

Appendix Test Data for RLAN(5.8G) (Conducted Measurement)

Product Name: Outdoor LoRa Gateway

Trade Mark: Dusun

Test Model: DSGW-014

FCC ID: 2AUXBDSGW-014

Environmental Conditions

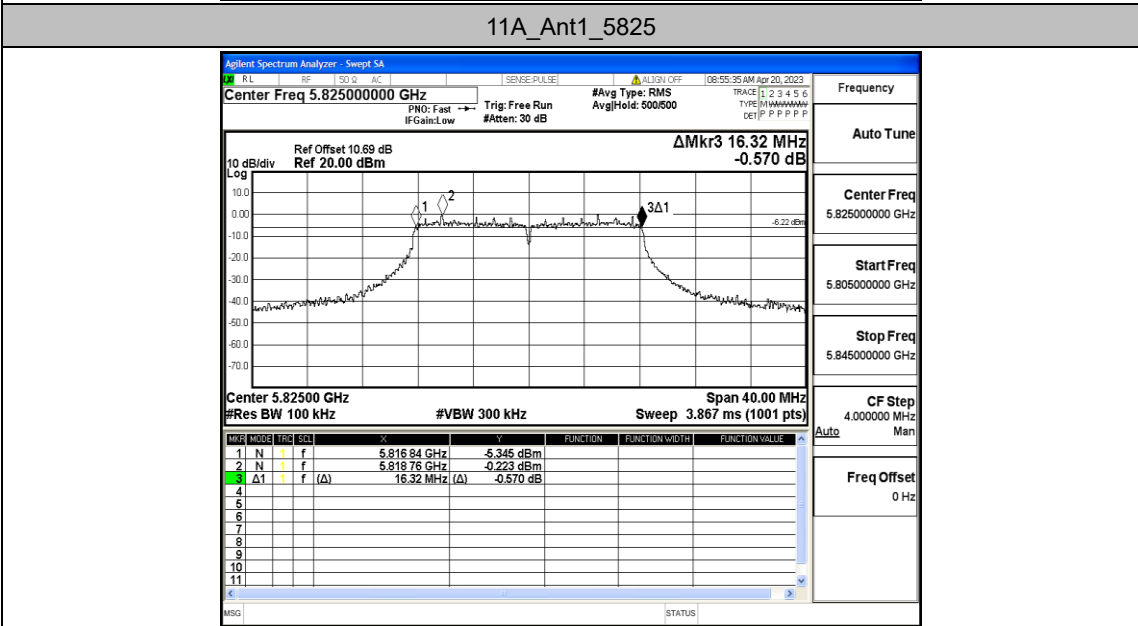
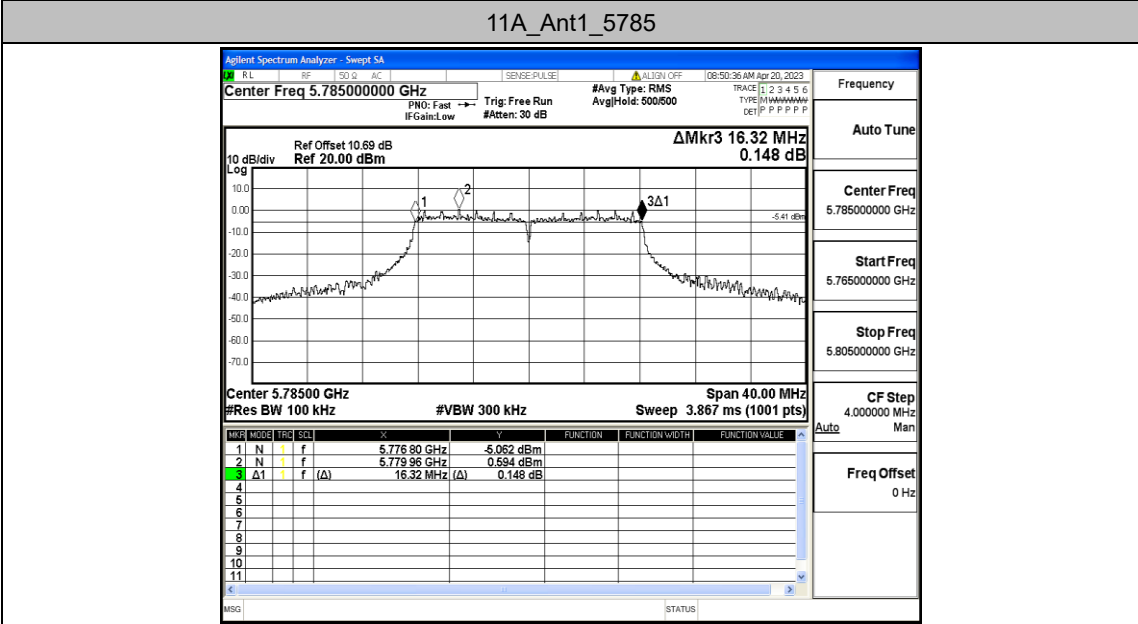
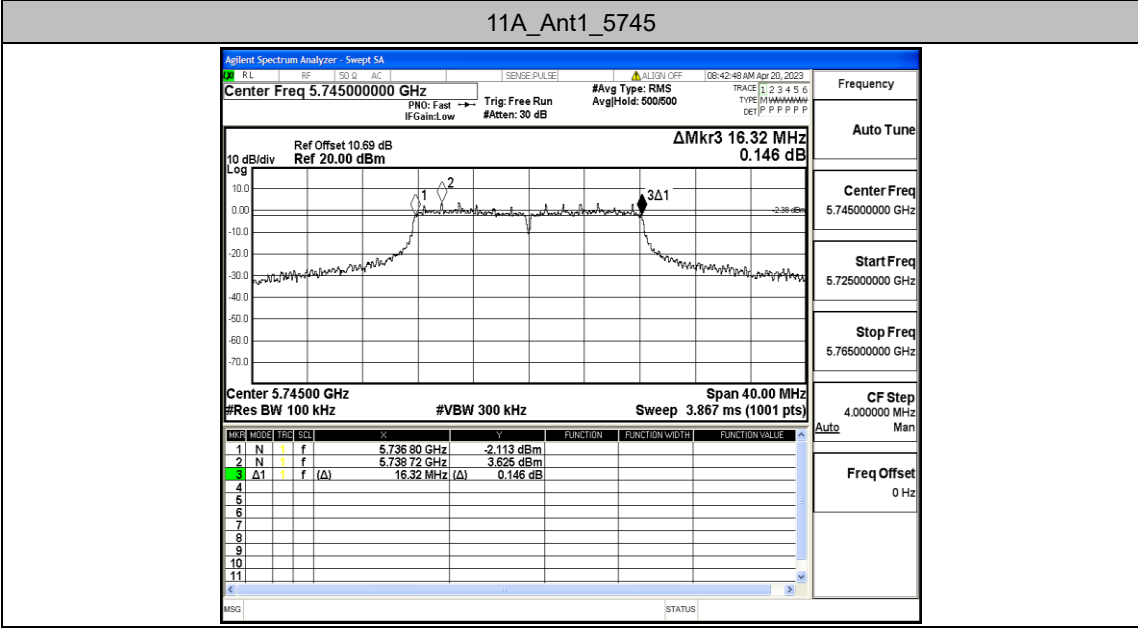
Temperature:	22.7°C
Relative Humidity:	56%
ATM Pressure:	100.0 kPa
Test Engneer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: Min emission bandwidth

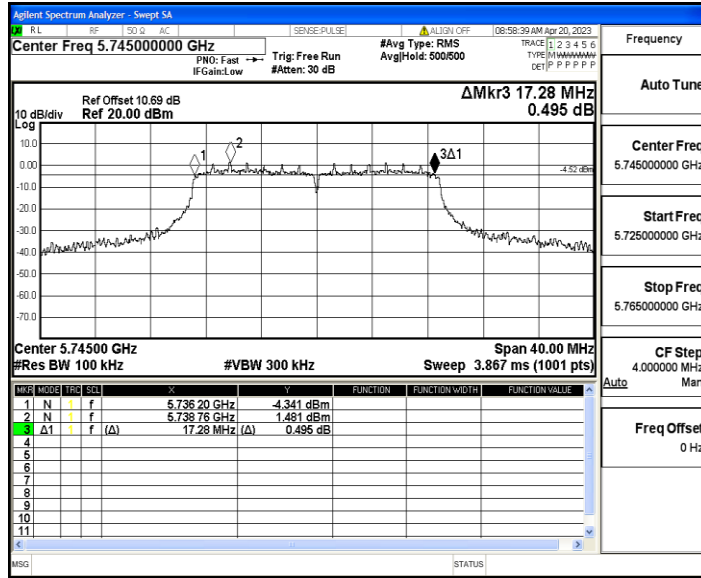
Test Result

TestMode	Antenna	Channel	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.320	5736.800	5753.120	0.5	PASS
		5785	16.320	5776.800	5793.120	0.5	PASS
		5825	16.320	5816.840	5833.160	0.5	PASS
11N20MIMO	Ant1	5745	17.280	5736.200	5753.480	0.5	PASS
		5785	17.040	5776.440	5793.480	0.5	PASS
		5825	17.040	5816.440	5833.480	0.5	PASS
11N40MIMO	Ant1	5755	35.520	5737.080	5772.600	0.5	PASS
		5795	35.360	5777.160	5812.520	0.5	PASS
11AC20MIMO	Ant1	5745	17.480	5736.240	5753.720	0.5	PASS
		5785	17.000	5776.400	5793.400	0.5	PASS
		5825	16.920	5816.480	5833.400	0.5	PASS
11AC40MIMO	Ant1	5755	35.680	5737.080	5772.760	0.5	PASS
		5795	35.520	5777.080	5812.600	0.5	PASS
11AC80MIMO	Ant1	5775	75.200	5737.400	5812.600	0.5	PASS

