Appendix Test Data

Report No.:	18220WC20275002	Test Sample No.:	1-2-2
Start Test Date:	2022.12.5	Finish Test Date:	2022.12.14
Test Engineer:	Tony.He	Auditor:	Edward.Pan
Temperature:	24.3℃	Relative Humidity:	47 %
Pressure:	1012 hPa		

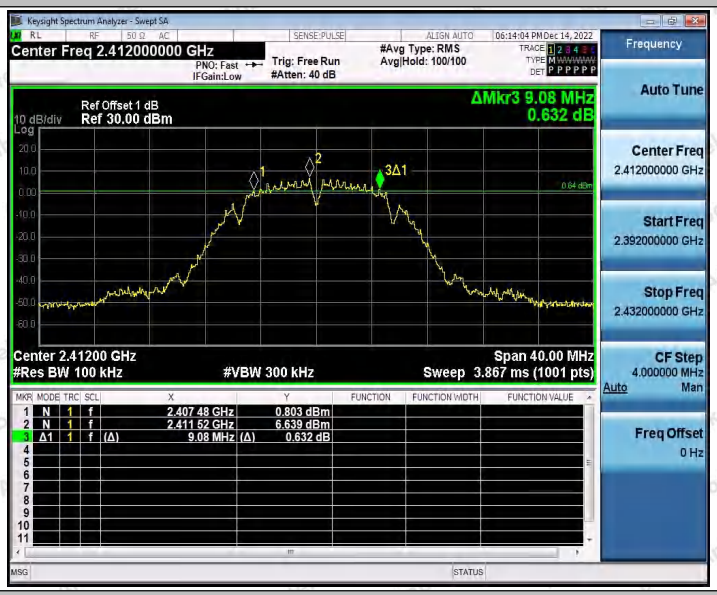
Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.080	2407.480	2416.560	≥0.5	PASS
		2437	8.600	2432.960	2441.560	≥0.5	PASS
		2462	9.560	2457.000	2466.560	≥0.5	PASS
11G	Ant1	2412	16.360	2403.840	2420.200	≥0.5	PASS
		2437	16.320	2428.840	2445.160	≥0.5	PASS
		2462	16.320	2453.840	2470.160	≥0.5	PASS
11N20	Ant1	2412	17.600	2403.240	2420.840	≥0.5	PASS
		2437	17.600	2428.200	2445.800	≥0.5	PASS
		2462	17.600	2453.200	2470.800	≥0.5	PASS

Test Graphs

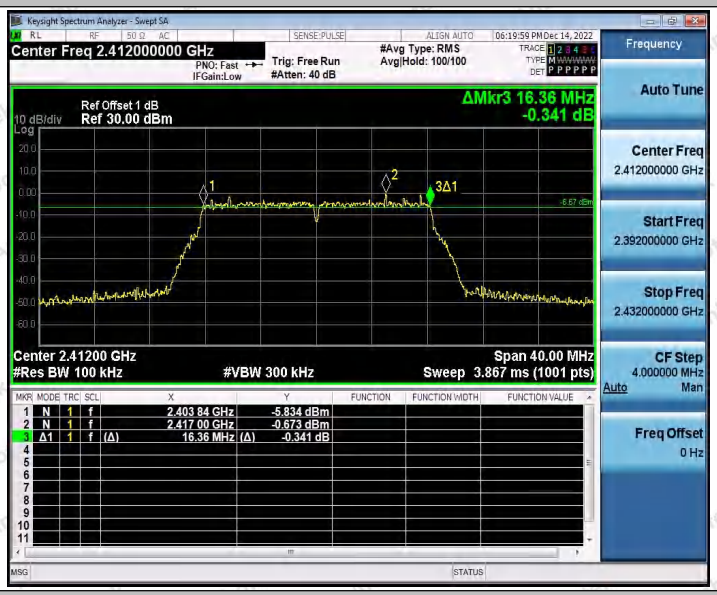
11B_Ant1_2412



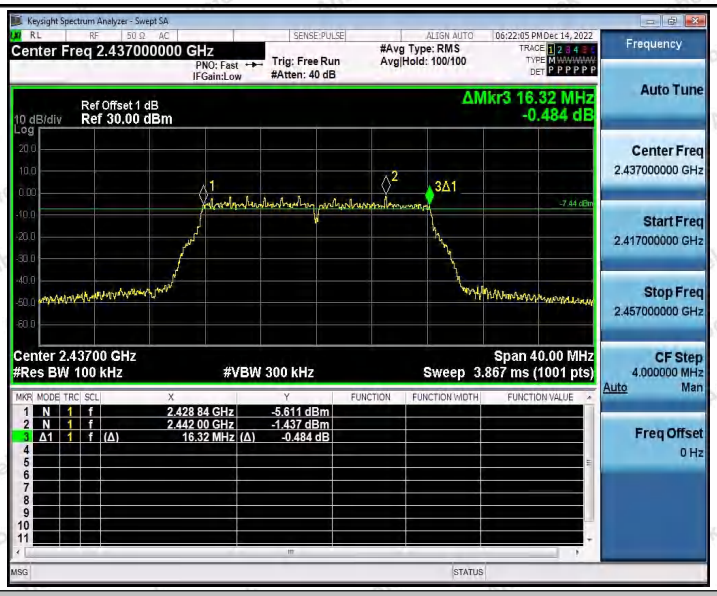
11B_Ant1_2437

11B_Ant1_2462

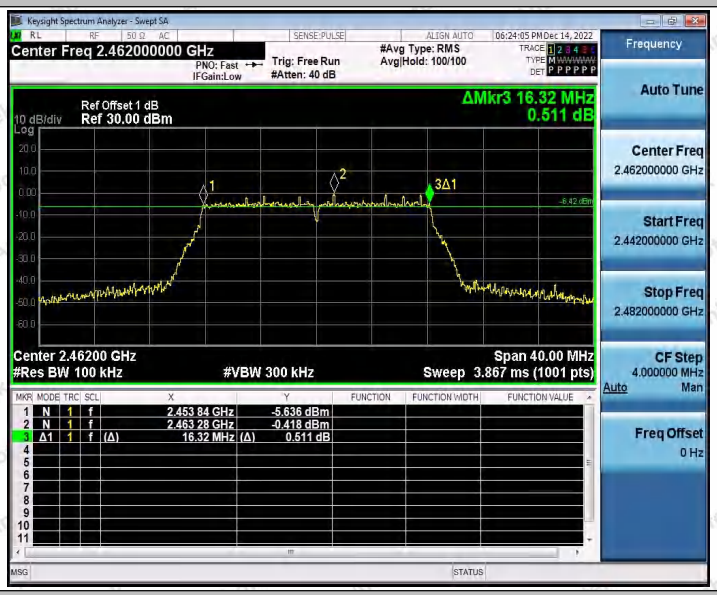
11G_Ant1_2412



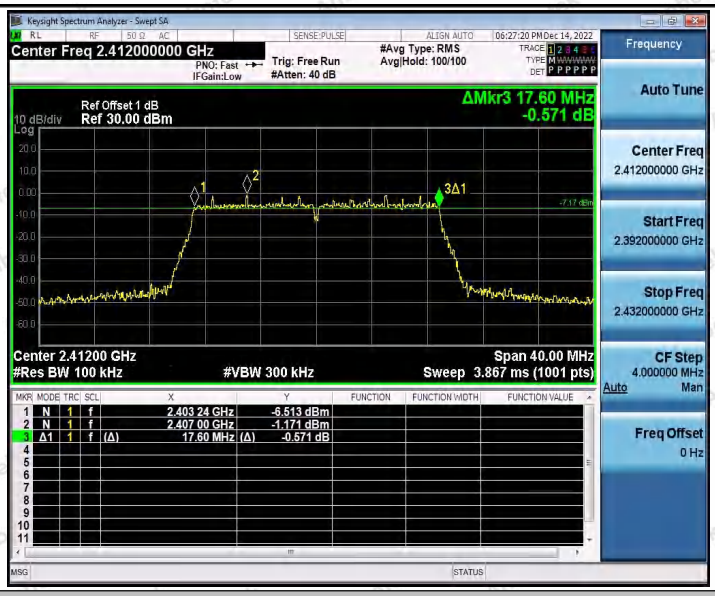
11G_Ant1_2437



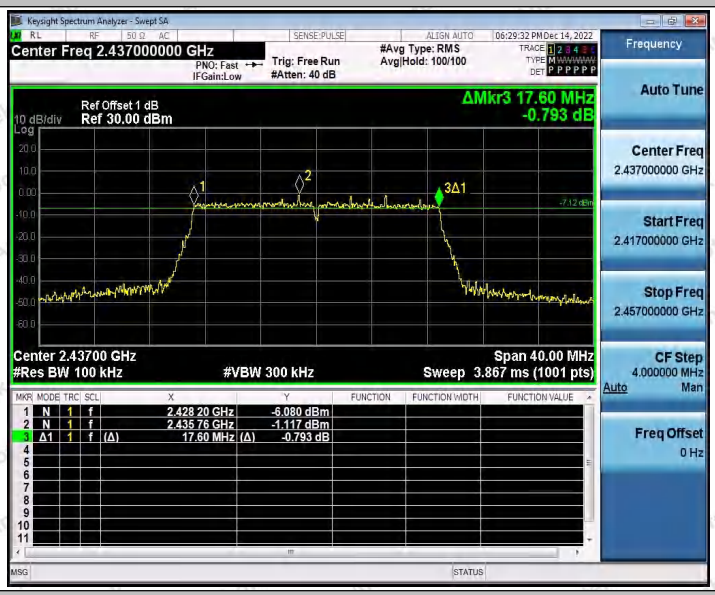
11G_Ant1_2462



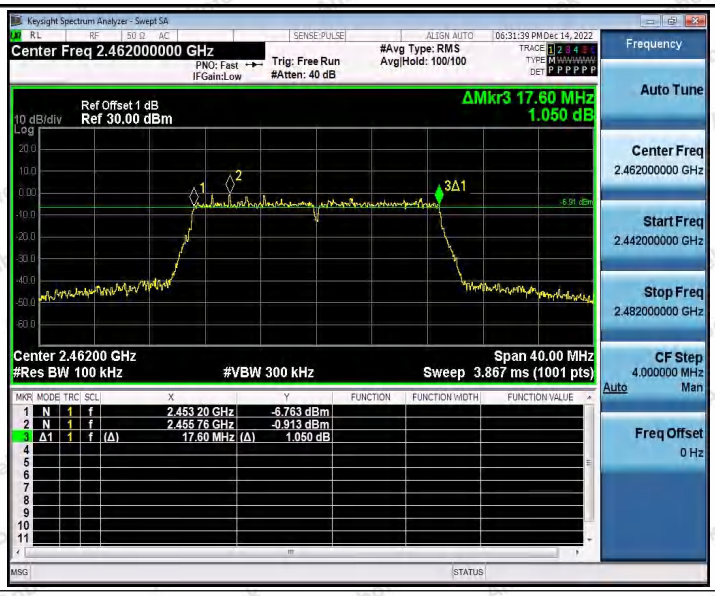
11N20_Ant1_2412



11N20_Ant1_2437



11N20_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
06:31:39 PM Dec 14, 2022
Ref Offset 1 dB
10 dB/div
Ref 30.00 dBm
ΔMkr3 17.60 MHz
1.050 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 20 GHz -6.763 dBm
2 N 1 f 2.455 76 GHz -0.913 dBm
3 Δ1 1 f (Δ) 17.60 MHz (Δ) 1.050 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

