



Appendix C

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: 4K Android TV™ Dongle

Test Model: i-217D1

Environmental Conditions

Temperature:	23.5 ° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	 Mark Chen
Supervised by:	 Li Huan



C.1 DTS Bandwidth

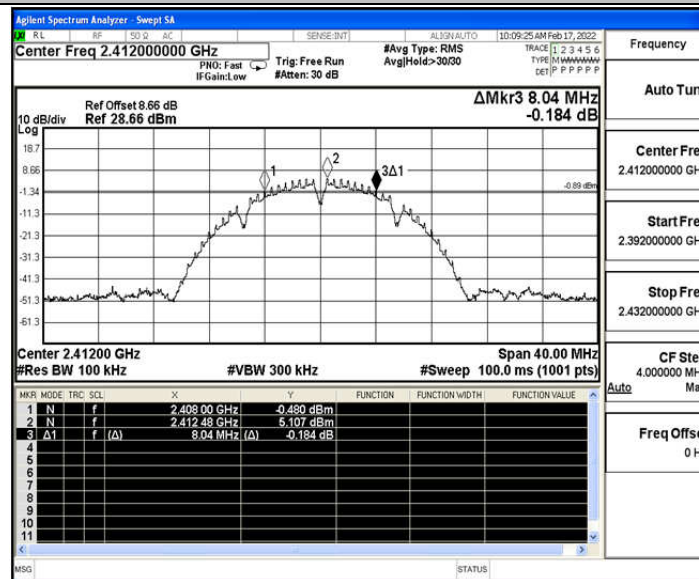
Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant0	2412	8.040	2408.000	2416.040	0.5	PASS
		2437	8.040	2432.960	2441.000	0.5	PASS
		2462	8.040	2457.960	2466.000	0.5	PASS
11G	Ant0	2412	15.120	2404.440	2419.560	0.5	PASS
		2437	15.320	2429.240	2444.560	0.5	PASS
		2462	15.120	2454.440	2469.560	0.5	PASS
11N20SISO	Ant0	2412	15.120	2404.440	2419.560	0.5	PASS
		2437	15.320	2429.240	2444.560	0.5	PASS
		2462	15.080	2454.440	2469.520	0.5	PASS
11N40SISO	Ant0	2422	35.040	2404.480	2439.520	0.5	PASS
		2437	35.680	2419.080	2454.760	0.5	PASS
		2452	35.040	2434.480	2469.520	0.5	PASS

