



Appendix C

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Single Board Computer

Test Model: IEC-EDGE2-0432

Environmental Conditions

Temperature:	23.5° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Bill Zhu
Supervised by:	Li huan



C.1 6dB Bandwidth

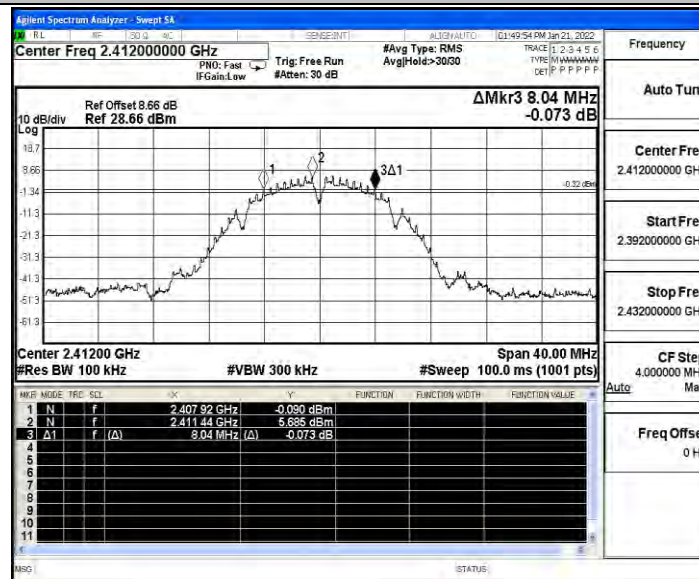
Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant0	2412	8.040	2407.920	2415.960	0.5	PASS
		2437	7.520	2433.440	2440.960	0.5	PASS
		2462	7.560	2458.400	2465.960	0.5	PASS
11G	Ant0	2412	12.920	2406.960	2419.880	0.5	PASS
		2437	15.440	2429.440	2444.880	0.5	PASS
		2462	15.280	2454.440	2469.720	0.5	PASS
11N20SISO	Ant0	2412	15.920	2404.440	2420.360	0.5	PASS
		2437	15.920	2429.440	2445.360	0.5	PASS
		2462	15.120	2454.440	2469.560	0.5	PASS
11N40SISO	Ant0	2422	35.280	2404.480	2439.760	0.5	PASS
		2437	33.840	2420.680	2454.520	0.5	PASS
		2452	35.040	2434.480	2469.520	0.5	PASS

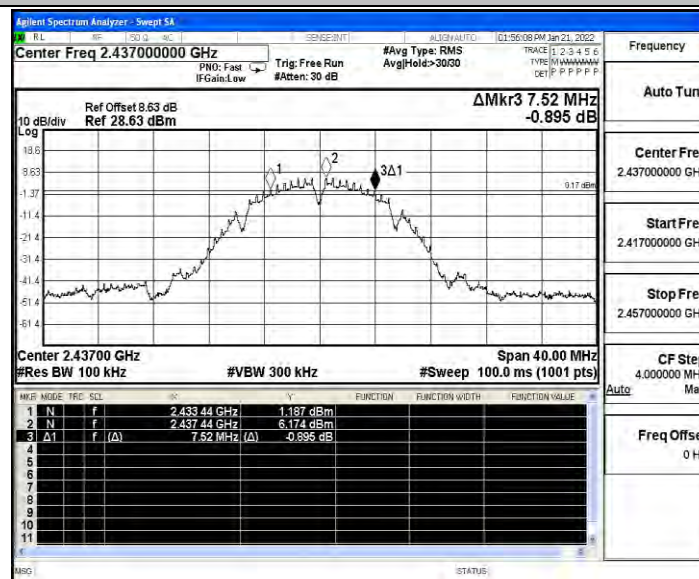


Test Graphs

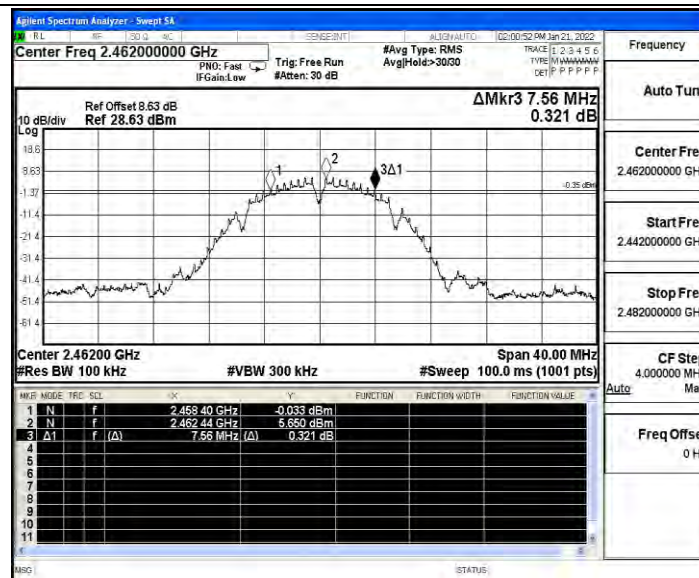
11B_Ant0_2412



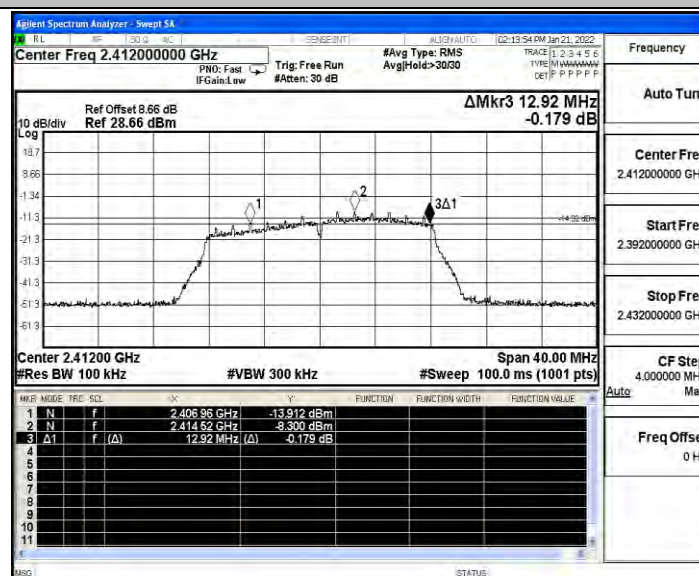
11B_Ant0_2437



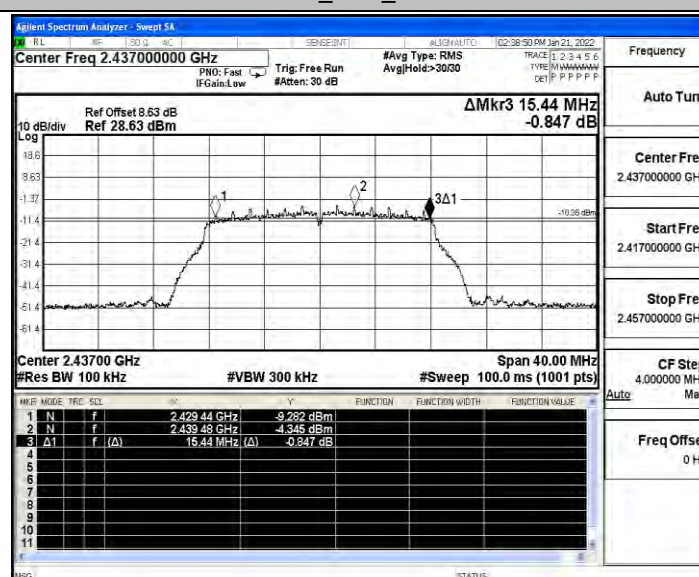
11B_Ant0_2462



11G_Ant0_2412

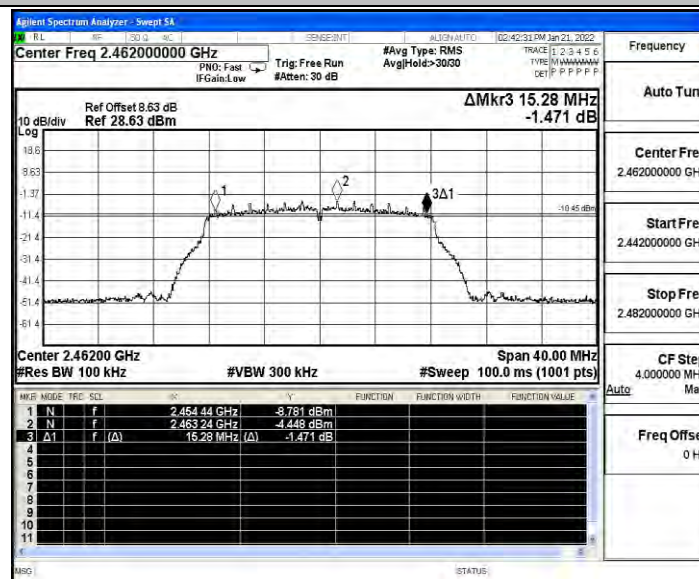


11G_Ant0_2437

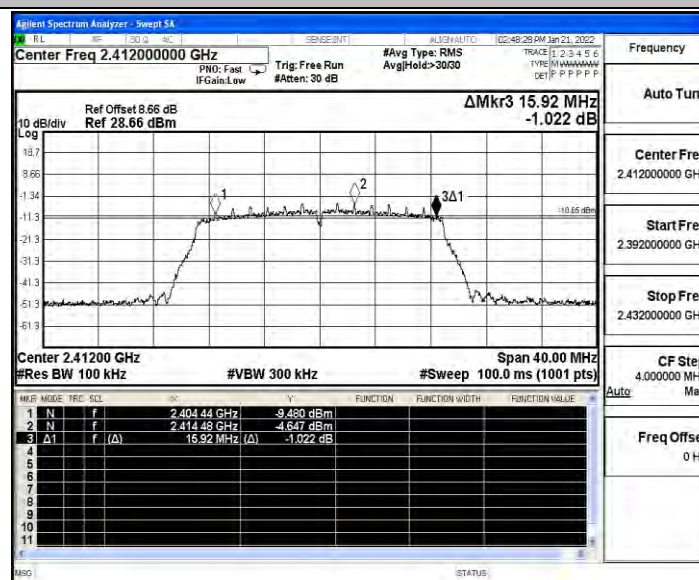




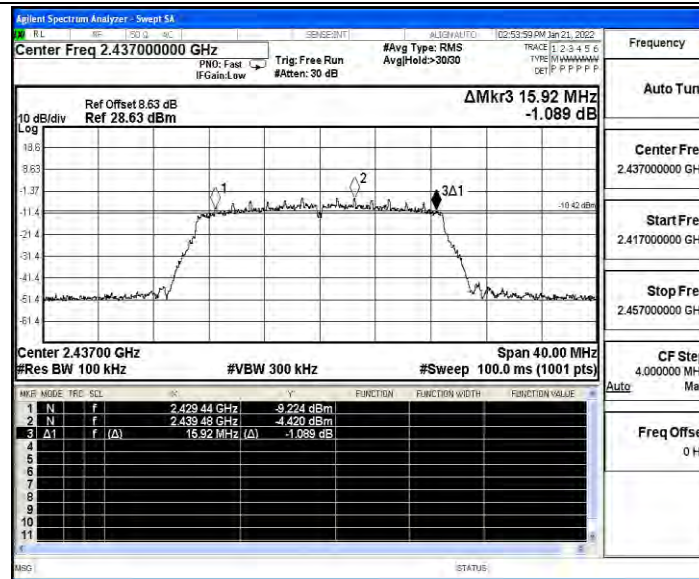
11G_Ant0_2462



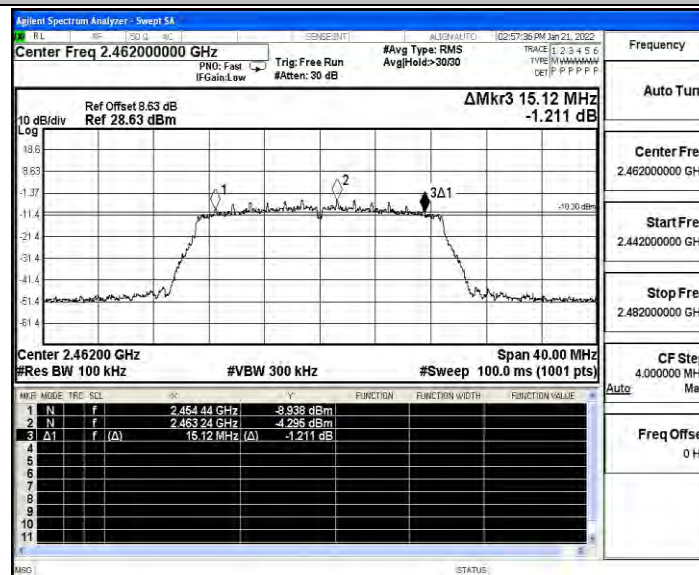
11N20SISO_Ant0_2412



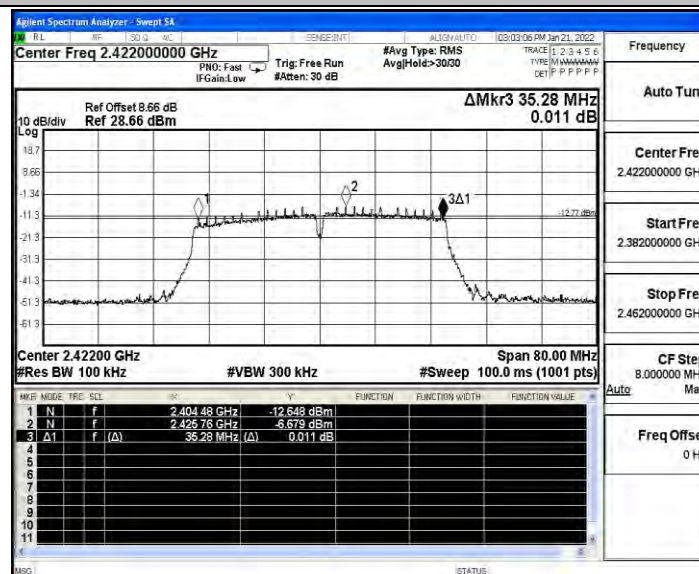
11N20SISO_Ant0_2437



11N20SISO_Ant0_2462

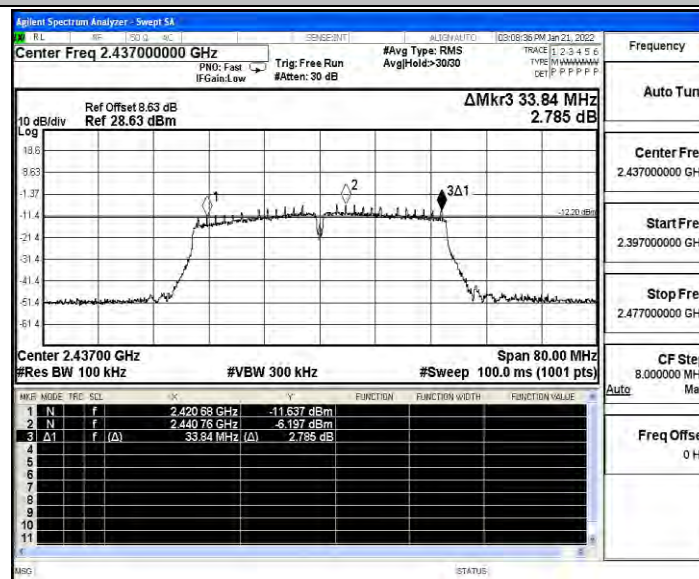


11N40SISO_Ant0_2422

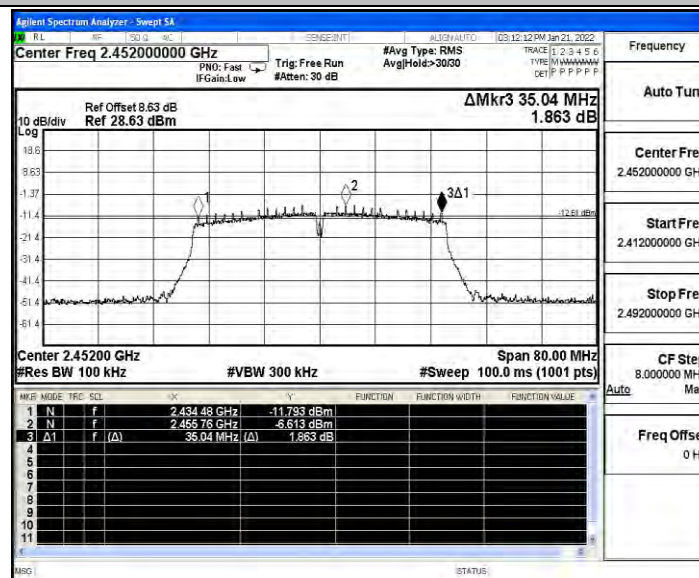




11N40SISO_Ant0_2437



11N40SISO_Ant0_2452



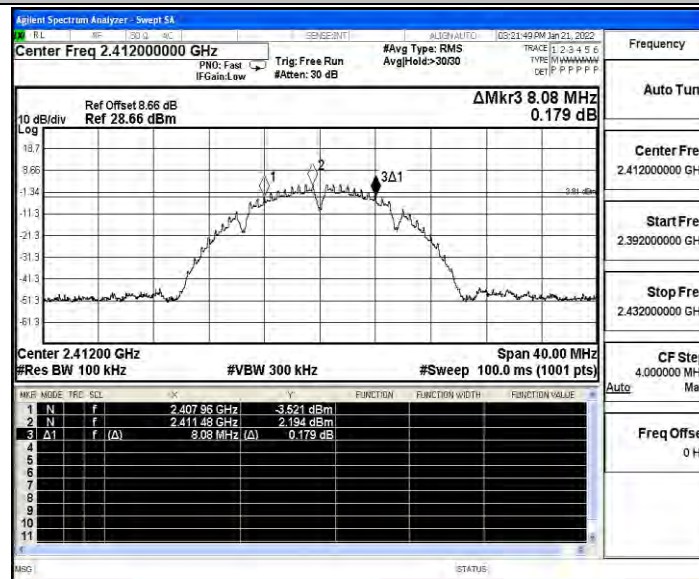


TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.080	2407.960	2416.040	0.5	PASS
		2437	8.040	2432.960	2441.000	0.5	PASS
		2462	8.000	2458.000	2466.000	0.5	PASS
11G	Ant1	2412	15.440	2404.440	2419.880	0.5	PASS
		2437	15.440	2429.440	2444.880	0.5	PASS
		2462	15.120	2454.440	2469.560	0.5	PASS
11N20SISO	Ant1	2412	16.000	2404.480	2420.480	0.5	PASS
		2437	15.400	2429.440	2444.840	0.5	PASS
		2462	15.120	2454.440	2469.560	0.5	PASS
11N40SISO	Ant1	2422	35.040	2404.480	2439.520	0.5	PASS
		2437	35.040	2419.480	2454.520	0.5	PASS
		2452	35.040	2434.480	2469.520	0.5	PASS

