



## 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



### TEST GRAPHS

11B\_Ant1\_2412



11B\_Ant1\_2437



11B\_Ant1\_2462



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11G\_Ant1\_2412



11G\_Ant1\_2437

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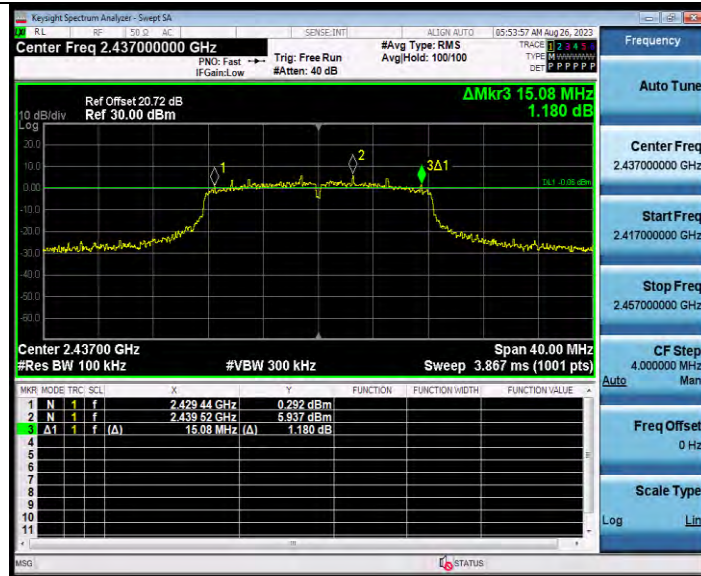
Room B37, Warehouse A5, No.3 Chiwan 4th Road,  
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11G\_Ant1\_2462

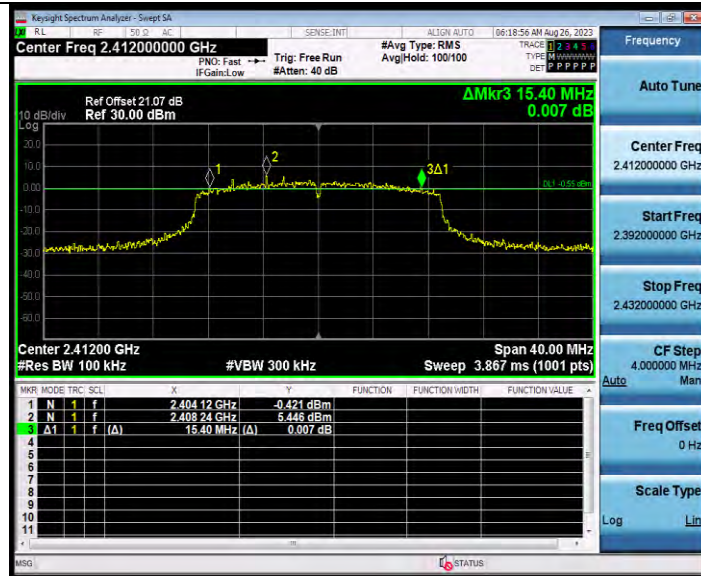


11N20SISO\_Ant1\_2412



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11N20SISO\_Ant1\_2437



11N20SISO\_Ant1\_2462

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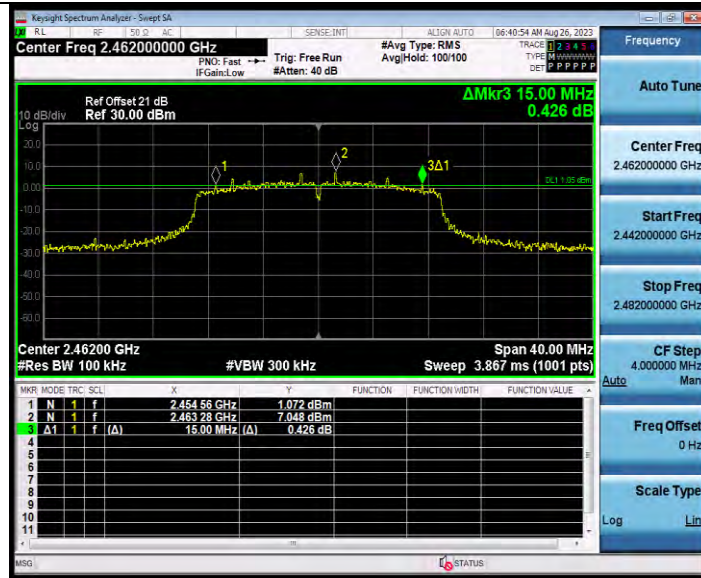
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11AX20SISO\_Ant1\_2412



