

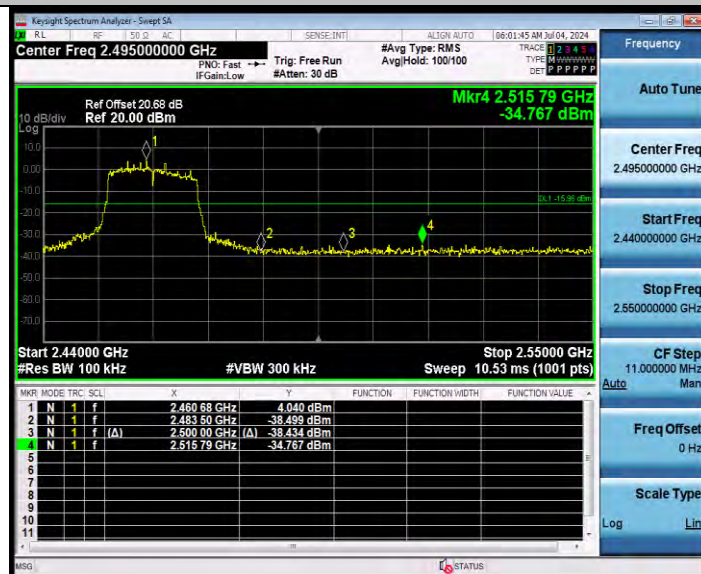


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Test Report No.: W7L-P24100005RF02



11N20SISO_Ant1_High_2462





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Test Report No.: W7L-P24100005RF02

CONDUCTED SPURIOUS EMISSION

TEST RESULT

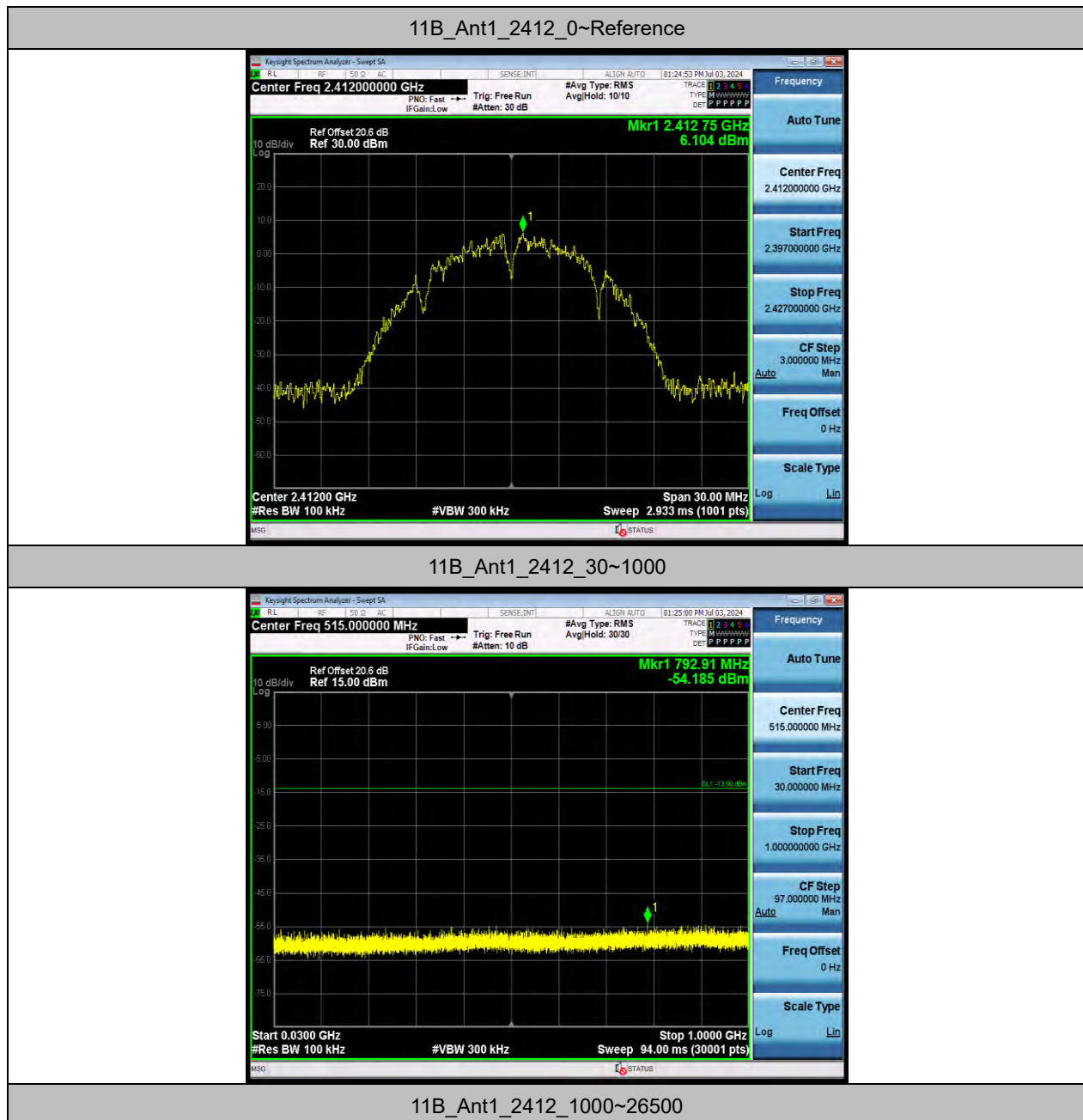
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	6.10	6.10	---	PASS
			30~1000	6.10	-54.19	≤-13.9	PASS
			1000~26500	6.10	-34.96	≤-13.9	PASS
		2437	Reference	7.39	7.39	---	PASS
			30~1000	7.39	-54.43	≤-12.61	PASS
			1000~26500	7.39	-35.3	≤-12.61	PASS
		2462	Reference	5.87	5.87	---	PASS
			30~1000	5.87	-53.92	≤-14.13	PASS
			1000~26500	5.87	-34.91	≤-14.13	PASS
11G	Ant1	2412	Reference	1.36	1.36	---	PASS
			30~1000	1.36	-54.44	≤-18.64	PASS
			1000~26500	1.36	-35.33	≤-18.64	PASS
		2437	Reference	2.79	2.79	---	PASS
			30~1000	2.79	-54.07	≤-17.21	PASS
			1000~26500	2.79	-35.59	≤-17.21	PASS
		2462	Reference	4.36	4.36	---	PASS
			30~1000	4.36	-54.31	≤-15.64	PASS
			1000~26500	4.36	-34.62	≤-15.64	PASS
11N20SISO	Ant1	2412	Reference	0.09	0.09	---	PASS
			30~1000	0.09	-53.87	≤-19.91	PASS
			1000~26500	0.09	-35.85	≤-19.91	PASS
		2437	Reference	2.56	2.56	---	PASS
			30~1000	2.56	-54.17	≤-17.44	PASS
			1000~26500	2.56	-35.3	≤-17.44	PASS
		2462	Reference	3.30	3.30	---	PASS
			30~1000	3.30	-54.13	≤-16.7	PASS
			1000~26500	3.30	-35.19	≤-16.7	PASS



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TEST GRAPHS





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11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000



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11B_Ant1_2437_1000~26500



11B_Ant1_2462_0~Reference



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11B_Ant1_2462_30~1000



11B_Ant1_2462_1000~26500



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11G_Ant1_2412_0~Reference

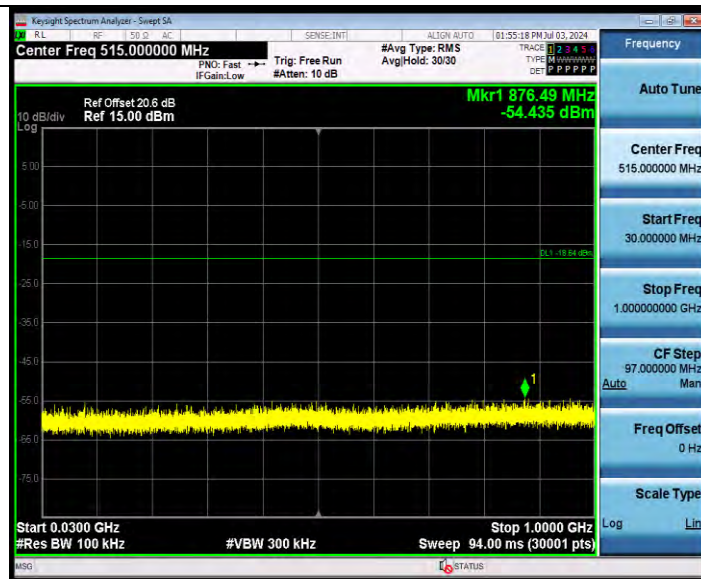


11G_Ant1_2412_30~1000



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Test Report No.: W7L-P24100005RF02



