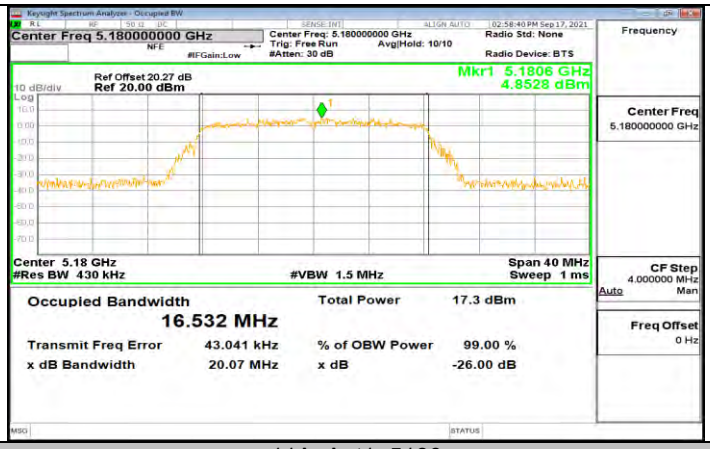
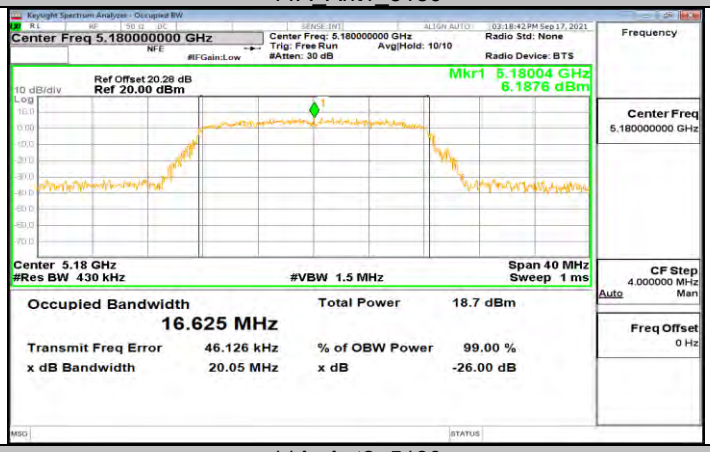
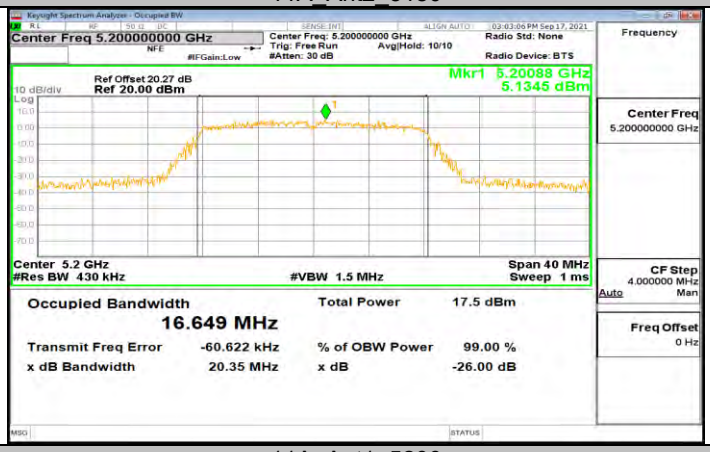
11.2.2. Test Graphs



