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

General Description of EUT	
Product Name:	**Android TV Box**
Test Model:	**SDSTB02**
Sample ID:	**202207-0234-9-2#**
Environmental Conditions	
Temperature:	**23.8℃**
Relative Humidity:	**44%**
Test Voltage:	**DC 12V**
Test Engineer:	**Huangjianping**
Note: For a more detailed features description, please refer to the report TBR-C-202207-0234-93.	

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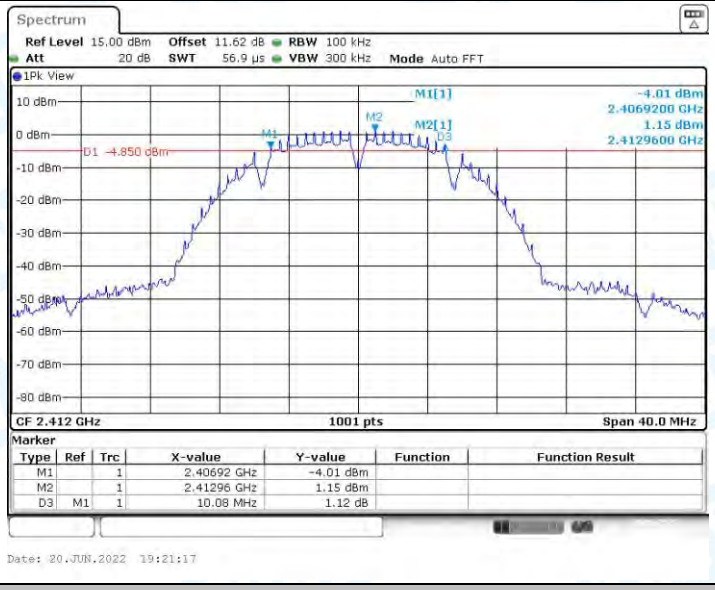
1. DTS Bandwidth

1.1.Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	10.08	2406.92	2417.00	0.5	PASS
	Ant2	2412	10.12	2406.92	2417.04	0.5	PASS
	Ant1	2437	10.08	2431.92	2442.00	0.5	PASS
	Ant2	2437	10.12	2431.92	2442.04	0.5	PASS
	Ant1	2462	10.08	2456.92	2467.00	0.5	PASS
	Ant2	2462	10.12	2456.92	2467.04	0.5	PASS
11G	Ant1	2412	15.56	2404.20	2419.76	0.5	PASS
	Ant2	2412	16.04	2403.84	2419.88	0.5	PASS
	Ant1	2437	15.68	2429.20	2444.88	0.5	PASS
	Ant2	2437	15.68	2429.20	2444.88	0.5	PASS
	Ant1	2462	15.68	2454.20	2469.88	0.5	PASS
	Ant2	2462	15.68	2454.20	2469.88	0.5	PASS
11N20MIMO	Ant1	2412	16.92	2403.44	2420.36	0.5	PASS
	Ant2	2412	16.52	2403.84	2420.36	0.5	PASS
	Ant1	2437	16.52	2428.84	2445.36	0.5	PASS
	Ant2	2437	16.28	2428.84	2445.12	0.5	PASS
	Ant1	2462	16.04	2454.08	2470.12	0.5	PASS
	Ant2	2462	16.28	2453.84	2470.12	0.5	PASS
11N40MIMO	Ant1	2422	35.44	2404.08	2439.52	0.5	PASS
	Ant2	2422	35.20	2404.40	2439.60	0.5	PASS
	Ant1	2437	35.12	2419.40	2454.52	0.5	PASS
	Ant2	2437	35.12	2419.40	2454.52	0.5	PASS
	Ant1	2452	35.12	2434.40	2469.52	0.5	PASS
	Ant2	2452	35.20	2434.40	2469.60	0.5	PASS

1.2.Test Graphs



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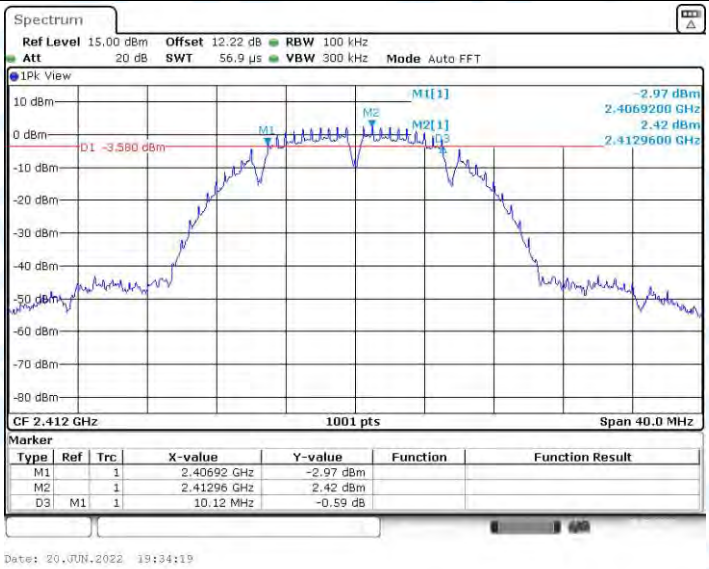

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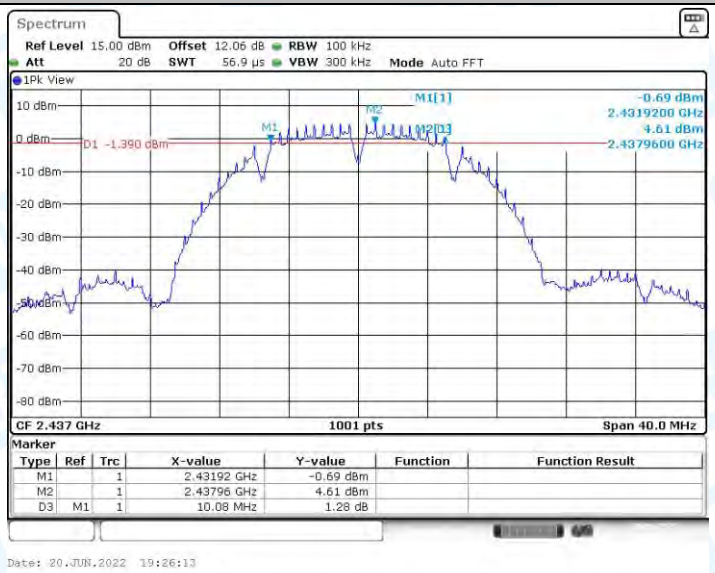

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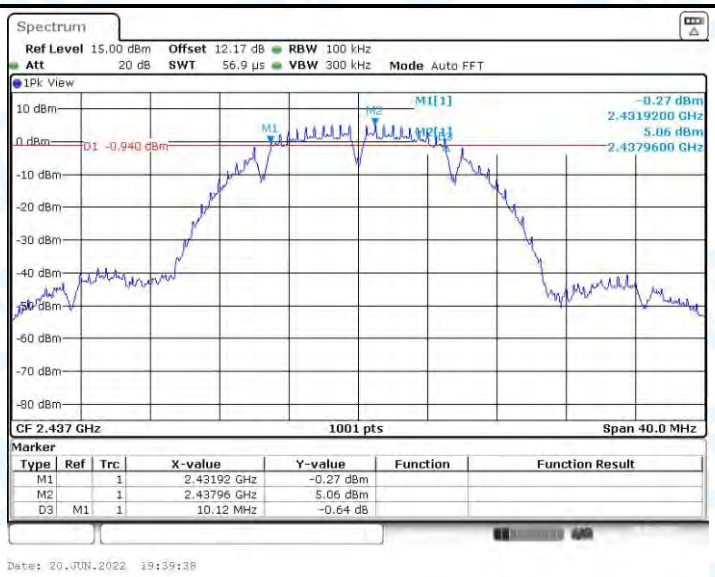

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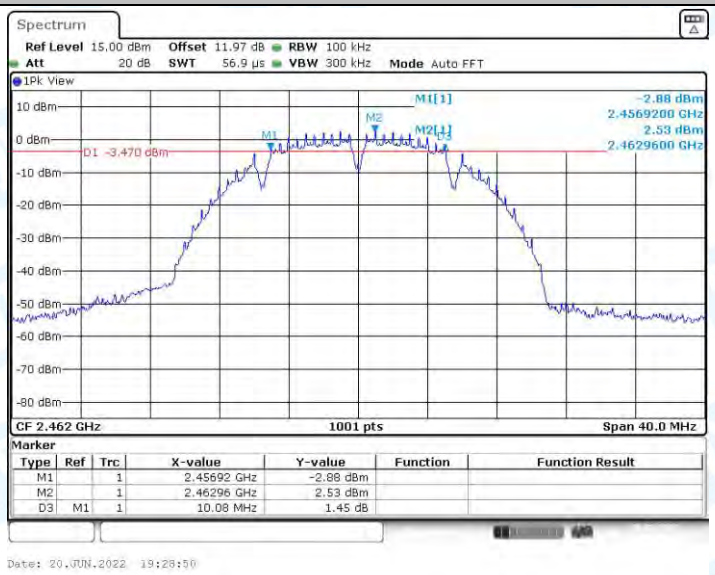

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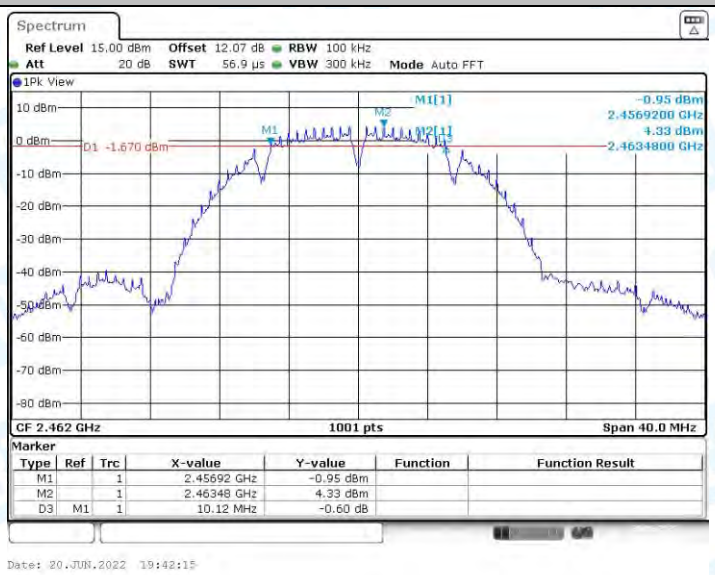

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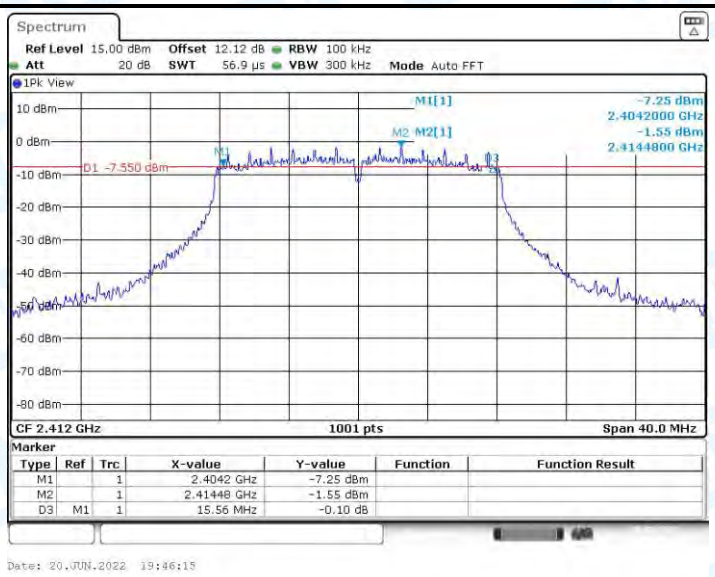

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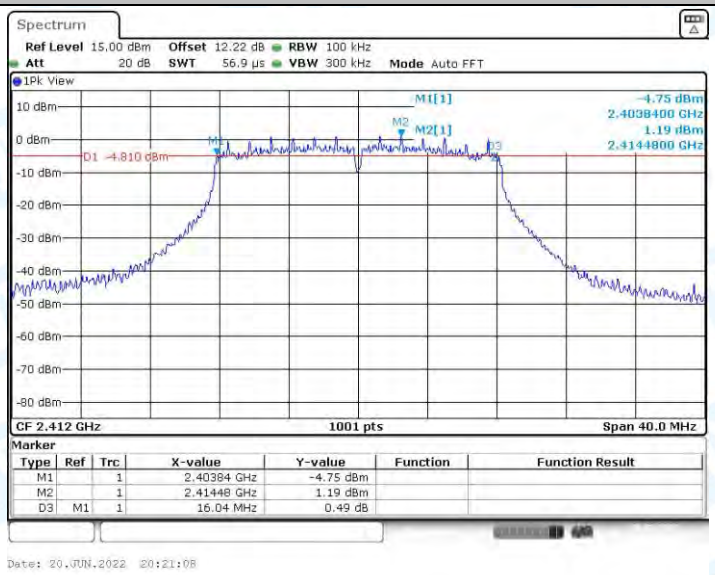

