



**BUREAU
VERITAS**

Test Report No.: W7L-P23070005RF02



11N20SISO_Ant1_2437_1000~26500



11N20SISO_Ant1_2462_0~Reference



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Test Report No.: W7L-P23070005RF02



11N20SISO_Ant1_2462_30~1000



11N20SISO_Ant1_2462_1000~26500



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BV 7Layers Communications Technology
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DUTY CYCLE TEST RESULT

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	0.84	0.94	89.36	0.49
		2437	0.85	0.94	90.43	0.44
		2462	0.85	0.94	90.43	0.44
11G	Ant1	2412	0.18	0.28	64.29	1.92
		2437	0.17	0.27	62.96	2.01
		2462	0.17	0.27	62.96	2.01
11N20SISO	Ant1	2412	0.16	0.27	59.26	2.27
		2437	0.17	0.27	62.96	2.01
		2462	0.16	0.26	61.54	2.11

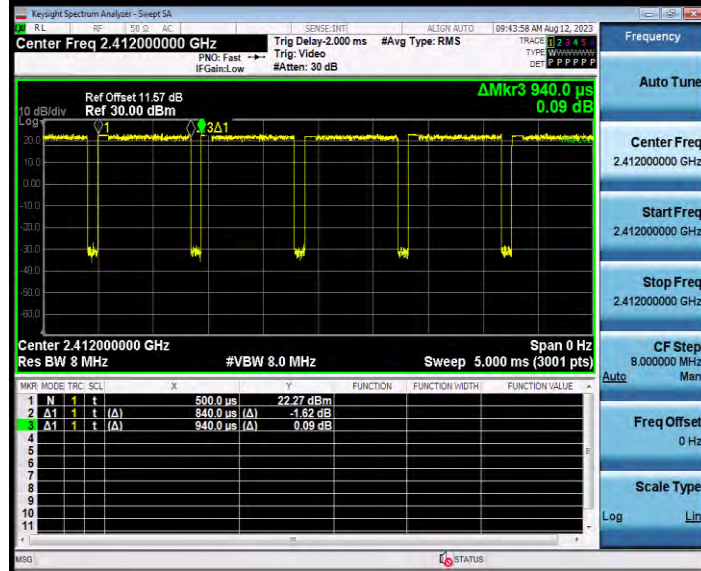


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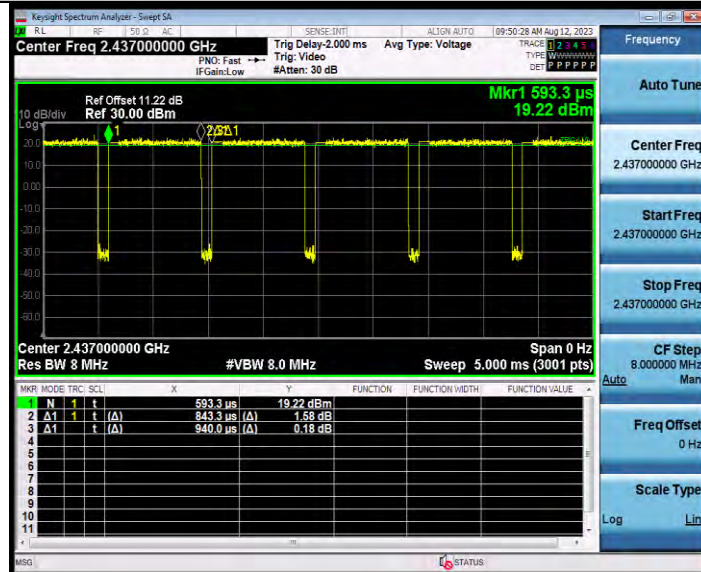
Test Report No.: W7L-P23070005RF02

