

Appendix B

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: SwitchBot Relay Switch

Test Model: W5502300

Environmental Conditions

Temperature:	23.6°C
Relative Humidity:	54.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

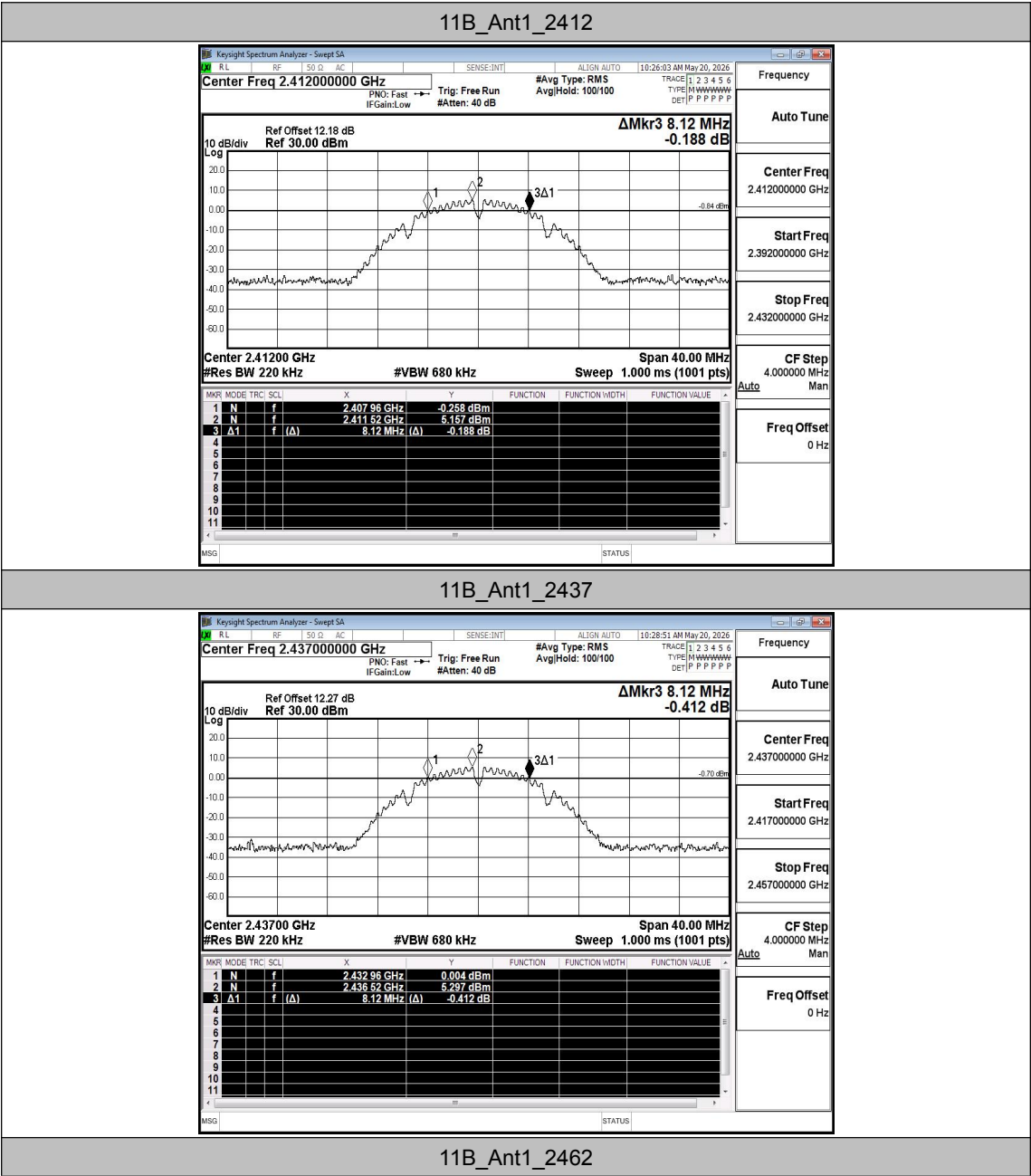
B.1 DTS Bandwidth

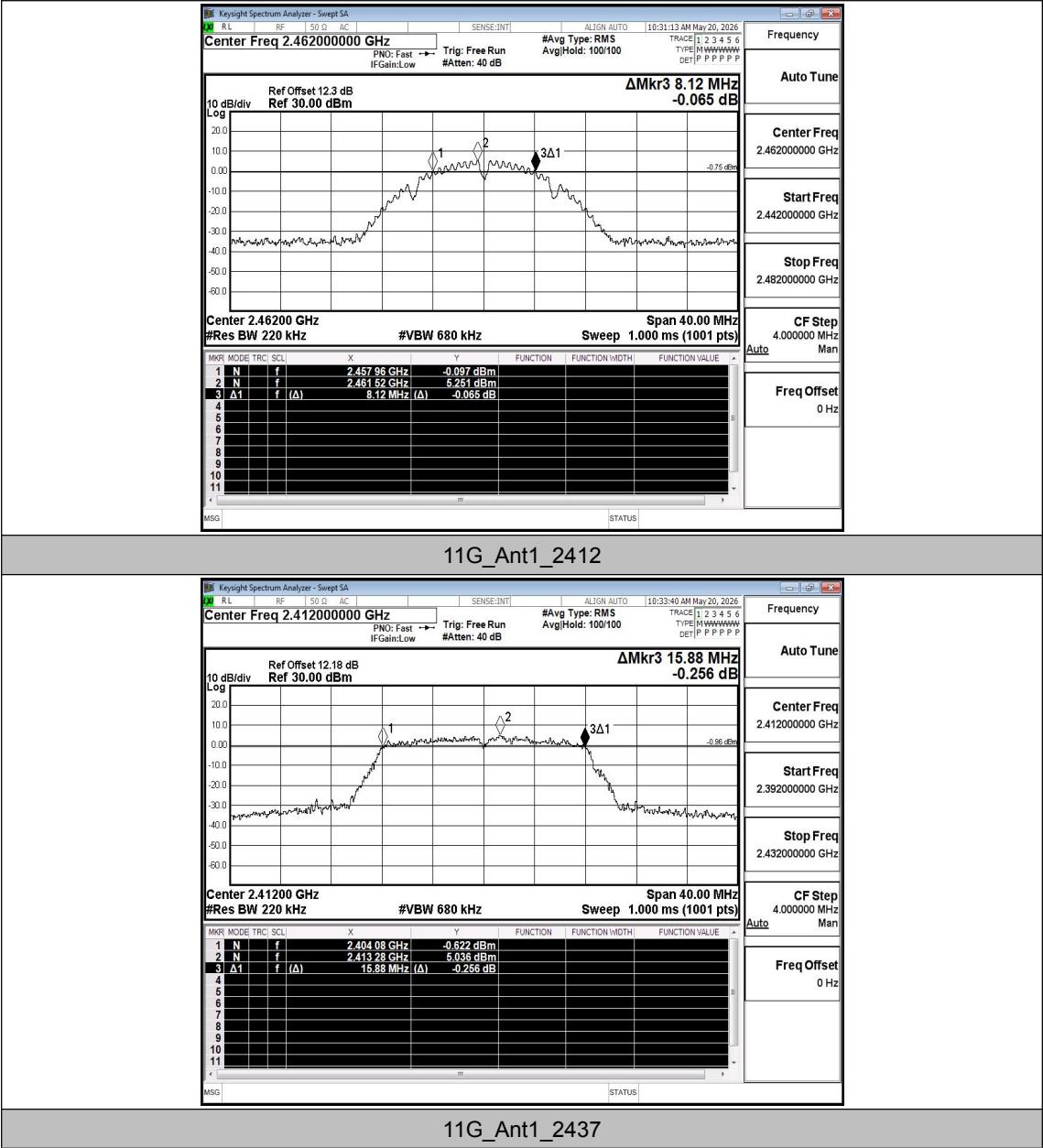
Test Result

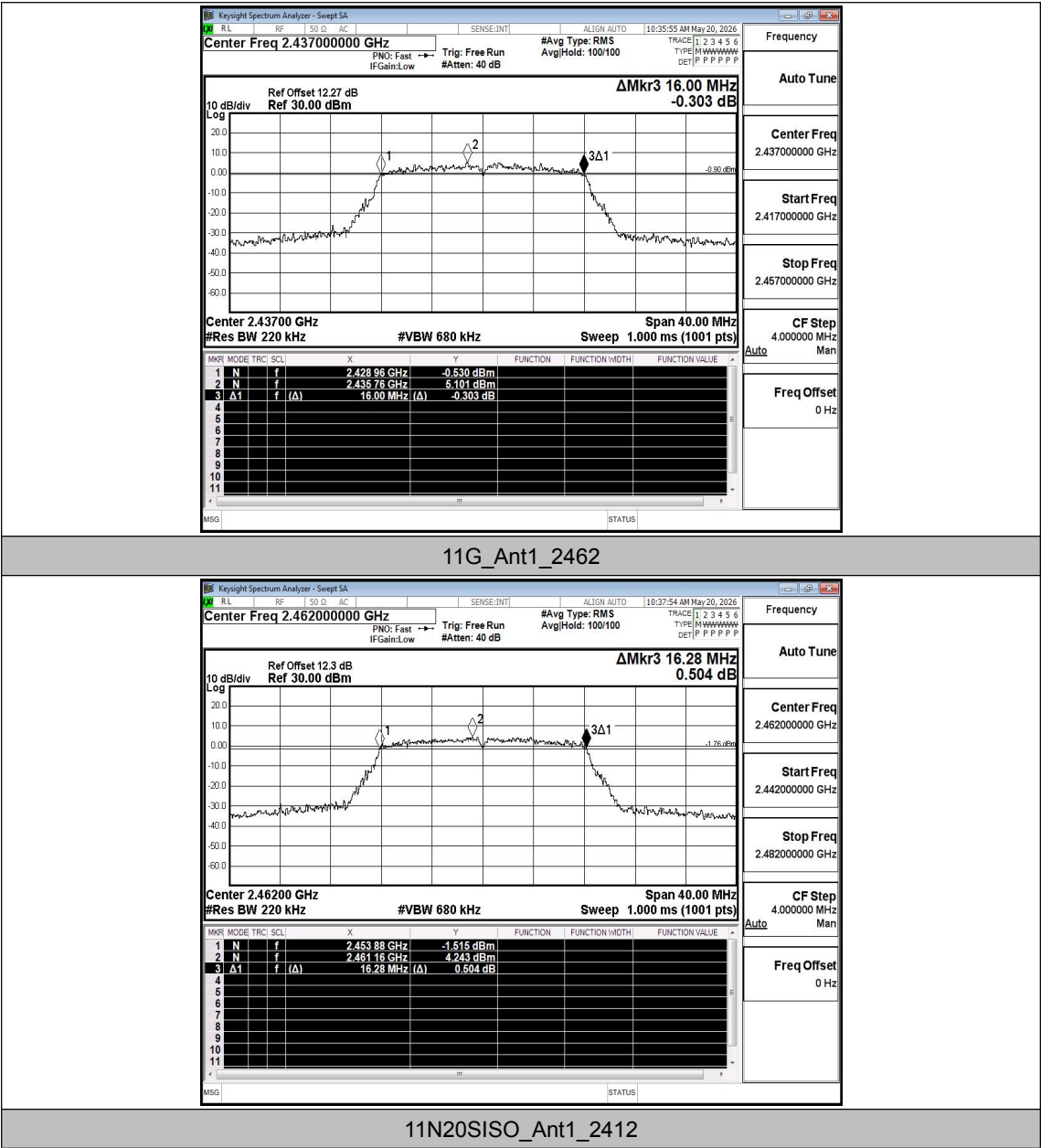
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.120	2407.960	2416.080	0.5	PASS
		2437	8.120	2432.960	2441.080	0.5	PASS
