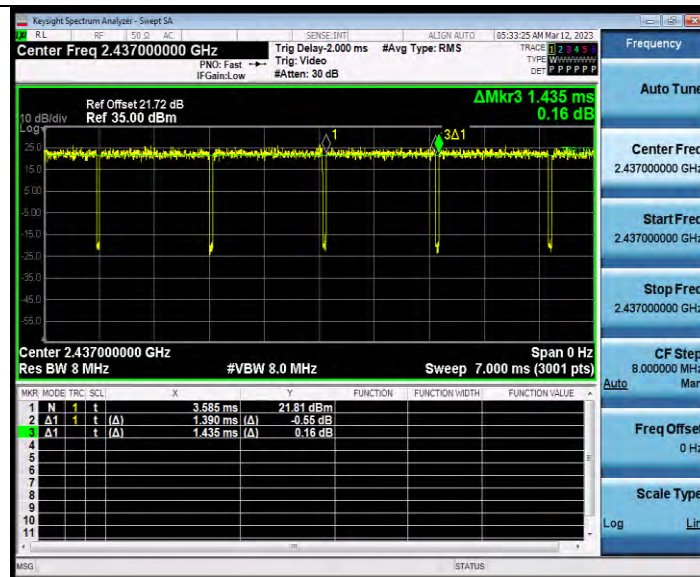
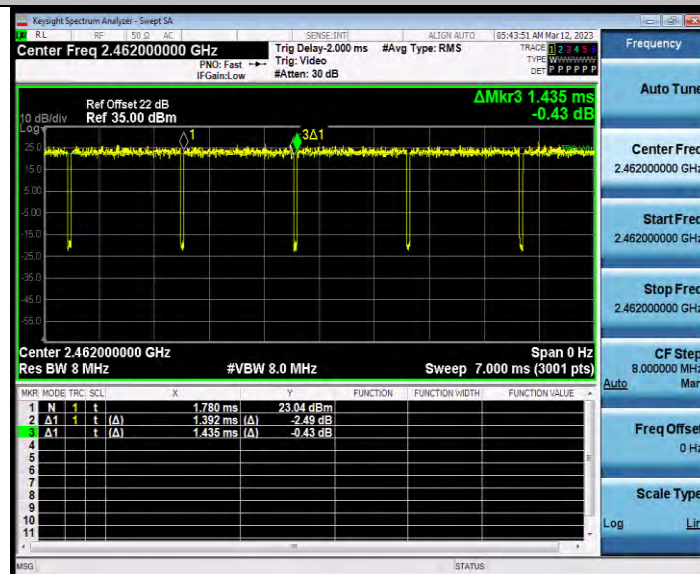




11G_Ant1_2462

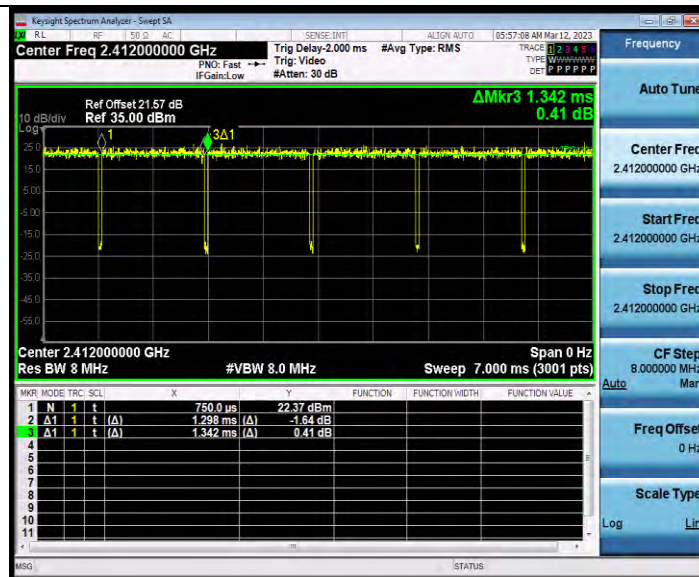


11N20SISO_Ant1_2412

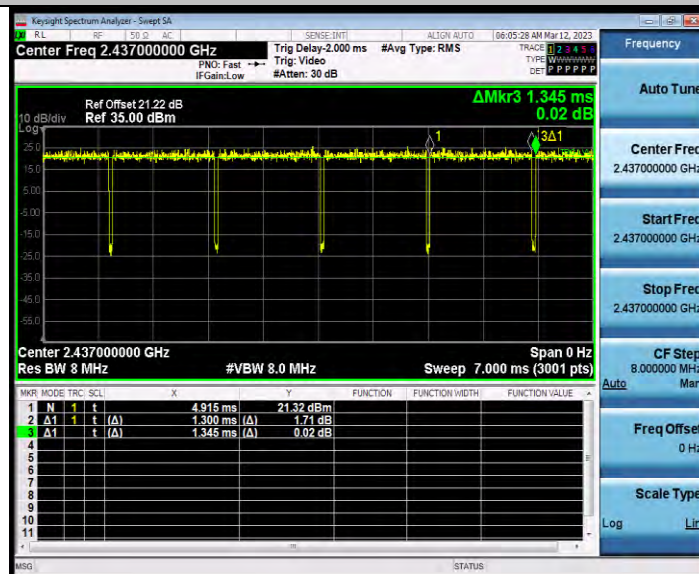


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11N20SISO_Ant1_2437

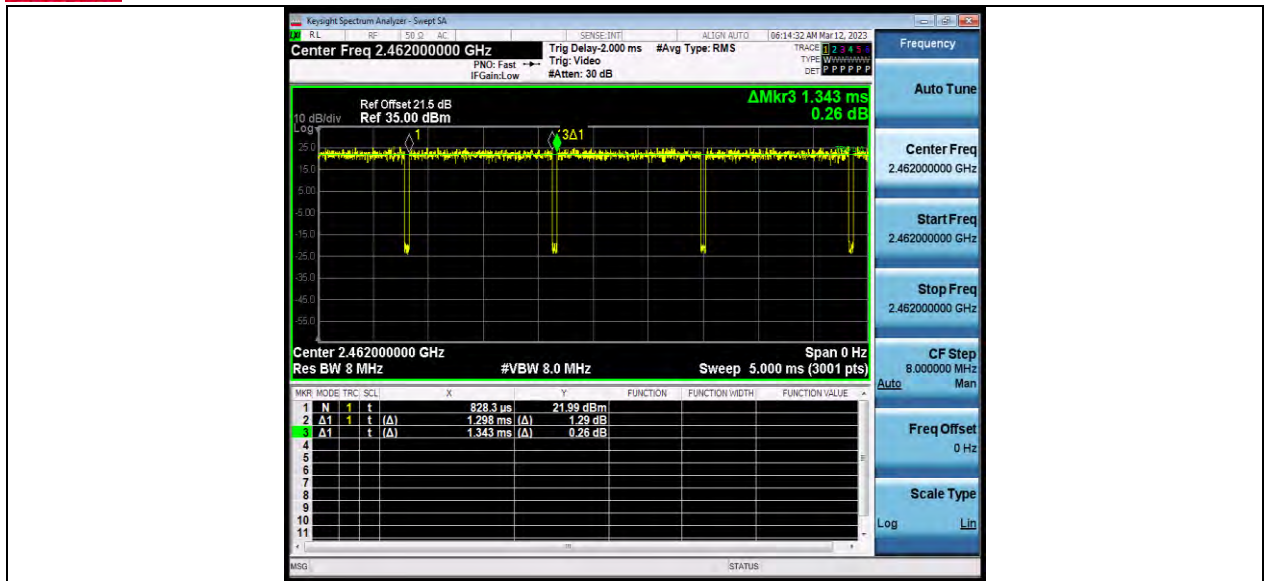


11N20SISO_Ant1_2462



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Test Report No.: W7L-P23030003RF02





