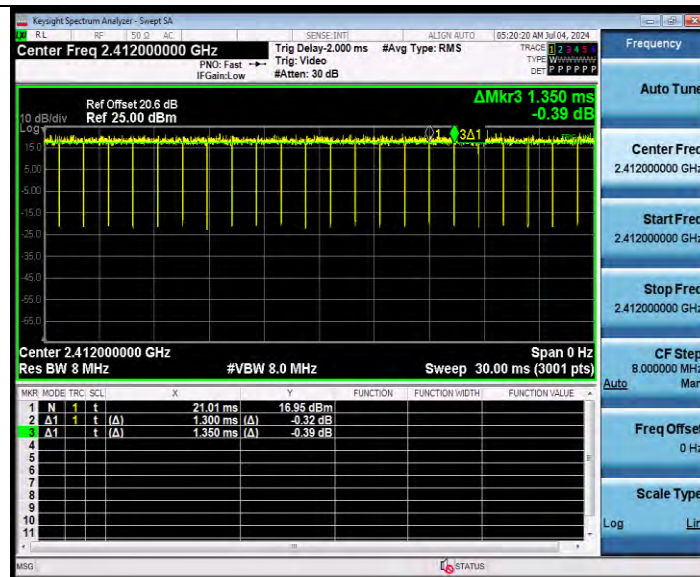


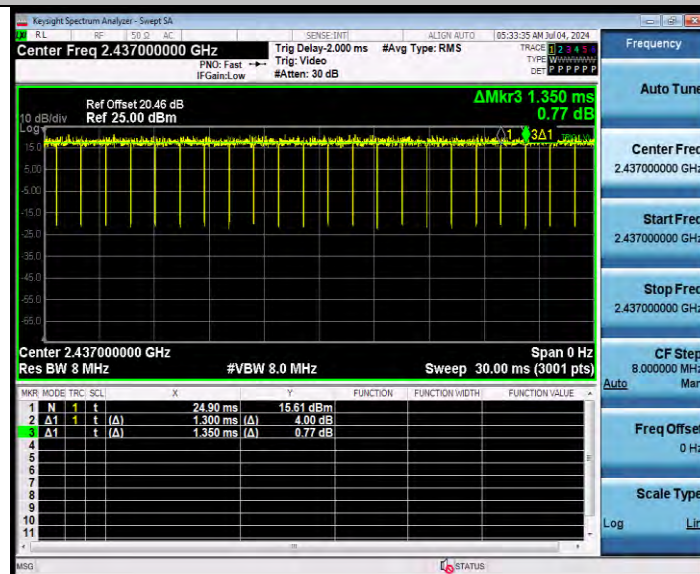


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11N20SISO_Ant1_2437

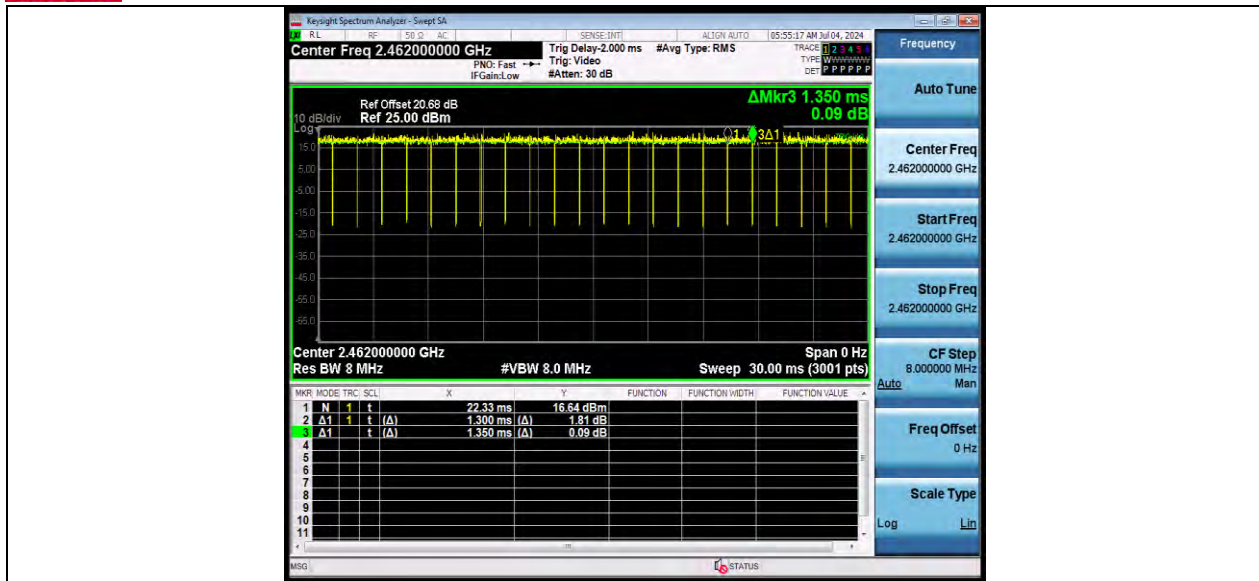


11N20SISO_Ant1_2462



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Test Report No.: W7L-P24050016RF02





