Appendix Test Data

Report No.:	18220WC20210401	Test Sample No.:	1-2-2
Start Test Date:	2022.9.7	Finish Test Date:	2022.9.13
Test Engineer:	Tony.He	Auditor:	Edward.Pan
Temperature:	27.3℃	Relative Humidity:	47 %
Pressure:	1012 hPa		

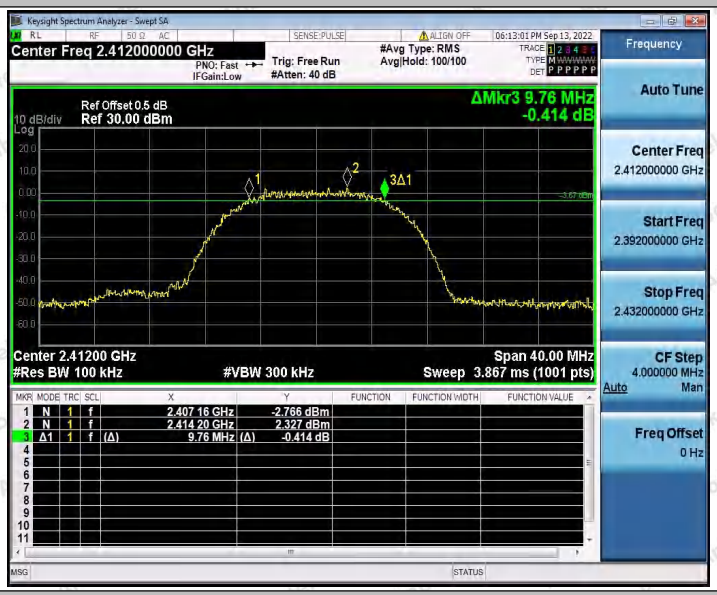
Appendix A: DTS Bandwidth

Test Result

Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.760	2407.160	2416.920	≥0.5	PASS
		2437	10.080	2432.080	2442.160	≥0.5	PASS
		2462	9.680	2457.320	2467.000	≥0.5	PASS
11G	Ant1	2412	16.480	2403.760	2420.240	≥0.5	PASS
		2437	16.480	2428.760	2445.240	≥0.5	PASS
		2462	16.440	2453.760	2470.200	≥0.5	PASS
11N20	Ant1	2412	17.680	2403.160	2420.840	≥0.5	PASS
		2437	17.680	2428.160	2445.840	≥0.5	PASS
		2462	17.720	2453.160	2470.880	≥0.5	PASS

