RF Test Data for 2.4G Wi-Fi (Conducted Measurements)

General Description of EUT	
Product Name:	NVR
Test Model:	TZ-NVR10VP
Sample ID:	HC-C-202407-0307-01-01-2#
Environmental Conditions	
Temperature:	23.8℃
Relative Humidity:	48%
Test Voltage:	DC 12V
Test Engineer:	Jolin Lee
Note: For a more detailed features description, please refer to the report TBR-C-202407-0307-2	

Contents

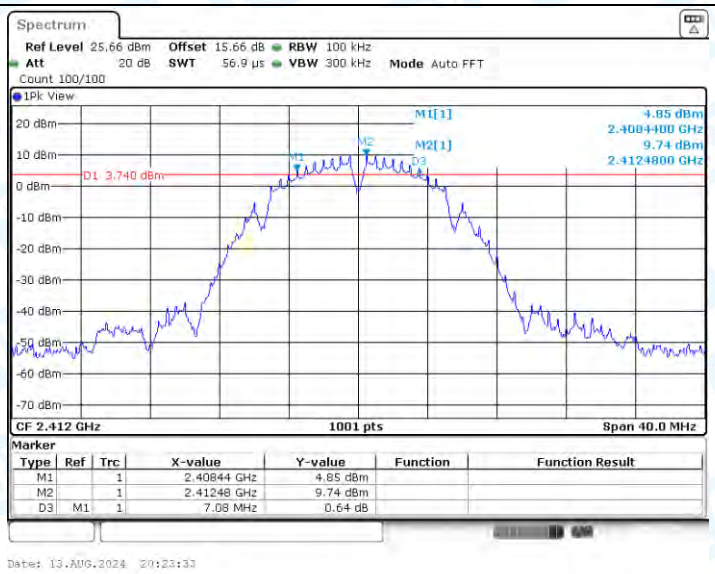
1. DTS Bandwidth 3
1.1.Test Result 3
1.2.Test Graphs 4
2. Occupied Channel Bandwidth 10
2.1.Test Result 10
2.2.Test Graphs 11
3. Maximum conducted output power 17
3.1.Test Result 17
4. Maximum power spectral density 18
4.1.Test Result 18
4.2.Test Graphs 19
5. Band edge measurements 25
5.1.Test Result 25
5.2.Test Graphs 26
6. Conducted Spurious Emission 30
6.1.Test Result 30
6.2.Test Graphs 32
7. Duty Cycle 50
7.1.Test Result 50
7.2.Test Graphs 51
8. Emissions in Restricted Bands 57
8.1.Test Result 57
8.2.Test Graphs 59

1. DTS Bandwidth

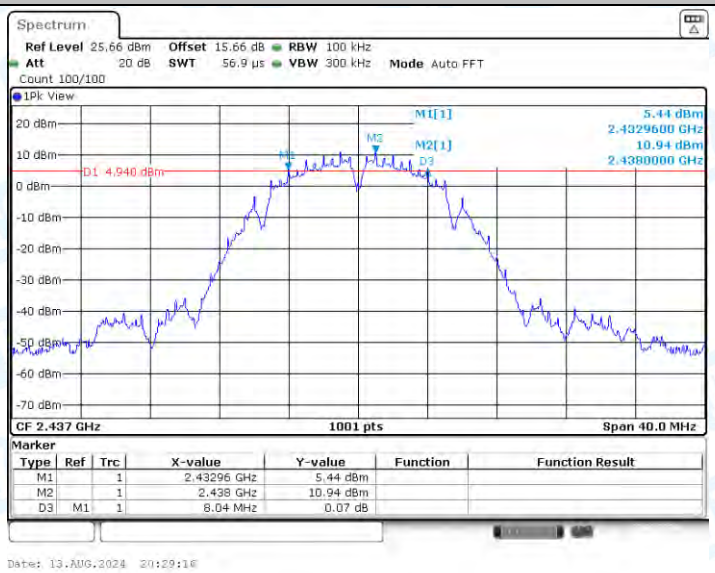
1.1.Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	7.08	2408.44	2415.52	0.5	PASS
		2437	8.04	2432.96	2441.00	0.5	PASS
		2462	7.08	2458.44	2465.52	0.5	PASS
11G	Ant1	2412	15.32	2404.24	2419.56	0.5	PASS
		2437	15.36	2429.40	2444.76	0.5	PASS
		2462	16.36	2453.80	2470.16	0.5	PASS
11N20SISO	Ant1	2412	17.56	2403.20	2420.76	0.5	PASS
		2437	13.88	2429.44	2443.32	0.5	PASS
		2462	17.60	2453.20	2470.80	0.5	PASS
11N40SISO	Ant1	2422	35.68	2403.84	2439.52	0.5	PASS
		2437	36.08	2418.84	2454.92	0.5	PASS
		2452	36.32	2433.84	2470.16	0.5	PASS
11AX20SISO	Ant1	2412	18.04	2403.04	2421.08	0.5	PASS
		2437	17.16	2429.00	2446.16	0.5	PASS
		2462	15.76	2453.76	2469.52	0.5	PASS
11AX40SISO	Ant1	2422	37.60	2402.96	2440.56	0.5	PASS
		2437	37.68	2418.20	2455.88	0.5	PASS
		2452	38.00	2432.96	2470.96	0.5	PASS

1.2.Test Graphs



11B_Ant1_2412



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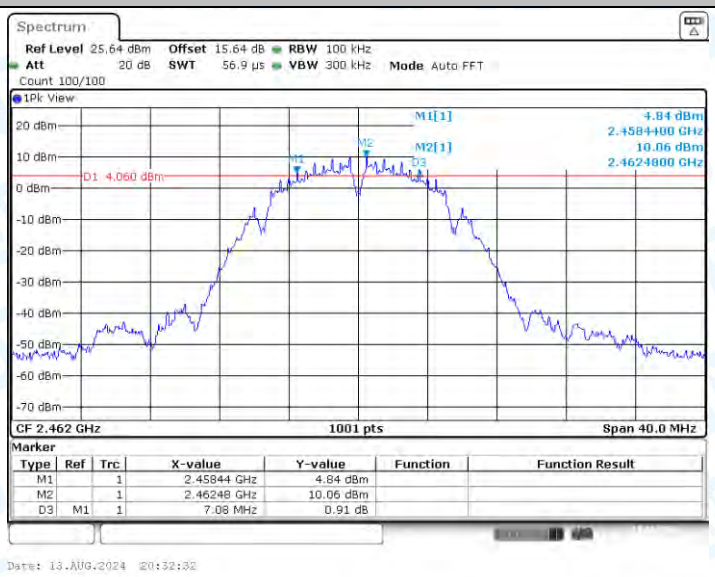

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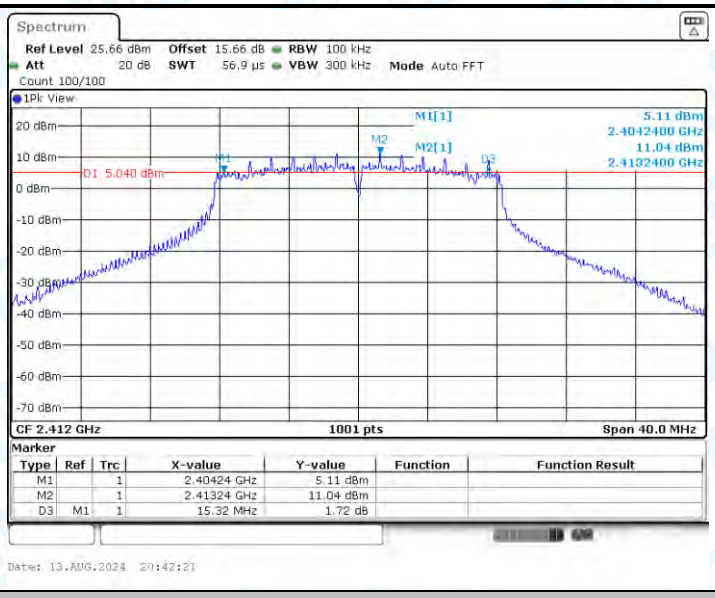

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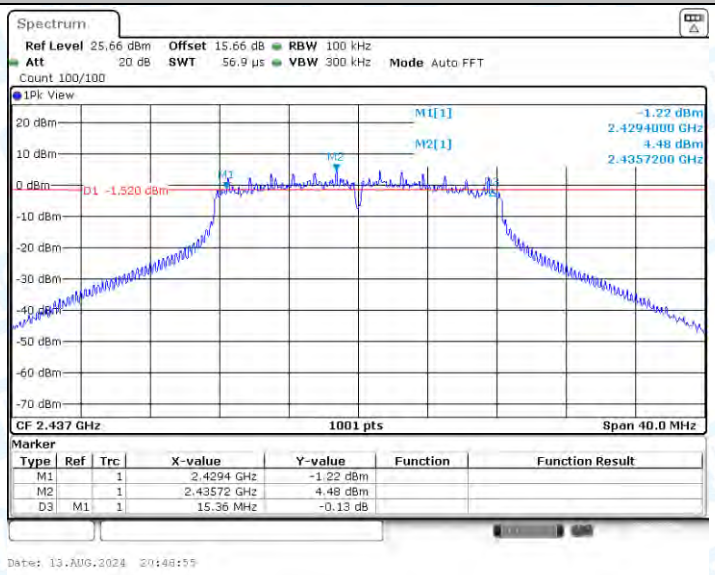

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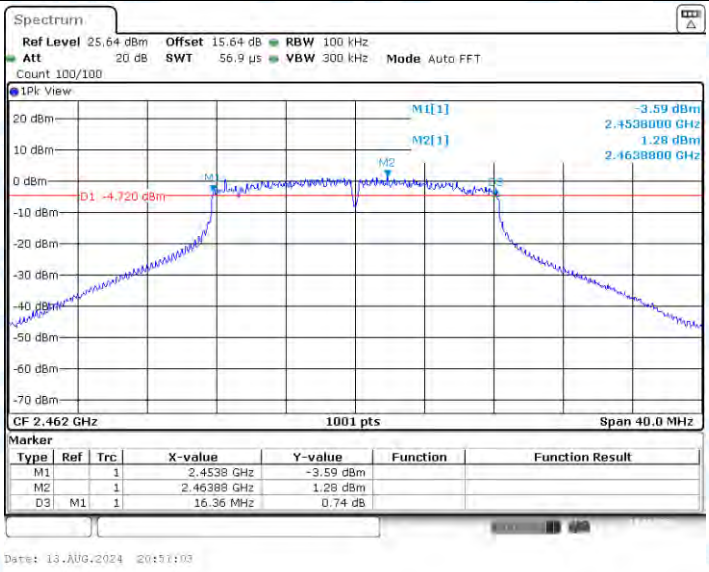

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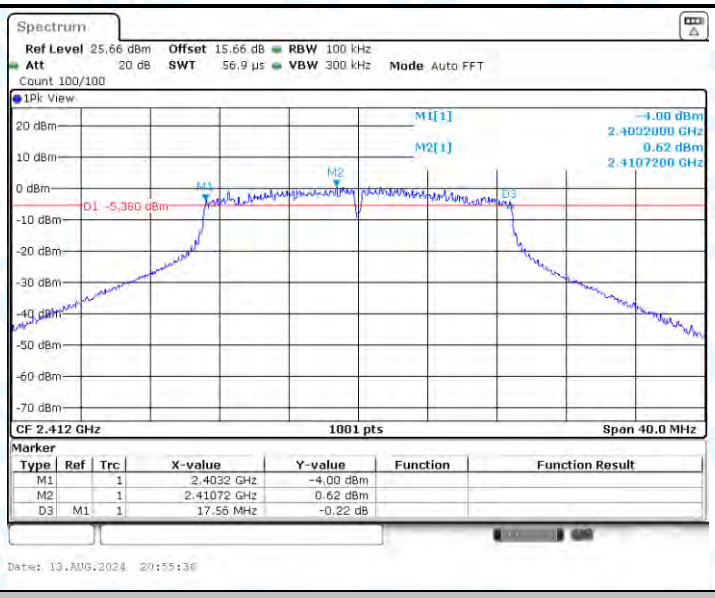

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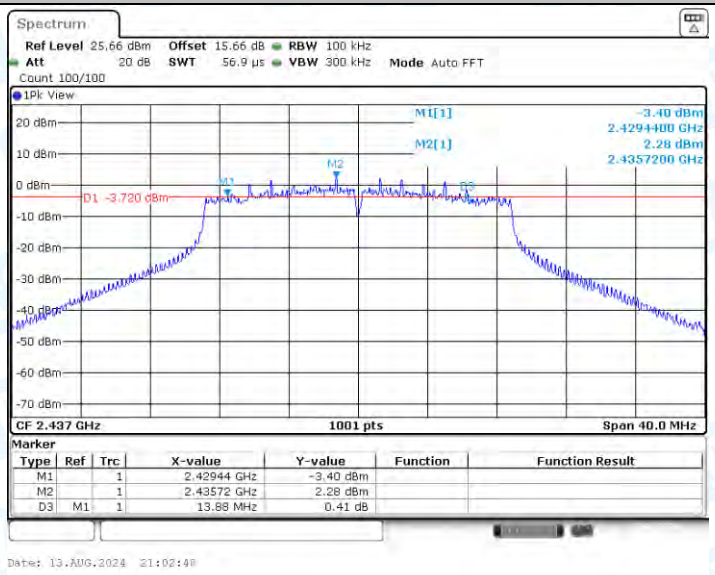

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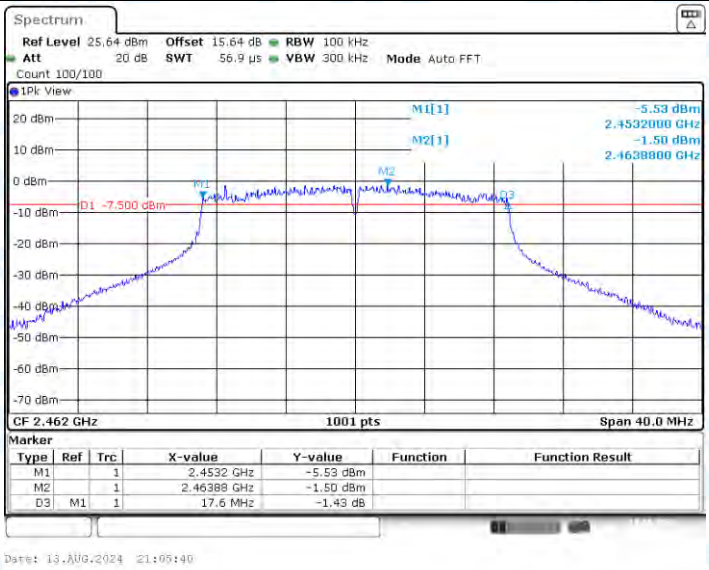

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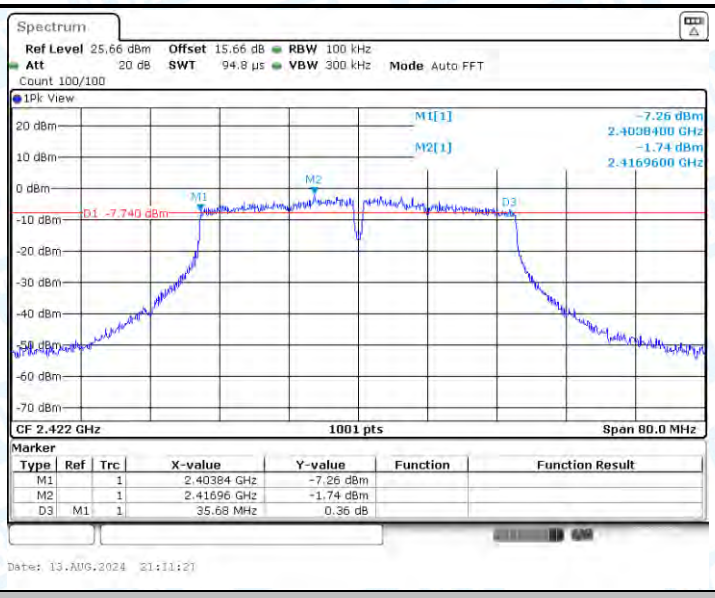

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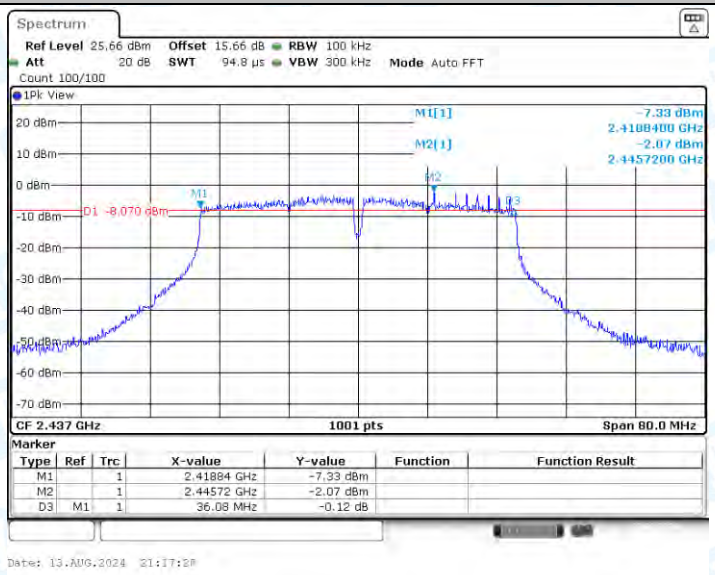

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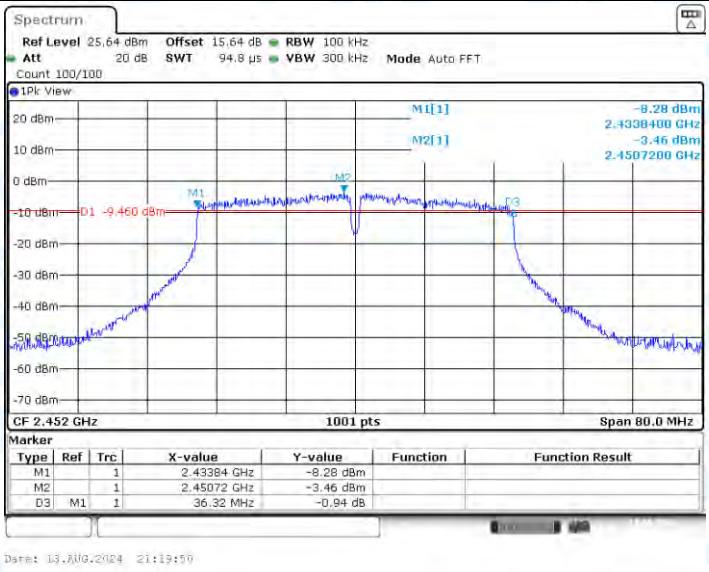

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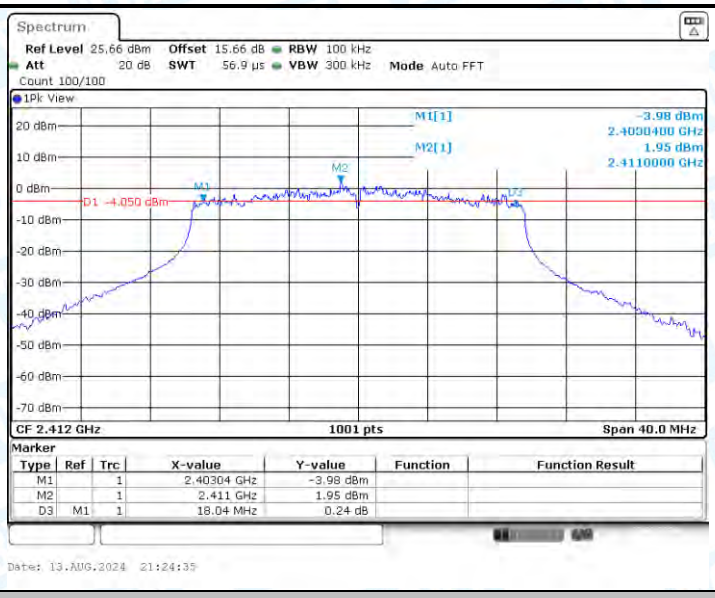

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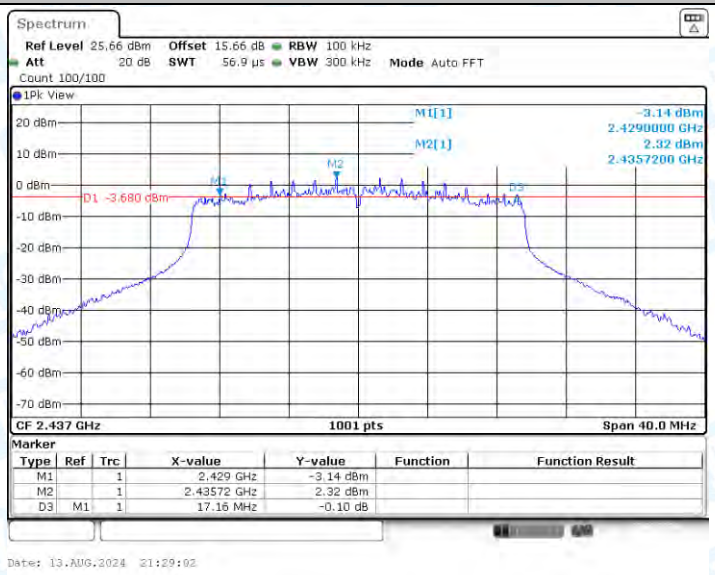

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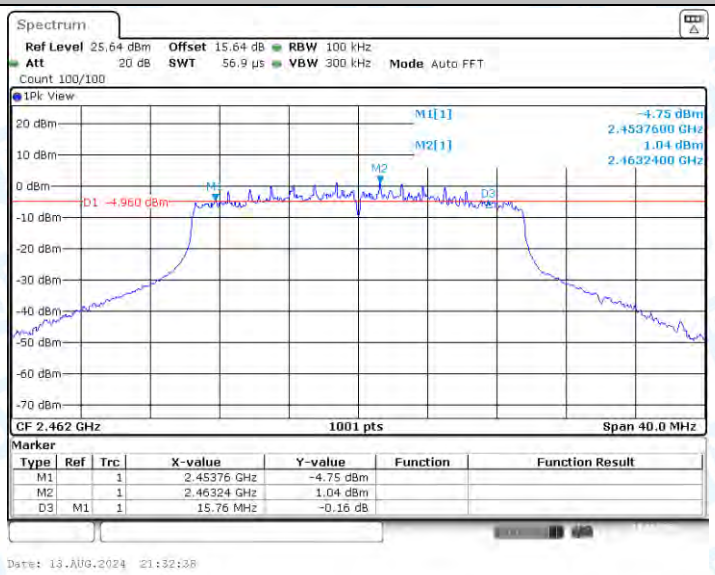

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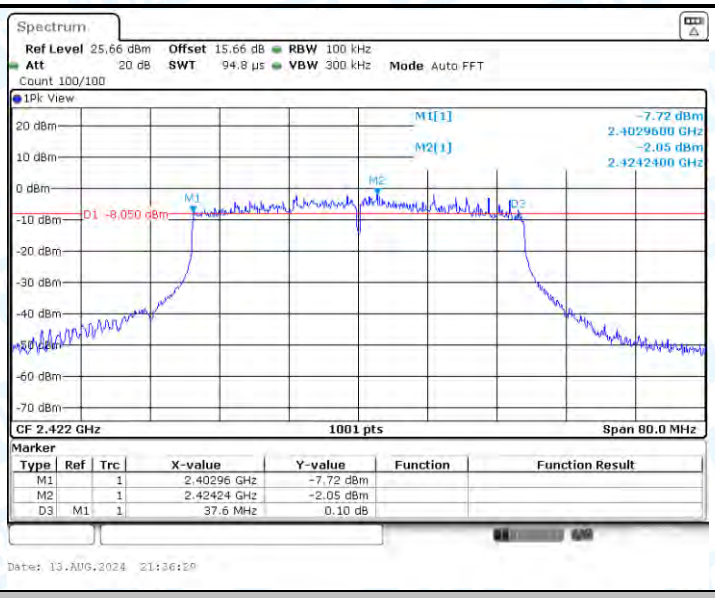

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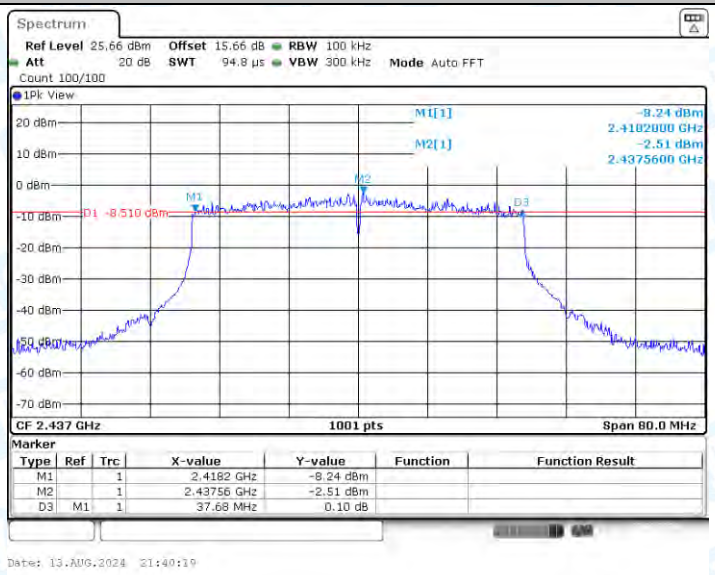

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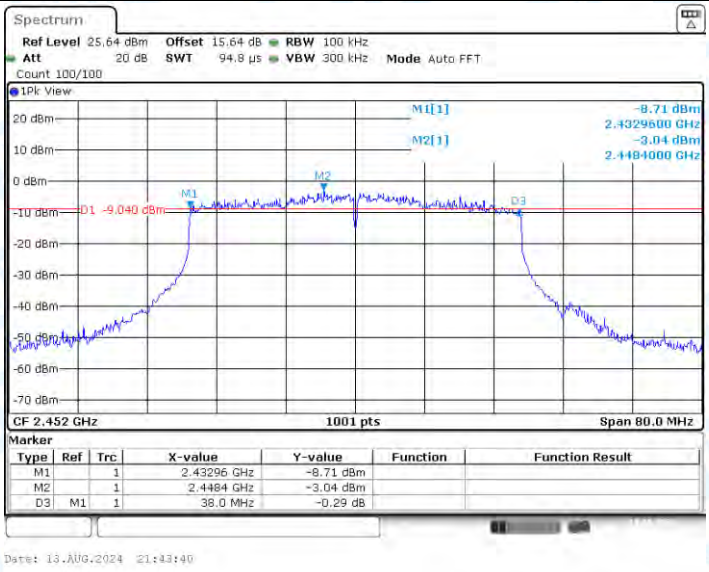


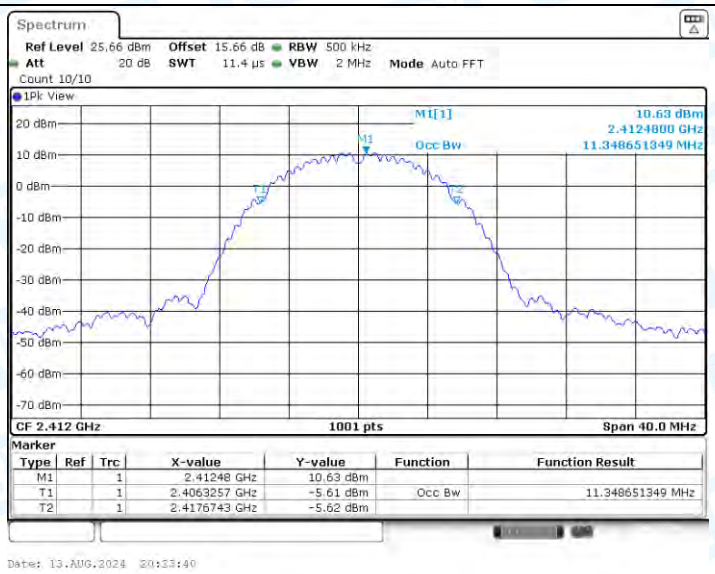
11AX40SISO_Ant1_2452

2. Occupied Channel Bandwidth

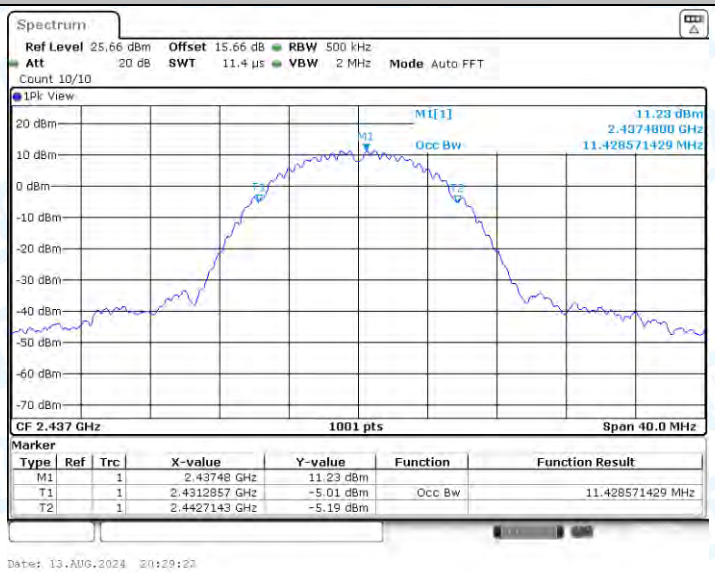
2.1.Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	11.349	2406.3257	2417.6743	---	---
		2437	11.429	2431.2857	2442.7143	---	---
		2462	11.349	2456.3257	2467.6743	---	---
11G	Ant1	2412	17.263	2403.2887	2420.5514	---	---
		2437	16.863	2428.5684	2445.4316	---	---
		2462	17.343	2453.2088	2470.5514	---	---
11N20SISO	Ant1	2412	18.342	2402.8092	2421.1508	---	---
		2437	18.541	2427.6094	2446.1508	---	---
		2462	18.342	2452.8492	2471.1908	---	---
11N40SISO	Ant1	2422	36.204	2403.8581	2440.0619	---	---
		2437	36.603	2418.3786	2454.9820	---	---
		2452	36.204	2433.8581	2470.0619	---	---
11AX20SISO	Ant1	2412	19.061	2402.3696	2421.4306	---	---
		2437	19.221	2427.4496	2446.6703	---	---
		2462	19.421	2452.1299	2471.5504	---	---
11AX40SISO	Ant1	2422	37.802	2403.0589	2440.8611	---	---
		2437	37.722	2418.0589	2455.7812	---	---
		2452	37.722	2433.0589	2470.7812	---	---

