

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

General Description of EUT	
EUT Name:	WiFi Repeater
Model:	WR25
Sample ID:	HC-C-202405-0242-04-01-2#
Test Standard:	FCC Part 15.247
Environmental Conditions	
Ambient Temperature:	24.9℃
Ambient Humidity:	45%RH
Test Power Supply:	AC 120V
Test Engineer:	Jolin Lee
Note: For a more detailed features description, please refer to the report TBR-C-202405-0242-7	

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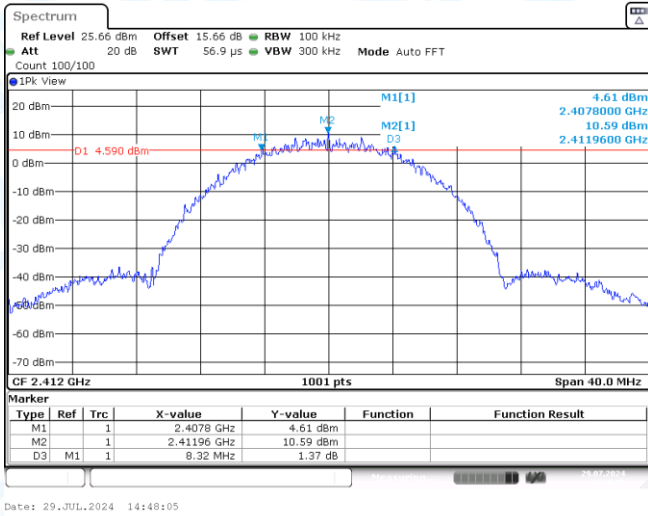
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1: DTS Bandwidth

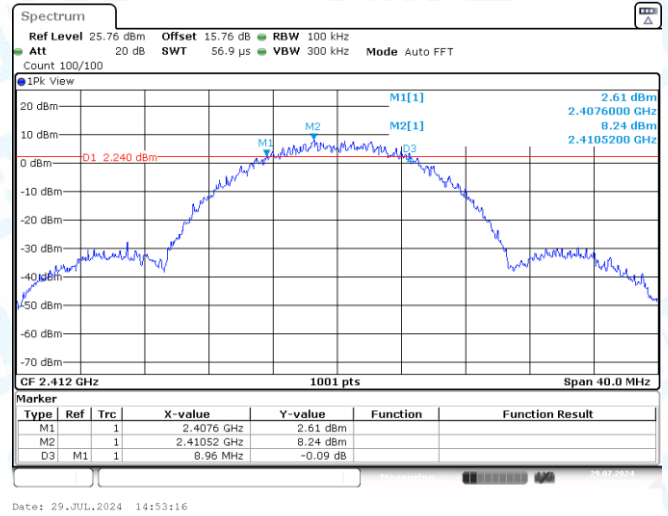
1.1 Test Result

TestMode	Ant.	Frequency [MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B-CDD	Ant1	2412	8.32	2407.80	2416.12	0.5	PASS
11B-CDD	Ant2	2412	8.96	2407.60	2416.56	0.5	PASS
11B-CDD	Ant1	2437	8.32	2432.80	2441.12	0.5	PASS
11B-CDD	Ant2	2437	8.32	2432.80	2441.12	0.5	PASS
11B-CDD	Ant1	2462	8.32	2457.80	2466.12	0.5	PASS
11B-CDD	Ant2	2462	8.32	2457.80	2466.12	0.5	PASS
11G-CDD	Ant1	2412	15.08	2404.44	2419.52	0.5	PASS
11G-CDD	Ant2	2412	15.68	2404.44	2420.12	0.5	PASS
11G-CDD	Ant1	2437	15.12	2429.44	2444.56	0.5	PASS
11G-CDD	Ant2	2437	13.84	2430.68	2444.52	0.5	PASS
11G-CDD	Ant1	2462	15.12	2454.44	2469.56	0.5	PASS
11G-CDD	Ant2	2462	15.08	2454.44	2469.52	0.5	PASS
11N20MIMO	Ant1	2412	15.12	2404.36	2419.48	0.5	PASS
11N20MIMO	Ant2	2412	15.08	2404.36	2419.44	0.5	PASS
11N20MIMO	Ant1	2437	16.28	2428.76	2445.04	0.5	PASS
11N20MIMO	Ant2	2437	16.32	2428.76	2445.08	0.5	PASS
11N20MIMO	Ant1	2462	16.36	2453.72	2470.08	0.5	PASS
11N20MIMO	Ant2	2462	12.60	2455.60	2468.20	0.5	PASS

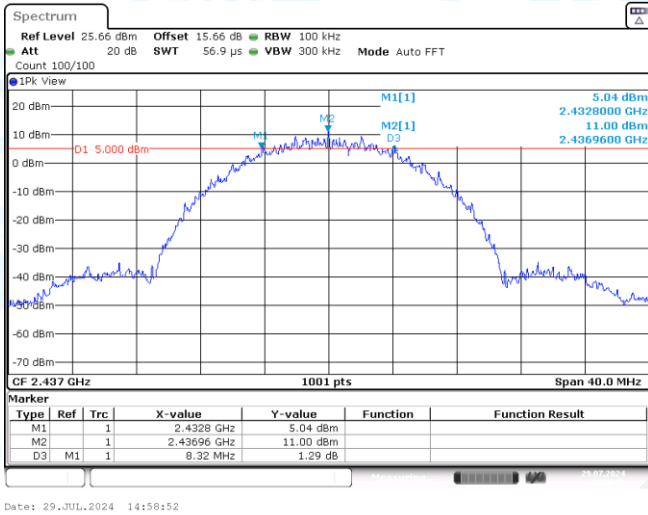
1.2 Test Graphs



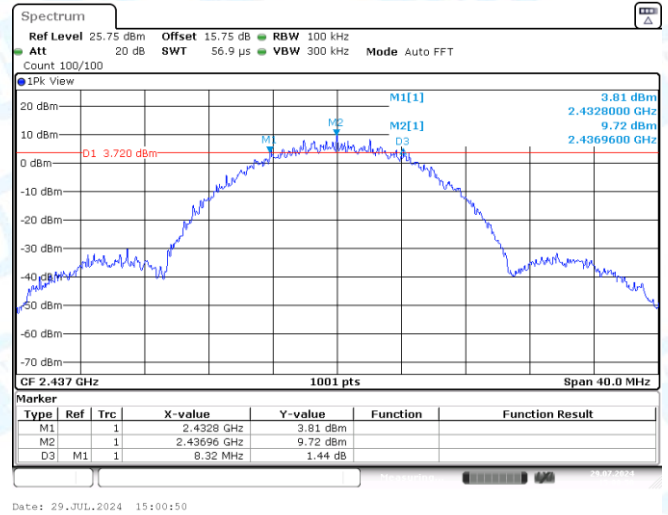
11B-CDD-Ant1-2412-PASS



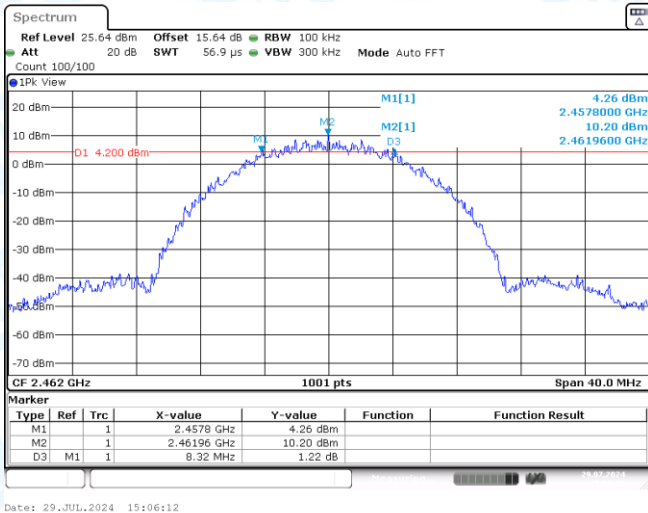
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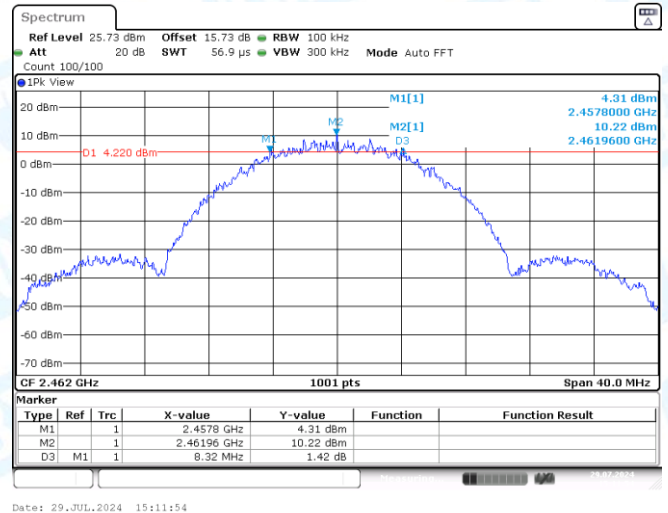
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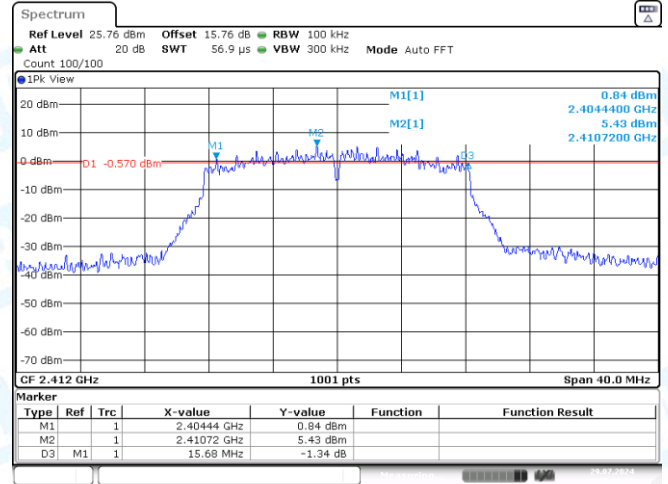
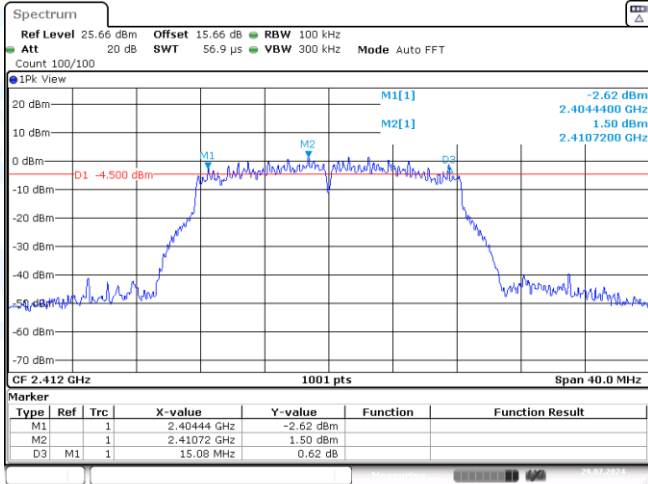
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11B-CDD-Ant1-2462-PASS

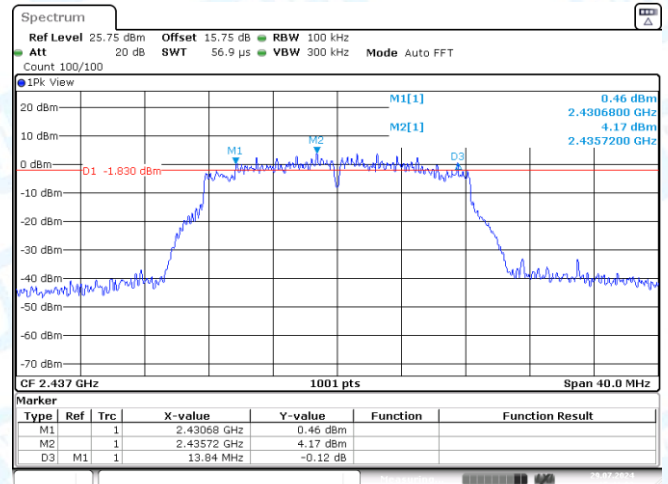
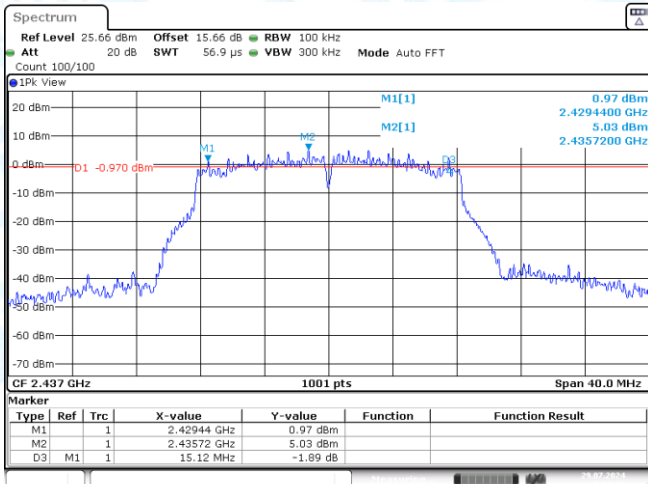