TEST GRAPHS

11B_Ant1_2412



11B_Ant1_2437

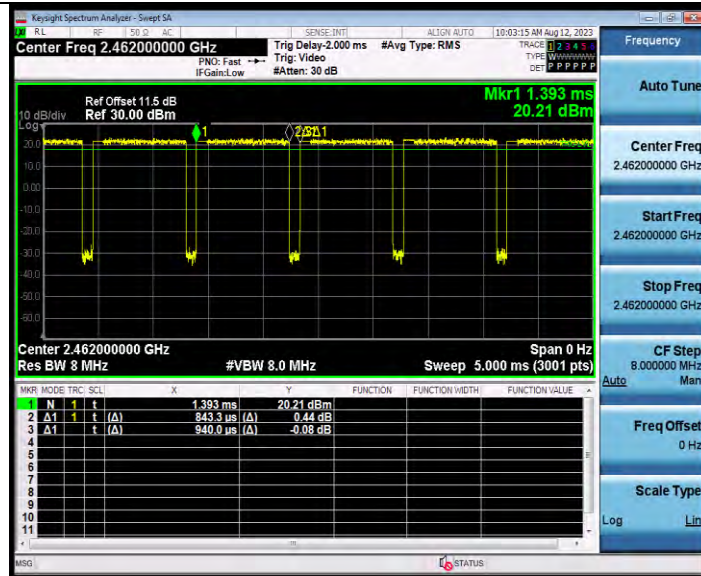


11B_Ant1_2462

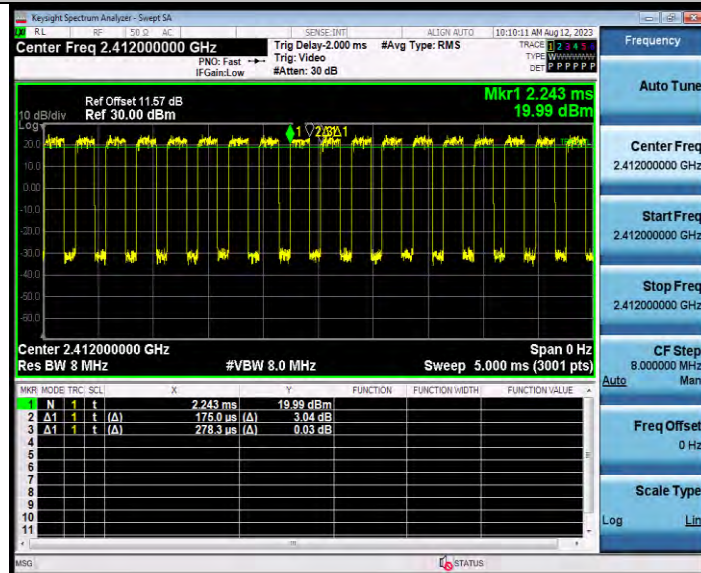


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11G_Ant1_2412



11G_Ant1_2437

BV 7Layers Communications Technology (Shenzhen) Co., Ltd

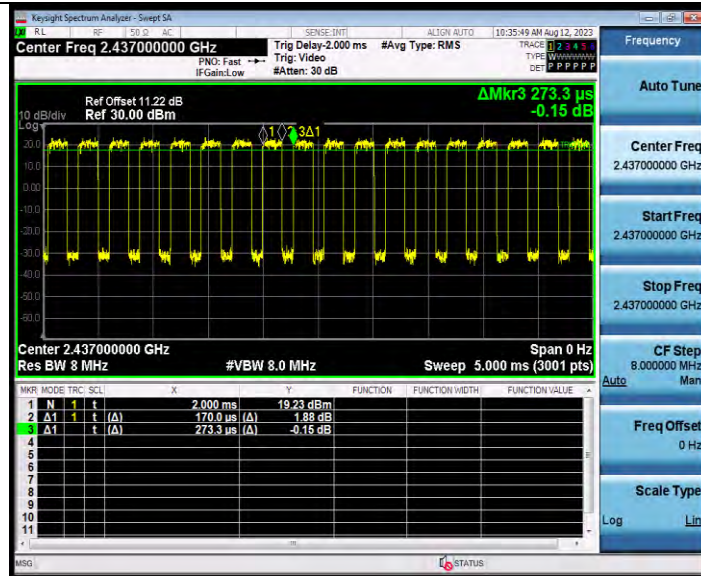
No.B102, Dazu Chuangxin Mansion, North of Beihuan Avenue, North Area, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, China

Tel: +86 755 8869 6566 Fax: +86 755 8869 6577 Email: customerservice.sw@bureauveritas.com

