

Appendix C

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Wireless Carplay

Test Model: Q1S

Environmental Conditions

Temperature:	23.7°C
Relative Humidity:	54.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

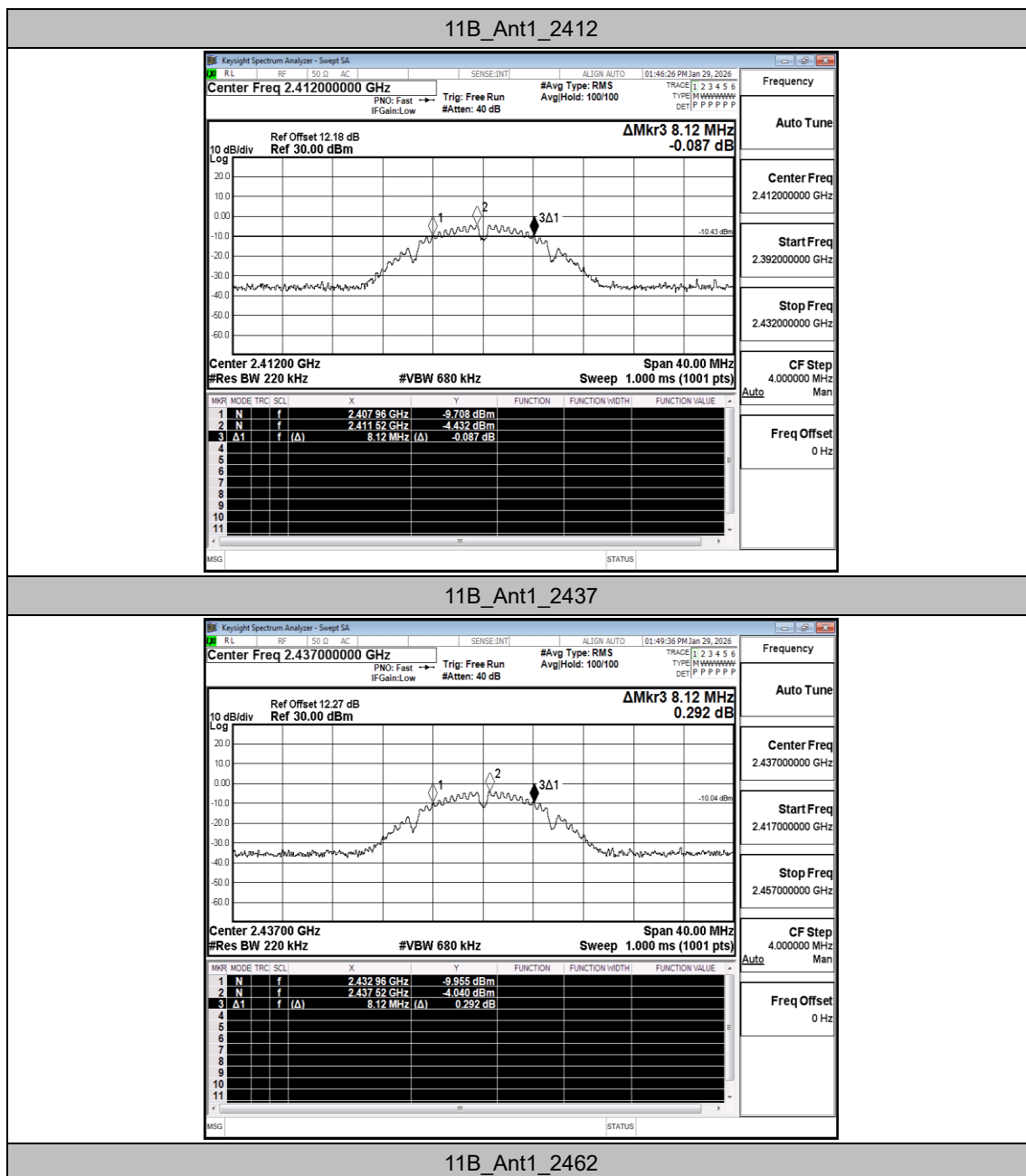
C.1 DTS Bandwidth

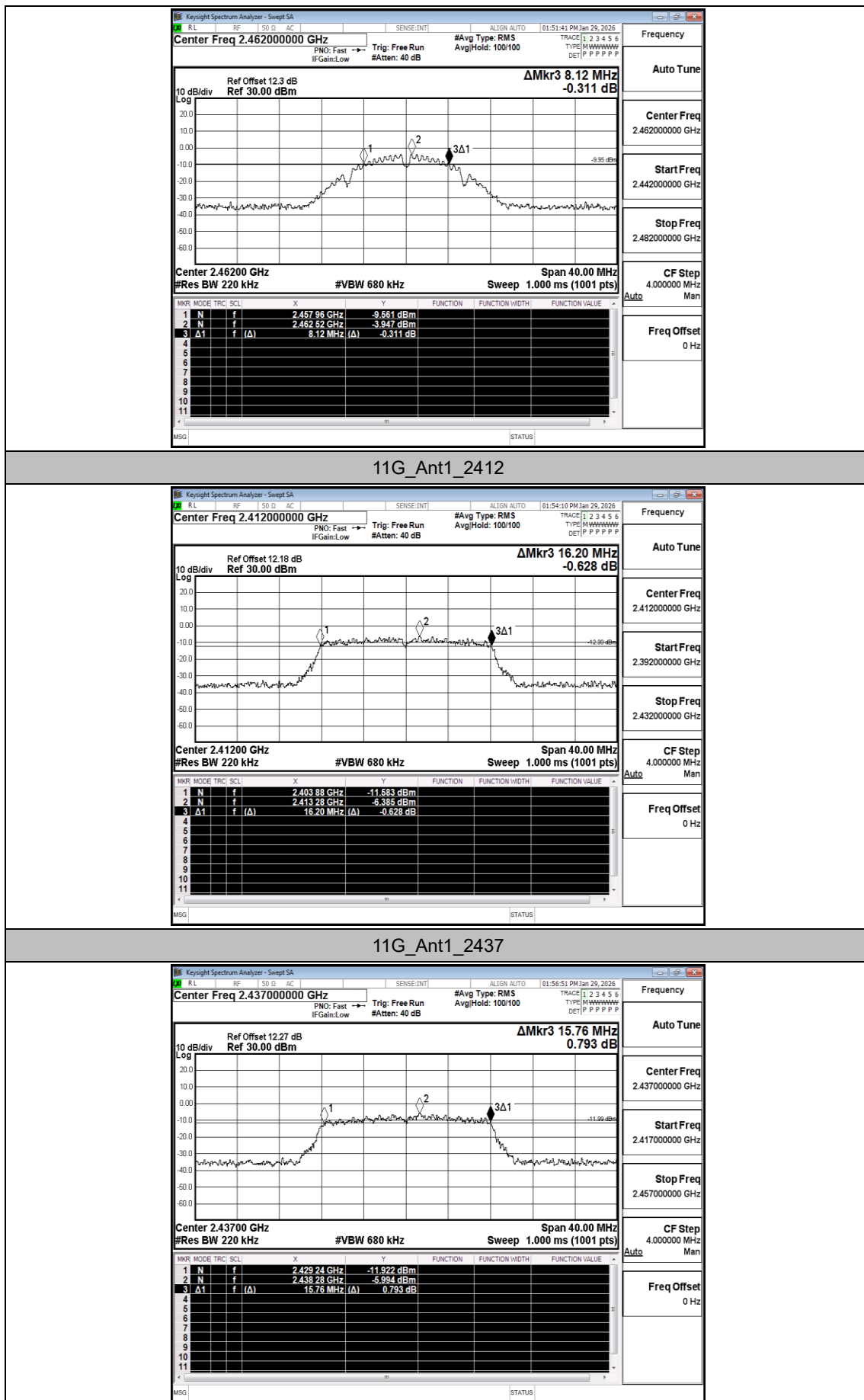
Test Result

TestMode	Antenna	Frequency [MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
11B	Ant1	2412	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	16.200	2403.880	2420.080	0.5	PASS
		2437	15.760	2429.240	2445.000	0.5	PASS
		2462	15.960	2454.120	2470.080	0.5	PASS
11N20SISO	Ant1	2412	17.080	2403.280	2420.360	0.5	PASS
		2437	16.360	2429.080	2445.440	0.5	PASS
		2462	17.200	2453.400	2470.600	0.5	PASS
11N40SISO	Ant1	2422	36.000	2404.320	2440.320	0.5	PASS
		2437	29.840	2423.400	2453.240	0.5	PASS
		2452	35.840	2434.160	2470.000	0.5	PASS