11AX20SISO\_Ant1\_2437

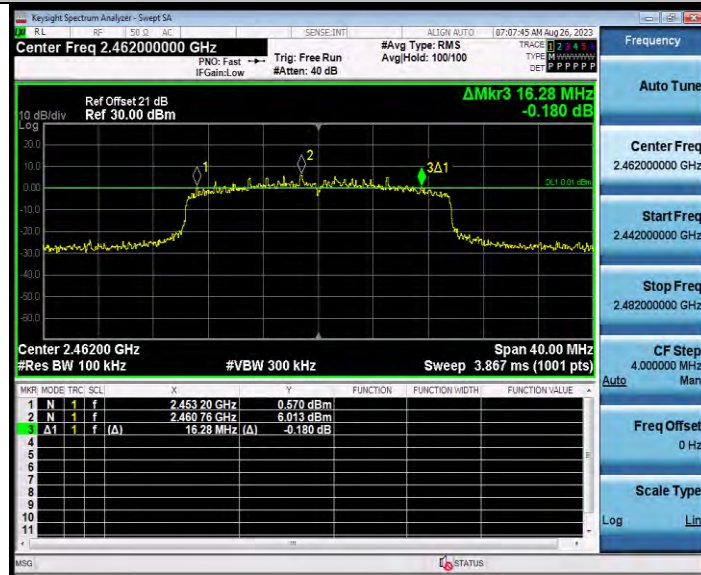


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11AX20SISO\_Ant1\_2462





## 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	---	---





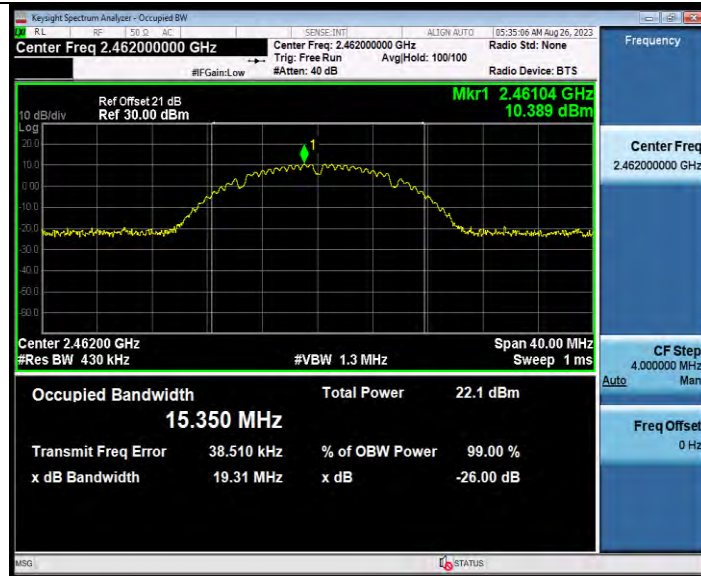
### TEST GRAPHS



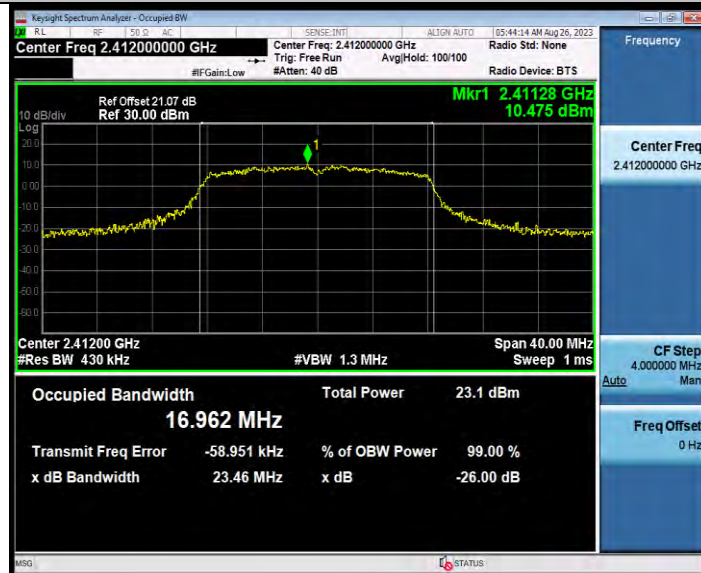


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11G\_Ant1\_2412



11G\_Ant1\_2437

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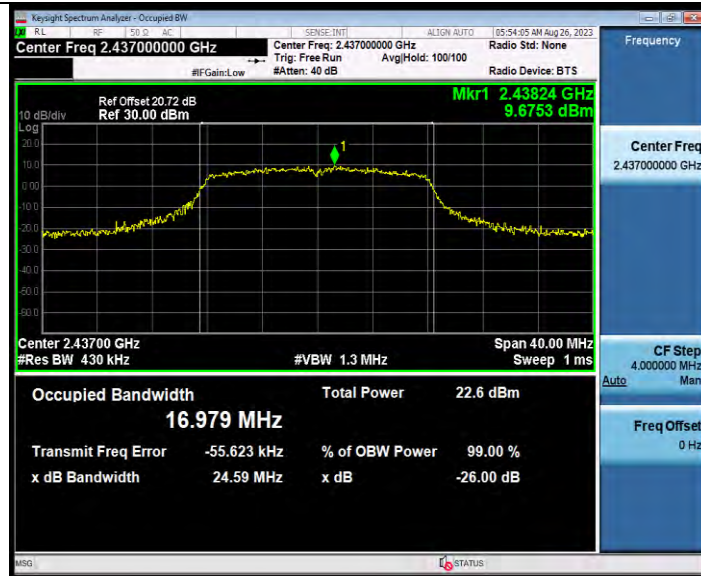
Room B37, Warehouse A5, No.3 Chiwan 4th Road,  
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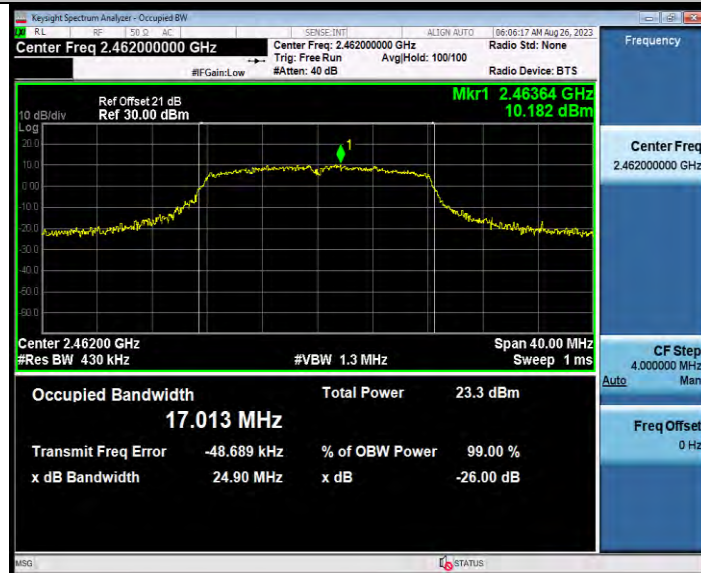


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11G\_Ant1\_2462



11N20SISO\_Ant1\_2412

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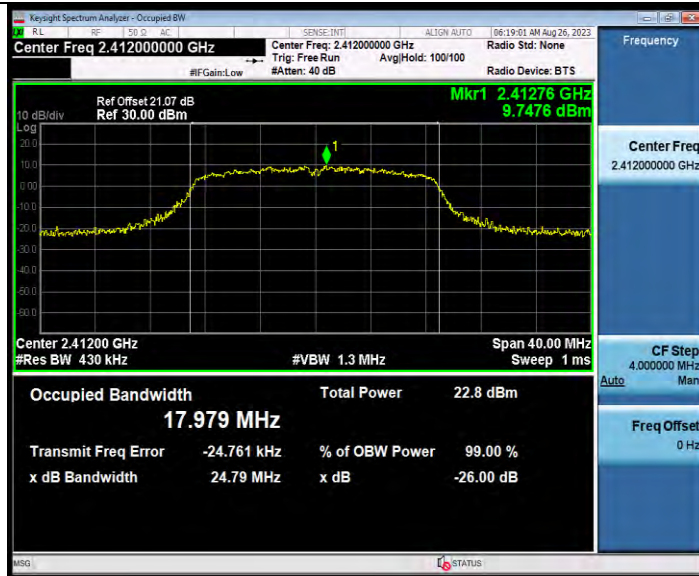
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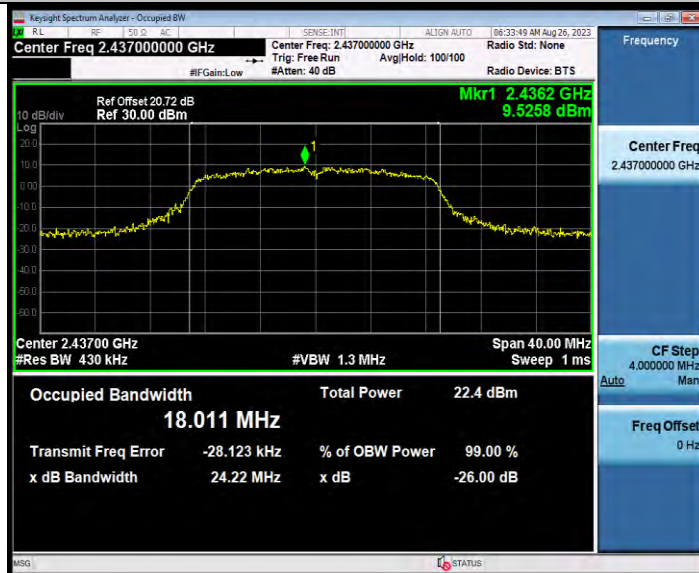


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11N20SISO\_Ant1\_2437



11N20SISO\_Ant1\_2462

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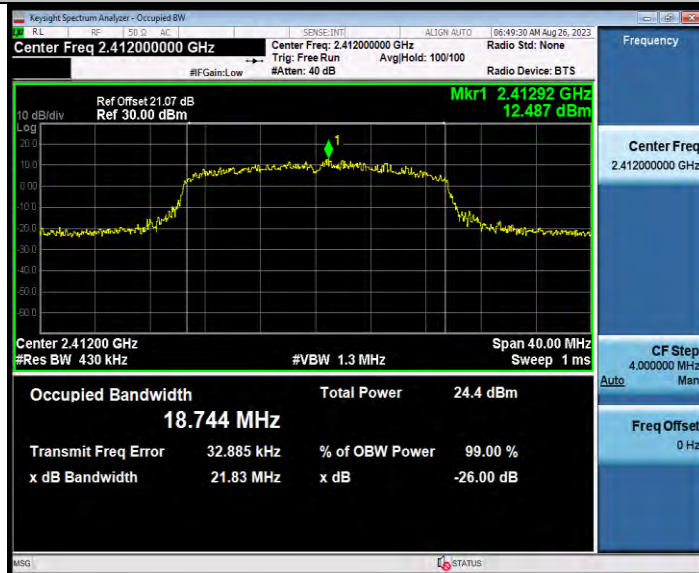


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11AX20SISO\_Ant1\_2412



11AX20SISO\_Ant1\_2437

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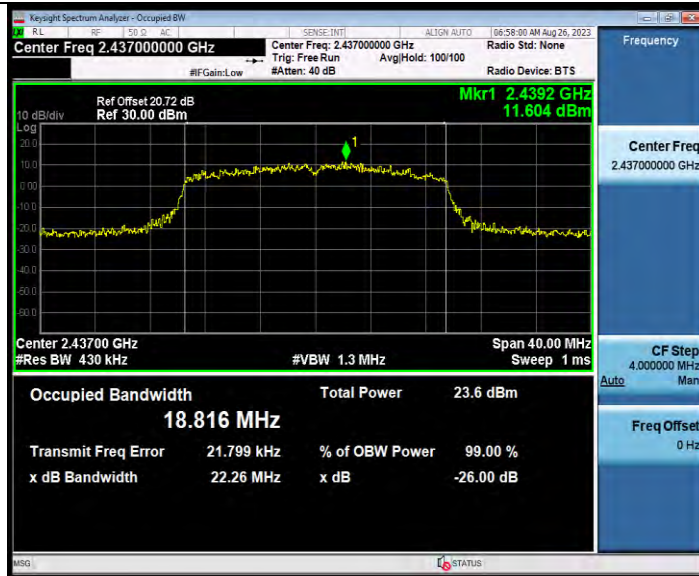
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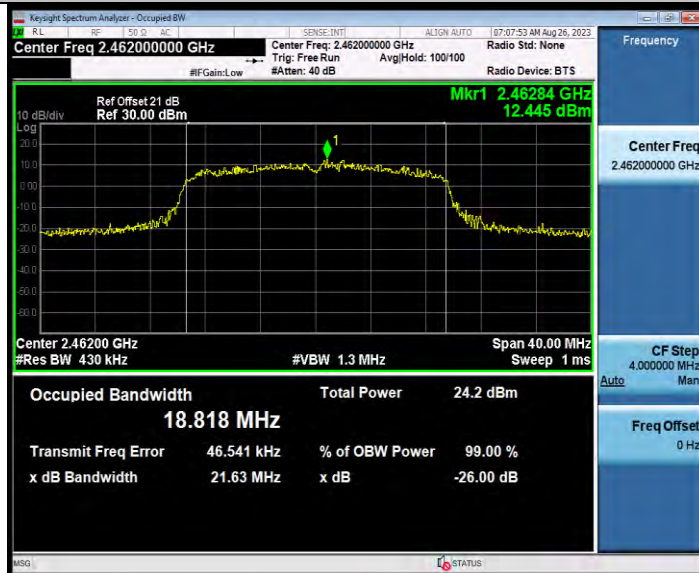


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### MAXIMUM CONDUCTED OUTPUT POWER

### 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	<b>24.51</b>	<b>282.49</b>	≤30.00	<b>27.61</b>	<b>576.77</b>	≤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



## 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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Test Report No.: W7L-P23080022RF01

