Appendix Test Data

Report No.:	18220WC20274303	Test Sample No.:	1-2-2
Start Test Date:	2022.11.30	Finish Test Date:	2022.12.26
Test Engineer:	Tony.He	Auditor:	Edward.Pan
Temperature:	24.3C°	Relative Humidity:	37 %
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	9.560	2407.000	2416.560	≥0.5	PASS
		2437	9.560	2431.960	2441.520	≥0.5	PASS
		2462	9.120	2457.440	2466.560	≥0.5	PASS
11G	Ant1	2412	15.440	2403.840	2419.280	≥0.5	PASS
		2437	16.040	2428.880	2444.920	≥0.5	PASS
		2462	15.960	2453.840	2469.800	≥0.5	PASS
11N20	Ant1	2412	15.000	2404.480	2419.480	≥0.5	PASS
		2437	15.400	2429.160	2444.560	≥0.5	PASS
		2462	15.080	2454.440	2469.520	≥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
04:50:43 PM Dec 09, 2022
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
Ref Offset 1 dB
10 dB/div Ref 30.00 dBm
ΔMkr3 15.08 MHz
0.340 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 2.454 44 GHz -1.397 dBm
2 N 1 f 2.460 72 GHz 2.997 dBm
3 Δ1 1 f (Δ) 15.08 MHz (Δ) 0.340 dB

Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.009	2405.4371	2418.4461	---	---
		2437	13.000	2430.4514	2443.4514	---	---
		2462	12.867	2455.5473	2468.4143	---	---
11G	Ant1	2412	16.945	2403.4391	2420.3841	---	---
		2437	17.179	2428.3146	2445.4936	---	---
		2462	17.059	2453.4141	2470.4731	---	---
11N20	Ant1	2412	17.849	2403.0013	2420.8503	---	---
		2437	18.042	2427.9262	2445.9682	---	---
		2462	17.906	2453.0352	2470.9412	---	---

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
Ref Offset 1 dB
10 dB/div
Ref 30.00 dBm
Mkr1 2.463 GHz
6.5424 dBm
Center 2.462 GHz
#Res BW 430 kHz
#VBW 1.3 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.906 MHz
Total Power 19.3 dBm
Transmit Freq Error -11.774 kHz
OBW Power 99.00 %
x dB Bandwidth 28.73 MHz
x dB -26.00 dB
Frequency
Center Freq
2.462000000 GHz
CF Step
4.000000 MHz
Auto Man
Freq Offset
0 Hz

Appendix C: Maximum conducted output power

Test Result Peak

TestMode	Antenna	Frequency[MHz]	Peak Power[dBm]	Conducted Limit[dBm]
11B	Ant1	2412	17.68	≤30.00
		2437	17.52	≤30.00
		2462	18.12	≤30.00
11G	Ant1	2412	18.25	≤30.00
		2437	19.75	≤30.00
		2462	20.37	≤30.00
11N20	Ant1	2412	18.17	≤30.00
		2437	19.69	≤30.00
		2462	20.38	≤30.00

Appendix D: Maximum power spectral density

Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-7.83	≤8.00	PASS
		2437	-6.8	≤8.00	PASS
		2462	-7.22	≤8.00	PASS
11G	Ant1	2412	-12.9	≤8.00	PASS
		2437	-10.82	≤8.00	PASS
		2462	-11.54	≤8.00	PASS
11N20	Ant1	2412	-13.11	≤8.00	PASS
		2437	-11.56	≤8.00	PASS
		2462	-9.81	≤8.00	PASS