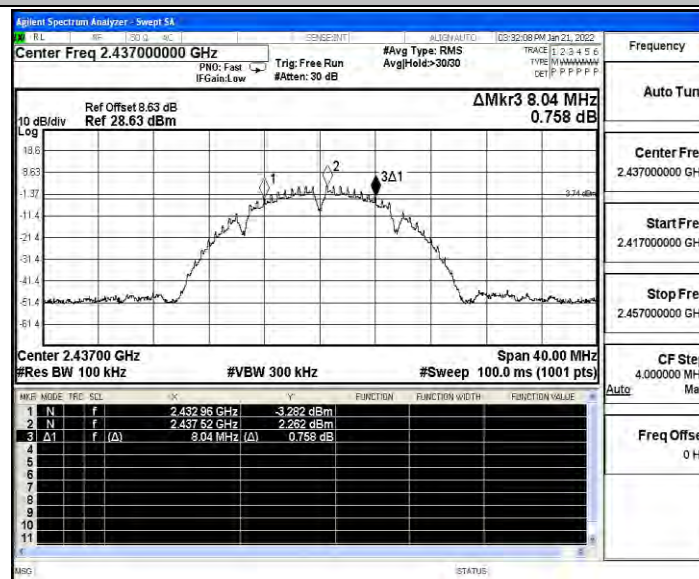


Test Graphs

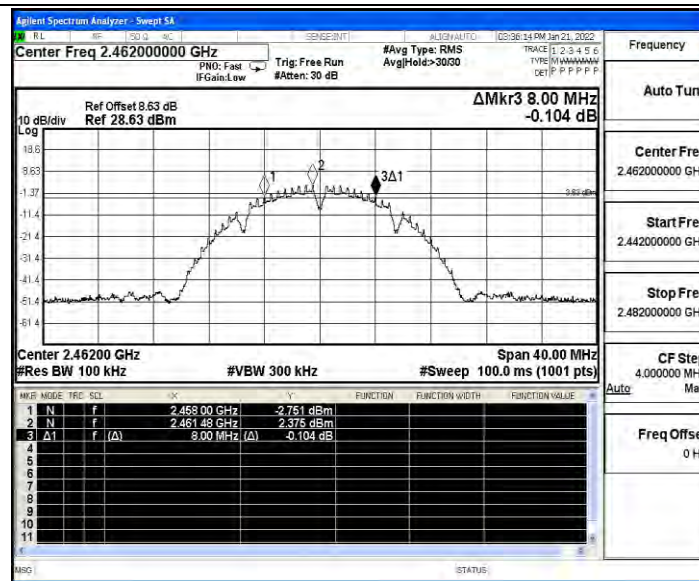
11B_Ant1_2412



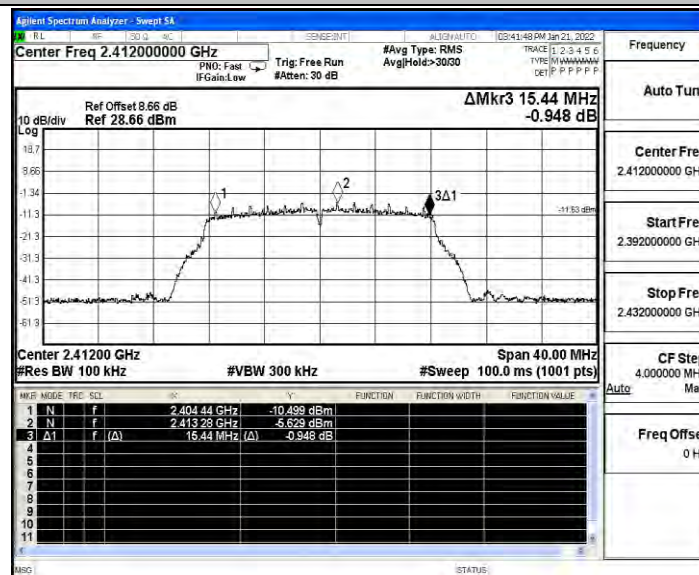
11B_Ant1_2437



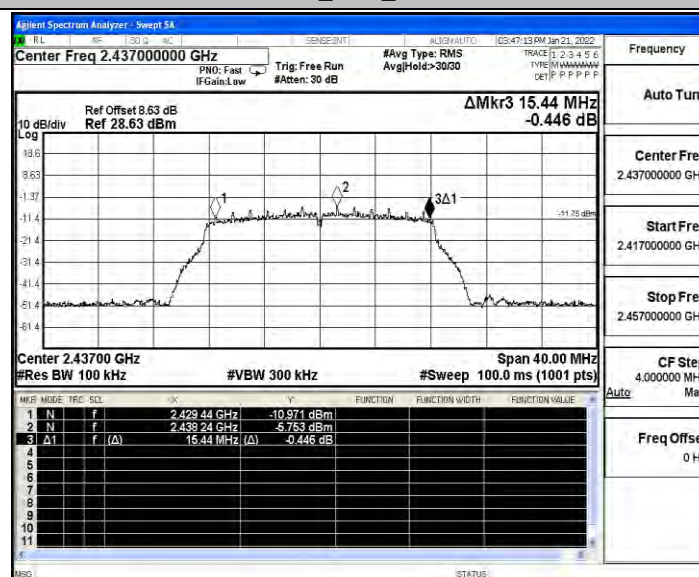
11B_Ant1_2462



11G_Ant1_2412

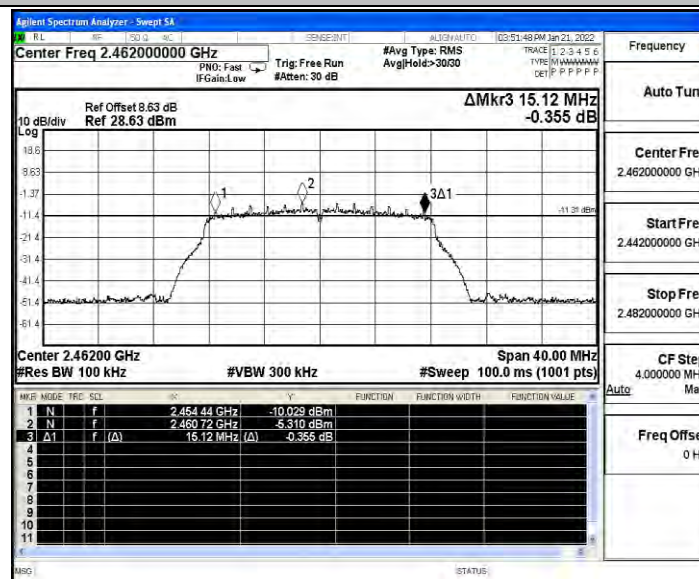


11G_Ant1_2437

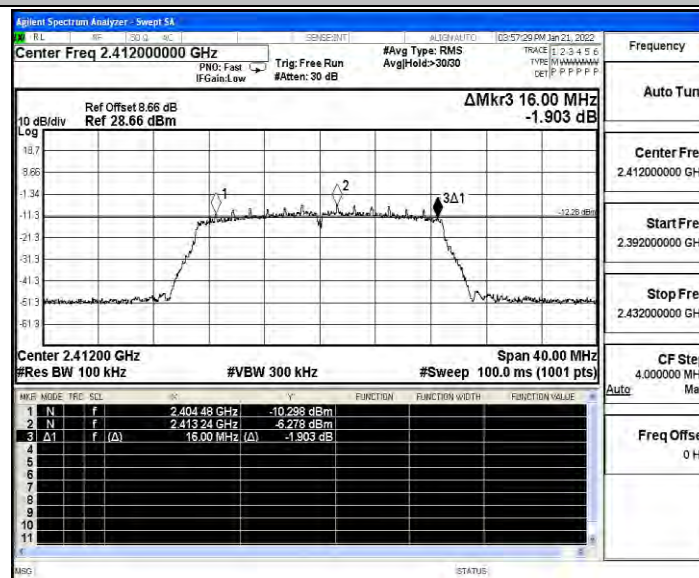




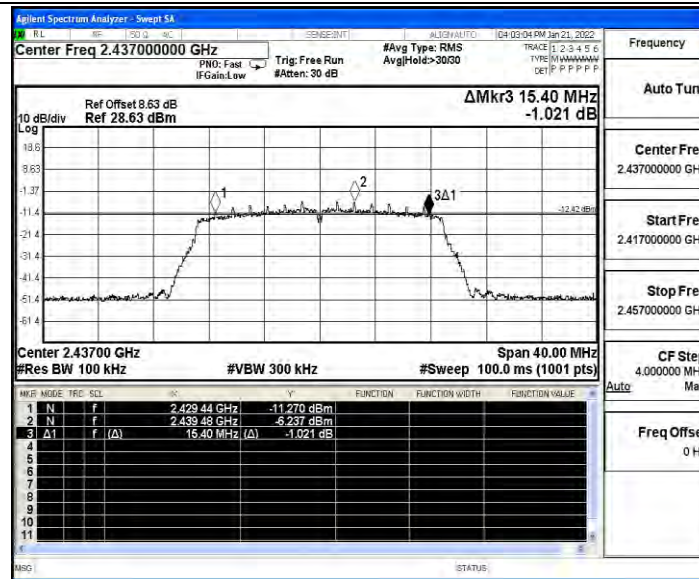
11G_Ant1_2462



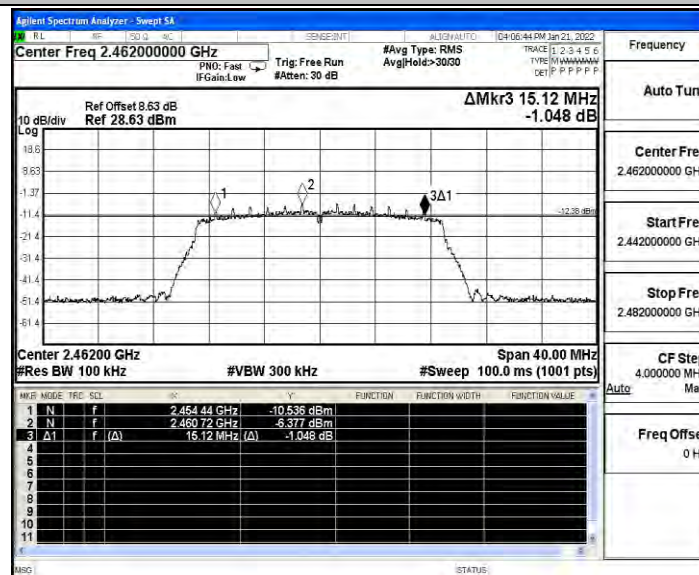
11N20SISO_Ant1_2412



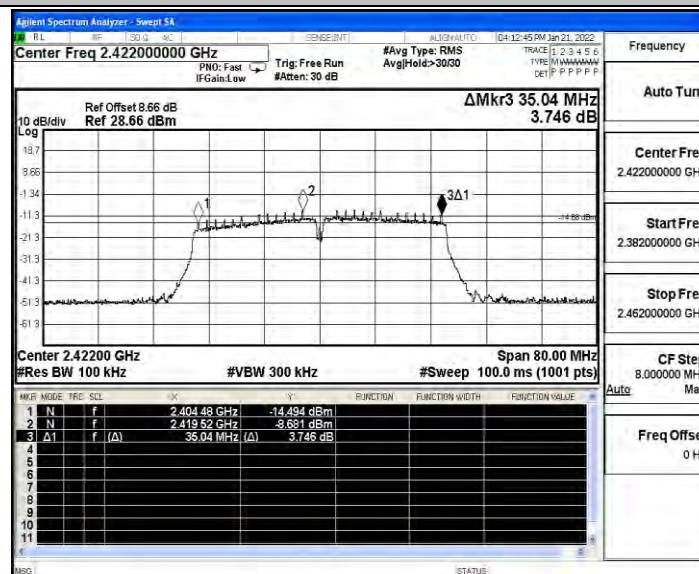
11N20SISO_Ant1_2437



11N20SISO_Ant1_2462

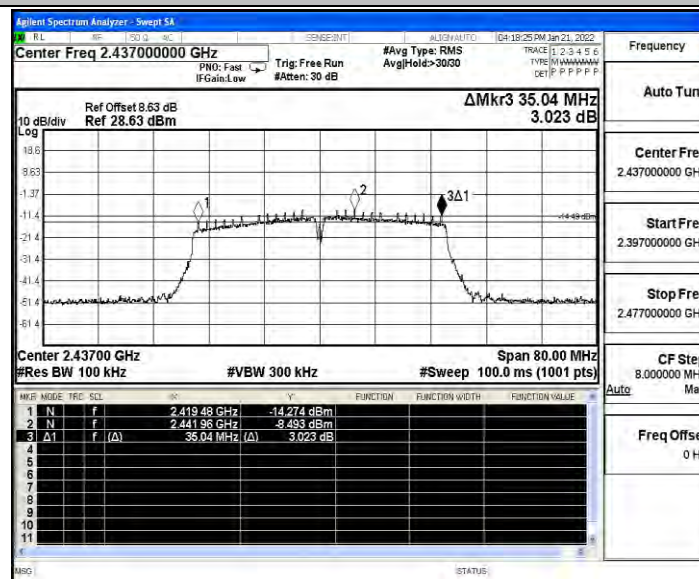


11N40SISO_Ant1_2422

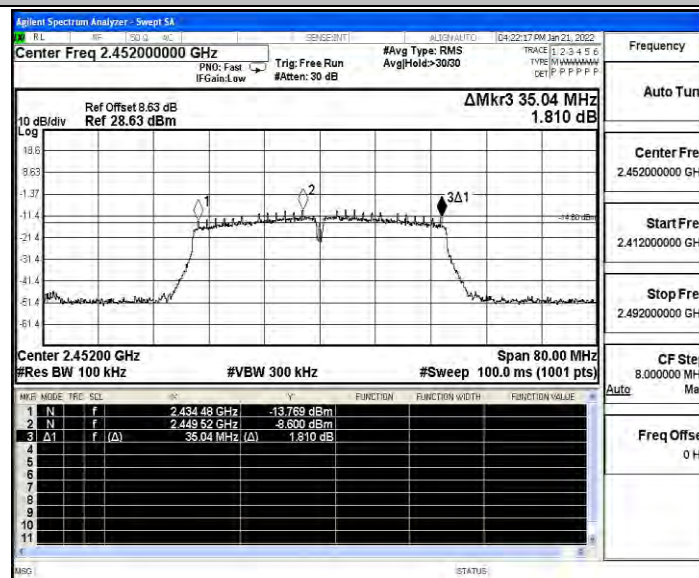




11N40SISO_Ant1_2437



11N40SISO_Ant1_2452





C.2 Maximum conducted output power

Test Result

Mode	Channel	Peak Power [dBm]			Limit [dBm]	Verdict
		Ant 0	Ant 1	Sum		
11B	2412	15.79	13.40	/	≤30	PASS
	2437	15.84	13.43	/	≤30	PASS
	2462	15.56	13.41	/	≤30	PASS
11G	2412	14.45	13.09	/	≤30	PASS
	2437	14.32	13.04	/	≤30	PASS
	2462	14.24	13.24	/	≤30	PASS
11N20	2412	14.04	12.27	16.25	≤30	PASS
	2437	14.26	12.30	16.40	≤30	PASS
	2462	14.22	12.23	16.35	≤30	PASS
11N40	2422	14.49	12.68	16.69	≤30	PASS
	2437	14.85	12.72	16.92	≤30	PASS
	2452	14.65	12.74	16.81	≤30	PASS



C.3 Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant0	2412	-8.42	≤8.00	PASS
		2437	-8.01	≤8.00	PASS
		2462	-9.09	≤8.00	PASS
11G	Ant0	2412	-19.05	≤8.00	PASS
		2437	-18.08	≤8.00	PASS
		2462	-17.79	≤8.00	PASS
11N20SISO	Ant0	2412	-19.28	≤8.00	PASS
		2437	-18.67	≤8.00	PASS
		2462	-17.91	≤8.00	PASS
11N40SISO	Ant0	2422	-22.05	≤8.00	PASS
		2437	-19.13	≤8.00	PASS
		2452	-17.64	≤8.00	PASS

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-12.62	≤8.00	PASS
		2437	-12.22	≤8.00	PASS
		2462	-11.99	≤8.00	PASS
11G	Ant1	2412	-20.51	≤8.00	PASS
		2437	-17.52	≤8.00	PASS
		2462	-17.38	≤8.00	PASS
11N20SISO	Ant1	2412	-21.54	≤8.00	PASS
		2437	-18.58	≤8.00	PASS
		2462	-17.36	≤8.00	PASS
11N40SISO	Ant1	2422	-21.19	≤8.00	PASS
		2437	-19.34	≤8.00	PASS
		2452	-19.62	≤8.00	PASS

