



6 APPENDIX 1

WLAN 2.4G

DTS BANDWIDTH

TEST RESULT

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.720	2407.040	2416.760	0.5	PASS
		2437	10.000	2432.040	2442.040	0.5	PASS
		2462	10.000	2457.040	2467.040	0.5	PASS
11G	Ant1	2412	14.440	2404.480	2418.920	0.5	PASS
		2437	15.080	2429.440	2444.520	0.5	PASS
		2462	14.040	2455.480	2469.520	0.5	PASS
11N20SISO	Ant1	2412	15.400	2404.120	2419.520	0.5	PASS
		2437	13.440	2429.440	2442.880	0.5	PASS
		2462	15.000	2454.560	2469.560	0.5	PASS
11AX20SISO	Ant1	2412	15.120	2404.480	2419.600	0.5	PASS
		2437	17.680	2428.400	2446.080	0.5	PASS
		2462	16.280	2453.200	2469.480	0.5	PASS



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Test Report No.: W7L-P23080022RF01

TEST GRAPHS

11B_Ant1_2412



11B_Ant1_2437



11B_Ant1_2462



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VERITAS

Test Report No.: W7L-P23080022RF01



11G_Ant1_2412



11G_Ant1_2437



11G_Ant1_2462

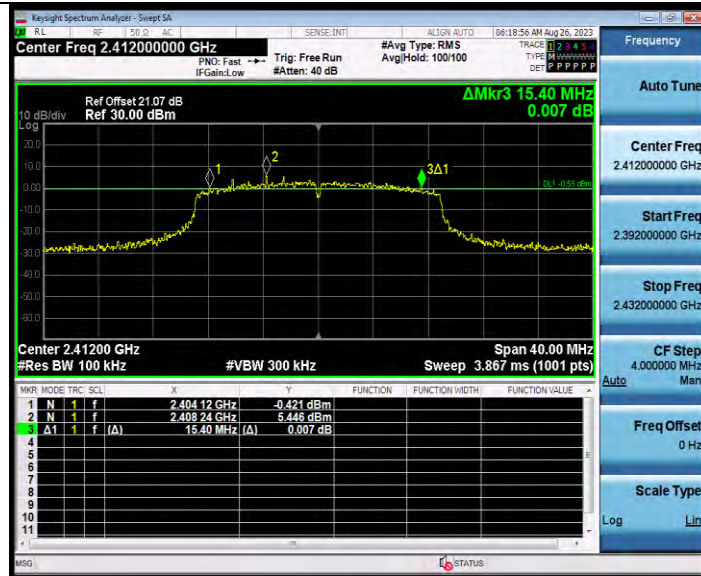


11N20SISO_Ant1_2412



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Test Report No.: W7L-P23080022RF01



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



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Test Report No.: W7L-P23080022RF01



11AX20SISO_Ant1_2412



11AX20SISO_Ant1_2437

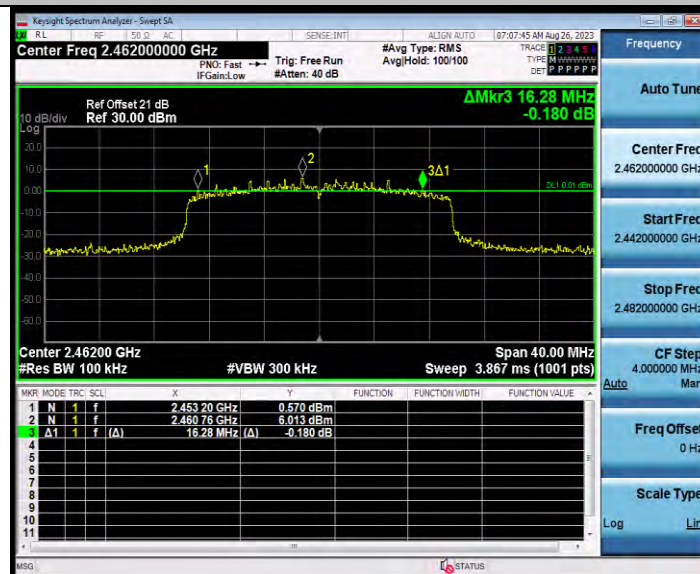


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Test Report No.: W7L-P23080022RF01



11AX20SISO_Ant1_2462





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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	15.292	2404.3527	2419.6447	---	---
		2437	15.357	2429.3499	2444.7069	---	---
		2462	15.350	2454.3635	2469.7135	---	---
11G	Ant1	2412	16.962	2403.4601	2420.4221	---	---
		2437	16.979	2428.4549	2445.4339	---	---
		2462	17.013	2453.4448	2470.4578	---	---
11N20SISO	Ant1	2412	17.979	2402.9857	2420.9647	---	---
		2437	18.011	2427.9664	2445.9774	---	---
		2462	17.956	2453.0121	2470.9681	---	---
11AX20SISO	Ant1	2412	18.744	2402.6609	2421.4049	---	---
		2437	18.816	2427.6138	2446.4298	---	---
		2462	18.818	2452.6375	2471.4555	---	---

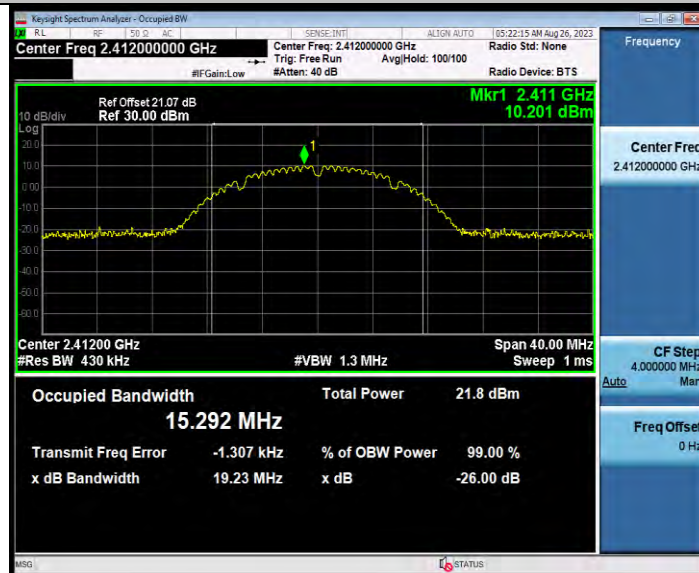


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VERITAS

Test Report No.: W7L-P23080022RF01

TEST GRAPHS

11B_Ant1_2412



11B_Ant1_2437

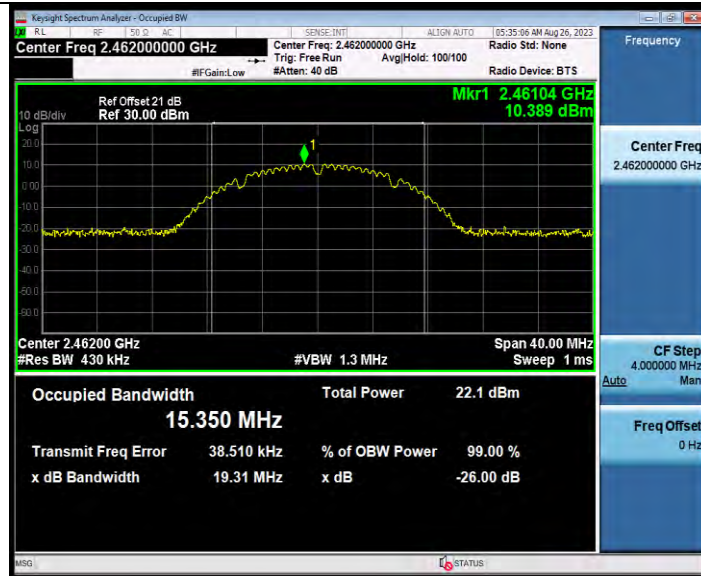


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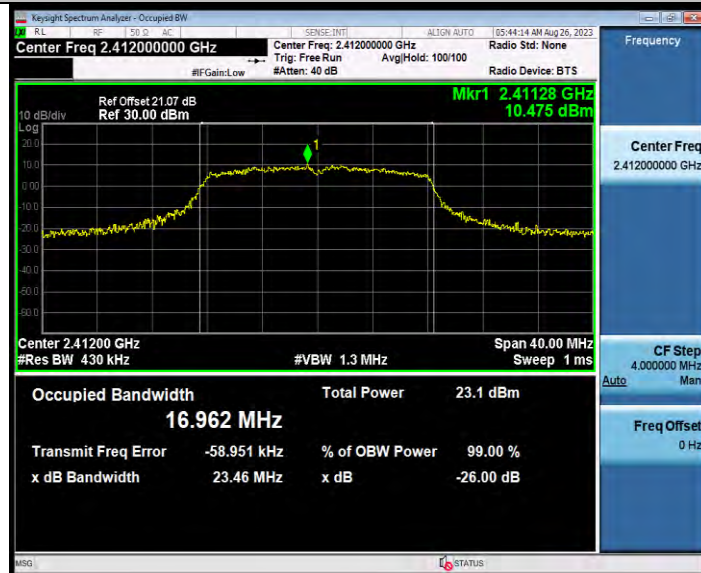


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Test Report No.: W7L-P23080022RF01



