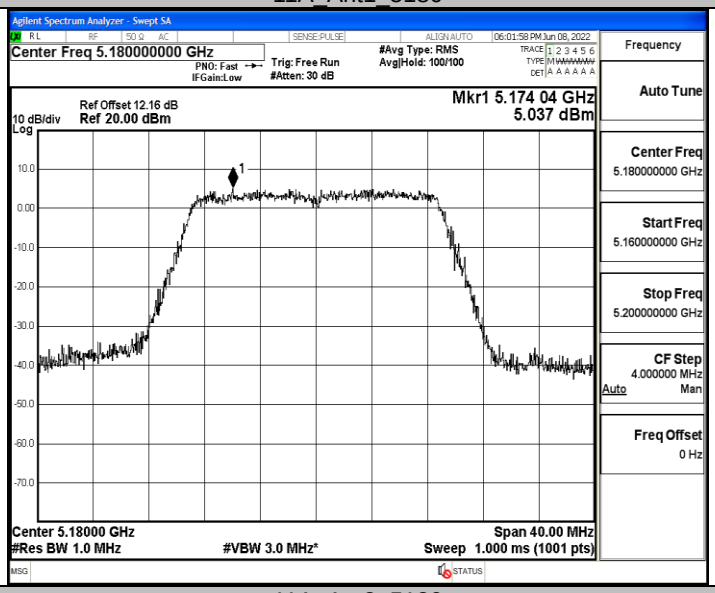
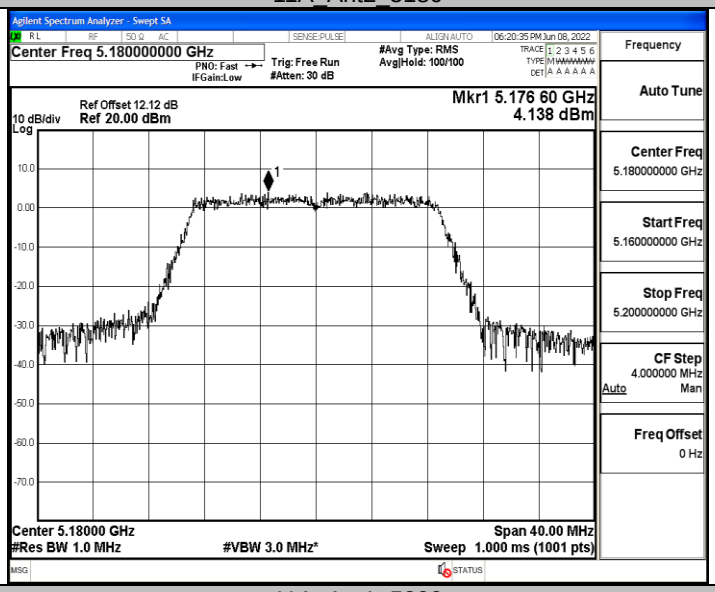
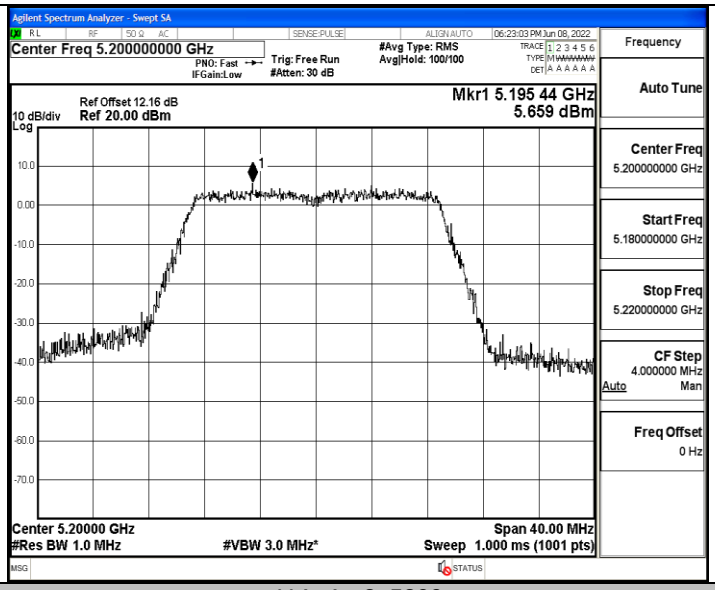
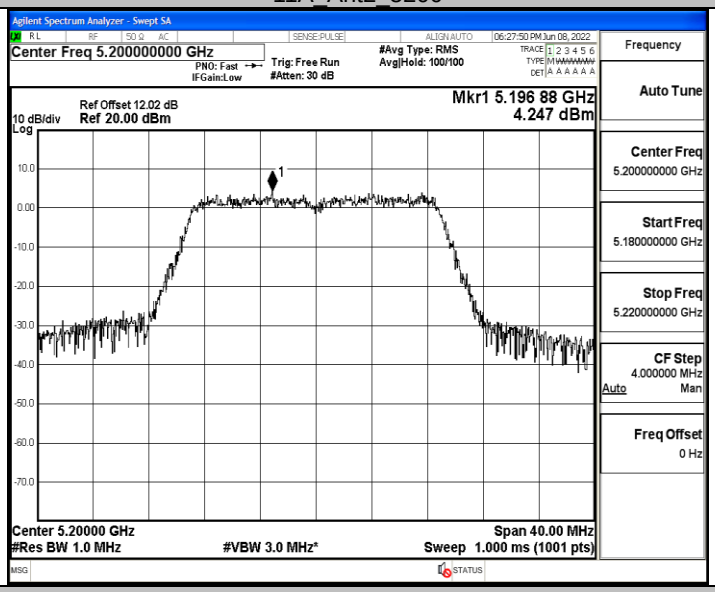
Test Graphs

