

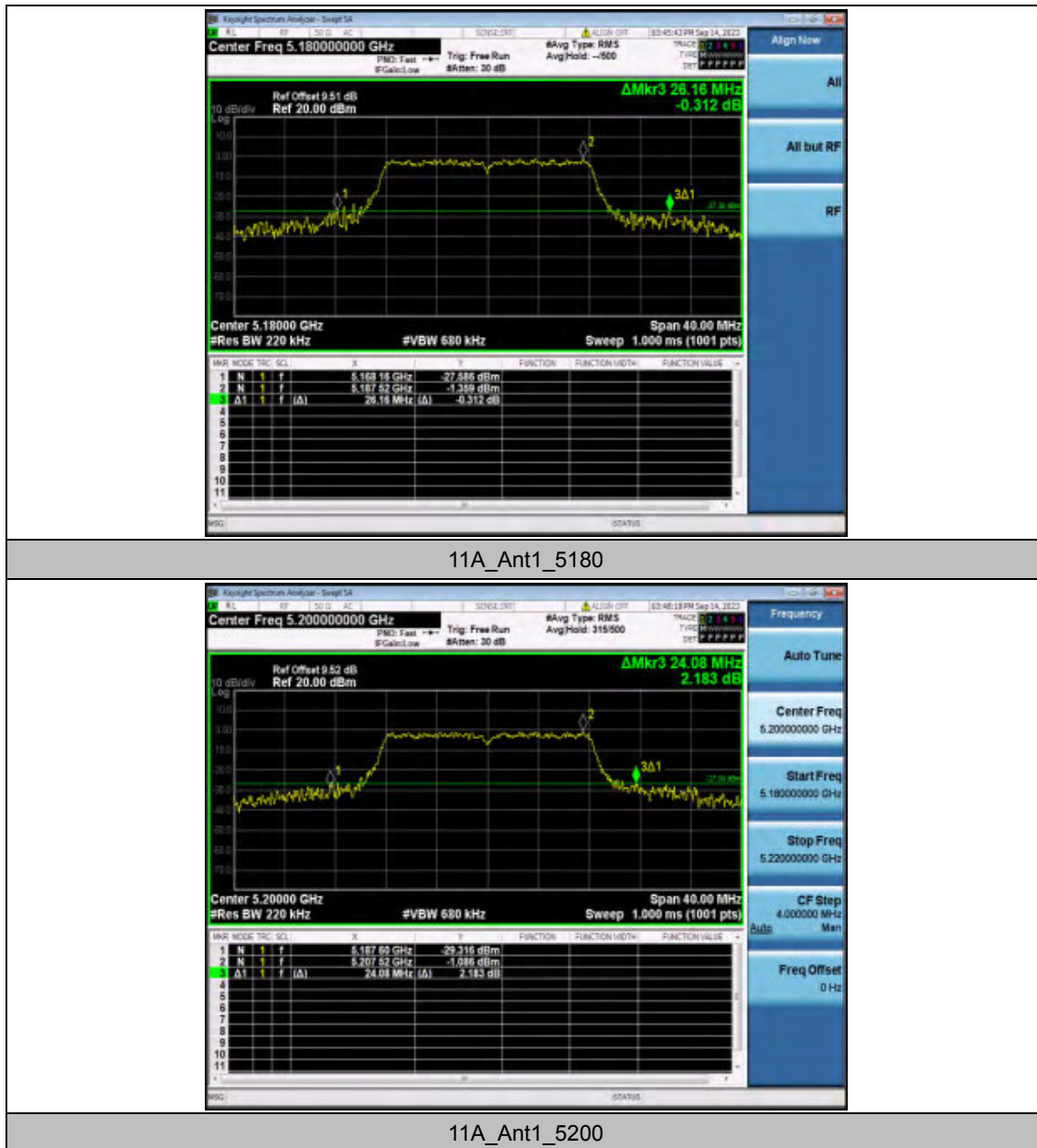
Case No. : <u>GTS20230822007-1-4</u>	
Ambient Condition: <u>24</u> °C, <u>49</u> %RH, Atmos100.1Kpa,	
Test Date: <u>2023.9.13</u>	Test Engineer: <u>Evan ouyang</u>

Appendix D.1: Emission Bandwidth

Test Result

Test Mode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	26.160	5168.160	5194.320	---	---
		5200	24.080	5187.600	5211.680	---	---
		5240	25.480	5227.320	5252.800	---	---
11N20SISO	Ant1	5180	27.040	5169.200	5196.240	---	---
		5200	29.400	5186.080	5215.480	---	---
		5240	31.400	5225.160	5256.560	---	---
11N40SISO	Ant1	5190	50.640	5167.840	5218.480	---	---
		5230	44.240	5210.400	5254.640	---	---
11AC20SISO	Ant1	5180	28.560	5167.800	5196.360	---	---
		5200	29.640	5187.080	5216.720	---	---
		5240	25.720	5229.160	5254.880	---	---
11AC40SISO	Ant1	5190	41.920	5170.240	5212.160	---	---
		5230	40.800	5210.240	5251.040	---	---
11AC80SISO	Ant1	5210	85.760	5168.080	5253.840	---	---

Test Graphs





11A_Ant1_5240



11N20SISO_Ant1_5180



11N20SISO_Ant1_5200



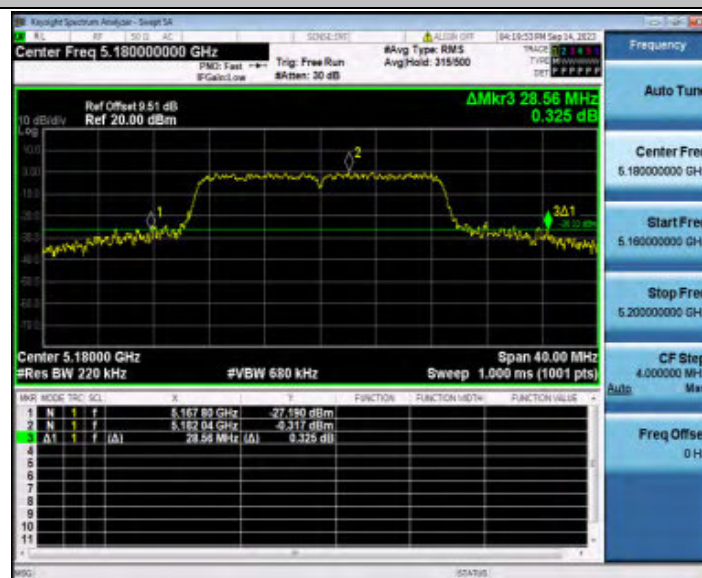
11N20SISO_Ant1_5240



11N40SISO_Ant1_5190



11N40SISO_Ant1_5230



11AC20SISO_Ant1_5180



11AC20SISO_Ant1_5200



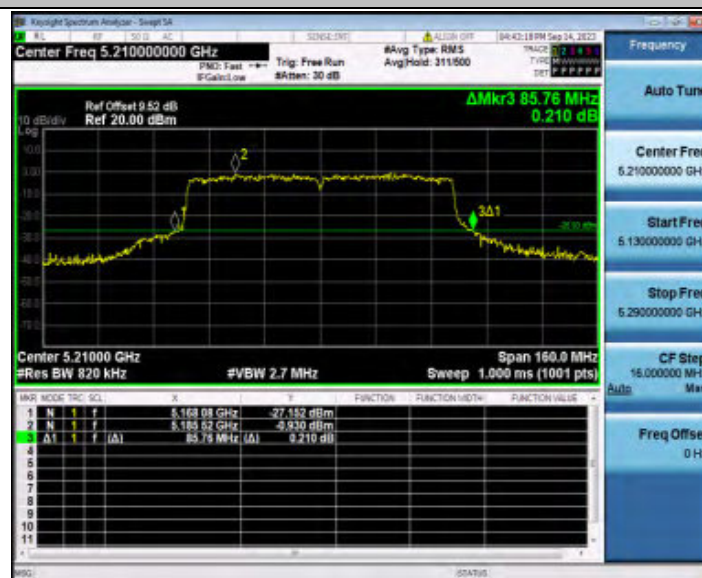
11AC20SISO_Ant1_5240



11AC40SISO_Ant1_5190



11AC40SISO_Ant1_5230



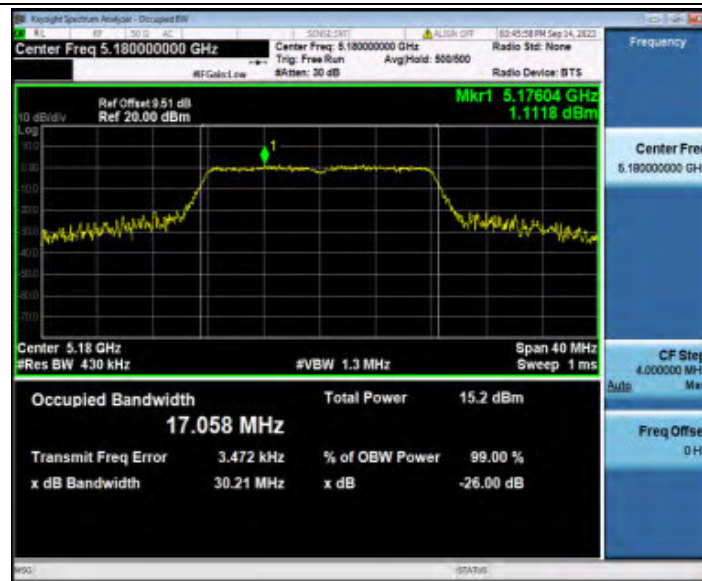
11AC80SISO_Ant1_5210

Appendix D.2: Occupied channel bandwidth

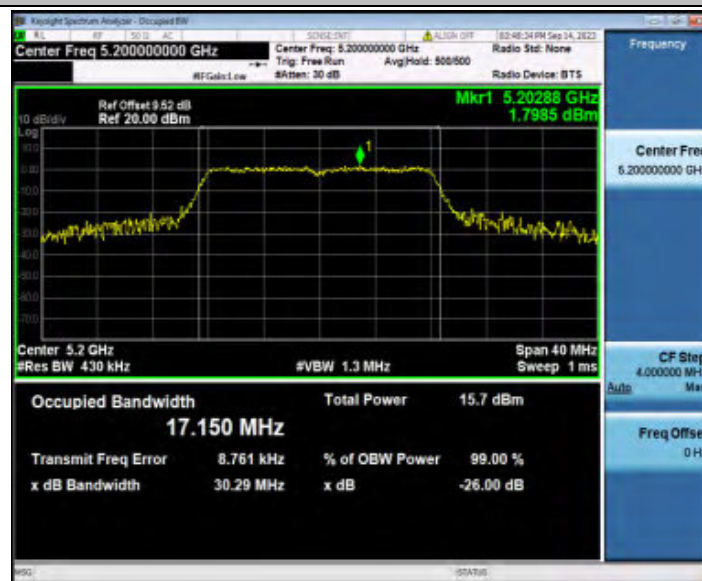
Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	17.058	5171.474	5188.532	---	---
		5200	17.150	5191.434	5208.584	---	---
		5240	17.161	5231.392	5248.553	---	---
11N20SISO	Ant1	5180	17.906	5171.073	5188.979	---	---
		5200	17.964	5191.024	5208.988	---	---
		5240	17.921	5231.022	5248.943	---	---
11N40SISO	Ant1	5190	36.777	5171.612	5208.389	---	---
		5230	36.323	5211.811	5248.134	---	---
11AC20SISO	Ant1	5180	17.910	5171.073	5188.983	---	---
		5200	17.916	5191.061	5208.977	---	---
		5240	17.875	5231.068	5248.943	---	---
11AC40SISO	Ant1	5190	36.372	5171.787	5208.159	---	---
		5230	36.345	5211.783	5248.128	---	---
11AC80SISO	Ant1	5210	75.876	5172.162	5248.038	---	---

