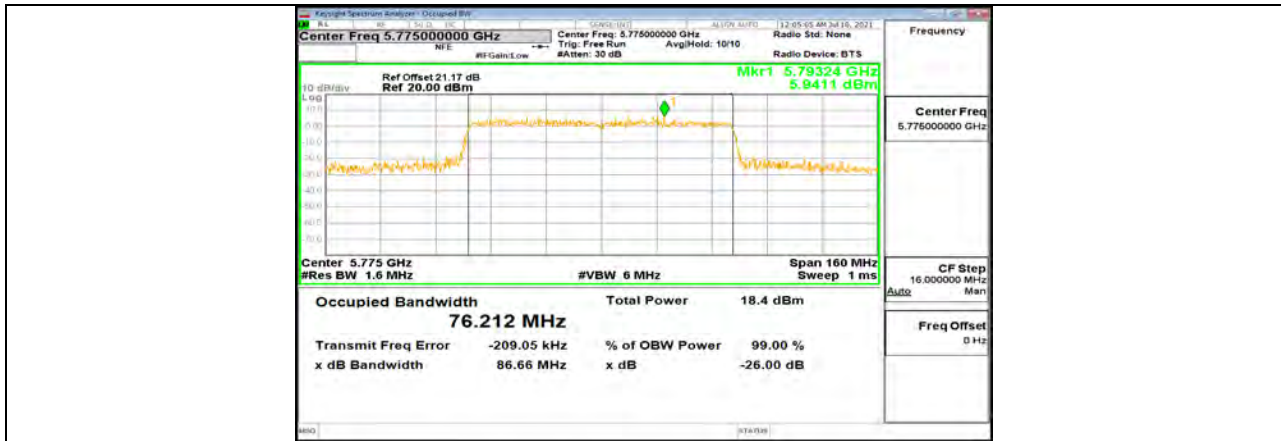
11AC40MIMO\_Ant1\_5190













### 12.3. Appendix A3: Min emission bandwidth

#### 12.3.1. Test Result

Test Mode	Antenna	Channel	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.200	5736.930	5753.130	0.5	PASS
	Ant2	5745	16.440	5736.720	5753.160	0.5	PASS
	Ant1	5785	16.410	5776.750	5793.160	0.5	PASS
	Ant2	5785	15.960	5776.780	5792.740	0.5	PASS
	Ant1	5825	16.350	5816.750	5833.100	0.5	PASS
	Ant2	5825	16.380	5816.750	5833.130	0.5	PASS
11N20MIMO	Ant1	5745	17.700	5736.090	5753.790	0.5	PASS
	Ant2	5745	17.220	5736.180	5753.400	0.5	PASS
	Ant1	5785	17.100	5776.300	5793.400	0.5	PASS
	Ant2	5785	17.580	5776.150	5793.730	0.5	PASS
	Ant1	5825	17.100	5816.390	5833.490	0.5	PASS
	Ant2	5825	17.610	5816.120	5833.730	0.5	PASS
11N40MIMO	Ant1	5755	36.480	5736.700	5773.180	0.5	PASS
	Ant2	5755	36.480	5736.700	5773.180	0.5	PASS
	Ant1	5795	36.360	5776.700	5813.060	0.5	PASS
	Ant2	5795	35.640	5776.880	5812.520	0.5	PASS
11AC20MIMO	Ant1	5745	17.580	5736.180	5753.760	0.5	PASS
	Ant2	5745	17.550	5736.150	5753.700	0.5	PASS
	Ant1	5785	17.370	5776.420	5793.790	0.5	PASS
	Ant2	5785	17.430	5776.120	5793.550	0.5	PASS
	Ant1	5825	17.640	5816.120	5833.760	0.5	PASS
	Ant2	5825	17.640	5816.150	5833.790	0.5	PASS
11AC40MIMO	Ant1	5755	36.420	5736.760	5773.180	0.5	PASS
	Ant2	5755	36.240	5736.760	5773.000	0.5	PASS
	Ant1	5795	36.480	5776.700	5813.180	0.5	PASS
	Ant2	5795	36.480	5776.700	5813.180	0.5	PASS
11AC80MIMO	Ant1	5775	74.040	5737.320	5811.360	0.5	PASS
	Ant2	5775	75.000	5736.960	5811.960	0.5	PASS