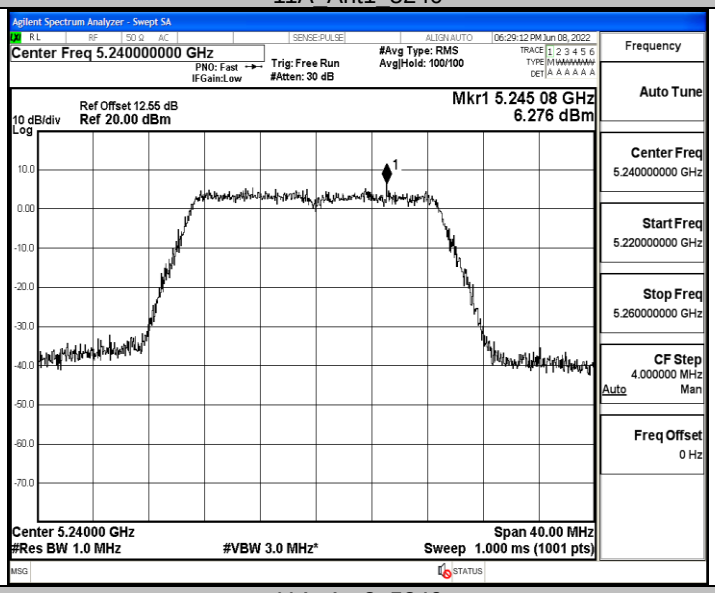
11A_Ant1_5180

11A_Ant2_5180

11A_Ant1_5200



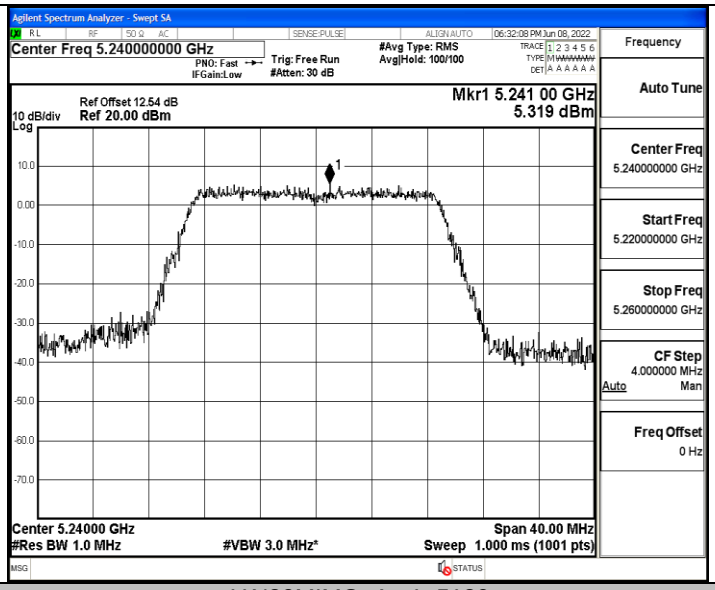
11A_Ant2_5200



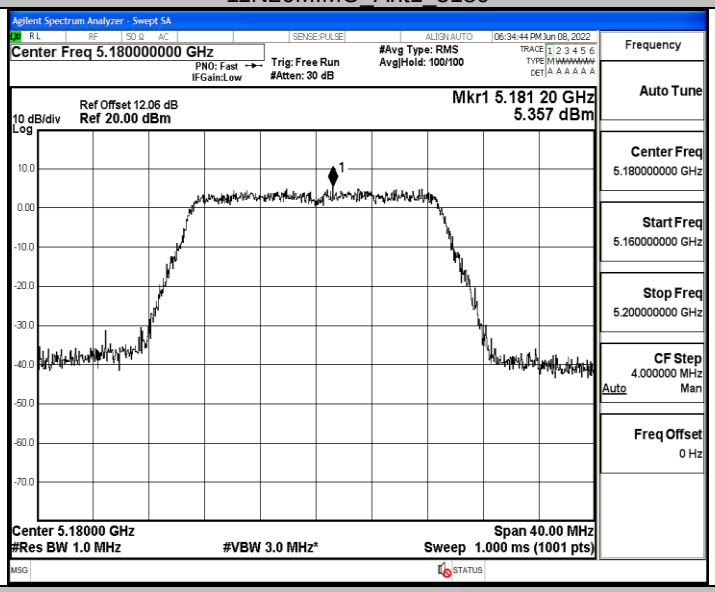
11A_Ant1_5240



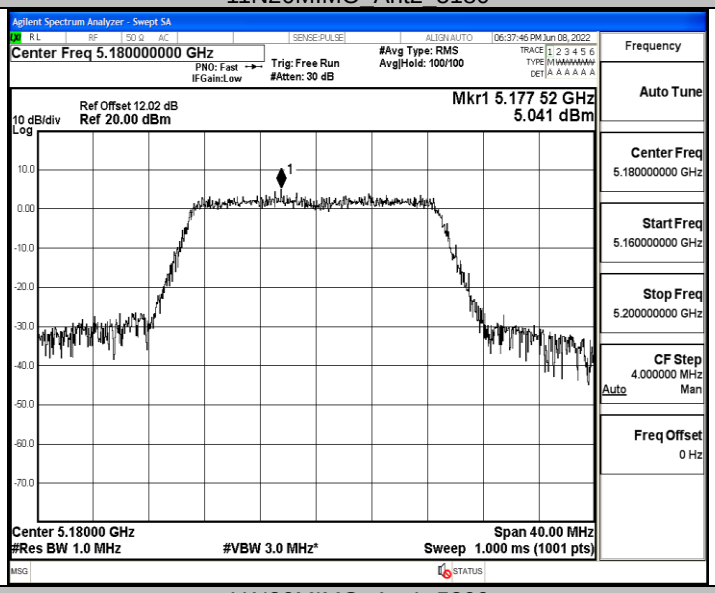
11A_Ant2_5240



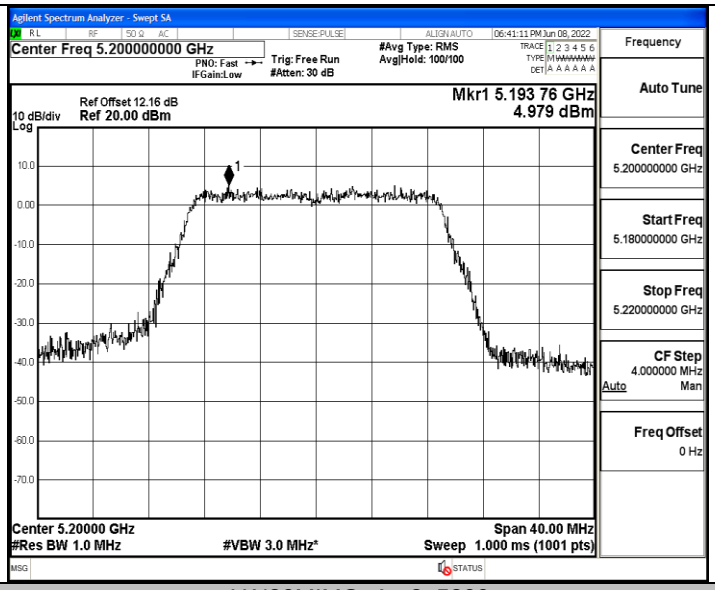
11N20MIMO_Ant1_5180



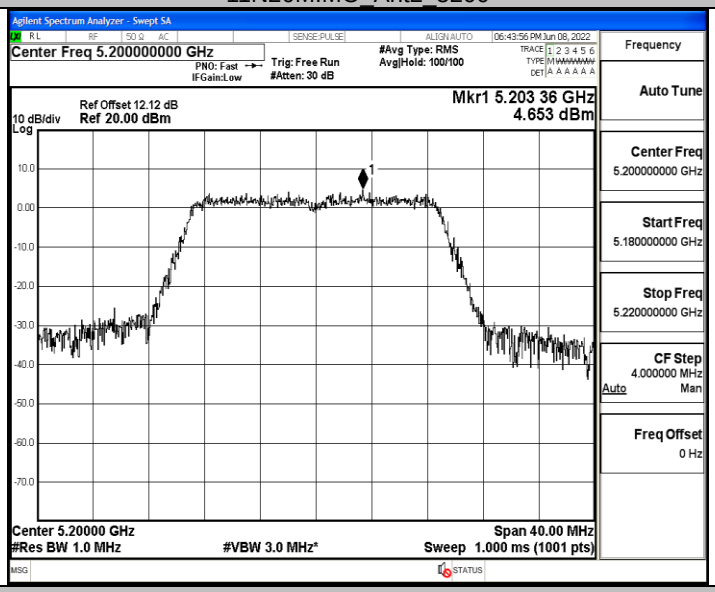
11N20MIMO_Ant2_5180



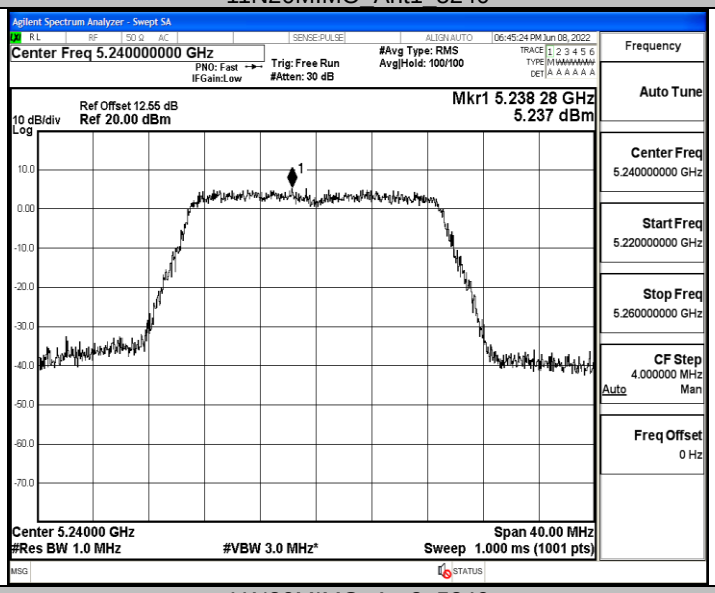
11N20MIMO_Ant1_5200



11N20MIMO_Ant2_5200



11N20MIMO_Ant1_5240



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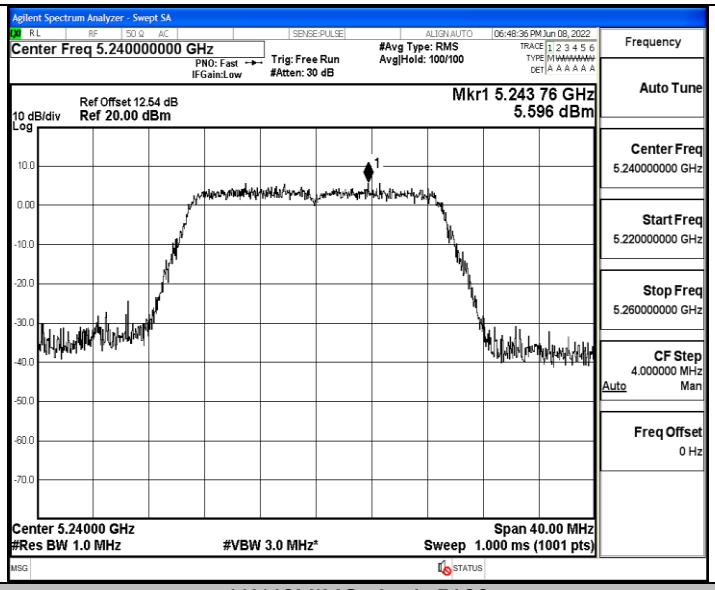
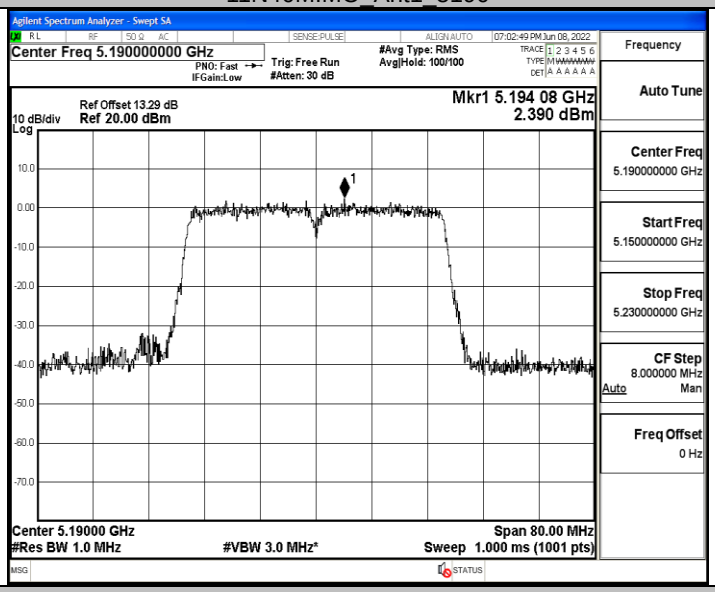
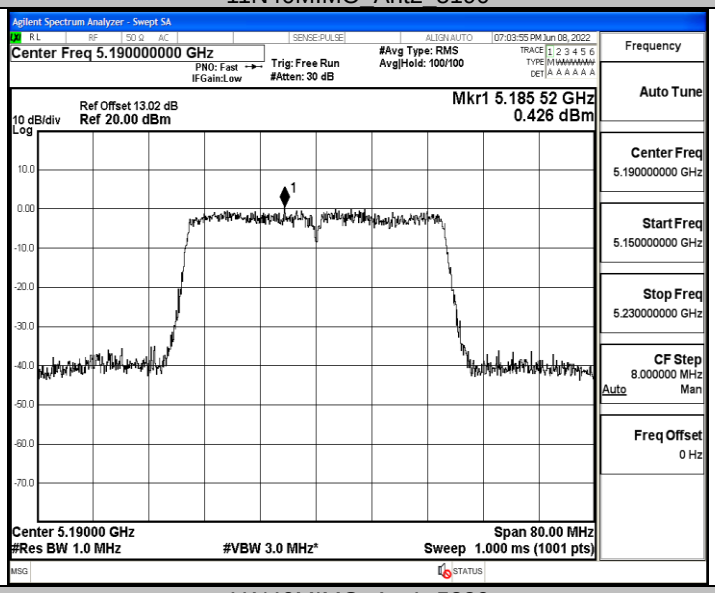