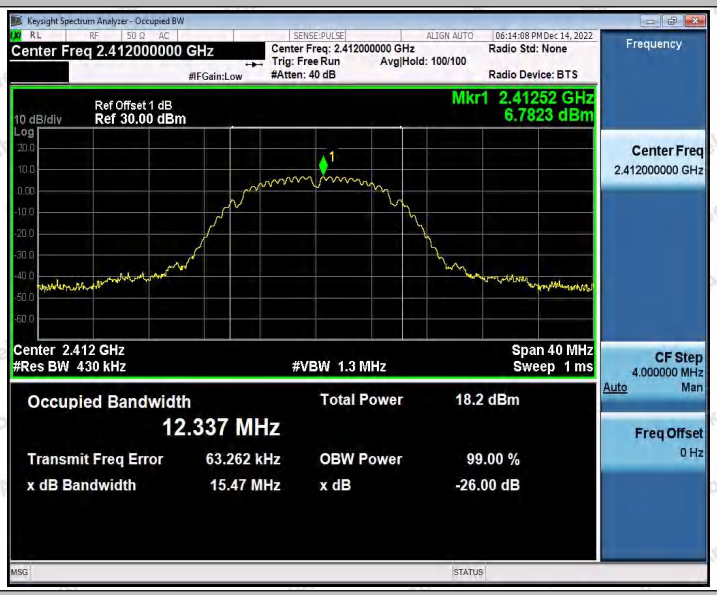
Appendix B: Occupied Channel Bandwidth

Test Result

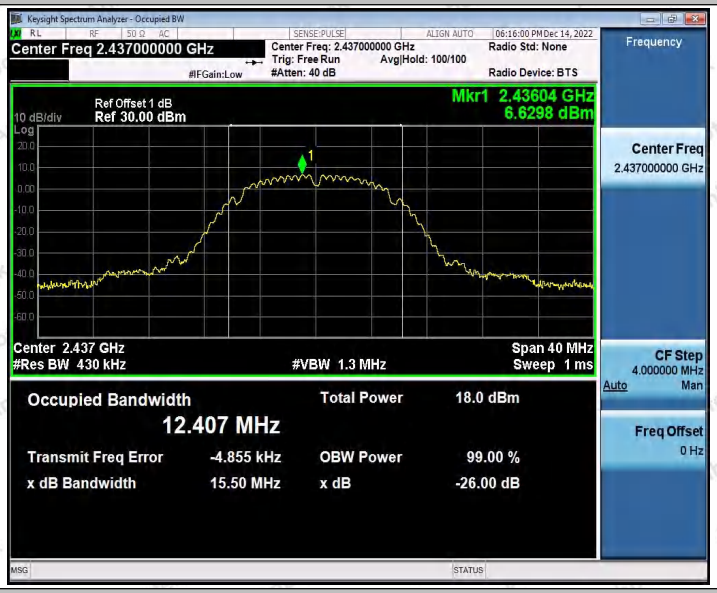
TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
11B	Ant1	2412	12.337	2405.8948	2418.2318
		2437	12.407	2430.7917	2443.1987
		2462	12.474	2455.8218	2468.2958
11G	Ant1	2412	17.130	2403.4710	2420.6010
		2437	17.104	2428.4563	2445.5603
		2462	17.054	2453.5477	2470.6017
11N20	Ant1	2412	17.924	2403.0921	2421.0161
		2437	17.964	2428.0324	2445.9964
		2462	17.965	2453.0648	2471.0298

Test Graphs

11B_Ant1_2412



11B_Ant1_2437



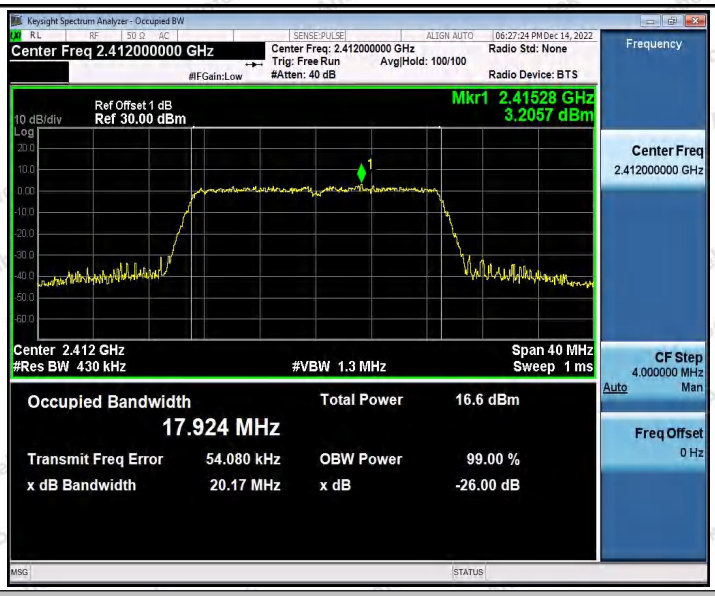
11B_Ant1_2462

11G_Ant1_2412

11G_Ant1_2437

11G_Ant1_2462

11N20_Ant1_2412



11N20_Ant1_2437

11N20_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
Log
Mkr1 2.45868 GHz
2.9632 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
17.965 MHz
Total Power
16.9 dBm
Transmit Freq Error
47.298 kHz
OBW Power
99.00 %
x dB Bandwidth
20.32 MHz
x dB
-26.00 dB
Freq Offset
0 Hz
MSG
STATUS

Appendix C: Maximum conducted output power

Test Result Peak

TestMode	Antenna	Frequency[MHz]	Peak Power[dBm]	Conducted Limit[dBm]
11B	Ant1	2412	18.22	≤30.00
		2437	18.04	≤30.00
		2462	18.50	≤30.00
11G	Ant1	2412	17.68	≤30.00
		2437	17.29	≤30.00
		2462	17.88	≤30.00
11N20	Ant1	2412	17.76	≤30.00
		2437	17.34	≤30.00
		2462	17.98	≤30.00

Appendix D: Maximum power spectral density

Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-7.05	≤8.00	PASS
		2437	-7.59	≤8.00	PASS
		2462	-5.66	≤8.00	PASS
11G	Ant1	2412	-14.26	≤8.00	PASS
		2437	-14.03	≤8.00	PASS
		2462	-12.87	≤8.00	PASS
11N20	Ant1	2412	-15.14	≤8.00	PASS
		2437	-14.98	≤8.00	PASS
		2462	-14.82	≤8.00	PASS