11G_Ant1_2412

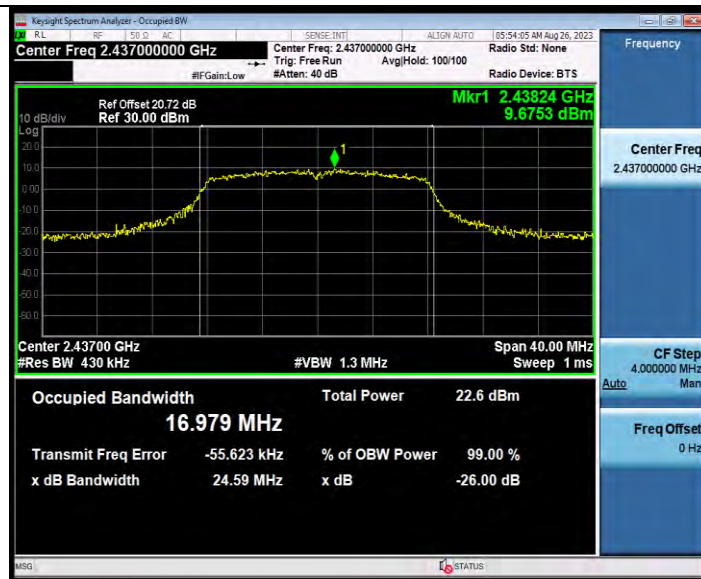


11G_Ant1_2437

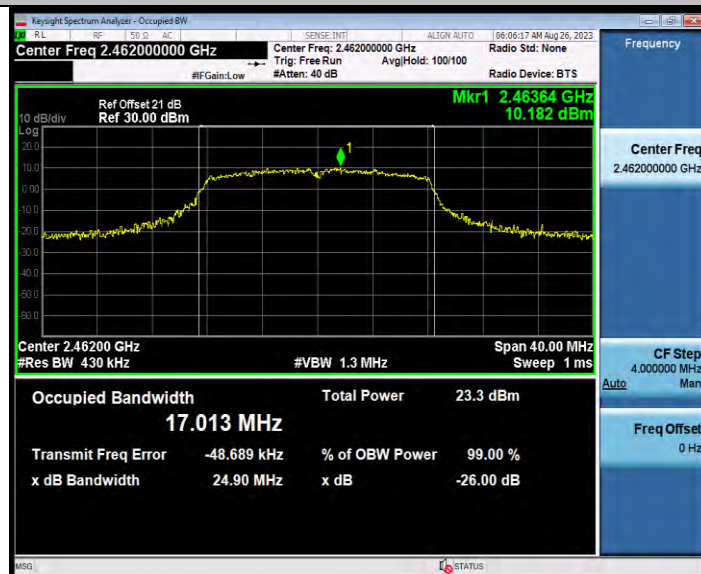


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Test Report No.: W7L-P23080022RF01



11G_Ant1_2462

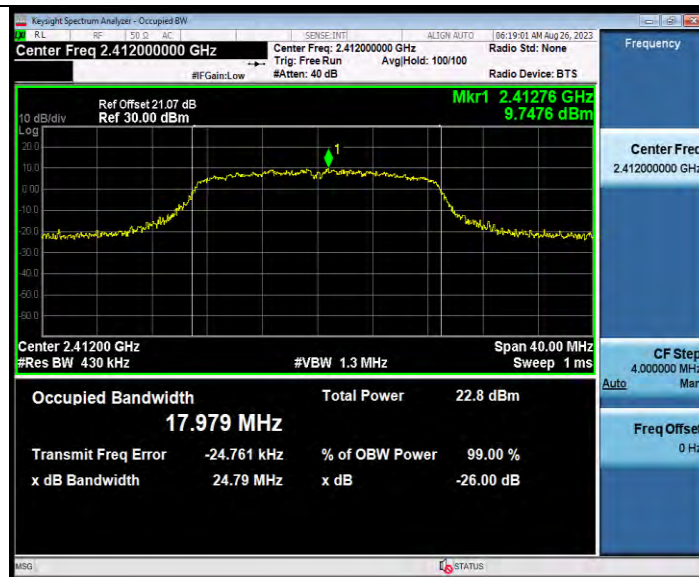


11N20SISO_Ant1_2412



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VERITAS

Test Report No.: W7L-P23080022RF01



11N20SISO_Ant1_2437

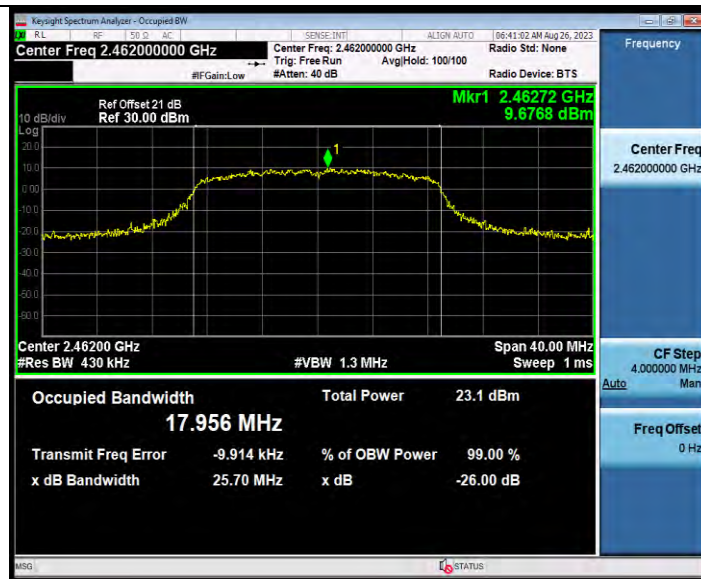


11N20SISO_Ant1_2462



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Test Report No.: W7L-P23080022RF01



11AX20SISO_Ant1_2412

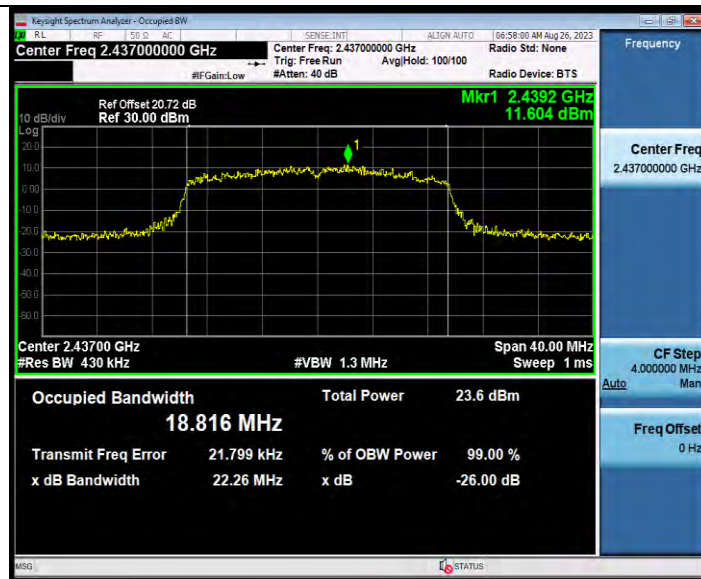


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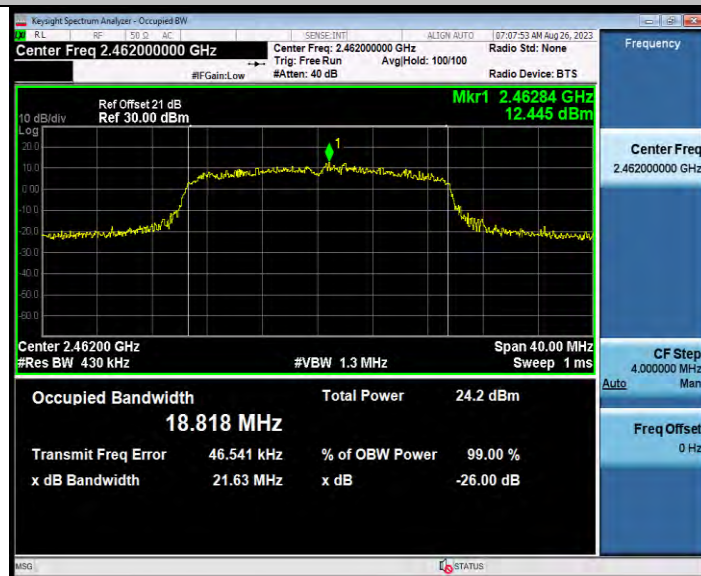


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VERITAS

Test Report No.: W7L-P23080022RF01



11AX20SISO_Ant1_2462



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

TestMode	TX Mod.	Frequency [MHz]	Average power [dBm]	Peak power [dBm]	MAX Peak power [mw]	Limit [dBm]	MAX EIRP [dBm]	MAX EIRP [mw]	EIRP Limit [dBm]	Verdict
11B	SISO	2412	17.86	19.94	98.63	≤30.00	23.04	201.37	≤36.00	PASS
		2437	18.03	19.99	99.77	≤30.00	23.09	203.70	≤36.00	PASS
		2462	18.23	20.22	105.20	≤30.00	23.32	214.78	≤36.00	PASS
11g	SISO	2412	16.07	24.51	282.49	≤30.00	27.61	576.77	≤36.00	PASS
		2437	16.12	24.49	281.19	≤30.00	27.59	574.12	≤36.00	PASS
		2462	16.30	24.47	279.90	≤30.00	27.57	571.48	≤36.00	PASS
11N20	SISO	2412	15.94	24.06	254.68	≤30.00	27.16	520.00	≤36.00	PASS
		2437	15.99	24.03	252.93	≤30.00	27.13	516.42	≤36.00	PASS
		2462	16.18	24.06	254.68	≤30.00	27.16	520.00	≤36.00	PASS
11AX20	SISO	2412	15.76	24.13	258.82	≤30.00	27.23	528.45	≤36.00	PASS
		2437	15.80	24.12	258.23	≤30.00	27.22	527.23	≤36.00	PASS
		2462	16.00	24.18	261.82	≤30.00	27.28	534.56	≤36.00	PASS



