Appendix Test Data

Report No.:	18220WC30028901	Test Sample No.:	1-2-2
Start Test Date:	2023.02.24	Finish Test Date:	2023.03.09
Test Engineer:	Tony.He	Auditor:	Edward.Pan
Temperature:	24.4℃	Relative Humidity:	46%
Pressure:	1012 hPa		

Appendix A: DTS Bandwidth

Test Result

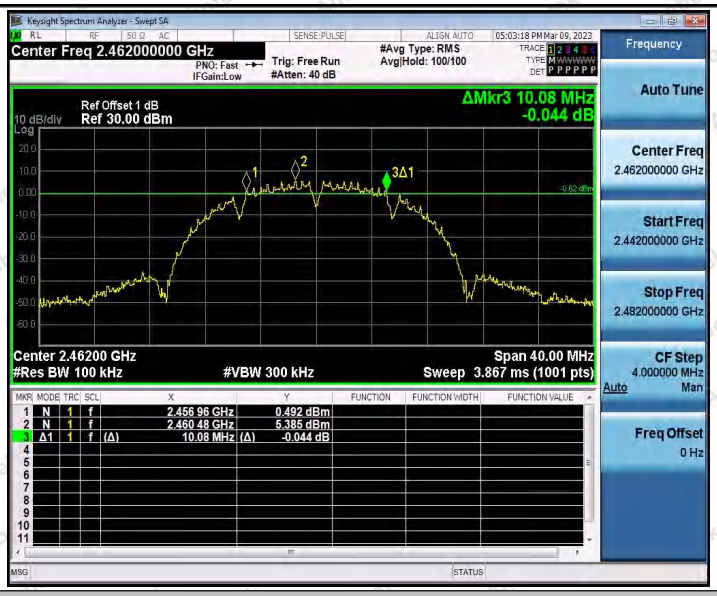
Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	10.040	2407.000	2417.040	≥0.5	PASS
		2437	10.040	2431.960	2442.000	≥0.5	PASS
		2462	10.080	2456.960	2467.040	≥0.5	PASS
11G	Ant1	2412	16.320	2403.840	2420.160	≥0.5	PASS
		2437	16.320	2428.840	2445.160	≥0.5	PASS
		2462	16.320	2453.840	2470.160	≥0.5	PASS
11N20SISO	Ant1	2412	17.680	2403.160	2420.840	≥0.5	PASS
		2437	16.920	2428.520	2445.440	≥0.5	PASS
		2462	17.280	2453.240	2470.520	≥0.5	PASS

Test Graphs

11B_Ant1_2412

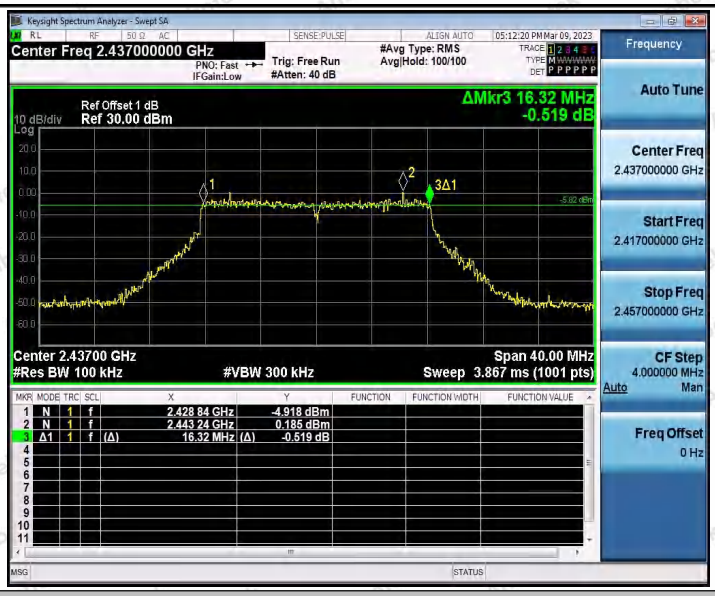
11B_Ant1_2437

11B_Ant1_2462



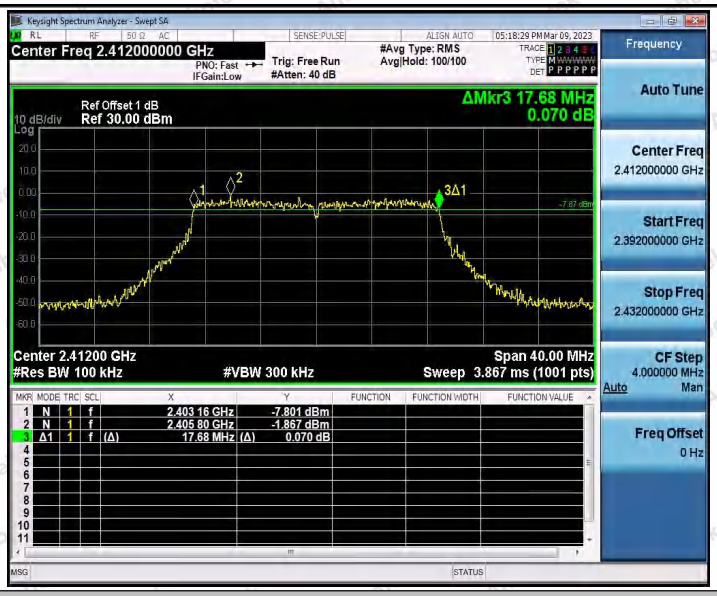
11G_Ant1_2412

11G_Ant1_2437

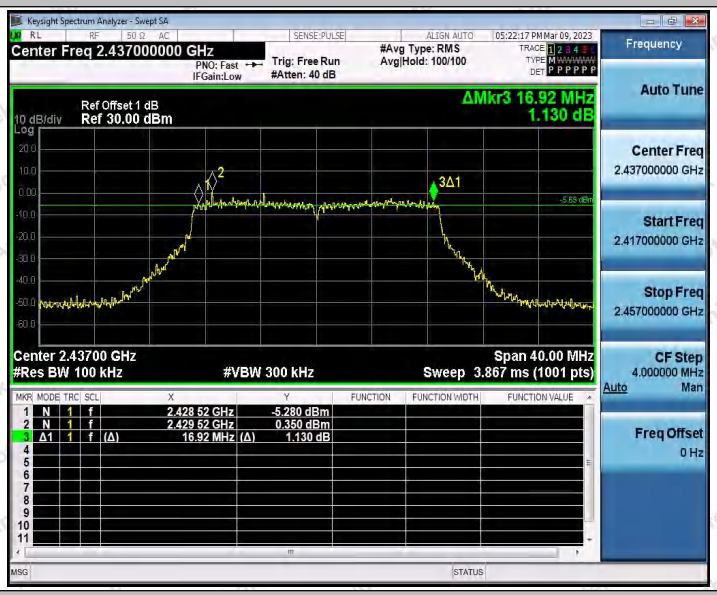


11G_Ant1_2462

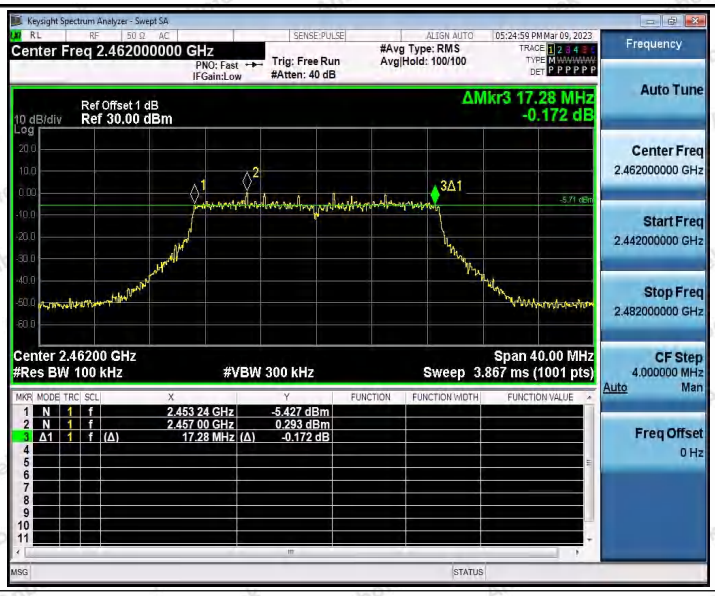
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.462000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold: 100/100
05:24:59 PM Mar 09, 2023
Ref Offset 1 dB
10 dB/div
Ref 30.00 dBm
ΔMkr3 17.28 MHz
-0.172 dB
Center 2.46200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep 3.867 ms (1001 pts)
1 N 1 f 2.453 24 GHz -5.427 dBm
2 N 1 f 2.457 00 GHz 0.293 dBm
3 Δ1 1 f (Δ) 17.28 MHz (Δ) -0.172 dB
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.442000000 GHz
Stop Freq
2.482000000 GHz
CF Step
4.000000 MHz
Auto Man
Freq Offset
0 Hz

Appendix B: Occupied Channel Bandwidth

Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
11B	Ant1	2412	15.174	2404.4118	2419.5858
		2437	15.165	2429.4239	2444.5889
		2462	15.150	2454.4385	2469.5885
11G	Ant1	2412	17.080	2403.4658	2420.5458
		2437	17.033	2428.4806	2445.5136
		2462	16.874	2453.5508	2470.4248
11N20SISO	Ant1	2412	18.074	2402.9997	2421.0737
		2437	17.890	2428.0798	2445.9698
		2462	17.915	2453.0750	2470.9900

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

Keysight Spectrum Analyzer - Occupied BW
Center Freq 2.462000000 GHz
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 40 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 1 dB
10 dB/div
Ref 30.00 dBm
Mkr1 2.46552 GHz
3.1201 dBm
Center Freq
2.462000000 GHz
Center 2.462 GHz
#Res BW 430 kHz
#VBW 1.3 MHz
Span 40 MHz
Sweep 1 ms
CF Step
4.000000 MHz
Auto
Man
Occupied Bandwidth
17.915 MHz
Total Power
16.3 dBm
Transmit Freq Error
32.509 kHz
OBW Power
99.00 %
x dB Bandwidth
21.89 MHz
x dB
-26.00 dB
Freq Offset
0 Hz