11G_Ant1_2412_1000~26500



11G_Ant1_2437_0~Reference

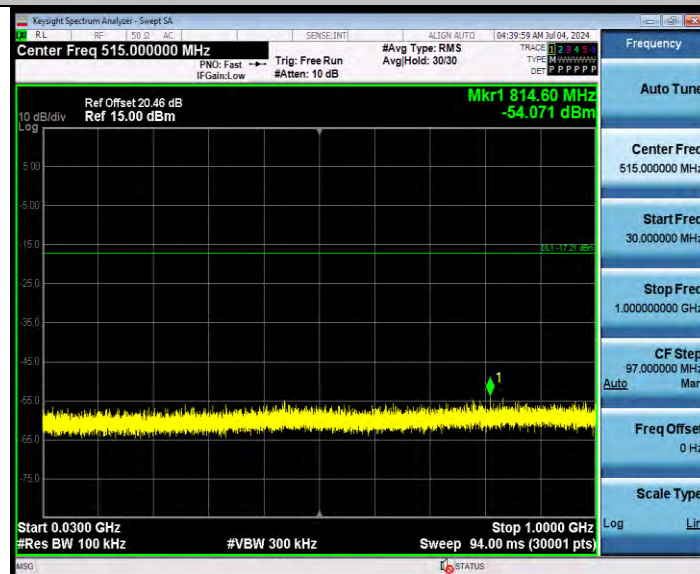


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11G_Ant1_2437_30~1000



11G_Ant1_2437_1000~26500



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Test Report No.: W7L-P24100005RF02



11G_Ant1_2462_0~Reference



11G_Ant1_2462_30~1000



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Test Report No.: W7L-P24100005RF02



11G_Ant1_2462_1000~26500



11N20SISO_Ant1_2412_0~Reference

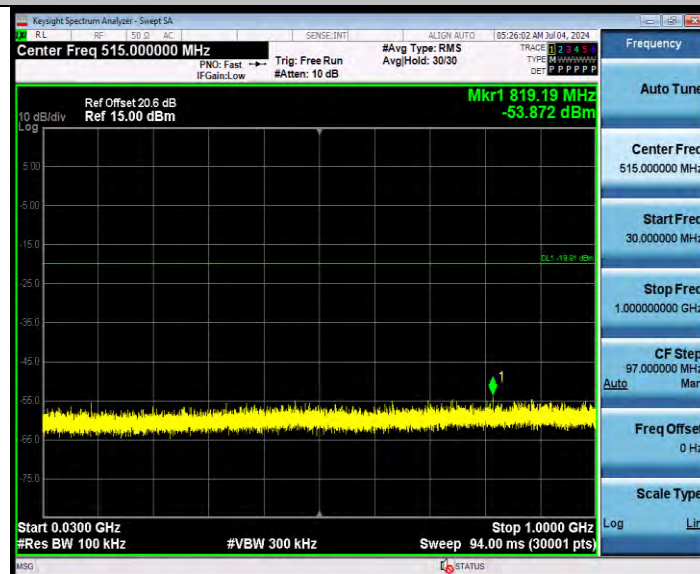


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11N20SISO_Ant1_2412_30~1000



11N20SISO_Ant1_2412_1000~26500



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Test Report No.: W7L-P24100005RF02



11N20SISO_Ant1_2437_0~Reference

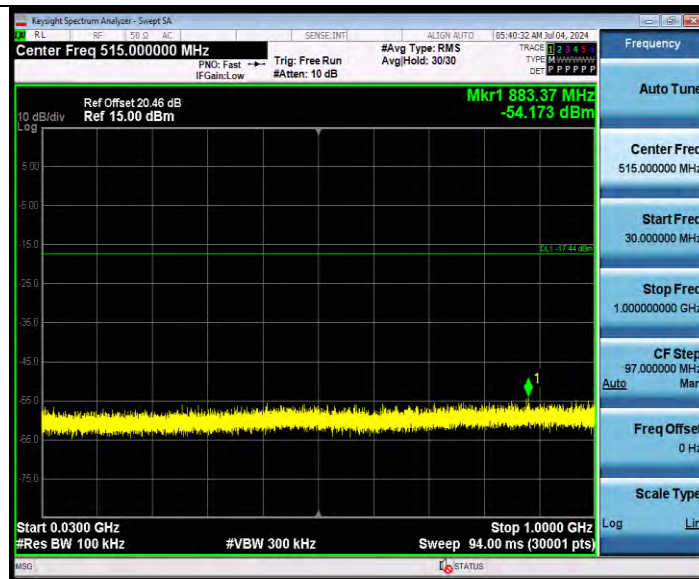


11N20SISO_Ant1_2437_30~1000



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Test Report No.: W7L-P24100005RF02



11N20SISO_Ant1_2437_1000~26500



11N20SISO_Ant1_2462_0~Reference

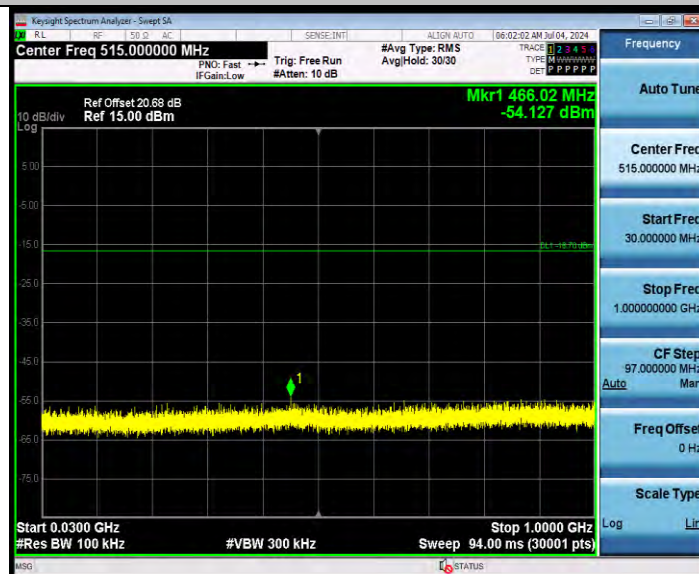


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11N20SISO_Ant1_2462_30~1000



11N20SISO_Ant1_2462_1000~26500



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Test Report No.: W7L-P24100005RF02



**DUTY CYCLE****TEST RESULT**

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	8.38	8.42	99.52	0.02
		2437	8.38	8.42	99.52	0.02
		2462	8.39	8.43	99.53	0.02
11G	Ant1	2412	1.39	1.44	96.53	0.15
		2437	1.39	1.44	96.53	0.15
		2462	1.39	1.44	96.53	0.15
11N20SISO	Ant1	2412	1.30	1.35	96.30	0.16
		2437	1.30	1.35	96.30	0.16
		2462	1.30	1.35	96.30	0.16

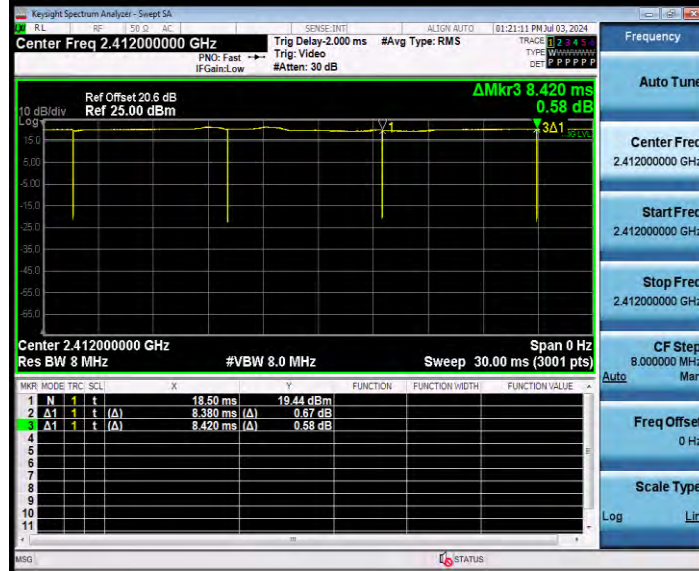


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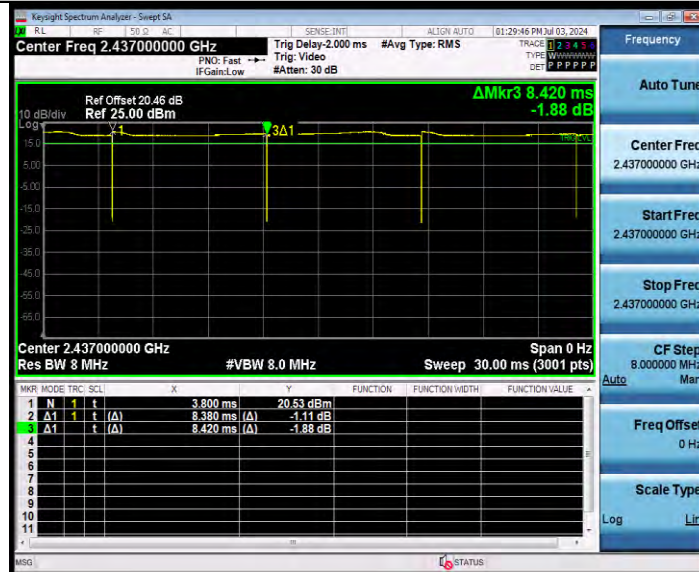
Test Report No.: W7L-P24100005RF02

