Appendix B

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Pet GPS Tracker

Test Model: EV-202G

Environmental Conditions

Temperature:	21.1 ° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Carl Fu
Supervised by:	Li Huan

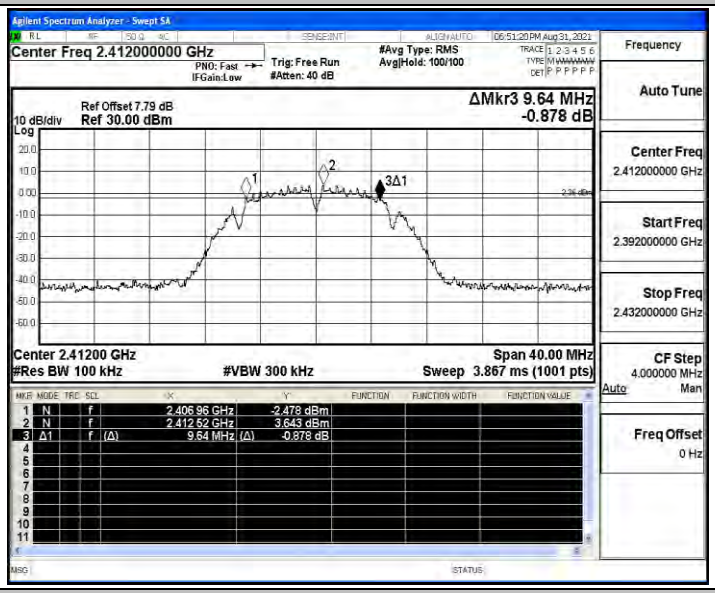
B.1 6dB Bandwidth

Test Result

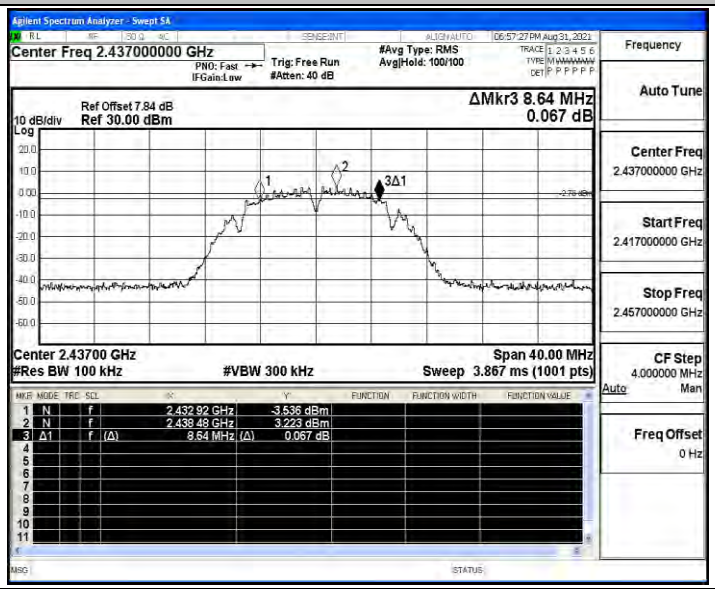
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.640	2406.960	2416.600	0.5	PASS
		2437	8.640	2432.920	2441.560	0.5	PASS
		2462	9.600	2456.960	2466.560	0.5	PASS
11G	Ant1	2412	16.440	2403.800	2420.240	0.5	PASS
		2437	16.000	2429.200	2445.200	0.5	PASS
		2462	15.840	2453.760	2469.600	0.5	PASS
11N20SISO	Ant1	2412	17.680	2403.160	2420.840	0.5	PASS
		2437	17.360	2428.480	2445.840	0.5	PASS
		2462	16.800	2453.120	2469.920	0.5	PASS
11N40SISO	Ant1	2422	35.920	2404.320	2440.240	0.5	PASS
		2437	35.840	2419.400	2455.240	0.5	PASS
		2452	35.440	2434.160	2469.600	0.5	PASS

Test Graphs

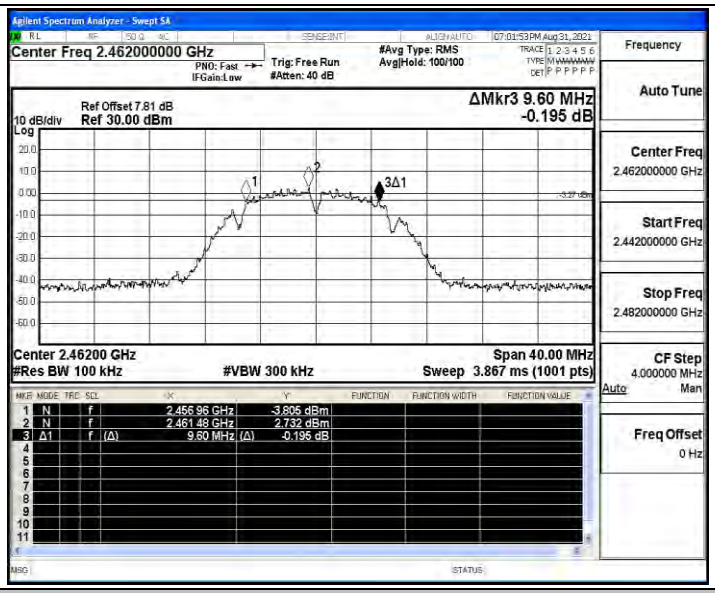
11B_Ant1_2412



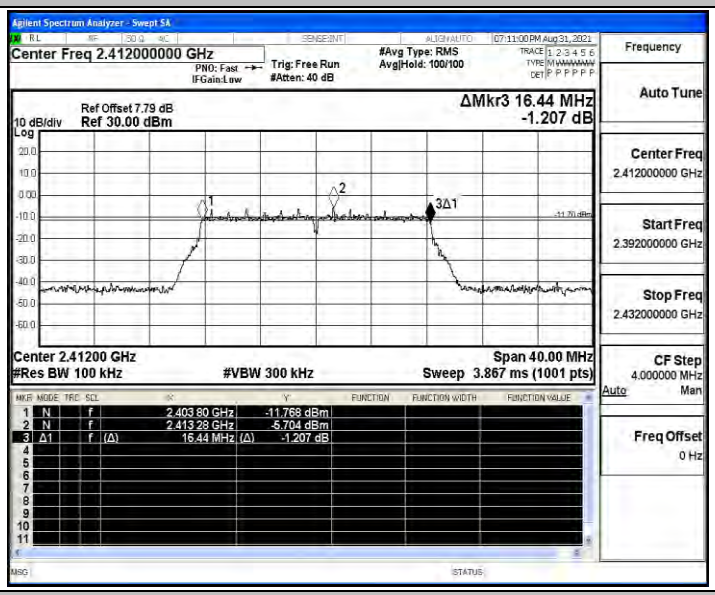
11B_Ant1_2437



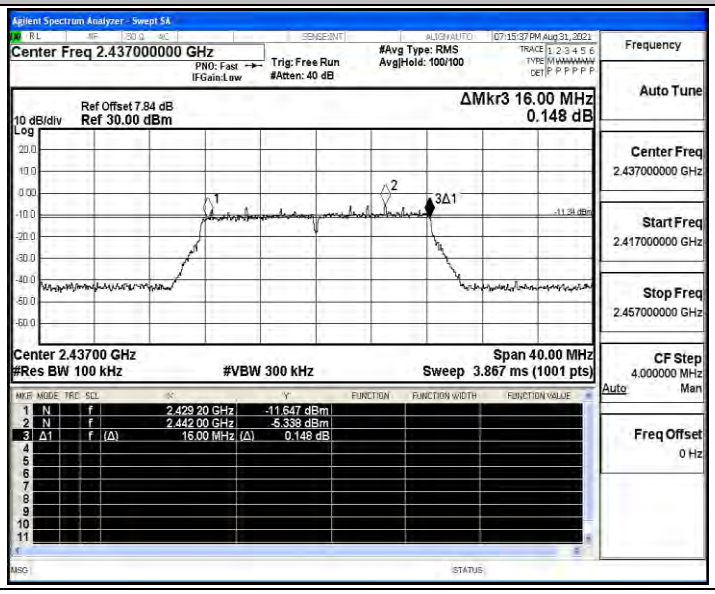
11B_Ant1_2462



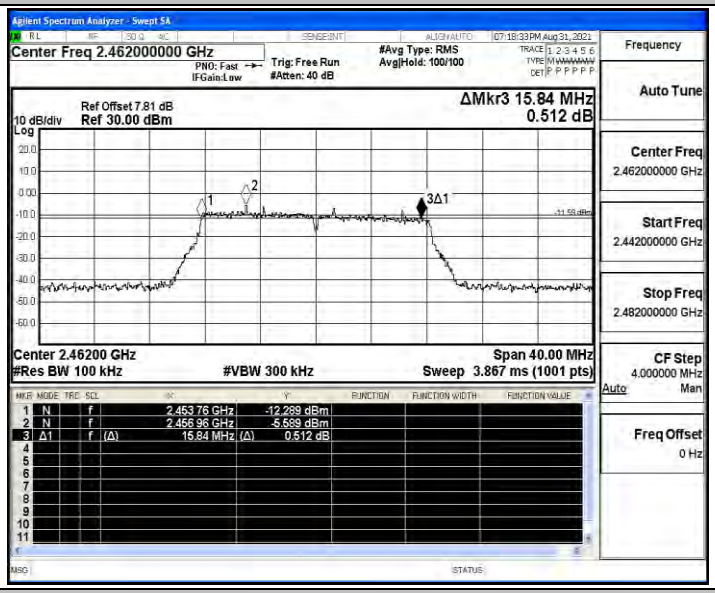
11G_Ant1_2412



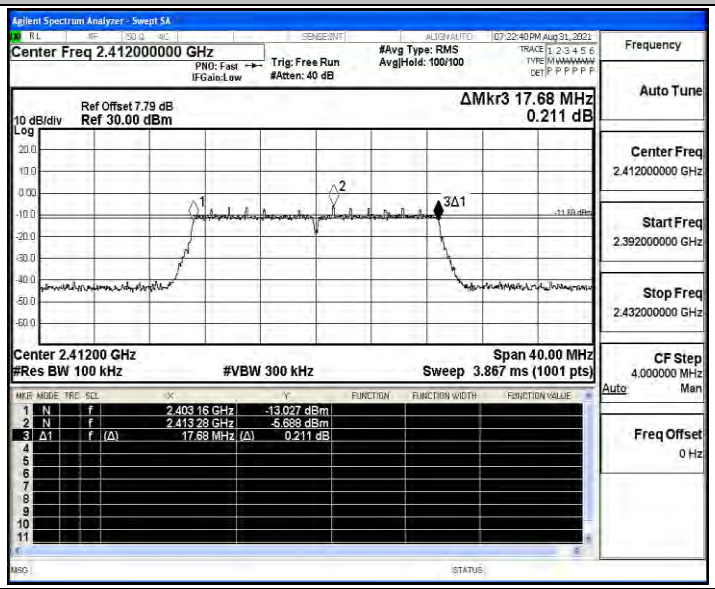
11G_Ant1_2437



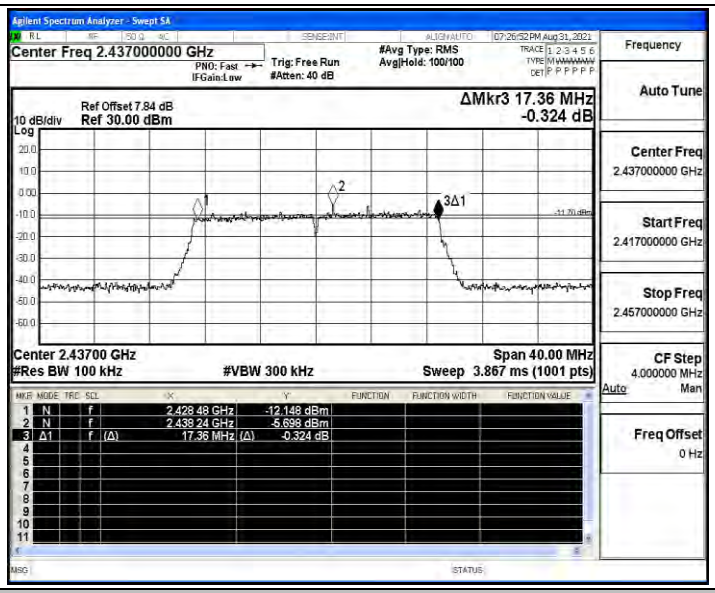
11G_Ant1_2462



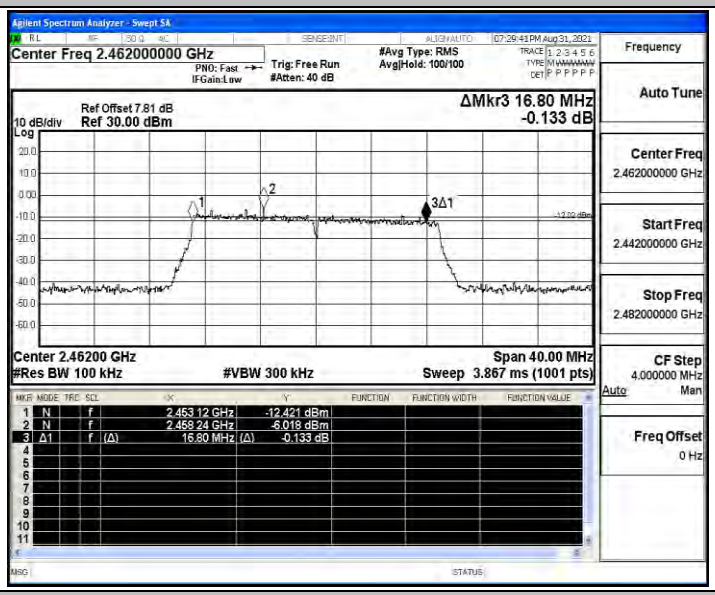
11N20SISO_Ant1_2412



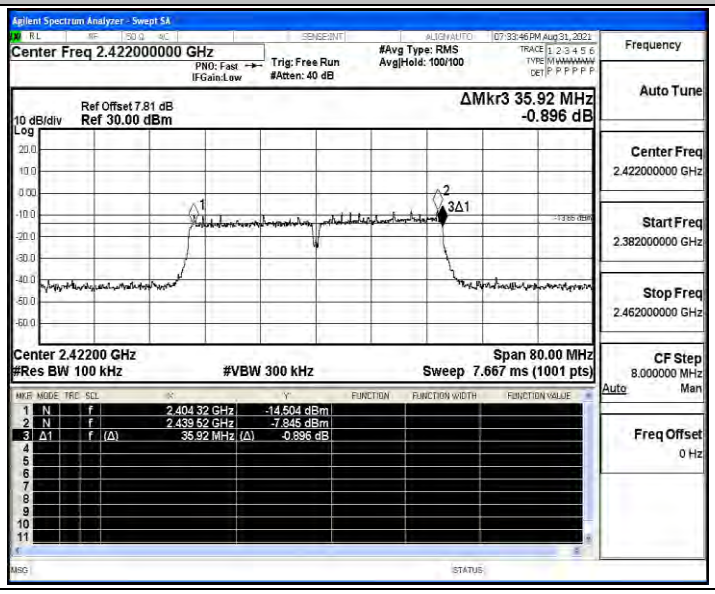
11N20SISO_Ant1_2437



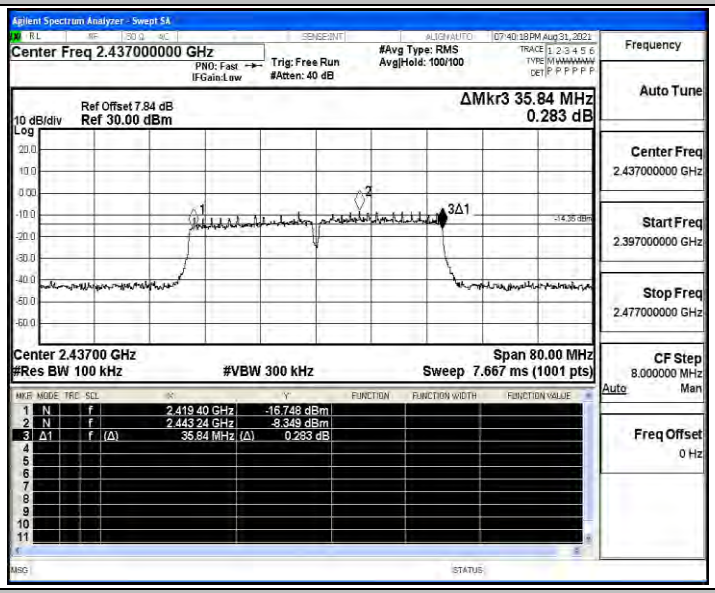
11N20SISO_Ant1_2462



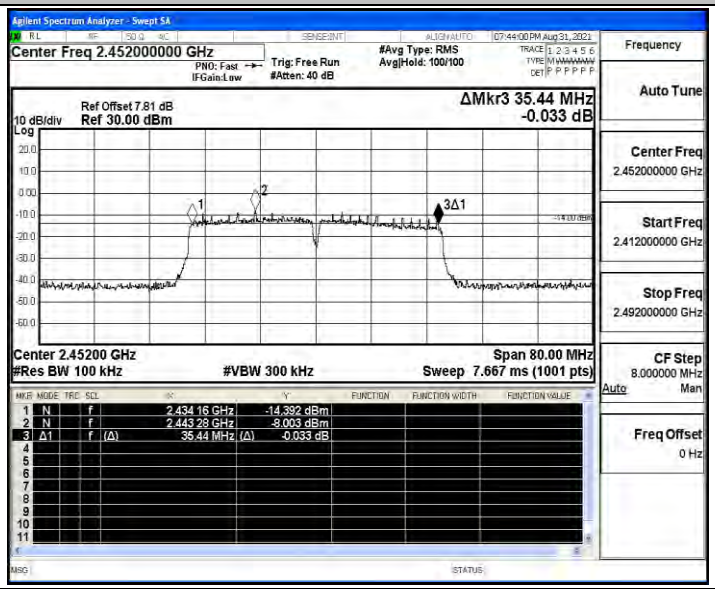
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



B.2 Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	15.81	≤30	PASS
		2437	14.99	≤30	PASS
		2462	14.51	≤30	PASS
11G	Ant1	2412	12.50	≤30	PASS
		2437	12.58	≤30	PASS
		2462	12.18	≤30	PASS
11N20SISO	Ant1	2412	12.61	≤30	PASS
		2437	12.57	≤30	PASS
		2462	12.25	≤30	PASS
11N40SISO	Ant1	2422	12.55	≤30	PASS
		2437	12.57	≤30	PASS
		2452	12.51	≤30	PASS

