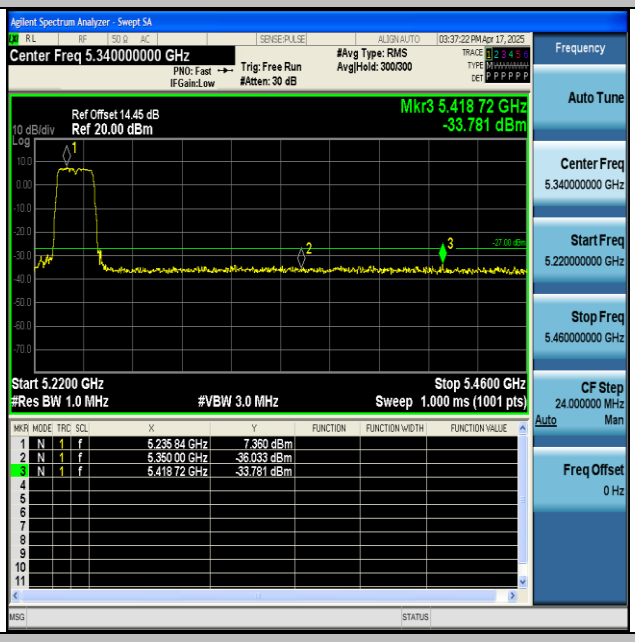
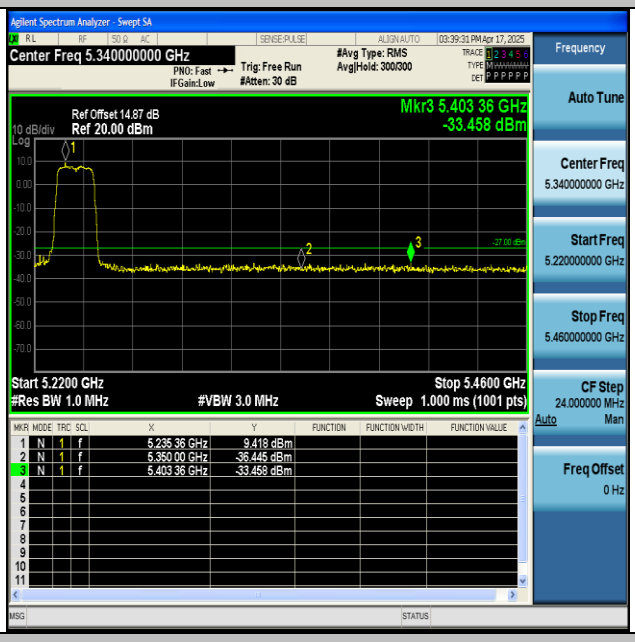
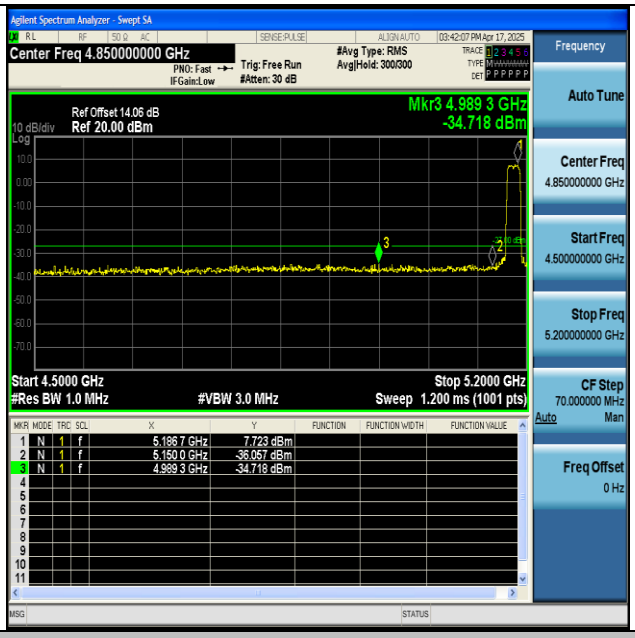
11N20MIMO-Ant2-5180-PASS



11N20MIMO-Ant1-5240-PASS



11N20MIMO-Ant2-5240-PASS



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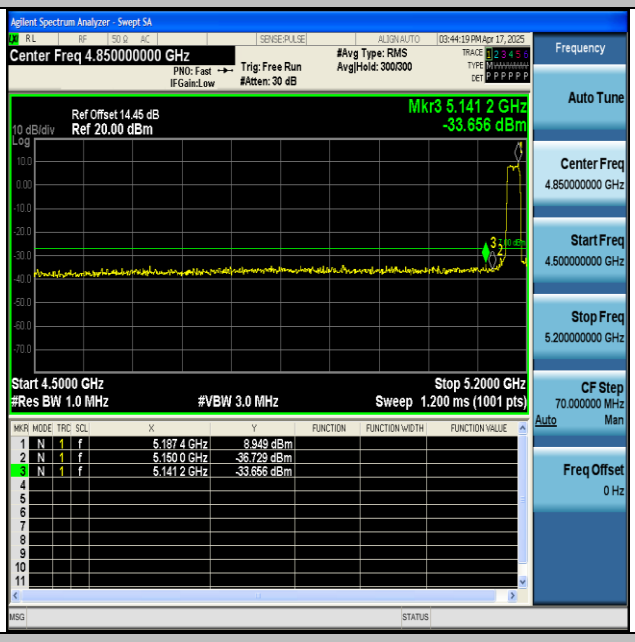
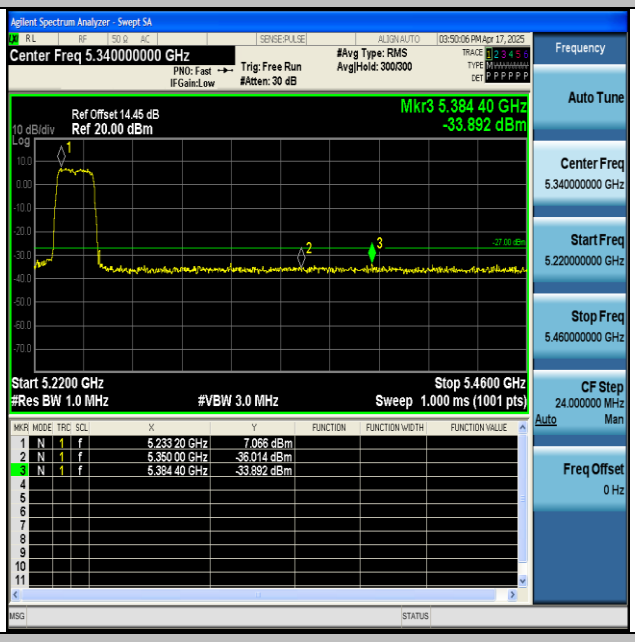
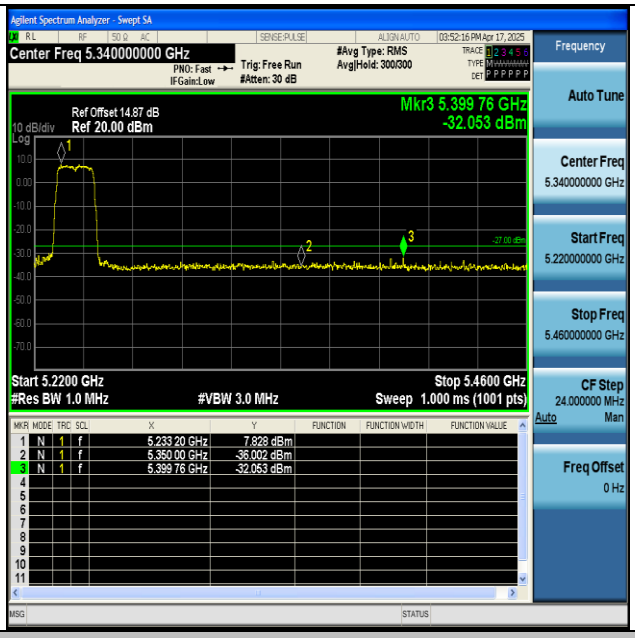


11AC20MIMO-Ant2-5180-PASS



11AC20MIMO-Ant1-5240-PASS



11AC20MIMO-Ant2-5240-PASS

Appendix E: Frequency Stability

Test Result

Ant1

Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5180	20	8.5	5180.005129	5150 – 5250	PASS
5180	20	6.9	5179.969335	5150 – 5250	PASS
5180	50	7.7	5180.034933	5150 – 5250	PASS
5180	40	7.7	5179.961207	5150 – 5250	PASS
5180	30	7.7	5179.944016	5150 – 5250	PASS
5180	20	7.7	5179.953366	5150 – 5250	PASS
5180	10	7.7	5179.926704	5150 – 5250	PASS
5180	0	7.7	5179.968161	5150 – 5250	PASS
5180	-10	7.7	5180.093015	5150 – 5250	PASS
5180	-20	7.7	5179.977630	5150 – 5250	PASS
5180	-30	7.7	5179.939434	5150 – 5250	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5180	20	8.5	5179.943117	5150 – 5250	PASS
5180	20	6.9	5180.089708	5150 – 5250	PASS
5180	50	7.7	5179.927032	5150 – 5250	PASS
5180	40	7.7	5180.079981	5150 – 5250	PASS
5180	30	7.7	5179.955466	5150 – 5250	PASS
5180	20	7.7	5180.093140	5150 – 5250	PASS
5180	10	7.7	5180.076612	5150 – 5250	PASS
5180	0	7.7	5179.939233	5150 – 5250	PASS
5180	-10	7.7	5180.015180	5150 – 5250	PASS
5180	-20	7.7	5179.904034	5150 – 5250	PASS
5180	-30	7.7	5179.974530	5150 – 5250	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5200	20	8.5	5199.946412	5150 – 5250	PASS
5200	20	6.9	5200.094176	5150 – 5250	PASS
5200	50	7.7	5200.039637	5150 – 5250	PASS
5200	40	7.7	5199.934464	5150 – 5250	PASS
5200	30	7.7	5200.037124	5150 – 5250	PASS
5200	20	7.7	5200.046432	5150 – 5250	PASS
5200	10	7.7	5199.944760	5150 – 5250	PASS
5200	0	7.7	5199.947695	5150 – 5250	PASS
5200	-10	7.7	5199.921535	5150 – 5250	PASS
5200	-20	7.7	5200.068697	5150 – 5250	PASS
5200	-30	7.7	5200.019136	5150 – 5250	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5200	20	8.5	5200.015771	5150 – 5250	PASS
5200	20	6.9	5200.084972	5150 – 5250	PASS
5200	50	7.7	5199.970996	5150 – 5250	PASS
5200	40	7.7	5200.057669	5150 – 5250	PASS
5200	30	7.7	5199.983715	5150 – 5250	PASS
5200	20	7.7	5200.020240	5150 – 5250	PASS
5200	10	7.7	5200.055100	5150 – 5250	PASS
5200	0	7.7	5199.999311	5150 – 5250	PASS
5200	-10	7.7	5199.942525	5150 – 5250	PASS
5200	-20	7.7	5200.051667	5150 – 5250	PASS
5200	-30	7.7	5199.901170	5150 – 5250	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5240	20	8.5	5240.022422	5150 – 5250	PASS
5240	20	6.9	5239.979973	5150 – 5250	PASS
5240	50	7.7	5239.911140	5150 – 5250	PASS
5240	40	7.7	5240.011221	5150 – 5250	PASS
5240	30	7.7	5240.076001	5150 – 5250	PASS
5240	20	7.7	5240.097196	5150 – 5250	PASS
5240	10	7.7	5239.964981	5150 – 5250	PASS
5240	0	7.7	5239.934266	5150 – 5250	PASS
5240	-10	7.7	5239.964559	5150 – 5250	PASS
5240	-20	7.7	5240.005501	5150 – 5250	PASS
5240	-30	7.7	5239.949387	5150 – 5250	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5240	20	8.5	5240.092594	5150 – 5250	PASS
5240	20	6.9	5240.034917	5150 – 5250	PASS
5240	50	7.7	5239.995319	5150 – 5250	PASS
5240	40	7.7	5239.907488	5150 – 5250	PASS
5240	30	7.7	5240.094972	5150 – 5250	PASS
5240	20	7.7	5239.992698	5150 – 5250	PASS
5240	10	7.7	5240.010046	5150 – 5250	PASS
5240	0	7.7	5239.900120	5150 – 5250	PASS
5240	-10	7.7	5239.941660	5150 – 5250	PASS
5240	-20	7.7	5239.973675	5150 – 5250	PASS
5240	-30	7.7	5240.081840	5150 – 5250	PASS