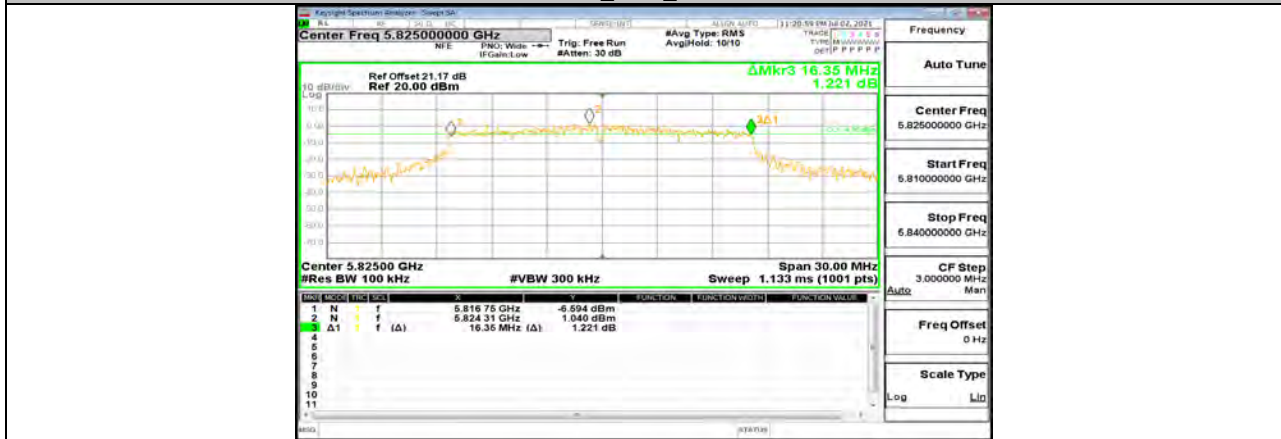
### 12.3.2. Test Graphs







11A\_Ant2\_5785



11A\_Ant1\_5825



11A\_Ant2\_5825



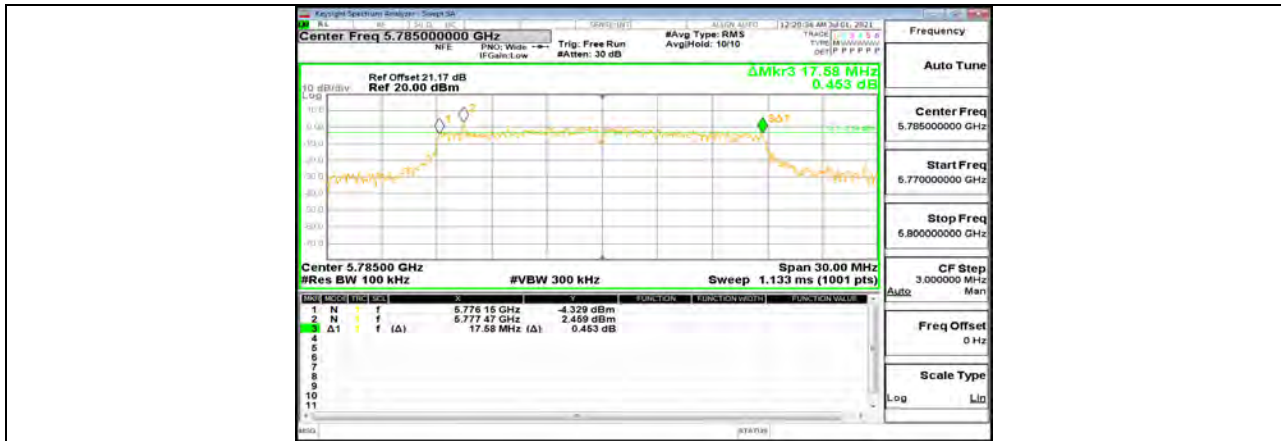
11N20MIMO\_Ant1\_5745



11N20MIMO\_Ant2\_5745



11N20MIMO\_Ant1\_5785



11N20MIMO\_Ant2\_5785

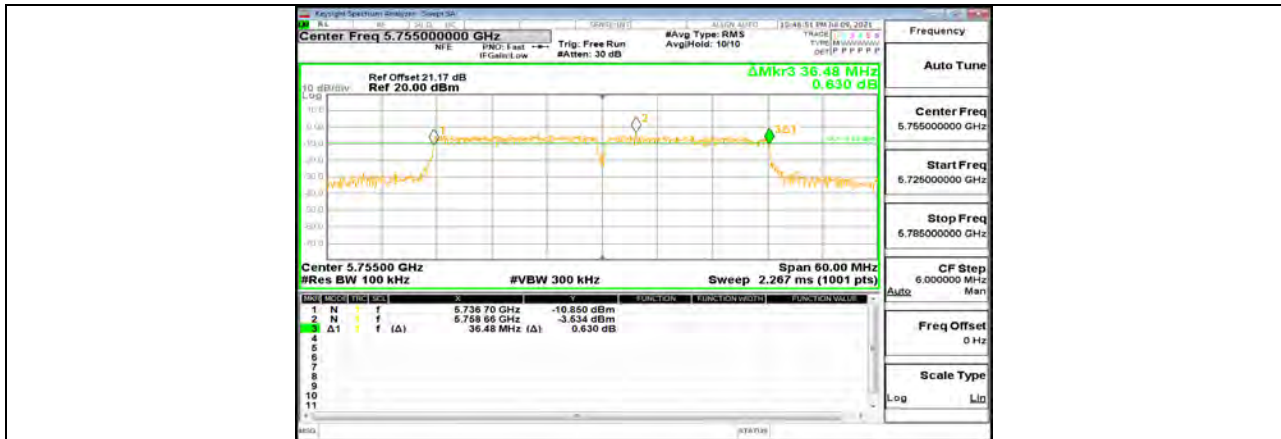


11N20MIMO\_Ant1\_5825



11N20MIMO\_Ant2\_5825

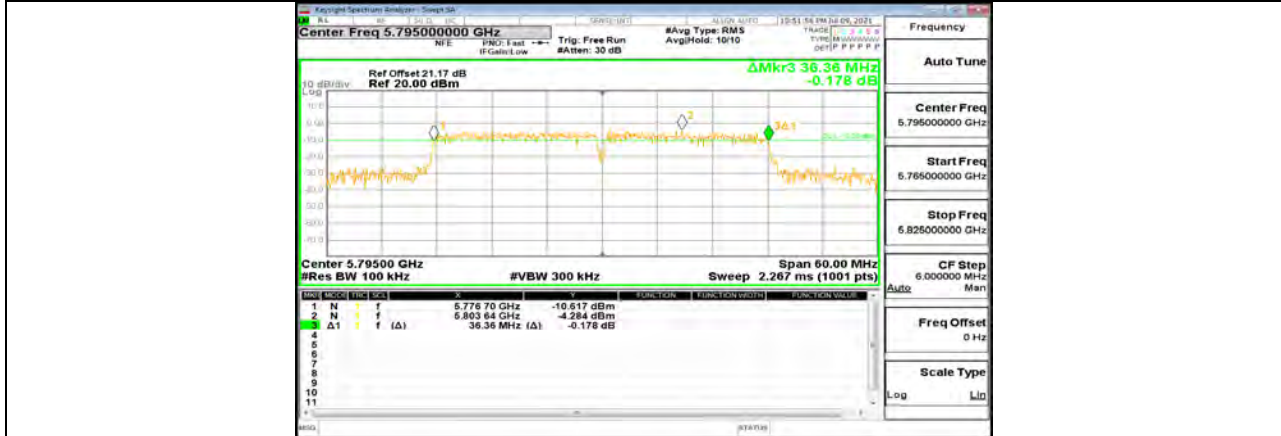




11N40MIMO\_Ant1\_5755

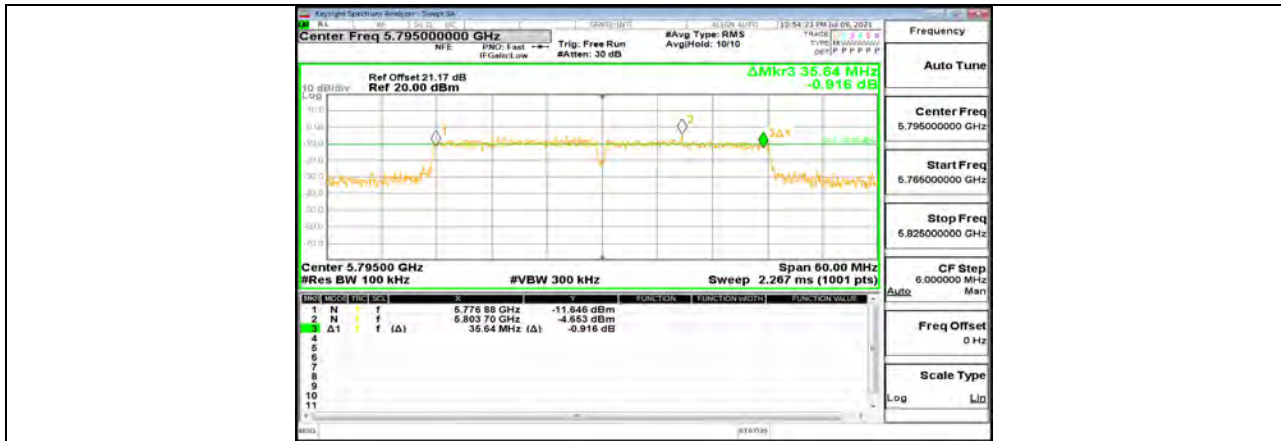


11N40MIMO\_Ant2\_5755

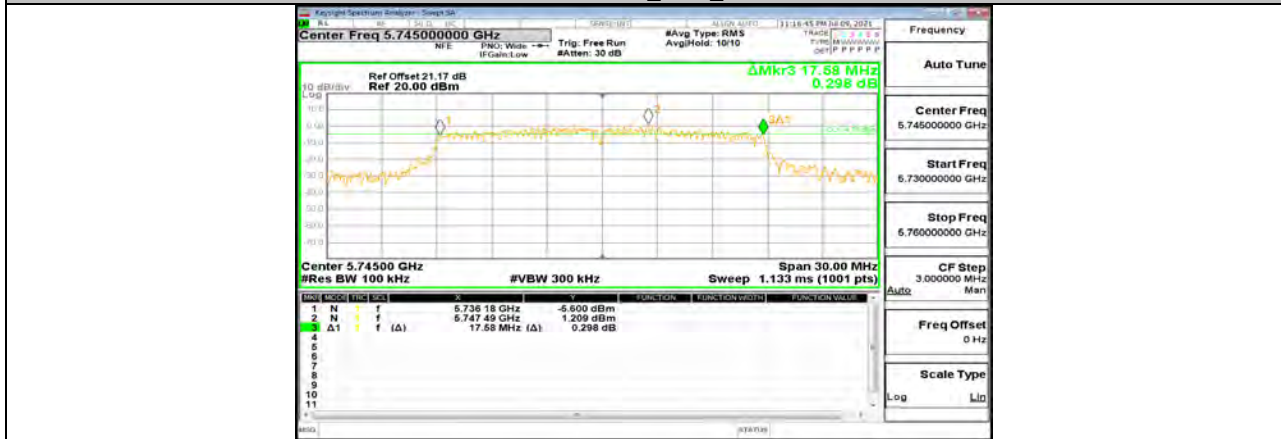


11N40MIMO\_Ant1\_5795

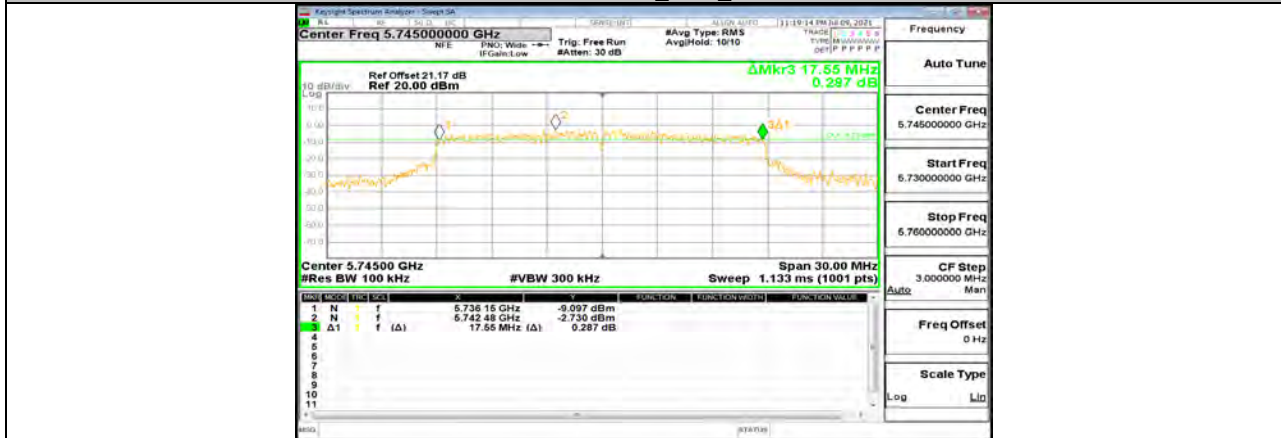




11N40MIMO\_Ant2\_5795



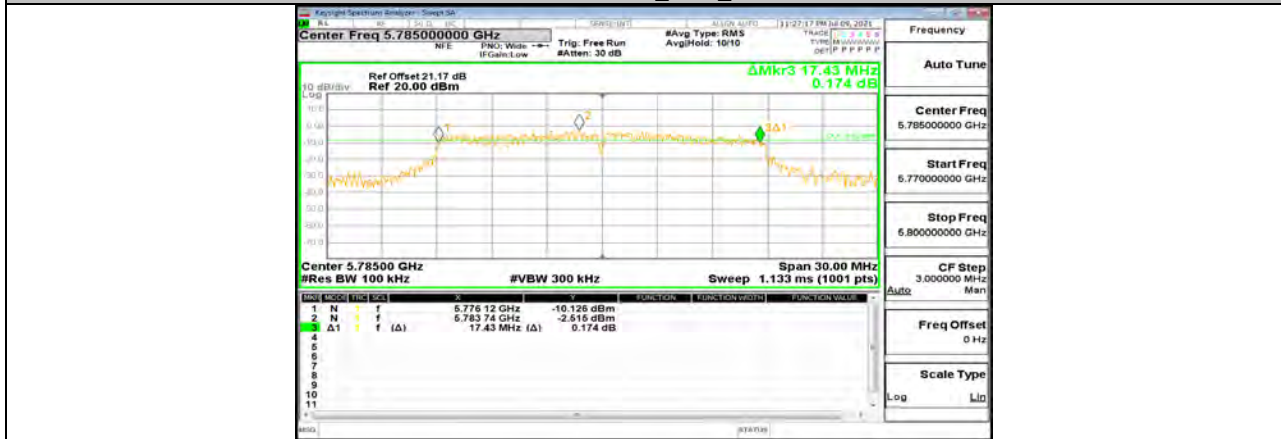
11AC20MIMO\_Ant1\_5745



11AC20MIMO\_Ant2\_5745



11AC20MIMO\_Ant1\_5785



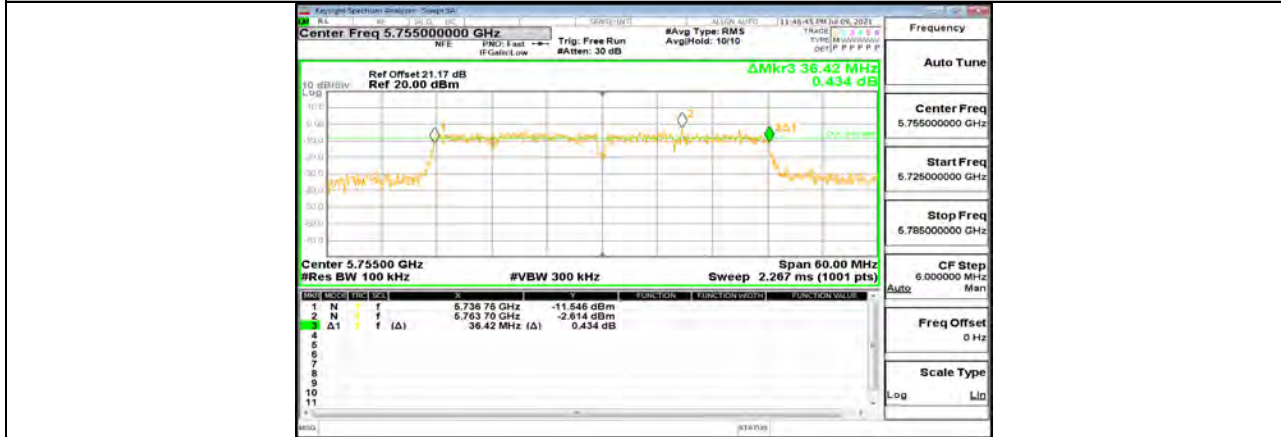
11AC20MIMO\_Ant2\_5785



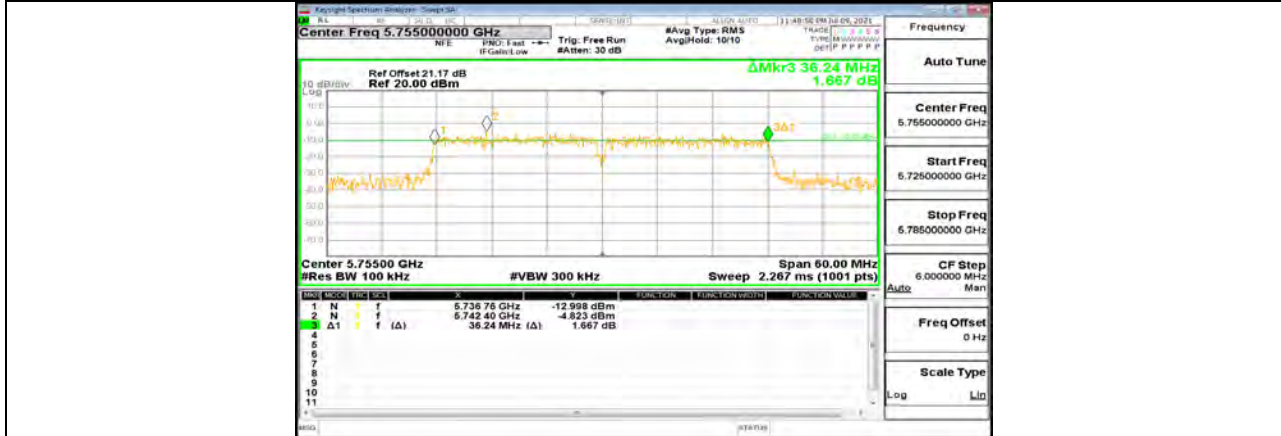
11AC20MIMO\_Ant1\_5825



11AC20MIMO\_Ant2\_5825



11AC40MIMO\_Ant1\_5755

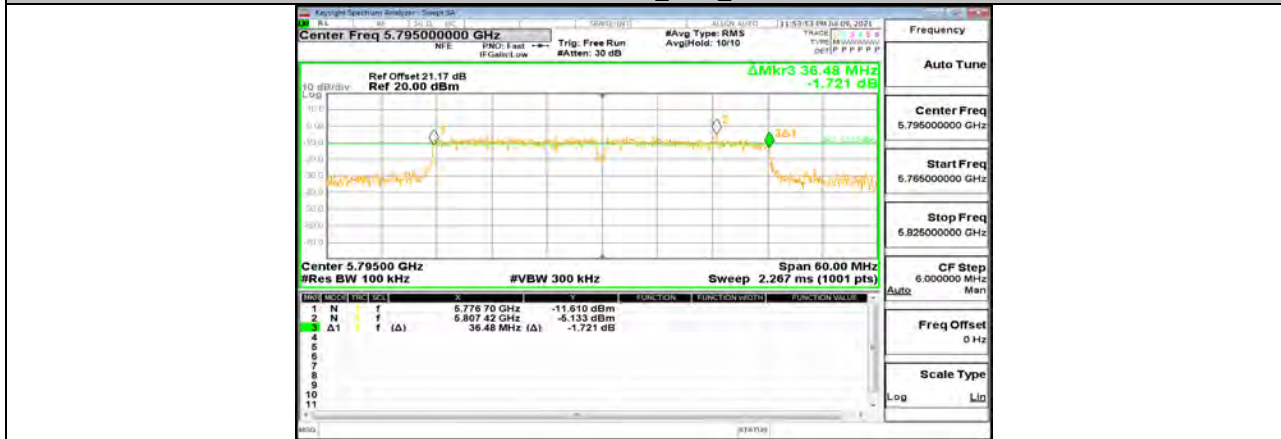


11AC40MIMO\_Ant2\_5755





11AC40MIMO\_Ant1\_5795



11AC40MIMO\_Ant2\_5795



11AC80MIMO\_Ant1\_5775







## 12.4. Appendix B: Maximum conducted output power

### 12.4.1. Test Result

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	5180	14.94	<=23.98	PASS
	Ant2	5180	16.20	<=23.98	PASS
	Ant1	5200	15.37	<=23.98	PASS
	Ant2	5200	16.43	<=23.98	PASS
	Ant1	5240	15.44	<=23.98	PASS
	Ant2	5240	16.39	<=23.98	PASS
	Ant1	5745	14.50	<=30	PASS
	Ant2	5745	14.74	<=30	PASS
	Ant1	5785	14.55	<=30	PASS
	Ant2	5785	14.75	<=30	PASS
11N20MIMO	Ant1	5825	14.73	<=30	PASS
	Ant2	5825	14.62	<=30	PASS
	Ant1	5180	14.29	<=23.98	PASS
	Ant2	5180	15.36	<=23.98	PASS
	total	5180	17.87	<=23.98	PASS
	Ant1	5200	14.47	<=23.98	PASS
	Ant2	5200	15.62	<=23.98	PASS
	total	5200	18.09	<=23.98	PASS