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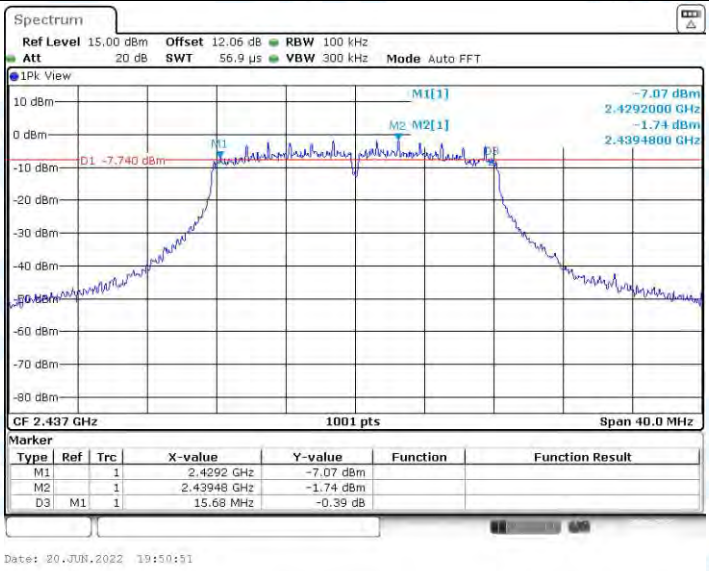

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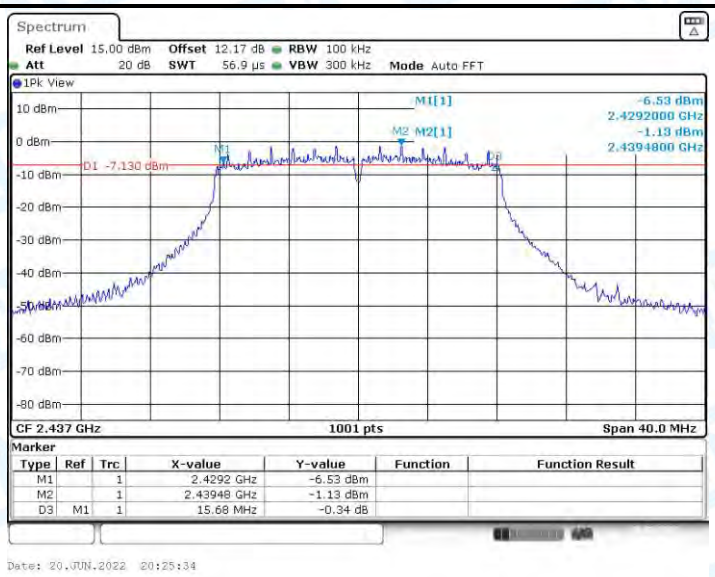

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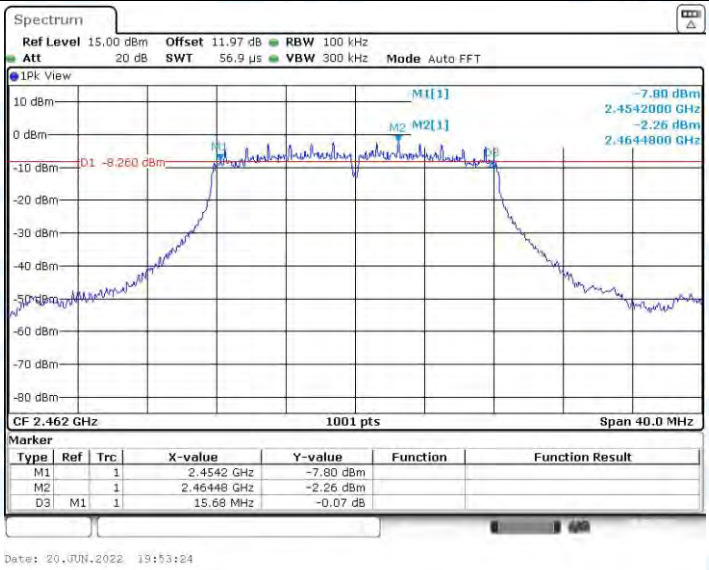

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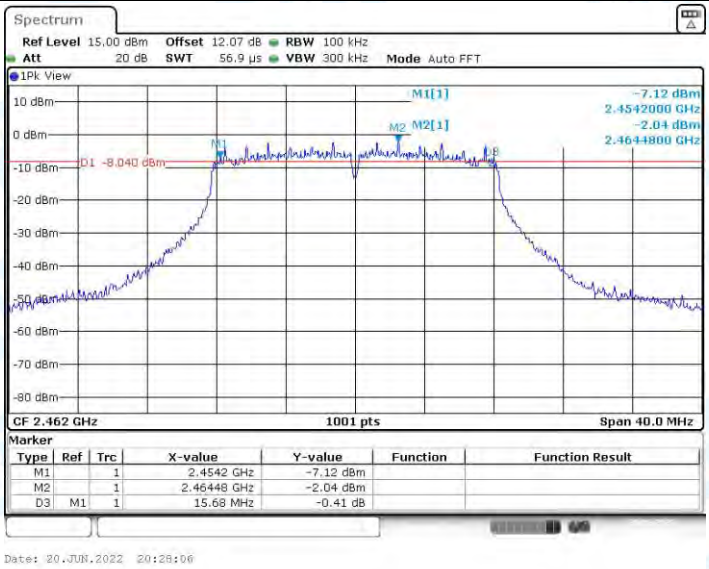

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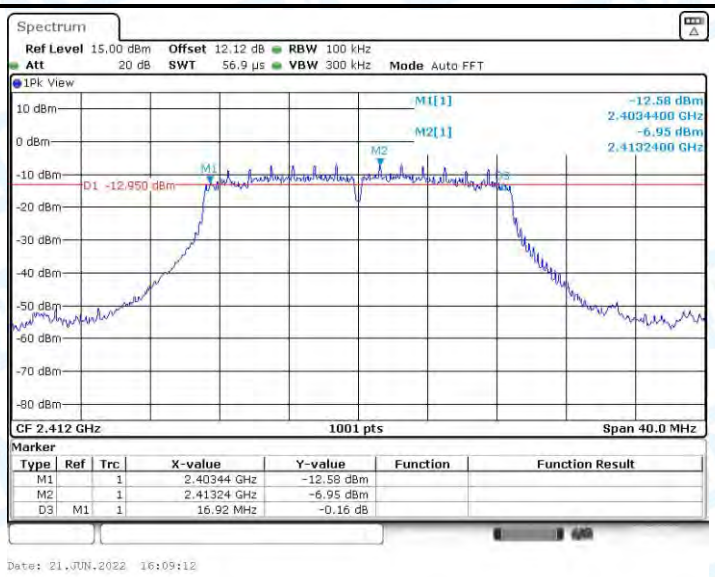

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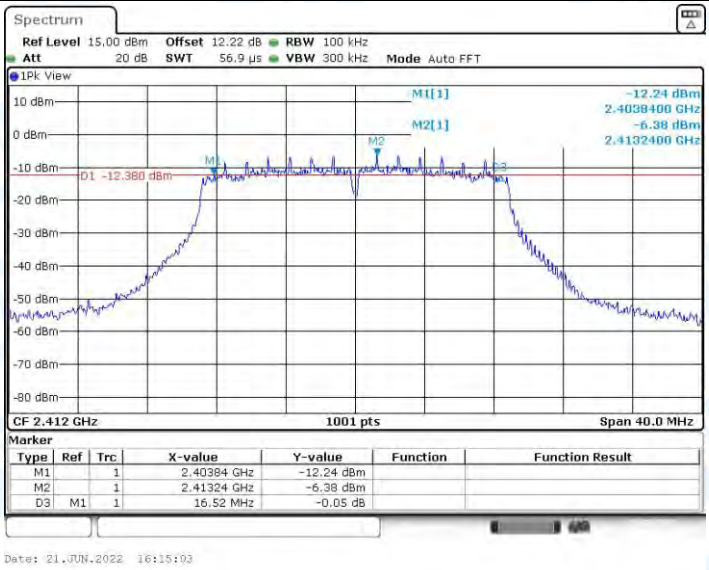

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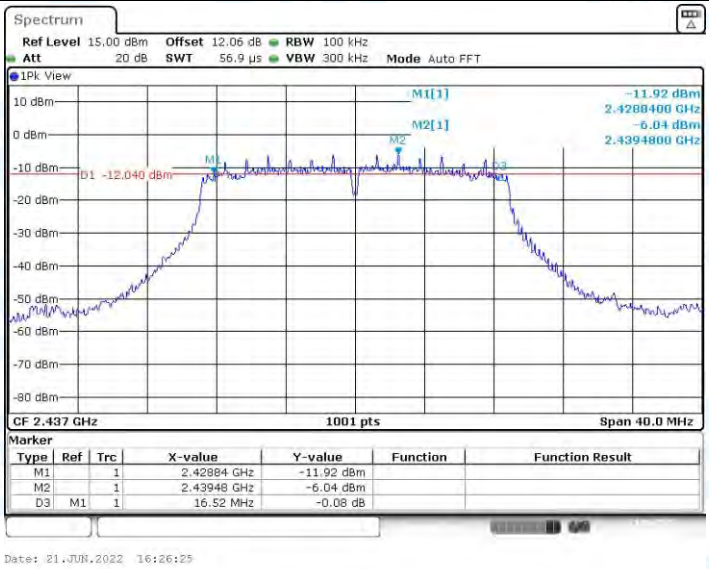

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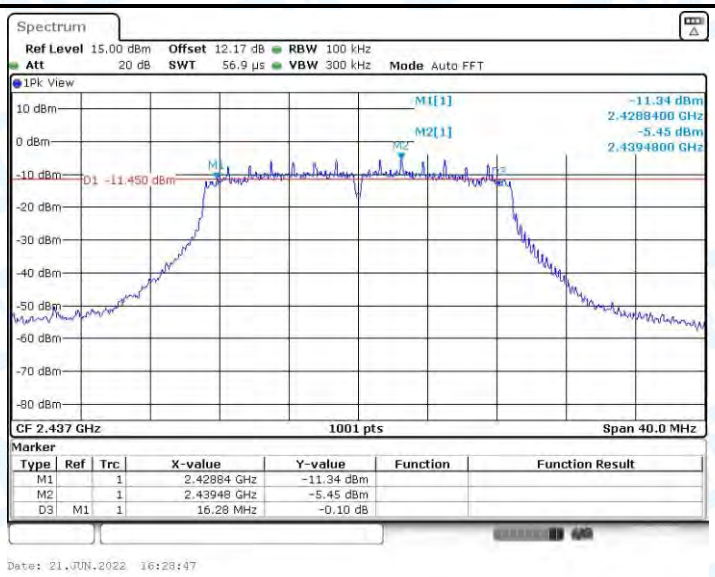

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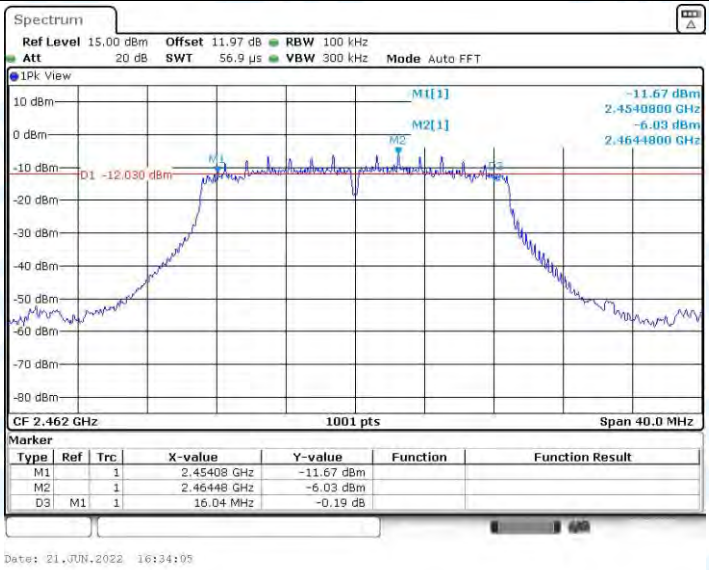