TEST GRAPHS

11B_Ant1_2412



11B_Ant1_2437

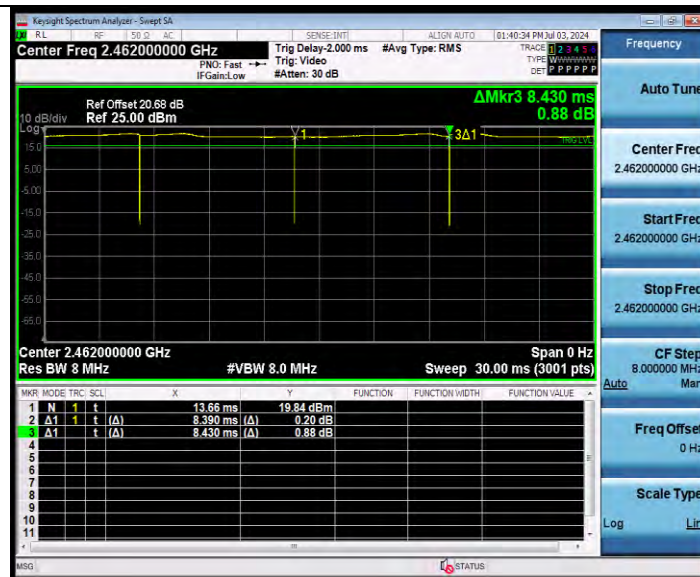


11B_Ant1_2462

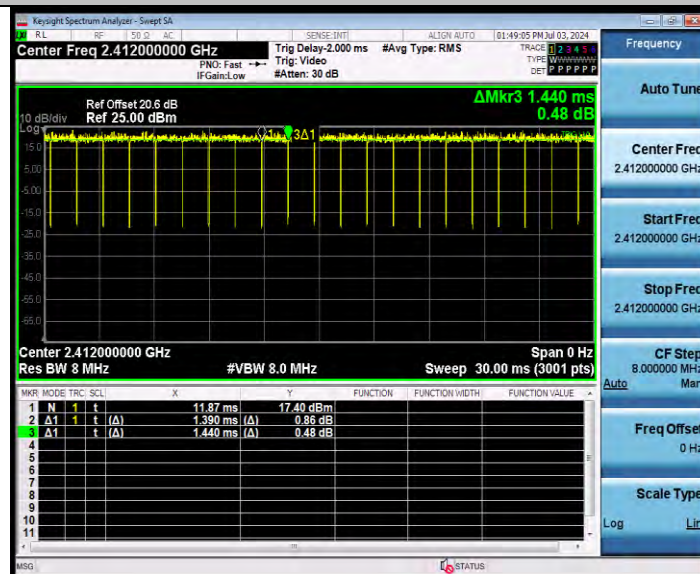


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Test Report No.: W7L-P24100005RF02



11G_Ant1_2412

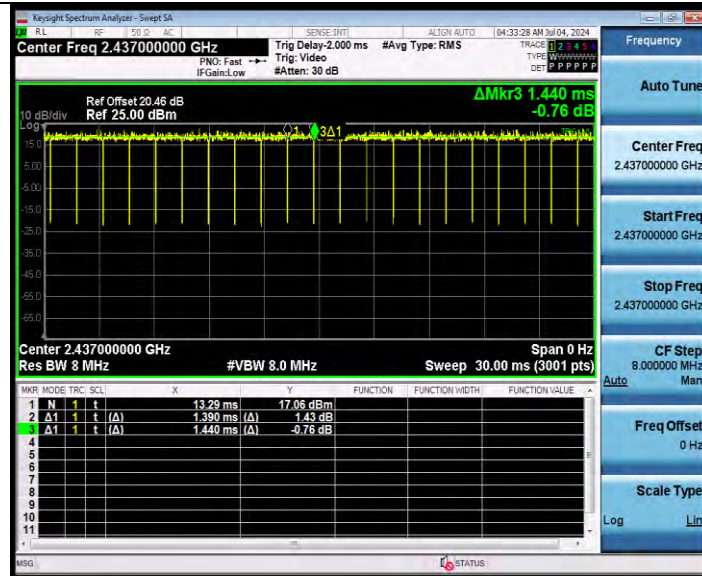


11G_Ant1_2437

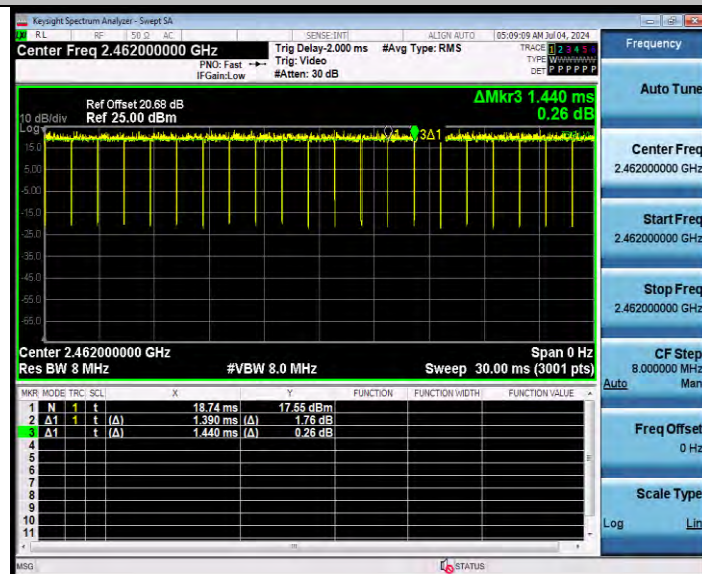


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Test Report No.: W7L-P24100005RF02



11G_Ant1_2462

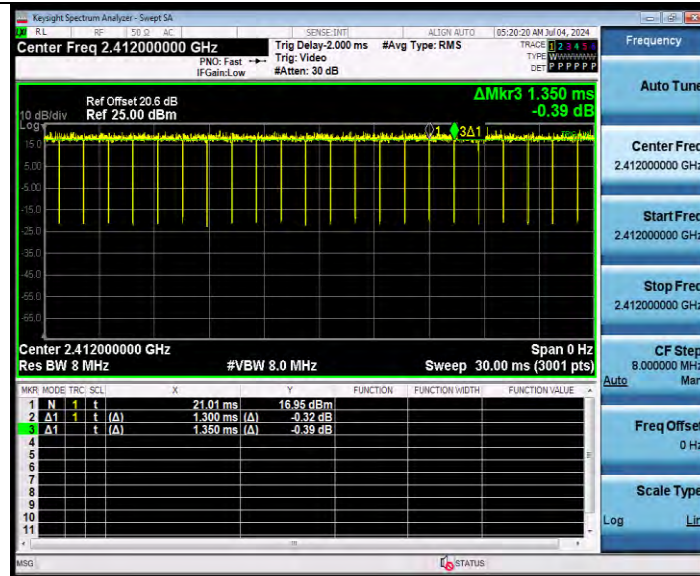


11N20SISO_Ant1_2412

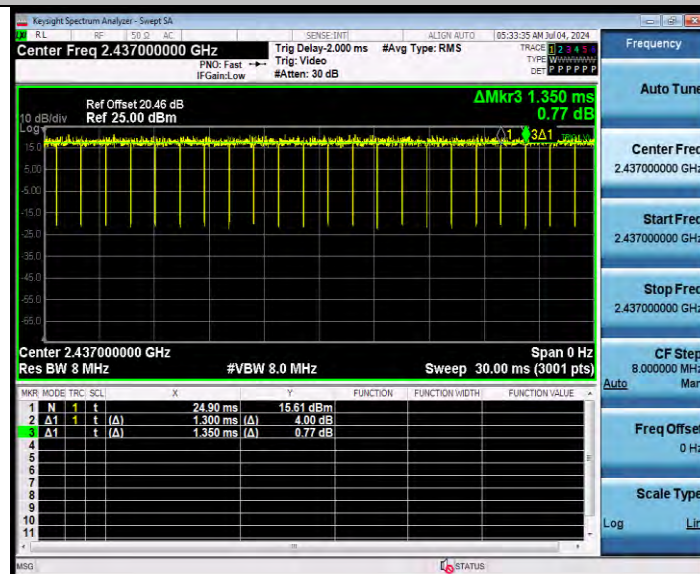


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Test Report No.: W7L-P24100005RF02



