Appendix Test Data

Report No.:	18220WC20039703	Test Sample No.:	1-2-2
Start Test Date:	2022.3.2	Finish Test Date:	2022.3.14
Test Engineer:	Tony.He	Auditor:	Edward.Pan
Temperature:	24.3℃	Relative Humidity:	56 %
Pressure:	1012 hPa		

Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.720	2406.920	2416.640	≥0.5	PASS
	Ant2	2412	9.680	2406.920	2416.600	≥0.5	PASS
	Ant1	2437	9.600	2432.440	2442.040	≥0.5	PASS
	Ant2	2437	9.160	2432.440	2441.600	≥0.5	PASS
	Ant1	2462	10.120	2456.960	2467.080	≥0.5	PASS
	Ant2	2462	9.600	2456.960	2466.560	≥0.5	PASS
11G	Ant1	2412	16.400	2403.800	2420.200	≥0.5	PASS
	Ant2	2412	16.400	2403.800	2420.200	≥0.5	PASS
	Ant1	2437	16.480	2428.760	2445.240	≥0.5	PASS
	Ant2	2437	16.440	2428.800	2445.240	≥0.5	PASS
	Ant1	2462	16.440	2453.800	2470.240	≥0.5	PASS
	Ant2	2462	16.440	2453.800	2470.240	≥0.5	PASS
11N20	Ant1	2412	17.680	2403.160	2420.840	≥0.5	PASS
	Ant2	2412	17.680	2403.160	2420.840	≥0.5	PASS
	Ant1	2437	17.640	2428.200	2445.840	≥0.5	PASS
	Ant2	2437	17.680	2428.160	2445.840	≥0.5	PASS
	Ant1	2462	17.640	2453.200	2470.840	≥0.5	PASS
	Ant2	2462	17.640	2453.200	2470.840	≥0.5	PASS

Test Graphs

11B_Ant1_2412

11B_Ant2_2412

11B_Ant1_2437

11B_Ant2_2437

11B_Ant1_2462

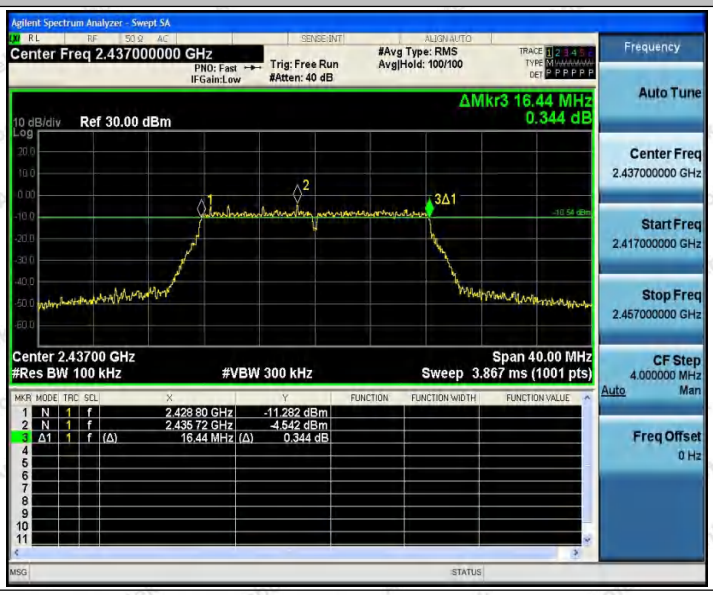
11B_Ant2_2462

11G_Ant1_2412

11G_Ant2_2412

11G_Ant1_2437

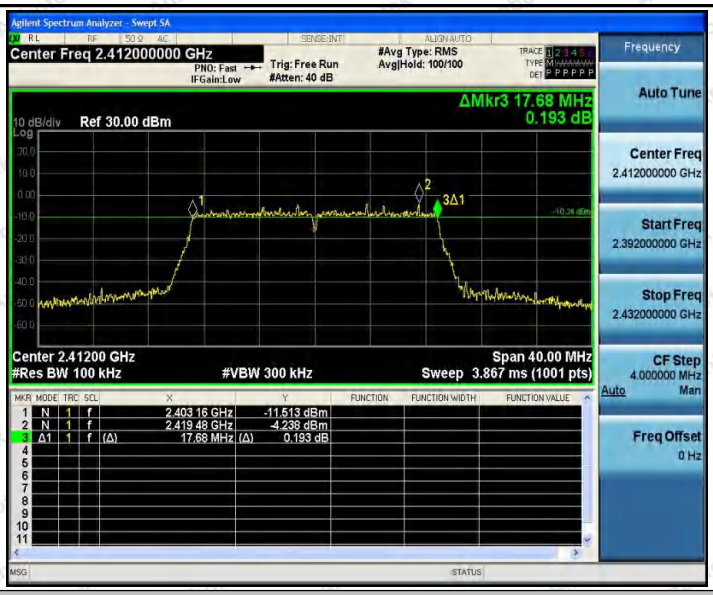
11G_Ant2_2437



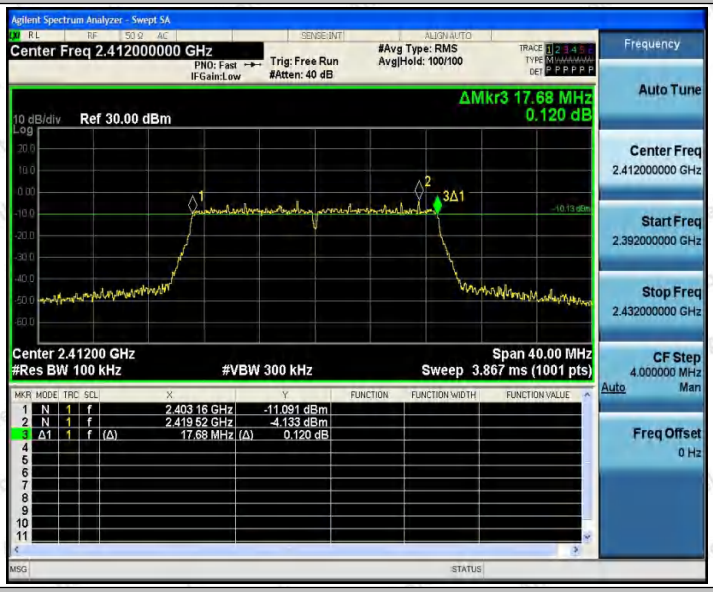
11G_Ant1_2462

11G_Ant2_2462

11N20_Ant1_2412

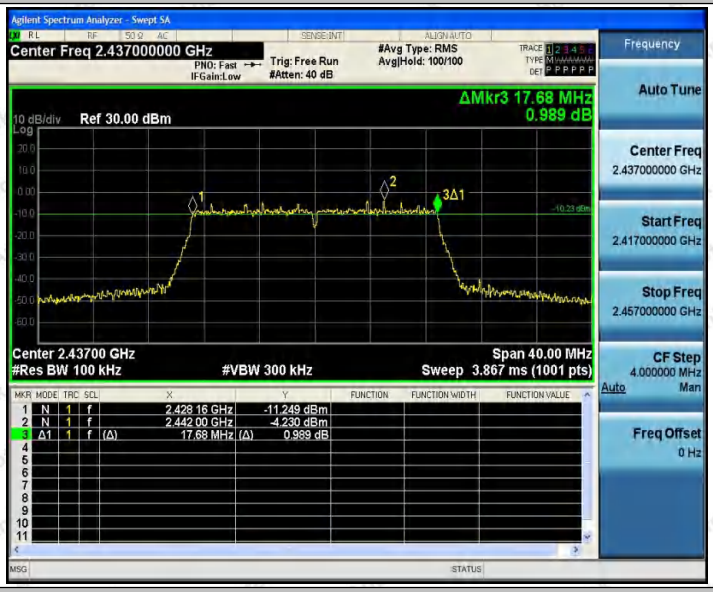


11N20_Ant2_2412



11N20_Ant1_2437

11N20_Ant2_2437



11N20_Ant1_2462

11N20_Ant2_2462

Agilent 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
ΔMkr3 17.64 MHz
-0.025 dB
10 dB/div
Ref 30.00 dBm
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 -10.255 dBm
2 N 1 f 2.467 00 GHz -3.556 dBm
3 Δ1 1 f (Δ) 17.64 MHz (Δ) -0.025 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

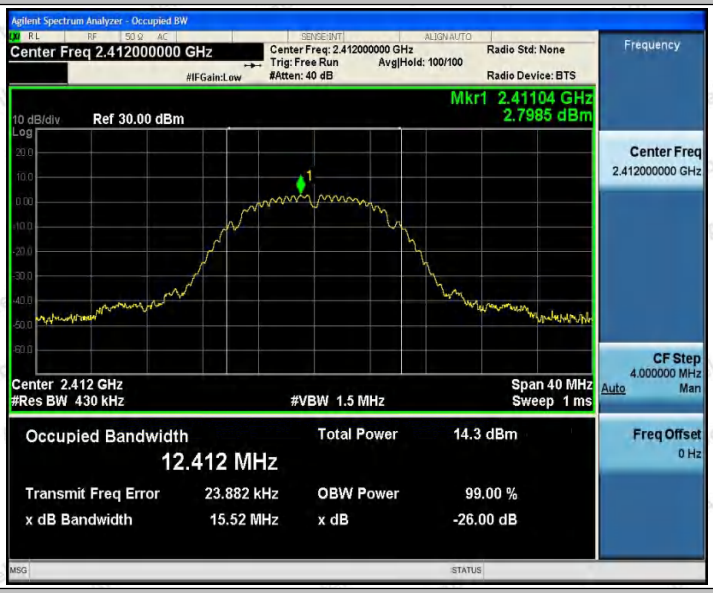
Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.434	2405.807	2418.241	---	PASS
	Ant2	2412	12.412	2405.818	2418.230	---	PASS
	Ant1	2437	12.440	2430.818	2443.258	---	PASS
	Ant2	2437	12.440	2430.819	2443.259	---	PASS
	Ant1	2462	12.400	2455.872	2468.272	---	PASS
	Ant2	2462	12.400	2455.872	2468.272	---	PASS
11G	Ant1	2412	17.128	2403.445	2420.573	---	PASS
	Ant2	2412	17.152	2403.386	2420.538	---	PASS
	Ant1	2437	17.049	2428.520	2445.569	---	PASS
	Ant2	2437	17.117	2428.494	2445.611	---	PASS
	Ant1	2462	17.059	2453.549	2470.608	---	PASS
	Ant2	2462	17.085	2453.518	2470.603	---	PASS
11N20	Ant1	2412	17.981	2403.002	2420.983	---	PASS
	Ant2	2412	18.017	2403.020	2421.037	---	PASS
	Ant1	2437	17.989	2428.023	2446.012	---	PASS
	Ant2	2437	17.975	2428.053	2446.028	---	PASS
	Ant1	2462	18.049	2453.021	2471.070	---	PASS
	Ant2	2462	17.951	2453.064	2471.015	---	PASS