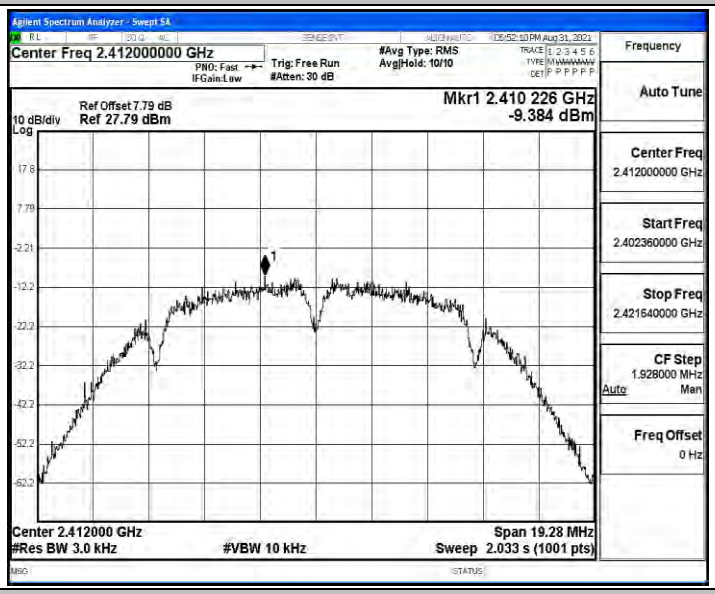
B.3 Maximum power spectral density

Test Result

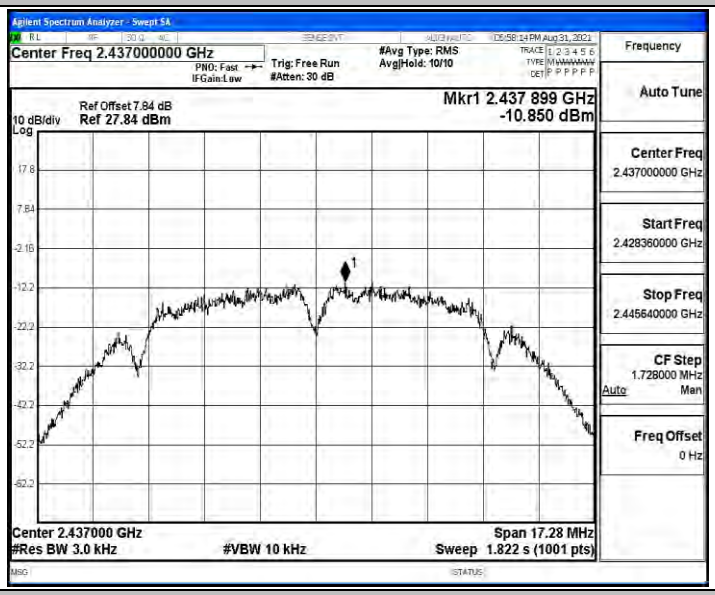
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-9.38	≤8	PASS
		2437	-10.85	≤8	PASS
		2462	-9.72	≤8	PASS
11G	Ant1	2412	-19.17	≤8	PASS
		2437	-20.04	≤8	PASS
		2462	-18.14	≤8	PASS
11N20SISO	Ant1	2412	-20.61	≤8	PASS
		2437	-20.05	≤8	PASS
		2462	-19.2	≤8	PASS
11N40SISO	Ant1	2422	-21.83	≤8	PASS
		2437	-22.6	≤8	PASS
		2452	-21.75	≤8	PASS

Test Graphs

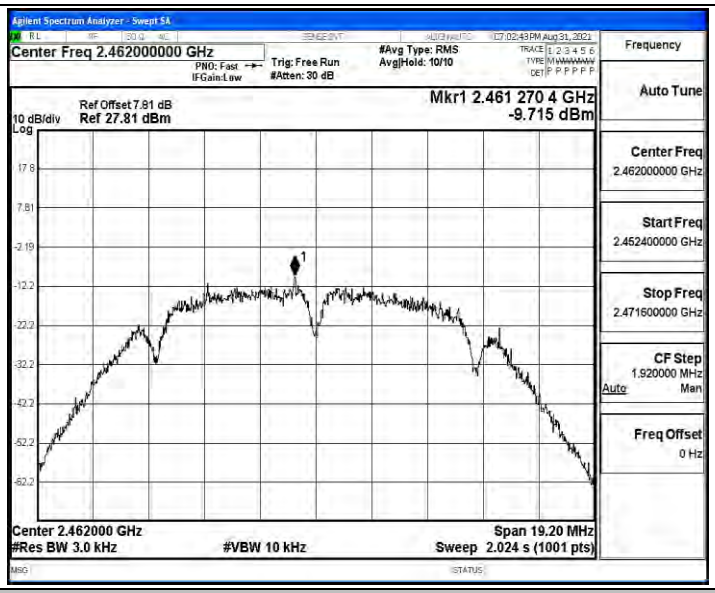
11B_Ant1_2412



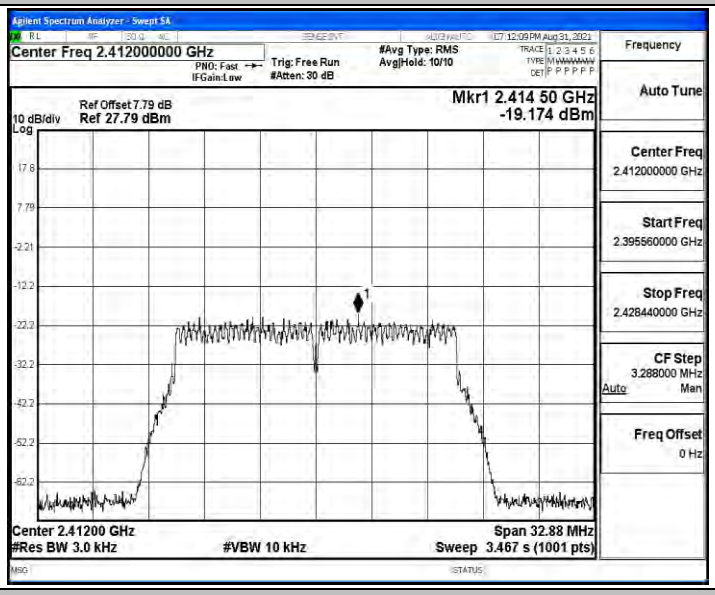
11B_Ant1_2437



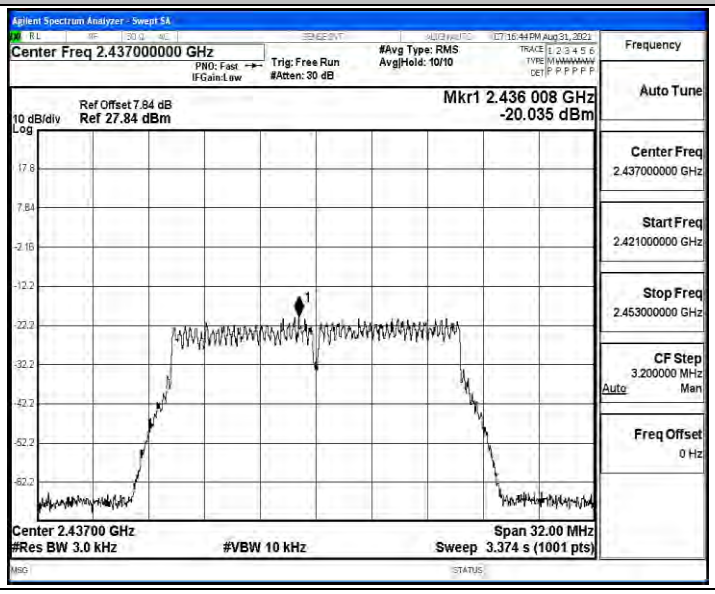
11B_Ant1_2462



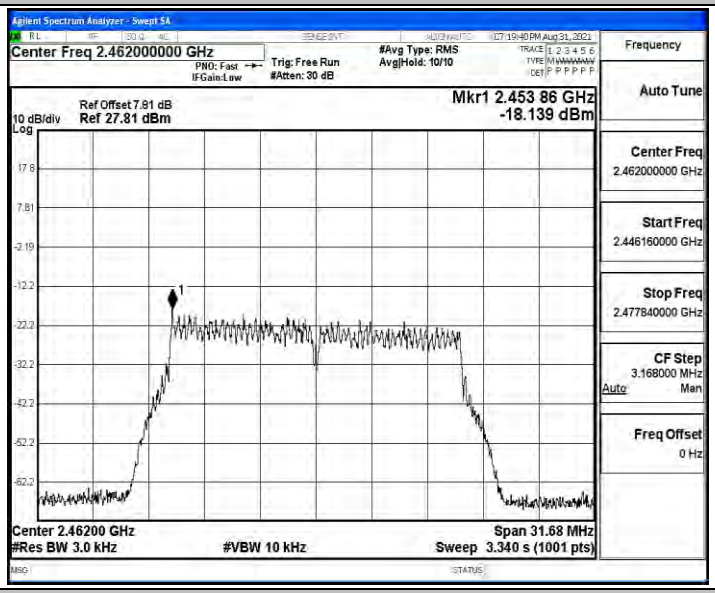
11G_Ant1_2412



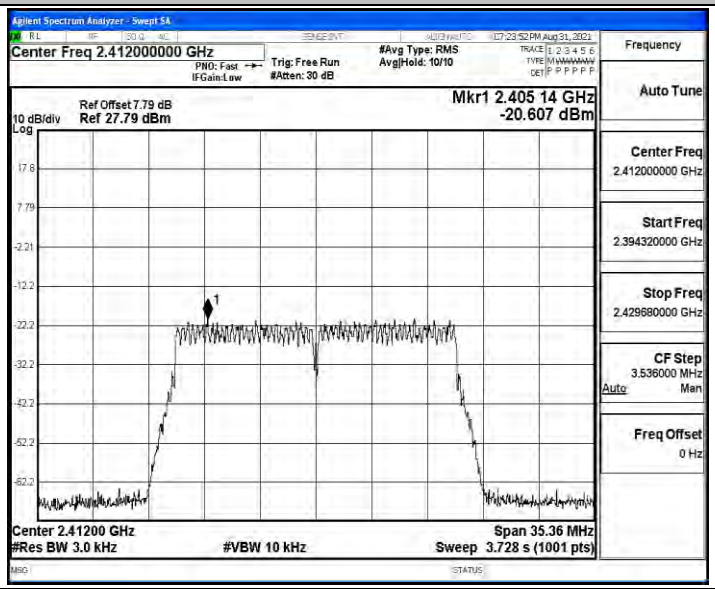
11G_Ant1_2437



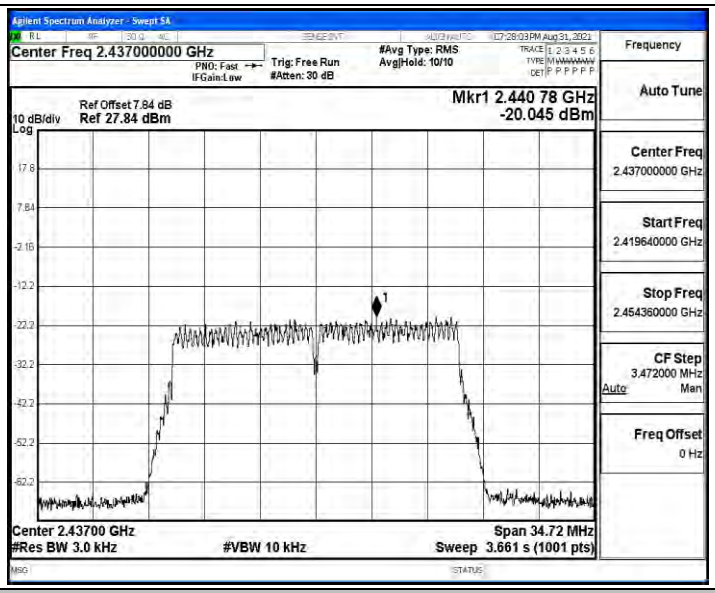
11G_Ant1_2462



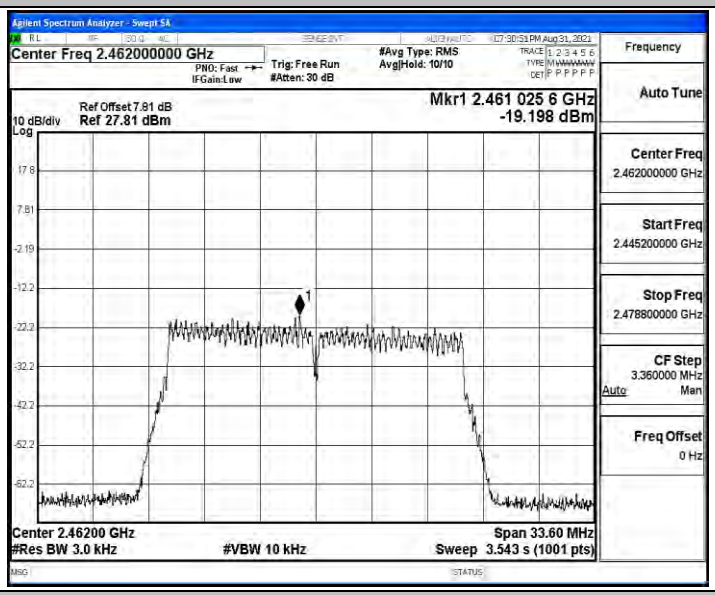
11N20SISO_Ant1_2412



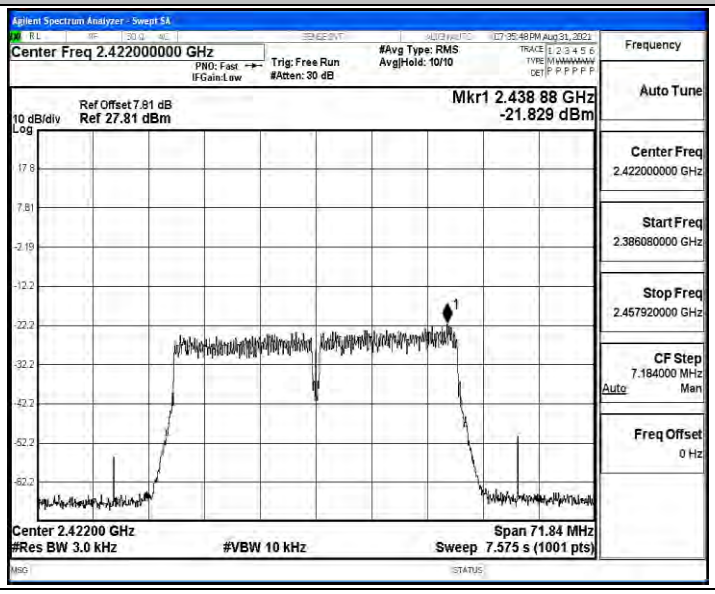
11N20SISO_Ant1_2437



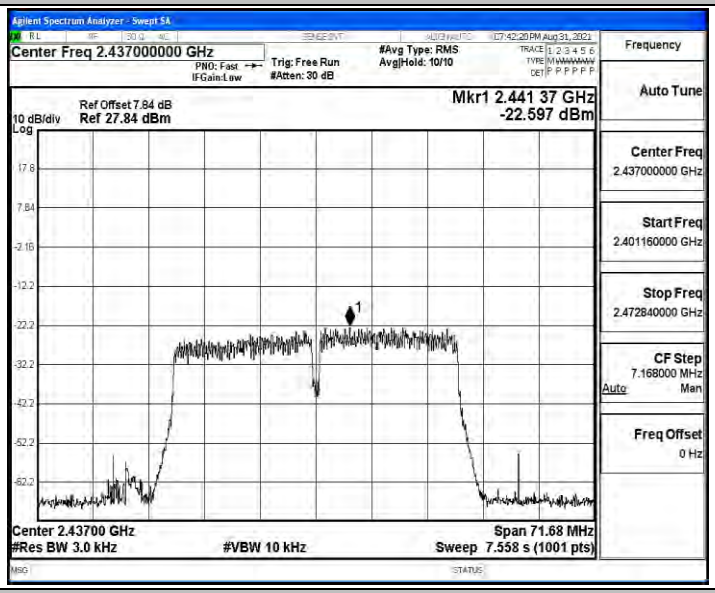
11N20SISO_Ant1_2462



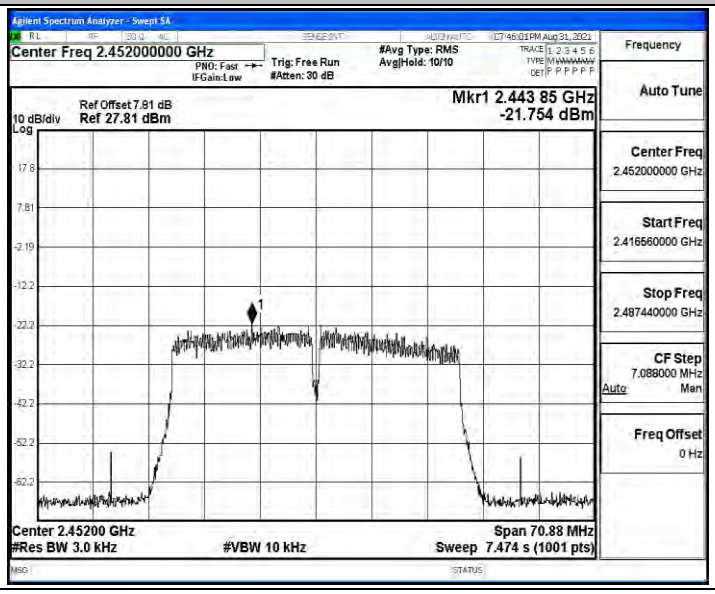
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