Test Report No.: W7L-P24050016RF02

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_2478

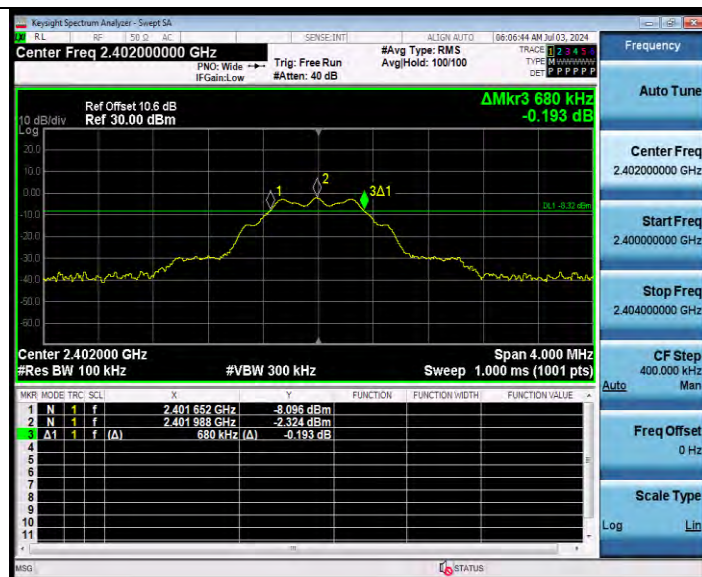


BLE_125K_Ant1_2402

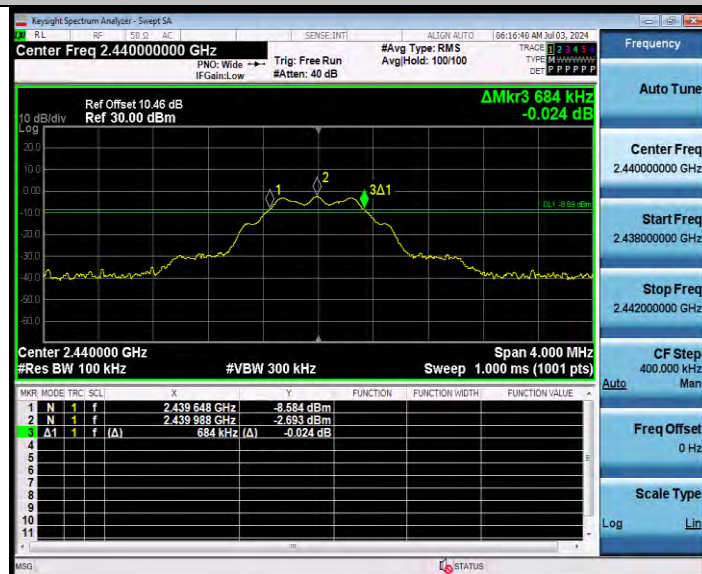


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BLE_125K_Ant1_2440



BLE_125K_Ant1_2480



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BLE_500K_Ant1_2402



BLE_500K_Ant1_2440



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BLE_500K_Ant1_2480



**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	---	---

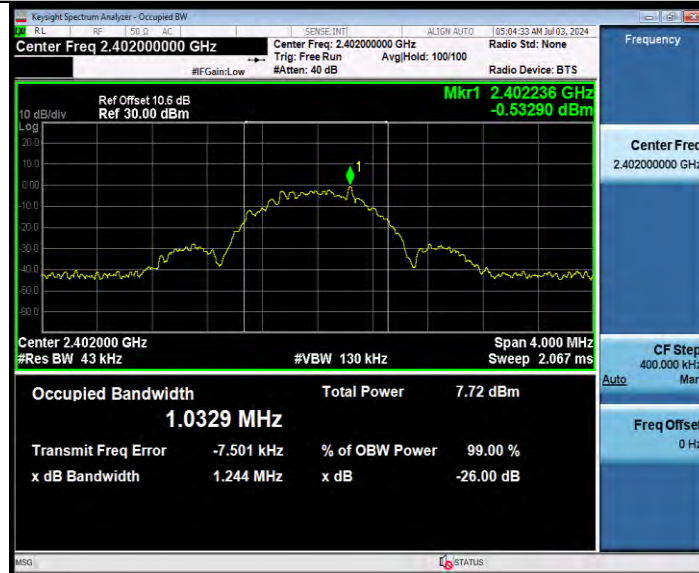


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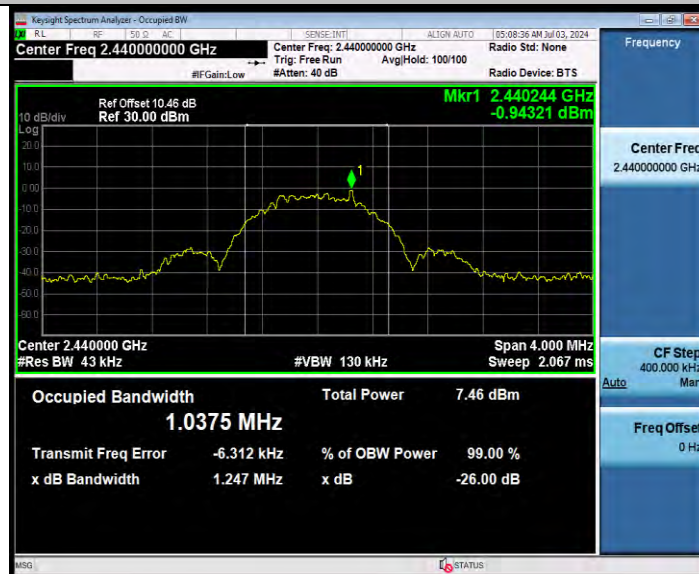
Test Report No.: W7L-P24050016RF02

TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440

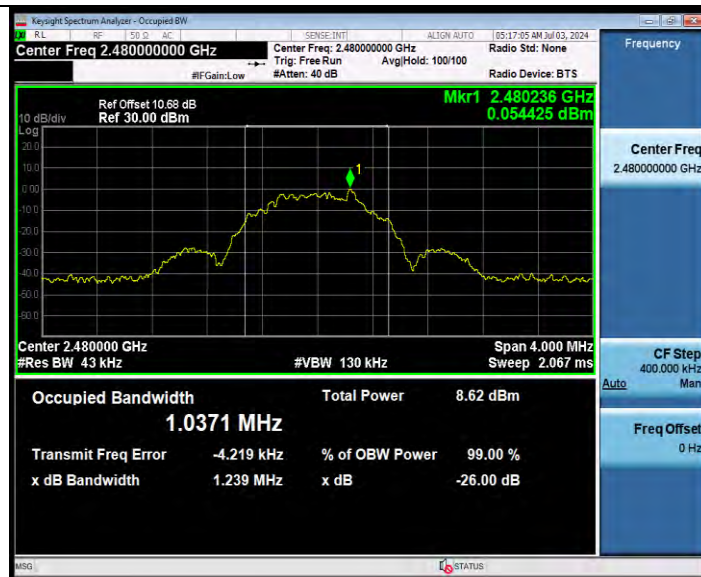


BLE_1M_Ant1_2480

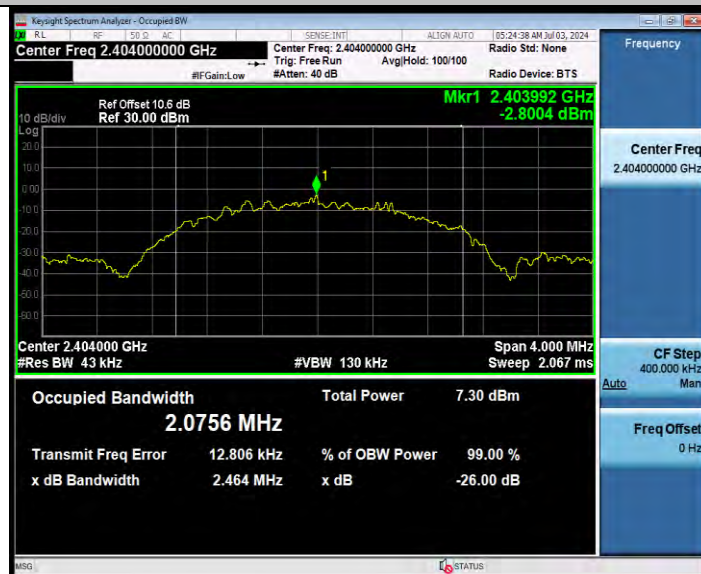


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BLE_2M_Ant1_2404



BLE_2M_Ant1_2440

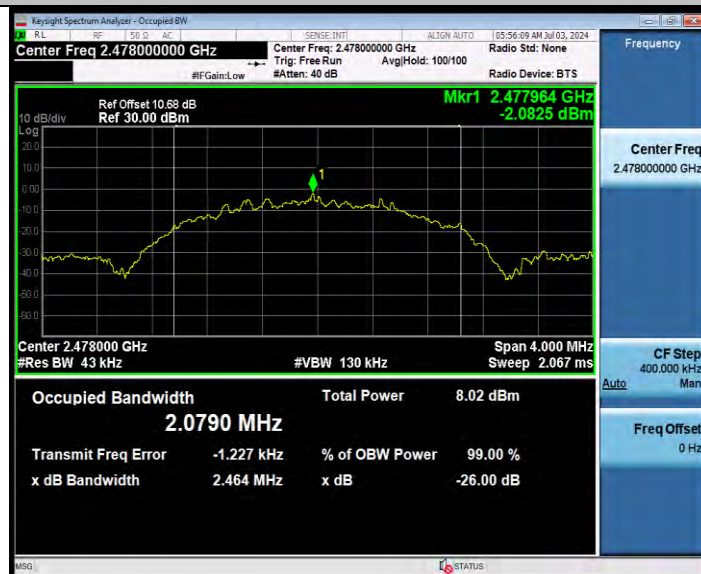


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BLE_2M_Ant1_2478



BLE_125K_Ant1_2402



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BLE_125K_Ant1_2440



BLE_125K_Ant1_2480

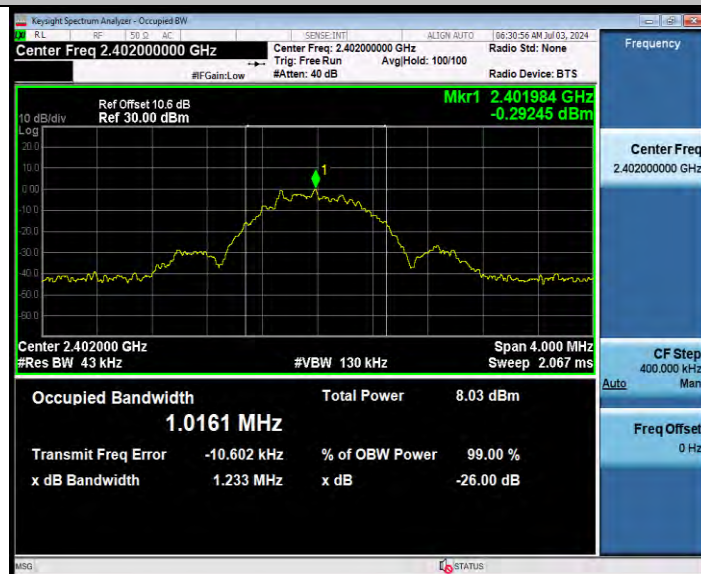


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BLE_500K_Ant1_2402



BLE_500K_Ant1_2440



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Test Report No.: W7L-P24050016RF02



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-P24050016RF02

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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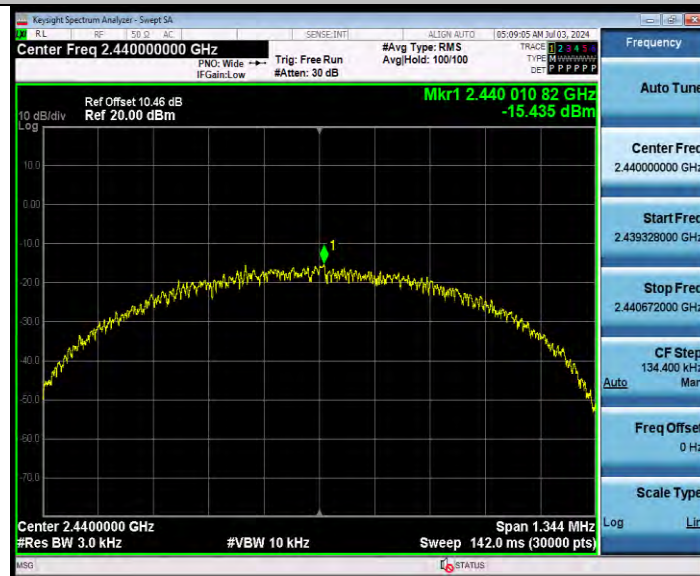
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TEST GRAPHS

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

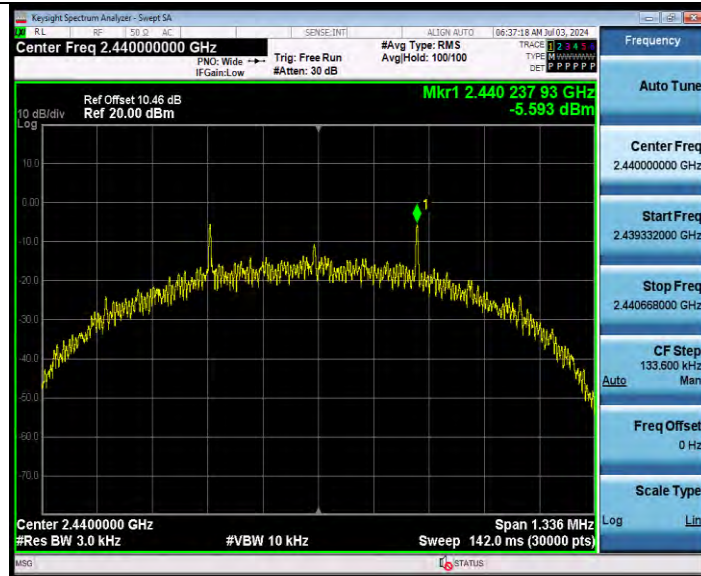


BLE_500K_Ant1_2440



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BLE_500K_Ant1_2480



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**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

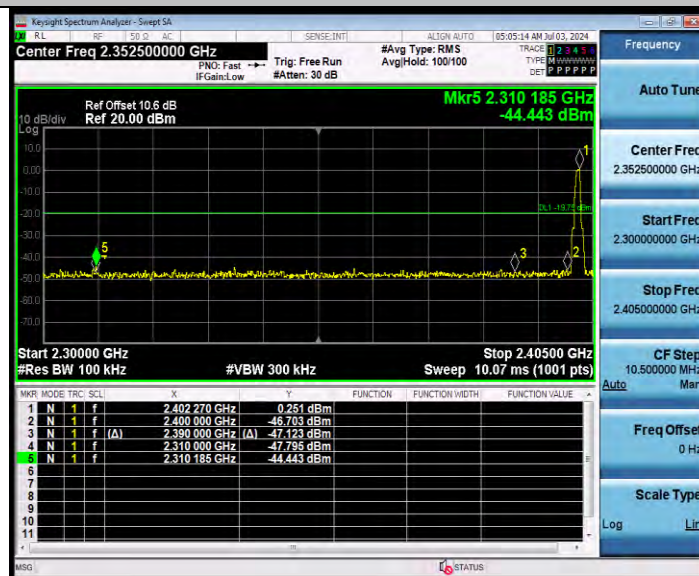


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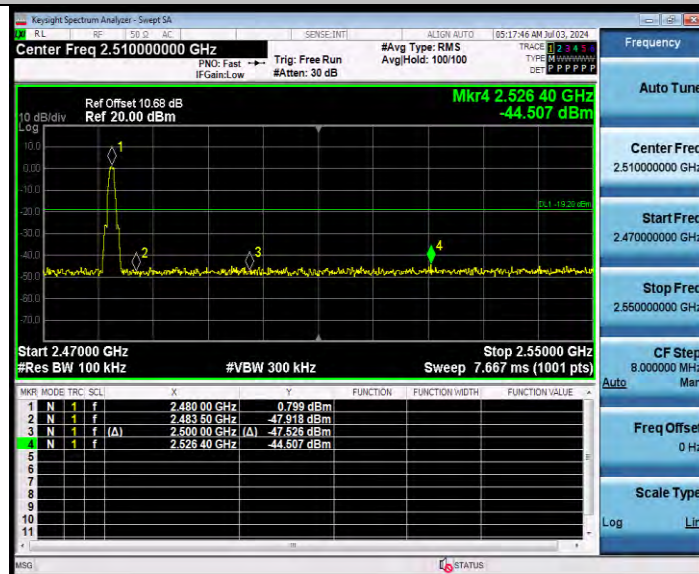
Test Report No.: W7L-P24050016RF02