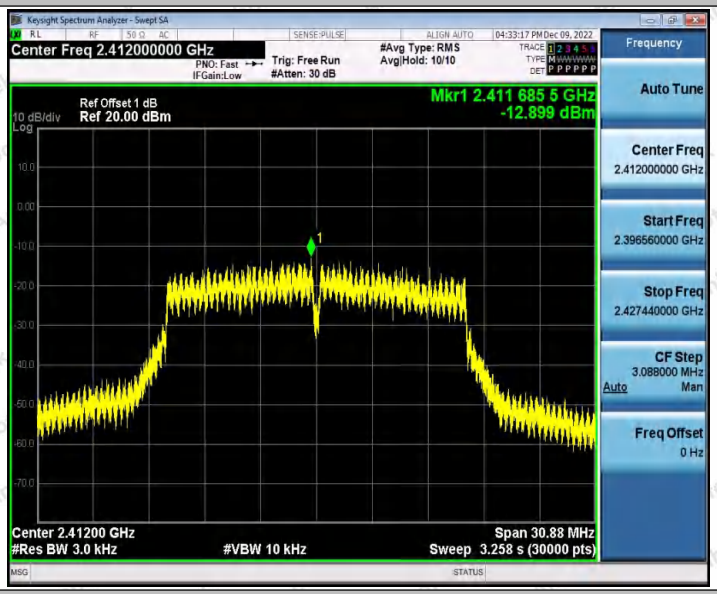
Test Graphs

11B_Ant1_2412

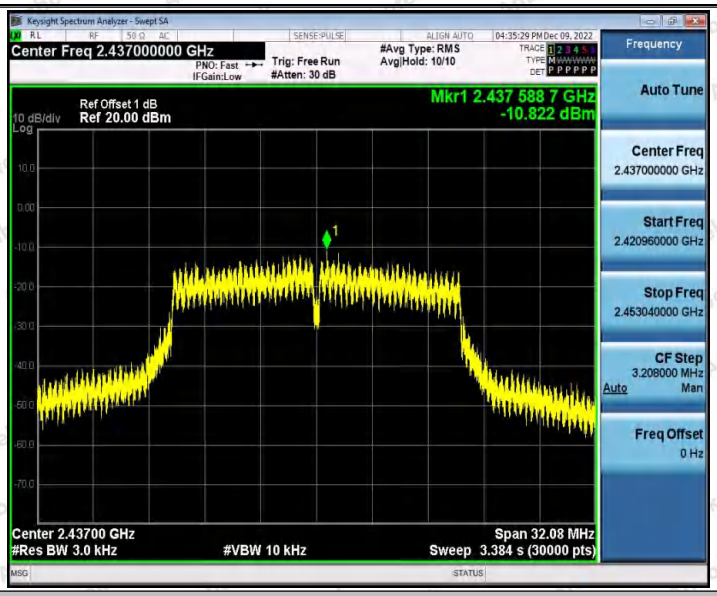
11B_Ant1_2437

11B_Ant1_2462

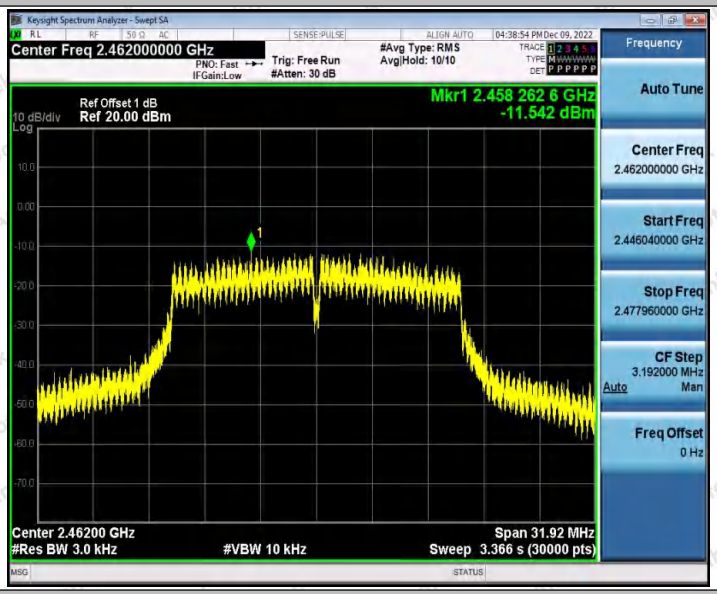
11G_Ant1_2412



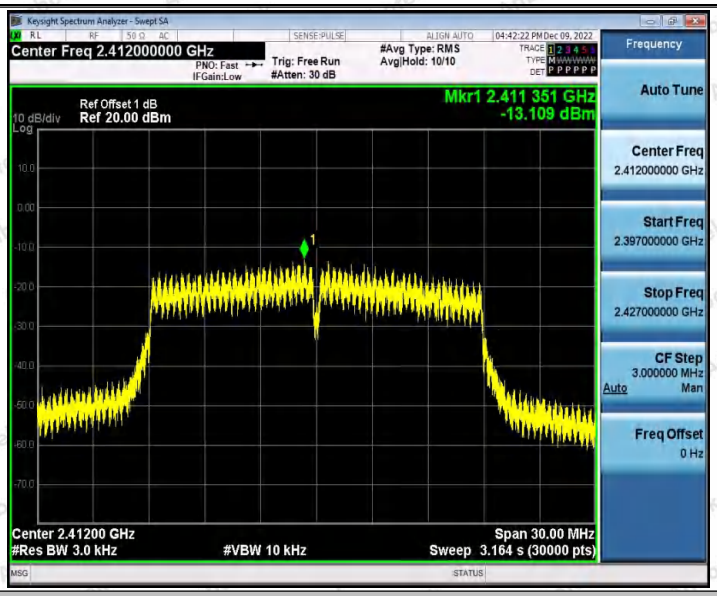
11G_Ant1_2437



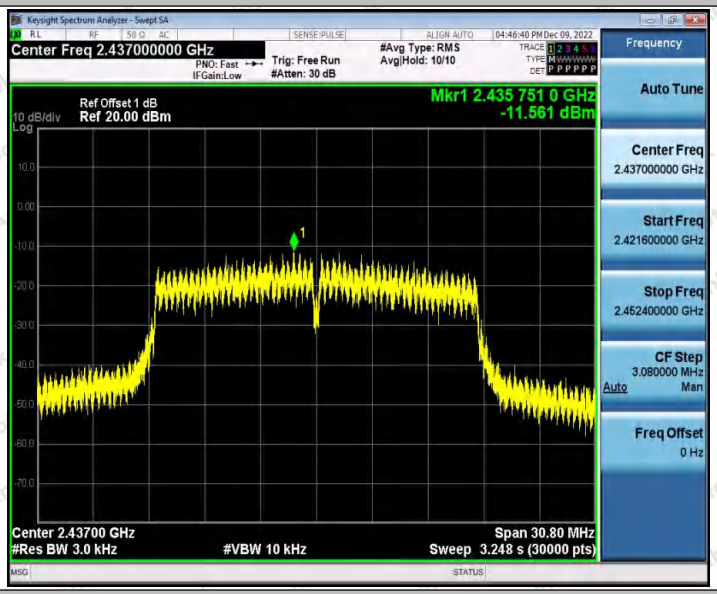
11G_Ant1_2462



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
Ref Offset 1 dB
10 dB/div
Ref 20.00 dBm
Mkr1 2.463 245 1 GHz
-9.805 dBm
Center 2.46200 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 30.16 MHz
Sweep 3.182 s (30000 pts)
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.446920000 GHz
Stop Freq
2.477080000 GHz
CF Step
3.016000 MHz
Auto
Man
Freq Offset
0 Hz

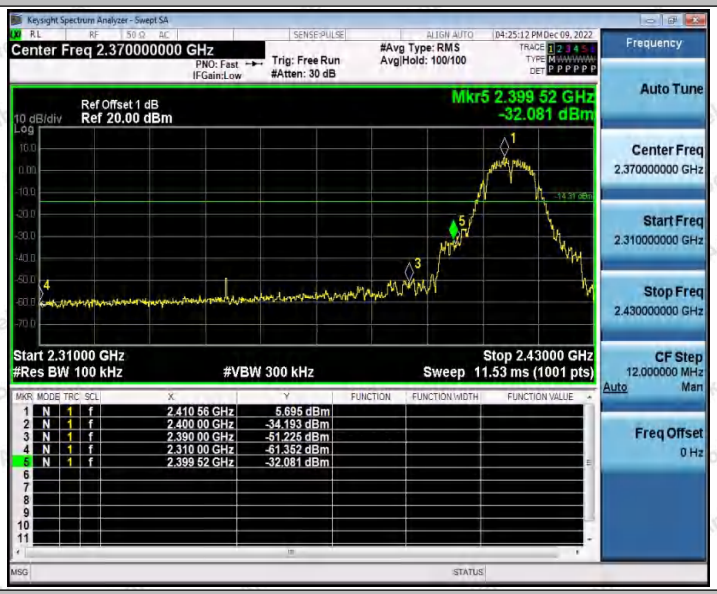
Appendix E: Band edge measurements

Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	5.70	-32.08	≤-14.31	PASS
		High	2462	6.14	-49.73	≤-13.86	PASS
11G	Ant1	Low	2412	1.22	-28.3	≤-18.78	PASS
		High	2462	2.74	-42.95	≤-17.26	PASS
11N20	Ant1	Low	2412	0.04	-28.57	≤-19.96	PASS
		High	2462	2.79	-39.25	≤-17.21	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

