3.5 Power Spectral Density

3.5.1 Limit

FCC Part15, Subpart E (15.407)			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(a)	Power Spectral Density	Master device: 17 dBm/MHz Client device: 11 dBm/MHz	5150-5250
		11 dBm/MHz	5250-5350
		11 dBm/MHz	5470-5725
		30 dBm/500 kHz	5725-5850

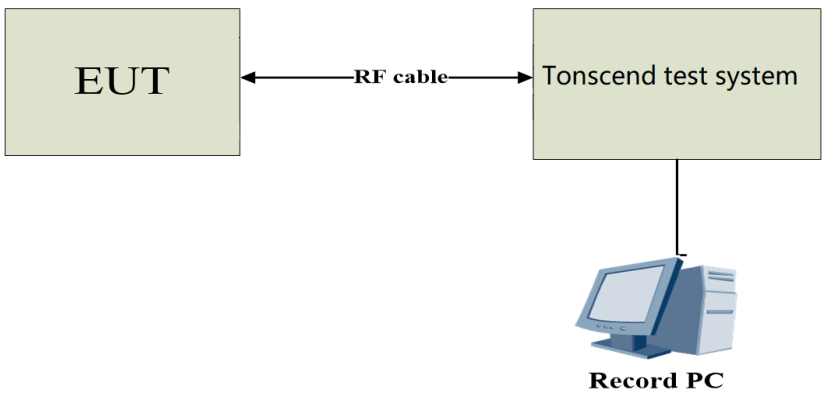
3.5.2 Test Procedure

Test Method	
●Conducted Measurement	○Radiated Measurement
Test Channels	
●Lowest, Middle and Highest Channel	○ Lowest and Highest Channel
Environmental conditions	
●Normal	○Normal and Extreme
Note:●:Test ○:No Test	

a) The EUT was directly connected to the tonscend test system and antenna output port as show in the block diagram below. Spectrum analyser settings as following:

Centre Frequency	The centre frequency of the channel under test
RBW	= 1 MHz (Band1/2/3); = 300kHz (Band4)
VBW	≥3 x RBW
Frequency span	2 x Nominal Channel Bandwidth
Detector Mode	RMS
Trace Mode	Max Hold
Sweep Time	Auto Couple

3.5.3 Test Setup



3.5.4 The Result

TestMode	Antenna	Frequency[MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A-CDD	Ant1	5180	13.97	≤17.00	PASS
	Ant2	5180	8.20	≤17.00	PASS
	total	5180	14.99	≤17.00	PASS
	Ant1	5200	14.00	≤17.00	PASS
	Ant2	5200	12.34	≤17.00	PASS
	total	5200	16.26	≤17.00	PASS
	Ant1	5240	14.76	≤17.00	PASS
	Ant2	5240	12.8	≤17.00	PASS
	total	5240	16.90	≤17.00	PASS
	Ant1	5260	8.35	≤11.00	PASS
	Ant2	5260	6.86	≤11.00	PASS
	total	5260	10.68	≤11.00	PASS
	Ant1	5280	7.94	≤11.00	PASS
	Ant2	5280	7.16	≤11.00	PASS
	total	5280	10.58	≤11.00	PASS
	Ant1	5320	7.49	≤11.00	PASS
	Ant2	5320	6.37	≤11.00	PASS
	total	5320	9.98	≤11.00	PASS
	Ant1	5500	6.84	≤10.10	PASS
	Ant2	5500	5.97	≤10.10	PASS
	total	5500	9.44	≤10.10	PASS
	Ant1	5580	6.57	≤10.10	PASS
	Ant2	5580	5.01	≤10.10	PASS
	total	5580	8.87	≤10.10	PASS
	Ant1	5700	7.66	≤10.10	PASS
	Ant2	5700	5.69	≤10.10	PASS
	total	5700	9.80	≤10.10	PASS
	Ant1	5745	3.77	≤29.29	PASS
	Ant2	5745	8.78	≤29.29	PASS
	total	5745	9.97	≤29.29	PASS
	Ant1	5785	3.84	≤29.29	PASS
	Ant2	5785	8.58	≤29.29	PASS
	total	5785	9.84	≤29.29	PASS
	Ant1	5825	4.32	≤29.29	PASS
	Ant2	5825	8.84	≤29.29	PASS
	total	5825	10.15	≤29.29	PASS
11N20MIMO	Ant1	5180	9.58	≤17.00	PASS
	Ant2	5180	9.67	≤17.00	PASS
	total	5180	12.64	≤17.00	PASS

	Ant1	5200	12.44	≤17.00	PASS
	Ant2	5200	9.43	≤17.00	PASS
	total	5200	14.20	≤17.00	PASS
	Ant1	5240	7.78	≤17.00	PASS
	Ant2	5240	7.75	≤17.00	PASS
	total	5240	10.78	≤17.00	PASS
	Ant1	5260	7.76	≤11.00	PASS
	Ant2	5260	7.51	≤11.00	PASS
	total	5260	10.65	≤11.00	PASS
	Ant1	5280	7.88	≤11.00	PASS
	Ant2	5280	7.60	≤11.00	PASS
	total	5280	10.75	≤11.00	PASS
	Ant1	5320	7.37	≤11.00	PASS
	Ant2	5320	6.70	≤11.00	PASS
	total	5320	10.06	≤11.00	PASS
	Ant1	5500	6.93	≤10.10	PASS
	Ant2	5500	7.29	≤10.10	PASS
	total	5500	10.12	≤10.10	PASS
	Ant1	5580	7.74	≤10.10	PASS
	Ant2	5580	7.23	≤10.10	PASS
	total	5580	10.50	≤10.10	PASS
	Ant1	5700	7.86	≤10.10	PASS
	Ant2	5700	7.43	≤10.10	PASS
	total	5700	10.66	≤10.10	PASS
	Ant1	5745	10.35	≤29.29	PASS
	Ant2	5745	11.01	≤29.29	PASS
	total	5745	13.70	≤29.29	PASS
	Ant1	5825	8.64	≤29.29	PASS
	Ant2	5825	9.05	≤29.29	PASS
	total	5825	11.86	≤29.29	PASS
11N40MIMO	Ant1	5190	9.04	≤17.00	PASS
	Ant2	5190	7.93	≤17.00	PASS
	total	5190	11.53	≤17.00	PASS
	Ant1	5230	9.64	≤17.00	PASS
	Ant2	5230	7.91	≤17.00	PASS
	total	5230	11.87	≤17.00	PASS
	Ant1	5270	8.21	≤11.00	PASS
	Ant2	5270	6.78	≤11.00	PASS
	total	5270	10.56	≤11.00	PASS
	Ant1	5310	8.66	≤11.00	PASS
	Ant2	5310	6.61	≤11.00	PASS
	total	5310	10.77	≤11.00	PASS

	Ant1	5510	5.39	≤10.10	PASS
	Ant2	5510	5.64	≤10.10	PASS
	total	5510	8.53	≤10.10	PASS
	Ant1	5550	5.43	≤10.10	PASS
	Ant2	5550	5.06	≤10.10	PASS
	total	5550	8.26	≤10.10	PASS
	Ant1	5670	5.63	≤10.10	PASS
	Ant2	5670	3.53	≤10.10	PASS
	total	5670	7.72	≤10.10	PASS
	Ant1	5755	7.26	≤29.29	PASS
	Ant2	5755	5.55	≤29.29	PASS
	total	5755	9.50	≤29.29	PASS
	Ant1	5795	4.3	≤29.29	PASS
	Ant2	5795	2.89	≤29.29	PASS
	total	5795	6.66	≤29.29	PASS
11AC80MIMO	Ant1	5210	3.87	≤17.00	PASS
	Ant2	5210	2.21	≤17.00	PASS
	total	5210	6.13	≤17.00	PASS
	Ant1	5290	3.85	≤11.00	PASS
	Ant2	5290	2.82	≤11.00	PASS
	total	5290	6.38	≤11.00	PASS
	Ant1	5530	4.87	≤10.10	PASS
	Ant2	5530	2.91	≤10.10	PASS
	total	5530	7.01	≤10.10	PASS
	Ant1	5610	4.39	≤10.10	PASS
	Ant2	5610	2.73	≤10.10	PASS
	total	5610	6.65	≤10.10	PASS
	Ant1	5775	0.53	≤29.29	PASS
	Ant2	5775	0.90	≤29.29	PASS
	total	5775	3.73	≤29.29	PASS
11AC160MIMO	Ant1	5250_UNII-1	0.32	≤11.00	PASS
	Ant2	5250_UNII-1	-0.82	≤11.00	PASS
	total	5250_UNII-1	2.80	≤11.00	PASS
	Ant1	5250_UNII-2A	-0.16	≤11.00	PASS
	Ant2	5250_UNII-2A	-1.32	≤11.00	PASS
	total	5250_UNII-2A	2.31	≤11.00	PASS
	Ant1	5570	-0.54	≤10.10	PASS
	Ant2	5570	-2.1	≤10.10	PASS
	total	5570	1.76	≤10.10	PASS
11AX20MIMO	Ant1	5180	10.98	≤17.00	PASS
	Ant2	5180	9.63	≤17.00	PASS
	total	5180	13.37	≤17.00	PASS

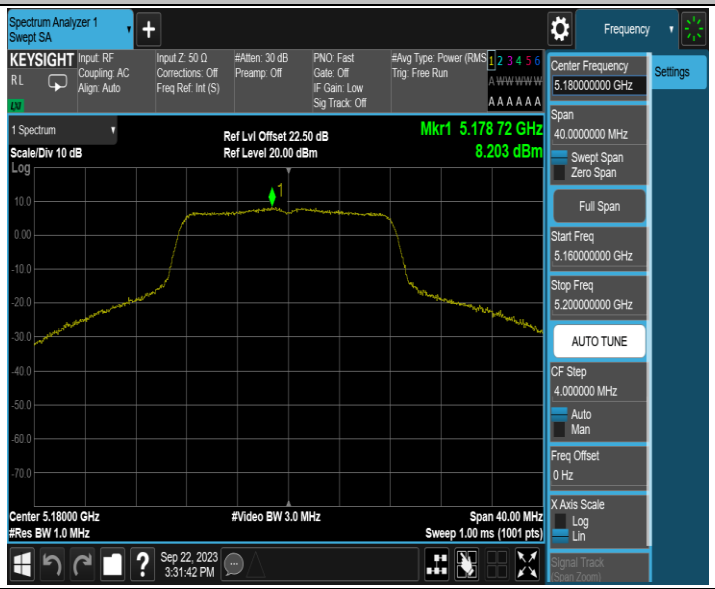
	Ant1	5200	9.10	≤17.00	PASS
	Ant2	5200	9.06	≤17.00	PASS
	total	5200	12.09	≤17.00	PASS
	Ant1	5240	9.43	≤17.00	PASS
	Ant2	5240	9.01	≤17.00	PASS
	total	5240	12.24	≤17.00	PASS
	Ant1	5260	8.24	≤11.00	PASS
	Ant2	5260	7.35	≤11.00	PASS
	total	5260	10.83	≤11.00	PASS
	Ant1	5280	7.37	≤11.00	PASS
	Ant2	5280	7.23	≤11.00	PASS
	total	5280	10.31	≤11.00	PASS
	Ant1	5320	8.06	≤11.00	PASS
	Ant2	5320	6.71	≤11.00	PASS
	total	5320	10.45	≤11.00	PASS
	Ant1	5500	8.42	≤10.10	PASS
	Ant2	5500	6.98	≤10.10	PASS
	total	5500	10.77	≤10.10	PASS
	Ant1	5580	7.73	≤10.10	PASS
	Ant2	5580	7.10	≤10.10	PASS
	total	5580	10.44	≤10.10	PASS
	Ant1	5700	7.66	≤10.10	PASS
	Ant2	5700	5.78	≤10.10	PASS
	total	5700	9.83	≤10.10	PASS
	Ant1	5745	9.87	≤29.29	PASS
	Ant2	5745	8.64	≤29.29	PASS
	total	5745	12.31	≤29.29	PASS
	Ant1	5785	9.44	≤29.29	PASS
	Ant2	5785	8.03	≤29.29	PASS
	total	5785	11.80	≤29.29	PASS
	Ant1	5825	9.27	≤29.29	PASS
	Ant2	5825	8.22	≤29.29	PASS
	total	5825	11.79	≤29.29	PASS
11AX40MIMO	Ant1	5190	7.6	≤17.00	PASS
	Ant2	5190	6.14	≤17.00	PASS
	total	5190	9.94	≤17.00	PASS
	Ant1	5230	7.85	≤17.00	PASS
	Ant2	5230	6.36	≤17.00	PASS
	total	5230	10.18	≤17.00	PASS
	Ant1	5270	6.09	≤11.00	PASS
	Ant2	5270	4.86	≤11.00	PASS
	total	5270	8.53	≤11.00	PASS