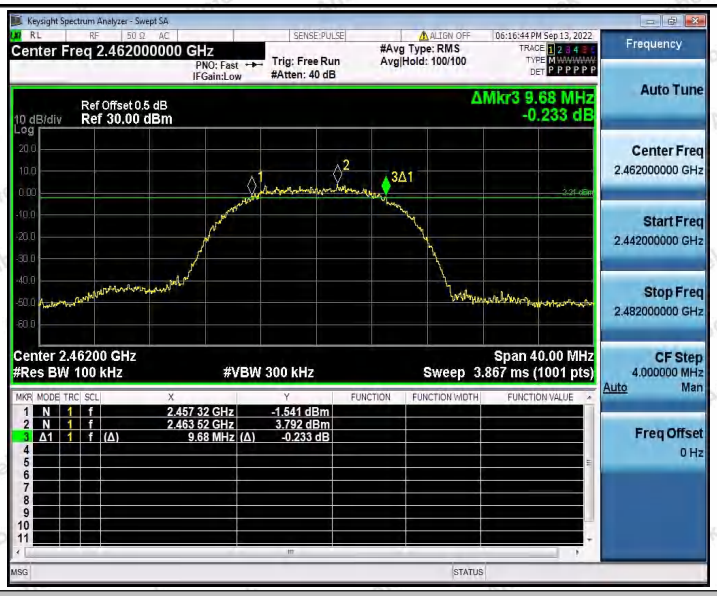
Test Graphs

11B_Ant1_2412

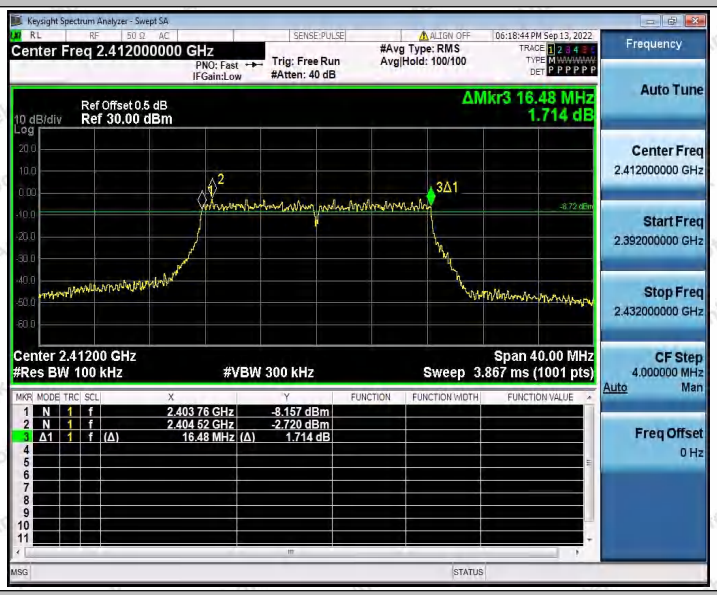


11B_Ant1_2437

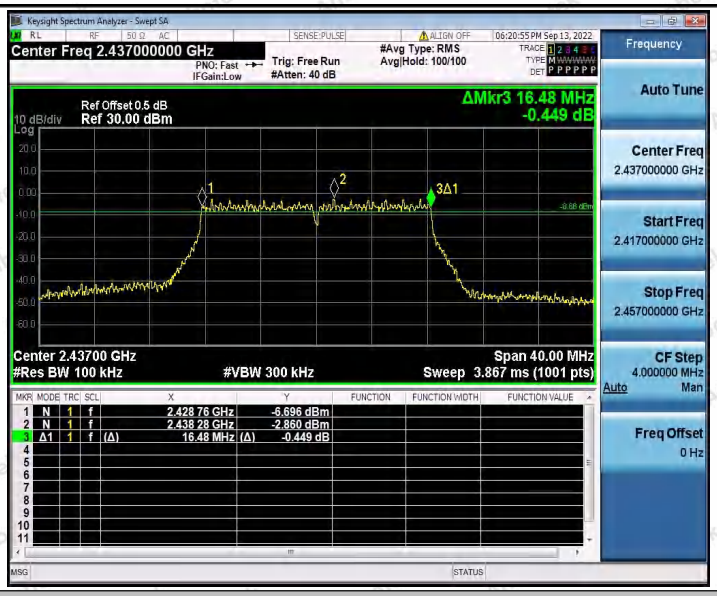
11B_Ant1_2462



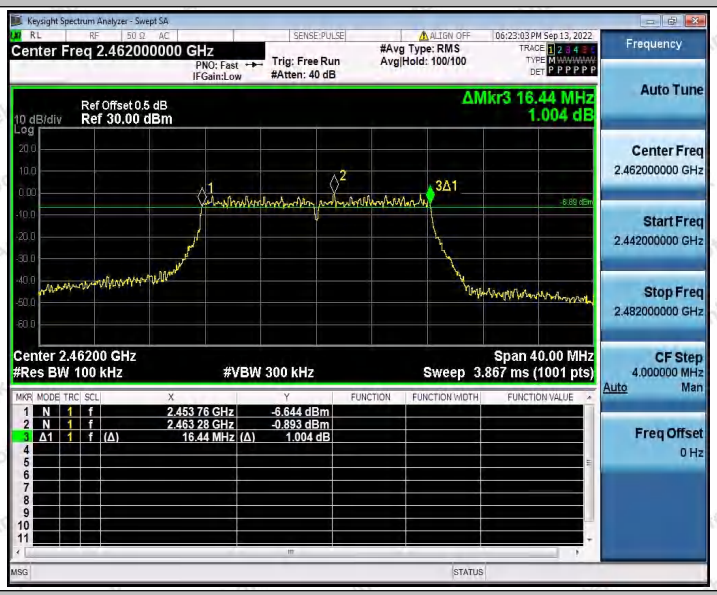
11G_Ant1_2412



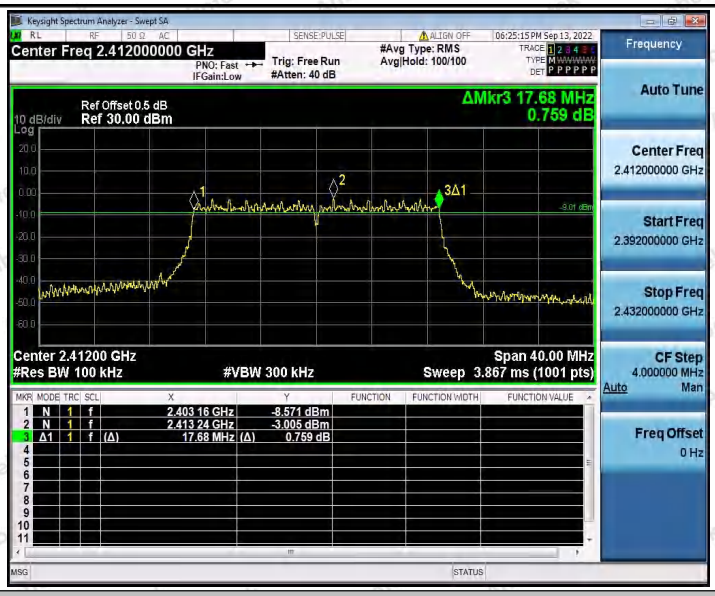
11G_Ant1_2437



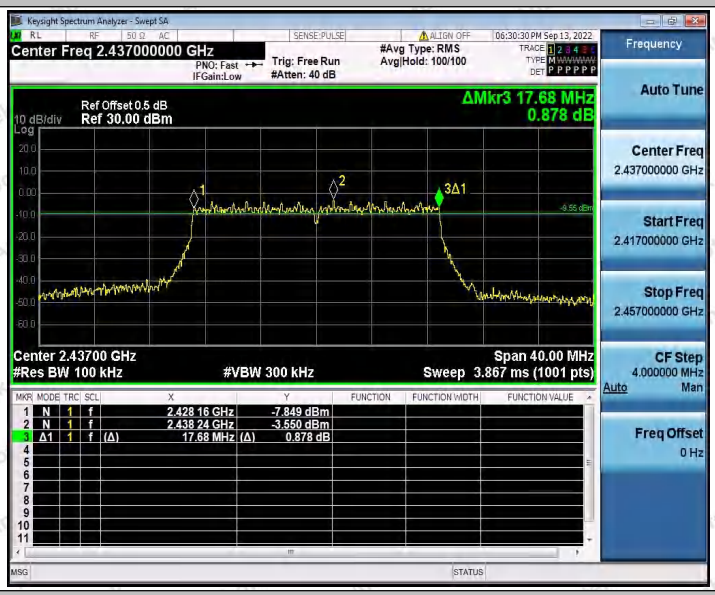
11G_Ant1_2462



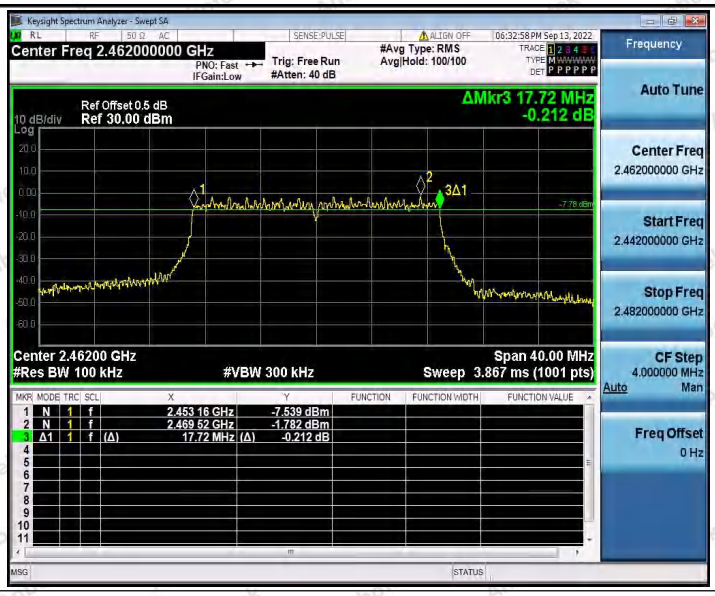
11N20_Ant1_2412



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
06:32:58 PM Sep 13, 2022
Ref Offset 0.5 dB
10 dB/div
Ref 30.00 dBm
ΔMkr3 17.72 MHz
-0.212 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 16 GHz -7.539 dBm
2 N 1 f 2.469 52 GHz -1.782 dBm
3 Δ1 1 f (Δ) 17.72 MHz (Δ) -0.212 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

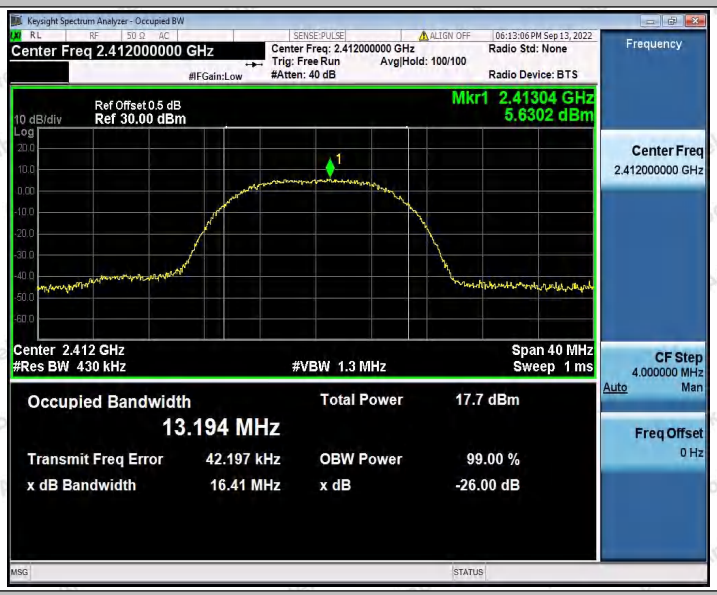
Appendix B: Occupied Channel Bandwidth

Test Result

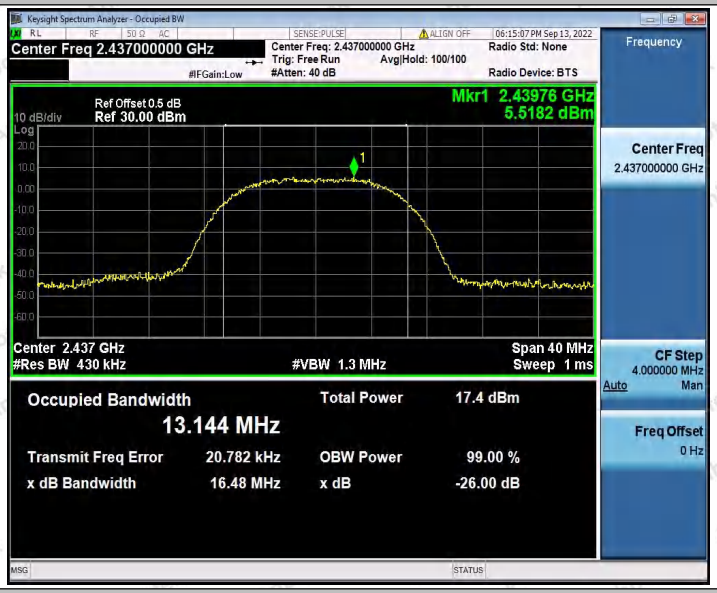
Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
11B	Ant1	2412	13.194	2405.4452	2418.6392
		2437	13.144	2430.4488	2443.5928
		2462	13.069	2455.5003	2468.5693
11G	Ant1	2412	16.714	2403.6585	2420.3725
		2437	16.770	2428.6581	2445.4281
		2462	16.766	2453.6453	2470.4113
11N20	Ant1	2412	17.837	2403.1243	2420.9613
		2437	17.822	2428.0977	2445.9197
		2462	17.822	2453.1166	2470.9386

Test Graphs

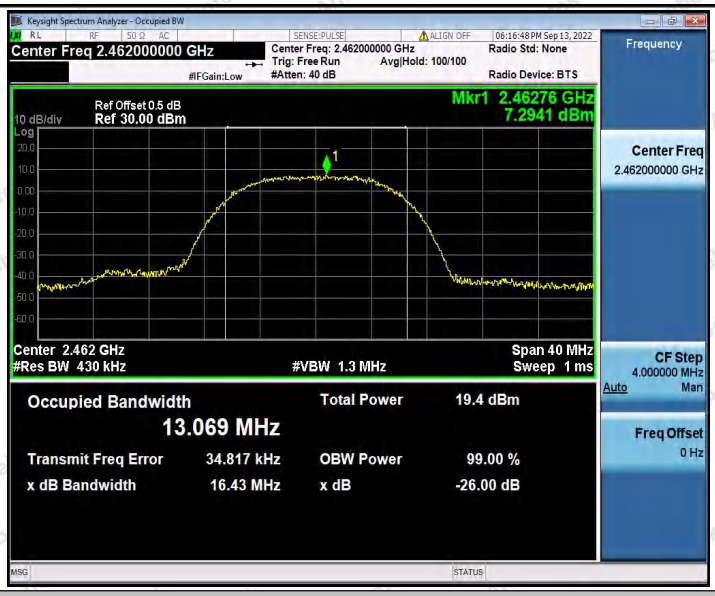
11B_Ant1_2412



11B_Ant1_2437



11B_Ant1_2462



11G_Ant1_2412

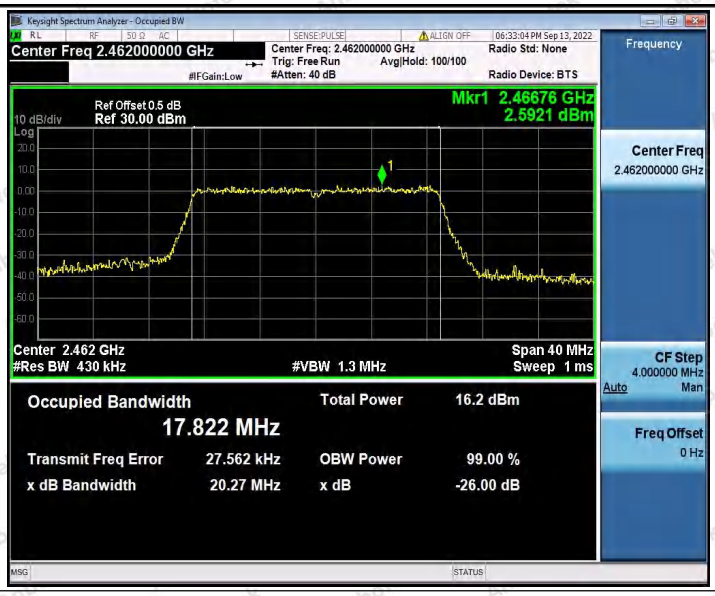
11G_Ant1_2437

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 0.5 dB
10 dB/div
Ref 30.00 dBm
Log
Mkr1 2.46676 GHz
2.5921 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
17.822 MHz
Total Power
16.2 dBm
Transmit Freq Error
27.562 kHz
OBW Power
99.00 %
x dB Bandwidth
20.27 MHz
x dB
-26.00 dB
Freq Offset
0 Hz
MSG
STATUS

Appendix C: Maximum conducted output power

Test Result Peak

Test Mode	Antenna	Frequency [MHz]	Peak Power [dBm]	Conducted Limit[dBm]	EIRP [dBm]	EIRP Limit[dBm]	Verdict
11B	Ant1	2412	17.33	≤30.00	19.35	≤36.00	PASS
		2437	16.99	≤30.00	19.01	≤36.00	PASS
		2462	18.84	≤30.00	20.86	≤36.00	PASS
11G	Ant1	2412	16.13	≤30.00	18.15	≤36.00	PASS
		2437	15.88	≤30.00	17.90	≤36.00	PASS
		2462	17.82	≤30.00	19.84	≤36.00	PASS
11N20	Ant1	2412	15.87	≤30.00	17.89	≤36.00	PASS
		2437	15.18	≤30.00	17.20	≤36.00	PASS
		2462	17.06	≤30.00	19.08	≤36.00	PASS

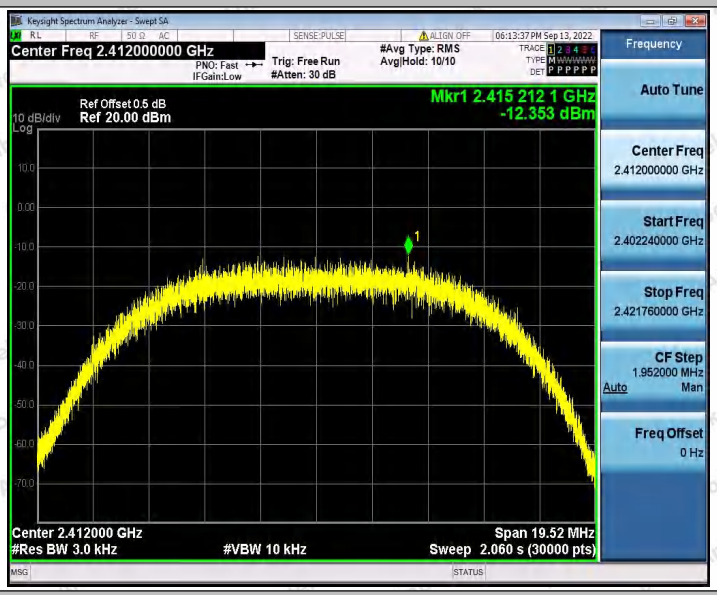
Appendix D: Maximum power spectral density

