



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: ZK-7632A



Table of Contents

Appendix A1: Emission Bandwidth	3
Appendix A2: Occupied channel bandwidth	17
Appendix A3: Min emission bandwidth	31
Appendix B: Maximum conducted output power	39
Appendix C: Maximum power spectral density	41
Appendix D: Frequency Stability	56



Appendix A1: Emission Bandwidth

Test Result

TestMode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	20.280	5169.840	5190.120	---	PASS
	Ant2	5180	25.920	5167.880	5193.800	---	PASS
	Ant1	5200	20.240	5189.840	5210.080	---	PASS
	Ant2	5200	27.160	5186.560	5213.720	---	PASS
	Ant1	5240	20.720	5229.720	5250.440	---	PASS
	Ant2	5240	20.160	5230.160	5250.320	---	PASS
	Ant1	5745	19.840	5735.000	5754.840	---	PASS
	Ant2	5745	20.120	5735.000	5755.120	---	PASS
	Ant1	5785	20.120	5774.920	5795.040	---	PASS
	Ant2	5785	23.280	5772.960	5796.240	---	PASS
	Ant1	5825	19.880	5815.040	5834.920	---	PASS
	Ant2	5825	21.760	5813.160	5834.920	---	PASS
11N20MIMO	Ant1	5180	21.280	5169.040	5190.320	---	PASS
	Ant2	5180	20.680	5170.000	5190.680	---	PASS
	Ant1	5200	22.360	5189.640	5212.000	---	PASS
	Ant2	5200	20.240	5189.960	5210.200	---	PASS
	Ant1	5240	21.800	5228.360	5250.160	---	PASS
	Ant2	5240	20.280	5229.840	5250.120	---	PASS
	Ant1	5745	20.000	5734.960	5754.960	---	PASS
	Ant2	5745	20.320	5734.760	5755.080	---	PASS
	Ant1	5785	21.160	5773.840	5795.000	---	PASS
	Ant2	5785	20.000	5774.960	5794.960	---	PASS
	Ant1	5825	20.080	5814.920	5835.000	---	PASS
	Ant2	5825	19.960	5815.040	5835.000	---	PASS
11N40MIMO	Ant1	5190	41.680	5168.800	5210.480	---	PASS
	Ant2	5190	40.000	5169.760	5209.760	---	PASS
	Ant1	5230	47.040	5208.720	5255.760	---	PASS
	Ant2	5230	40.080	5210.000	5250.080	---	PASS
	Ant1	5755	40.480	5734.760	5775.240	---	PASS
	Ant2	5755	40.320	5734.920	5775.240	---	PASS
	Ant1	5795	44.720	5771.640	5816.360	---	PASS
	Ant2	5795	40.000	5774.920	5814.920	---	PASS



Test Graphs

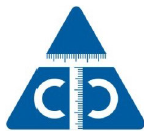
11A_Ant1_5180



11A_Ant2_5180



11A_Ant1_5200



CTC Laboratories, Inc.

