



CTC Laboratories, Inc.

Appendix for 5G WIFI

FCC ID: 2AR24-AIBOX30S

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 S

RF Module Model: ZK-7612U



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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	19.720	5170.160	5189.880	---	PASS
	Ant2	5180	20.280	5169.600	5189.880	---	PASS
	Ant1	5200	19.960	5190.120	5210.080	---	PASS
	Ant2	5200	19.840	5190.080	5209.920	---	PASS
	Ant1	5240	19.760	5230.200	5249.960	---	PASS
	Ant2	5240	19.880	5230.200	5250.080	---	PASS
	Ant1	5745	19.760	5735.160	5754.920	---	PASS
	Ant2	5745	19.800	5735.160	5754.960	---	PASS
	Ant1	5785	19.520	5775.280	5794.800	---	PASS
	Ant2	5785	19.480	5775.200	5794.680	---	PASS
	Ant1	5825	20.240	5814.840	5835.080	---	PASS
	Ant2	5825	19.640	5815.120	5834.760	---	PASS
11N20MIMO	Ant1	5180	20.400	5169.800	5190.200	---	PASS
	Ant2	5180	20.080	5169.920	5190.000	---	PASS
	Ant1	5200	20.280	5189.800	5210.080	---	PASS
	Ant2	5200	20.160	5190.000	5210.160	---	PASS
	Ant1	5240	20.080	5230.040	5250.120	---	PASS
	Ant2	5240	20.360	5229.880	5250.240	---	PASS
	Ant1	5745	20.000	5735.000	5755.000	---	PASS
	Ant2	5745	20.040	5735.000	5755.040	---	PASS
	Ant1	5785	20.000	5775.080	5795.080	---	PASS
	Ant2	5785	20.040	5775.040	5795.080	---	PASS
	Ant1	5825	20.120	5814.920	5835.040	---	PASS
	Ant2	5825	20.080	5814.920	5835.000	---	PASS
11N40MIMO	Ant1	5190	40.800	5169.760	5210.560	---	PASS
	Ant2	5190	40.880	5169.440	5210.320	---	PASS
	Ant1	5230	41.760	5209.840	5251.600	---	PASS
	Ant2	5230	40.560	5209.760	5250.320	---	PASS
	Ant1	5755	40.960	5734.680	5775.640	---	PASS
	Ant2	5755	40.080	5734.920	5775.000	---	PASS
	Ant1	5795	40.160	5774.920	5815.080	---	PASS
	Ant2	5795	40.160	5774.760	5814.920	---	PASS
11AC20MIMO	Ant1	5180	20.200	5169.880	5190.080	---	PASS
	Ant2	5180	20.240	5169.920	5190.160	---	PASS
	Ant1	5200	20.040	5189.880	5209.920	---	PASS
	Ant2	5200	20.120	5190.000	5210.120	---	PASS
	Ant1	5240	22.200	5229.800	5252.000	---	PASS



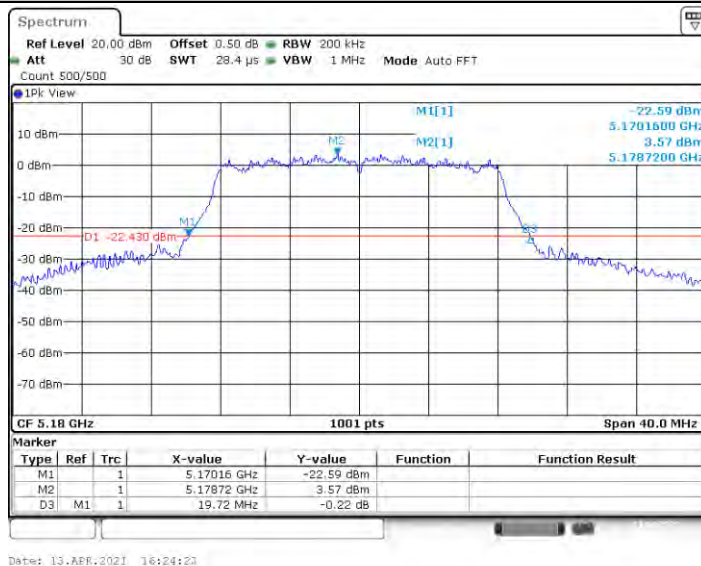
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	Ant2	5240	20.200	5229.880	5250.080	---	PASS
	Ant1	5745	21.640	5734.880	5756.520	---	PASS
	Ant2	5745	20.200	5734.880	5755.080	---	PASS
	Ant1	5785	20.200	5774.920	5795.120	---	PASS
	Ant2	5785	20.000	5775.000	5795.000	---	PASS
	Ant1	5825	20.360	5814.800	5835.160	---	PASS
	Ant2	5825	20.200	5814.880	5835.080	---	PASS
11AC40MIMO	Ant1	5190	40.480	5169.760	5210.240	---	PASS
	Ant2	5190	40.880	5169.200	5210.080	---	PASS
	Ant1	5230	40.560	5209.840	5250.400	---	PASS
	Ant2	5230	40.240	5209.920	5250.160	---	PASS
	Ant1	5755	40.320	5735.000	5775.320	---	PASS
	Ant2	5755	40.160	5734.920	5775.080	---	PASS
	Ant1	5795	40.480	5774.840	5815.320	---	PASS
11AC80MIMO	Ant2	5795	40.240	5774.840	5815.080	---	PASS
	Ant1	5210	80.000	5170.000	5250.000	---	PASS
	Ant2	5210	79.680	5170.160	5249.840	---	PASS
	Ant1	5775	80.000	5735.000	5815.000	---	PASS
	Ant2	5775	79.840	5735.160	5815.000	---	PASS

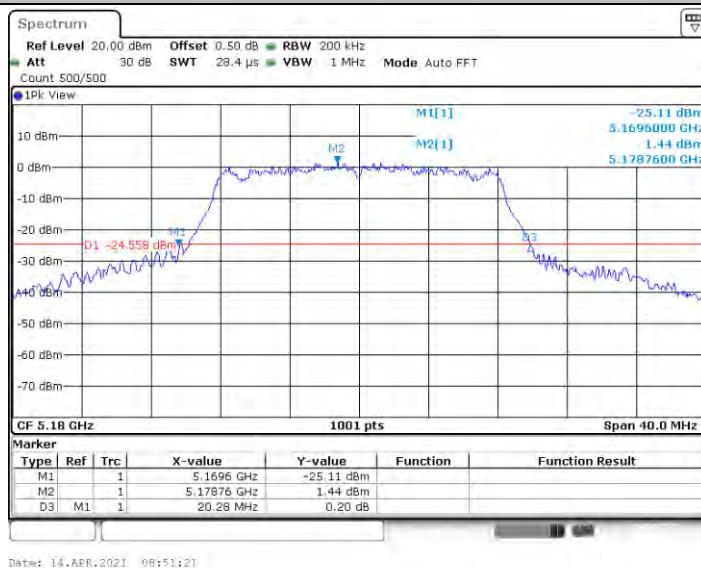


Test Graphs

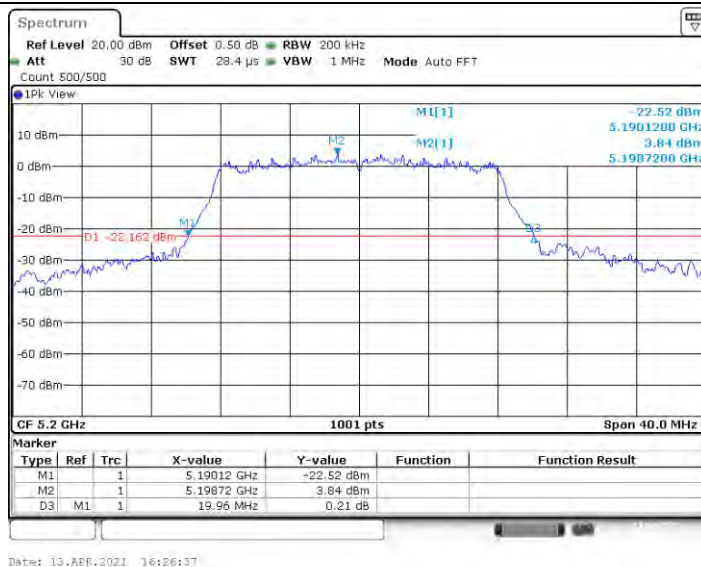
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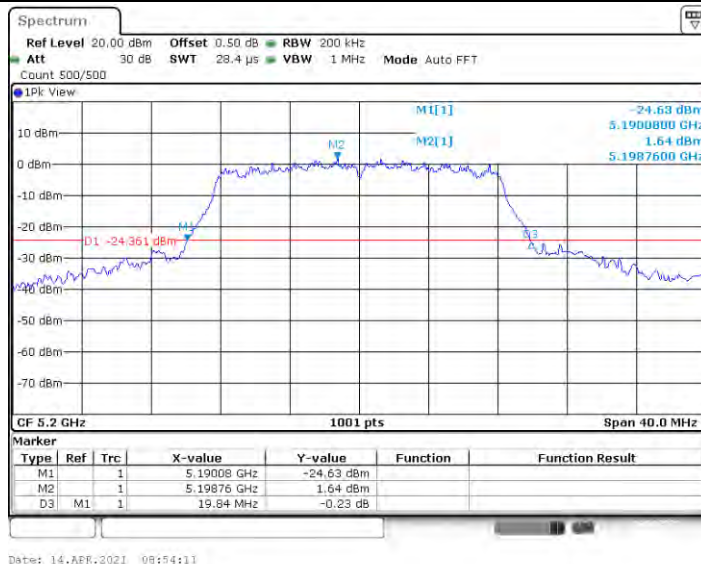
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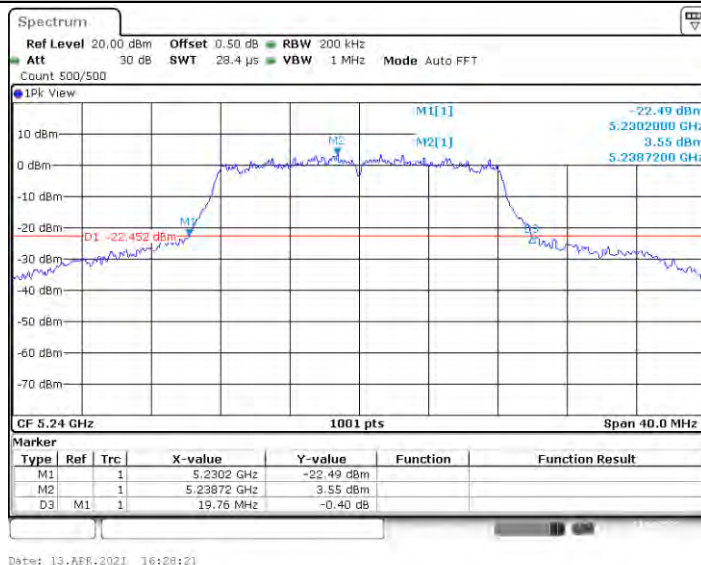
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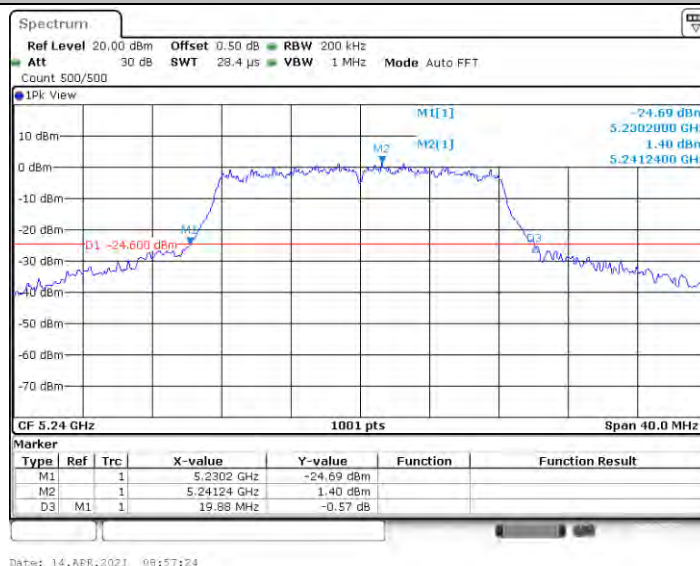


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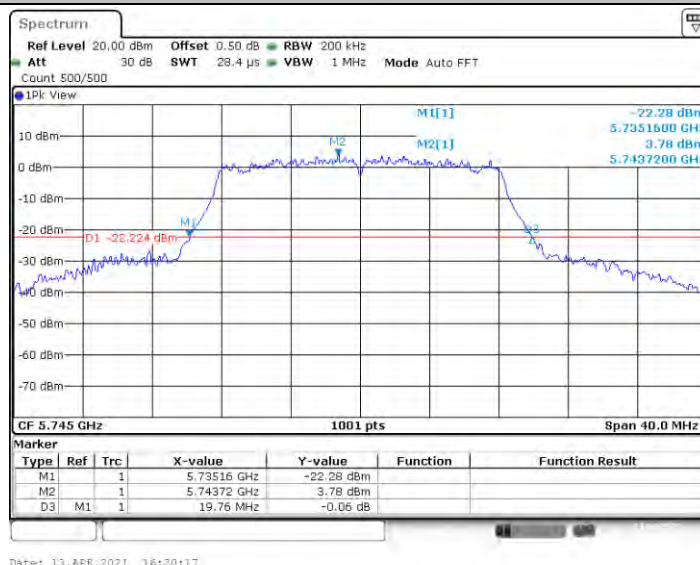




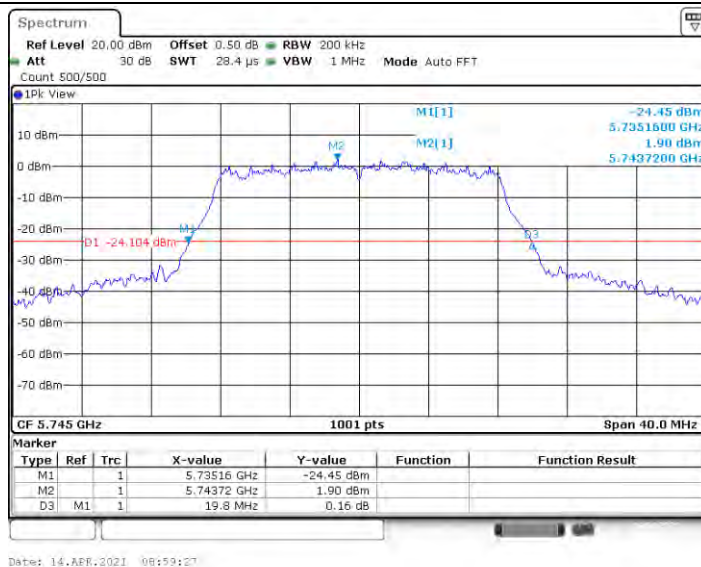
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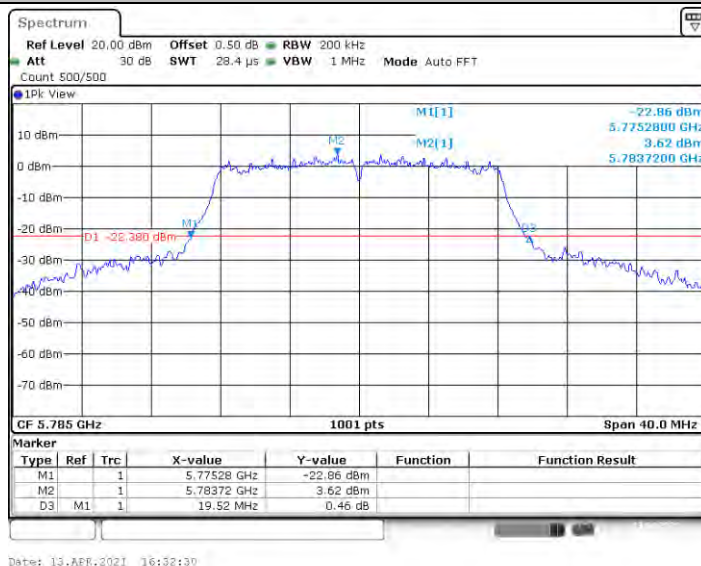
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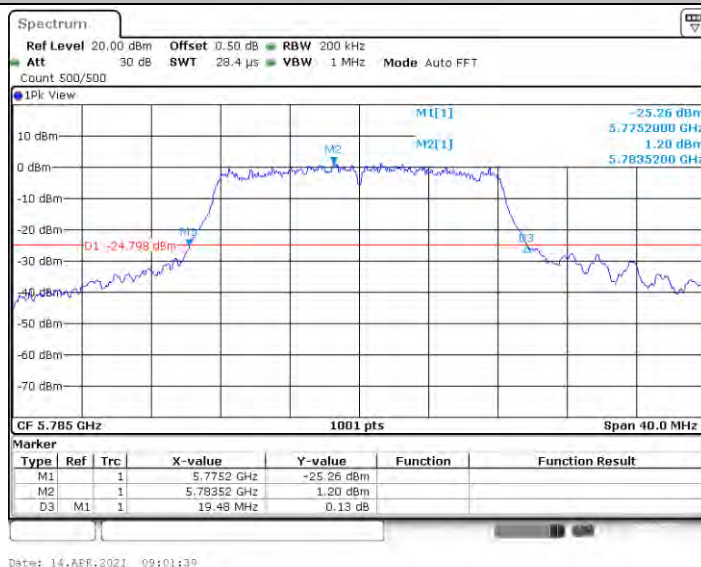
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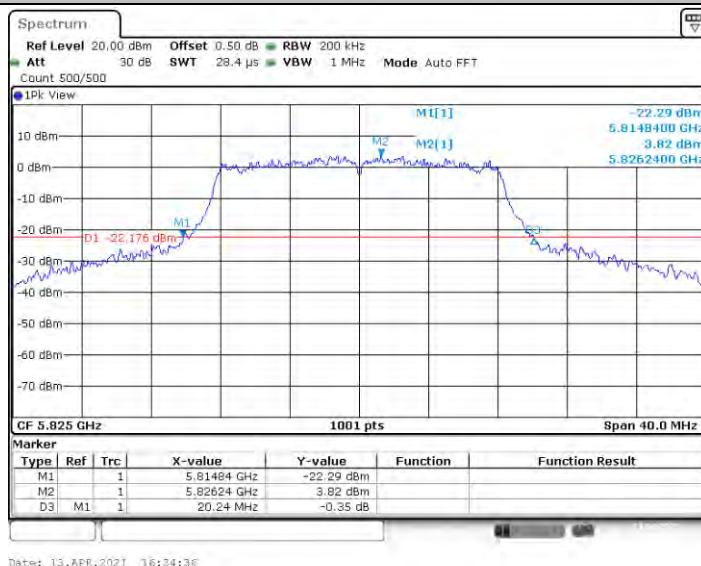


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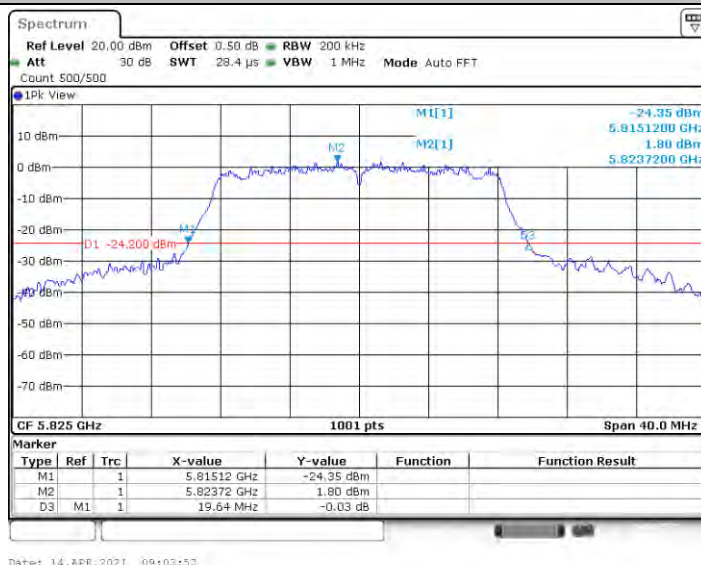




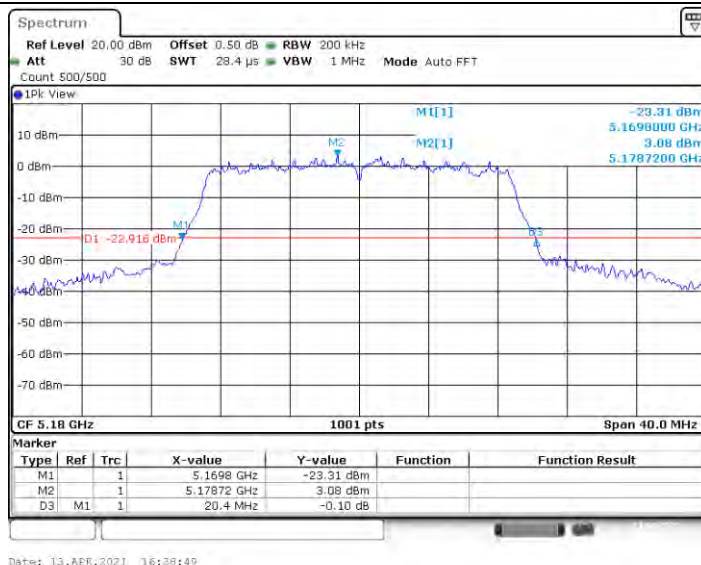
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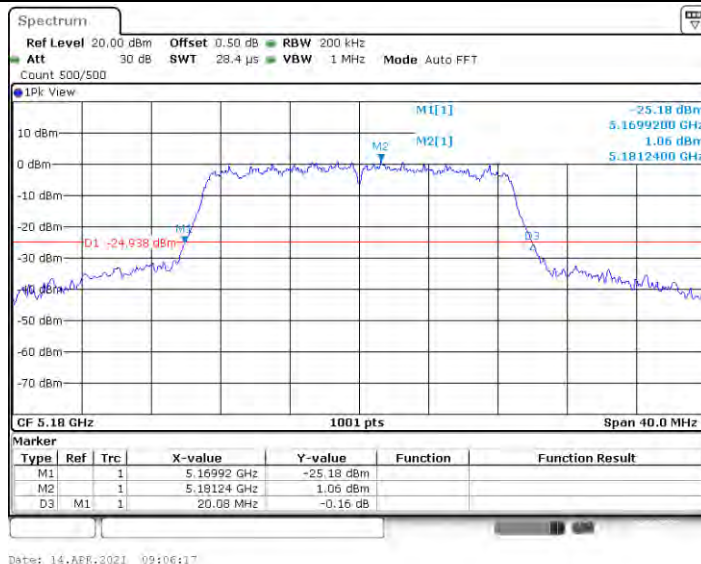
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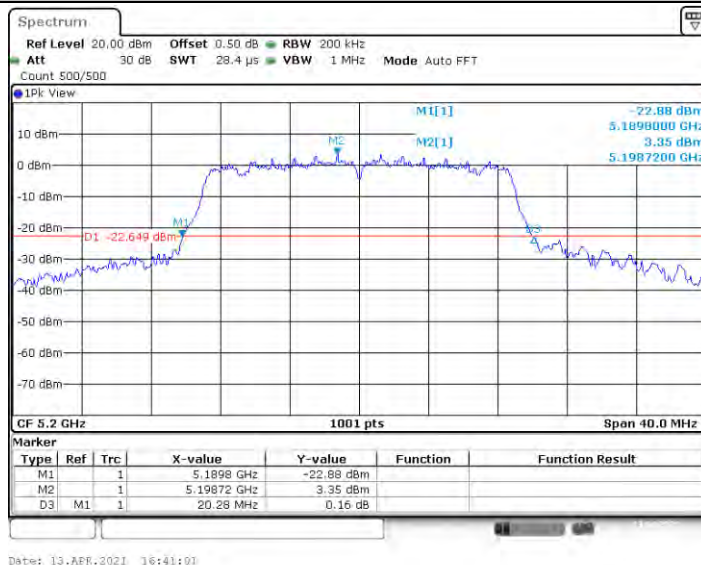
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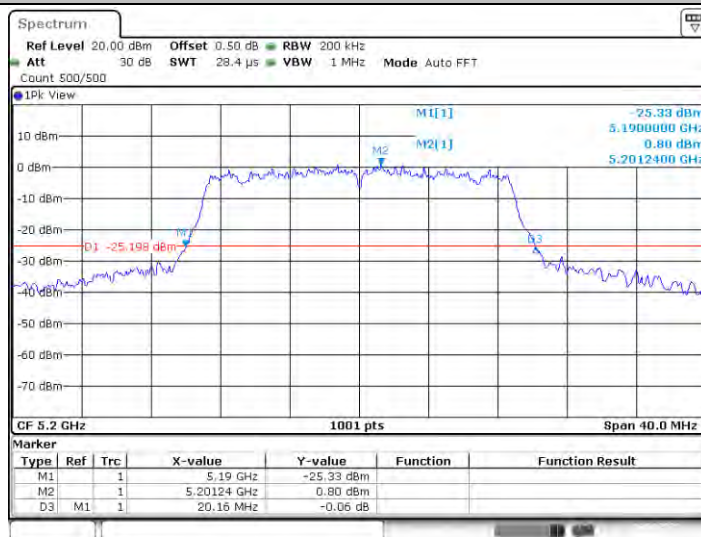


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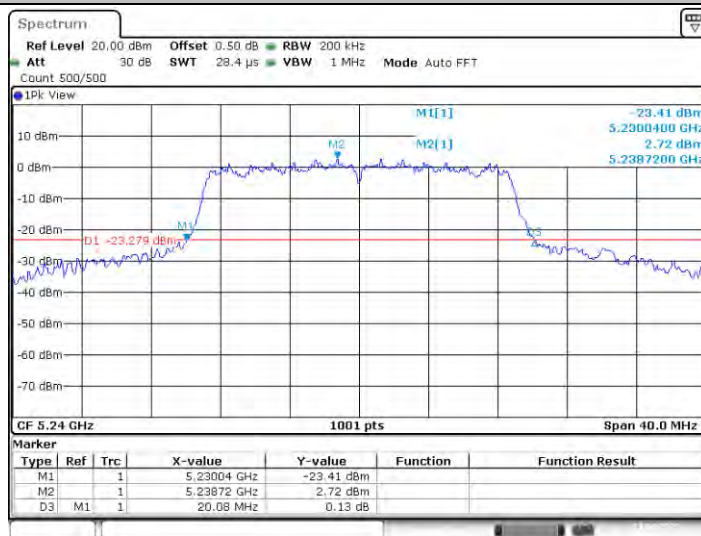


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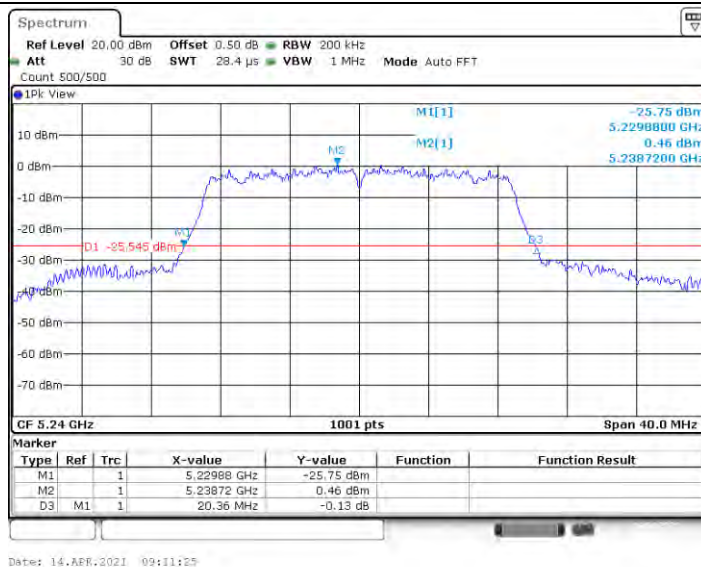
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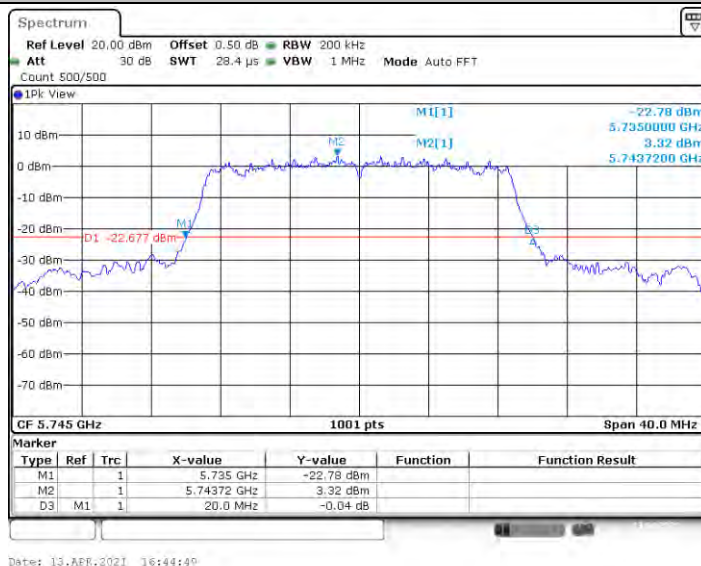