Test Graphs

11B_Ant1_2412

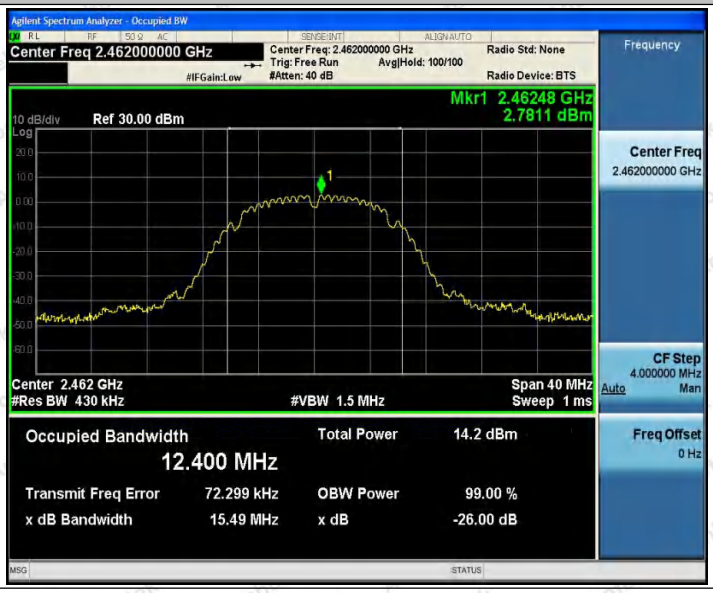
11B_Ant2_2412



11B_Ant1_2437

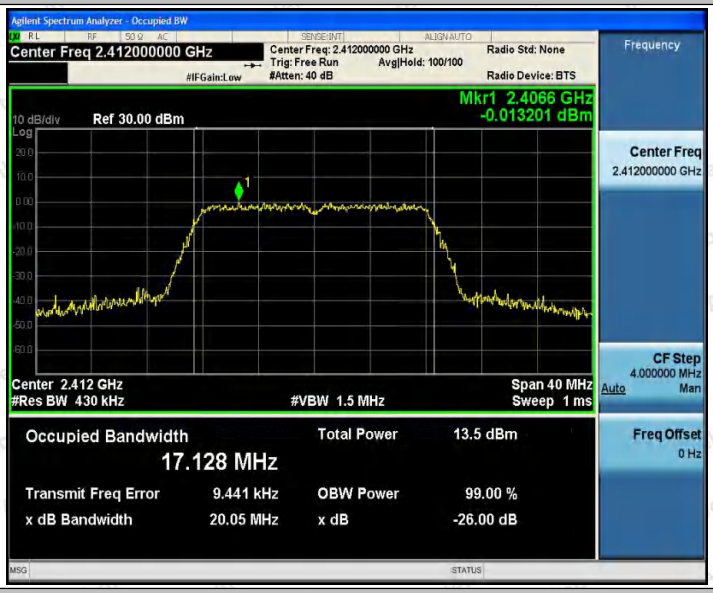
11B_Ant2_2437

11B_Ant1_2462



11B_Ant2_2462

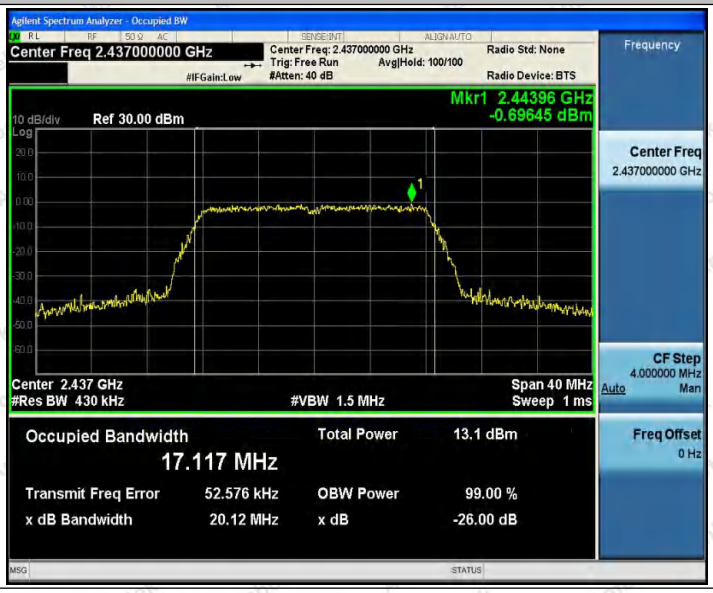
11G_Ant1_2412



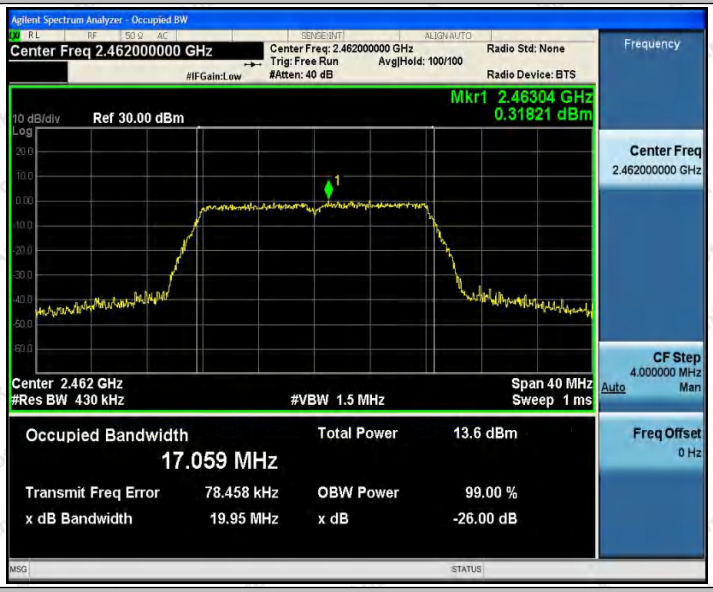
11G_Ant2_2412

11G_Ant1_2437

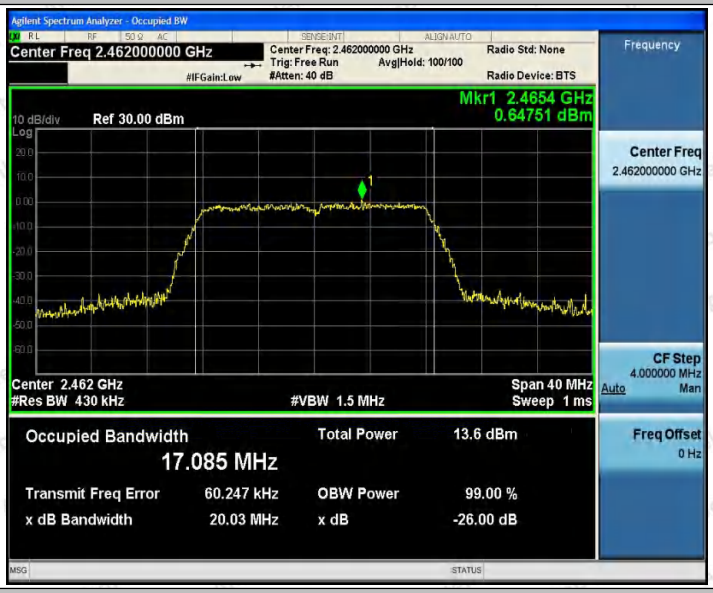
11G_Ant2_2437



11G_Ant1_2462

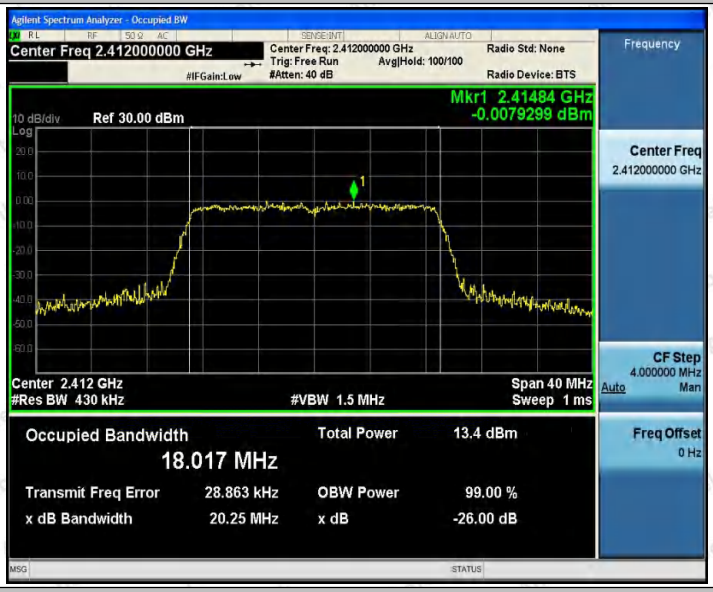


11G_Ant2_2462

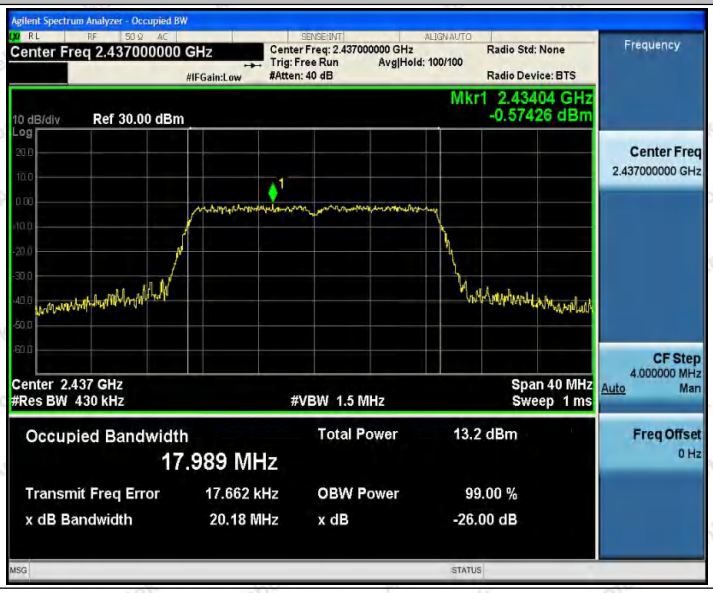


11N20_Ant1_2412

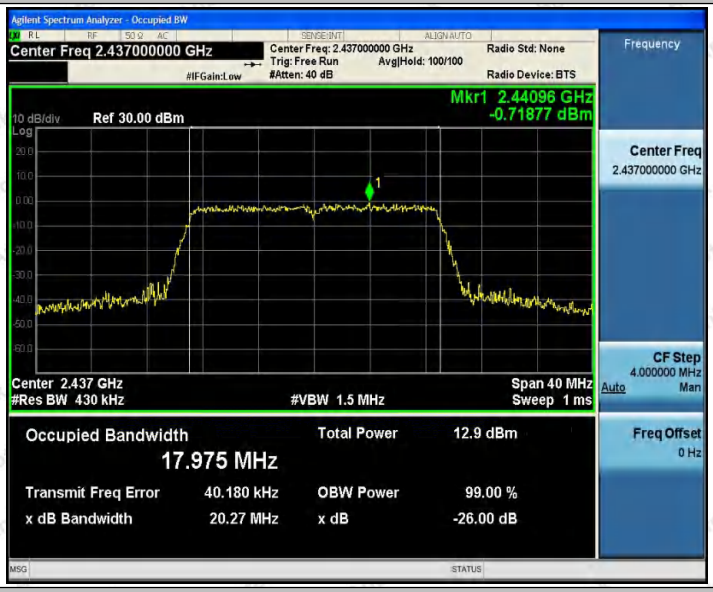
11N20_Ant2_2412



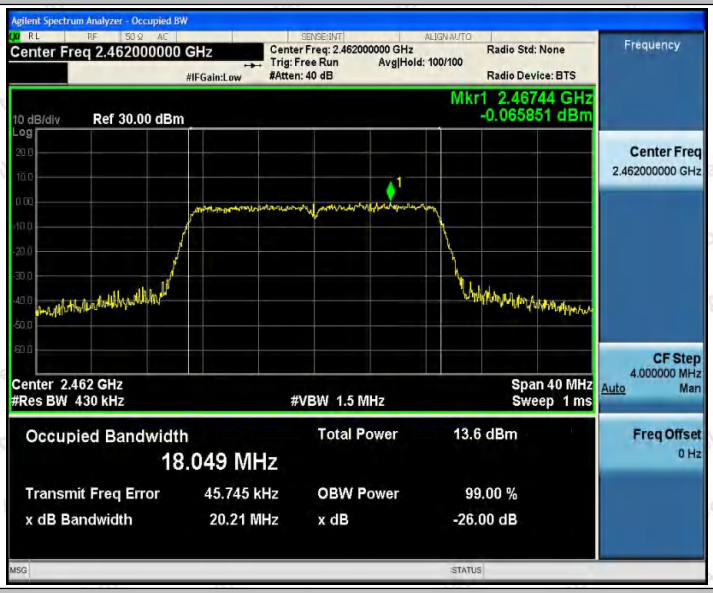
11N20_Ant1_2437



11N20_Ant2_2437



11N20_Ant1_2462



11N20_Ant2_2462

Agilent 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
Mkr1 2.45968 GHz
-0.35746 dBm
10 dB/div
Ref 30.00 dBm
Center Freq
2.462000000 GHz
Center 2.462 GHz
#Res BW 430 kHz
#VBW 1.5 MHz
Span 40 MHz
Sweep 1 ms
CF Step
4.000000 MHz
Auto
Man
Occupied Bandwidth
17.951 MHz
Total Power
13.6 dBm
Freq Offset
0 Hz
Transmit Freq Error
39.959 kHz
OBW Power
99.00 %
x dB Bandwidth
20.24 MHz
x dB
-26.00 dB
MSG
STATUS

Appendix C: Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	14.49	≤30	PASS
	Ant2	2412	14.25	≤30	PASS
	Ant1	2437	13.87	≤30	PASS
	Ant2	2437	13.87	≤30	PASS
	Ant1	2462	14.22	≤30	PASS
	Ant2	2462	14.22	≤30	PASS
11G	Ant1	2412	14.42	≤30	PASS
	Ant2	2412	14.52	≤30	PASS
	Ant1	2437	14.25	≤30	PASS
	Ant2	2437	14.19	≤30	PASS
	Ant1	2462	14.68	≤30	PASS
	Ant2	2462	14.73	≤30	PASS
11N20	Ant1	2412	14.48	≤30	PASS
	Ant2	2412	14.55	≤30	PASS
	Ant1	2437	14.29	≤30	PASS
	Ant2	2437	14.30	≤30	PASS
	Ant1	2462	14.74	≤30	PASS
	Ant2	2462	14.75	≤30	PASS

MIMO

TestMode	Channel	Result[dBm]	Limit[dBm]	Verdict
11N20	2412	17.525	≤30	PASS
	2437	17.305	≤30	PASS
	2462	17.755	≤30	PASS

Appendix D: Maximum power spectral density

Test Result

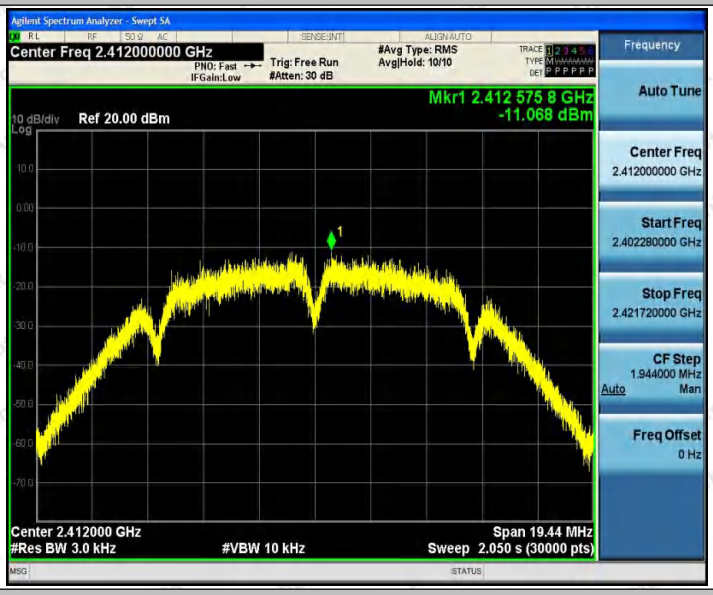
TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-11.07	≤8	PASS
	Ant2	2412	-10.02	≤8	PASS
	Ant1	2437	-8.37	≤8	PASS
	Ant2	2437	-10.89	≤8	PASS
	Ant1	2462	-11.63	≤8	PASS
	Ant2	2462	-11.43	≤8	PASS
11G	Ant1	2412	-17.48	≤8	PASS
	Ant2	2412	-17.77	≤8	PASS
	Ant1	2437	-17.51	≤8	PASS
	Ant2	2437	-17.77	≤8	PASS
	Ant1	2462	-17.69	≤8	PASS
	Ant2	2462	-16.64	≤8	PASS
11N20	Ant1	2412	-17.2	≤8	PASS
	Ant2	2412	-17.78	≤8	PASS
	Ant1	2437	-17.14	≤8	PASS
	Ant2	2437	-18.72	≤8	PASS
	Ant1	2462	-17.51	≤8	PASS
	Ant2	2462	-17.1	≤8	PASS

MIMO

TestMode	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11N20	2412	-14.470	≤8	PASS
	2437	-14.848	≤8	PASS
	2462	-14.290	≤8	PASS