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VERITAS

Test Report No.: W7L-P23080022RF01

MAXIMUM POWER SPECTRAL DENSITY

TEST RESULT

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-5.8	≤8.00	PASS
		2437	-6.42	≤8.00	PASS
		2462	-6.26	≤8.00	PASS
11G	Ant1	2412	-8.94	≤8.00	PASS
		2437	-9.35	≤8.00	PASS
		2462	-8.72	≤8.00	PASS
11N20SISO	Ant1	2412	-8.78	≤8.00	PASS
		2437	-9.2	≤8.00	PASS
		2462	-8.51	≤8.00	PASS
11AX20SISO	Ant1	2412	-7.92	≤8.00	PASS
		2437	-9.06	≤8.00	PASS
		2462	-7.84	≤8.00	PASS



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VERITAS

Test Report No.: W7L-P23080022RF01

TEST GRAPHS

11B_Ant1_2412



11B_Ant1_2437

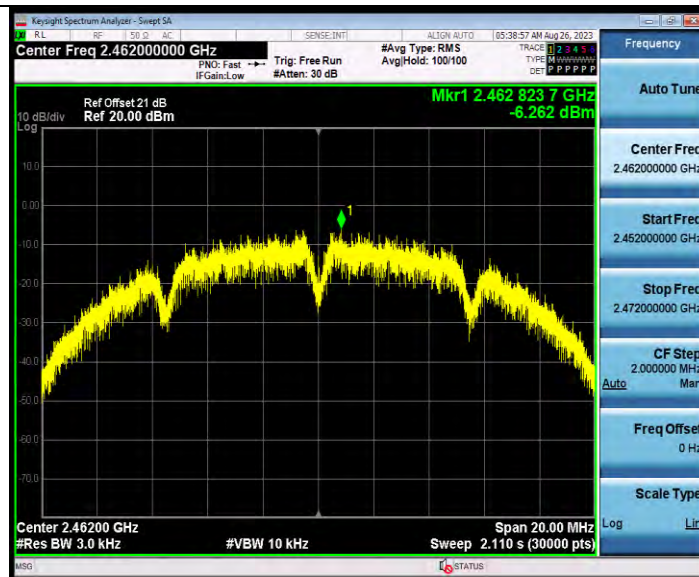


11B_Ant1_2462

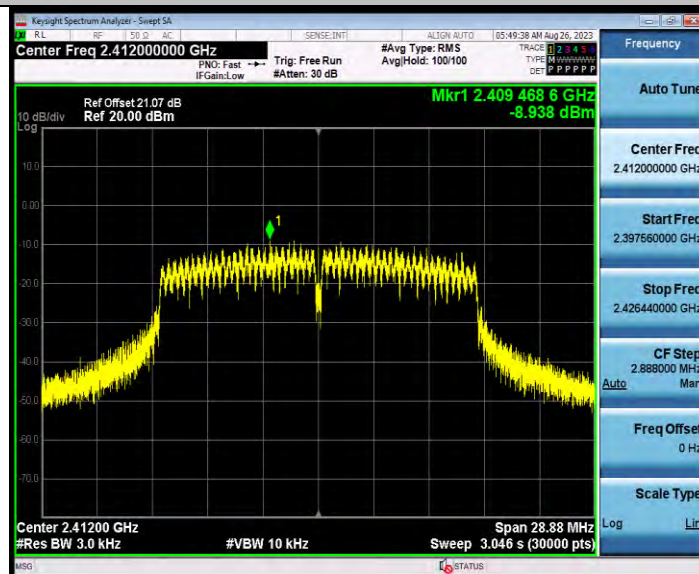


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Test Report No.: W7L-P23080022RF01



11G_Ant1_2412

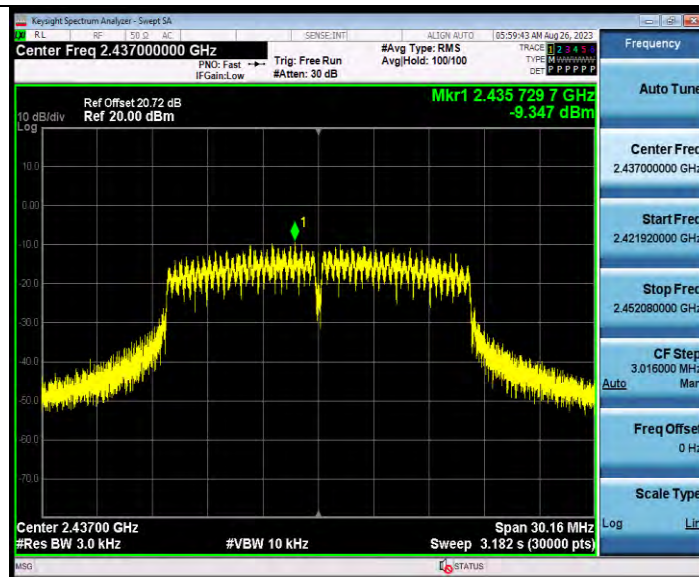


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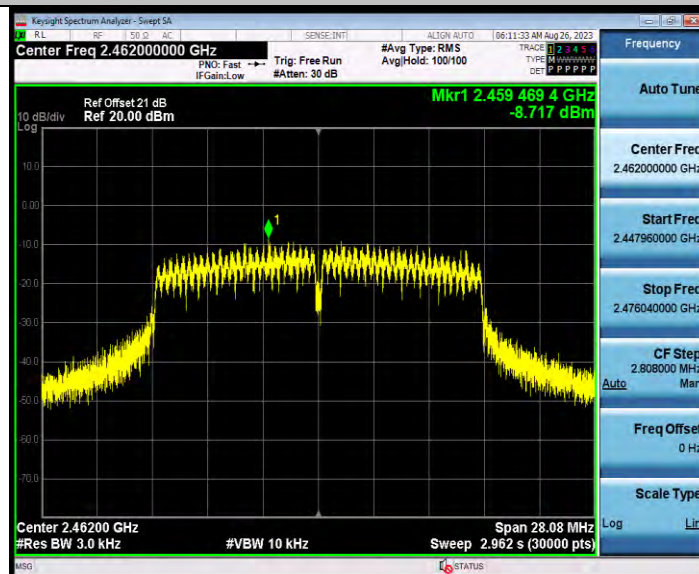


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Test Report No.: W7L-P23080022RF01