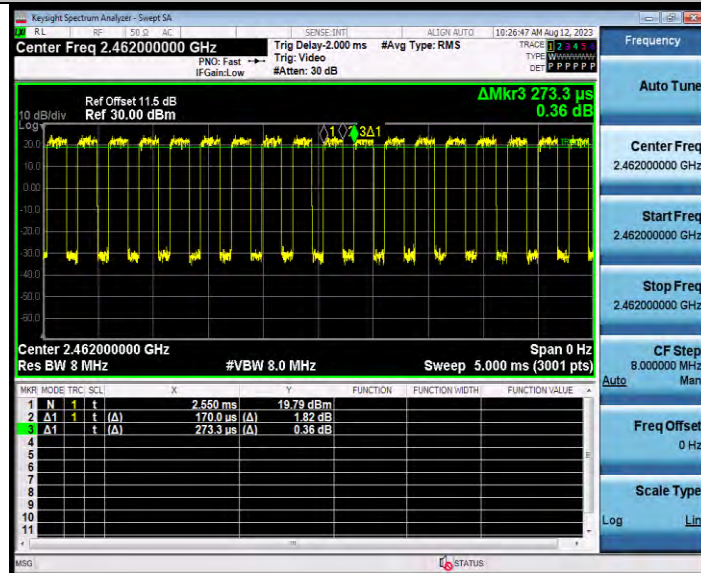


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11G_Ant1_2462

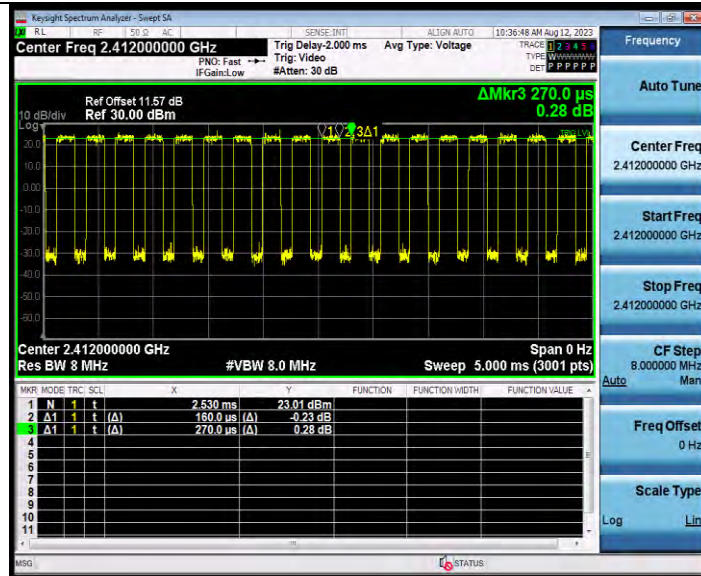


11N20SISO_Ant1_2412

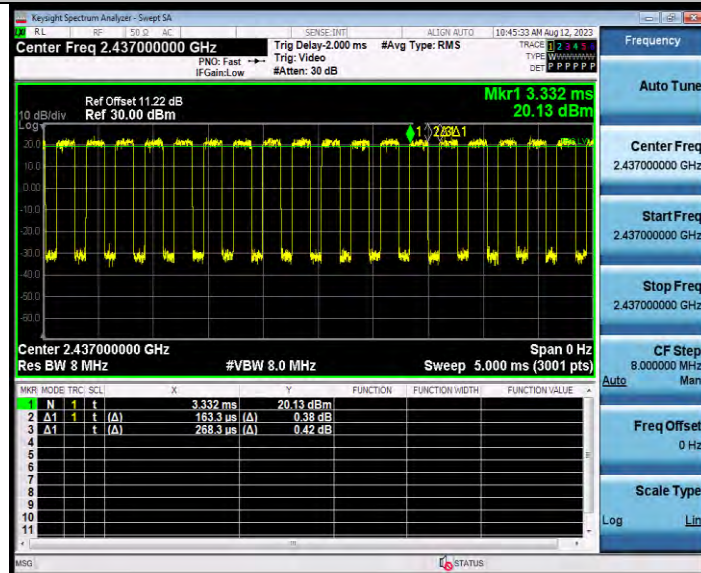


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11N20SISO_Ant1_2437

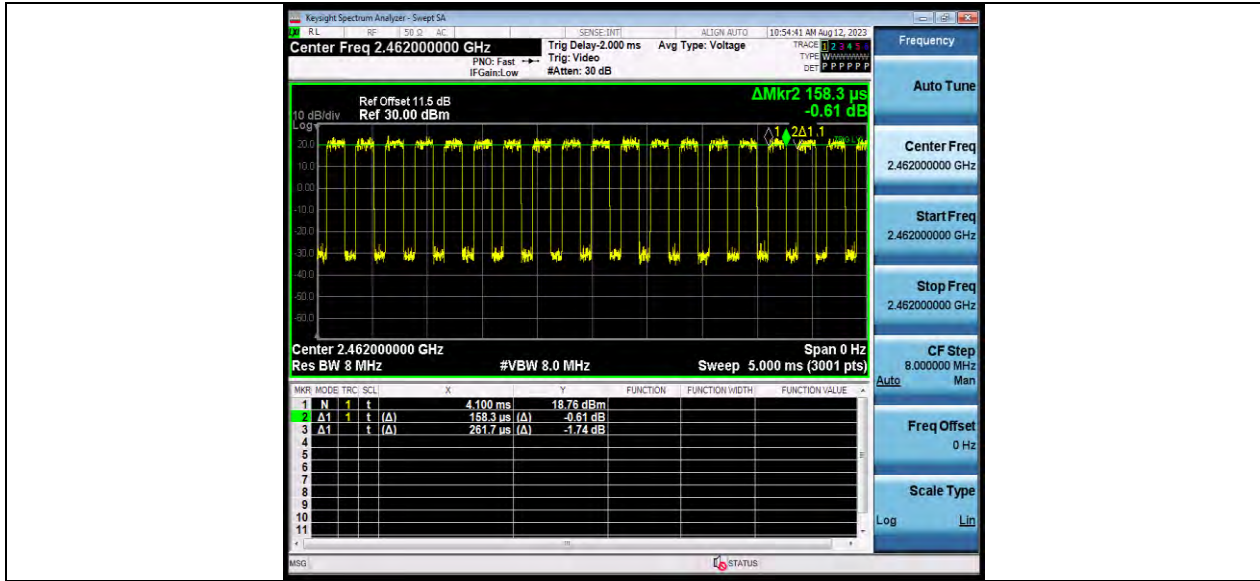


11N20SISO_Ant1_2462



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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	0.652	2401.652	2402.304	0.5	PASS
		2440	0.676	2439.644	2440.320	0.5	PASS
		2480	0.644	2479.676	2480.320	0.5	PASS
BLE_2M	Ant1	2404	1.180	2403.364	2404.544	0.5	PASS
		2440	1.076	2439.448	2440.524	0.5	PASS
		2478	1.084	2477.444	2478.528	0.5	PASS



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TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440

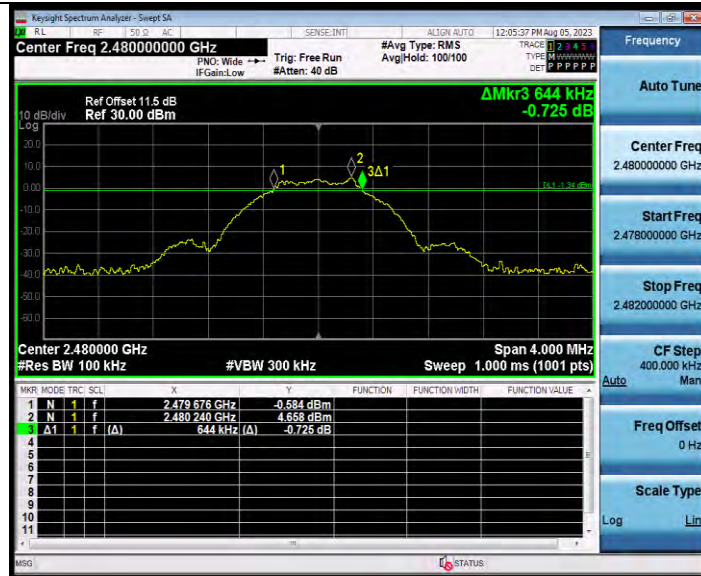


BLE_1M_Ant1_2480



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BLE_2M_Ant1_2404



BLE_2M_Ant1_2440



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BLE_2M_Ant1_2478





OCCUPIED CHANNEL BANDWIDTH TEST RESULT

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0641	2401.4566	2402.5207	---	---
		2440	1.0603	2439.4576	2440.5179	---	---
		2480	1.0731	2479.4569	2480.5300	---	---
BLE_2M	Ant1	2404	2.1105	2402.9405	2405.0510	---	---
		2440	2.1237	2438.9388	2441.0625	---	---
		2478	2.1045	2476.9550	2479.0595	---	---



TEST GRAPHS



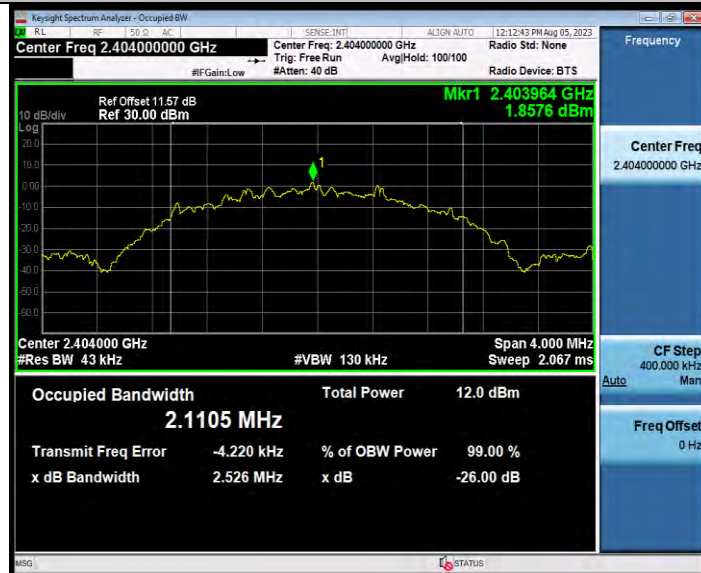


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BLE_2M_Ant1_2404



BLE_2M_Ant1_2440



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BLE_2M_Ant1_2478





MAXIMUM CONDUCTED OUTPUT POWER

TEST RESULT

Test Mode	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	3.74	4.42	2.77	≤30	5.49	3.54	≤36	PASS	Default
		2440	3.80	4.29	2.69	≤30	5.36	3.44	≤36	PASS	Default
		2480	3.86	4.33	2.71	≤30	5.40	3.47	≤36	PASS	Default
BLE_2M	Ant1	2402	4.44	4.69	2.94	≤30	5.76	3.77	≤36	PASS	Default
		2440	4.48	4.72	2.96	≤30	5.79	3.79	≤36	PASS	Default
		2480	4.33	4.63	2.90	≤30	5.70	3.72	≤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	-9.85	≤8.00	PASS
		2440	-11	≤8.00	PASS
		2480	-10.47	≤8.00	PASS
BLE_2M	Ant1	2404	-10.81	≤8.00	PASS
		2440	-12.23	≤8.00	PASS
		2478	-11.42	≤8.00	PASS