Note: offset=System attenuation +cable loss

Test Graphs



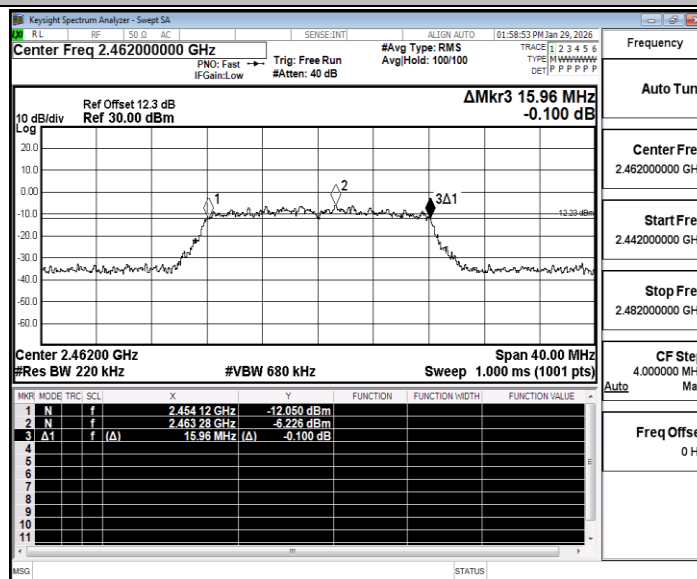


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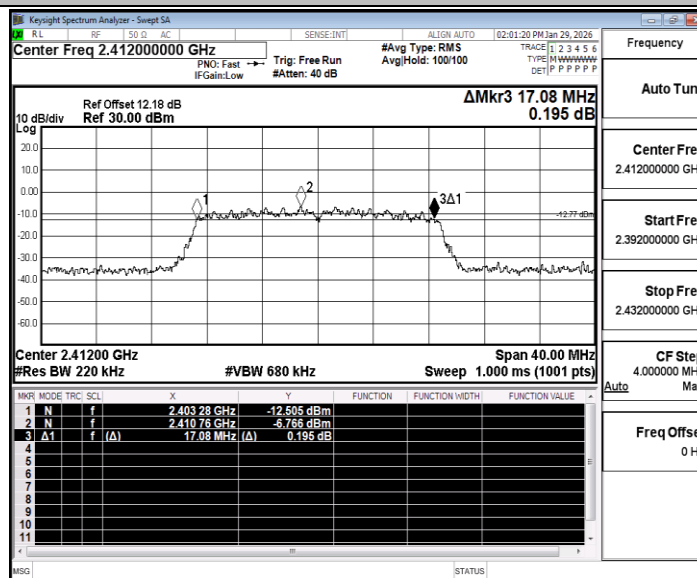
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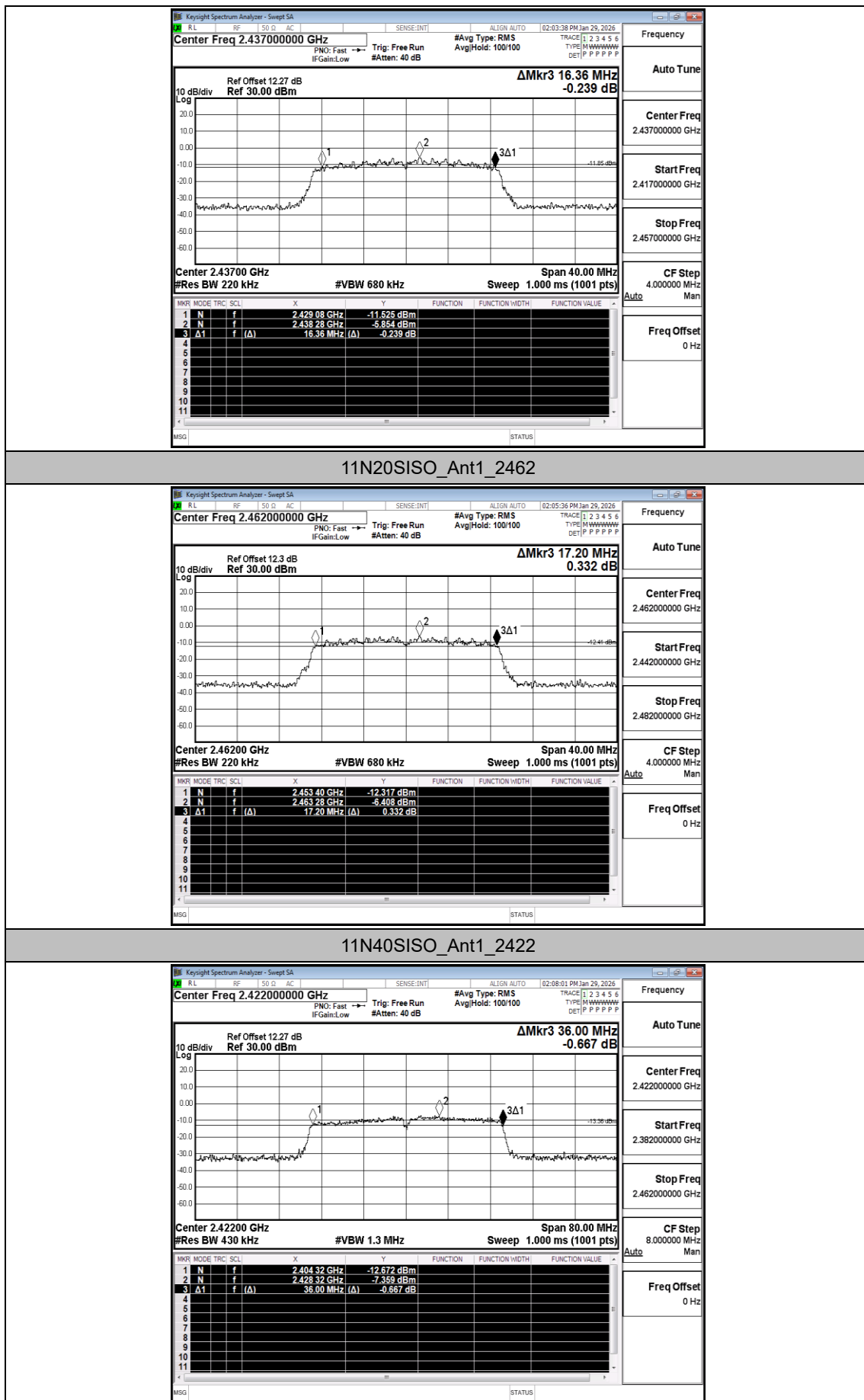
11G_Ant1_2462



11N20SISO_Ant1_2412



11N20SISO_Ant1_2437

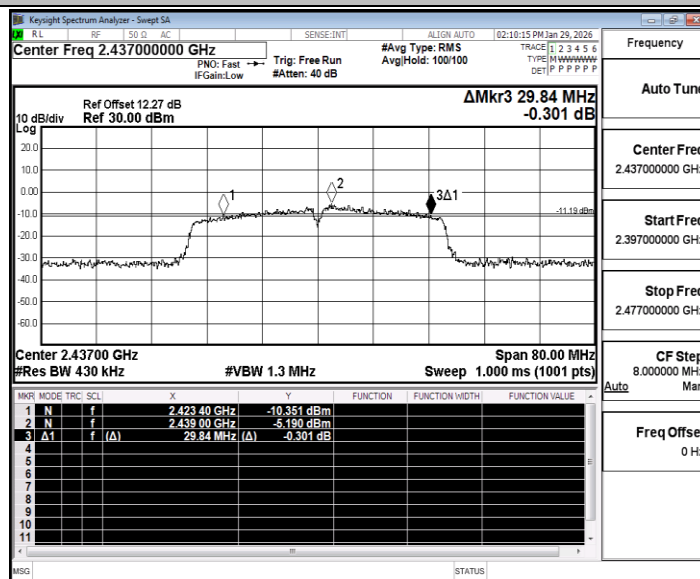


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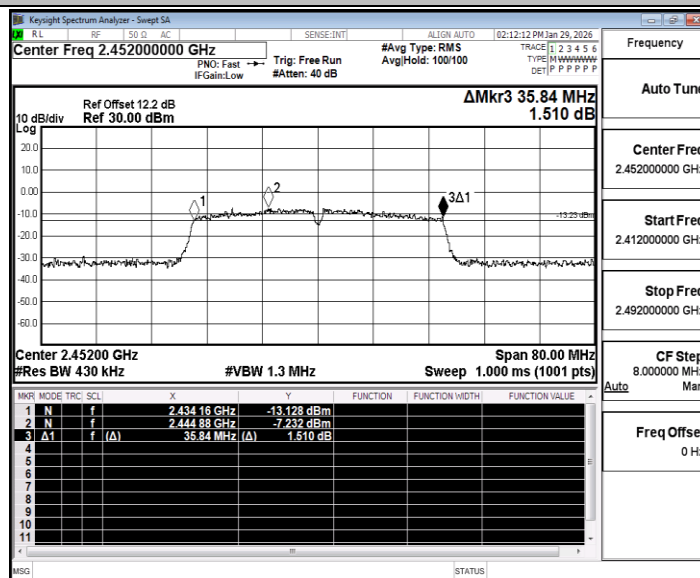
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11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



C.2 Maximum Average conducted output power

Test Result Average

TestMode	Antenna	Frequency [MHz]	Measured Power	DC Factor [dB]	AV Power [dBm]	Gain [dBi]	Verdict
11B	Ant1	2412	3.21	0.18	3.39	≤30.00	PASS
		2437	3.30	0.24	3.54	≤30.00	PASS
		2462	3.23	0.24	3.47	≤30.00	PASS
11G	Ant1	2412	1.57	1.63	3.20	≤30.00	PASS
		2437	1.73	1.63	3.36	≤30.00	PASS
		2462	1.66	1.63	3.29	≤30.00	PASS
11N20SISO	Ant1	2412	1.59	1.51	3.10	≤30.00	PASS
		2437	1.77	1.51	3.28	≤30.00	PASS
		2462	1.68	1.51	3.19	≤30.00	PASS
11N40SISO	Ant1	2422	1.37	1.76	3.13	≤30.00	PASS
		2437	1.31	4.34	5.65	≤30.00	PASS
		2452	1.32	2.34	3.66	≤30.00	PASS