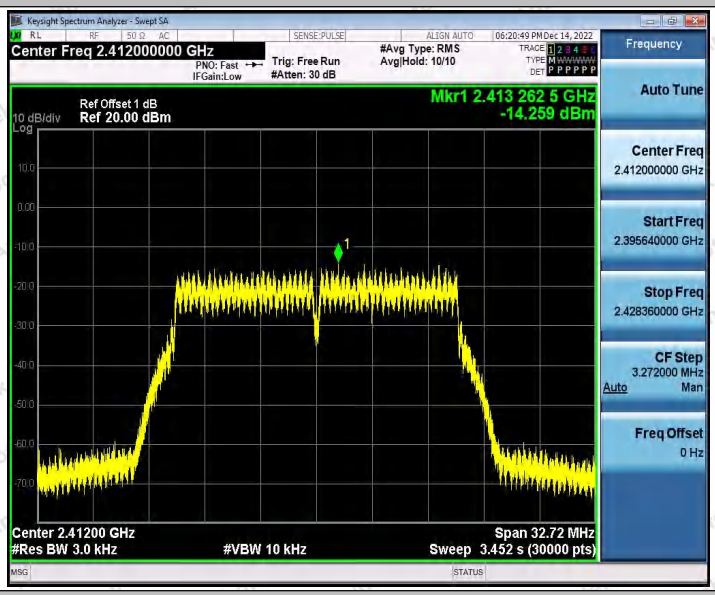
Test Graphs

11B_Ant1_2412

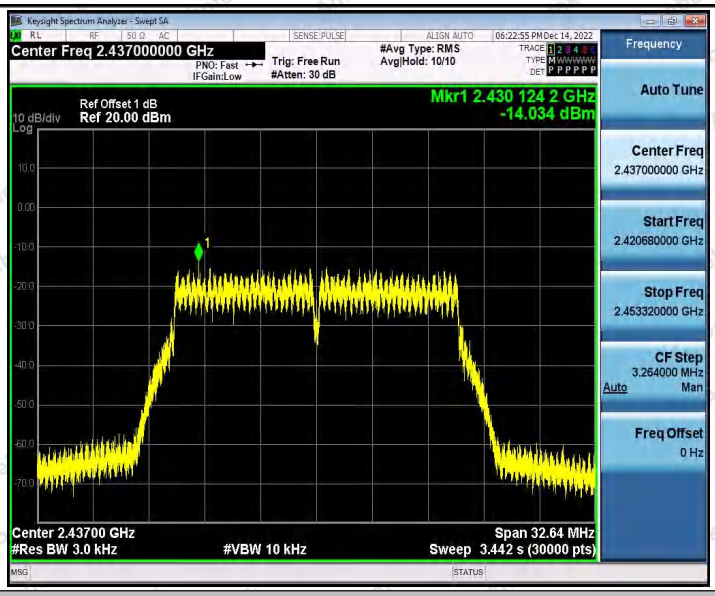
11B_Ant1_2437

11B_Ant1_2462

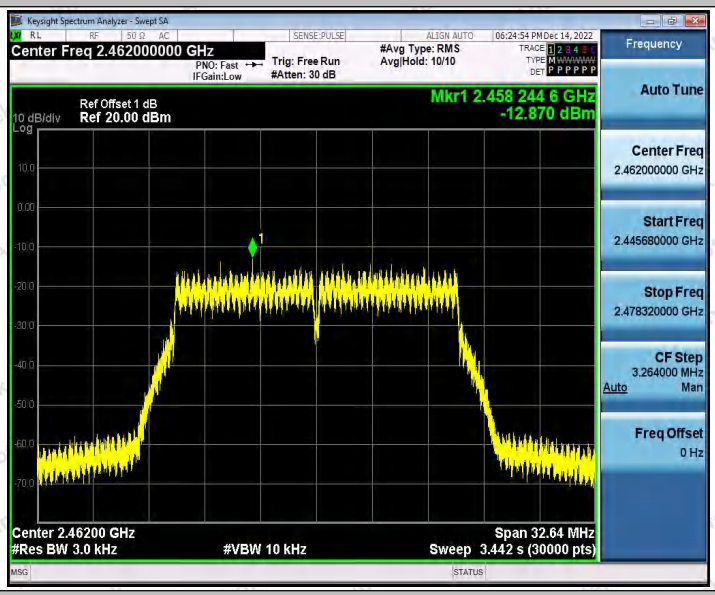
11G_Ant1_2412



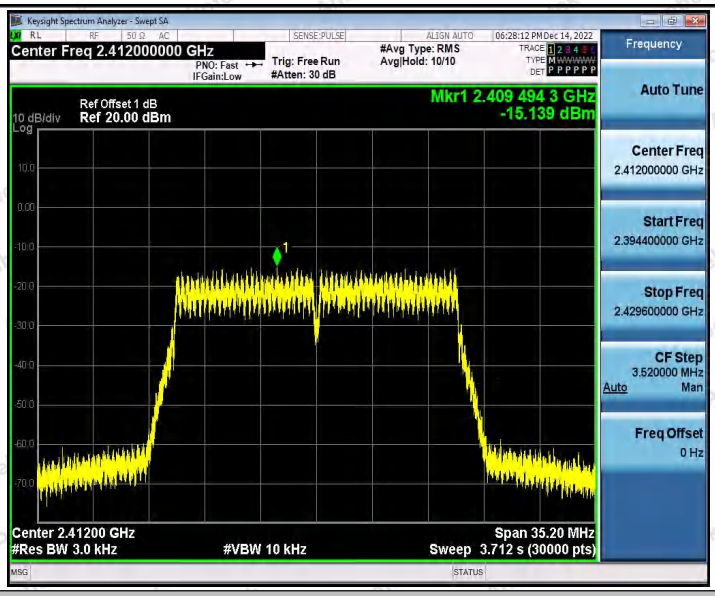
11G_Ant1_2437



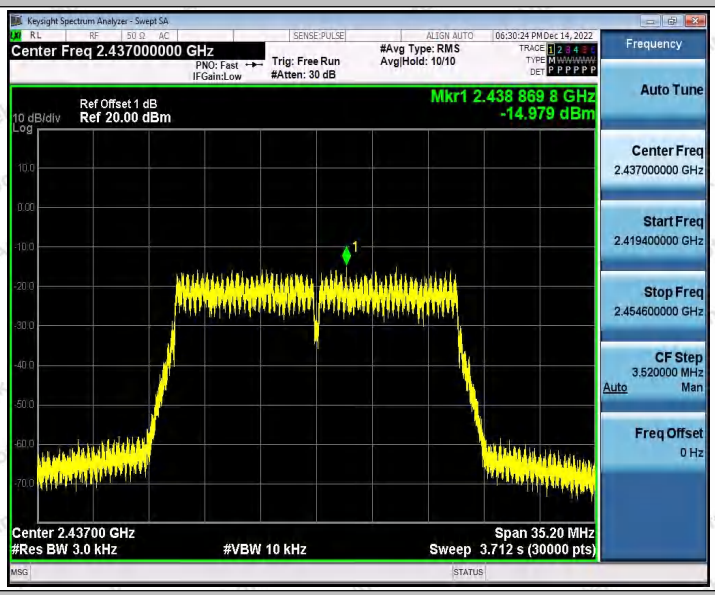
11G_Ant1_2462



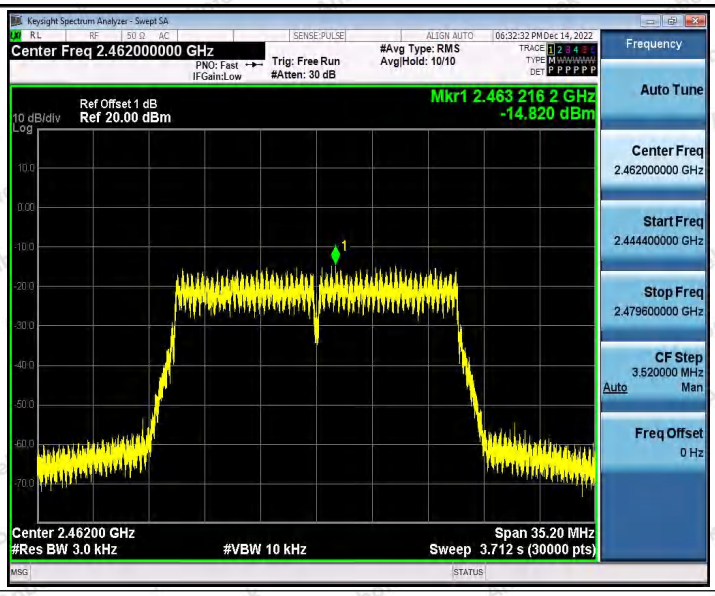
11N20_Ant1_2412



11N20_Ant1_2437



11N20_Ant1_2462


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.462000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 10/10
06:32:32 PM Dec 14, 2022
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.444400000 GHz
Stop Freq
2.479600000 GHz
CF Step
3.520000 MHz
Auto
Man
Freq Offset
0 Hz
Ref Offset 1 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.463 216 2 GHz
-14.820 dBm
Center 2.46200 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 35.20 MHz
Sweep 3.712 s (30000 pts)

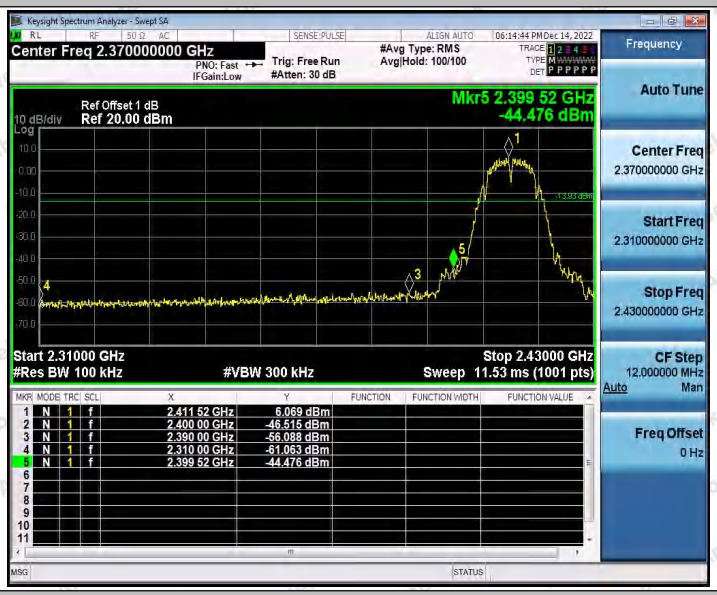
Appendix E: Band edge measurements

Test Result

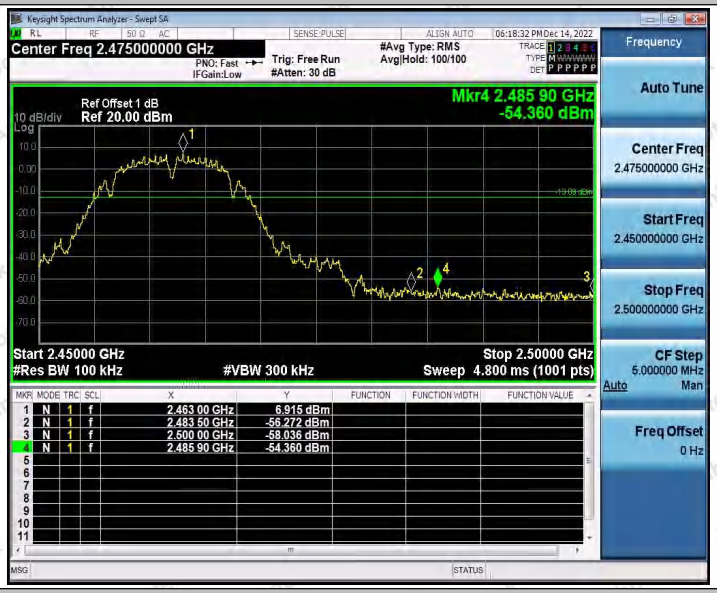
TestMode	Antenna	ChName	Frequency [MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	6.07	-44.48	≤-13.93	PASS
		High	2462	6.92	-54.36	≤-13.09	PASS
11G	Ant1	Low	2412	-0.62	-44.83	≤-20.62	PASS
		High	2462	-0.12	-50.68	≤-20.12	PASS
11N20	Ant1	Low	2412	-1.04	-42.09	≤-21.04	PASS
		High	2462	-0.13	-48.35	≤-20.13	PASS

