



CTC Laboratories, Inc.

Appendix for 5G WIFI

FCC ID: 2AR24-AIBOX30US

Applicant: Shenzhen Absen Optoelectronic Co.,Ltd

**Address: 18-20F Building 3A, Cloud Park, Bantian,
Longgang District, Shenzhen, China**

Product Name: LED Multimedia Processor

EUT Model: Ai Box3.0 US

RF Module Model: RTL8822BU



Table of Contents

Appendix A1: Emission Bandwidth	3
Appendix A2: Occupied channel bandwidth	28
Appendix A3: Min emission bandwidth	53
Appendix B: Maximum conducted output power.....	66
Appendix C: Maximum power spectral density	68
Appendix D: Frequency Stability	93



Appendix A1: Emission Bandwidth

Test Result

TestMode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	20.720	5169.720	5190.440	---	PASS
	Ant2	5180	20.960	5169.720	5190.680	---	PASS
	Ant1	5200	20.760	5189.800	5210.560	---	PASS
	Ant2	5200	20.800	5189.720	5210.520	---	PASS
	Ant1	5240	20.560	5229.760	5250.320	---	PASS
	Ant2	5240	20.840	5229.560	5250.400	---	PASS
	Ant1	5745	20.440	5734.680	5755.120	---	PASS
	Ant2	5745	20.400	5734.800	5755.200	---	PASS
	Ant1	5785	20.480	5774.680	5795.160	---	PASS
	Ant2	5785	20.600	5774.680	5795.280	---	PASS
	Ant1	5825	21.120	5814.160	5835.280	---	PASS
	Ant2	5825	20.560	5814.680	5835.240	---	PASS
11N20MIMO	Ant1	5180	21.080	5169.400	5190.480	---	PASS
	Ant2	5180	20.880	5169.680	5190.560	---	PASS
	Ant1	5200	20.840	5189.600	5210.440	---	PASS
	Ant2	5200	20.840	5189.720	5210.560	---	PASS
	Ant1	5240	21.200	5229.240	5250.440	---	PASS
	Ant2	5240	20.760	5229.600	5250.360	---	PASS
	Ant1	5745	21.240	5734.200	5755.440	---	PASS
	Ant2	5745	21.080	5734.520	5755.600	---	PASS
	Ant1	5785	20.840	5774.600	5795.440	---	PASS
	Ant2	5785	20.880	5774.640	5795.520	---	PASS
	Ant1	5825	21.200	5814.200	5835.400	---	PASS
	Ant2	5825	20.920	5814.640	5835.560	---	PASS
11N40MIMO	Ant1	5190	43.200	5168.000	5211.200	---	PASS
	Ant2	5190	41.760	5168.800	5210.560	---	PASS
	Ant1	5230	43.120	5208.160	5251.280	---	PASS
	Ant2	5230	41.680	5208.880	5250.560	---	PASS
	Ant1	5755	42.480	5733.560	5776.040	---	PASS
	Ant2	5755	41.600	5733.960	5775.560	---	PASS
	Ant1	5795	43.440	5772.760	5816.200	---	PASS
	Ant2	5795	41.840	5773.800	5815.640	---	PASS
11AC20MIMO	Ant1	5180	21.160	5169.440	5190.600	---	PASS
	Ant2	5180	21.080	5169.400	5190.480	---	PASS
	Ant1	5200	21.240	5189.280	5210.520	---	PASS
	Ant2	5200	21.160	5189.360	5210.520	---	PASS
	Ant1	5240	21.120	5229.280	5250.400	---	PASS
	Ant2	5240	21.000	5229.480	5250.480	---	PASS



	Ant1	5745	20.960	5734.440	5755.400	---	PASS
	Ant2	5745	21.040	5734.480	5755.520	---	PASS
	Ant1	5785	20.800	5774.520	5795.320	---	PASS
	Ant2	5785	20.760	5774.600	5795.360	---	PASS
	Ant1	5825	21.000	5814.480	5835.480	---	PASS
	Ant2	5825	20.920	5814.440	5835.360	---	PASS
11AC40MIMO	Ant1	5190	43.840	5168.240	5212.080	---	PASS
	Ant2	5190	43.760	5168.160	5211.920	---	PASS
	Ant1	5230	44.000	5208.000	5252.000	---	PASS
	Ant2	5230	43.360	5208.560	5251.920	---	PASS
	Ant1	5755	43.840	5733.320	5777.160	---	PASS
	Ant2	5755	43.680	5733.240	5776.920	---	PASS
	Ant1	5795	44.160	5773.080	5817.240	---	PASS
	Ant2	5795	43.840	5773.240	5817.080	---	PASS
11AC80MIMO	Ant1	5210	83.520	5168.560	5252.080	---	PASS
	Ant2	5210	82.080	5169.040	5251.120	---	PASS
	Ant1	5775	83.200	5733.400	5816.600	---	PASS
	Ant2	5775	82.560	5733.240	5815.800	---	PASS