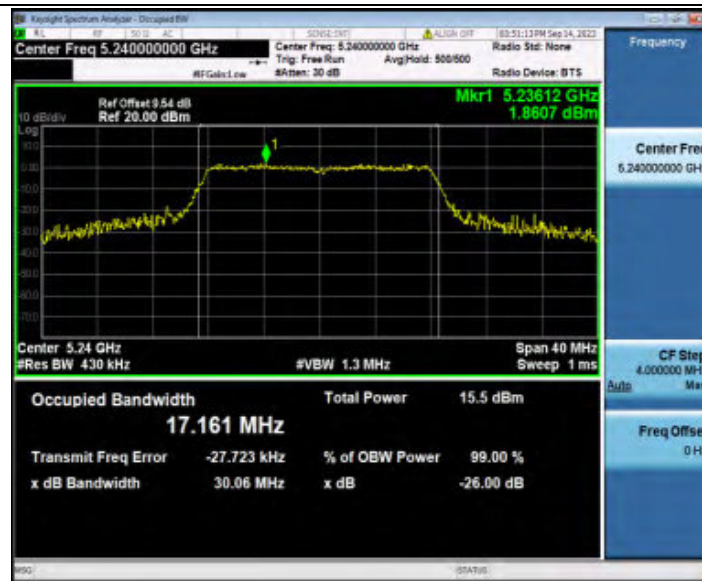
Test Graphs



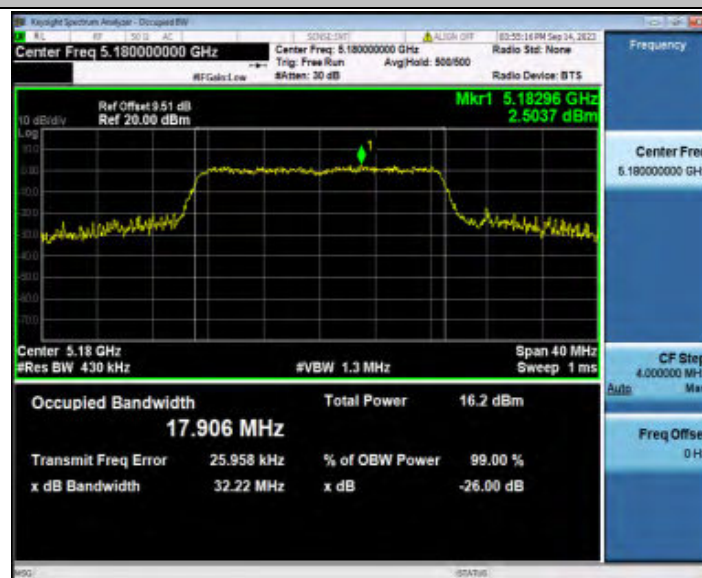
11A_Ant1_5180



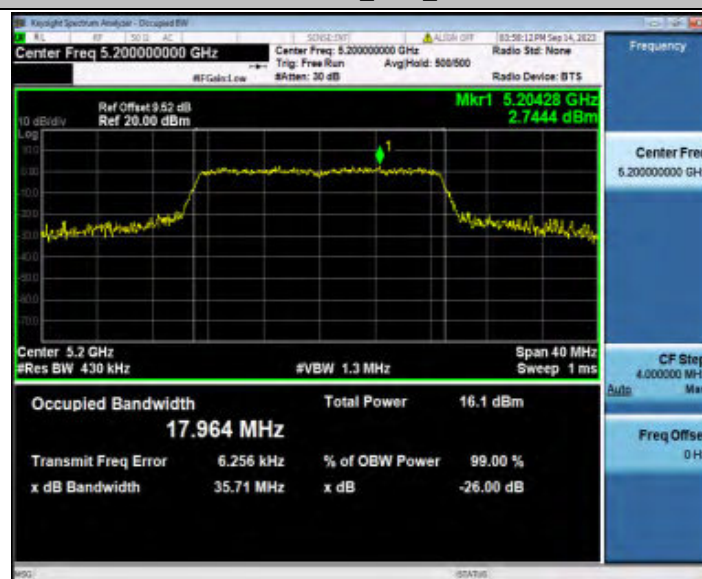
11A_Ant1_5200



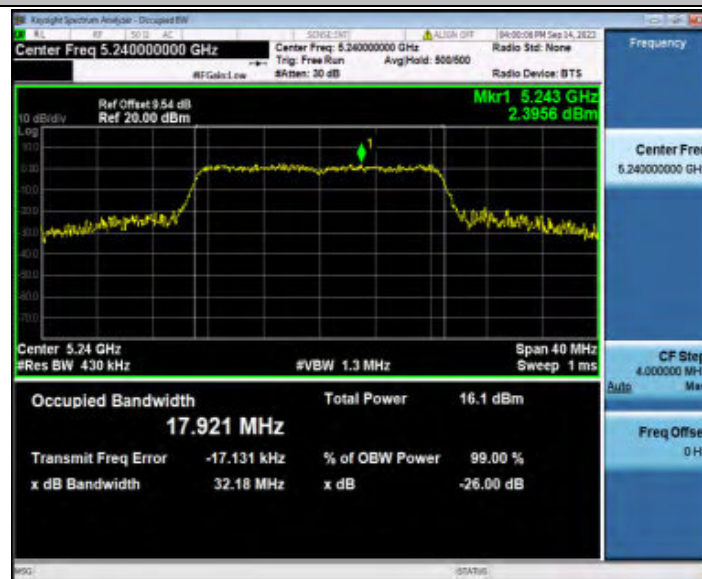
11A_Ant1_5240



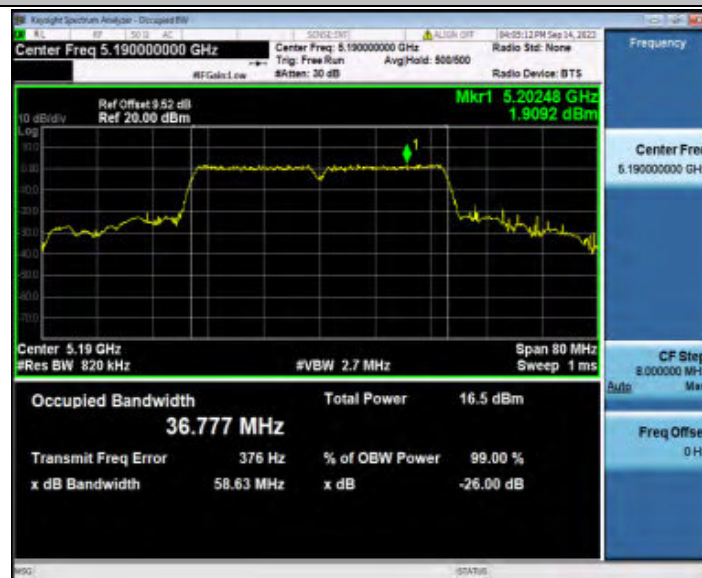
11N20SISO_Ant1_5180



11N20SISO_Ant1_5200



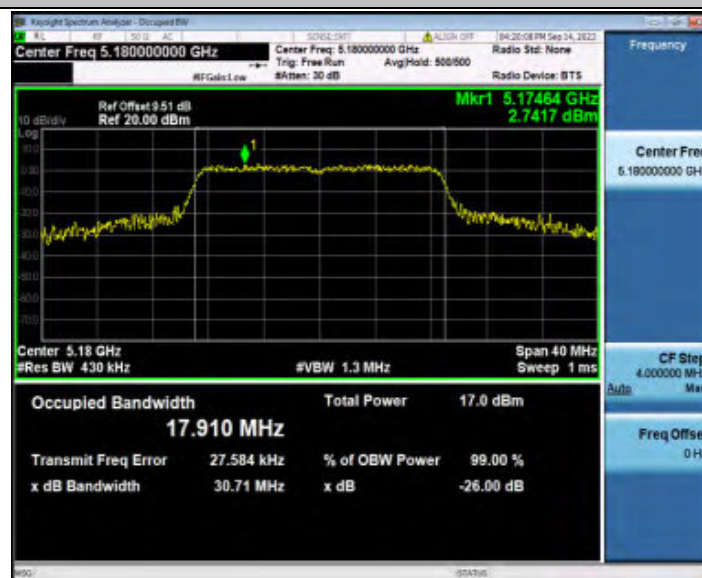
11N20SISO_Ant1_5240



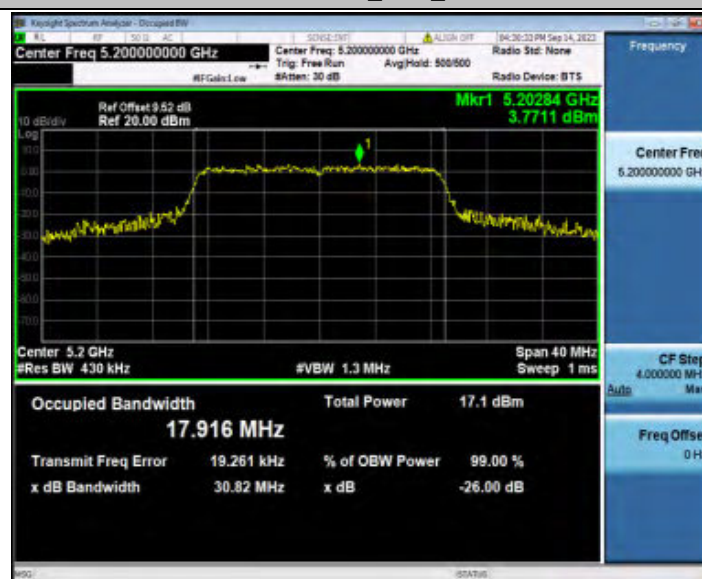
11N40SISO_Ant1_5190



11N40SISO_Ant1_5230



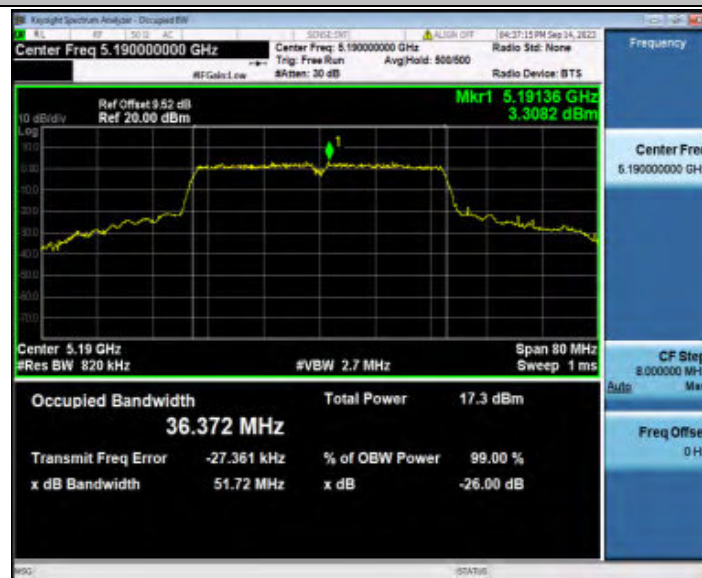
11AC20SISO_Ant1_5180



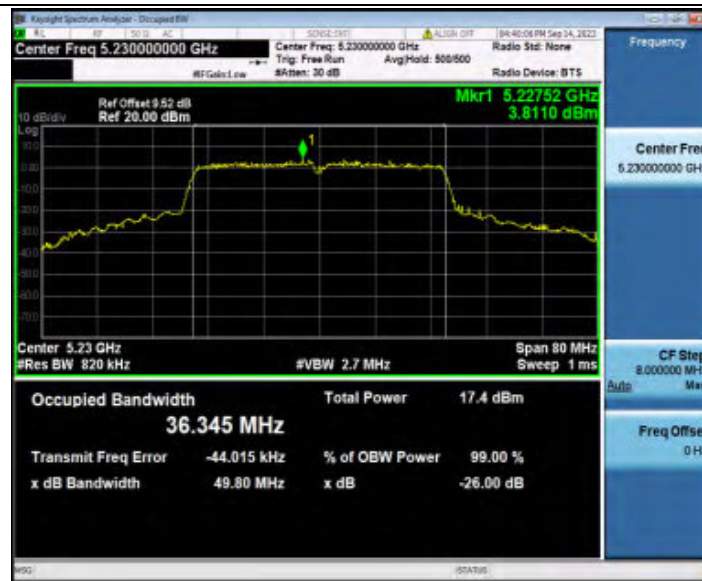
11AC20SISO_Ant1_5200



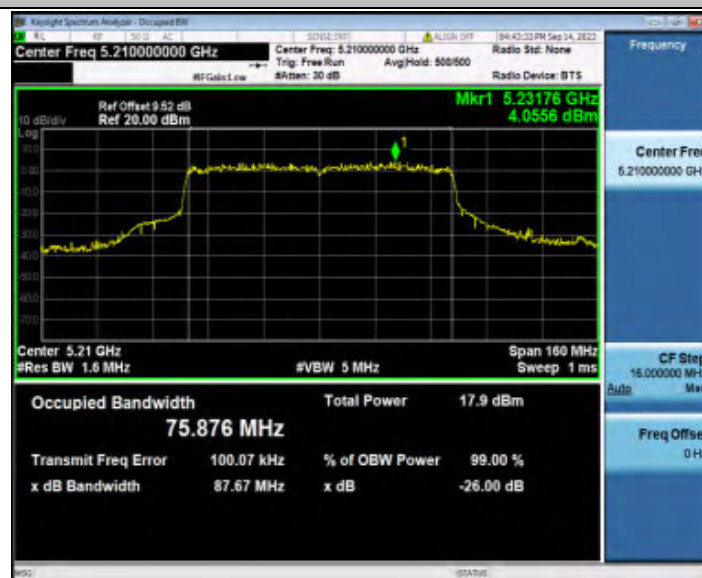
11AC20SISO_Ant1_5240



11AC40SISO_Ant1_5190



11AC40SISO_Ant1_5230



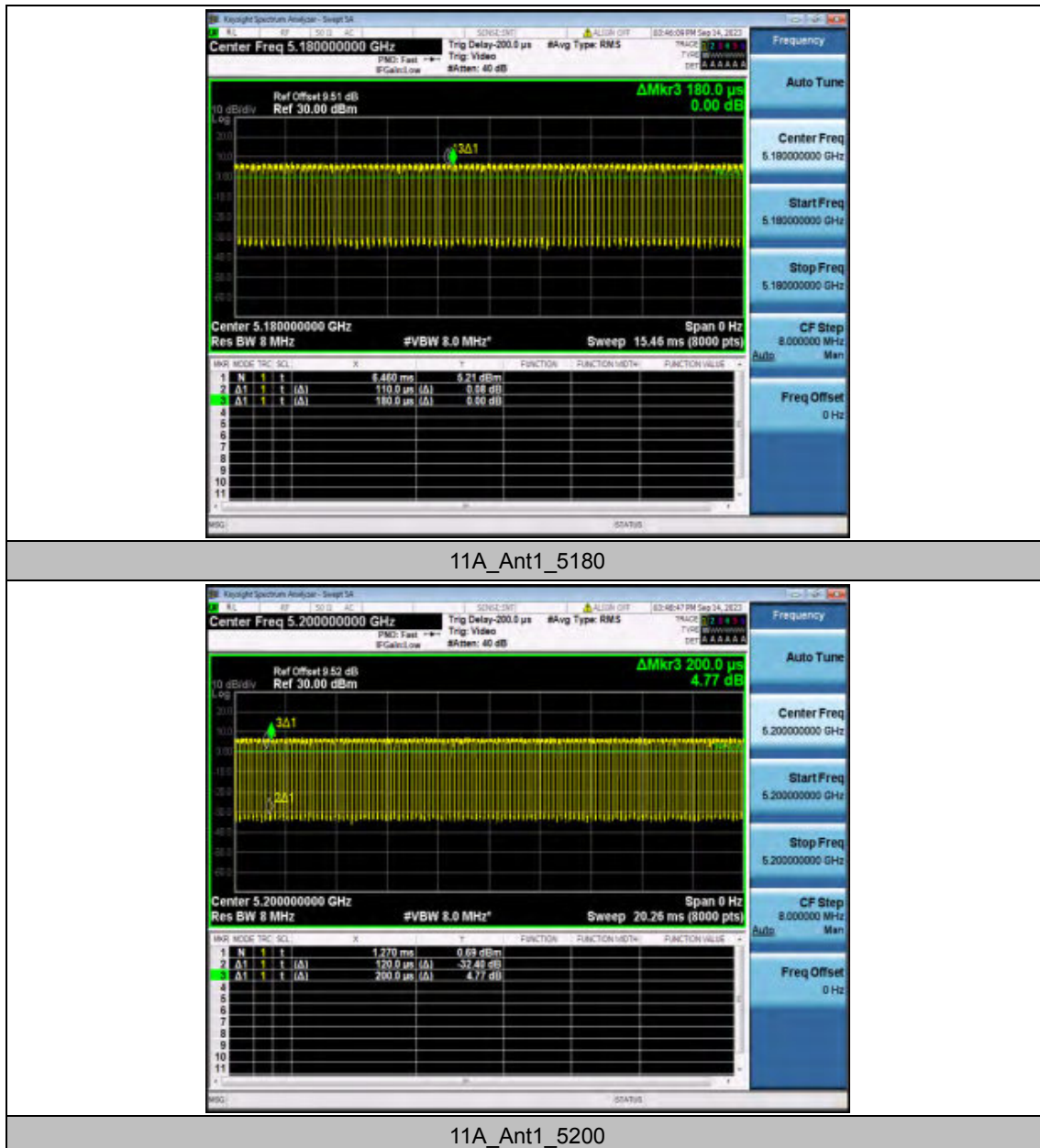
11AC80SISO_Ant1_5210

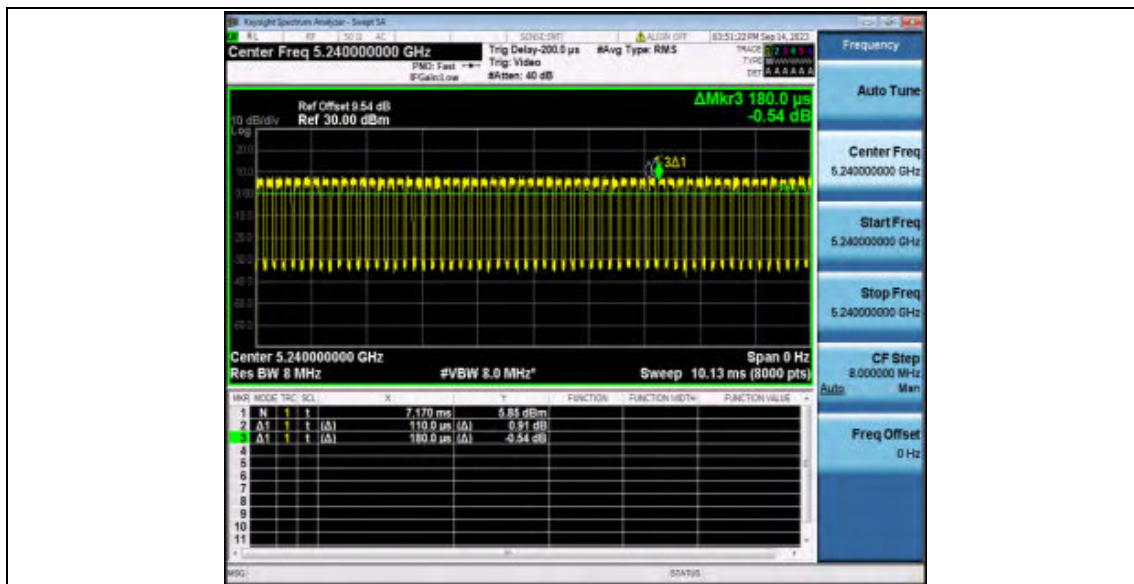
Appendix D.3: Duty Cycle

Test Result

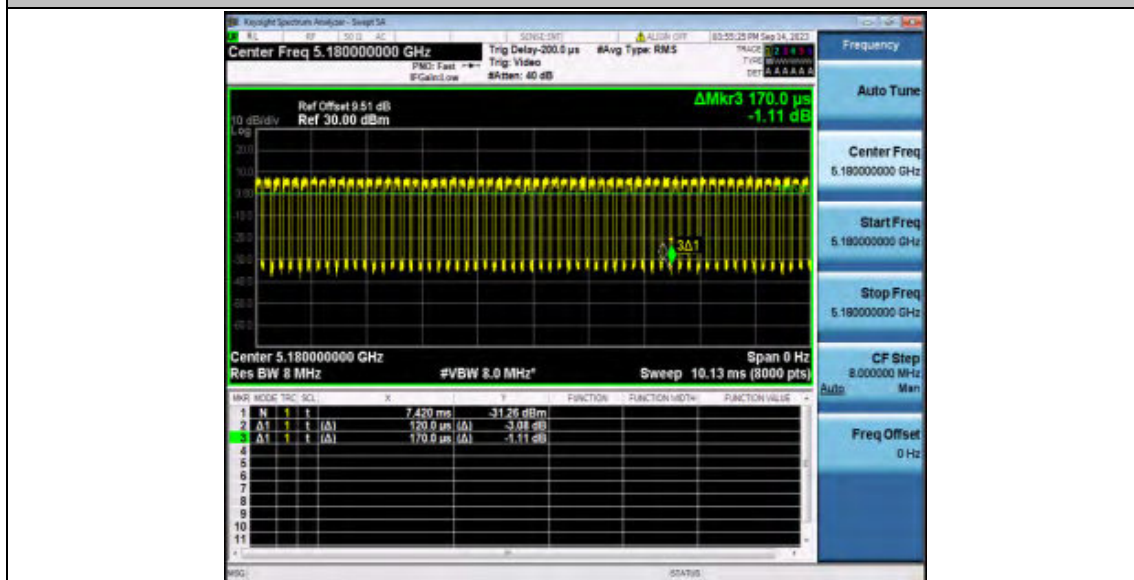
Test Mode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11A	Ant1	5180	0.11	0.18	61.11
		5200	0.12	0.20	60.00
		5240	0.11	0.18	61.11
11N20SISO	Ant1	5180	0.12	0.17	70.59
		5200	0.11	0.18	61.11