		2462	8.120	2457.960	2466.080	0.5	PASS
11G	Ant1	2412	15.880	2404.080	2419.960	0.5	PASS
		2437	16.000	2428.960	2444.960	0.5	PASS
		2462	16.280	2453.880	2470.160	0.5	PASS
11N20SISO	Ant1	2412	17.240	2403.400	2420.640	0.5	PASS
		2437	17.160	2428.320	2445.480	0.5	PASS
		2462	16.880	2453.680	2470.560	0.5	PASS
11N40SISO	Ant1	2422	35.680	2404.400	2440.080	0.5	PASS
		2437	35.520	2419.240	2454.760	0.5	PASS
		2452	35.520	2434.080	2469.600	0.5	PASS

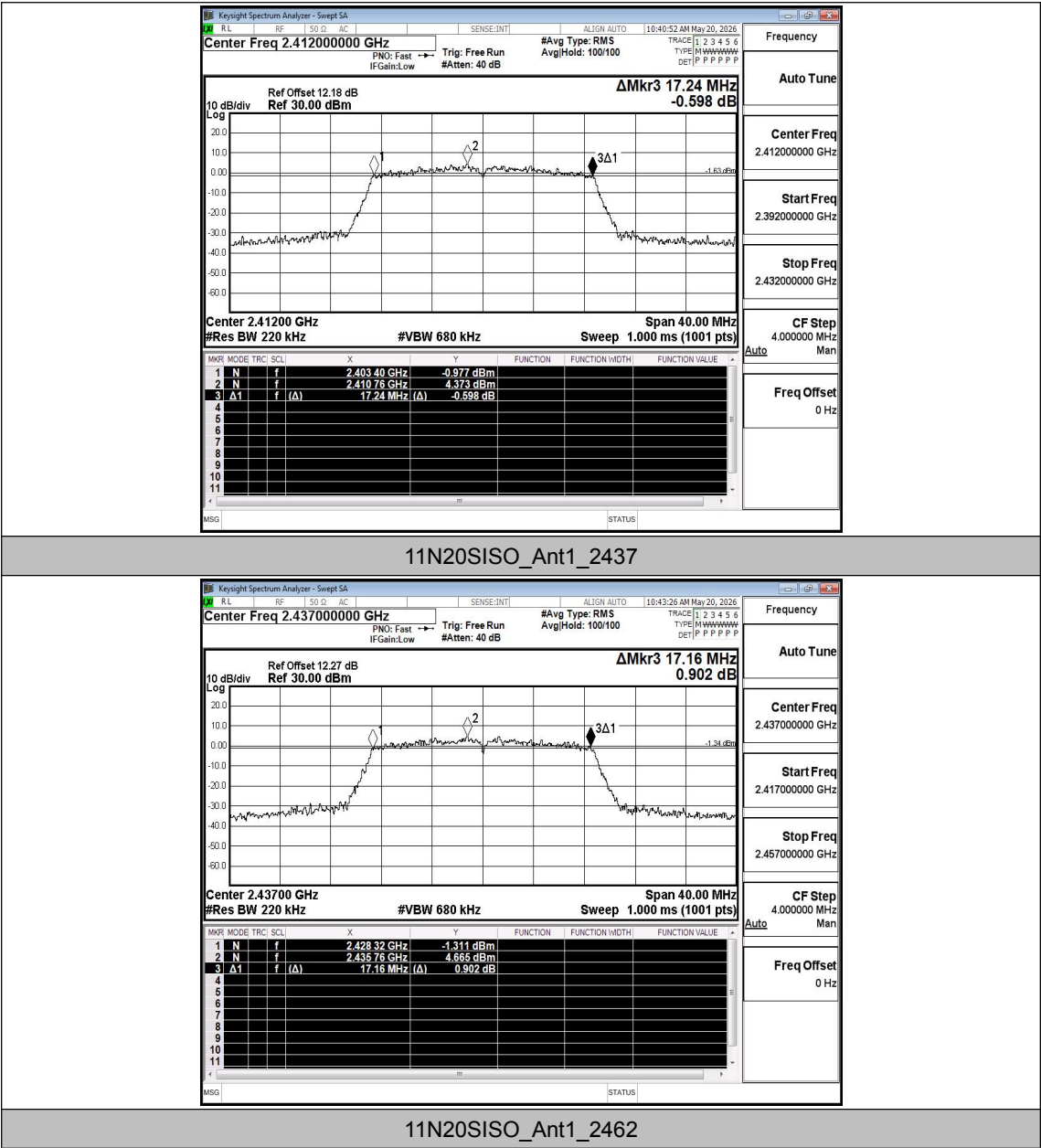
Note :offset=System attenuation +cabal loss