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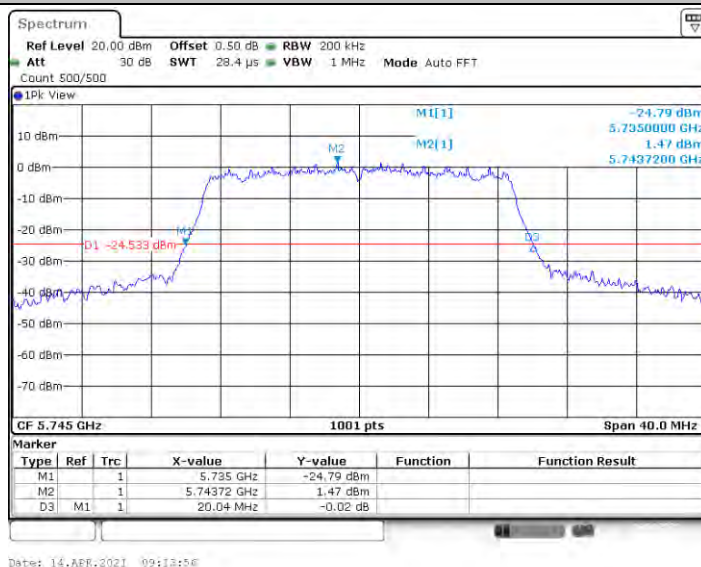
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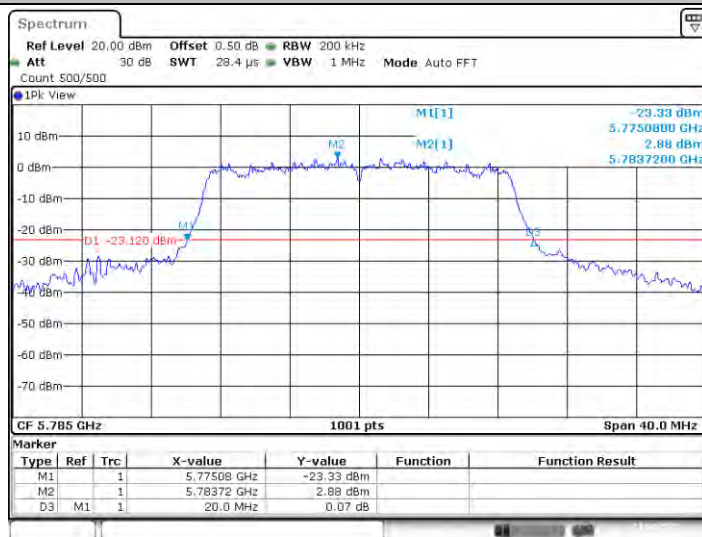


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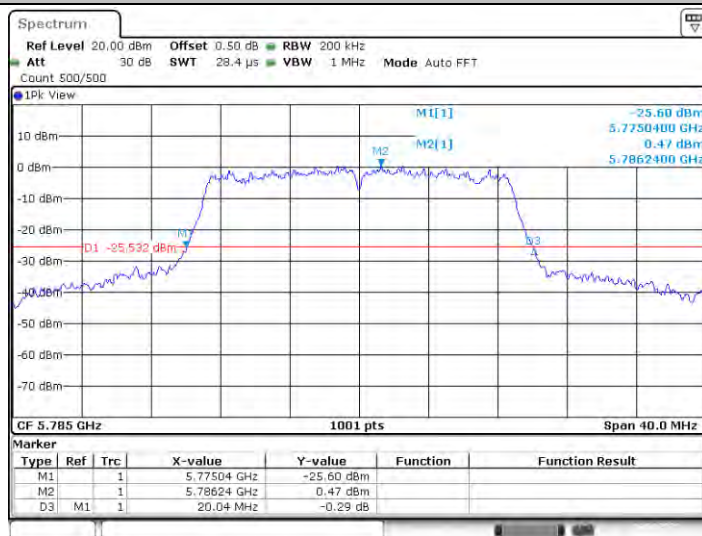


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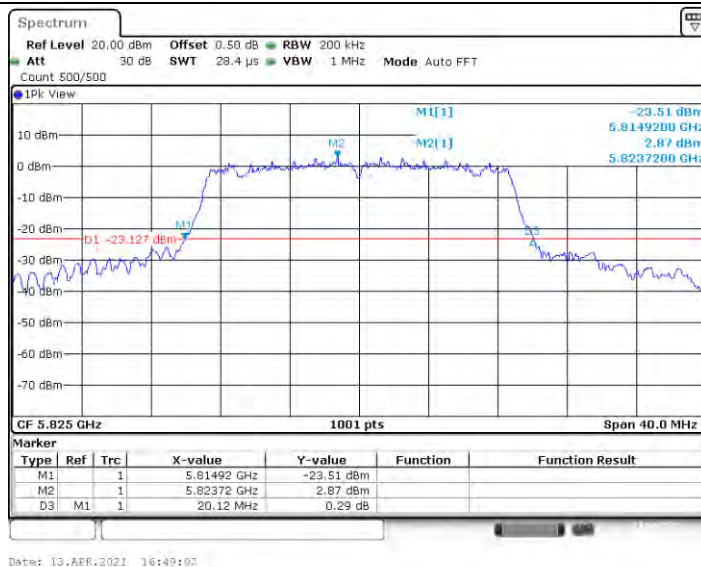
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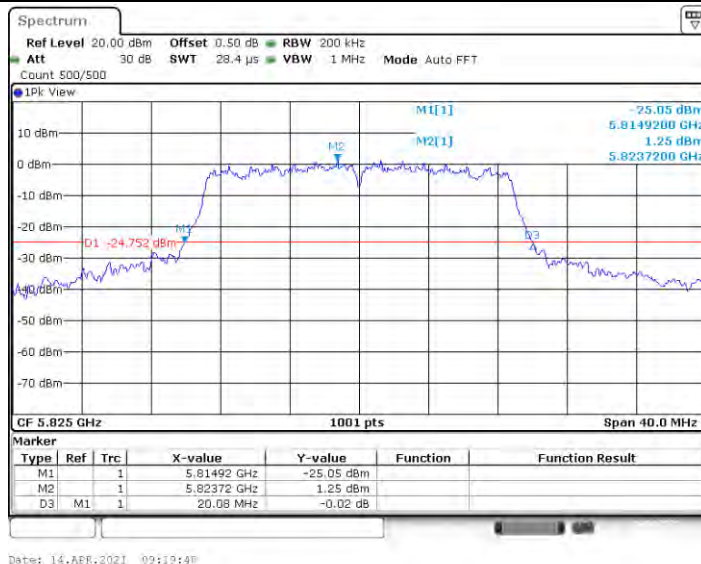


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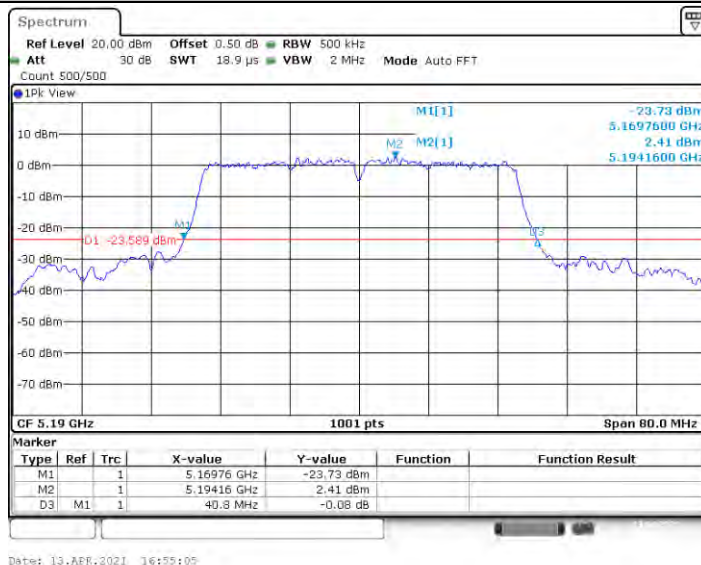
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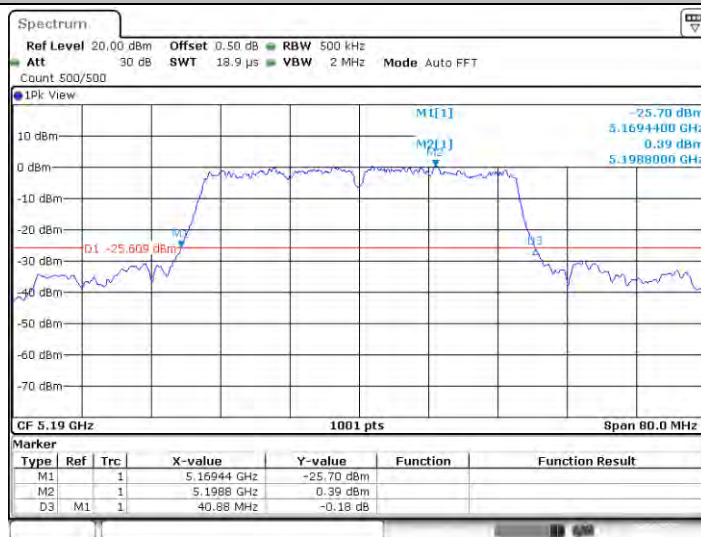


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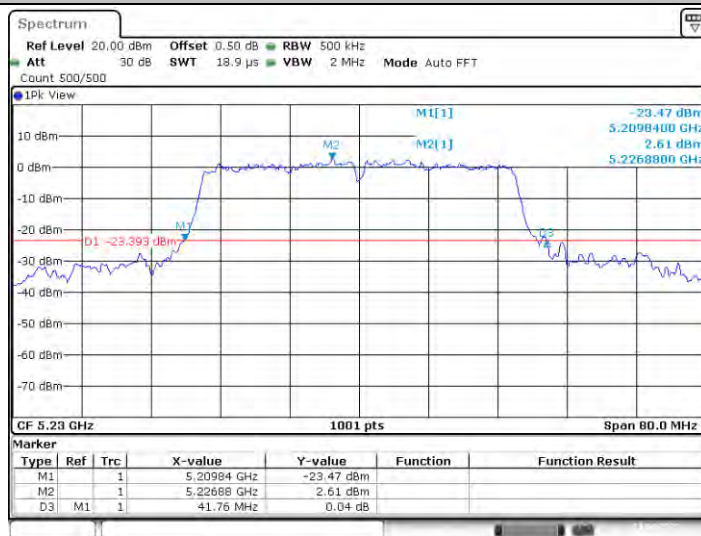


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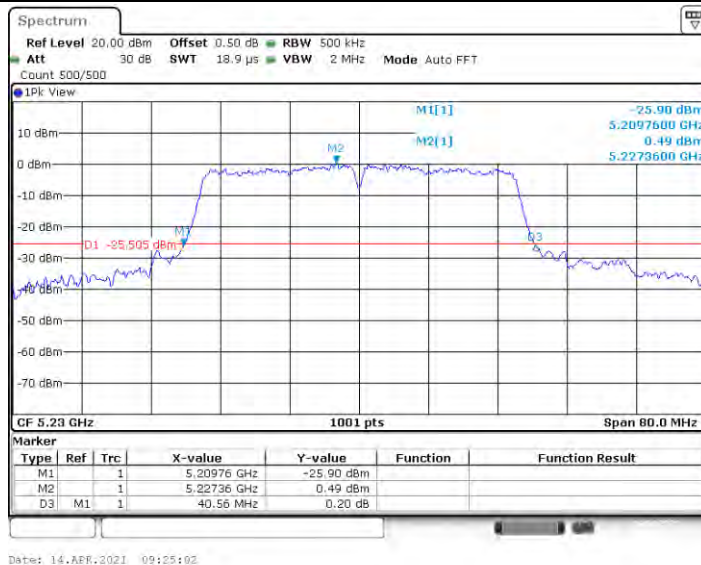
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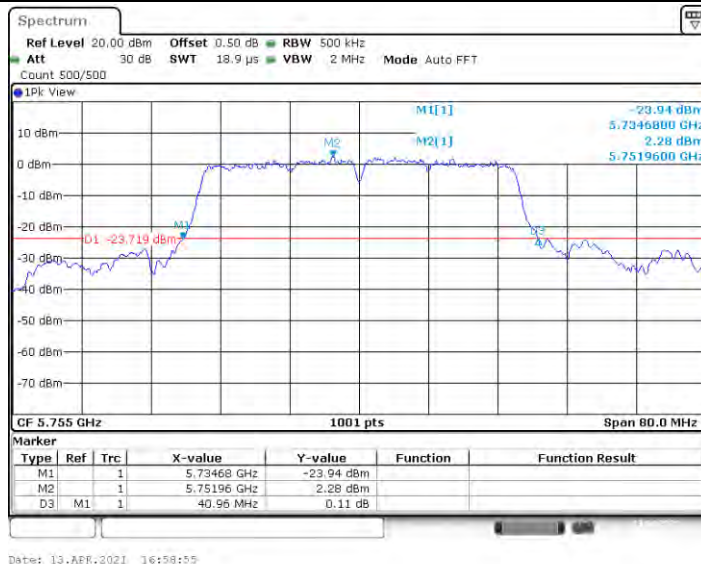


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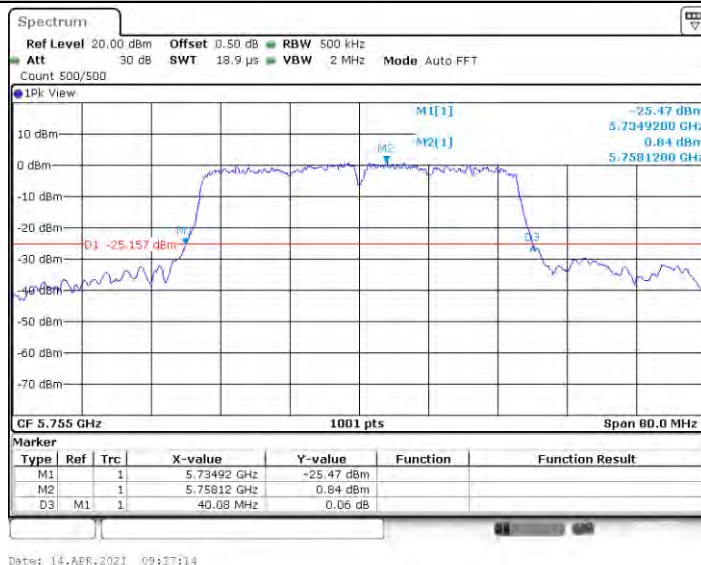
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11N40MIMO_Ant1_5755

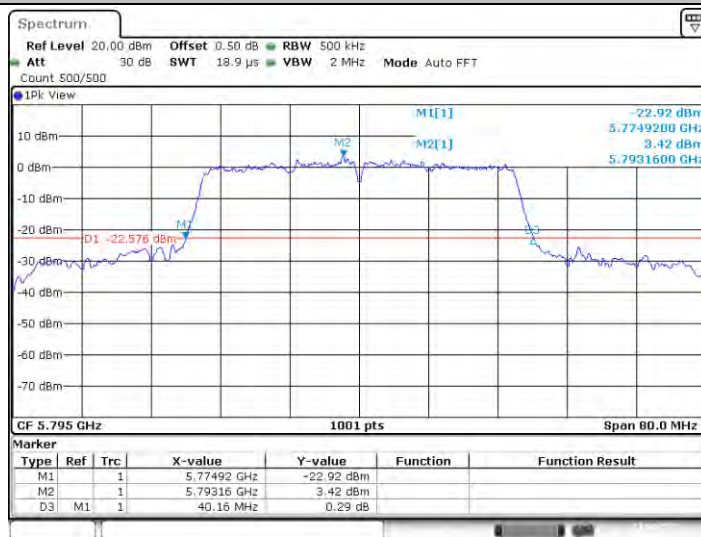


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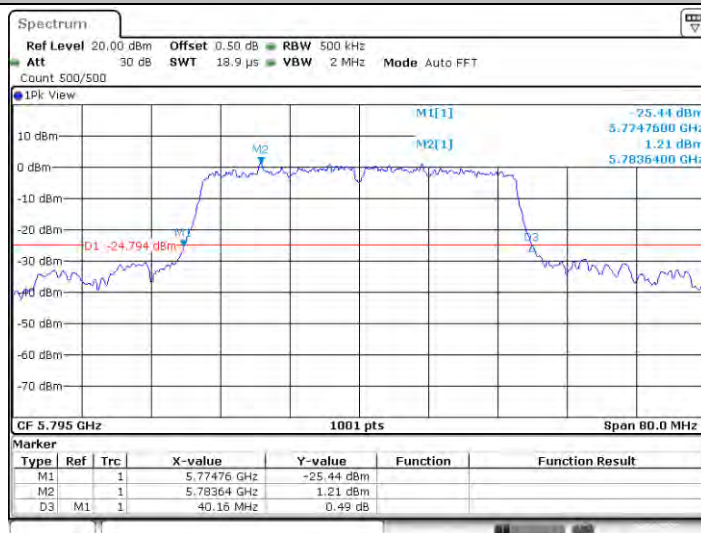


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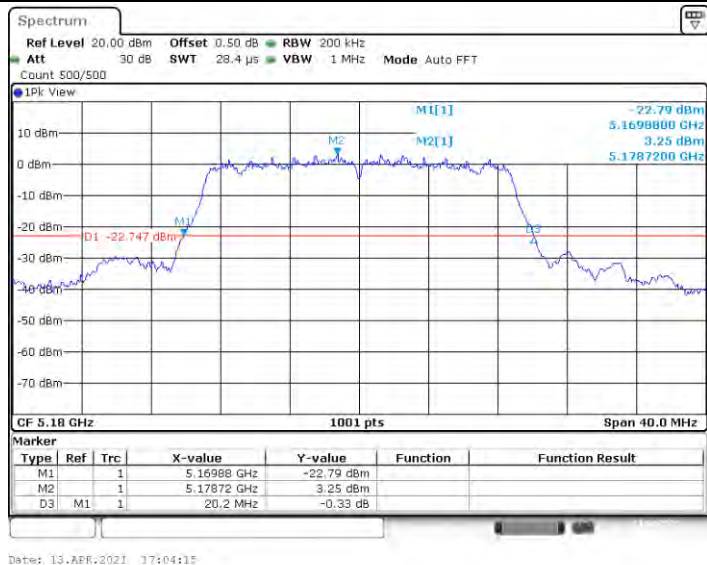
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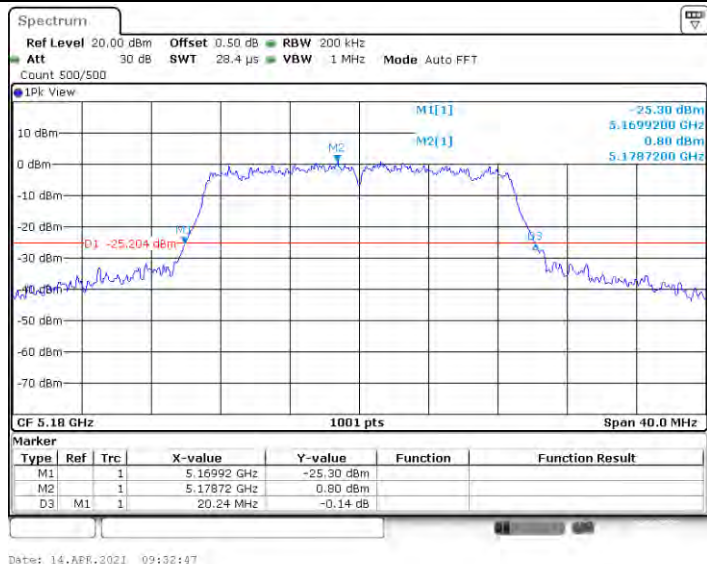


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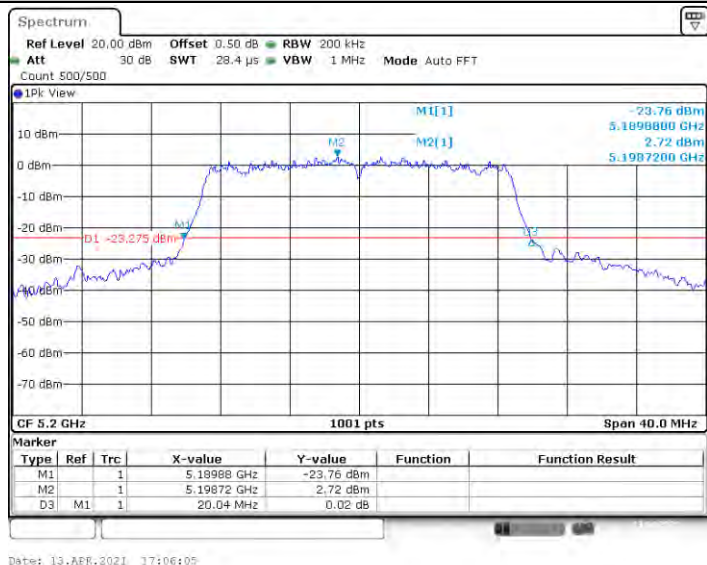
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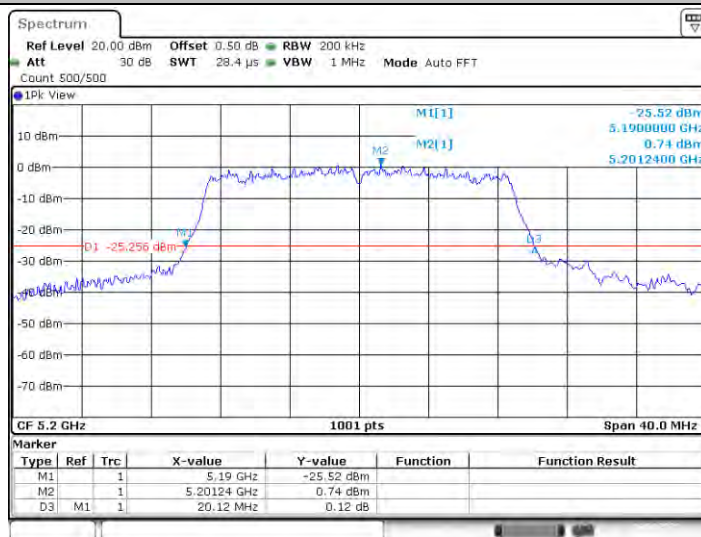


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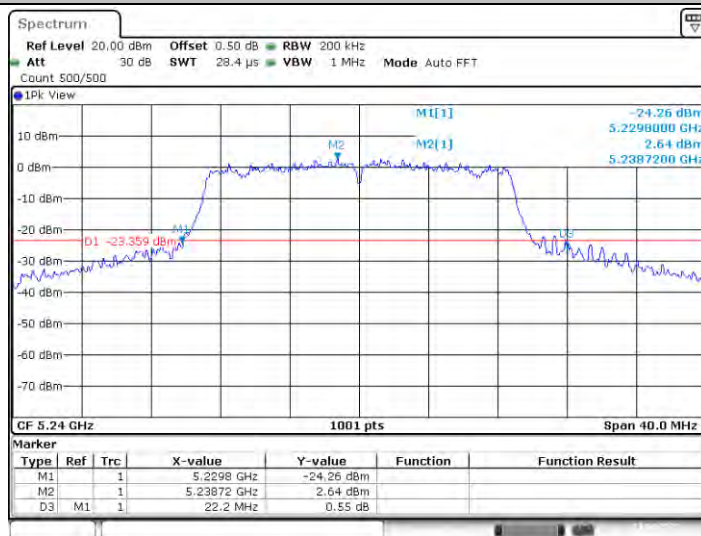


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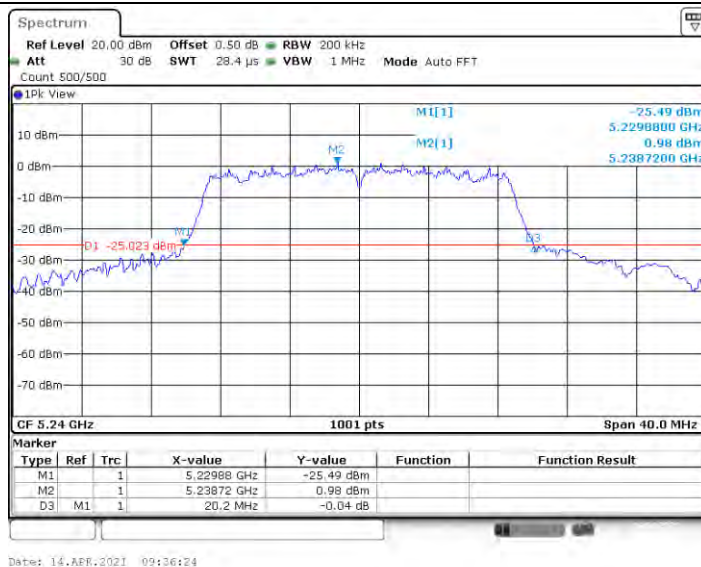
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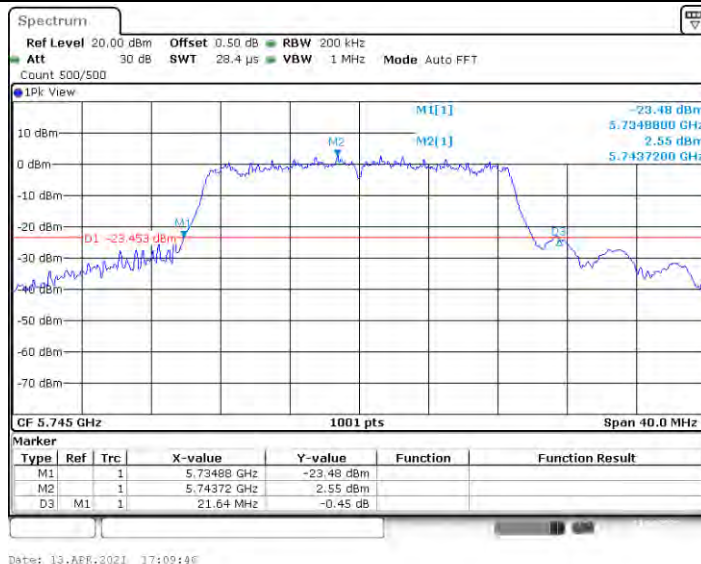