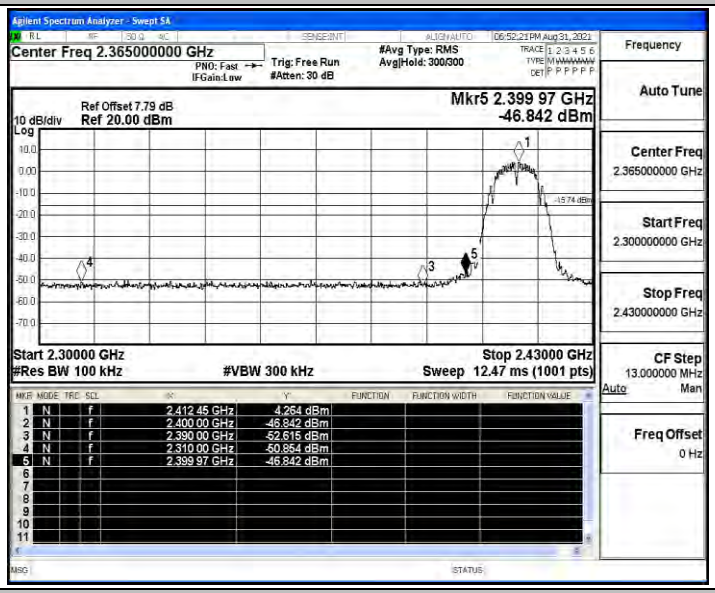
B.4 Band edge measurements

Test Result

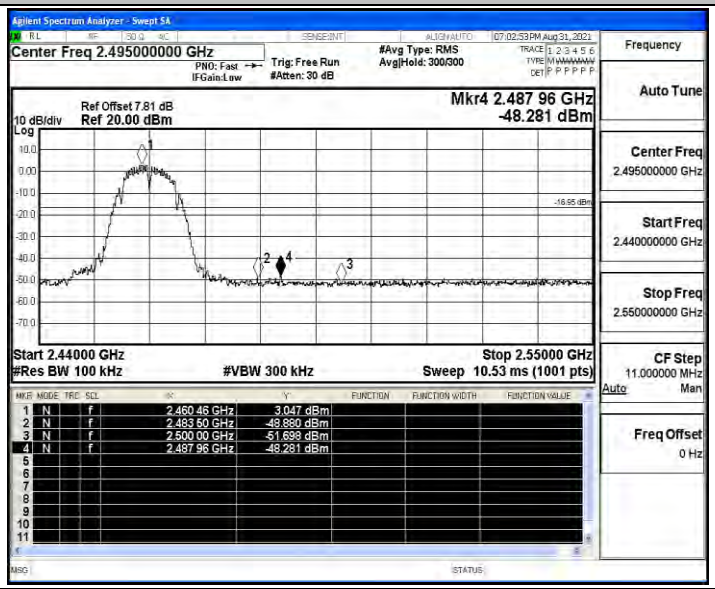
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	4.26	-46.84	≤-15.74	PASS
		High	2462	3.05	-48.28	≤-16.95	PASS
11G	Ant1	Low	2412	-5.74	-49.14	≤-25.74	PASS
		High	2462	-5.23	-47.49	≤-25.23	PASS
11N20SISO	Ant1	Low	2412	-5.77	-48.98	≤-25.77	PASS
		High	2462	-4.82	-47.49	≤-24.82	PASS
11N40SISO	Ant1	Low	2422	-9.21	-49.3	≤-29.21	PASS
		High	2452	-8.03	-49.07	≤-28.03	PASS

Test Graphs

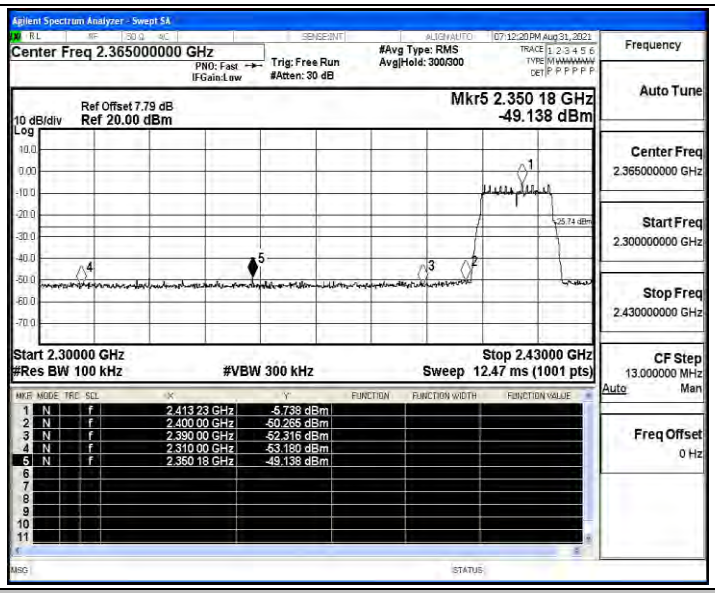
11B_Ant1_Low_2412



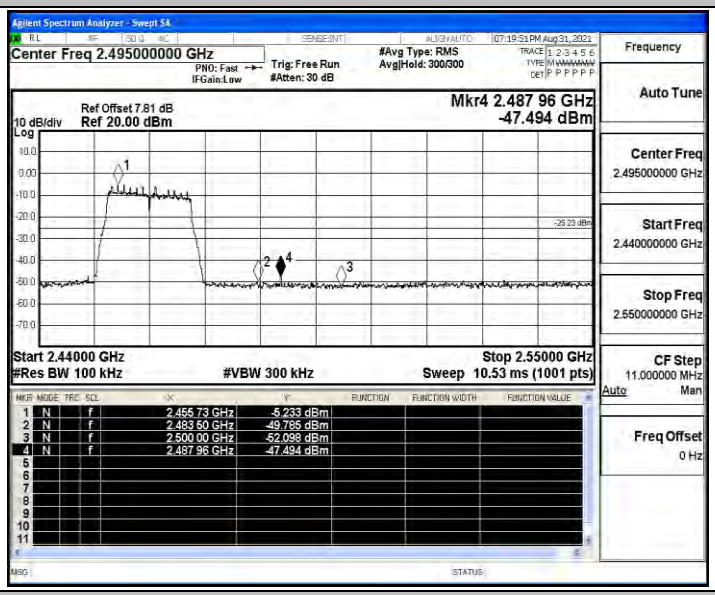
11B_Ant1_High_2462



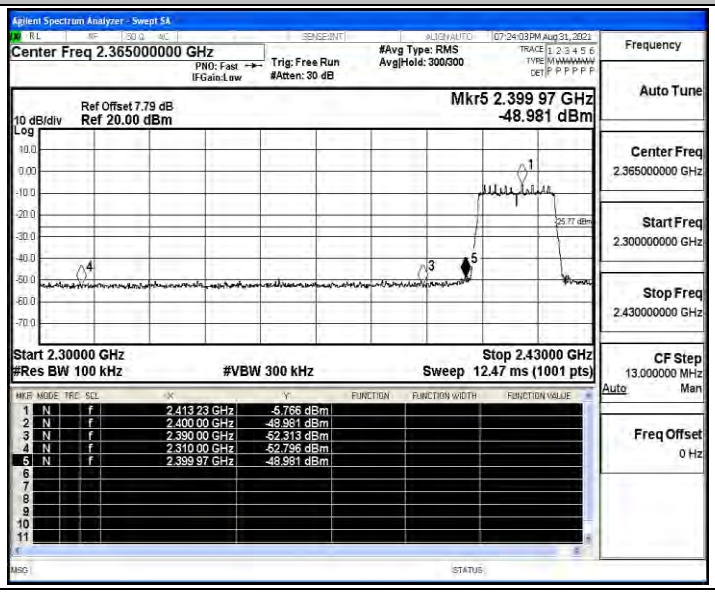
11G_Ant1_Low_2412



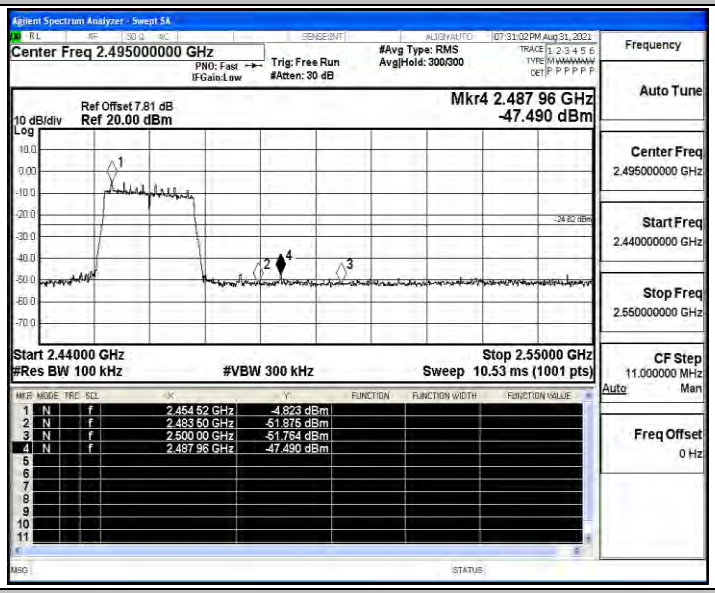
11G_Ant1_High_2462



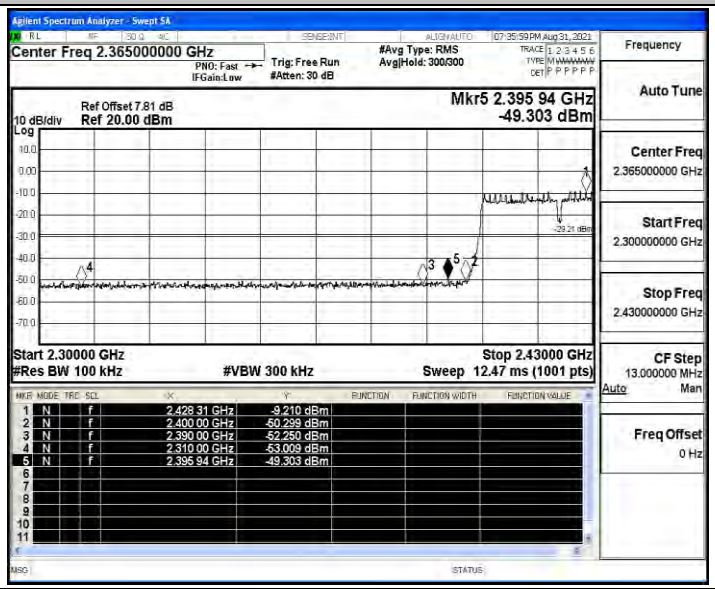
11N20SISO_Ant1_Low_2412



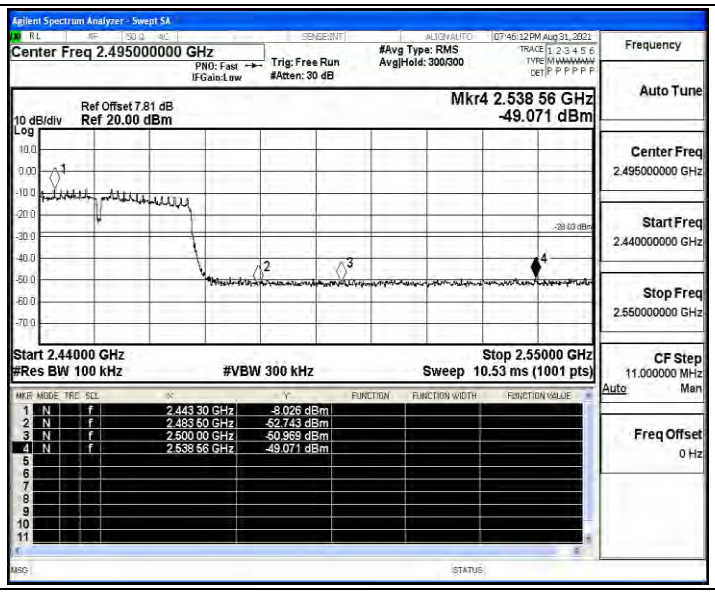
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.495000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 300/300
Ref Offset 7.81 dB
10 dB/div Ref 20.00 dBm
Log
Mkr4 2.538 56 GHz
-49.071 dBm
Start 2.44000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.55000 GHz
Sweep 10.53 ms (1001 pts)
1 N f 2.443 30 GHz -8.026 dBm
2 N f 2.483 50 GHz -52.743 dBm
3 N f 2.500 00 GHz -50.969 dBm
4 N f 2.538 56 GHz -49.071 dBm
Frequency
Auto Tune
Center Freq
2.495000000 GHz
Start Freq
2.440000000 GHz
Stop Freq
2.550000000 GHz
CF Step
11.000000 MHz
Auto Man
Freq Offset
0 Hz

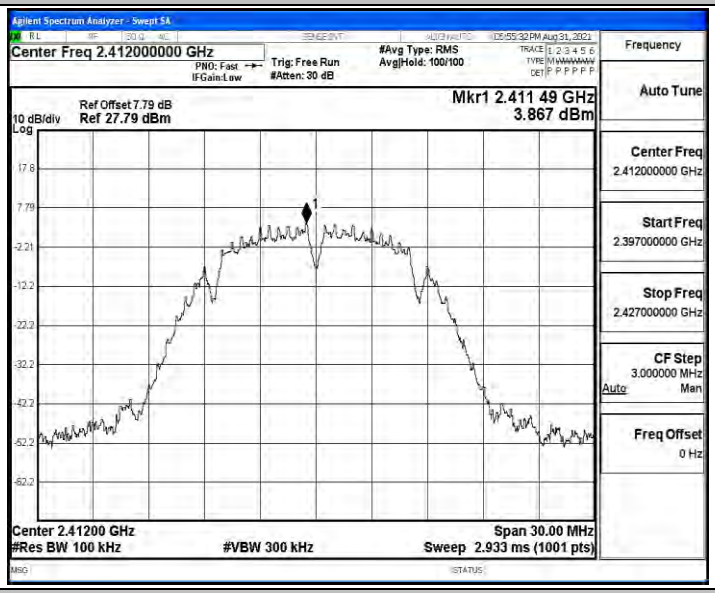
B.5 Conducted Spurious Emission

Test Result

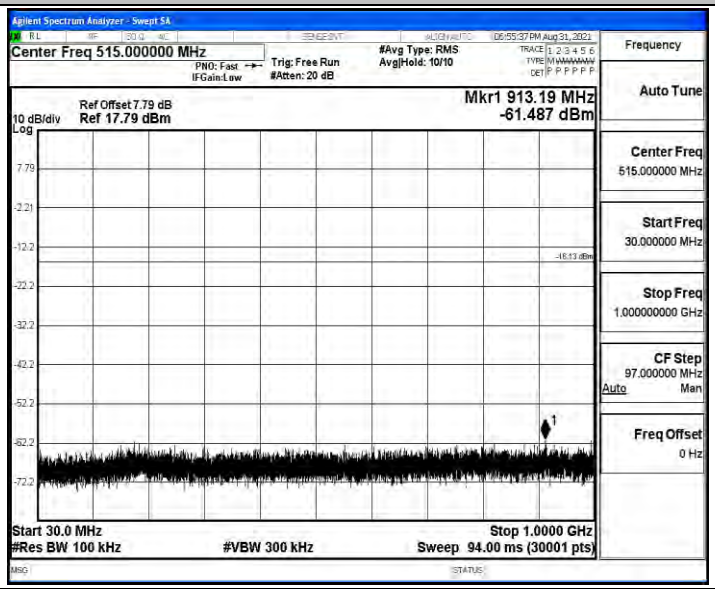
TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	3.87	3.87	---	PASS
			30~1000	3.87	-61.49	≤-16.13	PASS
			1000~26500	3.87	-48.04	≤-16.13	PASS
		2437	Reference	3.49	3.49	---	PASS
			30~1000	3.49	-62.45	≤-16.51	PASS
			1000~26500	3.49	-47.55	≤-16.51	PASS
		2462	Reference	2.55	2.55	---	PASS
			30~1000	2.55	-61.58	≤-17.45	PASS
			1000~26500	2.55	-47.16	≤-17.45	PASS
11G	Ant1	2412	Reference	-6.46	-6.46	---	PASS
			30~1000	-6.46	-61.59	≤-26.46	PASS
			1000~26500	-6.46	-46.36	≤-26.46	PASS
		2437	Reference	-5.46	-5.46	---	PASS
			30~1000	-5.46	-61.18	≤-25.46	PASS
			1000~26500	-5.46	-47.52	≤-25.46	PASS
		2462	Reference	-4.95	-4.95	---	PASS
			30~1000	-4.95	-60.76	≤-24.95	PASS
			1000~26500	-4.95	-47.58	≤-24.95	PASS
11N20SISO	Ant1	2412	Reference	-6.14	-6.14	---	PASS
			30~1000	-6.14	-61.93	≤-26.14	PASS
			1000~26500	-6.14	-47.3	≤-26.14	PASS
		2437	Reference	-5.56	-5.56	---	PASS
			30~1000	-5.56	-61.96	≤-25.56	PASS
			1000~26500	-5.56	-46.81	≤-25.56	PASS
		2462	Reference	-5.23	-5.23	---	PASS
			30~1000	-5.23	-61.91	≤-25.23	PASS
			1000~26500	-5.23	-47.72	≤-25.23	PASS
11N40SISO	Ant1	2422	Reference	-8.17	-8.17	---	PASS
			30~1000	-8.17	-62.25	≤-28.17	PASS
			1000~26500	-8.17	-47.5	≤-28.17	PASS
		2437	Reference	-8.31	-8.31	---	PASS
			30~1000	-8.31	-61.27	≤-28.31	PASS
			1000~26500	-8.31	-47.62	≤-28.31	PASS
		2452	Reference	-8.19	-8.19	---	PASS
			30~1000	-8.19	-62.35	≤-28.19	PASS
			1000~26500	-8.19	-47.6	≤-28.19	PASS

