Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: 600Mbps usb wifi adapter

Test Model: FX-600AC

Environmental Conditions

Temperature:	23.5° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Monkey Li
Supervised by:	Li huan

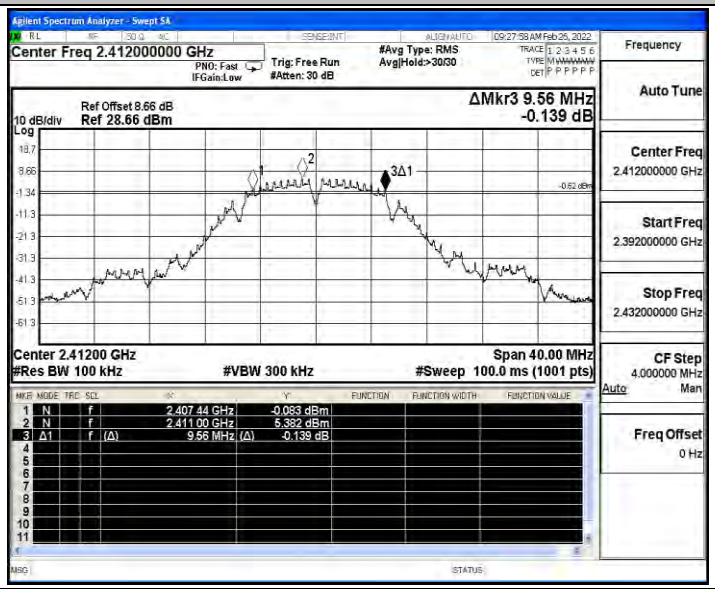
A.1 6dB Bandwidth

Test Result

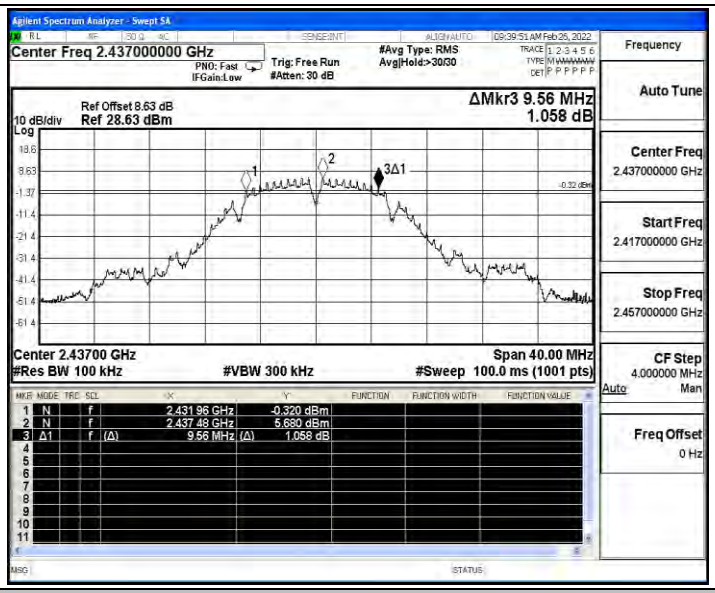
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant	2412	9.560	2407.440	2417.000	0.5	PASS
		2437	9.560	2431.960	2441.520	0.5	PASS
		2462	9.560	2457.440	2467.000	0.5	PASS
11G	Ant	2412	15.440	2404.440	2419.880	0.5	PASS
		2437	15.280	2429.440	2444.720	0.5	PASS
		2462	15.440	2454.120	2469.560	0.5	PASS
11N20SISO	Ant	2412	16.240	2404.120	2420.360	0.5	PASS
		2437	15.120	2429.440	2444.560	0.5	PASS
		2462	15.320	2454.240	2469.560	0.5	PASS
11N40SISO	Ant	2422	35.120	2404.400	2439.520	0.5	PASS
		2437	35.840	2419.240	2455.080	0.5	PASS
		2452	35.840	2434.080	2469.920	0.5	PASS

Test Graphs

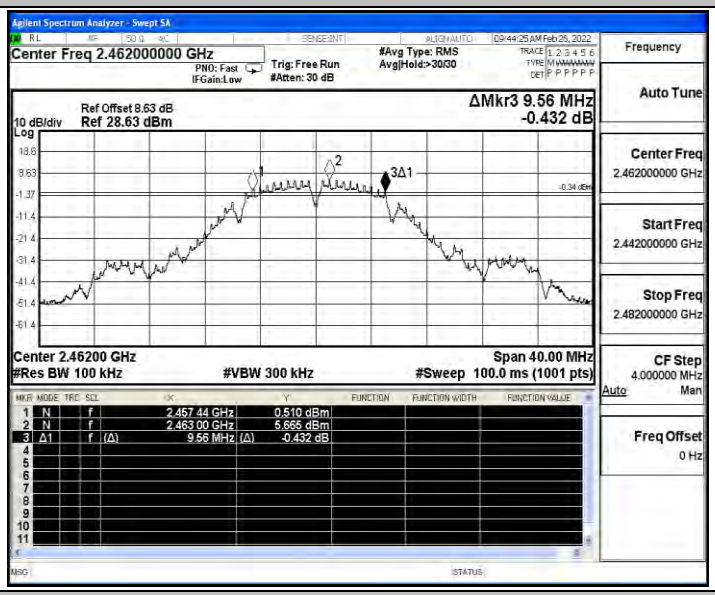
11B_Ant_2412



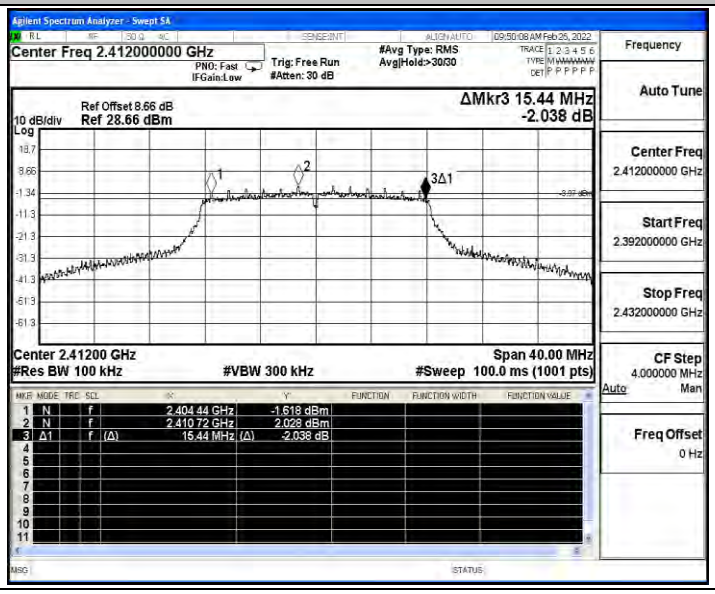
11B_Ant_2437



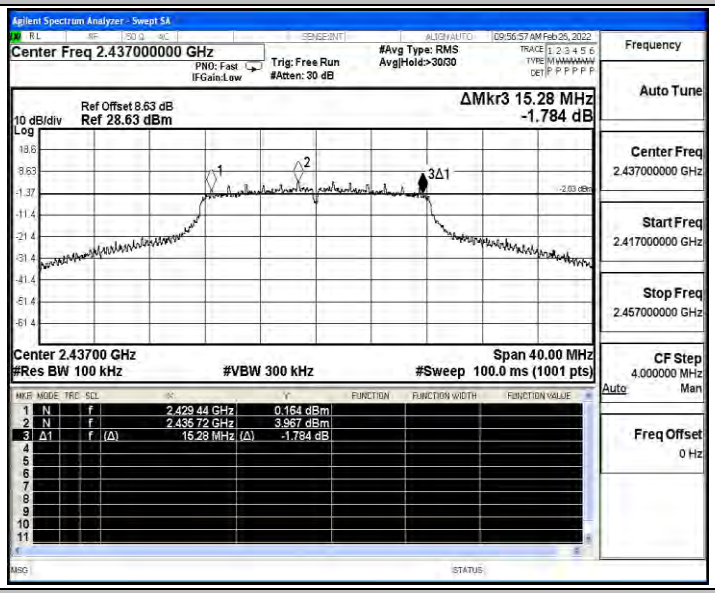
11B_Ant_2462



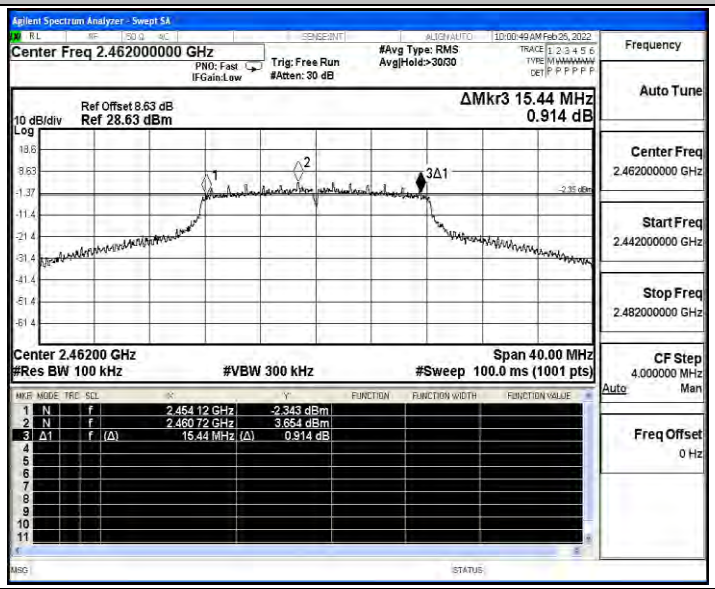
11G_Ant_2412



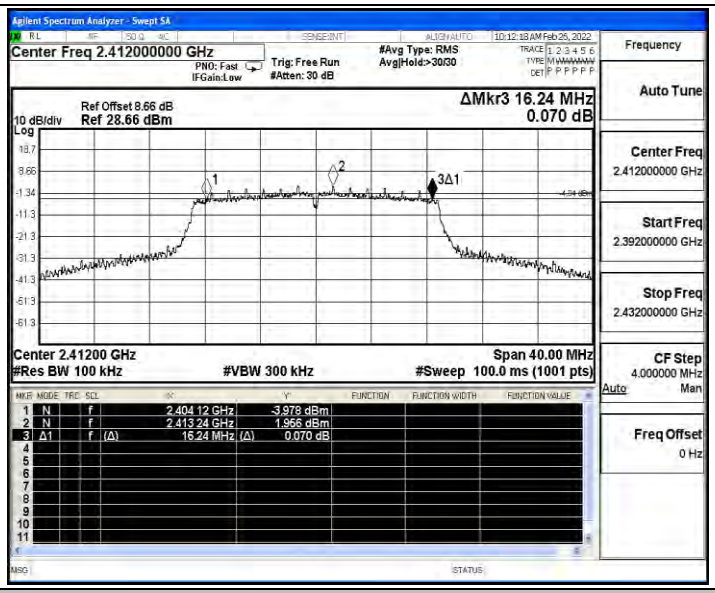
11G_Ant_2437



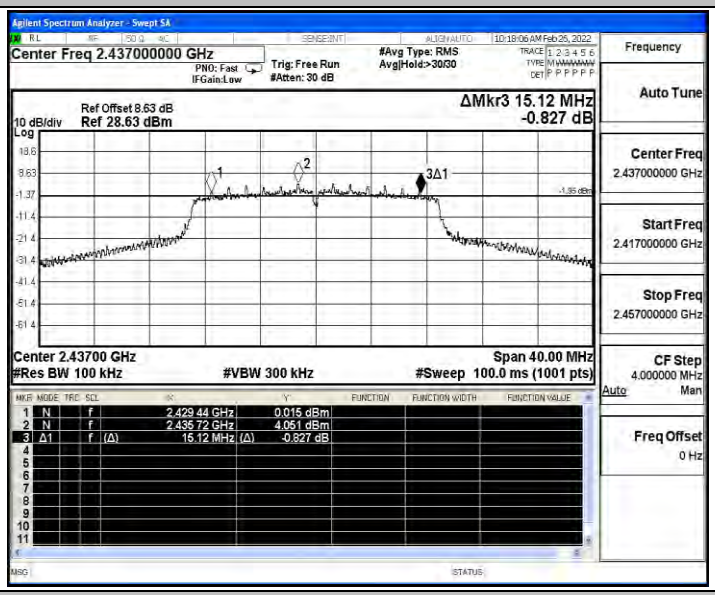
11G_Ant_2462



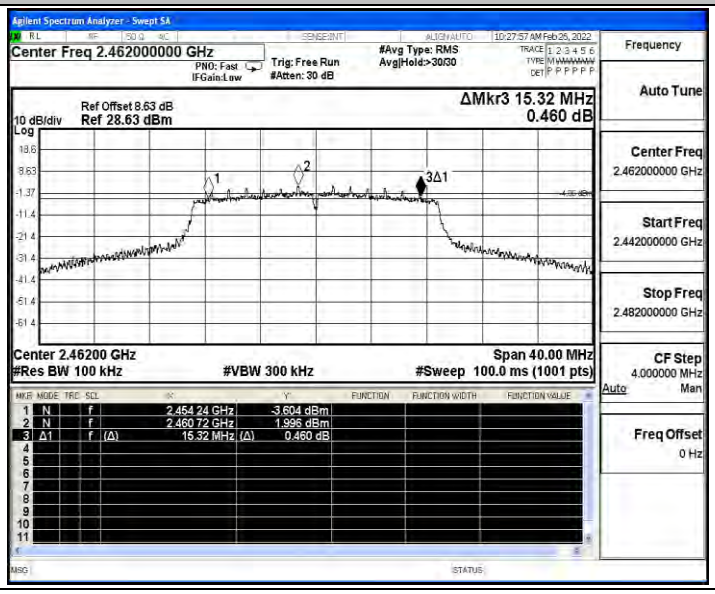
11N20SISO_Ant_2412



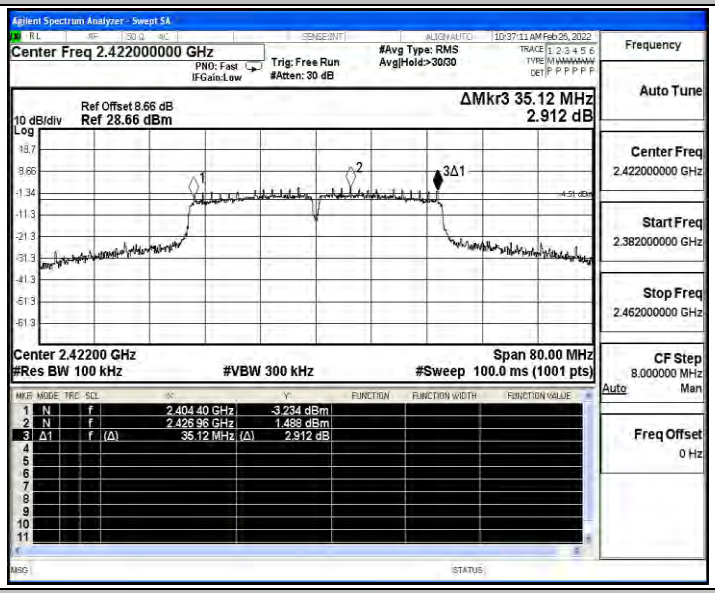
11N20SISO_Ant_2437



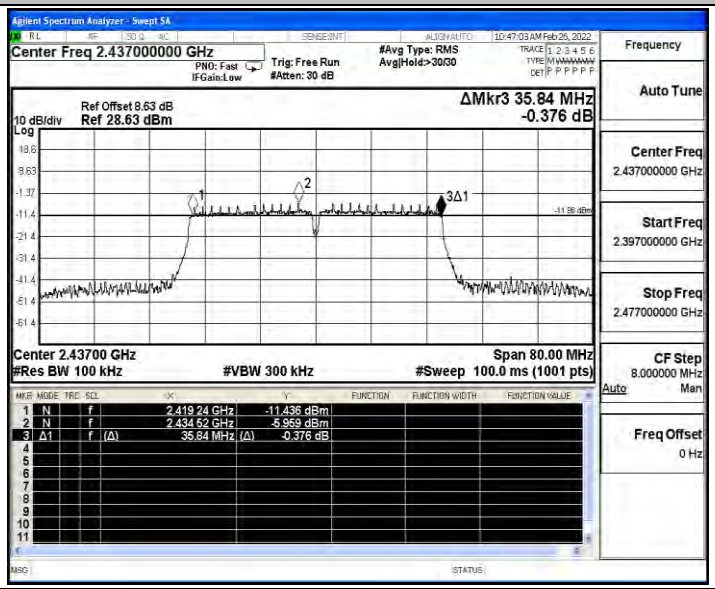
11N20SISO_Ant_2462



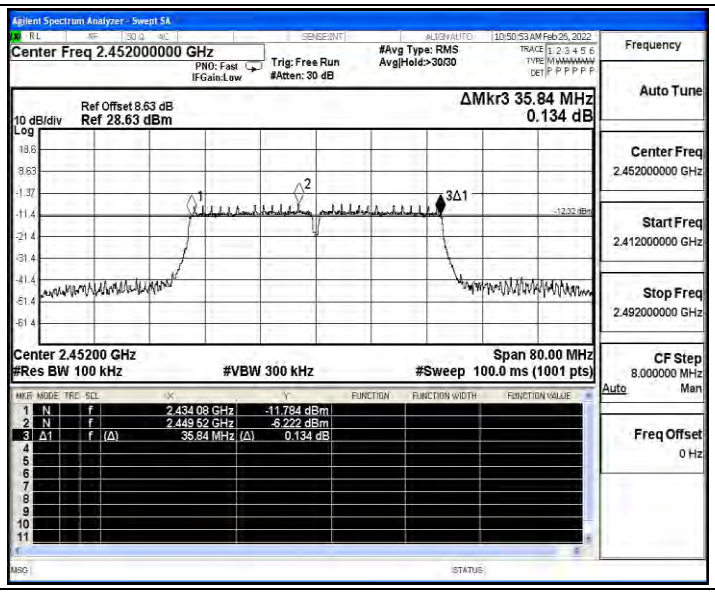
11N40SISO_Ant_2422



11N40SISO_Ant_2437



11N40SISO_Ant_2452


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.452000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold:>30/30
10/50/53 AM Feb 26, 2022
Frequency
Auto Tune
Ref Offset 8.63 dB
10 dB/div
Ref 28.63 dBm
Log
ΔMkr3 35.84 MHz
0.134 dB
Center Freq
2.452000000 GHz
Start Freq
2.412000000 GHz
Stop Freq
2.492000000 GHz
Center 2.45200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 80.00 MHz
#Sweep 100.0 ms (1001 pts)
CF Step
8.000000 MHz
Auto
Man
Freq Offset
0 Hz
1 N f 2.434 08 GHz -11.784 dBm
2 N f 2.449 52 GHz -6.222 dBm
3 Δ1 f (Δ) 35.84 MHz (Δ) 0.134 dB
MSG
STATUS