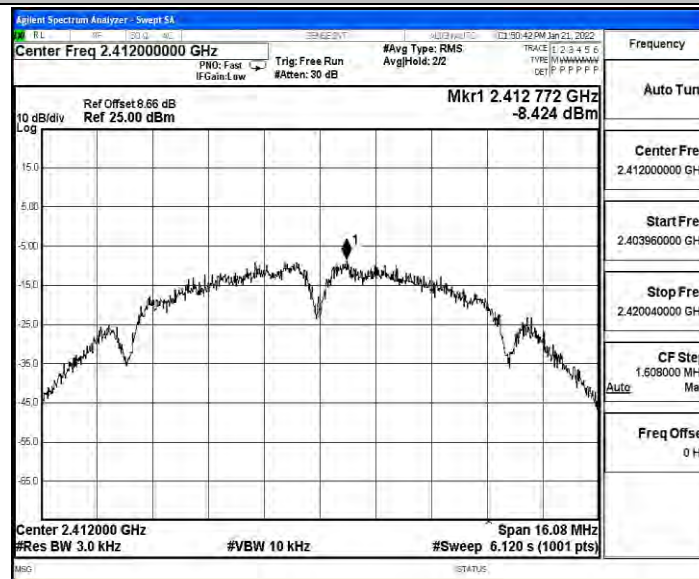
MIMO

Mode	Channel	MIMO PSD [dBm/3KHz]			Limit [dBm/3KHz]	Verdict
		Ant 0	Ant 1	Sum		
11N20	2412	-19.28	-21.54	-17.25	8	PASS
	2437	-18.67	-18.58	-15.61	8	PASS
	2462	-17.91	-17.36	-14.62	8	PASS
11N40	2422	-22.05	-21.19	-18.59	8	PASS
	2437	-19.13	-19.34	-16.22	8	PASS
	2452	-17.64	-19.62	-15.51	8	PASS

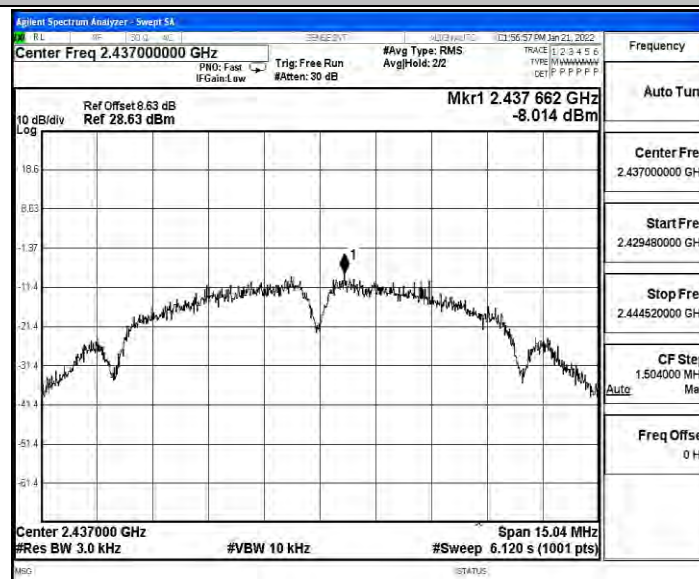


Test Graphs

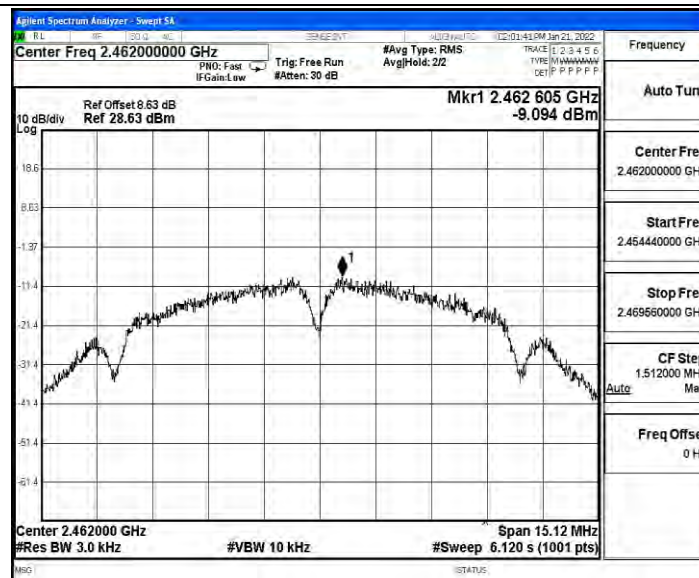
11B_Ant0_2412



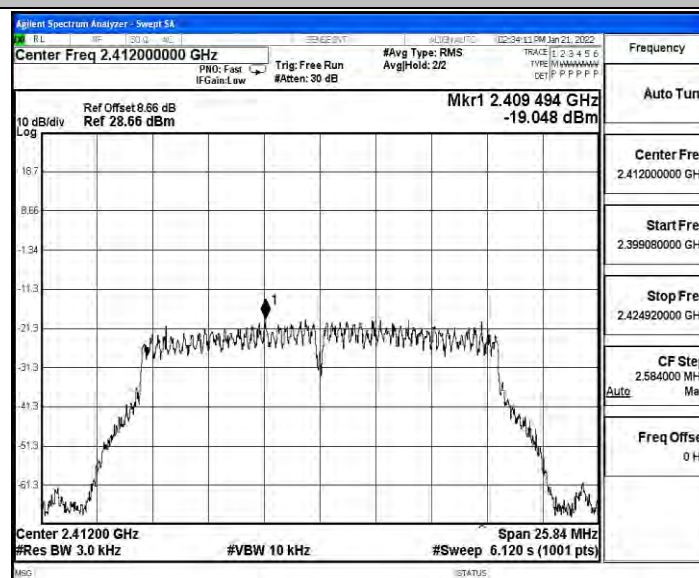
11B_Ant0_2437



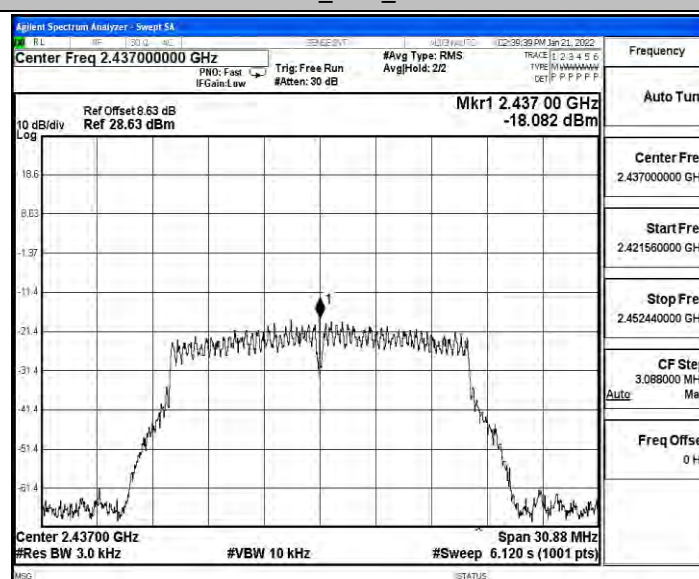
11B_Ant0_2462

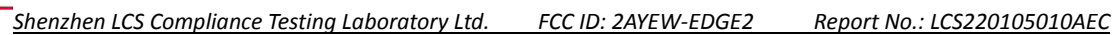


11G_Ant0_2412



11G_Ant0_2437





11G_Ant0_2462

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.46200000 GHz

Ref Offset 8.63 dB
Ref 28.63 dBm

Mkr1 2.462 00 GHz
-17.793 dBm

10 dB/div
Log

Span 30.56 MHz
#Res BW 3.0 kHz
#Sweep 6.120 s (1001 pts)

#VBW 10 kHz

Frequency

Auto Tune

Center Freq
2.46200000 GHz

Start Freq
2.446720000 GHz

Stop Freq
2.477280000 GHz

CF Step
3.056000 MHz
Man

Freq Offset
0 Hz

11N20SIS0_Ant0_2412

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.412000000 GHz
 PWD: Fast IF Gain: Low
 Trig: Free Run #Atten: 30 dB
 #Avg Type: RMS Avg/Hold: 2/2
 TRACE 1: 2 3 4 5 6
 TYPE: [M] [W] [M] [A] [V]
 DET: P P P P P

Ref Offset 8.86 dB
 Ref 28.86 dBm

Mkr1 2.414 74 GHz
 -19.282 dBm

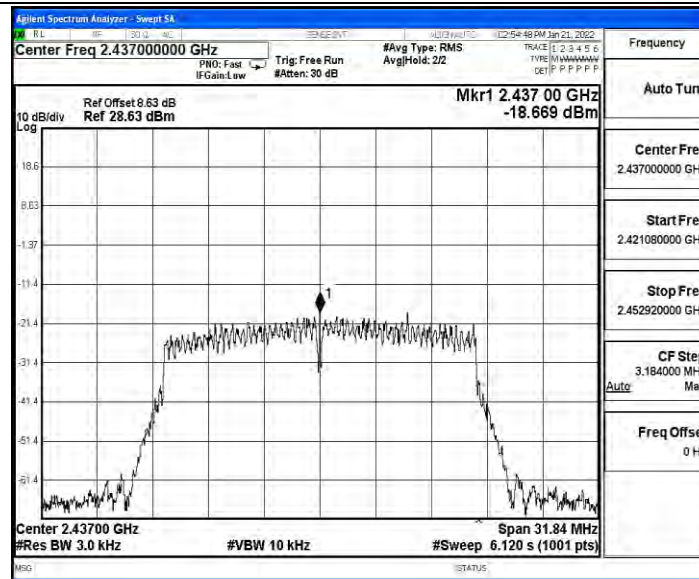
10 dB/div
 Log

Center Freq 2.412000000 GHz
 Start Freq 2.396080000 GHz
 Stop Freq 2.427920000 GHz
 CF Step 3.184000 MHz
 Auto Man
 Freq Offset 0 Hz

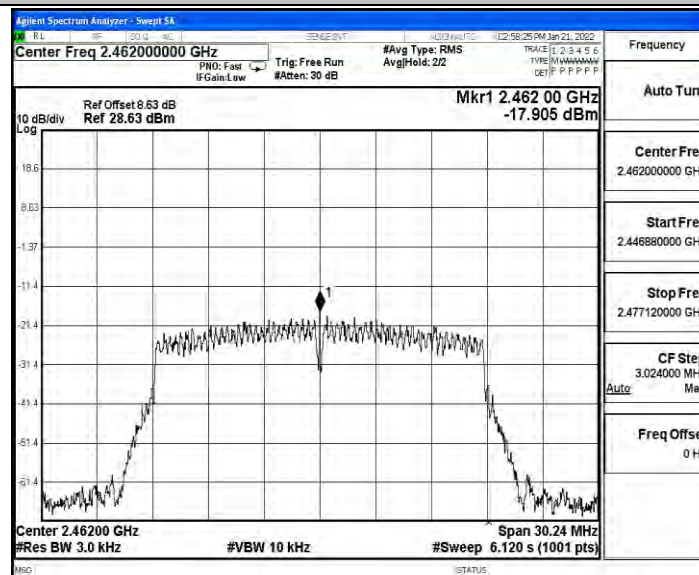
Center 2.41200 GHz
 #Res BW 3.0 kHz
 #VBW 10 kHz
 Span 31.84 MHz
 #Sweep 6.120 s (1001 pts)