Note: offset=System attenuation +cabel loss

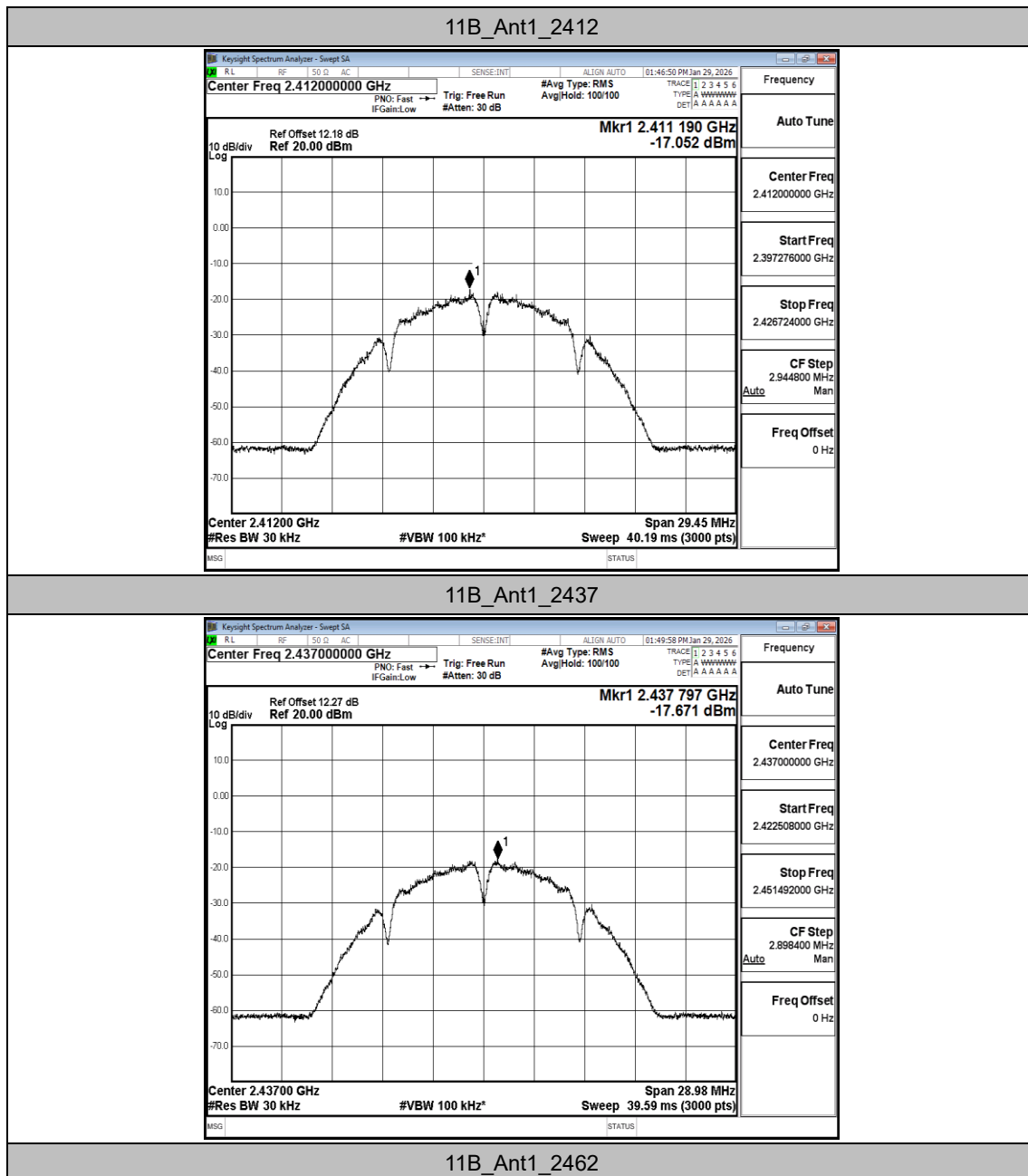
C.3 Maximum power spectral density

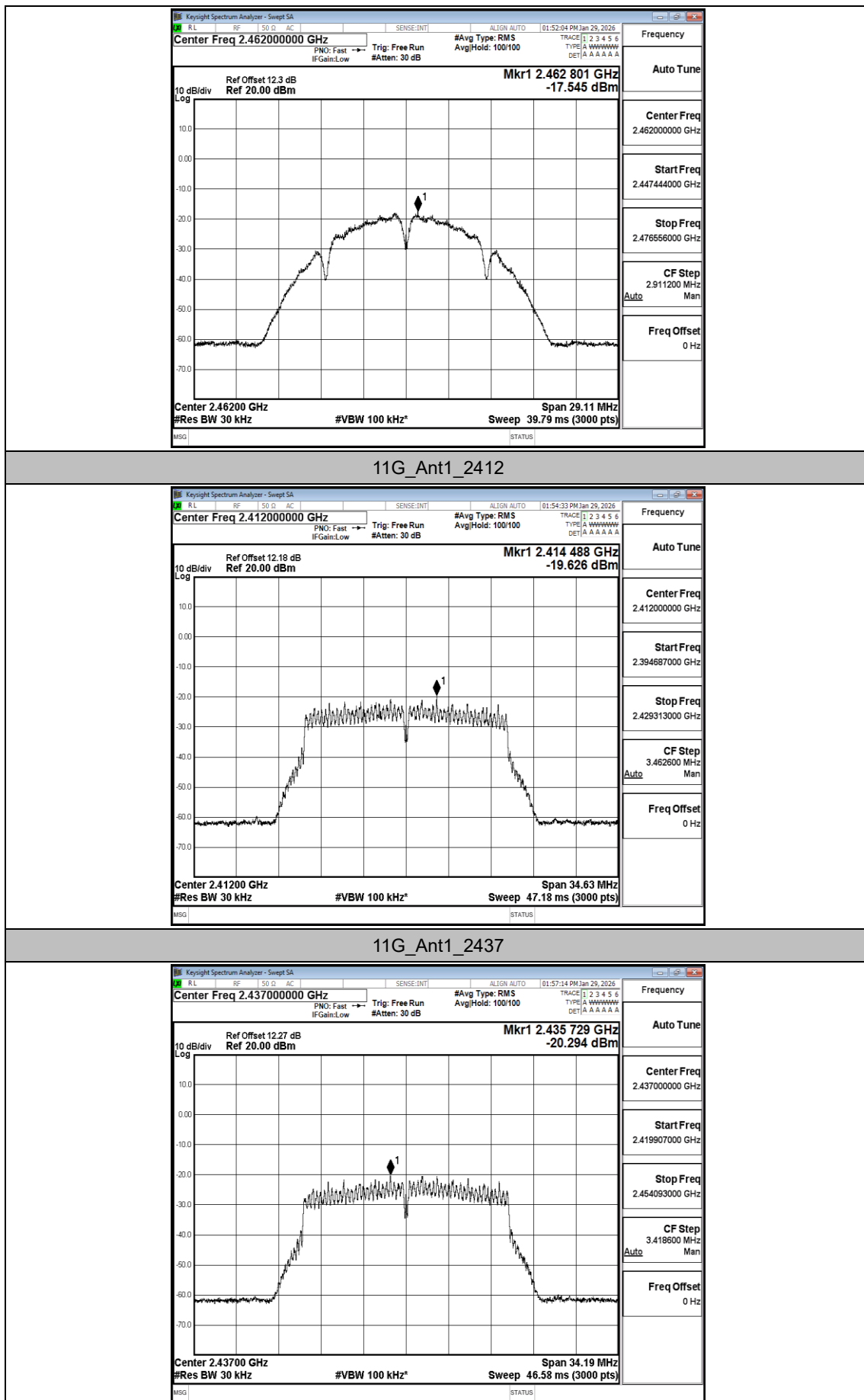
Test Result

TestMode	Antenna	Frequency [MHz]	Measured PSD [dBm/30kHz]	DC Factor [dB]	Result [dBm/30kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	-17.05	0.18	-16.87	≤8.00	PASS
		2437	-17.67	0.24	-17.43	≤8.00	PASS
		2462	-17.55	0.24	-17.31	≤8.00	PASS
11G	Ant1	2412	-19.63	1.63	-18.00	≤8.00	PASS
		2437	-20.29	1.63	-18.66	≤8.00	PASS
		2462	-19.99	1.63	-18.36	≤8.00	PASS
11N20SISO	Ant1	2412	-19.07	1.51	-17.56	≤8.00	PASS
		2437	-19.04	1.51	-17.53	≤8.00	PASS
		2462	-19.54	1.51	-18.03	≤8.00	PASS
11N40SISO	Ant1	2422	-22.28	1.76	-20.52	≤8.00	PASS
		2437	-21.15	4.34	-16.81	≤8.00	PASS
		2452	-21.32	2.34	-18.98	≤8.00	PASS

Note: offset=System attenuation +cabal loss

Test Graphs



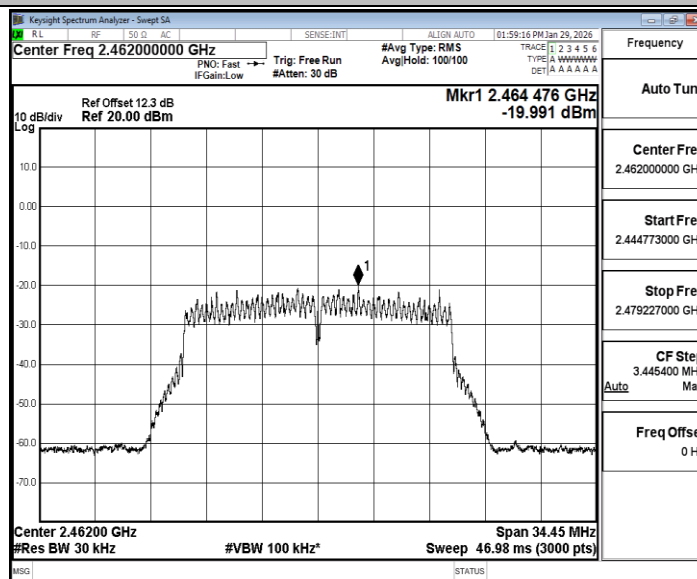


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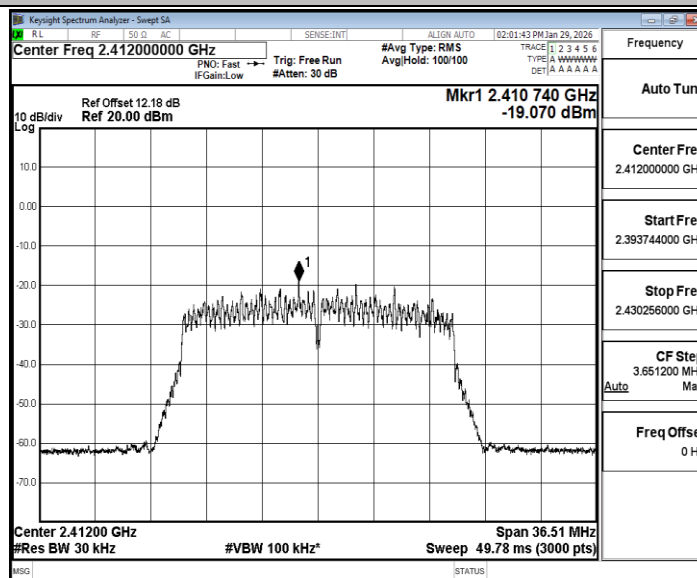
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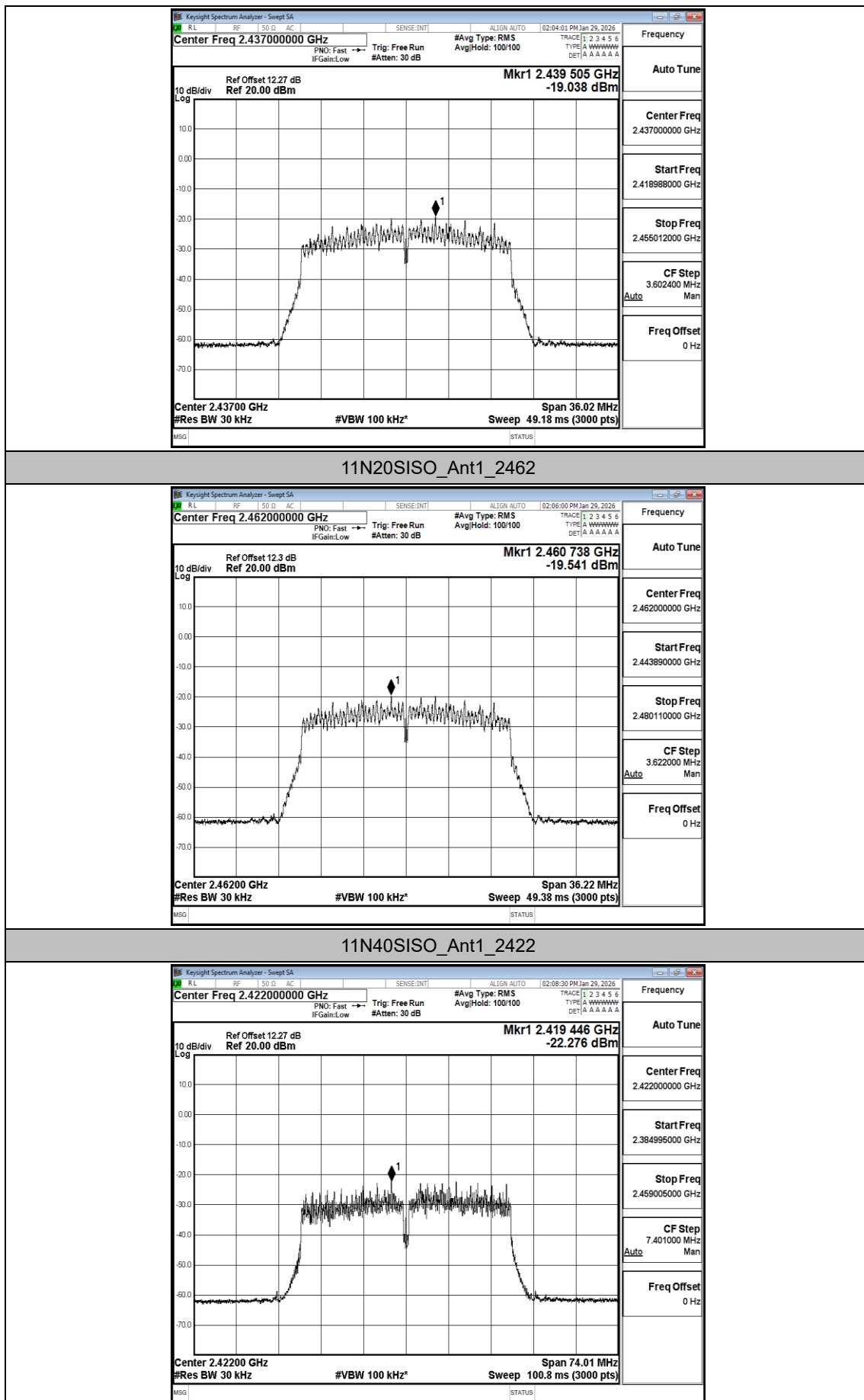
11G_Ant1_2462