TEST GRAPHS

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480

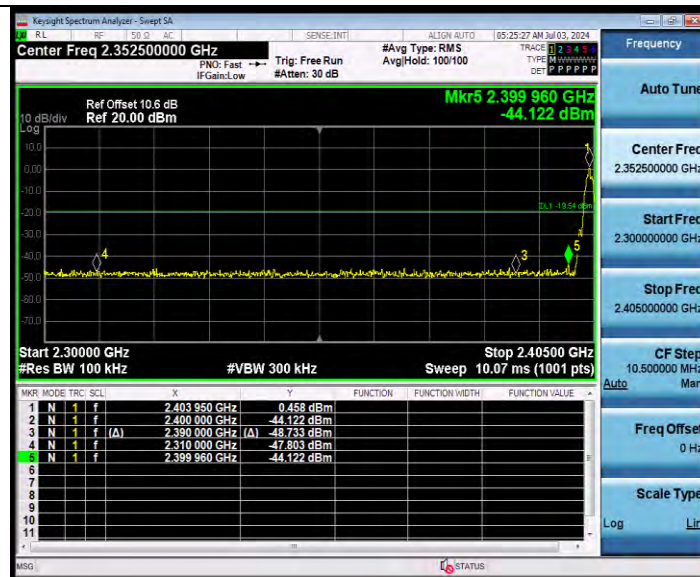


BLE_2M_Ant1_Low_2404

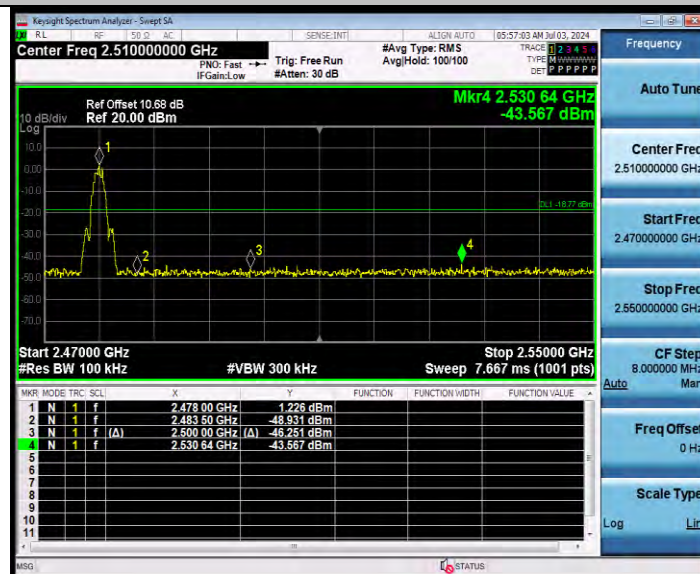


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BLE_2M_Ant1_High_2478

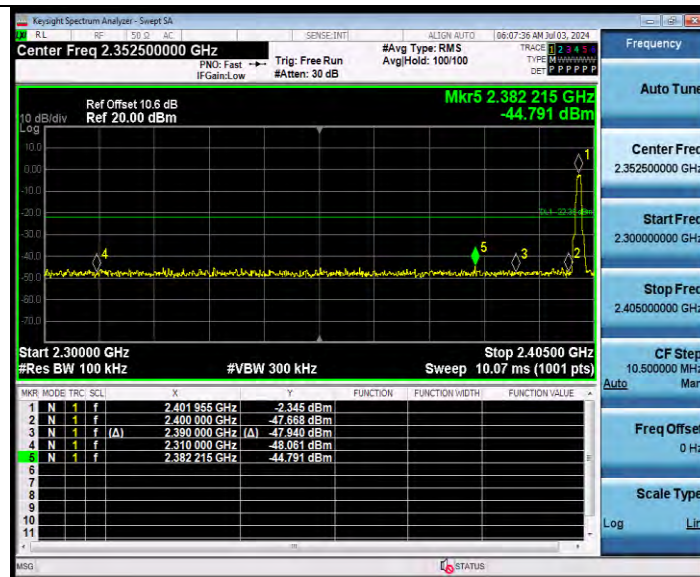


BLE_125K_Ant1_Low_2402

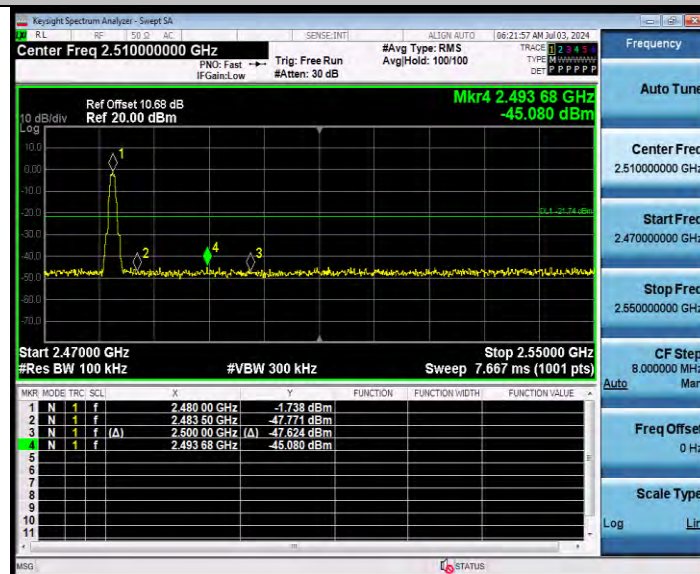


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BLE_125K_Ant1_High_2480

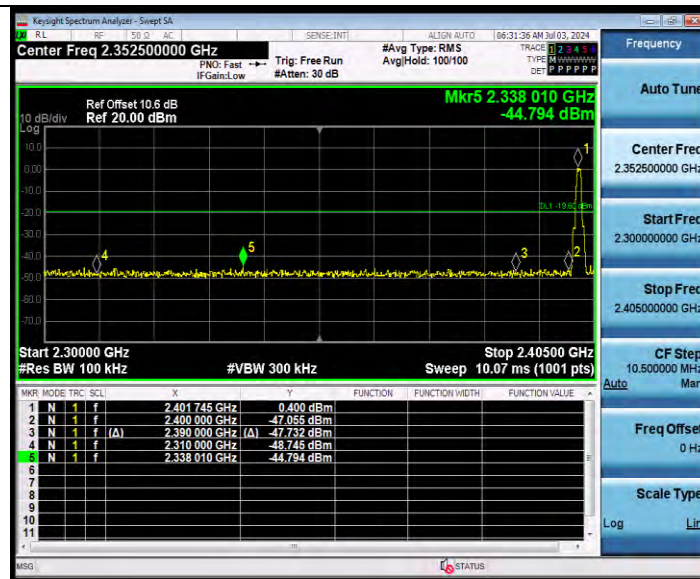


BLE_500K_Ant1_Low_2402

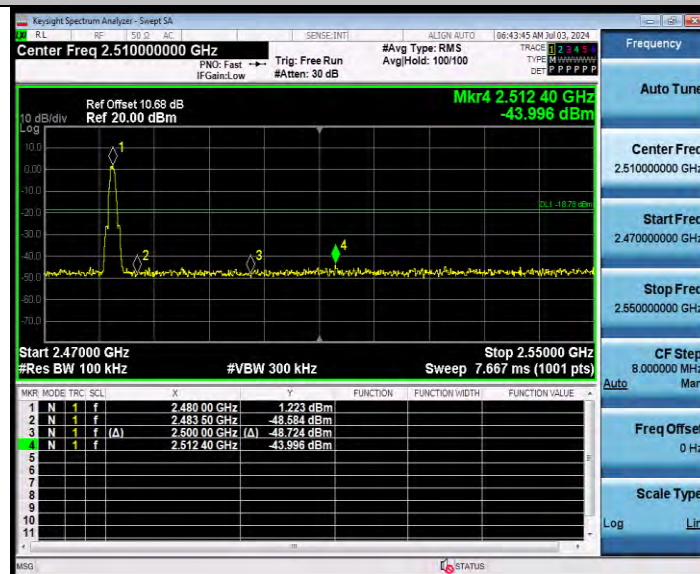


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BLE_500K_Ant1_High_2480





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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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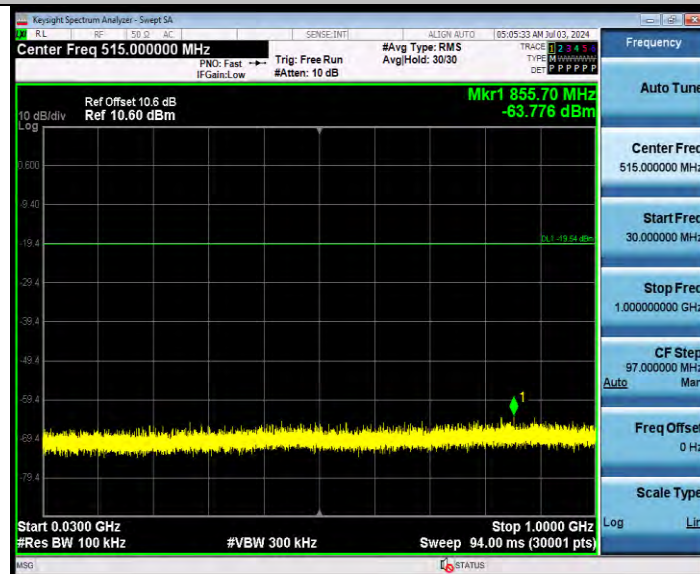
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TEST GRAPHS