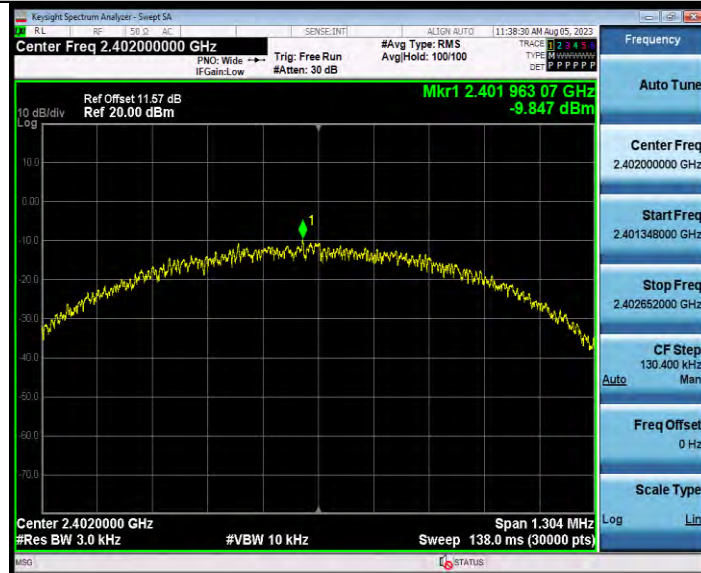


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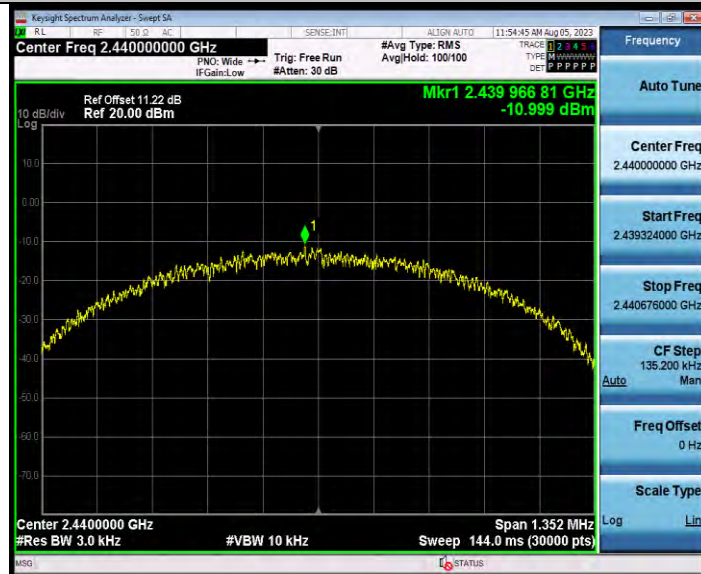
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TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440

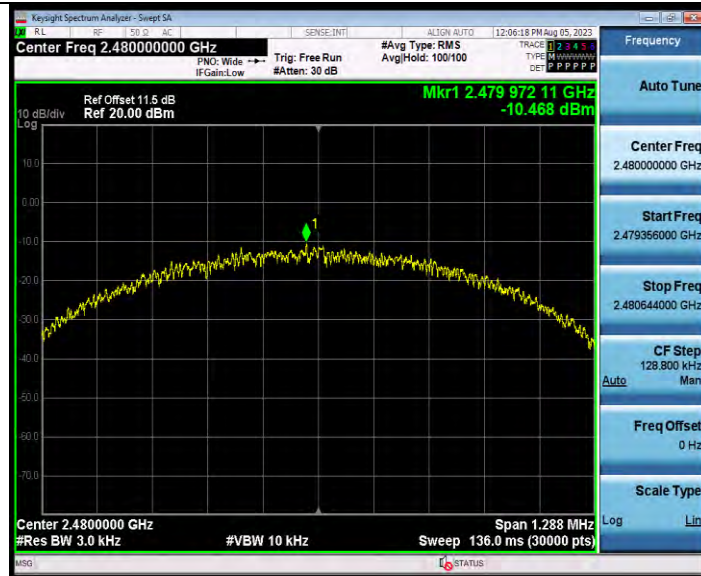


BLE_1M_Ant1_2480



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BLE_2M_Ant1_2404



BLE_2M_Ant1_2440

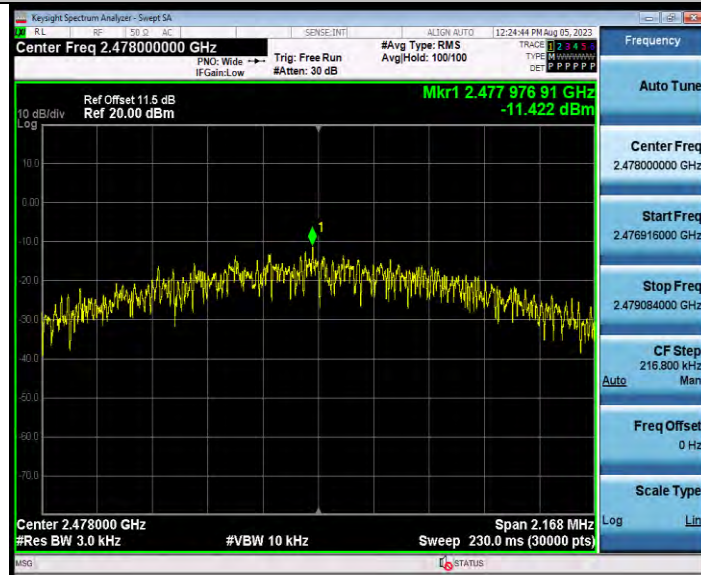


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BLE_2M_Ant1_2478





BAND EDGE MEASUREMENTS

TEST RESULT

TestMode	Antenna	ChName	Frequency [MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	4.91	-44.65	≤-15.09	PASS
		High	2480	3.77	-42.98	≤-16.23	PASS
BLE_2M	Ant1	Low	2404	3.63	-43.95	≤-16.37	PASS
		High	2478	4.18	-43.84	≤-15.82	PASS