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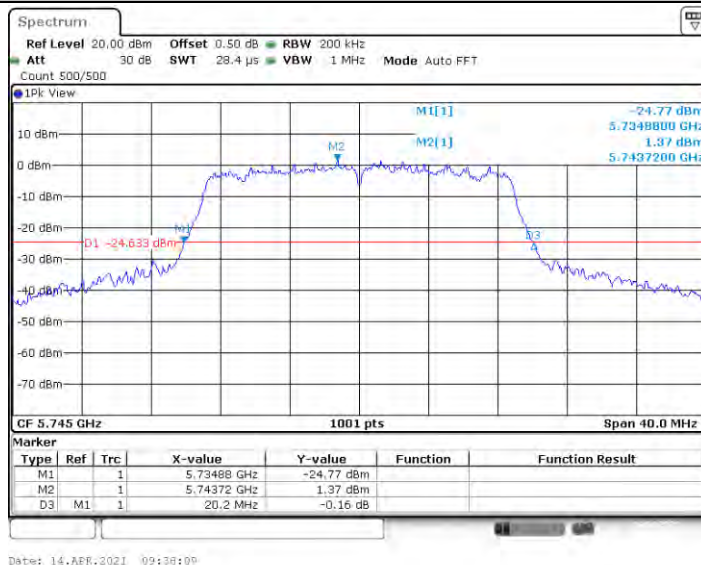
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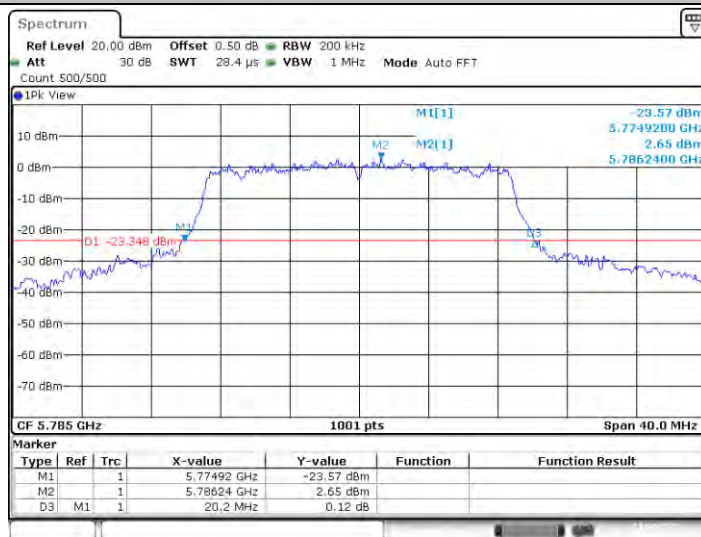


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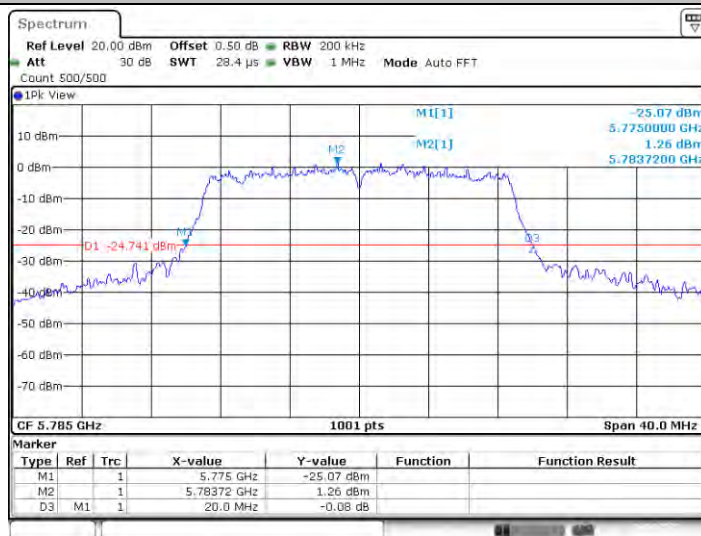




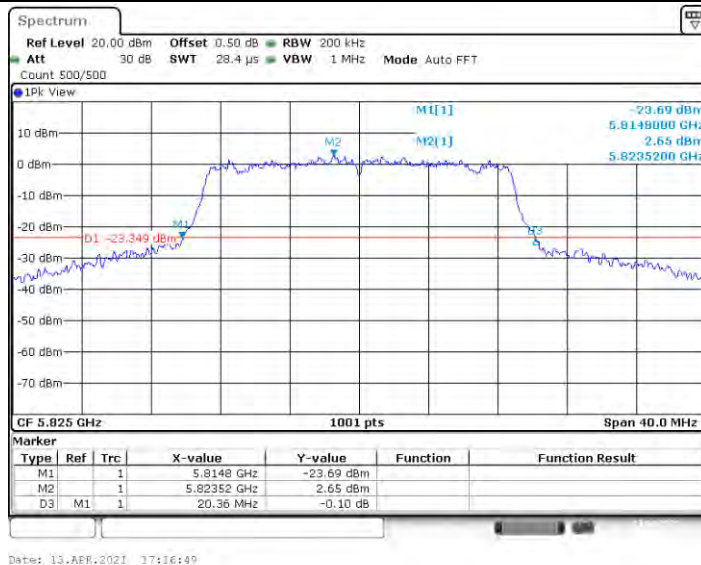
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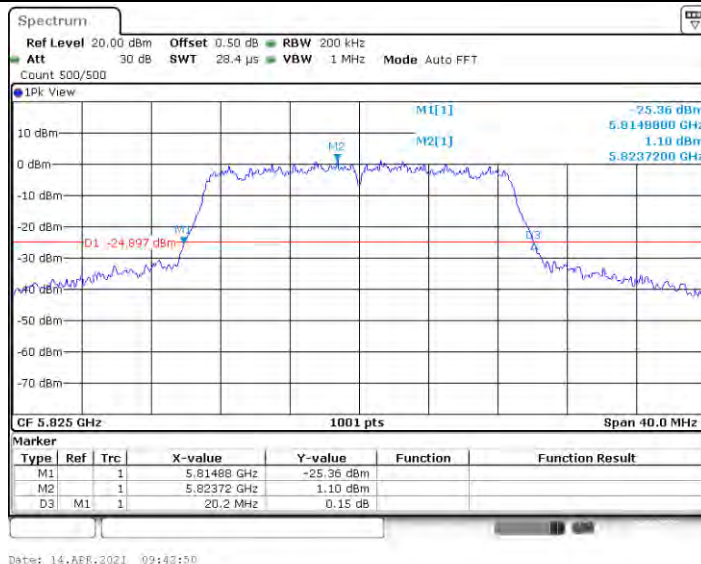
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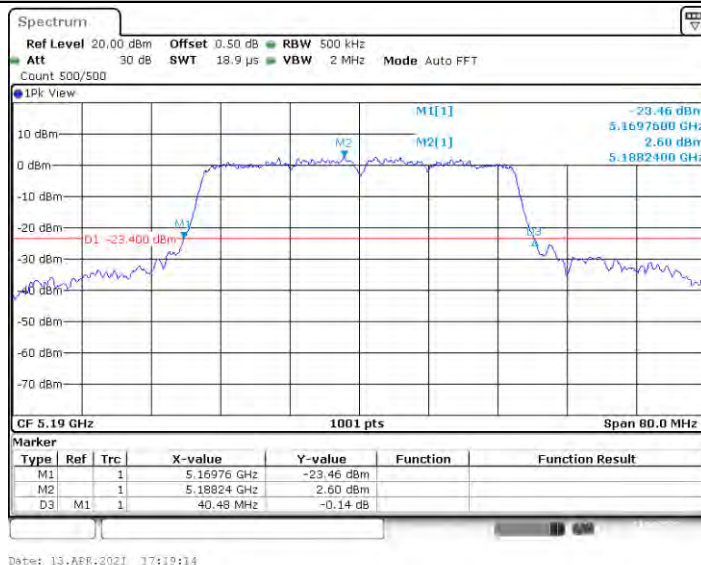
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11AC20MIMO_Ant2_5825

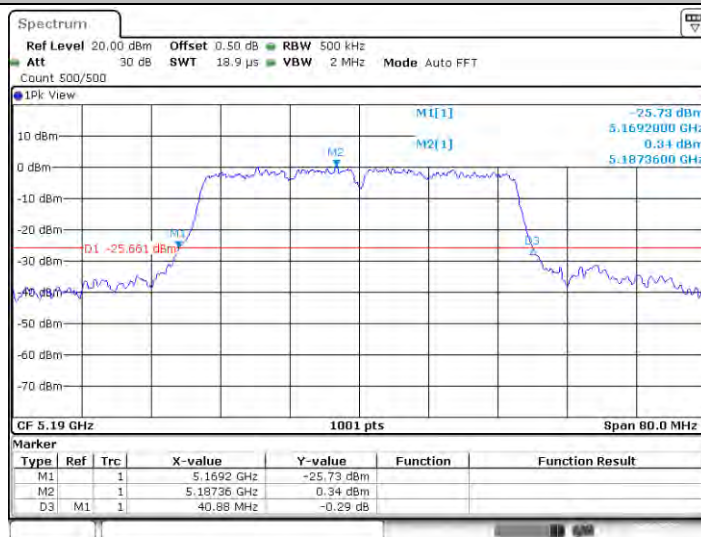


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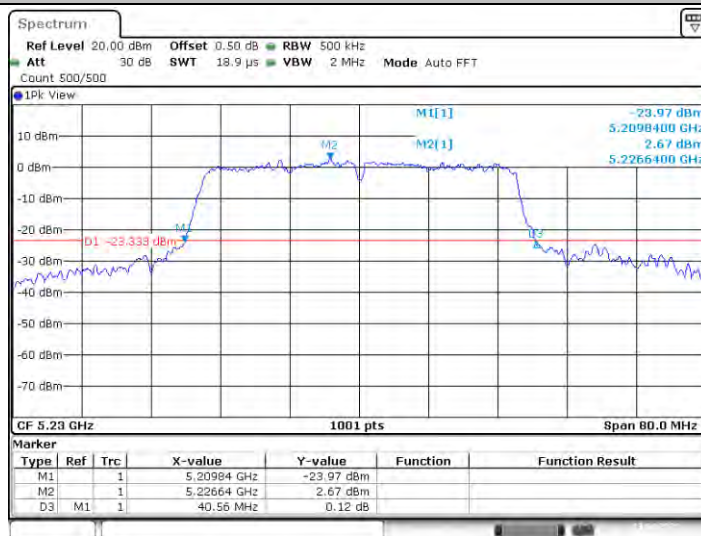


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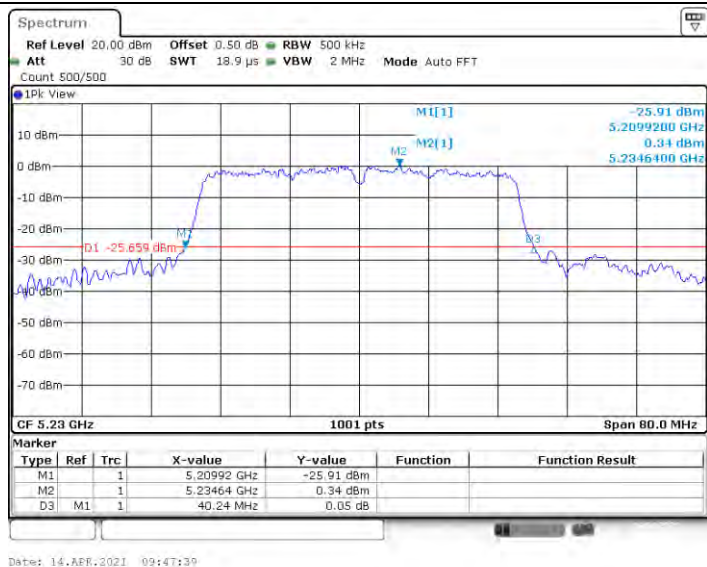
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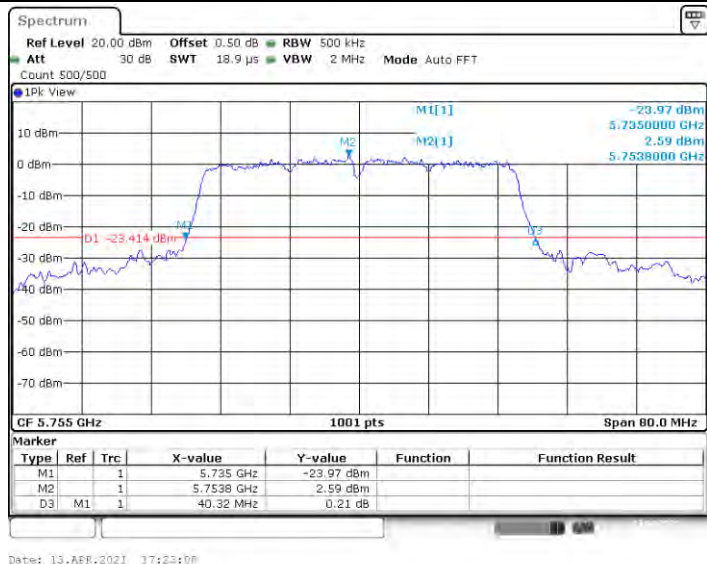


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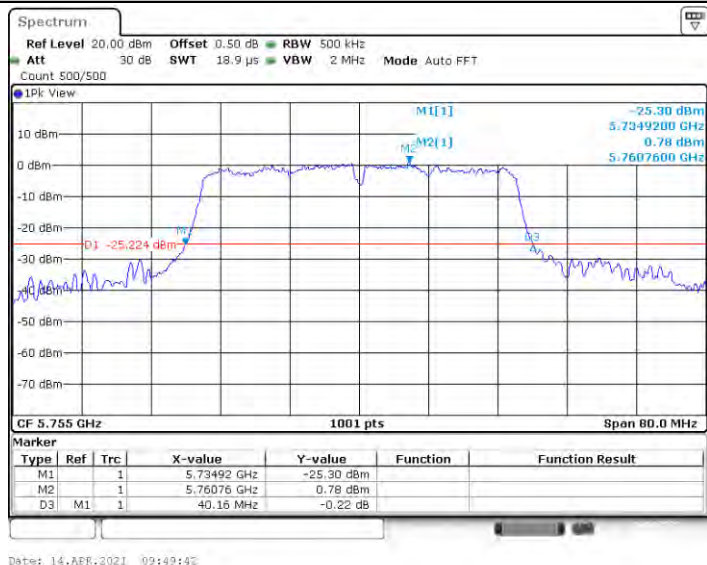
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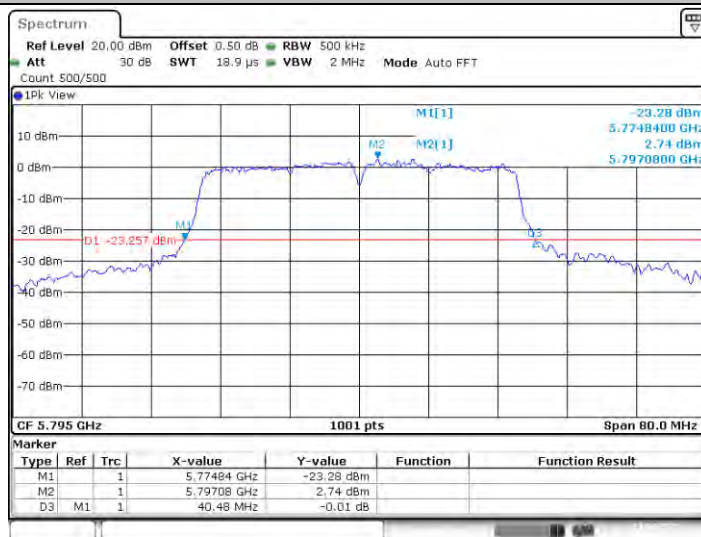


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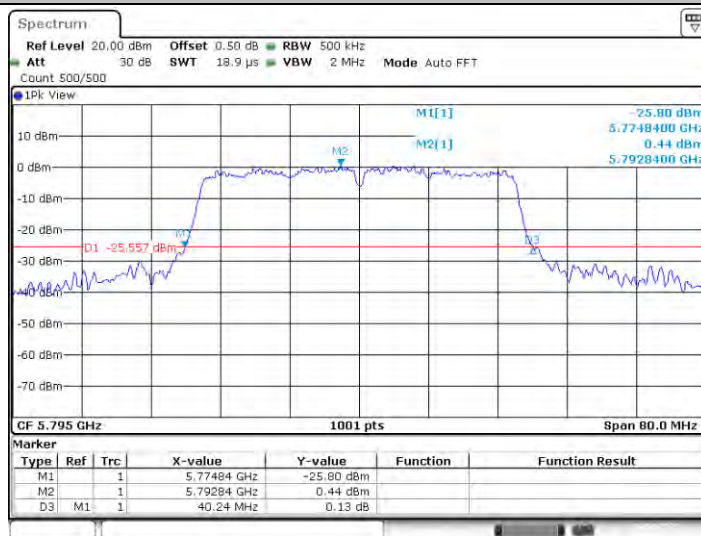


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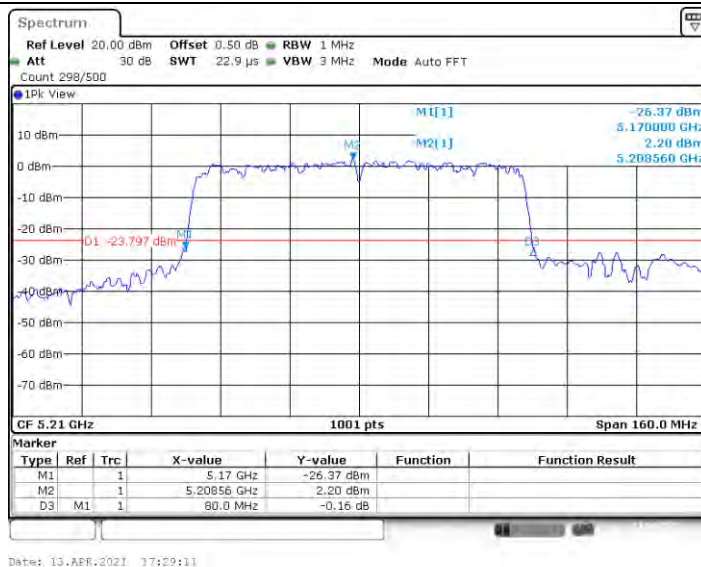
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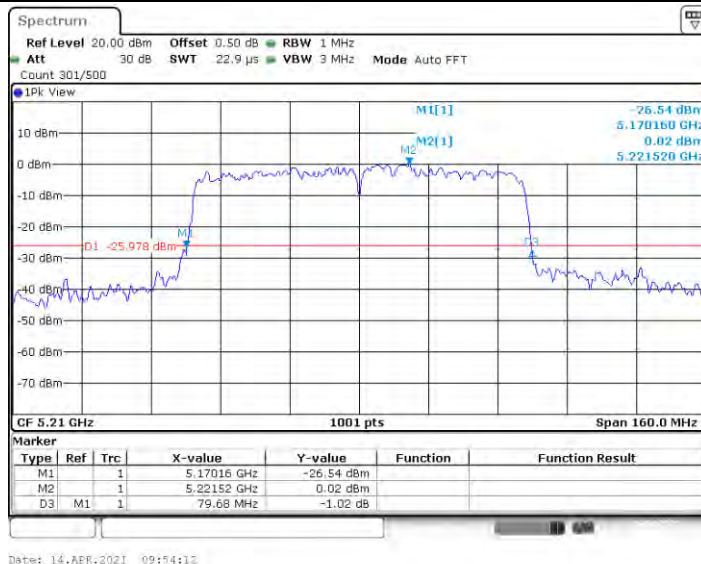


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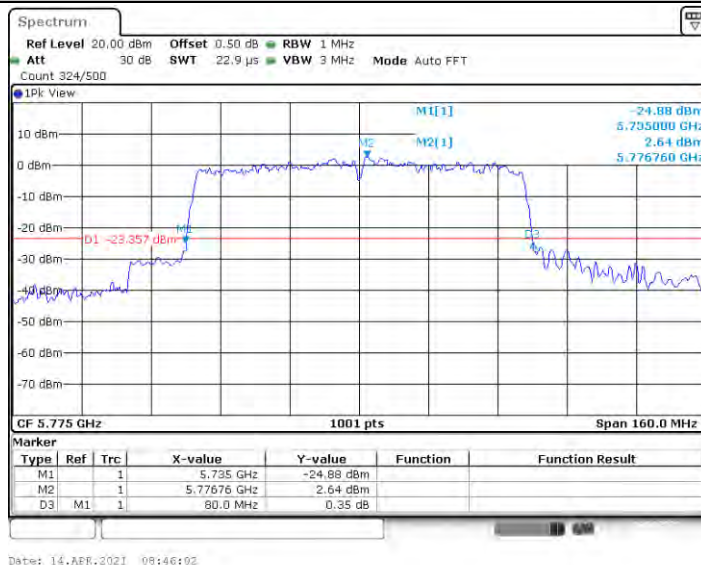
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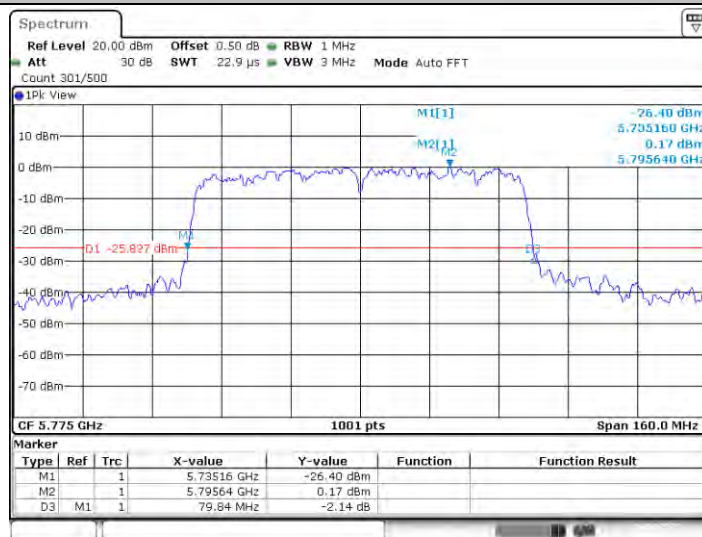


11AC80MIMO_Ant1_5775





11AC80MIMO_Ant2_5775



Date: 14.APR.2021 09:57:14



Appendix A2: Occupied channel bandwidth

Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	17.063	5171.409	5188.472	---	PASS
	Ant2	5180	17.223	5171.409	5188.631	---	PASS
	Ant1	5200	17.103	5191.568	5208.671	---	PASS
	Ant2	5200	17.303	5191.449	5208.751	---	PASS
	Ant1	5240	17.303	5231.329	5248.631	---	PASS
	Ant2	5240	17.183	5231.289	5248.472	---	PASS
	Ant1	5745	17.063	5736.528	5753.591	---	PASS
	Ant2	5745	16.943	5736.449	5753.392	---	PASS
	Ant1	5785	17.143	5776.489	5793.631	---	PASS
	Ant2	5785	17.223	5776.329	5793.551	---	PASS
	Ant1	5825	17.263	5816.329	5833.591	---	PASS
	Ant2	5825	17.103	5816.489	5833.591	---	PASS
11N20MIMO	Ant1	5180	18.022	5170.969	5188.991	---	PASS
	Ant2	5180	17.862	5171.009	5188.871	---	PASS
	Ant1	5200	17.942	5191.009	5208.951	---	PASS
	Ant2	5200	18.102	5190.889	5208.991	---	PASS
	Ant1	5240	17.982	5230.969	5248.951	---	PASS
	Ant2	5240	17.942	5231.049	5248.991	---	PASS
	Ant1	5745	18.022	5735.969	5753.991	---	PASS
	Ant2	5745	17.862	5736.089	5753.951	---	PASS
	Ant1	5785	18.142	5775.849	5793.991	---	PASS
	Ant2	5785	18.022	5775.889	5793.911	---	PASS
	Ant1	5825	17.982	5816.009	5833.991	---	PASS
	Ant2	5825	18.022	5815.929	5833.951	---	PASS
11N40MIMO	Ant1	5190	36.204	5171.858	5208.062	---	PASS
	Ant2	5190	36.284	5171.858	5208.142	---	PASS
	Ant1	5230	36.364	5211.938	5248.302	---	PASS
	Ant2	5230	36.364	5211.698	5248.062	---	PASS
	Ant1	5755	36.204	5736.938	5773.142	---	PASS
	Ant2	5755	36.204	5737.018	5773.222	---	PASS
	Ant1	5795	36.124	5776.938	5813.062	---	PASS
	Ant2	5795	36.044	5777.018	5813.062	---	PASS
11AC20MIMO	Ant1	5180	17.862	5171.049	5188.911	---	PASS
	Ant2	5180	17.942	5171.049	5188.991	---	PASS
	Ant1	5200	17.942	5191.049	5208.991	---	PASS
	Ant2	5200	17.902	5191.049	5208.951	---	PASS
	Ant1	5240	17.982	5231.009	5248.991	---	PASS



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	Ant2	5240	17.942	5231.009	5248.951	---	PASS
	Ant1	5745	17.942	5736.009	5753.951	---	PASS
	Ant2	5745	17.942	5736.009	5753.951	---	PASS
	Ant1	5785	17.942	5775.969	5793.911	---	PASS
	Ant2	5785	18.022	5775.889	5793.911	---	PASS
	Ant1	5825	17.862	5816.009	5833.871	---	PASS
	Ant2	5825	17.822	5816.049	5833.871	---	PASS
11AC40MIMO	Ant1	5190	36.204	5171.858	5208.062	---	PASS
	Ant2	5190	36.284	5171.778	5208.062	---	PASS
	Ant1	5230	36.444	5211.778	5248.222	---	PASS
	Ant2	5230	36.284	5212.018	5248.302	---	PASS
	Ant1	5755	36.364	5736.778	5773.142	---	PASS
	Ant2	5755	36.044	5737.018	5773.062	---	PASS
	Ant1	5795	36.284	5776.858	5813.142	---	PASS
11AC80MIMO	Ant2	5795	36.284	5776.858	5813.142	---	PASS
	Ant1	5210	74.805	5172.438	5247.243	---	PASS
	Ant2	5210	75.125	5172.597	5247.722	---	PASS
	Ant1	5775	75.125	5737.597	5812.722	---	PASS
	Ant2	5775	74.965	5737.757	5812.722	---	PASS