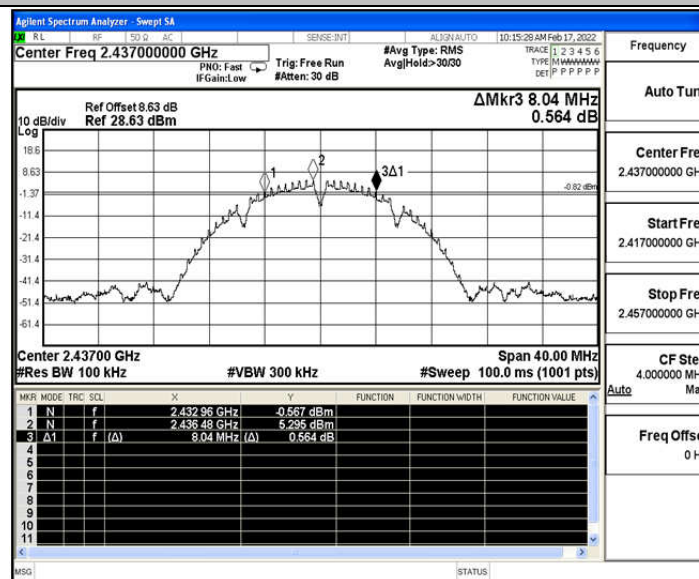


Test Graphs

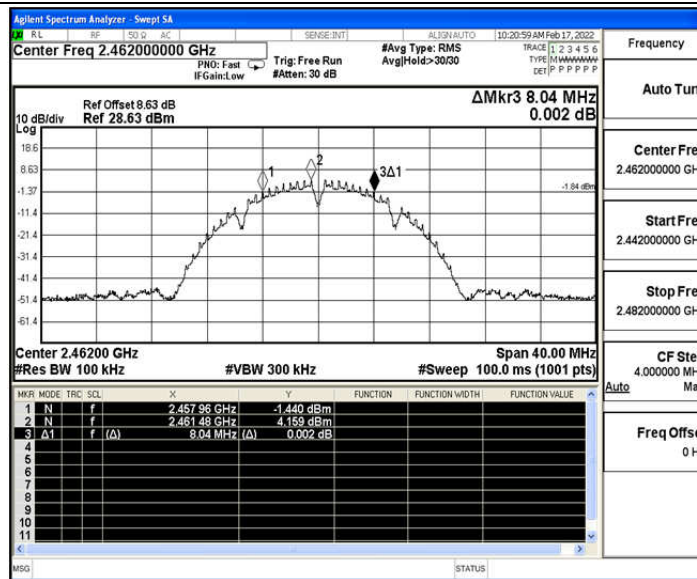
11B_Ant0_2412



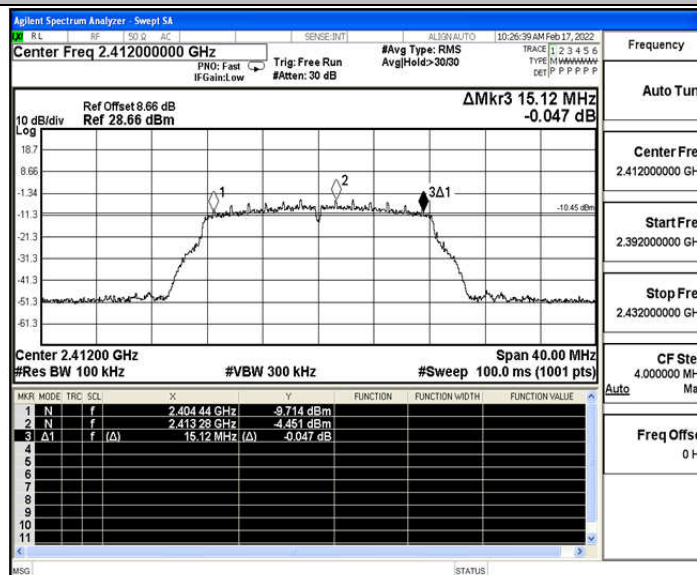
11B_Ant0_2437



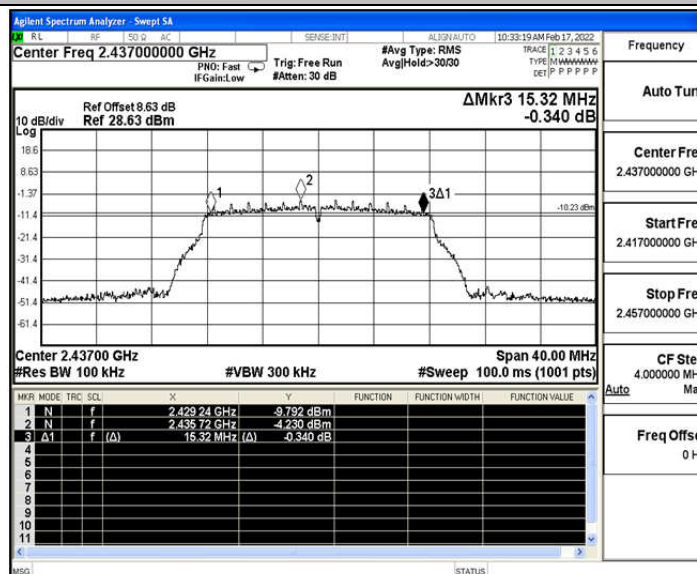
11B_Ant0_2462



11G_Ant0_2412

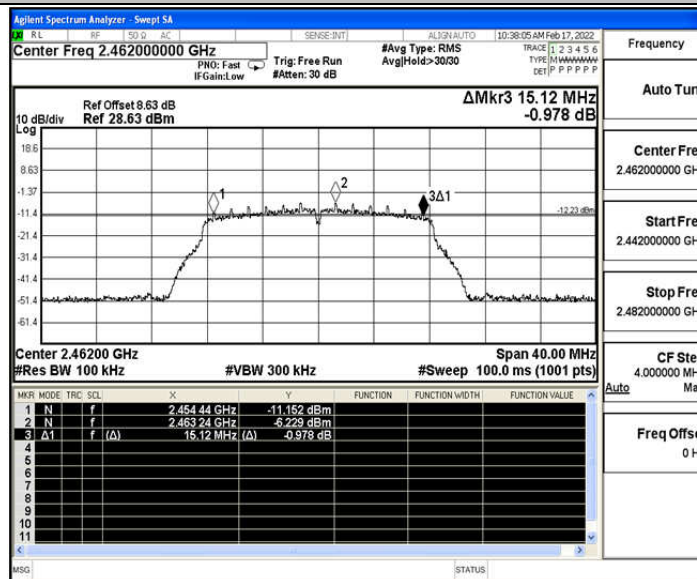


11G_Ant0_2437

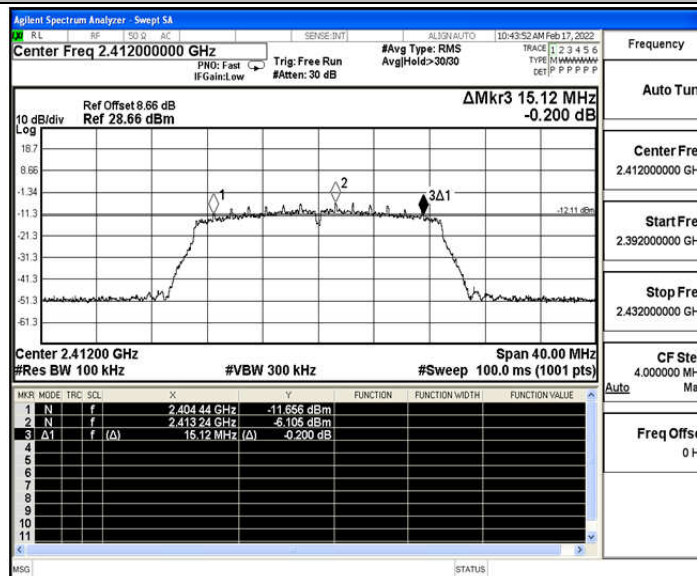




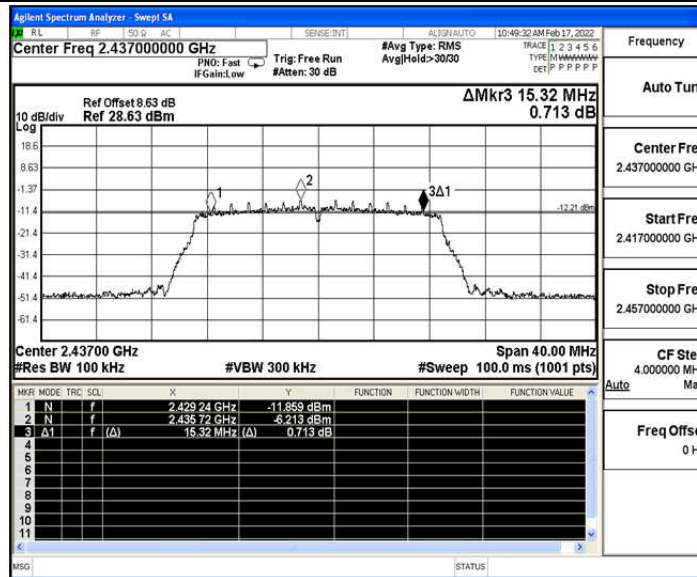
11G_Ant0_2462



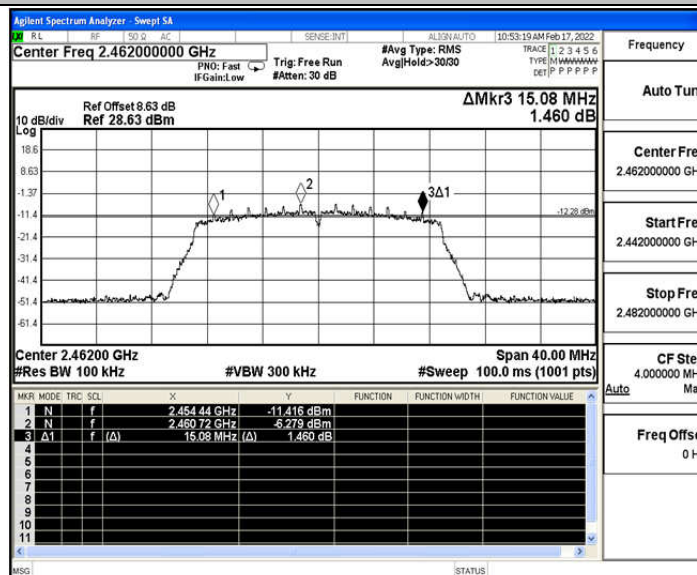
11N20SISO_Ant0_2412



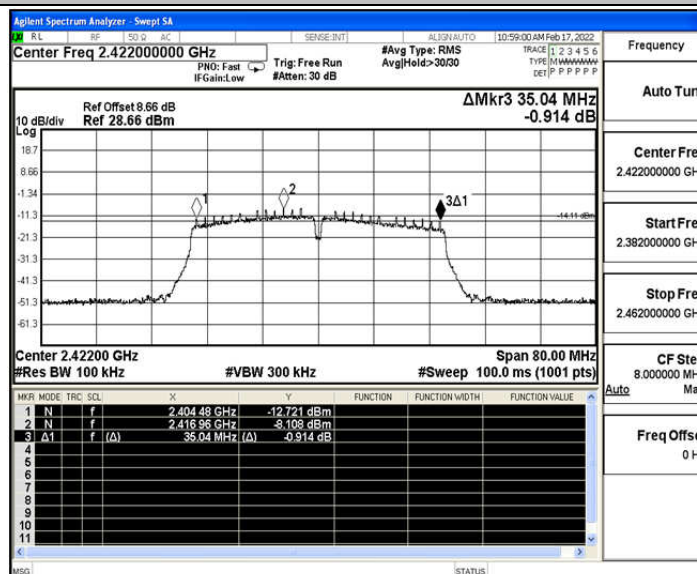
11N20SISO_Ant0_2437



11N20SISO_Ant0_2462

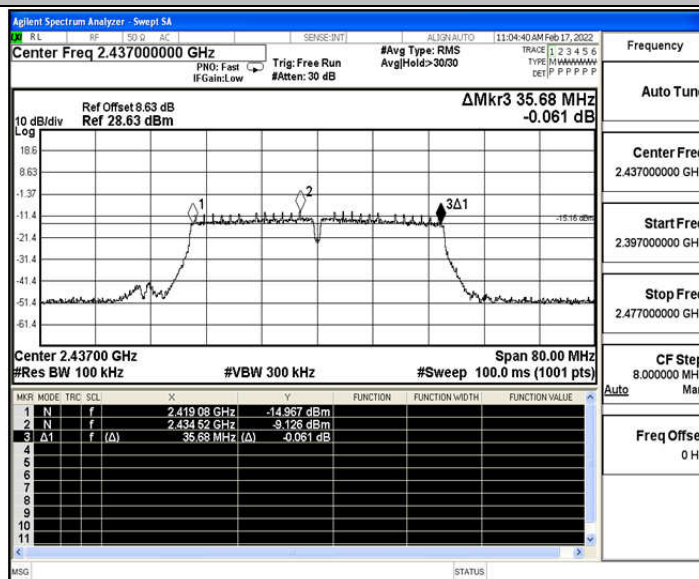


11N40SISO_Ant0_2422

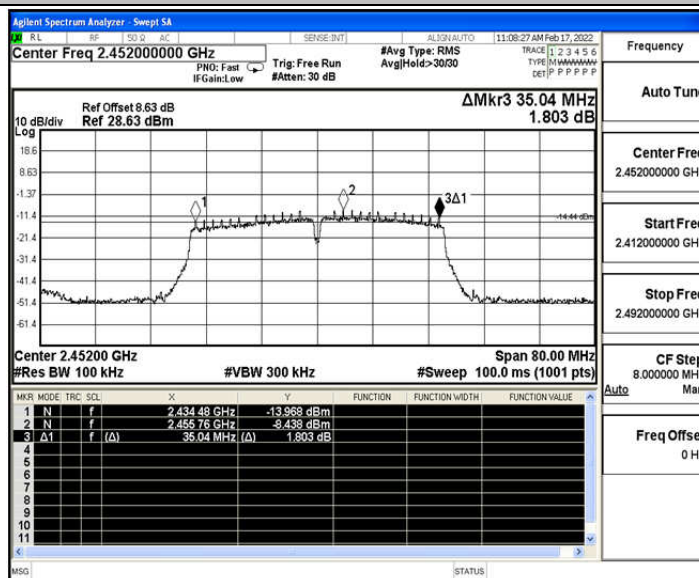




11N40SISO_Ant0_2437



11N40SISO_Ant0_2452





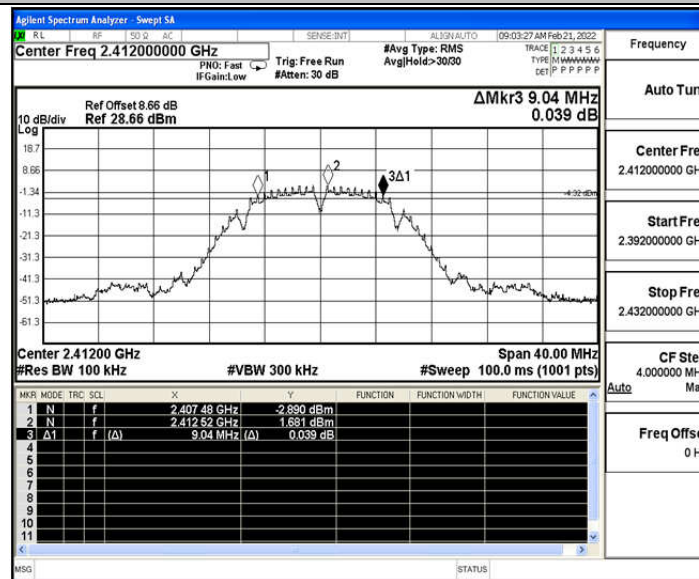
Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.040	2407.480	2416.520	0.5	PASS
		2437	9.520	2432.000	2441.520	0.5	PASS
		2462	9.080	2457.440	2466.520	0.5	PASS
11G	Ant1	2412	16.360	2403.800	2420.160	0.5	PASS
		2437	16.360	2428.800	2445.160	0.5	PASS
		2462	16.320	2453.840	2470.160	0.5	PASS
11N20SISO	Ant1	2412	17.600	2403.200	2420.800	0.5	PASS
		2437	17.560	2428.200	2445.760	0.5	PASS
		2462	17.560	2453.200	2470.760	0.5	PASS
11N40SISO	Ant1	2422	36.080	2404.080	2440.160	0.5	PASS
		2437	36.080	2419.080	2455.160	0.5	PASS
		2452	35.840	2434.080	2469.920	0.5	PASS