2.2.Test Graphs

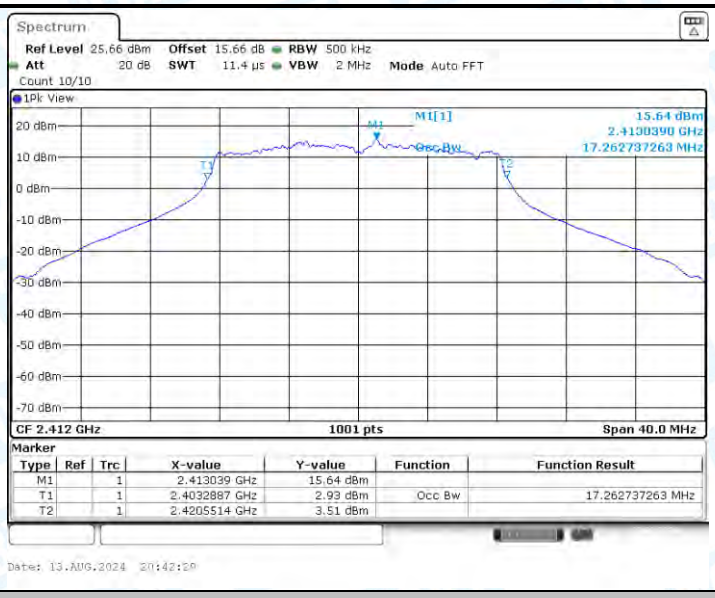


11B_Ant1_2412

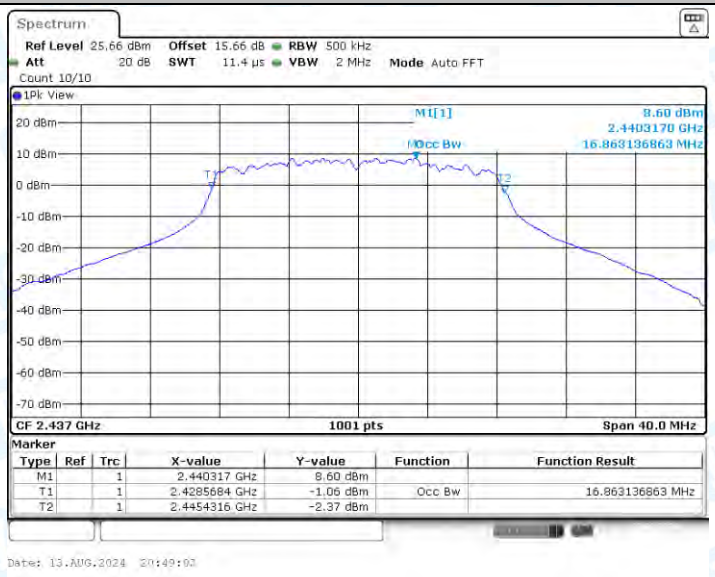


11B_Ant1_2437

11B_Ant1_2462



11G_Ant1_2412



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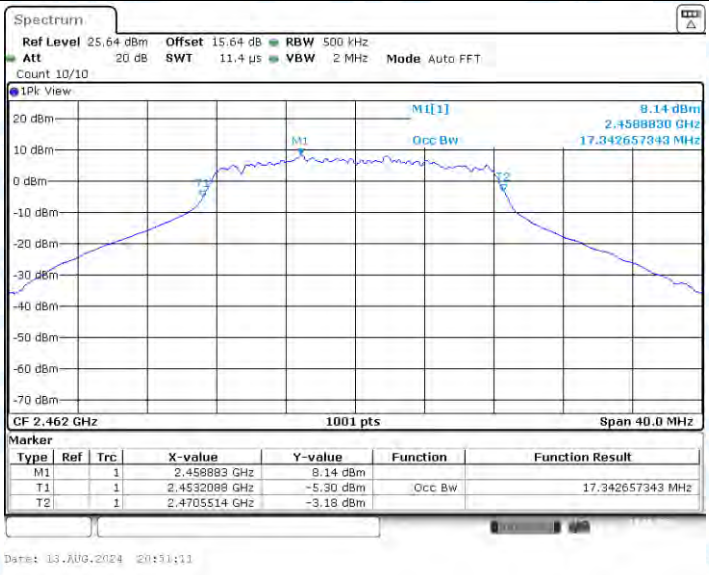
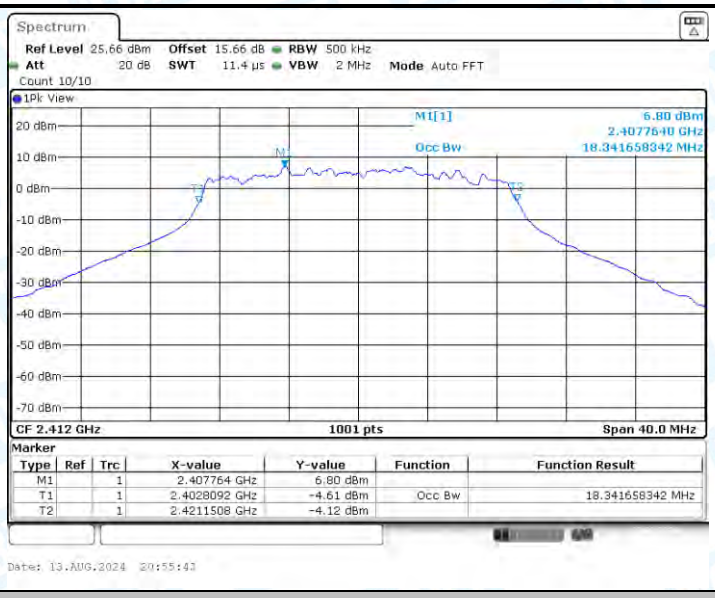


11G_Ant1_2462



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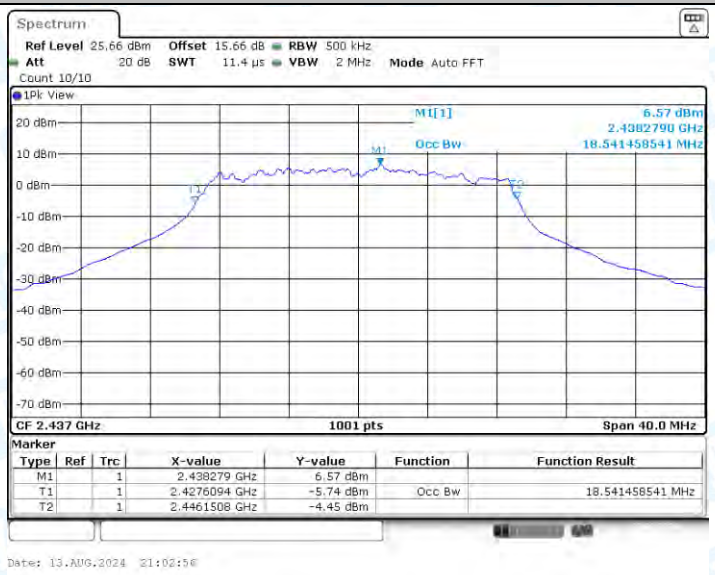

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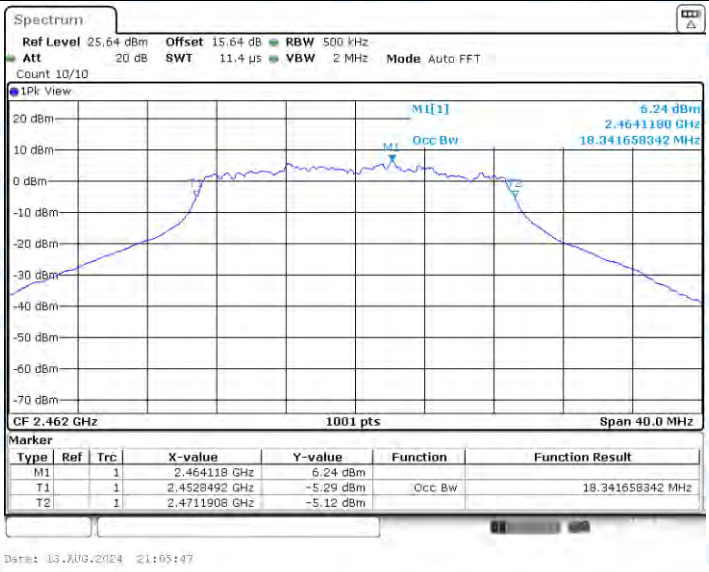

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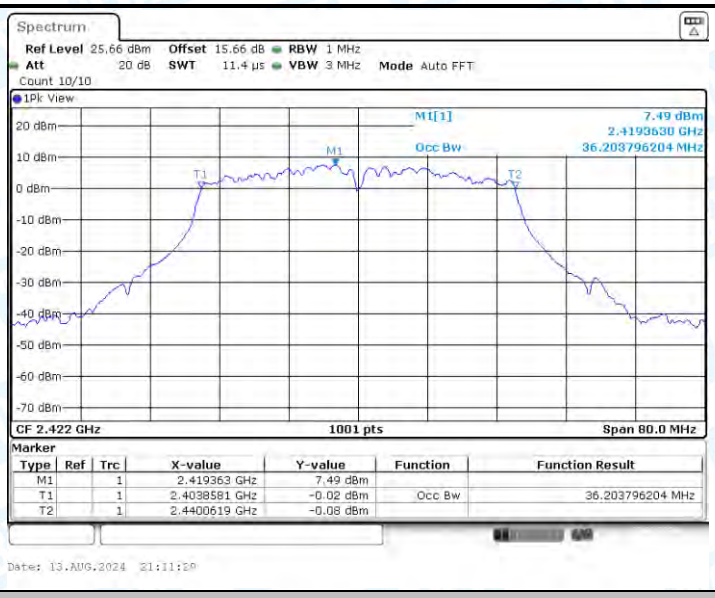
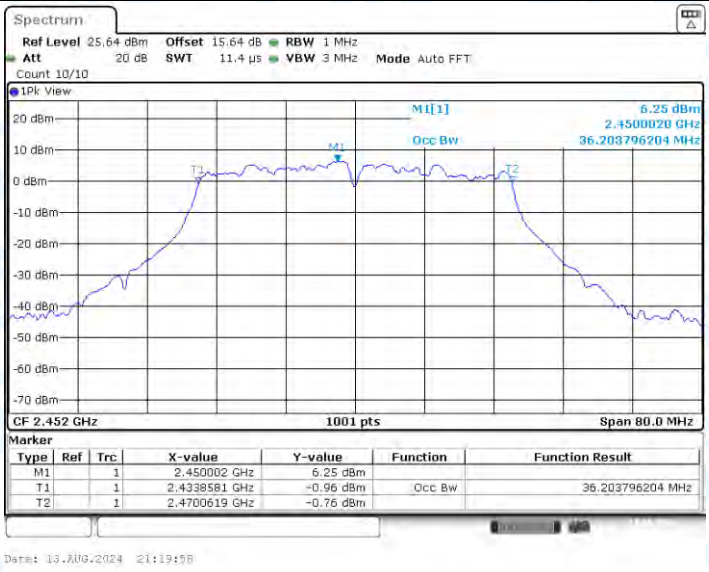


11N40SISO_Ant1_2422

11N40SISO_Ant1_2437



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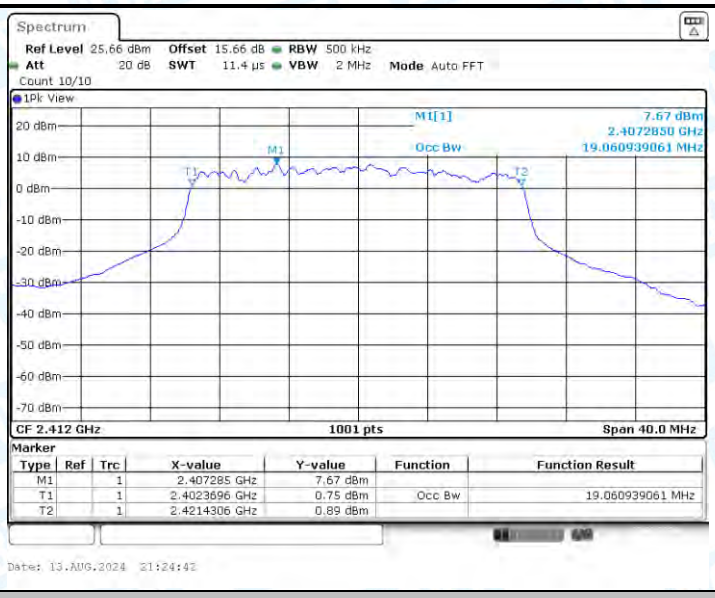

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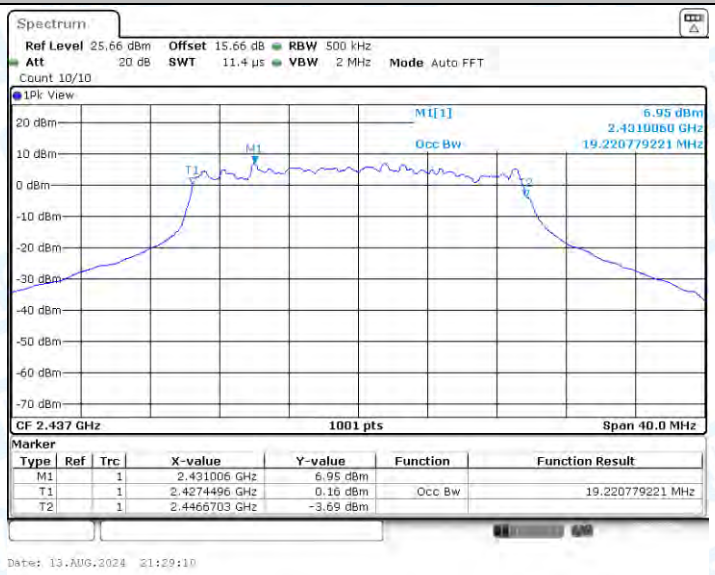

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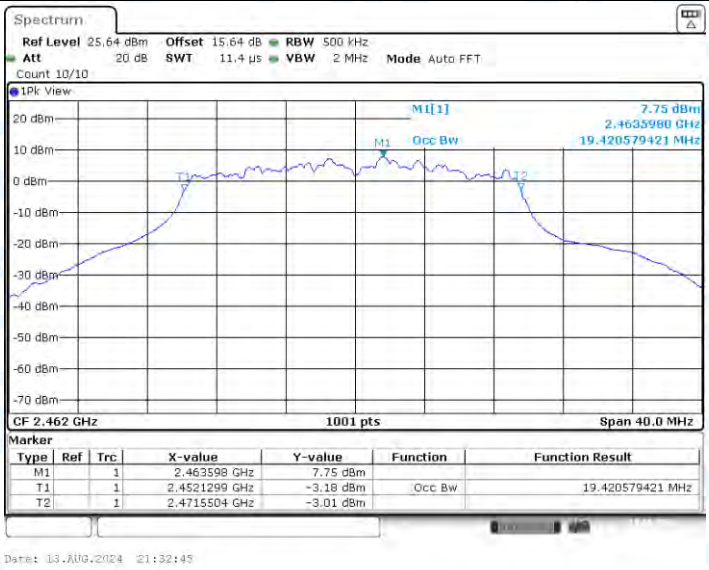

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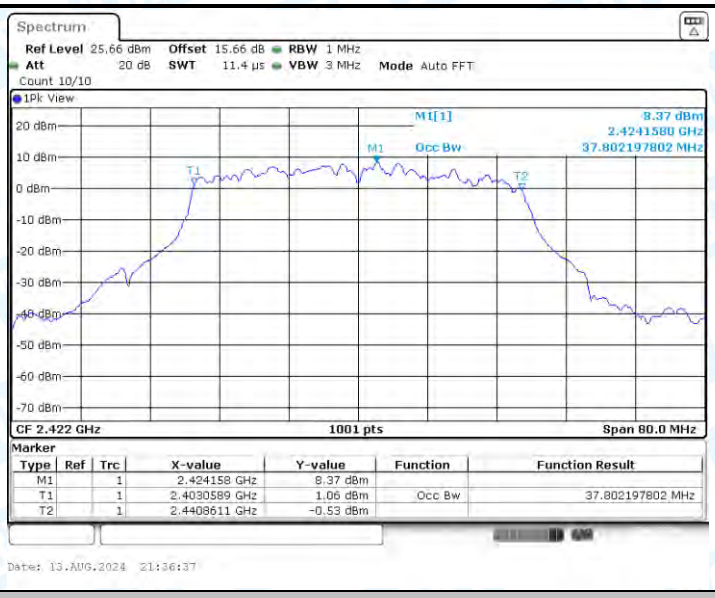

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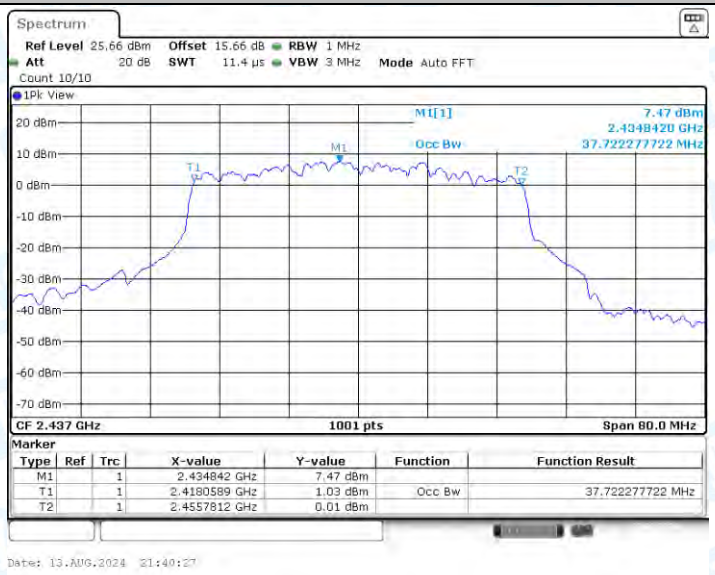

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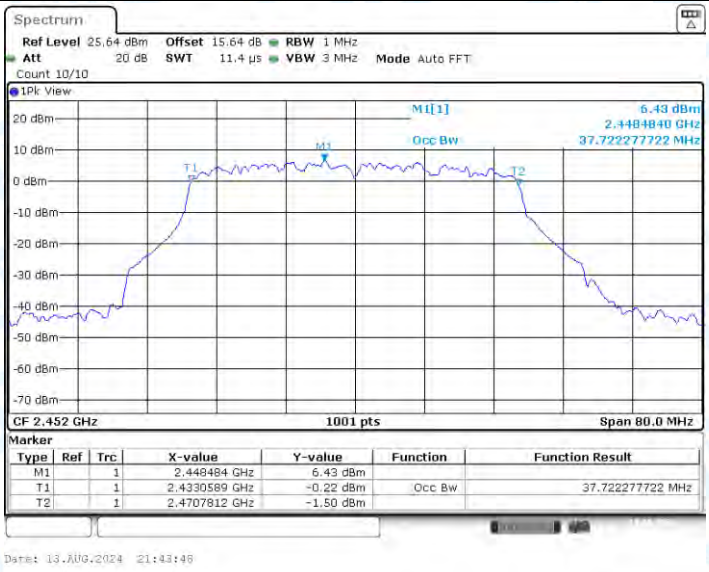


11AX40SISO_Ant1_2452

3. Maximum conducted output power

3.1.Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	21.82	≤30.00	PASS
		2437	22.29	≤30.00	PASS
		2462	21.14	≤30.00	PASS
11G	Ant1	2412	16.56	≤30.00	PASS
		2437	15.78	≤30.00	PASS
		2462	15.03	≤30.00	PASS
11N20SISO	Ant1	2412	13.47	≤30.00	PASS
		2437	12.92	≤30.00	PASS
		2462	12.30	≤30.00	PASS
11N40SISO	Ant1	2422	13.59	≤30.00	PASS
		2437	12.68	≤30.00	PASS
		2452	12.92	≤30.00	PASS
11AX20SISO	Ant1	2412	13.48	≤30.00	PASS
		2437	12.95	≤30.00	PASS
		2462	12.30	≤30.00	PASS
11AX40SISO	Ant1	2422	13.23	≤30.00	PASS
		2437	12.92	≤30.00	PASS
		2452	12.55	≤30.00	PASS

Note：The Duty Cycle Factor is compensated in the graph.

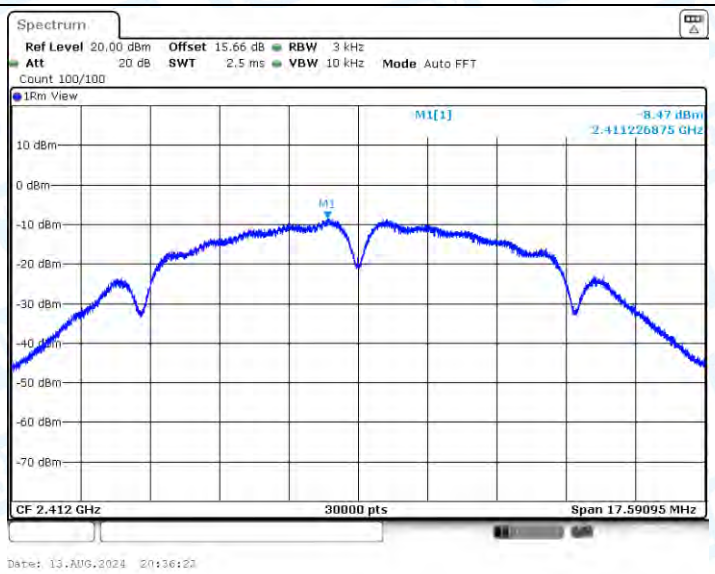
4. Maximum power spectral density

4.1.Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-7.97	≤8.00	PASS
		2437	-7.80	≤8.00	PASS
		2462	-8.65	≤8.00	PASS
11G	Ant1	2412	-16.50	≤8.00	PASS
		2437	-17.28	≤8.00	PASS
		2462	-17.85	≤8.00	PASS
11N20SISO	Ant1	2412	-18.38	≤8.00	PASS
		2437	-19.66	≤8.00	PASS
		2462	-20.88	≤8.00	PASS
11N40SISO	Ant1	2422	-22.47	≤8.00	PASS
		2437	-22.92	≤8.00	PASS
		2452	-23.56	≤8.00	PASS
11AX20SISO	Ant1	2412	-19.06	≤8.00	PASS
		2437	-20.78	≤8.00	PASS
		2462	-20.95	≤8.00	PASS
11AX40SISO	Ant1	2422	-23.13	≤8.00	PASS
		2437	-23.45	≤8.00	PASS
		2452	-23.98	≤8.00	PASS

Note：The Duty Cycle Factor is compensated in the graph.

4.2.Test Graphs



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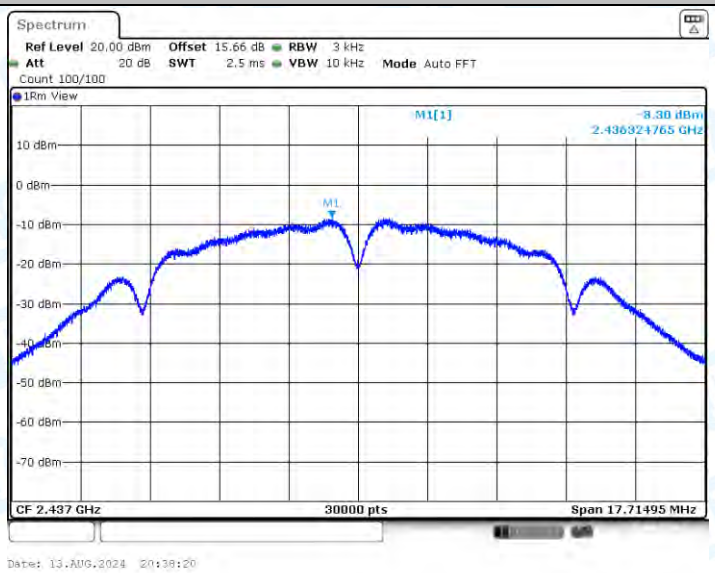

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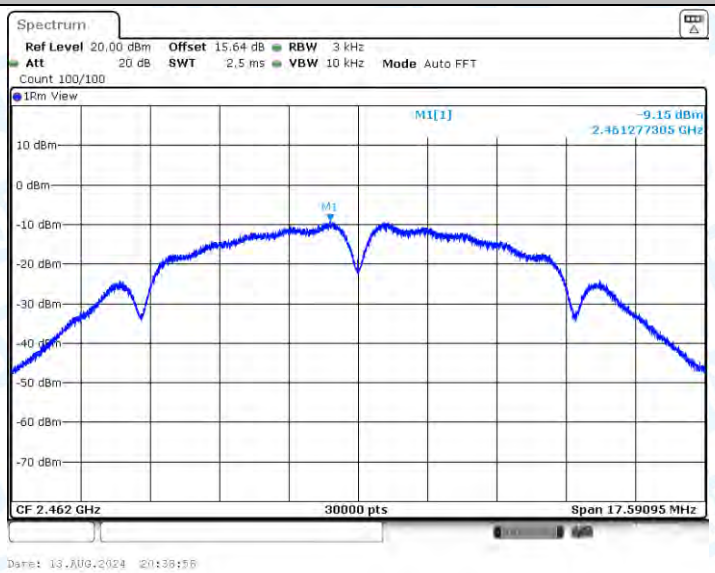