11B-CDD-Ant2-2462-PASS



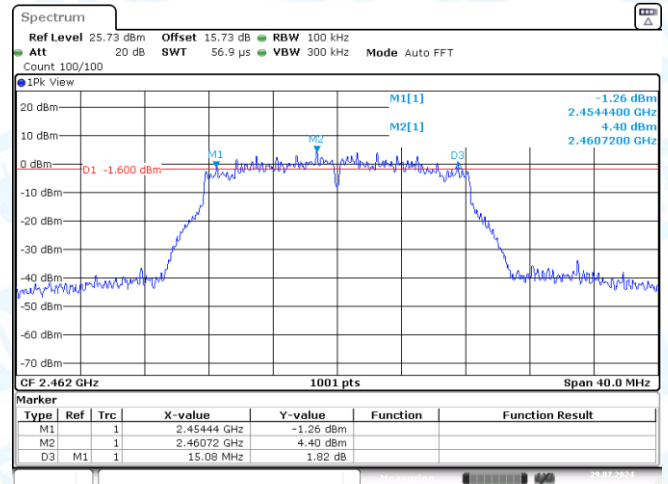
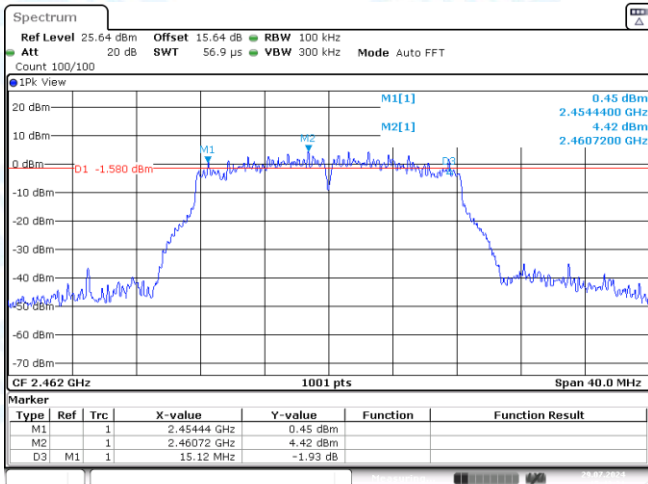
11G-CDD-Ant1-2412-PASS

11G-CDD-Ant2-2412-PASS



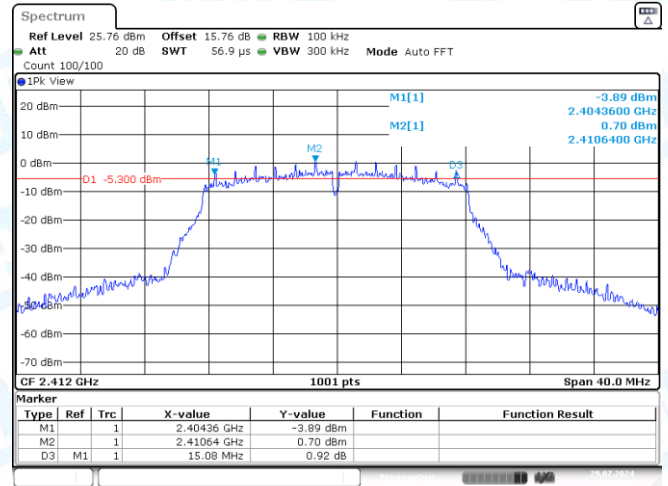
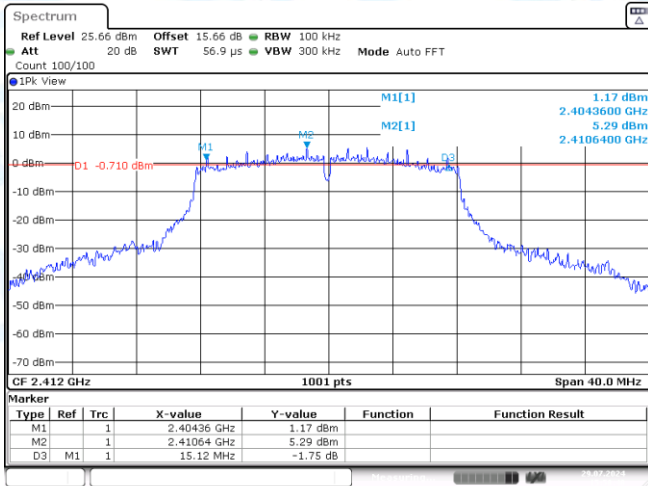
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11G-CDD-Ant2-2437-PASS



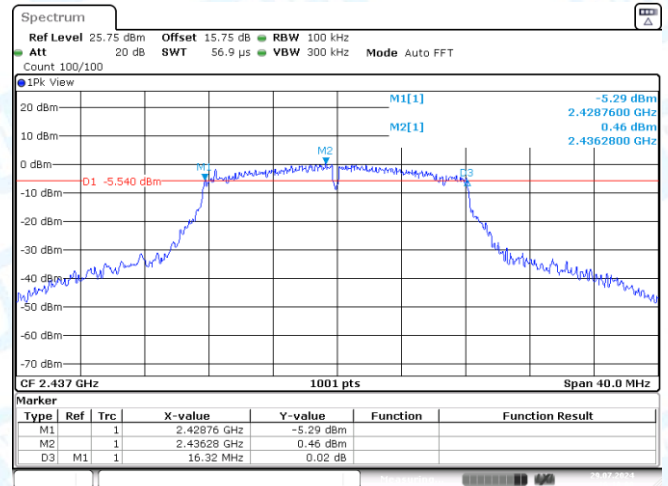
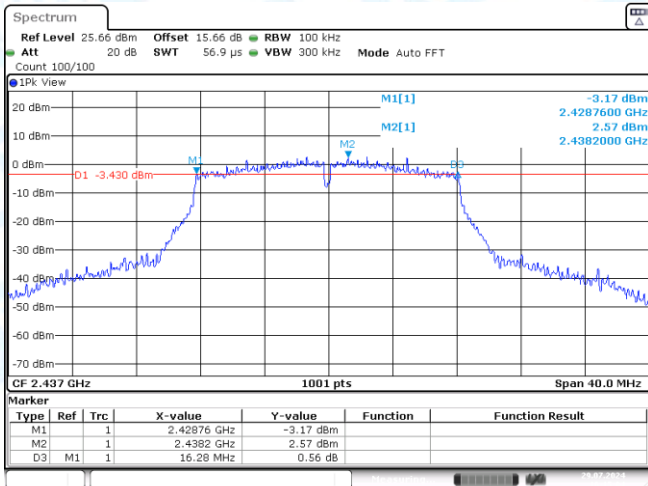
11G-CDD-Ant1-2462-PASS

11G-CDD-Ant2-2462-PASS



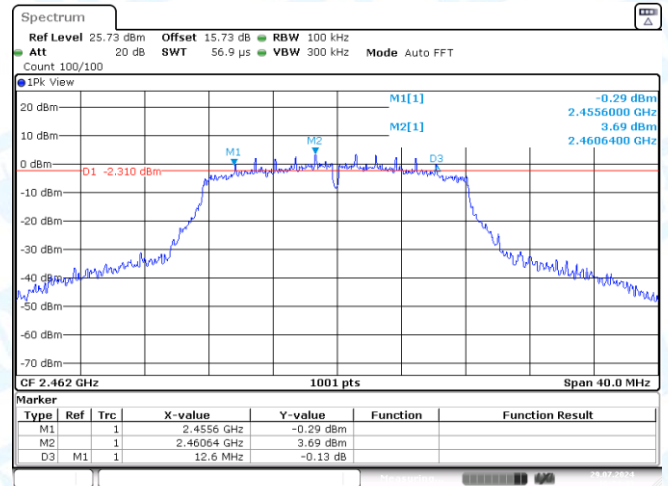
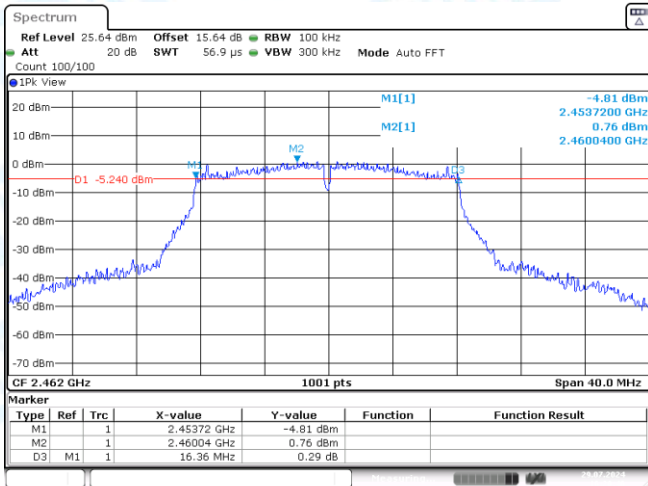
11N20MIMO-Ant1-2412-PASS

11N20MIMO-Ant2-2412-PASS



11N20MIMO-Ant1-2437-PASS

11N20MIMO-Ant2-2437-PASS



11N20MIMO-Ant1-2462-PASS

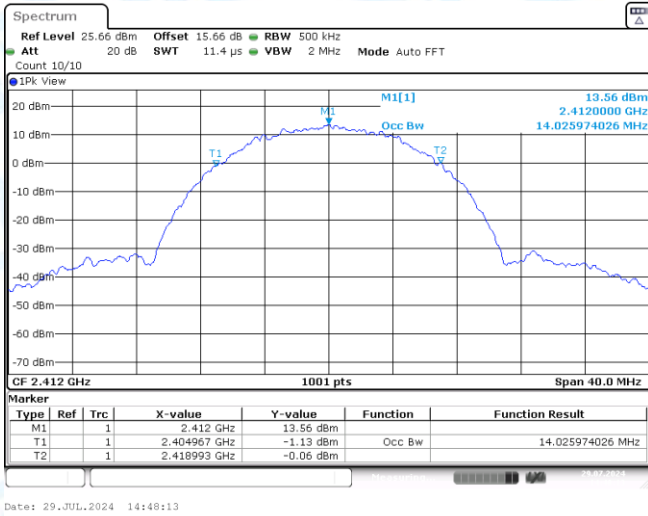
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2: Occupied Channel Bandwidth

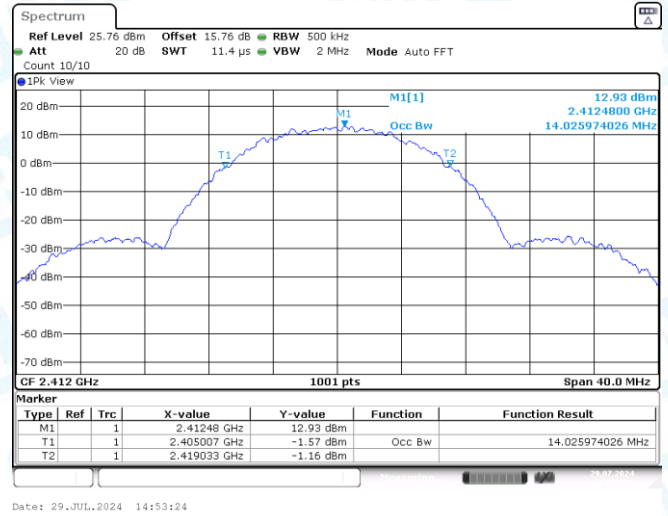
2.1 Test Result

TestMode	Ant.	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B-CDD	Ant1	2412	14.026	2404.9670	2418.9930	---	---
11B-CDD	Ant2	2412	14.026	2405.0070	2419.0330	---	---
11B-CDD	Ant1	2437	13.866	2430.0869	2443.9530	---	---
11B-CDD	Ant2	2437	14.066	2430.0070	2444.0729	---	---
11B-CDD	Ant1	2462	14.066	2454.9670	2469.0330	---	---
11B-CDD	Ant2	2462	14.066	2454.9271	2468.9930	---	---
11G-CDD	Ant1	2412	16.503	2403.8482	2420.3516	---	---
11G-CDD	Ant2	2412	16.903	2403.6084	2420.5115	---	---
11G-CDD	Ant1	2437	16.543	2428.6883	2445.2318	---	---
11G-CDD	Ant2	2437	16.743	2428.6484	2445.3916	---	---
11G-CDD	Ant1	2462	16.583	2453.6484	2470.2318	---	---
11G-CDD	Ant2	2462	16.823	2453.5684	2470.3916	---	---
11N20MIMO	Ant1	2412	16.623	2403.6084	2420.2318	---	---
11N20MIMO	Ant2	2412	16.703	2403.6084	2420.3117	---	---
11N20MIMO	Ant1	2437	16.623	2428.6484	2445.2717	---	---
11N20MIMO	Ant2	2437	17.063	2428.4086	2445.4715	---	---
11N20MIMO	Ant1	2462	16.663	2453.6084	2470.2717	---	---
11N20MIMO	Ant2	2462	16.903	2453.3287	2470.2318	---	---