11N20SISO_Ant1_2437

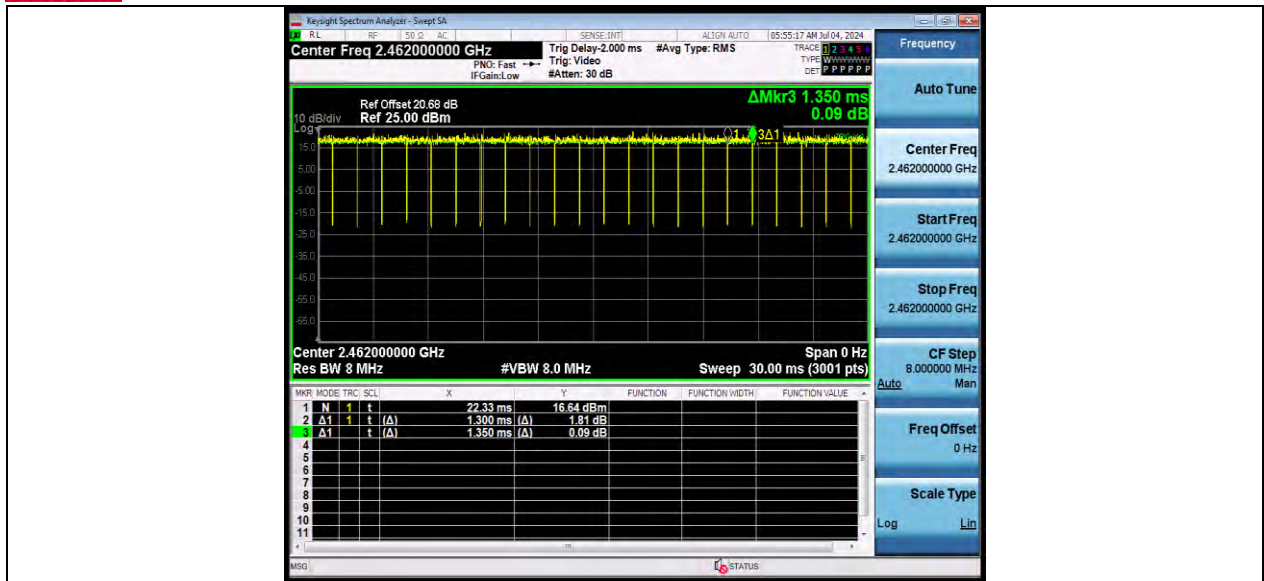


11N20SISO_Ant1_2462



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Test Report No.: W7L-P24100005RF02



**BLE****DTS BANDWIDTH****TEST RESULT**

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.696	2401.652	2402.348	0.5	PASS
		2440	0.672	2439.656	2440.328	0.5	PASS
		2480	0.660	2479.652	2480.312	0.5	PASS
BLE_2M	Ant1	2404	1.148	2403.436	2404.584	0.5	PASS
		2440	1.140	2439.424	2440.564	0.5	PASS
		2478	1.260	2477.328	2478.588	0.5	PASS
BLE_125K	Ant1	2402	0.680	2401.652	2402.332	0.5	PASS
		2440	0.684	2439.648	2440.332	0.5	PASS
		2480	0.680	2479.648	2480.328	0.5	PASS
BLE_500K	Ant1	2402	0.652	2401.664	2402.316	0.5	PASS
		2440	0.668	2439.656	2440.324	0.5	PASS
		2480	0.696	2479.648	2480.344	0.5	PASS



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TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440

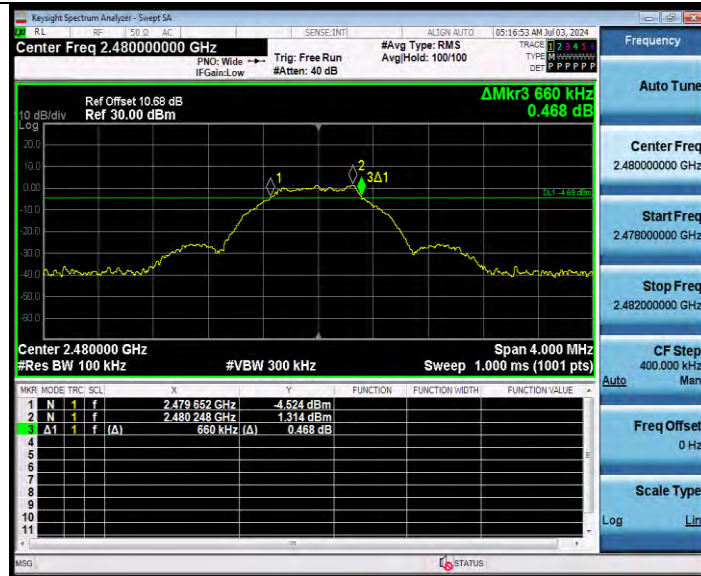


BLE_1M_Ant1_2480



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BLE_2M_Ant1_2404



BLE_2M_Ant1_2440



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BLE_2M_Ant1_2478

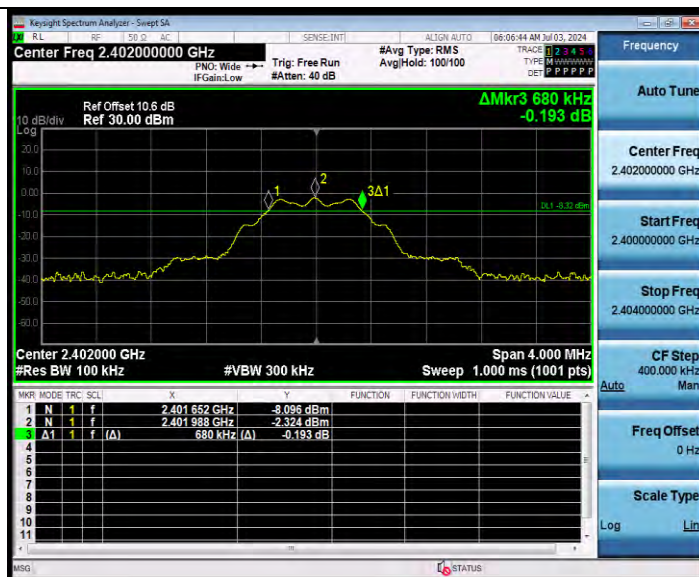


BLE_125K_Ant1_2402

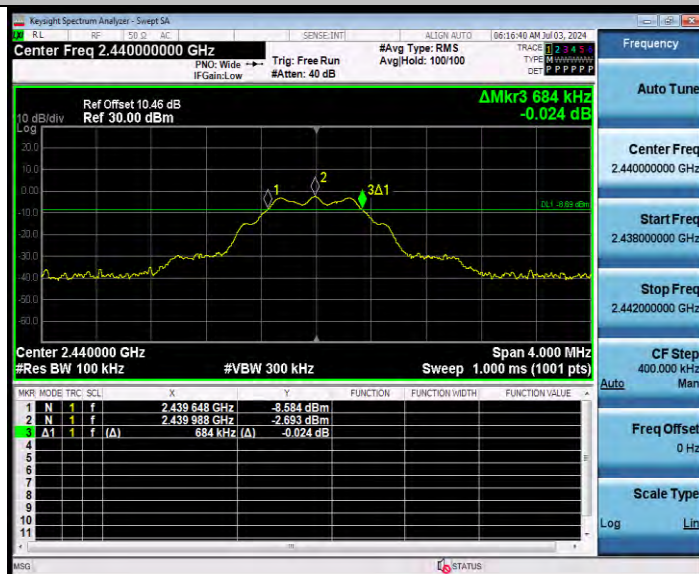


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BLE_125K_Ant1_2440



BLE_125K_Ant1_2480

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BLE_500K_Ant1_2402



BLE_500K_Ant1_2440



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BLE_500K_Ant1_2480



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OCCUPIED CHANNEL BANDWIDTH

TEST RESULT

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0329	2401.4761	2402.5090	---	---
		2440	1.0375	2439.4749	2440.5124	---	---
		2480	1.0371	2479.4772	2480.5143	---	---
BLE_2M	Ant1	2404	2.0756	2402.9750	2405.0506	---	---
		2440	2.0908	2438.9634	2441.0542	---	---
		2478	2.0790	2476.9593	2479.0383	---	---
BLE_125K	Ant1	2402	1.0626	2401.4577	2402.5203	---	---
		2440	1.0661	2439.4535	2440.5196	---	---
		2480	1.0603	2479.4550	2480.5153	---	---
BLE_500K	Ant1	2402	1.0161	2401.4814	2402.4975	---	---
		2440	1.0300	2439.4715	2440.5015	---	---
		2480	1.0243	2479.4793	2480.5036	---	---