BLE_1M_Ant1_2402_0~Reference



BLE_1M_Ant1_2402_30~1000



BLE_1M_Ant1_2402_1000~26500



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BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000

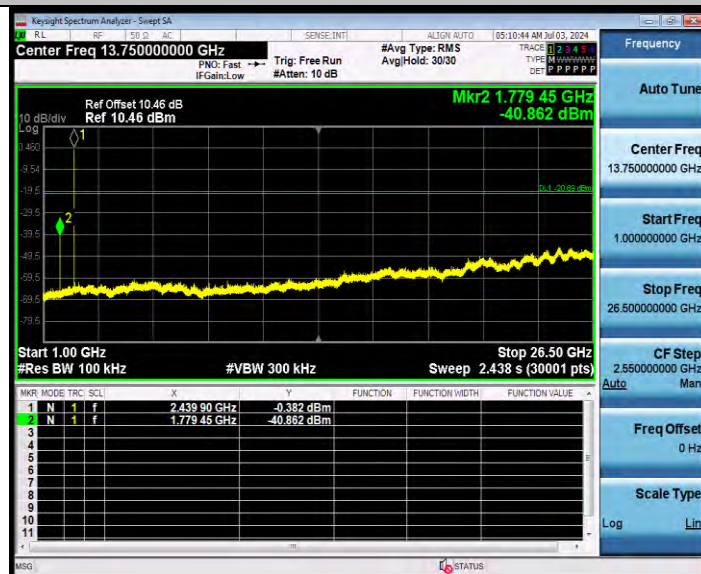


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BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference

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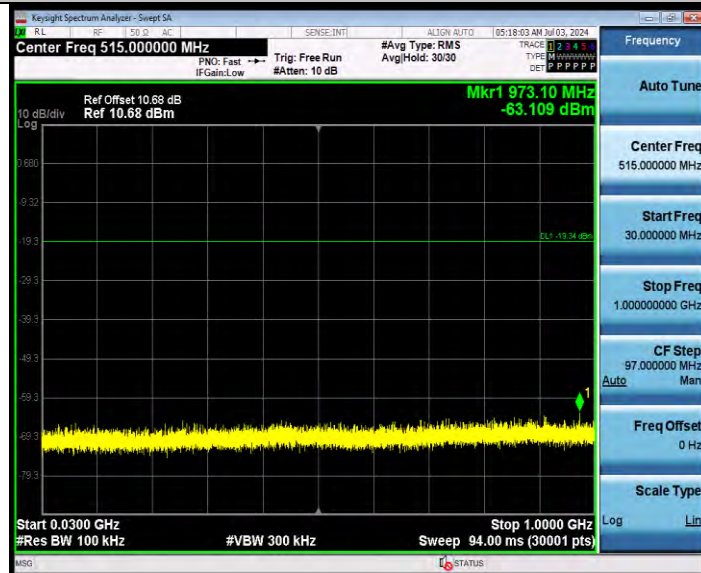


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BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



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BLE_2M_Ant1_2404_0~Reference

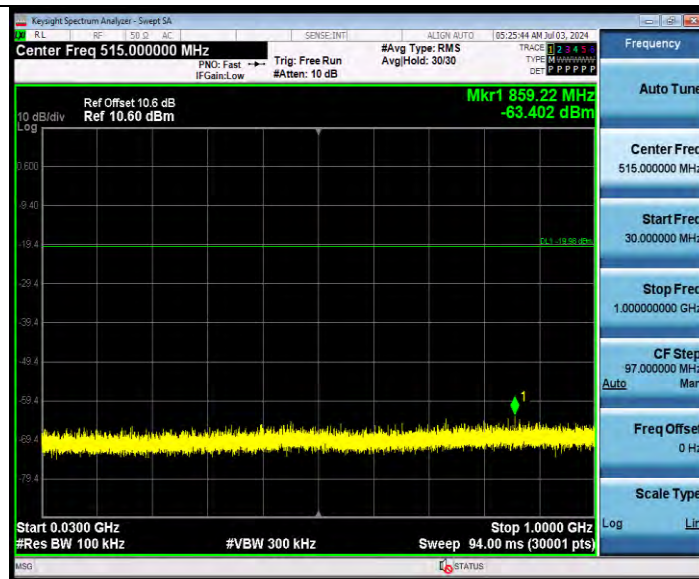


BLE_2M_Ant1_2404_30~1000



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BLE_2M_Ant1_2404_1000~26500



BLE_2M_Ant1_2440_0~Reference

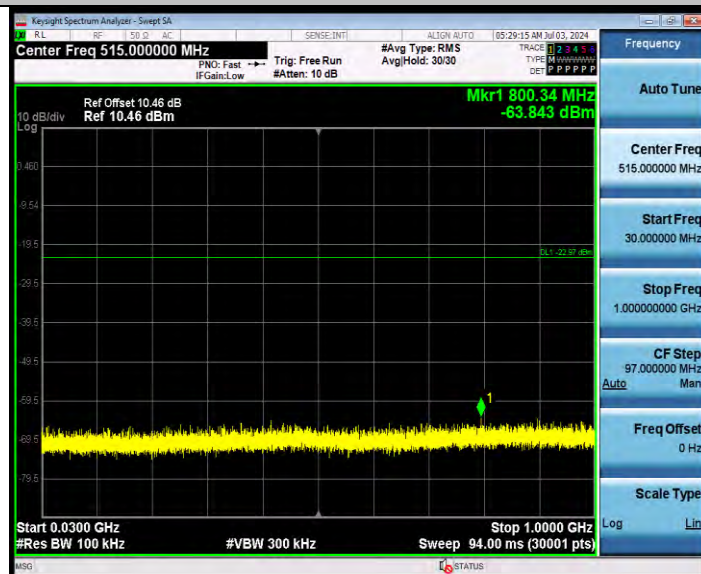


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BLE_2M_Ant1_2440_30~1000



BLE_2M_Ant1_2440_1000~26500



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Test Report No.: W7L-P24050016RF02



BLE_2M_Ant1_2478_0~Reference



BLE_2M_Ant1_2478_30~1000



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BLE_2M_Ant1_2478_1000~26500



BLE_2M_Ant1_2480_0~Reference



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Test Report No.: W7L-P24050016RF02