Test Graphs

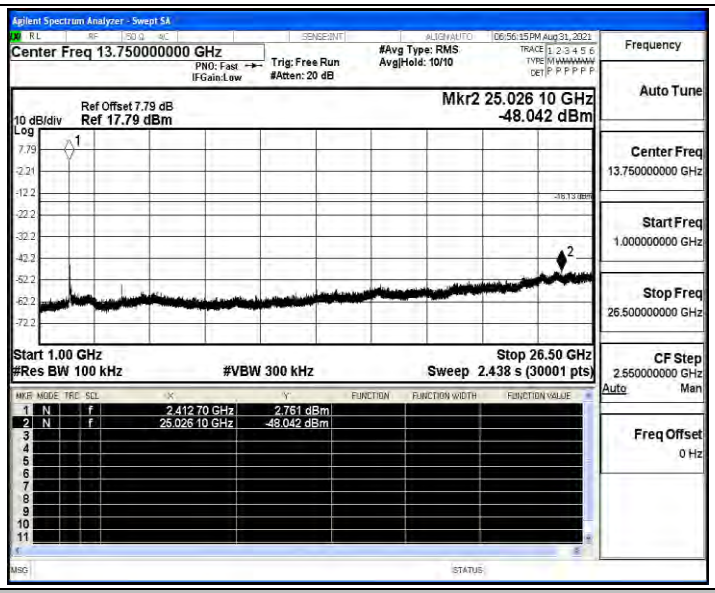
11B_Ant1_2412_0~Reference



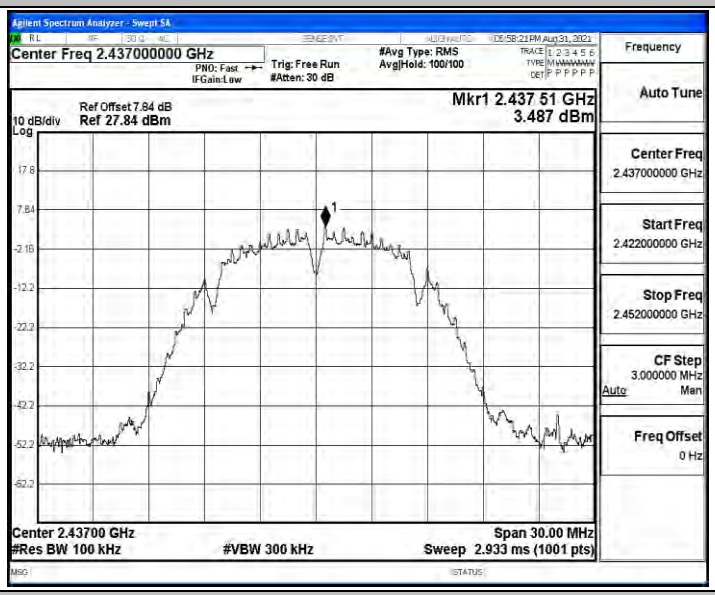
11B_Ant1_2412_30~1000



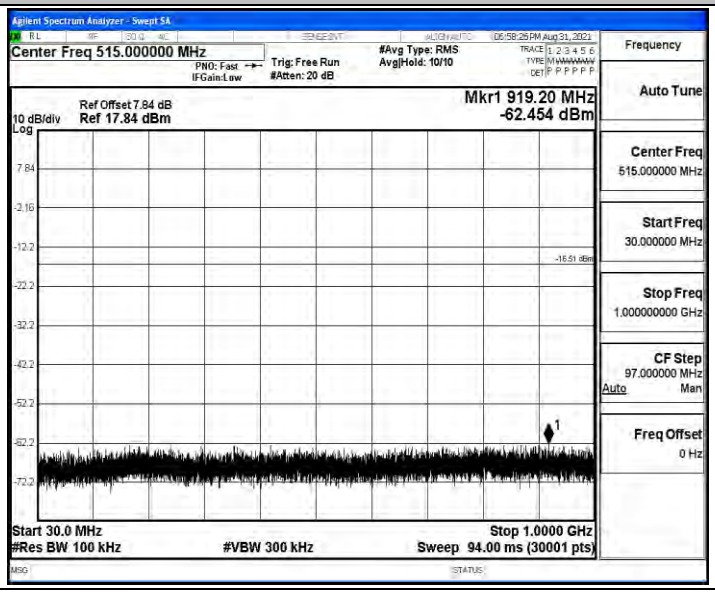
11B_Ant1_2412_1000~26500



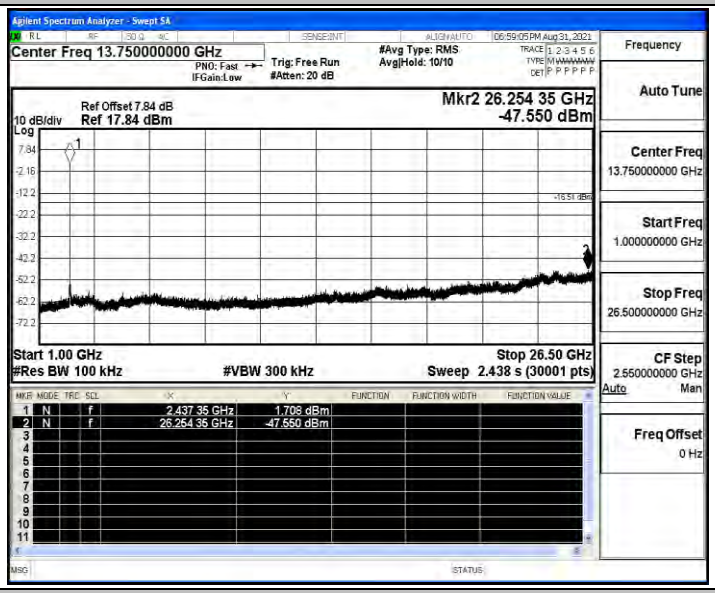
11B_Ant1_2437_0~Reference



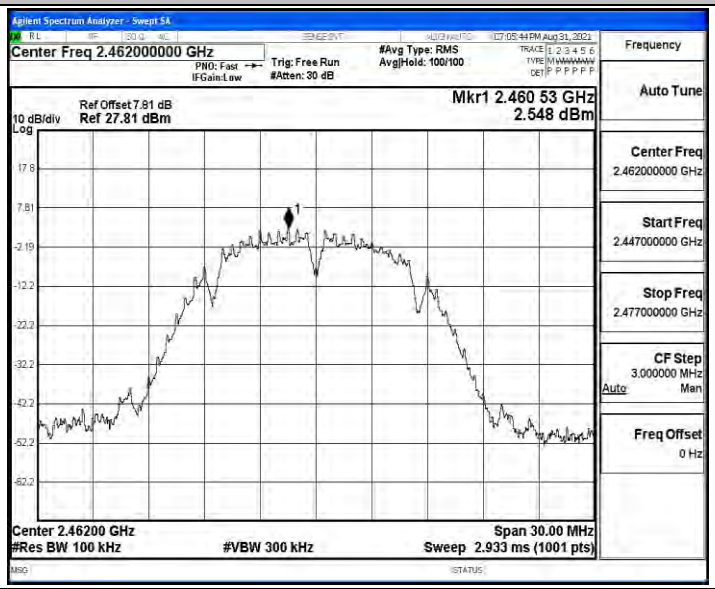
11B_Ant1_2437_30~1000



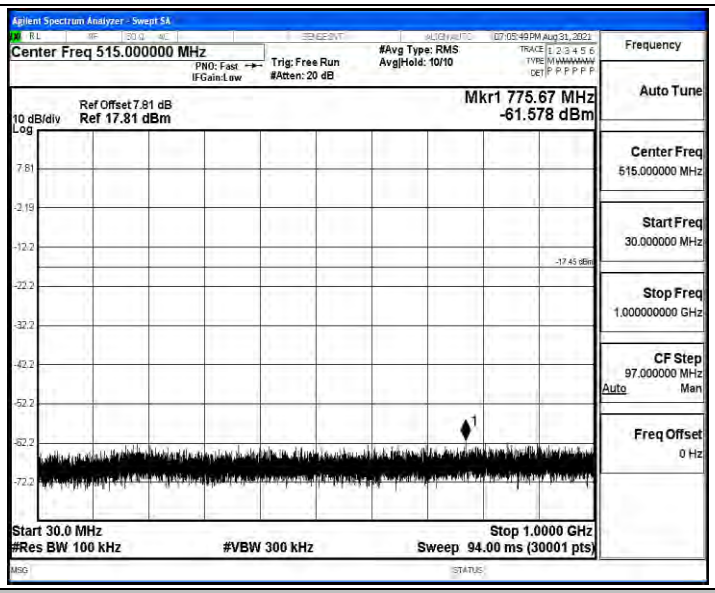
11B_Ant1_2437_1000~26500



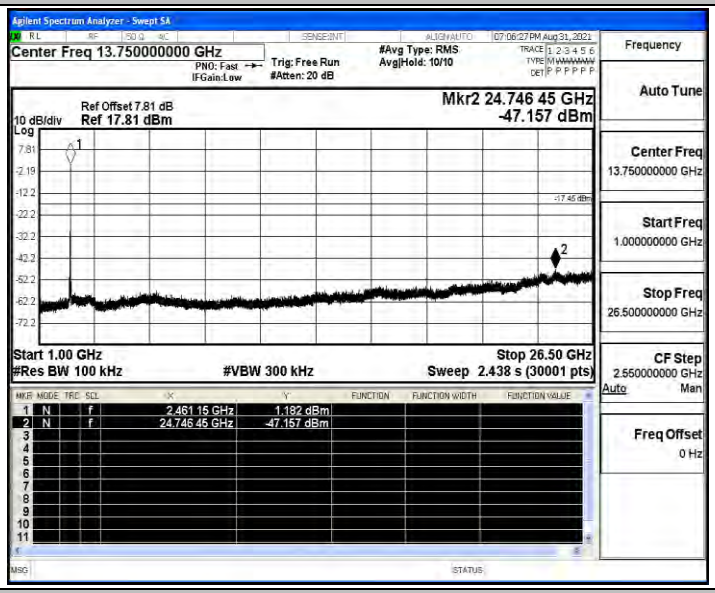
11B_Ant1_2462_0~Reference



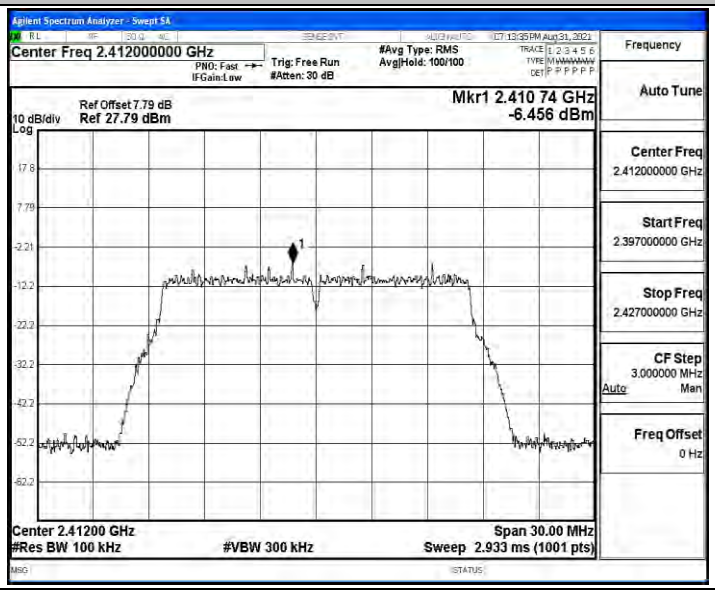
11B_Ant1_2462_30~1000



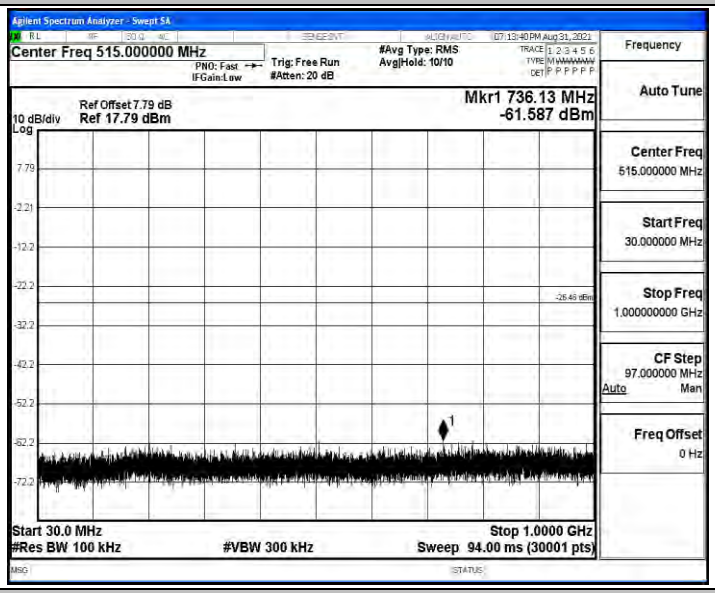
11B_Ant1_2462_1000~26500



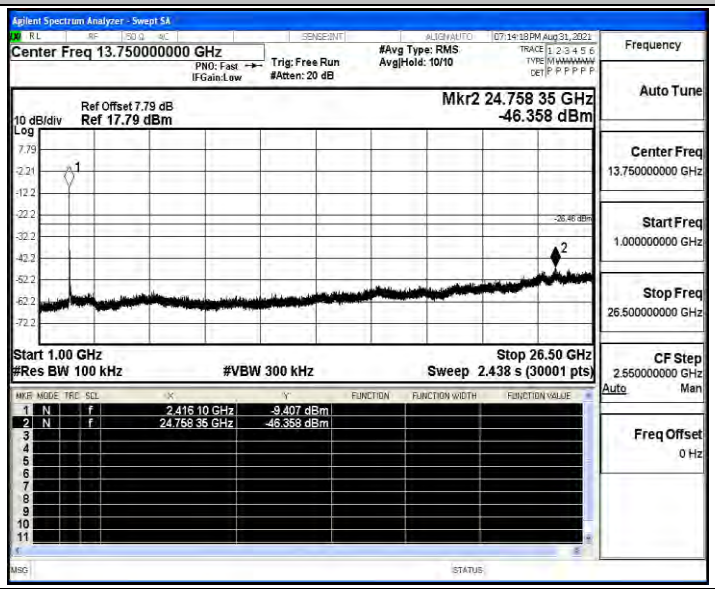
11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000



11G_Ant1_2412_1000~26500



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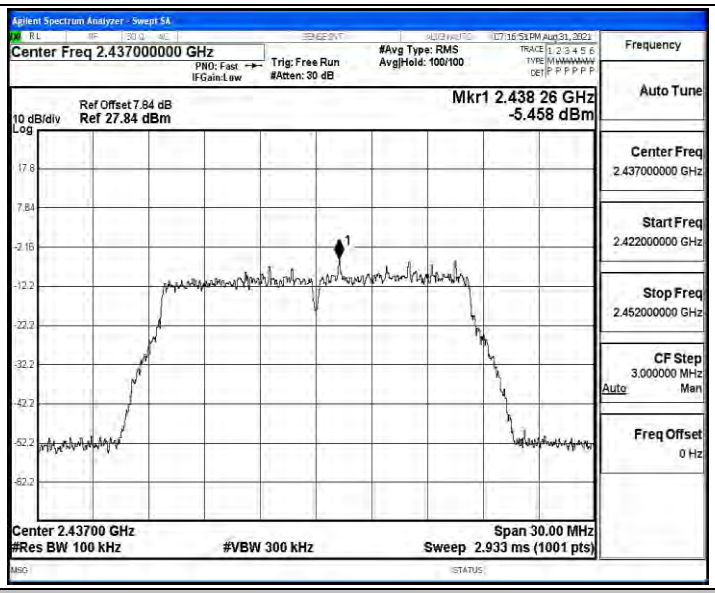
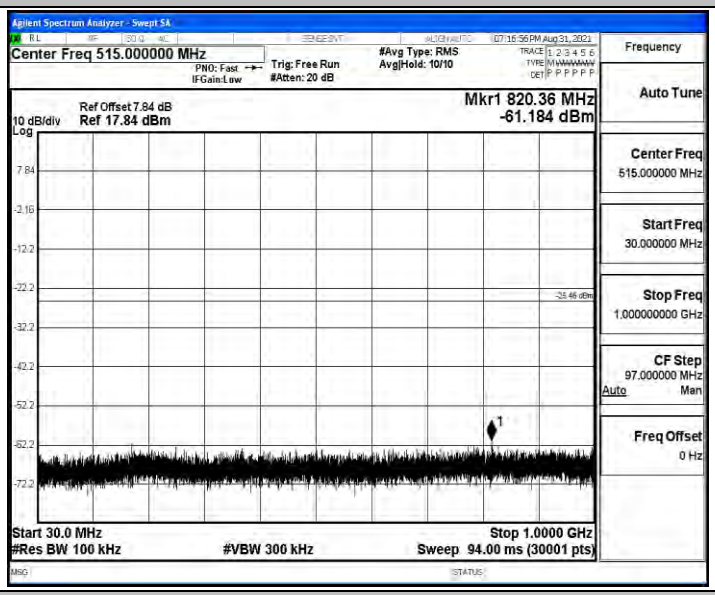
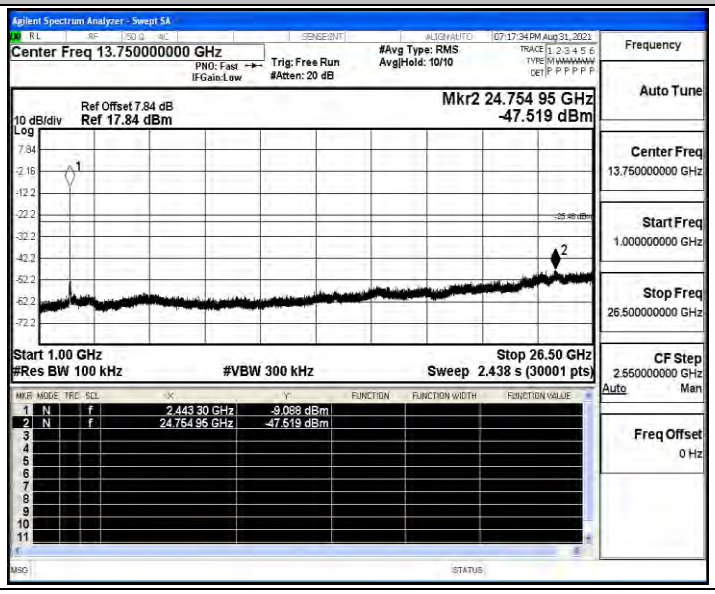