Test Graphs

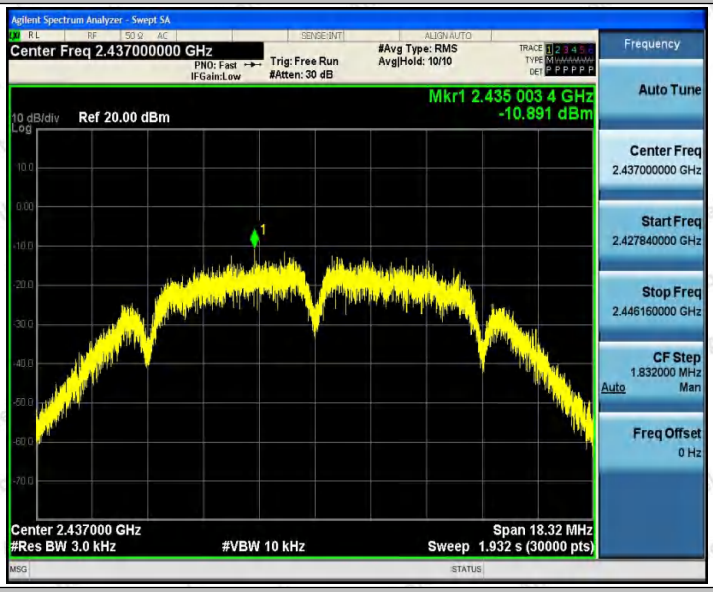
11B_Ant1_2412



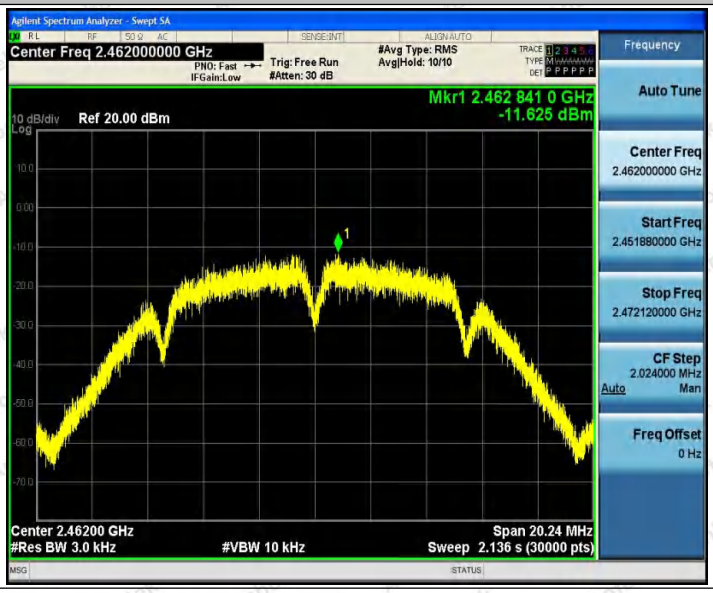
11B_Ant2_2412

11B_Ant1_2437

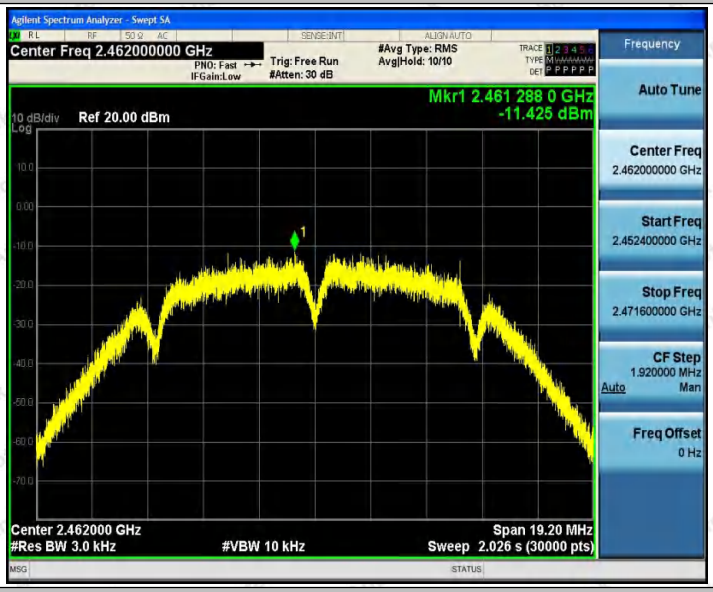
11B_Ant2_2437



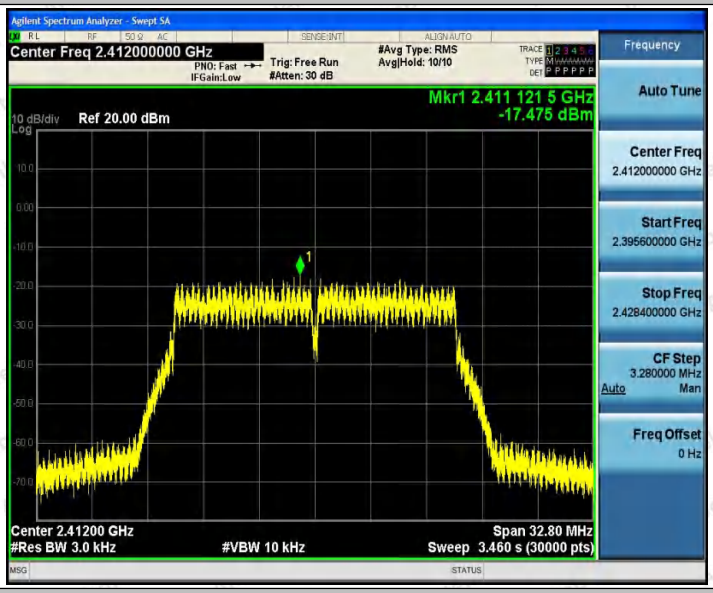
11B_Ant1_2462



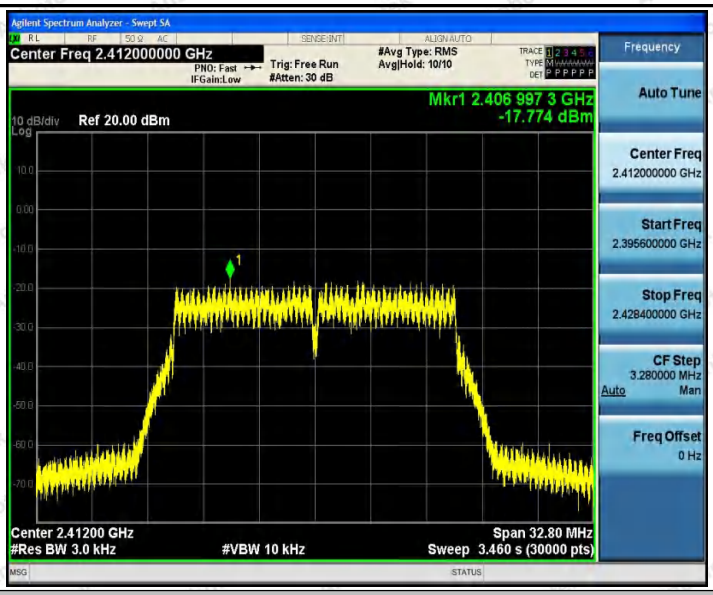
11B_Ant2_2462



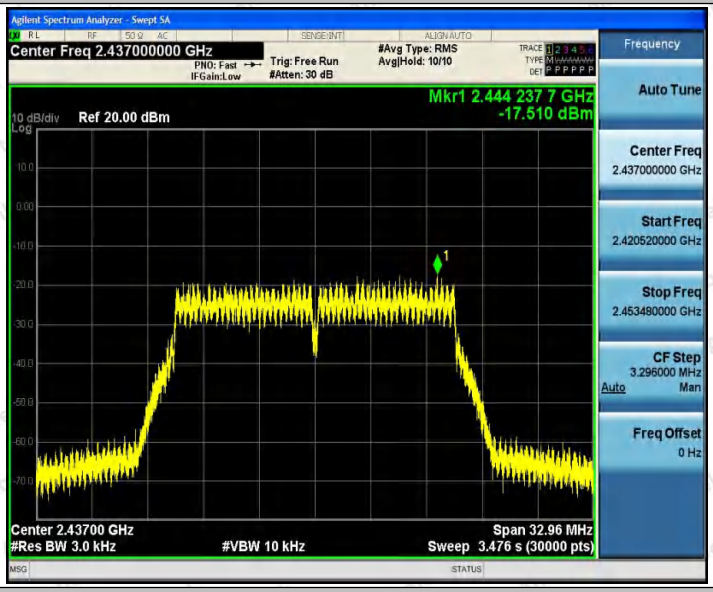
11G_Ant1_2412



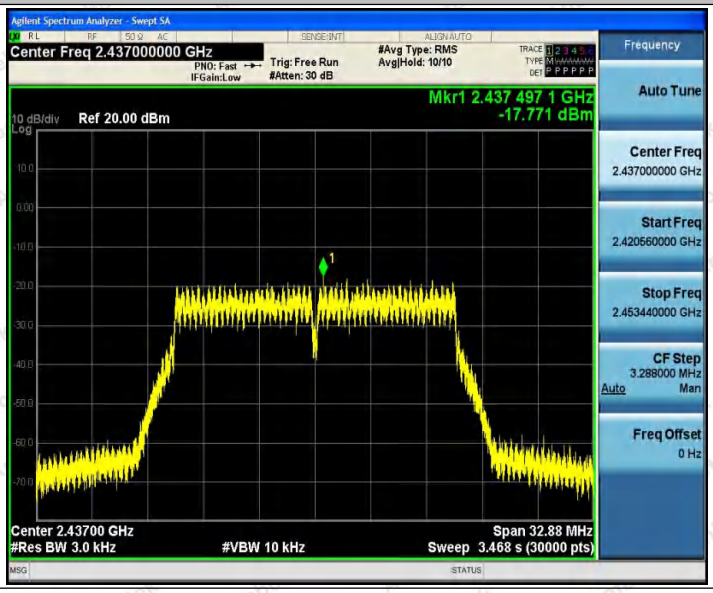
11G_Ant2_2412



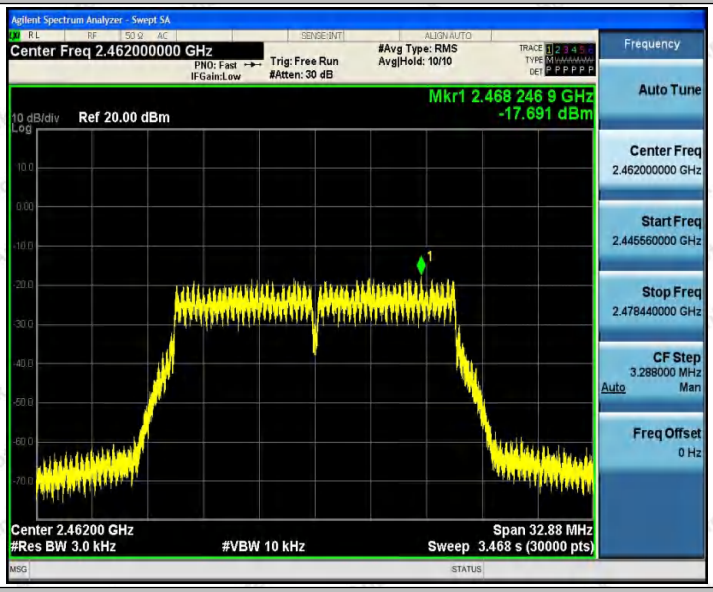
11G_Ant1_2437



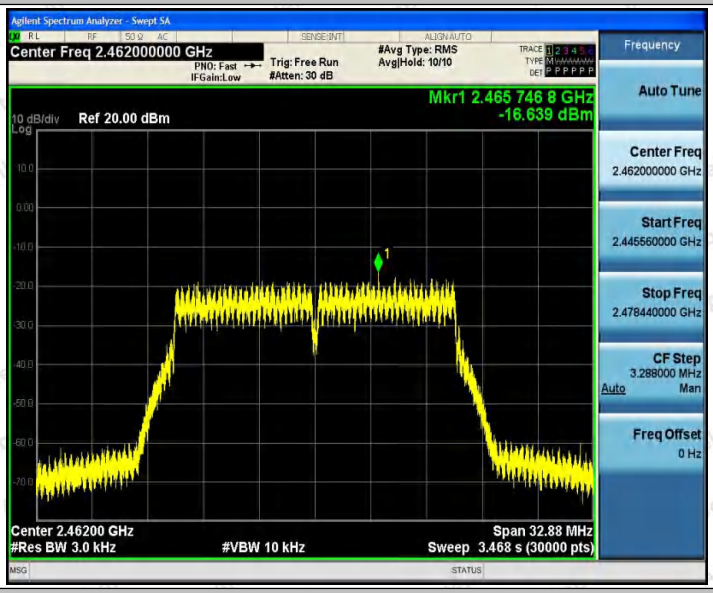
11G_Ant2_2437



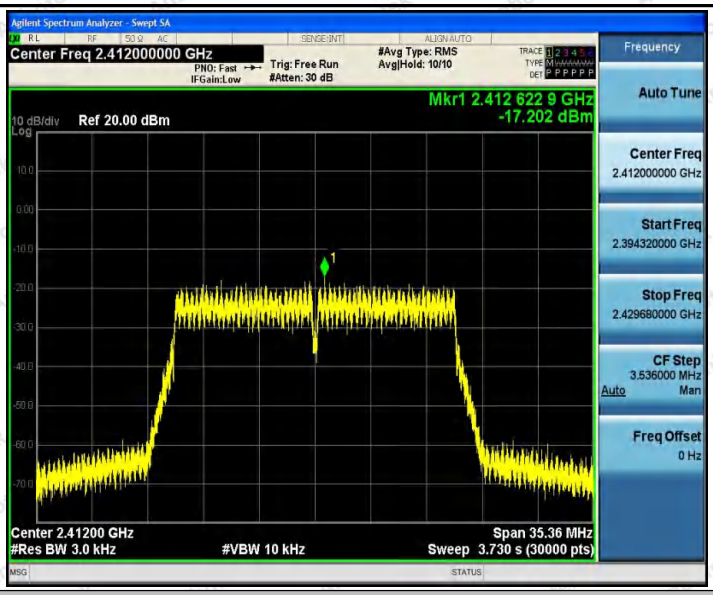
11G_Ant1_2462



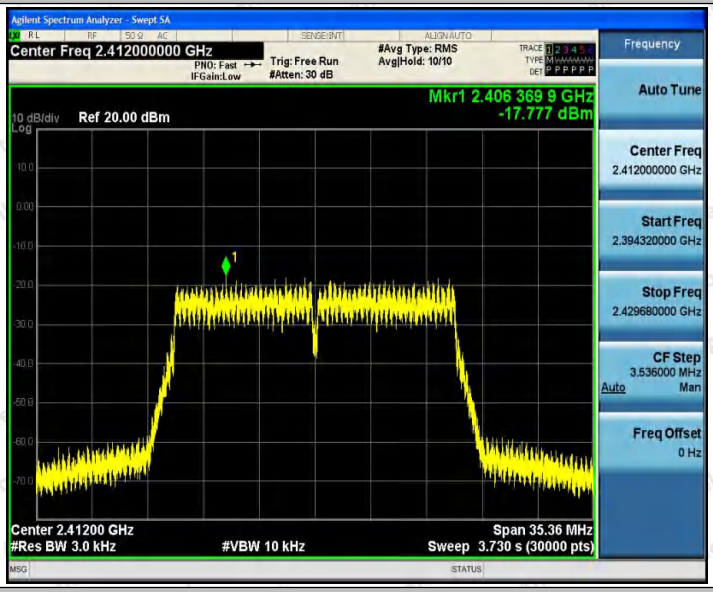
11G_Ant2_2462



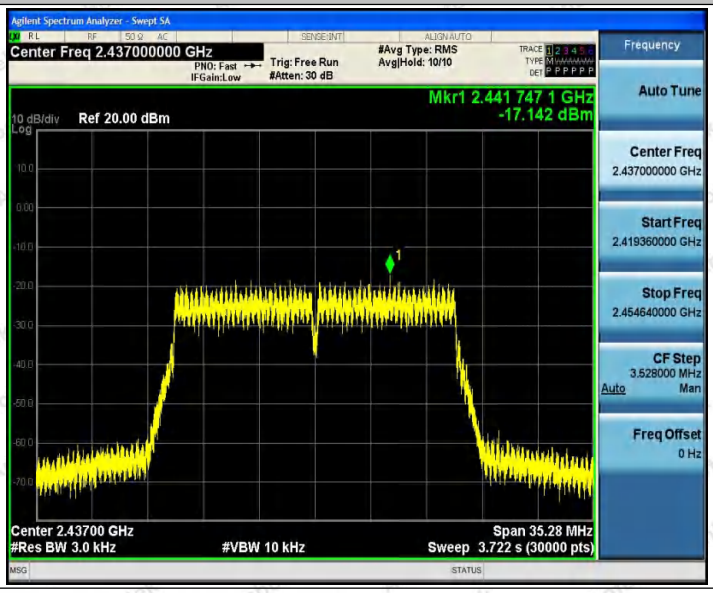
11N20_Ant1_2412



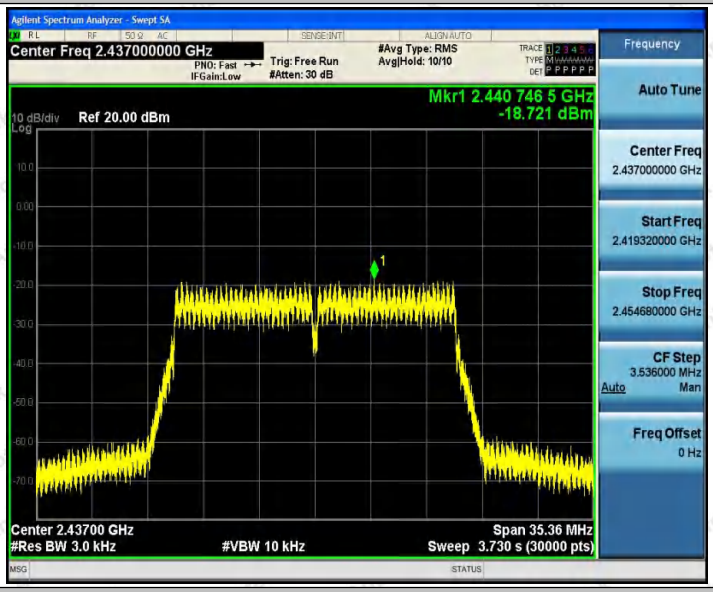
11N20_Ant2_2412



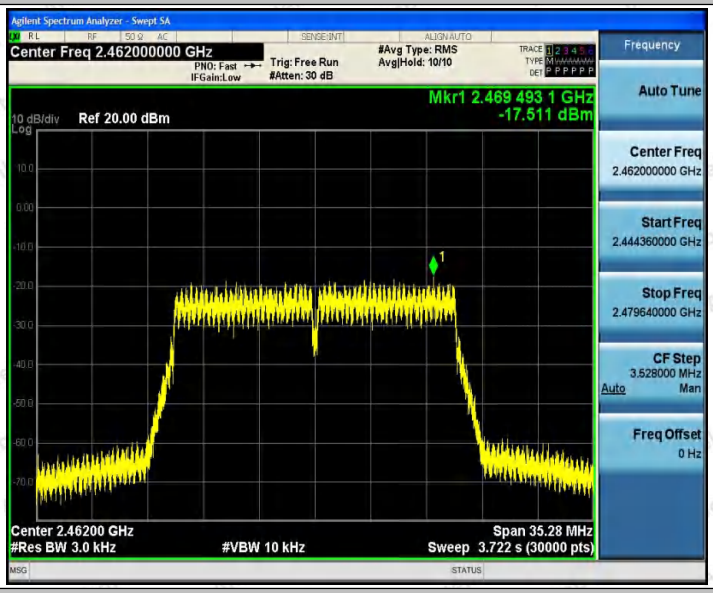
11N20_Ant1_2437



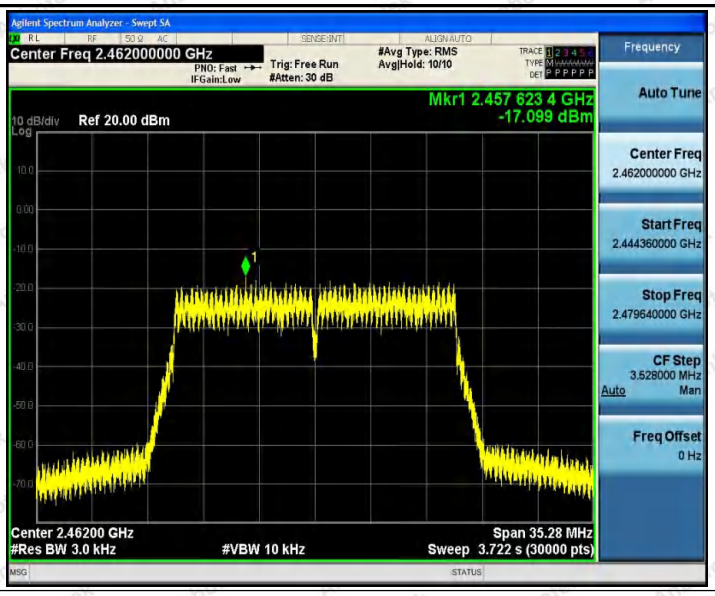
11N20_Ant2_2437



11N20_Ant1_2462



11N20_Ant2_2462


Agilent 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
Mkr1 2.457 623 4 GHz
-17.099 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 2.46200 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 35.28 MHz
Sweep 3.722 s (30000 pts)
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.444360000 GHz
Stop Freq
2.479640000 GHz
CF Step
3.528000 MHz
Auto
Man
Freq Offset
0 Hz

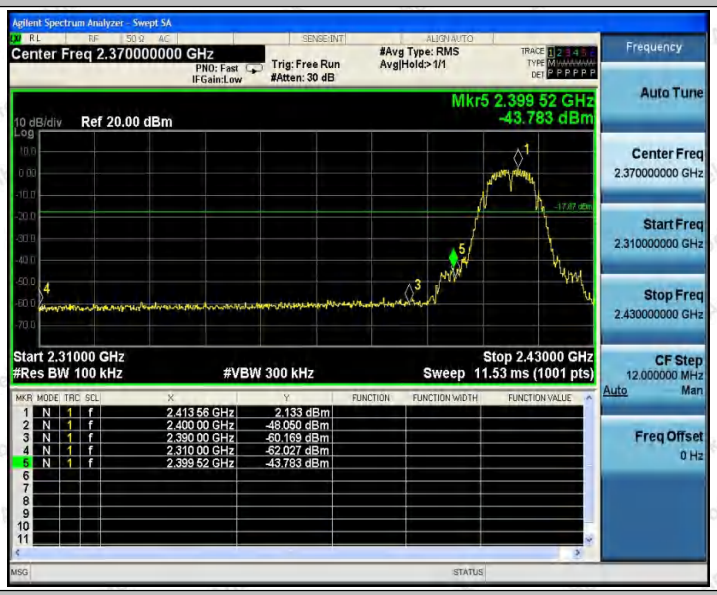
Appendix E: Band edge measurements

Test Result

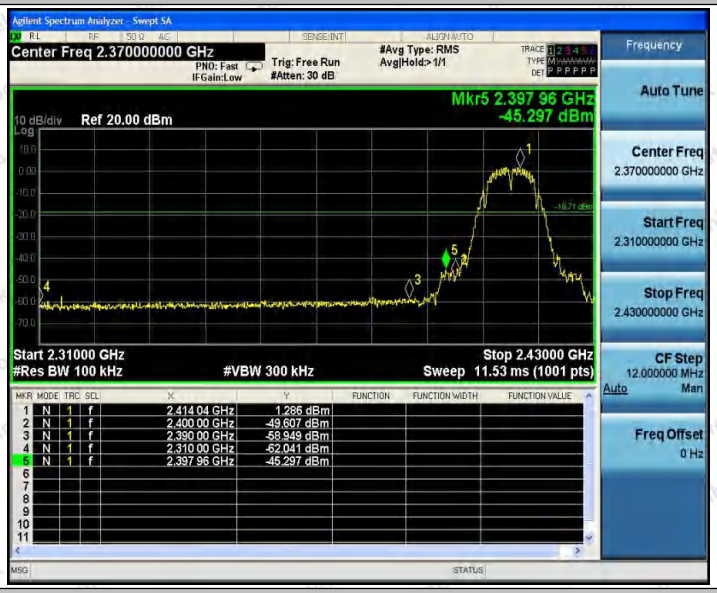
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	2.13	-43.78	≤-17.87	PASS
	Ant2	Low	2412	1.29	-45.3	≤-18.71	PASS
	Ant1	High	2462	2.41	-56.64	≤-17.59	PASS
	Ant2	High	2462	2.24	-57.16	≤-17.76	PASS
11G	Ant1	Low	2412	-4.12	-42.36	≤-24.12	PASS
	Ant2	Low	2412	-3.93	-42.67	≤-23.93	PASS
	Ant1	High	2462	-3.47	-53.36	≤-23.47	PASS
	Ant2	High	2462	-3.53	-53.2	≤-23.53	PASS
11N20	Ant1	Low	2412	-4.01	-43.54	≤-24.01	PASS
	Ant2	Low	2412	-4.23	-41.65	≤-24.23	PASS
	Ant1	High	2462	-3.56	-52.53	≤-23.56	PASS
	Ant2	High	2462	-3.96	-52.81	≤-23.96	PASS