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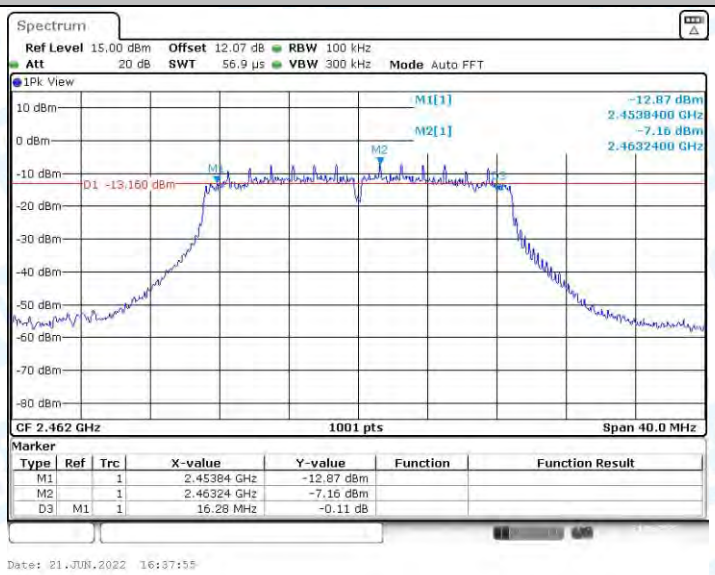

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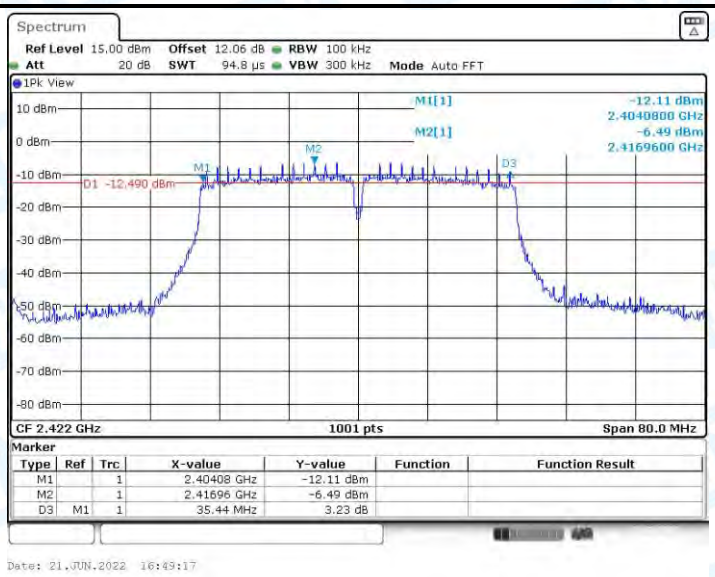

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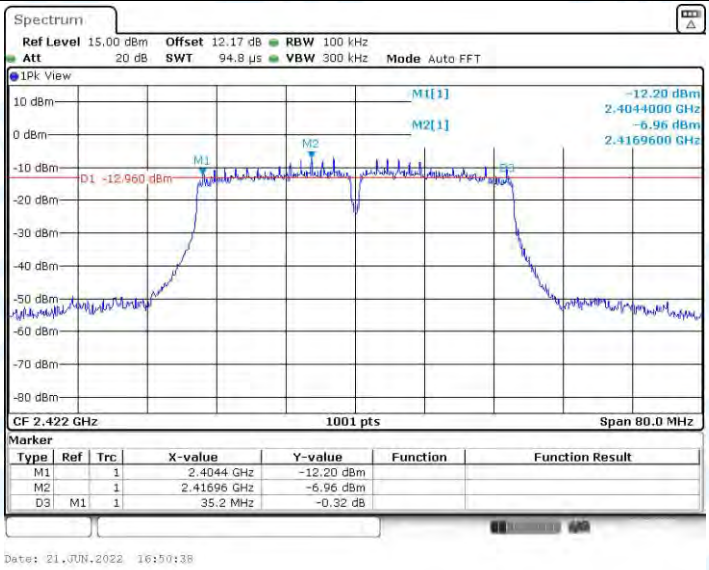

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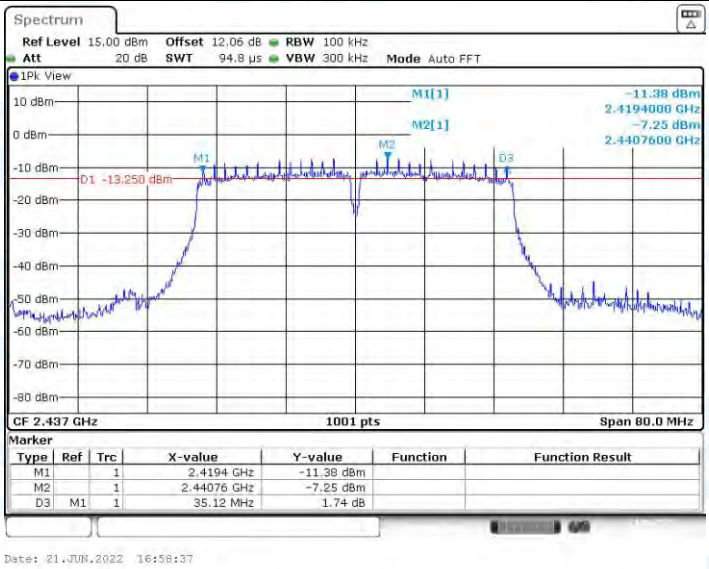

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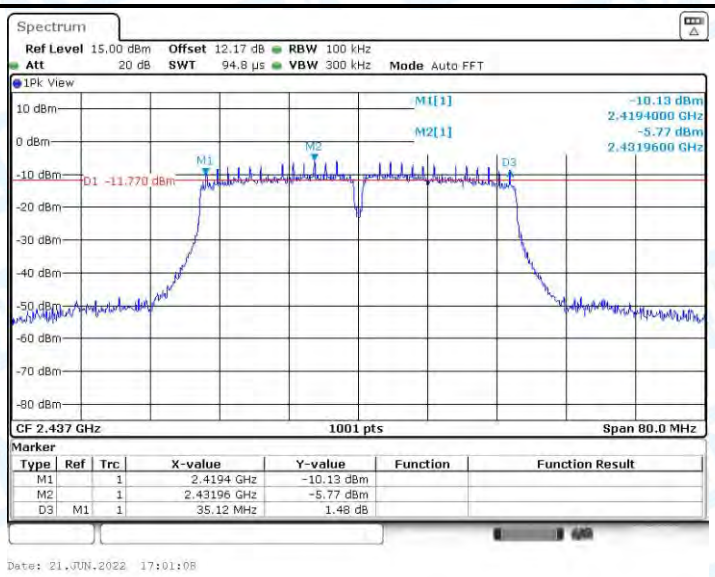

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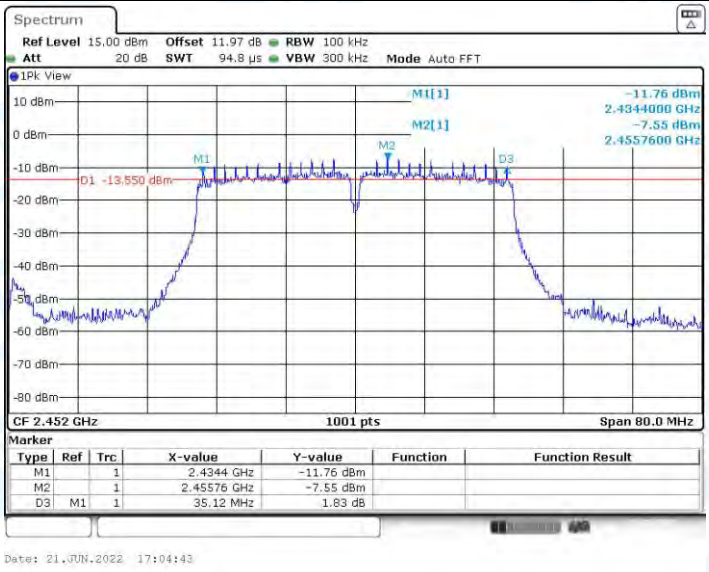

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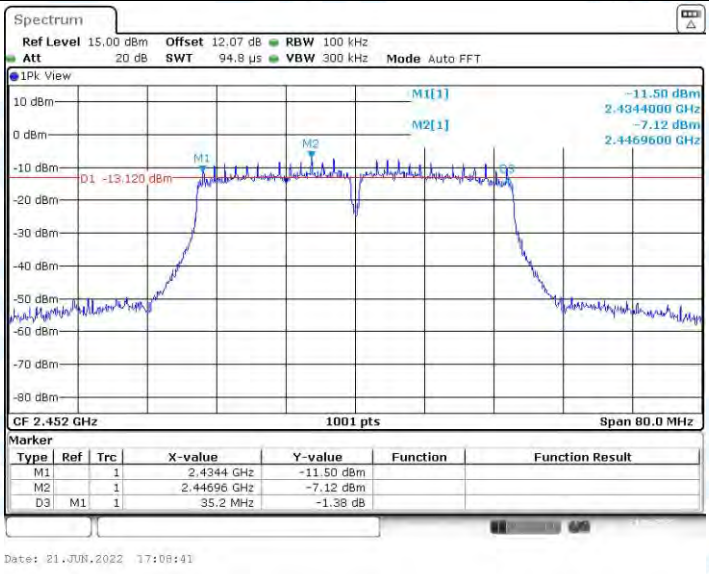


11N40MIMO_Ant2_2452

2. Occupied Channel Bandwidth

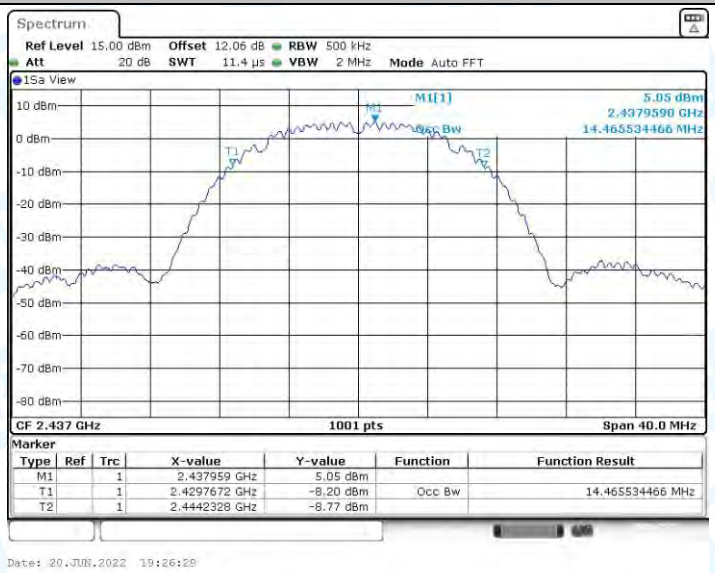
2.1.Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	14.545	2404.687	2419.233	---	---
	Ant2	2412	14.505	2404.767	2419.273	---	---
	Ant1	2437	14.466	2429.767	2444.233	---	---
	Ant2	2437	14.505	2429.727	2444.233	---	---
	Ant1	2462	14.585	2454.727	2469.313	---	---
	Ant2	2462	14.466	2454.767	2469.233	---	---
11G	Ant1	2412	16.863	2403.648	2420.511	---	---
	Ant2	2412	16.823	2403.568	2420.392	---	---
	Ant1	2437	16.783	2428.648	2445.432	---	---
	Ant2	2437	16.783	2428.608	2445.392	---	---
	Ant1	2462	16.823	2453.568	2470.392	---	---
	Ant2	2462	16.943	2453.489	2470.432	---	---
11N20MIMO	Ant1	2412	17.902	2403.049	2420.951	---	---
	Ant2	2412	18.102	2402.889	2420.991	---	---
	Ant1	2437	18.022	2428.049	2446.071	---	---
	Ant2	2437	18.062	2427.929	2445.991	---	---
	Ant1	2462	17.982	2453.089	2471.071	---	---
	Ant2	2462	18.062	2452.809	2470.871	---	---
11N40MIMO	Ant1	2422	36.124	2403.938	2440.062	---	---
	Ant2	2422	36.364	2403.618	2439.982	---	---
	Ant1	2437	36.523	2418.538	2455.062	---	---
	Ant2	2437	36.044	2418.938	2454.982	---	---
	Ant1	2452	36.204	2433.858	2470.062	---	---
	Ant2	2452	36.124	2433.858	2469.982	---	---