Test Result

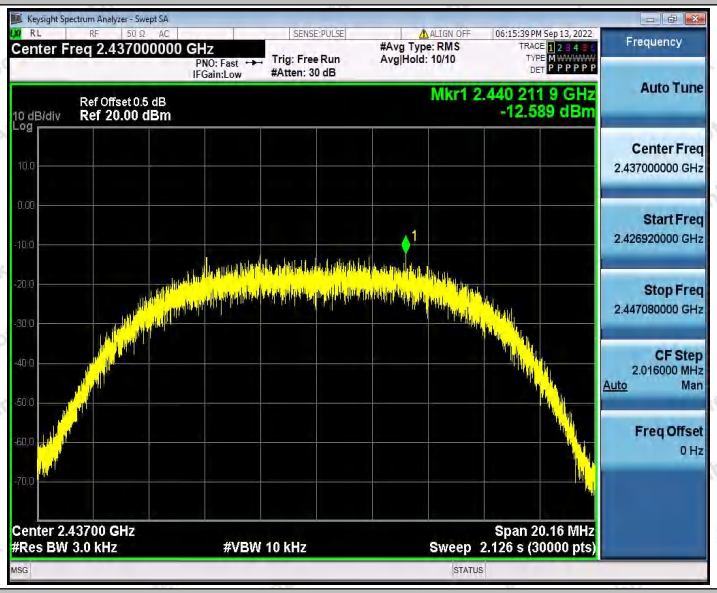
Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-12.35	≤8.00	PASS
		2437	-12.59	≤8.00	PASS
		2462	-11.19	≤8.00	PASS
11G	Ant1	2412	-15.35	≤8.00	PASS
		2437	-16.62	≤8.00	PASS
		2462	-14.09	≤8.00	PASS
11N20	Ant1	2412	-17.36	≤8.00	PASS
		2437	-17.24	≤8.00	PASS
		2462	-16.19	≤8.00	PASS