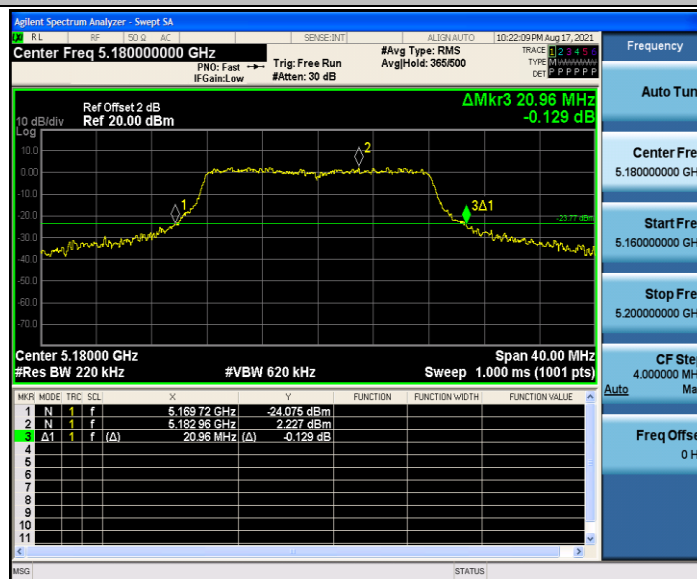


Test Graphs

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



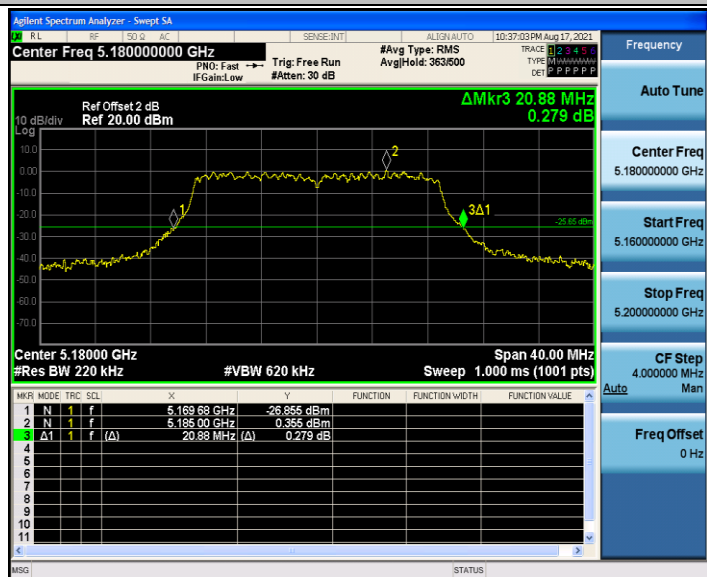
11A_Ant2_5825



11N20MIMO_Ant1_5180



11N20MIMO_Ant2_5180



11N20MIMO_Ant1_5200

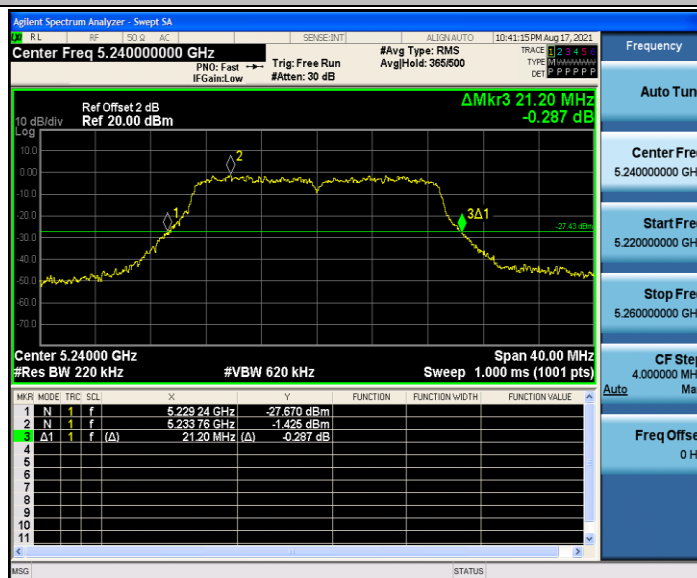




11N20MIMO_Ant2_5200



11N20MIMO_Ant1_5240

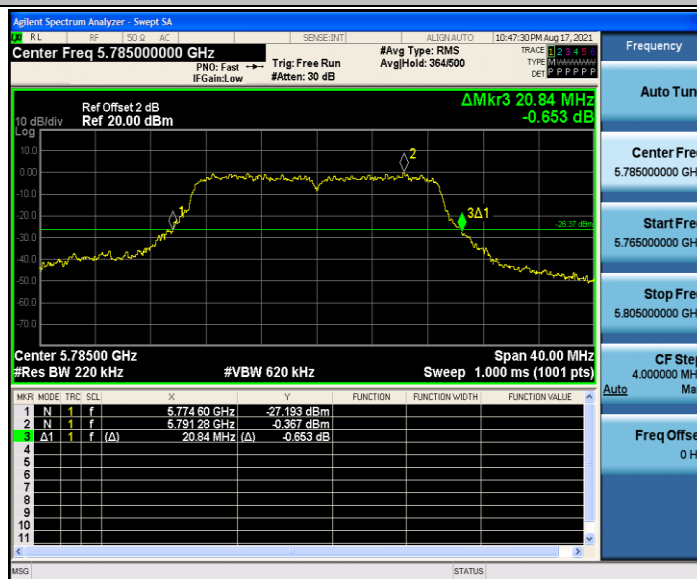


11N20MIMO_Ant2_5240





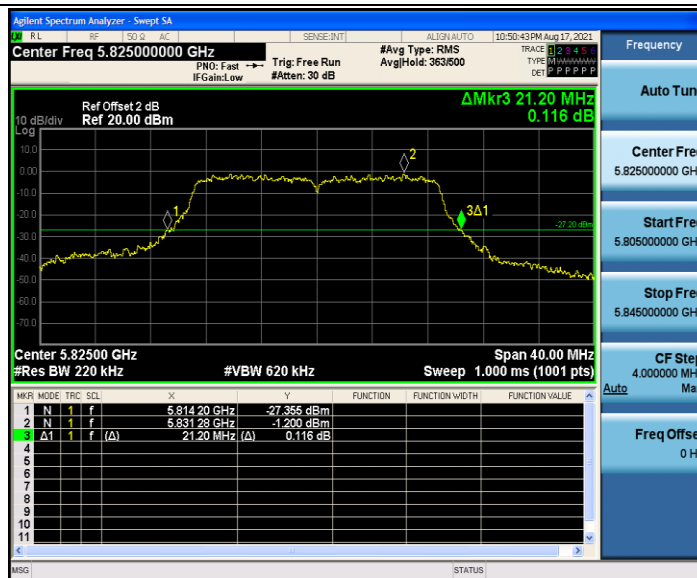
11N20MIMO_Ant1_5785



11N20MIMO_Ant2_5785



11N20MIMO_Ant1_5825



11N20MIMO_Ant2_5825

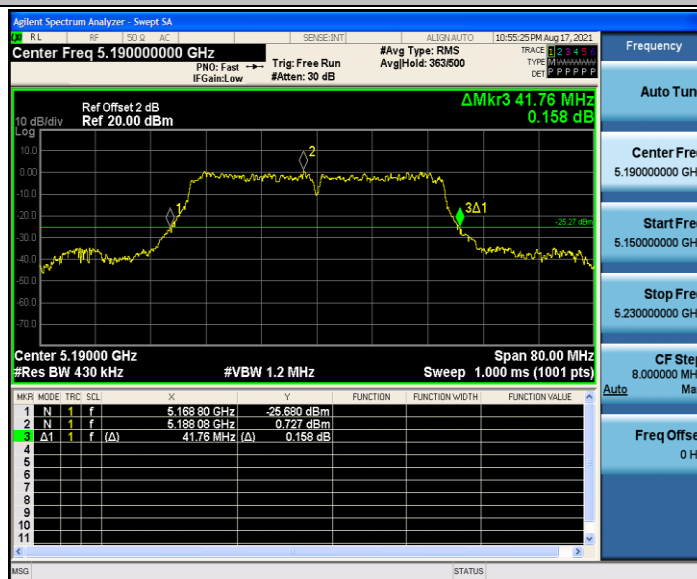


11N40MIMO_Ant1_5190

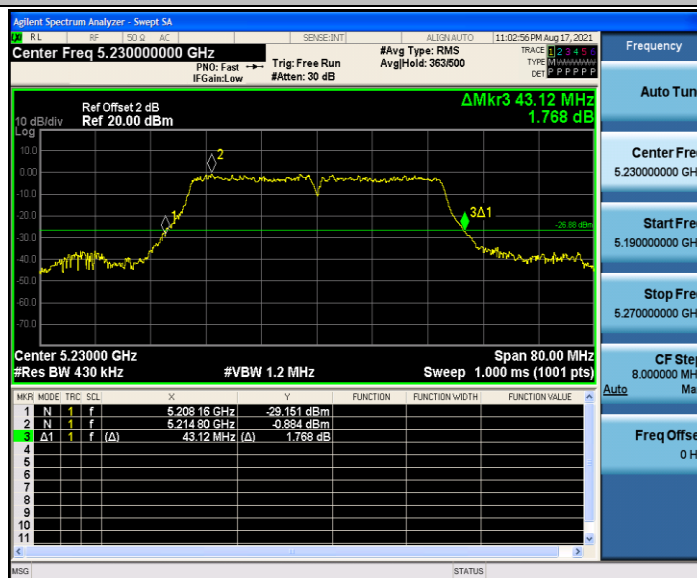




