

FCC Appendix RF Test Data for 2.4GWIFI

FCC ID : 2AUZX-MGW2ULU

Company : UBITECH LIMITED

EUT : Micro Gateway 2

Model Number : MGW2ULU

Report No. : CTA26061601702

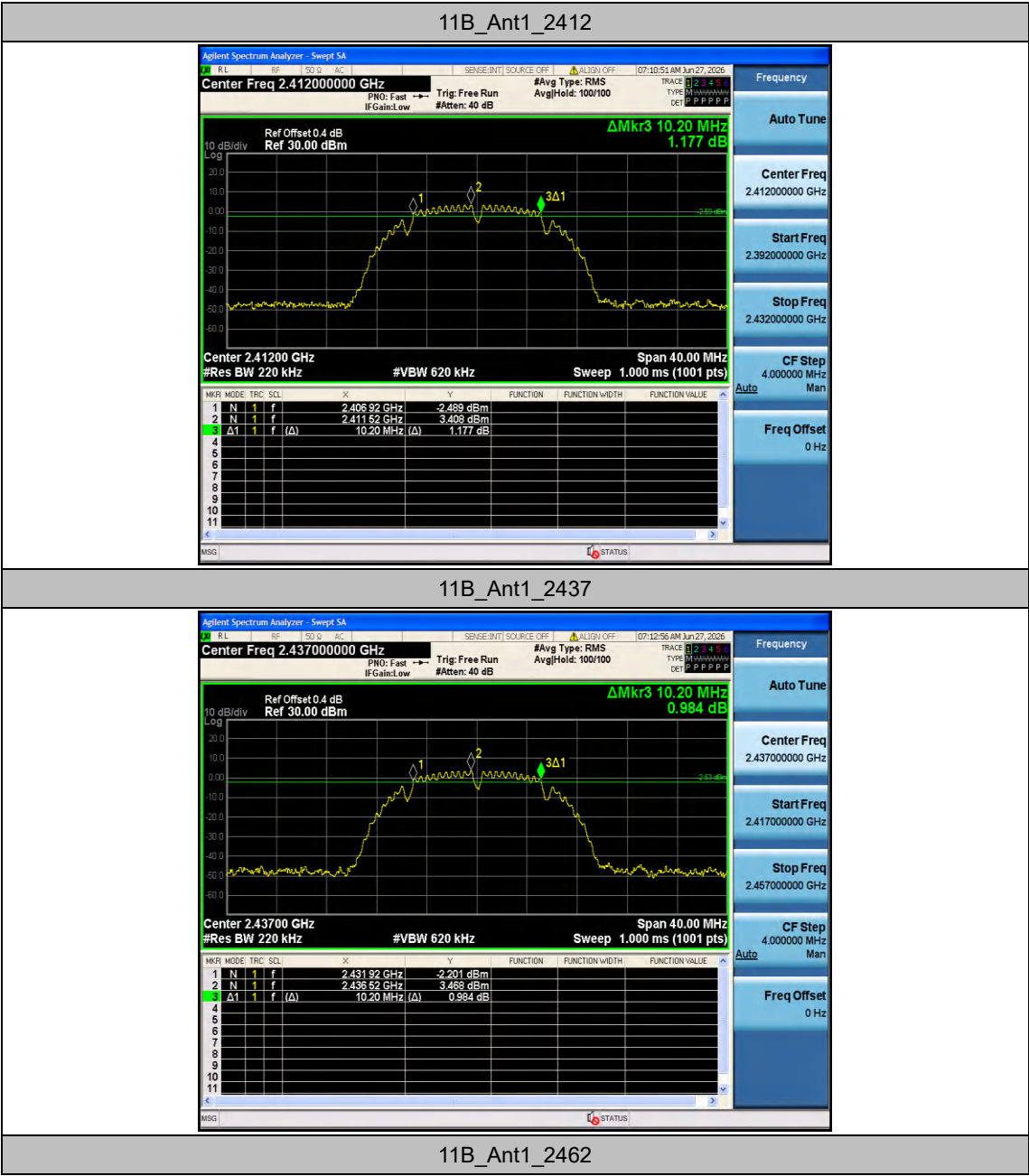
Reviewed By : Eric Wang

Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	10.200	2406.920	2417.120	0.5	PASS
		2437	10.200	2431.920	2442.120	0.5	PASS
		2462	10.240	2456.920	2467.160	0.5	PASS
11G	Ant1	2412	15.880	2404.080	2419.960	0.5	PASS
		2437	15.720	2429.040	2444.760	0.5	PASS
		2462	15.760	2454.040	2469.800	0.5	PASS
11N20SISO	Ant1	2412	16.560	2403.440	2420.000	0.5	PASS
		2437	16.920	2428.440	2445.360	0.5	PASS
		2462	16.560	2453.480	2470.040	0.5	PASS

Test Graphs





11G_Ant1_2412



11G_Ant1_2437



11G_Ant1_2462



11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



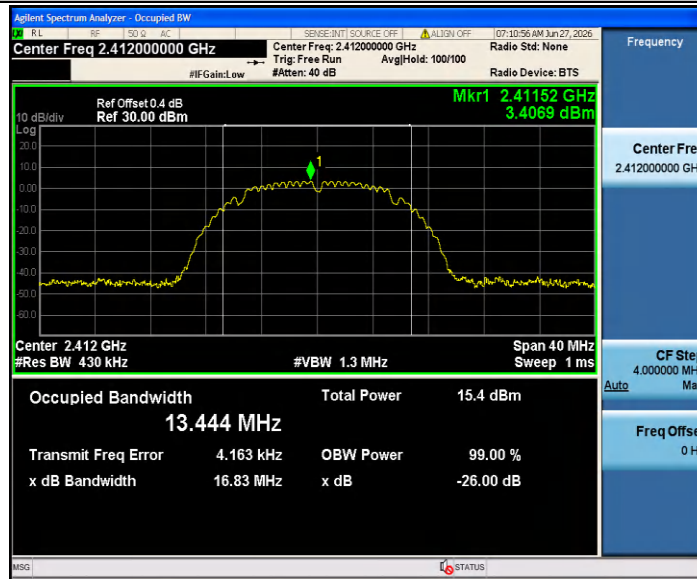
Appendix B: Occupied Channel Bandwidth

Test Result

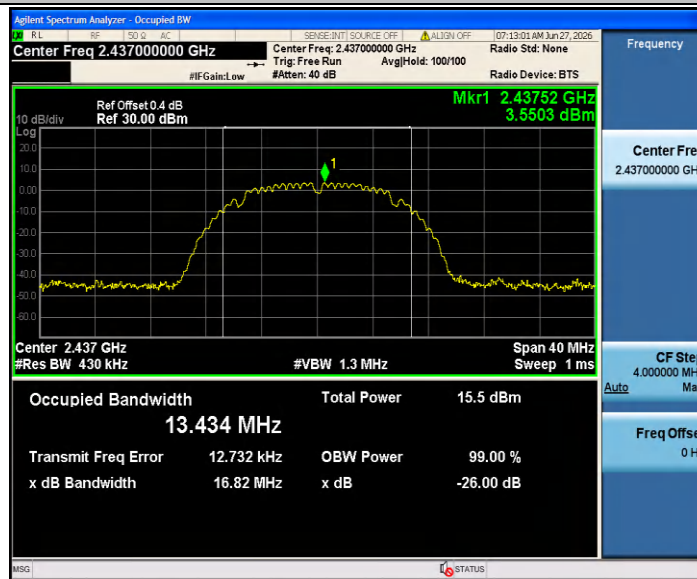
TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.444	2405.2822	2418.7262	---	---
		2437	13.434	2430.2957	2443.7297	---	---
		2462	13.426	2455.3096	2468.7356	---	---
11G	Ant1	2412	16.808	2403.5982	2420.4062	---	---
		2437	16.790	2428.6391	2445.4291	---	---
		2462	16.864	2453.6131	2470.4771	---	---
11N20SISO	Ant1	2412	17.867	2403.0721	2420.9391	---	---
		2437	17.961	2428.0494	2446.0104	---	---
		2462	17.875	2453.1148	2470.9898	---	---