2.2.Test Graphs

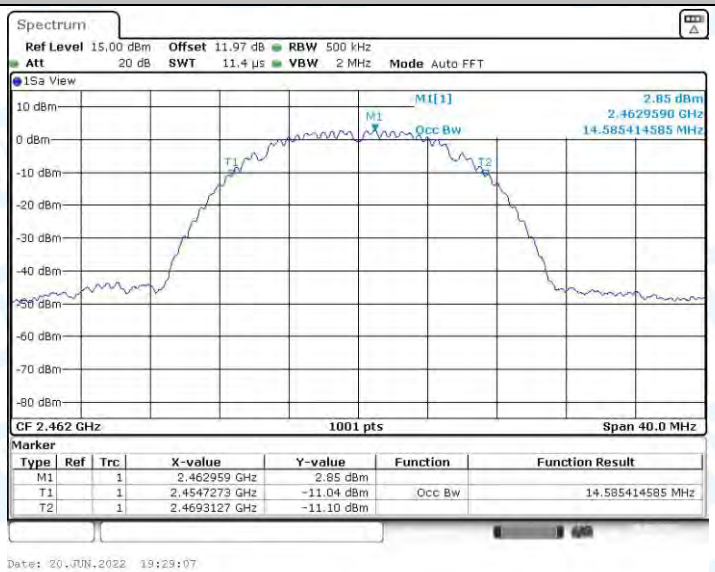
11B_Ant1_2412

11B_Ant2_2412



11B_Ant1_2437

11B_Ant2_2437



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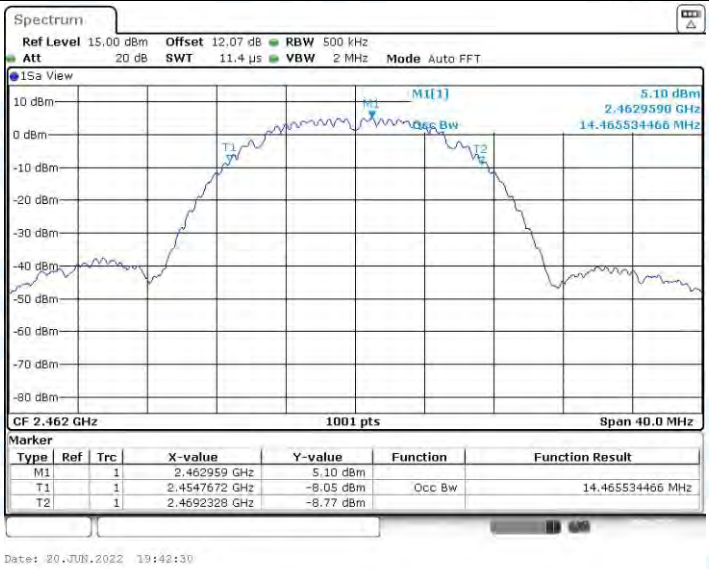

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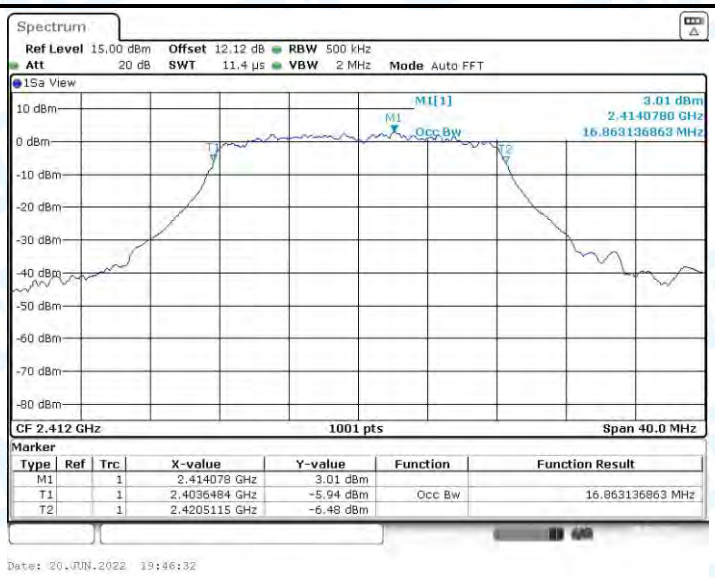

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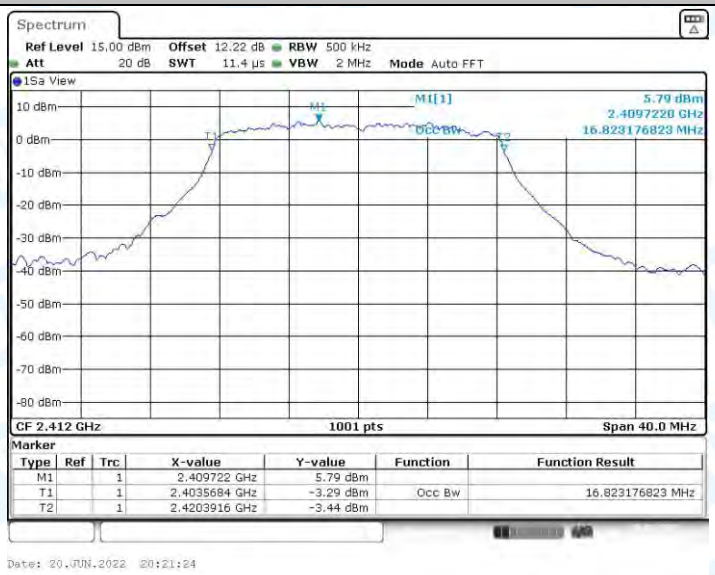

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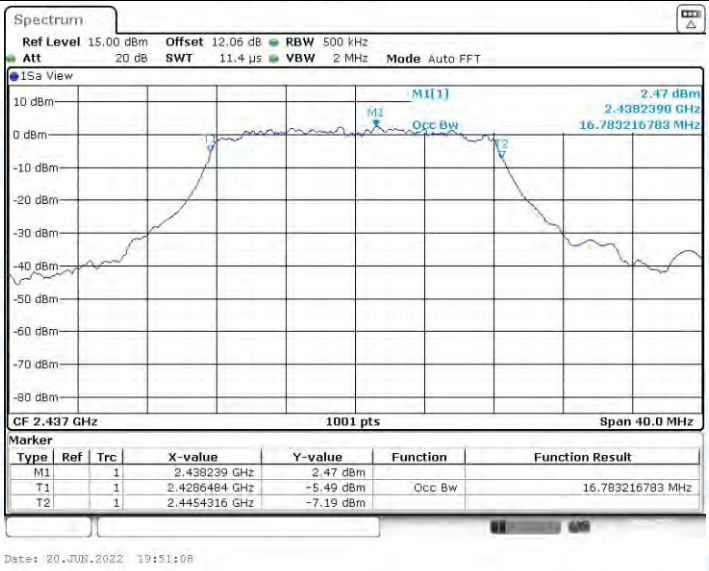

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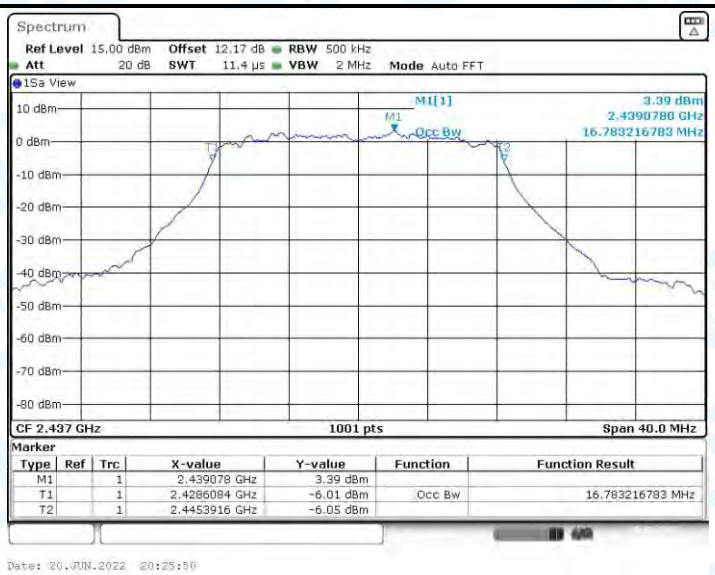

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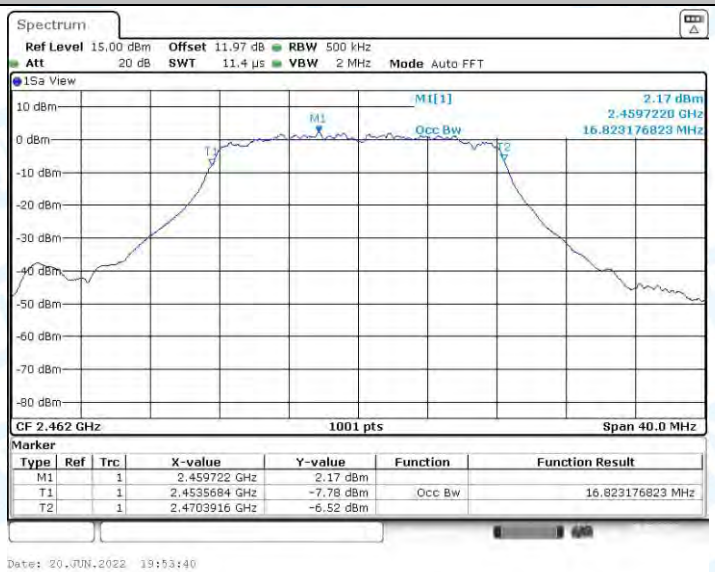

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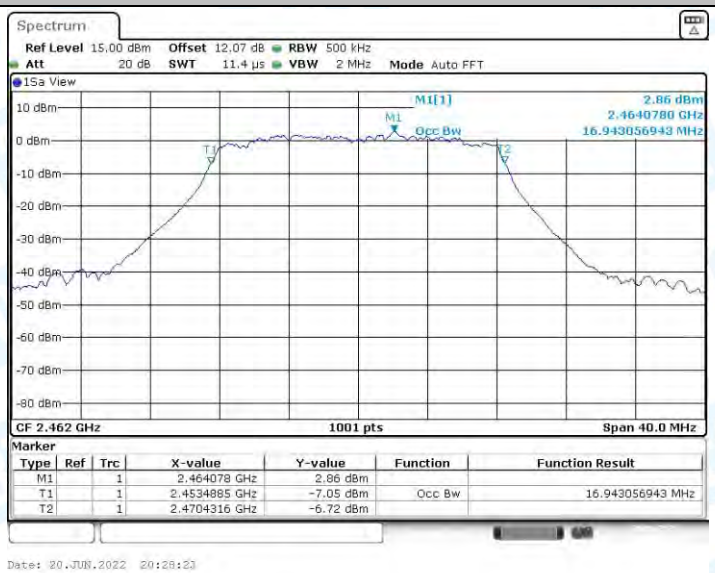

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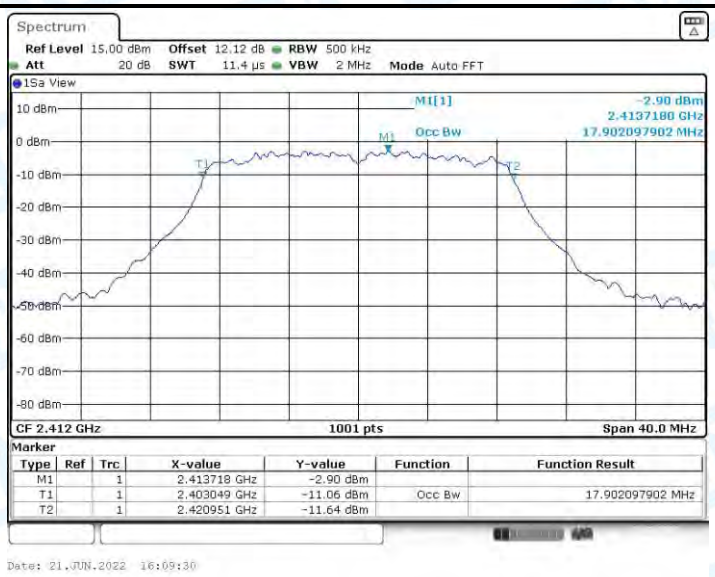

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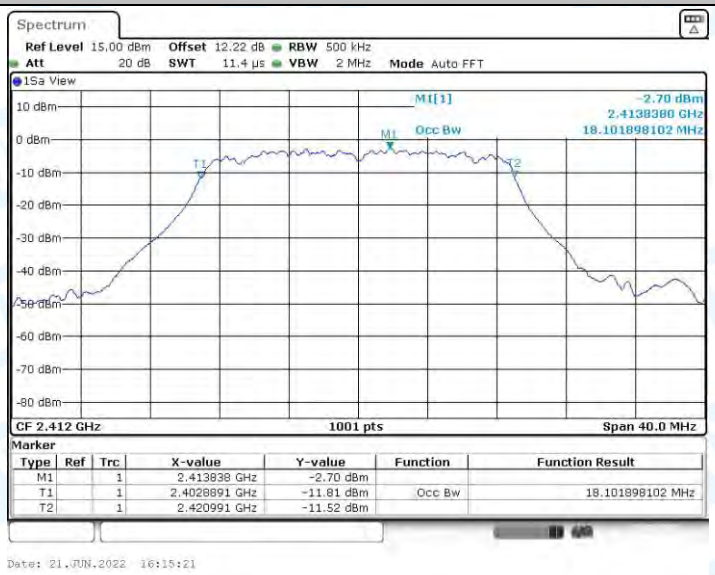