Test Graphs

11B_Ant1_Low_2412



11B_Ant2_Low_2412



11B_Ant1_High_2462

11B_Ant2_High_2462

11G_Ant1_Low_2412

11G_Ant2_Low_2412

11G_Ant1_High_2462

11G_Ant2_High_2462

11N20_Ant1_Low_2412

11N20_Ant2_Low_2412

11N20_Ant1_High_2462

11N20_Ant2_High_2462

Appendix F: Conducted Spurious Emission

Test Result

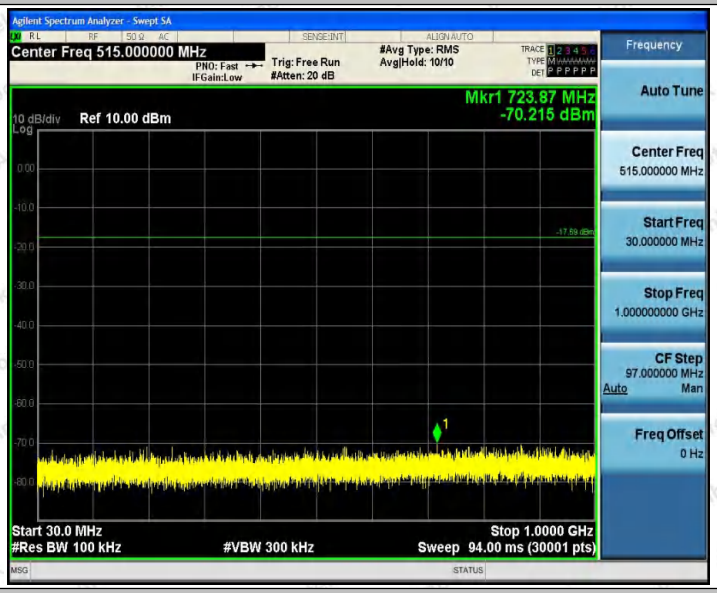
TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	2.31	2.31	---	PASS
			30~1000	2.31	-70.22	≤-17.69	PASS
			1000~26500	2.31	-51.84	≤-17.69	PASS
	Ant2	2412	Reference	2.19	2.19	---	PASS
			30~1000	2.19	-69.6	≤-17.81	PASS
			1000~26500	2.19	-52.56	≤-17.81	PASS
	Ant1	2437	Reference	1.97	1.97	---	PASS
			30~1000	1.97	-69.45	≤-18.04	PASS
			1000~26500	1.97	-54.33	≤-18.04	PASS
	Ant2	2437	Reference	1.73	1.73	---	PASS
			30~1000	1.73	-69.37	≤-18.27	PASS
			1000~26500	1.73	-54.28	≤-18.27	PASS
	Ant1	2462	Reference	2.43	2.43	---	PASS
			30~1000	2.43	-69.65	≤-17.57	PASS
			1000~26500	2.43	-55.2	≤-17.57	PASS
	Ant2	2462	Reference	2.60	2.60	---	PASS
			30~1000	2.60	-69.55	≤-17.4	PASS
			1000~26500	2.60	-56.07	≤-17.4	PASS
11G	Ant1	2412	Reference	-4.31	-4.31	---	PASS
			30~1000	-4.31	-70.4	≤-24.31	PASS
			1000~26500	-4.31	-55.28	≤-24.31	PASS
	Ant2	2412	Reference	-4.16	-4.16	---	PASS
			30~1000	-4.16	-70.07	≤-24.16	PASS
			1000~26500	-4.16	-55.65	≤-24.16	PASS
	Ant1	2437	Reference	-4.37	-4.37	---	PASS
			30~1000	-4.37	-68.79	≤-24.37	PASS
			1000~26500	-4.37	-55.31	≤-24.37	PASS
	Ant2	2437	Reference	-4.49	-4.49	---	PASS
			30~1000	-4.49	-70.48	≤-24.49	PASS
			1000~26500	-4.49	-54.81	≤-24.49	PASS
	Ant1	2462	Reference	-3.78	-3.78	---	PASS
			30~1000	-3.78	-70.27	≤-23.78	PASS
			1000~26500	-3.78	-56	≤-23.78	PASS
	Ant2	2462	Reference	-3.67	-3.67	---	PASS
			30~1000	-3.67	-70.04	≤-23.67	PASS
			1000~26500	-3.67	-55.57	≤-23.67	PASS
11N20	Ant1	2412	Reference	-4.03	-4.03	---	PASS

			30~1000	-4.03	-70.26	≤-24.03	PASS
			1000~26500	-4.03	-54.83	≤-24.03	PASS
	Ant2	2412	Reference	-4.28	-4.28	---	PASS
			30~1000	-4.28	-70.02	≤-24.28	PASS
			1000~26500	-4.28	-54.35	≤-24.28	PASS
	Ant1	2437	Reference	-4.53	-4.53	---	PASS
			30~1000	-4.53	-69.96	≤-24.53	PASS
			1000~26500	-4.53	-55.55	≤-24.53	PASS
	Ant2	2437	Reference	-4.48	-4.48	---	PASS
			30~1000	-4.48	-70.1	≤-24.48	PASS
			1000~26500	-4.48	-56.15	≤-24.48	PASS
	Ant1	2462	Reference	-3.37	-3.37	---	PASS
			30~1000	-3.37	-70.45	≤-23.37	PASS
			1000~26500	-3.37	-55.2	≤-23.37	PASS
	Ant2	2462	Reference	-3.69	-3.69	---	PASS
			30~1000	-3.69	-70.35	≤-23.69	PASS
			1000~26500	-3.69	-55.79	≤-23.69	PASS