Test Graphs

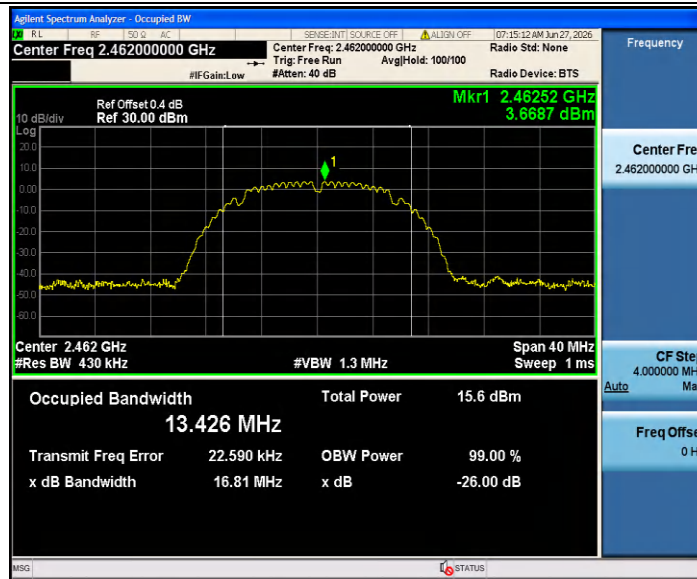
11B_Ant1_2412



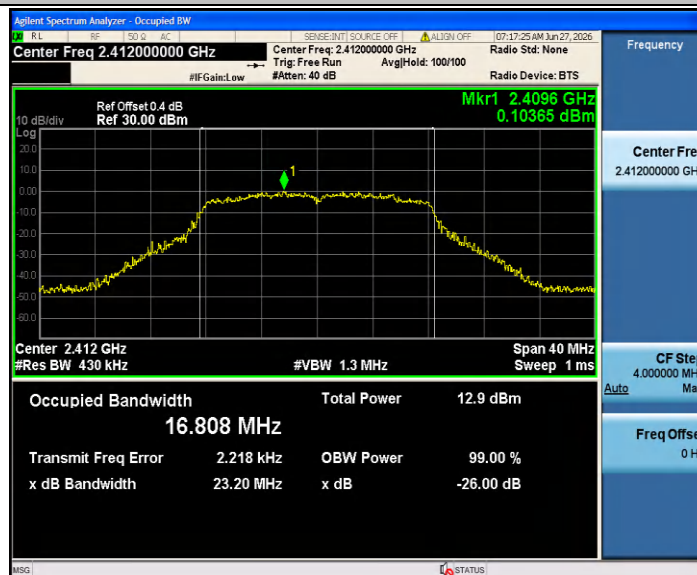
11B_Ant1_2437



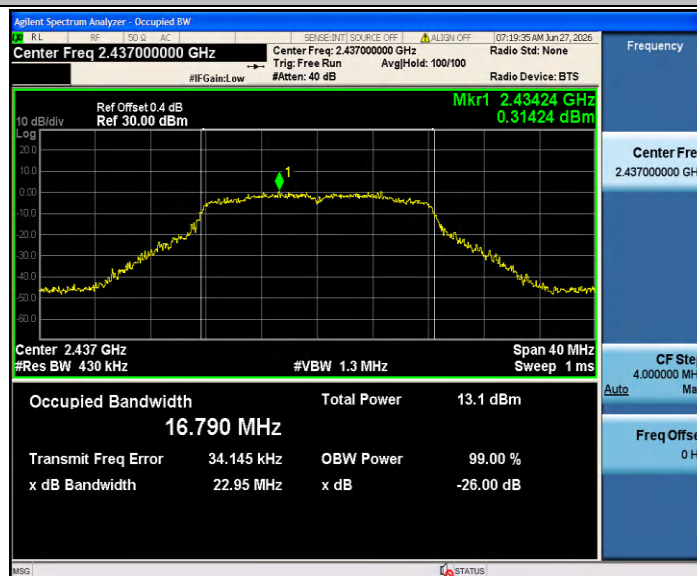
11B_Ant1_2462



11G_Ant1_2412



11G_Ant1_2437



11G_Ant1_2462



11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



Appendix C: Maximum conducted output power

Test Result

Test Mode	Antenna	Frequency[M Hz]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	15.06	≤30.00	PASS
		2437	15.14	≤30.00	PASS
		2462	15.30	≤30.00	PASS
11G	Ant1	2412	13.94	≤30.00	PASS
		2437	13.92	≤30.00	PASS
		2462	14.18	≤30.00	PASS
11N20SISO	Ant1	2412	13.70	≤30.00	PASS
		2437	13.76	≤30.00	PASS
		2462	13.93	≤30.00	PASS

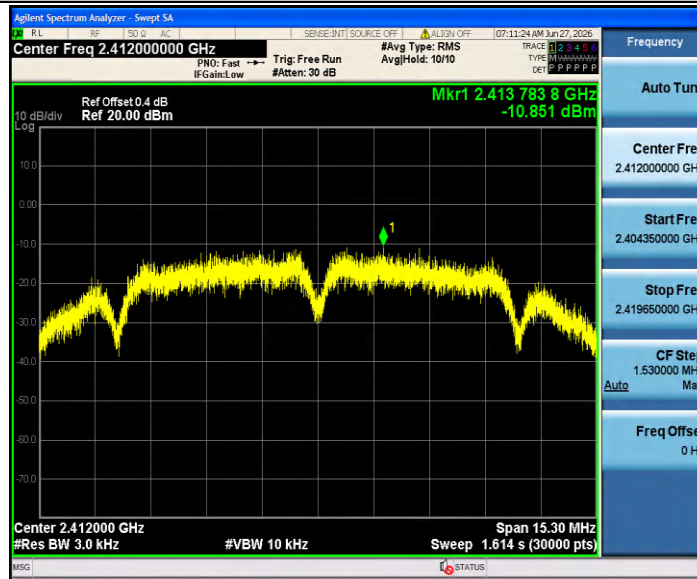
Appendix D: Maximum power spectral density

Test Result

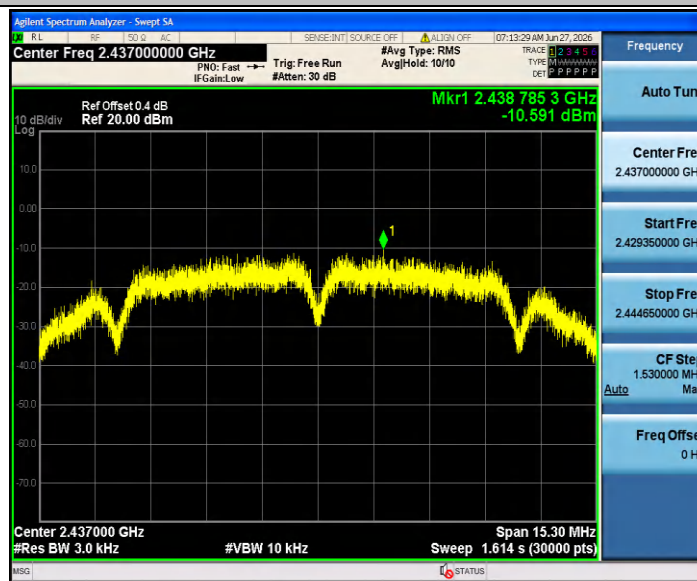
TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-10.85	≤8.00	PASS
		2437	-10.59	≤8.00	PASS
		2462	-10.89	≤8.00	PASS
11G	Ant1	2412	-16.78	≤8.00	PASS
		2437	-17.59	≤8.00	PASS
		2462	-17.05	≤8.00	PASS
11N20SISO	Ant1	2412	-17.45	≤8.00	PASS
		2437	-17.78	≤8.00	PASS
		2462	-17.55	≤8.00	PASS