	Ant1	5310	5.78	≤11.00	PASS
	Ant2	5310	5.38	≤11.00	PASS
	total	5310	8.59	≤11.00	PASS
	Ant1	5510	5.91	≤10.10	PASS
	Ant2	5510	4.49	≤10.10	PASS
	total	5510	8.27	≤10.10	PASS
	Ant1	5550	5.10	≤10.10	PASS
	Ant2	5550	4.62	≤10.10	PASS
	total	5550	7.88	≤10.10	PASS
	Ant1	5670	6.16	≤10.10	PASS
	Ant2	5670	4.44	≤10.10	PASS
	total	5670	8.39	≤10.10	PASS
	Ant1	5755	7.07	≤29.29	PASS
	Ant2	5755	5.00	≤29.29	PASS
	total	5755	9.17	≤29.29	PASS
	Ant1	5795	6.54	≤29.29	PASS
	Ant2	5795	4.90	≤29.29	PASS
	total	5795	8.81	≤29.29	PASS
11AX80MIMO	Ant1	5210	2.98	≤17.00	PASS
	Ant2	5210	1.74	≤17.00	PASS
	total	5210	5.41	≤17.00	PASS
	Ant1	5290	3.64	≤11.00	PASS
	Ant2	5290	2.63	≤11.00	PASS
	total	5290	6.17	≤11.00	PASS
	Ant1	5530	2.52	≤10.10	PASS
	Ant2	5530	1.47	≤10.10	PASS
	total	5530	5.04	≤10.10	PASS
	Ant1	5610	3.27	≤10.10	PASS
	Ant2	5610	1.39	≤10.10	PASS
	total	5610	5.44	≤10.10	PASS
	Ant1	5775	0.53	≤30.00	PASS
	Ant2	5775	0.90	≤30.00	PASS
	total	5775	3.73	≤30.00	PASS
11AX160MIMO	Ant1	5250_UNII-1	0.63	≤10.10	PASS
	Ant2	5250_UNII-1	-1.19	≤10.10	PASS
	total	5250_UNII-1	2.82	≤10.10	PASS
	Ant1	5250_UNII-2A	1.31	≤10.10	PASS
	Ant2	5250_UNII-2A	-1.09	≤10.10	PASS
	total	5250_UNII-2A	3.28	≤10.10	PASS
	Ant1	5570	-0.25	≤10.10	PASS
	Ant2	5570	-1.6	≤10.10	PASS
	total	5570	2.14	≤10.10	PASS

Note：

1. The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.
2. For UNII-3, according to KDB publication 789033 D02 General UNII Test Procedures New Rules v02r01, section II.F.5., it is acceptable to set RBW at 300kHz and VBW at 1500kHz if the spectrum analyzer does not have 500 kHz RBW. Then, add 10 log (500 kHz/300 kHz) to the measured result, i.e. 2.22 dB.
3. During the test of U-NII 3 PSD, the measurement result with RBW=300kHz has been added 2.22 dB by compensating offset, offset=cable loss+duty factor+10log(500kHz/300kHz).
4. Note: The results have compensated for the Duty Cycle Correction Factor.

11A-CDD_Ant1_5180

11A-CDD_Ant2_5180

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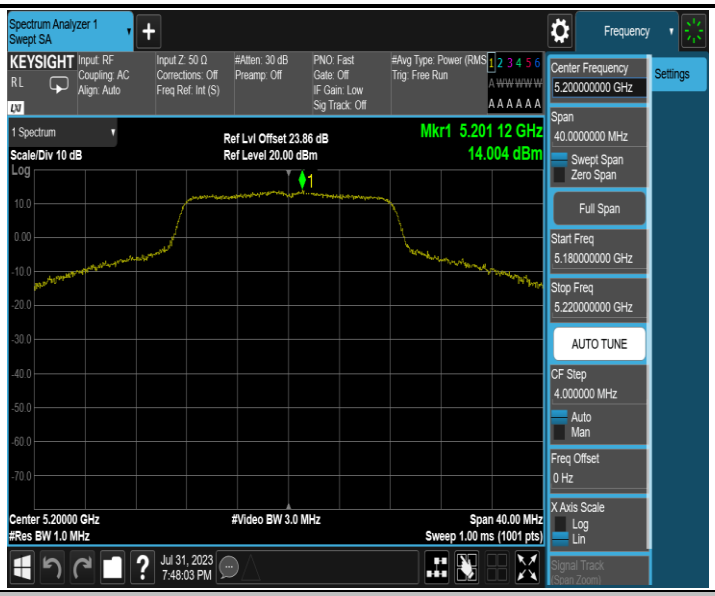
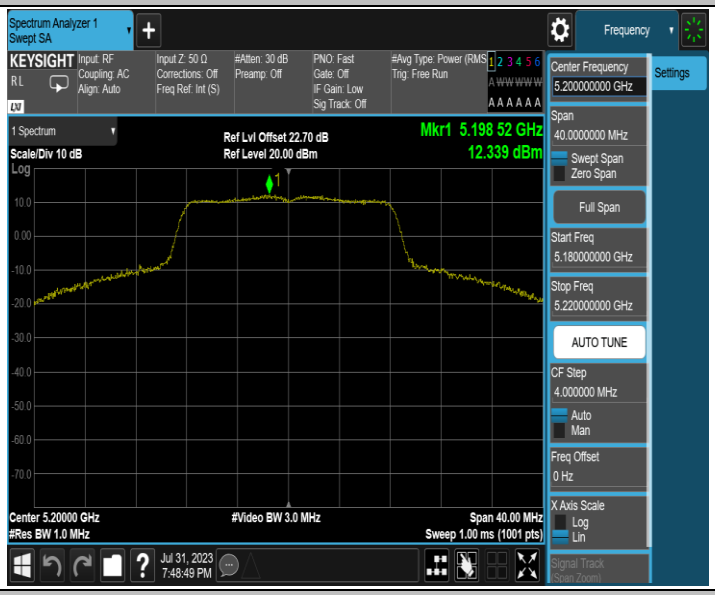
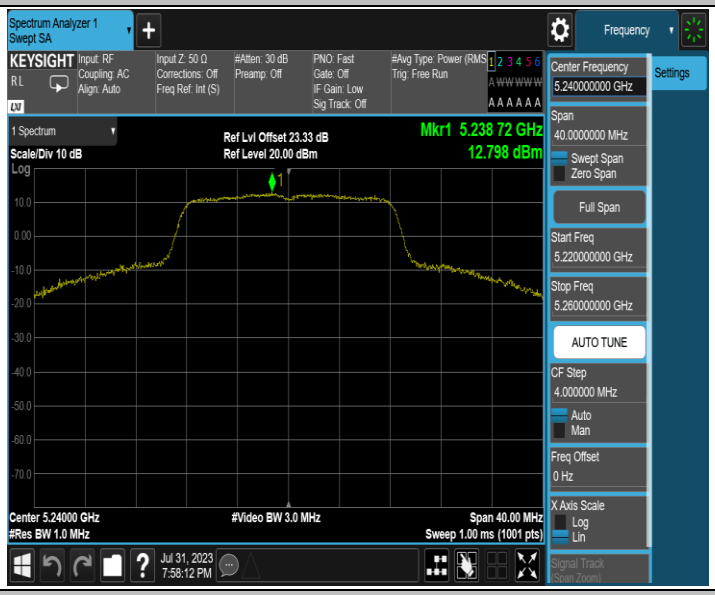


11A-CDD_Ant2_5200



11A-CDD_Ant1_5240

11A-CDD_Ant2_5240



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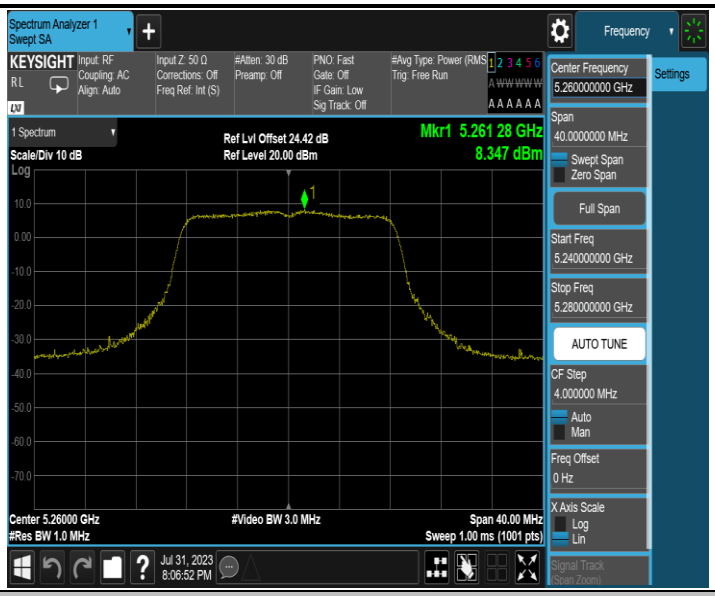

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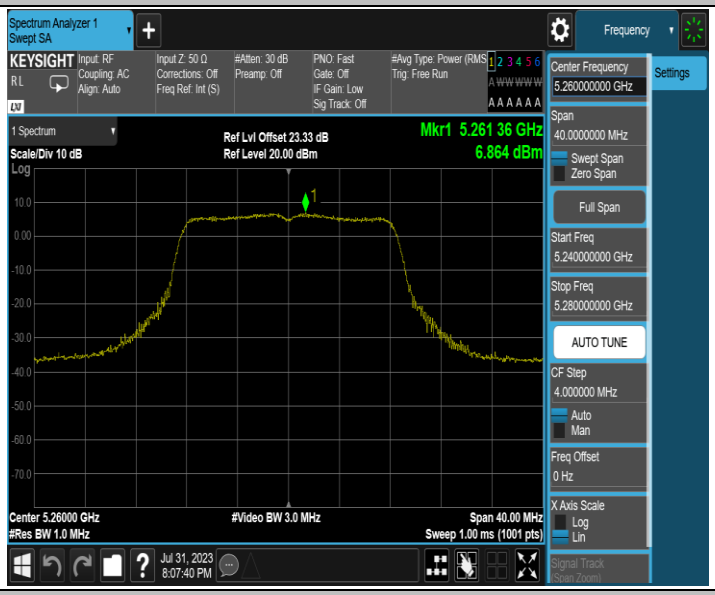