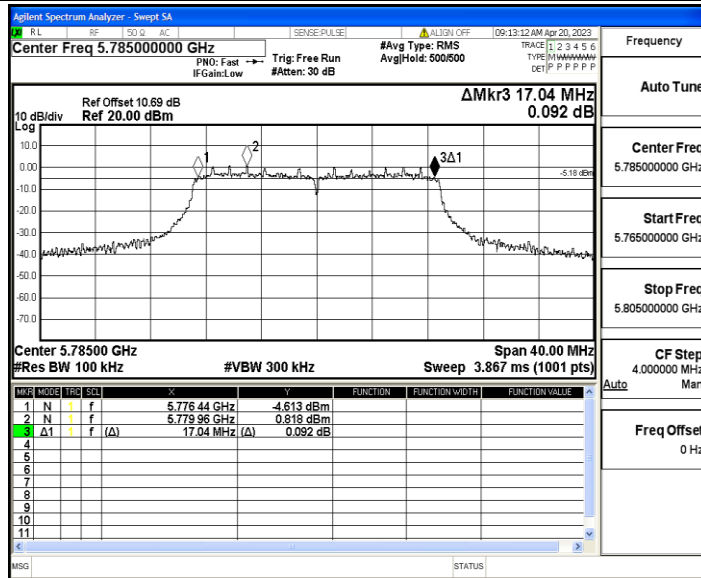
Test Graphs



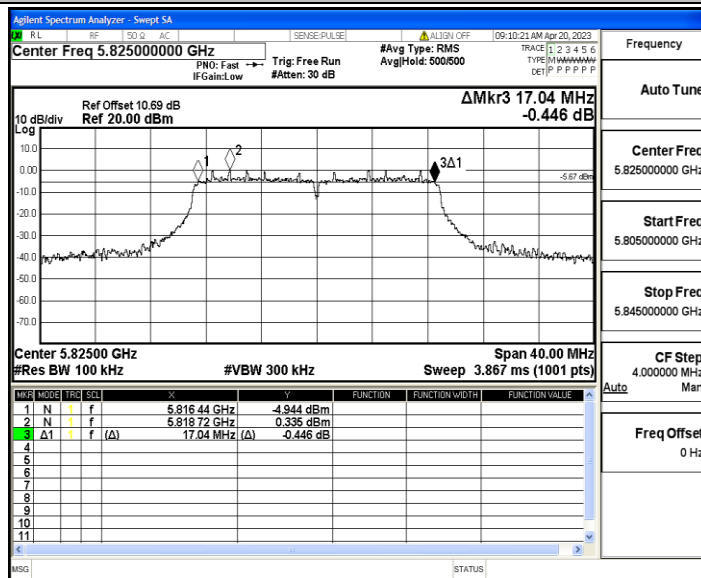
11N20MIMO_Ant1_5745



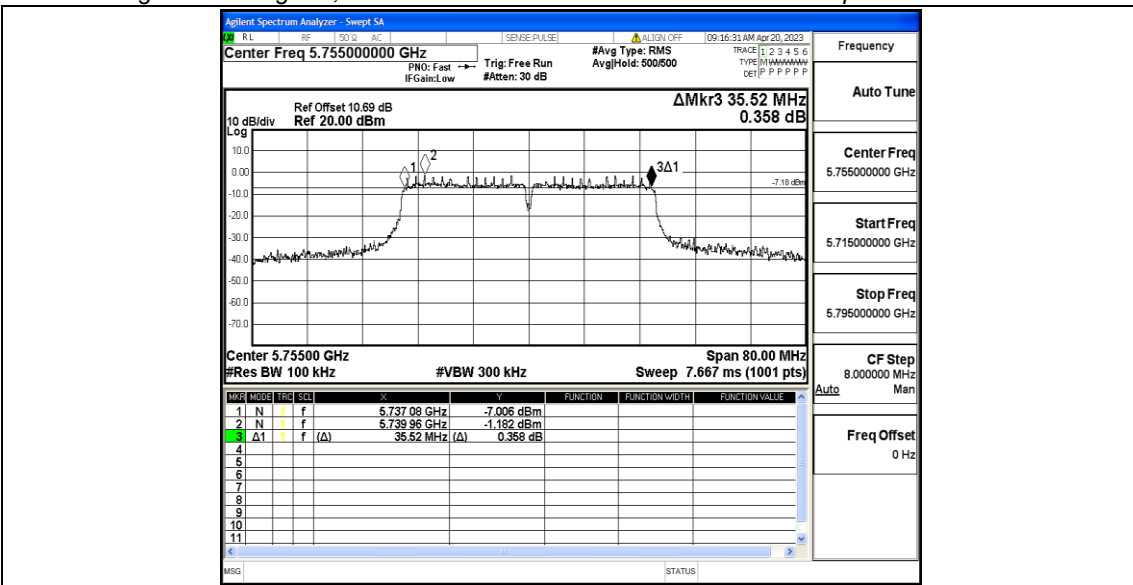
11N20MIMO_Ant1_5785



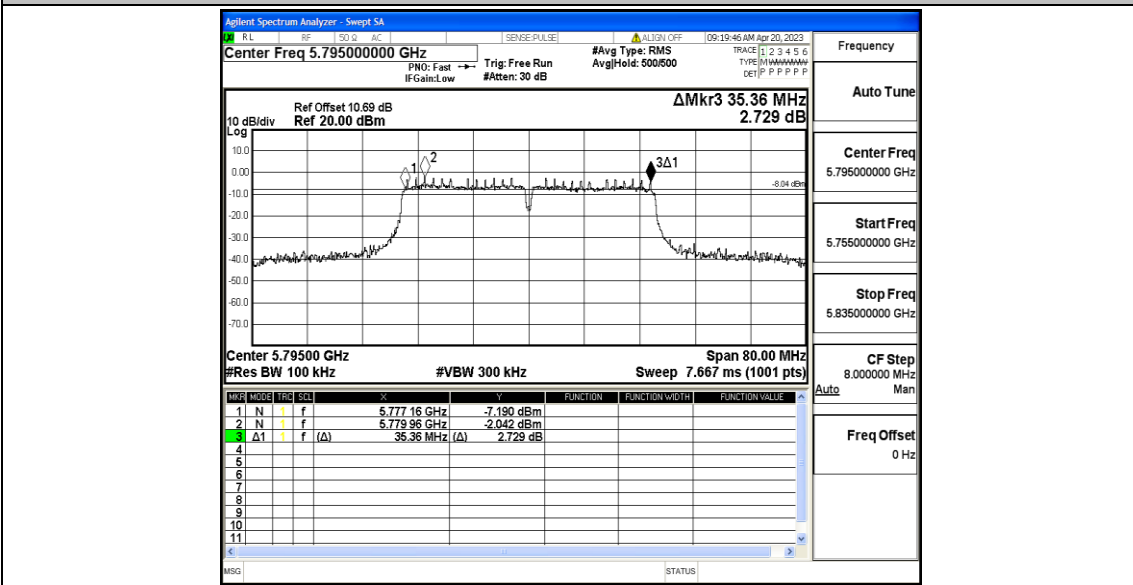
11N20MIMO_Ant1_5825



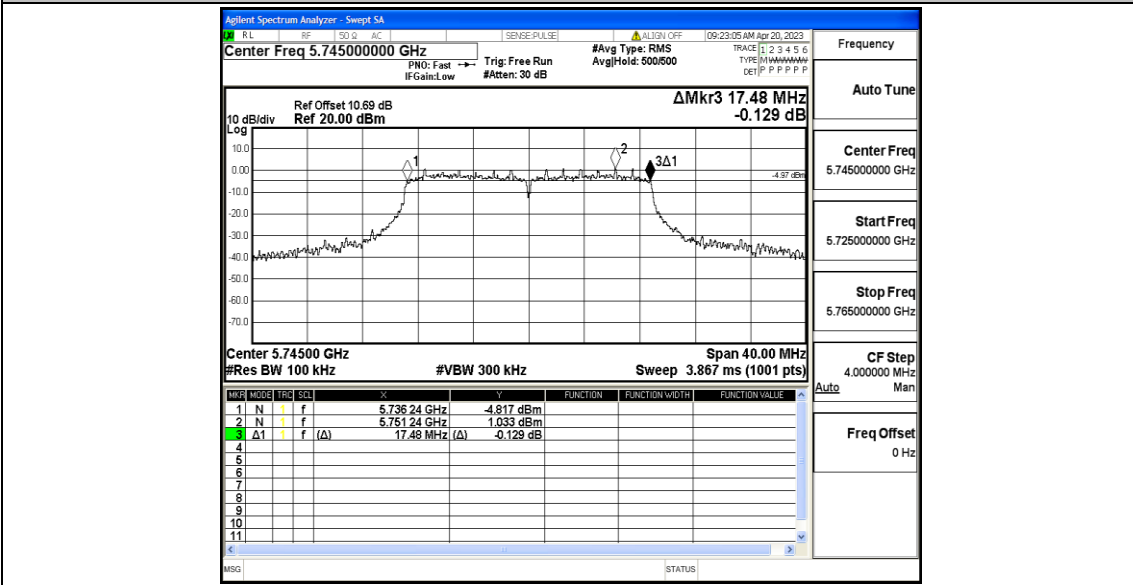
11N40MIMO_Ant1_5755



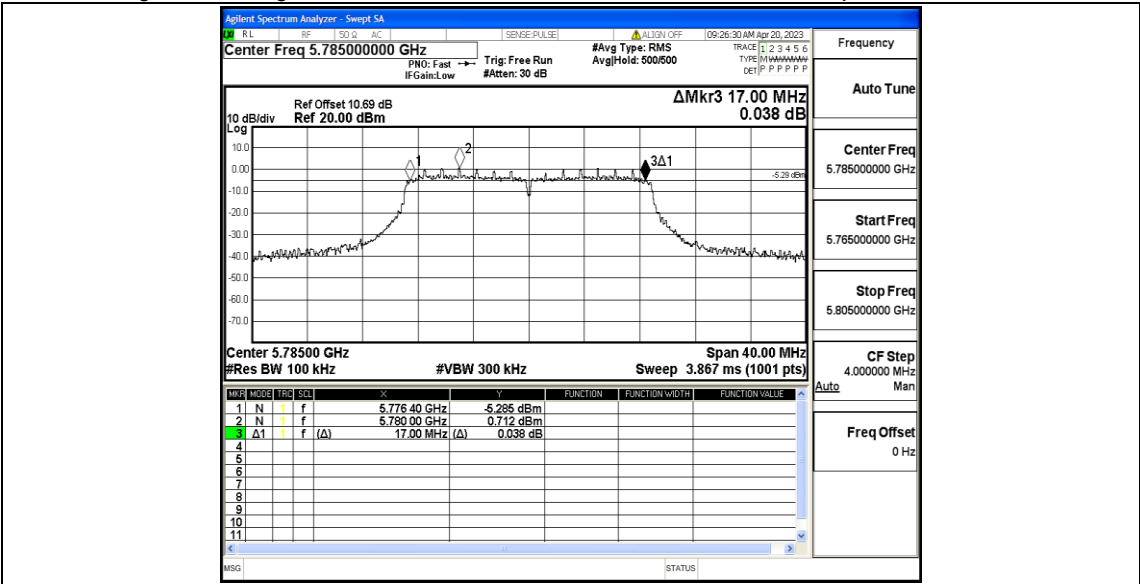
11N40MIMO_Ant1_5795



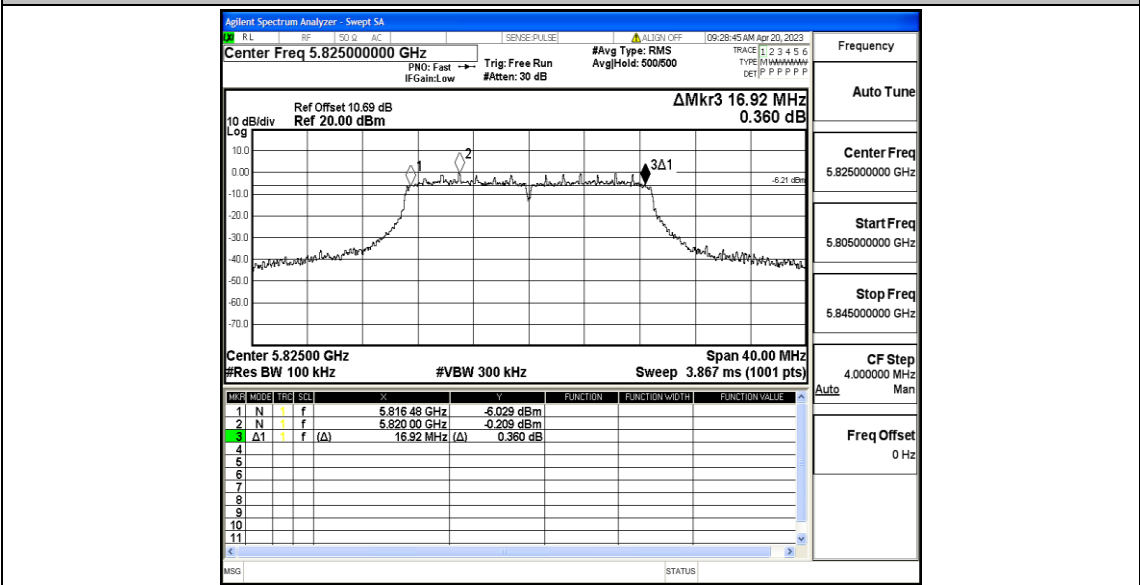
11AC20MIMO_Ant1_5745



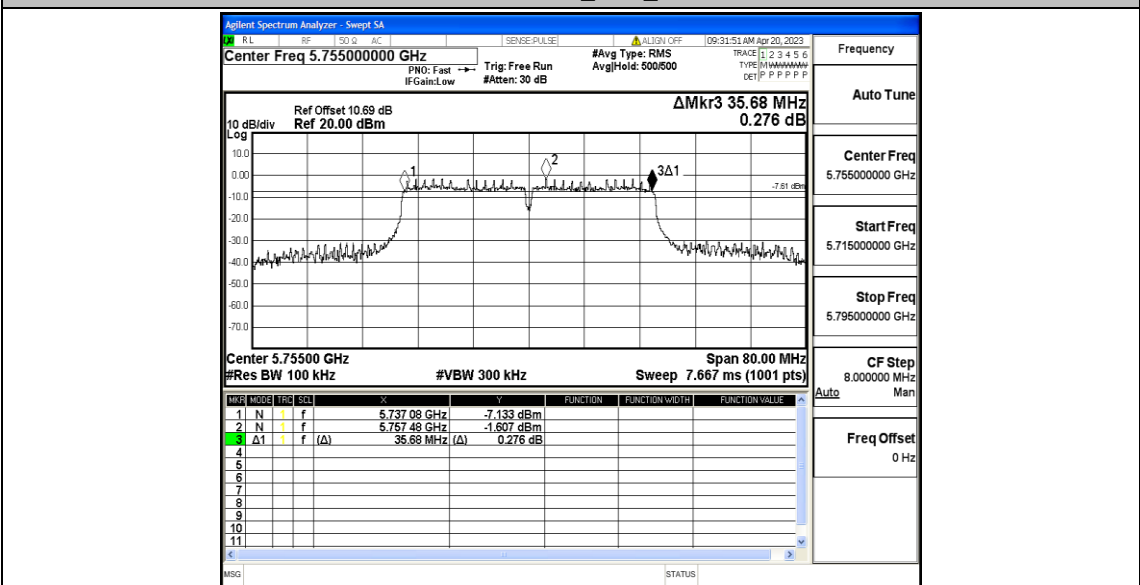
11AC20MIMO_Ant1_5785



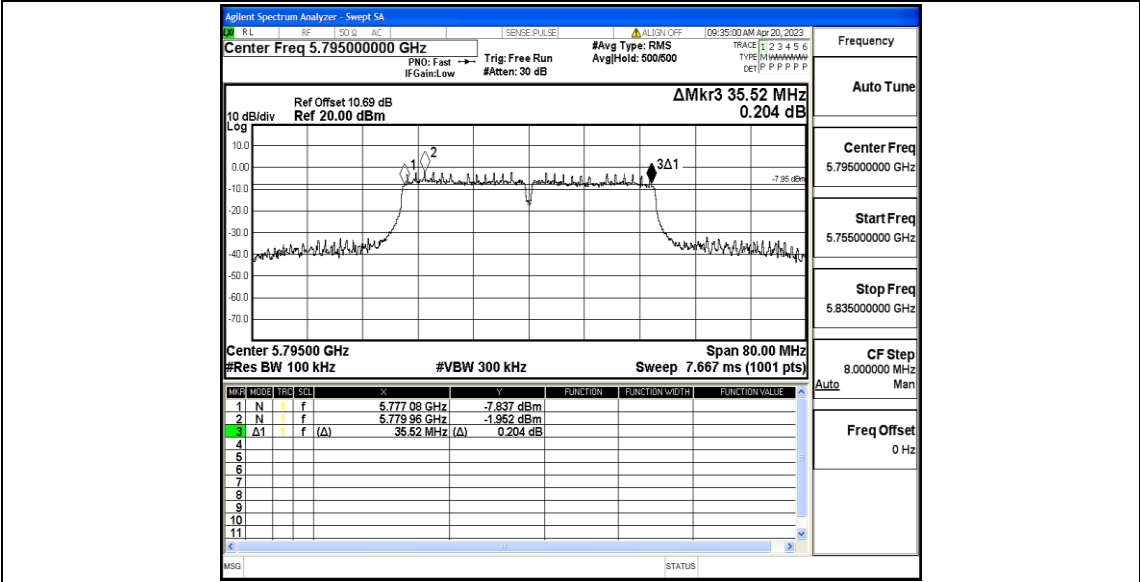
11AC20MIMO_Ant1_5825



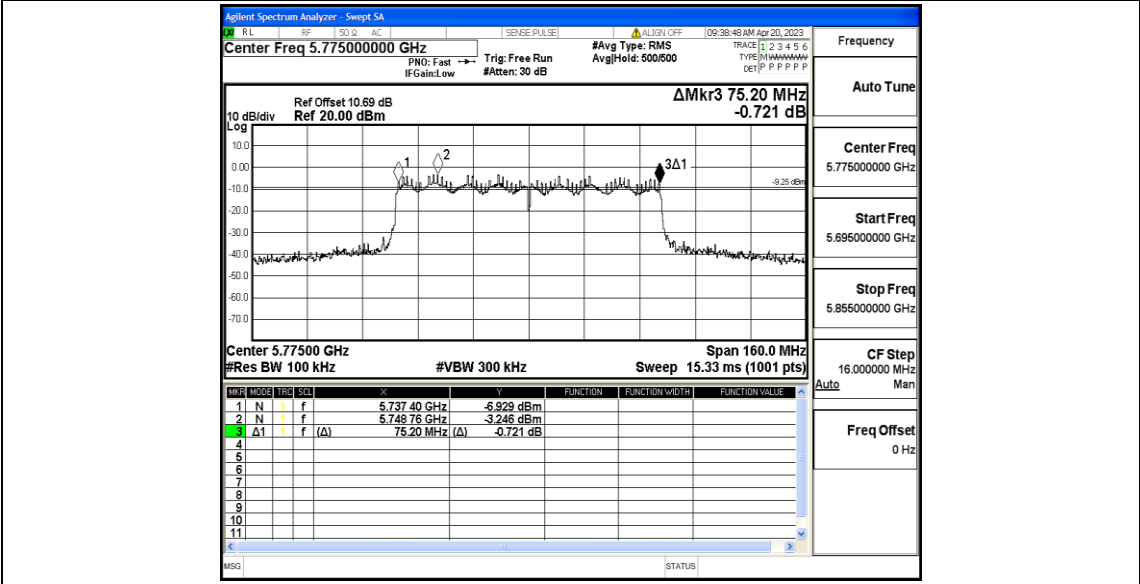
11AC40MIMO_Ant1_5755



11AC40MIMO_Ant1_5795



11AC80MIMO_Ant1_5775



Appendix B: Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	5745	12.51	≤30.00	PASS
		5785	11.46	≤30.00	PASS
		5825	10.97	≤30.00	PASS
11N20MIMO	Ant1	5745	12.31	≤30.00	PASS
		5785	11.75	≤30.00	PASS
		5825	11.17	≤30.00	PASS
11N40MIMO	Ant1	5755	12.65	≤30.00	PASS
		5795	11.91	≤30.00	PASS
11AC20MIMO	Ant1	5745	12.38	≤30.00	PASS