BLE_125K_Ant1_2402_0~Reference

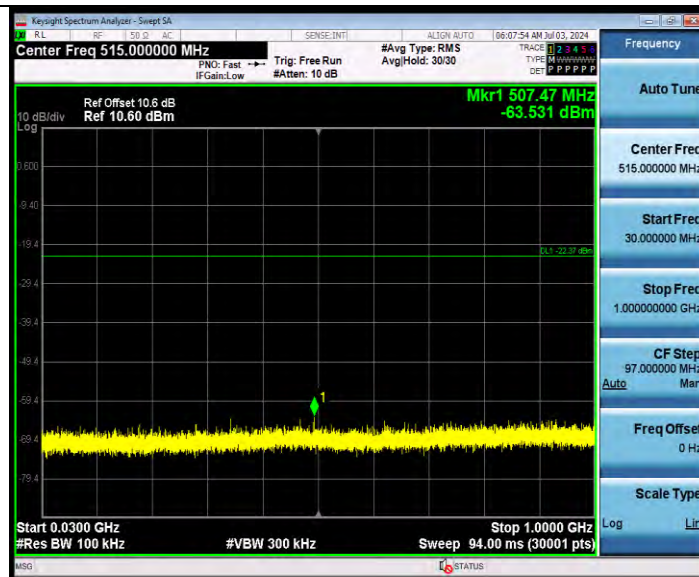


BLE_125K_Ant1_2402_30~1000



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BLE_125K_Ant1_2402_1000~26500



BLE_125K_Ant1_2440_0~Reference



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Test Report No.: W7L-P24050016RF02



BLE_125K_Ant1_2440_30~1000



BLE_125K_Ant1_2440_1000~26500



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Test Report No.: W7L-P24050016RF02



BLE_125K_Ant1_2480_0~Reference



BLE_125K_Ant1_2480_30~1000



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Test Report No.: W7L-P24050016RF02



BLE_125K_Ant1_2480_1000~26500



BLE_500K_Ant1_2402_0~Reference

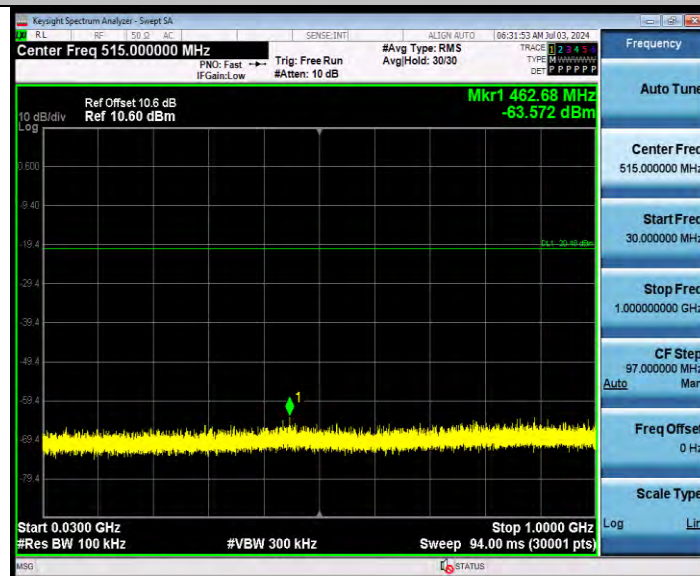


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Test Report No.: W7L-P24050016RF02



BLE_500K_Ant1_2402_30~1000



BLE_500K_Ant1_2402_1000~26500



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VERITAS

Test Report No.: W7L-P24050016RF02



BLE_500K_Ant1_2440_0~Reference

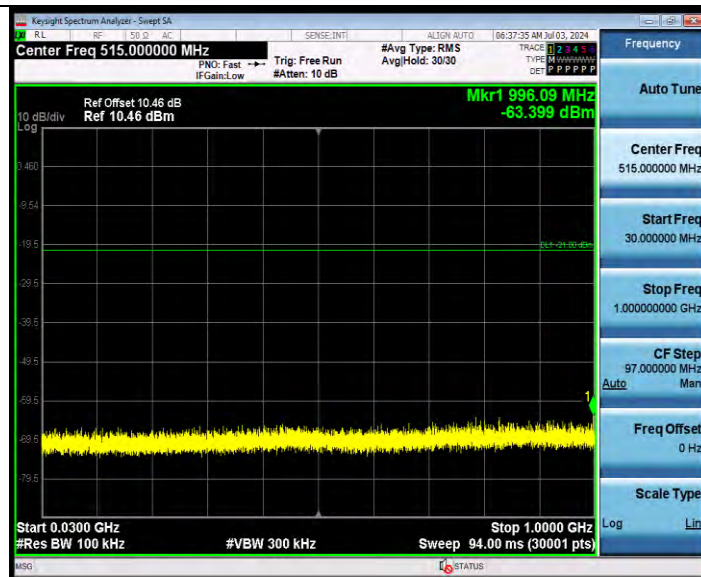


BLE_500K_Ant1_2440_30~1000



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Test Report No.: W7L-P24050016RF02



BLE_500K_Ant1_2440_1000~26500



BLE_500K_Ant1_2480_0~Reference

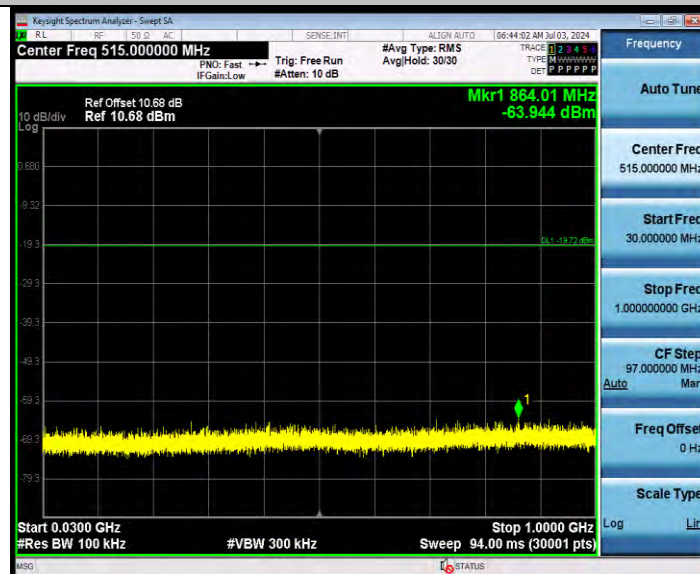


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BLE_500K_Ant1_2480_30~1000



BLE_500K_Ant1_2480_1000~26500



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DUTY CYCLE

TEST RESULT

TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	2.13	2.50	85.20	0.70
		2440	2.13	2.50	85.20	0.70
		2480	2.13	2.50	85.20	0.70
BLE_2M	Ant1	2404	1.07	1.88	56.91	2.45
		2440	1.07	1.87	57.22	2.42
		2478	1.07	1.88	56.91	2.45
BLE_125K	Ant1	2402	17.04	17.52	97.26	0.12
		2440	17.04	17.52	97.26	0.12
		2480	17.04	17.48	97.48	0.11
BLE_500K	Ant1	2402	4.54	4.99	90.98	0.41
		2440	4.55	5.00	91.00	0.41
		2480	4.54	5.01	90.62	0.43