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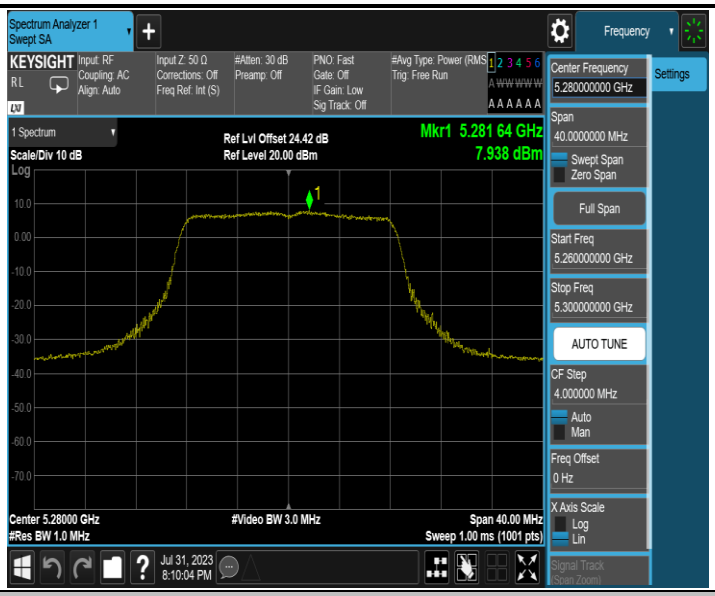

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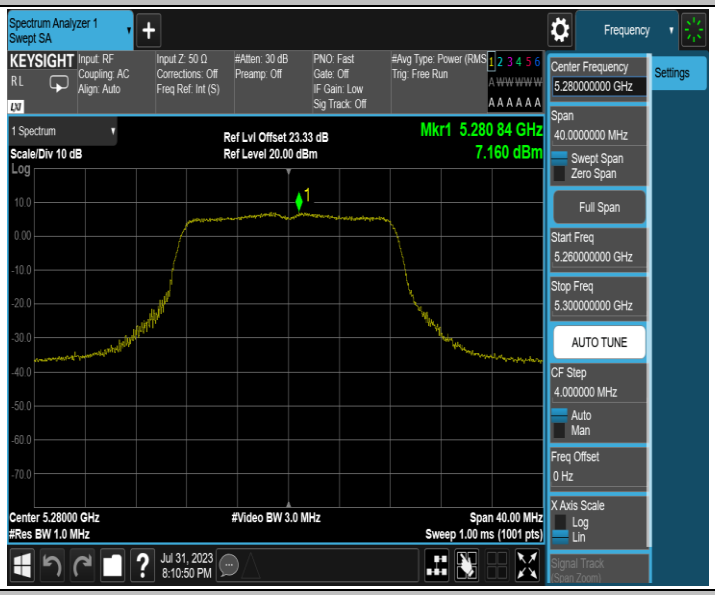

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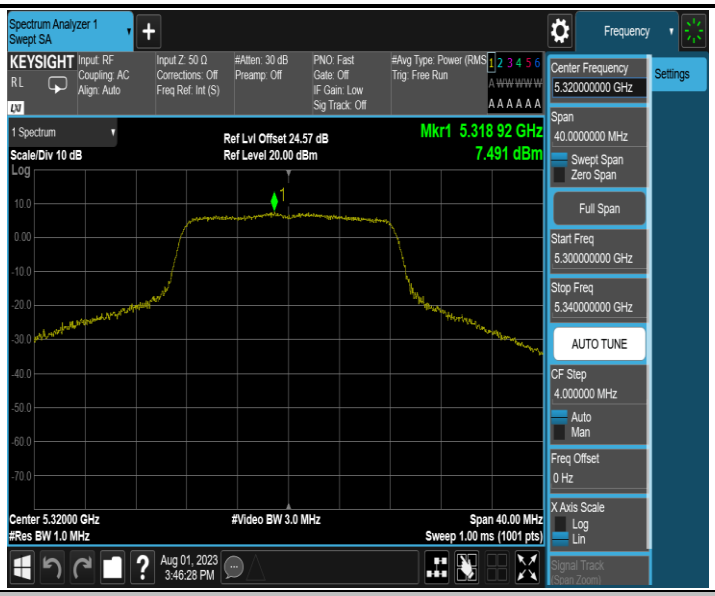

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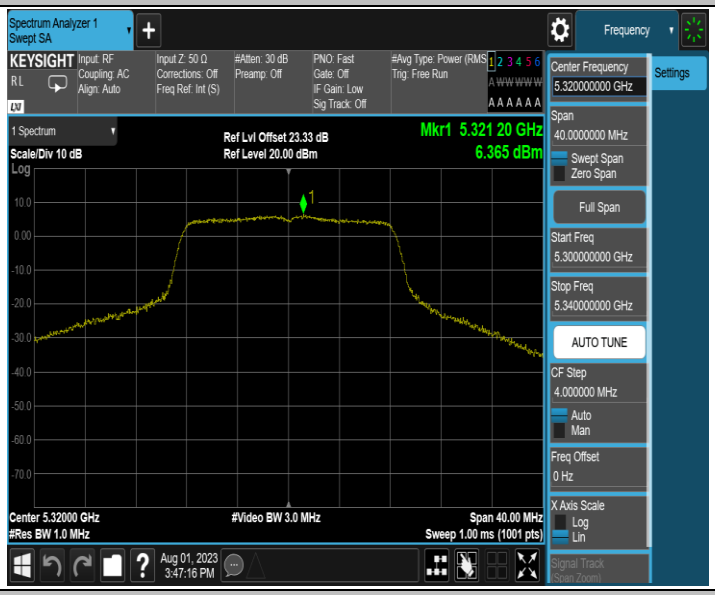
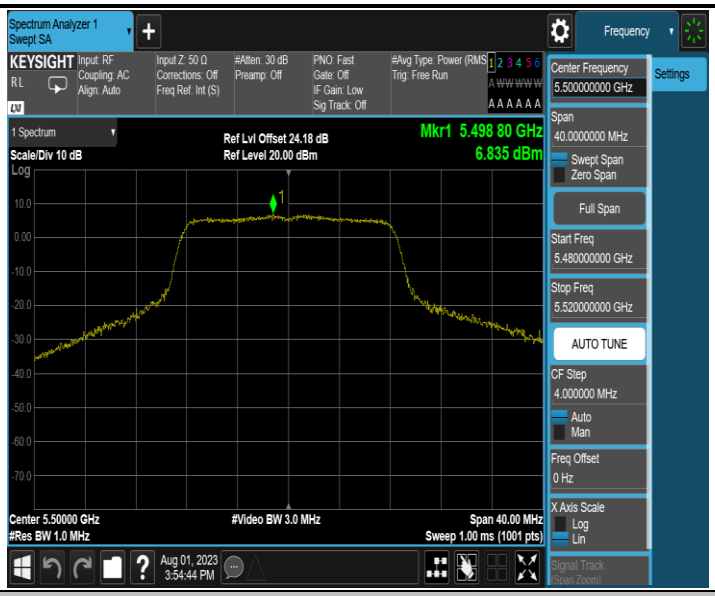


11A-CDD_Ant1_5500



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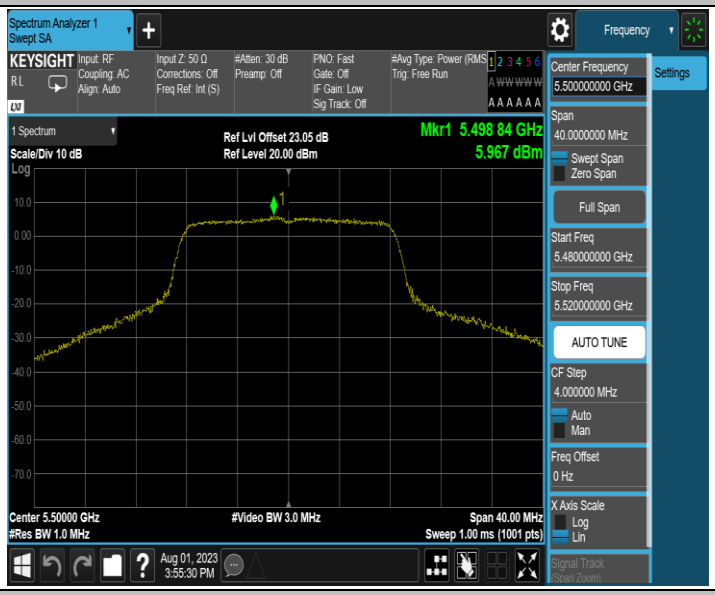

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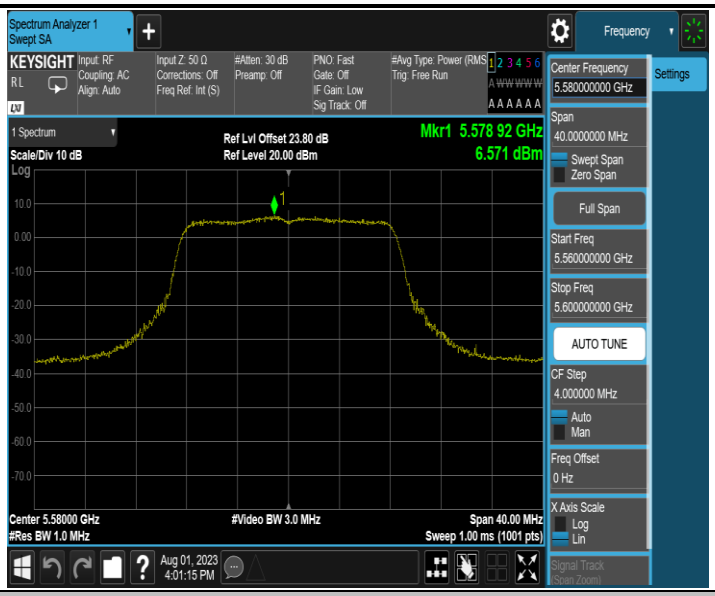

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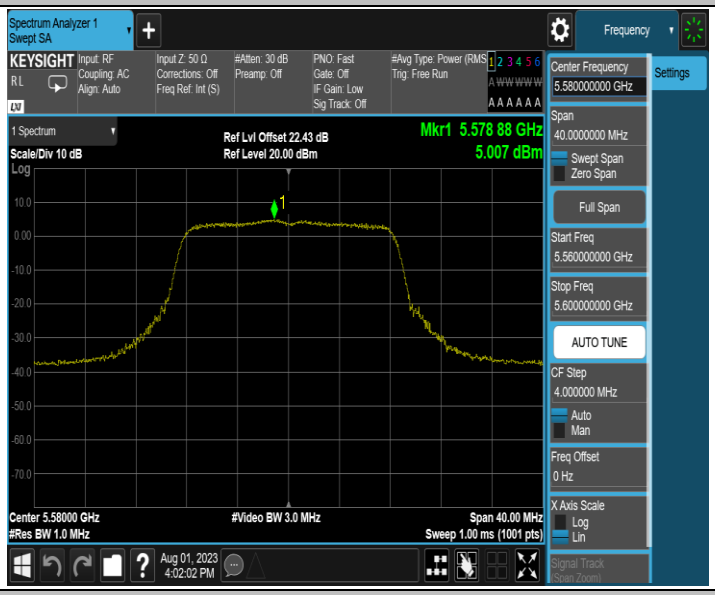

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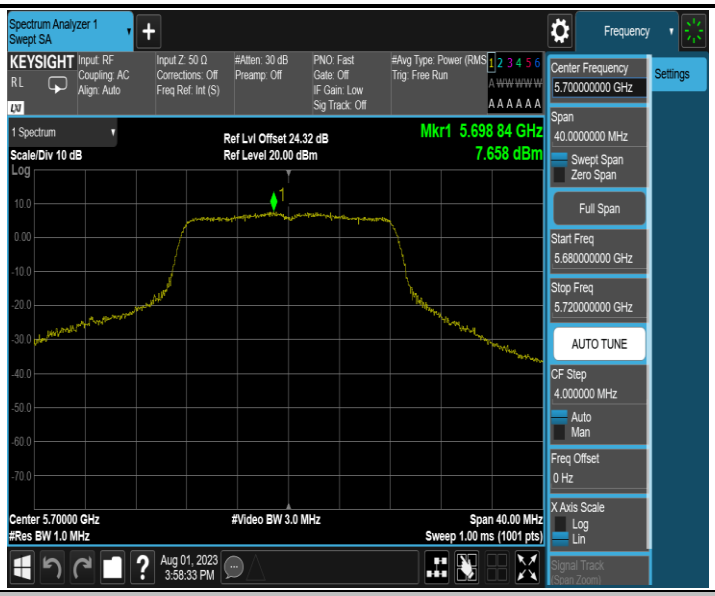