Test Graphs

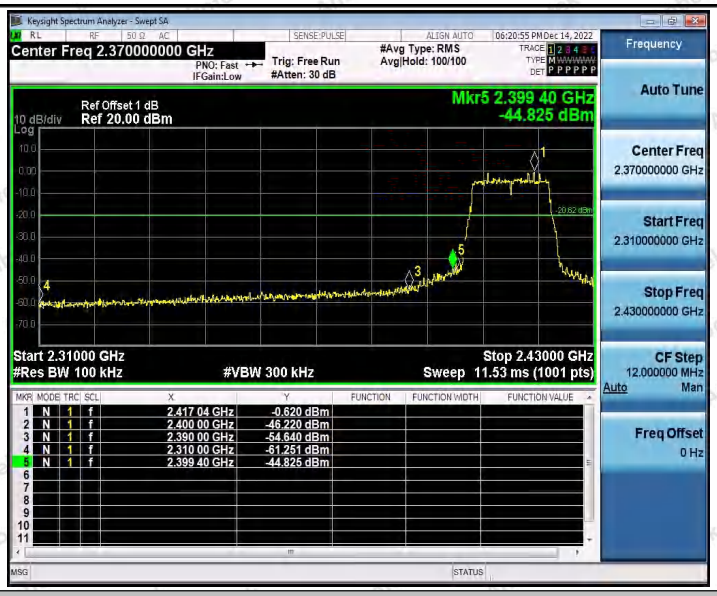
11B_Ant1_Low_2412



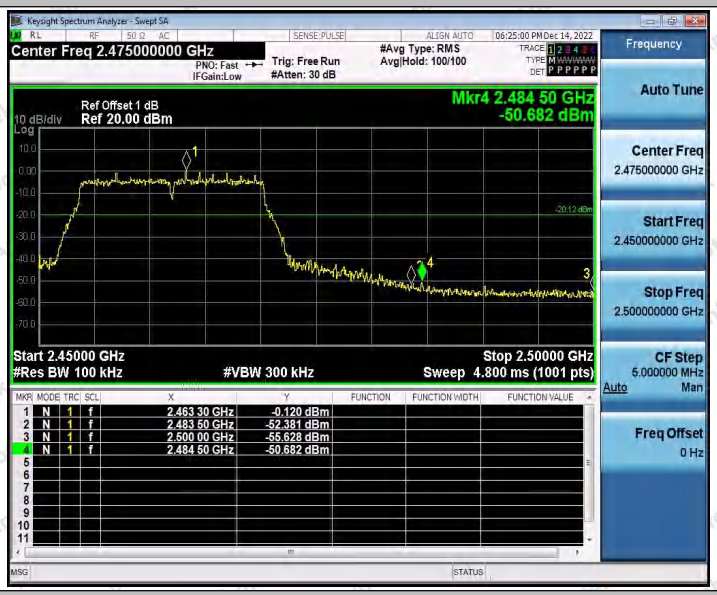
11B_Ant1_High_2462



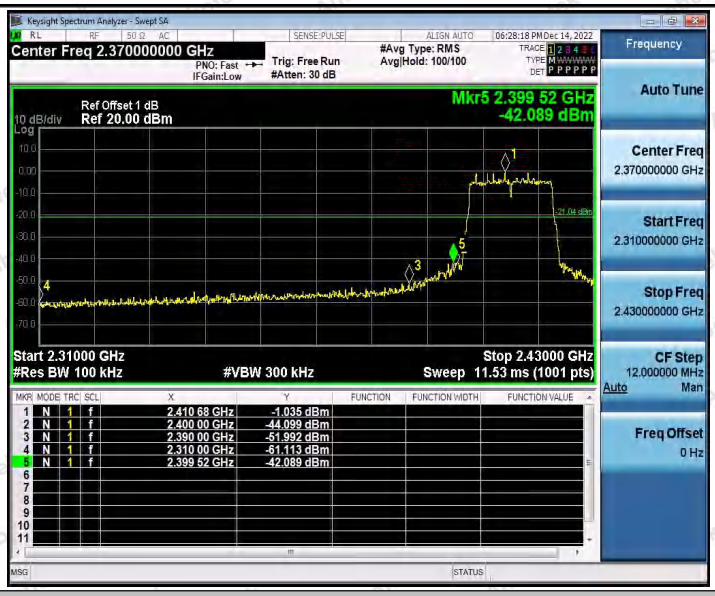
11G_Ant1_Low_2412



11G_Ant1_High_2462



11N20_Ant1_Low_2412



11N20_Ant1_High_2462

Appendix F: Conducted Spurious Emission

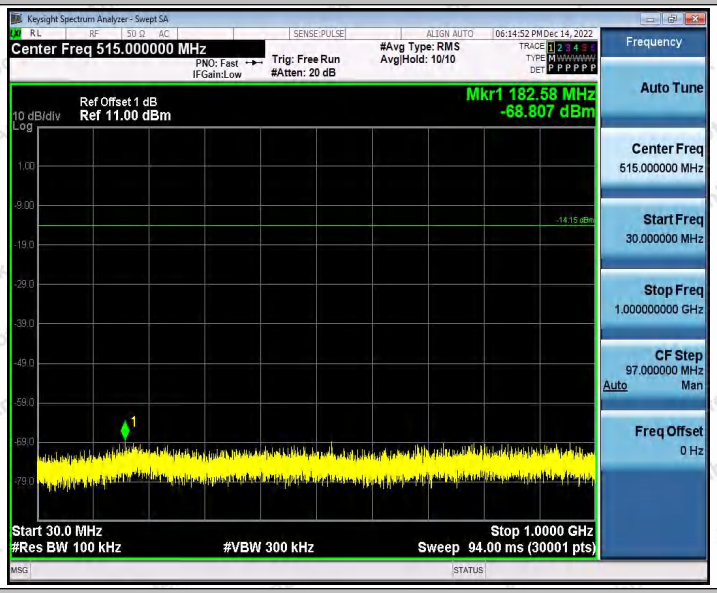
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	5.85	5.85	---	PASS
			30~1000	5.85	-68.81	≤-14.15	PASS
			1000~26500	5.85	-48.41	≤-14.15	PASS
		2437	Reference	5.44	5.44	---	PASS
			30~1000	5.44	-68.5	≤-14.56	PASS
			1000~26500	5.44	-52.96	≤-14.56	PASS
		2462	Reference	6.01	6.01	---	PASS
			30~1000	6.01	-68.42	≤-13.99	PASS
			1000~26500	6.01	-51.44	≤-13.99	PASS
11G	Ant1	2412	Reference	-1.70	-1.70	---	PASS
			30~1000	-1.70	-68.75	≤-21.7	PASS
			1000~26500	-1.70	-53.07	≤-21.7	PASS
		2437	Reference	-1.69	-1.69	---	PASS
			30~1000	-1.69	-68.99	≤-21.69	PASS
			1000~26500	-1.69	-53.16	≤-21.69	PASS
		2462	Reference	-1.61	-1.61	---	PASS
			30~1000	-1.61	-68.94	≤-21.61	PASS
			1000~26500	-1.61	-53.48	≤-21.61	PASS
11N20	Ant1	2412	Reference	-0.64	-0.64	---	PASS
			30~1000	-0.64	-68.71	≤-20.64	PASS
			1000~26500	-0.64	-45.23	≤-20.64	PASS
		2437	Reference	-2.77	-2.77	---	PASS
			30~1000	-2.77	-68.81	≤-22.77	PASS
			1000~26500	-2.77	-53	≤-22.77	PASS
		2462	Reference	-1.32	-1.32	---	PASS
			30~1000	-1.32	-68.48	≤-21.32	PASS
			1000~26500	-1.32	-52.77	≤-21.32	PASS