## TEST GRAPHS

11B\_Ant1\_2412



11B\_Ant1\_2437

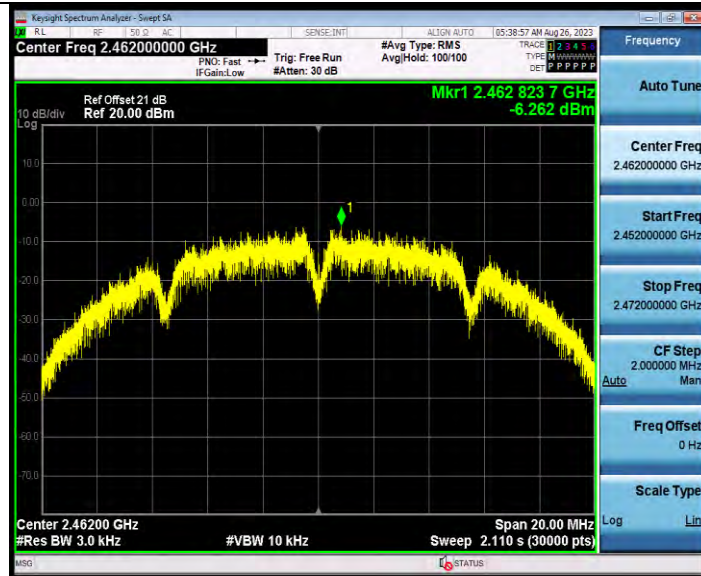


11B\_Ant1\_2462

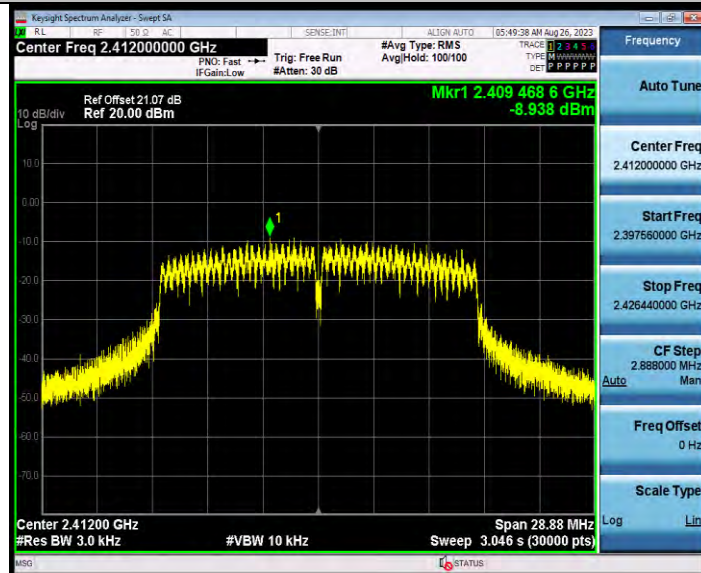


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11G\_Ant1\_2412



11G\_Ant1\_2437

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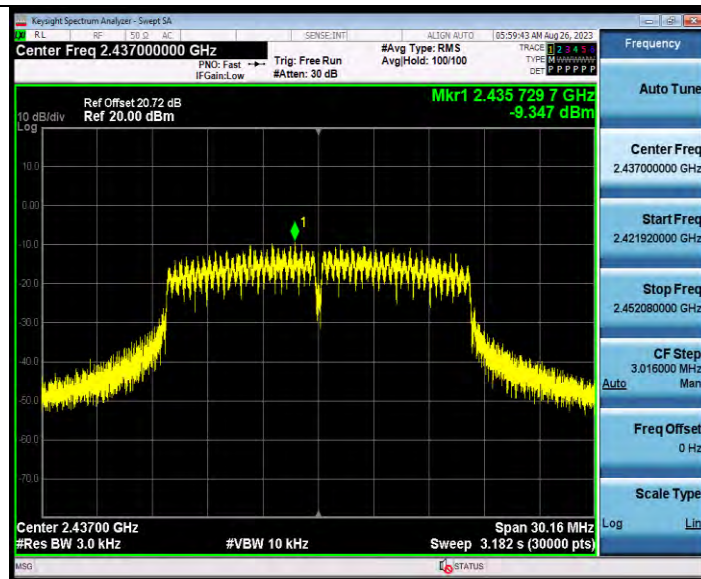
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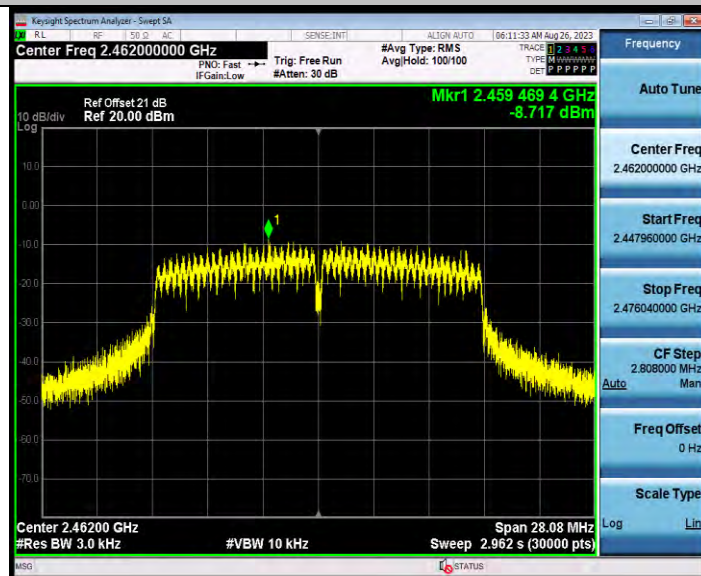


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11G\_Ant1\_2462

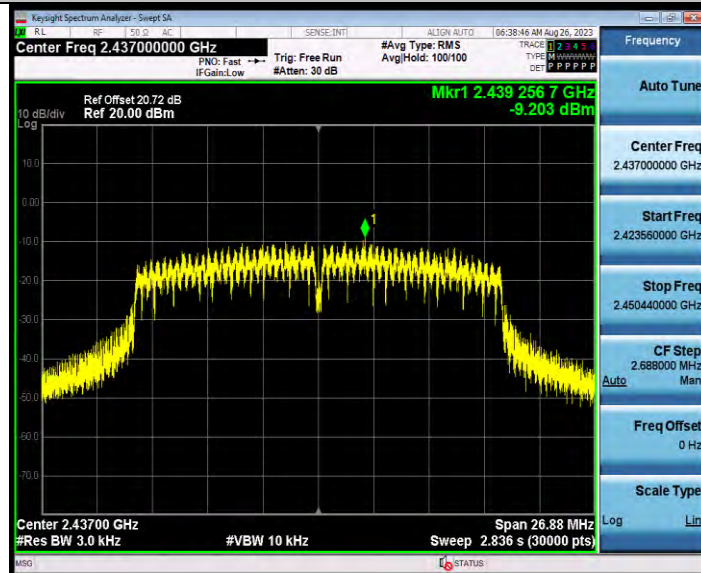
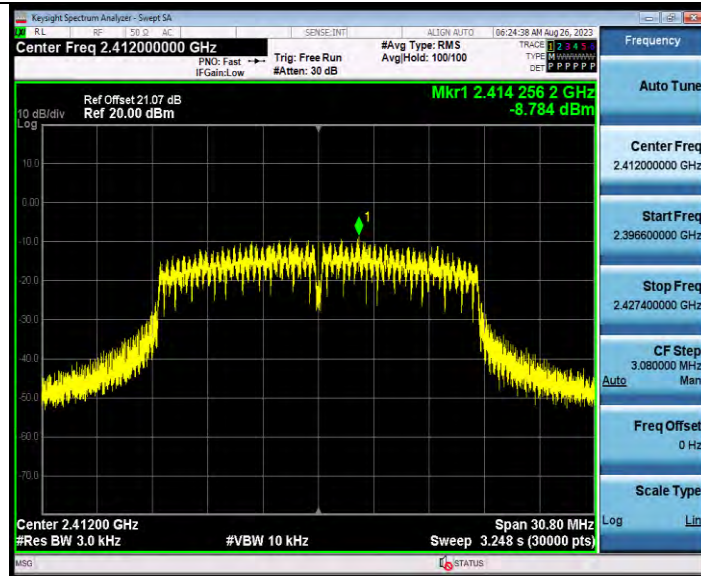


11N20SISO\_Ant1\_2412



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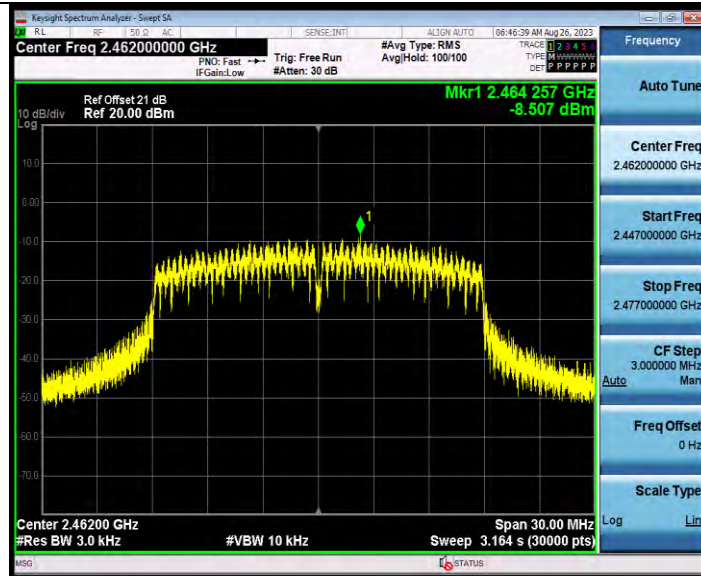
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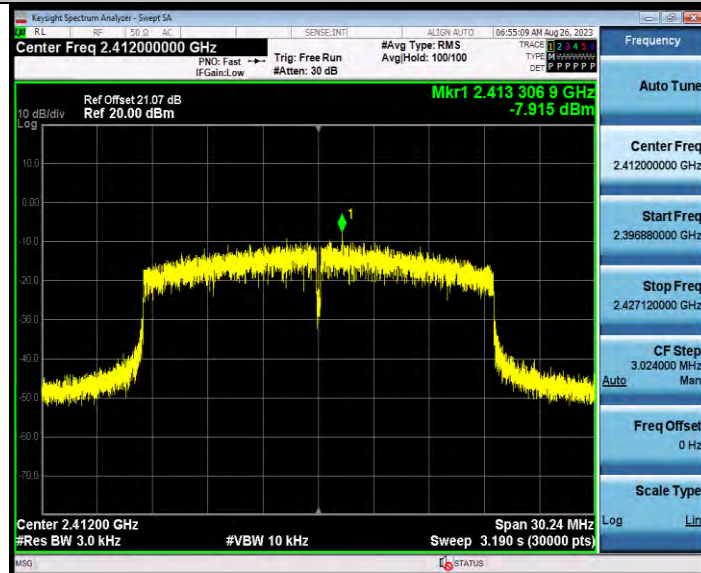