7 APPENDIX 2 :BLE

DTS BANDWIDTH

TEST RESULT

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.712	2401.648	2402.360	0.5	PASS
		2440	0.664	2439.664	2440.328	0.5	PASS
		2480	0.704	2479.652	2480.356	0.5	PASS
BLE_2M	Ant1	2402	1.140	2401.436	2402.576	0.5	PASS
		2440	1.132	2439.456	2440.588	0.5	PASS
		2480	1.272	2479.332	2480.604	0.5	PASS
BLE_125K	Ant1	2402	0.680	2401.664	2402.344	0.5	PASS
		2440	0.680	2439.660	2440.340	0.5	PASS
		2480	0.680	2479.660	2480.340	0.5	PASS
BLE_500K	Ant1	2402	0.648	2401.684	2402.332	0.5	PASS
		2440	0.692	2439.664	2440.356	0.5	PASS
		2480	0.672	2479.676	2480.348	0.5	PASS



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Test Report No.: W7L-P23030003RF02

TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



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Test Report No.: W7L-P23030003RF02



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



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Test Report No.: W7L-P23030003RF02



BLE_2M_Ant1_2480

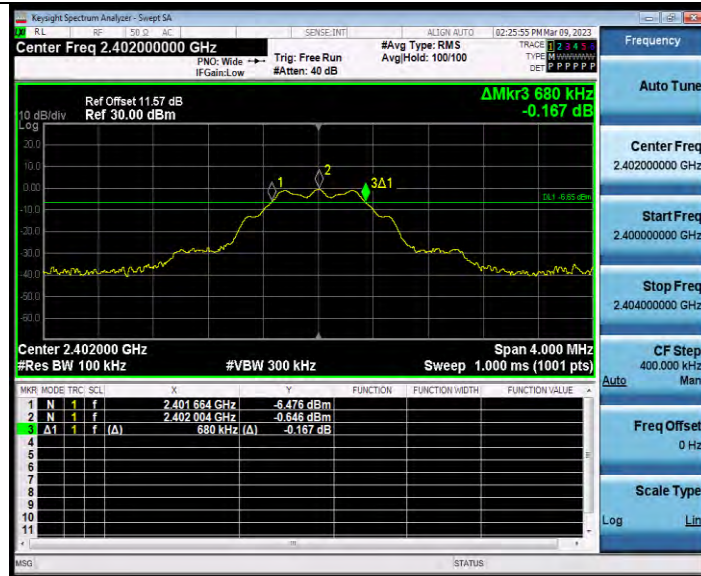


BLE_125K_Ant1_2402



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Test Report No.: W7L-P23030003RF02



BLE_125K_Ant1_2440

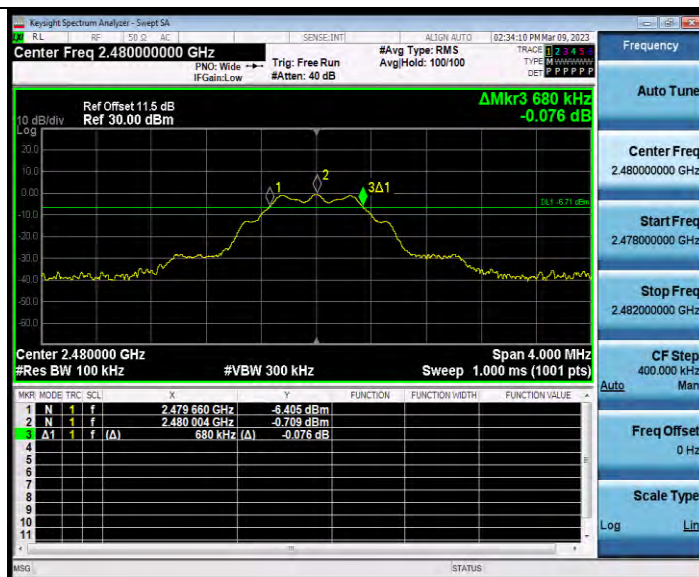


BLE_125K_Ant1_2480



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Test Report No.: W7L-P23030003RF02



BLE_500K_Ant1_2402



BLE_500K_Ant1_2440



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Test Report No.: W7L-P23030003RF02



BLE_500K_Ant1_2480





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Test Report No.: W7L-P23030003RF02

OCCUPIED CHANNEL BANDWIDTH

TEST RESULT

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0438	2401.4854	2402.5292	---	---
		2440	1.0473	2439.4815	2440.5288	---	---
		2480	1.0331	2479.4875	2480.5206	---	---
BLE_2M	Ant1	2402	2.0834	2400.9752	2403.0586	---	---
		2440	2.0728	2438.9803	2441.0531	---	---
		2480	2.0699	2478.9747	2481.0446	---	---
BLE_125K	Ant1	2402	1.0588	2401.4715	2402.5303	---	---
		2440	1.0563	2439.4718	2440.5281	---	---
		2480	1.0611	2479.4678	2480.5289	---	---
BLE_500K	Ant1	2402	1.0364	2401.4819	2402.5183	---	---
		2440	1.0345	2439.4812	2440.5157	---	---
		2480	1.0291	2479.4835	2480.5126	---	---



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Test Report No.: W7L-P23030003RF02

TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



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Test Report No.: W7L-P23030003RF02



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



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Test Report No.: W7L-P23030003RF02



BLE_2M_Ant1_2480



BLE_125K_Ant1_2402



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Test Report No.: W7L-P23030003RF02