		5240	0.11	0.24	45.83
11N40SISO	Ant1	5190	0.08	0.16	50.00
		5230	0.07	0.13	53.85
11AC20SISO	Ant1	5180	0.13	0.20	65.00
		5200	0.12	0.20	60.00
		5240	0.12	0.24	50.00
11AC40SISO	Ant1	5190	0.08	0.17	47.06
		5230	0.08	0.14	57.14
11AC80SISO	Ant1	5210	0.06	0.14	42.86

Test Graphs

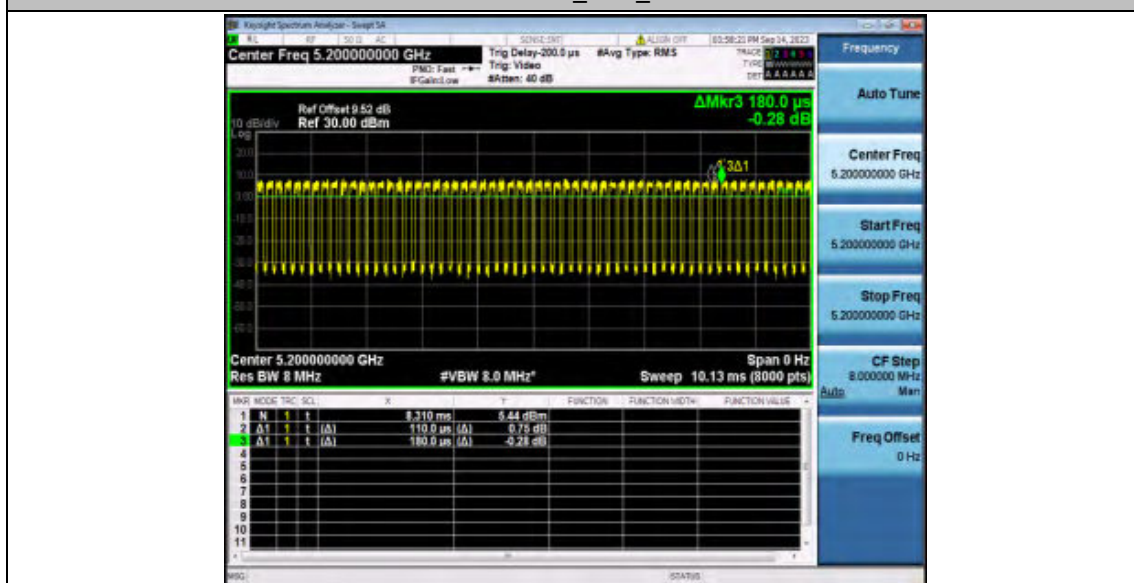




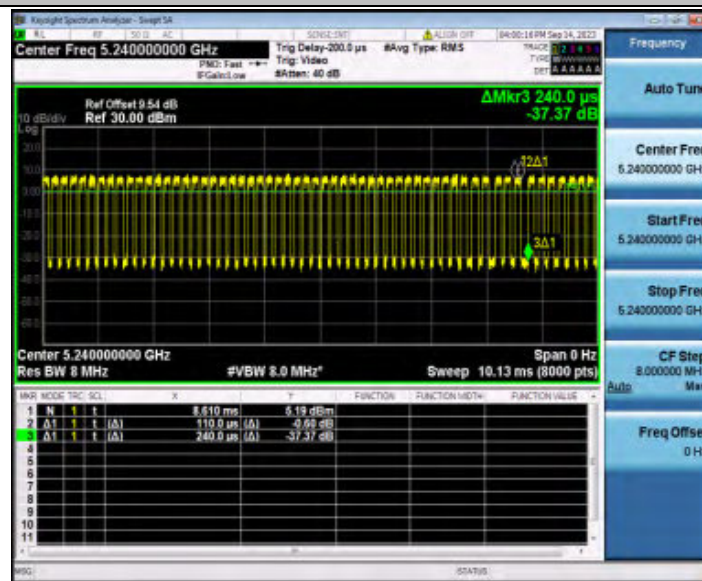
11A_Ant1_5240



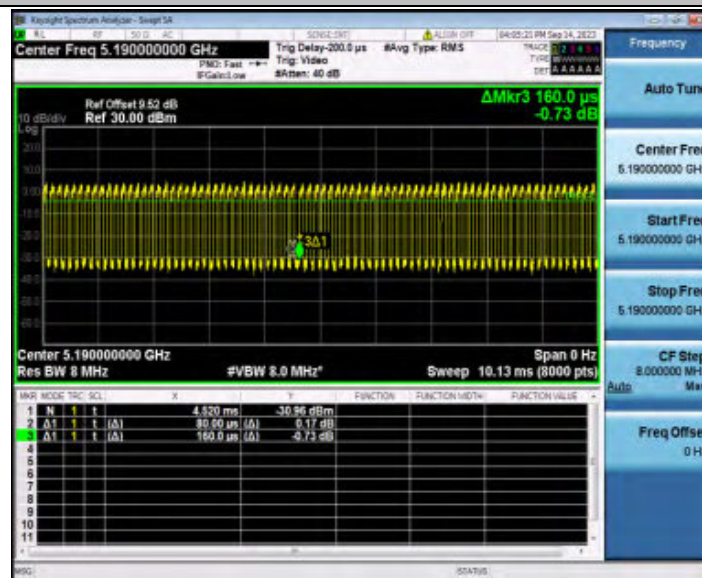
11N20SISO_Ant1_5180



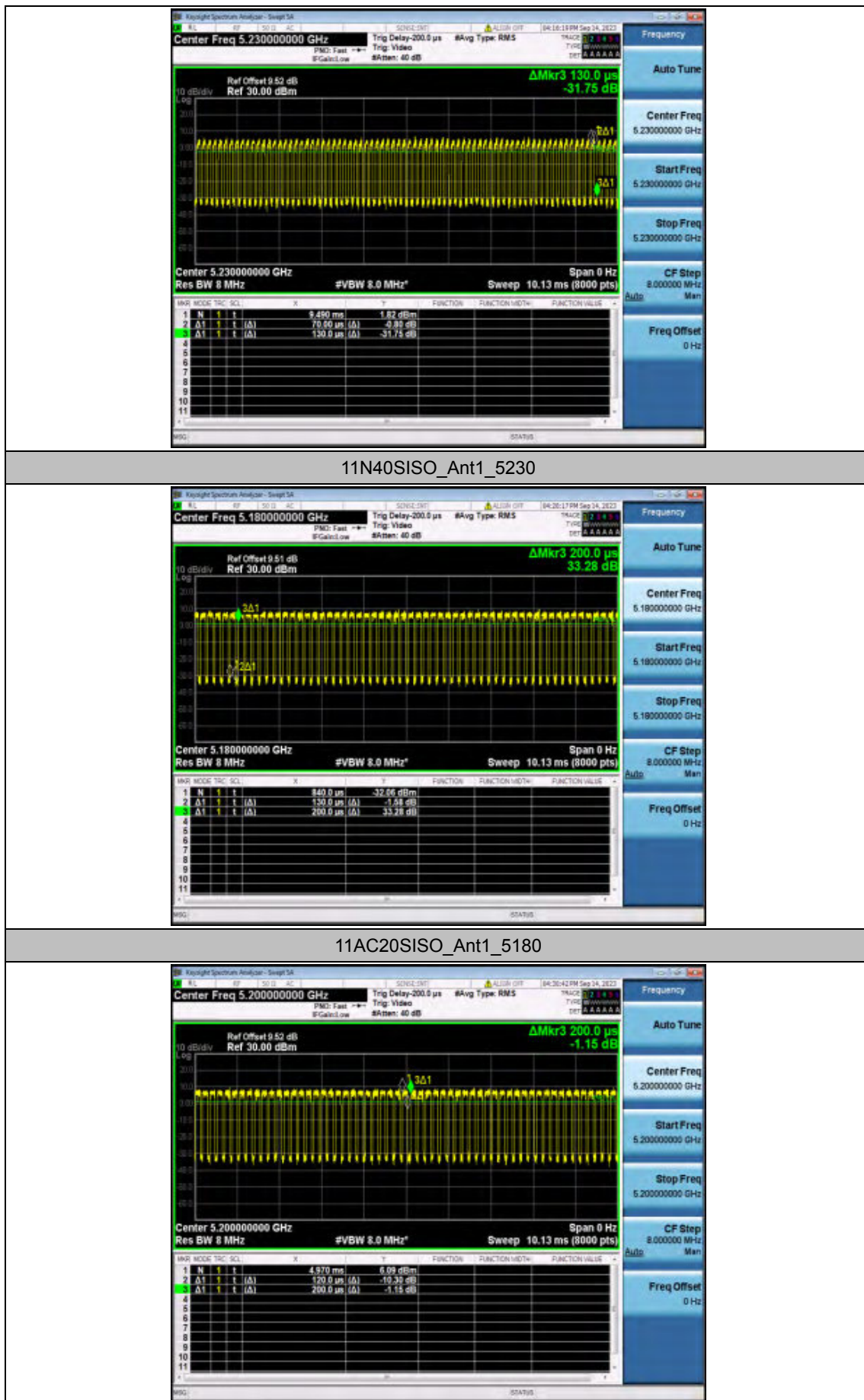
11N20SISO_Ant1_5200



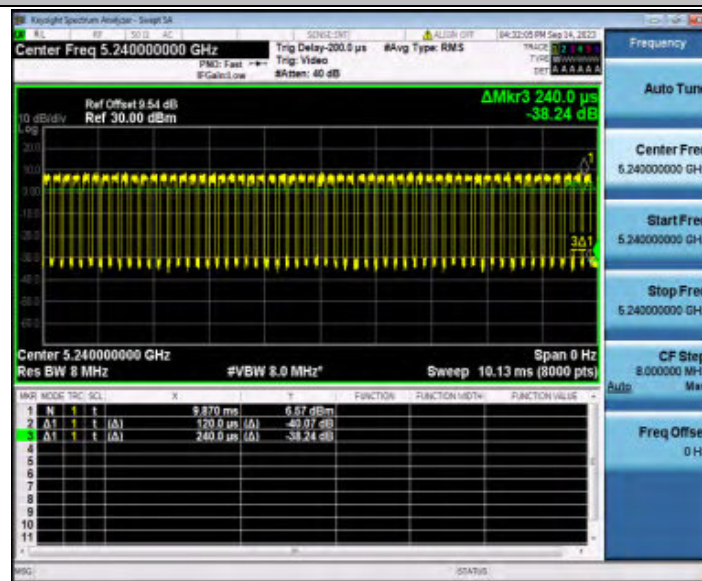
11N20SISO_Ant1_5240



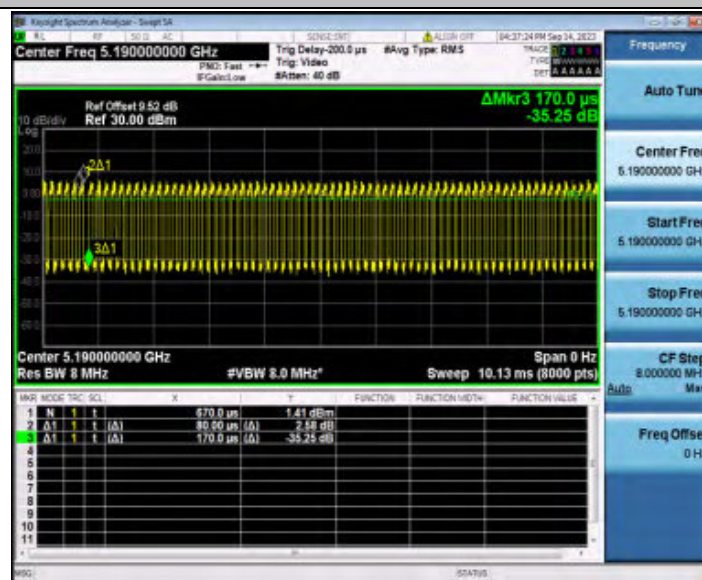
11N40SISO_Ant1_5190



11AC20SISO_Ant1_5200



11AC20SISO_Ant1_5240



11AC40SISO_Ant1_5190

Keysight Spectrum Analyzer - Sweep 54

Center Freq 5.210000000 GHz

Ref Offset 9.52 dB
Ref 30.00 dBm

ΔMkr3 140.0 μs
0.08 dB

Center 5.210000000 GHz
Res BW 8 MHz
#VBW 8.0 MHz

Span 0 Hz
Sweep 10.13 ms (8000 pts)

MARK	MODE	TRIG	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	1	1.050 nm	-1.84 dBm			
2	A1	1	1	Δ1	40.00 μs (Δ)			-26.93 dB
3	Δ1	1	1	Δ1	140.0 μs (Δ)			0.08 dB