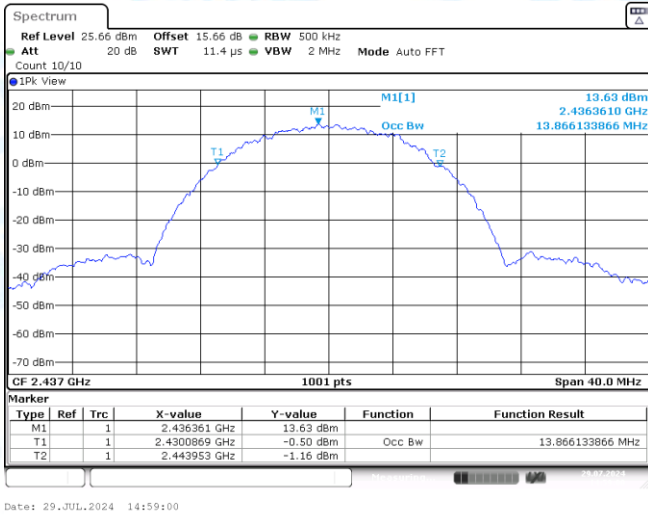
2.2 Test Graphs



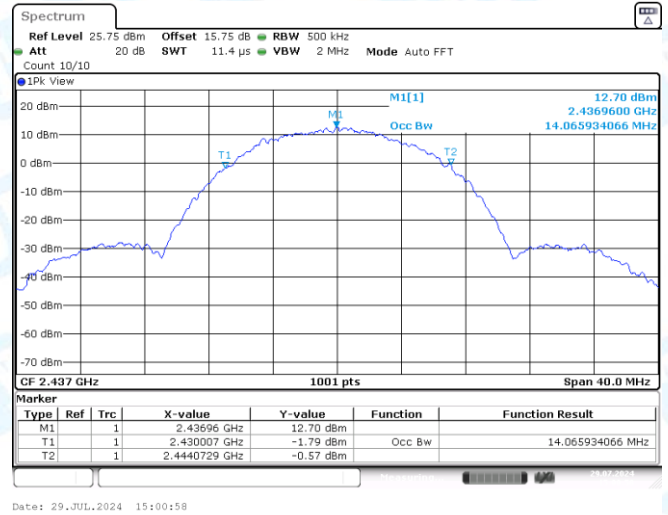
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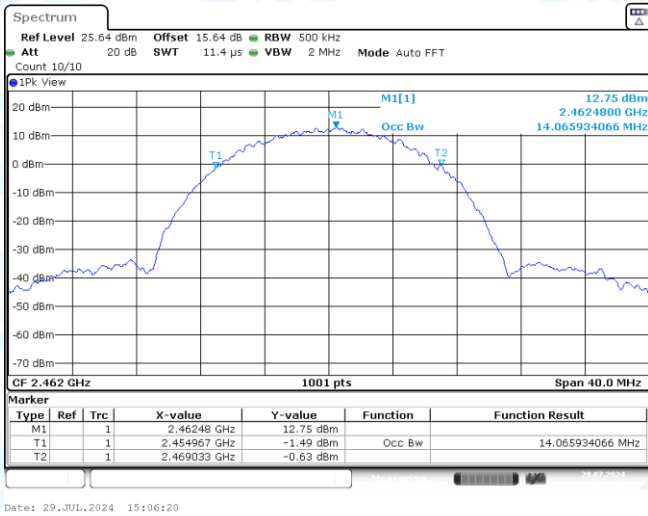
11B-CDD-Ant2-2412



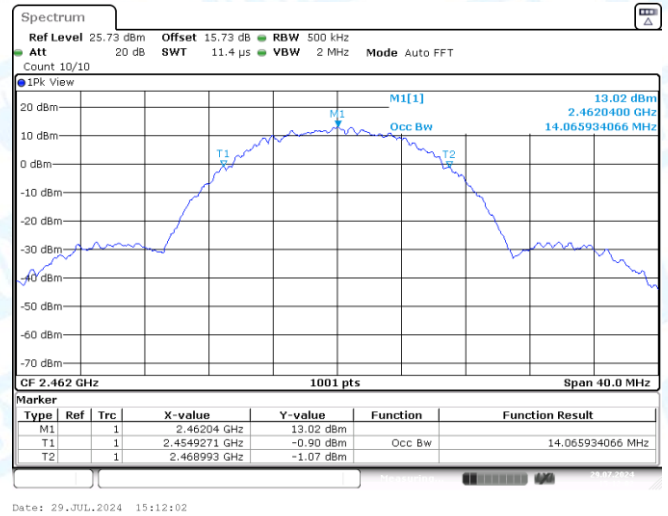
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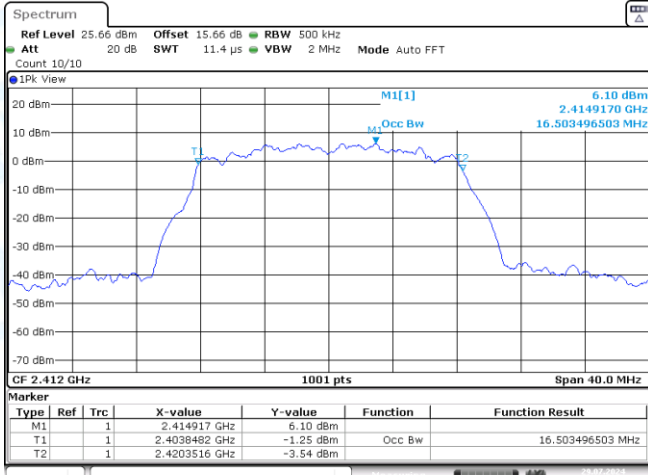
11B-CDD-Ant2-2437



11B-CDD-Ant1-2462

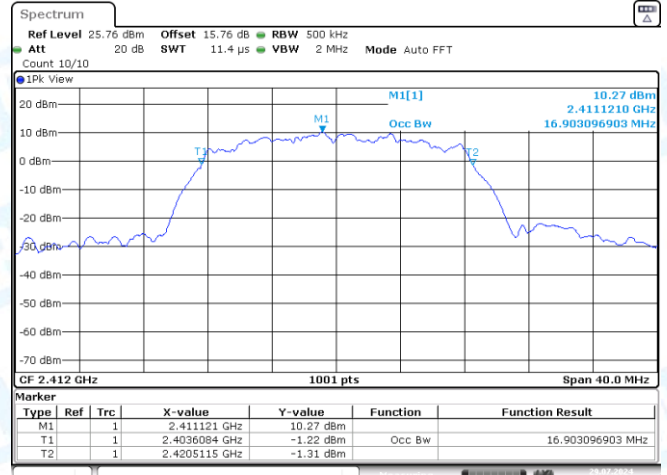


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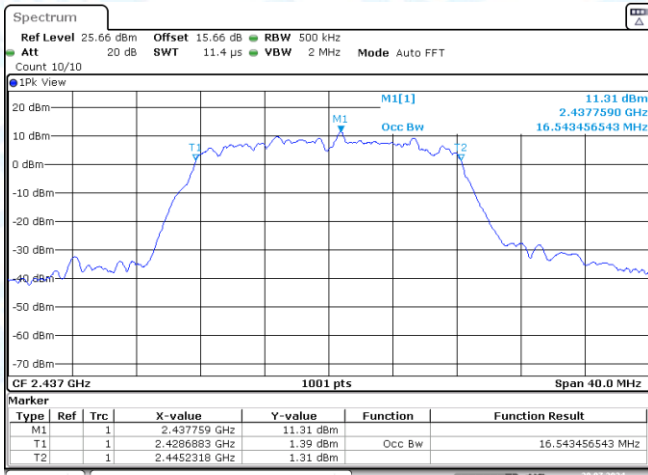
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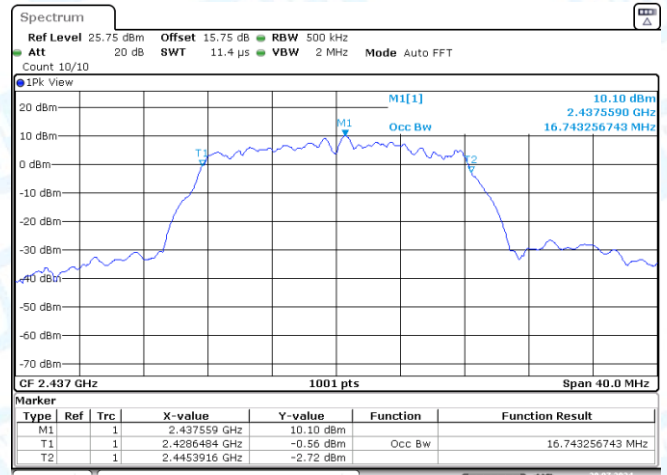
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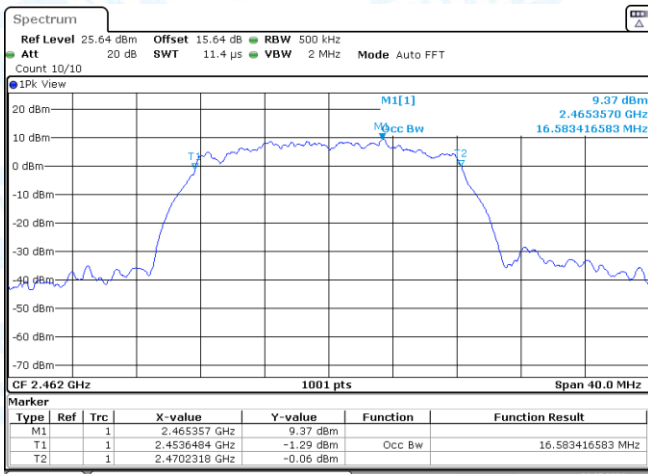
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11G-CDD-Ant1-2437



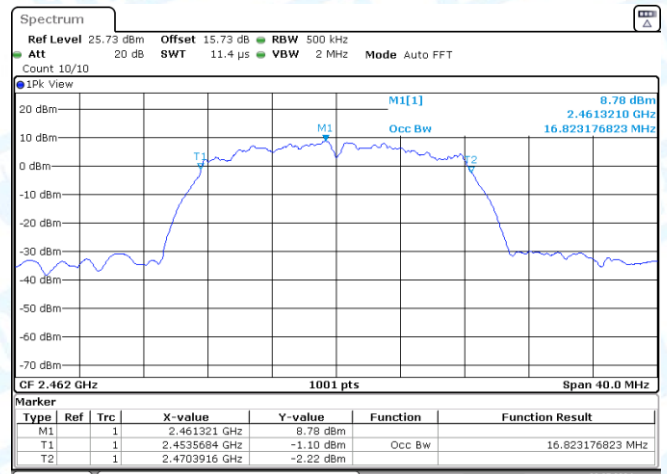
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11G-CDD-Ant2-2437



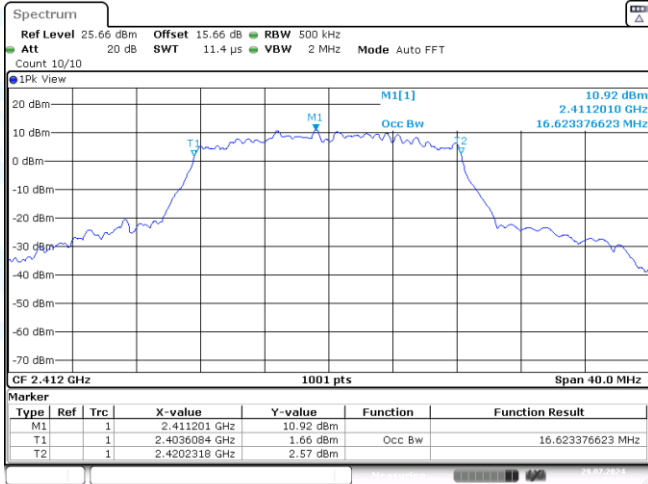
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11G-CDD-Ant1-2462