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11AX20SISO\_Ant1\_2412

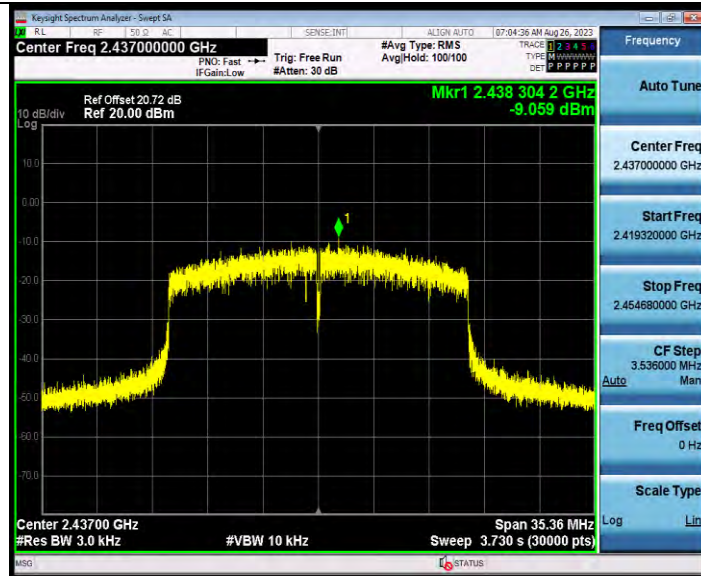


11AX20SISO\_Ant1\_2437

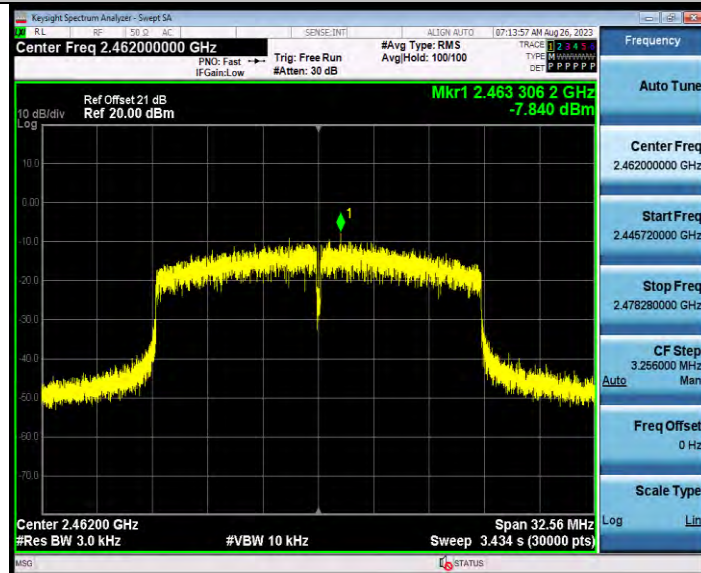


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11AX20SISO\_Ant1\_2462





## **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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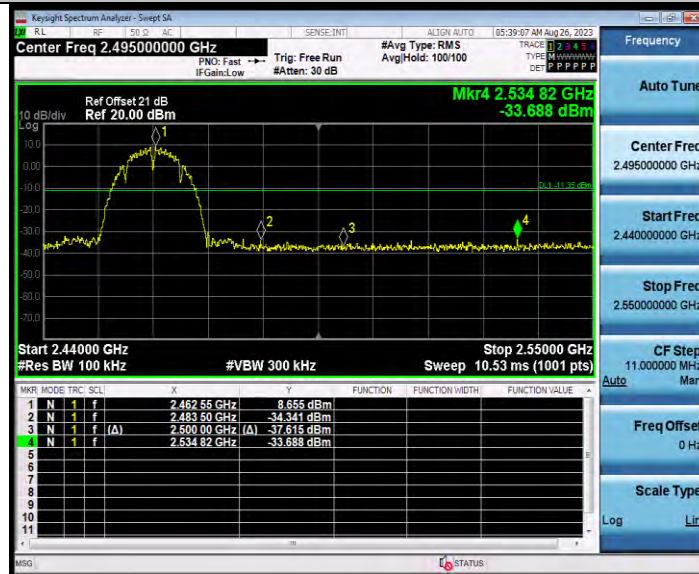
Test Report No.: W7L-P23080022RF01

## TEST GRAPHS

11B\_Ant1\_Low\_2412



11B\_Ant1\_High\_2462



11G\_Ant1\_Low\_2412





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11G\_Ant1\_High\_2462



11N20SISO\_Ant1\_Low\_2412

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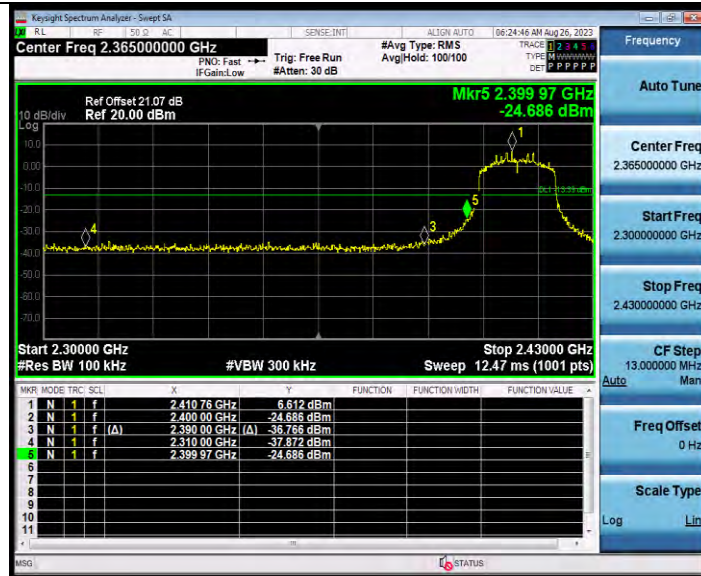
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11N20SISO\_Ant1\_High\_2462



11AX20SISO\_Ant1\_Low\_2412

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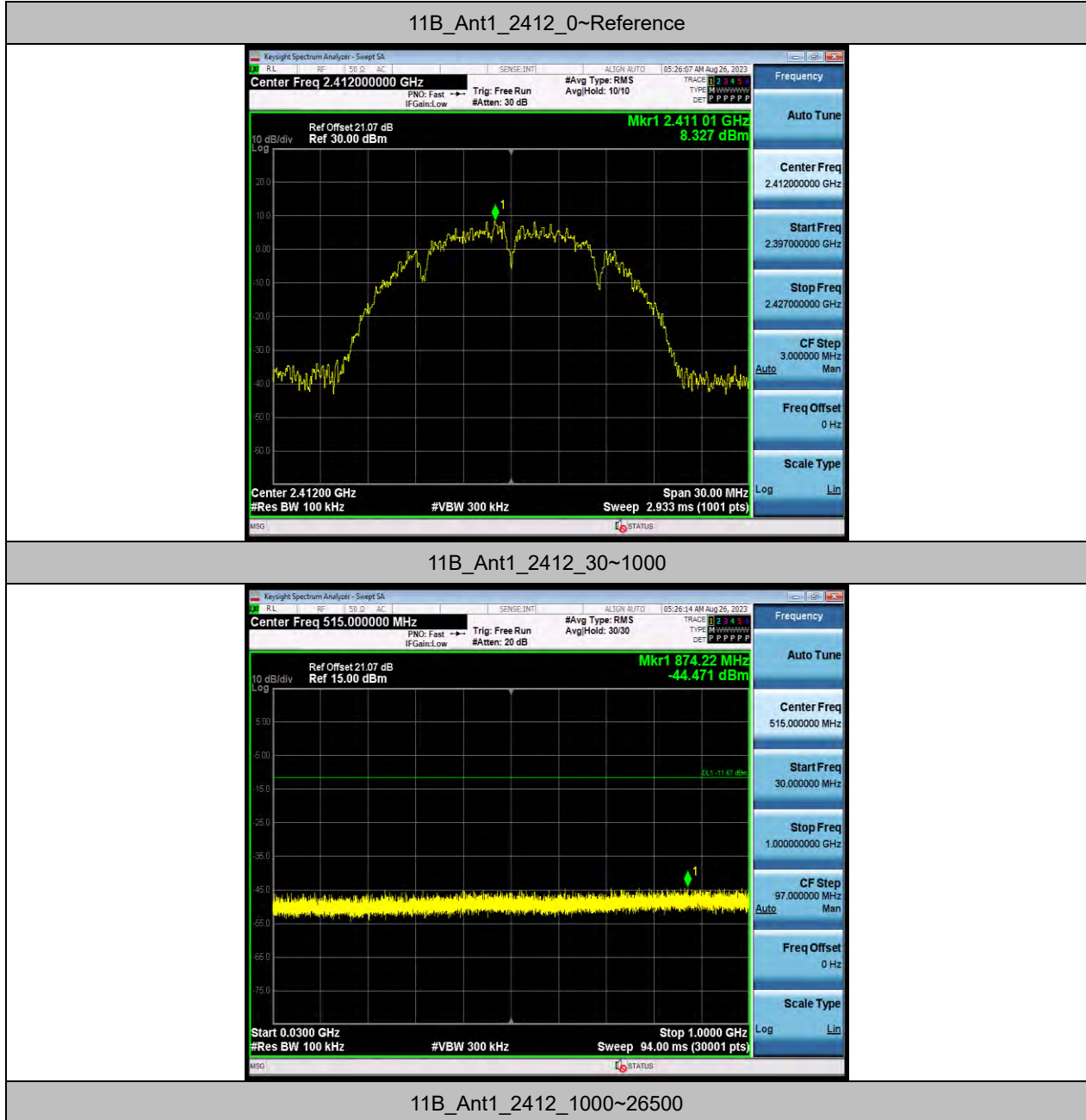
			1000~26500	4.12	-24.74	≤-15.88	PASS
		2437	Reference	3.40	3.40	---	PASS
			30~1000	3.40	-44.38	≤-16.6	PASS
			1000~26500	3.40	-25.11	≤-16.6	PASS
		2462	Reference	5.33	5.33	---	PASS
			30~1000	5.33	-44.33	≤-14.67	PASS
			1000~26500	5.33	-23.92	≤-14.67	PASS