MRO STATUS

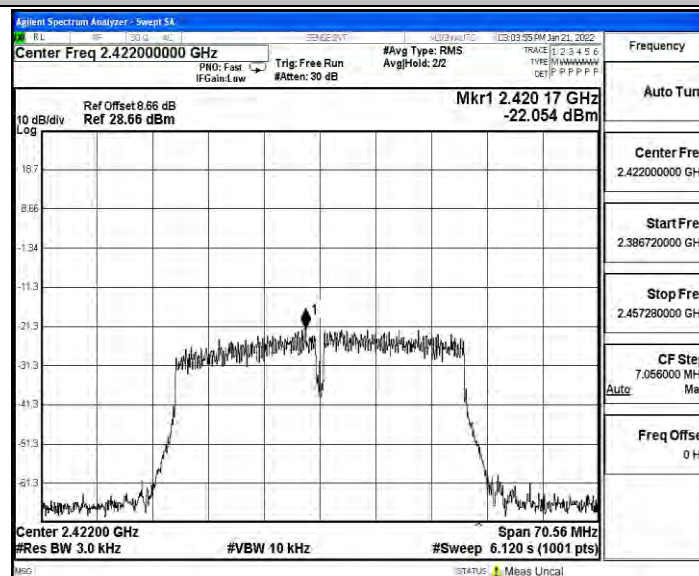
11N20SISO_Ant0_2437



11N20SISO_Ant0_2462

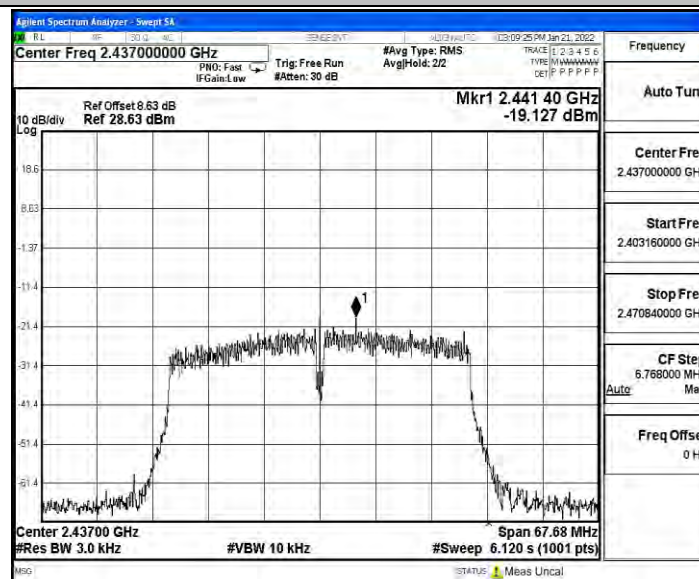


11N40SISO_Ant0_2422

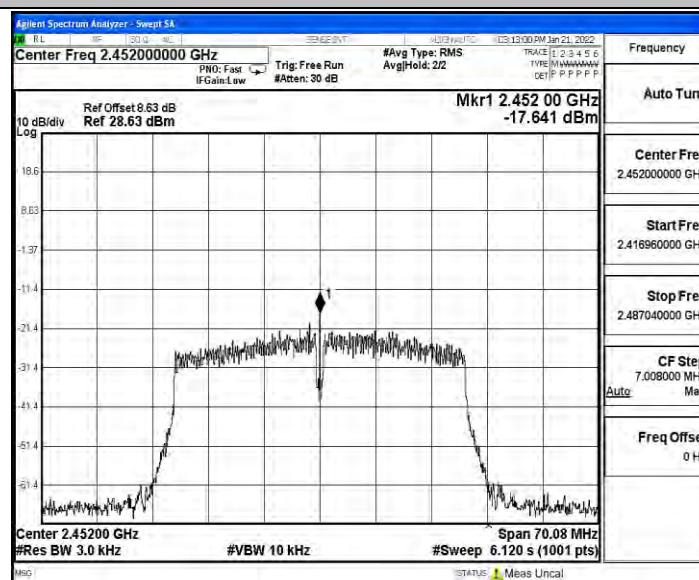




11N40SISO_Ant0_2437

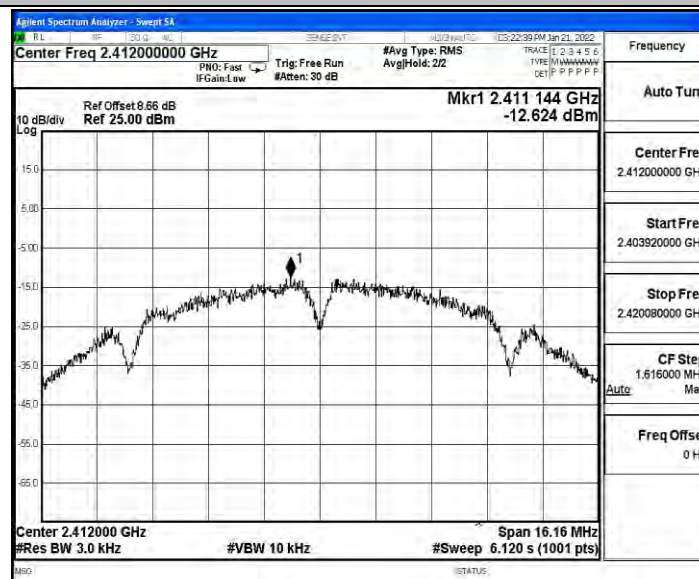


11N40SISO_Ant0_2452

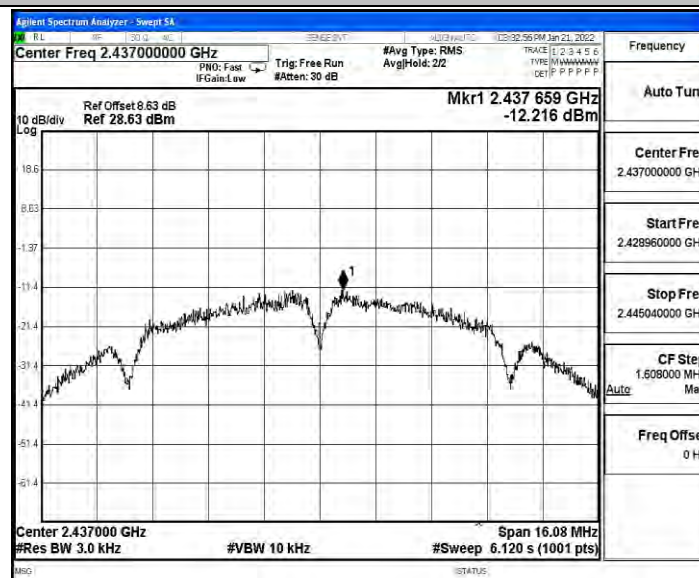




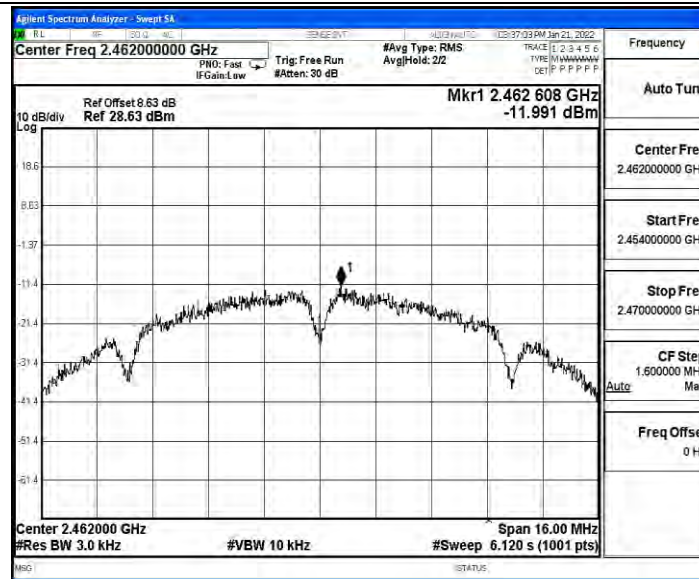
11B_Ant1_2412



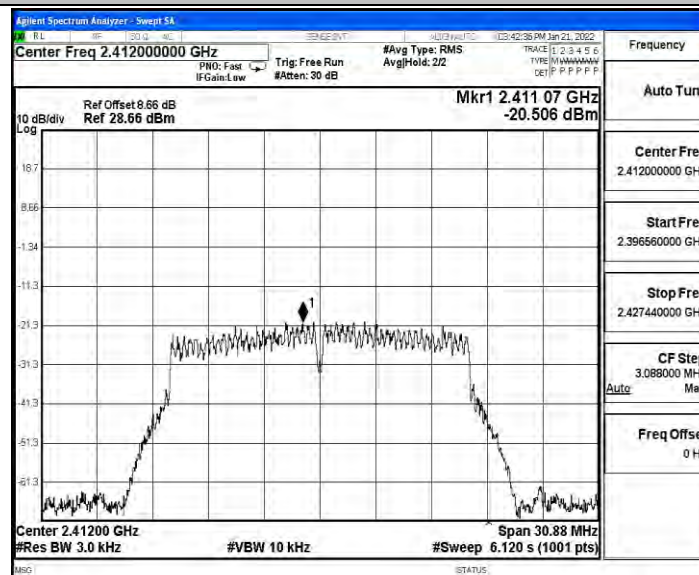
11B_Ant1_2437



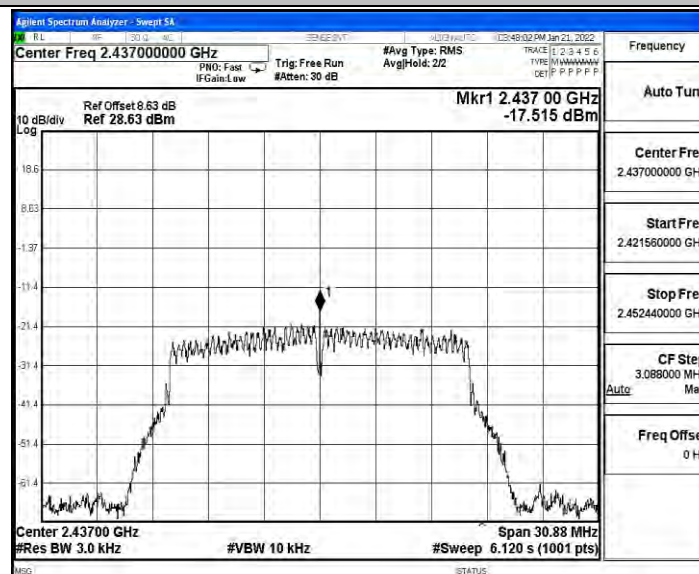
11B_Ant1_2462



11G_Ant1_2412

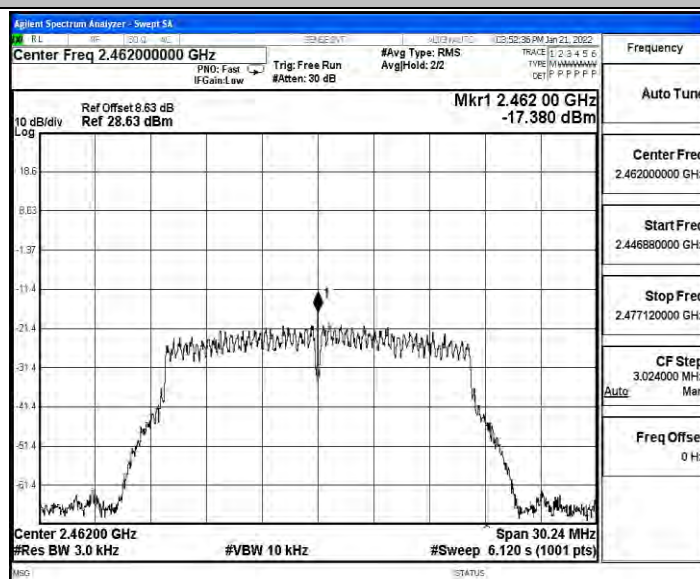


11G_Ant1_2437

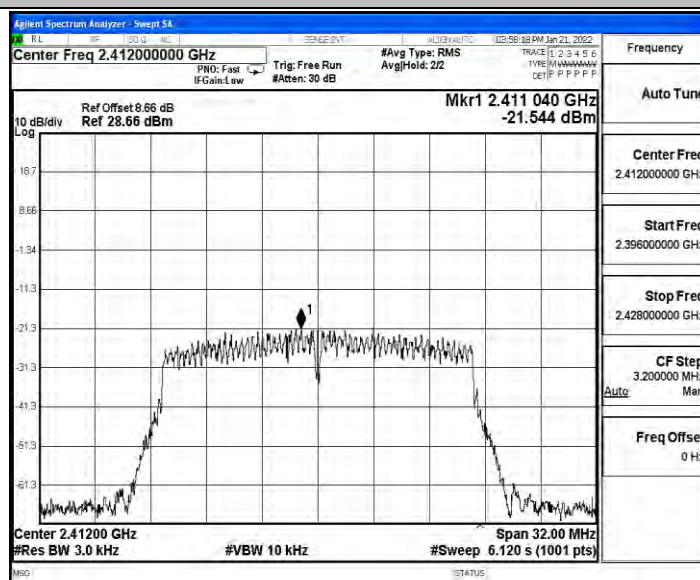




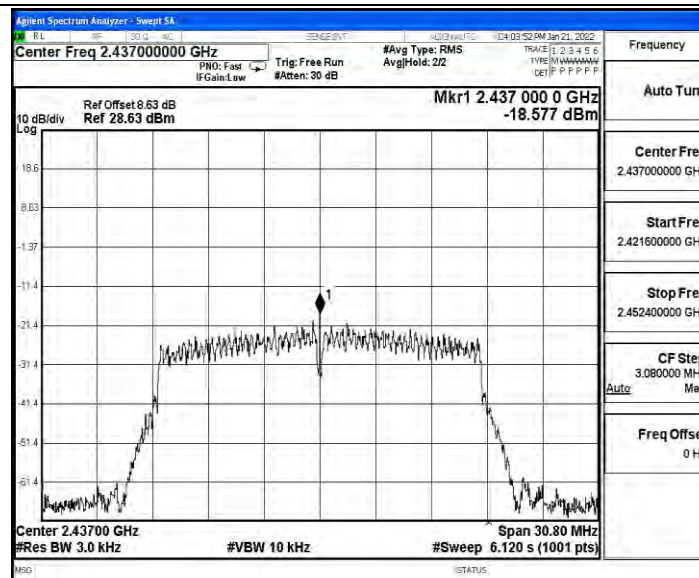
11G_Ant1_2462



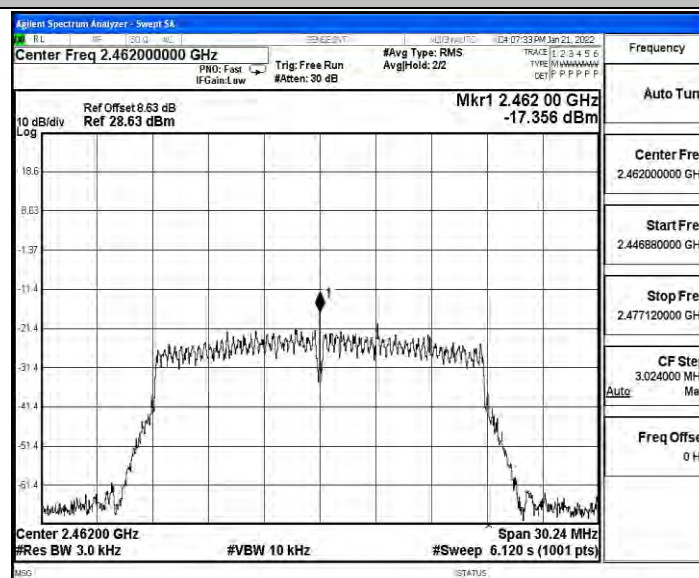
11N20SISO_Ant1_2412



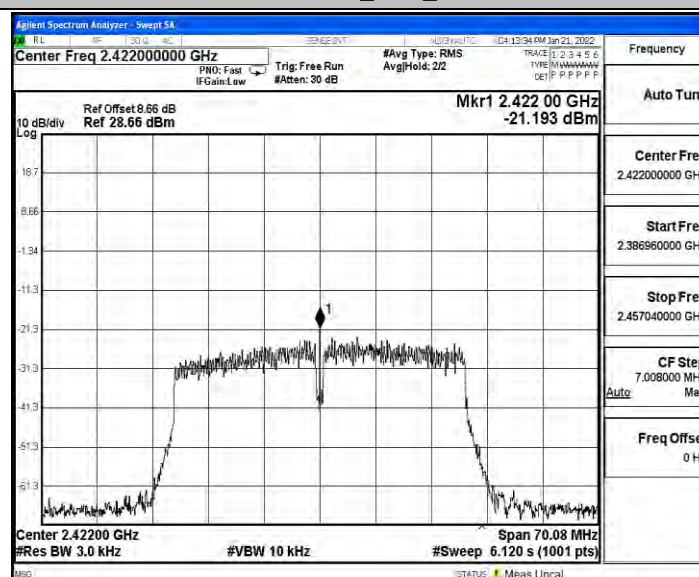
11N20SISO_Ant1_2437



11N20SISO_Ant1_2462

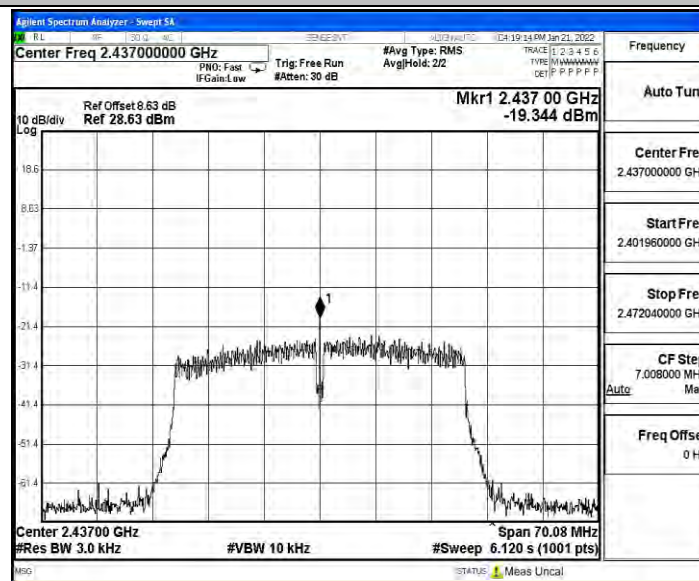


11N40SISO_Ant1_2422

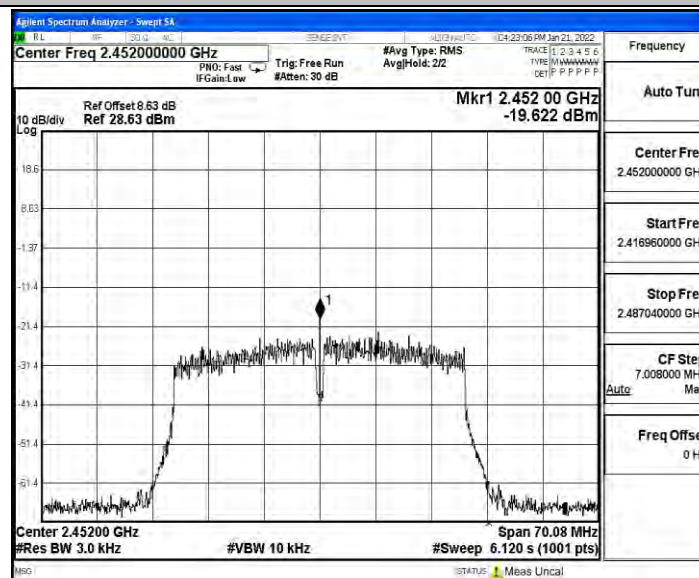




11N40SISO_Ant1_2437



11N40SISO_Ant1_2452





C.4 Band edge measurements

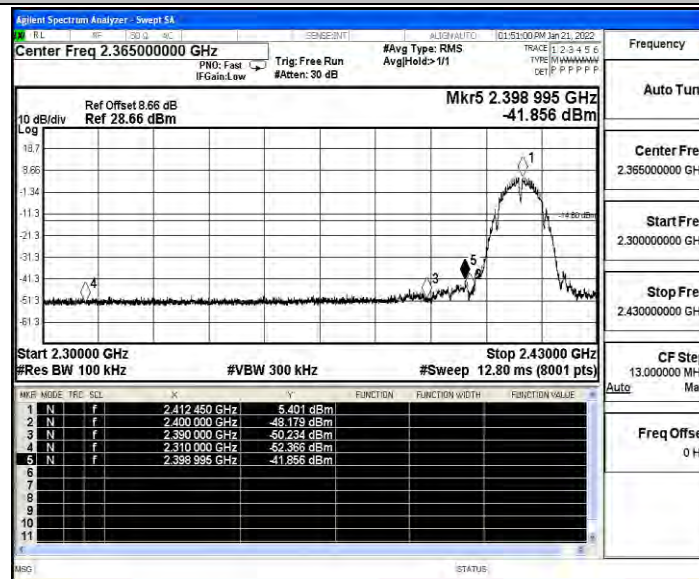
Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant0	Low	2412	5.40	-41.86	≤-14.6	PASS
		High	2462	5.78	-47.99	≤-14.22	PASS
11G	Ant0	Low	2412	-4.19	-47.75	≤-24.19	PASS
		High	2462	-4.27	-47.77	≤-24.27	PASS
11N20SISO	Ant0	Low	2412	-4.01	-47.63	≤-24.01	PASS
		High	2462	-4.34	-48.57	≤-24.34	PASS
11N40SISO	Ant0	Low	2422	-6.70	-46.12	≤-26.7	PASS
		High	2452	-6.47	-48.17	≤-26.47	PASS