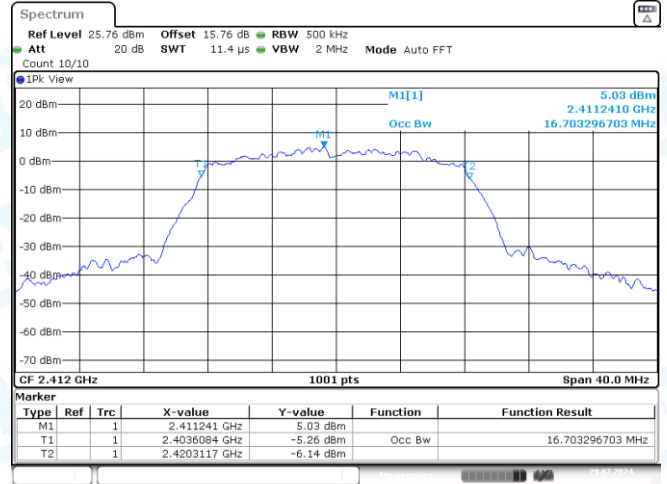
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11G-CDD-Ant2-2462



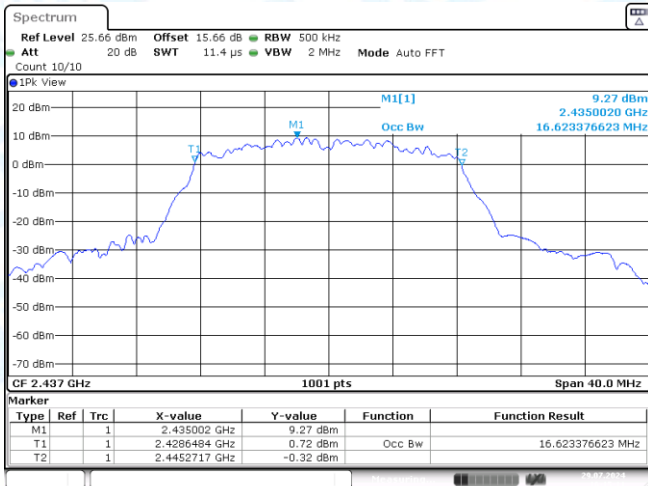
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11N20MIMO-Ant1-2412



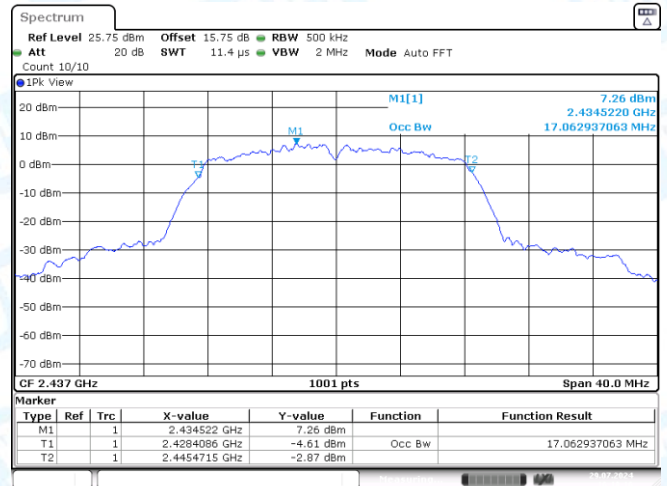
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11N20MIMO-Ant2-2412



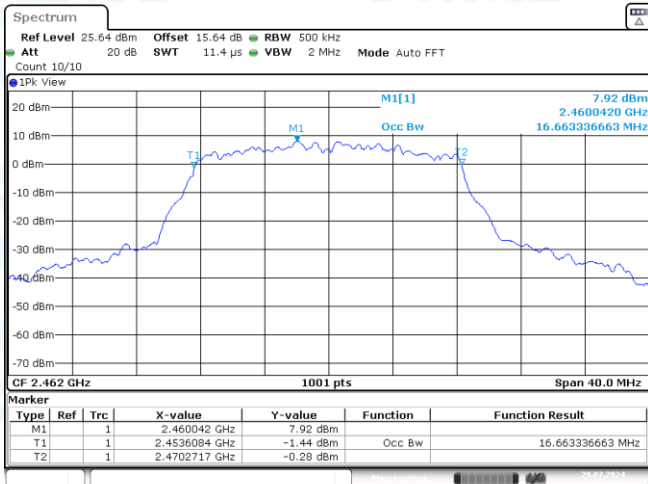
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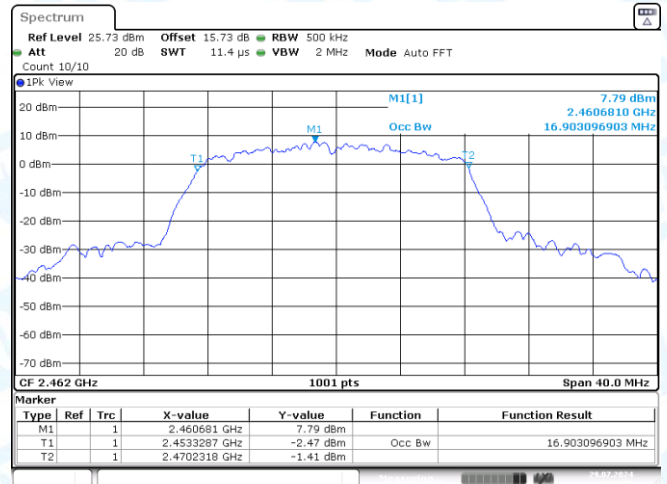
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11N20MIMO-Ant2-2437



Date: 29.JUL.2024 16:20:54

11N20MIMO-Ant1-2462



Date: 29.JUL.2024 16:24:57

11N20MIMO-Ant2-2462

3: Maximum conducted output power

3.1 Test Result Average

Test Mode	Ant.	Frequency [MHz]	Result [dBm]	Limit [dBm]	Verdict
11B-CDD	Ant1	2412	18.83	≤30.00	PASS
11B-CDD	Ant2	2412	18.52	≤30.00	PASS
11B-CDD	total	2412	21.69	≤29.99	PASS
11B-CDD	Ant1	2437	18.82	≤30.00	PASS
11B-CDD	Ant2	2437	17.69	≤30.00	PASS
11B-CDD	total	2437	21.30	≤29.99	PASS
11B-CDD	Ant1	2462	18.53	≤30.00	PASS
11B-CDD	Ant2	2462	18.47	≤30.00	PASS
11B-CDD	total	2462	21.51	≤29.99	PASS
11G-CDD	Ant1	2412	16.08	≤30.00	PASS
11G-CDD	Ant2	2412	15.22	≤30.00	PASS
11G-CDD	total	2412	18.68	≤29.99	PASS
11G-CDD	Ant1	2437	16.82	≤30.00	PASS
11G-CDD	Ant2	2437	15.27	≤30.00	PASS
11G-CDD	total	2437	19.12	≤29.99	PASS
11G-CDD	Ant1	2462	15.40	≤30.00	PASS
11G-CDD	Ant2	2462	14.23	≤30.00	PASS
11G-CDD	total	2462	17.86	≤29.99	PASS
11N20MIMO	Ant1	2412	14.54	≤30.00	PASS
11N20MIMO	Ant2	2412	14.57	≤30.00	PASS
11N20MIMO	total	2412	17.57	≤29.99	PASS
11N20MIMO	Ant1	2437	14.99	≤30.00	PASS
11N20MIMO	Ant2	2437	13.83	≤30.00	PASS
11N20MIMO	total	2437	17.46	≤29.99	PASS
11N20MIMO	Ant1	2462	14.23	≤30.00	PASS
11N20MIMO	Ant2	2462	14.62	≤30.00	PASS
11N20MIMO	total	2462	17.44	≤29.99	PASS

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two antennas for transmitting and receiving.

When ANT.1(3.0dBi) and ANT. 2(3.0dBi) transmitting simultaneously, so the Directional Gain= 6.01dBi > 6dBi.

So Pout = Plimit-(G_{TX}-6)]=(30-0.01)dBm =29.99dBm

Directional Gain=ANT. Gain+10*LOG(NANT)

The Duty Cycle Factor is compensated in the graph.

4: Maximum power spectral density

4.1 Test Result

TestMode	Ant.	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B-CDD	Ant1	2412	-5.98	≤8.00	PASS
11B-CDD	Ant2	2412	-6.64	≤8.00	PASS
11B-CDD	total	2412	-3.29	≤7.99	PASS
11B-CDD	Ant1	2437	-6.42	≤8.00	PASS
11B-CDD	Ant2	2437	-7.88	≤8.00	PASS
11B-CDD	total	2437	-4.08	≤7.99	PASS
11B-CDD	Ant1	2462	-5.93	≤8.00	PASS
11B-CDD	Ant2	2462	-6.56	≤8.00	PASS
11B-CDD	total	2462	-3.22	≤7.99	PASS
11G-CDD	Ant1	2412	-14.31	≤8.00	PASS
11G-CDD	Ant2	2412	-15.02	≤8.00	PASS
11G-CDD	total	2412	-11.64	≤7.99	PASS
11G-CDD	Ant1	2437	-13.34	≤8.00	PASS
11G-CDD	Ant2	2437	-14.85	≤8.00	PASS
11G-CDD	total	2437	-11.02	≤7.99	PASS
11G-CDD	Ant1	2462	-14.54	≤8.00	PASS
11G-CDD	Ant2	2462	-16.36	≤8.00	PASS
11G-CDD	total	2462	-12.35	≤7.99	PASS
11N20MIMO	Ant1	2412	-16.81	≤8.00	PASS
11N20MIMO	Ant2	2412	-16.78	≤8.00	PASS
11N20MIMO	total	2412	-13.78	≤7.99	PASS
11N20MIMO	Ant1	2437	-16.34	≤8.00	PASS
11N20MIMO	Ant2	2437	-17.77	≤8.00	PASS
11N20MIMO	total	2437	-13.99	≤7.99	PASS
11N20MIMO	Ant1	2462	-17.07	≤8.00	PASS
11N20MIMO	Ant2	2462	-17.25	≤8.00	PASS
11N20MIMO	total	2462	-14.15	≤7.99	PASS

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two antennas for transmitting and receiving.

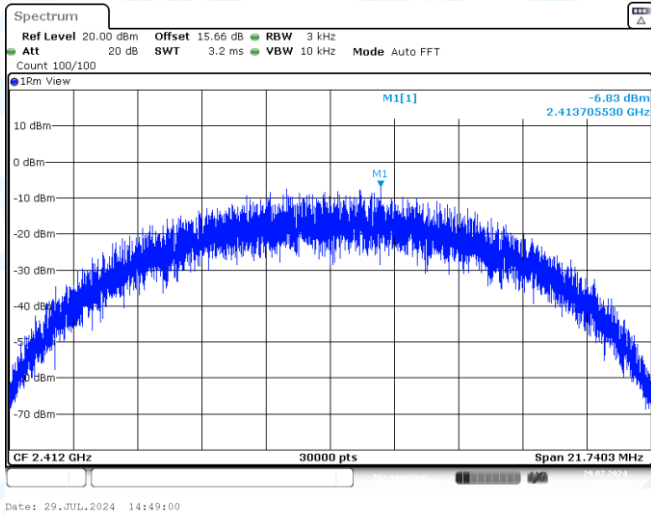
When ANT.1(3.0dBi) and ANT. 2(3.0dBi) transmitting simultaneously, so the Directional Gain= 6.01dBi > 6dBi.

So $PSD_{out} = PSD_{limit} - (G_{TX} - 6) = (8 - 0.01) dBm = 7.99 dBm$

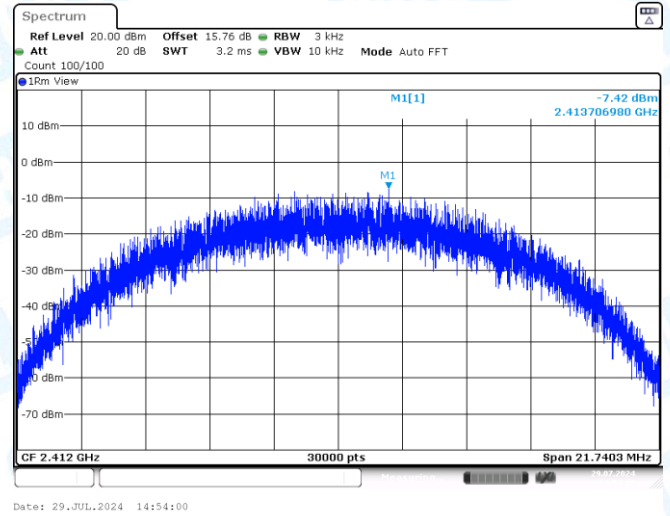
Directional Gain=ANT. Gain+10*LOG(NANT)