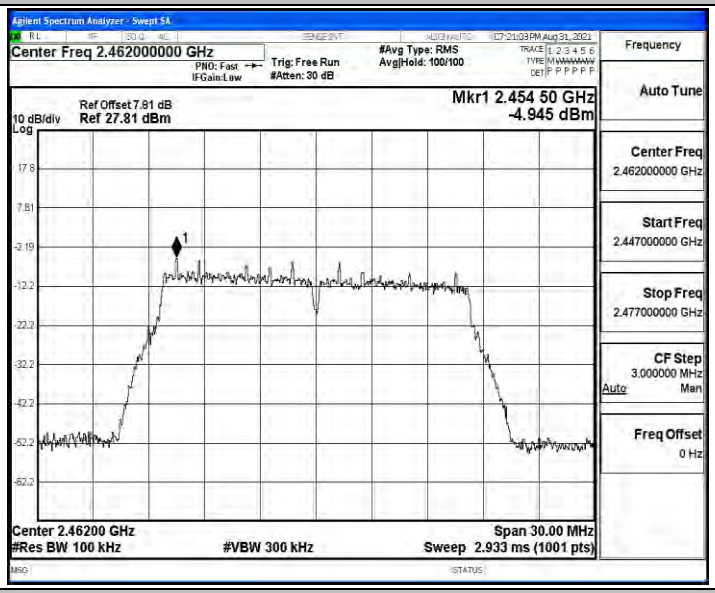
11G_Ant1_2437_30~1000



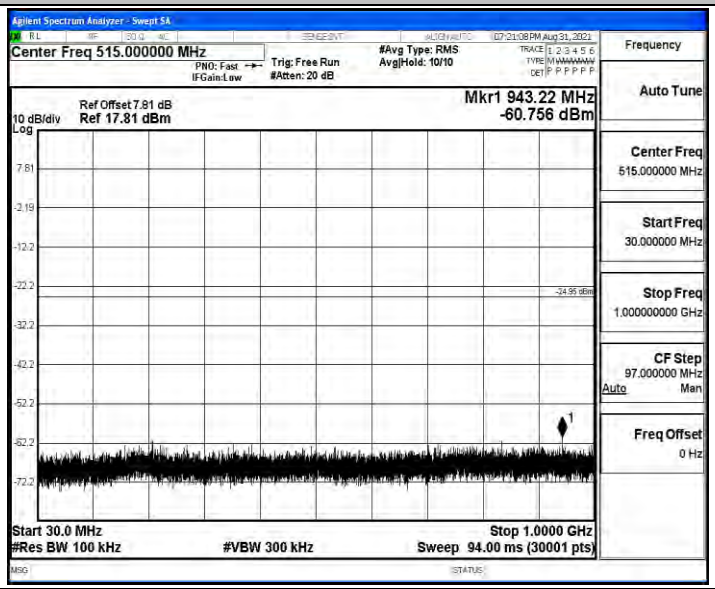
11G_Ant1_2437_1000~26500



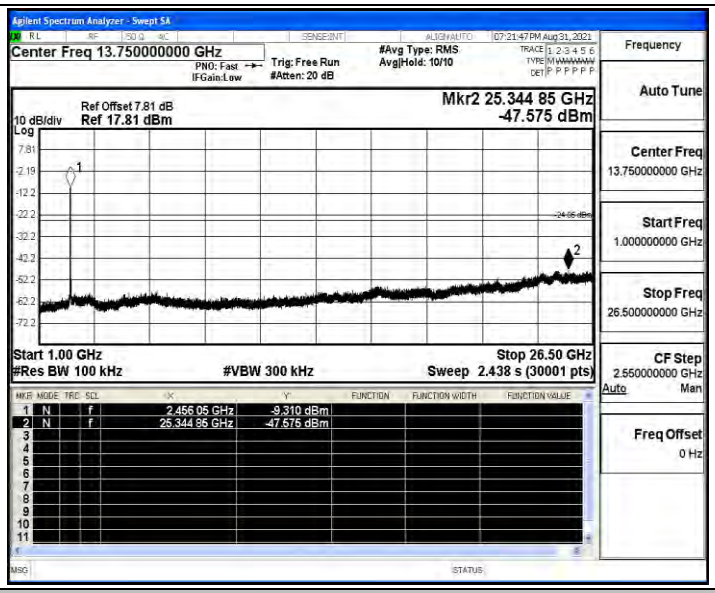
11G_Ant1_2462_0~Reference



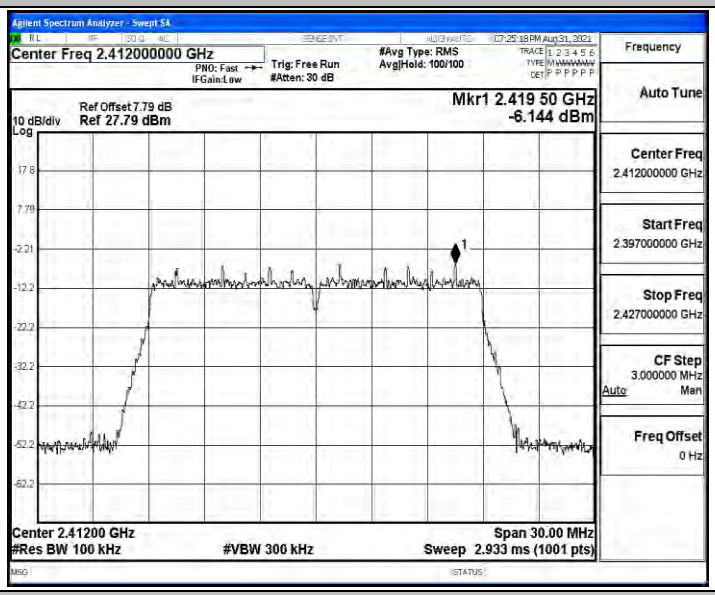
11G_Ant1_2462_30~1000



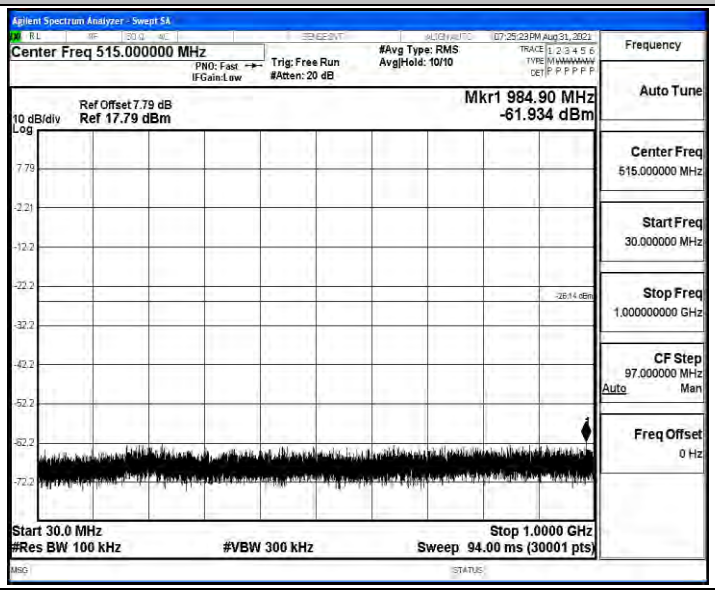
11G_Ant1_2462_1000~26500



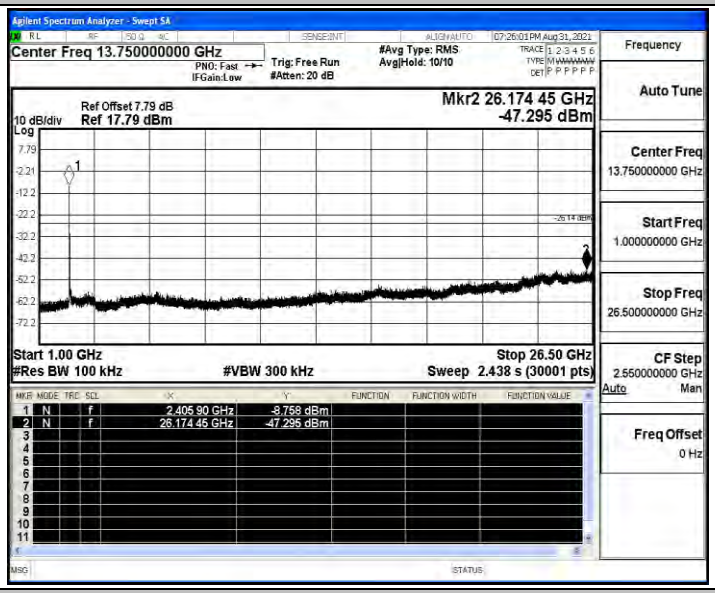
11N20SISO_Ant1_2412_0~Reference



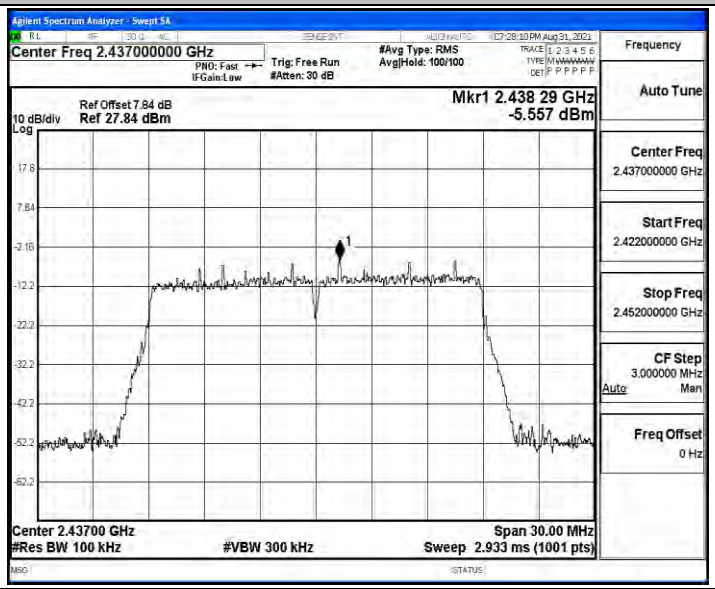
11N20SISO_Ant1_2412_30~1000



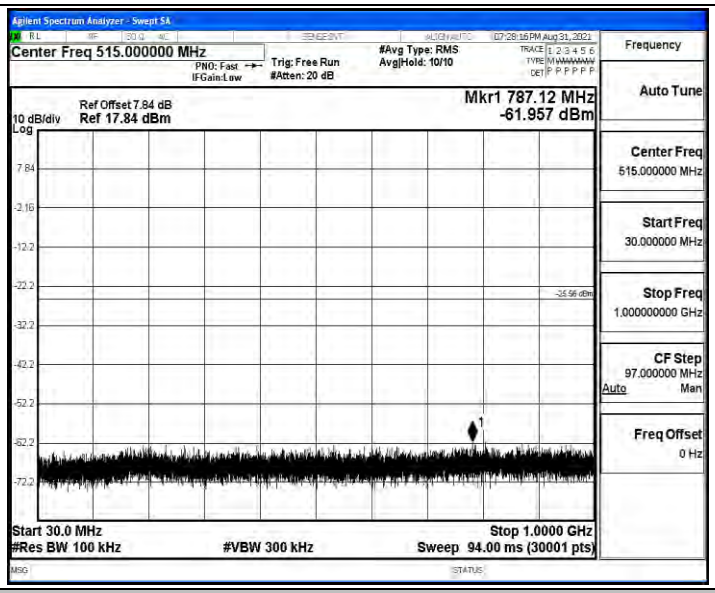
11N20SISO_Ant1_2412_1000~26500



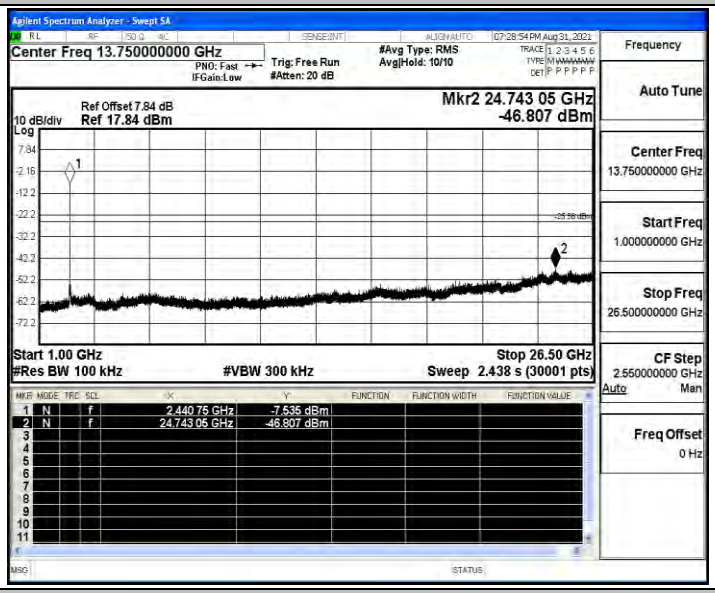
11N20SISO_Ant1_2437_0~Reference



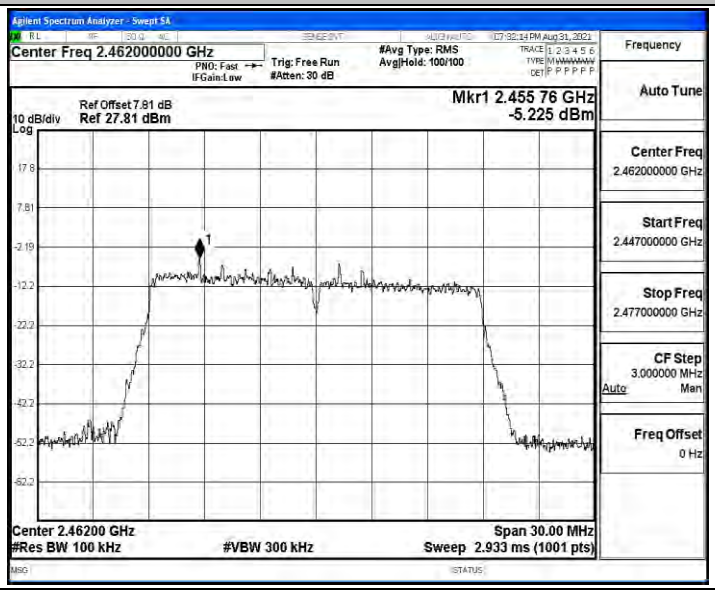
11N20SISO_Ant1_2437_30~1000



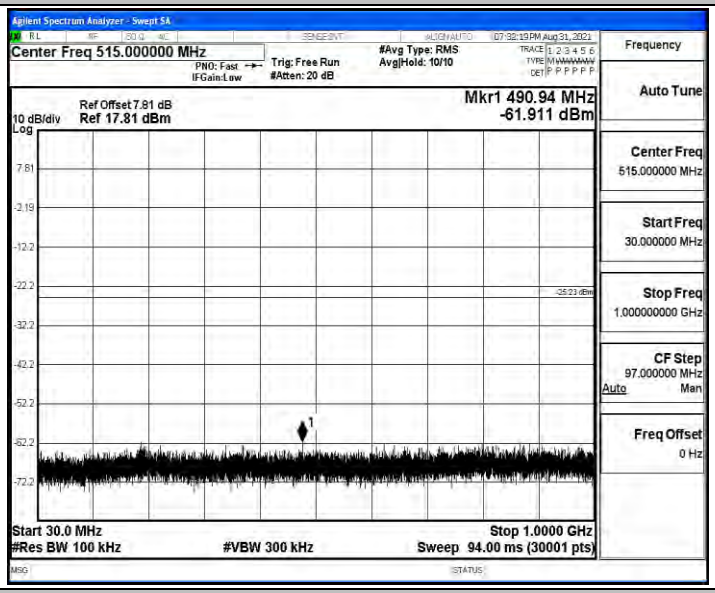
11N20SISO_Ant1_2437_1000~26500



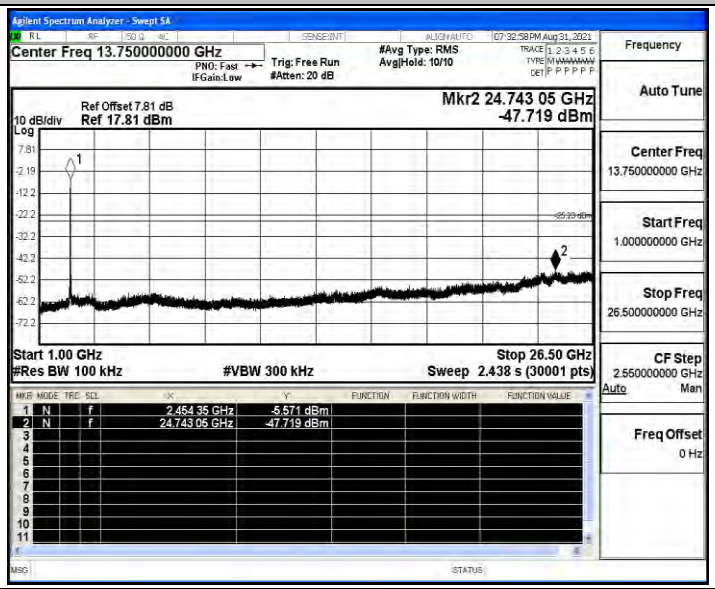
11N20SISO_Ant1_2462_0~Reference



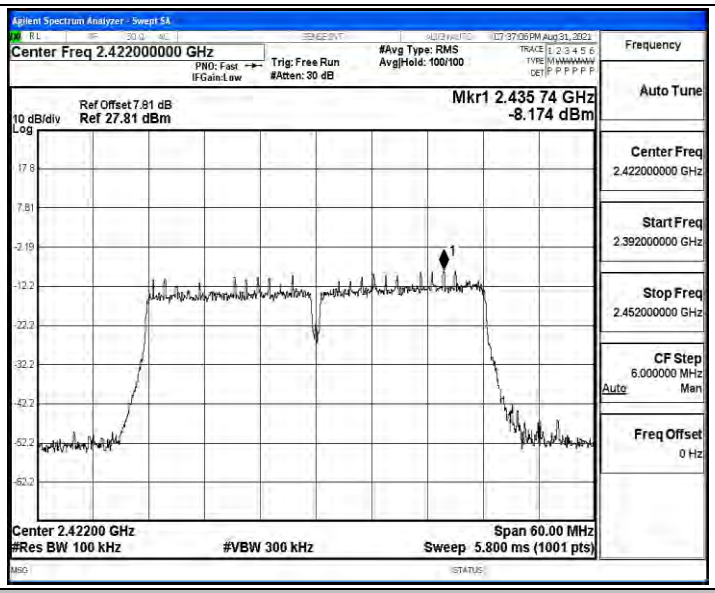
11N20SISO_Ant1_2462_30~1000



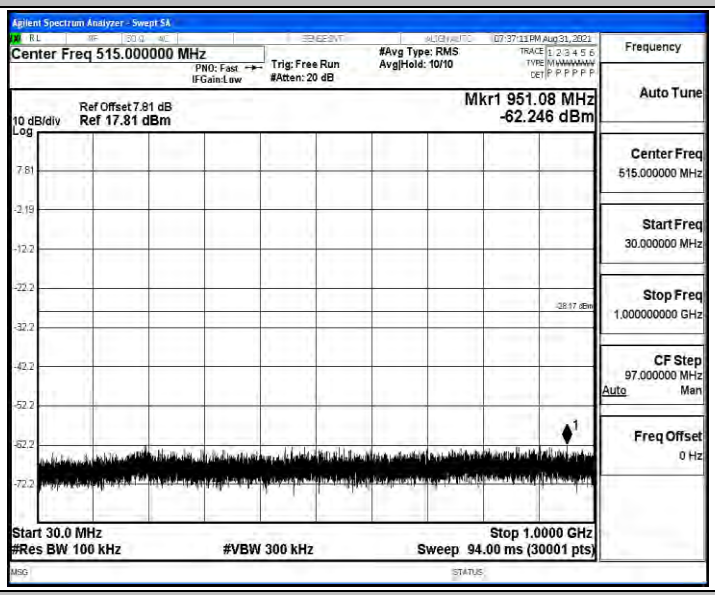
11N20SISO_Ant1_2462_1000~26500



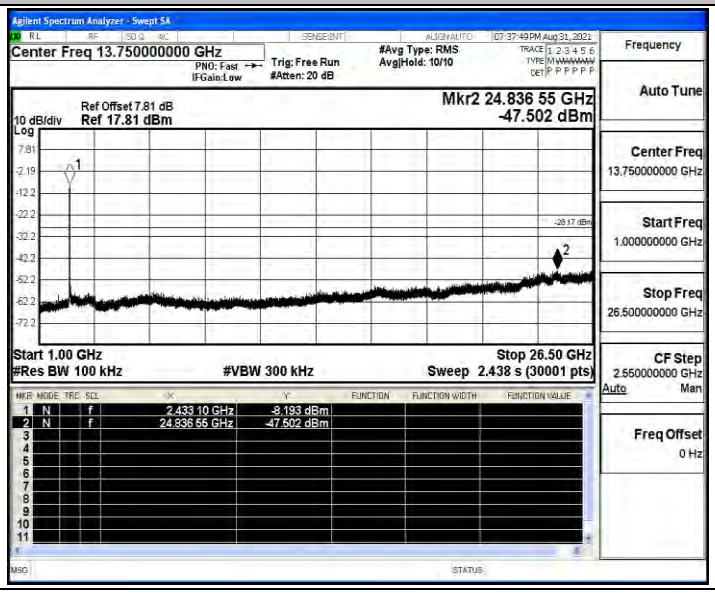
11N40SISO_Ant1_2422_0~Reference



