

FCC ID: 2A64B-DDX39
IC: 28593-DDX39

Appendix A of 2.4G WIFI

DTS Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.520	2407.000	2416.520	0.5	PASS
11B	Ant1	2437	9.040	2432.440	2441.480	0.5	PASS
11B	Ant1	2462	9.080	2457.440	2466.520	0.5	PASS
11G	Ant1	2412	16.320	2403.840	2420.160	0.5	PASS
11G	Ant1	2437	16.360	2428.800	2445.160	0.5	PASS
11G	Ant1	2462	16.320	2453.840	2470.160	0.5	PASS
11N20SISO	Ant1	2412	16.920	2403.600	2420.520	0.5	PASS
11N20SISO	Ant1	2437	17.280	2428.480	2445.760	0.5	PASS
11N20SISO	Ant1	2462	17.560	2453.200	2470.760	0.5	PASS
11N40SISO	Ant1	2422	35.120	2404.480	2439.600	0.5	PASS
11N40SISO	Ant1	2437	35.360	2419.480	2454.840	0.5	PASS
11N40SISO	Ant1	2452	35.120	2434.400	2469.520	0.5	PASS

Test Graphs

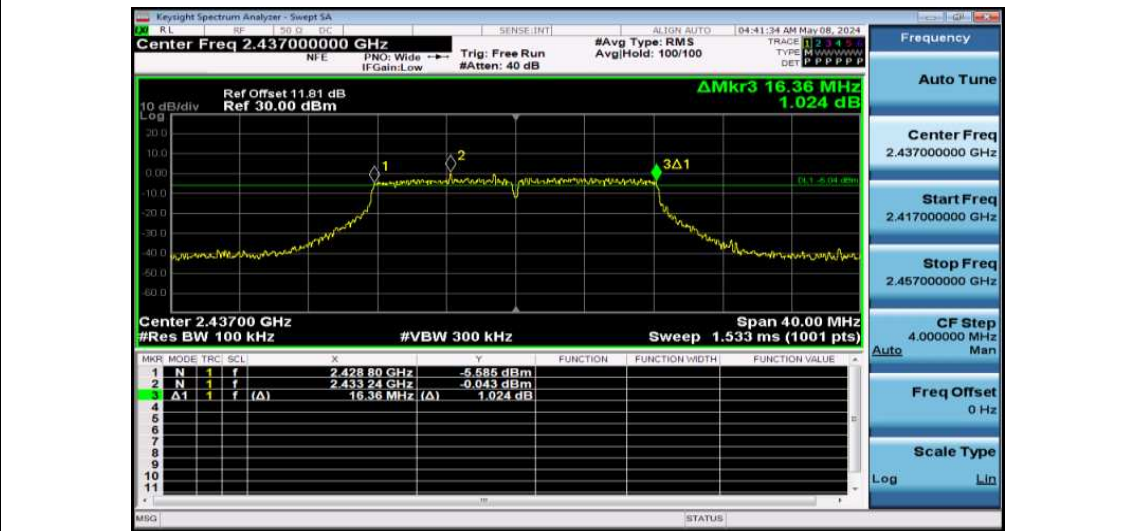


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11G-Ant1-2412-PASS



11G-Ant1-2437-PASS



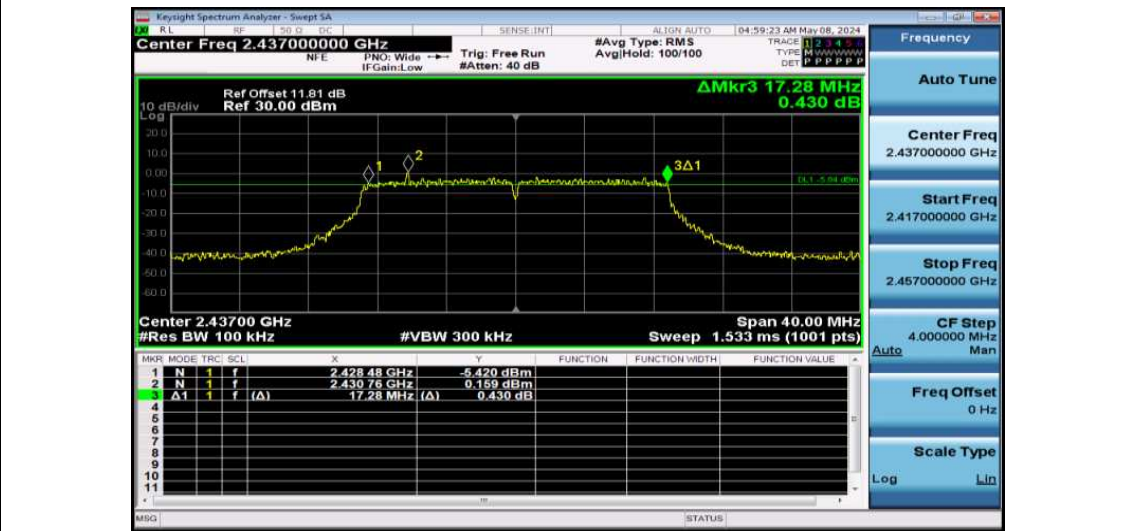
11G-Ant1-2462-PASS

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11N20SISO-Ant1-2412-PASS



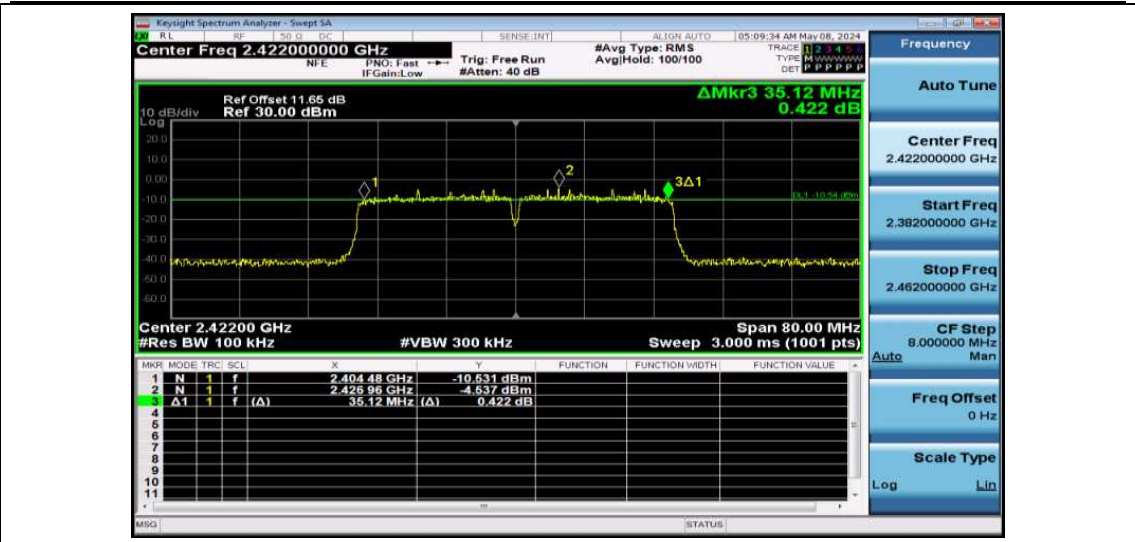
11N20SISO-Ant1-2437-PASS



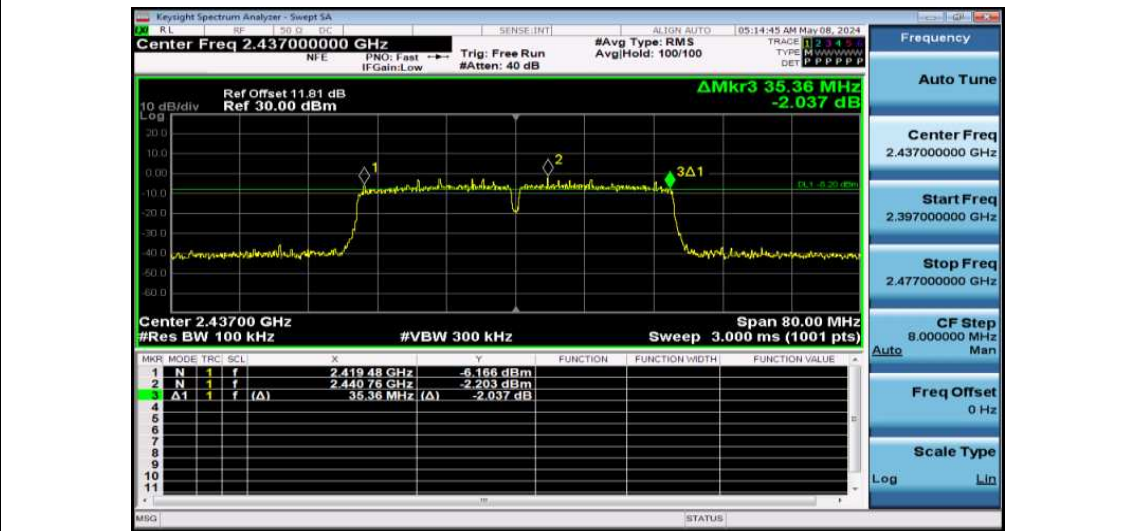
11N20SISO-Ant1-2462-PASS

FCC ID:2A64B-DDX39

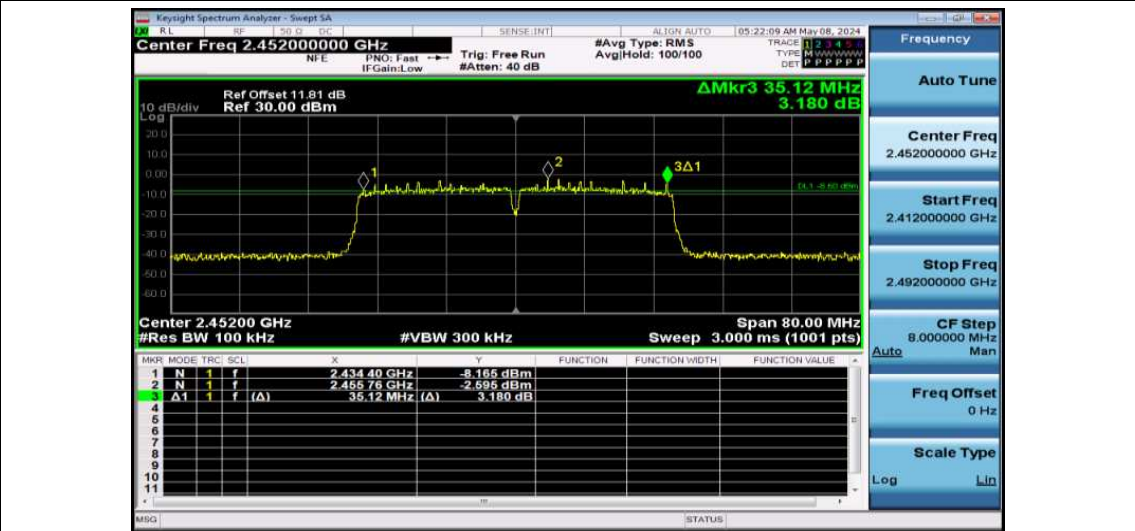
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11N40SISO-Ant1-2422-PASS



11N40SISO-Ant1-2437-PASS



11N40SISO-Ant1-2452-PASS

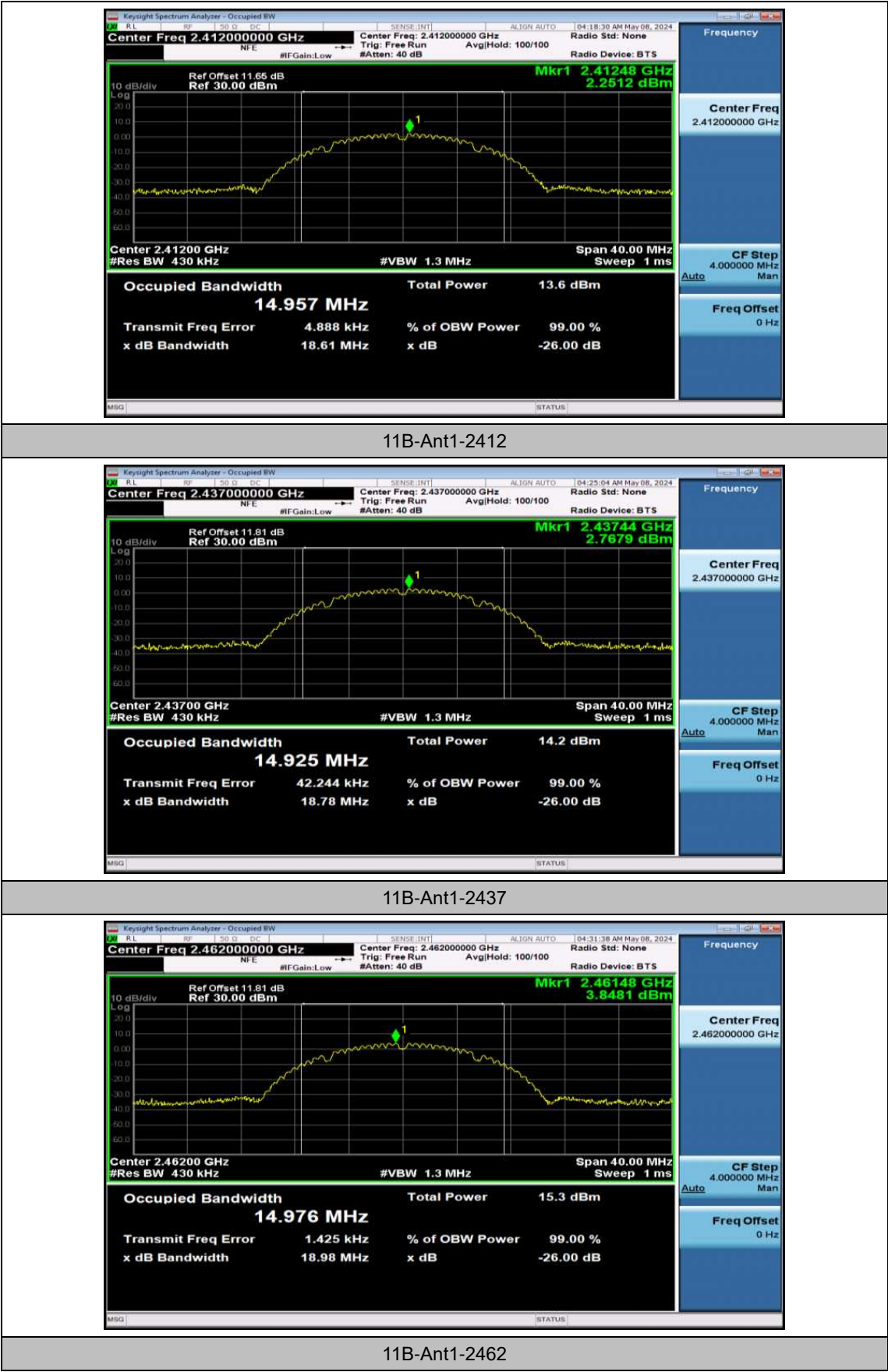
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Occupied Channel Bandwidth

Test Result

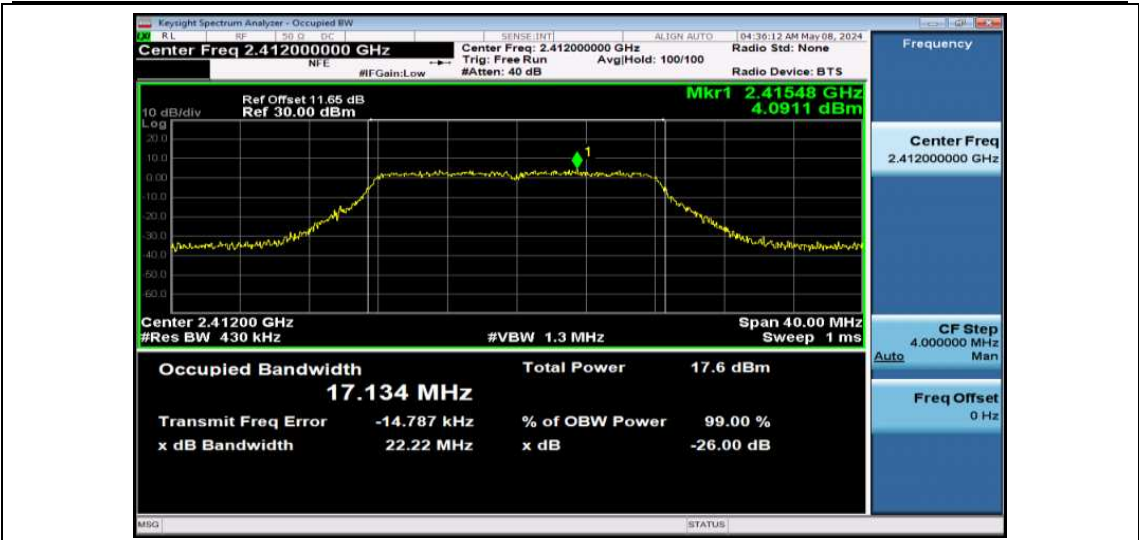
TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	14.957	2404.5264	2419.4834	---	---
11B	Ant1	2437	14.925	2429.5797	2444.5047	---	---
11B	Ant1	2462	14.976	2454.5134	2469.4894	---	---
11G	Ant1	2412	17.134	2403.4182	2420.5522	---	---
11G	Ant1	2437	17.081	2428.4520	2445.5330	---	---
11G	Ant1	2462	17.173	2453.4197	2470.5927	---	---
11N20SISO	Ant1	2412	18.091	2402.9031	2420.9941	---	---
11N20SISO	Ant1	2437	18.127	2427.9675	2446.0945	---	---
11N20SISO	Ant1	2462	18.173	2452.9210	2471.0940	---	---
11N40SISO	Ant1	2422	35.953	2404.0316	2439.9846	---	---
11N40SISO	Ant1	2437	35.896	2419.0806	2454.9766	---	---
11N40SISO	Ant1	2452	35.877	2434.0588	2469.9358	---	---