A.2 Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant	2412	17.33	≤30.00	PASS
		2437	17.42	≤30.00	PASS
		2462	17.51	≤30.00	PASS
11G	Ant	2412	20.52	≤30.00	PASS
		2437	22.37	≤30.00	PASS
		2462	22.04	≤30.00	PASS
11N20SISO	Ant	2412	20.50	≤30.00	PASS
		2437	22.38	≤30.00	PASS
		2462	20.48	≤30.00	PASS
11N40SISO	Ant	2422	23.24	≤30.00	PASS
		2437	16.25	≤30.00	PASS
		2452	16.01	≤30.00	PASS

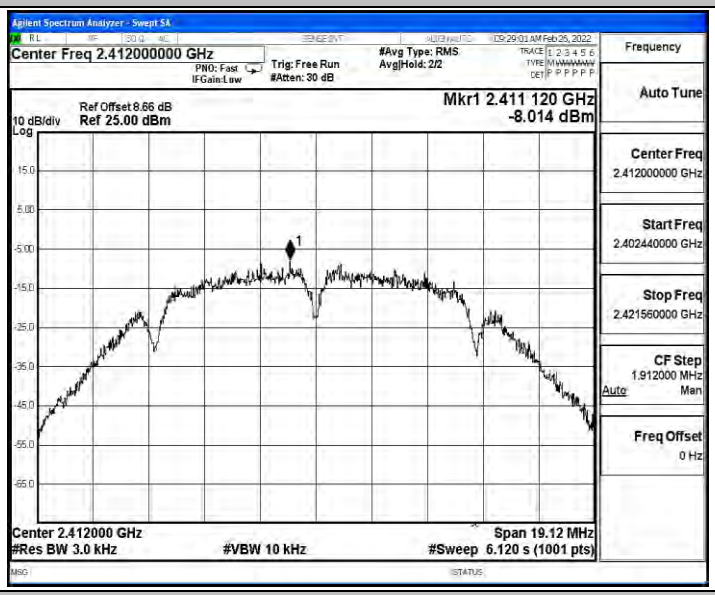
A.3 Maximum power spectral density

Test Result

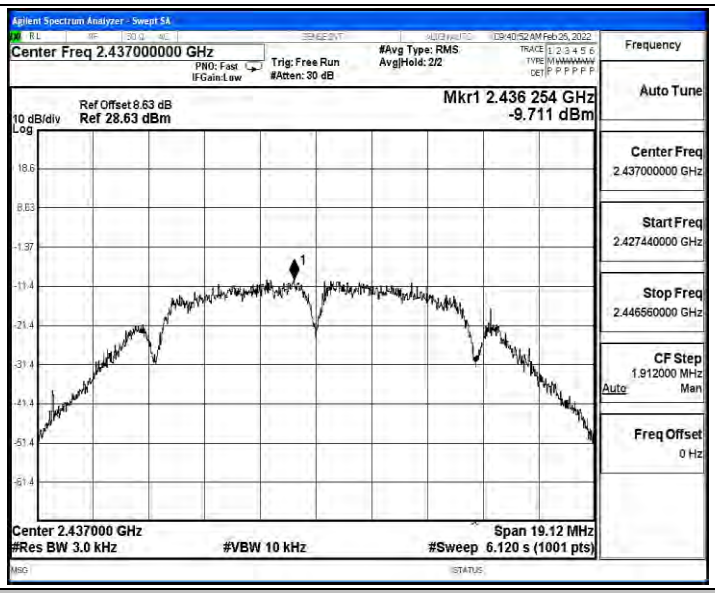
TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant	2412	-8.01	≤8.00	PASS
		2437	-9.71	≤8.00	PASS
		2462	-9.68	≤8.00	PASS
11G	Ant	2412	-12.78	≤8.00	PASS
		2437	-10.92	≤8.00	PASS
		2462	-9.84	≤8.00	PASS
11N20SISO	Ant	2412	-13.11	≤8.00	PASS
		2437	-10.58	≤8.00	PASS
		2462	-12.72	≤8.00	PASS
11N40SISO	Ant	2422	-11.71	≤8.00	PASS
		2437	-20.52	≤8.00	PASS
		2452	-21.15	≤8.00	PASS

Test Graphs

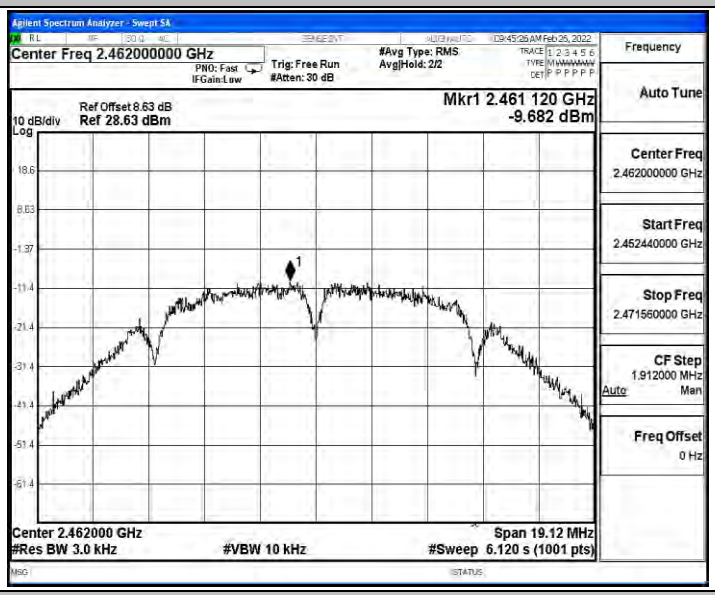
11B_Ant_2412



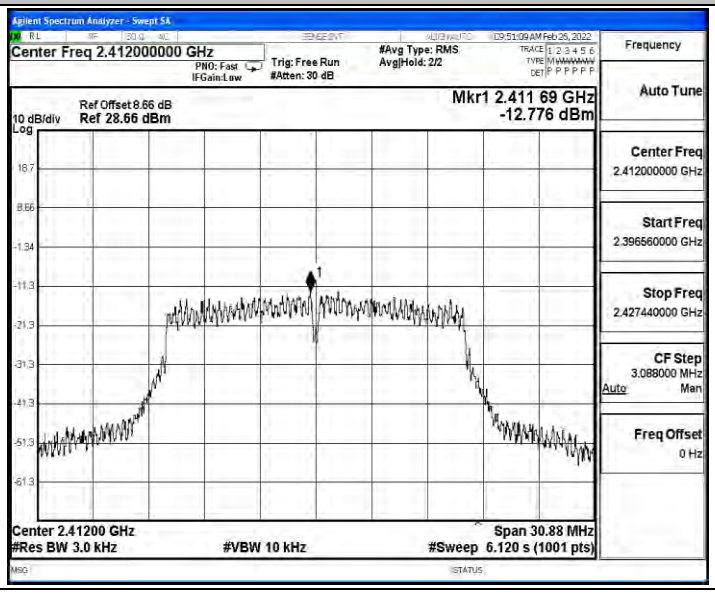
11B_Ant_2437



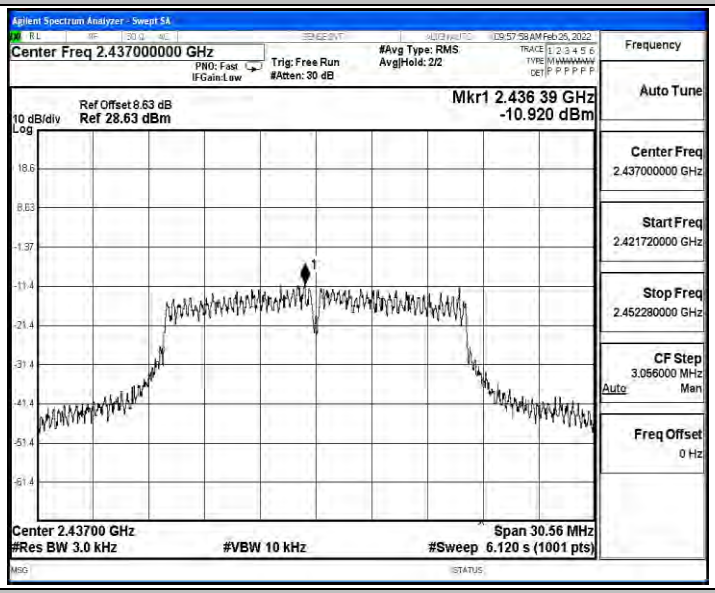
11B_Ant_2462



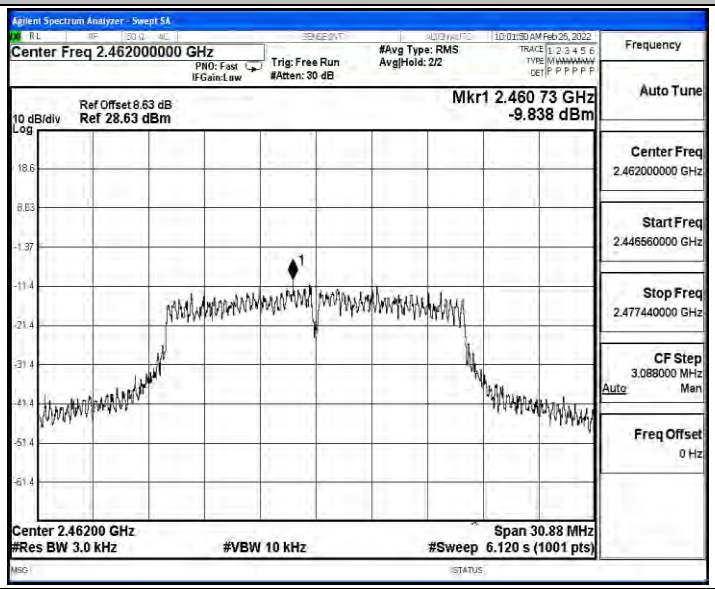
11G_Ant_2412



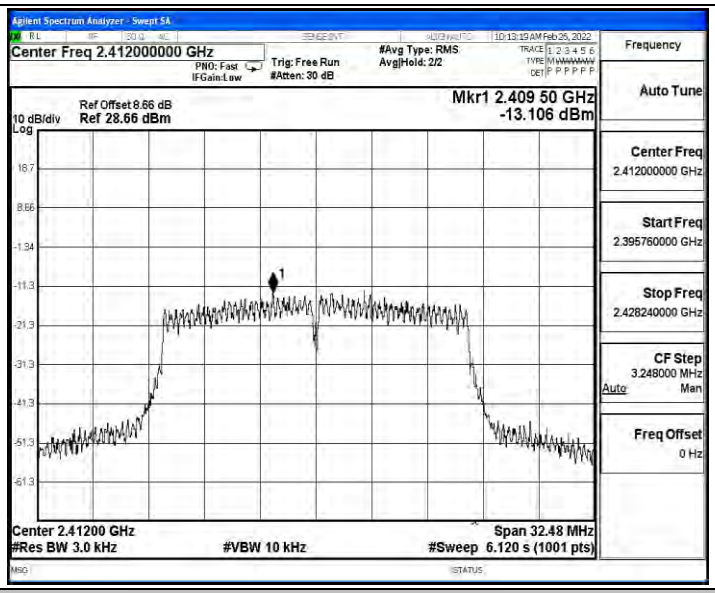
11G_Ant_2437



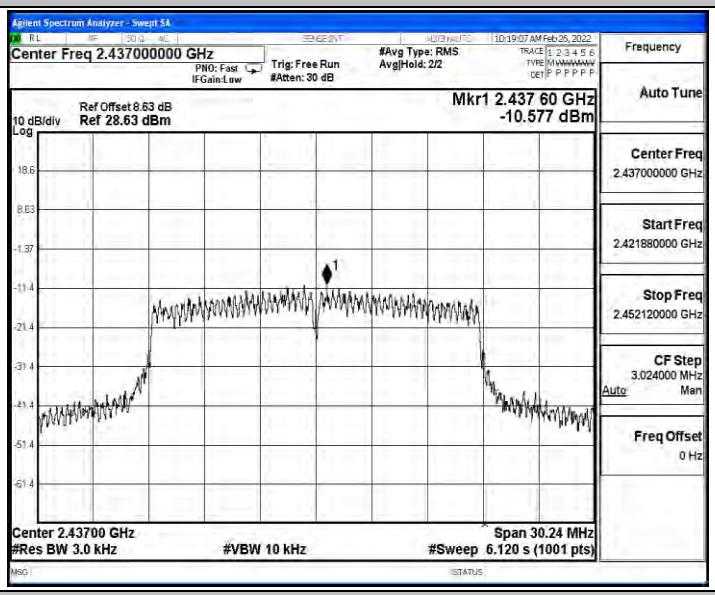
11G_Ant_2462



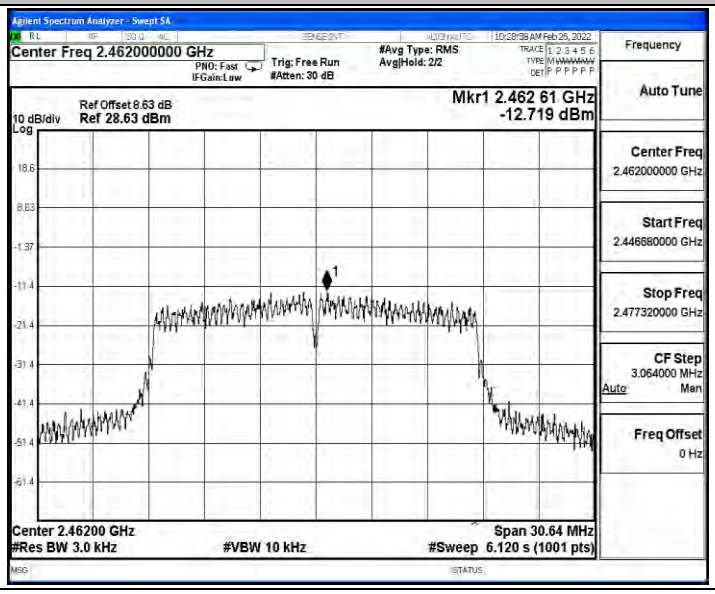
11N20SISO_Ant_2412



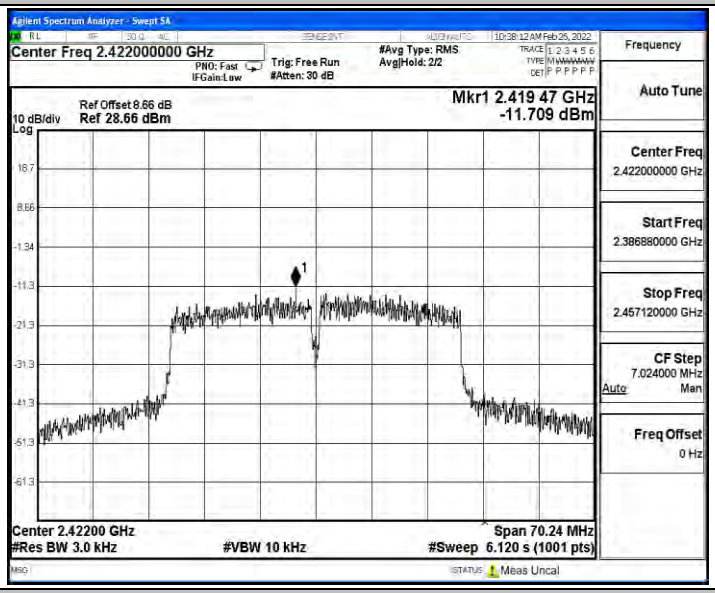
11N20SISO_Ant_2437



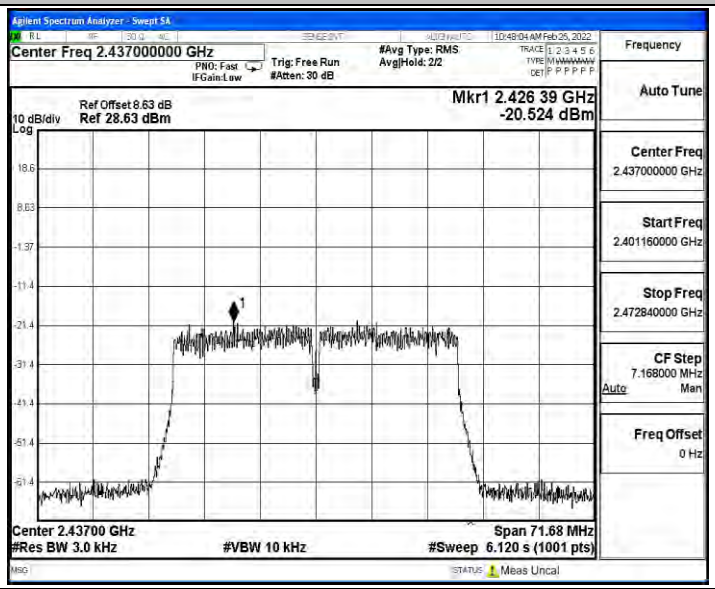
11N20SISO_Ant_2462



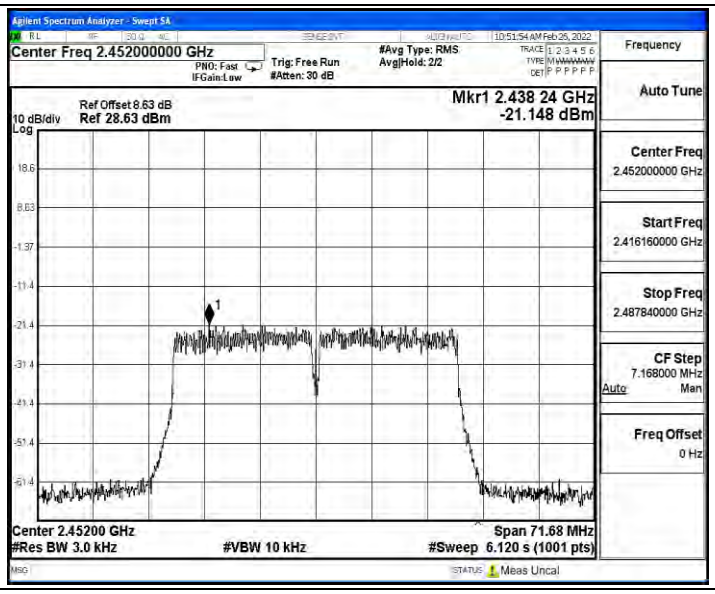
11N40SISO_Ant_2422



11N40SISO_Ant_2437



11N40SISO_Ant_2452


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.452000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 2/2
10:51:54 AM Feb 26, 2022
Frequency
Auto Tune
Ref Offset 8.63 dB
10 dB/div Ref 28.63 dBm
Log
Mkr1 2.438 24 GHz
-21.148 dBm
Center Freq
2.452000000 GHz
Start Freq
2.416160000 GHz
Stop Freq
2.487840000 GHz
CF Step
7.168000 MHz
Auto Man
Freq Offset
0 Hz
Center 2.45200 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 71.68 MHz
#Sweep 6.120 s (1001 pts)
Meas Uncal