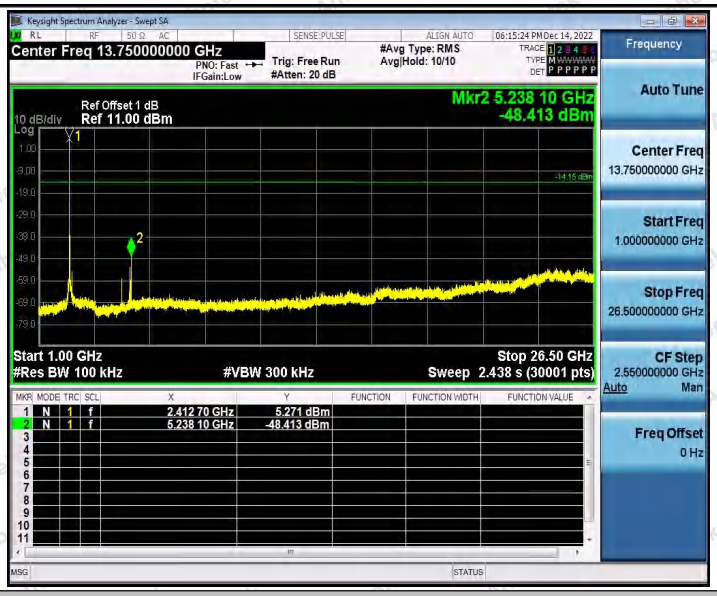
Test Graphs

11B_Ant1_2412_0~Reference

11B_Ant1_2412_30~1000

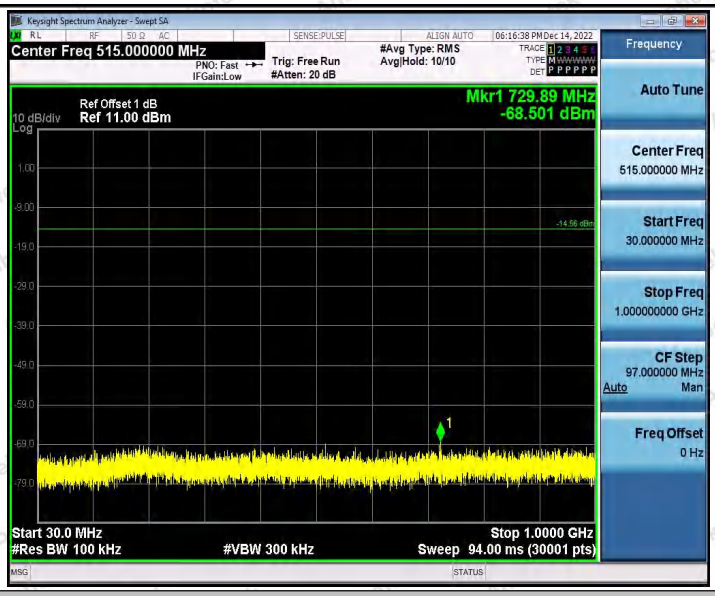


11B_Ant1_2412_1000~26500

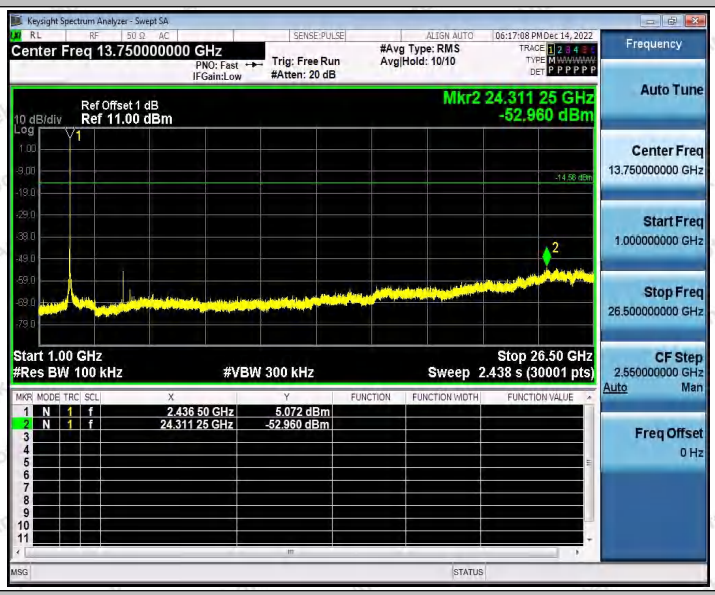


11B_Ant1_2437_0~Reference

11B_Ant1_2437_30~1000

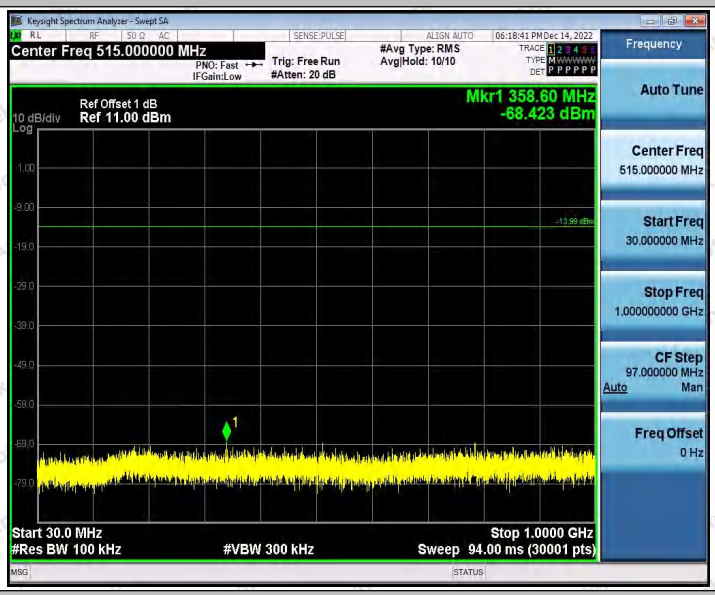


11B_Ant1_2437_1000~26500

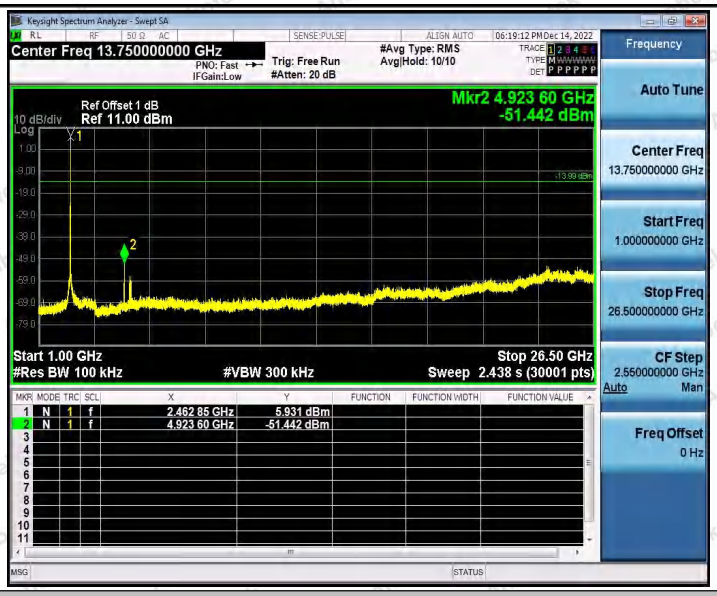


11B_Ant1_2462_0~Reference

11B_Ant1_2462_30~1000

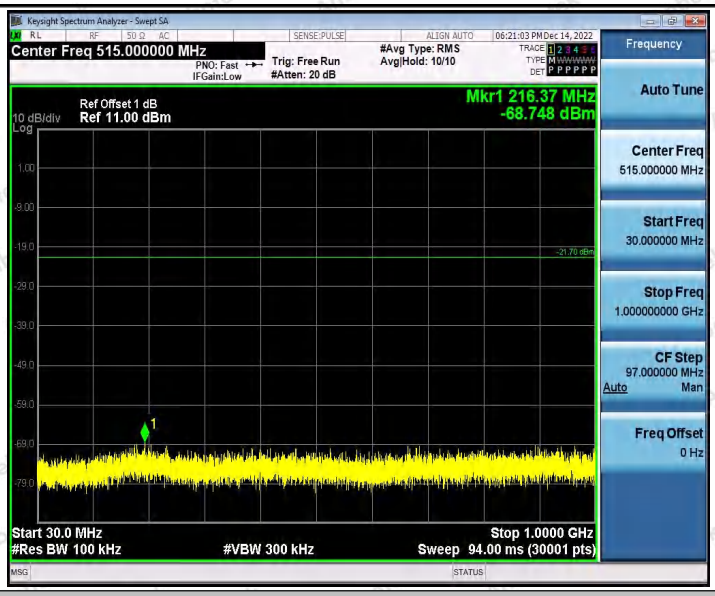


11B_Ant1_2462_1000~26500

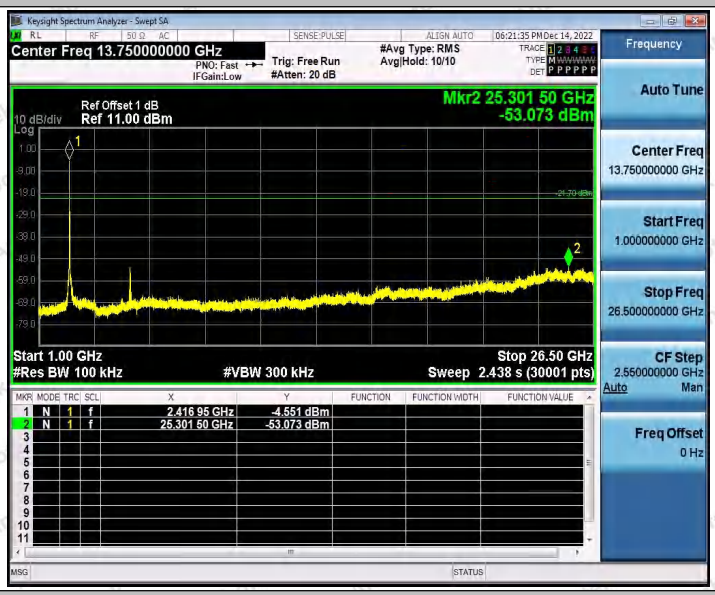


11G_Ant1_2412_0~Reference

11G_Ant1_2412_30~1000

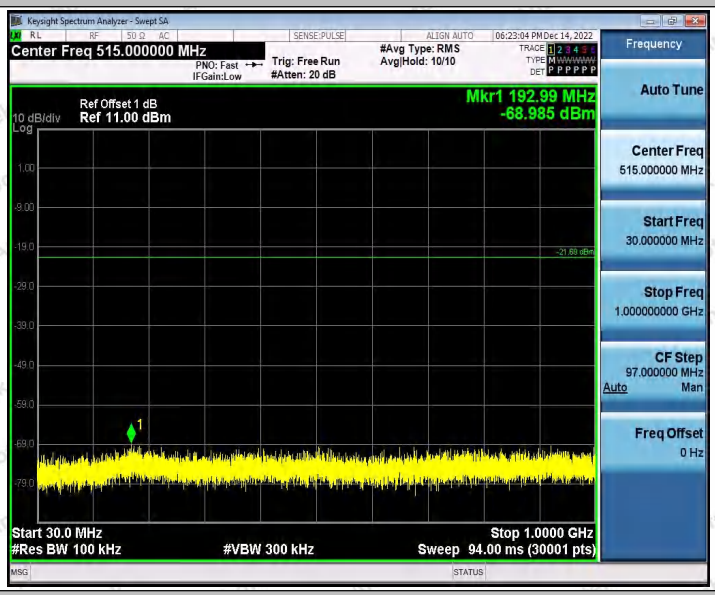