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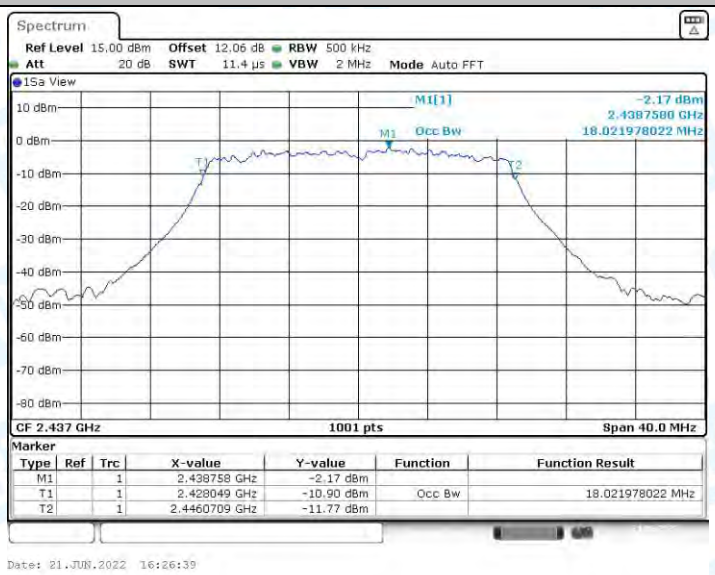

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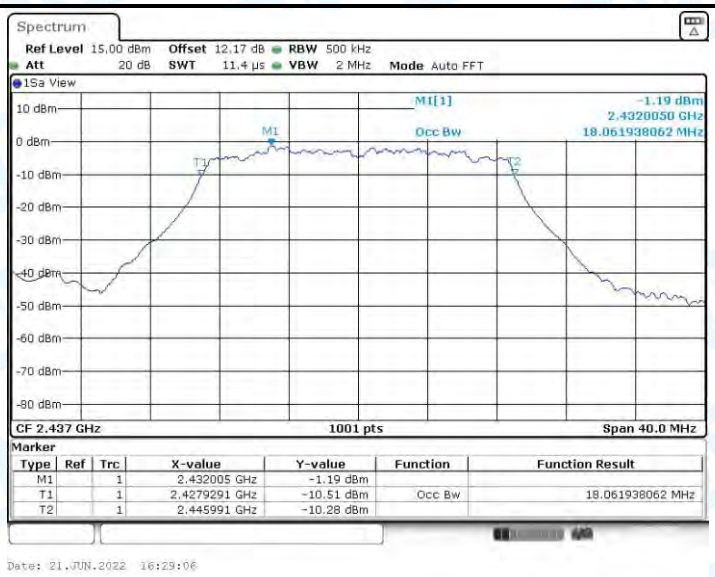

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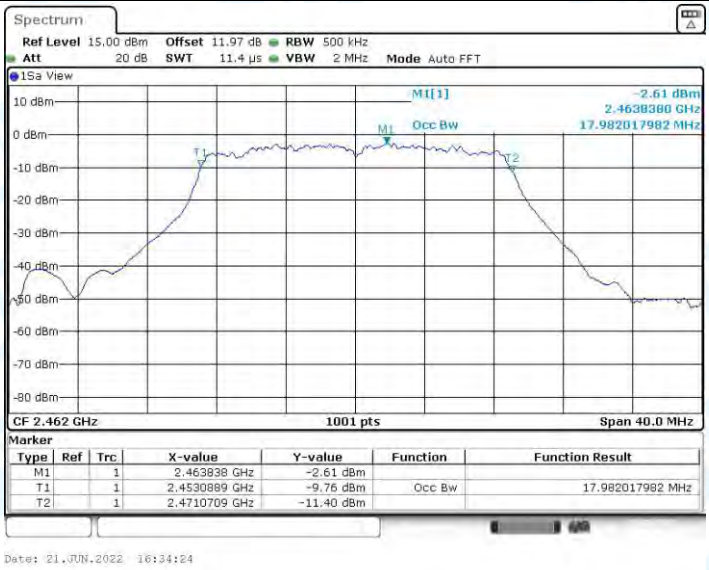

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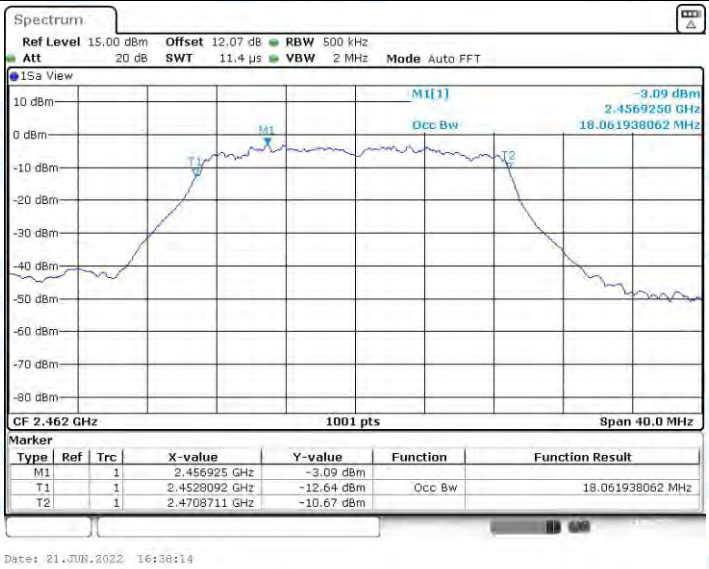

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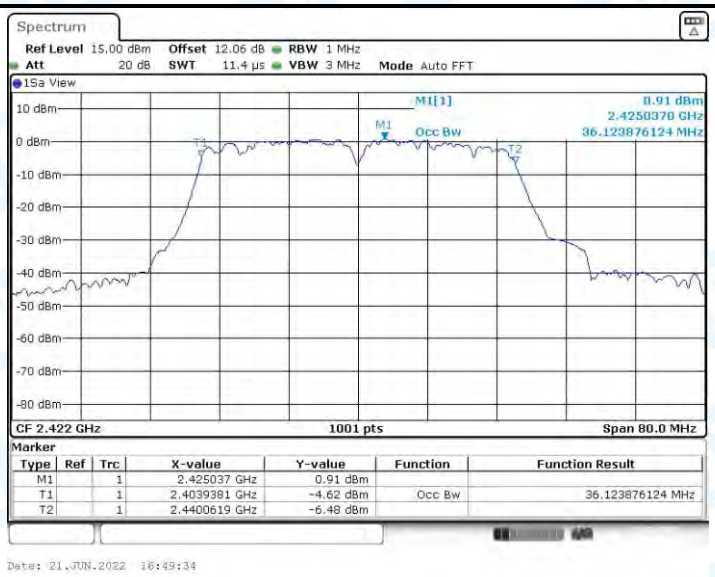

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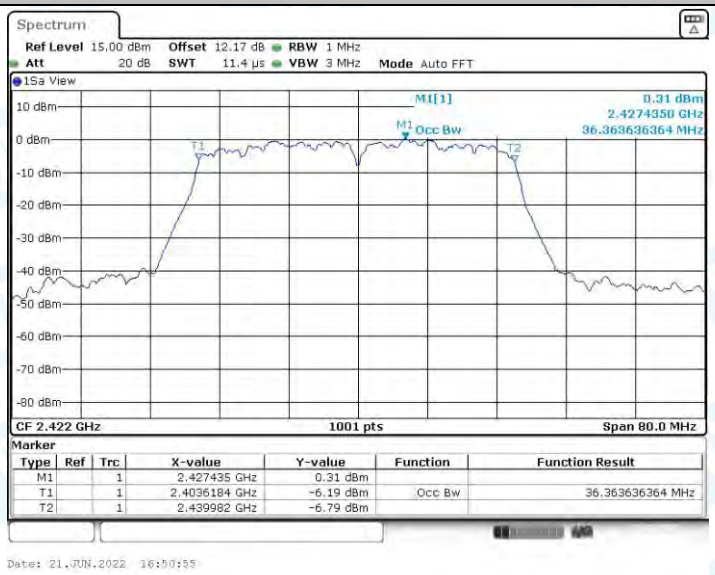
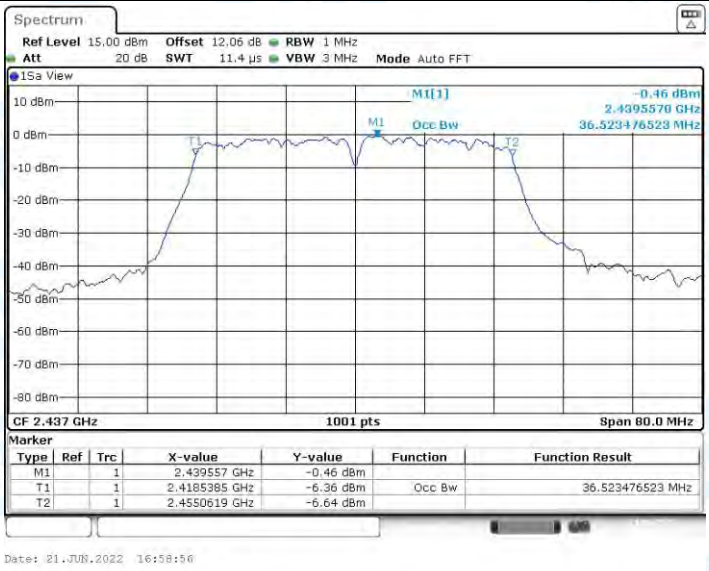
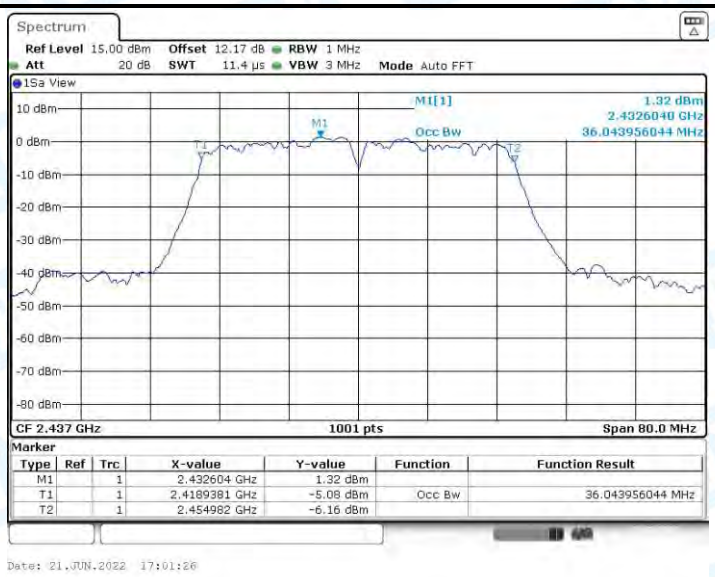


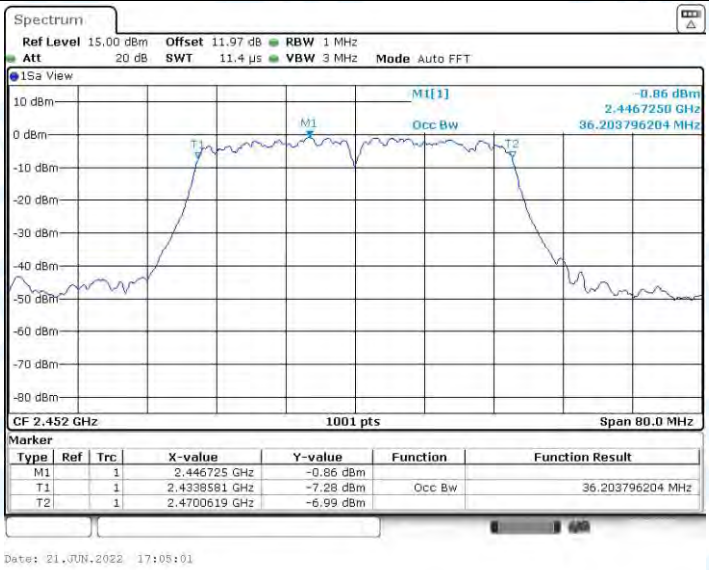
11N40MIMO_Ant2_2422



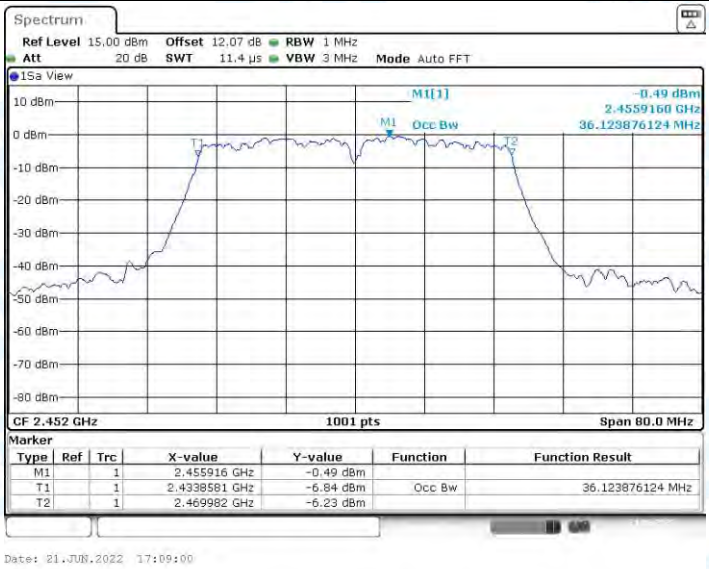
11N40MIMO_Ant1_2437



11N40MIMO_Ant2_2437



11N40MIMO_Ant1_2452



11N40MIMO_Ant2_2452

3. Maximum conducted output power

3.1.Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	17.71	≤30.00	PASS
	Ant2	2412	17.03	≤30.00	PASS
	Ant1	2437	17.04	≤30.00	PASS
	Ant2	2437	17.61	≤30.00	PASS
	Ant1	2462	17.59	≤30.00	PASS
	Ant2	2462	17.11	≤30.00	PASS
11G	Ant1	2412	17.57	≤30.00	PASS
	Ant2	2412	17.93	≤30.00	PASS
	Ant1	2437	17.28	≤30.00	PASS
	Ant2	2437	17.80	≤30.00	PASS
	Ant1	2462	17.33	≤30.00	PASS
	Ant2	2462	17.11	≤30.00	PASS
11N20MIMO	Ant1	2412	14.52	≤30.00	PASS
	Ant2	2412	14.59	≤30.00	PASS
	total	2412	17.57	≤29.19	PASS
	Ant1	2437	14.92	≤30.00	PASS
	Ant2	2437	14.56	≤30.00	PASS
	total	2437	17.75	≤29.19	PASS
	Ant1	2462	14.33	≤30.00	PASS
	Ant2	2462	13.84	≤30.00	PASS
	total	2462	17.10	≤29.19	PASS
11N40MIMO	Ant1	2422	14.45	≤30.00	PASS
	Ant2	2422	14.51	≤30.00	PASS
	total	2422	17.49	≤29.19	PASS
	Ant1	2437	14.41	≤30.00	PASS
	Ant2	2437	14.98	≤30.00	PASS
	total	2437	17.71	≤29.19	PASS
	Ant1	2452	14.05	≤30.00	PASS
	Ant2	2452	14.21	≤30.00	PASS
	total	2452	17.14	≤29.19	PASS