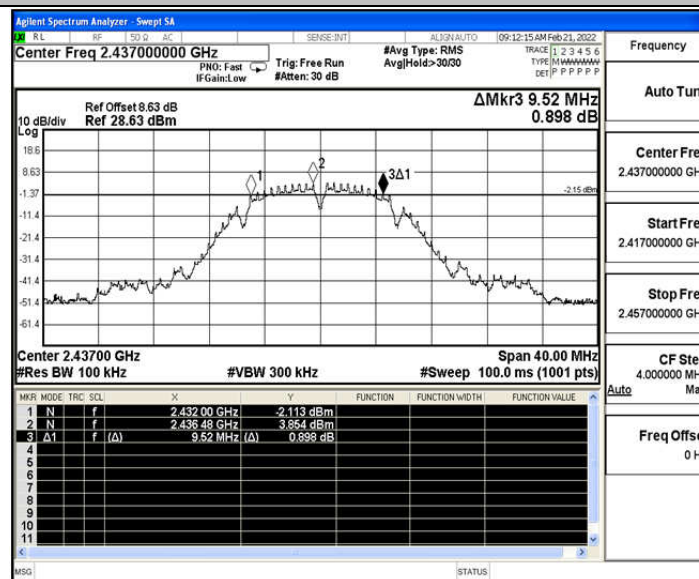


Test Graphs

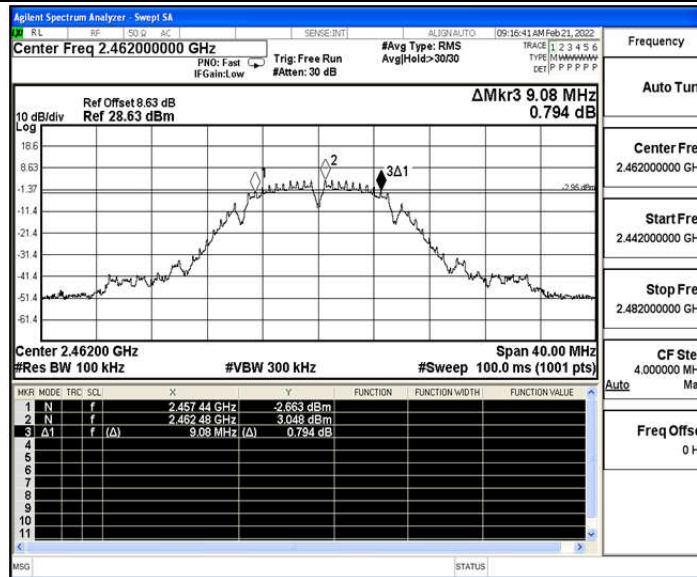
11B_Ant1_2412



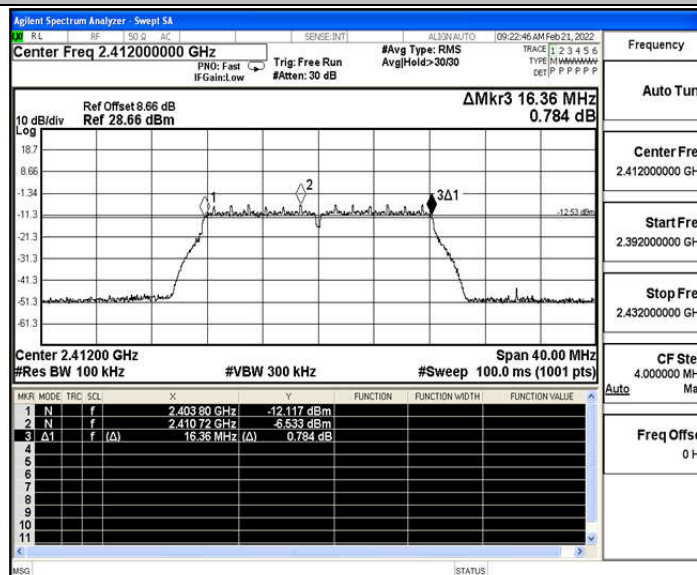
11B_Ant1_2437



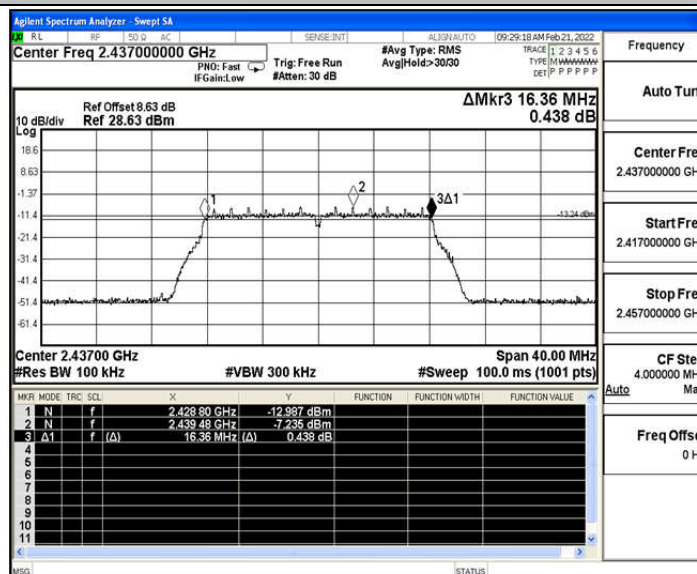
11B_Ant1_2462



11G_Ant1_2412

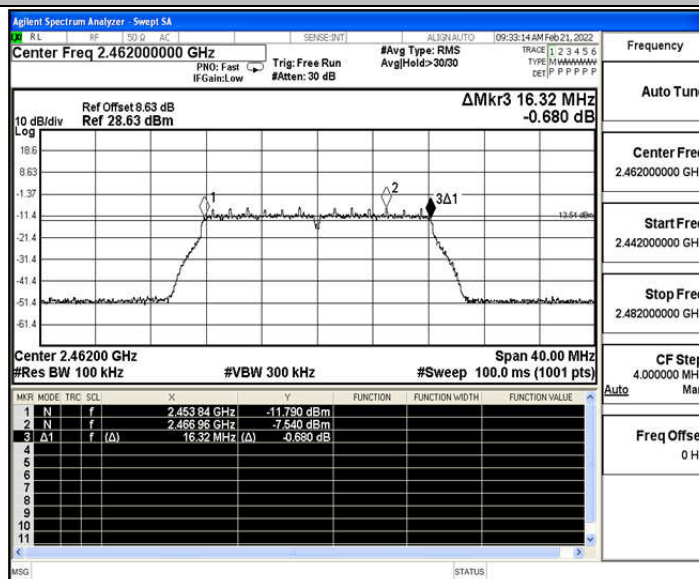


11G_Ant1_2437

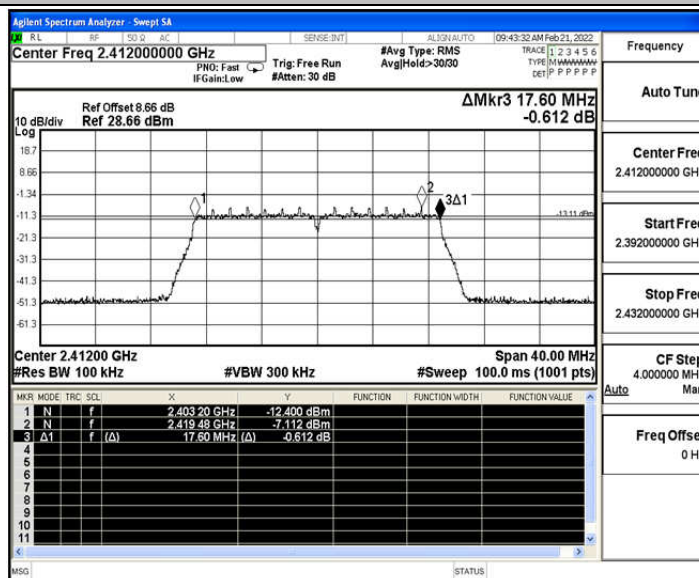




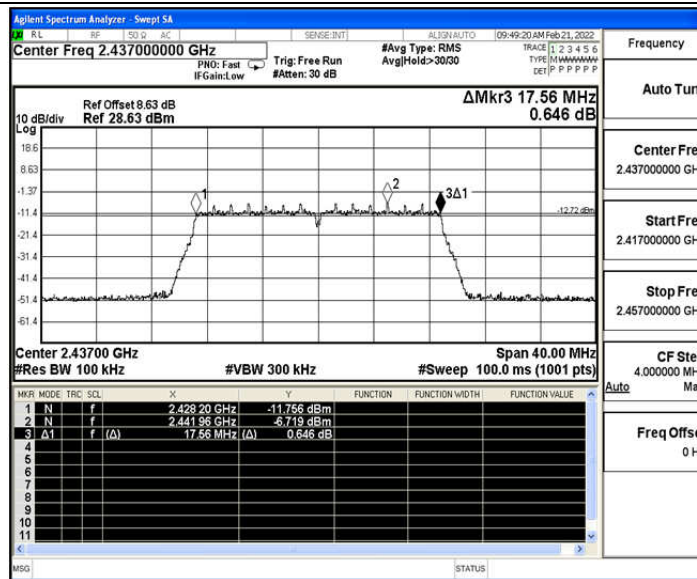
11G_Ant1_2462



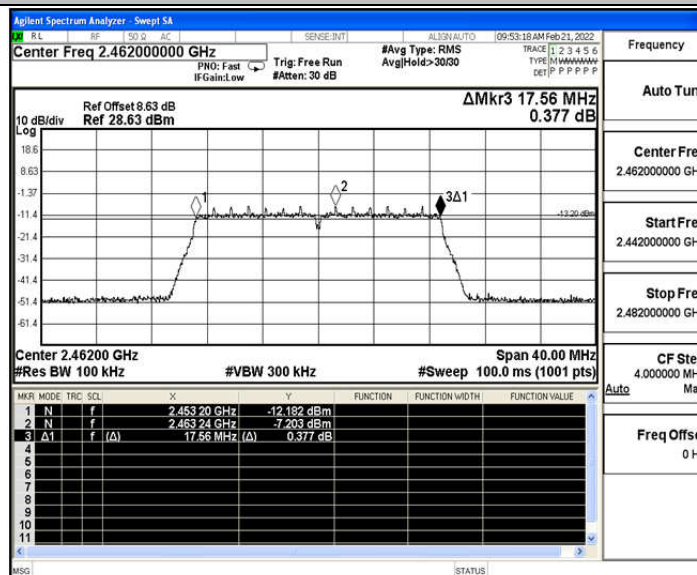
11N20SISO_Ant1_2412



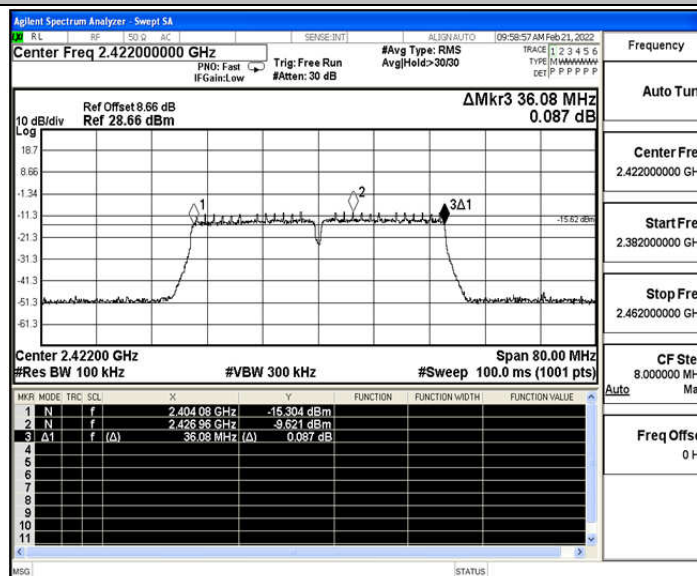
11N20SISO_Ant1_2437



11N20SISO_Ant1_2462

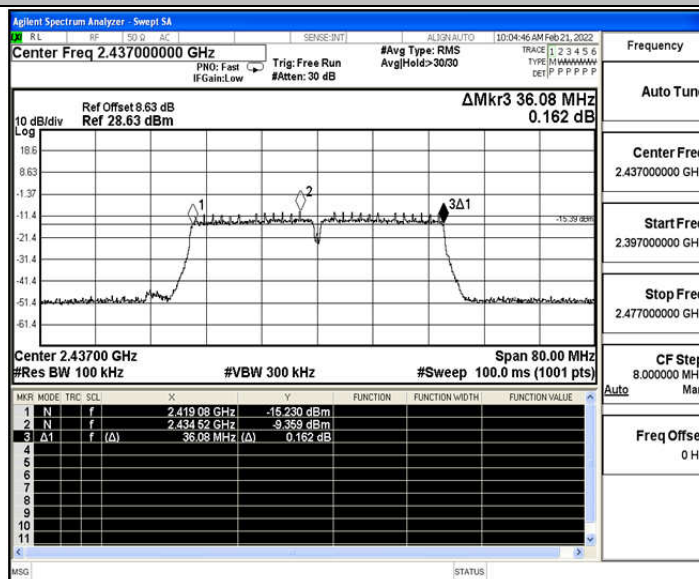


11N40SISO_Ant1_2422

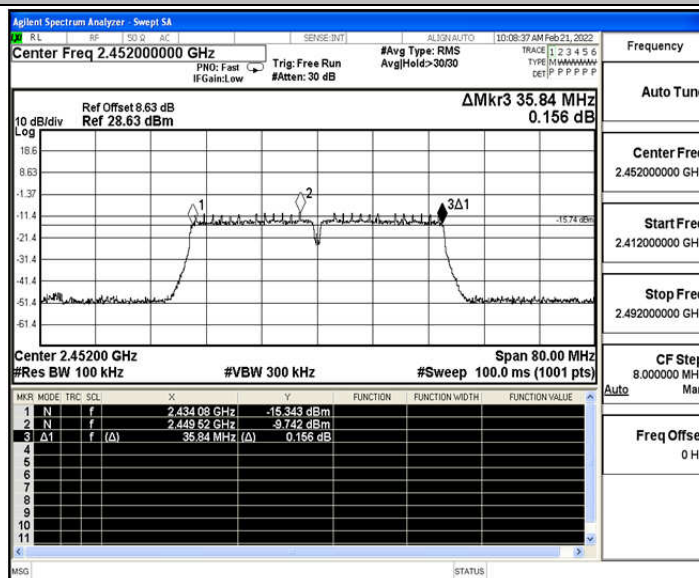




11N40SISO_Ant1_2437



11N40SISO_Ant1_2452





C.2 Maximum peak conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant0	2412	15.93	≤30.00	PASS
		2437	15.31	≤30.00	PASS
		2462	14.94	≤30.00	PASS
11G	Ant0	2412	12.27	≤30.00	PASS
		2437	12.56	≤30.00	PASS
		2462	12.21	≤30.00	PASS
11N20SISO	Ant0	2412	12.24	≤30.00	PASS
		2437	12.43	≤30.00	PASS
		2462	11.94	≤30.00	PASS
11N40SISO	Ant0	2422	12.72	≤30.00	PASS
		2437	12.80	≤30.00	PASS
		2452	12.69	≤30.00	PASS

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	15.39	≤30.00	PASS
		2437	15.52	≤30.00	PASS
		2462	14.79	≤30.00	PASS
11G	Ant1	2412	12.07	≤30.00	PASS
		2437	12.37	≤30.00	PASS
		2462	12.08	≤30.00	PASS
11N20SISO	Ant1	2412	12.43	≤30.00	PASS
		2437	12.70	≤30.00	PASS
		2462	12.24	≤30.00	PASS
11N40SISO	Ant1	2422	12.78	≤30.00	PASS
		2437	12.82	≤30.00	PASS
		2452	12.59	≤30.00	PASS

MIMO

TestMode	Channel	Result[dBm]			Limit[dBm]	Verdict
		Ant 0	Ant 1	MIMO		
11N20SISO	2412	12.24	12.43	15.35	≤30.00	PASS
	2437	12.43	12.70	15.58	≤30.00	PASS
	2462	11.94	12.24	15.10	≤30.00	PASS
11N40SISO	2422	12.72	12.78	15.76	≤30.00	PASS
	2437	12.80	12.82	15.82	≤30.00	PASS
	2452	12.69	12.59	15.65	≤30.00	PASS



C.3 Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant0	2412	-9.58	≤8.00	PASS
		2437	-9.85	≤8.00	PASS
		2462	-10.6	≤8.00	PASS
11G	Ant0	2412	-20.63	≤8.00	PASS
		2437	-21.27	≤8.00	PASS
		2462	-19.86	≤8.00	PASS
11N20SISO	Ant0	2412	-21.25	≤8.00	PASS
		2437	-20.4	≤8.00	PASS
		2462	-21.73	≤8.00	PASS
11N40SISO	Ant0	2422	-22.78	≤8.00	PASS
		2437	-23.09	≤8.00	PASS
		2452	-23.74	≤8.00	PASS

Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-9.16	≤8.00	PASS
		2437	-10.43	≤8.00	PASS
		2462	-11.7	≤8.00	PASS
11G	Ant1	2412	-21.73	≤8.00	PASS
		2437	-21.1	≤8.00	PASS
		2462	-21.31	≤8.00	PASS
11N20SISO	Ant1	2412	-21.42	≤8.00	PASS
		2437	-21.39	≤8.00	PASS
		2462	-21.07	≤8.00	PASS
11N40SISO	Ant1	2422	-23.59	≤8.00	PASS
		2437	-24	≤8.00	PASS
		2452	-23.54	≤8.00	PASS

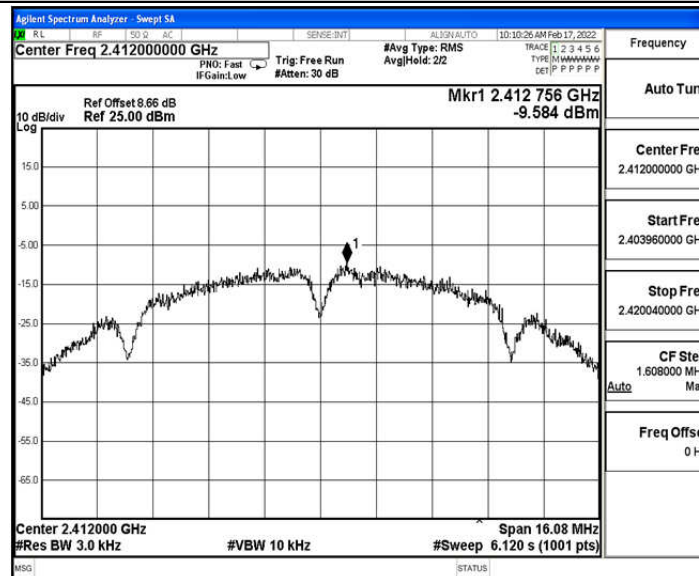
MIMO

TestMode	Channel	Result[dBm/3kHz]			Limit[dBm/3kHz]	Verdict
		Ant 0	Ant 1	MIMO		
11N20SISO	2412	-21.25	-21.42	-18.32	≤8.00	PASS
	2437	-20.4	-21.39	-17.86	≤8.00	PASS
	2462	-21.73	-21.07	-18.38	≤8.00	PASS
11N40SISO	2422	-22.78	-23.59	-20.16	≤8.00	PASS
	2437	-23.09	-24	-20.51	≤8.00	PASS
	2452	-23.74	-23.54	-20.63	≤8.00	PASS