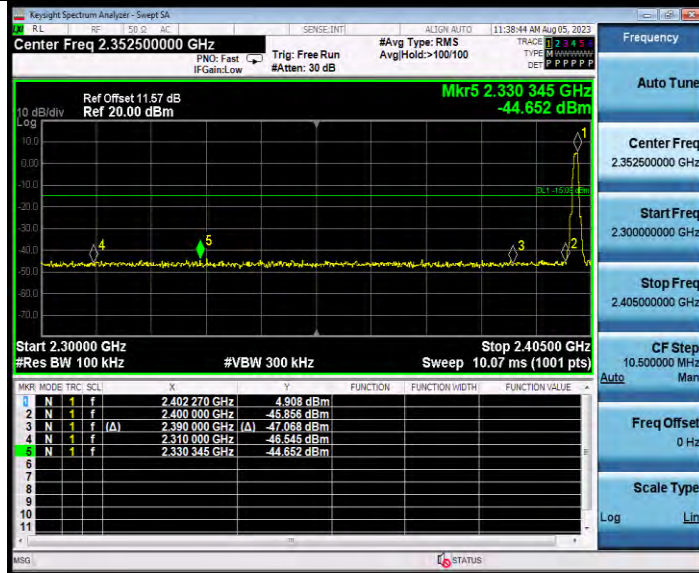


BUREAU VERITAS

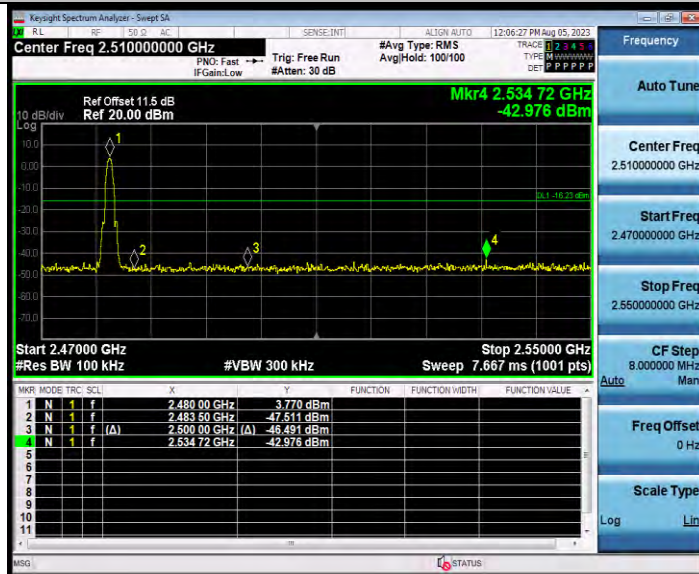
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TEST GRAPHS