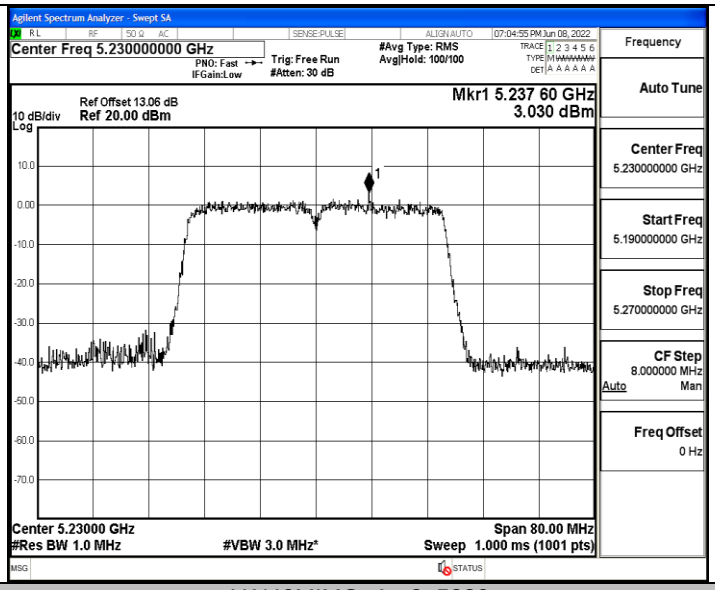
11N40MIMO_Ant1_5190



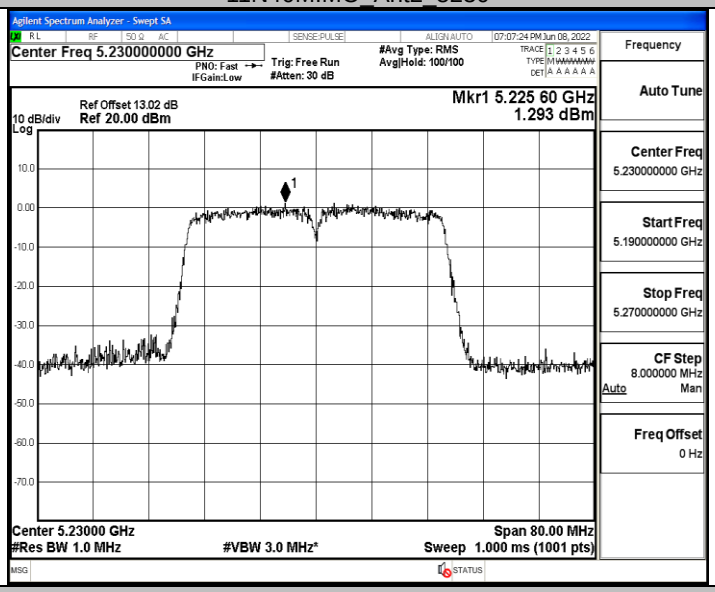
11N40MIMO_Ant2_5190



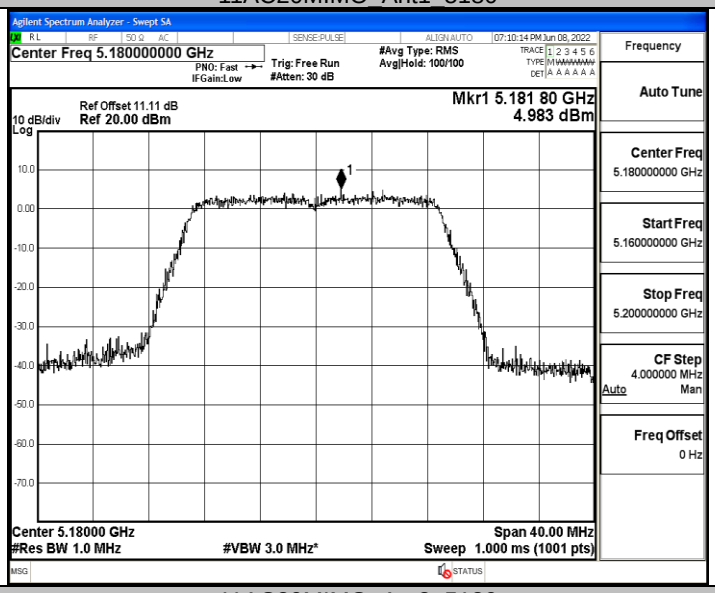
11N40MIMO_Ant1_5230



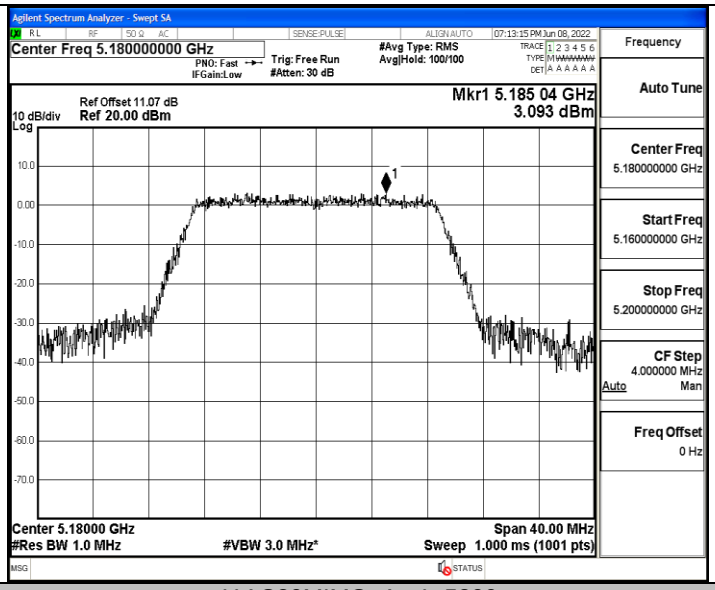
11N40MIMO_Ant2_5230



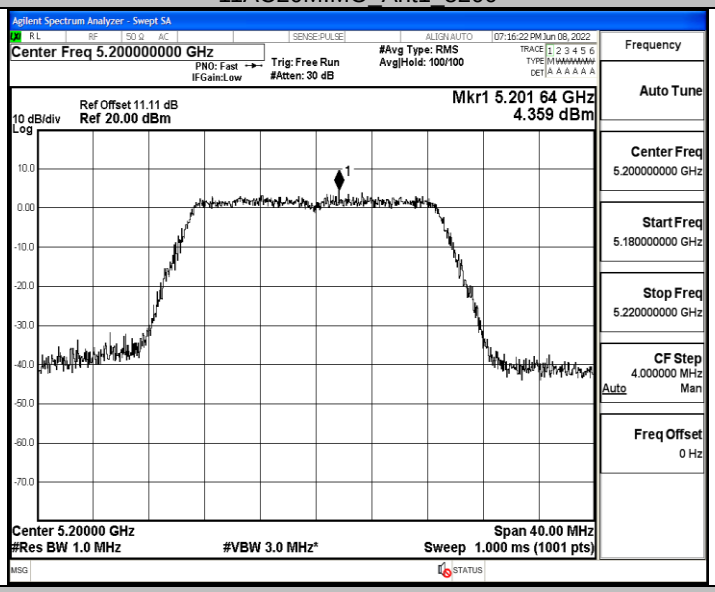
11AC20MIMO_Ant1_5180



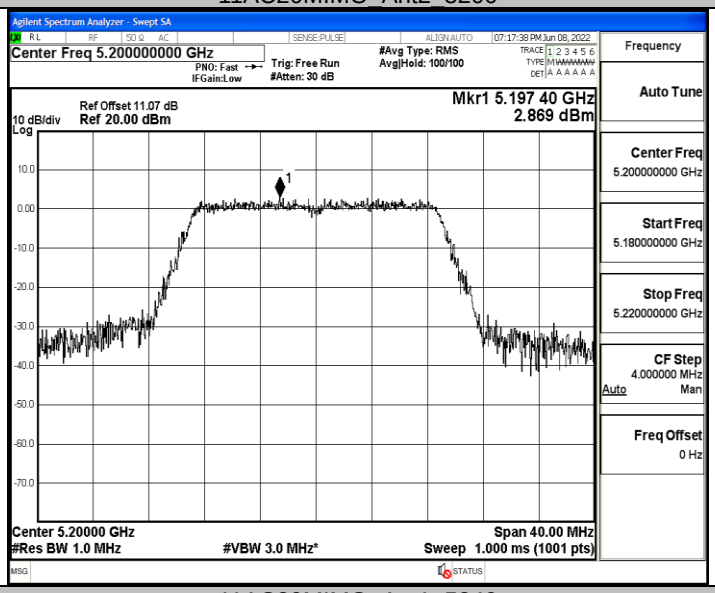
11AC20MIMO_Ant2_5180



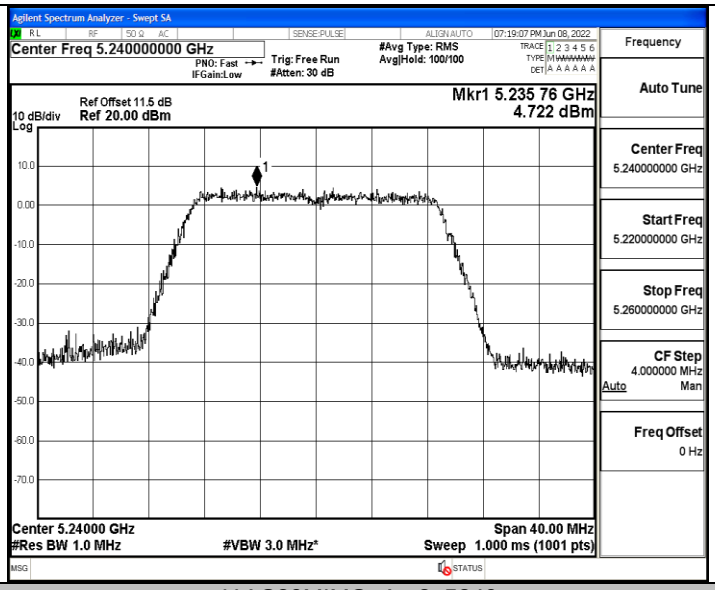
11AC20MIMO_Ant1_5200



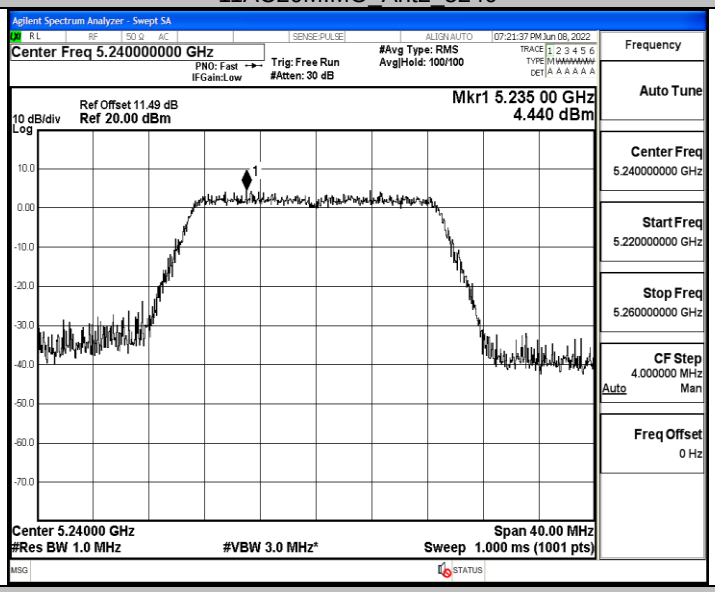
11AC20MIMO_Ant2_5200



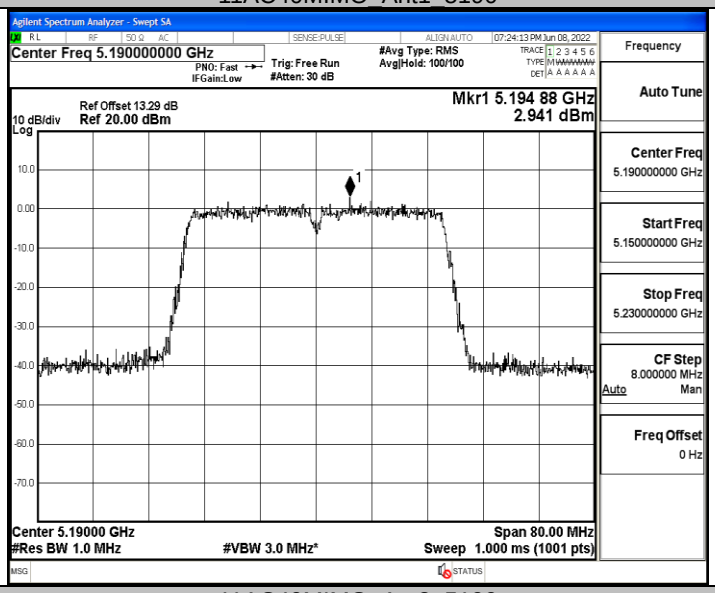
11AC20MIMO_Ant1_5240



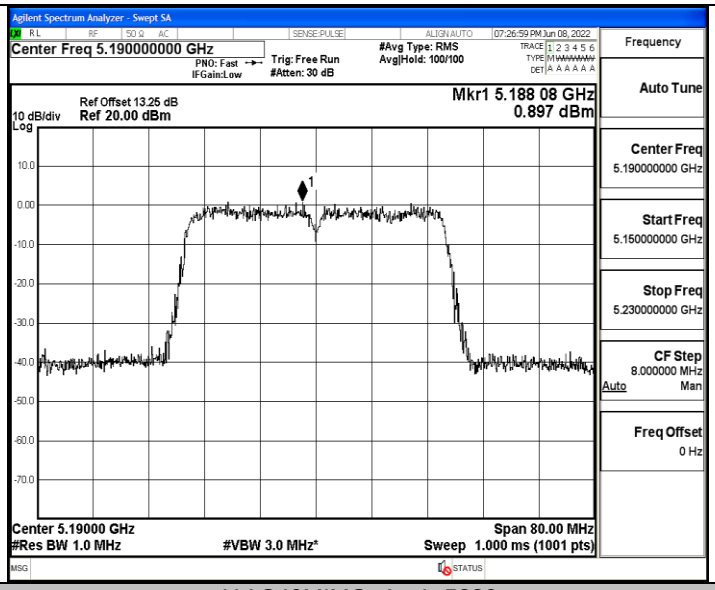
11AC20MIMO_Ant2_5240



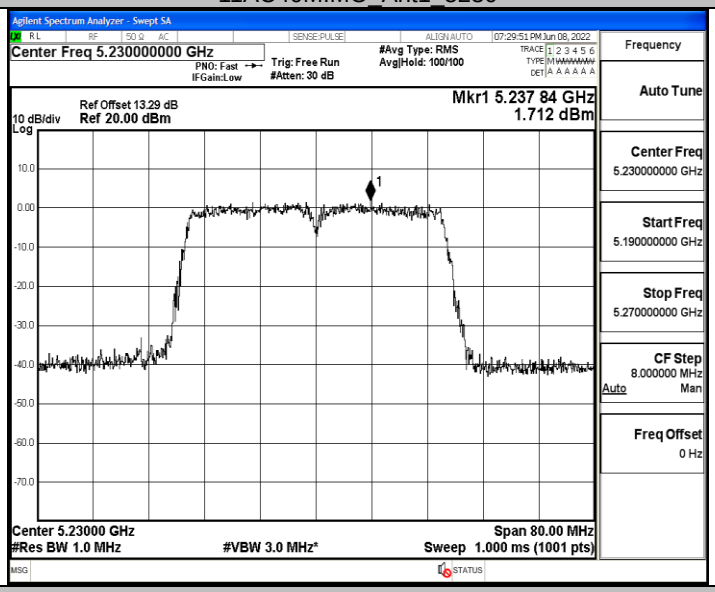
11AC40MIMO_Ant1_5190



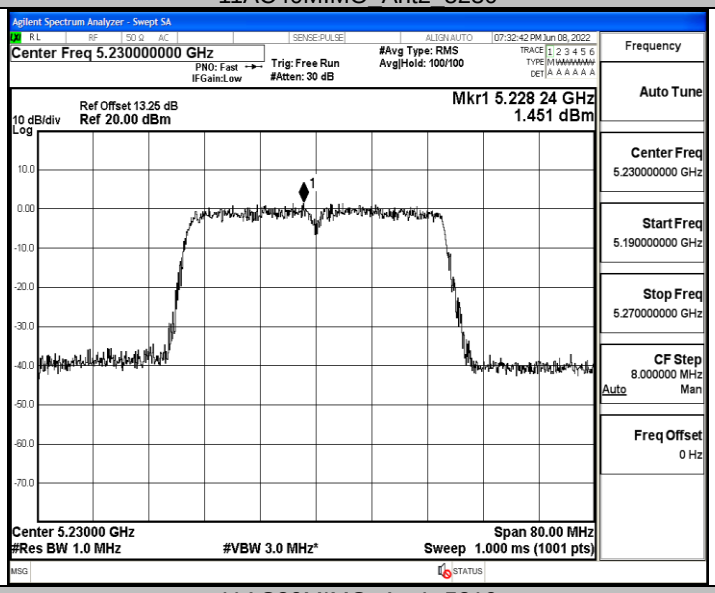
11AC40MIMO_Ant2_5190



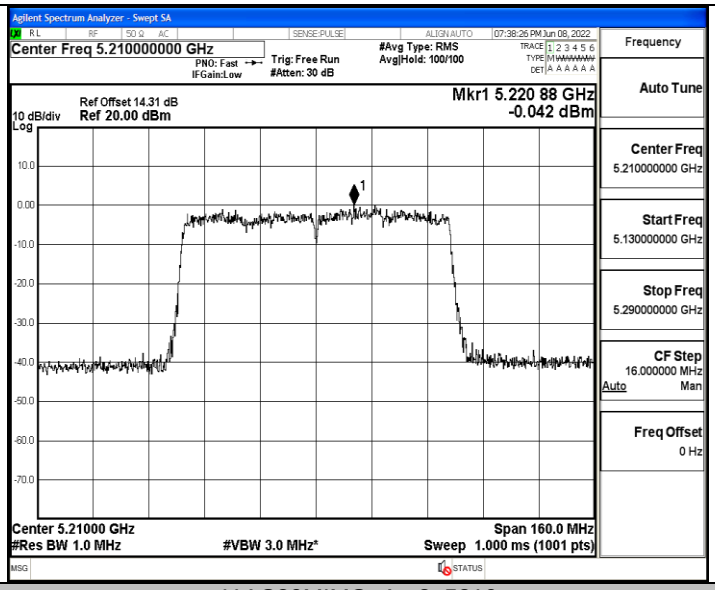
11AC40MIMO_Ant1_5230



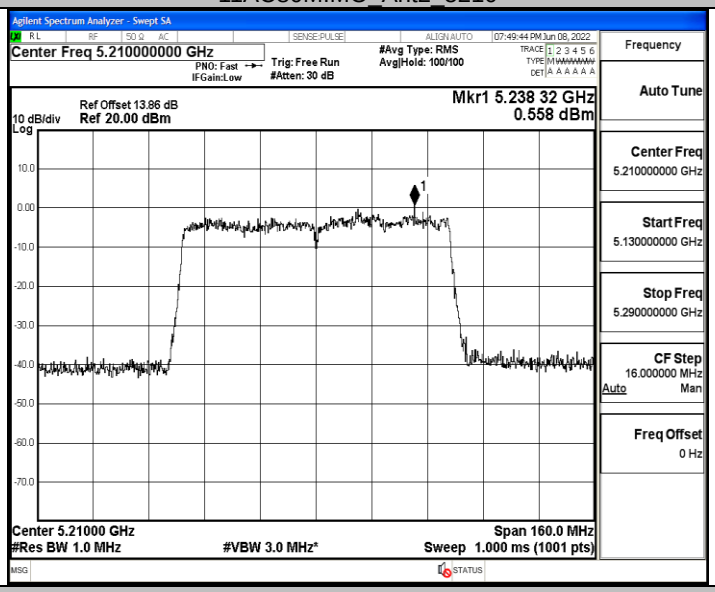
11AC40MIMO_Ant2_5230



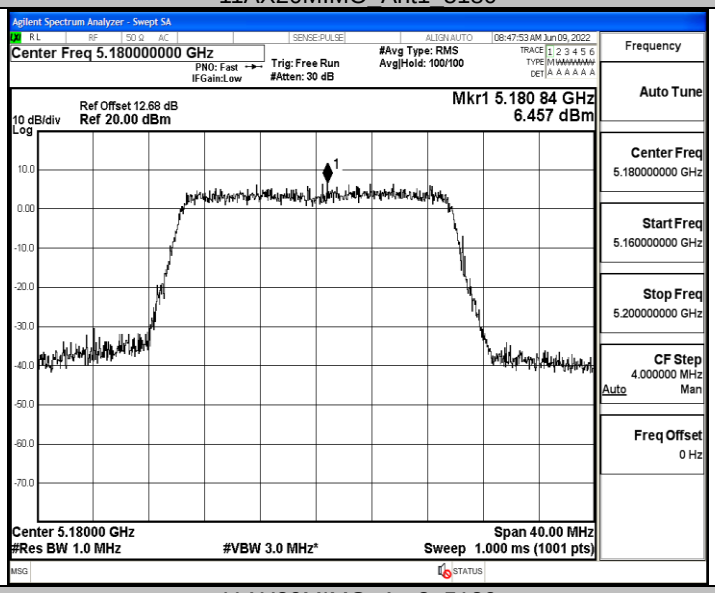
11AC80MIMO_Ant1_5210



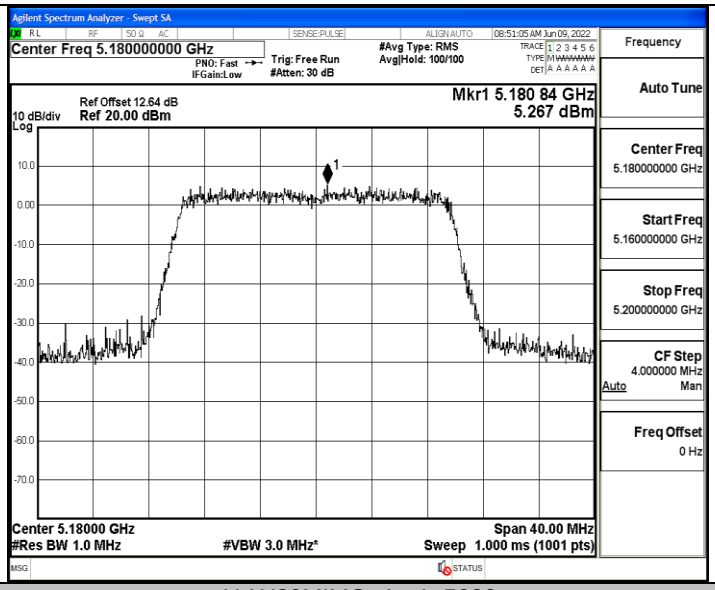
11AC80MIMO_Ant2_5210



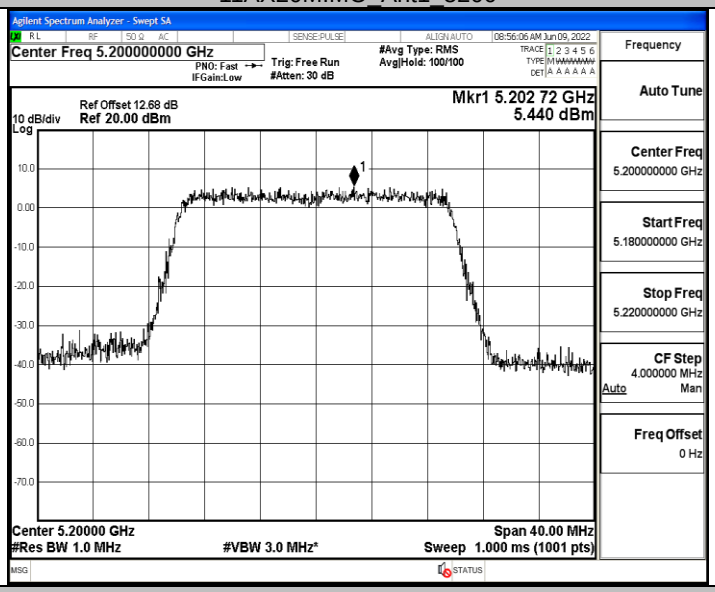
11AX20MIMO_Ant1_5180



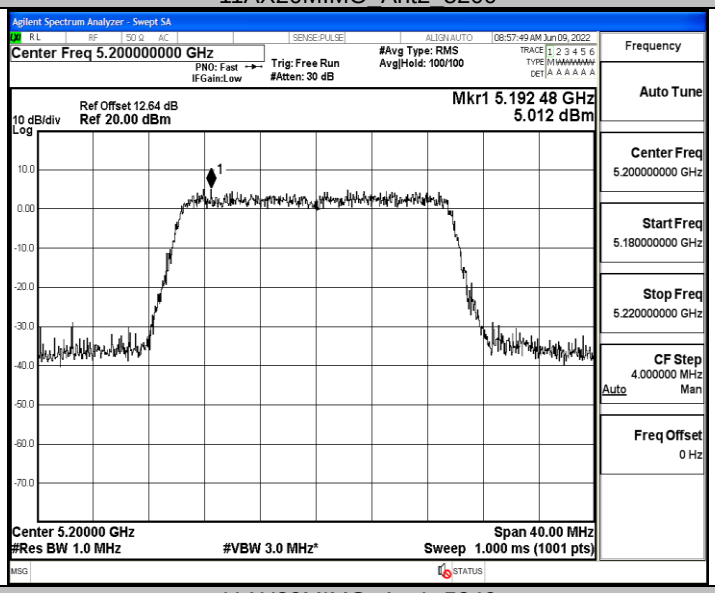
11AX20MIMO_Ant2_5180



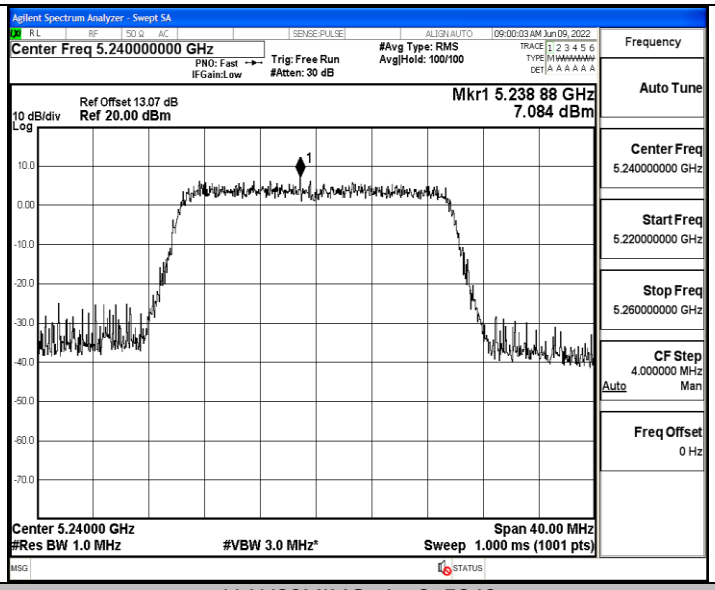
11AX20MIMO_Ant1_5200



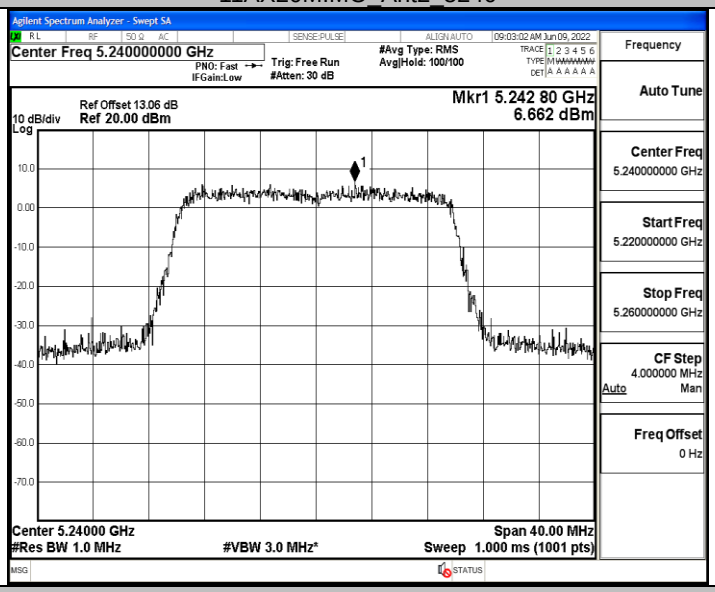
11AX20MIMO_Ant2_5200



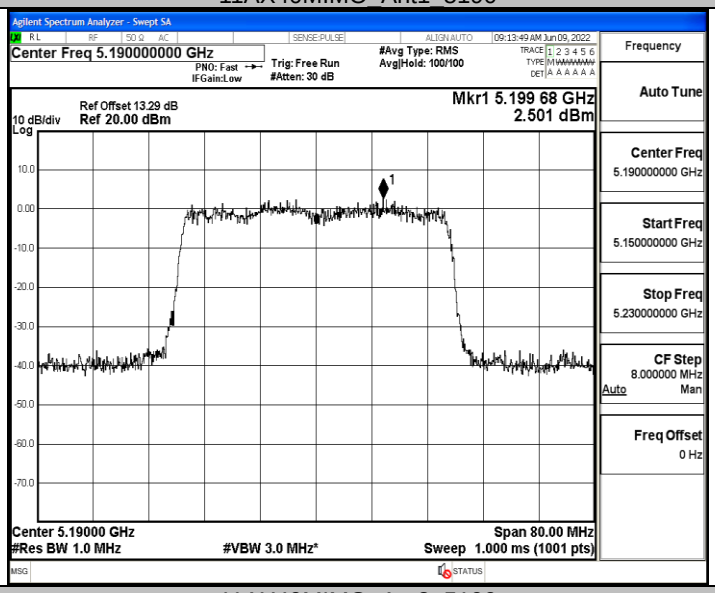
11AX20MIMO_Ant1_5240



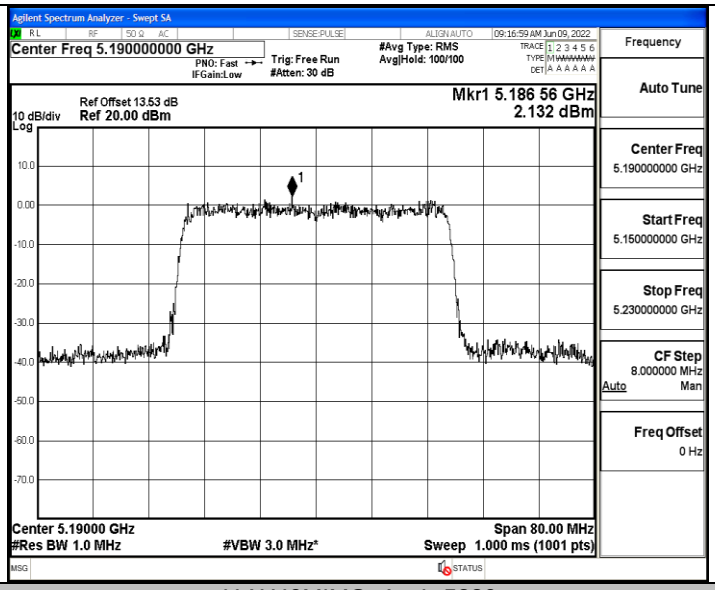
11AX20MIMO_Ant2_5240



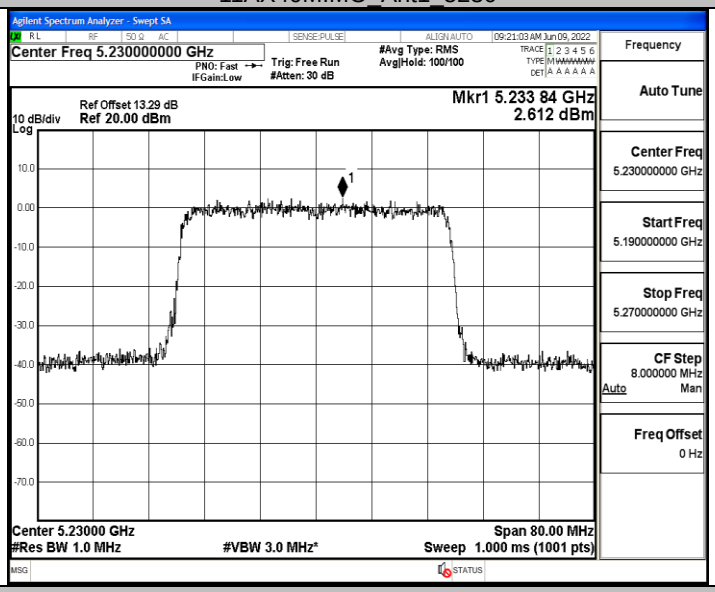
11AX40MIMO_Ant1_5190



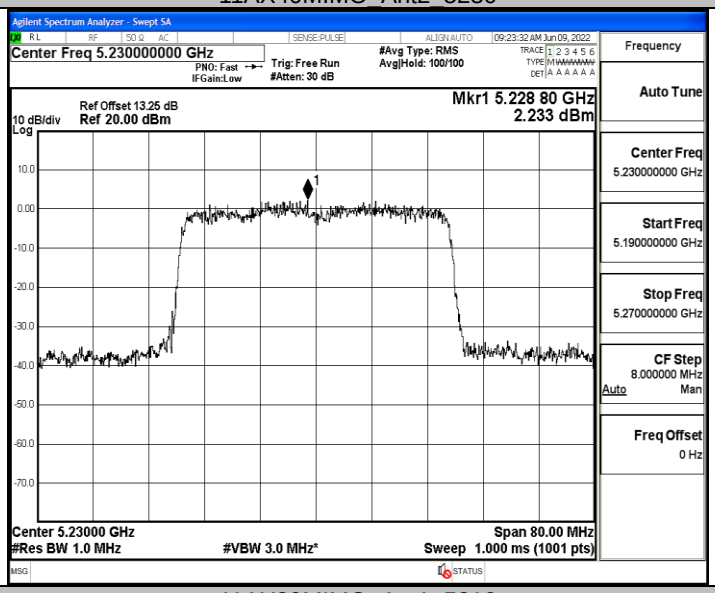
11AX40MIMO_Ant2_5190



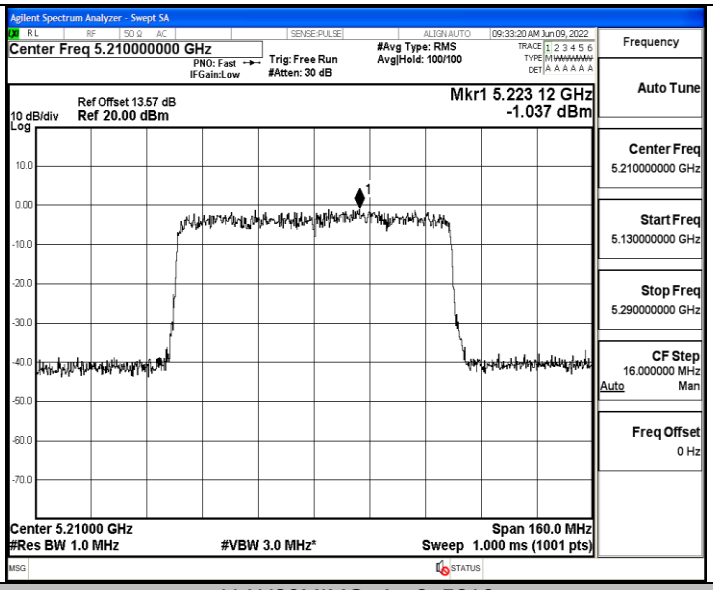
