

Appendix C

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: SecondBrain Note
Test Model: GSA011

Environmental Conditions

Temperature:	24.2°C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

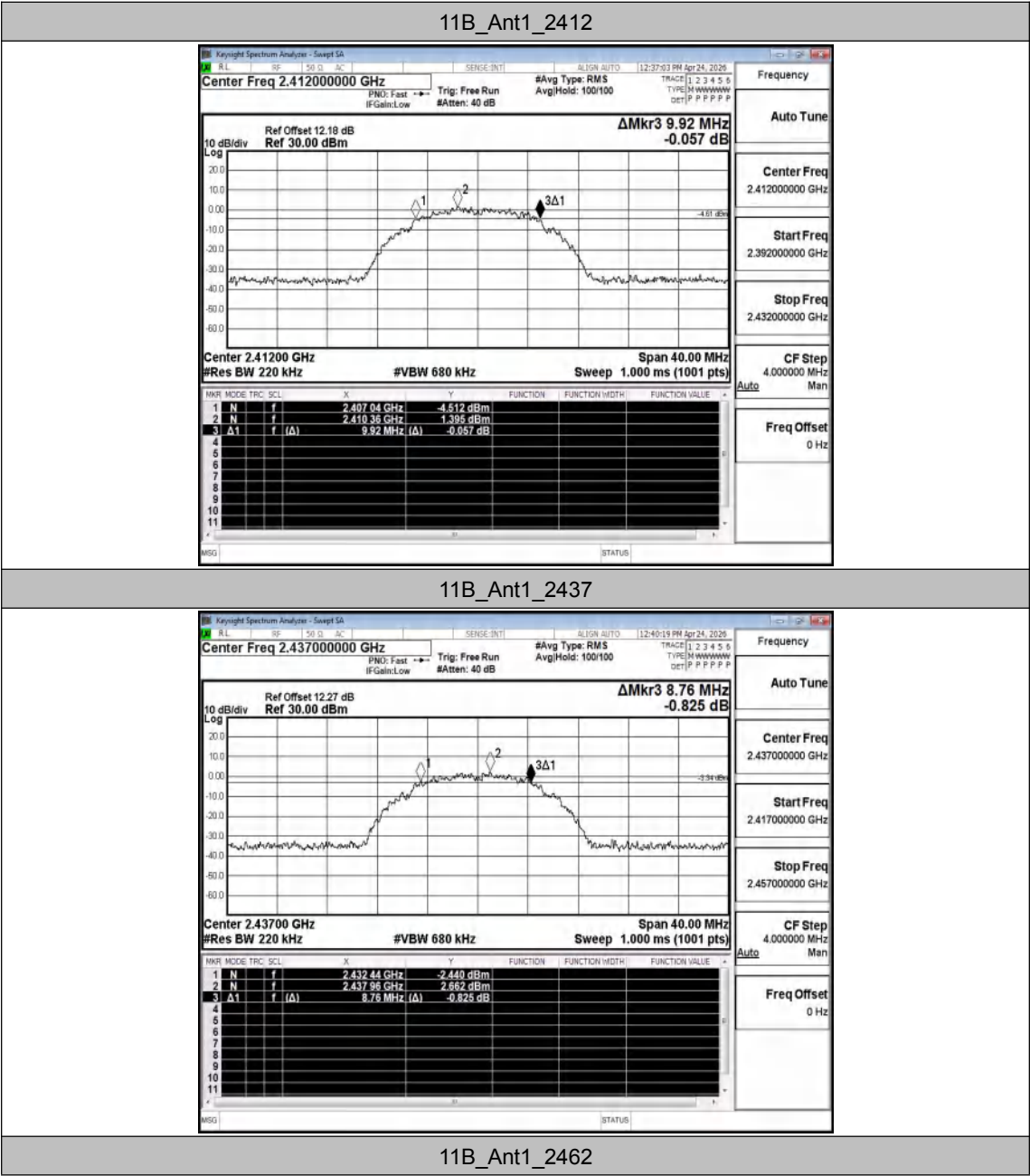
C.1 DTS Bandwidth

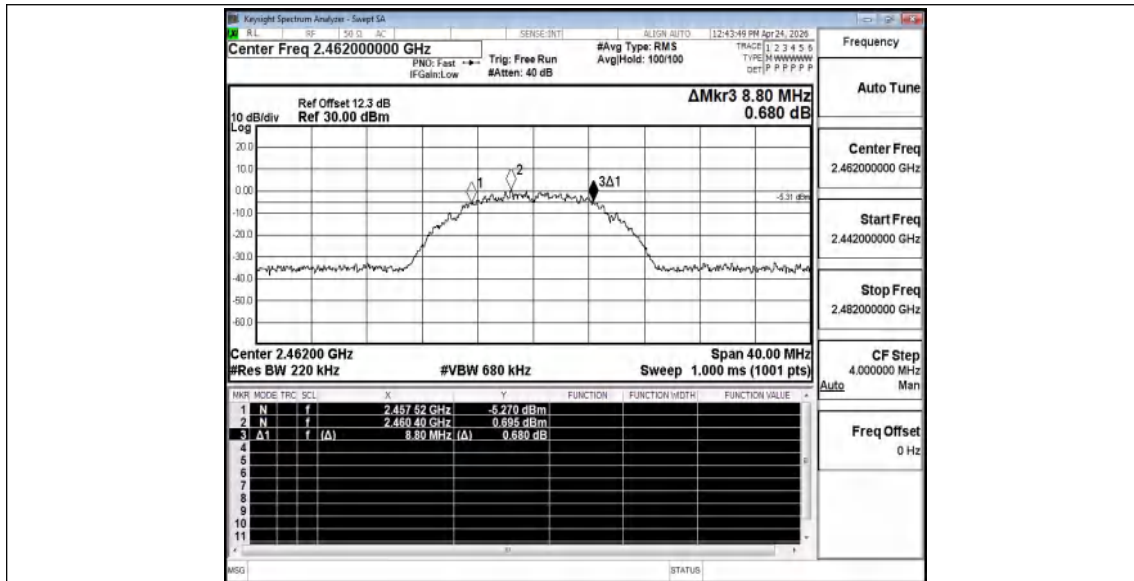
Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.920	2407.040	2416.960	0.5	PASS
		2437	8.760	2432.440	2441.200	0.5	PASS
		2462	8.800	2457.520	2466.320	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	16.400	2453.800	2470.200	0.5	PASS
11N20SISO	Ant1	2412	17.240	2403.280	2420.520	0.5	PASS
		2437	17.280	2428.320	2445.600	0.5	PASS
		2462	17.200	2453.360	2470.560	0.5	PASS
11N40SISO	Ant1	2422	35.920	2404.160	2440.080	0.5	PASS
		2437	35.600	2419.240	2454.840	0.5	PASS
		2452	35.840	2433.920	2469.760	0.5	PASS

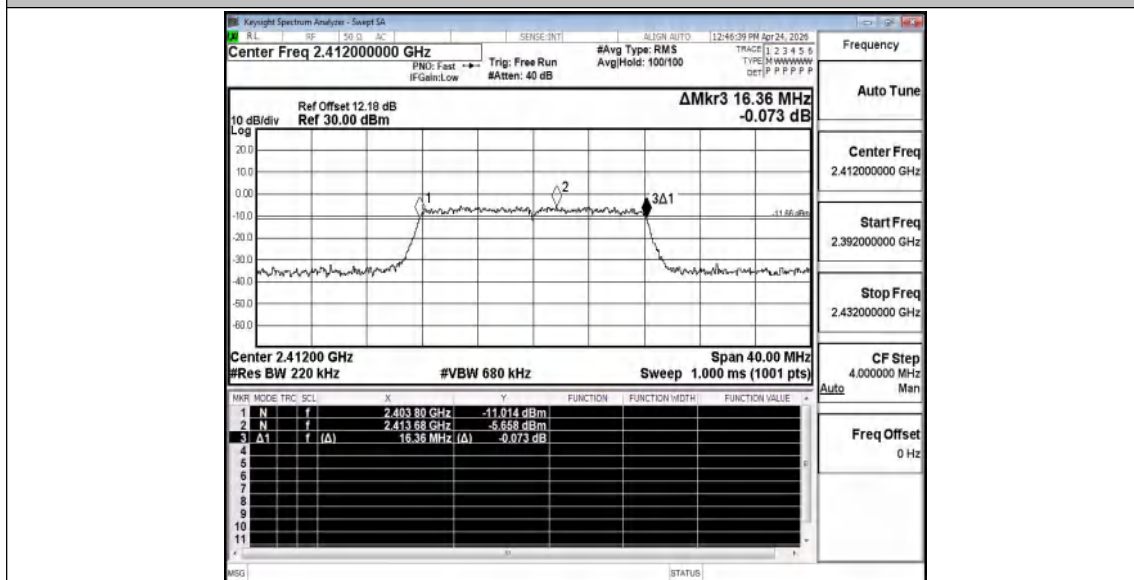
Note :offset=System attenuation +cabal loss

Test Graphs

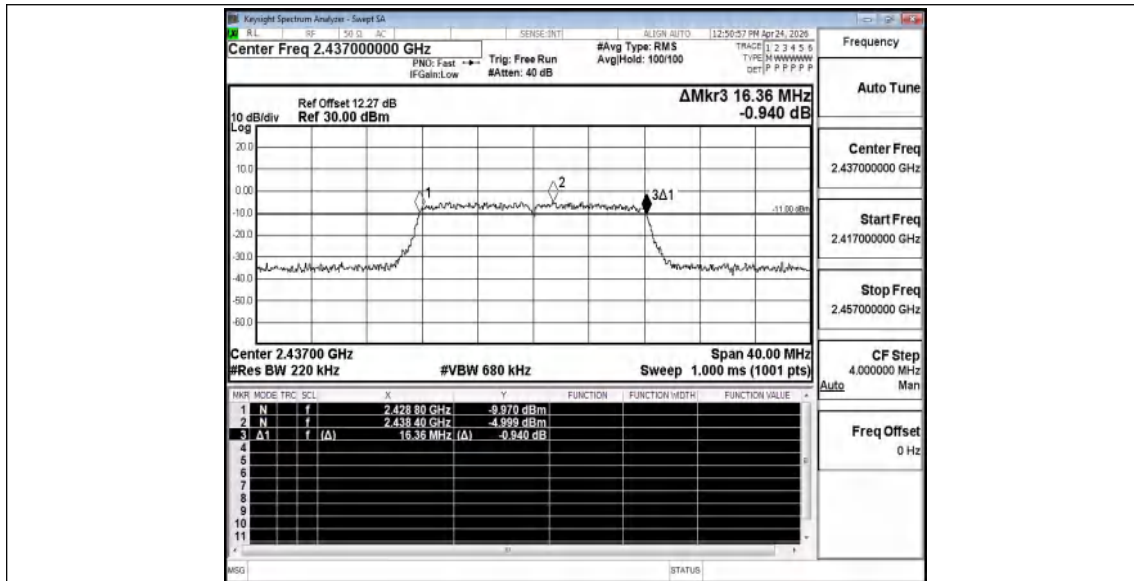




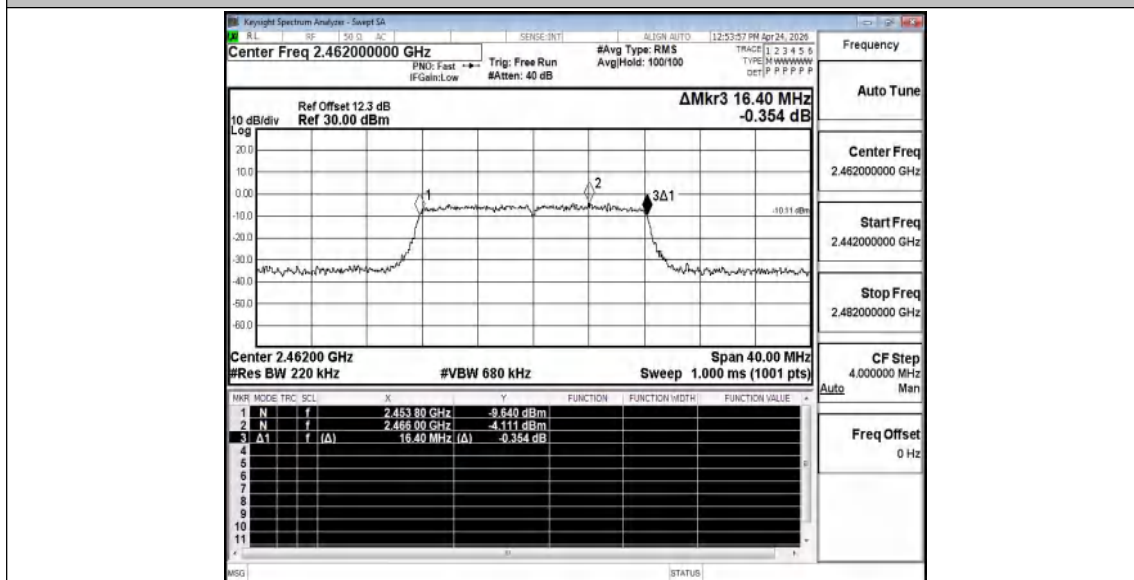
11G_Ant1_2412



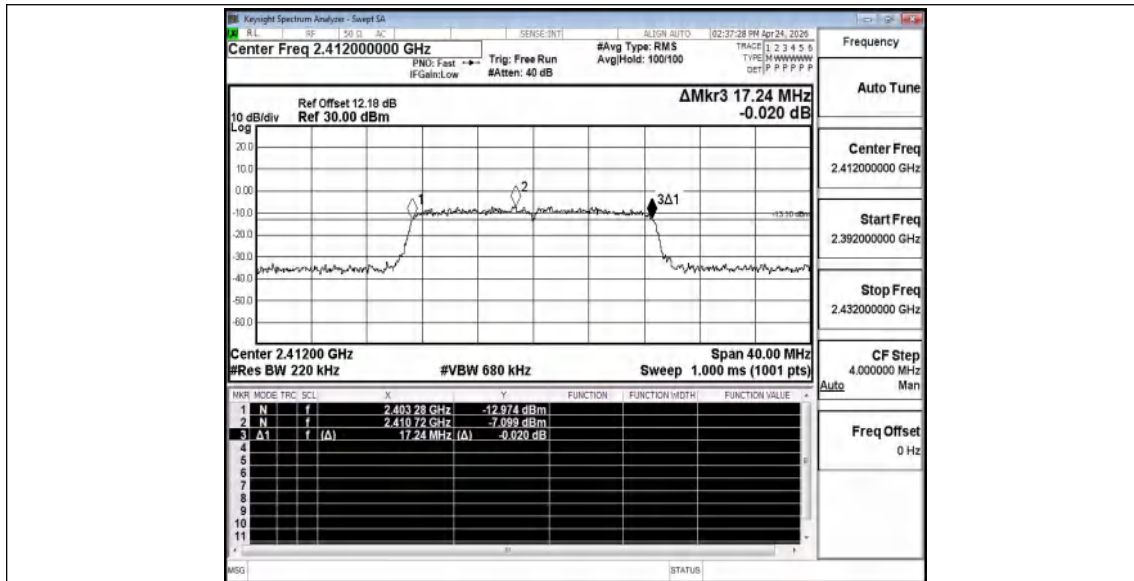
11G_Ant1_2437



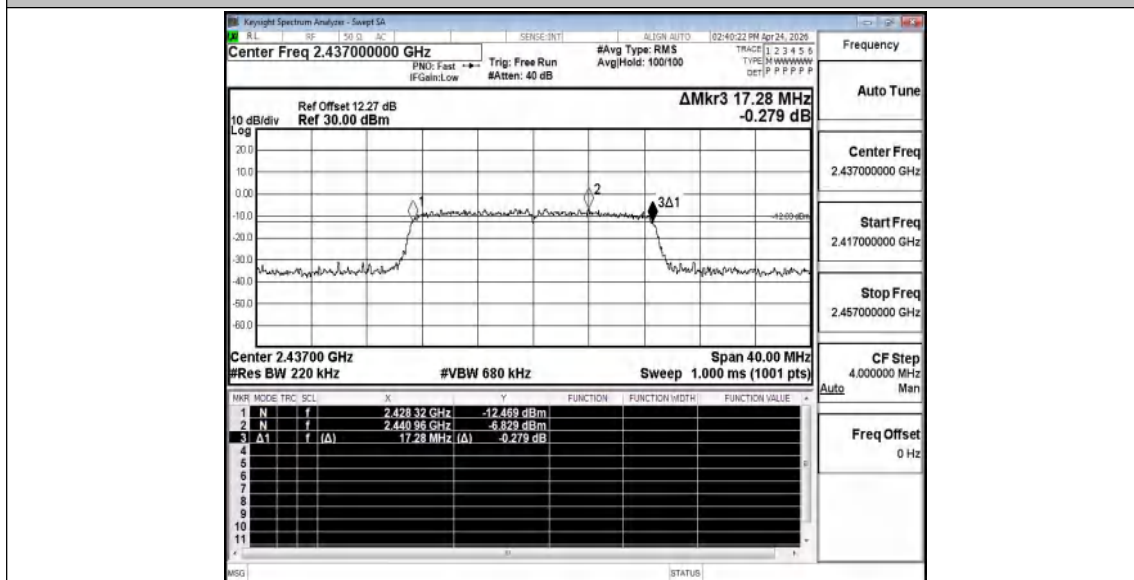
11G_Ant1_2462



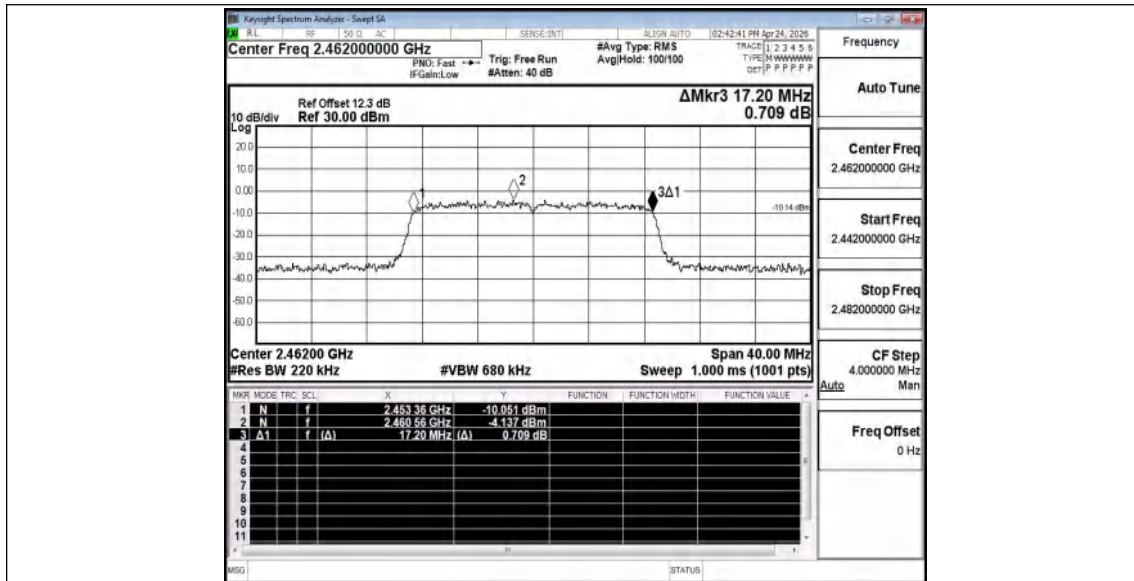
11N20SISO_Ant1_2412



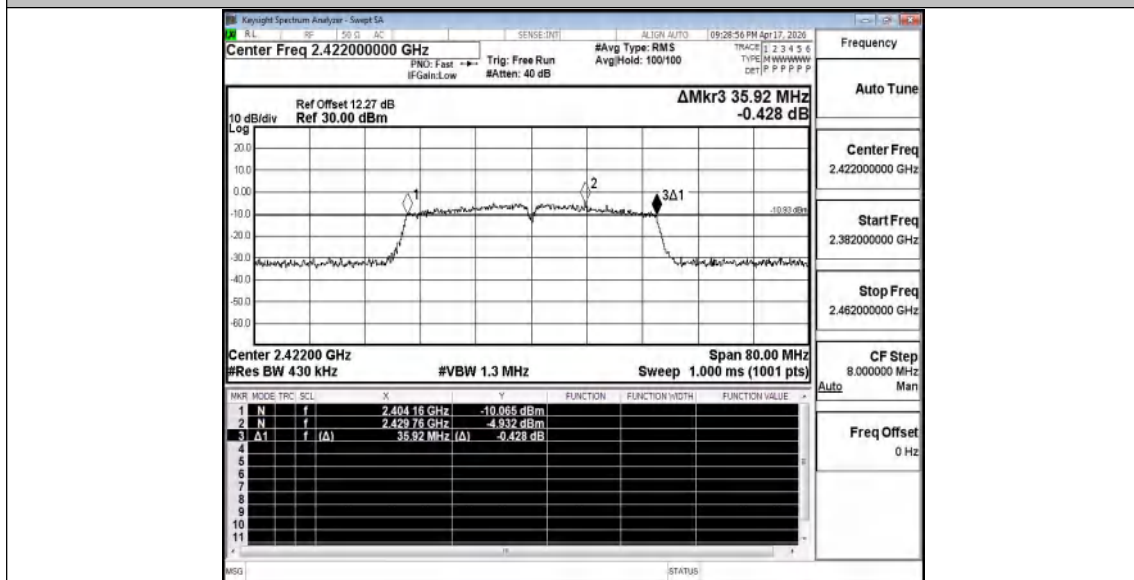
11N20SISO_Ant1_2437



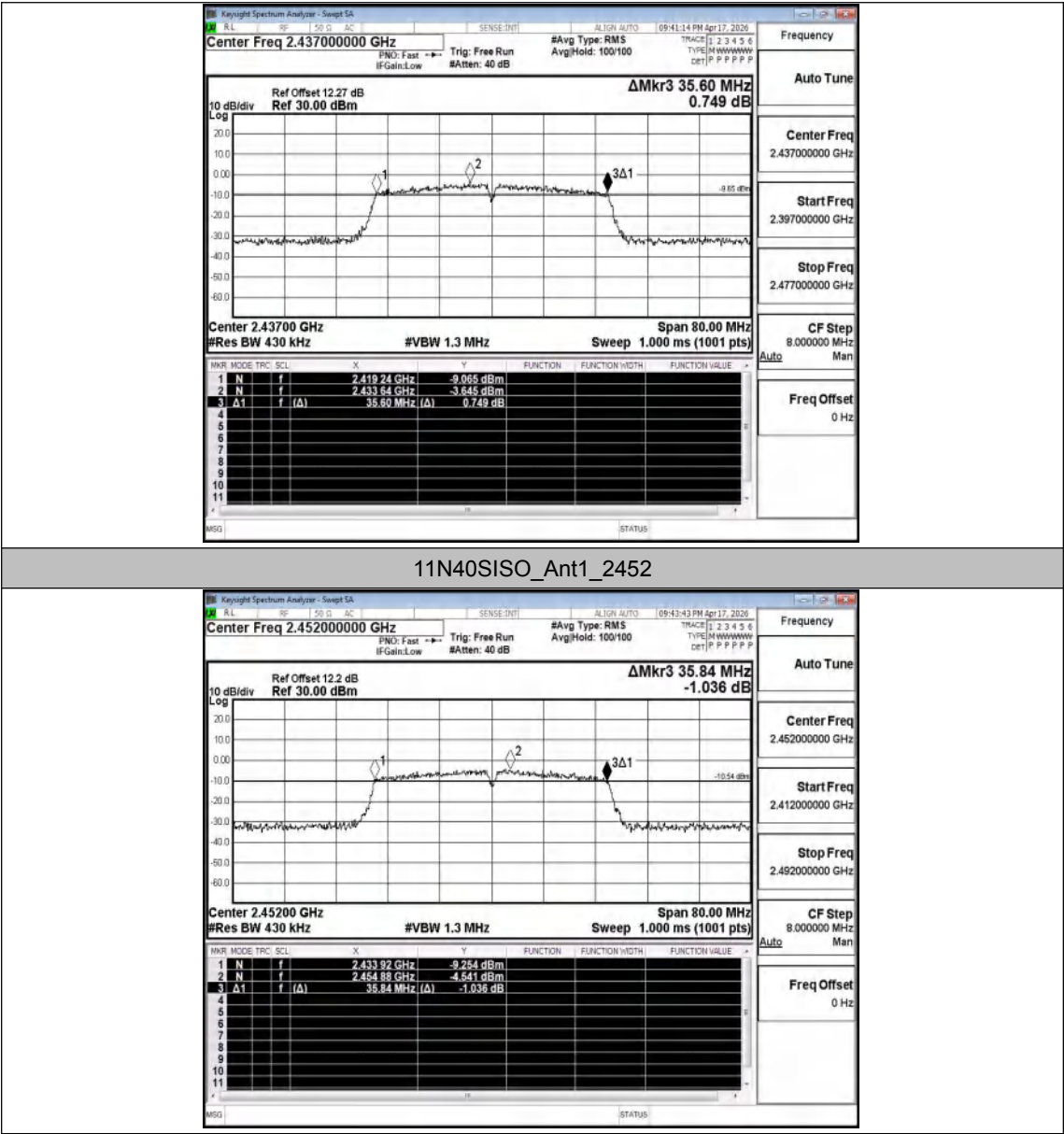
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