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480

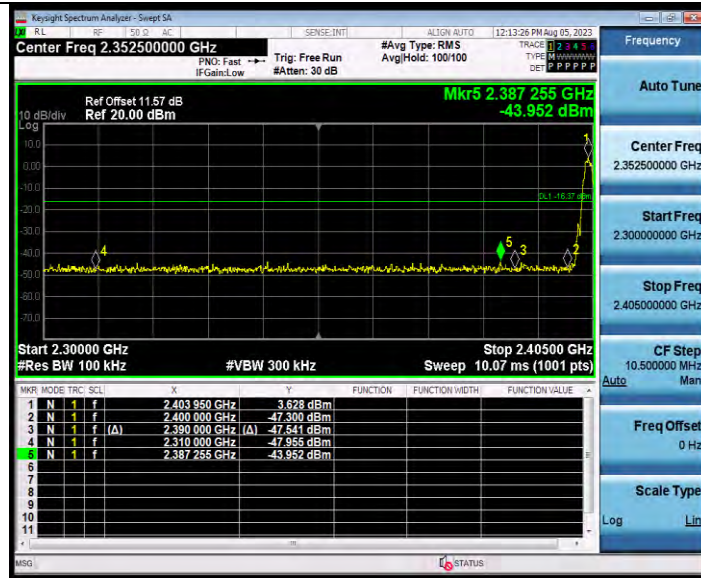


BLE_2M_Ant1_Low_2404

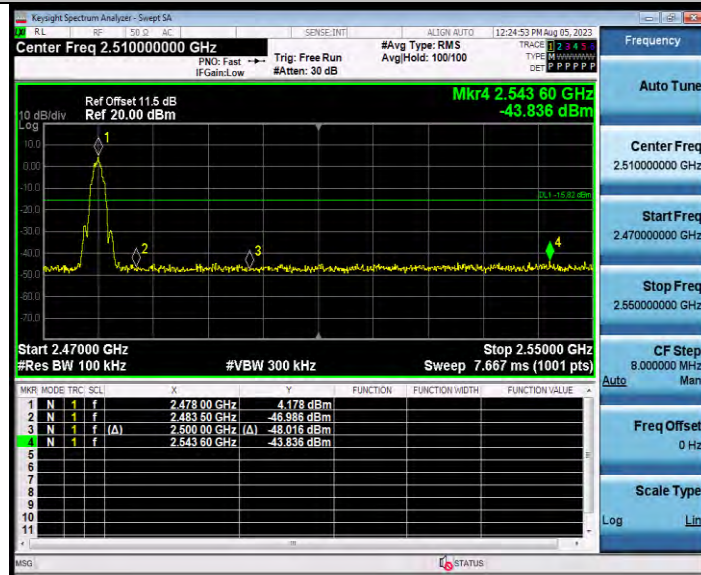


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BLE_2M_Ant1_High_2478



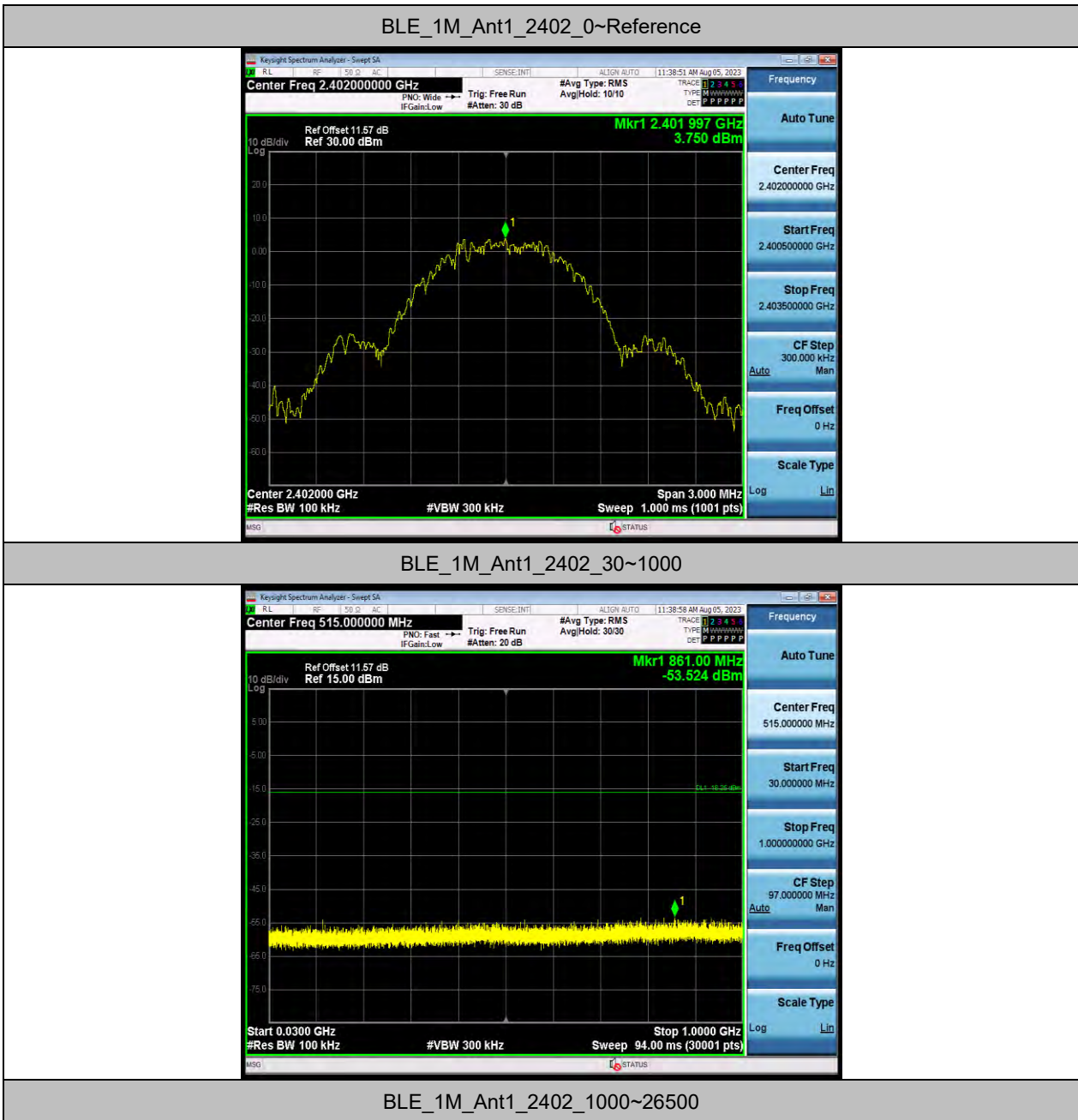


CONDUCTED SPURIOUS EMISSION TEST RESULT

TestMode	Antenna	Frequency [MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	3.75	3.75	---	PASS
			30~1000	3.75	-53.52	≤-16.25	PASS
			1000~26500	3.75	-34.05	≤-16.25	PASS
		2440	Reference	2.60	2.60	---	PASS
			30~1000	2.60	-53.63	≤-17.4	PASS
			1000~26500	2.60	-34.25	≤-17.4	PASS
		2480	Reference	2.77	2.77	---	PASS
			30~1000	2.77	-53.39	≤-17.23	PASS
			1000~26500	2.77	-34.27	≤-17.23	PASS
BLE_2M	Ant1	2404	Reference	1.76	1.76	---	PASS
			30~1000	1.76	-52.96	≤-18.24	PASS
			1000~26500	1.76	-34.47	≤-18.24	PASS
		2440	Reference	0.61	0.61	---	PASS
			30~1000	0.61	-53.54	≤-19.39	PASS
			1000~26500	0.61	-34.48	≤-19.39	PASS
		2478	Reference	1.46	1.46	---	PASS
			30~1000	1.46	-53.74	≤-18.54	PASS
			1000~26500	1.46	-34.01	≤-18.54	PASS



TEST GRAPHS





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BLE_1M_Ant1_2440_0~Reference

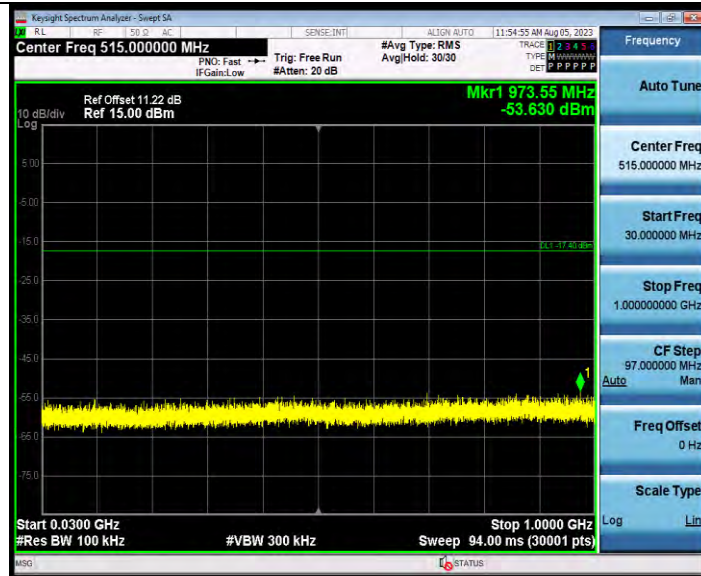


BLE_1M_Ant1_2440_30~1000



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BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



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Test Report No.: W7L-P23070005RF02



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



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Test Report No.: W7L-P23070005RF02