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

When ANT.1(3.96dBi) and ANT. 2(3.63dBi) transmitting simultaneously, and the Directional Gain= 4.18+10log(N)dBi =6.81dBi＞6dBi.

So Pout = Plimit-(G_{TX}-6)]=(30-0.81)dBm =29.19dBm

4. Maximum power spectral density

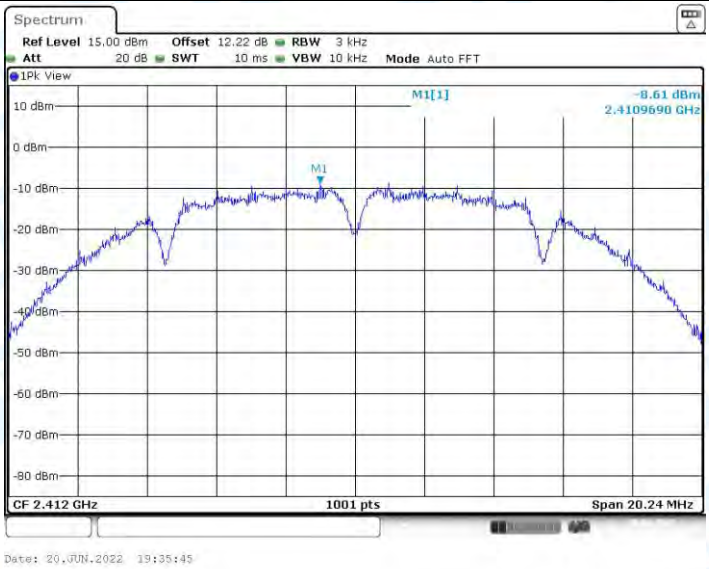
4.1.Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-8.39	≤8.00	PASS
	Ant2	2412	-8.61	≤8.00	PASS
	Ant1	2437	-8.92	≤8.00	PASS
	Ant2	2437	-8.33	≤8.00	PASS
	Ant1	2462	-8.72	≤8.00	PASS
	Ant2	2462	-8.81	≤8.00	PASS
11G	Ant1	2412	-16.34	≤8.00	PASS
	Ant2	2412	-16.02	≤8.00	PASS
	Ant1	2437	-16.64	≤8.00	PASS
	Ant2	2437	-16.09	≤8.00	PASS
	Ant1	2462	-16.5	≤8.00	PASS
	Ant2	2462	-16.79	≤8.00	PASS
11N20MIMO	Ant1	2412	-18.65	≤8.00	PASS
	Ant2	2412	-18.36	≤8.00	PASS
	total	2412	-15.49	≤7.19	PASS
	Ant1	2437	-18.32	≤8.00	PASS
	Ant2	2437	-18.43	≤8.00	PASS
	total	2437	-15.36	≤7.19	PASS
	Ant1	2462	-18.77	≤8.00	PASS
	Ant2	2462	-19.13	≤8.00	PASS
	total	2462	-15.94	≤7.19	PASS
11N40MIMO	Ant1	2422	-20.78	≤8.00	PASS
	Ant2	2422	-21.08	≤8.00	PASS
	total	2422	-17.92	≤7.19	PASS
	Ant1	2437	-21.08	≤8.00	PASS
	Ant2	2437	-20.49	≤8.00	PASS
	total	2437	-17.76	≤7.19	PASS
	Ant1	2452	-21.46	≤8.00	PASS
	Ant2	2452	-21.18	≤8.00	PASS
	total	2452	-18.31	≤7.19	PASS

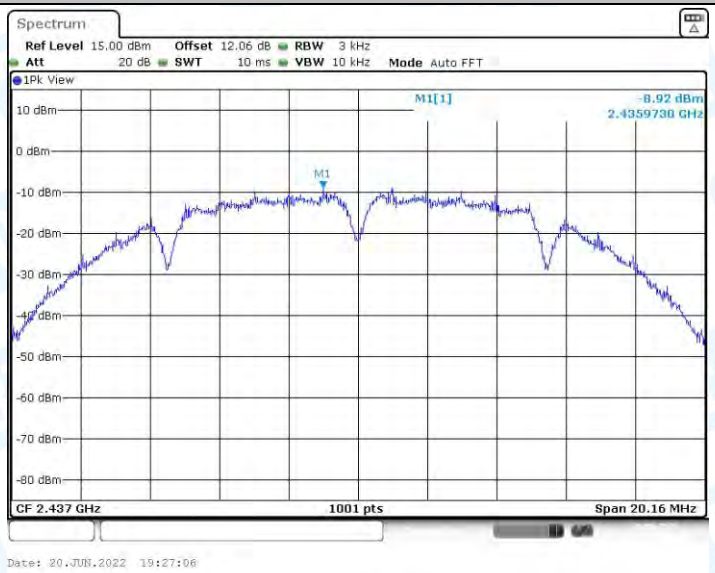
Note： The EUT incorporates a MIMO function. Physically, the EUT provides three antennas for transmitting and receiving.
When ANT.1(3.96dBi) and ANT. 2(3.63dBi) transmitting simultaneously, and the Directional Gain= 4.18+10log(N)dBi =6.81dBi＞6dBi.
So $PSD_{out} = PSD_{limit}-(G_{TX}-6)]$=(8-0.81)dBm/3KHz=7.19dBm/3kHz