Frequency

Auto Tune

Center Freq
5.210000000 GHz

Start Freq
5.210000000 GHz

Stop Freq
5.210000000 GHz

CF Step
8.0000000 MHz
Man

Freq Offset
0 Hz

21

Appendix D.4: Maximum conducted output power

Test Result Channel Power

Test Mode	Antenna	Frequency[MHz]	Channel Power [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	6.58	61.11	2.14	8.72	≤23.98	PASS
		5200	8.06	60.00	2.22	10.28	≤23.98	PASS
		5240	7.29	61.11	2.14	9.43	≤23.98	PASS
11N20SISO	Ant1	5180	7.56	70.59	1.51	9.07	≤23.98	PASS
		5200	7.55	61.11	2.14	9.69	≤23.98	PASS
		5240	7.45	45.83	3.39	10.84	≤23.98	PASS
11N40SISO	Ant1	5190	6.55	50.00	3.01	9.56	≤23.98	PASS
		5230	7.43	53.85	2.69	10.12	≤23.98	PASS
11AC20SISO	Ant1	5180	8.38	65.00	1.87	10.25	≤23.98	PASS
		5200	8.44	60.00	2.22	10.66	≤23.98	PASS
		5240	8.41	50.00	3.01	11.42	≤23.98	PASS
11AC40SISO	Ant1	5190	7.46	47.06	3.27	10.73	≤23.98	PASS
		5230	7.49	57.14	2.43	9.92	≤23.98	PASS
11AC80SISO	Ant1	5210	7.07	42.86	3.68	10.75	≤23.98	PASS

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

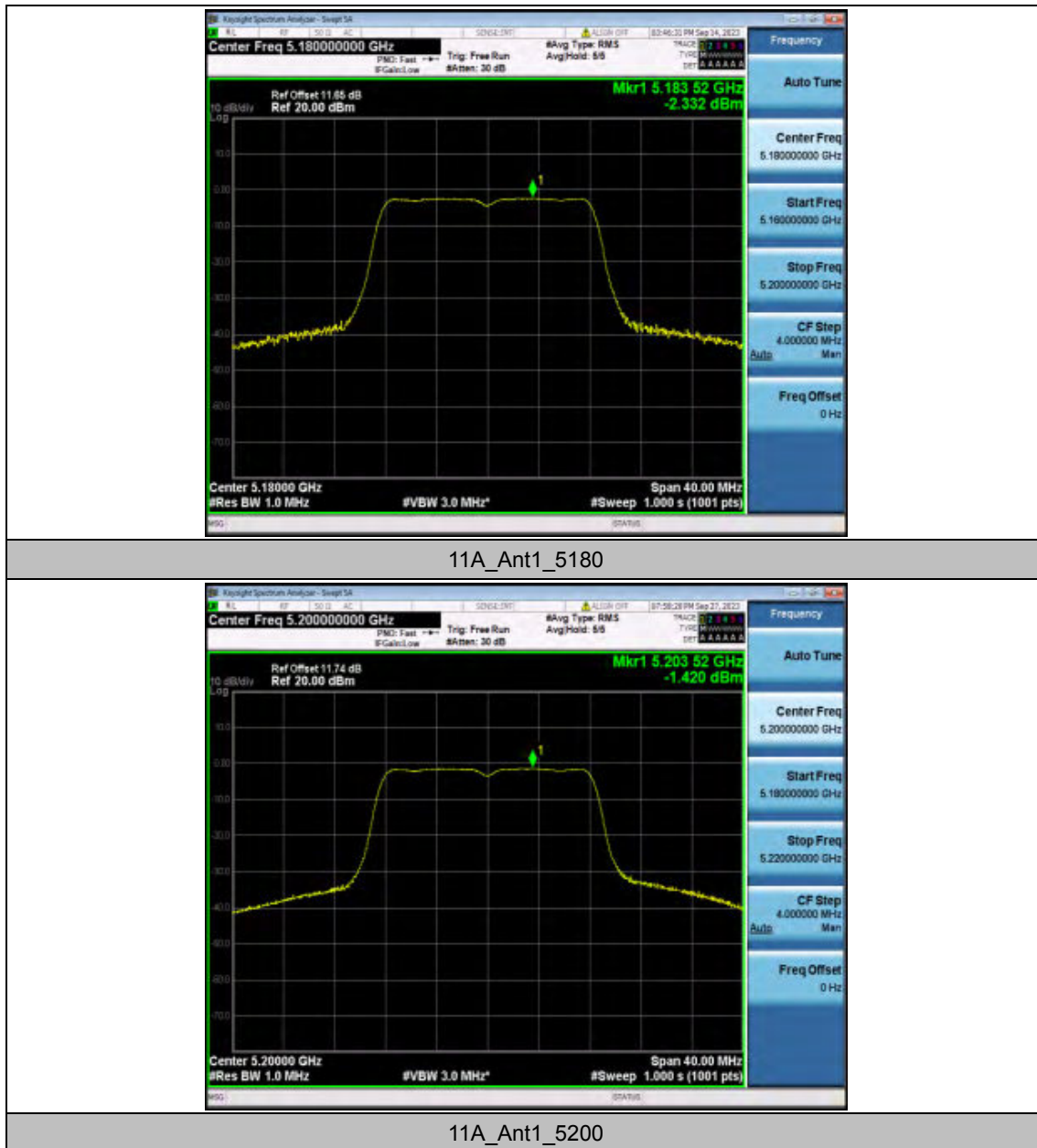
Appendix D.5: Maximum power spectral density

Test Result

Test Mode	Antenna	Frequency[MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	-2.33	≤11.00	PASS
		5200	-1.42	≤11.00	PASS
		5240	-1.98	≤11.00	PASS
11N20SISO	Ant1	5180	-2.52	≤11.00	PASS
		5200	-1.93	≤11.00	PASS
		5240	-0.72	≤11.00	PASS
11N40SISO	Ant1	5190	-4.46	≤11.00	PASS
		5230	-3.91	≤11.00	PASS
11AC20SISO	Ant1	5180	-1.19	≤11.00	PASS
		5200	-0.8	≤11.00	PASS
		5240	-0.09	≤11.00	PASS
11AC40SISO	Ant1	5190	-3.4	≤11.00	PASS
		5230	-4.14	≤11.00	PASS
11AC80SISO	Ant1	5210	-6.23	≤11.00	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

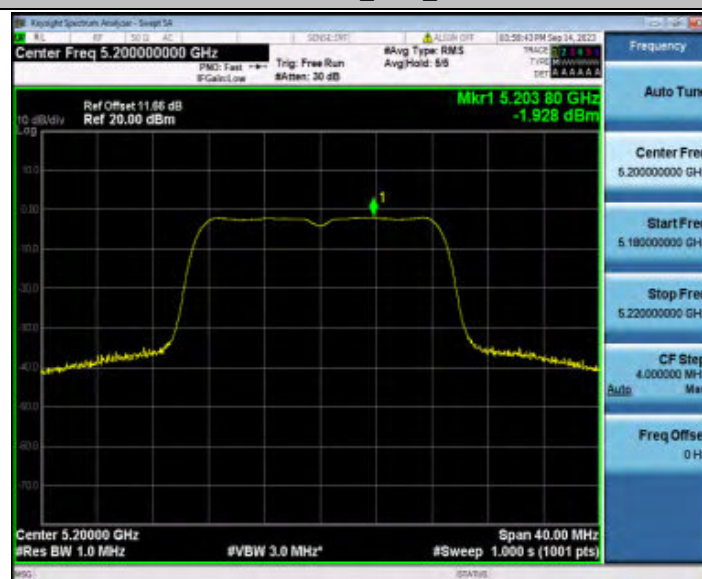




11A_Ant1_5240



11N20SISO_Ant1_5180



11N20SISO_Ant1_5200



11N20SISO_Ant1_5240



11N40SISO_Ant1_5190



11N40SISO_Ant1_5230



11AC20SISO_Ant1_5180



11AC20SISO_Ant1_5200



11AC20SISO_Ant1_5240



11AC40SISO_Ant1_5190



11AC40SISO_Ant1_5230



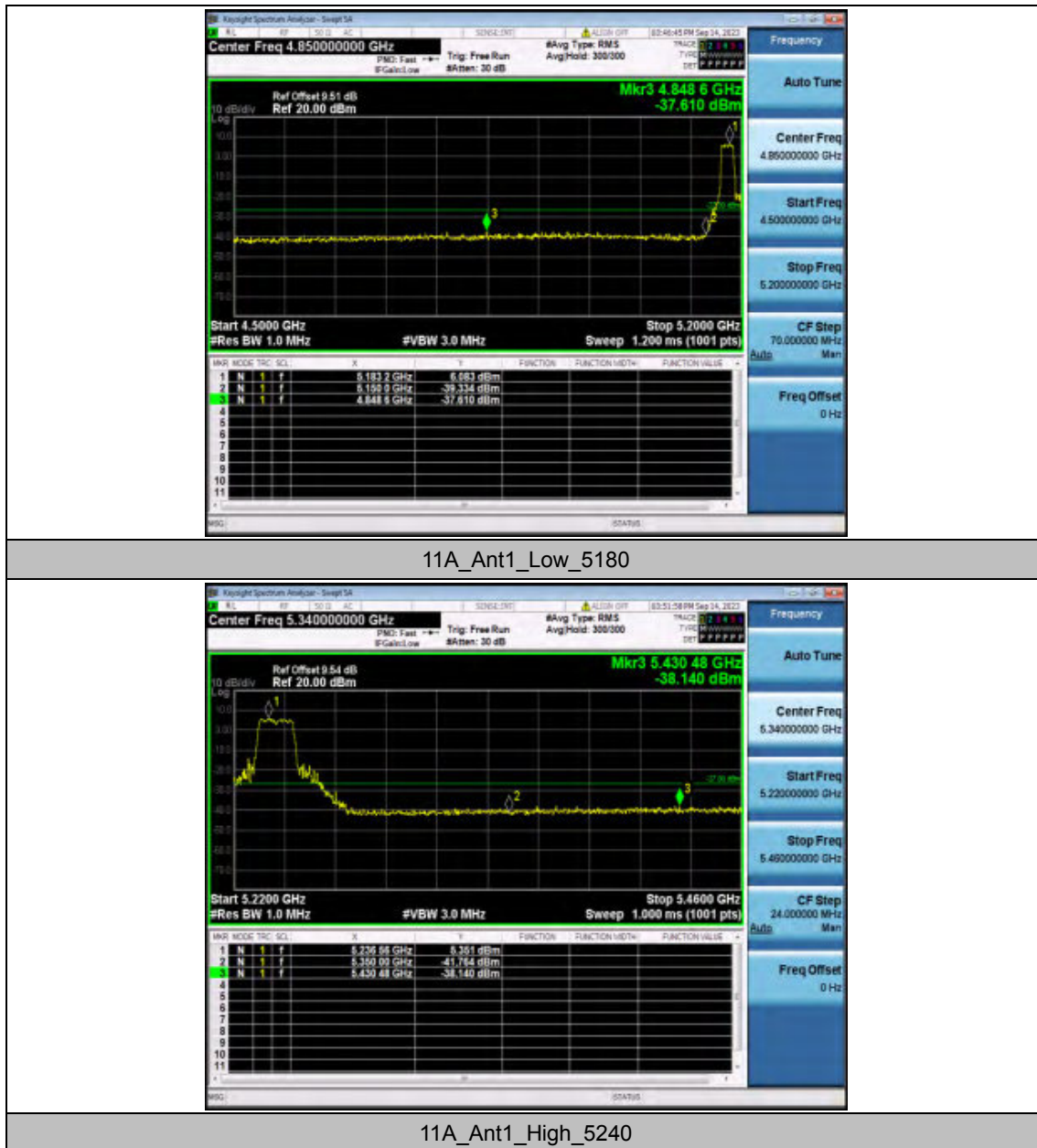
11AC80SISO_Ant1_5210

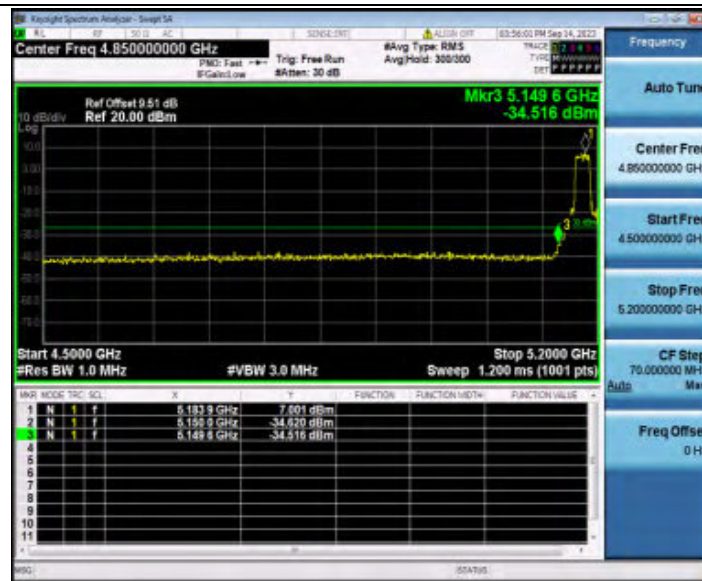
Appendix D.6: Band edge measurements

Test Result B1

Test Mode	Antenna	ChName	Frequency[MHz]	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	Low	5180	-37.61	≤ -27	PASS
		High	5240	-38.14	≤ -27	PASS
11N20SISO	Ant1	Low	5180	-34.52	≤ -27	PASS
		High	5240	-38.34	≤ -27	PASS
11N40SISO	Ant1	Low	5190	-33.28	≤ -27	PASS
		High	5230	-37.99	≤ -27	PASS
11AC20SISO	Ant1	Low	5180	-35.49	≤ -27	PASS
		High	5240	-37.25	≤ -27	PASS
11AC40SISO	Ant1	Low	5190	-35.41	≤ -27	PASS
		High	5230	-37.87	≤ -27	PASS
11AC80SISO	Ant1	Low	5210	-33.89	≤ -27	PASS
		High	5210	-38.26	≤ -27	PASS