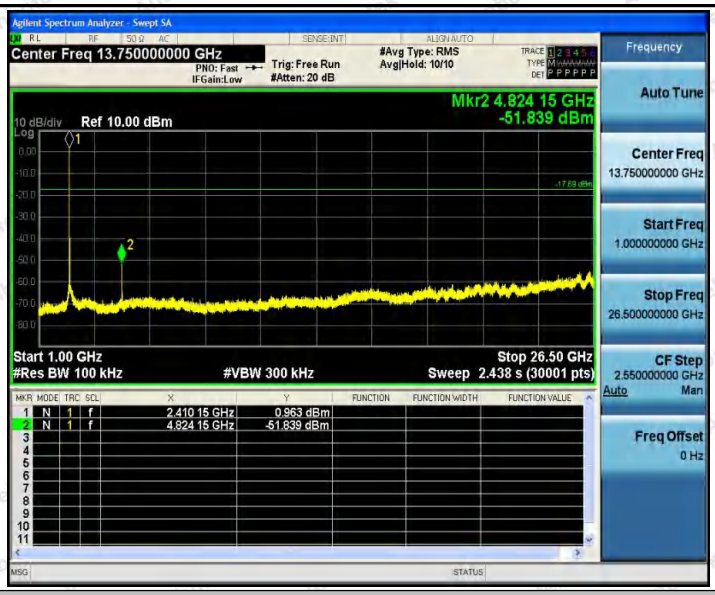
Test Graphs

11B_Ant1_2412_0~Reference

11B_Ant1_2412_30~1000

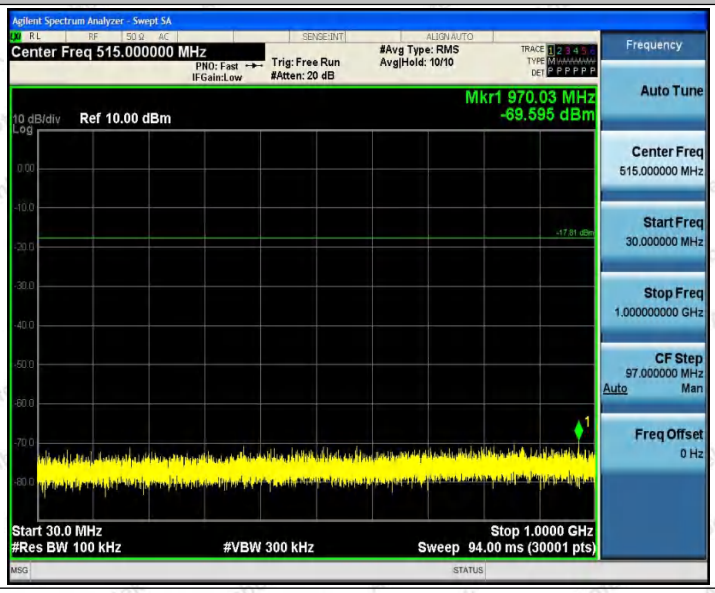


11B_Ant1_2412_1000~26500

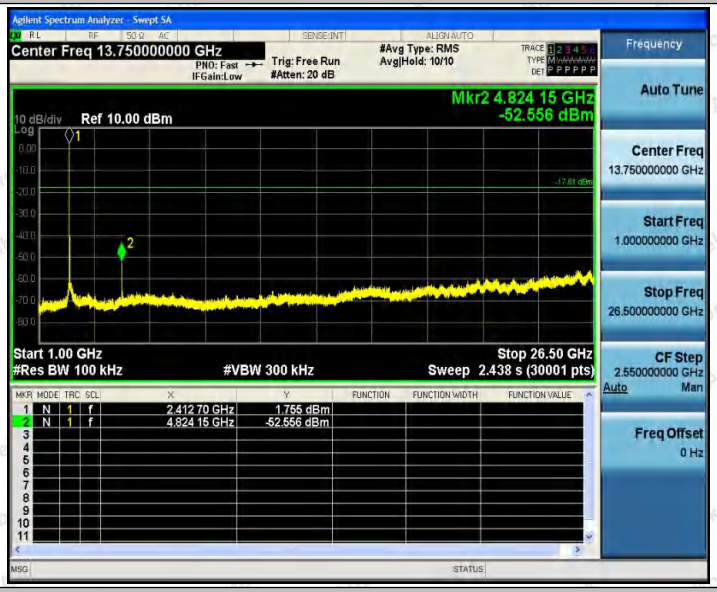


11B_Ant2_2412_0~Reference

11B_Ant2_2412_30~1000

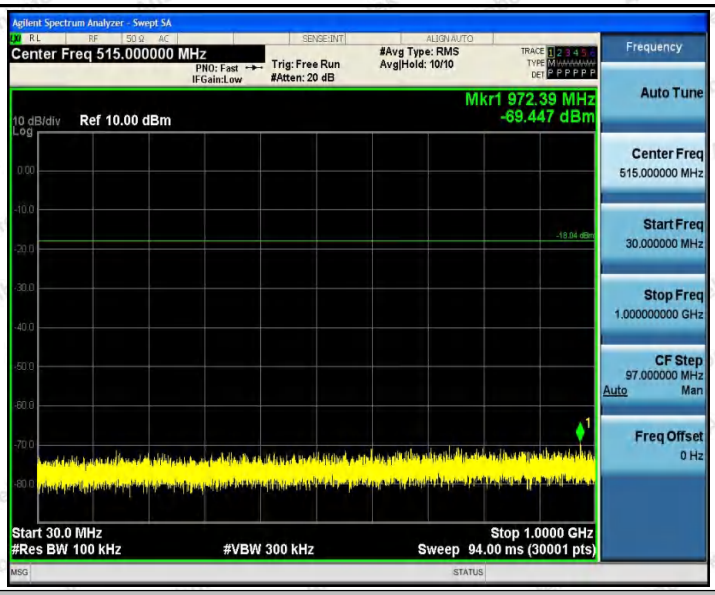


11B_Ant2_2412_1000~26500

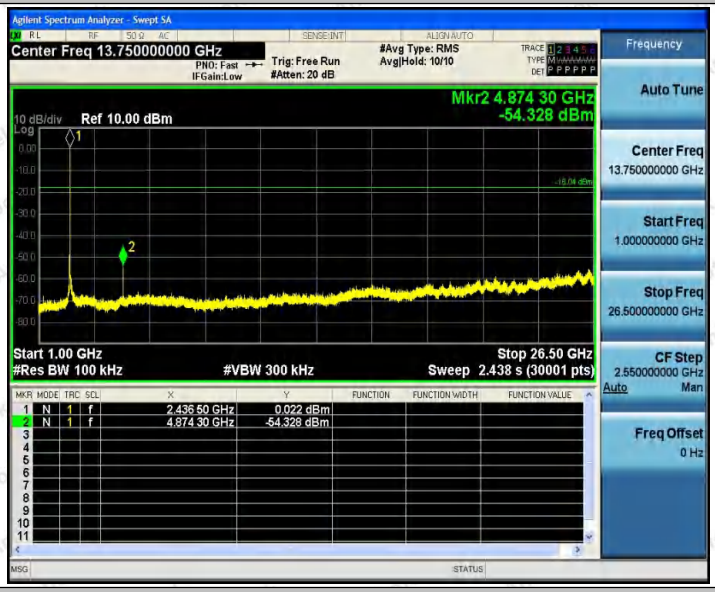


11B_Ant1_2437_0~Reference

11B_Ant1_2437_30~1000

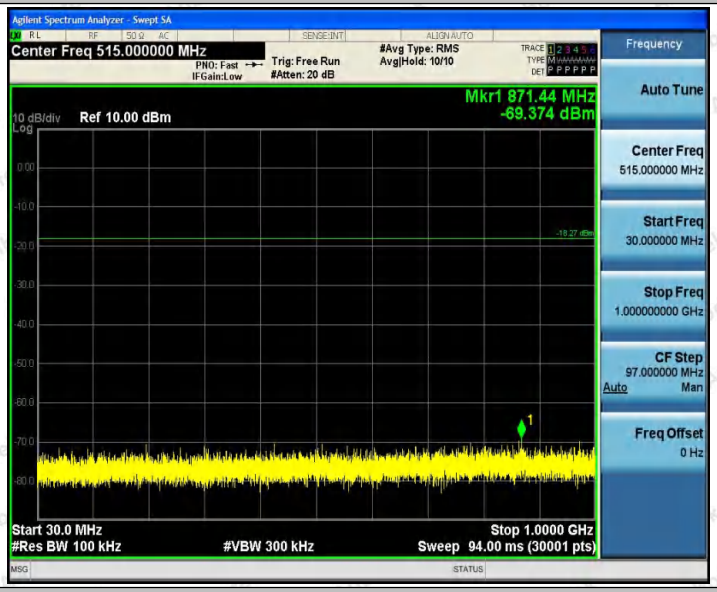


11B_Ant1_2437_1000~26500

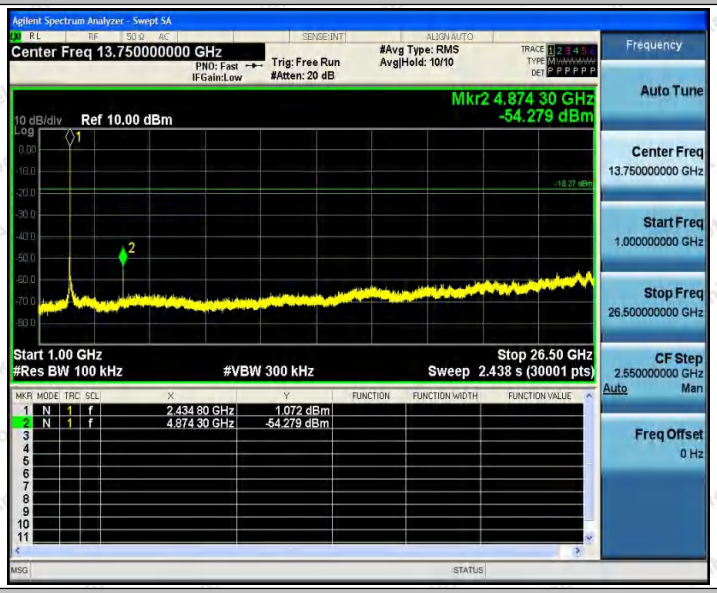


11B_Ant2_2437_0~Reference

11B_Ant2_2437_30~1000

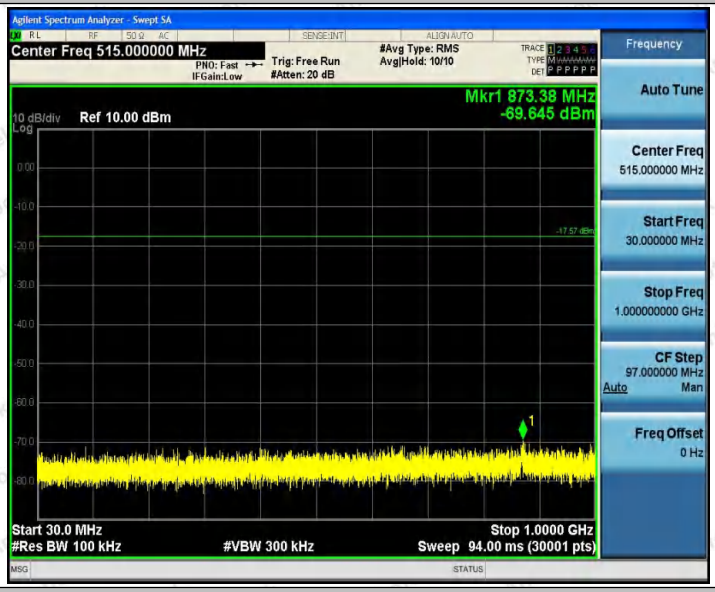


11B_Ant2_2437_1000~26500

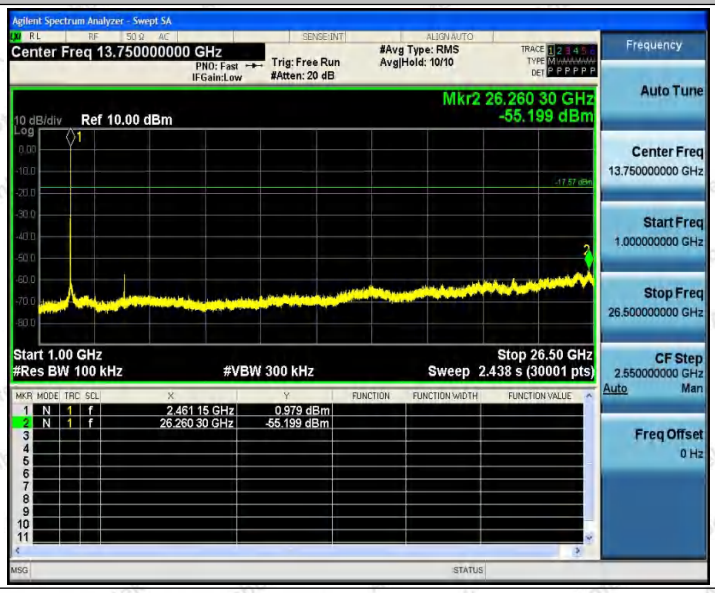


11B_Ant1_2462_0~Reference

11B_Ant1_2462_30~1000

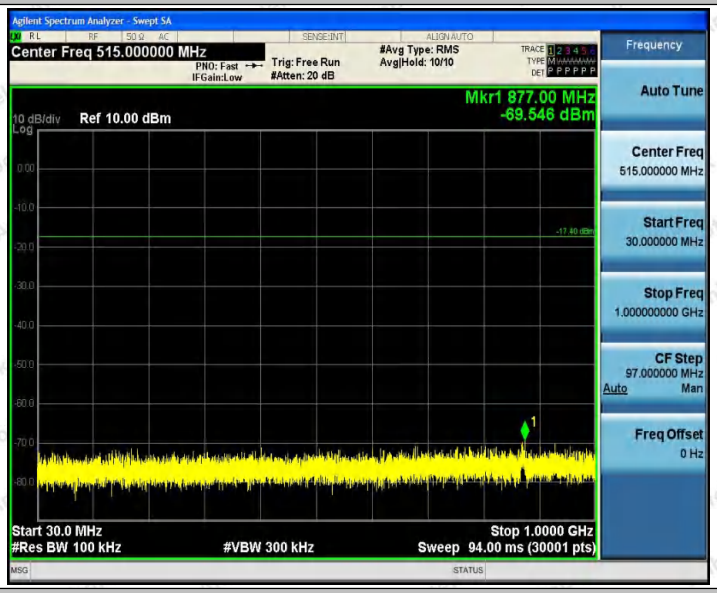


11B_Ant1_2462_1000~26500

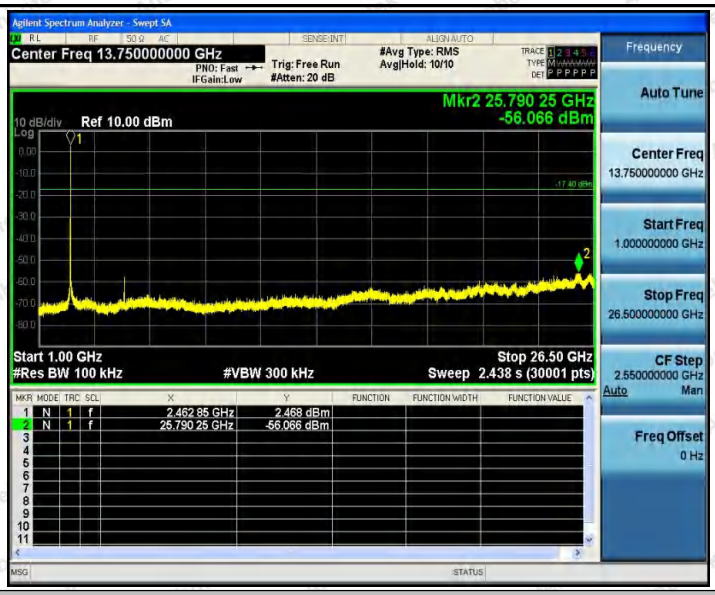


11B_Ant2_2462_0~Reference

11B_Ant2_2462_30~1000

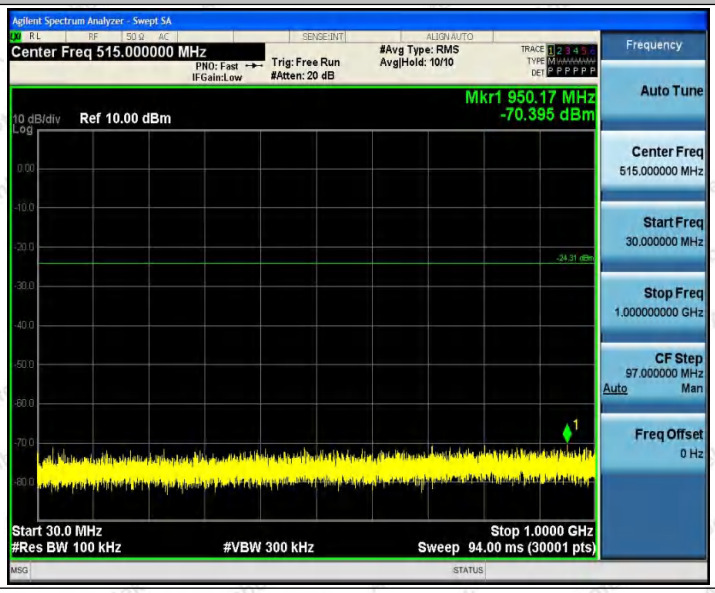


11B_Ant2_2462_1000~26500

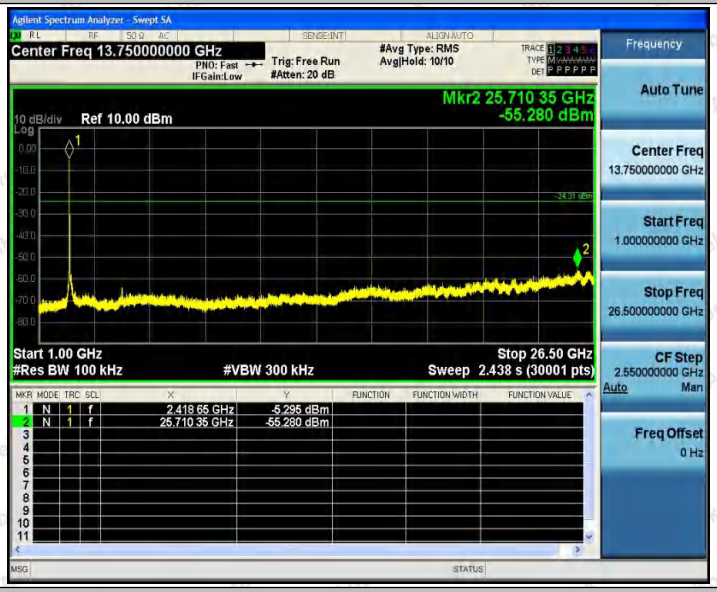


11G_Ant1_2412_0~Reference

11G_Ant1_2412_30~1000

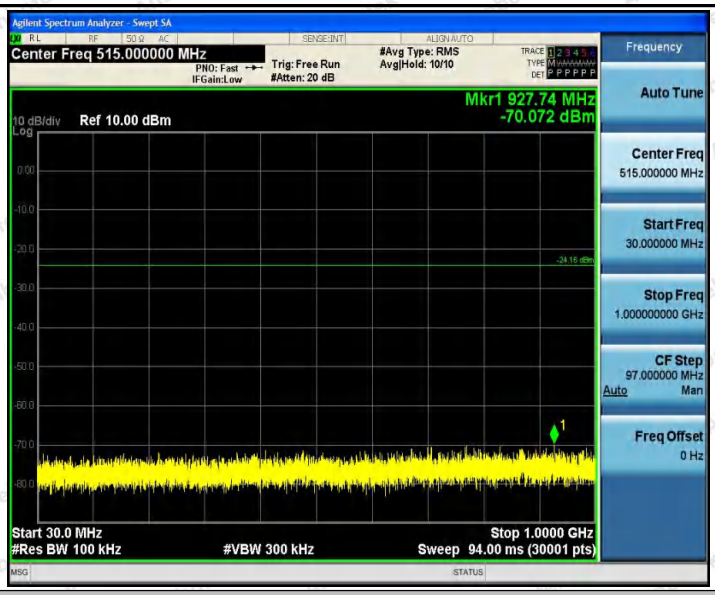


11G_Ant1_2412_1000~26500

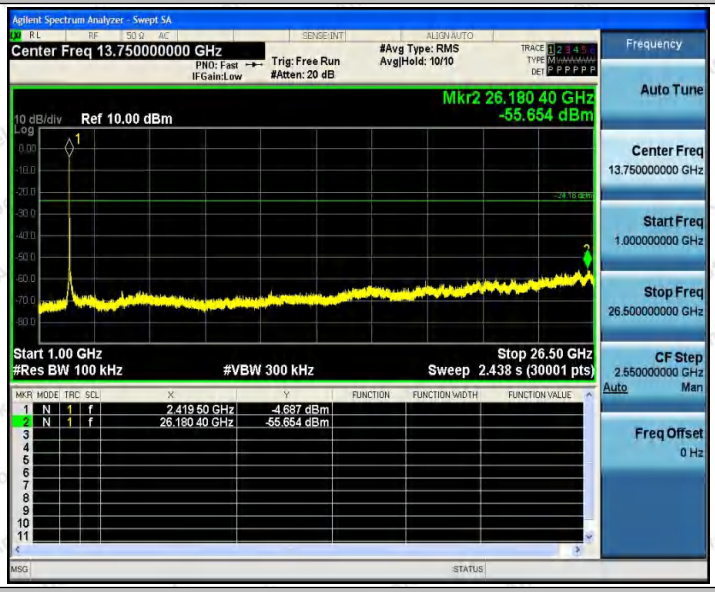


11G_Ant2_2412_0~Reference

11G_Ant2_2412_30~1000



11G_Ant2_2412_1000~26500



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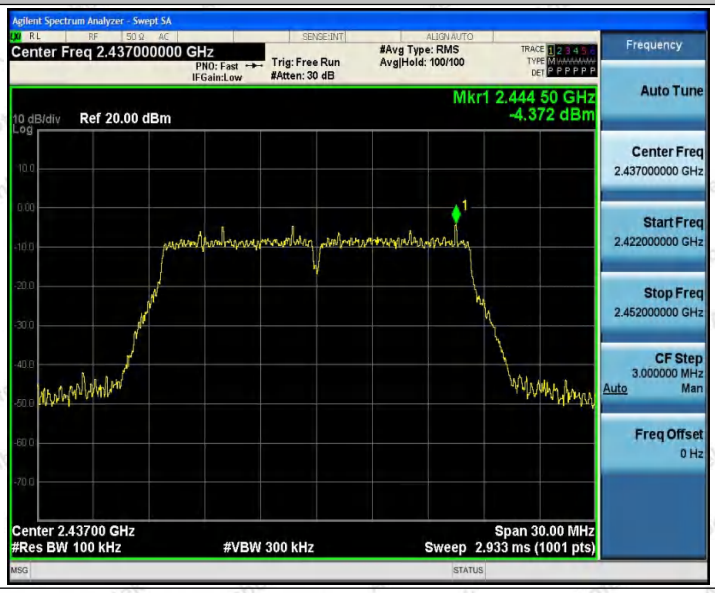
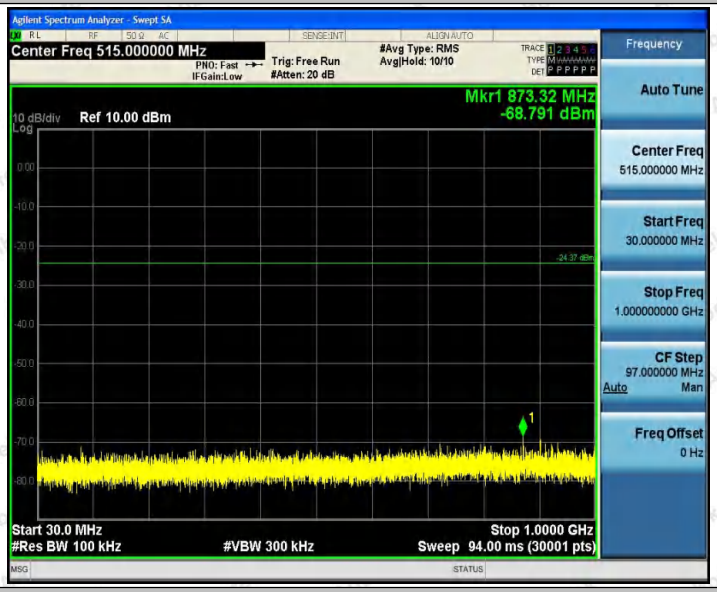
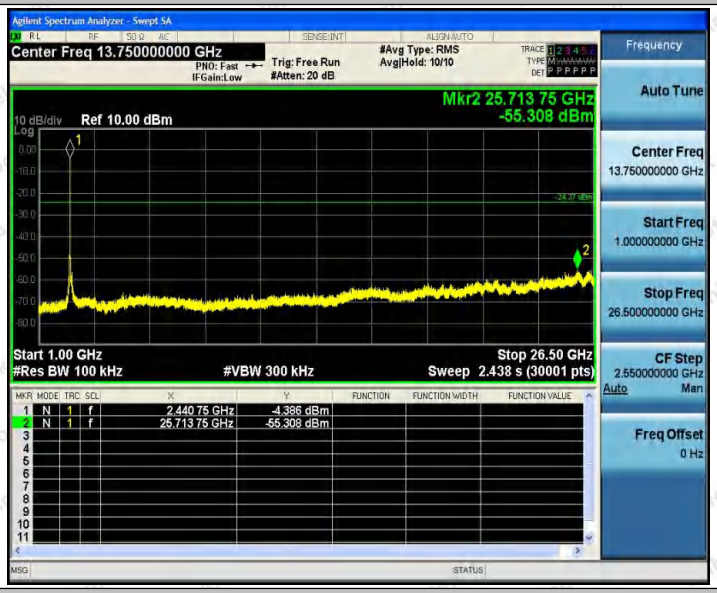


11G_Ant1_2437_30~1000



11G_Ant1_2437_1000~26500



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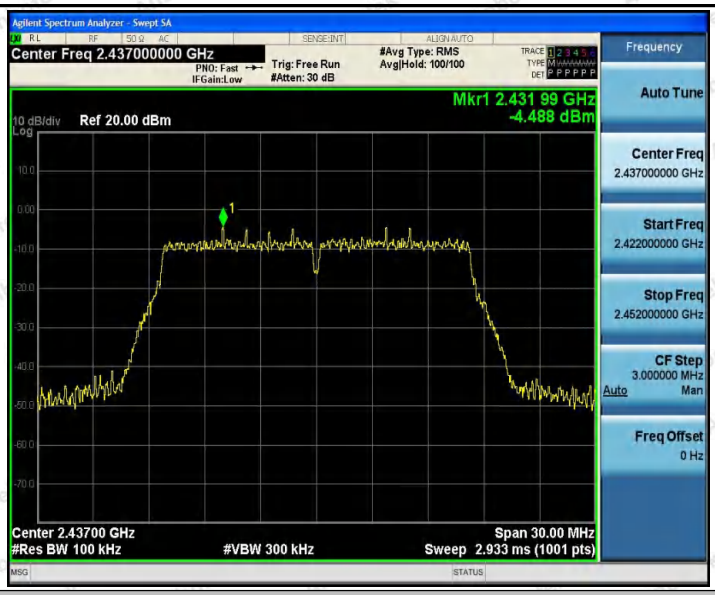
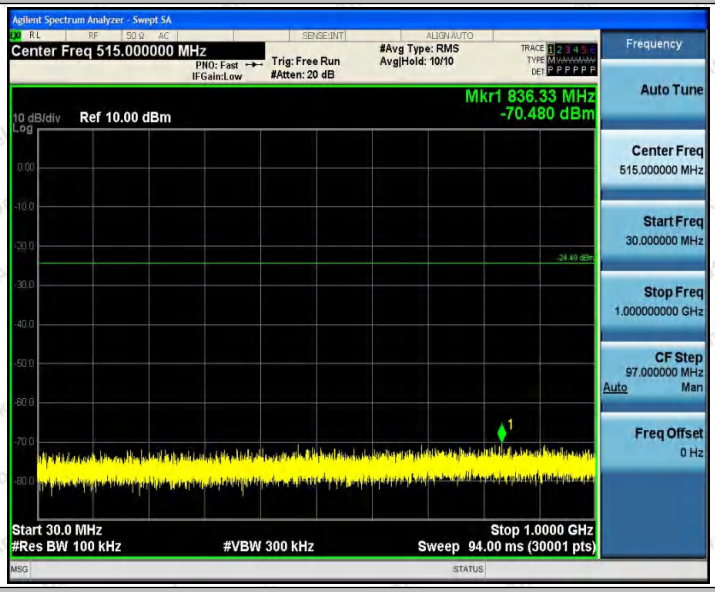
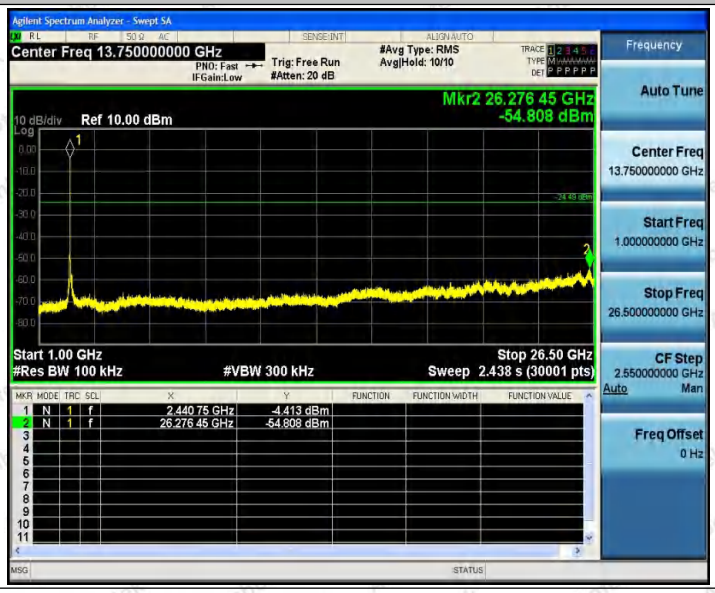