		5785	11.64	≤30.00	PASS
		5825	10.81	≤30.00	PASS
11AC40MIMO	Ant1	5755	12.61	≤30.00	PASS
		5795	11.99	≤30.00	PASS
11AC80MIMO	Ant1	5775	12.78	≤30.00	PASS

Note: The Duty Cycle Factor is compensated in the test result.

Appendix C: Maximum power spectral density

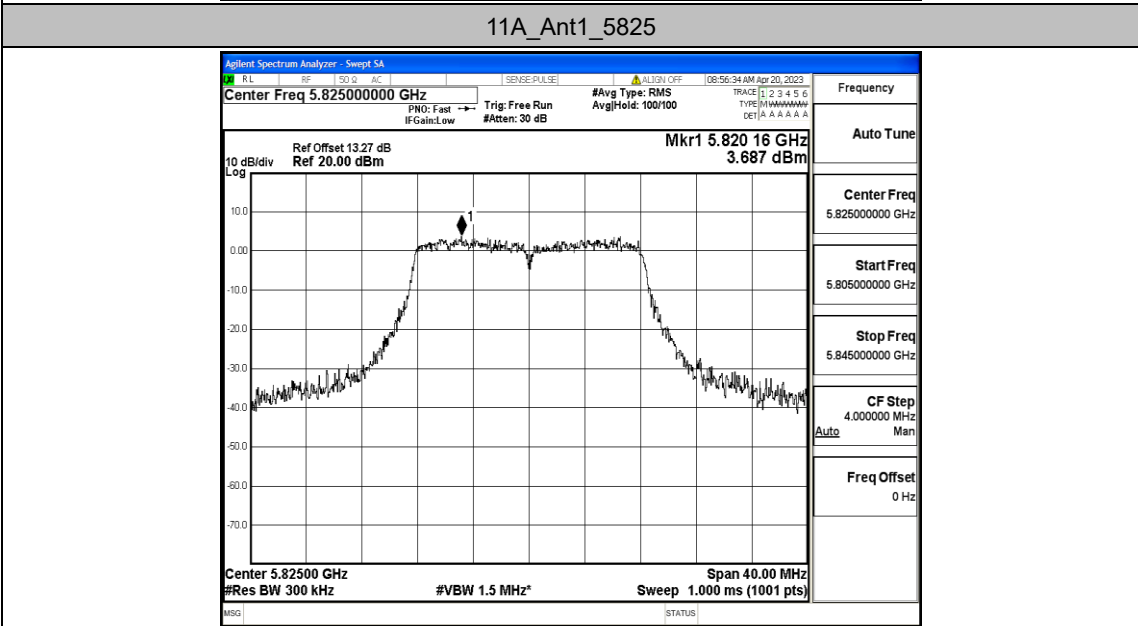
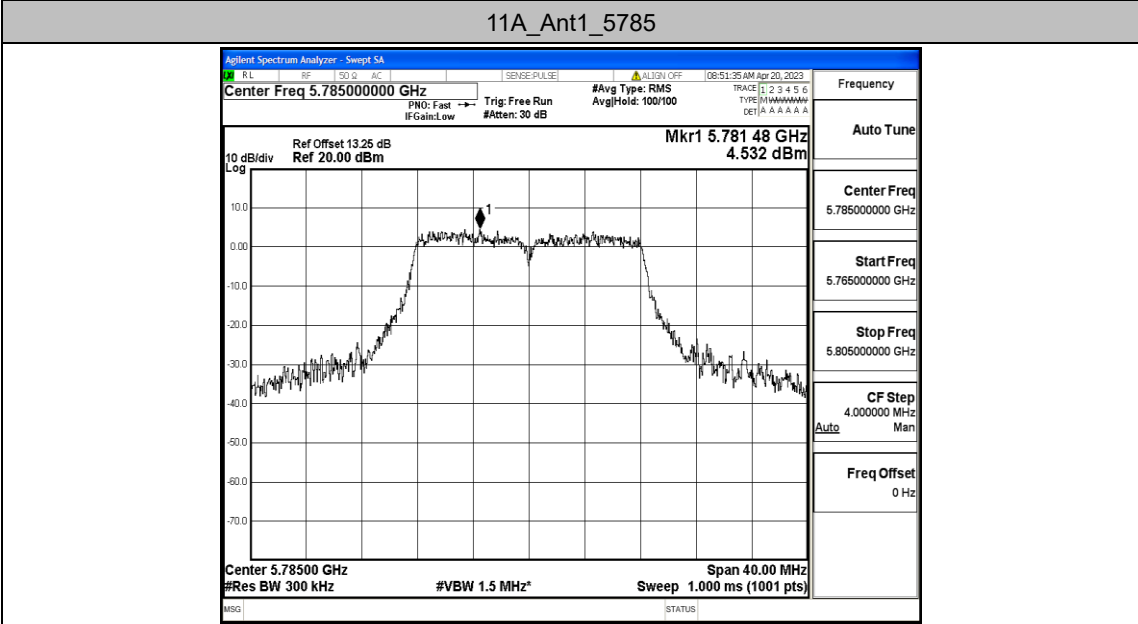
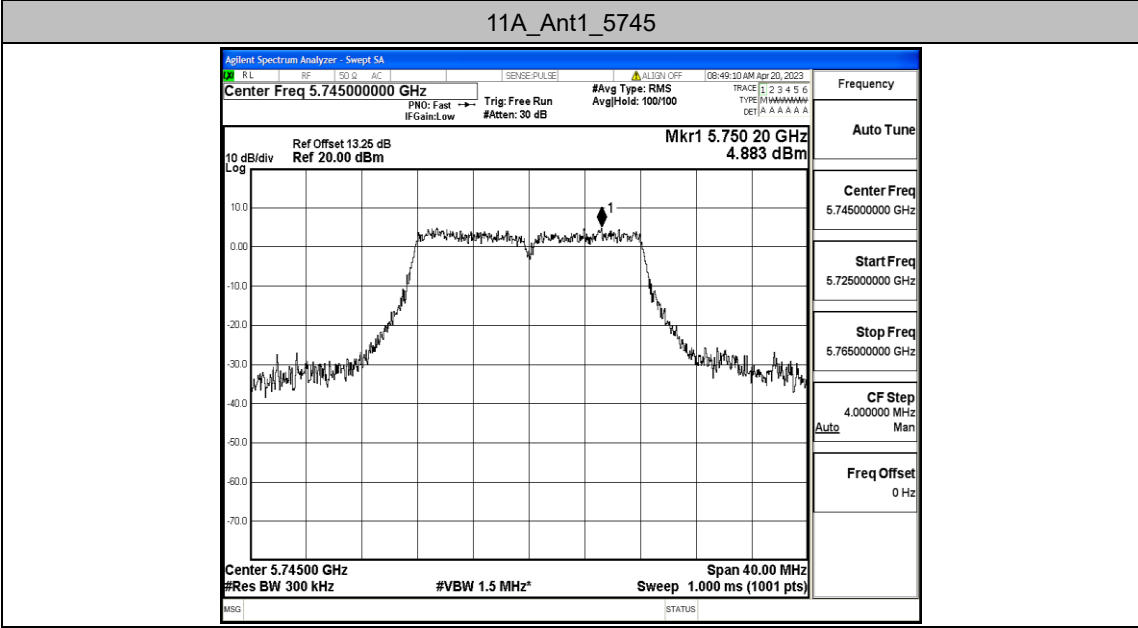
Test Result

TestMode	Antenna	Channel	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5745	4.88	≤30.00	PASS
		5785	4.53	≤30.00	PASS
		5825	3.69	≤30.00	PASS
11N20MIMO	Ant1	5745	5.34	≤30.00	PASS
		5785	4.54	≤30.00	PASS
		5825	3.95	≤30.00	PASS
11N40MIMO	Ant1	5755	2.28	≤30.00	PASS
		5795	1.38	≤30.00	PASS
11AC20MIMO	Ant1	5745	5.44	≤30.00	PASS
		5785	4.44	≤30.00	PASS
		5825	3.39	≤30.00	PASS
11AC40MIMO	Ant1	5755	2.06	≤30.00	PASS
		5795	2.54	≤30.00	PASS
11AC80MIMO	Ant1	5775	0.27	≤30.00	PASS

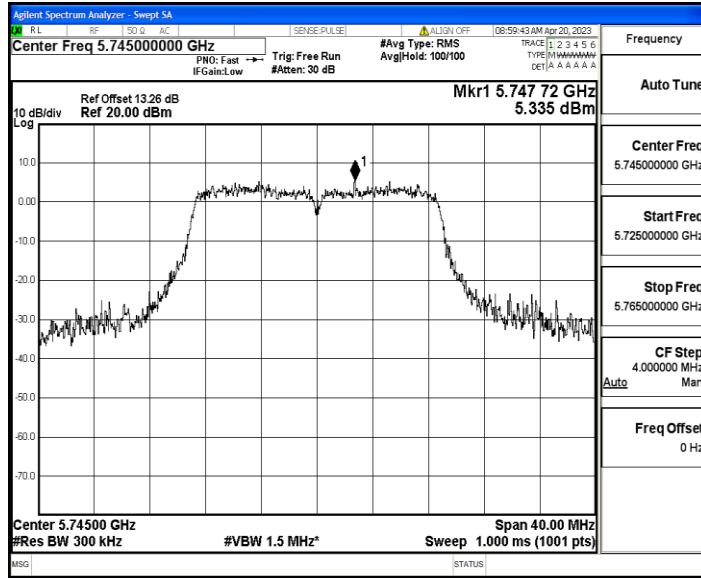
Note: 1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.