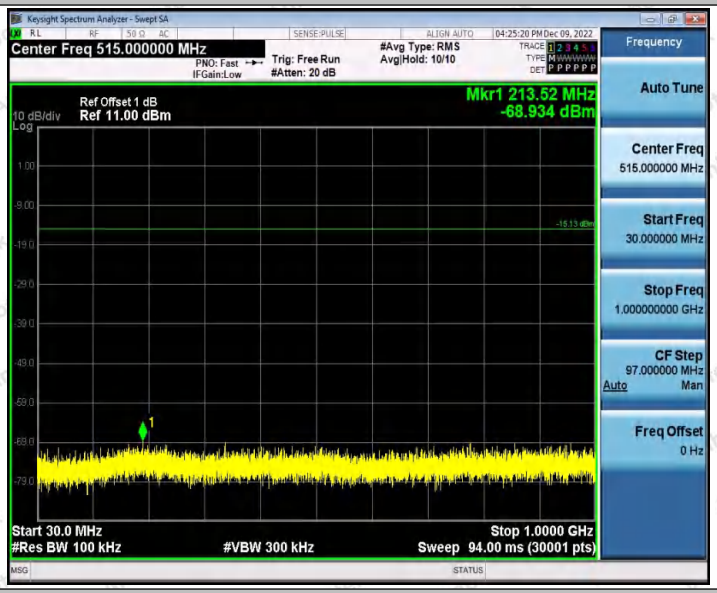
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	4.87	4.87	---	PASS
			30~1000	4.87	-68.93	≤-15.13	PASS
			1000~26500	4.87	-41.17	≤-15.13	PASS
		2437	Reference	4.13	4.13	---	PASS
			30~1000	4.13	-68.58	≤-15.87	PASS
			1000~26500	4.13	-40.49	≤-15.87	PASS
		2462	Reference	5.44	5.44	---	PASS
			30~1000	5.44	-68.33	≤-14.56	PASS
			1000~26500	5.44	-38.13	≤-14.56	PASS
11G	Ant1	2412	Reference	-2.64	-2.64	---	PASS
			30~1000	-2.64	-67.96	≤-22.64	PASS
			1000~26500	-2.64	-53.23	≤-22.64	PASS
		2437	Reference	2.84	2.84	---	PASS
			30~1000	2.84	-67.43	≤-17.16	PASS
			1000~26500	2.84	-45	≤-17.16	PASS
		2462	Reference	-0.01	-0.01	---	PASS
			30~1000	-0.01	-68.69	≤-20.01	PASS
			1000~26500	-0.01	-42.33	≤-20.01	PASS
11N20	Ant1	2412	Reference	-2.86	-2.86	---	PASS
			30~1000	-2.86	-68.8	≤-22.86	PASS
			1000~26500	-2.86	-45.02	≤-22.86	PASS
		2437	Reference	-1.12	-1.12	---	PASS
			30~1000	-1.12	-68.09	≤-21.12	PASS
			1000~26500	-1.12	-46.65	≤-21.12	PASS
		2462	Reference	0.77	0.77	---	PASS
			30~1000	0.77	-68.07	≤-19.23	PASS
			1000~26500	0.77	-44.4	≤-19.23	PASS