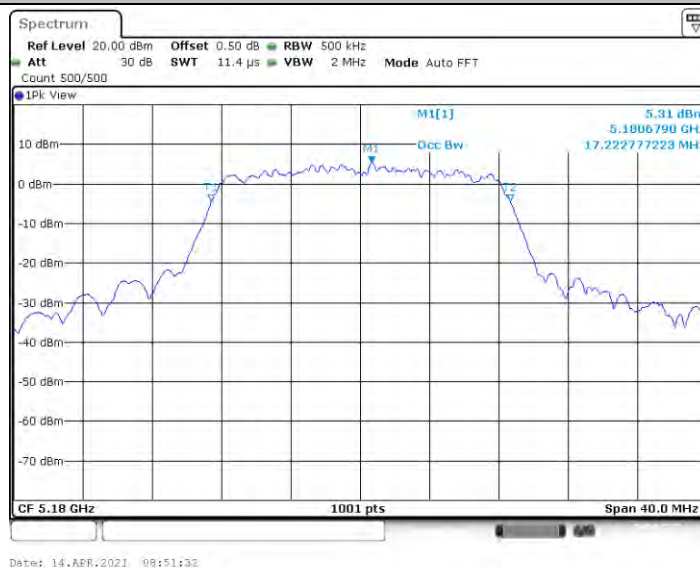


Test Graphs

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





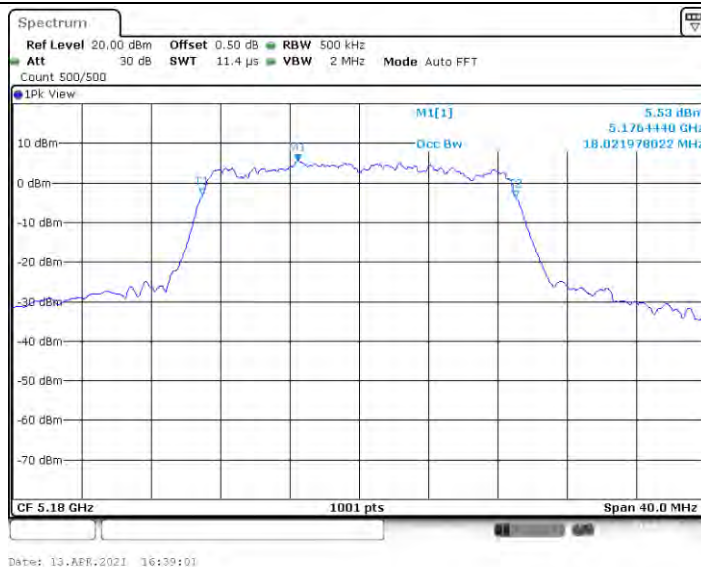
11A_Ant1_5825



11A_Ant2_5825



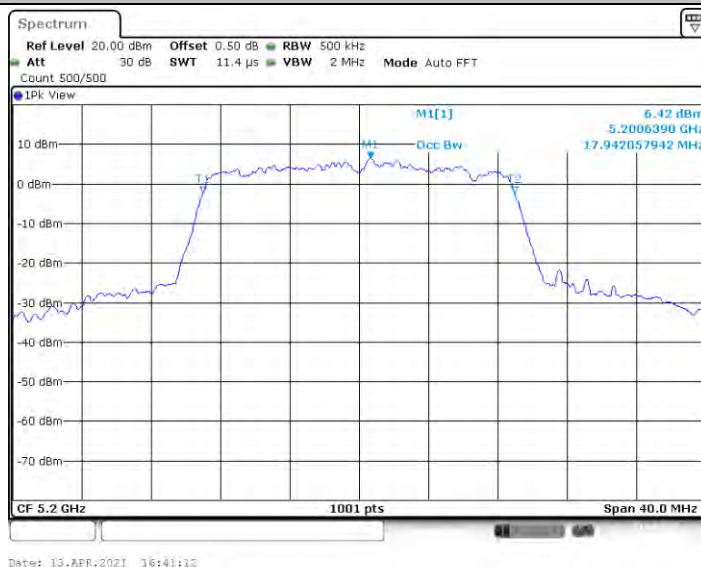
11N20MIMO_Ant1_5180



11N20MIMO_Ant2_5180

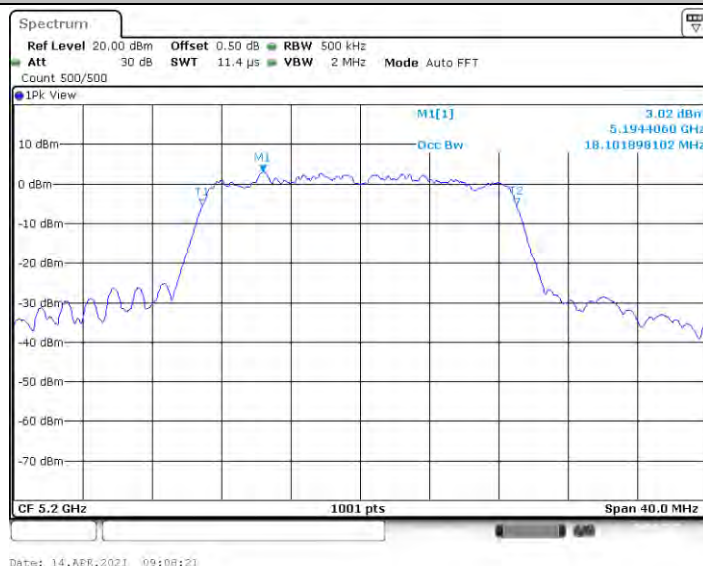


11N20MIMO_Ant1_5200

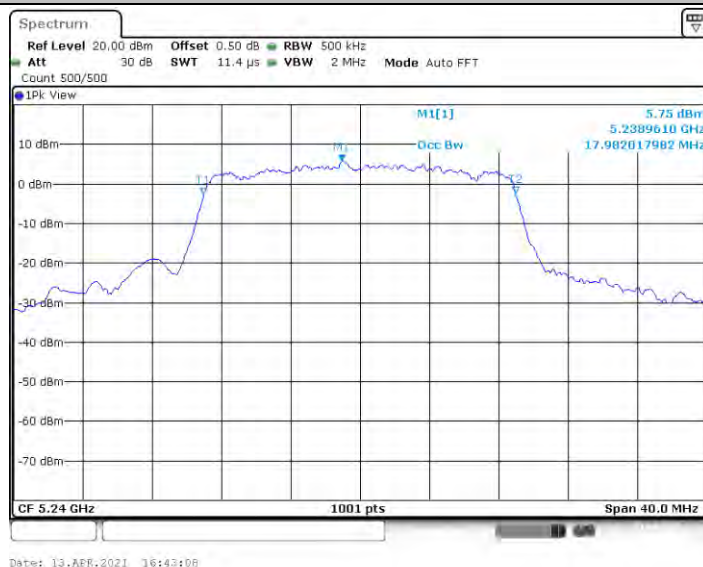




11N20MIMO_Ant2_5200



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



Date: 14.APR.2021 09:25:14

11N40MIMO_Ant1_5755



Date: 13.APR.2021 16:59:26

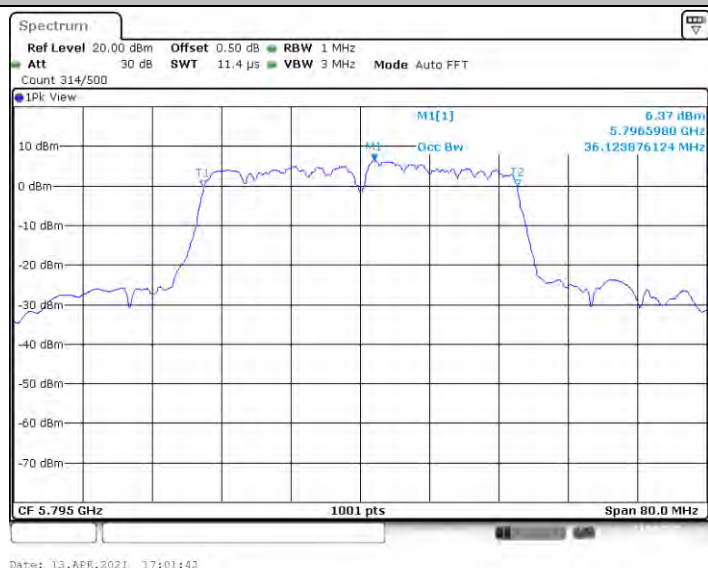
11N40MIMO_Ant2_5755



Date: 14.APR.2021 09:37:45



11N40MIMO_Ant1_5795



11N40MIMO_Ant2_5795



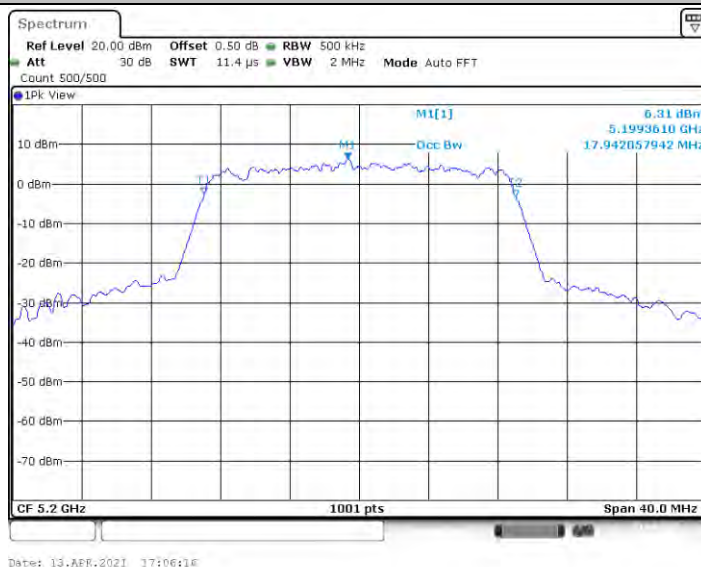
11AC20MIMO_Ant1_5180



11AC20MIMO_Ant2_5180



11AC20MIMO_Ant1_5200





11AC20MIMO_Ant2_5200



11AC20MIMO_Ant1_5240



11AC20MIMO_Ant2_5240



Date: 14.APR.2021 09:36:35

11AC20MIMO_Ant1_5745



Date: 13.APR.2021 17:10:17

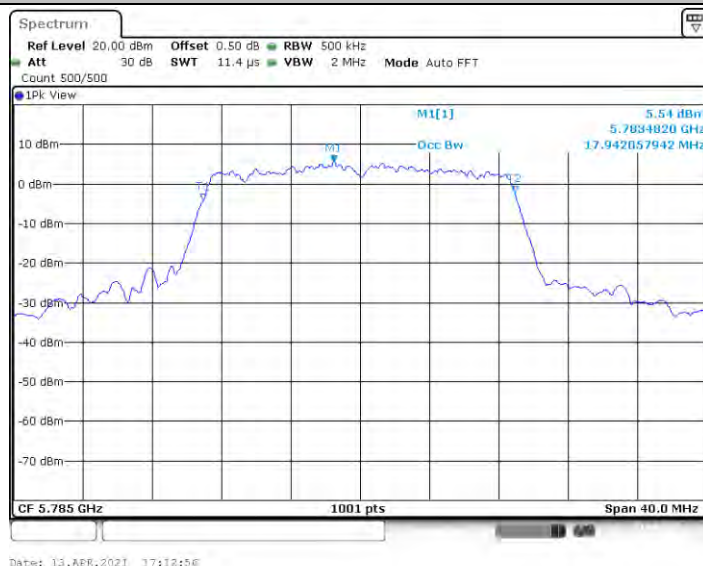
11AC20MIMO_Ant2_5745



Date: 14.APR.2021 09:38:39



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



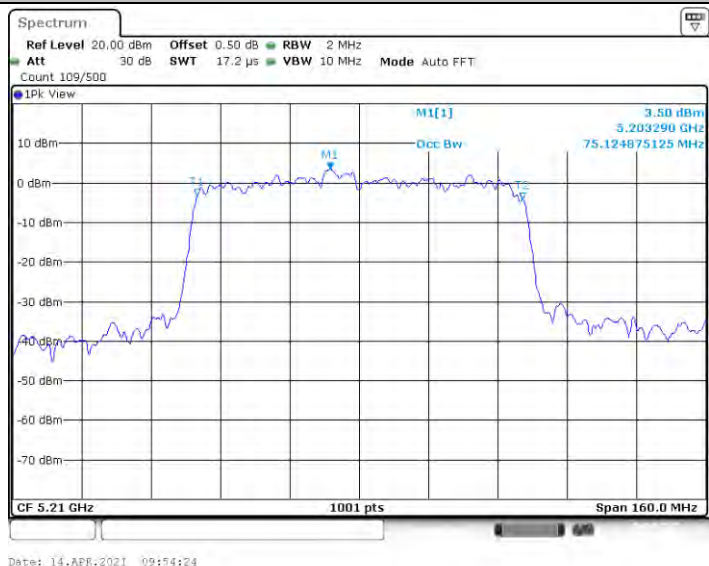
11AC40MIMO_Ant2_5795



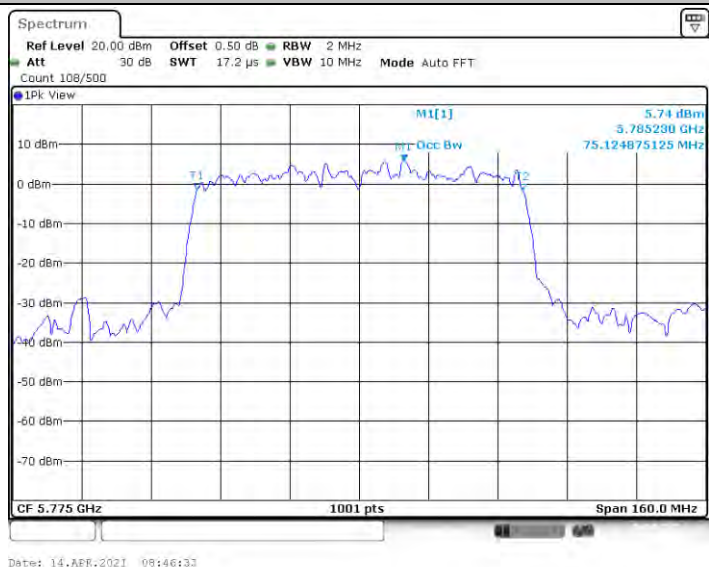
11AC80MIMO_Ant1_5210



11AC80MIMO_Ant2_5210

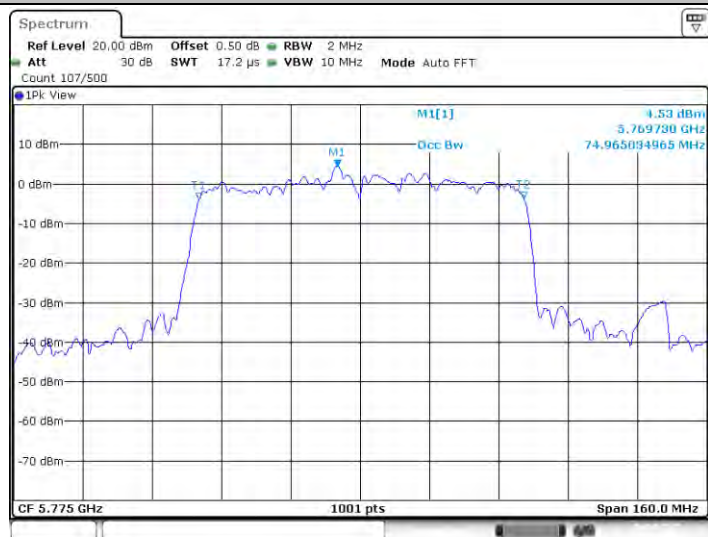


11AC80MIMO_Ant1_5775





11AC80MIMO_Ant2_5775



Date: 14.APR.2021 09:57:49



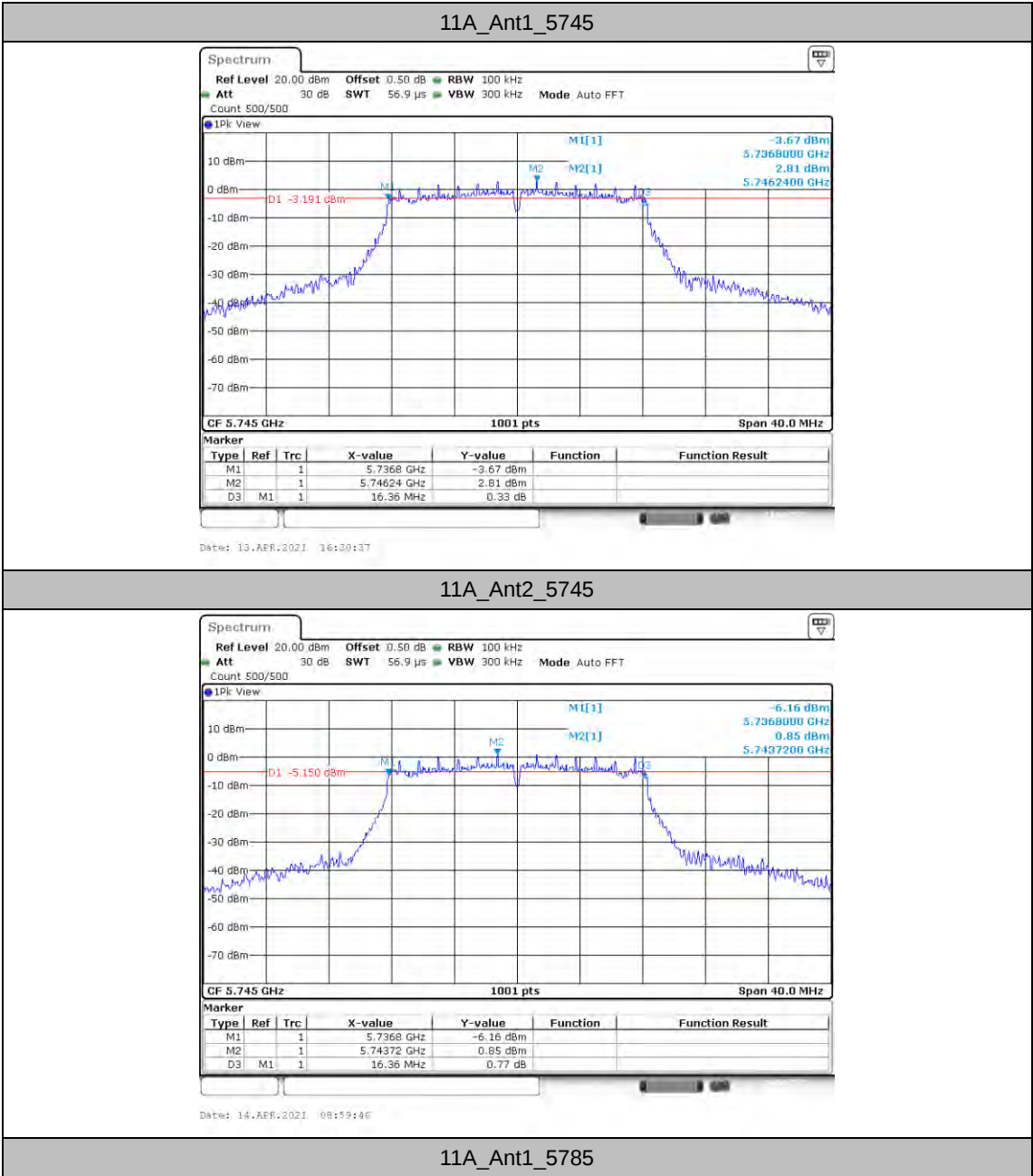
Appendix A3: Min emission bandwidth

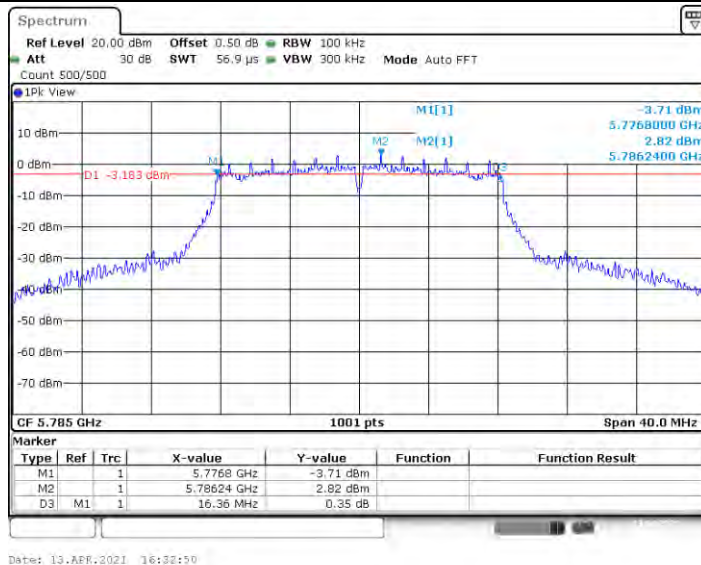
Test Result

TestMode	Antenna	Channel	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.360	5736.800	5753.160	0.5	PASS
	Ant2	5745	16.360	5736.800	5753.160	0.5	PASS
	Ant1	5785	16.360	5776.800	5793.160	0.5	PASS
	Ant2	5785	16.400	5776.800	5793.200	0.5	PASS
	Ant1	5825	16.360	5816.800	5833.160	0.5	PASS
	Ant2	5825	16.400	5816.800	5833.200	0.5	PASS
11N20MIMO	Ant1	5745	17.360	5736.440	5753.800	0.5	PASS
	Ant2	5745	17.120	5736.440	5753.560	0.5	PASS
	Ant1	5785	17.120	5776.440	5793.560	0.5	PASS
	Ant2	5785	17.280	5776.320	5793.600	0.5	PASS
	Ant1	5825	17.160	5816.400	5833.560	0.5	PASS
	Ant2	5825	17.160	5816.400	5833.560	0.5	PASS
11N40MIMO	Ant1	5755	35.360	5737.320	5772.680	0.5	PASS
	Ant2	5755	35.360	5737.320	5772.680	0.5	PASS
	Ant1	5795	35.280	5777.320	5812.600	0.5	PASS
	Ant2	5795	35.360	5777.320	5812.680	0.5	PASS
11AC20MIMO	Ant1	5745	16.880	5736.560	5753.440	0.5	PASS
	Ant2	5745	17.640	5736.160	5753.800	0.5	PASS
	Ant1	5785	17.120	5776.440	5793.560	0.5	PASS
	Ant2	5785	17.640	5776.160	5793.800	0.5	PASS
	Ant1	5825	17.640	5816.160	5833.800	0.5	PASS
	Ant2	5825	17.160	5816.400	5833.560	0.5	PASS
11AC40MIMO	Ant1	5755	35.360	5737.320	5772.680	0.5	PASS
	Ant2	5755	35.360	5737.320	5772.680	0.5	PASS
	Ant1	5795	35.360	5777.320	5812.680	0.5	PASS
	Ant2	5795	35.360	5777.320	5812.680	0.5	PASS
11AC80MIMO	Ant1	5775	75.520	5737.240	5812.760	0.5	PASS
	Ant2	5775	74.240	5738.520	5812.760	0.5	PASS