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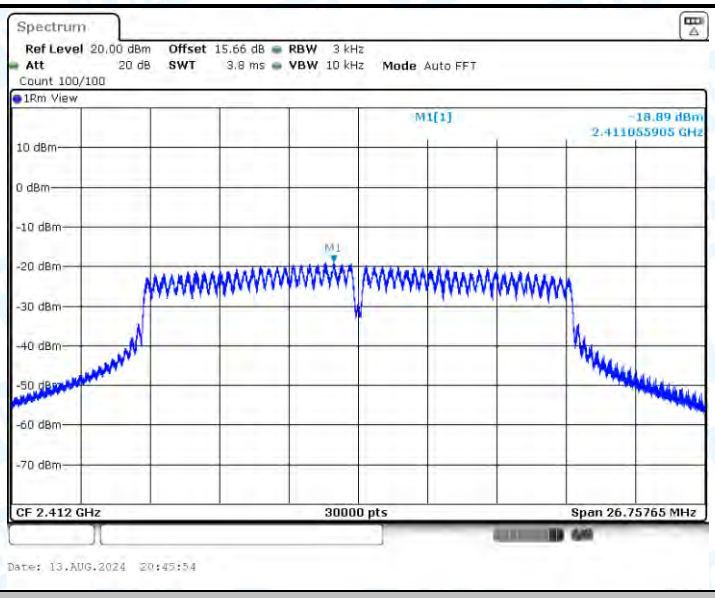
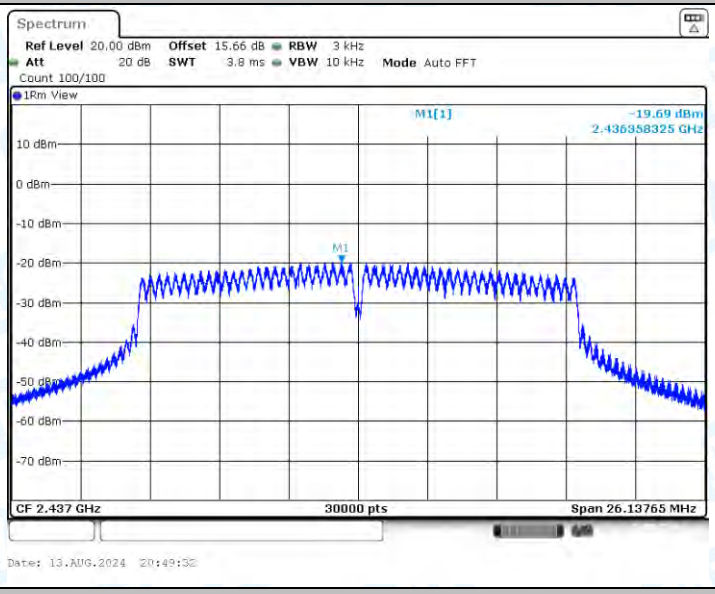
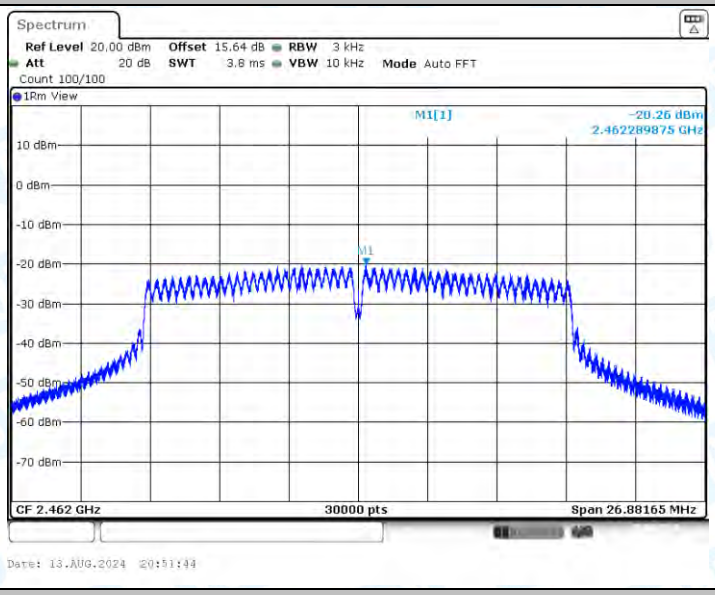


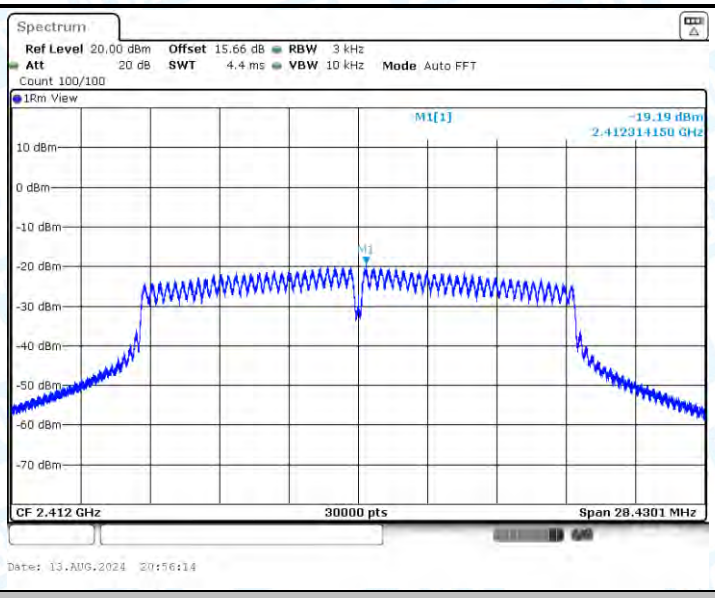
11G_Ant1_2412



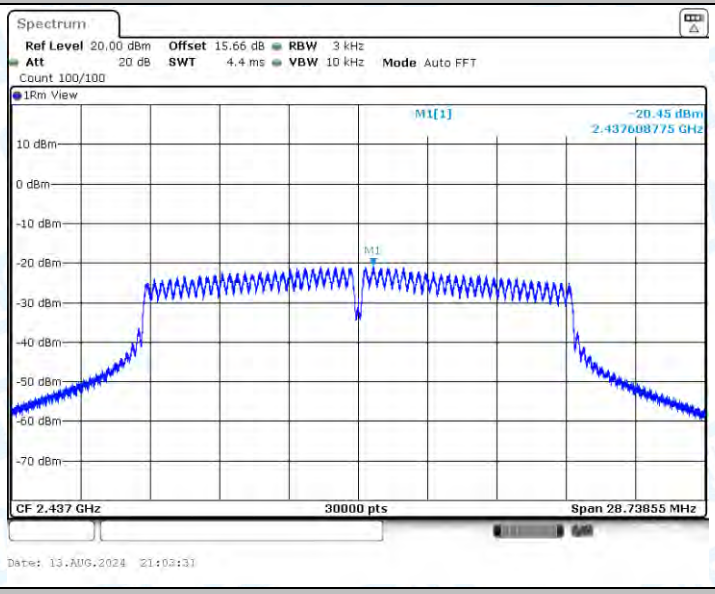
11G_Ant1_2437



11G_Ant1_2462



11N20SISO_Ant1_2412



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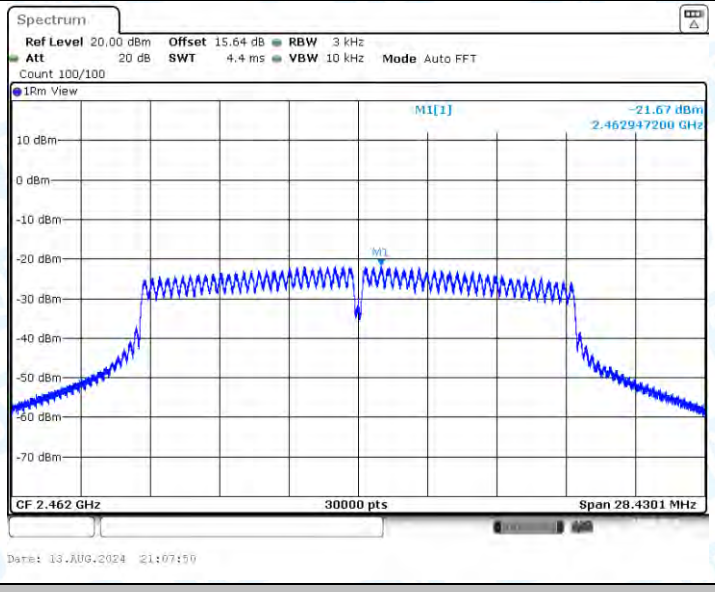
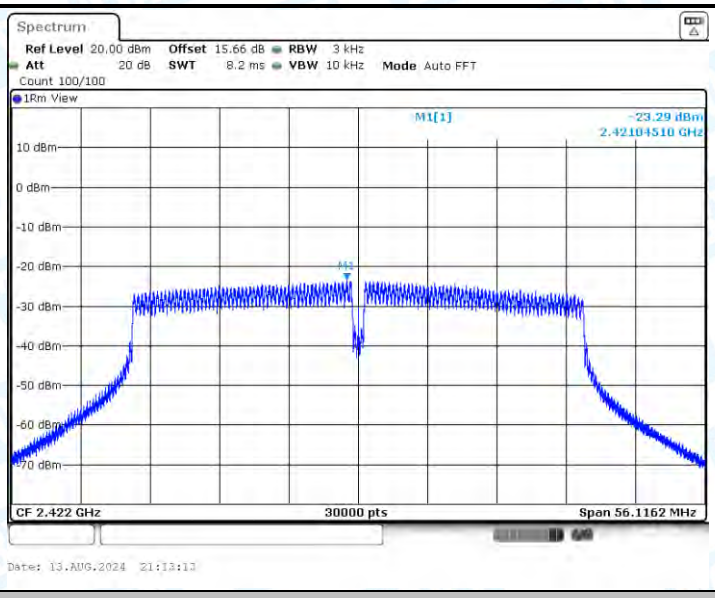


11N20SISO_Ant1_2462



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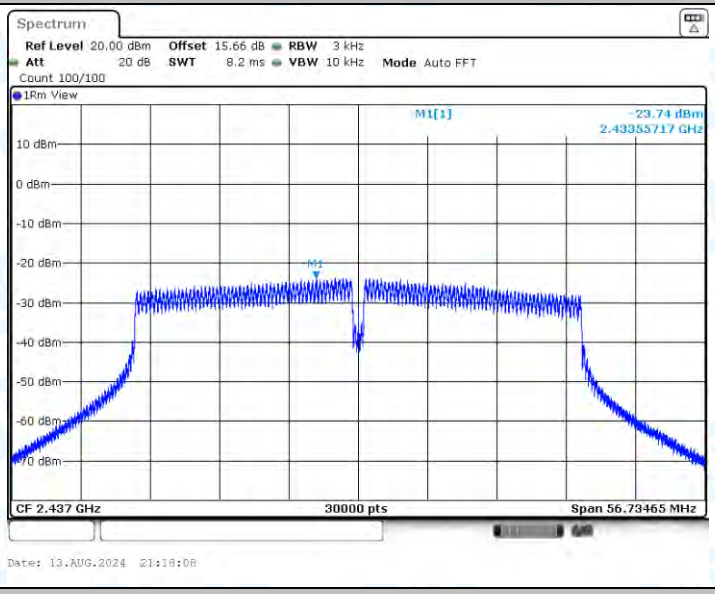

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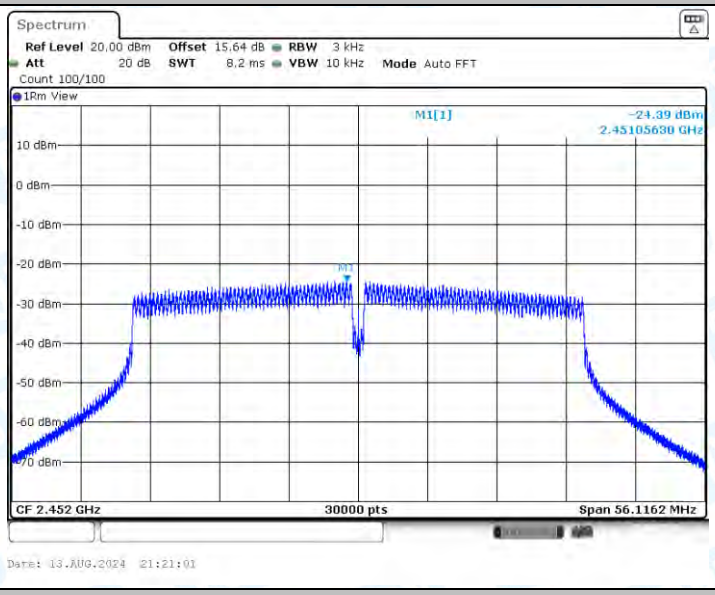

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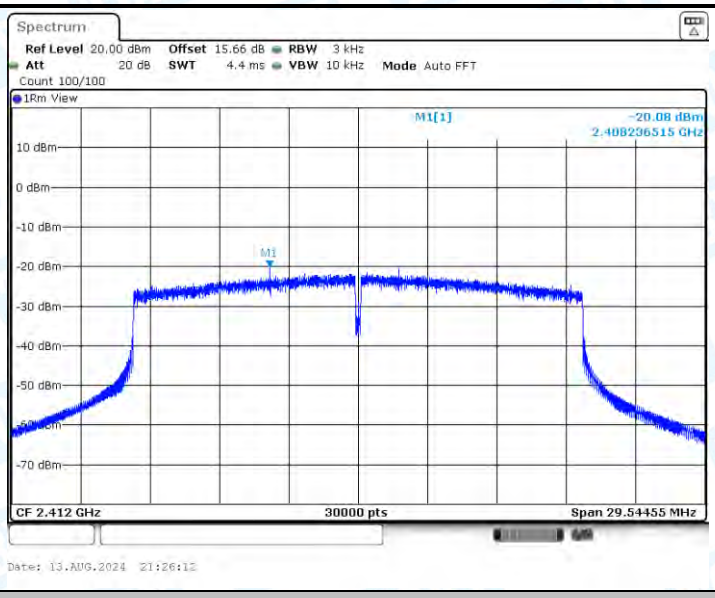
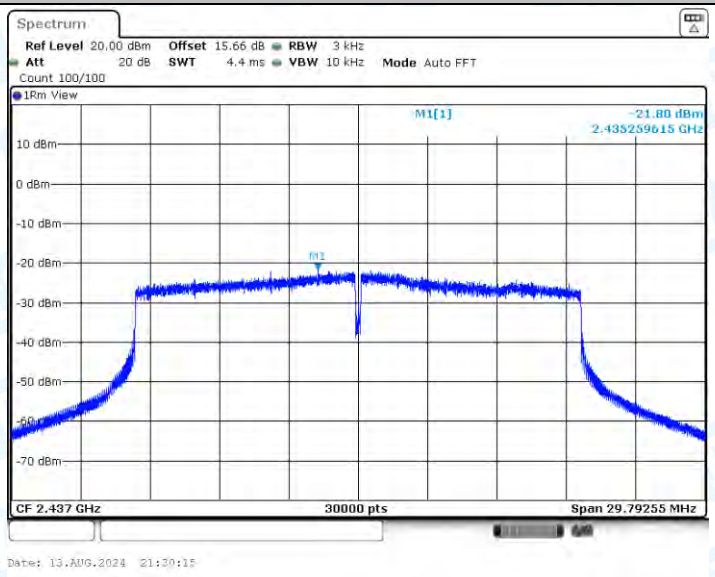


11AX20SISO_Ant1_2412



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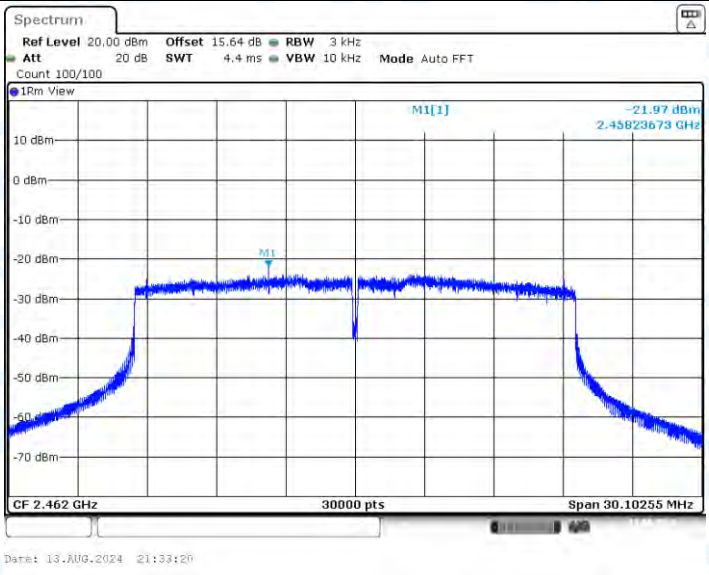
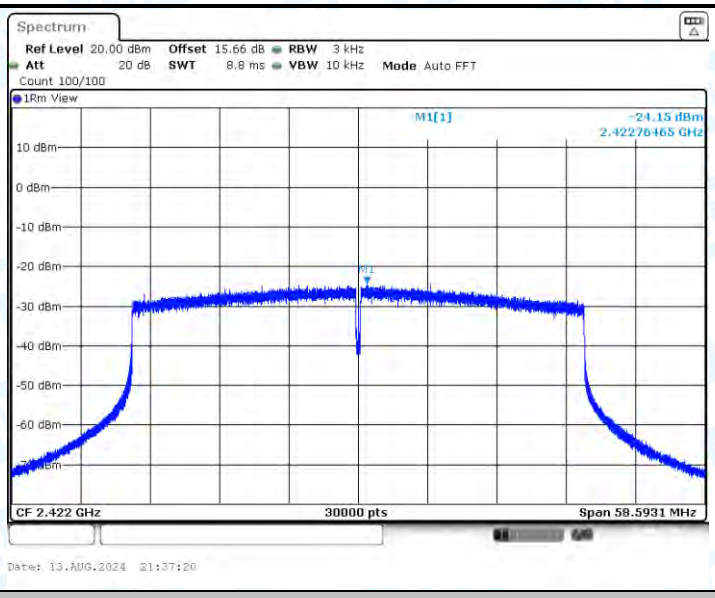
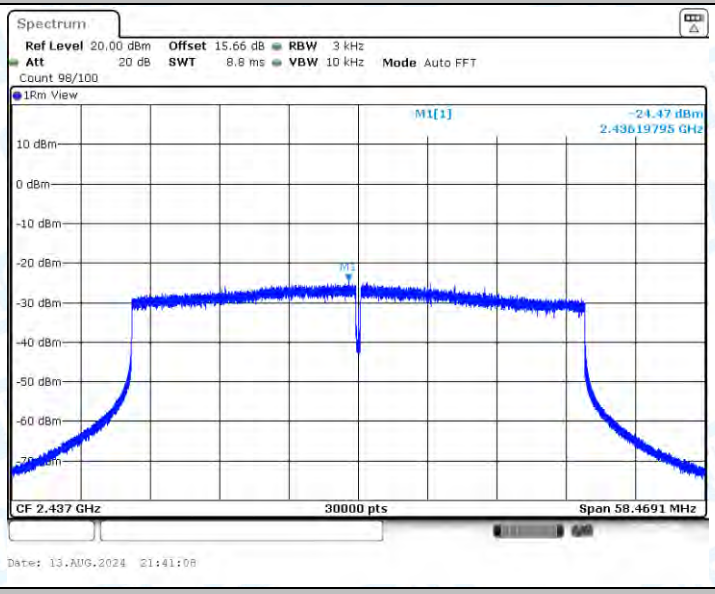


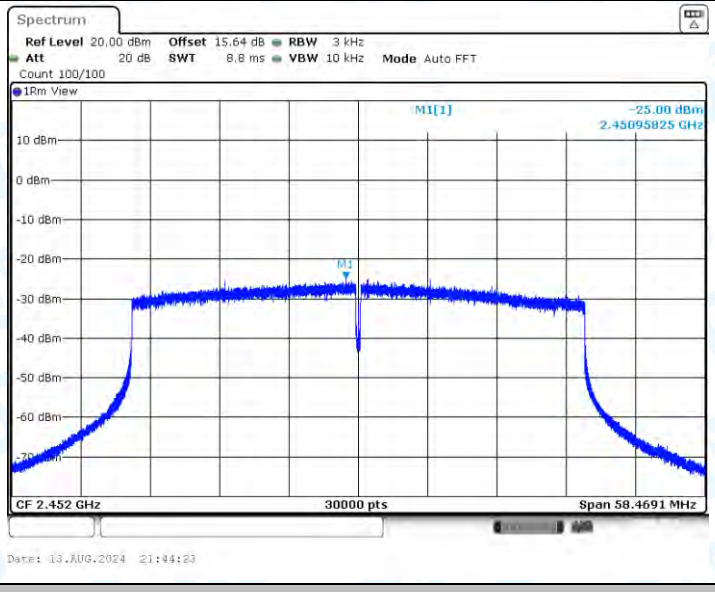
11AX20SISO_Ant1_2462



11AX40SISO_Ant1_2422



11AX40SISO_Ant1_2437



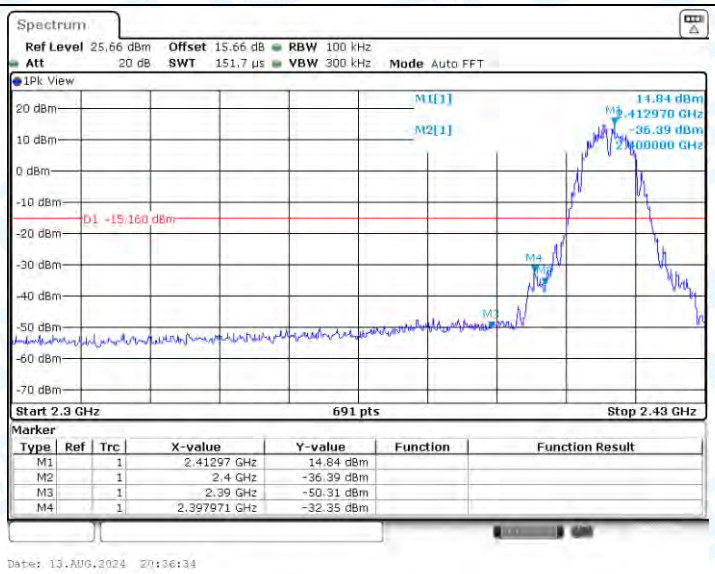
11AX40SISO_Ant1_2452

5. Band edge measurements

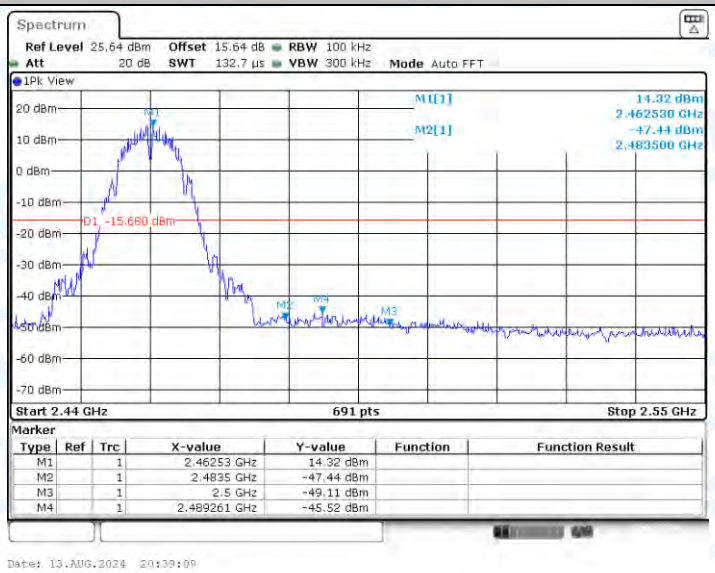
5.1.Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	14.84	-32.35	≤-15.16	PASS
		High	2462	14.32	-45.52	≤-15.68	PASS
11G	Ant1	Low	2412	5.60	-25.79	≤-24.4	PASS
		High	2462	3.86	-45.53	≤-26.14	PASS
11N20SISO	Ant1	Low	2412	3.21	-27.12	≤-26.79	PASS
		High	2462	-1.08	-48.98	≤-31.08	PASS
11N40SISO	Ant1	Low	2422	-2.96	-33.09	≤-32.96	PASS
		High	2452	-3.93	-48.95	≤-33.93	PASS
11AX20SISO	Ant1	Low	2412	1.82	-28.28	≤-28.18	PASS
		High	2462	0.05	-48.06	≤-29.95	PASS
11AX40SISO	Ant1	Low	2422	0.40	-32.76	≤-29.6	PASS
		High	2452	-2.87	-46.3	≤-32.87	PASS