Appendix C: Maximum conducted output power

Test Result Peak

Test Mode	Antenna	Frequency[MHz]	Peak Power[dBm]	Conducted Limit[dBm]
11B	Ant1	2412	**18.88**	≤30.00
		2437	18.30	≤30.00
		2462	18.20	≤30.00
11G	Ant1	2412	17.80	≤30.00
		2437	17.66	≤30.00
		2462	17.71	≤30.00
11N20SISO	Ant1	2412	18.04	≤30.00
		2437	17.46	≤30.00
		2462	17.45	≤30.00

Appendix D: Maximum power spectral density

Test Result

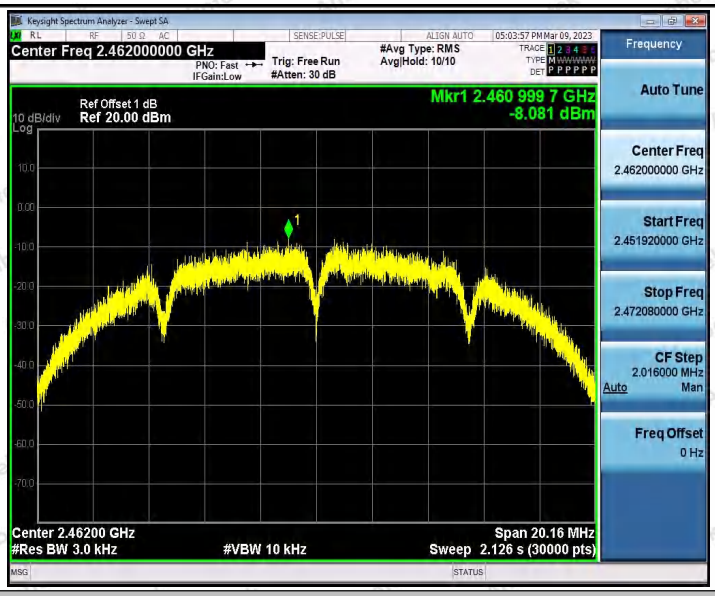
Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-7.11	≤8.00	PASS
		2437	-7.92	≤8.00	PASS
		2462	-8.08	≤8.00	PASS
11G	Ant1	2412	-12.77	≤8.00	PASS
		2437	-13.35	≤8.00	PASS
		2462	-14.39	≤8.00	PASS
11N20SISO	Ant1	2412	-13.6	≤8.00	PASS
		2437	-14.32	≤8.00	PASS
		2462	-14.06	≤8.00	PASS

