

Appendix A

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Electric Toothbrush

Test Model: DuoBrush Connect

Environmental Conditions

Temperature:	23.2°C
Relative Humidity:	54.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

A.1 DTS Bandwidth

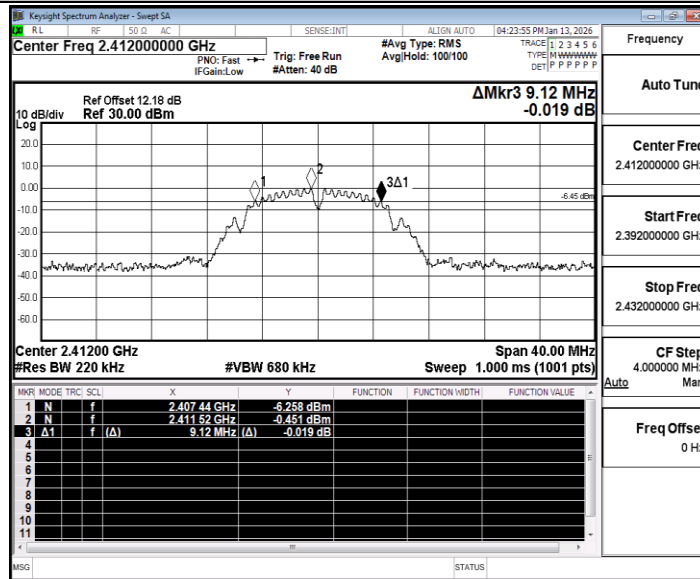
Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.120	2407.440	2416.560	0.5	PASS
		2437	8.680	2432.920	2441.600	0.5	PASS
		2462	8.680	2457.400	2466.080	0.5	PASS
11G	Ant1	2412	16.360	2403.840	2420.200	0.5	PASS
		2437	16.280	2428.920	2445.200	0.5	PASS
		2462	16.120	2454.040	2470.160	0.5	PASS
11N20SISO	Ant1	2412	17.480	2403.280	2420.760	0.5	PASS
		2437	17.200	2428.240	2445.440	0.5	PASS
		2462	17.160	2453.240	2470.400	0.5	PASS

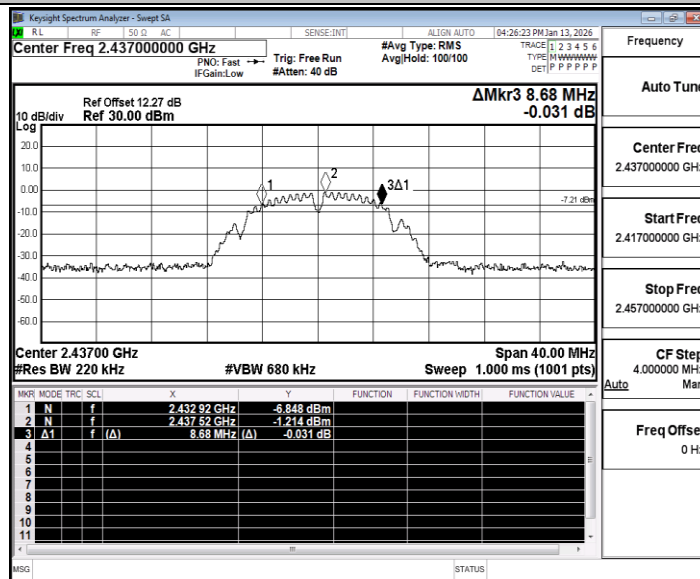
Note :offset=System attenuation +cabal loss

