



CTC Laboratories, Inc.

Appendix for 5G WIFI

FCC ID: WNA-LK02

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Co.,LTD**

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Product Name: DIRECTV 4K RECEIVER

EUT Model: LK02



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Appendix A1: Emission Bandwidth

Test Result

TestMode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	25.880	5166.480	5192.360	---	PASS
	Ant2	5180	28.080	5166.480	5194.560	---	PASS
	Ant1	5200	23.920	5188.400	5212.320	---	PASS
	Ant2	5200	29.400	5186.480	5215.880	---	PASS
	Ant1	5240	27.920	5226.480	5254.400	---	PASS
	Ant2	5240	32.160	5225.160	5257.320	---	PASS
	Ant1	5260	28.720	5246.360	5275.080	---	PASS
	Ant2	5260	33.680	5243.600	5277.280	---	PASS
	Ant1	5280	31.800	5265.200	5297.000	---	PASS
	Ant2	5280	33.640	5263.360	5297.000	---	PASS
	Ant1	5320	30.000	5306.000	5336.000	---	PASS
	Ant2	5320	32.960	5303.680	5336.640	---	PASS
	Ant1	5500	26.120	5486.440	5512.560	---	PASS
	Ant2	5500	25.680	5486.920	5512.600	---	PASS
	Ant1	5580	22.360	5569.320	5591.680	---	PASS
	Ant2	5580	23.120	5569.040	5592.160	---	PASS
	Ant1	5700	22.720	5689.480	5712.200	---	PASS
	Ant2	5700	26.680	5687.720	5714.400	---	PASS
	Ant1	5745	21.000	5734.480	5755.480	---	PASS
	Ant2	5745	23.320	5733.880	5757.200	---	PASS
Ant1	5785	21.200	5774.280	5795.480	---	PASS	
Ant2	5785	25.920	5771.400	5797.320	---	PASS	
Ant1	5825	25.720	5811.480	5837.200	---	PASS	
Ant2	5825	28.080	5811.400	5839.480	---	PASS	
11N20MIMO	Ant1	5180	20.200	5169.920	5190.120	---	PASS
	Ant2	5180	20.000	5170.000	5190.000	---	PASS
	Ant1	5200	20.320	5189.800	5210.120	---	PASS
	Ant2	5200	20.320	5189.880	5210.200	---	PASS
	Ant1	5240	20.360	5229.800	5250.160	---	PASS
	Ant2	5240	20.680	5229.880	5250.560	---	PASS
	Ant1	5260	20.320	5249.840	5270.160	---	PASS
	Ant2	5260	20.720	5249.760	5270.480	---	PASS
	Ant1	5280	20.280	5269.960	5290.240	---	PASS
	Ant2	5280	25.760	5267.400	5293.160	---	PASS
	Ant1	5320	20.240	5309.840	5330.080	---	PASS