11G_Ant2_2437_30~1000

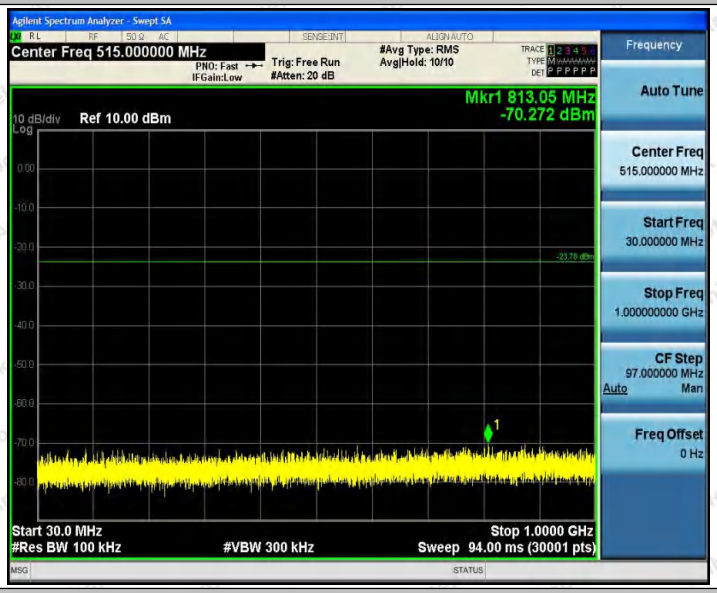


11G_Ant2_2437_1000~26500

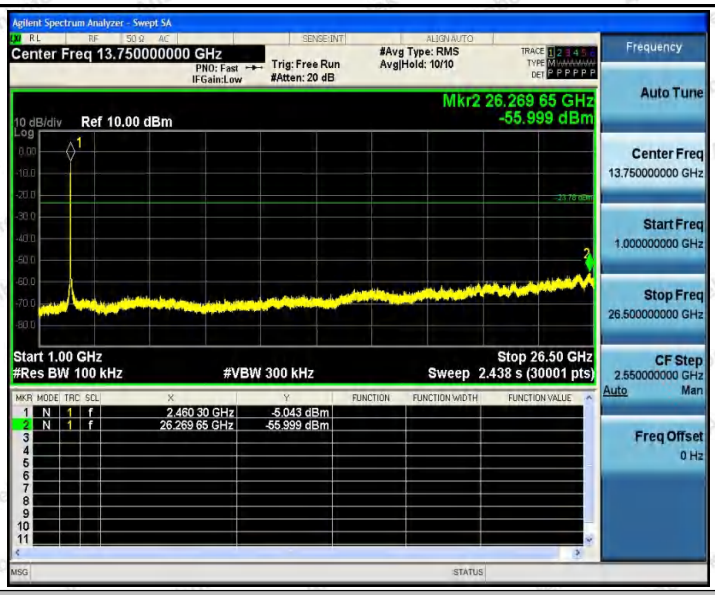


11G_Ant1_2462_0~Reference

11G_Ant1_2462_30~1000

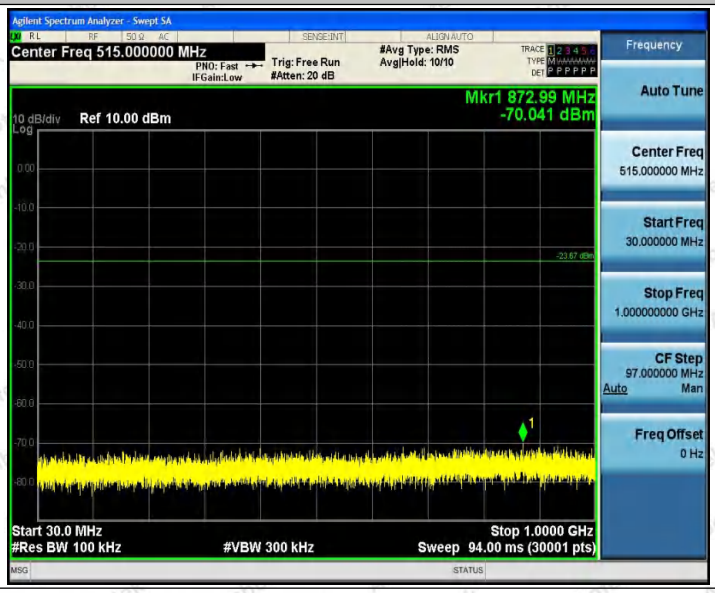


11G_Ant1_2462_1000~26500

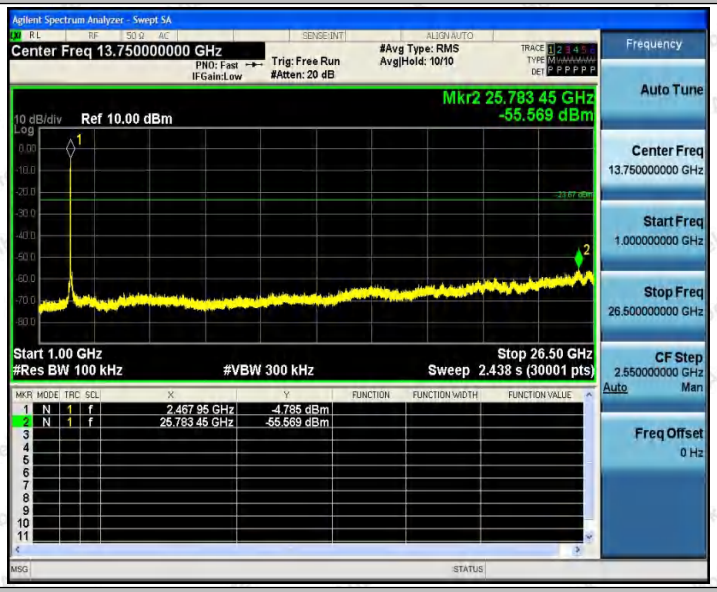


11G_Ant2_2462_0~Reference

11G_Ant2_2462_30~1000

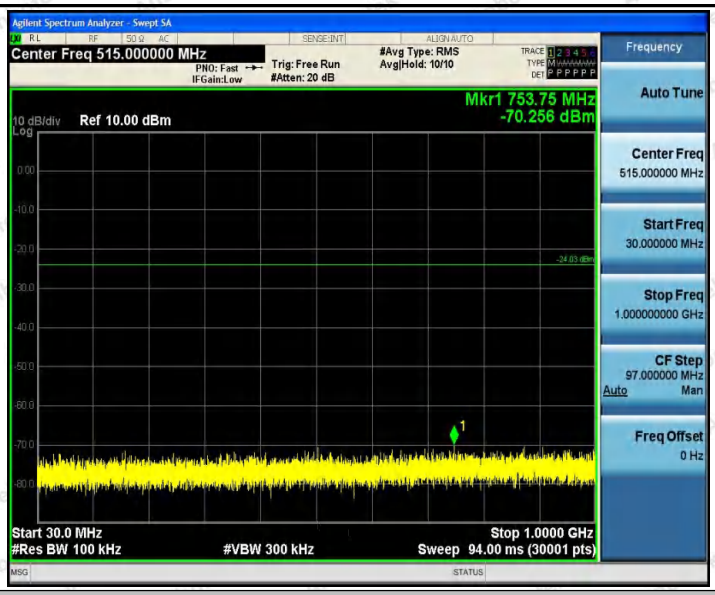


11G_Ant2_2462_1000~26500

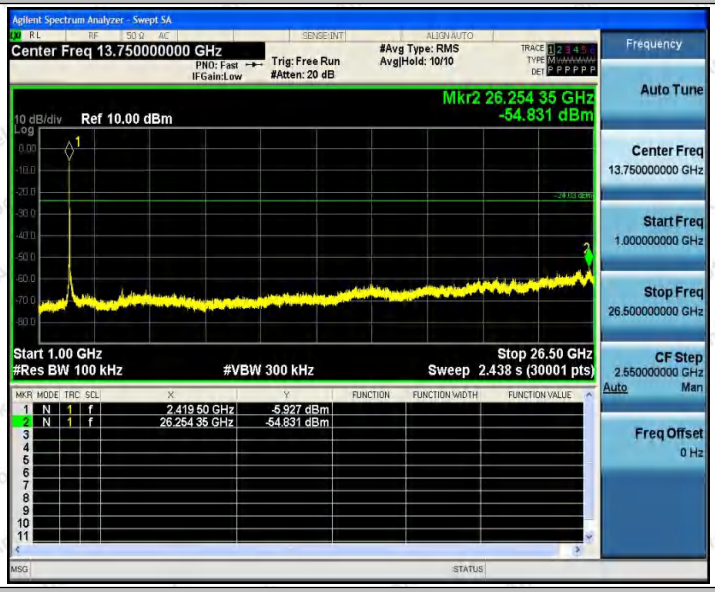


11N20_Ant1_2412_0~Reference

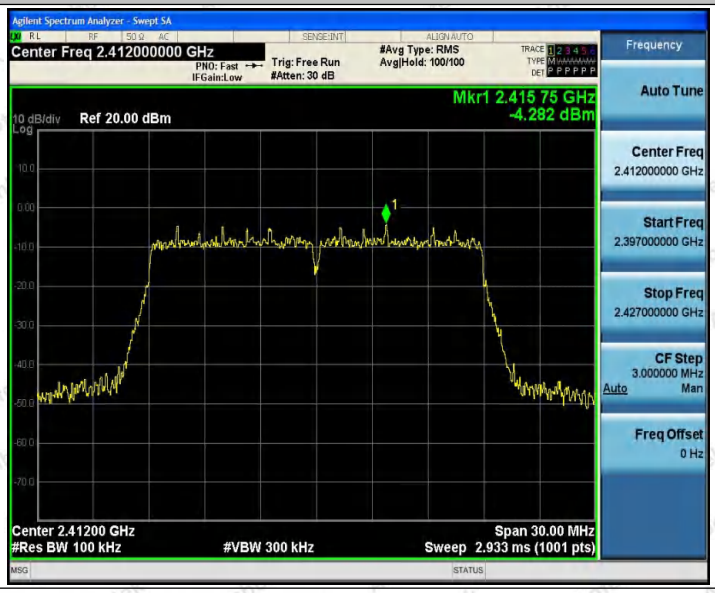
11N20_Ant1_2412_30~1000



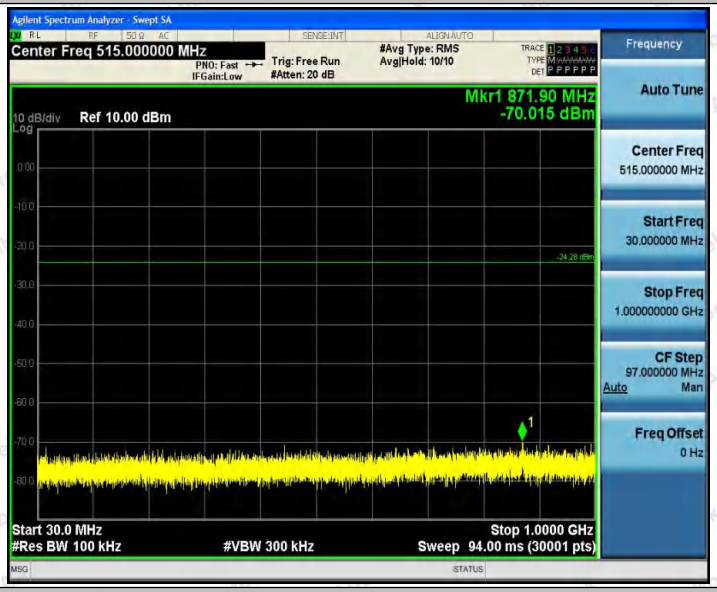
11N20_Ant1_2412_1000~26500



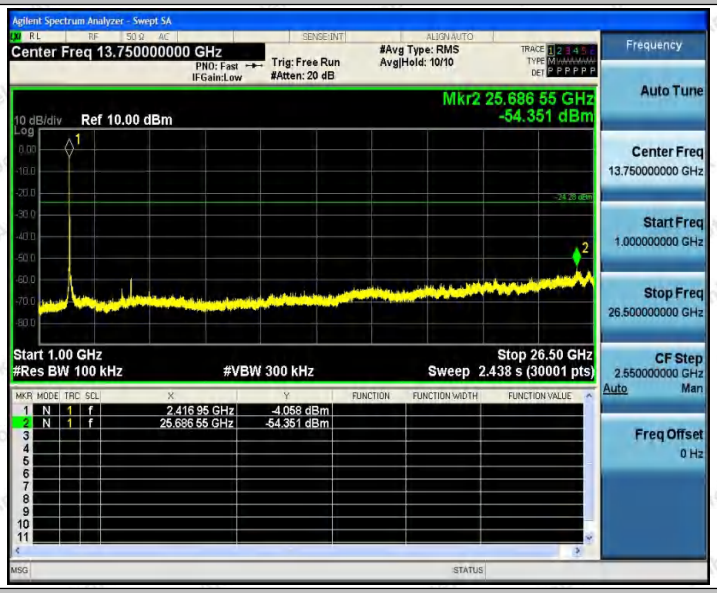
11N20_Ant2_2412_0~Reference



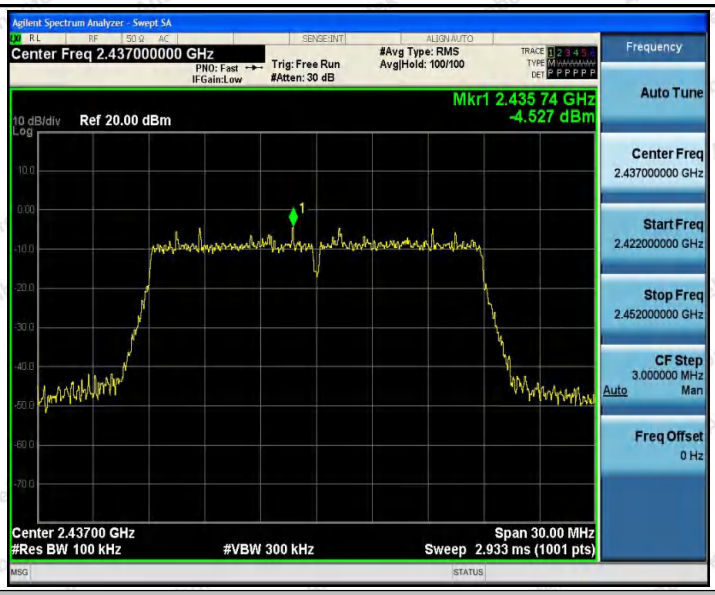
11N20_Ant2_2412_30~1000



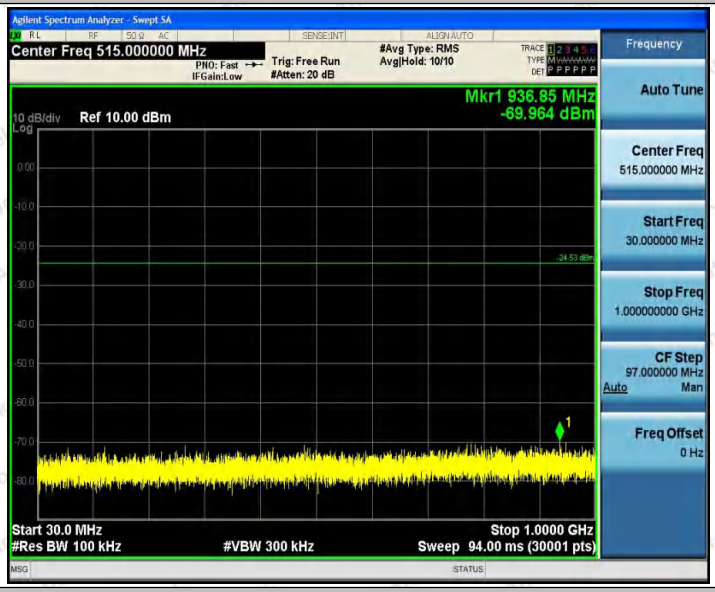
11N20_Ant2_2412_1000~26500



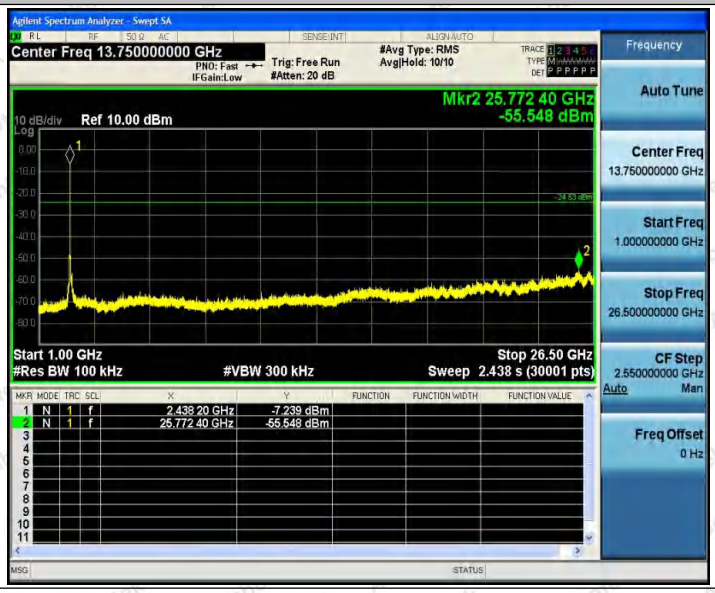
11N20_Ant1_2437_0~Reference



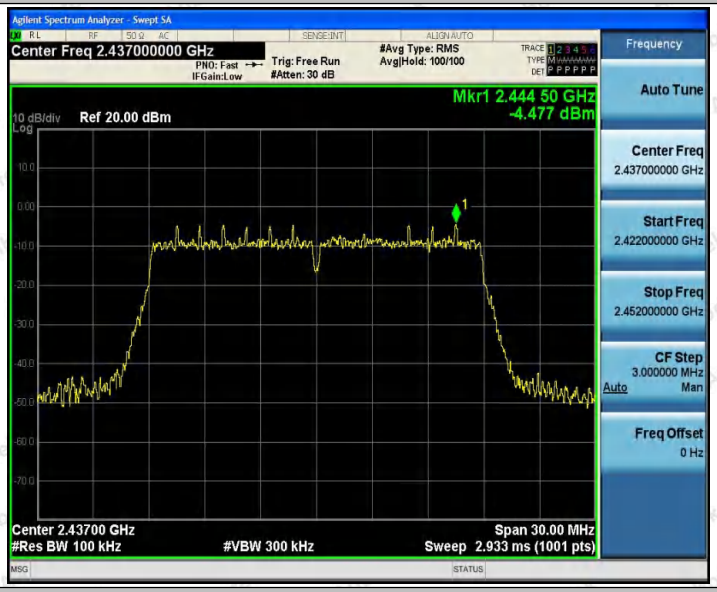
11N20_Ant1_2437_30~1000



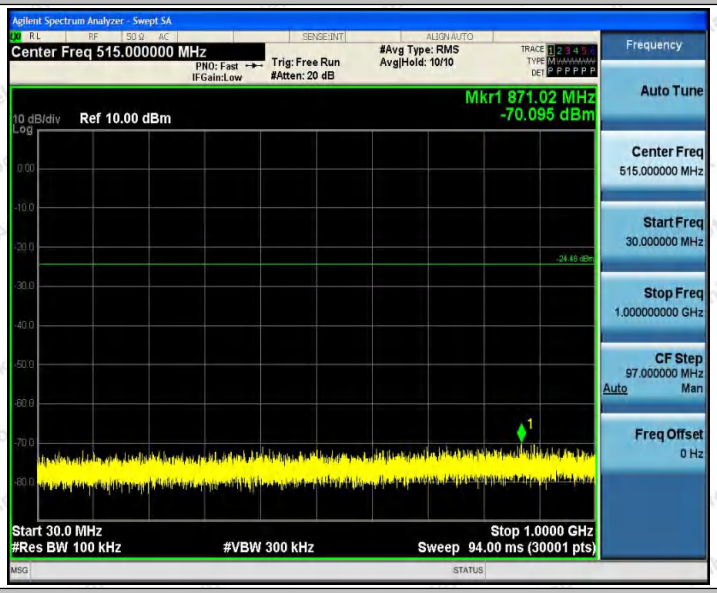
11N20_Ant1_2437_1000~26500



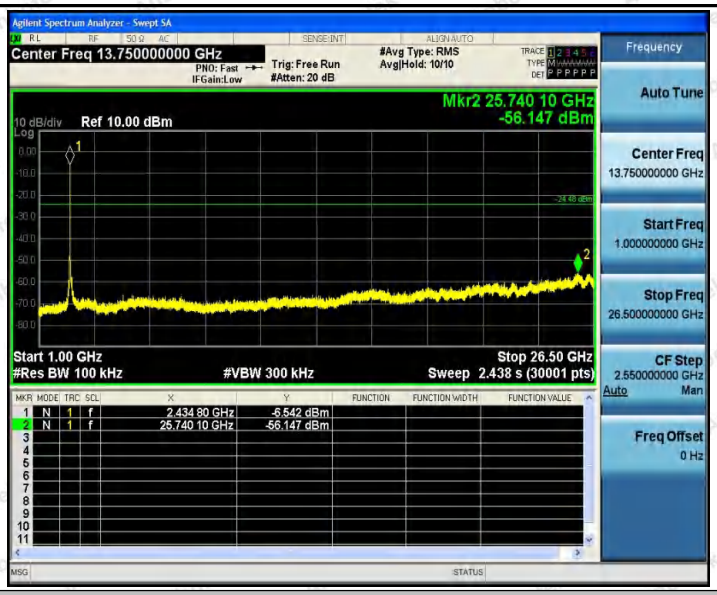
11N20_Ant2_2437_0~Reference



11N20_Ant2_2437_30~1000

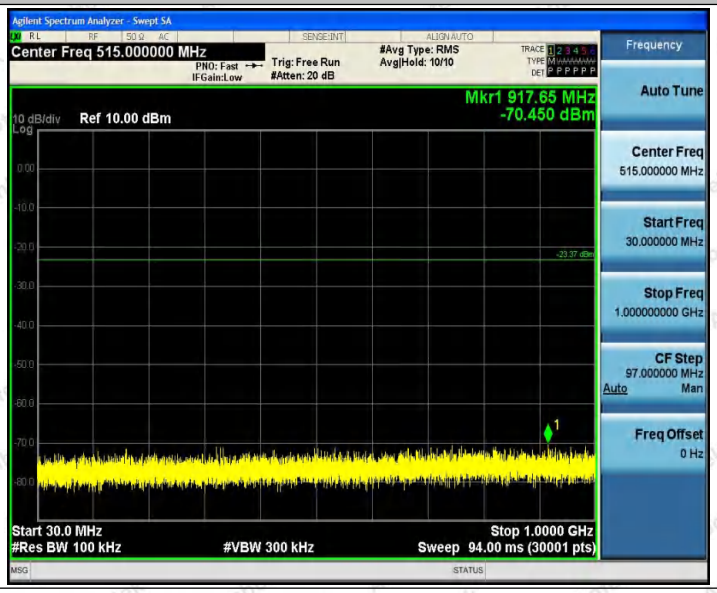


11N20_Ant2_2437_1000~26500

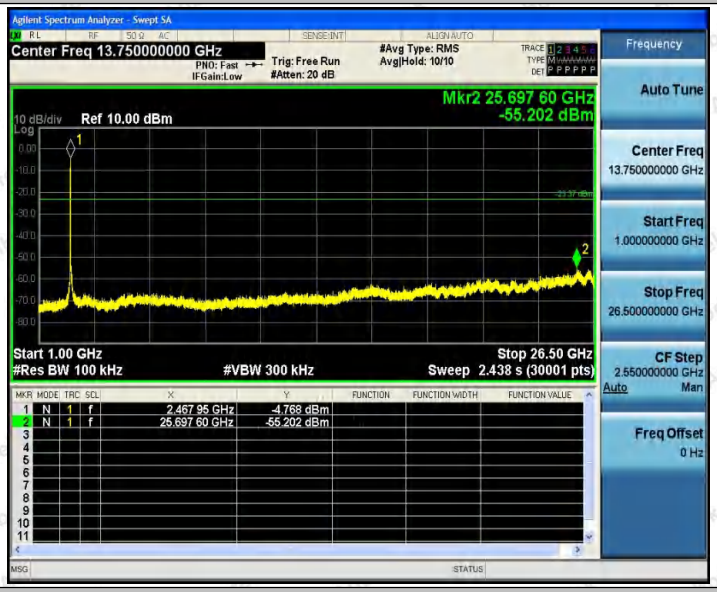


11N20_Ant1_2462_0~Reference

11N20_Ant1_2462_30~1000

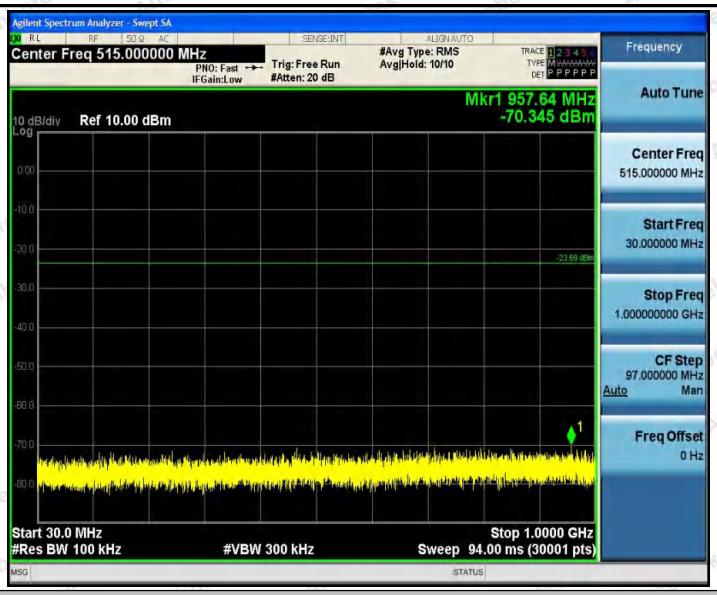