C.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	6.68	0.00	6.68	≤30.00	PASS
		2437	5.46	0.00	5.46	≤30.00	PASS
		2462	6.22	0.00	6.22	≤30.00	PASS
11G	Ant1	2412	4.61	0.02	4.63	≤30.00	PASS
		2437	5.07	0.02	5.09	≤30.00	PASS
		2462	5.47	0.02	5.49	≤30.00	PASS
11N20SISO	Ant1	2412	5.07	0.03	5.10	≤30.00	PASS
		2437	4.82	0.03	4.85	≤30.00	PASS
		2462	5.17	0.03	5.20	≤30.00	PASS
11N40SISO	Ant1	2422	4.69	0.02	4.71	≤30.00	PASS
		2437	5.50	0.02	5.52	≤30.00	PASS
		2452	5.66	0.02	5.68	≤30.00	PASS

Note :offset=System attenuation +cabal loss

C.3 Maximum power spectral density

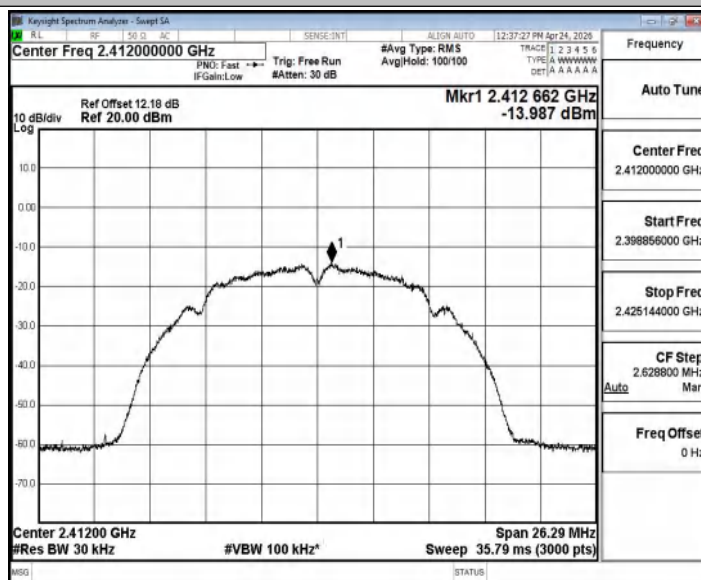
Test Result

TestMode	Antenna	Frequency[MHz]	Measured PSD [dBm/30kHz]	DC Factor [dB]	Result[dBm/30kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-13.99	0.00	-13.99	≤8.00	PASS
		2437	-17.03	0.00	-17.03	≤8.00	PASS
		2462	-16.04	0.00	-16.04	≤8.00	PASS
11G	Ant1	2412	-19.5	0.02	-19.48	≤8.00	PASS
		2437	-19.08	0.02	-19.06	≤8.00	PASS
		2462	-18.5	0.02	-18.48	≤8.00	PASS
11N20SISO	Ant1	2412	-19.7	0.02	-19.68	≤8.00	PASS
		2437	-19.31	0.03	-19.28	≤8.00	PASS
		2462	-18.59	0.03	-18.56	≤8.00	PASS
11N40SISO	Ant1	2422	-22.09	0.02	-22.07	≤8.00	PASS
		2437	-20.7	0.02	-20.68	≤8.00	PASS
		2452	-21.15	0.02	-21.13	≤8.00	PASS

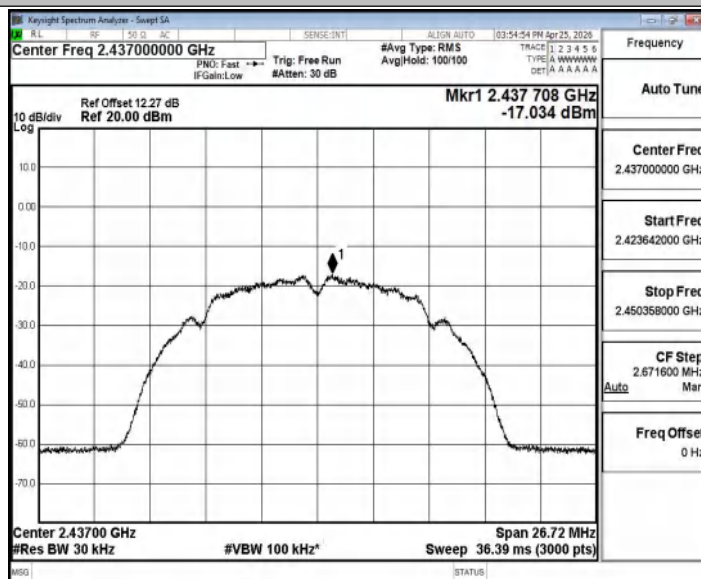
Note :offset=System attenuation +cabel loss

Test Graphs

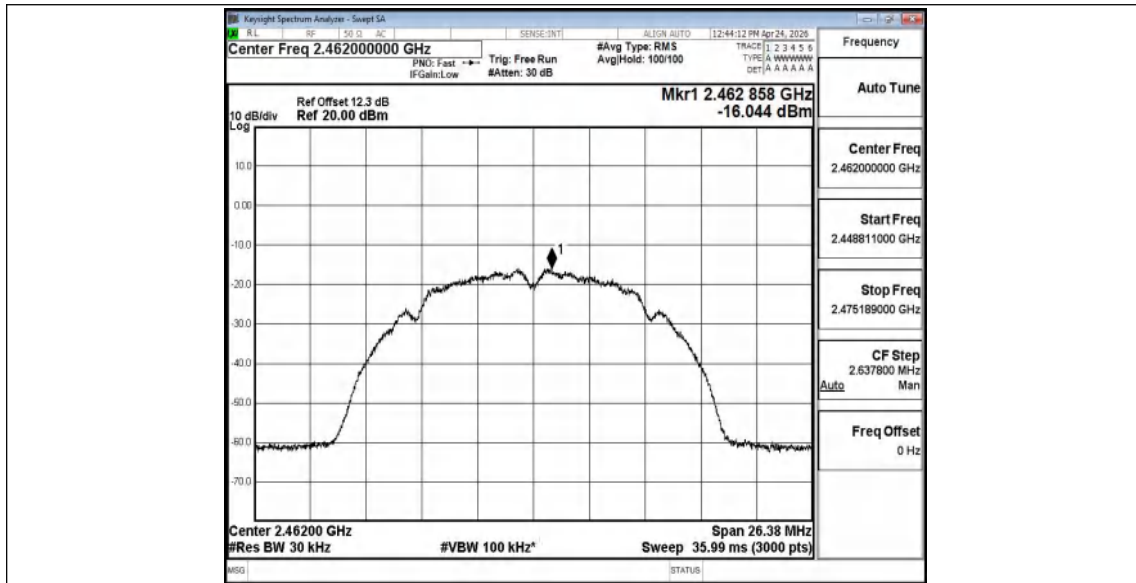
11B_Ant1_2412



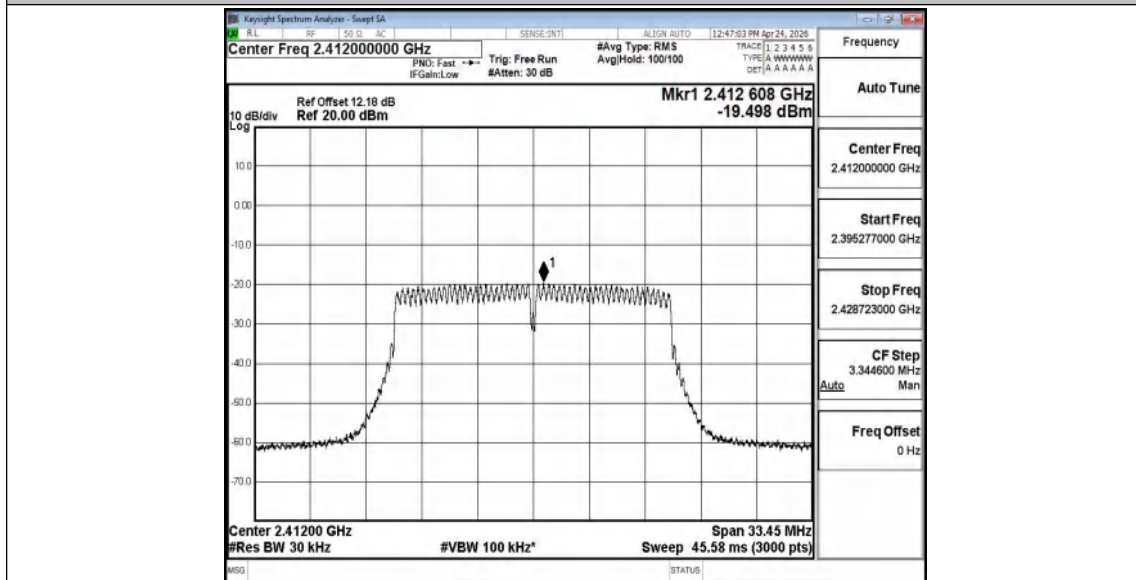
11B_Ant1_2437



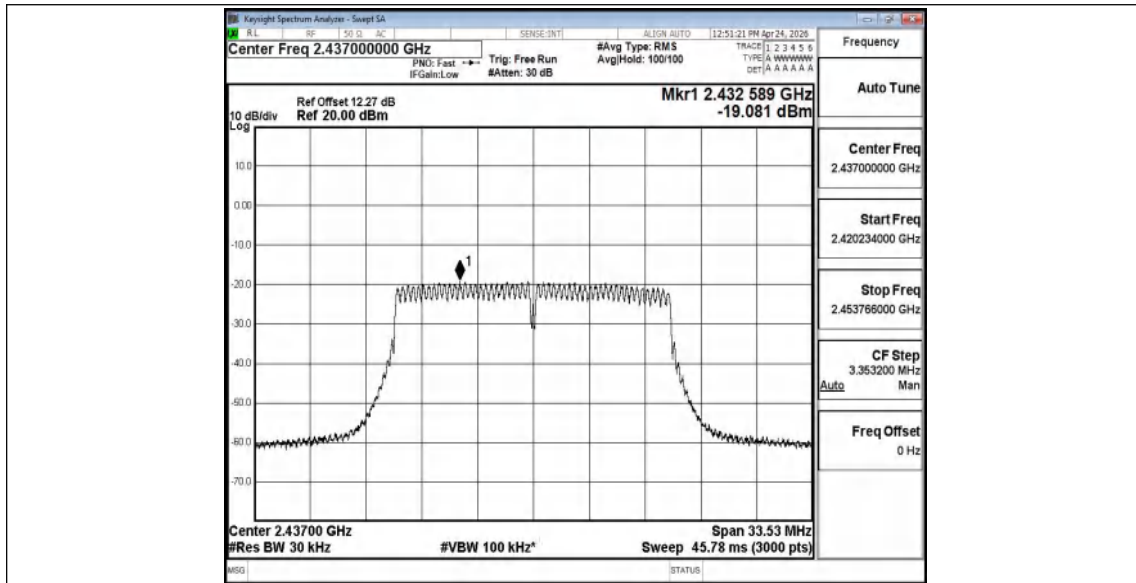
11B_Ant1_2462



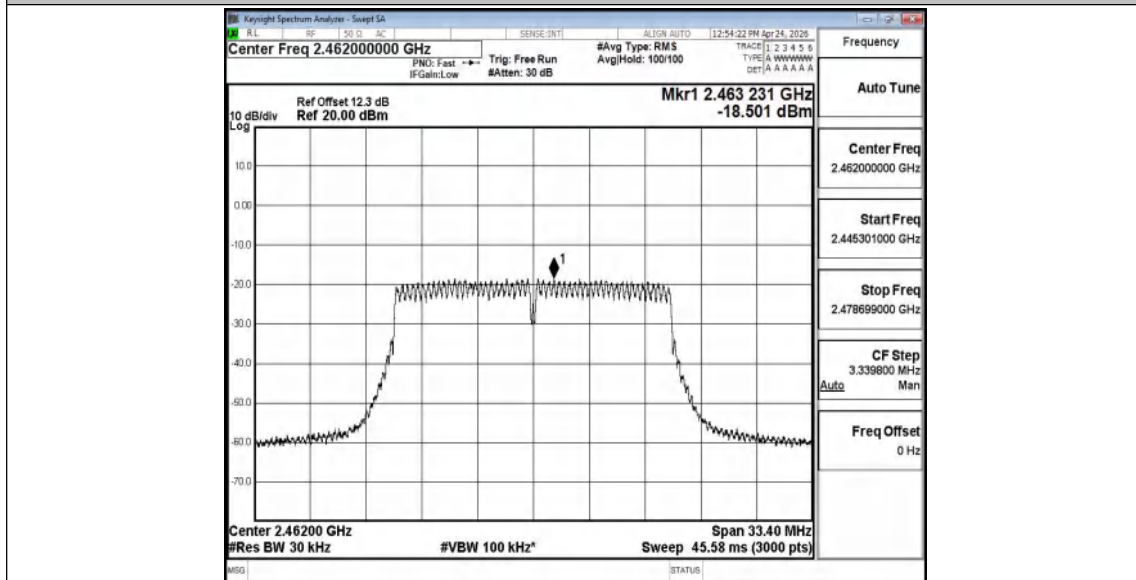
11G_Ant1_2412



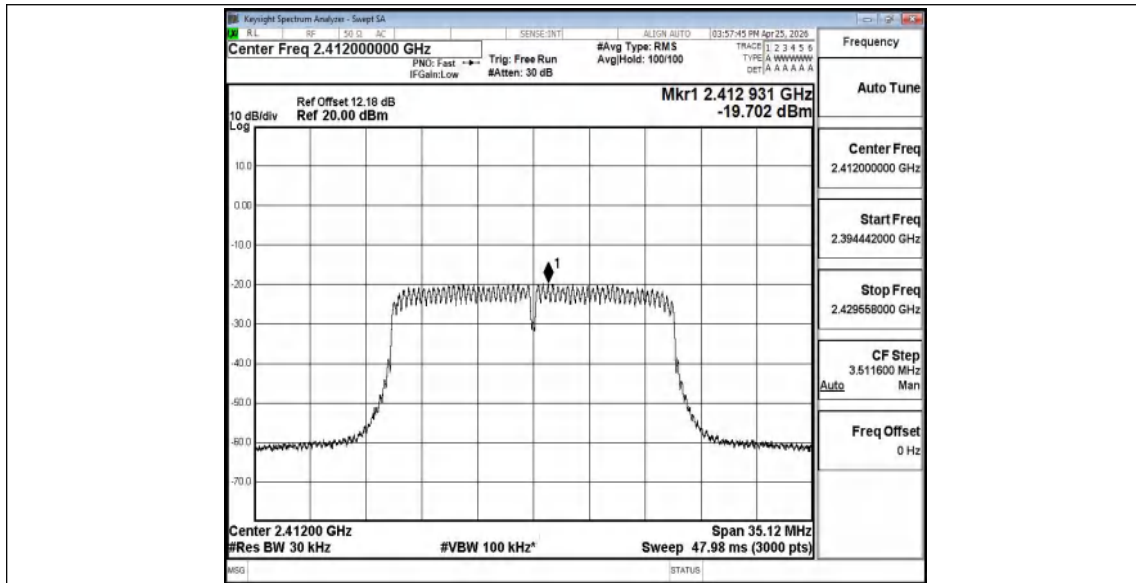
11G_Ant1_2437



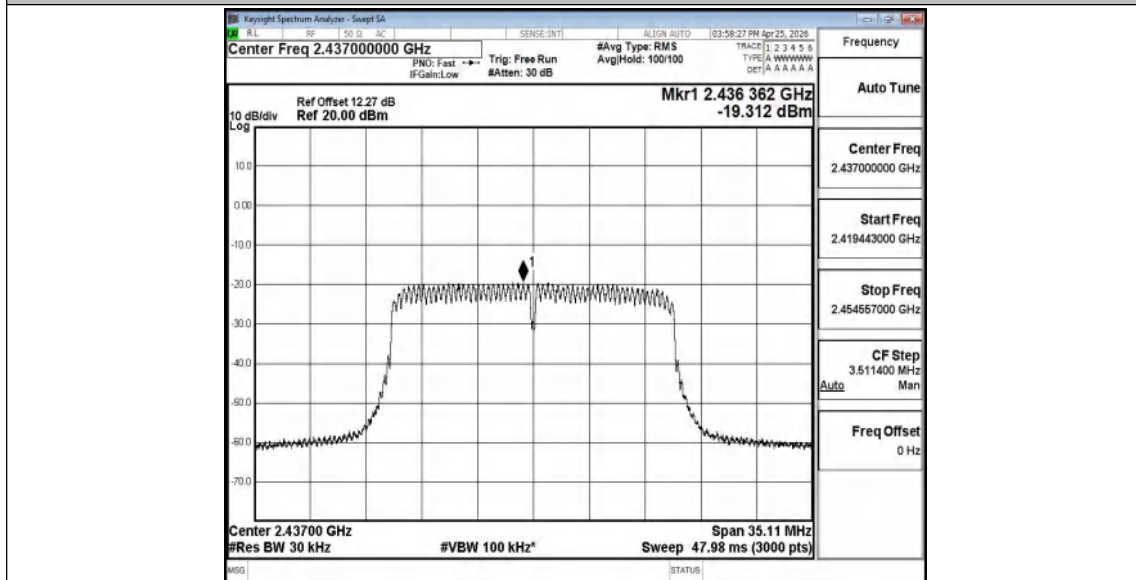
11G_Ant1_2462



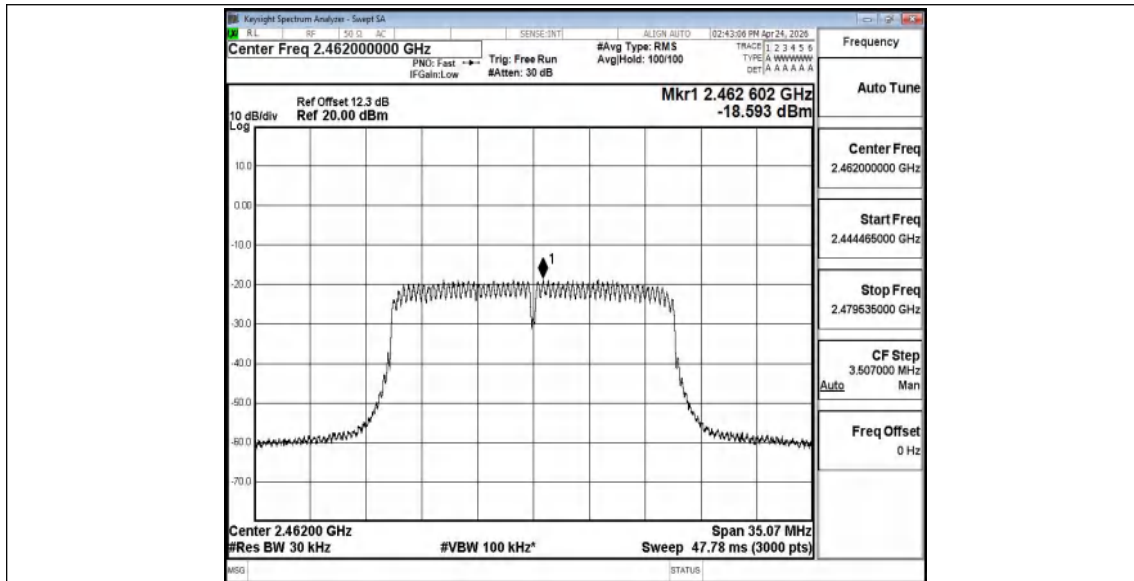
11N20SISO_Ant1_2412



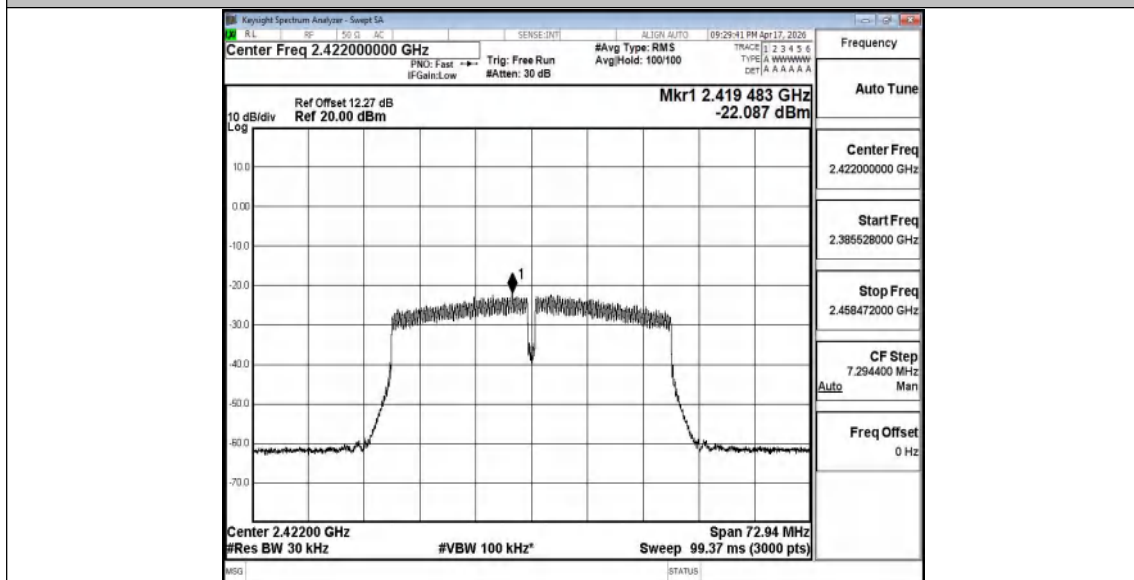
11N20SISO_Ant1_2437



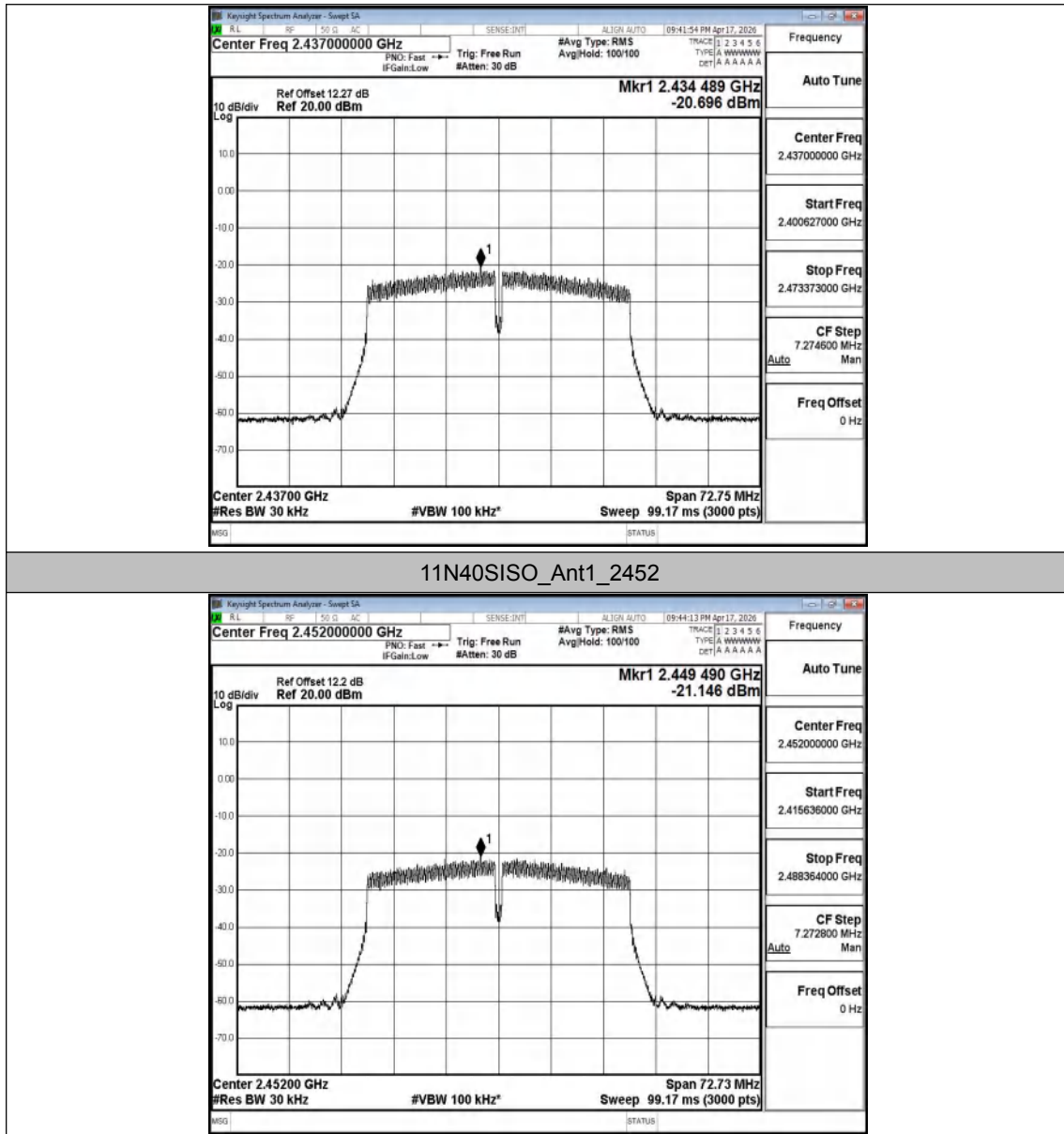
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