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Test Report No.: W7L-P23080022RF01

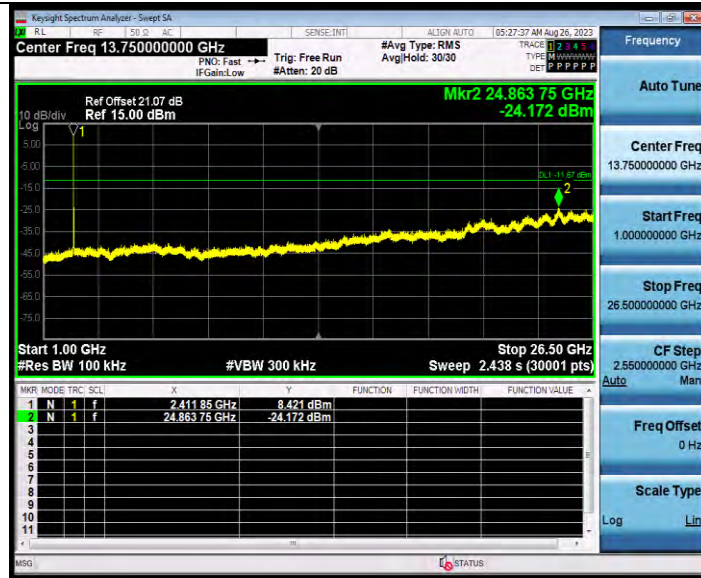
## TEST GRAPHS





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**Test Report No.: W7L-P23080022RF01**



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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Test Report No.: W7L-P23080022RF01



11B\_Ant1\_2462\_30~1000

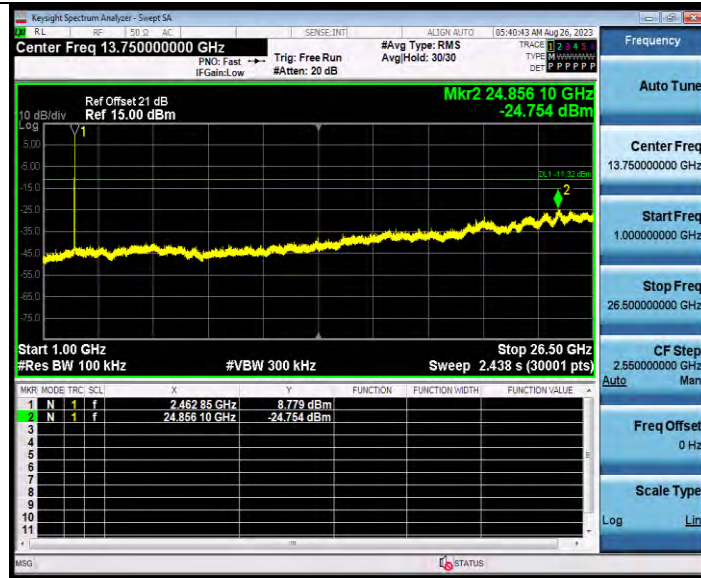


11B\_Ant1\_2462\_1000~26500



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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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11G\_Ant1\_2437\_30~1000

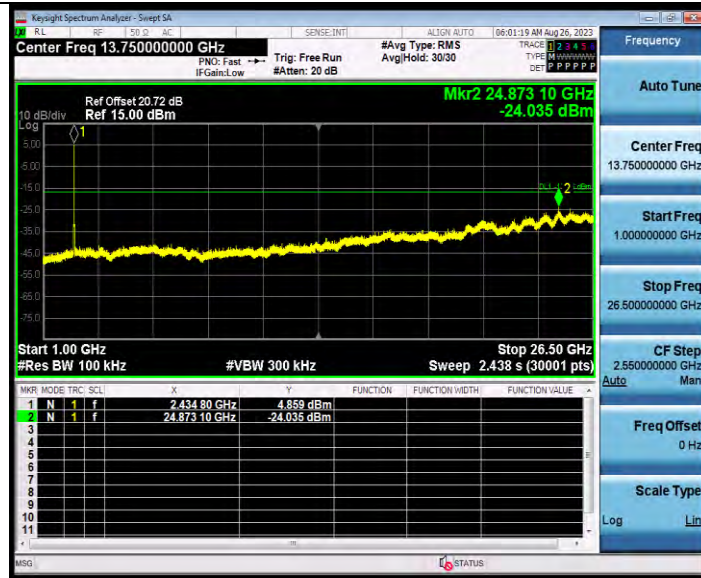


11G\_Ant1\_2437\_1000~26500



BUREAU VERITAS

Test Report No.: W7L-P23080022RF01



11G\_Ant1\_2462\_0~Reference



11G\_Ant1\_2462\_30~1000

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11G\_Ant1\_2462\_1000~26500



11N20SISO\_Ant1\_2412\_0~Reference

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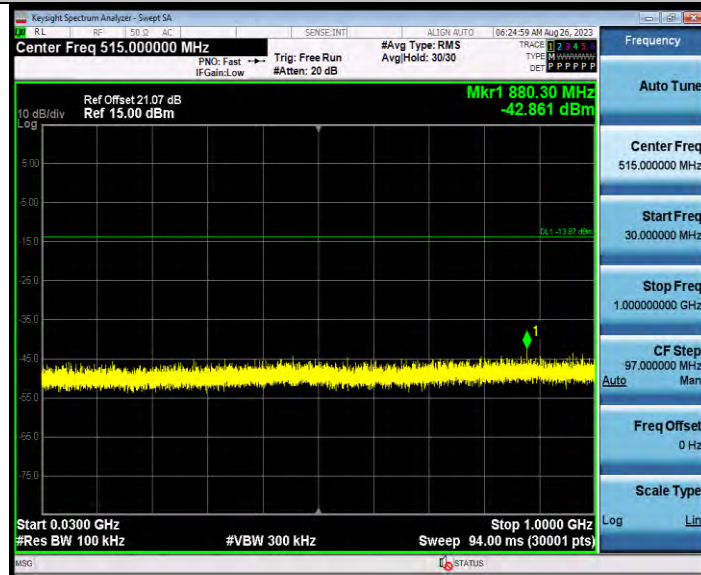


BUREAU VERITAS

Test Report No.: W7L-P23080022RF01



11N20SISO\_Ant1\_2412\_30~1000

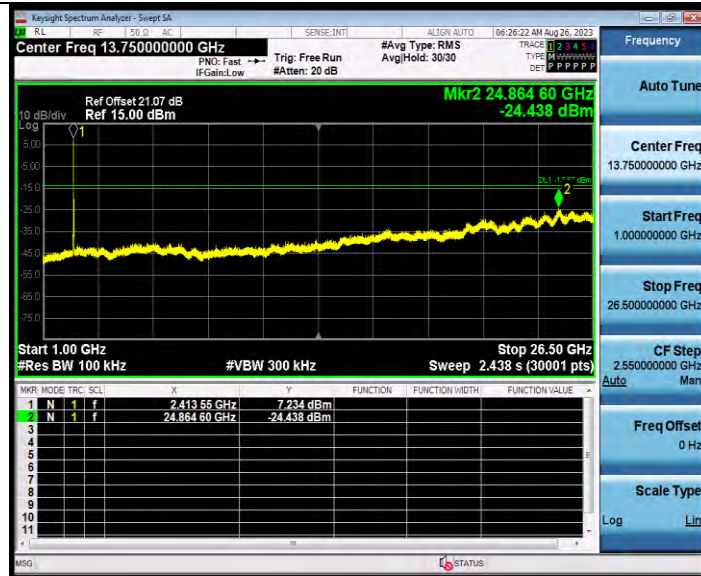


11N20SISO\_Ant1\_2412\_1000~26500



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Test Report No.: W7L-P23080022RF01



11N20SISO\_Ant1\_2437\_0~Reference



11N20SISO\_Ant1\_2437\_30~1000

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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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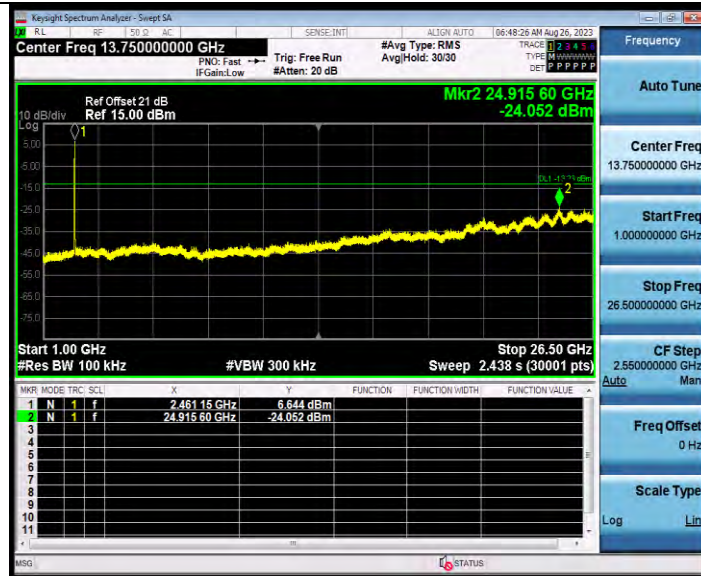
Room B37, Warehouse A5, No.3 Chiwan 4th Road,  
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11AX20SISO\_Ant1\_2412\_0~Reference