11AX40MIMO_Ant1_5230



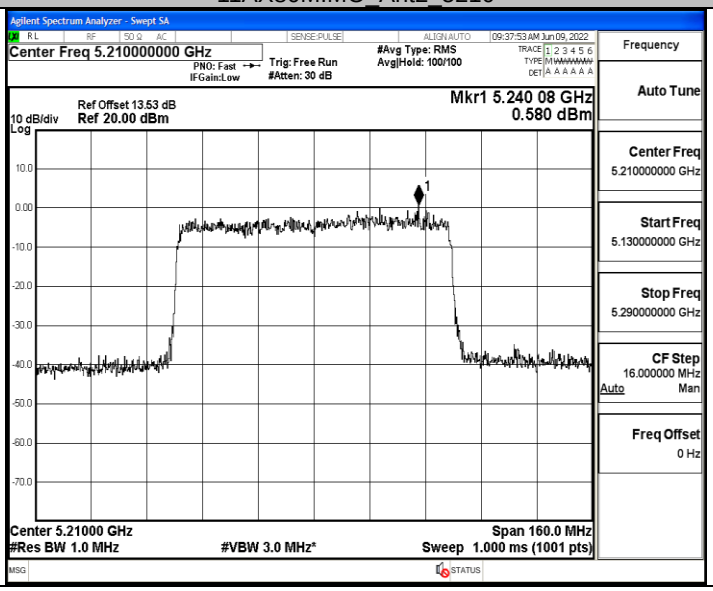
11AX40MIMO_Ant2_5230



11AX80MIMO_Ant1_5210



11AX80MIMO_Ant2_5210



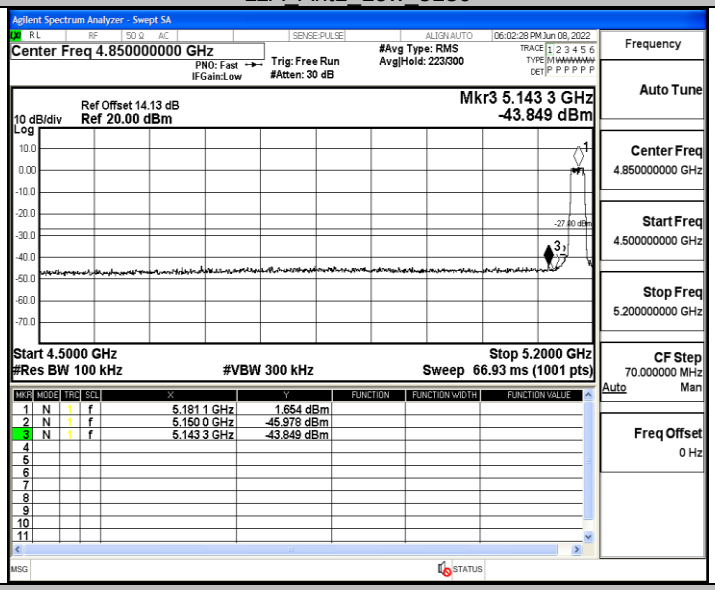
Appendix D: Band edge measurements

Test Result

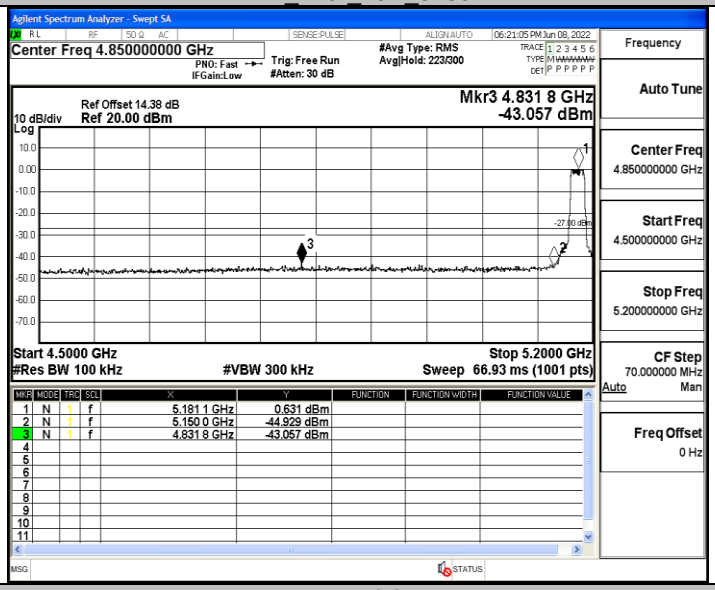
TestMode	Antenna	ChName	Channel	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	Low	5180	-43.85	≤-27	PASS
	Ant2	Low	5180	-43.06	≤-27	PASS
	Ant1	High	5240	-43.43	≤-27	PASS
	Ant2	High	5240	-43.56	≤-27	PASS
11N20MIMO	Ant1	Low	5180	-43.78	≤-27	PASS
	Ant2	Low	5180	-42.51	≤-27	PASS
	Ant1	High	5240	-43.45	≤-27	PASS
	Ant2	High	5240	-43.01	≤-27	PASS
11N40MIMO	Ant1	Low	5190	-43.3	≤-27	PASS
	Ant2	Low	5190	-43.64	≤-27	PASS
	Ant1	High	5230	-43.28	≤-27	PASS
	Ant2	High	5230	-43.52	≤-27	PASS
11AC20MIMO	Ant1	Low	5180	-43.44	≤-27	PASS
	Ant2	Low	5180	-41.61	≤-27	PASS
	Ant1	High	5240	-43.74	≤-27	PASS
	Ant2	High	5240	-43.31	≤-27	PASS
11AC40MIMO	Ant1	Low	5190	-43.54	≤-27	PASS
	Ant2	Low	5190	-43.11	≤-27	PASS
	Ant1	High	5230	-43.74	≤-27	PASS
	Ant2	High	5230	-44.23	≤-27	PASS
11AC80MIMO	Ant1	Low	5210	-43.65	≤-27	PASS
	Ant2	Low	5210	-42.8	≤-27	PASS
	Ant1	High	5210	-44.16	≤-27	PASS
	Ant2	High	5210	-43.4	≤-27	PASS
11AX20MIMO	Ant1	Low	5180	-43.37	≤-27	PASS
	Ant2	Low	5180	-43.22	≤-27	PASS
	Ant1	High	5240	-44.14	≤-27	PASS
	Ant2	High	5240	-43.6	≤-27	PASS
11AX40MIMO	Ant1	Low	5190	-43.59	≤-27	PASS
	Ant2	Low	5190	-42.67	≤-27	PASS
	Ant1	High	5230	-43.75	≤-27	PASS
	Ant2	High	5230	-43.78	≤-27	PASS
11AX80MIMO	Ant1	Low	5210	-43.84	≤-27	PASS
	Ant2	Low	5210	-43.22	≤-27	PASS
	Ant1	High	5210	-44.22	≤-27	PASS
	Ant2	High	5210	-42.72	≤-27	PASS