C.4 Band edge measurements

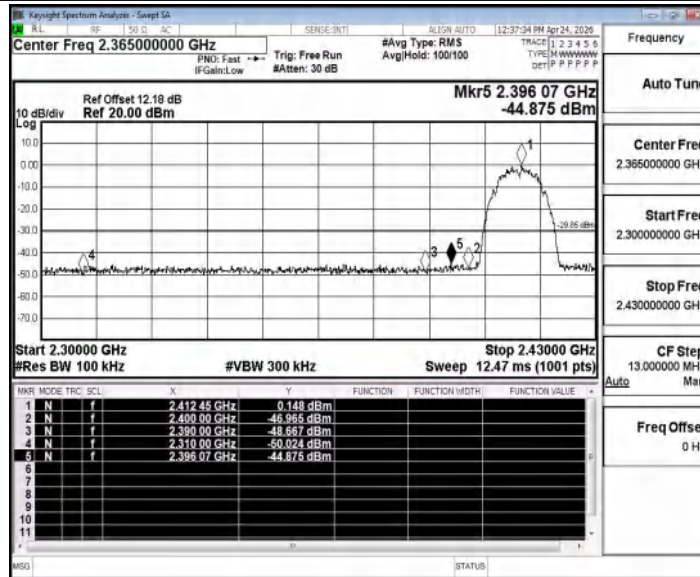
Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	0.15	-44.88	≤-29.85	PASS
		High	2462	-2.12	-44.17	≤-32.12	PASS
11G	Ant1	Low	2412	-7.71	-45.37	≤-37.71	PASS
		High	2462	-5.42	-43.77	≤-35.42	PASS
11N20SISO	Ant1	Low	2412	-8.39	-45.08	≤-38.39	PASS
		High	2462	-7.01	-45.5	≤-37.01	PASS
11N40SISO	Ant1	Low	2422	-8.53	-44.68	≤-38.53	PASS
		High	2452	-7.67	-44.34	≤-37.67	PASS

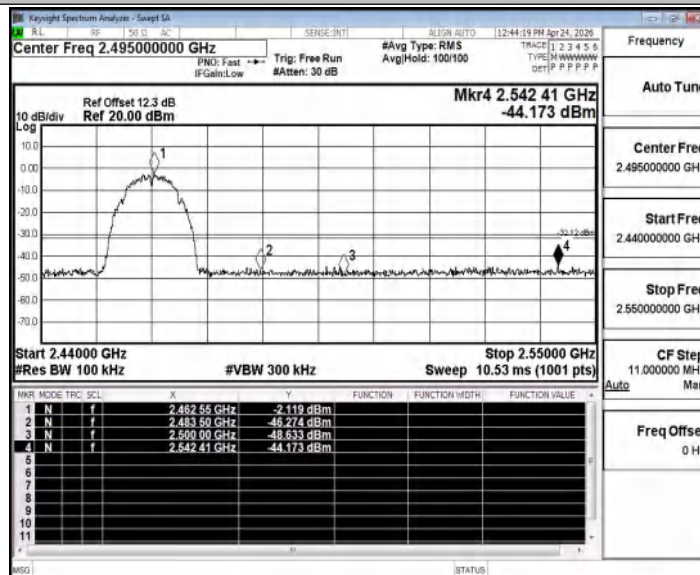
Note :offset=System attenuation +cabal loss

Test Graphs

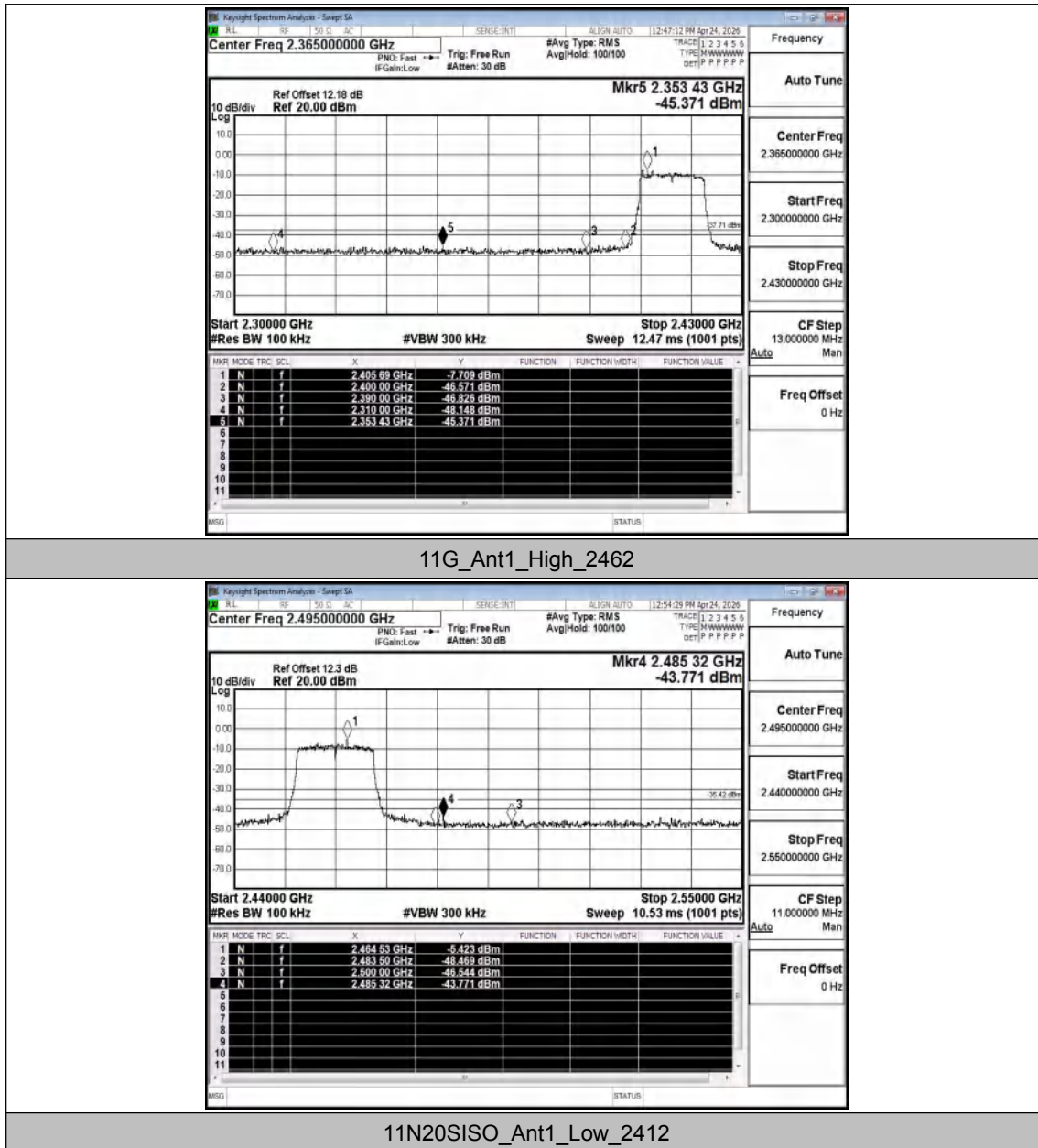
11B_Ant1_Low_2412

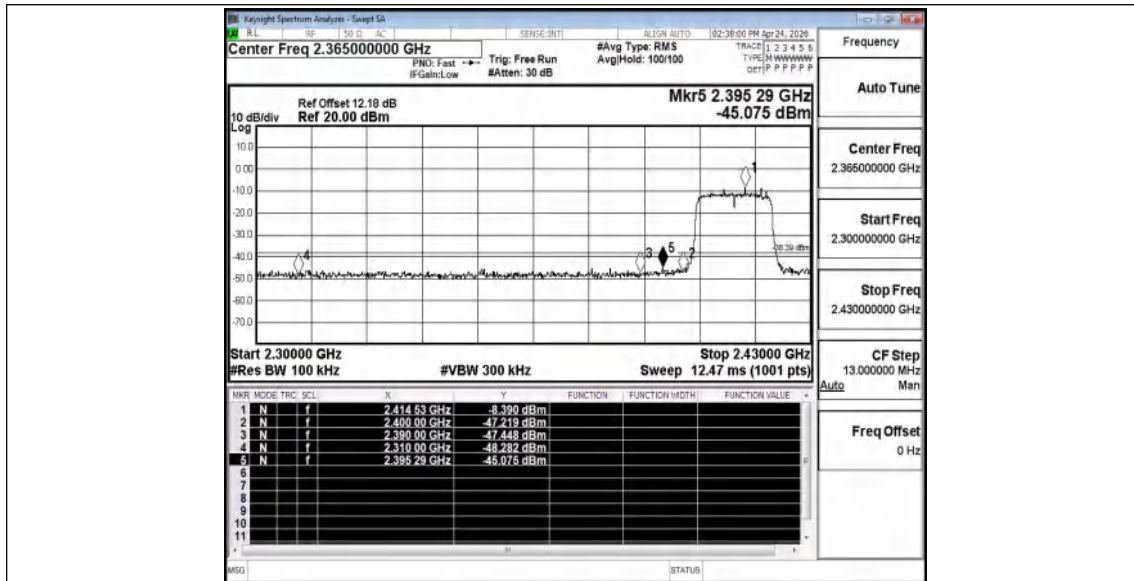


11B_Ant1_High_2462

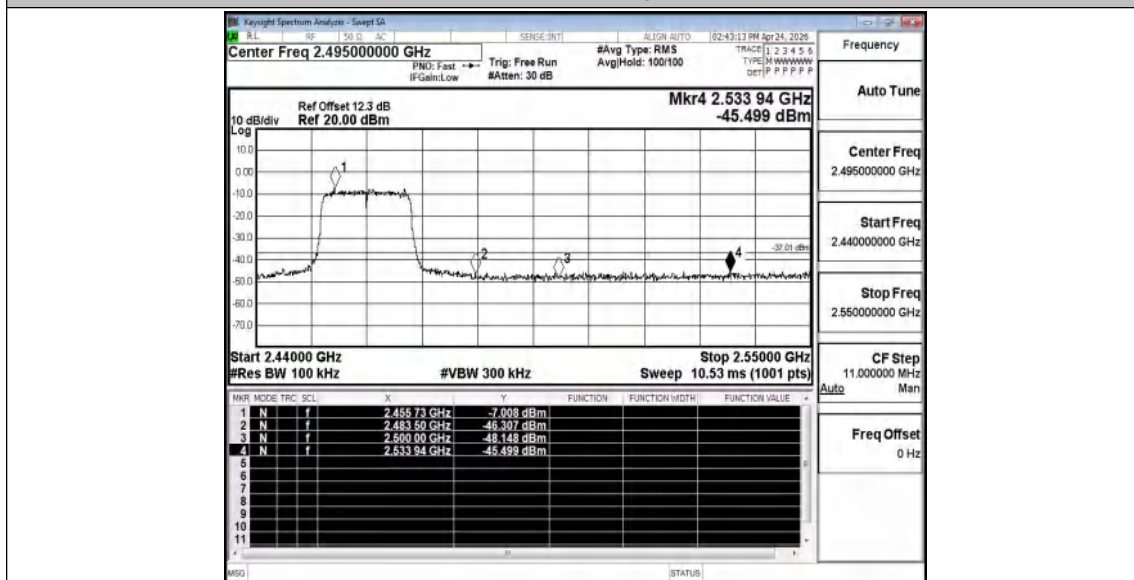


11G_Ant1_Low_2412

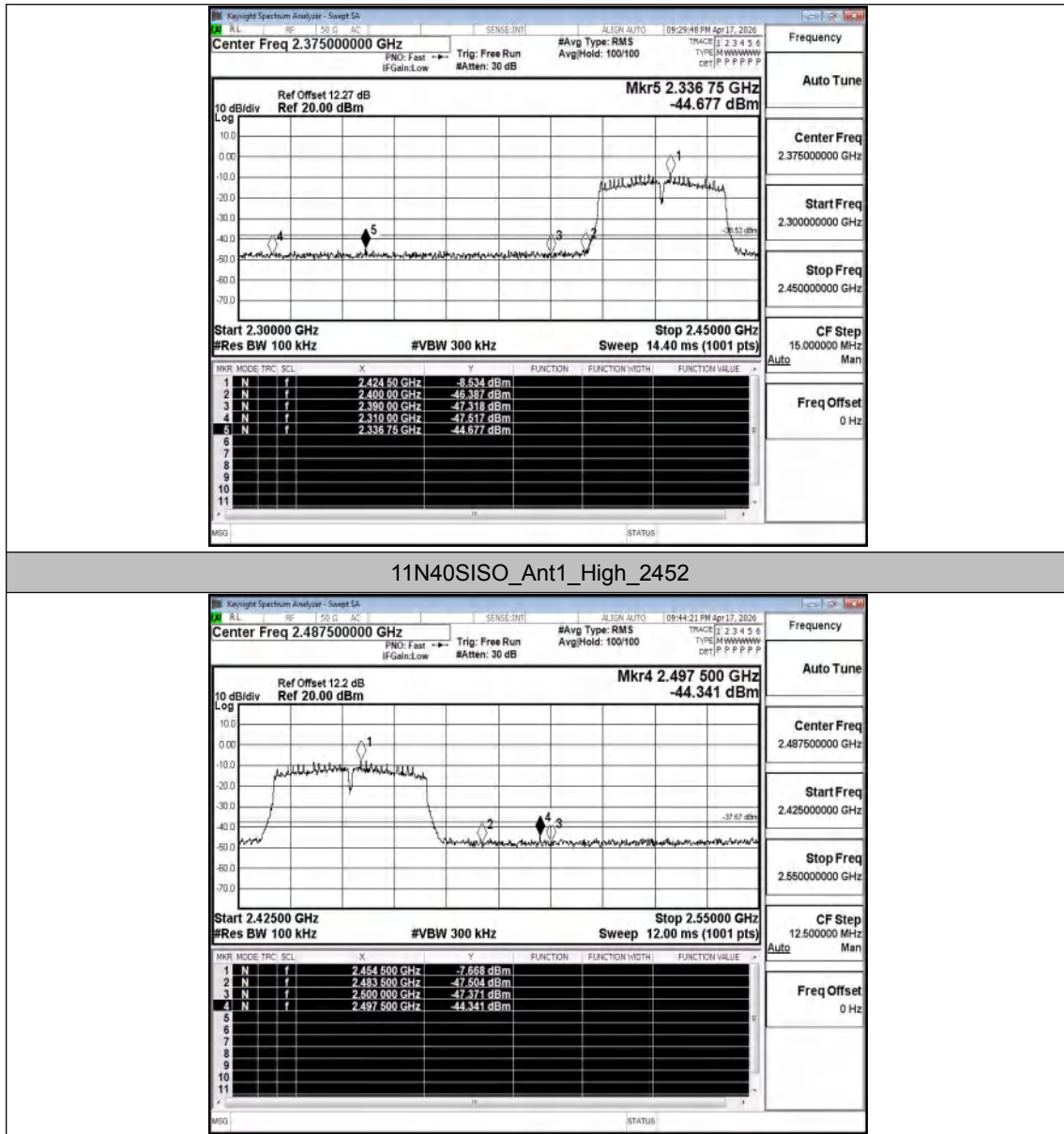




11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



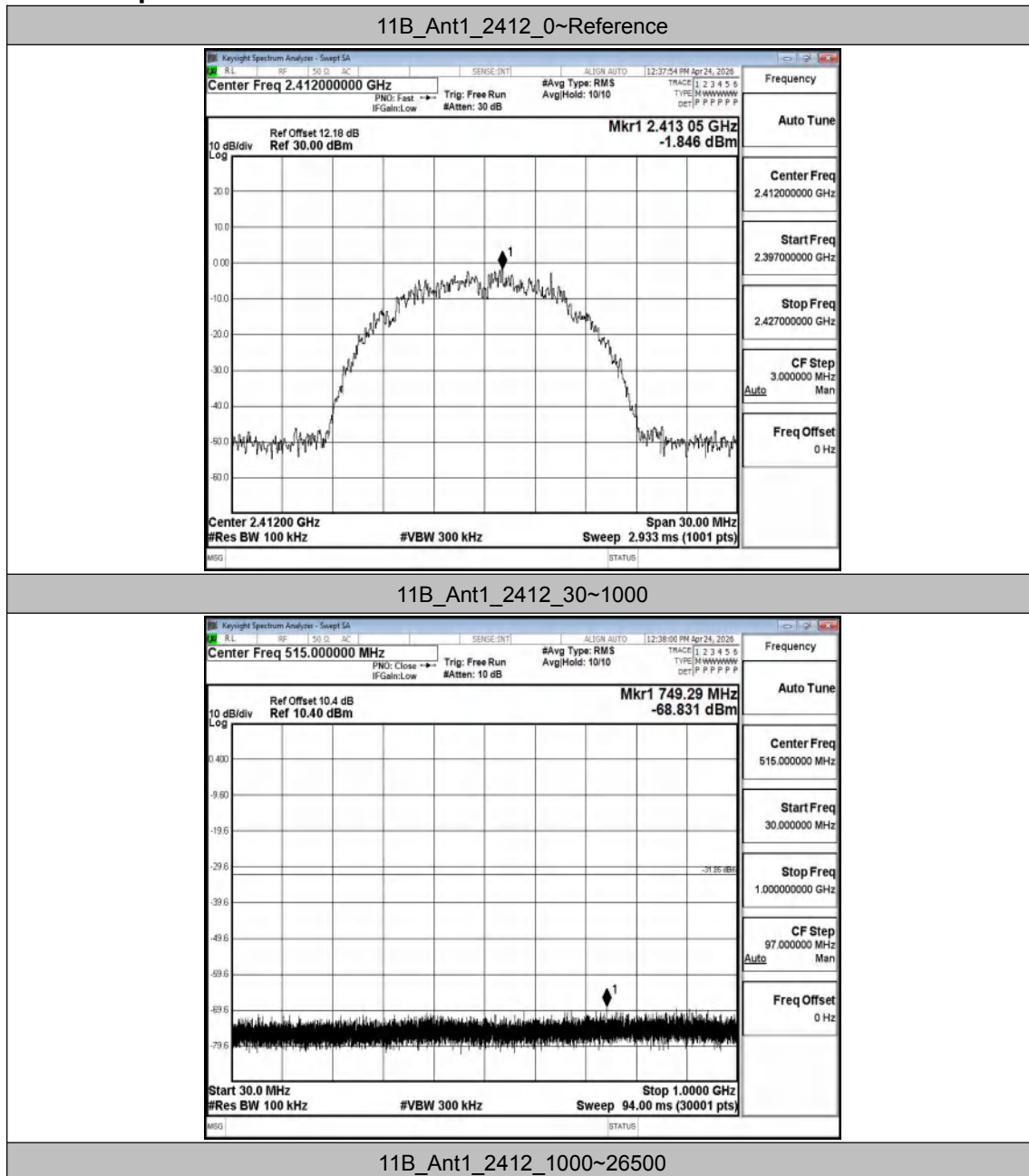
C.5 Conducted Spurious Emission

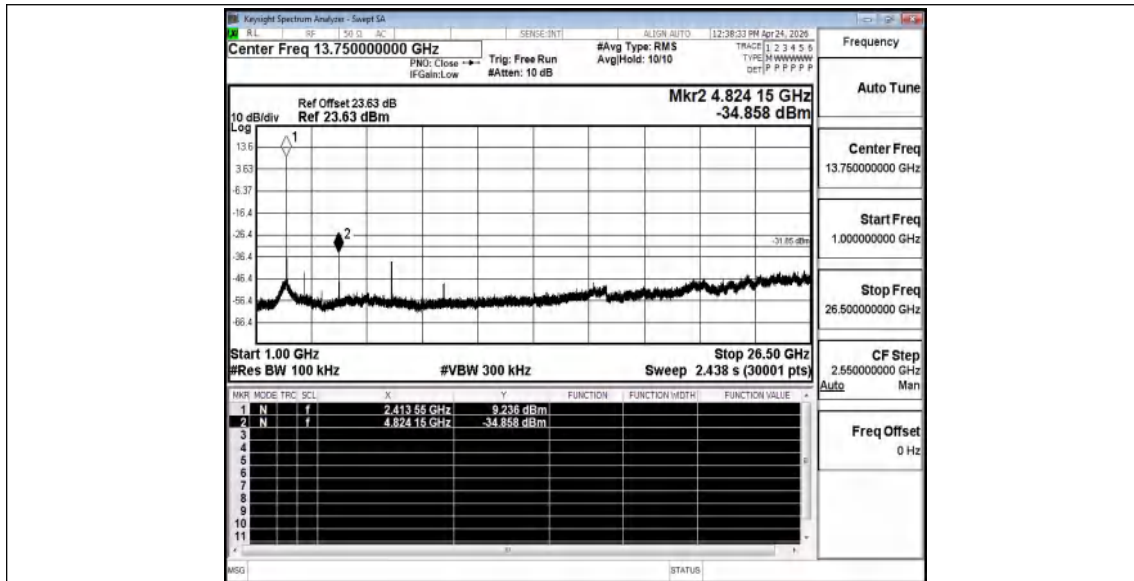
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	-1.85	-1.85	---	PASS
			30~1000	-1.85	-68.83	≤-31.85	PASS
			1000~26500	-1.85	-34.86	≤-31.85	PASS
		2437	Reference	-2.36	-2.36	---	PASS
			30~1000	-2.36	-69.56	≤-32.36	PASS
			1000~26500	-2.36	-33.08	≤-32.36	PASS
		2462	Reference	-4.14	-4.14	---	PASS
			30~1000	-4.14	-68.98	≤-34.14	PASS
			1000~26500	-4.14	-40.35	≤-34.14	PASS
11G	Ant1	2412	Reference	-8.03	-8.03	---	PASS
			30~1000	-8.03	-68.76	≤-38.03	PASS
			1000~26500	-8.03	-43.54	≤-38.03	PASS
		2437	Reference	-8.92	-8.92	---	PASS
			30~1000	-8.92	-69.46	≤-38.92	PASS
			1000~26500	-8.92	-43.41	≤-38.92	PASS
		2462	Reference	-8.59	-8.59	---	PASS
			30~1000	-8.59	-69.39	≤-38.59	PASS
			1000~26500	-8.59	-43.35	≤-38.59	PASS
11N20SISO	Ant1	2412	Reference	-11.08	-11.08	---	PASS
			30~1000	-11.08	-69.6	≤-41.08	PASS
			1000~26500	-11.08	-43.1	≤-41.08	PASS
		2437	Reference	-11.11	-11.11	---	PASS
			30~1000	-11.11	-69.13	≤-41.11	PASS
			1000~26500	-11.11	-43.39	≤-41.11	PASS
		2462	Reference	-9.00	-9.00	---	PASS
			30~1000	-9.00	-69.28	≤-39	PASS
			1000~26500	-9.00	-43.21	≤-39	PASS
11N40SISO	Ant1	2422	Reference	-9.44	-9.44	---	PASS
			30~1000	-9.44	-68.51	≤-39.44	PASS
			1000~26500	-9.44	-43.21	≤-39.44	PASS
		2437	Reference	-7.88	-7.88	---	PASS
			30~1000	-7.88	-68.17	≤-37.88	PASS
			1000~26500	-7.88	-42.57	≤-37.88	PASS
		2452	Reference	-7.75	-7.75	---	PASS
			30~1000	-7.75	-68.5	≤-37.75	PASS
			1000~26500	-7.75	-43.25	≤-37.75	PASS

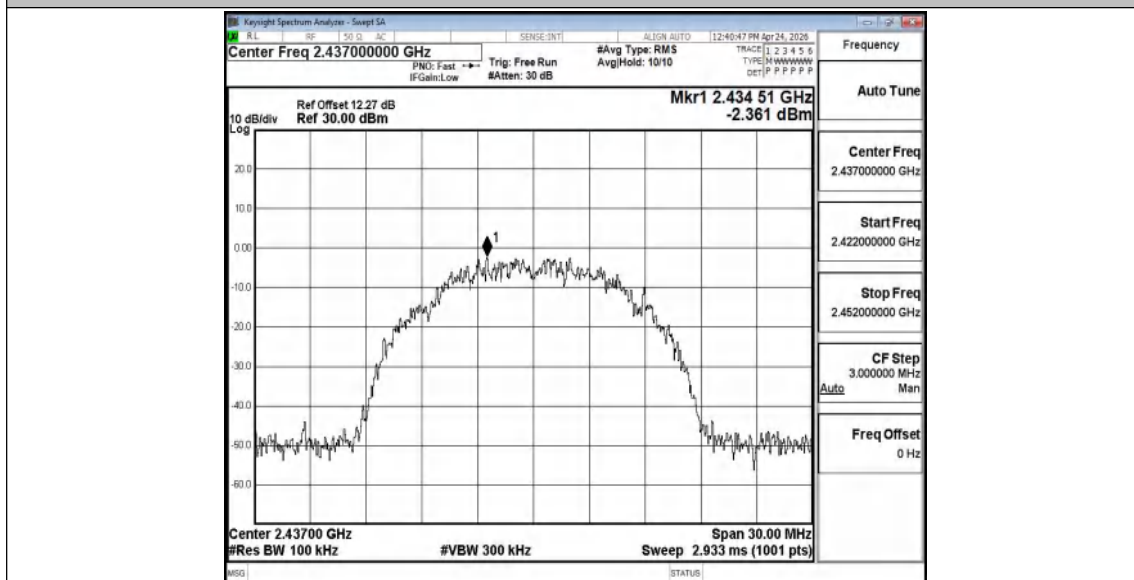
Note :Regarding the spurious emissions from 30MHz to 26.5GHz, the cable lose have been set in the CORREC' of the Spectrum Analyzer during the test.