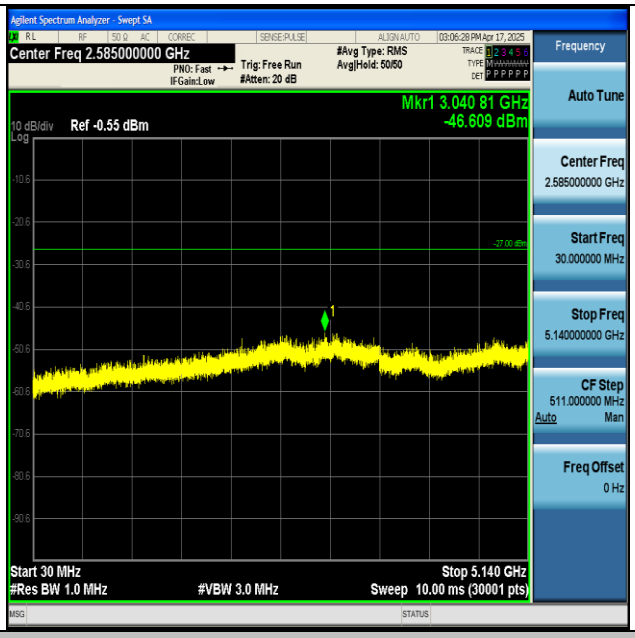
Appendix F: Conducted Spurious Emission

Test Result

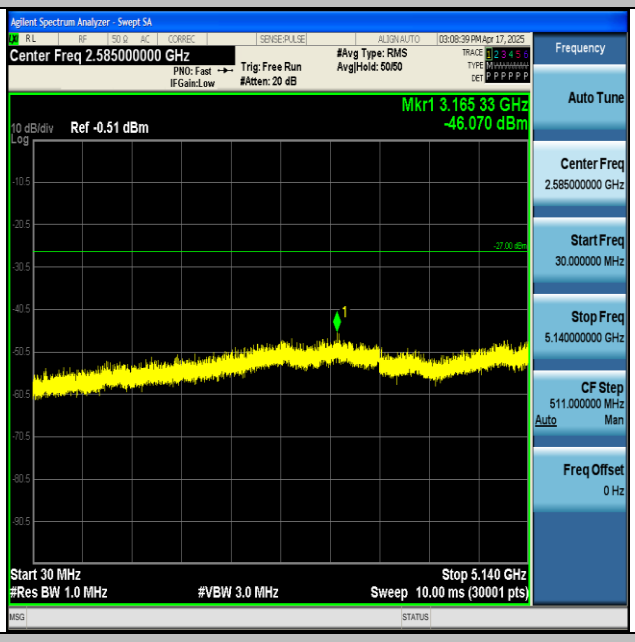
TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	Max. Fre [MHz]	Max. Level [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	30~5140	3040.81	-46.61	≤-27	PASS
11A	Ant2	5180	30~5140	3165.33	-46.07	≤-27	PASS
11A	Ant1	5180	5360~40000	26901.18	-39.34	≤-27	PASS
11A	Ant2	5180	5360~40000	26863.67	-39.91	≤-27	PASS
11A	Ant1	5200	30~5140	2641.72	-46.81	≤-27	PASS
11A	Ant2	5200	30~5140	1928.71	-43.38	≤-27	PASS
11A	Ant1	5200	5360~40000	26099.78	-39.49	≤-27	PASS
11A	Ant2	5200	5360~40000	25011.28	-38.62	≤-27	PASS
11A	Ant1	5240	30~5140	3596.1	-45.87	≤-27	PASS
11A	Ant2	5240	30~5140	3038.6	-46.92	≤-27	PASS
11A	Ant1	5240	5360~40000	24639.08	-40.27	≤-27	PASS
11A	Ant2	5240	5360~40000	26123.58	-40.14	≤-27	PASS
11N20MIMO	Ant1	5180	30~5140	2555.19	-46.86	≤-27	PASS
11N20MIMO	Ant2	5180	30~5140	2665.74	-46.8	≤-27	PASS
11N20MIMO	Ant1	5180	5360~40000	25099.29	-40.19	≤-27	PASS
11N20MIMO	Ant2	5180	5360~40000	25998.07	-39.3	≤-27	PASS
11N20MIMO	Ant1	5200	30~5140	3013.22	-45.9	≤-27	PASS
11N20MIMO	Ant2	5200	30~5140	3502.76	-46.44	≤-27	PASS
11N20MIMO	Ant1	5200	5360~40000	26020.43	-39.29	≤-27	PASS
11N20MIMO	Ant2	5200	5360~40000	26128.63	-38.45	≤-27	PASS
11N20MIMO	Ant1	5240	30~5140	2542.93	-45.33	≤-27	PASS
11N20MIMO	Ant2	5240	30~5140	2574.27	-42.33	≤-27	PASS
11N20MIMO	Ant1	5240	5360~40000	26839.14	-39.63	≤-27	PASS
11N20MIMO	Ant2	5240	5360~40000	26152.43	-39.5	≤-27	PASS
11AC20MIMO	Ant1	5180	30~5140	2547.87	-44.45	≤-27	PASS
11AC20MIMO	Ant2	5180	30~5140	2606.8	-44.52	≤-27	PASS
11AC20MIMO	Ant1	5180	5360~40000	25560.94	-39.78	≤-27	PASS
11AC20MIMO	Ant2	5180	5360~40000	25571.76	-39.48	≤-27	PASS
11AC20MIMO	Ant1	5200	30~5140	3144.03	-46.38	≤-27	PASS
11AC20MIMO	Ant2	5200	30~5140	1925.81	-45.28	≤-27	PASS
11AC20MIMO	Ant1	5200	5360~40000	25023.55	-39.62	≤-27	PASS
11AC20MIMO	Ant2	5200	5360~40000	24553.24	-38.78	≤-27	PASS
11AC20MIMO	Ant1	5240	30~5140	3019.18	-46.69	≤-27	PASS
11AC20MIMO	Ant2	5240	30~5140	1924.11	-44.85	≤-27	PASS
11AC20MIMO	Ant1	5240	5360~40000	26067.32	-39.38	≤-27	PASS
11AC20MIMO	Ant2	5240	5360~40000	26125.74	-39.89	≤-27	PASS

Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 40 GHz, the cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.

Test Graphs



11A-Ant1-5180-30~5140-PASS



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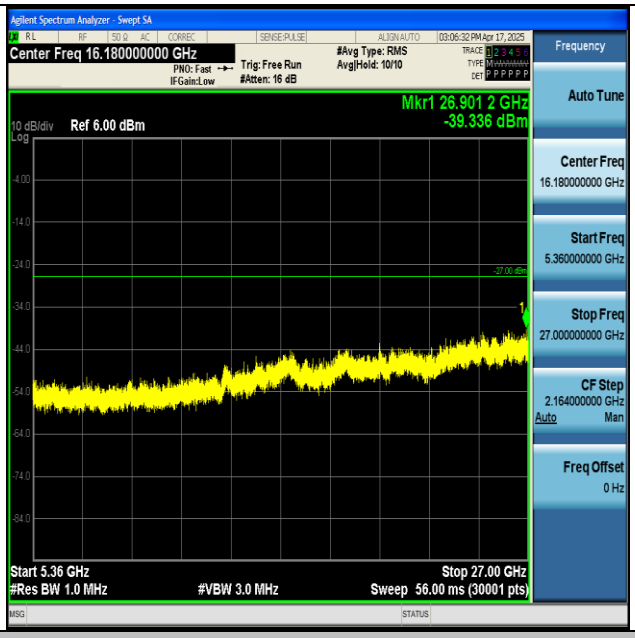

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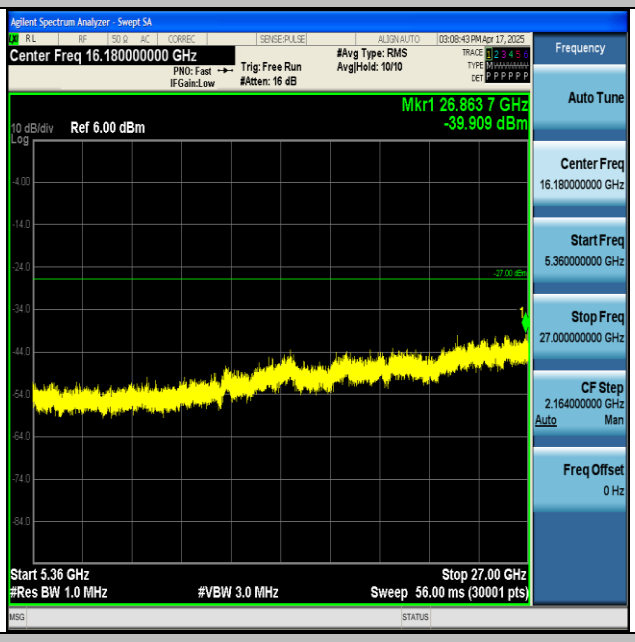

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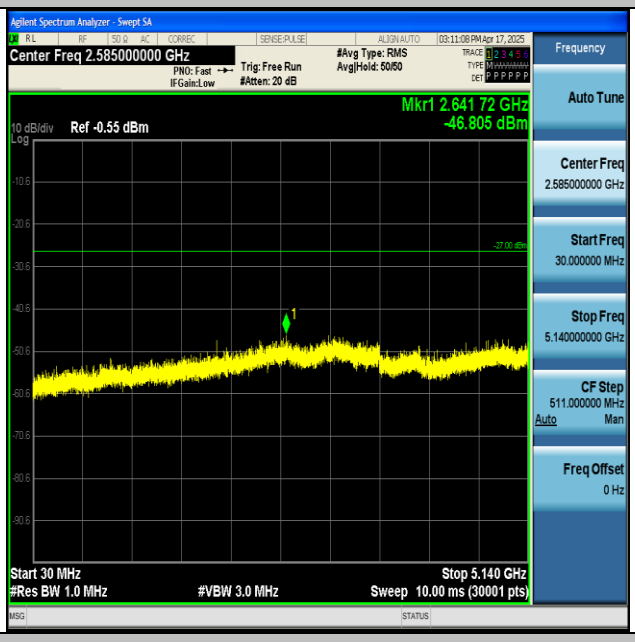