Test Graphs



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11G-Ant1-2412



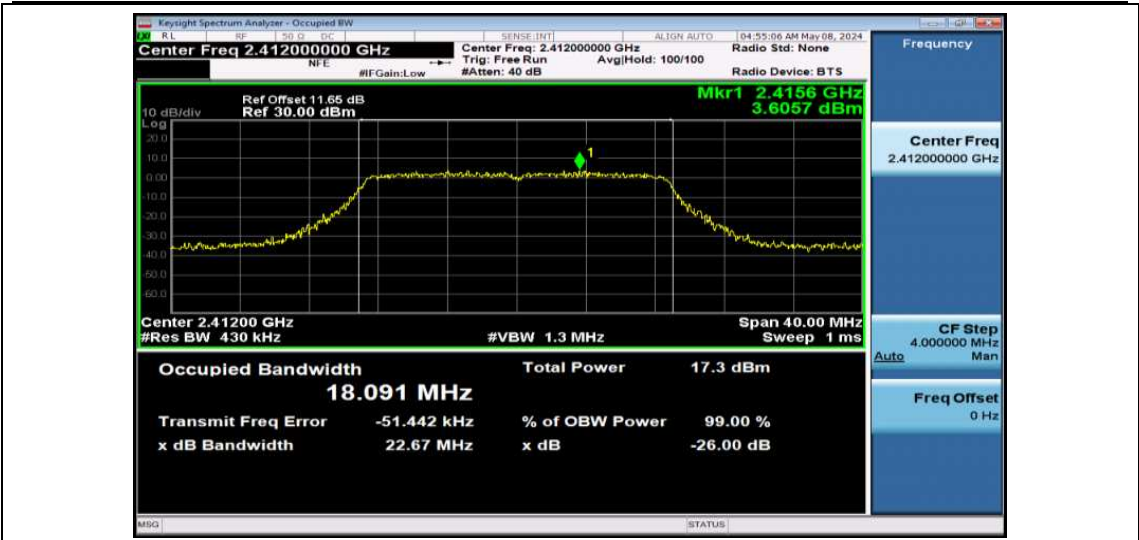
11G-Ant1-2437



11G-Ant1-2462

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11N20SISO-Ant1-2412



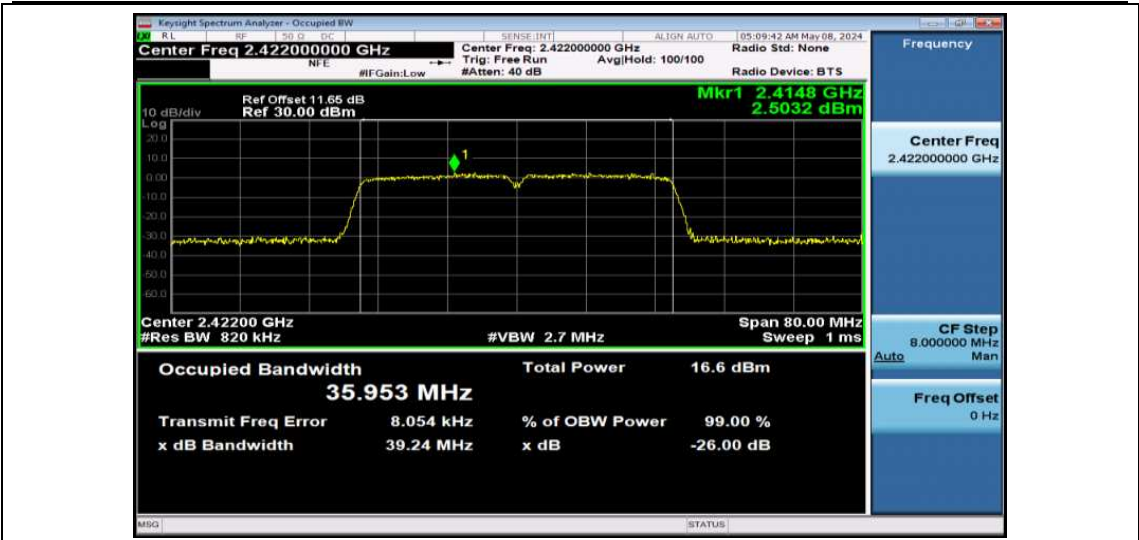
11N20SISO-Ant1-2437



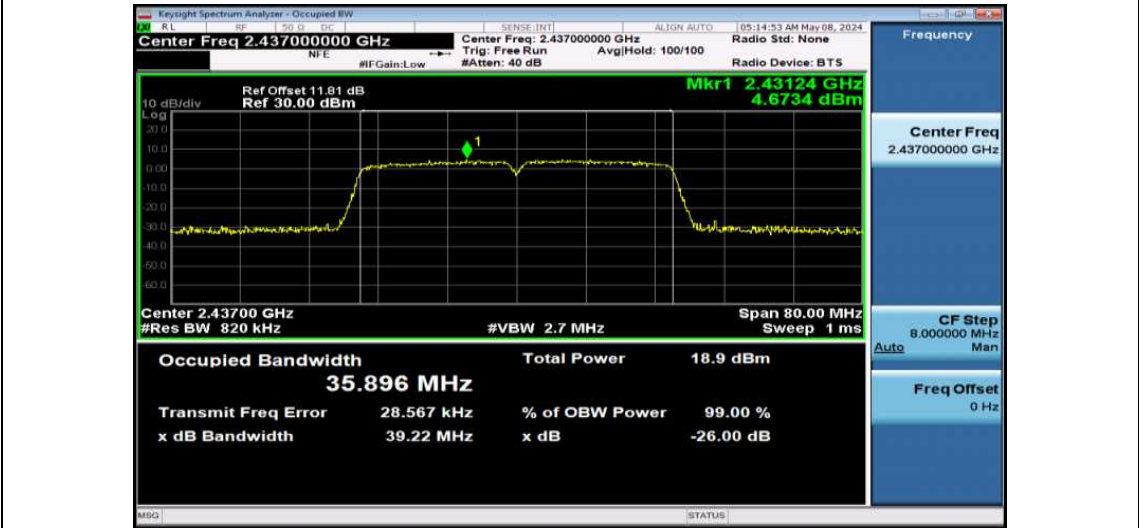
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FCC ID:2A64B-DDX39

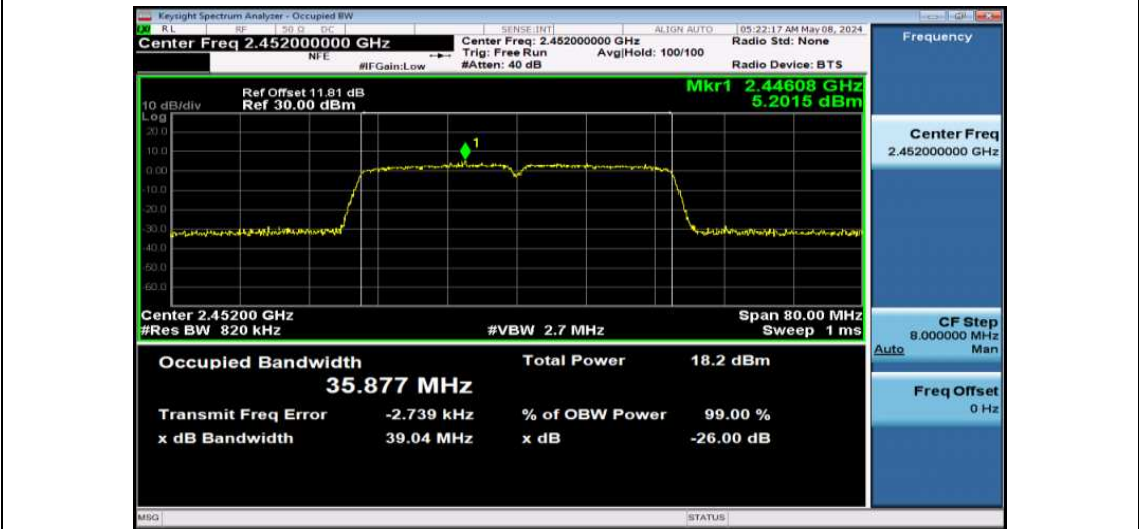
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11N40SISO-Ant1-2422



11N40SISO-Ant1-2437



11N40SISO-Ant1-2452

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Maximum conducted output power

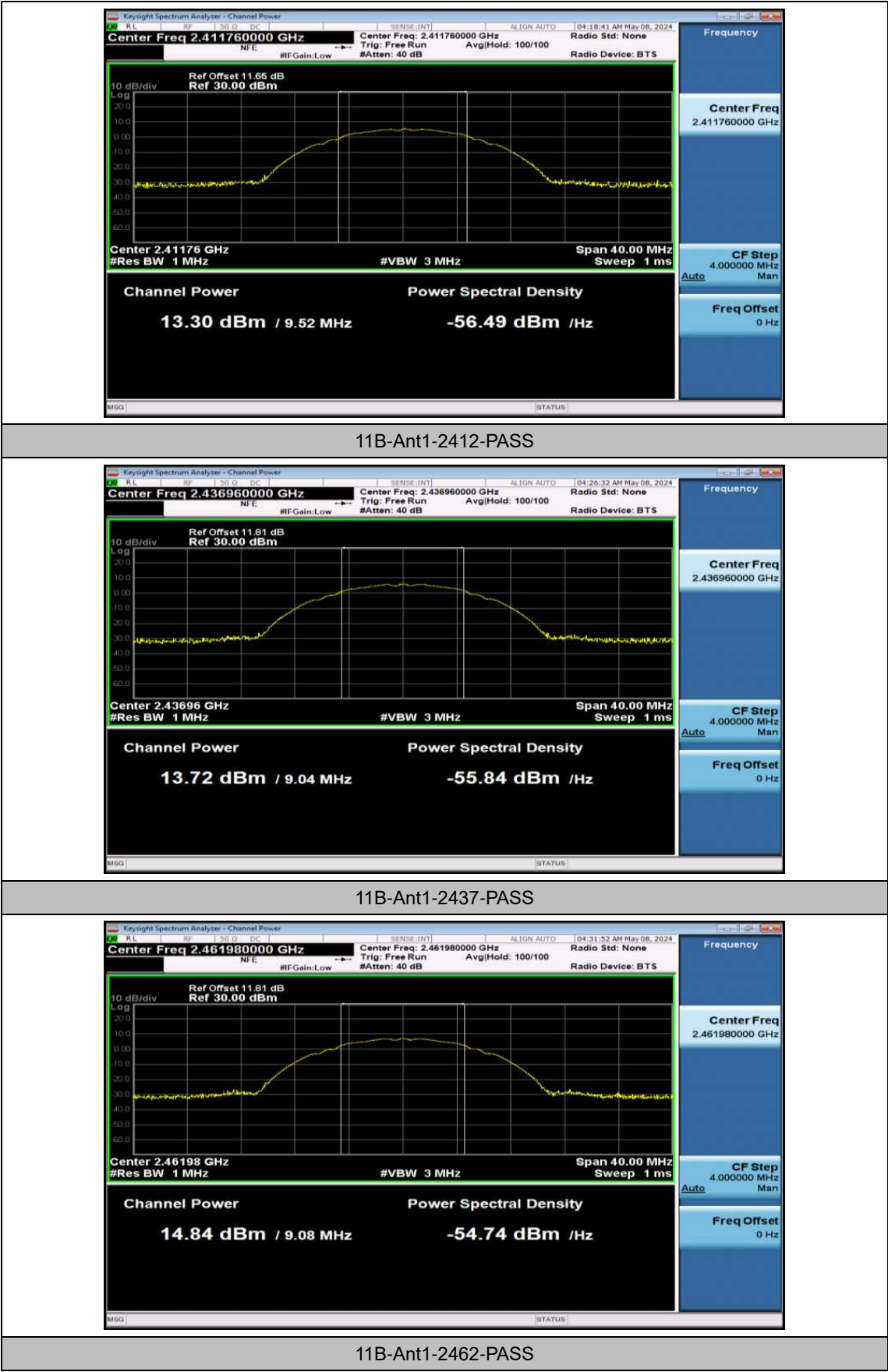
Test Result Average

Test Mode	Antenna	Frequency [MHz]	Average power [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Limit [dBm]	Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
11B	Ant1	2412	13.30	99.52	0.02	13.32	≤30.00	4.92	18.24	≤36.00	PASS
11B	Ant1	2437	13.72	99.04	0.04	13.76	≤30.00	4.92	18.68	≤36.00	PASS
11B	Ant1	2462	14.84	99.44	0.02	14.86	≤30.00	4.92	19.78	≤36.00	PASS
11G	Ant1	2412	18.47	92.38	0.34	18.81	≤30.00	4.92	23.73	≤36.00	PASS
11G	Ant1	2437	19.24	93.24	0.30	19.54	≤30.00	4.92	24.46	≤36.00	PASS
11G	Ant1	2462	19.50	95.39	0.20	19.7	≤30.00	4.92	24.62	≤36.00	PASS
11N20SISO	Ant1	2412	18.38	96.00	0.18	18.56	≤30.00	4.92	23.48	≤36.00	PASS
11N20SISO	Ant1	2437	19.16	95.52	0.20	19.36	≤30.00	4.92	24.28	≤36.00	PASS
11N20SISO	Ant1	2462	19.41	93.20	0.31	19.72	≤30.00	4.92	24.64	≤36.00	PASS
11N40SISO	Ant1	2422	16.81	91.26	0.40	17.21	≤30.00	4.92	22.13	≤36.00	PASS
11N40SISO	Ant1	2437	19.16	87.16	0.60	19.76	≤30.00	4.92	24.68	≤36.00	PASS
11N40SISO	Ant1	2452	18.44	88.79	0.52	18.96	≤30.00	4.92	23.88	≤36.00	PASS