Test Graphs

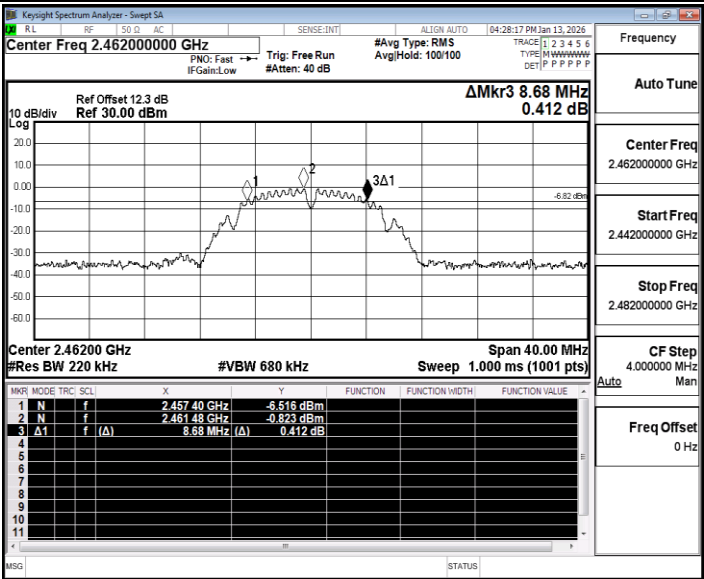
11B_Ant1_2412



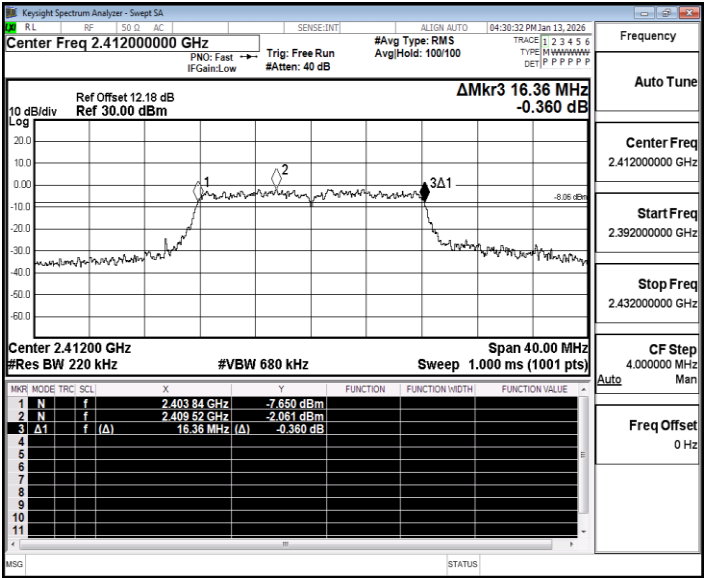
11B_Ant1_2437



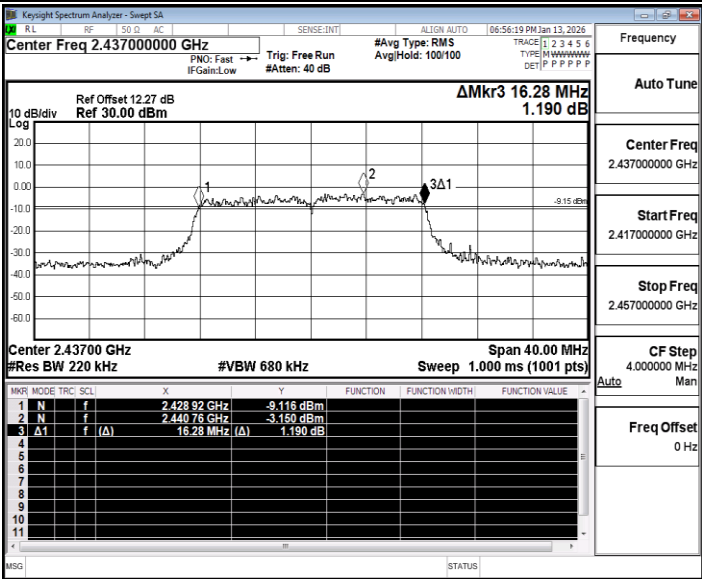
11B_Ant1_2462



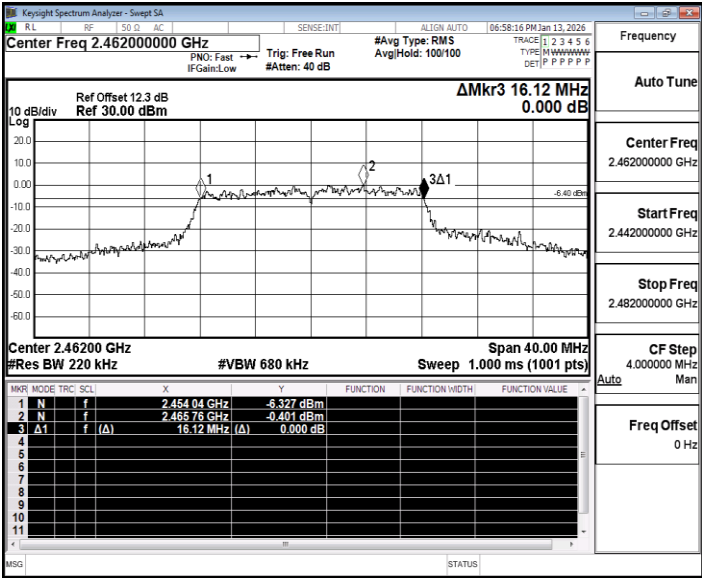
11G_Ant1_2412



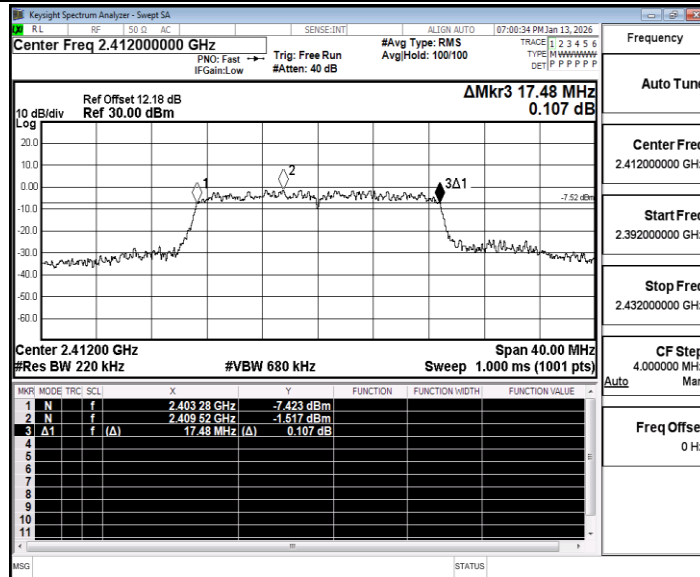
11G_Ant1_2437



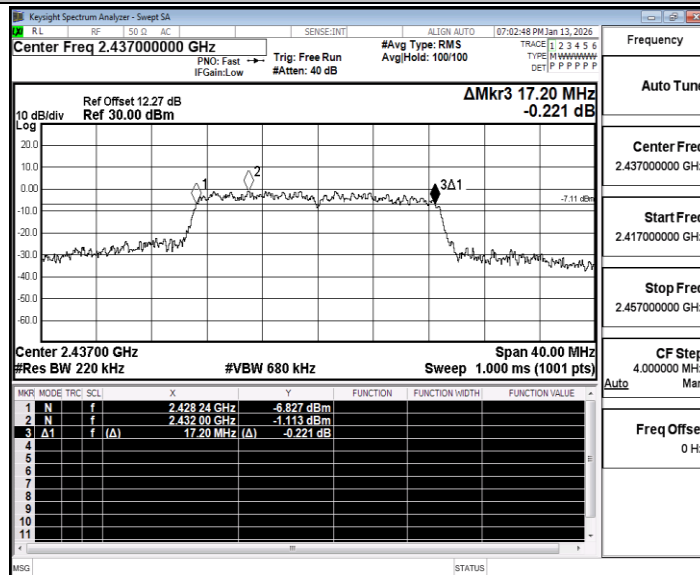
11G_Ant1_2462



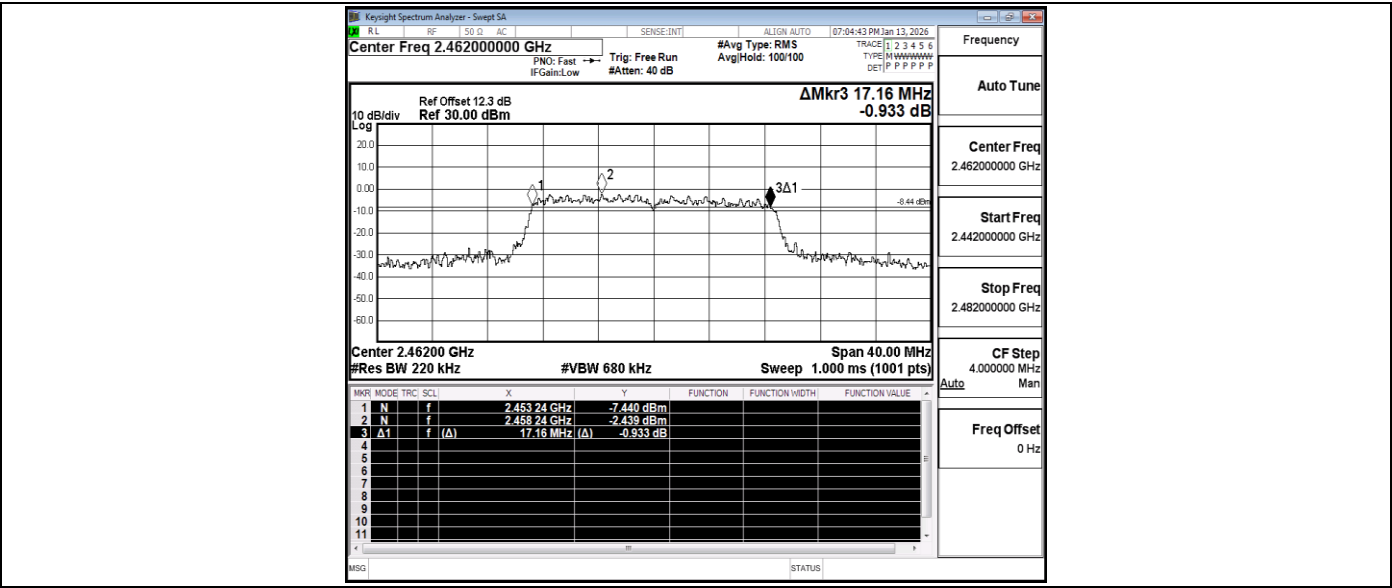
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



A.2 Maximum Average conducted output power

Test Result Average

Test Mode	Antenna	Frequency[MHz]	Average power [dBm]	Duty Cycle [%]	DC Factor [dB]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	7.35	92.50	0.34	7.69	≤30.00	PASS
		2437	6.69	92.41	0.34	7.03	≤30.00	PASS
		2462	6.99	92.41	0.34	7.33	≤30.00	PASS
11G	Ant1	2412	6.25	66.67	1.76	8.01	≤30.00	PASS
		2437	4.72	66.67	1.76	6.48	≤30.00	PASS
		2462	5.93	66.67	1.76	7.69	≤30.00	PASS
11N20SISO	Ant1	2412	6.55	66.67	1.76	8.31	≤30.00	PASS
		2437	6.55	64.71	1.89	8.44	≤30.00	PASS
		2462	5.59	66.67	1.76	7.35	≤30.00	PASS

Note :offset=System attenuation +cabal loss

A.3 Maximum power spectral density

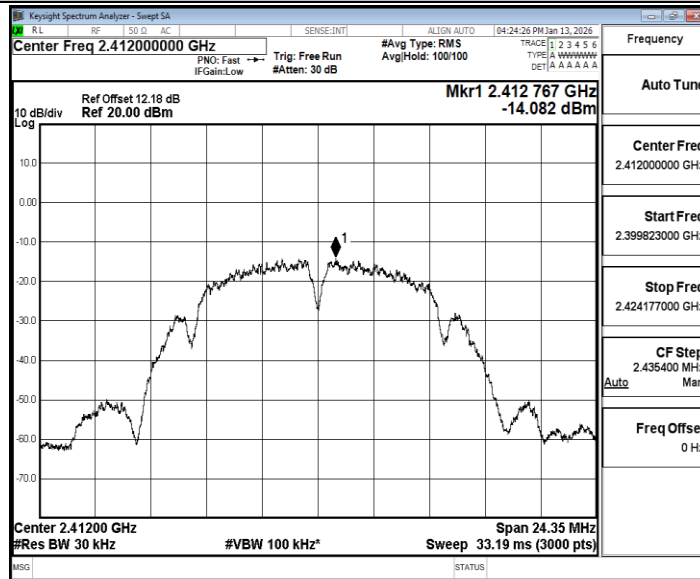
Test Result

TestMode	Antenna	Frequency[MHz]	Measured PSD [dBm/30kHz]	DC Factor [dB]	Result[dBm/30kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-14.08	0.34	-13.74	≤8.00	PASS
		2437	-14.7	0.34	-14.36	≤8.00	PASS
		2462	-14.41	0.34	-14.07	≤8.00	PASS
11G	Ant1	2412	-15.67	1.76	-13.91	≤8.00	PASS
		2437	-16.74	1.76	-14.98	≤8.00	PASS
		2462	-13.93	1.76	-12.17	≤8.00	PASS
11N20SISO	Ant1	2412	-15.09	1.76	-13.33	≤8.00	PASS
		2437	-14.77	1.89	-12.88	≤8.00	PASS
		2462	-16.31	1.76	-14.55	≤8.00	PASS