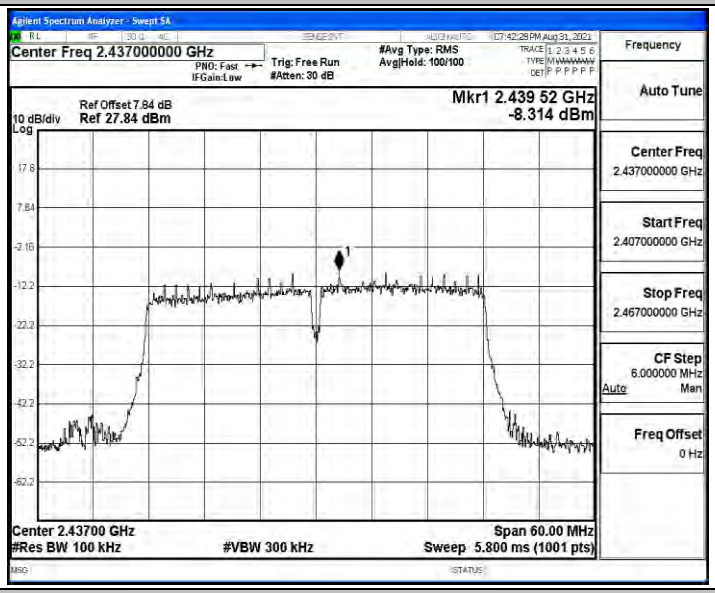
11N40SISO_Ant1_2422_30~1000



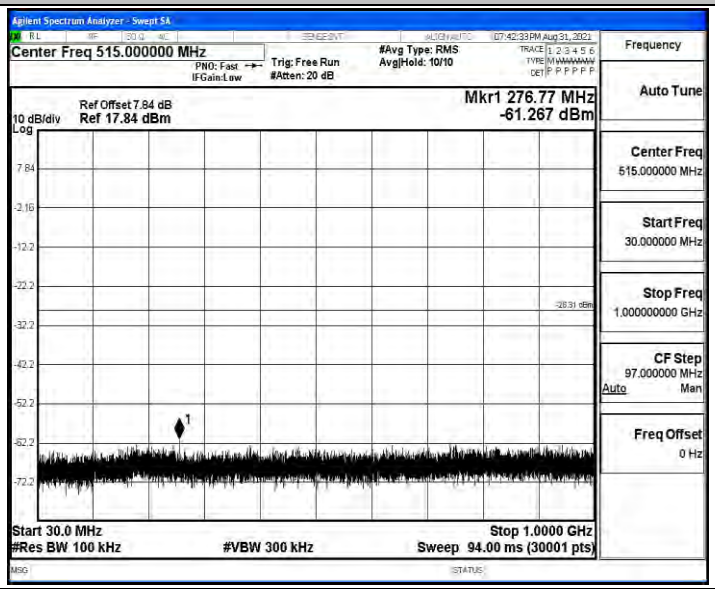
11N40SISO_Ant1_2422_1000~26500



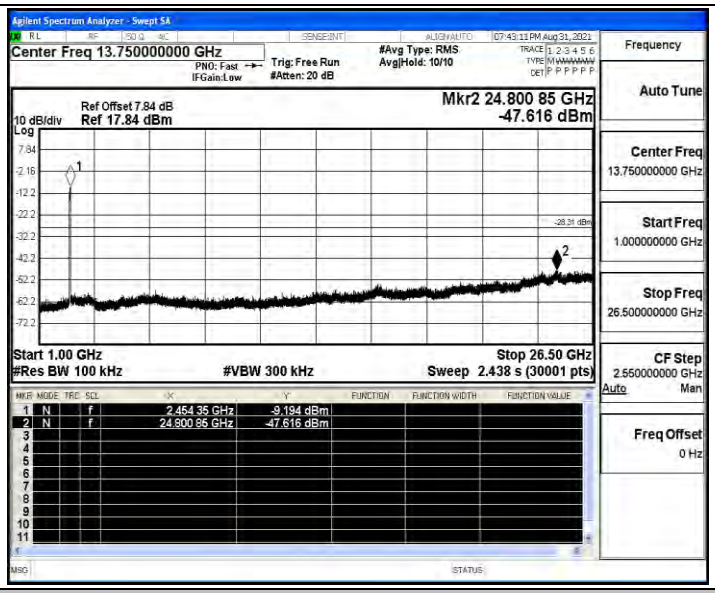
11N40SISO_Ant1_2437_0~Reference



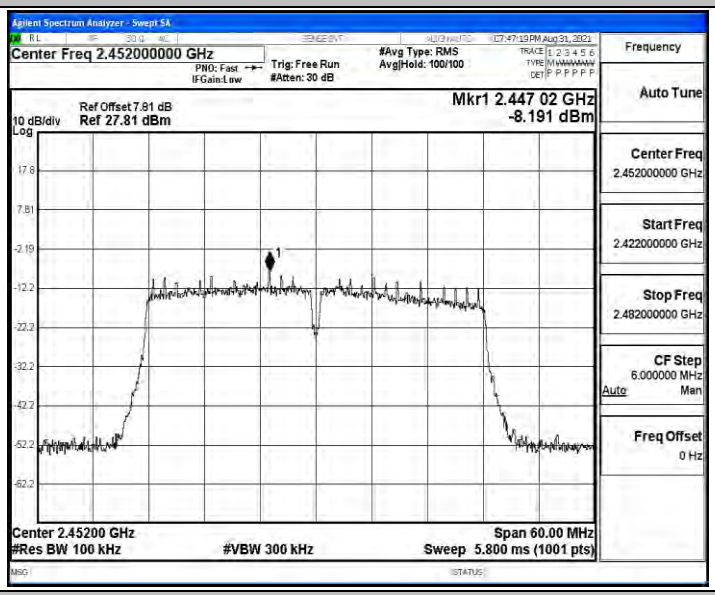
11N40SISO_Ant1_2437_30~1000



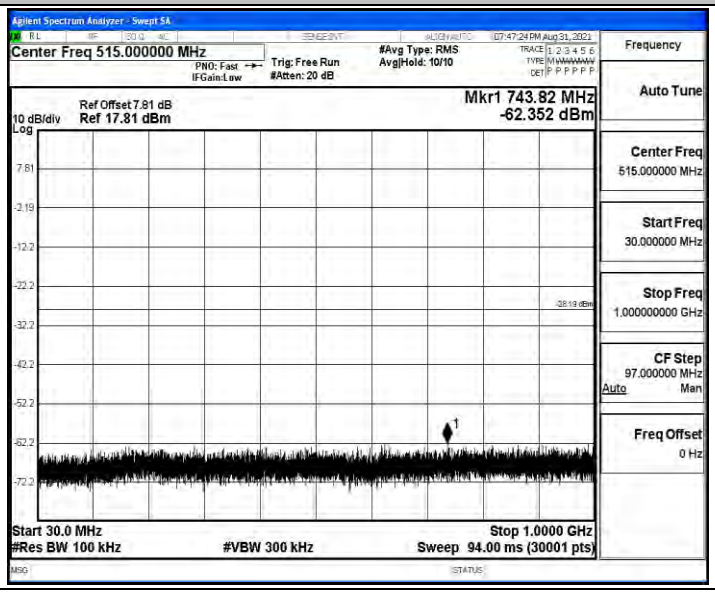
11N40SISO_Ant1_2437_1000~26500

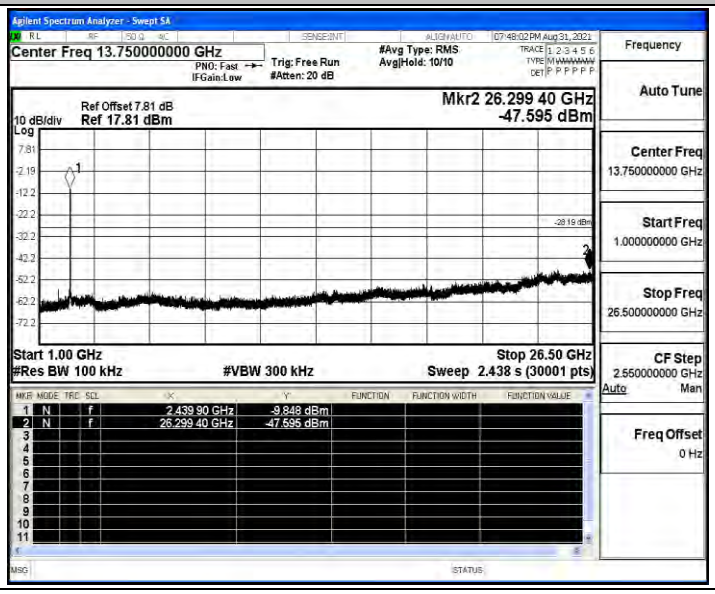


11N40SISO_Ant1_2452_0~Reference



11N40SISO_Ant1_2452_30~1000



11N40SISO_Ant1_2452_1000~26500


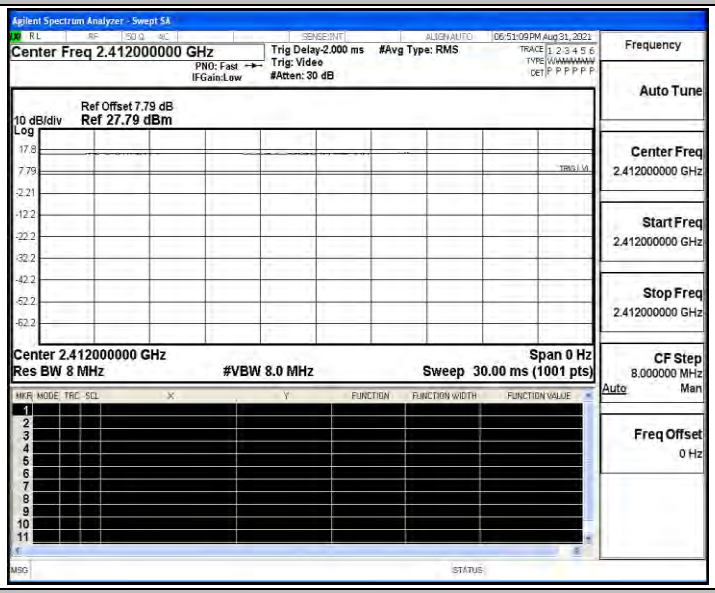
B.6 Duty Cycle

Test Result

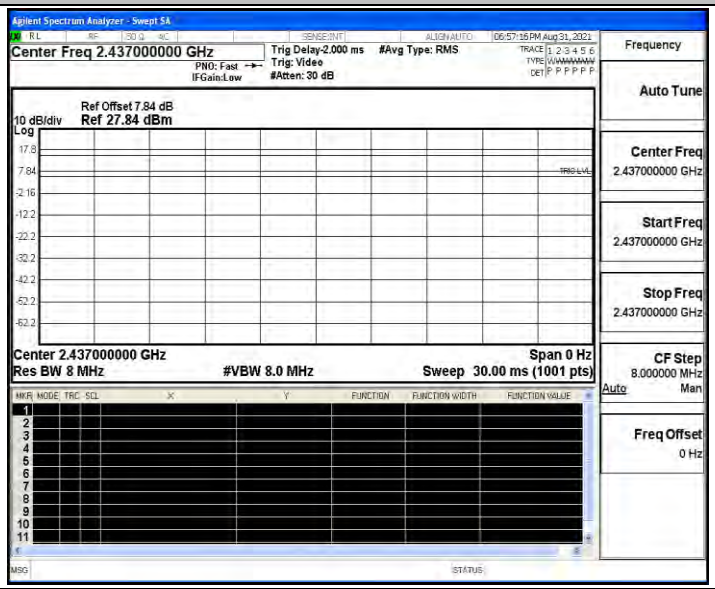
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
11B	Ant1	2412	30.00	30.00	100.00	---	PASS
		2437	30.00	30.00	100.00	---	PASS
		2462	30.00	30.00	100.00	---	PASS
11G	Ant1	2412	1.39	1.43	97.20	---	PASS
		2437	1.39	1.43	97.20	---	PASS
		2462	1.39	1.43	97.20	---	PASS
11N20SISO	Ant1	2412	1.30	1.34	97.01	---	PASS
		2437	1.30	1.34	97.01	---	PASS
		2462	1.30	1.34	97.01	---	PASS
11N40SISO	Ant1	2422	0.64	0.68	94.12	---	PASS
		2437	0.64	0.68	94.12	---	PASS
		2452	0.64	0.68	94.12	---	PASS