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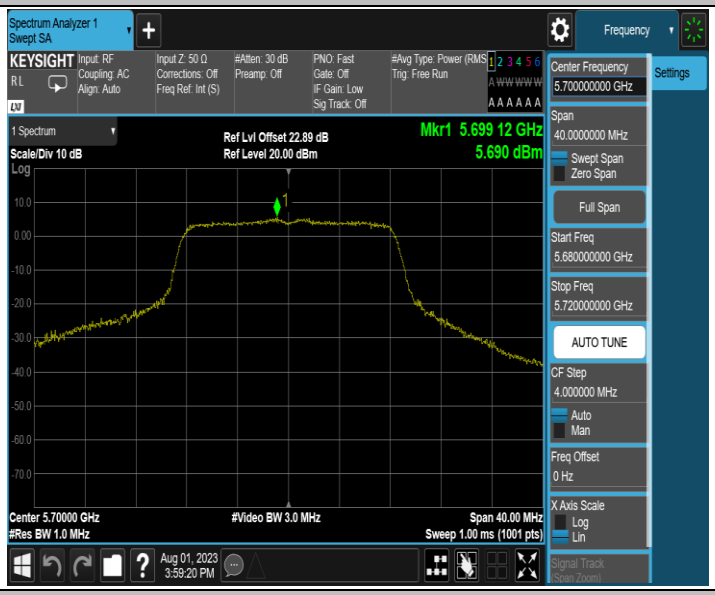

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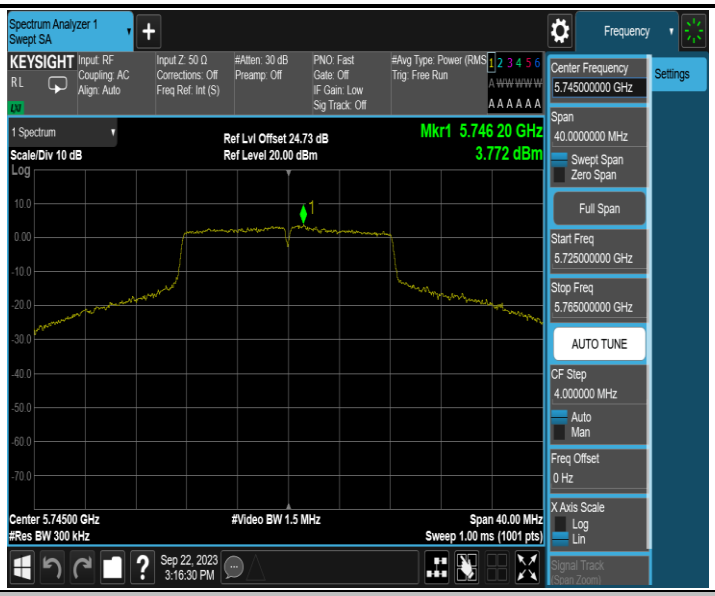

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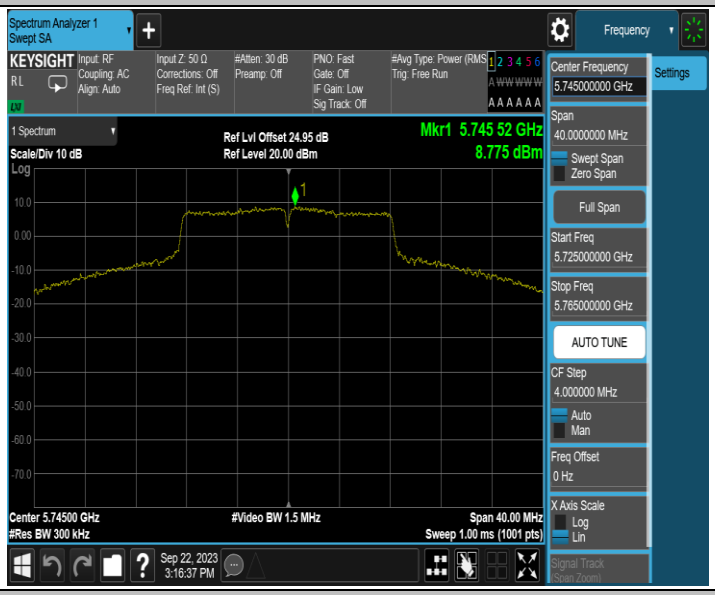

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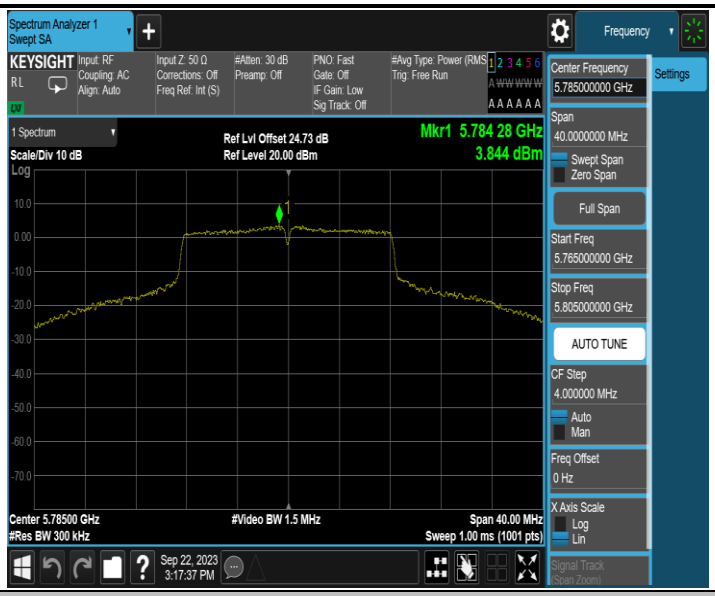

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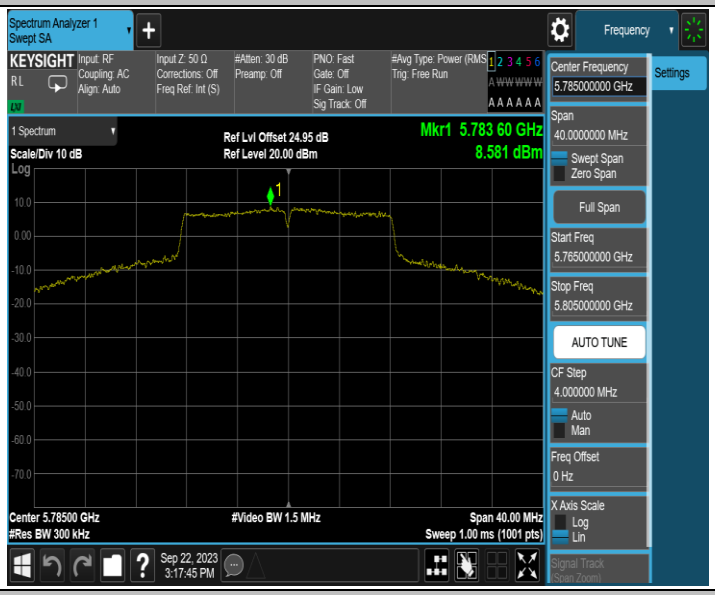

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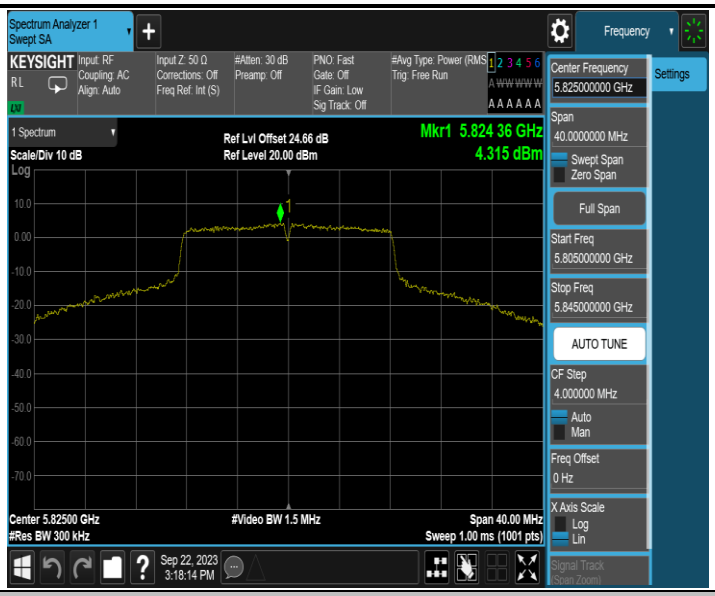

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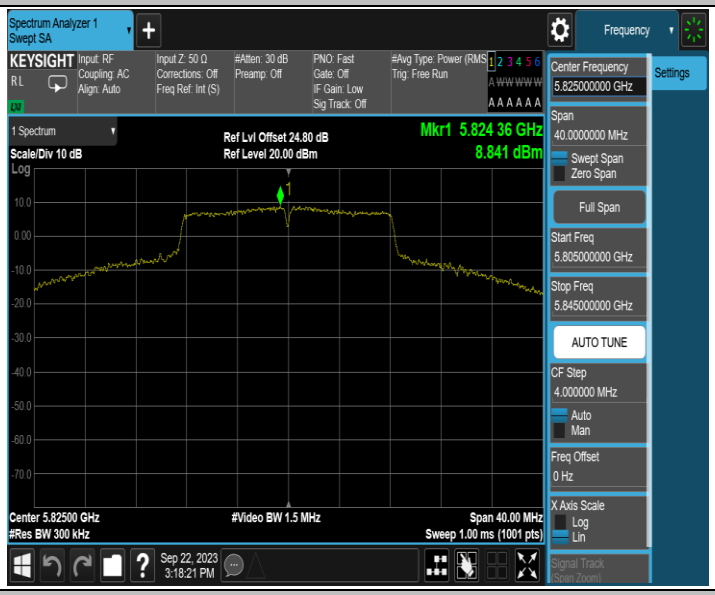