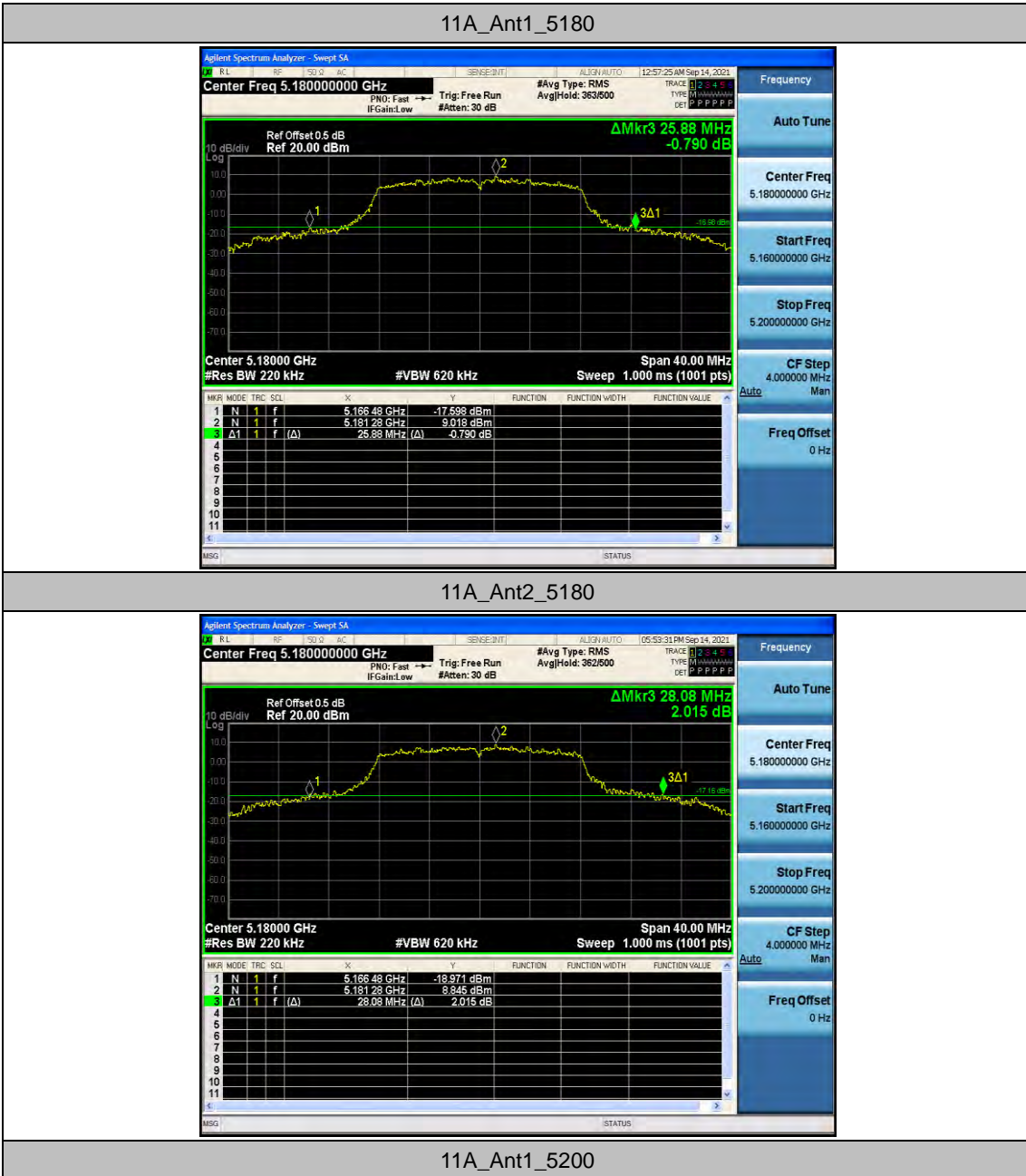
	Ant2	5320	20.280	5309.880	5330.160	---	PASS
	Ant1	5500	20.200	5489.920	5510.120	---	PASS
	Ant2	5500	20.160	5489.880	5510.040	---	PASS
	Ant1	5580	20.280	5569.920	5590.200	---	PASS
	Ant2	5580	20.080	5569.960	5590.040	---	PASS
	Ant1	5700	20.440	5689.800	5710.240	---	PASS
	Ant2	5700	20.240	5689.880	5710.120	---	PASS
	Ant1	5745	20.320	5734.840	5755.160	---	PASS
	Ant2	5745	20.280	5734.840	5755.120	---	PASS
	Ant1	5785	20.240	5774.880	5795.120	---	PASS
	Ant2	5785	20.280	5774.880	5795.160	---	PASS
	Ant1	5825	20.280	5814.800	5835.080	---	PASS
	Ant2	5825	20.320	5814.880	5835.200	---	PASS
11N40MIMO	Ant1	5190	41.200	5169.120	5210.320	---	PASS
	Ant2	5190	39.760	5170.160	5209.920	---	PASS
	Ant1	5230	40.960	5209.520	5250.480	---	PASS
	Ant2	5230	40.560	5209.920	5250.480	---	PASS
	Ant1	5270	41.520	5249.040	5290.560	---	PASS
	Ant2	5270	42.240	5249.920	5292.160	---	PASS
	Ant1	5310	40.320	5289.920	5330.240	---	PASS
	Ant2	5310	39.920	5289.920	5329.840	---	PASS
	Ant1	5510	40.720	5489.600	5530.320	---	PASS
	Ant2	5510	39.920	5490.080	5530.000	---	PASS
	Ant1	5550	40.480	5529.840	5570.320	---	PASS
	Ant2	5550	40.400	5529.840	5570.240	---	PASS
	Ant1	5670	40.720	5649.520	5690.240	---	PASS
	Ant2	5670	40.160	5649.920	5690.080	---	PASS
	Ant1	5755	40.720	5734.600	5775.320	---	PASS
	Ant2	5755	40.000	5735.000	5775.000	---	PASS
11AC20MIMO	Ant1	5795	40.800	5774.440	5815.240	---	PASS
	Ant2	5795	39.920	5774.840	5814.760	---	PASS
	Ant1	5180	20.280	5169.880	5190.160	---	PASS
	Ant2	5180	20.000	5170.040	5190.040	---	PASS
	Ant1	5200	20.200	5189.920	5210.120	---	PASS
	Ant2	5200	20.280	5189.840	5210.120	---	PASS
	Ant1	5240	20.200	5229.880	5250.080	---	PASS
	Ant2	5240	20.200	5229.960	5250.160	---	PASS
	Ant1	5260	20.400	5249.720	5270.120	---	PASS
	Ant2	5260	26.480	5247.360	5273.840	---	PASS
	Ant1	5280	20.400	5269.840	5290.240	---	PASS
	Ant2	5280	23.160	5267.560	5290.720	---	PASS
Ant1	5320	20.280	5309.960	5330.240	---	PASS	
Ant2	5320	20.040	5310.000	5330.040	---	PASS	