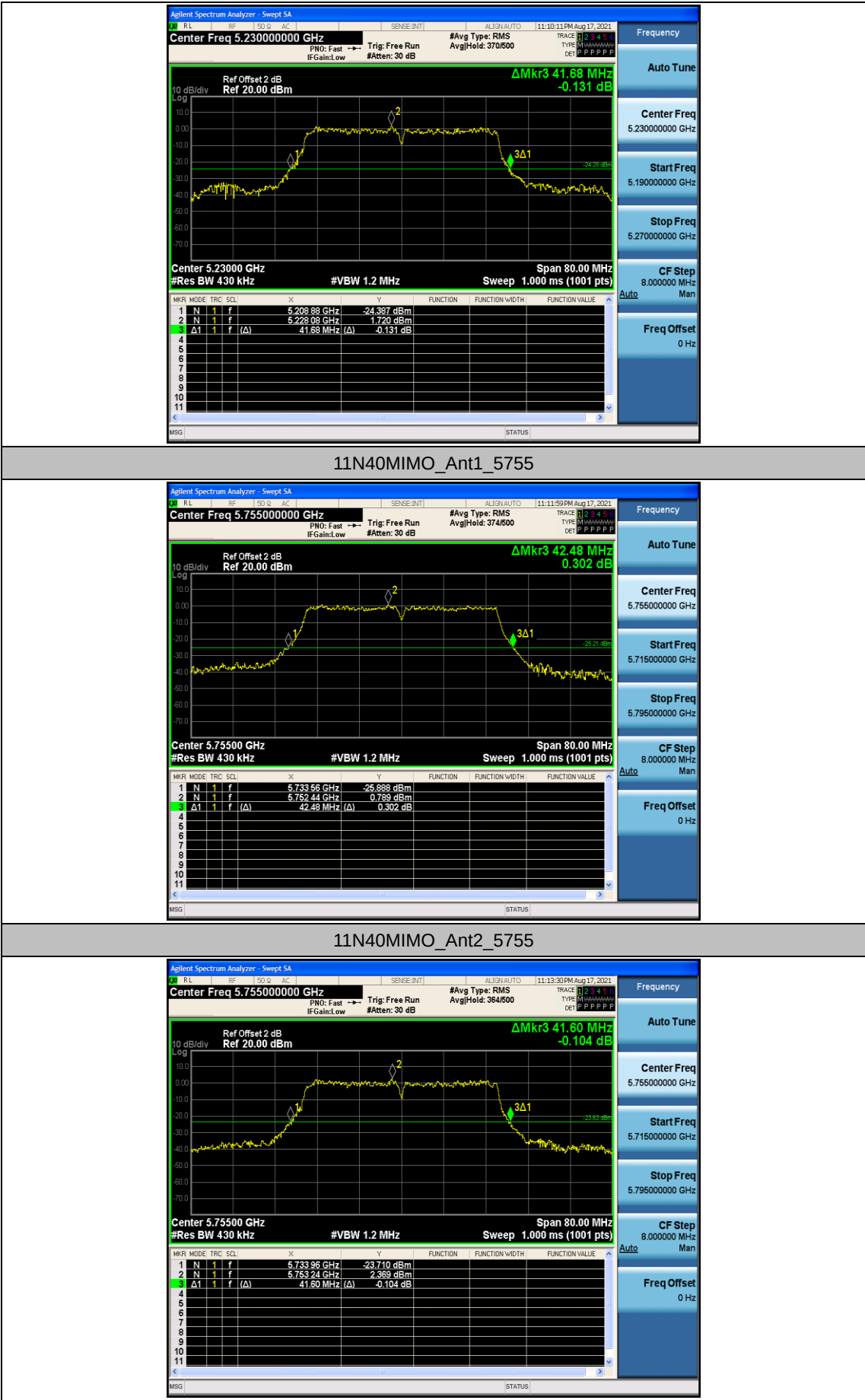
11N40MIMO_Ant2_5190



11N40MIMO_Ant1_5230



11N40MIMO_Ant2_5230





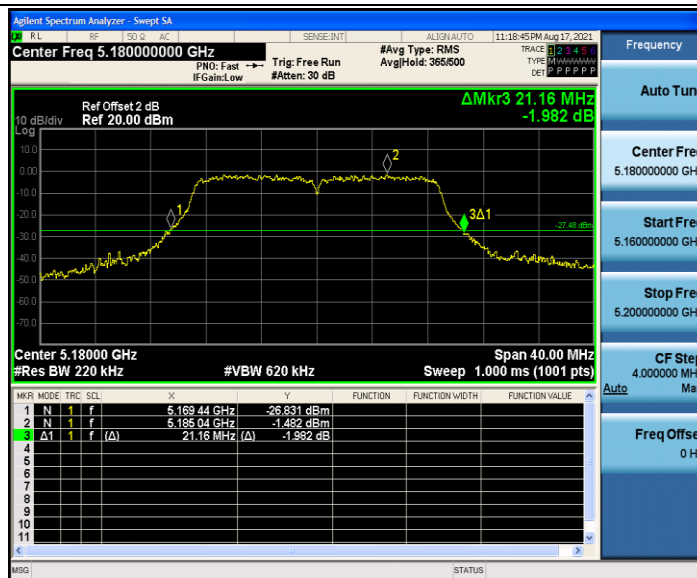
11N40MIMO_Ant1_5795



11N40MIMO_Ant2_5795



11AC20MIMO_Ant1_5180



11AC20MIMO_Ant2_5180



11AC20MIMO_Ant1_5200





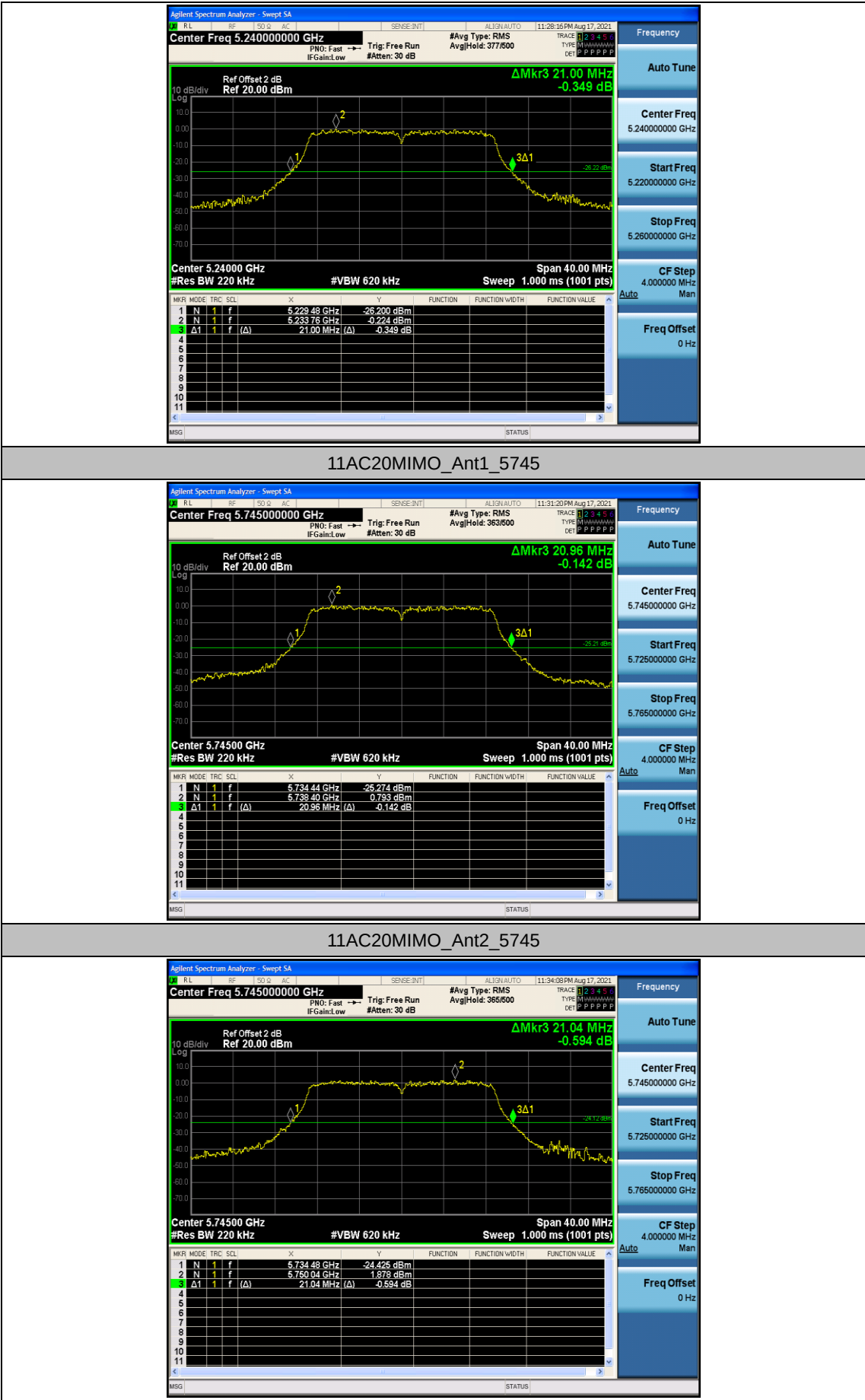
11AC20MIMO_Ant2_5200



11AC20MIMO_Ant1_5240



11AC20MIMO_Ant2_5240





11AC20MIMO_Ant1_5785



11AC20MIMO_Ant2_5785



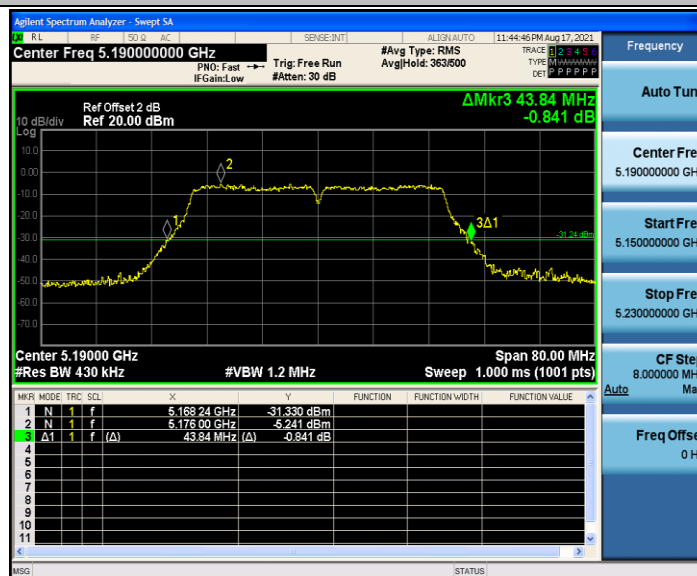
11AC20MIMO_Ant1_5825



11AC20MIMO_Ant2_5825

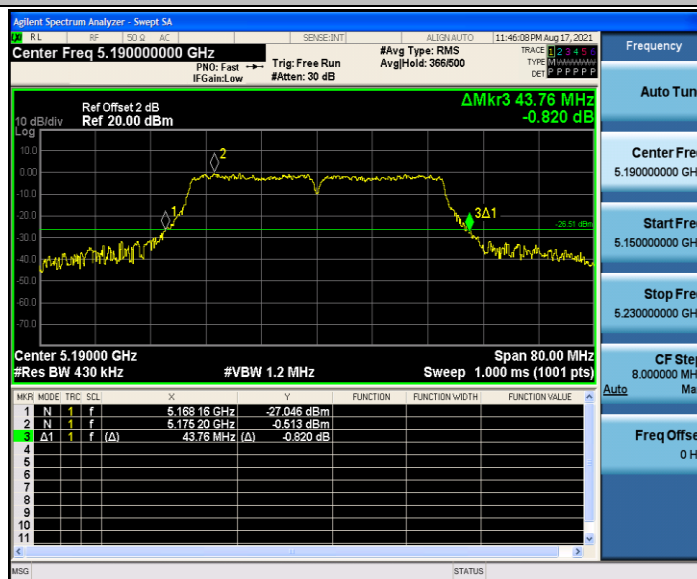


11AC40MIMO_Ant1_5190

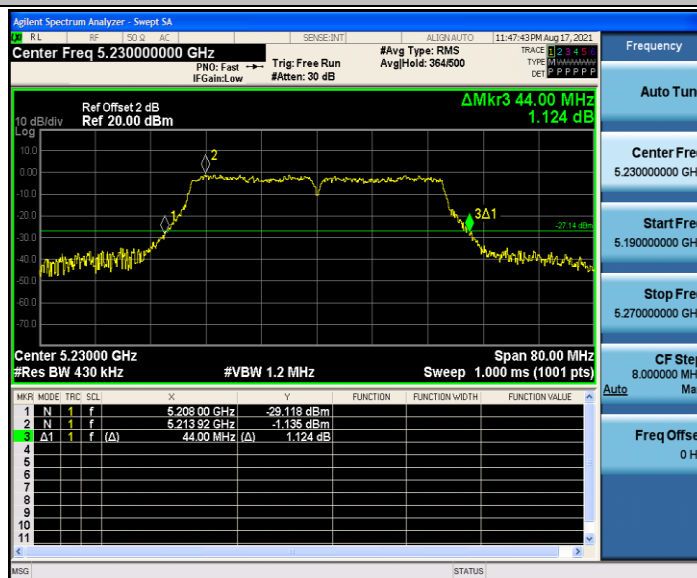