Test Graphs

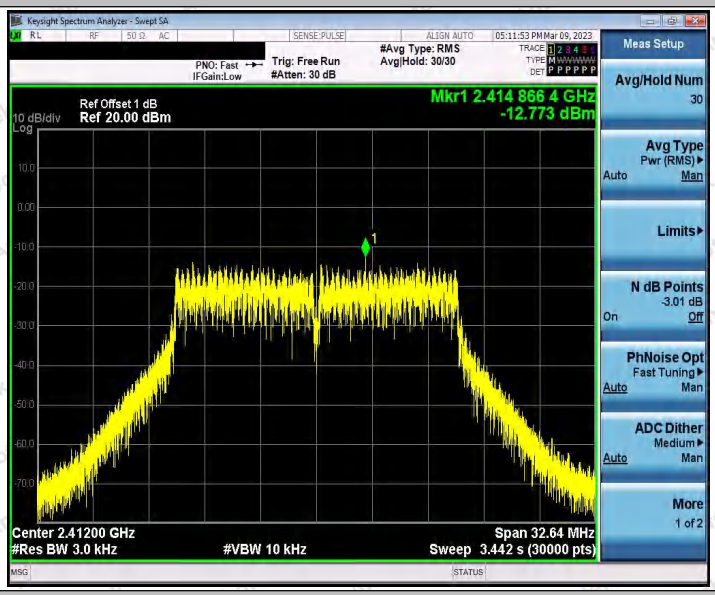
11B_Ant1_2412

11B_Ant1_2437

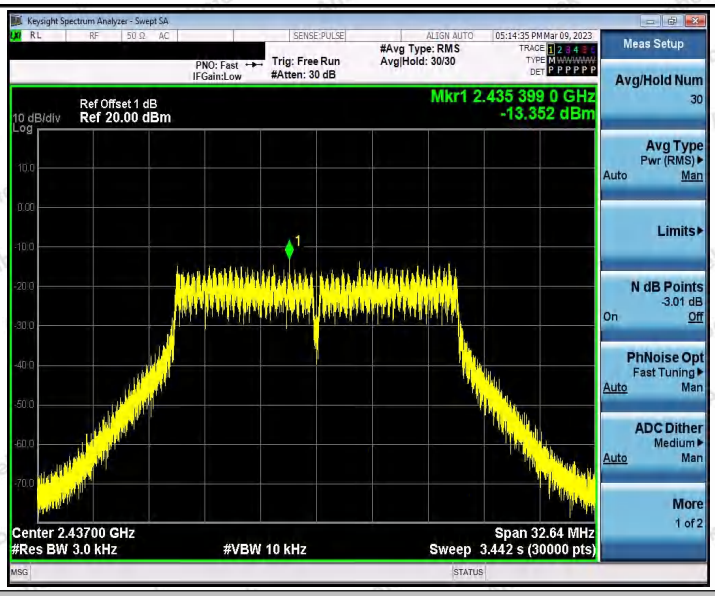
11B_Ant1_2462



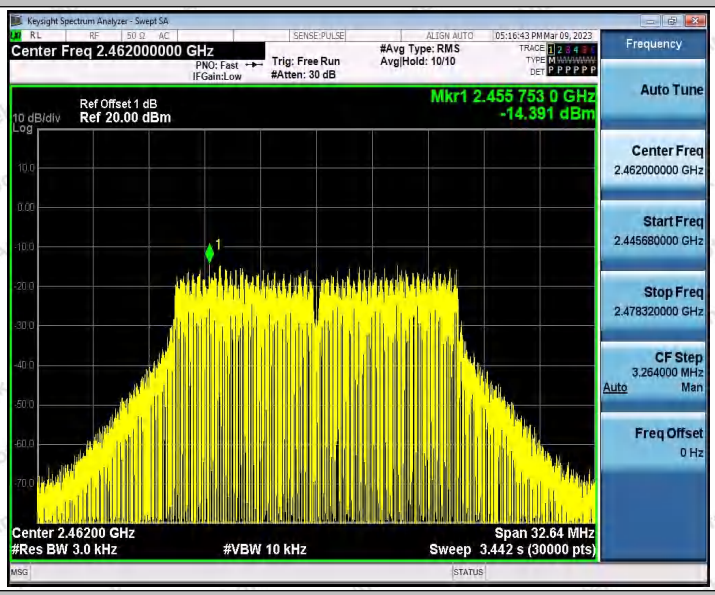
11G_Ant1_2412



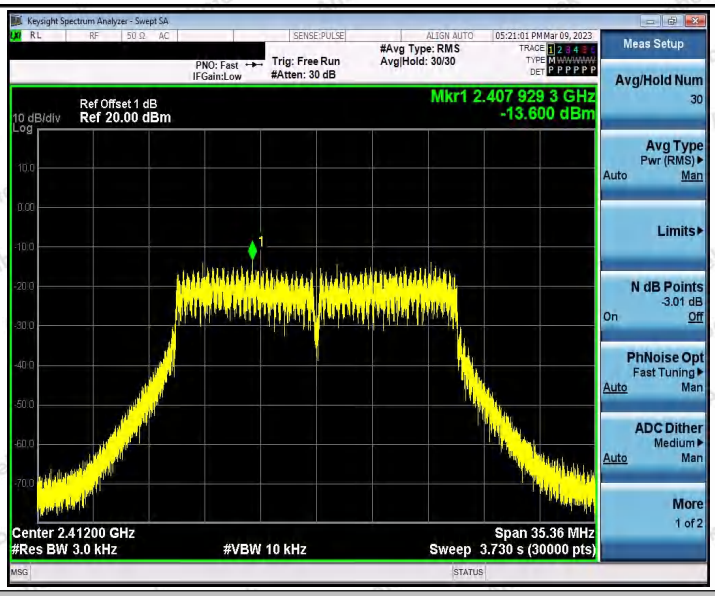
11G_Ant1_2437



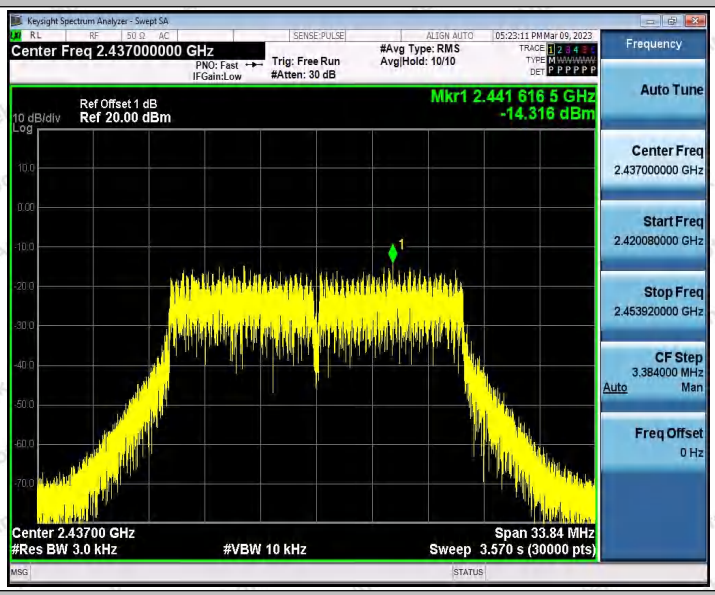
11G_Ant1_2462



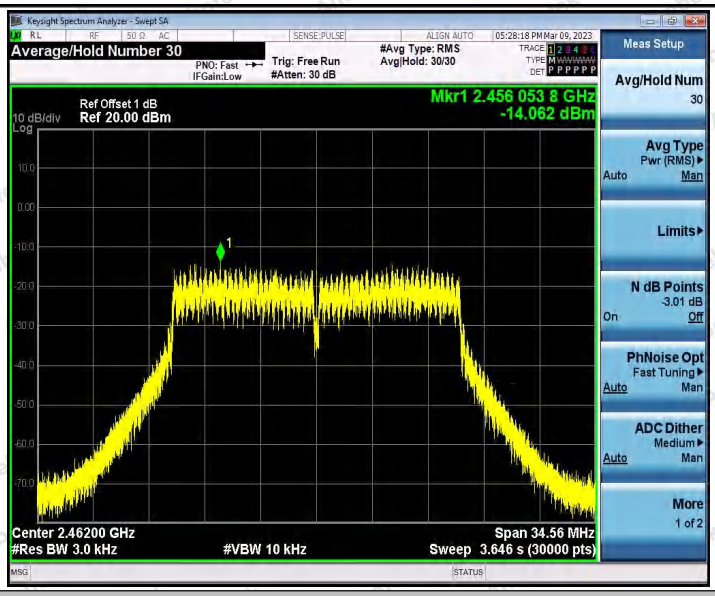
11N20SISO_Ant1_2412



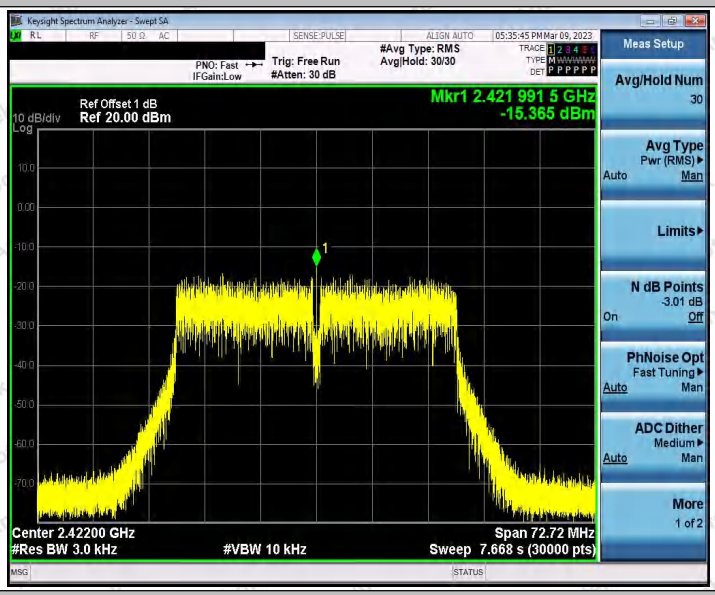
11N20SISO_Ant1_2437



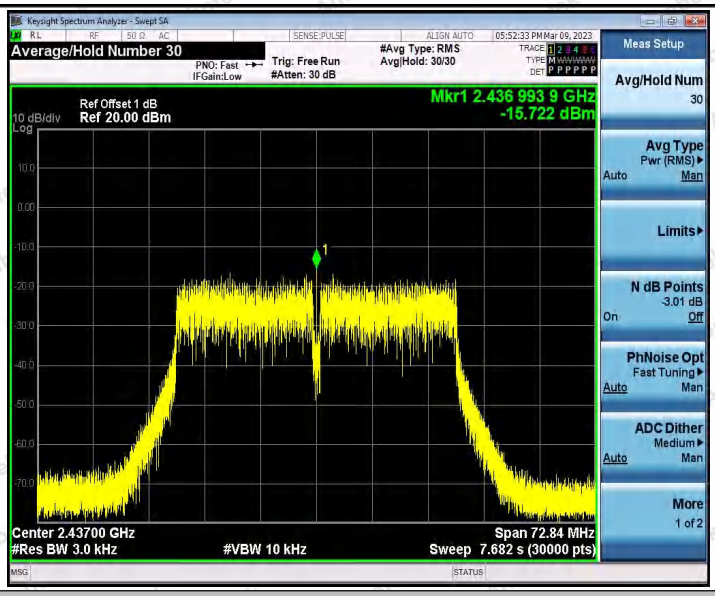
11N20SISO_Ant1_2462



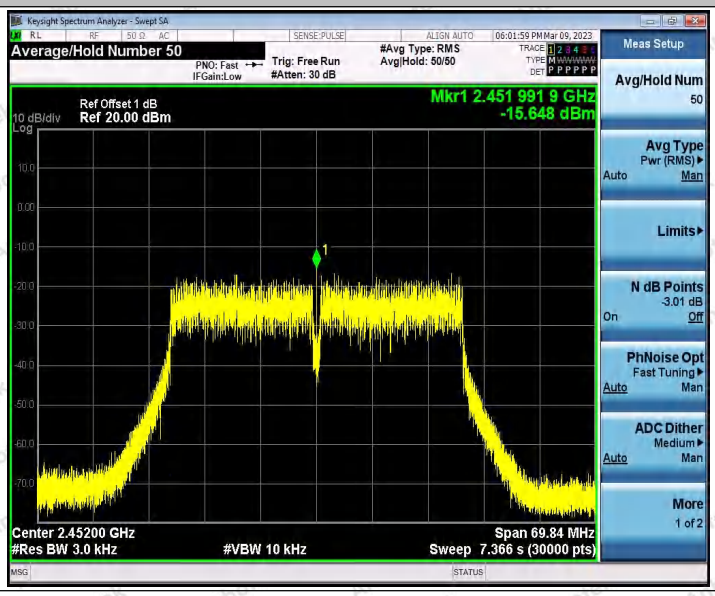
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



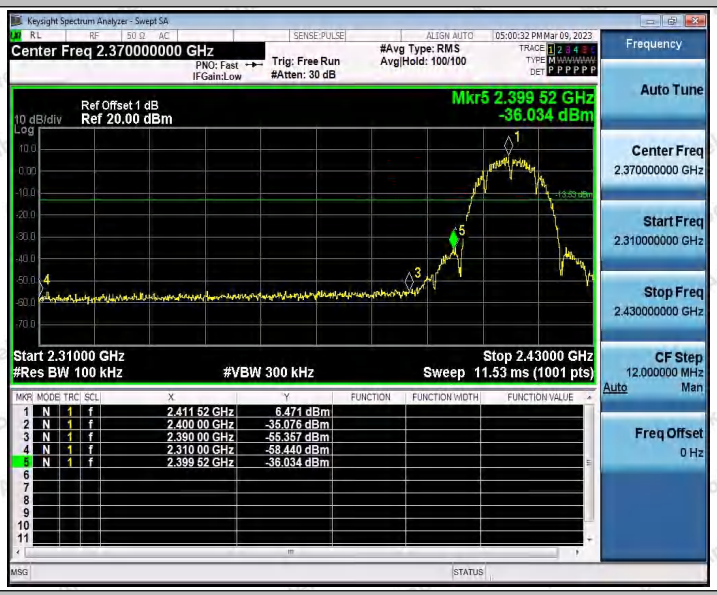
Appendix E: Band edge measurements

Test Result

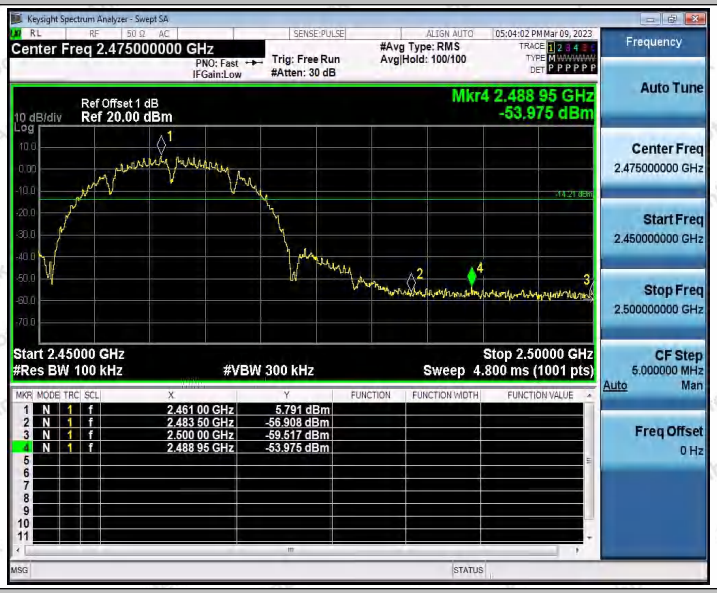
TestMode	Antenna	ChName	Frequency [MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	6.47	-36.03	≤-13.53	PASS
		High	2462	5.79	-53.98	≤-14.21	PASS
11G	Ant1	Low	2412	0.80	-38.01	≤-19.2	PASS
		High	2462	0.03	-55.37	≤-19.97	PASS
11N20SISO	Ant1	Low	2412	0.51	-39.61	≤-19.49	PASS
		High	2462	0.24	-54.45	≤-19.76	PASS