Test Graphs

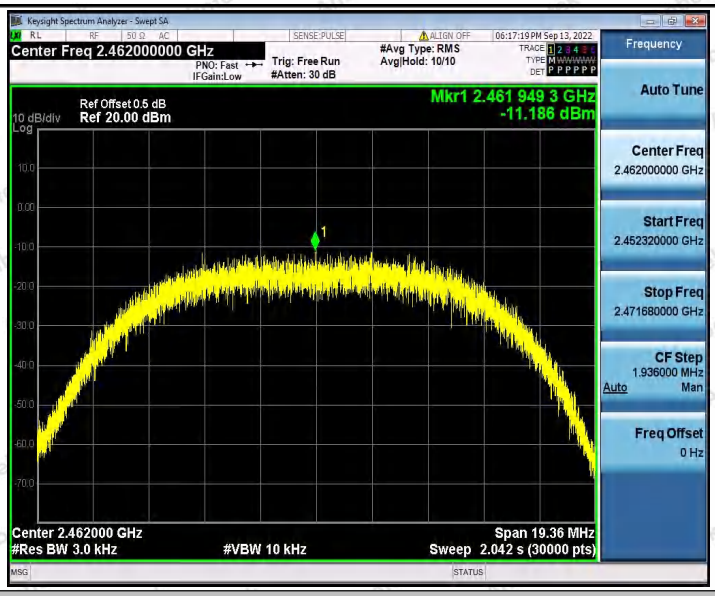
11B_Ant1_2412



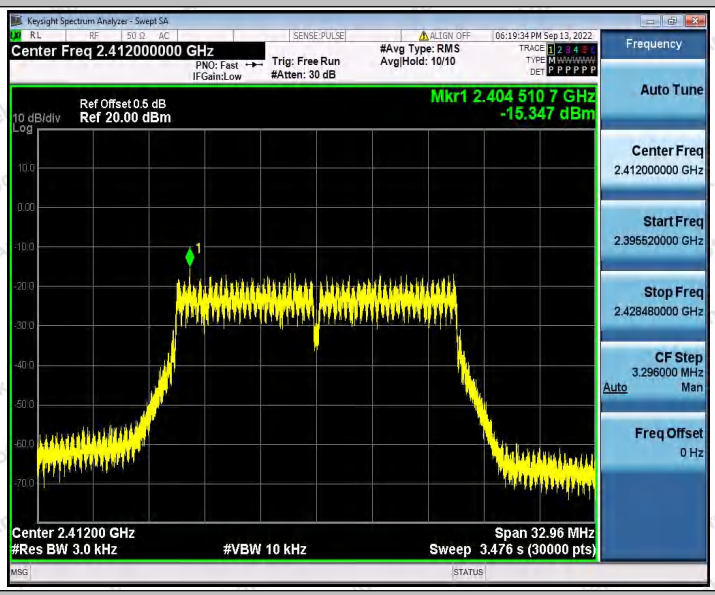
11B_Ant1_2437



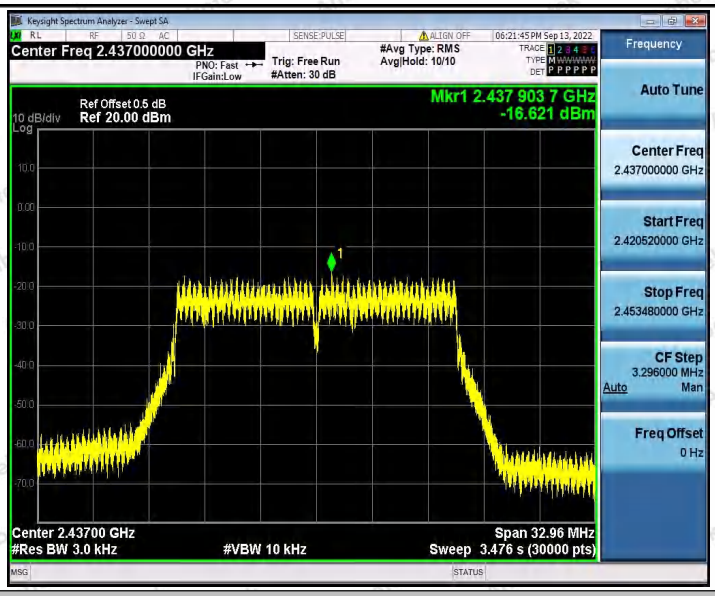
11B_Ant1_2462



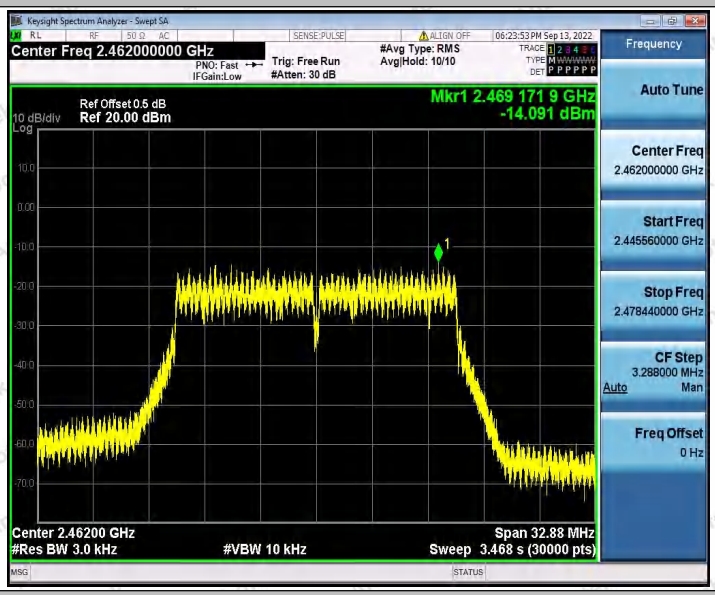
11G_Ant1_2412



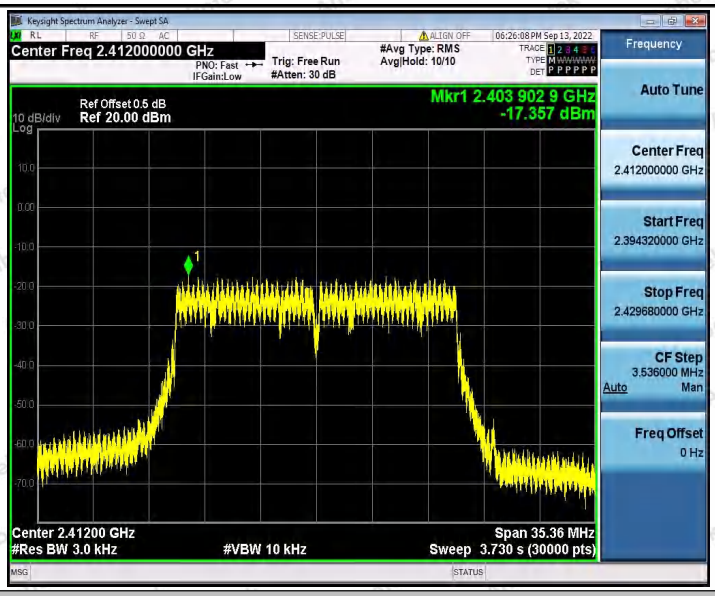
11G_Ant1_2437



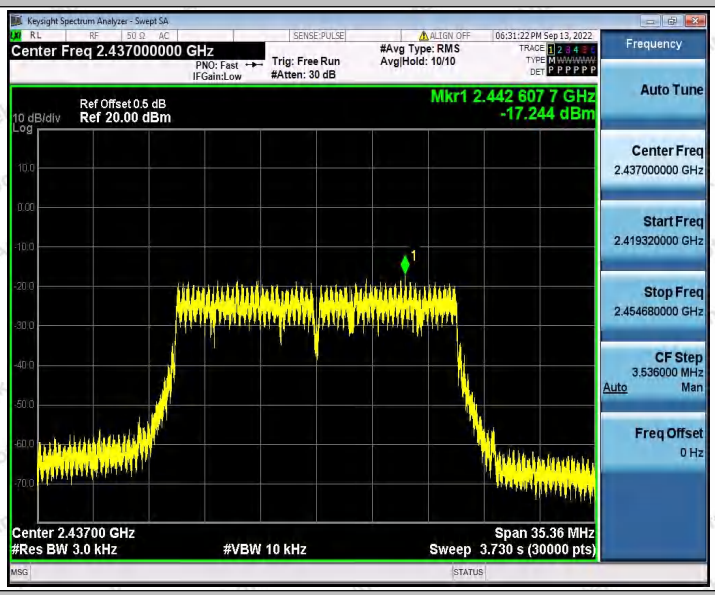
11G_Ant1_2462



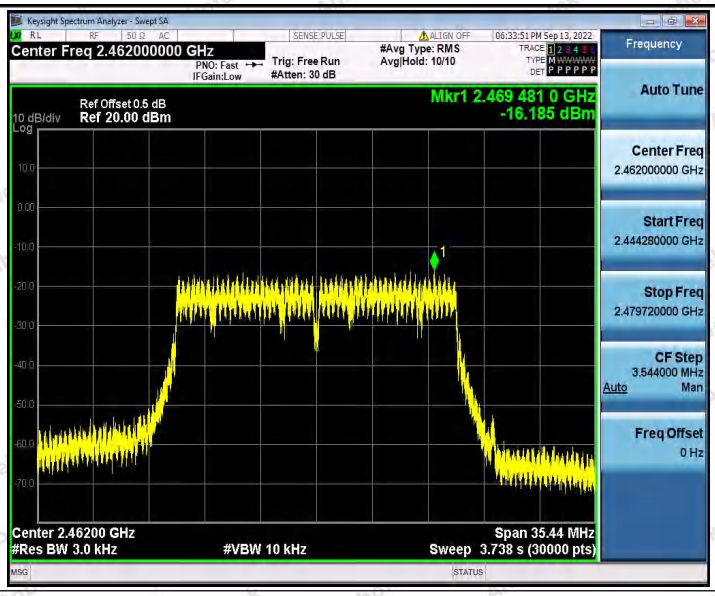
11N20_Ant1_2412



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
06:33:51 PM Sep 13, 2022
Ref Offset 0.5 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.469 481 0 GHz
-16.185 dBm
Center 2.46200 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 35.44 MHz
Sweep 3.738 s (30000 pts)
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.444280000 GHz
Stop Freq
2.479720000 GHz
CF Step
3.544000 MHz
Auto
Man
Freq Offset
0 Hz

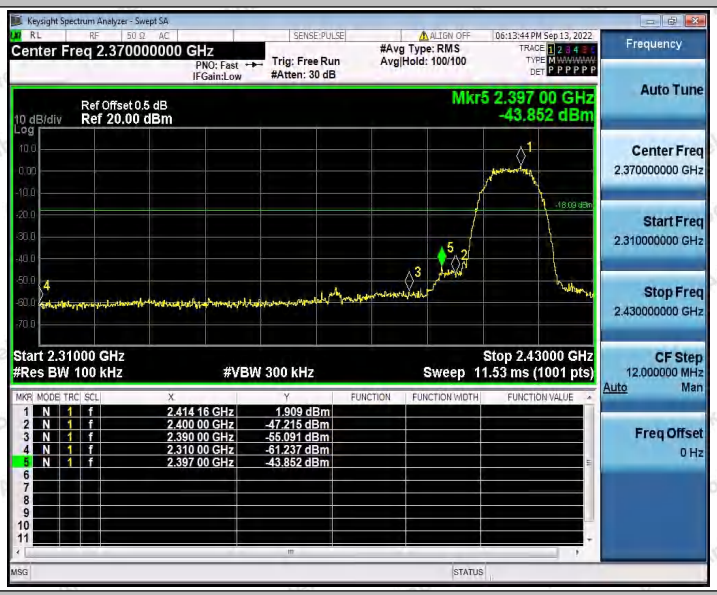
Appendix E: Band edge measurements

Test Result

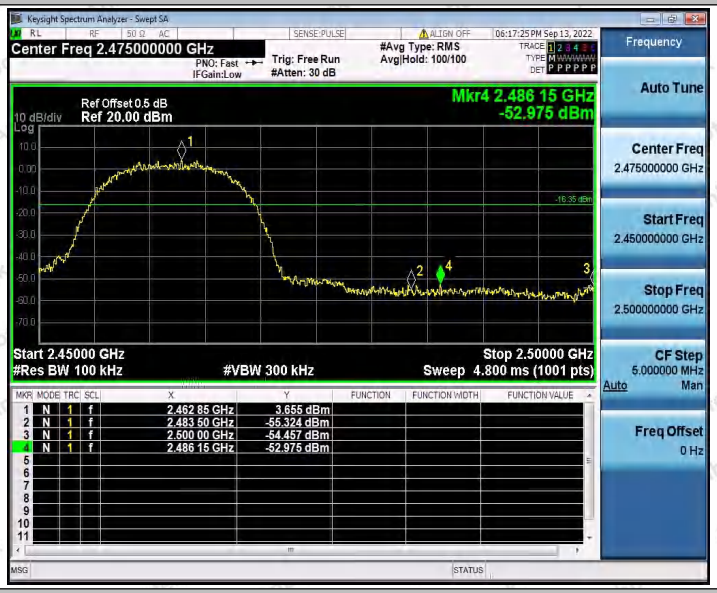
Test Mode	Antenna	Ch Name	Frequency[MHz]	Ref Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	1.91	-43.85	≤-18.09	PASS
		High	2462	3.66	-52.98	≤-16.35	PASS
11G	Ant1	Low	2412	-2.54	-38.72	≤-22.54	PASS
		High	2462	-1.21	-53.1	≤-21.21	PASS
11N20	Ant1	Low	2412	-2.96	-40.67	≤-22.96	PASS
		High	2462	-1.85	-50.14	≤-21.85	PASS