11G_Ant1_2462

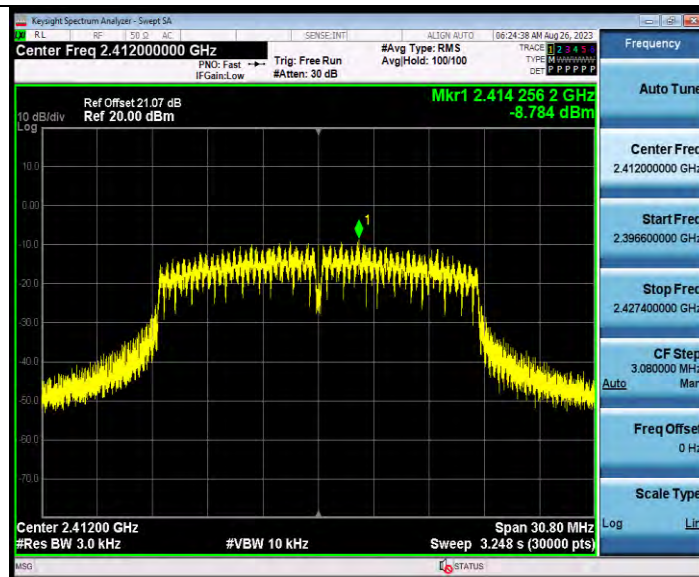


11N20SISO_Ant1_2412

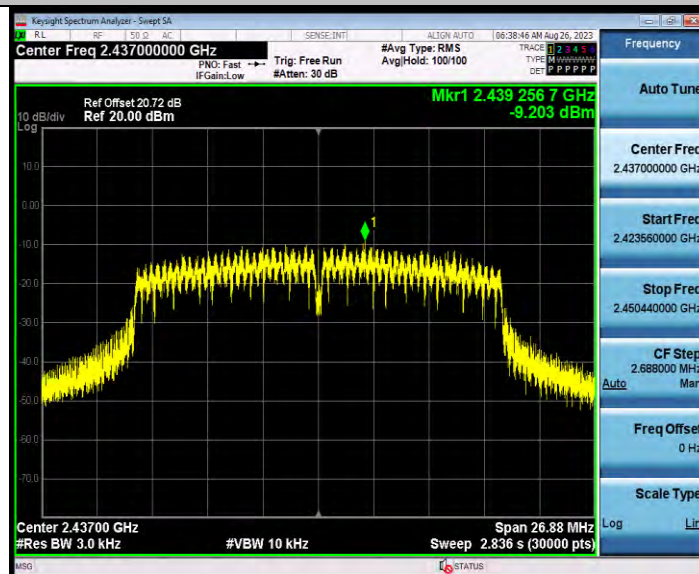


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11N20SISO_Ant1_2437

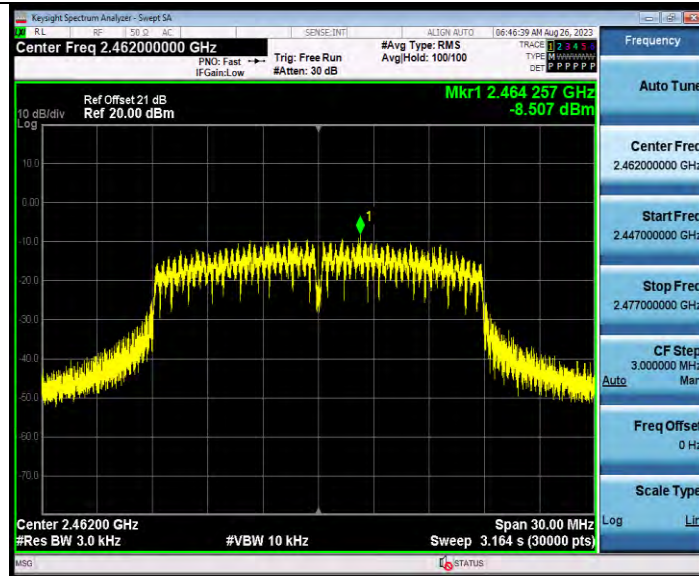


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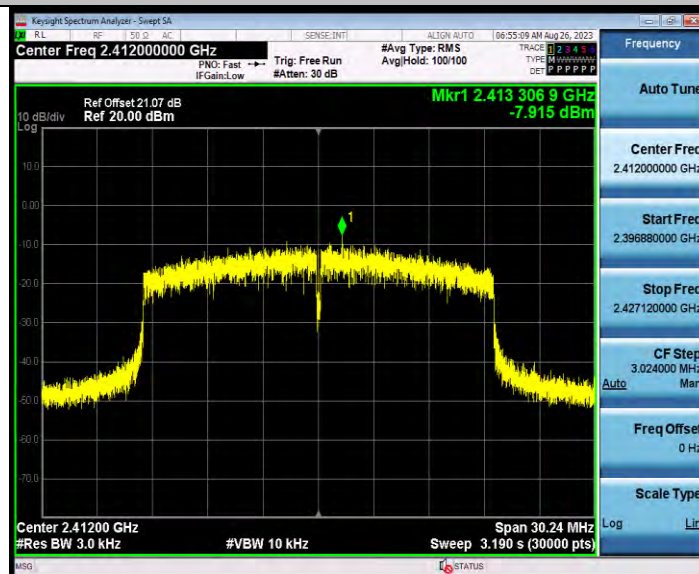


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Test Report No.: W7L-P23080022RF01



11AX20SISO_Ant1_2412

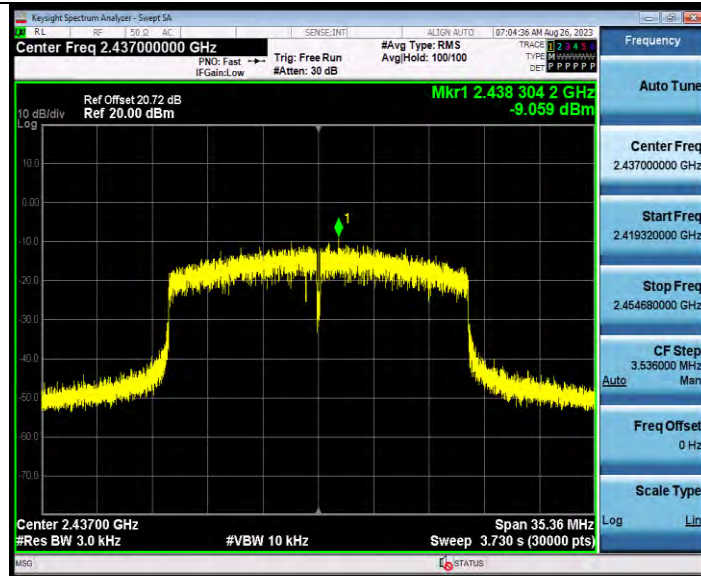


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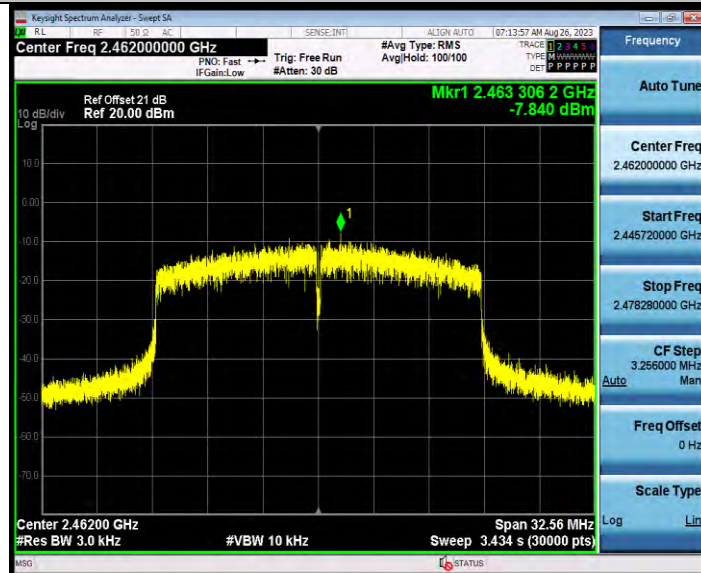


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Test Report No.: W7L-P23080022RF01



11AX20SISO_Ant1_2462





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Test Report No.: W7L-P23080022RF01

BAND EDGE MEASUREMENTS

TEST RESULT

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	8.56	-32.49	≤ -11.45	PASS
		High	2462	8.66	-33.69	≤ -11.35	PASS
11G	Ant1	Low	2412	6.47	-24.34	≤ -13.53	PASS
		High	2462	6.70	-32.98	≤ -13.3	PASS
11N20SISO	Ant1	Low	2412	6.61	-24.69	≤ -13.39	PASS
		High	2462	6.26	-33.17	≤ -13.74	PASS
11AX20SISO	Ant1	Low	2412	5.99	-26.62	≤ -14.01	PASS
		High	2462	6.85	-33.87	≤ -13.15	PASS



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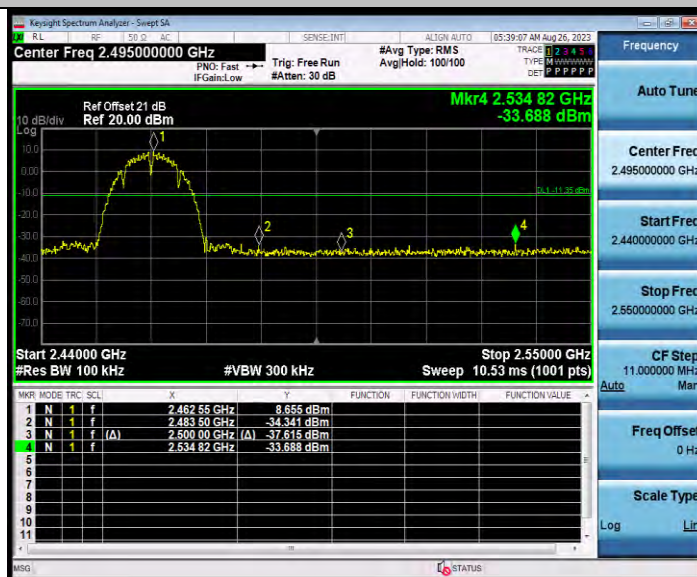
Test Report No.: W7L-P23080022RF01

TEST GRAPHS

11B_Ant1_Low_2412



11B_Ant1_High_2462



11G_Ant1_Low_2412

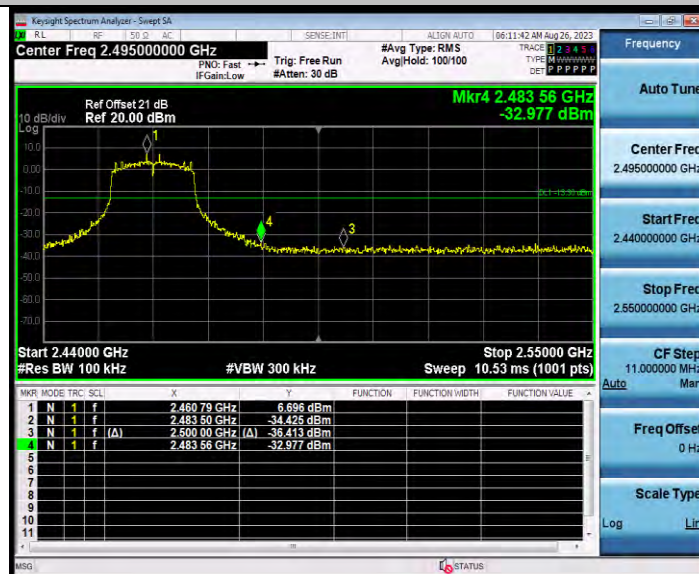


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Test Report No.: W7L-P23080022RF01