Test Graphs

11B_Ant1_2412



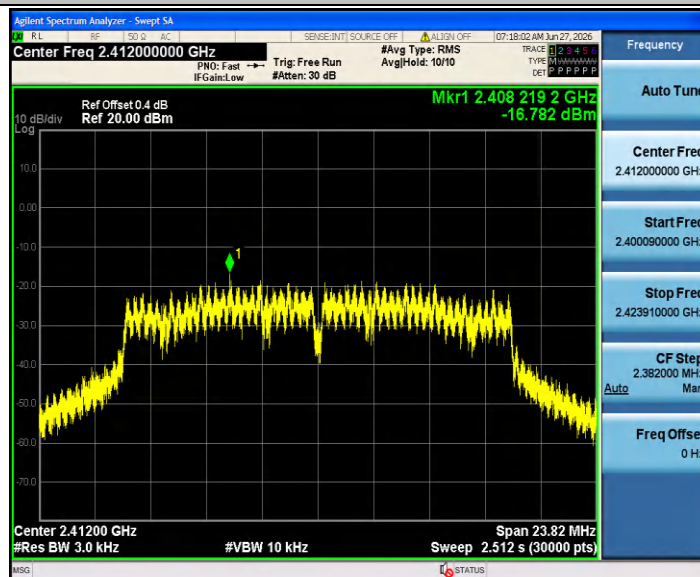
11B_Ant1_2437



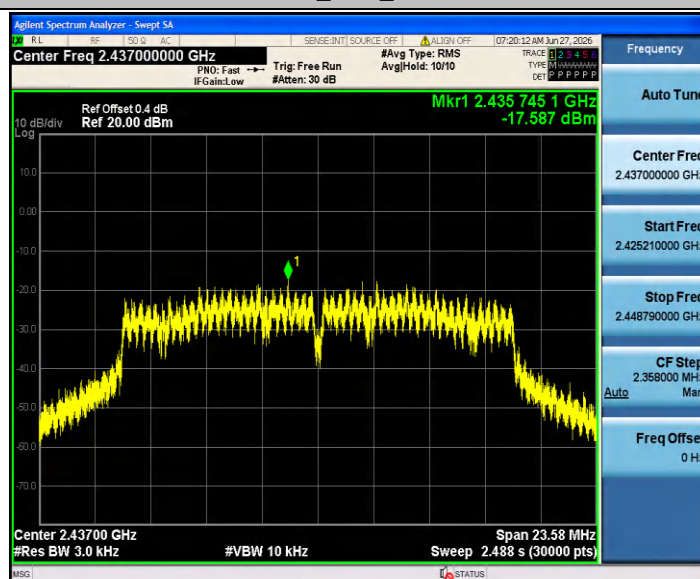
11B_Ant1_2462



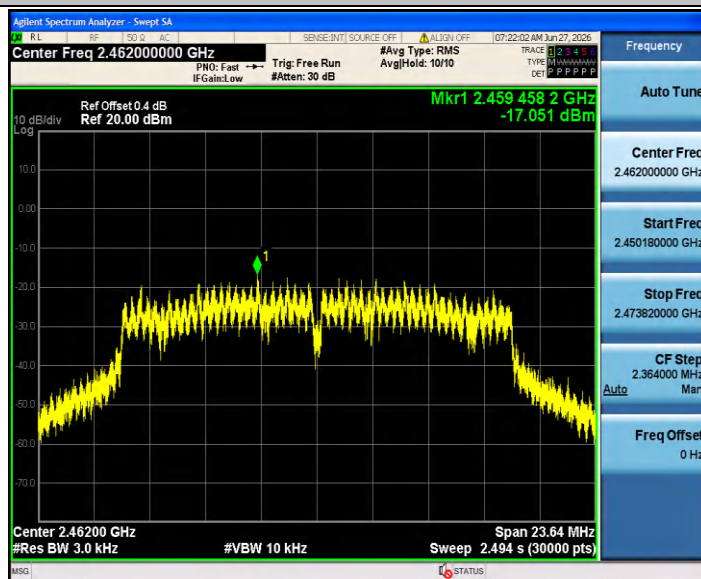
11G_Ant1_2412



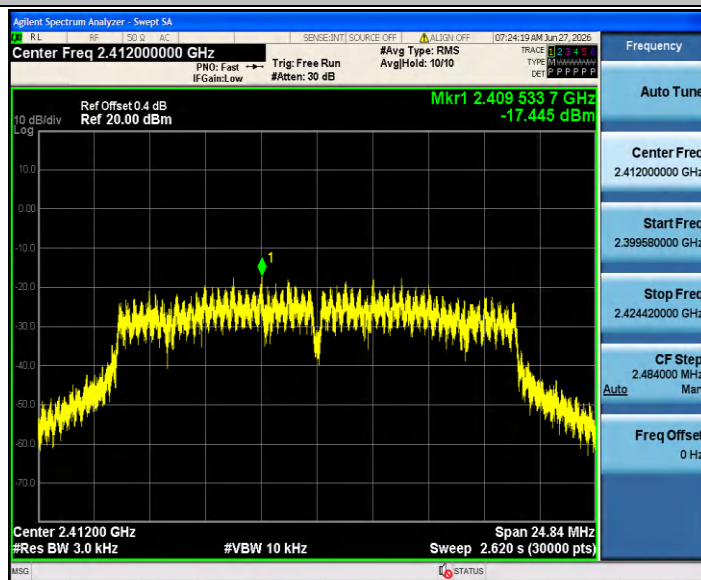
11G_Ant1_2437



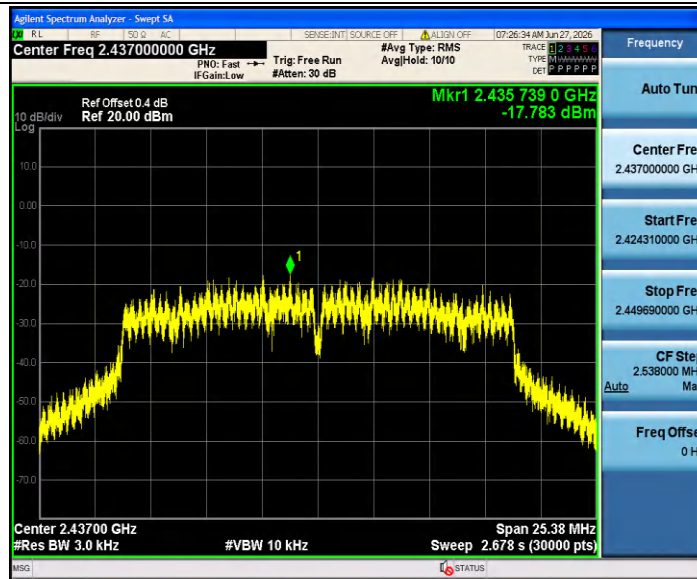
11G_Ant1_2462



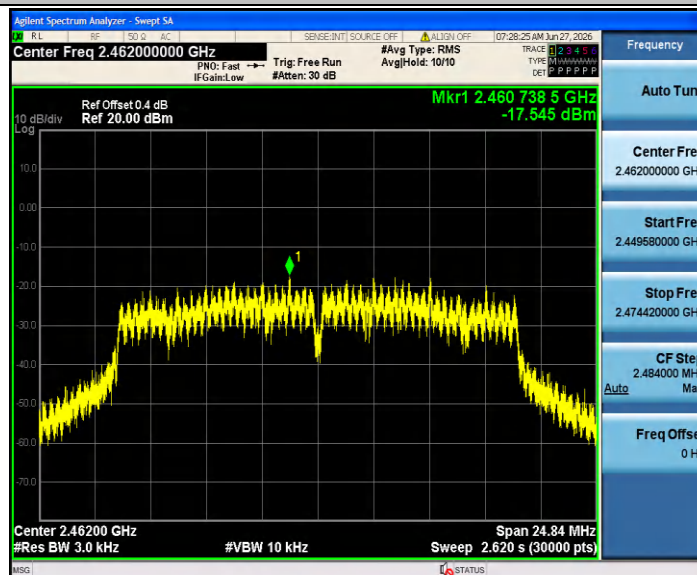
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



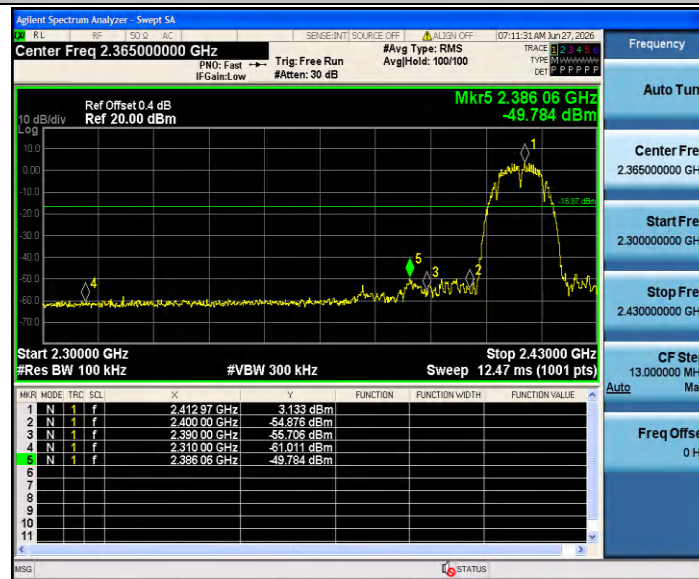
Appendix E: Band edge measurements

Test Result

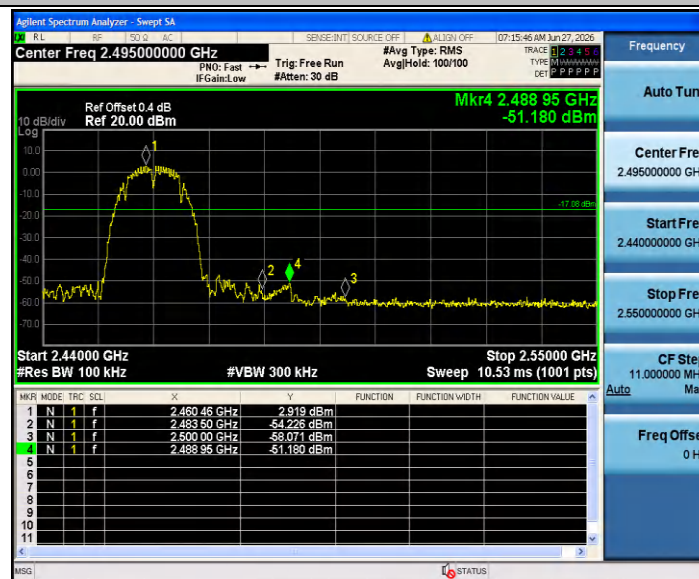
TestMode	Antenna	Channel Name	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	3.13	-49.78	≤-16.87	PASS
		High	2462	2.92	-51.18	≤-17.08	PASS
11G	Ant1	Low	2412	-2.75	-31.93	≤-22.75	PASS
		High	2462	-2.48	-57.85	≤-22.48	PASS
11N20SISO	Ant1	Low	2412	-2.58	-34	≤-22.58	PASS
		High	2462	-2.14	-57.28	≤-22.14	PASS