Test Graphs B1

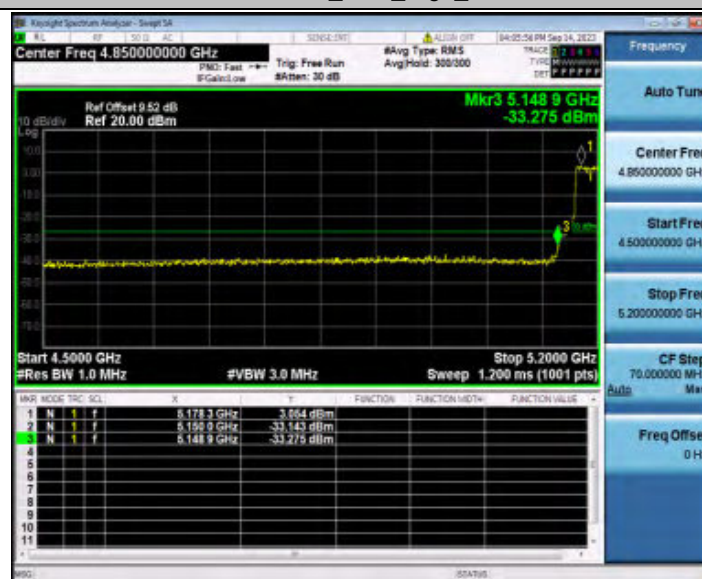




11N20SISO_Ant1_Low_5180



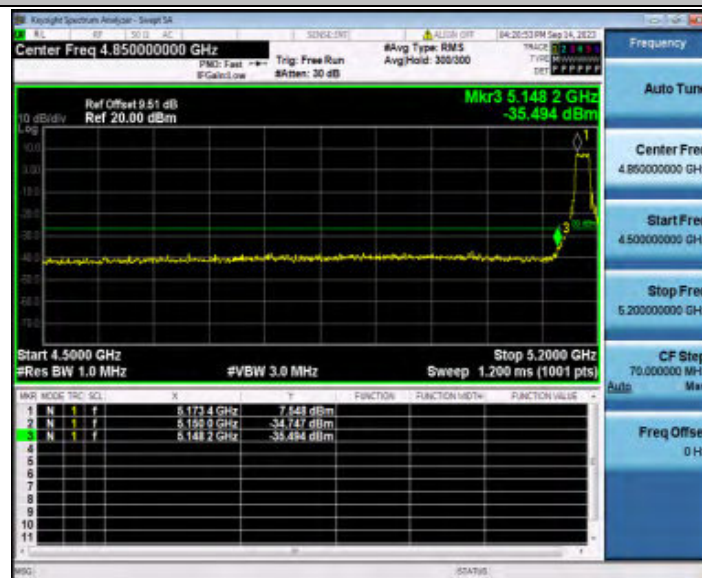
11N20SISO_Ant1_High_5240



11N40SISO_Ant1_Low_5190



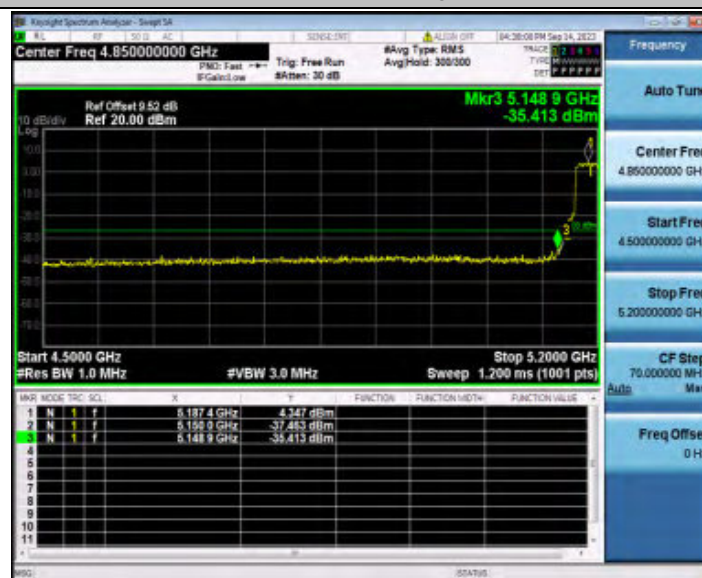
11N40SISO_Ant1_High_5230



11AC20SISO_Ant1_Low_5180



11AC20SISO_Ant1_High_5240



11AC40SISO_Ant1_Low_5190



11AC40SISO_Ant1_High_5230



11AC80SISO_Ant1_Low_5210



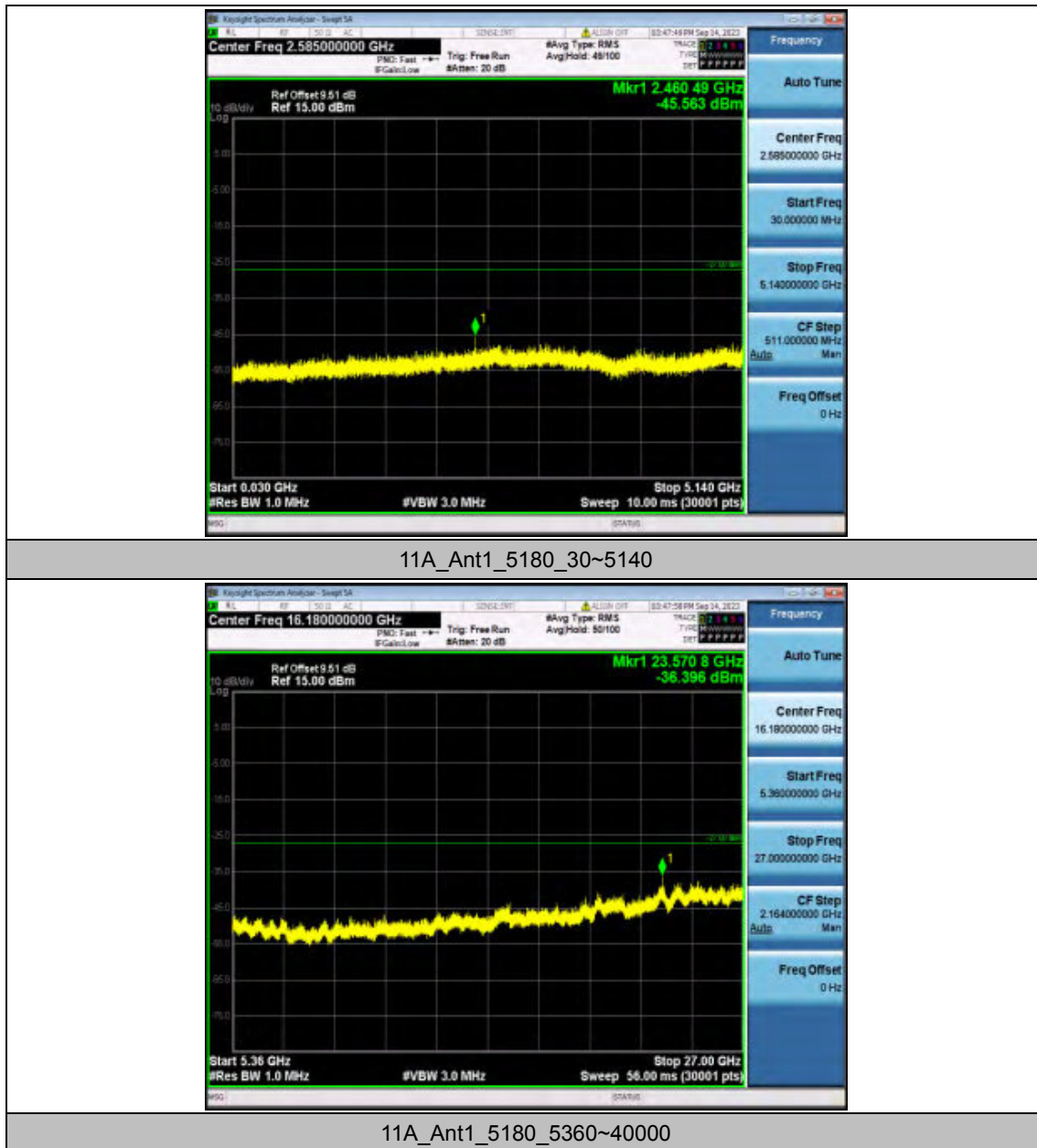
11AC80SISO_Ant1_High_5210

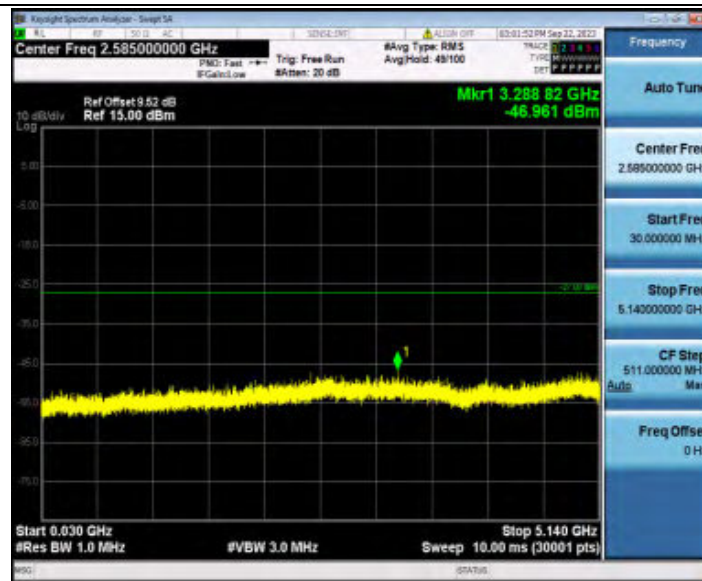
Appendix D.7: Conducted Spurious Emission

Test Result

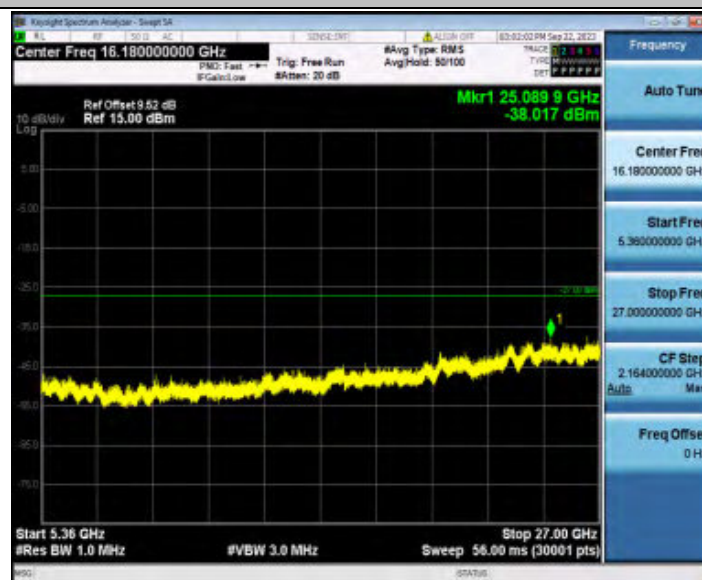
Test Mode	Antenna	Frequency[MHz]	FreqRange [MHz]	Max. Fre [MHz]	Max. Level [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	30~5140	2460.49	-45.56	≤-27	PASS
			5360~40000	23570.78	-36.4	≤-27	PASS
		5200	30~5140	3288.82	-46.96	≤-27	PASS
			5360~40000	25089.91	-38.02	≤-27	PASS
		5240	30~5140	2461.51	-46.36	≤-27	PASS
			5360~40000	24833.11	-37.45	≤-27	PASS
11N20SISO	Ant1	5180	30~5140	5136.25	-46.54	≤-27	PASS
			5360~40000	24218.54	-37.76	≤-27	PASS
		5200	30~5140	4958.6	-47.57	≤-27	PASS
			5360~40000	26510.21	-37.68	≤-27	PASS
		5240	30~5140	4854.69	-47.02	≤-27	PASS
			5360~40000	26984.85	-38.21	≤-27	PASS
11N40SISO	Ant1	5190	30~5140	5131.48	-45.38	≤-27	PASS
			5360~40000	26825.44	-37.53	≤-27	PASS
		5230	30~5140	4976.31	-47	≤-27	PASS
			5360~40000	24279.13	-37.36	≤-27	PASS
11AC20SISO	Ant1	5180	30~5140	2448.56	-45.43	≤-27	PASS
			5360~40000	26500.84	-37.54	≤-27	PASS
		5200	30~5140	2414.84	-40.6	≤-27	PASS
			5360~40000	23535.44	-37.16	≤-27	PASS
		5240	30~5140	3174.35	-47.27	≤-27	PASS
			5360~40000	26006.72	-37.98	≤-27	PASS
11AC40SISO	Ant1	5190	30~5140	2447.88	-45.82	≤-27	PASS
			5360~40000	26824.72	-38.13	≤-27	PASS
		5230	30~5140	2608.68	-36.82	≤-27	PASS
			5360~40000	26751.86	-37.95	≤-27	PASS
11AC80SISO	Ant1	5210	30~5140	5133.36	-40.08	≤-27	PASS
			5360~40000	26479.2	-37.96	≤-27	PASS