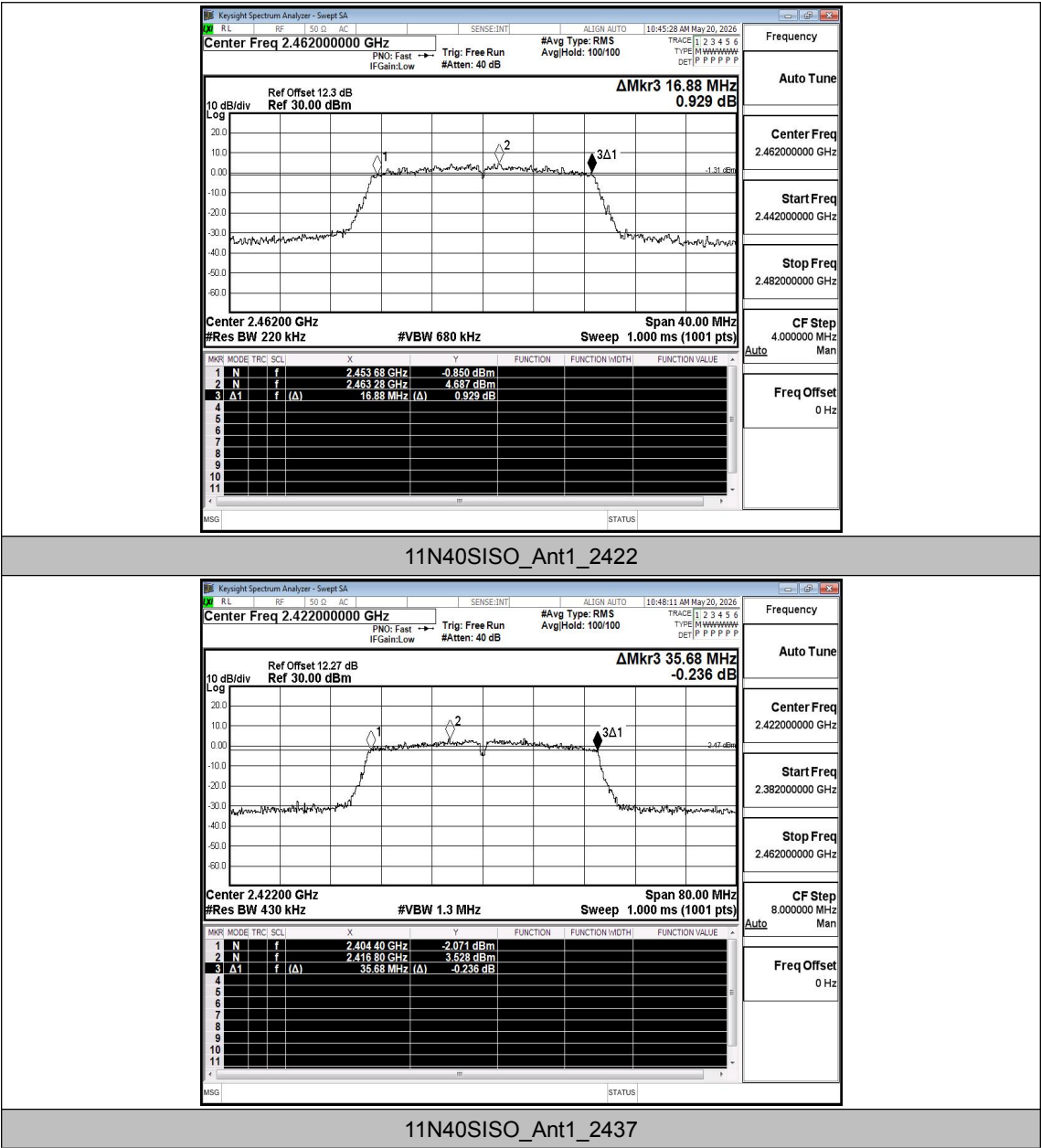
Test Graphs

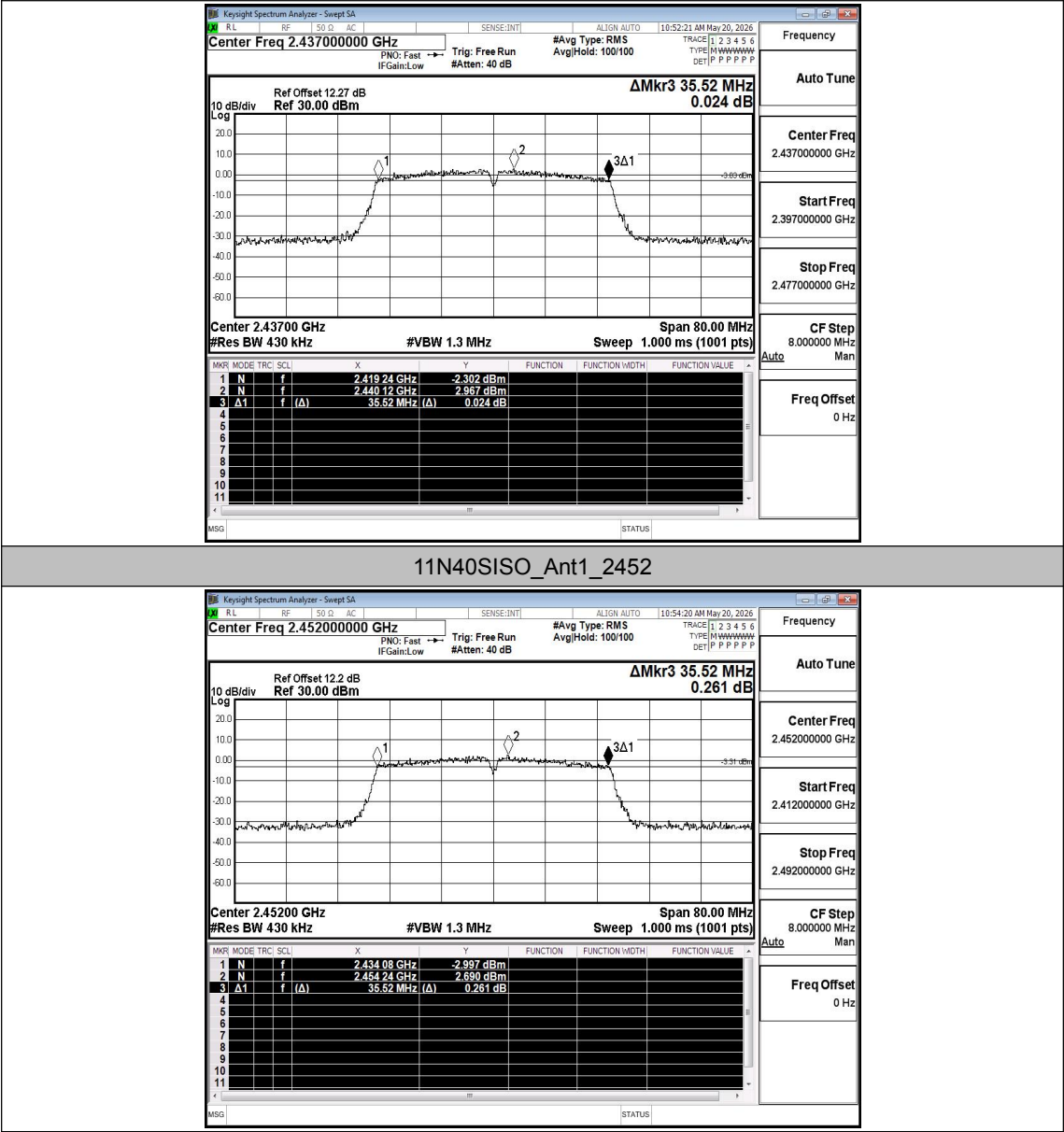












B.2 Maximum Average conducted output power

Test Result Average

TestMode	Antenna	Frequency [MHz]	Measured Power	DC Factor [dB]	AV Power [dBm]	Conducted Limit[dBm]	Verdict
11B	Ant1	2412	12.66	0.02	12.68	≤30.00	PASS
		2437	12.58	0.02	12.60	≤30.00	PASS
		2462	12.74	0.02	12.76	≤30.00	PASS
11G	Ant1	2412	14.66	0.15	14.81	≤30.00	PASS
		2437	14.47	0.15	14.62	≤30.00	PASS
		2462	14.47	0.15	14.62	≤30.00	PASS
11N20SISO	Ant1	2412	13.72	0.13	13.85	≤30.00	PASS
		2437	13.76	0.13	13.89	≤30.00	PASS
		2462	13.63	0.13	13.76	≤30.00	PASS
11N40SISO	Ant1	2422	13.11	0.26	13.37	≤30.00	PASS
		2437	12.68	0.33	13.01	≤30.00	PASS
		2452	11.92	0.26	12.18	≤30.00	PASS

Note :offset=System attenuation +cabel loss

B.4 Maximum power spectral density

Test Result