Test Graphs

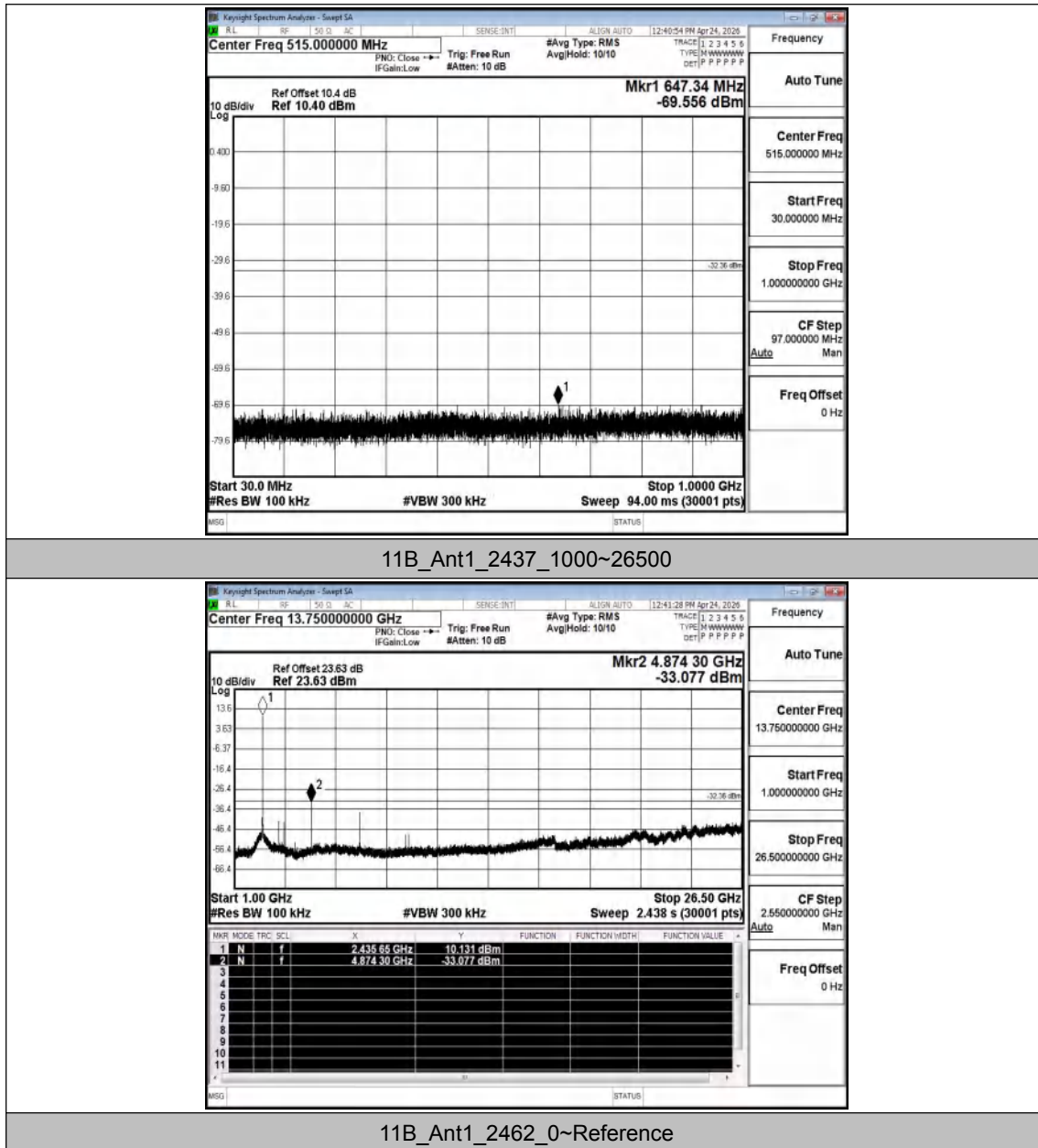


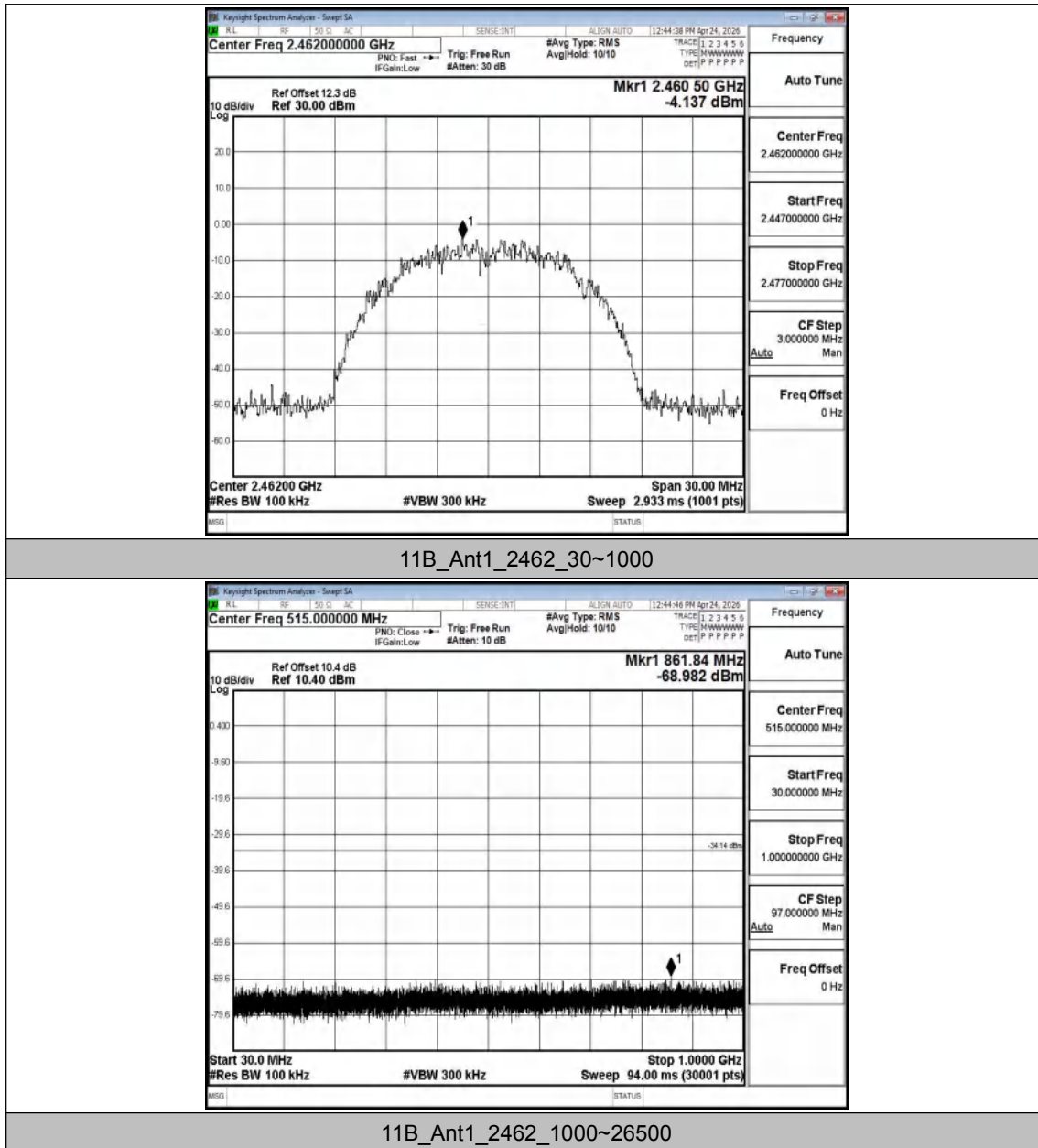


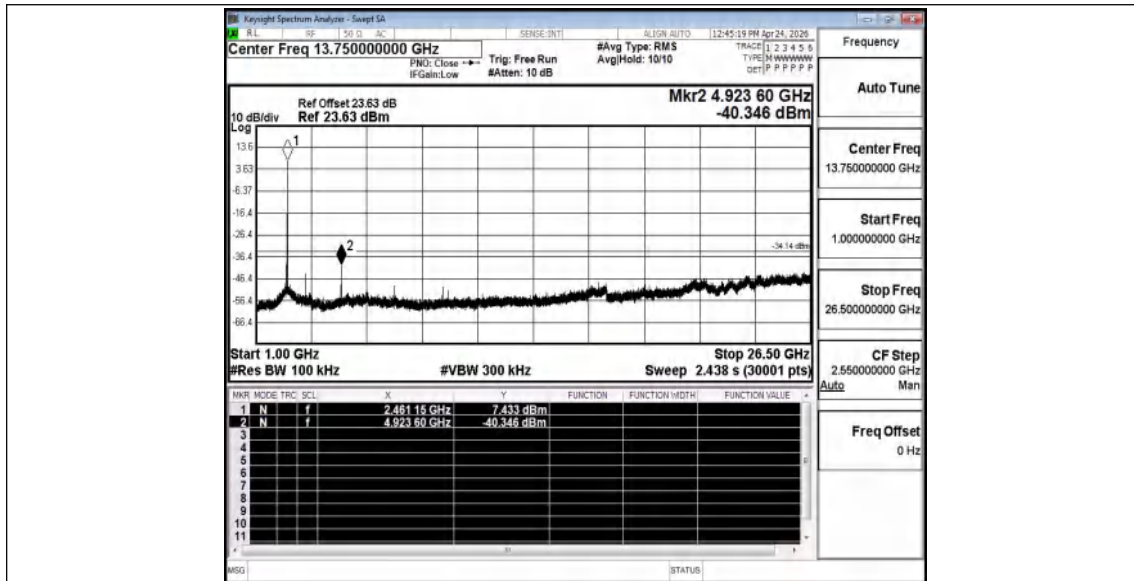
11B_Ant1_2437_0~Reference



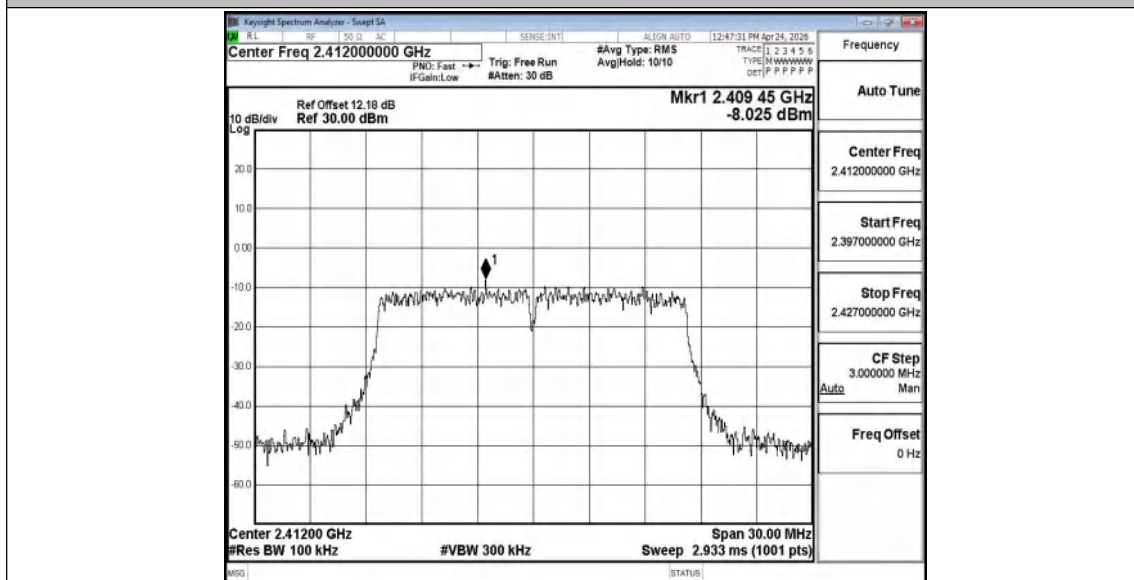
11B_Ant1_2437_30~1000



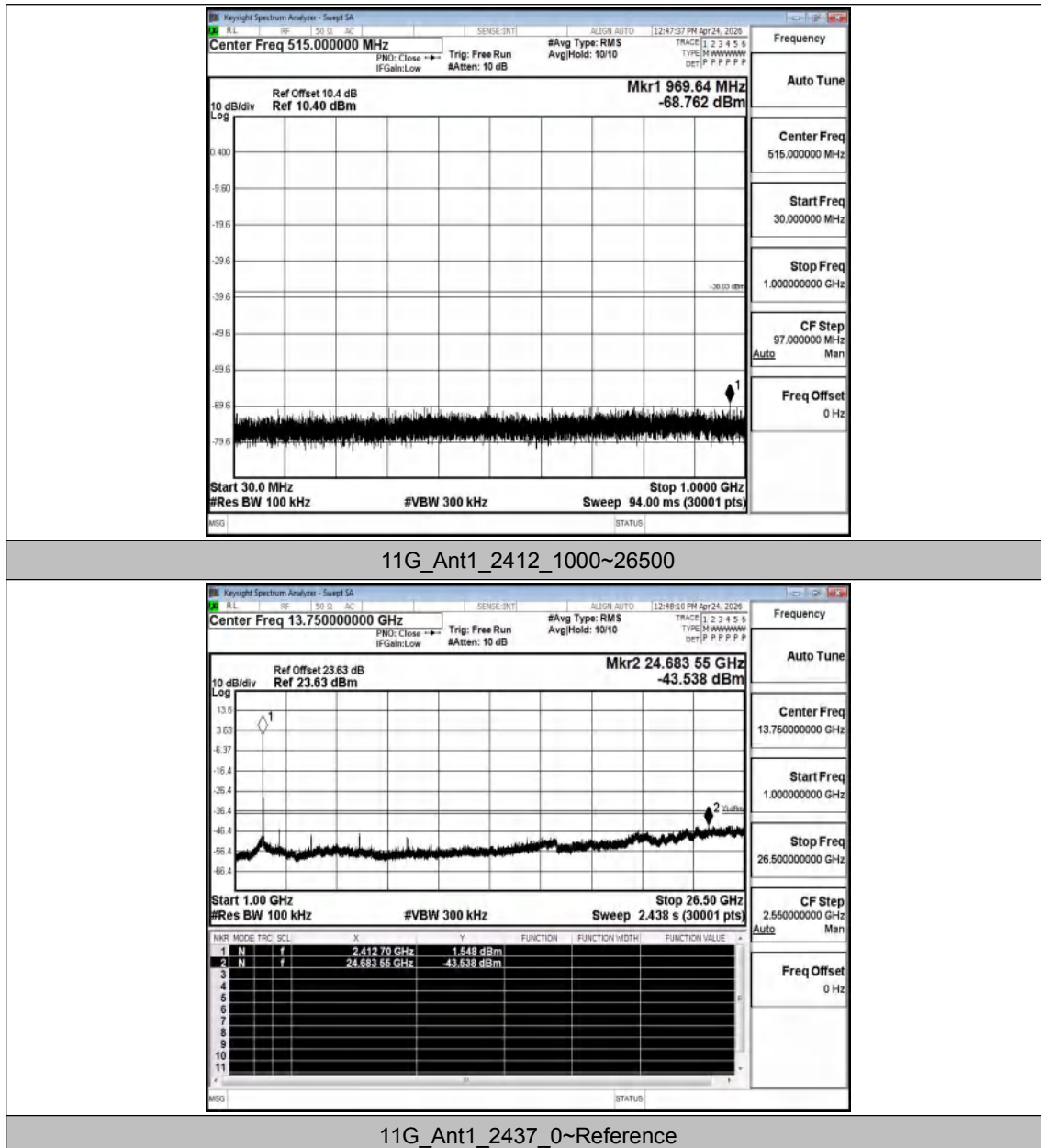


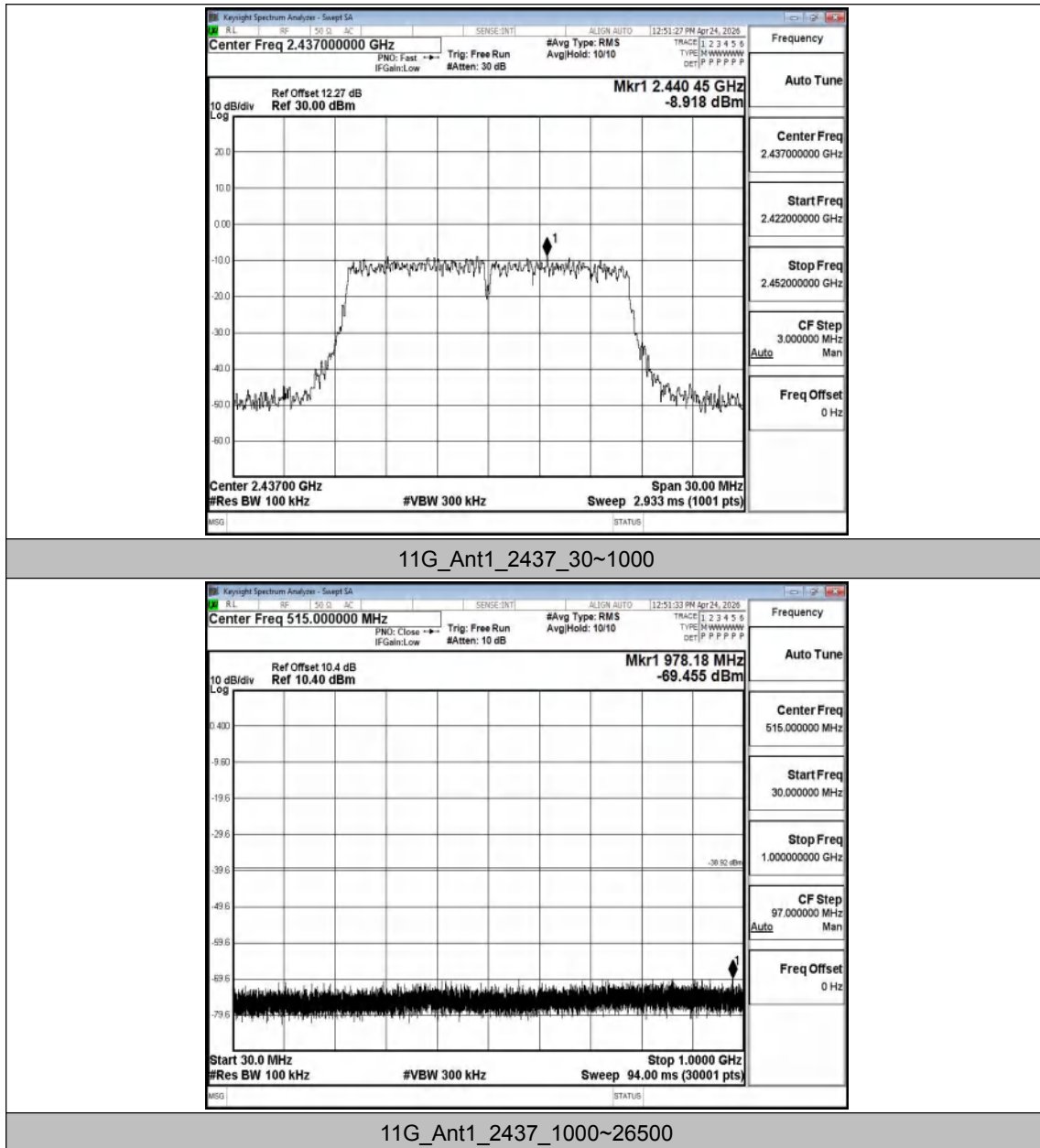


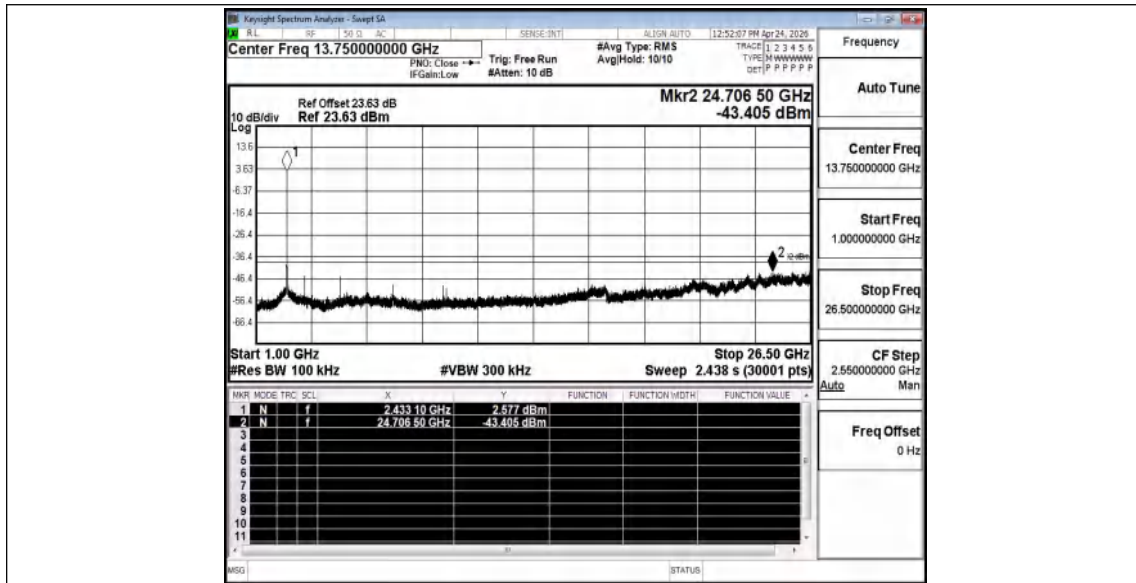
11G_Ant1_2412_0~Reference



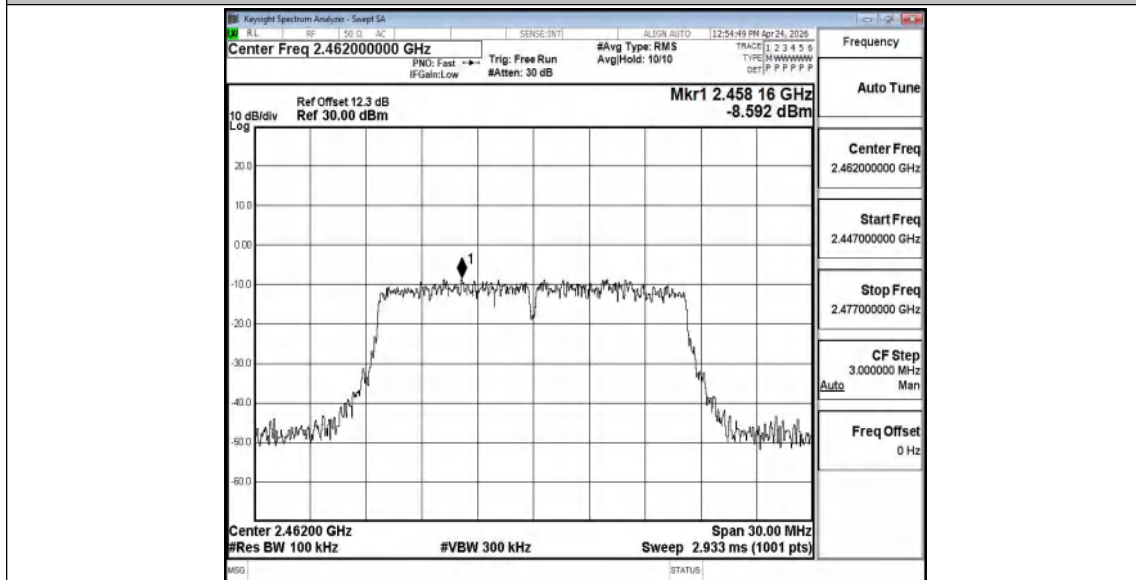
11G_Ant1_2412_30~1000



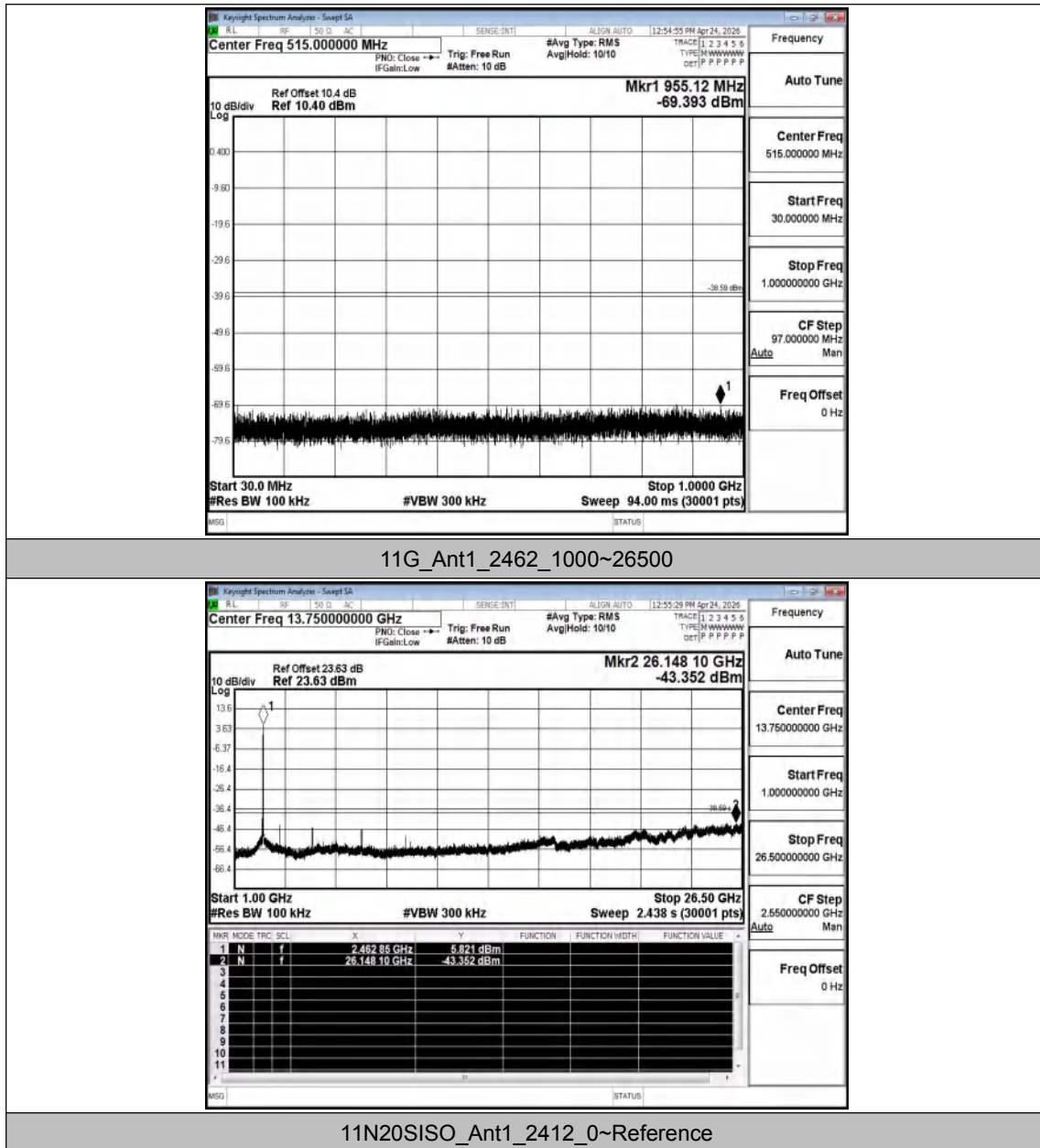


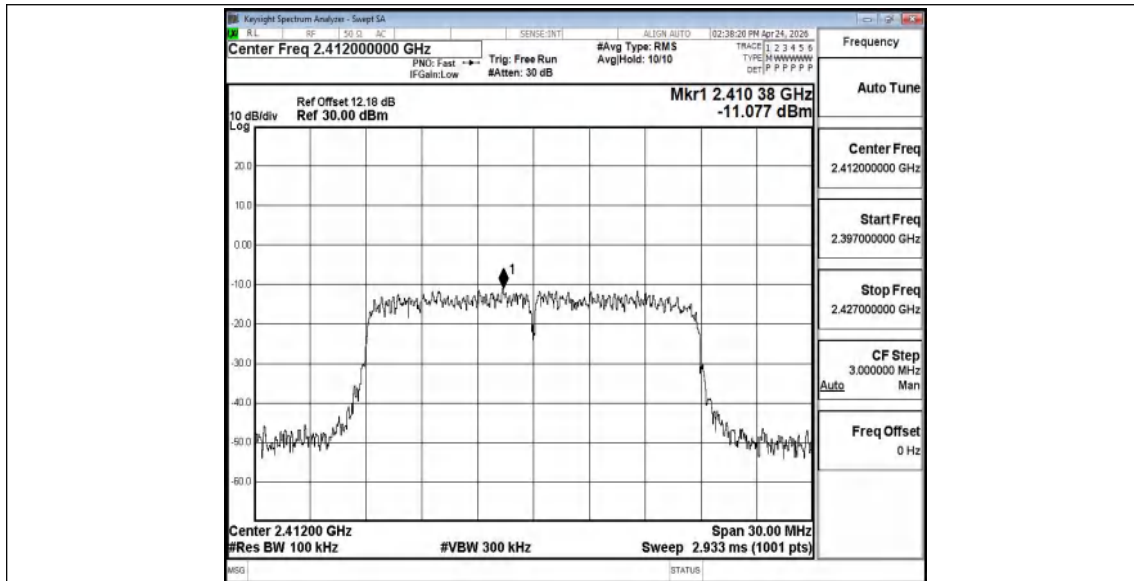


11G_Ant1_2462_0~Reference

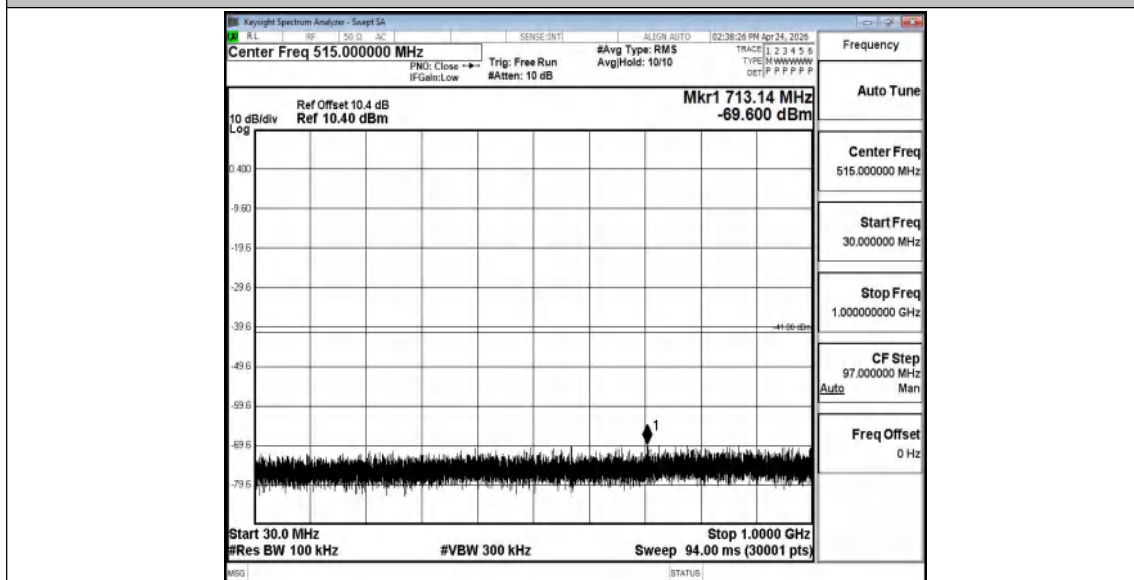


11G_Ant1_2462_30~1000

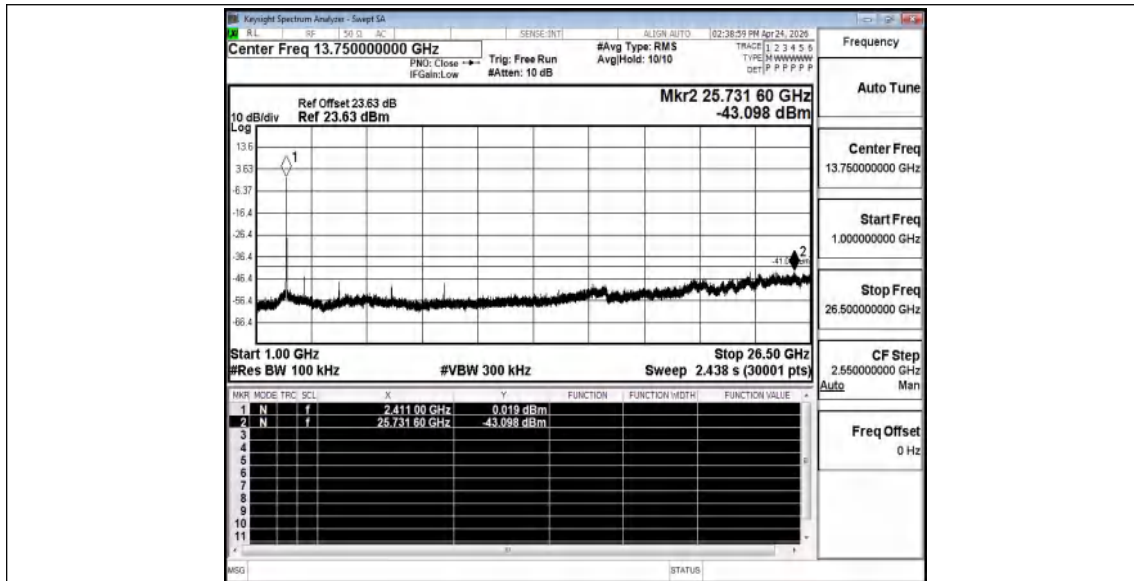




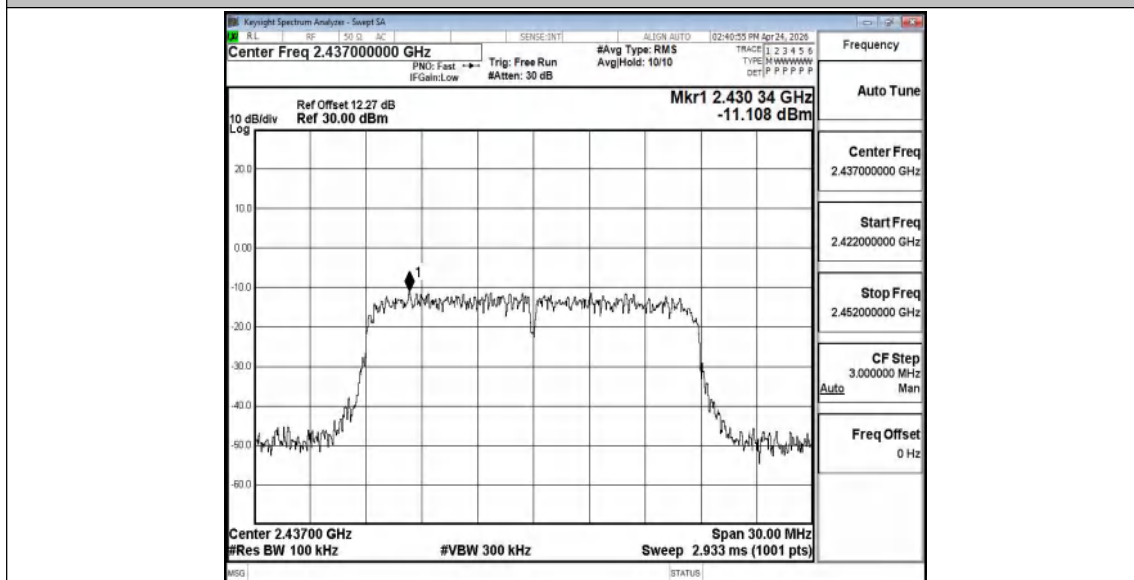
11N20SISO_Ant1_2412_30~1000



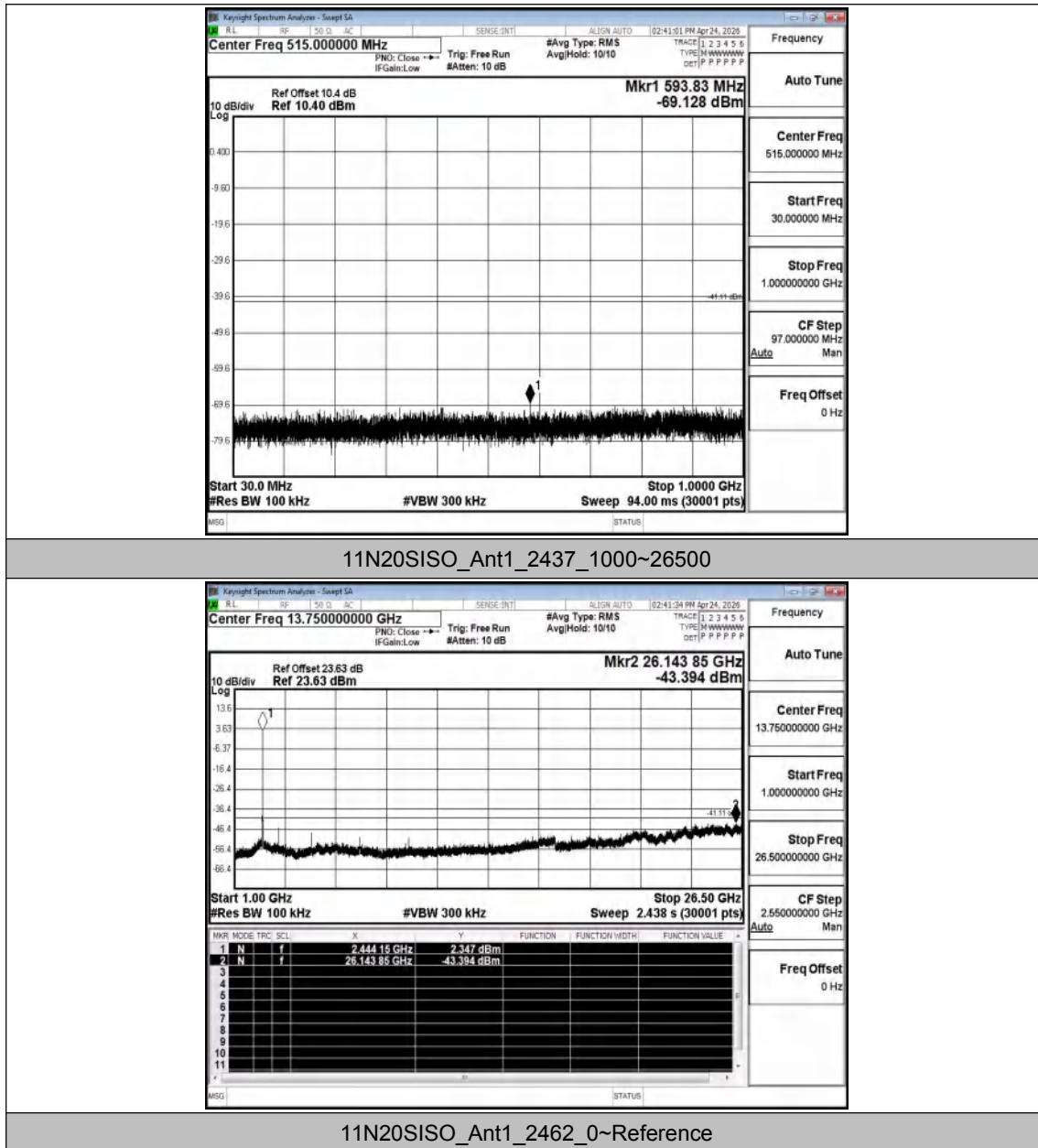
11N20SISO_Ant1_2412_1000~26500