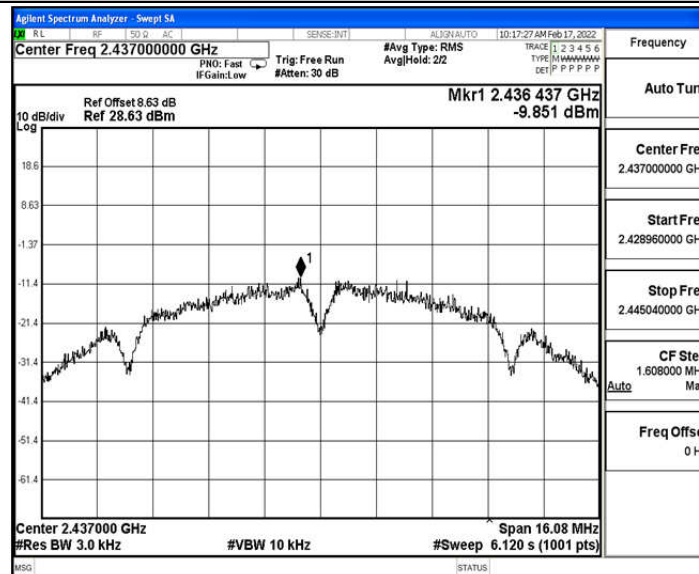


Test Graphs

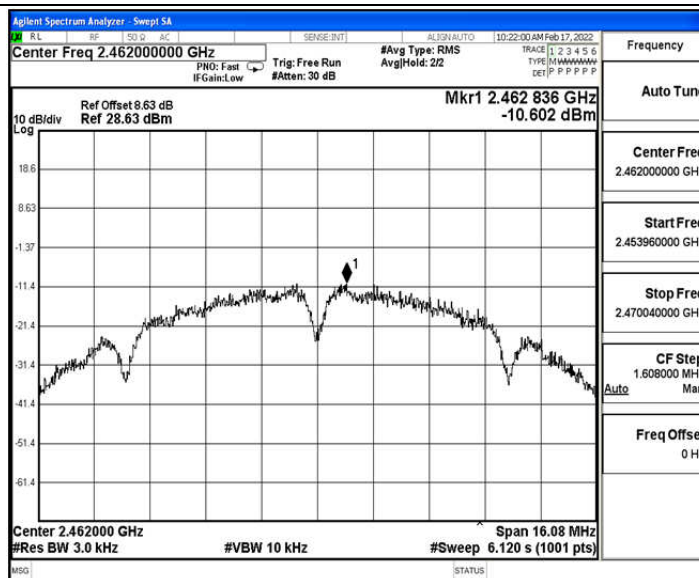
11B_Ant0_2412



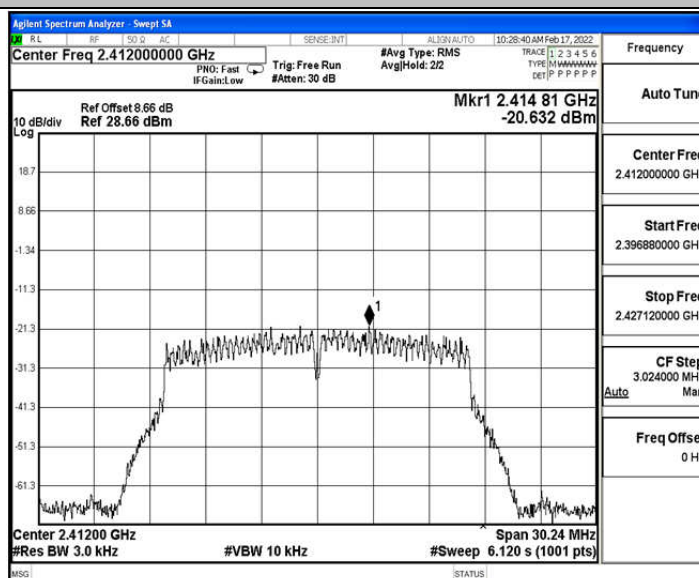
11B_Ant0_2437



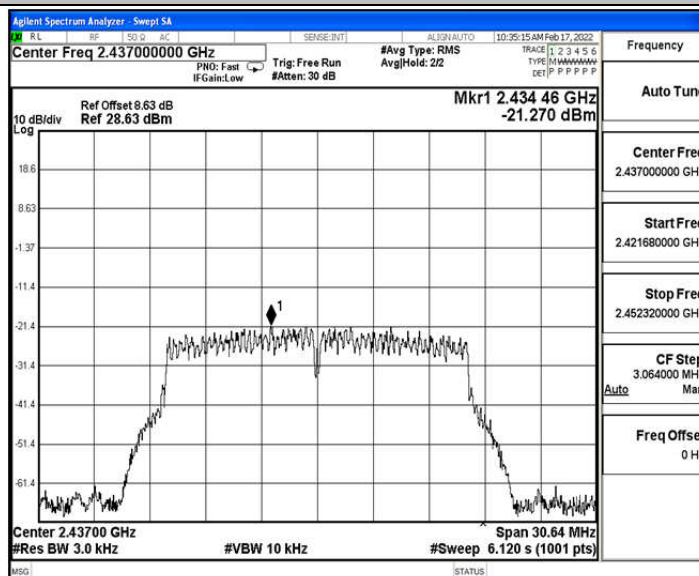
11B_Ant0_2462



11G_Ant0_2412

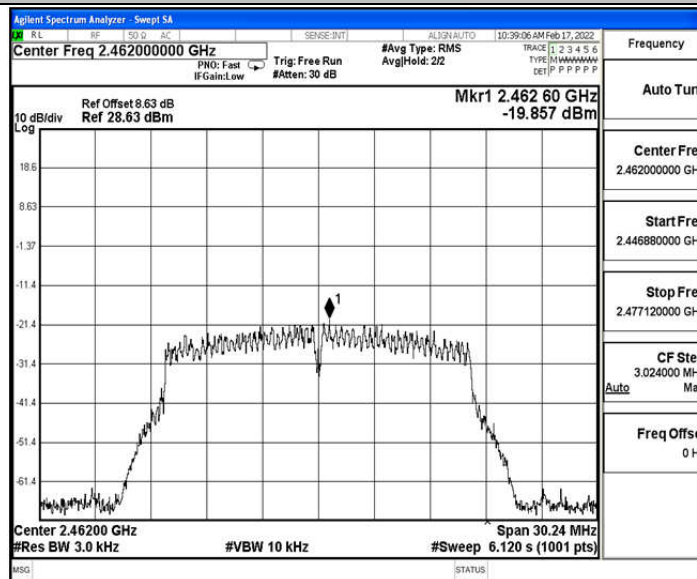


11G_Ant0_2437

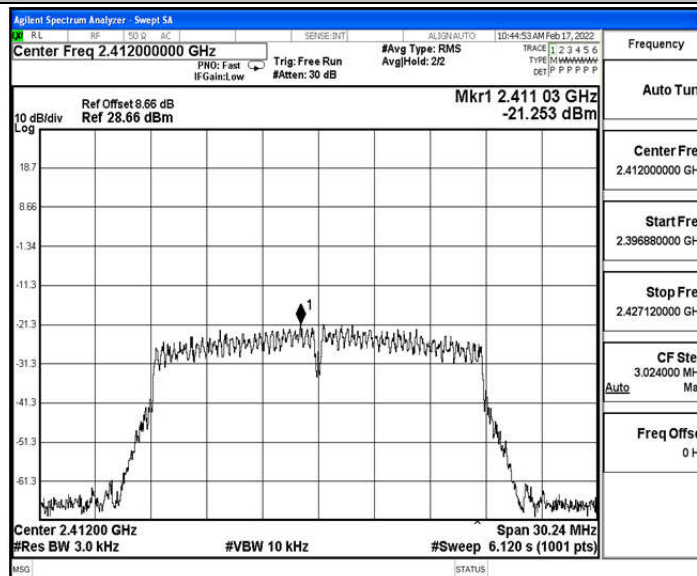




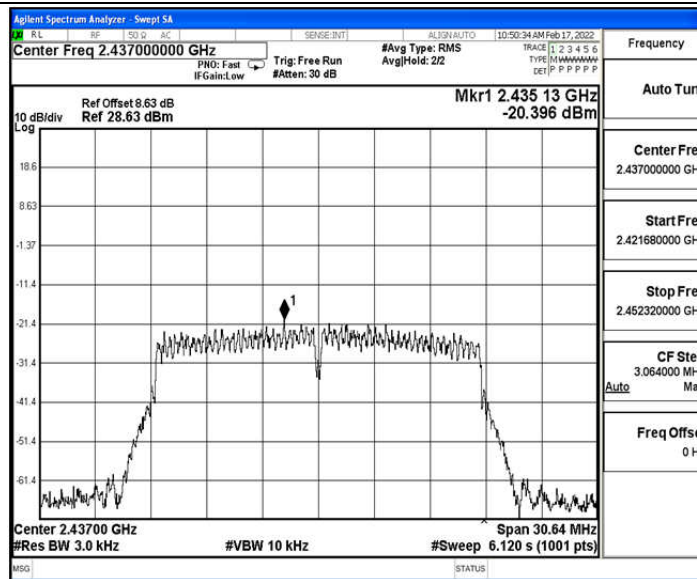
11G_Ant0_2462



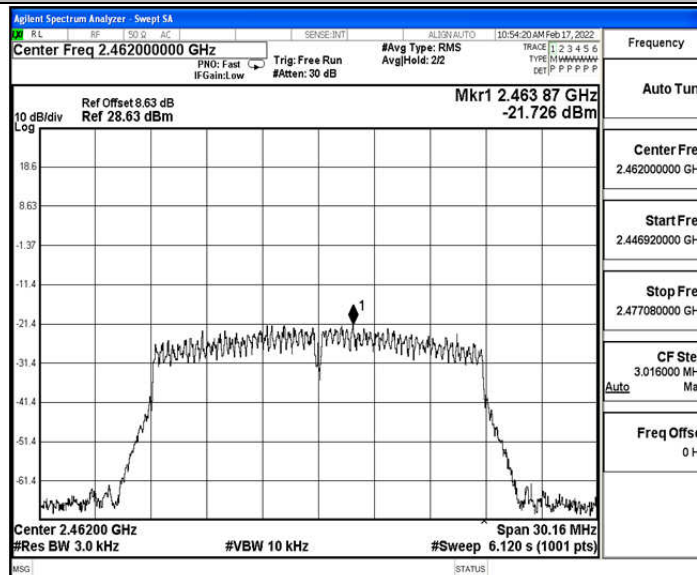
11N20SISO_Ant0_2412



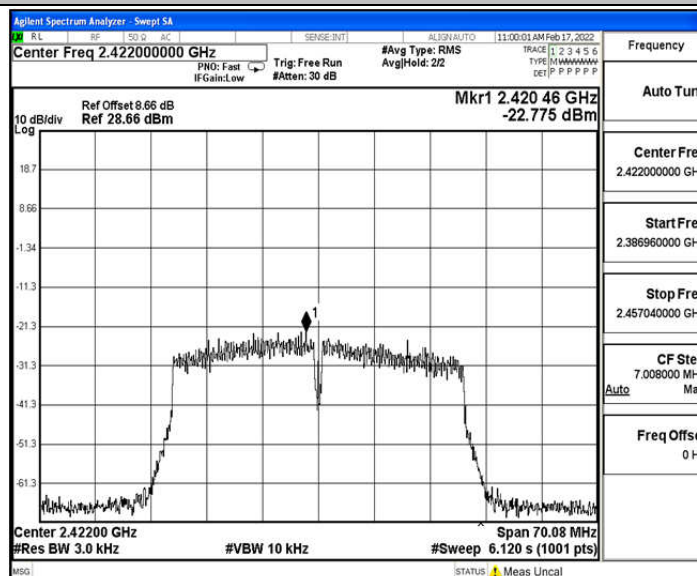
11N20SISO_Ant0_2437



11N20SISO_Ant0_2462

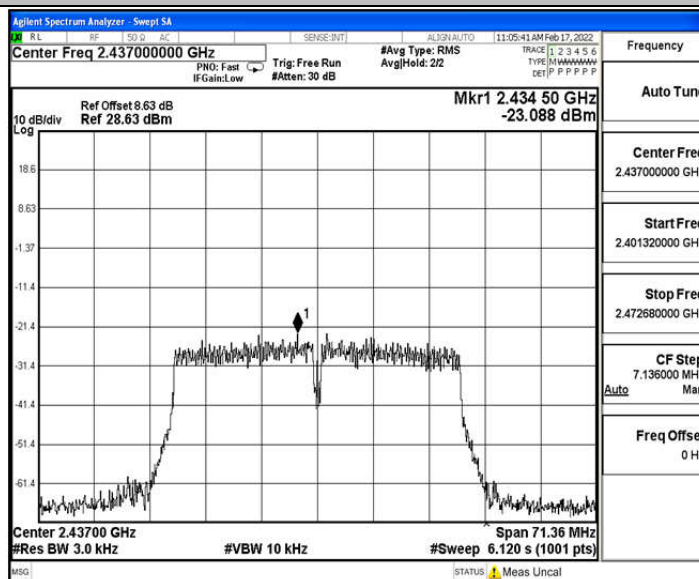


11N40SISO_Ant0_2422

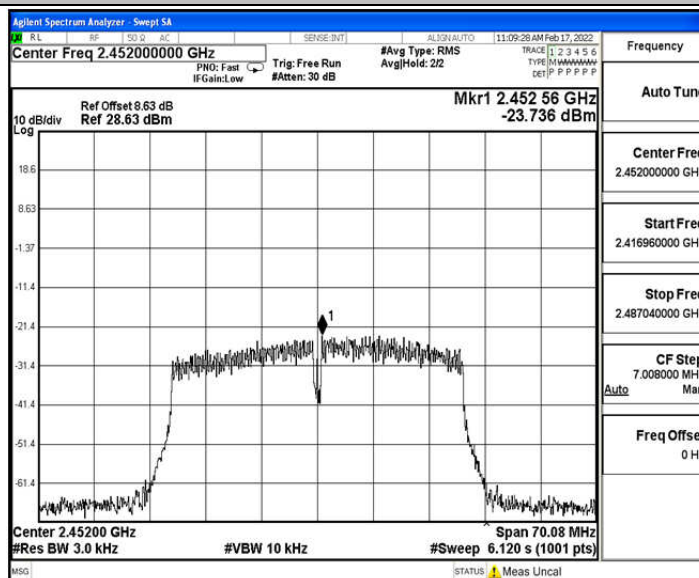




11N40SISO_Ant0_2437



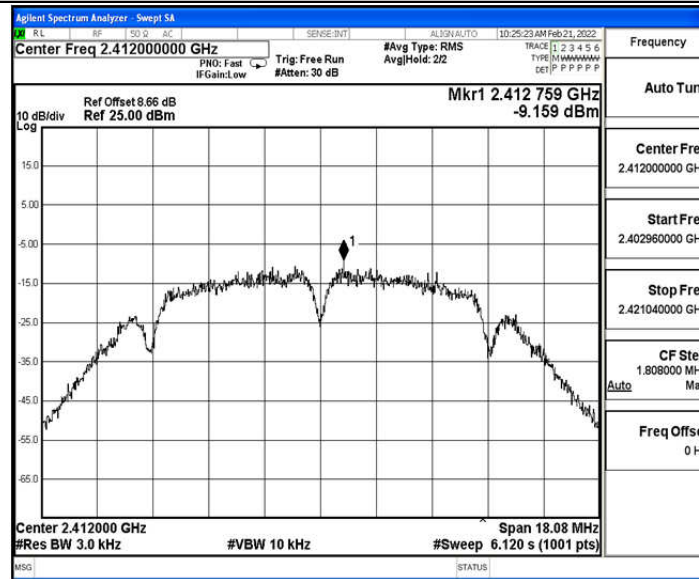
11N40SISO_Ant0_2452



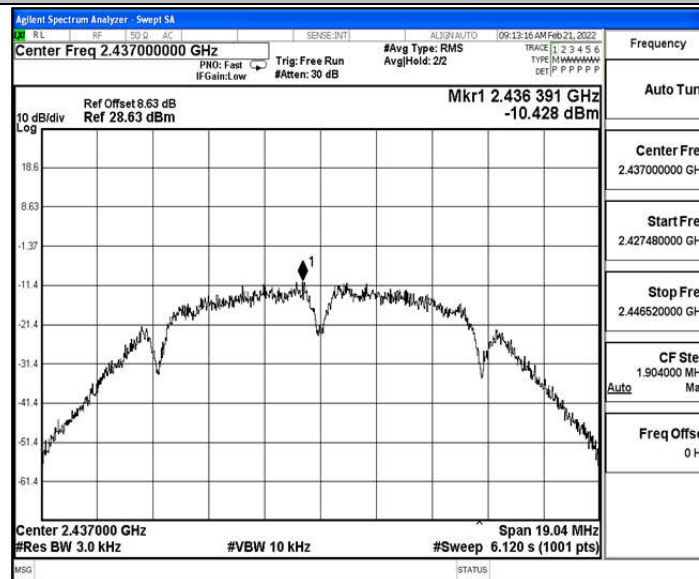


Test Graphs

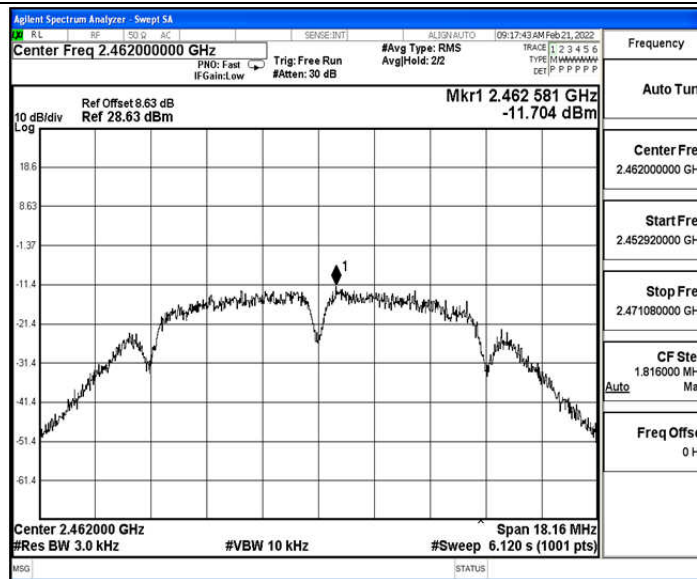
11B_Ant1_2412



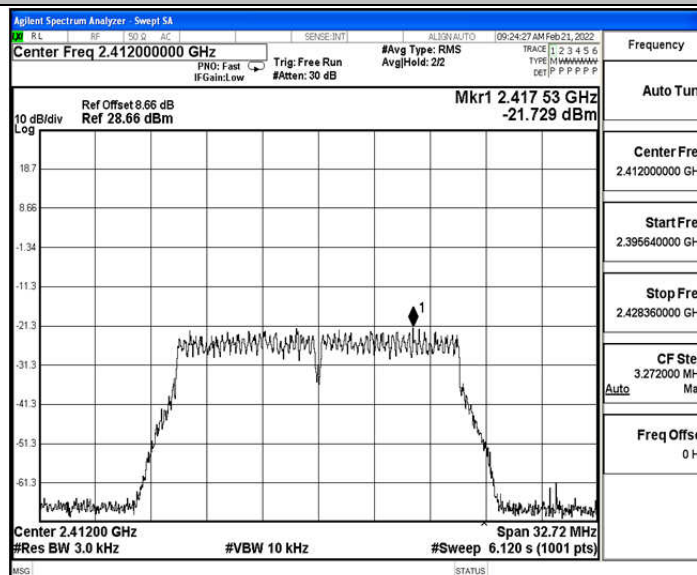
11B_Ant1_2437



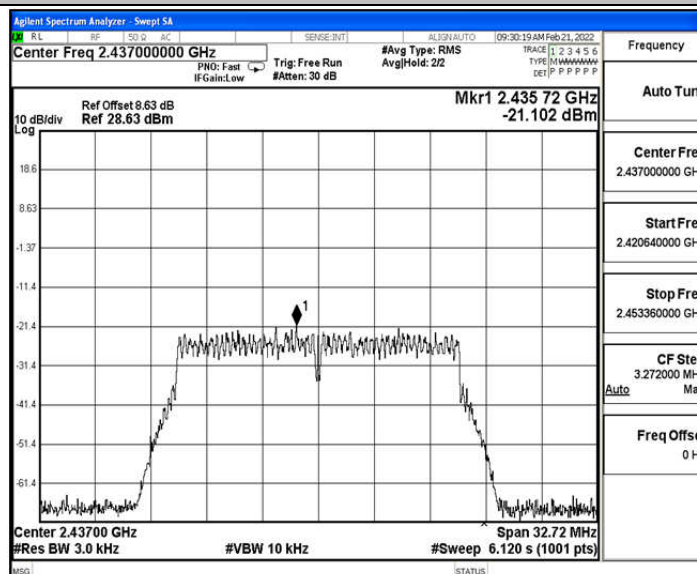
11B_Ant1_2462

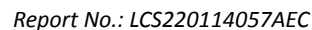


11G_Ant1_2412



11G_Ant1_2437





Agilent Spectrum Analyzer - Swept SA

Center Freq 2.46200000 GHz

Ref Offset 8.63 dB
Ref 28.63 dBm

Trig: Fast Run
IF Gain: Low

#Avg Type: RMS
Avg/Hold: 22

Frequency

Auto Tune

Center Freq
2.46200000 GHz

Start Freq
2.445680000 GHz

Stop Freq
2.478320000 GHz

CF Step
3.264000 MHz

Auto

Freq Offset
0 Hz

10 dB/div
Log

Ref Offset 8.63 dB
Ref 28.63 dBm