BLE_2M_Ant1_2404_0~Reference

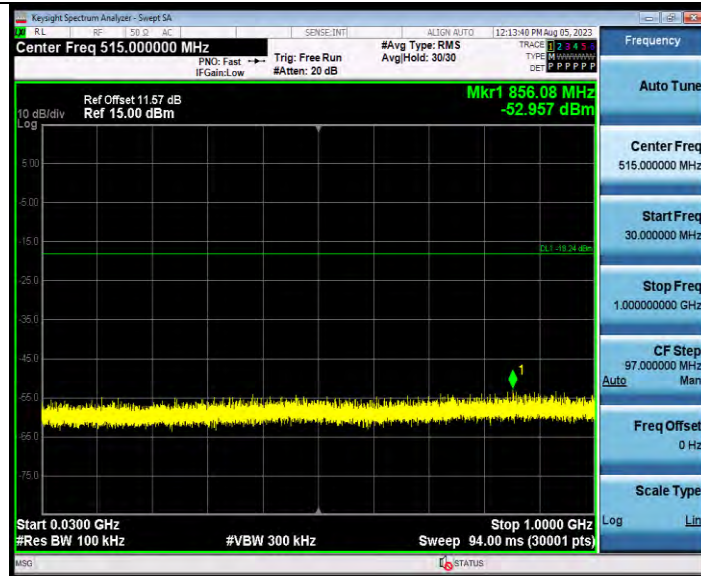


BLE_2M_Ant1_2404_30~1000



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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

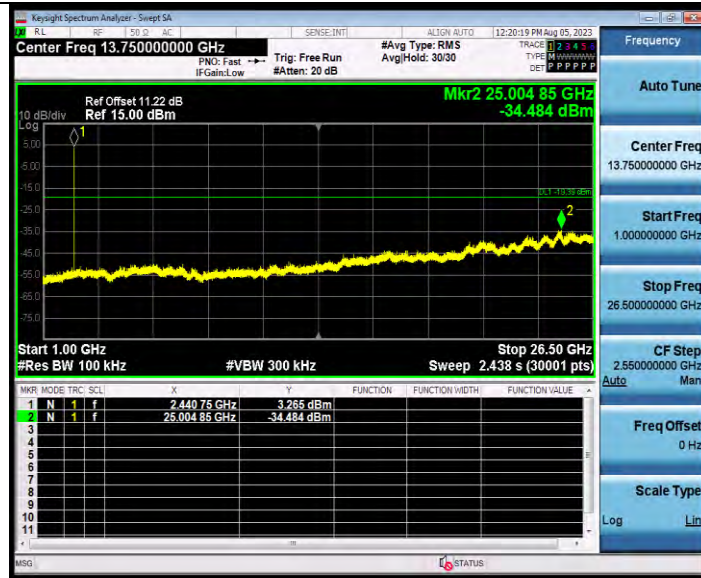


BLE_2M_Ant1_2440_1000~26500



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BLE_2M_Ant1_2478_0~Reference

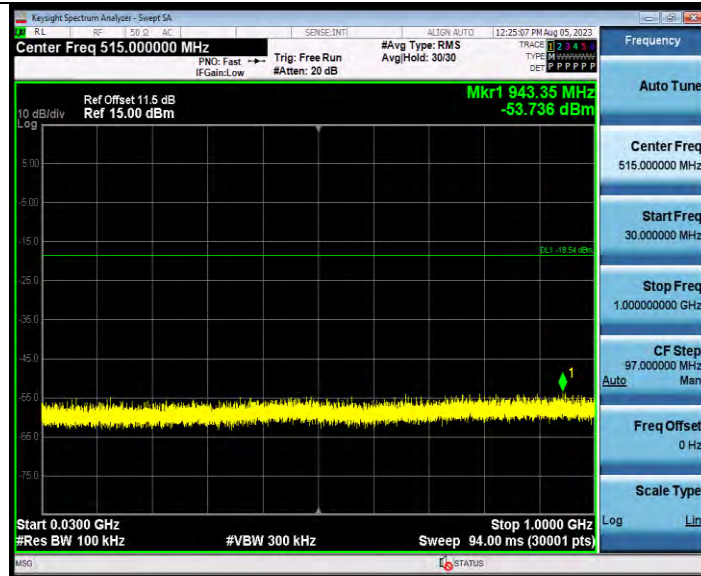


BLE_2M_Ant1_2478_30~1000



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BLE_2M_Ant1_2478_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	2.14	2.50	85.60	0.68
		2440	2.13	2.50	85.20	0.70
		2480	2.14	2.50	85.60	0.68
BLE_2M	Ant1	2404	1.08	1.88	57.45	2.41
		2440	1.08	1.88	57.45	2.41
		2478	1.08	1.88	57.45	2.41

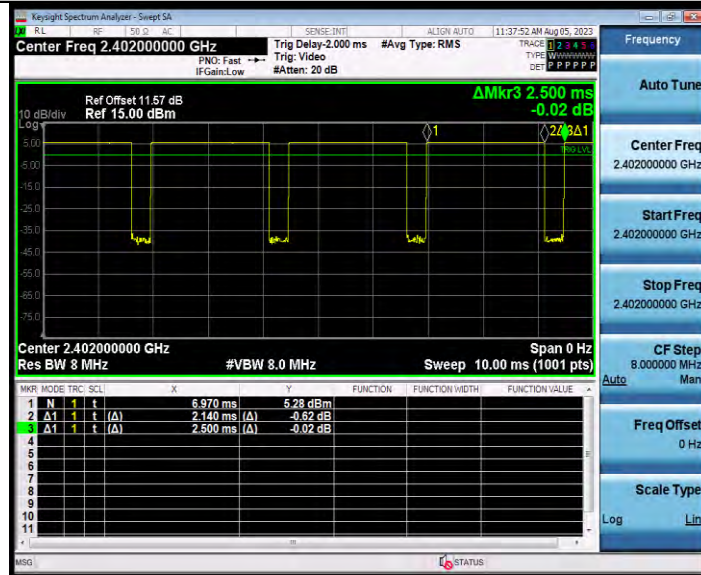


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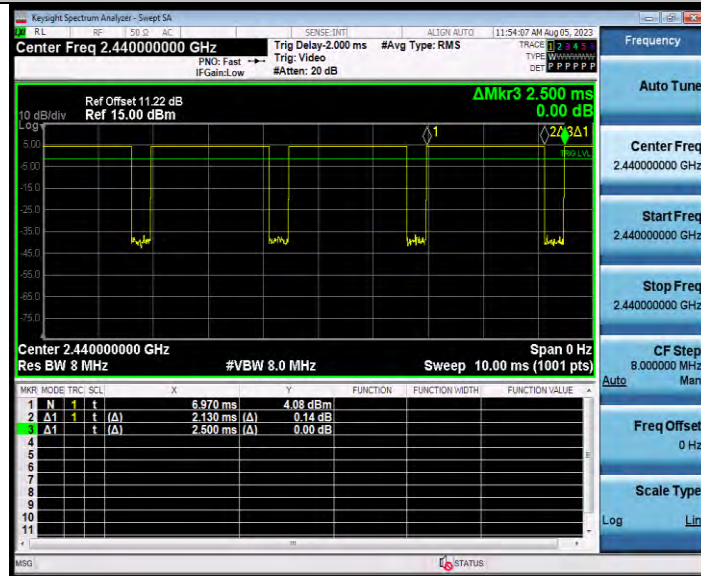
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TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440