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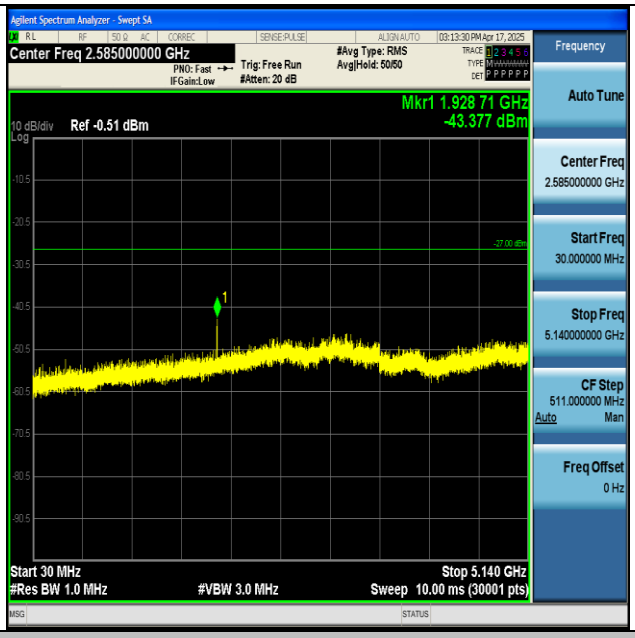

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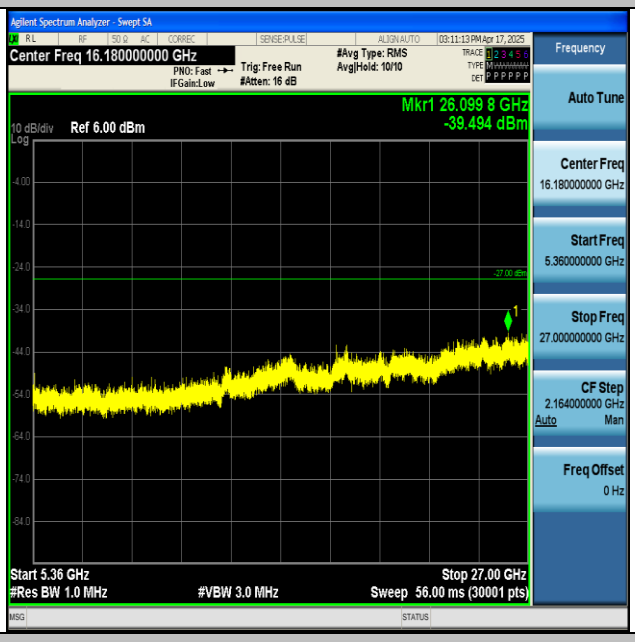

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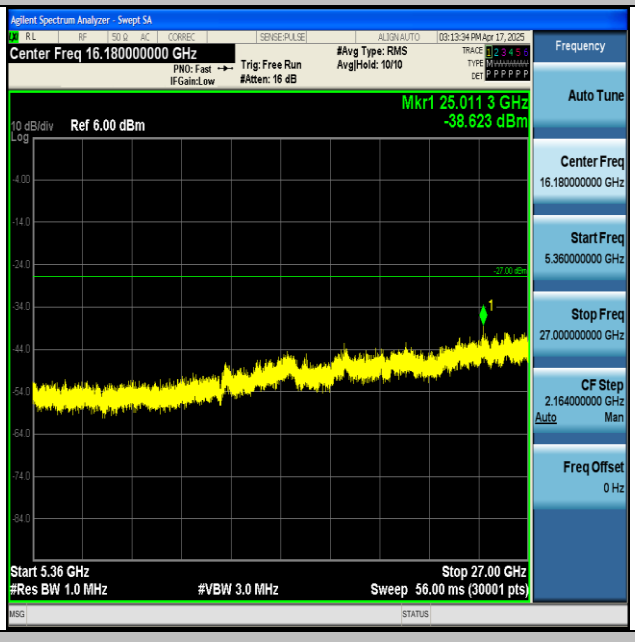

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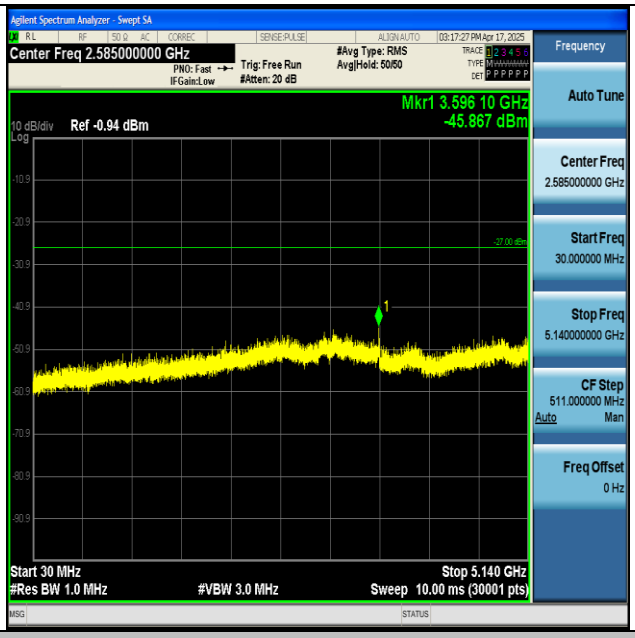

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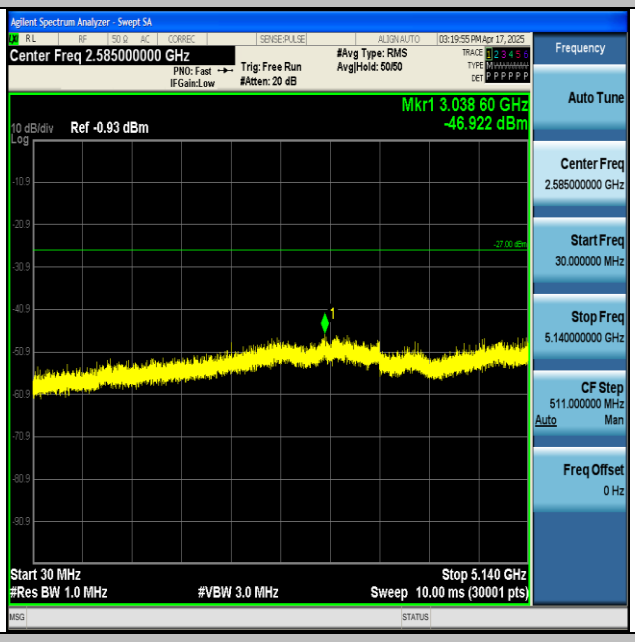

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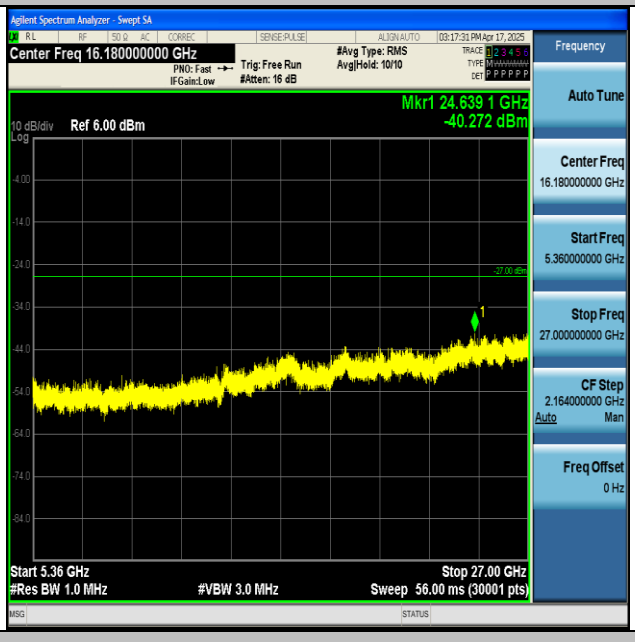
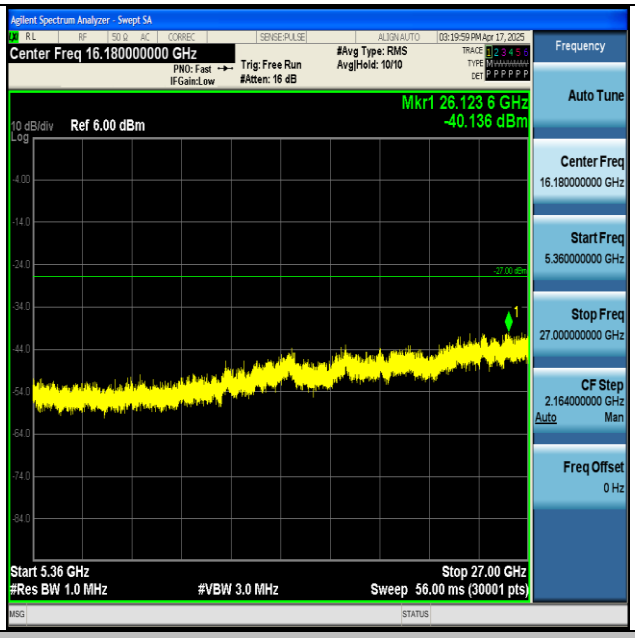