11N20SISO_Ant1_2412



11N20SISO_Ant1_2437

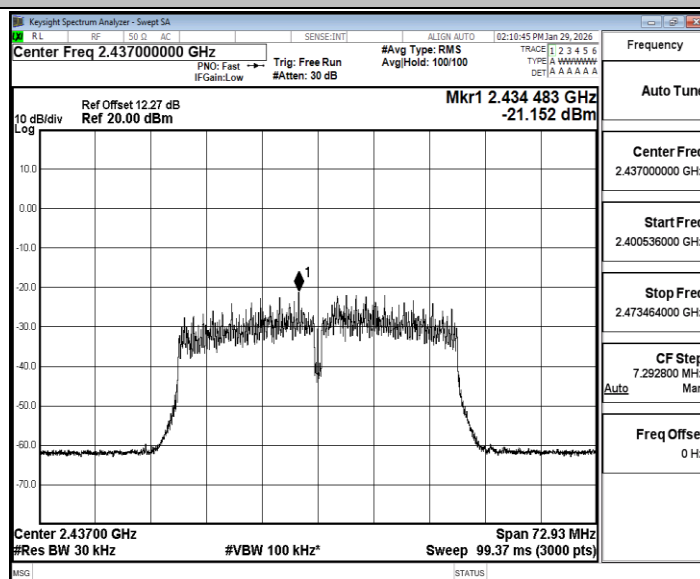


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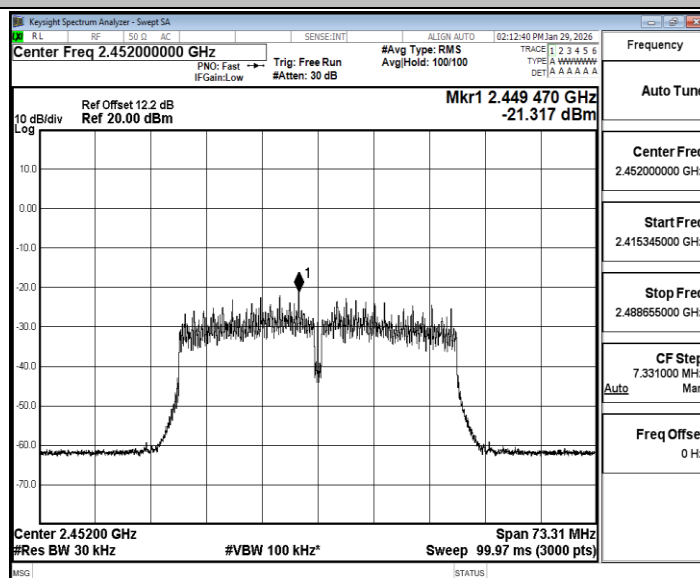
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11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