Test Graphs

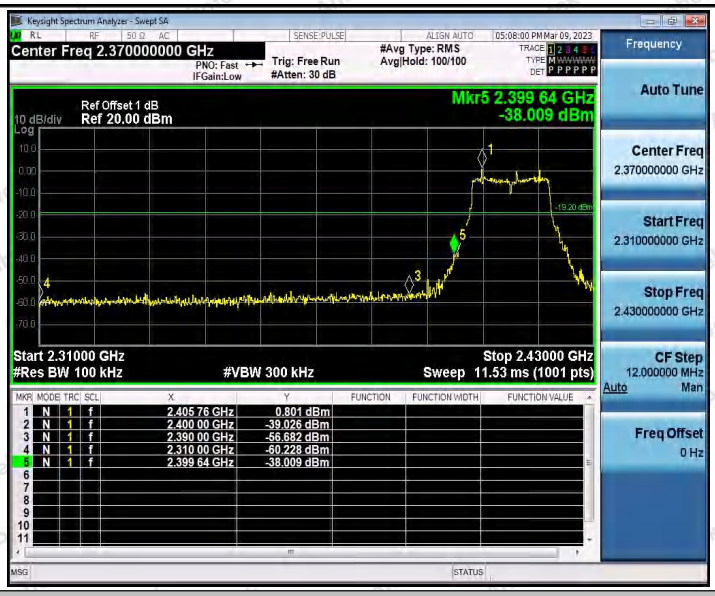
11B_Ant1_Low_2412



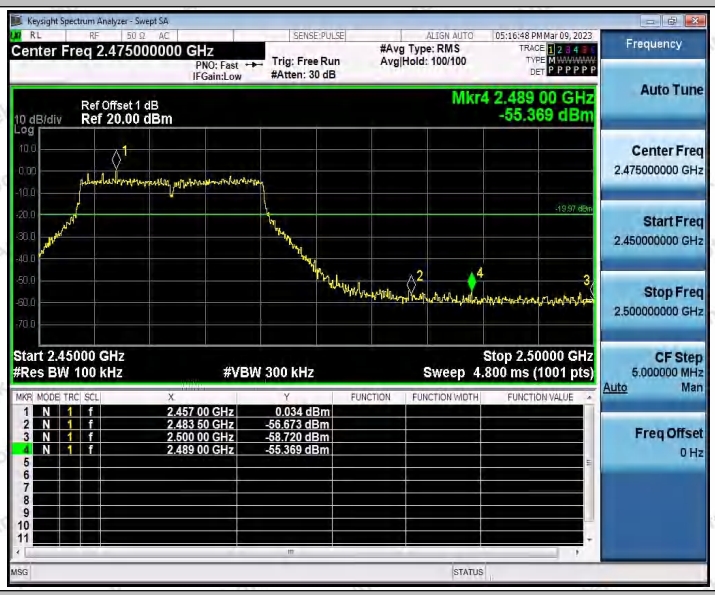
11B_Ant1_High_2462



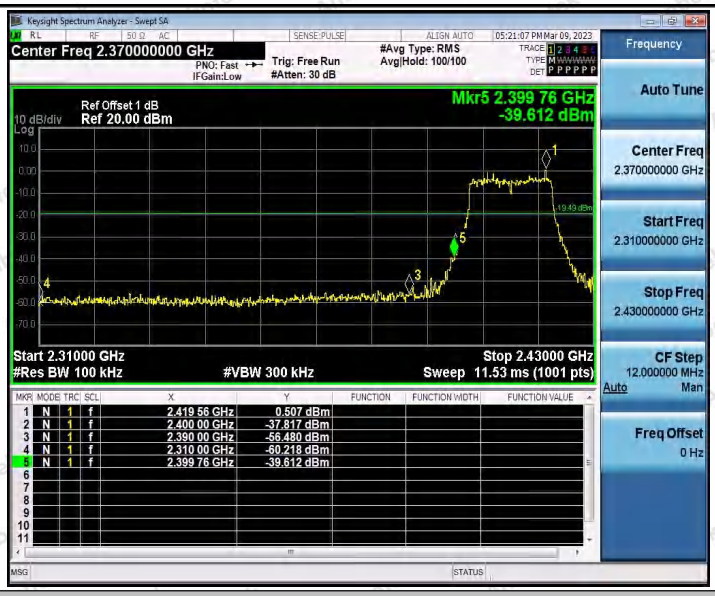
11G_Ant1_Low_2412



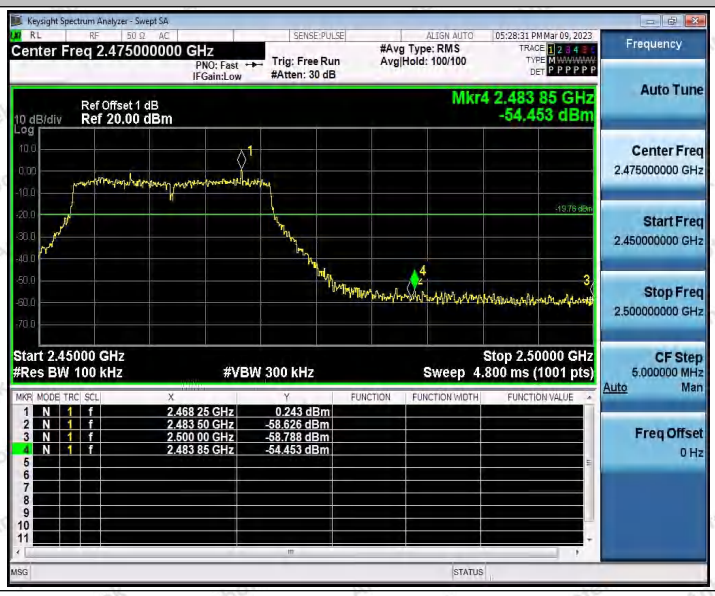
11G_Ant1_High_2462



11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_High_2462



Appendix F: Conducted Spurious Emission

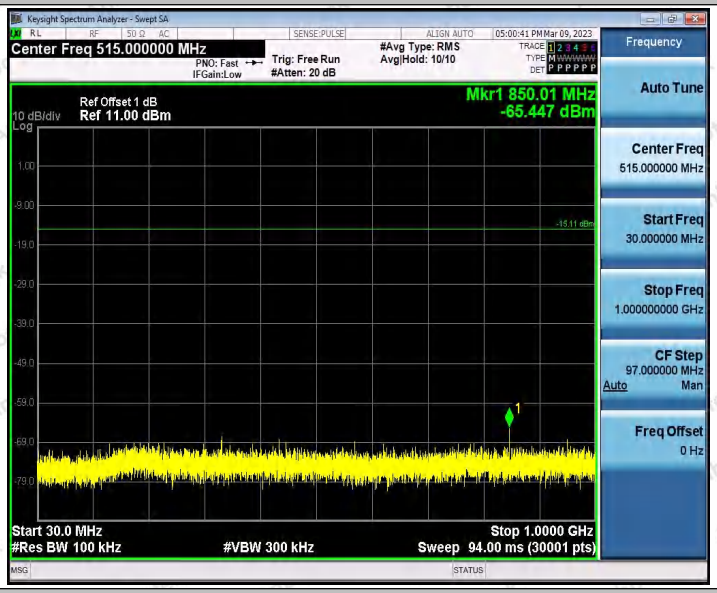
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	4.89	4.89	---	PASS
			30~1000	4.89	-65.45	≤-15.11	PASS
			1000~26500	4.89	-53.34	≤-15.11	PASS
		2437	Reference	5.03	5.03	---	PASS
			30~1000	5.03	-66.67	≤-14.97	PASS
			1000~26500	5.03	-53.04	≤-14.97	PASS
		2462	Reference	5.04	5.04	---	PASS
			30~1000	5.04	-65.9	≤-14.96	PASS
			1000~26500	5.04	-53.44	≤-14.96	PASS
11G	Ant1	2412	Reference	-3.18	-3.18	---	PASS
			30~1000	-3.18	-65.53	≤-23.18	PASS
			1000~26500	-3.18	-53.04	≤-23.18	PASS
		2437	Reference	-3.83	-3.83	---	PASS
			30~1000	-3.83	-65.93	≤-23.83	PASS
			1000~26500	-3.83	-53.47	≤-23.83	PASS
		2462	Reference	-3.53	-3.53	---	PASS
			30~1000	-3.53	-64.42	≤-23.53	PASS
			1000~26500	-3.53	-53.58	≤-23.53	PASS
11N20SISO	Ant1	2412	Reference	-1.60	-1.60	---	PASS
			30~1000	-1.60	-66.09	≤-21.6	PASS
			1000~26500	-1.60	-53.43	≤-21.6	PASS
		2437	Reference	-2.37	-2.37	---	PASS
			30~1000	-2.37	-65.93	≤-22.37	PASS
			1000~26500	-2.37	-53.07	≤-22.37	PASS
		2462	Reference	-3.38	-3.38	---	PASS
			30~1000	-3.38	-66.24	≤-23.38	PASS
			1000~26500	-3.38	-51.85	≤-23.38	PASS