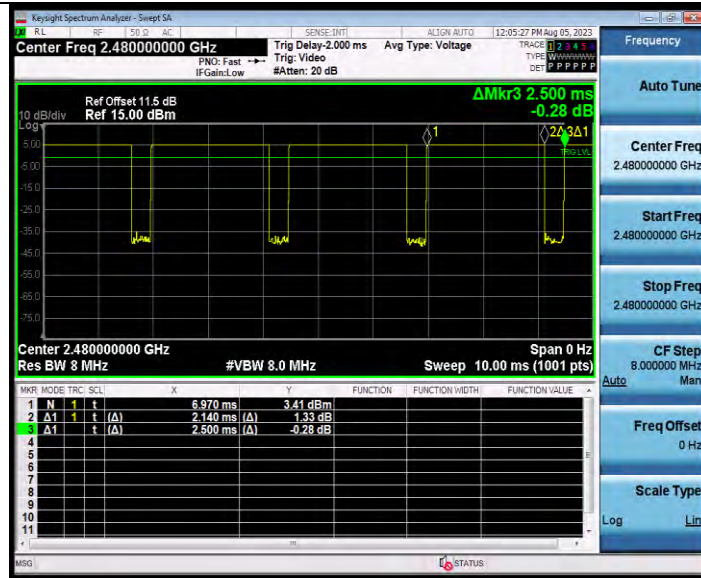


BLE_1M_Ant1_2480

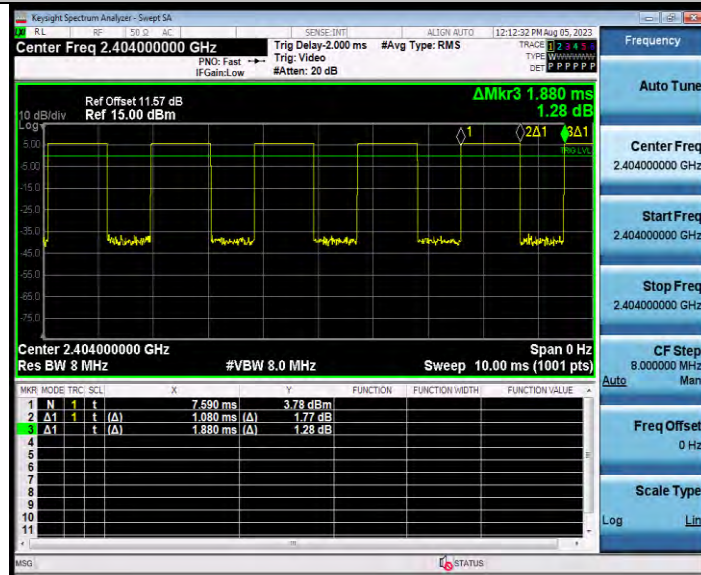


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BLE_2M_Ant1_2404

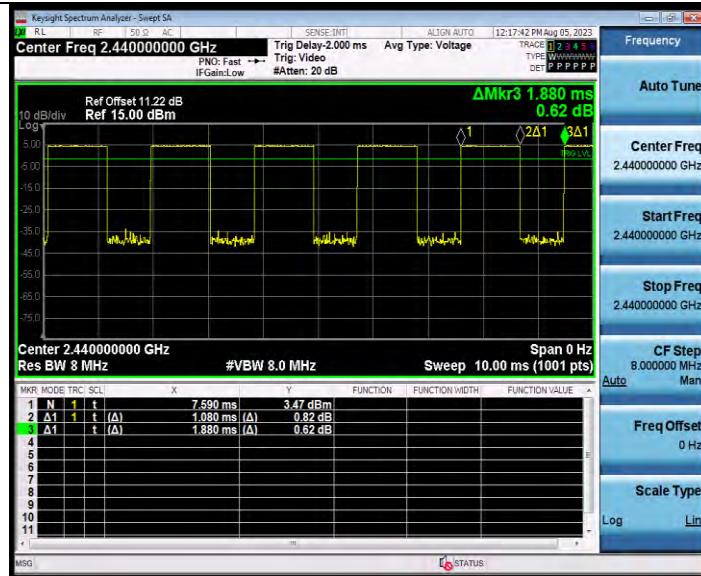


BLE_2M_Ant1_2440

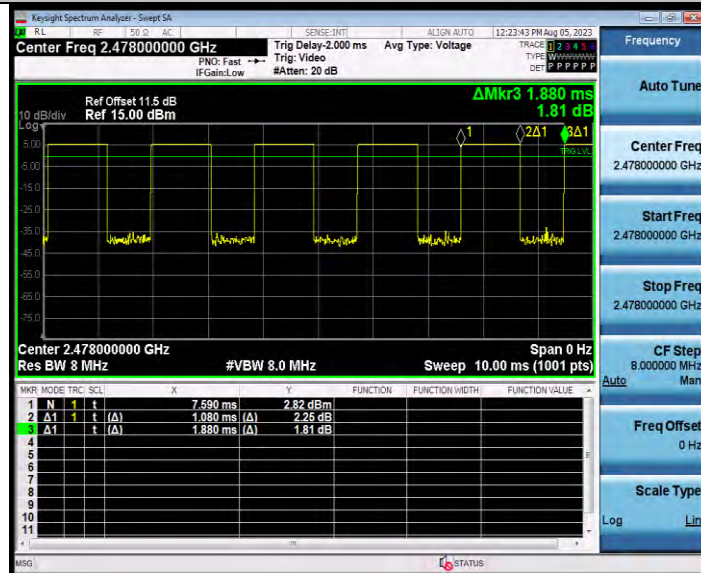


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BLE_2M_Ant1_2478



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