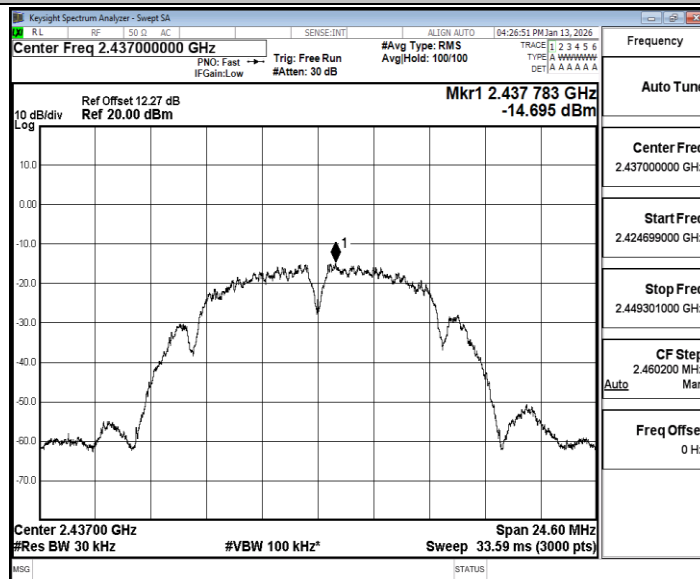
Note :offset=System attenuation +cable loss