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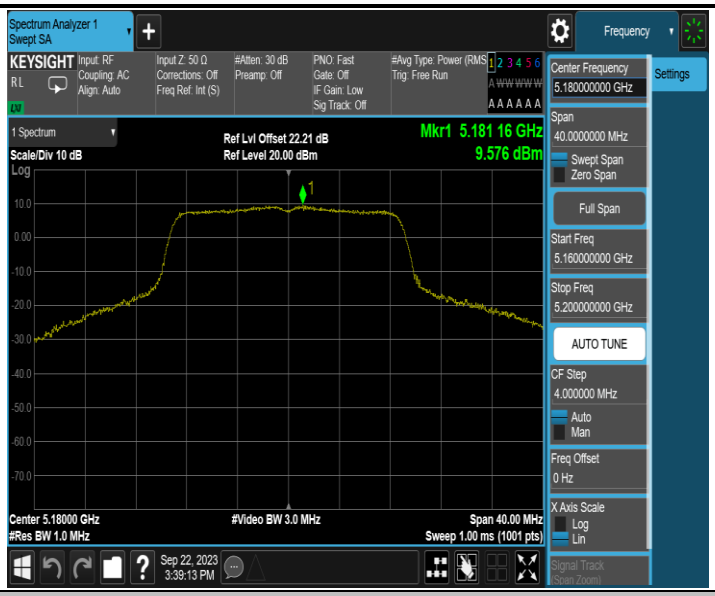
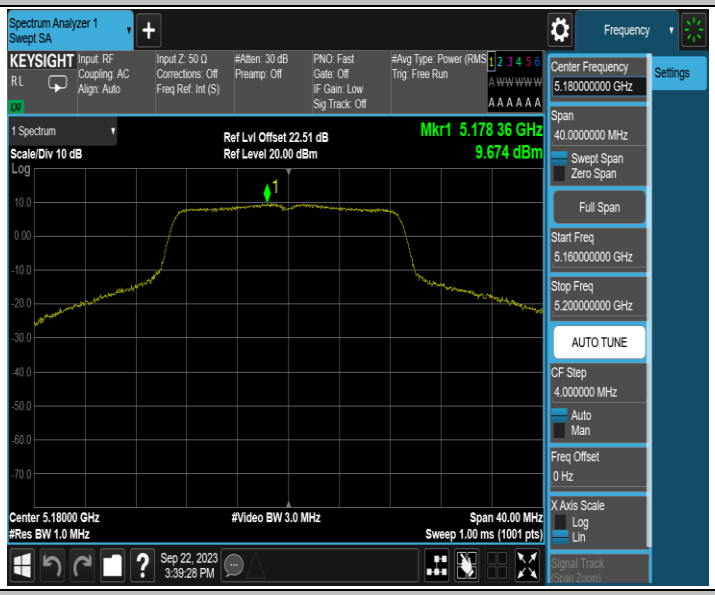
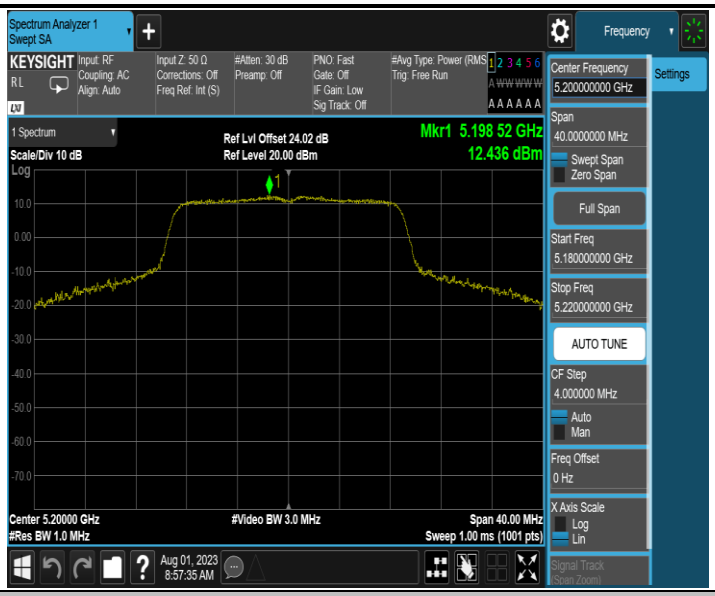


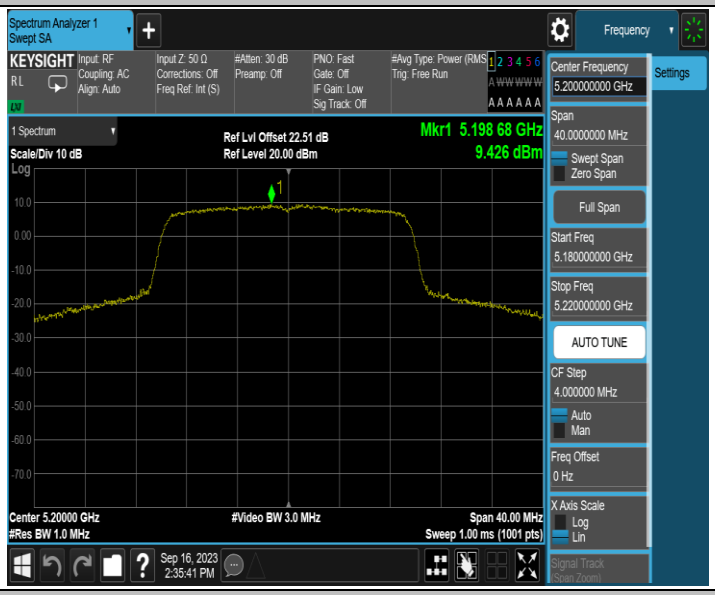
11N20MIMO_Ant2_5180



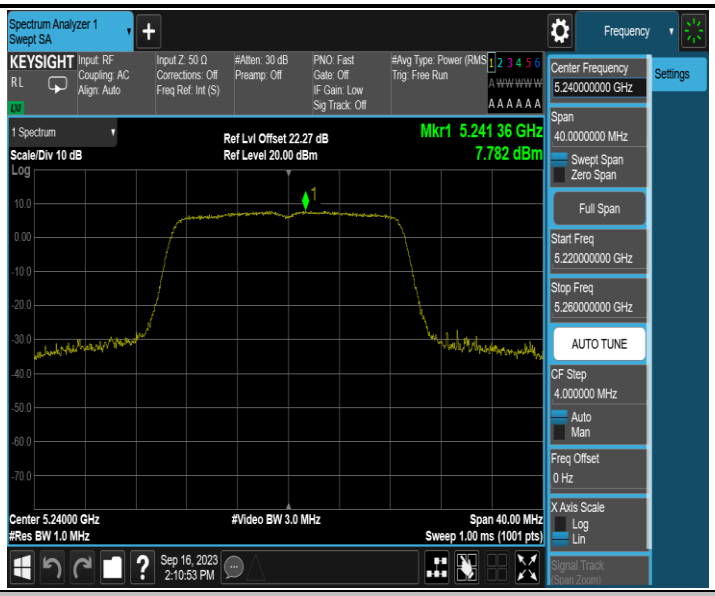
11N20MIMO_Ant1_5200



11N20MIMO_Ant2_5200



11N20MIMO_Ant1_5240



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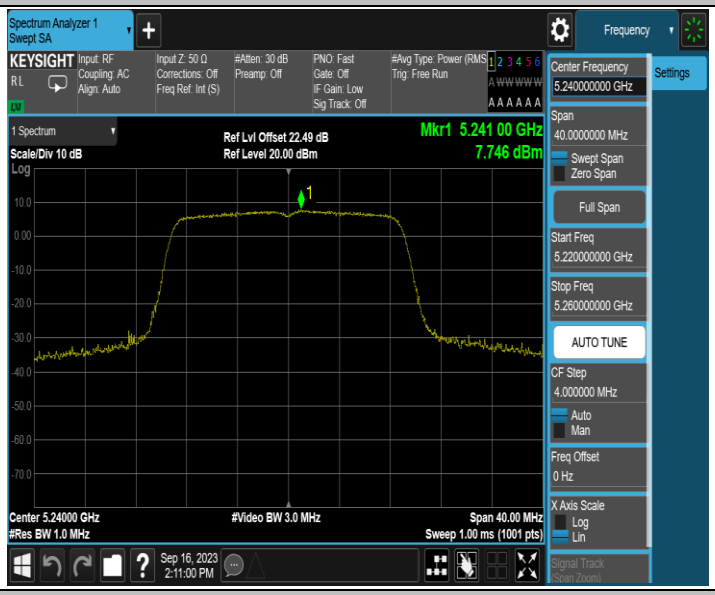
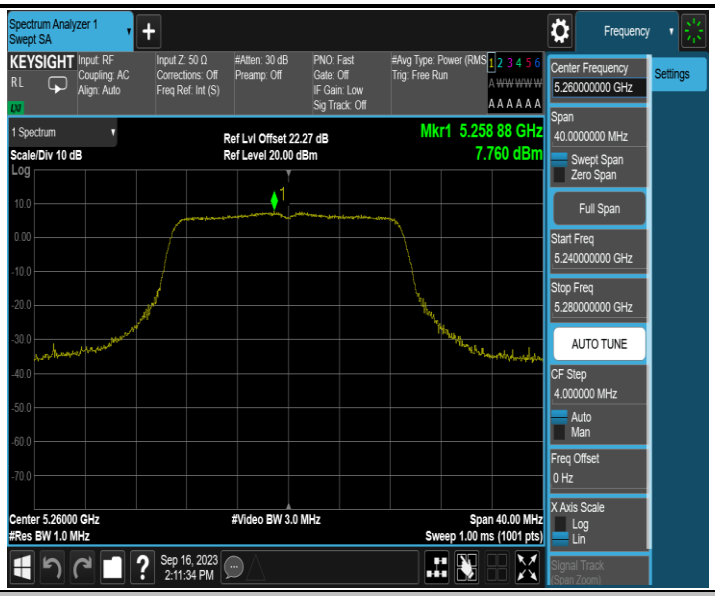


11N20MIMO_Ant1_5260



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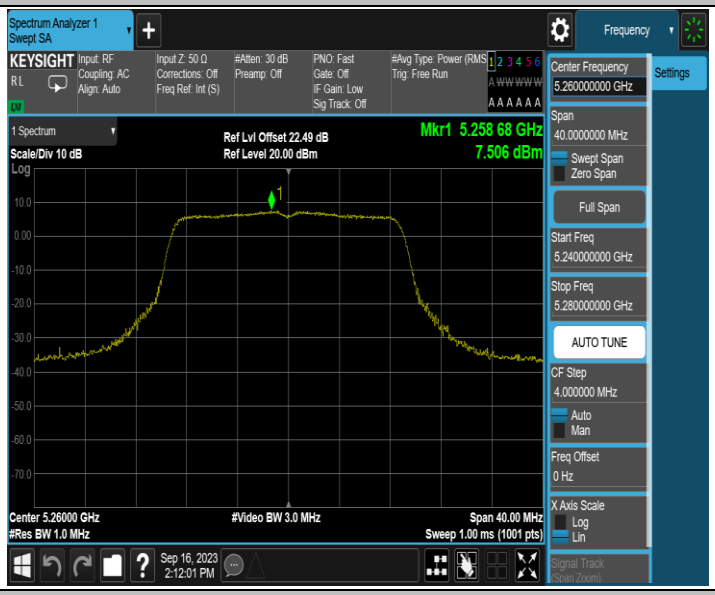

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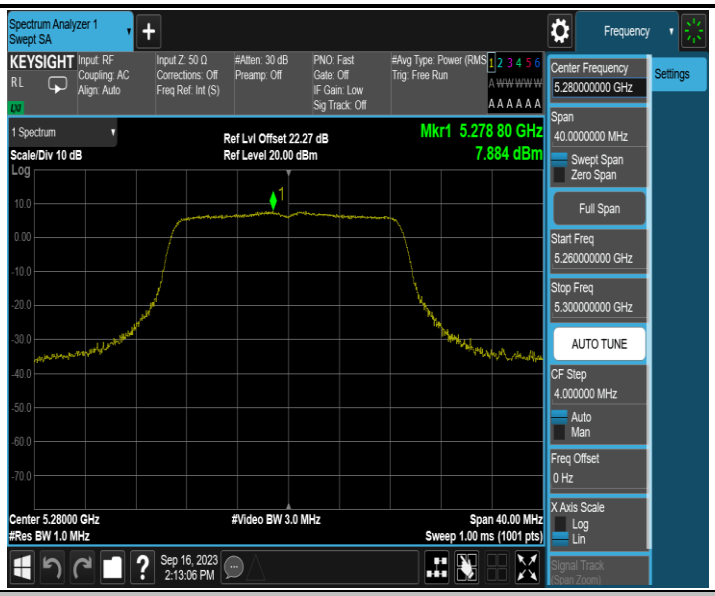