BLE_125K_Ant1_2440



BLE_125K_Ant1_2480

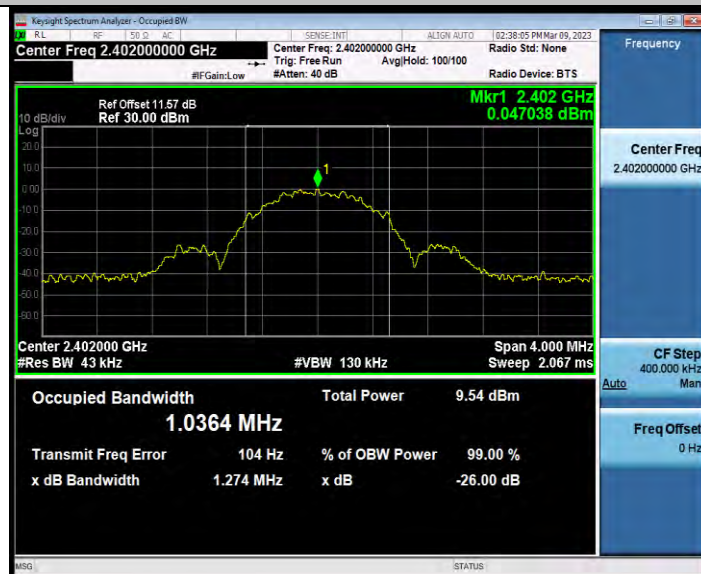


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Test Report No.: W7L-P23030003RF02



BLE_500K_Ant1_2402



BLE_500K_Ant1_2440



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Test Report No.: W7L-P23030003RF02



BLE_500K_Ant1_2480





**BUREAU
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Test Report No.: W7L-P23030003RF02

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	1.22	1.74	1.49	≤30	-1.96	0.64	≤36	PASS	Default
		2440	2.54	2.97	1.98	≤30	-0.73	0.85	≤36	PASS	Default
		2480	1.83	2.05	1.60	≤30	-1.65	0.68	≤36	PASS	Default
BLE_2M	Ant1	2402	1.77	1.82	1.52	≤30	-1.88	0.65	≤36	PASS	Default
		2440	2.6	2.92	1.96	≤30	-0.78	0.84	≤36	PASS	Default
		2480	1.73	2.04	1.60	≤30	-1.66	0.68	≤36	PASS	Default
BLE_125k	Ant1	2402	1.1	1.63	1.46	≤30	-2.07	0.62	≤36	PASS	Default
		2440	2.39	2.96	1.98	≤30	-0.74	0.84	≤36	PASS	Default
		2480	1.47	2.01	1.59	≤30	-1.69	0.68	≤36	PASS	Default
BLE_500K	Ant1	2402	1.12	1.72	1.49	≤30	-1.98	0.63	≤36	PASS	Default
		2440	2.25	2.99	1.99	≤30	-0.71	0.85	≤36	PASS	Default
		2480	1.55	2.06	1.61	≤30	-1.64	0.69	≤36	PASS	Default

Note:EIRP=Peak Power+Gain

**MAXIMUM POWER SPECTRAL DENSITY****TEST RESULT**

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-13.36	≤8.00	PASS
		2440	-12.88	≤8.00	PASS
		2480	-13.39	≤8.00	PASS
BLE_2M	Ant1	2402	-15.9	≤8.00	PASS
		2440	-15.37	≤8.00	PASS
		2480	-15.87	≤8.00	PASS
BLE_125K	Ant1	2402	-3.56	≤8.00	PASS
		2440	-3.03	≤8.00	PASS
		2480	-3.48	≤8.00	PASS
BLE_500K	Ant1	2402	-3.65	≤8.00	PASS
		2440	-3.1	≤8.00	PASS
		2480	-3.63	≤8.00	PASS



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Test Report No.: W7L-P23030003RF02

TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440

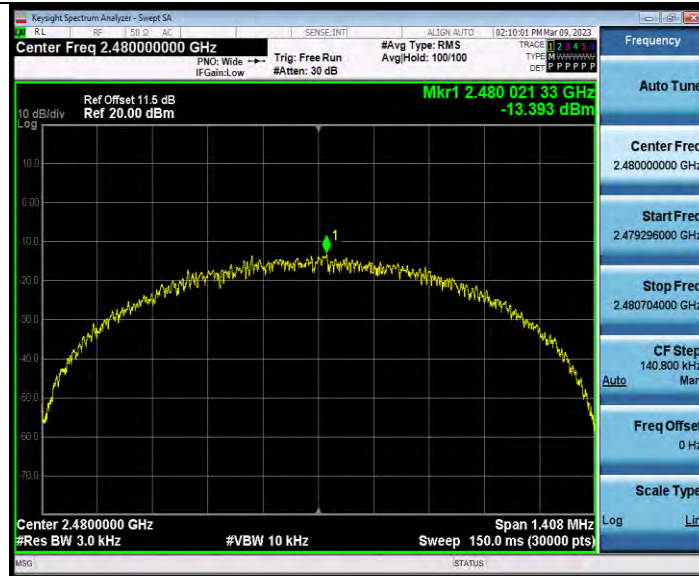


BLE_1M_Ant1_2480



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Test Report No.: W7L-P23030003RF02



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



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Test Report No.: W7L-P23030003RF02



BLE_2M_Ant1_2480



BLE_125K_Ant1_2402



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Test Report No.: W7L-P23030003RF02



BLE_125K_Ant1_2440



BLE_125K_Ant1_2480



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Test Report No.: W7L-P23030003RF02



BLE_500K_Ant1_2402



BLE_500K_Ant1_2440



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Test Report No.: W7L-P23030003RF02



BLE_500K_Ant1_2480





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Test Report No.: W7L-P23030003RF02

BAND EDGE MEASUREMENTS

TEST RESULT

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	2.32	-45.02	≤ -17.68	PASS
		High	2480	2.55	-44.32	≤ -17.45	PASS
BLE_2M	Ant1	Low	2402	0.15	-28.72	≤ -19.85	PASS
		High	2480	0.18	-44.07	≤ -19.82	PASS
BLE_125K	Ant1	Low	2402	-0.68	-43.85	≤ -20.68	PASS
		High	2480	-0.65	-43.93	≤ -20.65	PASS
BLE_500K	Ant1	Low	2402	2.26	-44.57	≤ -17.74	PASS
		High	2480	2.17	-44.17	≤ -17.83	PASS