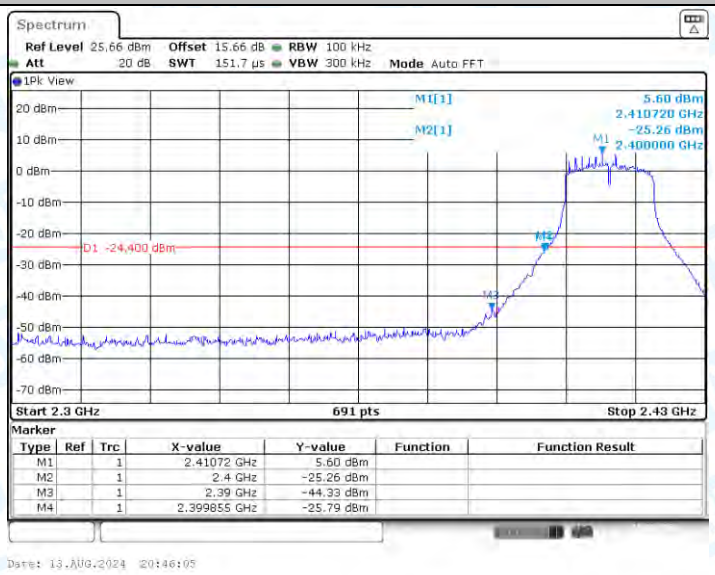
5.2.Test Graphs



11B_Ant1_Low_2412

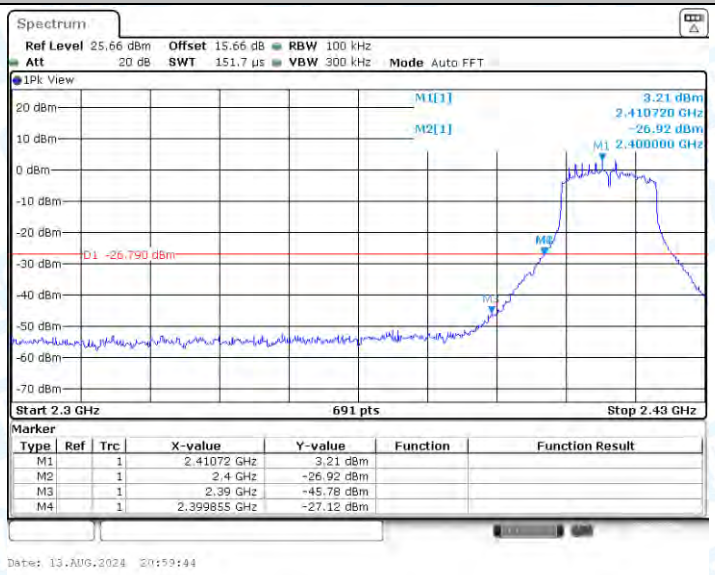


11B_Ant1_High_2462

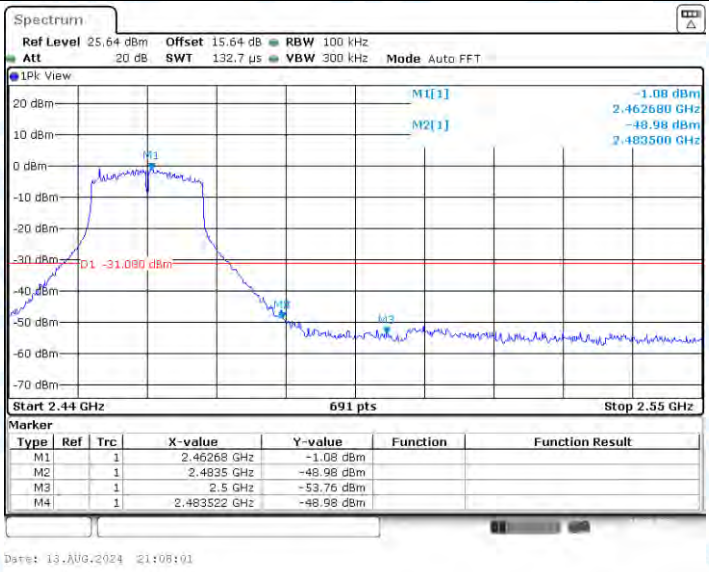


11G_Ant1_Low_2412

11G_Ant1_High_2462

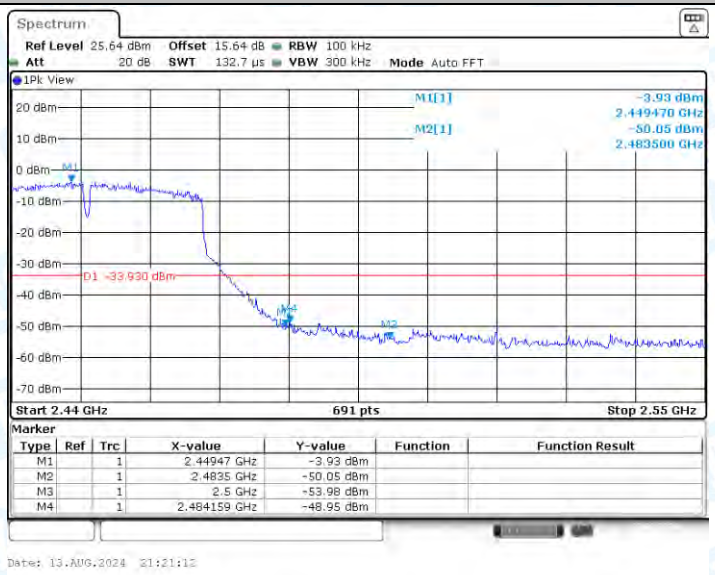


11N20SISO_Ant1_Low_2412

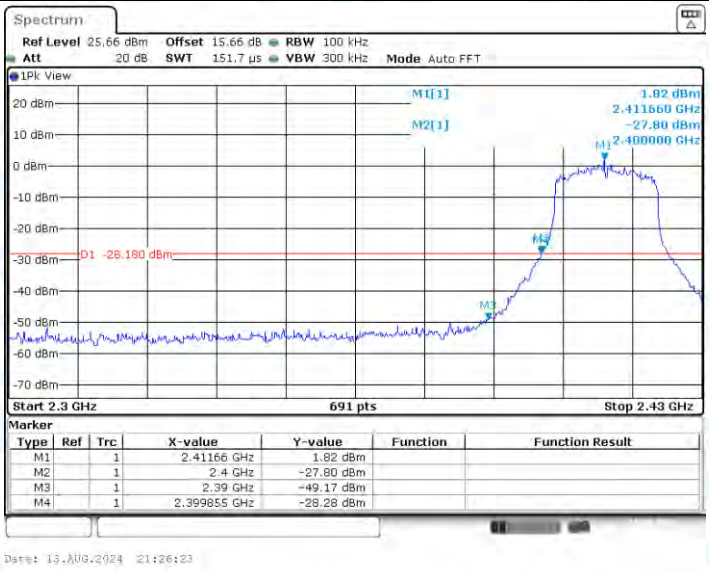


11N20SISO_Ant1_High_2462

11N40SISO_Ant1_Low_2422

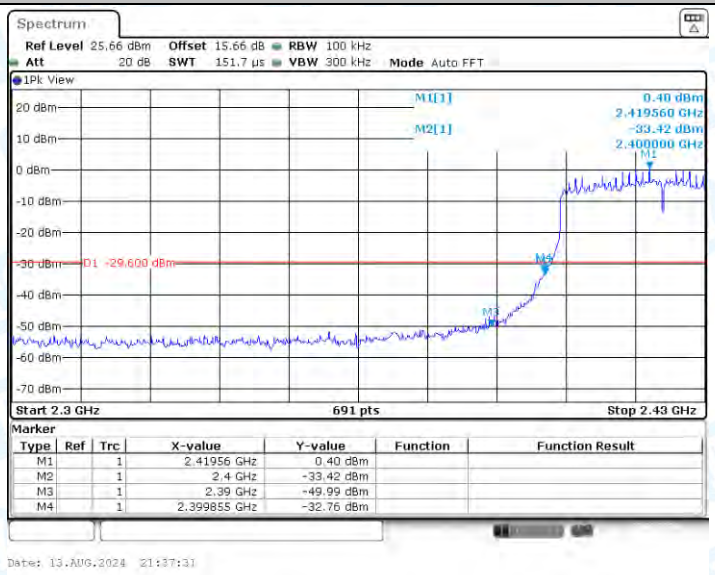


11N40SISO_Ant1_High_2452

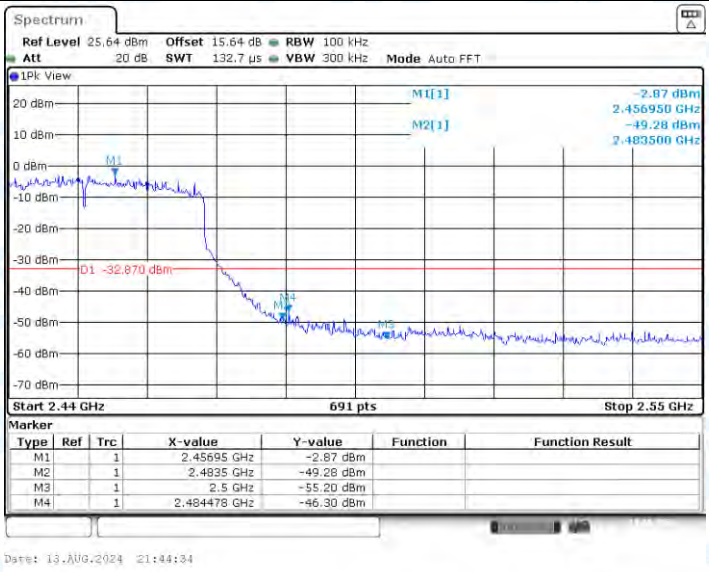


11AX20SISO_Ant1_Low_2412

11AX20SISO_Ant1_High_2462



11AX40SISO_Ant1_Low_2422



11AX40SISO_Ant1_High_2452

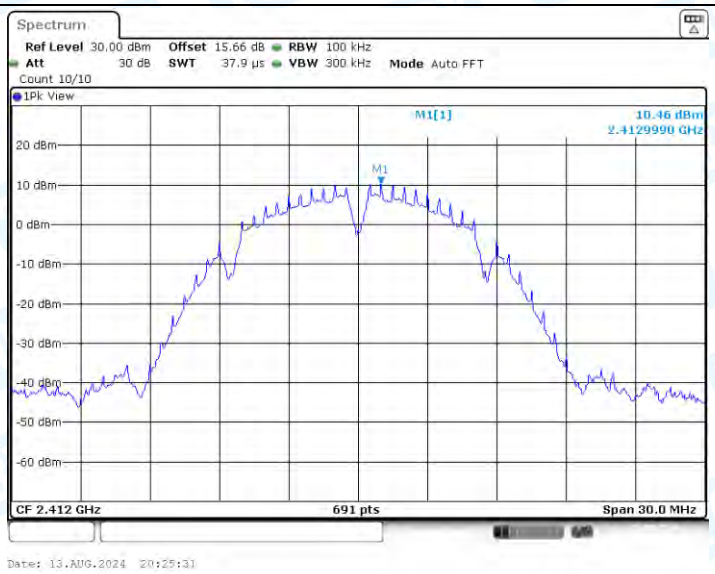
6. Conducted Spurious Emission

6.1.Test Result

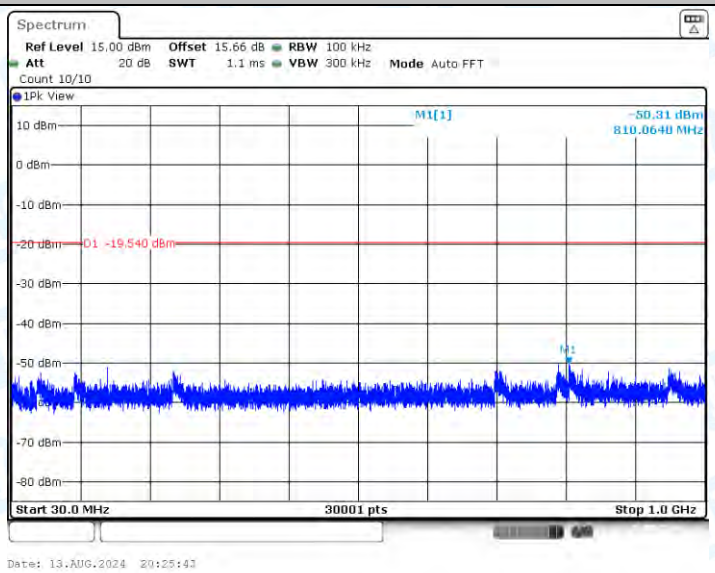
TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	10.46	10.46	---	PASS
			30~1000	10.46	-50.31	≤-19.54	PASS
			1000~26500	10.46	-45.38	≤-19.54	PASS
		2437	Reference	10.96	10.96	---	PASS
			30~1000	10.96	-50.43	≤-19.04	PASS
			1000~26500	10.96	-39.46	≤-19.04	PASS
		2462	Reference	14.08	14.08	---	PASS
			30~1000	14.08	-49.21	≤-15.92	PASS
			1000~26500	14.08	-35.5	≤-15.92	PASS
11G	Ant1	2412	Reference	5.36	5.36	---	PASS
			30~1000	5.36	-50.98	≤-24.64	PASS
			1000~26500	5.36	-45.65	≤-24.64	PASS
		2437	Reference	4.81	4.81	---	PASS
			30~1000	4.81	-50.82	≤-25.19	PASS
			1000~26500	4.81	-45.99	≤-25.19	PASS
		2462	Reference	4.35	4.35	---	PASS
			30~1000	4.35	-50.4	≤-25.65	PASS
			1000~26500	4.35	-46.08	≤-25.65	PASS
11N20SISO	Ant1	2412	Reference	3.27	3.27	---	PASS
			30~1000	3.27	-50.51	≤-26.73	PASS
			1000~26500	3.27	-44.65	≤-26.73	PASS
		2437	Reference	2.50	2.50	---	PASS
			30~1000	2.50	-50.92	≤-27.5	PASS
			1000~26500	2.50	-45.78	≤-27.5	PASS
		2462	Reference	1.94	1.94	---	PASS
			30~1000	1.94	-50.15	≤-28.06	PASS
			1000~26500	1.94	-45.63	≤-28.06	PASS
11N40SISO	Ant1	2422	Reference	-2.24	-2.24	---	PASS
			30~1000	-2.24	-50.43	≤-32.24	PASS
			1000~26500	-2.24	-45.89	≤-32.24	PASS
		2437	Reference	-0.91	-0.91	---	PASS
			30~1000	-0.91	-50.16	≤-30.91	PASS
			1000~26500	-0.91	-45.73	≤-30.91	PASS
		2452	Reference	-2.32	-2.32	---	PASS
			30~1000	-2.32	-51.13	≤-32.32	PASS
			1000~26500	-2.32	-45.78	≤-32.32	PASS
11AX20SISO	Ant1	2412	Reference	1.48	1.48	---	PASS
			30~1000	1.48	-51	≤-28.52	PASS
			1000~26500	1.48	-45.83	≤-28.52	PASS
		2437	Reference	2.49	2.49	---	PASS

			30~1000	2.49	-50.07	≤-27.51	PASS
			1000~26500	2.49	-45.32	≤-27.51	PASS
		2462	Reference	0.43	0.43	---	PASS
			30~1000	0.43	-51.12	≤-29.57	PASS
			1000~26500	0.43	-45.58	≤-29.57	PASS
11AX40SISO	Ant1	2422	Reference	0.13	0.13	---	PASS
			30~1000	0.13	-50.35	≤-29.87	PASS
			1000~26500	0.13	-45.86	≤-29.87	PASS
		2437	Reference	-0.36	-0.36	---	PASS
			30~1000	-0.36	-50.87	≤-30.36	PASS
			1000~26500	-0.36	-45.25	≤-30.36	PASS
		2452	Reference	-2.31	-2.31	---	PASS
			30~1000	-2.31	-50.76	≤-32.31	PASS
			1000~26500	-2.31	-45.96	≤-32.31	PASS

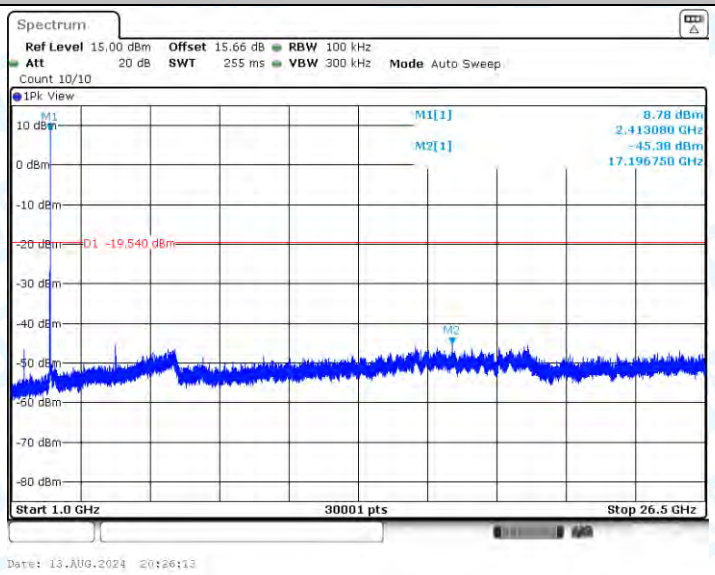
6.2.Test Graphs



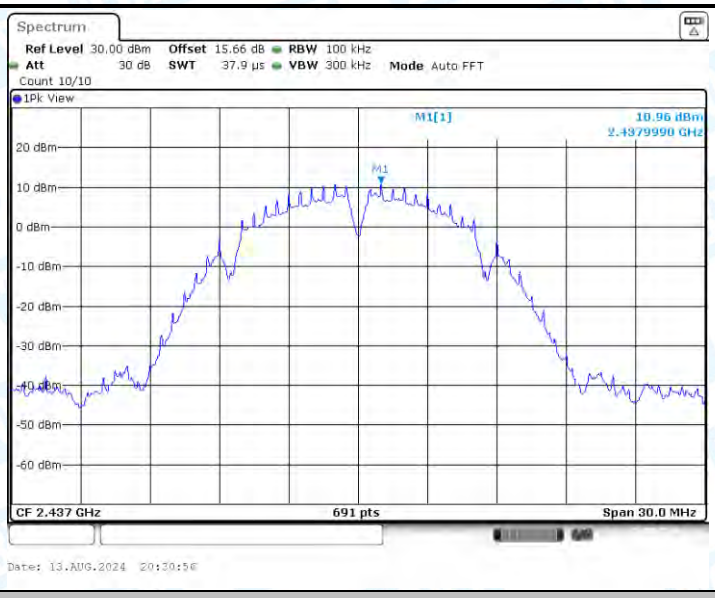
11B_Ant1_2412_0~Reference



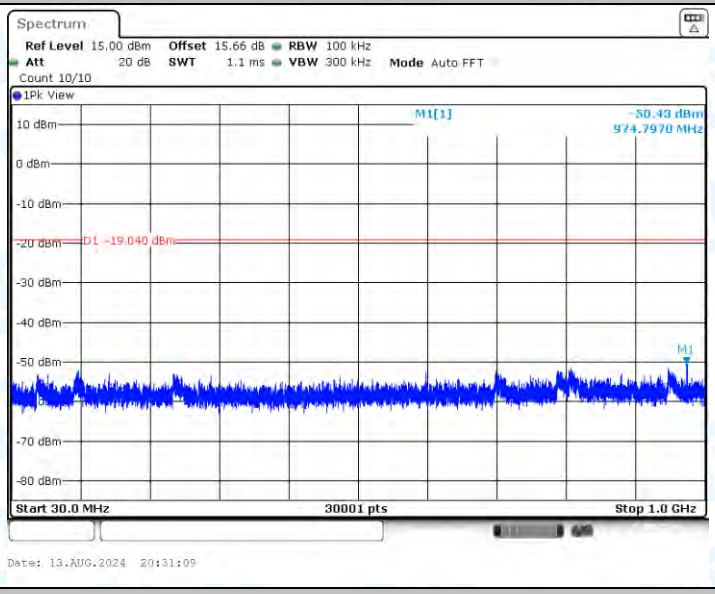
11B_Ant1_2412_30~1000



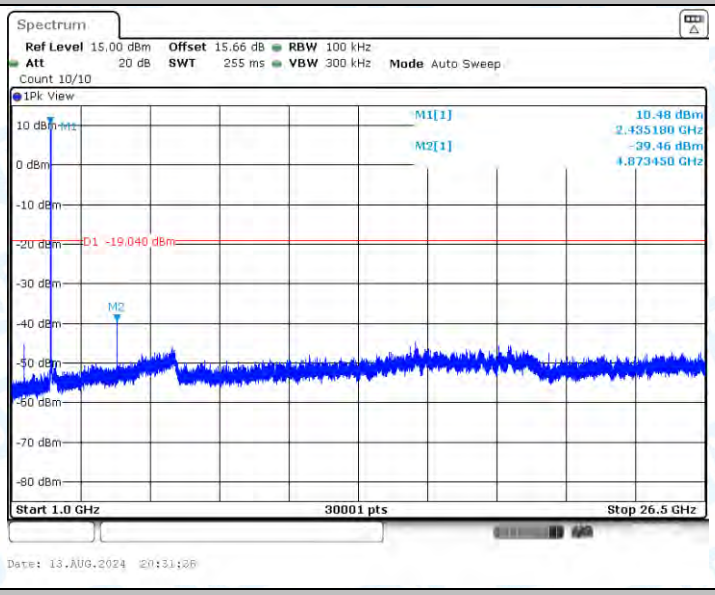
11B_Ant1_2412_1000~26500



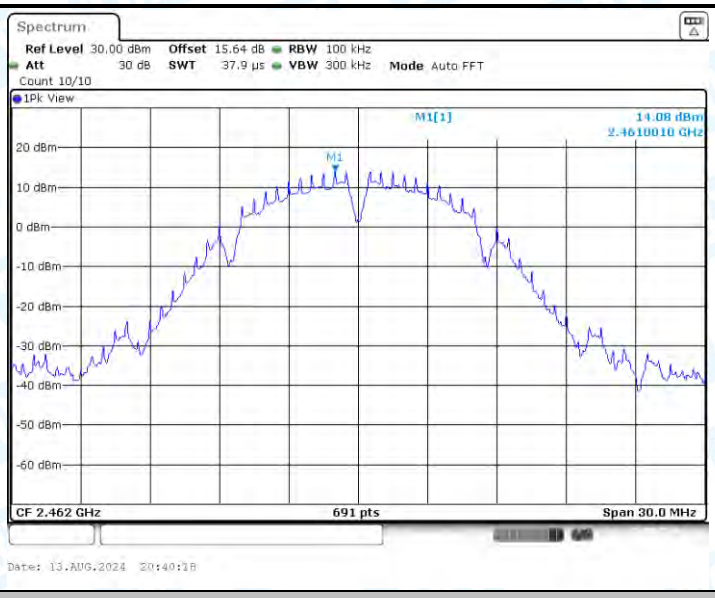
11B_Ant1_2437_0~Reference



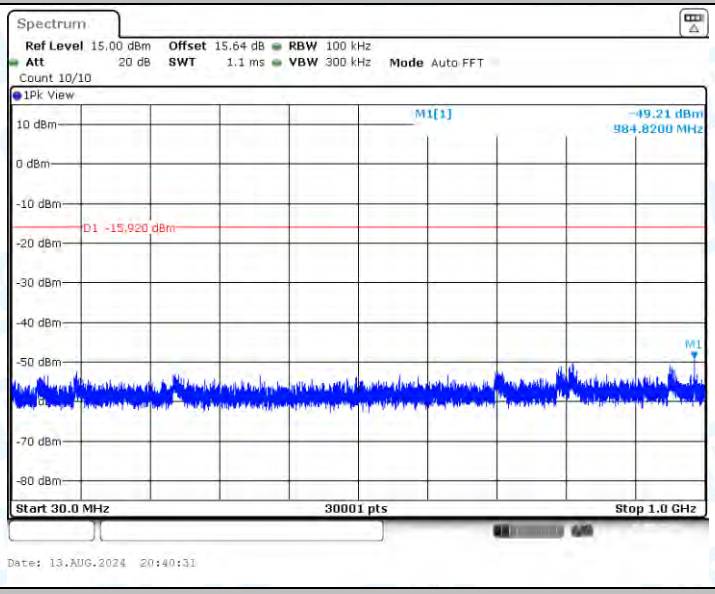
11B_Ant1_2437_30~1000



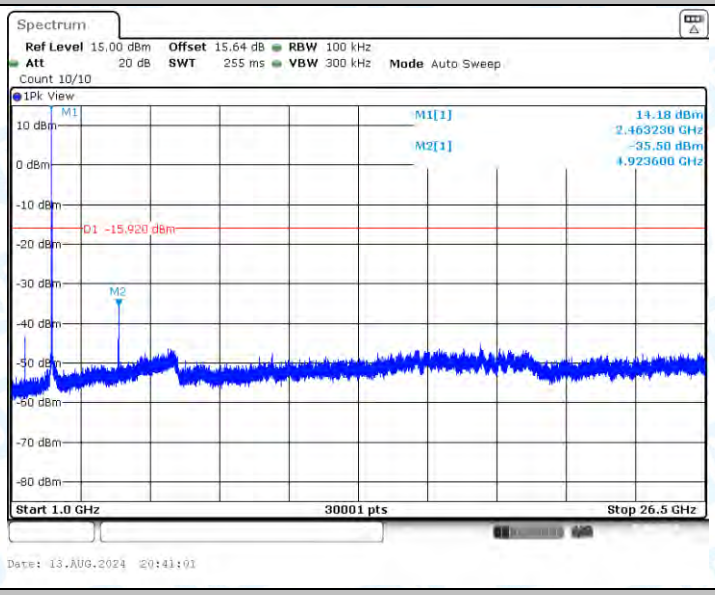
11B_Ant1_2437_1000~26500



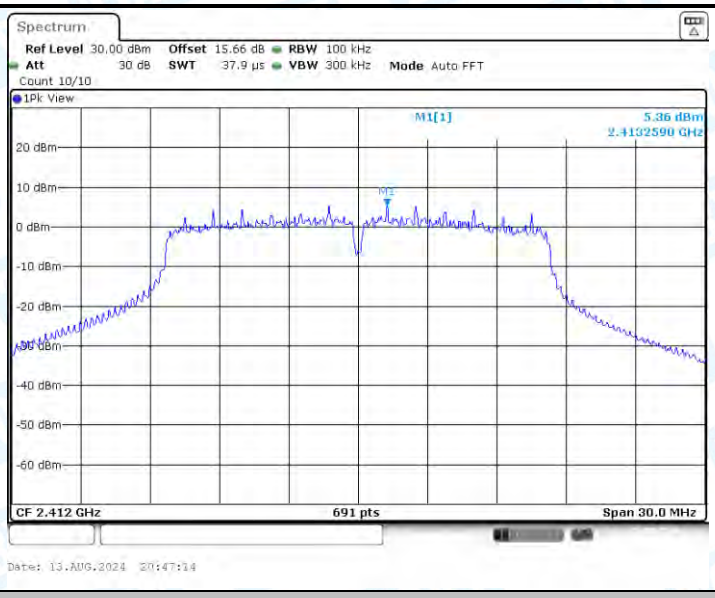
11B_Ant1_2462_0~Reference



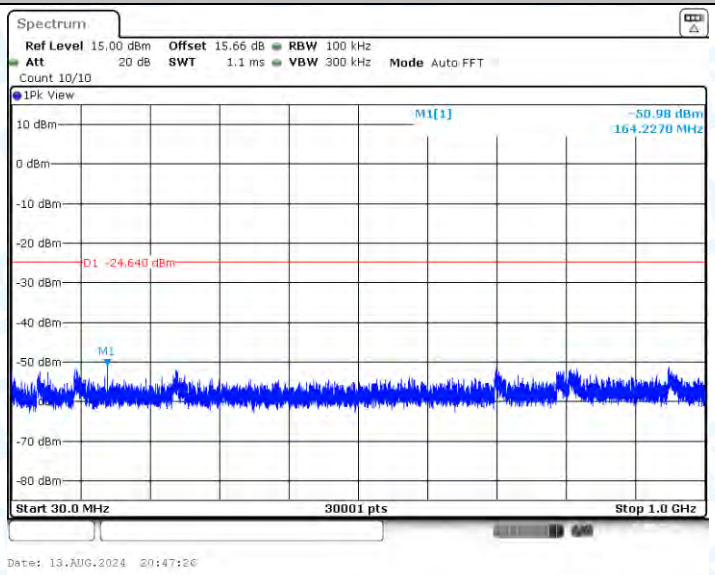
11B_Ant1_2462_30~1000



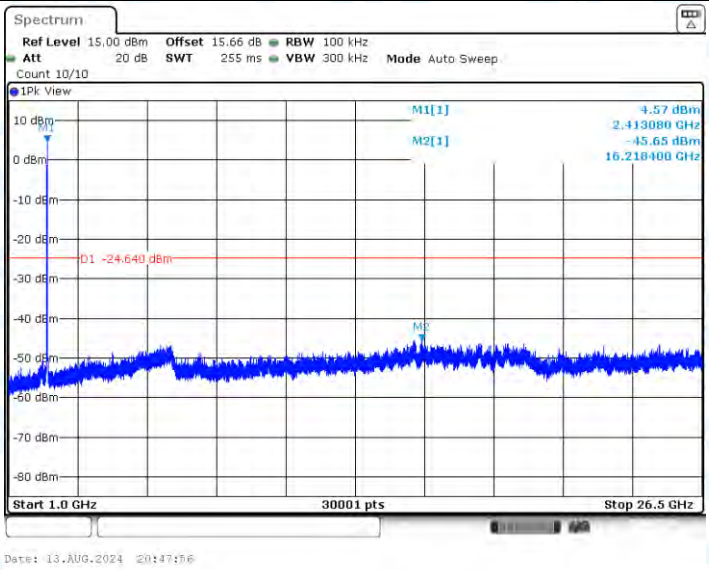
11B_Ant1_2462_1000~26500



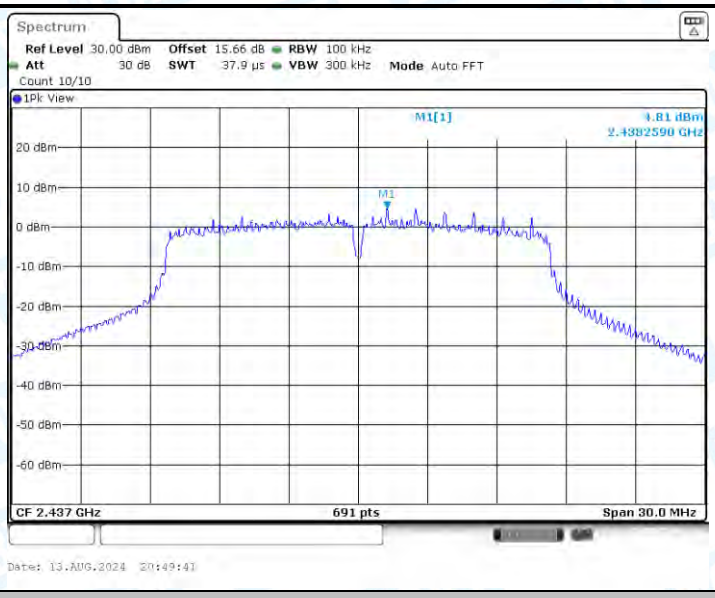
11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000



11G_Ant1_2412_1000~26500



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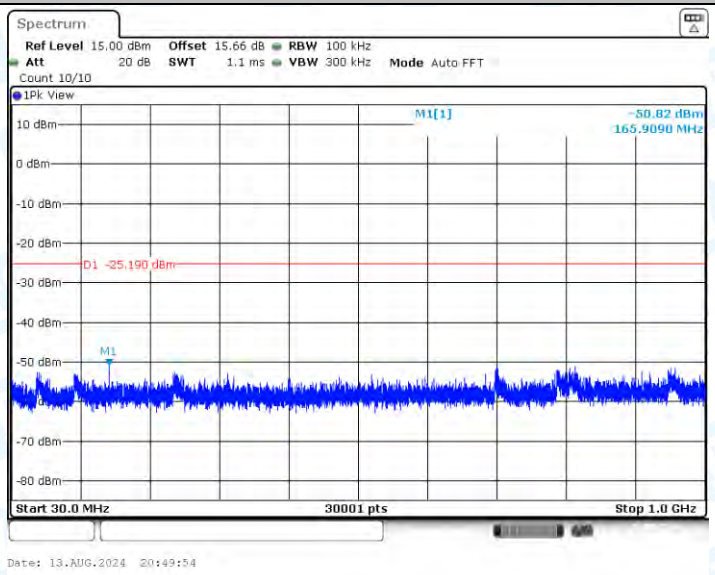
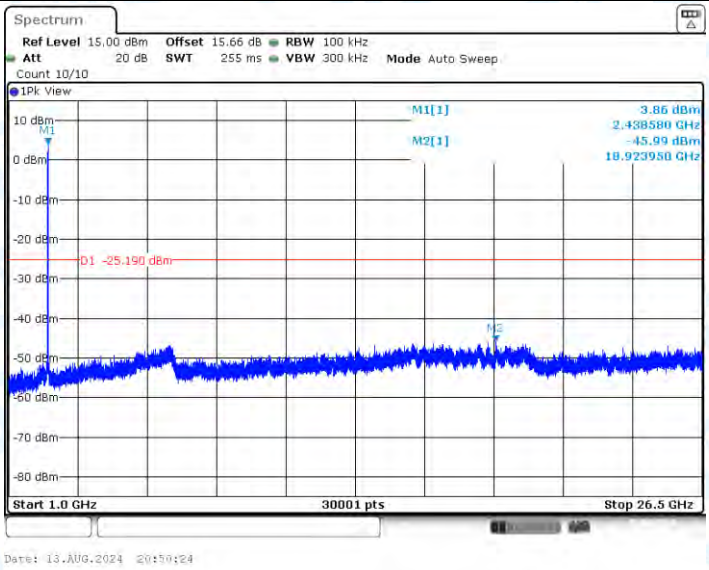
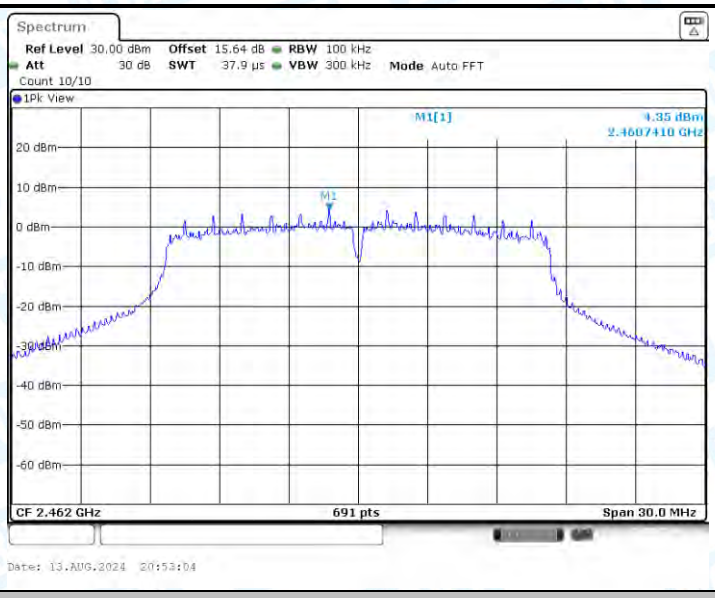