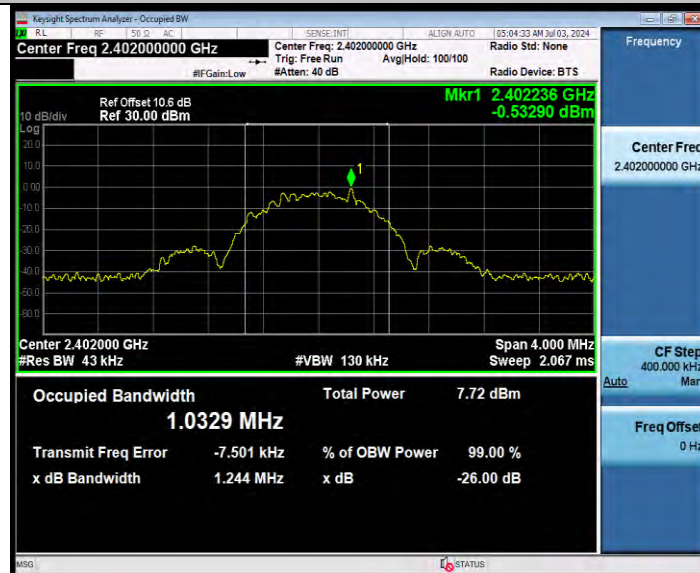


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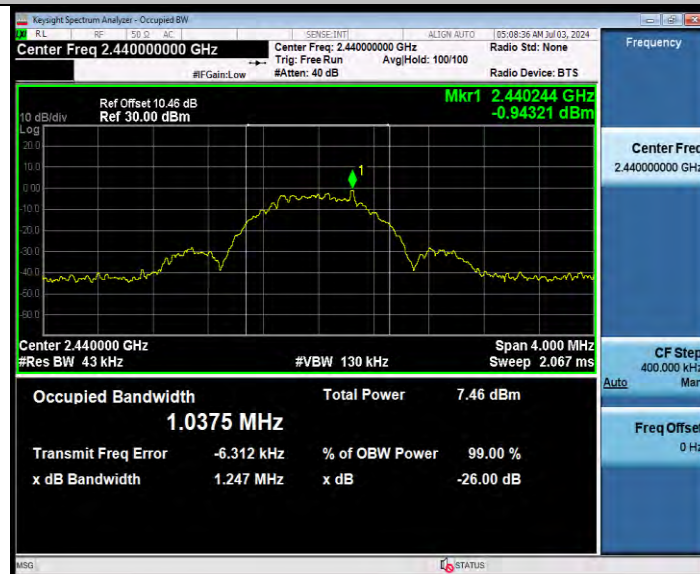
Test Report No.: W7L-P24100005RF02

TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440

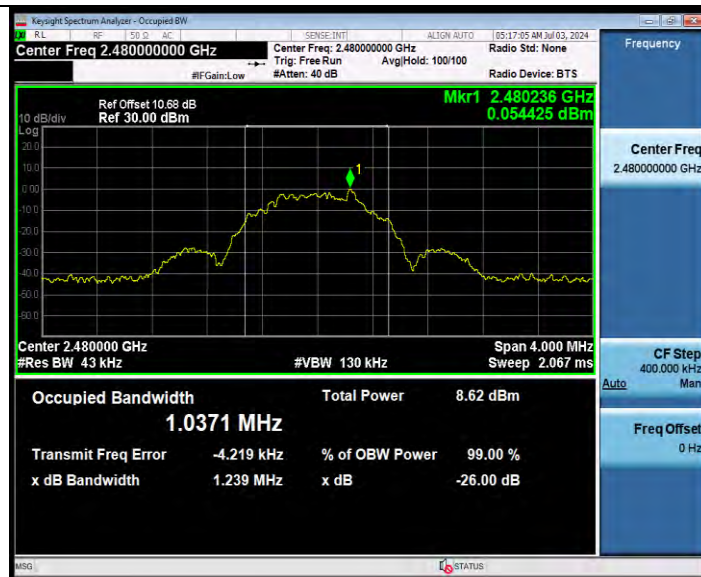


BLE_1M_Ant1_2480

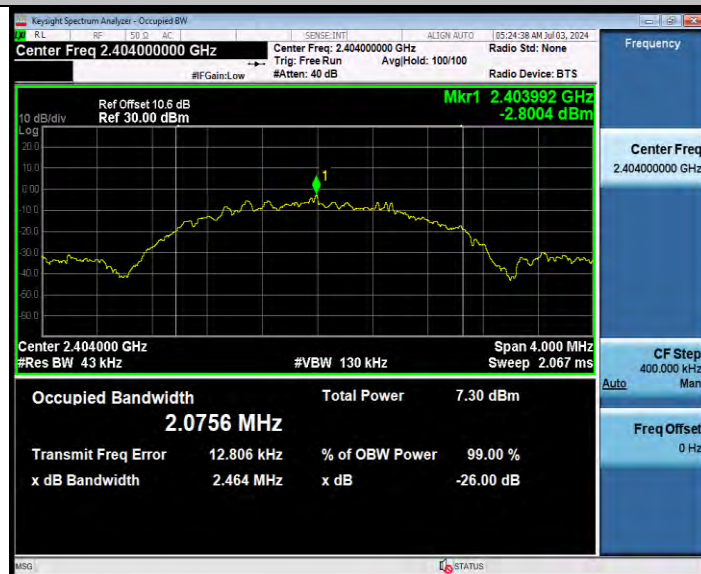


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Test Report No.: W7L-P24100005RF02



BLE_2M_Ant1_2404



BLE_2M_Ant1_2440



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Test Report No.: W7L-P24100005RF02



BLE_2M_Ant1_2478



BLE_125K_Ant1_2402



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Test Report No.: W7L-P24100005RF02



BLE_125K_Ant1_2440



BLE_125K_Ant1_2480

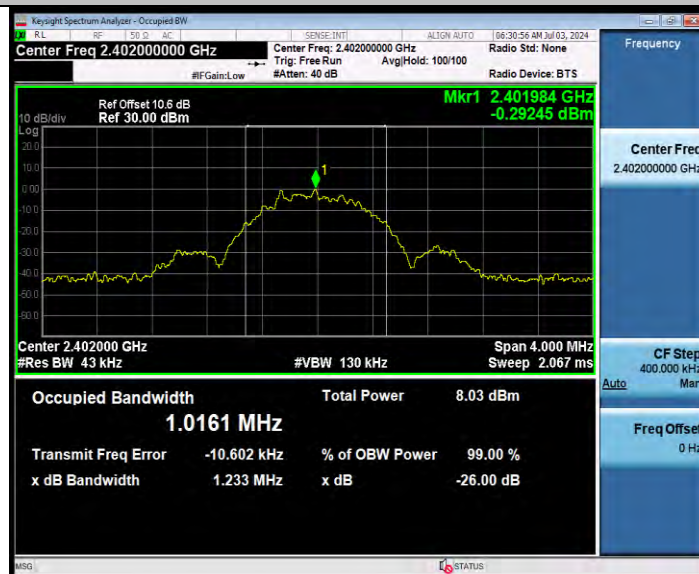


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BLE_500K_Ant1_2402



BLE_500K_Ant1_2440



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Test Report No.: W7L-P24100005RF02