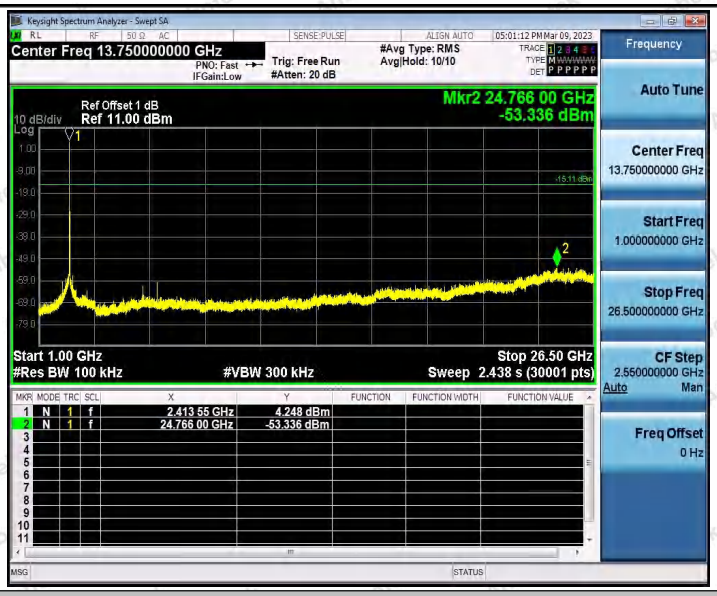
Test Graphs

11B_Ant1_2412_0~Reference

11B_Ant1_2412_30~1000

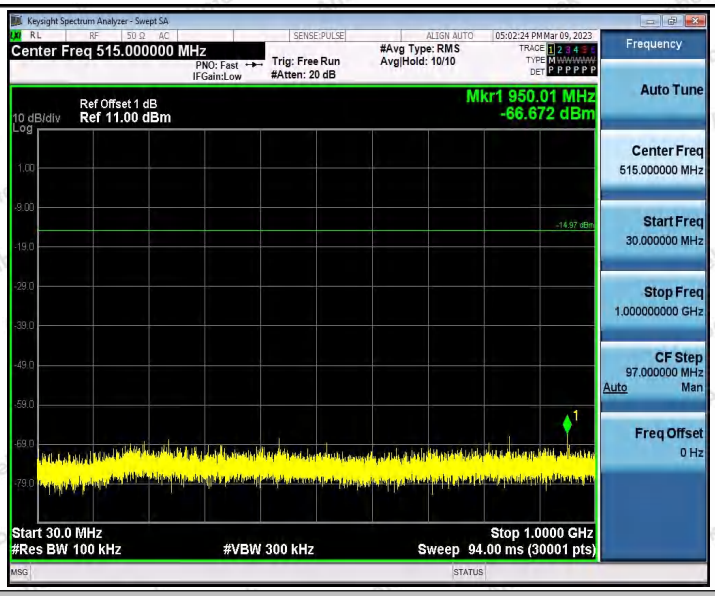


11B_Ant1_2412_1000~26500

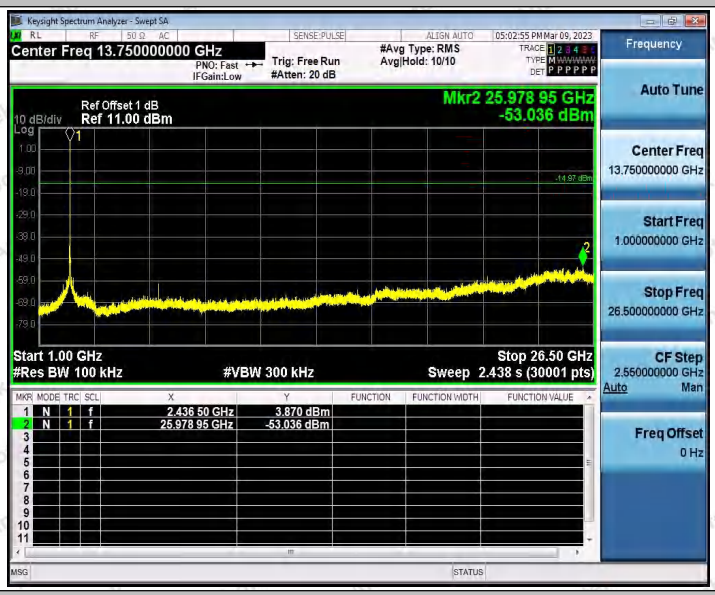


11B_Ant1_2437_0~Reference

11B_Ant1_2437_30~1000

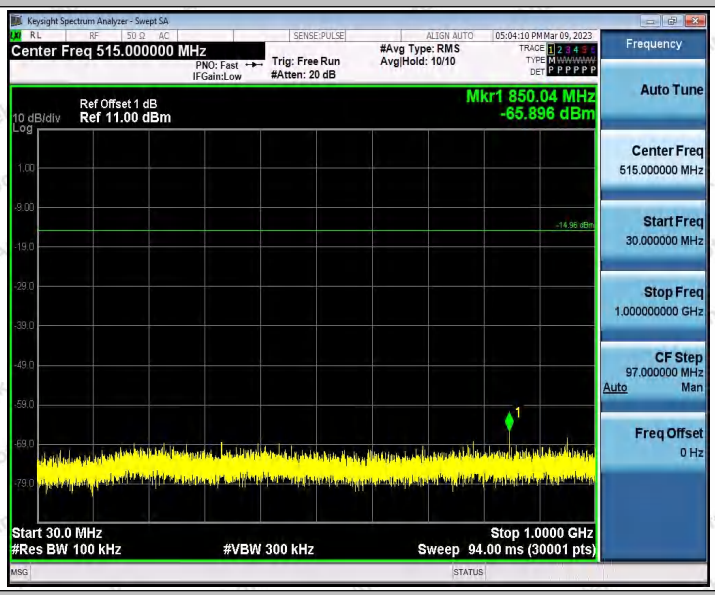


11B_Ant1_2437_1000~26500

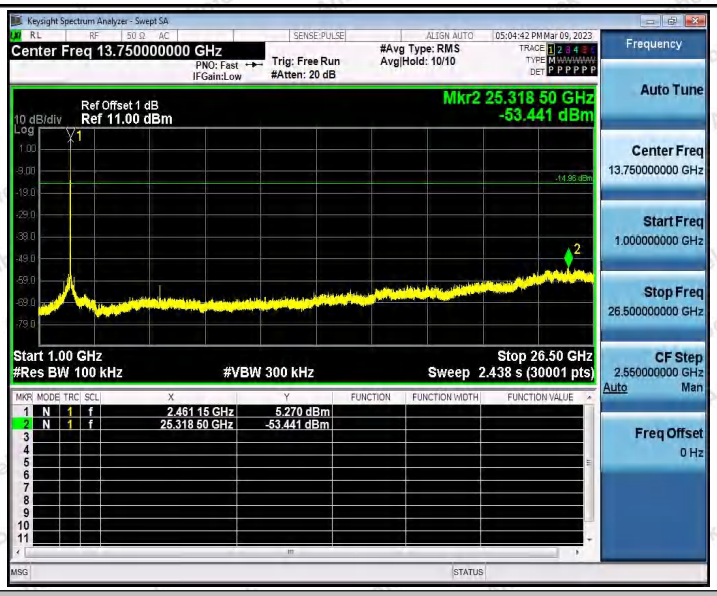


11B_Ant1_2462_0~Reference

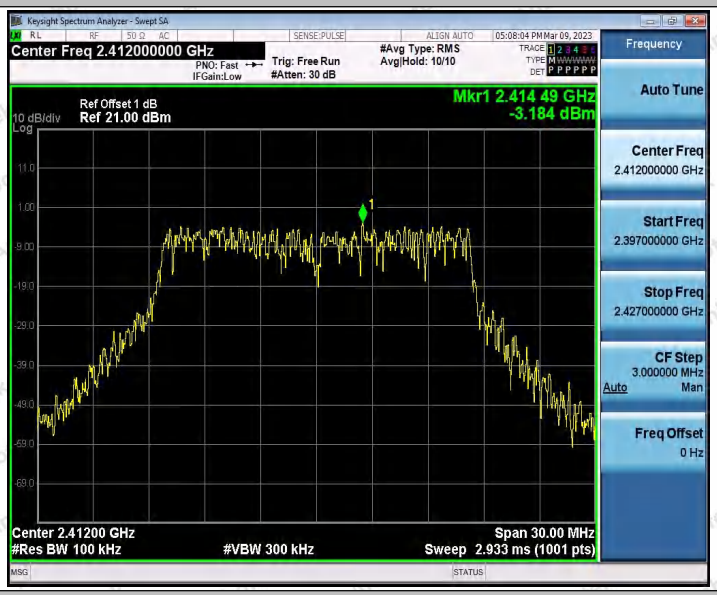
11B_Ant1_2462_30~1000



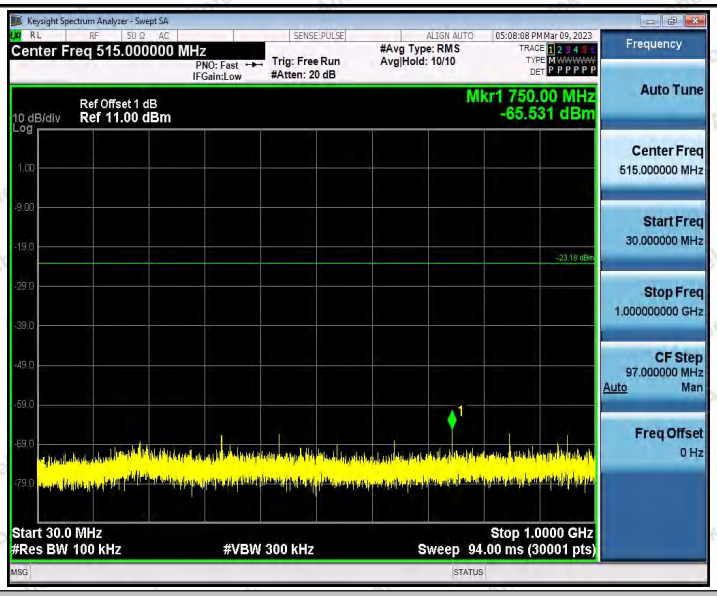
11B_Ant1_2462_1000~26500



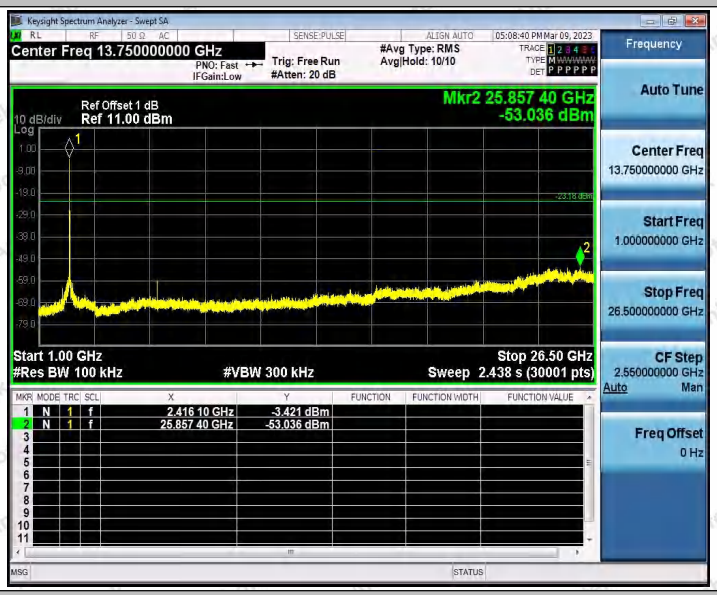
11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000