Test Graphs

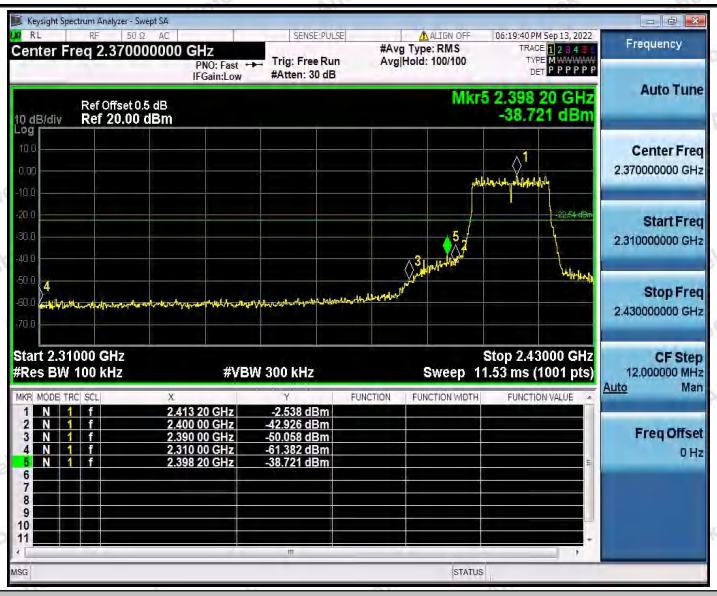
11B_Ant1_Low_2412



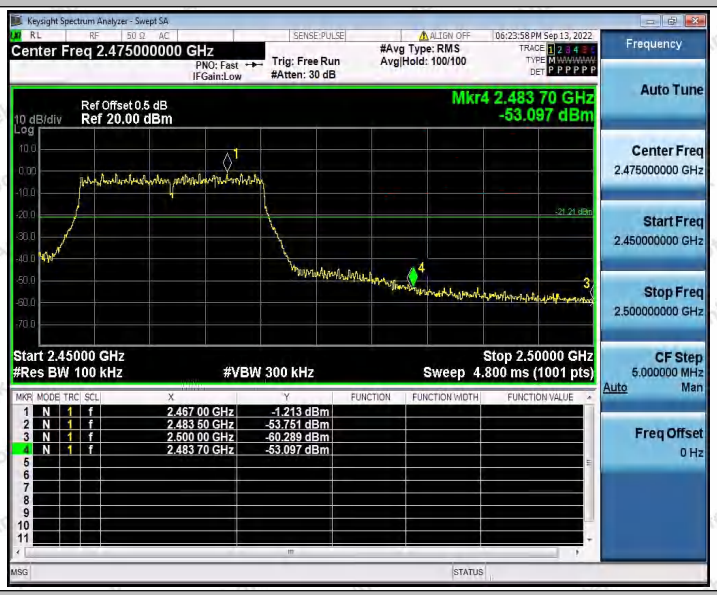
11B_Ant1_High_2462



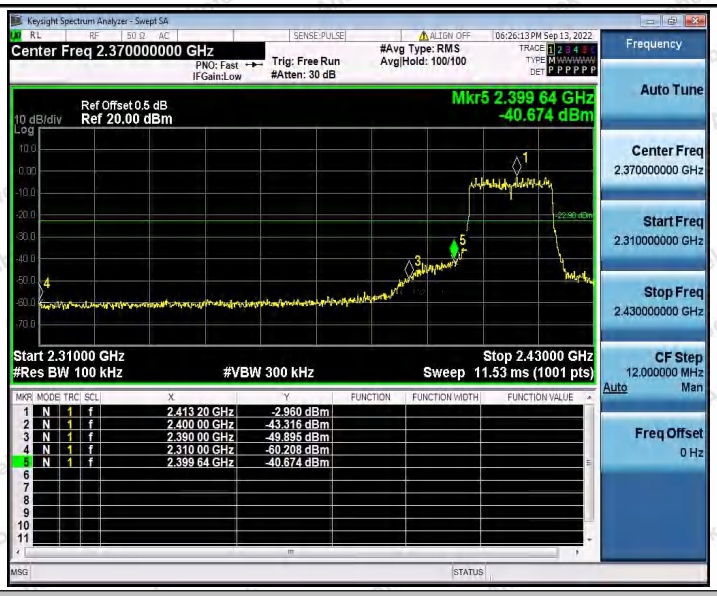
11G_Ant1_Low_2412



11G_Ant1_High_2462



11N20_Ant1_Low_2412



11N20_Ant1_High_2462

Appendix F: Conducted Spurious Emission

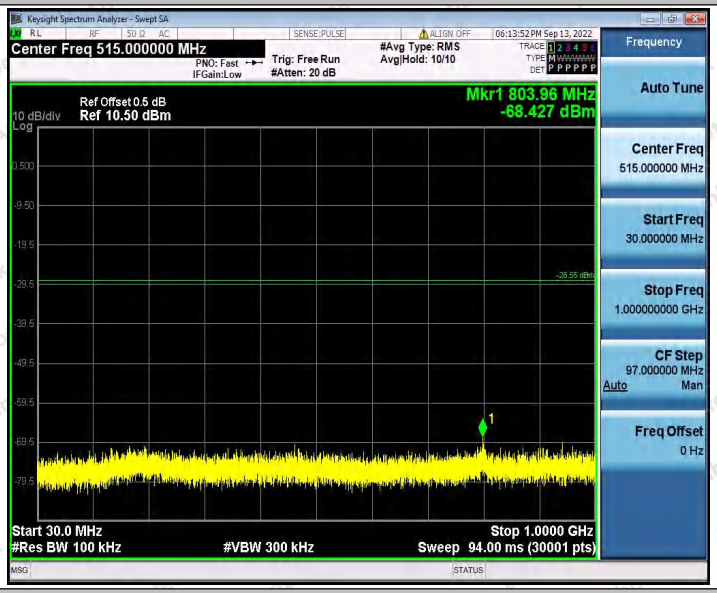
Test Result

Test Mode	Antenna	Frequency[MHz]	Freq Range [Mhz]	Ref Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	1.45	1.45	---	PASS
			30~1000	1.45	-68.43	≤-28.55	PASS
			1000~26500	1.45	-53.86	≤-28.55	PASS
		2437	Reference	1.24	1.24	---	PASS
			30~1000	1.24	-69.68	≤-28.76	PASS
			1000~26500	1.24	-53.76	≤-28.76	PASS
		2462	Reference	3.27	3.27	---	PASS
			30~1000	3.27	-67.05	≤-26.73	PASS
			1000~26500	3.27	-54.21	≤-26.73	PASS
11G	Ant1	2412	Reference	-3.01	-3.01	---	PASS
			30~1000	-3.01	-70.49	≤-33.01	PASS
			1000~26500	-3.01	-53.62	≤-33.01	PASS
		2437	Reference	-3.51	-3.51	---	PASS
			30~1000	-3.51	-68.98	≤-33.51	PASS
			1000~26500	-3.51	-54.25	≤-33.51	PASS
		2462	Reference	-0.95	-0.95	---	PASS
			30~1000	-0.95	-68.55	≤-30.95	PASS
			1000~26500	-0.95	-53.9	≤-30.95	PASS
11N20	Ant1	2412	Reference	-2.94	-2.94	---	PASS
			30~1000	-2.94	-68.58	≤-32.94	PASS
			1000~26500	-2.94	-53.88	≤-32.94	PASS
		2437	Reference	-3.78	-3.78	---	PASS
			30~1000	-3.78	-69.73	≤-33.78	PASS
			1000~26500	-3.78	-54.52	≤-33.78	PASS
		2462	Reference	-2.25	-2.25	---	PASS
			30~1000	-2.25	-70.23	≤-32.25	PASS
			1000~26500	-2.25	-54.82	≤-32.25	PASS