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Test Graphs Average



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11G-Ant1-2412-PASS



11G-Ant1-2437-PASS



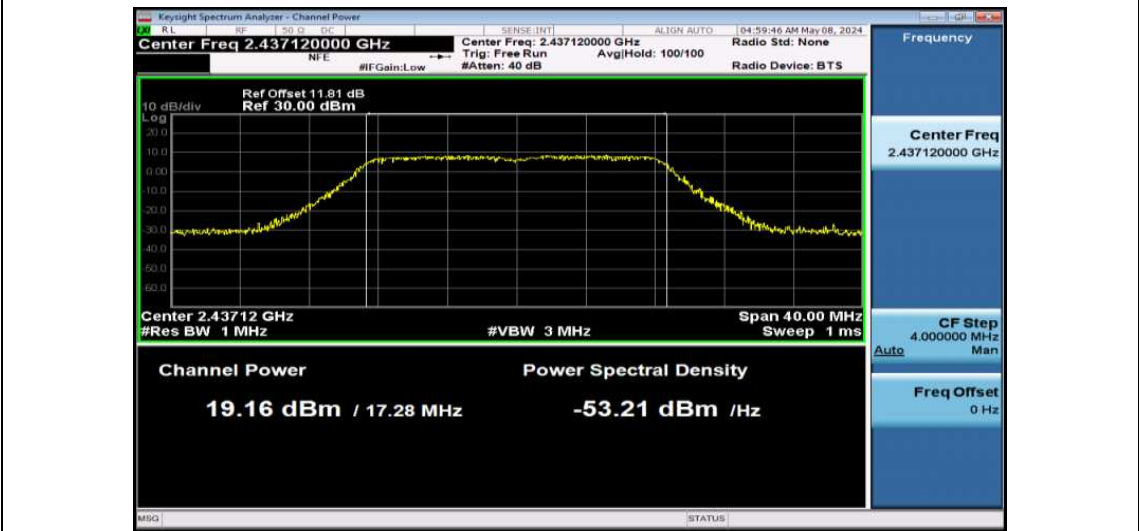
11G-Ant1-2462-PASS

FCC ID:2A64B-DDX39

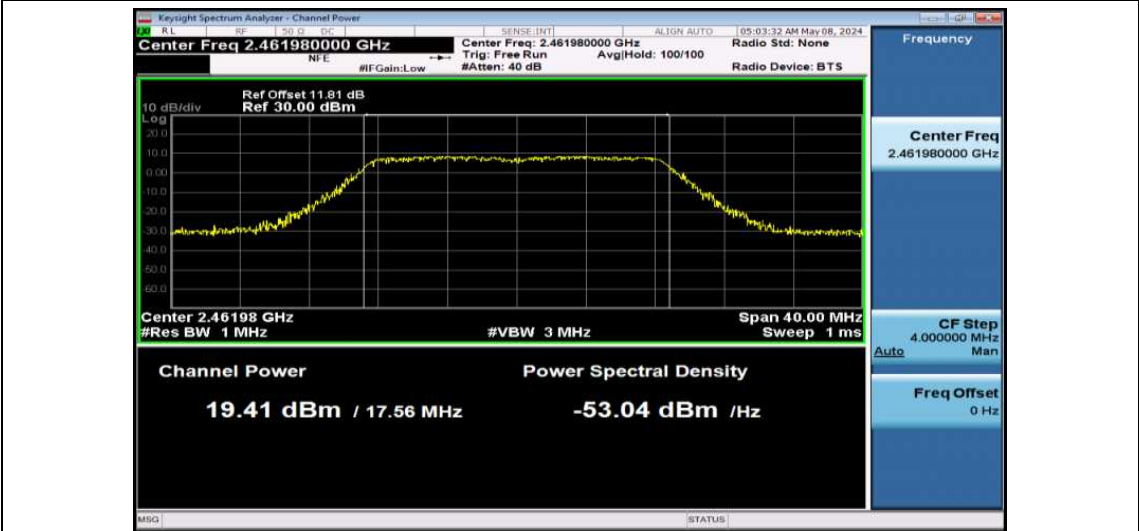
IC:28593-DDX39



11N20SISO-Ant1-2412-PASS



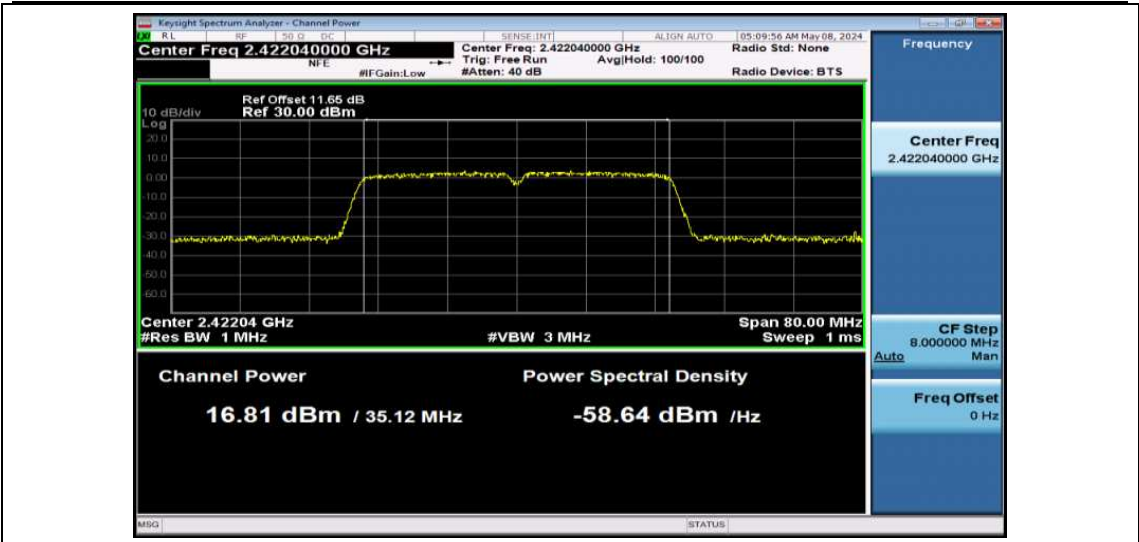
11N20SISO-Ant1-2437-PASS



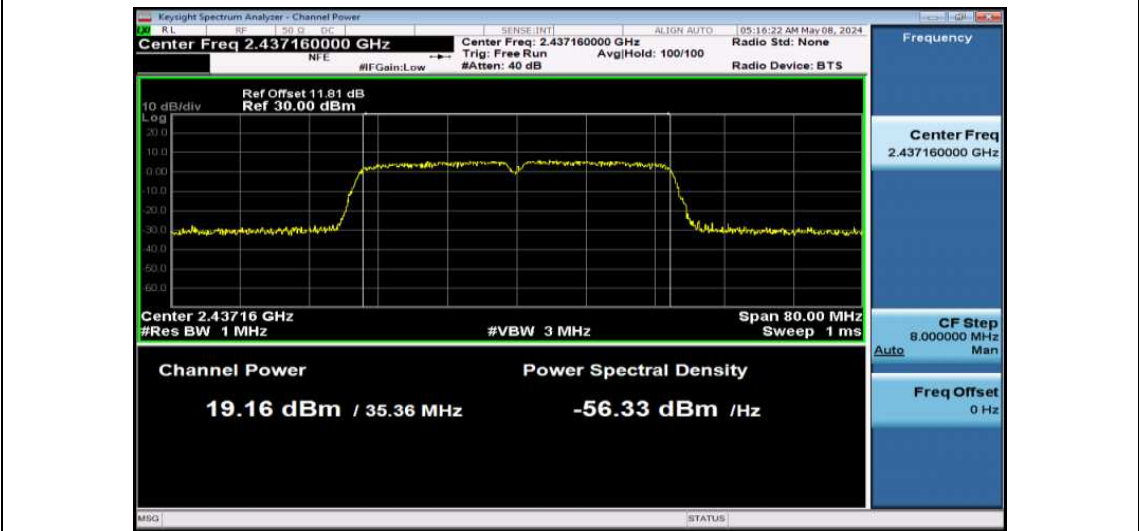
11N20SISO-Ant1-2462-PASS

FCC ID:2A64B-DDX39

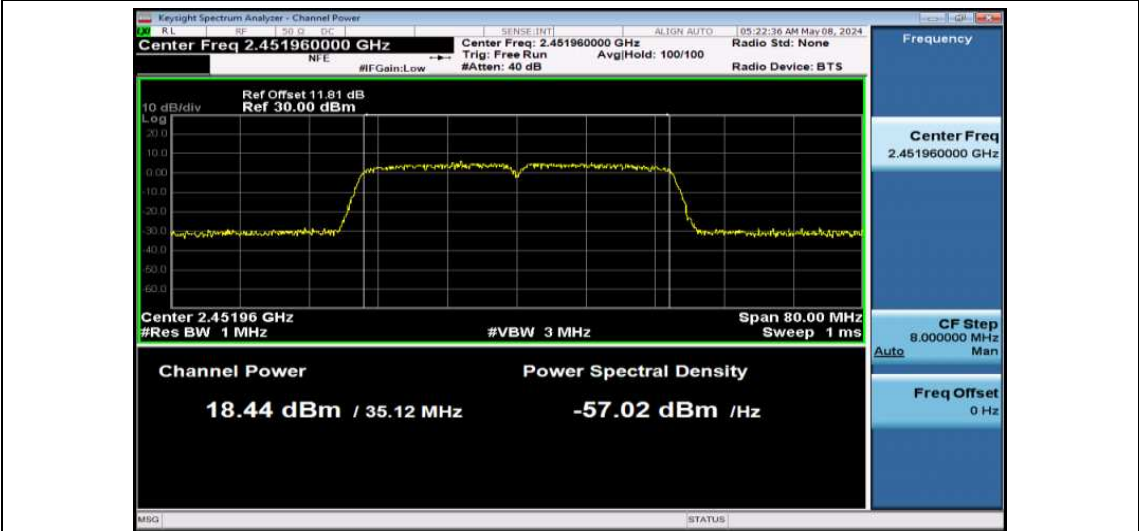
IC:28593-DDX39



11N40SISO-Ant1-2422-PASS



11N40SISO-Ant1-2437-PASS



11N40SISO-Ant1-2452-PASS

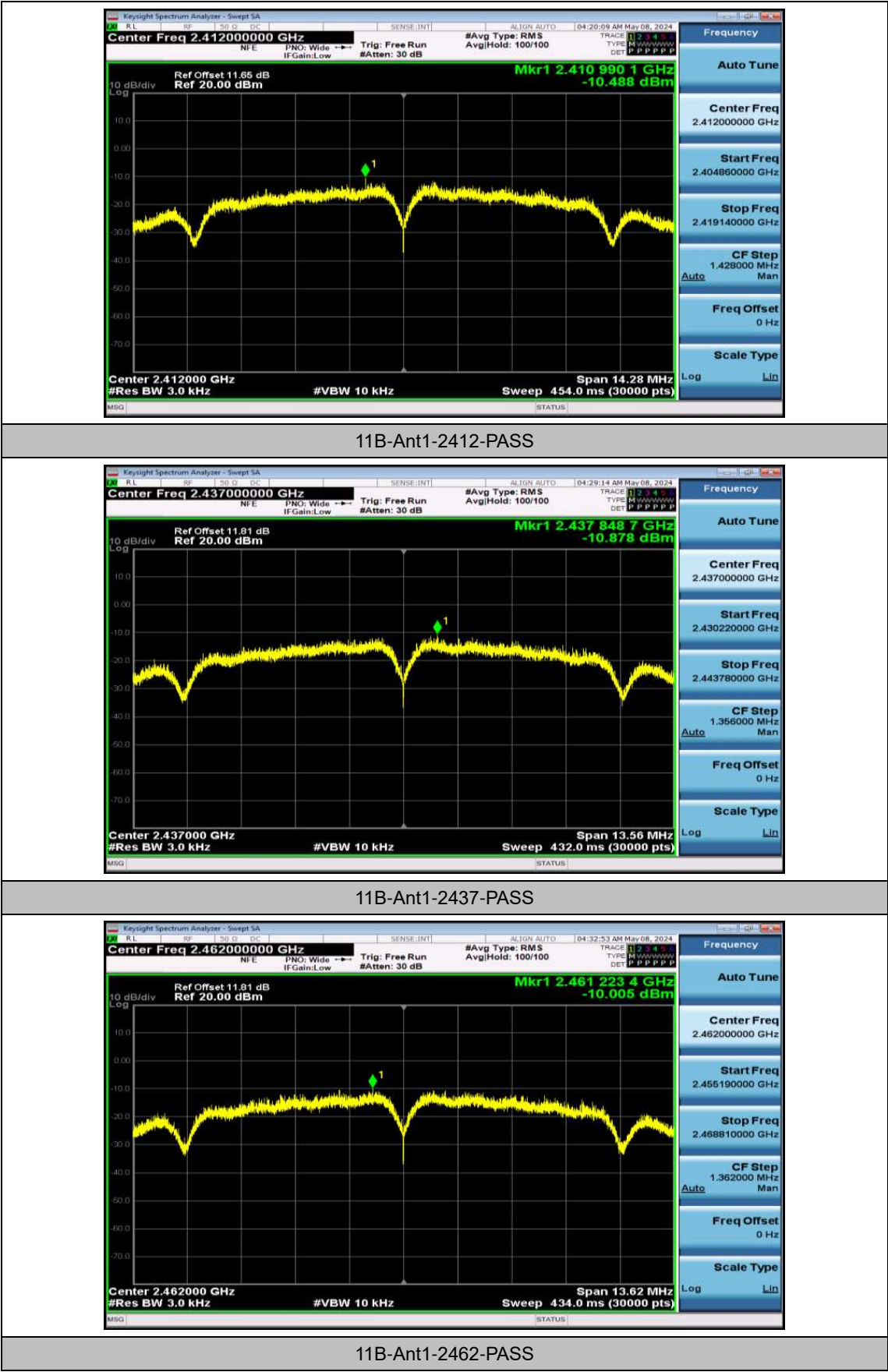
FCC ID: 2A64B-DDX39
IC: 28593-DDX39

Maximum power spectral density

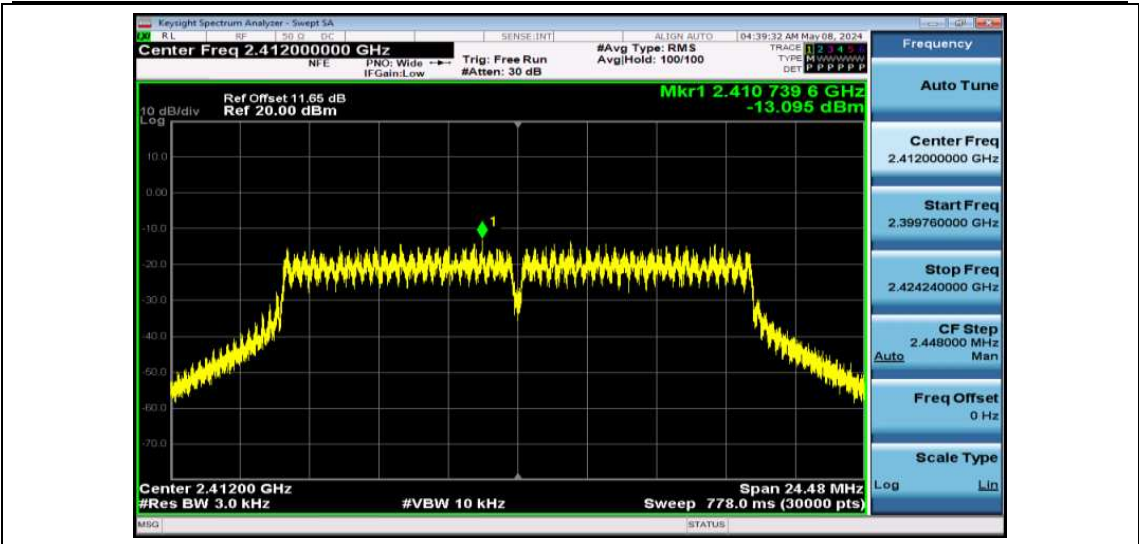
Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-10.49	≤8.00	PASS
11B	Ant1	2437	-10.88	≤8.00	PASS
11B	Ant1	2462	-10.01	≤8.00	PASS
11G	Ant1	2412	-13.10	≤8.00	PASS
11G	Ant1	2437	-13.18	≤8.00	PASS
11G	Ant1	2462	-12.25	≤8.00	PASS
11N20SISO	Ant1	2412	-13.40	≤8.00	PASS
11N20SISO	Ant1	2437	-13.02	≤8.00	PASS
11N20SISO	Ant1	2462	-12.92	≤8.00	PASS
11N40SISO	Ant1	2422	-17.65	≤8.00	PASS
11N40SISO	Ant1	2437	-15.64	≤8.00	PASS
11N40SISO	Ant1	2452	-16.92	≤8.00	PASS