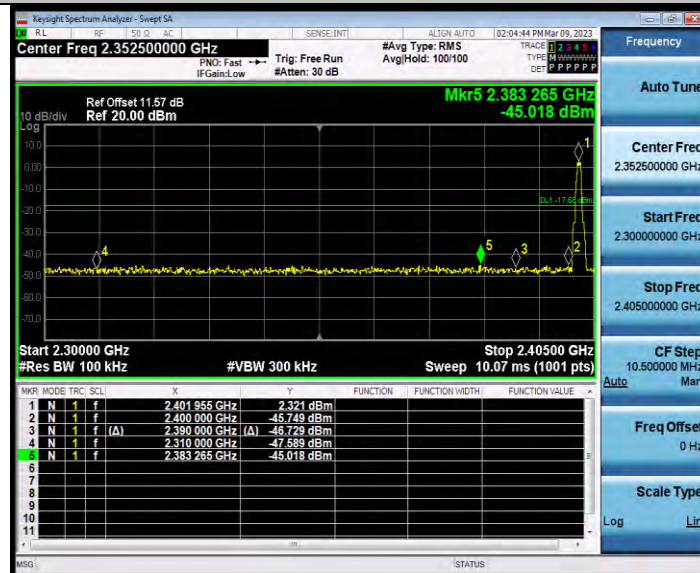


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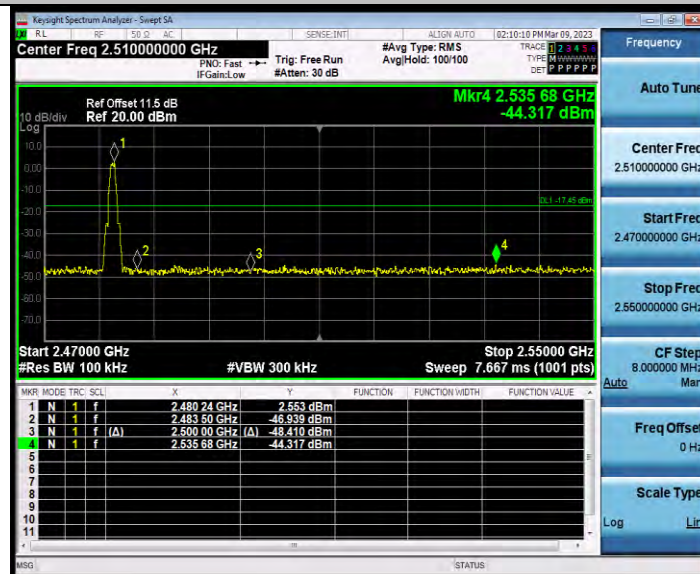
Test Report No.: W7L-P23030003RF02

TEST GRAPHS

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480

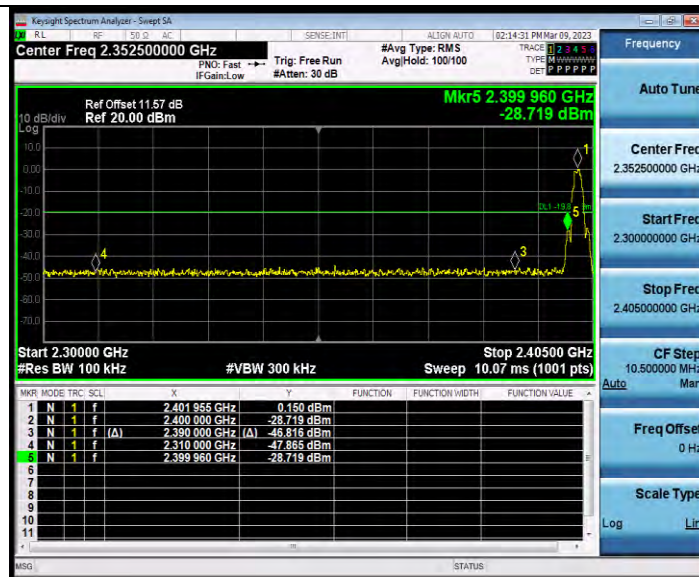


BLE_2M_Ant1_Low_2402

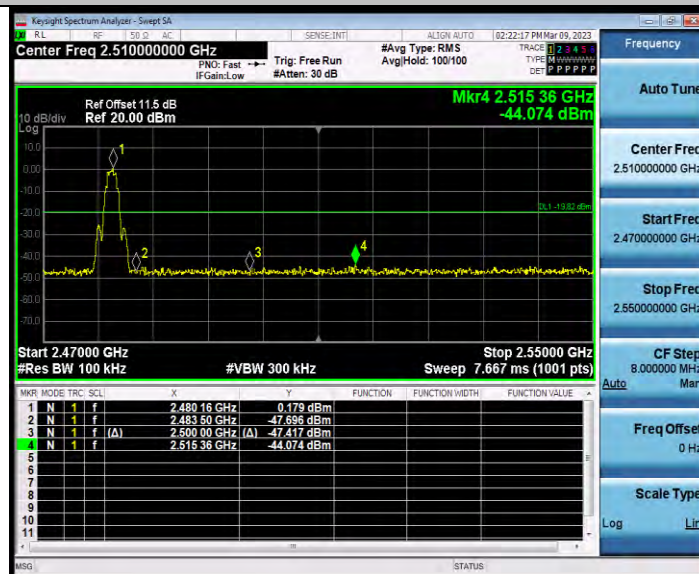


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Test Report No.: W7L-P23030003RF02



BLE_2M_Ant1_High_2480

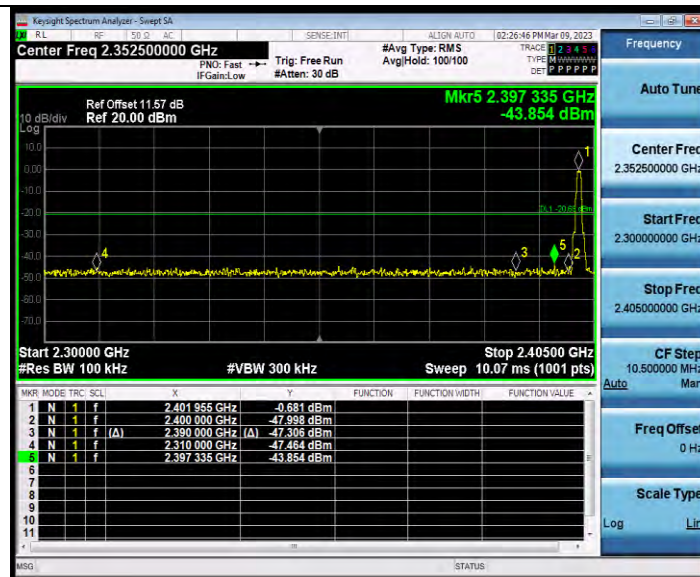


BLE_125K_Ant1_Low_2402

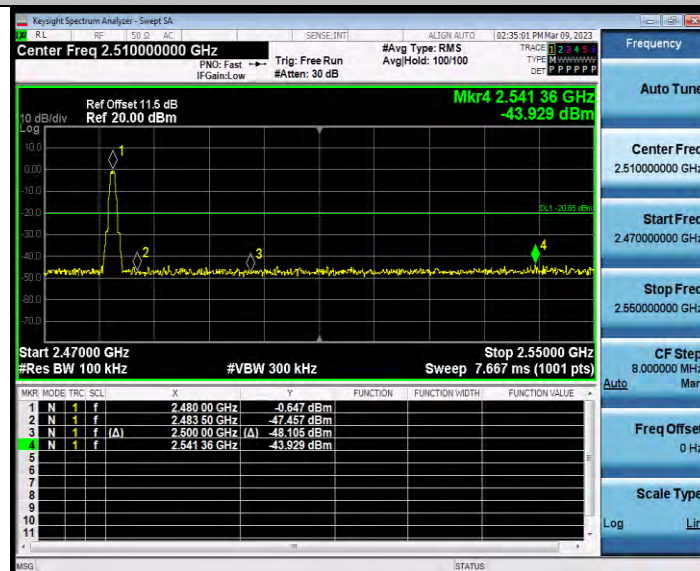


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Test Report No.: W7L-P23030003RF02