11A-Ant1-5240-5360~40000-PASS



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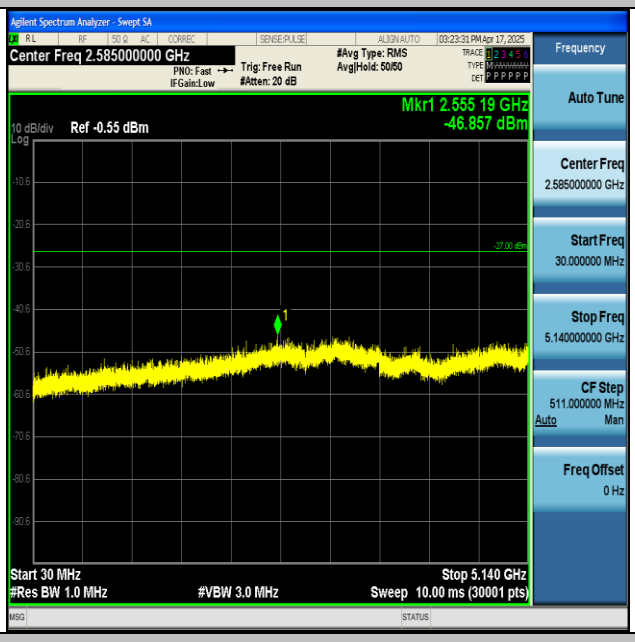
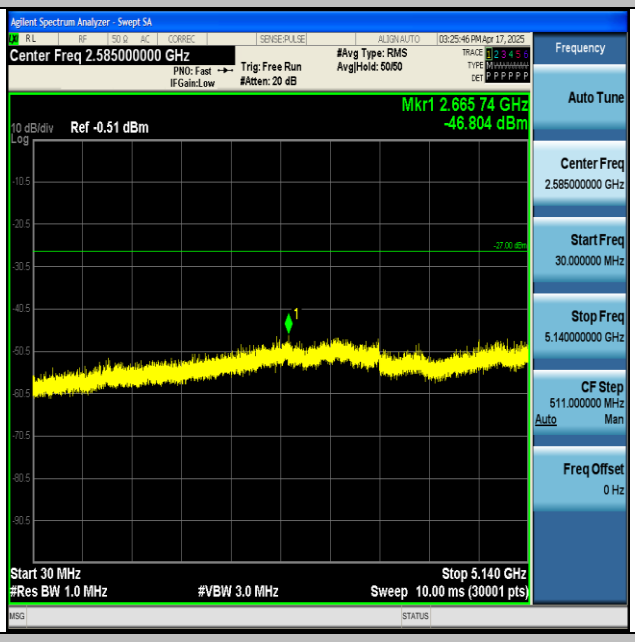
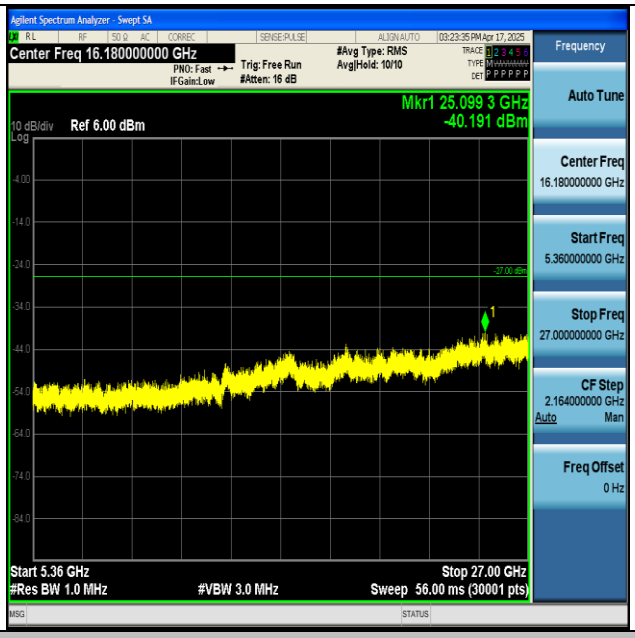


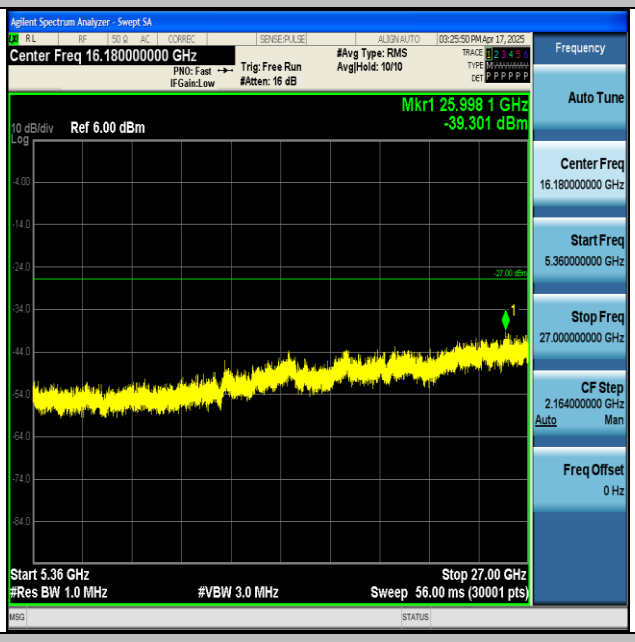
11N20MIMO-Ant1-5180-30~5140-PASS



11N20MIMO-Ant2-5180-30~5140-PASS



11N20MIMO-Ant1-5180-5360~40000-PASS



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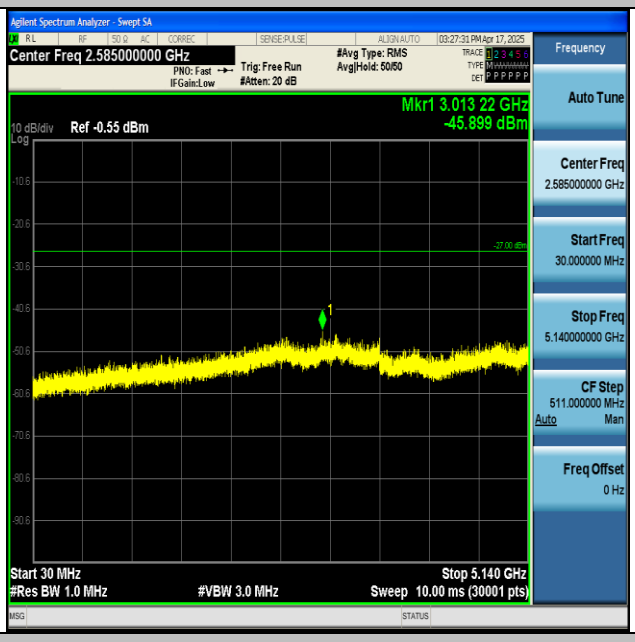
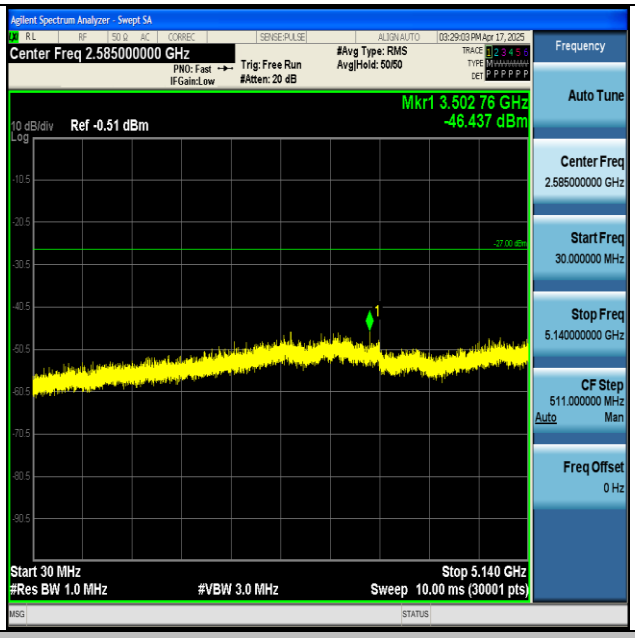
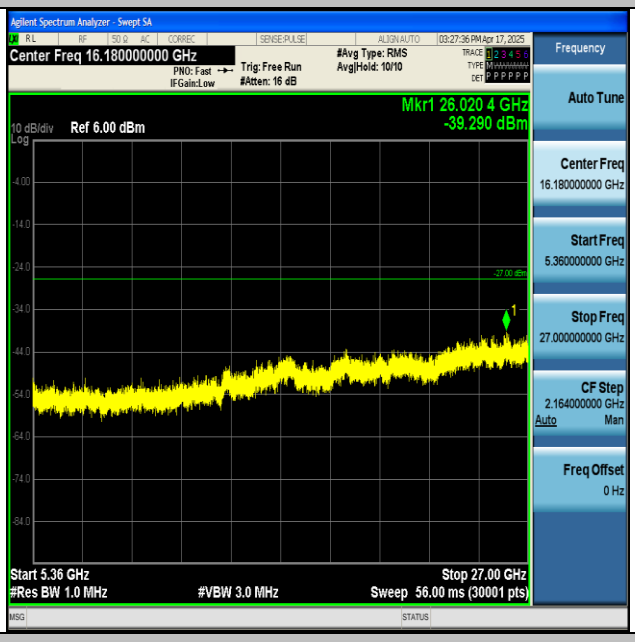


11N20MIMO-Ant1-5200-30~5140-PASS



11N20MIMO-Ant2-5200-30~5140-PASS



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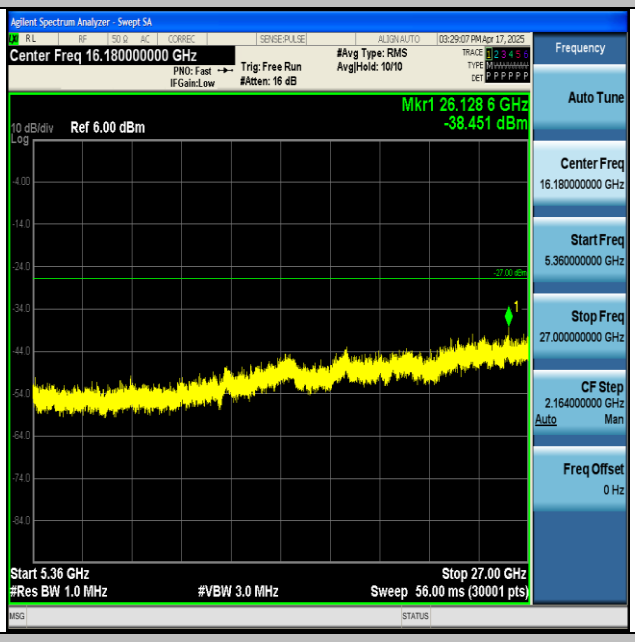

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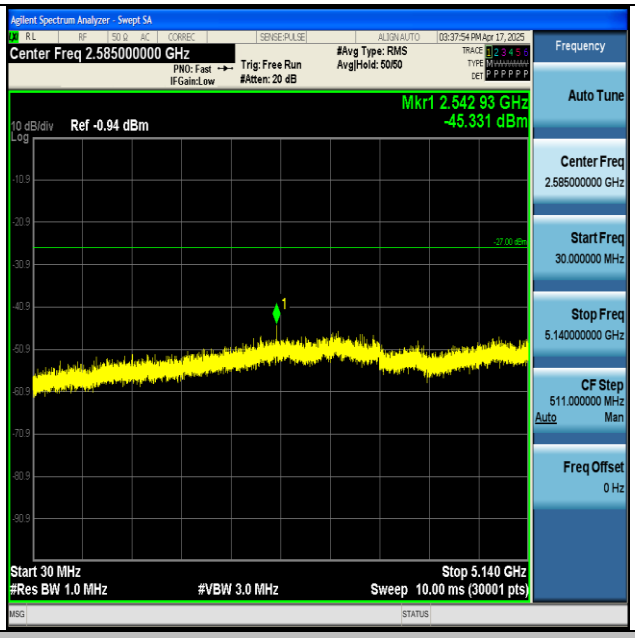
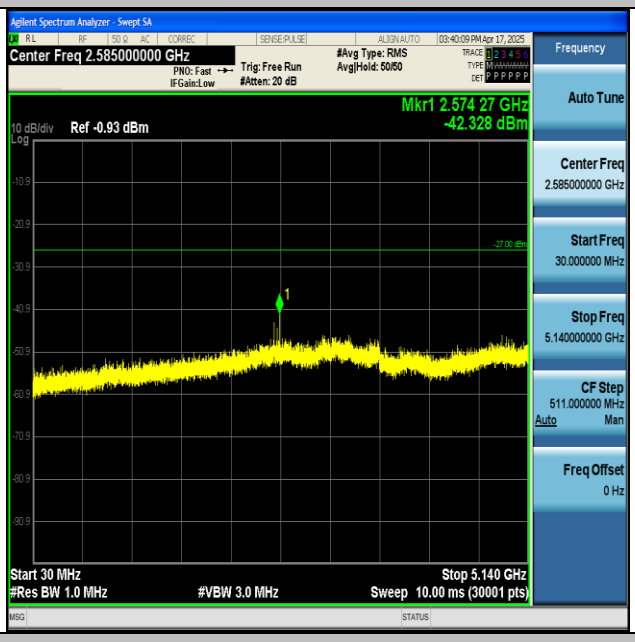
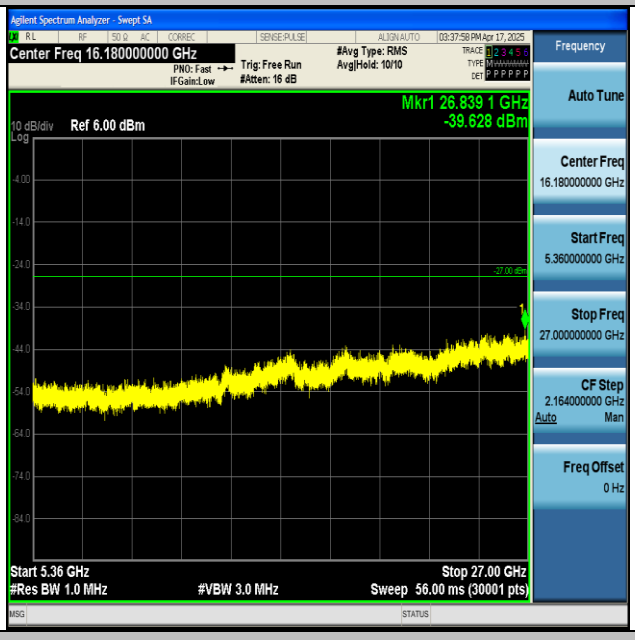