11AC40MIMO_Ant2_5190



11AC40MIMO_Ant1_5230



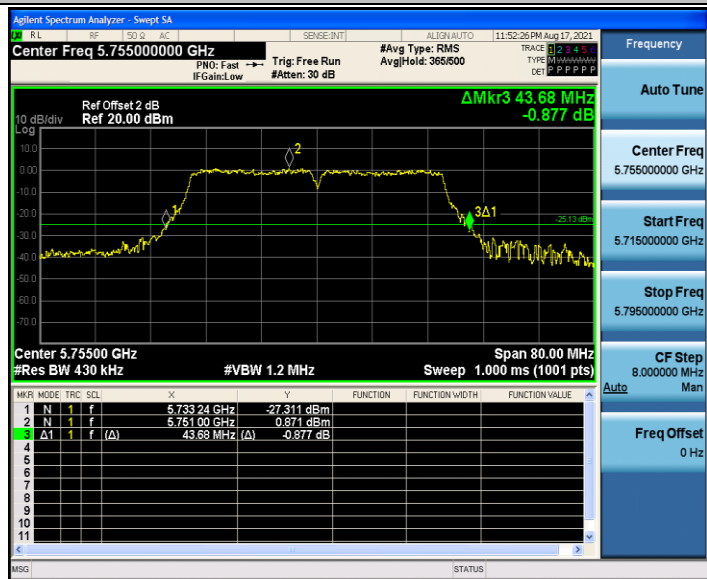
11AC40MIMO_Ant2_5230



11AC40MIMO_Ant1_5755

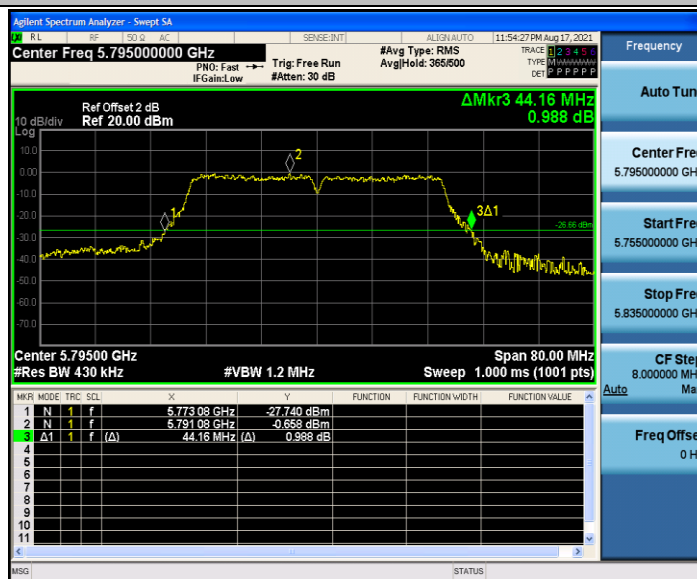


11AC40MIMO_Ant2_5755

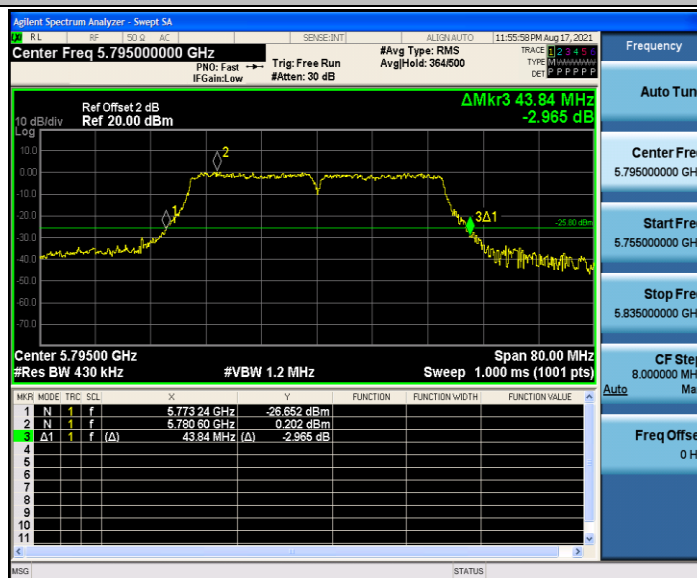




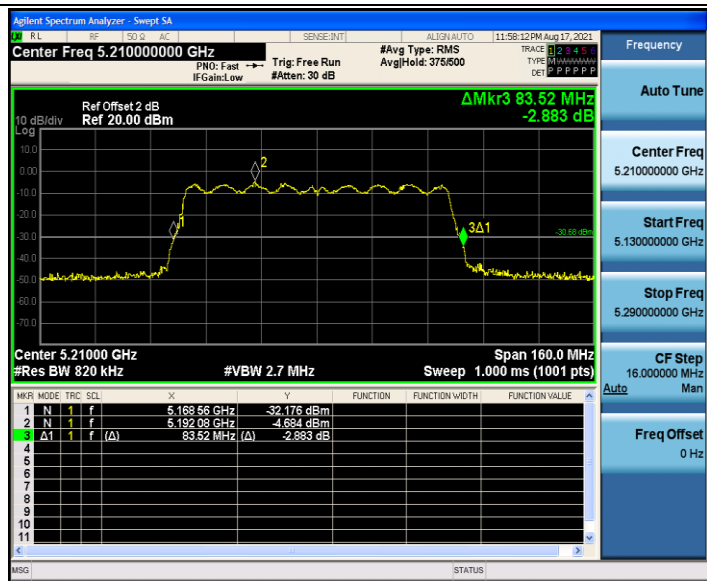
11AC40MIMO_Ant1_5795



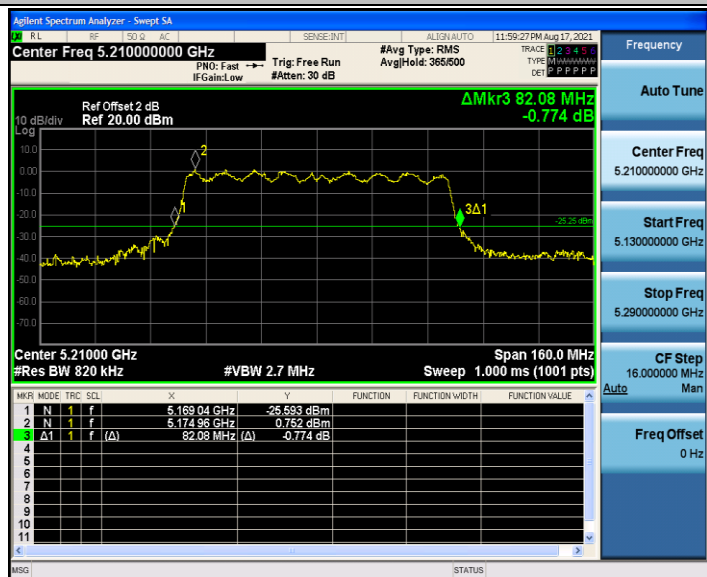
11AC40MIMO_Ant2_5795



11AC80MIMO_Ant1_5210



11AC80MIMO_Ant2_5210

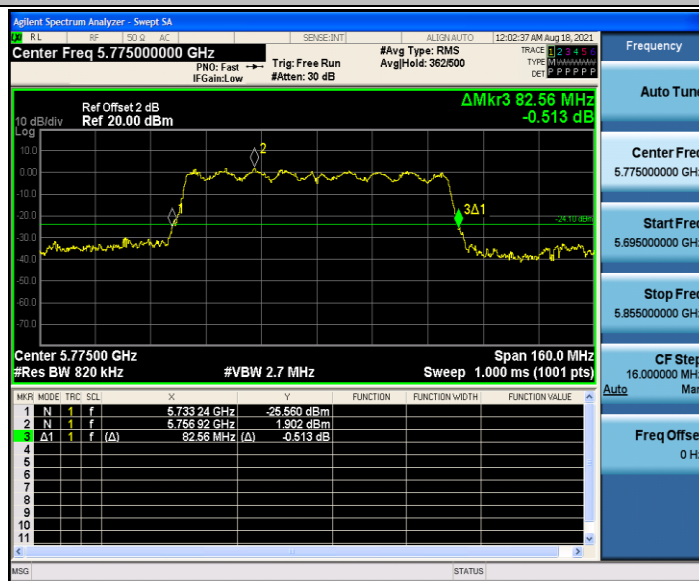


11AC80MIMO_Ant1_5775





11AC80MIMO_Ant2_5775





Appendix A2: Occupied channel bandwidth

Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	17.063	5171.498	5188.561	---	PASS