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

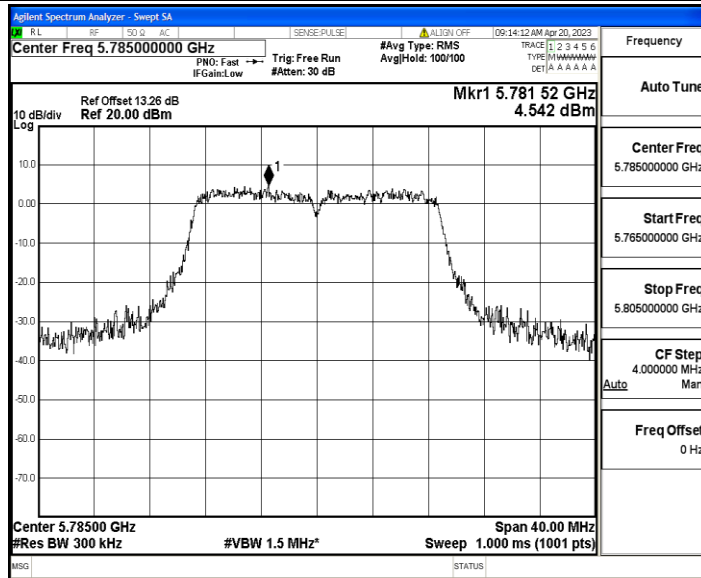
Test Graphs



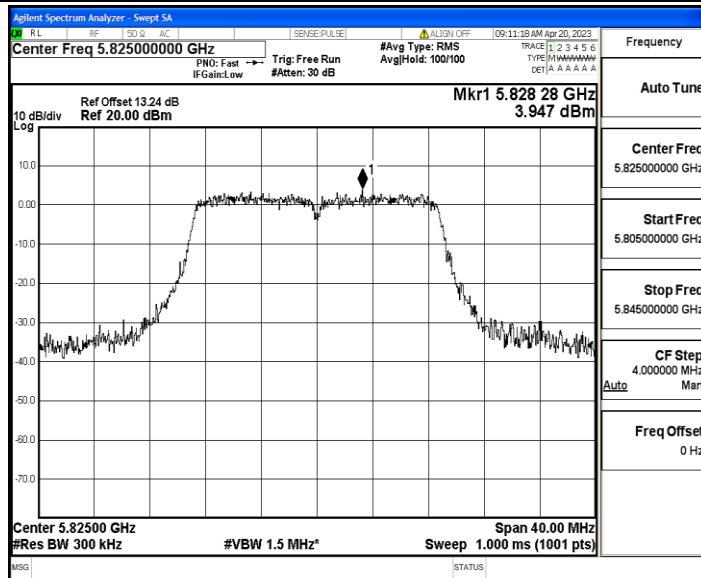
11N20MIMO_Ant1_5745



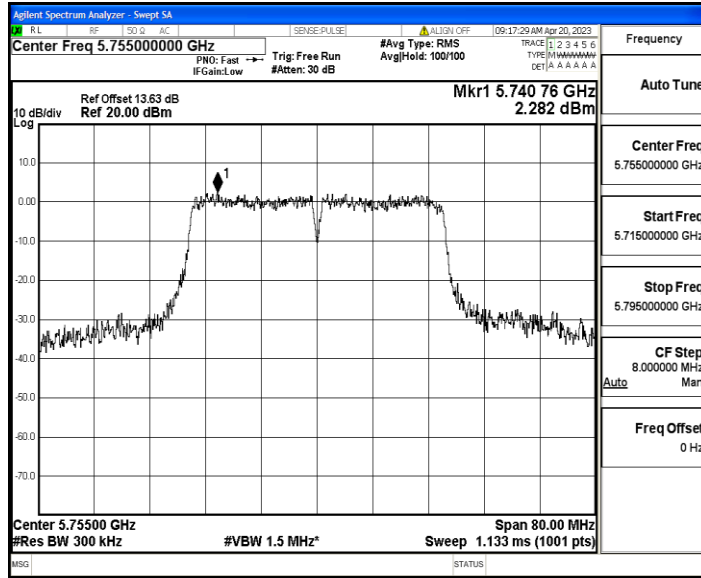
11N20MIMO_Ant1_5785



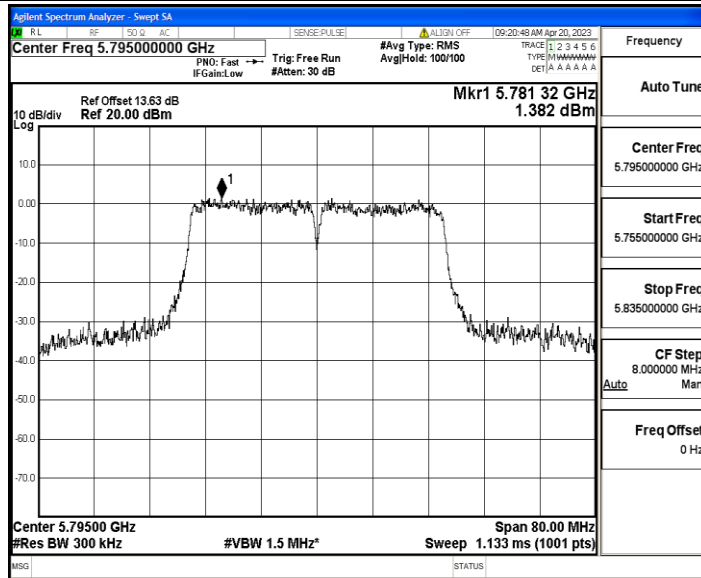
11N20MIMO_Ant1_5825



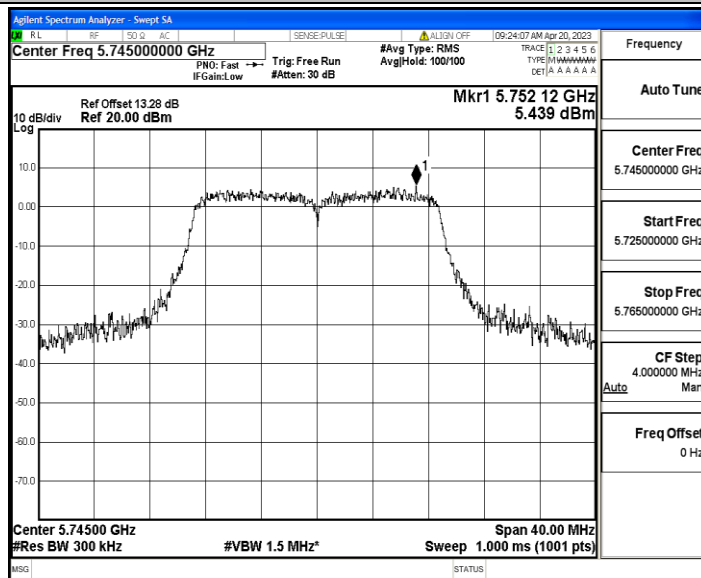
11N40MIMO_Ant1_5755



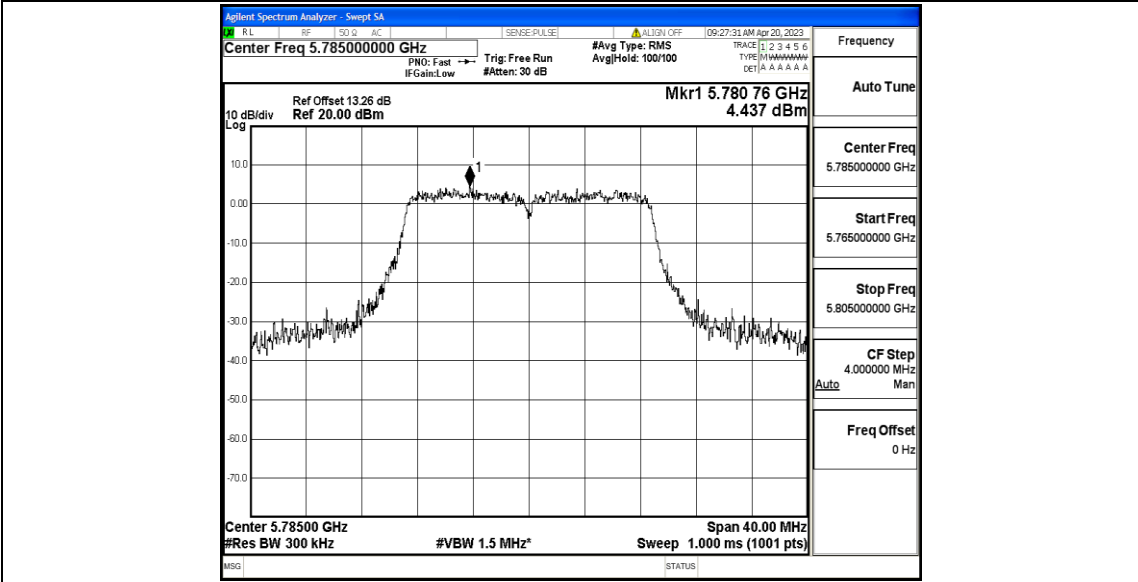
11N40MIMO_Ant1_5795



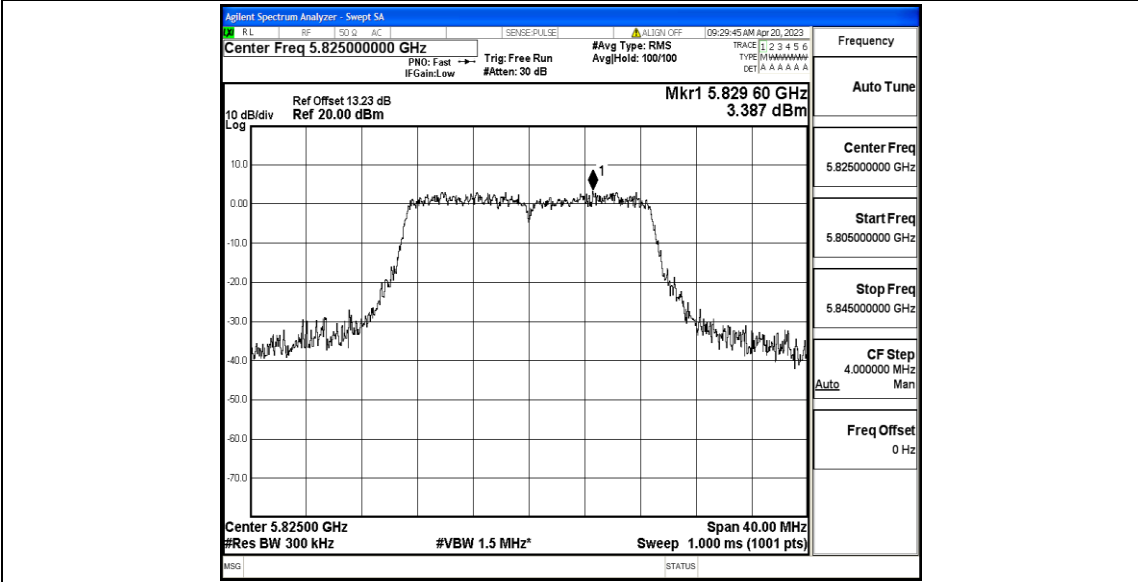
11AC20MIMO_Ant1_5745



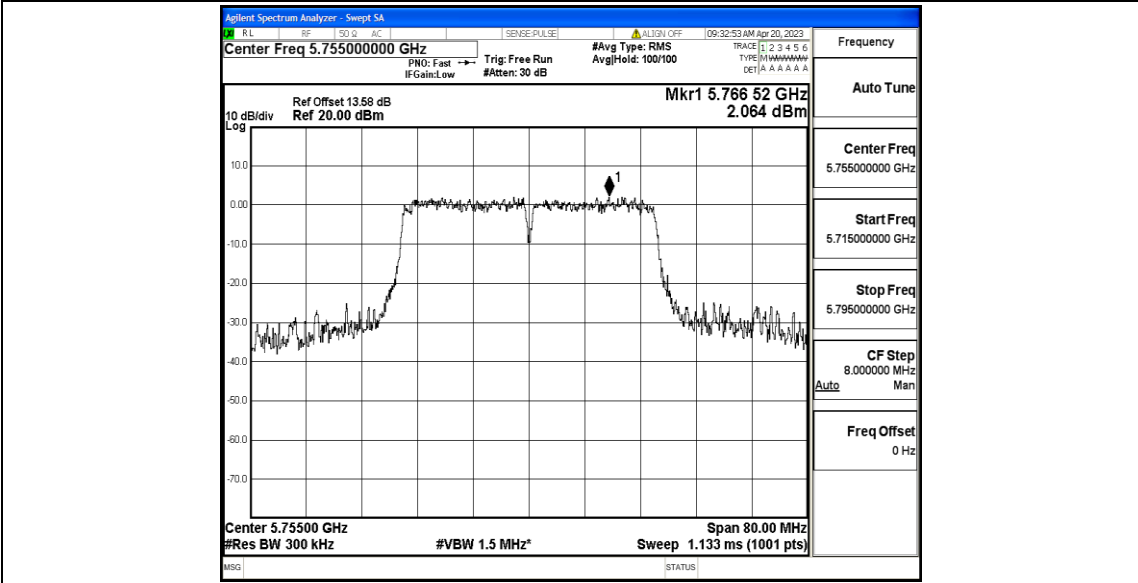
11AC20MIMO_Ant1_5785



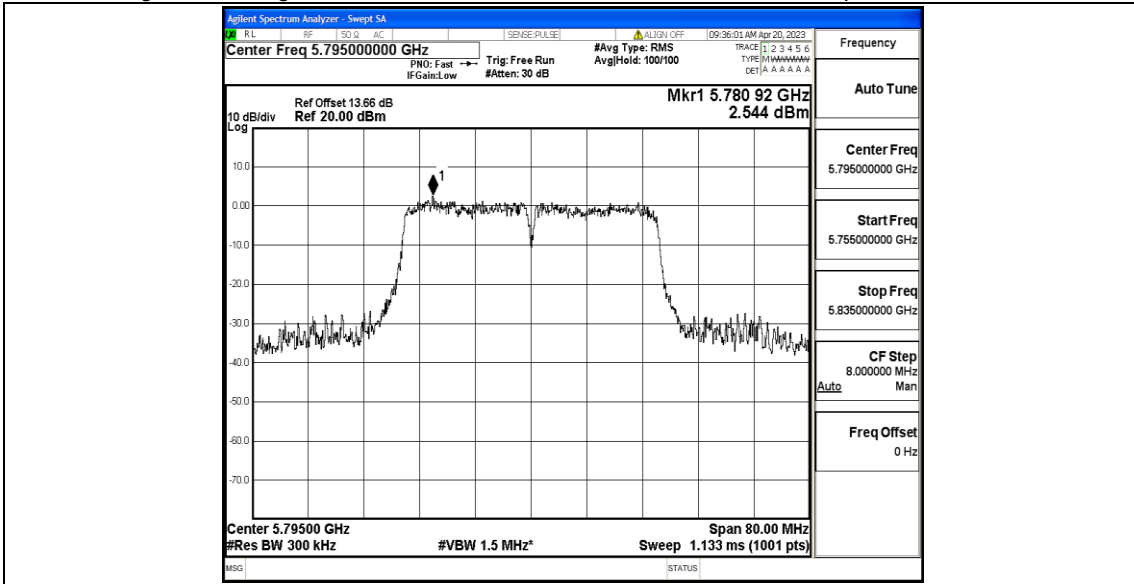
11AC20MIMO_Ant1_5825



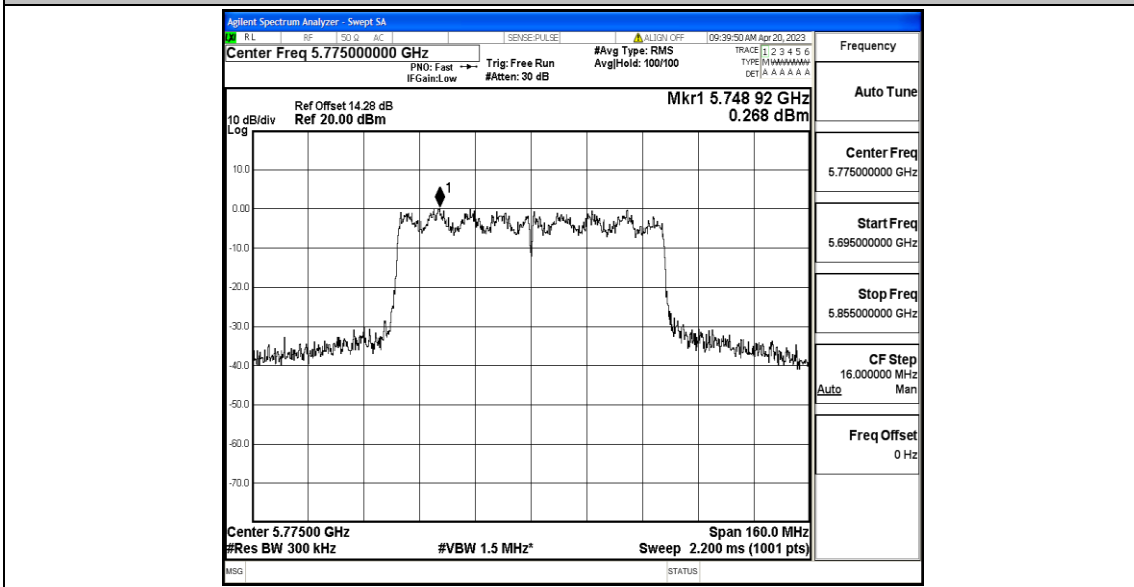
11AC40MIMO_Ant1_5755



11AC40MIMO_Ant1_5795



11AC80MIMO_Ant1_5775



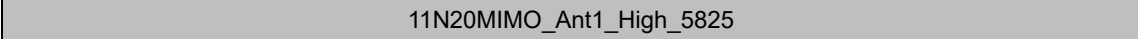
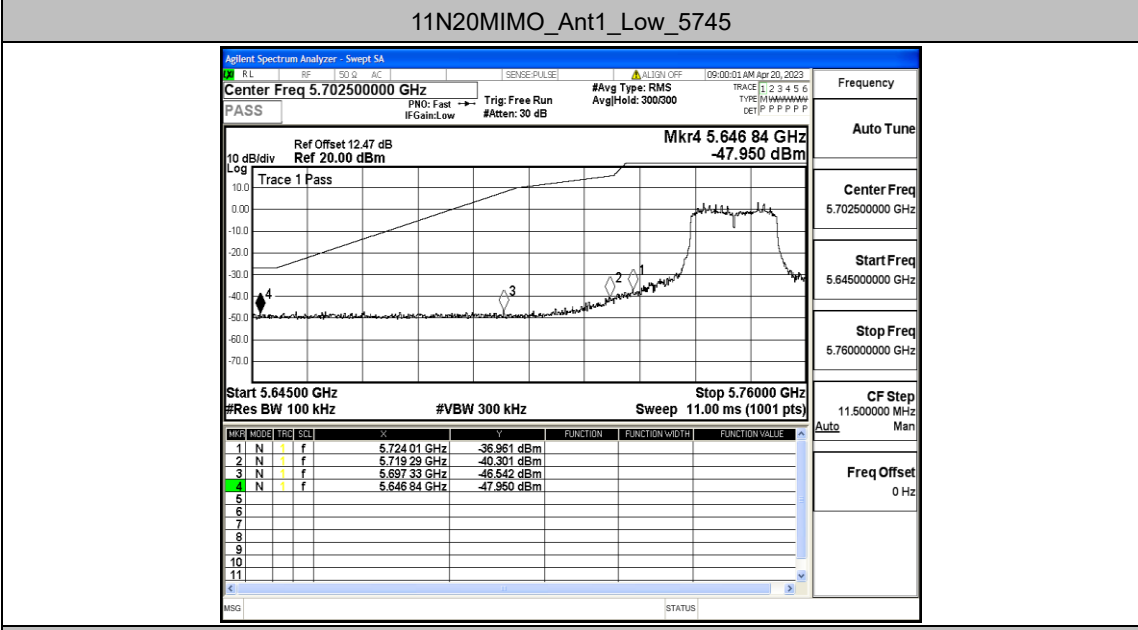
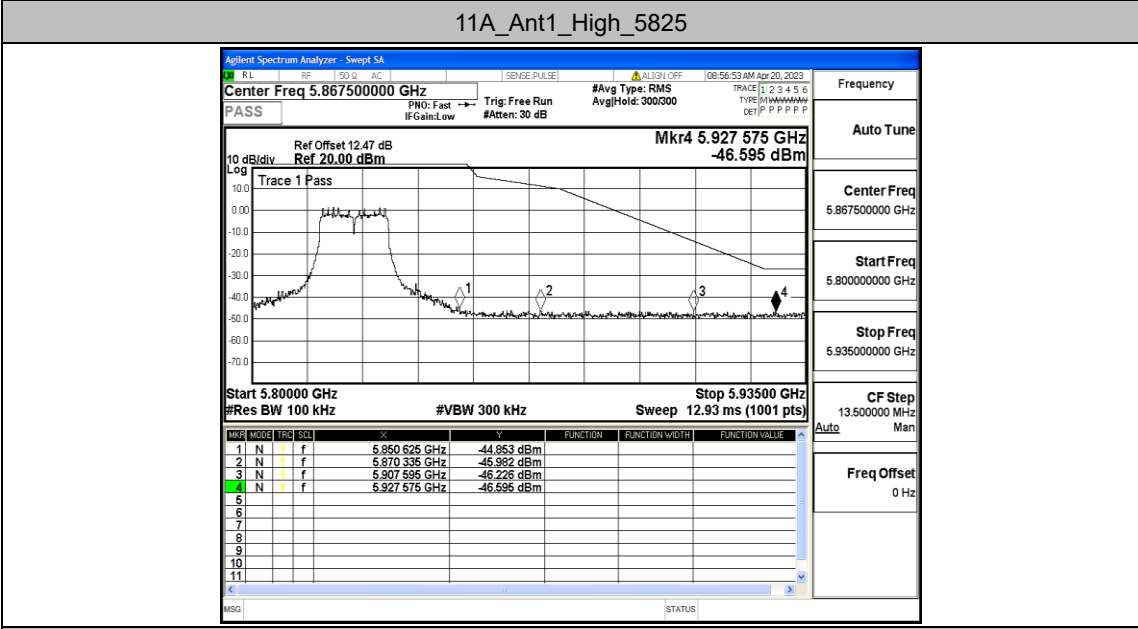
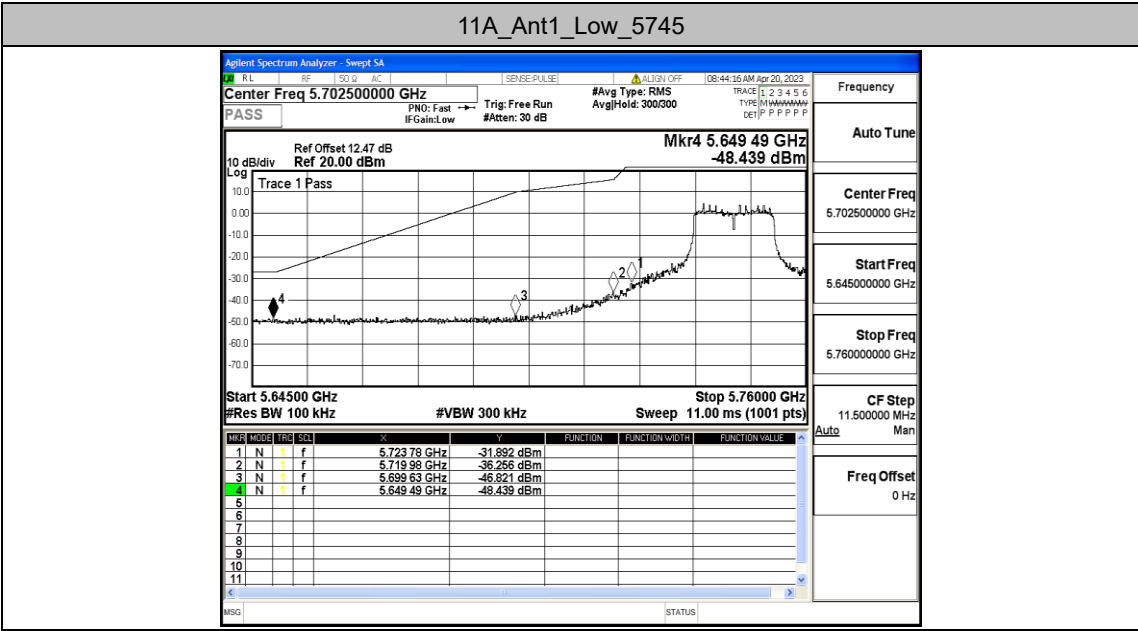
Appendix D: Band edge measurements

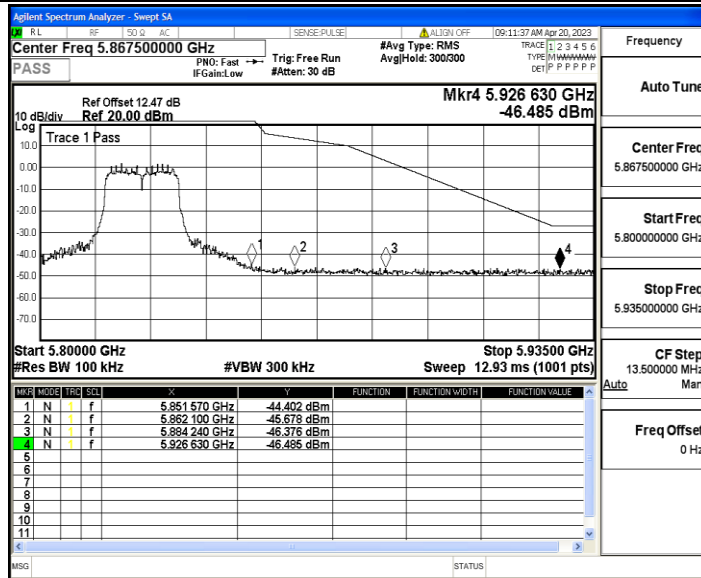
Test Result

TestMode	Antenna	ChName	Channel	FreqRange [MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	Low	5745	5650~5700	-46.82	≤9.72	PASS
				5700~5720	-36.26	≤15.59	PASS
				5720~5725	-31.89	≤24.21	PASS