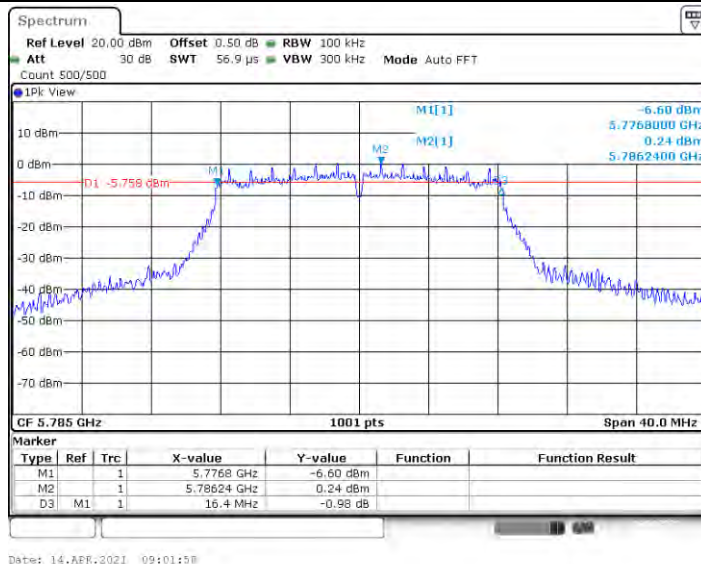


Test Graphs

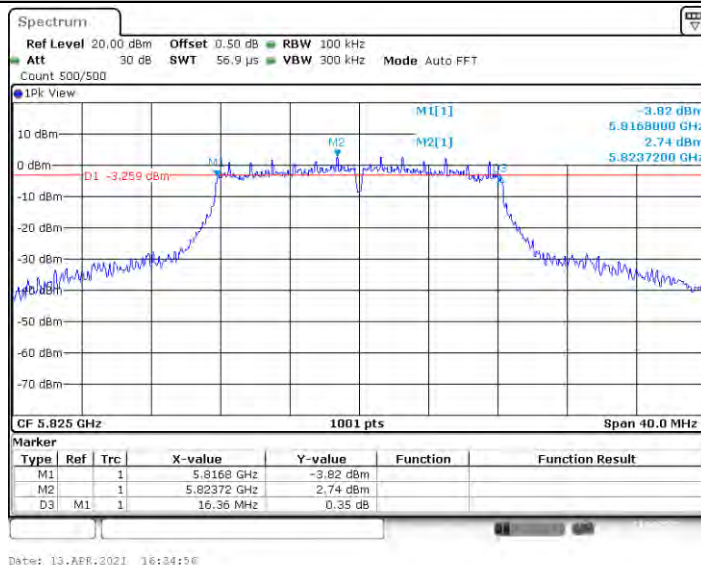




11A_Ant2_5785

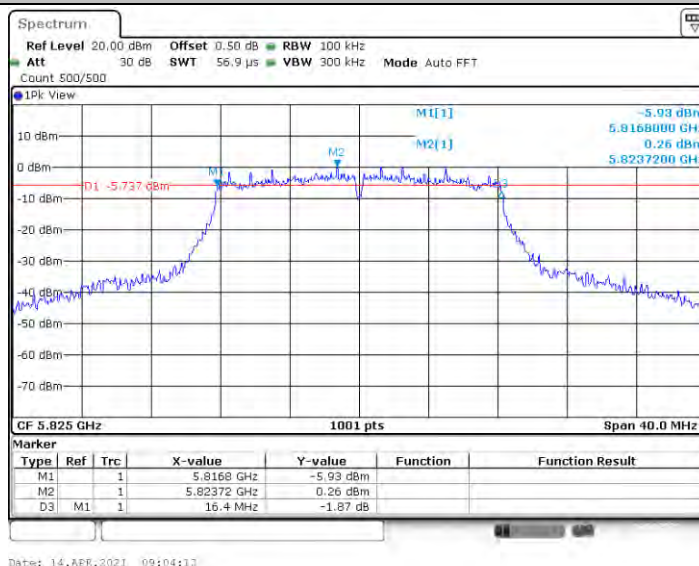


11A_Ant1_5825

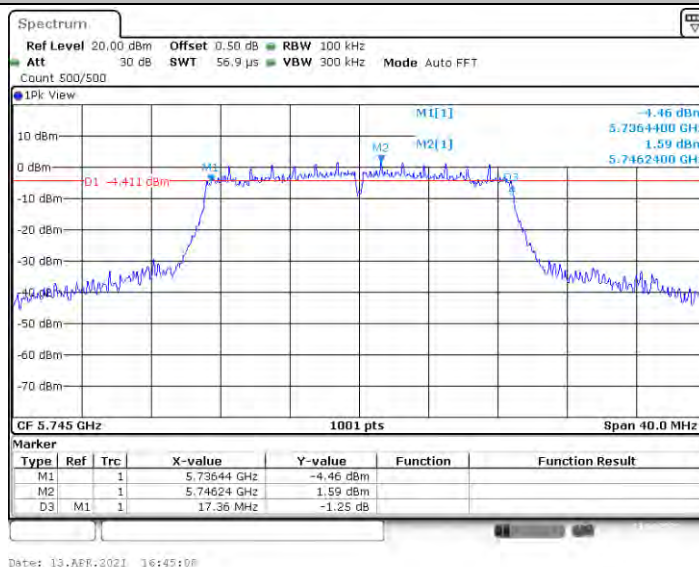




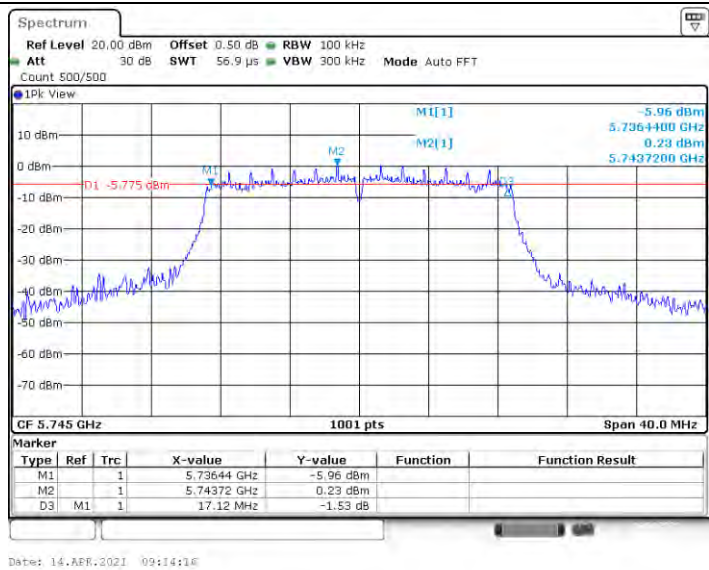
11A_Ant2_5825



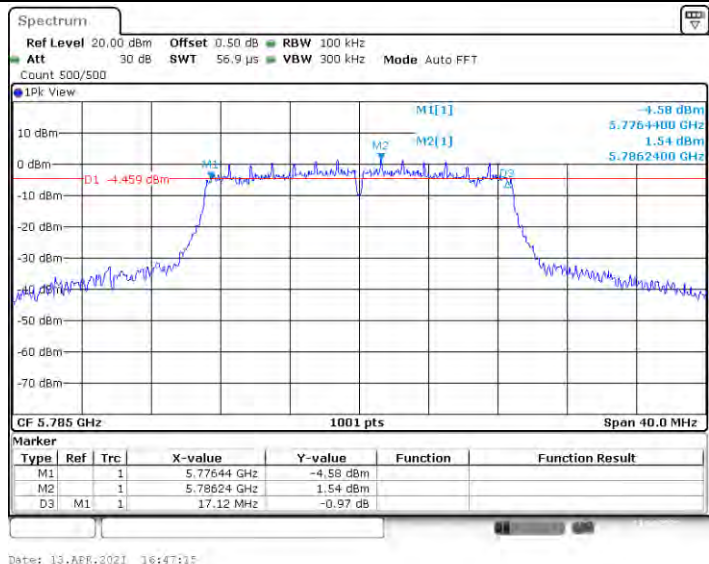
11N20MIMO_Ant1_5745



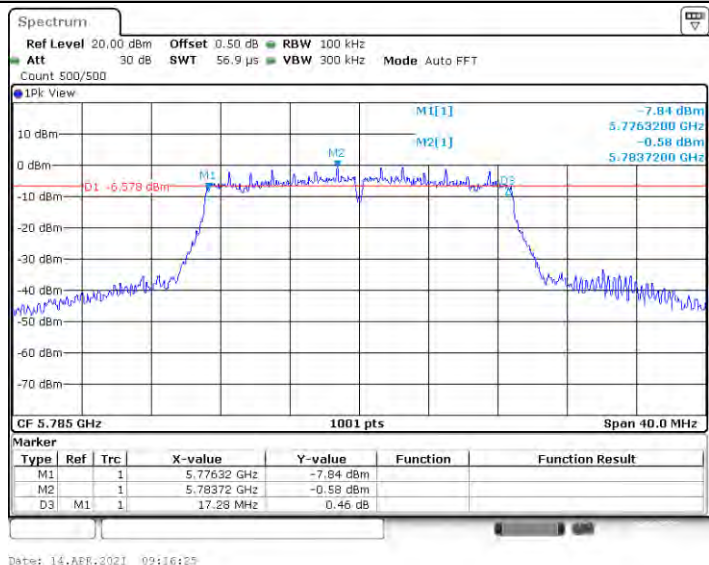
11N20MIMO_Ant2_5745



11N20MIMO_Ant1_5785

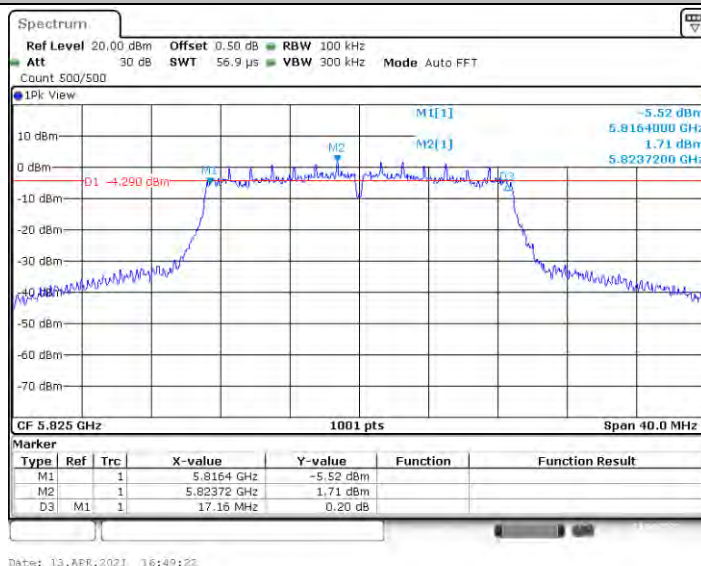


11N20MIMO_Ant2_5785

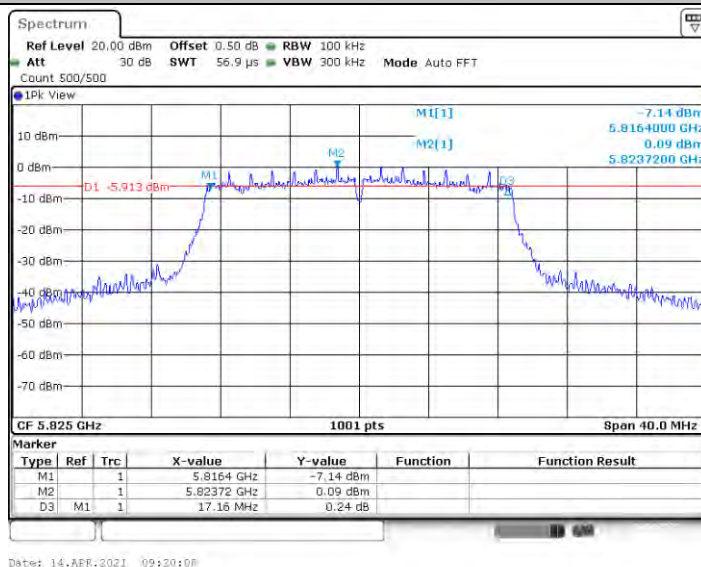




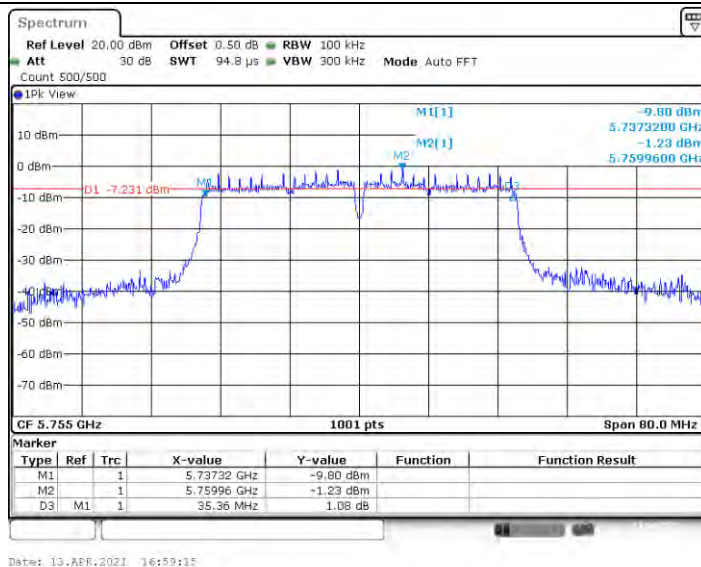
11N20MIMO_Ant1_5825



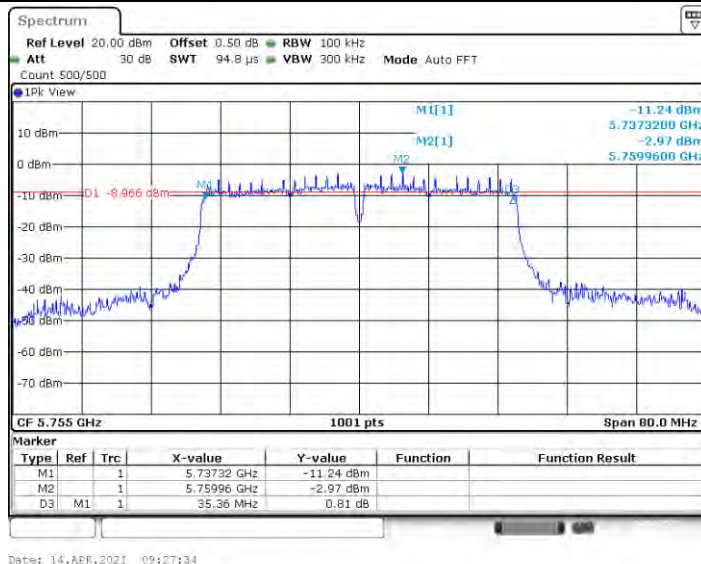
11N20MIMO_Ant2_5825



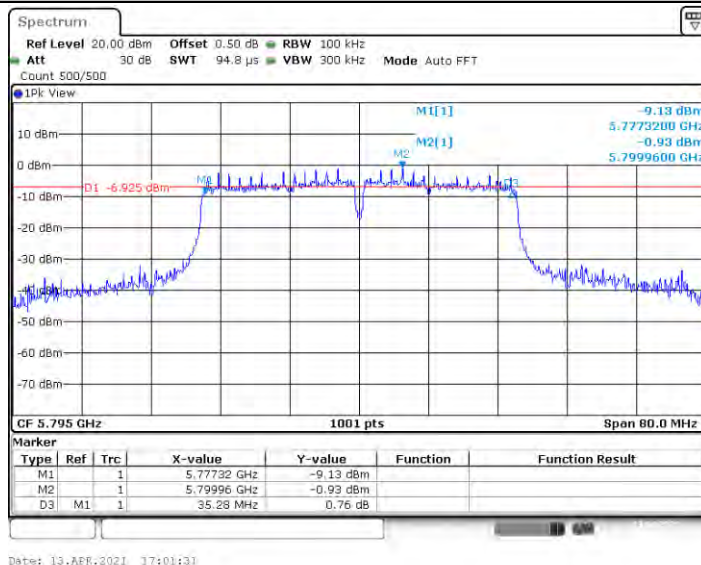
11N40MIMO_Ant1_5755



11N40MIMO_Ant2_5755

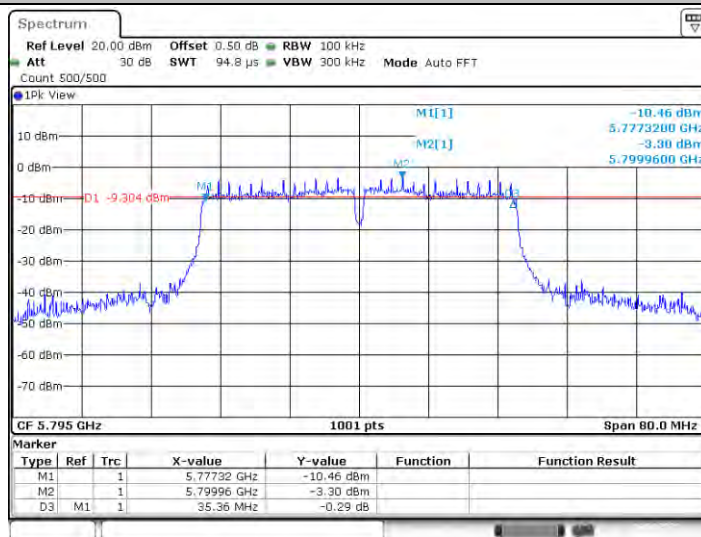


11N40MIMO_Ant1_5795



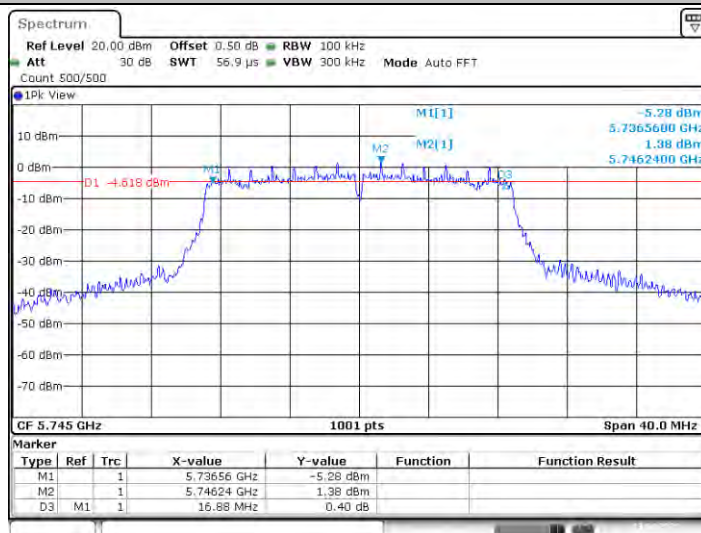


11N40MIMO_Ant2_5795



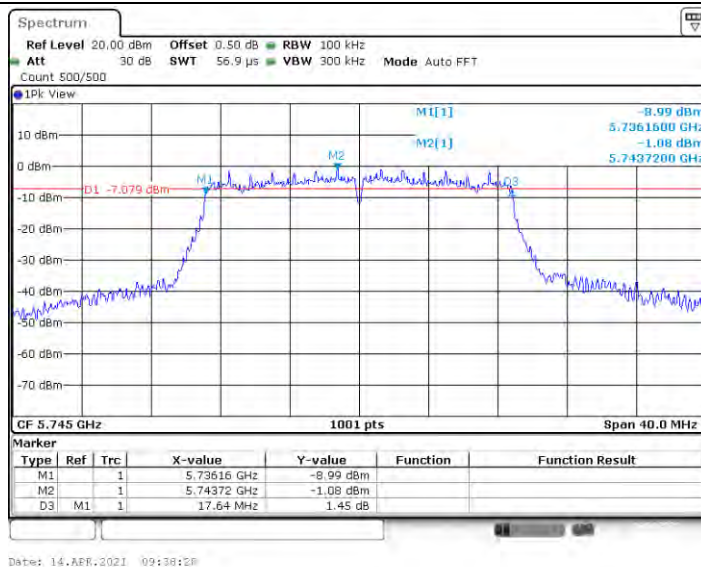
Dates: 14.APR.2021 09:29:45

11AC20MIMO_Ant1_5745

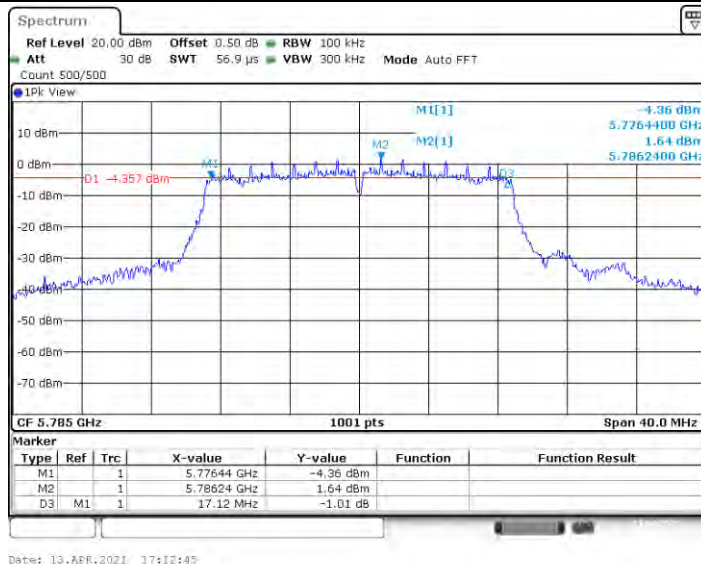


Dates: 13.APR.2021 17:10:06

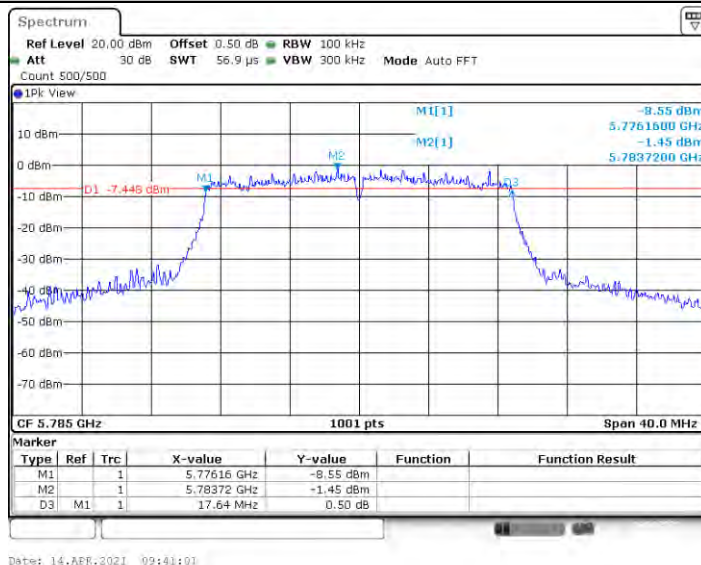
11AC20MIMO_Ant2_5745



11AC20MIMO_Ant1_5785

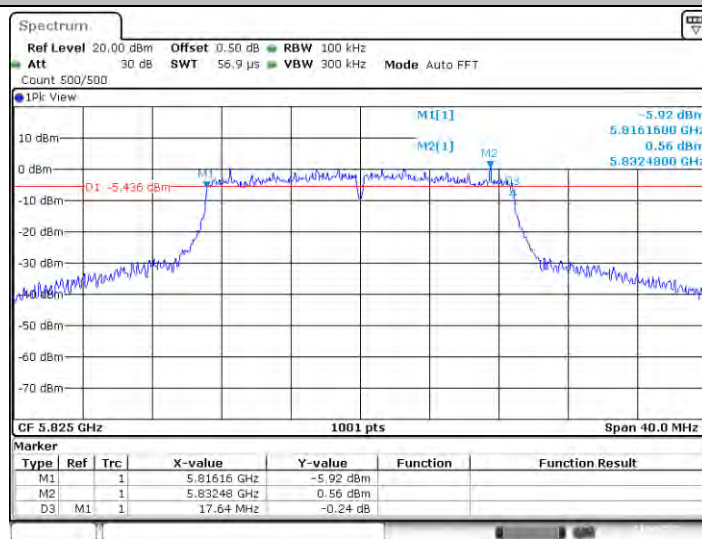


11AC20MIMO_Ant2_5785



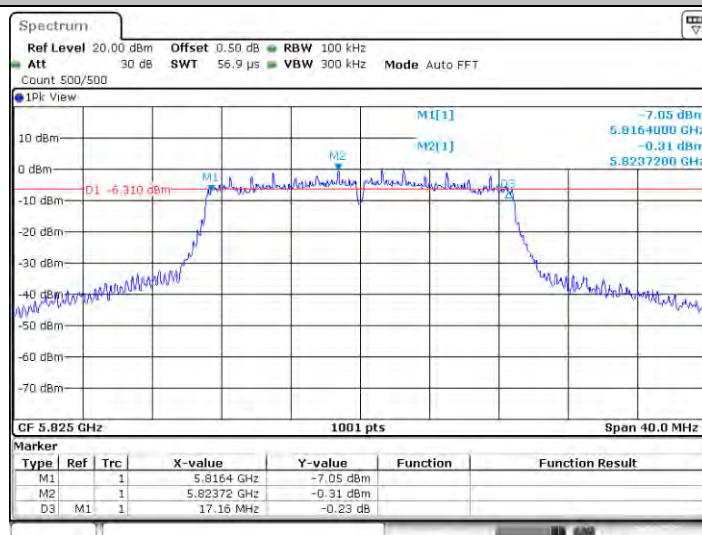


11AC20MIMO_Ant1_5825



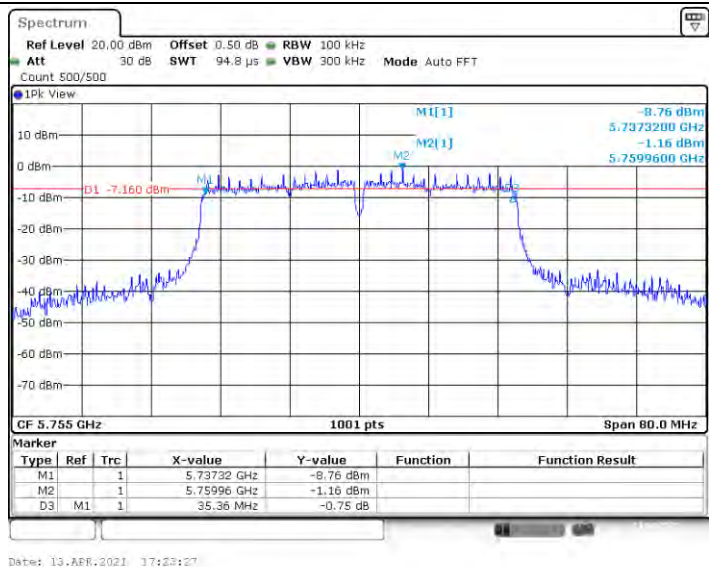
Dates: 13.APR.2021 17:17:09

11AC20MIMO_Ant2_5825

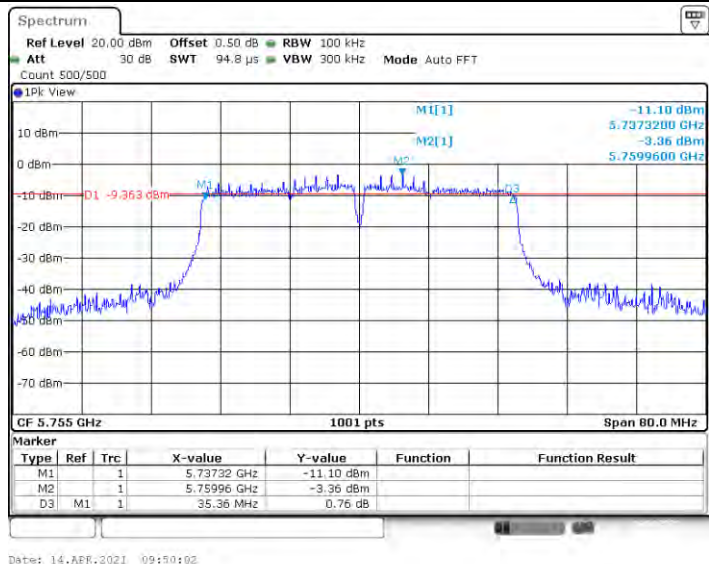


Dates: 14.APR.2021 09:43:10

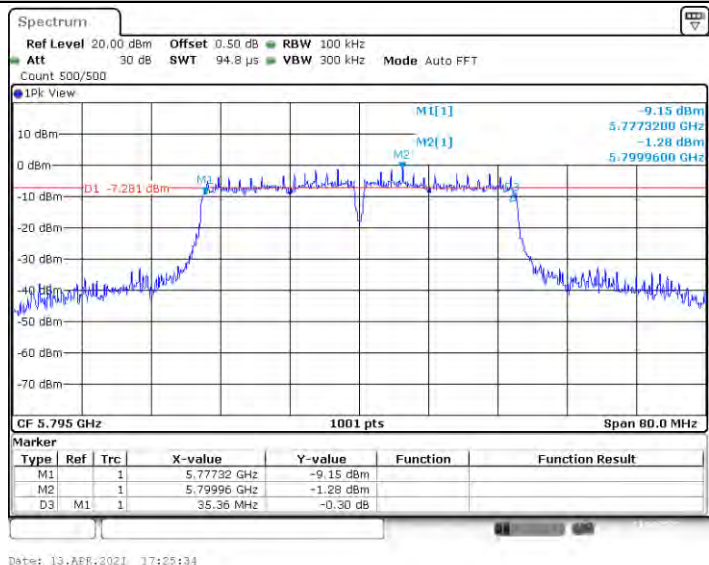
11AC40MIMO_Ant1_5755



11AC40MIMO_Ant2_5755

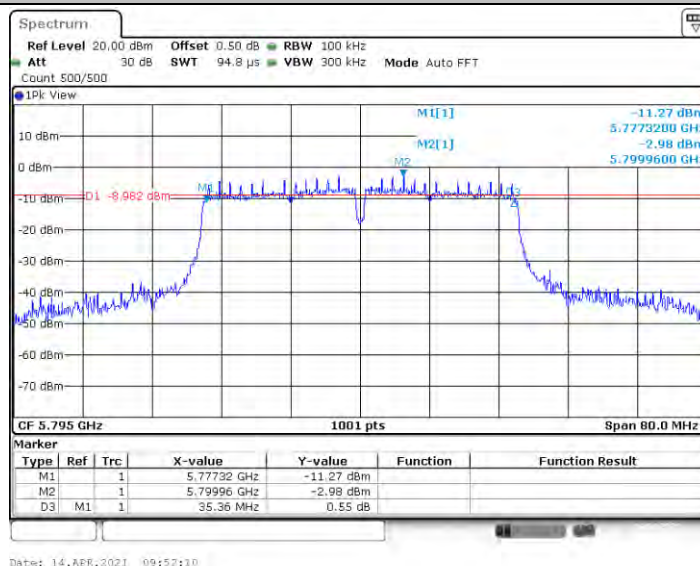


11AC40MIMO_Ant1_5795

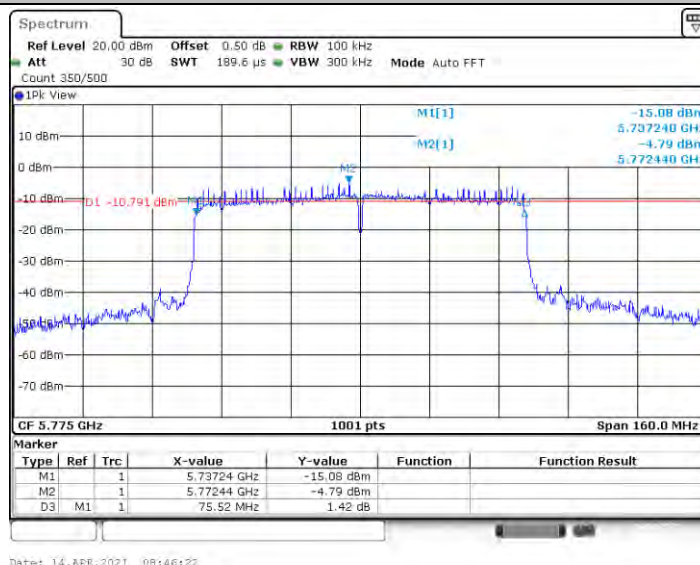




11AC40MIMO_Ant2_5795



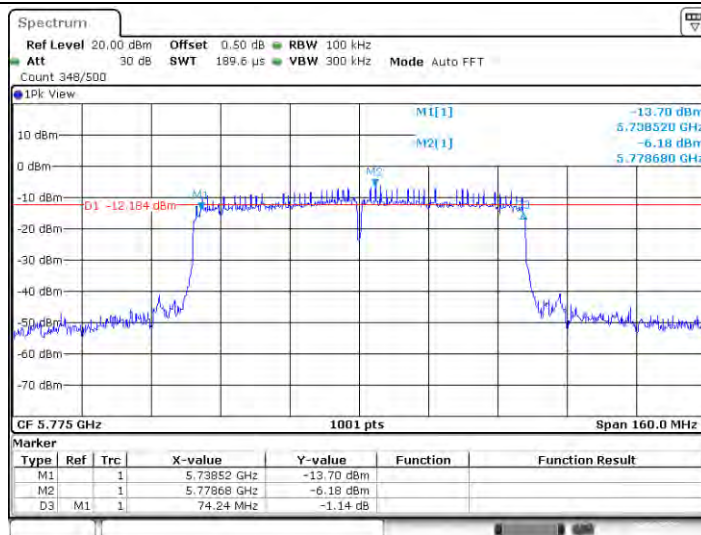
11AC80MIMO_Ant1_5775



11AC80MIMO_Ant2_5775



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Date: 14.APR.2021 09:57:33



Appendix B: Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	5180	13.36	<=23.98	PASS
	Ant2	5180	11.48	<=23.98	PASS
	Ant1	5200	13.52	<=23.98	PASS
	Ant2	5200	11.27	<=23.98	PASS
	Ant1	5240	13.33	<=23.98	PASS
	Ant2	5240	10.88	<=23.98	PASS
	Ant1	5745	13.68	<=30	PASS
	Ant2	5745	11.65	<=30	PASS
	Ant1	5785	13.54	<=30	PASS
	Ant2	5785	11.63	<=30	PASS
	Ant1	5825	13.56	<=30	PASS
	Ant2	5825	11.44	<=30	PASS
11N20MIMO	Ant1	5180	12.94	<=23.98	PASS
	Ant2	5180	10.87	<=23.98	PASS
	total	5180	15.00	<=23.98	PASS
	Ant1	5200	12.99	<=23.98	PASS
	Ant2	5200	10.14	<=23.98	PASS
	total	5200	14.80	<=23.98	PASS
	Ant1	5240	12.74	<=23.98	PASS
	Ant2	5240	10.19	<=23.98	PASS
	total	5240	14.70	<=23.98	PASS
	Ant1	5745	13.00	<=30	PASS
	Ant2	5745	11.02	<=30	PASS
	total	5745	15.10	<=30	PASS
	Ant1	5785	12.60	<=30	PASS
	Ant2	5785	10.54	<=30	PASS
	total	5785	14.70	<=30	PASS
	Ant1	5825	12.47	<=30	PASS
	Ant2	5825	10.87	<=30	PASS
	total	5825	14.80	<=30	PASS
11N40MIMO	Ant1	5190	13.16	<=23.98	PASS
	Ant2	5190	11.02	<=23.98	PASS
	total	5190	15.20	<=23.98	PASS
	Ant1	5230	12.96	<=23.98	PASS
	Ant2	5230	10.91	<=23.98	PASS
	total	5230	15.10	<=23.98	PASS
	Ant1	5755	13.05	<=30	PASS
	Ant2	5755	11.34	<=30	PASS



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	total	5755	15.30	≤ 30	PASS
	Ant1	5795	13.19	≤ 30	PASS
	Ant2	5795	11.26	≤ 30	PASS
	total	5795	15.30	≤ 30	PASS
11AC20MIMO	Ant1	5180	12.92	≤ 23.98	PASS
	Ant2	5180	10.78	≤ 23.98	PASS
	total	5180	15.00	≤ 23.98	PASS
	Ant1	5200	12.93	≤ 23.98	PASS
	Ant2	5200	10.50	≤ 23.98	PASS
	total	5200	14.90	≤ 23.98	PASS
	Ant1	5240	12.83	≤ 23.98	PASS
	Ant2	5240	10.64	≤ 23.98	PASS
	total	5240	14.90	≤ 23.98	PASS
	Ant1	5745	12.22	≤ 30	PASS
	Ant2	5745	11.02	≤ 30	PASS
	total	5745	14.70	≤ 30	PASS
	Ant1	5785	12.46	≤ 30	PASS
	Ant2	5785	10.95	≤ 30	PASS
	total	5785	14.80	≤ 30	PASS
	Ant1	5825	12.90	≤ 30	PASS
	Ant2	5825	10.82	≤ 30	PASS
	total	5825	15.00	≤ 30	PASS
11AC40MIMO	Ant1	5190	13.17	≤ 23.98	PASS
	Ant2	5190	10.71	≤ 23.98	PASS
	total	5190	15.10	≤ 23.98	PASS
	Ant1	5230	12.94	≤ 23.98	PASS
	Ant2	5230	10.78	≤ 23.98	PASS
	total	5230	15.00	≤ 23.98	PASS
	Ant1	5755	13.18	≤ 30	PASS
	Ant2	5755	11.32	≤ 30	PASS
	total	5755	15.40	≤ 30	PASS
	Ant1	5795	12.82	≤ 30	PASS
	Ant2	5795	11.14	≤ 30	PASS
	total	5795	15.10	≤ 30	PASS
11AC80MIMO	Ant1	5210	13.41	≤ 23.98	PASS
	Ant2	5210	11.24	≤ 23.98	PASS
	total	5210	15.50	≤ 23.98	PASS
	Ant1	5775	13.42	≤ 30	PASS
	Ant2	5775	11.25	≤ 30	PASS
	total	5775	15.50	≤ 30	PASS

Note: The Duty Cycle Factor is compensated in the graph.