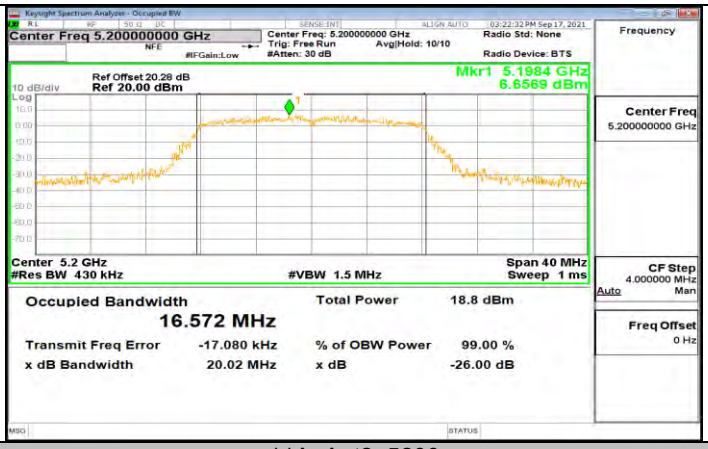
11A_Ant1_5180



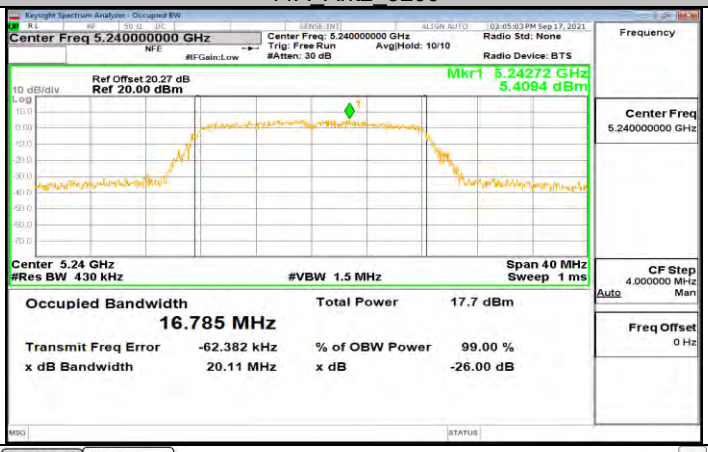
11A_Ant2_5180



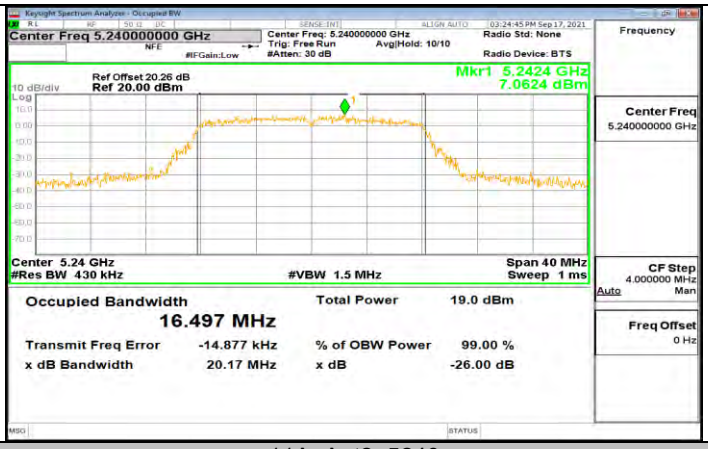
11A_Ant1_5200



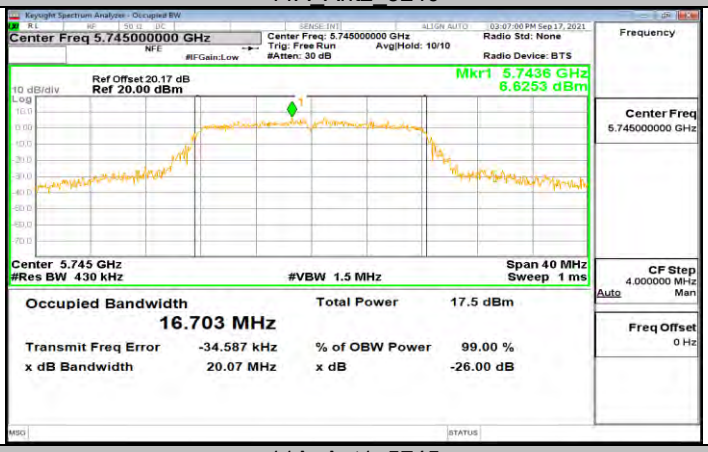
11A_Ant2_5200



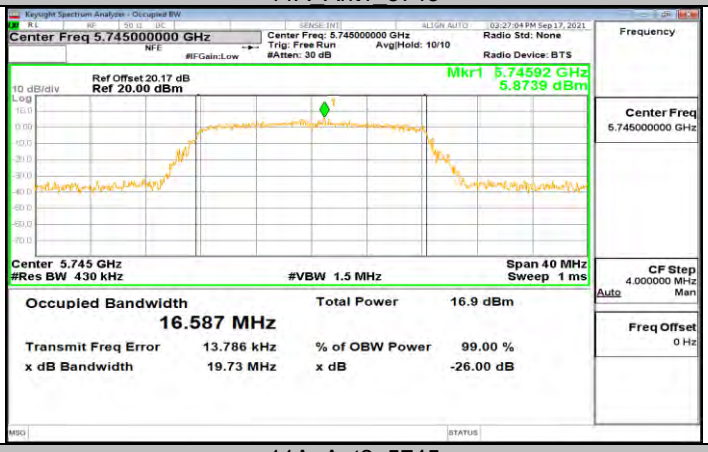
11A_Ant1_5240



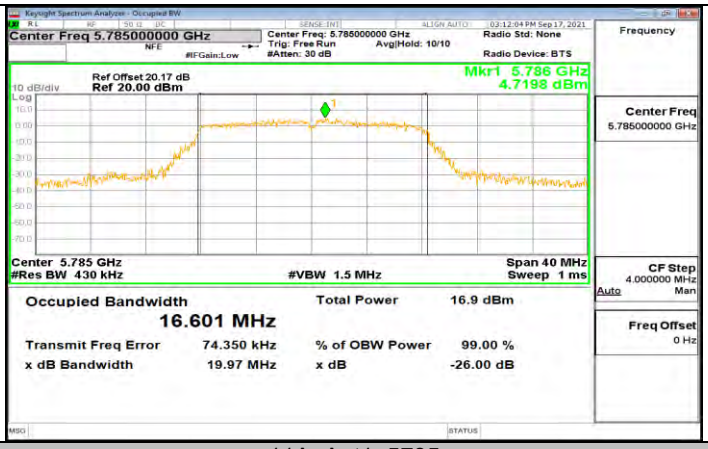
11A_Ant2_5240



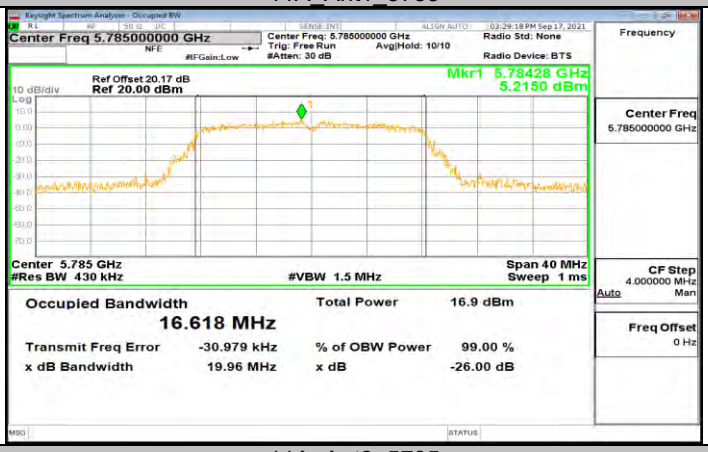
11A_Ant1_5745



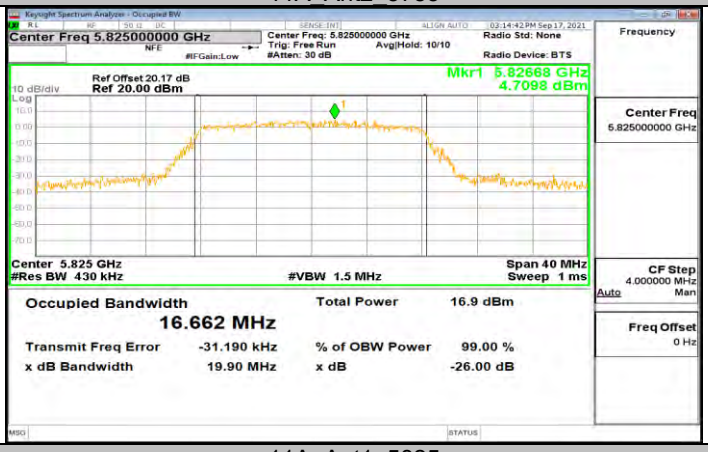
11A_Ant2_5745



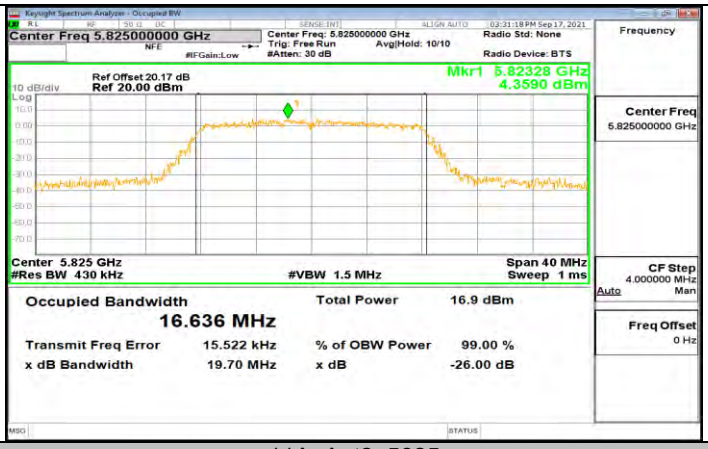
11A_Ant1_5785



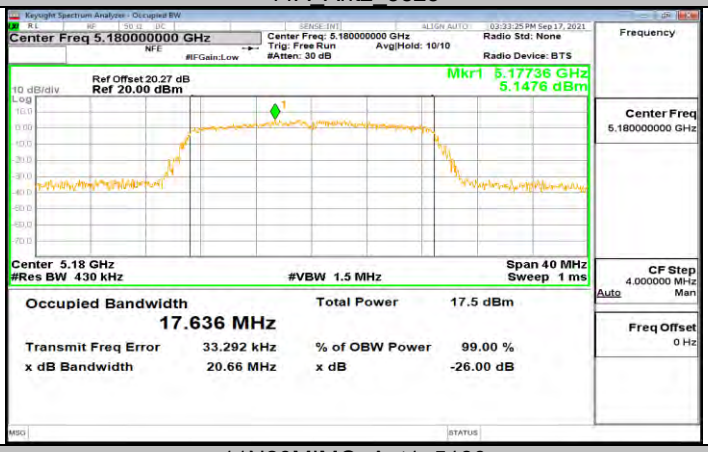
11A_Ant2_5785



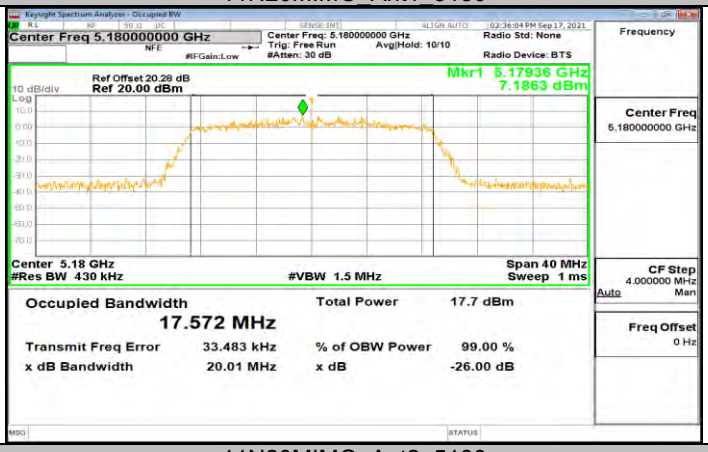
11A_Ant1_5825



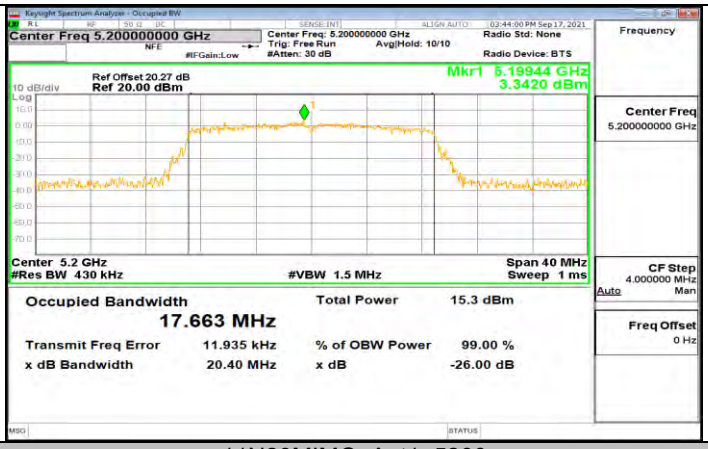
11A_Ant2_5825



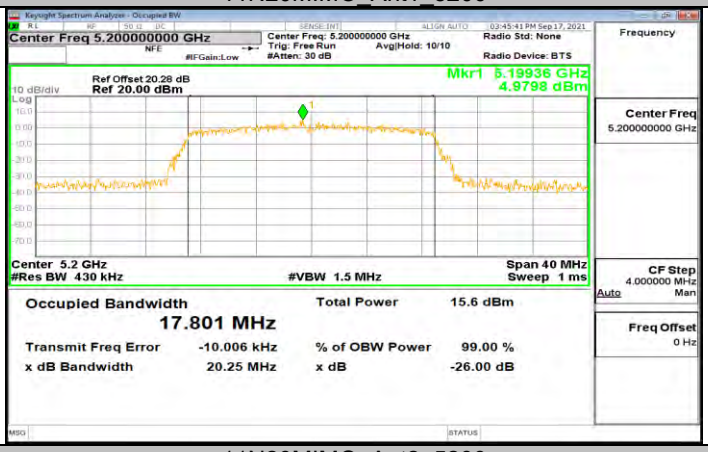
11N20MIMO_Ant1_5180



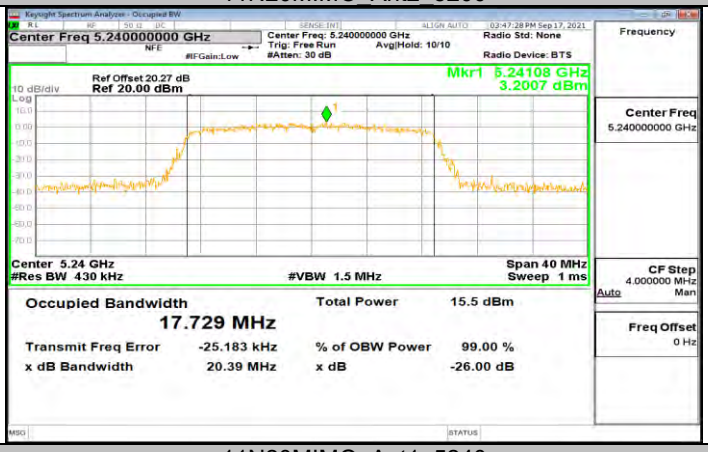
11N20MIMO_Ant2_5180



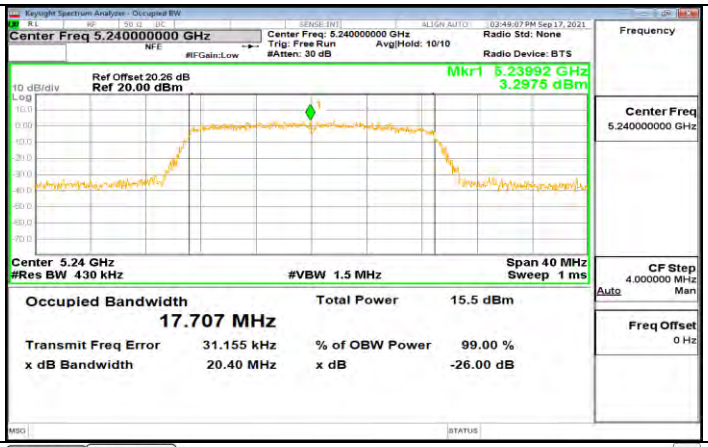
11N20MIMO_Ant1_5200



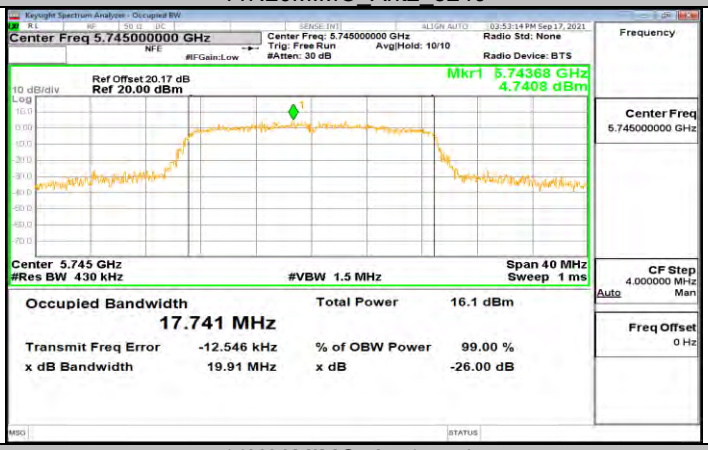
11N20MIMO_Ant2_5200



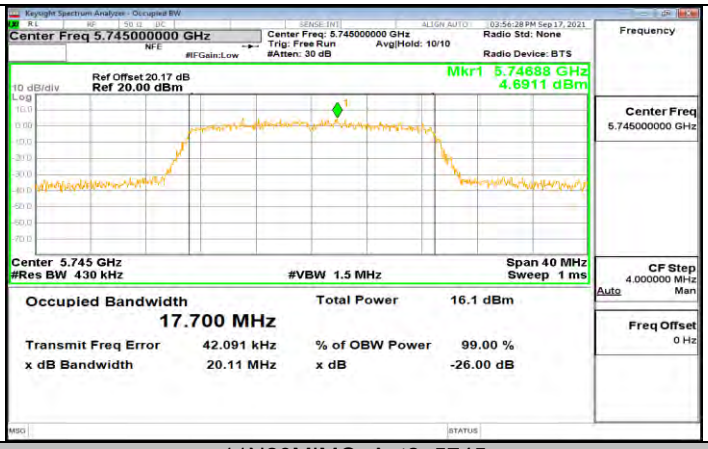
11N20MIMO_Ant1_5240



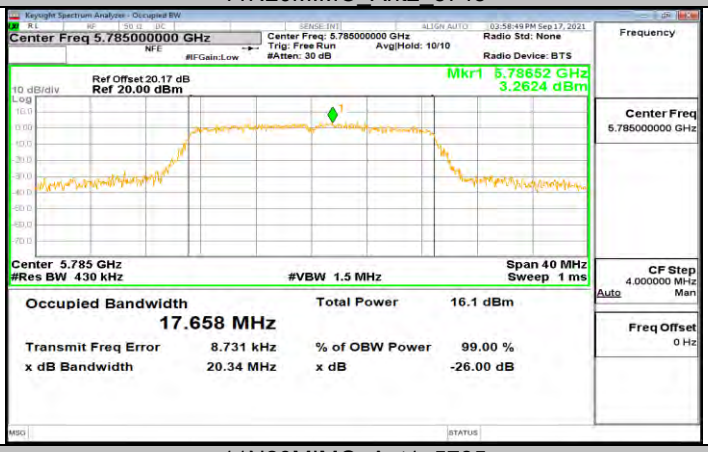
11N20MIMO_Ant2_5240



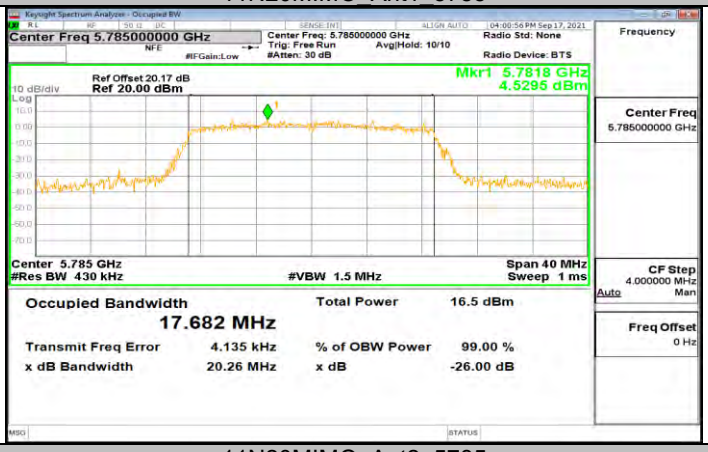