Mkr1 2.456 39 GHz
-21.306 dBm

Center 2.46200 GHz
#Res BW 3.0 kHz

#VBW 10 kHz

Span 32.64 MHz
#Sweep 6.120 s (1001 pts)

MSG

STATUS

Agilent Spectrum Analyzer - Sweep SA

RL RF SQ G AC SENSE INT ALIGN AUTO 09:44:33 AM Feb 21, 2022

Center Freq 2.41200000 GHz PNO: Fast Trig: Free Run #Avg Type: RMS #Att Field: 22

IF Gain: Low

Ref Offset 8.66 dB Ref 28.66 dBm

Mkr1 2.412 598 4 GHz -21.418 dBm

10 dB/div Log

Center 2.41200 GHz #Res BW 3.0 kHz #VBW 10 kHz #Sweep 6.120 s (1001 pts)

Span 35.20 MHz

Frequency Auto Tune

Center Freq 2.41200000 GHz

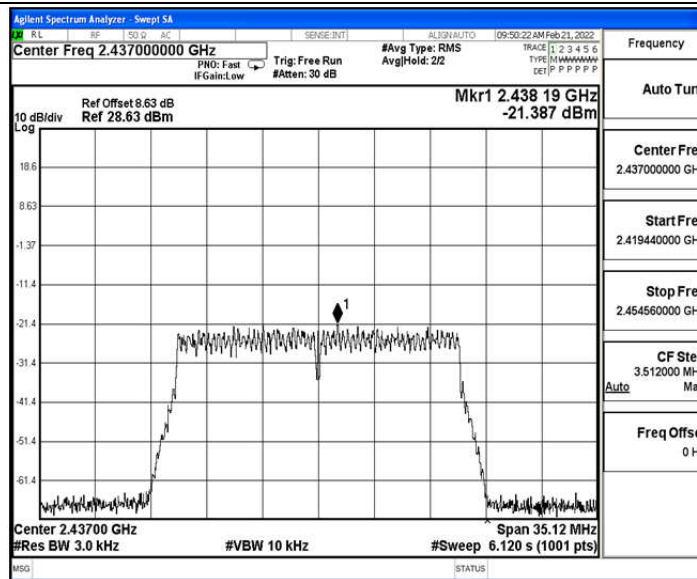
Start Freq 2.394400000 GHz

Stop Freq 2.429600000 GHz

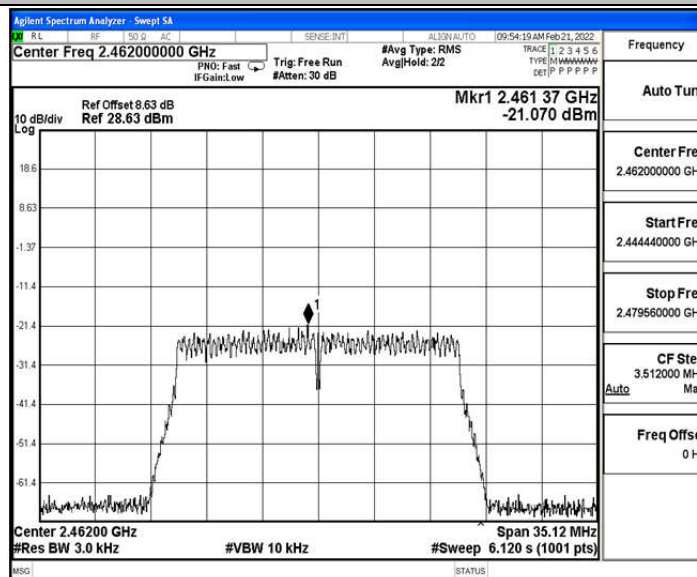
CF Step 3.520000 MHz

Auto Man

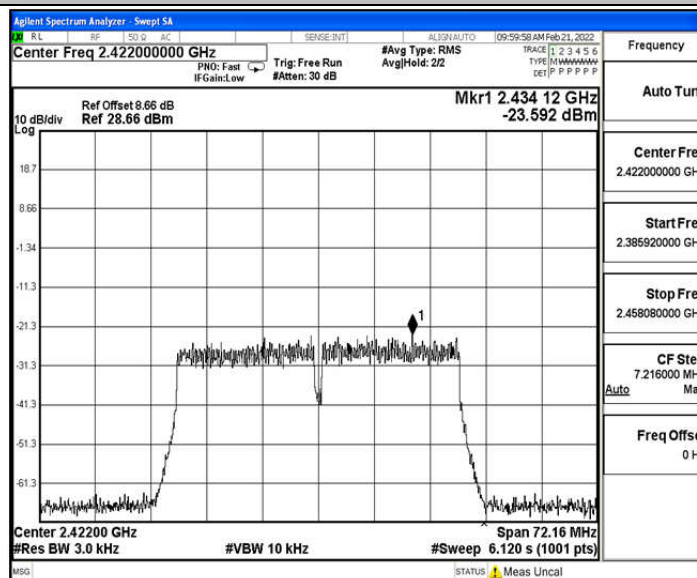
Freq Offset 0 Hz



11N20SISO_Ant1_2462

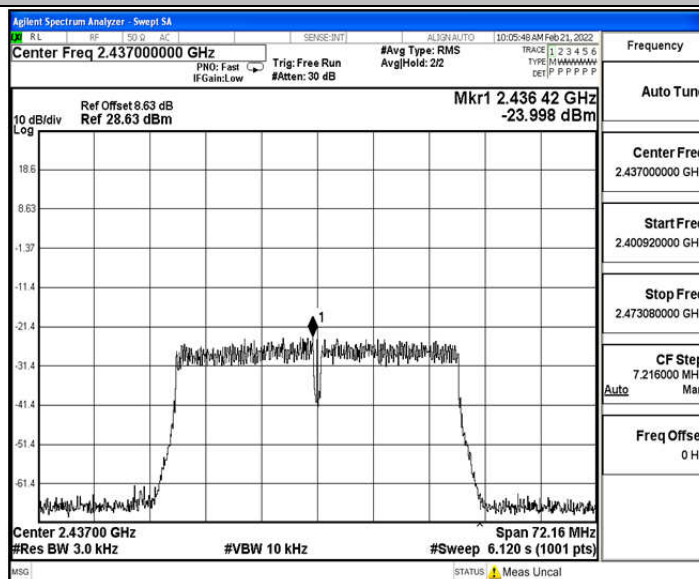


11N40SISO_Ant1_2422

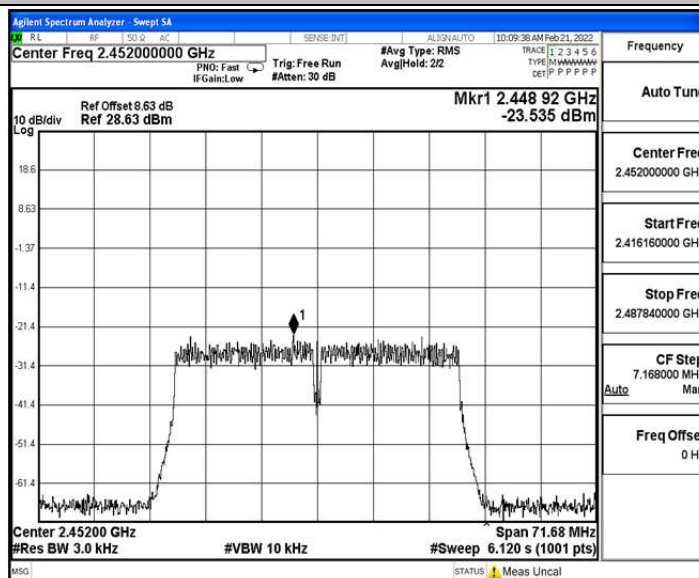




11N40SISO_Ant1_2437



11N40SISO_Ant1_2452





C.4 Band edge measurements

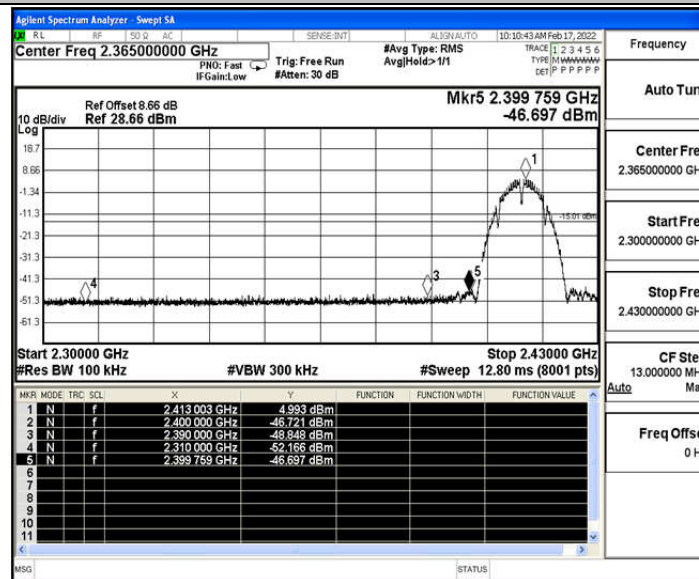
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant0	Low	2412	4.99	-46.7	≤ -15.01	PASS
		High	2462	3.70	-48.15	≤ -16.3	PASS
11G	Ant0	Low	2412	-5.95	-48.51	≤ -25.95	PASS
		High	2462	-6.42	-48.31	≤ -26.42	PASS
11N20SISO	Ant0	Low	2412	-5.51	-47.26	≤ -25.51	PASS
		High	2462	-6.14	-48.28	≤ -26.14	PASS
11N40SISO	Ant0	Low	2422	-8.00	-46.92	≤ -28	PASS
		High	2452	-8.34	-47.59	≤ -28.34	PASS