Appendix C: Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	2.66	<=11	PASS
	Ant2	5180	0.47	<=11	PASS
	Ant1	5200	2.60	<=11	PASS
	Ant2	5200	0.21	<=11	PASS
	Ant1	5240	2.30	<=11	PASS
	Ant2	5240	0.19	<=11	PASS
	Ant1	5745	0.03	<=30	PASS
	Ant2	5745	-2.04	<=30	PASS
	Ant1	5785	-0.07	<=30	PASS
	Ant2	5785	-2.07	<=30	PASS
	Ant1	5825	-0.08	<=30	PASS
	Ant2	5825	-2.26	<=30	PASS
11N20MIMO	Ant1	5180	2.00	<=11	PASS
	Ant2	5180	-0.42	<=11	PASS
	total	5180	3.97	11	PASS
	Ant1	5200	1.76	<=11	PASS
	Ant2	5200	-0.71	<=11	PASS
	total	5200	3.71	11	PASS
	Ant1	5240	1.45	<=11	PASS
	Ant2	5240	-1.10	<=11	PASS
	total	5240	3.37	11	PASS
	Ant1	5745	-0.97	<=30	PASS
	Ant2	5745	-2.86	<=30	PASS
	total	5745	1.20	30	PASS
	Ant1	5785	-1.32	<=30	PASS
	Ant2	5785	-3.44	<=30	PASS
	total	5785	0.76	30	PASS
	Ant1	5825	-1.46	<=30	PASS
	Ant2	5825	-3.09	<=30	PASS
	total	5825	0.81	30	PASS
11N40MIMO	Ant1	5190	-1.14	<=11	PASS
	Ant2	5190	-3.23	<=11	PASS
	total	5190	0.95	11	PASS
	Ant1	5230	-1.39	<=11	PASS
	Ant2	5230	-3.15	<=11	PASS
	total	5230	0.83	11	PASS
	Ant1	5755	-3.95	<=30	PASS
	Ant2	5755	-5.69	<=30	PASS



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	total	5755	-1.72	30	PASS
	Ant1	5795	-3.74	<=30	PASS
	Ant2	5795	-5.63	<=30	PASS
	total	5795	-1.57	30	PASS
11AC20MIMO	Ant1	5180	1.92	<=11	PASS
	Ant2	5180	-0.50	<=11	PASS
	total	5180	3.89	11	PASS
	Ant1	5200	1.63	<=11	PASS
	Ant2	5200	-0.78	<=11	PASS
	total	5200	3.60	11	PASS
	Ant1	5240	1.56	<=11	PASS
	Ant2	5240	-0.68	<=11	PASS
	total	5240	3.59	11	PASS
	Ant1	5745	-1.70	<=30	PASS
	Ant2	5745	-2.91	<=30	PASS
	total	5745	0.75	30	PASS
	Ant1	5785	-1.51	<=30	PASS
	Ant2	5785	-2.99	<=30	PASS
	total	5785	0.82	30	PASS
	Ant1	5825	-1.01	<=30	PASS
	Ant2	5825	-2.98	<=30	PASS
	total	5825	1.13	30	PASS
11AC40MIMO	Ant1	5190	-1.11	<=11	PASS
	Ant2	5190	-3.28	<=11	PASS
	total	5190	0.95	11	PASS
	Ant1	5230	-1.40	<=11	PASS
	Ant2	5230	-3.30	<=11	PASS
	total	5230	0.76	11	PASS
	Ant1	5755	-3.79	<=30	PASS
	Ant2	5755	-5.59	<=30	PASS
	total	5755	-1.59	30	PASS
	Ant1	5795	-4.12	<=30	PASS
	Ant2	5795	-5.78	<=30	PASS
	total	5795	-1.86	30	PASS
11AC80MIMO	Ant1	5210	-3.96	<=11	PASS
	Ant2	5210	-6.18	<=11	PASS
	total	5210	-1.92	11	PASS
	Ant1	5775	-6.67	<=30	PASS
	Ant2	5775	-9.07	<=30	PASS
	total	5775	-4.70	30	PASS

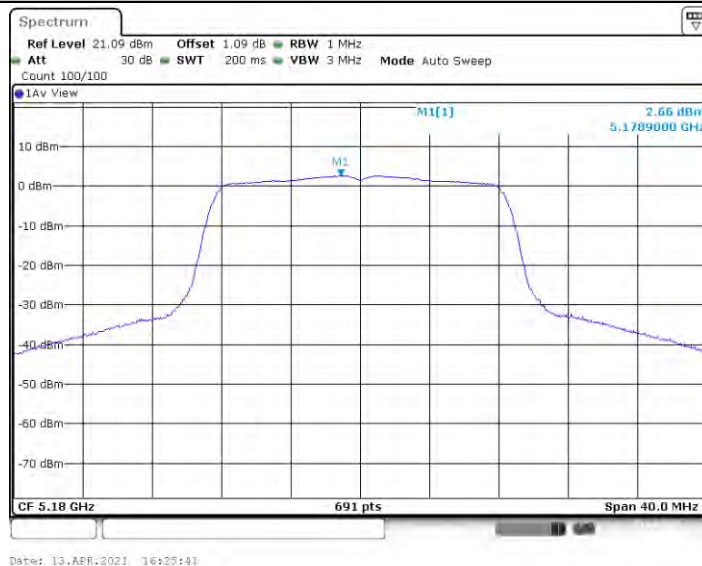
Note: 1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.

2.The Duty Cycle Factor and RBW Factor is compensated in the graph.