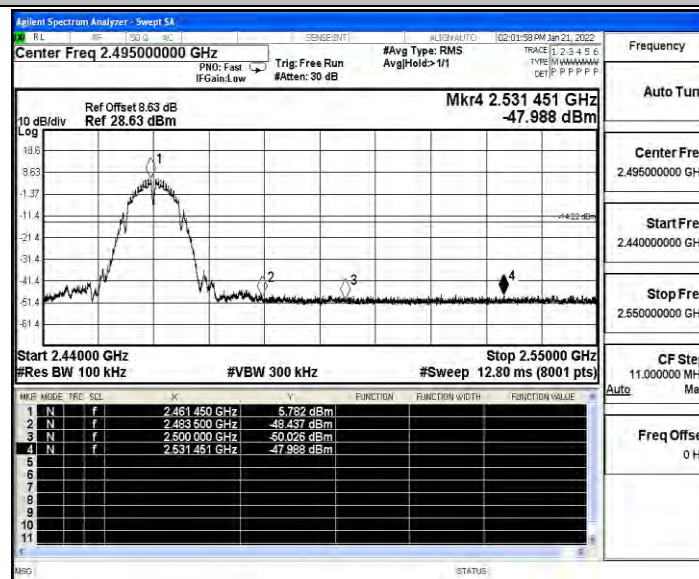


Test Graphs

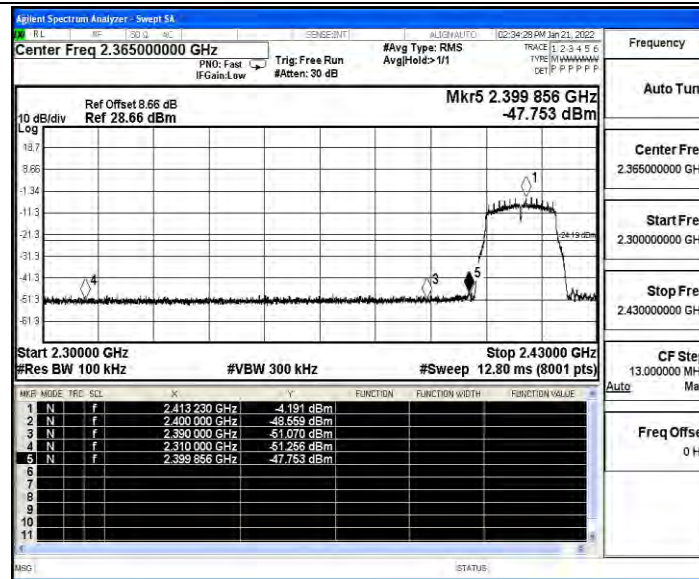
11B_Ant0_Low_2412



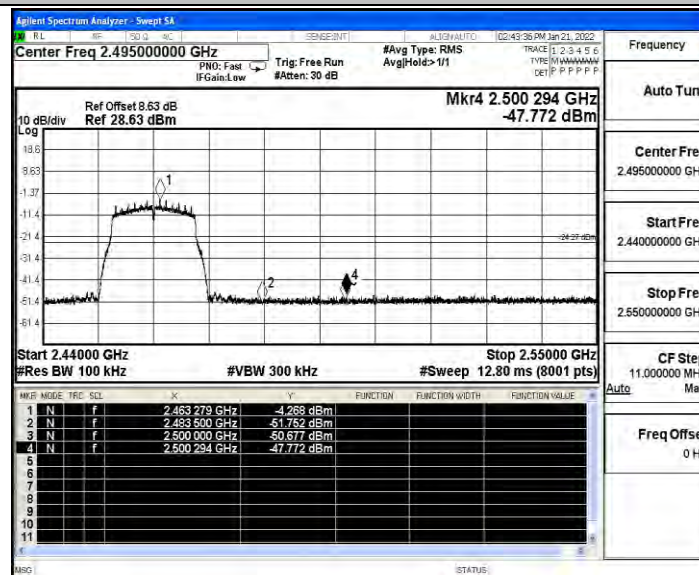
11B_Ant0_High_2462



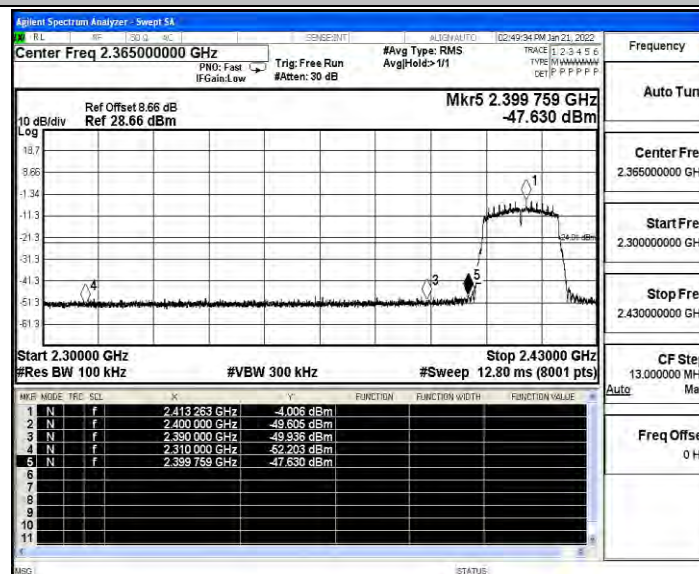
11G_Ant0_Low_2412



11G_Ant0_High_2462

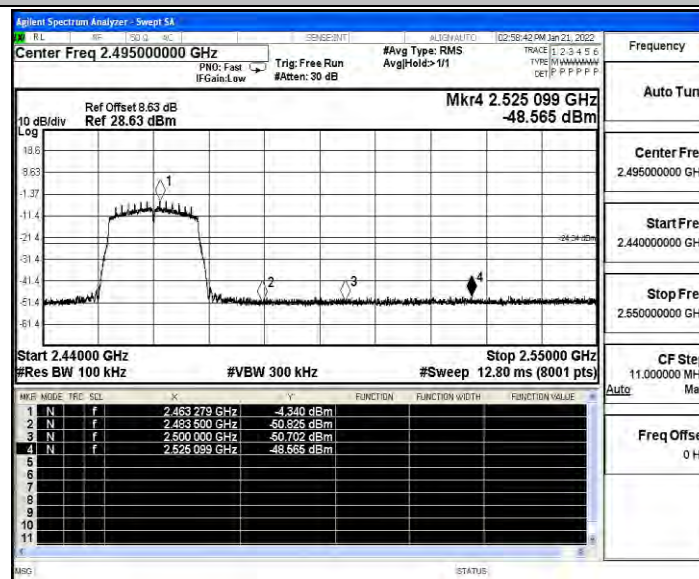


11N20SISO_Ant0_Low_2412

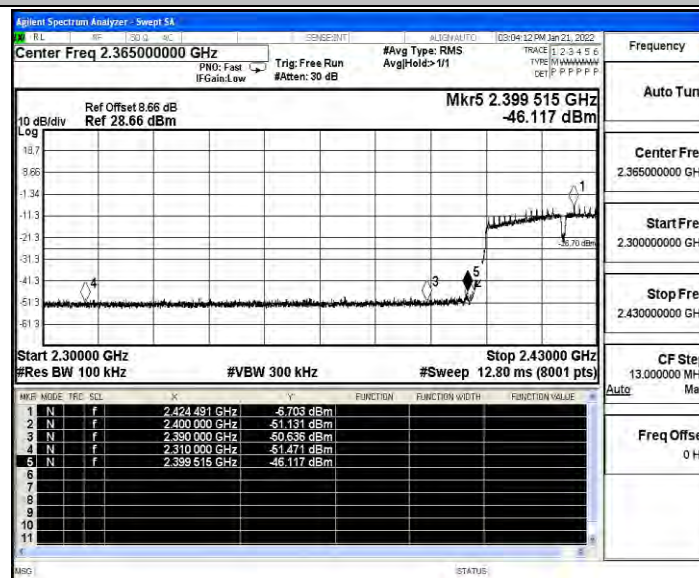




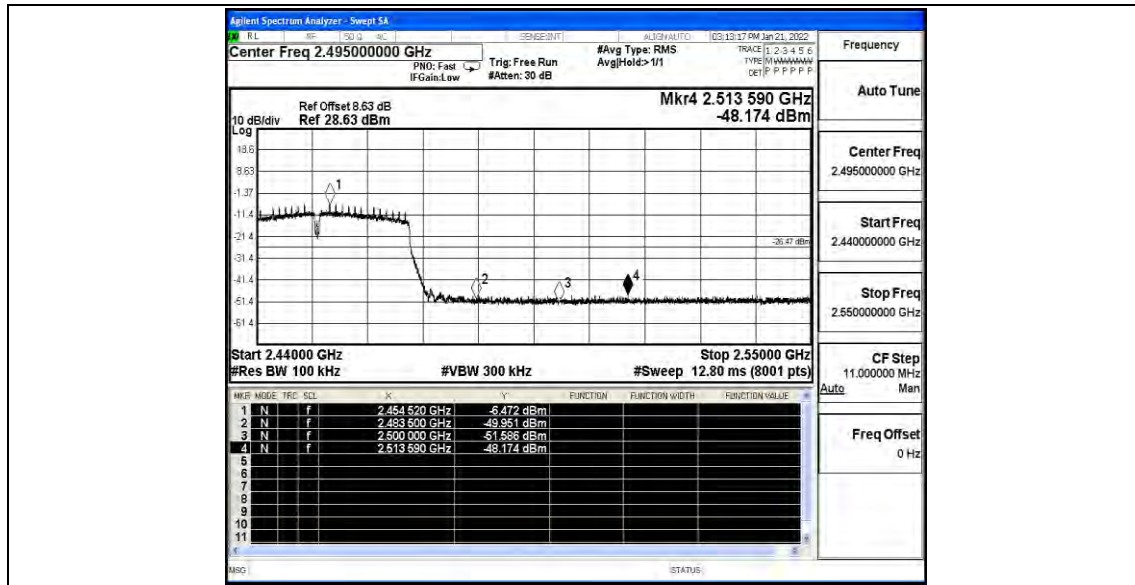
11N20SISO_Ant0_High_2462



11N40SISO_Ant0_Low_2422

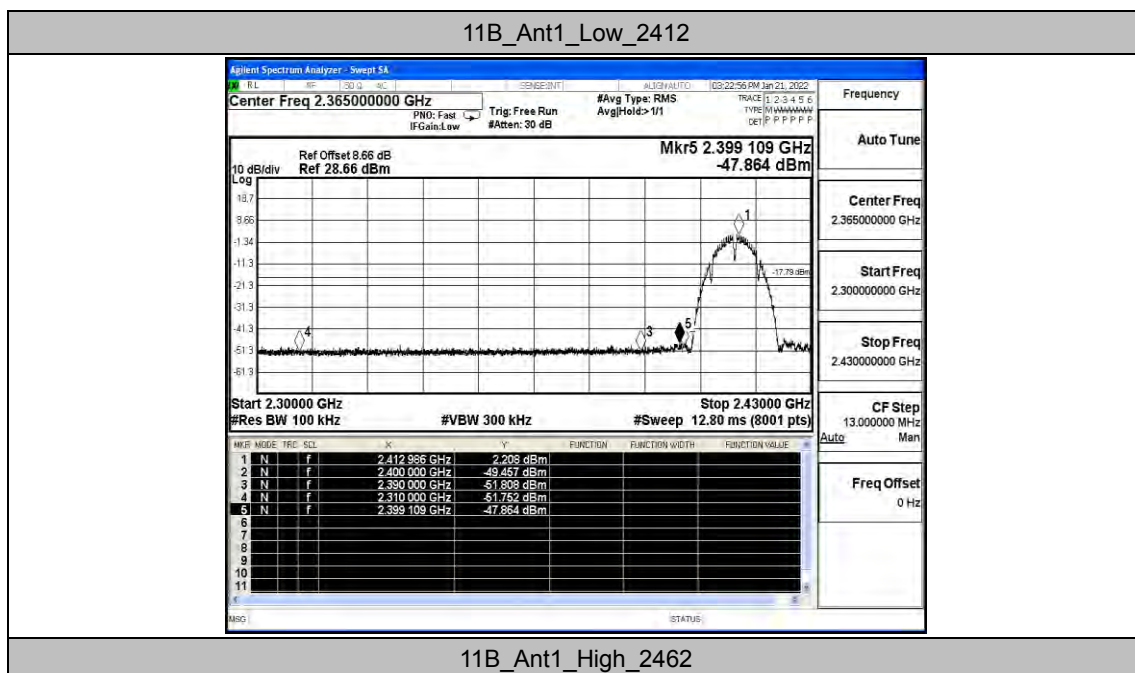


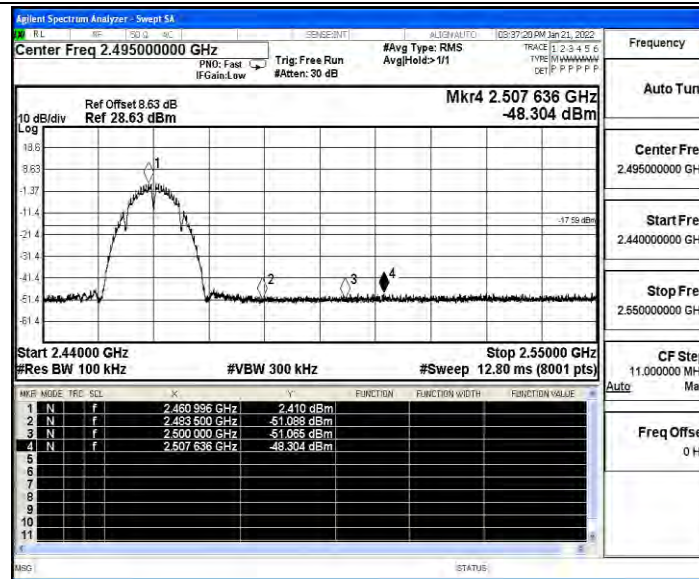
11N40SISO_Ant0_High_2452



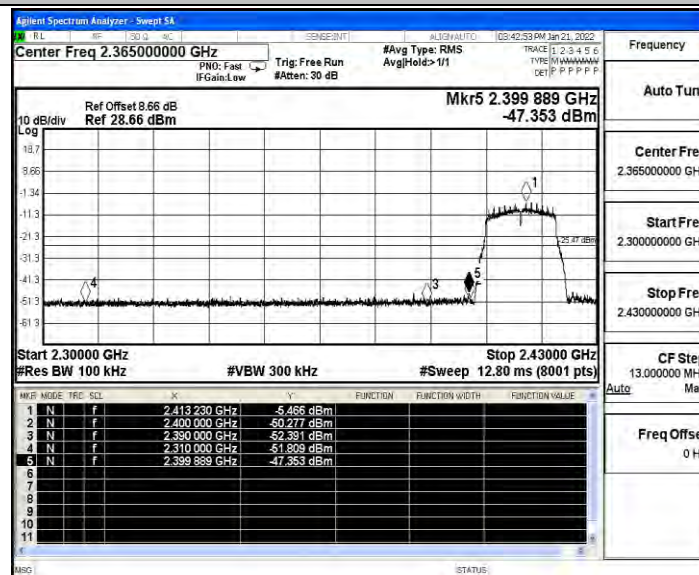
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	2.21	-47.86	≤-17.79	PASS
		High	2462	2.41	-48.3	≤-17.59	PASS
11G	Ant1	Low	2412	-5.47	-47.35	≤-25.47	PASS
		High	2462	-5.13	-48.07	≤-25.13	PASS
11N20SISO	Ant1	Low	2412	-5.65	-48.67	≤-25.65	PASS
		High	2462	-6.73	-48.29	≤-26.73	PASS
11N40SISO	Ant1	Low	2422	-8.55	-48.06	≤-28.55	PASS
		High	2452	-8.53	-48.21	≤-28.53	PASS

Test Graphs

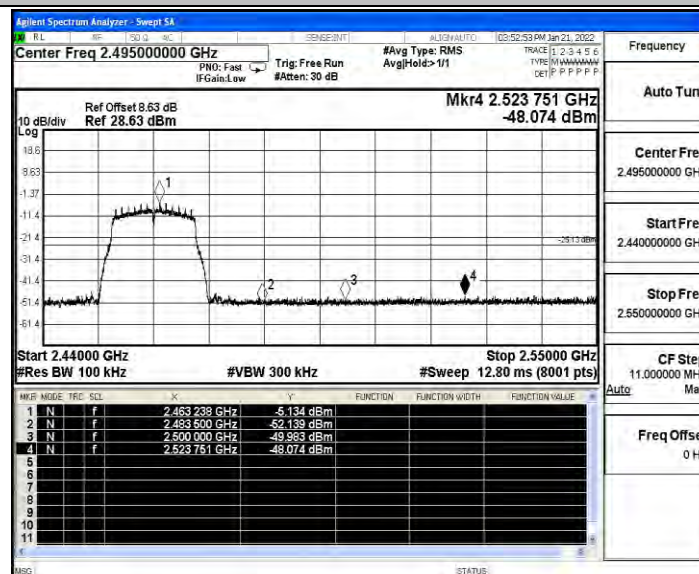




11G_Ant1_Low_2412

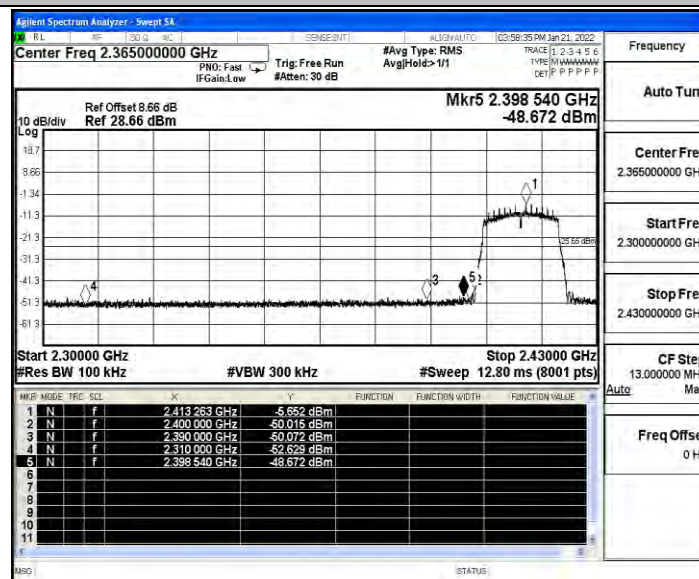


11G_Ant1_High_2462

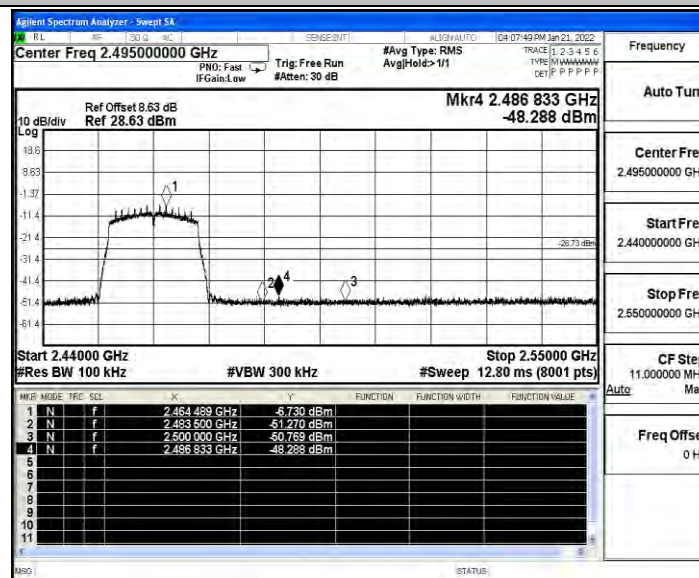




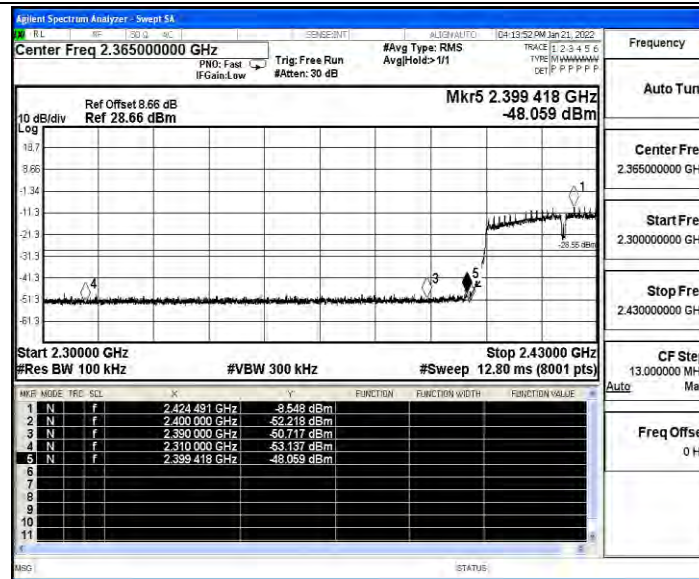
11N20SISO_Ant1_Low_2412



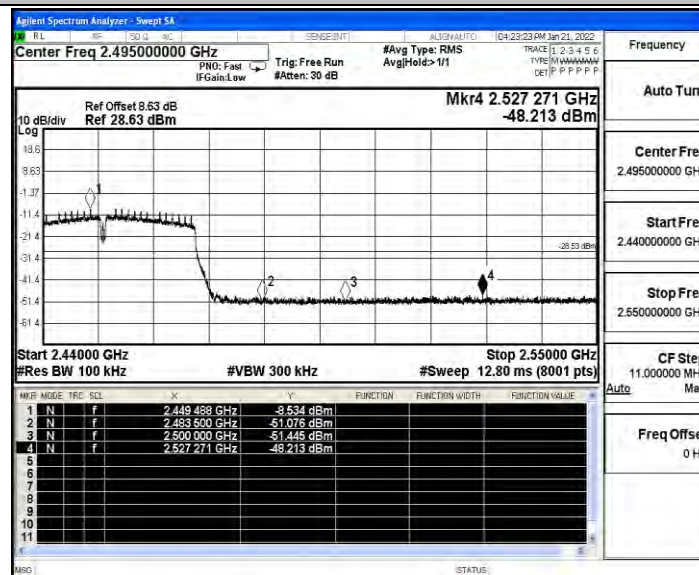
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452