4.2.Test Graphs

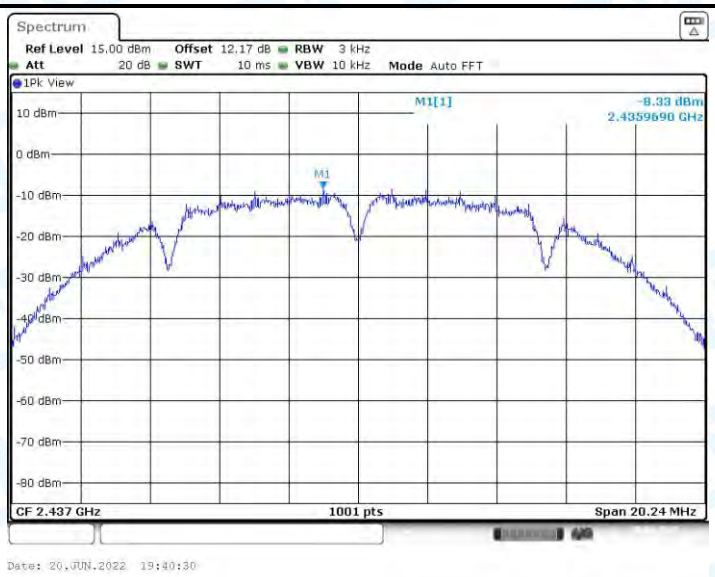
11B_Ant1_2412



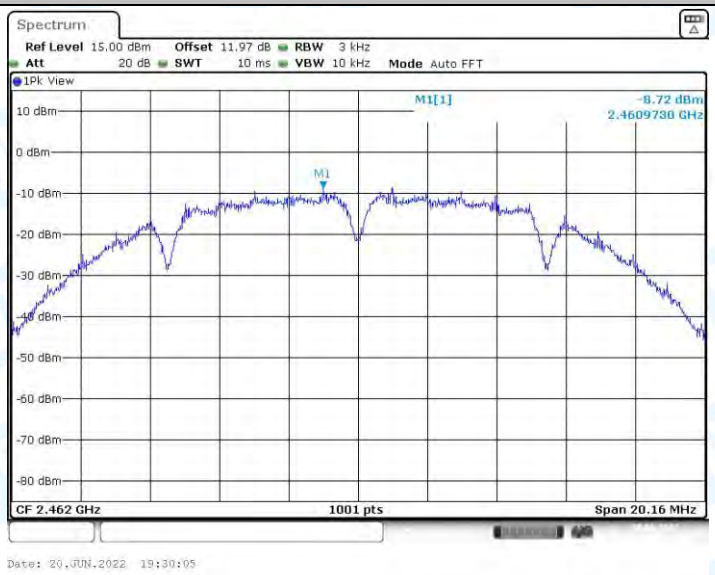
11B_Ant2_2412



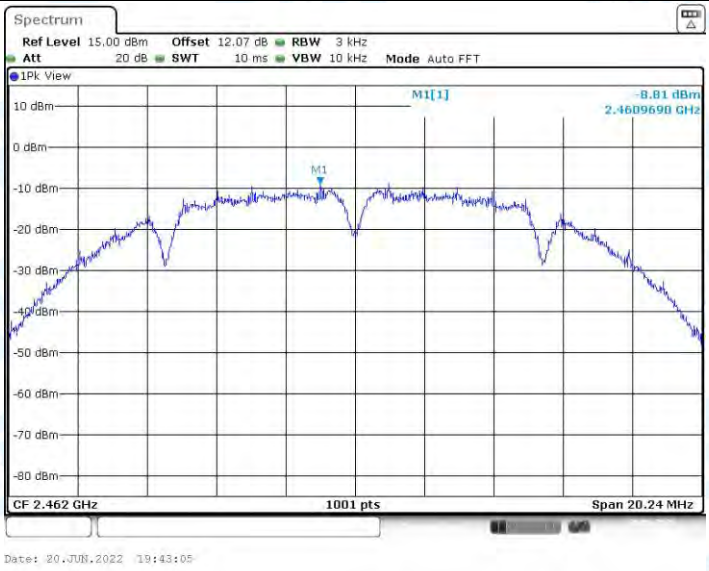
11B_Ant1_2437



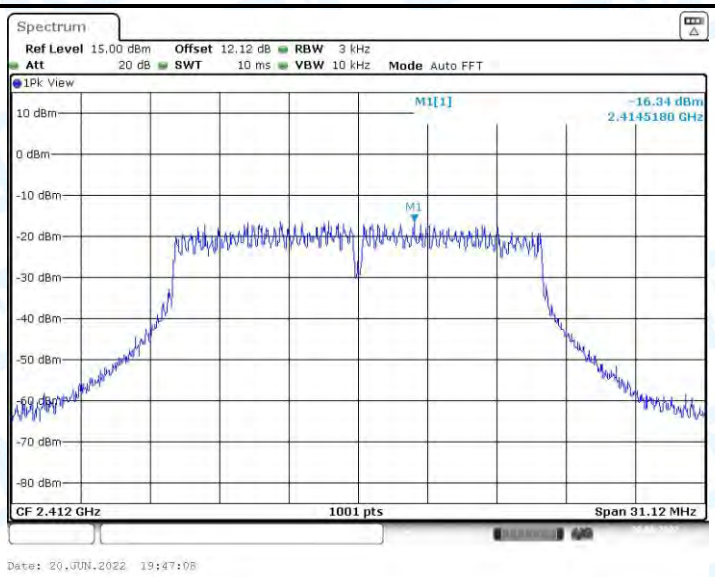
11B_Ant2_2437



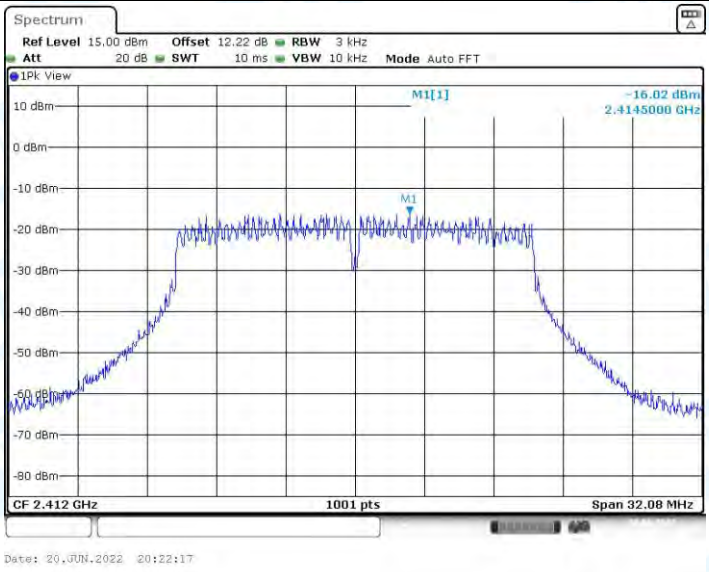
11B_Ant1_2462



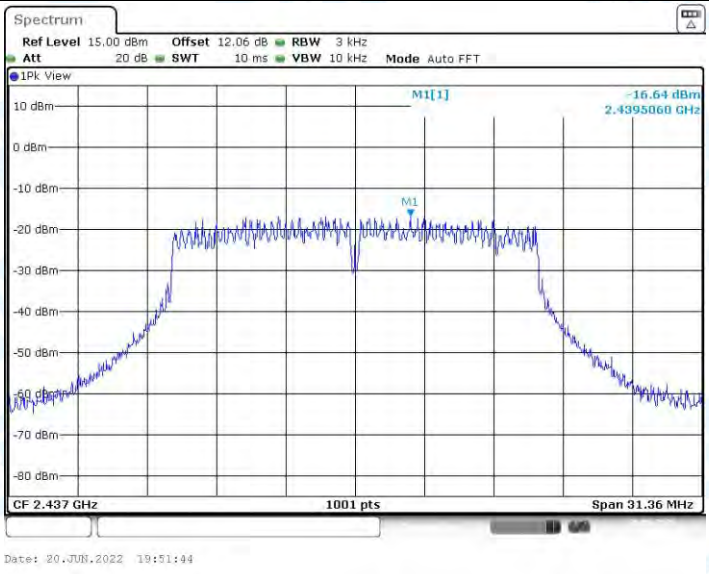
11B_Ant2_2462



11G_Ant1_2412



11G_Ant2_2412



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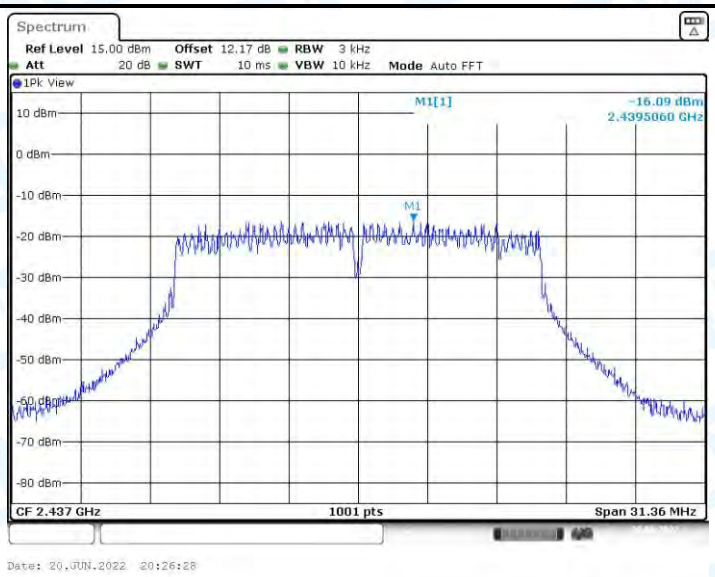
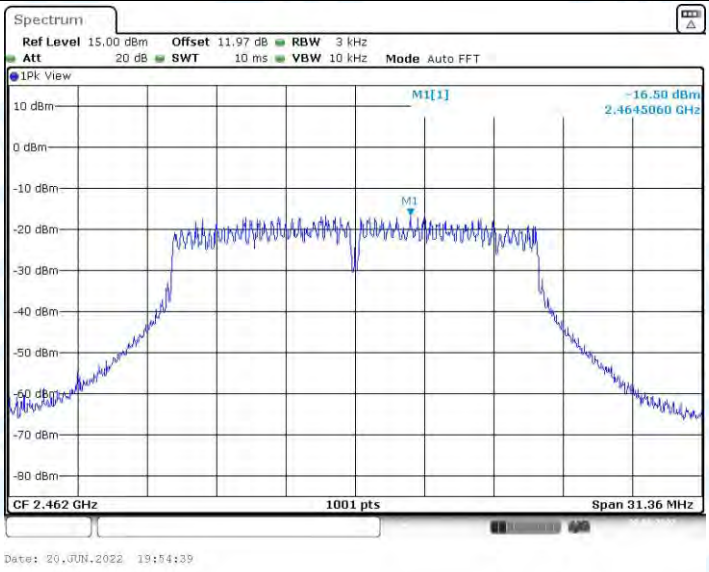


11G_Ant2_2437



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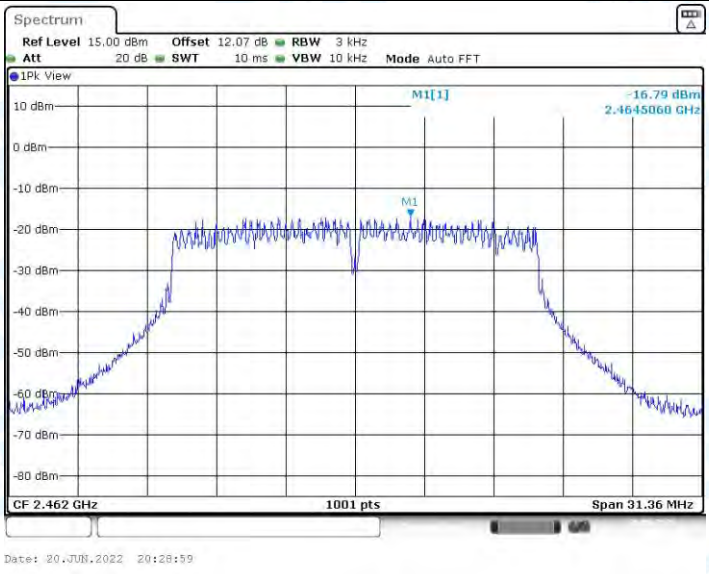
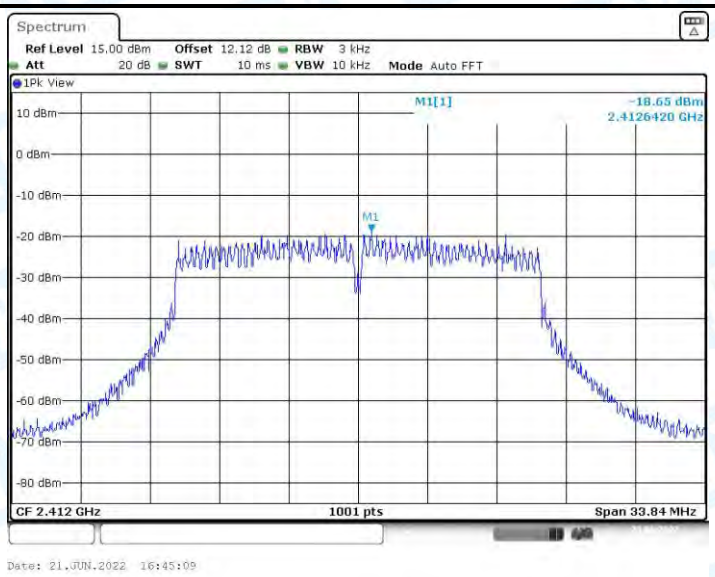
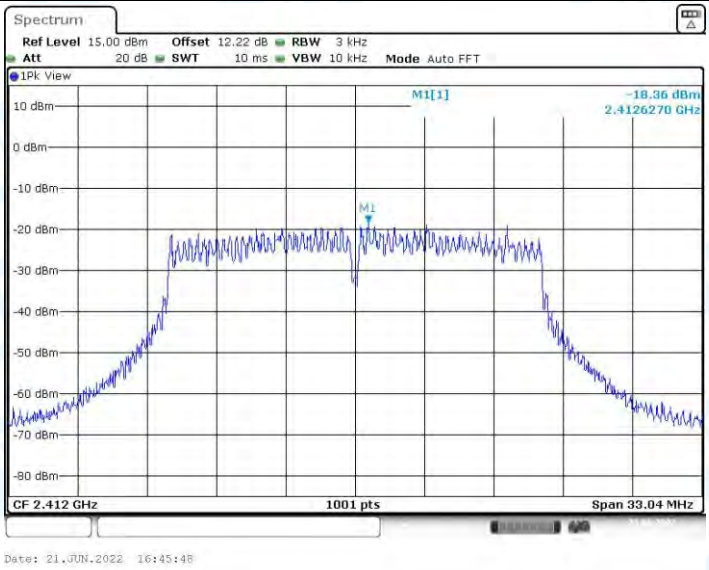


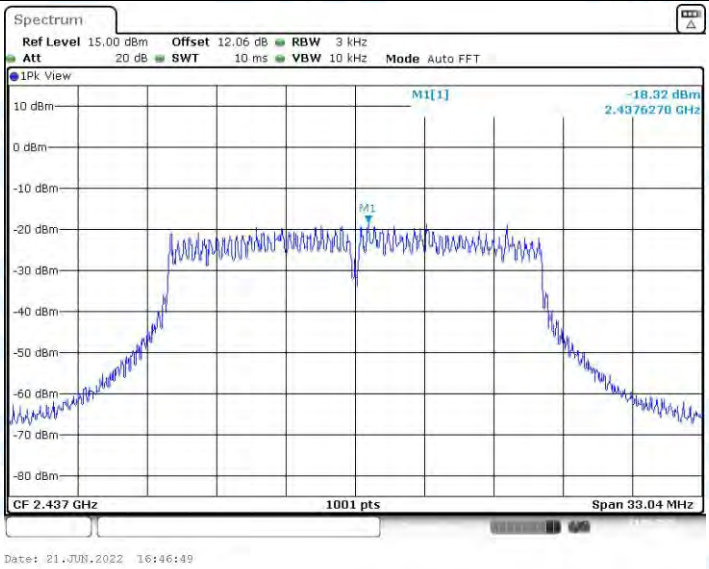
11G_Ant2_2462



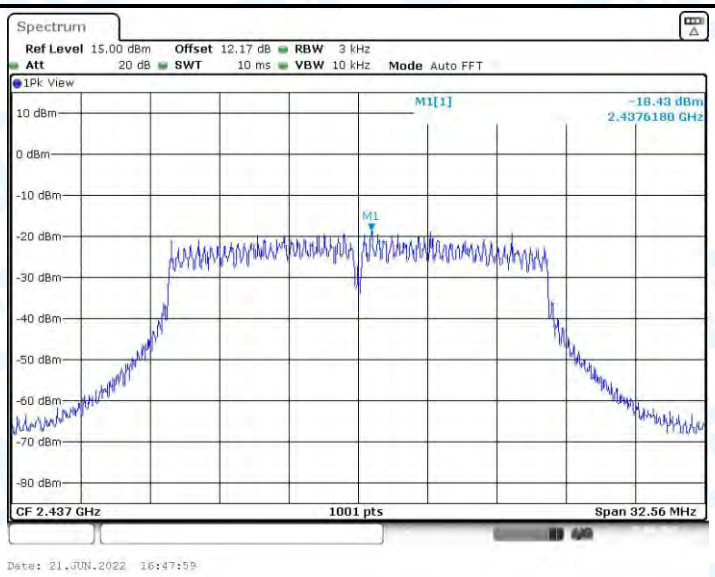
11N20MIMO_Ant1_2412



11N20MIMO_Ant2_2412



11N20MIMO_Ant1_2437



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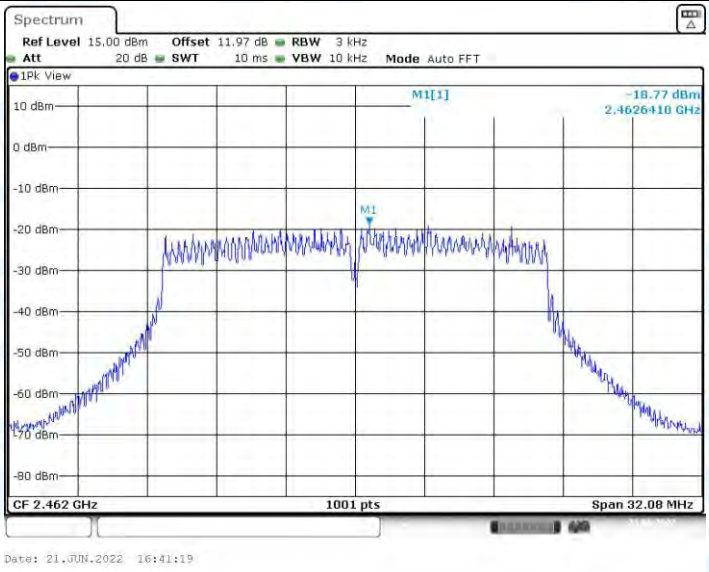