11N20_Ant1_2462_1000~26500

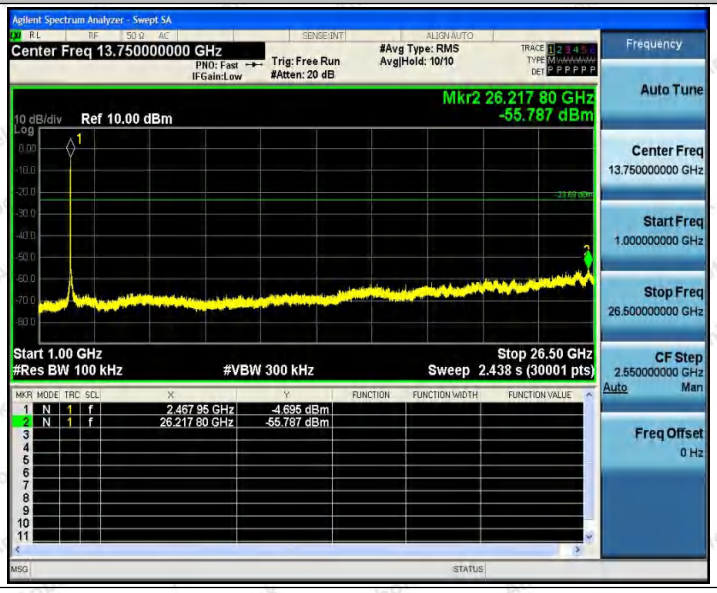


11N20_Ant2_2462_0~Reference

11N20_Ant2_2462_30~1000



11N20_Ant2_2462_1000~26500



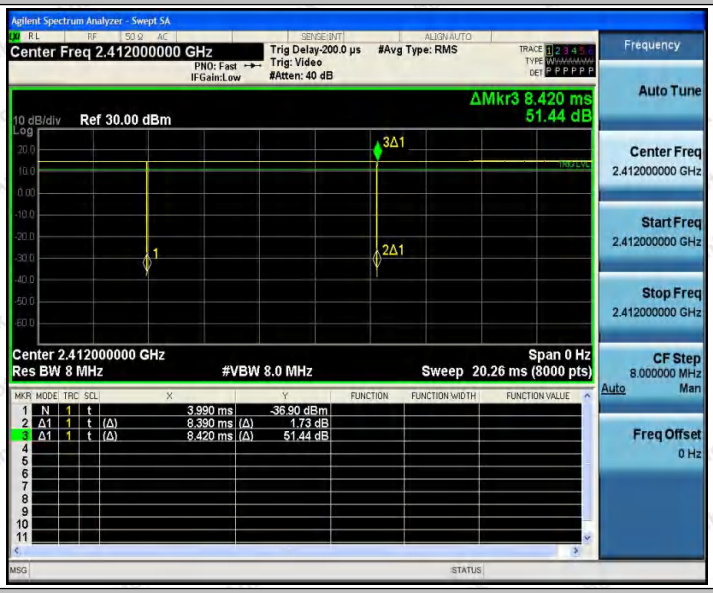
Appendix G: Duty Cycle

Test Result

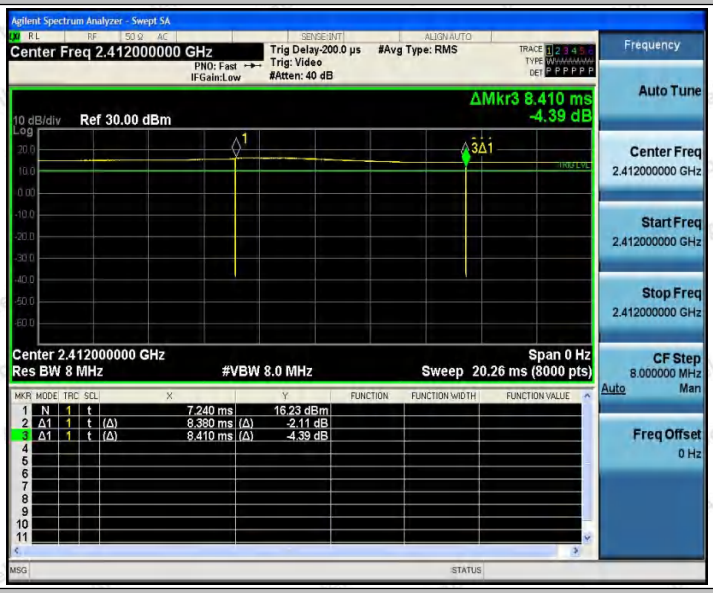
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
11B	Ant1	2412	8.39	8.42	99.64	---	PASS
	Ant2	2412	8.38	8.41	99.64	---	PASS
	Ant1	2437	8.38	8.42	99.52	---	PASS
	Ant2	2437	8.38	8.41	99.64	---	PASS
	Ant1	2462	8.39	8.42	99.64	---	PASS
	Ant2	2462	8.39	8.42	99.64	---	PASS
11G	Ant1	2412	1.39	1.43	97.20	---	PASS
	Ant2	2412	1.39	1.42	97.89	---	PASS
	Ant1	2437	1.39	1.42	97.89	---	PASS
	Ant2	2437	1.39	1.43	97.20	---	PASS
	Ant1	2462	1.39	1.43	97.20	---	PASS
	Ant2	2462	1.39	1.42	97.89	---	PASS
11N20	Ant1	2412	1.29	1.33	96.99	---	PASS
	Ant2	2412	1.30	1.33	97.74	---	PASS
	Ant1	2437	1.30	1.33	97.74	---	PASS
	Ant2	2437	1.29	1.33	96.99	---	PASS
	Ant1	2462	1.30	1.34	97.01	---	PASS
	Ant2	2462	1.30	1.34	97.01	---	PASS

Test Graphs

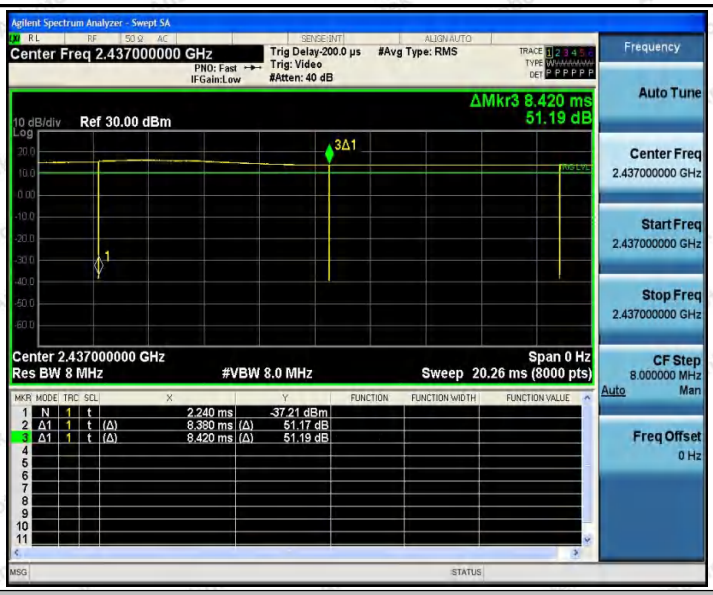
11B_Ant1_2412



11B_Ant2_2412



11B_Ant1_2437



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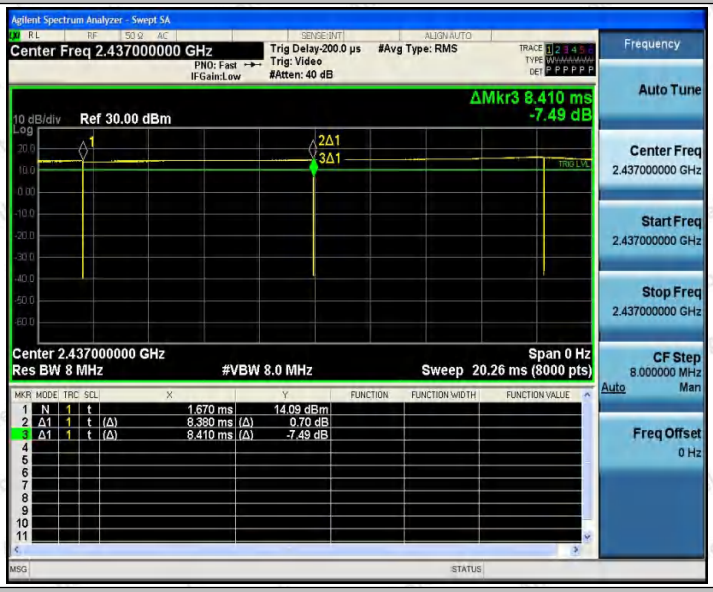

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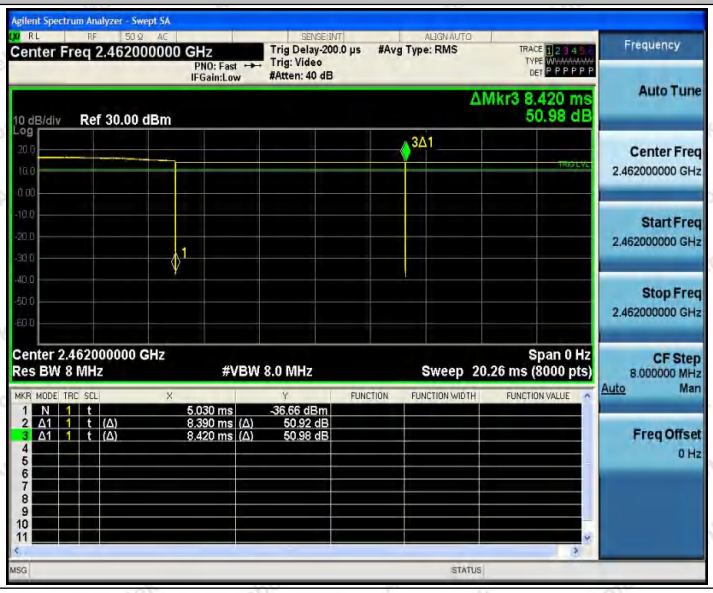

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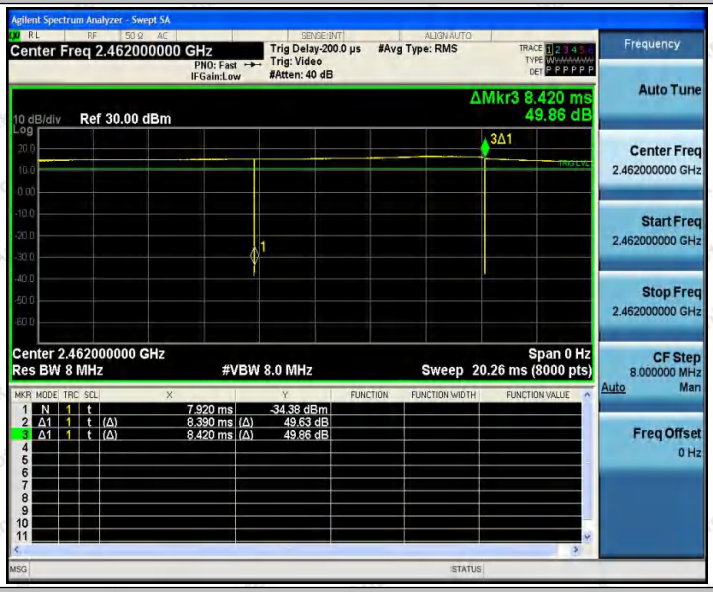