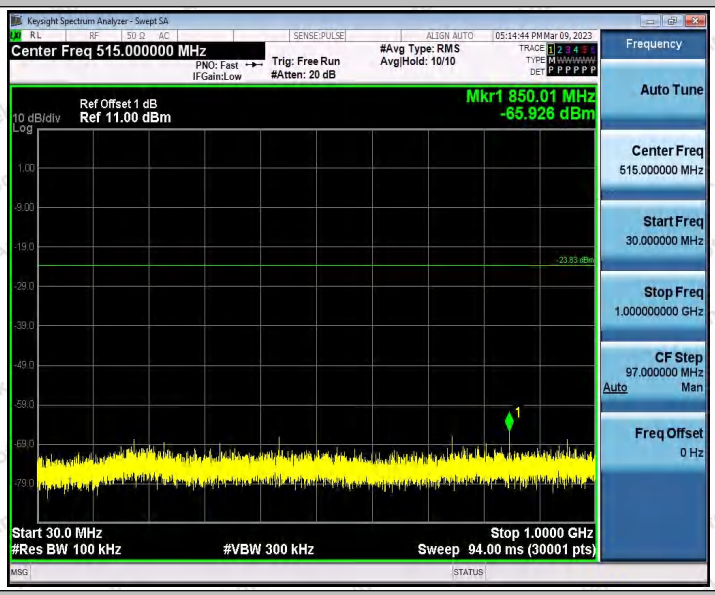


11G_Ant1_2412_1000~26500

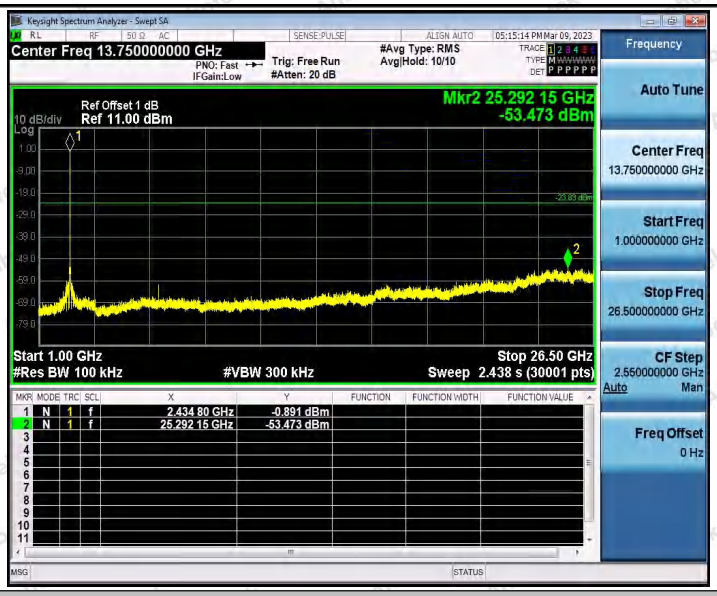


11G_Ant1_2437_0~Reference

11G_Ant1_2437_30~1000

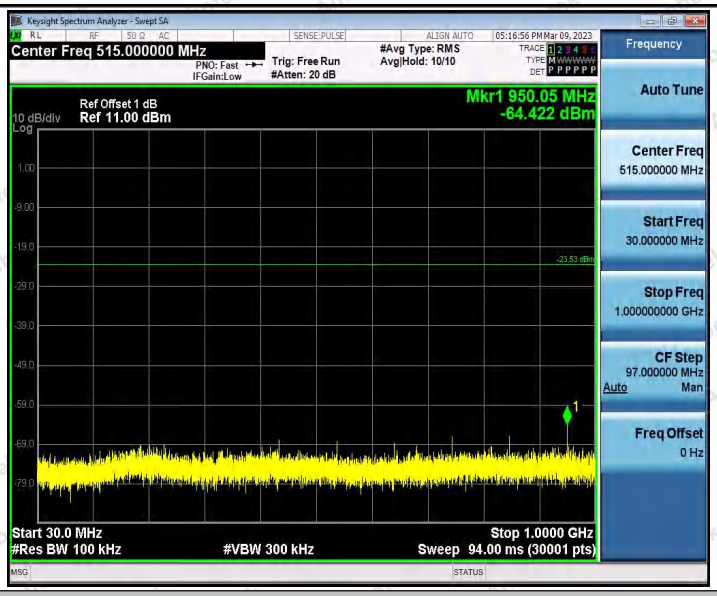


11G_Ant1_2437_1000~26500

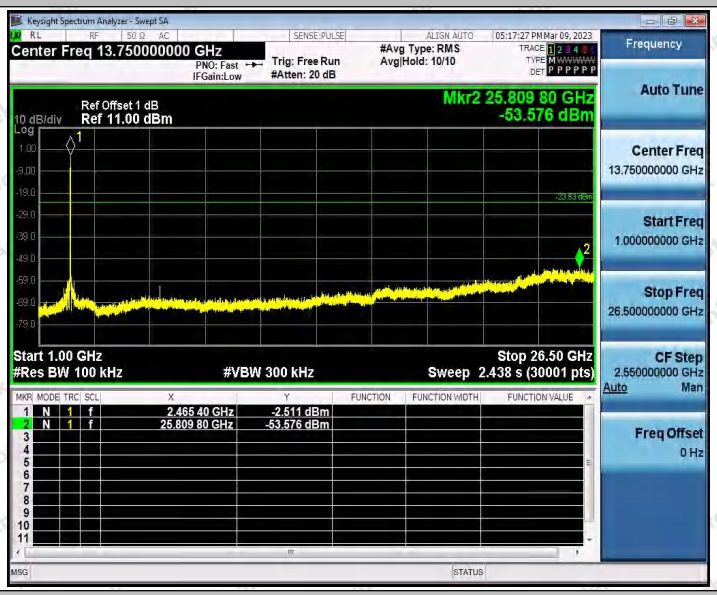


11G_Ant1_2462_0~Reference

11G_Ant1_2462_30~1000

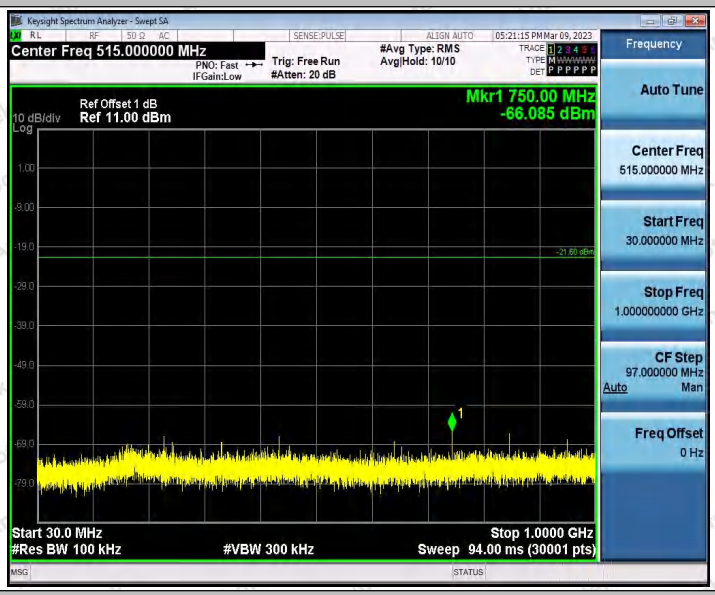


11G_Ant1_2462_1000~26500

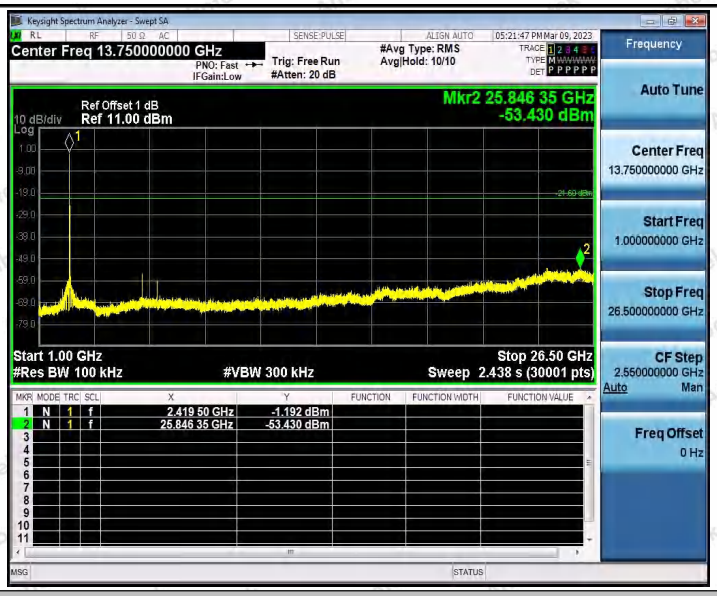


11N20SISO_Ant1_2412_0~Reference

11N20SISO_Ant1_2412_30~1000

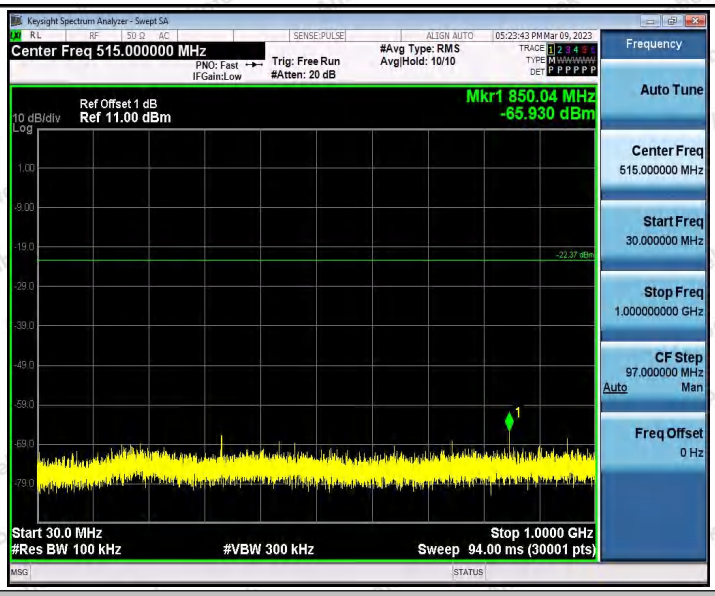


11N20SISO_Ant1_2412_1000~26500



11N20SISO_Ant1_2437_0~Reference

11N20SISO_Ant1_2437_30~1000



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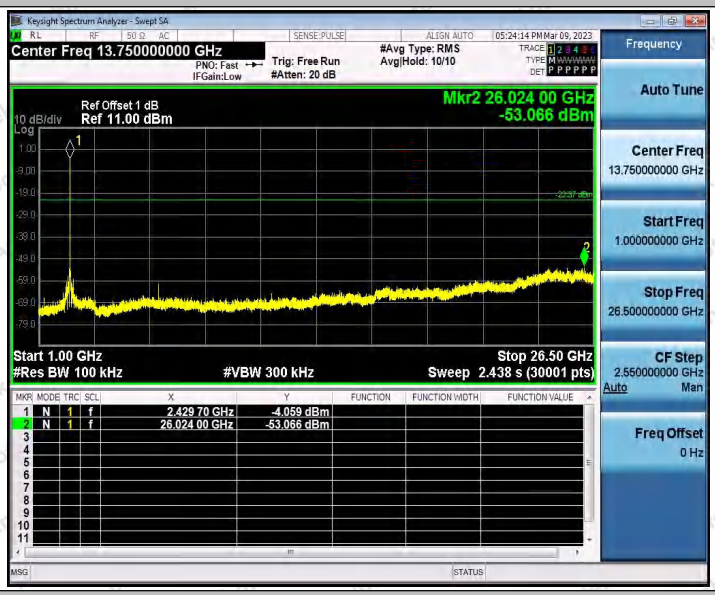
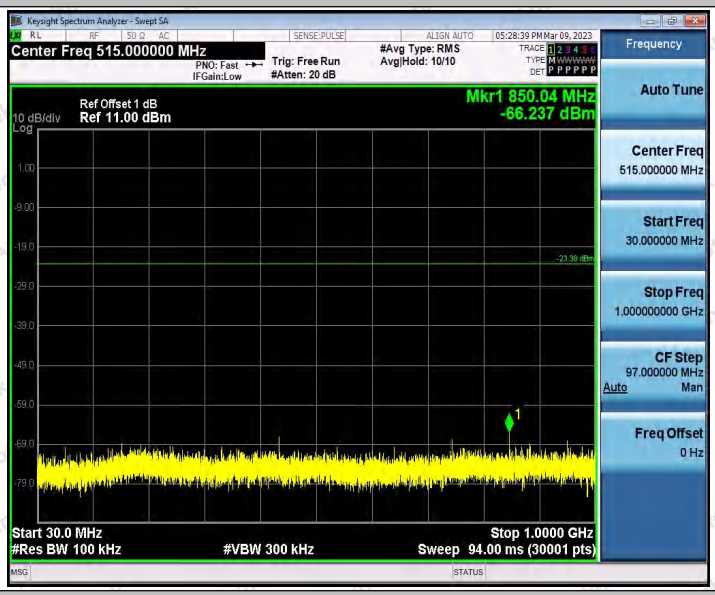
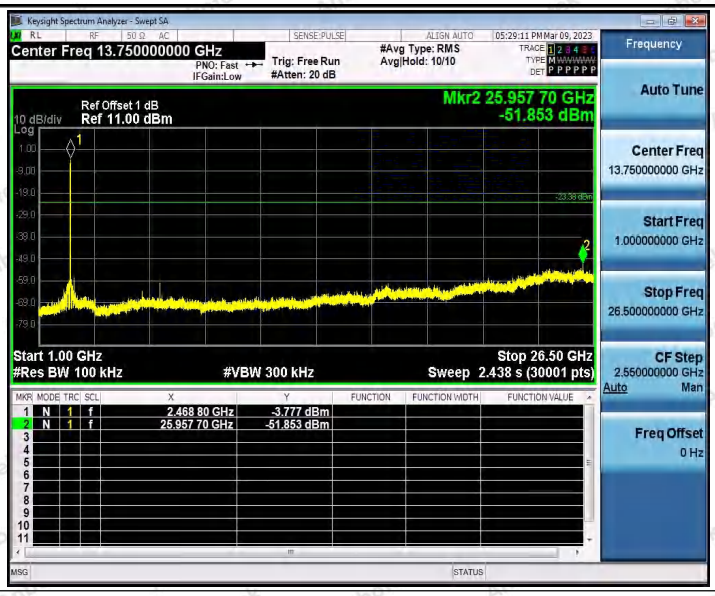


11N20SISO_Ant1_2462_0~Reference

11N20SISO_Ant1_2462_30~1000



11N20SISO_Ant1_2462_1000~26500


Keysight Spectrum Analyzer - Swept SA