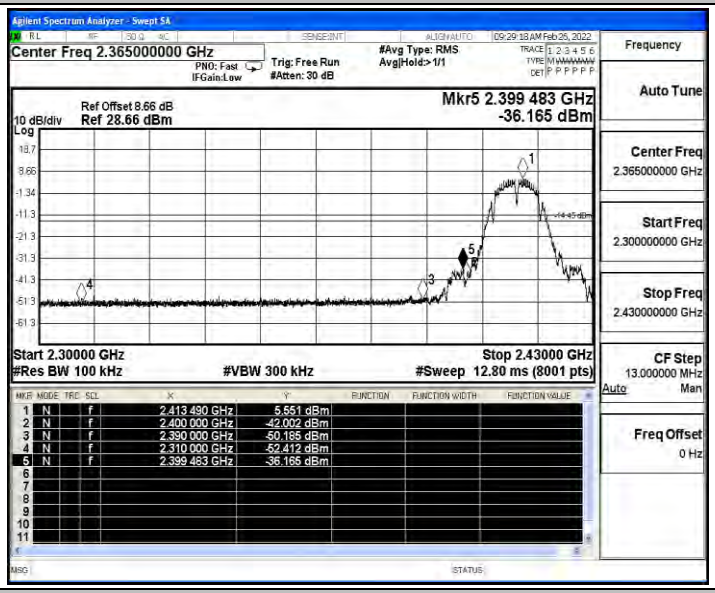
A.4 Band edge measurements

Test Result

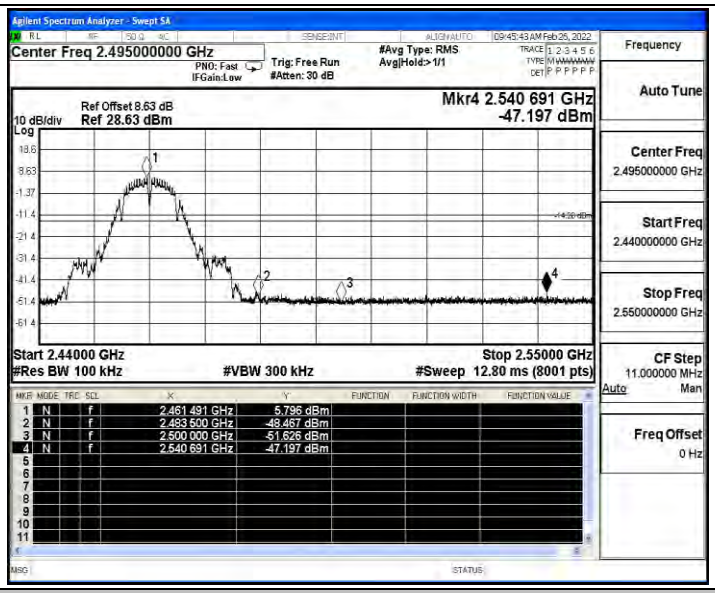
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant	Low	2412	5.55	-36.17	≤-14.45	PASS
		High	2462	5.80	-47.2	≤-14.2	PASS
11G	Ant	Low	2412	2.37	-29.09	≤-17.63	PASS
		High	2462	3.85	-37.25	≤-16.15	PASS
11N20SISO	Ant	Low	2412	2.61	-27.99	≤-17.39	PASS
		High	2462	2.28	-39.83	≤-17.72	PASS
11N40SISO	Ant	Low	2422	1.57	-23.71	≤-18.43	PASS
		High	2452	-6.15	-41.5	≤-26.15	PASS

Test Graphs

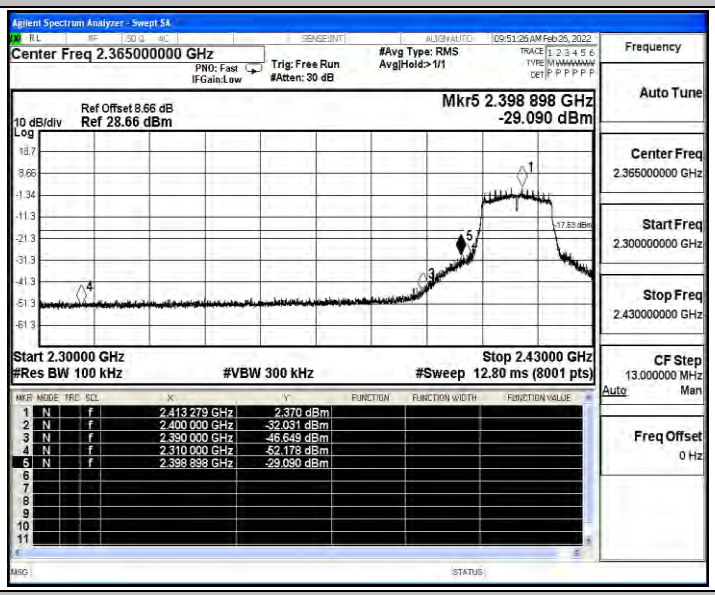
11B_Ant_Low_2412



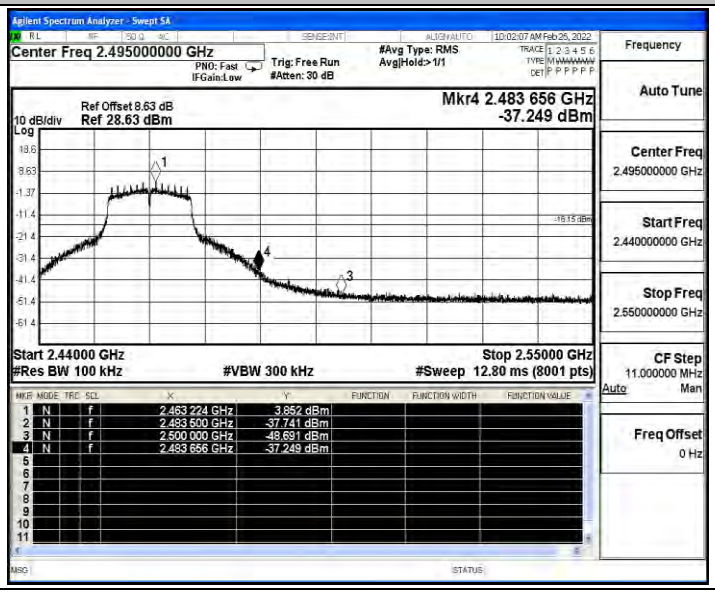
11B_Ant_High_2462



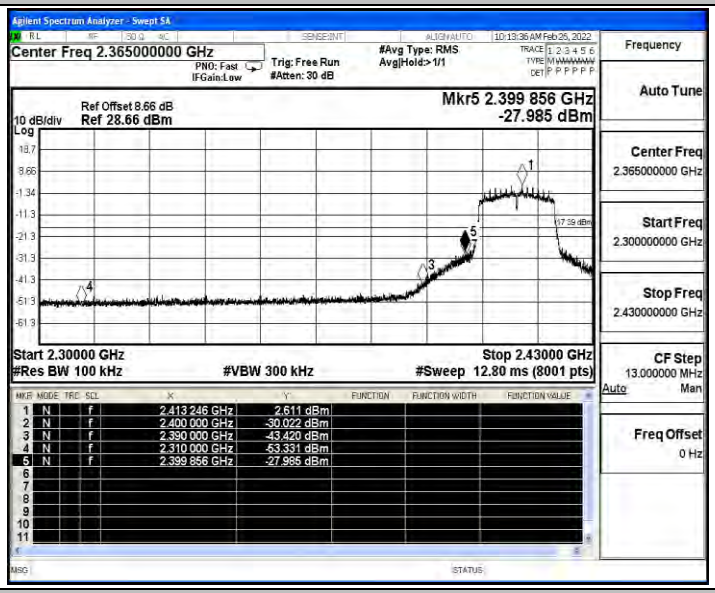
11G_Ant_Low_2412



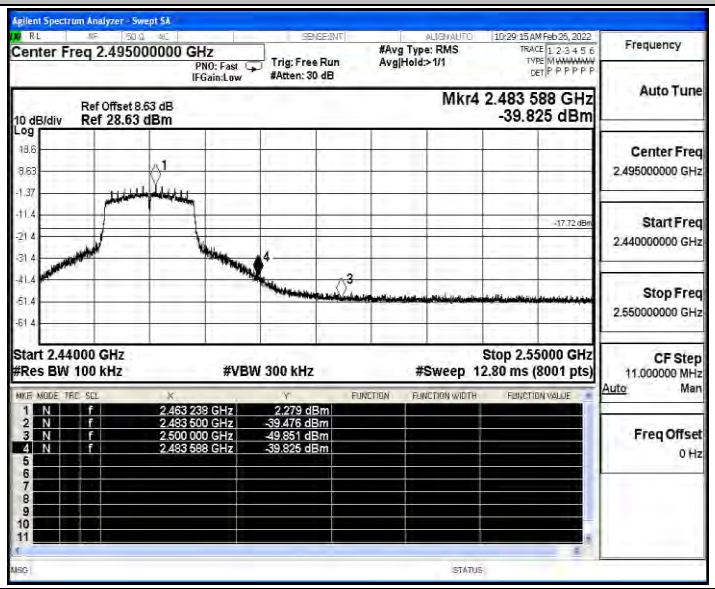
11G_Ant_High_2462



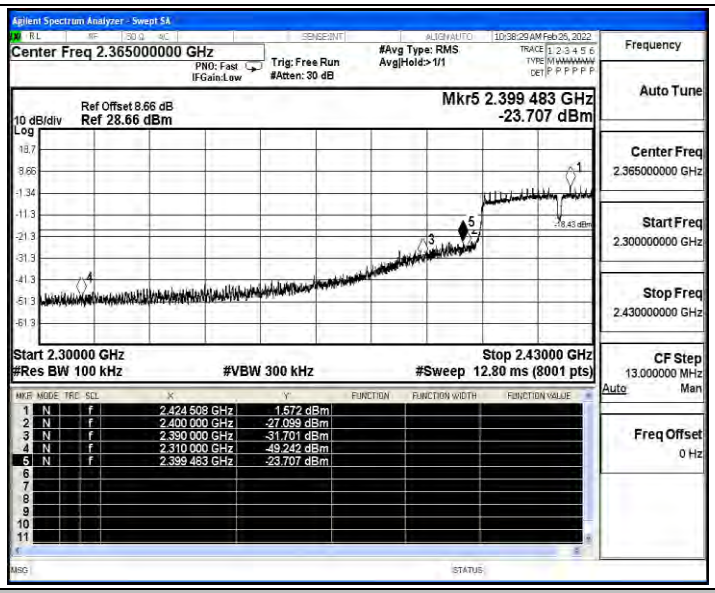
11N20SISO_Ant_Low_2412



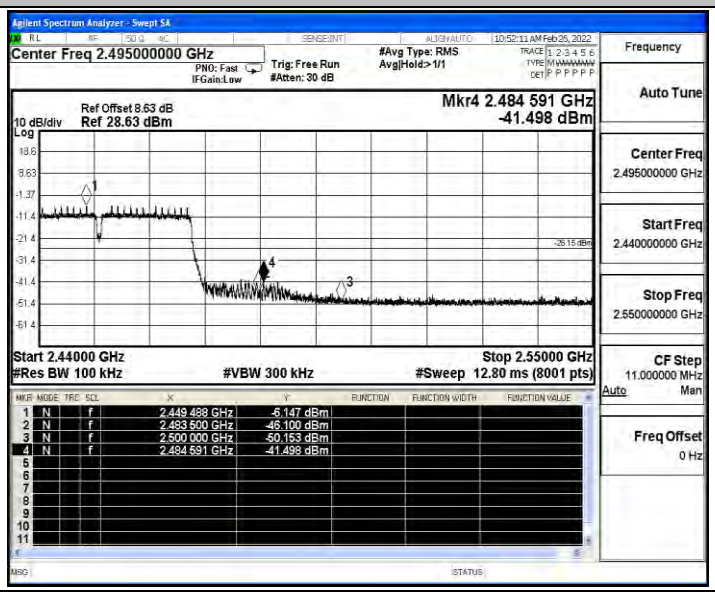
11N20SISO_Ant_High_2462



11N40SISO_Ant_Low_2422



11N40SISO_Ant_High_2452



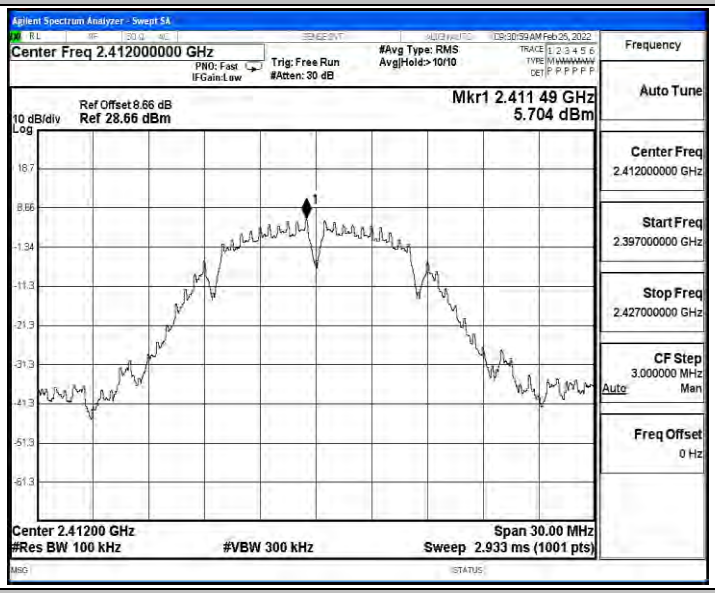
A.5 Conducted Spurious Emission

Test Result

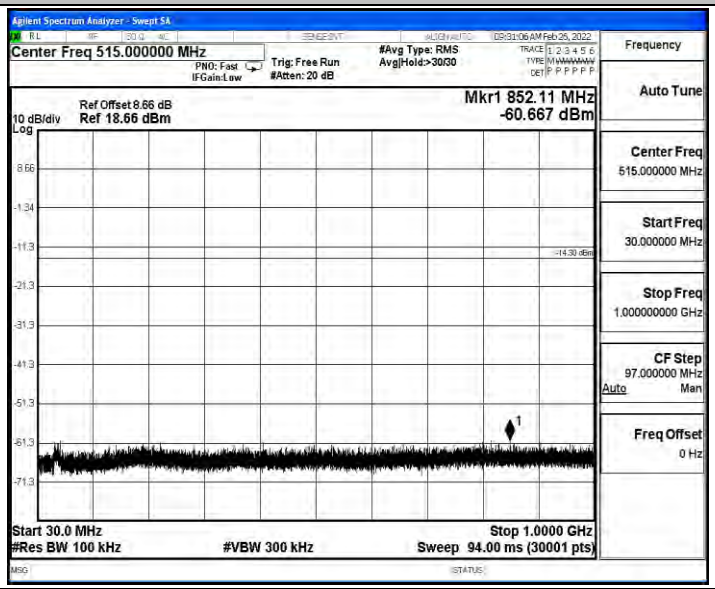
TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant	2412	Reference	5.70	5.70	---	PASS
			30~1000	5.70	-60.67	≤-14.3	PASS
			1000~26500	5.70	-46.18	≤-14.3	PASS
		2437	Reference	5.65	5.65	---	PASS
			30~1000	5.65	-60.58	≤-14.35	PASS
			1000~26500	5.65	-39.82	≤-14.35	PASS
		2462	Reference	5.55	5.55	---	PASS
			30~1000	5.55	-60.12	≤-14.45	PASS
			1000~26500	5.55	-46.21	≤-14.45	PASS
11G	Ant	2412	Reference	2.61	2.61	---	PASS
			30~1000	2.61	-60.05	≤-17.39	PASS
			1000~26500	2.61	-46.1	≤-17.39	PASS
		2437	Reference	4.54	4.54	---	PASS
			30~1000	4.54	-60.72	≤-15.46	PASS
			1000~26500	4.54	-46.13	≤-15.46	PASS
		2462	Reference	4.00	4.00	---	PASS
			30~1000	4.00	-60.54	≤-16	PASS
			1000~26500	4.00	-46.51	≤-16	PASS
11N20SISO	Ant	2412	Reference	1.50	1.50	---	PASS
			30~1000	1.50	-60.37	≤-18.5	PASS
			1000~26500	1.50	-46.51	≤-18.5	PASS
		2437	Reference	4.33	4.33	---	PASS
			30~1000	4.33	-60.05	≤-15.67	PASS
			1000~26500	4.33	-45	≤-15.67	PASS
		2462	Reference	2.16	2.16	---	PASS
			30~1000	2.16	-60.83	≤-17.84	PASS
			1000~26500	2.16	-46.11	≤-17.84	PASS
11N40SISO	Ant	2422	Reference	1.75	1.75	---	PASS
			30~1000	1.75	-43.47	≤-18.25	PASS
			1000~26500	1.75	-46.05	≤-18.25	PASS
		2437	Reference	-6.02	-6.02	---	PASS
			30~1000	-6.02	-48.53	≤-26.02	PASS
			1000~26500	-6.02	-45.54	≤-26.02	PASS
		2452	Reference	-6.11	-6.11	---	PASS
			30~1000	-6.11	-53.63	≤-26.11	PASS
			1000~26500	-6.11	-46.21	≤-26.11	PASS