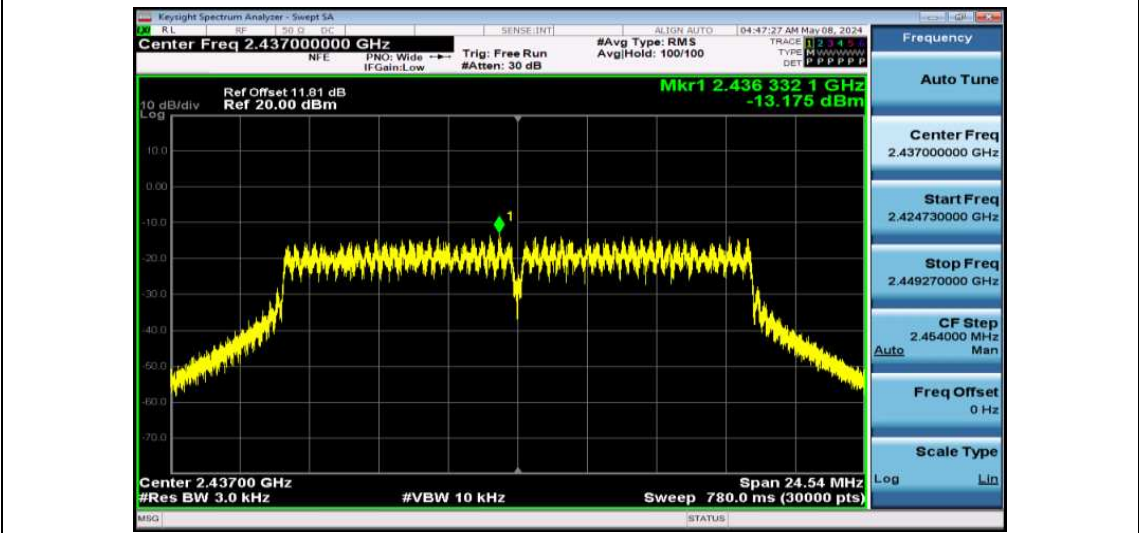
Test Graphs



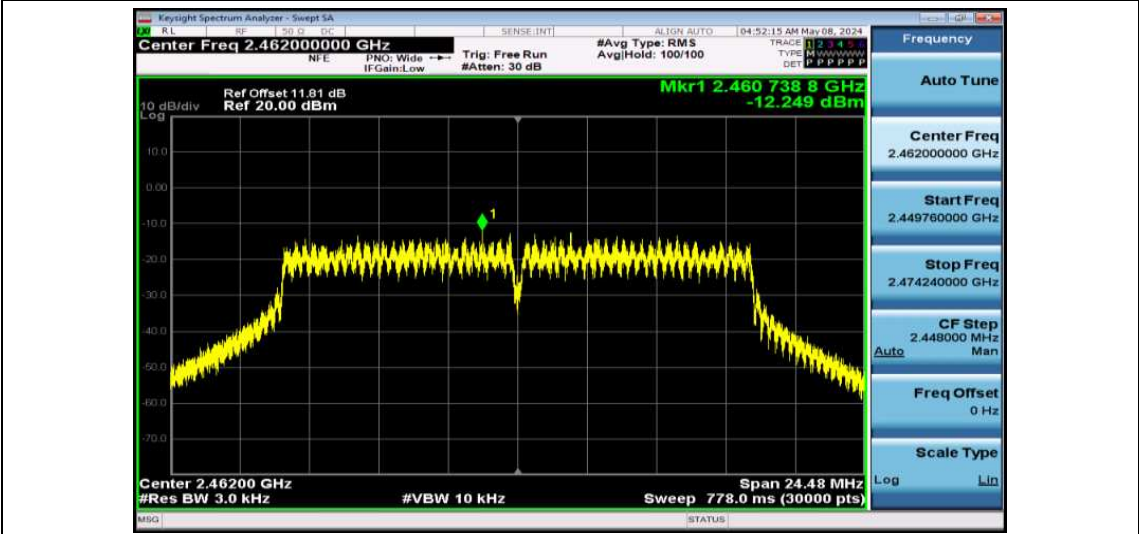
FCC ID: 2A64B-DDX39
IC: 28593-DDX39



11G-Ant1-2412-PASS

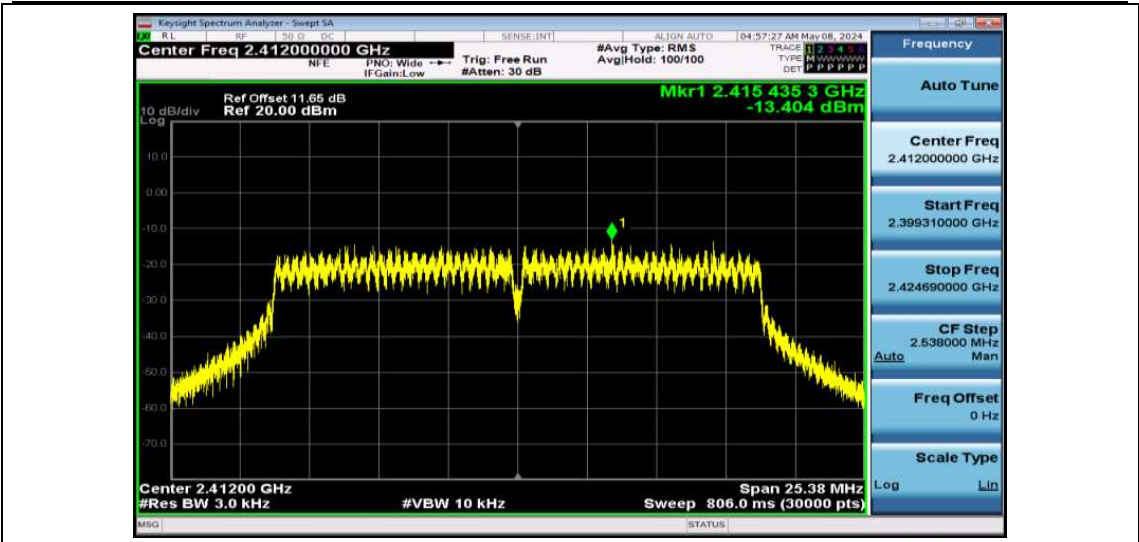


11G-Ant1-2437-PASS

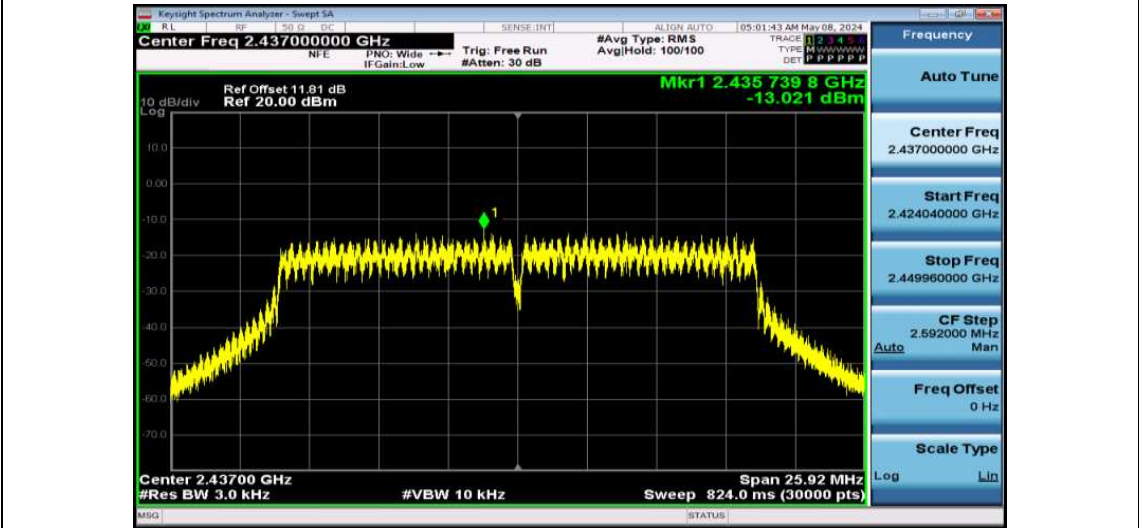


11G-Ant1-2462-PASS

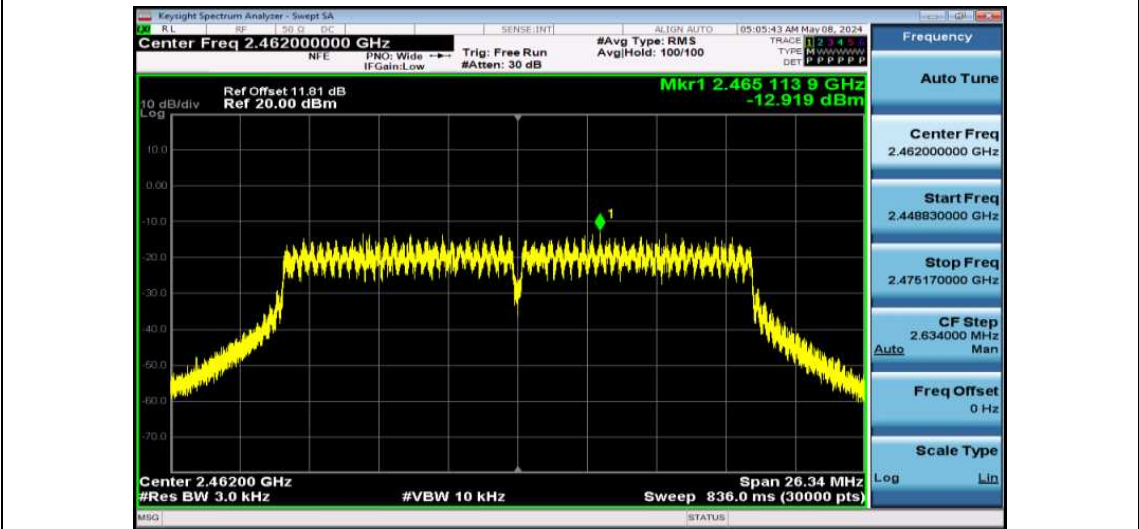
FCC ID: 2A64B-DDX39
IC: 28593-DDX39



11N20SISO-Ant1-2412-PASS

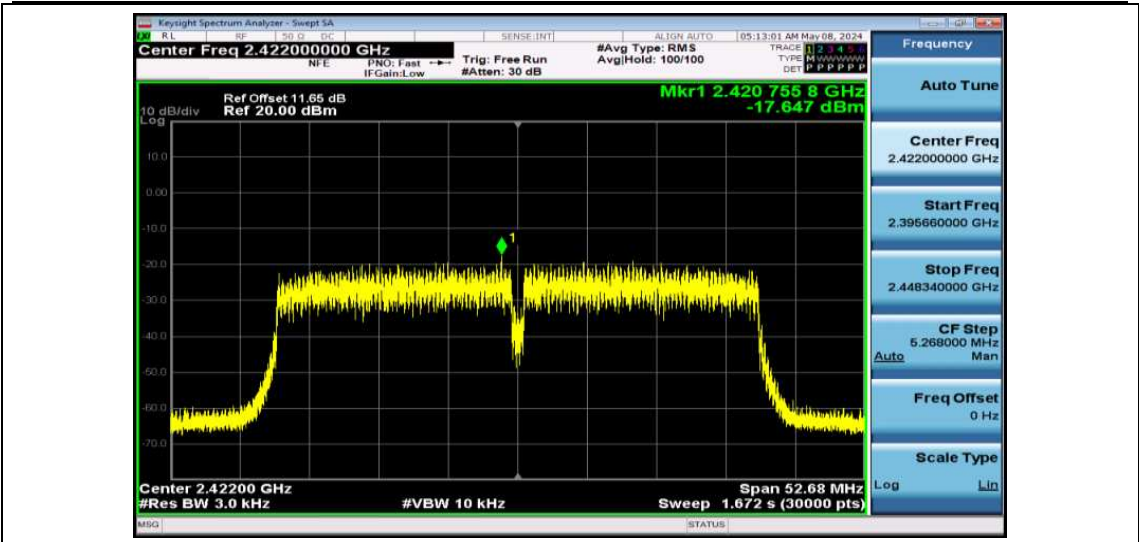


11N20SISO-Ant1-2437-PASS

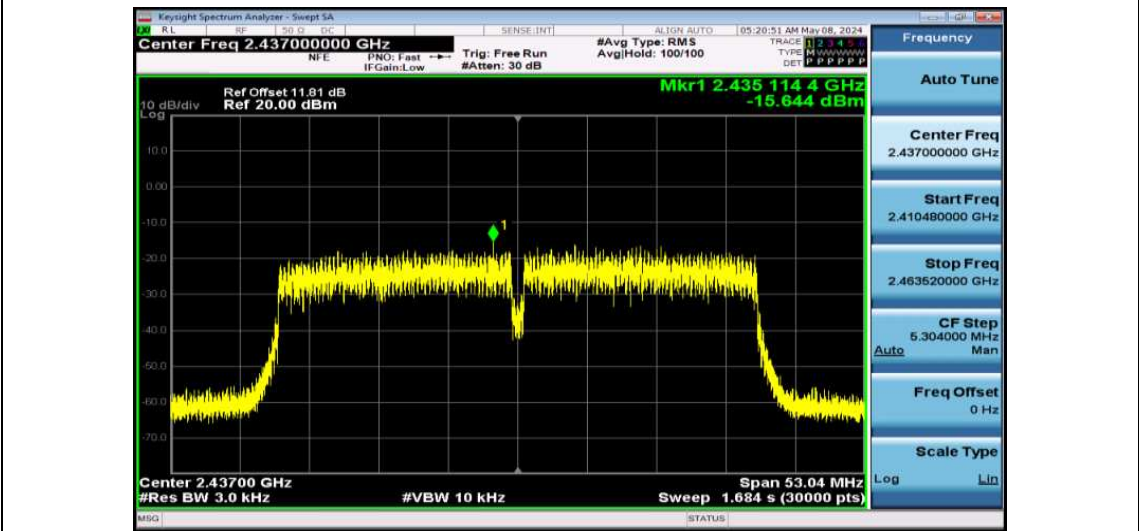


11N20SISO-Ant1-2462-PASS

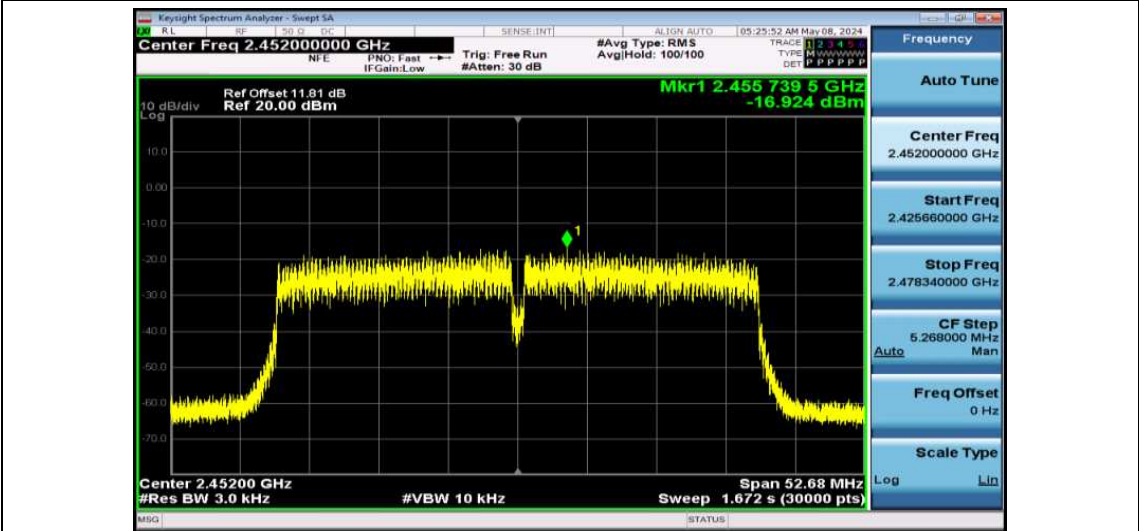
FCC ID: 2A64B-DDX39
IC: 28593-DDX39



11N40SISO-Ant1-2422-PASS



11N40SISO-Ant1-2437-PASS



11N40SISO-Ant1-2452-PASS

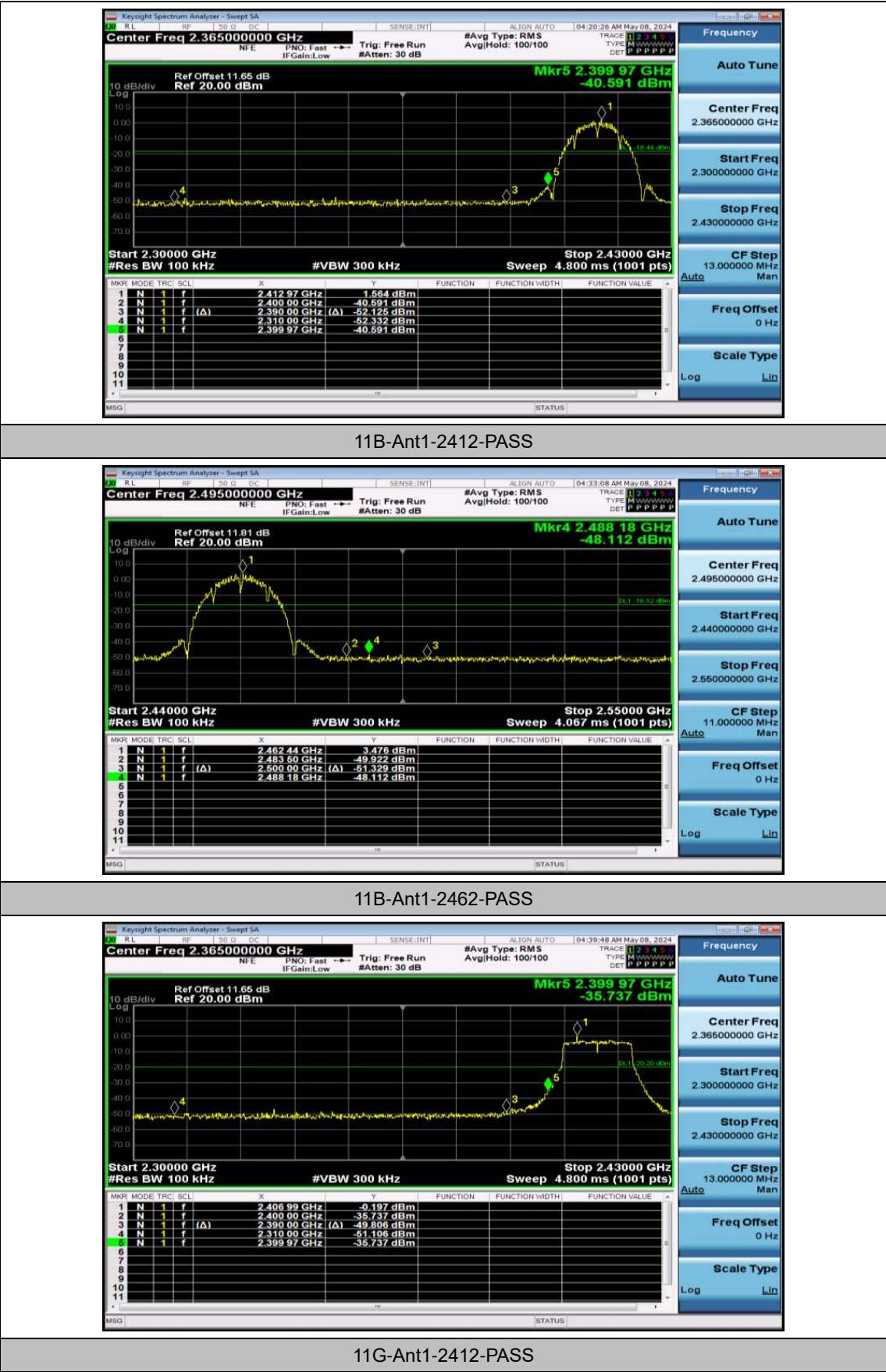
FCC ID: 2A64B-DDX39
IC: 28593-DDX39

Band edge measurements

Test Result

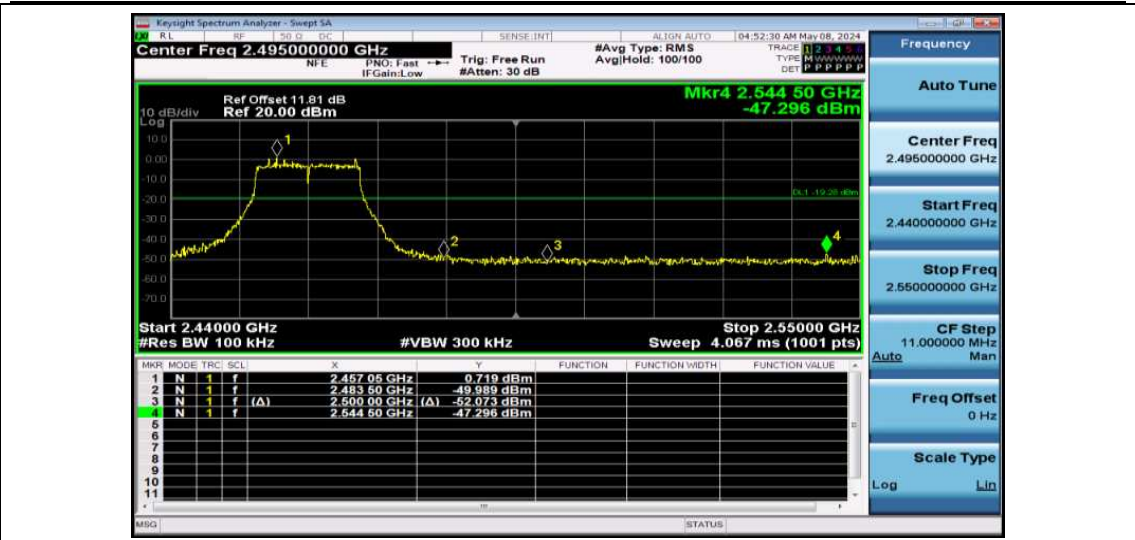
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	1.56	-40.59	≤-18.44	PASS
11B	Ant1	High	2462	3.48	-48.11	≤-16.52	PASS
11G	Ant1	Low	2412	-0.20	-35.74	≤-20.2	PASS
11G	Ant1	High	2462	0.72	-47.3	≤-19.28	PASS
11N20SISO	Ant1	Low	2412	-0.68	-35.13	≤-20.68	PASS
11N20SISO	Ant1	High	2462	-0.44	-47.41	≤-20.44	PASS
11N40SISO	Ant1	Low	2422	-4.75	-45.02	≤-24.75	PASS
11N40SISO	Ant1	High	2452	-3.30	-46.41	≤-23.3	PASS