	Ant1	5240	14.26	<=23.98	PASS
	Ant2	5240	15.63	<=23.98	PASS
	total	5240	18.01	<=23.98	PASS
	Ant1	5745	14.96	<=30	PASS
	Ant2	5745	14.47	<=30	PASS
	total	5745	17.73	<=30	PASS
	Ant1	5785	15.11	<=30	PASS
	Ant2	5785	14.59	<=30	PASS
	total	5785	17.87	<=30	PASS
	Ant1	5825	14.29	<=30	PASS
Ant2	5825	13.99	<=30	PASS	
total	5825	17.15	<=30	PASS	
11N40MIMO	Ant1	5190	12.72	<=23.98	PASS
	Ant2	5190	12.18	<=23.98	PASS
	total	5190	15.47	<=23.98	PASS
	Ant1	5230	13.64	<=23.98	PASS
	Ant2	5230	12.16	<=23.98	PASS
	total	5230	15.97	<=23.98	PASS
	Ant1	5755	11.75	<=30	PASS
	Ant2	5755	9.19	<=30	PASS
	total	5755	13.67	<=30	PASS
	Ant1	5795	12.10	<=30	PASS
Ant2	5795	9.25	<=30	PASS	
total	5795	13.92	<=30	PASS	
11AC20MIMO	Ant1	5180	12.97	<=23.98	PASS
	Ant2	5180	12.98	<=23.98	PASS
	total	5180	15.99	<=23.98	PASS
	Ant1	5200	13.42	<=23.98	PASS
	Ant2	5200	13.34	<=23.98	PASS
	total	5200	16.39	<=23.98	PASS
	Ant1	5240	13.28	<=23.98	PASS
	Ant2	5240	12.99	<=23.98	PASS
	total	5240	16.15	<=23.98	PASS
Ant1	5745	12.29	<=30	PASS	



	Ant2	5745	9.98	<=30	PASS
	total	5745	14.30	<=30	PASS
	Ant1	5785	13.20	<=30	PASS
	Ant2	5785	9.04	<=30	PASS
	total	5785	14.61	<=30	PASS
	Ant1	5825	12.64	<=30	PASS
	Ant2	5825	9.19	<=30	PASS
	total	5825	14.26	<=30	PASS
11AC40MIMO	Ant1	5190	13.37	<=23.98	PASS
	Ant2	5190	12.70	<=23.98	PASS
	total	5190	16.06	<=23.98	PASS
	Ant1	5230	13.11	<=23.98	PASS
	Ant2	5230	12.38	<=23.98	PASS
	total	5230	15.77	<=23.98	PASS
	Ant1	5755	12.11	<=30	PASS
	Ant2	5755	9.39	<=30	PASS
	total	5755	13.97	<=30	PASS
	Ant1	5795	11.99	<=30	PASS
	Ant2	5795	9.12	<=30	PASS
	total	5795	13.80	<=30	PASS
11AC80MIMO	Ant1	5210	12.08	<=23.98	PASS
	Ant2	5210	11.76	<=23.98	PASS
	total	5210	14.93	<=23.98	PASS
	Ant1	5775	10.95	<=30	PASS
	Ant2	5775	8.29	<=30	PASS
	total	5775	12.83	<=30	PASS