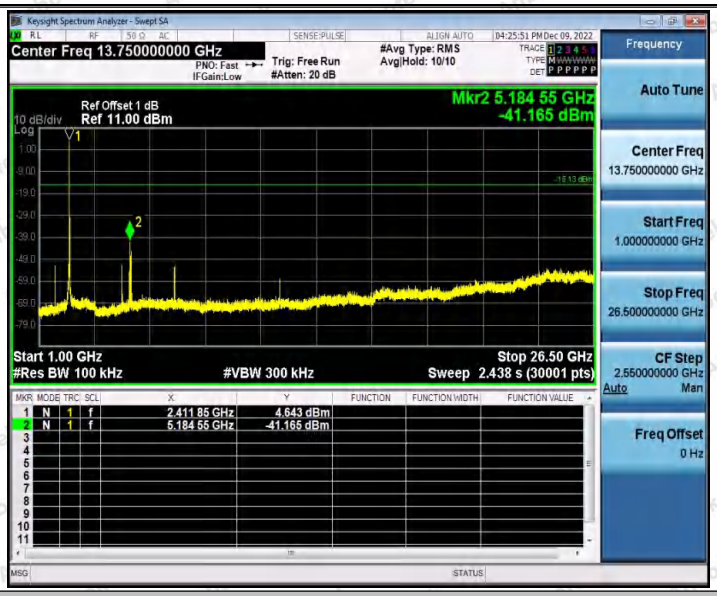
Test Graphs

11B_Ant1_2412_0~Reference

11B_Ant1_2412_30~1000

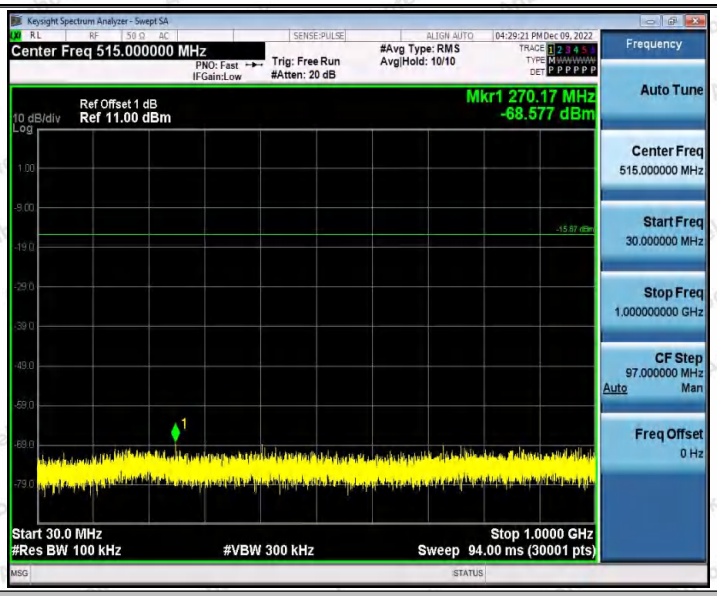


11B_Ant1_2412_1000~26500

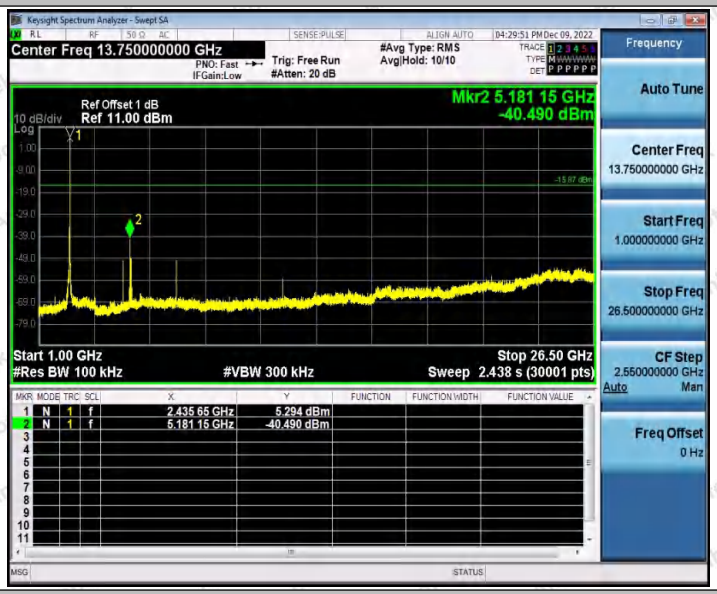


11B_Ant1_2437_0~Reference

11B_Ant1_2437_30~1000

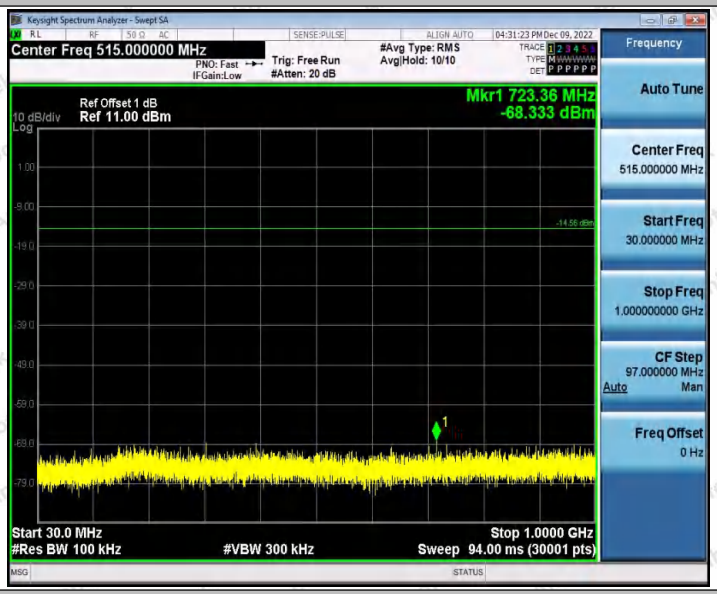


11B_Ant1_2437_1000~26500

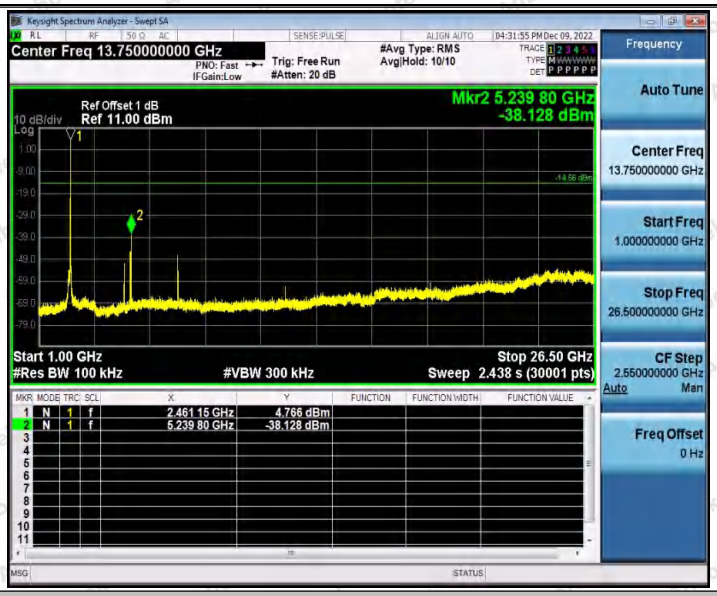


11B_Ant1_2462_0~Reference

11B_Ant1_2462_30~1000

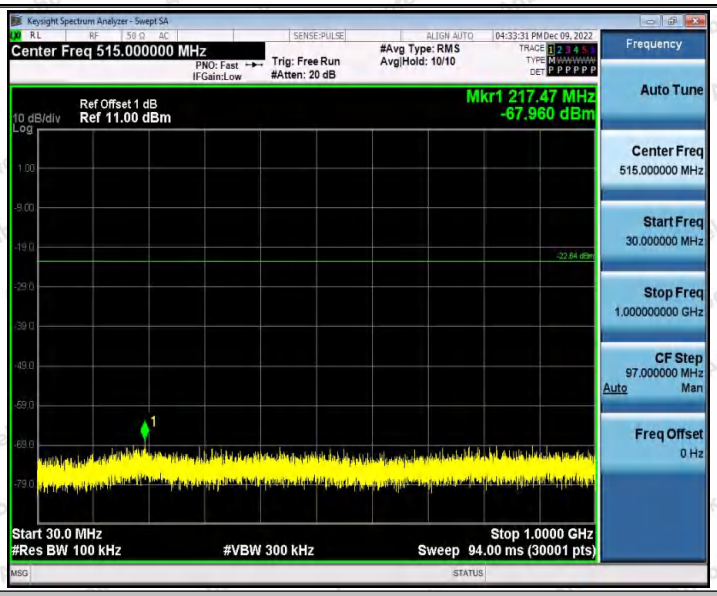


11B_Ant1_2462_1000~26500



11G_Ant1_2412_0~Reference

11G_Ant1_2412_30~1000