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

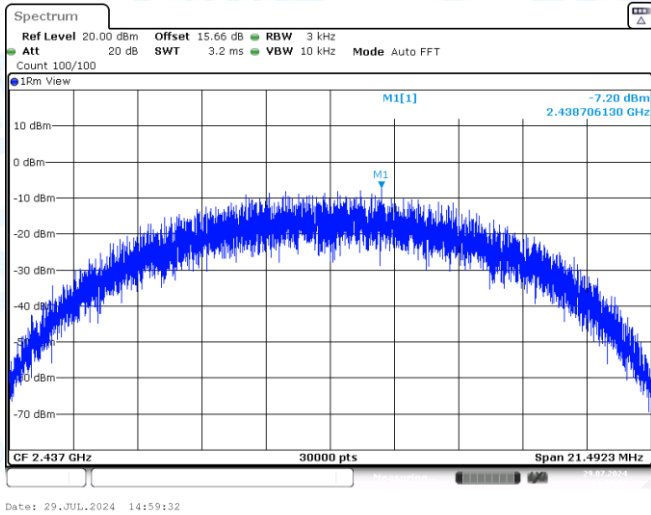
4.2 Test Graphs



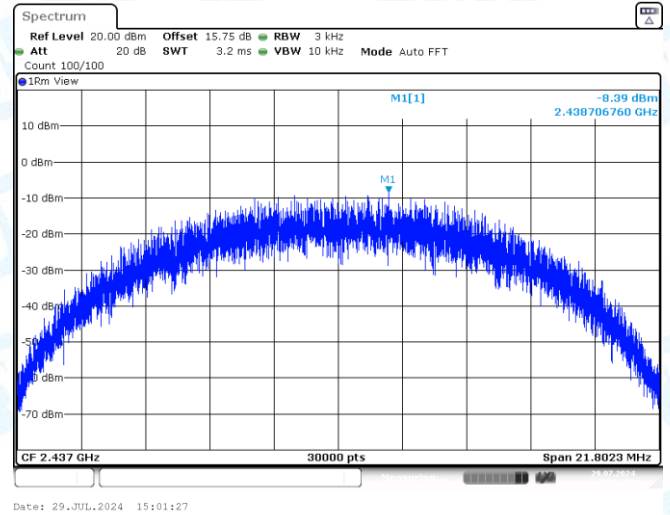
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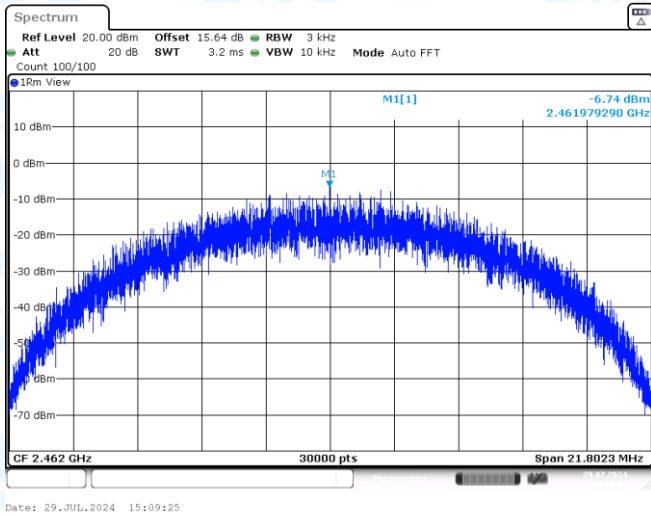
11B-CDD-Ant2-2412-PASS



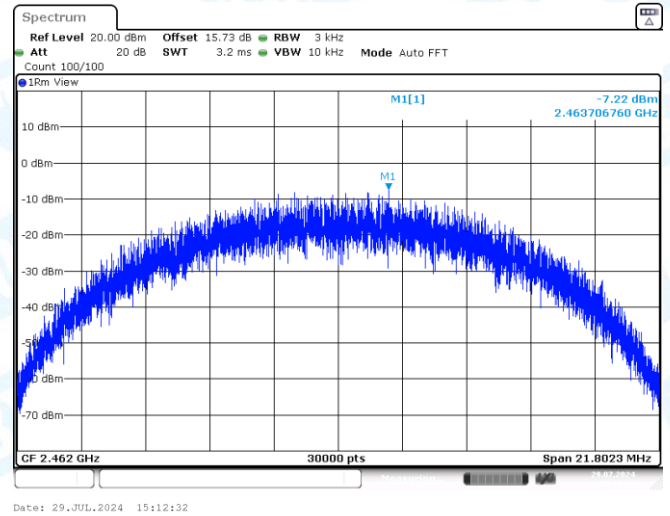
11B-CDD-Ant1-2437-PASS



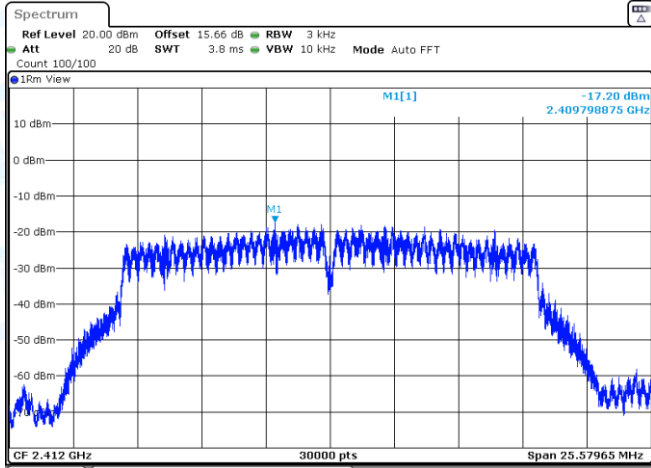
11B-CDD-Ant2-2437-PASS



11B-CDD-Ant1-2462-PASS

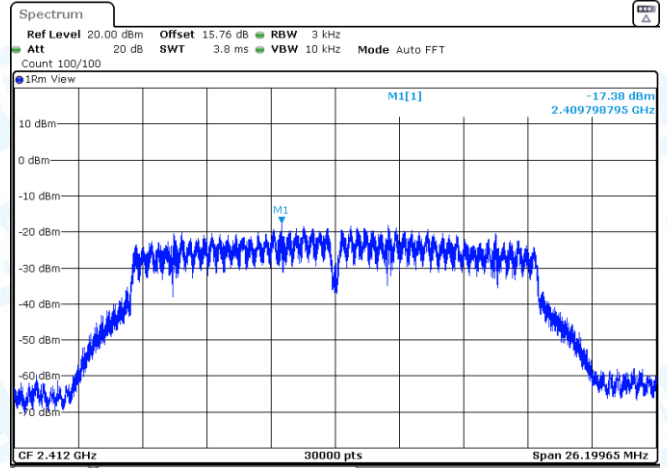


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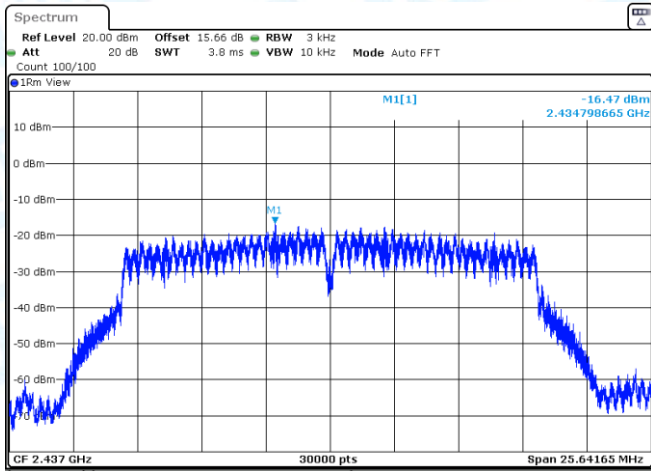
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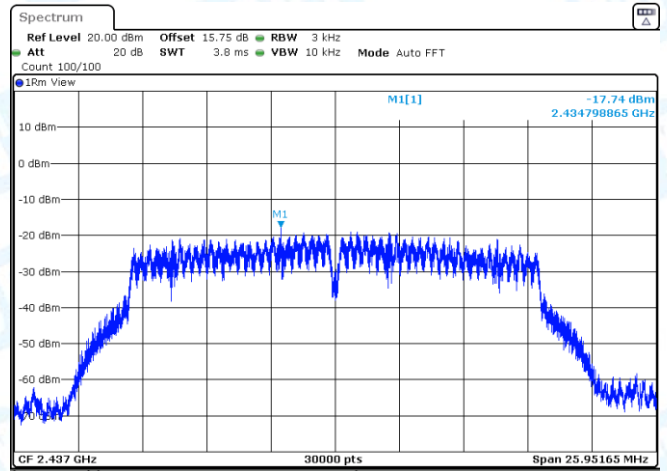
Date: 29.JUL.2024 15:37:10