Test Graphs

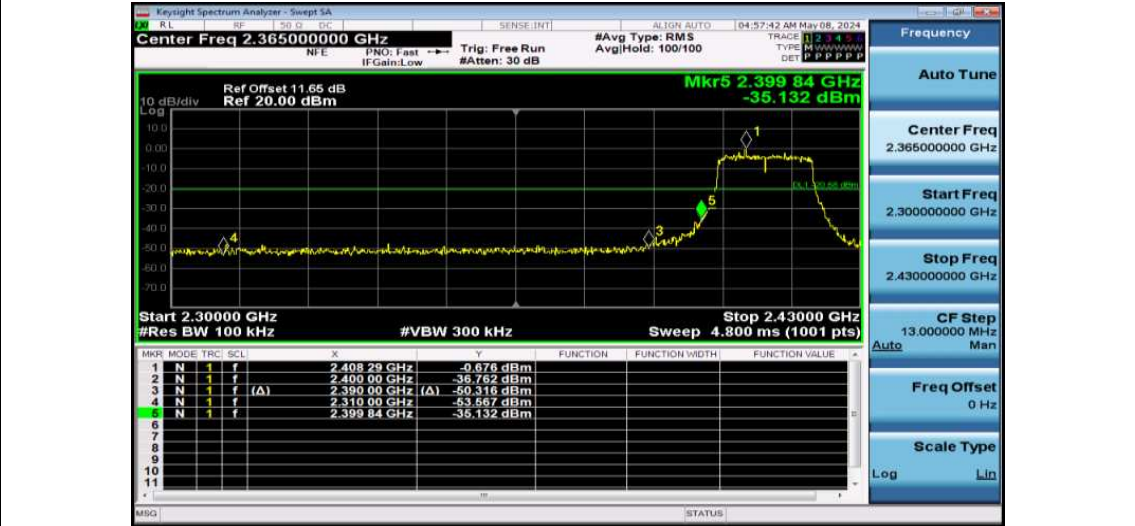


FCC ID:2A64B-DDX39

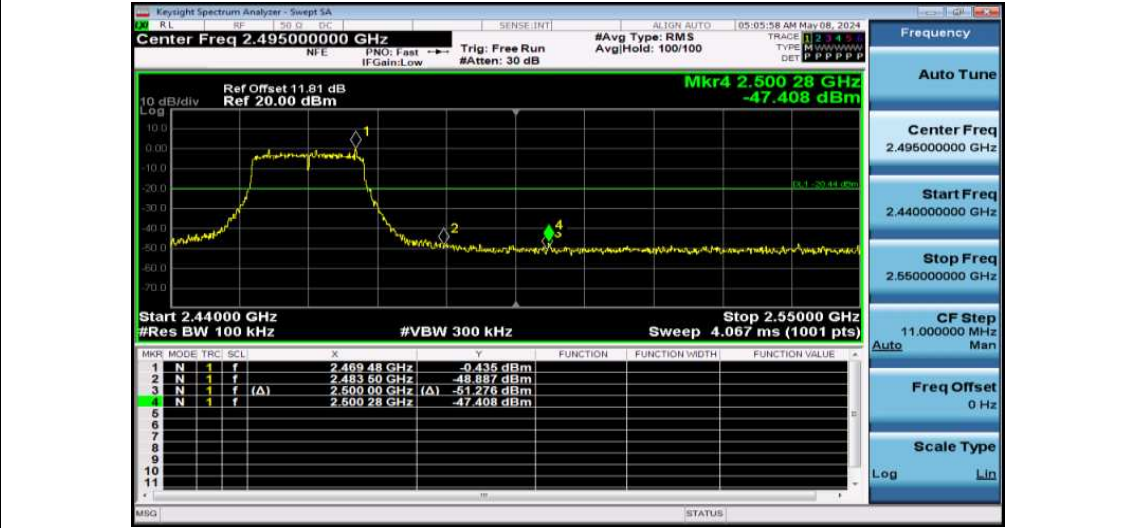
IC:28593-DDX39



11G-Ant1-2462-PASS



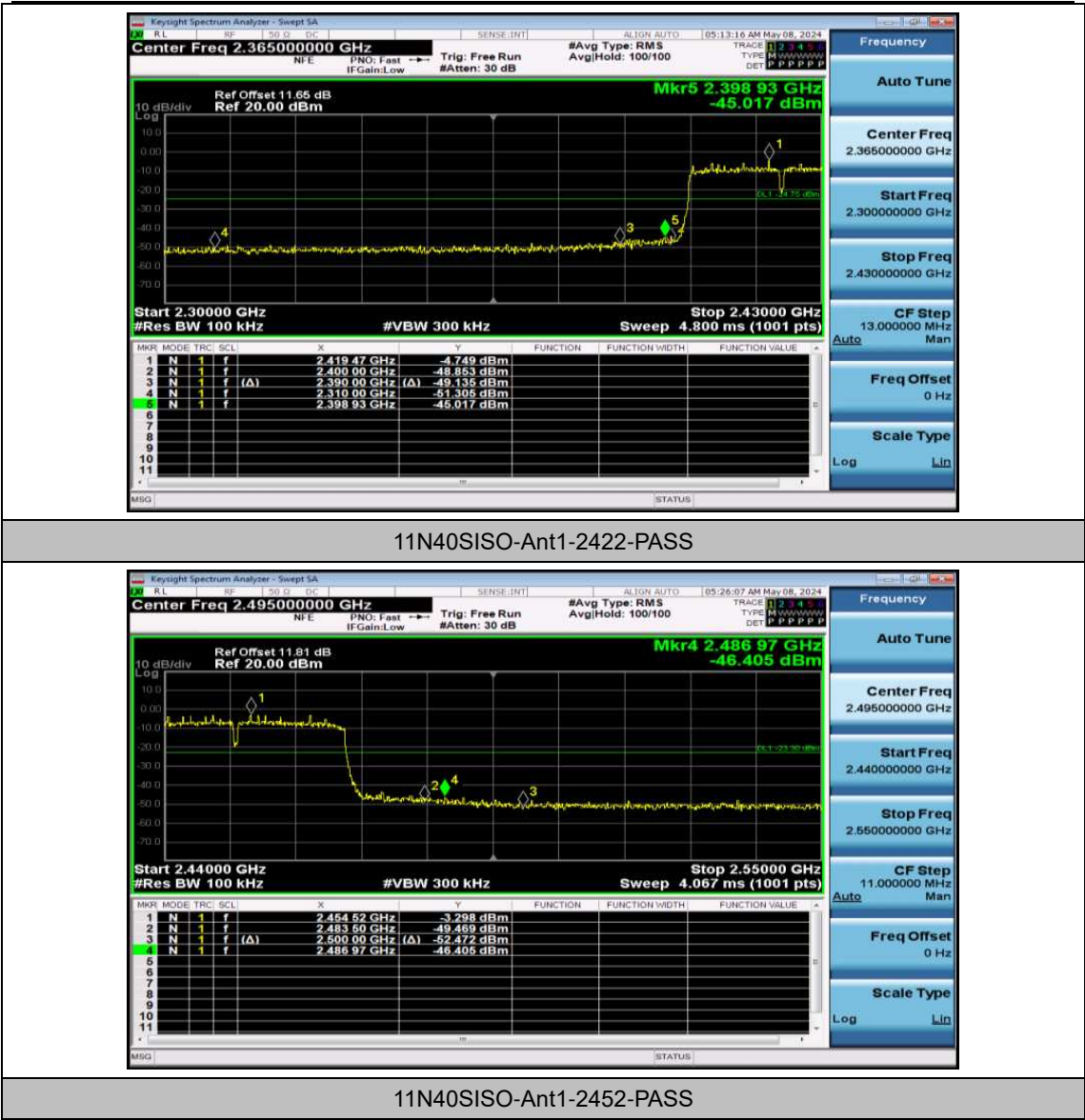
11N20SISO-Ant1-2412-PASS



11N20SISO-Ant1-2462-PASS

FCC ID:2A64B-DDX39

IC:28593-DDX39



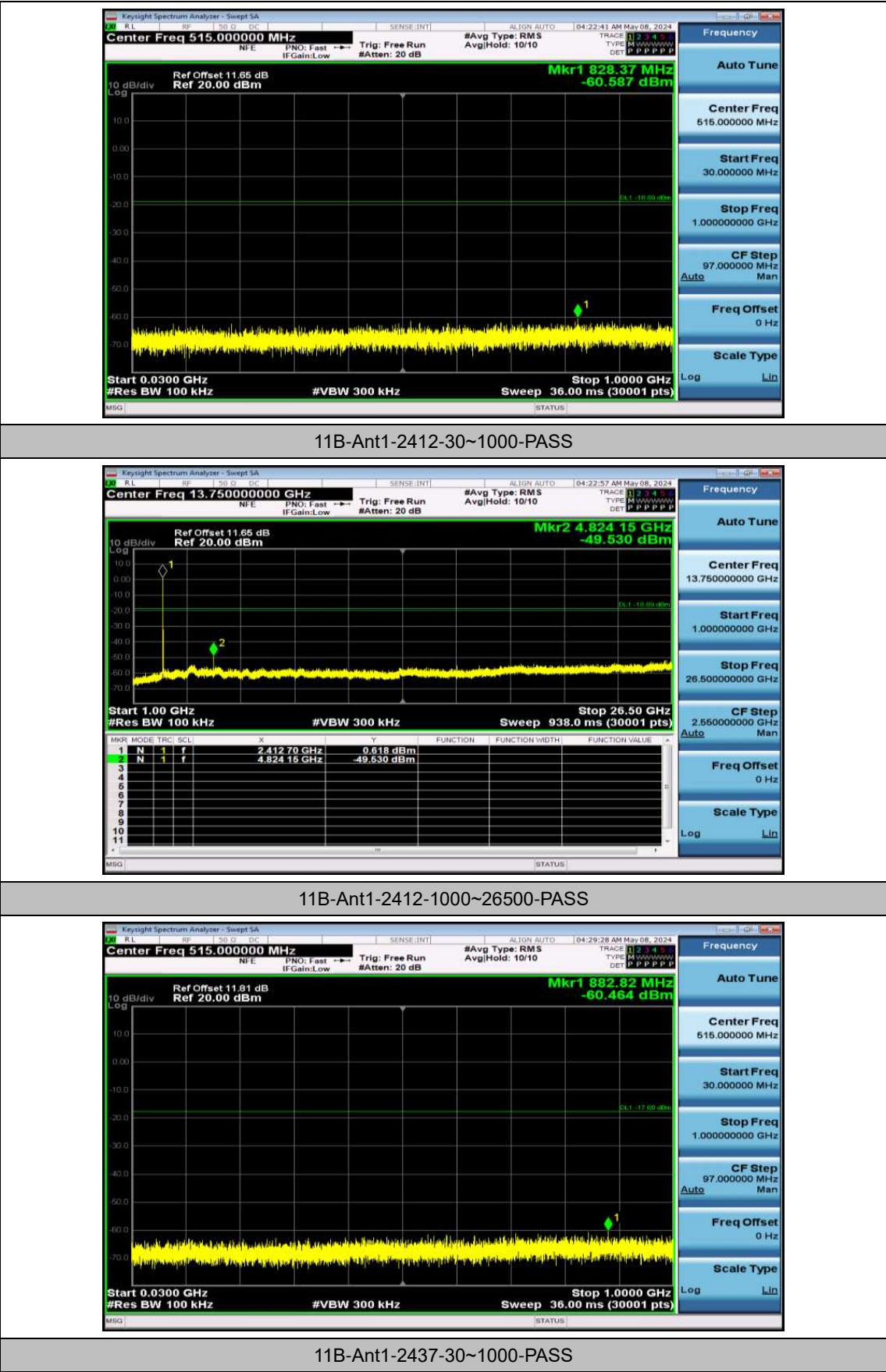
FCC ID: 2A64B-DDX39
IC: 28593-DDX39

Conducted Spurious Emission

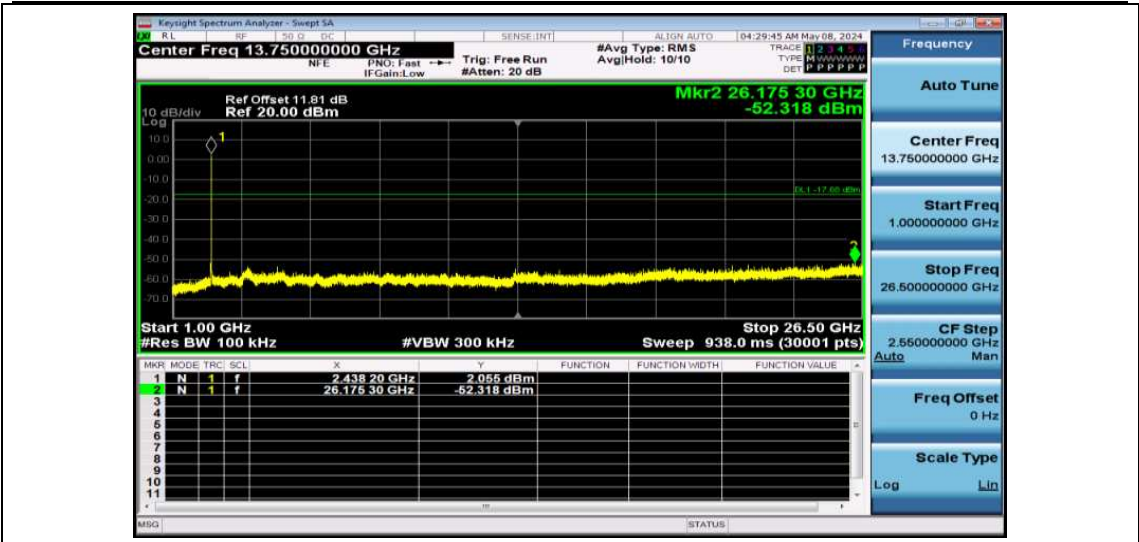
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	30~1000	1.11	-60.59	≤-18.89	PASS
11B	Ant1	2412	1000~26500	1.11	-49.53	≤-18.89	PASS
11B	Ant1	2437	30~1000	2.32	-60.46	≤-17.68	PASS
11B	Ant1	2437	1000~26500	2.32	-52.32	≤-17.68	PASS
11B	Ant1	2462	30~1000	3.27	-60.66	≤-16.73	PASS
11B	Ant1	2462	1000~26500	3.27	-50.91	≤-16.73	PASS
11G	Ant1	2412	30~1000	-0.62	-61.01	≤-20.62	PASS
11G	Ant1	2412	1000~26500	-0.62	-50.6	≤-20.62	PASS
11G	Ant1	2437	30~1000	0.98	-59.41	≤-19.02	PASS
11G	Ant1	2437	1000~26500	0.98	-52.02	≤-19.02	PASS
11G	Ant1	2462	30~1000	0.13	-60.71	≤-19.87	PASS
11G	Ant1	2462	1000~26500	0.13	-51.16	≤-19.87	PASS
11N20SISO	Ant1	2412	30~1000	-0.38	-60.21	≤-20.38	PASS
11N20SISO	Ant1	2412	1000~26500	-0.38	-50.8	≤-20.38	PASS
11N20SISO	Ant1	2437	30~1000	0.66	-59.03	≤-19.34	PASS
11N20SISO	Ant1	2437	1000~26500	0.66	-51.58	≤-19.34	PASS
11N20SISO	Ant1	2462	30~1000	0.08	-59.95	≤-19.92	PASS
11N20SISO	Ant1	2462	1000~26500	0.08	-50.74	≤-19.92	PASS
11N40SISO	Ant1	2422	30~1000	-5.16	-59.74	≤-25.16	PASS
11N40SISO	Ant1	2422	1000~26500	-5.16	-52.74	≤-25.16	PASS
11N40SISO	Ant1	2437	30~1000	-2.51	-61.01	≤-22.51	PASS
11N40SISO	Ant1	2437	1000~26500	-2.51	-52.54	≤-22.51	PASS
11N40SISO	Ant1	2452	30~1000	-2.67	-60.37	≤-22.67	PASS
11N40SISO	Ant1	2452	1000~26500	-2.67	-51.62	≤-22.67	PASS

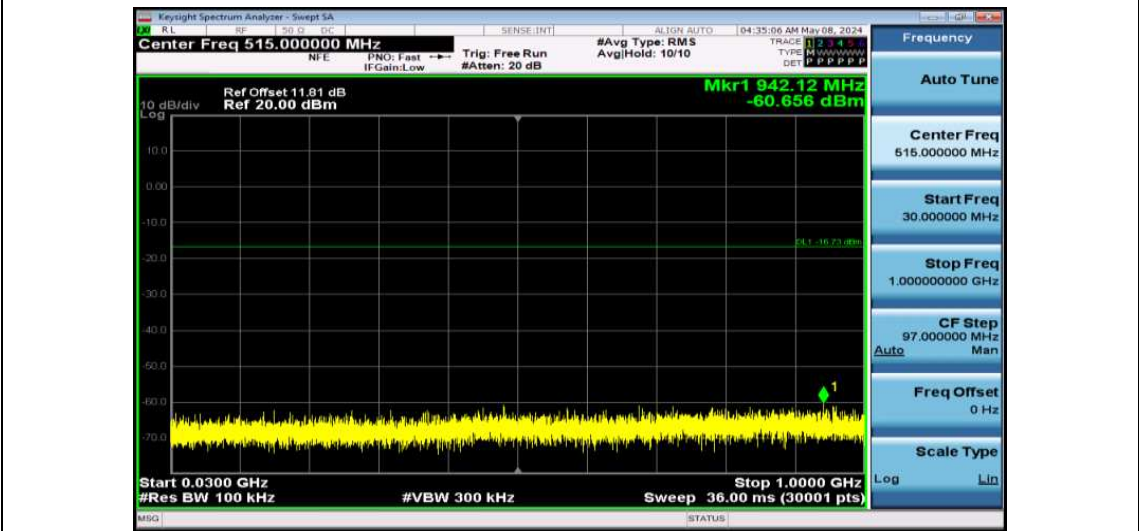
Test Graphs



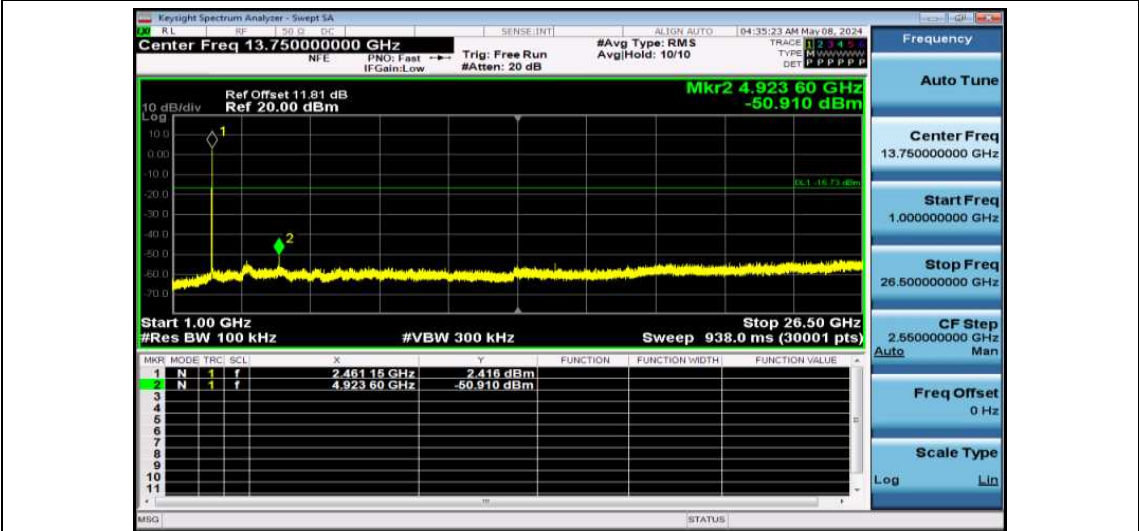
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11B-Ant1-2437-1000~26500-PASS