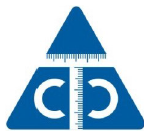


11A_Ant2_5200

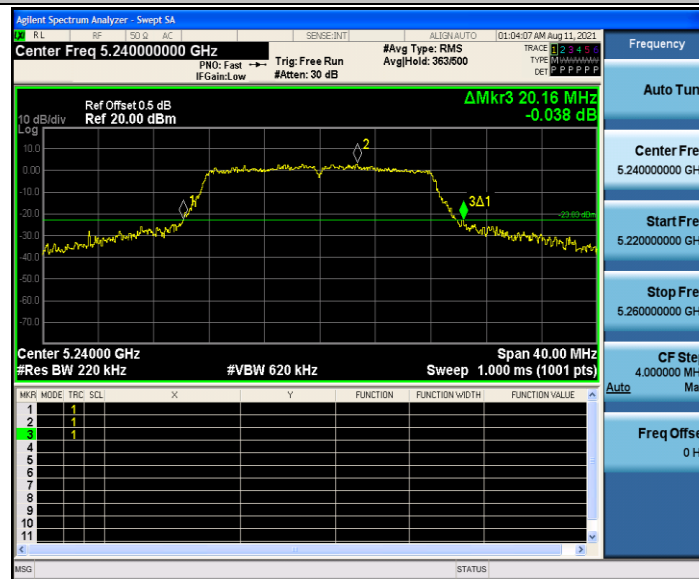


11A_Ant1_5240





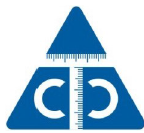
11A_Ant2_5240



11A_Ant1_5745



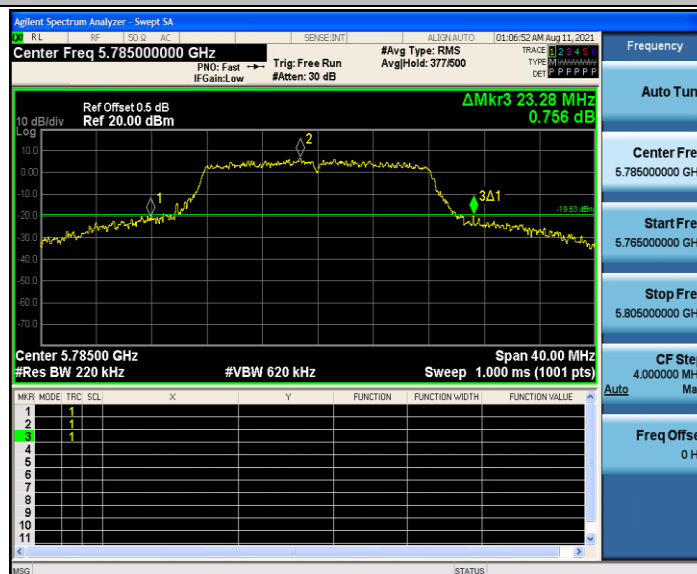
11A_Ant2_5745

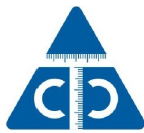


11A_Ant1_5785



11A_Ant2_5785





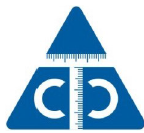
11A_Ant1_5825



11A_Ant2_5825



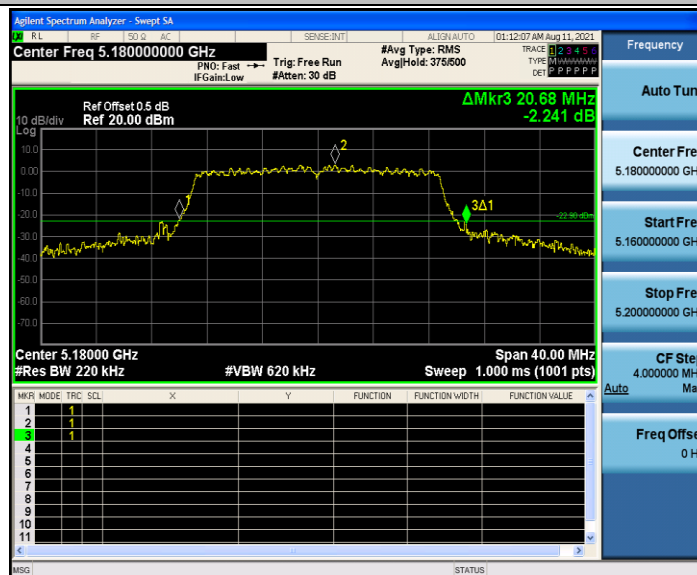
11N20MIMO_Ant1_5180



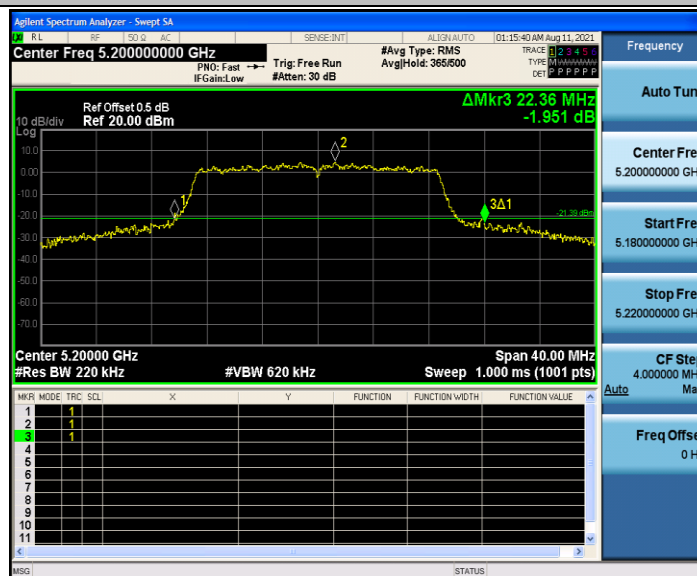
CTC Laboratories, Inc.