Test Graphs

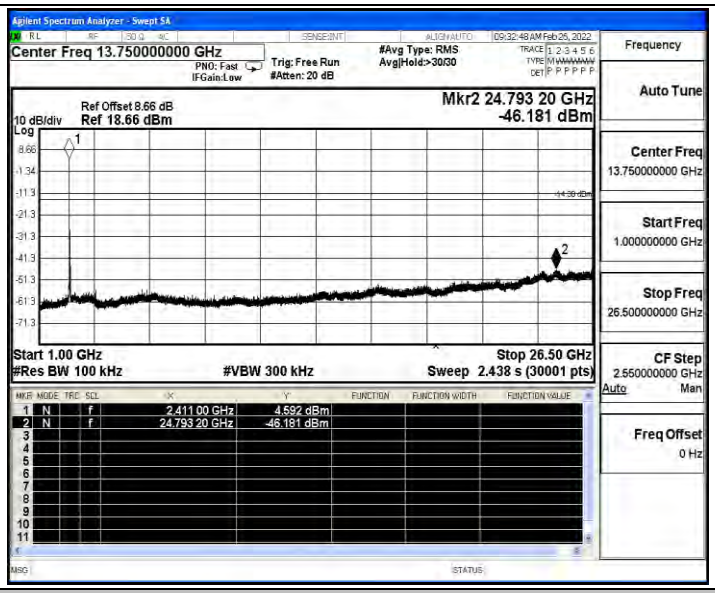
11B_Ant_2412_0~Reference



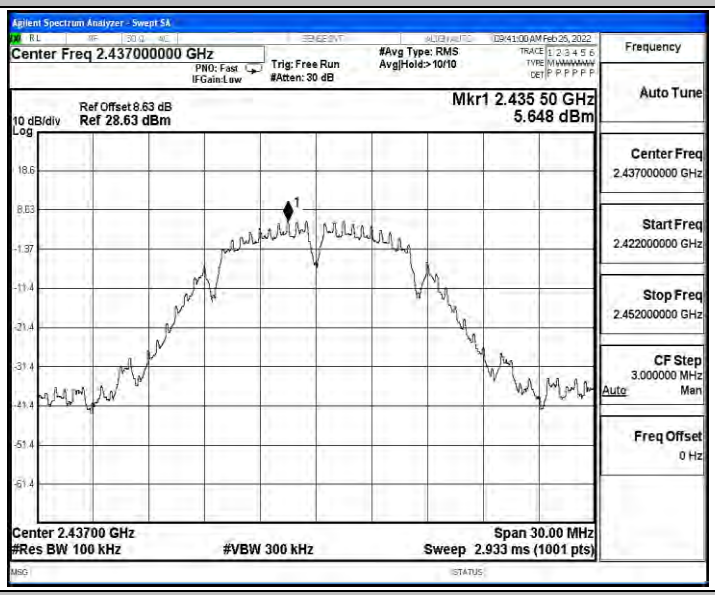
11B_Ant_2412_30~1000



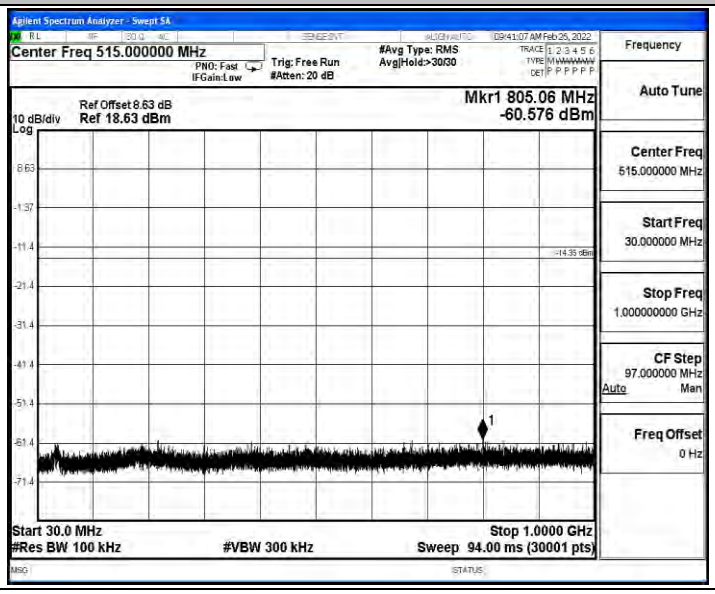
11B_Ant_2412_1000~26500



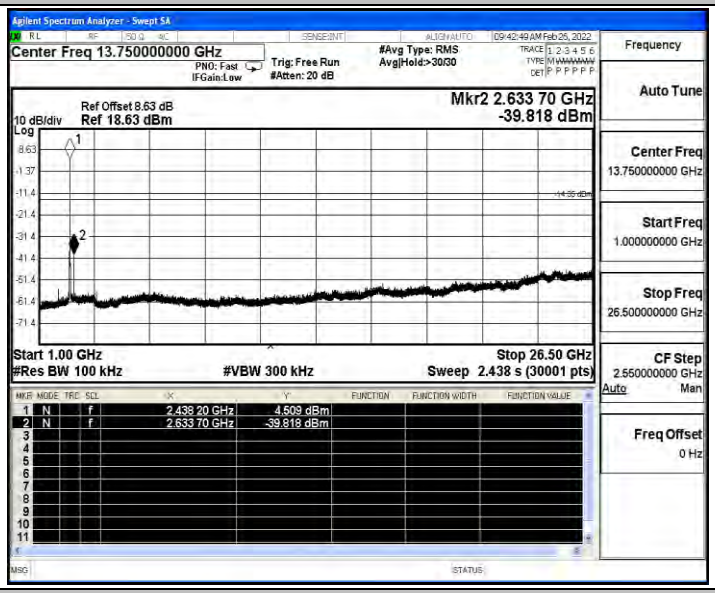
11B_Ant_2437_0~Reference



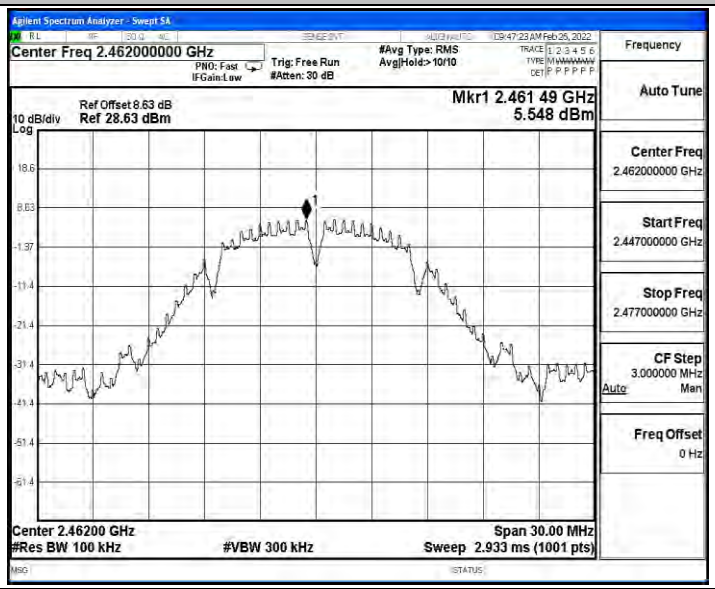
11B_Ant_2437_30~1000



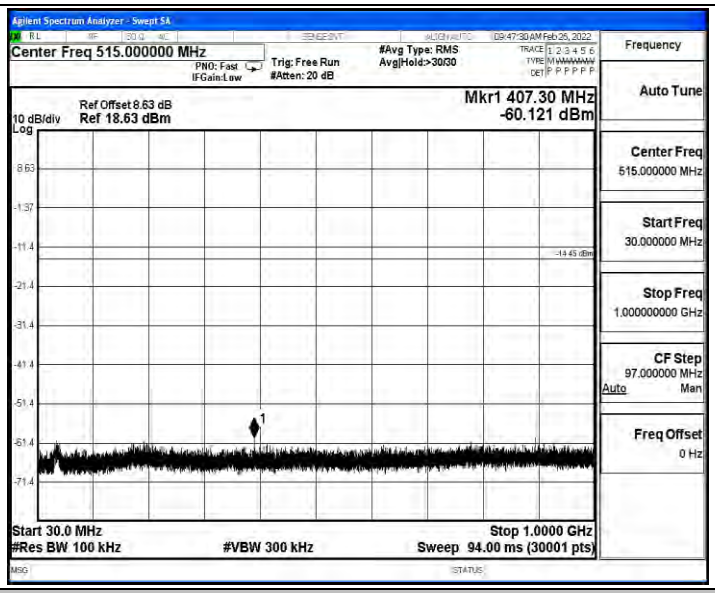
11B_Ant_2437_1000~26500



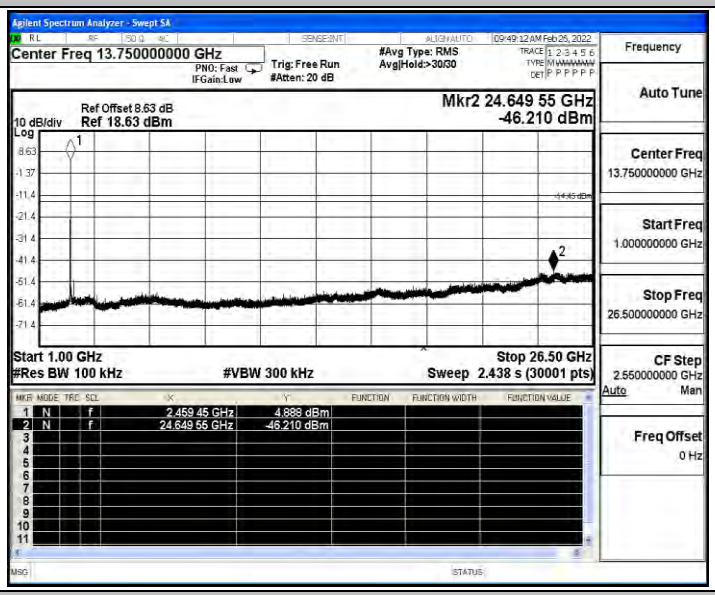
11B_Ant_2462_0~Reference



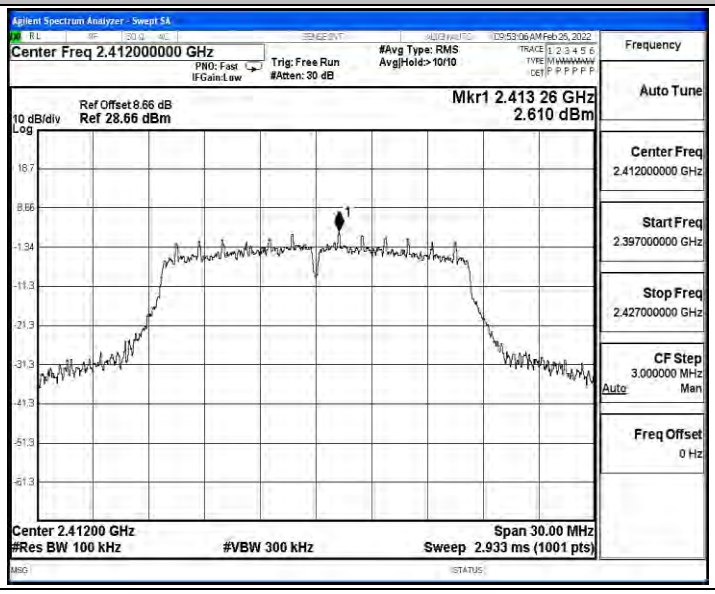
11B_Ant_2462_30~1000



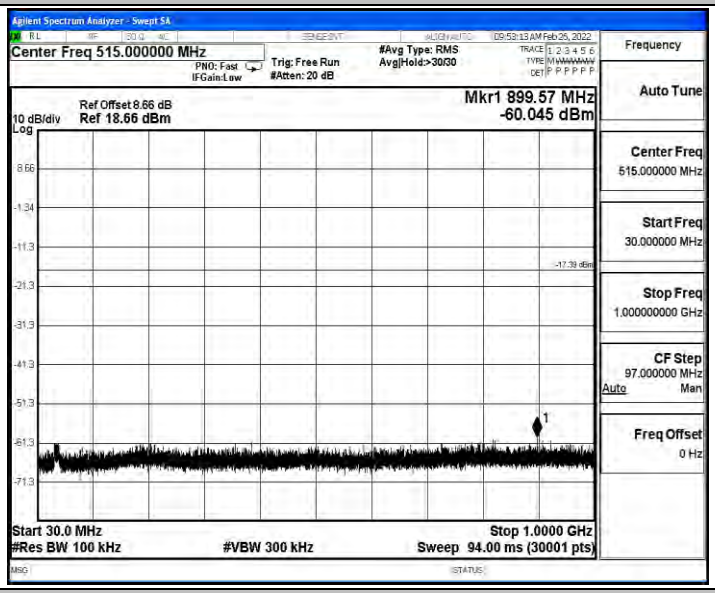
11B_Ant_2462_1000~26500



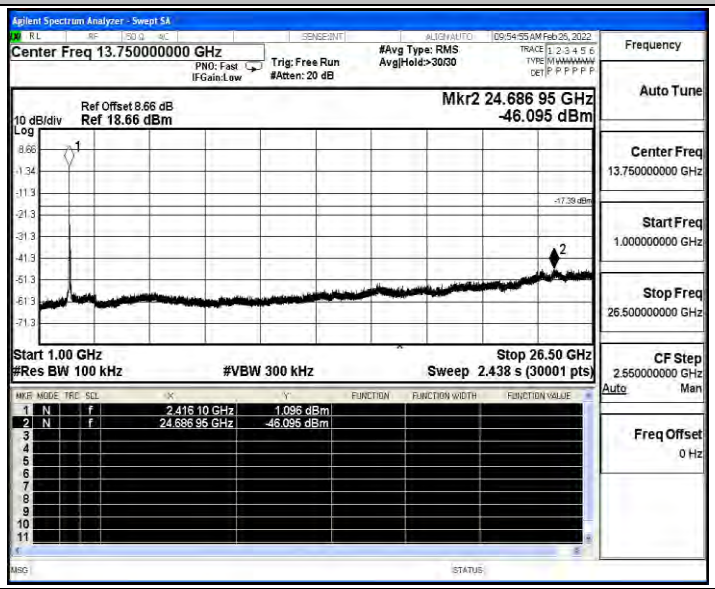
11G_Ant_2412_0~Reference



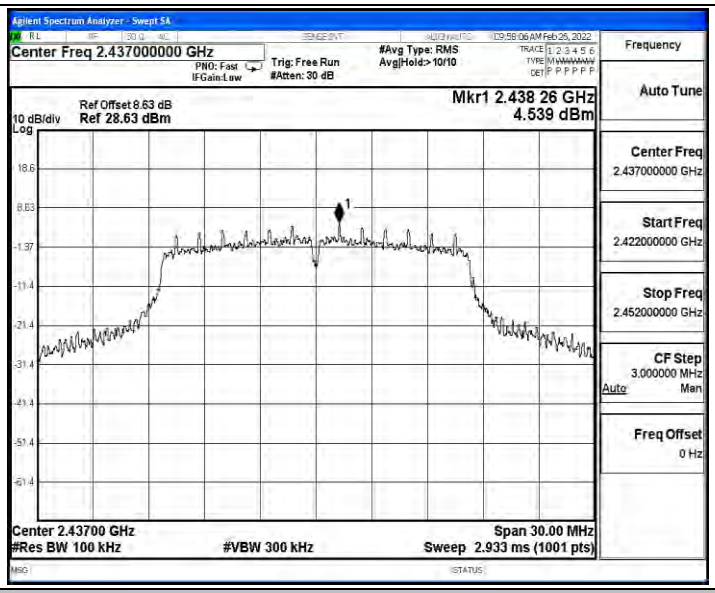
11G_Ant_2412_30~1000



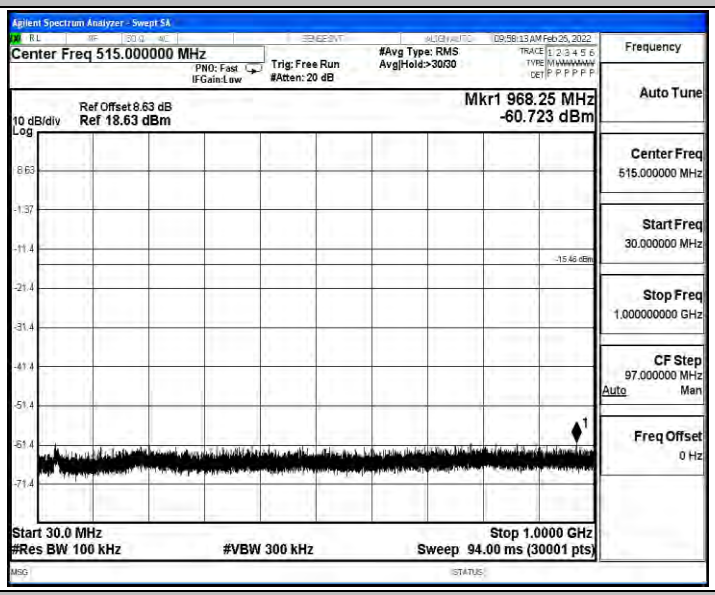
11G_Ant_2412_1000~26500



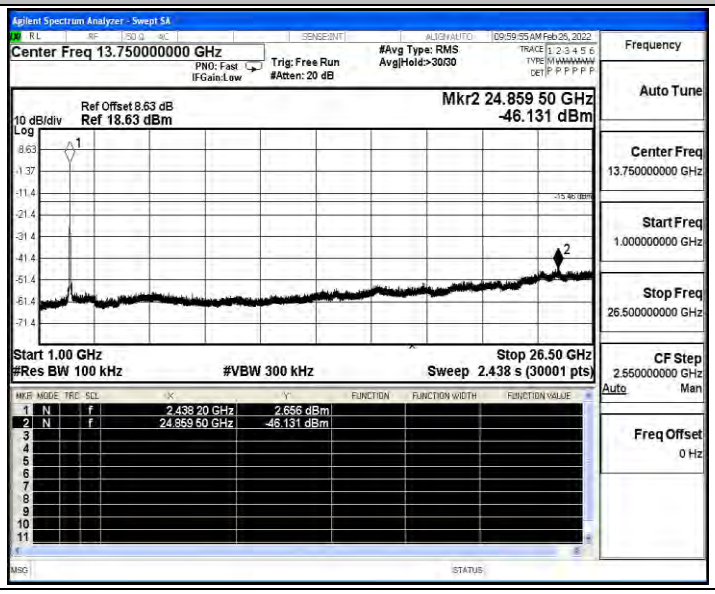
11G_Ant_2437_0~Reference