11G-CDD-Ant2-2412-PASS



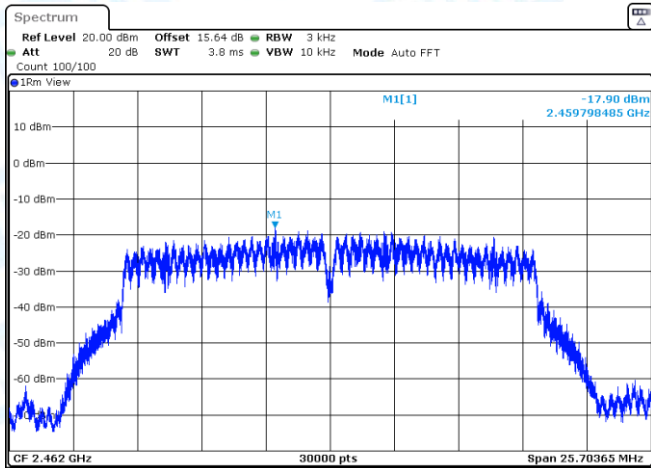
Date: 29.JUL.2024 15:39:47

11G-CDD-Ant1-2437-PASS



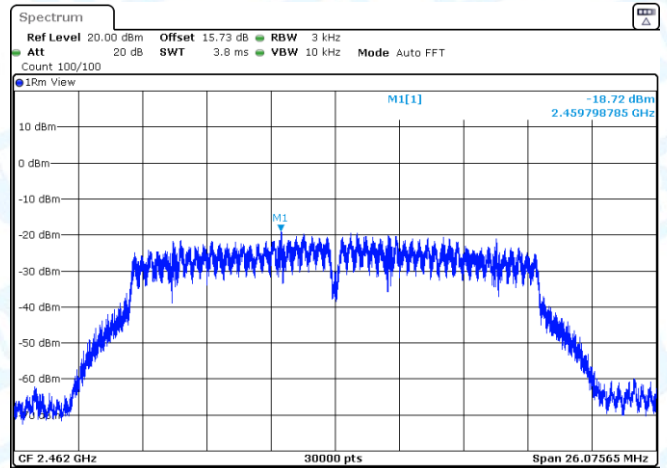
Date: 29.JUL.2024 15:41:44

11G-CDD-Ant2-2437-PASS



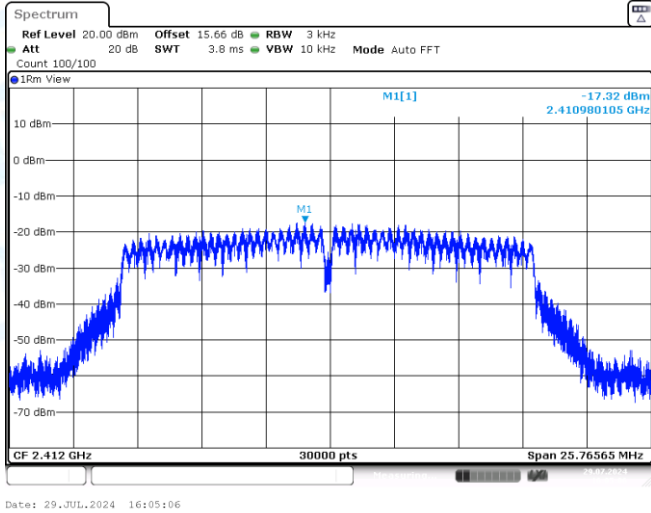
Date: 29.JUL.2024 15:50:23

11G-CDD-Ant1-2462-PASS

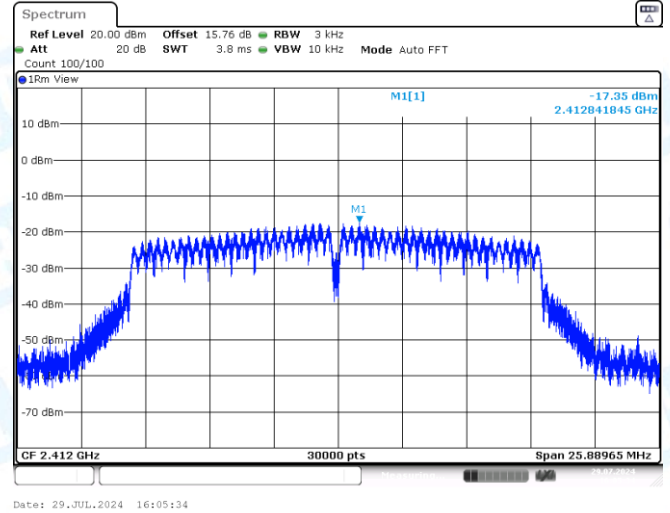


Date: 29.JUL.2024 15:52:01

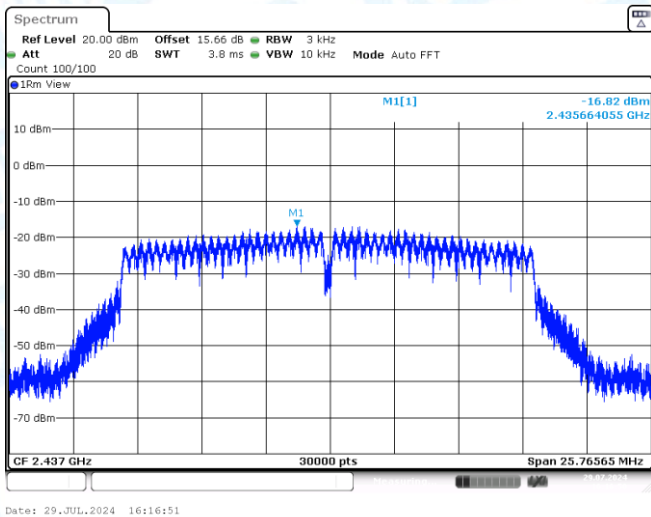
11G-CDD-Ant2-2462-PASS



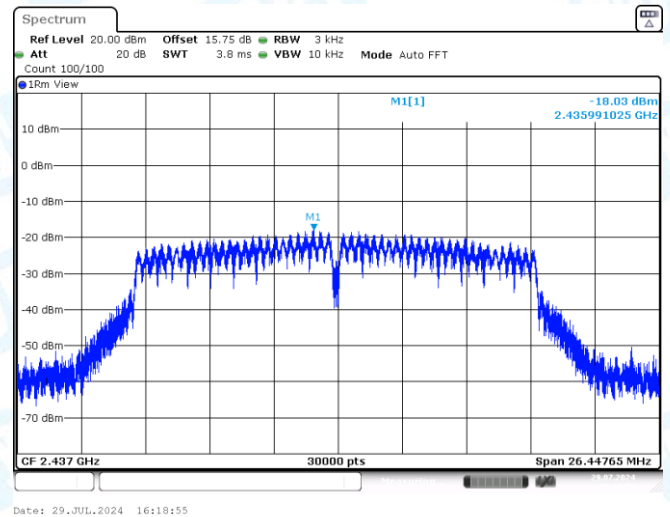
11N20MIMO-Ant1-2412-PASS



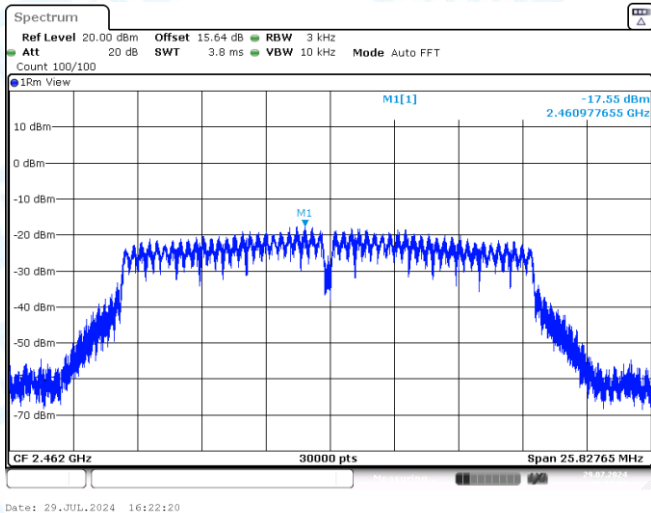
11N20MIMO-Ant2-2412-PASS



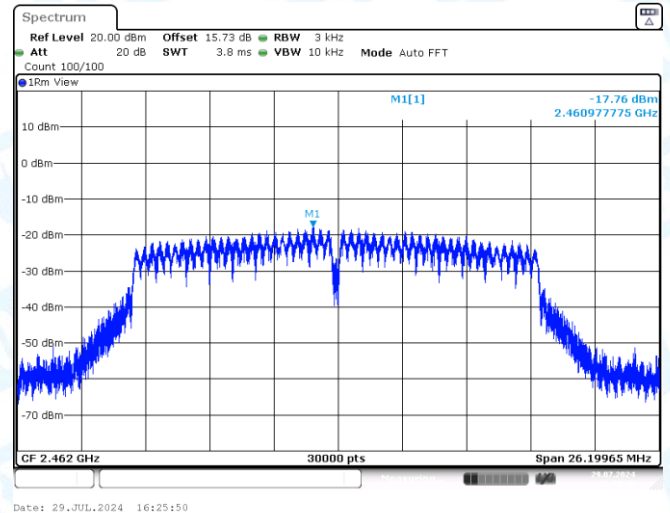
11N20MIMO-Ant1-2437-PASS



11N20MIMO-Ant2-2437-PASS



11N20MIMO-Ant1-2462-PASS



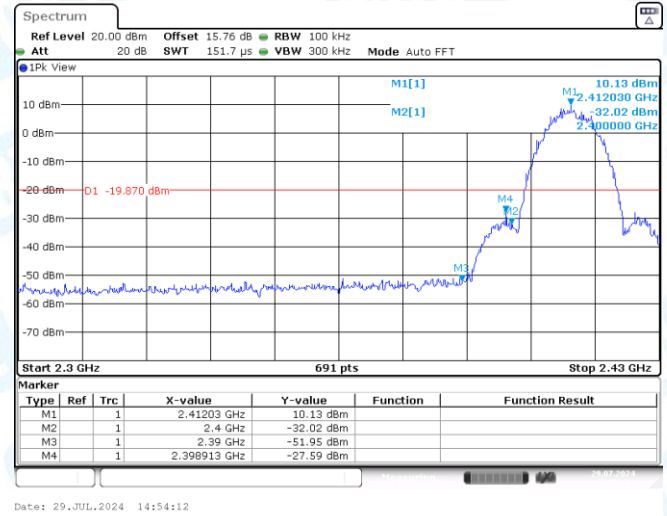
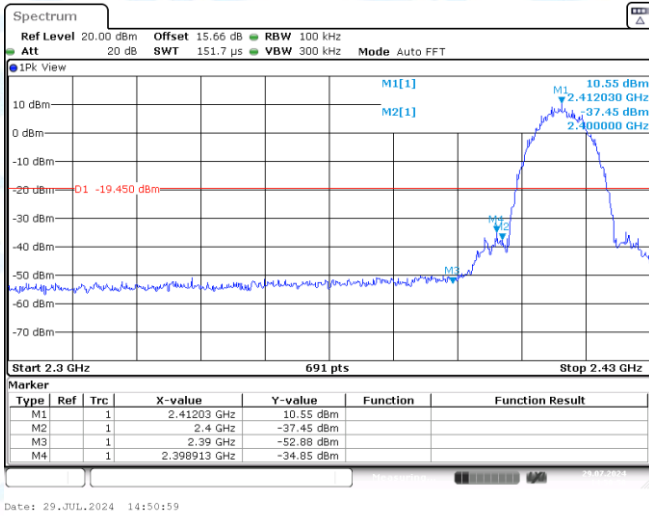
11N20MIMO-Ant2-2462-PASS

5: Band edge measurements

5.1 Test Result

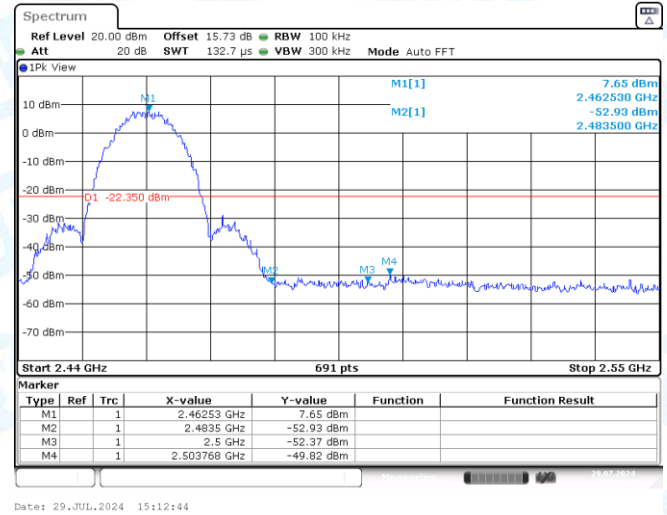
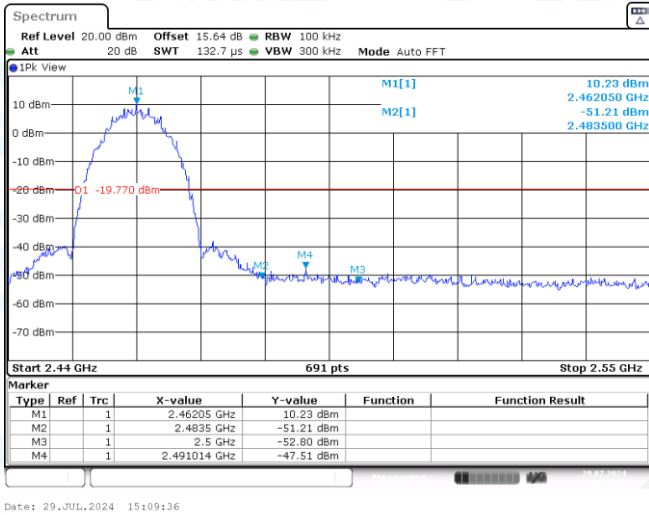
TestMode	Ant.	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B-CDD	Ant1	Low	2412	10.55	-34.85	≤-19.45	PASS
11B-CDD	Ant2	Low	2412	10.13	-27.59	≤-19.87	PASS
11B-CDD	Ant1	High	2462	10.23	-47.51	≤-19.77	PASS
11B-CDD	Ant2	High	2462	7.65	-49.82	≤-22.35	PASS
11G-CDD	Ant1	Low	2412	4.16	-38.81	≤-25.84	PASS
11G-CDD	Ant2	Low	2412	3.87	-36.18	≤-26.13	PASS
11G-CDD	Ant1	High	2462	3.52	-47.48	≤-26.48	PASS
11G-CDD	Ant2	High	2462	3.45	-42.93	≤-26.55	PASS
11N20MIMO	Ant1	Low	2412	-0.75	-38.27	≤-30.75	PASS
11N20MIMO	Ant2	Low	2412	0.83	-31.05	≤-29.17	PASS
11N20MIMO	Ant1	High	2462	2.55	-48.7	≤-27.45	PASS
11N20MIMO	Ant2	High	2462	3.60	-47.46	≤-26.4	PASS

5.2 Test Graphs



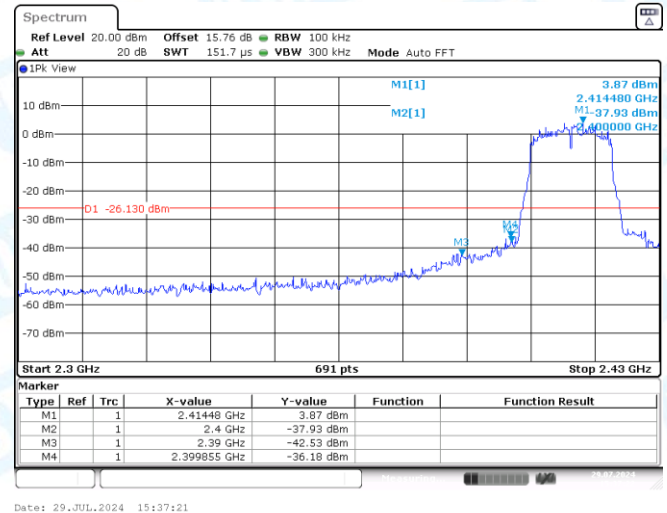
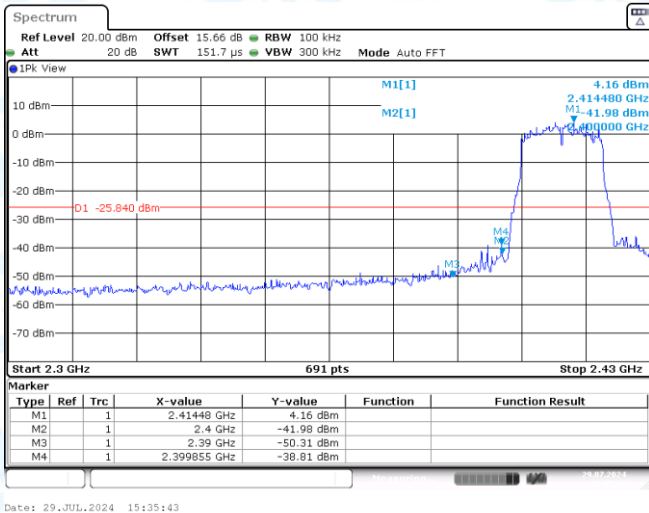
11B-CDD-Ant1-2412-PASS