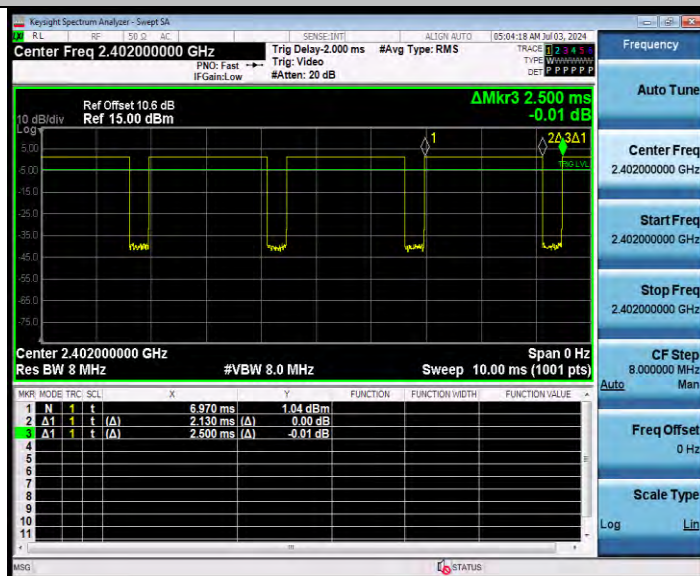


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VERITAS

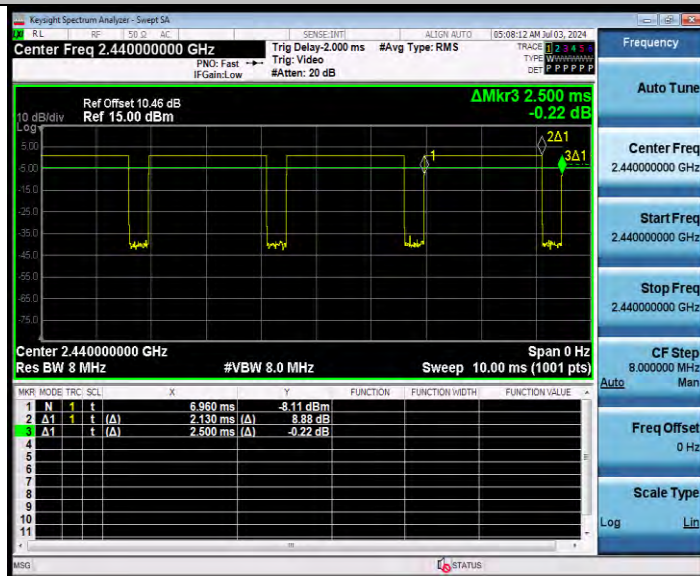
Test Report No.: W7L-P24050016RF02

TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440

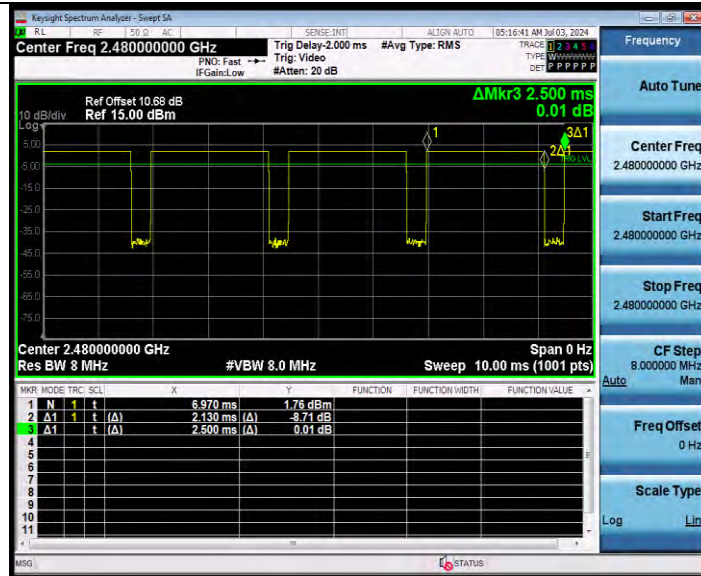


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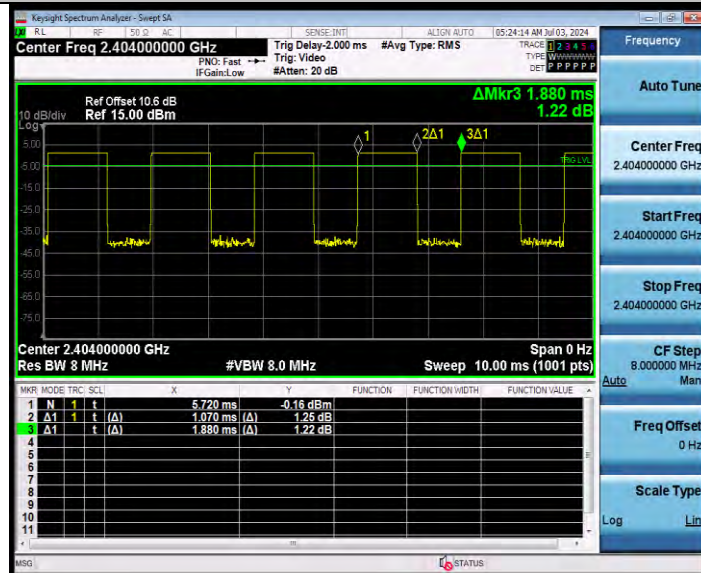


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VERITAS

Test Report No.: W7L-P24050016RF02



BLE_2M_Ant1_2404

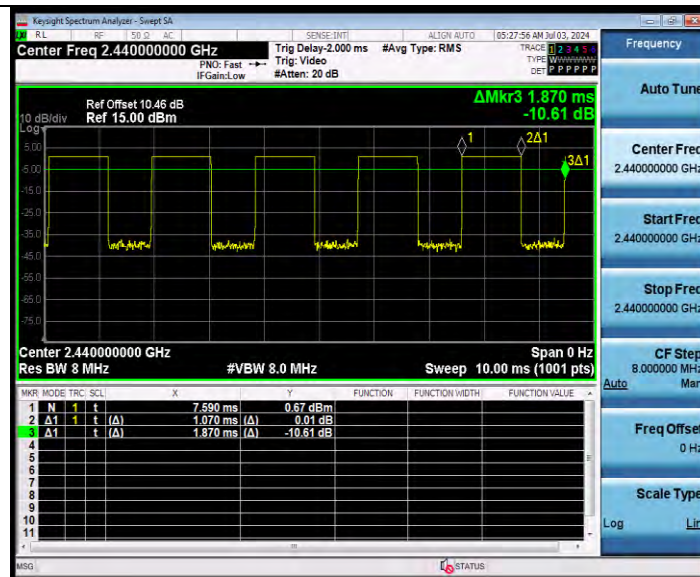


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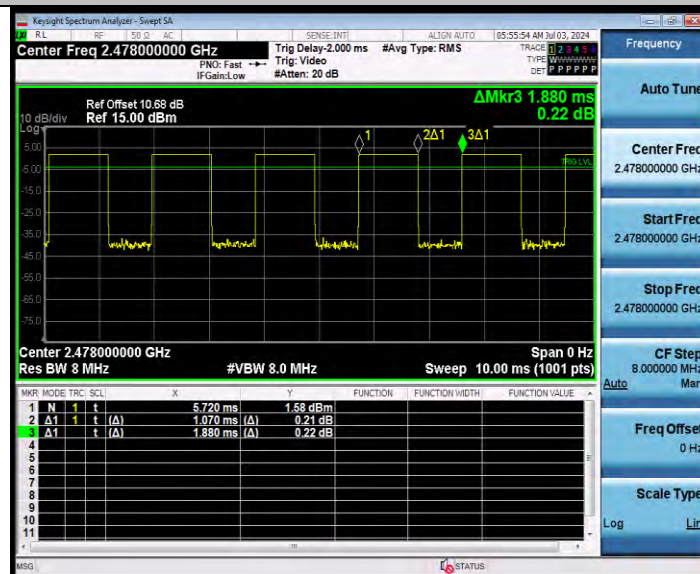