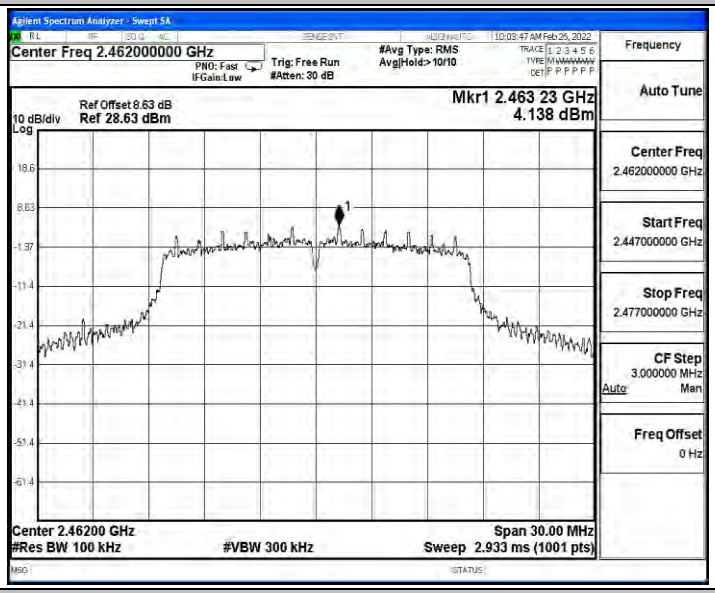
11G_Ant_2437_30~1000



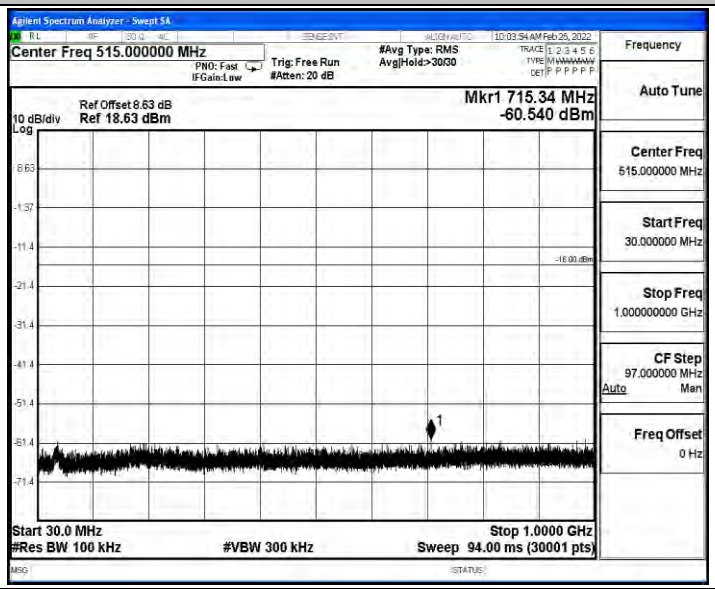
11G_Ant_2437_1000~26500



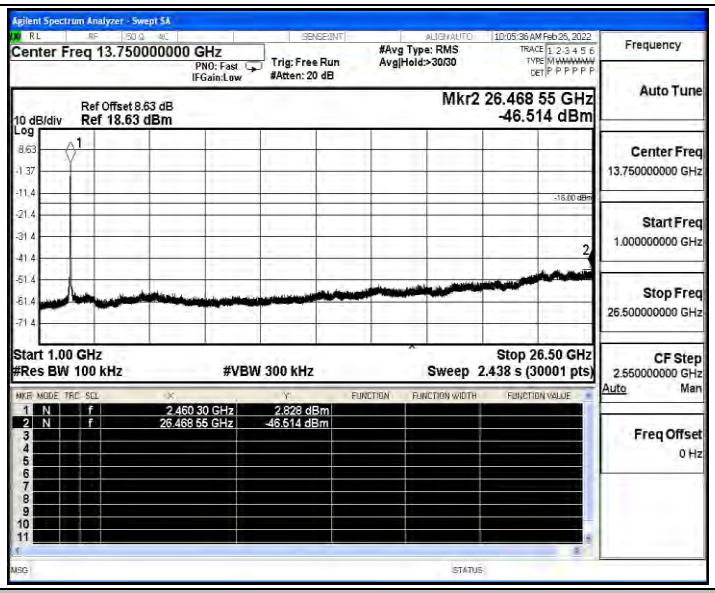
11G_Ant_2462_0~Reference



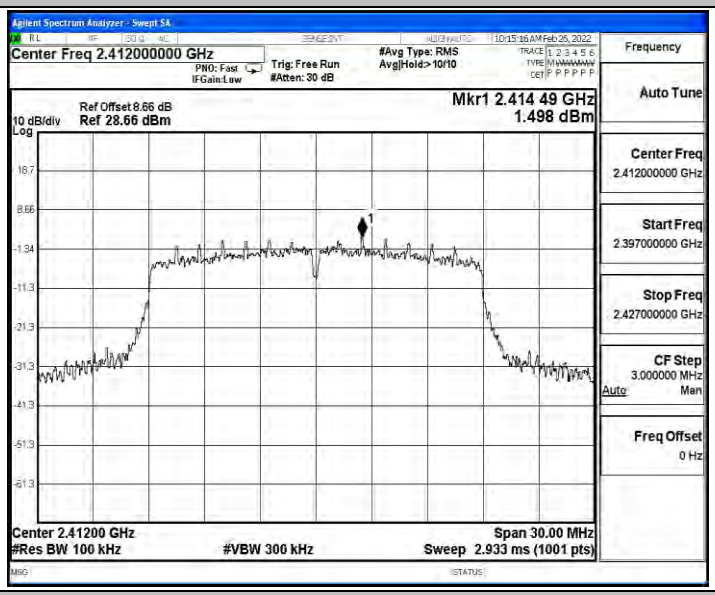
11G_Ant_2462_30~1000



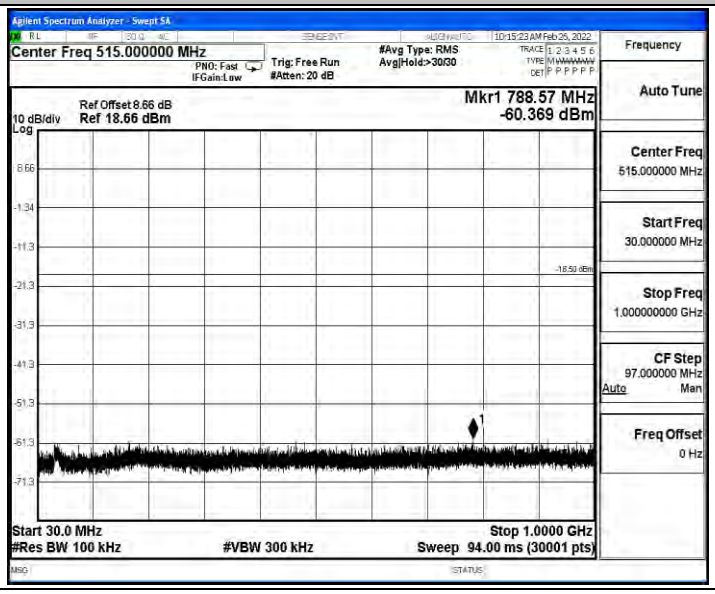
11G_Ant_2462_1000~26500



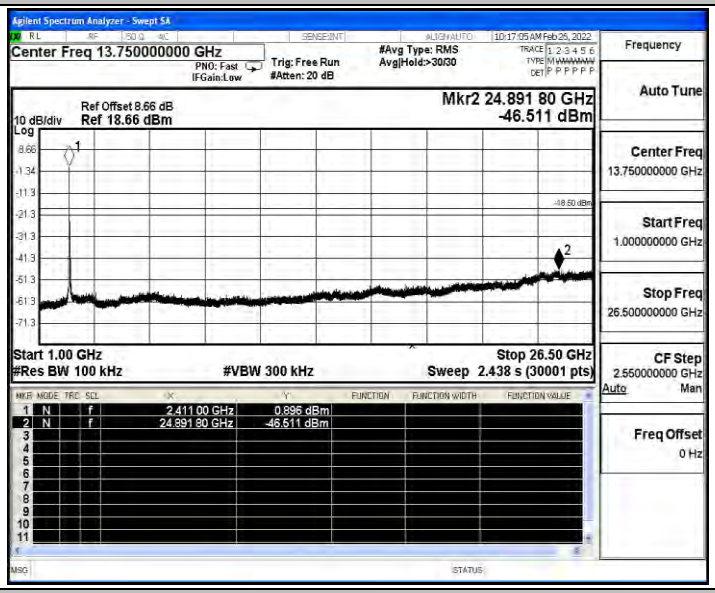
11N20SISO_Ant_2412_0~Reference



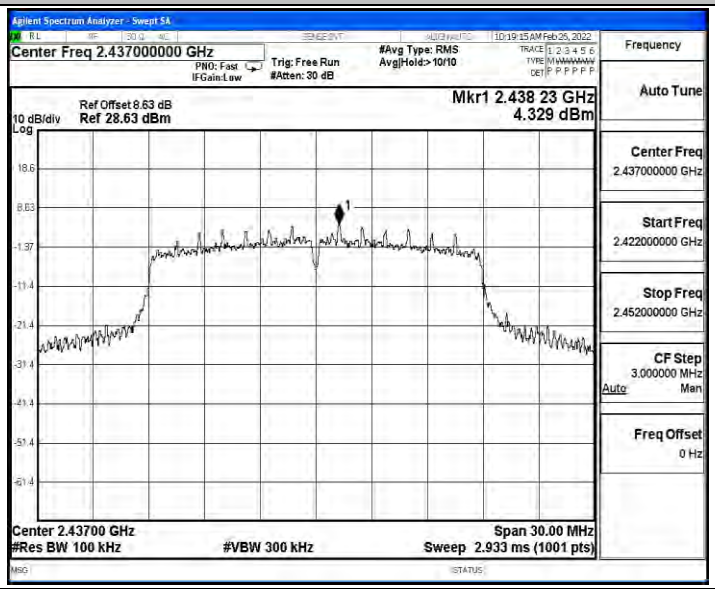
11N20SISO_Ant_2412_30~1000



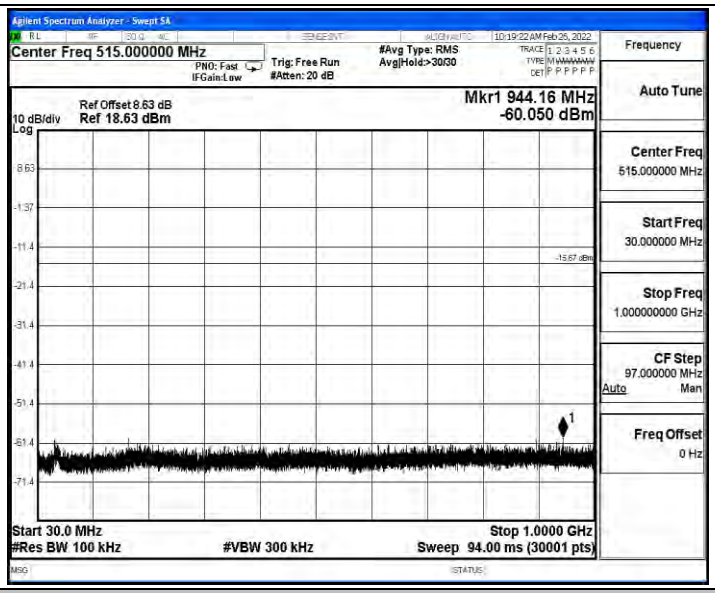
11N20SISO_Ant_2412_1000~26500



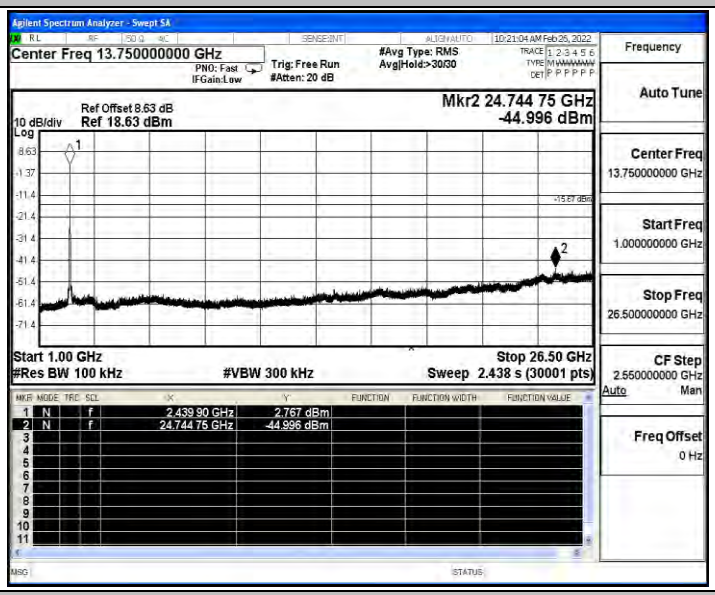
11N20SISO_Ant_2437_0~Reference



11N20SISO_Ant_2437_30~1000



11N20SISO_Ant_2437_1000~26500



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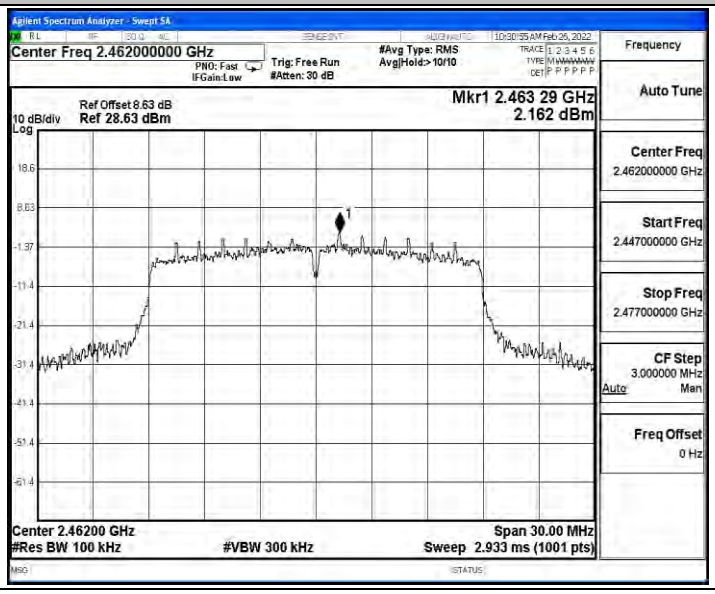
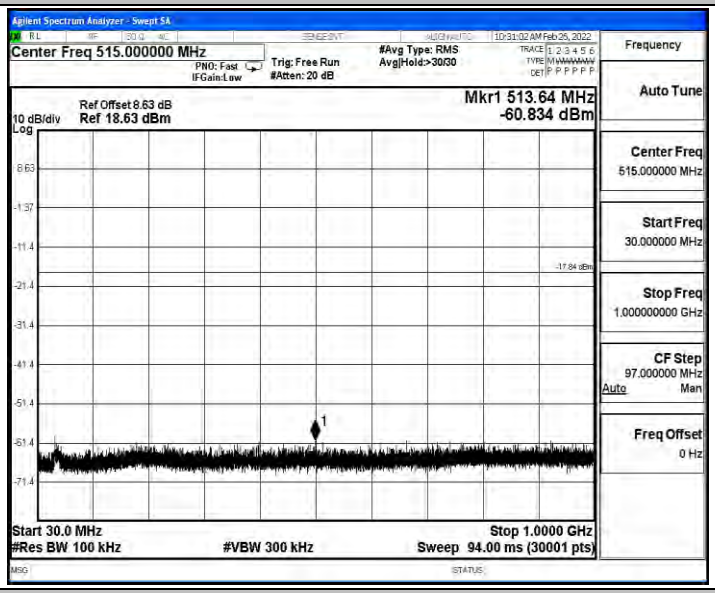
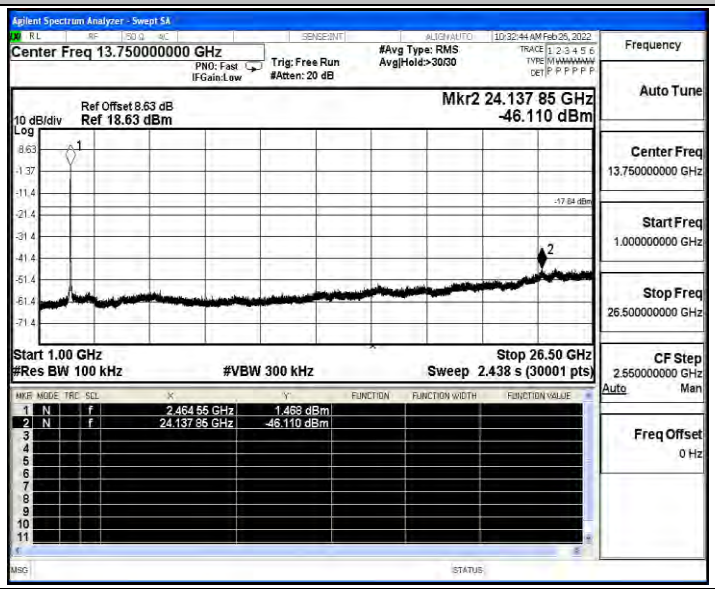