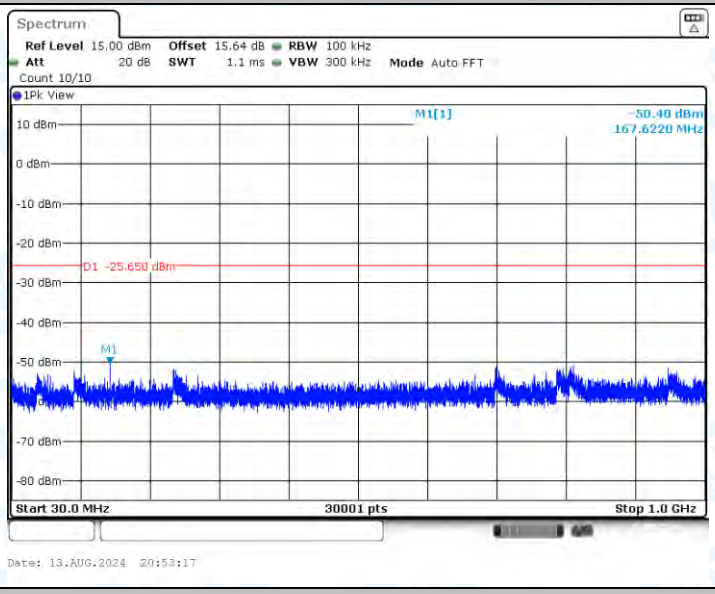
11G_Ant1_2437_30~1000



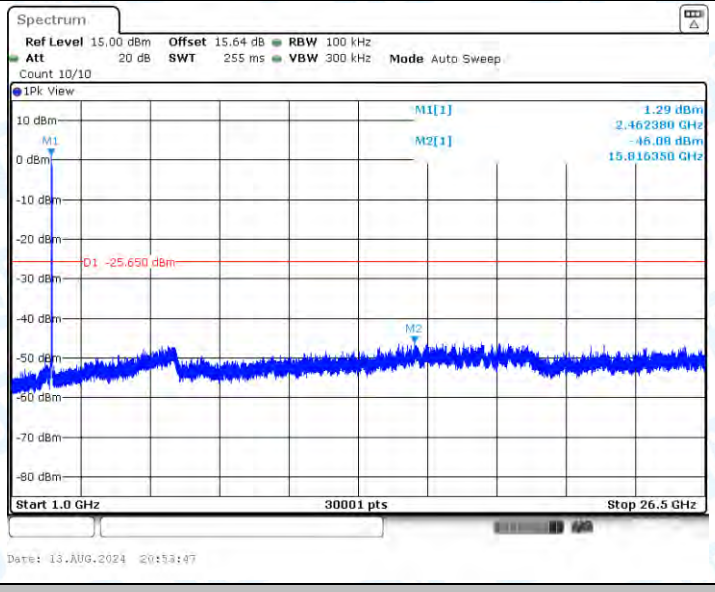
11G_Ant1_2437_1000~26500



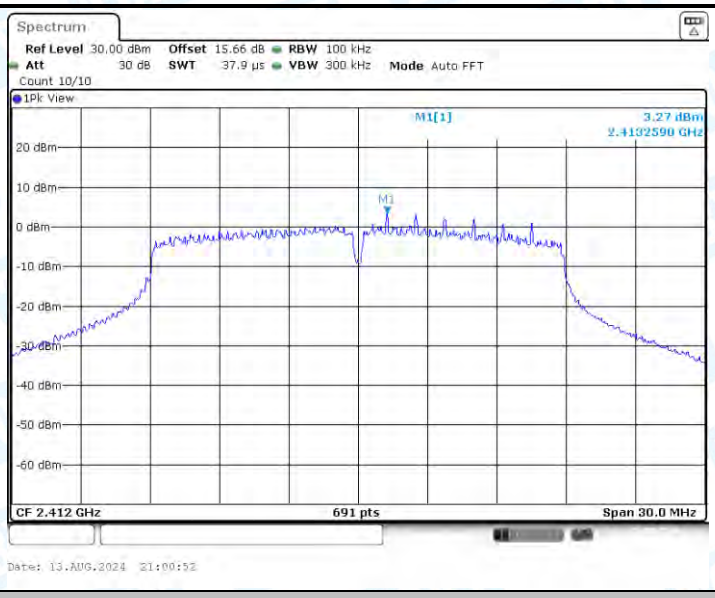
11G_Ant1_2462_0~Reference



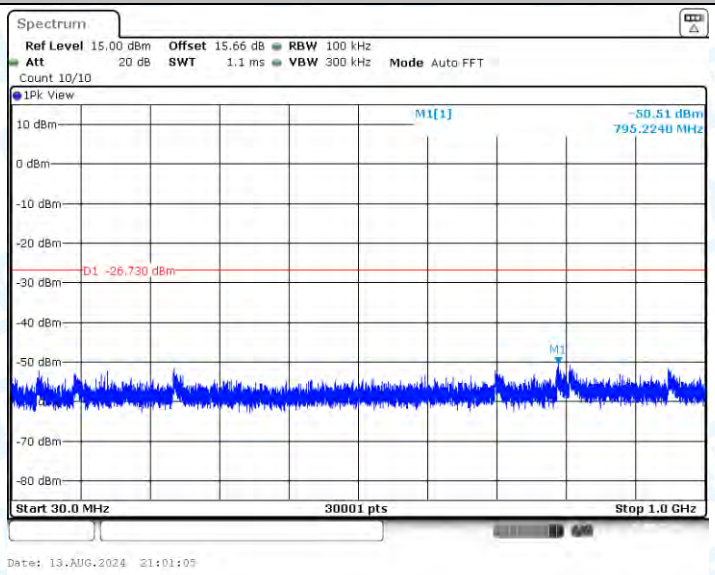
11G_Ant1_2462_30~1000



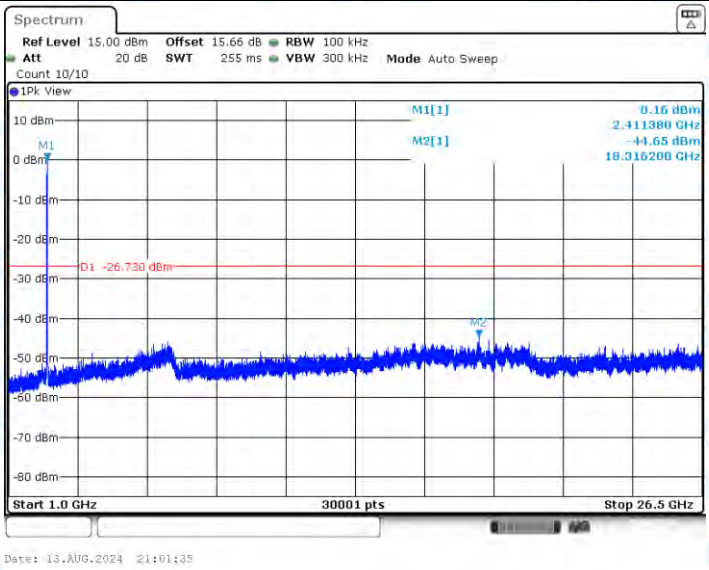
11G_Ant1_2462_1000~26500



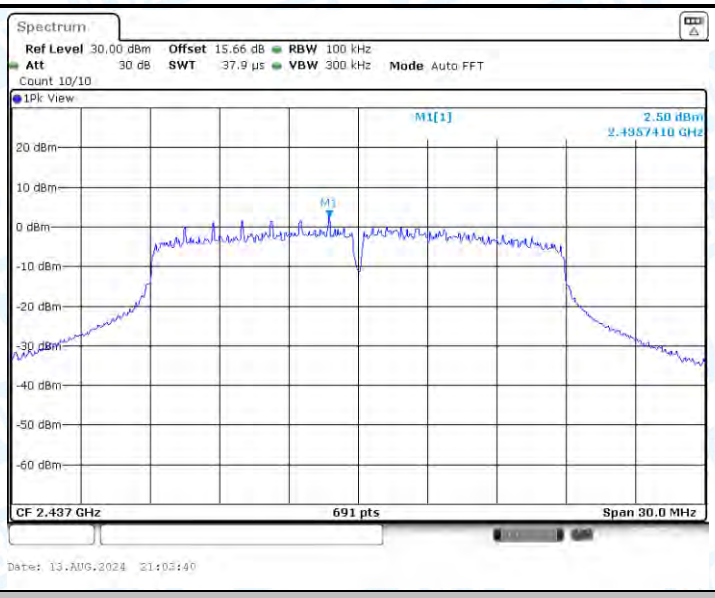
11N20SISO_Ant1_2412_0~Reference



11N20SISO_Ant1_2412_30~1000



11N20SISO_Ant1_2412_1000~26500



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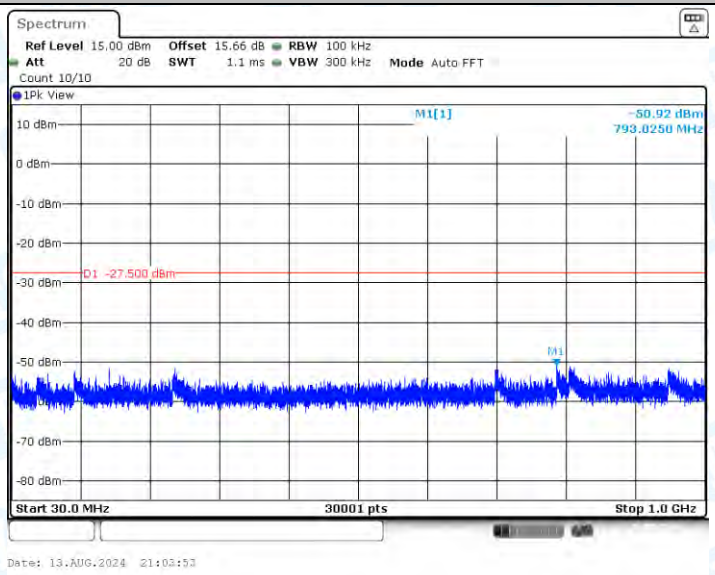

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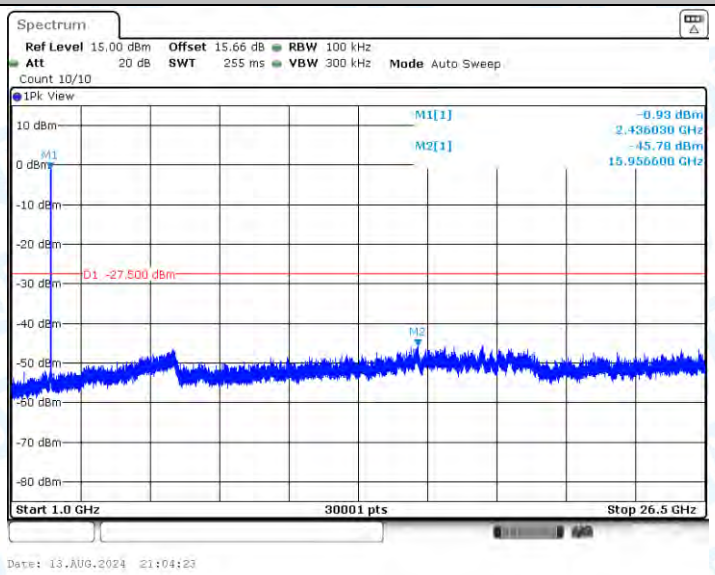

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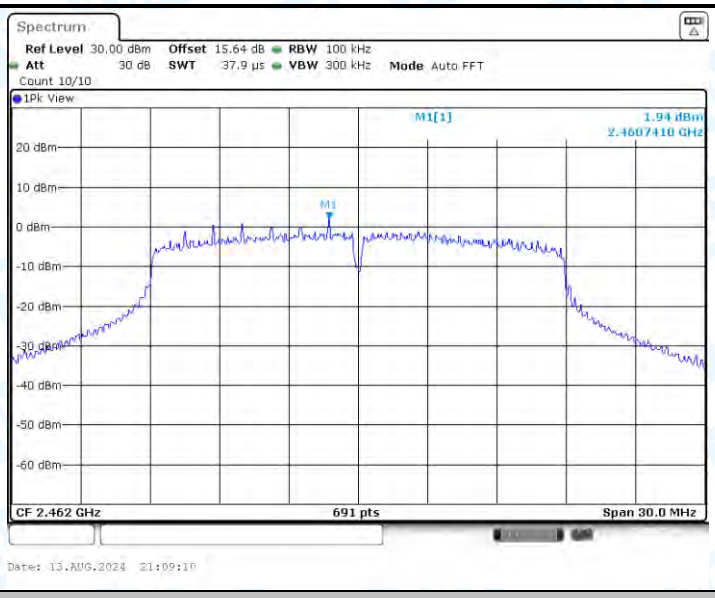

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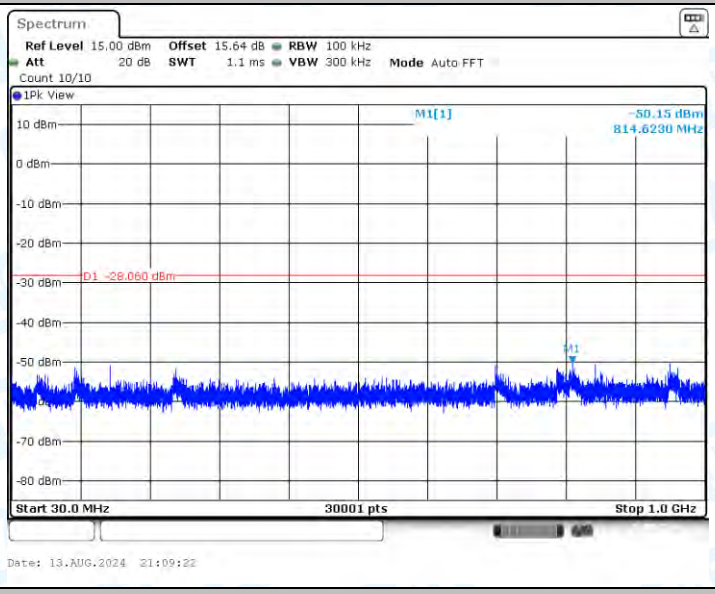

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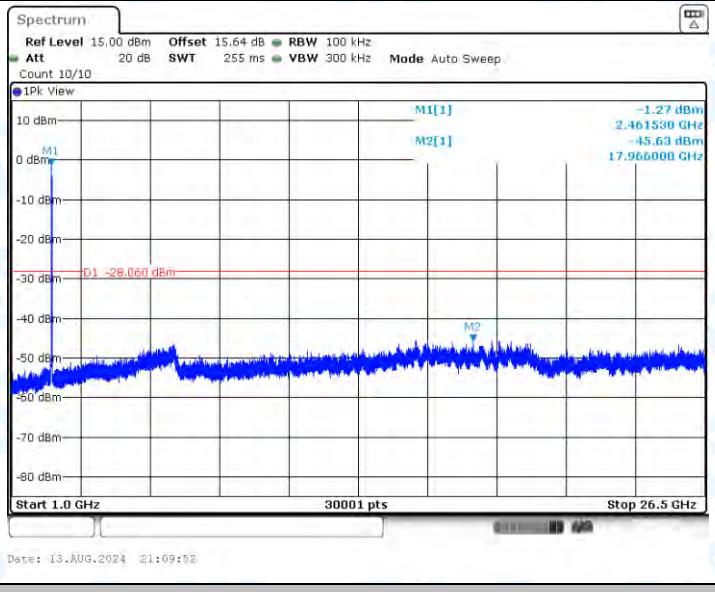

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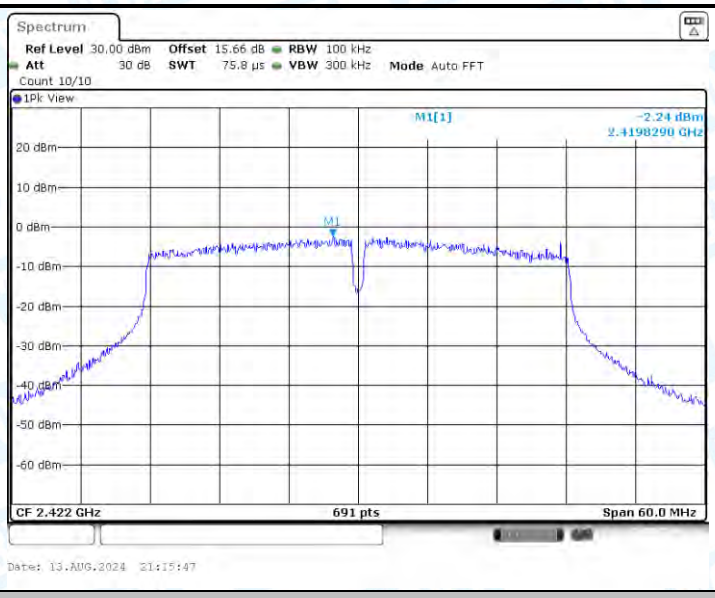

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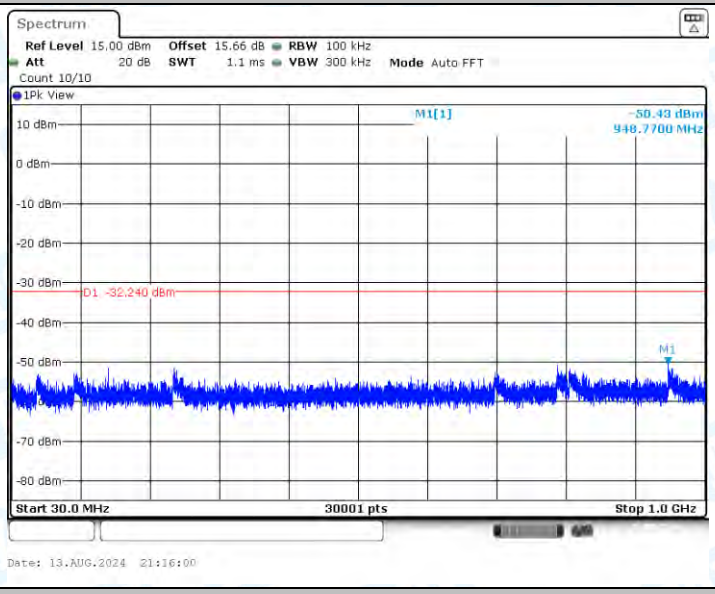

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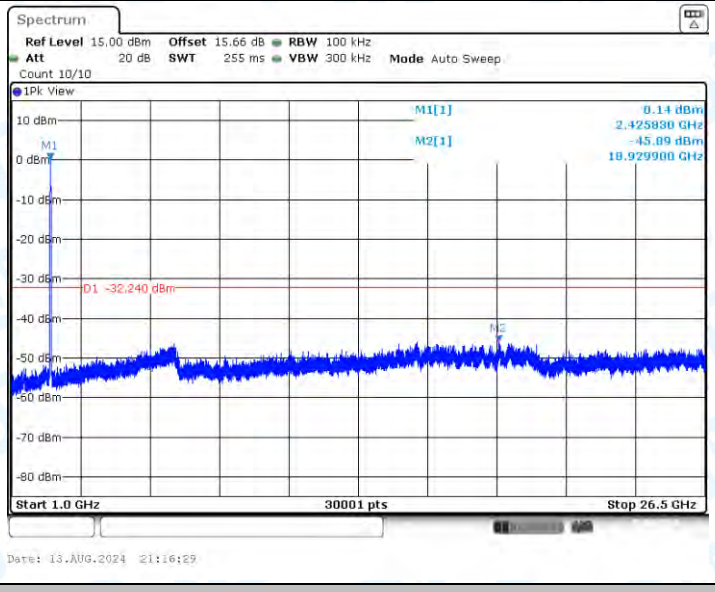

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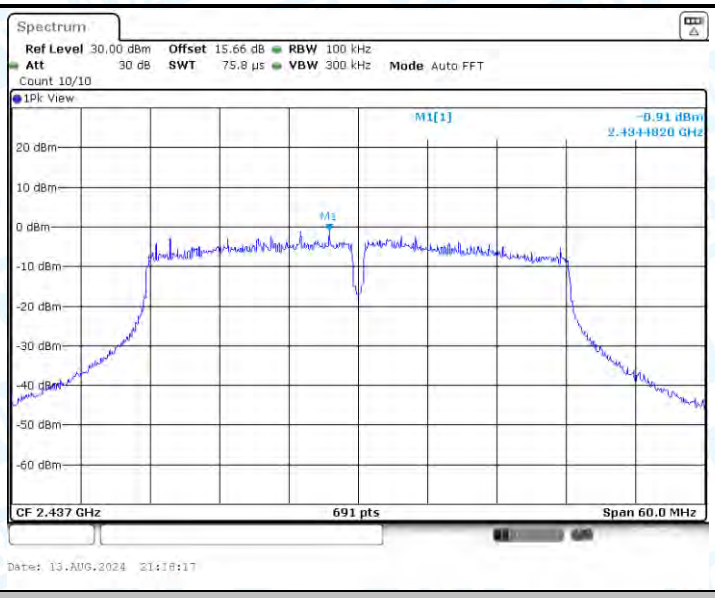

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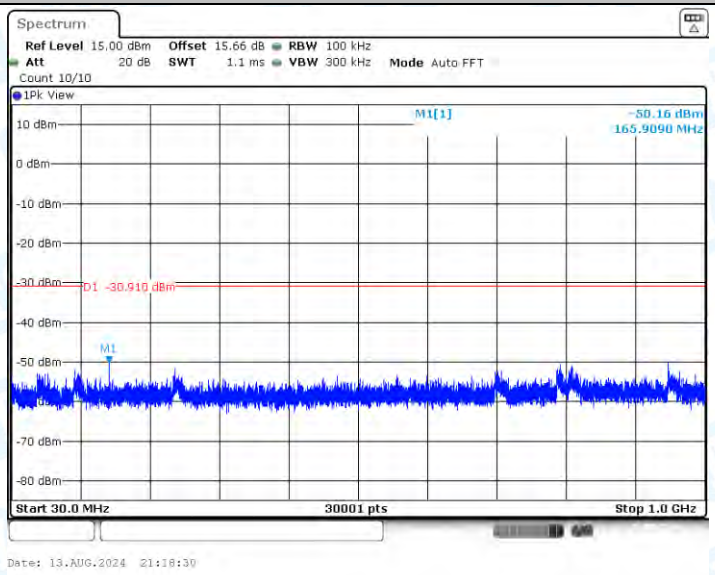
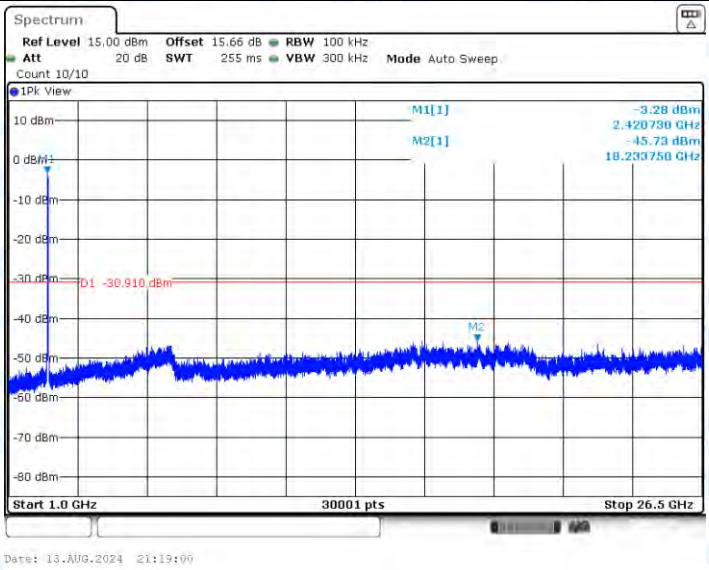


11N40SISO_Ant1_2437_30~1000



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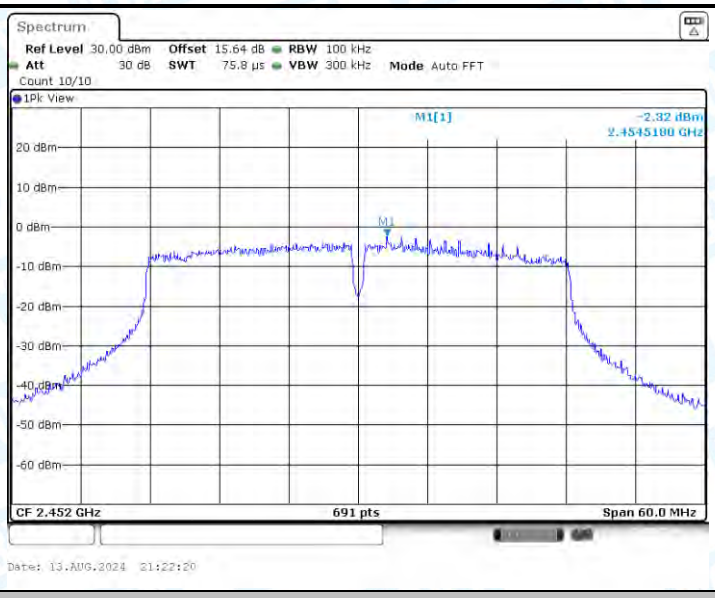

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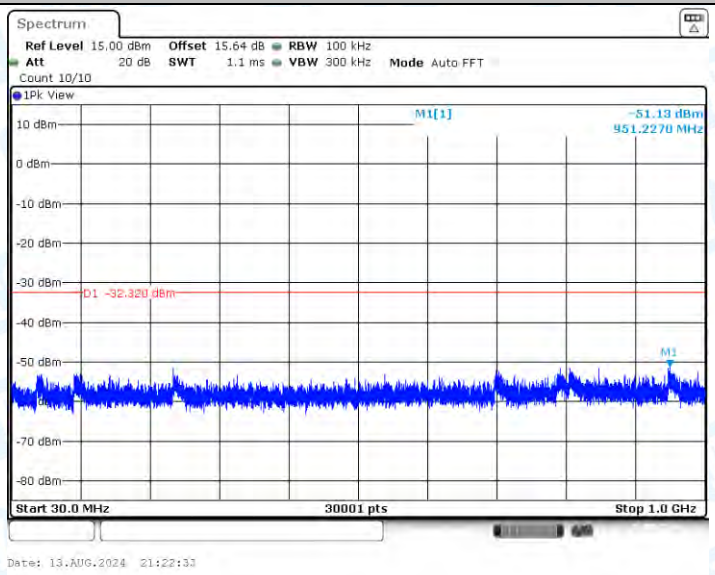

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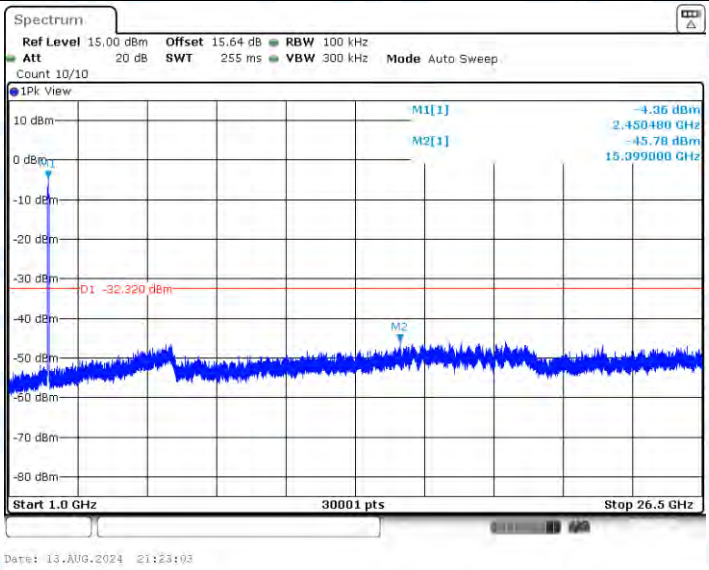