Note: 1. Conducted Power=Meas. Level+ Correction Factor

2. The Duty Cycle Factor (refer to section 7.1) had already compensated to the test data.



**12.5. Appendix C: Maximum power spectral density**  
**12.5.1. Test Result**

Test Mode	Antenna	Channel	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	4.74	<=11	PASS
	Ant2	5180	6.03	<=11	PASS
	Ant1	5200	5.32	<=11	PASS
	Ant2	5200	6.42	<=11	PASS
	Ant1	5240	5.47	<=11	PASS
	Ant2	5240	6.45	<=11	PASS
	Ant1	5745	1.57	<=30	PASS
	Ant2	5745	1.76	<=30	PASS
	Ant1	5785	2.06	<=30	PASS
	Ant2	5785	2.36	<=30	PASS
11N20MIMO	Ant1	5825	1.84	<=30	PASS
	Ant2	5825	1.7	<=30	PASS
	Ant1	5180	3.87	<=11	PASS
	Ant2	5180	4.79	<=11	PASS
	total	5180	7.36	<=11	PASS
	Ant1	5200	4.52	<=11	PASS
	Ant2	5200	5.21	<=11	PASS
	total	5200	9.27	<=11	PASS
	Ant1	5240	3.63	<=11	PASS
	Ant2	5240	5.17	<=11	PASS
	total	5240	7.48	<=11	PASS
	Ant1	5745	1.92	<=30	PASS
	Ant2	5745	1.07	<=30	PASS
	total	5745	4.53	<=30	PASS
	Ant1	5785	2.03	<=30	PASS
	Ant2	5785	1.64	<=30	PASS
	total	5785	4.85	<=30	PASS
	Ant1	5825	1.28	<=30	PASS
Ant2	5825	1.35	<=30	PASS	
total	5825	4.33	<=30	PASS	
11N40MIMO	Ant1	5190	-1.52	<=11	PASS
	Ant2	5190	-1.95	<=11	PASS
	total	5190	1.28	<=11	PASS
	Ant1	5230	-1.41	<=11	PASS
	Ant2	5230	-1.83	<=11	PASS
	total	5230	1.40	<=11	PASS
	Ant1	5755	-5.15	<=30	PASS
	Ant2	5755	-7.84	<=30	PASS
	total	5755	-3.28	<=30	PASS
	Ant1	5795	-5.13	<=30	PASS
Ant2	5795	-7.81	<=30	PASS	
total	5795	-3.26	<=30	PASS	
11AC20MIMO	Ant1	5180	2.73	<=11	PASS
	Ant2	5180	3.09	<=11	PASS
	total	5180	5.92	<=11	PASS
	Ant1	5200	3.06	<=11	PASS
	Ant2	5200	3.09	<=11	PASS
	total	5200	6.09	<=11	PASS
	Ant1	5240	3.43	<=11	PASS
	Ant2	5240	2.89	<=11	PASS
	total	5240	6.18	<=11	PASS
	Ant1	5745	-0.16	<=30	PASS
Ant2	5745	-2.97	<=30	PASS	