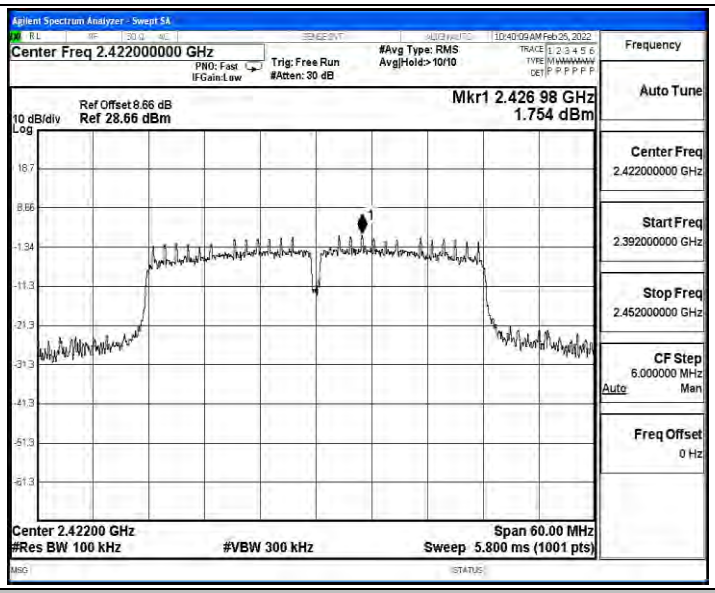
11N20SISO_Ant_2462_30~1000



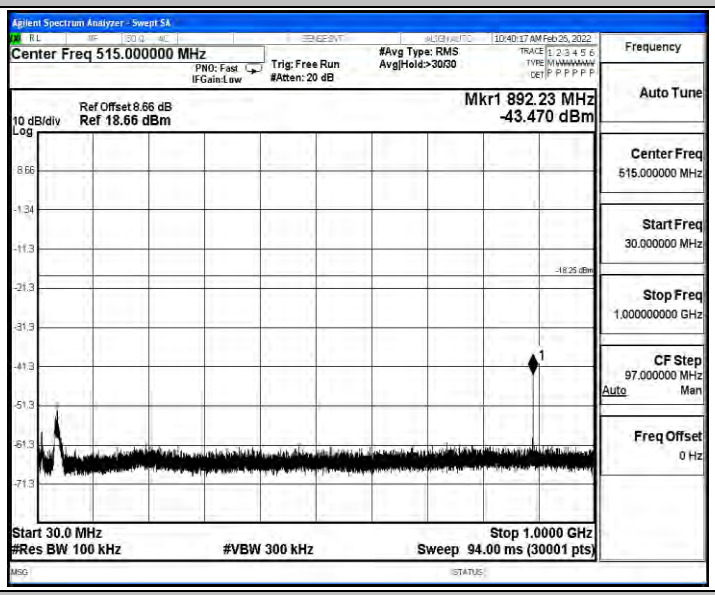
11N20SISO_Ant_2462_1000~26500



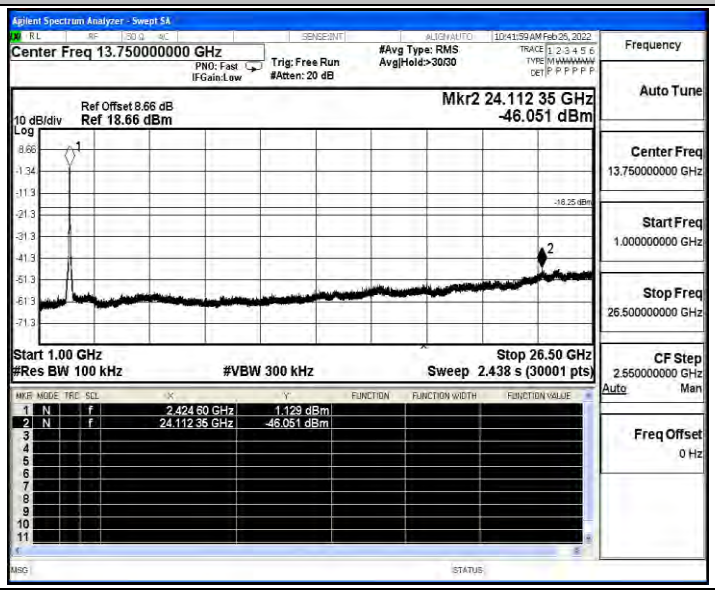
11N40SISO_Ant_2422_0~Reference



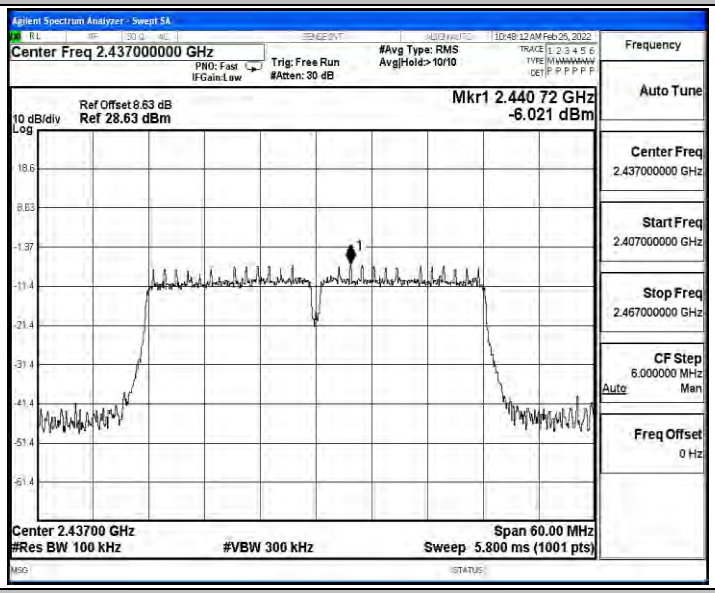
11N40SISO_Ant_2422_30~1000



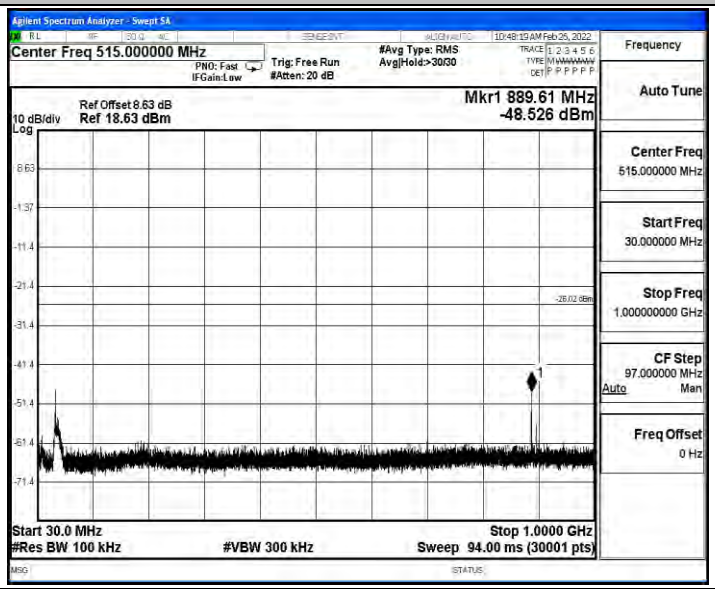
11N40SISO_Ant_2422_1000~26500



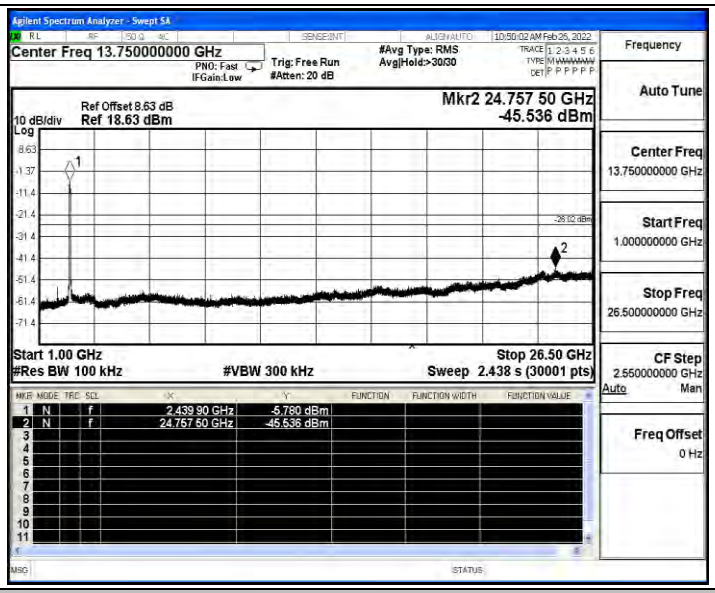
11N40SISO_Ant_2437_0~Reference



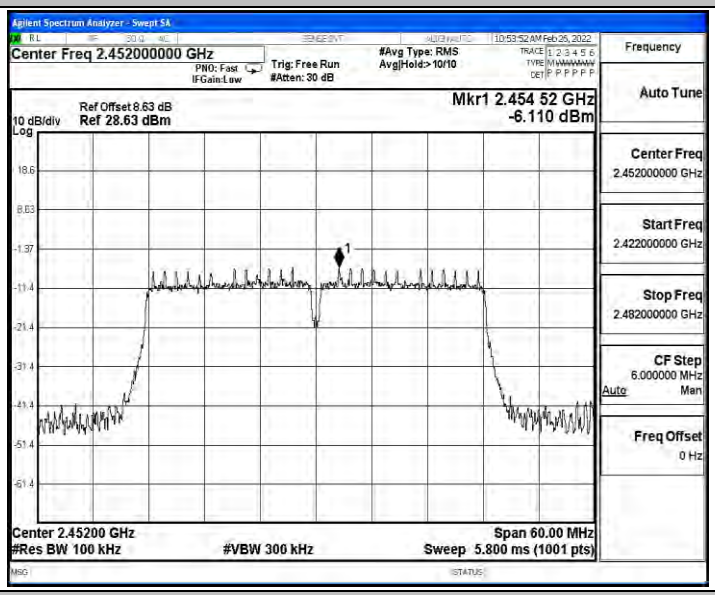
11N40SISO_Ant_2437_30~1000



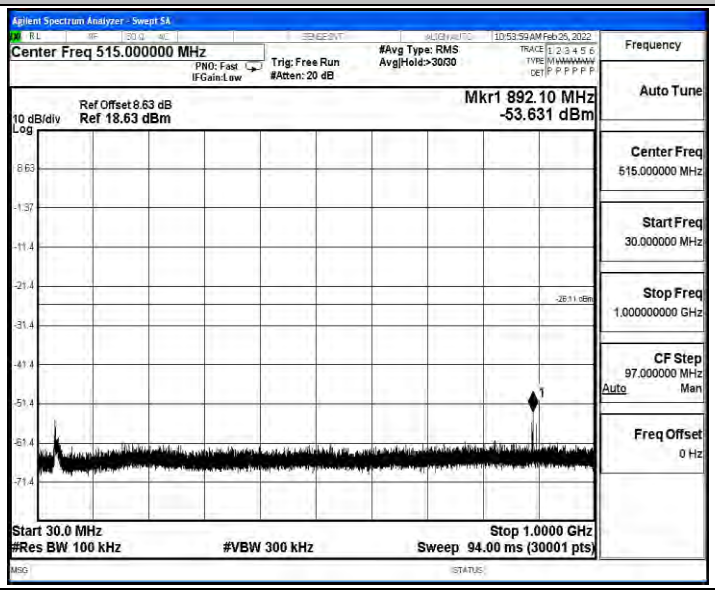
11N40SISO_Ant_2437_1000~26500

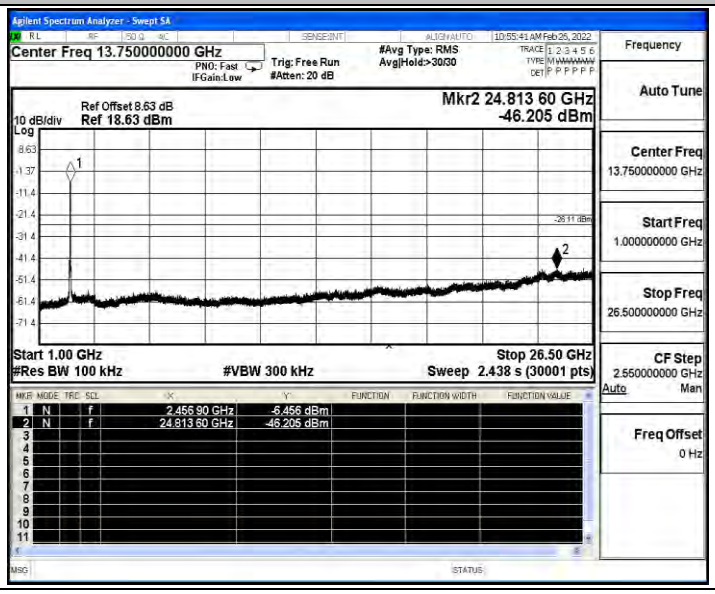


11N40SISO_Ant_2452_0~Reference



11N40SISO_Ant_2452_30~1000



11N40SISO_Ant_2452_1000~26500


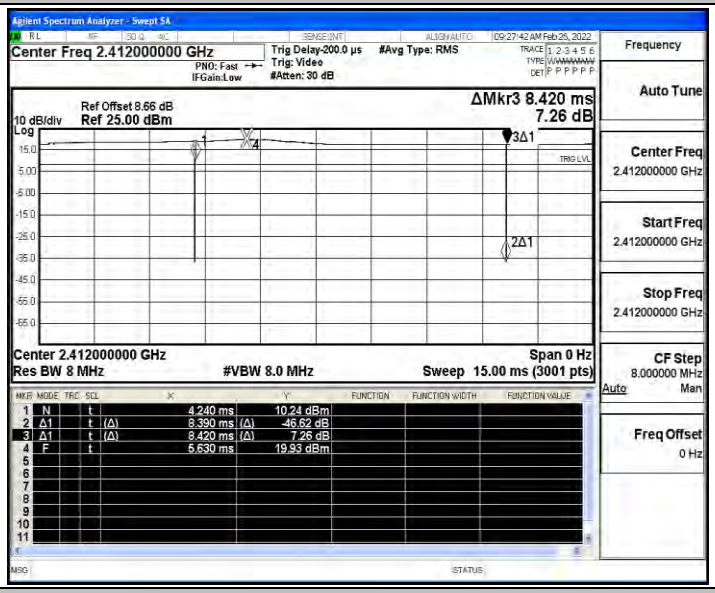
A.6 Duty Cycle

Test Result

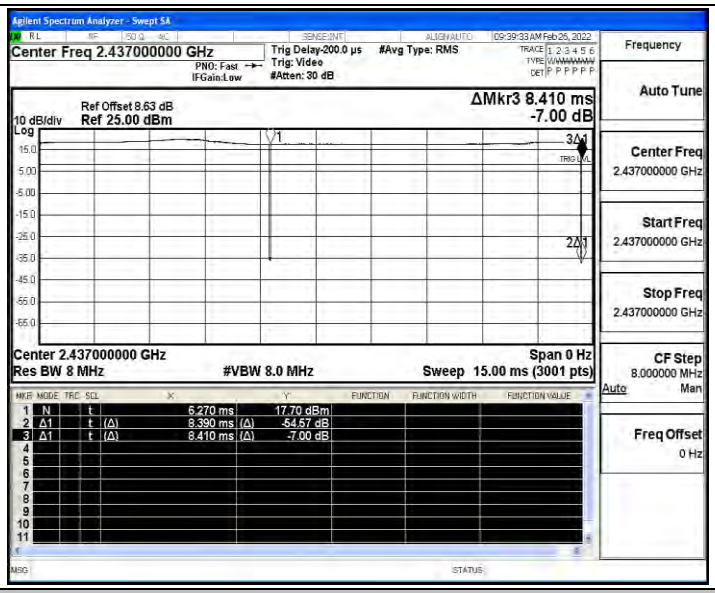
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
11B	Ant	2412	8.39	8.42	99.64	---	---
		2437	8.39	8.41	99.76	---	---
		2462	8.38	8.41	99.64	---	---
11G	Ant	2412	1.39	1.43	97.20	---	---
		2437	1.39	1.43	97.20	---	---
		2462	1.40	1.43	97.90	---	---
11N20SISO	Ant	2412	1.30	1.34	97.01	---	---
		2437	1.30	1.33	97.74	---	---
		2462	1.30	1.34	97.01	---	---
11N40SISO	Ant	2422	0.65	0.68	95.59	---	---
		2437	0.65	0.69	94.20	---	---
		2452	0.65	0.69	94.20	---	---