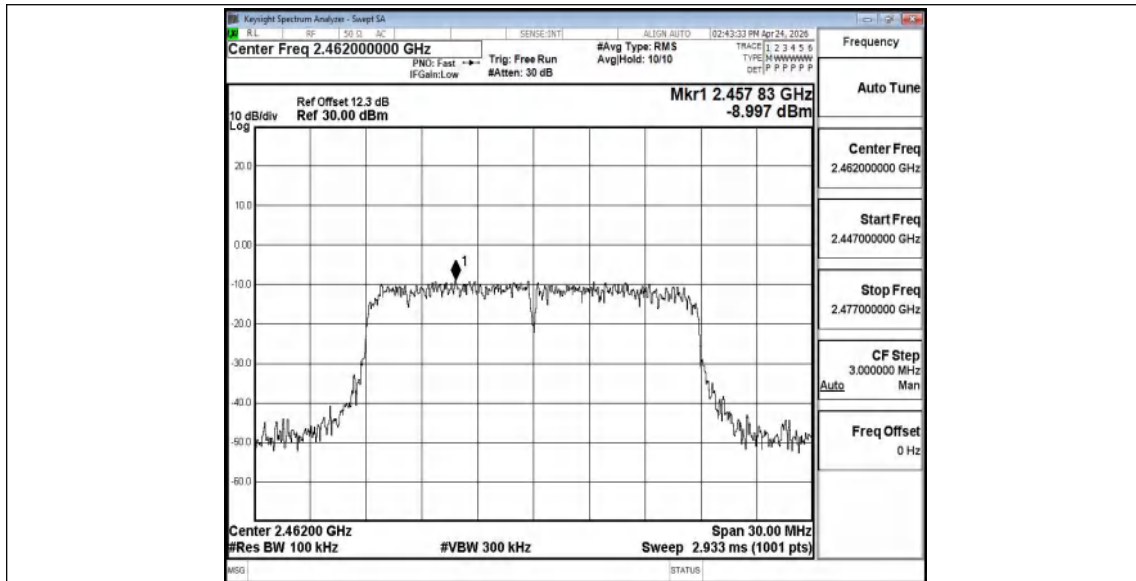


11N20SISO_Ant1_2437_0~Reference

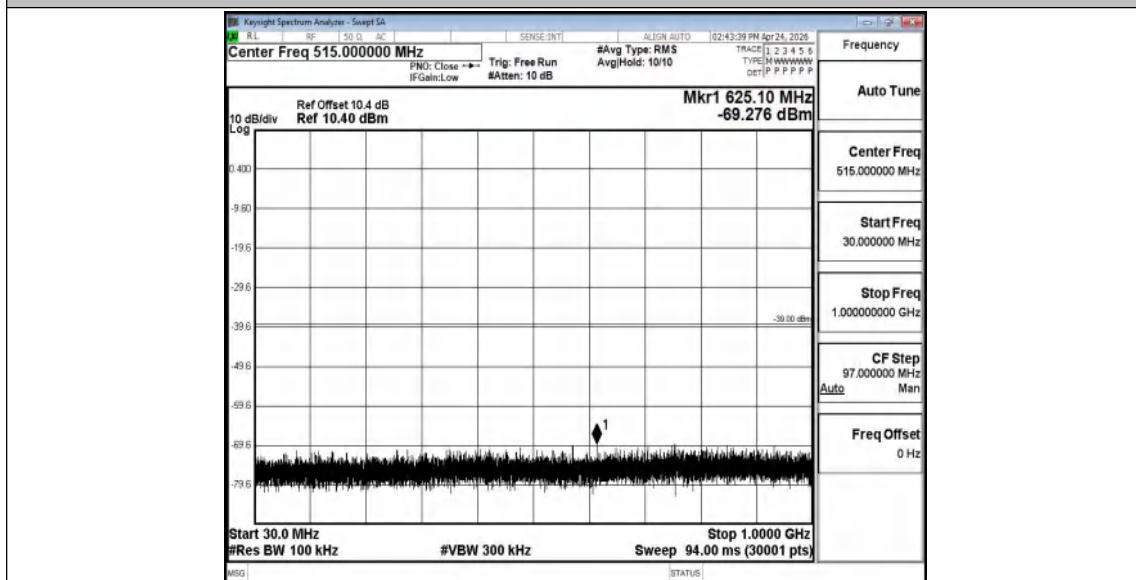


11N20SISO_Ant1_2437_30~1000

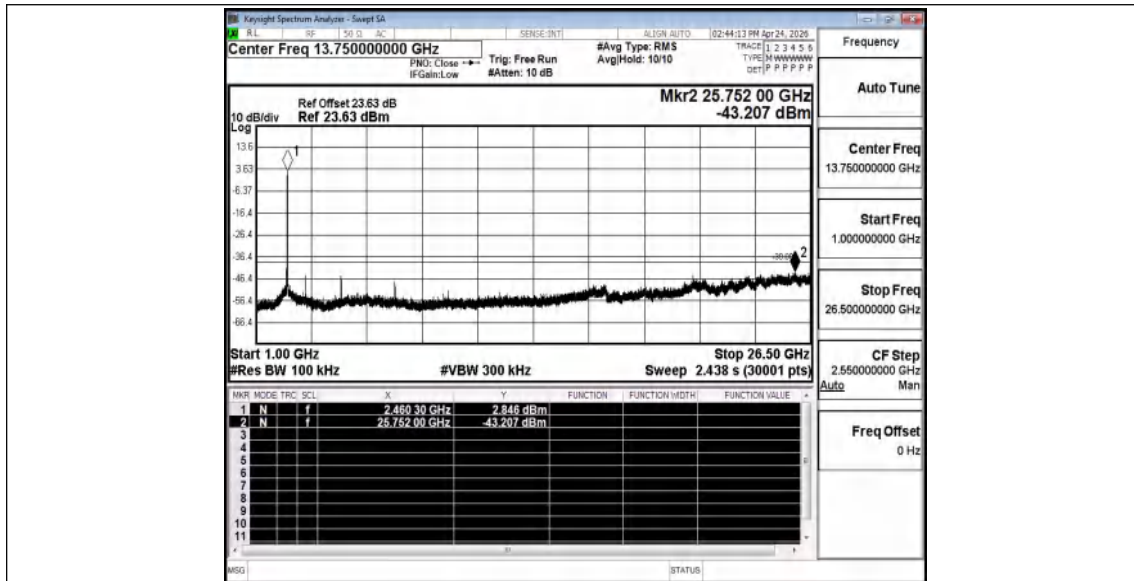




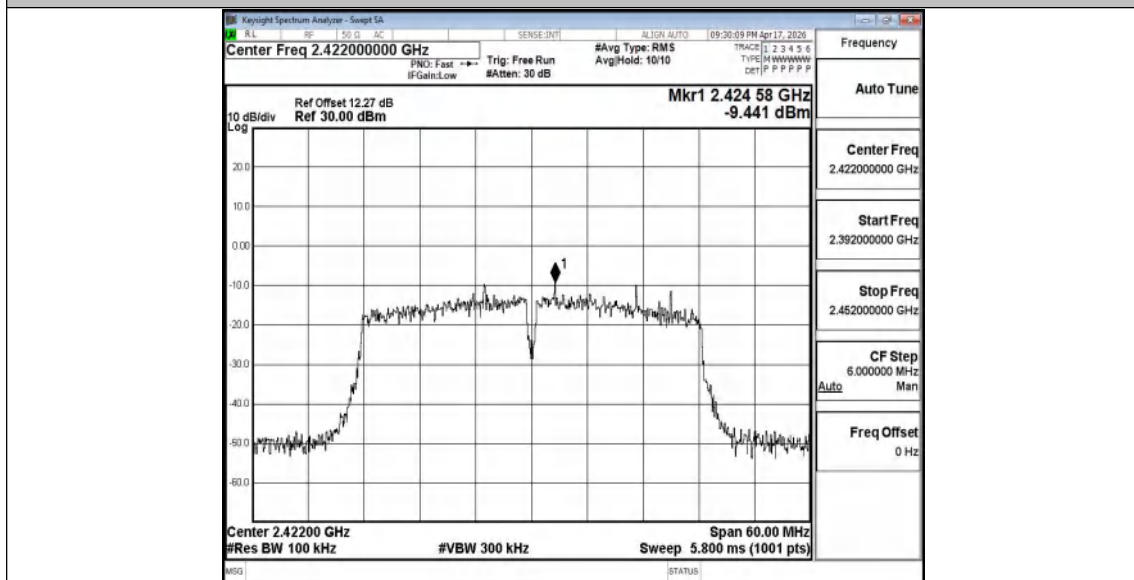
11N20SISO_Ant1_2462_30~1000



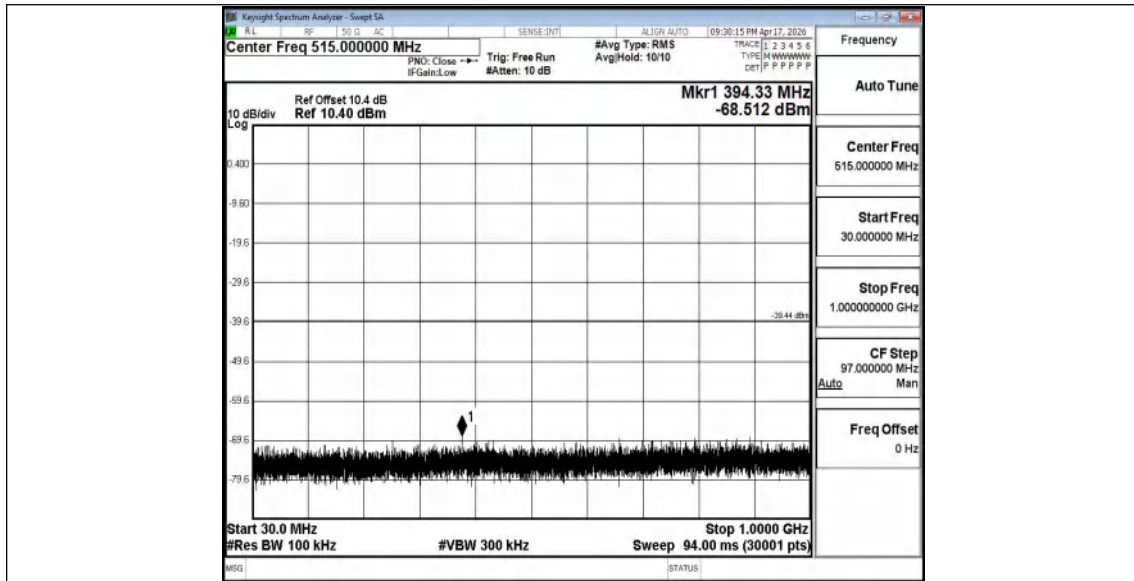
11N20SISO_Ant1_2462_1000~26500



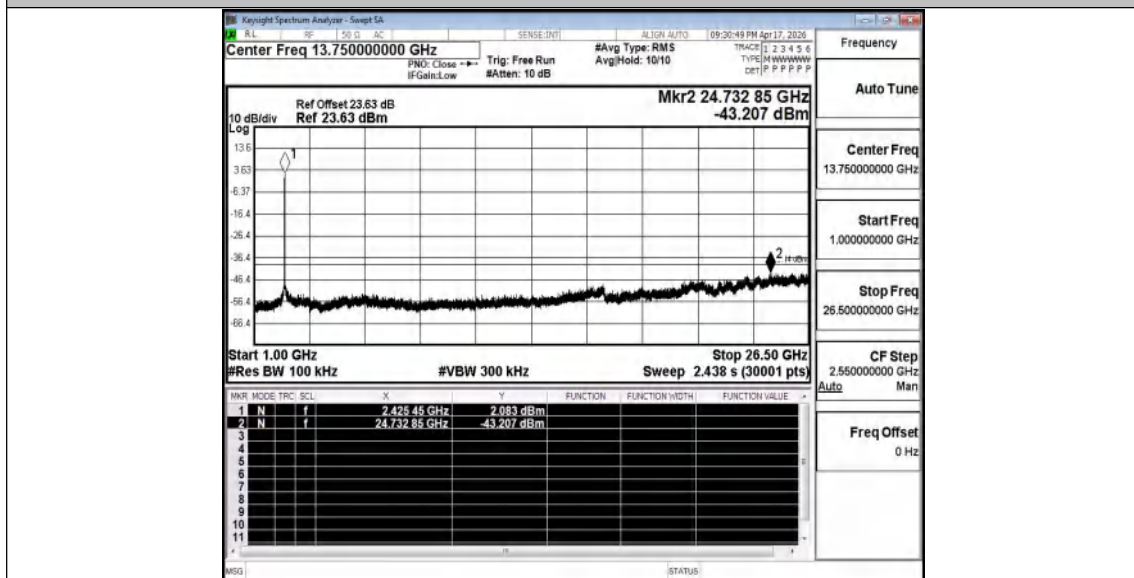
11N40SISO_Ant1_2422_0~Reference



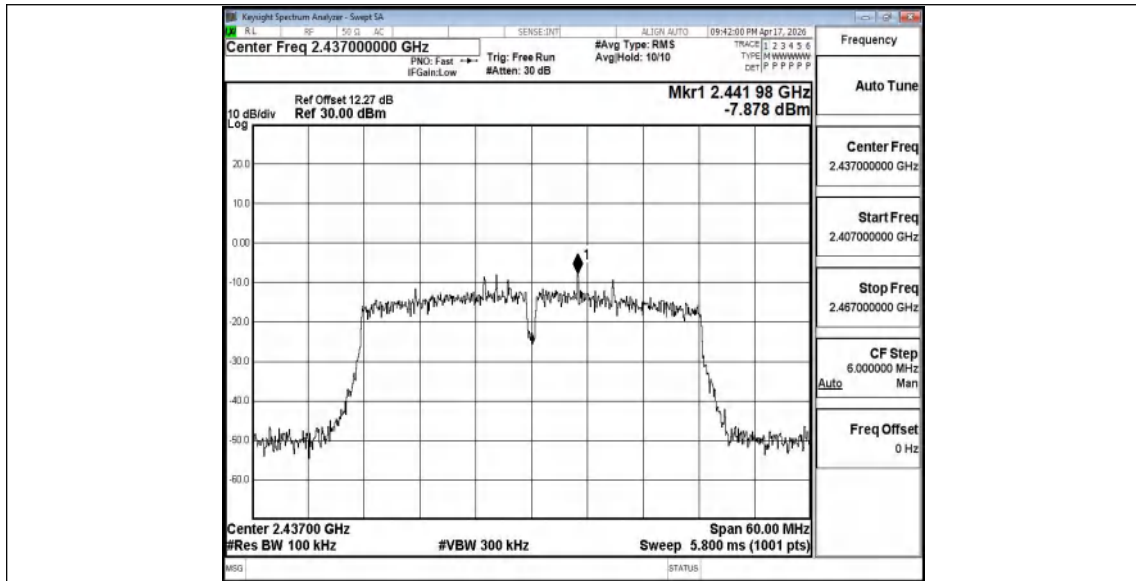
11N40SISO_Ant1_2422_30~1000



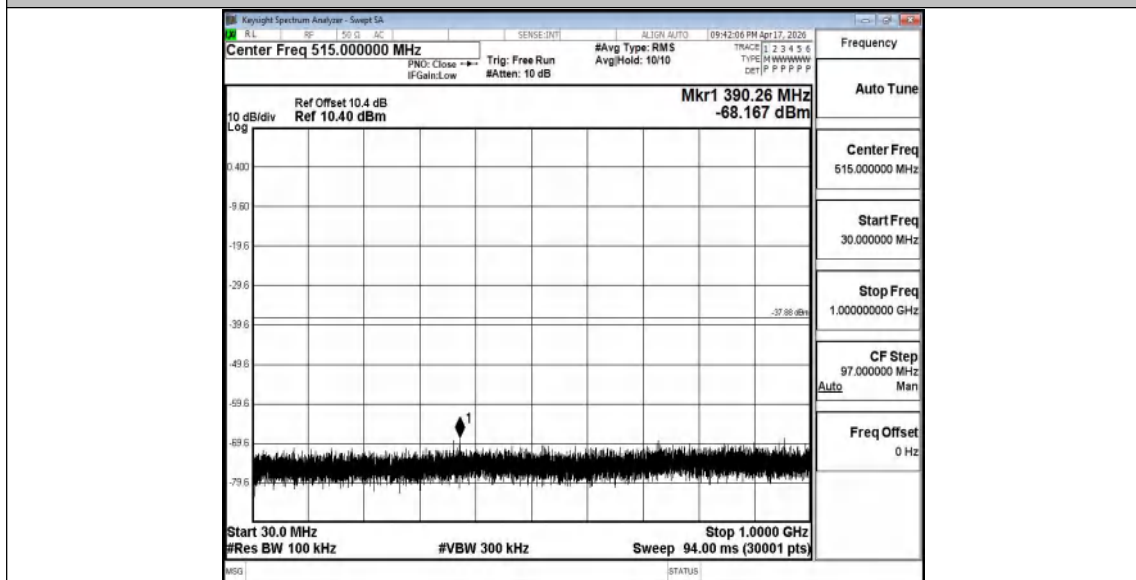
11N40SISO_Ant1_2422_1000~26500



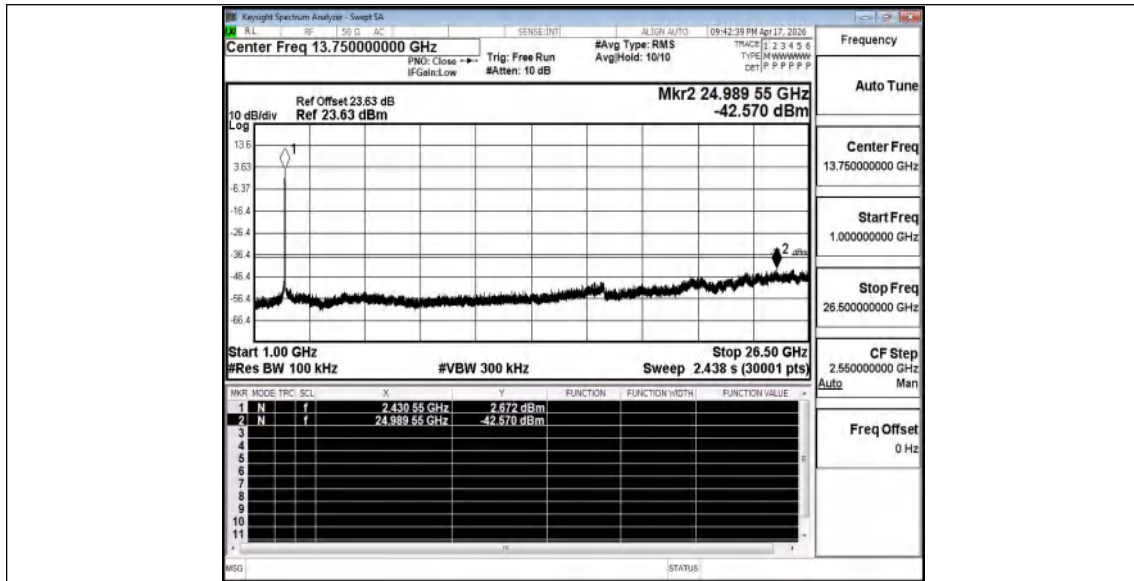
11N40SISO_Ant1_2437_0~Reference



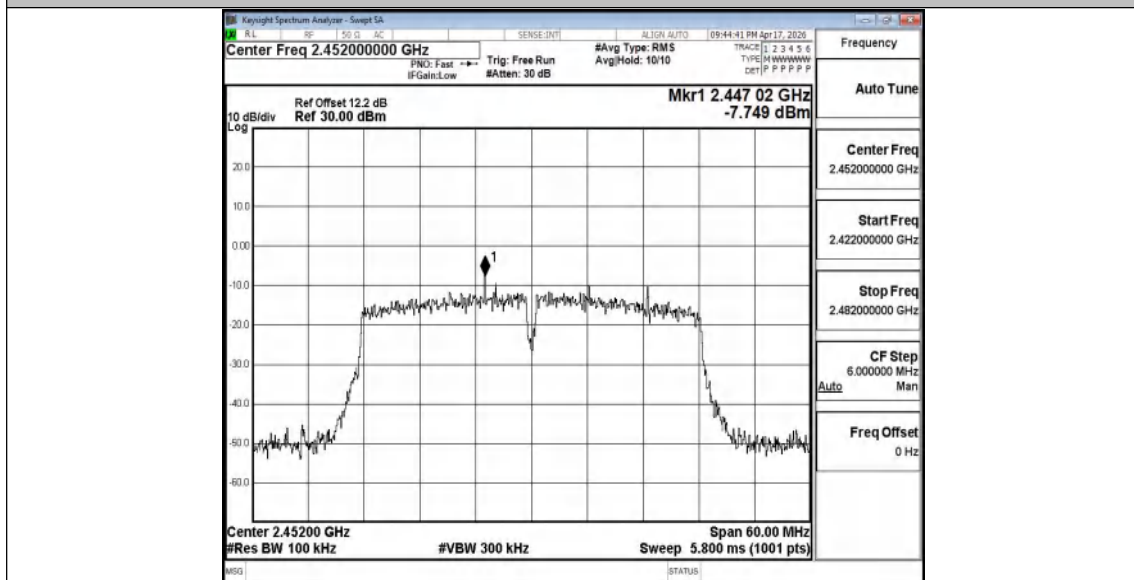
11N40SISO_Ant1_2437_30~1000



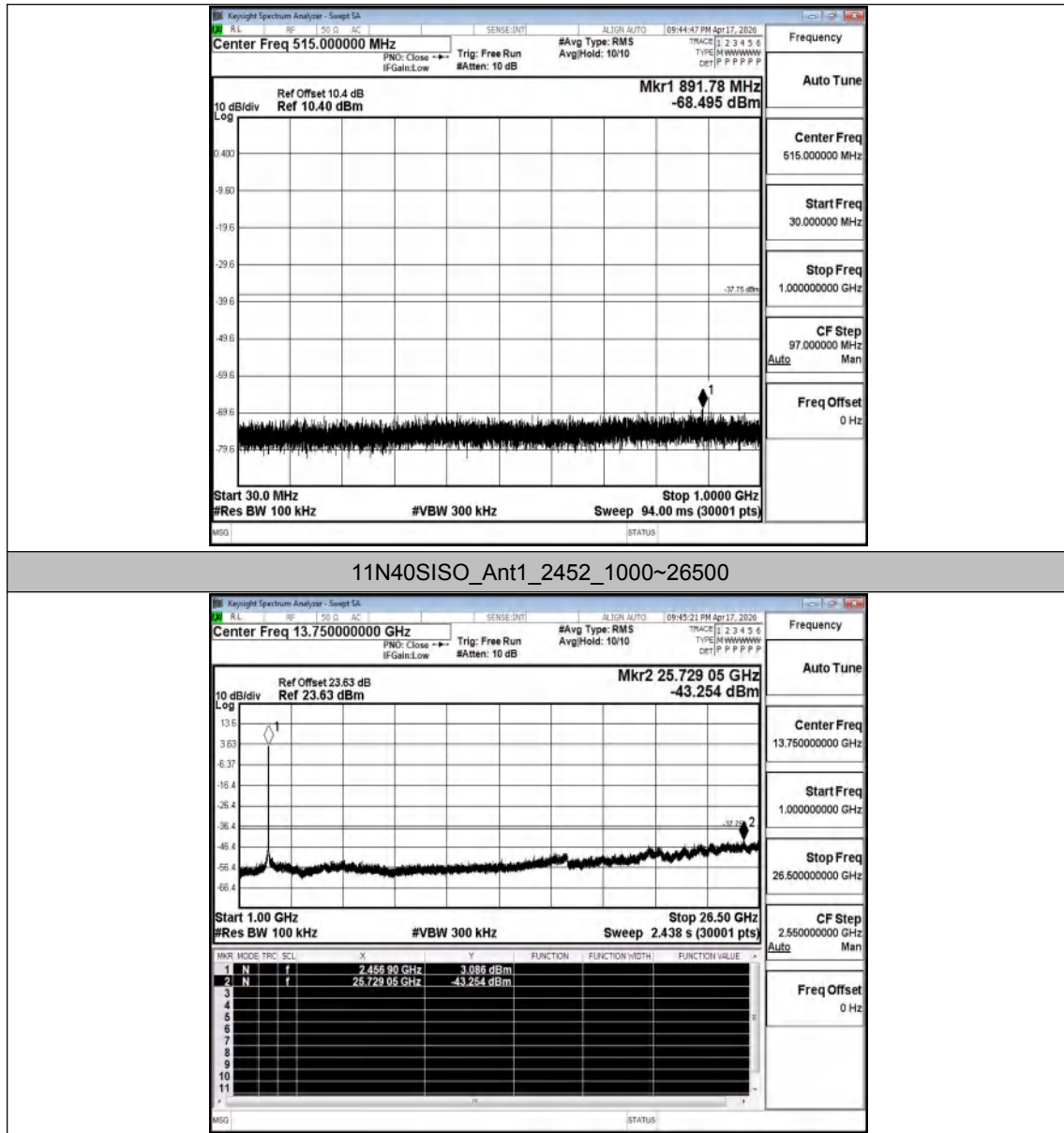
11N40SISO_Ant1_2437_1000~26500



11N40SISO_Ant1_2452_0~Reference