Test Graphs

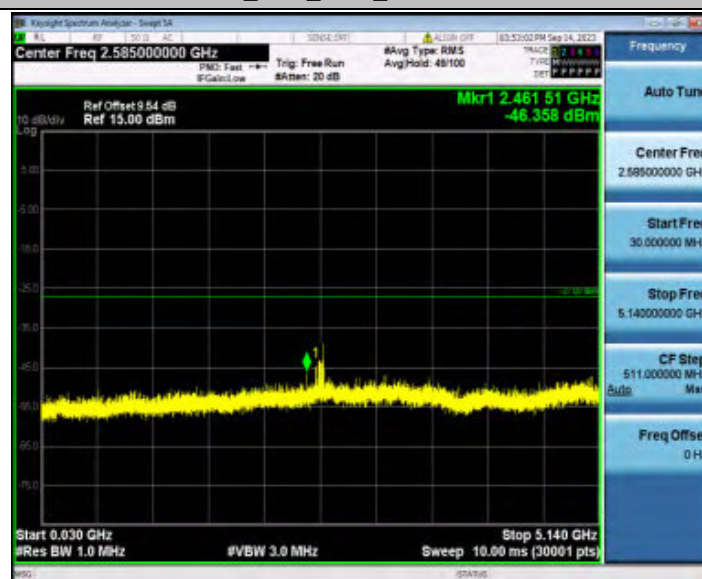




11A_Ant1_5200_30~5140



11A_Ant1_5200_5360~40000



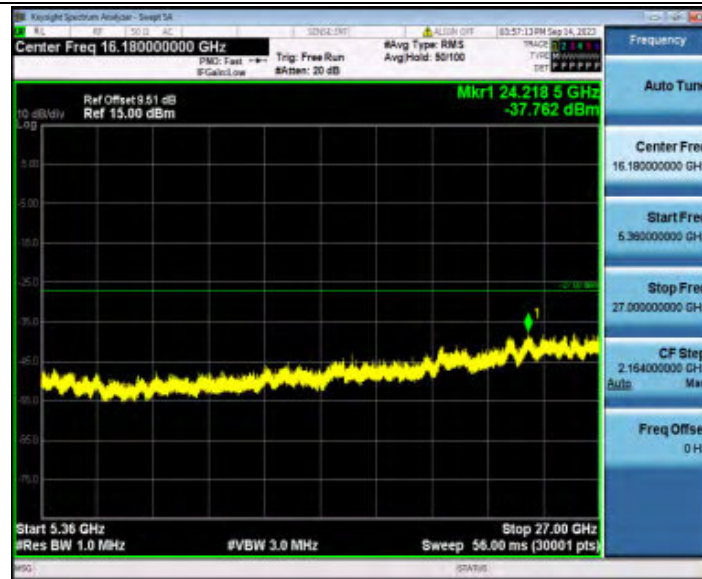
11A_Ant1_5240_30~5140



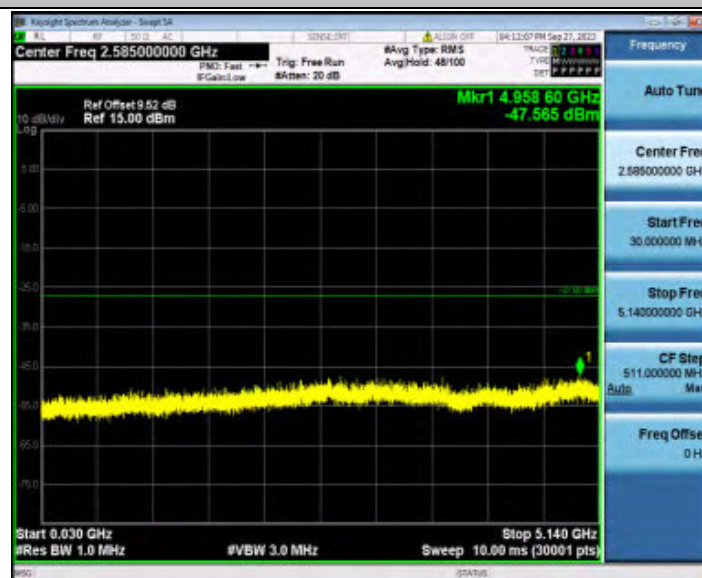
11A_Ant1_5240_5360~40000



11N20SISO_Ant1_5180_30~5140



11N20SISO_Ant1_5180_5360~40000



11N20SISO_Ant1_5200_30~5140



11N20SISO_Ant1_5200_5360~40000



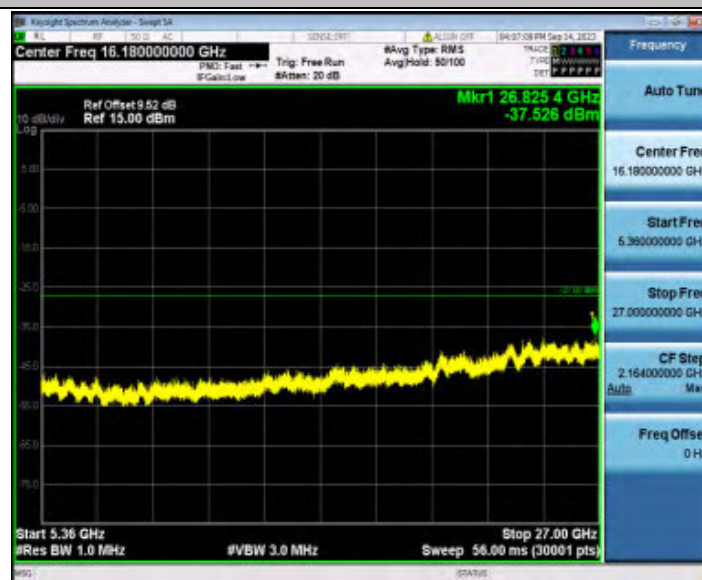
11N20SISO_Ant1_5240_30~5140



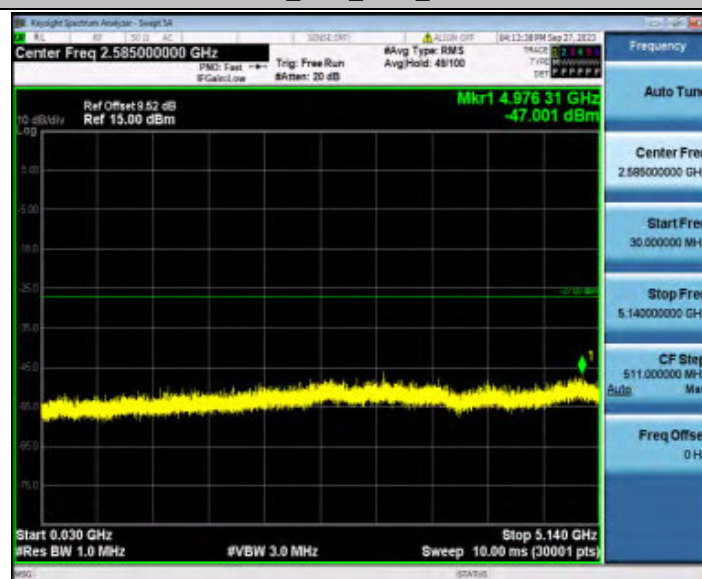
11N20SISO_Ant1_5240_5360~40000



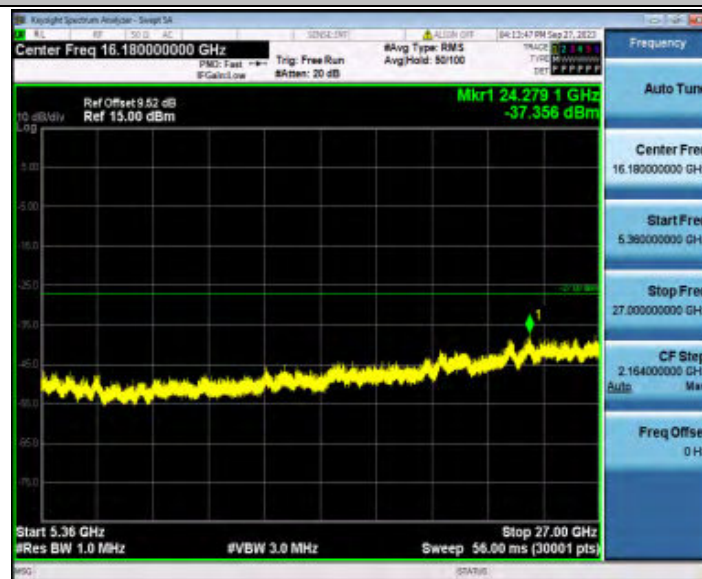
11N40SISO_Ant1_5190_30~5140



11N40SISO_Ant1_5190_5360~40000



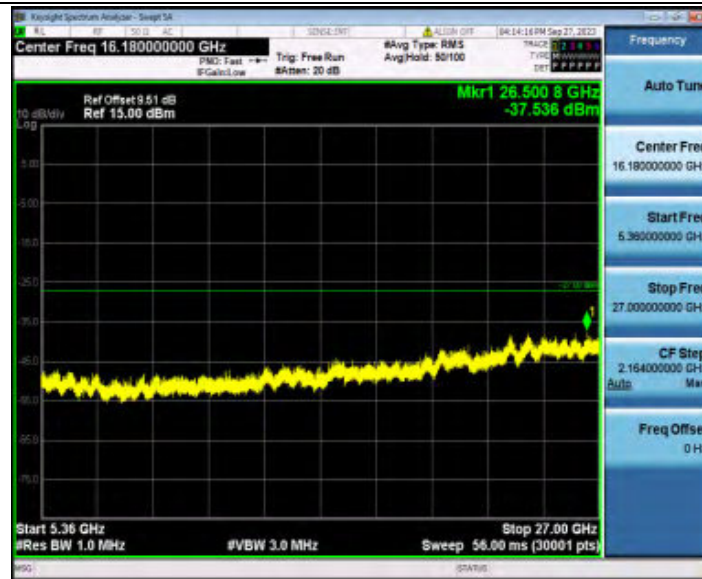
11N40SISO_Ant1_5230_30~5140



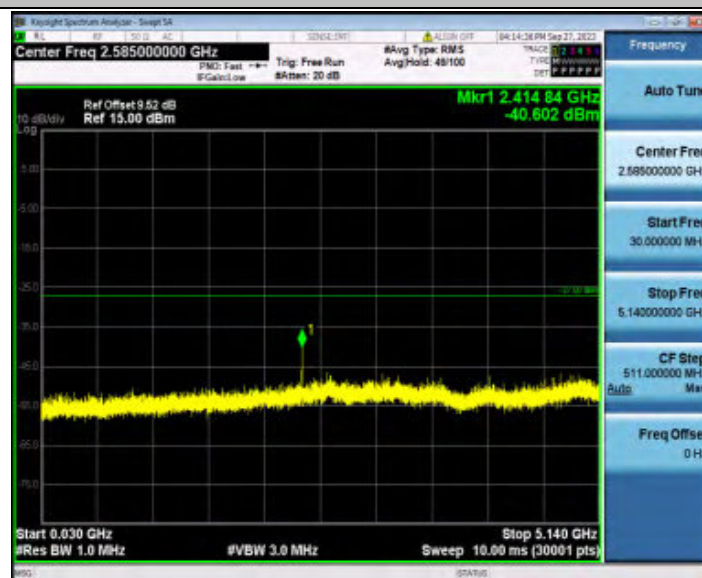
11N40SISO_Ant1_5230_5360~40000



11AC20SISO_Ant1_5180_30~5140



11AC20SISO_Ant1_5180_5360~40000



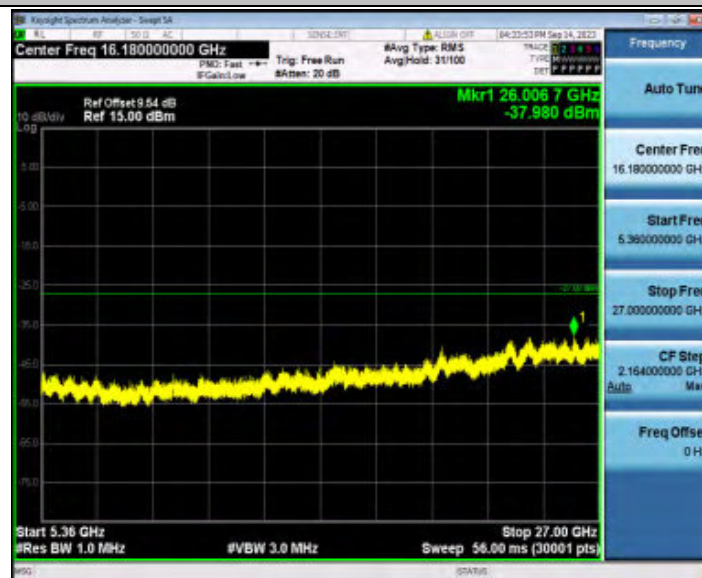
11AC20SISO_Ant1_5200_30~5140



11AC20SISO_Ant1_5200_5360~40000



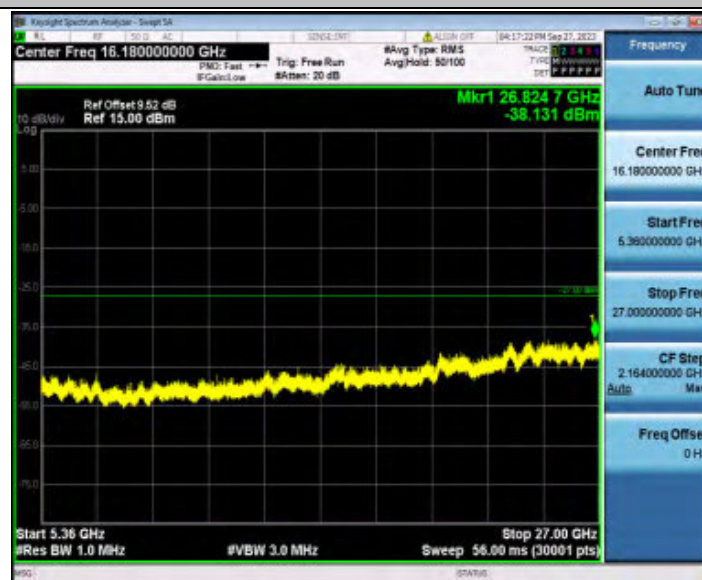
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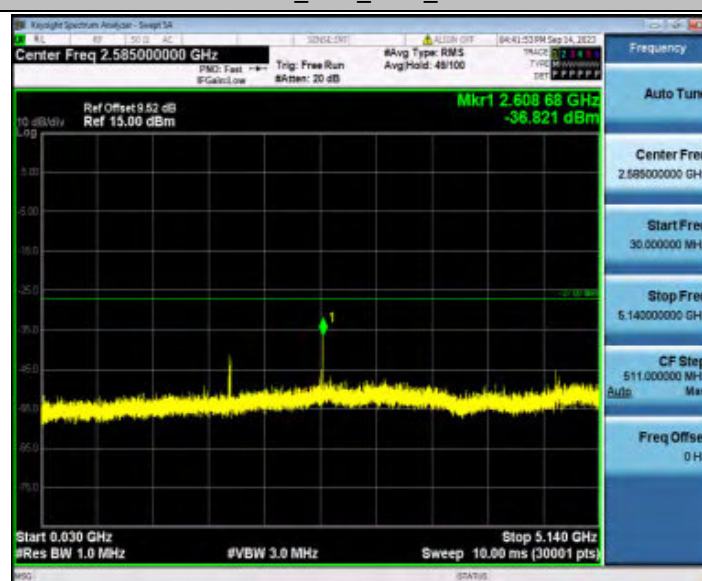
11AC20SISO_Ant1_5240_5360~40000