	Ant2	5180	17.051	5171.500	5188.551	---	PASS
	Ant1	5200	17.029	5191.504	5208.533	---	PASS
	Ant2	5200	17.013	5191.508	5208.521	---	PASS
	Ant1	5240	17.014	5231.511	5248.525	---	PASS
	Ant2	5240	17.011	5231.520	5248.531	---	PASS
	Ant1	5745	17.027	5736.510	5753.537	---	PASS
	Ant2	5745	17.015	5736.526	5753.541	---	PASS
	Ant1	5785	17.033	5776.489	5793.522	---	PASS
	Ant2	5785	17.017	5776.505	5793.522	---	PASS
	Ant1	5825	17.040	5816.489	5833.529	---	PASS
	Ant2	5825	17.007	5816.511	5833.518	---	PASS
11N20MIMO	Ant1	5180	18.030	5170.933	5188.963	---	PASS
	Ant2	5180	17.838	5171.074	5188.912	---	PASS
	Ant1	5200	17.990	5190.953	5208.943	---	PASS
	Ant2	5200	17.822	5191.090	5208.912	---	PASS
	Ant1	5240	17.995	5230.945	5248.940	---	PASS
	Ant2	5240	17.832	5231.078	5248.910	---	PASS
	Ant1	5745	17.994	5735.944	5753.938	---	PASS
	Ant2	5745	17.839	5736.068	5753.907	---	PASS
	Ant1	5785	17.980	5775.959	5793.939	---	PASS
	Ant2	5785	17.846	5776.058	5793.904	---	PASS
	Ant1	5825	18.026	5815.927	5833.953	---	PASS
	Ant2	5825	17.839	5816.081	5833.920	---	PASS
11N40MIMO	Ant1	5190	37.033	5171.481	5208.514	---	PASS
	Ant2	5190	36.728	5171.584	5208.312	---	PASS
	Ant1	5230	37.047	5211.418	5248.465	---	PASS
	Ant2	5230	36.760	5211.527	5248.287	---	PASS
	Ant1	5755	37.049	5736.426	5773.475	---	PASS