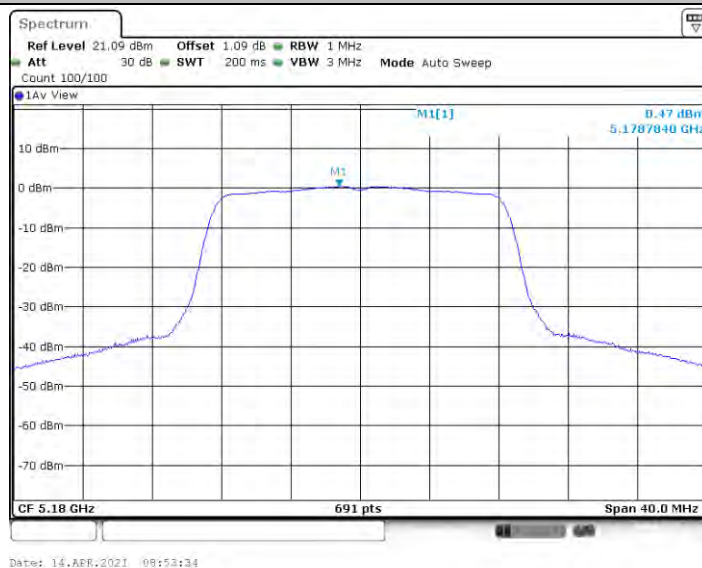


Test Graphs

11A_Ant1_5180



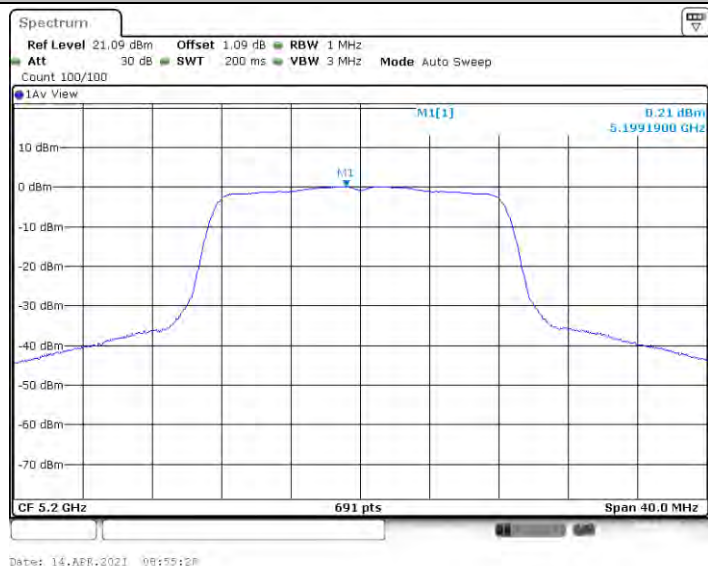
11A_Ant2_5180



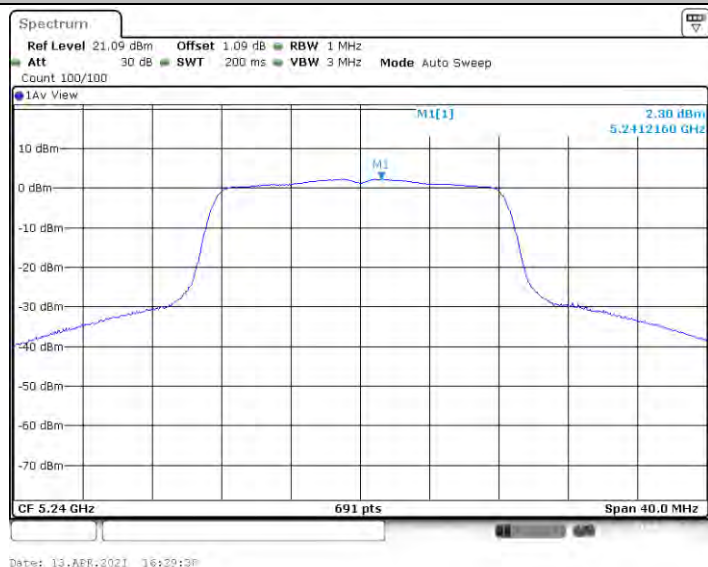
11A_Ant1_5200



11A_Ant2_5200

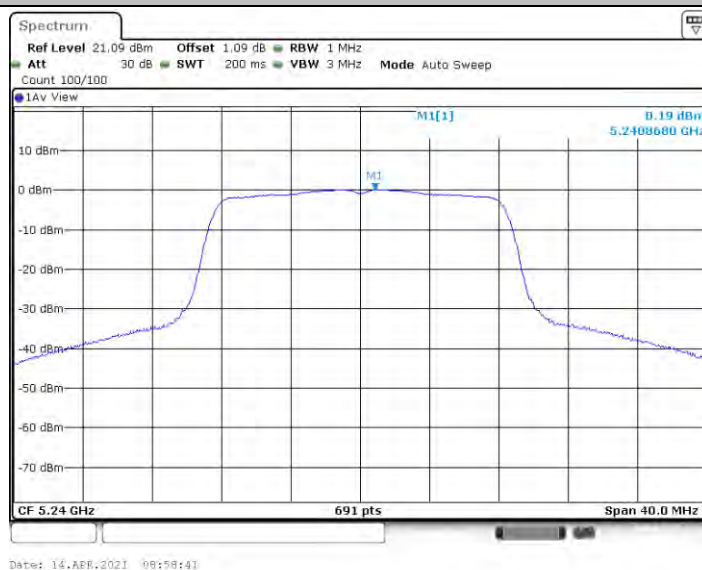


11A_Ant1_5240

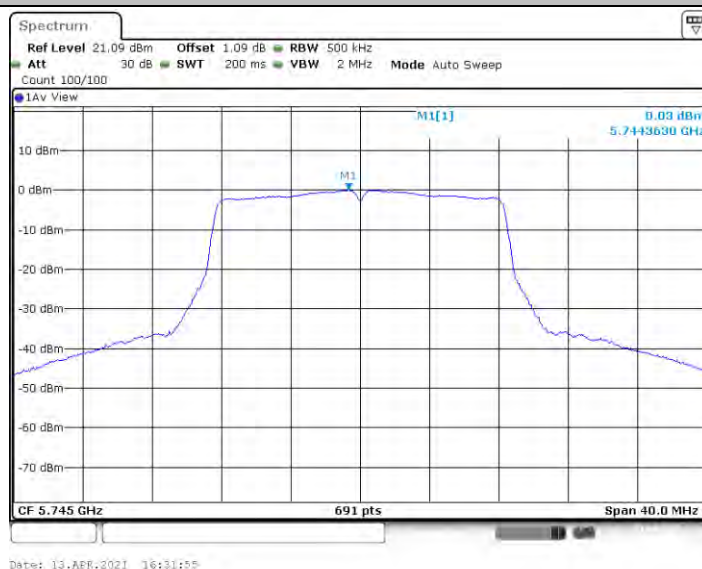




11A_Ant2_5240



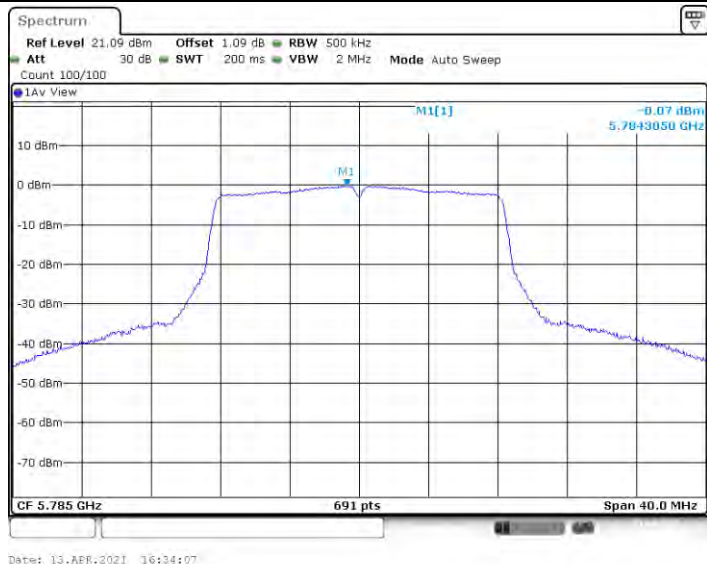
11A_Ant1_5745



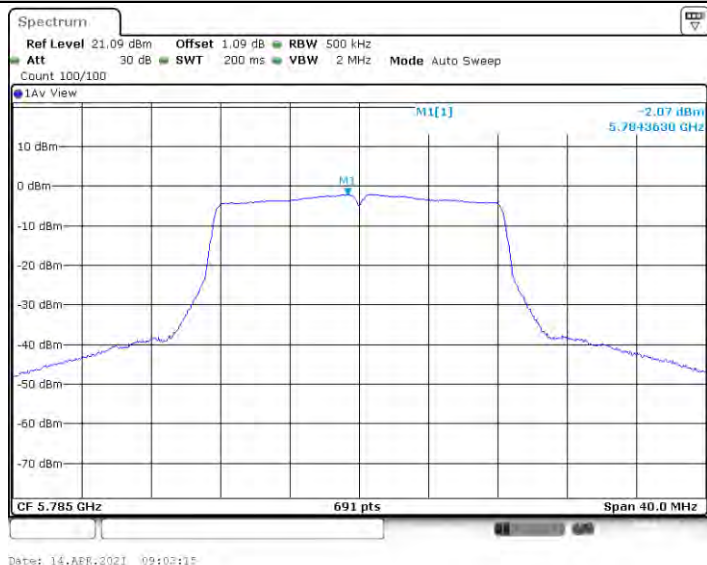
11A_Ant2_5745

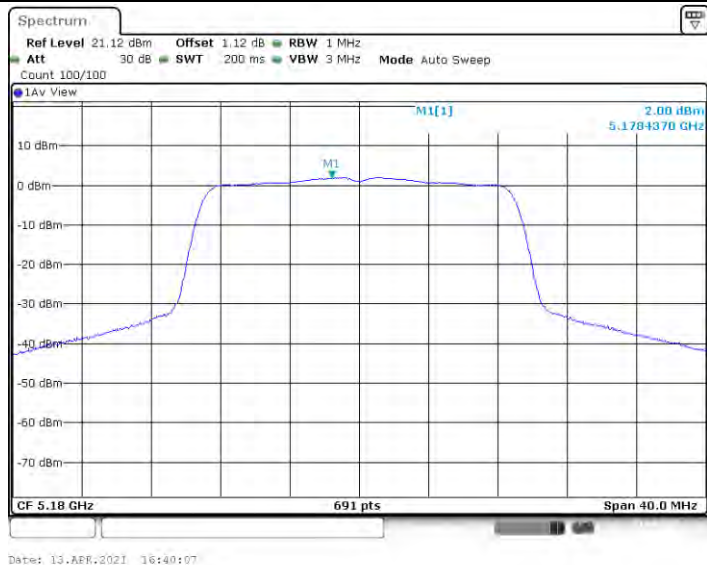


11A_Ant1_5785

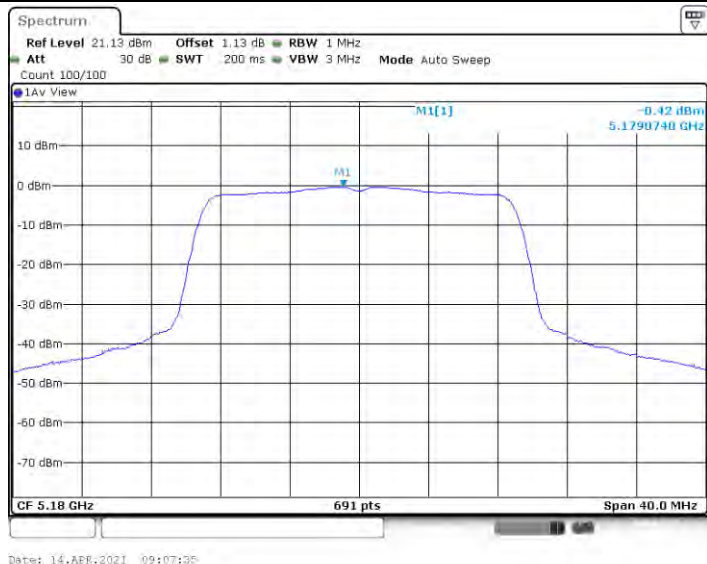


11A_Ant2_5785

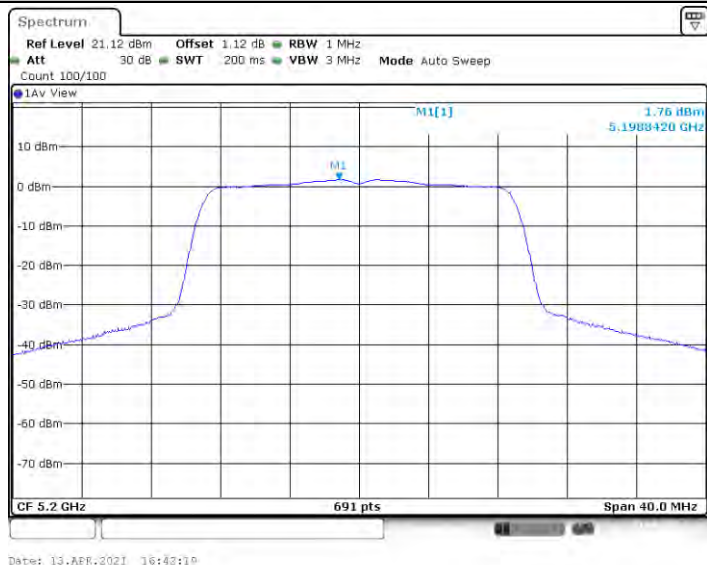




11N20MIMO_Ant2_5180

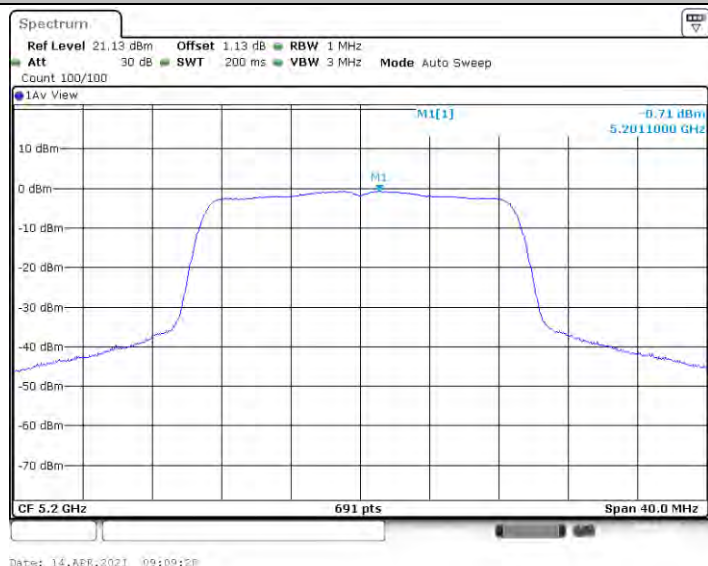


11N20MIMO_Ant1_5200

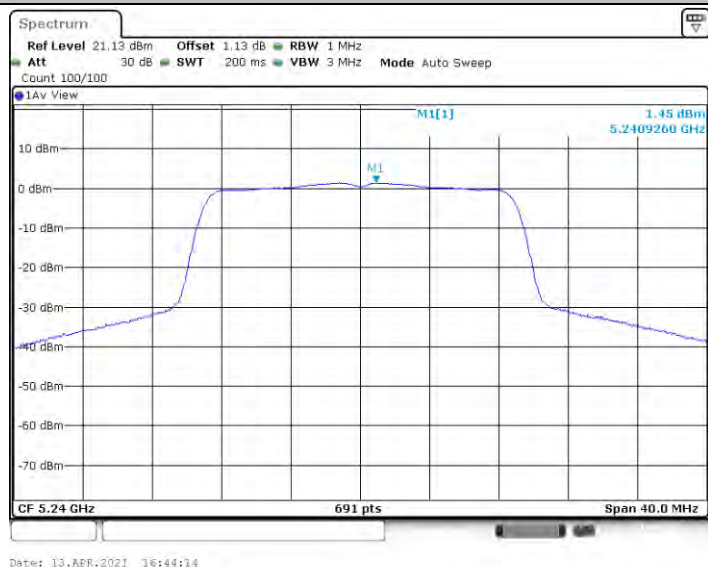




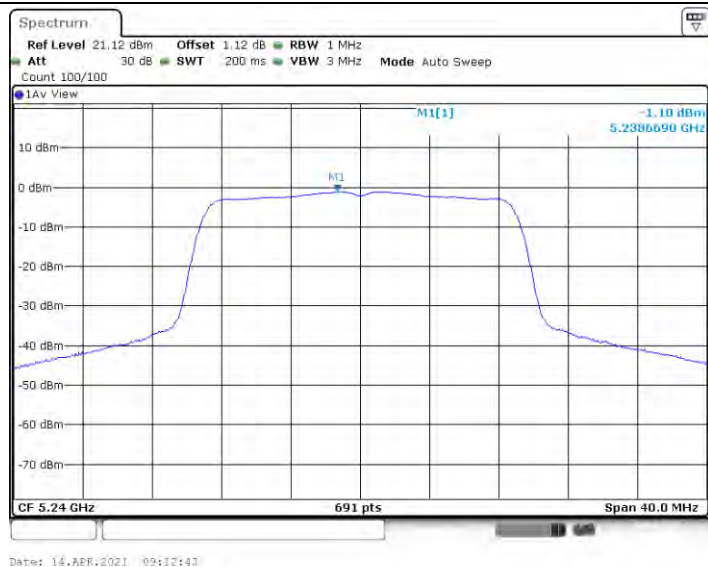
11N20MIMO_Ant2_5200



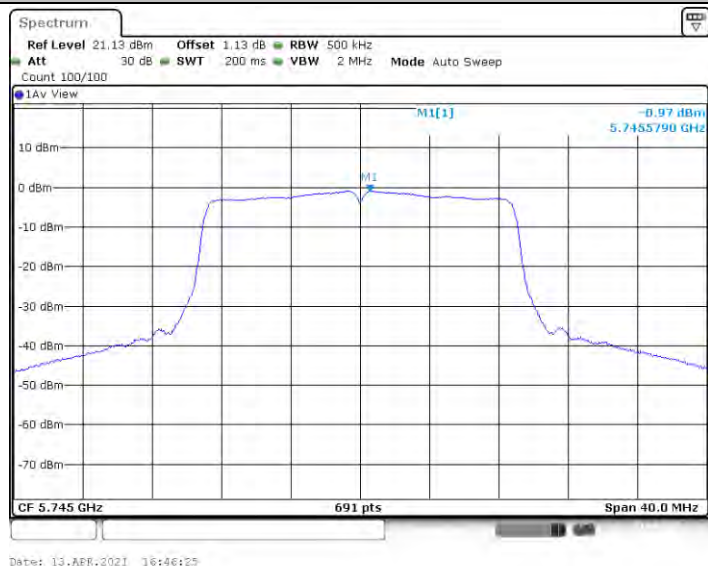
11N20MIMO_Ant1_5240



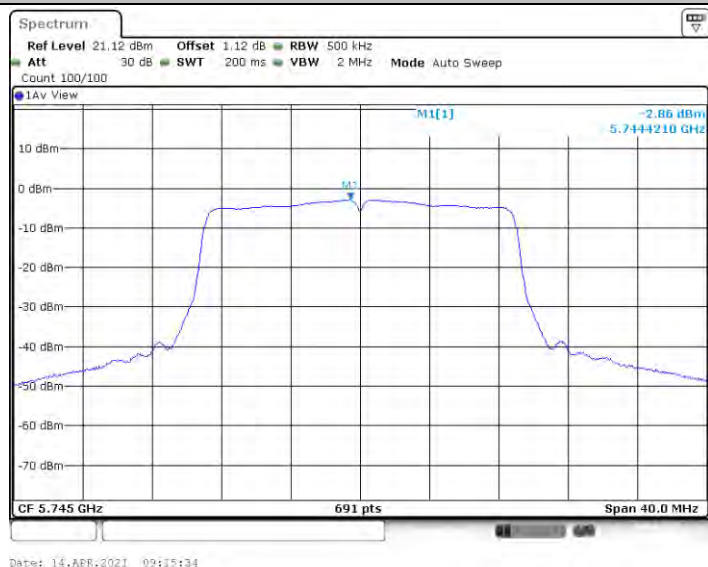
11N20MIMO_Ant2_5240



11N20MIMO_Ant1_5745

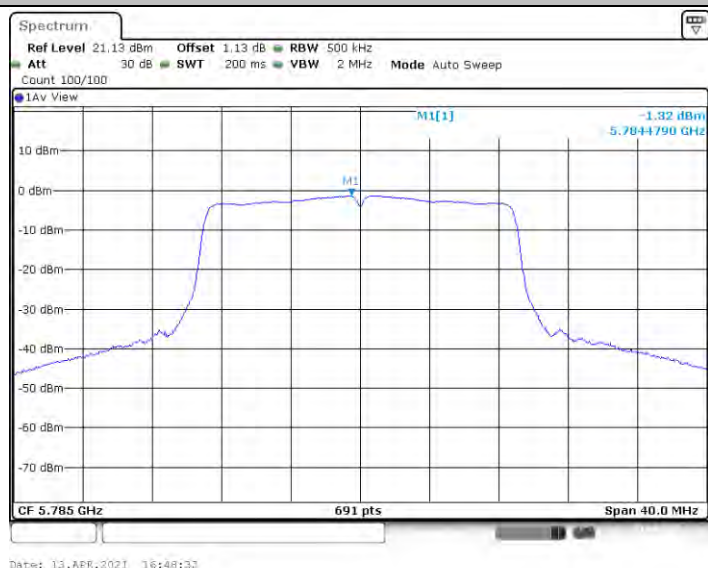


11N20MIMO_Ant2_5745

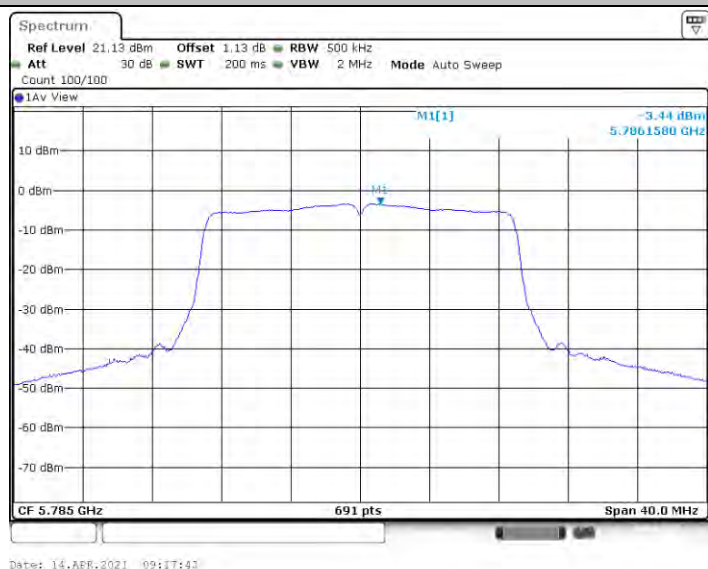




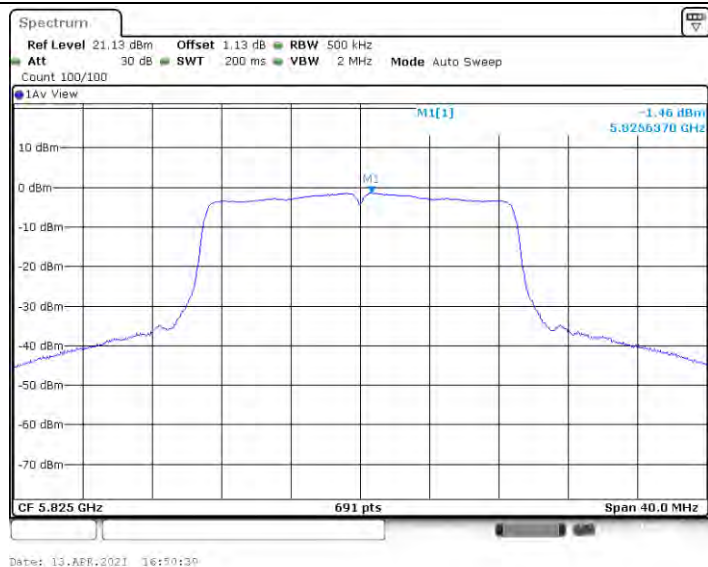
11N20MIMO_Ant1_5785



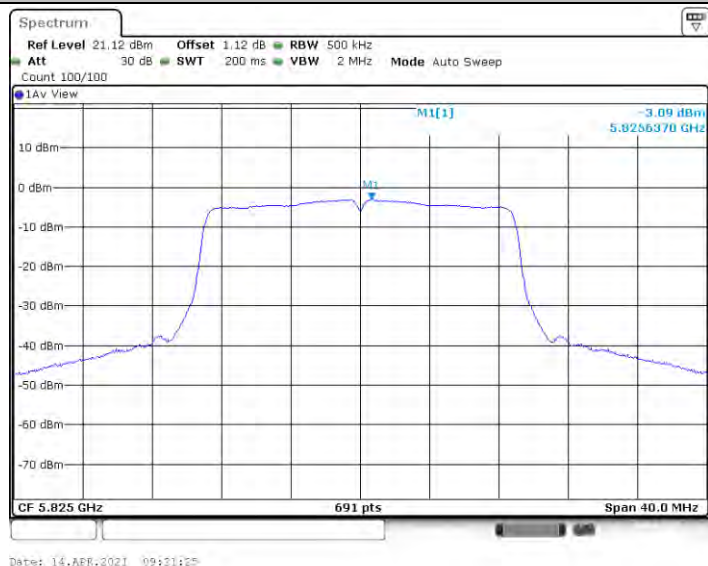
11N20MIMO_Ant2_5785



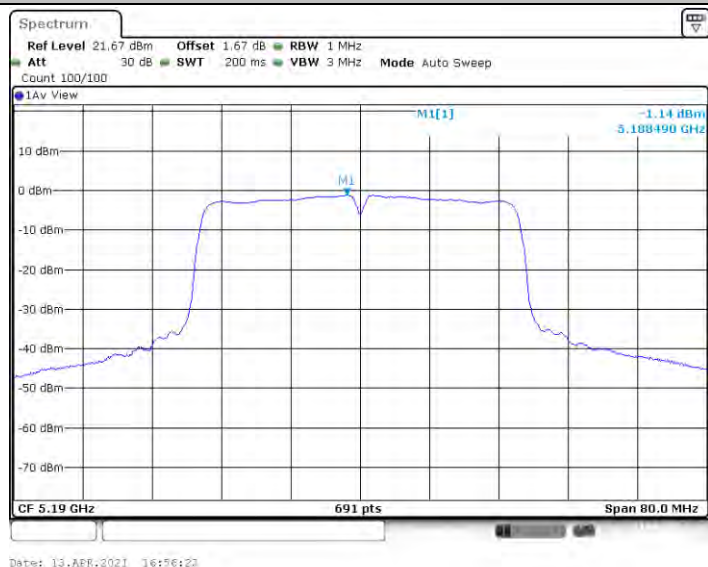
11N20MIMO_Ant1_5825



11N20MIMO_Ant2_5825

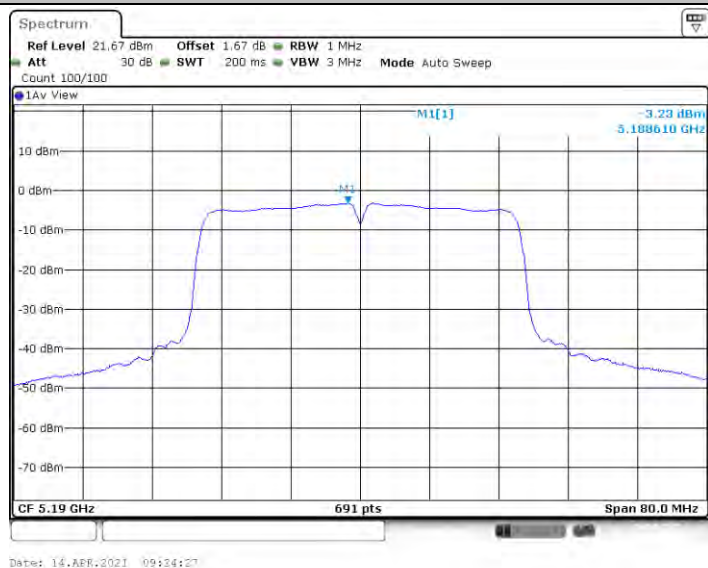


11N40MIMO_Ant1_5190

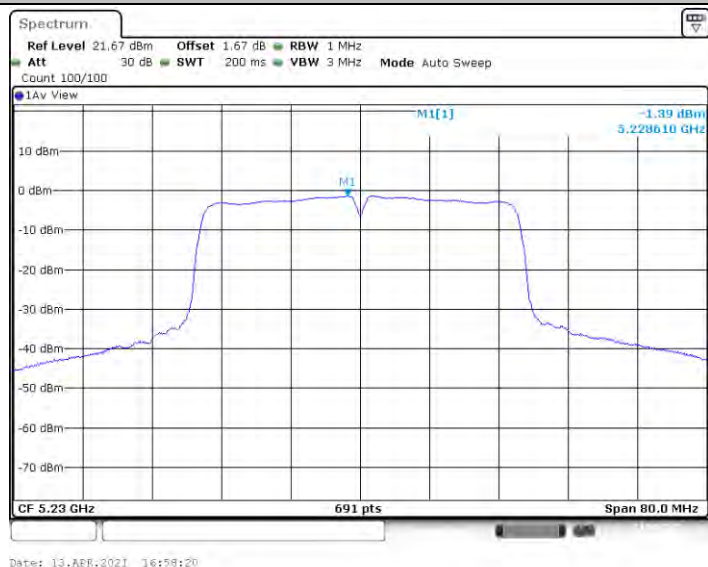




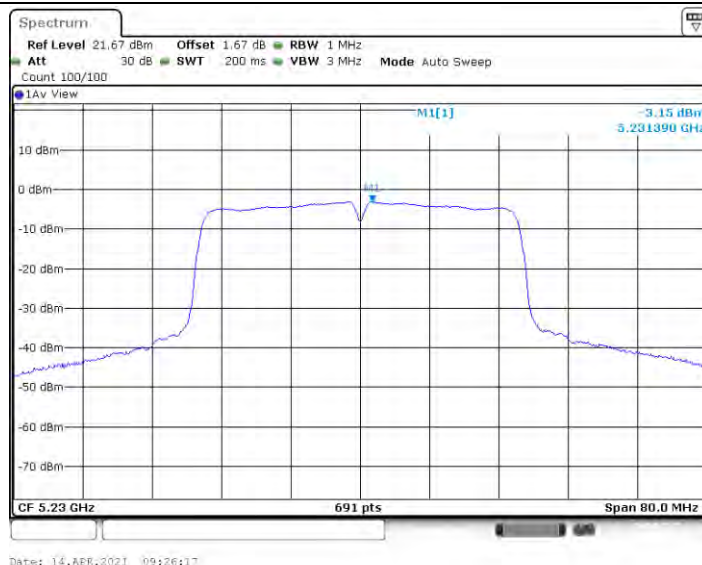
11N40MIMO_Ant2_5190



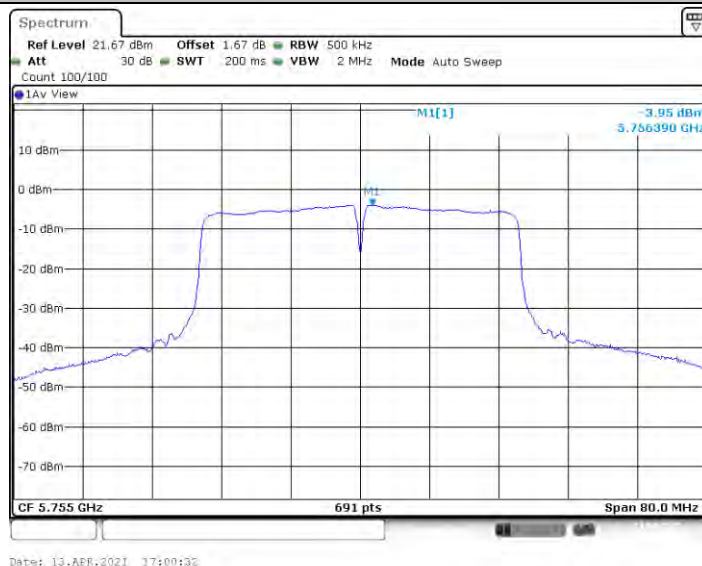
11N40MIMO_Ant1_5230



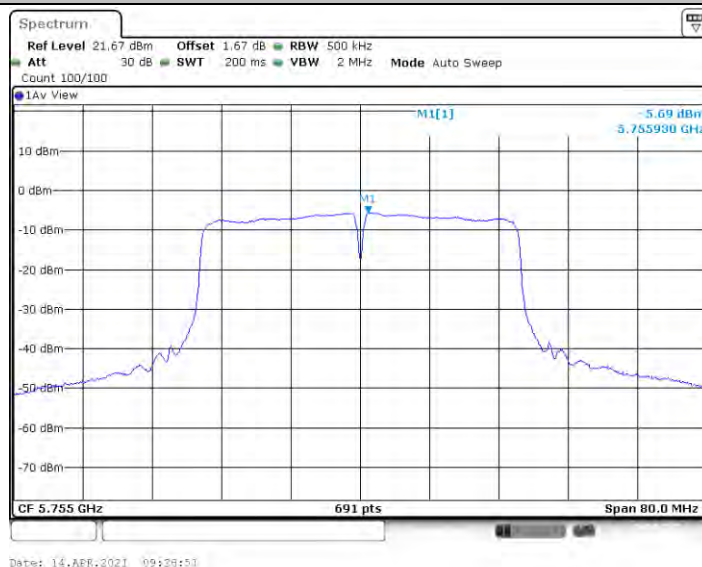
11N40MIMO_Ant2_5230



11N40MIMO_Ant1_5755

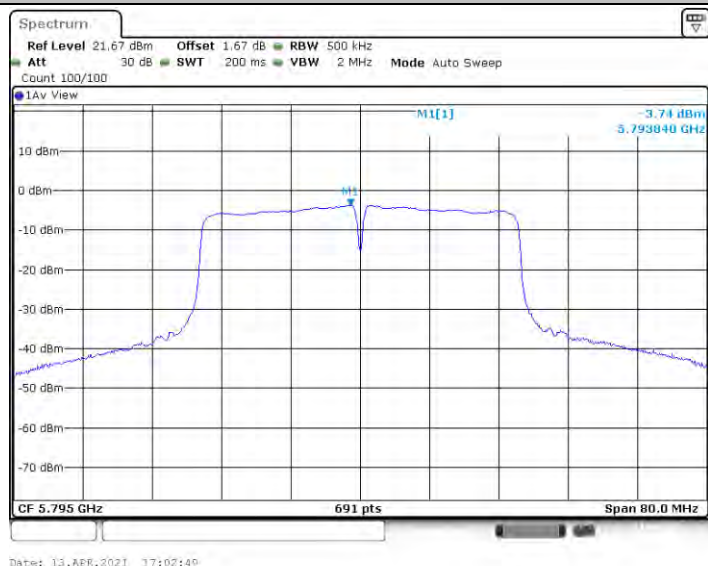


11N40MIMO_Ant2_5755

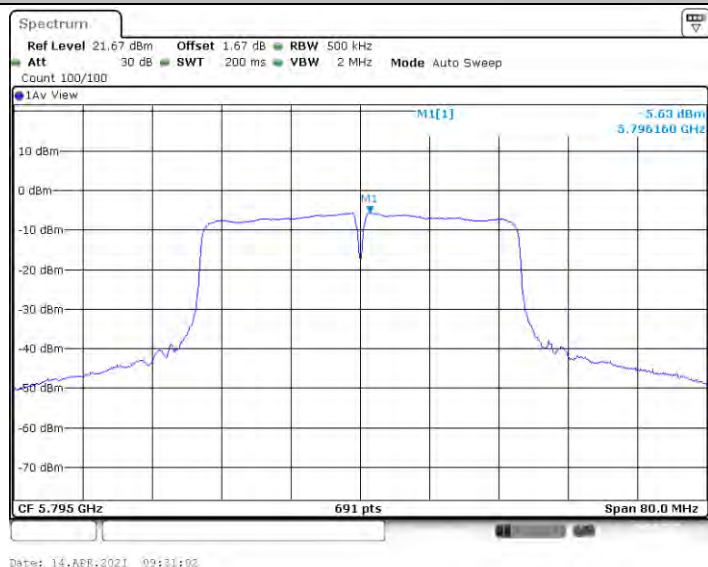




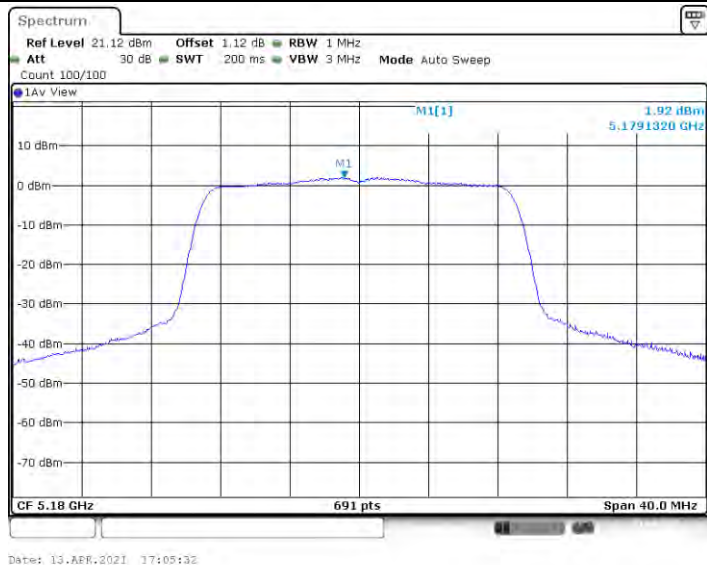
11N40MIMO_Ant1_5795



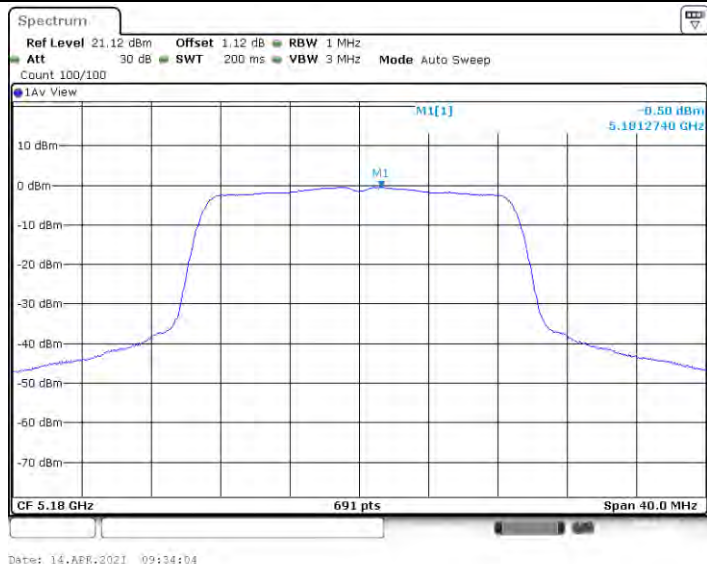
11N40MIMO_Ant2_5795



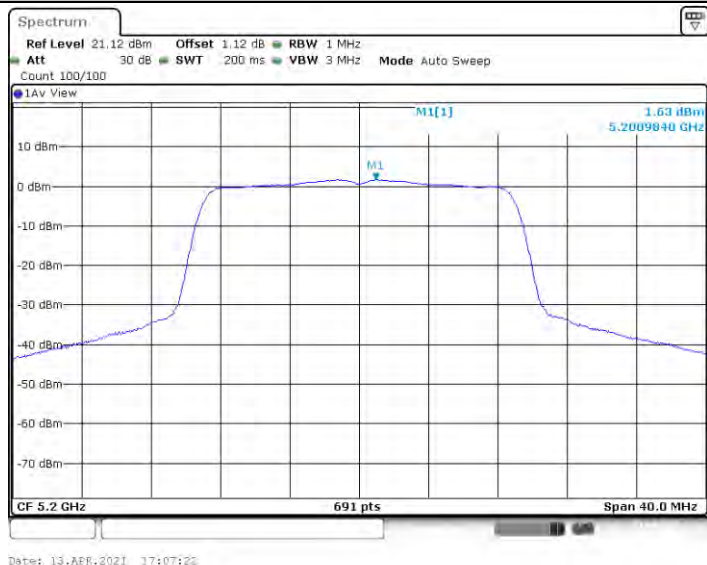
11AC20MIMO_Ant1_5180



11AC20MIMO_Ant2_5180

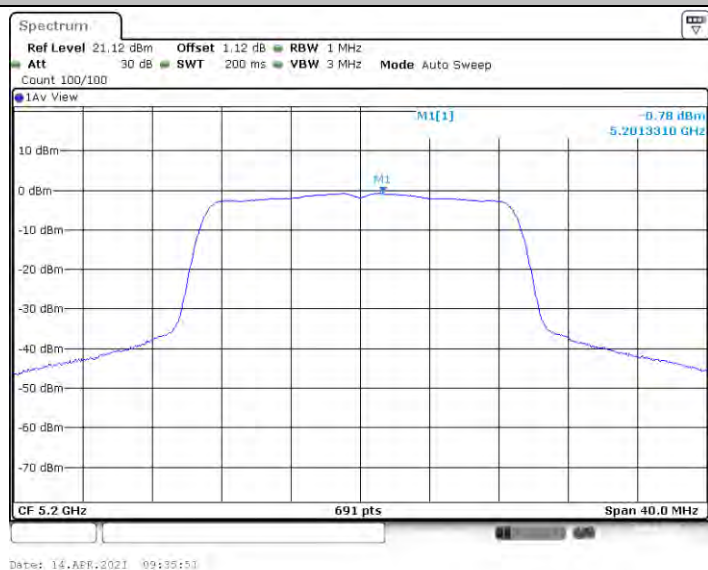


11AC20MIMO_Ant1_5200

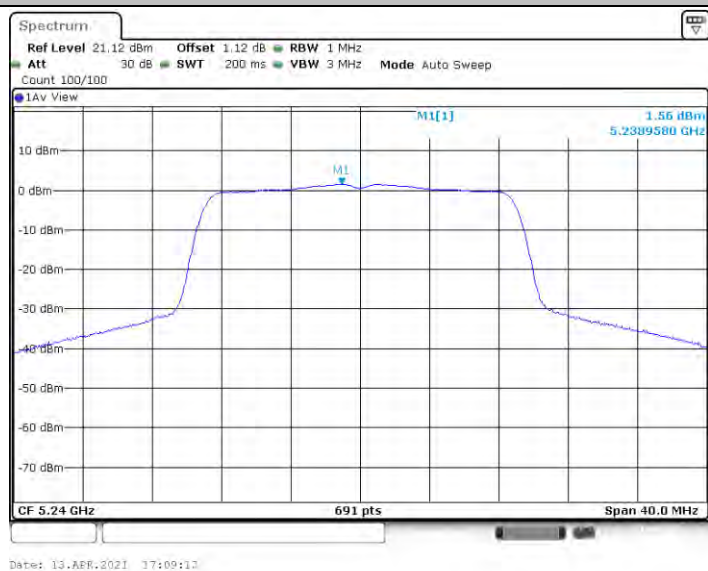




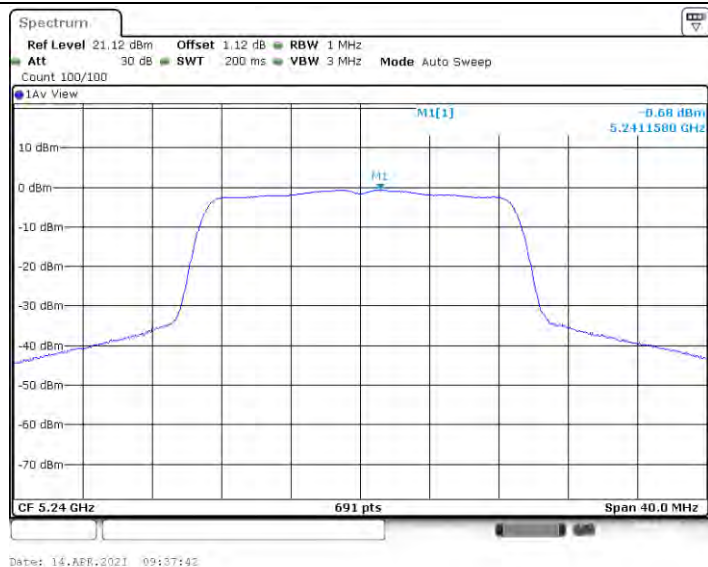
11AC20MIMO_Ant2_5200



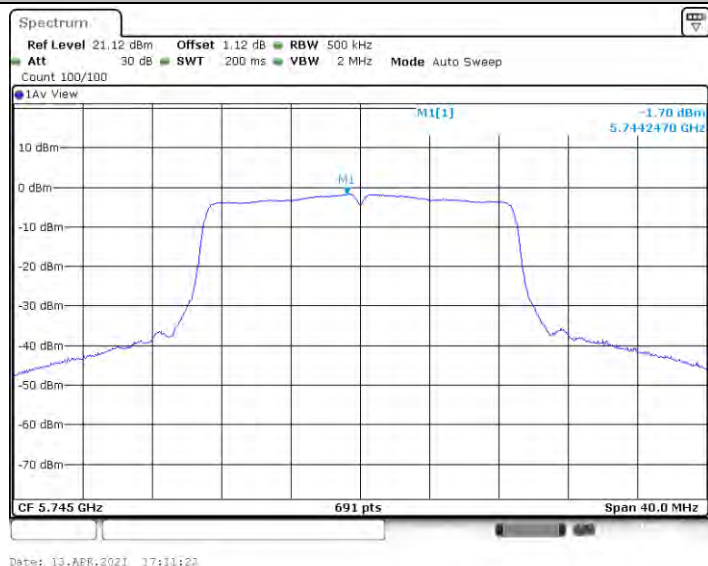
11AC20MIMO_Ant1_5240



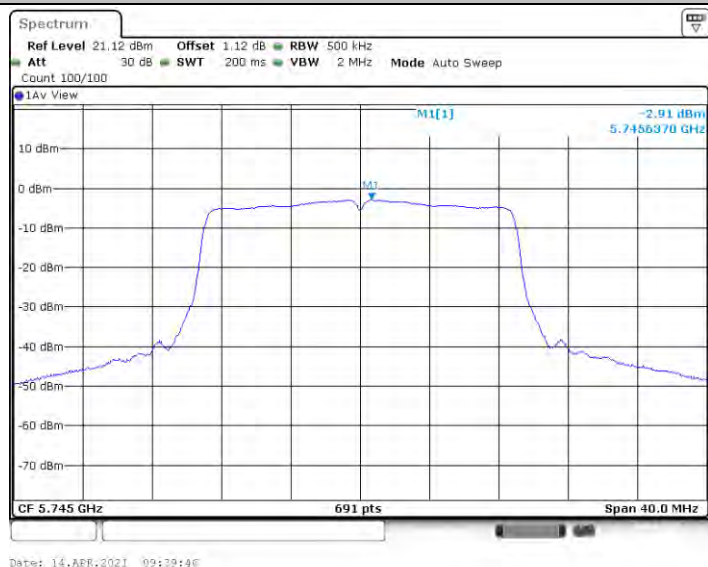
11AC20MIMO_Ant2_5240



11AC20MIMO_Ant1_5745

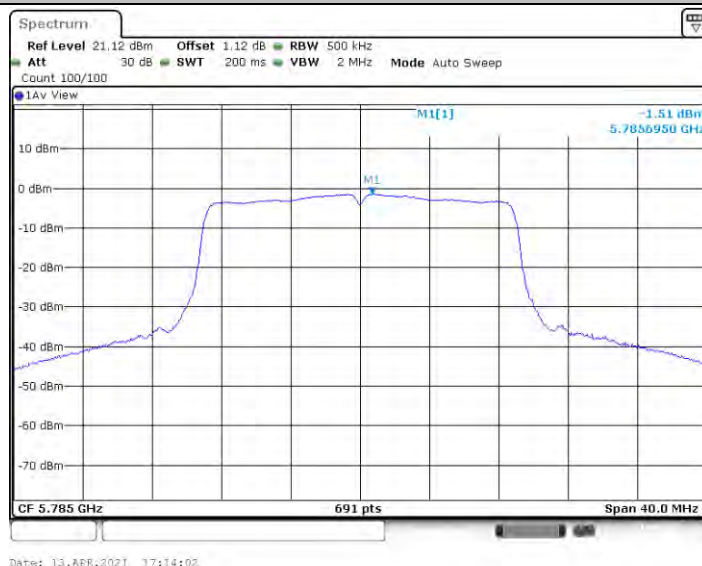


11AC20MIMO_Ant2_5745

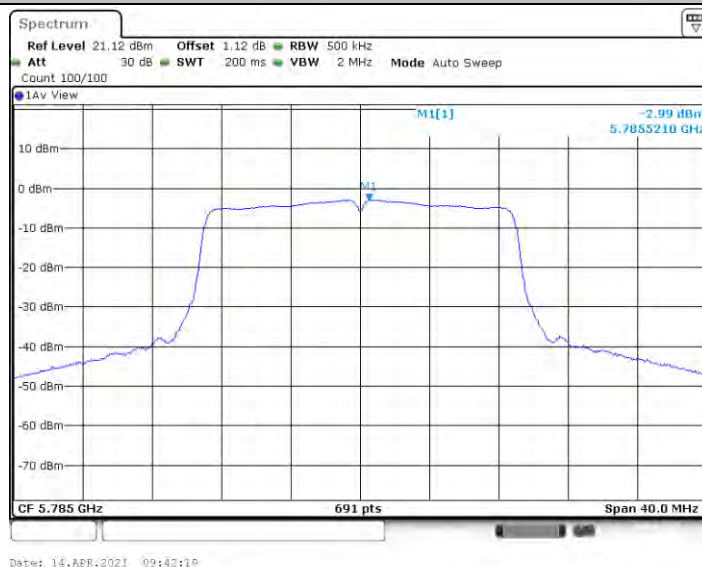




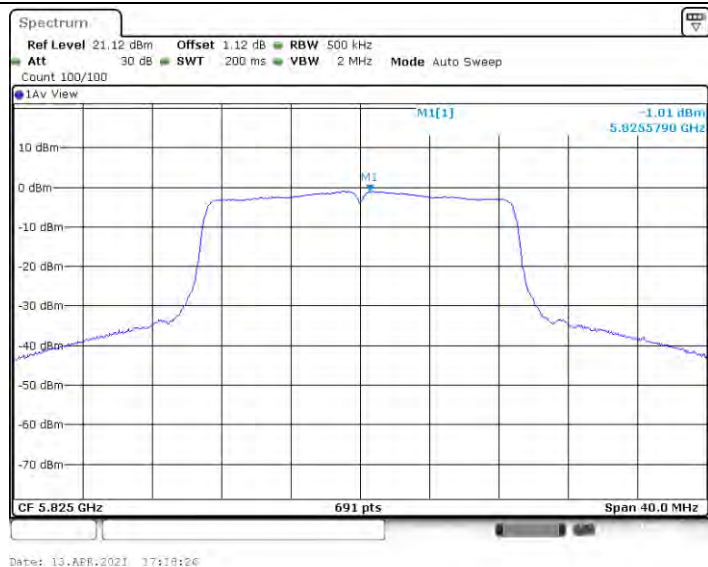
11AC20MIMO_Ant1_5785



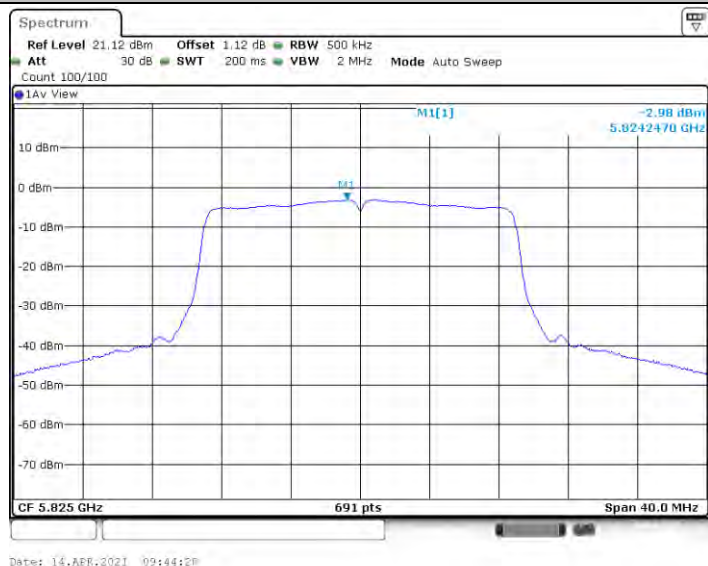
11AC20MIMO_Ant2_5785



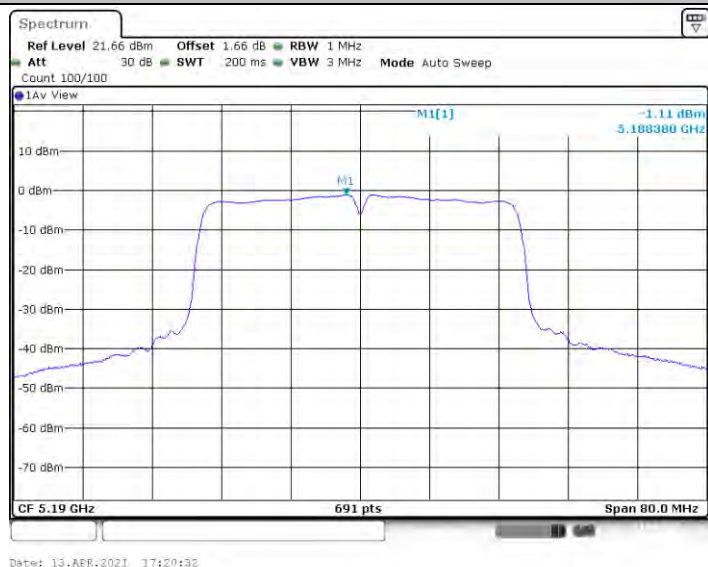
11AC20MIMO_Ant1_5825



11AC20MIMO_Ant2_5825

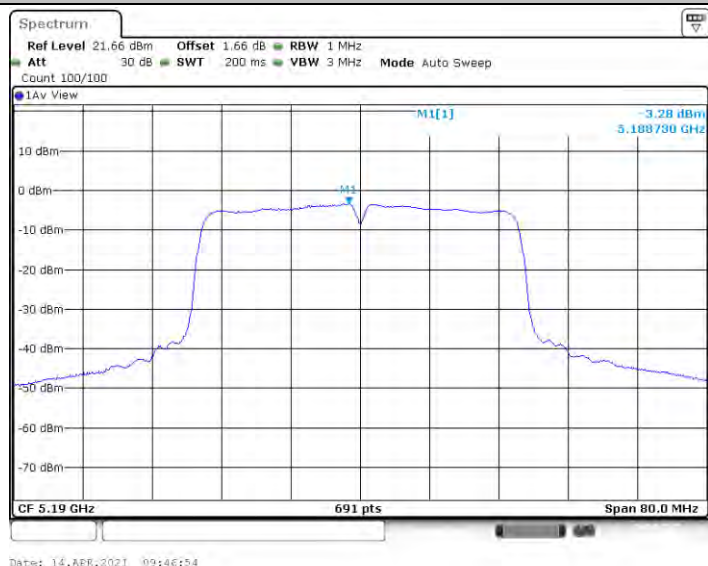


11AC40MIMO_Ant1_5190

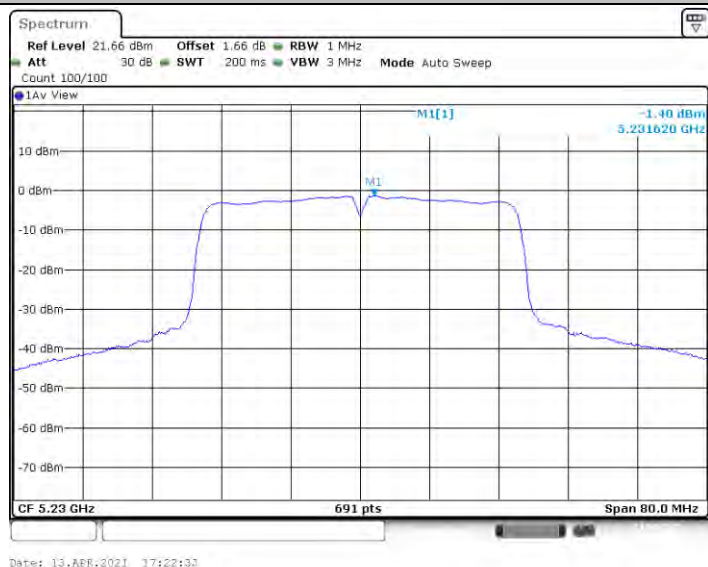




11AC40MIMO_Ant2_5190



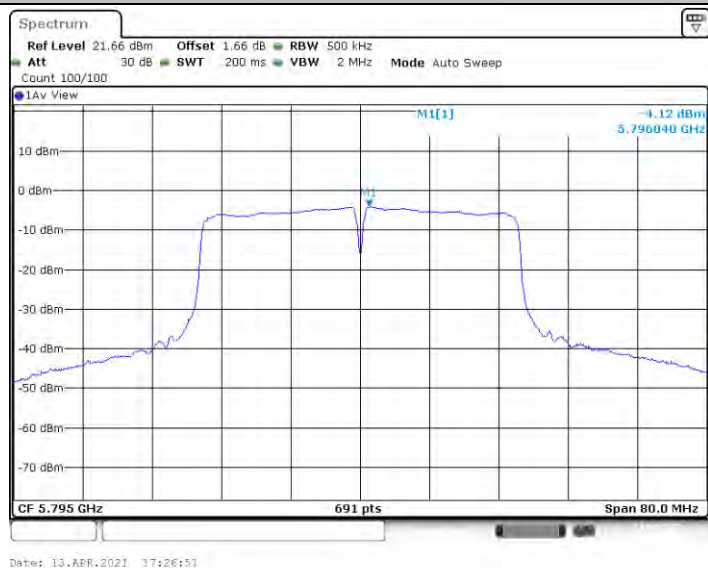
11AC40MIMO_Ant1_5230



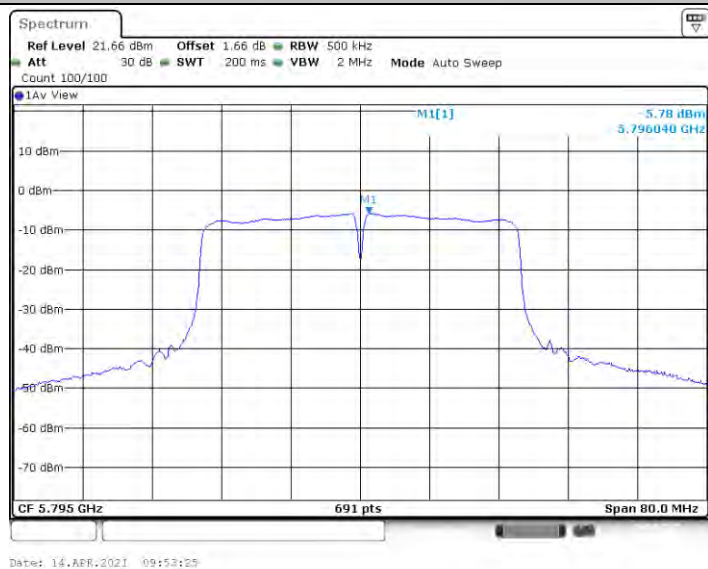
11AC40MIMO_Ant2_5230



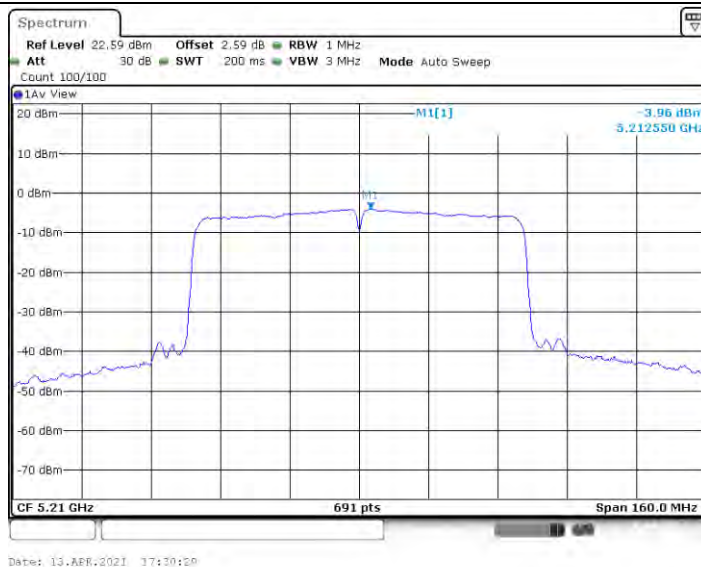
11AC40MIMO_Ant1_5795



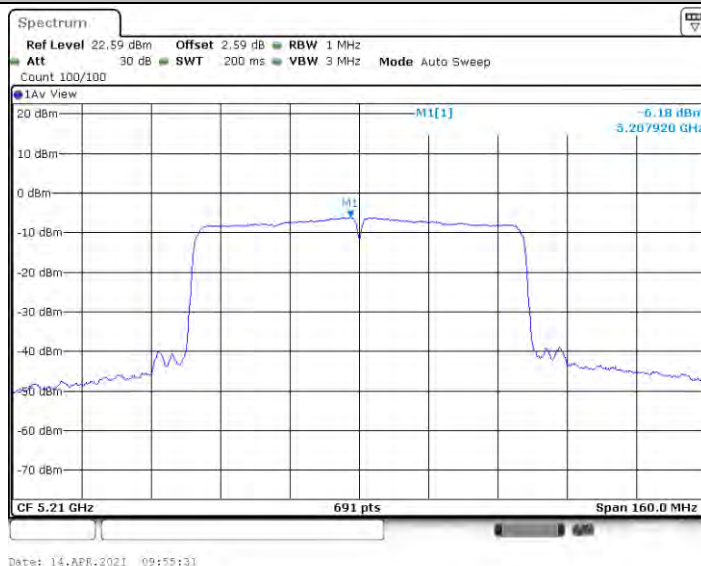
11AC40MIMO_Ant2_5795



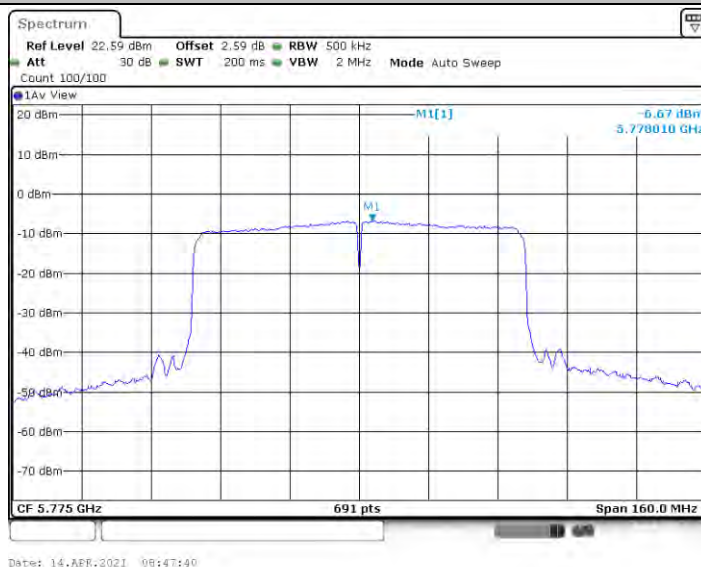
11AC80MIMO_Ant1_5210



11AC80MIMO_Ant2_5210



11AC80MIMO_Ant1_5775





11AC80MIMO_Ant2_5775



Date: 14.APR.2021 09:58:51



Appendix D: Frequency Stability

Test Result

Voltage								
TestMode	Antenna	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
20MHz	Ant1	5180	NV	NT	-8000	-1.544402	± 20	PASS
			LV	NT	-12000	-2.316602	± 20	PASS
			HV	NT	-13000	-2.509653	± 20	PASS
	Ant2	5180	NV	NT	-14000	-2.702703	± 20	PASS
			LV	NT	-14000	-2.702703	± 20	PASS
			HV	NT	-14000	-2.702703	± 20	PASS
	Ant1	5200	NV	NT	-15000	-2.884615	± 20	PASS
			LV	NT	-15000	-2.884615	± 20	PASS
			HV	NT	-15000	-2.884615	± 20	PASS
	Ant2	5200	NV	NT	-15000	-2.884615	± 20	PASS
			LV	NT	-14000	-2.692308	± 20	PASS
			HV	NT	-14000	-2.692308	± 20	PASS
	Ant1	5240	NV	NT	-16000	-3.053435	± 20	PASS
			LV	NT	-15000	-2.862595	± 20	PASS
			HV	NT	-15000	-2.862595	± 20	PASS
	Ant2	5240	NV	NT	-15000	-2.862595	± 20	PASS
			LV	NT	-15000	-2.862595	± 20	PASS
			HV	NT	-14000	-2.671756	± 20	PASS
	Ant1	5745	NV	NT	-16000	-2.785030	± 20	PASS
			LV	NT	-16000	-2.785030	± 20	PASS
			HV	NT	-16000	-2.785030	± 20	PASS
	Ant2	5745	NV	NT	-16000	-2.785030	± 20	PASS
			LV	NT	-16000	-2.785030	± 20	PASS
			HV	NT	-16000	-2.785030	± 20	PASS
	Ant1	5785	NV	NT	-17000	-2.938634	± 20	PASS
			LV	NT	-17000	-2.938634	± 20	PASS
			HV	NT	-16000	-2.765774	± 20	PASS
	Ant2	5785	NV	NT	-16000	-2.765774	± 20	PASS
			LV	NT	-16000	-2.765774	± 20	PASS
			HV	NT	-16000	-2.765774	± 20	PASS
	Ant1	5825	NV	NT	-17000	-2.918455	± 20	PASS
			LV	NT	-17000	-2.918455	± 20	PASS
			HV	NT	-16000	-2.746781	± 20	PASS
	Ant2	5825	NV	NT	-16000	-2.746781	± 20	PASS
			LV	NT	-16000	-2.746781	± 20	PASS
			HV	NT	-16000	-2.746781	± 20	PASS



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40MHz	Ant1	5190	NV	NT	-15000	-2.890173	±20	PASS
			LV	NT	-14000	-2.697495	±20	PASS
			HV	NT	-14000	-2.697495	±20	PASS
	Ant2	5190	NV	NT	-14000	-2.697495	±20	PASS
			LV	NT	-14000	-2.697495	±20	PASS
			HV	NT	-14000	-2.697495	±20	PASS
	Ant1	5230	NV	NT	-15000	-2.868069	±20	PASS
			LV	NT	-15000	-2.868069	±20	PASS
			HV	NT	-14000	-2.676864	±20	PASS
	Ant2	5230	NV	NT	-15000	-2.868069	±20	PASS
			LV	NT	-14000	-2.676864	±20	PASS
			HV	NT	-14000	-2.676864	±20	PASS
	Ant1	5755	NV	NT	-16000	-2.780191	±20	PASS
			LV	NT	-16000	-2.780191	±20	PASS
			HV	NT	-16000	-2.780191	±20	PASS
	Ant2	5755	NV	NT	-16000	-2.780191	±20	PASS
			LV	NT	-16000	-2.780191	±20	PASS
			HV	NT	-16000	-2.780191	±20	PASS
	Ant1	5795	NV	NT	-17000	-2.933563	±20	PASS
			LV	NT	-16000	-2.761001	±20	PASS
			HV	NT	-16000	-2.761001	±20	PASS
	Ant2	5795	NV	NT	-16000	-2.761001	±20	PASS
			LV	NT	-16000	-2.761001	±20	PASS
			HV	NT	-16000	-2.761001	±20	PASS
80MHz	Ant1	5210	NV	NT	-15000	-2.879079	±20	PASS
			LV	NT	-14000	-2.687140	±20	PASS
			HV	NT	-14000	-2.687140	±20	PASS
	Ant2	5210	NV	NT	-15000	-2.879079	±20	PASS
			LV	NT	-14000	-2.687140	±20	PASS
			HV	NT	-14000	-2.687140	±20	PASS