11N20MIMO_Ant1_5745



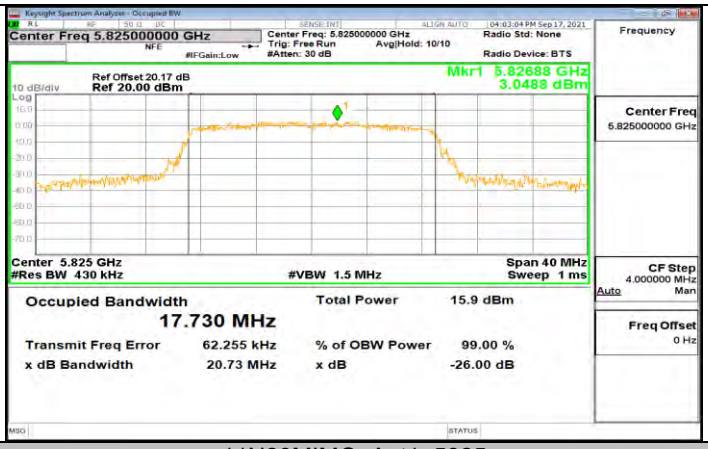
11N20MIMO_Ant2_5745



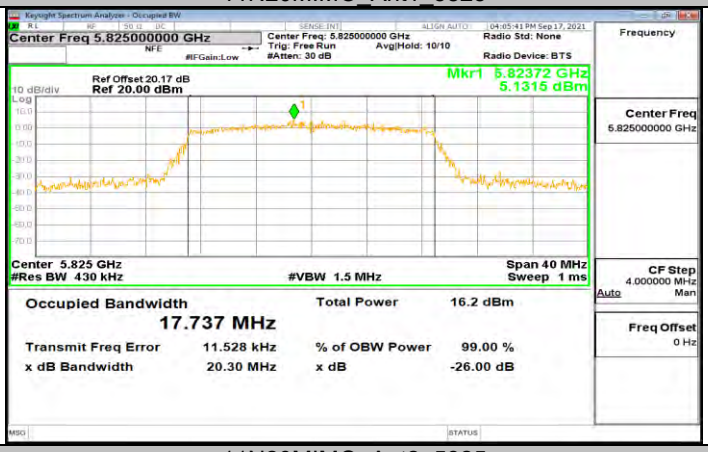
11N20MIMO_Ant1_5785



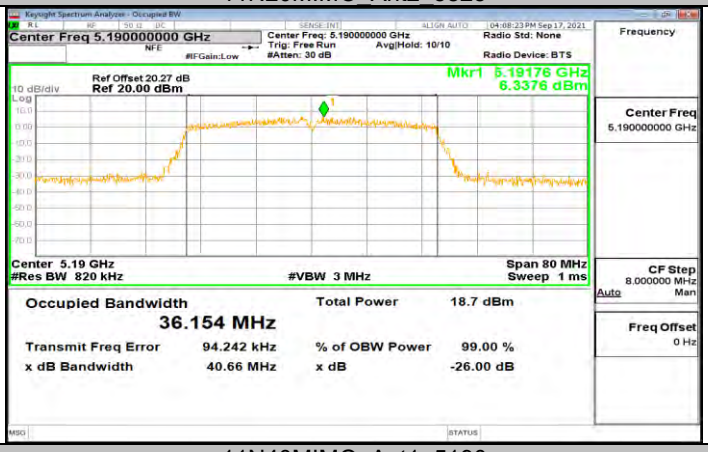
11N20MIMO_Ant2_5785



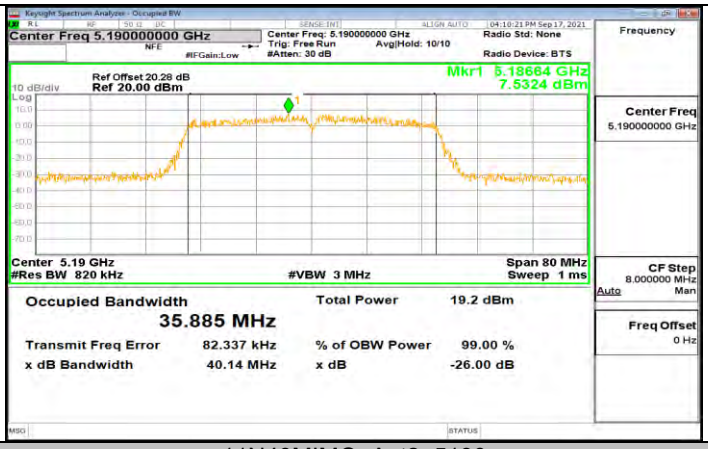
11N20MIMO_Ant1_5825



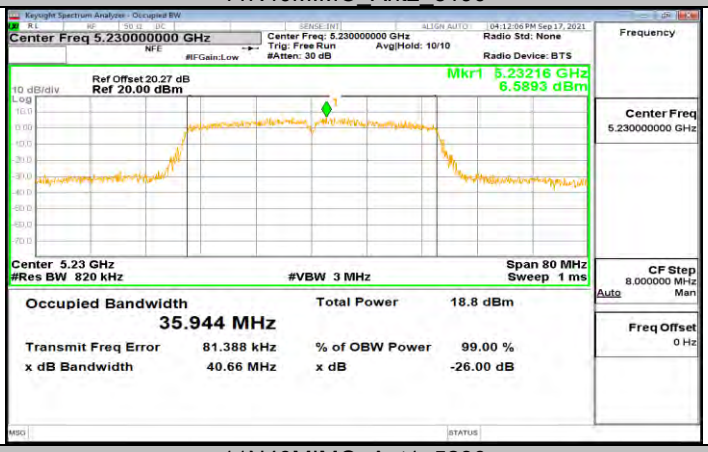
11N20MIMO_Ant2_5825



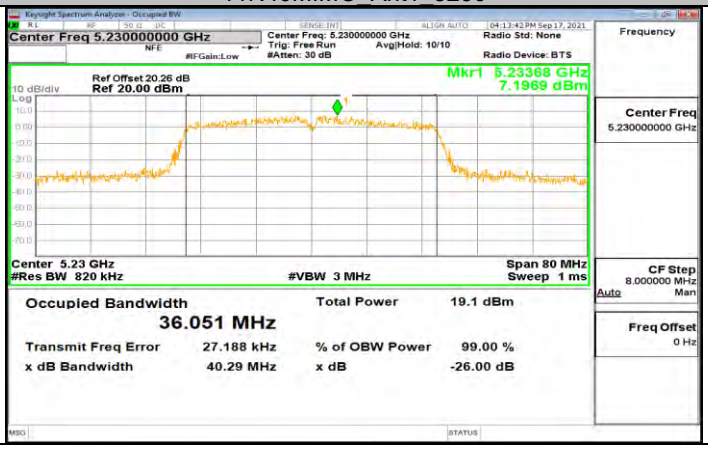
11N40MIMO_Ant1_5190

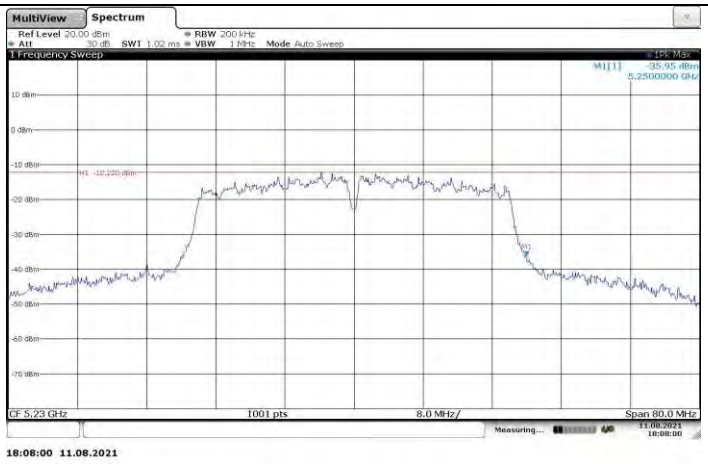


11N40MIMO_Ant2_5190

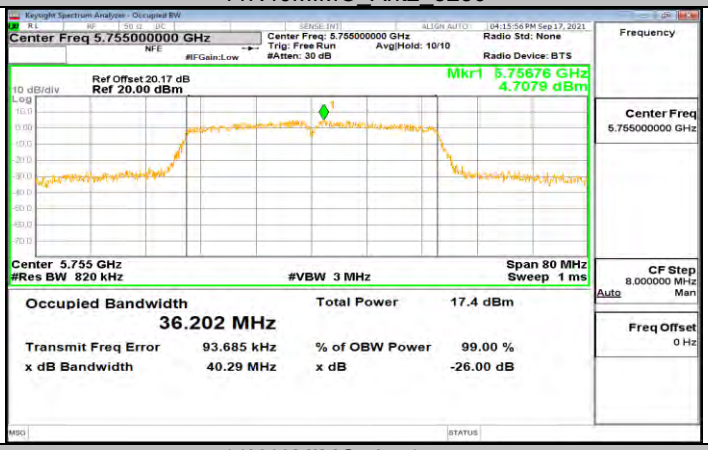


11N40MIMO_Ant1_5230

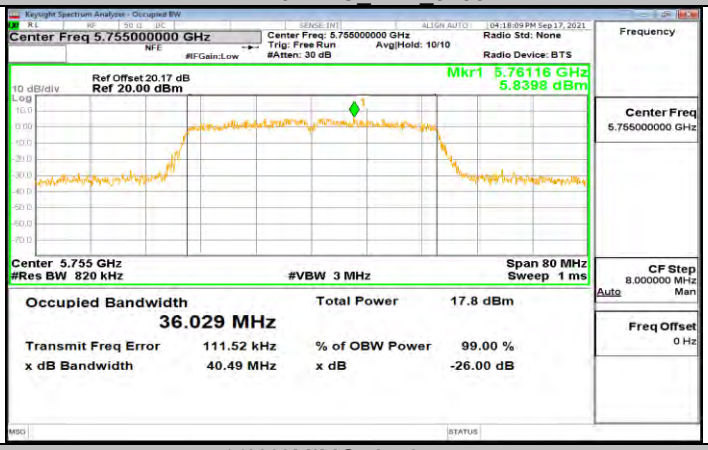




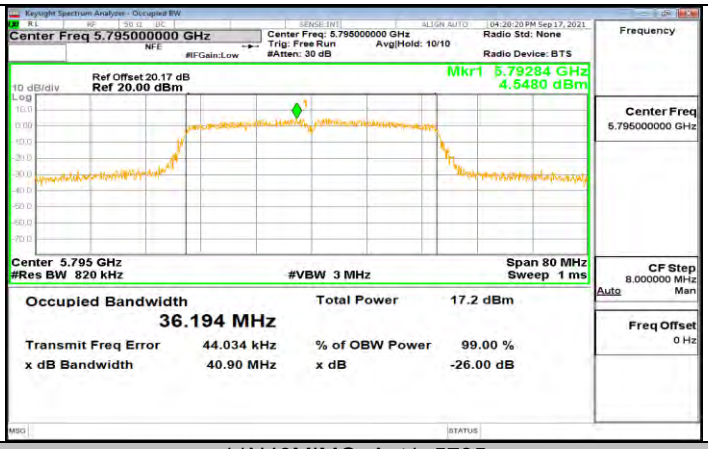
11N40MIMO_Ant2_5230



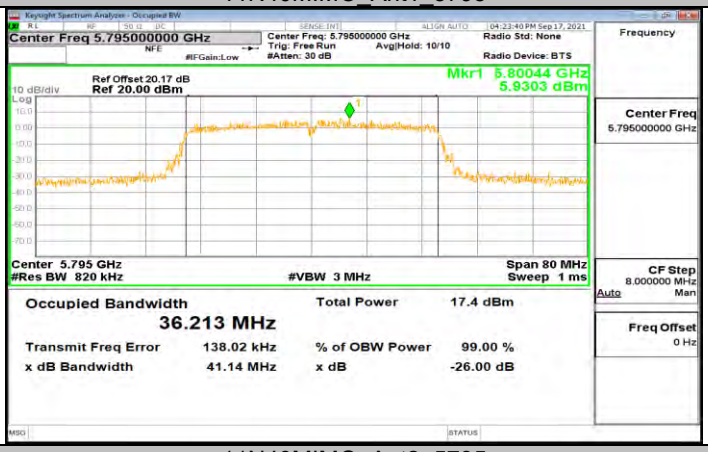
11N40MIMO_Ant1_5755



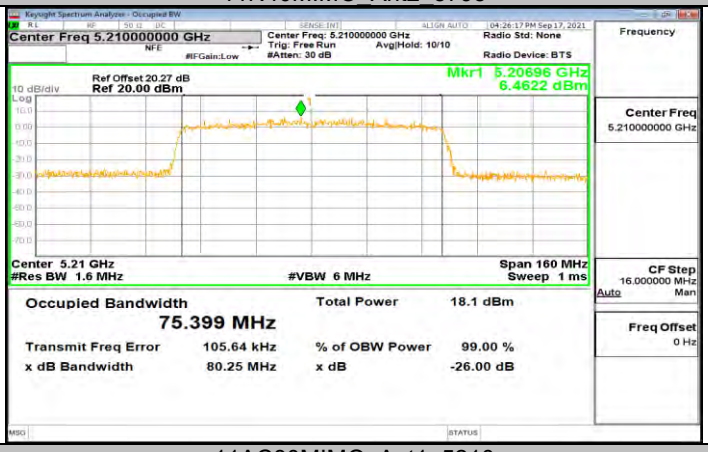
11N40MIMO_Ant2_5755



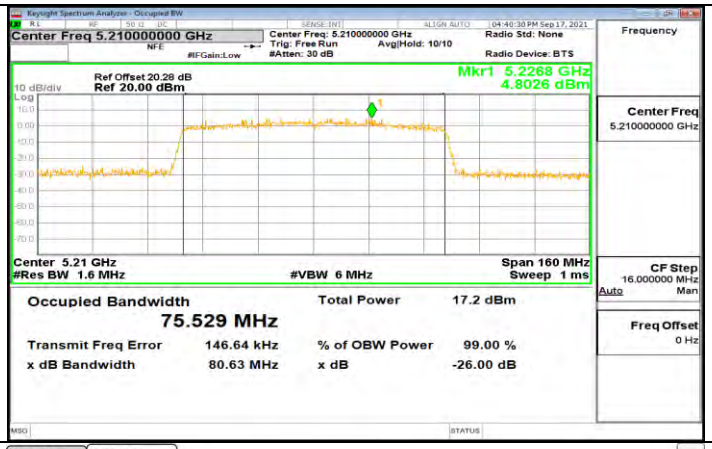
11N40MIMO_Ant1_5795

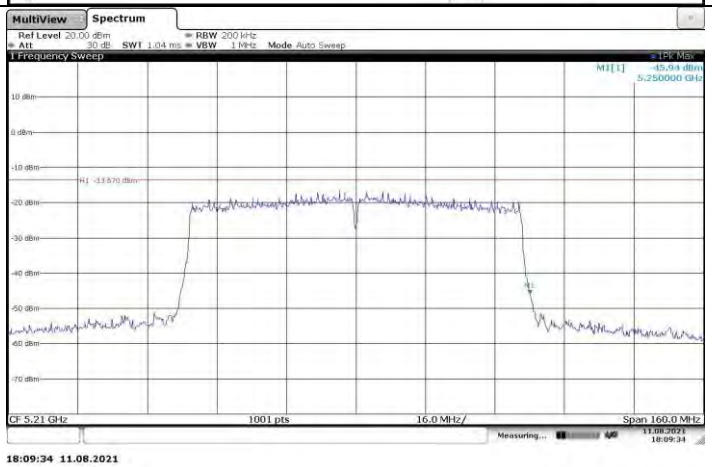


11N40MIMO_Ant2_5795

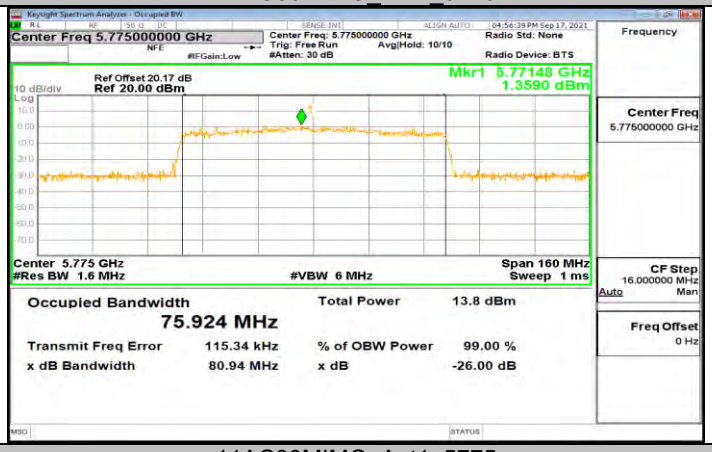


11AC80MIMO_Ant1_5210

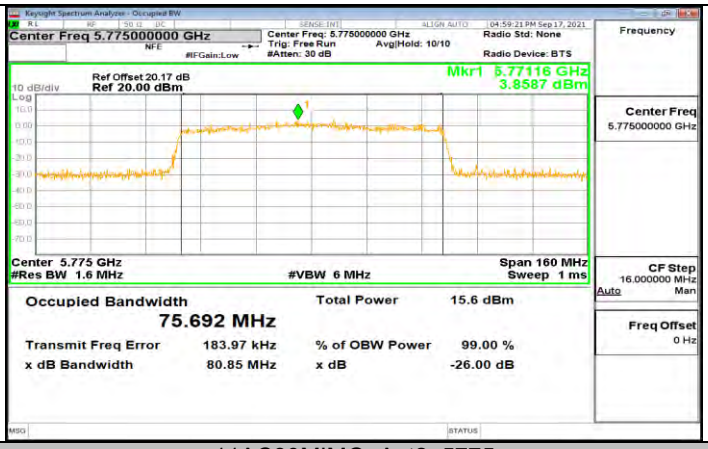




11AC80MIMO_Ant2_5210



11AC80MIMO_Ant1_5775



11AC80MIMO_Ant2_5775

Note: 1. About the channel power, please refer to the appendix B.