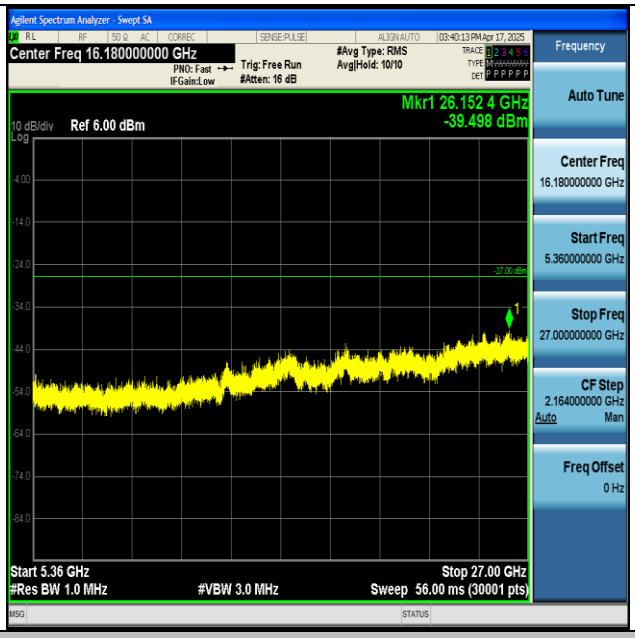
11N20MIMO-Ant1-5240-30~5140-PASS



11N20MIMO-Ant2-5240-30~5140-PASS



11N20MIMO-Ant1-5240-5360~40000-PASS



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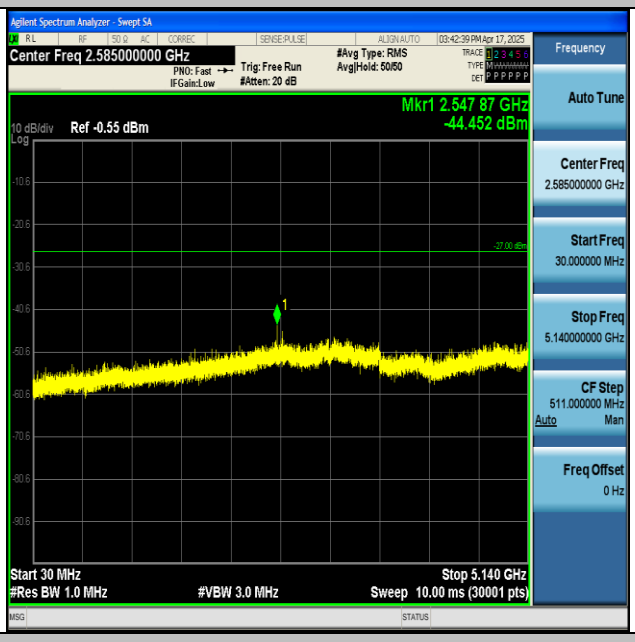
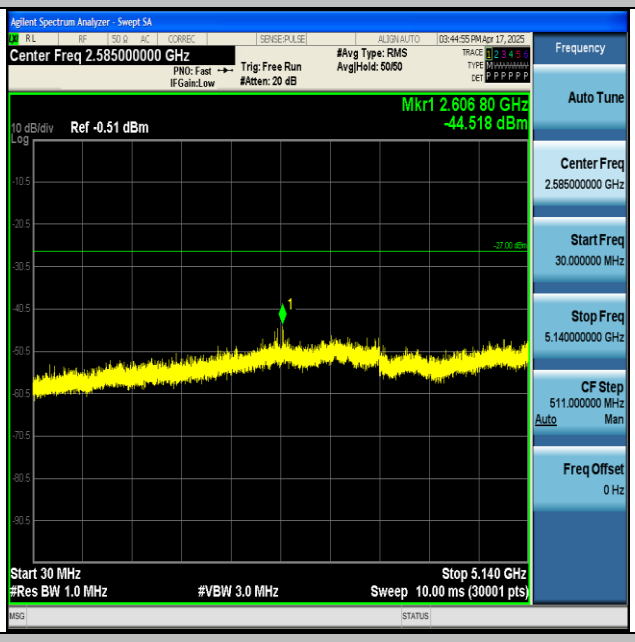


11AC20MIMO-Ant1-5180-30~5140-PASS



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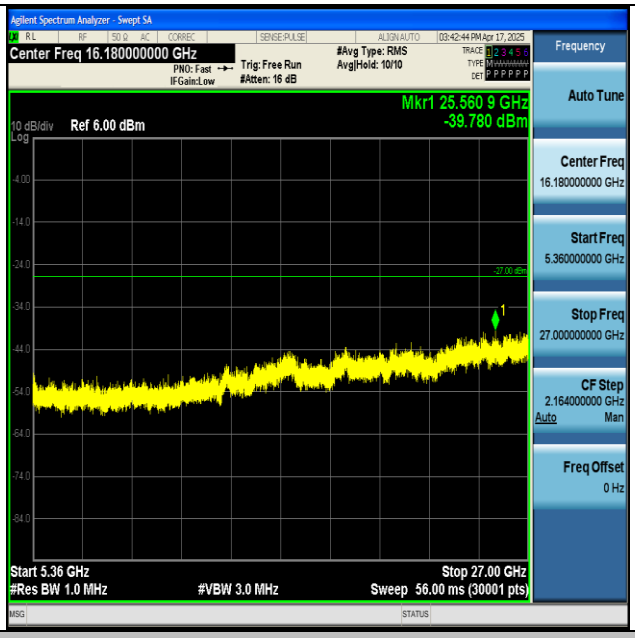
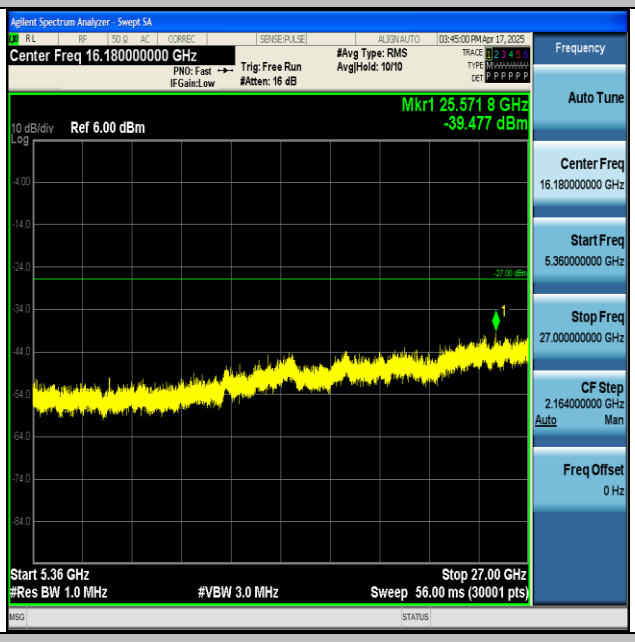


11AC20MIMO-Ant1-5180-5360~40000-PASS



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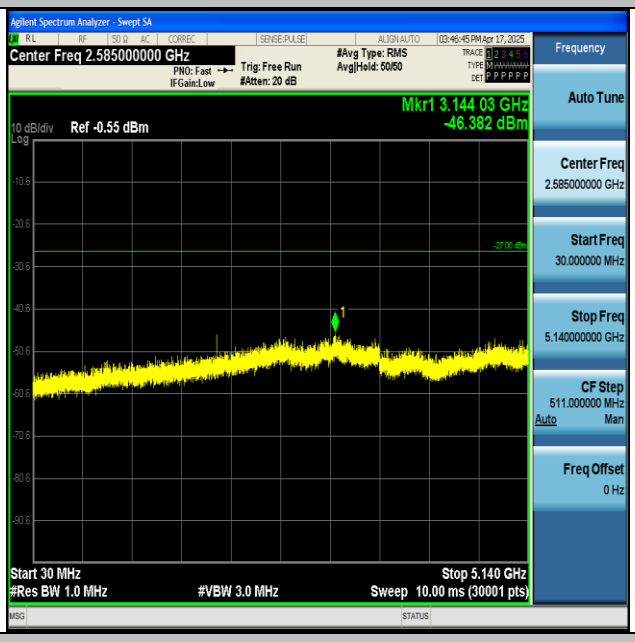
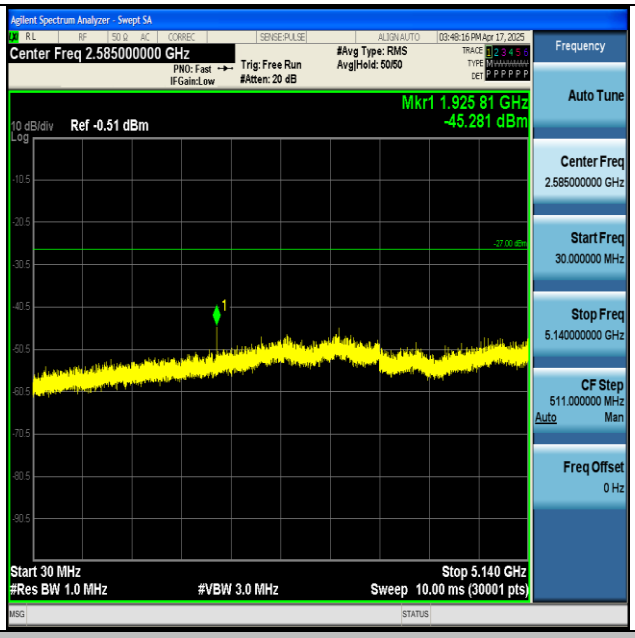