Test Graphs

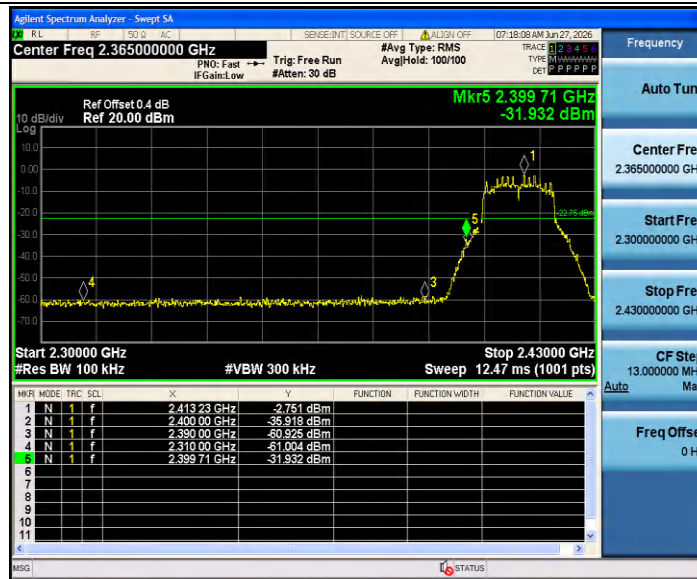
11B_Ant1_Low_2412



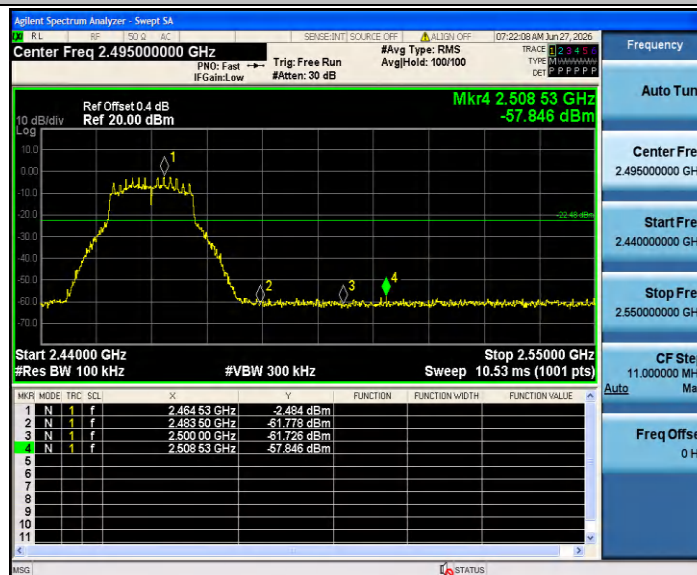
11B_Ant1_High_2462



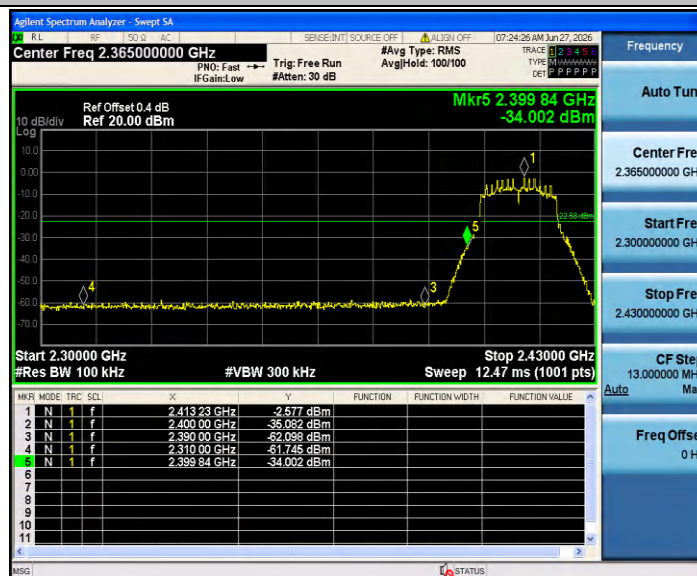
11G_Ant1_Low_2412



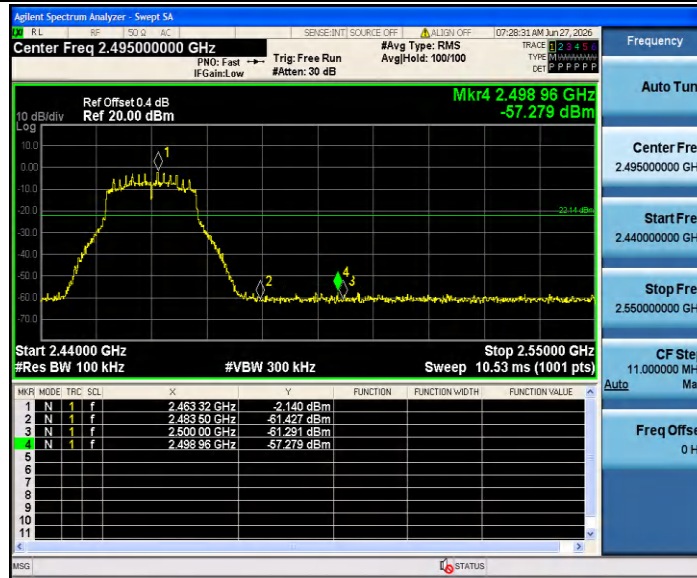
11G_Ant1_High_2462



11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_High_2462



Appendix F: Conducted Spurious Emission

Test Result

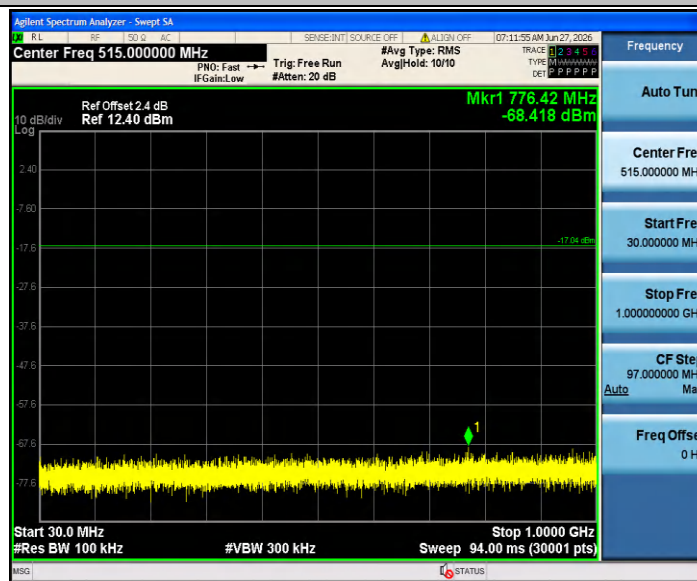
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	2.96	2.96	---	PASS
			30~1000	2.96	-68.42	≤-17.04	PASS
			1000~26500	2.96	-46.83	≤-17.04	PASS
		2437	Reference	2.06	2.06	---	PASS
			30~1000	2.06	-68.73	≤-17.94	PASS
			1000~26500	2.06	-46.33	≤-17.94	PASS
		2462	Reference	3.03	3.03	---	PASS
			30~1000	3.03	-68.82	≤-16.97	PASS
			1000~26500	3.03	-47.12	≤-16.97	PASS
11G	Ant1	2412	Reference	-3.40	-3.40	---	PASS
			30~1000	-3.40	-69.09	≤-23.4	PASS
			1000~26500	-3.40	-47.02	≤-23.4	PASS
		2437	Reference	-3.05	-3.05	---	PASS
			30~1000	-3.05	-68.95	≤-23.05	PASS
			1000~26500	-3.05	-46.68	≤-23.05	PASS
		2462	Reference	-2.41	-2.41	---	PASS
			30~1000	-2.41	-67.73	≤-22.41	PASS
			1000~26500	-2.41	-46.18	≤-22.41	PASS
11N20SISO	Ant1	2412	Reference	-3.12	-3.12	---	PASS
			30~1000	-3.12	-66.91	≤-23.12	PASS
			1000~26500	-3.12	-47	≤-23.12	PASS
		2437	Reference	-3.25	-3.25	---	PASS
			30~1000	-3.25	-69.13	≤-23.25	PASS
			1000~26500	-3.25	-46.67	≤-23.25	PASS
		2462	Reference	-2.67	-2.67	---	PASS
			30~1000	-2.67	-69.43	≤-22.67	PASS
			1000~26500	-2.67	-46.68	≤-22.67	PASS

Test Graphs

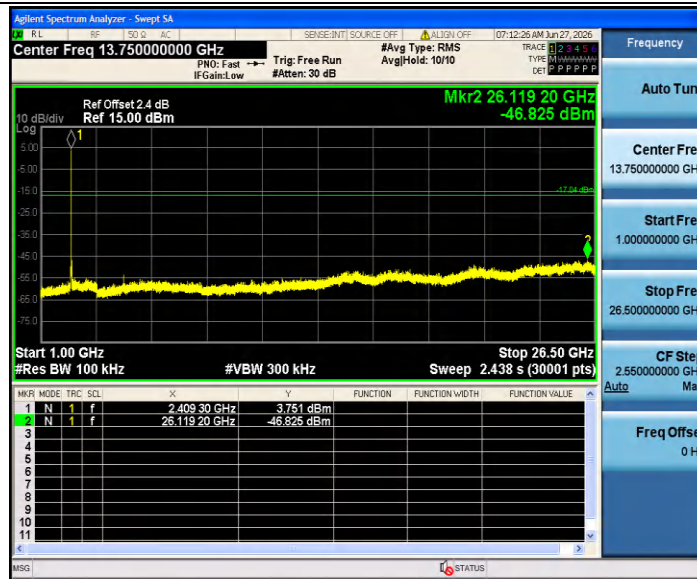
11B_Ant1_2412_0~Reference



11B_Ant1_2412_30~1000



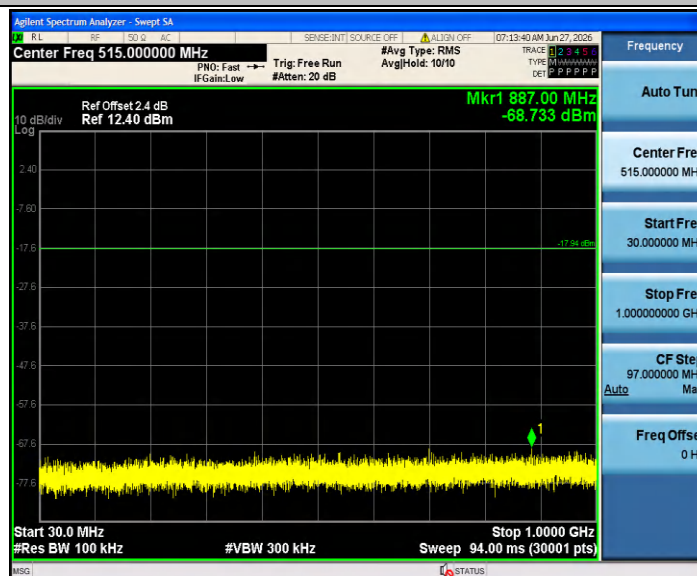
11B_Ant1_2412_1000~26500



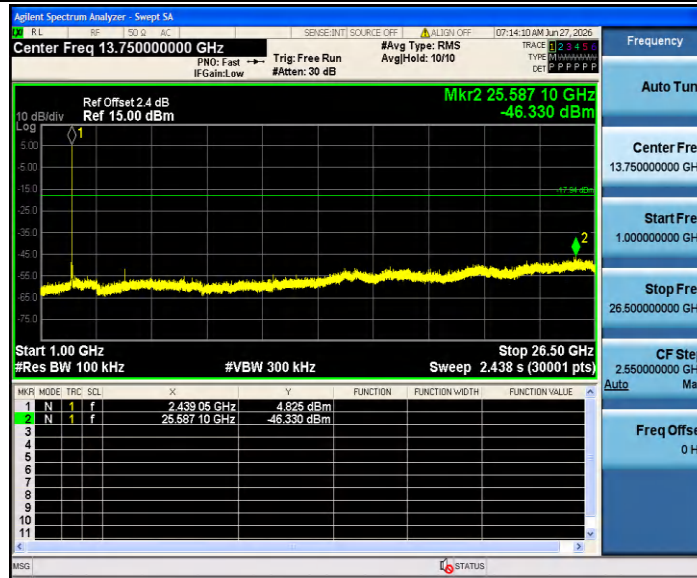
11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000