11B-CDD-Ant2-2412-PASS



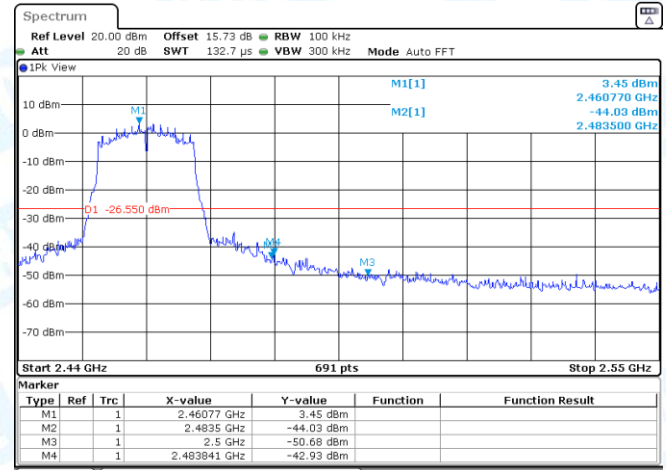
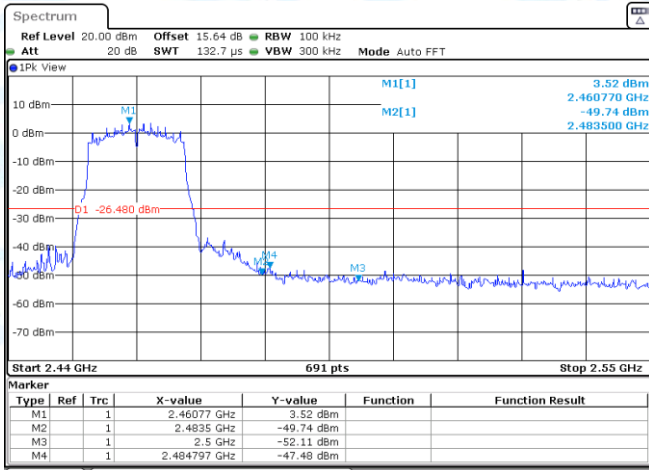
11B-CDD-Ant1-2462-PASS

11B-CDD-Ant2-2462-PASS



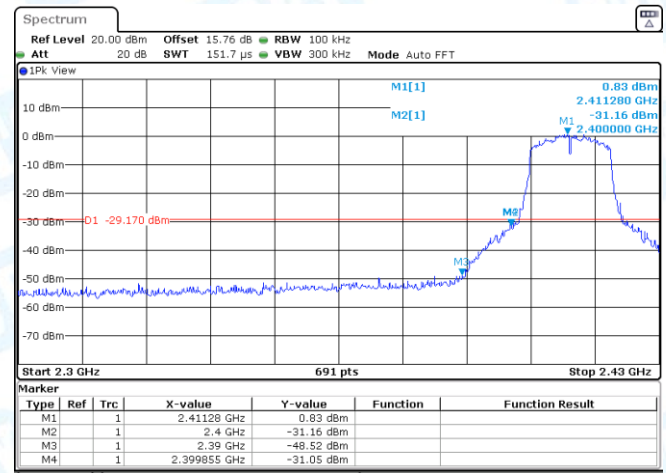
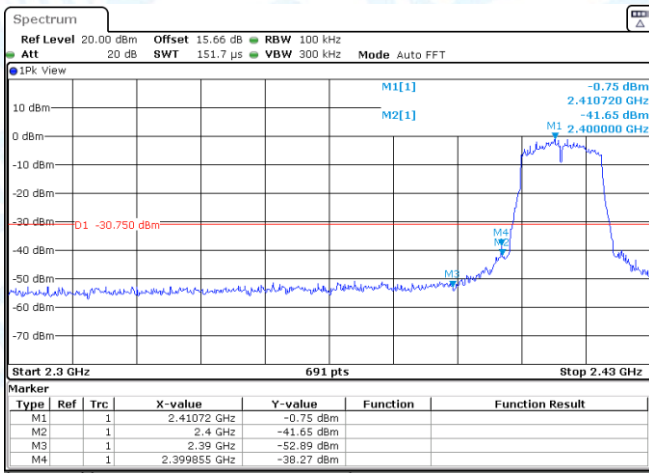
11G-CDD-Ant1-2412-PASS

11G-CDD-Ant2-2412-PASS



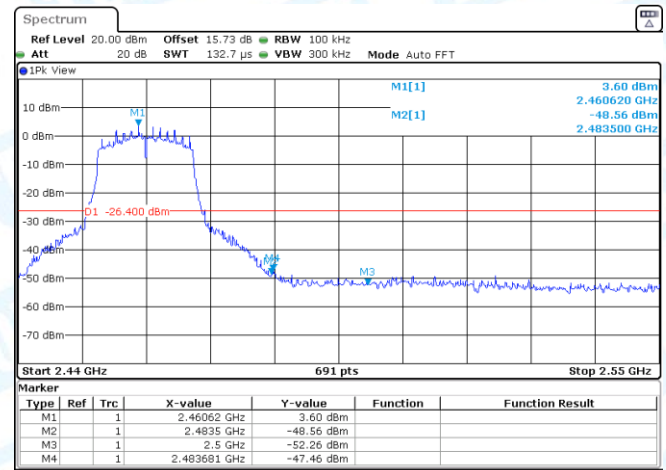
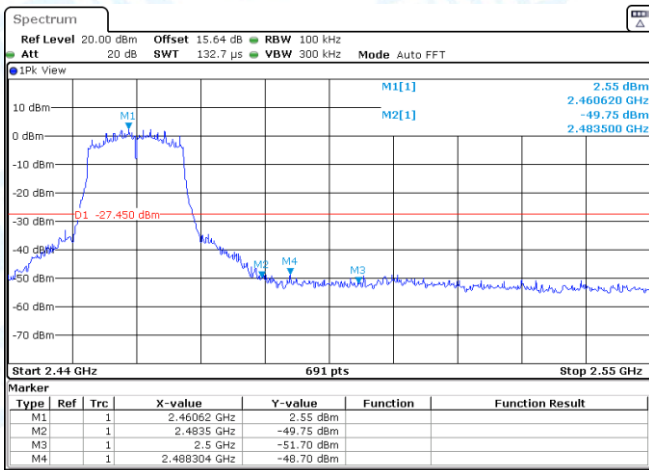
11G-CDD-Ant1-2462-PASS

11G-CDD-Ant2-2462-PASS



11N20MIMO-Ant1-2412-PASS

11N20MIMO-Ant2-2412-PASS



11N20MIMO-Ant1-2462-PASS

11N20MIMO-Ant2-2462-PASS

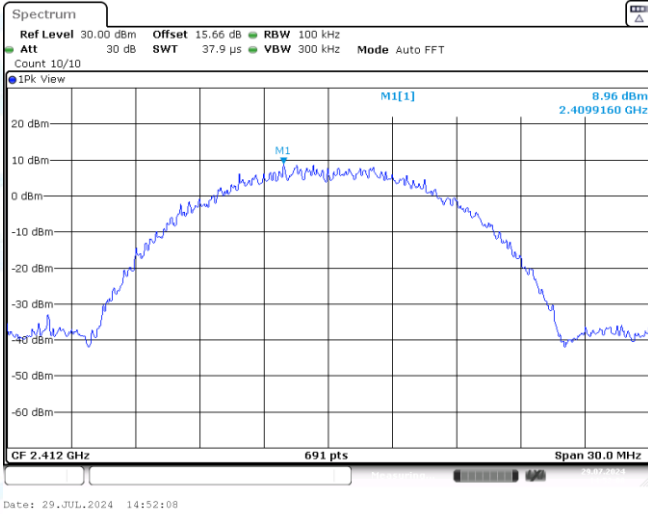
6: Conducted Spurious Emission

6.1 Test Result

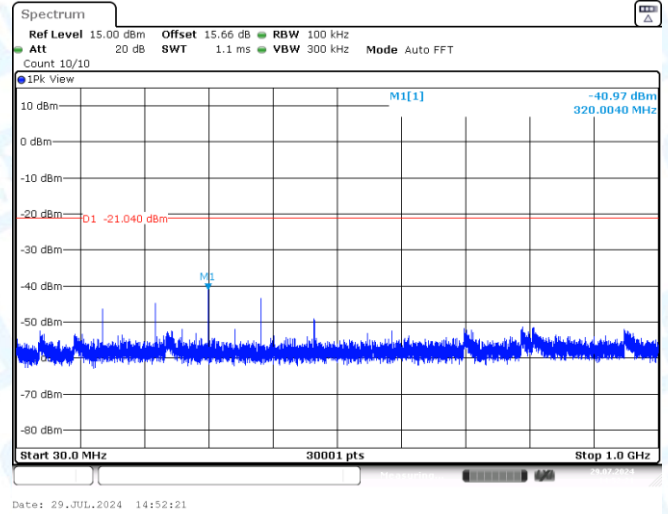
TestMode	Ant.	Frequency [MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B-CDD	Ant1	2412	0~Reference	8.96	8.96	---	PASS
11B-CDD	Ant1	2412	30~1000	8.96	-40.97	≤-21.04	PASS
11B-CDD	Ant1	2412	1000~26500	8.96	-39.83	≤-21.04	PASS
11B-CDD	Ant2	2412	0~Reference	8.82	8.82	---	PASS
11B-CDD	Ant2	2412	30~1000	8.82	-50.03	≤-21.18	PASS
11B-CDD	Ant2	2412	1000~26500	8.82	-32.99	≤-21.18	PASS
11B-CDD	Ant1	2437	0~Reference	9.44	9.44	---	PASS
11B-CDD	Ant1	2437	30~1000	9.44	-41.74	≤-20.56	PASS
11B-CDD	Ant1	2437	1000~26500	9.44	-40.1	≤-20.56	PASS
11B-CDD	Ant2	2437	0~Reference	8.23	8.23	---	PASS
11B-CDD	Ant2	2437	30~1000	8.23	-49.72	≤-21.77	PASS
11B-CDD	Ant2	2437	1000~26500	8.23	-33.47	≤-21.77	PASS
11B-CDD	Ant1	2462	0~Reference	8.72	8.72	---	PASS
11B-CDD	Ant1	2462	30~1000	8.72	-41.93	≤-21.28	PASS
11B-CDD	Ant1	2462	1000~26500	8.72	-41.78	≤-21.28	PASS
11B-CDD	Ant2	2462	0~Reference	8.78	8.78	---	PASS
11B-CDD	Ant2	2462	30~1000	8.78	-50.29	≤-21.22	PASS
11B-CDD	Ant2	2462	1000~26500	8.78	-33.27	≤-21.22	PASS
11G-CDD	Ant1	2412	0~Reference	5.67	5.67	---	PASS
11G-CDD	Ant1	2412	30~1000	5.67	-41.34	≤-24.33	PASS
11G-CDD	Ant1	2412	1000~26500	5.67	-45.45	≤-24.33	PASS
11G-CDD	Ant2	2412	0~Reference	5.46	5.46	---	PASS
11G-CDD	Ant2	2412	30~1000	5.46	-48.69	≤-24.54	PASS
11G-CDD	Ant1	2437	0~Reference	5.01	5.01	---	PASS
11G-CDD	Ant1	2437	30~1000	5.01	-41.46	≤-24.99	PASS
11G-CDD	Ant1	2437	1000~26500	5.01	-46.03	≤-24.99	PASS
11G-CDD	Ant2	2437	0~Reference	4.19	4.19	---	PASS
11G-CDD	Ant2	2437	30~1000	4.19	-47.83	≤-25.81	PASS
11G-CDD	Ant2	2437	1000~26500	4.19	-43.31	≤-25.81	PASS
11G-CDD	Ant1	2462	0~Reference	4.56	4.56	---	PASS
11G-CDD	Ant1	2462	30~1000	4.56	-41.44	≤-25.44	PASS
11G-CDD	Ant1	2462	1000~26500	4.56	-45.23	≤-25.44	PASS
11G-CDD	Ant2	2462	0~Reference	2.71	2.71	---	PASS
11G-CDD	Ant2	2462	30~1000	2.71	-49.2	≤-27.29	PASS
11G-CDD	Ant2	2462	1000~26500	2.71	-45.41	≤-27.29	PASS
11N20MIMO	Ant1	2412	0~Reference	0.63	0.63	---	PASS
11N20MIMO	Ant1	2412	30~1000	0.63	-42.25	≤-29.37	PASS
11N20MIMO	Ant1	2412	1000~26500	0.63	-44.41	≤-29.37	PASS
11N20MIMO	Ant2	2412	0~Reference	3.59	3.59	---	PASS
11N20MIMO	Ant2	2412	30~1000	3.59	-49.46	≤-26.41	PASS