Test Graphs

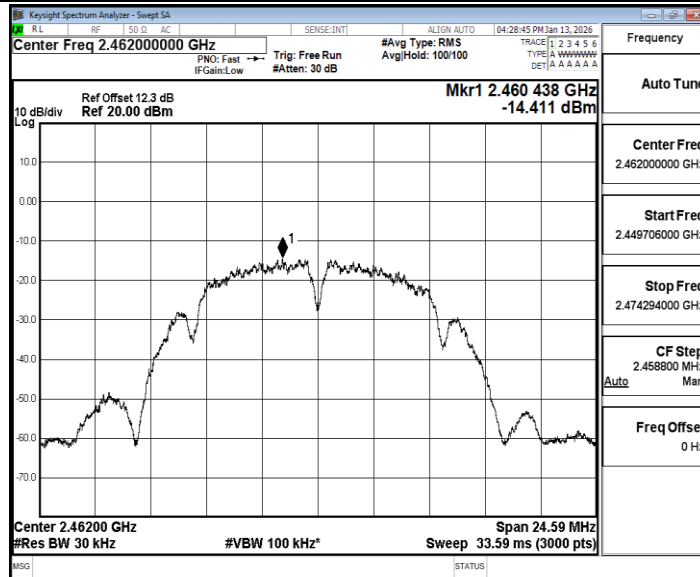
11B_Ant1_2412



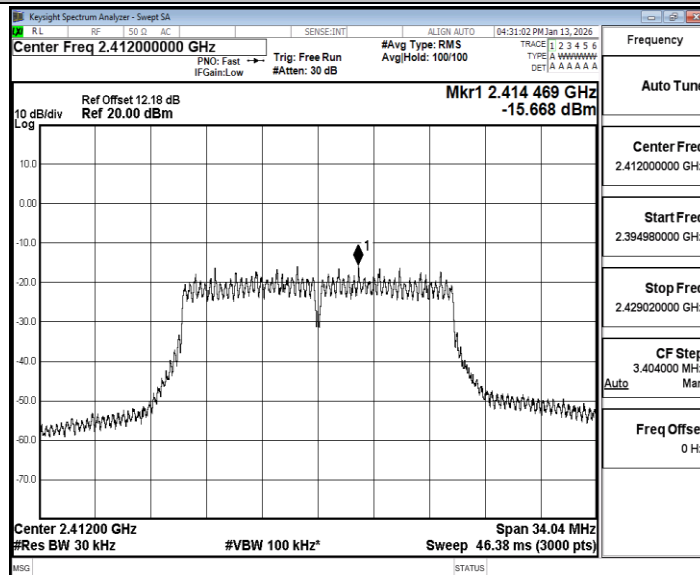
11B_Ant1_2437



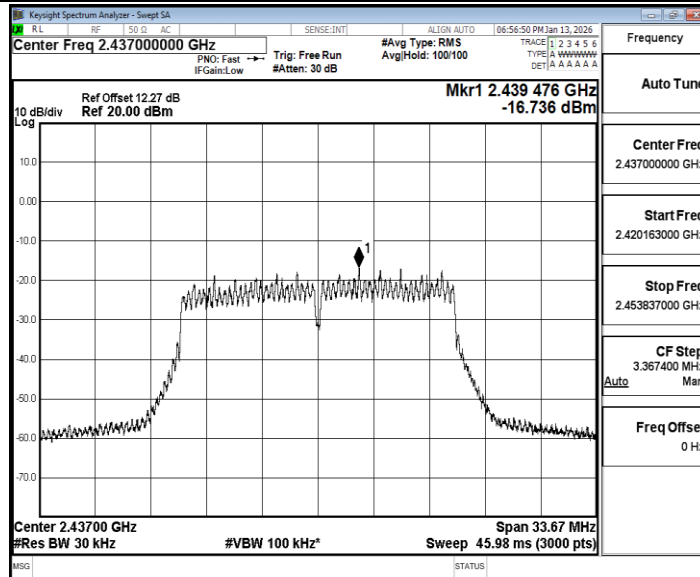
11B_Ant1_2462



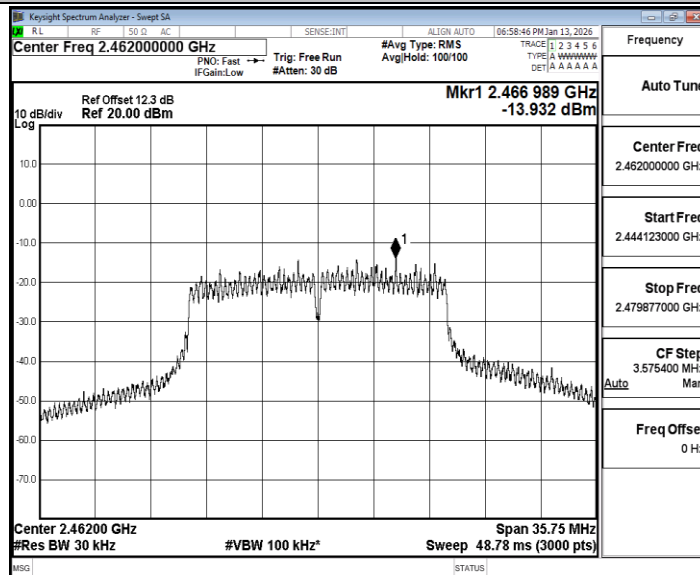
11G_Ant1_2412



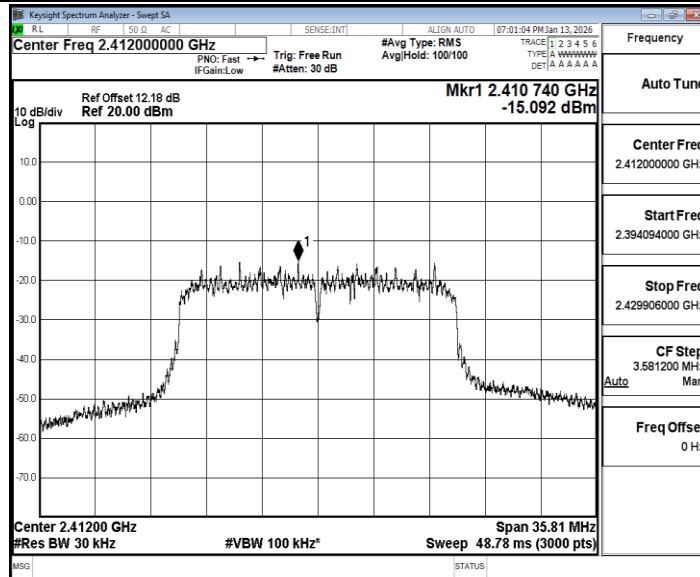
11G_Ant1_2437



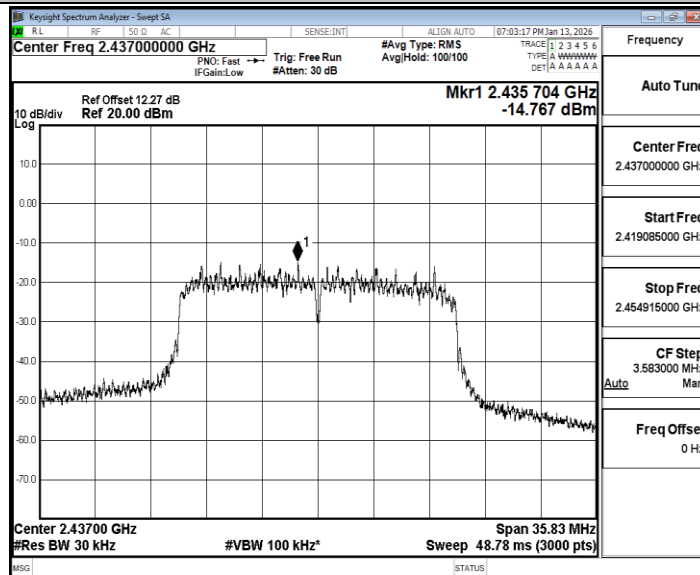
11G_Ant1_2462



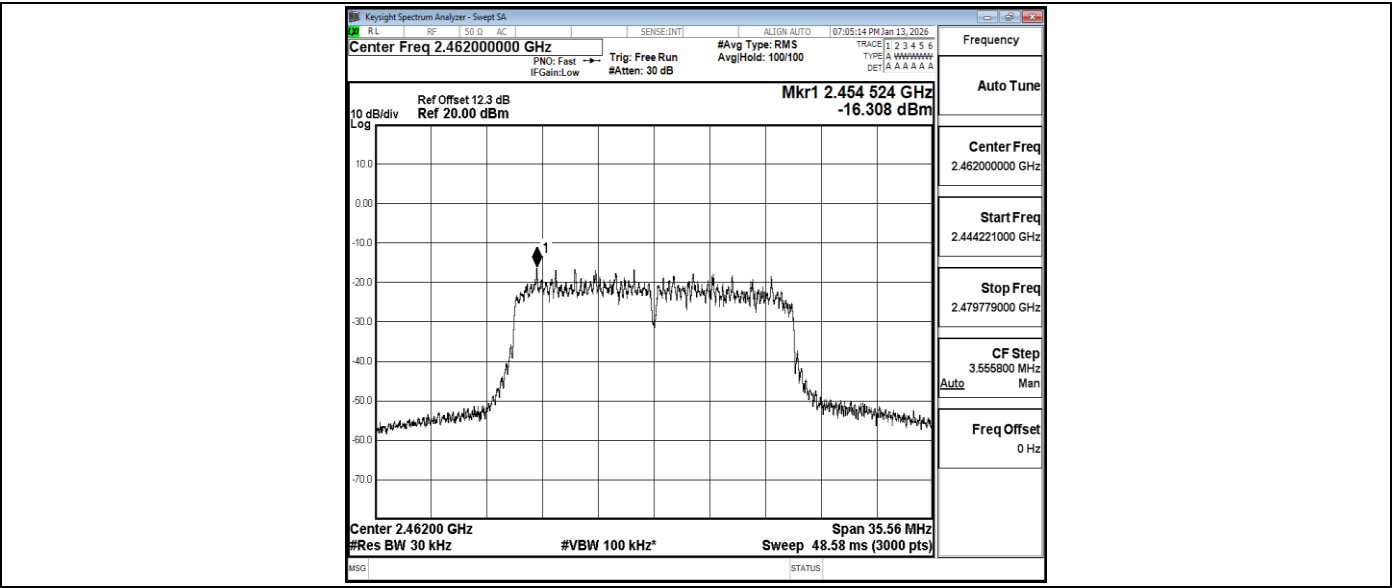
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



A.4 Band edge measurements

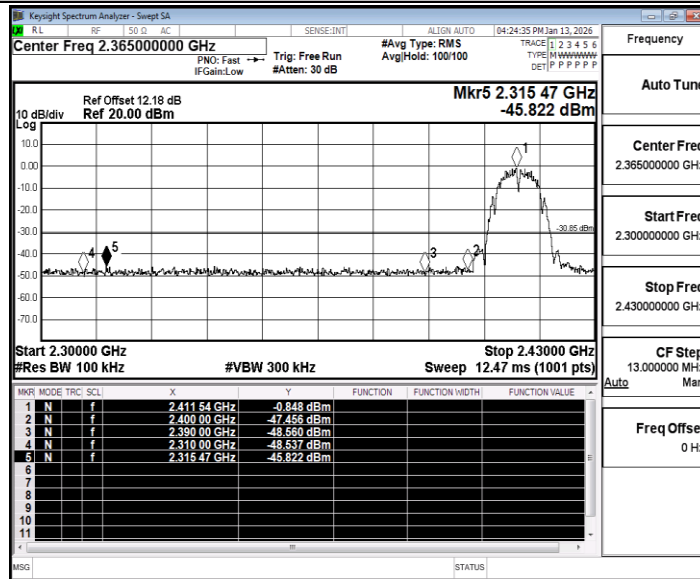
Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	-0.85	-45.82	≤ -30.85	PASS
		High	2462	-1.32	-44.64	≤ -31.32	PASS
11G	Ant1	Low	2412	-2.91	-35.64	≤ -32.91	PASS
		High	2462	-1.13	-38.47	≤ -31.13	PASS
11N20SISO	Ant1	Low	2412	-2.53	-32.66	≤ -32.53	PASS
		High	2462	-3.59	-43.21	≤ -33.59	PASS

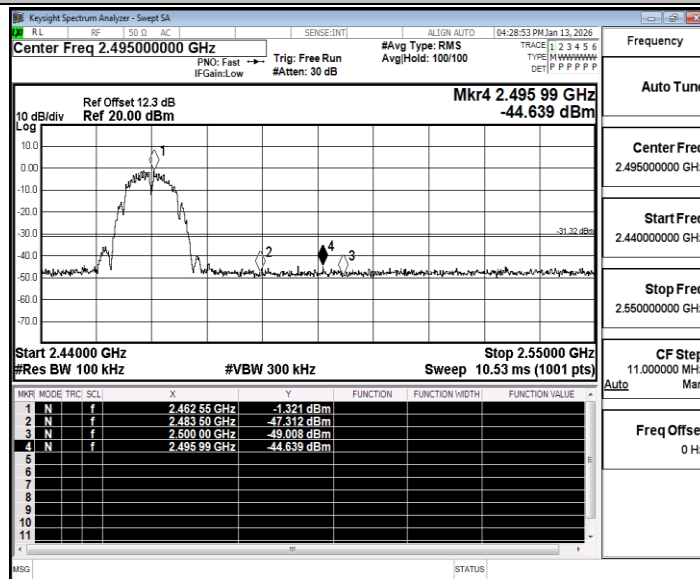
Note :offset=System attenuation +cabal loss