				5760~5650	-48.44	≤-27	PASS
		High	5825	5850~5855	-44.85	≤17.03	PASS
				5855~5875	-45.98	≤14.29	PASS
				5875~5925	-46.23	≤-2.88	PASS
11N20MI MO	Ant1	Low	5745	5650~5700	-46.54	≤8.02	PASS
				5700~5720	-40.3	≤15.40	PASS
				5720~5725	-36.96	≤24.73	PASS
				5760~5650	-47.95	≤-27	PASS
		High	5825	5850~5855	-44.4	≤19.18	PASS
				5855~5875	-45.68	≤11.99	PASS
				5875~5925	-46.38	≤-20.16	PASS
11N40MI MO	Ant1	Low	5755	5650~5700	-43.24	≤7.66	PASS
				5700~5720	-33.79	≤15.28	PASS
				5720~5725	-34.76	≤21.58	PASS
				5780~5650	-47.47	≤-27	PASS
		High	5795	5850~5855	-46.61	≤20.17	PASS
				5855~5875	-45.78	≤10.22	PASS
				5875~5925	-46.43	≤-2.01	PASS
11AC20M IMO	Ant1	Low	5745	5650~5700	-47.5	≤5.55	PASS
				5700~5720	-41.04	≤15.24	PASS
				5720~5725	-37.85	≤23.42	PASS
				5760~5650	-48.01	≤-27	PASS
		High	5825	5850~5855	-45.4	≤24.41	PASS
				5855~5875	-45.21	≤14.75	PASS
				5875~5925	-45.94	≤7.41	PASS
11AC40M IMO	Ant1	Low	5755	5650~5700	-43.89	≤9.76	PASS
				5700~5720	-33.16	≤15.50	PASS
				5720~5725	-31.43	≤26.20	PASS
				5780~5650	-47.54	≤-27	PASS
		High	5795	5850~5855	-45.17	≤17.16	PASS
				5855~5875	-46.31	≤14.66	PASS
				5875~5925	-45.95	≤-8.00	PASS
				5925~5935	-45.48	≤-27	PASS