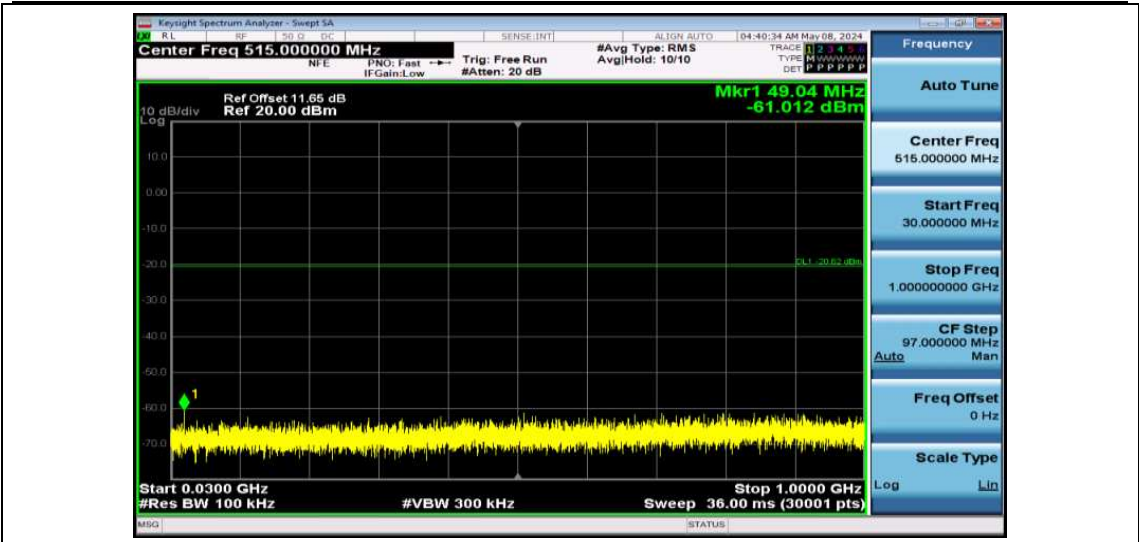


11B-Ant1-2462-30~1000-PASS

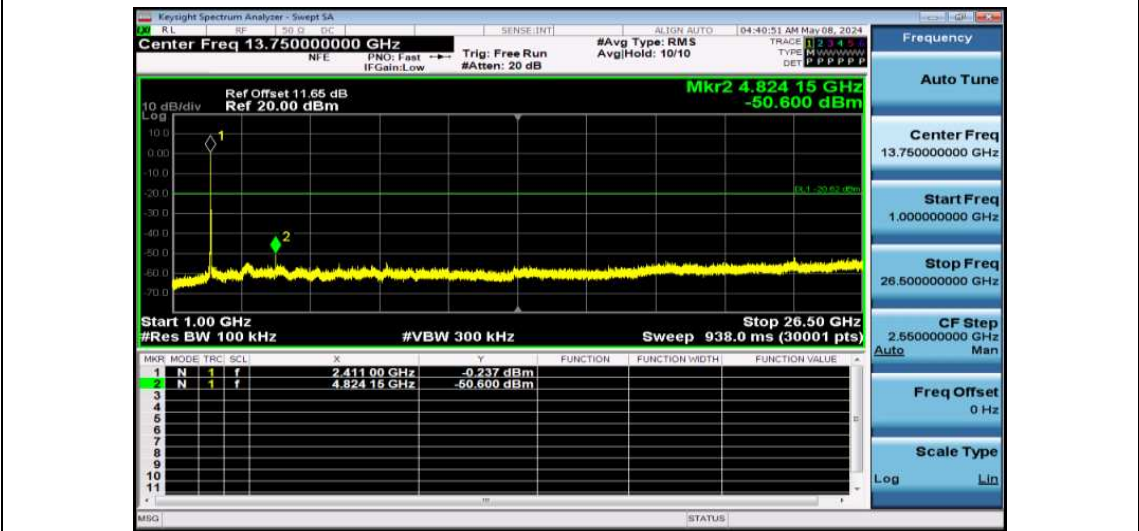


11B-Ant1-2462-1000~26500-PASS

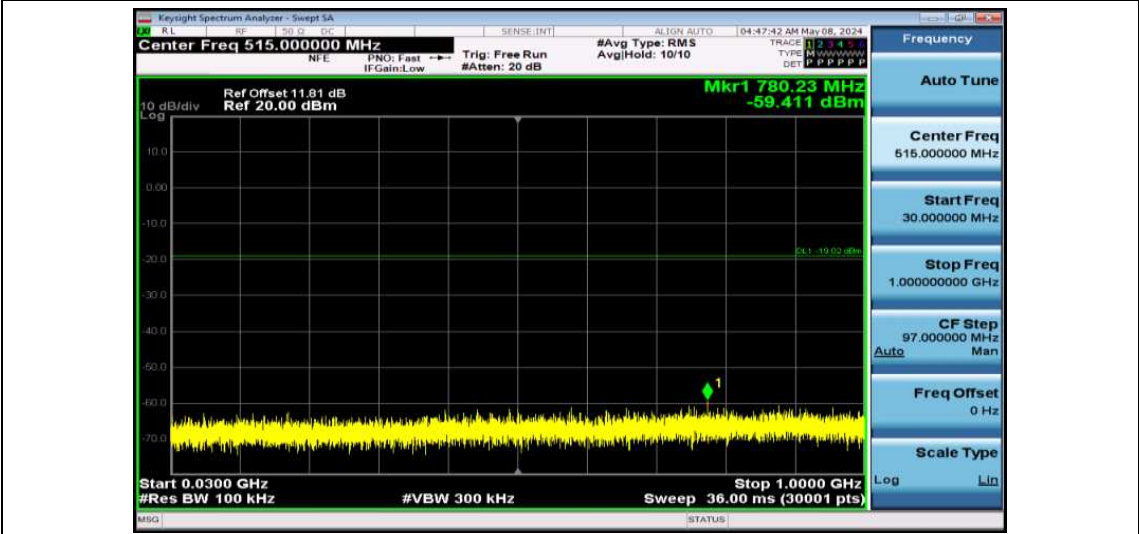
FCC ID: 2A64B-DDX39
IC: 28593-DDX39



11G-Ant1-2412-30~1000-PASS

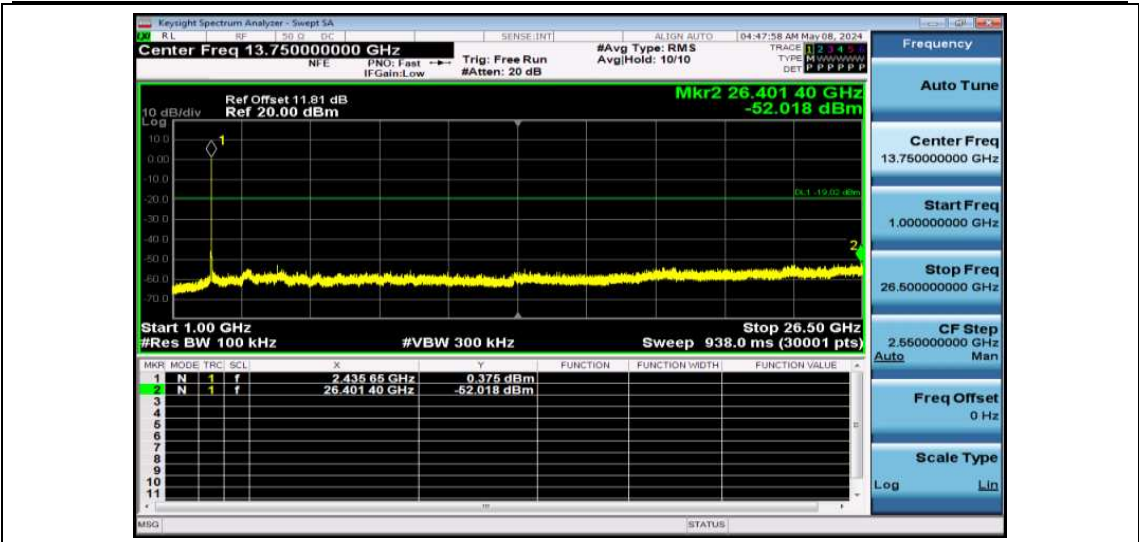


11G-Ant1-2412-1000~26500-PASS

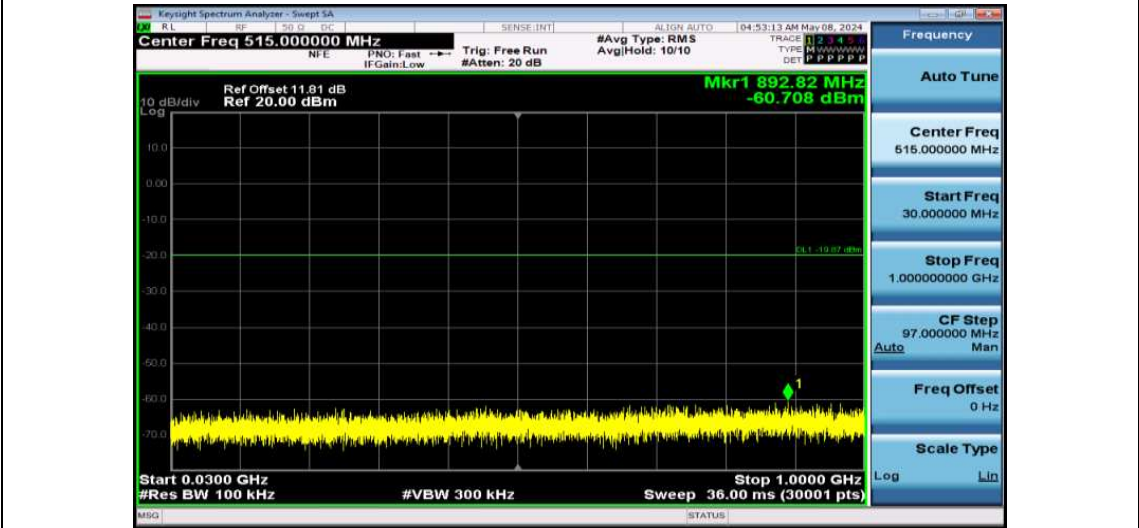


11G-Ant1-2437-30~1000-PASS

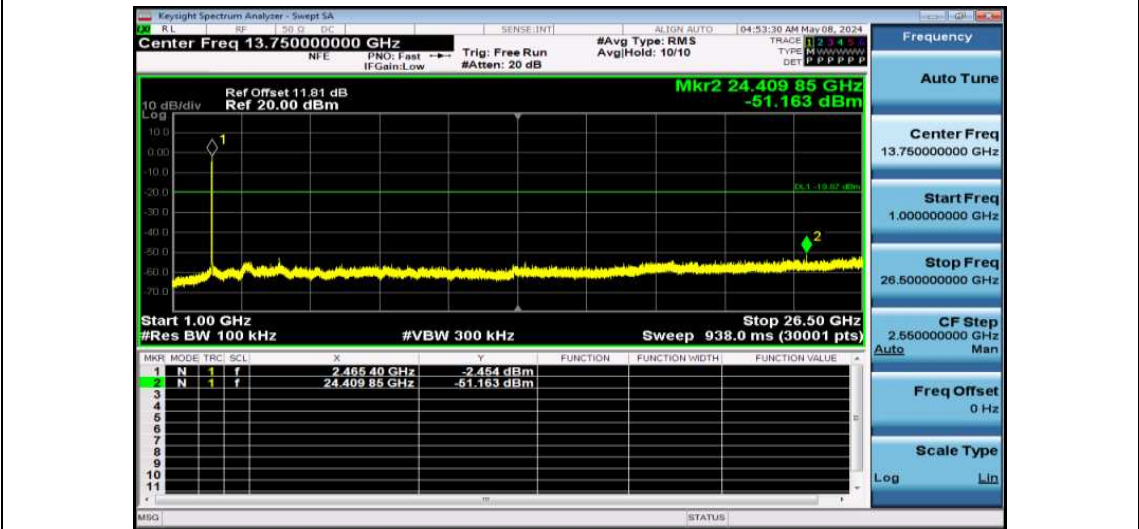
FCC ID: 2A64B-DDX39
IC: 28593-DDX39



11G-Ant1-2437-1000~26500-PASS



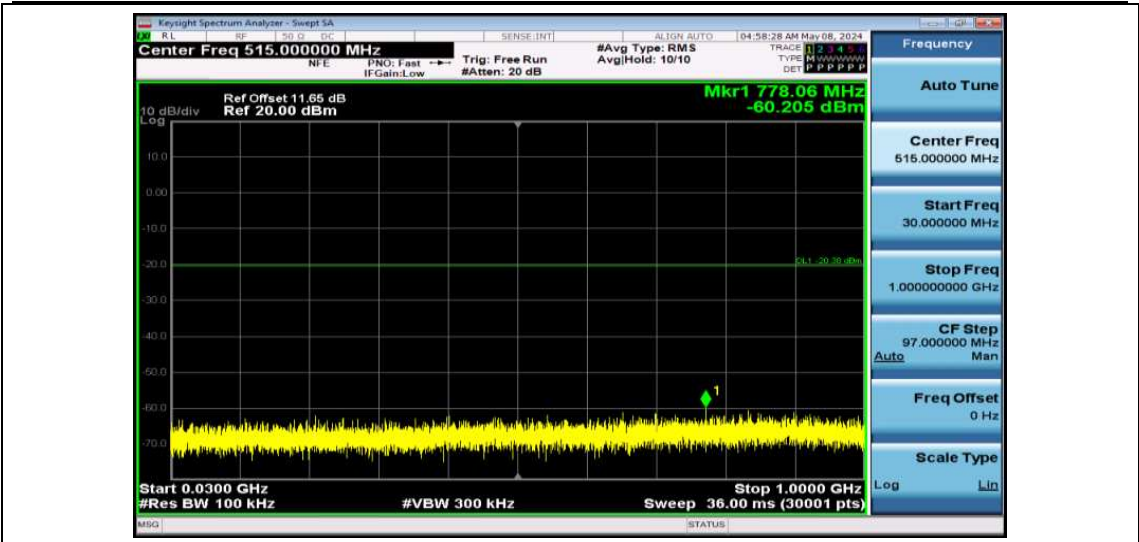
11G-Ant1-2462-30~1000-PASS



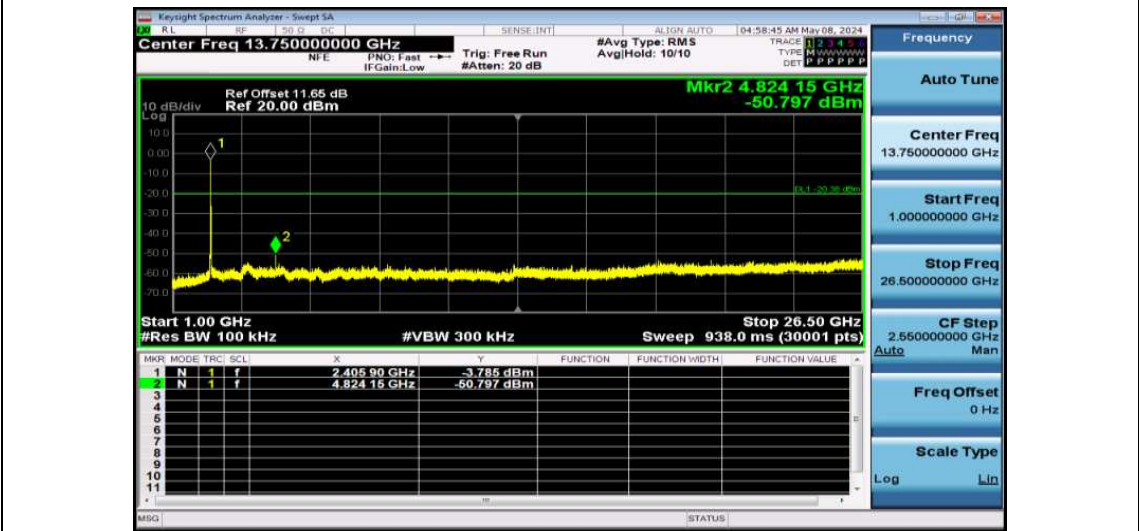
11G-Ant1-2462-1000~26500-PASS

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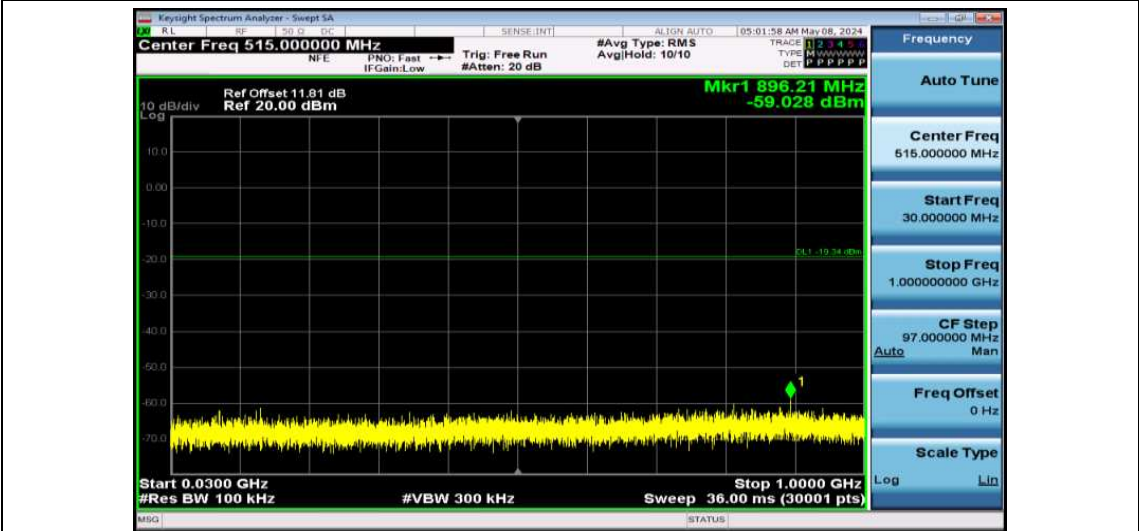
IC:28593-DDX39