11G_Ant1_2412_1000~26500

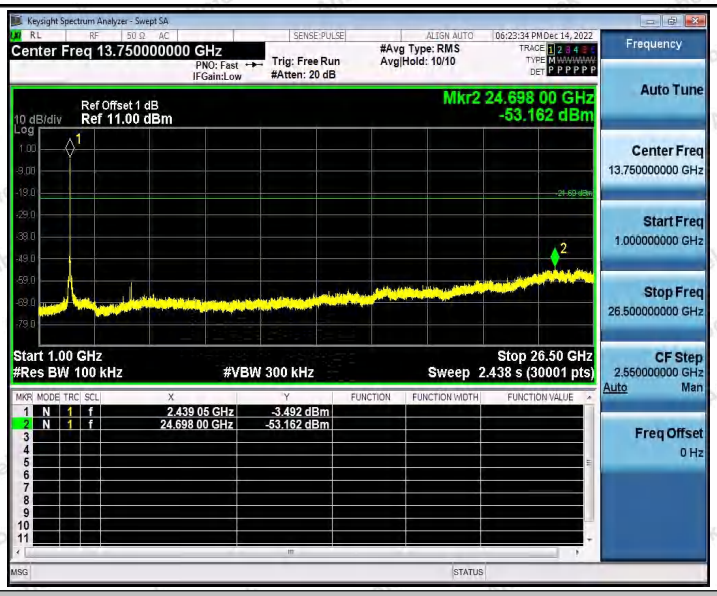


11G_Ant1_2437_0~Reference

11G_Ant1_2437_30~1000

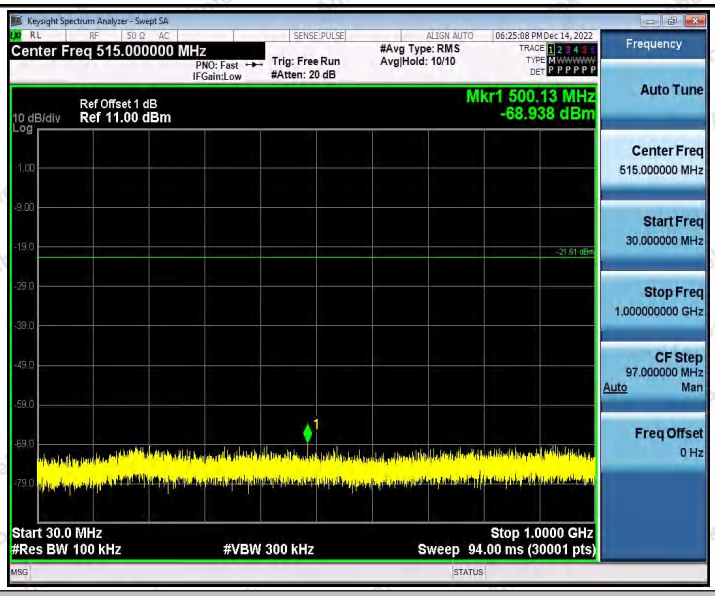


11G_Ant1_2437_1000~26500

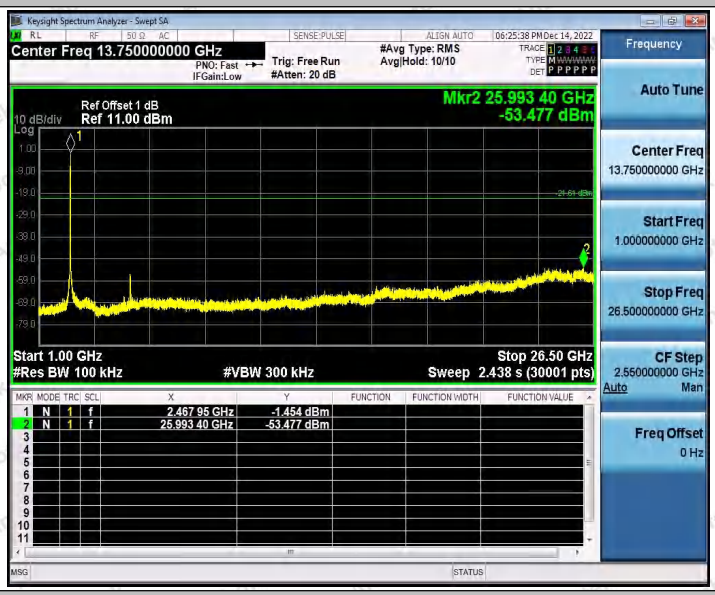


11G_Ant1_2462_0~Reference

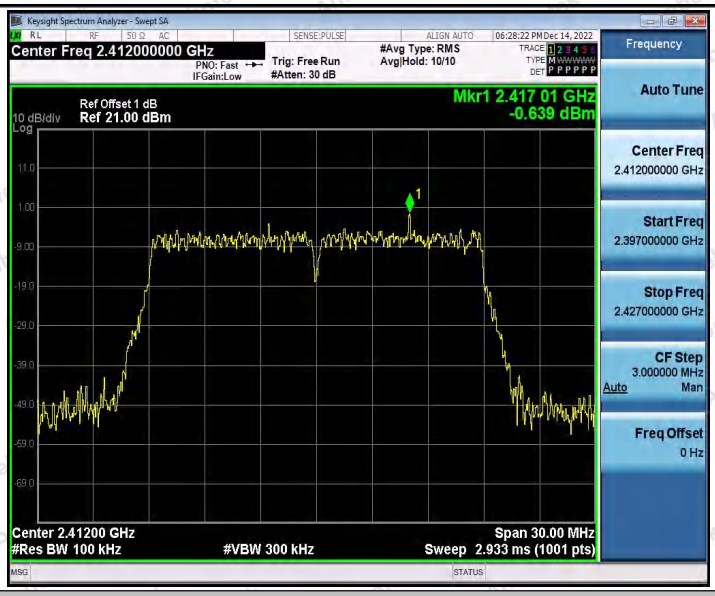
11G_Ant1_2462_30~1000



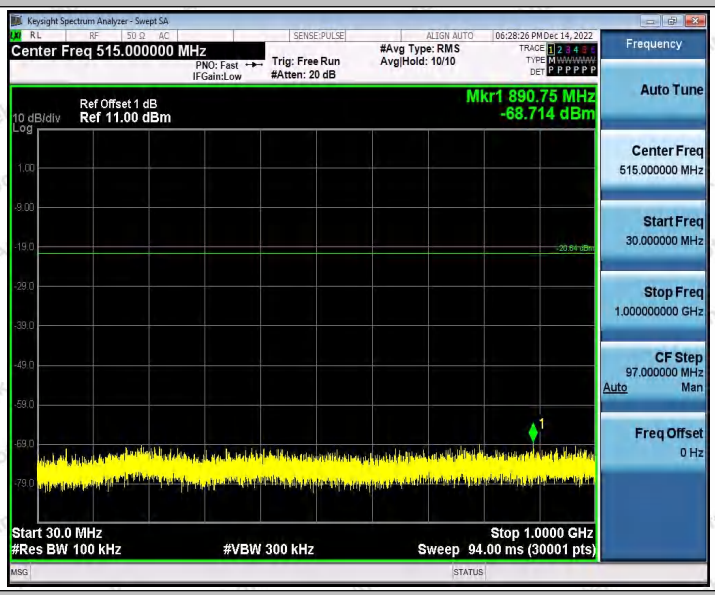
11G_Ant1_2462_1000~26500



11N20_Ant1_2412_0~Reference



11N20_Ant1_2412_30~1000



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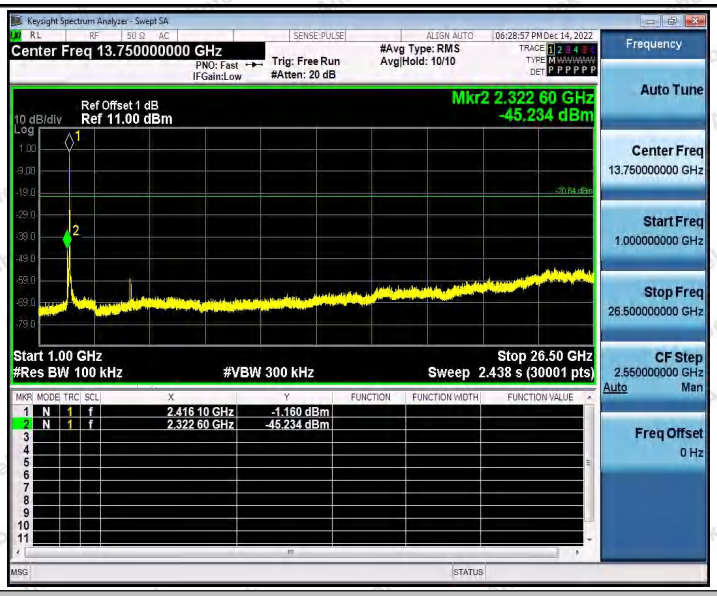
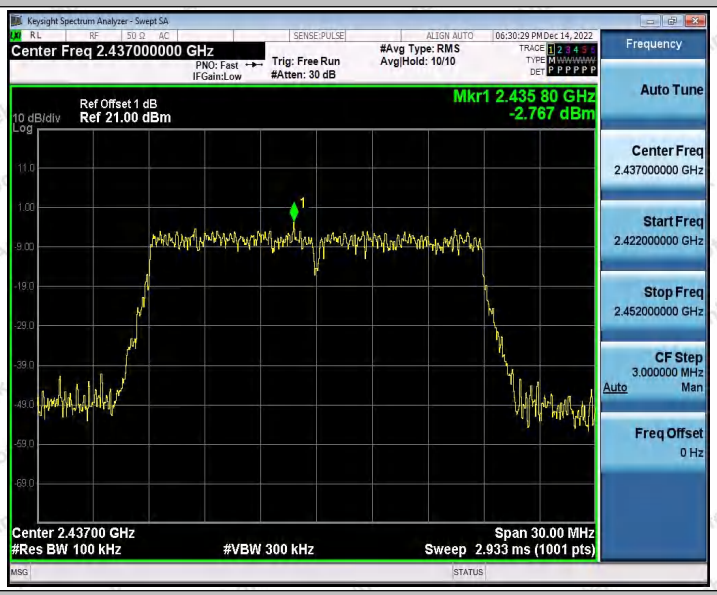
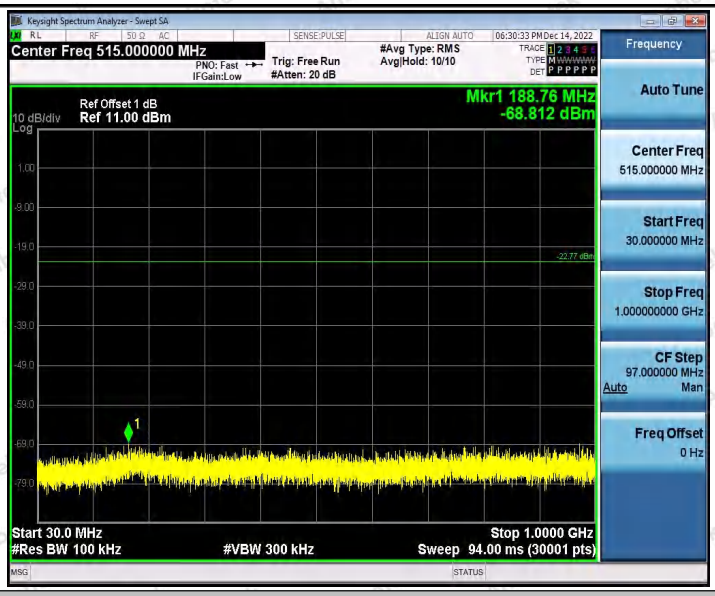