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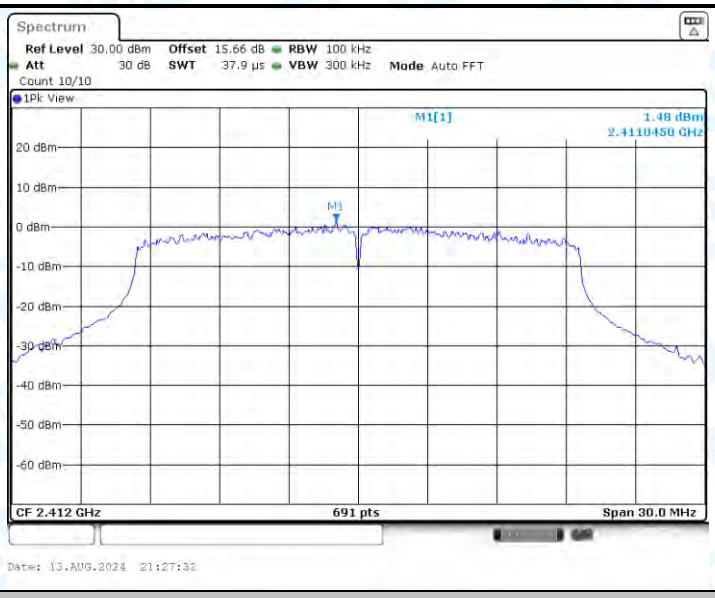
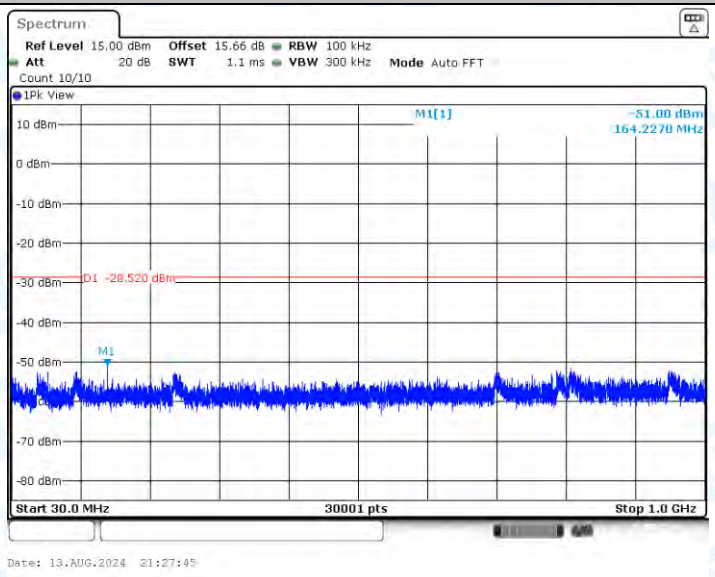


11AX20SISO_Ant1_2412_0~Reference



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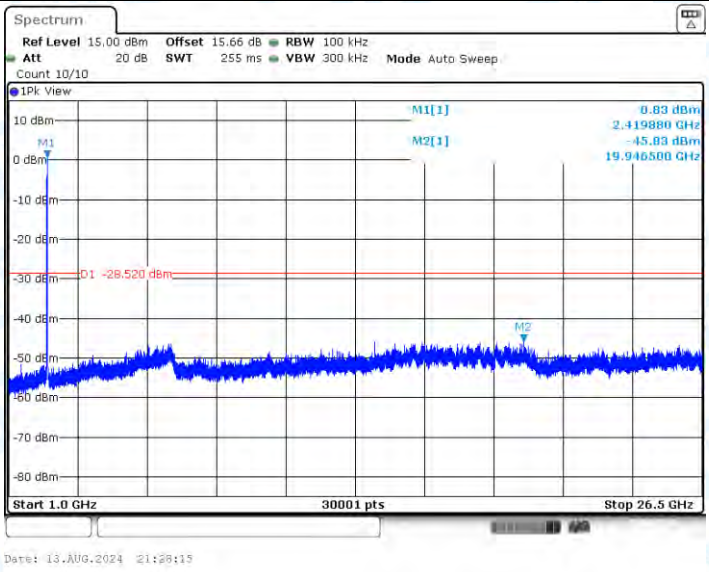

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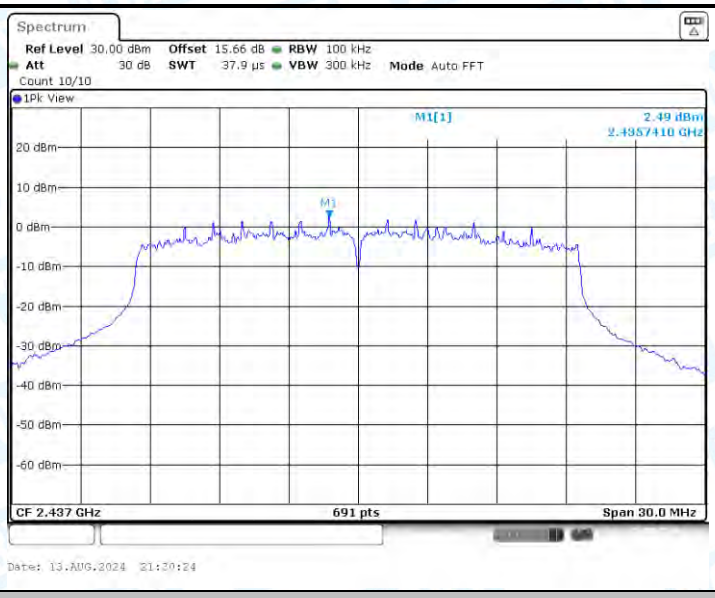

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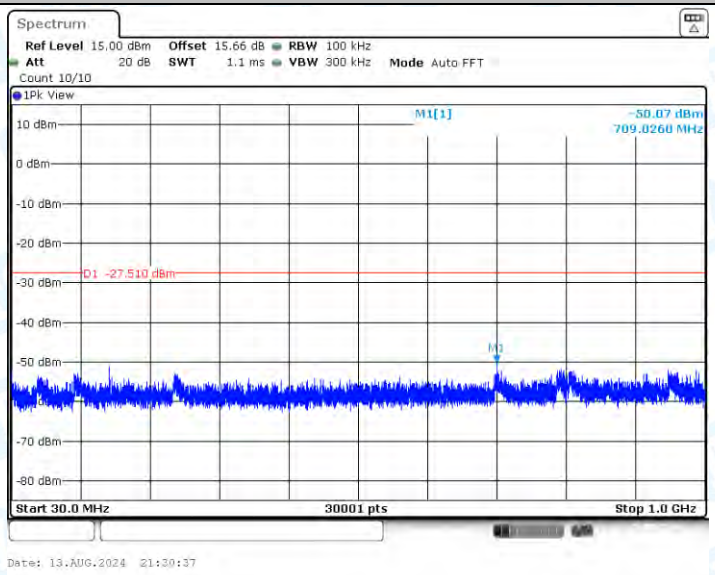

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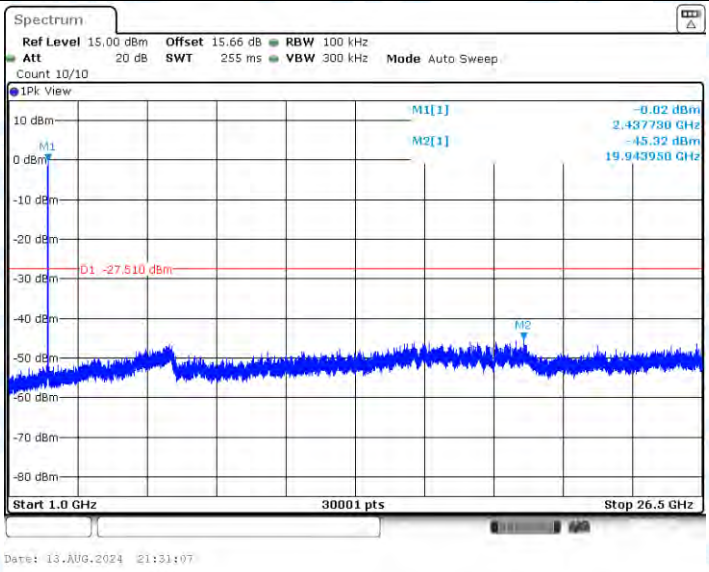

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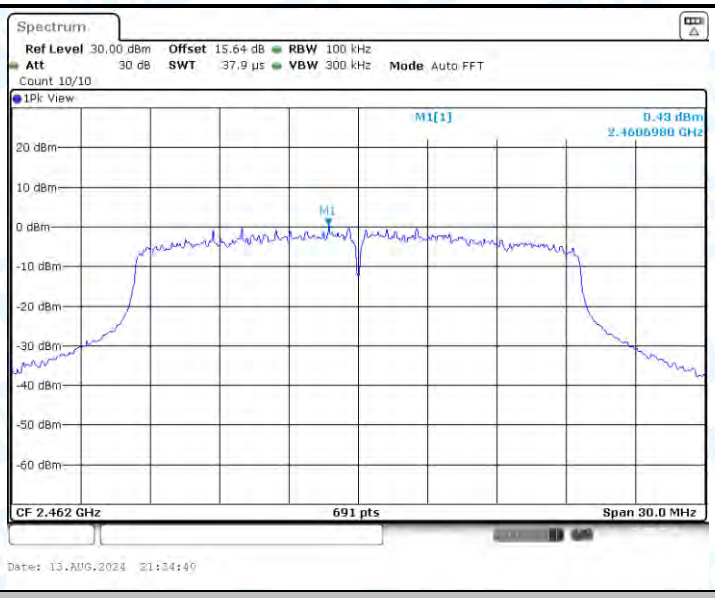

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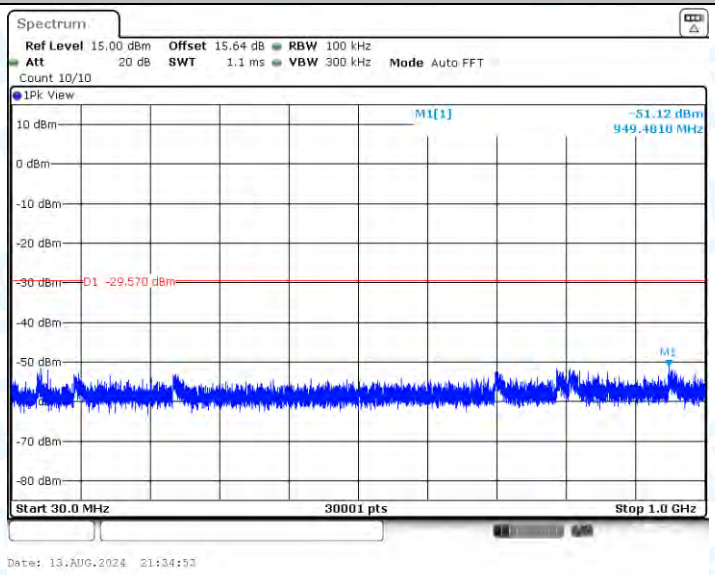

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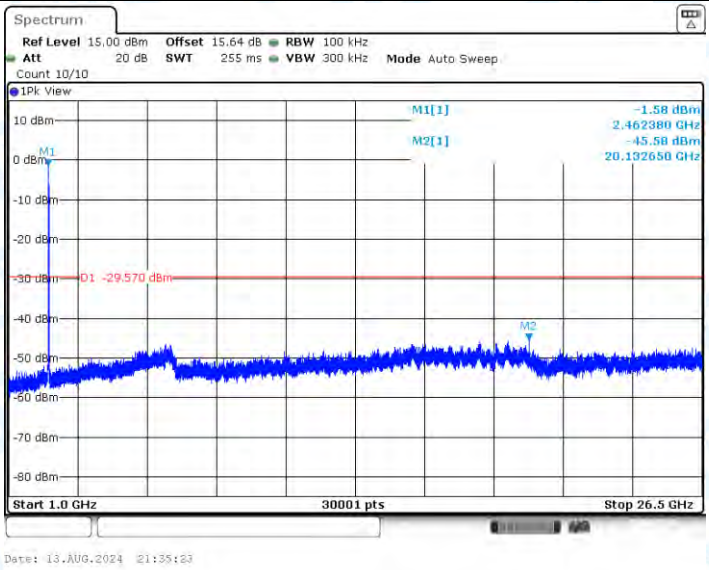

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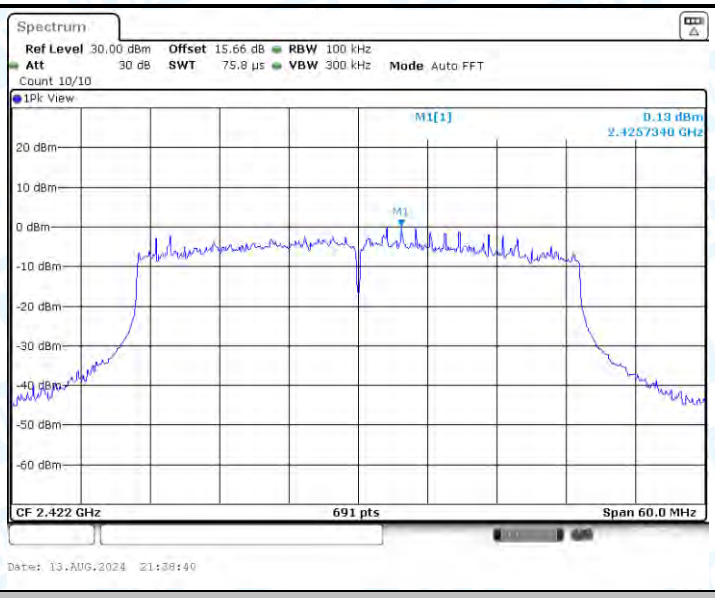

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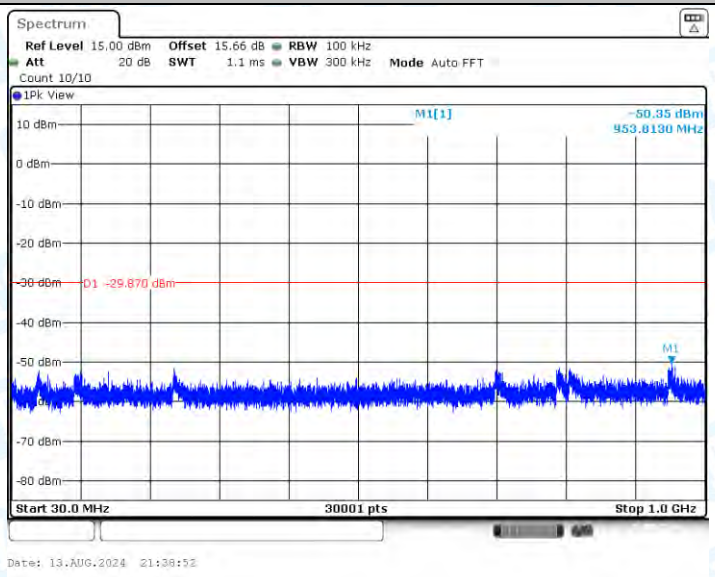

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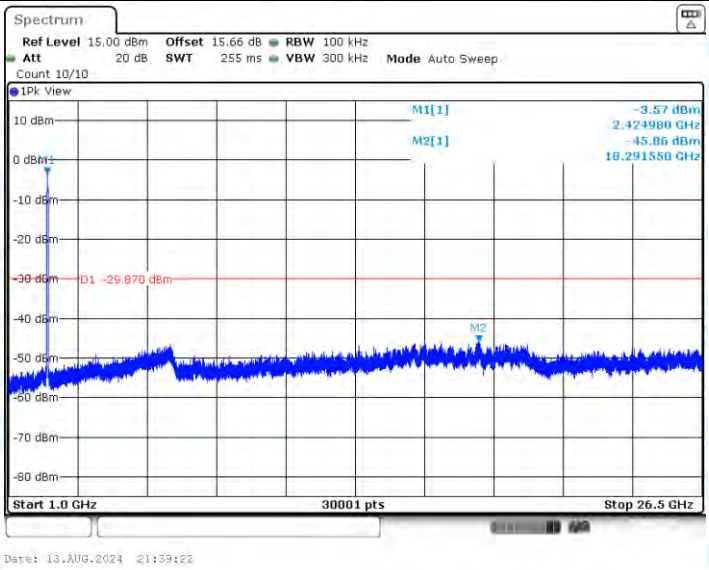

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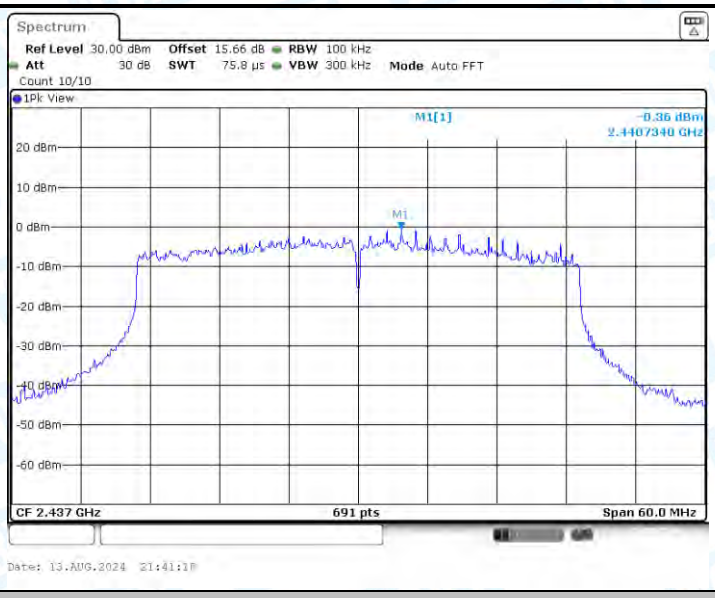

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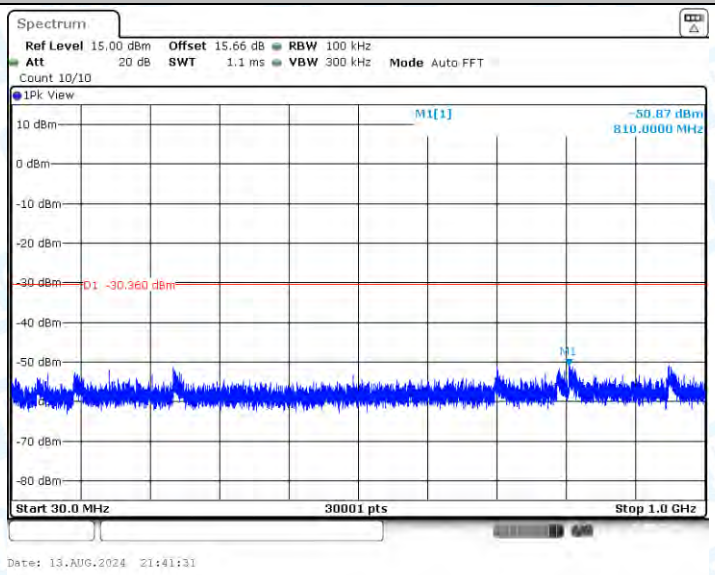

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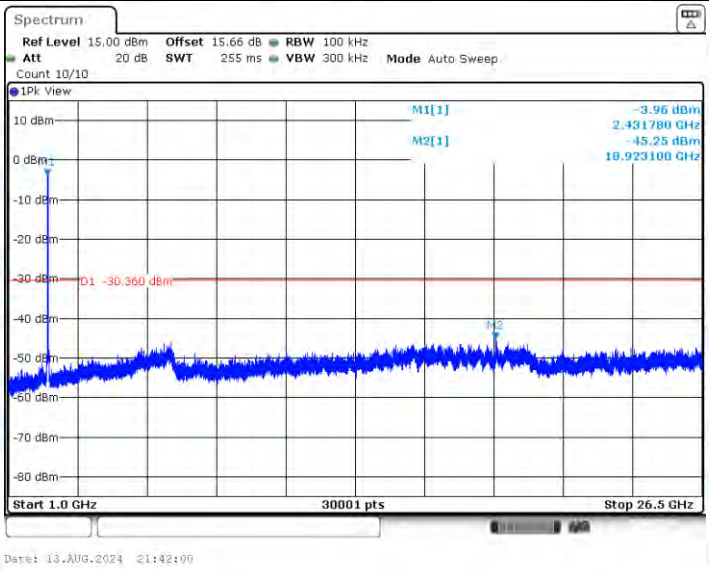
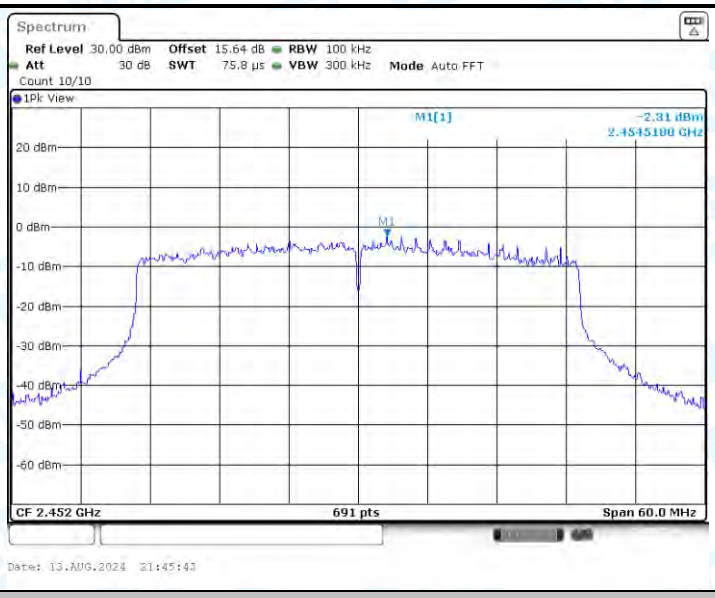


11AX40SISO_Ant1_2437_1000~26500



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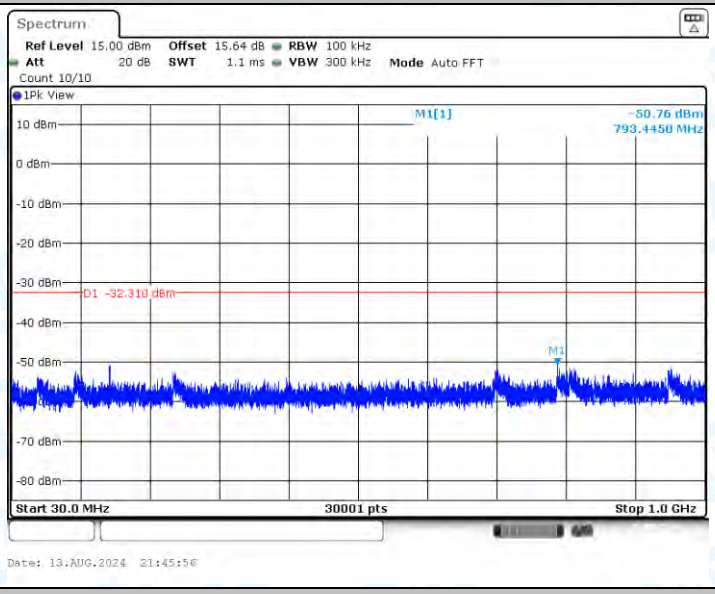

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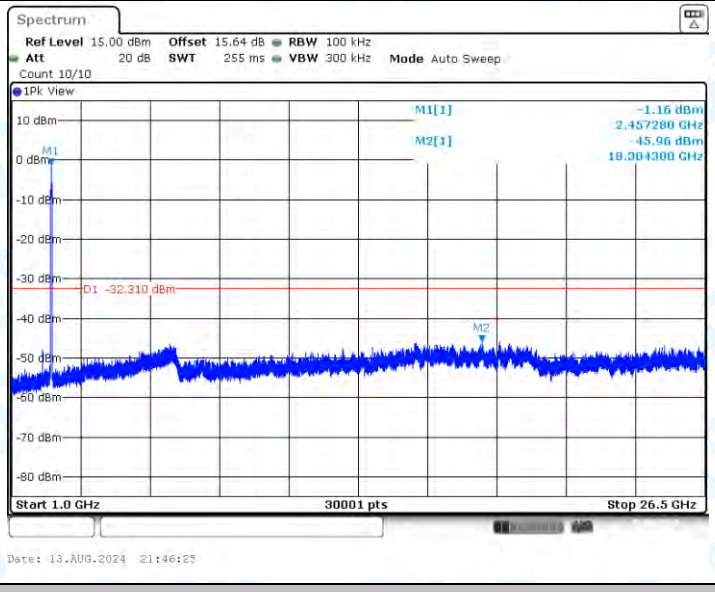


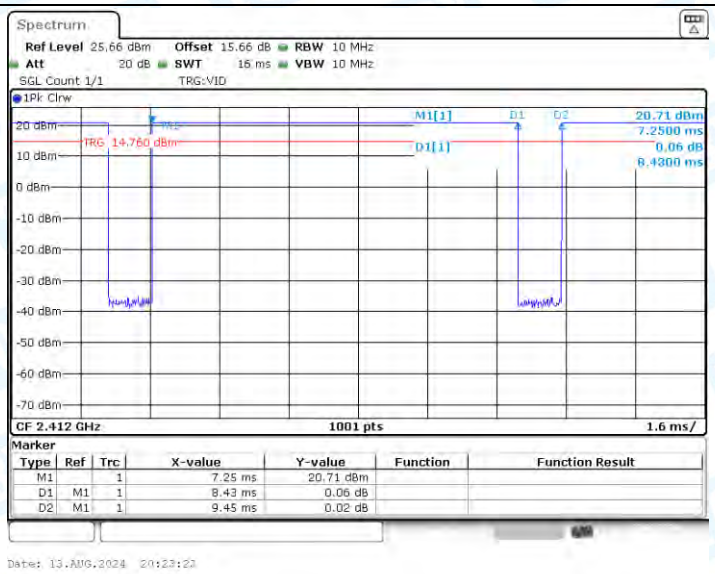
11AX40SISO_Ant1_2452_1000~26500

7. Duty Cycle

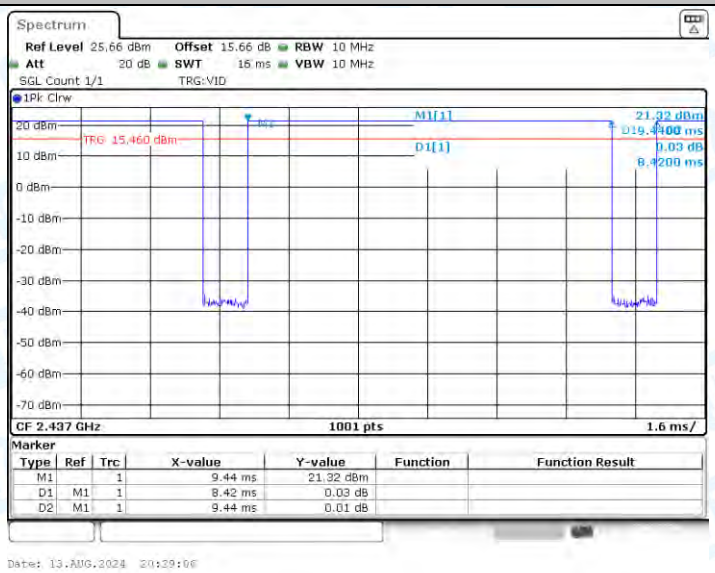
7.1.Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
11B	Ant1	2412	8.43	9.45	89.21	---	---
		2437	8.42	9.44	89.19	---	---
		2462	8.41	9.44	89.09	---	---
11G	Ant1	2412	1.39	2.41	57.68	---	---
		2437	1.39	2.42	57.44	---	---
		2462	1.39	2.42	57.44	---	---
11N20SISO	Ant1	2412	5.09	6.13	83.03	---	---
		2437	5.10	6.12	83.33	---	---
		2462	5.09	6.11	83.31	---	---
11N40SISO	Ant1	2422	4.90	5.92	82.77	---	---
		2437	4.90	5.92	82.77	---	---
		2452	4.90	5.93	82.63	---	---
11AX20SISO	Ant1	2412	3.88	4.91	79.02	---	---
		2437	3.88	4.91	79.02	---	---
		2462	3.87	4.89	79.14	---	---
11AX40SISO	Ant1	2422	3.87	4.89	79.14	---	---
		2437	3.87	4.90	78.98	---	---
		2452	3.88	4.91	79.02	---	---