11N20MIMO	Ant2	2412	1000~26500	3.59	-44.04	≤-26.41	PASS
11N20MIMO	Ant1	2437	0~Reference	4.00	4.00	---	PASS
11N20MIMO	Ant1	2437	30~1000	4.00	-41.96	≤-26	PASS
11N20MIMO	Ant1	2437	1000~26500	4.00	-45.91	≤-26	PASS
11N20MIMO	Ant2	2437	0~Reference	2.92	2.92	---	PASS
11N20MIMO	Ant2	2437	30~1000	2.92	-48.58	≤-27.08	PASS
11N20MIMO	Ant2	2437	1000~26500	2.92	-45.42	≤-27.08	PASS
11N20MIMO	Ant1	2462	0~Reference	3.67	3.67	---	PASS
11N20MIMO	Ant1	2462	30~1000	3.67	-42.1	≤-26.33	PASS
11N20MIMO	Ant1	2462	1000~26500	3.67	-46.04	≤-26.33	PASS
11N20MIMO	Ant2	2462	0~Reference	3.42	3.42	---	PASS
11N20MIMO	Ant2	2462	30~1000	3.42	-50.02	≤-26.58	PASS
11N20MIMO	Ant2	2462	1000~26500	3.42	-45.51	≤-26.58	PASS

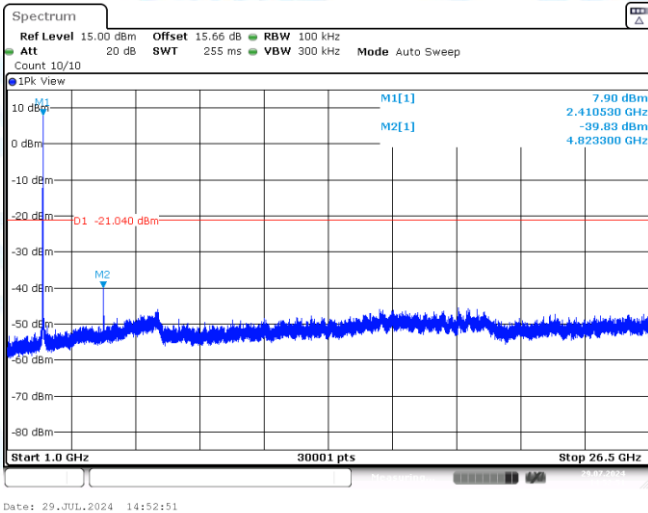
6.2 Test Graphs



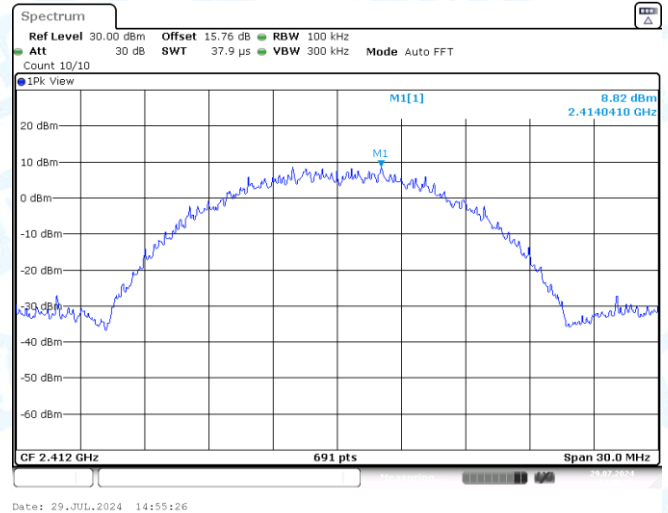
11B-CDD-Ant1-2412-0~Reference-PASS



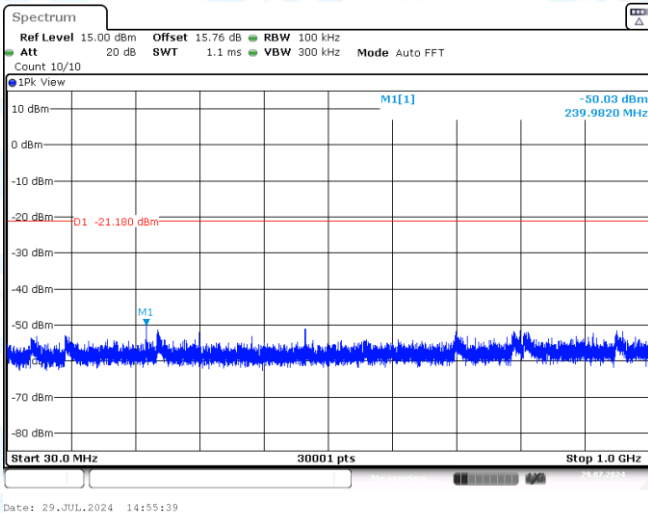
11B-CDD-Ant1-2412-30~1000-PASS



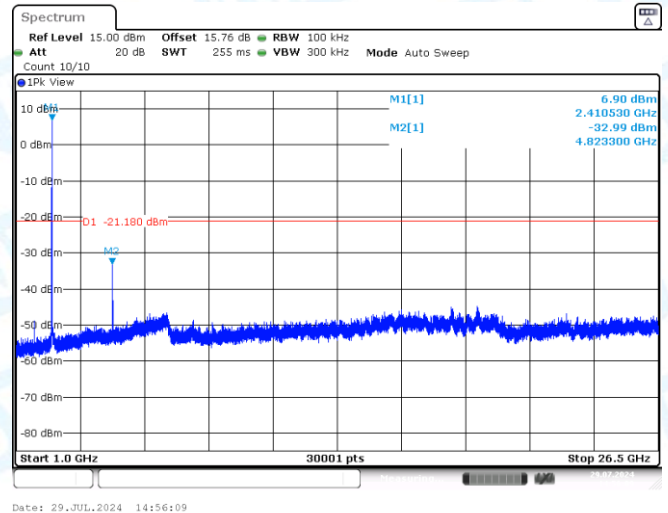
11B-CDD-Ant1-2412-1000~26500-PASS



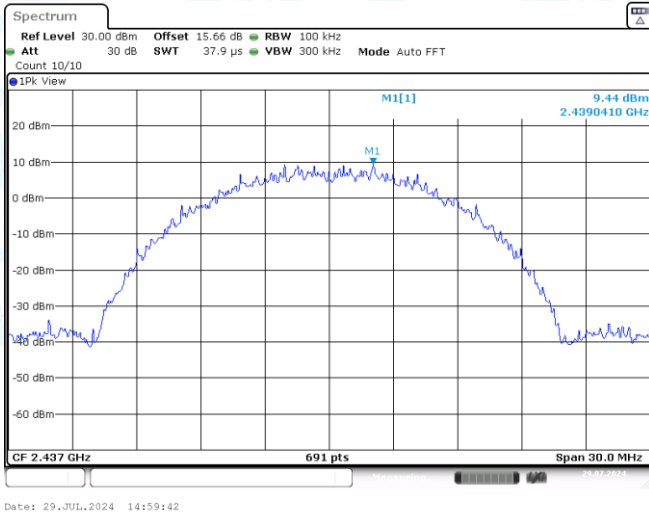
11B-CDD-Ant2-2412-0~Reference-PASS



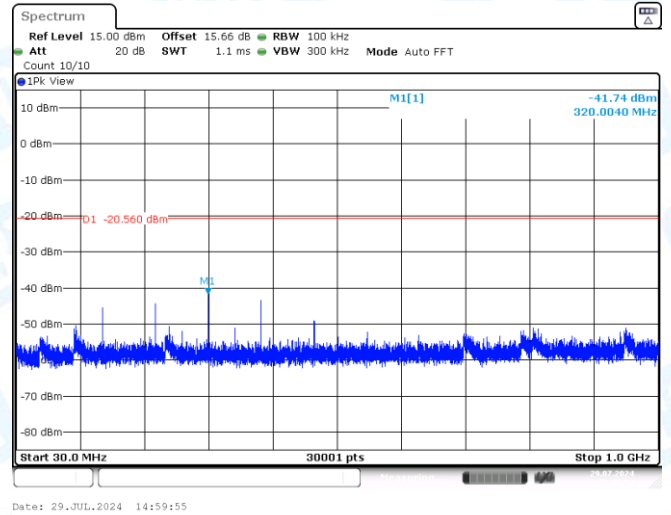
11B-CDD-Ant2-2412-30~1000-PASS



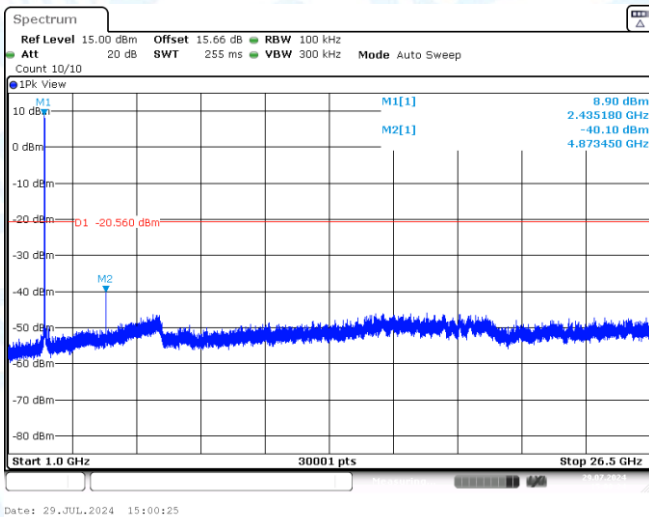
11B-CDD-Ant2-2412-1000~26500-PASS



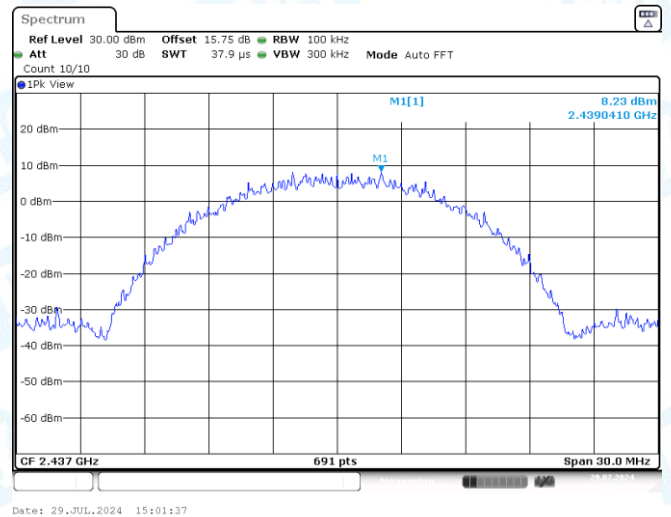
11B-CDD-Ant1-2437-0~Reference-PASS



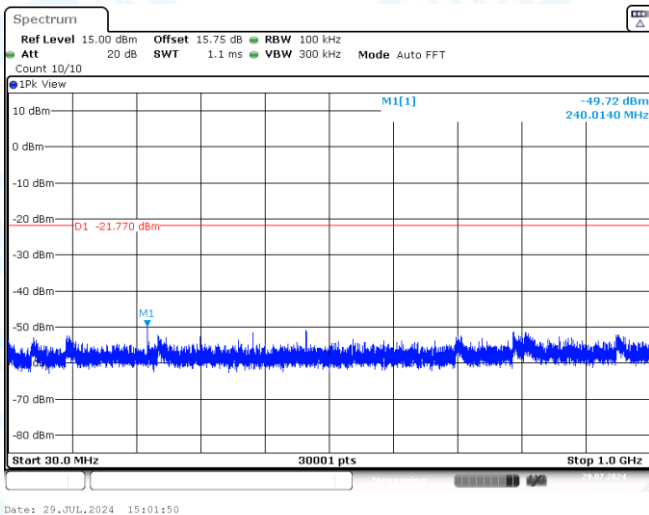
11B-CDD-Ant1-2437-30~1000-PASS



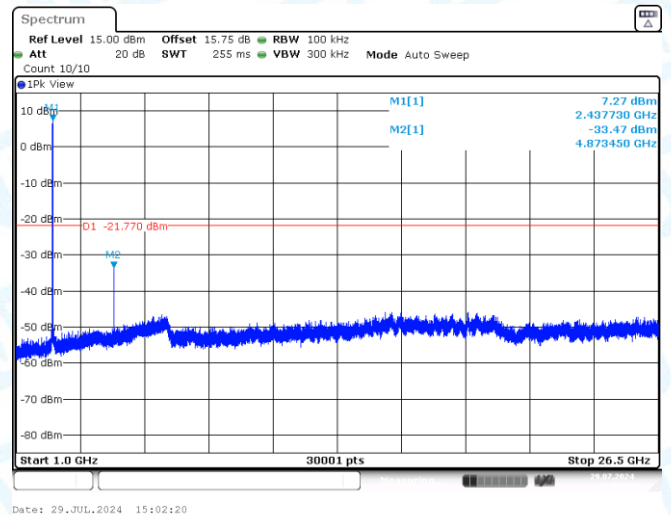
11B-CDD-Ant1-2437-1000~26500-PASS



11B-CDD-Ant2-2437-0~Reference-PASS



11B-CDD-Ant2-2437-30~1000-PASS



11B-CDD-Ant2-2437-1000~26500-PASS