	Ant1	5775	NV	NT	-17000	-2.943723	±20	PASS
			LV	NT	-16000	-2.770563	±20	PASS
			HV	NT	-16000	-2.770563	±20	PASS
	Ant2	5775	NV	NT	-13000	-2.251082	±20	PASS
			LV	NT	-14000	-2.424242	±20	PASS
			HV	NT	-15000	-2.597403	±20	PASS



Temperature								
TestMode	Antenna	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
20MHz	Ant1	5180	NV	-10	-14000	-2.702703	± 20	PASS
			NV	0	-15000	-2.895753	± 20	PASS
			NV	10	-15000	-2.895753	± 20	PASS
			NV	20	-15000	-2.895753	± 20	PASS
			NV	30	-15000	-2.895753	± 20	PASS
			NV	40	-15000	-2.895753	± 20	PASS
	Ant2	5180	NV	-10	-14000	-2.702703	± 20	PASS
			NV	0	-14000	-2.702703	± 20	PASS
			NV	10	-14000	-2.702703	± 20	PASS
			NV	20	-14000	-2.702703	± 20	PASS
			NV	30	-14000	-2.702703	± 20	PASS
			NV	40	-14000	-2.702703	± 20	PASS
	Ant1	5200	NV	-10	-15000	-2.884615	± 20	PASS
			NV	0	-15000	-2.884615	± 20	PASS
			NV	10	-15000	-2.884615	± 20	PASS
			NV	20	-15000	-2.884615	± 20	PASS
			NV	30	-15000	-2.884615	± 20	PASS
			NV	40	-15000	-2.884615	± 20	PASS
	Ant2	5200	NV	-10	-14000	-2.692308	± 20	PASS
			NV	0	-14000	-2.692308	± 20	PASS
			NV	10	-14000	-2.692308	± 20	PASS
			NV	20	-14000	-2.692308	± 20	PASS
			NV	30	-14000	-2.692308	± 20	PASS
			NV	40	-14000	-2.692308	± 20	PASS
	Ant1	5240	NV	-10	-15000	-2.862595	± 20	PASS
			NV	0	-15000	-2.862595	± 20	PASS
			NV	10	-15000	-2.862595	± 20	PASS
			NV	20	-15000	-2.862595	± 20	PASS
			NV	30	-15000	-2.862595	± 20	PASS
			NV	40	-15000	-2.862595	± 20	PASS
	Ant2	5240	NV	-10	-14000	-2.671756	± 20	PASS
			NV	0	-14000	-2.671756	± 20	PASS
			NV	10	-14000	-2.671756	± 20	PASS
			NV	20	-14000	-2.671756	± 20	PASS
			NV	30	-14000	-2.671756	± 20	PASS
			NV	40	-14000	-2.671756	± 20	PASS
	Ant1	5745	NV	-10	-16000	-2.785030	± 20	PASS
			NV	0	-16000	-2.785030	± 20	PASS
			NV	10	-16000	-2.785030	± 20	PASS
			NV	20	-16000	-2.785030	± 20	PASS



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			NV	30	-16000	-2.785030	± 20	PASS
			NV	40	-16000	-2.785030	± 20	PASS
	Ant2	5745	NV	-10	-16000	-2.785030	± 20	PASS
			NV	0	-16000	-2.785030	± 20	PASS
			NV	10	-16000	-2.785030	± 20	PASS
			NV	20	-16000	-2.785030	± 20	PASS
			NV	30	-16000	-2.785030	± 20	PASS
			NV	40	-16000	-2.785030	± 20	PASS
	Ant1	5785	NV	-10	-16000	-2.765774	± 20	PASS
			NV	0	-16000	-2.765774	± 20	PASS
			NV	10	-16000	-2.765774	± 20	PASS
			NV	20	-16000	-2.765774	± 20	PASS
			NV	30	-16000	-2.765774	± 20	PASS
			NV	40	-16000	-2.765774	± 20	PASS
	Ant2	5785	NV	-10	-16000	-2.765774	± 20	PASS
			NV	0	-16000	-2.765774	± 20	PASS
			NV	10	-16000	-2.765774	± 20	PASS
			NV	20	-16000	-2.765774	± 20	PASS
			NV	30	-16000	-2.765774	± 20	PASS
			NV	40	-16000	-2.765774	± 20	PASS
	Ant1	5825	NV	-10	-16000	-2.746781	± 20	PASS
			NV	0	-16000	-2.746781	± 20	PASS
			NV	10	-16000	-2.746781	± 20	PASS
			NV	20	-16000	-2.746781	± 20	PASS
			NV	30	-16000	-2.746781	± 20	PASS
			NV	40	-16000	-2.746781	± 20	PASS
	Ant2	5825	NV	-10	-16000	-2.746781	± 20	PASS
			NV	0	-16000	-2.746781	± 20	PASS
			NV	10	-16000	-2.746781	± 20	PASS
			NV	20	-16000	-2.746781	± 20	PASS
			NV	30	-16000	-2.746781	± 20	PASS
			NV	40	-16000	-2.746781	± 20	PASS
40MHz	Ant1	5190	NV	-10	-14000	-2.697495	± 20	PASS
			NV	0	-14000	-2.697495	± 20	PASS
			NV	10	-14000	-2.697495	± 20	PASS
			NV	20	-14000	-2.697495	± 20	PASS
			NV	30	-14000	-2.697495	± 20	PASS
			NV	40	-14000	-2.697495	± 20	PASS
	Ant2	5190	NV	-10	-14000	-2.697495	± 20	PASS
			NV	0	-14000	-2.697495	± 20	PASS
			NV	10	-14000	-2.697495	± 20	PASS
			NV	20	-14000	-2.697495	± 20	PASS
			NV	30	-14000	-2.697495	± 20	PASS



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			NV	40	-14000	-2.697495	± 20	PASS
	Ant1	5230	NV	-10	-14000	-2.676864	± 20	PASS
			NV	0	-14000	-2.676864	± 20	PASS
			NV	10	-14000	-2.676864	± 20	PASS
			NV	20	-14000	-2.676864	± 20	PASS
			NV	30	-14000	-2.676864	± 20	PASS
			NV	40	-14000	-2.676864	± 20	PASS
	Ant2	5230	NV	-10	-14000	-2.676864	± 20	PASS
			NV	0	-14000	-2.676864	± 20	PASS
			NV	10	-14000	-2.676864	± 20	PASS
			NV	20	-14000	-2.676864	± 20	PASS
			NV	30	-14000	-2.676864	± 20	PASS
			NV	40	-14000	-2.676864	± 20	PASS
	Ant1	5755	NV	-10	-16000	-2.780191	± 20	PASS
			NV	0	-16000	-2.780191	± 20	PASS
			NV	10	-16000	-2.780191	± 20	PASS
			NV	20	-16000	-2.780191	± 20	PASS
			NV	30	-16000	-2.780191	± 20	PASS
			NV	40	-16000	-2.780191	± 20	PASS
	Ant2	5755	NV	-10	-16000	-2.780191	± 20	PASS
			NV	0	-16000	-2.780191	± 20	PASS
			NV	10	-16000	-2.780191	± 20	PASS
			NV	20	-16000	-2.780191	± 20	PASS
			NV	30	-16000	-2.780191	± 20	PASS
			NV	40	-16000	-2.780191	± 20	PASS
	Ant1	5795	NV	-10	-16000	-2.761001	± 20	PASS
			NV	0	-16000	-2.761001	± 20	PASS
			NV	10	-16000	-2.761001	± 20	PASS
			NV	20	-16000	-2.761001	± 20	PASS
			NV	30	-16000	-2.761001	± 20	PASS
			NV	40	-16000	-2.761001	± 20	PASS
	Ant2	5795	NV	-10	-16000	-2.761001	± 20	PASS
			NV	0	-16000	-2.761001	± 20	PASS
			NV	10	-16000	-2.761001	± 20	PASS
			NV	20	-16000	-2.761001	± 20	PASS
			NV	30	-16000	-2.761001	± 20	PASS
			NV	40	-16000	-2.761001	± 20	PASS
80MHz	Ant1	5210	NV	-10	-14000	-2.687140	± 20	PASS
			NV	0	-14000	-2.687140	± 20	PASS
			NV	10	-14000	-2.687140	± 20	PASS
			NV	20	-14000	-2.687140	± 20	PASS
			NV	30	-14000	-2.687140	± 20	PASS
			NV	40	-14000	-2.687140	± 20	PASS



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	Ant2	5210	NV	-10	-14000	-2.687140	± 20	PASS
			NV	0	-14000	-2.687140	± 20	PASS
			NV	10	-14000	-2.687140	± 20	PASS
			NV	20	-14000	-2.687140	± 20	PASS
			NV	30	-14000	-2.687140	± 20	PASS
			NV	40	-14000	-2.687140	± 20	PASS
	Ant1	5775	NV	-10	-16000	-2.770563	± 20	PASS
			NV	0	-16000	-2.770563	± 20	PASS
			NV	10	-16000	-2.770563	± 20	PASS
			NV	20	-16000	-2.770563	± 20	PASS
			NV	30	-16000	-2.770563	± 20	PASS
			NV	40	-16000	-2.770563	± 20	PASS
	Ant2	5775	NV	-10	-15000	-2.597403	± 20	PASS
			NV	0	-16000	-2.770563	± 20	PASS
			NV	10	-16000	-2.770563	± 20	PASS
			NV	20	-16000	-2.770563	± 20	PASS
			NV	30	-16000	-2.770563	± 20	PASS
			NV	40	-16000	-2.770563	± 20	PASS