Test Graphs

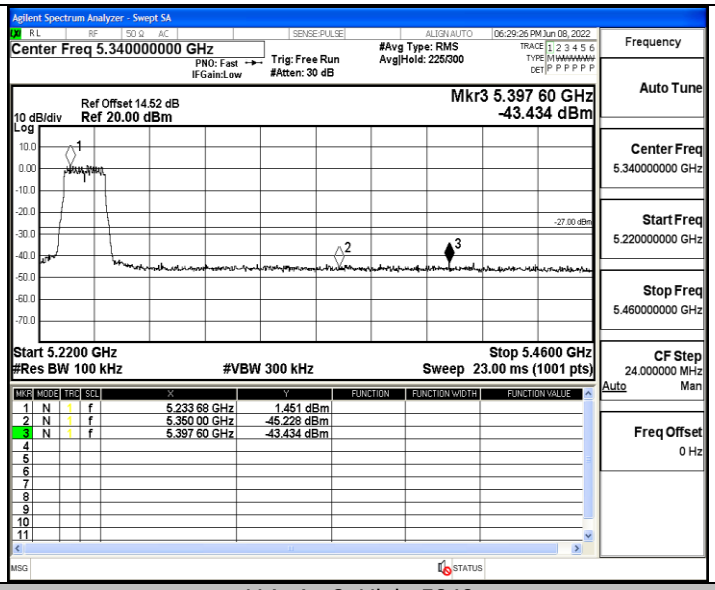
11A_Ant1_Low_5180



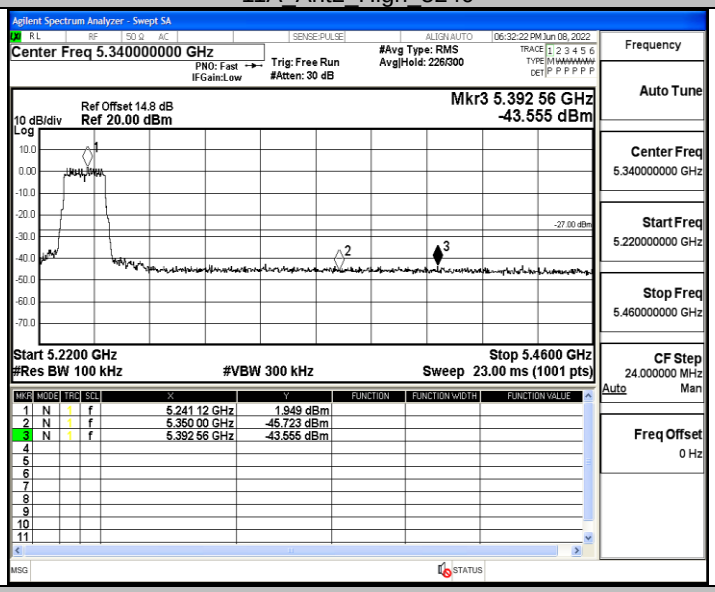
11A_Ant2_Low_5180



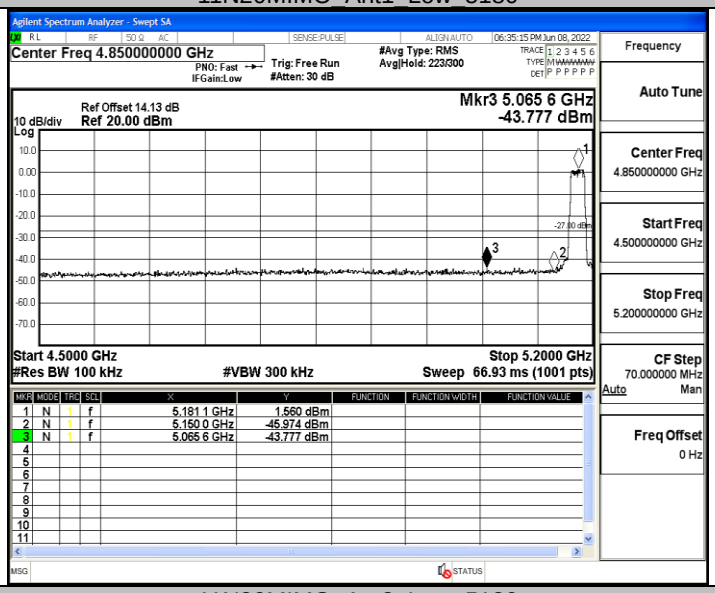
11A_Ant1_High_5240



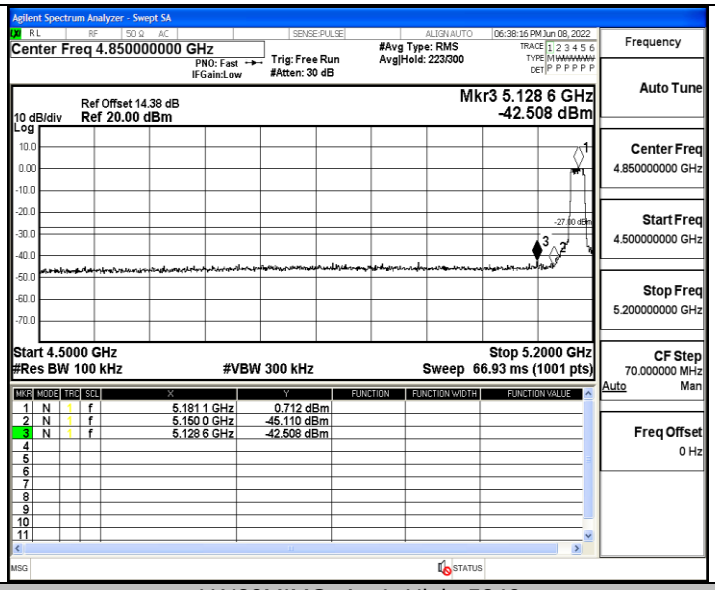
11A_Ant2_High_5240



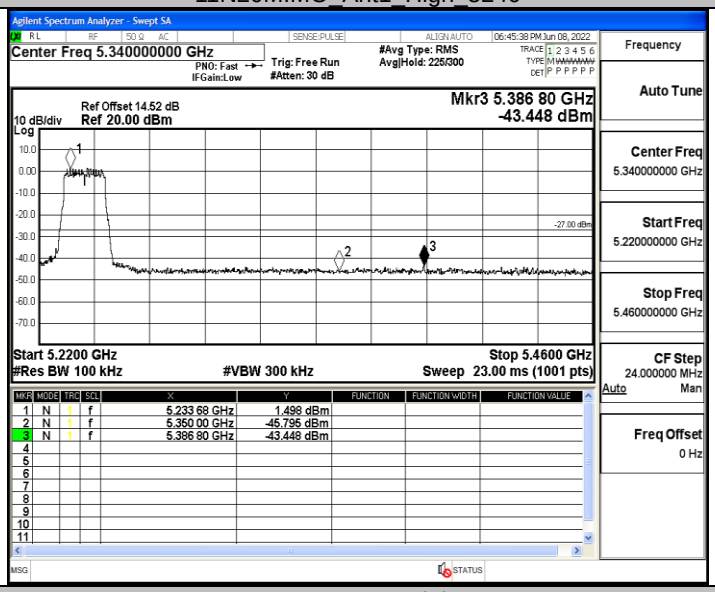
11N20MIMO_Ant1_Low_5180



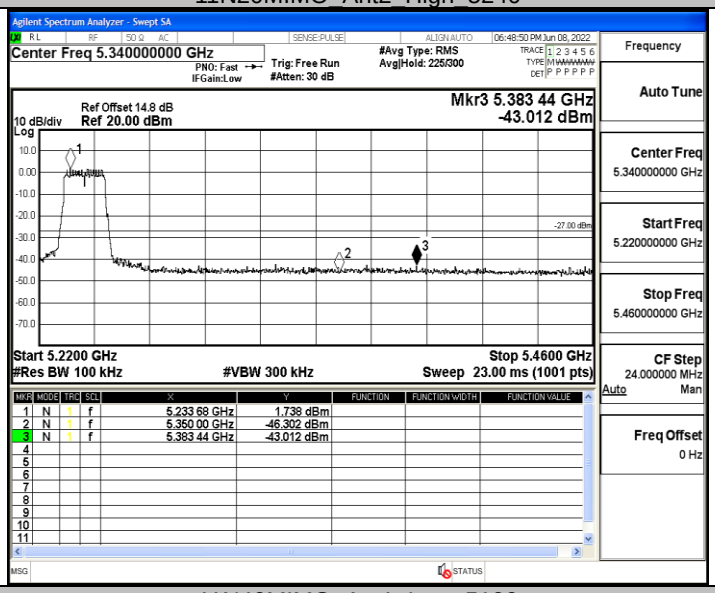
11N20MIMO_Ant2_Low_5180



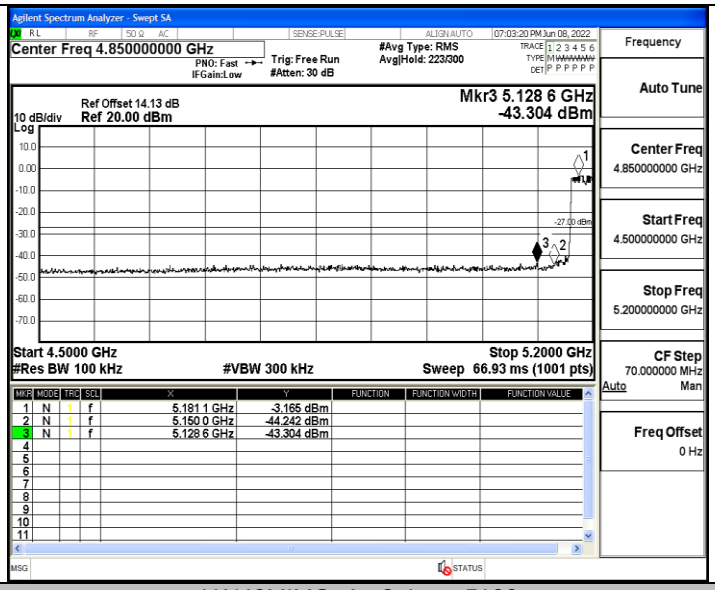
11N20MIMO_Ant1_High_5240



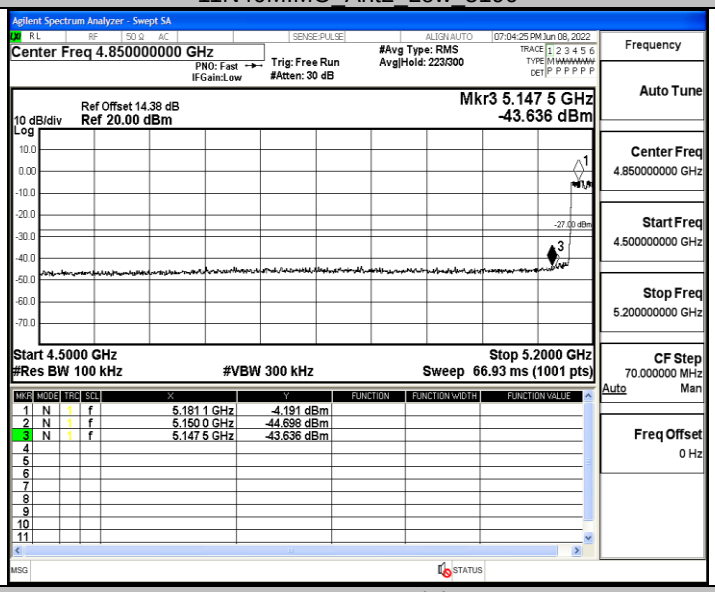
11N20MIMO_Ant2_High_5240



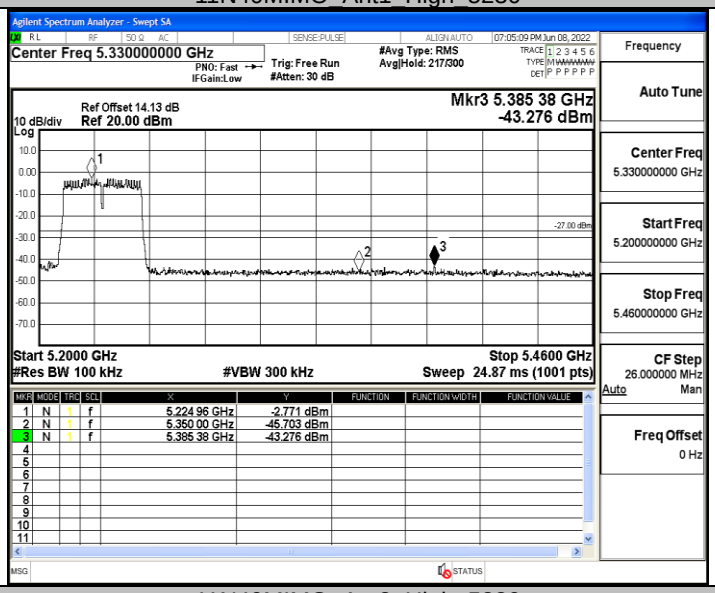
11N40MIMO_Ant1_Low_5190



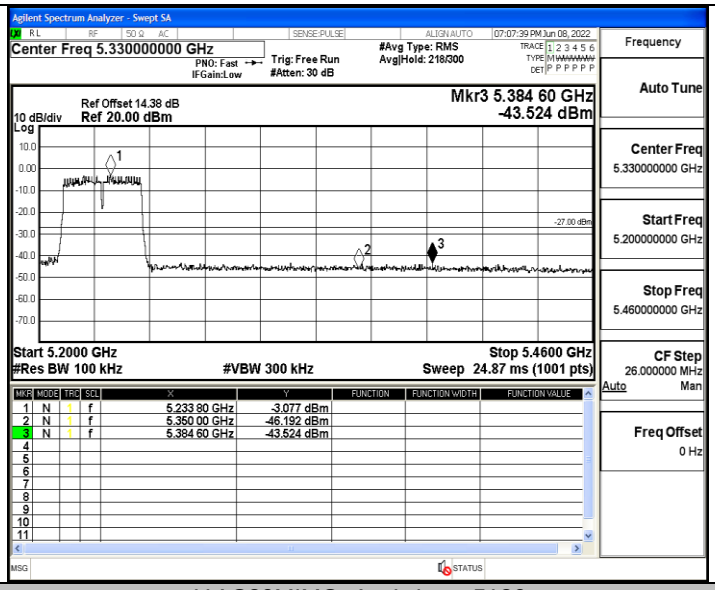
11N40MIMO_Ant2_Low_5190



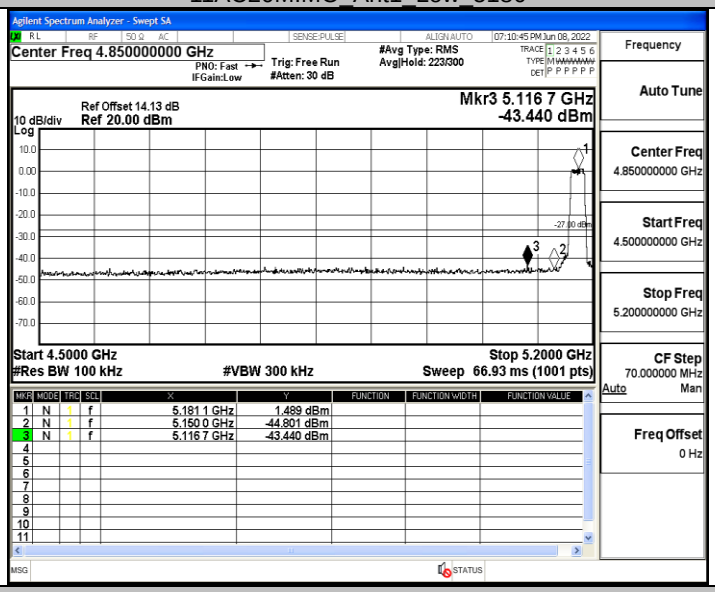
11N40MIMO_Ant1_High_5230



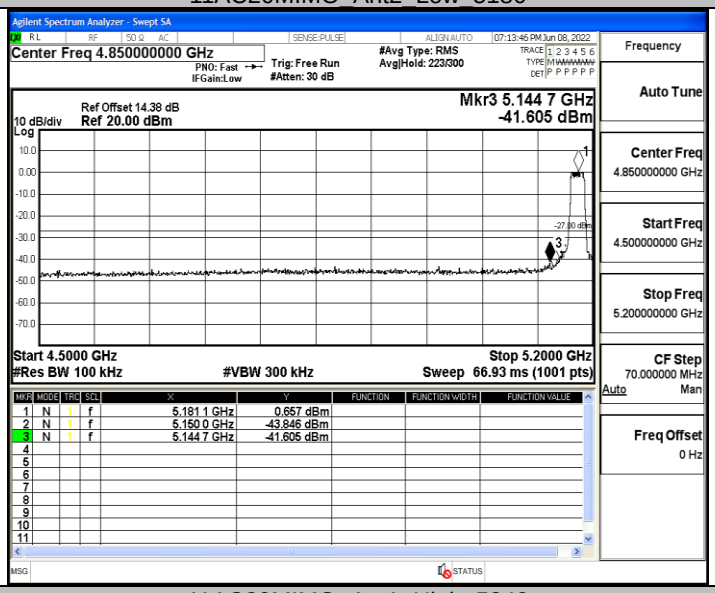
11N40MIMO_Ant2_High_5230



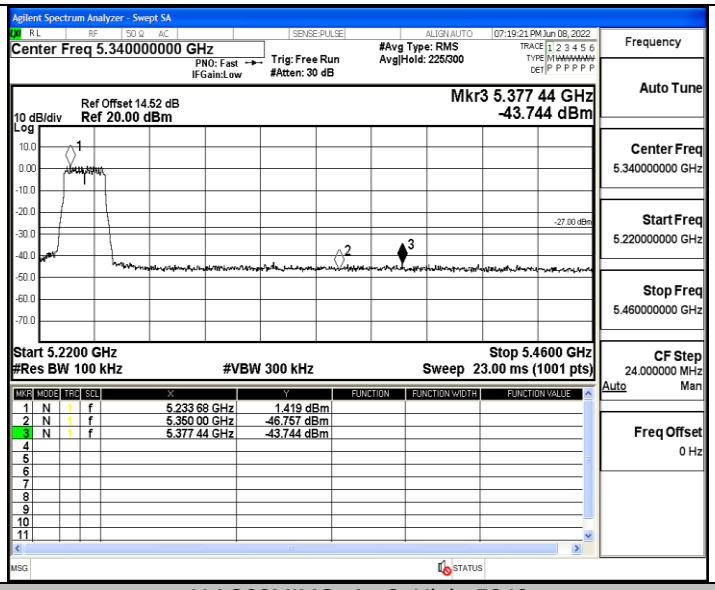
11AC20MIMO_Ant1_Low_5180



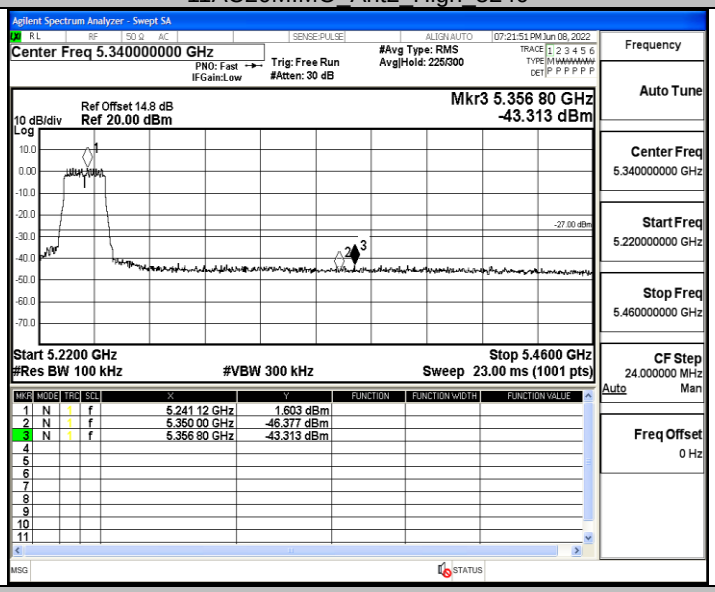
11AC20MIMO_Ant2_Low_5180



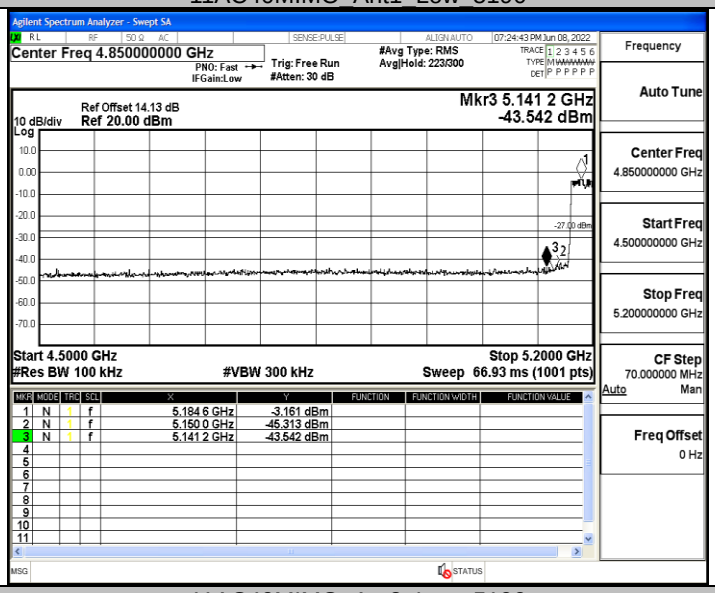
11AC20MIMO_Ant1_High_5240