11N40SISO_Ant1_2452_30~1000



C.6 Duty Cycle

Test Result

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	xFactor
11B	Ant1	2412	19.00	19.00	100.00	0.00
		2437	19.00	19.00	100.00	0.00
		2462	19.00	19.00	100.00	0.00
11G	Ant1	2412	5.49	5.51	99.64	0.02
		2437	5.49	5.51	99.64	0.02

Guangzhou LCS Compliance Testing Laboratory Ltd.

Add: No.44-1, Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China

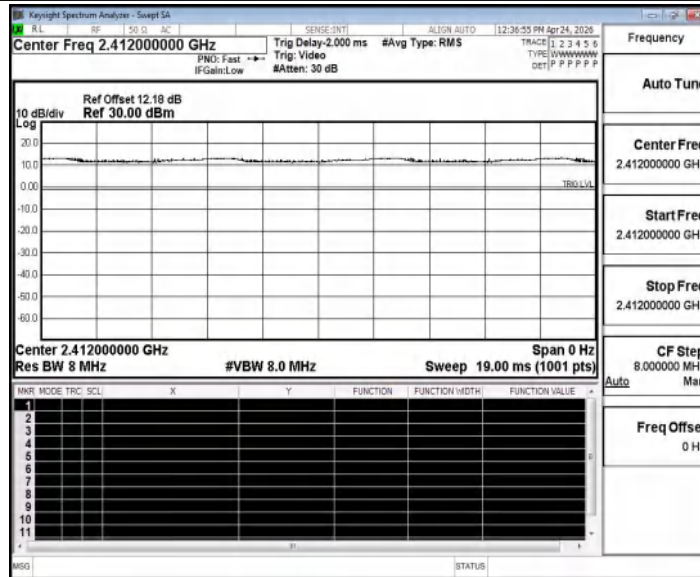
Tel: +(86) 020-39166689 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

		2462	5.48	5.50	99.64	0.02
11N20SISO	Ant1	2412	5.09	5.11	99.61	0.02
		2437	5.08	5.11	99.41	0.03
		2462	5.08	5.11	99.41	0.03
11N40SISO	Ant1	2422	5.08	5.10	99.61	0.02
		2437	5.08	5.10	99.61	0.02
		2452	5.08	5.10	99.61	0.02

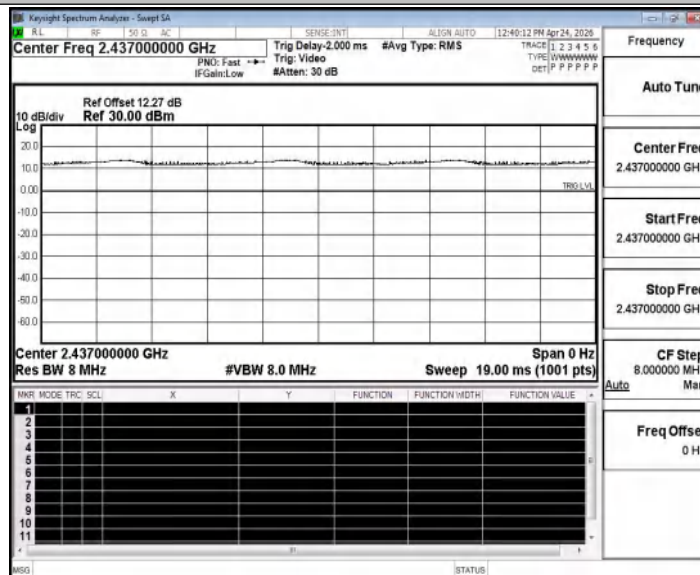
Note :offset=System attenuation +cabal loss