C.5 Conducted Spurious Emission

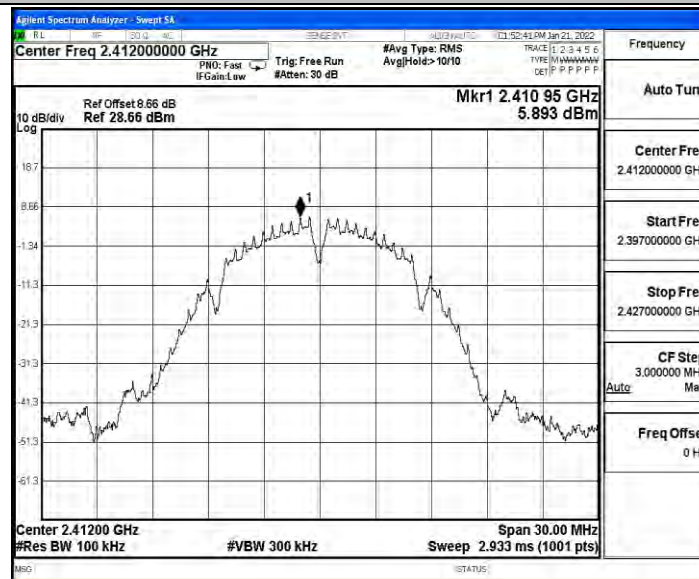
Test Result

TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant0	2412	Reference	5.61	5.61	---	PASS
			30~1000	5.61	-61.18	≤-14.39	PASS
			1000~26500	5.61	-45.96	≤-14.39	PASS
		2437	Reference	6.18	6.18	---	PASS
			30~1000	6.18	-60.78	≤-13.82	PASS
			1000~26500	6.18	-45.99	≤-13.82	PASS
		2462	Reference	6.09	6.09	---	PASS
			30~1000	6.09	-60.79	≤-13.91	PASS
			1000~26500	6.09	-45.77	≤-13.91	PASS
11G	Ant0	2412	Reference	-4.58	-4.58	---	PASS
			30~1000	-4.58	-60.23	≤-24.58	PASS
			1000~26500	-4.58	-46.56	≤-24.58	PASS
		2437	Reference	-4.50	-4.50	---	PASS
			30~1000	-4.50	-61.17	≤-24.5	PASS
			1000~26500	-4.50	-45.48	≤-24.5	PASS
		2462	Reference	-4.52	-4.52	---	PASS
			30~1000	-4.52	-60.66	≤-24.52	PASS
			1000~26500	-4.52	-46.24	≤-24.52	PASS
11N20SISO	Ant0	2412	Reference	-4.03	-4.03	---	PASS
			30~1000	-4.03	-60.87	≤-24.03	PASS
			1000~26500	-4.03	-46.23	≤-24.03	PASS
		2437	Reference	-4.35	-4.35	---	PASS
			30~1000	-4.35	-60.37	≤-24.35	PASS
			1000~26500	-4.35	-46.45	≤-24.35	PASS
		2462	Reference	-4.25	-4.25	---	PASS
			30~1000	-4.25	-60.76	≤-24.25	PASS
			1000~26500	-4.25	-45.78	≤-24.25	PASS
11N40SISO	Ant0	2422	Reference	-6.79	-6.79	---	PASS
			30~1000	-6.79	-61	≤-26.79	PASS
			1000~26500	-6.79	-45.76	≤-26.79	PASS
		2437	Reference	-6.18	-6.18	---	PASS
			30~1000	-6.18	-60.75	≤-26.18	PASS
			1000~26500	-6.18	-46.49	≤-26.18	PASS
		2452	Reference	-6.50	-6.50	---	PASS
			30~1000	-6.50	-60.98	≤-26.5	PASS
			1000~26500	-6.50	-46.66	≤-26.5	PASS