BLE_125K_Ant1_High_2480

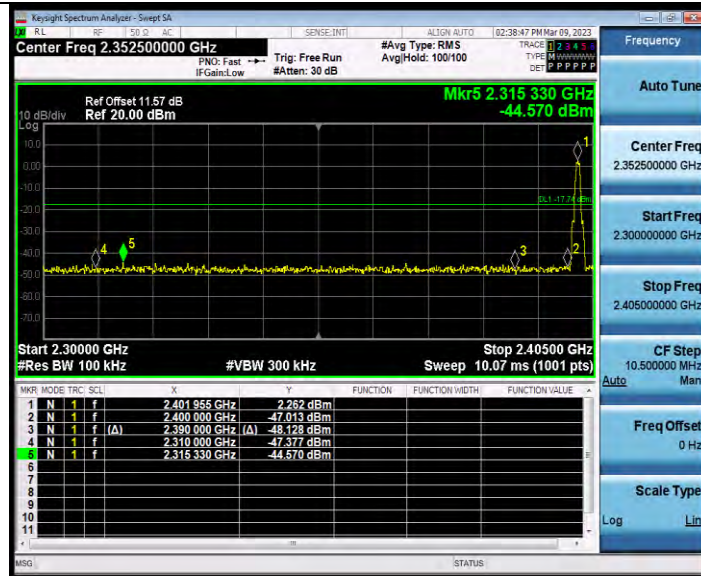


BLE_500K_Ant1_Low_2402

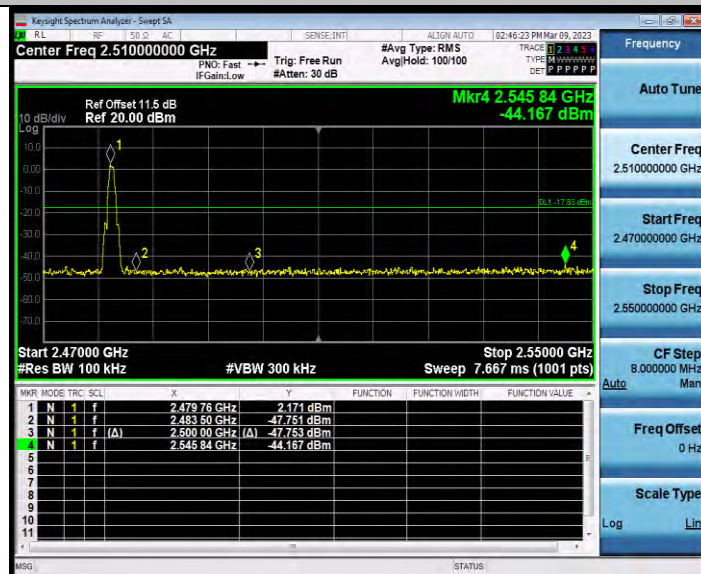


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VERITAS

Test Report No.: W7L-P23030003RF02



BLE_500K_Ant1_High_2480



**CONDUCTED SPURIOUS EMISSION****TEST RESULT**

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	2.58	2.58	---	PASS
			30~1000	2.58	-53.15	≤-17.42	PASS
			1000~26500	2.58	-34.09	≤-17.42	PASS
		2440	Reference	2.69	2.69	---	PASS
			30~1000	2.69	-53.81	≤-17.31	PASS
			1000~26500	2.69	-35.02	≤-17.31	PASS
		2480	Reference	1.95	1.95	---	PASS
			30~1000	1.95	-53.77	≤-18.05	PASS
			1000~26500	1.95	-33.57	≤-18.05	PASS
BLE_2M	Ant1	2402	Reference	2.14	2.14	---	PASS
			30~1000	2.14	-53.41	≤-17.86	PASS
			1000~26500	2.14	-34.16	≤-17.86	PASS
		2440	Reference	-0.12	-0.12	---	PASS
			30~1000	-0.12	-53.7	≤-20.12	PASS
			1000~26500	-0.12	-34.7	≤-20.12	PASS
		2480	Reference	-0.38	-0.38	---	PASS
			30~1000	-0.38	-54.15	≤-20.38	PASS
			1000~26500	-0.38	-32.56	≤-20.38	PASS
BLE_125K	Ant1	2402	Reference	-0.91	-0.91	---	PASS
			30~1000	-0.91	-53.39	≤-20.91	PASS
			1000~26500	-0.91	-34.67	≤-20.91	PASS
		2440	Reference	-0.19	-0.19	---	PASS
			30~1000	-0.19	-54.12	≤-20.19	PASS
			1000~26500	-0.19	-33.77	≤-20.19	PASS
		2480	Reference	-0.70	-0.70	---	PASS
			30~1000	-0.70	-53.62	≤-20.7	PASS
			1000~26500	-0.70	-34.74	≤-20.7	PASS
BLE_500K	Ant1	2402	Reference	0.98	0.98	---	PASS
			30~1000	0.98	-53.34	≤-19.02	PASS



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Test Report No.: W7L-P23030003RF02

			1000~26500	0.98	-34.45	≤ -19.02	PASS
		2440	Reference	2.68	2.68	---	PASS
			30~1000	2.68	-54.1	≤ -17.32	PASS
			1000~26500	2.68	-34.53	≤ -17.32	PASS
		2480	Reference	2.12	2.12	---	PASS
			30~1000	2.12	-53.39	≤ -17.88	PASS
			1000~26500	2.12	-34.11	≤ -17.88	PASS



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Test Report No.: W7L-P23030003RF02

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-P23030003RF02



BLE_1M_Ant1_2440_0~Reference

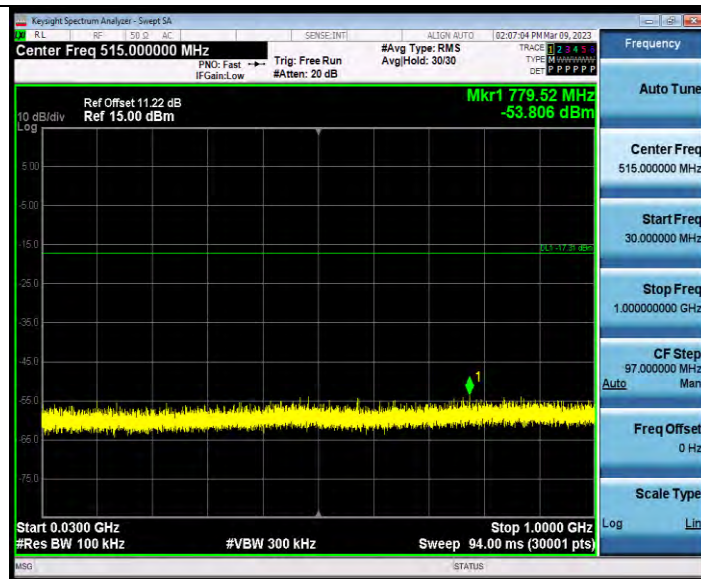


BLE_1M_Ant1_2440_30~1000



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Test Report No.: W7L-P23030003RF02



BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



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Test Report No.: W7L-P23030003RF02



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



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Test Report No.: W7L-P23030003RF02



BLE_2M_Ant1_2402_0~Reference



BLE_2M_Ant1_2402_30~1000



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Test Report No.: W7L-P23030003RF02



BLE_2M_Ant1_2402_1000~26500



BLE_2M_Ant1_2440_0~Reference



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Test Report No.: W7L-P23030003RF02



BLE_2M_Ant1_2440_30~1000



BLE_2M_Ant1_2440_1000~26500



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Test Report No.: W7L-P23030003RF02



BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



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Test Report No.: W7L-P23030003RF02



BLE_2M_Ant1_2480_1000~26500



BLE_125K_Ant1_2402_0~Reference



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Test Report No.: W7L-P23030003RF02



BLE_125K_Ant1_2402_30~1000



BLE_125K_Ant1_2402_1000~26500



BUREAU
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Test Report No.: W7L-P23030003RF02



BLE_125K_Ant1_2440_0~Reference

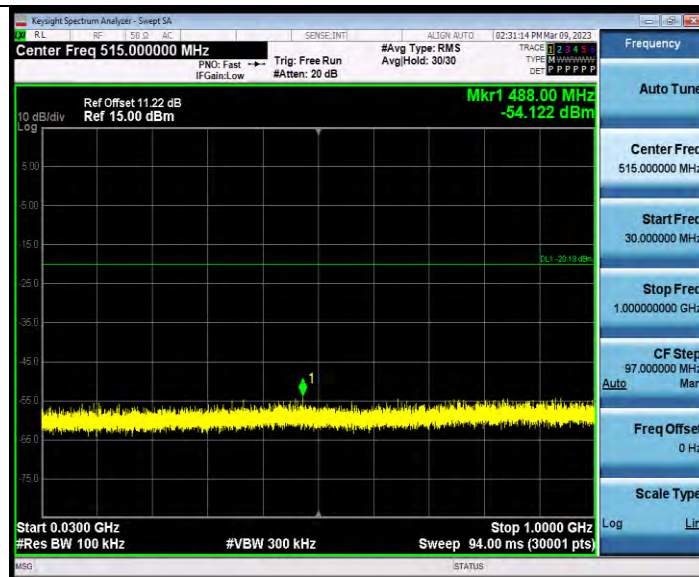


BLE_125K_Ant1_2440_30~1000



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Test Report No.: W7L-P23030003RF02



BLE_125K_Ant1_2440_1000~26500



BLE_125K_Ant1_2480_0~Reference



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Test Report No.: W7L-P23030003RF02



BLE_125K_Ant1_2480_30~1000



BLE_125K_Ant1_2480_1000~26500



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Test Report No.: W7L-P23030003RF02



BLE_500K_Ant1_2402_0~Reference



BLE_500K_Ant1_2402_30~1000



BUREAU
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Test Report No.: W7L-P23030003RF02



BLE_500K_Ant1_2402_1000~26500



BLE_500K_Ant1_2440_0~Reference



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Test Report No.: W7L-P23030003RF02



BLE_500K_Ant1_2440_30~1000



BLE_500K_Ant1_2440_1000~26500



BUREAU
VERITAS

Test Report No.: W7L-P23030003RF02



BLE_500K_Ant1_2480_0~Reference

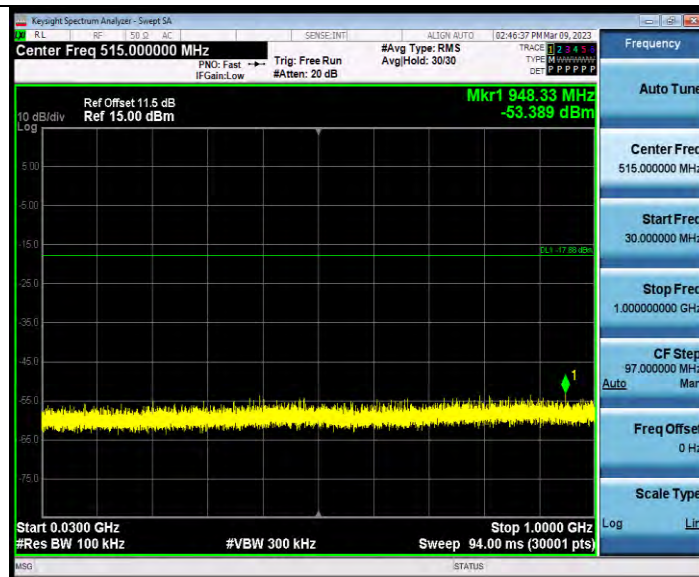


BLE_500K_Ant1_2480_30~1000



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Test Report No.: W7L-P23030003RF02



BLE_500K_Ant1_2480_1000~26500





DUTY CYCLE TEST RESULT

TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	2.12	2.50	84.80	0.72
		2440	2.13	2.50	85.20	0.70
		2480	2.13	2.50	85.20	0.70
BLE_2M	Ant1	2402	1.08	1.88	57.45	2.41
		2440	1.07	1.87	57.22	2.42
		2480	1.07	1.87	57.22	2.42
BLE_125K	Ant1	2402	1.00	1.00	100.00	0.00
		2440	1.00	1.00	100.00	0.00
		2480	17.04	17.52	97.26	0.12
BLE_500K	Ant1	2402	4.54	5.01	90.62	0.43
		2440	4.55	5.00	91.00	0.41
		2480	4.55	5.00	91.00	0.41