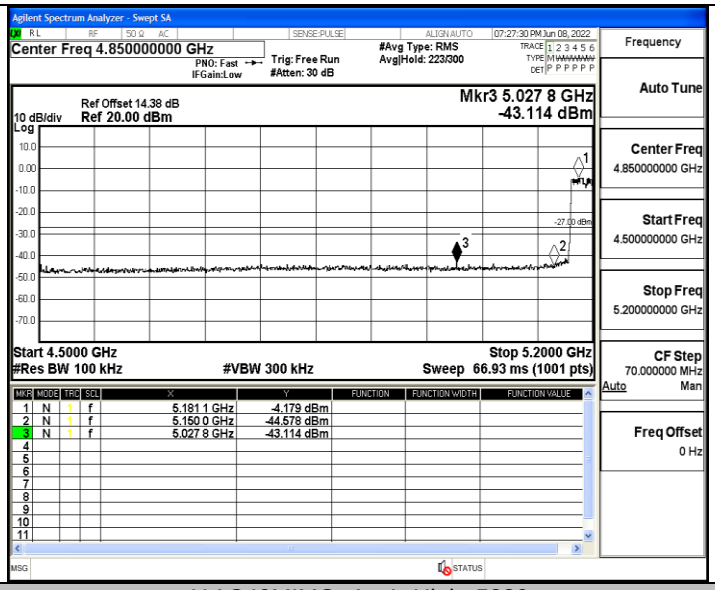
11AC20MIMO_Ant2_High_5240



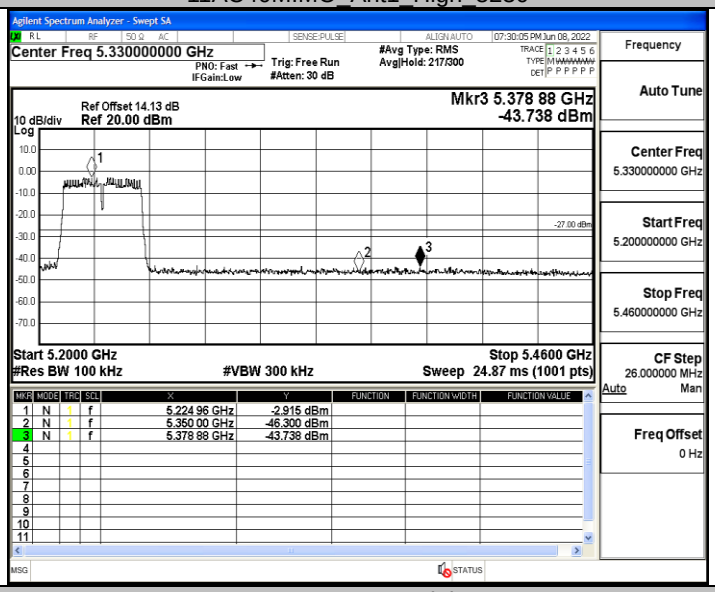
11AC40MIMO_Ant1_Low_5190



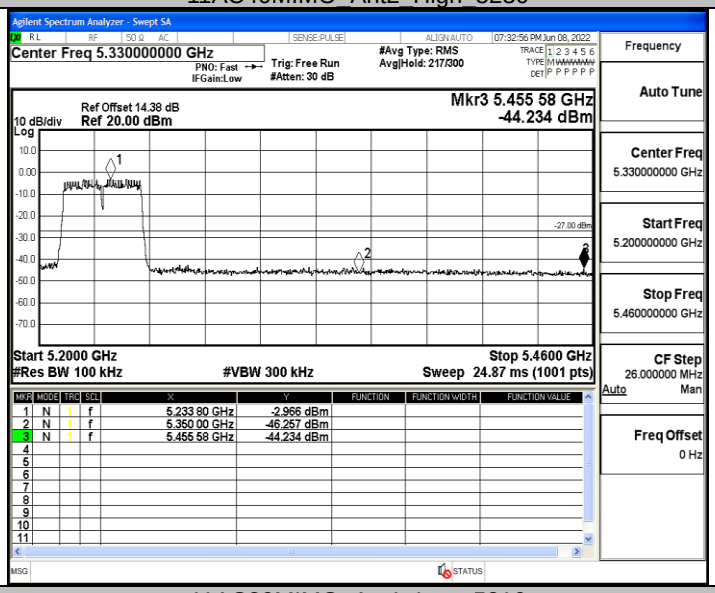
11AC40MIMO_Ant2_Low_5190



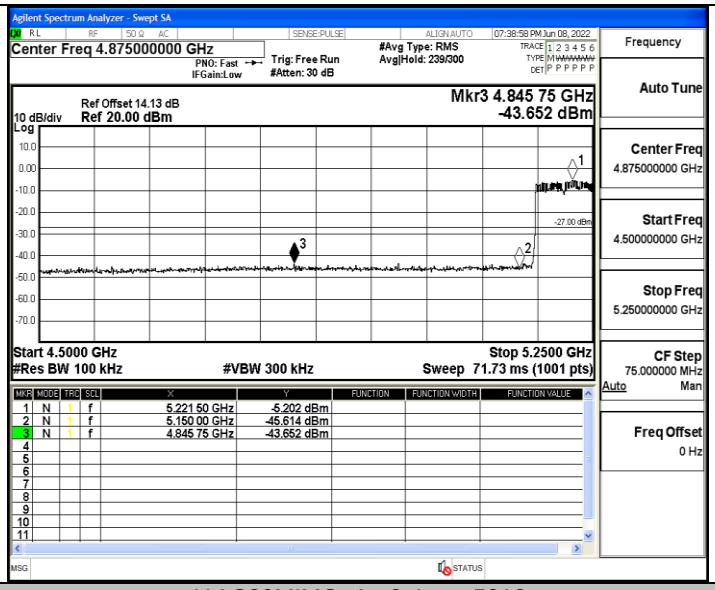
11AC40MIMO_Ant1_High_5230



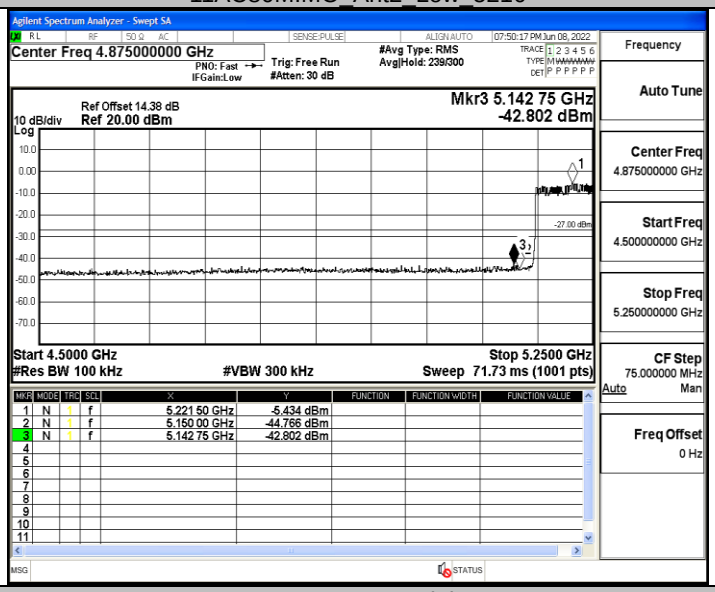
11AC40MIMO_Ant2_High_5230



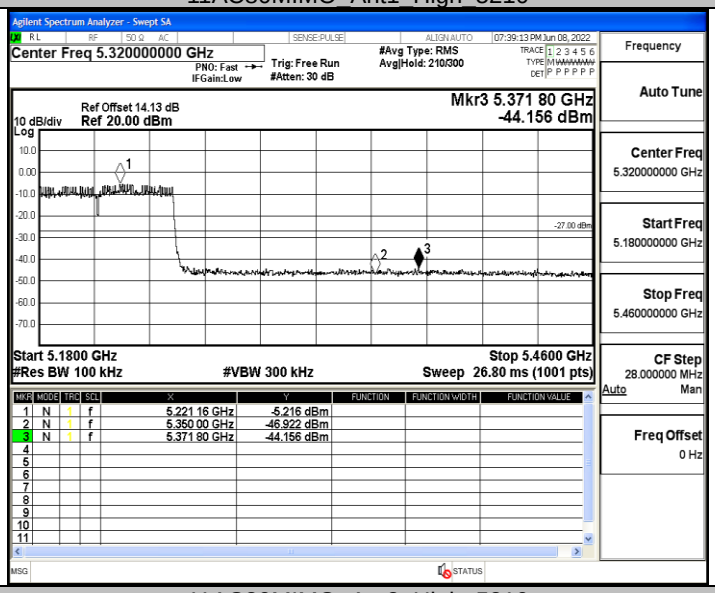
11AC80MIMO_Ant1_Low_5210



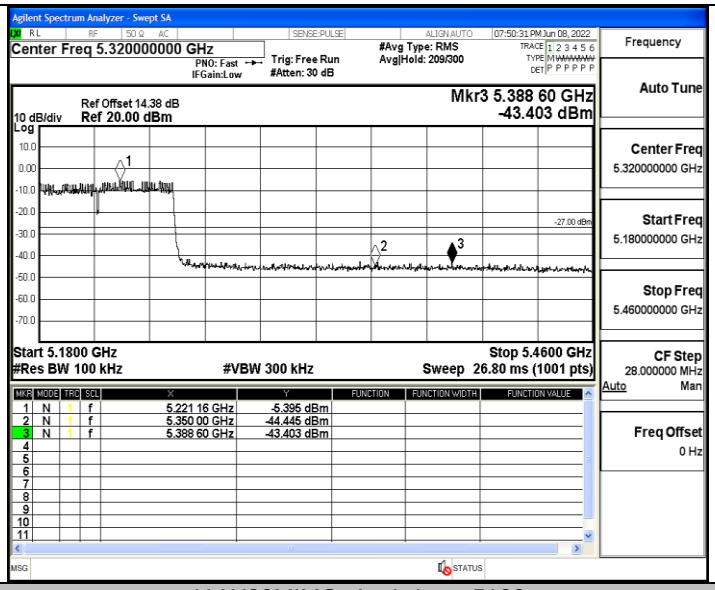
11AC80MIMO_Ant2_Low_5210



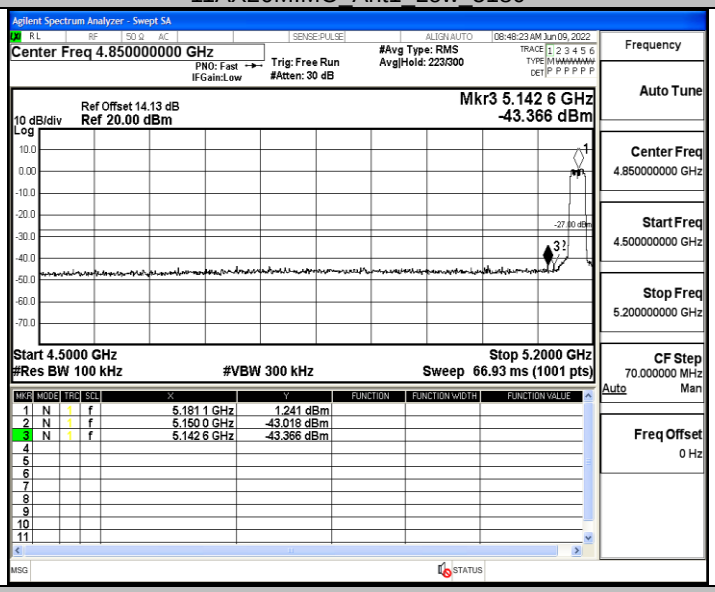
11AC80MIMO_Ant1_High_5210



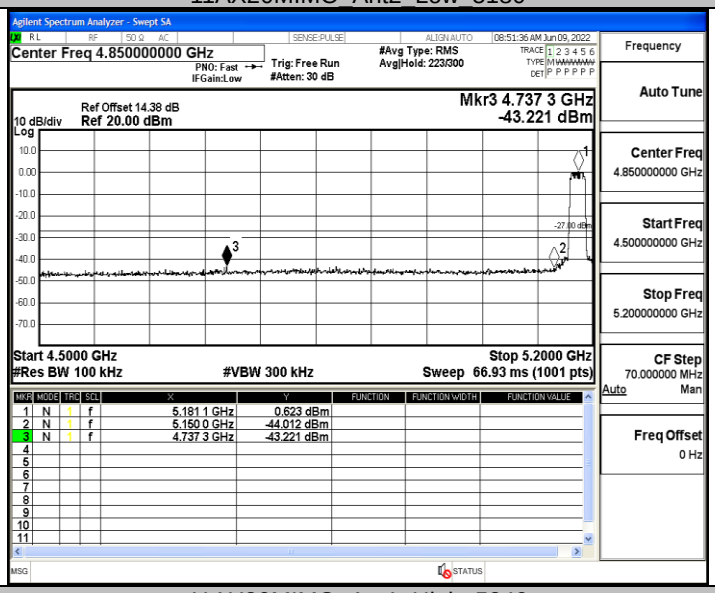
11AC80MIMO_Ant2_High_5210



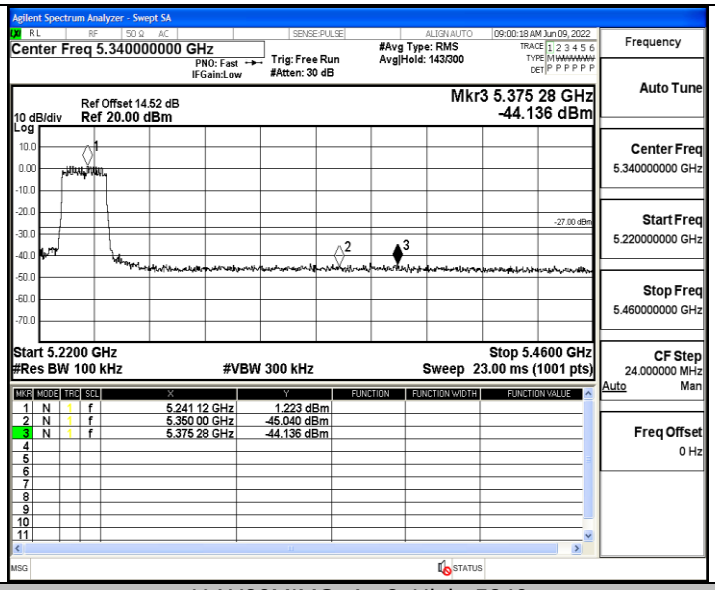
11AX20MIMO_Ant1_Low_5180



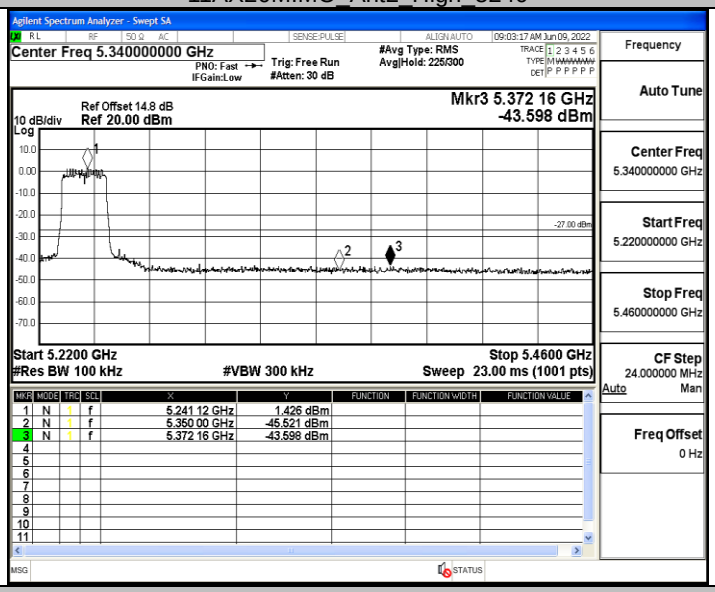
11AX20MIMO_Ant2_Low_5180



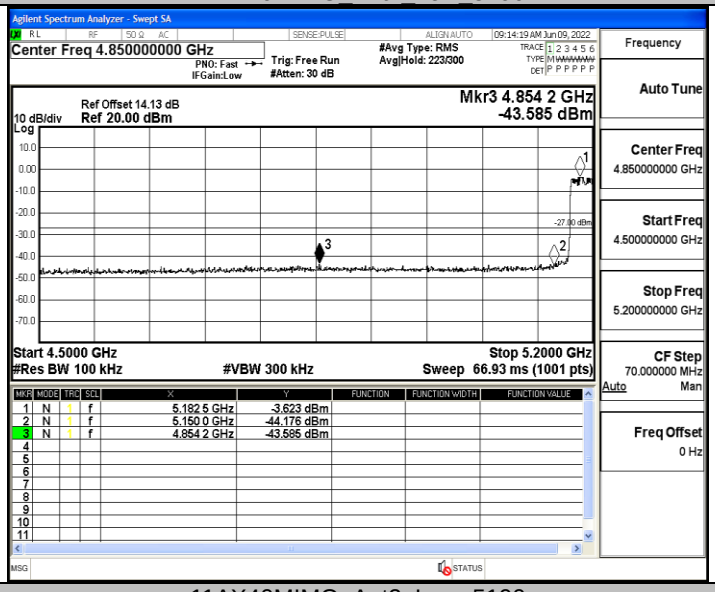
11AX20MIMO_Ant1_High_5240



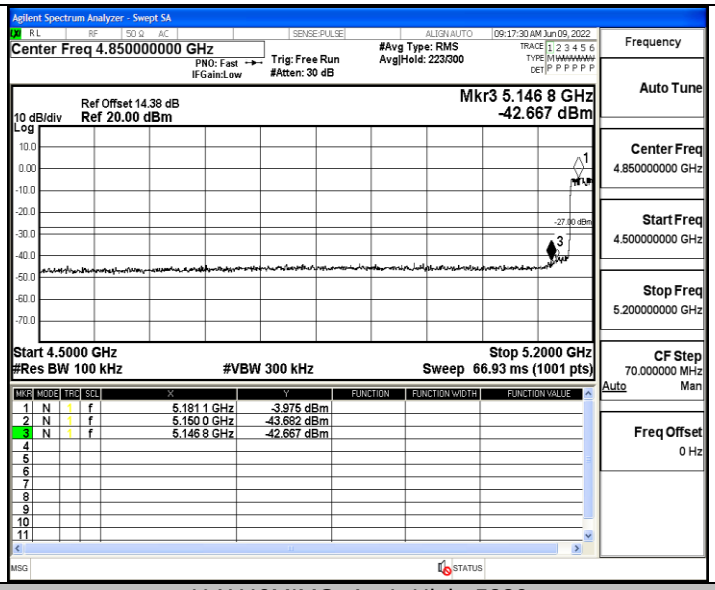
11AX20MIMO_Ant2_High_5240



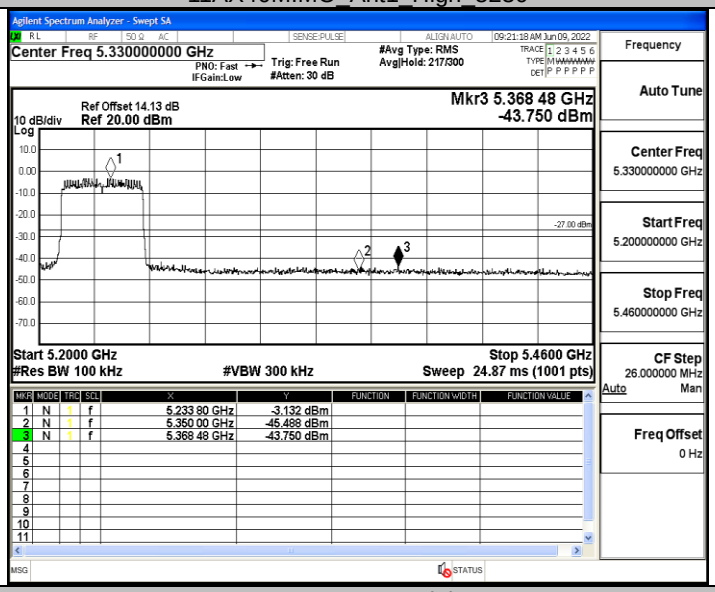
11AX40MIMO_Ant1_Low_5190



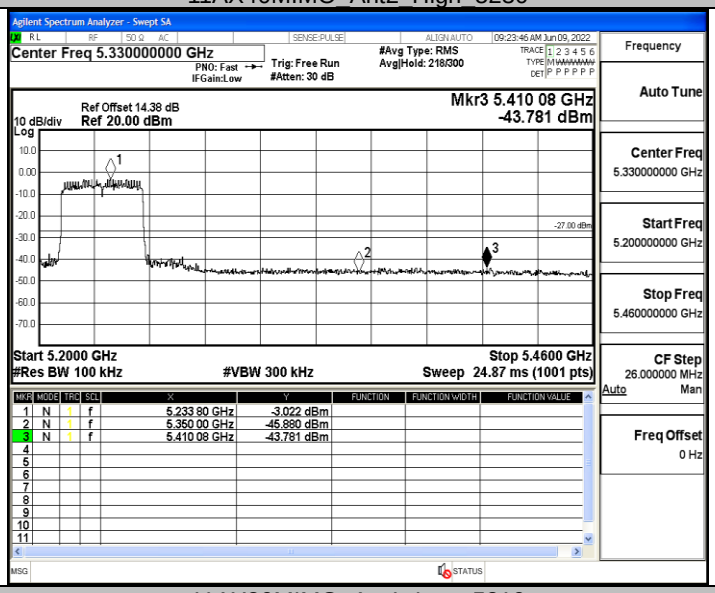