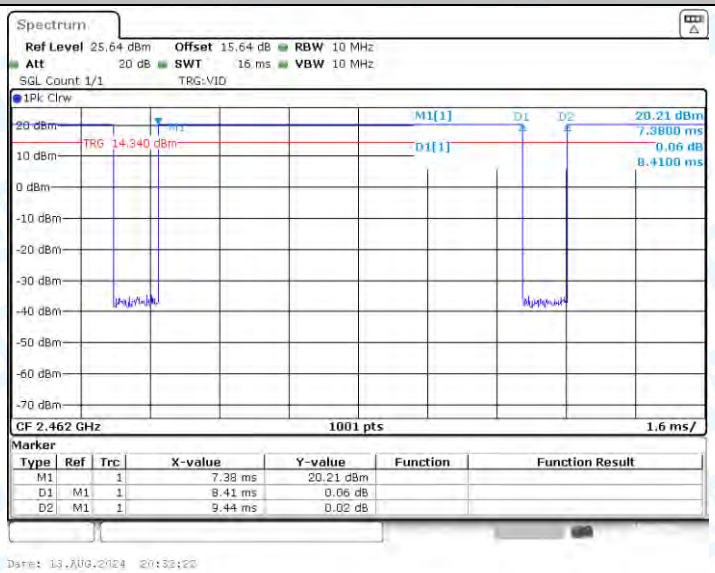
7.2.Test Graphs



11B_Ant1_2412



11B_Ant1_2437



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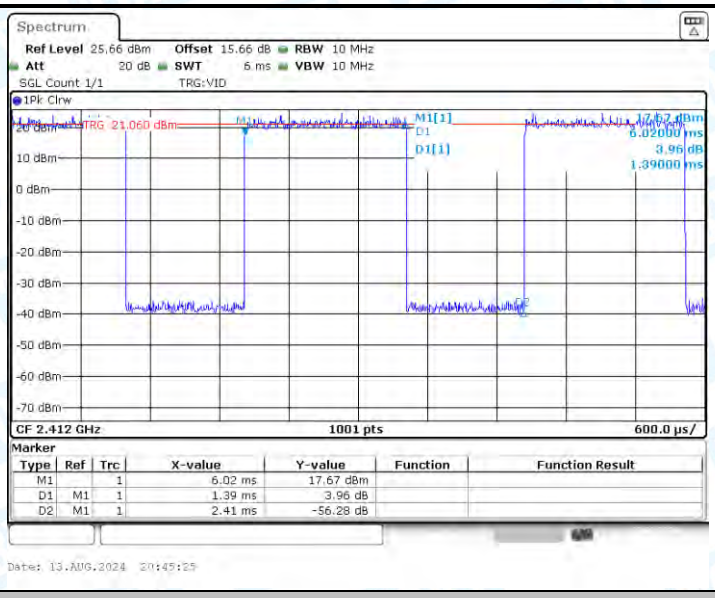

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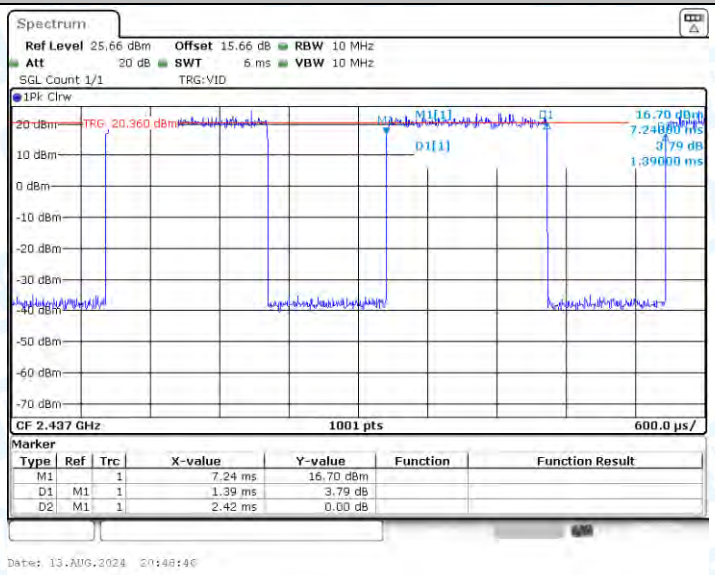

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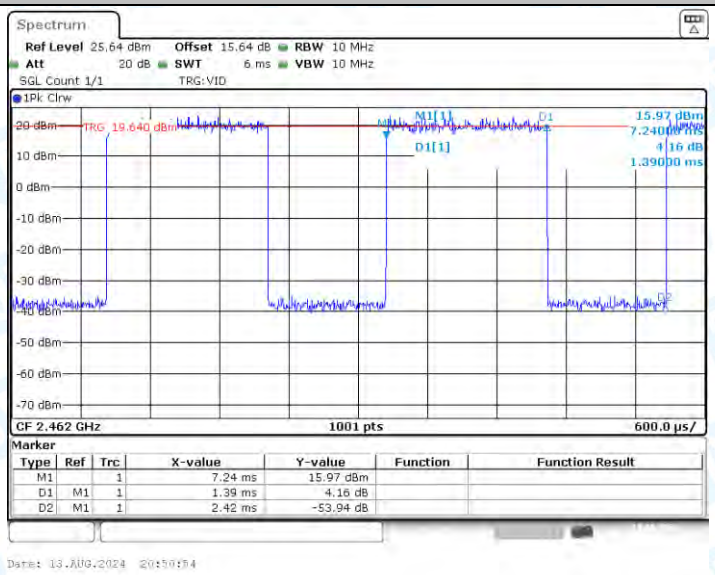

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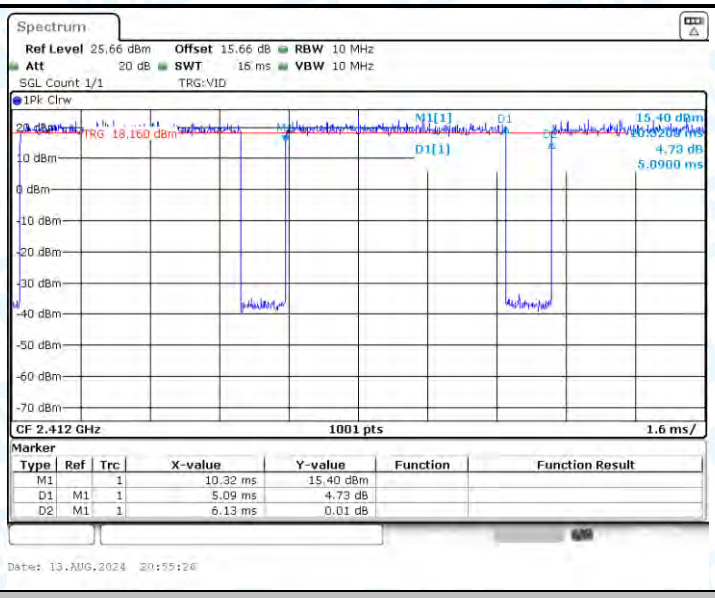
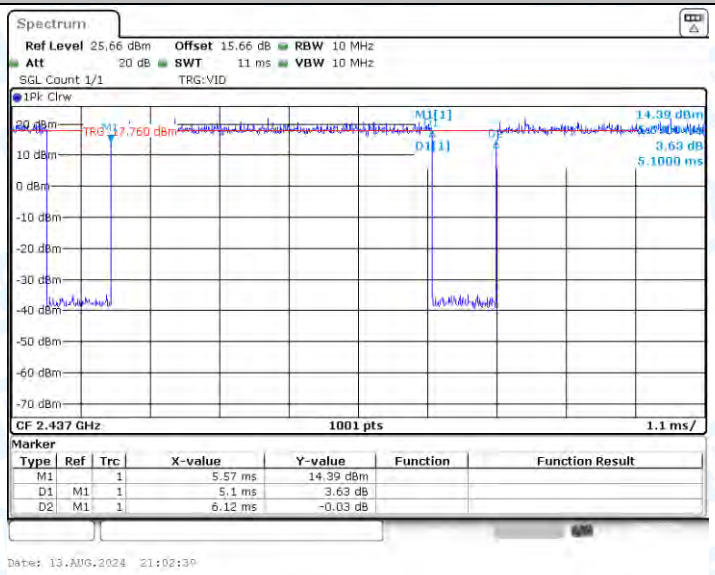


11N20SISO_Ant1_2412



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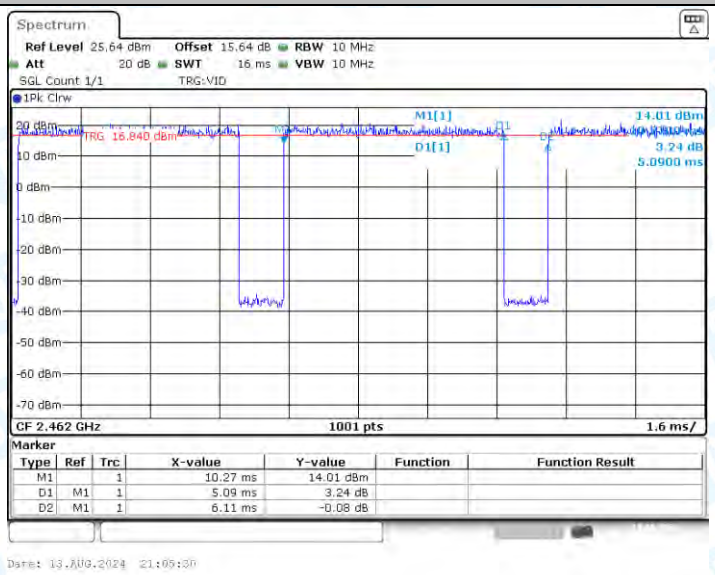

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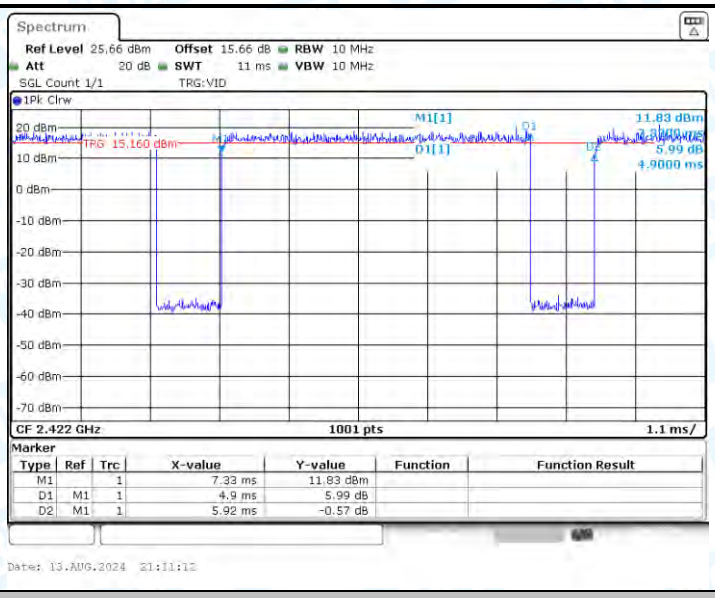
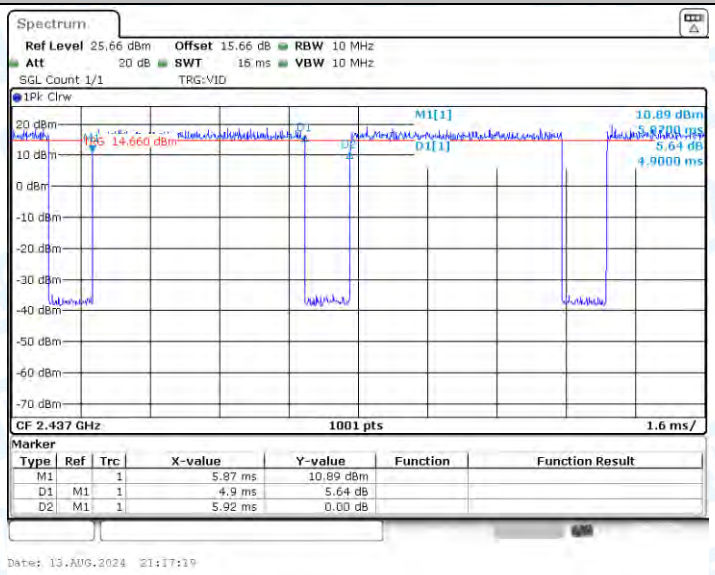
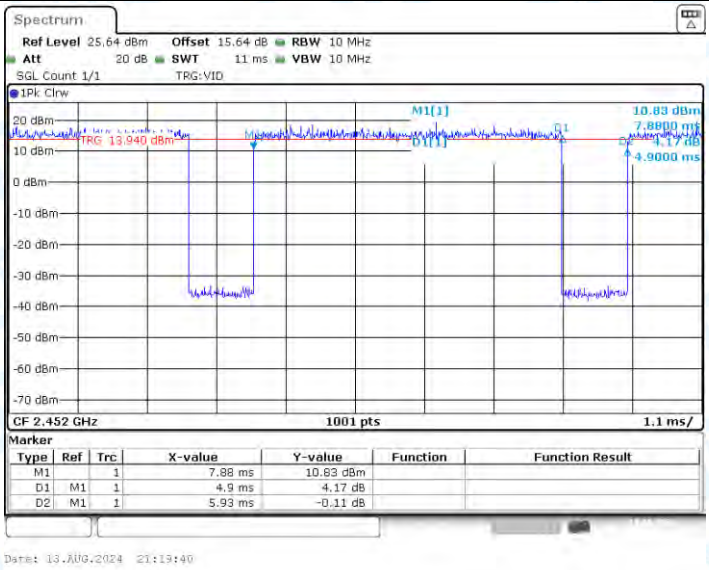


11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



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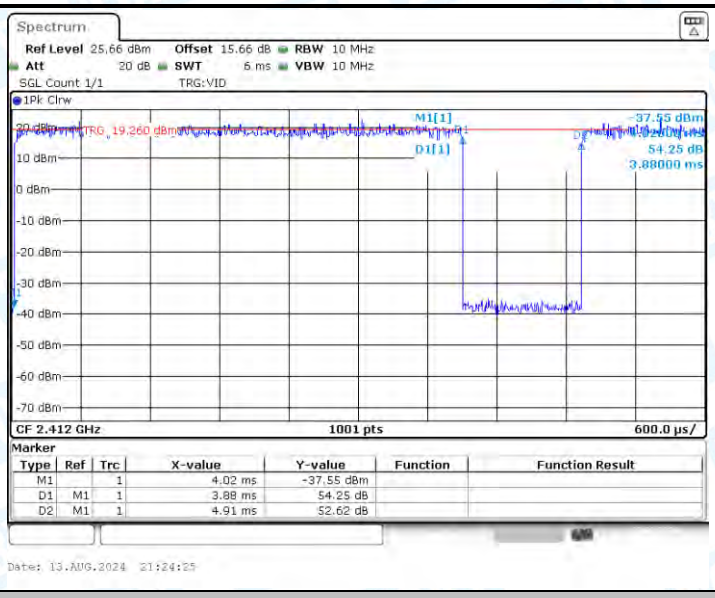

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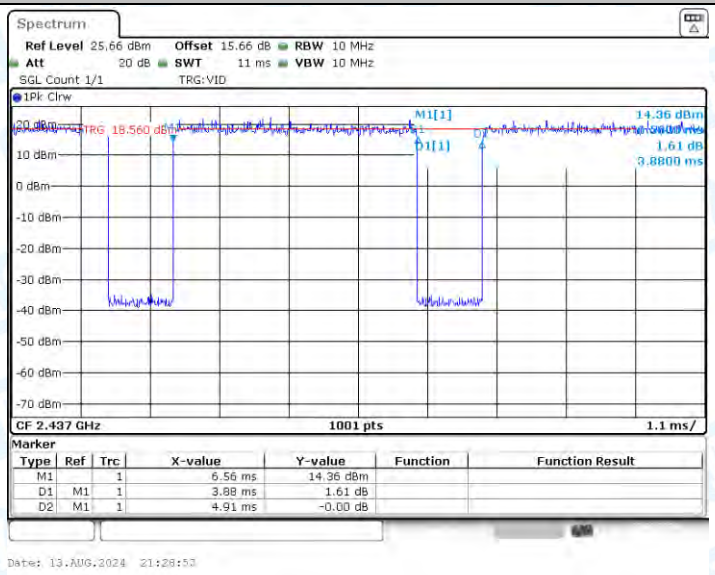

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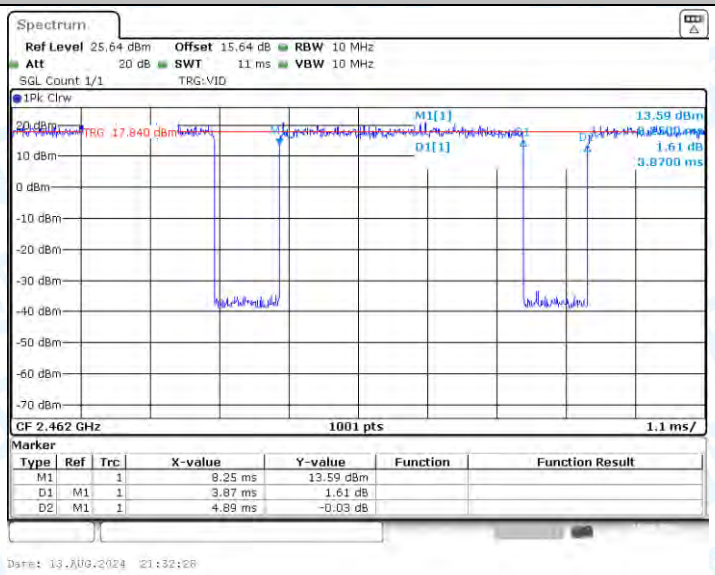
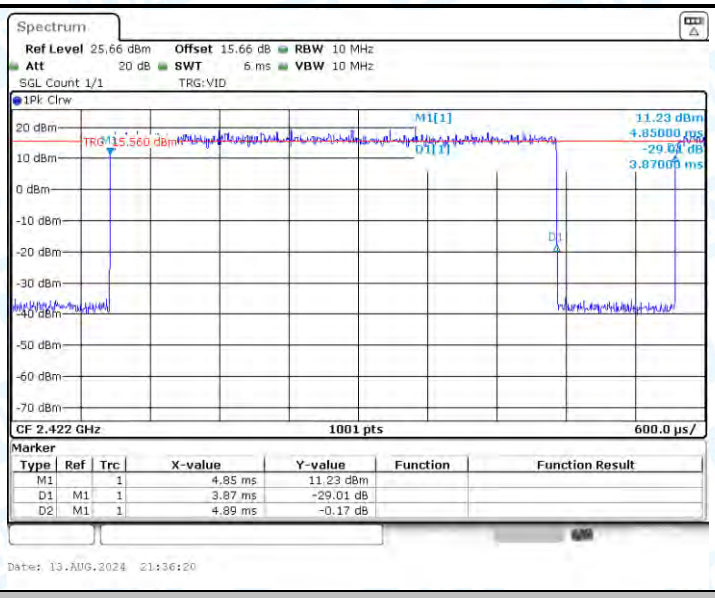


11AX20SISO_Ant1_2462



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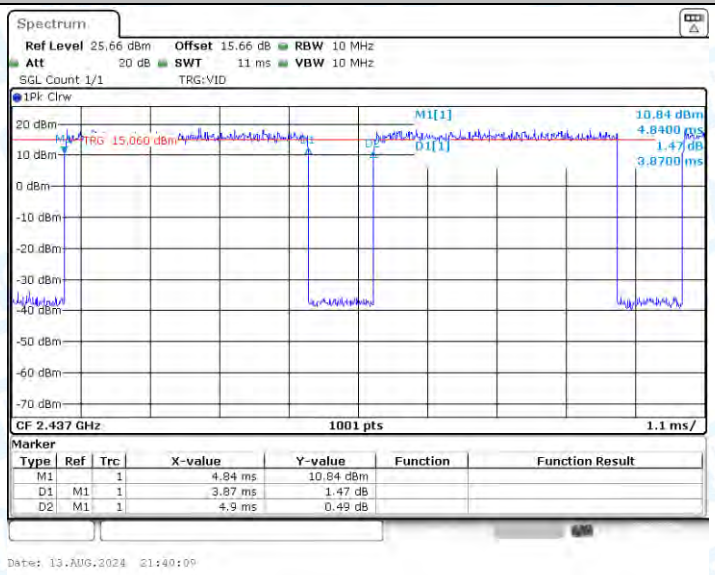

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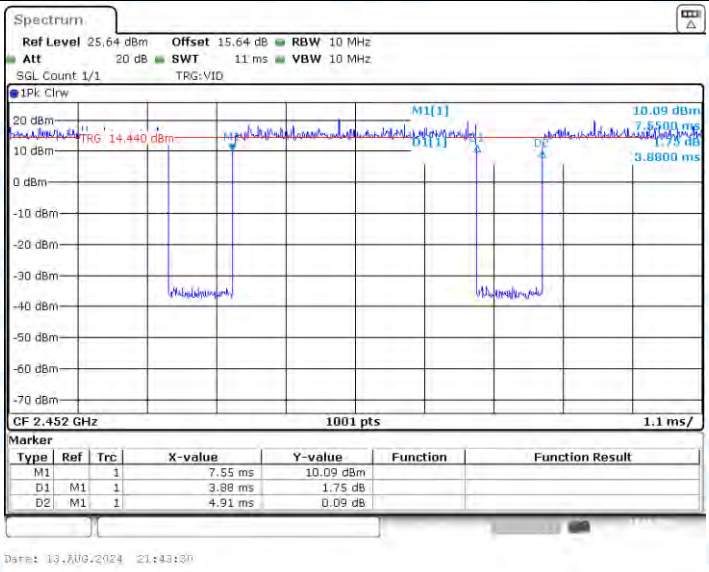


11AX40SISO_Ant1_2452

8. Emissions in Restricted Bands

8.1.Test Result

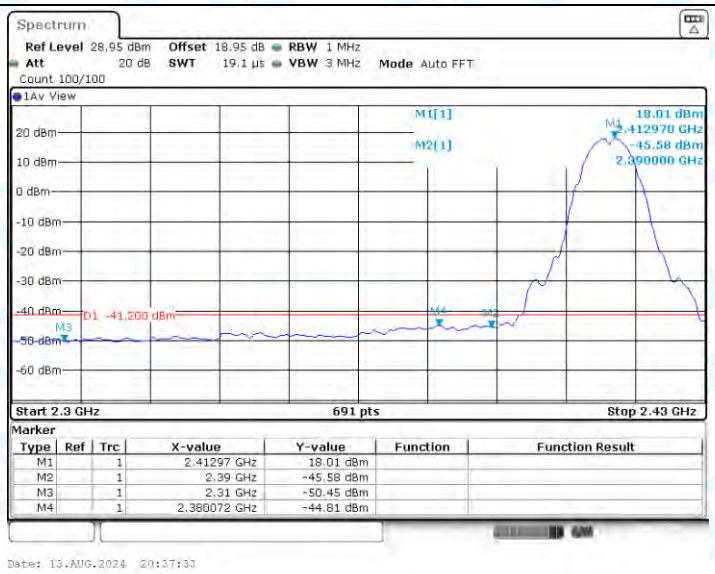
TestMode	Antenna	ChName	Channel	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	Low	2412	AV	2310.000	-50.45	≤-41.20	PASS
				AV	2380.072	-44.81	≤-41.20	PASS
				AV	2390.000	-45.58	≤-41.20	PASS
				Peak	2310.000	-41.59	≤-21.20	PASS
				Peak	2380.826	-34.32	≤-21.20	PASS
				Peak	2390.000	-36.39	≤-21.20	PASS
		High	2462	AV	2483.500	-43.65	≤-41.20	PASS
				AV	2485.913	-43.13	≤-41.20	PASS
				AV	2500.000	-43.99	≤-41.20	PASS
				Peak	2483.500	-34.93	≤-21.20	PASS
				Peak	2488.145	-33.02	≤-21.20	PASS
				Peak	2500.000	-35.81	≤-21.20	PASS
11G	Ant1	Low	2412	AV	2310.000	-49.87	≤-41.20	PASS
				AV	2389.870	-44.24	≤-41.20	PASS
				AV	2390.000	-43.84	≤-41.20	PASS
				Peak	2310.000	-40.01	≤-21.20	PASS
				Peak	2389.681	-28.45	≤-21.20	PASS
				Peak	2390.000	-28.47	≤-21.20	PASS
		High	2462	AV	2483.500	-43.63	≤-41.20	PASS
				AV	2483.522	-43.63	≤-41.20	PASS
				AV	2500.000	-49.74	≤-41.20	PASS
				Peak	2483.500	-25.95	≤-21.20	PASS
				Peak	2483.522	-25.95	≤-21.20	PASS
				Peak	2500.000	-39.48	≤-21.20	PASS
11N20SISO	Ant1	Low	2412	AV	2310.000	-50.82	≤-41.20	PASS
				AV	2389.870	-43.3	≤-41.20	PASS
				AV	2390.000	-43.2	≤-41.20	PASS
				Peak	2310.000	-40.1	≤-21.20	PASS
				Peak	2389.493	-28.49	≤-21.20	PASS
				Peak	2390.000	-29.13	≤-21.20	PASS
		High	2462	AV	2483.500	-45.5	≤-41.20	PASS
				AV	2483.522	-45.5	≤-41.20	PASS
				AV	2500.000	-49.48	≤-41.20	PASS
				Peak	2483.500	-29.75	≤-21.20	PASS
				Peak	2484.000	-29.56	≤-21.20	PASS
				Peak	2500.000	-40.93	≤-21.20	PASS
11N40SISO	Ant1	Low	2422	AV	2310.000	-50.82	≤-41.20	PASS
				AV	2389.493	-46.04	≤-41.20	PASS
				AV	2390.000	-45.98	≤-41.20	PASS
				Peak	2310.000	-42.22	≤-21.20	PASS

				Peak	2388.174	-33.47	≤-21.20	PASS
				Peak	2390.000	-33.46	≤-21.20	PASS
		High	2452	AV	2483.500	-45.74	≤-41.20	PASS
				AV	2483.522	-45.74	≤-41.20	PASS
				AV	2500.000	-49.81	≤-41.20	PASS
				Peak	2483.500	-29.92	≤-21.20	PASS
				Peak	2483.841	-29.9	≤-21.20	PASS
				Peak	2500.000	-40.51	≤-21.20	PASS
11AX20SISO	Ant1	Low	2412	AV	2310.000	-50.9	≤-41.20	PASS
				AV	2389.870	-46.01	≤-41.20	PASS
				AV	2390.000	-45.76	≤-41.20	PASS
				Peak	2310.000	-43.47	≤-21.20	PASS
				Peak	2389.493	-31.87	≤-21.20	PASS
				Peak	2390.000	-31.79	≤-21.20	PASS
		High	2462	AV	2483.500	-46.37	≤-41.20	PASS
				AV	2483.522	-46.37	≤-41.20	PASS
				AV	2500.000	-50.12	≤-41.20	PASS
				Peak	2483.500	-29.92	≤-21.20	PASS
				Peak	2483.681	-29.91	≤-21.20	PASS
				Peak	2500.000	-40.25	≤-21.20	PASS
11AX40SISO	Ant1	Low	2422	AV	2310.000	-50.89	≤-41.20	PASS
				AV	2389.870	-45.15	≤-41.20	PASS
				AV	2390.000	-45.14	≤-41.20	PASS
				Peak	2310.000	-40.95	≤-21.20	PASS
				Peak	2389.870	-33.68	≤-21.20	PASS
				Peak	2390.000	-33.66	≤-21.20	PASS
		High	2452	AV	2483.500	-44.91	≤-41.20	PASS
				AV	2483.522	-44.91	≤-41.20	PASS
				AV	2500.000	-48.92	≤-41.20	PASS
				Peak	2483.500	-36.03	≤-21.20	PASS
				Peak	2486.551	-35.56	≤-21.20	PASS
				Peak	2500.000	-40.43	≤-21.20	PASS

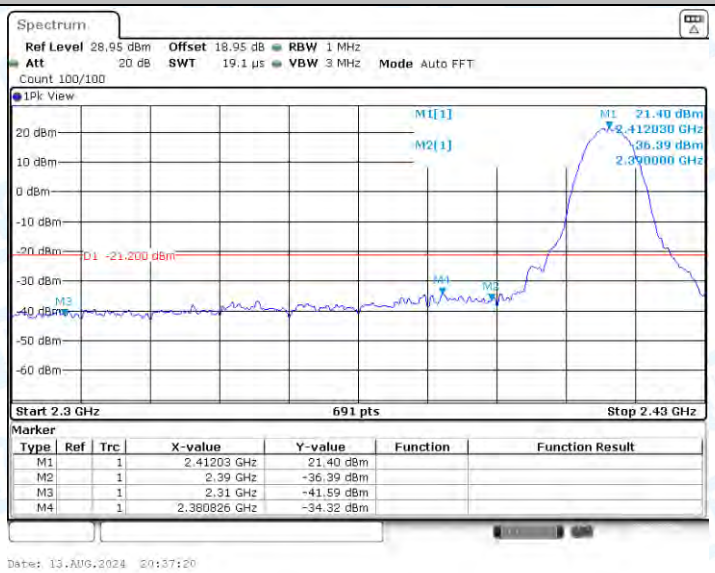
Note：

1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.
3. The Duty Cycle Factor is compensated in the graph.