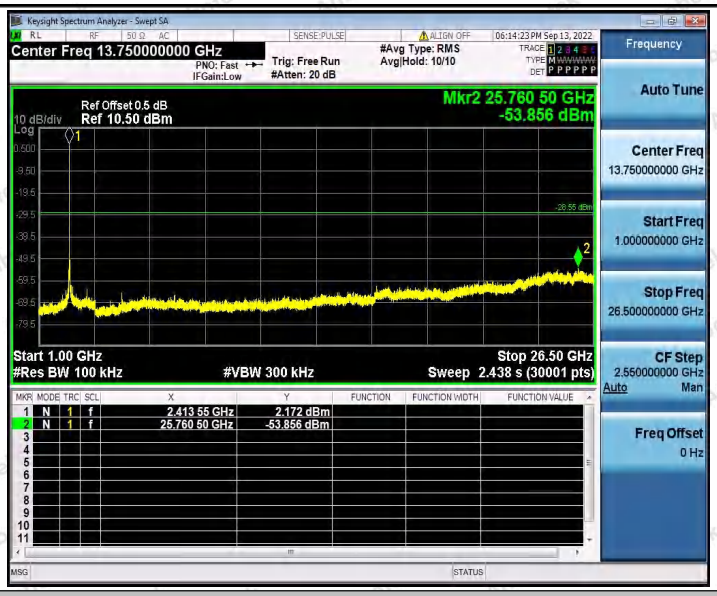
Test Graphs

11B_Ant1_2412_0~Reference

11B_Ant1_2412_30~1000

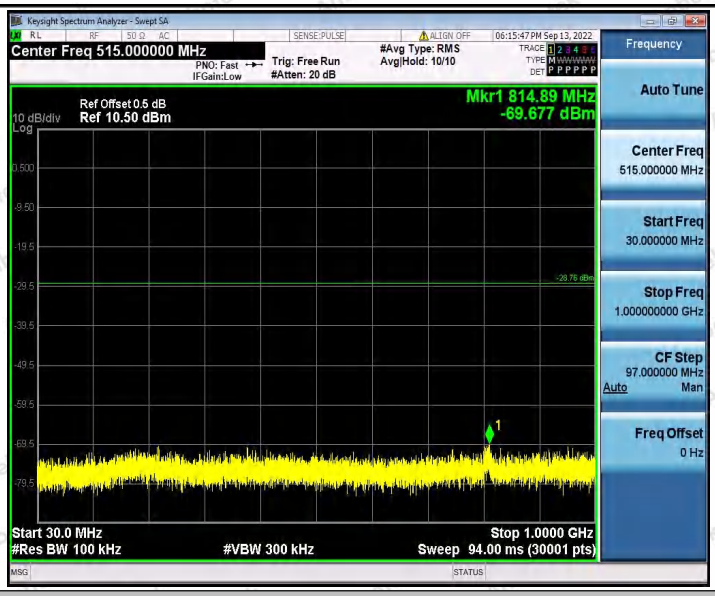


11B_Ant1_2412_1000~26500

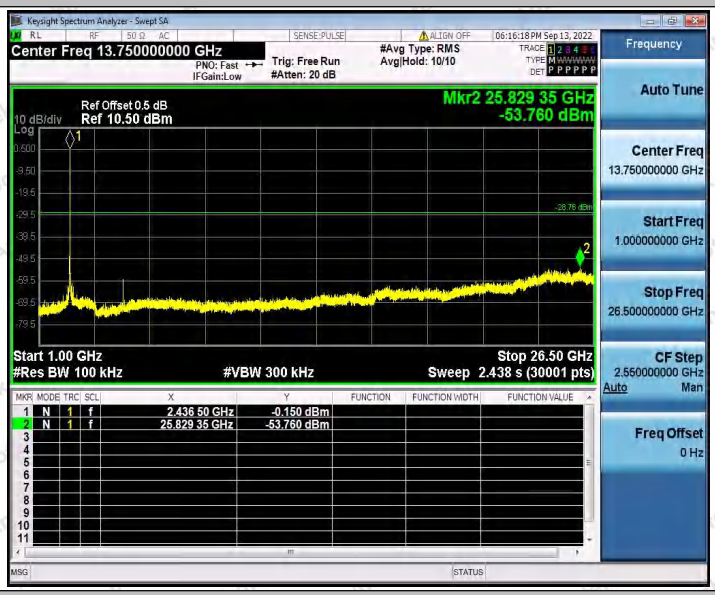


11B_Ant1_2437_0~Reference

11B_Ant1_2437_30~1000

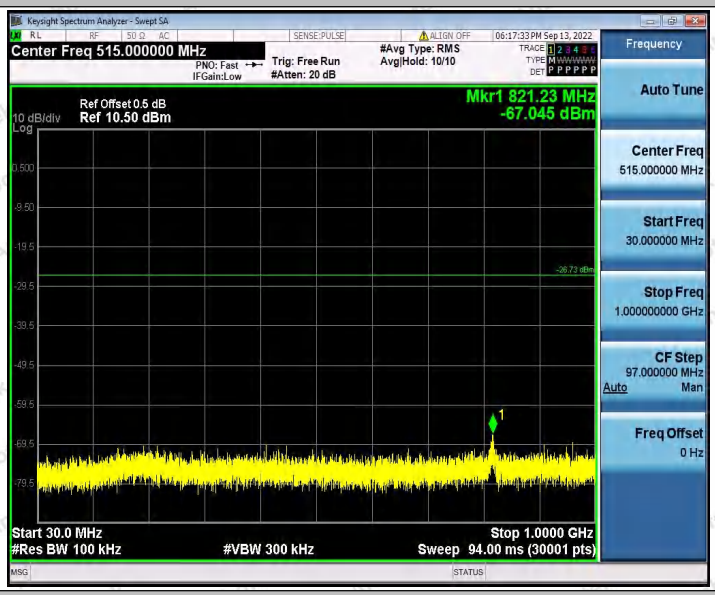


11B_Ant1_2437_1000~26500

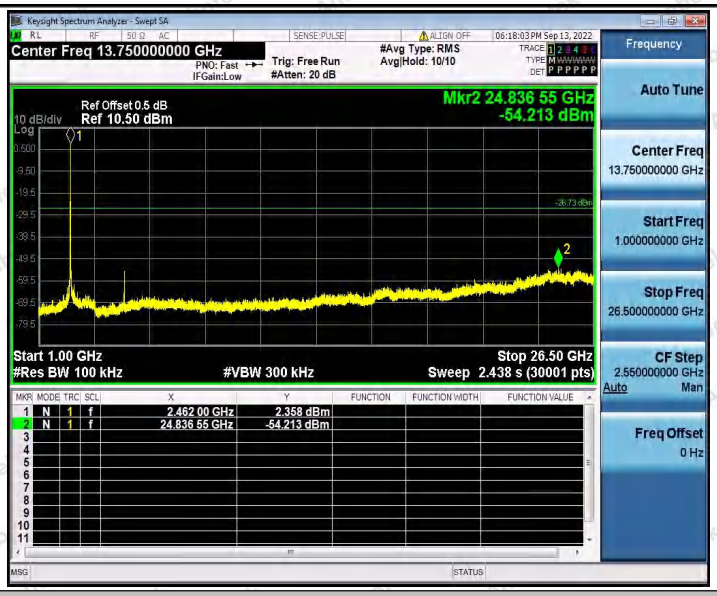


11B_Ant1_2462_0~Reference

11B_Ant1_2462_30~1000

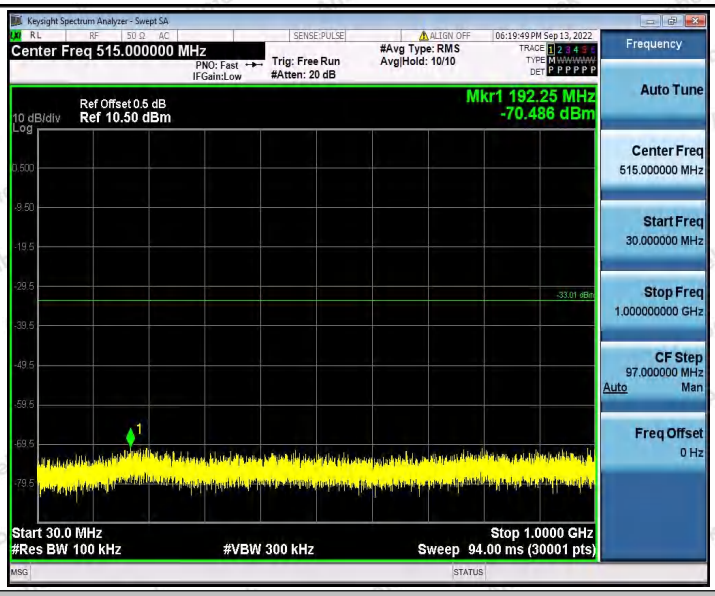


11B_Ant1_2462_1000~26500

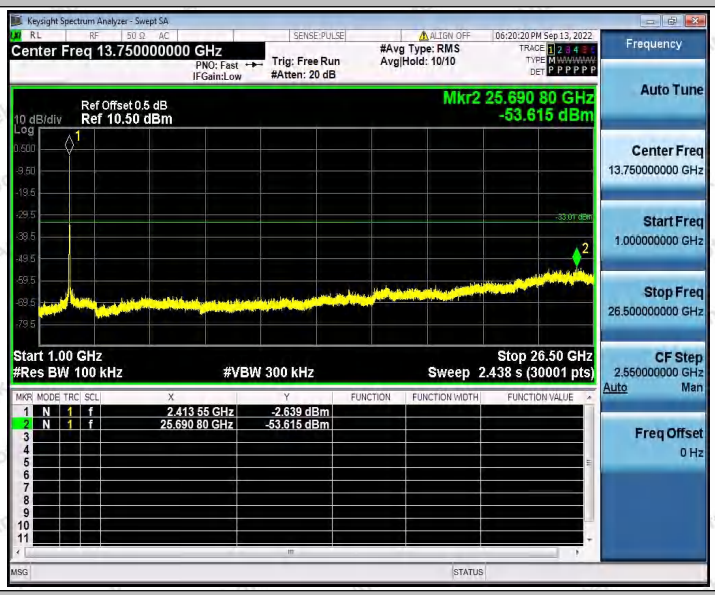


11G_Ant1_2412_0~Reference

11G_Ant1_2412_30~1000

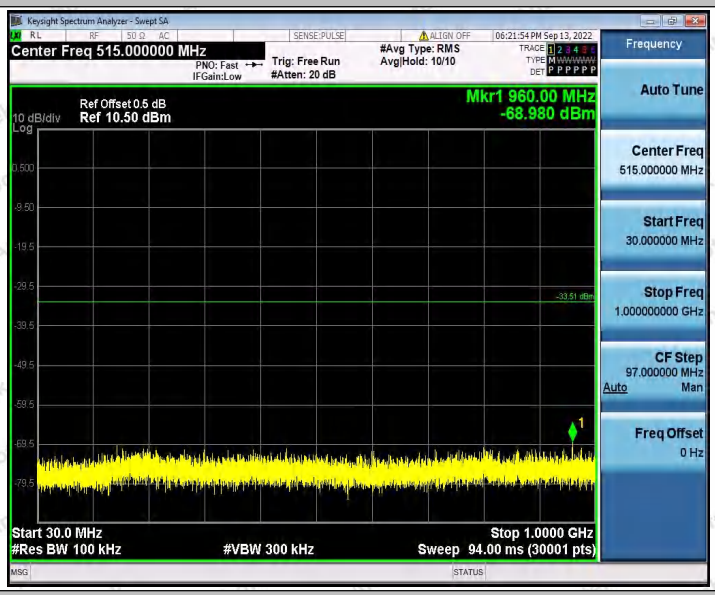


11G_Ant1_2412_1000~26500



11G_Ant1_2437_0~Reference

11G_Ant1_2437_30~1000



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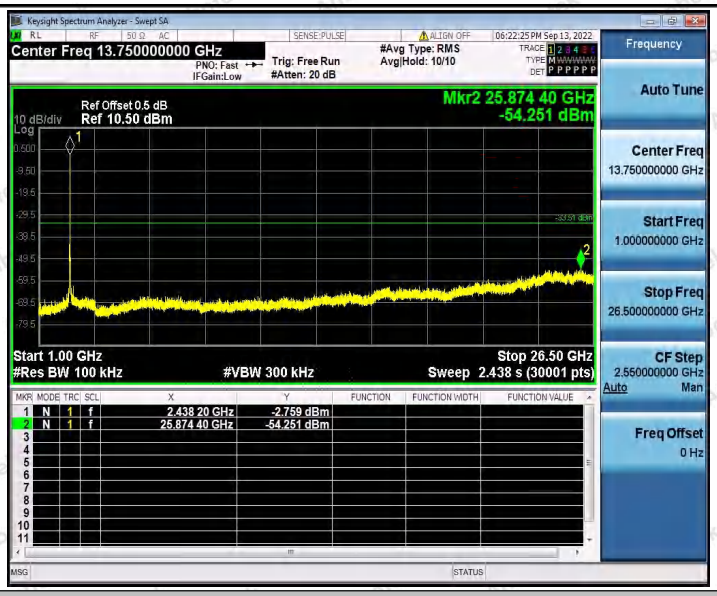
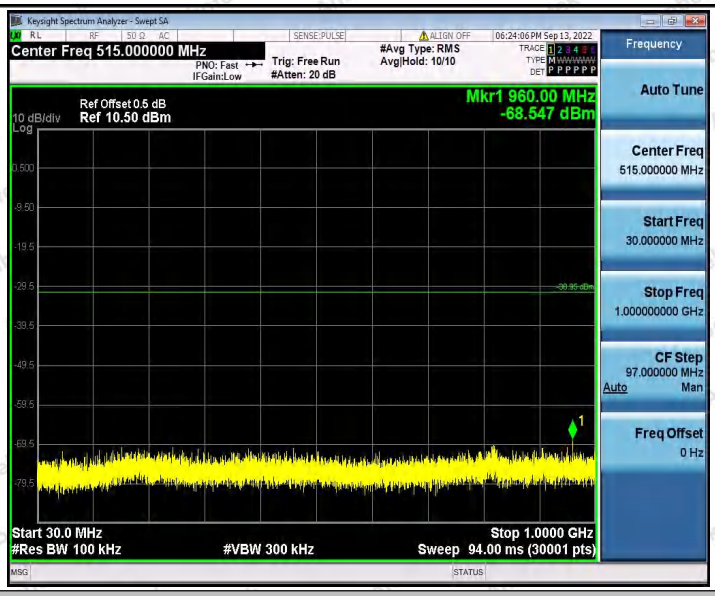
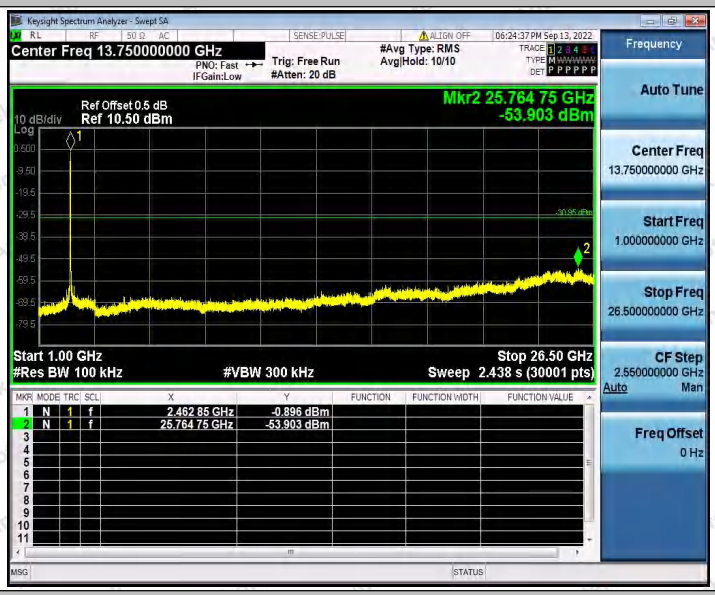