Test Graphs

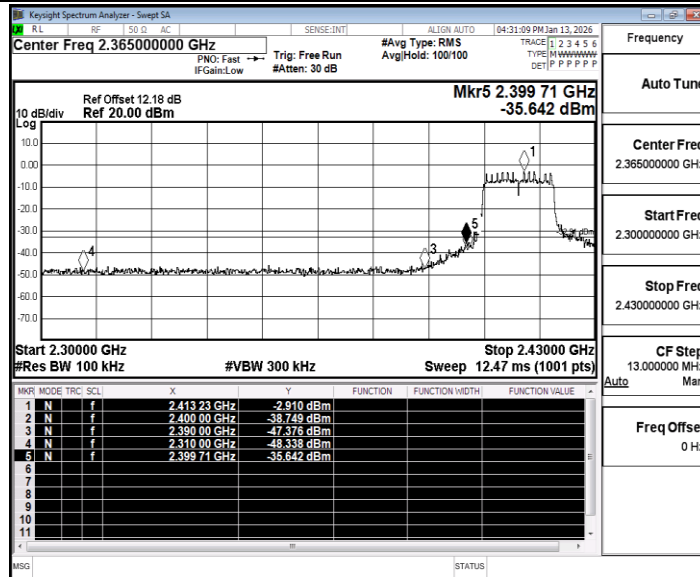
11B_Ant1_Low_2412



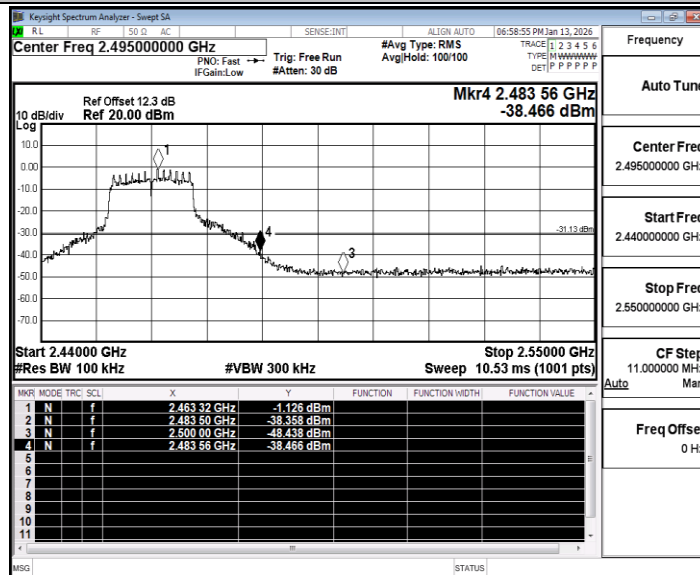
11B_Ant1_High_2462



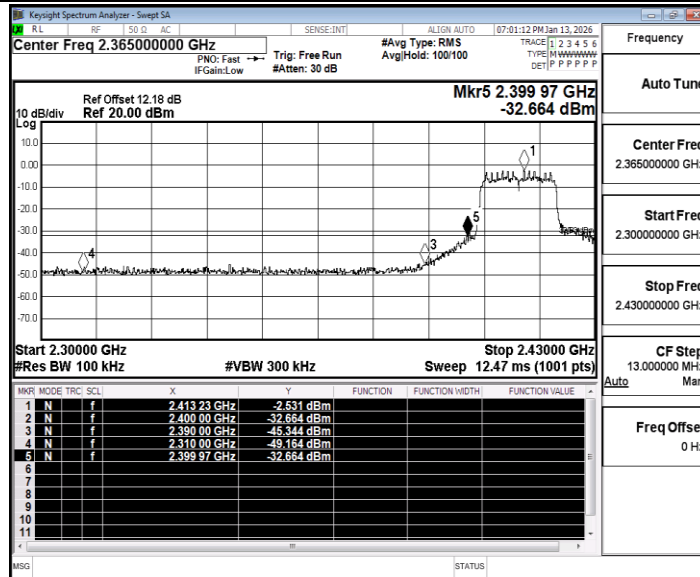
11G_Ant1_Low_2412



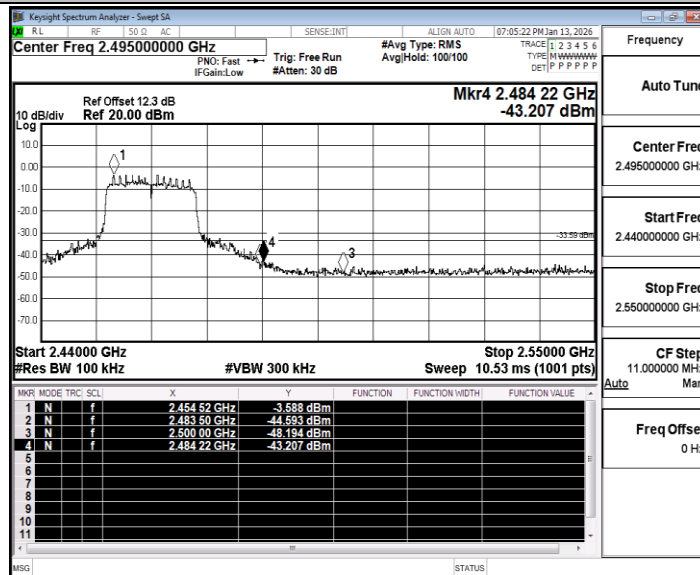
11G_Ant1_High_2462



11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_High_2462



A.5 Conducted Spurious Emission

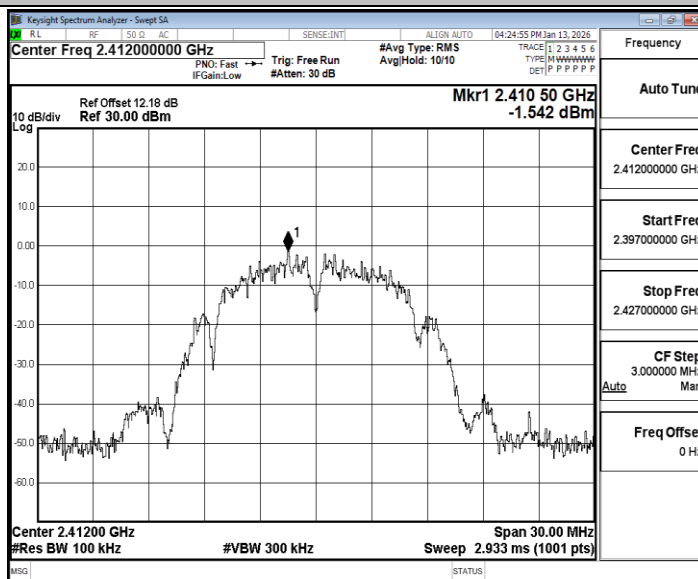
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	-1.54	-1.54	---	PASS
			30~1000	-1.54	-46.54	≤-31.54	PASS
			1000~26500	-1.54	-54.93	≤-31.54	PASS
		2437	Reference	-2.91	-2.91	---	PASS
			30~1000	-2.91	-47.9	≤-32.91	PASS
			1000~26500	-2.91	-54.04	≤-32.91	PASS
		2462	Reference	-2.66	-2.66	---	PASS
			30~1000	-2.66	-48.13	≤-32.66	PASS
			1000~26500	-2.66	-54.43	≤-32.66	PASS
11G	Ant1	2412	Reference	-3.23	-3.23	---	PASS
			30~1000	-3.23	-49.31	≤-33.23	PASS
			1000~26500	-3.23	-54.74	≤-33.23	PASS
		2437	Reference	-4.63	-4.63	---	PASS
			30~1000	-4.63	-49.76	≤-34.63	PASS
			1000~26500	-4.63	-55.36	≤-34.63	PASS
		2462	Reference	-1.82	-1.82	---	PASS
			30~1000	-1.82	-51.99	≤-31.82	PASS
			1000~26500	-1.82	-55.04	≤-31.82	PASS
11N20SISO	Ant1	2412	Reference	-3.01	-3.01	---	PASS
			30~1000	-3.01	-50.85	≤-33.01	PASS
			1000~26500	-3.01	-54.43	≤-33.01	PASS
		2437	Reference	-2.12	-2.12	---	PASS
			30~1000	-2.12	-49.54	≤-32.12	PASS
			1000~26500	-2.12	-54.82	≤-32.12	PASS
		2462	Reference	-3.67	-3.67	---	PASS
			30~1000	-3.67	-49.02	≤-33.67	PASS
			1000~26500	-3.67	-54.16	≤-33.67	PASS

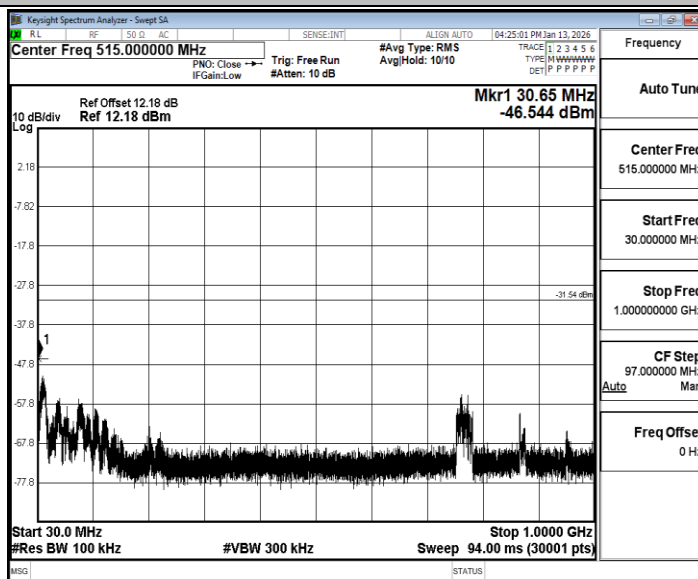
Note : Regarding the spurious emissions from 30MHz to 26.5GHz, the cable lose have been set in the CORREC' of the Spectrum Analyzer during the test.