11N20MIMO_Ant2_5180



11N20MIMO_Ant1_5200





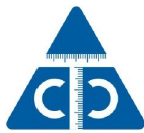
11N20MIMO_Ant2_5200



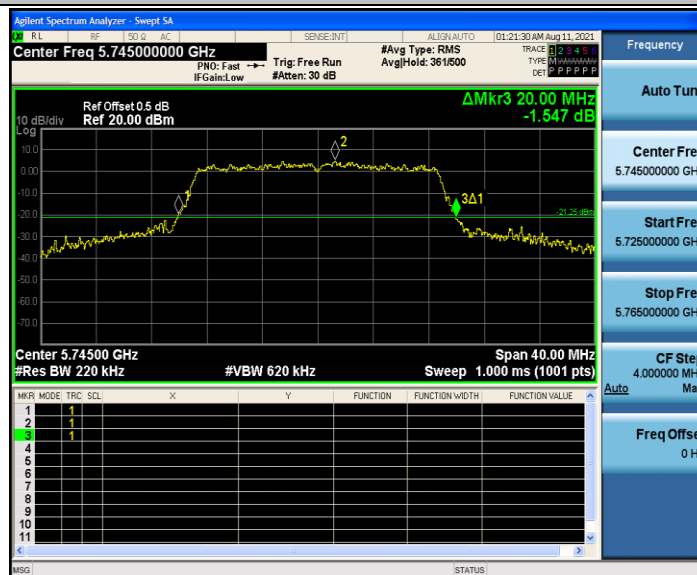
11N20MIMO_Ant1_5240



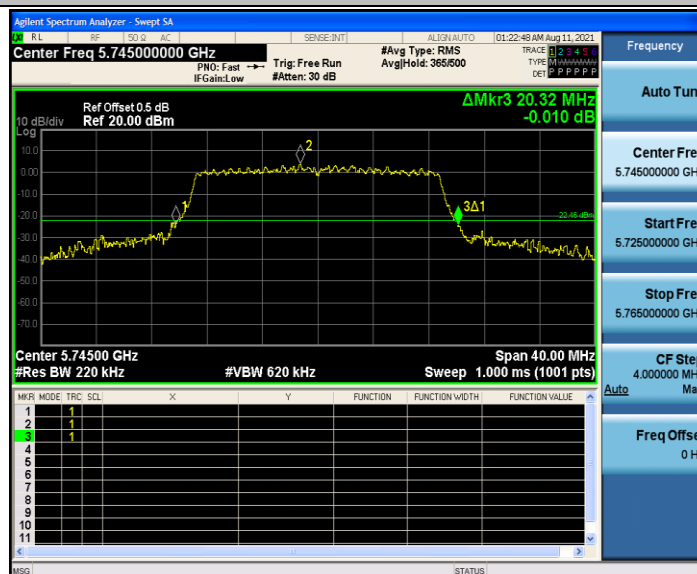
11N20MIMO_Ant2_5240



11N20MIMO_Ant1_5745



11N20MIMO_Ant2_5745





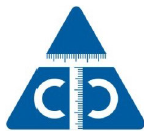
11N20MIMO_Ant1_5785



11N20MIMO_Ant2_5785



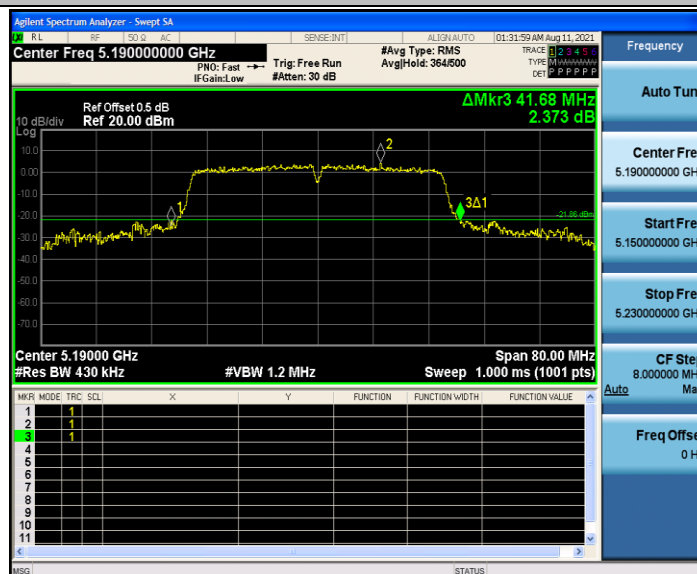
11N20MIMO_Ant1_5825



11N20MIMO_Ant2_5825

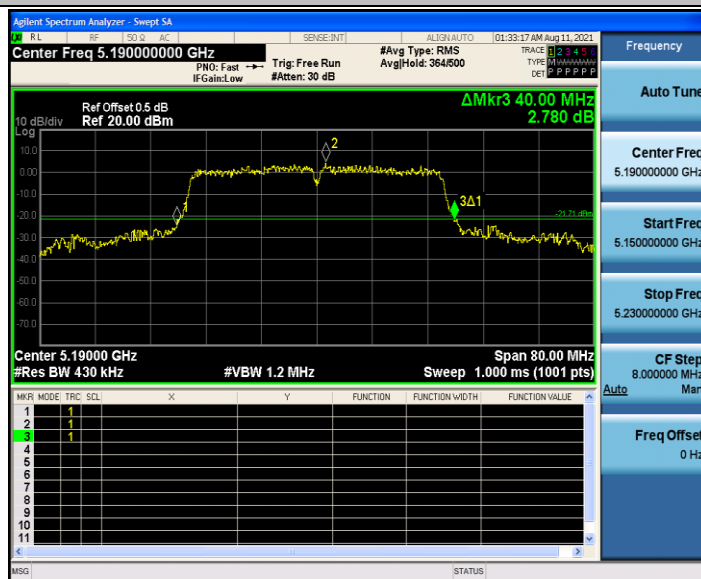


11N40MIMO_Ant1_5190





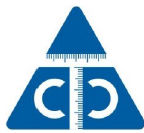
11N40MIMO_Ant2_5190



11N40MIMO Ant1 5230



11N40MIMO Ant2 5230

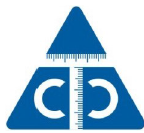


11N40MIMO_Ant1_5755



11N40MIMO_Ant2_5755





11N40MIMO_Ant1_5795



11N40MIMO_Ant2_5795

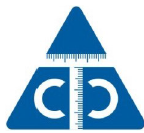




Appendix A2: Occupied channel bandwidth

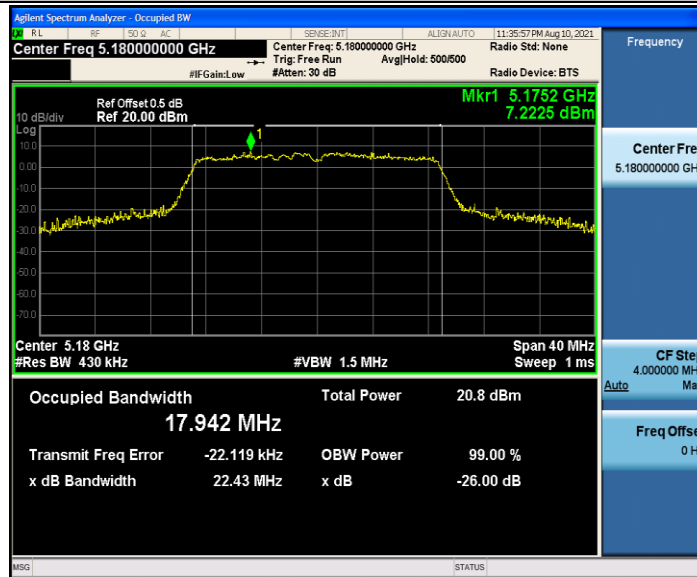
Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	17.942	5171.007	5188.949	---	PASS
	Ant2	5180	17.404	5171.254	5188.658	---	PASS
	Ant1	5200	18.022	5190.963	5208.985	---	PASS
	Ant2	5200	17.470	5191.242	5208.712	---	PASS
	Ant1	5240	17.973	5230.988	5248.961	---	PASS
	Ant2	5240	17.113	5231.416	5248.529	---	PASS
	Ant1	5745	17.135	5736.396	5753.531	---	PASS
	Ant2	5745	17.067	5736.417	5753.484	---	PASS
	Ant1	5785	17.094	5776.387	5793.481	---	PASS
	Ant2	5785	17.029	5776.430	5793.459	---	PASS
	Ant1	5825	17.099	5816.377	5833.476	---	PASS
	Ant2	5825	17.016	5816.432	5833.448	---	PASS
11N20MIMO	Ant1	5180	17.959	5170.977	5188.936	---	PASS
	Ant2	5180	17.761	5171.099	5188.860	---	PASS
	Ant1	5200	18.012	5190.967	5208.979	---	PASS
	Ant2	5200	17.773	5191.097	5208.870	---	PASS
	Ant1	5240	18.028	5230.968	5248.996	---	PASS
	Ant2	5240	17.768	5231.091	5248.859	---	PASS
	Ant1	5745	17.947	5735.998	5753.945	---	PASS
	Ant2	5745	17.749	5736.090	5753.839	---	PASS
	Ant1	5785	17.929	5775.982	5793.911	---	PASS
	Ant2	5785	17.757	5776.084	5793.841	---	PASS
	Ant1	5825	17.943	5816.001	5833.944	---	PASS
	Ant2	5825	17.776	5816.078	5833.854	---	PASS
11N40MIMO	Ant1	5190	36.444	5171.772	5208.216	---	PASS
	Ant2	5190	36.273	5171.876	5208.149	---	PASS
	Ant1	5230	36.492	5211.789	5248.281	---	PASS
	Ant2	5230	36.270	5211.883	5248.153	---	PASS
	Ant1	5755	36.371	5736.767	5773.138	---	PASS
	Ant2	5755	36.205	5736.827	5773.032	---	PASS
	Ant1	5795	36.411	5776.696	5813.107	---	PASS
	Ant2	5795	36.183	5776.839	5813.022	---	PASS

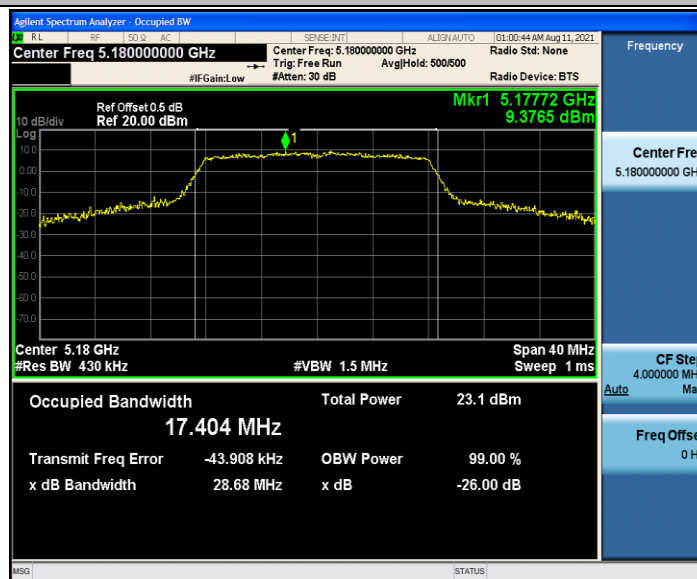


Test Graphs

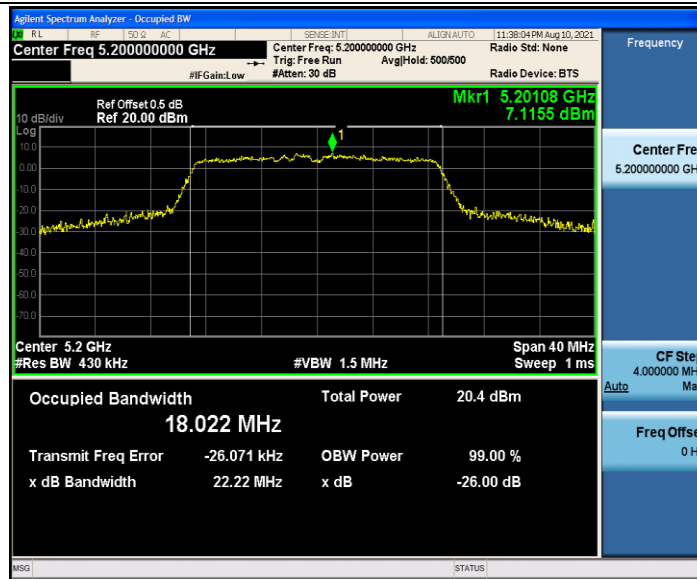
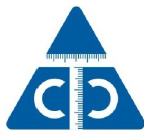
11A_Ant1_5180