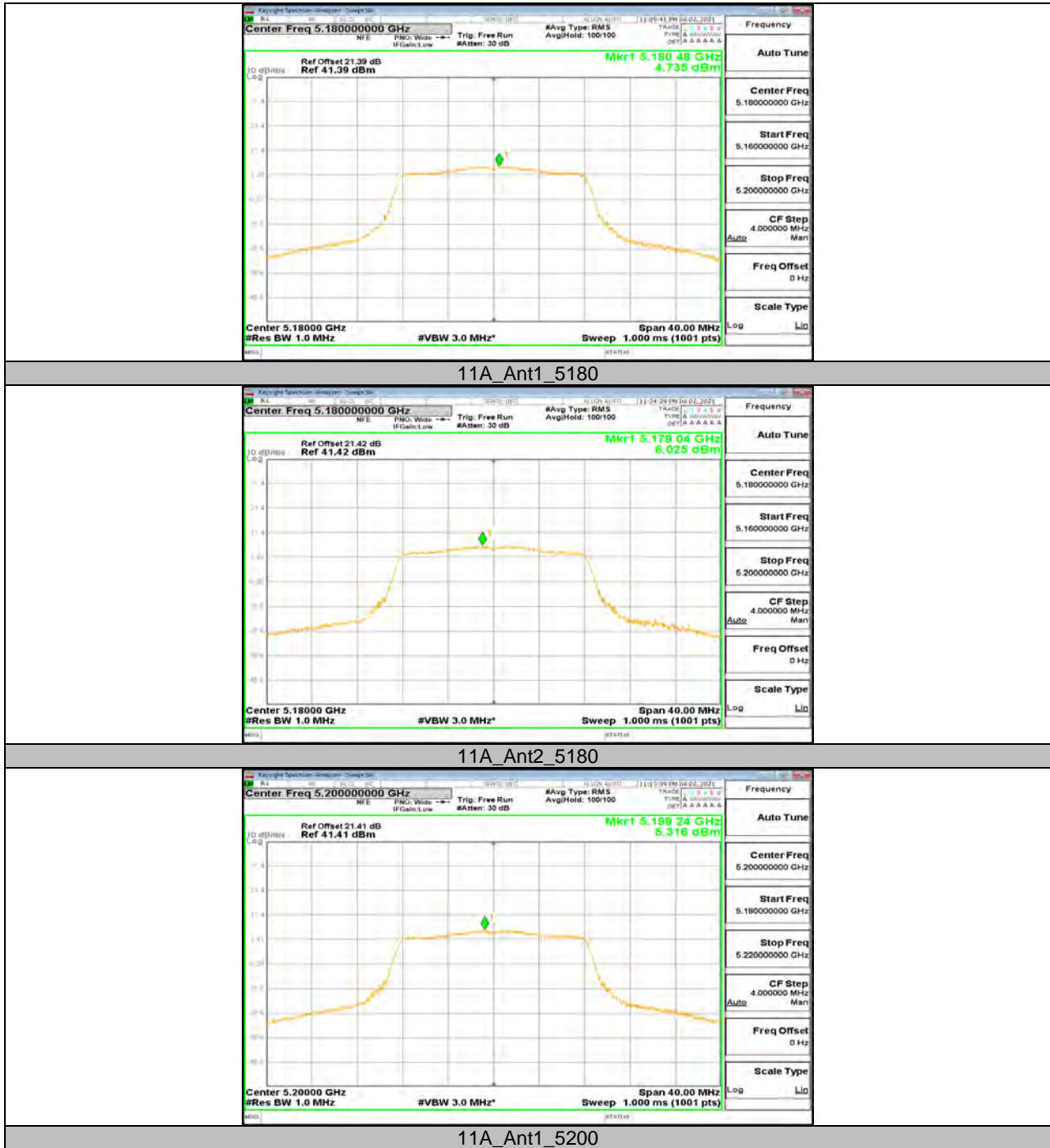




	total	5745	1.67	<=30	PASS
	Ant1	5785	-0.48	<=30	PASS
	Ant2	5785	-4.05	<=30	PASS
	total	5785	1.10	<=30	PASS
	Ant1	5825	-0.85	<=30	PASS
	Ant2	5825	-3.27	<=30	PASS
11AC40MIMO	total	5825	1.12	<=30	PASS
	Ant1	5190	-1.2	<=11	PASS
	Ant2	5190	-1.64	<=11	PASS
	total	5190	1.60	<=11	PASS
	Ant1	5230	-1.12	<=11	PASS
	Ant2	5230	-1.25	<=11	PASS
	total	5230	1.83	<=11	PASS
	Ant1	5755	-5.07	<=30	PASS
	Ant2	5755	-7.64	<=30	PASS
	total	5755	-3.16	<=30	PASS
	Ant1	5795	-4.71	<=30	PASS
	Ant2	5795	-7.29	<=30	PASS
11AC80MIMO	total	5795	-2.80	<=30	PASS
	Ant1	5210	-5.21	<=11	PASS
	Ant2	5210	-5.55	<=11	PASS
	total	5210	-2.37	<=11	PASS
	Ant1	5775	-9.21	<=30	PASS
	Ant2	5775	-11.61	<=30	PASS
	total	5775	-7.24	<=30	PASS

Note : 1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.  
2.The Duty Cycle Factor and RBW Factor is compensated in the graph.