11G_Ant1_High_2462



11N20SISO_Ant1_Low_2412

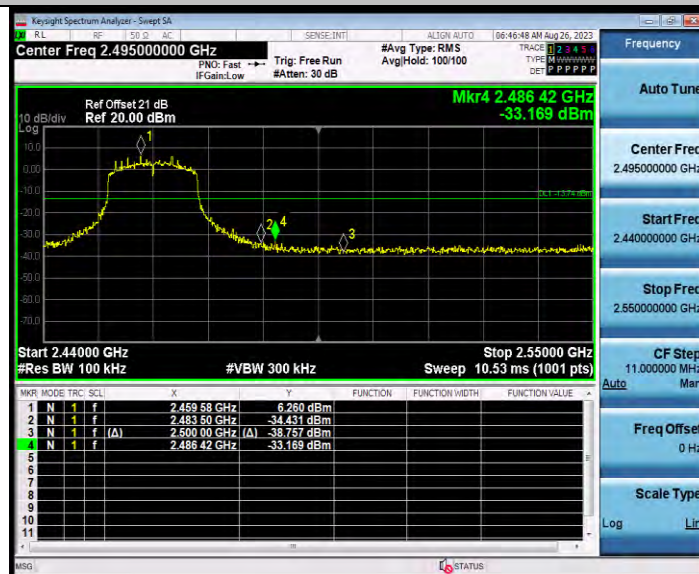


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Test Report No.: W7L-P23080022RF01



11N20SISO_Ant1_High_2462



11AX20SISO_Ant1_Low_2412



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Test Report No.: W7L-P23080022RF01



11AX20SISO_Ant1_High_2462





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Test Report No.: W7L-P23080022RF01

CONDUCTED SPURIOUS EMISSION

TEST RESULT

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	8.33	8.33	---	PASS
			30~1000	8.33	-44.47	≤-11.67	PASS
			1000~26500	8.33	-24.17	≤-11.67	PASS
		2437	Reference	7.21	7.21	---	PASS
			30~1000	7.21	-43.24	≤-12.79	PASS
			1000~26500	7.21	-25.48	≤-12.79	PASS
		2462	Reference	8.68	8.68	---	PASS
			30~1000	8.68	-43.63	≤-11.32	PASS
			1000~26500	8.68	-24.75	≤-11.32	PASS
11G	Ant1	2412	Reference	5.66	5.66	---	PASS
			30~1000	5.66	-43.82	≤-14.34	PASS
			1000~26500	5.66	-25.11	≤-14.34	PASS
		2437	Reference	2.84	2.84	---	PASS
			30~1000	2.84	-44.26	≤-17.16	PASS
			1000~26500	2.84	-24.04	≤-17.16	PASS
		2462	Reference	3.37	3.37	---	PASS
			30~1000	3.37	-43.45	≤-16.63	PASS
			1000~26500	3.37	-24.49	≤-16.63	PASS
11N20SISO	Ant1	2412	Reference	6.13	6.13	---	PASS
			30~1000	6.13	-42.86	≤-13.87	PASS
			1000~26500	6.13	-24.44	≤-13.87	PASS
		2437	Reference	3.06	3.06	---	PASS
			30~1000	3.06	-43.58	≤-16.94	PASS
			1000~26500	3.06	-24.68	≤-16.94	PASS
		2462	Reference	6.77	6.77	---	PASS
			30~1000	6.77	-43.5	≤-13.23	PASS
			1000~26500	6.77	-24.05	≤-13.23	PASS
11AX20SISO	Ant1	2412	Reference	4.12	4.12	---	PASS
			30~1000	4.12	-43.79	≤-15.88	PASS



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			1000~26500	4.12	-24.74	≤-15.88	PASS
		2437	Reference	3.40	3.40	---	PASS
			30~1000	3.40	-44.38	≤-16.6	PASS
			1000~26500	3.40	-25.11	≤-16.6	PASS
		2462	Reference	5.33	5.33	---	PASS
			30~1000	5.33	-44.33	≤-14.67	PASS
			1000~26500	5.33	-23.92	≤-14.67	PASS



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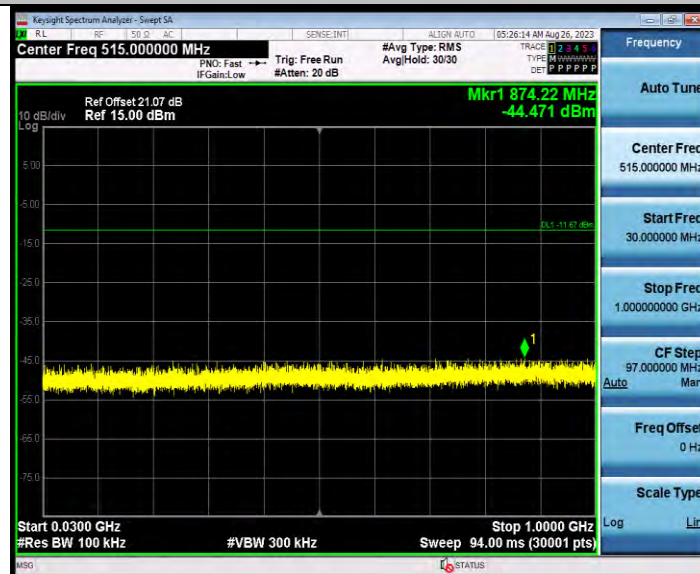
Test Report No.: W7L-P23080022RF01

TEST GRAPHS

11B_Ant1_2412_0~Reference



11B_Ant1_2412_30~1000



11B_Ant1_2412_1000~26500



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Test Report No.: W7L-P23080022RF01



11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000



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Test Report No.: W7L-P23080022RF01



11B_Ant1_2437_1000~26500



11B_Ant1_2462_0~Reference



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Test Report No.: W7L-P23080022RF01



11B_Ant1_2462_30~1000



11B_Ant1_2462_1000~26500



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Test Report No.: W7L-P23080022RF01



11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000



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Test Report No.: W7L-P23080022RF01



11G_Ant1_2412_1000~26500



11G_Ant1_2437_0~Reference



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Test Report No.: W7L-P23080022RF01



11G_Ant1_2437_30~1000



11G_Ant1_2437_1000~26500

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11G_Ant1_2462_0~Reference

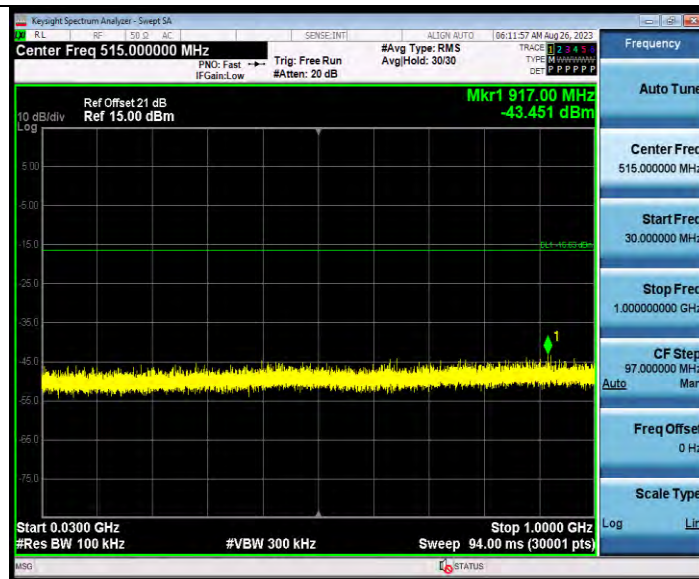


11G_Ant1_2462_30~1000



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Test Report No.: W7L-P23080022RF01



11G_Ant1_2462_1000~26500



11N20SISO_Ant1_2412_0~Reference



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Test Report No.: W7L-P23080022RF01



11N20SISO_Ant1_2412_30~1000



11N20SISO_Ant1_2412_1000~26500



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VERITAS

Test Report No.: W7L-P23080022RF01



11N20SISO_Ant1_2437_0~Reference

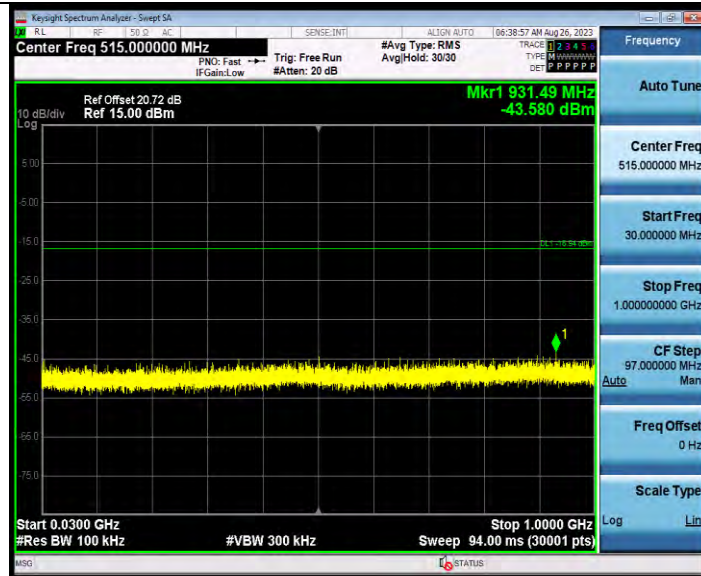


11N20SISO_Ant1_2437_30~1000



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Test Report No.: W7L-P23080022RF01