11G_Ant1_2462_0~Reference

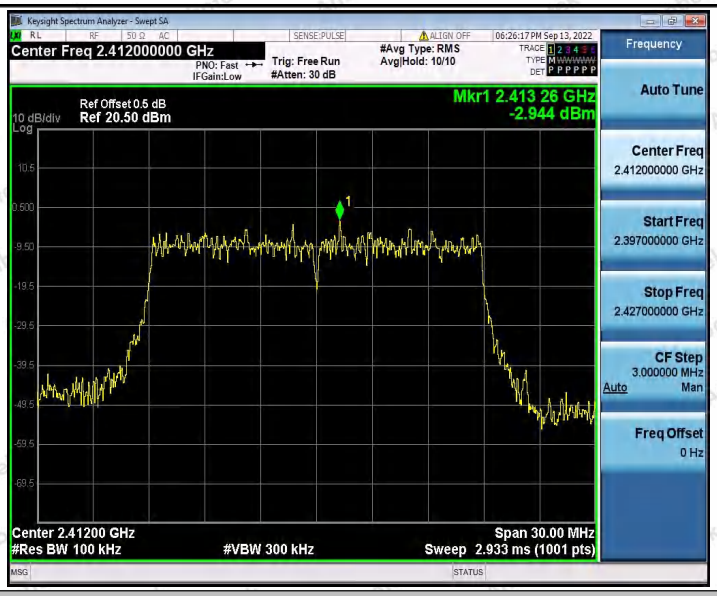
11G_Ant1_2462_30~1000



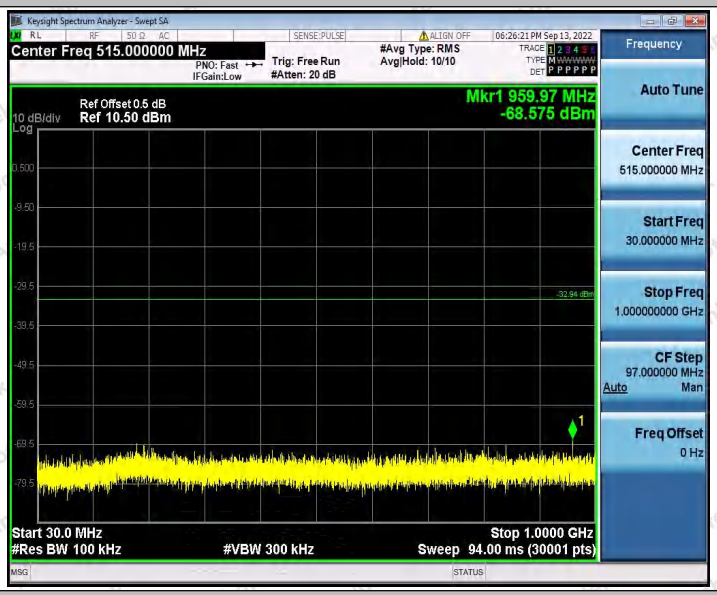
11G_Ant1_2462_1000~26500



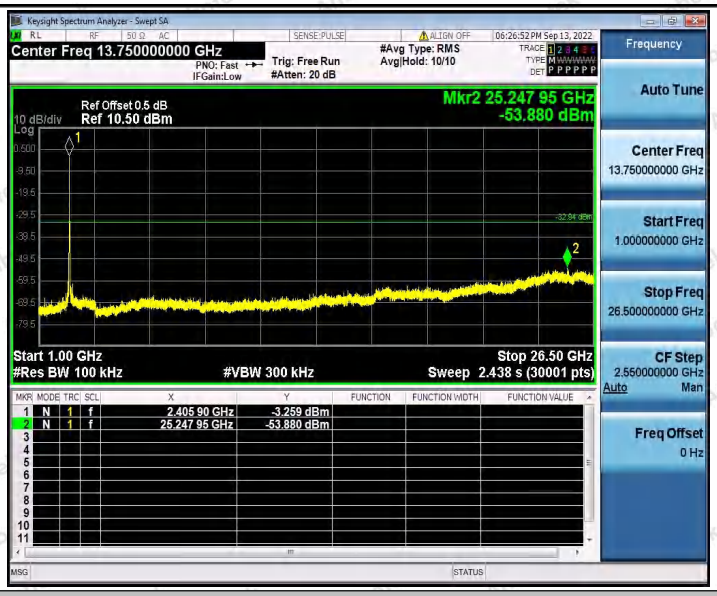
11N20_Ant1_2412_0~Reference



11N20_Ant1_2412_30~1000

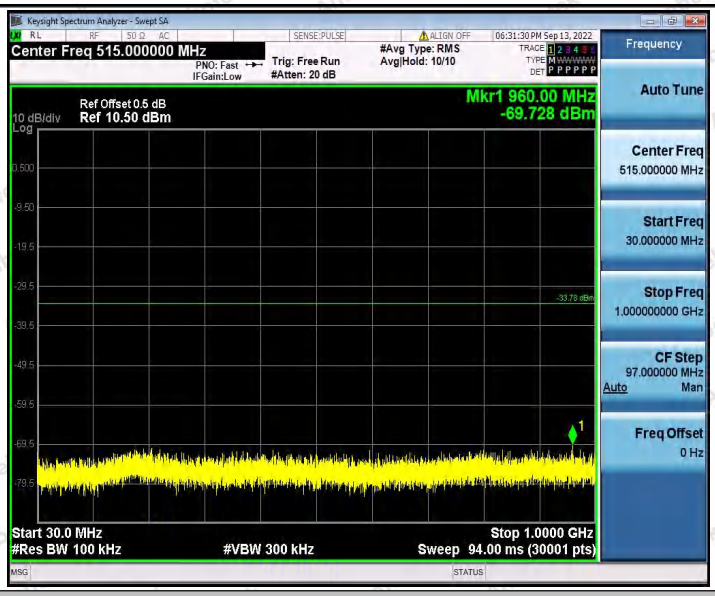


11N20_Ant1_2412_1000~26500

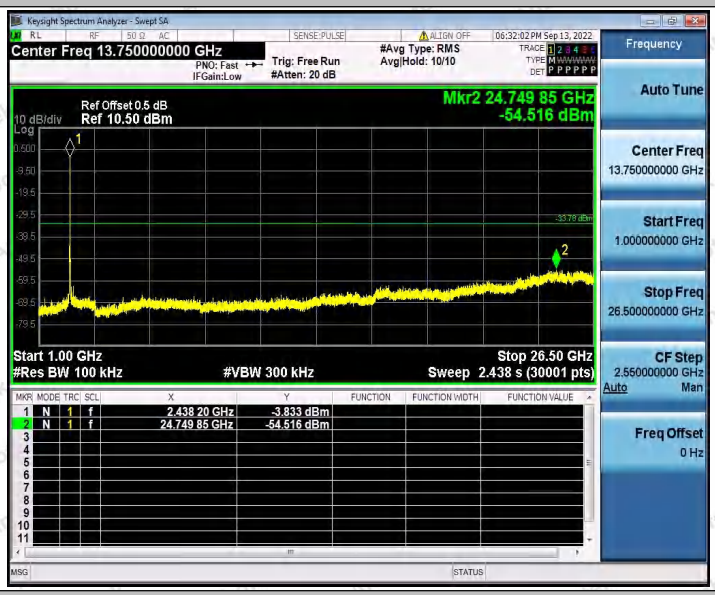


11N20_Ant1_2437_0~Reference

11N20_Ant1_2437_30~1000

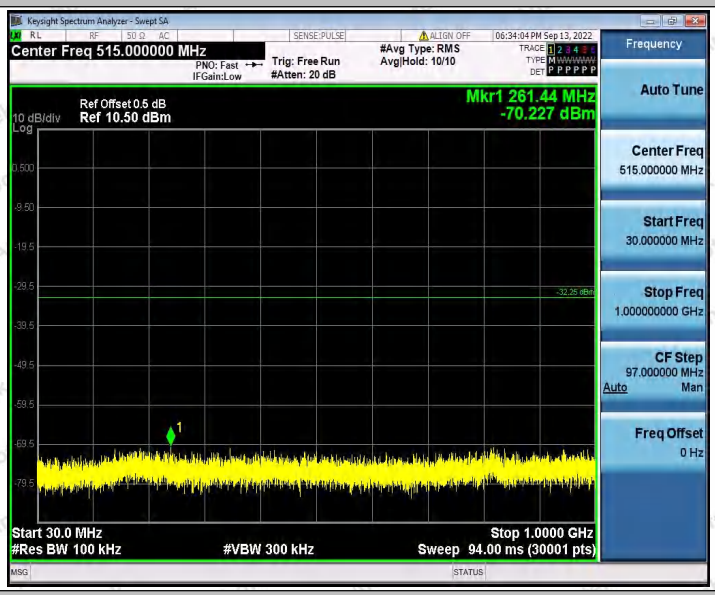


11N20_Ant1_2437_1000~26500

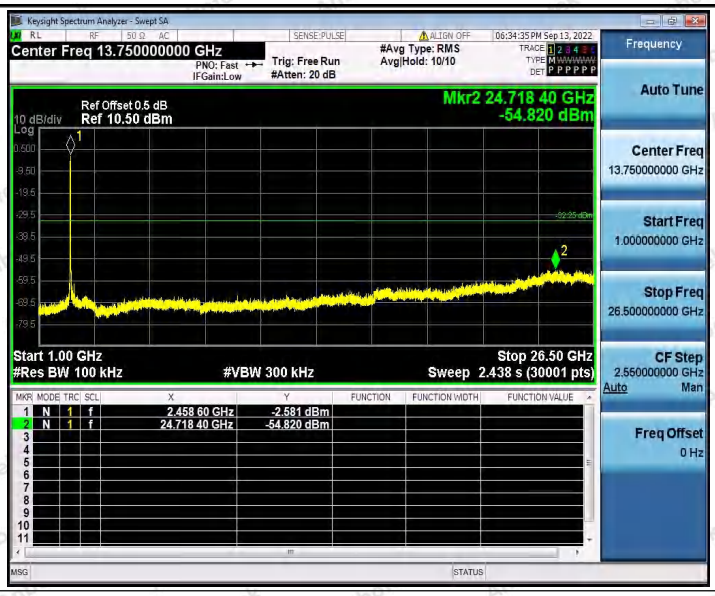


11N20_Ant1_2462_0~Reference

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
06:34:35 PM Sep 13, 2022
Ref Offset 0.5 dB
10 dB/div
Ref 10.50 dBm
Mkr2 24.718 40 GHz
-54.820 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 2.458 60 GHz -2.581 dBm
2 N 1 f 24.718 40 GHz -54.820 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

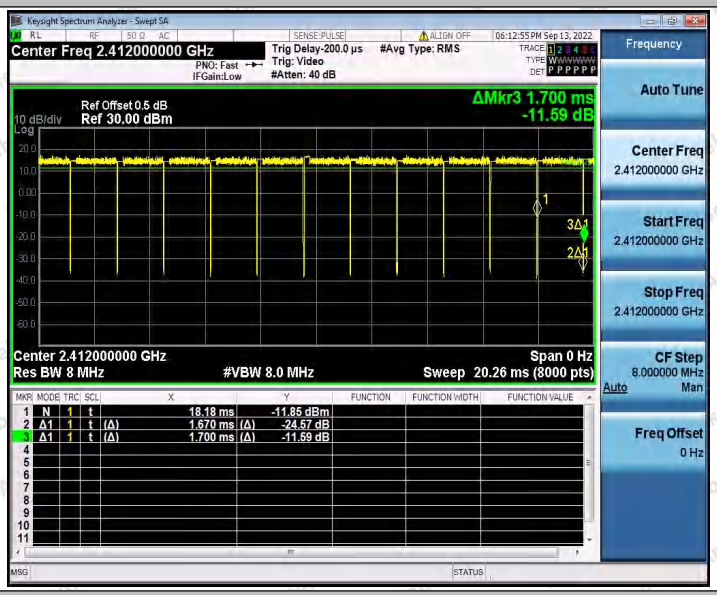
Appendix G: Duty Cycle

Test Result

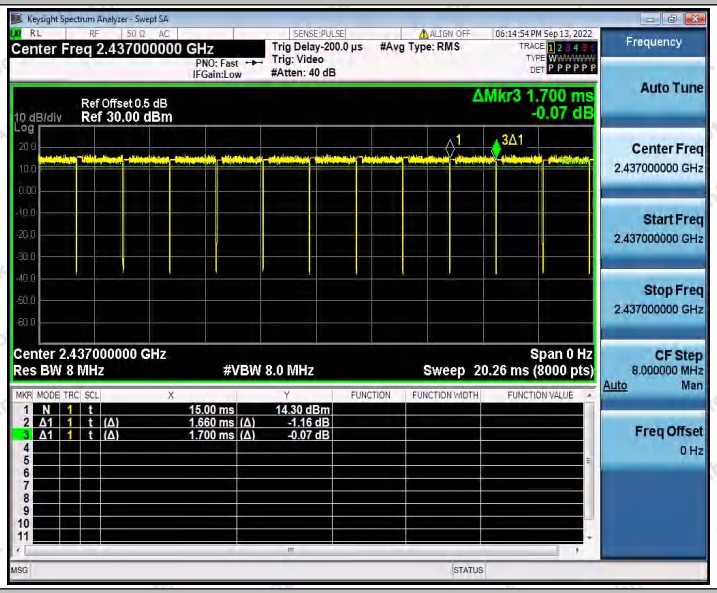
Test Mode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	1.67	1.70	98.24	0.08
		2437	1.66	1.70	97.65	0.10
		2462	1.67	1.70	98.24	0.08
11G	Ant1	2412	0.33	0.36	91.67	0.38
		2437	0.32	0.36	88.89	0.51
		2462	0.32	0.36	88.89	0.51
11N20	Ant1	2412	0.29	0.32	90.63	0.43
		2437	0.29	0.33	87.88	0.56
		2462	0.29	0.32	90.63	0.43