BLE_500K_Ant1_2480



**MAXIMUM CONDUCTED OUTPUT POWER****TEST RESULT**

TestMode	Antenna	Channel	Average power [dBm]	Peak power [dBm]	Peak power [mw]	Conducted Limit [dBm]	EIRP [dBm]	EIRP [mw]	EIRP Limit [dBm]	Verdict	Power Setting
BLE_1M	Ant1	2402	0.37	0.98	1.25	≤30	1.38	1.37	≤36	PASS	Default
		2440	0.94	1.45	1.40	≤30	1.85	1.53	≤36	PASS	Default
		2480	1.4	1.86	1.53	≤30	2.26	1.68	≤36	PASS	Default
BLE_2M	Ant1	2404	0.69	1.08	1.28	≤30	1.48	1.41	≤36	PASS	Default
		2440	1.06	1.61	1.45	≤30	2.01	1.59	≤36	PASS	Default
		2478	1.4	2.18	1.65	≤30	2.58	1.81	≤36	PASS	Default
BLE_125k	Ant1	2402	0.59	1.02	1.26	≤30	1.42	1.39	≤36	PASS	Default
		2440	0.85	1.48	1.41	≤30	1.88	1.54	≤36	PASS	Default
		2480	1.56	1.95	1.57	≤30	2.35	1.72	≤36	PASS	Default
BLE_500K	Ant1	2402	0.48	0.99	1.26	≤30	1.39	1.38	≤36	PASS	Default
		2440	0.95	1.48	1.41	≤30	1.88	1.54	≤36	PASS	Default
		2480	1.44	1.98	1.58	≤30	2.38	1.73	≤36	PASS	Default
Note:EIRP=Peak Power+Gain											



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Test Report No.: W7L-P24100005RF02

MAXIMUM POWER SPECTRAL DENSITY

TEST RESULT

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-15.05	≤8.00	PASS
		2440	-15.44	≤8.00	PASS
		2480	-14.36	≤8.00	PASS
BLE_2M	Ant1	2404	-17.65	≤8.00	PASS
		2440	-17.98	≤8.00	PASS
		2478	-16.79	≤8.00	PASS
BLE_125K	Ant1	2402	-5.23	≤8.00	PASS
		2440	-5.66	≤8.00	PASS
		2480	-4.64	≤8.00	PASS
BLE_500K	Ant1	2402	-5.49	≤8.00	PASS
		2440	-5.59	≤8.00	PASS
		2480	-4.60	≤8.00	PASS



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Test Report No.: W7L-P24100005RF02

TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



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BLE_2M_Ant1_2404



BLE_2M_Ant1_2440



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BLE_2M_Ant1_2478



BLE_125K_Ant1_2402



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Test Report No.: W7L-P24100005RF02



BLE_125K_Ant1_2440



BLE_125K_Ant1_2480

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BLE_500K_Ant1_2402

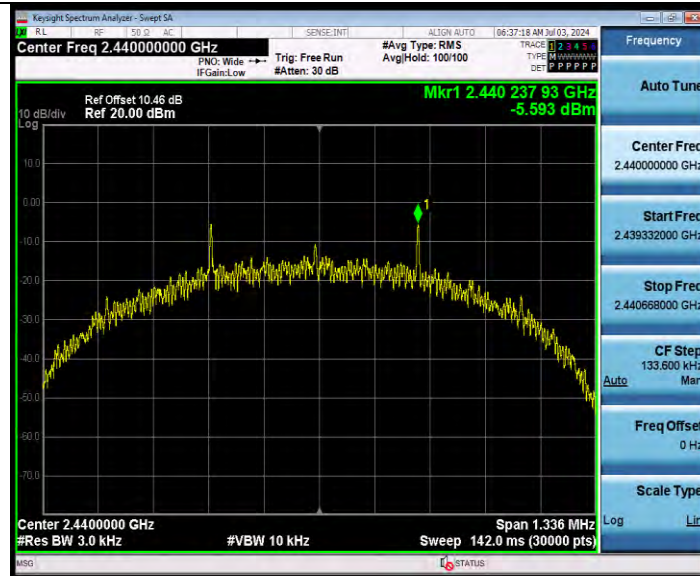


BLE_500K_Ant1_2440

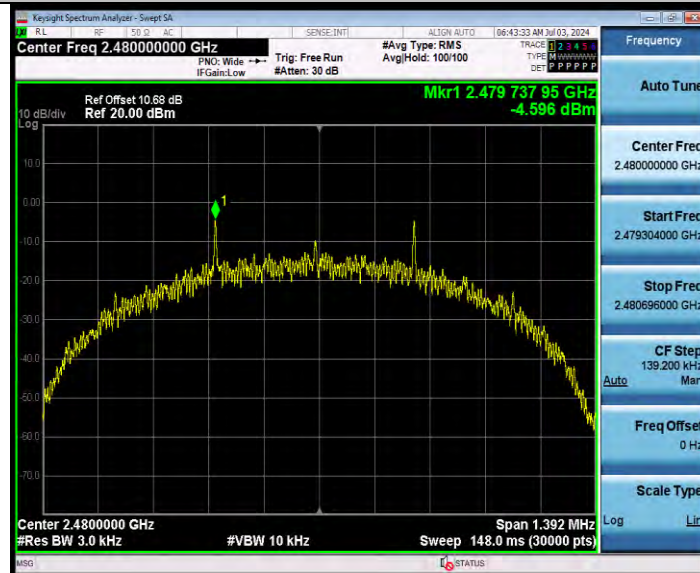


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BLE_500K_Ant1_2480



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BAND EDGE MEASUREMENTS

TEST RESULT

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.25	-44.44	≤ -19.75	PASS
		High	2480	0.80	-44.51	≤ -19.2	PASS
BLE_2M	Ant1	Low	2404	0.46	-44.12	≤ -19.54	PASS
		High	2478	1.23	-43.57	≤ -18.77	PASS
BLE_125K	Ant1	Low	2402	-2.35	-44.79	≤ -22.35	PASS
		High	2480	-1.74	-45.08	≤ -21.74	PASS
BLE_500K	Ant1	Low	2402	0.40	-44.79	≤ -19.6	PASS
		High	2480	1.22	-44	≤ -18.78	PASS

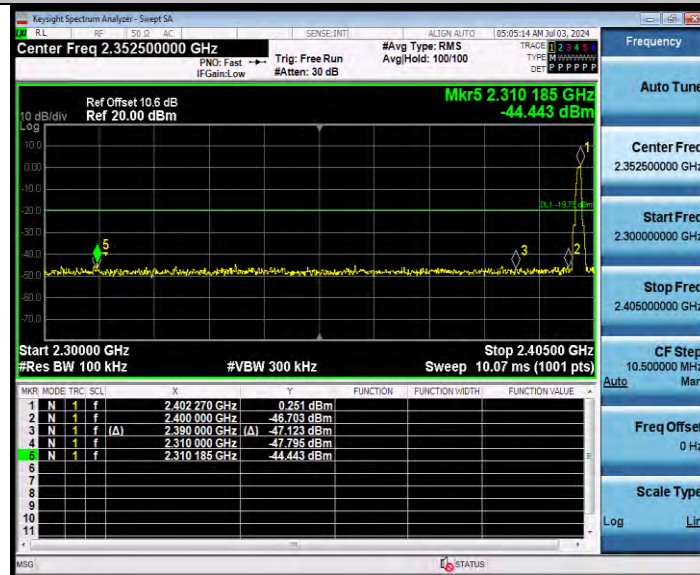


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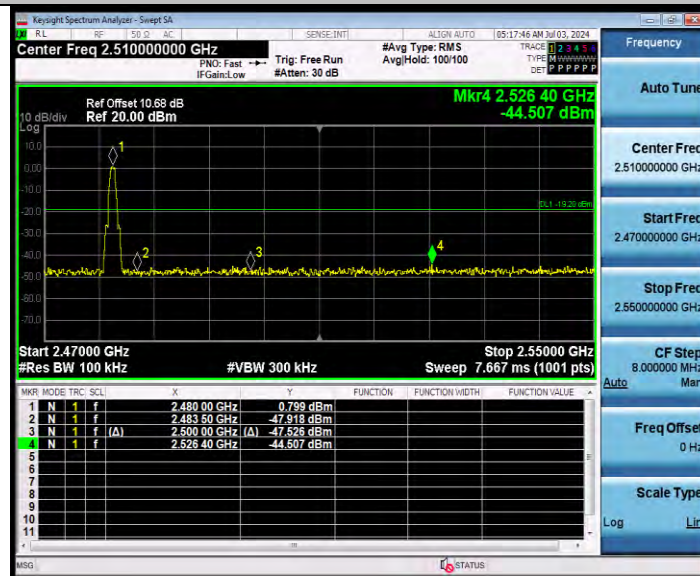
Test Report No.: W7L-P24100005RF02