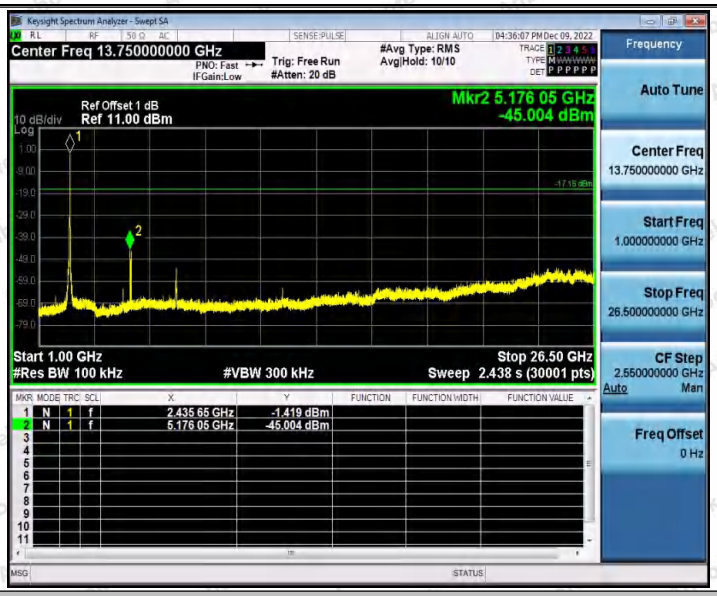


11G_Ant1_2412_1000~26500

11G_Ant1_2437_0~Reference

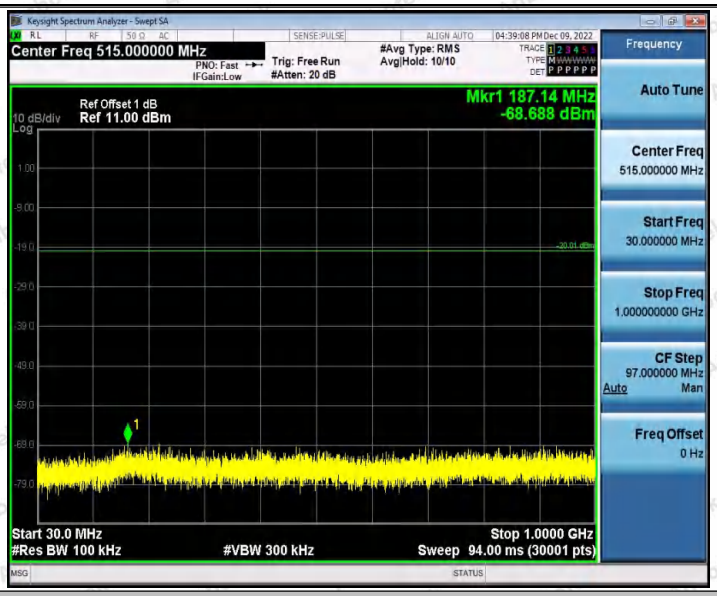
11G_Ant1_2437_30~1000

11G_Ant1_2437_1000~26500

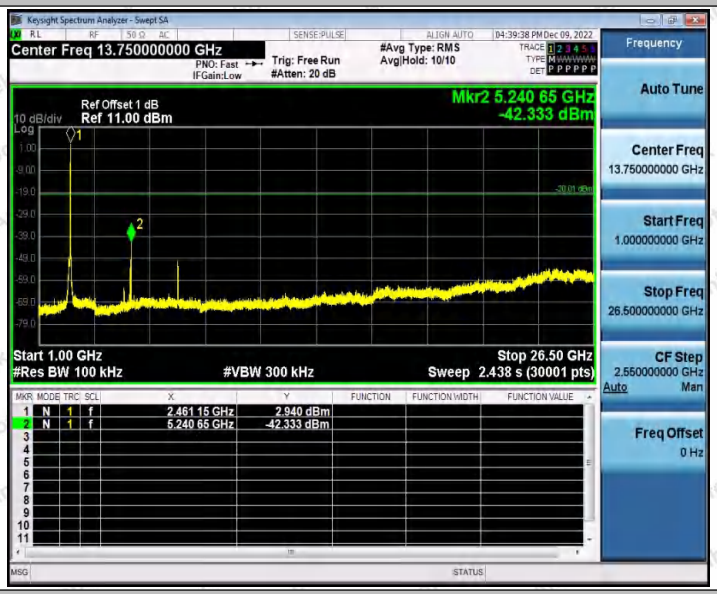


11G_Ant1_2462_0~Reference

11G_Ant1_2462_30~1000

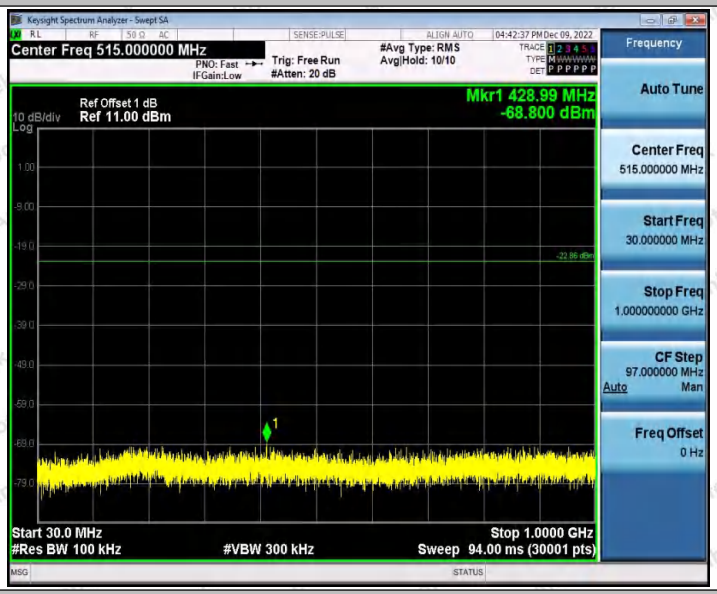


11G_Ant1_2462_1000~26500

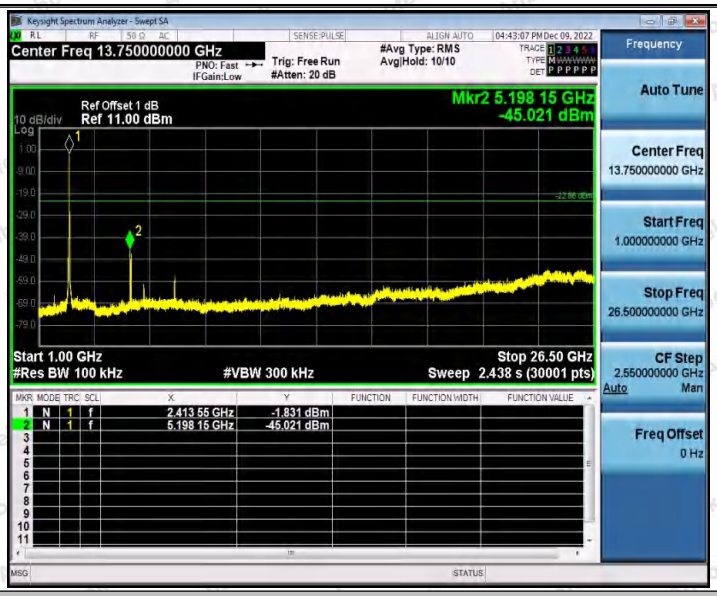


11N20_Ant1_2412_0~Reference

11N20_Ant1_2412_30~1000

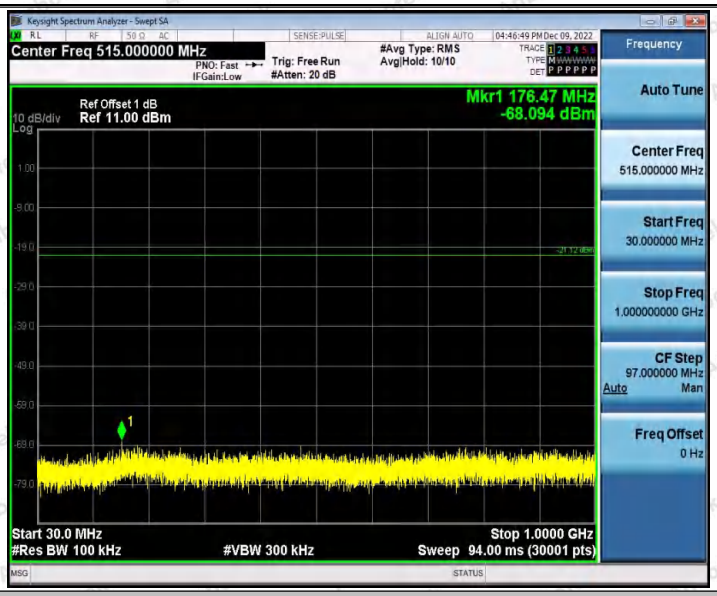


11N20_Ant1_2412_1000~26500