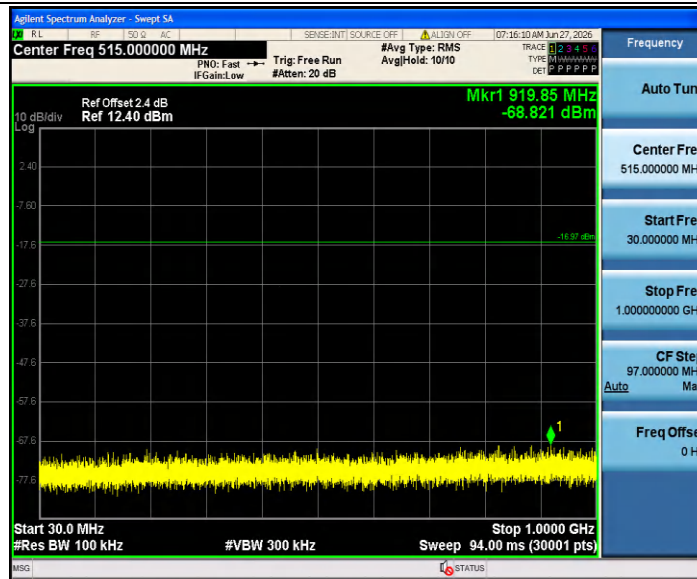
11B_Ant1_2437_1000~26500



11B_Ant1_2462_0~Reference



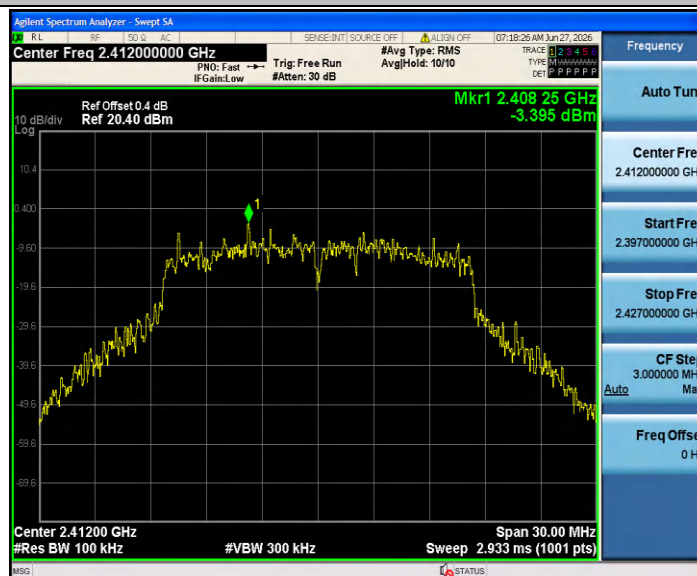
11B_Ant1_2462_30~1000



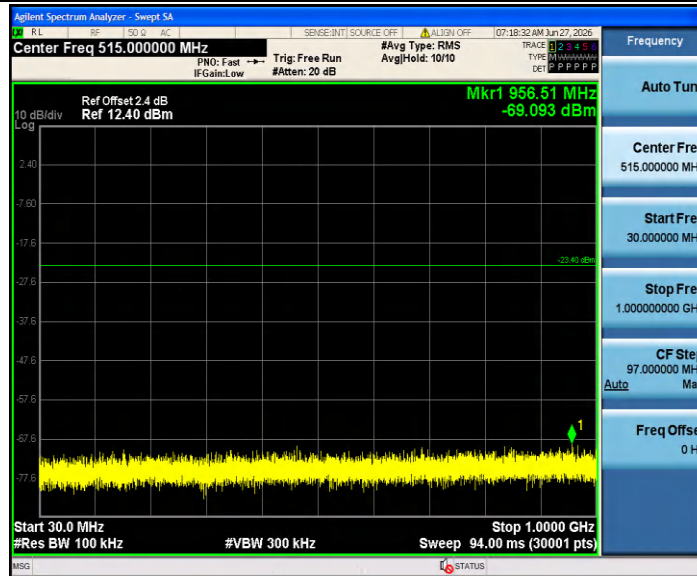
11B_Ant1_2462_1000~26500



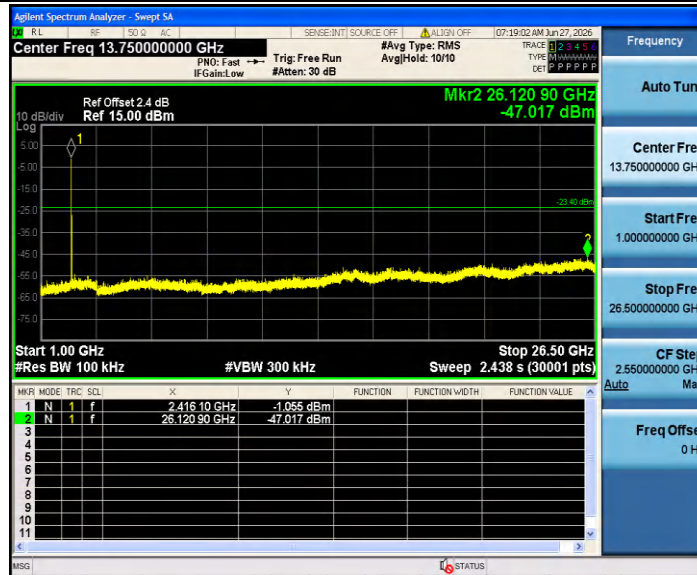
11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000