2. All the antenna port had been tested, but only the worst data was recorded in the report.

11.3. Appendix A3: Minimum Emission Bandwidth

11.3.1. Test Result

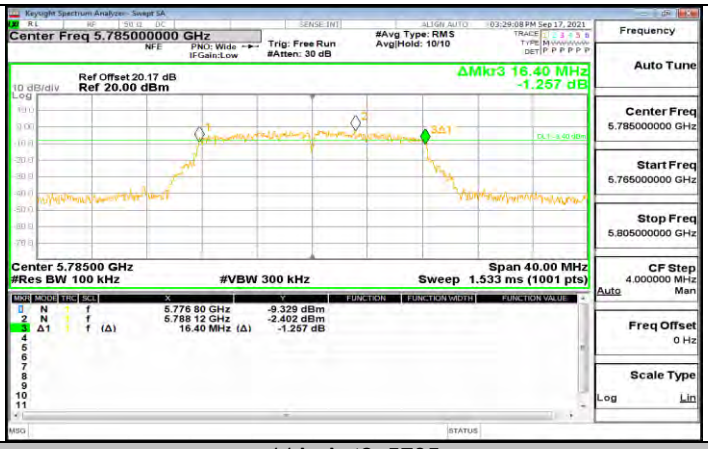
Test Mode	Antenna	Channel	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A 20	Ant1	5745	16.360	5736.840	5753.200	0.5	PASS
	Ant2	5745	16.520	5736.760	5753.280	0.5	PASS
	Ant1	5785	16.400	5776.800	5793.200	0.5	PASS
	Ant2	5785	16.400	5776.800	5793.200	0.5	PASS
	Ant1	5825	16.400	5816.800	5833.200	0.5	PASS
	Ant2	5825	16.160	5817.040	5833.200	0.5	PASS
11N20MIMO	Ant1	5745	17.440	5736.160	5753.600	0.5	PASS
	Ant2	5745	17.560	5736.240	5753.800	0.5	PASS
	Ant1	5785	17.680	5776.160	5793.840	0.5	PASS
	Ant2	5785	17.640	5776.200	5793.840	0.5	PASS
	Ant1	5825	17.680	5816.160	5833.840	0.5	PASS
	Ant2	5825	16.800	5816.560	5833.360	0.5	PASS
11N40MIMO	Ant1	5755	35.520	5736.760	5772.280	0.5	PASS
	Ant2	5755	36.080	5736.760	5772.840	0.5	PASS
	Ant1	5795	36.480	5776.760	5813.240	0.5	PASS
	Ant2	5795	36.080	5777.160	5813.240	0.5	PASS
11AC80MIMO	Ant1	5775	75.520	5737.240	5812.760	0.5	PASS
	Ant2	5775	75.360	5737.400	5812.760	0.5	PASS