11N20SISO_Ant1_2437_1000~26500



11N20SISO_Ant1_2462_0~Reference



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Test Report No.: W7L-P23080022RF01



11N20SISO_Ant1_2462_30~1000



11N20SISO_Ant1_2462_1000~26500



BUREAU
VERITAS

Test Report No.: W7L-P23080022RF01



11AX20SISO_Ant1_2412_0~Reference



11AX20SISO_Ant1_2412_30~1000



BUREAU
VERITAS

Test Report No.: W7L-P23080022RF01



11AX20SISO_Ant1_2412_1000~26500



11AX20SISO_Ant1_2437_0~Reference



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Test Report No.: W7L-P23080022RF01



11AX20SISO_Ant1_2437_30~1000



11AX20SISO_Ant1_2437_1000~26500



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Test Report No.: W7L-P23080022RF01



11AX20SISO_Ant1_2462_0~Reference

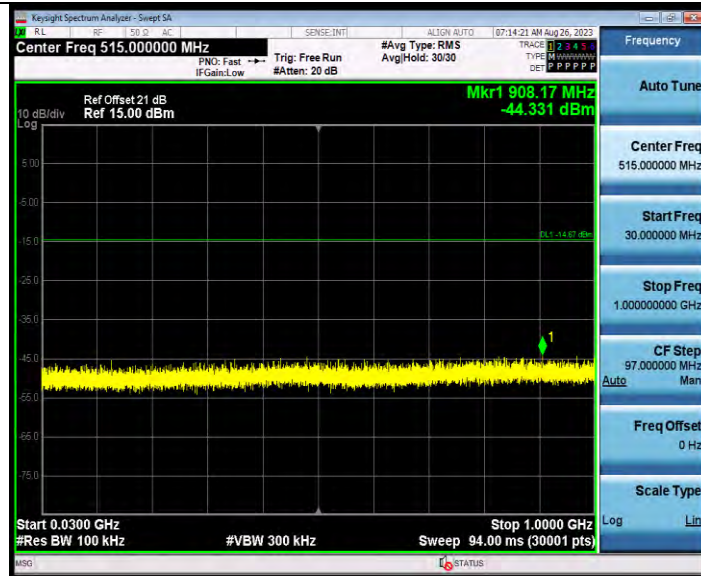


11AX20SISO_Ant1_2462_30~1000



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Test Report No.: W7L-P23080022RF01



11AX20SISO_Ant1_2462_1000~26500





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VERITAS

Test Report No.: W7L-P23080022RF01

DUTY CYCLE

TEST RESULT

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	8.19	8.21	99.76	0.01
		2437	8.19	8.21	99.76	0.01
		2462	8.19	8.21	99.76	0.01
11G	Ant1	2412	1.36	1.37	99.27	0.03
		2437	1.36	1.38	98.55	0.06
		2462	1.36	1.37	99.27	0.03
11N20SISO	Ant1	2412	1.27	1.29	98.45	0.07
		2437	1.27	1.29	98.45	0.07
		2462	1.27	1.29	98.45	0.07
11AX20SISO	Ant1	2412	0.98	0.99	98.99	0.04
		2437	0.98	1.00	98.00	0.09
		2462	0.98	1.00	98.00	0.09

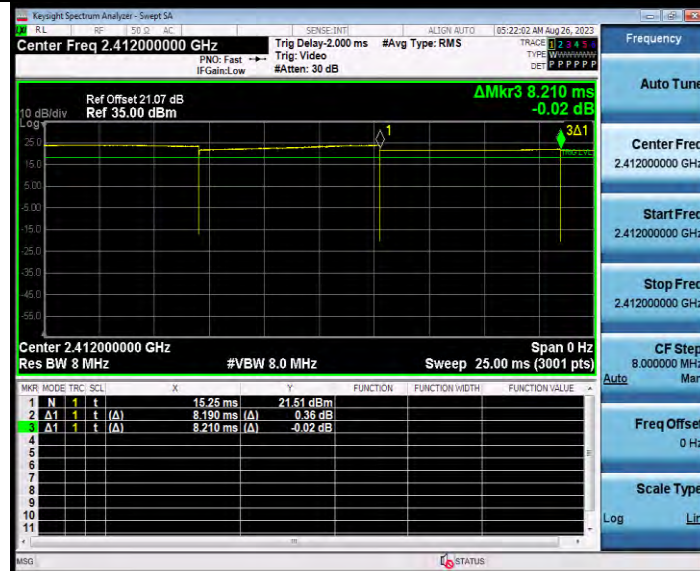


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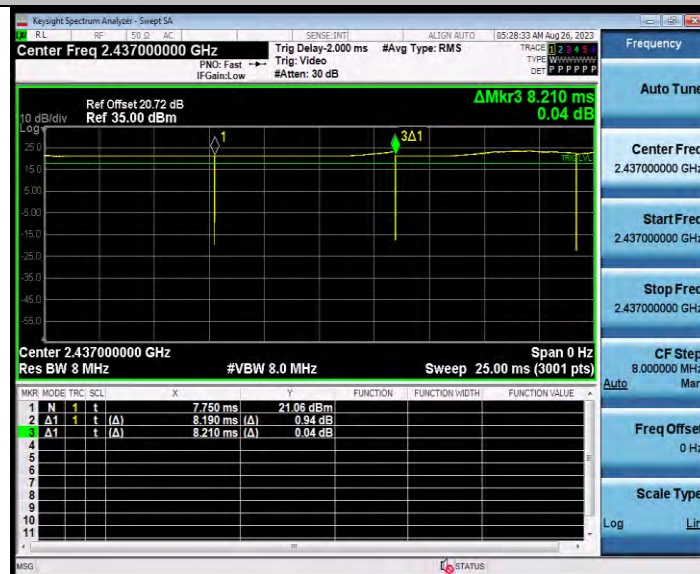
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TEST GRAPHS

11B_Ant1_2412



11B_Ant1_2437

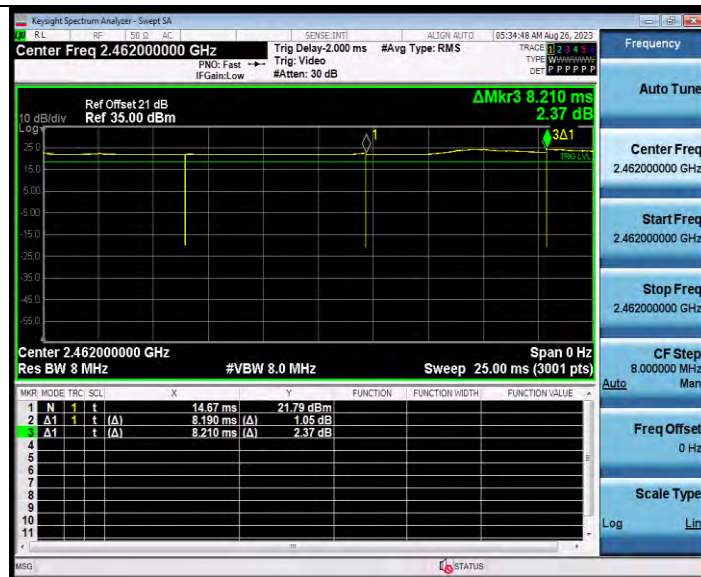


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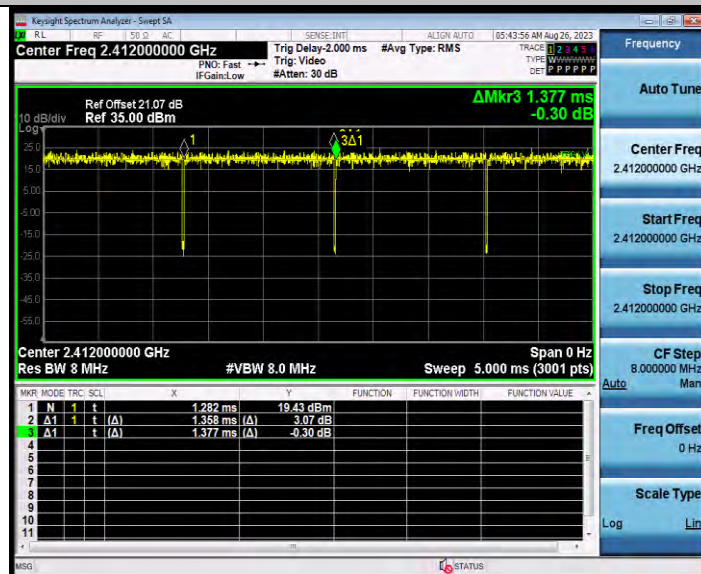