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VERITAS

Test Report No.: W7L-P24050016RF02



BLE_2M_Ant1_2478

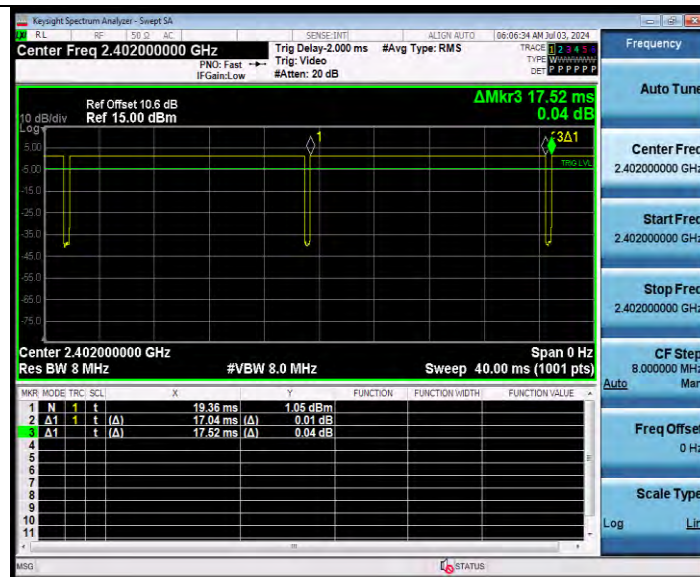


BLE_125K_Ant1_2402

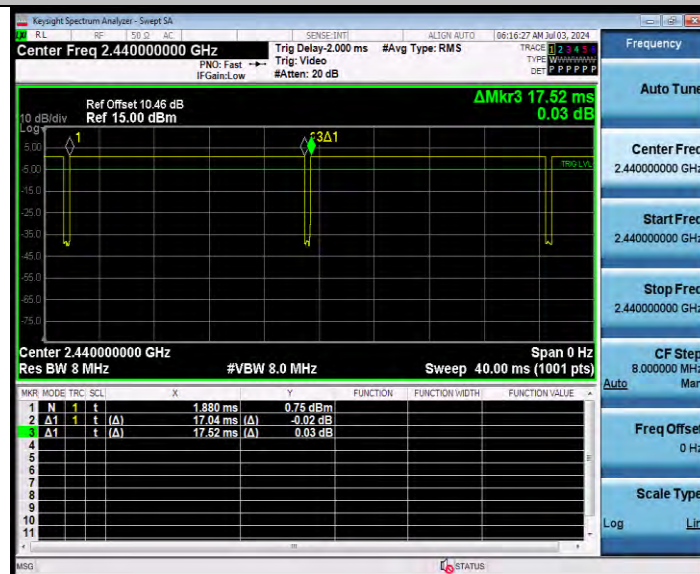


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VERITAS

Test Report No.: W7L-P24050016RF02



BLE_125K_Ant1_2440

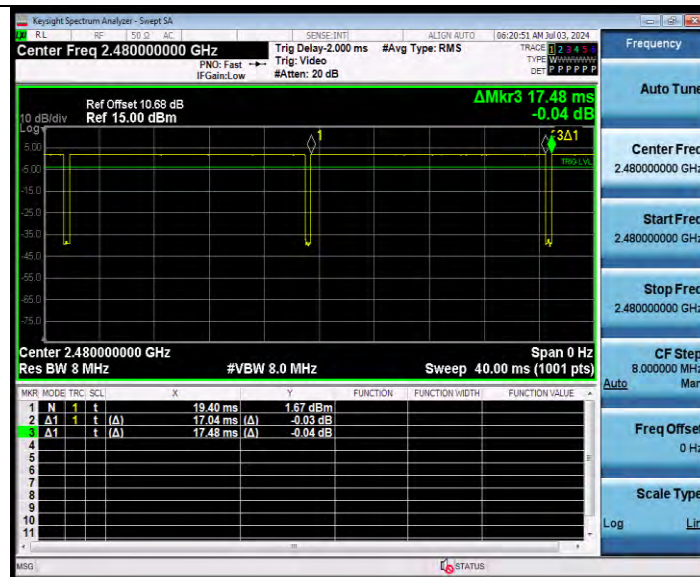


BLE_125K_Ant1_2480

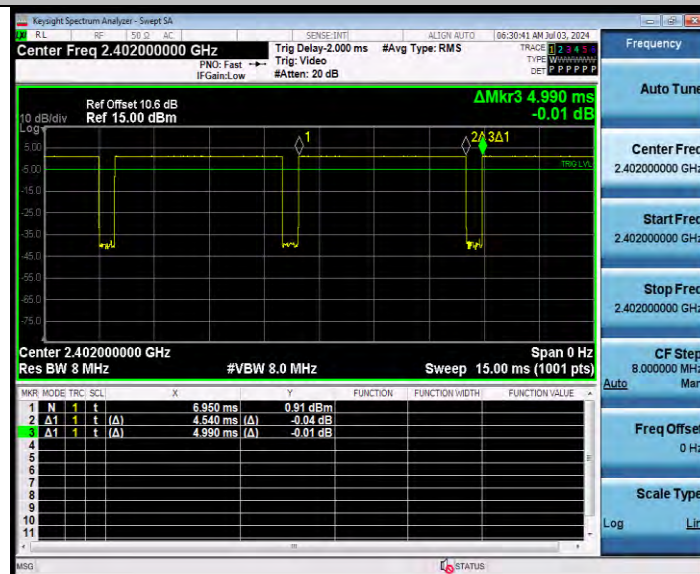


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VERITAS

Test Report No.: W7L-P24050016RF02



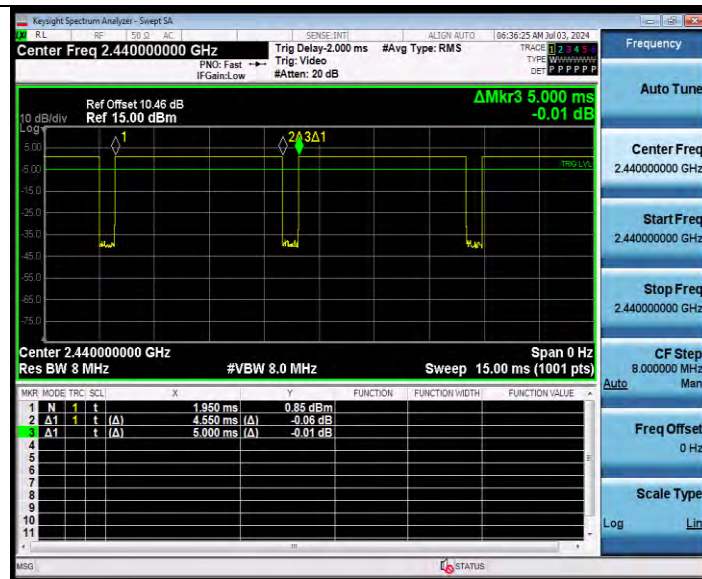
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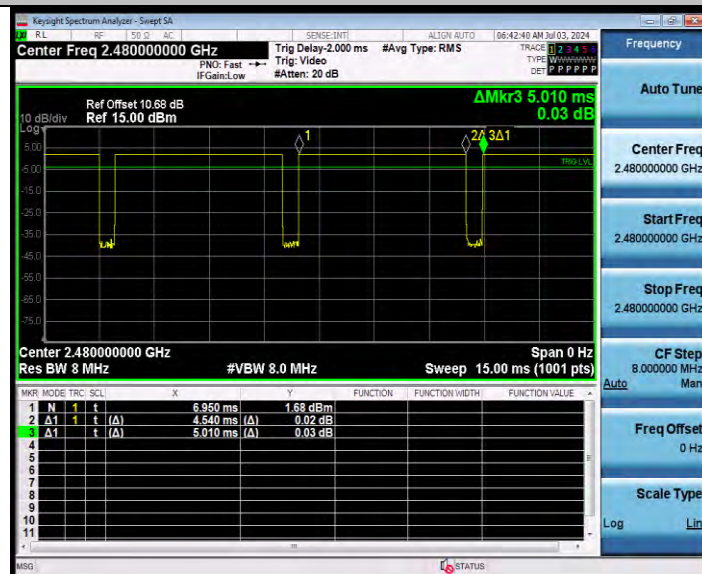
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Test Report No.: W7L-P24050016RF02



BLE_500K_Ant1_2480



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