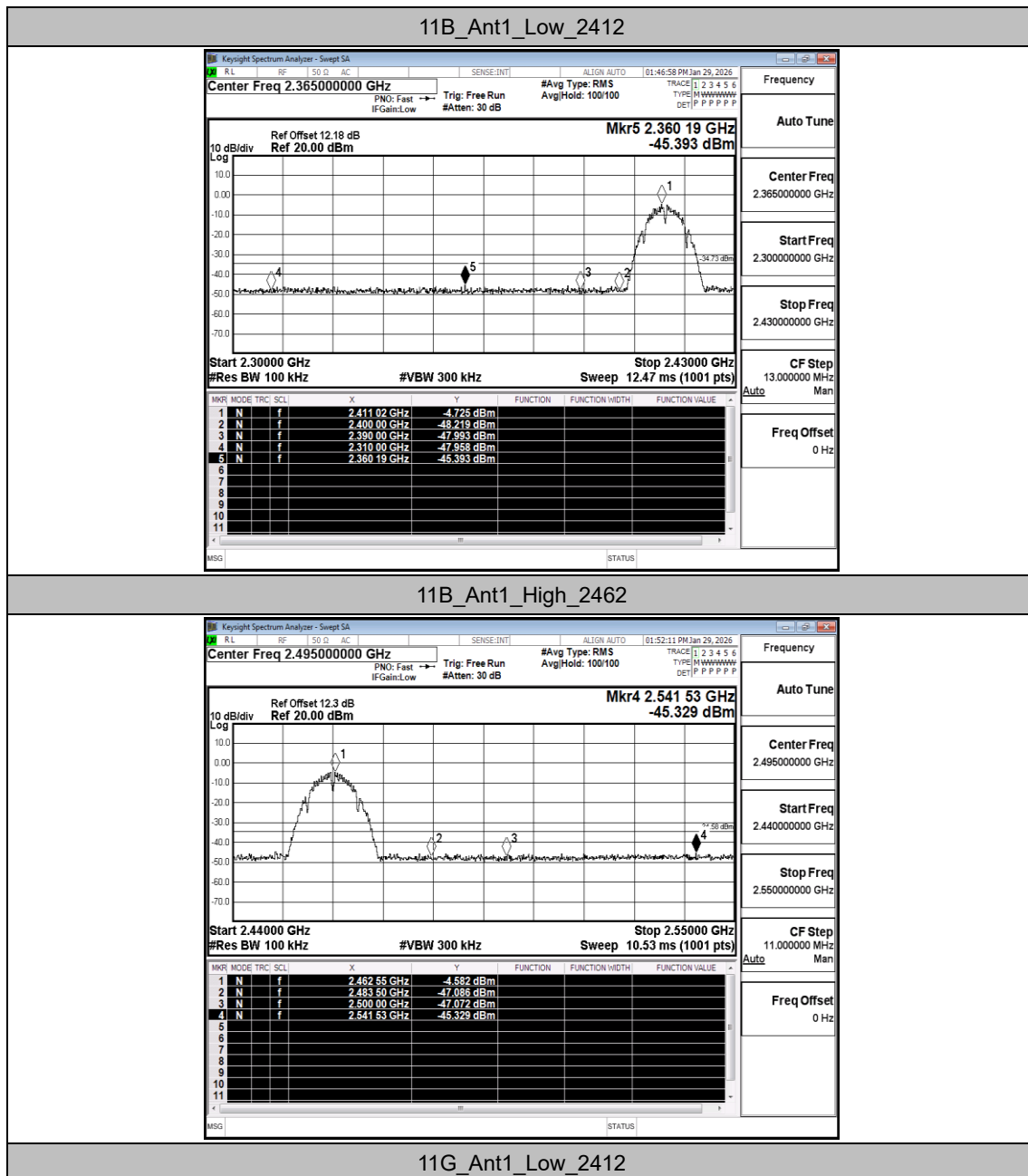
C.4 Band edge measurements

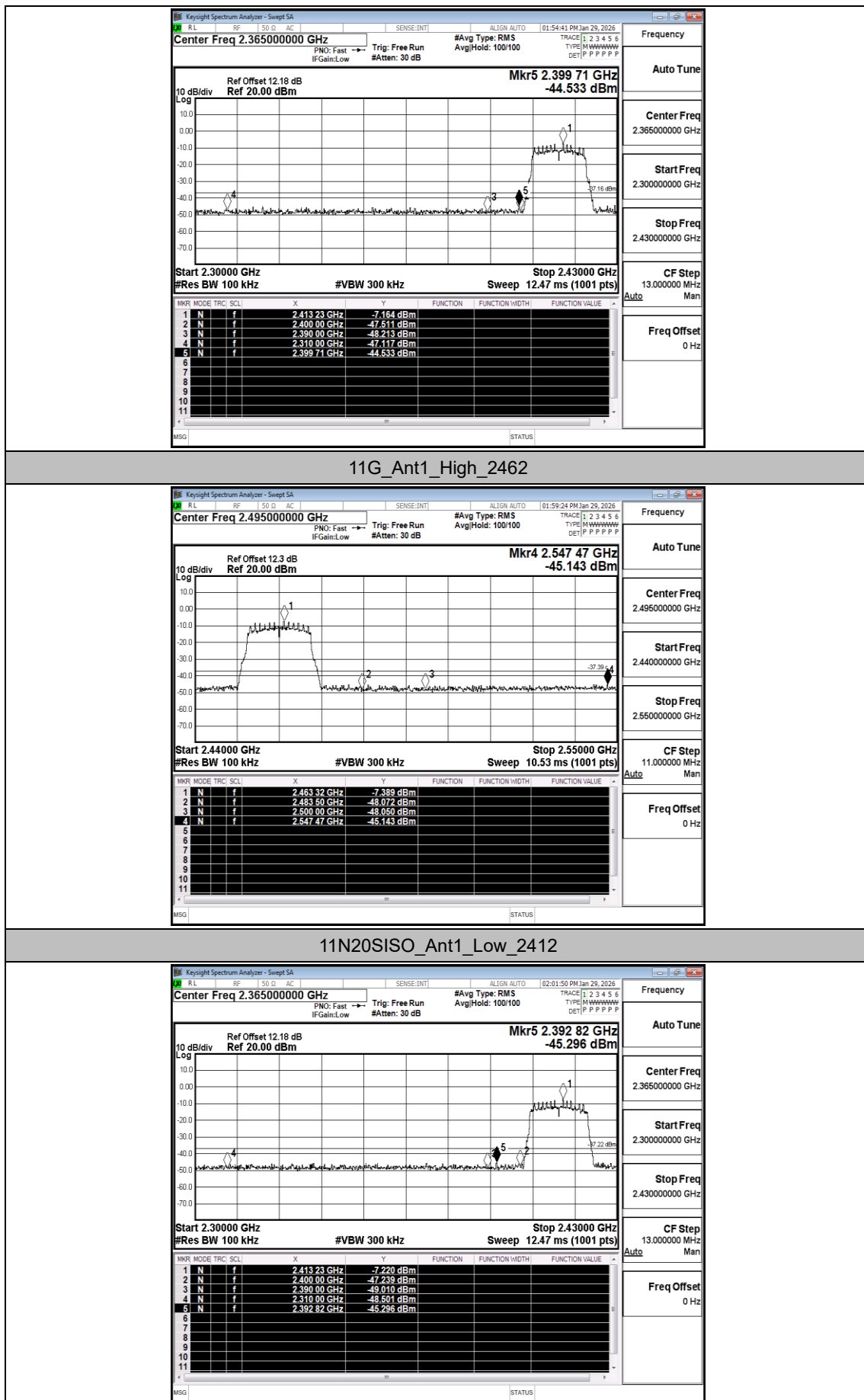
Test Result

TestMode	Antenna	ChName	Frequency [MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	-4.73	-45.39	≤-34.73	PASS
		High	2462	-4.58	-45.33	≤-34.58	PASS
11G	Ant1	Low	2412	-7.16	-44.53	≤-37.16	PASS
		High	2462	-7.39	-45.14	≤-37.39	PASS
11N20SISO	Ant1	Low	2412	-7.22	-45.3	≤-37.22	PASS
		High	2462	-7.18	-45.16	≤-37.18	PASS
11N40SISO	Ant1	Low	2422	-9.58	-45.32	≤-39.58	PASS
		High	2452	-9.21	-45.01	≤-39.21	PASS

Note: offset=System attenuation +cabel loss

Test Graphs



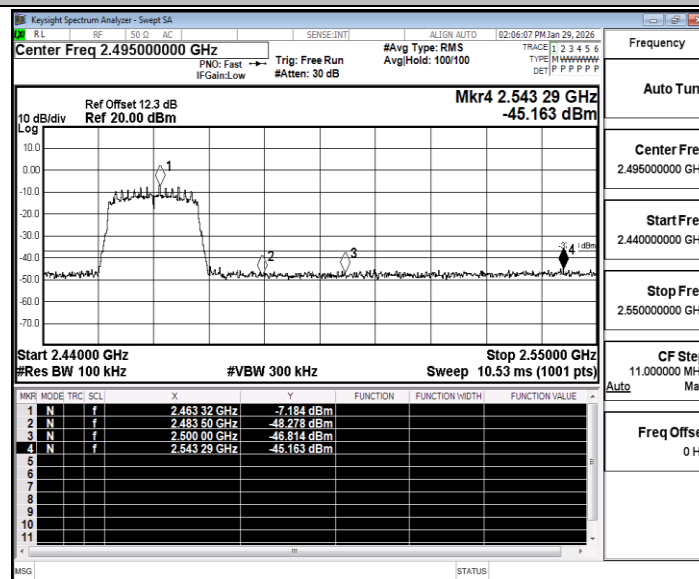


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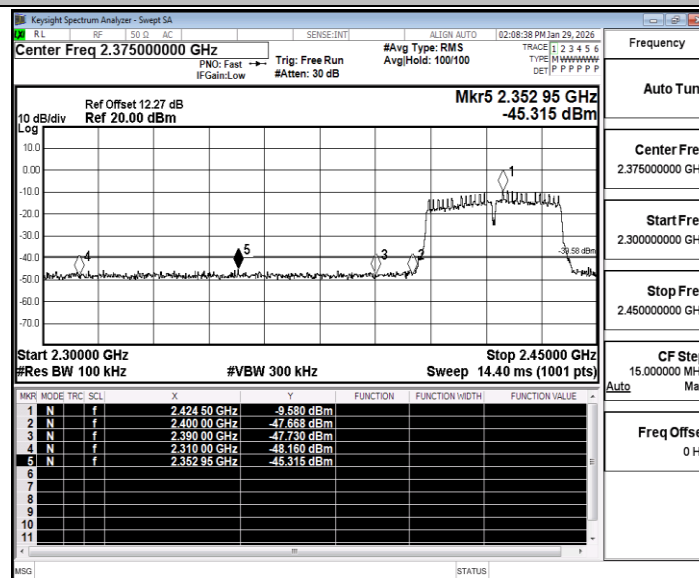
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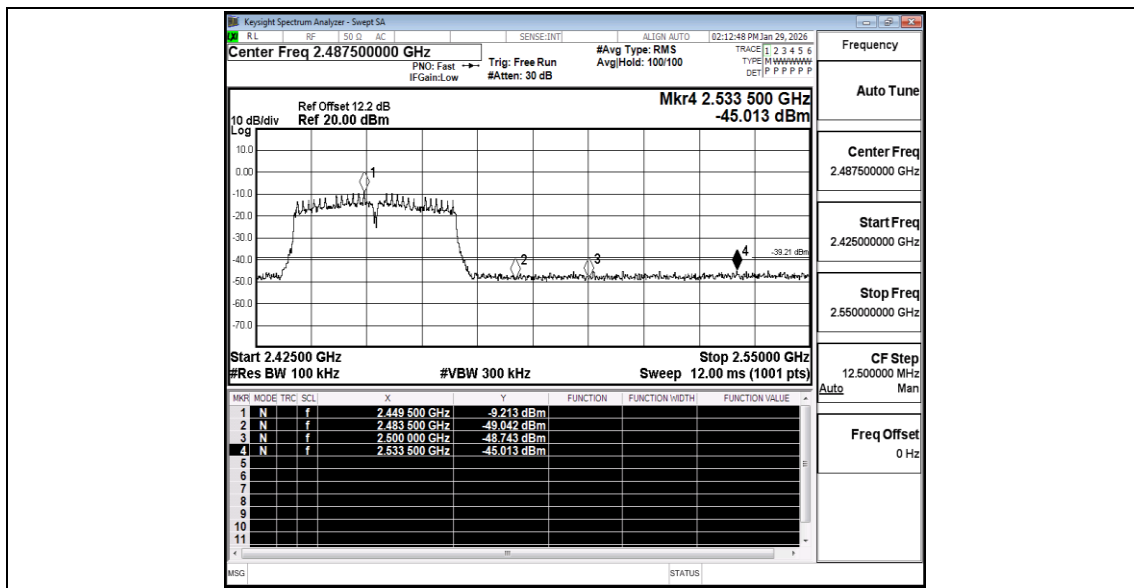
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452