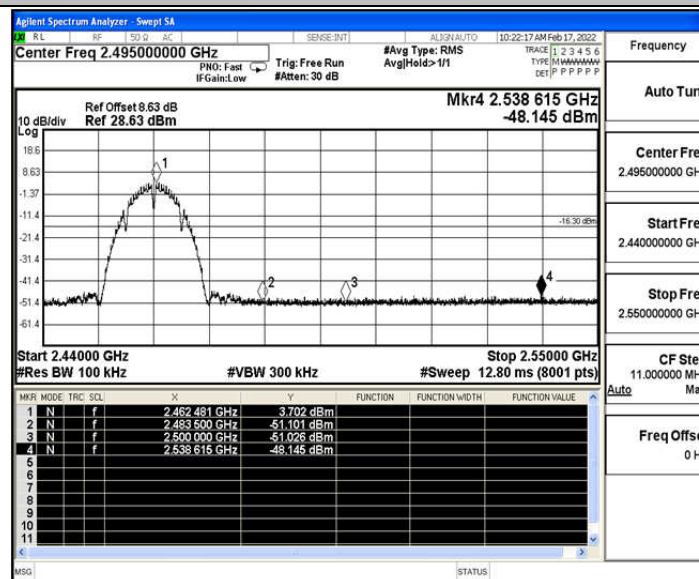


Test Graphs

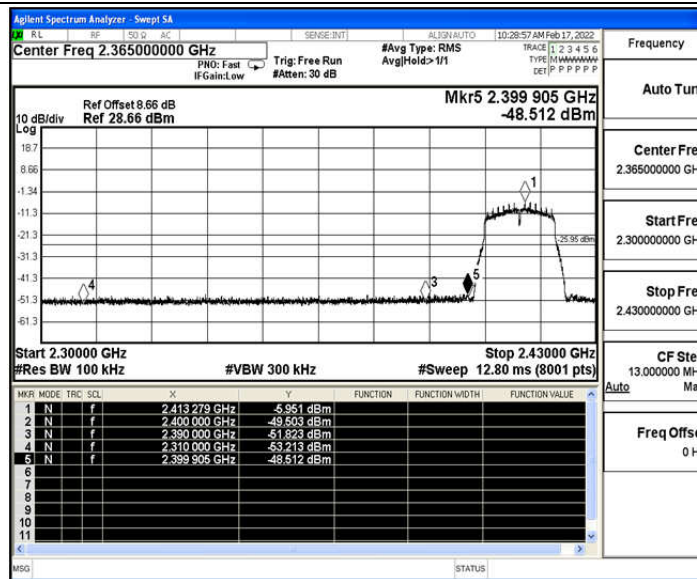
11B_Ant0_Low_2412



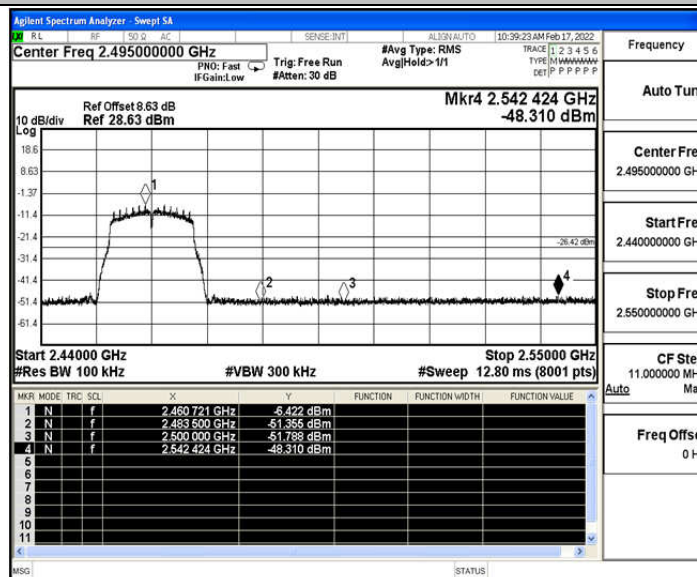
11B_Ant0_High_2462



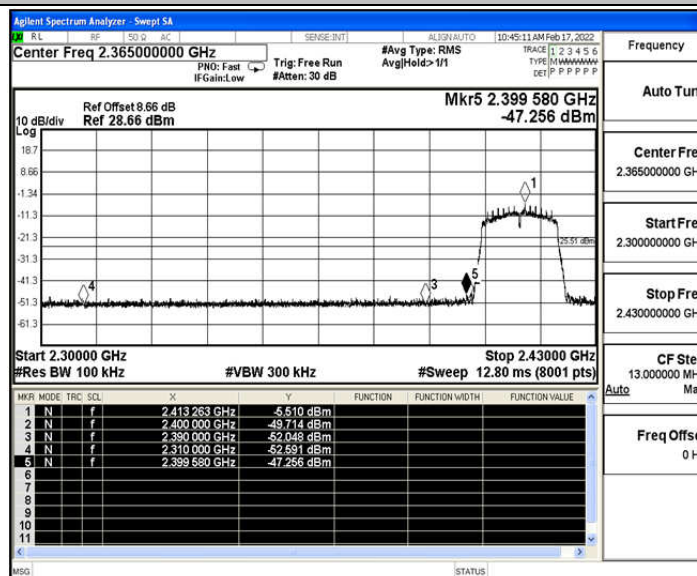
11G_Ant0_Low_2412



11G_Ant0_High_2462

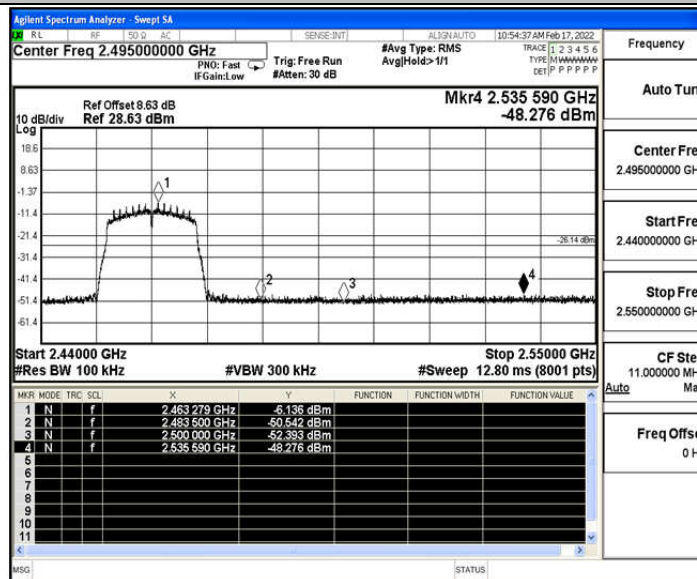


11N20SISO_Ant0_Low_2412

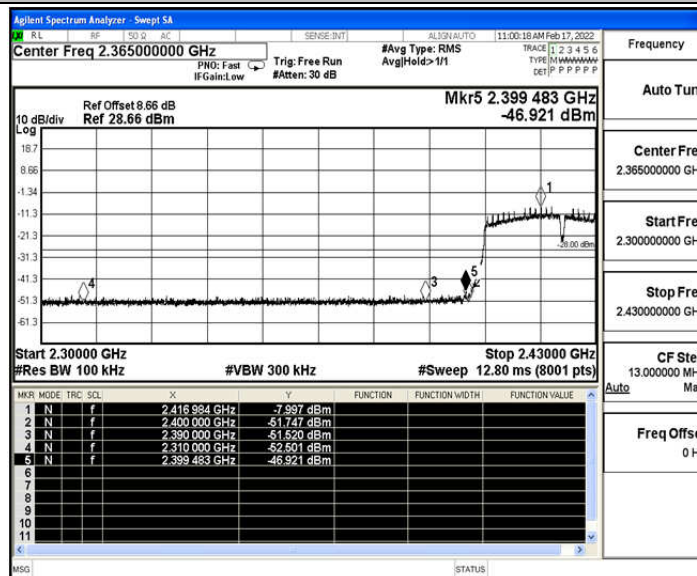




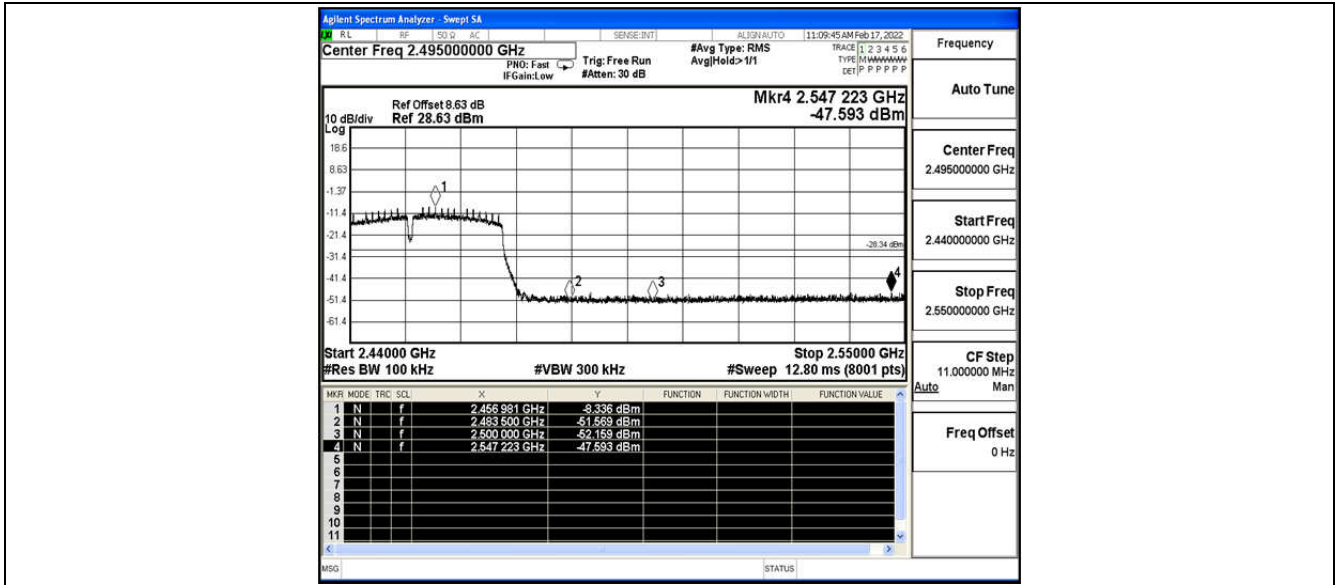
11N20SISO_Ant0_High_2462



11N40SISO_Ant0_Low_2422



11N40SISO_Ant0_High_2452





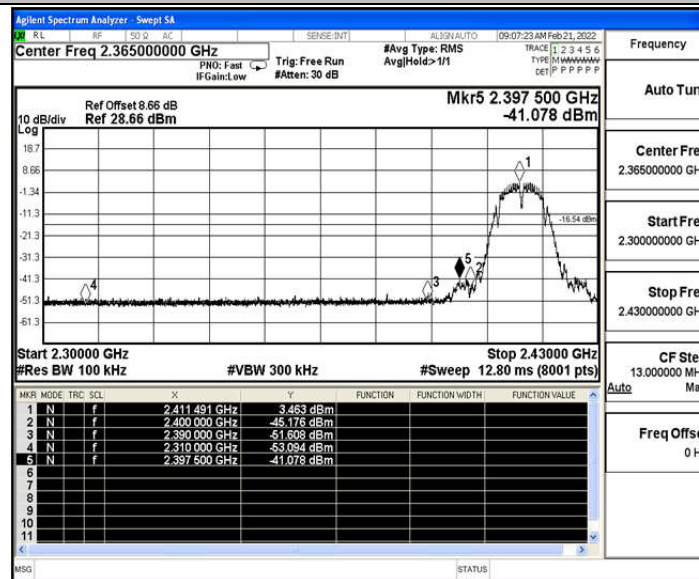
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	3.46	-41.08	≤ -16.54	PASS
		High	2462	2.79	-48.38	≤ -17.21	PASS
11G	Ant1	Low	2412	-7.01	-48.71	≤ -27.01	PASS
		High	2462	-7.07	-47.51	≤ -27.07	PASS
11N20SISO	Ant1	Low	2412	-6.53	-48.27	≤ -26.53	PASS
		High	2462	-7.00	-47.73	≤ -27	PASS
11N40SISO	Ant1	Low	2422	-9.37	-47.16	≤ -29.37	PASS
		High	2452	-9.51	-48.41	≤ -29.51	PASS