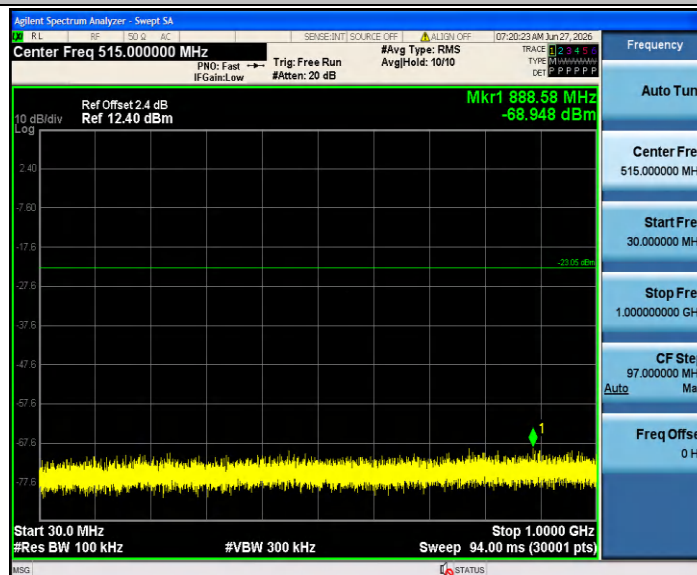
11G_Ant1_2412_1000~26500



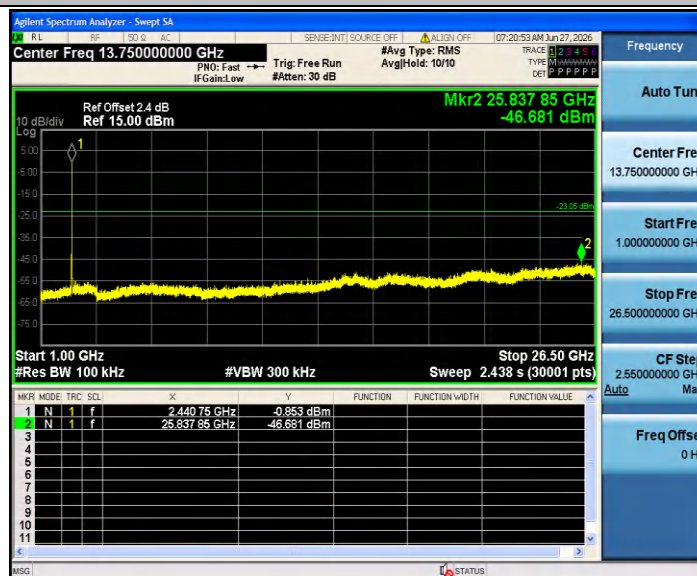
11G_Ant1_2437_0~Reference



11G_Ant1_2437_30~1000



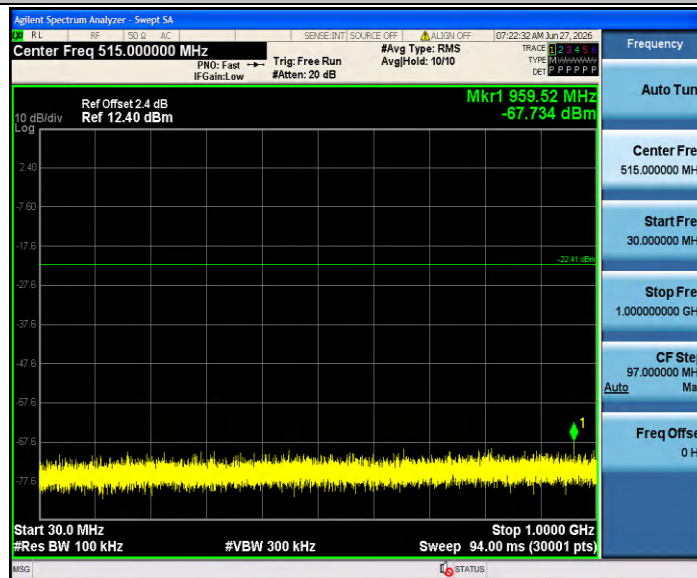
11G_Ant1_2437_1000~26500



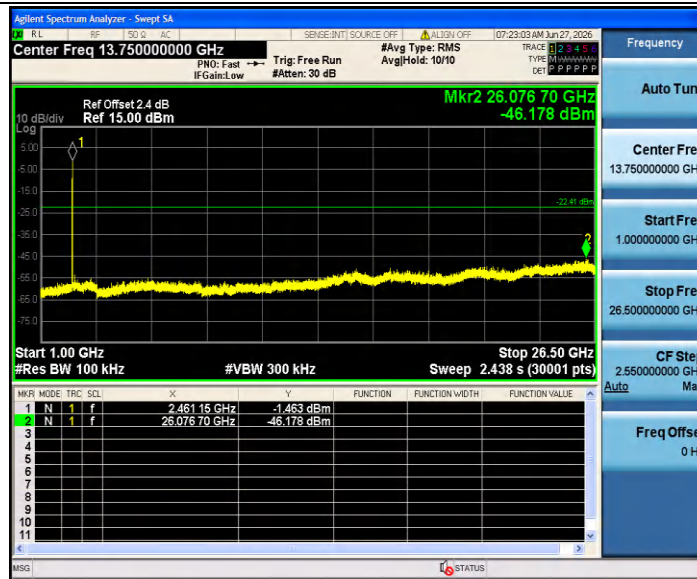
11G_Ant1_2462_0~Reference



11G_Ant1_2462_30~1000



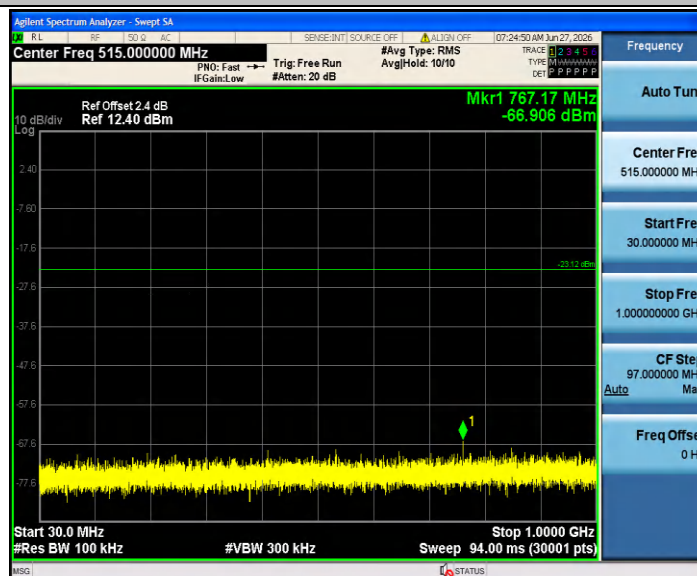
11G_Ant1_2462_1000~26500



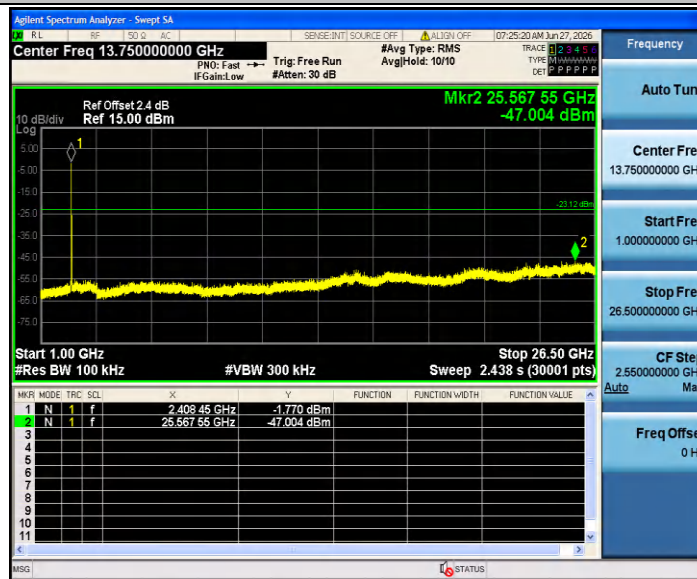
11N20SISO_Ant1_2412_0~Reference



11N20SISO_Ant1_2412_30~1000



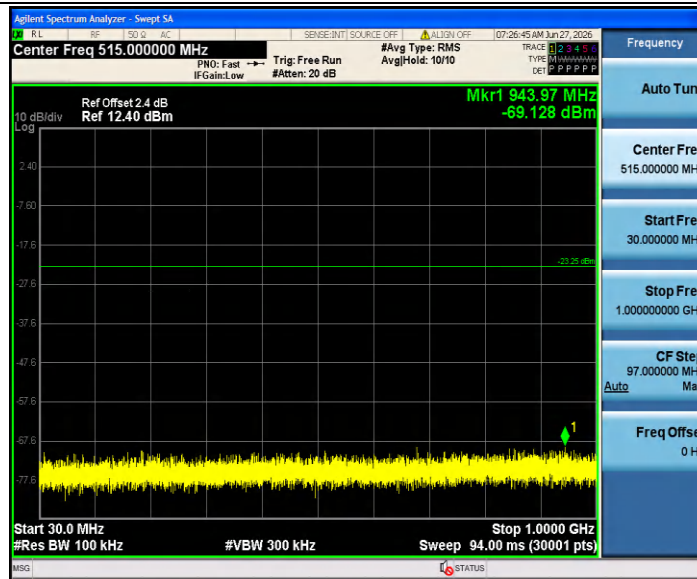
11N20SISO_Ant1_2412_1000~26500



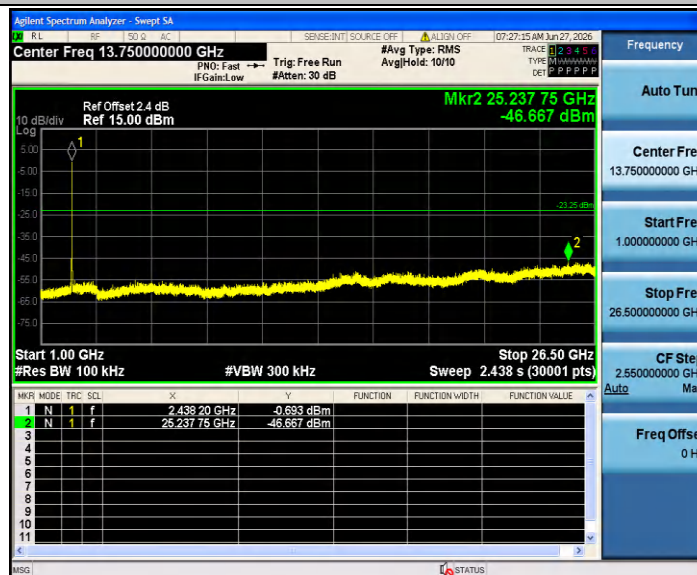
11N20SISO_Ant1_2437_0~Reference



11N20SISO_Ant1_2437_30~1000



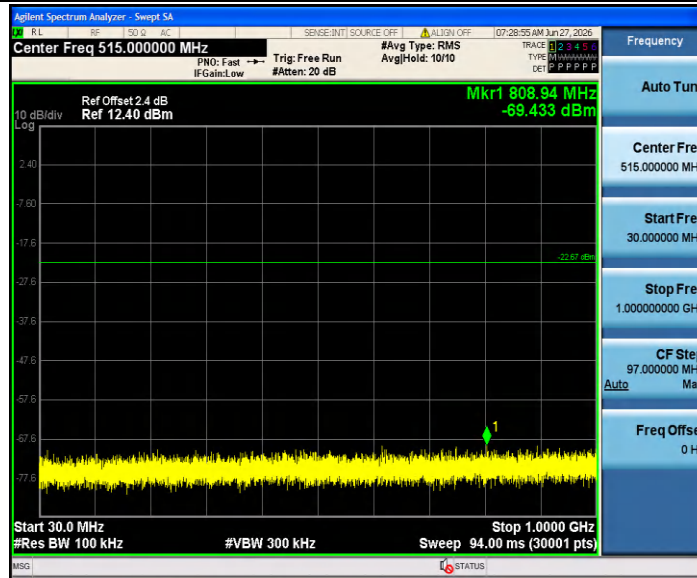
11N20SISO_Ant1_2437_1000~26500



11N20SISO_Ant1_2462_0~Reference



11N20SISO_Ant1_2462_30~1000



11N20SISO_Ant1_2462_1000~26500



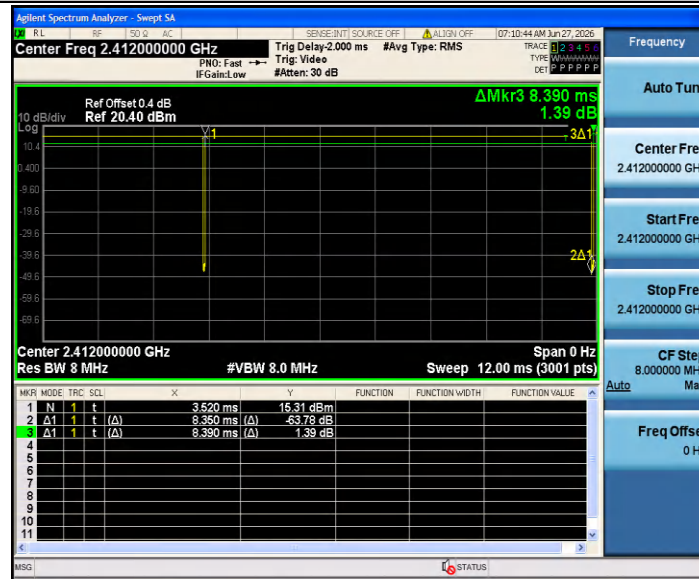
Appendix G: Duty Cycle

Test Result

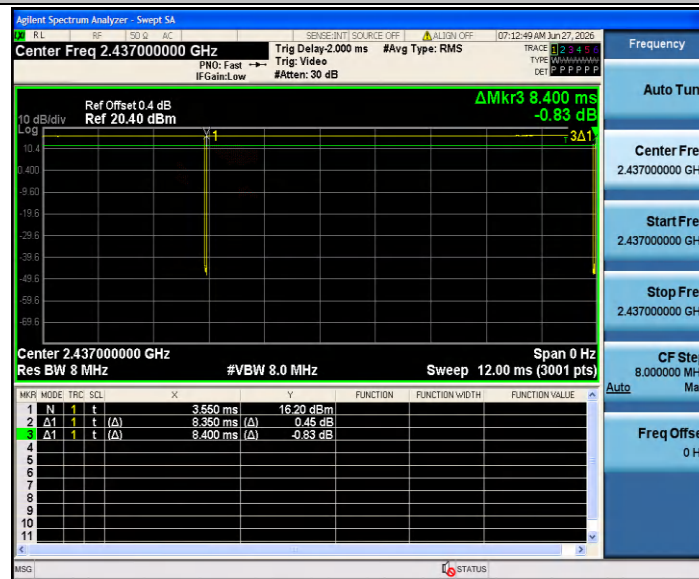
TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	DC Factor [dB]	T Factor [dB]
11B	Ant1	2412	8.35	8.39	99.52	0.02	0.12
		2437	8.35	8.40	99.40	0.03	0.12
		2462	8.36	8.40	99.52	0.02	0.12
11G	Ant1	2412	0.15	0.20	75.00	1.25	6.67
		2437	0.14	0.19	73.68	1.33	7.14
		2462	0.15	0.20	75.00	1.25	6.67
11N20SISO	Ant1	2412	0.18	0.23	78.26	1.06	5.56
		2437	0.18	0.23	78.26	1.06	5.56
		2462	0.17	0.22	77.27	1.12	5.88