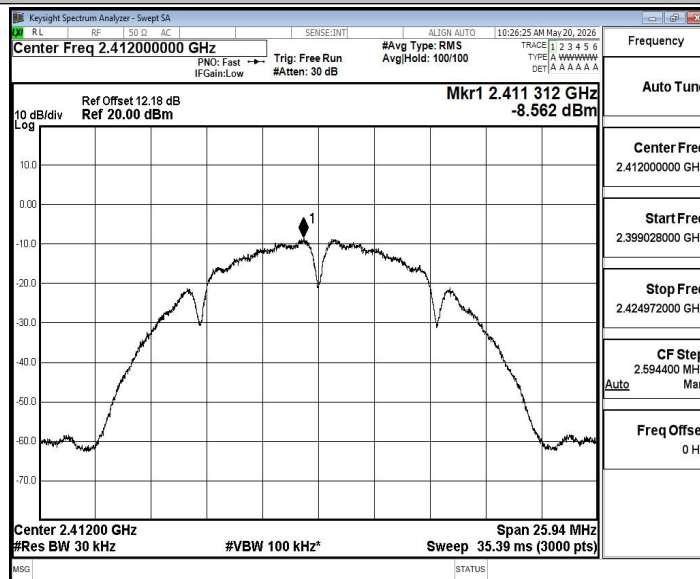
TestMode	Antenna	Frequency[MHz]	Measured PSD [dBm/30kHz]	DC Factor [dB]	Result [dBm/30kHz]	Result [dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-8.56	0.02	-8.54	-18.54	≤8.00	PASS
		2437	-8.57	0.02	-8.55	-18.55	≤8.00	PASS
		2462	-8.35	0.02	-8.33	-18.33	≤8.00	PASS
11G	Ant1	2412	-9.59	0.15	-9.44	-19.44	≤8.00	PASS
		2437	-9.5	0.15	-9.35	-19.35	≤8.00	PASS
		2462	-9.28	0.15	-9.13	-19.13	≤8.00	PASS
11N20SISO	Ant1	2412	-10.12	0.13	-9.99	-19.99	≤8.00	PASS
		2437	-10.24	0.13	-10.11	-20.11	≤8.00	PASS
		2462	-9.91	0.13	-9.78	-19.78	≤8.00	PASS
11N40SISO	Ant1	2422	-13.55	0.26	-13.29	-23.29	≤8.00	PASS
		2437	-14.26	0.33	-13.93	-23.93	≤8.00	PASS
		2452	-14.96	0.26	-14.70	-24.70	≤8.00	PASS

Note :offset=System attenuation +cabal loss

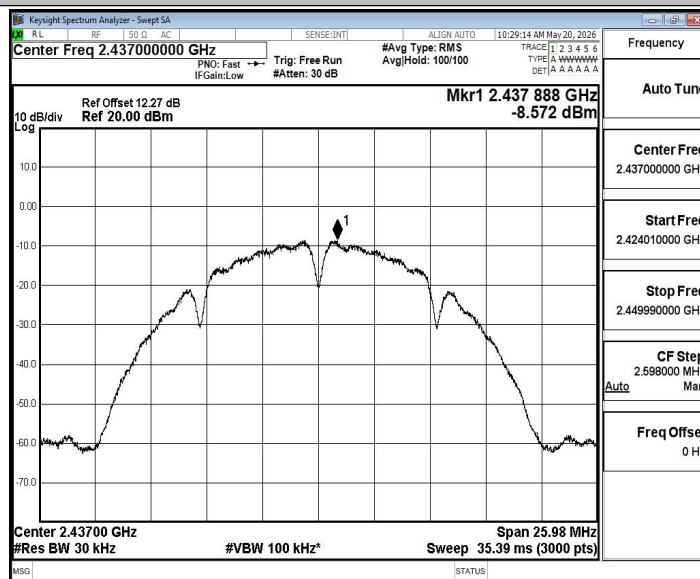
Result[dBm/3kHz]=Result[dBm/30kHz]+10*Log(3/30)