### 12.5.2. Test Graphs

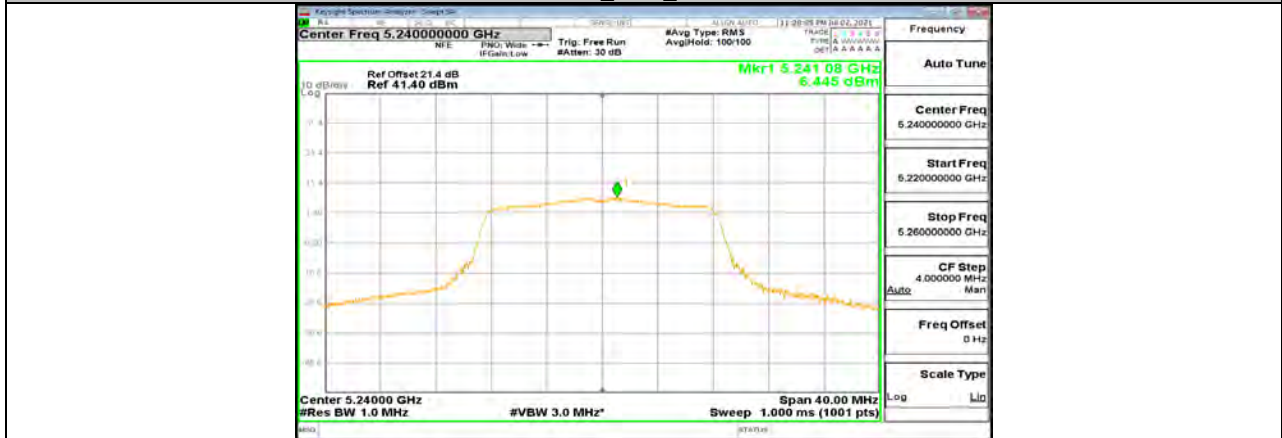




11A\_Ant2\_5200



11A\_Ant1\_5240



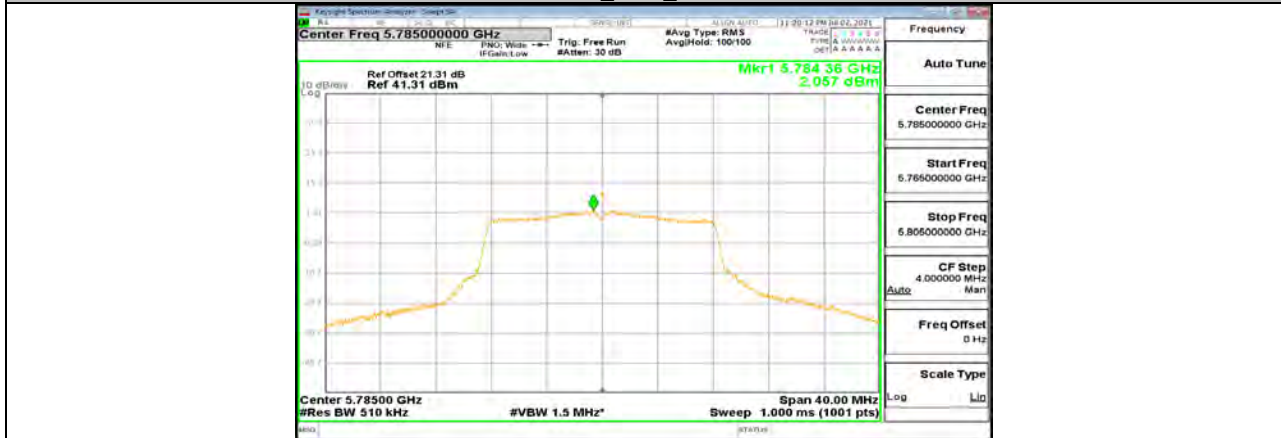
11A\_Ant2\_5240



11A\_Ant1\_5745



11A\_Ant2\_5745



11A\_Ant1\_5785





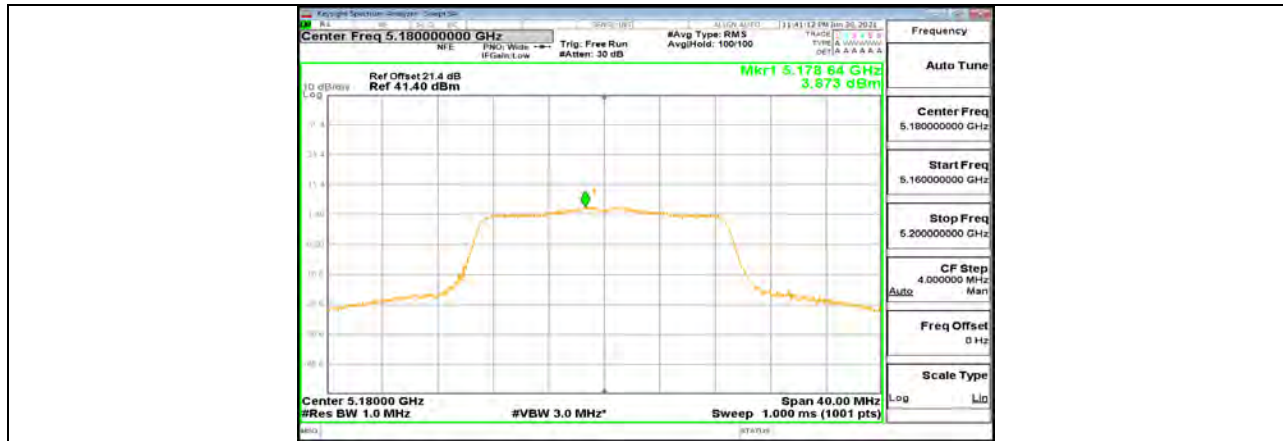
11A\_Ant2\_5785



11A\_Ant1\_5825



11A\_Ant2\_5825



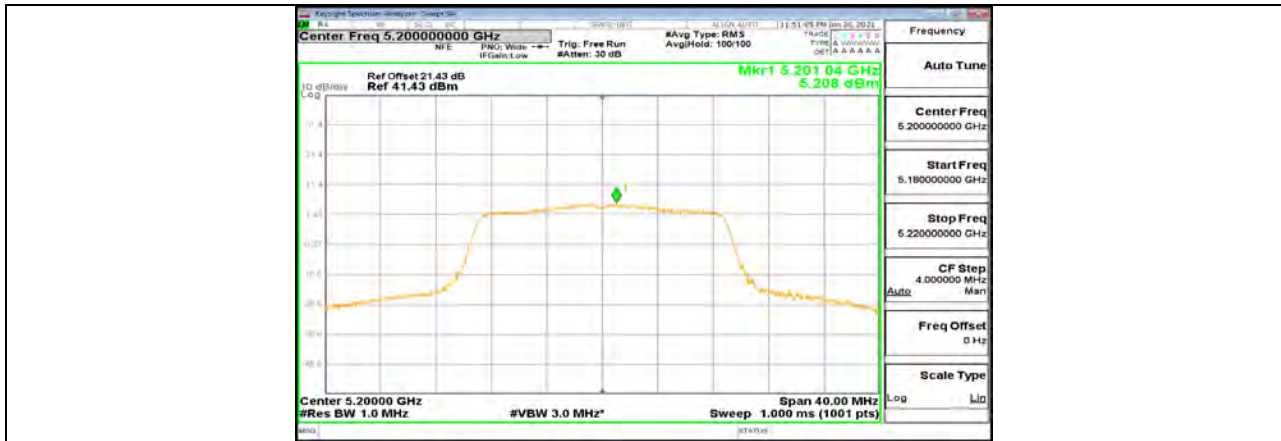
11N20MIMO\_Ant1\_5180



11N20MIMO\_Ant2\_5180



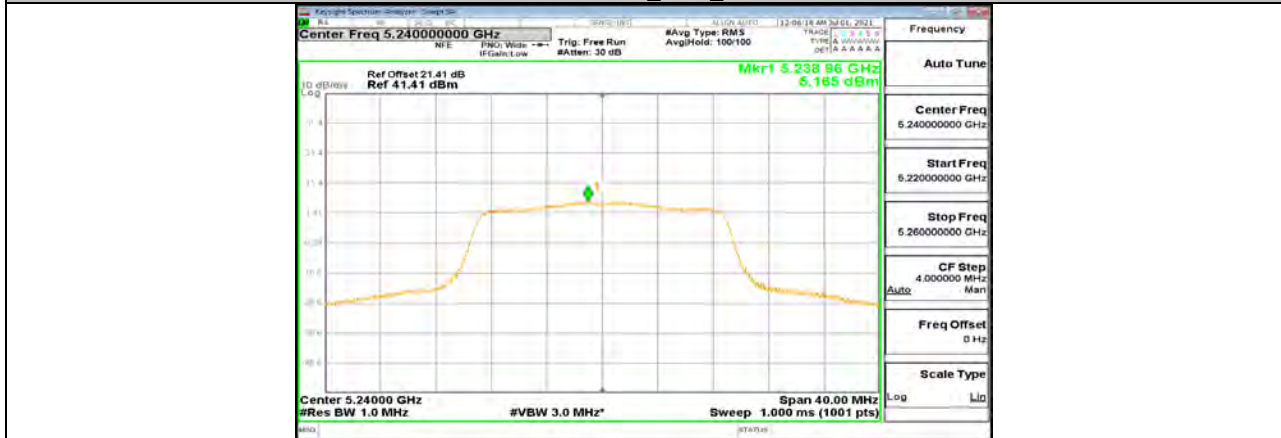
11N20MIMO\_Ant1\_5200



11N20MIMO\_Ant2\_5200



11N20MIMO\_Ant1\_5240



11N20MIMO\_Ant2\_5240



11N20MIMO\_Ant1\_5745

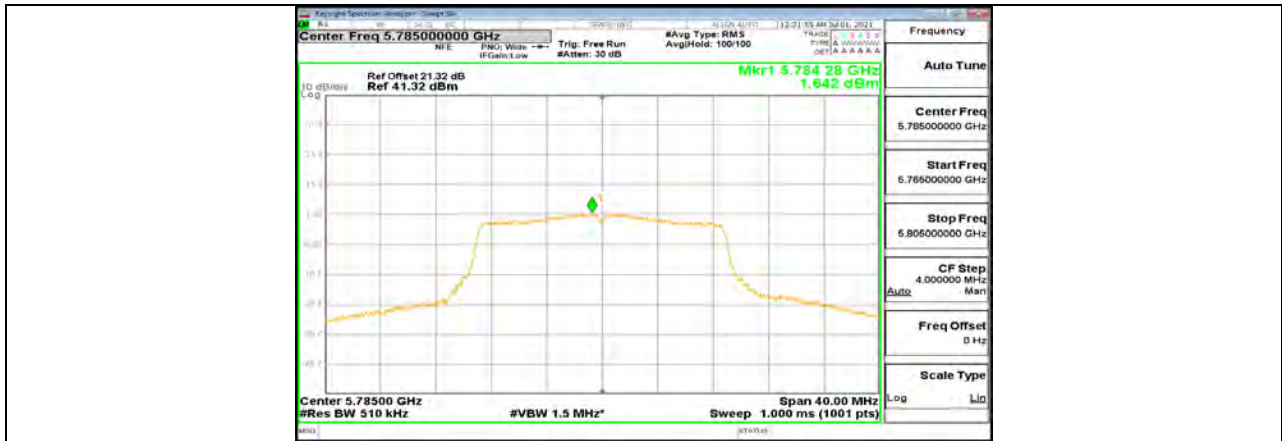


11N20MIMO\_Ant2\_5745



11N20MIMO\_Ant1\_5785





11N20MIMO\_Ant2\_5785



11N20MIMO\_Ant1\_5825



11N20MIMO\_Ant2\_5825



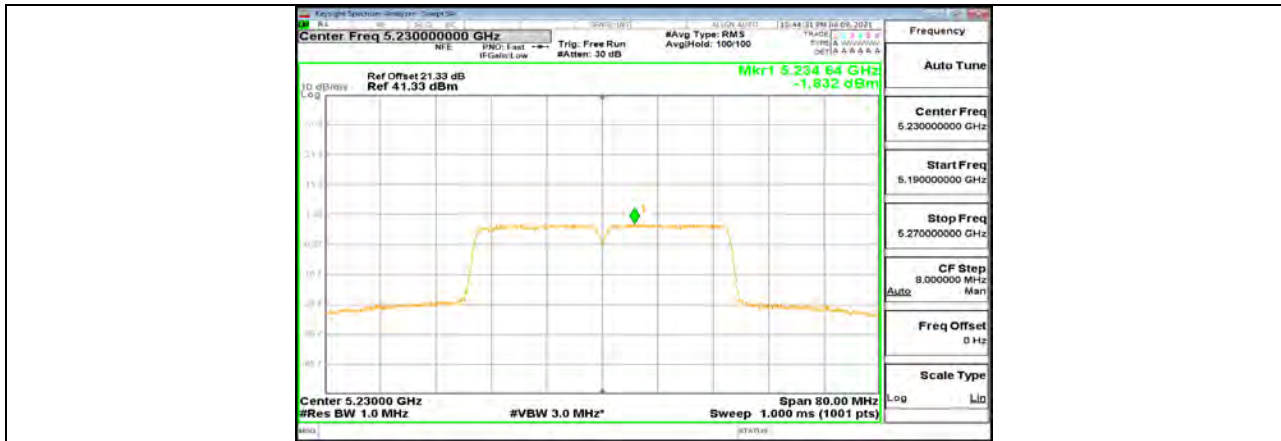
11N40MIMO\_Ant1\_5190



11N40MIMO\_Ant2\_5190



11N40MIMO\_Ant1\_5230



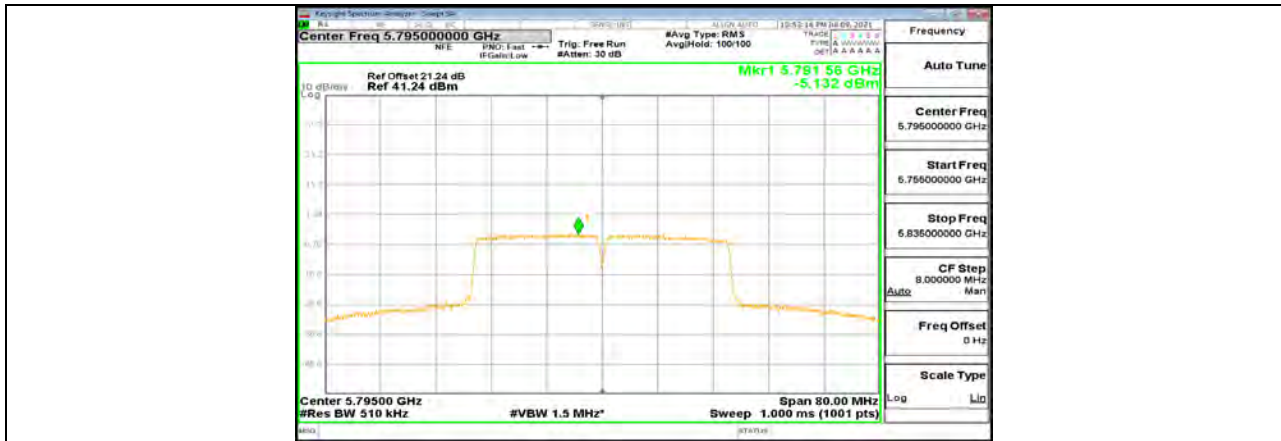
11N40MIMO\_Ant2\_5230



11N40MIMO\_Ant1\_5755



11N40MIMO\_Ant2\_5755



11N40MIMO\_Ant1\_5795

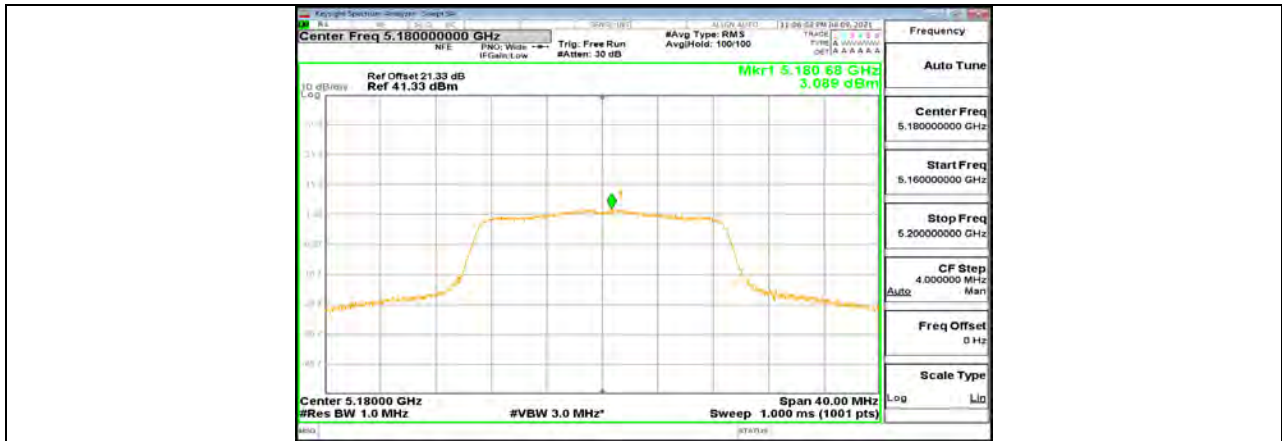


11N40MIMO\_Ant2\_5795



11AC20MIMO\_Ant1\_5180





11AC20MIMO\_Ant2\_5180



11AC20MIMO\_Ant1\_5200



11AC20MIMO\_Ant2\_5200



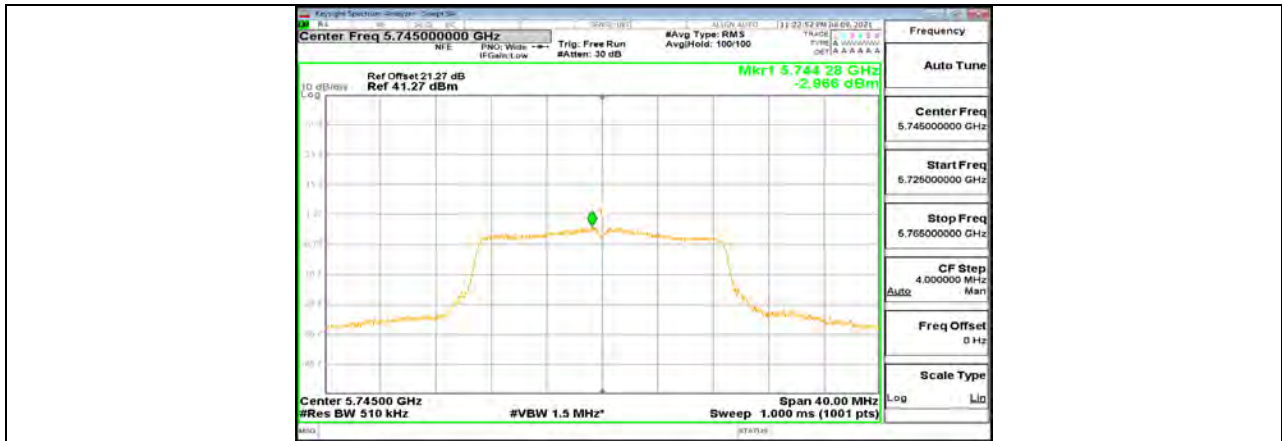
11AC20MIMO\_Ant1\_5240



11AC20MIMO\_Ant2\_5240



11AC20MIMO\_Ant1\_5745



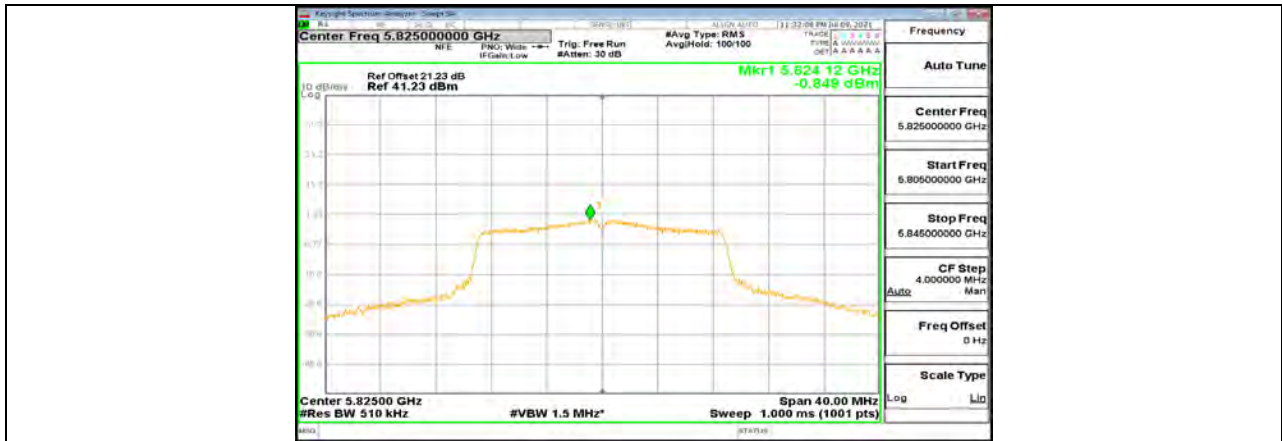
11AC20MIMO\_Ant2\_5745



11AC20MIMO\_Ant1\_5785



11AC20MIMO\_Ant2\_5785



11AC20MIMO\_Ant1\_5825



11AC20MIMO\_Ant2\_5825



11AC40MIMO\_Ant1\_5190





11AC40MIMO\_Ant2\_5190