Test Graphs

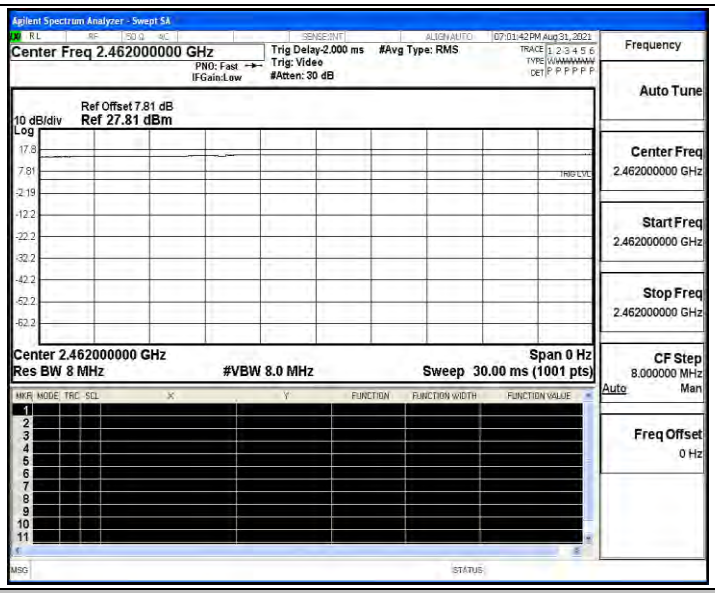
11B_Ant1_2412



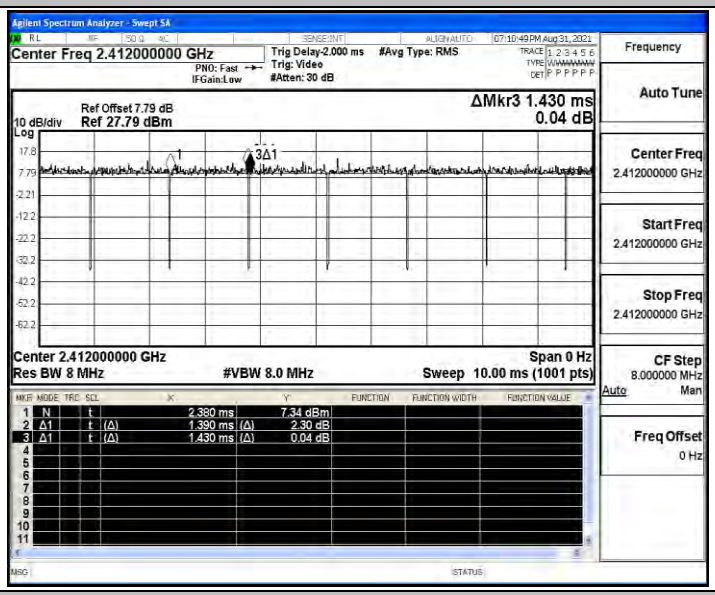
11B_Ant1_2437



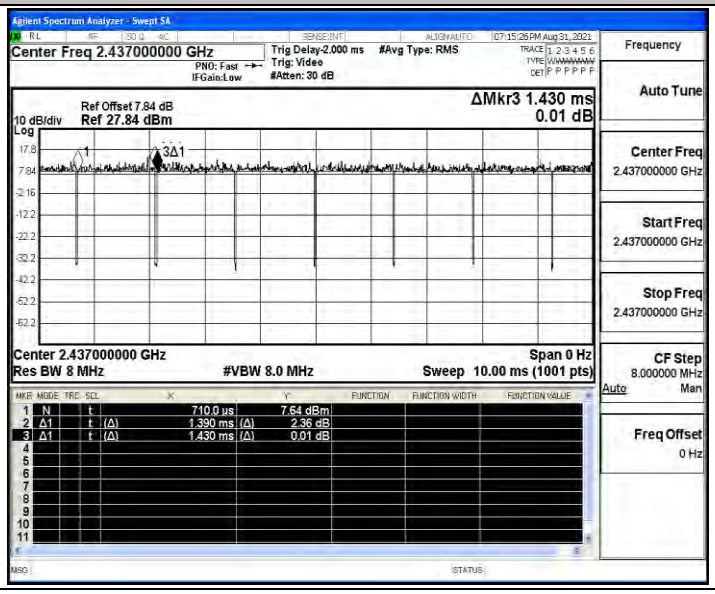
11B_Ant1_2462



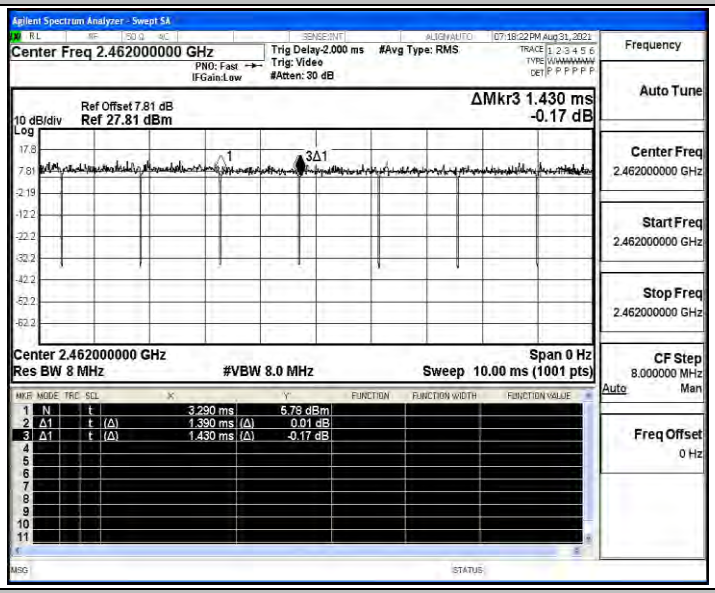
11G_Ant1_2412



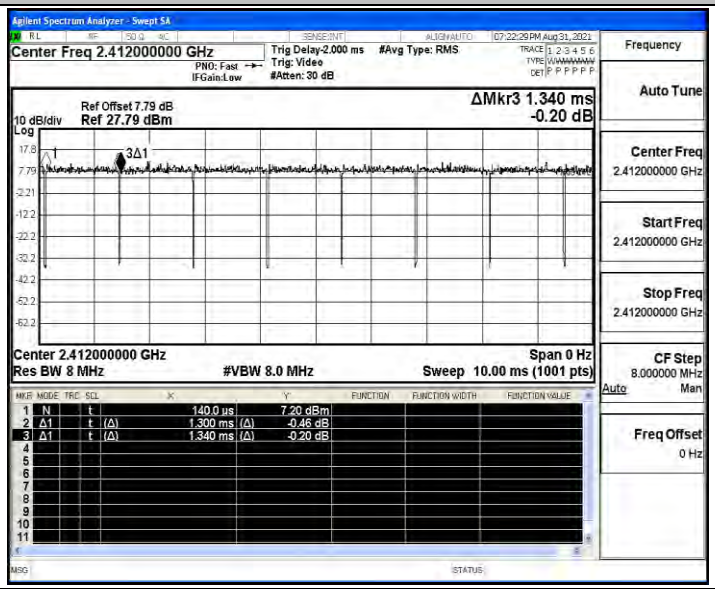
11G_Ant1_2437



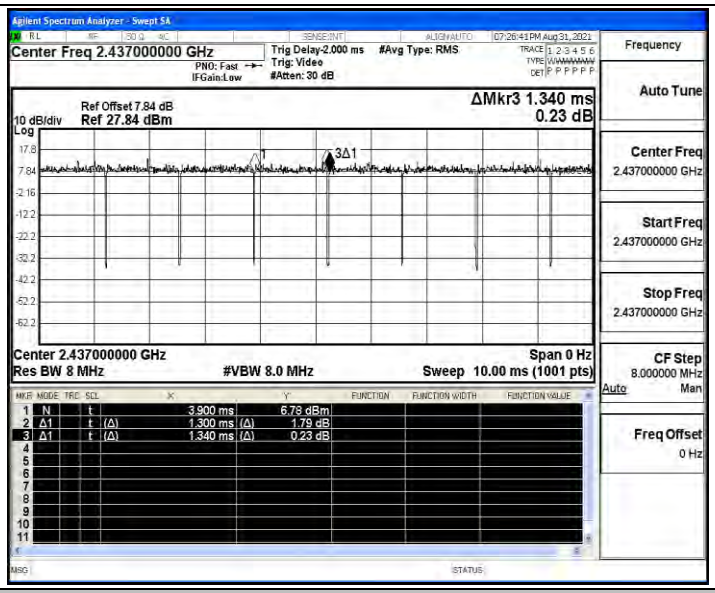
11G_Ant1_2462



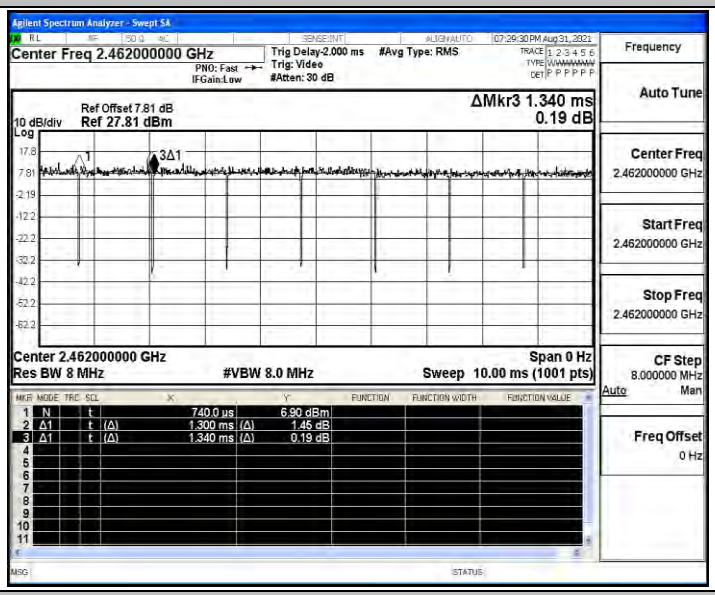
11N20SISO_Ant1_2412



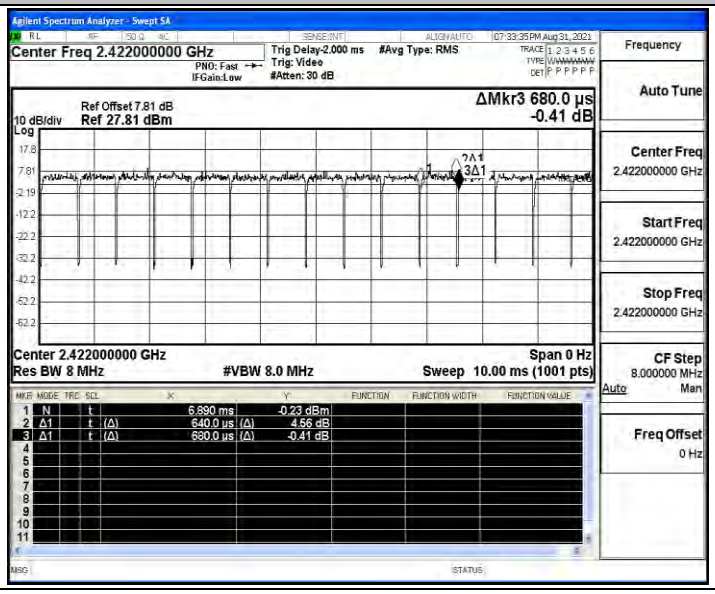
11N20SISO_Ant1_2437



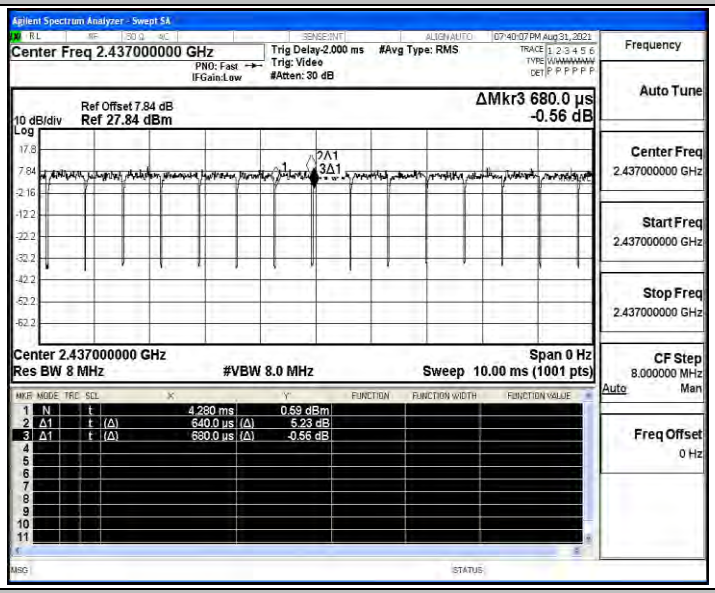
11N20SISO_Ant1_2462



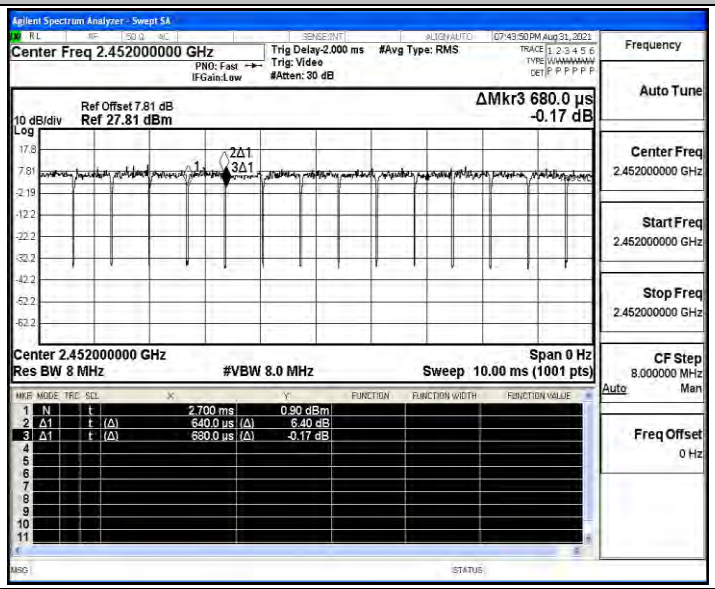
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



B.7 Emissions in Restricted Bands

Test Result

TestMode	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
11B	2412	AV	2310.000	-49.5	≤-41.20	45.70	≤54	PASS
		AV	2389.960	-49.07	≤-41.20	46.13	≤54	PASS
		AV	2390.000	-49.07	≤-41.20	46.13	≤54	PASS
		Peak	2310.000	-46.39	≤-21.20	48.81	≤74	PASS
		Peak	2369.810	-40.08	≤-21.20	55.12	≤74	PASS
		Peak	2390.000	-42.66	≤-21.20	52.54	≤74	PASS
	2462	AV	2483.500	-48.22	≤-41.20	46.98	≤54	PASS
		AV	2488.070	-46.94	≤-41.20	48.26	≤54	PASS
		AV	2500.000	-48.54	≤-41.20	46.66	≤54	PASS
		Peak	2483.500	-43.02	≤-21.20	52.18	≤74	PASS
		Peak	2494.340	-39.27	≤-21.20	55.93	≤74	PASS
		Peak	2500.000	-44.14	≤-21.20	51.06	≤74	PASS
11G	2412	AV	2310.000	-49.07	≤-41.20	46.13	≤54	PASS
		AV	2376.960	-48.33	≤-41.20	46.87	≤54	PASS
		AV	2390.000	-48.39	≤-41.20	46.81	≤54	PASS
		Peak	2310.000	-43.17	≤-21.20	52.03	≤74	PASS
		Peak	2362.140	-38.35	≤-21.20	56.85	≤74	PASS
		Peak	2390.000	-40.79	≤-21.20	54.41	≤74	PASS
	2462	AV	2483.500	-47.64	≤-41.20	47.56	≤54	PASS
		AV	2487.850	-45.61	≤-41.20	49.59	≤54	PASS
		AV	2500.000	-48.05	≤-41.20	47.15	≤54	PASS
		Peak	2483.500	-40.98	≤-21.20	54.22	≤74	PASS
		Peak	2495.110	-38.24	≤-21.20	56.96	≤74	PASS
		Peak	2500.000	-41.63	≤-21.20	53.57	≤74	PASS
11N20 SISO	2412	AV	2310.000	-48.9	≤-41.20	46.30	≤54	PASS
		AV	2386.450	-48.43	≤-41.20	46.77	≤54	PASS
		AV	2390.000	-48.45	≤-41.20	46.75	≤54	PASS
		Peak	2310.000	-42.17	≤-21.20	53.03	≤74	PASS
		Peak	2382.680	-38.58	≤-21.20	56.62	≤74	PASS
		Peak	2390.000	-41.38	≤-21.20	53.82	≤74	PASS
	2462	AV	2483.500	-47.65	≤-41.20	47.55	≤54	PASS
		AV	2488.070	-45.74	≤-41.20	49.46	≤54	PASS
		AV	2500.000	-48	≤-41.20	47.20	≤54	PASS
		Peak	2483.500	-39.02	≤-21.20	56.18	≤74	PASS
		Peak	2487.960	-37.71	≤-21.20	57.49	≤74	PASS
		Peak	2500.000	-42.05	≤-21.20	53.15	≤74	PASS

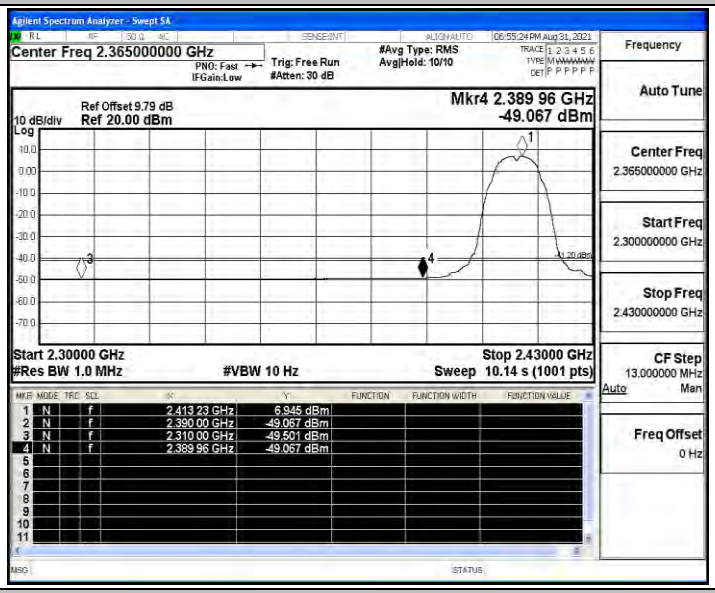
11N40 SISO	2422	AV	2310.000	-48.84	≤-41.20	46.36	≤54	PASS
		AV	2388.400	-48.14	≤-41.20	47.06	≤54	PASS
		AV	2390.000	-48.32	≤-41.20	46.88	≤54	PASS
		Peak	2310.000	-42.85	≤-21.20	52.35	≤74	PASS
		Peak	2383.590	-38.98	≤-21.20	56.22	≤74	PASS
		Peak	2390.000	-42.65	≤-21.20	52.55	≤74	PASS
	2452	AV	2483.500	-47.59	≤-41.20	47.61	≤54	PASS
		AV	2483.890	-47.27	≤-41.20	47.93	≤54	PASS
		AV	2500.000	-47.82	≤-41.20	47.38	≤54	PASS
		Peak	2483.500	-40.83	≤-21.20	54.37	≤74	PASS
		Peak	2485.980	-38.58	≤-21.20	56.62	≤74	PASS
		Peak	2500.000	-41.54	≤-21.20	53.66	≤74	PASS

Note：

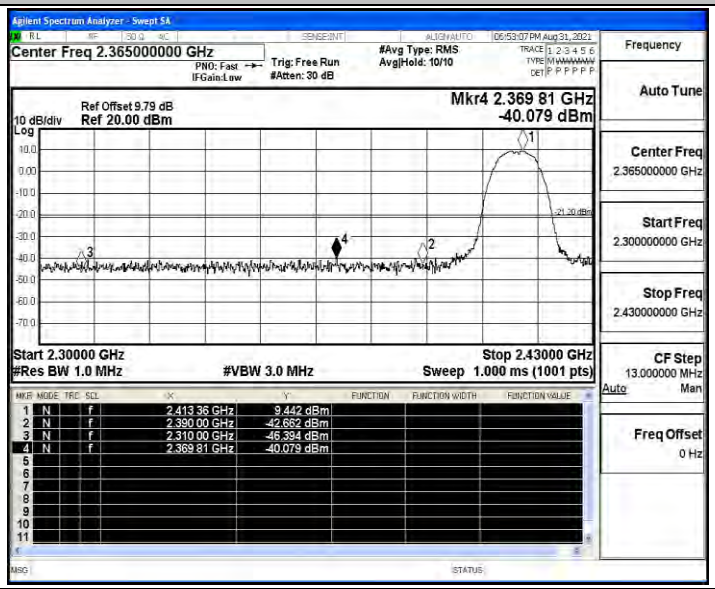
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

11B_Ant1_Low_2412_AV



11B_Ant1_Low_2412_Peak



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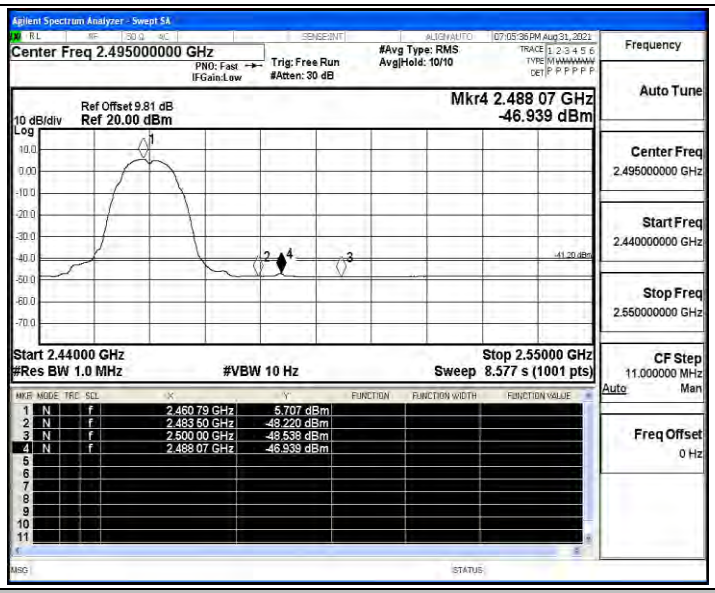