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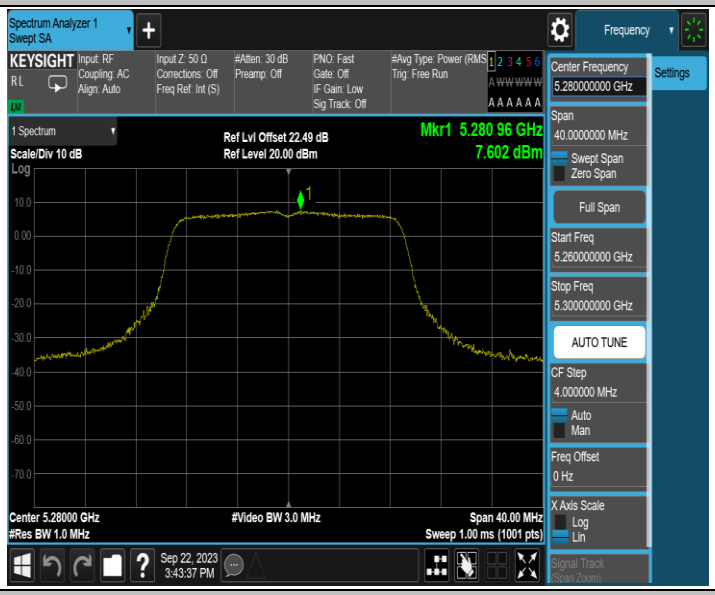

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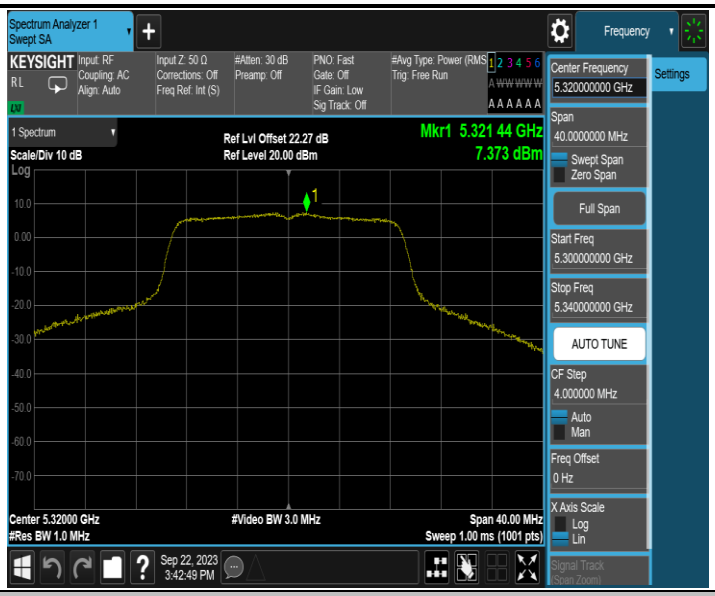

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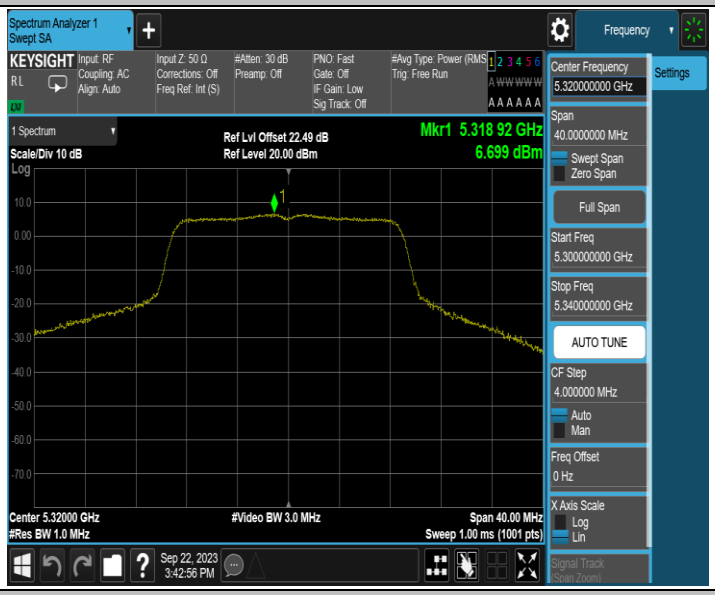
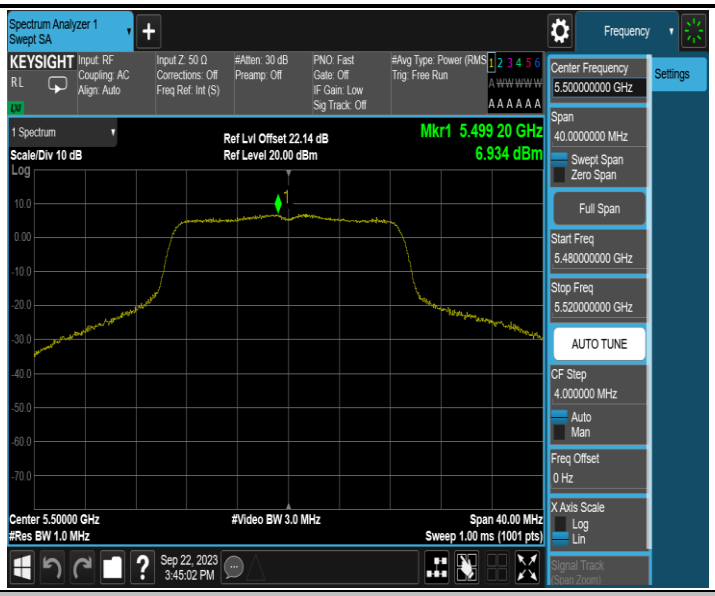


11N20MIMO_Ant1_5500



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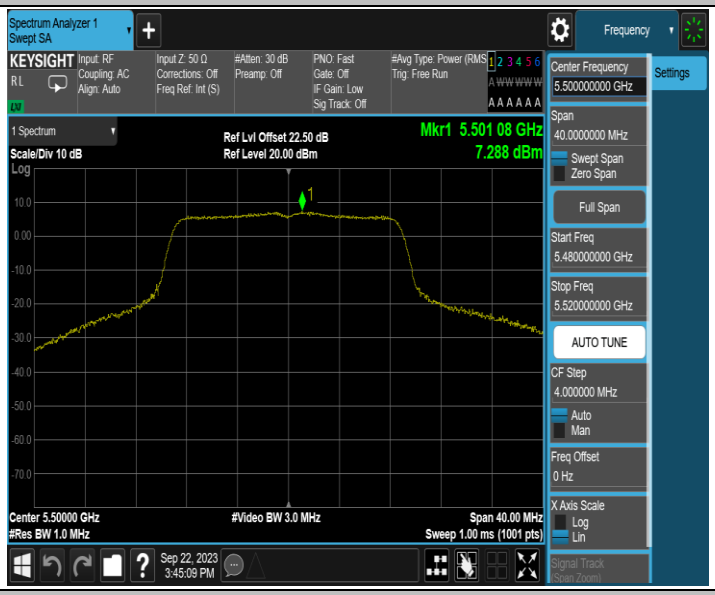

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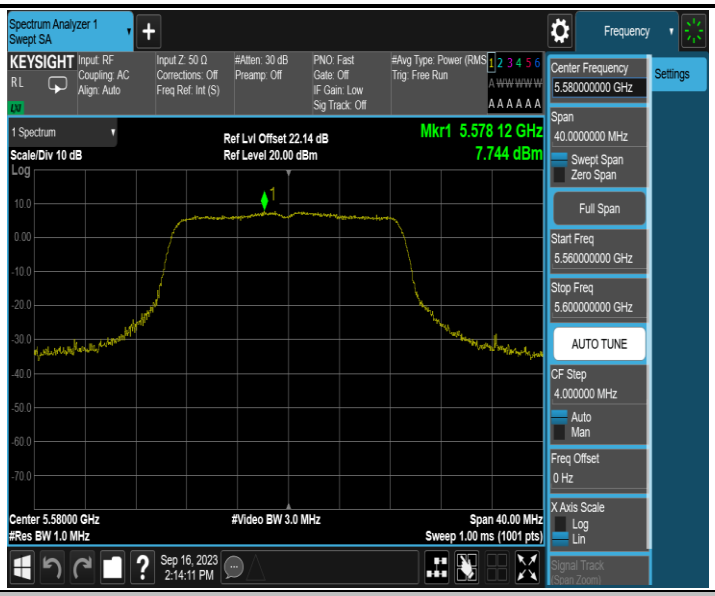

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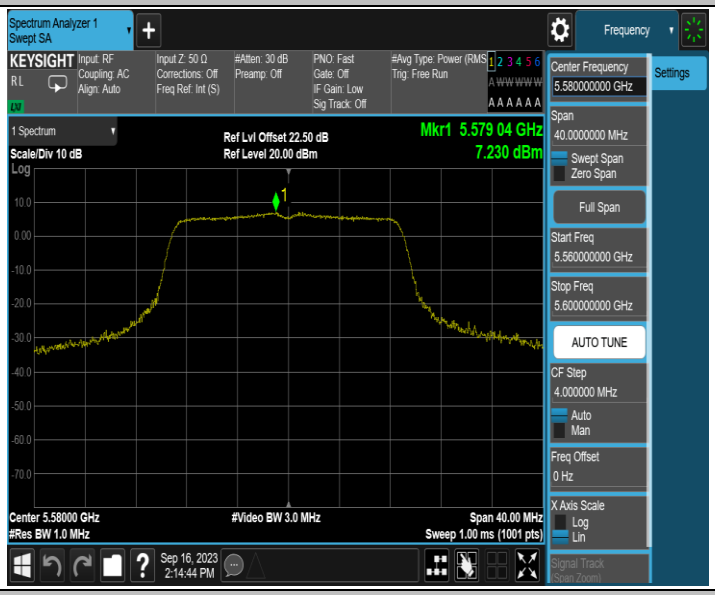

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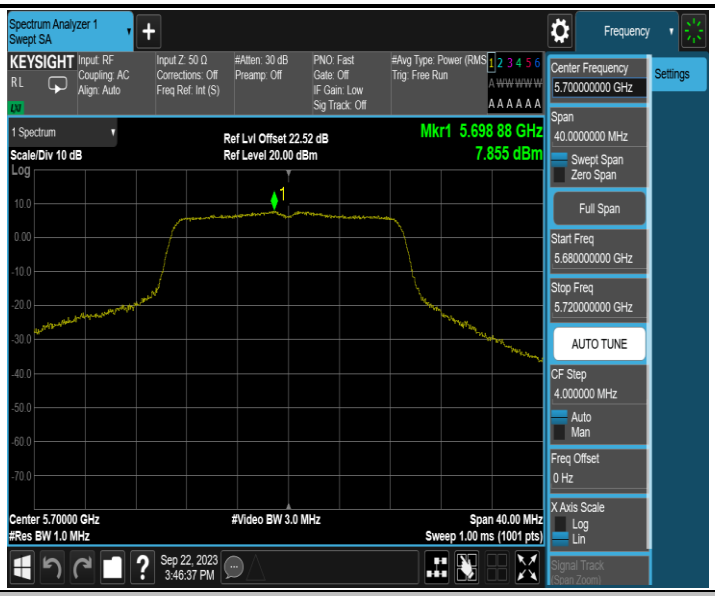
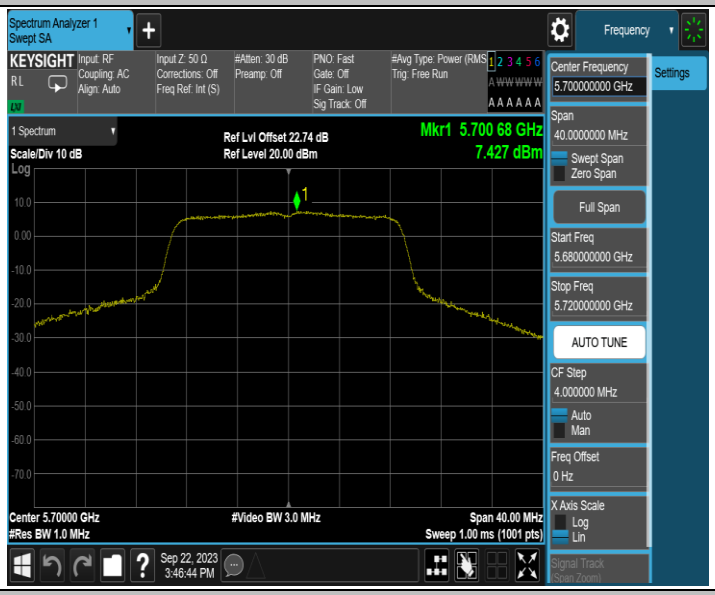
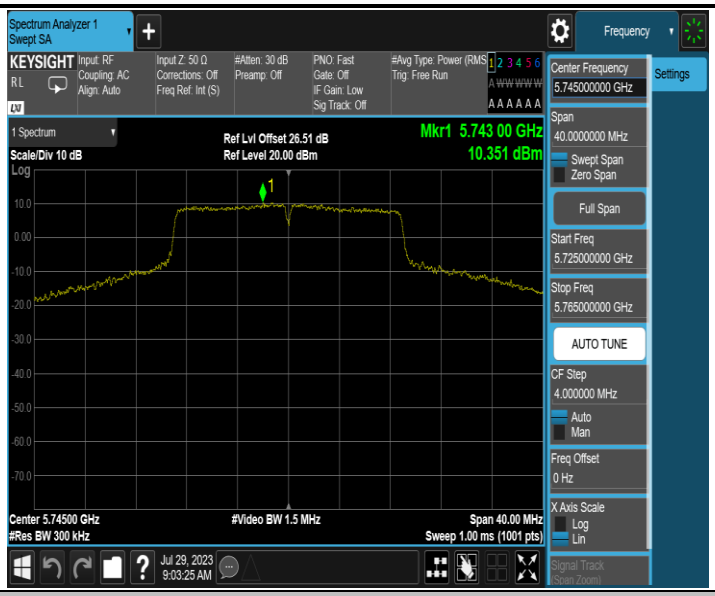