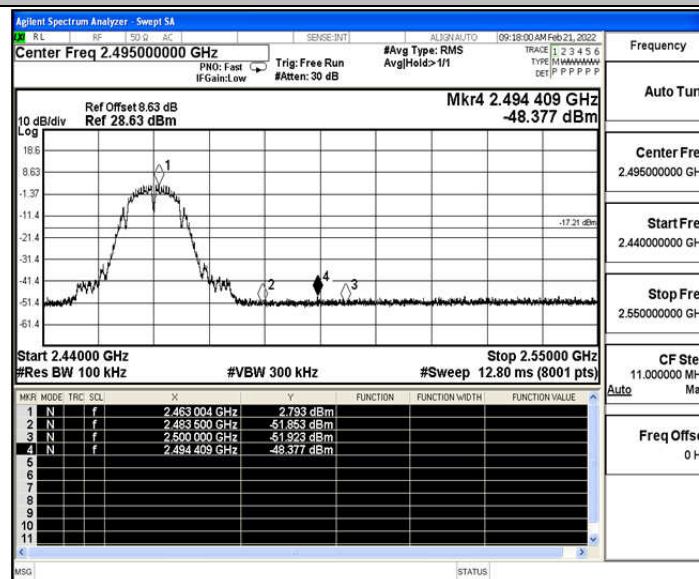


Test Graphs

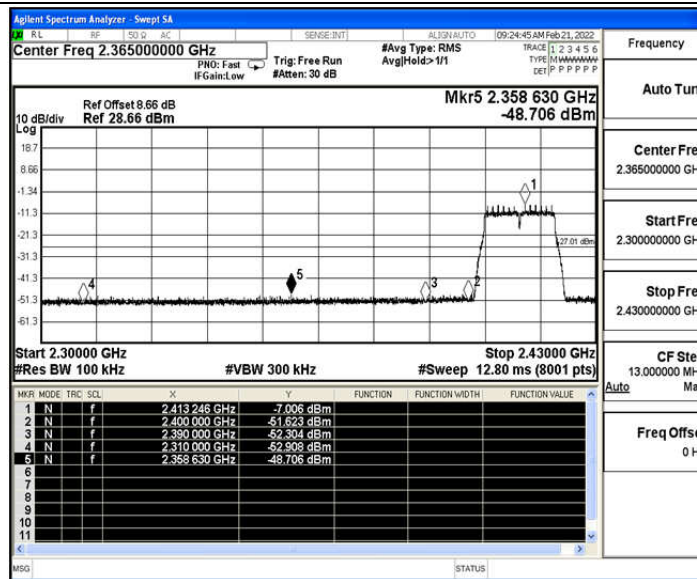
11B_Ant1_Low_2412



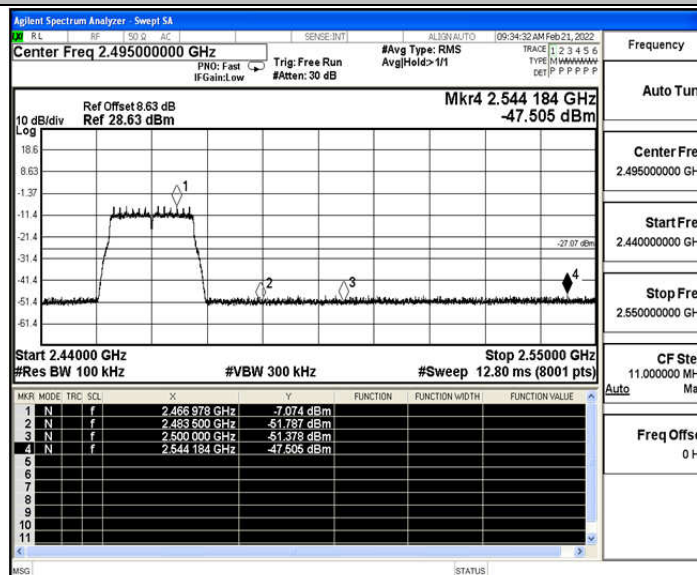
11B_Ant1_High_2462



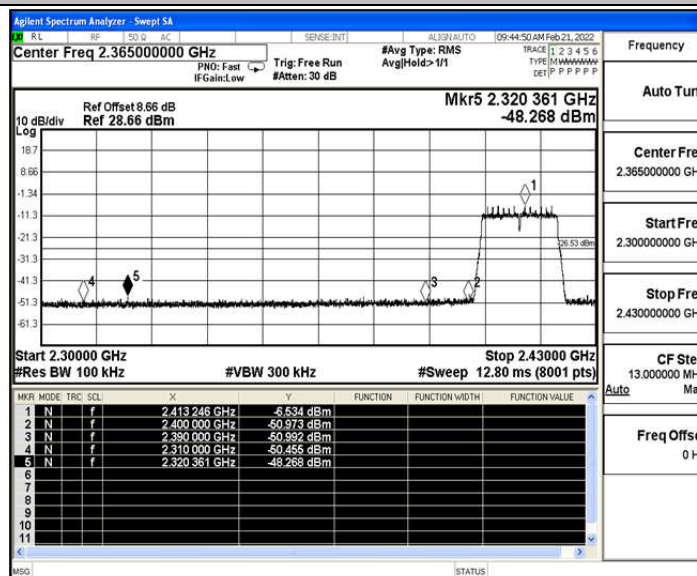
11G_Ant1_Low_2412



11G_Ant1_High_2462

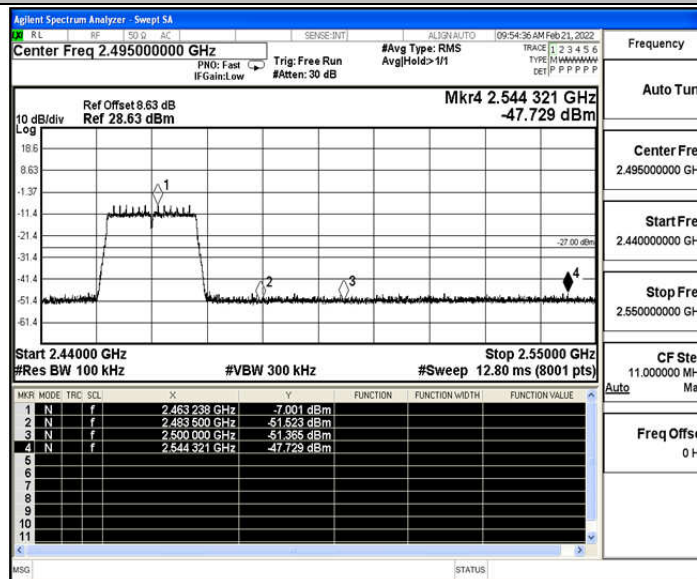


11N20SISO_Ant1_Low_2412

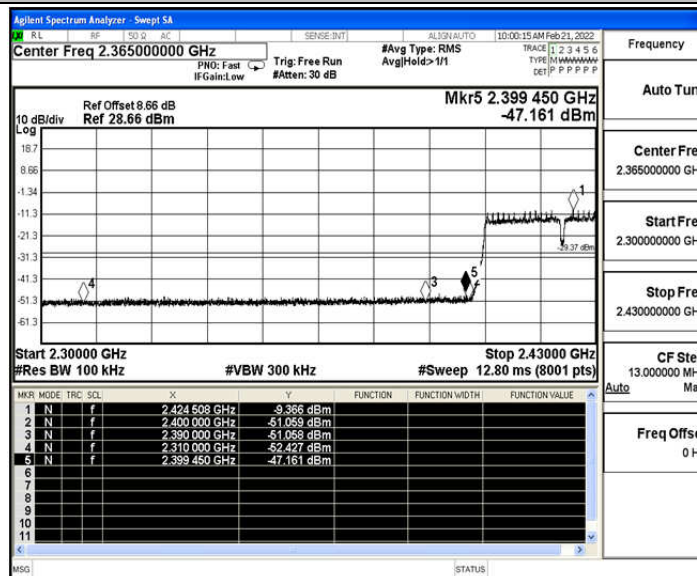




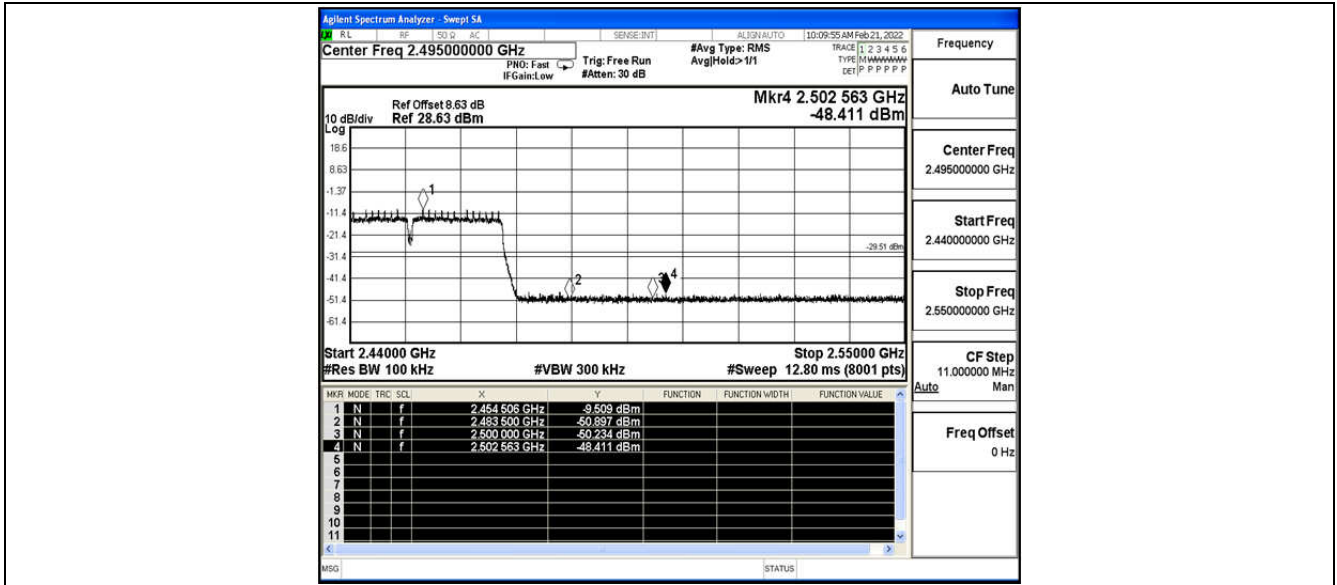
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452





C.5 Conducted Spurious Emission

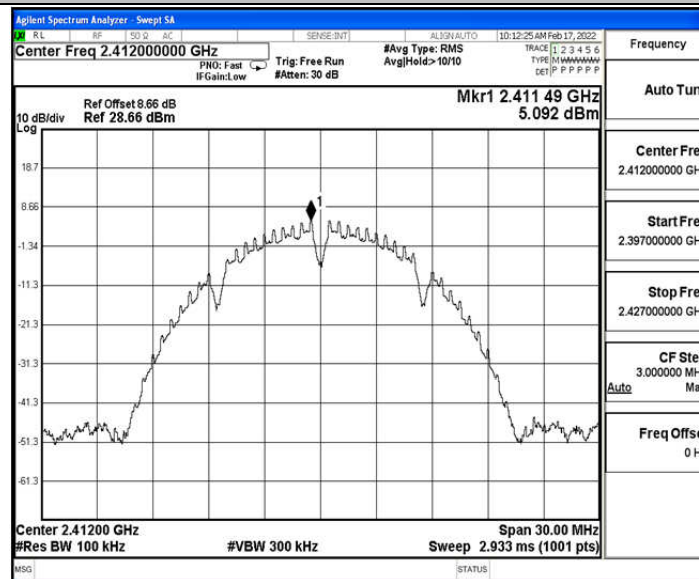
Test Result

TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant0	2412	Reference	5.09	5.09	---	PASS
			30~1000	5.09	-60.57	≤ -14.91	PASS
			1000~26500	5.09	-46.35	≤ -14.91	PASS
		2437	Reference	4.18	4.18	---	PASS
			30~1000	4.18	-60.91	≤ -15.82	PASS
			1000~26500	4.18	-46.23	≤ -15.82	PASS
		2462	Reference	3.57	3.57	---	PASS
			30~1000	3.57	-60.86	≤ -16.43	PASS
			1000~26500	3.57	-46.3	≤ -16.43	PASS
11G	Ant0	2412	Reference	-6.16	-6.16	---	PASS
			30~1000	-6.16	-60.18	≤ -26.16	PASS
			1000~26500	-6.16	-46.01	≤ -26.16	PASS
		2437	Reference	-6.33	-6.33	---	PASS
			30~1000	-6.33	-59.56	≤ -26.33	PASS
			1000~26500	-6.33	-46.26	≤ -26.33	PASS
		2462	Reference	-6.20	-6.20	---	PASS
			30~1000	-6.20	-60.31	≤ -26.2	PASS
			1000~26500	-6.20	-46.52	≤ -26.2	PASS
11N20SISO	Ant0	2412	Reference	-5.63	-5.63	---	PASS
			30~1000	-5.63	-60.53	≤ -25.63	PASS
			1000~26500	-5.63	-45.55	≤ -25.63	PASS
		2437	Reference	-5.89	-5.89	---	PASS
			30~1000	-5.89	-60.83	≤ -25.89	PASS
			1000~26500	-5.89	-46.18	≤ -25.89	PASS
		2462	Reference	-5.85	-5.85	---	PASS
			30~1000	-5.85	-60.2	≤ -25.85	PASS
			1000~26500	-5.85	-46.18	≤ -25.85	PASS
11N40SISO	Ant0	2422	Reference	-7.87	-7.87	---	PASS
			30~1000	-7.87	-60.92	≤ -27.87	PASS
			1000~26500	-7.87	-46.4	≤ -27.87	PASS
		2437	Reference	-9.14	-9.14	---	PASS
			30~1000	-9.14	-59.92	≤ -29.14	PASS
			1000~26500	-9.14	-46.52	≤ -29.14	PASS
		2452	Reference	-8.48	-8.48	---	PASS
			30~1000	-8.48	-60.48	≤ -28.48	PASS
			1000~26500	-8.48	-45.48	≤ -28.48	PASS