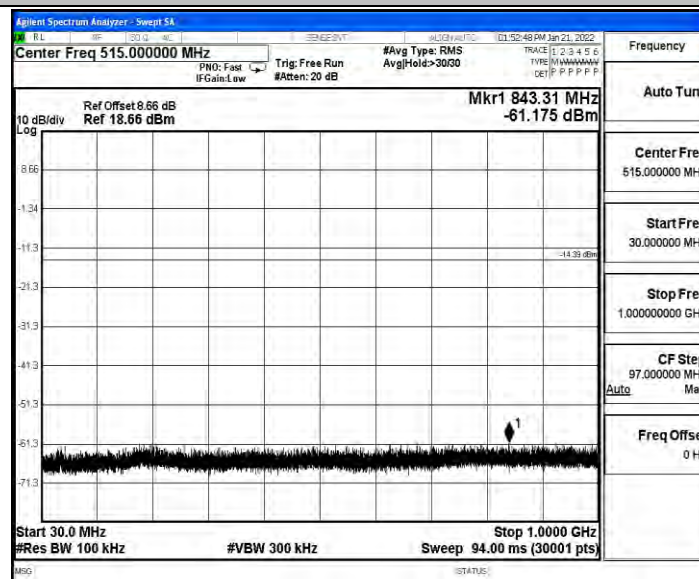


Test Graphs

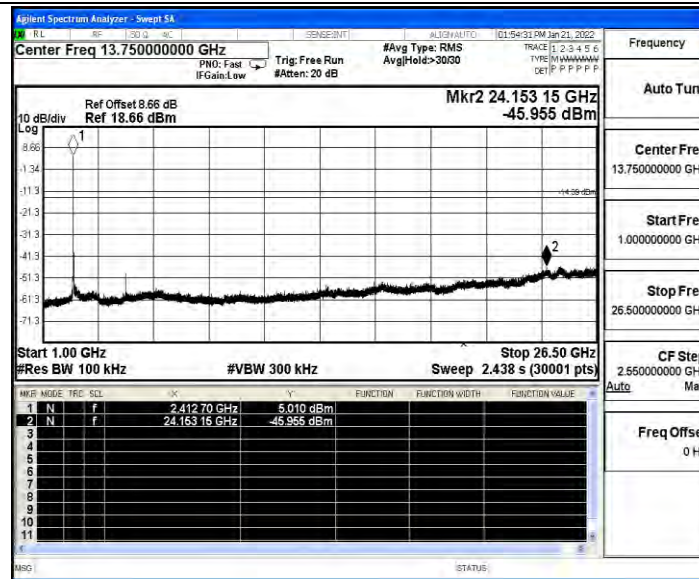
11B_Ant0_2412_0~Reference



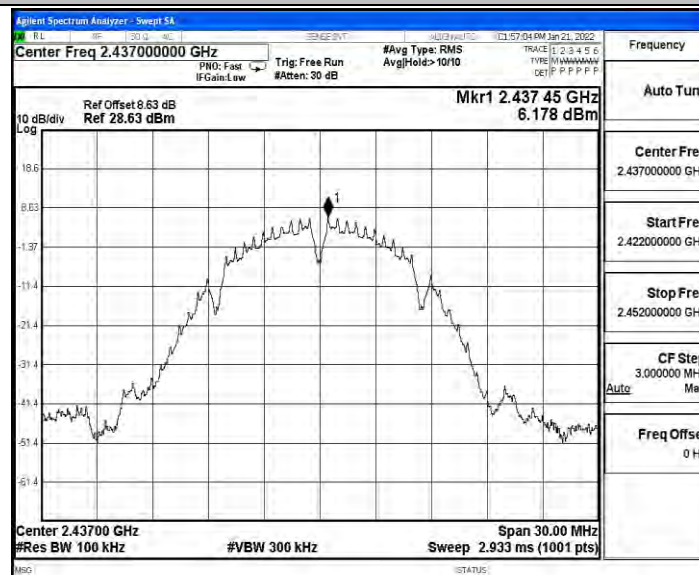
11B_Ant0_2412_30~1000



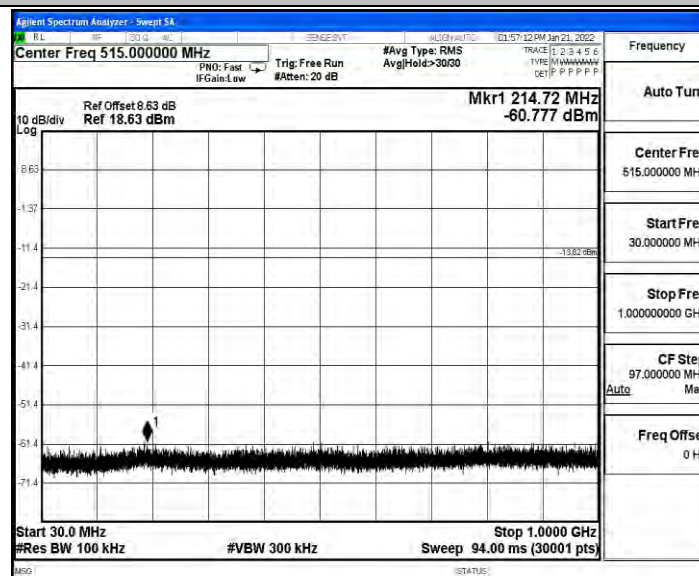
11B_Ant0_2412_1000~26500



11B_Ant0_2437_0~Reference

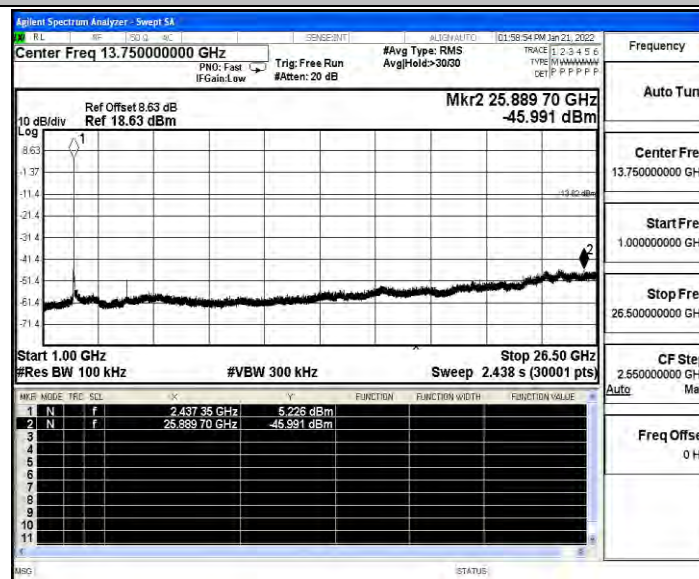


11B_Ant0_2437_30~1000

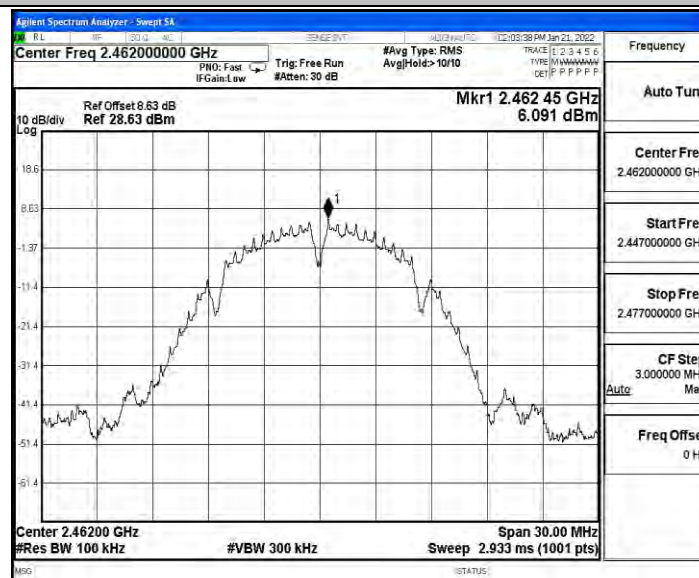




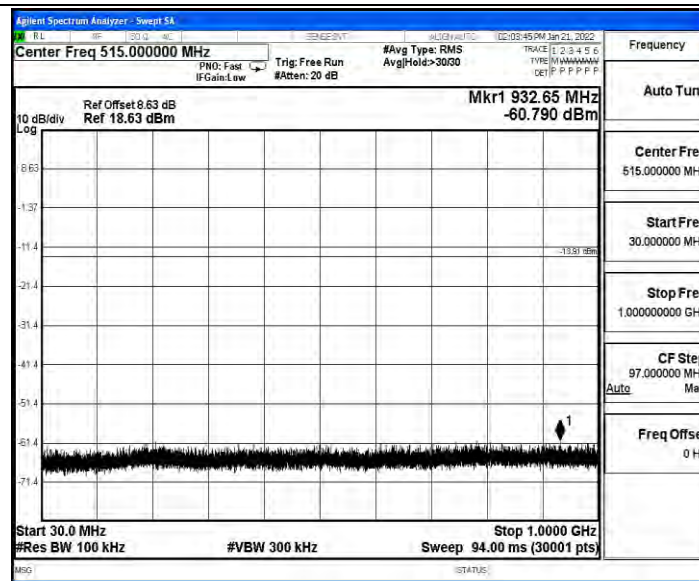
11B_Ant0_2437_1000~26500



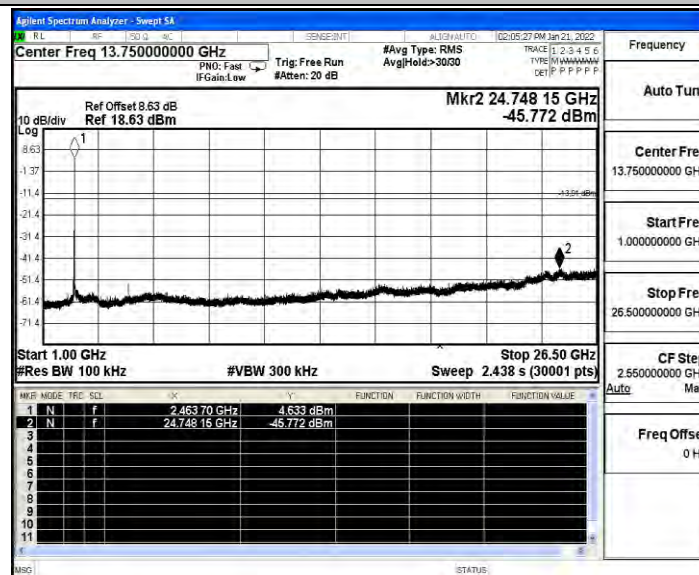
11B_Ant0_2462_0~Reference



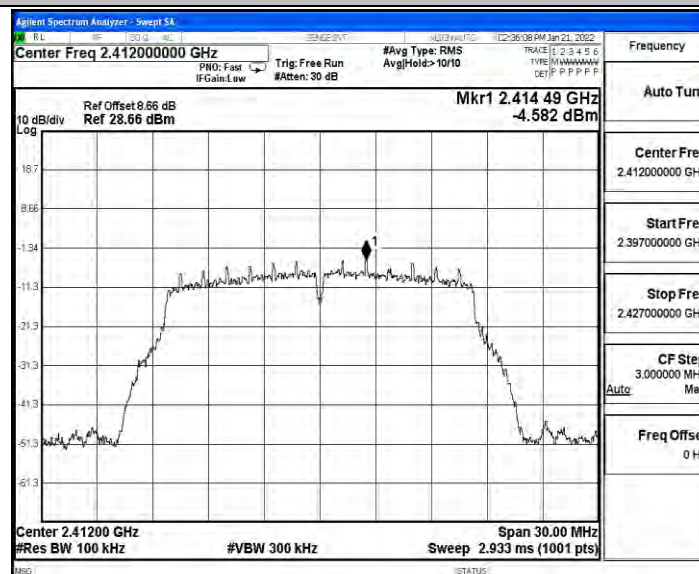
11B_Ant0_2462_30~1000



11B_Ant0_2462_1000~26500

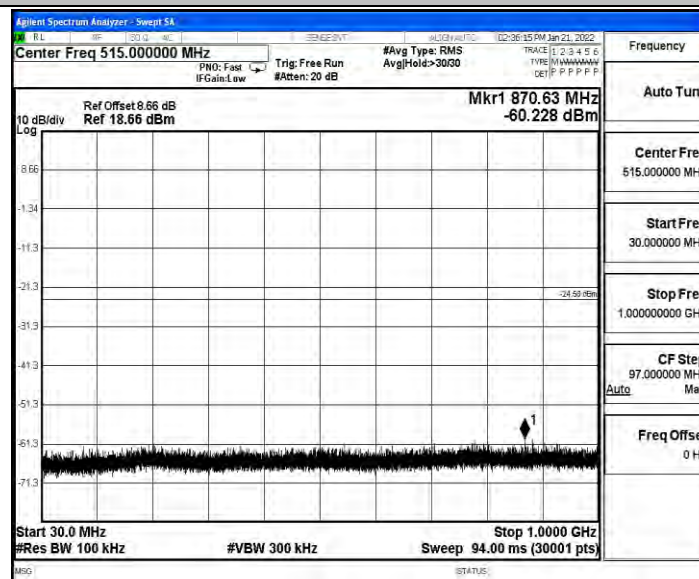


11G_Ant0_2412_0~Reference

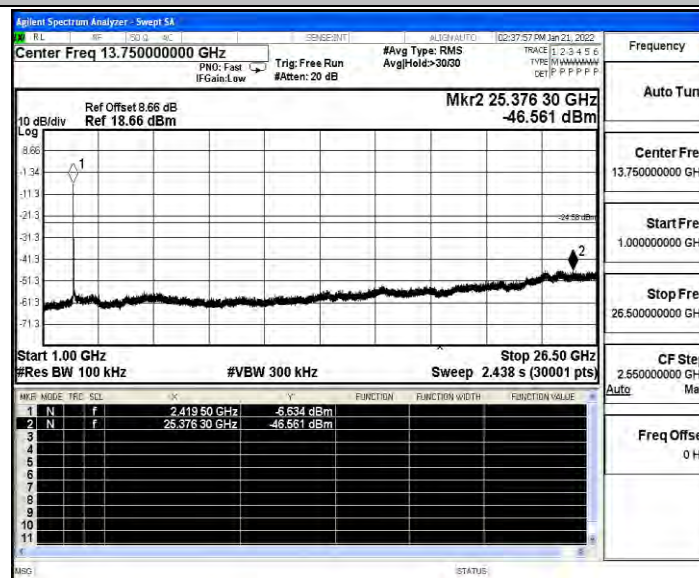




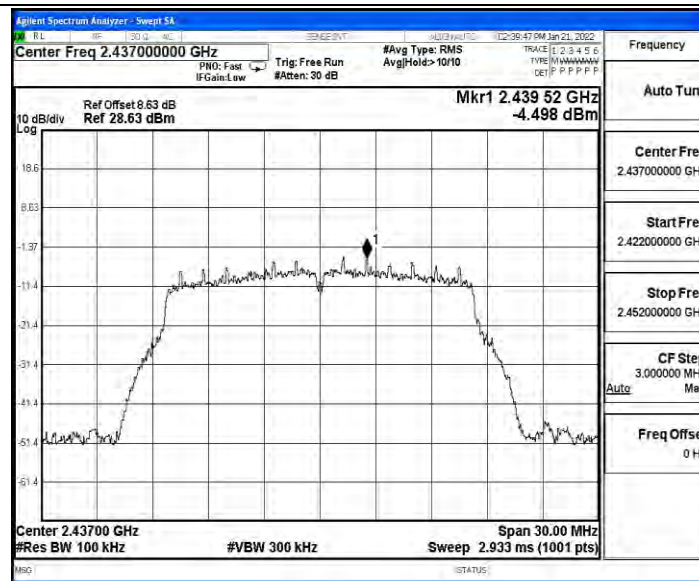
11G_Ant0_2412_30~1000



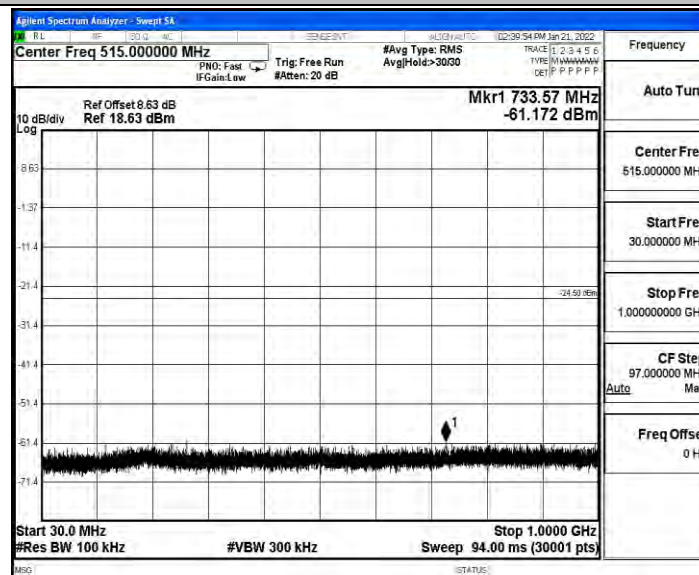
11G_Ant0_2412_1000~26500



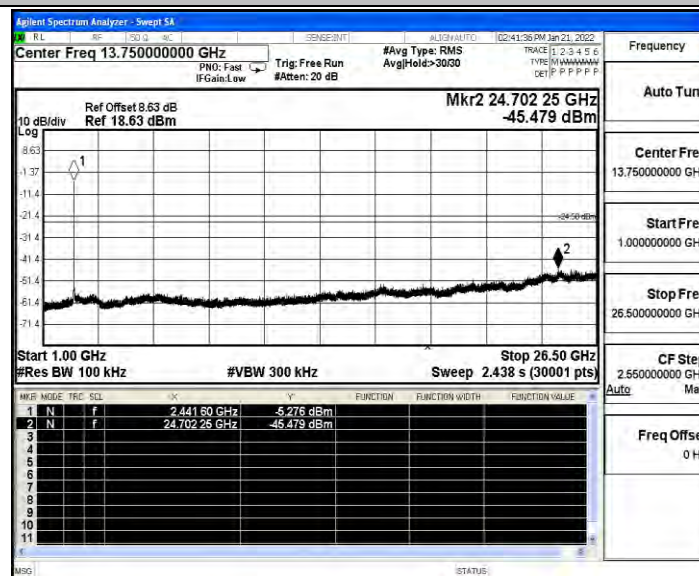
11G_Ant0_2437_0~Reference



11G_Ant0_2437_30~1000

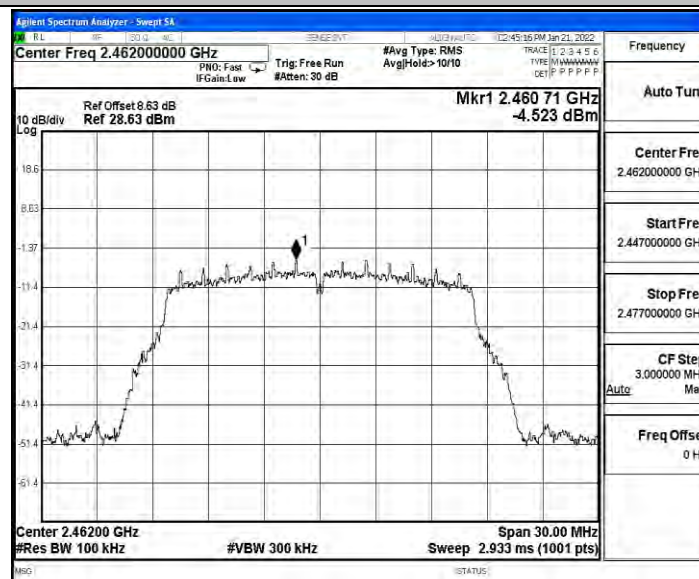


11G_Ant0_2437_1000~26500

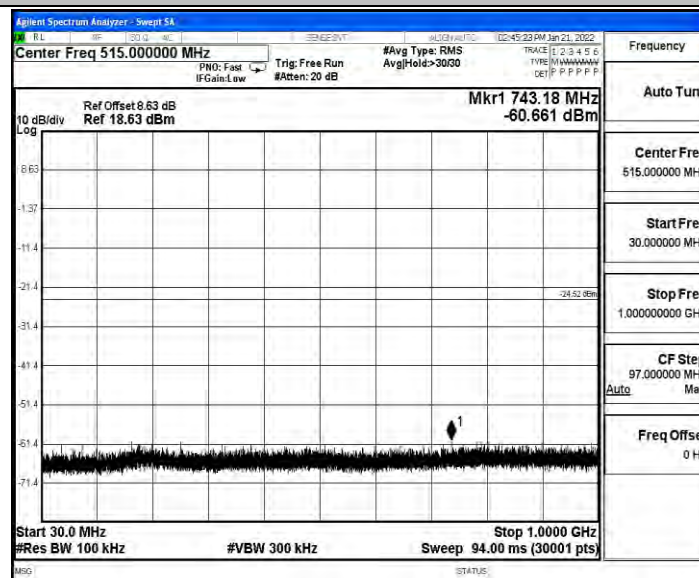




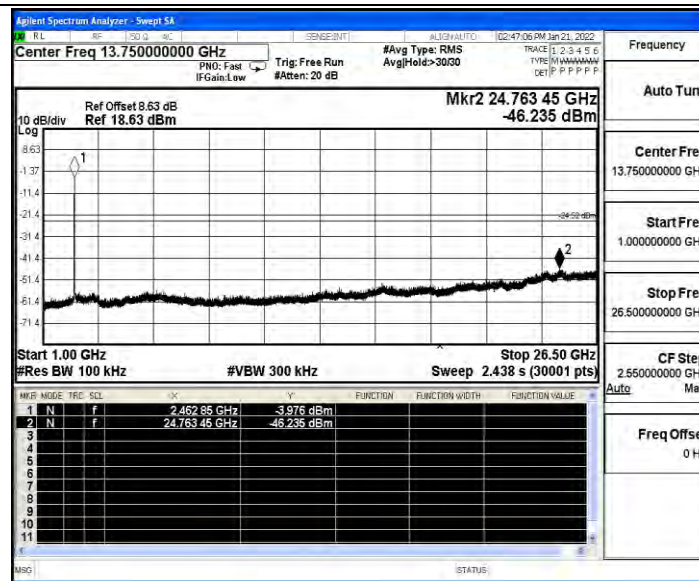
11G_Ant0_2462_0~Reference



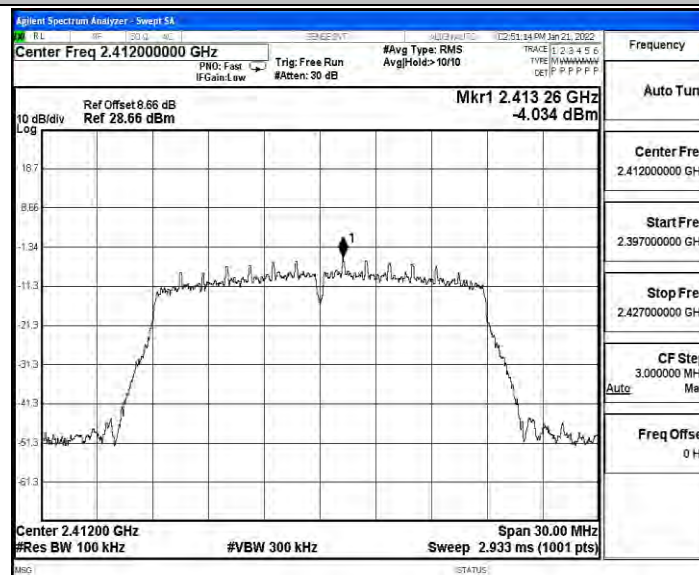
11G_Ant0_2462_30~1000



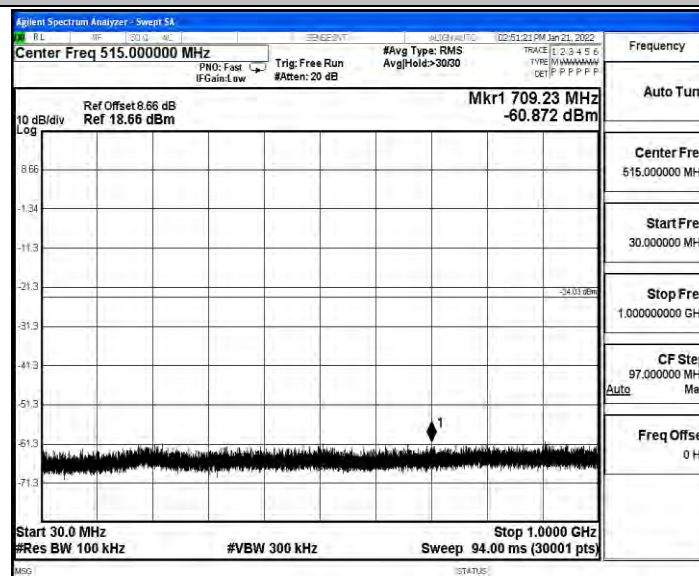
11G_Ant0_2462_1000~26500



11N20SISO_Ant0_2412_0~Reference

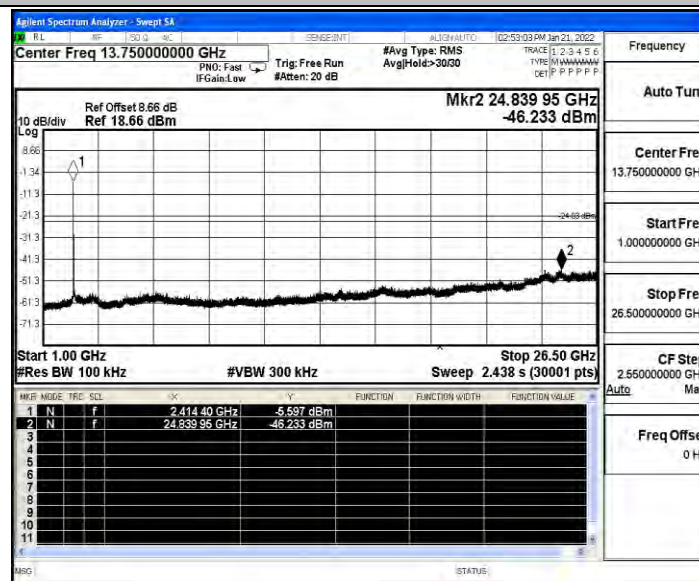


11N20SISO_Ant0_2412_30~1000

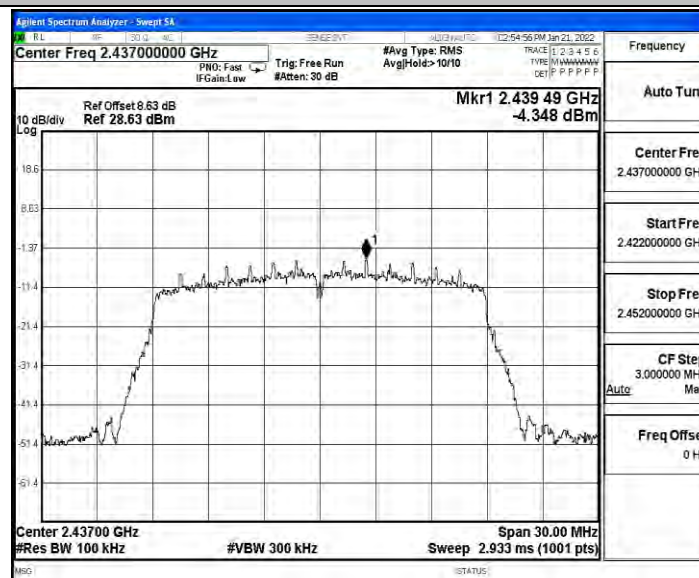




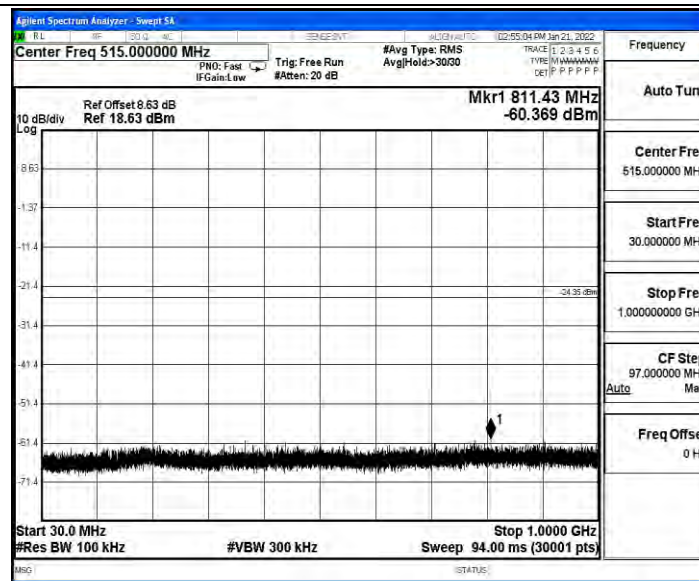
11N20SISO_Ant0_2412_1000~26500



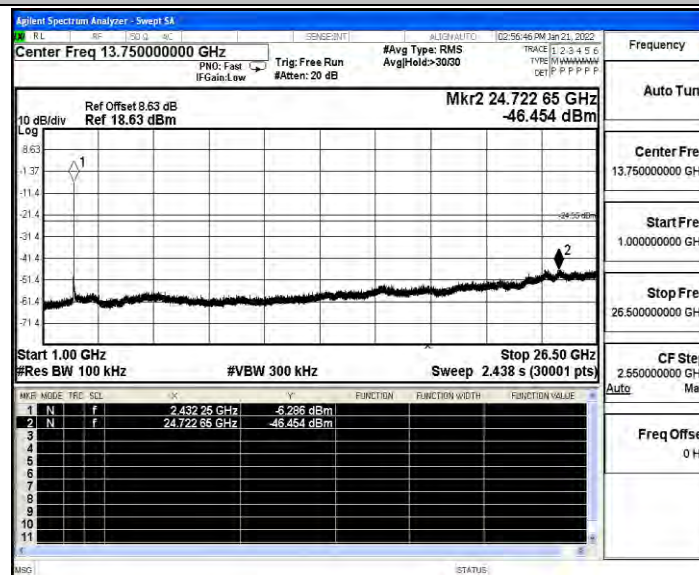
11N20SISO_Ant0_2437_0~Reference



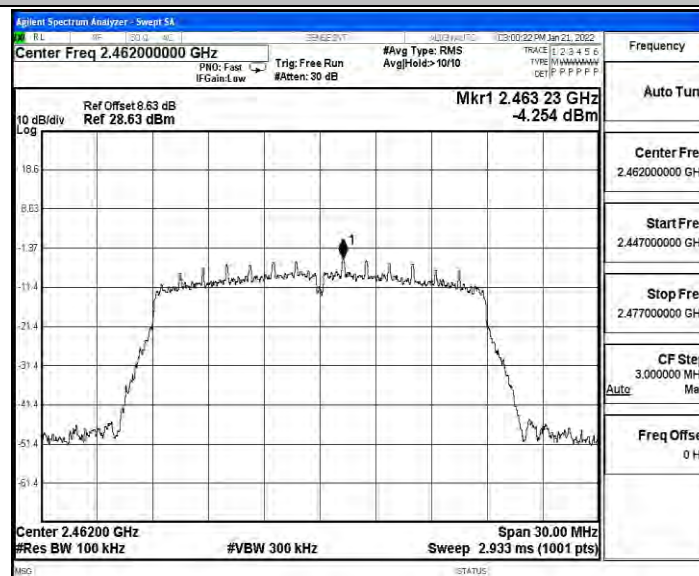
11N20SISO_Ant0_2437_30~1000



11N20SISO_Ant0_2437_1000~26500

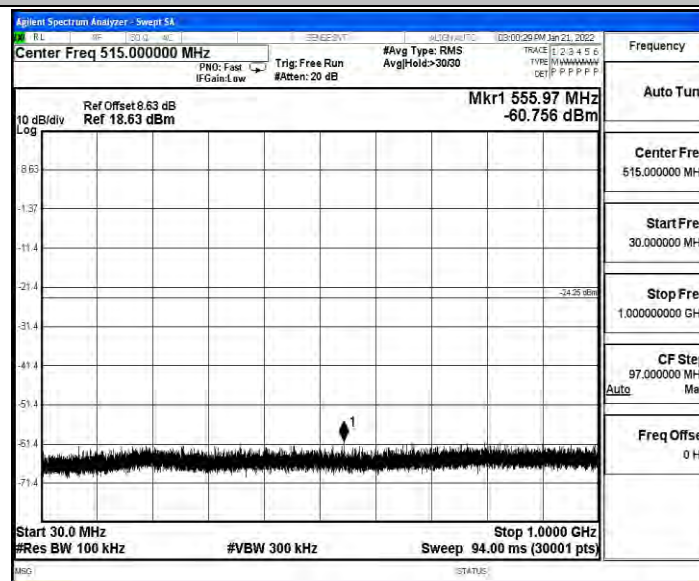


11N20SISO_Ant0_2462_0~Reference

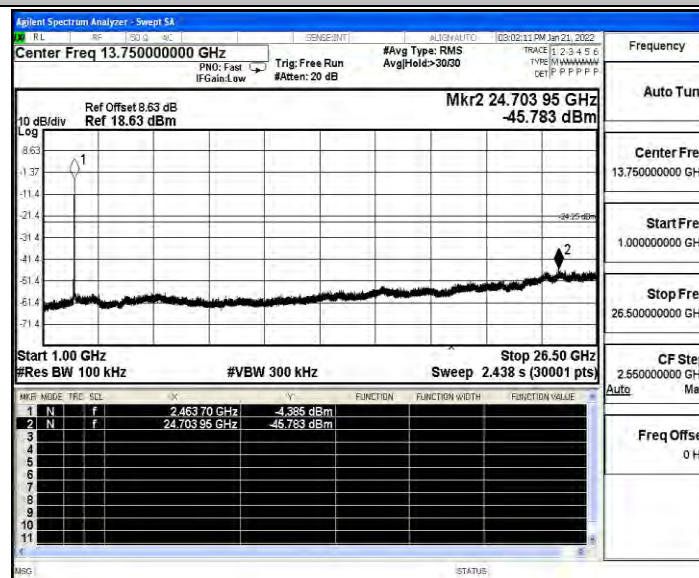




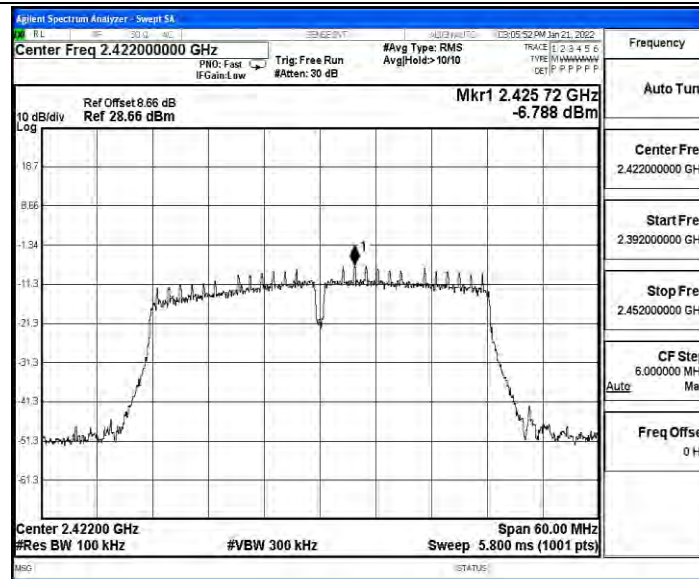
11N20SISO_Ant0_2462_30~1000



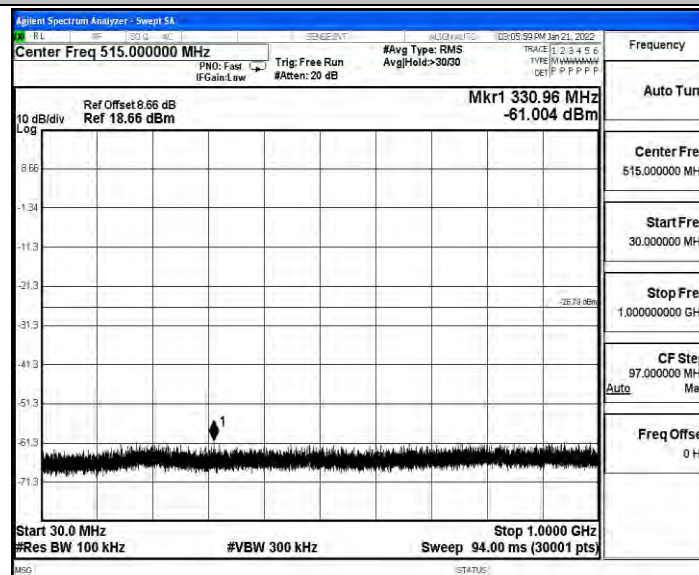
11N20SISO_Ant0_2462_1000~26500



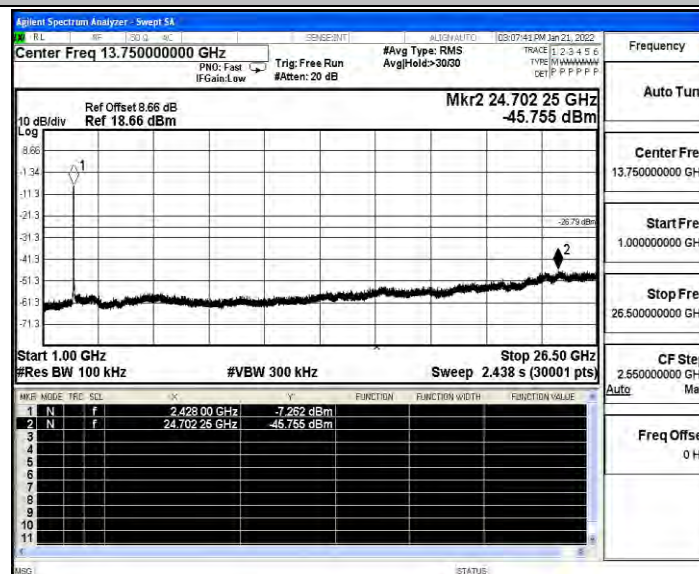
11N40SISO_Ant0_2422_0~Reference