	Ant2	5755	36.739	5736.525	5773.264	---	PASS
	Ant1	5795	37.122	5776.360	5813.482	---	PASS
	Ant2	5795	36.716	5776.556	5813.272	---	PASS
11AC20MIMO	Ant1	5180	18.001	5170.990	5188.991	---	PASS
	Ant2	5180	17.977	5170.983	5188.960	---	PASS
	Ant1	5200	17.997	5190.980	5208.977	---	PASS
	Ant2	5200	17.982	5190.993	5208.975	---	PASS
	Ant1	5240	17.987	5230.986	5248.973	---	PASS



	Ant2	5240	17.967	5230.991	5248.958	---	PASS
	Ant1	5745	18.009	5735.979	5753.988	---	PASS
	Ant2	5745	17.977	5736.005	5753.982	---	PASS
	Ant1	5785	18.030	5775.957	5793.987	---	PASS
	Ant2	5785	17.966	5775.992	5793.958	---	PASS
	Ant1	5825	18.001	5815.983	5833.984	---	PASS
	Ant2	5825	17.968	5816.008	5833.976	---	PASS
11AC40MIMO	Ant1	5190	37.223	5171.429	5208.652	---	PASS
	Ant2	5190	37.182	5171.406	5208.588	---	PASS
	Ant1	5230	37.246	5211.351	5248.597	---	PASS
	Ant2	5230	37.180	5211.389	5248.569	---	PASS
	Ant1	5755	37.270	5736.357	5773.627	---	PASS
	Ant2	5755	37.183	5736.382	5773.565	---	PASS
	Ant1	5795	37.302	5776.322	5813.624	---	PASS
	Ant2	5795	37.111	5776.446	5813.557	---	PASS
11AC80MIMO	Ant1	5210	76.225	5171.822	5248.047	---	PASS
	Ant2	5210	75.922	5172.028	5247.950	---	PASS
	Ant1	5775	76.333	5736.682	5813.015	---	PASS
	Ant2	5775	75.840	5737.043	5812.883	---	PASS



Test Graphs