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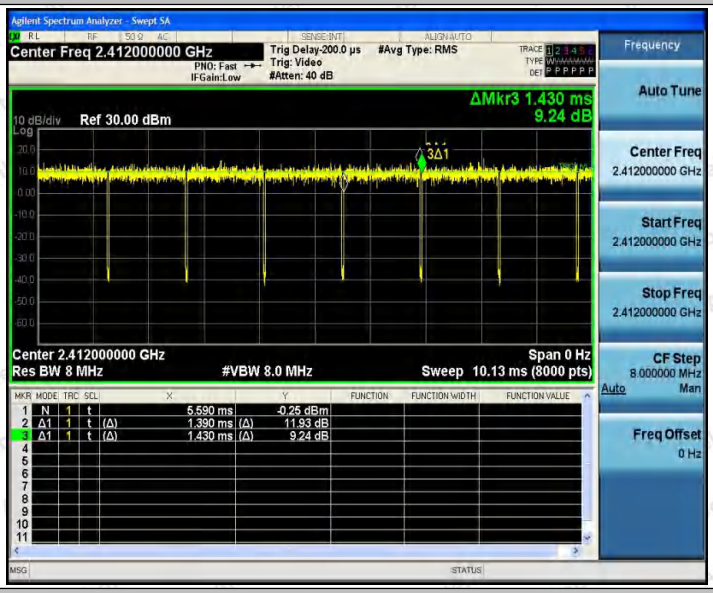

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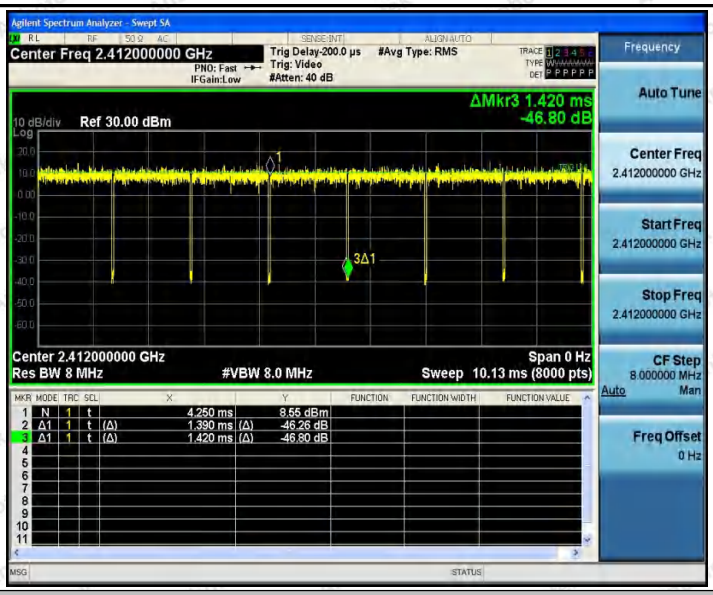

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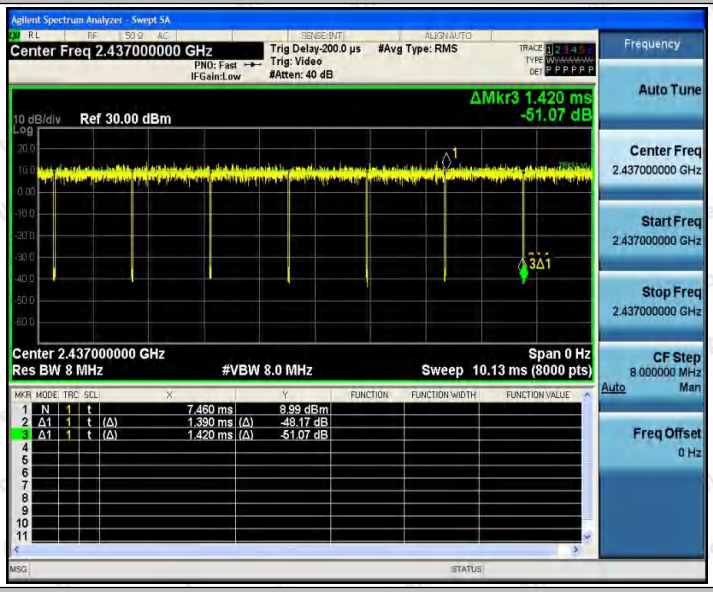

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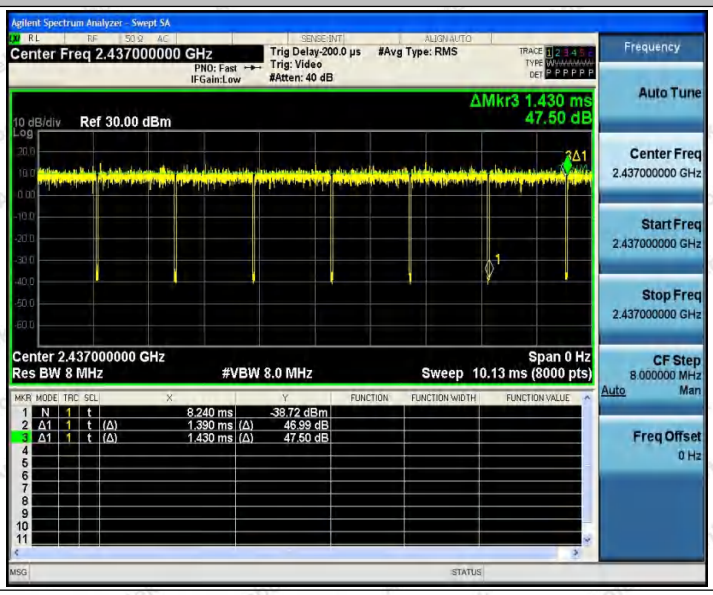

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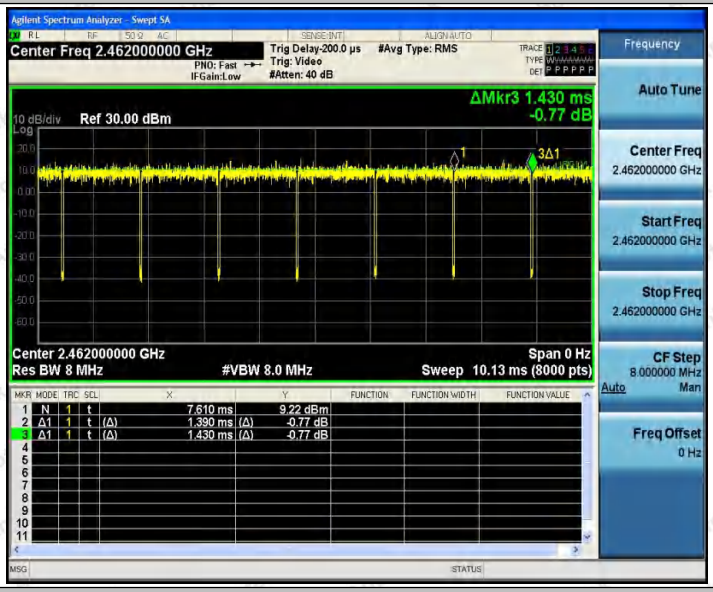

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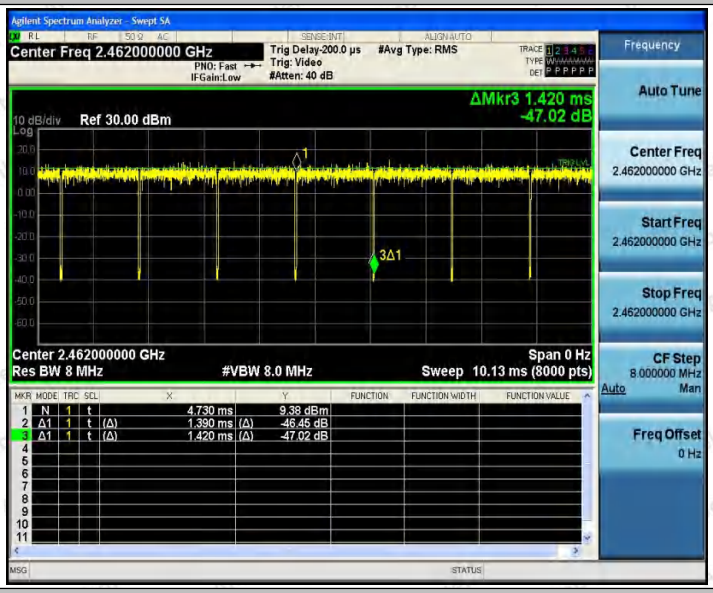
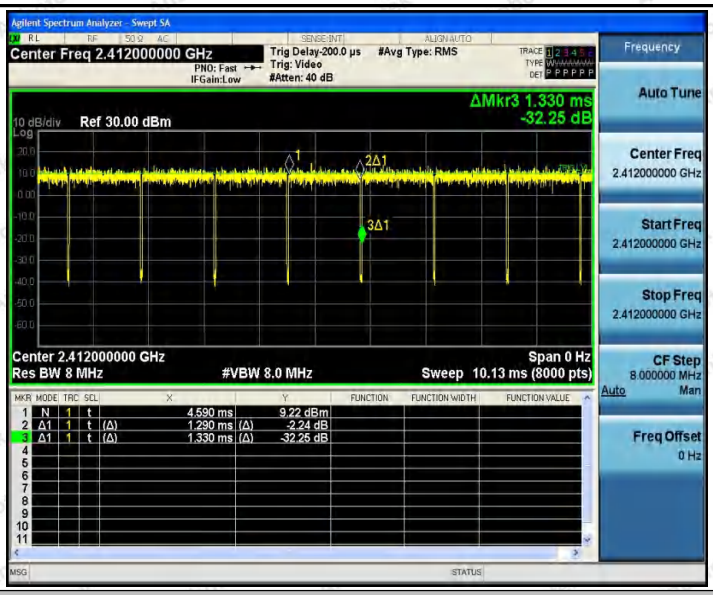


11N20_Ant1_2412



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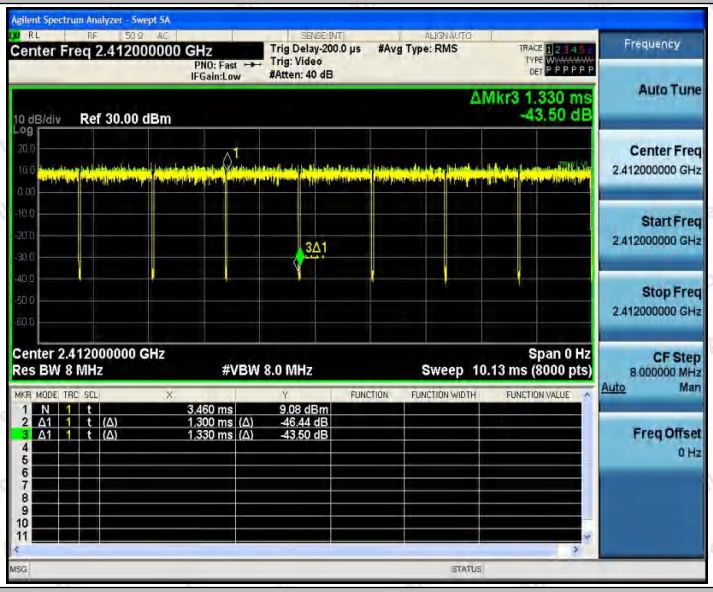

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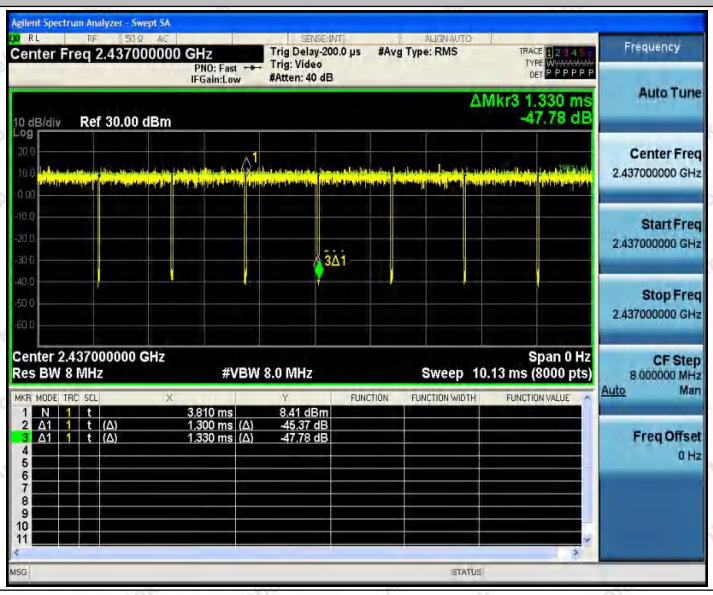

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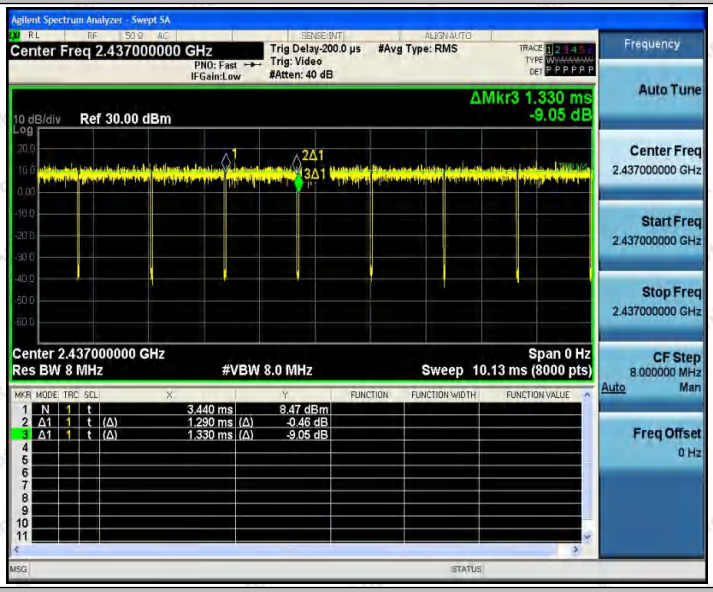

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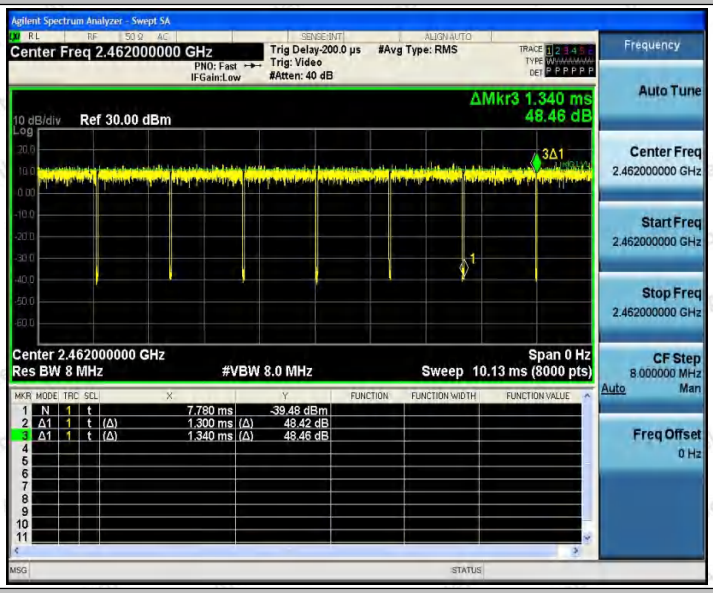

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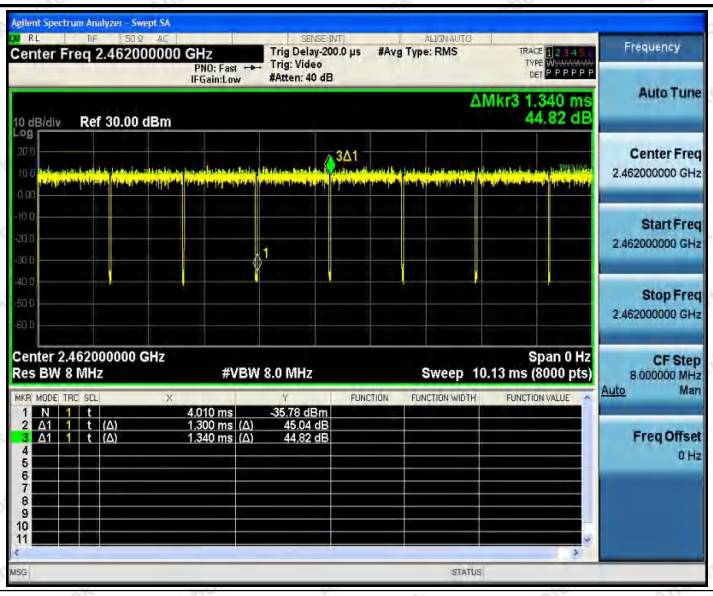
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.462000000 GHz
PNO: Fast
IFGain:Low
Trig Delay-200.0 µs
Trig: Video
#Atten: 40 dB
#Avg Type: RMS
Frequency
Auto Tune
ΔMkr3 1.340 ms
44.82 dB
10 dB/div
Ref 30.00 dBm
Center Freq
2.462000000 GHz
Start Freq
2.462000000 GHz
Stop Freq
2.462000000 GHz
Center 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 4.010 ms -35.78 dBm
2 Δ1 1 t (Δ) 1.300 ms (Δ) 45.04 dB
3 Δ1 1 t (Δ) 1.340 ms (Δ) 44.82 dB

---End---