11.3.2. Test Graphs

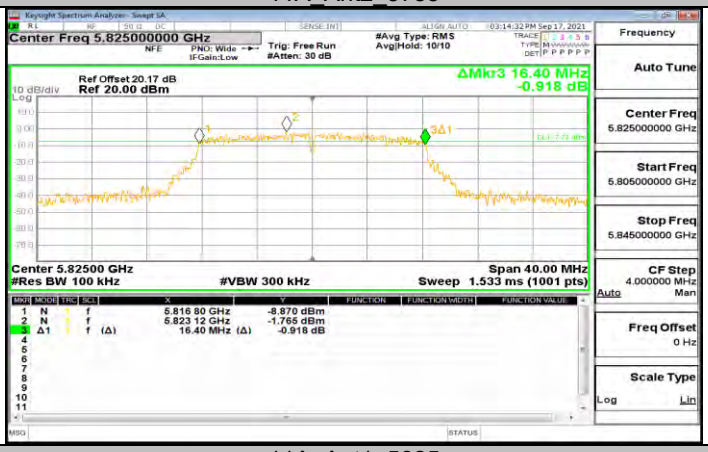
11A_Ant1_5745

11A_Ant2_5745

11A_Ant1_5785



11A_Ant2_5785



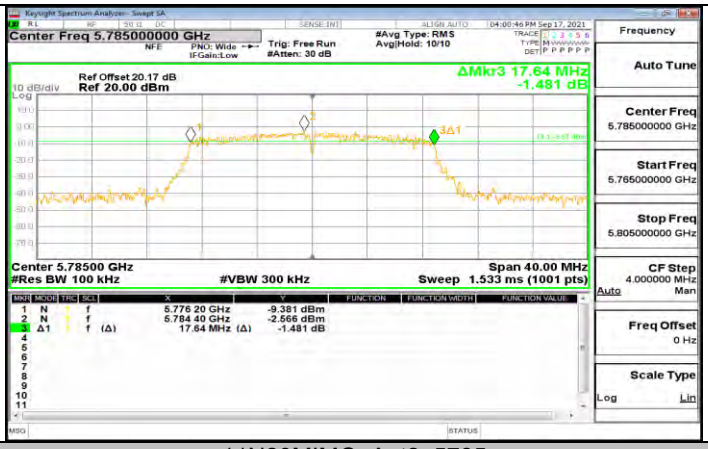
11A_Ant1_5825

11A_Ant2_5825

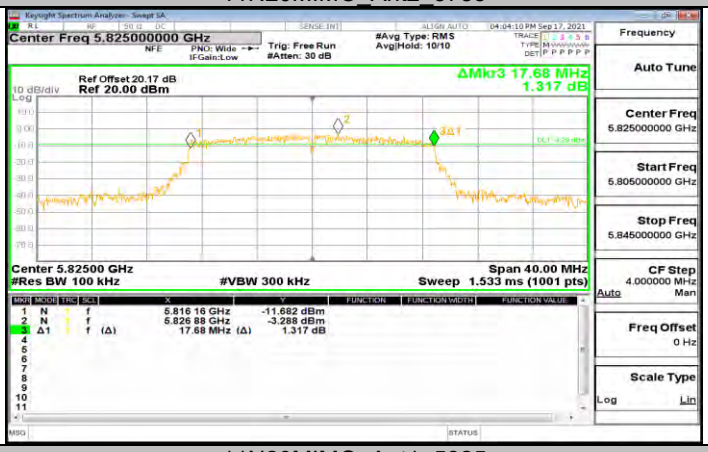
11N20MIMO_Ant1_5745

11N20MIMO_Ant2_5745

11N20MIMO_Ant1_5785



11N20MIMO_Ant2_5785



11N20MIMO_Ant1_5825

11N20MIMO_Ant2_5825

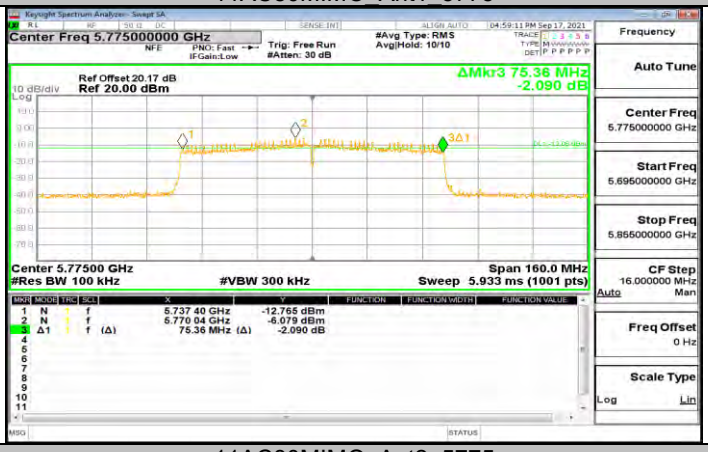
11N40MIMO_Ant1_5755

11N40MIMO_Ant2_5755

11N40MIMO_Ant1_5795

11N40MIMO_Ant2_5795

11AC80MIMO_Ant1_5775



11AC80MIMO_Ant2_5775

11.4. Appendix B: Maximum Average Conducted Output Power

11.4.1. Test Result

Mode	Frequency (MHz)	Average Power (dBm)			Directional gain (dBi)	FCC Limit (dBm)	ISED EIRP (dBm)			ISED Limit (dBm)
		ANT1	ANT2	Total			ANT1	ANT2	Total	
802.11a 20	5180	12.69	14.30	/	2.30	24.00	14.99	16.60	/	22.21
	5200	12.73	14.29	/	2.30	24.00	15.03	16.59	/	22.21
	5240	13.09	14.22	/	2.30	24.00	15.39	16.52	/	22.25
	5745	12.42	12.35	/	2.30	30.00	/	/	/	36.00
	5785	12.62	12.49	/	2.30	30.00	/	/	/	36.00
	5825	12.60	12.46	/	2.30	30.00	/	/	/	36.00
802.11n HT20	5180	11.01	10.99	14.01	2.30	24.00	/	/	16.31	22.50
	5200	10.86	11.17	14.03	2.30	24.00	/	/	16.33	22.50
	5240	11.02	11.01	14.03	2.30	24.00	/	/	16.33	22.50
	5745	11.52	11.69	14.62	2.30	30.00	/	/	/	36.00
	5785	11.57	11.86	14.73	2.30	30.00	/	/	/	36.00
	5825	11.46	11.76	14.62	2.30	30.00	/	/	/	36.00
802.11n HT40	5190	13.33	13.66	16.51	2.30	24.00	/	/	18.81	23.00
	5230	13.55	13.78	16.68	2.30	24.00	/	/	18.98	23.00
	5755	12.00	12.28	15.15	2.30	30.00	/	/	/	36.00
	5795	12.03	12.13	15.09	2.30	30.00	/	/	/	36.00
802.11ac VHT80	5210	12.34	12.33	15.35	2.30	24.00	/	/	17.65	23.00
	5775	8.25	9.80	12.10	2.30	30.00	/	/	/	36.00

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.

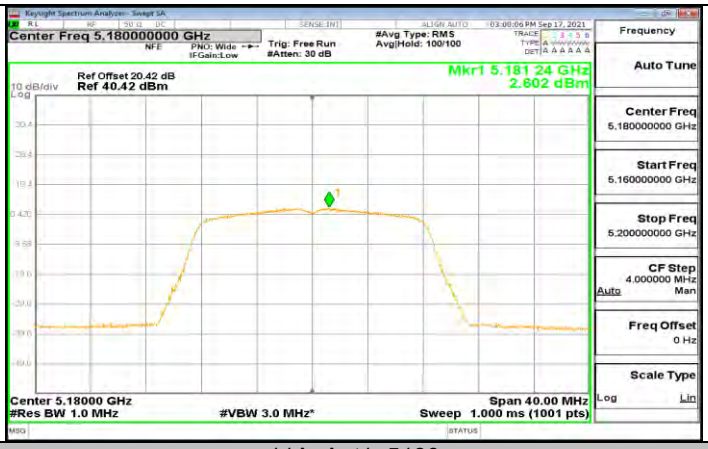
11.5. Appendix C: Maximum Power Spectral Density

11.5.1. Test Result

Mode	Frequency (MHz)	PSD 5150-5725MHz (dBm/MHz) 5725-5850MHz (dBm/500kHz)			Directional gain (dBi)	FCC Limit 5150-5725 MHz (dBm/MHz) 5725-5850 MHz (dBm/500kHz)	PSD EIRP			ISED Limit 5150-5725 MHz (dBm/MHz) 5725-5850 MHz (dBm/500kHz
		ANT1	ANT2	Total			ANT1	ANT2	Total	
802.11a 20	5180	2.602	4.261	/	2.30	11.00	4.902	6.561	/	10.00
	5200	2.824	4.209	/	2.30	11.00	5.121	6.509	/	10.00
	5240	3.280	4.185	/	2.30	11.00	5.580	6.485	/	10.00
	5745	-0.763	-0.789	/	2.30	30.00	/	/	/	30.00
	5785	-0.193	-0.419	/	2.30	30.00	/	/	/	30.00
	5825	-0.583	-0.558	/	2.30	30.00	/	/	/	30.00
802.11n HT20	5180	0.668	0.464	3.577	5.31	11.00	/	/	8.888	10.00
	5200	0.625	0.848	3.752	5.31	11.00	/	/	9.059	10.00
	5240	0.738	0.660	3.710	5.31	11.00	/	/	9.020	10.00
	5745	-1.302	-1.635	1.544	5.31	30.00	/	/	/	30.00
	5785	-1.591	-1.219	1.609	5.31	30.00	/	/	/	30.00
	5825	-1.770	-1.291	1.487	5.31	30.00	/	/	/	30.00
802.11n HT40	5190	0.147	0.587	3.386	5.31	11.00	/	/	8.693	10.00
	5230	0.798	0.597	3.711	5.31	11.00	/	/	9.019	10.00
	5755	-3.975	-3.466	-0.707	5.31	30.00	/	/	/	30.00
	5795	-4.213	-3.894	-1.037	5.31	30.00	/	/	/	30.00
802.11ac VHT80	5210	-3.522	-3.287	-0.393	5.31	11.00	/	/	4.918	10.00
	5775	-12.127	-8.879	-7.198	5.31	30.00	/	/	/	30.00

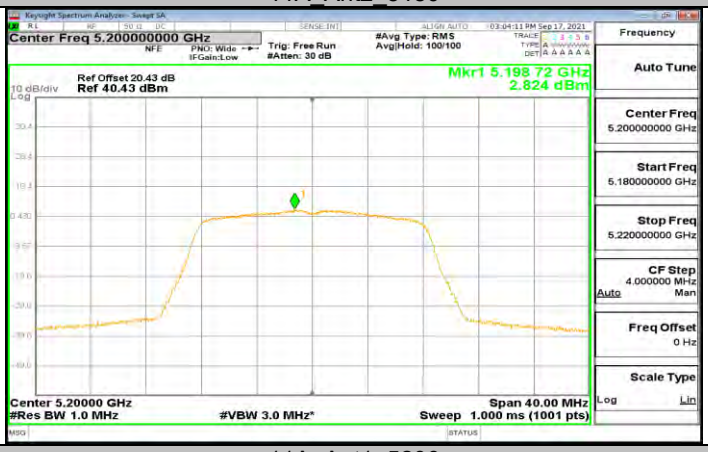
Note: 1. The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.
2. The Duty Cycle Factor and RBW Factor is compensated in the graph.