Center Freq 13.750000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 10/10
05:29:11 PM Mar 09, 2023
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Mkr2 25.957 70 GHz
-51.853 dBm
Start 1.00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 26.50 GHz
Sweep 2.438 s (30001 pts)
1 N 1 f 2.468 80 GHz -3.777 dBm
2 N 1 f 25.957 70 GHz -51.853 dBm
Frequency
Auto Tune
Center Freq
13.750000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
CF Step
2.550000000 GHz
Auto Man
Freq Offset
0 Hz

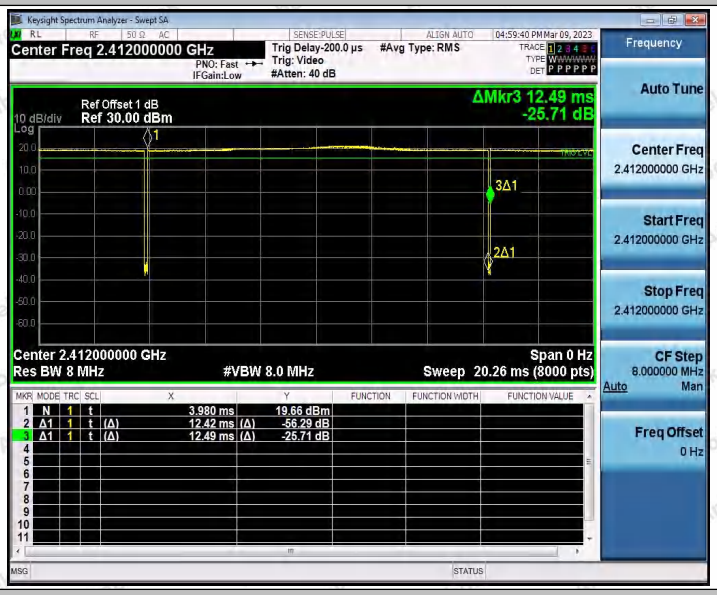
Appendix G: Duty Cycle

Test Result

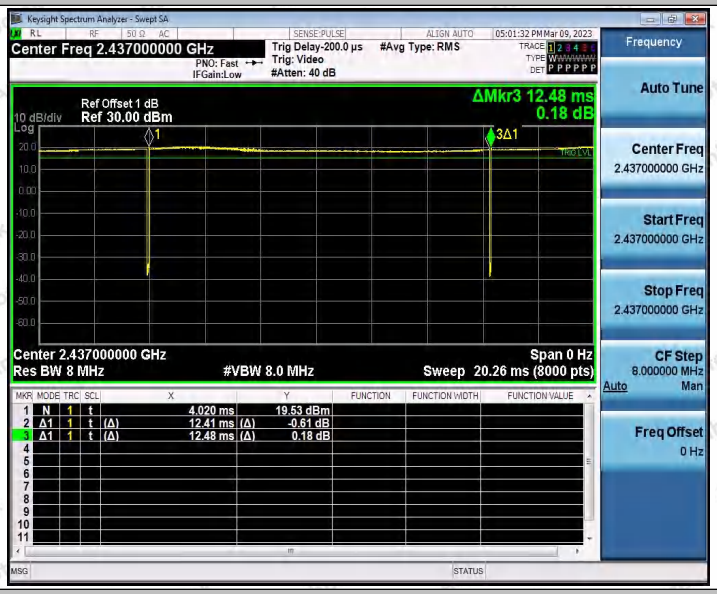
Test Mode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	12.42	12.49	99.44	0.02
		2437	12.41	12.48	99.44	0.02
		2462	12.42	12.46	99.68	0.01
11G	Ant1	2412	2.06	10.01	20.58	6.87
		2437	2.06	9.98	20.64	6.85
		2462	2.07	10.02	20.66	6.85
11N20SISO	Ant1	2412	1.92	9.98	19.24	7.16
		2437	1.92	9.98	19.24	7.16
		2462	1.92	10.02	19.16	7.18