11AC40MIMO\_Ant1\_5230



11AC40MIMO\_Ant2\_5230



11AC40MIMO\_Ant1\_5755



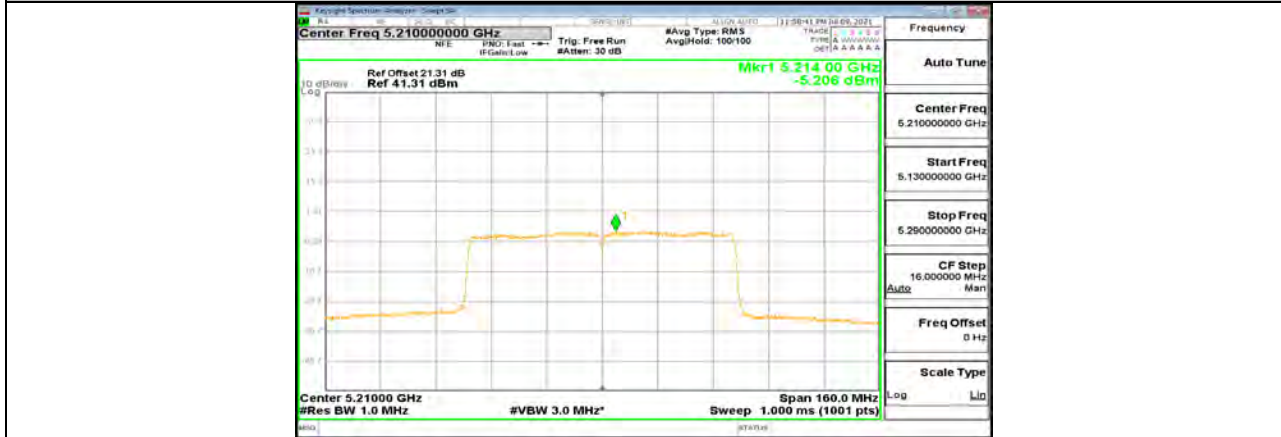
11AC40MIMO\_Ant2\_5755



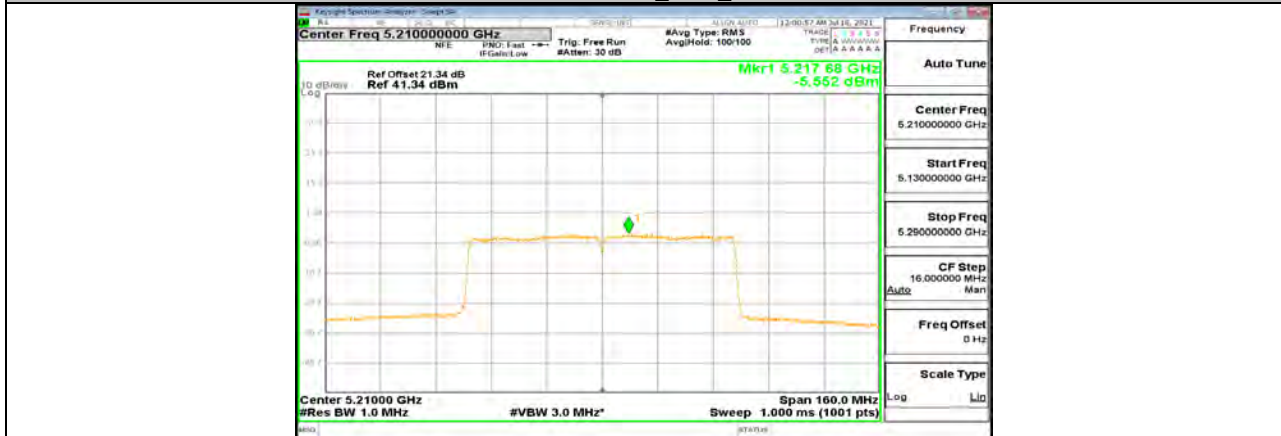
11AC40MIMO\_Ant1\_5795



11AC40MIMO\_Ant2\_5795



11AC80MIMO\_Ant1\_5210



11AC80MIMO\_Ant2\_5210



11AC80MIMO\_Ant1\_5775



11AC80MIMO\_Ant2\_5775





## 12.6. Appendix D: Duty Cycle

### 12.6.1. Test Result

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
11A	1.40	1.44	0.9722	97.22	0.12	0.71	1
11N20MIMO	1.31	1.35	0.9704	97.04	0.13	0.76	1
11N40MIMO	1.54	1.56	0.9872	98.72	0.06	0.65	0.01
11AC20MIMO	1.93	1.95	0.9897	98.97	0.04	0.52	0.01
11AC40MIMO	1.54	1.56	0.9872	98.72	0.06	0.65	0.01
11AC80MIMO	2.24	2.26	0.9912	99.12	0.04	0.45	0.01

Note:

Duty Cycle Correction Factor=10log (1/x).

Where: x is Duty Cycle (Linear)

Where: T is On Time

If that calculated VBW is not available on the analyzer then the next higher value should be used.

### 12.6.2. Test Graphs





11AC20MIMO\_Ant1\_5180



11AC40MIMO\_Ant1\_5190



11AC80MIMO\_Ant1\_5210



## 12.7. Appendix E: FREQUENCY STABILITY

Frequency Error vs. Voltage									
802.11a:5200MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	
		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
TN	VL	5200.0069	1.32	5199.9911	-1.71	5200.0131	2.53	5200.0234	4.50
TN	VN	5199.9851	-2.86	5199.9867	-2.56	5200.0128	2.46	5200.0199	3.83
TN	VH	5200.0248	4.77	5200.0007	0.13	5200.0115	2.22	5199.9998	-0.03
Frequency Error vs. Temperature									
802.11a:5200MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	