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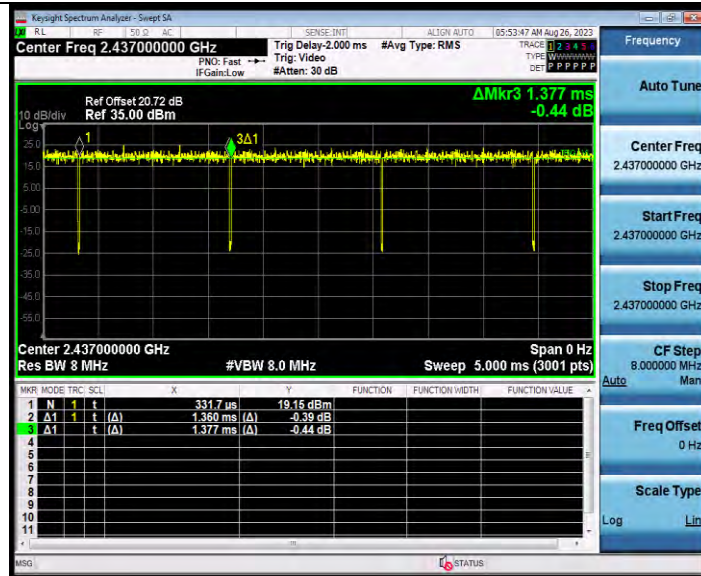


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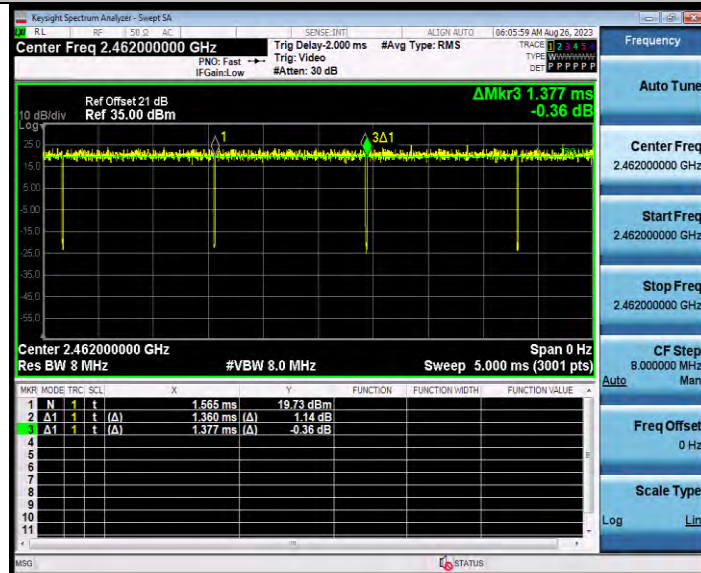


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Test Report No.: W7L-P23080022RF01



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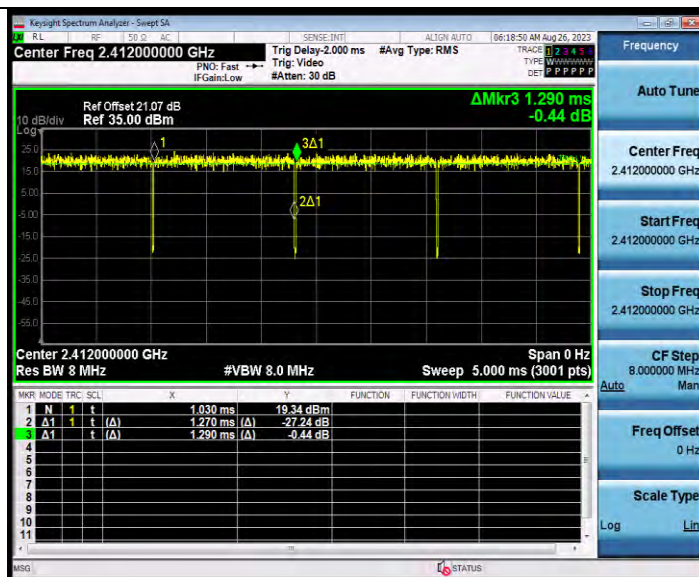


11N20SISO_Ant1_2412

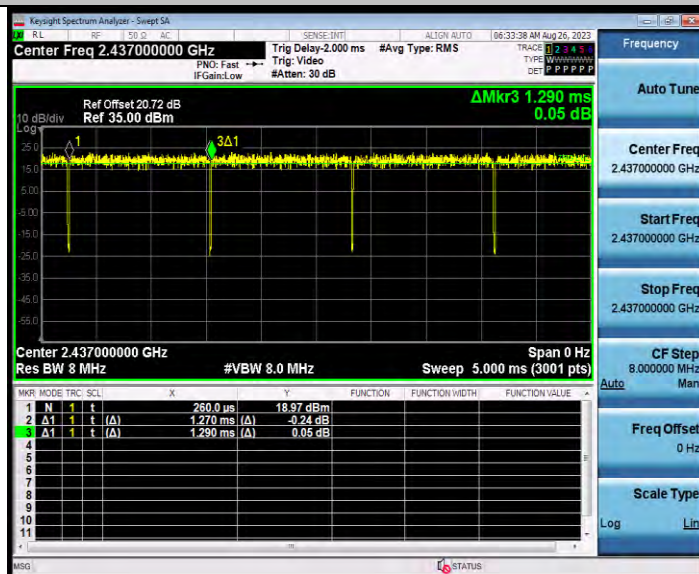


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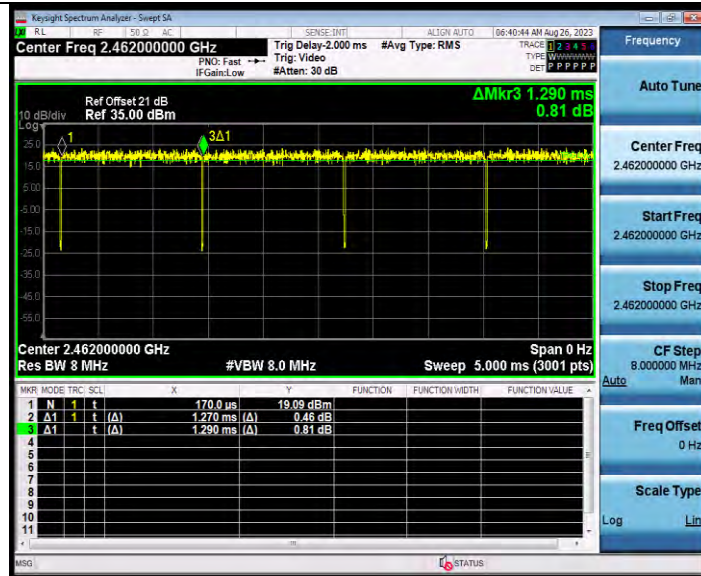


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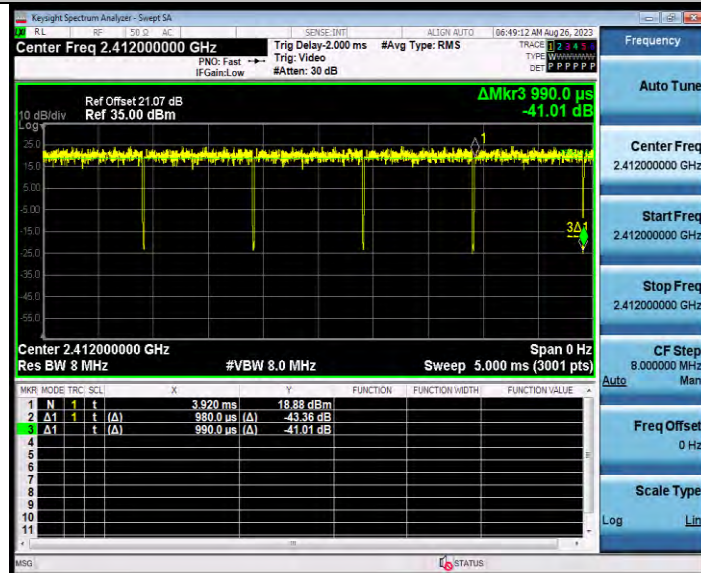


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Test Report No.: W7L-P23080022RF01