Test Graphs

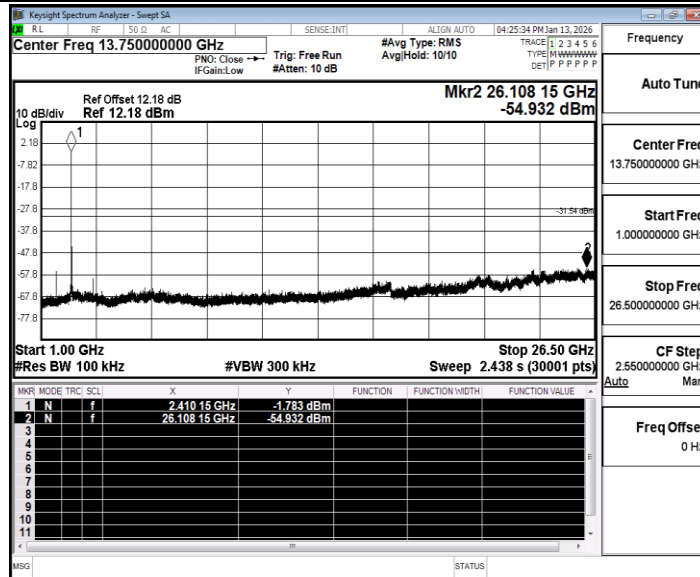
11B_Ant1_2412_0~Reference



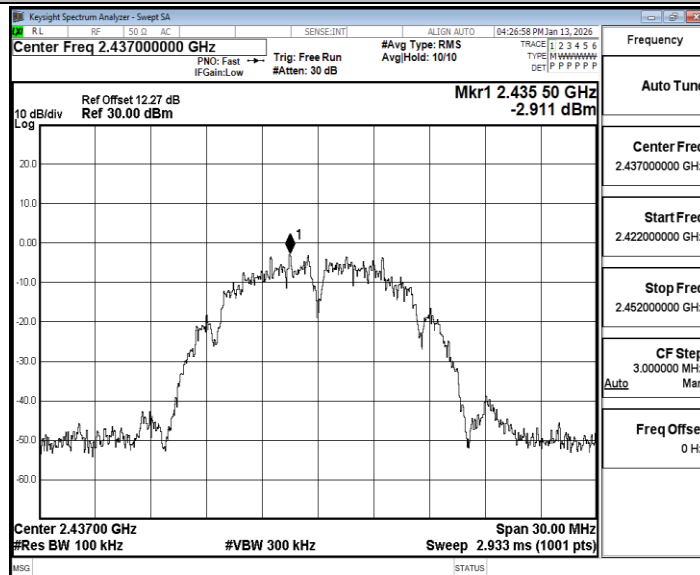
11B_Ant1_2412_30~1000



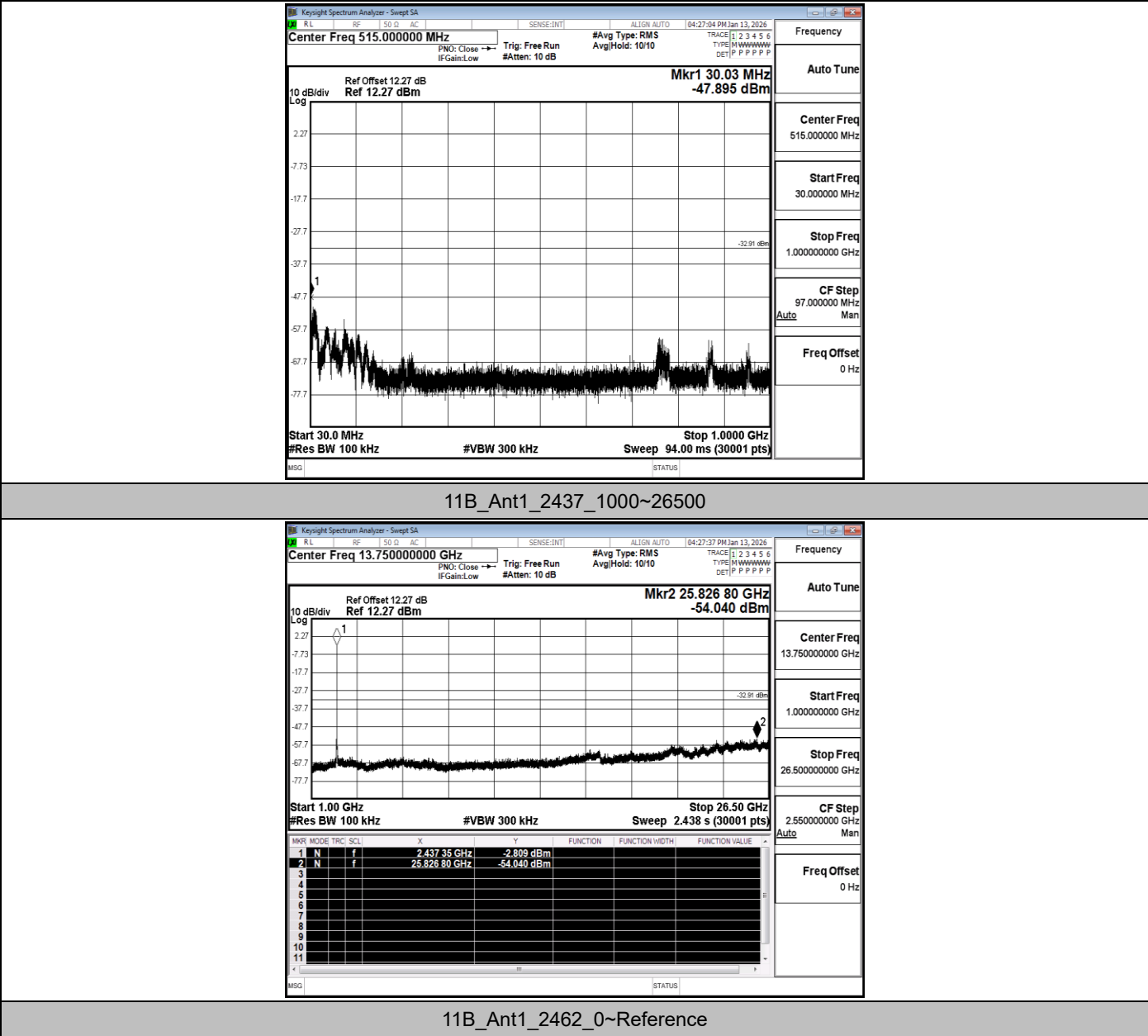
11B_Ant1_2412_1000~26500

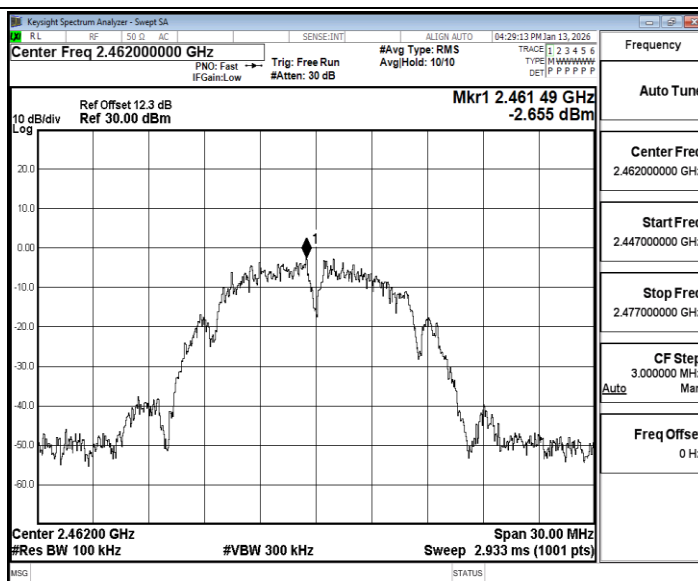


11B_Ant1_2437_0~Reference

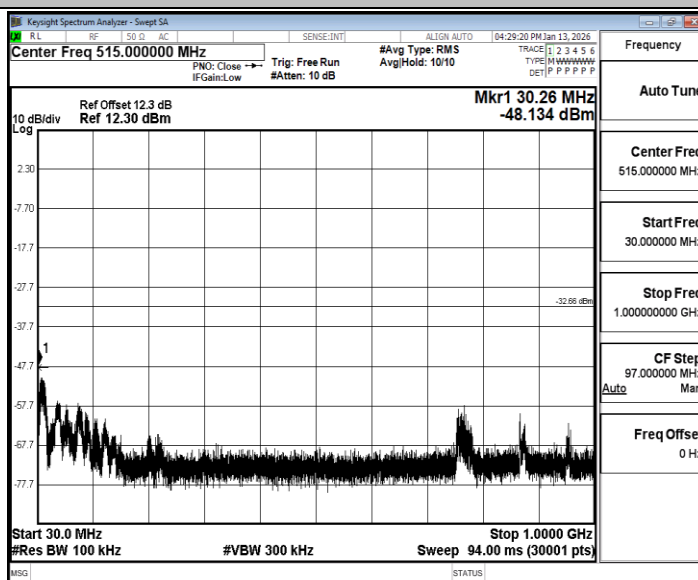


11B_Ant1_2437_30~1000

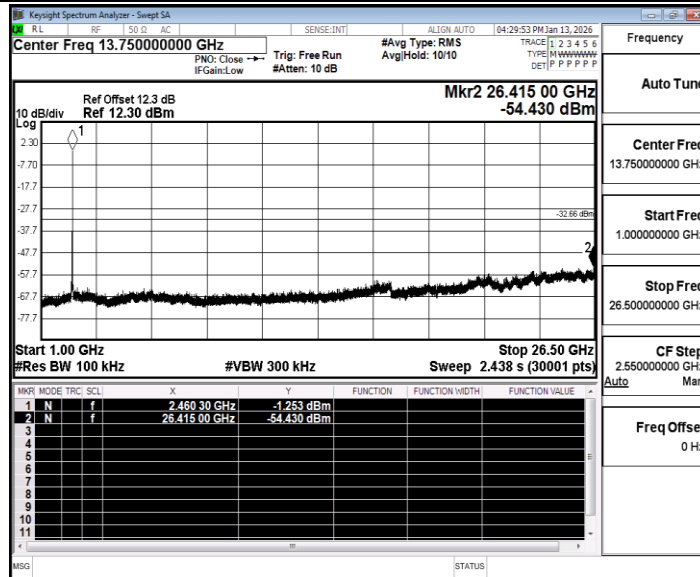