Test Graphs

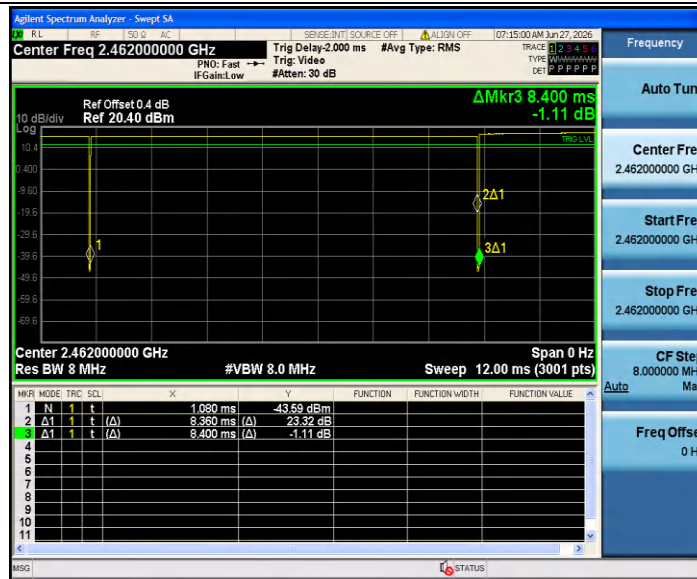
11B_Ant1_2412



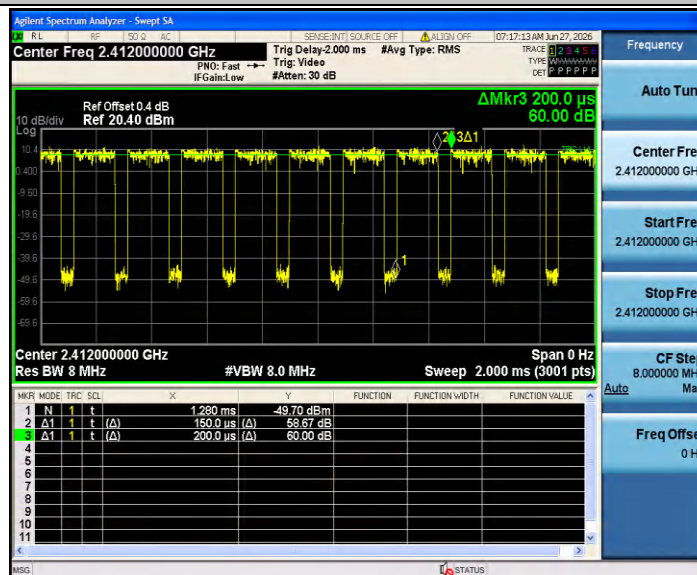
11B_Ant1_2437



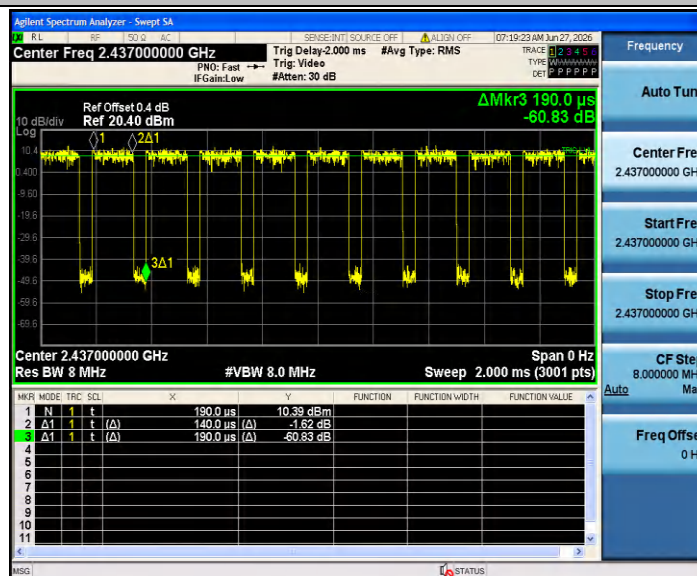
11B_Ant1_2462



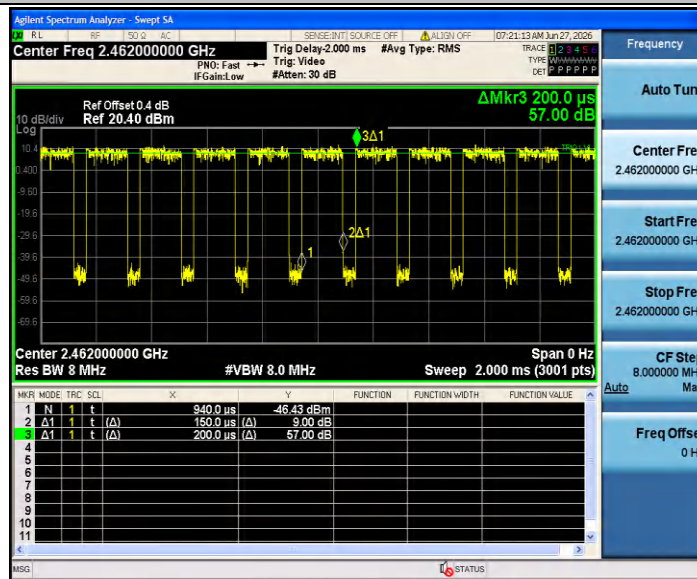
11G_Ant1_2412



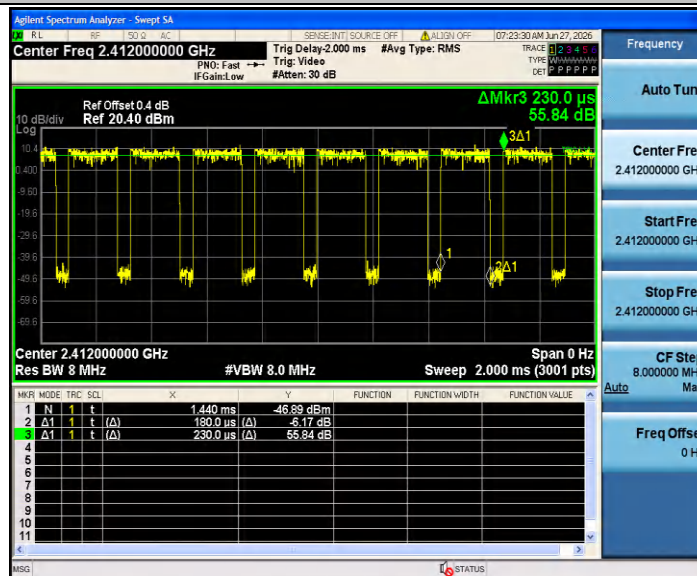
11G_Ant1_2437



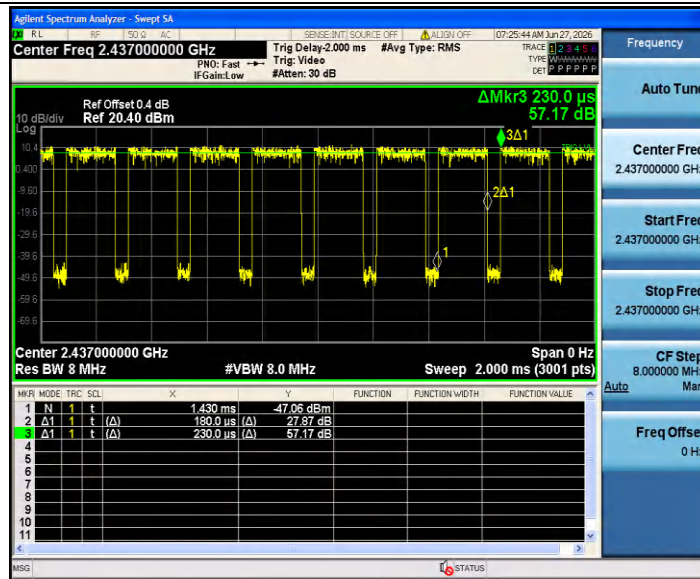
11G_Ant1_2462



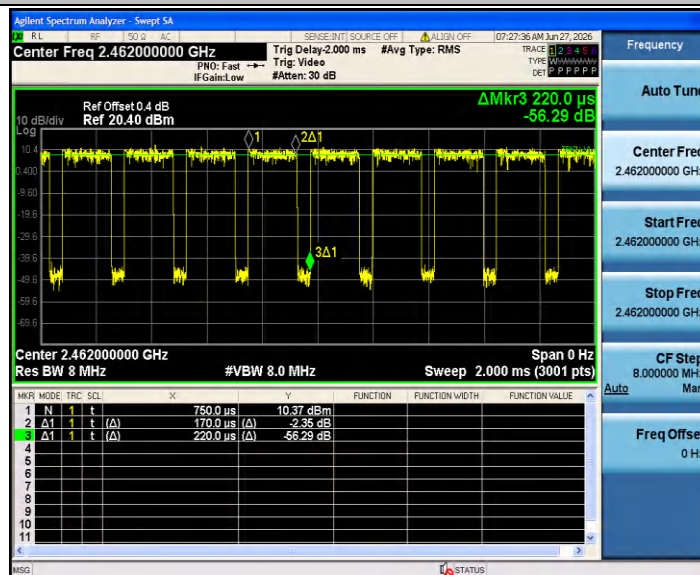
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



Appendix H: Emissions in Restricted Bands

Test Result

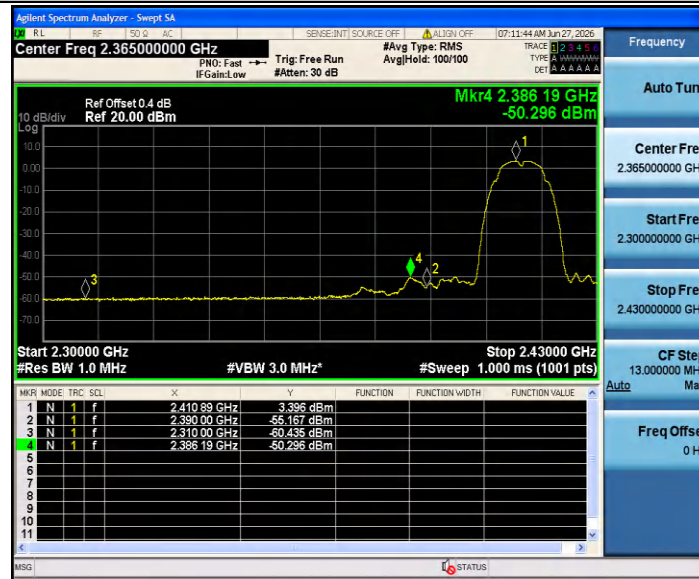
TestMod e	Antenn a	ChNam e	Frequen cy[MHz]	Detector	Freq [MHz]	Result [dBm]	Gain [dB]	DC Factor [dB]	Result [dBUV/m]	Limit [dBUV/m]	Verdict
11B	Ant1	Low	2412	AV	2310.000	-60.44	3.98	0.02	38.76	≤54	PASS
				AV	2386.190	-50.3	3.98	0.02	48.9	≤54	PASS
				AV	2390.000	-55.17	3.98	0.02	44.03	≤54	PASS
				Peak	2310.000	-52.81	3.98	0.00	46.37	≤74	PASS
				Peak	2386.060	-42.95	3.98	0.00	56.23	≤74	PASS
				Peak	2390.000	-45.87	3.98	0.00	53.31	≤74	PASS
		High	2462	AV	2483.500	-53.99	3.98	0.02	45.21	≤54	PASS
				AV	2488.730	-51.26	3.98	0.02	47.94	≤54	PASS
				AV	2500.000	-57.13	3.98	0.02	42.07	≤54	PASS
				Peak	2483.500	-47.78	3.98	0.00	51.4	≤74	PASS
				Peak	2488.950	-44.21	3.98	0.00	54.97	≤74	PASS
				Peak	2500.000	-49.29	3.98	0.00	49.89	≤74	PASS
11G	Ant1	Low	2412	AV	2310.000	-60.67	3.98	1.25	39.76	≤54	PASS
				AV	2388.010	-59.2	3.98	1.25	41.23	≤54	PASS
				AV	2390.000	-59.59	3.98	1.25	40.84	≤54	PASS
				Peak	2310.000	-51.16	3.98	0.00	48.02	≤74	PASS
				Peak	2379.820	-48.9	3.98	0.00	50.28	≤74	PASS
				Peak	2390.000	-51.43	3.98	0.00	47.75	≤74	PASS
		High	2462	AV	2483.500	-59.67	3.98	1.25	40.76	≤54	PASS
				AV	2484.660	-58.66	3.98	1.25	41.77	≤54	PASS
				AV	2500.000	-59.56	3.98	1.25	40.87	≤54	PASS
				Peak	2483.500	-50.99	3.98	0.00	48.19	≤74	PASS
				Peak	2484.220	-49.19	3.98	0.00	49.99	≤74	PASS
				Peak	2500.000	-50.26	3.98	0.00	48.92	≤74	PASS
11N20SI SO	Ant1	Low	2412	AV	2310.000	-60.56	3.98	1.06	39.68	≤54	PASS
				AV	2389.960	-59.16	3.98	1.06	41.08	≤54	PASS
				AV	2390.000	-59.16	3.98	1.06	41.08	≤54	PASS
				Peak	2310.000	-52.86	3.98	0.00	46.32	≤74	PASS
				Peak	2388.790	-49.32	3.98	0.00	49.86	≤74	PASS
				Peak	2390.000	-49.96	3.98	0.00	49.22	≤74	PASS
		High	2462	AV	2483.500	-59.42	3.98	1.12	40.88	≤54	PASS
				AV	2486.860	-58.54	3.98	1.12	41.76	≤54	PASS
				AV	2500.000	-59.79	3.98	1.12	40.51	≤54	PASS
				Peak	2483.500	-51.29	3.98	0.00	47.89	≤74	PASS
				Peak	2486.750	-49.31	3.98	0.00	49.87	≤74	PASS
				Peak	2500.000	-51.63	3.98	0.00	47.55	≤74	PASS

Note:

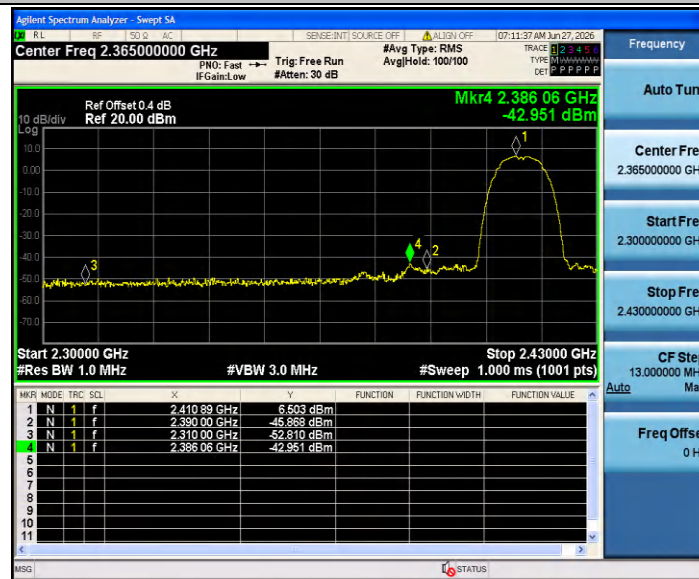
1. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

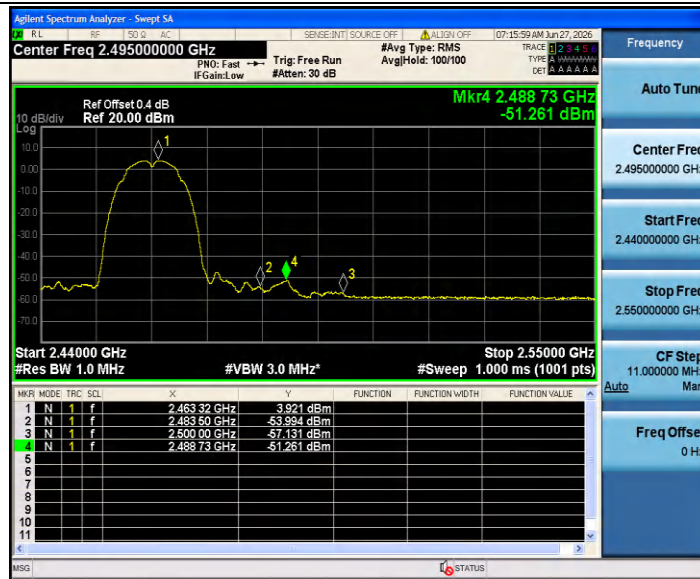
11B_Ant1_Low_2412_AV



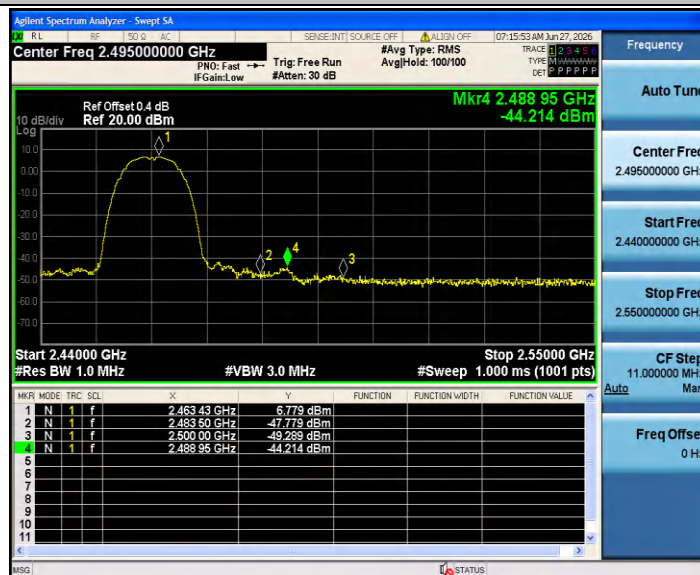
11B_Ant1_Low_2412_Peak



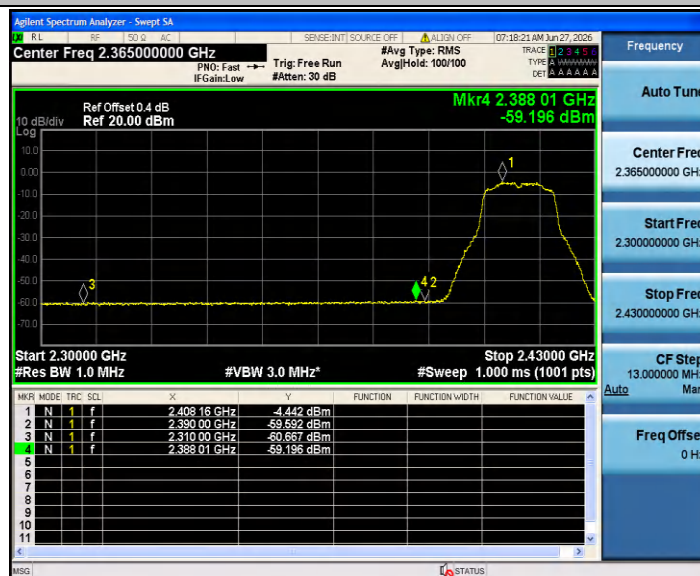
11B_Ant1_High_2462_AV



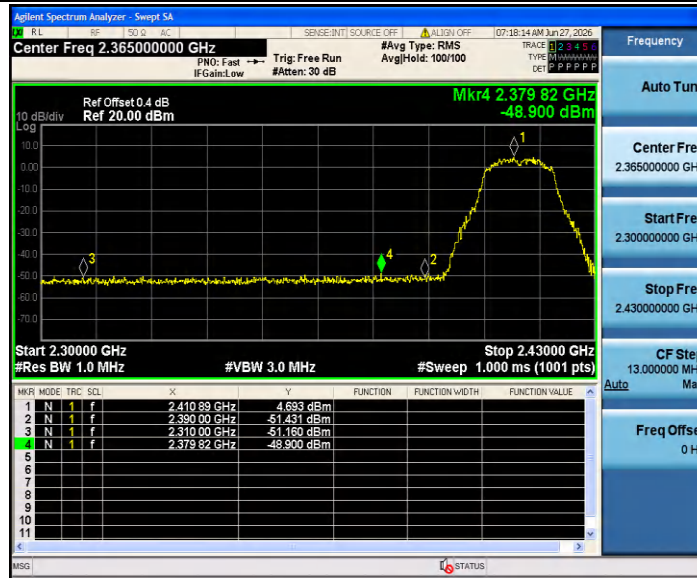
11B_Ant1_High_2462_Peak



11G_Ant1_Low_2412_AV



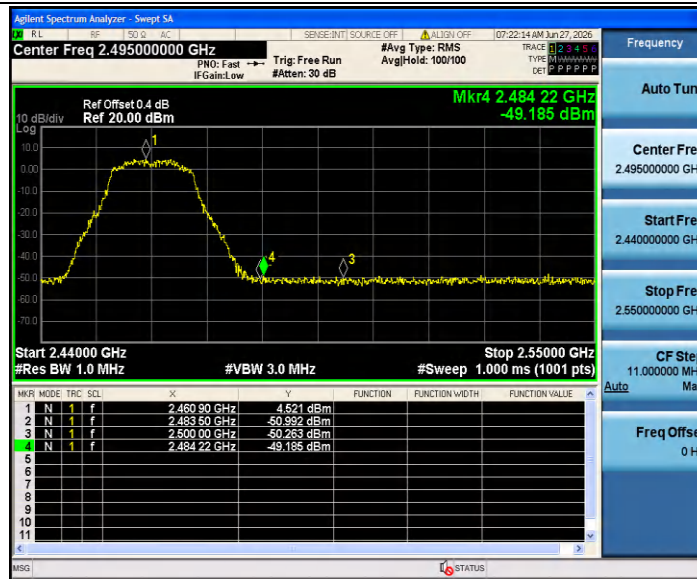
11G_Ant1_Low_2412_Peak



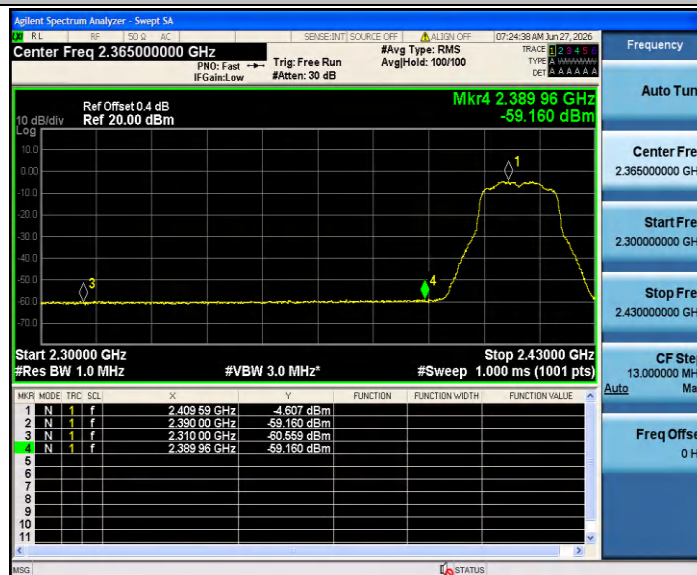
11G_Ant1_High_2462_AV



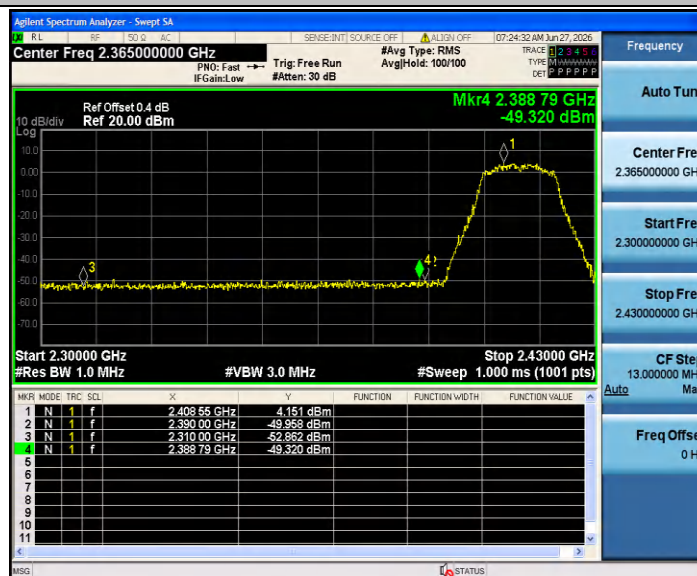
11G_Ant1_High_2462_Peak



11N20SISO_Ant1_Low_2412_AV



11N20SISO_Ant1_Low_2412_Peak



11N20SISO_Ant1_High_2462_AV



11N20SISO_Ant1_High_2462_Peak