11AX40MIMO_Ant2_Low_5190



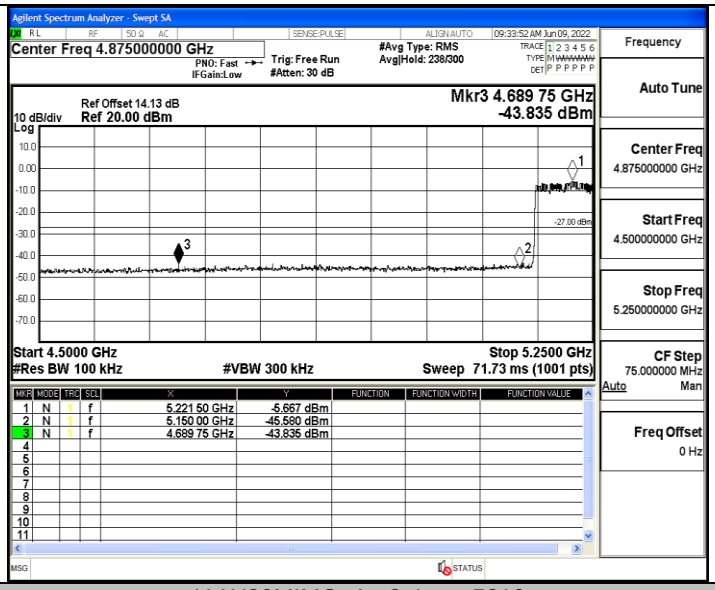
11AX40MIMO_Ant1_High_5230



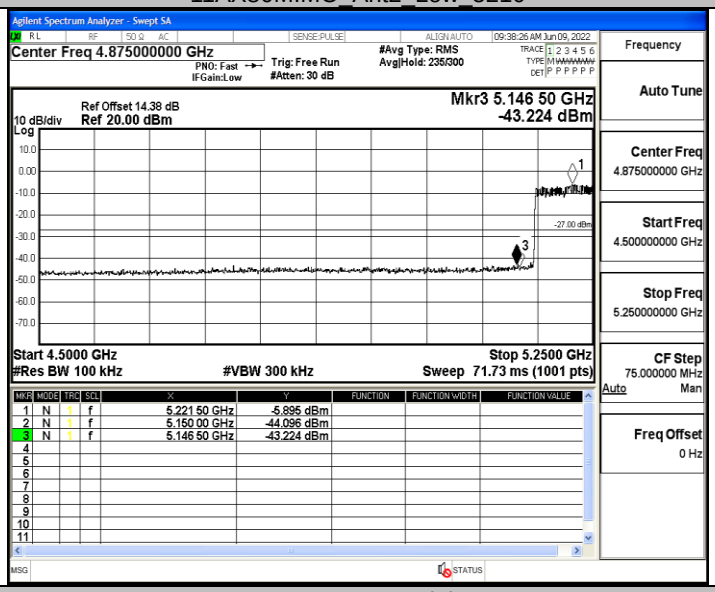
11AX40MIMO_Ant2_High_5230



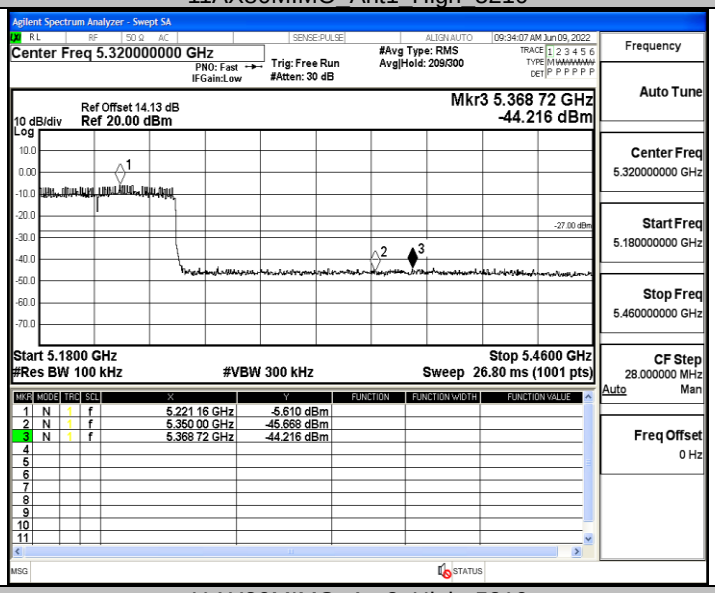
11AX80MIMO_Ant1_Low_5210



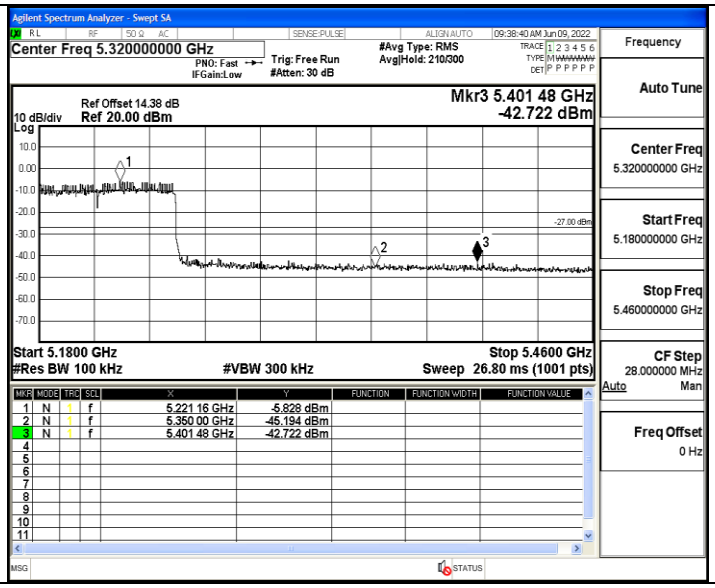
11AX80MIMO_Ant2_Low_5210



11AX80MIMO_Ant1_High_5210



11AX80MIMO_Ant2_High_5210


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.320000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 210/300
09:38:40 AM Jun 09, 2022
Ref Offset 14.38 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr3 5.401 48 GHz
-42.722 dBm
-27.00 dBm
Start 5.1800 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 5.4600 GHz
Sweep 26.80 ms (1001 pts)
1 N 1 f 5.221 16 GHz -5.828 dBm
2 N 1 f 5.350 00 GHz -45.194 dBm
3 N 1 f 5.401 48 GHz -42.722 dBm
Frequency
Auto Tune
Center Freq
5.320000000 GHz
Start Freq
5.180000000 GHz
Stop Freq
5.460000000 GHz
CF Step
28.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