Test Graphs

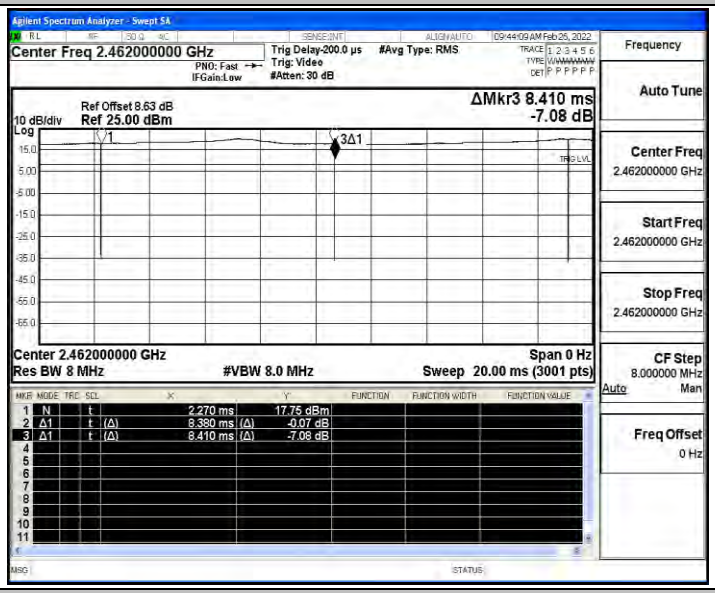
11B_Ant_2412



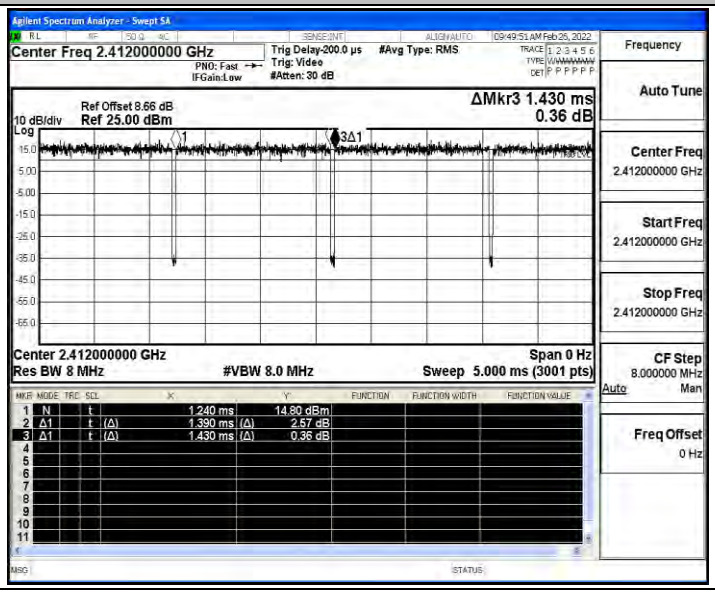
11B_Ant_2437



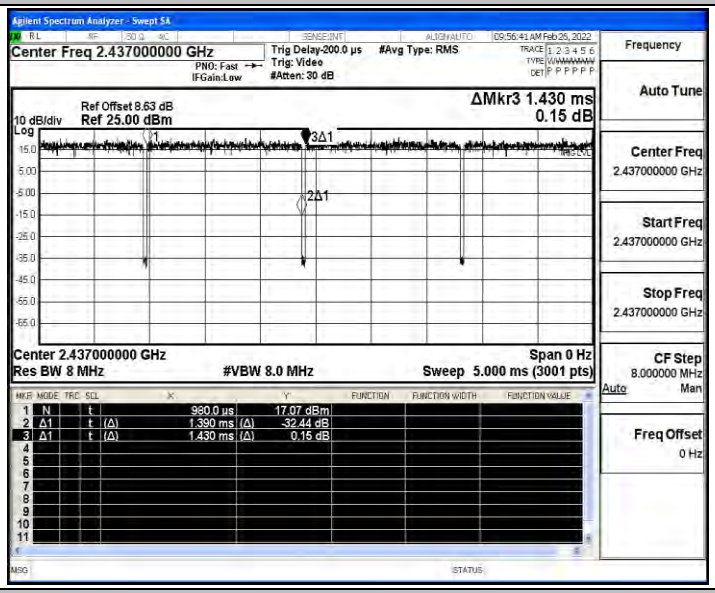
11B_Ant_2462



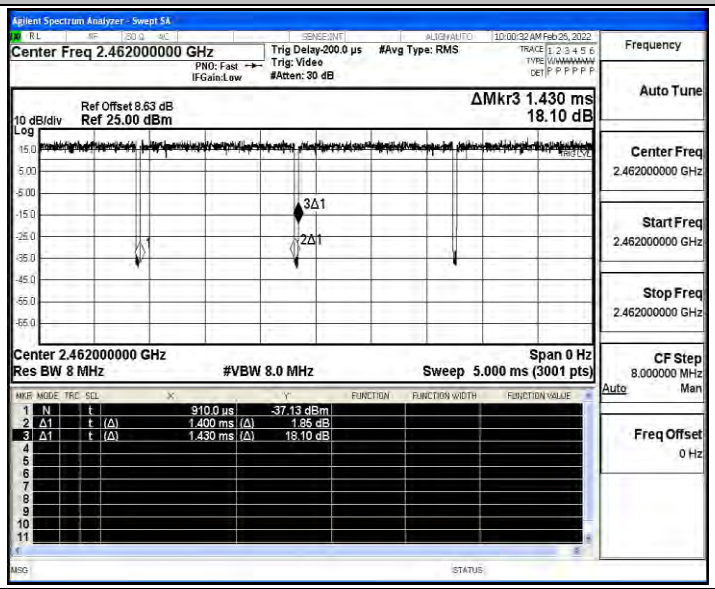
11G_Ant_2412



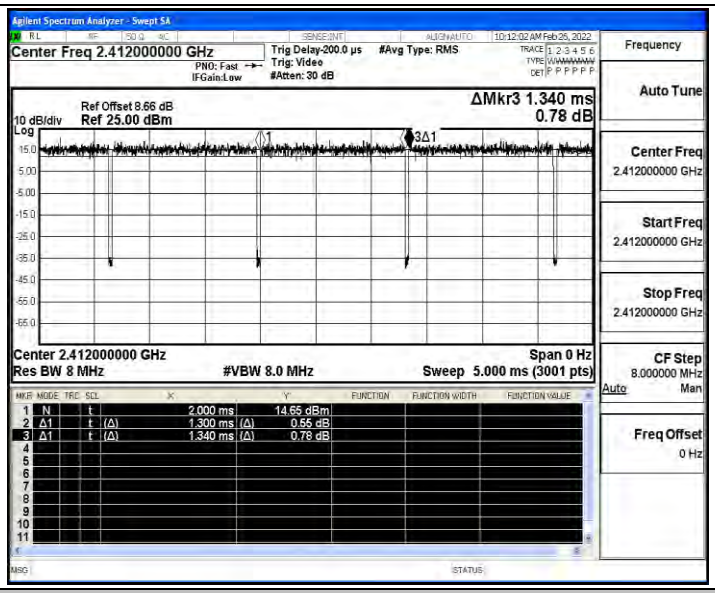
11G_Ant_2437



11G_Ant_2462



11N20SISO_Ant_2412



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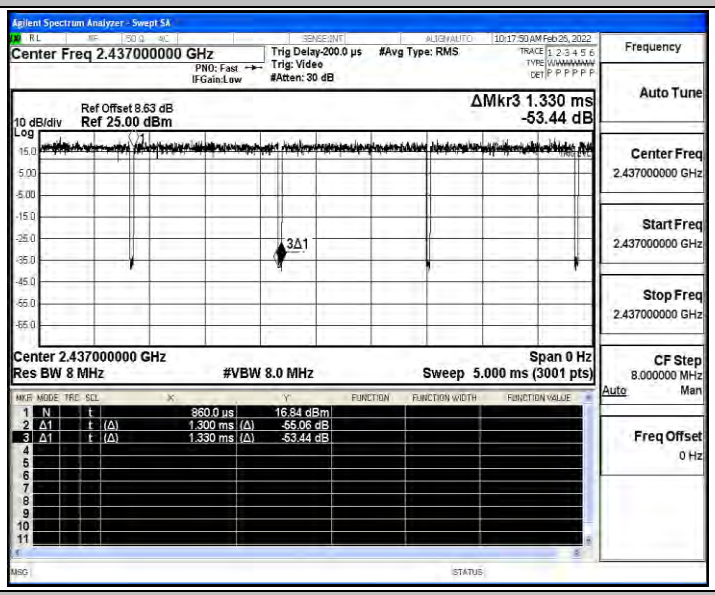

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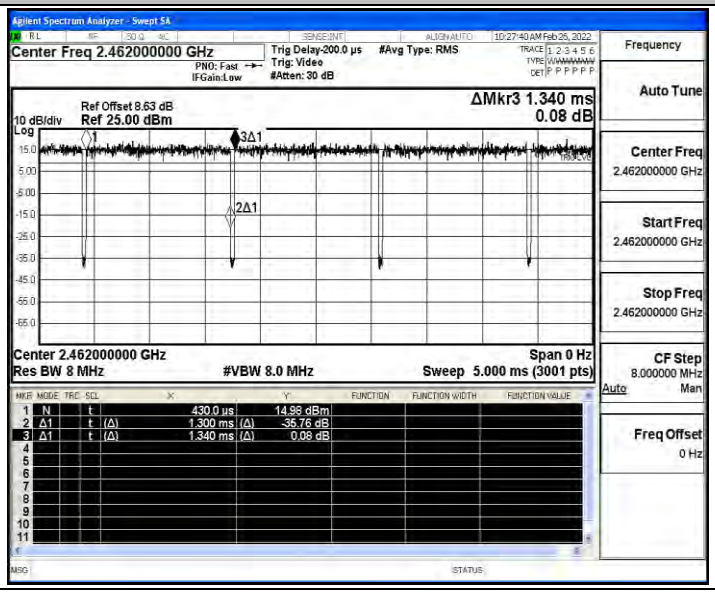
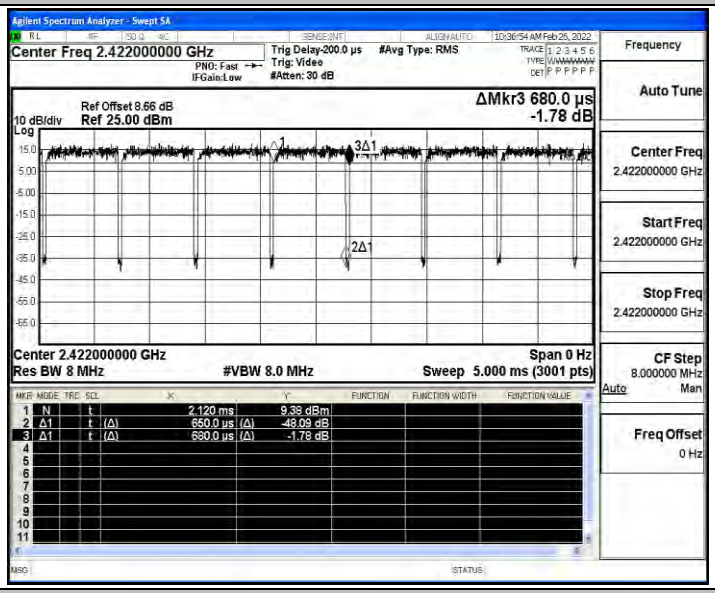
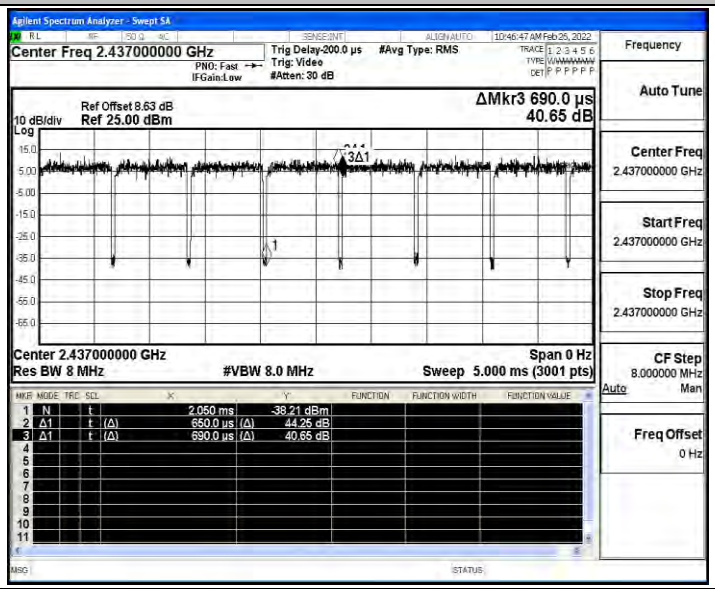


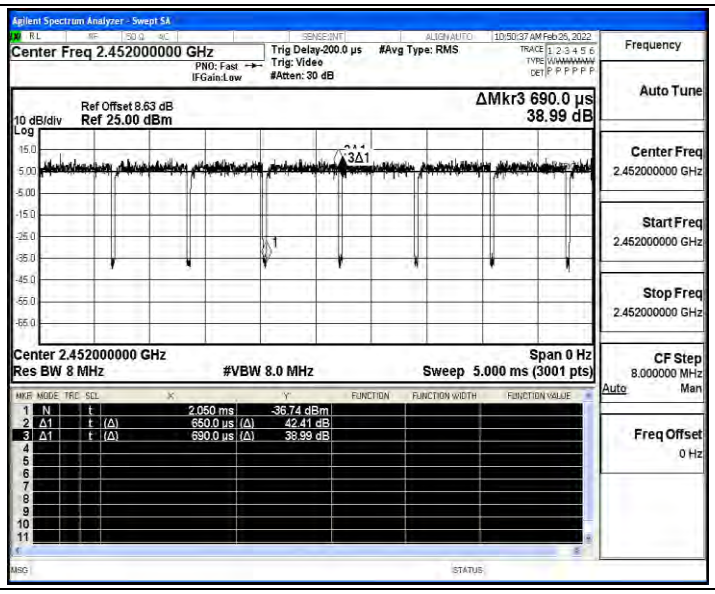
11N40SISO_Ant_2422



11N40SISO_Ant_2437



11N40SISO_Ant_2452


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.452000000 GHz
Trig Delay-200.0 µs
#Avg Type: RMS
Trig: Video
#Atten: 30 dB
Ref Offset 8.63 dB
10 dB/div Ref 25.00 dBm
ΔMkr3 690.0 µs
38.99 dB
Center 2.452000000 GHz
Span 0 Hz
Res BW 8 MHz
#VBW 8.0 MHz
Sweep 5.000 ms (3001 pts)
1 N t 2.050 ms -36.74 dBm
2 Δ1 t (Δ) 650.0 µs (Δ) 42.41 dB
3 Δ1 t (Δ) 690.0 µs (Δ) 38.99 dB
Frequency
Auto Tune
Center Freq 2.452000000 GHz
Start Freq 2.452000000 GHz
Stop Freq 2.452000000 GHz
CF Step 8.000000 MHz
Auto Man
Freq Offset 0 Hz

A.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
11B	Ant	Low	2412	AV	2310.000	-49.13	≤-41.20	46.07	≤54	PASS
				AV	2387.100	-47.34	≤-41.20	47.86	≤54	PASS
				AV	2390.000	-47.37	≤-41.20	47.83	≤54	PASS
				Peak	2310.000	-39.18	≤-21.20	56.02	≤74	PASS
				Peak	2356.160	-36.05	≤-21.20	59.15	≤74	PASS
				Peak	2390.000	-37.42	≤-21.20	57.78	≤74	PASS
		High	2462	AV	2483.500	-46.05	≤-41.20	49.15	≤54	PASS
				AV	2483.560	-46.11	≤-41.20	49.09	≤54	PASS
				AV	2500.000	-47.92	≤-41.20	47.28	≤54	PASS
				Peak	2483.500	-35.51	≤-21.20	59.69	≤74	PASS
				Peak	2483.670	-35.38	≤-21.20	59.82	≤74	PASS
				Peak	2500.000	-37.83	≤-21.20	57.37	≤74	PASS
11G	Ant	Low	2412	AV	2310.000	-48.54	≤-41.20	46.66	≤54	PASS
				AV	2389.960	-42.14	≤-41.20	53.06	≤54	PASS
				AV	2390.000	-42.14	≤-41.20	53.06	≤54	PASS
				Peak	2310.000	-37.98	≤-21.20	57.22	≤74	PASS
				Peak	2389.960	-25.96	≤-21.20	69.24	≤74	PASS
				Peak	2390.000	-25.96	≤-21.20	69.24	≤74	PASS
		High	2462	AV	2483.500	-46.37	≤-41.20	48.83	≤54	PASS
				AV	2483.670	-46.42	≤-41.20	48.78	≤54	PASS
				AV	2500.000	-47.2	≤-41.20	48.00	≤54	PASS
				Peak	2483.500	-32.49	≤-21.20	62.71	≤74	PASS
				Peak	2483.670	-33.62	≤-21.20	61.58	≤74	PASS
				Peak	2500.000	-36.94	≤-21.20	58.26	≤74	PASS
11N20SISO	Ant	Low	2412	AV	2310.000	-48.41	≤-41.20	46.79	≤54	PASS
				AV	2389.960	-46.39	≤-41.20	48.81	≤54	PASS
				AV	2390.000	-46.39	≤-41.20	48.81	≤54	PASS
				Peak	2310.000	-38.21	≤-21.20	56.99	≤74	PASS
				Peak	2389.960	-33.13	≤-21.20	62.07	≤74	PASS
				Peak	2390.000	-33.13	≤-21.20	62.07	≤74	PASS
		High	2462	AV	2483.500	-46.08	≤-41.20	49.12	≤54	PASS
				AV	2483.780	-46.08	≤-41.20	49.12	≤54	PASS
				AV	2500.000	-47.14	≤-41.20	48.06	≤54	PASS
				Peak	2483.500	-31.87	≤-21.20	63.33	≤74	PASS
				Peak	2483.670	-31.18	≤-21.20	64.02	≤74	PASS
				Peak	2500.000	-37.17	≤-21.20	58.03	≤74	PASS
11N40SIS	Ant	Low	2422	AV	2310.000	-48.38	≤-41.20	46.82	≤54	PASS

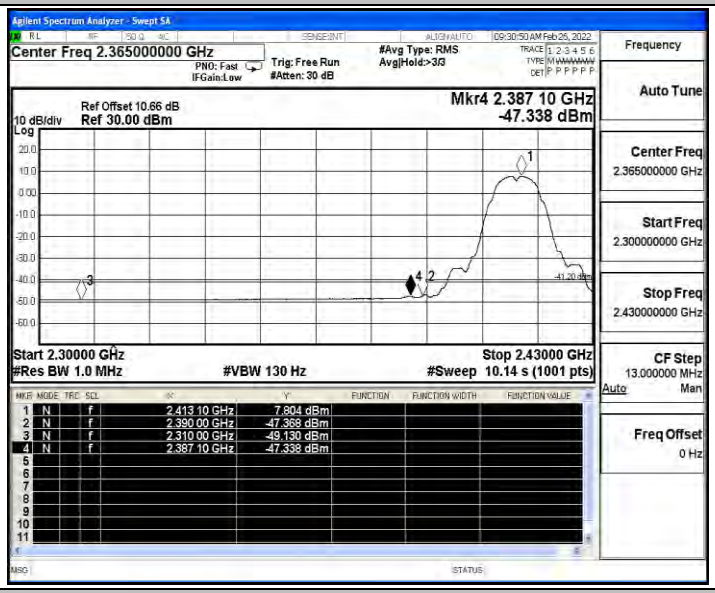
O				AV	2389.440	-43.62	≤-41.20	51.58	≤54	PASS
				AV	2390.000	-43.82	≤-41.20	51.38	≤54	PASS
				Peak	2310.000	-38.39	≤-21.20	56.81	≤74	PASS
				Peak	2388.270	-26.97	≤-21.20	68.23	≤74	PASS
				Peak	2390.000	-28.18	≤-21.20	67.02	≤74	PASS
		High	2452	AV	2483.500	-42.96	≤-41.20	52.24	≤54	PASS
				AV	2484.440	-42.86	≤-41.20	52.34	≤54	PASS
				AV	2500.000	-46.28	≤-41.20	48.92	≤54	PASS
				Peak	2483.500	-25.88	≤-21.20	69.32	≤74	PASS
				Peak	2485.650	-24.92	≤-21.20	70.28	≤74	PASS
				Peak	2500.000	-34.77	≤-21.20	60.43	≤74	PASS

Note：

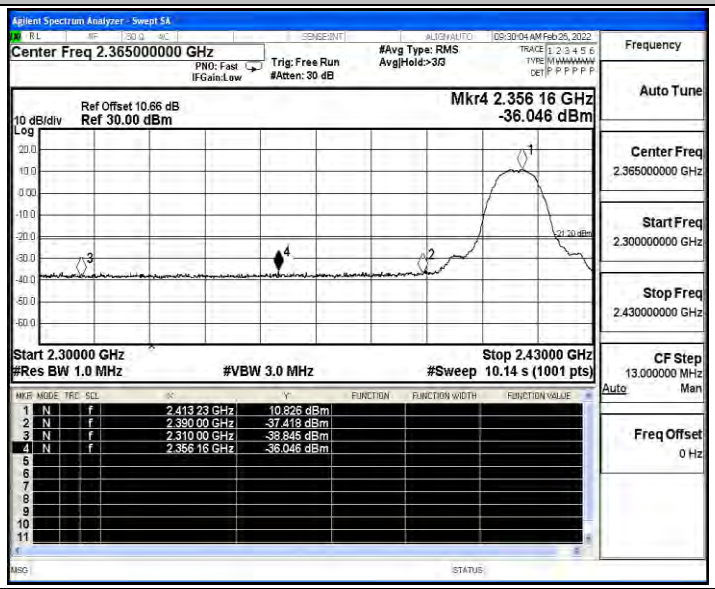
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

11B_Ant_Low_2412_AV



11B_Ant_Low_2412_Peak



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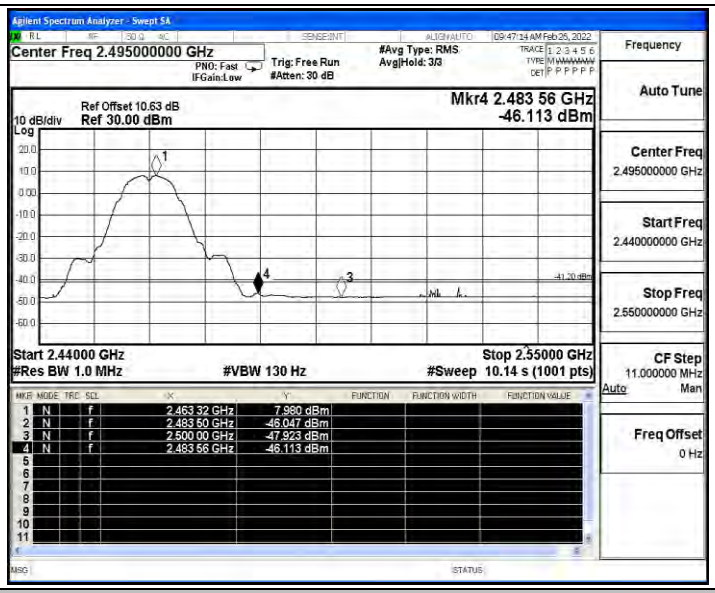