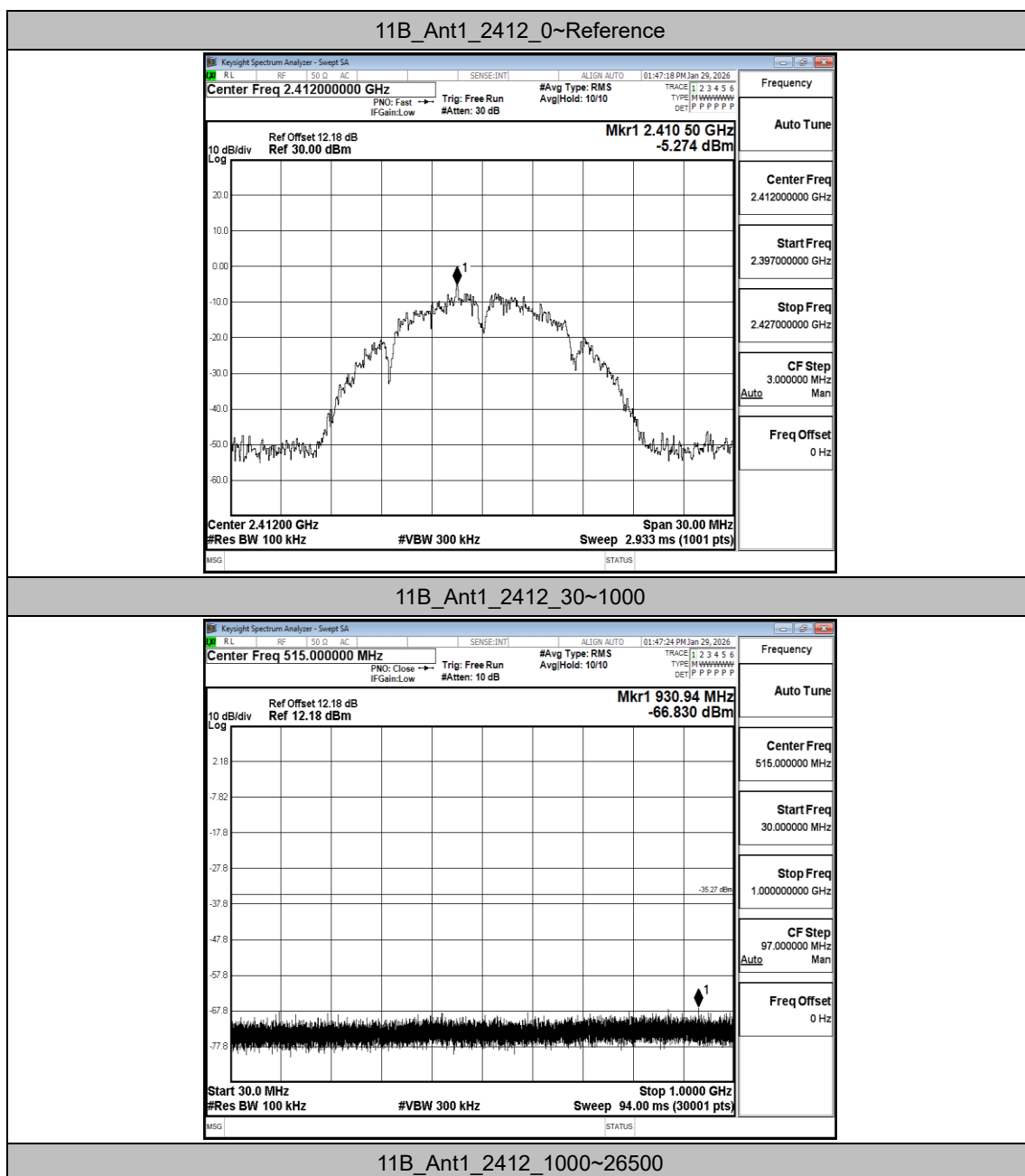
C.5 Conducted Spurious Emission

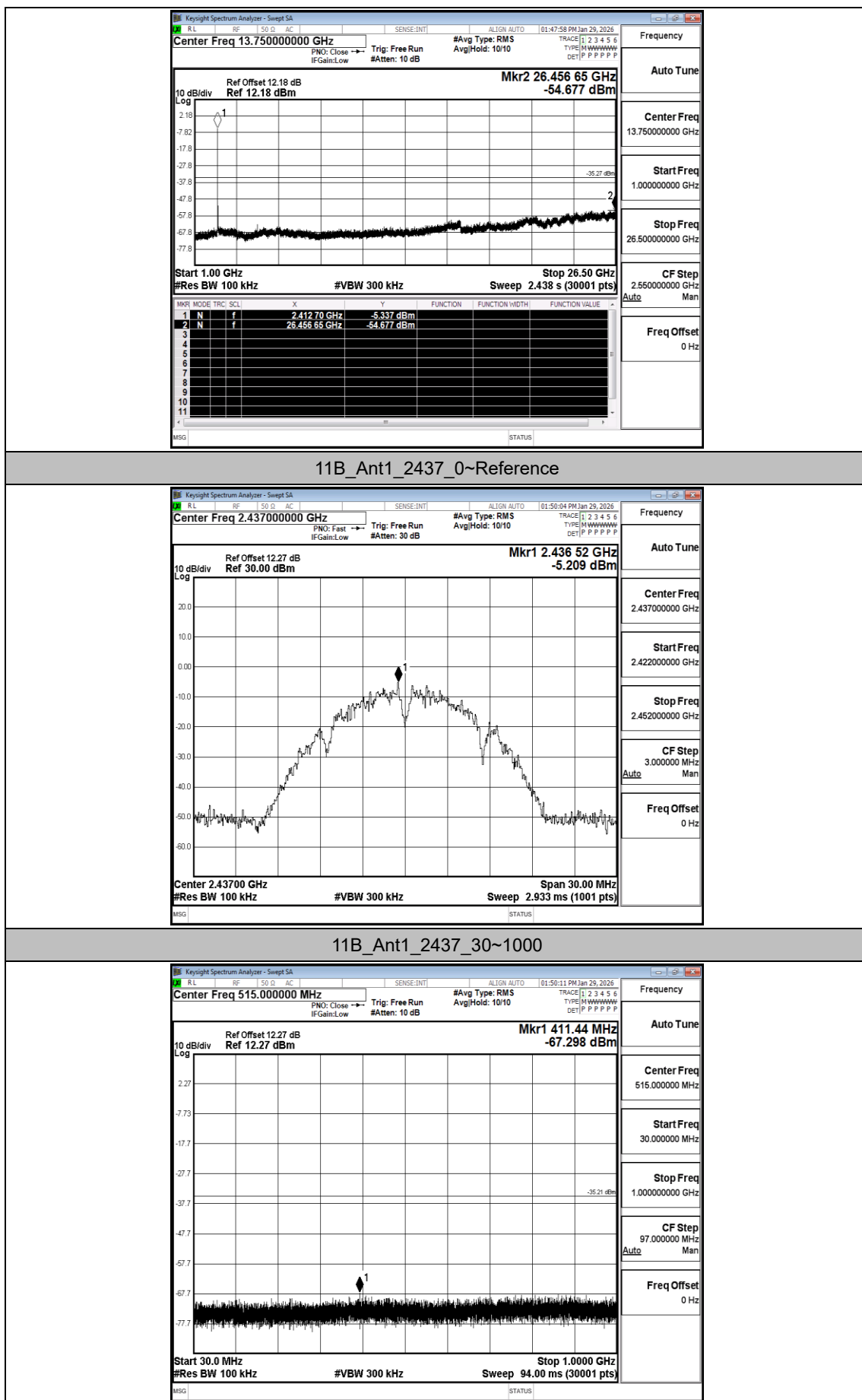
Test Result

TestMode	Antenna	Frequency [MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	-5.27	-5.27	---	PASS
			30~1000	-5.27	-66.83	≤-35.27	PASS
			1000~26500	-5.27	-54.68	≤-35.27	PASS
		2437	Reference	-5.21	-5.21	---	PASS
			30~1000	-5.21	-67.3	≤-35.21	PASS
			1000~26500	-5.21	-54.5	≤-35.21	PASS
		2462	Reference	-6.56	-6.56	---	PASS
			30~1000	-6.56	-66.58	≤-36.56	PASS
			1000~26500	-6.56	-53.74	≤-36.56	PASS
11G	Ant1	2412	Reference	-7.98	-7.98	---	PASS
			30~1000	-7.98	-67.45	≤-37.98	PASS
			1000~26500	-7.98	-54.26	≤-37.98	PASS
		2437	Reference	-6.87	-6.87	---	PASS
			30~1000	-6.87	-67.41	≤-36.87	PASS
			1000~26500	-6.87	-54.83	≤-36.87	PASS
		2462	Reference	-7.93	-7.93	---	PASS
			30~1000	-7.93	-67.45	≤-37.93	PASS
			1000~26500	-7.93	-54.89	≤-37.93	PASS
11N20SISO	Ant1	2412	Reference	-8.54	-8.54	---	PASS
			30~1000	-8.54	-67.48	≤-38.54	PASS
			1000~26500	-8.54	-54.37	≤-38.54	PASS
		2437	Reference	-7.38	-7.38	---	PASS
			30~1000	-7.38	-67.71	≤-37.38	PASS
			1000~26500	-7.38	-52.95	≤-37.38	PASS
		2462	Reference	-8.04	-8.04	---	PASS
			30~1000	-8.04	-66.92	≤-38.04	PASS
			1000~26500	-8.04	-54.78	≤-38.04	PASS
11N40SISO	Ant1	2422	Reference	-9.61	-9.61	---	PASS
			30~1000	-9.61	-66.88	≤-39.61	PASS
			1000~26500	-9.61	-53.96	≤-39.61	PASS
		2437	Reference	-9.82	-9.82	---	PASS
			30~1000	-9.82	-66.49	≤-39.82	PASS
			1000~26500	-9.82	-54.02	≤-39.82	PASS
		2452	Reference	-10.00	-10.00	---	PASS
			30~1000	-10.00	-68.02	≤-40	PASS
			1000~26500	-10.00	-54.63	≤-40	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



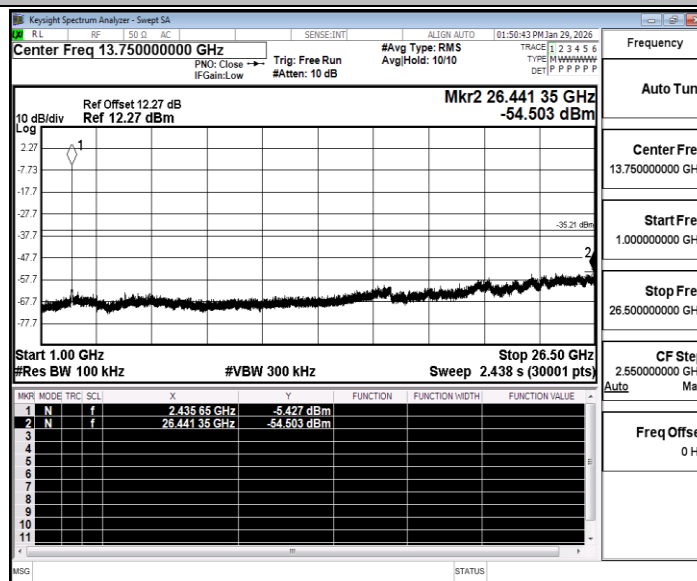


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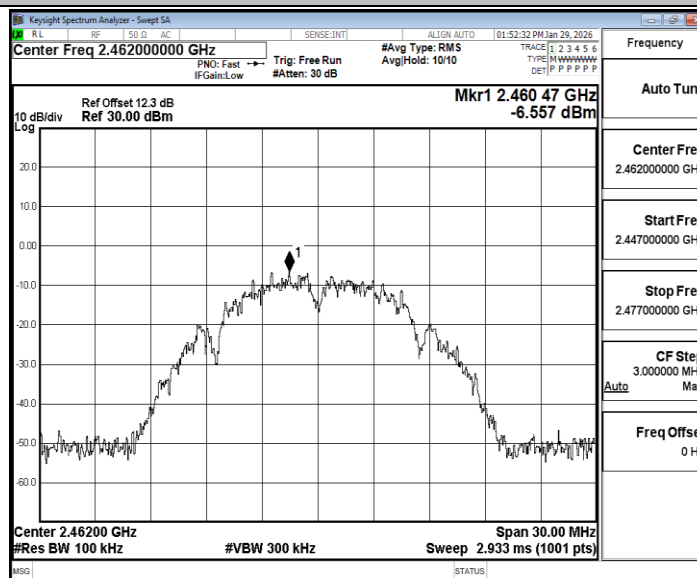
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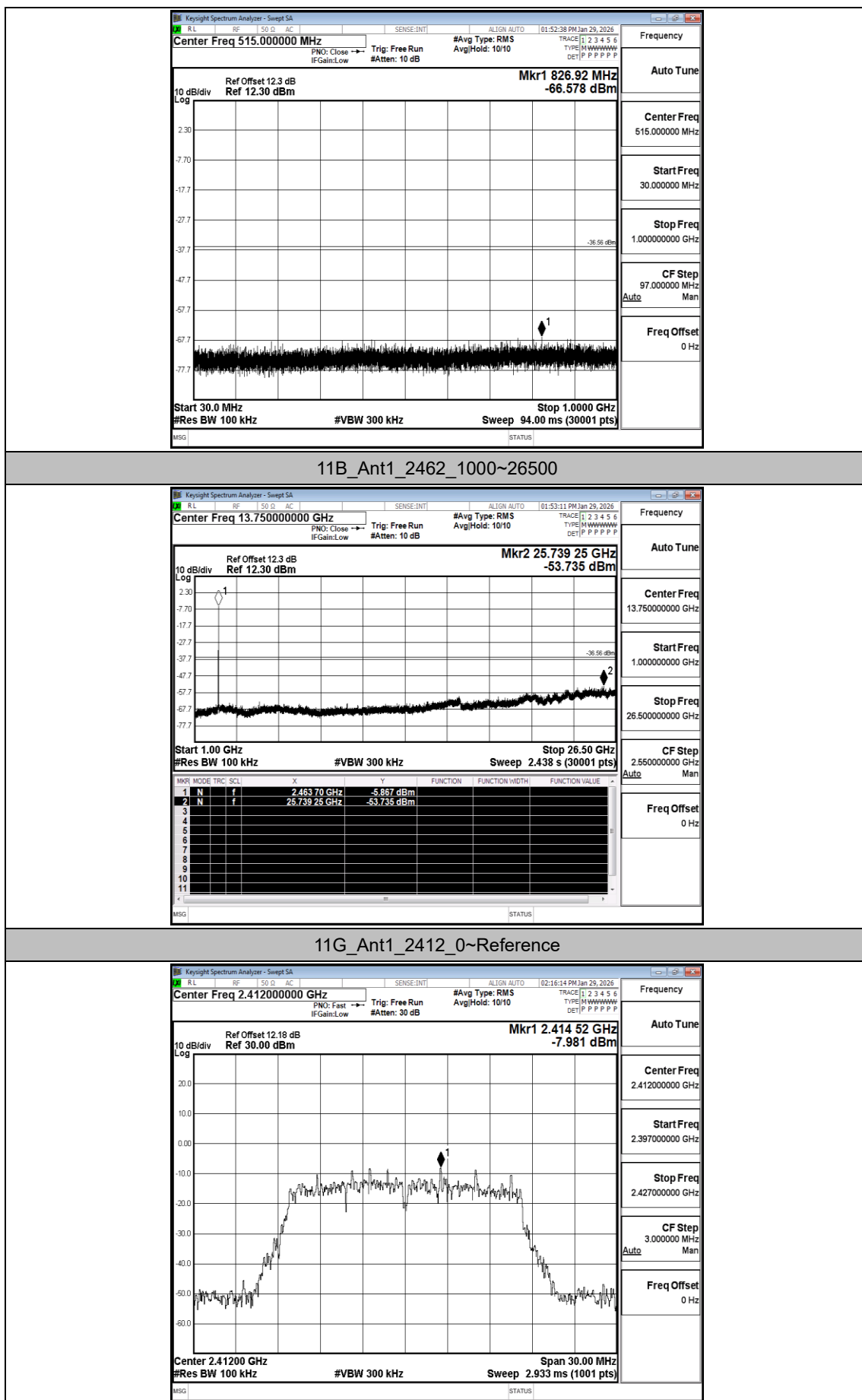
11B_Ant1_2437_1000~26500