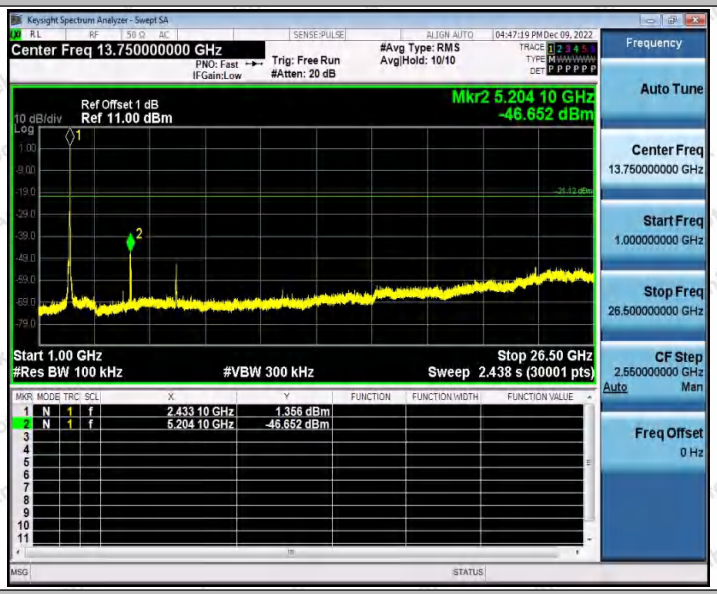


11N20_Ant1_2437_0~Reference

11N20_Ant1_2437_30~1000

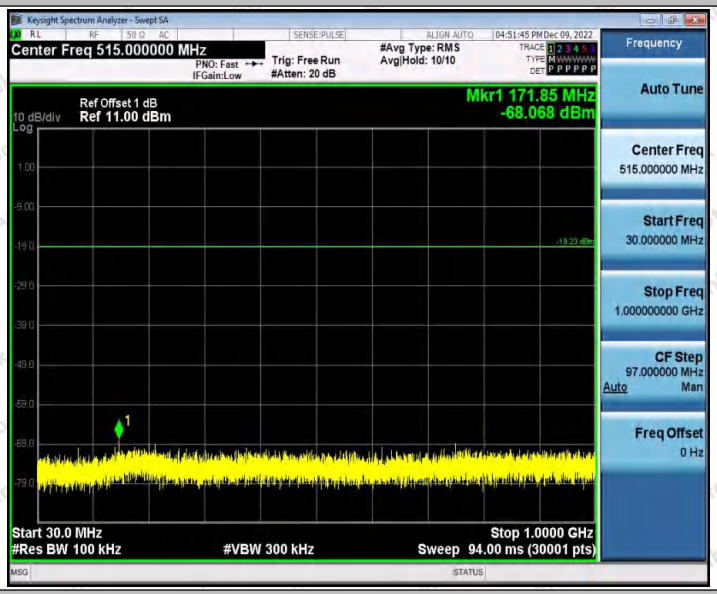


11N20_Ant1_2437_1000~26500

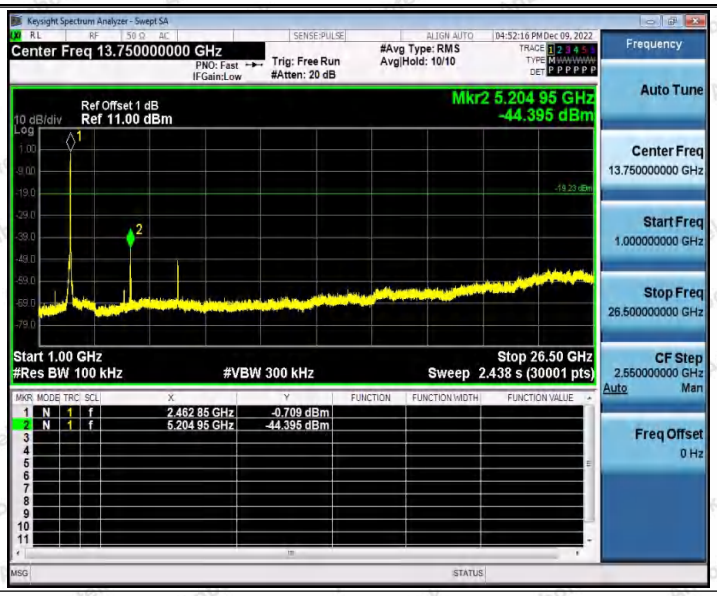


11N20_Ant1_2462_0~Reference

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
04:52:16 PM Dec 09, 2022
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
Mkr2 5.204 95 GHz
-44.395 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 2.462 85 GHz -0.709 dBm
2 N 1 f 5.204 95 GHz -44.395 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