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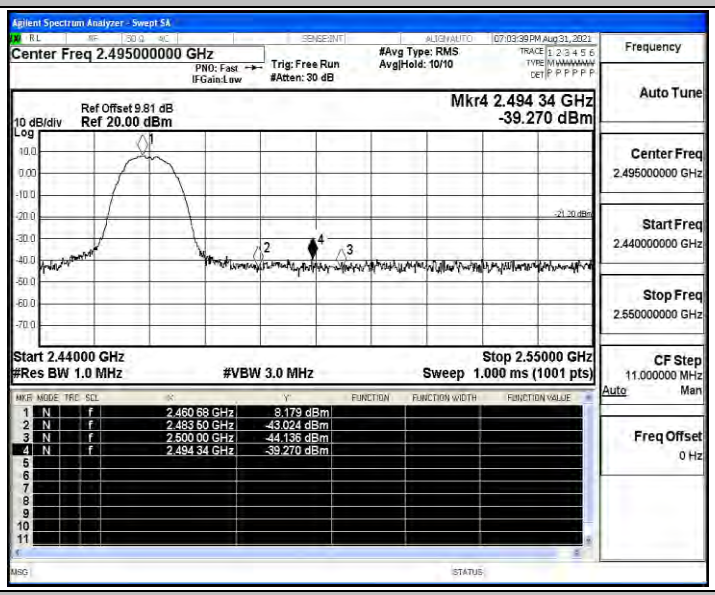
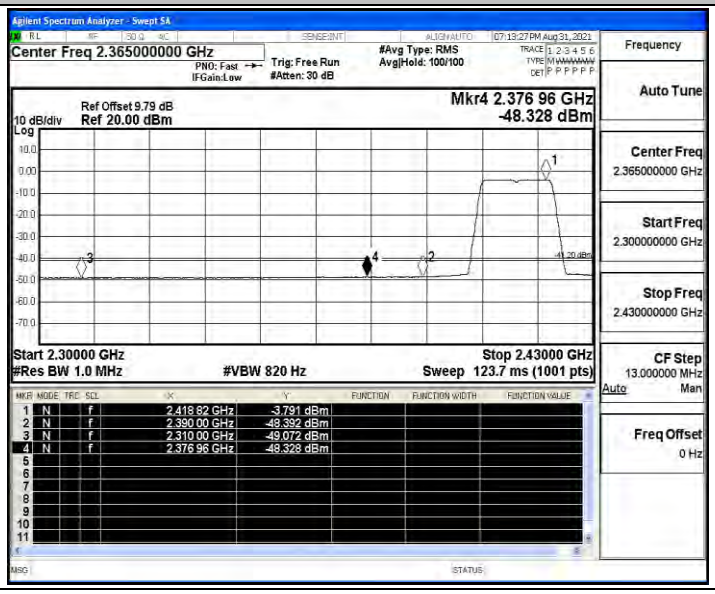


11G_Ant1_Low_2412_AV



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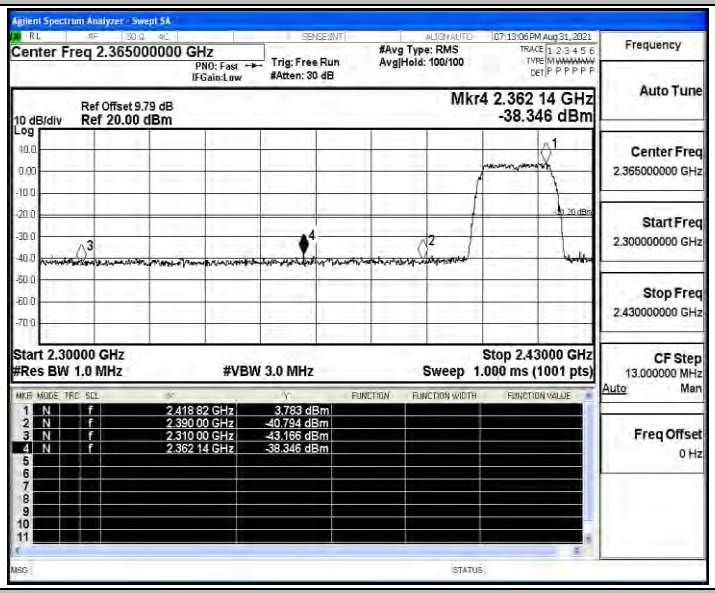

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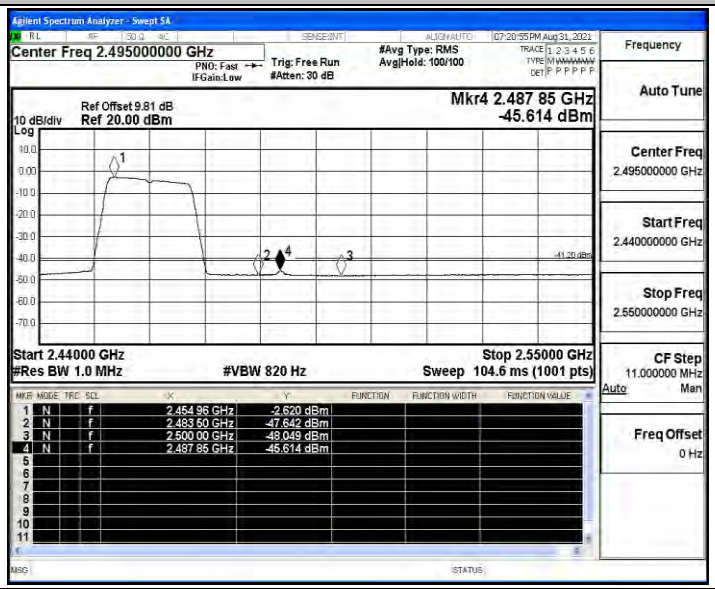

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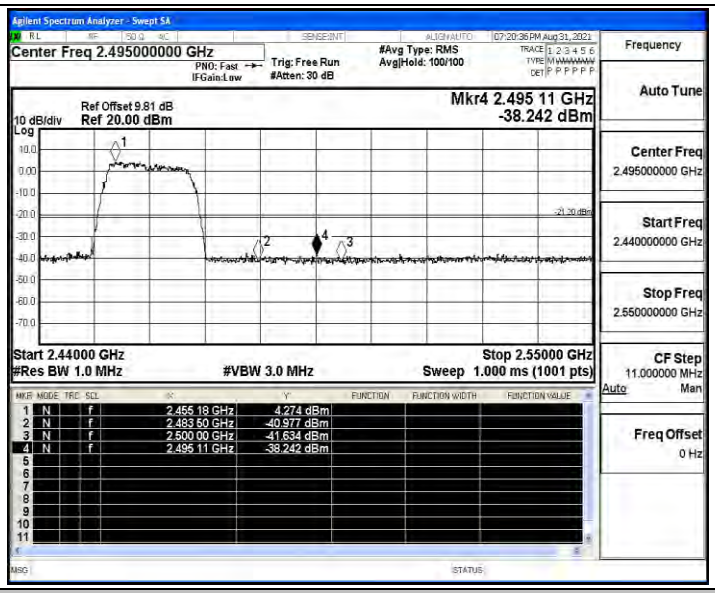

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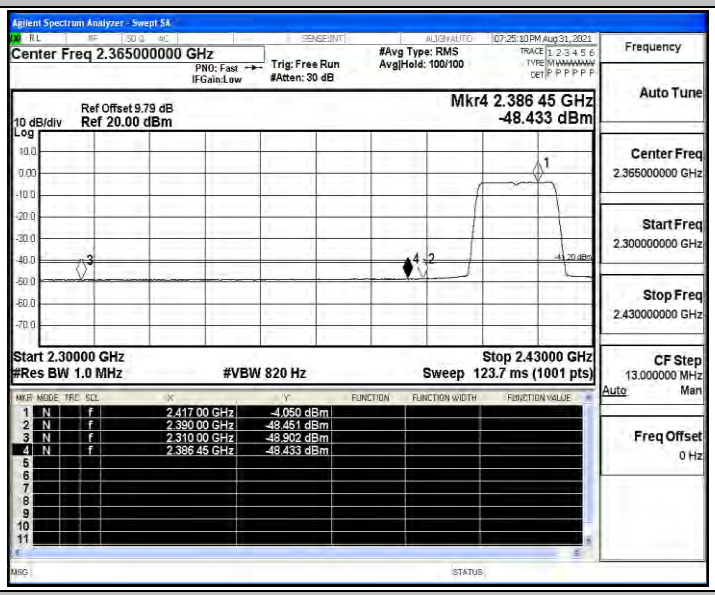

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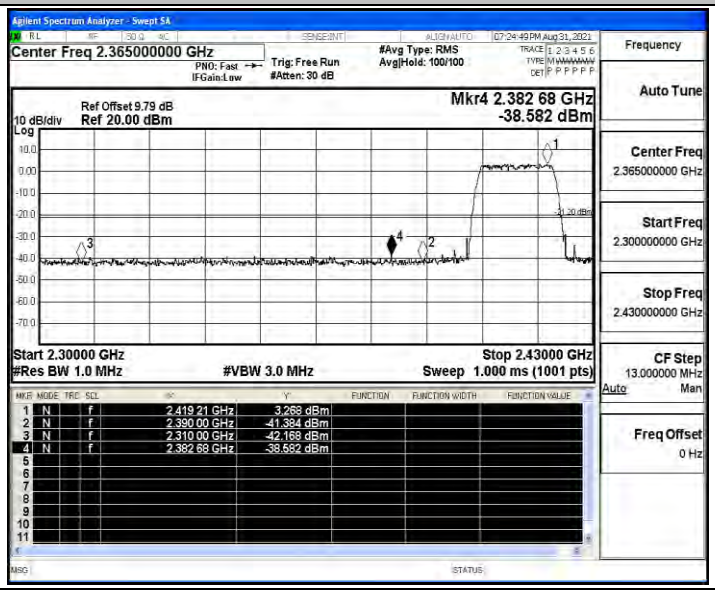

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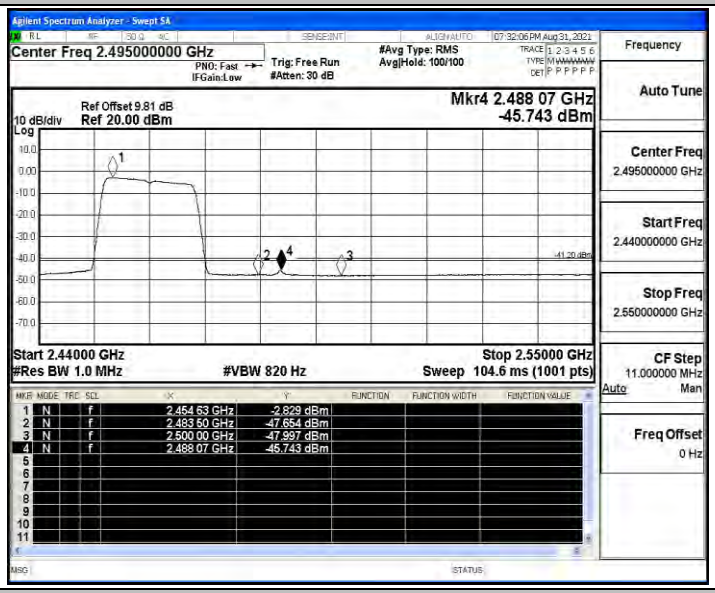
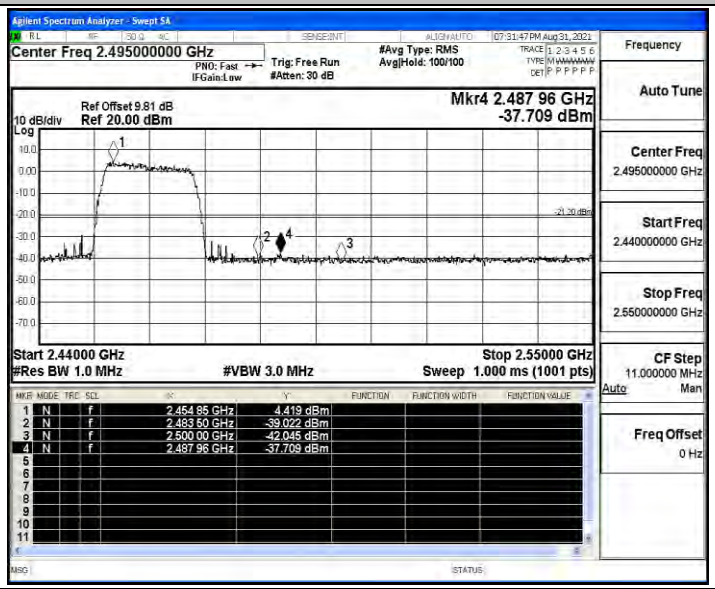
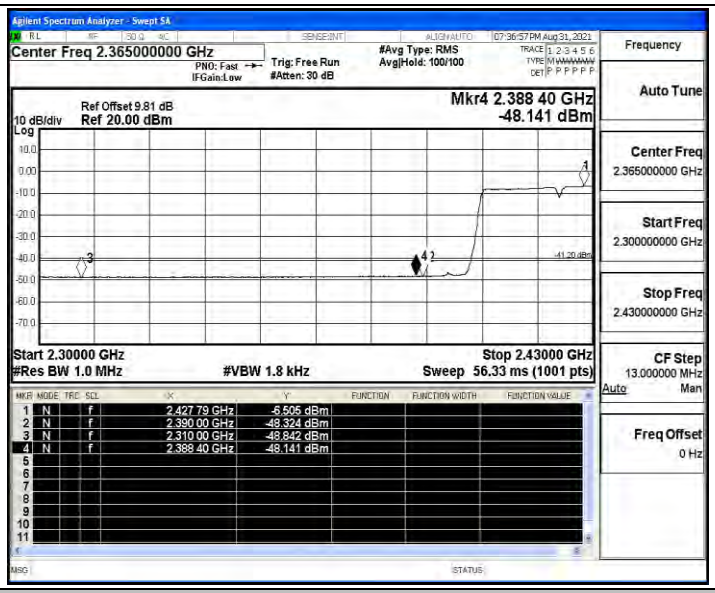


11N20SISO_Ant1_High_2462_Peak



11N40SISO_Ant1_Low_2422_AV



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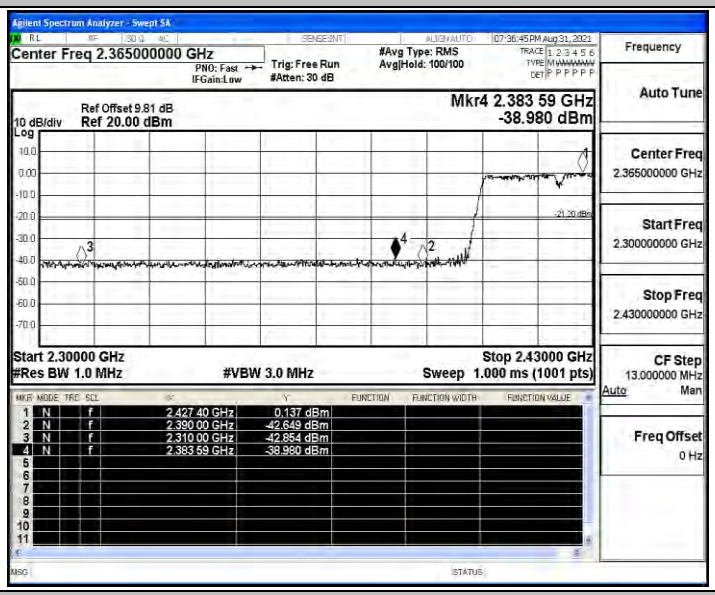

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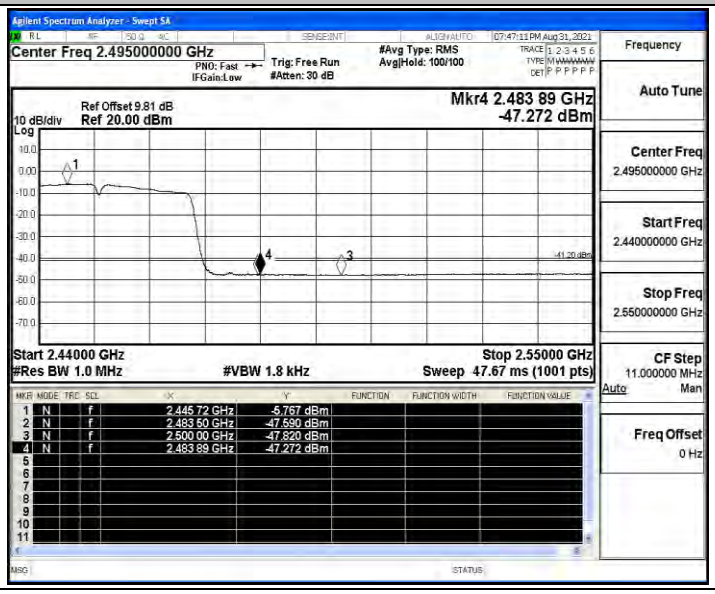
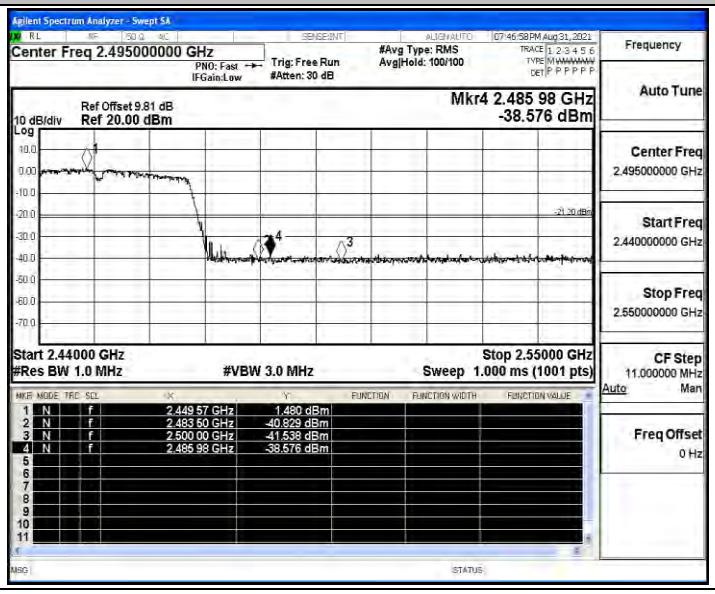
11N40SISO_Ant1_High_2452_Peak