Test Graphs

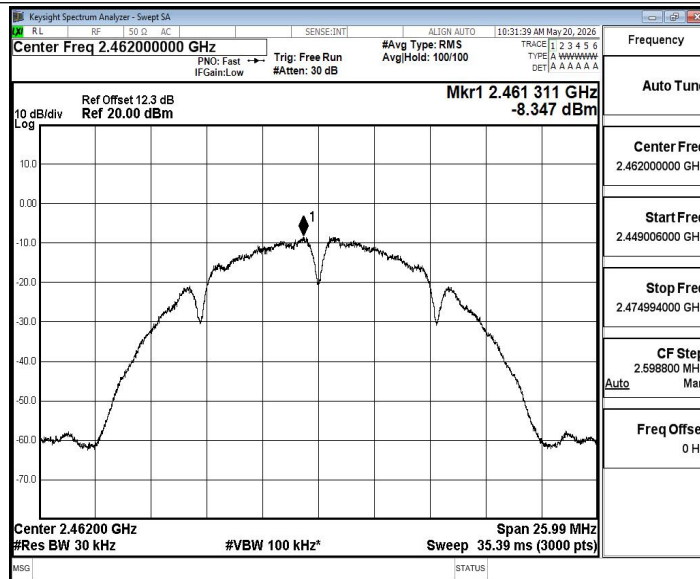
11B_Ant1_2412



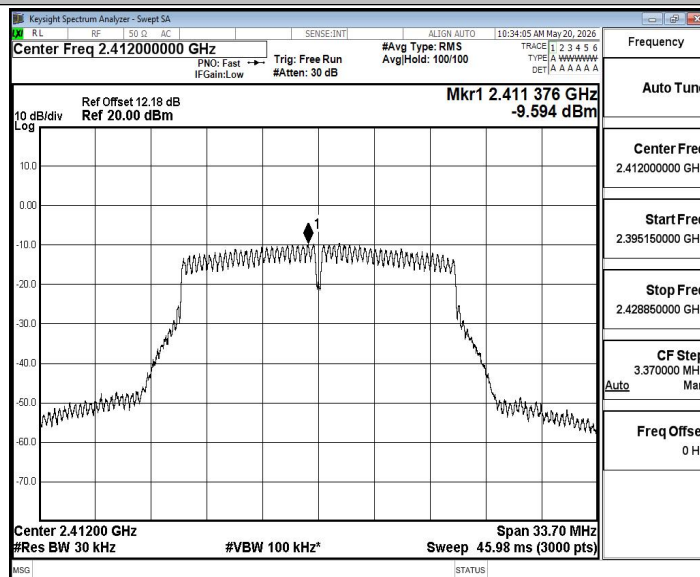
11B_Ant1_2437



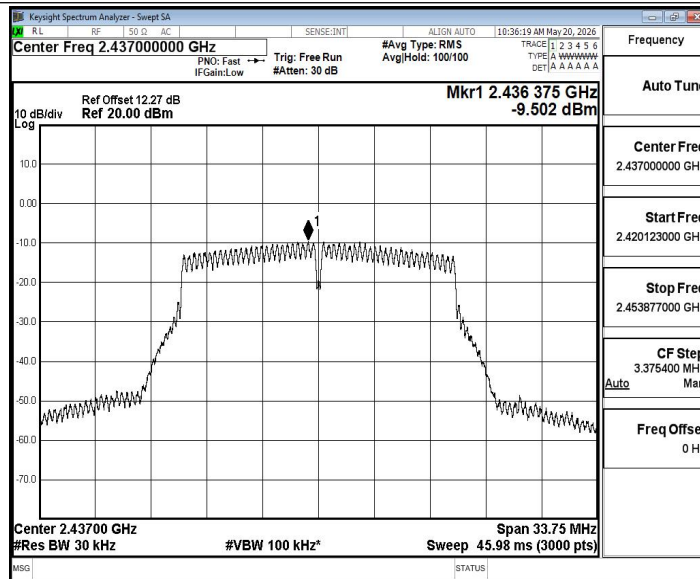
11B_Ant1_2462



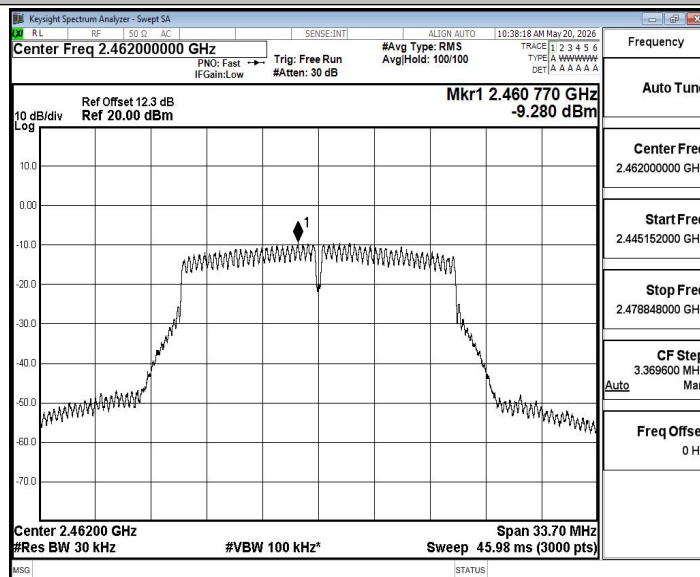
11G_Ant1_2412



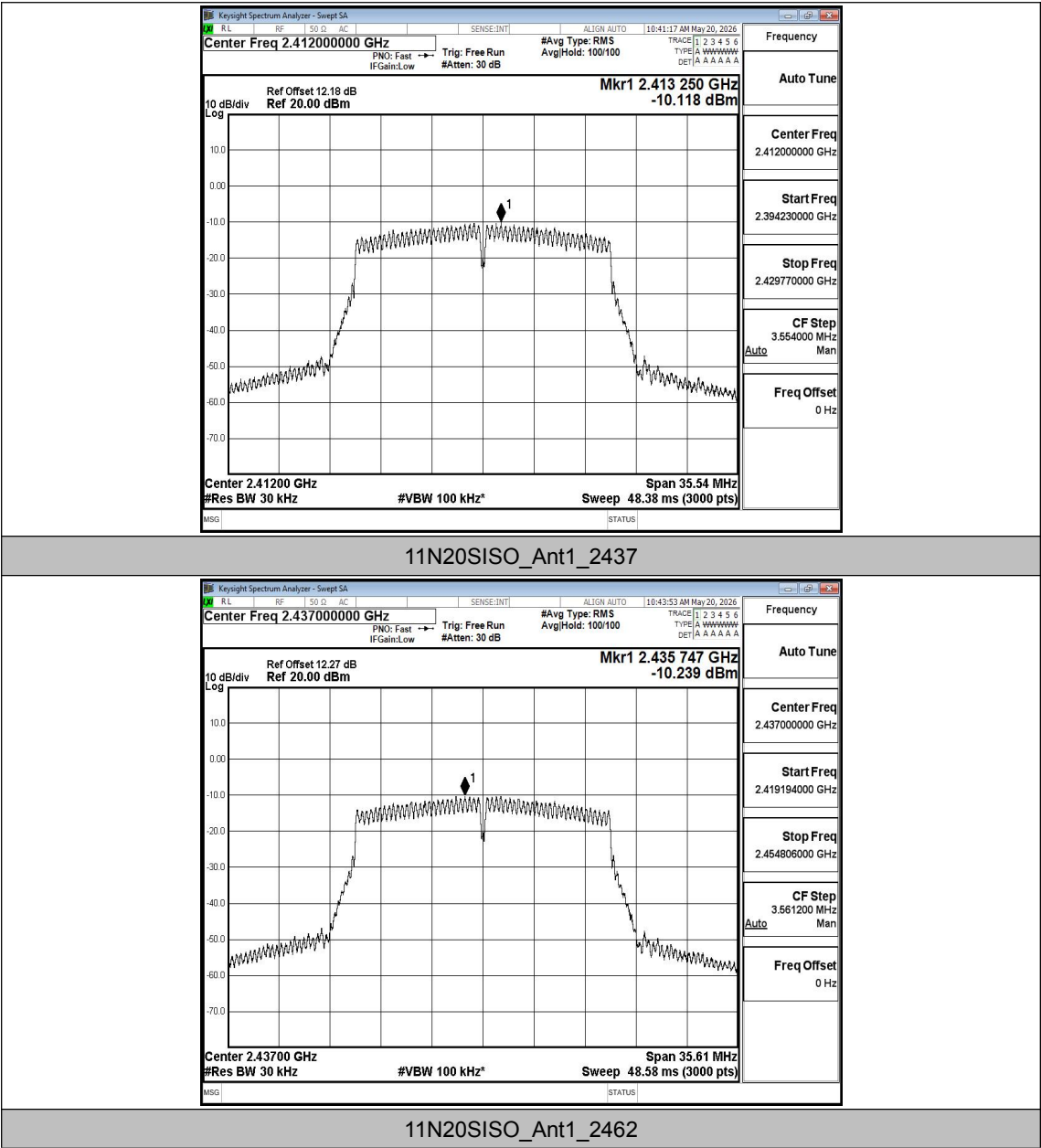
11G_Ant1_2437

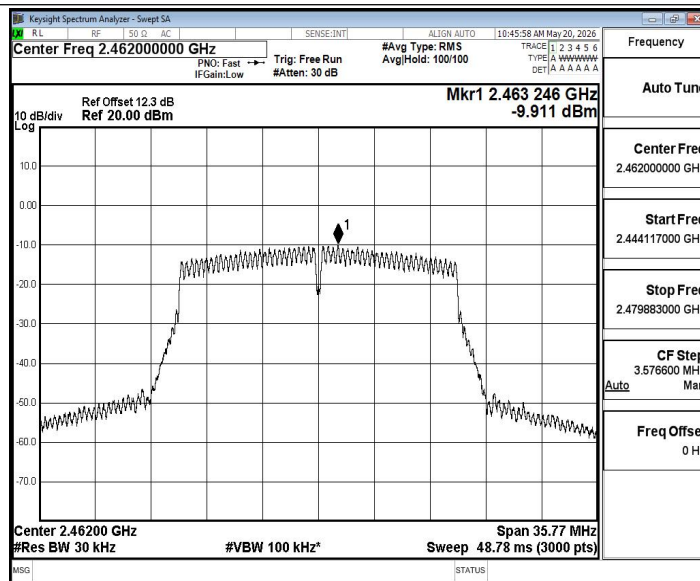


11G_Ant1_2462