11AC20MIMO-Ant1-5200-30~5140-PASS



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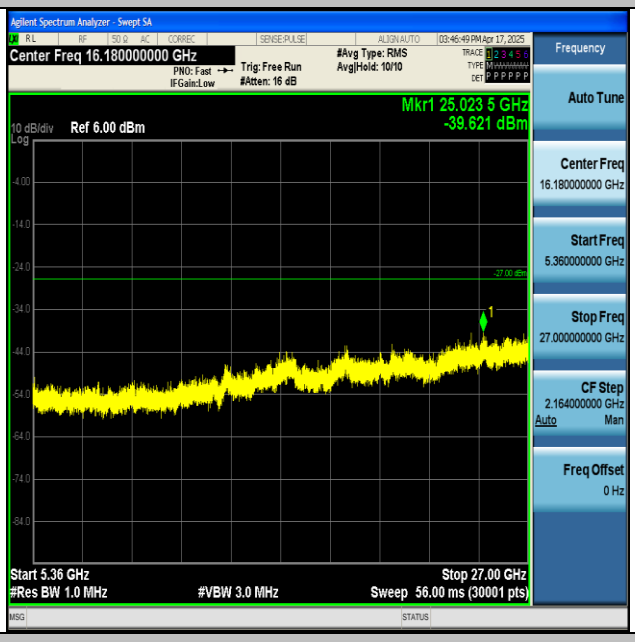
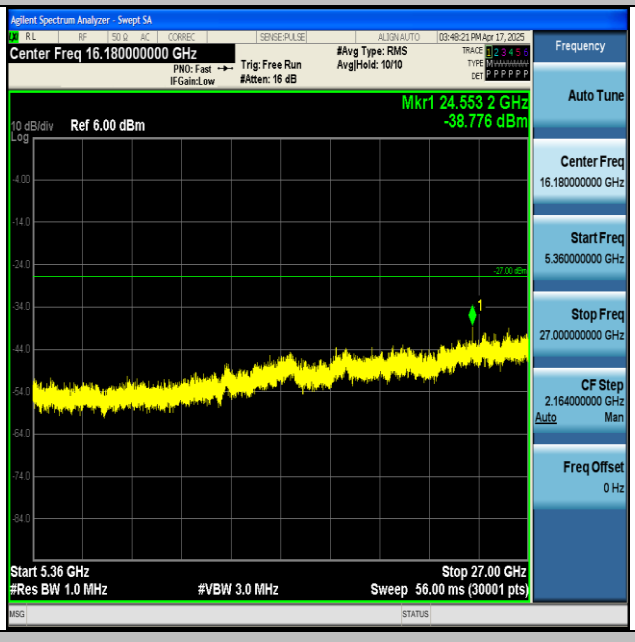
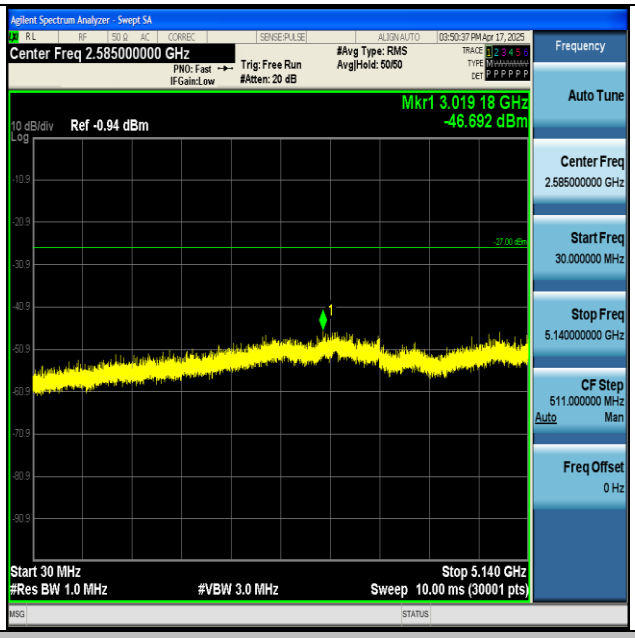


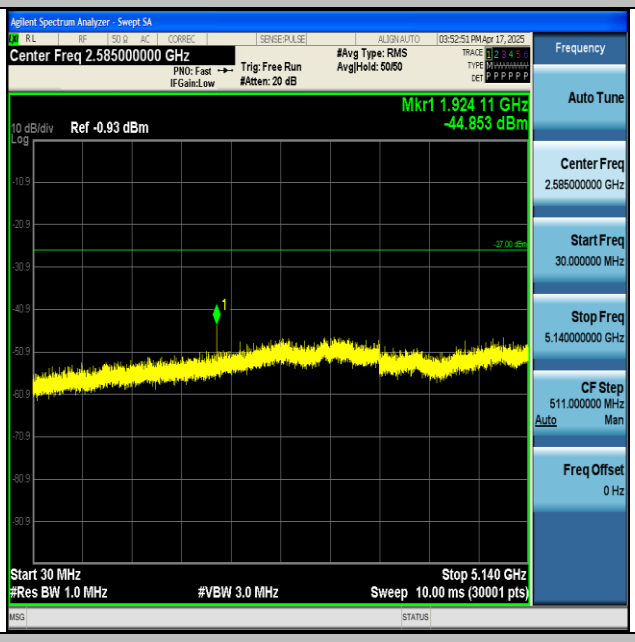
11AC20MIMO-Ant1-5200-5360~40000-PASS



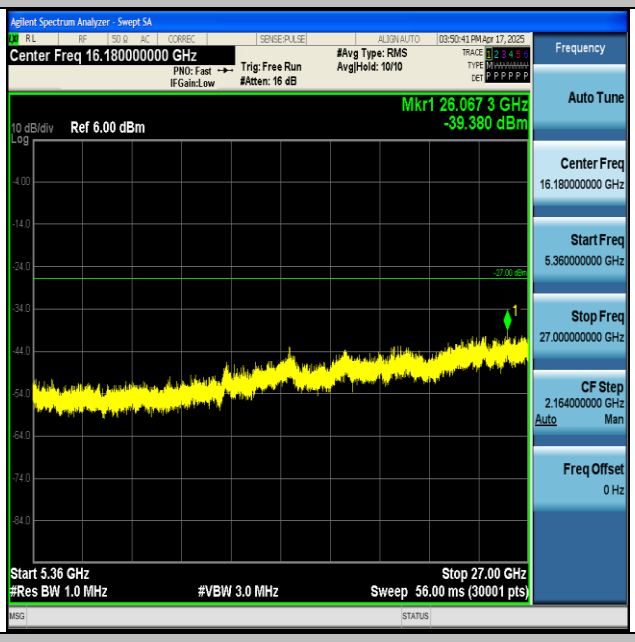
11AC20MIMO-Ant2-5200-5360~40000-PASS



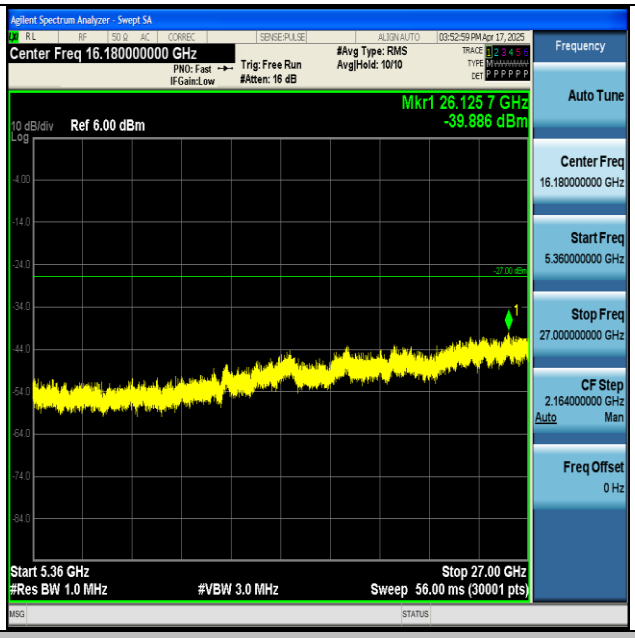
11AC20MIMO-Ant1-5240-30~5140-PASS



11AC20MIMO-Ant2-5240-30~5140-PASS



11AC20MIMO-Ant1-5240-5360~40000-PASS



11AC20MIMO-Ant2-5240-5360~40000-PASS

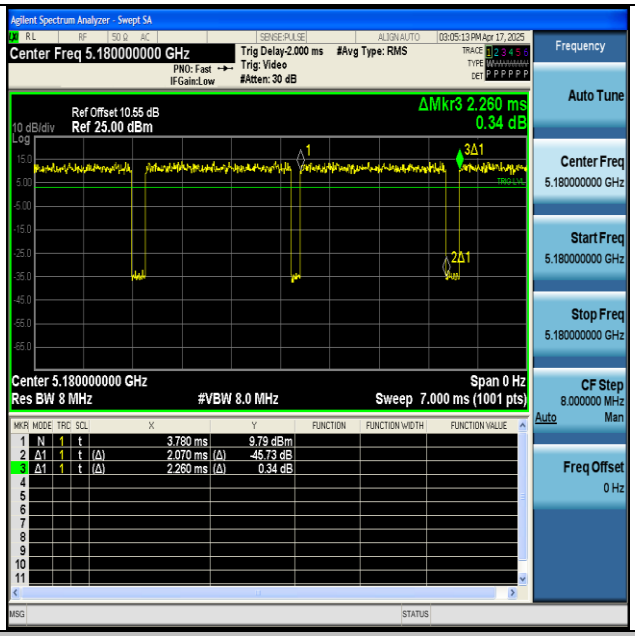
Appendix G: Duty Cycle

Test Result

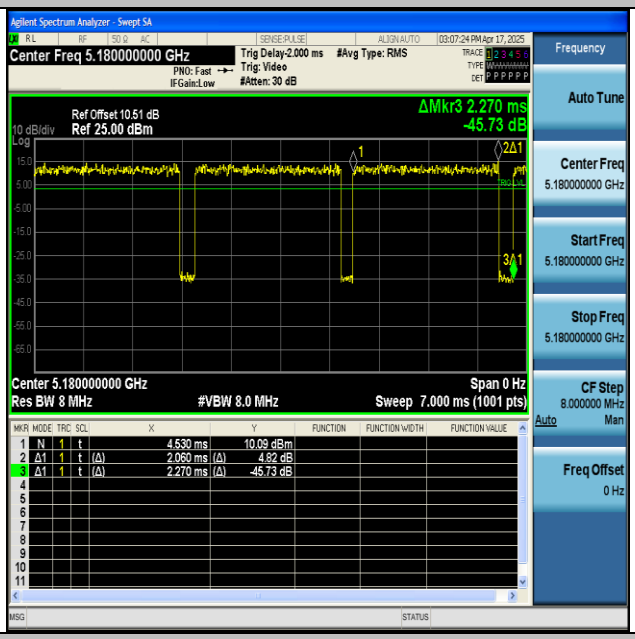
Test Mode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Dc. Factor [%]	1/T [kHz]
11A	Ant1	5180	2.07	2.26	91.59	0.38	0.48
11A	Ant2	5180	2.06	2.27	90.75	0.42	0.49
11A	Ant1	5200	2.07	2.30	90.00	0.46	0.48
11A	Ant2	5200	2.06	2.20	93.64	0.29	0.49
11A	Ant1	5240	2.06	2.29	89.96	0.46	0.49
11A	Ant2	5240	2.07	2.26	91.59	0.38	0.48
11N20MIMO	Ant1	5180	1.92	2.13	90.14	0.45	0.52
11N20MIMO	Ant2	5180	1.92	2.15	89.30	0.49	0.52
11N20MIMO	Ant1	5200	1.92	2.05	93.66	0.28	0.52
11N20MIMO	Ant2	5200	1.93	2.16	89.35	0.49	0.52
11N20MIMO	Ant1	5240	1.93	2.10	91.90	0.37	0.52
11N20MIMO	Ant2	5240	1.92	2.13	90.14	0.45	0.52
11AC20MIMO	Ant1	5180	1.94	2.19	88.58	0.53	0.52
11AC20MIMO	Ant2	5180	1.94	2.14	90.65	0.43	0.52
11AC20MIMO	Ant1	5200	1.93	2.07	93.24	0.30	0.52
11AC20MIMO	Ant2	5200	1.93	2.16	89.35	0.49	0.52
11AC20MIMO	Ant1	5240	1.94	2.17	89.40	0.49	0.52
11AC20MIMO	Ant2	5240	1.94	2.17	89.40	0.49	0.52