11AX20SISO\_Ant1\_2412\_30~1000

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11AX20SISO\_Ant1\_2412\_1000~26500



11AX20SISO\_Ant1\_2437\_0~Reference

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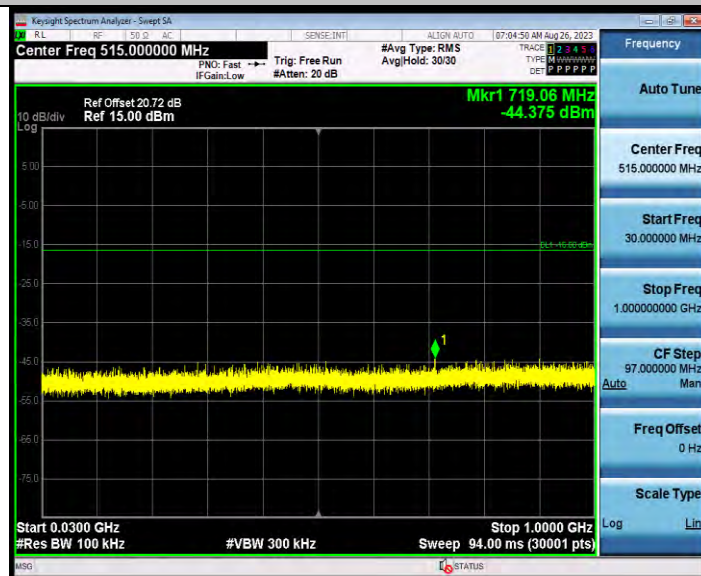


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Test Report No.: W7L-P23080022RF01



11AX20SISO\_Ant1\_2437\_30~1000



11AX20SISO\_Ant1\_2437\_1000~26500



**BUREAU  
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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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## 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



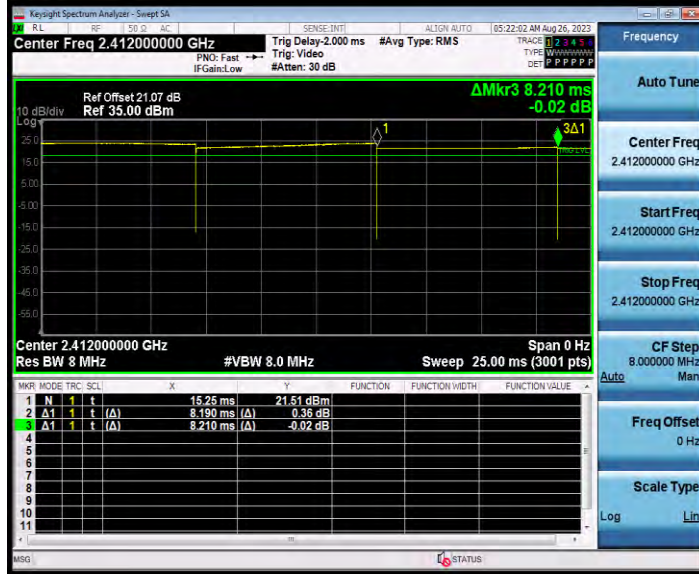


BUREAU VERITAS

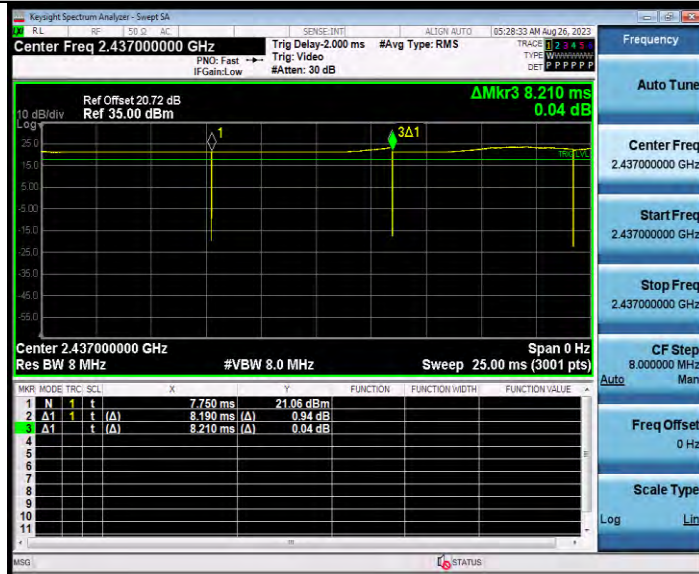
Test Report No.: W7L-P23080022RF01

### TEST GRAPHS

11B\_Ant1\_2412



11B\_Ant1\_2437

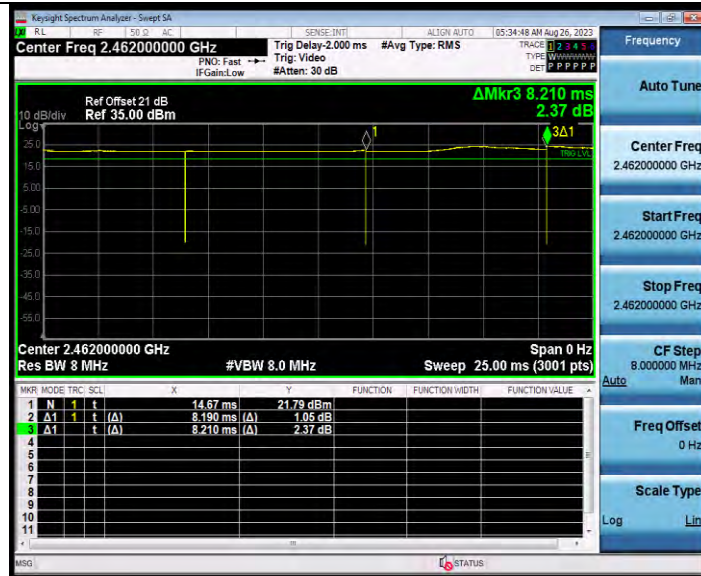


11B\_Ant1\_2462

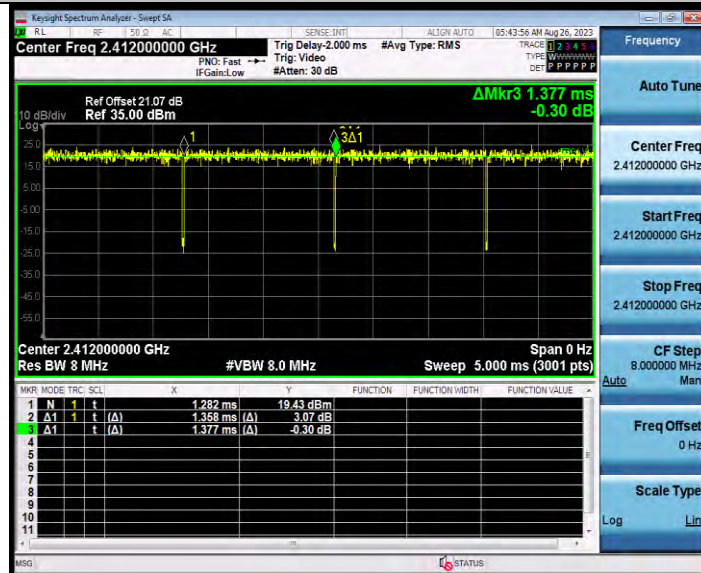


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11G\_Ant1\_2412



11G\_Ant1\_2437

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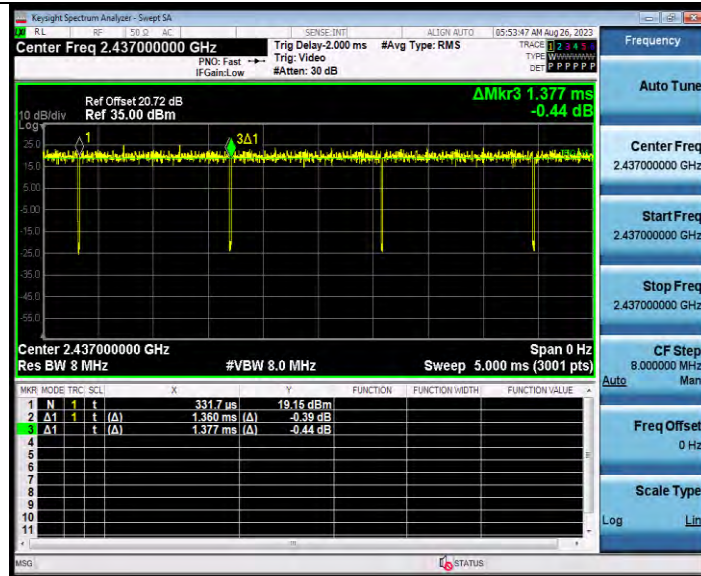
Room B37, Warehouse A5, No.3 Chiwan 4th Road,  
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Fax: +86 755 8869 6577  
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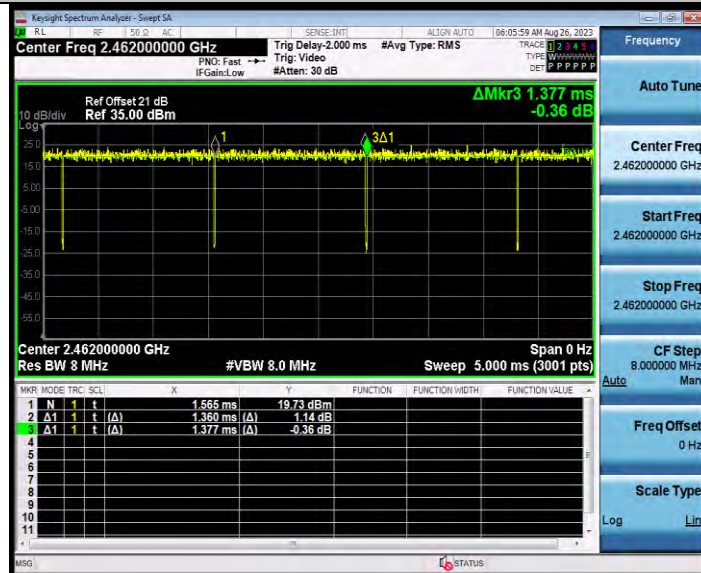