Test Graphs

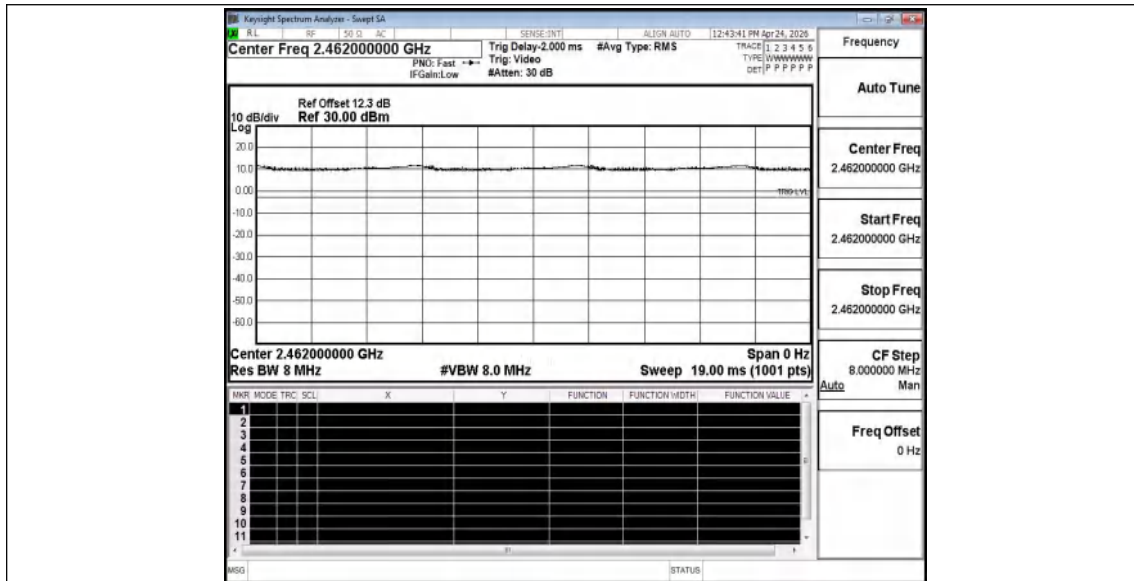
11B_Ant1_2412



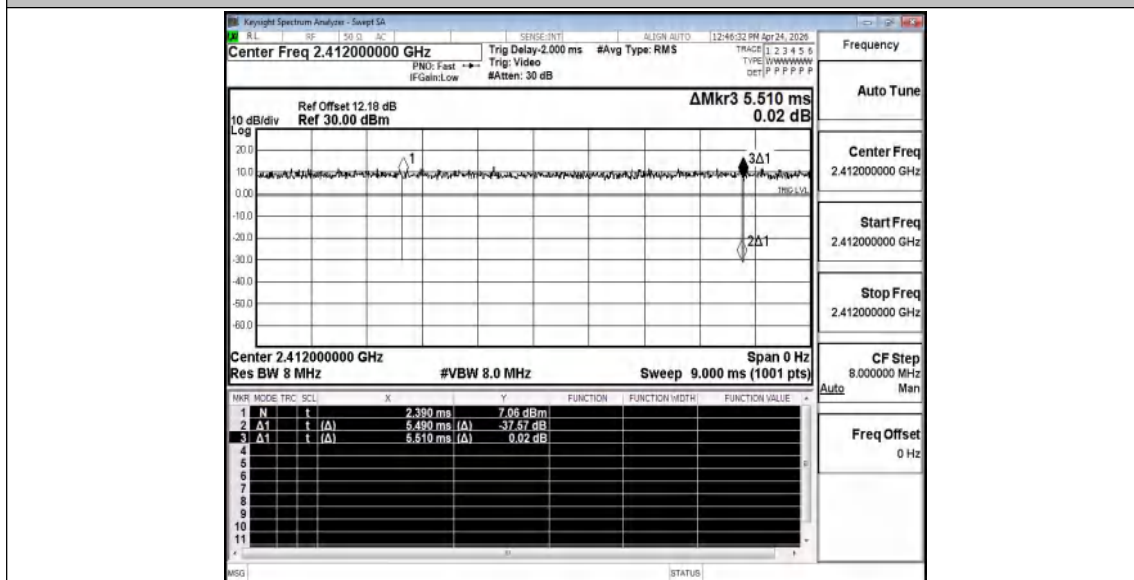
11B_Ant1_2437



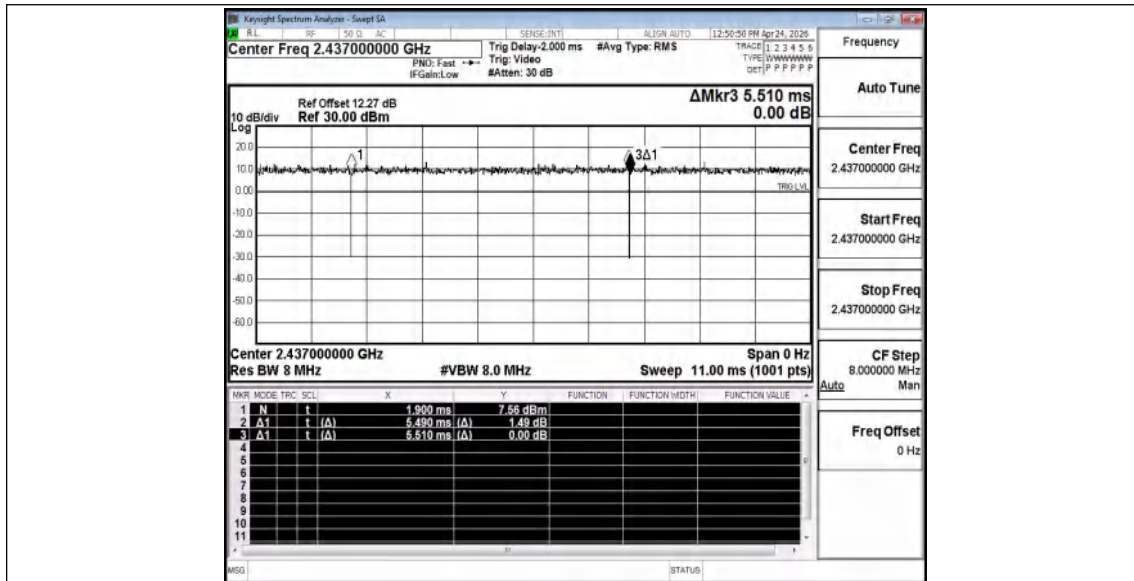
11B_Ant1_2462



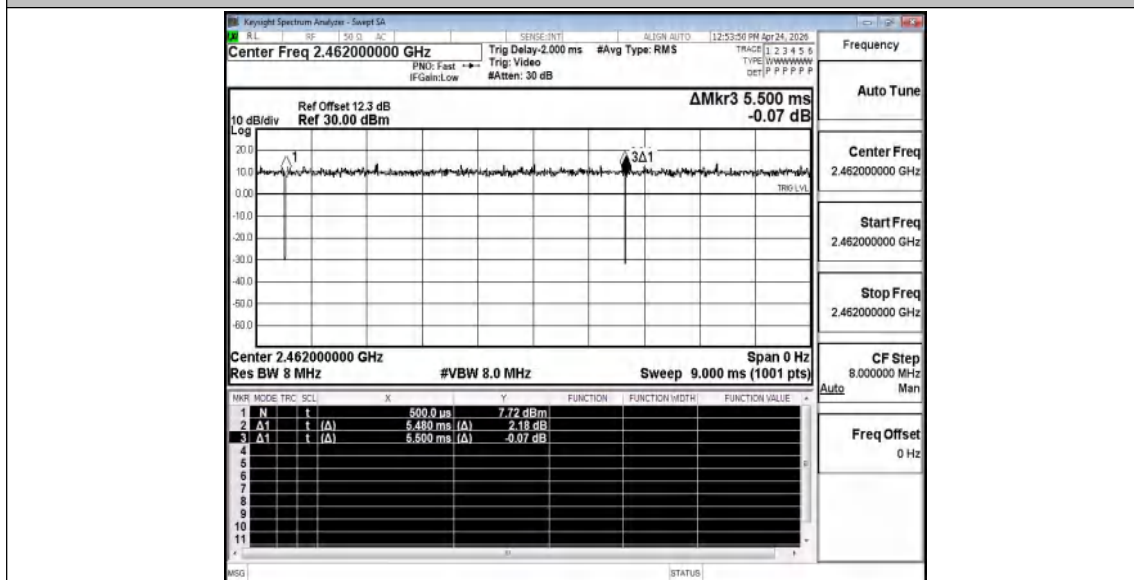
11G_Ant1_2412



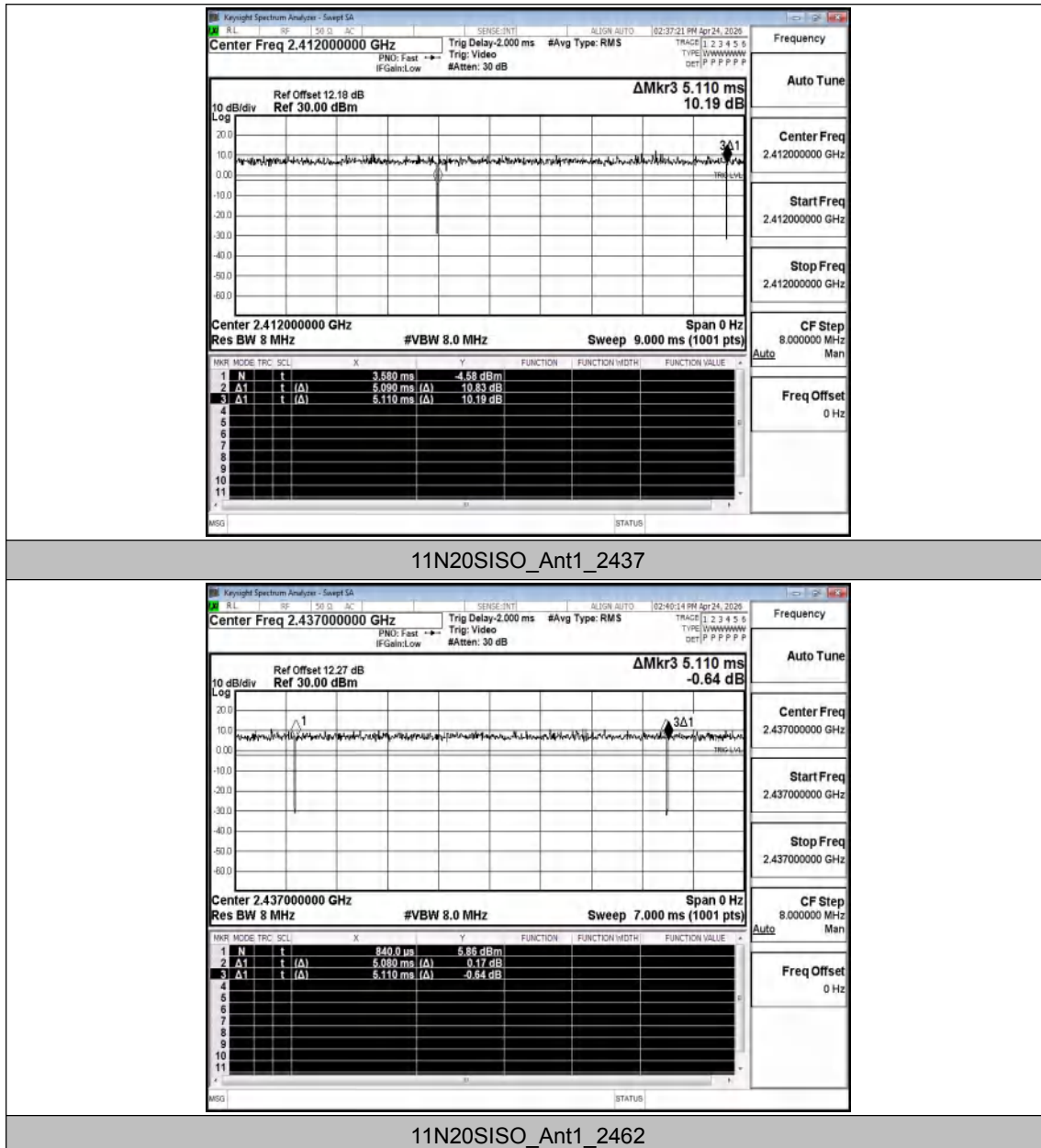
11G_Ant1_2437

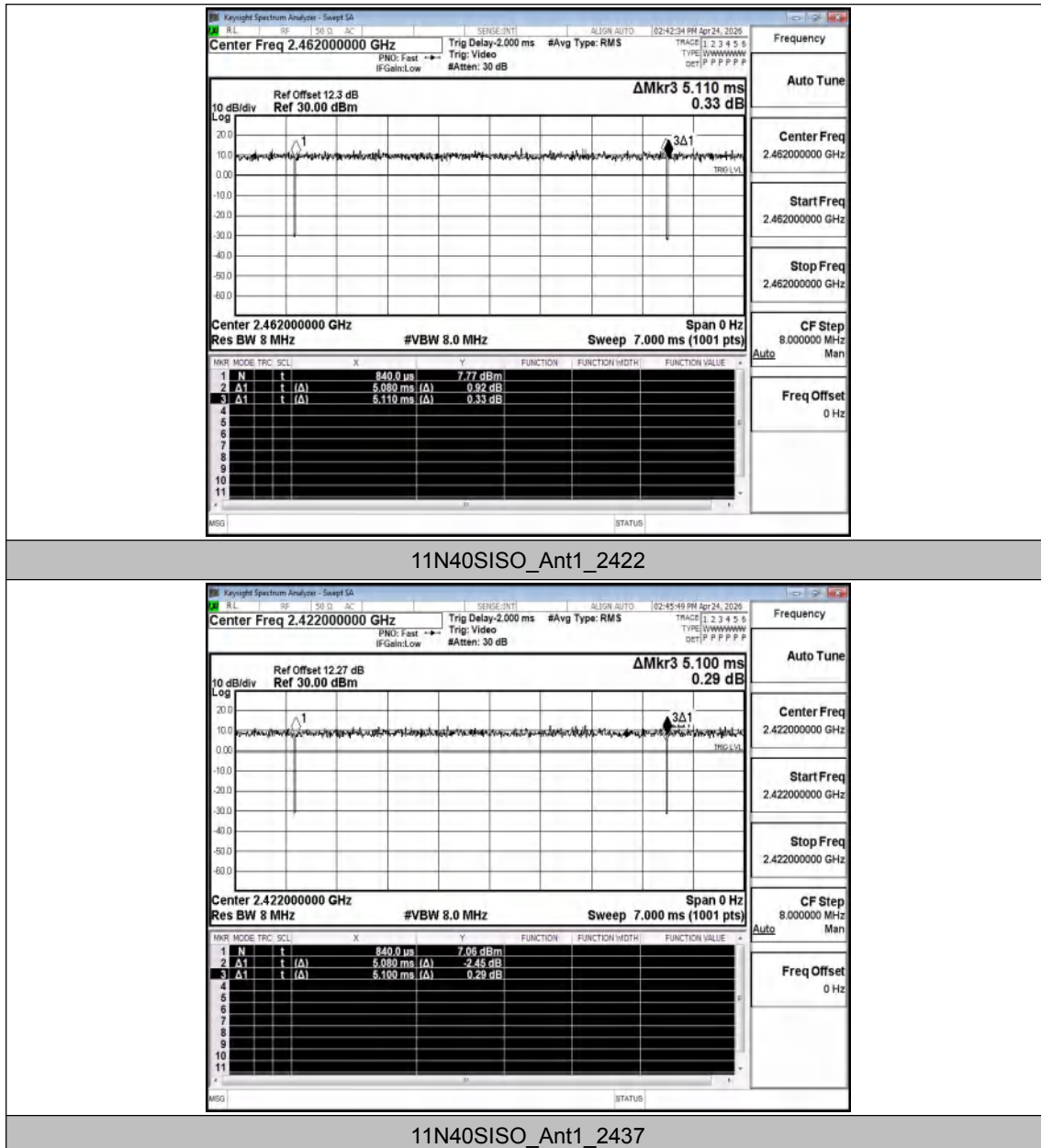


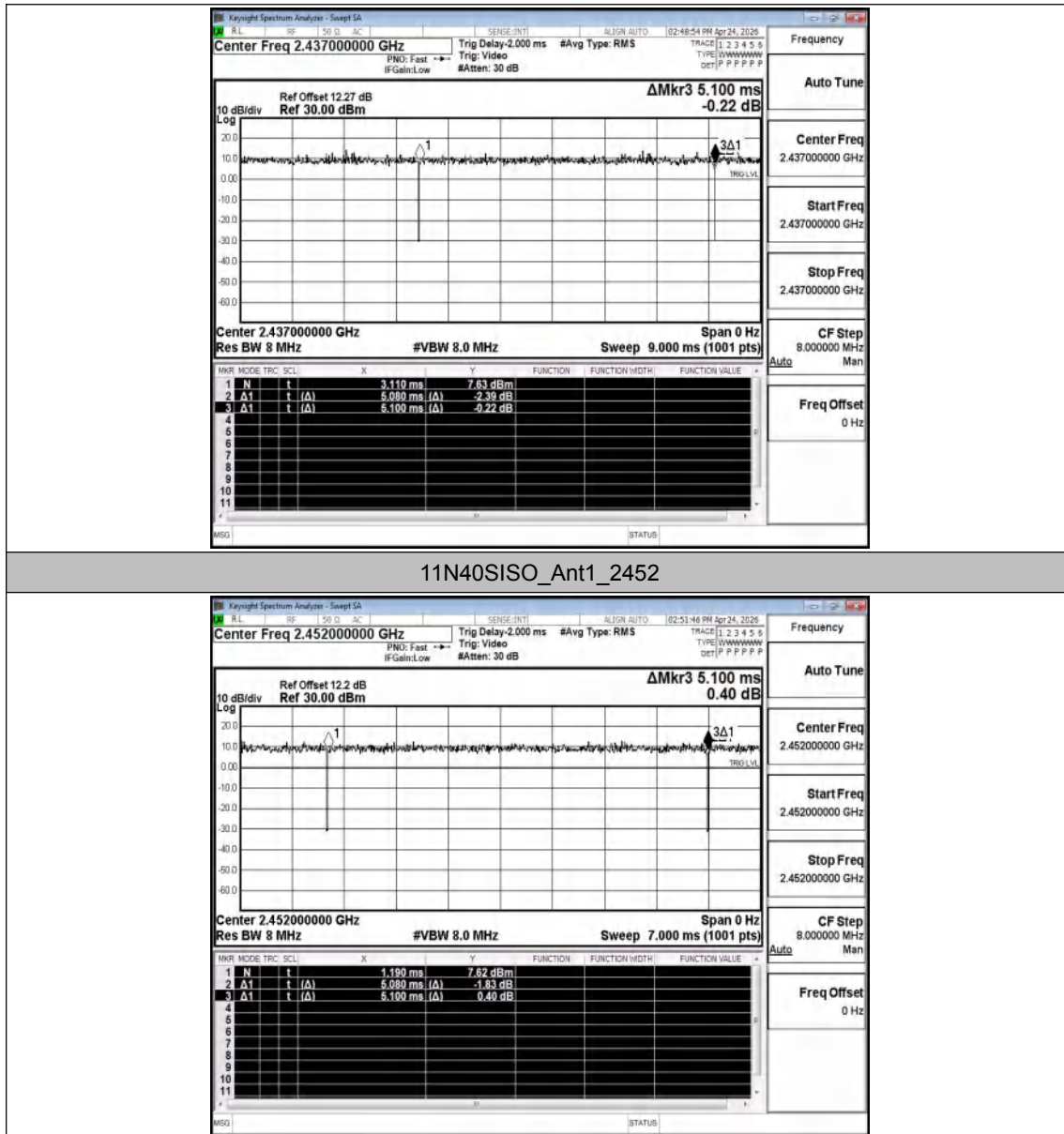
11G_Ant1_2462



11N20SISO_Ant1_2412







C.7Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Frequency[MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
11B	Ant1	Low	2412	AV	2310.000	-48.5	≤-43.20	2.00	0.00	48.70	≤54	PASS
				AV	2378.390	-44.68	≤-43.20	2.00	0.00	52.52	≤54	PASS
				AV	2390.000	-48.1	≤-43.20	2.00	0.00	49.10	≤54	PASS
				Peak	2310.000	-41.36	≤-23.20	2.00	0.00	55.84	≤74	PASS
				Peak	2375.400	-36.47	≤-23.20	2.00	0.00	60.73	≤74	PASS
				Peak	2390.000	-39.99	≤-23.20	2.00	0.00	57.21	≤74	PASS
		High	2462	AV	2483.500	-44.92	≤-43.20	2.00	0.00	52.28	≤54	PASS
				AV	2496.760	-44.68	≤-43.20	2.00	0.00	52.52	≤54	PASS
				AV	2500.000	-47.5	≤-43.20	2.00	0.00	49.70	≤54	PASS
				Peak	2483.500	-39.65	≤-23.20	2.00	0.00	57.55	≤74	PASS
				Peak	2496.980	-36.83	≤-23.20	2.00	0.00	60.37	≤74	PASS
				Peak	2500.000	-39.4	≤-23.20	2.00	0.00	57.80	≤74	PASS
11G	Ant1	Low	2412	AV	2310.000	-46.59	≤-43.22	2.00	0.02	50.63	≤54	PASS
				AV	2376.310	-44.24	≤-43.22	2.00	0.02	52.98	≤54	PASS
				AV	2390.000	-47.17	≤-43.22	2.00	0.02	50.05	≤54	PASS
				Peak	2310.000	-42.1	≤-23.20	2.00	0.00	55.10	≤74	PASS
				Peak	2338.350	-36.53	≤-23.20	2.00	0.00	60.67	≤74	PASS
				Peak	2390.000	-40.48	≤-23.20	2.00	0.00	56.72	≤74	PASS
		High	2462	AV	2483.500	-47.14	≤-43.22	2.00	0.02	50.08	≤54	PASS
				AV	2483.890	-43.79	≤-43.22	2.00	0.02	53.43	≤54	PASS
				AV	2500.000	-47.05	≤-43.22	2.00	0.02	50.17	≤54	PASS
				Peak	2483.500	-40.02	≤-23.20	2.00	0.00	57.18	≤74	PASS
				Peak	2488.950	-36.87	≤-23.20	2.00	0.00	60.33	≤74	PASS
				Peak	2500.000	-37.38	≤-23.20	2.00	0.00	59.82	≤74	PASS
11N20SISO	Ant1	Low	2412	AV	2310.000	-45.15	≤-43.22	2.00	0.02	52.07	≤54	PASS
				AV	2369.030	-44.49	≤-43.22	2.00	0.02	52.73	≤54	PASS
				AV	2390.000	-47.74	≤-43.22	2.00	0.02	49.48	≤54	PASS
				Peak	2310.000	-40.81	≤-23.20	2.00	0.00	56.39	≤74	PASS
				Peak	2377.870	-36.96	≤-23.20	2.00	0.00	60.24	≤74	PASS
				Peak	2390.000	-41.42	≤-23.20	2.00	0.00	55.78	≤74	PASS
		High	2462	AV	2483.500	-47.36	≤-43.23	2.00	0.03	49.87	≤54	PASS
				AV	2483.780	-44.35	≤-43.23	2.00	0.03	52.88	≤54	PASS
				AV	2500.000	-48.09	≤-43.23	2.00	0.03	49.14	≤54	PASS
				Peak	2483.500	-39.56	≤-23.20	2.00	0.00	57.64	≤74	PASS
				Peak	2494.230	-35.8	≤-23.20	2.00	0.00	61.40	≤74	PASS

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				Peak	2500.000	-39.25	≤-23.20	2.00	0.00	57.95	≤74	PASS
11N40SISO	Ant1	Low	2422	AV	2310.000	-47.66	≤-43.52	2.00	0.02	49.62	≤54	PASS
				AV	2385.200	-45.98	≤-43.52	2.00	0.02	51.30	≤54	PASS
				AV	2390.000	-46.39	≤-43.52	2.00	0.02	50.89	≤54	PASS
				Peak	2310.000	-39.86	≤-23.20	2.00	0.00	57.40	≤74	PASS
				Peak	2378.600	-32.01	≤-23.20	2.00	0.00	65.25	≤74	PASS
				Peak	2390.000	-39.08	≤-23.20	2.00	0.00	58.18	≤74	PASS
		High	2452	AV	2483.500	-46.22	≤-43.46	2.00	0.02	51.06	≤54	PASS
				AV	2487.250	-45.87	≤-43.46	2.00	0.02	51.41	≤54	PASS
				AV	2500.000	-46.69	≤-43.46	2.00	0.02	50.59	≤54	PASS
				Peak	2483.500	-37.96	≤-23.20	2.00	0.00	59.30	≤74	PASS
				Peak	2492.125	-36.18	≤-23.20	2.00	0.00	61.08	≤74	PASS
				Peak	2500.000	-38.98	≤-23.20	2.00	0.00	58.28	≤74	PASS

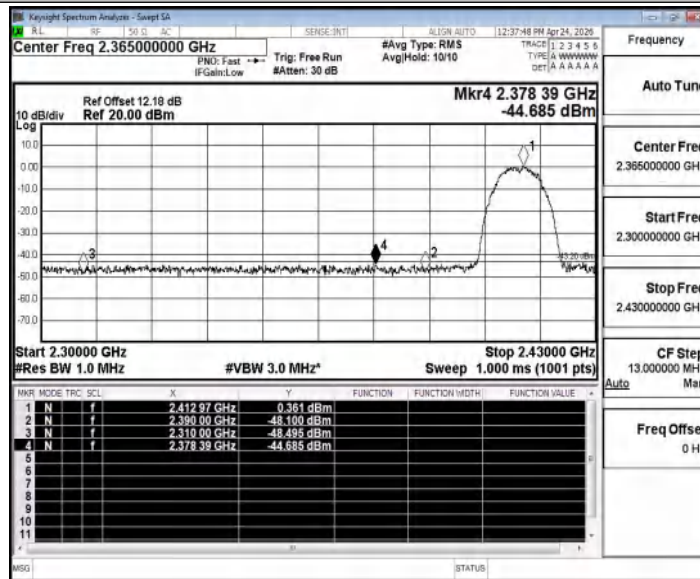
Note :offset=System attenuation +cabel loss

Note:

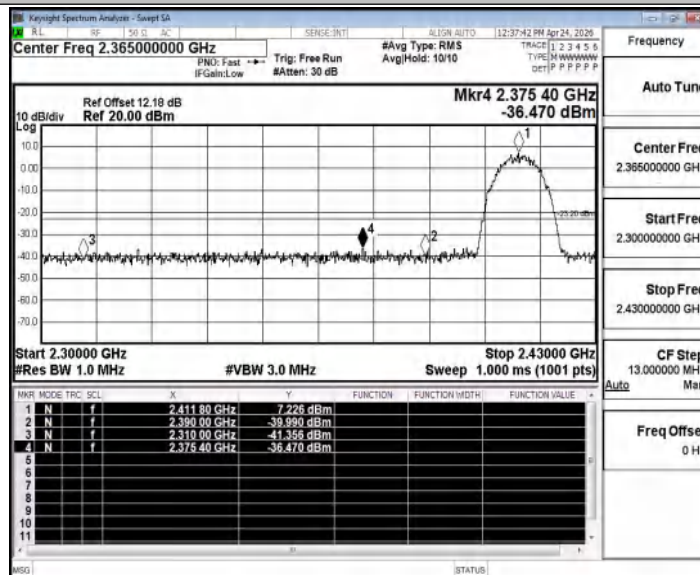
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