11AC40SISO_Ant1_5190_30~5140



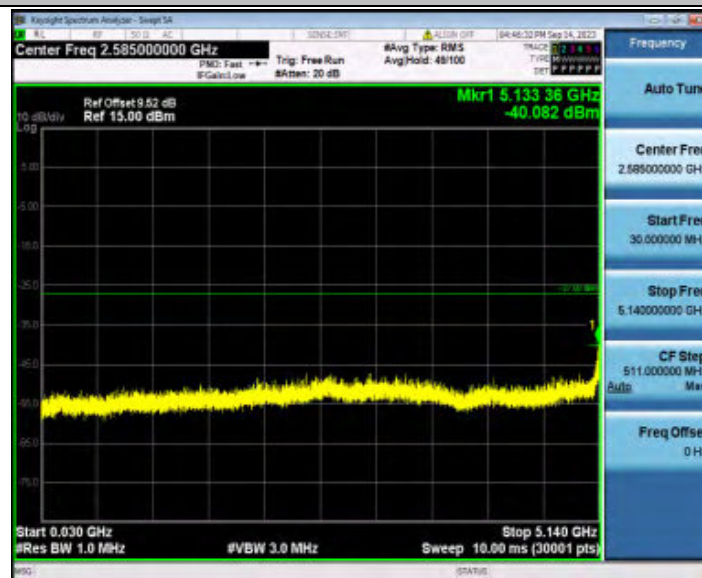
11AC40SISO_Ant1_5190_5360~40000



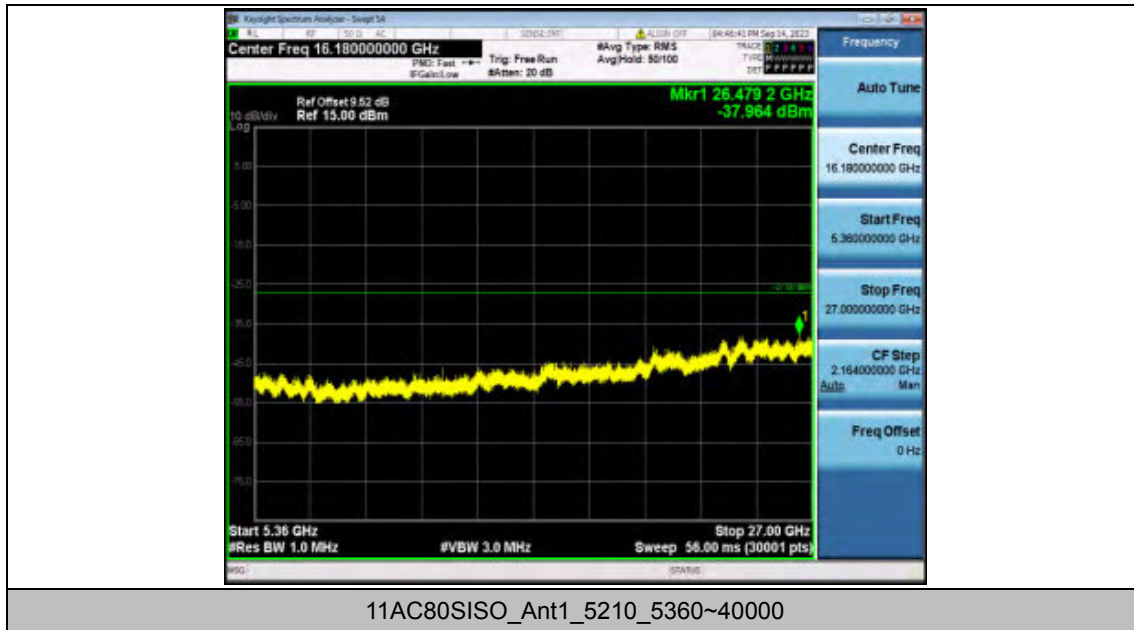
11AC40SISO_Ant1_5230_30~5140



11AC40SISO_Ant1_5230_5360~40000



11AC80SISO_Ant1_5210_30~5140



Appendix D.8: Emissions in Restricted Bands

Test Result

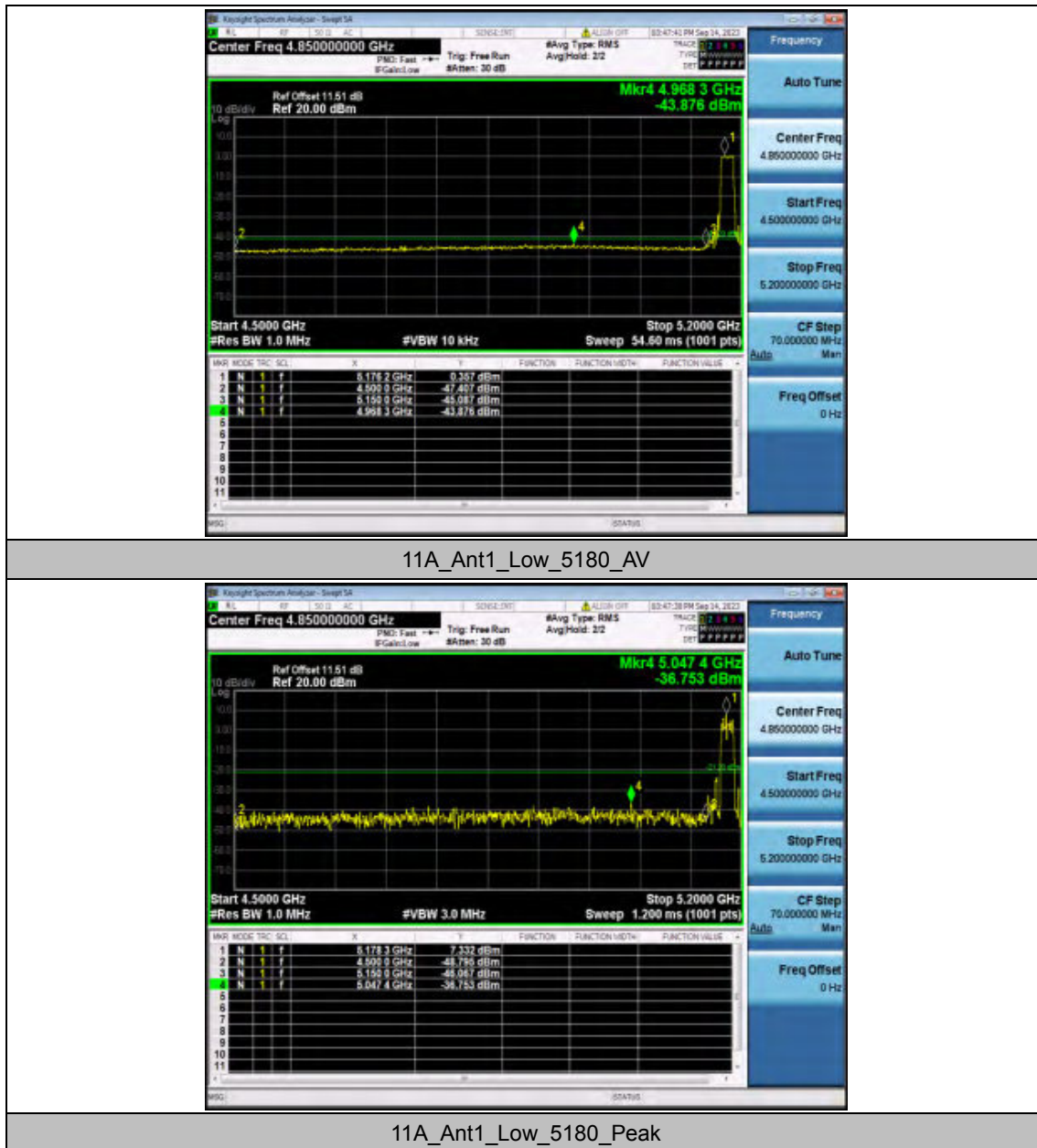
Test Mode	Antenna	ChName	Frequency [MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
11A	Ant1	Low	5180	AV	4500.000	-47.41	≤-41.20	47.79	≤54	PASS
				AV	4968.300	-43.88	≤-41.20	51.32	≤54	PASS
				AV	5150.000	-45.09	≤-41.20	50.11	≤54	PASS
				Peak	4500.000	-48.8	≤-21.20	46.40	≤74	PASS
				Peak	5047.400	-36.75	≤-21.20	58.45	≤74	PASS
				Peak	5150.000	-46.07	≤-21.20	49.13	≤74	PASS
		High	5240	AV	5350.000	-45.34	≤-41.20	49.86	≤54	PASS
				AV	5454.240	-44.41	≤-41.20	50.79	≤54	PASS
				AV	5460.000	-45.74	≤-41.20	49.46	≤54	PASS
				Peak	5350.000	-41.99	≤-21.20	53.21	≤74	PASS
				Peak	5455.920	-37.07	≤-21.20	58.13	≤74	PASS
				Peak	5460.000	-43.97	≤-21.20	51.23	≤74	PASS
11N20SIS O	Ant1	Low	5180	AV	4500.000	-47.42	≤-41.20	47.78	≤54	PASS
				AV	5149.600	-42.36	≤-41.20	52.84	≤54	PASS
				AV	5150.000	-42.64	≤-41.20	52.56	≤54	PASS
				Peak	4500.000	-48.24	≤-21.20	46.96	≤74	PASS
				Peak	5136.300	-38.18	≤-21.20	57.02	≤74	PASS
				Peak	5150.000	-41.47	≤-21.20	53.73	≤74	PASS
		High	5240	AV	5350.000	-46.9	≤-41.20	48.30	≤54	PASS
				AV	5432.880	-44.05	≤-41.20	51.15	≤54	PASS
				AV	5460.000	-45.72	≤-41.20	49.48	≤54	PASS
				Peak	5350.000	-43.5	≤-21.20	51.70	≤74	PASS
				Peak	5448.720	-39.1	≤-21.20	56.10	≤74	PASS
				Peak	5460.000	-44	≤-21.20	51.20	≤74	PASS
11N40SIS O	Ant1	Low	5190	AV	4500.000	-47.19	≤-41.20	48.01	≤54	PASS
				AV	5148.900	-42.93	≤-41.20	52.27	≤54	PASS
				AV	5150.000	-42.54	≤-41.20	52.66	≤54	PASS
				Peak	4500.000	-47.37	≤-21.20	47.83	≤74	PASS
				Peak	4961.300	-36.02	≤-21.20	59.18	≤74	PASS
				Peak	5150.000	-42.53	≤-21.20	52.67	≤74	PASS
		High	5230	AV	5350.000	-45.96	≤-41.20	49.24	≤54	PASS
				AV	5439.460	-43.53	≤-41.20	51.67	≤54	PASS
				AV	5460.000	-45.68	≤-41.20	49.52	≤54	PASS
				Peak	5350.000	-44.07	≤-21.20	51.13	≤74	PASS
				Peak	5395.780	-37.55	≤-21.20	57.65	≤74	PASS
				Peak	5460.000	-42.02	≤-21.20	53.18	≤74	PASS

11AC20SI SO	Ant1	Low	5180	AV	4500.000	-47.64	≤ -41.20	47.56	≤ 54	PASS
				AV	5148.900	-43.81	≤ -41.20	51.39	≤ 54	PASS
				AV	5150.000	-44.45	≤ -41.20	50.75	≤ 54	PASS
				Peak	4500.000	-47.04	≤ -21.20	48.16	≤ 74	PASS
				Peak	4899.700	-38.2	≤ -21.20	57.00	≤ 74	PASS
				Peak	5150.000	-41.9	≤ -21.20	53.30	≤ 74	PASS
		High	5240	AV	5350.000	-46.79	≤ -41.20	48.41	≤ 54	PASS
				AV	5413.440	-44.77	≤ -41.20	50.43	≤ 54	PASS
				AV	5460.000	-46.03	≤ -41.20	49.17	≤ 54	PASS
				Peak	5350.000	-40.57	≤ -21.20	54.63	≤ 74	PASS
				Peak	5423.520	-37.67	≤ -21.20	57.53	≤ 74	PASS
				Peak	5460.000	-43.63	≤ -21.20	51.57	≤ 74	PASS
11AC40SI SO	Ant1	Low	5190	AV	4500.000	-47.7	≤ -41.20	47.50	≤ 54	PASS
				AV	4941.000	-43.43	≤ -41.20	51.77	≤ 54	PASS
				AV	5150.000	-44.26	≤ -41.20	50.94	≤ 54	PASS
				Peak	4500.000	-45.16	≤ -21.20	50.04	≤ 74	PASS
				Peak	5055.800	-35.94	≤ -21.20	59.26	≤ 74	PASS
				Peak	5150.000	-38.62	≤ -21.20	56.58	≤ 74	PASS
		High	5230	AV	5350.000	-45.91	≤ -41.20	49.29	≤ 54	PASS
				AV	5410.340	-44.25	≤ -41.20	50.95	≤ 54	PASS
				AV	5460.000	-45.47	≤ -41.20	49.73	≤ 54	PASS
				Peak	5350.000	-43.47	≤ -21.20	51.73	≤ 74	PASS
				Peak	5394.740	-37.4	≤ -21.20	57.80	≤ 74	PASS
				Peak	5460.000	-39.84	≤ -21.20	55.36	≤ 74	PASS
11AC80SI SO	Ant1	Low	5210	AV	4500.000	-46.75	≤ -41.20	48.45	≤ 54	PASS
				AV	4955.250	-43.59	≤ -41.20	51.61	≤ 54	PASS
				AV	5150.000	-46.01	≤ -41.20	49.19	≤ 54	PASS
				Peak	4500.000	-41.81	≤ -21.20	53.39	≤ 74	PASS
				Peak	4990.500	-36.4	≤ -21.20	58.80	≤ 74	PASS
				Peak	5150.000	-41.22	≤ -21.20	53.98	≤ 74	PASS
		High	5210	AV	5350.000	-45.33	≤ -41.20	49.87	≤ 54	PASS
				AV	5424.440	-43.22	≤ -41.20	51.98	≤ 54	PASS
				AV	5460.000	-45.07	≤ -41.20	50.13	≤ 54	PASS
				Peak	5350.000	-43.13	≤ -21.20	52.07	≤ 74	PASS
				Peak	5360.320	-38.13	≤ -21.20	57.07	≤ 74	PASS
				Peak	5460.000	-41.2	≤ -21.20	54.00	≤ 74	PASS

Note:

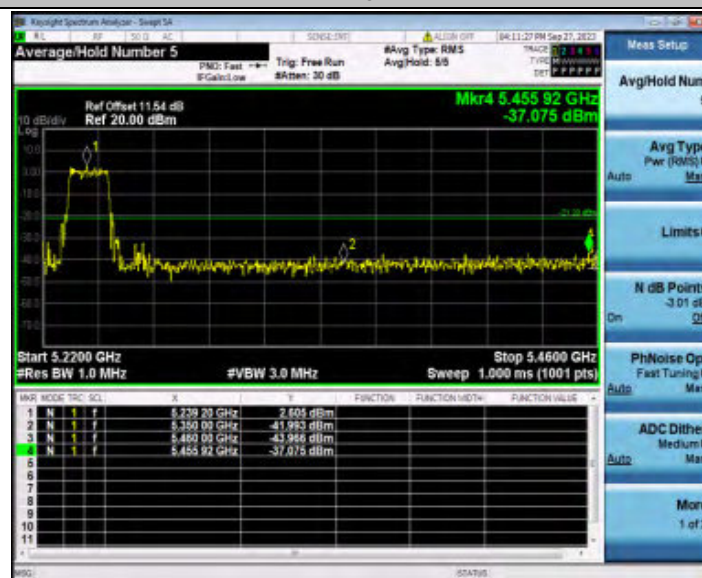
1. The Antenna Gain is compensated in the graph.
2. The Duty Cycle Factor and RBW Factor is compensated in the graph.
3. For transmitters operating in 5150-5350 GHz band and 5470-5725 GHz band: The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs





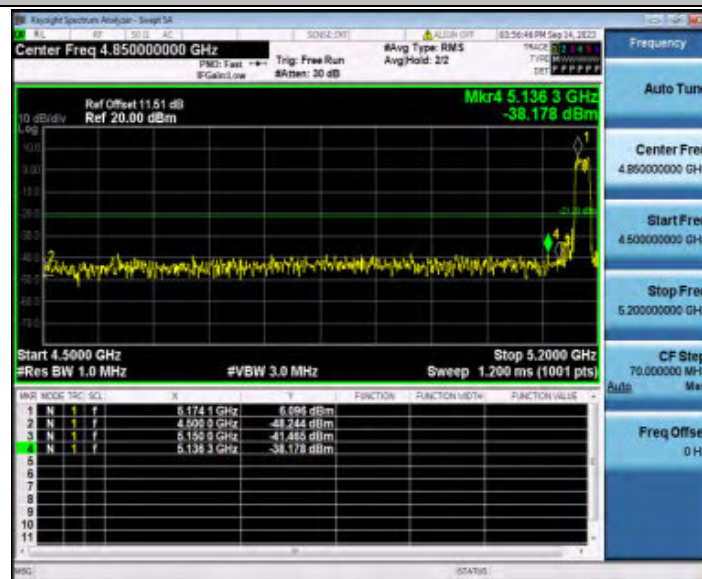
11A_Ant1_High_5240_AV



11A_Ant1_High_5240_Peak



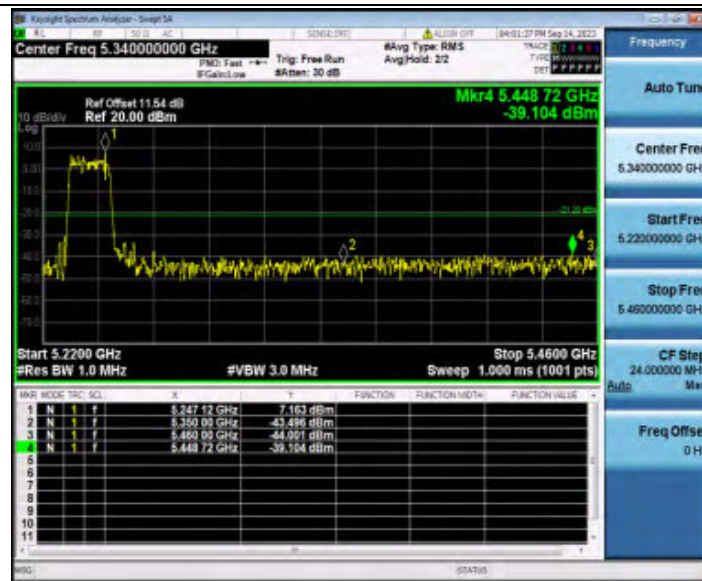
11N20SISO_Ant1_Low_5180_AV



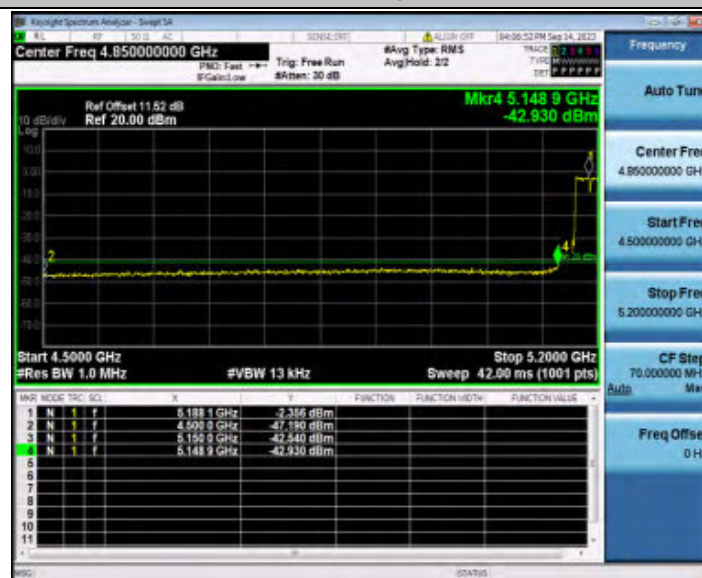
11N20SISO_Ant1_Low_5180_Peak



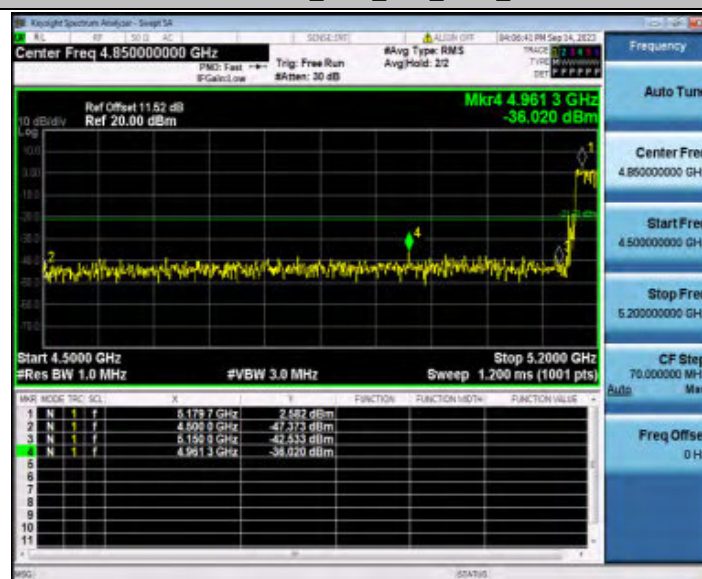
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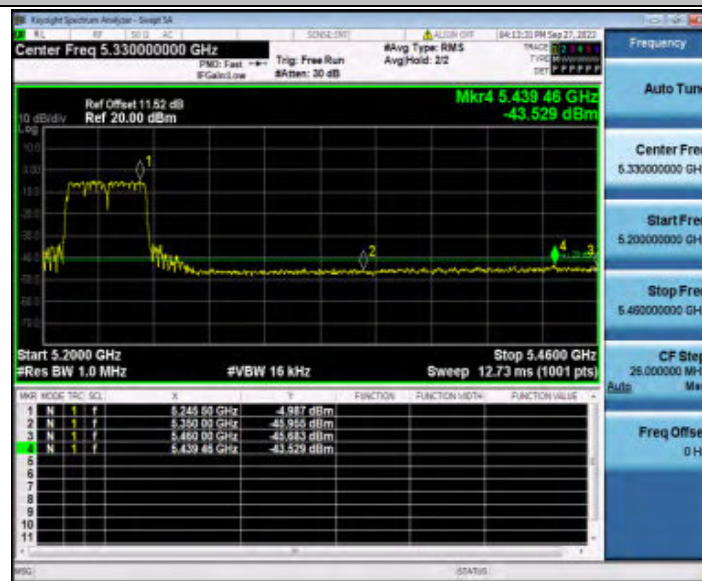
11N20SISO_Ant1_High_5240_Peak



11N40SISO_Ant1_Low_5190_AV



11N40SISO_Ant1_Low_5190_Peak



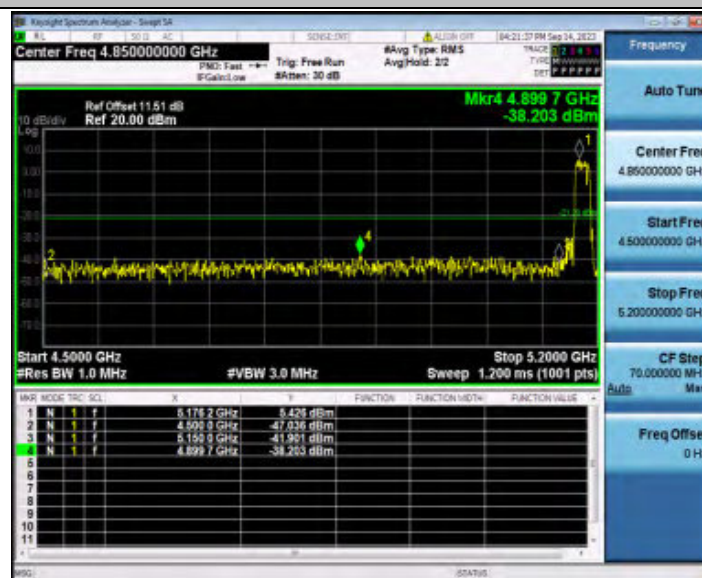
11N40SISO_Ant1_High_5230_AV



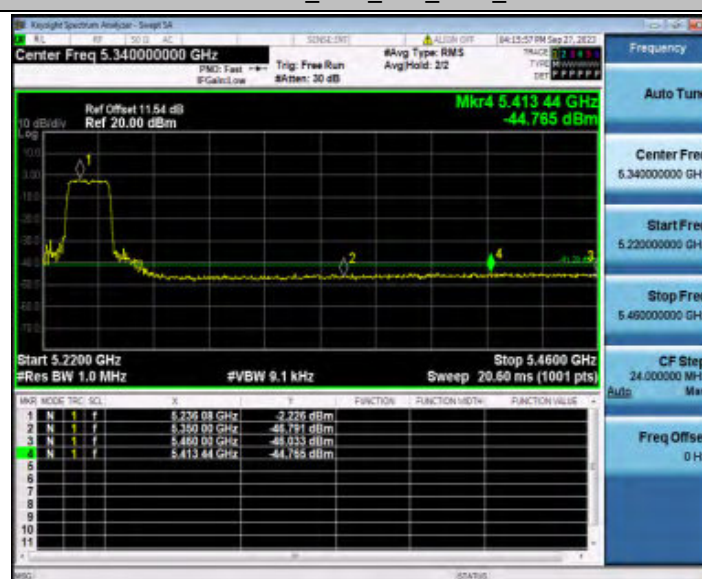
11N40SISO_Ant1_High_5230_Peak



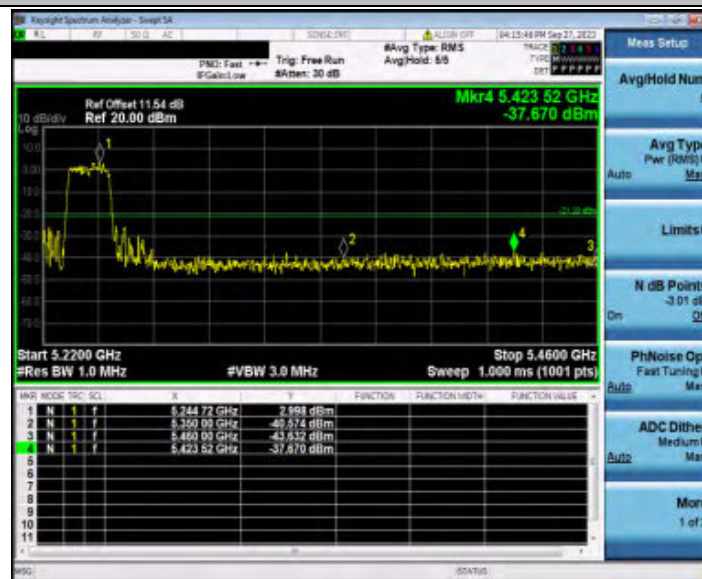
11AC20SISO_Ant1_Low_5180_AV



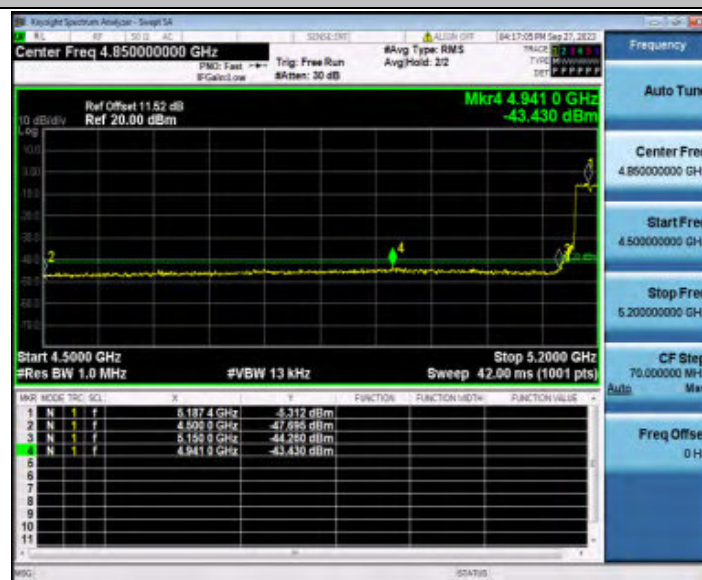
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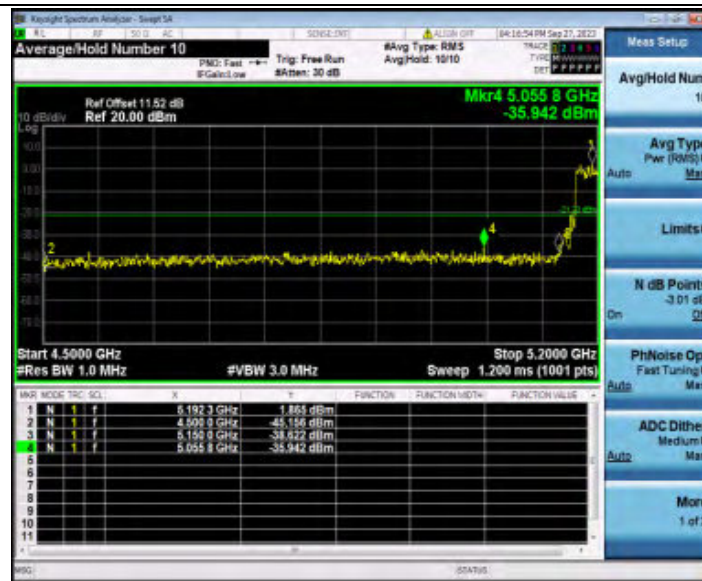
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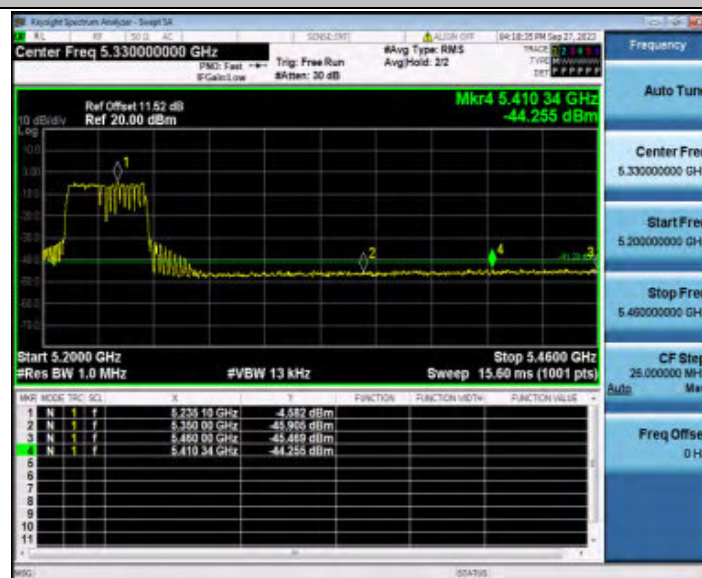
11AC20SISO_Ant1_High_5240_Peak



11AC40SISO_Ant1_Low_5190_AV



11AC40SISO_Ant1_Low_5190_Peak



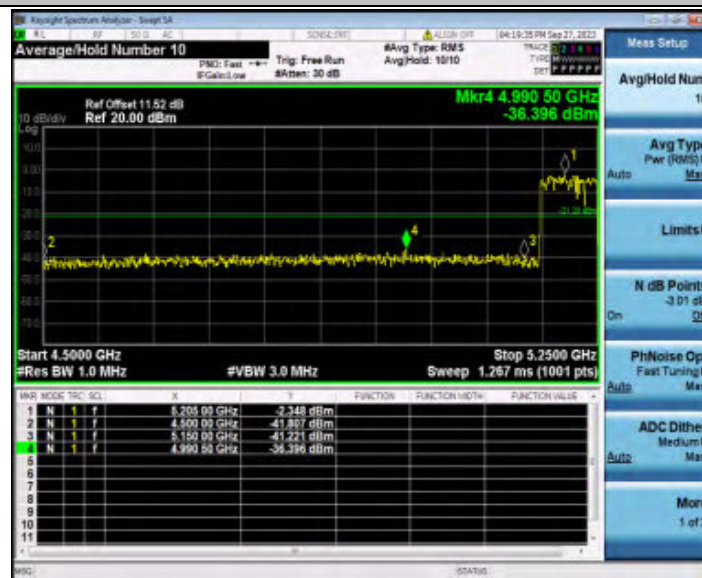
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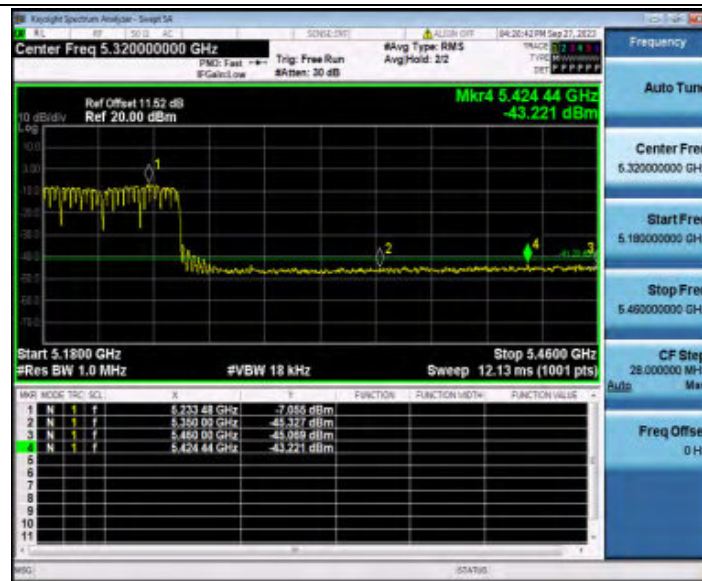
11AC40SISO_Ant1_High_5230_Peak



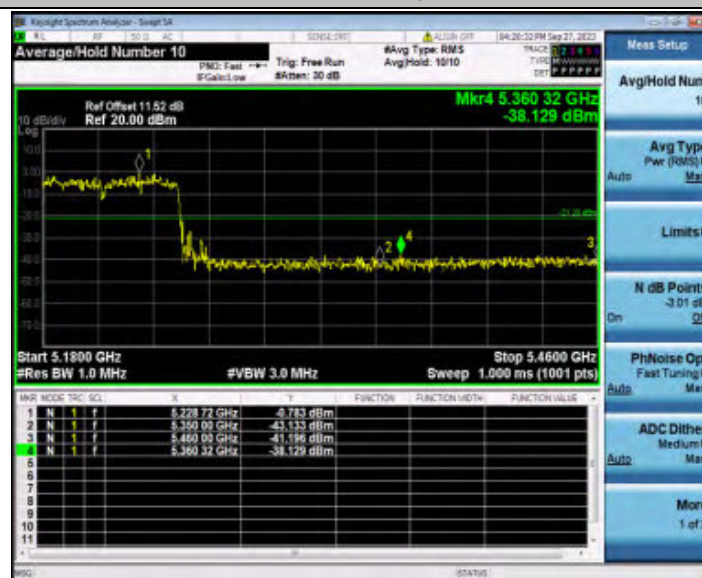
11AC80SISO_Ant1_Low_5210_AV



11AC80SISO_Ant1_Low_5210_Peak



11AC80SISO_Ant1_High_5210_AV



11AC80SISO_Ant1_High_5210_Peak