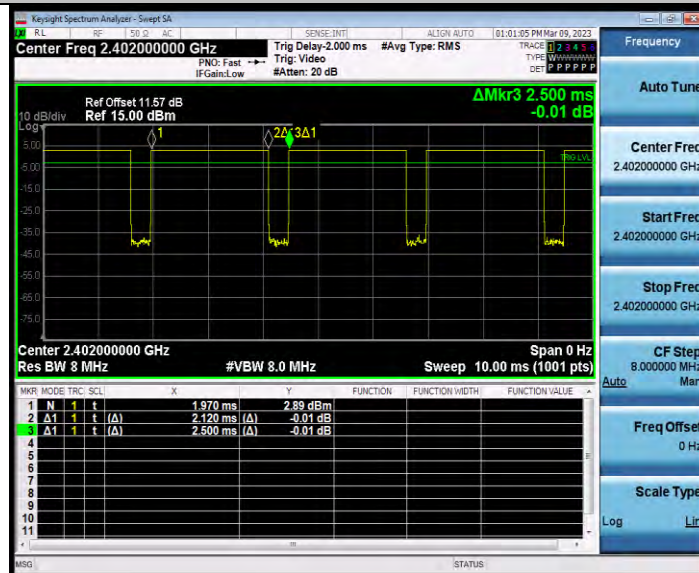


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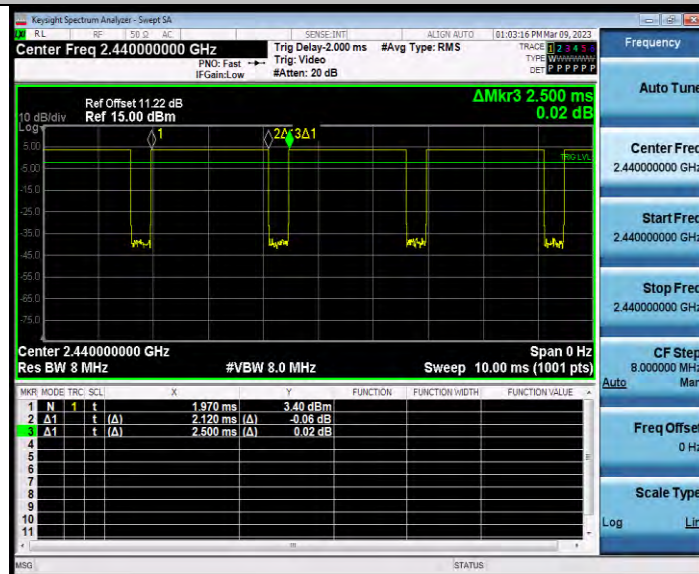
Test Report No.: W7L-P23030003RF02

TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440

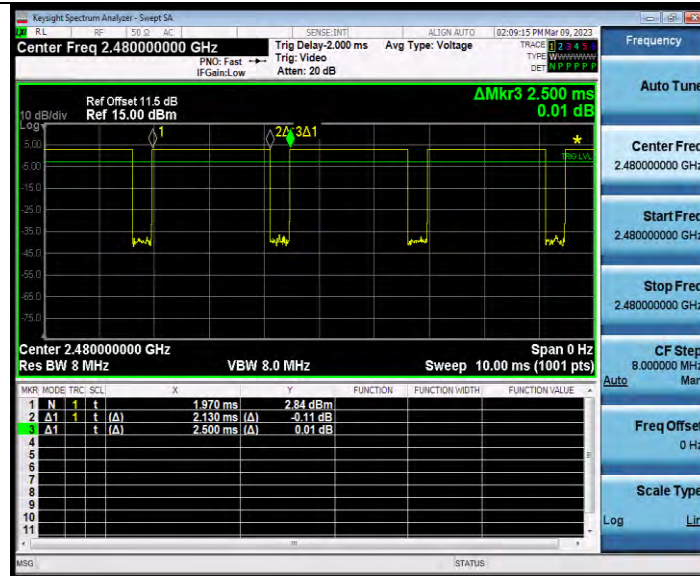


BLE_1M_Ant1_2480



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Test Report No.: W7L-P23030003RF02



BLE_2M_Ant1_2402

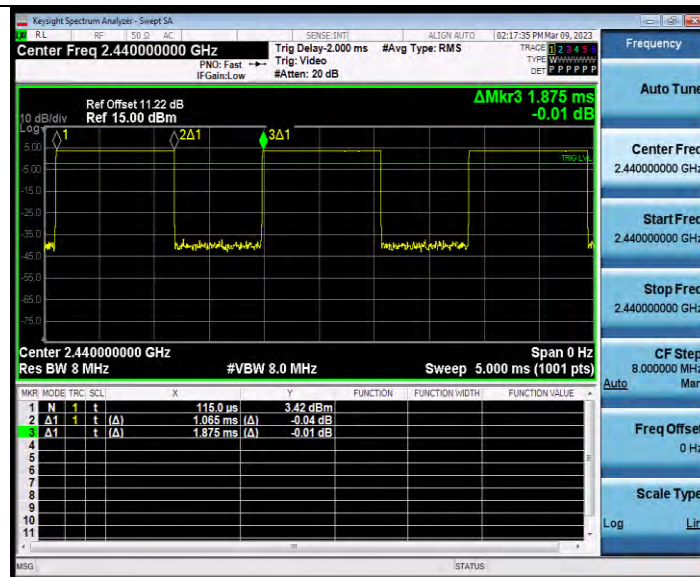


BLE_2M_Ant1_2440

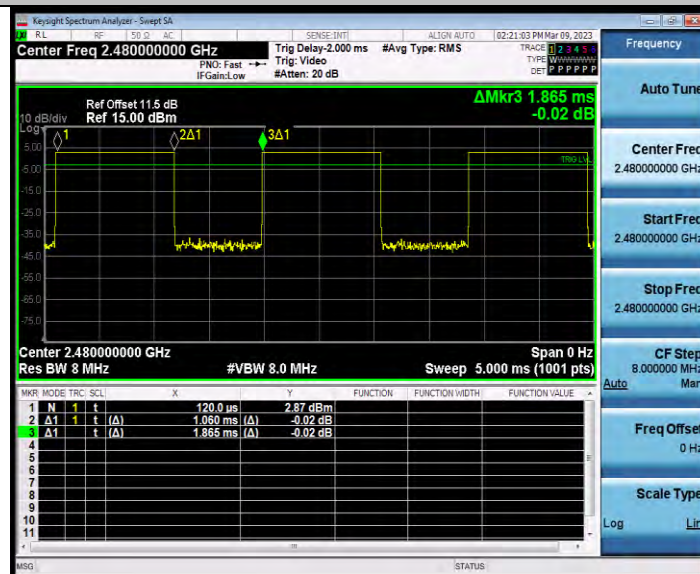


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Test Report No.: W7L-P23030003RF02