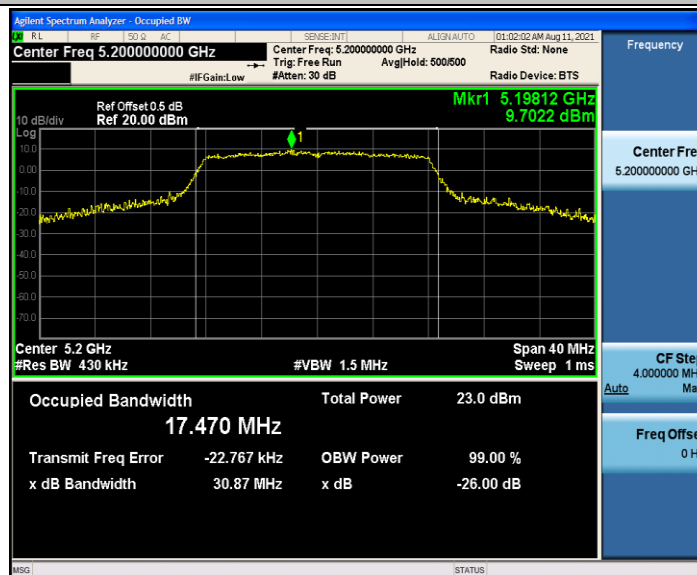
11A_Ant2_5180



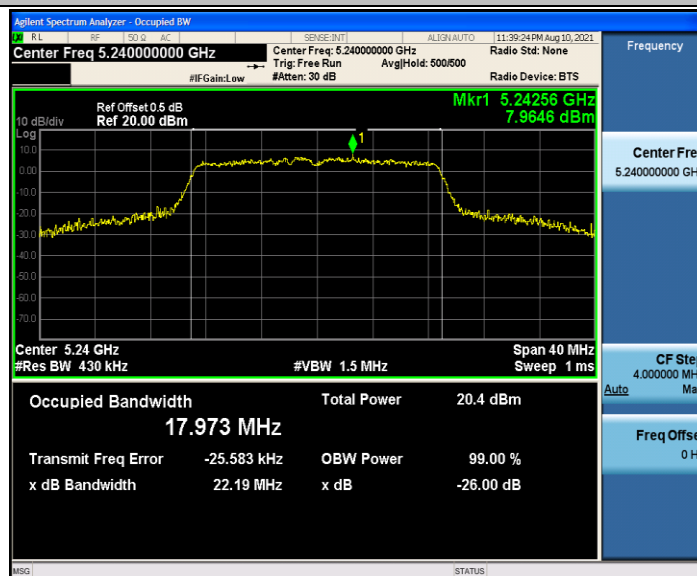
11A_Ant1_5200

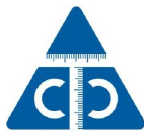


11A_Ant2_5200

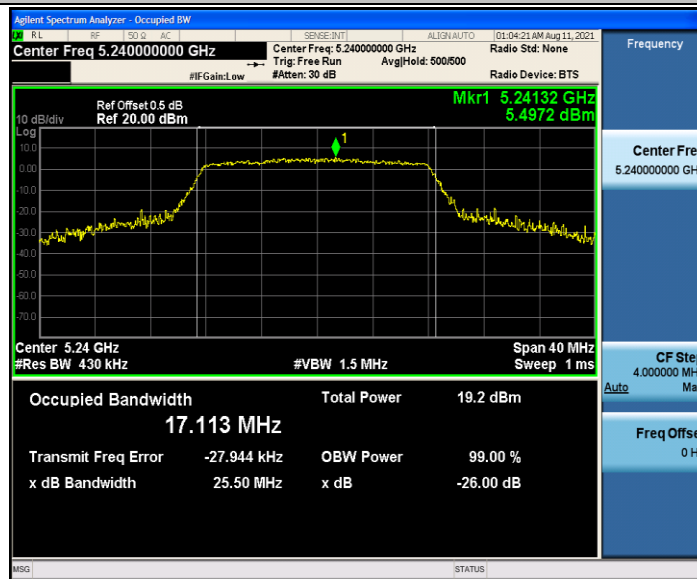


11A_Ant1_5240

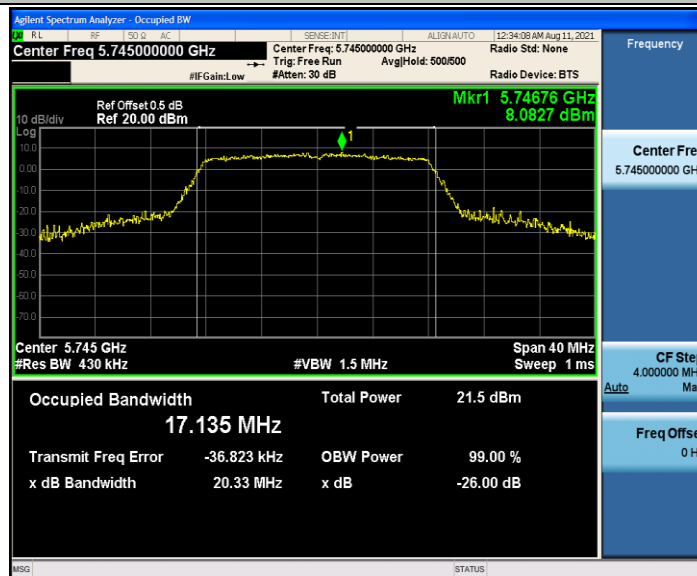




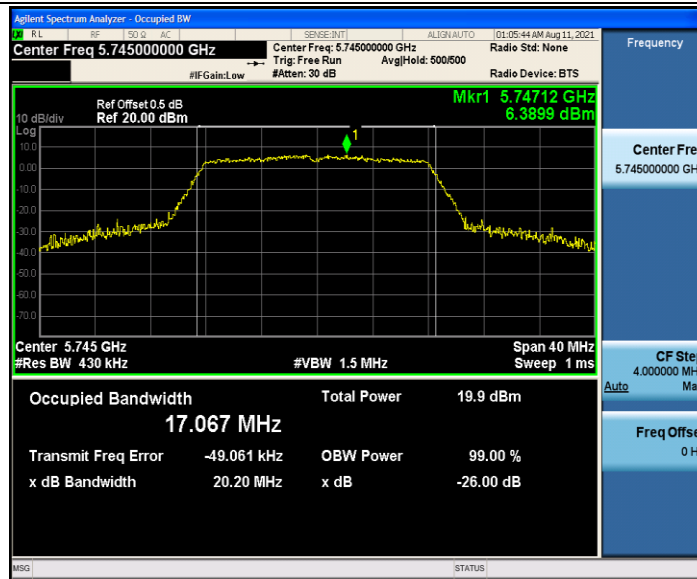
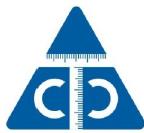
11A_Ant2_5240