Test Graphs

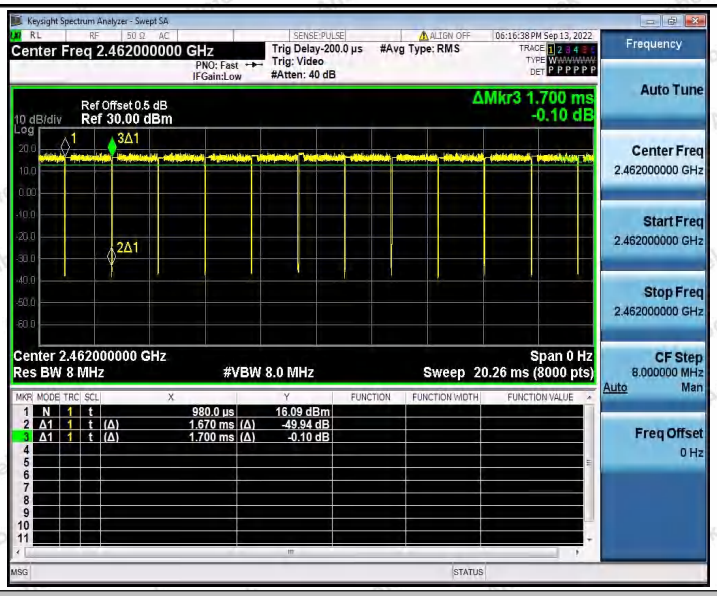
11B_Ant1_2412



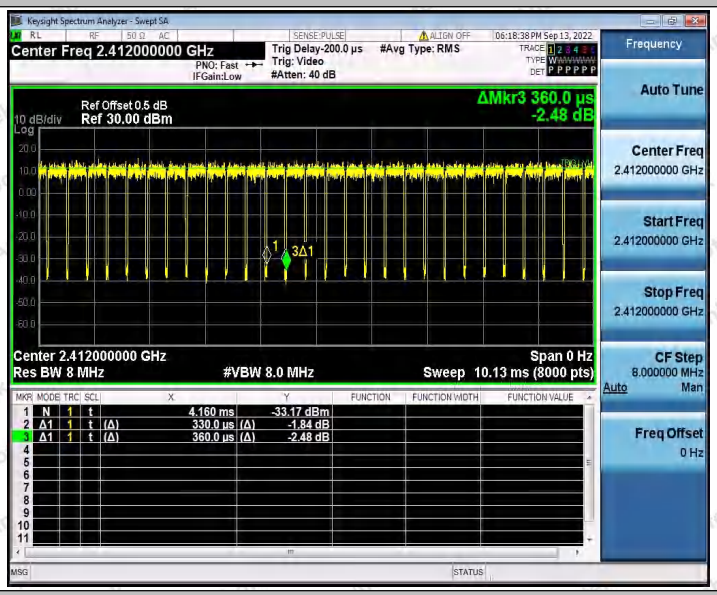
11B_Ant1_2437



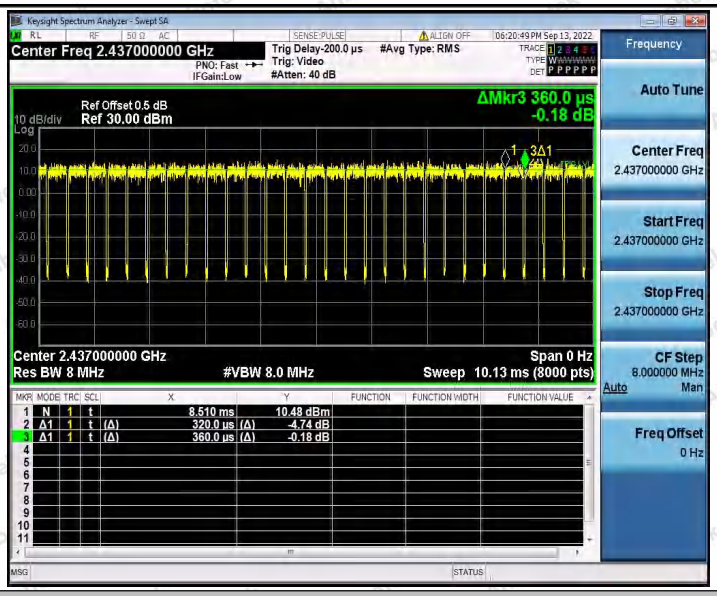
11B_Ant1_2462



11G_Ant1_2412



11G_Ant1_2437



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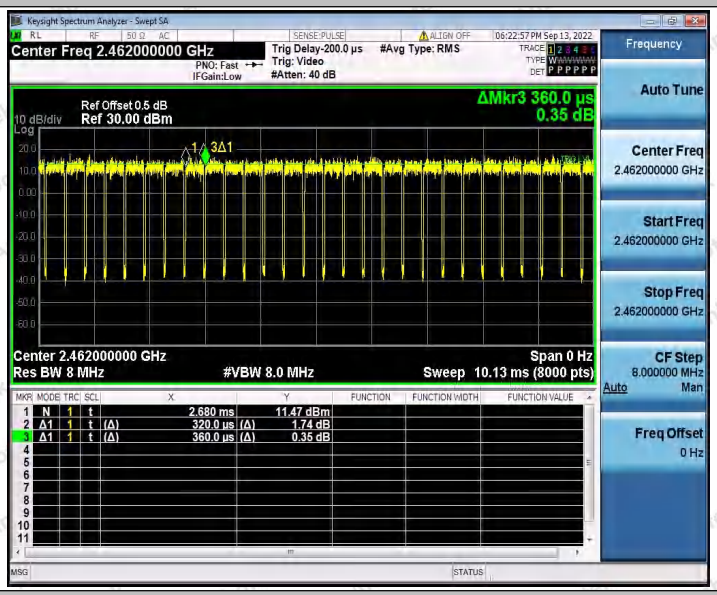
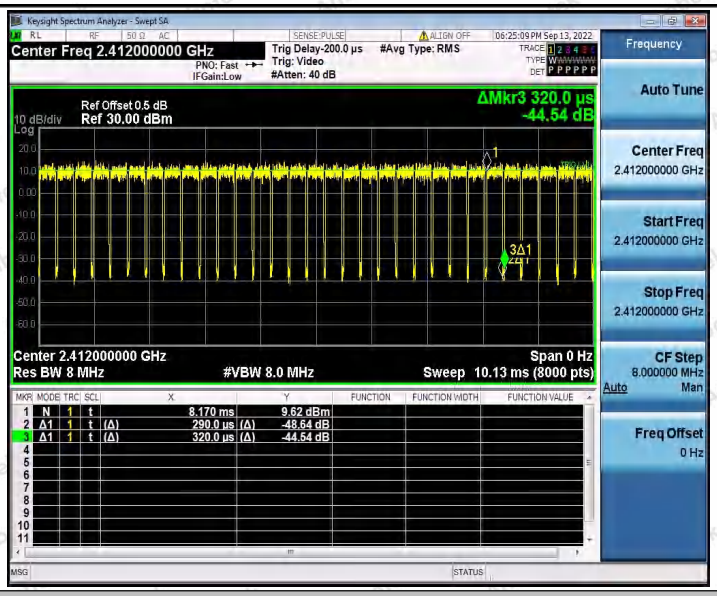


11N20_Ant1_2412



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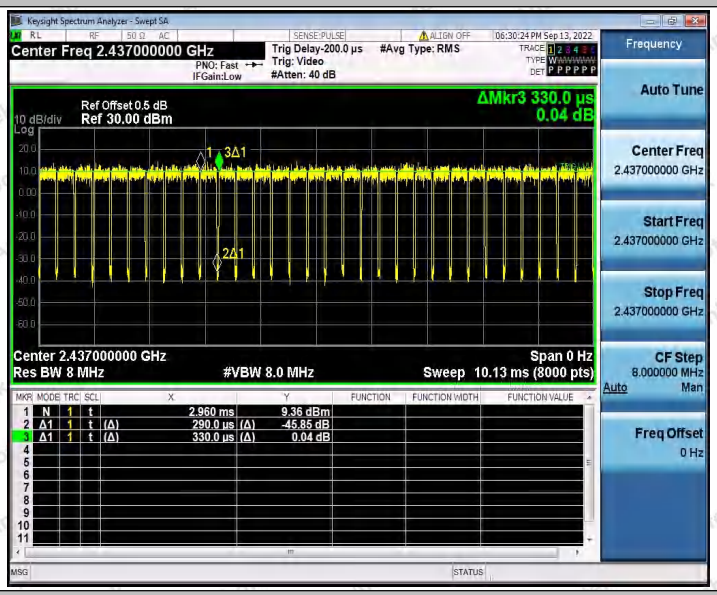
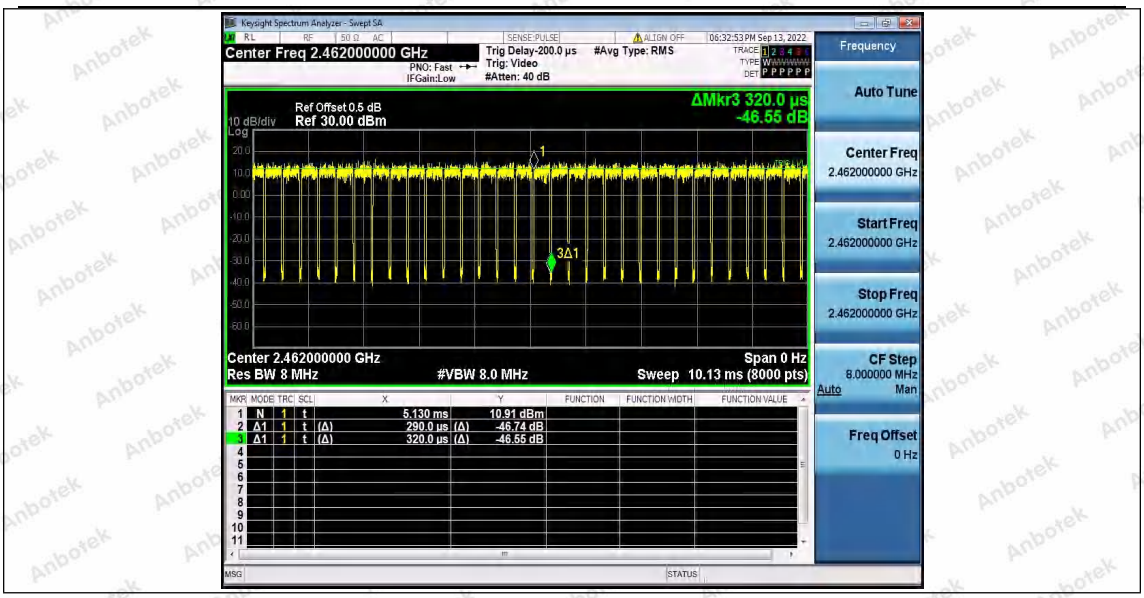


11N20_Ant1_2462


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.462000000 GHz
Trig Delay-200.0 µs
Trig: Video
#Atten: 40 dB
#Avg Type: RMS
06:32:53 PM Sep 13, 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
ΔMkr3 320.0 µs
-46.55 dB
Ref Offset 0.5 dB
10 dB/div
Ref 30.00 dBm
Center 2.462000000 GHz
Span 0 Hz
Res BW 8 MHz
#VBW 8.0 MHz
Sweep 10.13 ms (8000 pts)
1 N 1 t 5.130 ms 10.91 dBm
2 Δ1 1 t (Δ) 290.0 µs (Δ) -46.74 dB
3 Δ1 1 t (Δ) 320.0 µs (Δ) -46.55 dB

---End---