BLE_2M_Ant1_2480

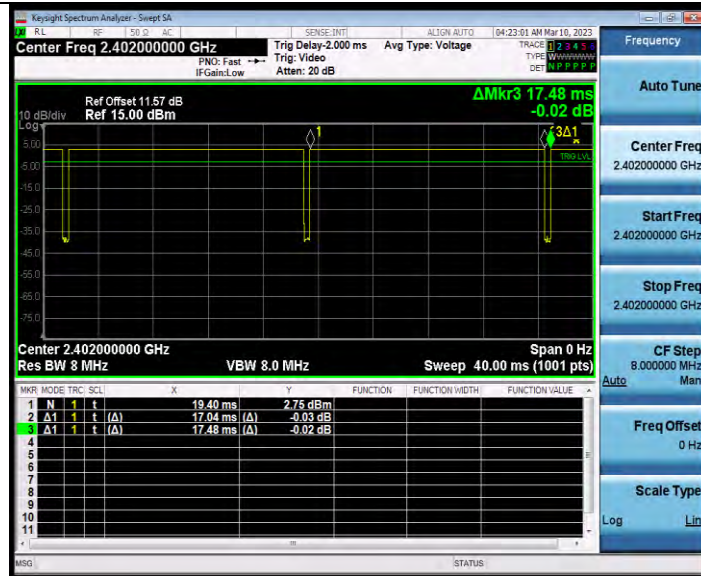


BLE_125K_Ant1_2402

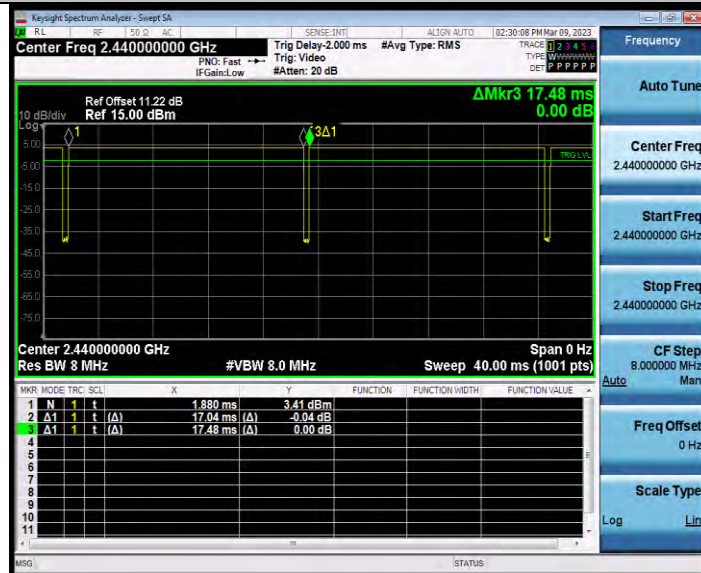


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VERITAS

Test Report No.: W7L-P23030003RF02



BLE_125K_Ant1_2440

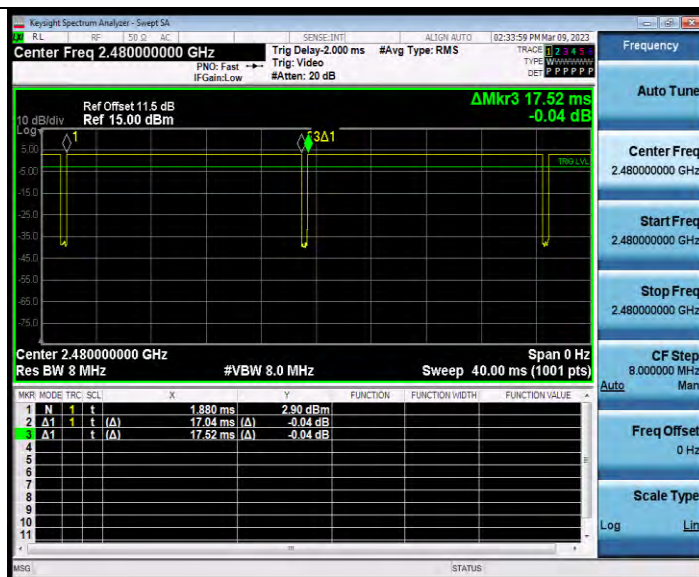


BLE_125K_Ant1_2480

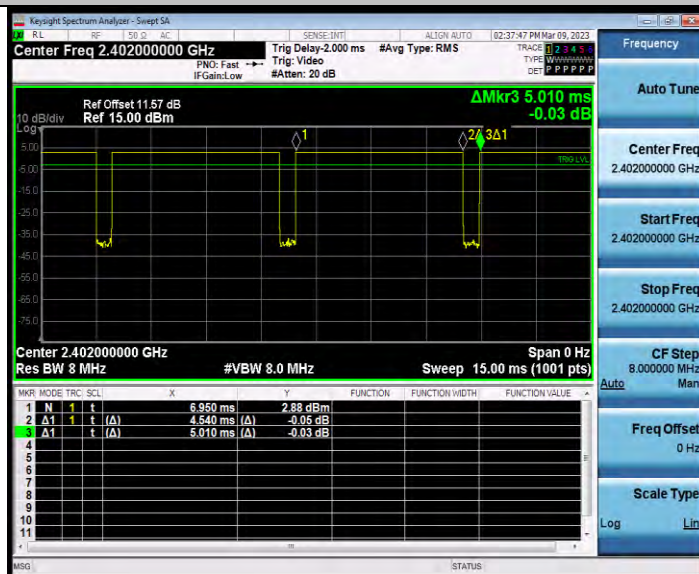


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BLE_500K_Ant1_2402

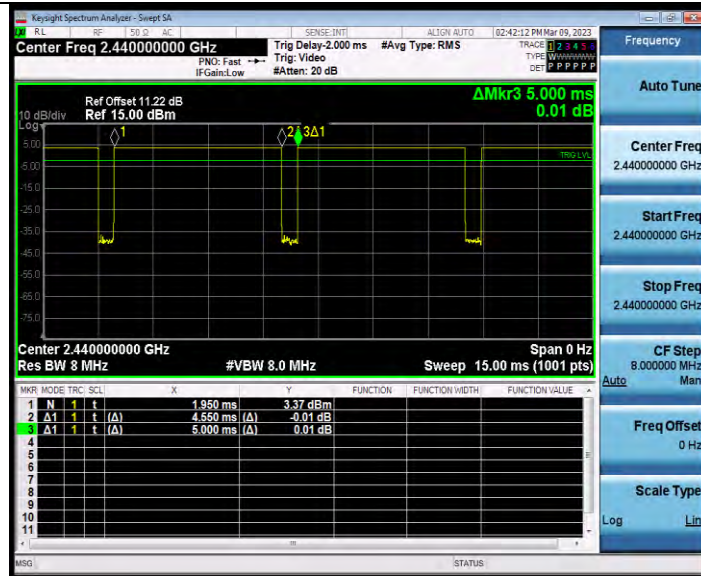


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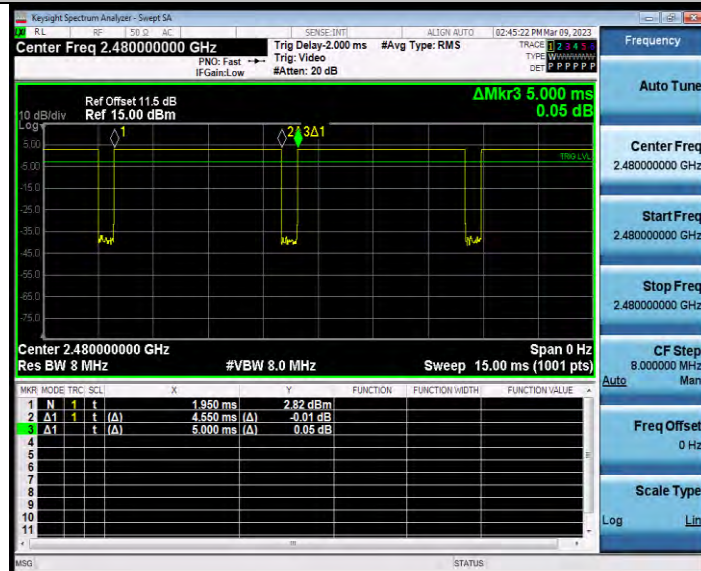


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VERITAS

Test Report No.: W7L-P23030003RF02



BLE_500K_Ant1_2480



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