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

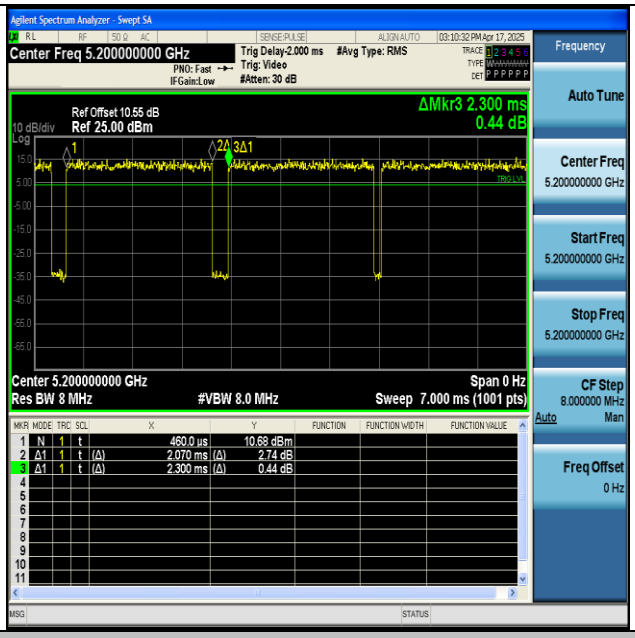
Test Graphs



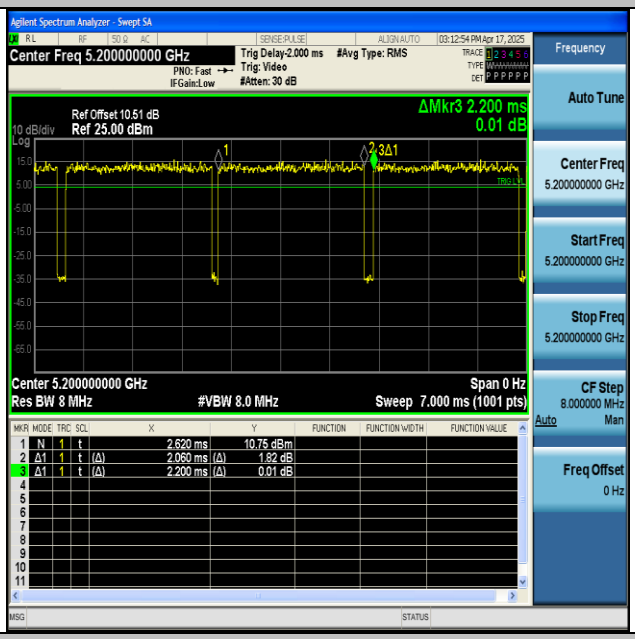
NTNV-11A-Ant1-5180



NTNV-11A-Ant2-5180



NTNV-11A-Ant1-5200



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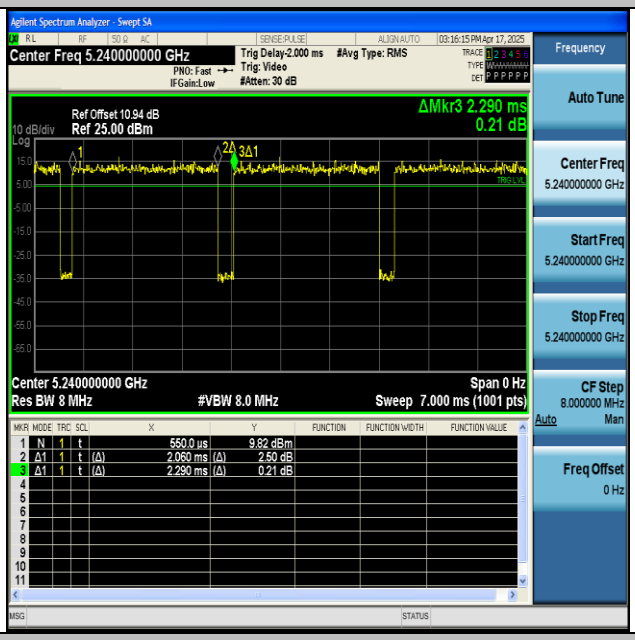

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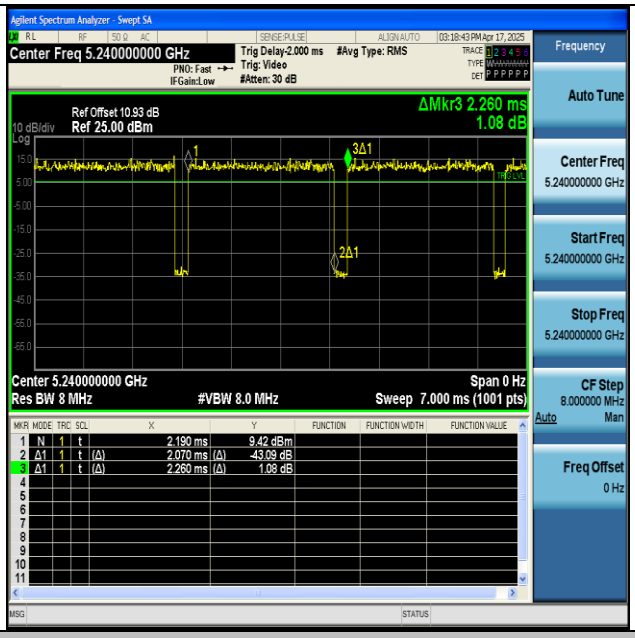
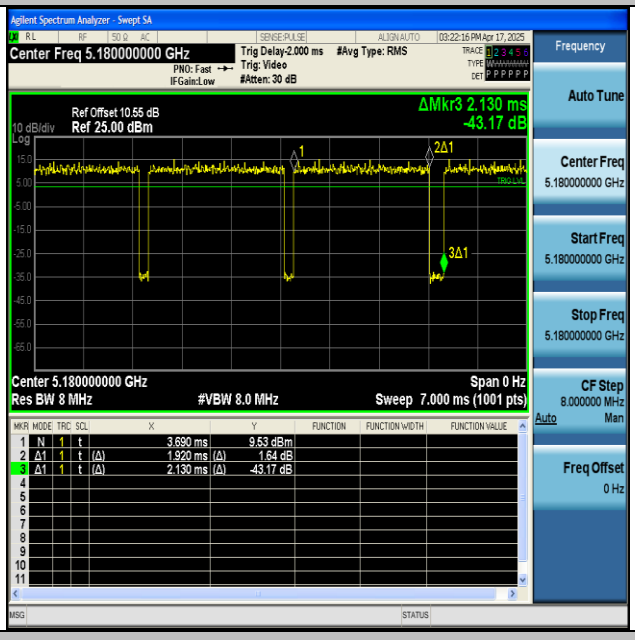
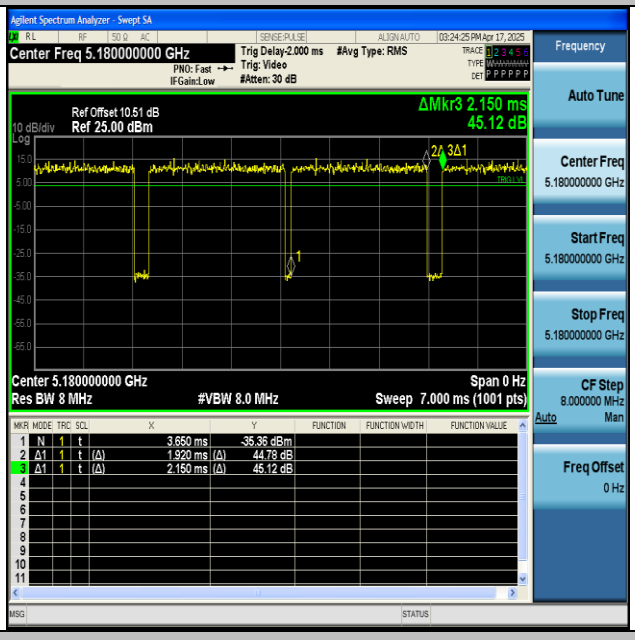


NTNV-11A-Ant2-5240



NTNV-11N20MIMO-Ant1-5180



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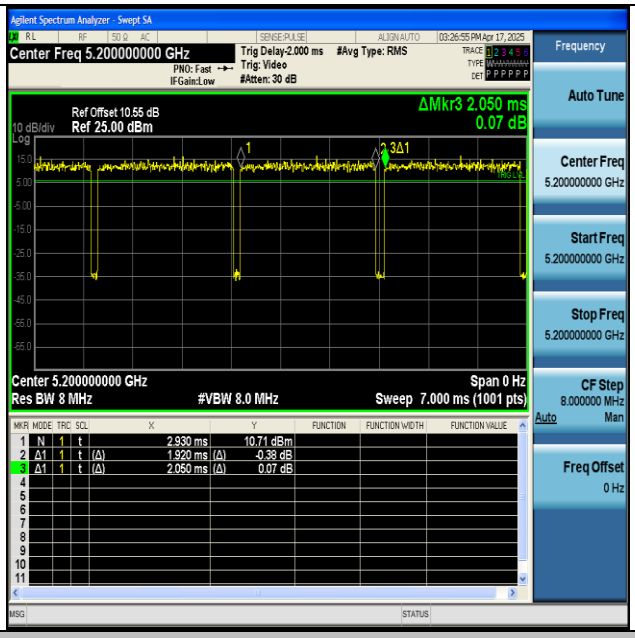