		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
45	VN	5199.9962	-0.74	5200.0201	3.87	5199.9825	-3.36	5199.9775	-4.33
40	VN	5199.9770	-4.42	5200.0223	4.28	5199.9978	-0.42	5200.0136	2.61
30	VN	5200.0214	4.12	5199.9949	-0.97	5199.9814	-3.57	5200.0019	0.37
20	VN	5200.0144	2.77	5199.9978	-0.41	5199.9829	-3.29	5200.0134	2.58
10	VN	5199.9782	-4.19	5200.0240	4.62	5200.0189	3.63	5199.9766	-4.49
0	VN	5199.9778	-4.28	5200.0022	0.43	5199.9962	-0.73	5199.9785	-4.13





Frequency Error vs. Voltage									
802.11a:5825MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	
		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
TN	VL	5825.0091	1.56	5825.0210	3.60	5825.0051	0.88	5825.0127	2.18
TN	VN	5825.0040	0.69	5825.0100	1.71	5824.9893	-1.84	5825.0057	0.98
TN	VH	5825.0025	0.43	5824.9996	-0.08	5825.0081	1.40	5824.9866	-2.30

Frequency Error vs. Temperature									
802.11a:5825MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	
		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
45	VN	5824.9954	-0.79	5824.9852	-2.55	5824.9813	-3.21	5824.9993	-0.12
40	VN	5824.9930	-1.20	5824.9915	-1.46	5825.0066	1.14	5825.0163	2.80
30	VN	5824.9796	-3.50	5824.9827	-2.98	5824.9889	-1.90	5825.0041	0.71
20	VN	5825.0184	3.16	5824.9840	-2.74	5825.0089	1.52	5824.9883	-2.00
10	VN	5824.9951	-0.85	5824.9829	-2.94	5824.9946	-0.93	5825.0112	1.92
0	VN	5824.9994	-0.10	5825.0096	1.64	5825.0213	3.65	5824.9755	-4.20

Note: All antennas and test modes have been tested, only the worst data record in the report.

**END OF REPORT**