11N20SISO-Ant1-2412-30~1000-PASS

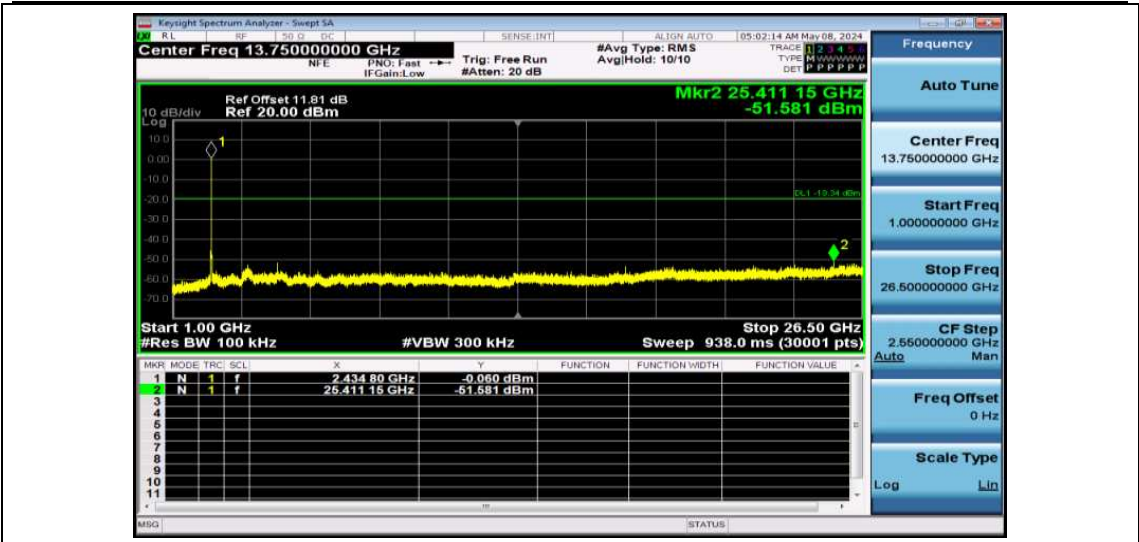


11N20SISO-Ant1-2412-1000~26500-PASS

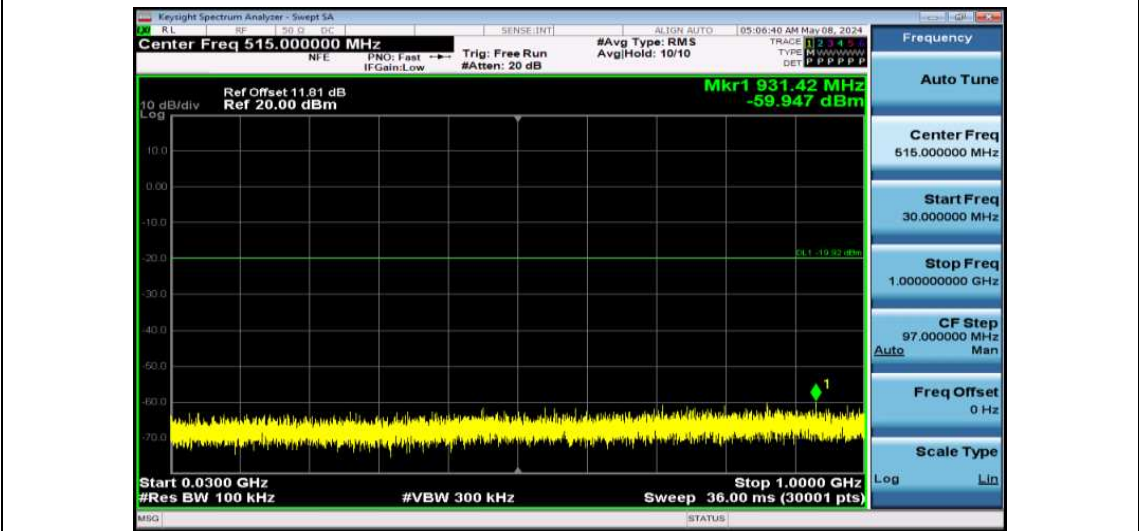


11N20SISO-Ant1-2437-30~1000-PASS

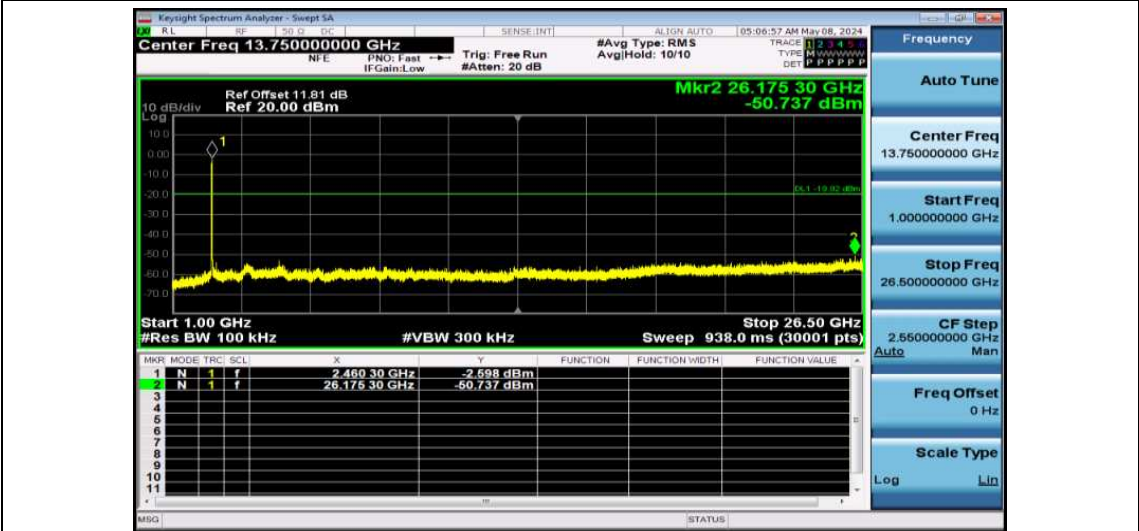
FCC ID: 2A64B-DDX39
IC: 28593-DDX39



11N20SISO-Ant1-2437-1000~26500-PASS

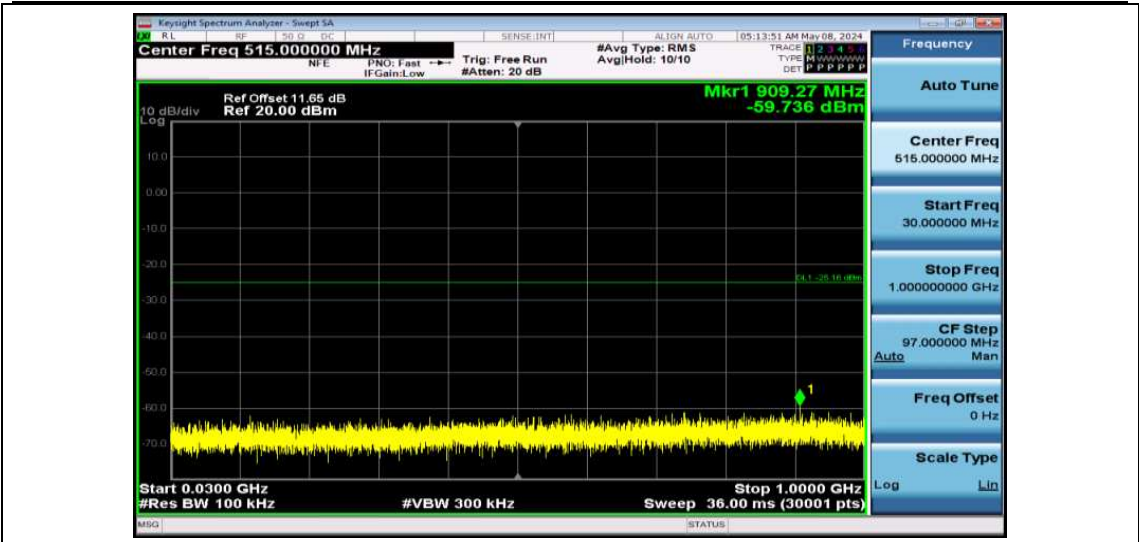


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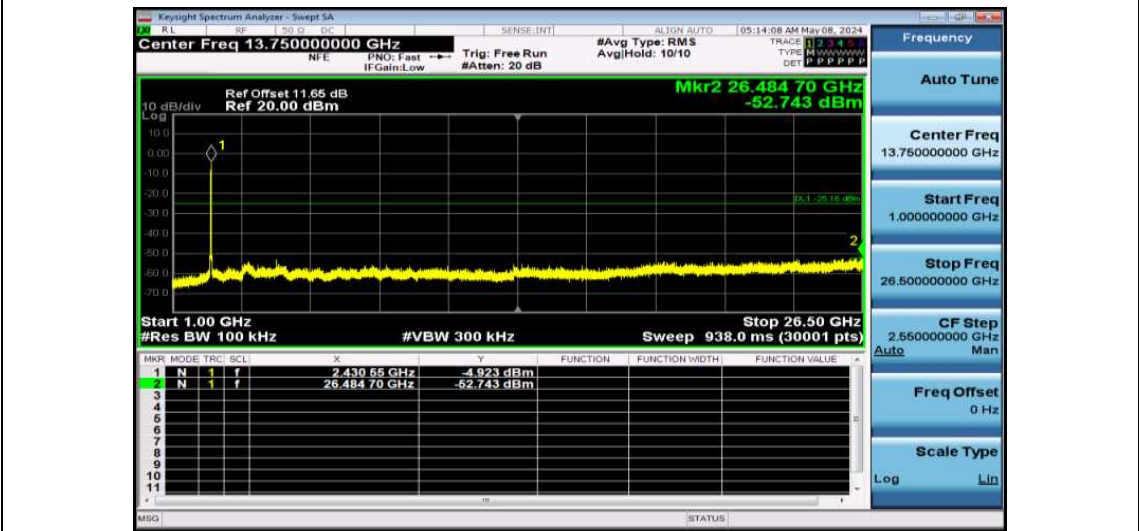


11N20SISO-Ant1-2462-1000~26500-PASS

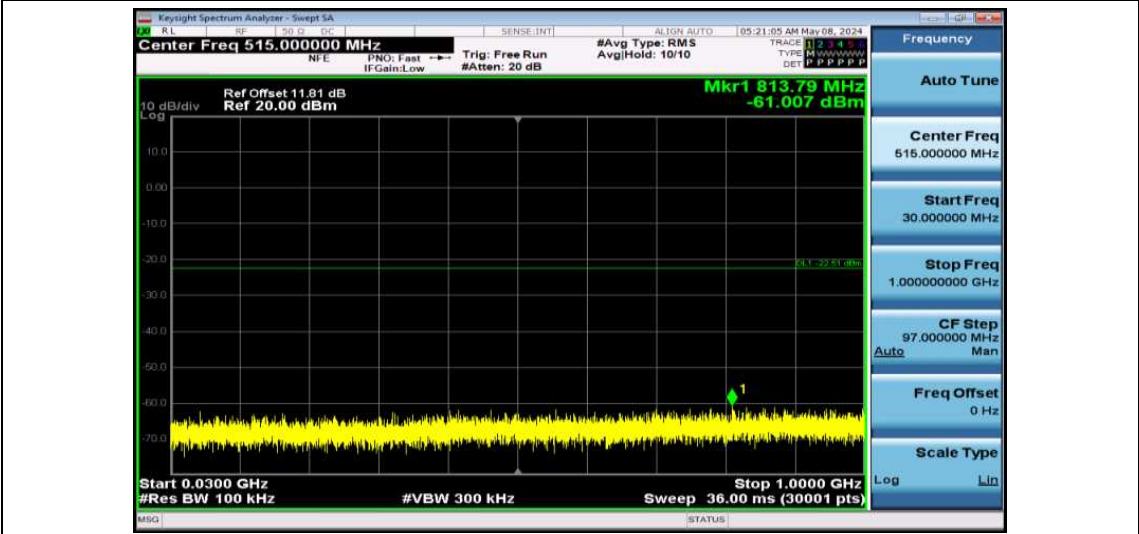
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11N40SISO-Ant1-2422-30~1000-PASS



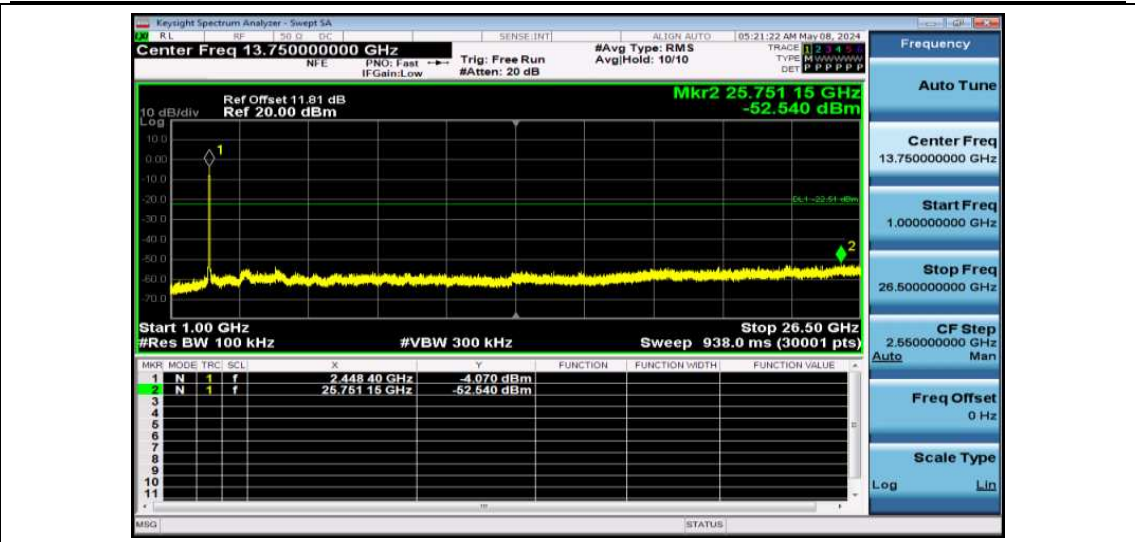
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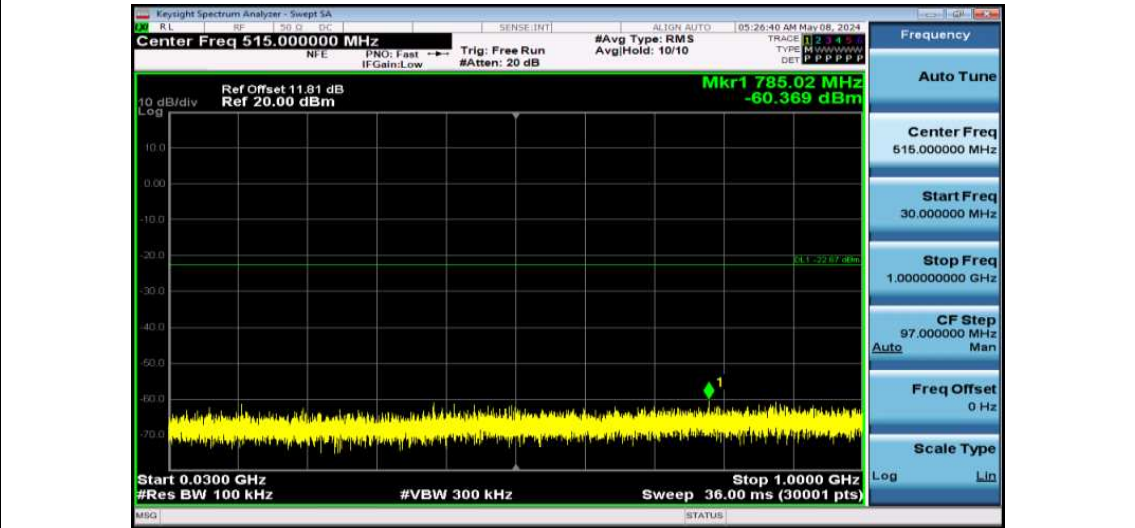
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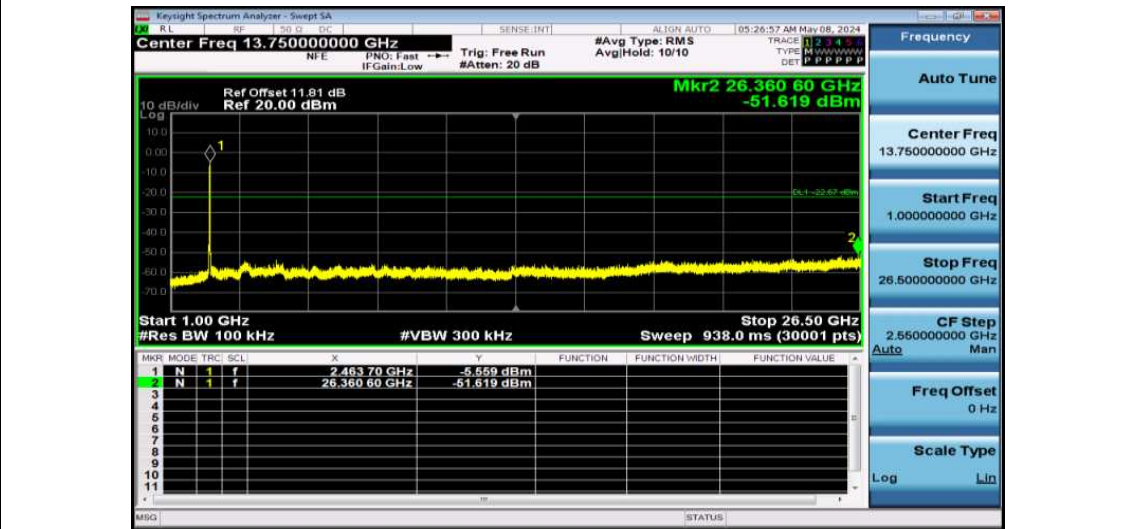
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11N40SISO-Ant1-2437-1000~26500-PASS