TEST GRAPHS

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480

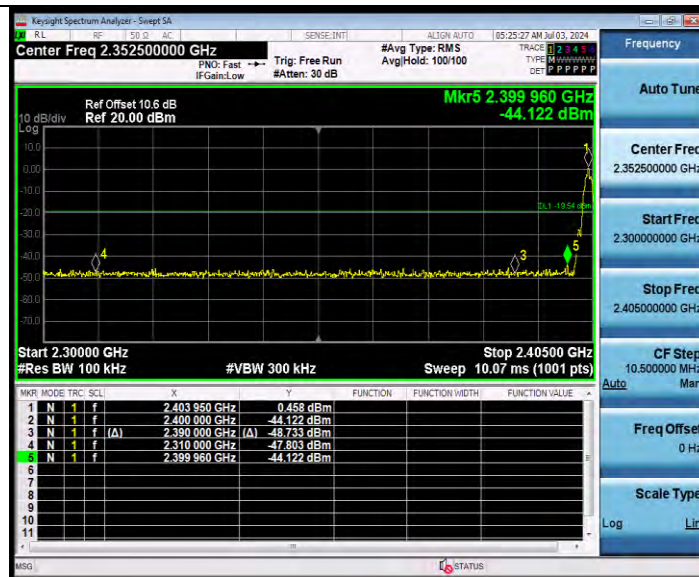


BLE_2M_Ant1_Low_2404

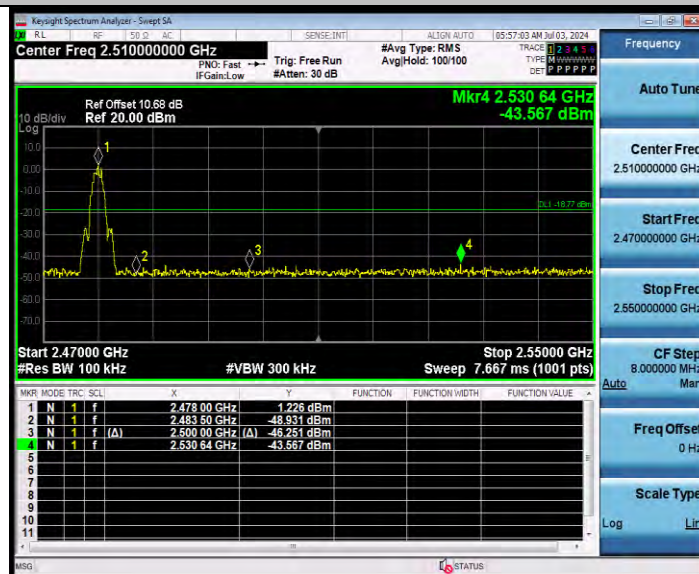


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Test Report No.: W7L-P24100005RF02