Test Graphs

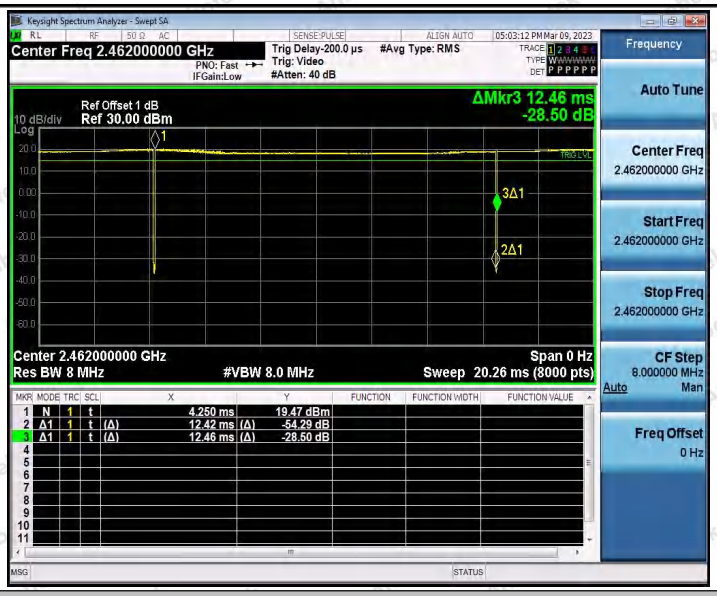
11B_Ant1_2412



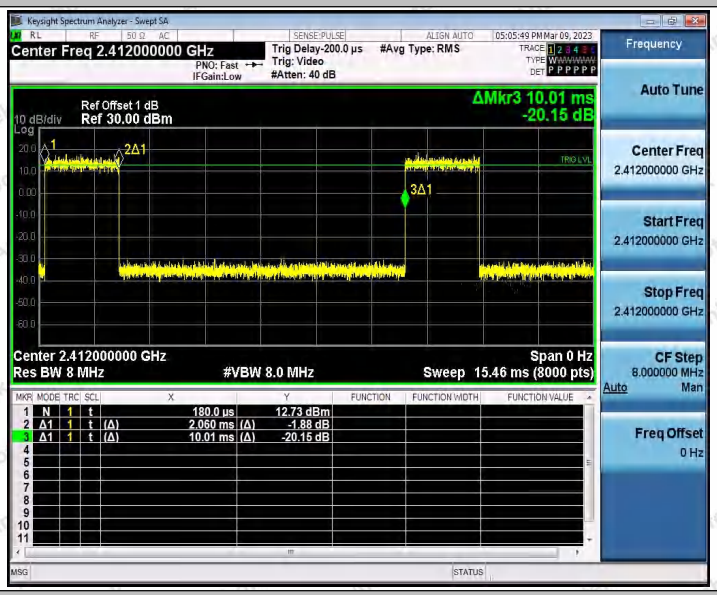
11B_Ant1_2437



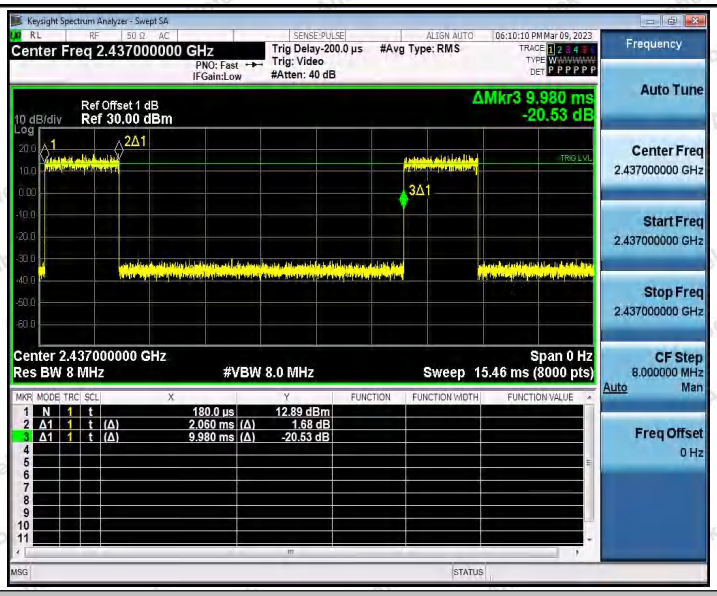
11B_Ant1_2462



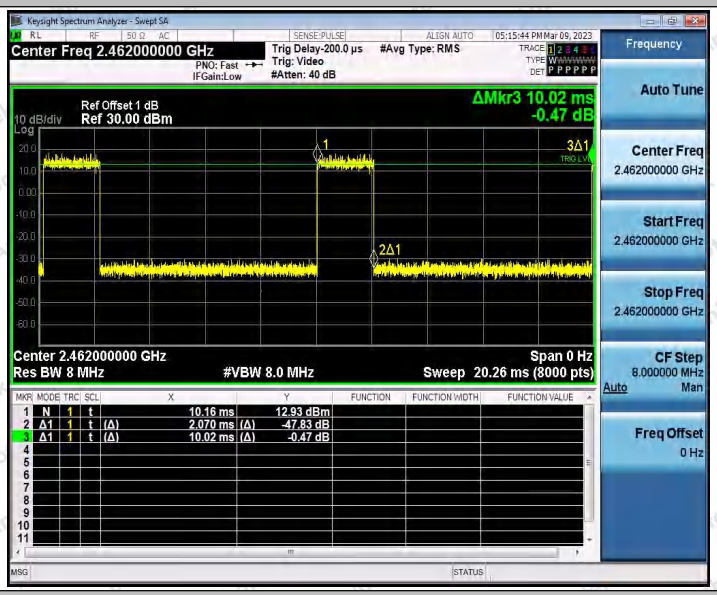
11G_Ant1_2412



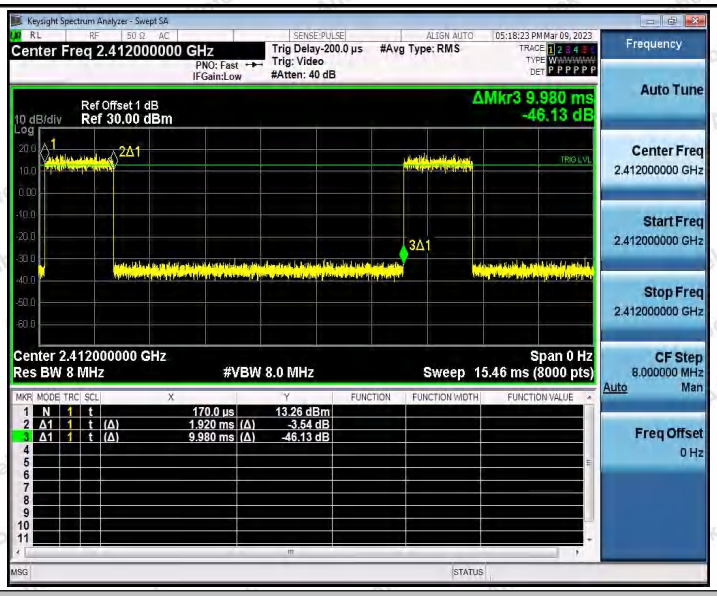
11G_Ant1_2437



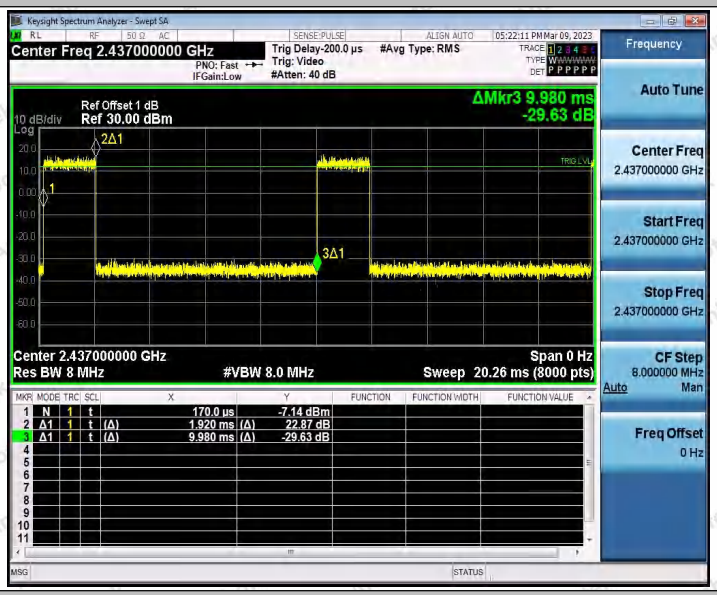
11G_Ant1_2462



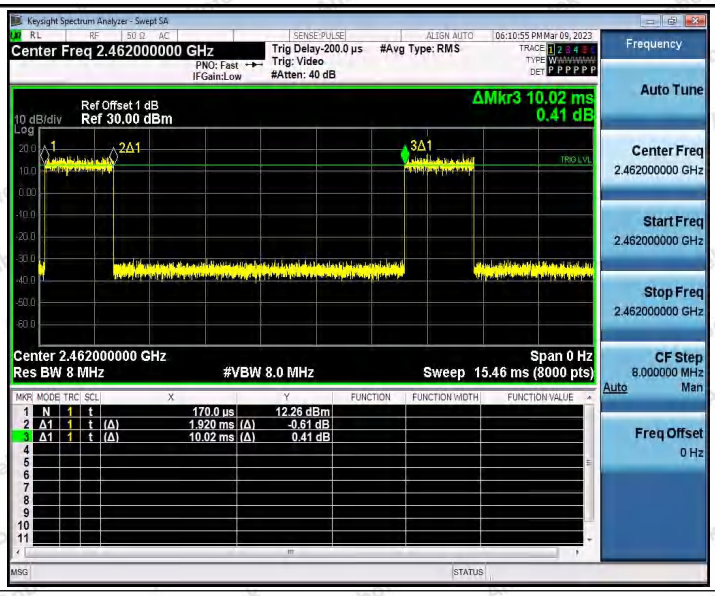
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.462000000 GHz
Trig Delay-200.0 µs
Trig: Video
#Atten: 40 dB
#Avg Type: RMS
06:10:55 PM Mar 09, 2023
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.462000000 GHz
Stop Freq
2.462000000 GHz
CF Step
8.000000 MHz
Auto Man
Freq Offset
0 Hz
ΔMkr3 10.02 ms
0.41 dB
Ref Offset 1 dB
10 dB/div Ref 30.00 dBm
Center 2.462000000 GHz
Span 0 Hz
Res BW 8 MHz
#VBW 8.0 MHz
Sweep 15.46 ms (8000 pts)
1 N 1 t 170.0 µs 12.26 dBm
2 Δ1 1 t (Δ) 1.920 ms (Δ) -0.61 dB
3 Δ1 1 t (Δ) 10.02 ms (Δ) 0.41 dB

---End---