11N40SISO_Ant0_2422_30~1000

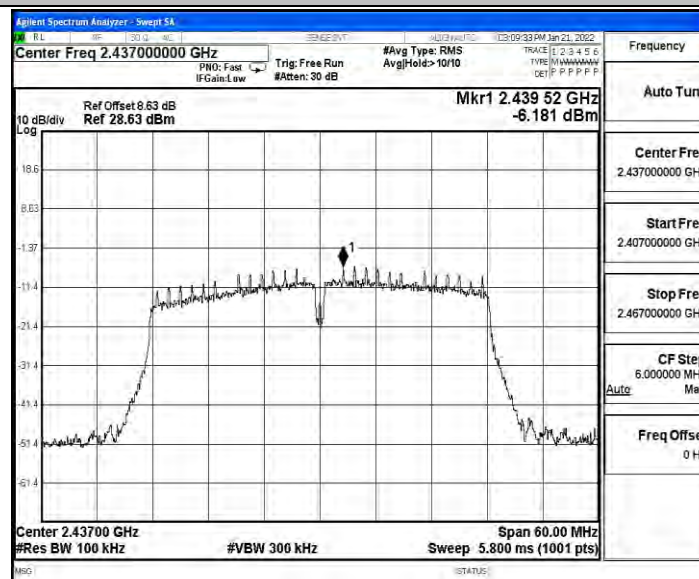


11N40SISO_Ant0_2422_1000~26500

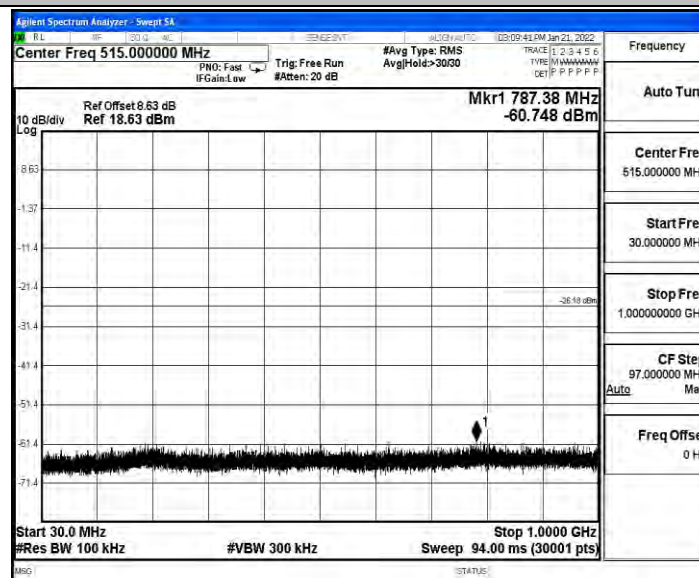




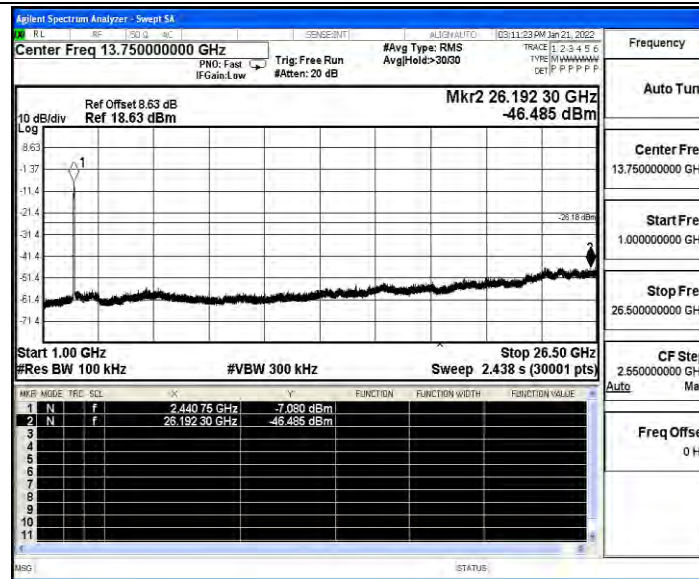
11N40SISO_Ant0_2437_0~Reference



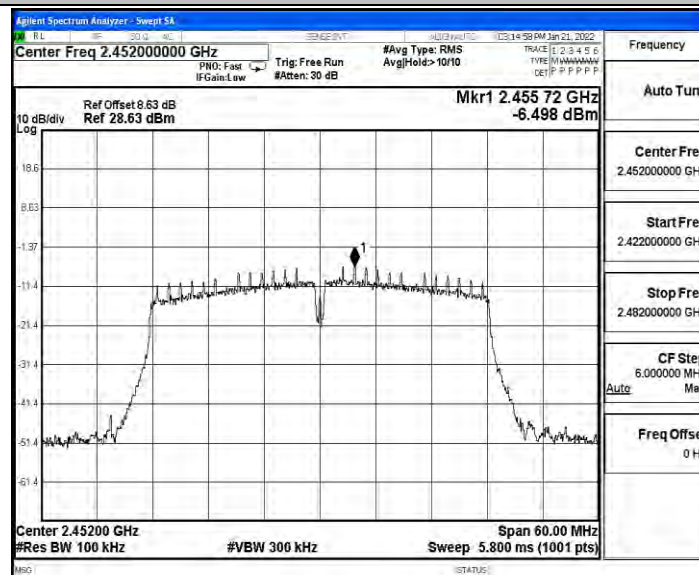
11N40SISO_Ant0_2437_30~1000



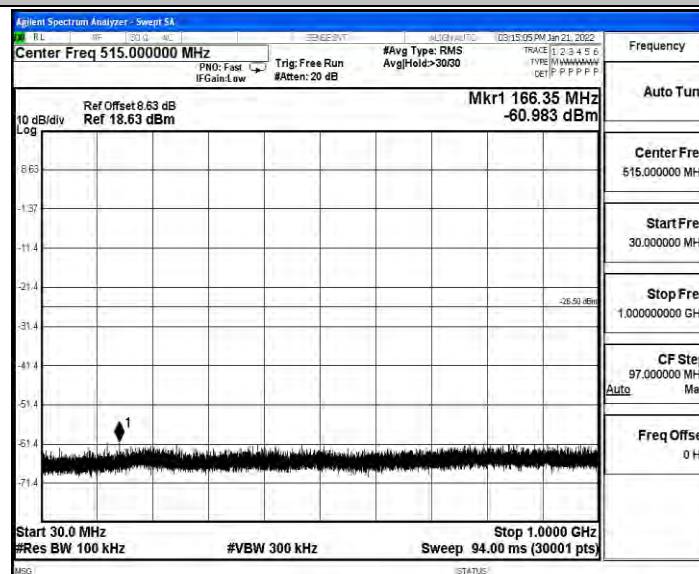
11N40SISO_Ant0_2437_1000~26500

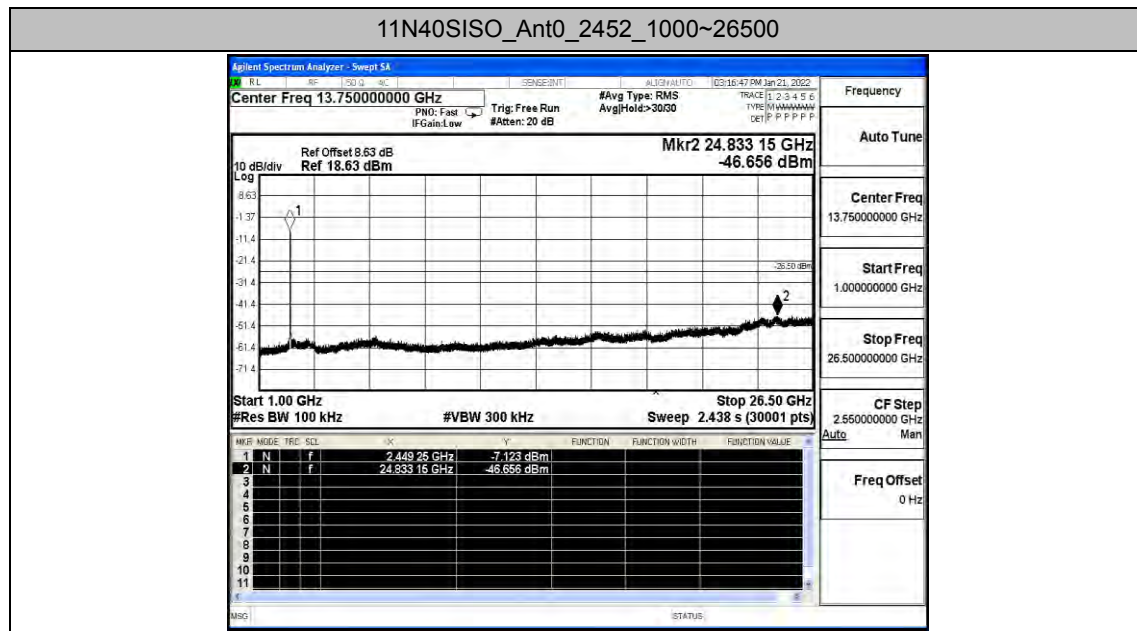


11N40SISO_Ant0_2452_0~Reference



11N40SISO_Ant0_2452_30~1000





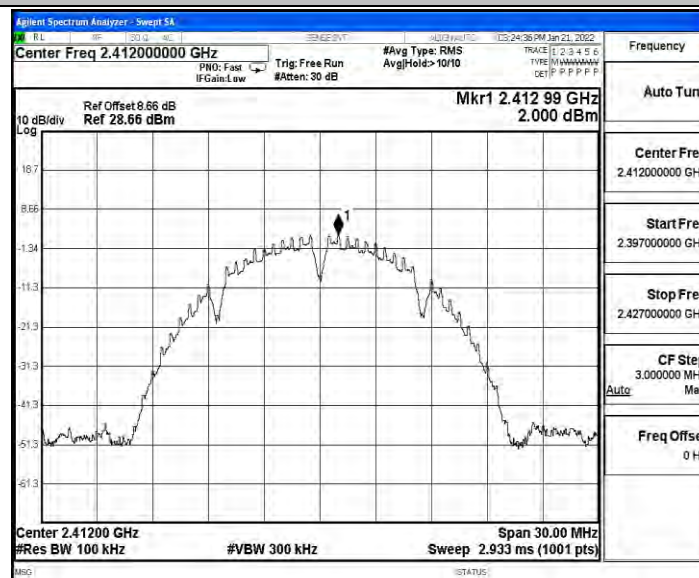
TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	2.00	2.00	---	PASS
			30~1000	2.00	-43.78	≤-18	PASS
			1000~26500	2.00	-46.51	≤-18	PASS
		2437	Reference	2.27	2.27	---	PASS
			30~1000	2.27	-60.92	≤-17.73	PASS
			1000~26500	2.27	-44.33	≤-17.73	PASS
		2462	Reference	2.10	2.10	---	PASS
			30~1000	2.10	-60.45	≤-17.9	PASS
			1000~26500	2.10	-45.62	≤-17.9	PASS
11G	Ant1	2412	Reference	-4.85	-4.85	---	PASS
			30~1000	-4.85	-34.67	≤-24.85	PASS
			1000~26500	-4.85	-46.43	≤-24.85	PASS
		2437	Reference	-5.97	-5.97	---	PASS
			30~1000	-5.97	-60.83	≤-25.97	PASS
			1000~26500	-5.97	-46.33	≤-25.97	PASS
		2462	Reference	-4.93	-4.93	---	PASS
			30~1000	-4.93	-42.78	≤-24.93	PASS
			1000~26500	-4.93	-46.48	≤-24.93	PASS
11N20SISO	Ant1	2412	Reference	-5.92	-5.92	---	PASS
			30~1000	-5.92	-59.98	≤-25.92	PASS
			1000~26500	-5.92	-45.26	≤-25.92	PASS
		2437	Reference	-5.52	-5.52	---	PASS
			30~1000	-5.52	-61.06	≤-25.52	PASS
			1000~26500	-5.52	-45.23	≤-25.52	PASS
		2462	Reference	-6.06	-6.06	---	PASS



11N40SISO	Ant1		30~1000	-6.06	-60.59	≤-26.06	PASS
			1000~26500	-6.06	-46.21	≤-26.06	PASS
		2422	Reference	-8.57	-8.57	---	PASS
			30~1000	-8.57	-59.98	≤-28.57	PASS
			1000~26500	-8.57	-46.31	≤-28.57	PASS
		2437	Reference	-8.45	-8.45	---	PASS
			30~1000	-8.45	-42.64	≤-28.45	PASS
			1000~26500	-8.45	-46.63	≤-28.45	PASS
		2452	Reference	-8.41	-8.41	---	PASS
			30~1000	-8.41	-60.86	≤-28.41	PASS
			1000~26500	-8.41	-46.6	≤-28.41	PASS

Test Graphs

11B_Ant1_2412_0~Reference



11B_Ant1_2412_30~1000