11N20MIMO_Ant2_5700



11N20MIMO_Ant1_5745



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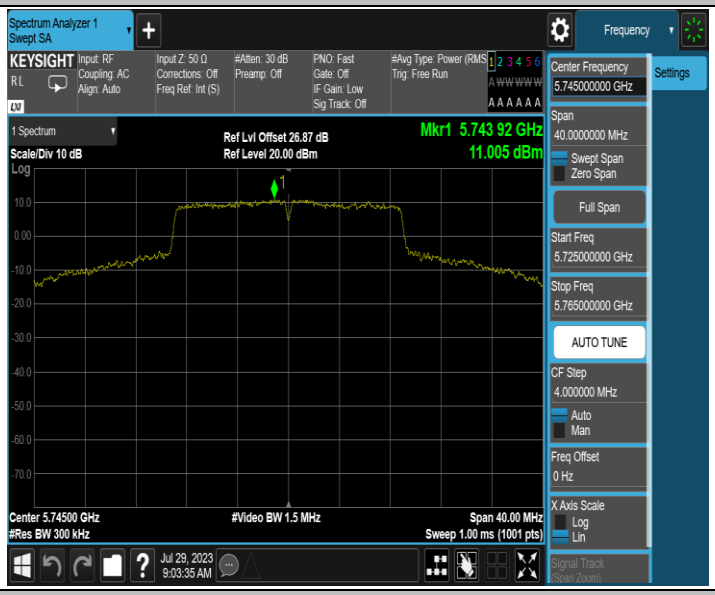
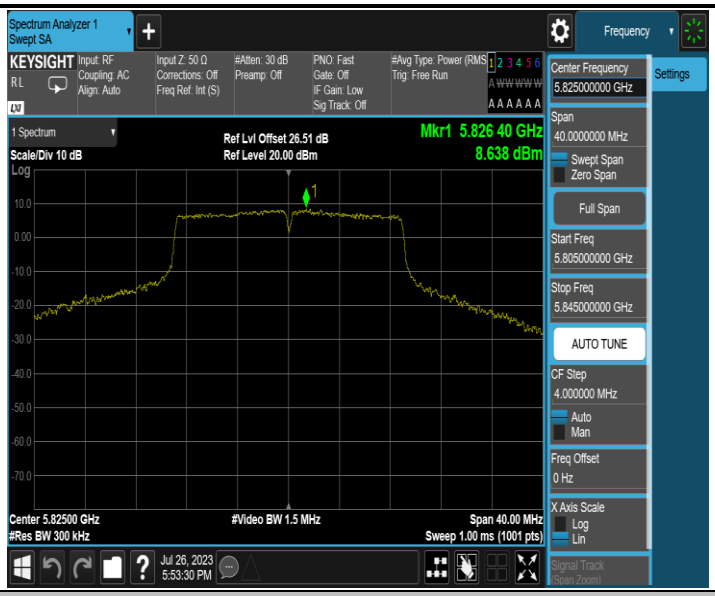


11N20MIMO_Ant1_5825



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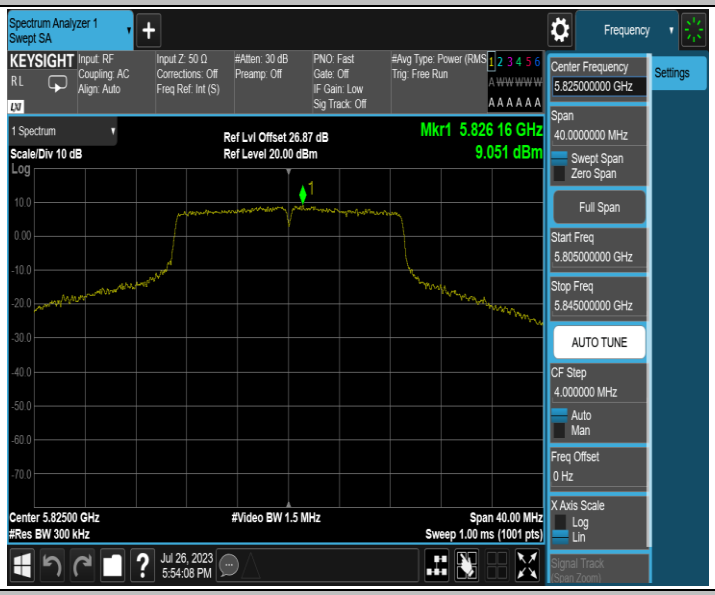
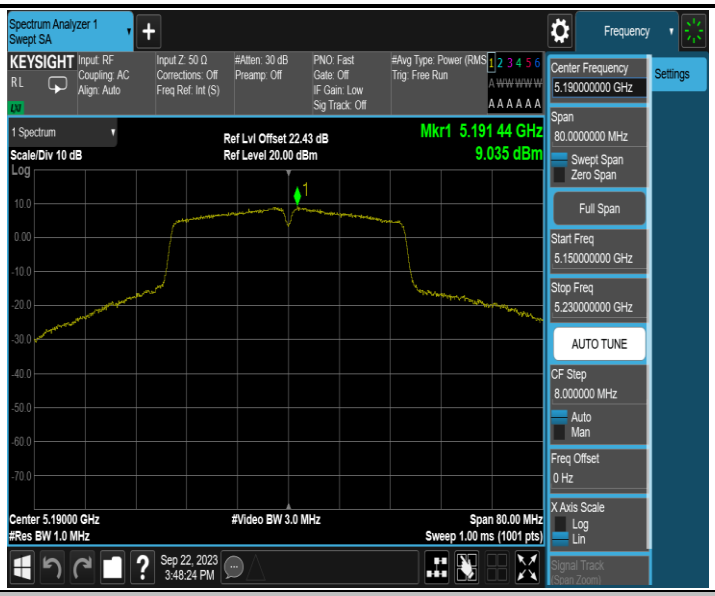


11N40MIMO_Ant1_5190



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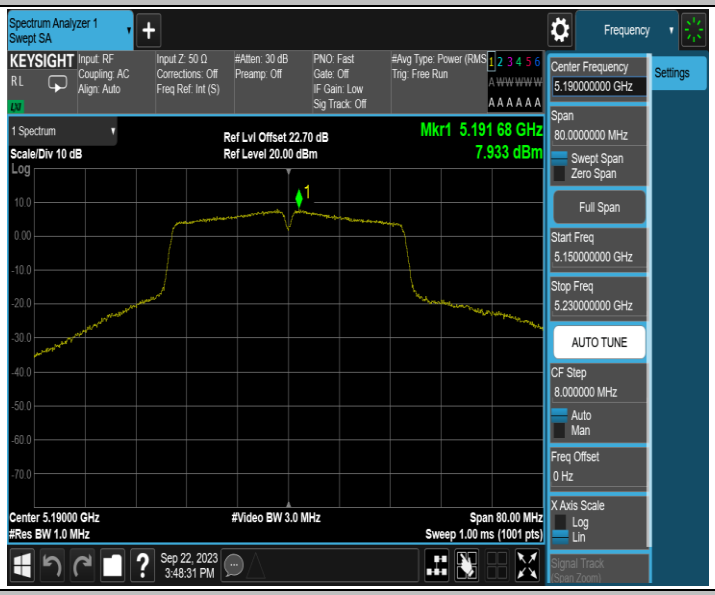

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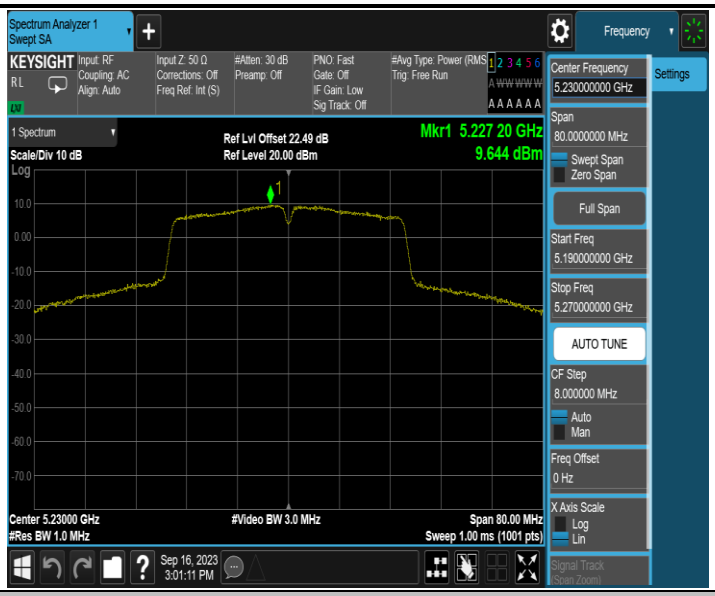

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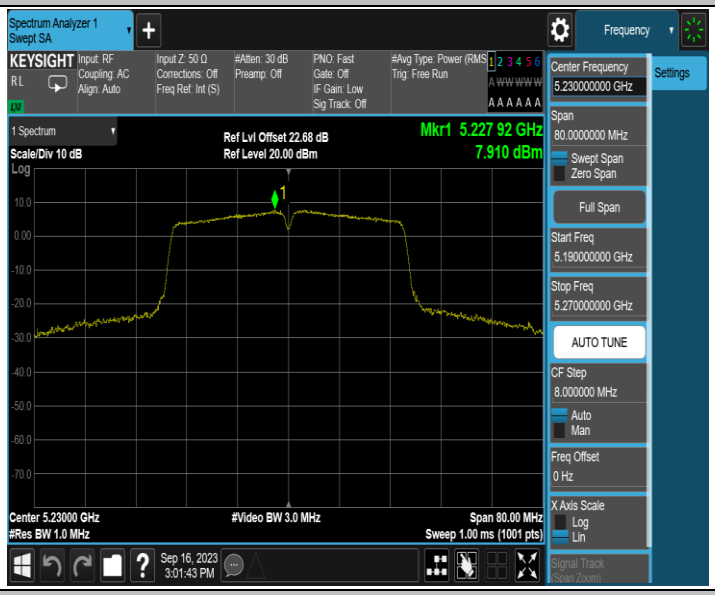