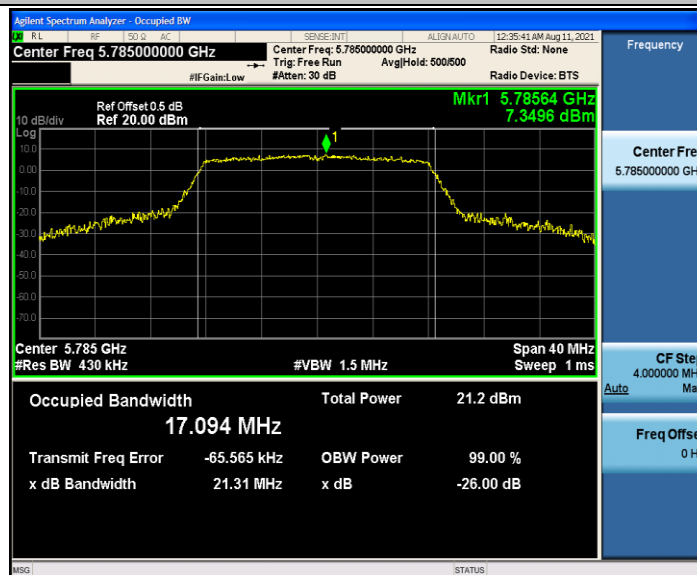
11A_Ant1_5745



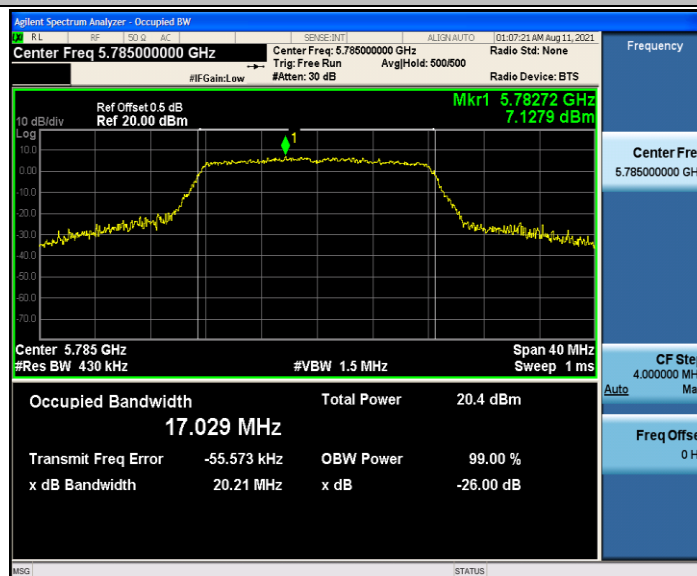
11A_Ant2_5745

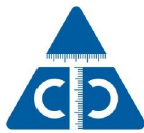


11A_Ant1_5785

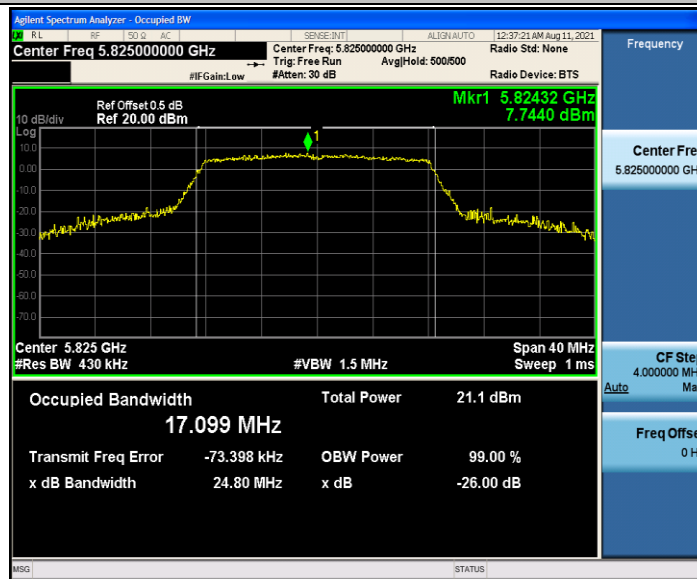


11A_Ant2_5785

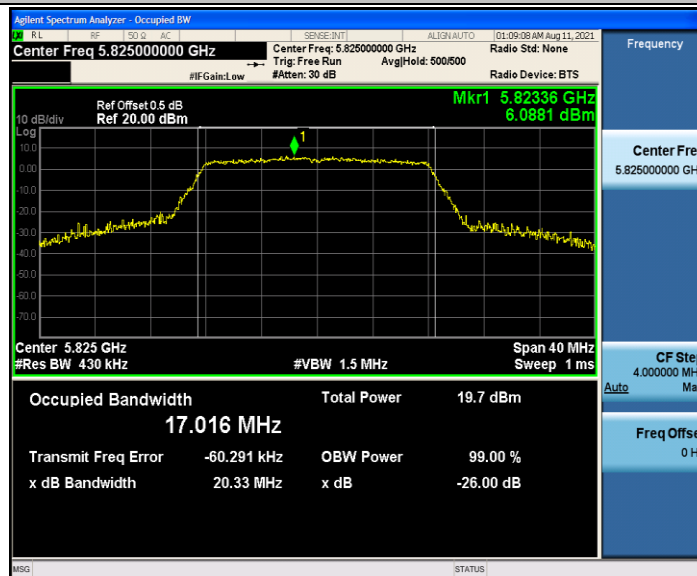




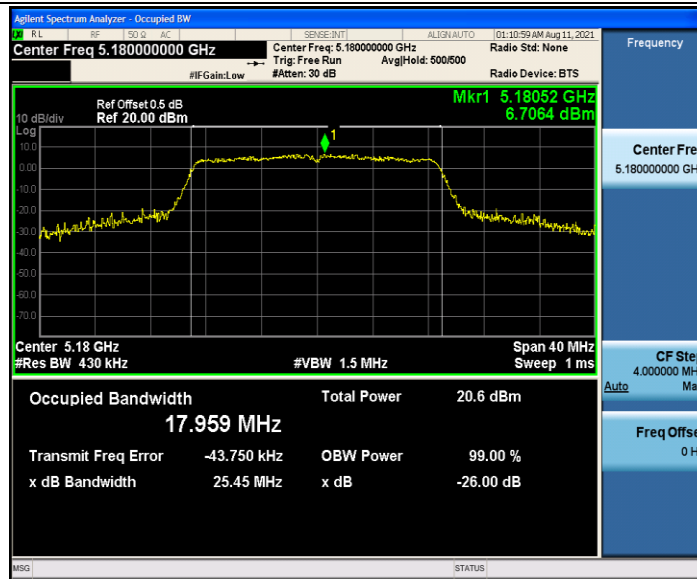
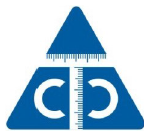
11A_Ant1_5825