Appendix E: Frequency Stability

Test Result

Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5180	20	132	5180.092806	5150 – 5250	PASS
5180	20	108	5179.903494	5150 – 5250	PASS
5180	50	120	5179.968679	5150 – 5250	PASS
5180	40	120	5180.090334	5150 – 5250	PASS
5180	30	120	5180.033736	5150 – 5250	PASS
5180	20	120	5180.033311	5150 – 5250	PASS
5180	10	120	5180.021070	5150 – 5250	PASS
5180	0	120	5180.085911	5150 – 5250	PASS
5180	-10	120	5180.058448	5150 – 5250	PASS
5180	-20	120	5179.905986	5150 – 5250	PASS
5180	-30	120	5180.000256	5150 – 5250	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5180	20	132	5180.048903	5150 – 5250	PASS
5180	20	108	5180.053963	5150 – 5250	PASS
5180	50	120	5179.955221	5150 – 5250	PASS
5180	40	120	5180.076595	5150 – 5250	PASS
5180	30	120	5180.042729	5150 – 5250	PASS
5180	20	120	5180.069485	5150 – 5250	PASS
5180	10	120	5180.062093	5150 – 5250	PASS
5180	0	120	5179.910973	5150 – 5250	PASS
5180	-10	120	5179.942003	5150 – 5250	PASS
5180	-20	120	5180.007273	5150 – 5250	PASS
5180	-30	120	5180.001426	5150 – 5250	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5200	20	132	5199.964812	5150 – 5250	PASS
5200	20	108	5199.904851	5150 – 5250	PASS
5200	50	120	5200.011095	5150 – 5250	PASS
5200	40	120	5200.014657	5150 – 5250	PASS
5200	30	120	5199.979355	5150 – 5250	PASS
5200	20	120	5199.968875	5150 – 5250	PASS
5200	10	120	5200.086457	5150 – 5250	PASS

5200	0	120	5200.031294	5150 – 5250	PASS
5200	-10	120	5200.066483	5150 – 5250	PASS
5200	-20	120	5199.940400	5150 – 5250	PASS
5200	-30	120	5200.050342	5150 – 5250	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5200	20	132	5199.952868	5150 – 5250	PASS
5200	20	108	5200.007136	5150 – 5250	PASS
5200	50	120	5199.981045	5150 – 5250	PASS
5200	40	120	5199.920130	5150 – 5250	PASS
5200	30	120	5200.051468	5150 – 5250	PASS
5200	20	120	5199.967173	5150 – 5250	PASS
5200	10	120	5199.958425	5150 – 5250	PASS
5200	0	120	5200.077999	5150 – 5250	PASS
5200	-10	120	5200.067245	5150 – 5250	PASS
5200	-20	120	5200.072208	5150 – 5250	PASS
5200	-30	120	5199.934014	5150 – 5250	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5240	20	132	5239.913521	5150 – 5250	PASS
5240	20	108	5239.992345	5150 – 5250	PASS
5240	50	120	5239.945423	5150 – 5250	PASS
5240	40	120	5239.919664	5150 – 5250	PASS
5240	30	120	5239.989251	5150 – 5250	PASS
5240	20	120	5239.908626	5150 – 5250	PASS
5240	10	120	5239.918773	5150 – 5250	PASS
5240	0	120	5239.963196	5150 – 5250	PASS
5240	-10	120	5240.034797	5150 – 5250	PASS
5240	-20	120	5239.991619	5150 – 5250	PASS
5240	-30	120	5239.930658	5150 – 5250	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5240	20	132	5240.047948	5150 – 5250	PASS
5240	20	108	5240.023073	5150 – 5250	PASS
5240	50	120	5240.014126	5150 – 5250	PASS
5240	40	120	5239.979290	5150 – 5250	PASS
5240	30	120	5239.935032	5150 – 5250	PASS
5240	20	120	5239.966738	5150 – 5250	PASS

5240	10	120	5239.921529	5150 – 5250	PASS
5240	0	120	5239.992689	5150 – 5250	PASS
5240	-10	120	5239.936831	5150 – 5250	PASS
5240	-20	120	5239.985409	5150 – 5250	PASS
5240	-30	120	5240.044446	5150 – 5250	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5190	20	132	5189.982331	5150 – 5250	PASS
5190	20	108	5190.005310	5150 – 5250	PASS
5190	50	120	5189.928000	5150 – 5250	PASS
5190	40	120	5189.916482	5150 – 5250	PASS
5190	30	120	5190.090901	5150 – 5250	PASS
5190	20	120	5189.948550	5150 – 5250	PASS
5190	10	120	5190.064375	5150 – 5250	PASS
5190	0	120	5189.991478	5150 – 5250	PASS
5190	-10	120	5189.954383	5150 – 5250	PASS
5190	-20	120	5189.948067	5150 – 5250	PASS
5190	-30	120	5189.971917	5150 – 5250	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5190	20	132	5190.094043	5150 – 5250	PASS
5190	20	108	5190.022063	5150 – 5250	PASS
5190	50	120	5190.092920	5150 – 5250	PASS
5190	40	120	5189.915851	5150 – 5250	PASS
5190	30	120	5190.020334	5150 – 5250	PASS
5190	20	120	5189.967095	5150 – 5250	PASS
5190	10	120	5189.957361	5150 – 5250	PASS
5190	0	120	5190.011171	5150 – 5250	PASS
5190	-10	120	5190.084782	5150 – 5250	PASS
5190	-20	120	5190.003701	5150 – 5250	PASS
5190	-30	120	5190.008376	5150 – 5250	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5230	20	132	5229.951720	5150 – 5250	PASS
5230	20	108	5229.915030	5150 – 5250	PASS
5230	50	120	5230.008555	5150 – 5250	PASS
5230	40	120	5230.014598	5150 – 5250	PASS
5230	30	120	5230.051336	5150 – 5250	PASS

5230	20	120	5229.900184	5150 – 5250	PASS
5230	10	120	5229.956772	5150 – 5250	PASS
5230	0	120	5229.982528	5150 – 5250	PASS
5230	-10	120	5230.011197	5150 – 5250	PASS
5230	-20	120	5230.024399	5150 – 5250	PASS
5230	-30	120	5230.030977	5150 – 5250	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5230	20	132	5229.960484	5150 – 5250	PASS
5230	20	108	5229.951003	5150 – 5250	PASS
5230	50	120	5230.007437	5150 – 5250	PASS
5230	40	120	5229.996608	5150 – 5250	PASS
5230	30	120	5229.919300	5150 – 5250	PASS
5230	20	120	5229.991410	5150 – 5250	PASS
5230	10	120	5230.051501	5150 – 5250	PASS
5230	0	120	5229.911462	5150 – 5250	PASS
5230	-10	120	5229.918529	5150 – 5250	PASS
5230	-20	120	5230.019633	5150 – 5250	PASS
5230	-30	120	5229.955522	5150 – 5250	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5210	20	132	5209.913770	5150 – 5250	PASS
5210	20	108	5210.074039	5150 – 5250	PASS
5210	50	120	5210.084451	5150 – 5250	PASS
5210	40	120	5209.956068	5150 – 5250	PASS
5210	30	120	5210.048968	5150 – 5250	PASS
5210	20	120	5210.004526	5150 – 5250	PASS
5210	10	120	5209.922055	5150 – 5250	PASS
5210	0	120	5210.053833	5150 – 5250	PASS
5210	-10	120	5210.058067	5150 – 5250	PASS
5210	-20	120	5209.975039	5150 – 5250	PASS
5210	-30	120	5210.039951	5150 – 5250	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5210	20	132	5210.017300	5150 – 5250	PASS
5210	20	108	5209.954555	5150 – 5250	PASS
5210	50	120	5210.013165	5150 – 5250	PASS
5210	40	120	5210.049635	5150 – 5250	PASS

5210	30	120	5210.010014	5150 – 5250	PASS
5210	20	120	5209.993432	5150 – 5250	PASS
5210	10	120	5209.981287	5150 – 5250	PASS
5210	0	120	5209.984275	5150 – 5250	PASS
5210	-10	120	5210.069722	5150 – 5250	PASS
5210	-20	120	5209.958484	5150 – 5250	PASS
5210	-30	120	5210.091188	5150 – 5250	PASS

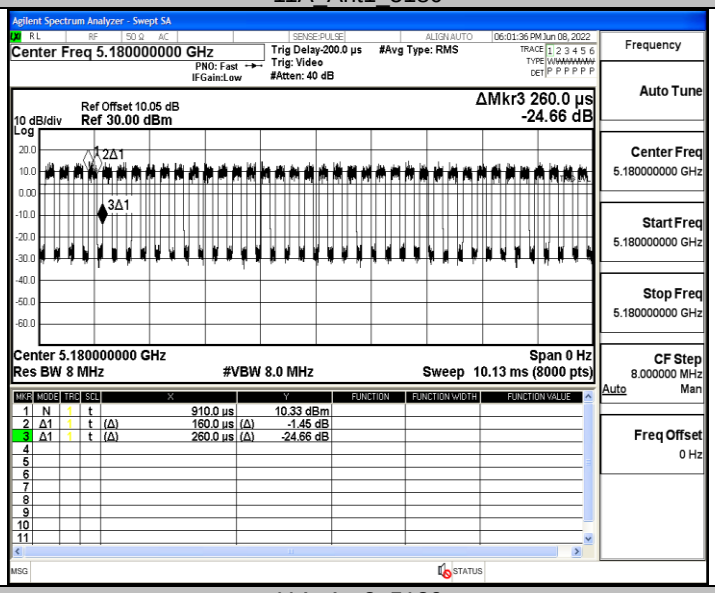
Appendix F: Duty Cycle

Test Result

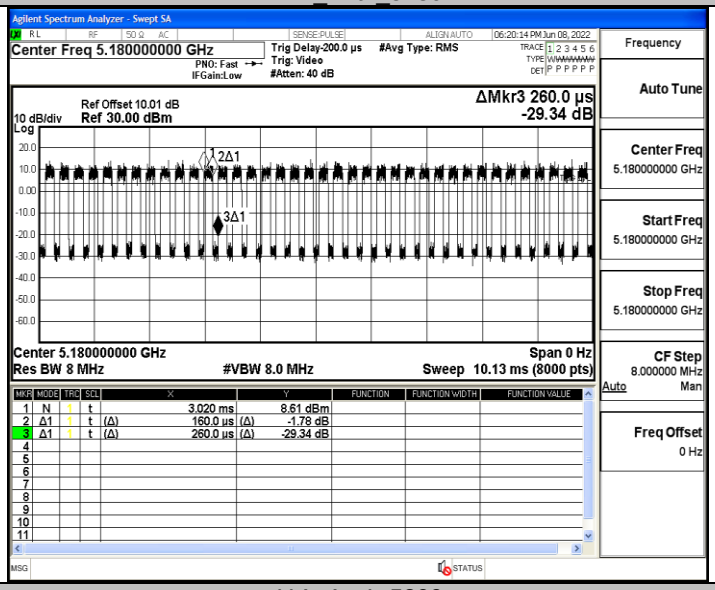
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T [kHz]
11A	Ant1	5180	0.16	0.26	61.54	6.25
	Ant2	5180	0.16	0.26	61.54	6.25
	Ant1	5200	0.16	0.26	61.54	6.25
	Ant2	5200	0.17	0.27	62.96	5.88
	Ant1	5240	0.16	0.26	61.54	6.25
	Ant2	5240	0.16	0.26	61.54	6.25
11N20MIMO	Ant1	5180	0.17	0.27	62.96	5.88
	Ant2	5180	0.17	0.27	62.96	5.88
	Ant1	5200	0.16	0.26	61.54	6.25
	Ant2	5200	0.16	0.26	61.54	6.25
	Ant1	5240	0.16	0.26	61.54	6.25
	Ant2	5240	0.16	0.26	61.54	6.25
11N40MIMO	Ant1	5190	0.09	0.19	47.37	11.11
	Ant2	5190	0.10	0.20	50.00	10.00
	Ant1	5230	0.10	0.20	50.00	10.00
	Ant2	5230	0.10	0.20	50.00	10.00
11AC20MIMO	Ant1	5180	0.36	0.46	78.26	2.78
	Ant2	5180	0.36	0.46	78.26	2.78
	Ant1	5200	0.36	0.46	78.26	2.78
	Ant2	5200	0.36	0.46	78.26	2.78
	Ant1	5240	0.36	0.46	78.26	2.78
	Ant2	5240	0.36	0.46	78.26	2.78
11AC40MIMO	Ant1	5190	0.09	0.19	47.37	11.11
	Ant2	5190	0.09	0.19	47.37	11.11
	Ant1	5230	0.09	0.19	47.37	11.11
	Ant2	5230	0.09	0.19	47.37	11.11
11AC80MIMO	Ant1	5210	0.06	0.16	37.50	16.67
	Ant2	5210	0.07	0.17	41.18	14.29
11AX20MIMO	Ant1	5180	0.12	0.22	54.55	8.33
	Ant2	5180	0.12	0.22	54.55	8.33
	Ant1	5200	0.12	0.22	54.55	8.33
	Ant2	5200	0.12	0.22	54.55	8.33
	Ant1	5240	0.12	0.22	54.55	8.33
	Ant2	5240	0.12	0.22	54.55	8.33
11AX40MIMO	Ant1	5190	0.09	0.19	47.37	11.11
	Ant2	5190	0.08	0.18	44.44	12.50
	Ant1	5230	0.09	0.19	47.37	11.11
	Ant2	5230	0.09	0.19	47.37	11.11
11AX80MIMO	Ant1	5210	0.08	0.18	44.44	12.50
	Ant2	5210	0.08	0.18	44.44	12.50

Test Graphs

11A_Ant1_5180



11A_Ant2_5180



11A_Ant1_5200