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**Test Report No.: W7L-P23080022RF01**



11G\_Ant1\_2462

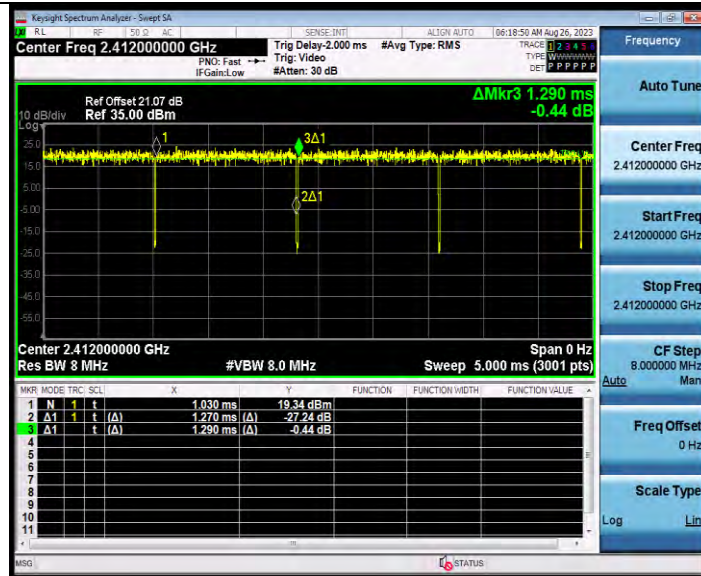


11N20SISO\_Ant1\_2412

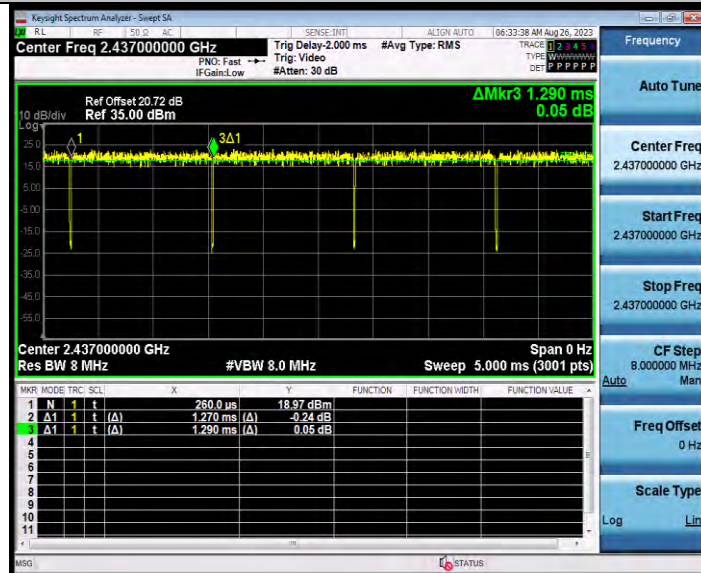


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11N20SISO\_Ant1\_2437

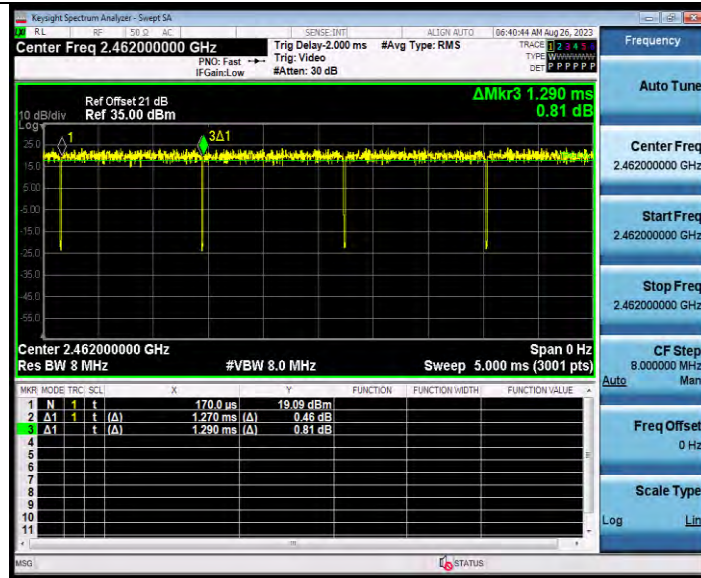


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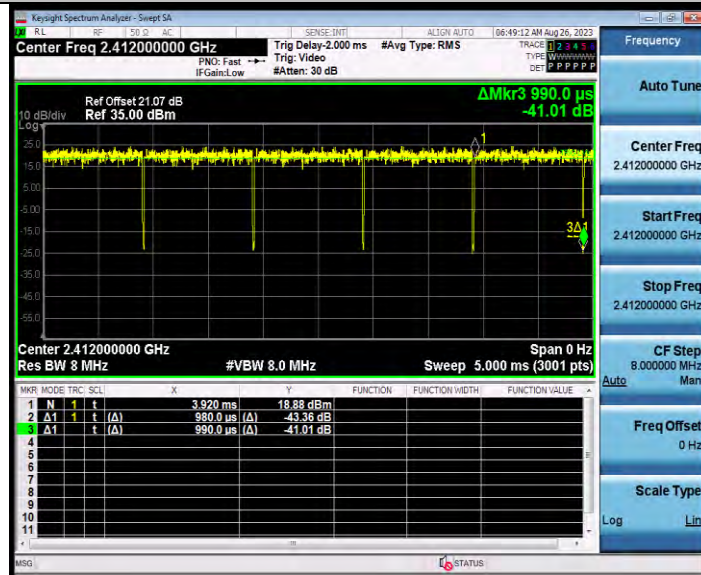


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11AX20SISO\_Ant1\_2412

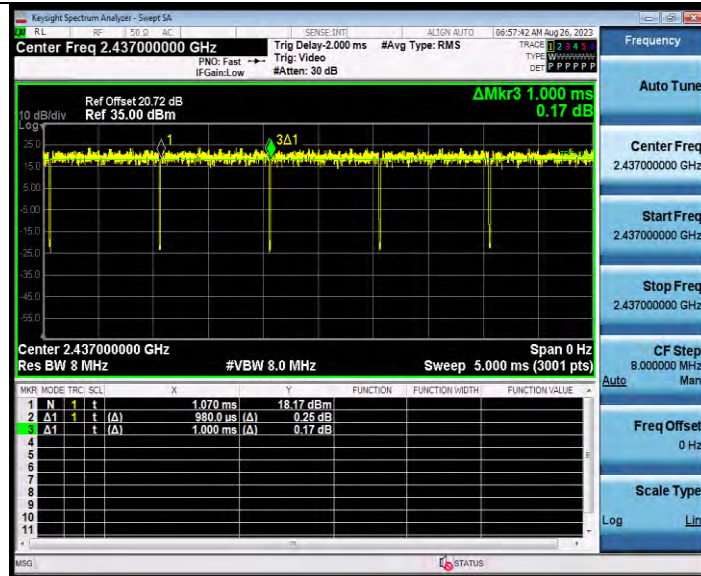


11AX20SISO\_Ant1\_2437

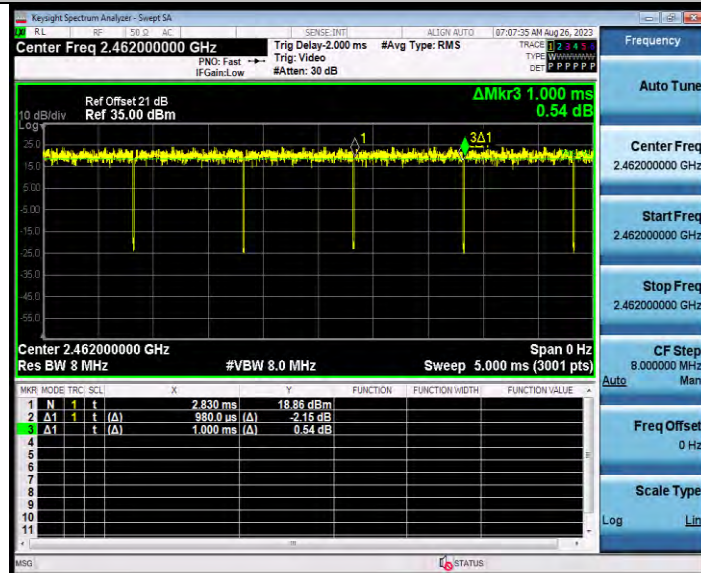


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11AX20SISO\_Ant1\_2462





## 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



### TEST GRAPHS

BLE\_1M\_Ant1\_2402



BLE\_1M\_Ant1\_2440



BLE\_1M\_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	1.0415	2401.4917	2402.5332	---	---
		2440	1.0462	2439.4883	2440.5345	---	---
		2480	1.0380	2479.4898	2480.5278	---	---



### TEST GRAPHS





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### 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	<b>13.29</b>	<b>21.33</b>	≤30	<b>16.39</b>	<b>43.55</b>	≤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 GRAPHS