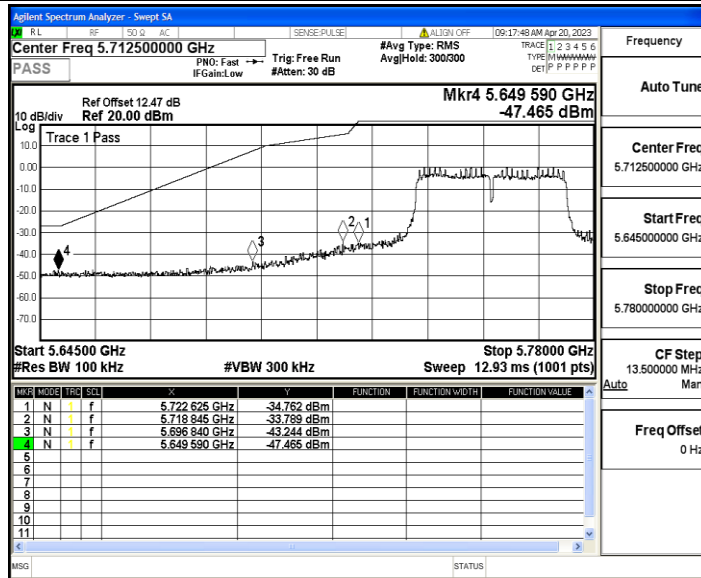
11AC80M IMO	Ant1	Low	5775	5650~5700	-36.52	≤ 0.73	PASS
				5700~5720	-36.1	≤ 15.52	PASS
				5720~5725	-35.7	≤ 20.24	PASS
				5800~5650	-46.78	≤ -27	PASS
	High	5775	5850~5855	-38.57	≤ 17.90	PASS	
			5855~5875	-36.64	≤ 14.22	PASS	
			5875~5925	-42.82	≤ -26.41	PASS	
			5925~5935	-46.68	≤ -27	PASS	

Test Graphs

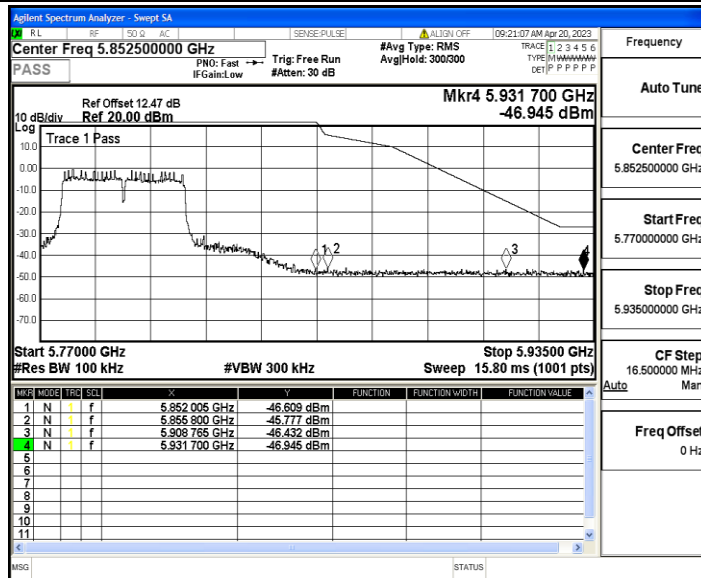




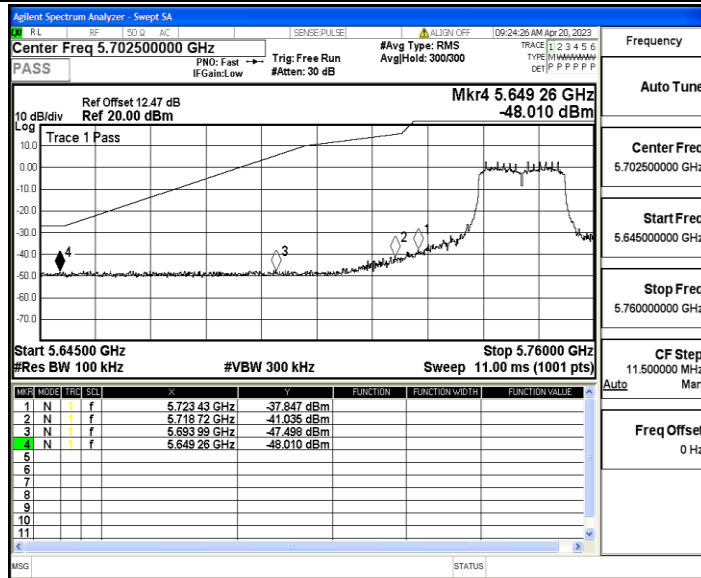
11N40MIMO_Ant1_Low_5755



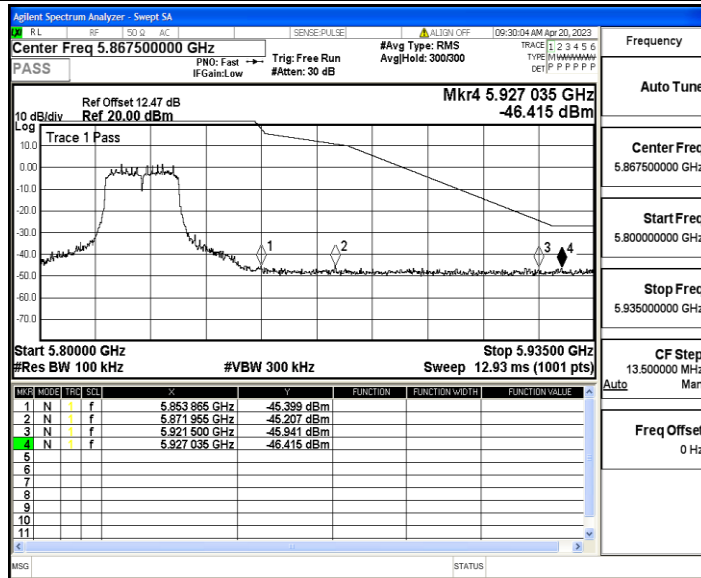
11N40MIMO_Ant1_High_5795



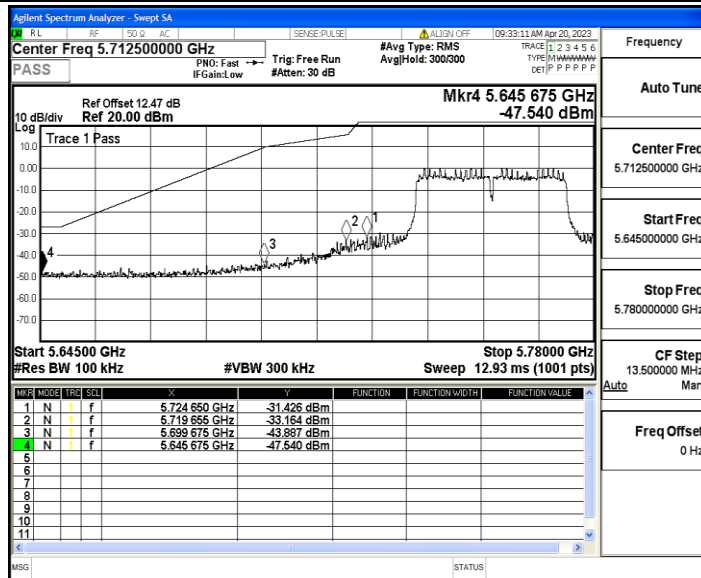
11AC20MIMO_Ant1_Low_5745



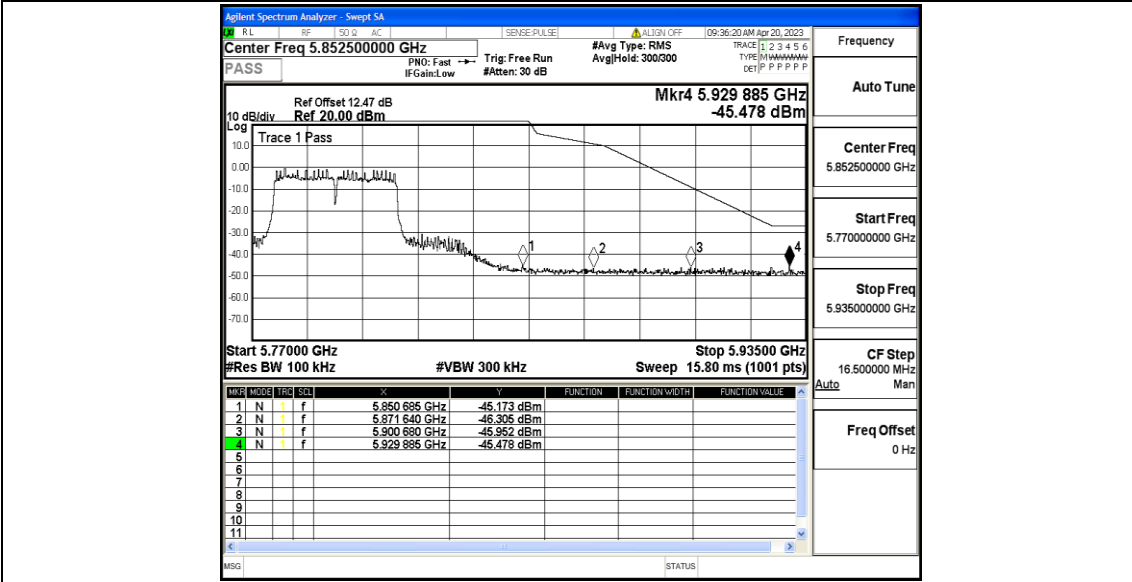
11AC20MIMO_Ant1_High_5825



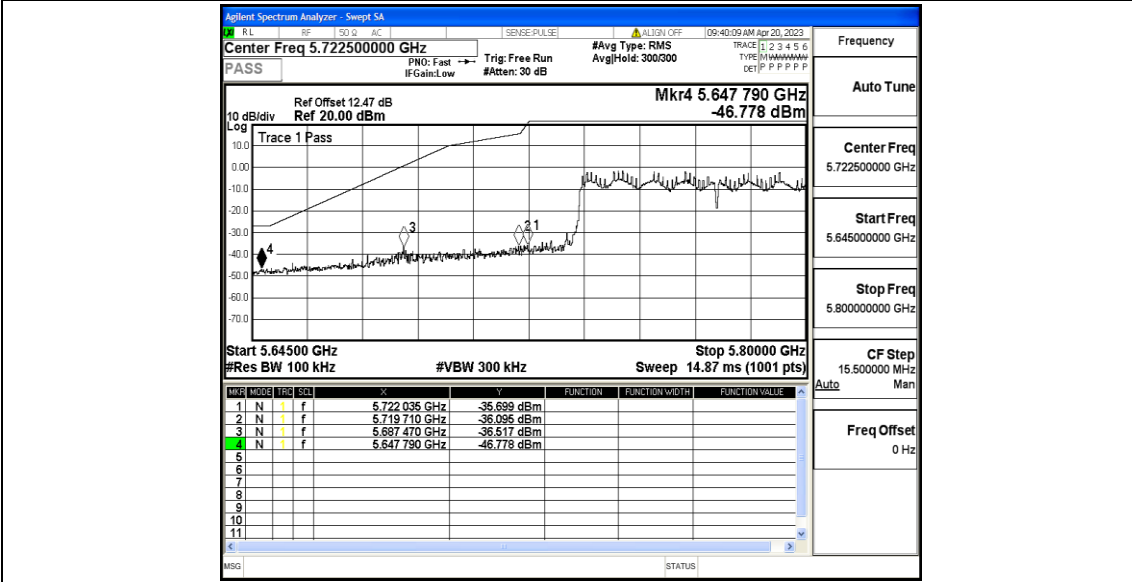
11AC40MIMO_Ant1_Low_5755



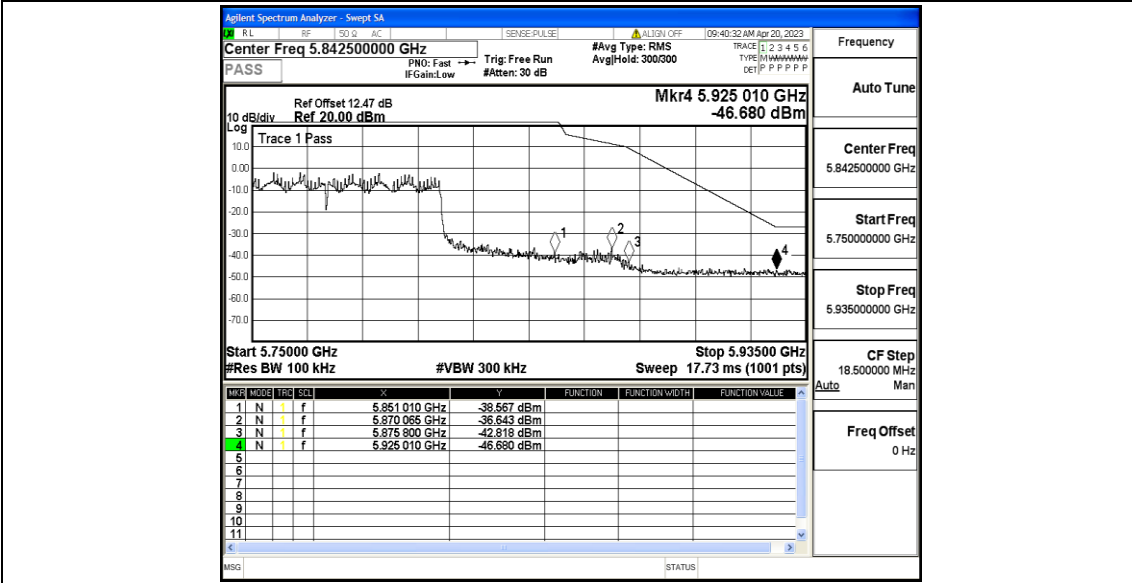
11AC40MIMO_Ant1_High_5795



11AC80MIMO_Ant1_Low_5775



11AC80MIMO_Ant1_High_5775



Appendix E: Frequency Stability

Test Result

Frequency (MHz)	Environment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5745	20	132	5744.900978	5745 – 5825	PASS
5745	20	108	5745.041039	5745 – 5825	PASS
5745	50	120	5744.933548	5745 – 5825	PASS
5745	40	120	5745.050945	5745 – 5825	PASS
5745	30	120	5745.009926	5745 – 5825	PASS
5745	20	120	5744.907202	5745 – 5825	PASS
5745	10	120	5745.076732	5745 – 5825	PASS
5745	0	120	5745.084333	5745 – 5825	PASS
5745	-10	120	5744.903159	5745 – 5825	PASS
5745	-20	120	5745.033055	5745 – 5825	PASS
5745	-30	120	5745.059729	5745 – 5825	PASS