11N20_Ant1_2437_0~Reference



11N20_Ant1_2437_30~1000



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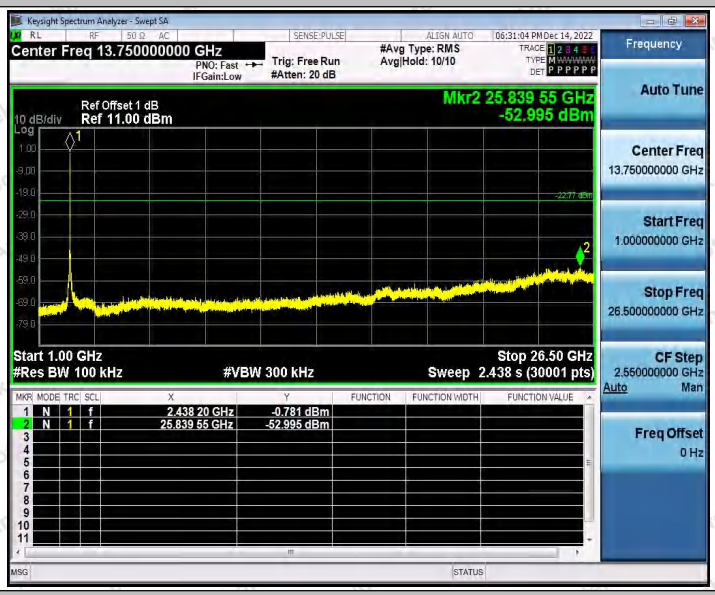
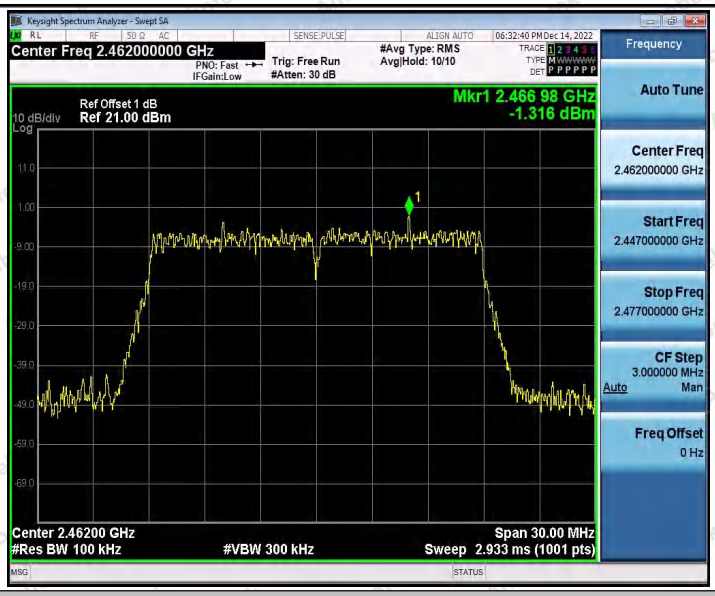
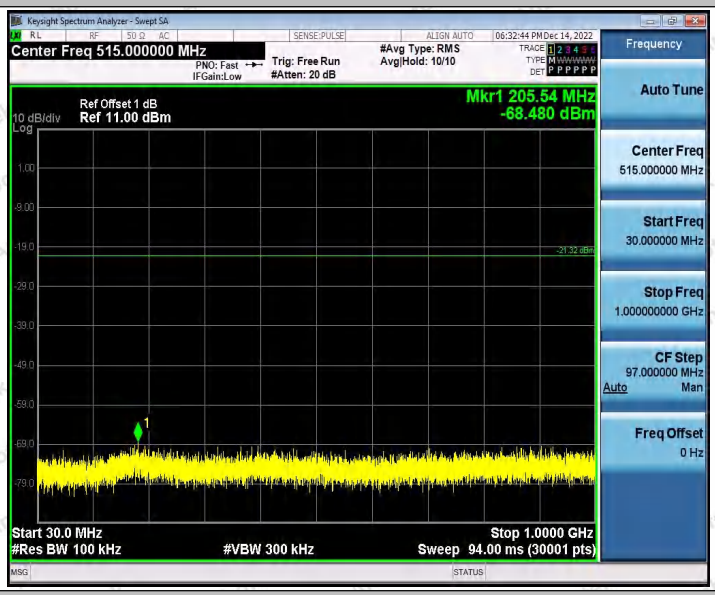


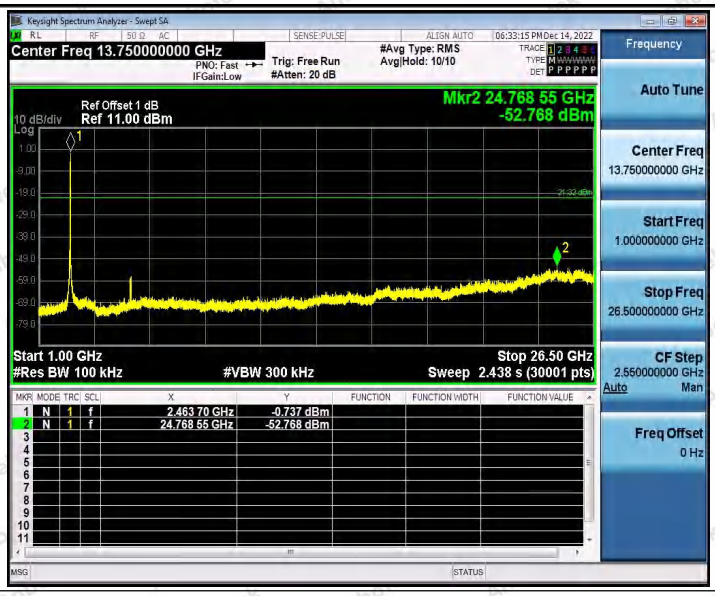
11N20_Ant1_2462_0~Reference



11N20_Ant1_2462_30~1000



11N20_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
06:33:15 PM Dec 14, 2022
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
Mkr2 24.768 55 GHz
-52.768 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 2.463 70 GHz -0.737 dBm
2 N 1 f 24.768 55 GHz -52.768 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

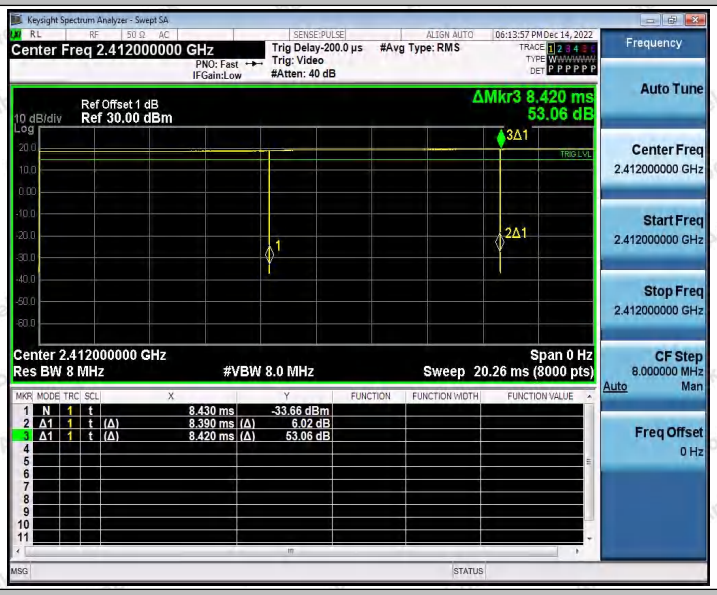
Appendix G: Duty Cycle

Test Result

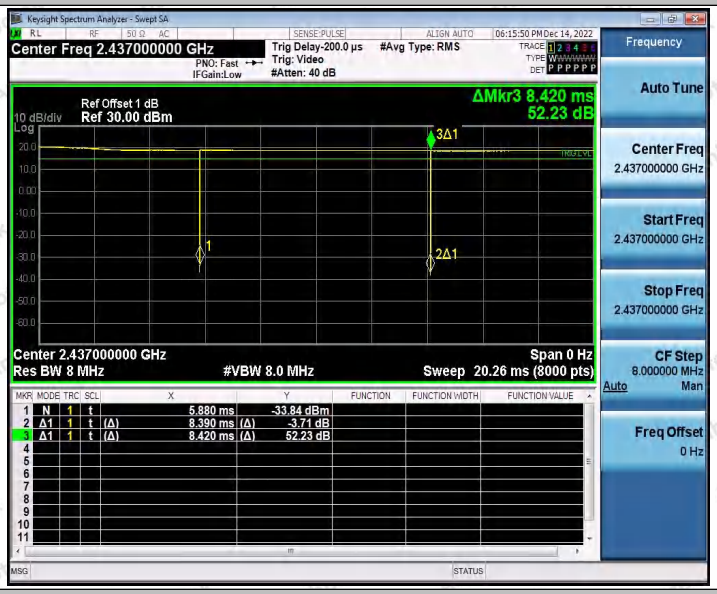
TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	8.39	8.42	99.64	0.02
		2437	8.39	8.42	99.64	0.02
		2462	8.38	8.41	99.64	0.02
11G	Ant1	2412	1.39	1.42	97.89	0.09
		2437	1.39	1.43	97.20	0.12
		2462	1.39	1.42	97.89	0.09
11N20	Ant1	2412	1.30	1.33	97.74	0.10
		2437	1.30	1.34	97.01	0.13
		2462	1.30	1.33	97.74	0.10