	Ant1	5500	20.240	5489.880	5510.120	---	PASS
	Ant2	5500	20.000	5490.040	5510.040	---	PASS
	Ant1	5580	20.280	5569.840	5590.120	---	PASS
	Ant2	5580	20.200	5569.920	5590.120	---	PASS
	Ant1	5700	20.240	5689.800	5710.040	---	PASS
	Ant2	5700	20.240	5689.920	5710.160	---	PASS
	Ant1	5745	20.280	5734.840	5755.120	---	PASS
	Ant2	5745	20.000	5735.040	5755.040	---	PASS
	Ant1	5785	20.280	5774.800	5795.080	---	PASS
	Ant2	5785	20.240	5774.840	5795.080	---	PASS
	Ant1	5825	20.360	5814.800	5835.160	---	PASS
	Ant2	5825	20.280	5814.840	5835.120	---	PASS
11AC40MIMO	Ant1	5190	40.480	5169.840	5210.320	---	PASS
	Ant2	5190	39.600	5170.160	5209.760	---	PASS
	Ant1	5230	40.400	5209.840	5250.240	---	PASS
	Ant2	5230	40.400	5210.080	5250.480	---	PASS
	Ant1	5270	41.120	5249.600	5290.720	---	PASS
	Ant2	5270	44.880	5249.920	5294.800	---	PASS
	Ant1	5310	40.480	5289.920	5330.400	---	PASS
	Ant2	5310	40.080	5290.000	5330.080	---	PASS
	Ant1	5510	40.480	5489.840	5530.320	---	PASS
	Ant2	5510	39.840	5490.160	5530.000	---	PASS
	Ant1	5550	40.560	5529.840	5570.400	---	PASS
	Ant2	5550	40.480	5529.920	5570.400	---	PASS
	Ant1	5670	40.560	5649.440	5690.000	---	PASS
	Ant2	5670	39.840	5650.160	5690.000	---	PASS
	Ant1	5755	40.800	5734.440	5775.240	---	PASS
	Ant2	5755	39.760	5735.000	5774.760	---	PASS
	Ant1	5795	40.800	5774.600	5815.400	---	PASS
	Ant2	5795	40.000	5774.840	5814.840	---	PASS
11AC80MIMO	Ant1	5210	81.600	5169.360	5250.960	---	PASS
	Ant2	5210	79.840	5170.320	5250.160	---	PASS
	Ant1	5290	81.280	5249.520	5330.800	---	PASS
	Ant2	5290	80.000	5250.160	5330.160	---	PASS
	Ant1	5530	81.600	5489.360	5570.960	---	PASS
	Ant2	5530	80.000	5490.160	5570.160	---	PASS
	Ant1	5610	81.120	5569.680	5650.800	---	PASS
	Ant2	5610	80.160	5570.000	5650.160	---	PASS
	Ant1	5775	81.120	5734.680	5815.800	---	PASS
	Ant2	5775	79.840	5735.160	5815.000	---	PASS



Test Graphs





11A_Ant2_5200



11A_Ant1_5240





11A_Ant2_5240



11A_Ant1_5260



11A_Ant2_5260



11A_Ant1_5280



11A_Ant2_5280





11A_Ant1_5320



11A_Ant2_5320



11A_Ant1_5500



11A_Ant2_5500



11A_Ant1_5580





11A_Ant2_5580



11A_Ant1_5700



11A_Ant2_5700



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_5260



11N20MIMO_Ant2_5260



11N20MIMO_Ant1_5280



11N20MIMO_Ant2_5280



11N20MIMO_Ant1_5320





11N20MIMO_Ant2_5320



11N20MIMO_Ant1_5500



11N20MIMO_Ant2_5500



11N20MIMO_Ant1_5580



11N20MIMO_Ant2_5580





11N20MIMO_Ant1_5700



11N20MIMO_Ant2_5700



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_5270



11N40MIMO_Ant2_5270



11N40MIMO_Ant1_5310





11N40MIMO_Ant2_5310



11N40MIMO_Ant1_5510



11N40MIMO_Ant2_5510



11N40MIMO_Ant1_5550



11N40MIMO_Ant2_5550





11N40MIMO_Ant1_5670



11N40MIMO_Ant2_5670



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_5260



11AC20MIMO_Ant2_5260



11AC20MIMO_Ant1_5280





11AC20MIMO_Ant2_5280



11AC20MIMO_Ant1_5320



11AC20MIMO_Ant2_5320



11AC20MIMO_Ant1_5500



11AC20MIMO_Ant2_5500