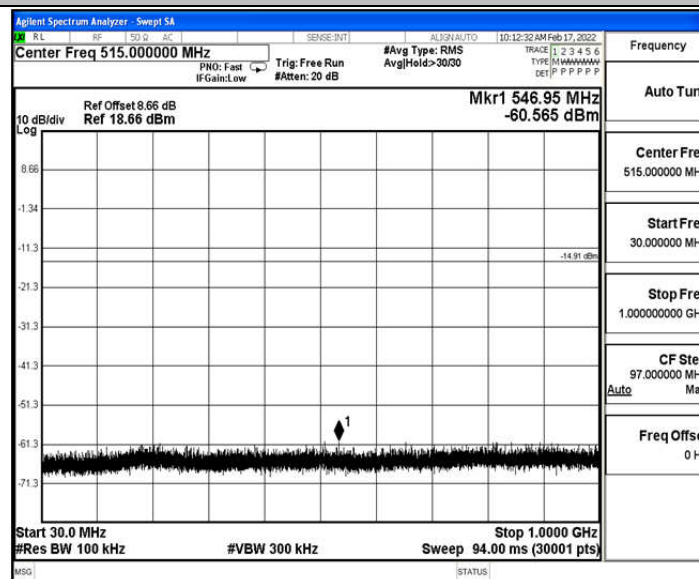


Test Graphs

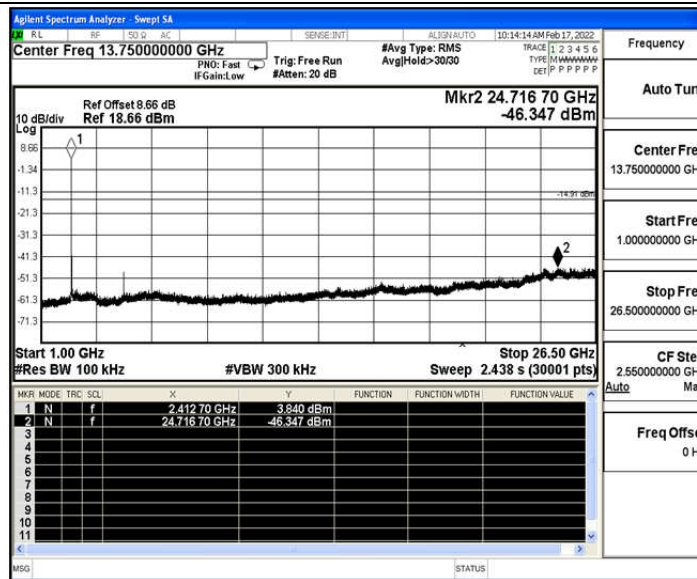
11B_Ant0_2412_0~Reference



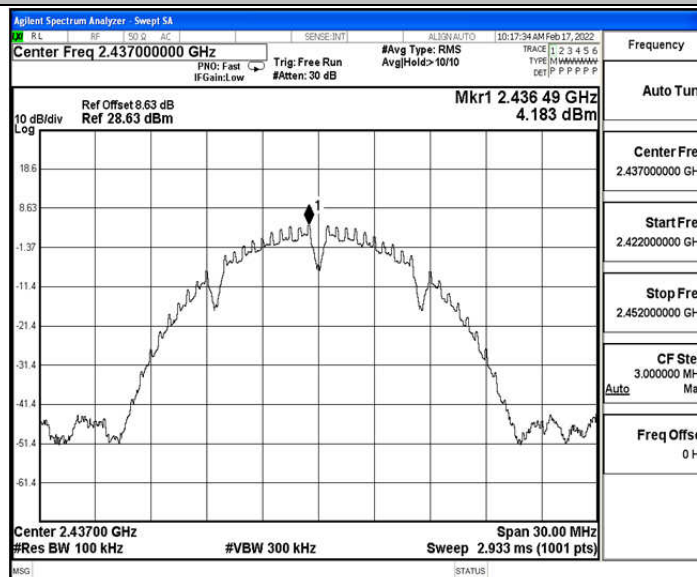
11B_Ant0_2412_30~1000



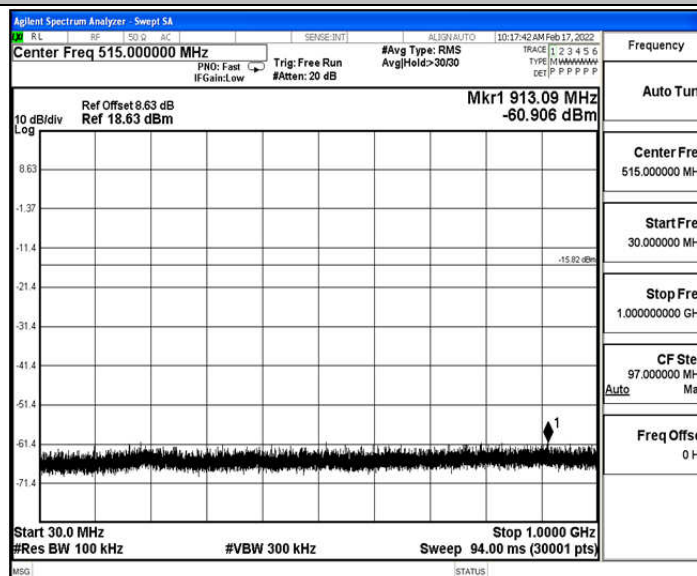
11B_Ant0_2412_1000~26500



11B_Ant0_2437_0~Reference

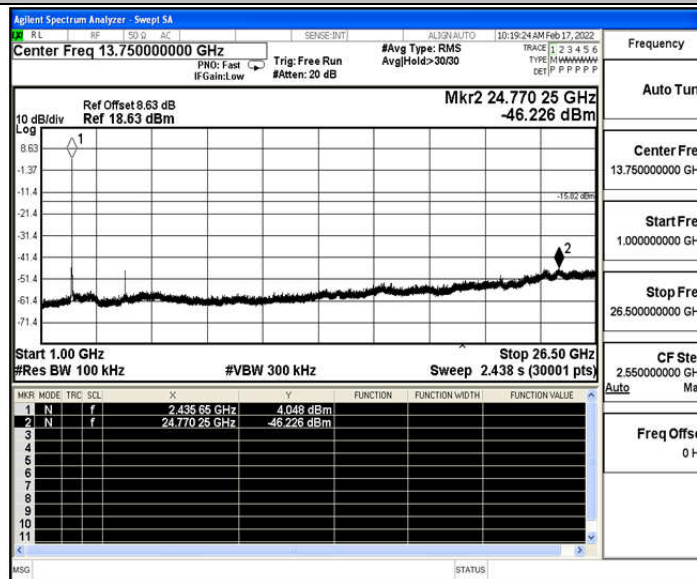


11B_Ant0_2437_30~1000

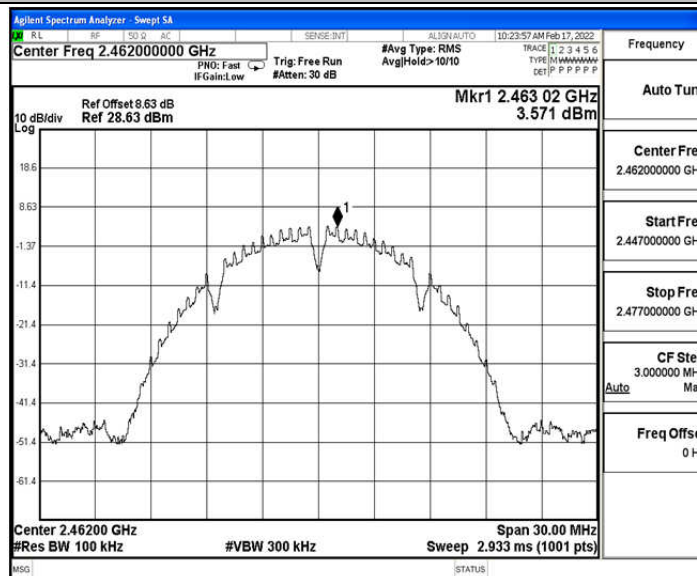




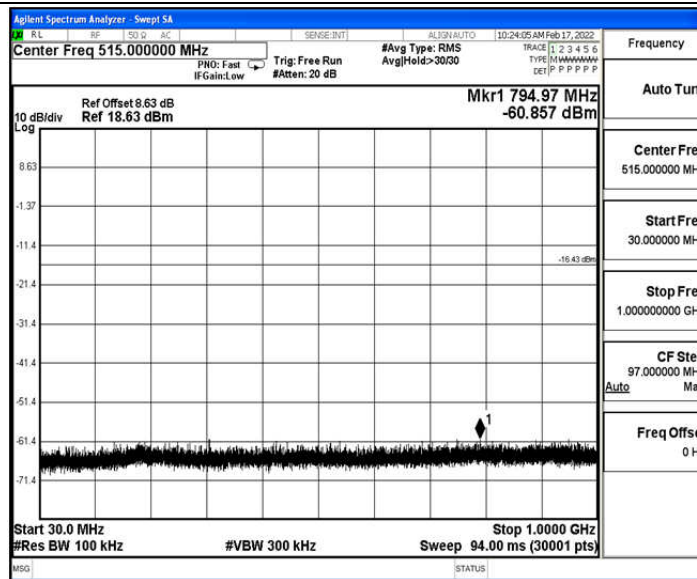
11B_Ant0_2437_1000~26500



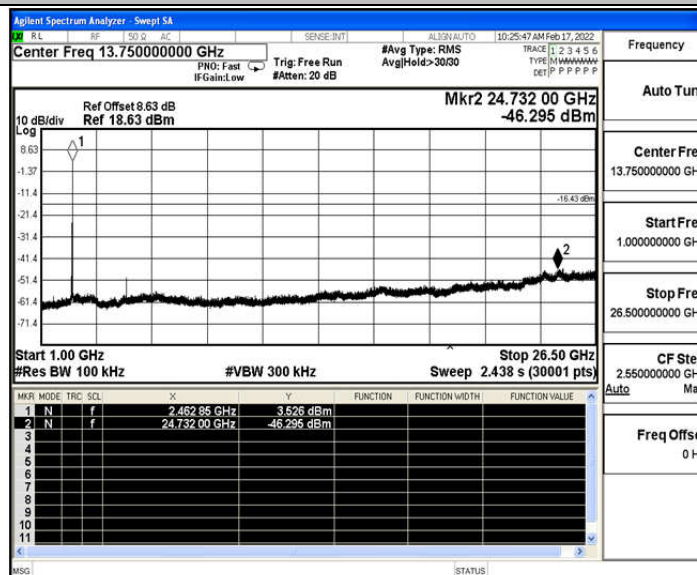
11B_Ant0_2462_0~Reference



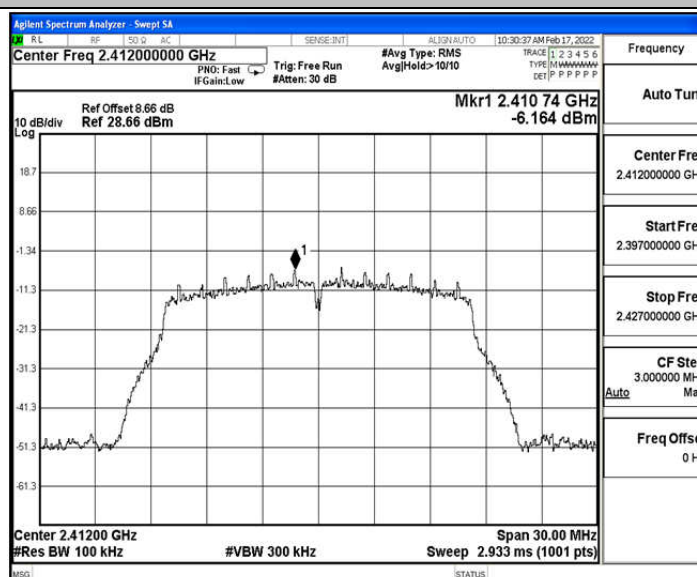
11B_Ant0_2462_30~1000



11B_Ant0_2462_1000~26500

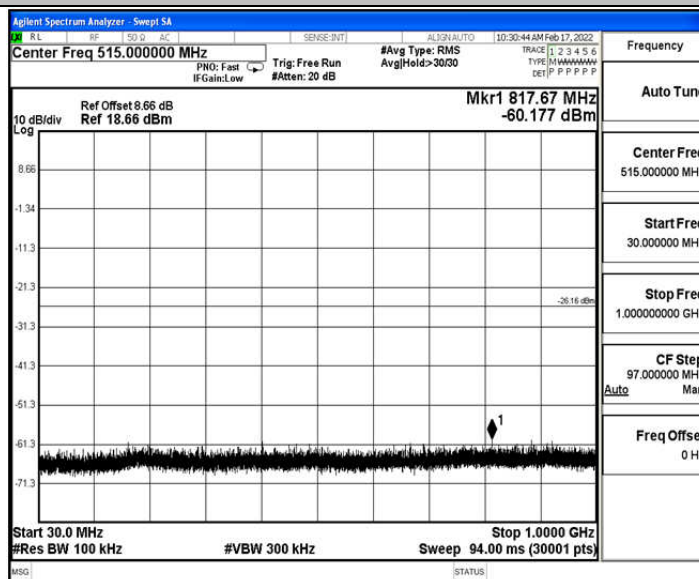


11G_Ant0_2412_0~Reference

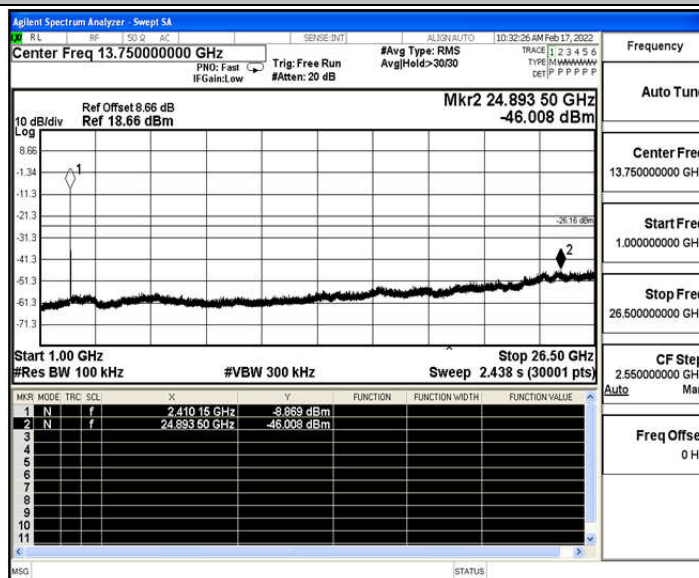




11G_Ant0_2412_30~1000



11G_Ant0_2412_1000~26500



11G_Ant0_2437_0~Reference