11AX20SISO_Ant1_2412

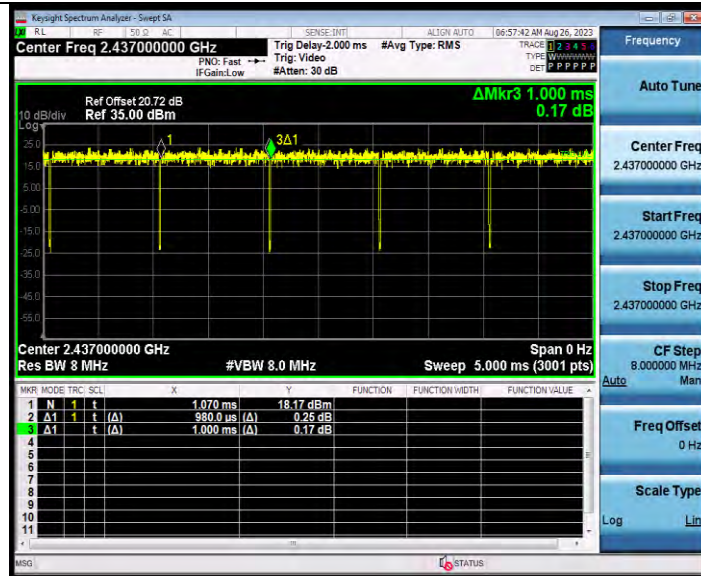


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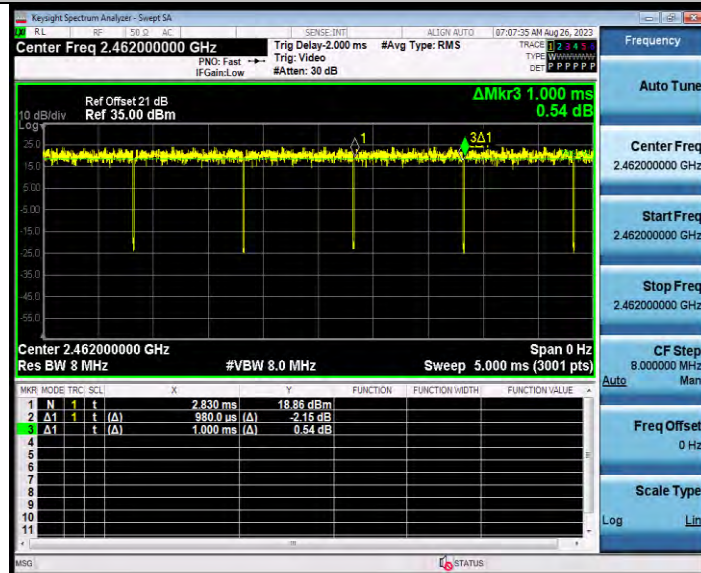


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11AX20ISO_Ant1_2462



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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	0.688	2401.660	2402.348	0.5	PASS
		2440	0.676	2439.668	2440.344	0.5	PASS
		2480	0.704	2479.648	2480.352	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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Test Report No.: W7L-P23080022RF01

OCCUPIED CHANNEL BANDWIDTH

TEST RESULT

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0415	2401.4917	2402.5332	---	---
		2440	1.0462	2439.4883	2440.5345	---	---
		2480	1.0380	2479.4898	2480.5278	---	---



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Test Report No.: W7L-P23080022RF01

TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



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Test Report No.: W7L-P23080022RF01



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

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	12.83	13.29	21.33	≤30	16.39	43.55	≤36	PASS	14
		2440	11.95	12.42	17.46	≤30	15.52	35.65	≤36	PASS	14
		2480	12.04	12.51	17.82	≤30	15.61	36.39	≤36	PASS	14

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	-2.93	≤8.00	PASS
		2440	-4.45	≤8.00	PASS
		2480	-3.89	≤8.00	PASS



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Test Report No.: W7L-P23080022RF01

TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





Test Report No.: W7L-P23080022RF01

BAND EDGE MEASUREMENTS

TEST RESULT

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	12.45	-39.86	≤ -7.55	PASS
		High	2480	11.60	-43.47	≤ -8.4	PASS

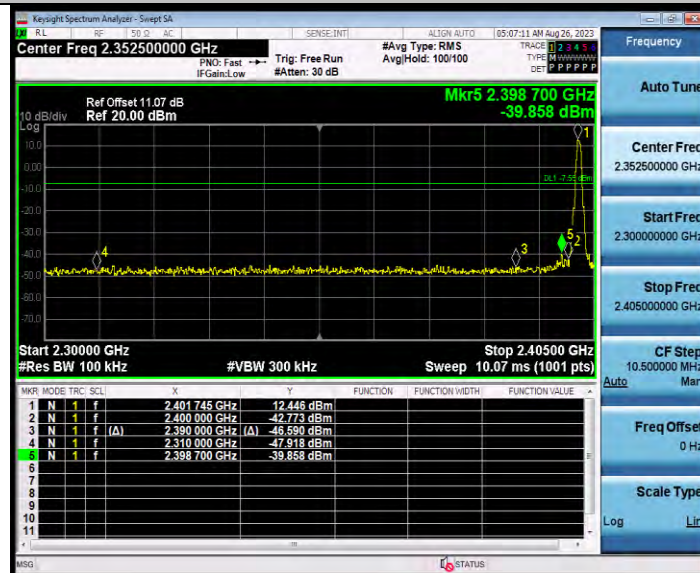


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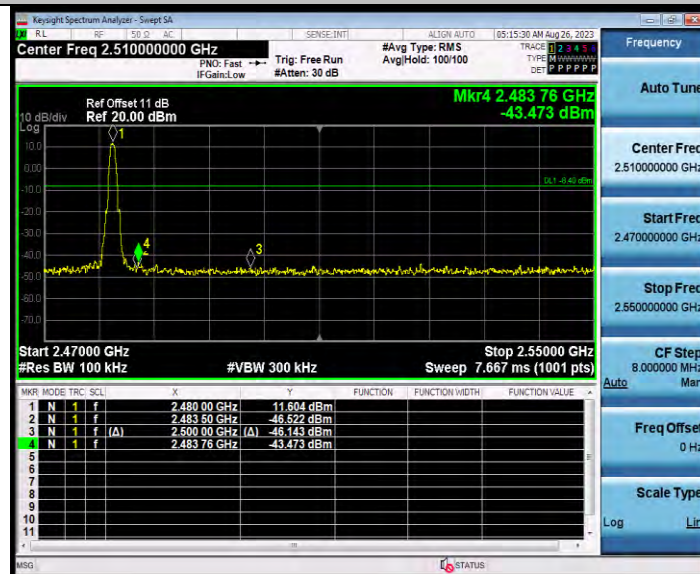
Test Report No.: W7L-P23080022RF01

TEST GRAPHS

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480





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Test Report No.: W7L-P23080022RF01

CONDUCTED SPURIOUS EMISSION

TEST RESULT

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	11.52	11.52	---	PASS
			30~1000	11.52	-54.32	≤ -8.48	PASS
			1000~26500	11.52	-35.1	≤ -8.48	PASS
		2440	Reference	10.75	10.75	---	PASS
			30~1000	10.75	-53.32	≤ -9.25	PASS
			1000~26500	10.75	-34.58	≤ -9.25	PASS
		2480	Reference	11.66	11.66	---	PASS
			30~1000	11.66	-53.89	≤ -8.34	PASS
			1000~26500	11.66	-33.63	≤ -8.34	PASS



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Test Report No.: W7L-P23080022RF01

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-P23080022RF01



BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



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Test Report No.: W7L-P23080022RF01



BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



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VERITAS

Test Report No.: W7L-P23080022RF01



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



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VERITAS

Test Report No.: W7L-P23080022RF01





Test Report No.: W7L-P23080022RF01

DUTY CYCLE

TEST RESULT

TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	0.30	0.93	32.26	4.91
		2440	0.30	0.92	32.61	4.87
		2480	0.30	0.93	32.26	4.91

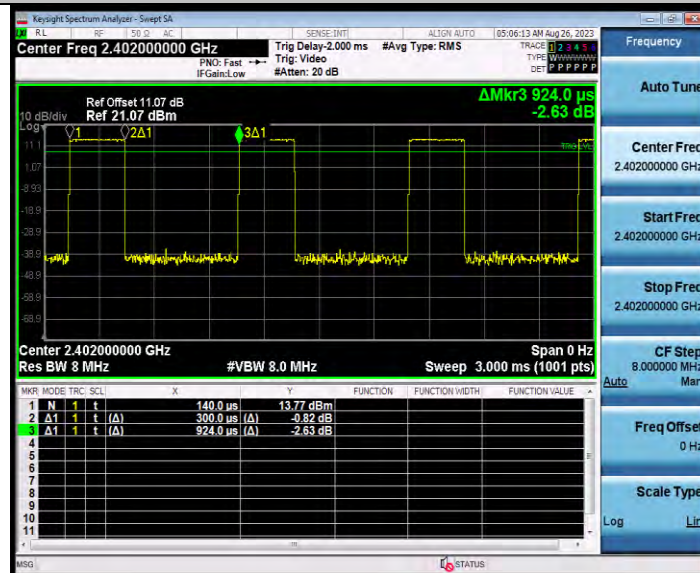


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VERITAS

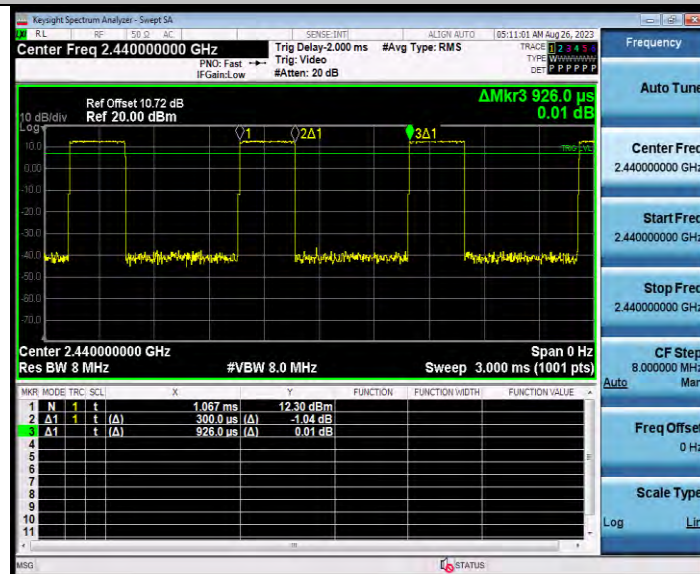
Test Report No.: W7L-P23080022RF01

TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480