11.5.2. Test Graphs



11A_Ant1_5180

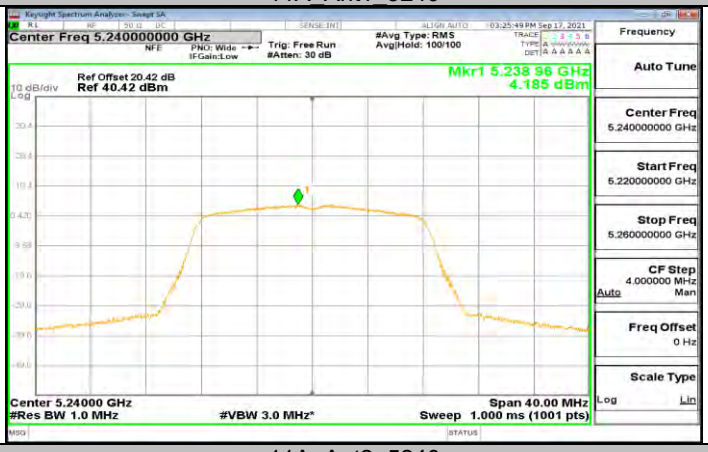
11A_Ant2_5180



11A_Ant1_5200

11A_Ant2_5200

11A_Ant1_5240



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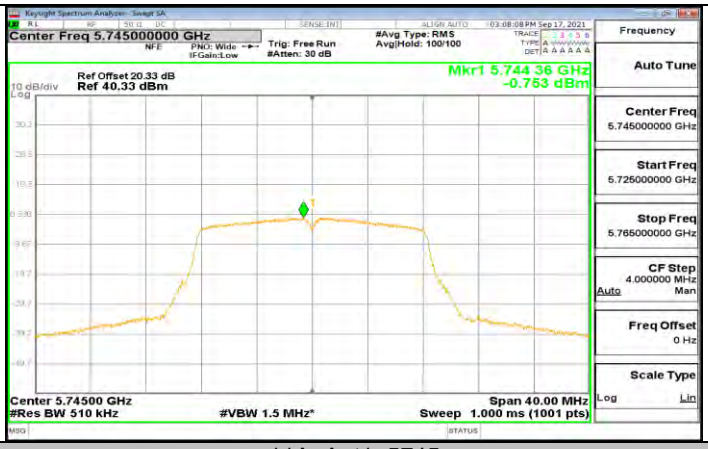
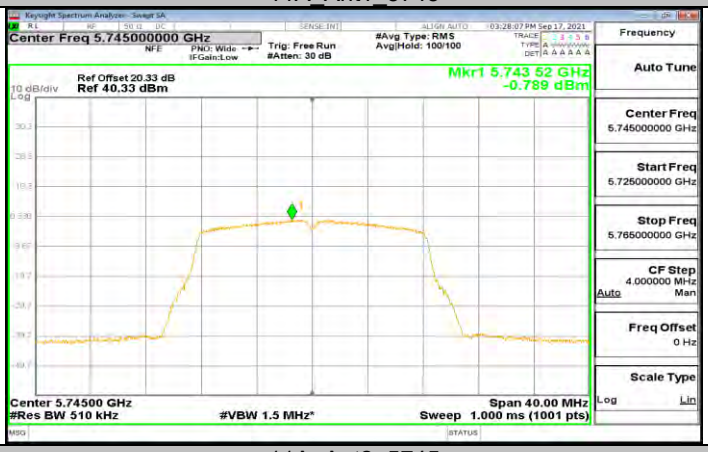
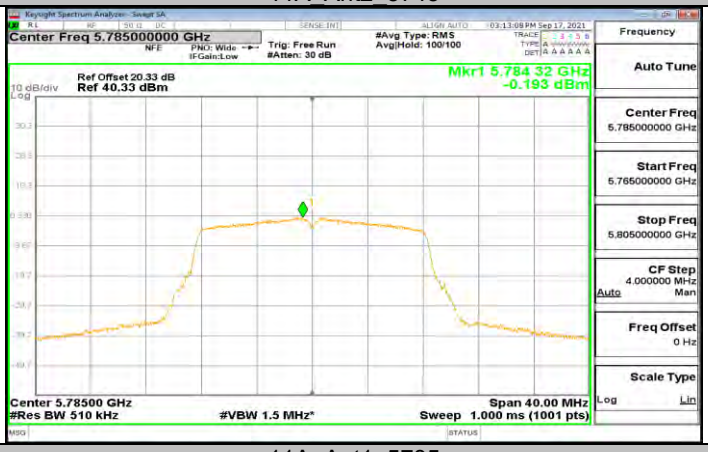