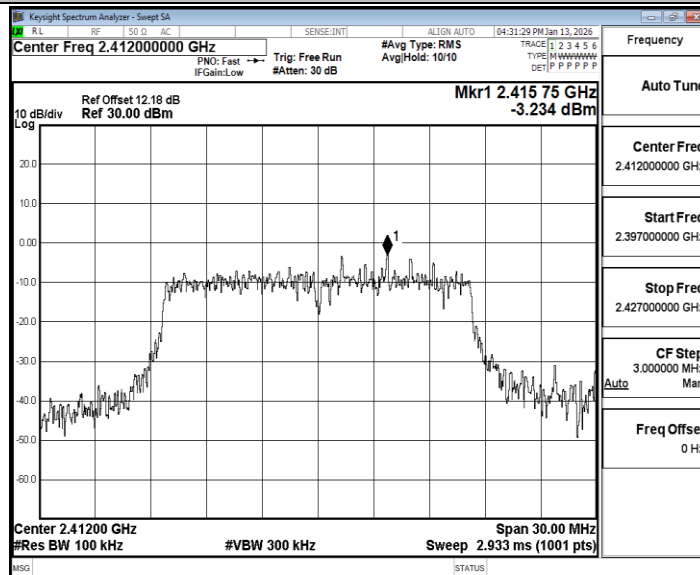
11B_Ant1_2462_30~1000



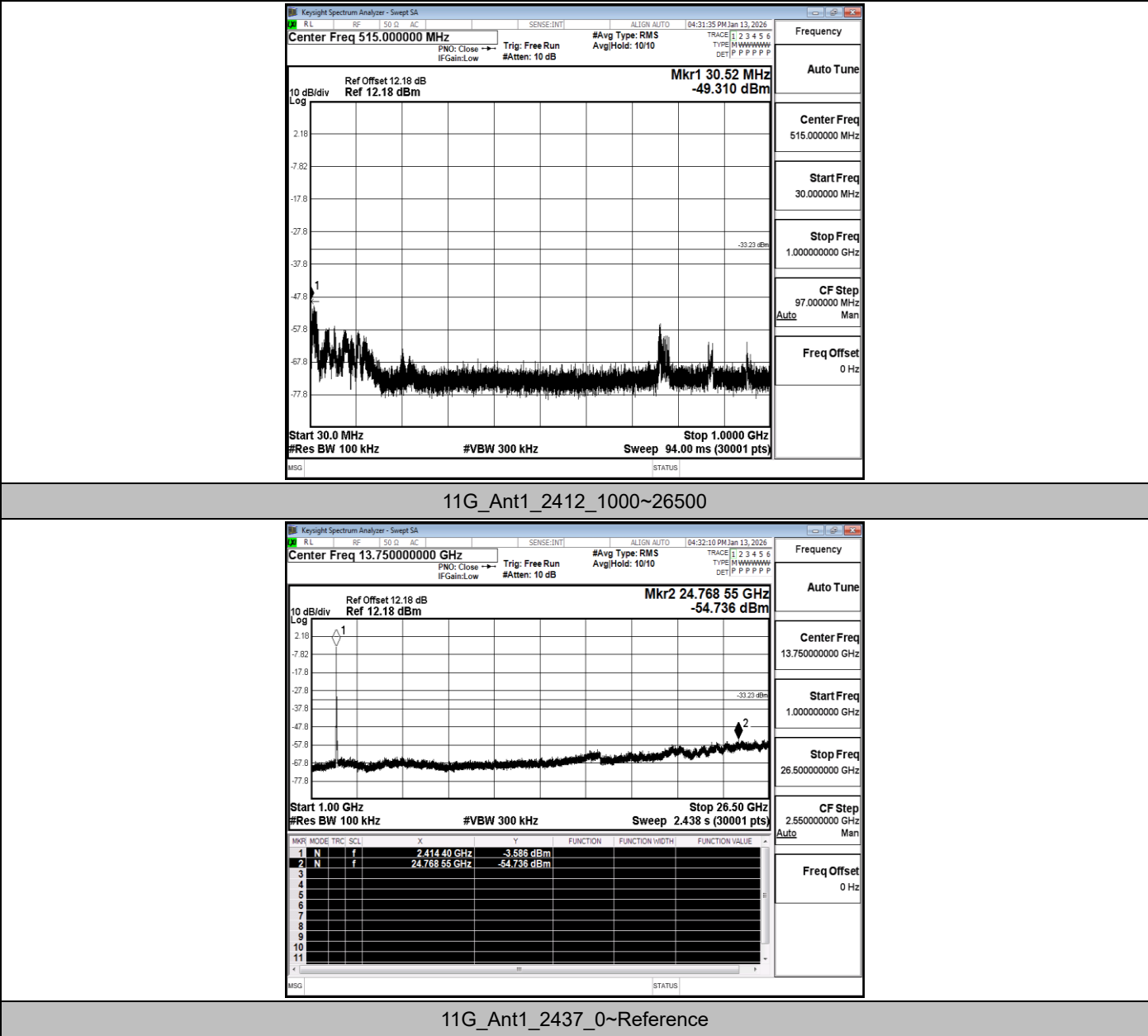
11B_Ant1_2462_1000~26500

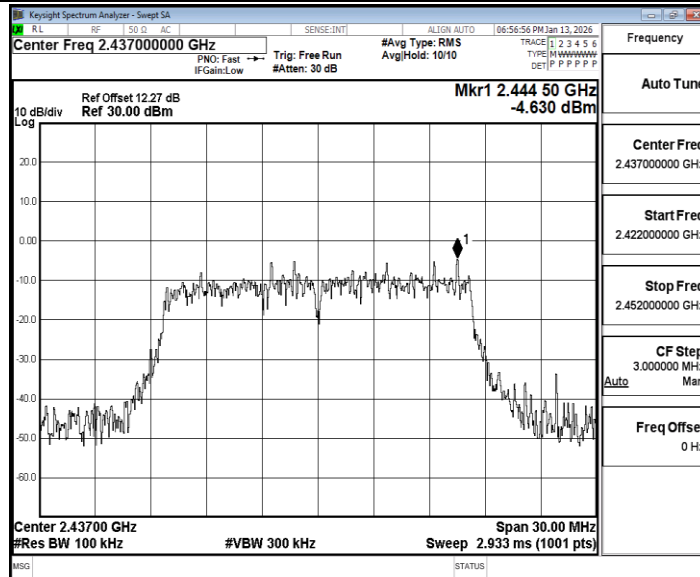


11G_Ant1_2412_0~Reference

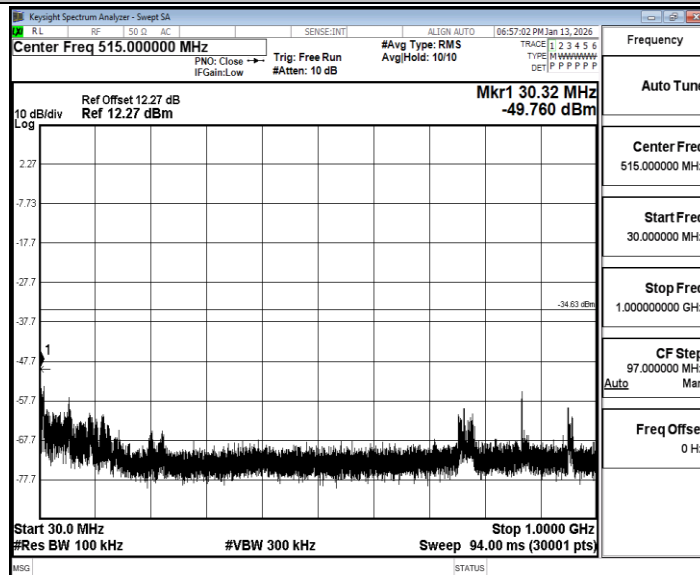


11G_Ant1_2412_30~1000

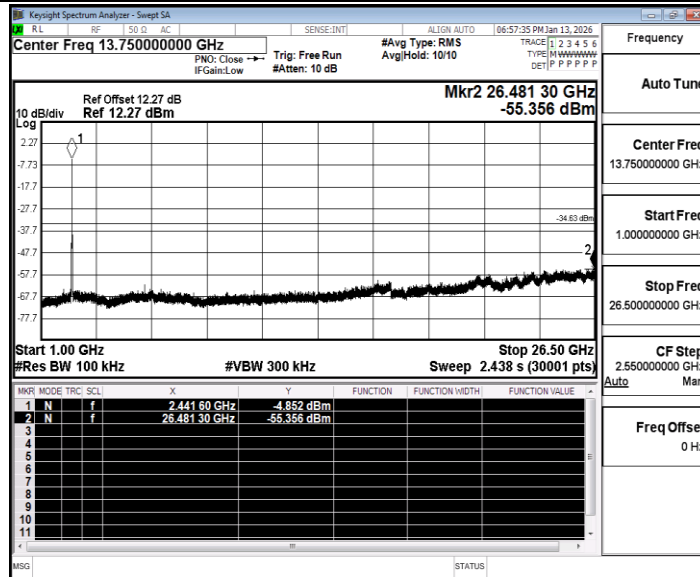




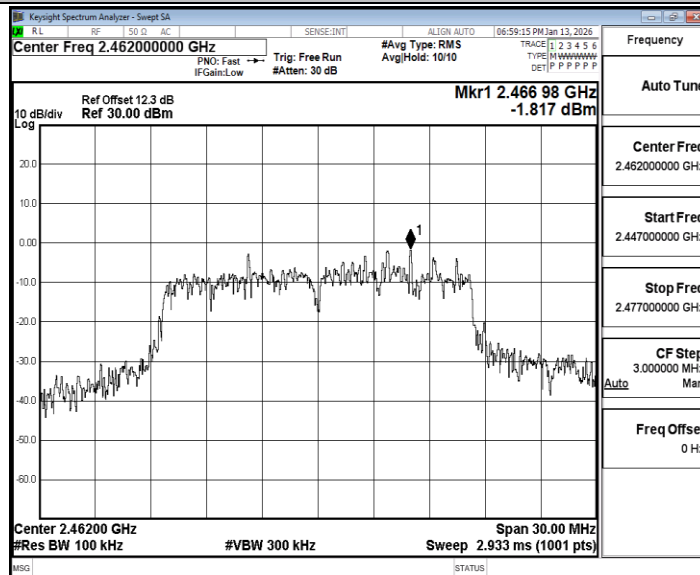
11G_Ant1_2437_30~1000