8.2.Test Graphs



11B_Ant1_Low_2412_AV



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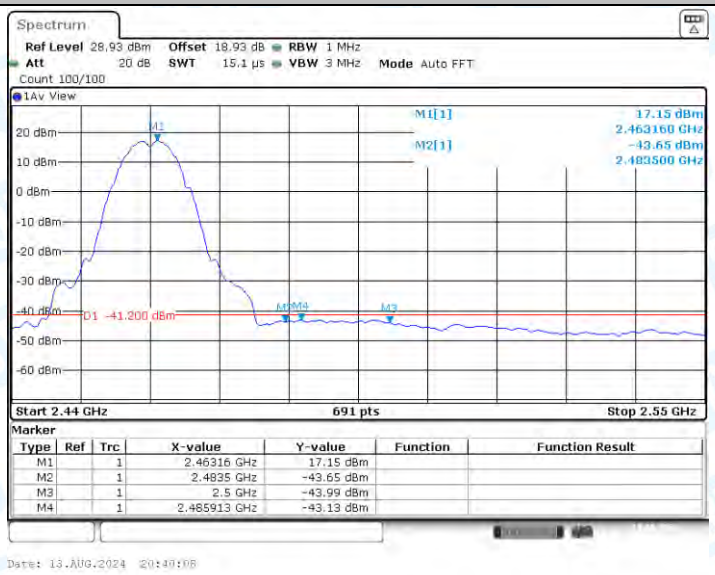
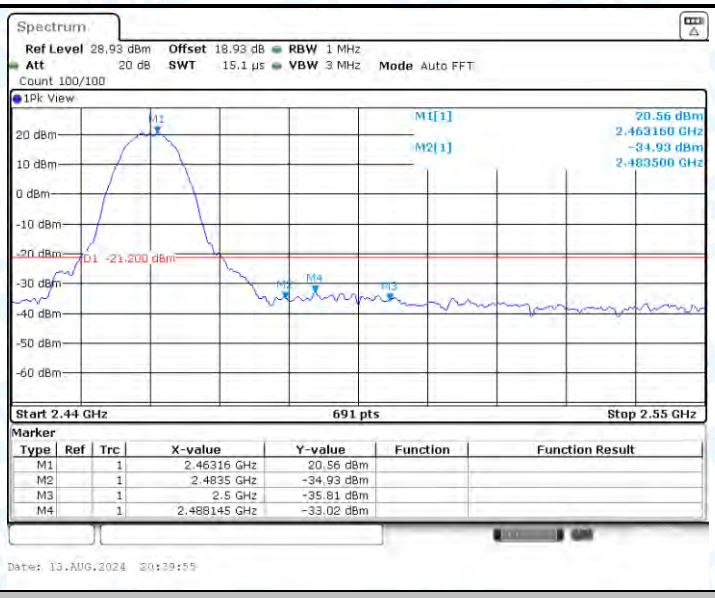


11B_Ant1_High_2462_AV



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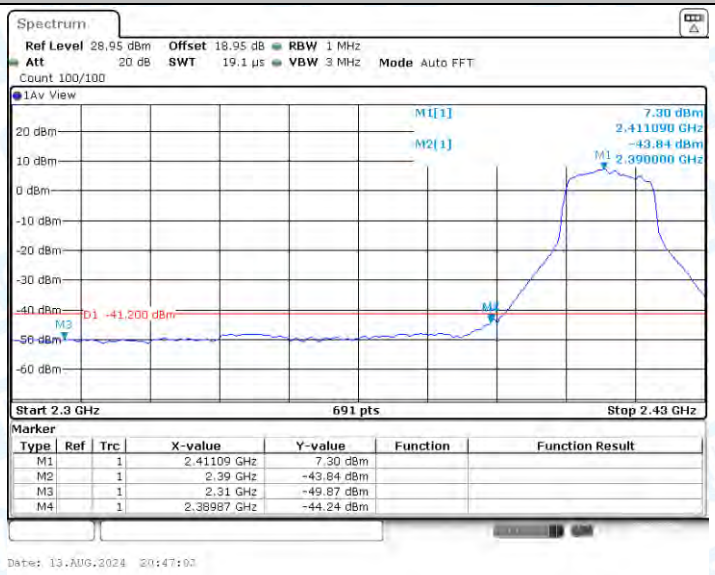

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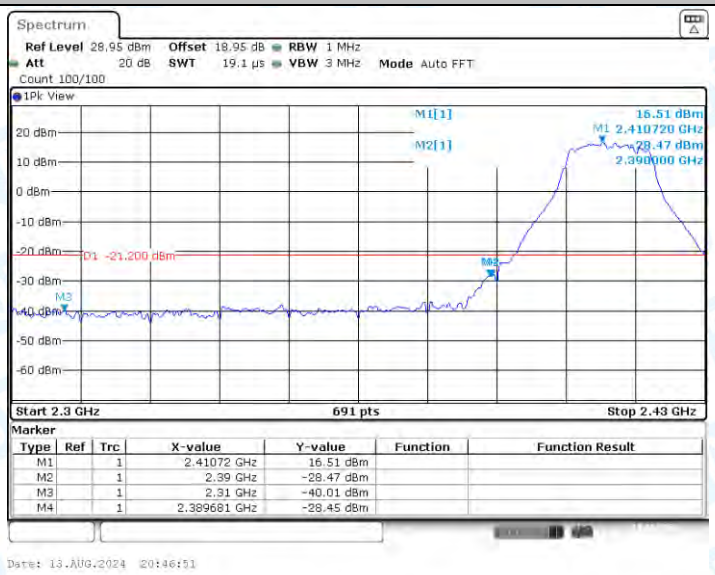

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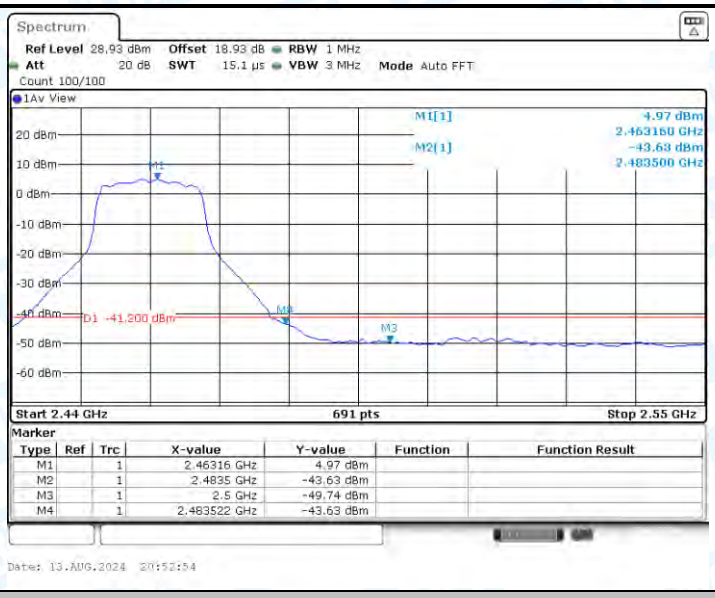

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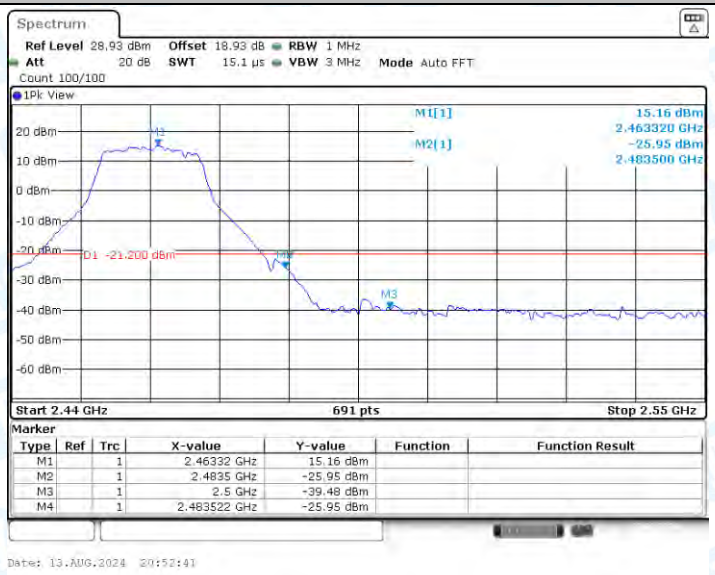

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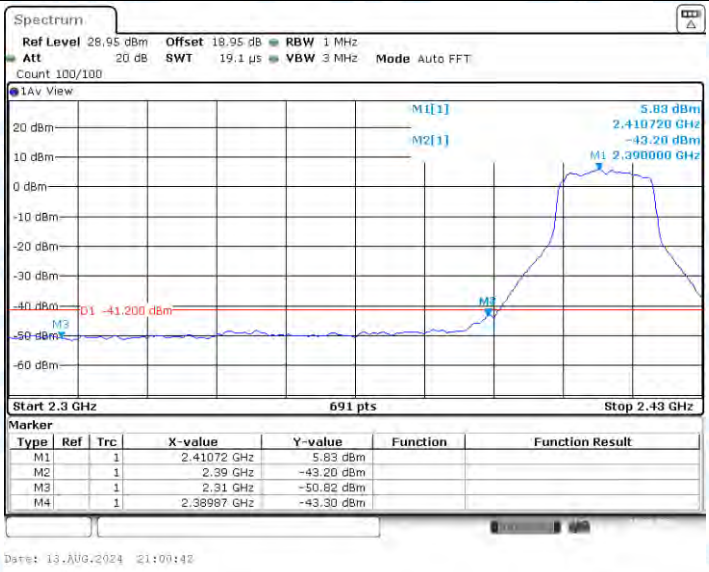

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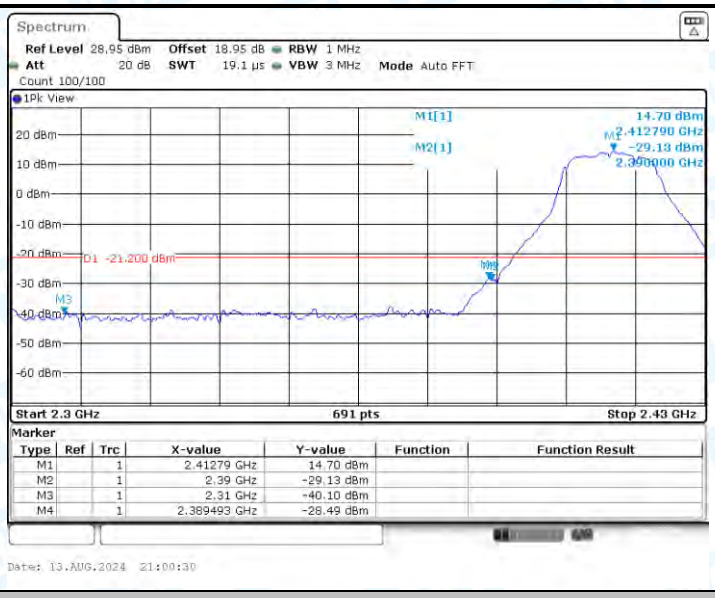

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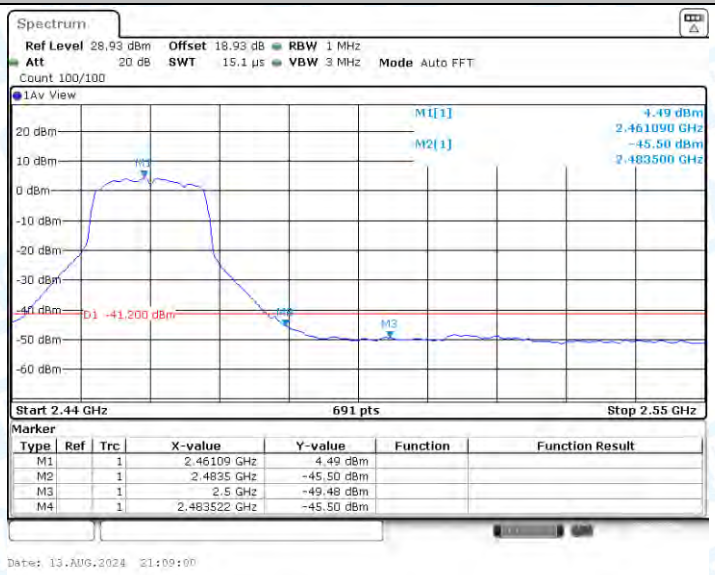

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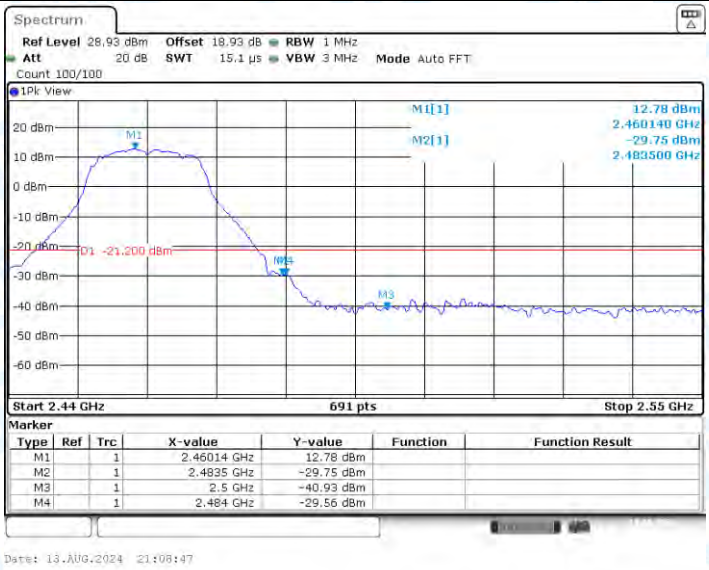

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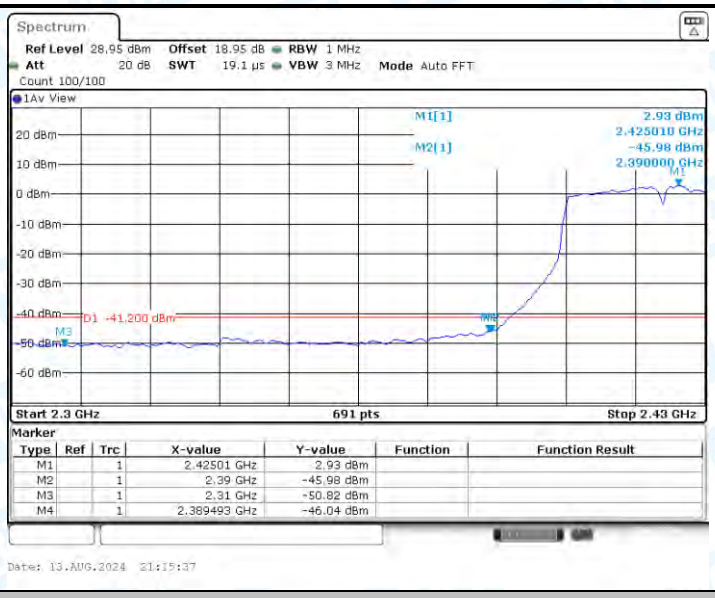

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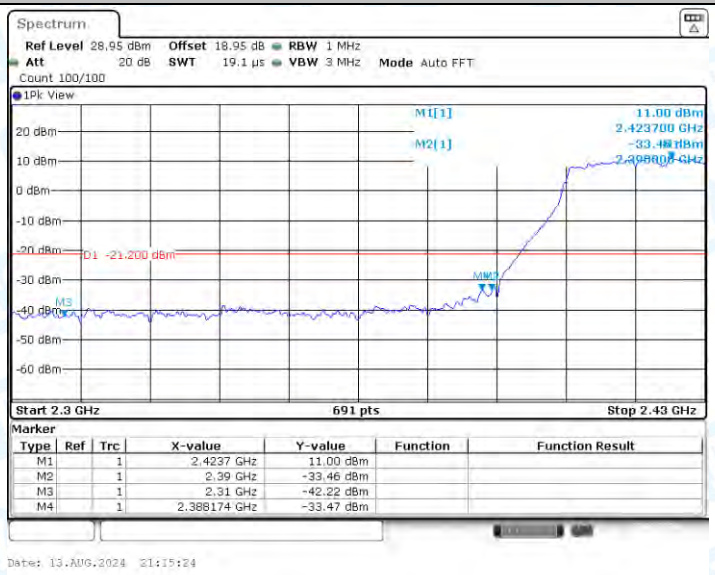

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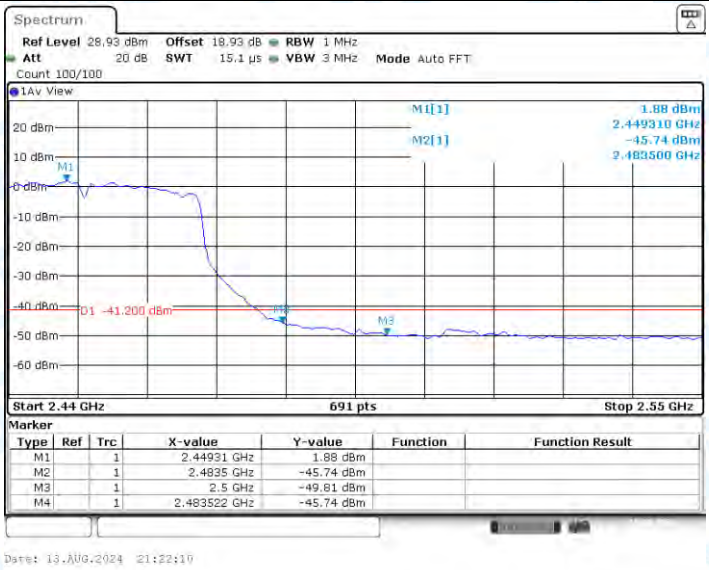

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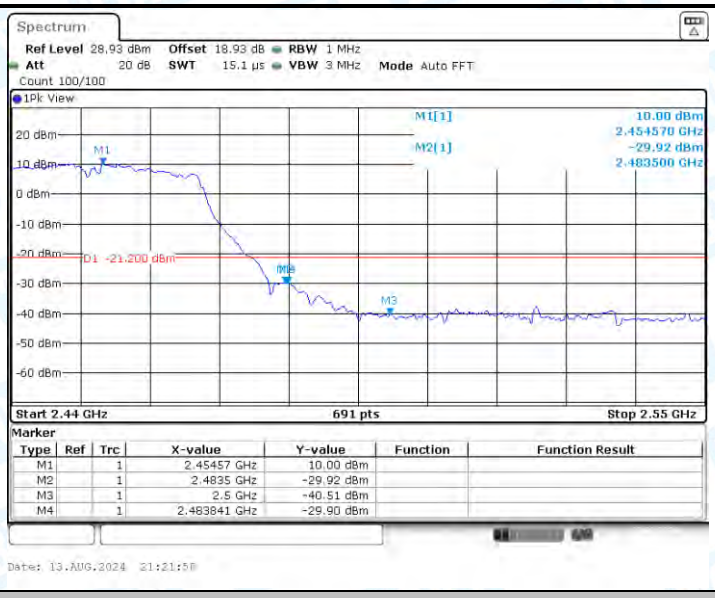

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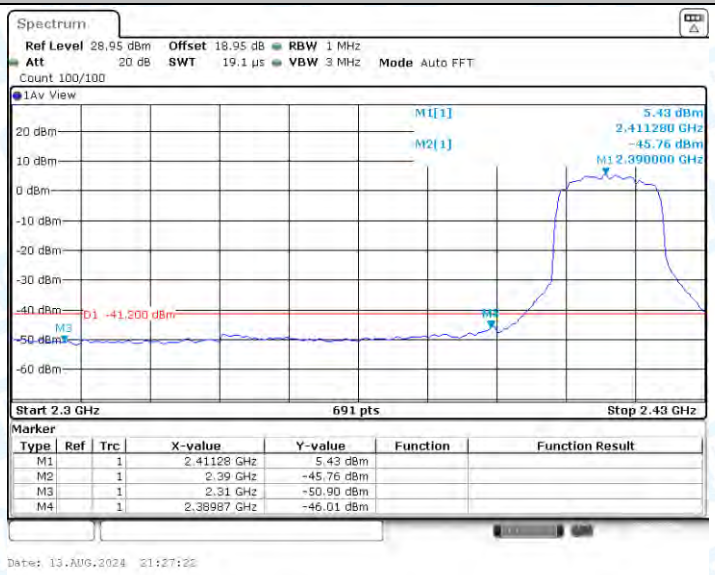

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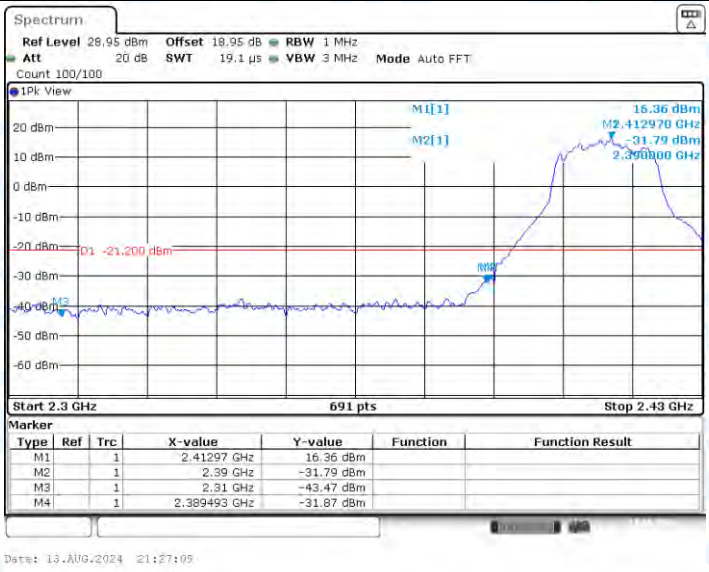

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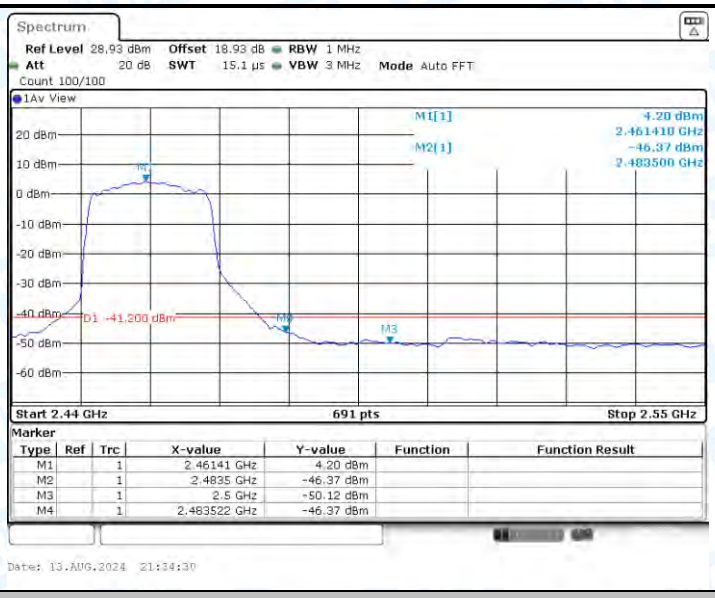

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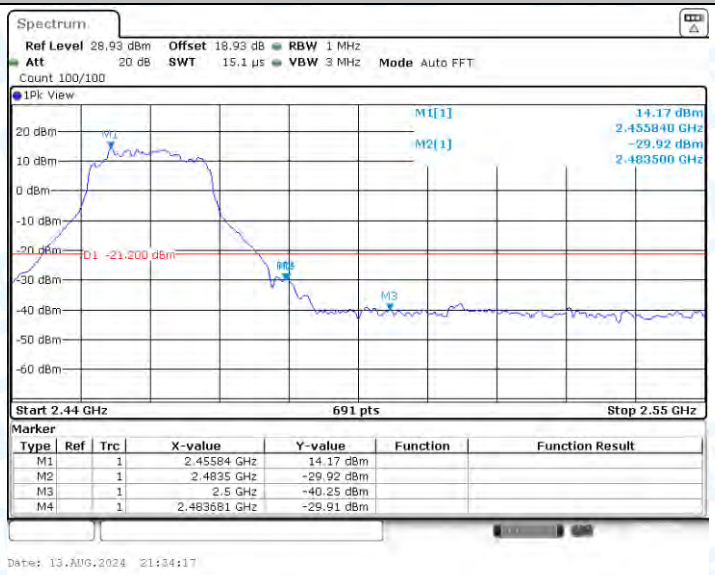

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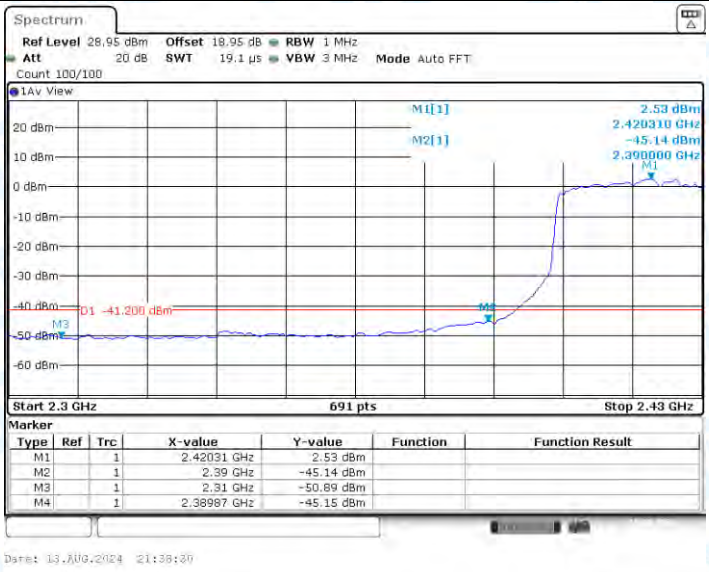

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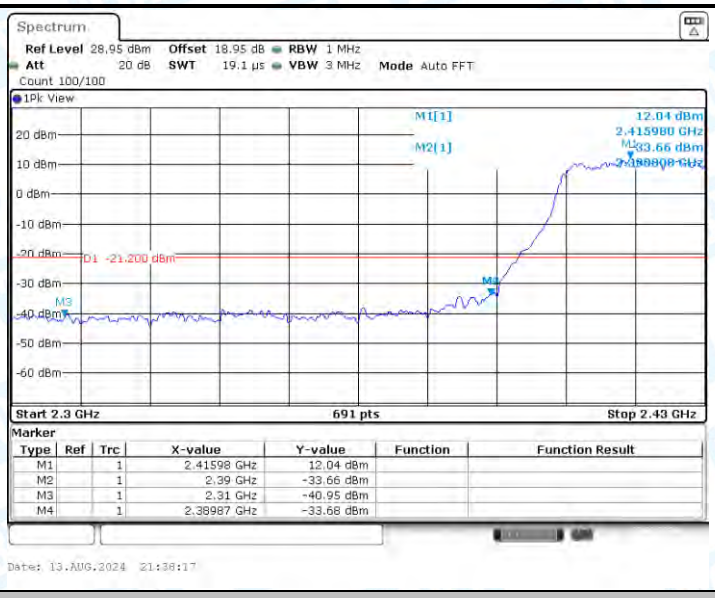

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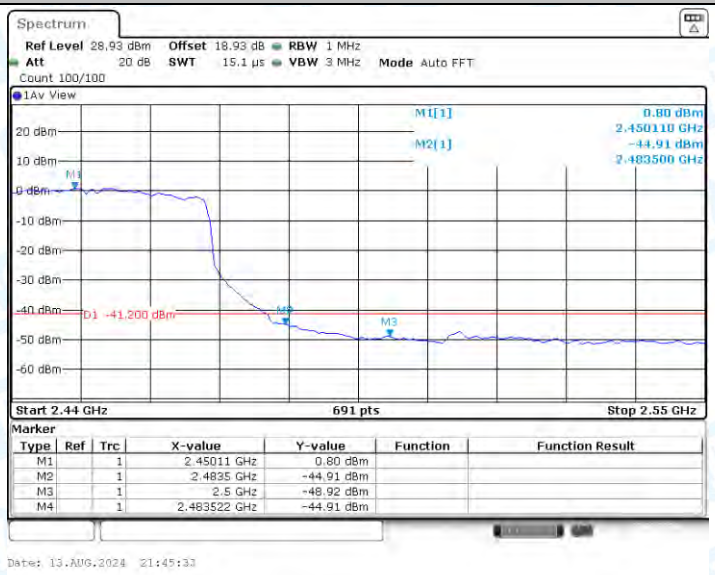

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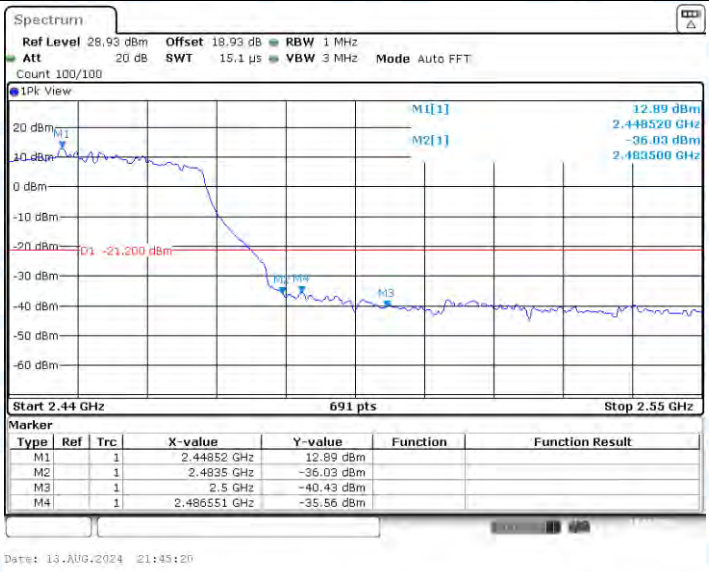

11AX40SISO_Ant1_High_2452_Peak

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