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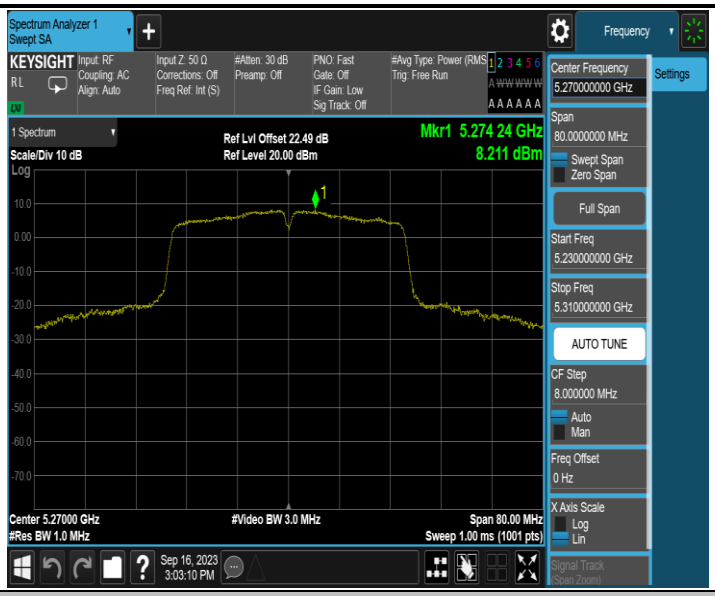
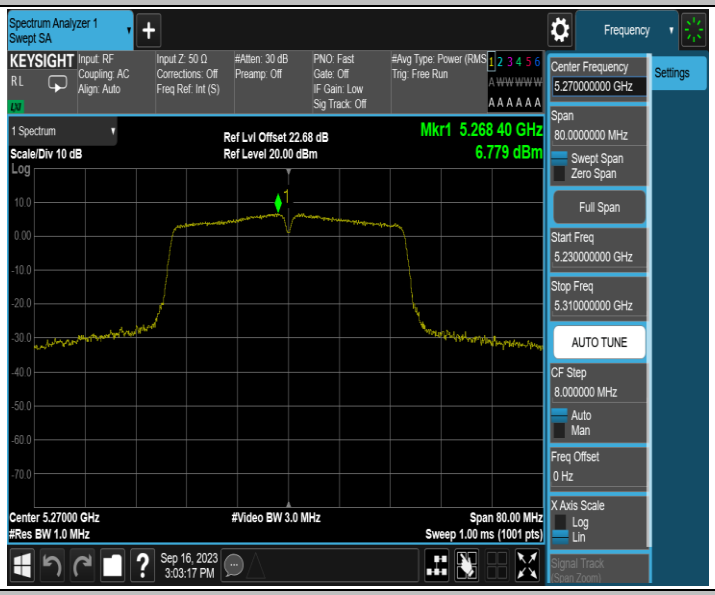
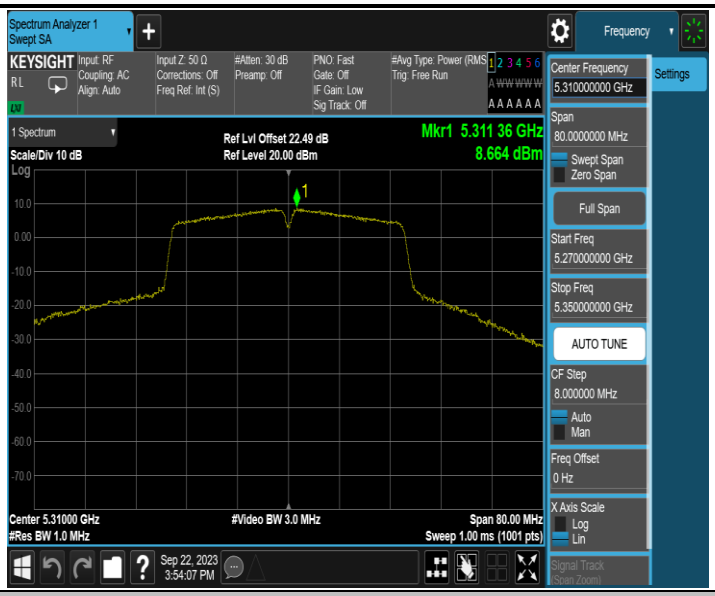


11N40MIMO_Ant2_5270



11N40MIMO_Ant1_5310



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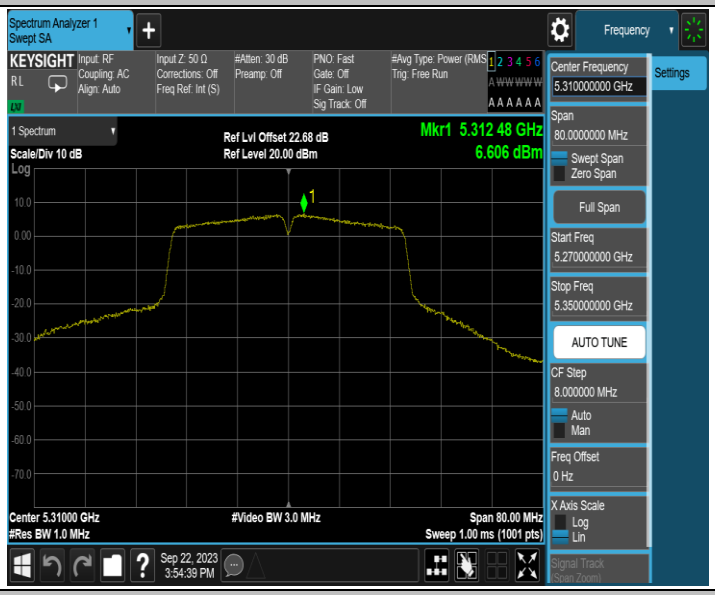

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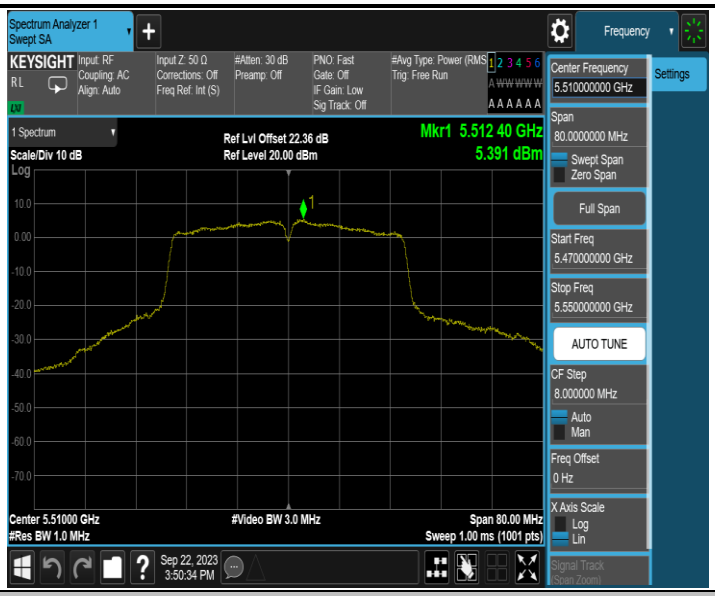

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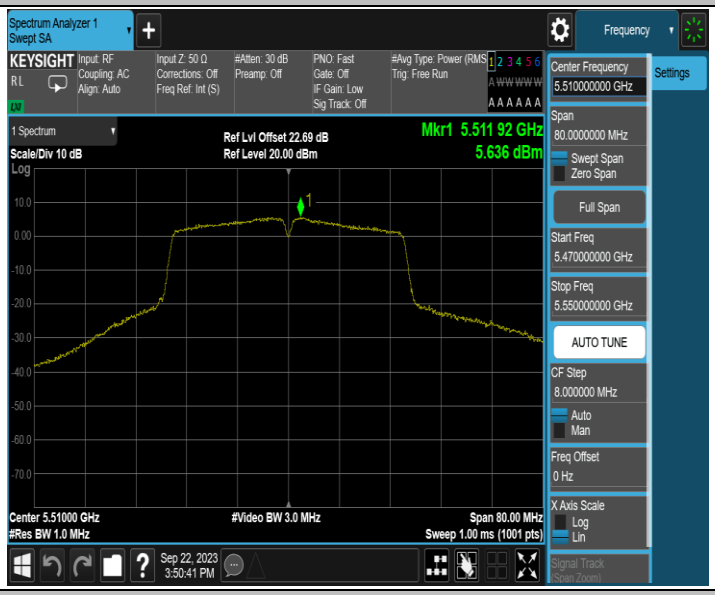

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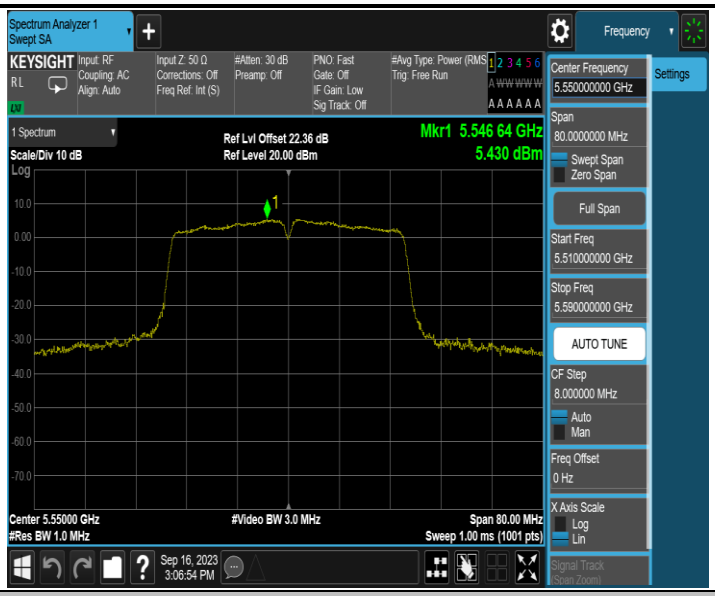
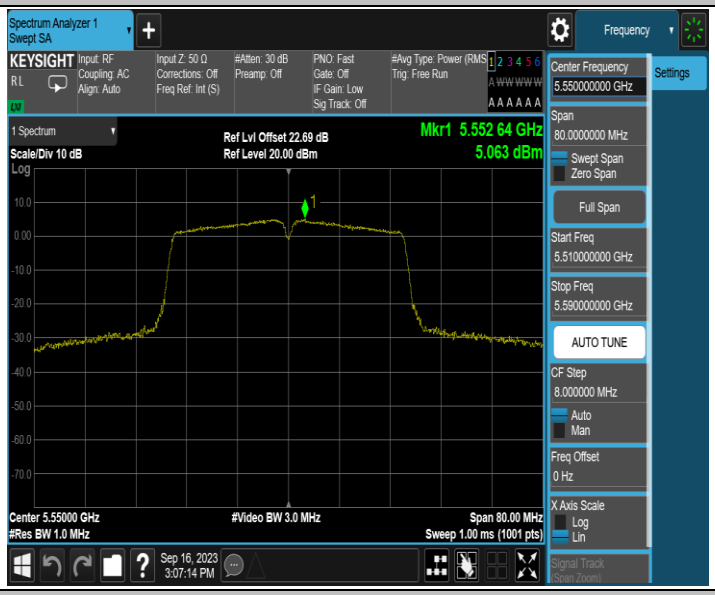


11N40MIMO_Ant2_5550



11N40MIMO_Ant1_5670