BLE\_1M\_Ant1\_2402



BLE\_1M\_Ant1\_2440

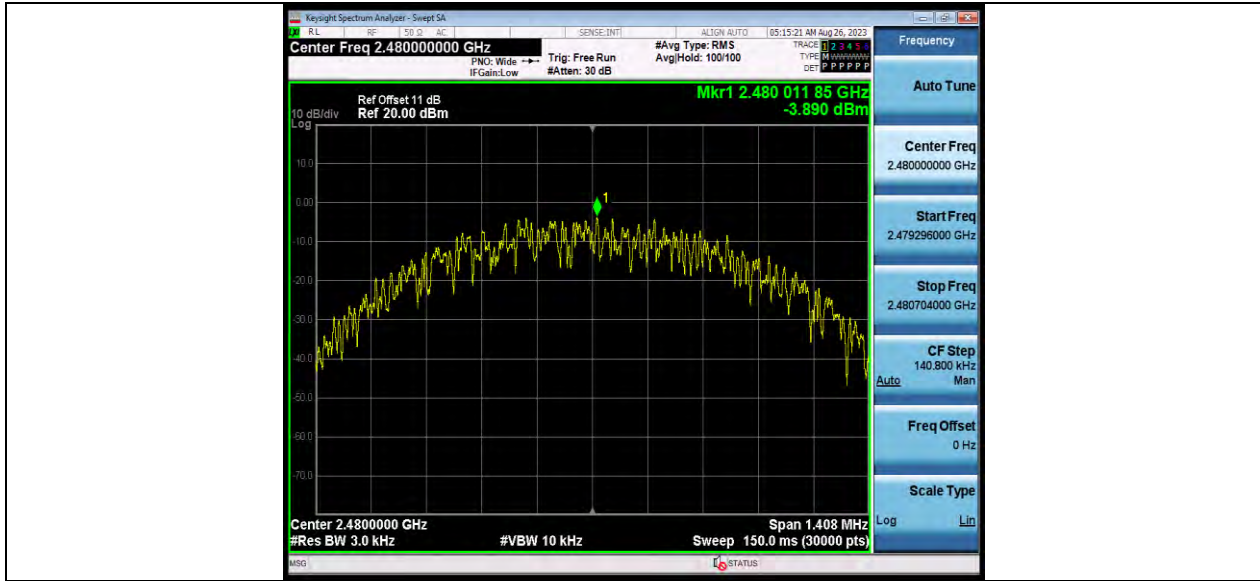


BLE\_1M\_Ant1\_2480



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## BAND EDGE MEASUREMENTS

### TEST RESULT

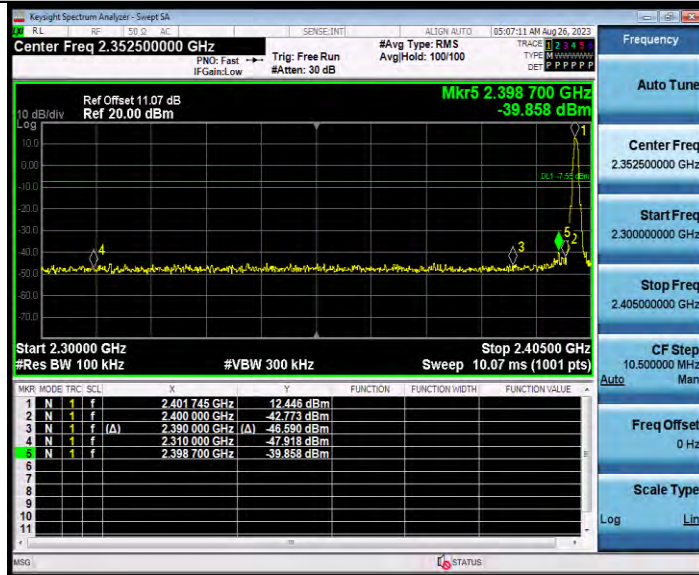
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	12.45	-39.86	≤-7.55	PASS
		High	2480	11.60	-43.47	≤-8.4	PASS



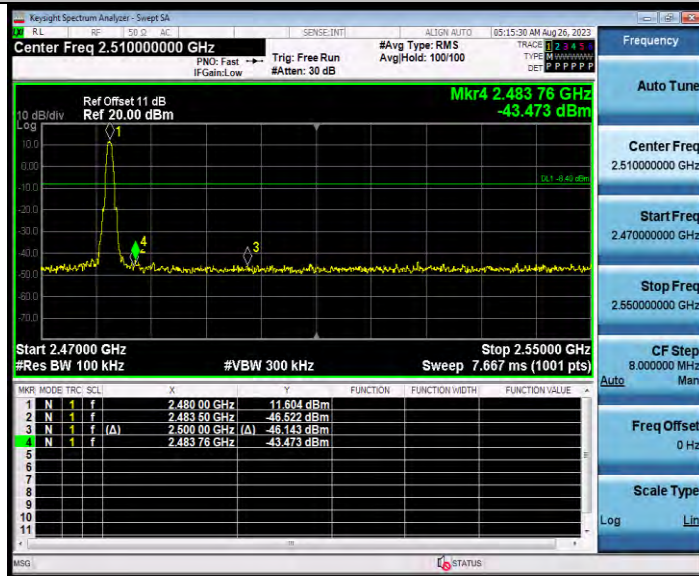


### TEST GRAPHS

BLE\_1M\_Ant1\_Low\_2402



BLE\_1M\_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	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





BUREAU VERITAS

Test Report No.: W7L-P23080022RF01



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

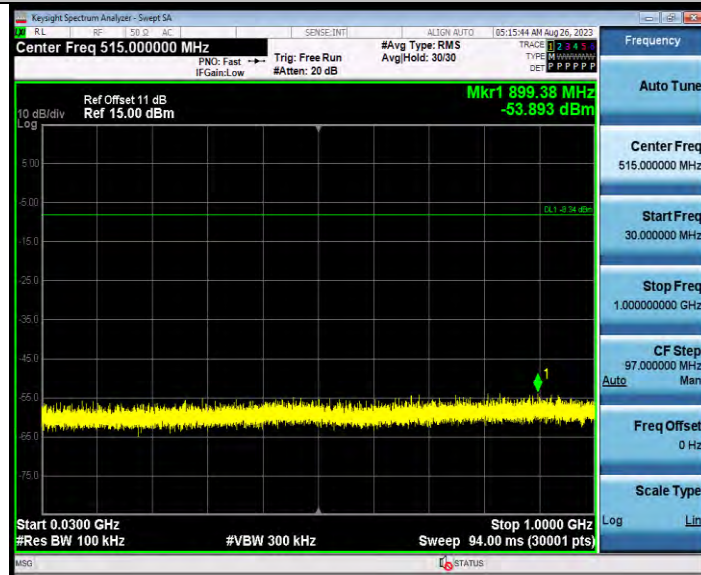


BUREAU VERITAS

Test Report No.: W7L-P23080022RF01



BLE\_1M\_Ant1\_2480\_30~1000



BLE\_1M\_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	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



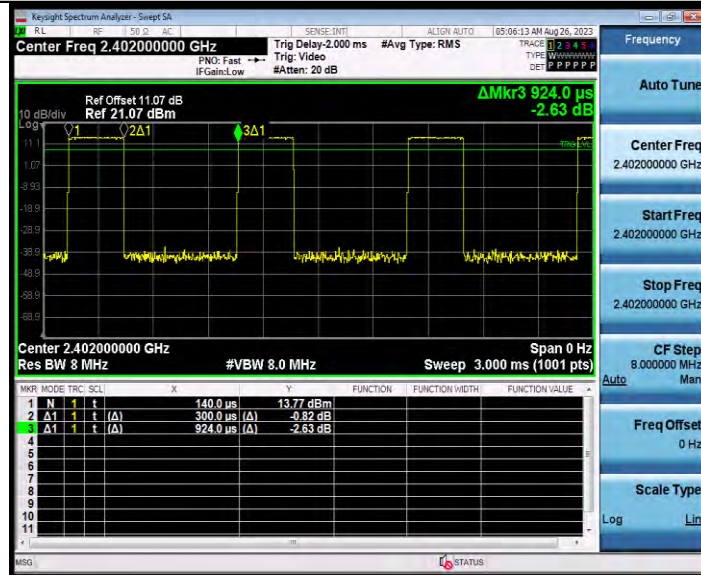


BUREAU VERITAS

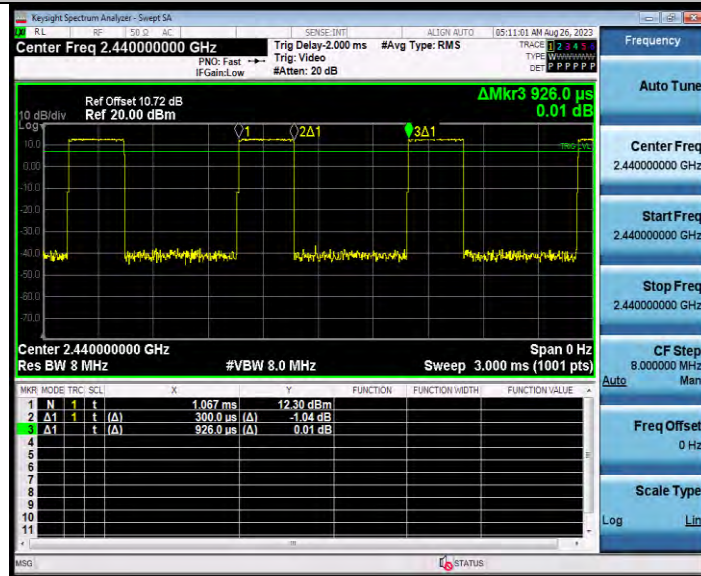
Test Report No.: W7L-P23080022RF01

### TEST GRAPHS

BLE\_1M\_Ant1\_2402



BLE\_1M\_Ant1\_2440



BLE\_1M\_Ant1\_2480

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