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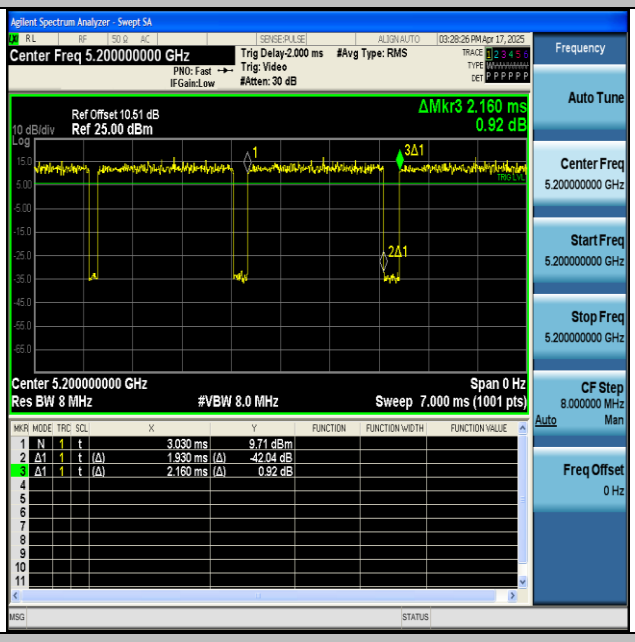

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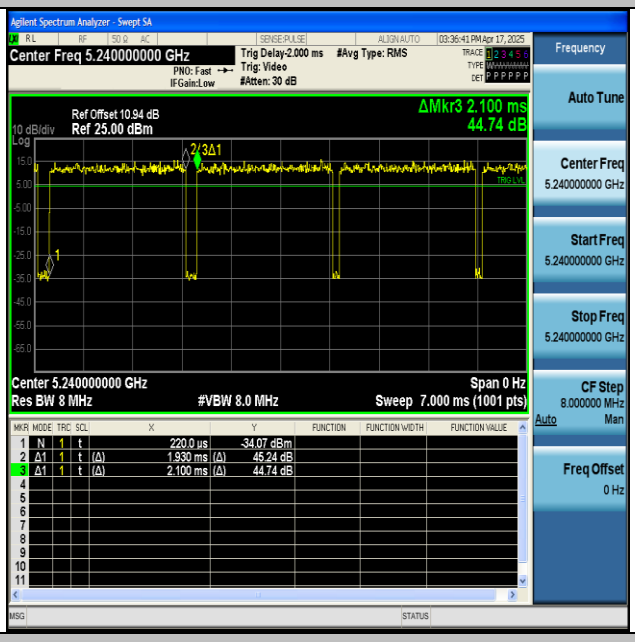

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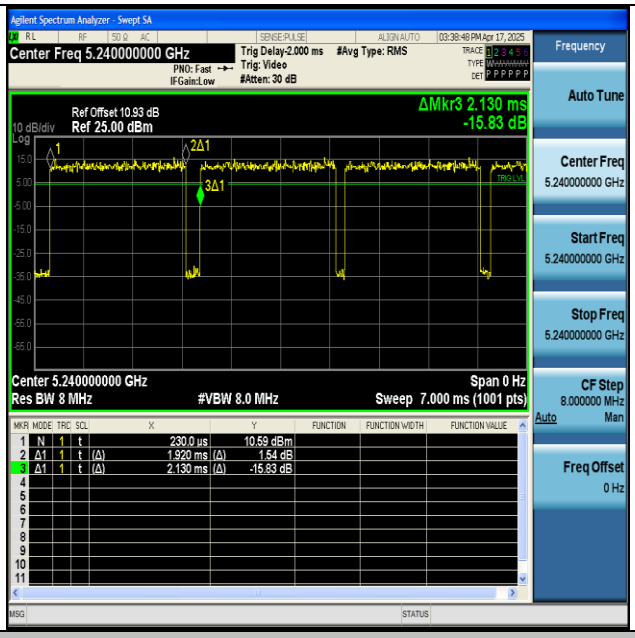

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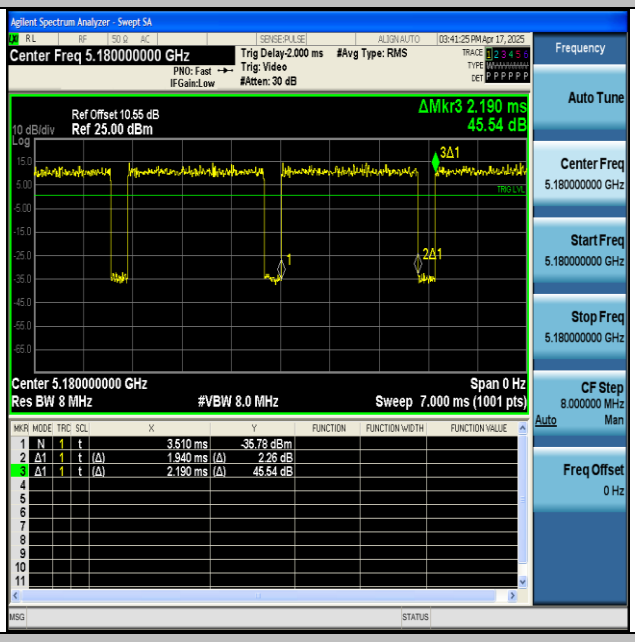

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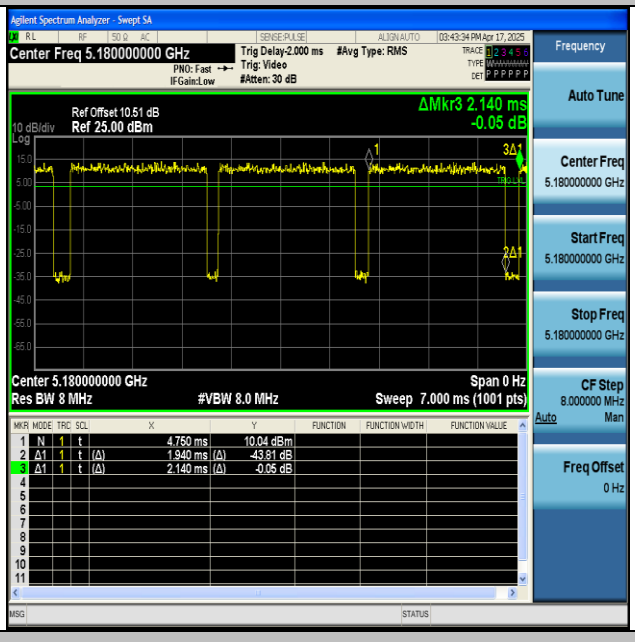

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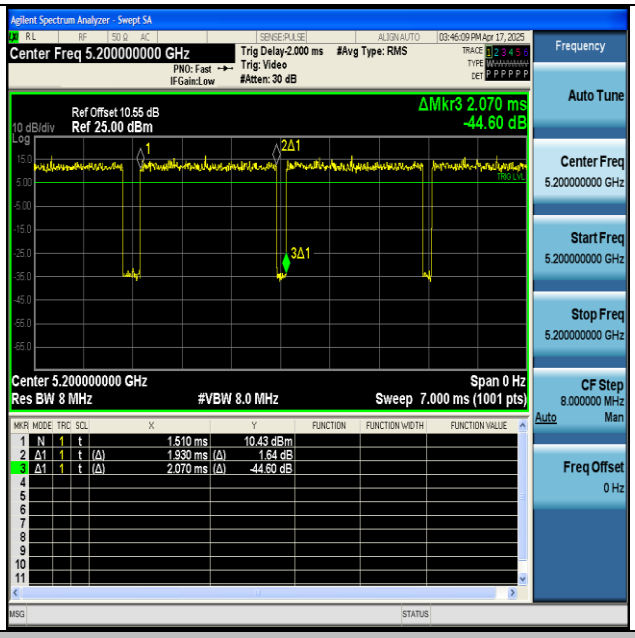
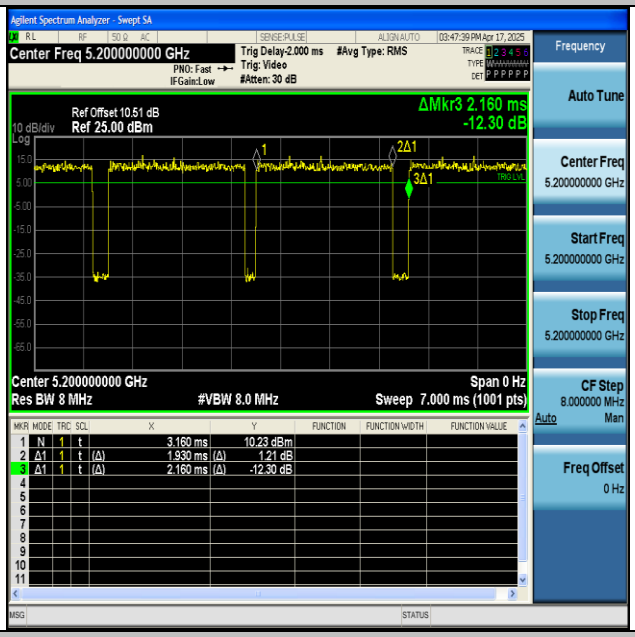


NTNV-11AC20MIMO-Ant1-5200



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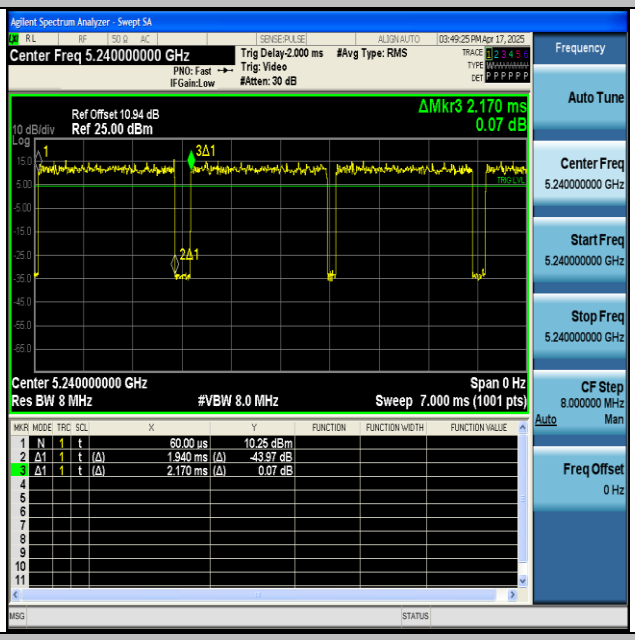

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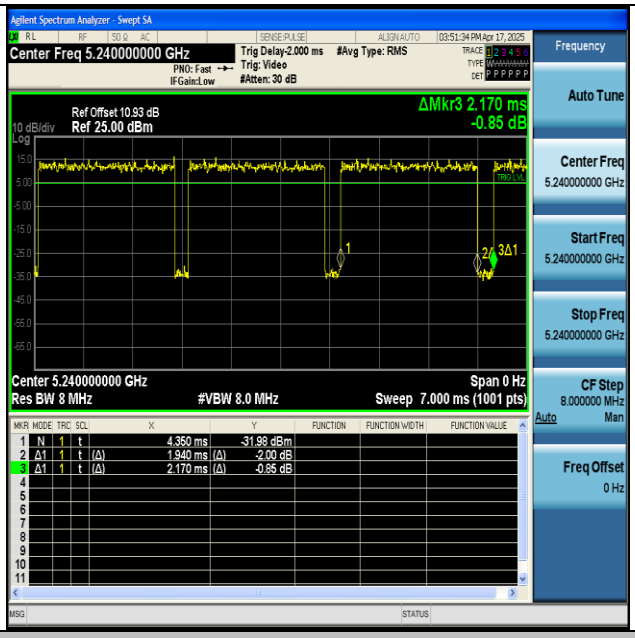

NTNV-11AC20MIMO-Ant2-5240