11B_Ant1_2462_0~Reference



11B_Ant1_2462_30~1000

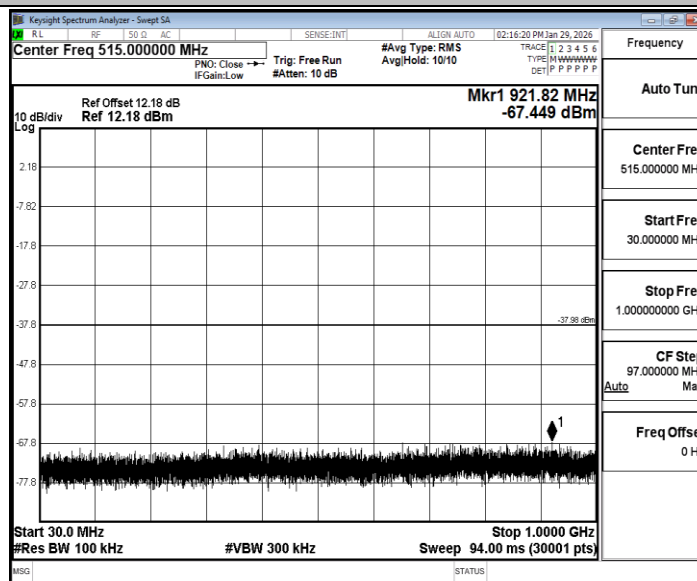


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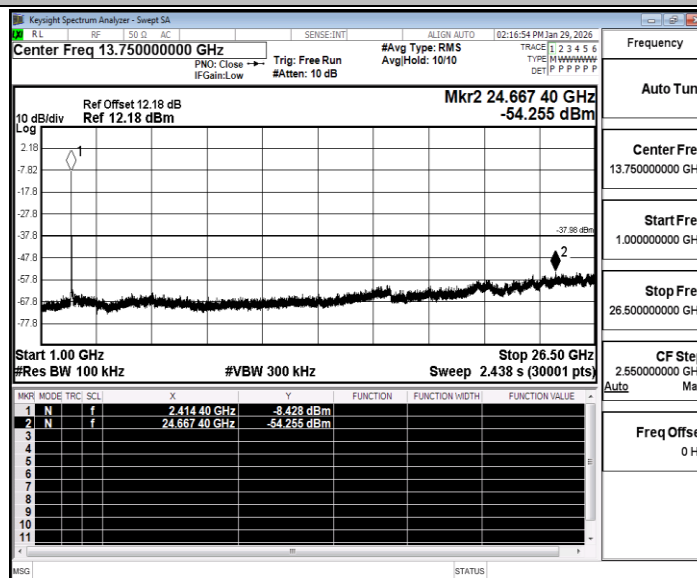
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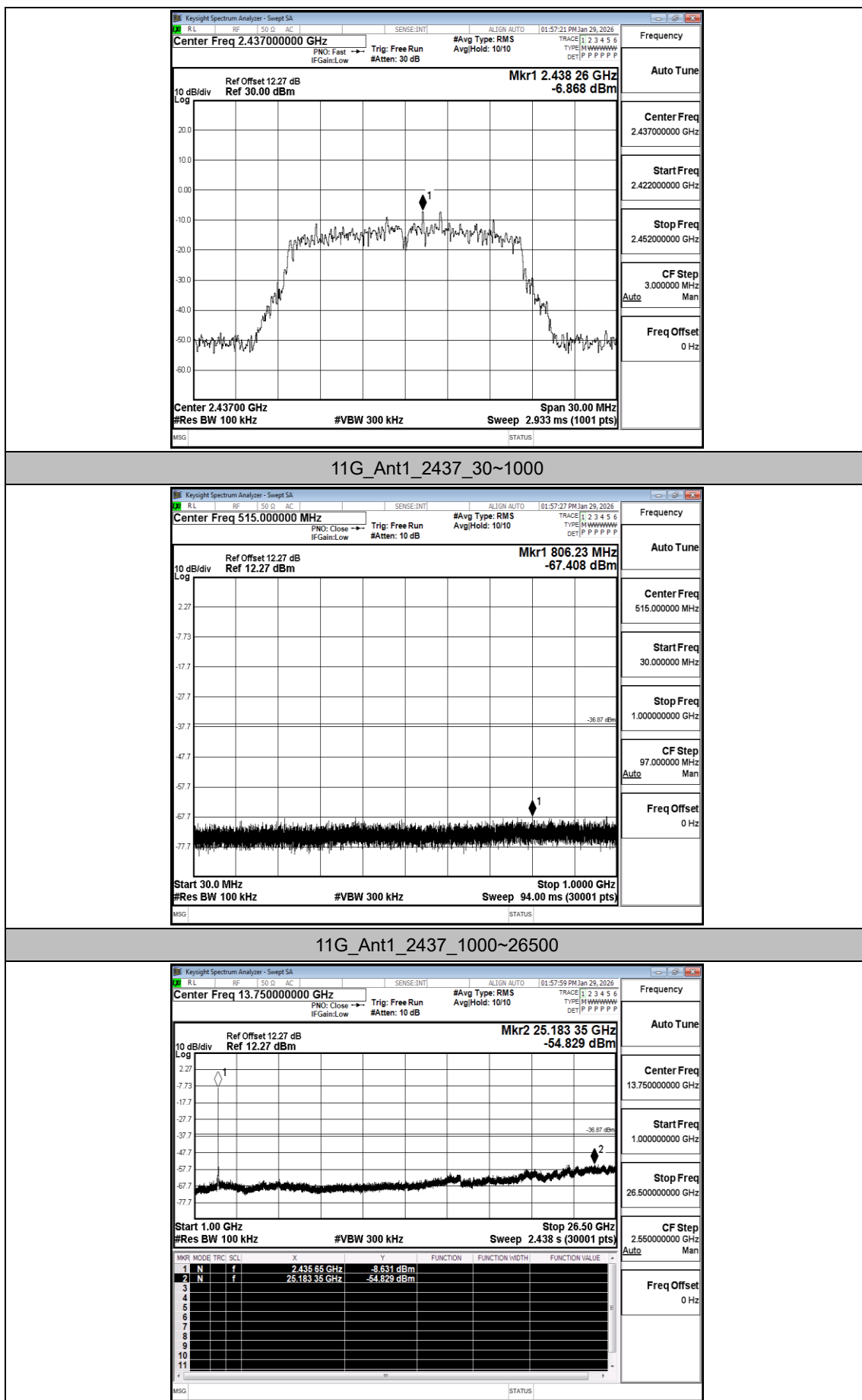
11G_Ant1_2412_30~1000