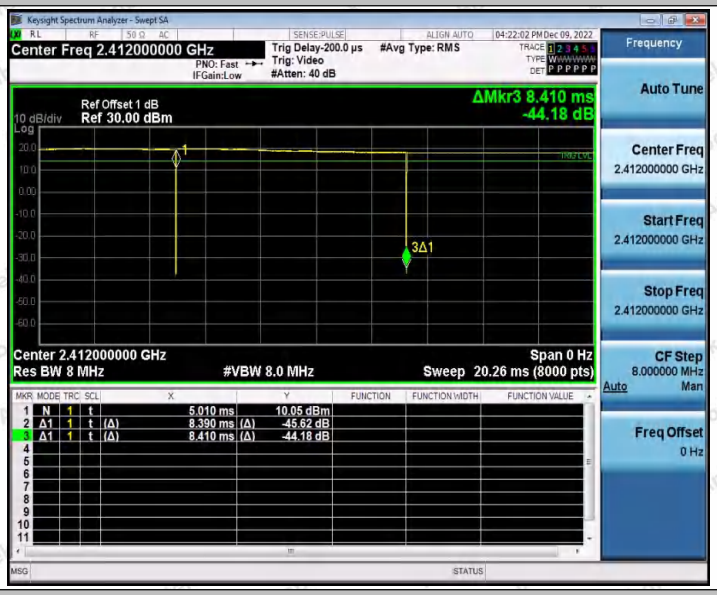
Appendix G: Duty Cycle

Test Result

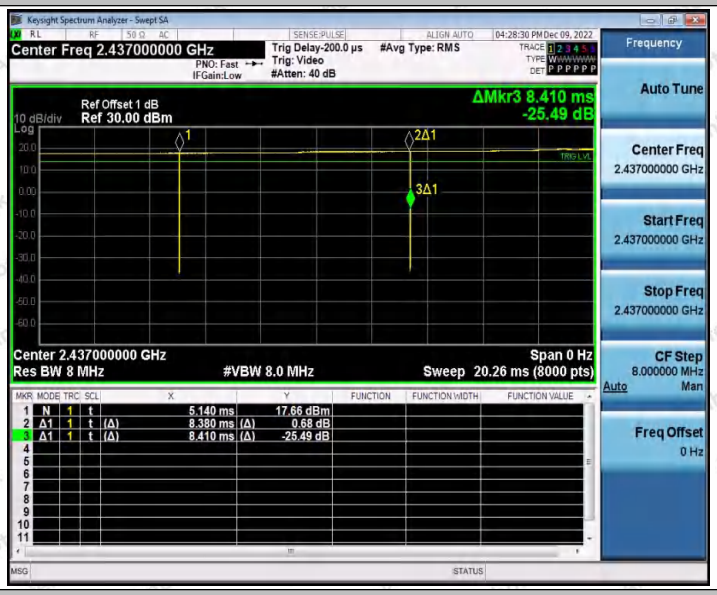
TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	8.39	8.41	99.76	0.01
		2437	8.38	8.41	99.64	0.02
		2462	8.38	8.41	99.64	0.02
11G	Ant1	2412	1.39	1.43	97.20	0.12
		2437	1.40	1.43	97.90	0.09
		2462	1.39	1.43	97.20	0.12
11N20	Ant1	2412	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