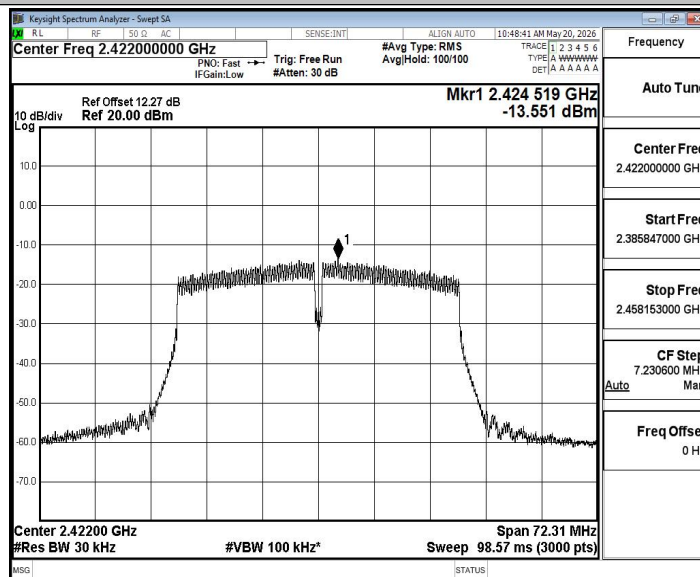


11N20SISO_Ant1_2412

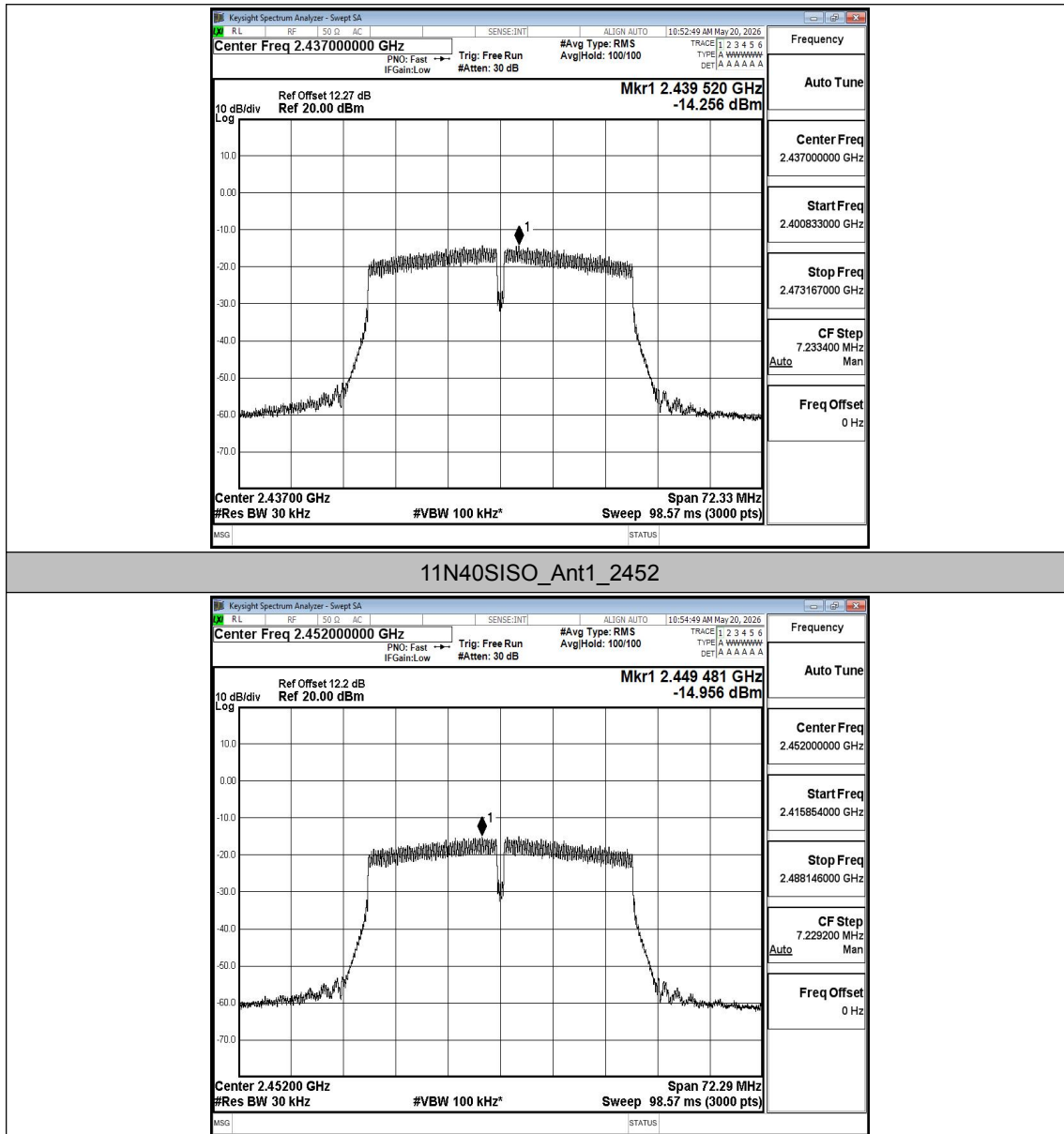




11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



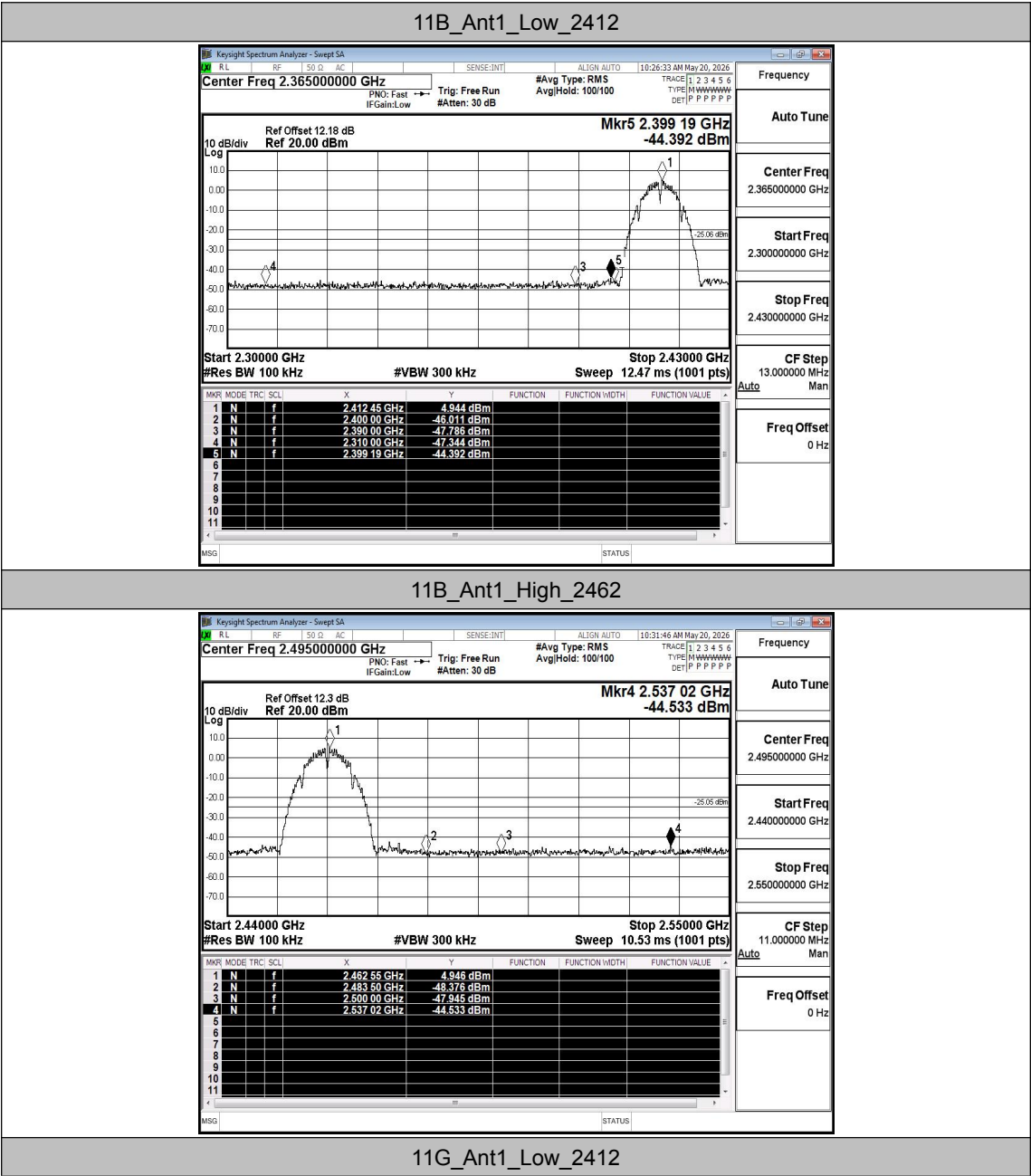
B.5 Band edge measurements

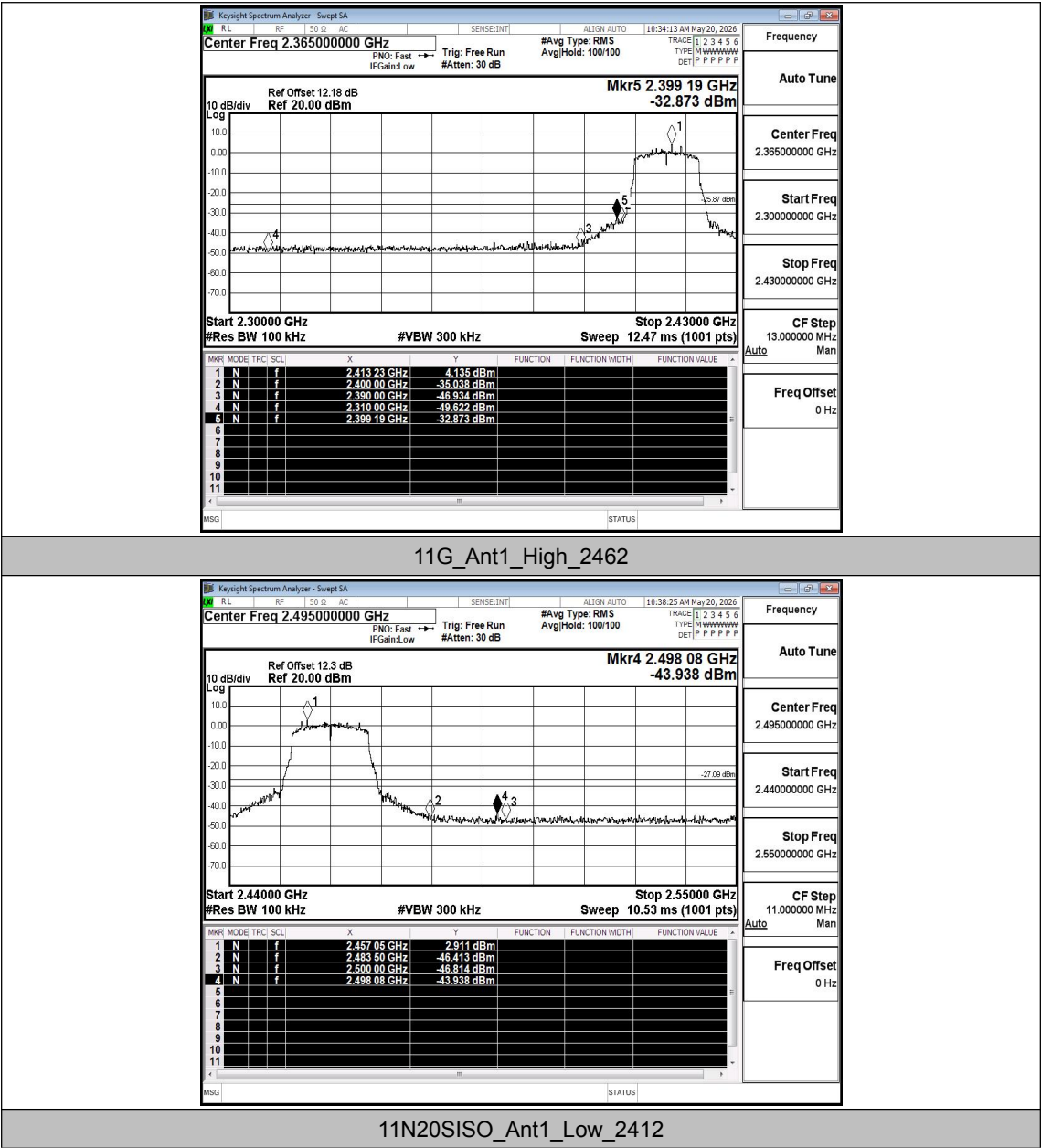
Test Result

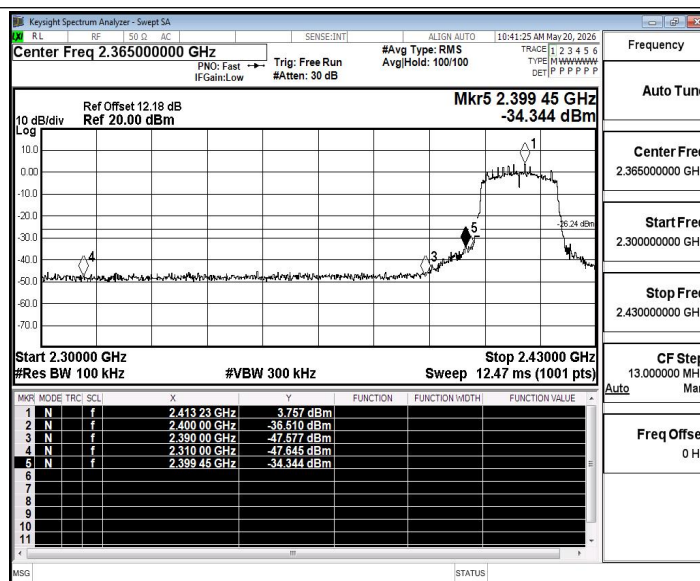
TestMode	Antenna	Channel Name	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	4.94	-44.39	≤-25.06	PASS
		High	2462	4.95	-44.53	≤-25.05	PASS
11G	Ant1	Low	2412	4.14	-32.87	≤-25.87	PASS
		High	2462	2.91	-43.94	≤-27.09	PASS
11N20SISO	Ant1	Low	2412	3.76	-34.34	≤-26.24	PASS
		High	2462	3.25	-44.55	≤-26.75	PASS
11N40SISO	Ant1	Low	2422	0.10	-37.86	≤-29.9	PASS
		High	2452	-1.33	-44.03	≤-31.33	PASS