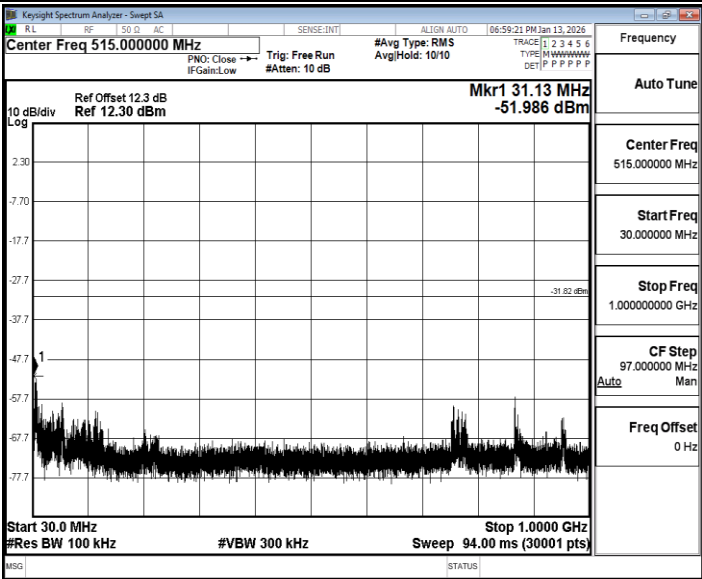
11G_Ant1_2437_1000~26500



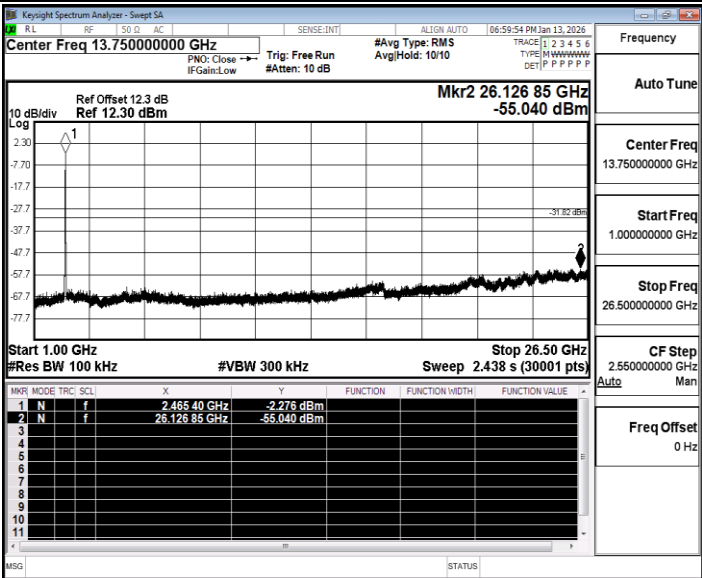
11G_Ant1_2462_0~Reference



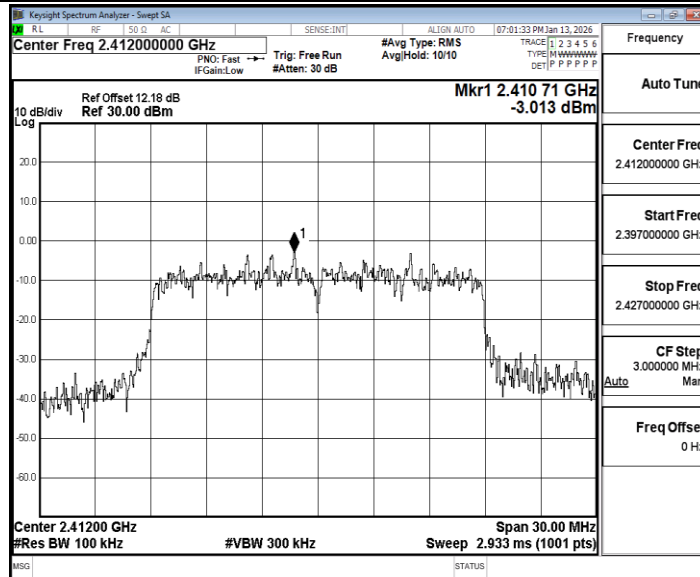
11G_Ant1_2462_30~1000



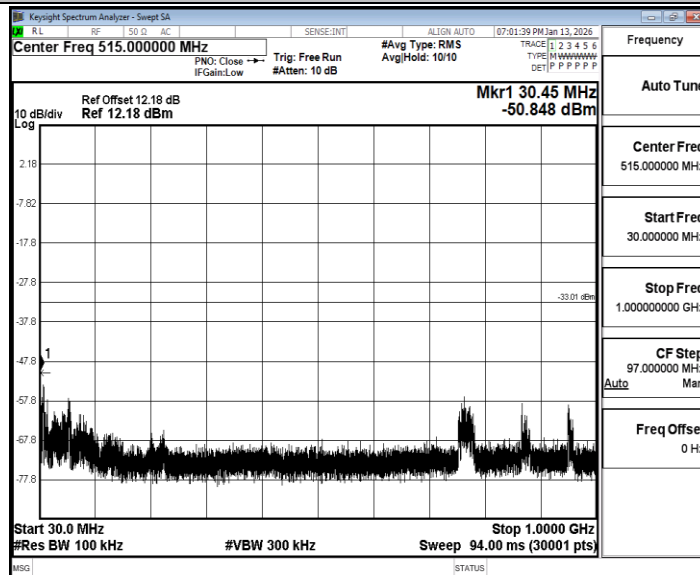
11G_Ant1_2462_1000~26500



11N20SISO_Ant1_2412_0~Reference



11N20SISO_Ant1_2412_30~1000



11N20SISO_Ant1_2412_1000~26500