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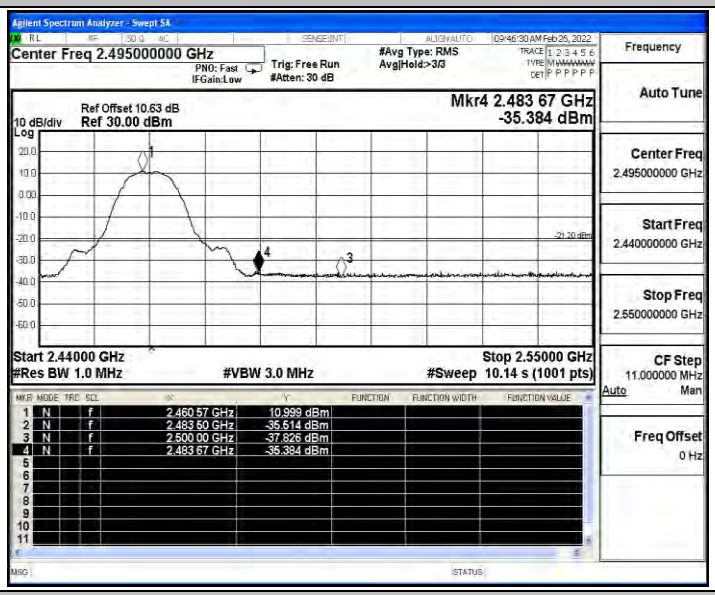

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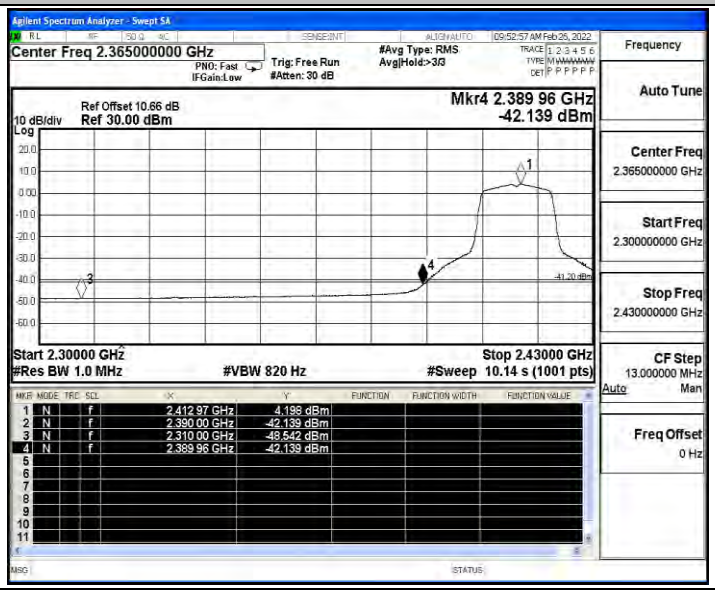

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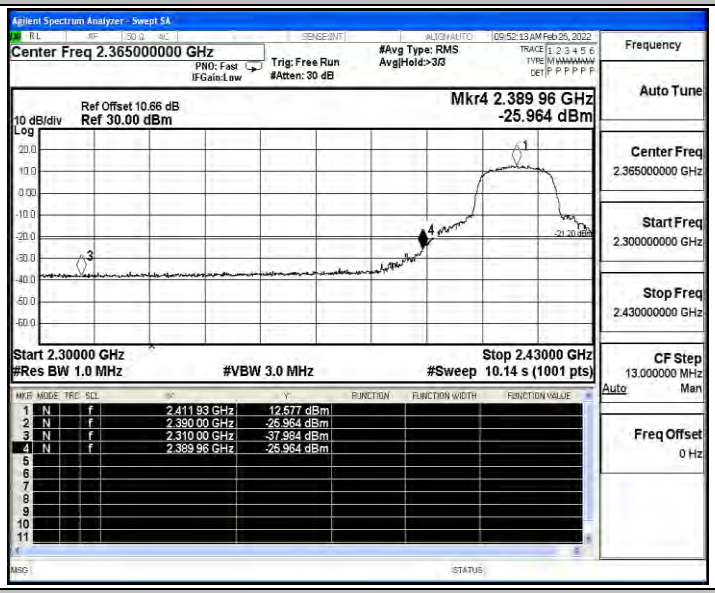

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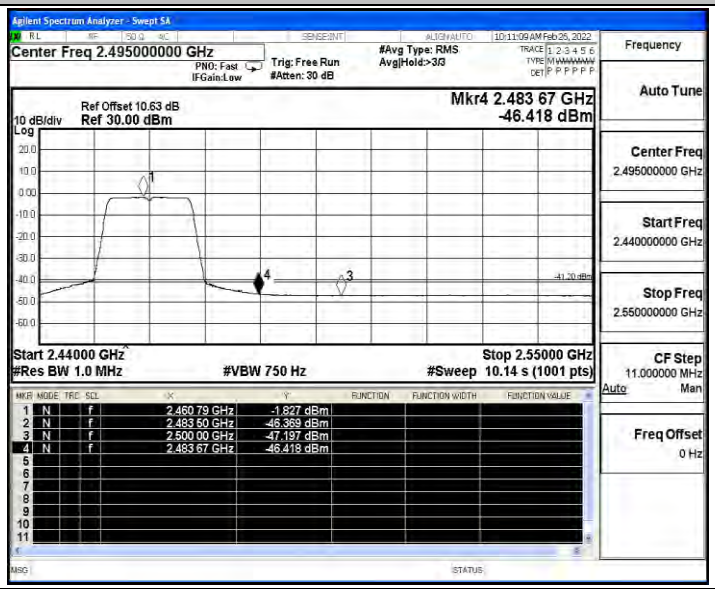

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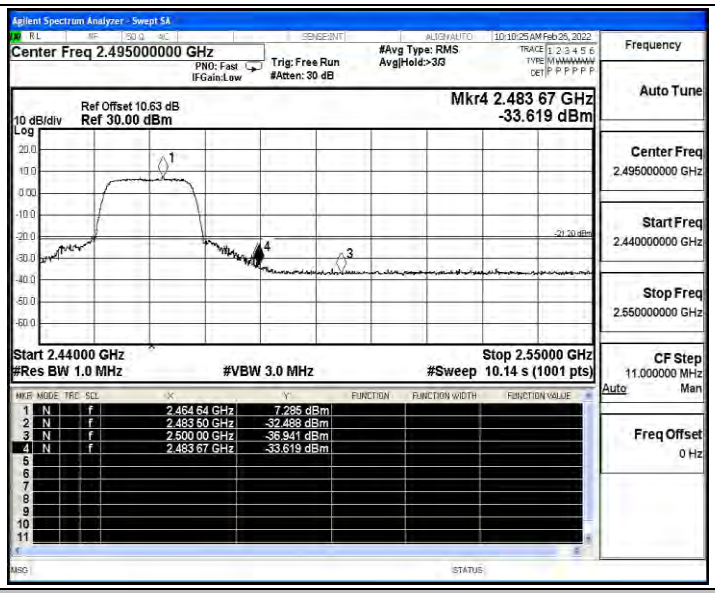

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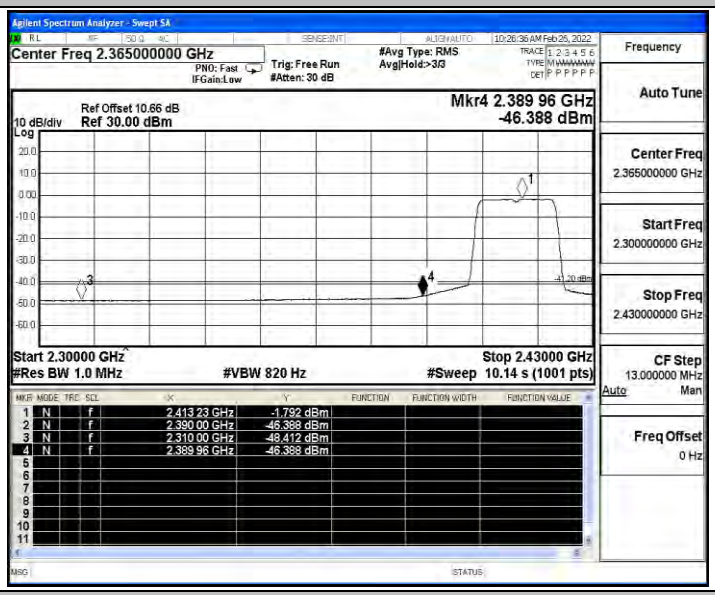

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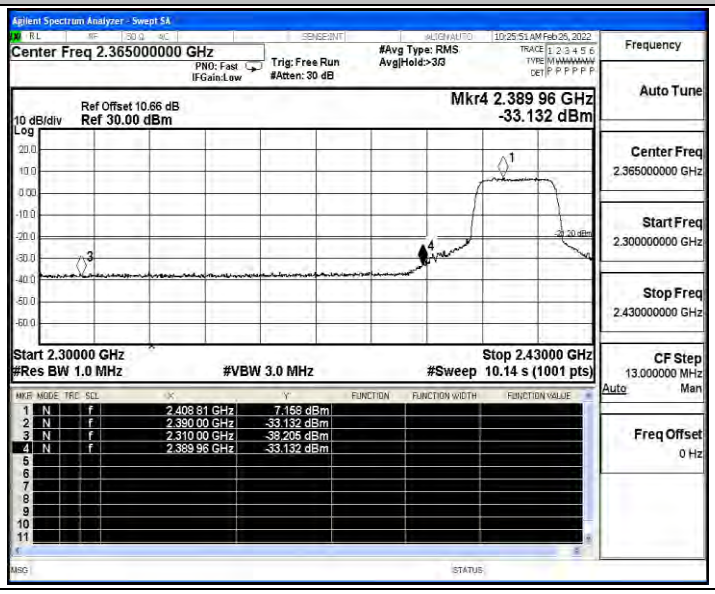

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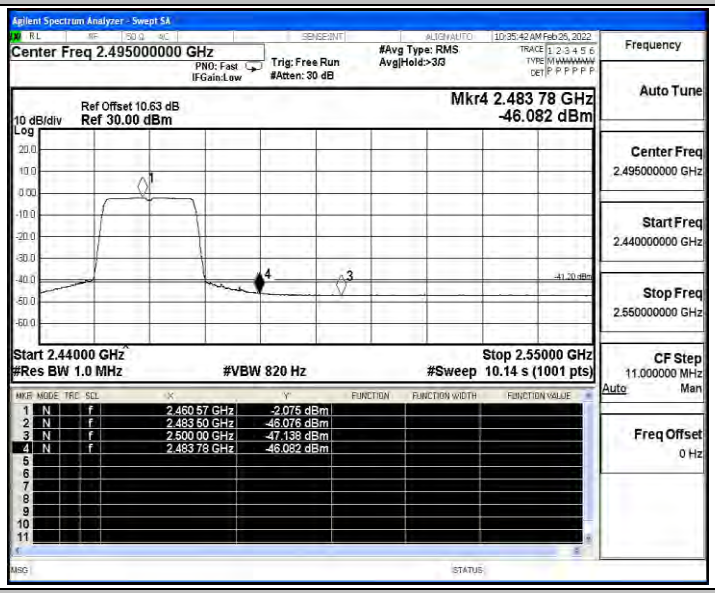

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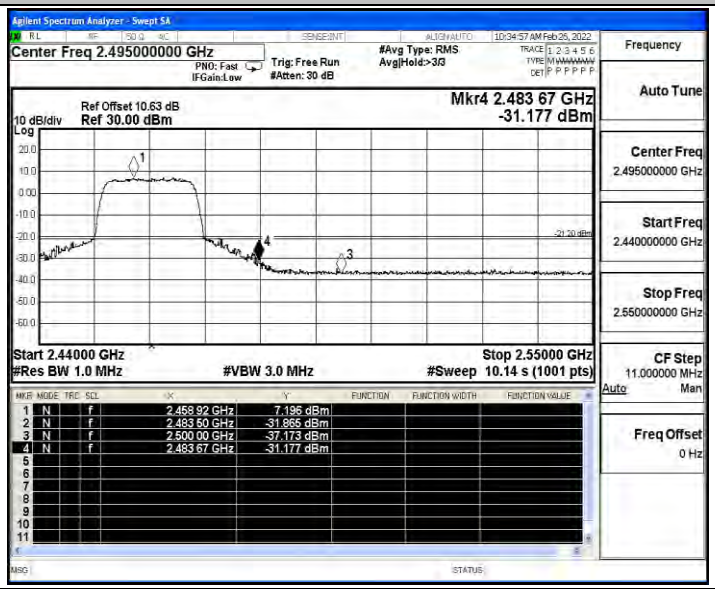

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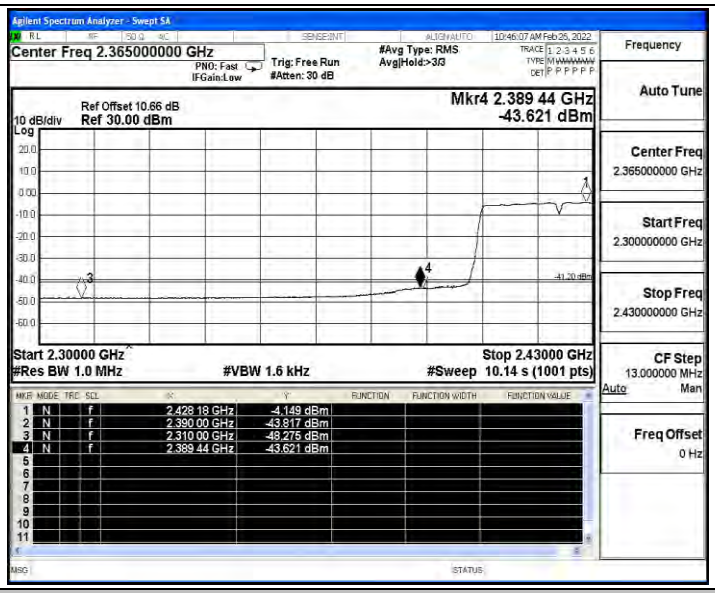

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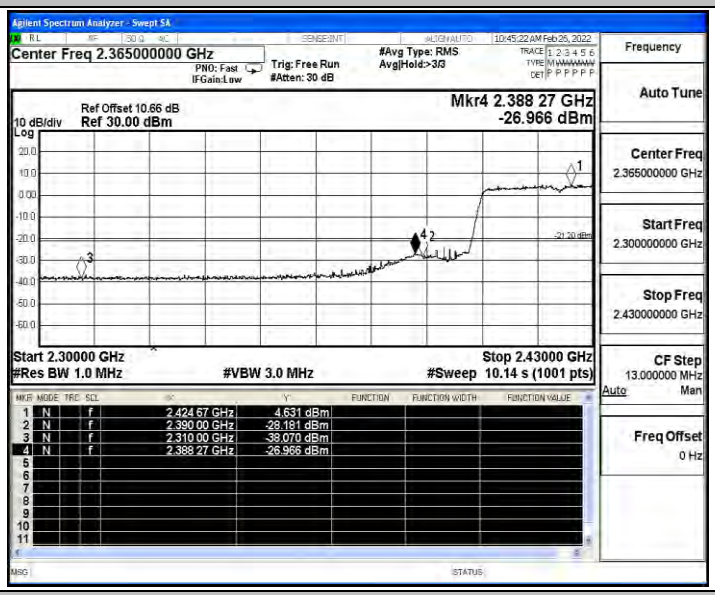

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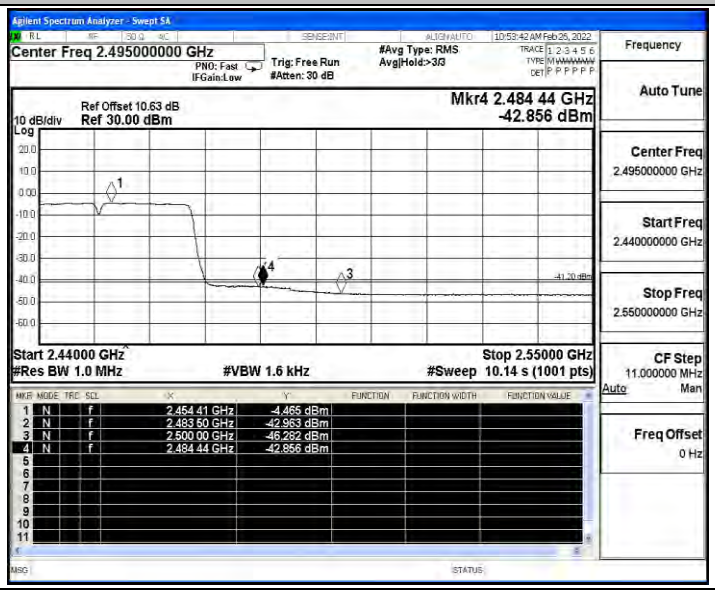
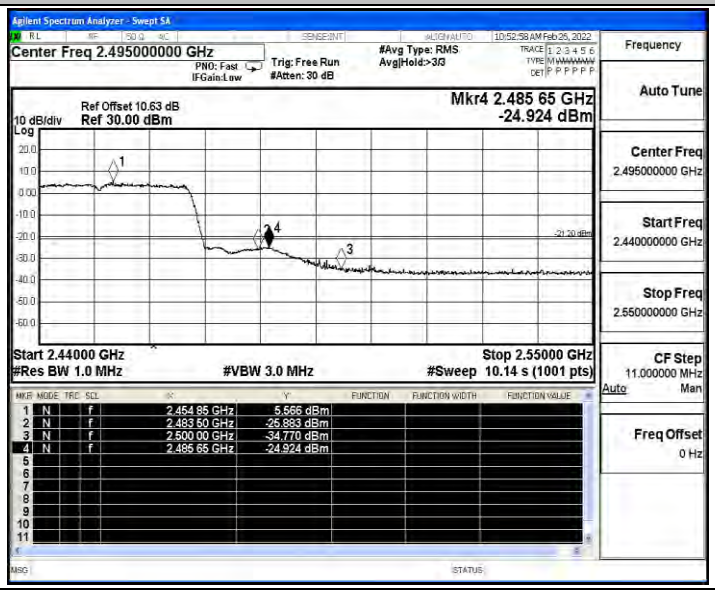
11N40SISO_Ant_High_2452_Peak