Frequency (MHz)	Environment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5785	20	132	5784.918658	5745 – 5825	PASS
5785	20	108	5784.976167	5745 – 5825	PASS
5785	50	120	5785.027551	5745 – 5825	PASS
5785	40	120	5784.962090	5745 – 5825	PASS
5785	30	120	5784.990629	5745 – 5825	PASS
5785	20	120	5784.998354	5745 – 5825	PASS
5785	10	120	5785.012681	5745 – 5825	PASS
5785	0	120	5785.059765	5745 – 5825	PASS
5785	-10	120	5784.912339	5745 – 5825	PASS
5785	-20	120	5785.074352	5745 – 5825	PASS
5785	-30	120	5784.912952	5745 – 5825	PASS

Frequency (MHz)	Environment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5825	20	132	5824.902968	5745 – 5825	PASS
5825	20	108	5824.910994	5745 – 5825	PASS
5825	50	120	5824.955446	5745 – 5825	PASS
5825	40	120	5824.950636	5745 – 5825	PASS
5825	30	120	5824.982370	5745 – 5825	PASS
5825	20	120	5825.085909	5745 – 5825	PASS
5825	10	120	5824.906989	5745 – 5825	PASS
5825	0	120	5825.008848	5745 – 5825	PASS
5825	-10	120	5824.975844	5745 – 5825	PASS
5825	-20	120	5824.953194	5745 – 5825	PASS
5825	-30	120	5825.032182	5745 – 5825	PASS

Frequency (MHz)	Environment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5755	20	132	5755.085781	5745 – 5825	PASS
5755	20	108	5755.018576	5745 – 5825	PASS
5755	50	120	5754.997551	5745 – 5825	PASS
5755	40	120	5755.045244	5745 – 5825	PASS
5755	30	120	5755.005085	5745 – 5825	PASS
5755	20	120	5754.993754	5745 – 5825	PASS
5755	10	120	5755.045784	5745 – 5825	PASS
5755	0	120	5754.938192	5745 – 5825	PASS
5755	-10	120	5755.050014	5745 – 5825	PASS
5755	-20	120	5754.939851	5745 – 5825	PASS
5755	-30	120	5755.084397	5745 – 5825	PASS

Frequency (MHz)	Environment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5795	20	132	5794.976560	5745 – 5825	PASS
5795	20	108	5794.980464	5745 – 5825	PASS
5795	50	120	5795.053547	5745 – 5825	PASS
5795	40	120	5795.071755	5745 – 5825	PASS
5795	30	120	5794.989789	5745 – 5825	PASS
5795	20	120	5794.909062	5745 – 5825	PASS
5795	10	120	5795.070606	5745 – 5825	PASS
5795	0	120	5794.943231	5745 – 5825	PASS
5795	-10	120	5794.943866	5745 – 5825	PASS
5795	-20	120	5795.024793	5745 – 5825	PASS
5795	-30	120	5795.006434	5745 – 5825	PASS

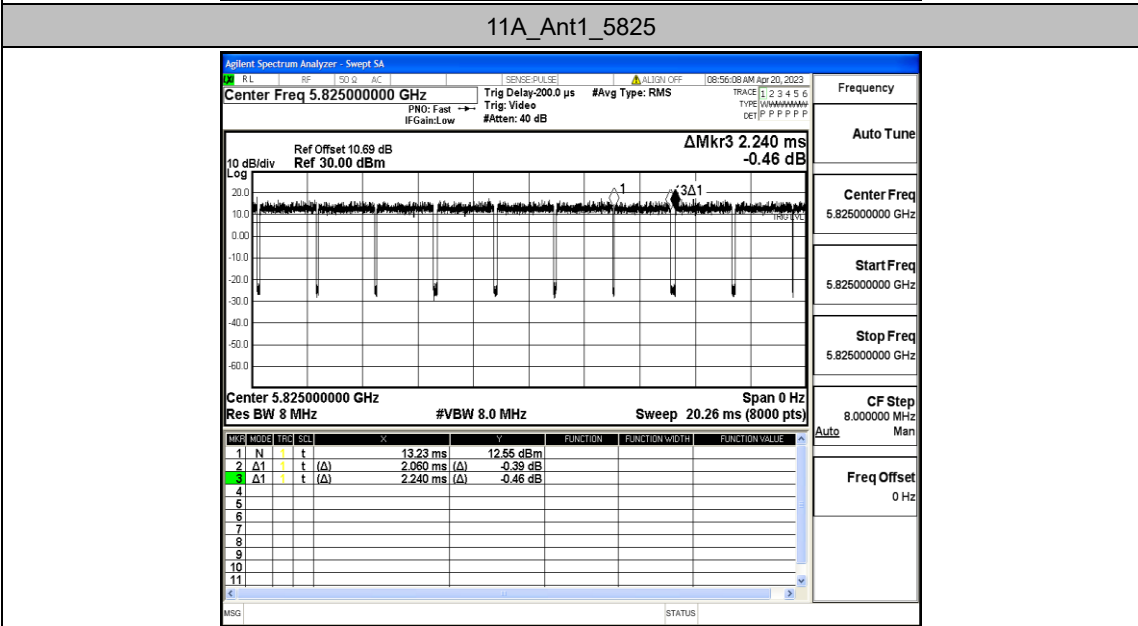
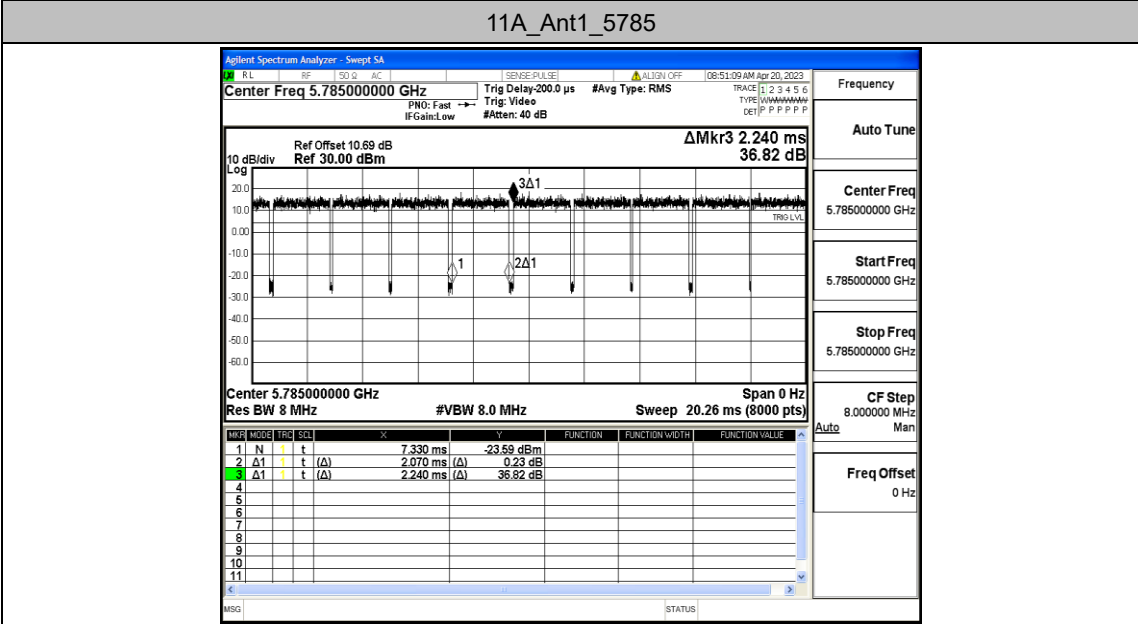
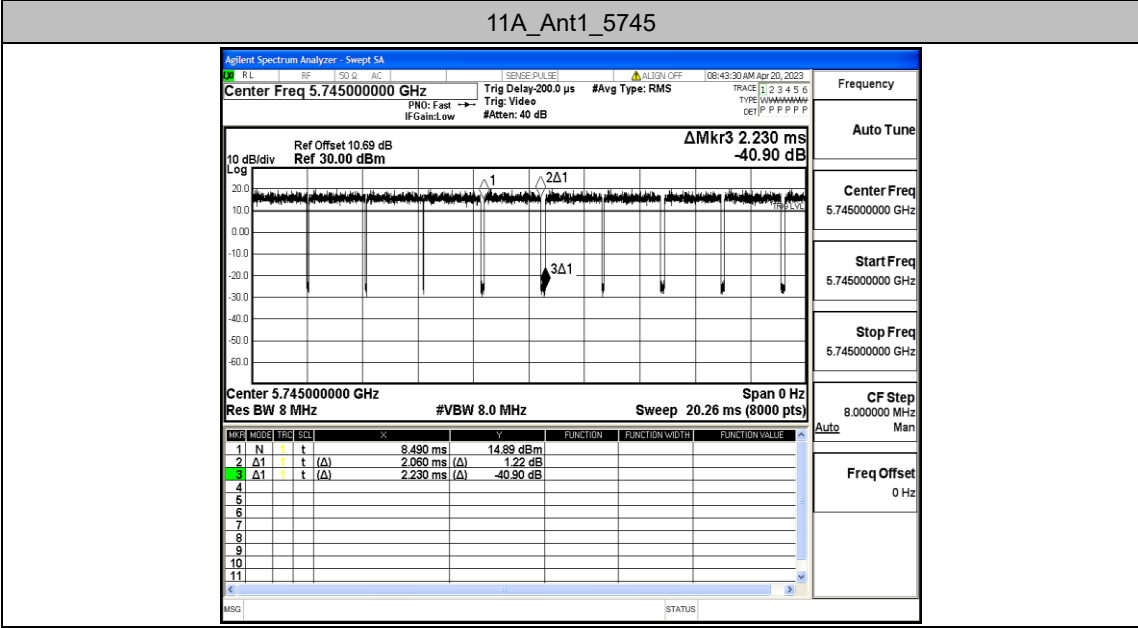
Frequency (MHz)	Environment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5775	20	132	5775.069852	5745 – 5825	PASS
5775	20	108	5774.910218	5745 – 5825	PASS
5775	50	120	5775.038829	5745 – 5825	PASS
5775	40	120	5774.992270	5745 – 5825	PASS
5775	30	120	5774.948452	5745 – 5825	PASS
5775	20	120	5774.953492	5745 – 5825	PASS
5775	10	120	5774.903603	5745 – 5825	PASS
5775	0	120	5774.973904	5745 – 5825	PASS
5775	-10	120	5775.010758	5745 – 5825	PASS
5775	-20	120	5774.908281	5745 – 5825	PASS
5775	-30	120	5775.090681	5745 – 5825	PASS

Appendix F: Duty Cycle

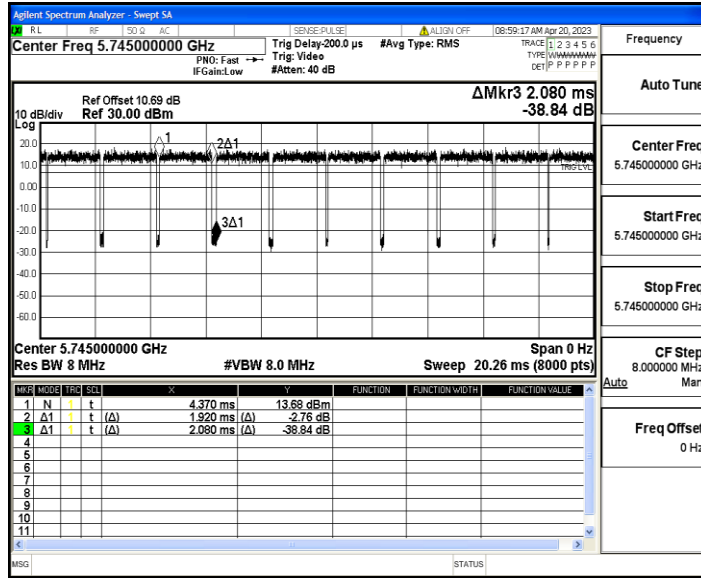
Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T [kHz]
11A	Ant1	5745	2.06	2.23	92.38	0.49
		5785	2.07	2.24	92.41	0.48
		5825	2.06	2.24	91.96	0.49
11N20MIMO	Ant1	5745	1.92	2.08	92.31	0.52
		5785	1.92	2.08	92.31	0.52
		5825	1.92	2.07	92.75	0.52
11N40MIMO	Ant1	5755	0.95	1.12	84.82	1.05
		5795	0.94	1.11	84.68	1.06
11AC20MIMO	Ant1	5745	1.93	2.10	91.90	0.52
		5785	1.93	2.09	92.34	0.52
		5825	1.93	2.08	92.79	0.52
11AC40MIMO	Ant1	5755	0.96	1.12	85.71	1.04
		5795	0.95	1.13	84.07	1.05
11AC80MIMO	Ant1	5775	0.46	0.63	73.02	2.17