11G_Ant1_2412_1000~26500



11G_Ant1_2437_0~Reference

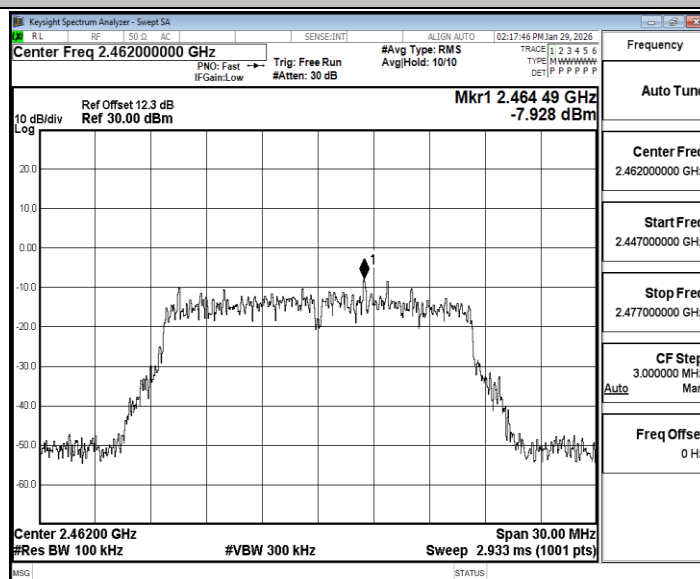


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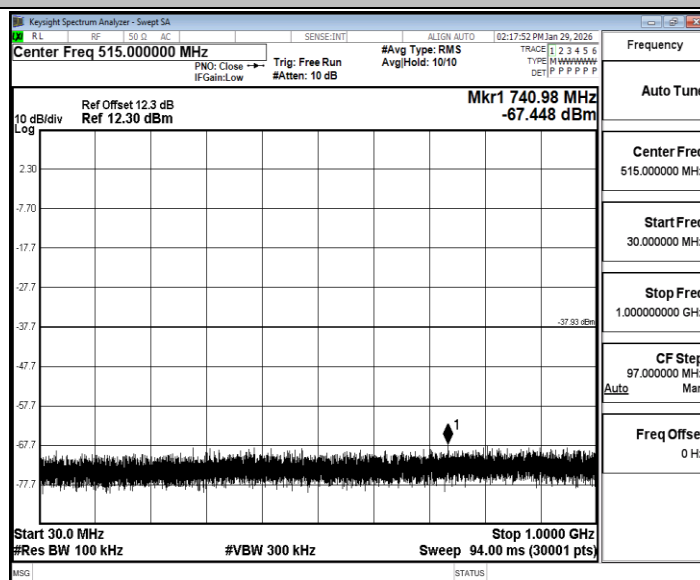
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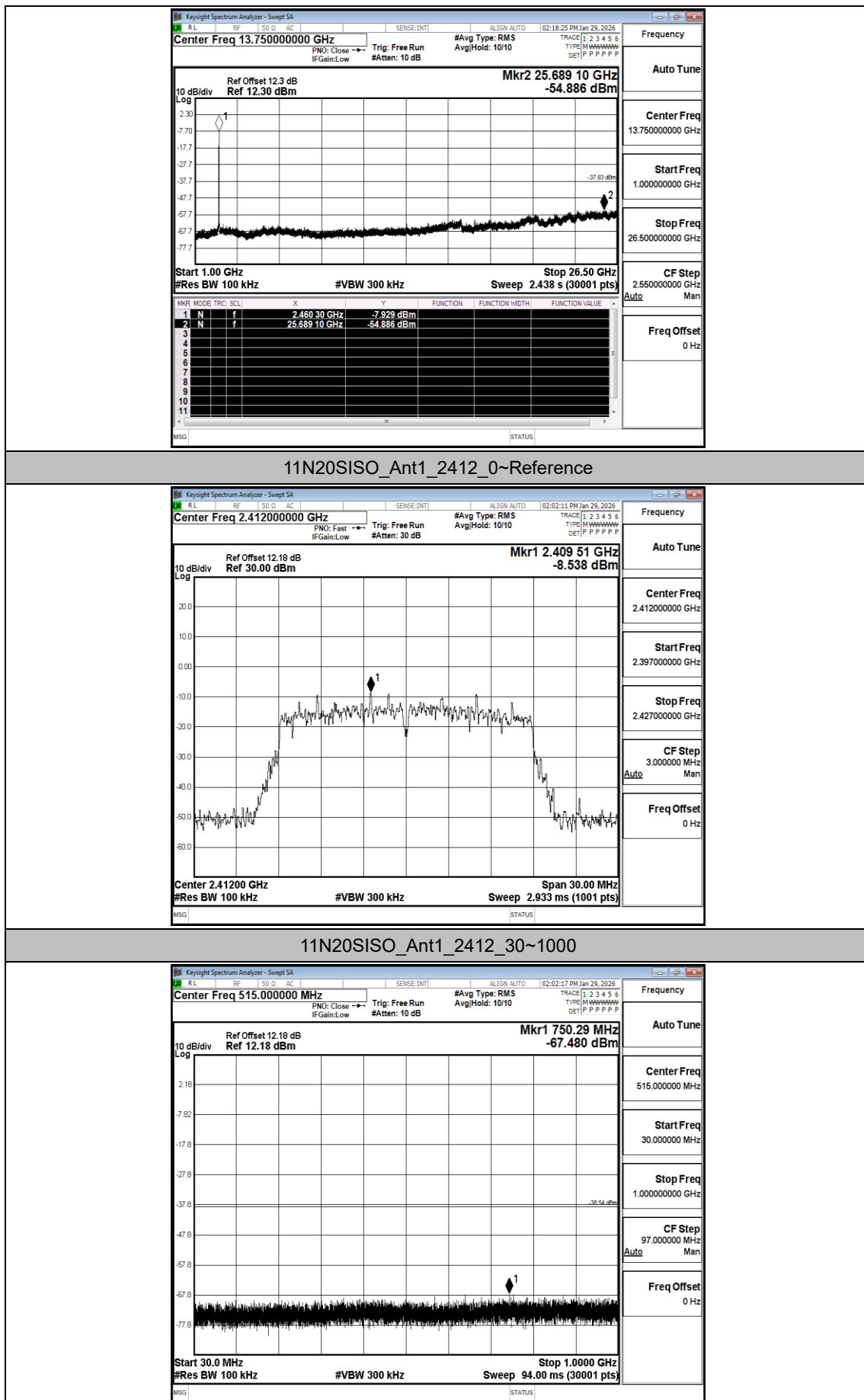
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11G_Ant1_2462_30~1000



11G_Ant1_2462_1000~26500

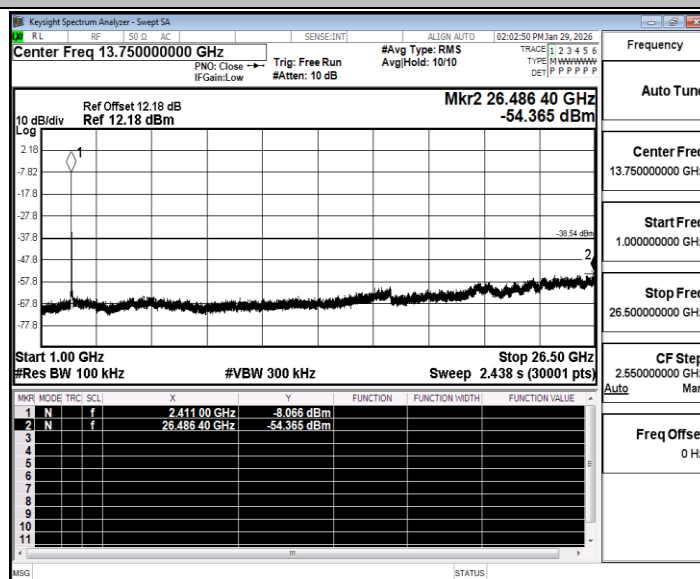


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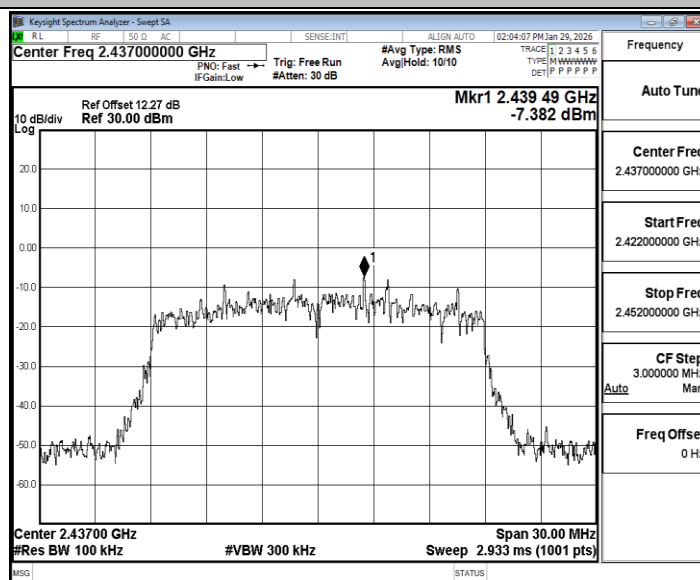
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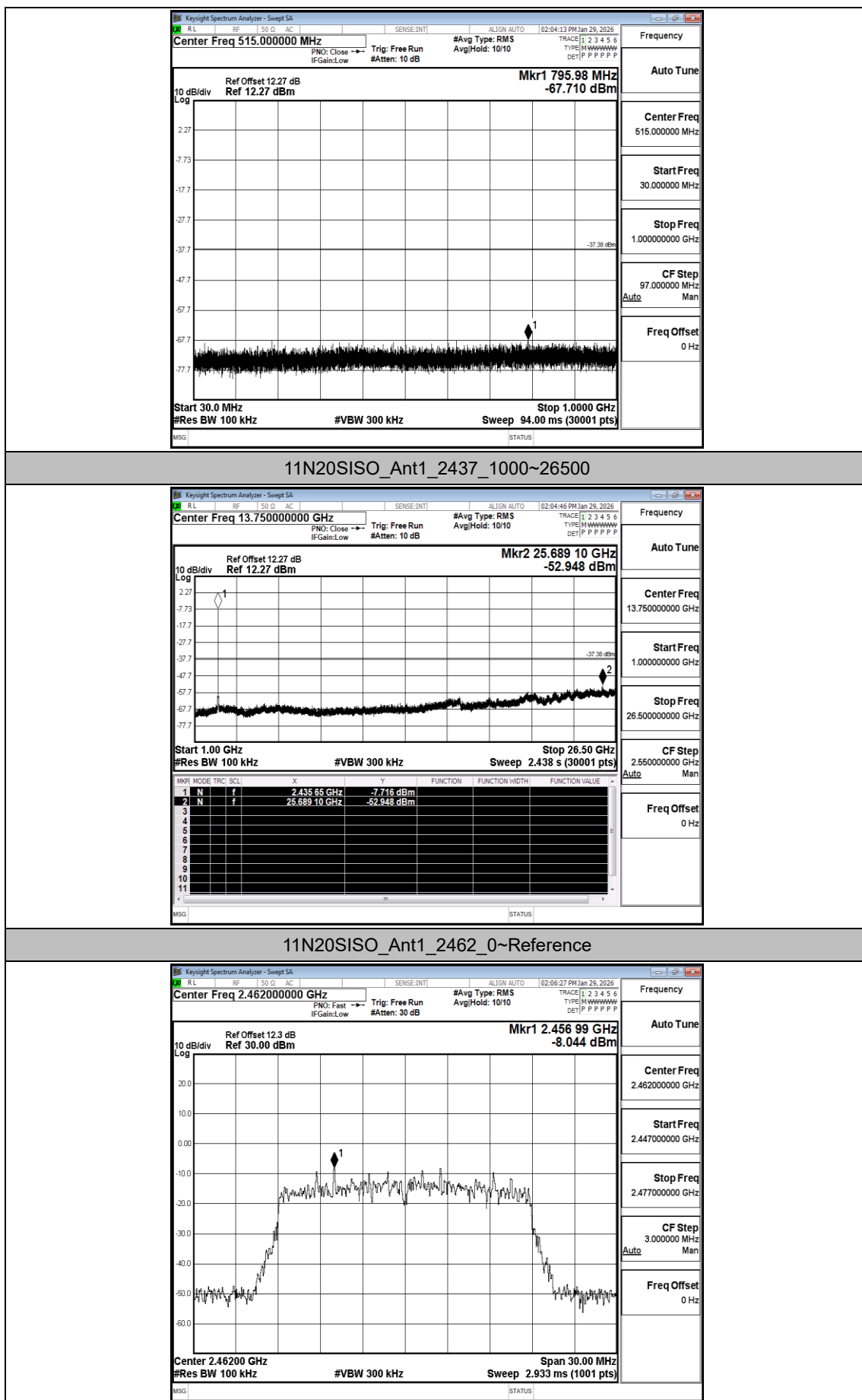
11N20SISO_Ant1_2412_1000~26500



11N20SISO_Ant1_2437_0~Reference



11N20SISO_Ant1_2437_30~1000



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