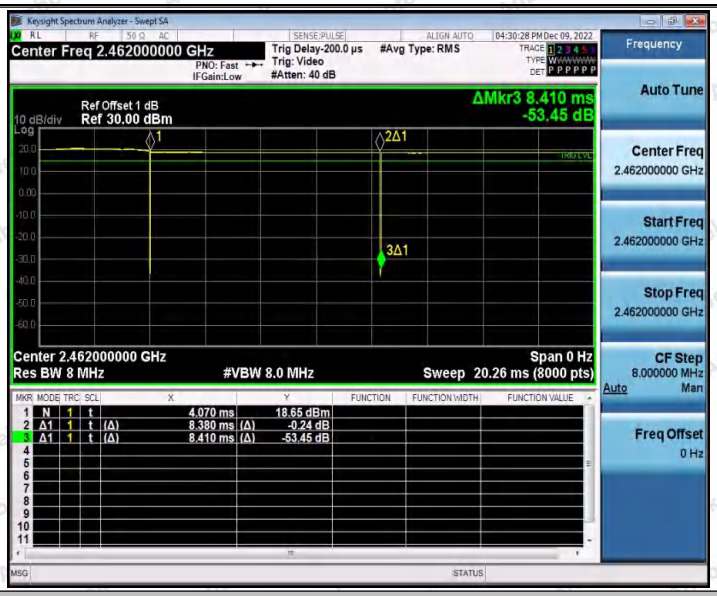
11B_Ant1_2412



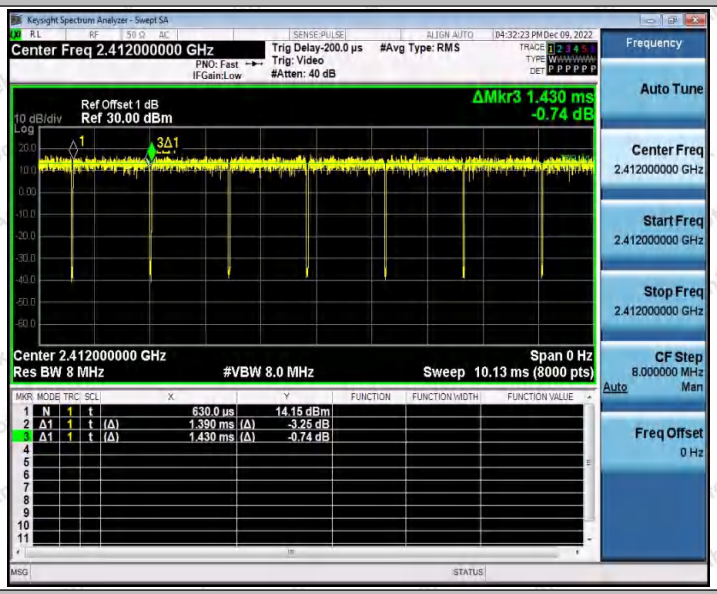
11B_Ant1_2437



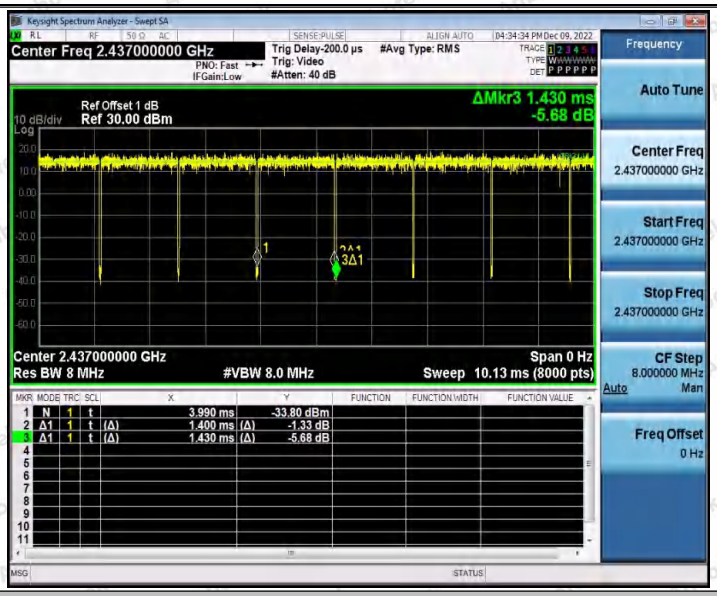
11B_Ant1_2462



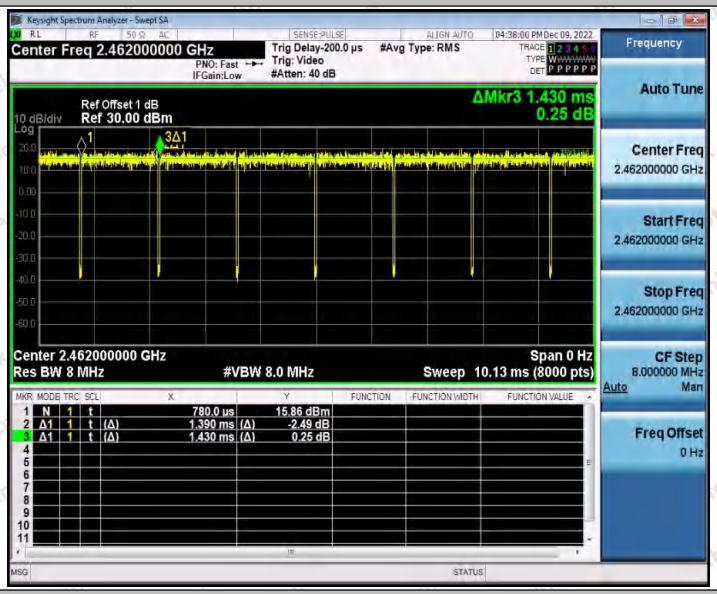
11G_Ant1_2412



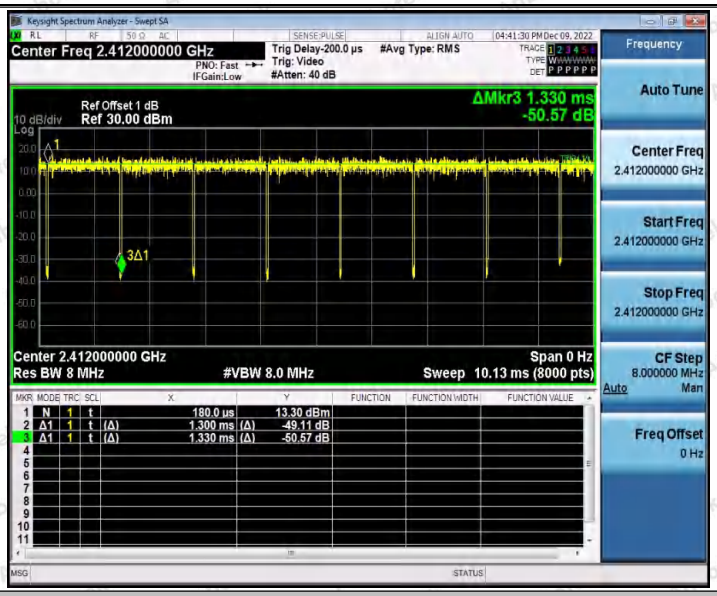
11G_Ant1_2437



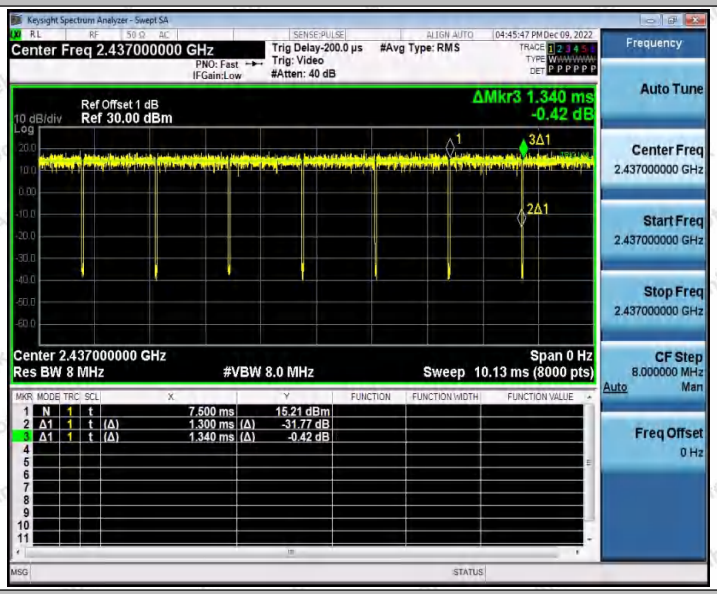
11G_Ant1_2462



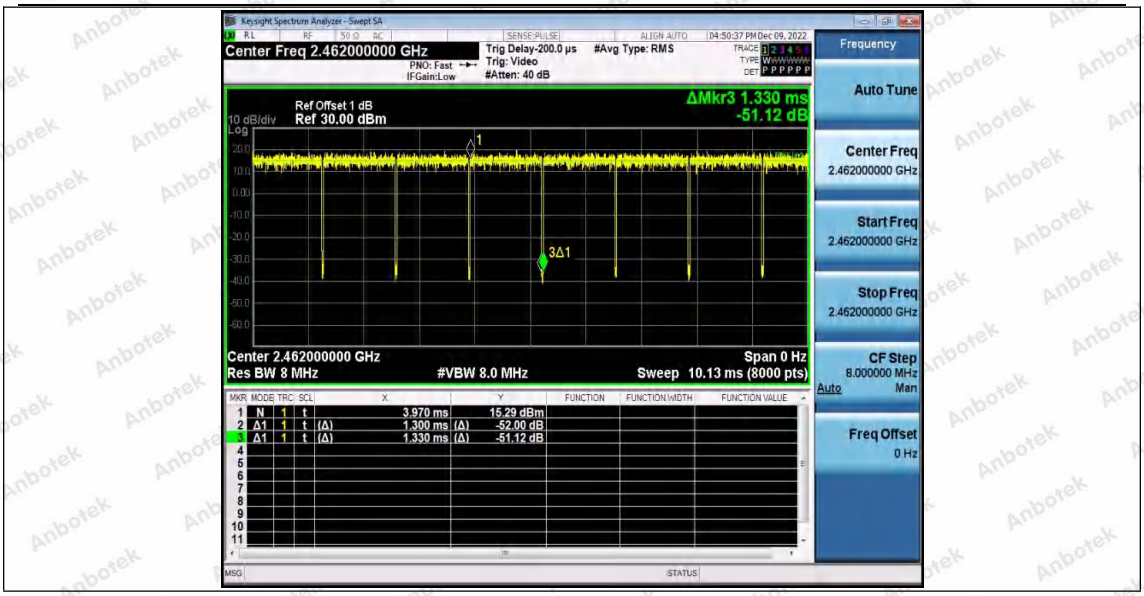
11N20_Ant1_2412



11N20_Ant1_2437



11N20_Ant1_2462


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.462000000 GHz
PNO: Fast
IFGain:Low
Trig Delay-200.0 µs
Trig: Video
#Atten: 40 dB
#Avg Type: RMS
04:50:37 PM Dec 09, 2022
Frequency
Auto Tune
Ref Offset 1 dB
10 dB/div
Ref 30.00 dBm
Log
ΔMkr3 1.330 ms
-51.12 dB
Center Freq
2.462000000 GHz
Start Freq
2.462000000 GHz
Stop Freq
2.462000000 GHz
Center 2.462000000 GHz
Res BW 8 MHz
#VBW 8.0 MHz
Span 0 Hz
Sweep 10.13 ms (8000 pts)
CF Step
8.000000 MHz
Auto
Man
Freq Offset
0 Hz
1 N 1 t 3.970 ms 15.29 dBm
2 Δ1 1 t (Δ) 1.300 ms (Δ) -52.00 dB
3 Δ1 1 t (Δ) 1.330 ms (Δ) -51.12 dB
MSG
STATUS

---End---