Test Graphs

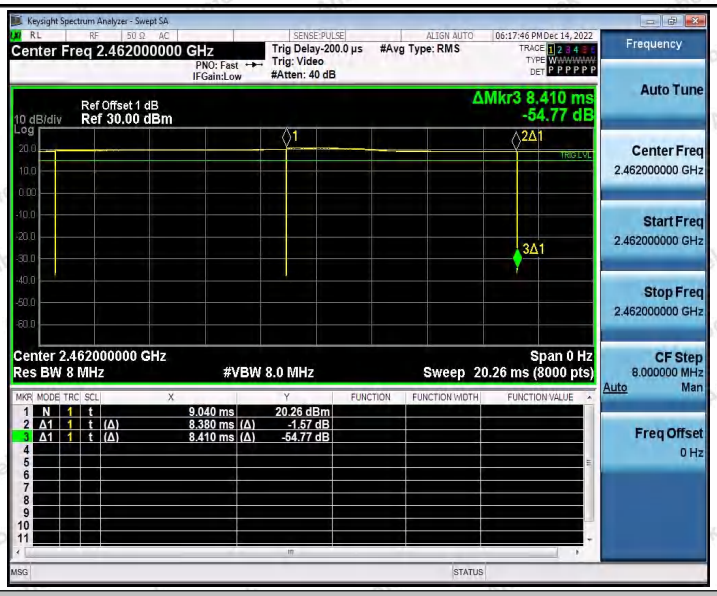
11B_Ant1_2412



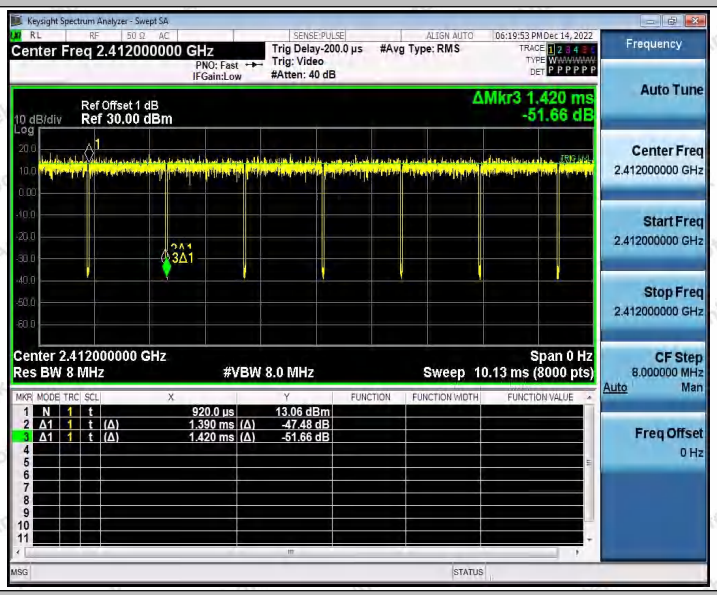
11B_Ant1_2437



11B_Ant1_2462



11G_Ant1_2412



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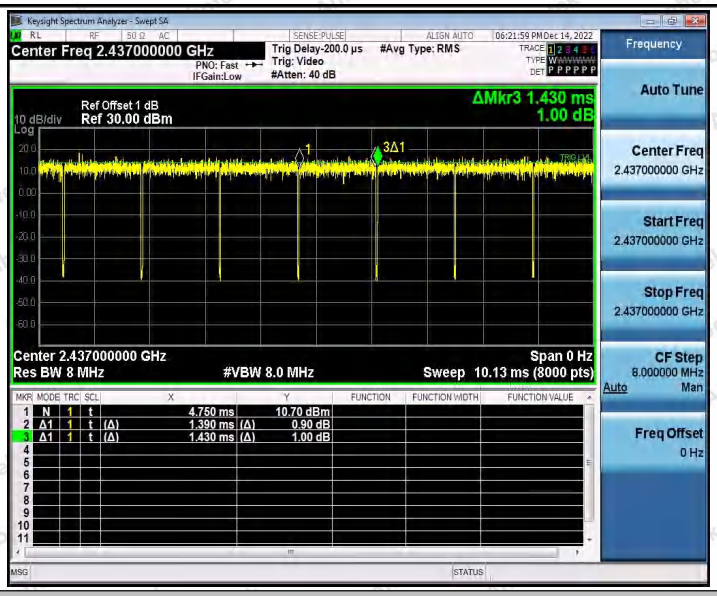

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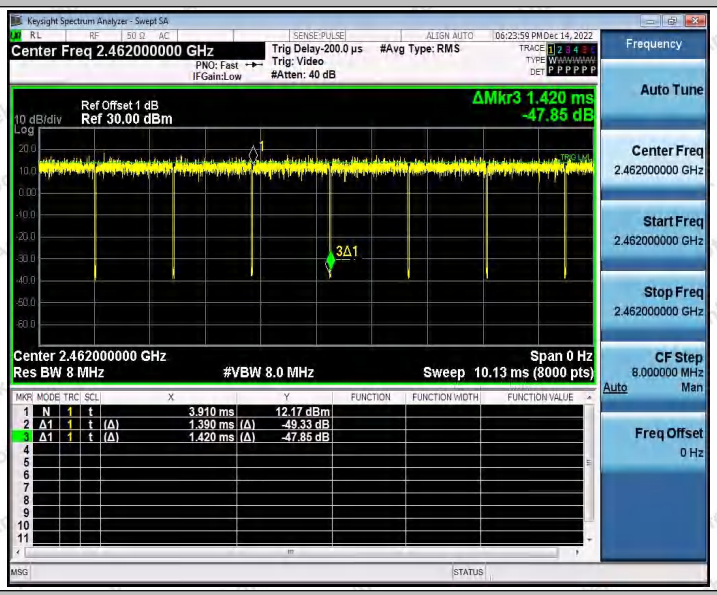
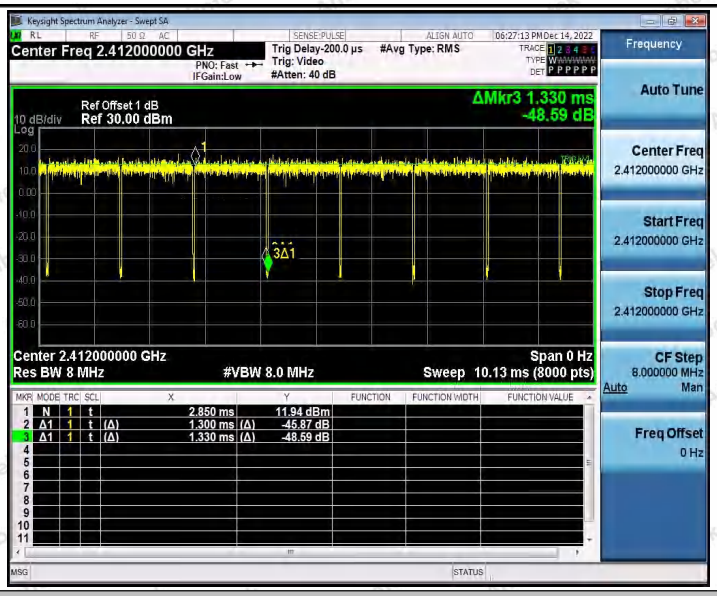
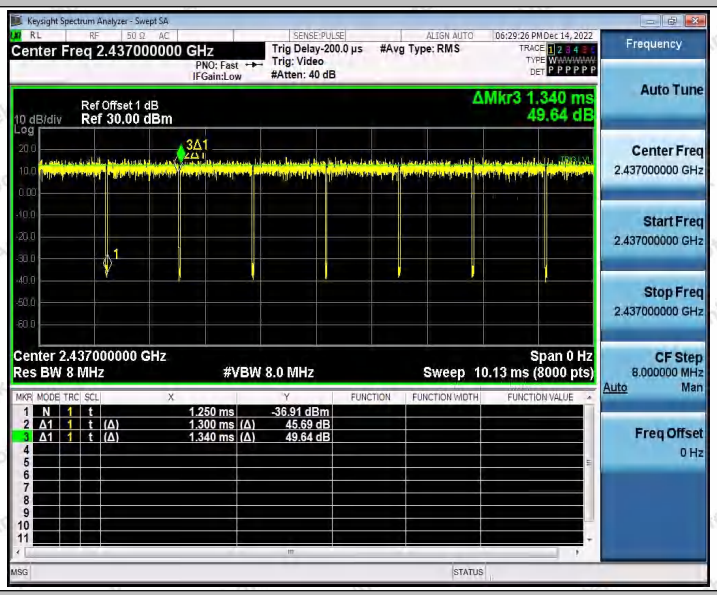


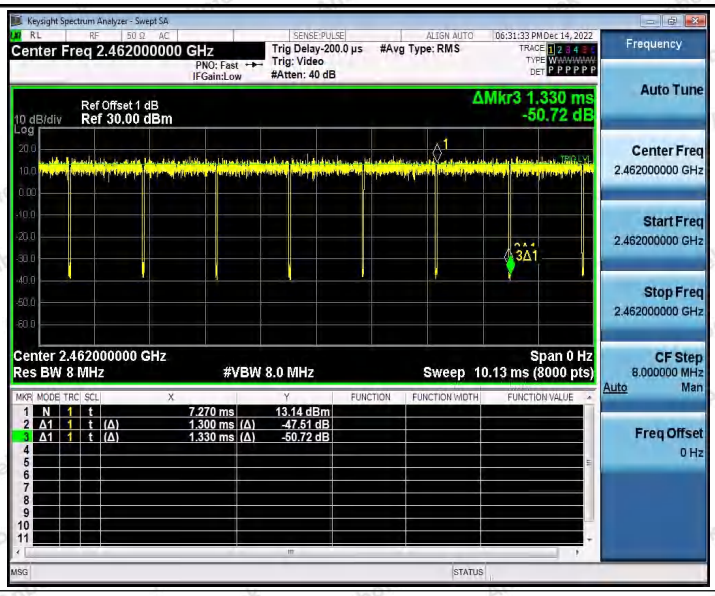
11N20_Ant1_2412



11N20_Ant1_2437



11N20_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
06:31:33 PM Dec 14, 2022
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
Ref Offset 1 dB
10 dB/div Ref 30.00 dBm
ΔMkr3 1.330 ms
-50.72 dB
Center 2.462000000 GHz
Res BW 8 MHz
#VBW 8.0 MHz
Span 0 Hz
Sweep 10.13 ms (8000 pts)
1 N 1 t 7.270 ms 13.14 dBm
2 Δ1 1 t (Δ) 1.300 ms (Δ) -47.51 dB
3 Δ1 1 t (Δ) 1.330 ms (Δ) -50.72 dB

---End---