BLE_2M_Ant1_High_2478

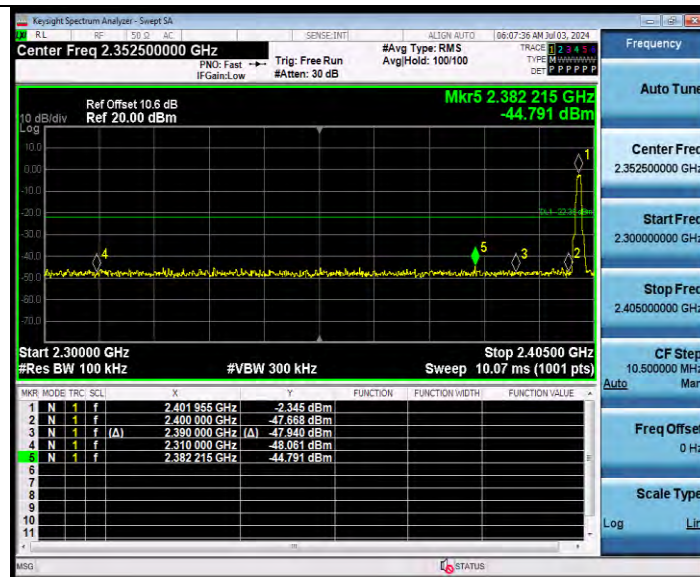


BLE_125K_Ant1_Low_2402

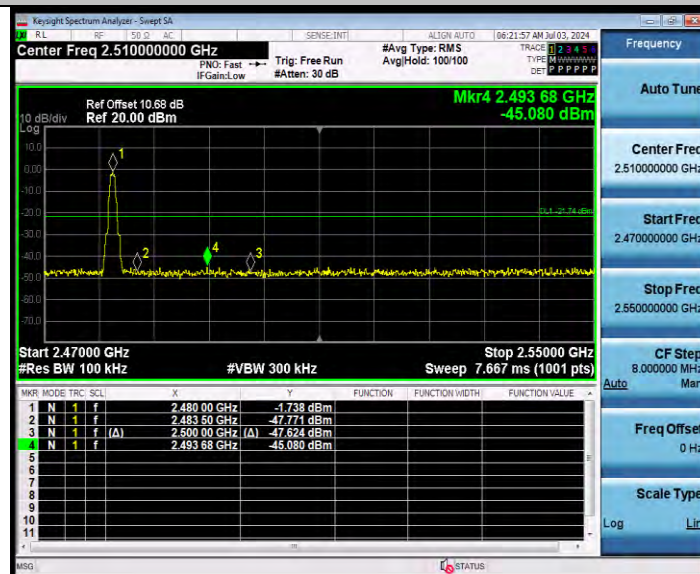


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VERITAS

Test Report No.: W7L-P24100005RF02



BLE_125K_Ant1_High_2480

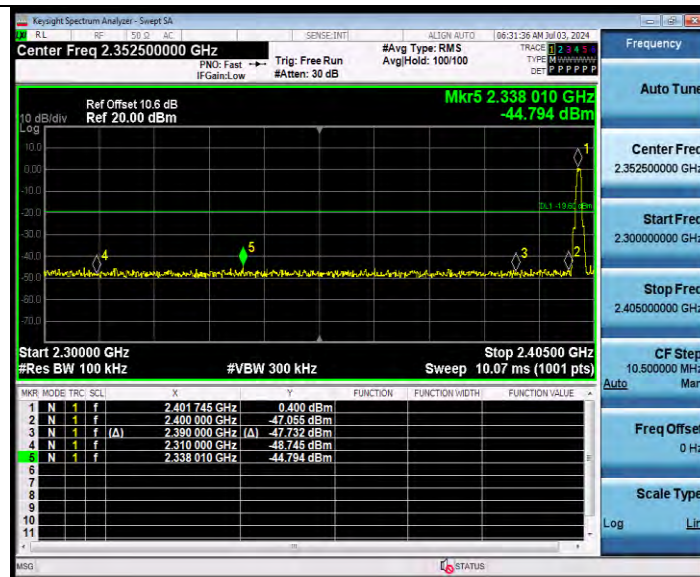


BLE_500K_Ant1_Low_2402

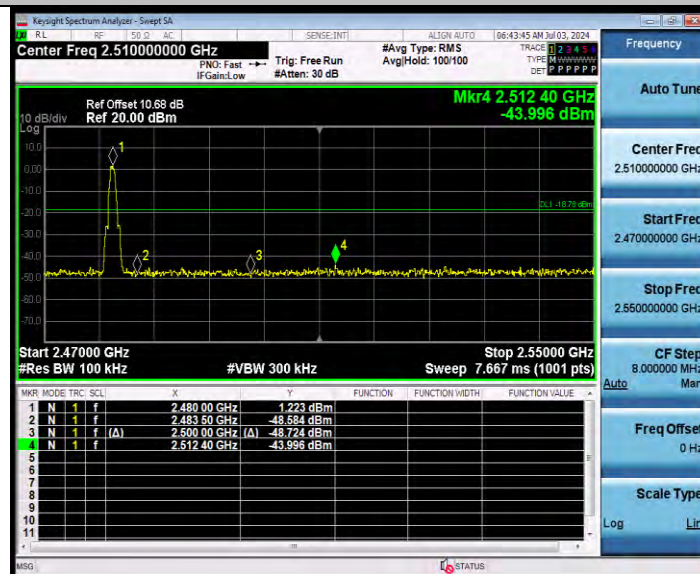


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BLE_500K_Ant1_High_2480





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CONDUCTED SPURIOUS EMISSION

TEST RESULT

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	0.46	0.46	---	PASS
			30~1000	0.46	-63.78	≤-19.54	PASS
			1000~26500	0.46	-44.41	≤-19.54	PASS
		2440	Reference	-0.89	-0.89	---	PASS
			30~1000	-0.89	-63.83	≤-20.89	PASS
			1000~26500	-0.89	-40.86	≤-20.89	PASS
		2480	Reference	0.66	0.66	---	PASS
			30~1000	0.66	-63.11	≤-19.34	PASS
			1000~26500	0.66	-44.81	≤-19.34	PASS
BLE_2M	Ant1	2404	Reference	0.02	0.02	---	PASS
			30~1000	0.02	-63.4	≤-19.98	PASS
			1000~26500	0.02	-45.04	≤-19.98	PASS
		2440	Reference	-2.97	-2.97	---	PASS
			30~1000	-2.97	-63.84	≤-22.97	PASS
			1000~26500	-2.97	-44.86	≤-22.97	PASS
		2478	Reference	-0.55	-0.55	---	PASS
			30~1000	-0.55	-62.86	≤-20.55	PASS
			1000~26500	-0.55	-44.24	≤-20.55	PASS
		2480	Reference	-3.79	-3.79	---	PASS
BLE_125K	Ant1	2402	Reference	-2.37	-2.37	---	PASS
			30~1000	-2.37	-63.53	≤-22.37	PASS
			1000~26500	-2.37	-44.82	≤-22.37	PASS
		2440	Reference	-2.76	-2.76	---	PASS
			30~1000	-2.76	-64.17	≤-22.76	PASS
			1000~26500	-2.76	-45.2	≤-22.76	PASS
		2480	Reference	-1.78	-1.78	---	PASS
			30~1000	-1.78	-64.11	≤-21.78	PASS
			1000~26500	-1.78	-44.31	≤-21.78	PASS
BLE_500K	Ant1	2402	Reference	-0.48	-0.48	---	PASS



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			30~1000	-0.48	-63.57	≤ -20.48	PASS
			1000~26500	-0.48	-44.85	≤ -20.48	PASS
		2440	Reference	-1.00	-1.00	---	PASS
			30~1000	-1.00	-63.4	≤ -21	PASS
			1000~26500	-1.00	-44.65	≤ -21	PASS
		2480	Reference	0.28	0.28	---	PASS
			30~1000	0.28	-63.94	≤ -19.72	PASS
			1000~26500	0.28	-44.83	≤ -19.72	PASS



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VERITAS

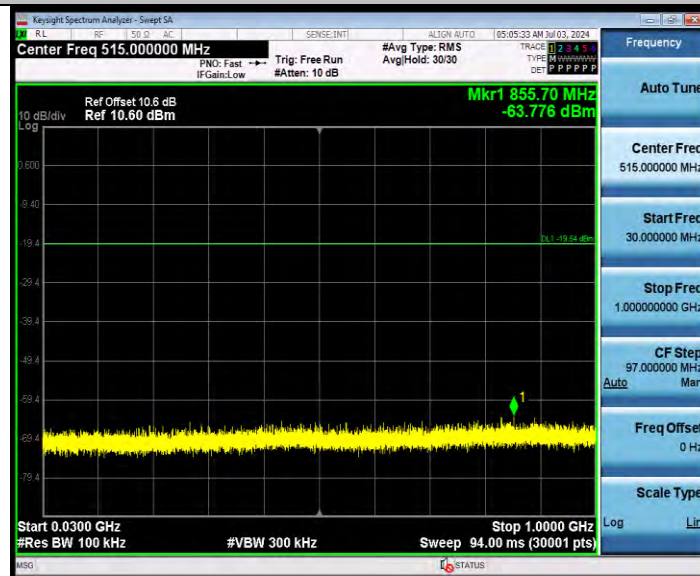
Test Report No.: W7L-P24100005RF02

TEST GRAPHS

BLE_1M_Ant1_2402_0~Reference



BLE_1M_Ant1_2402_30~1000



BLE_1M_Ant1_2402_1000~26500



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Test Report No.: W7L-P24100005RF02



BLE_1M_Ant1_2440_0~Reference

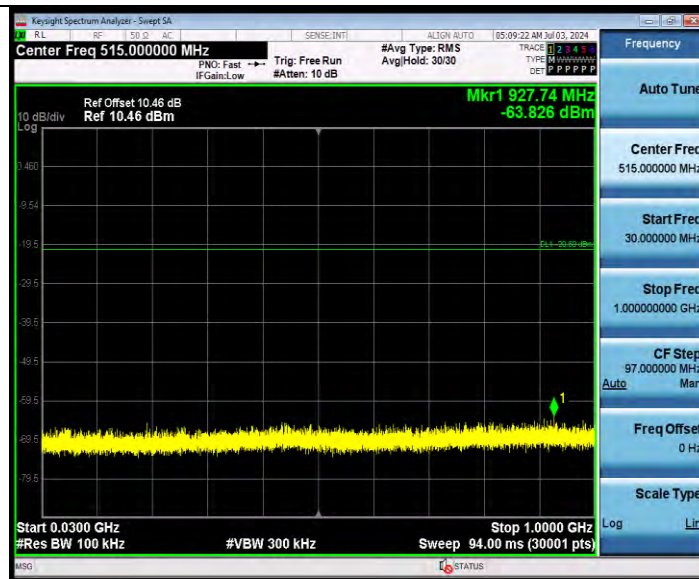


BLE_1M_Ant1_2440_30~1000



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Test Report No.: W7L-P24100005RF02



BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference

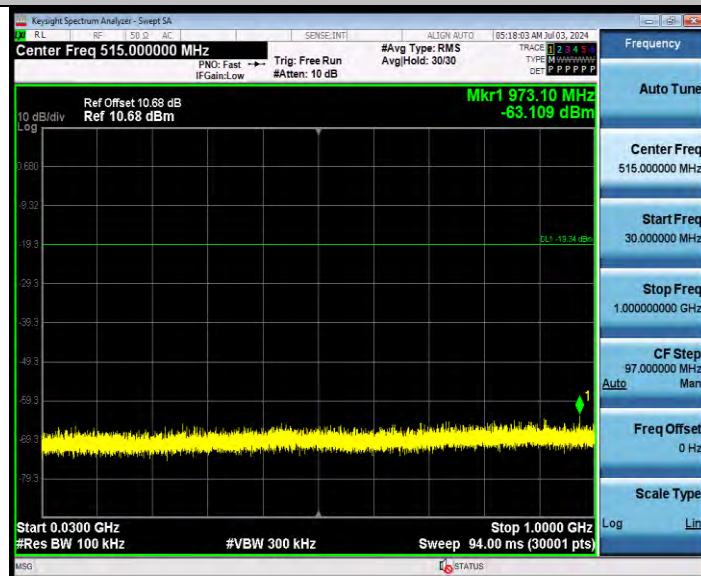


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BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



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Test Report No.: W7L-P24100005RF02



BLE_2M_Ant1_2404_0~Reference

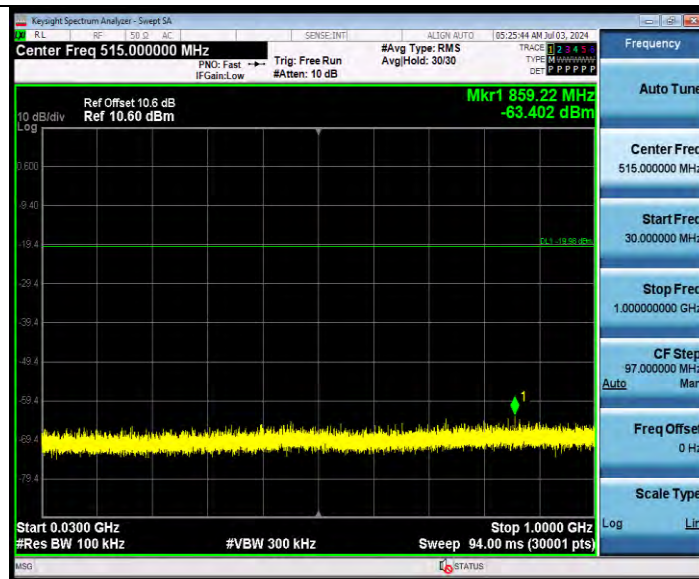


BLE_2M_Ant1_2404_30~1000



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Test Report No.: W7L-P24100005RF02



BLE_2M_Ant1_2404_1000~26500



BLE_2M_Ant1_2440_0~Reference