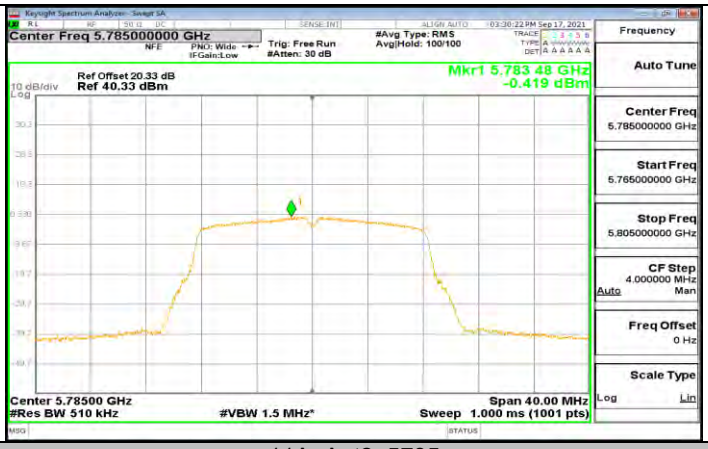
11A_Ant1_5745



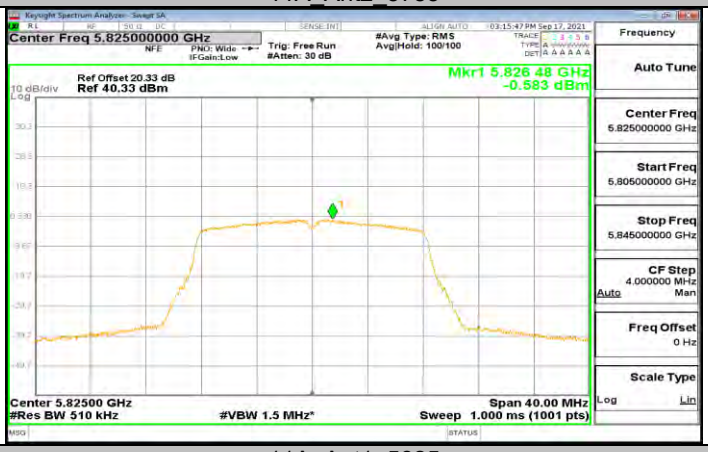
11A_Ant2_5745



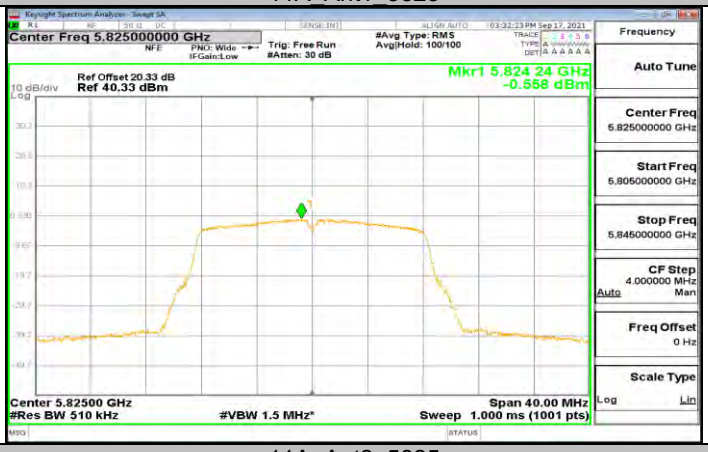
11A_Ant1_5785



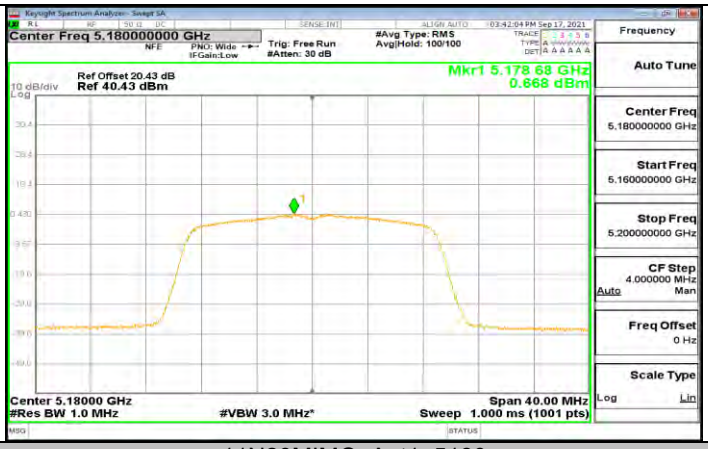
11A_Ant2_5785



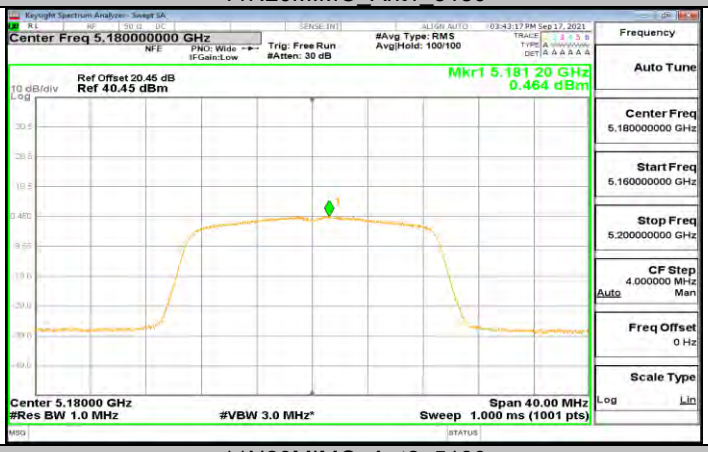
11A_Ant1_5825



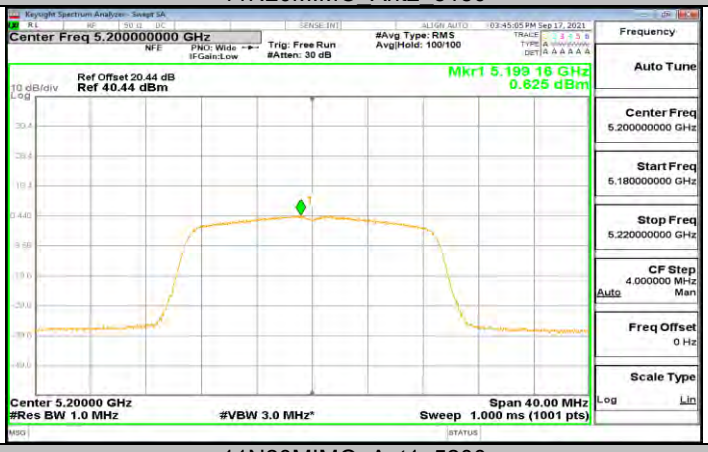
11A_Ant2_5825



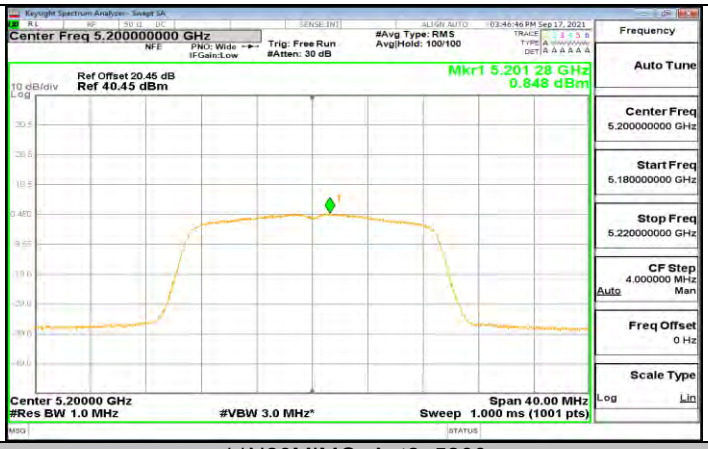
11N20MIMO_Ant1_5180



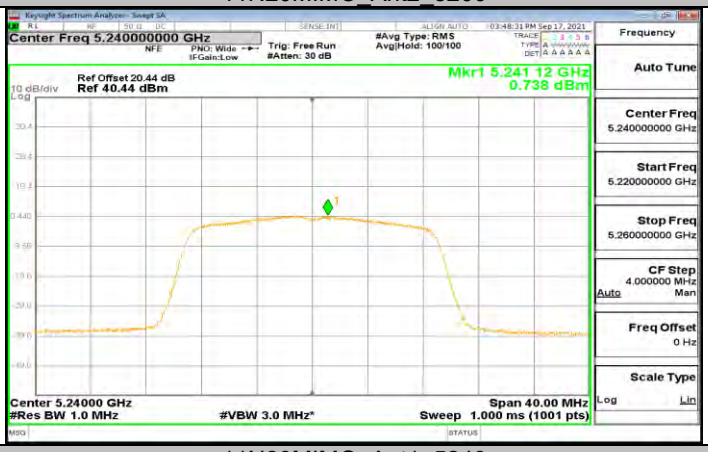
11N20MIMO_Ant2_5180



11N20MIMO_Ant1_5200

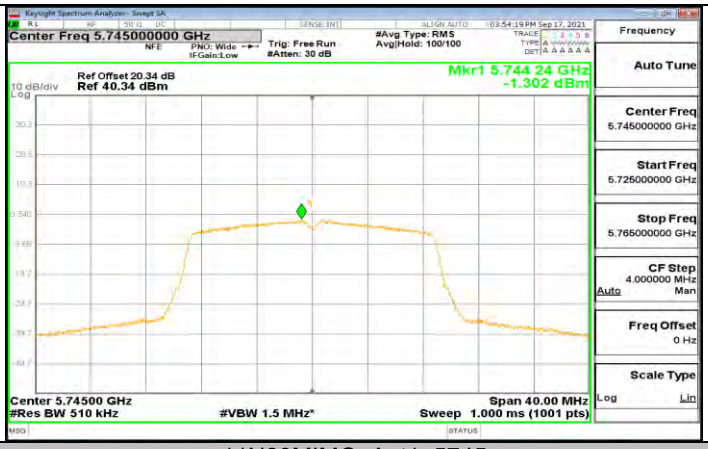


11N20MIMO_Ant2_5200

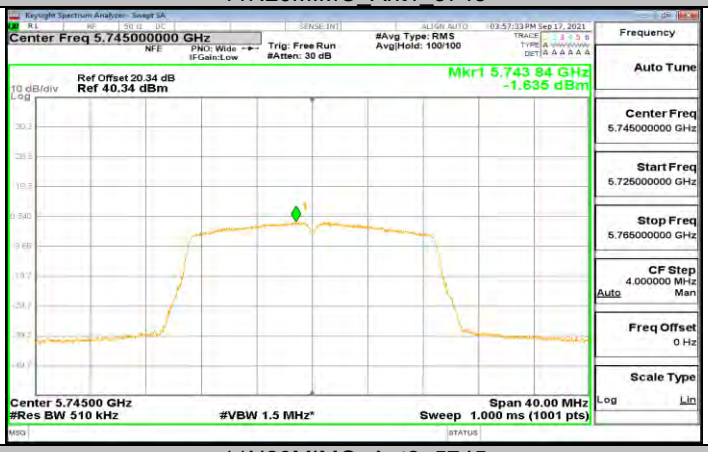


11N20MIMO_Ant1_5240

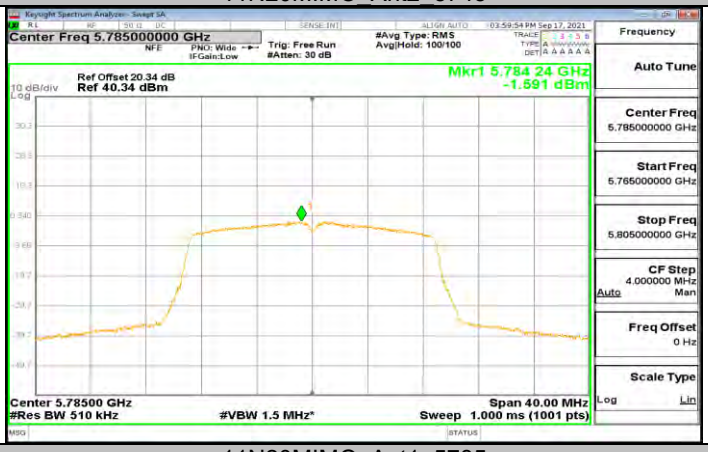
11N20MIMO_Ant2_5240



11N20MIMO_Ant1_5745

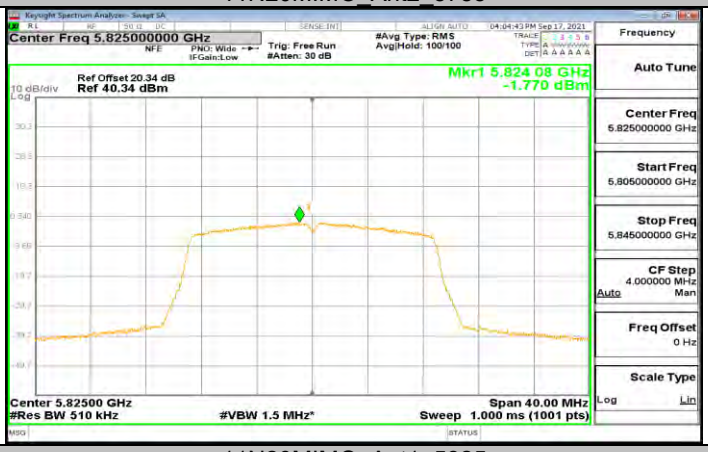


11N20MIMO_Ant2_5745



11N20MIMO_Ant1_5785

11N20MIMO_Ant2_5785



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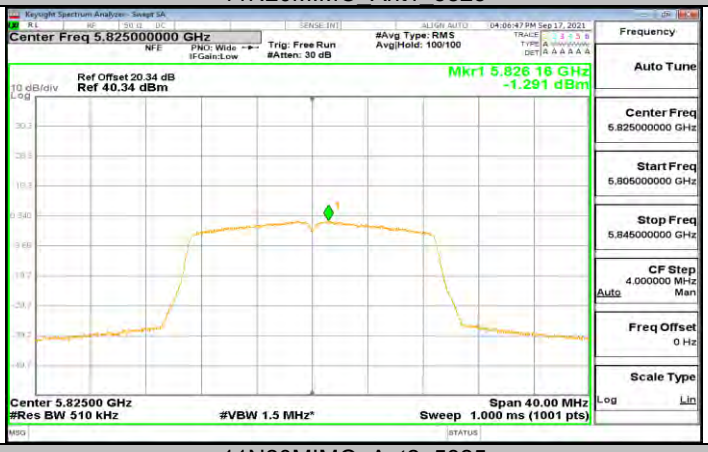
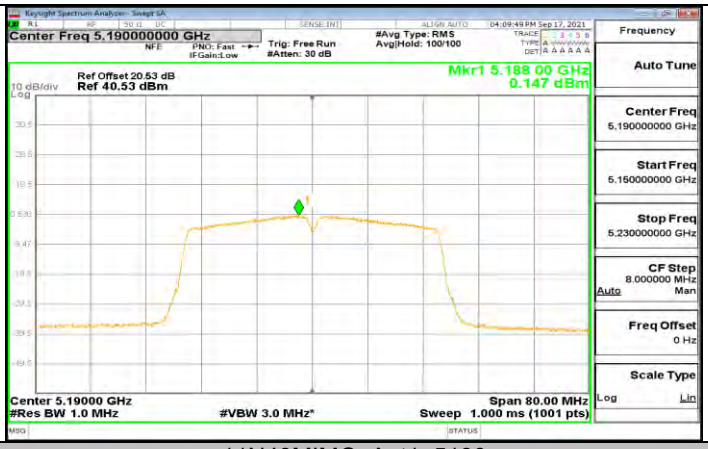


11N20MIMO_Ant2_5825



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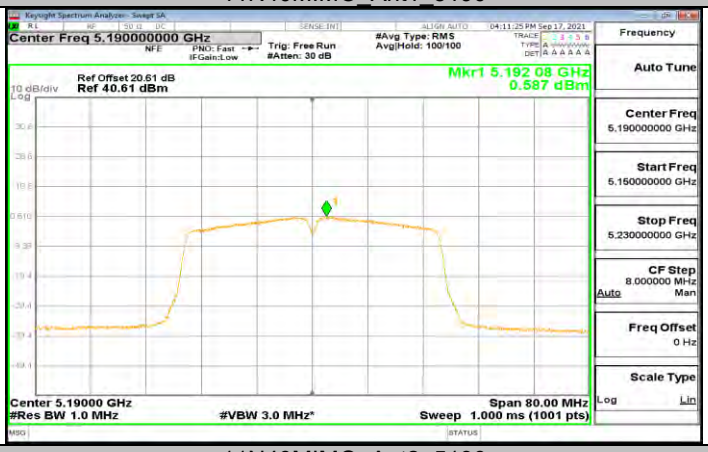

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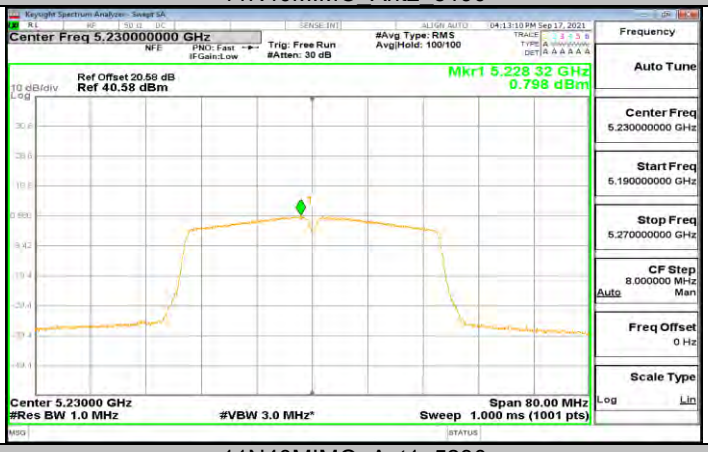