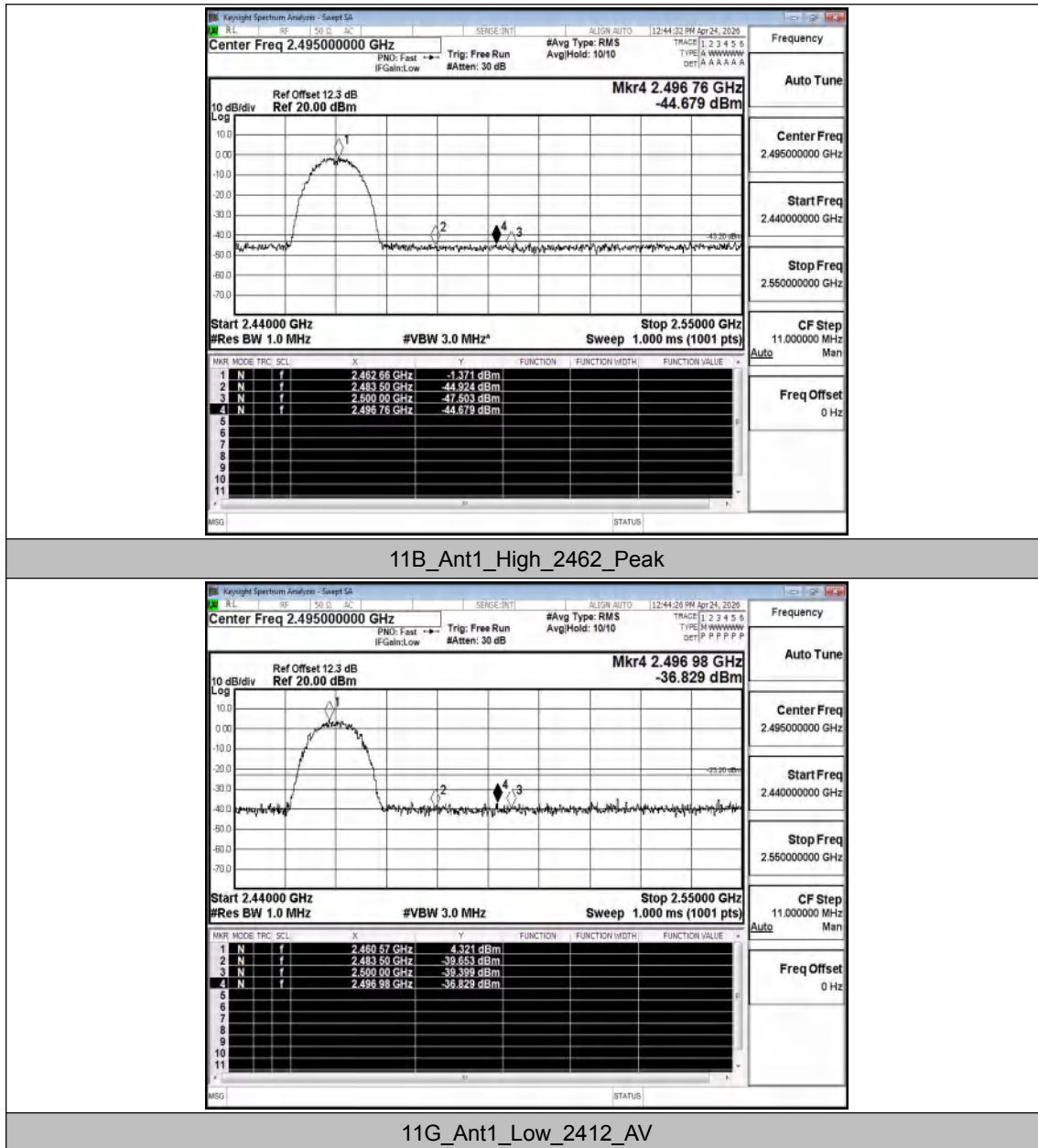
11B_Ant1_Low_2412_AV

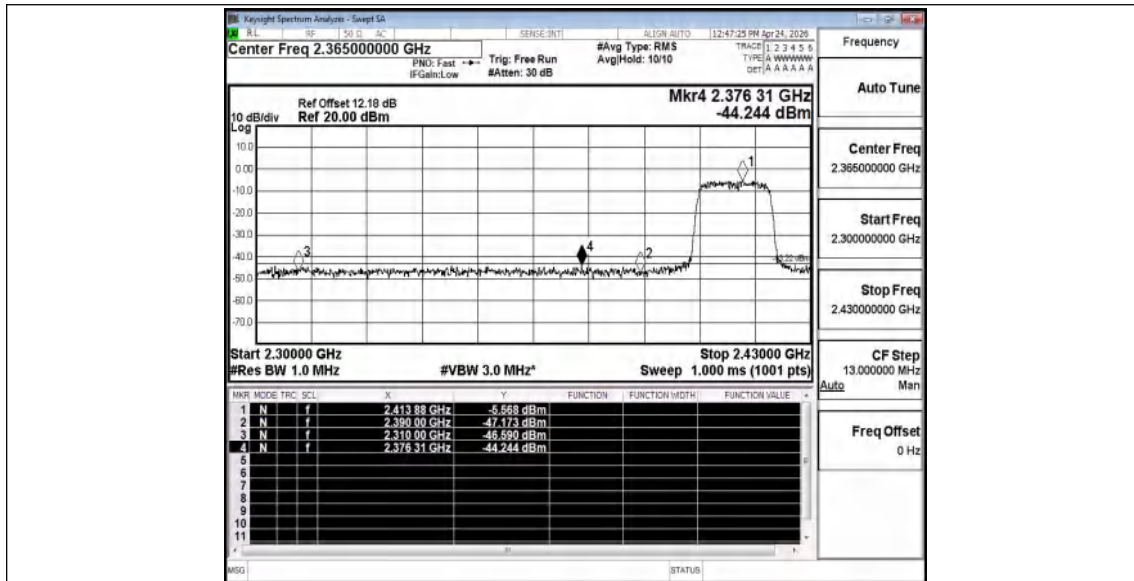


11B_Ant1_Low_2412_Peak

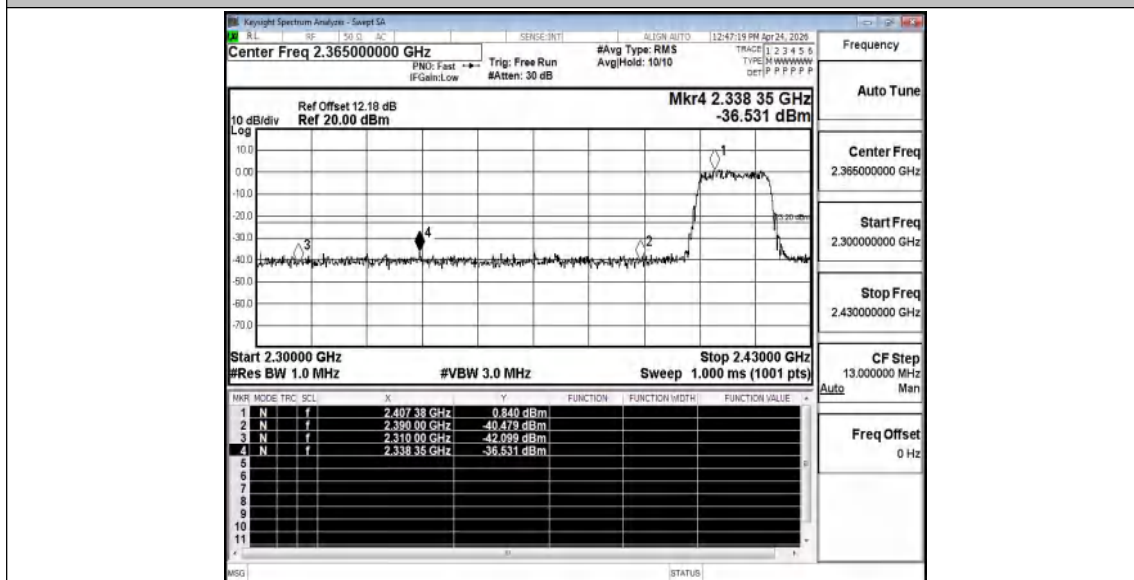


11B_Ant1_High_2462_AV

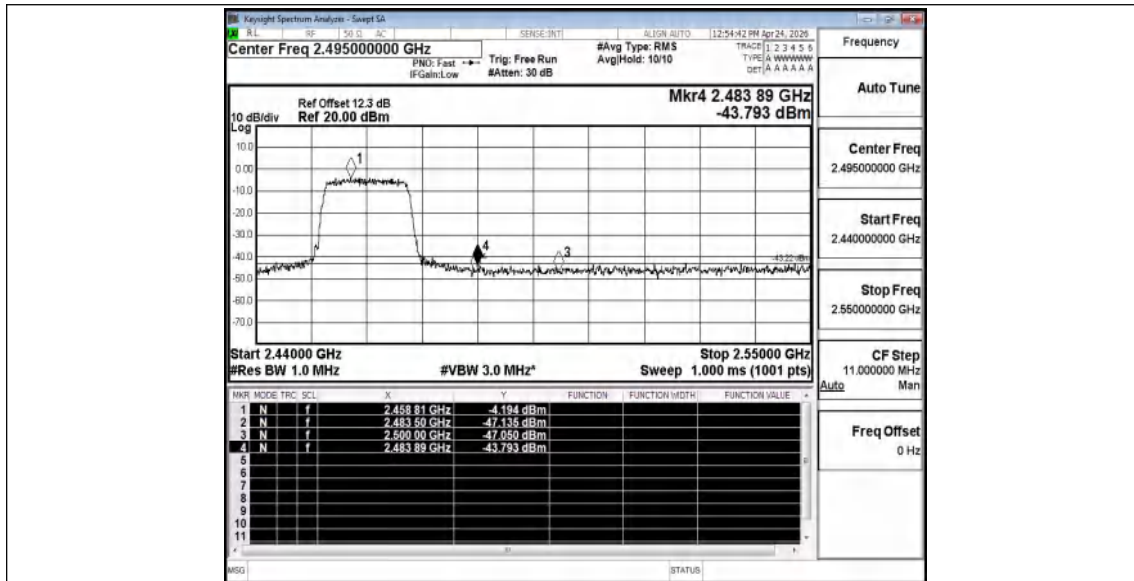




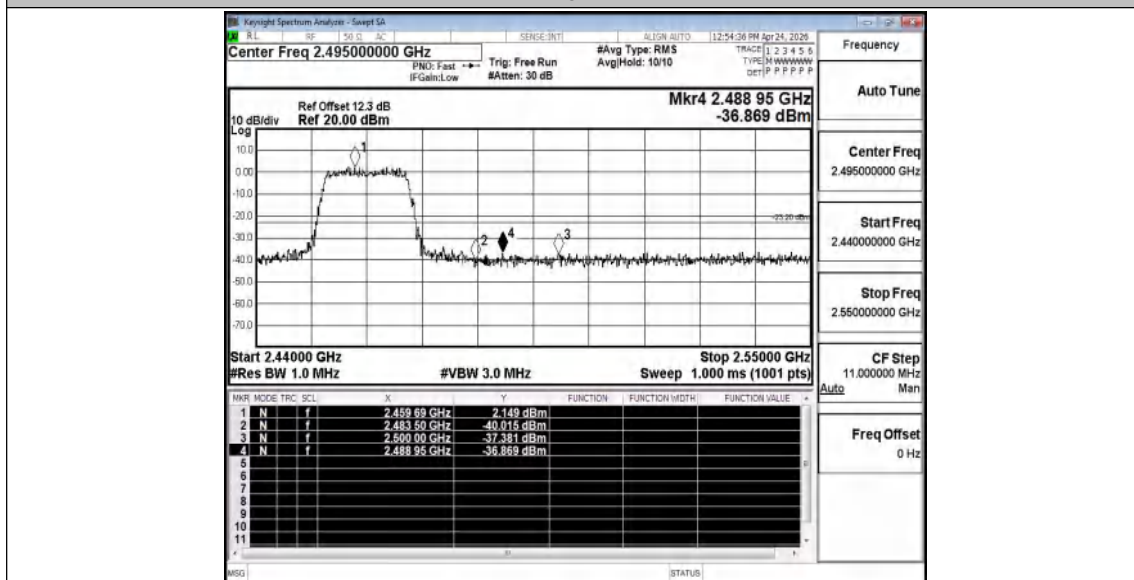
11G_Ant1_Low_2412_Peak



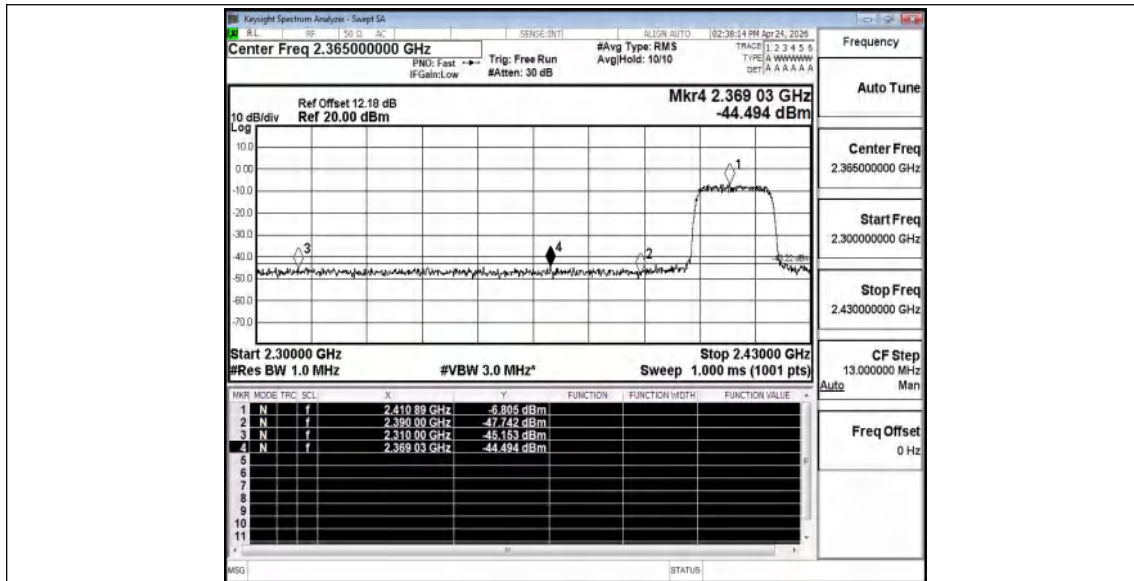
11G_Ant1_High_2462_AV



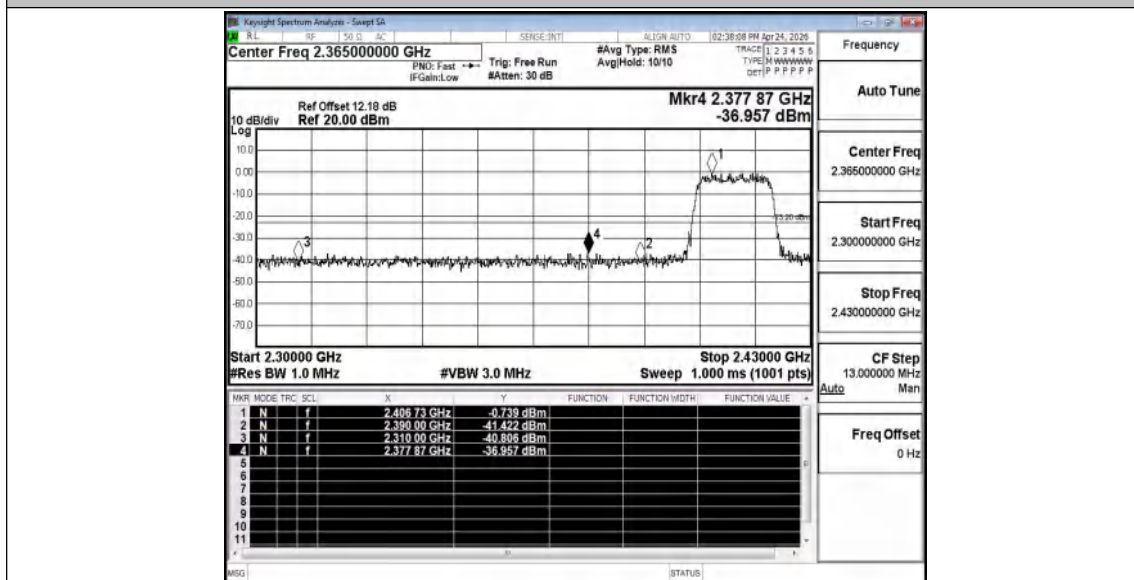
11G_Ant1_High_2462_Peak



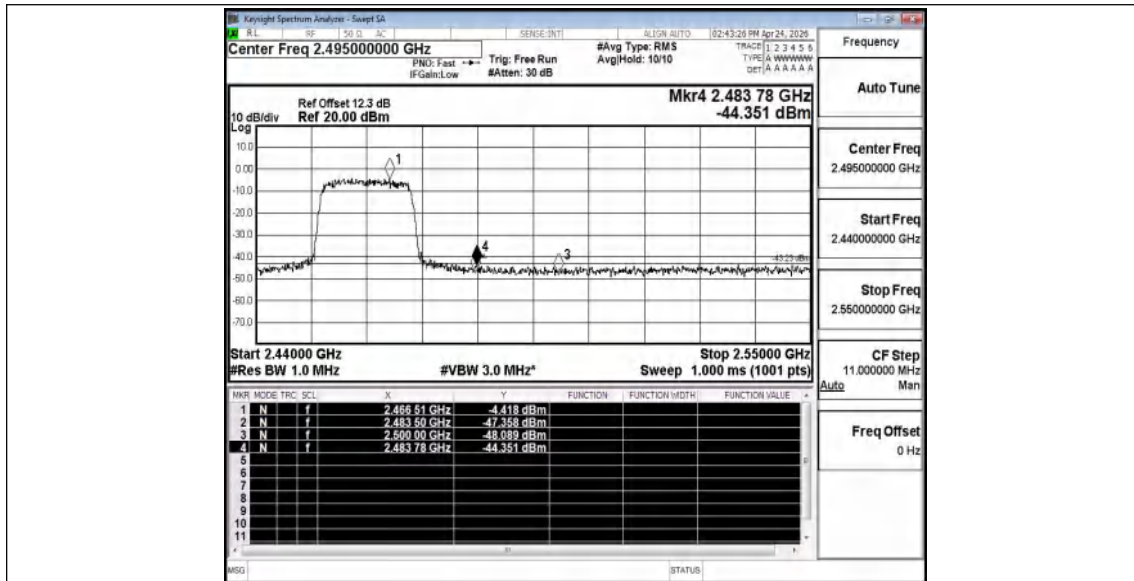
11N20SISO_Ant1_Low_2412_AV



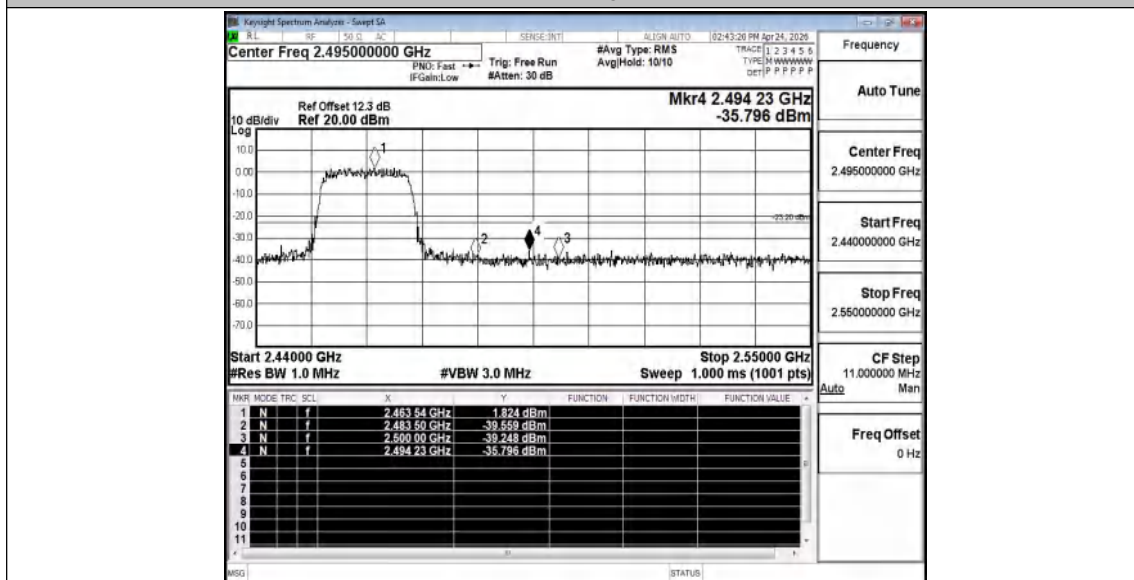
11N20SISO_Ant1_Low_2412_Peak



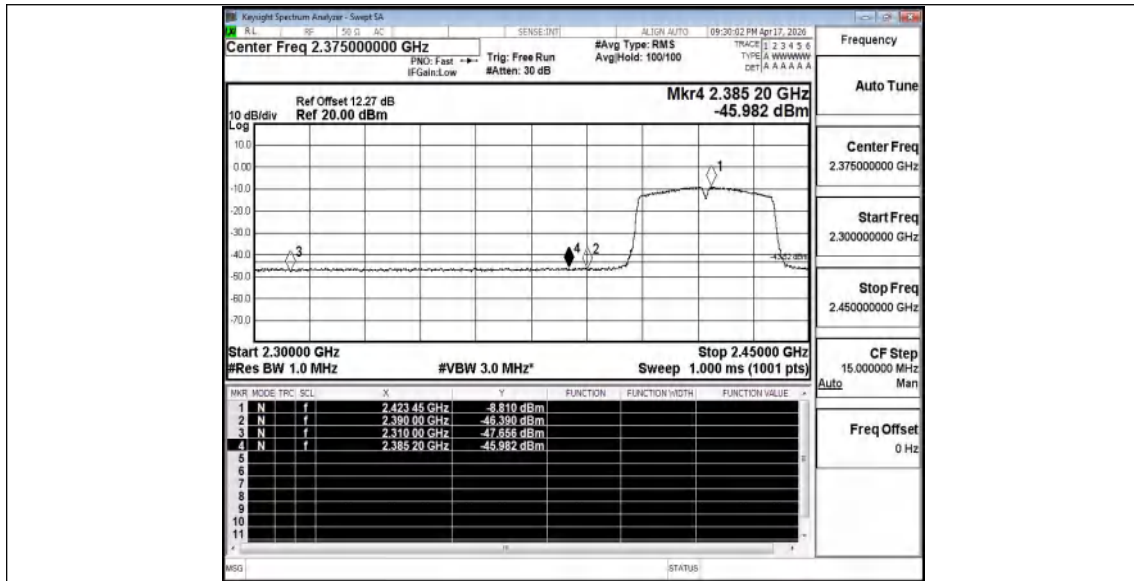
11N20SISO_Ant1_High_2462_AV



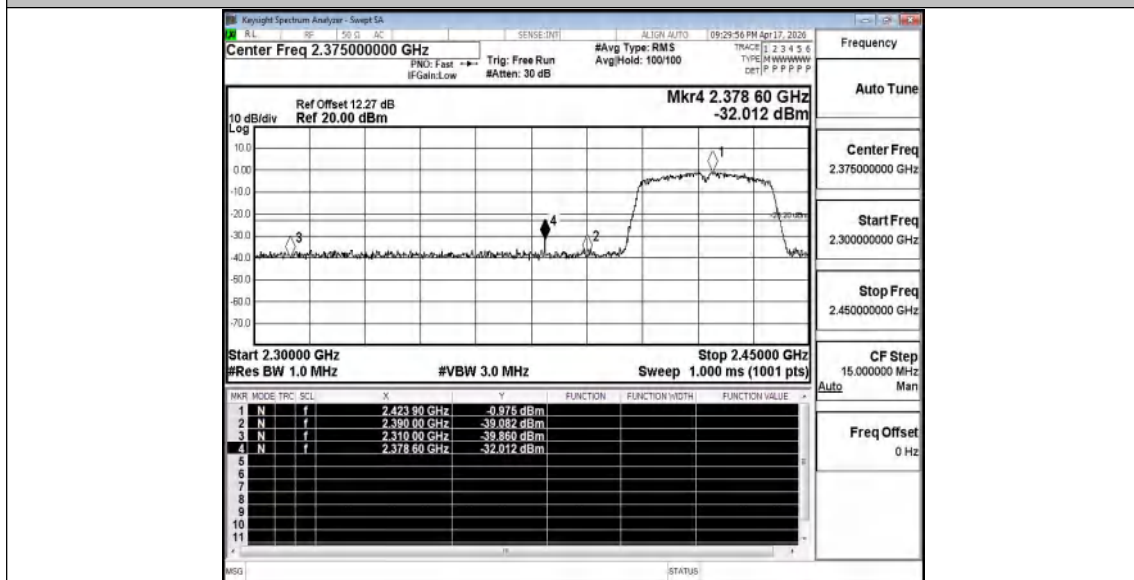
11N20SISO_Ant1_High_2462_Peak



11N40SISO_Ant1_Low_2422_AV



11N40SISO_Ant1_Low_2422_Peak



11N40SISO_Ant1_High_2452_AV