Note :offset=System attenuation +cable loss

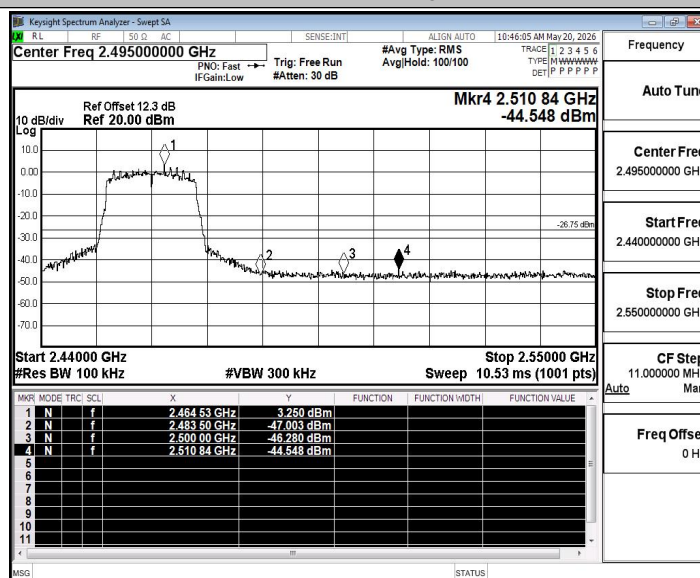
Test Graphs



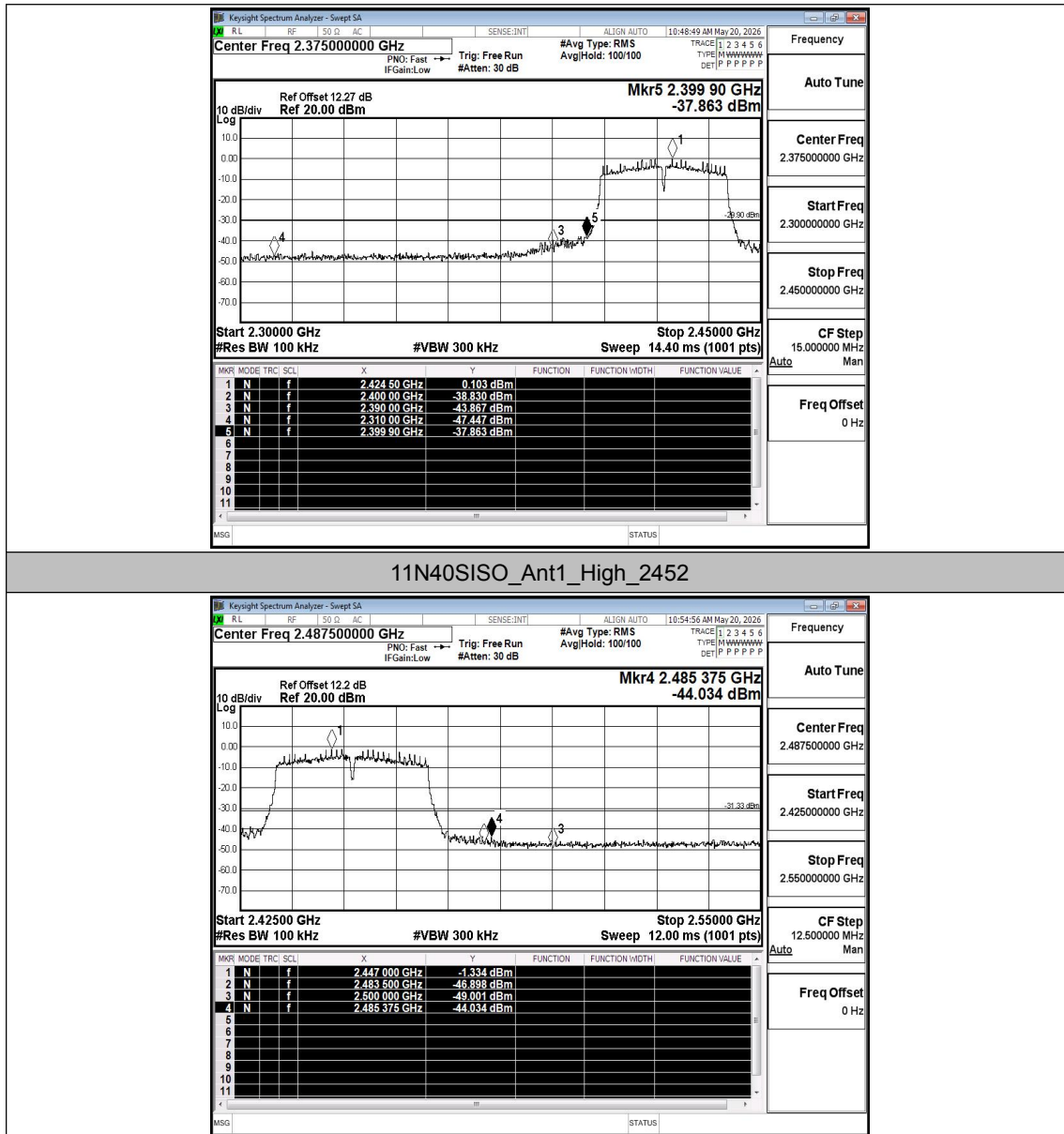




11N20SISO Ant1 High 2462



11N40SISO Ant1 Low 2422



B.6 Conducted Spurious Emission

Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	4.15	4.15	---	PASS
			30~1000	4.15	-69.48	≤-25.85	PASS
			1000~26500	4.15	-38.12	≤-25.85	PASS
		2437	Reference	4.04	4.04	---	PASS
			30~1000	4.04	-68.95	≤-25.96	PASS
			1000~26500	4.04	-37.51	≤-25.96	PASS
		2462	Reference	2.99	2.99	---	PASS
			30~1000	2.99	-68.77	≤-27.01	PASS
			1000~26500	2.99	-37.9	≤-27.01	PASS
11G	Ant1	2412	Reference	2.08	2.08	---	PASS
			30~1000	2.08	-68.73	≤-27.92	PASS
			1000~26500	2.08	-42.03	≤-27.92	PASS
		2437	Reference	2.74	2.74	---	PASS
			30~1000	2.74	-68.32	≤-27.26	PASS
			1000~26500	2.74	-43.53	≤-27.26	PASS
		2462	Reference	3.07	3.07	---	PASS
			30~1000	3.07	-69.35	≤-26.93	PASS
			1000~26500	3.07	-43.22	≤-26.93	PASS
11N20SISO	Ant1	2412	Reference	3.13	3.13	---	PASS
			30~1000	3.13	-68.68	≤-26.87	PASS
			1000~26500	3.13	-43.3	≤-26.87	PASS
		2437	Reference	-0.36	-0.36	---	PASS
			30~1000	-0.36	-68.4	≤-30.36	PASS
			1000~26500	-0.36	-43.24	≤-30.36	PASS
		2462	Reference	1.50	1.50	---	PASS
			30~1000	1.50	-68.87	≤-28.5	PASS
			1000~26500	1.50	-43.43	≤-28.5	PASS
11N40SISO	Ant1	2422	Reference	-0.89	-0.89	---	PASS
			30~1000	-0.89	-68.33	≤-30.89	PASS
			1000~26500	-0.89	-43.51	≤-30.89	PASS
		2437	Reference	-0.69	-0.69	---	PASS
			30~1000	-0.69	-68.85	≤-30.69	PASS
			1000~26500	-0.69	-42.91	≤-30.69	PASS
		2452	Reference	-2.04	-2.04	---	PASS
			30~1000	-2.04	-69.14	≤-32.04	PASS

			1000~26500	-2.04	-43.34	≤ -32.04	PASS
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Note :Regarding the spurious emissions from 30MHz to 26.5GHz, the cable lose have been set in the CORREC' of the Spectrum Analyzer during the test.

Test Graphs