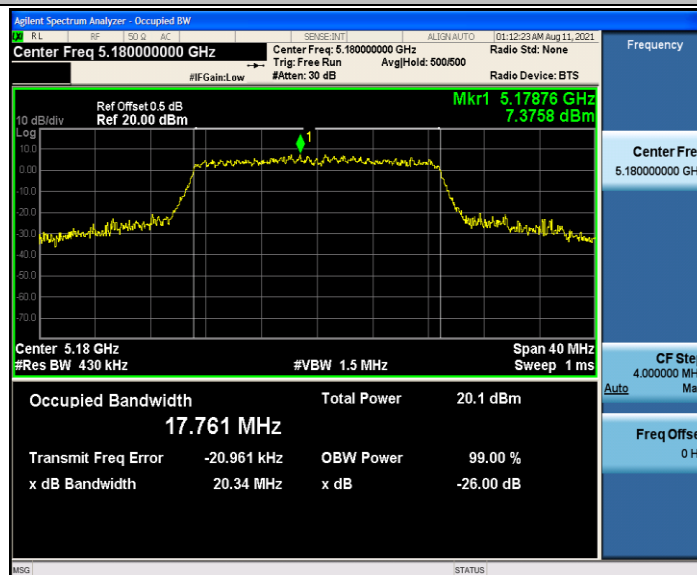
11A_Ant2_5825



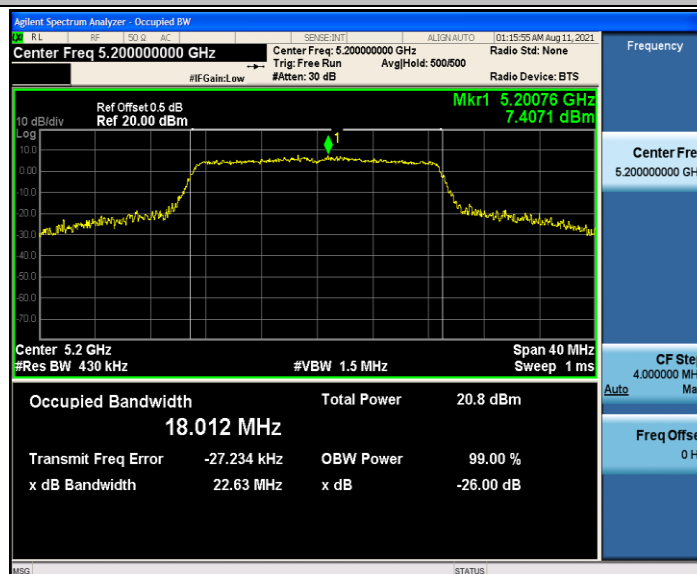
11N20MIMO_Ant1_5180

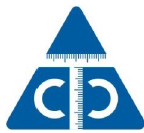


11N20MIMO_Ant2_5180

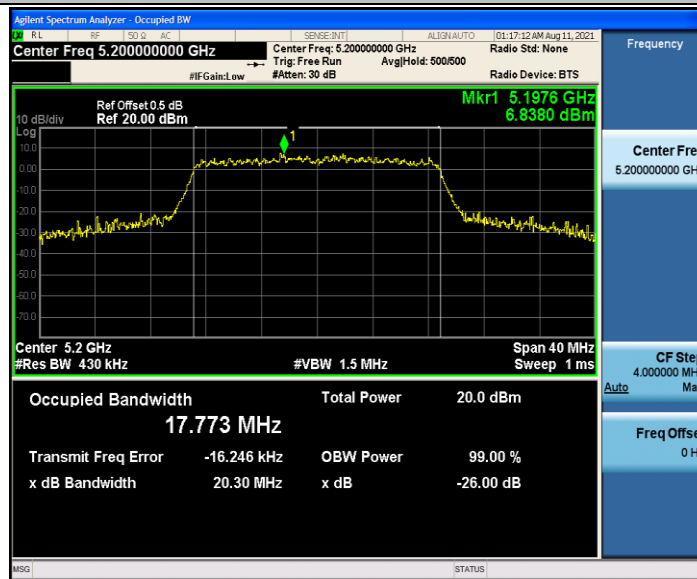


11N20MIMO_Ant1_5200

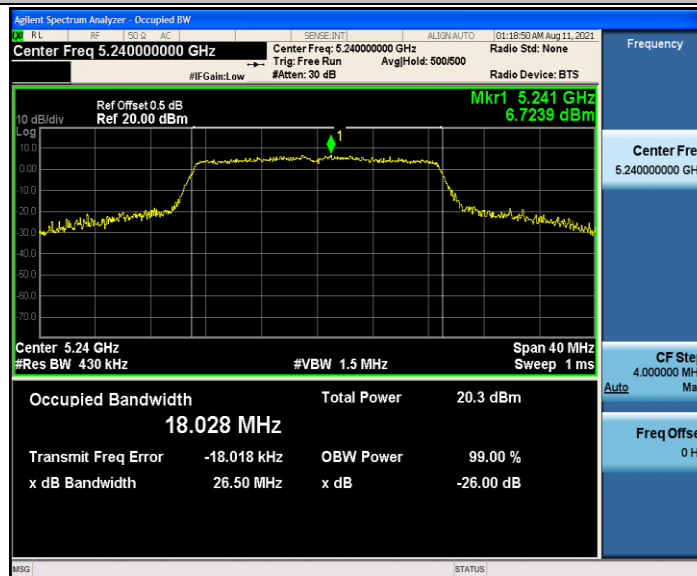




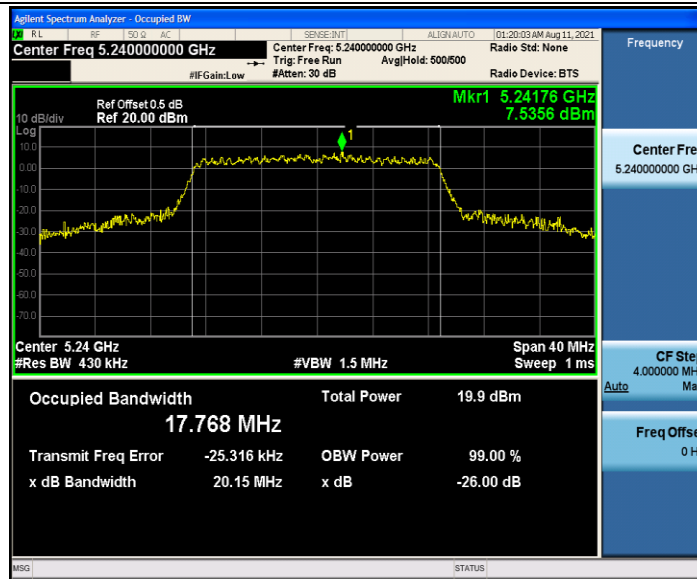
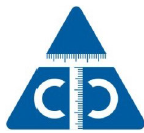
11N20MIMO_Ant2_5200