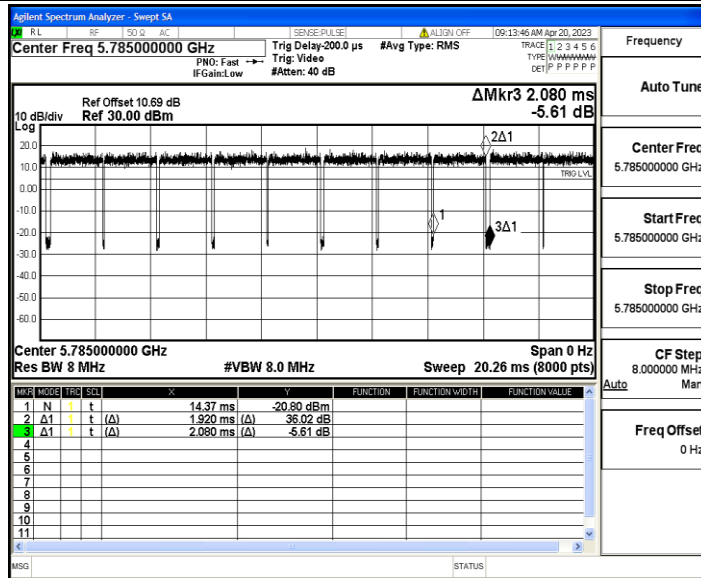
Test Graphs



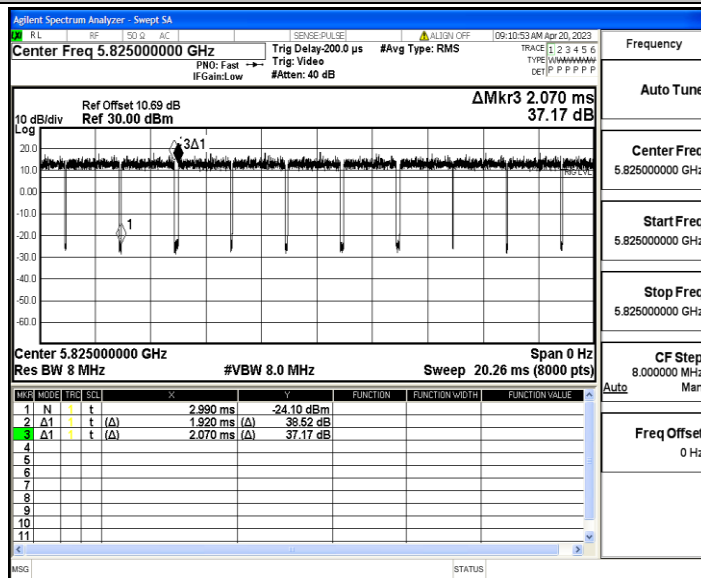
11N20MIMO_Ant1_5745



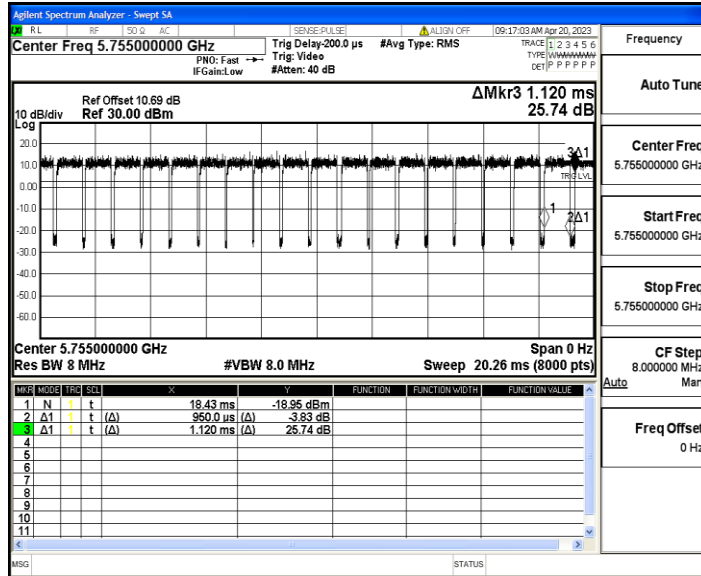
11N20MIMO_Ant1_5785



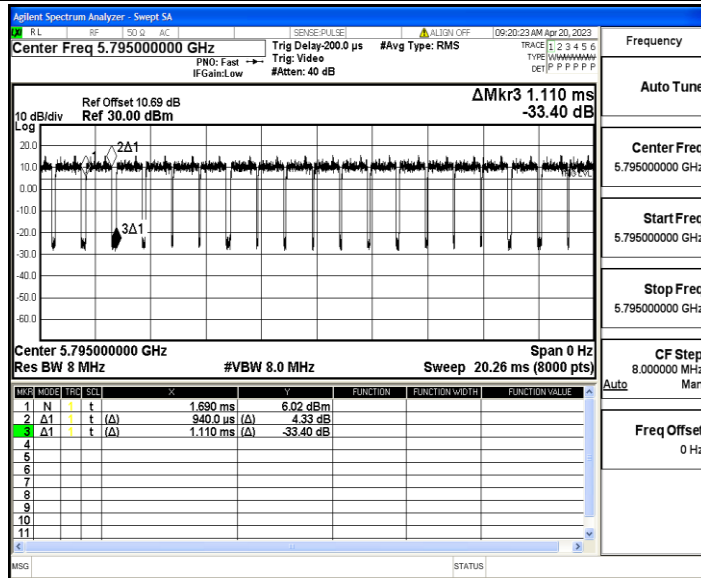
11N20MIMO_Ant1_5825



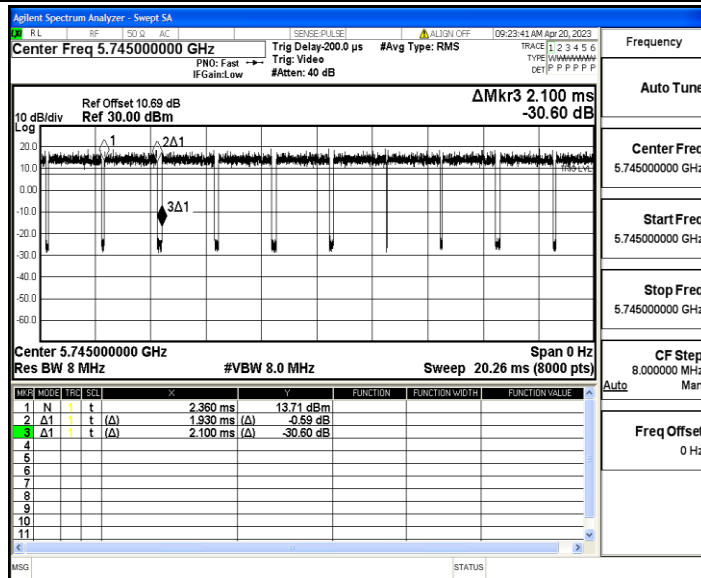
11N40MIMO_Ant1_5755



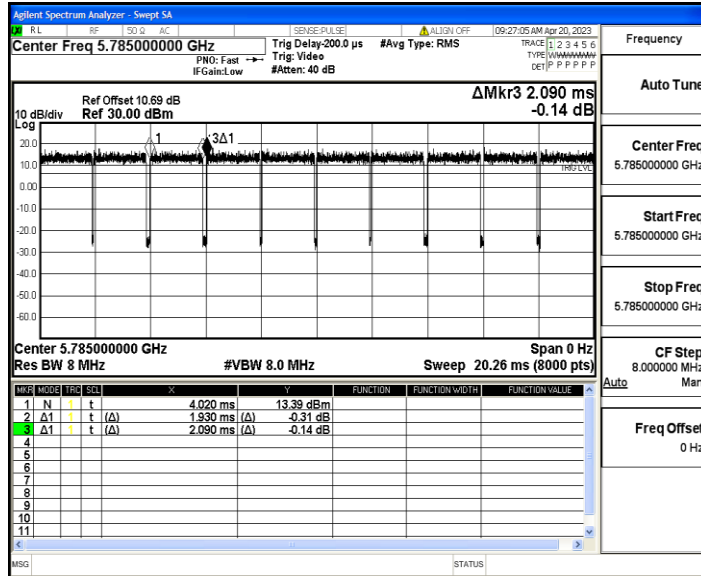
11N40MIMO_Ant1_5795



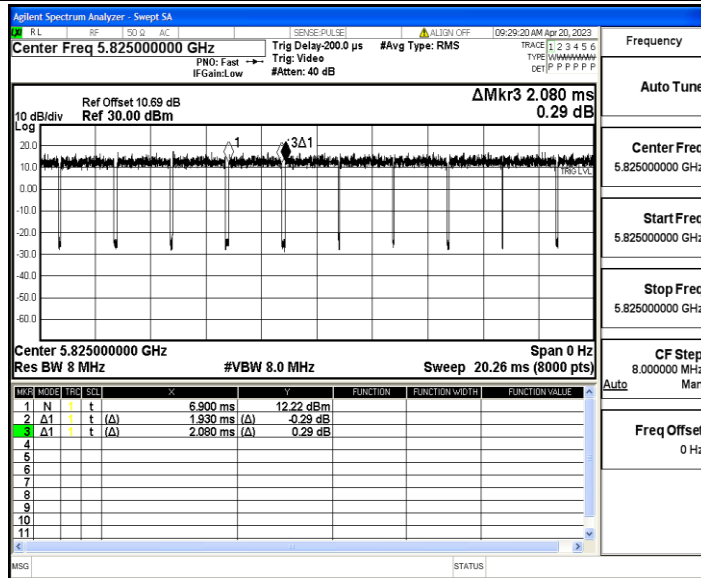
11AC20MIMO_Ant1_5745



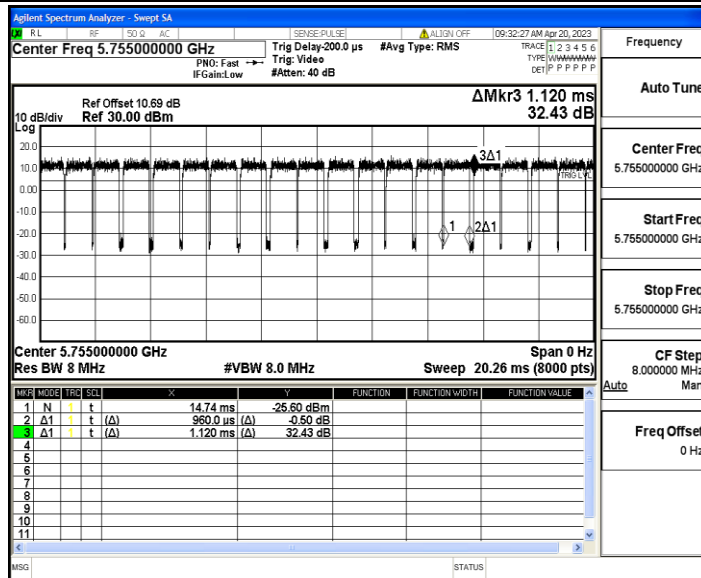
11AC20MIMO_Ant1_5785



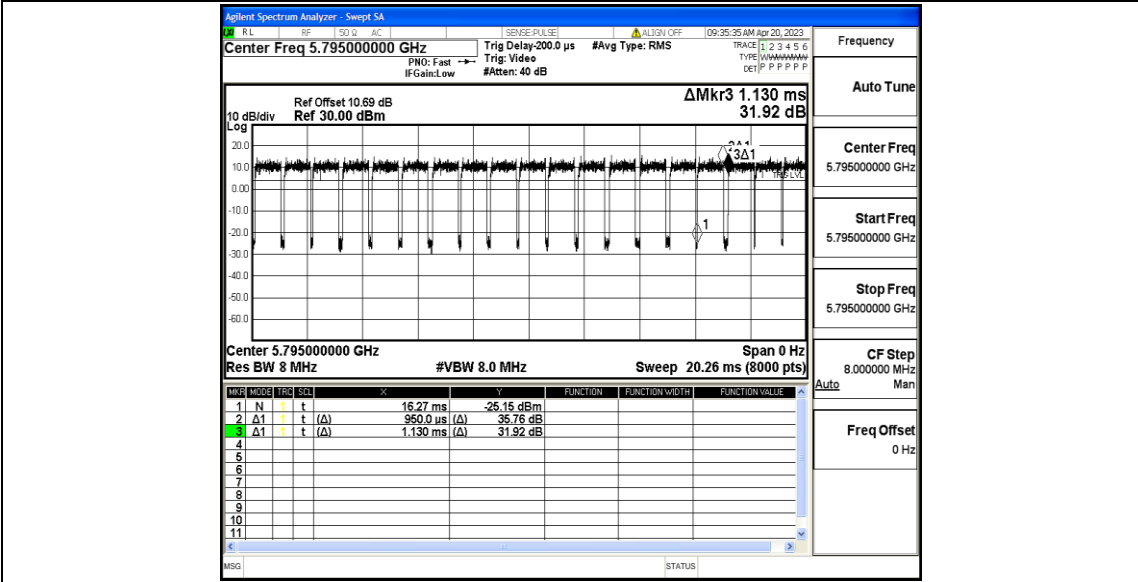
11AC20MIMO_Ant1_5825



11AC40MIMO_Ant1_5755



11AC40MIMO_Ant1_5795



11AC80MIMO_Ant1_5775