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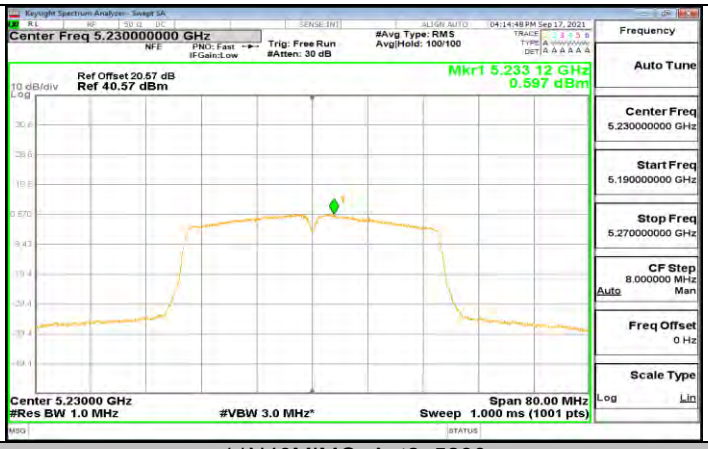
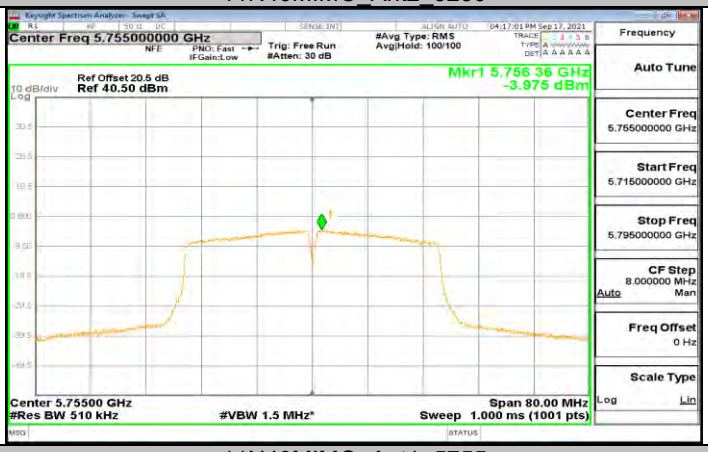
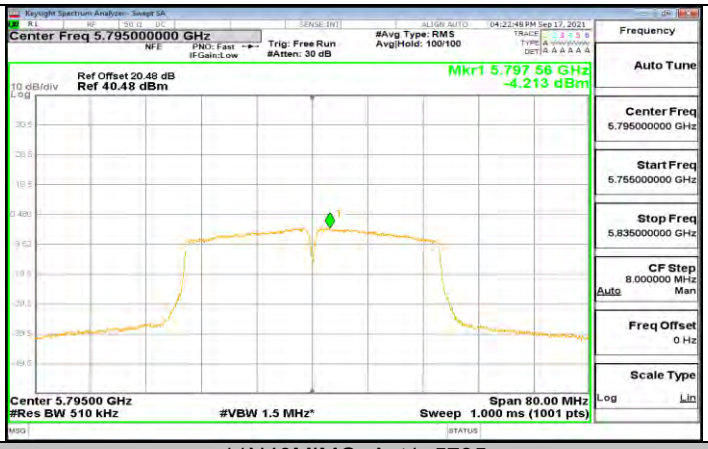


11N40MIMO_Ant2_5230

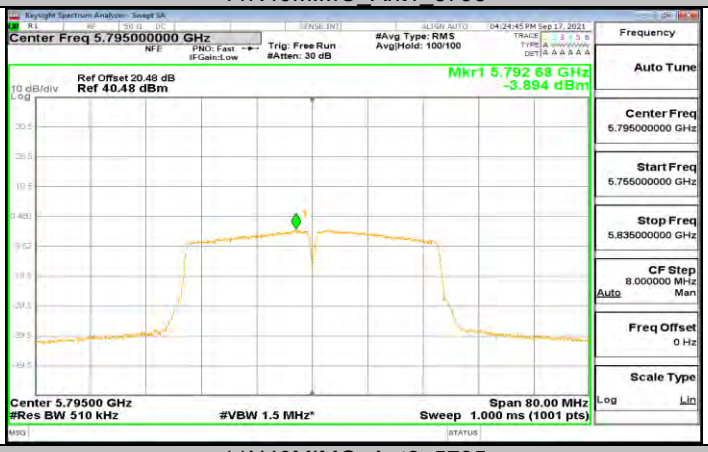


11N40MIMO_Ant1_5755

11N40MIMO_Ant2_5755



11N40MIMO_Ant1_5795



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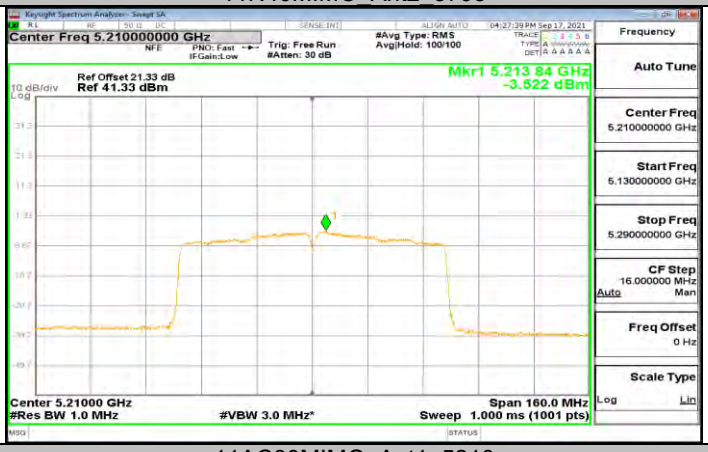
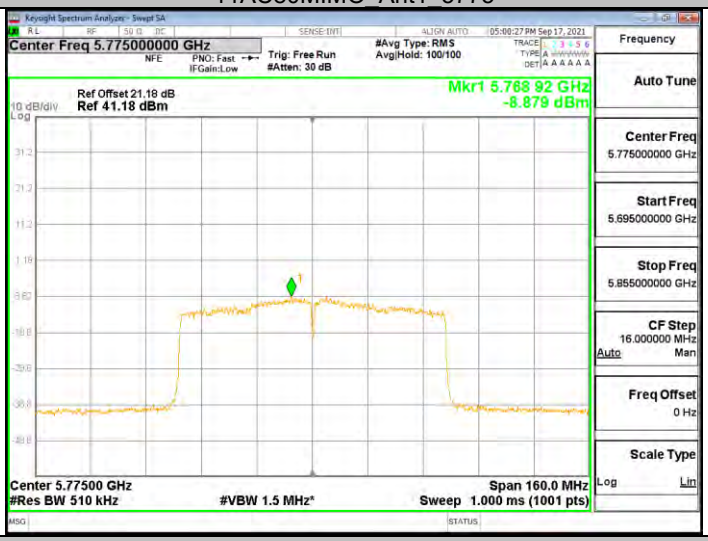


11AC80MIMO_Ant1_5210

11AC80MIMO_Ant2_5210

11AC80MIMO_Ant1_5775



11AC80MIMO_Ant2_5775

11.6. Appendix D: Duty Cycle

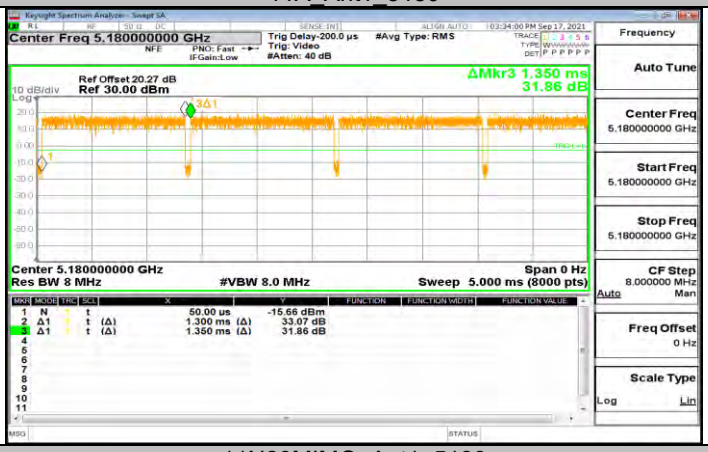
11.6.1. Test Result

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 20	1.39	1.44	0.9653	96.53	0.15	0.72	1
11N20MIMO	1.30	1.35	0.9630	96.30	0.16	0.77	1
11N40MIMO	0.65	0.69	0.9420	94.20	0.26	1.54	2
11AC80MIMO	0.18	0.23	0.7826	78.26	1.06	5.56	6

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.

11.6.2. Test Graphs

11A_Ant1_5180



11N20MIMO_Ant1_5180

11N40MIMO_Ant1_5190

11AC80MIMO_Ant1_5210

11.7. Appendix E: Frequency Stability

11.7.1. Test Result

Frequency Error vs. Voltage									
802.11a 20:5200MHz									
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	5200.04033	7.76	5200.03942	7.58	5200.04249	8.17	5200.04777	9.19
TN	VN	5200.03657	7.03	5200.03033	5.83	5200.03758	7.23	5200.03369	6.48
TN	VH	5200.03641	7.00	5200.04471	8.60	5200.04241	8.16	5200.04262	8.20
Frequency Error vs. Temperature									
802.11a 20:5200MHz									
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)
70	VN	5200.04289	8.25	5200.04233	8.14	5200.04841	9.31	5200.04922	9.47
60	VN	5200.03882	7.47	5200.04526	8.70	5200.04737	9.11	5200.04781	9.19
50	VN	5200.03772	7.25	5200.03844	7.39	5200.04322	8.31	5200.04432	8.52
40	VN	5200.03233	6.22	5200.03539	6.81	5200.03951	7.60	5200.03983	7.66
30	VN	5200.02984	5.74	5200.03141	6.04	5200.03668	7.05	5200.03775	7.26
20	VN	5200.02642	5.08	5200.02887	5.55	5200.02951	5.68	5200.03074	5.91
10	VN	5200.03222	6.20	5200.03252	6.25	5200.03549	6.83	5200.03881	7.46
0	VN	5200.03872	7.45	5200.03981	7.66	5200.03838	7.38	5200.04666	8.97

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	5825.04461	7.66	5825.03769	6.47	5825.03751	6.44	5825.04251	7.30
TN	VN	5825.02744	4.71	5825.02832	4.86	5825.02879	4.94	5825.03226	5.54
TN	VH	5825.03739	6.42	5825.03365	5.78	5825.04142	7.11	5825.04448	7.64
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)
60	VN	5825.04755	8.16	5825.04783	8.21	5825.04868	8.36	5825.05376	9.23
50	VN	5825.03868	6.64	5825.04579	7.86	5825.04677	8.03	5825.04882	8.38
40	VN	5825.03694	6.34	5825.04146	7.12	5825.04684	8.04	5825.04435	7.61
30	VN	5825.03144	5.40	5825.03651	6.27	5825.04345	7.46	5825.03767	6.47
20	VN	5825.02889	4.96	5825.03586	6.16	5825.03326	5.71	5825.03642	6.25
10	VN	5825.02581	4.43	5825.02676	4.59	5825.03137	5.39	5825.03052	5.24
0	VN	5825.03345	5.74	5825.03368	5.78	5825.03558	6.11	5825.03876	6.65

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

END OF REPORT