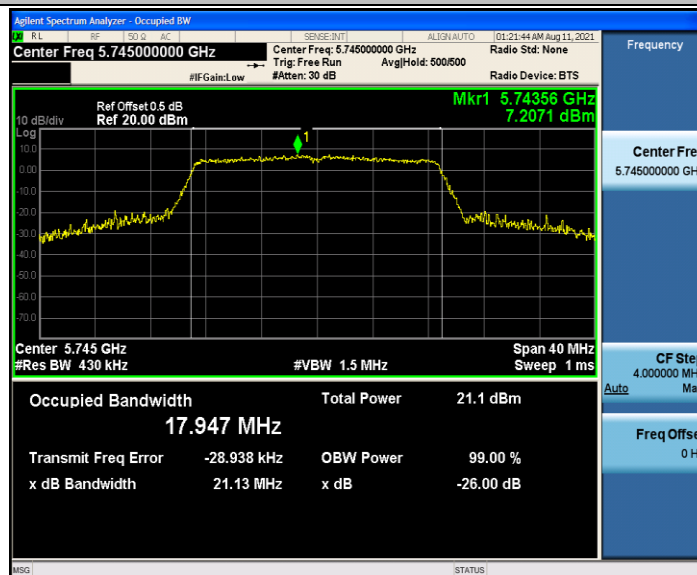
11N20MIMO_Ant1_5240



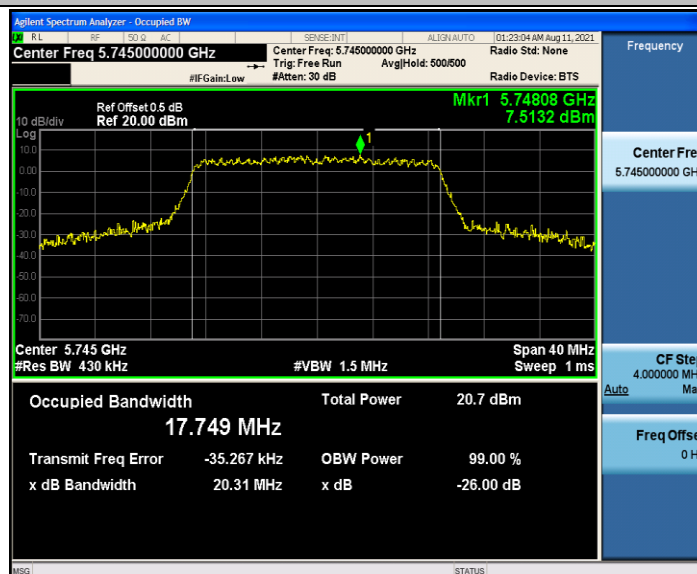
11N20MIMO_Ant2_5240

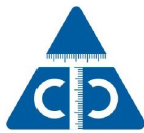


11N20MIMO_Ant1_5745

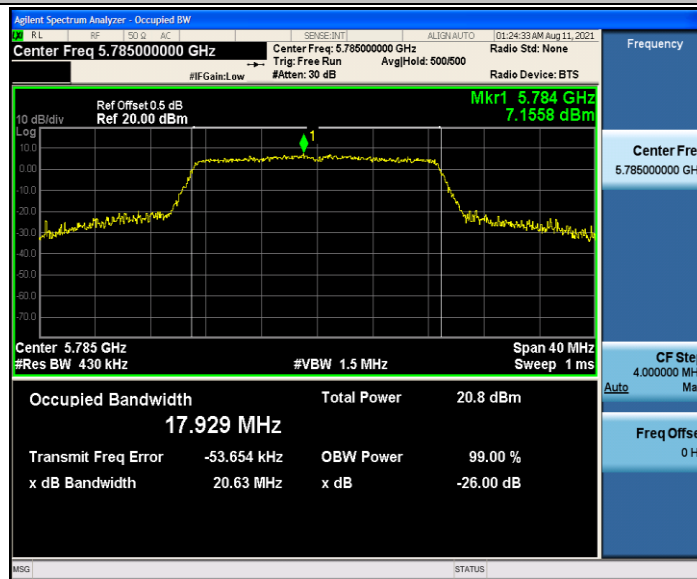


11N20MIMO_Ant2_5745

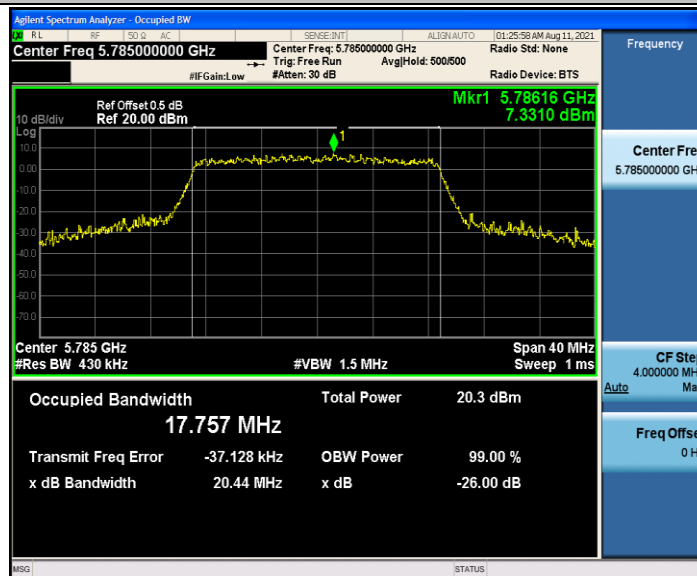




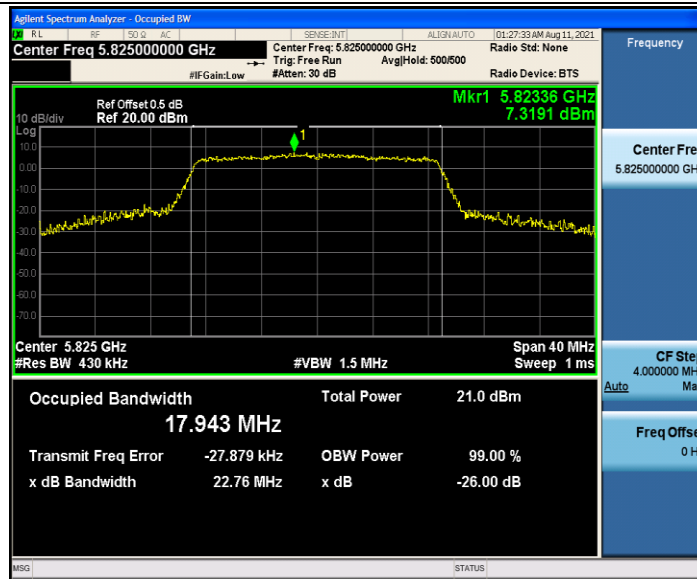
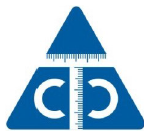
11N20MIMO_Ant1_5785