11N40SISO-Ant1-2452-30~1000-PASS



11N40SISO-Ant1-2452-1000~26500-PASS

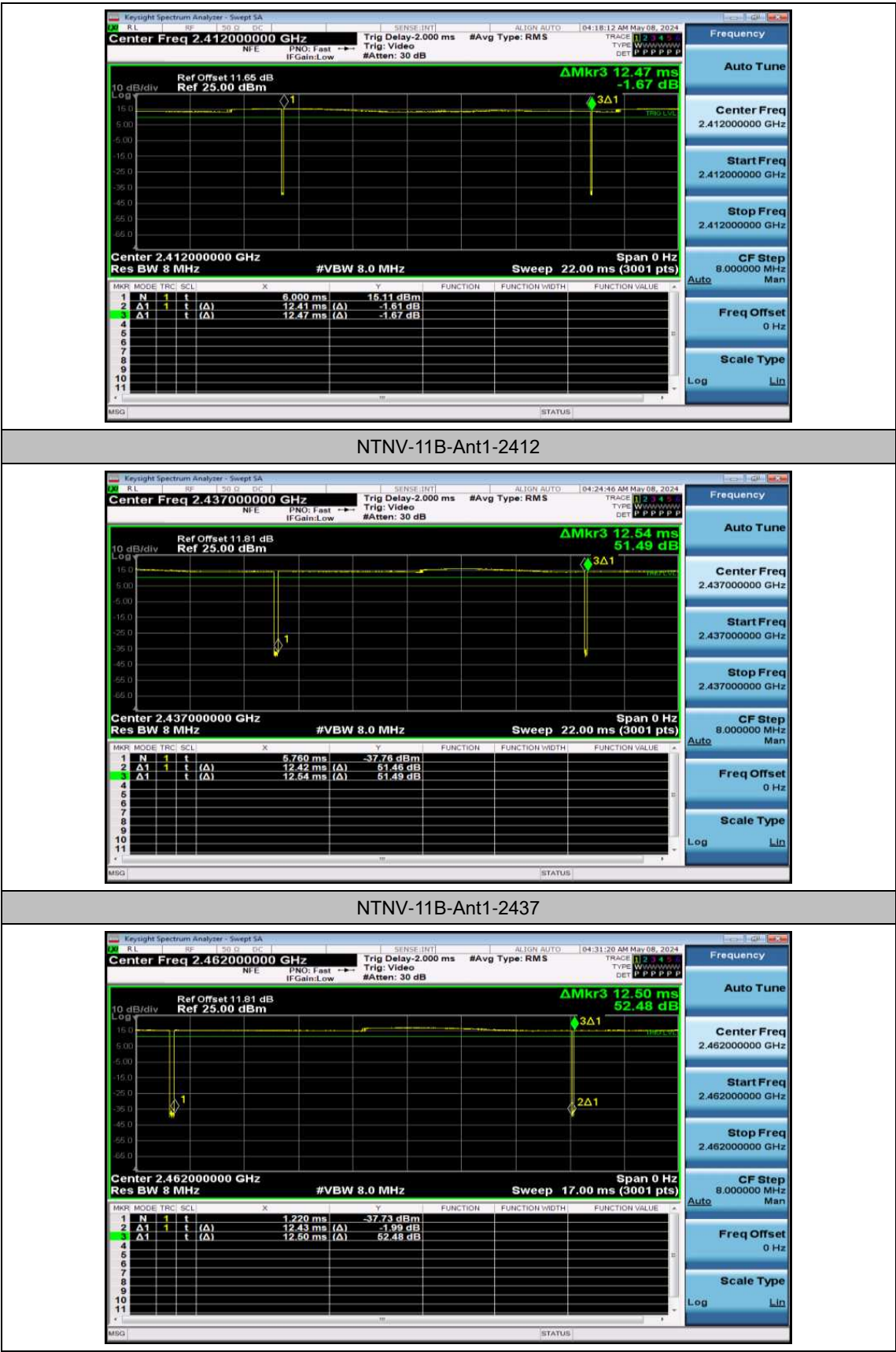
FCC ID: 2A64B-DDX39
IC: 28593-DDX39

Duty Cycle

Test Result

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	12.41	12.47	99.52	0.02
11B	Ant1	2437	12.42	12.54	99.04	0.04
11B	Ant1	2462	12.43	12.50	99.44	0.02
11G	Ant1	2412	2.06	2.23	92.38	0.34
11G	Ant1	2437	2.07	2.22	93.24	0.30
11G	Ant1	2462	2.07	2.17	95.39	0.20
11N20SISO	Ant1	2412	1.92	2.00	96.00	0.18
11N20SISO	Ant1	2437	1.92	2.01	95.52	0.20
11N20SISO	Ant1	2462	1.92	2.06	93.20	0.31
11N40SISO	Ant1	2422	0.94	1.03	91.26	0.40
11N40SISO	Ant1	2437	0.95	1.09	87.16	0.60
11N40SISO	Ant1	2452	0.95	1.07	88.79	0.52

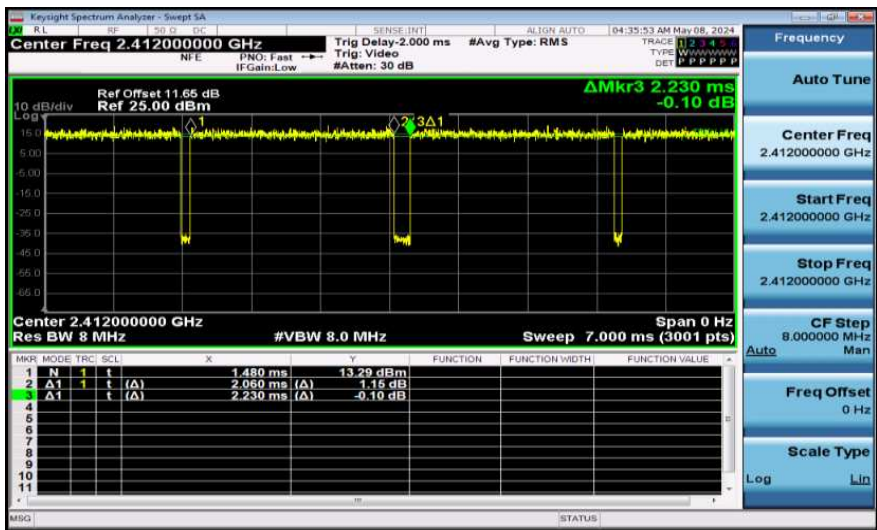
Test Graphs



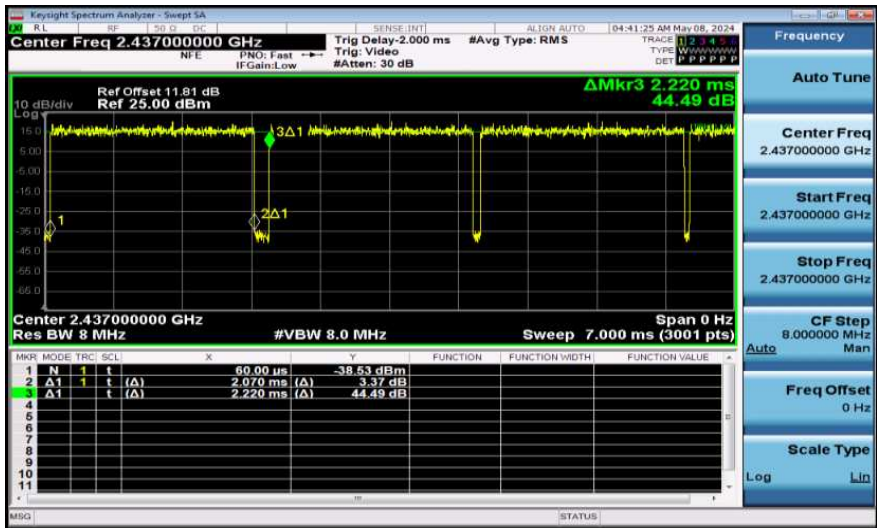
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IC:28593-DDX39

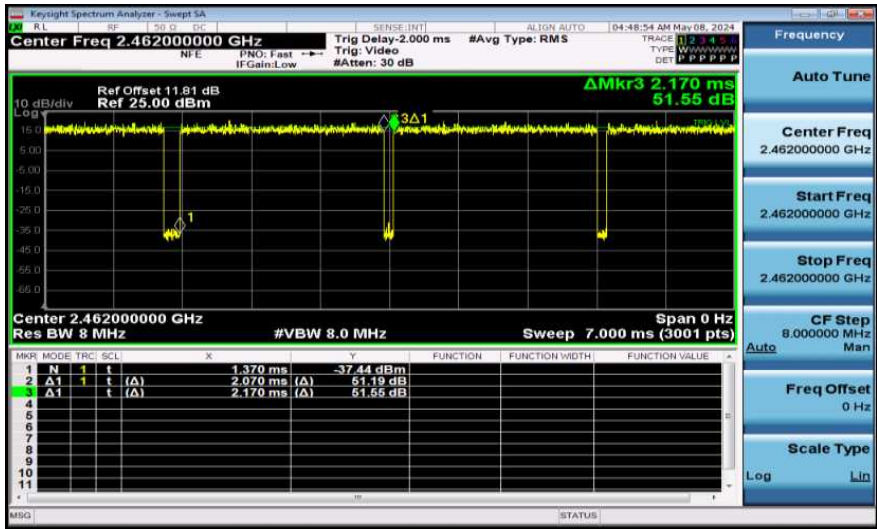
NTNV-11B-Ant1-2462



NTNV-11G-Ant1-2412



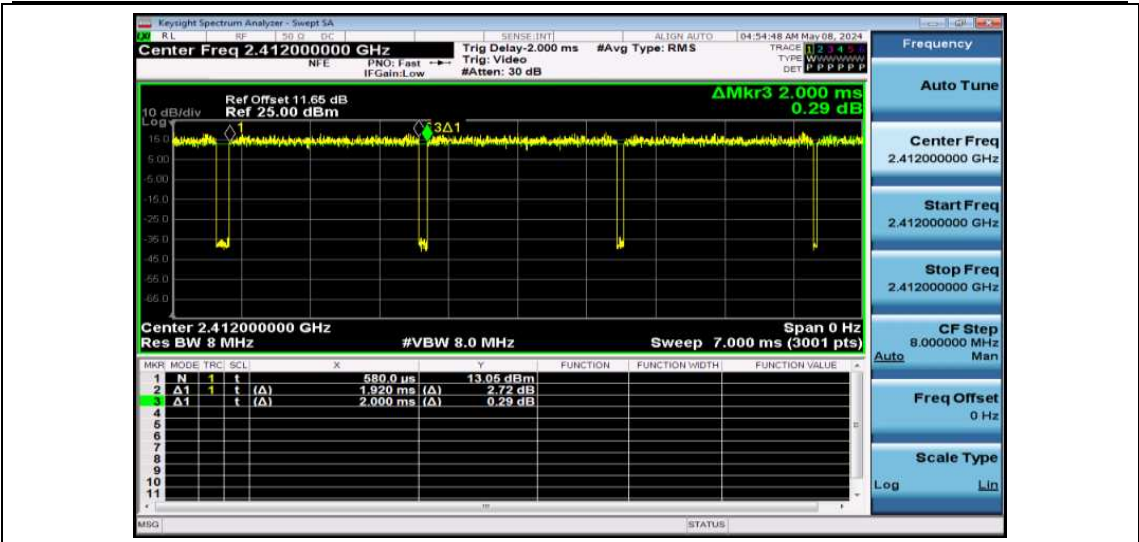
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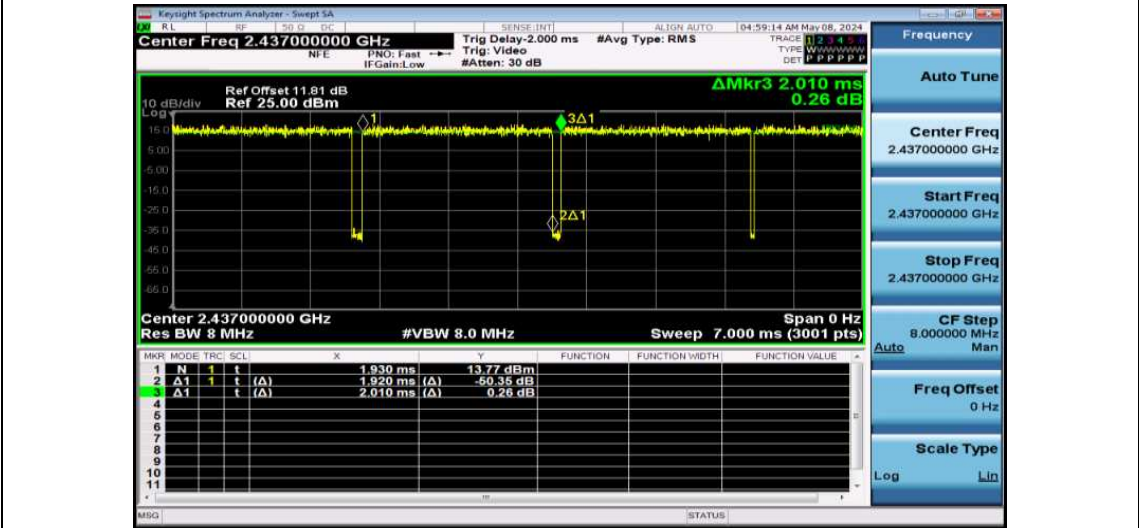
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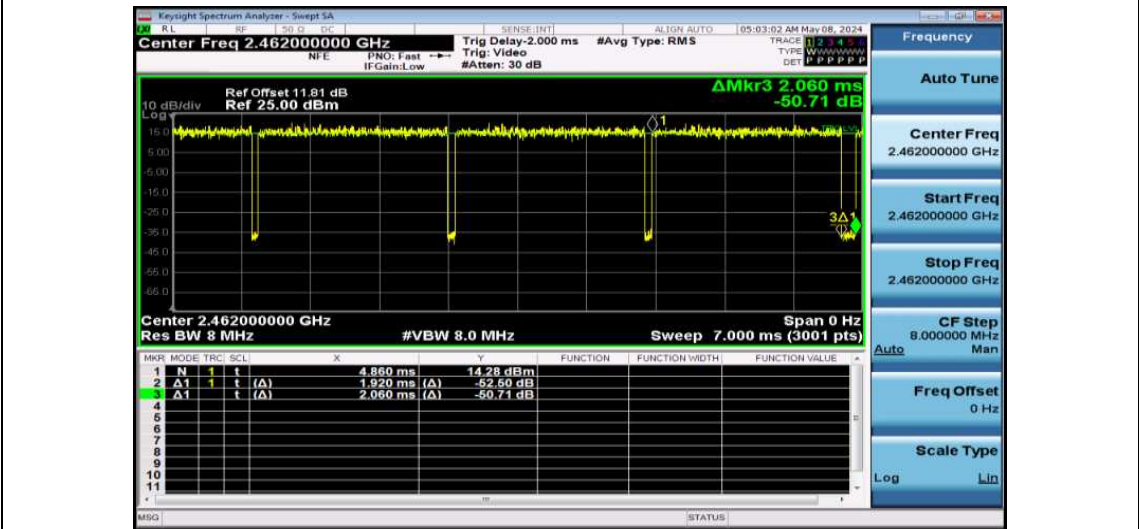
IC:28593-DDX39



NTNV-11N20SISO-Ant1-2412

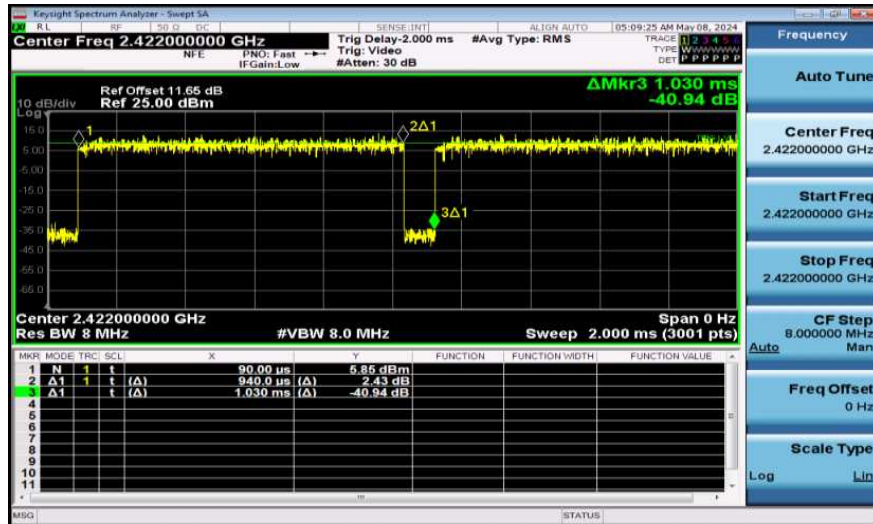


NTNV-11N20SISO-Ant1-2437

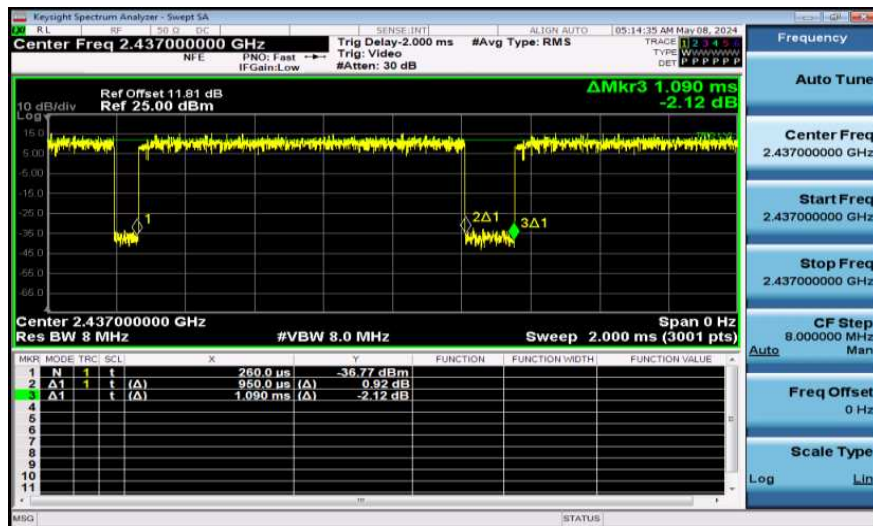


NTNV-11N20SISO-Ant1-2462

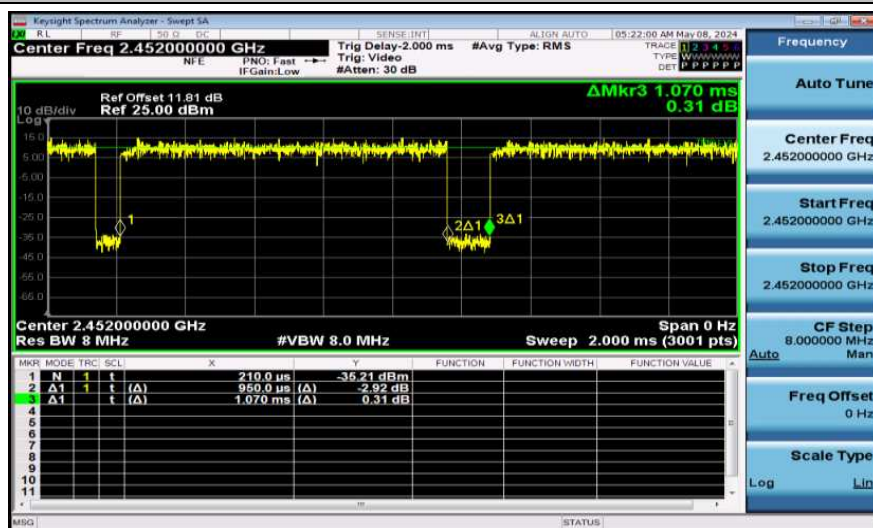
IC: 28593-DDX39



NTNV-11N40SISO-Ant1-2422



NTNV-11N40SISO-Ant1-2437



NTNV-11N40SISO-Ant1-2452