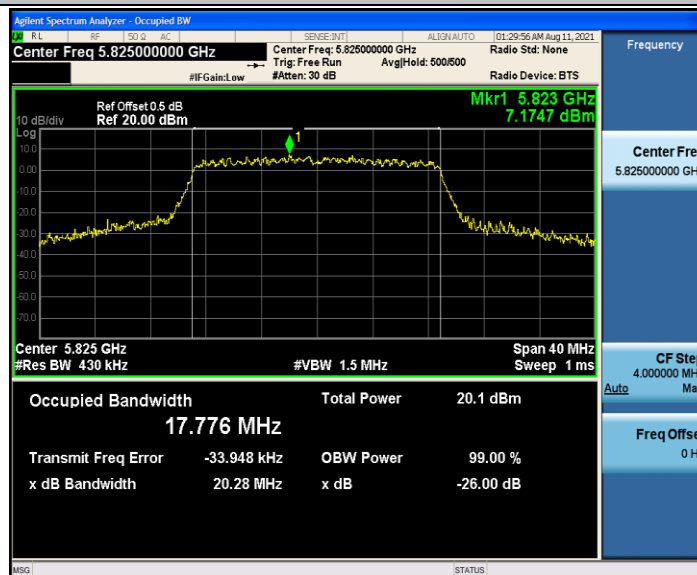
11N20MIMO_Ant2_5785



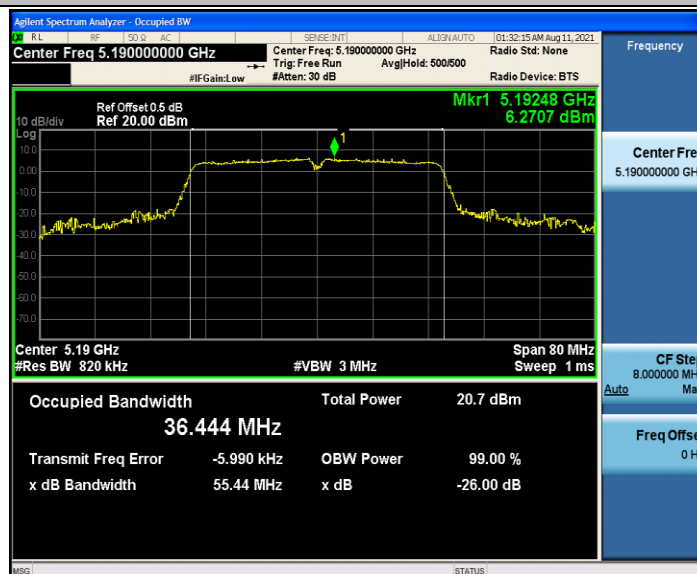
11N20MIMO_Ant1_5825

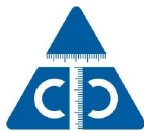


11N20MIMO_Ant2_5825

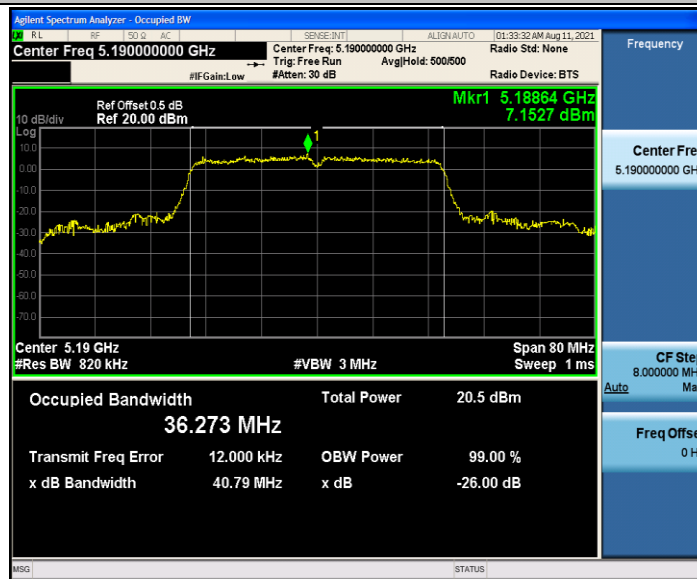


11N40MIMO_Ant1_5190

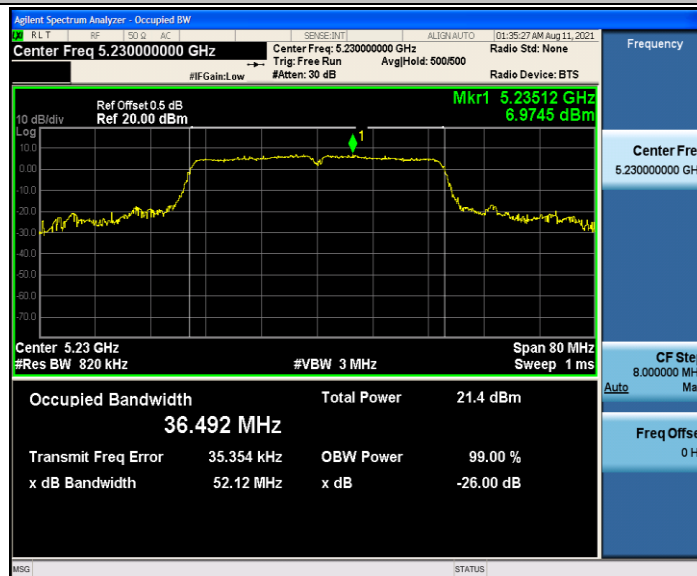




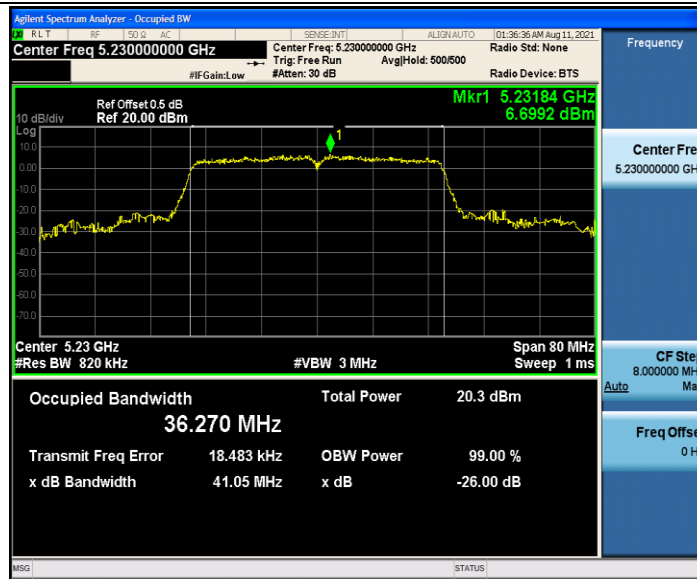
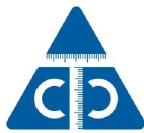
11N40MIMO_Ant2_5190



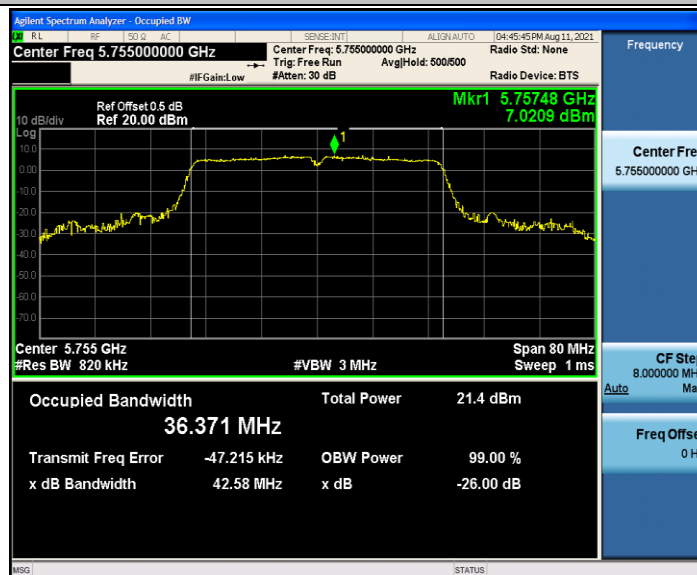
11N40MIMO_Ant1_5230



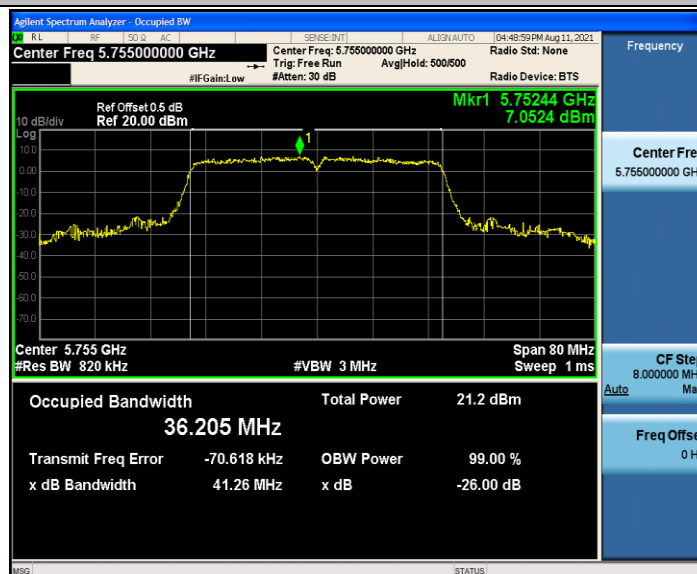
11N40MIMO_Ant2_5230

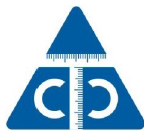


11N40MIMO_Ant1_5755

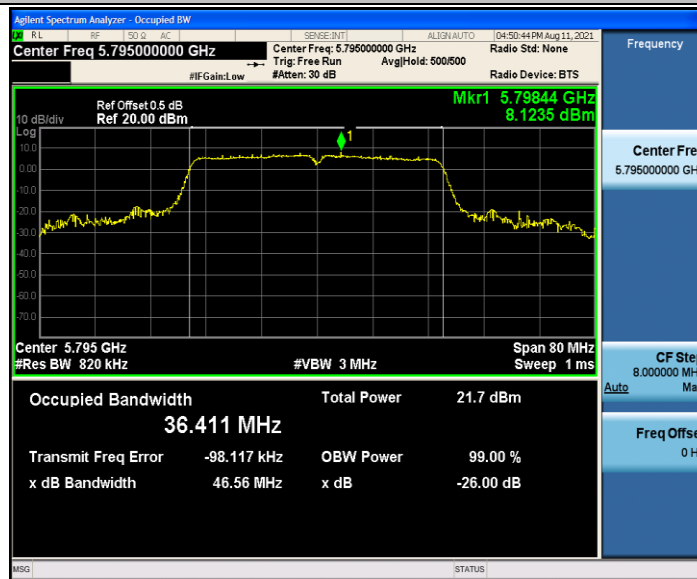


11N40MIMO_Ant2_5755





11N40MIMO_Ant1_5795



11N40MIMO_Ant2_5795