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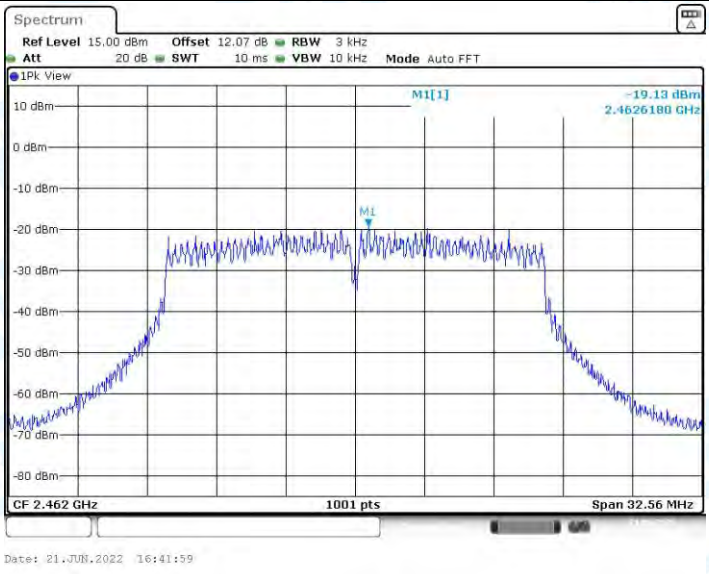

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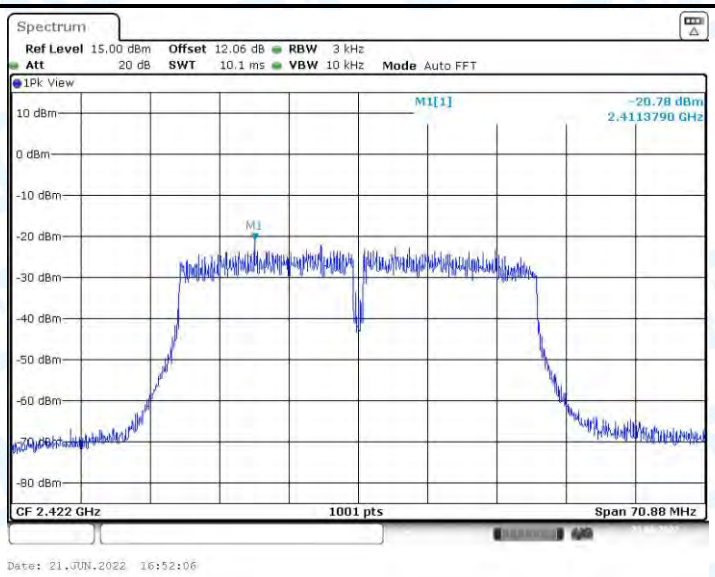
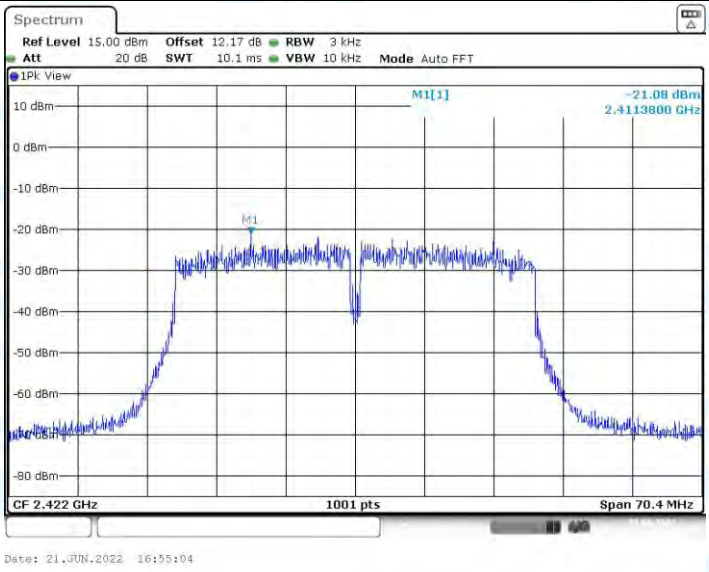
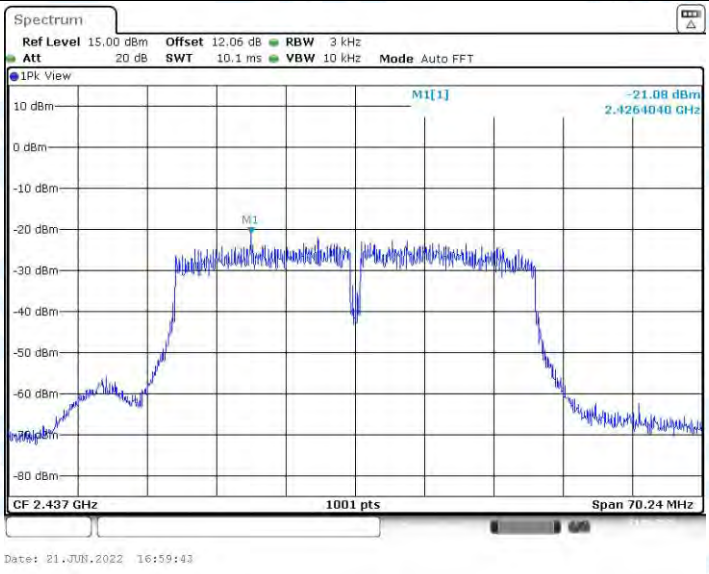


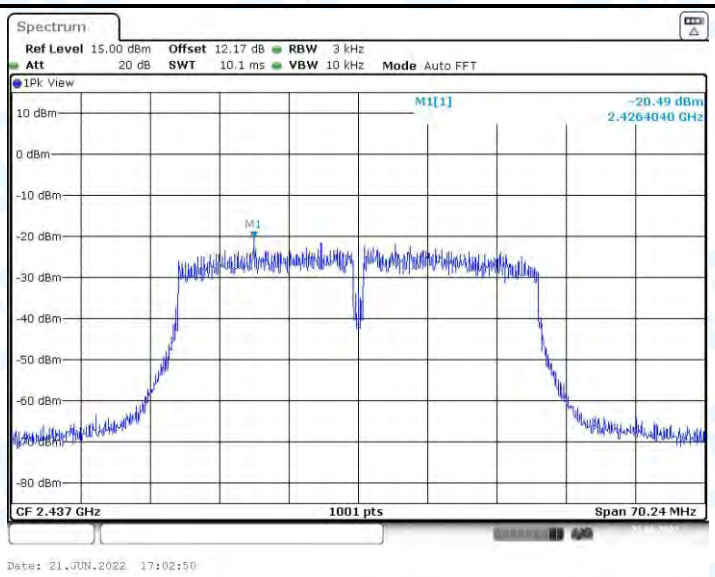
11N40MIMO_Ant1_2422



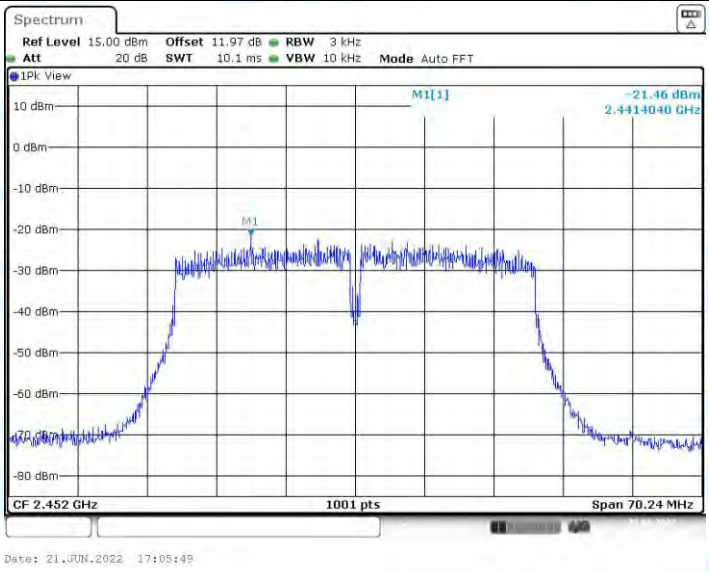
11N40MIMO_Ant2_2422



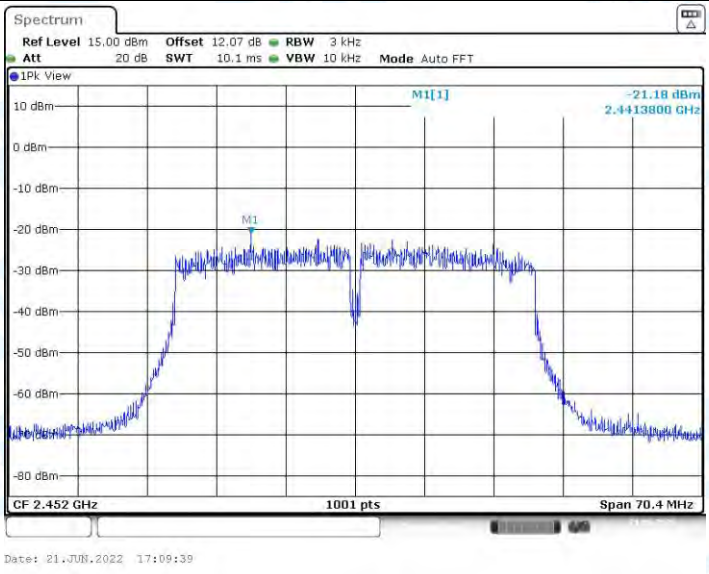
11N40MIMO_Ant1_2437



11N40MIMO_Ant2_2437



11N40MIMO_Ant1_2452



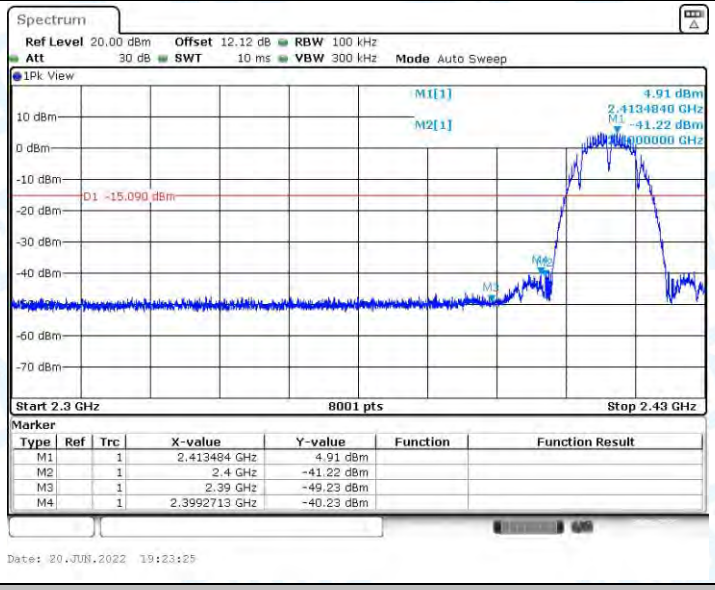
11N40MIMO_Ant2_2452

5. Band edge measurements

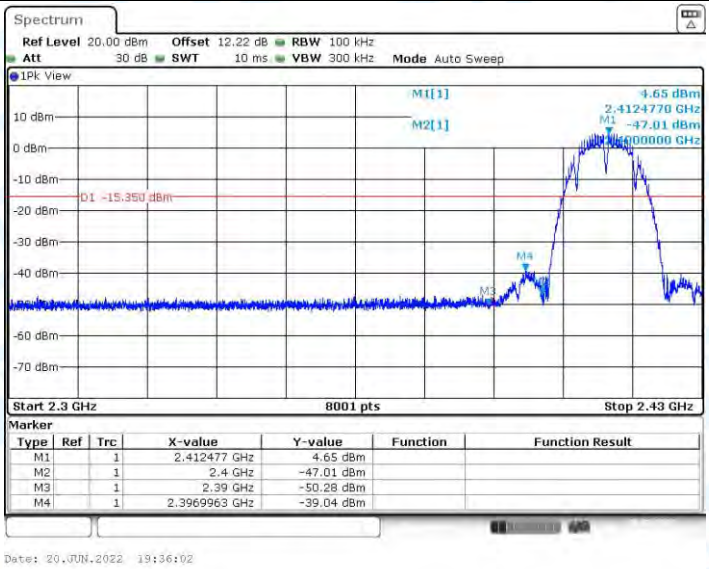
5.1.Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	4.91	-40.23	≤-15.09	PASS
	Ant2	Low	2412	4.65	-39.04	≤-15.35	PASS
	Ant1	High	2462	4.61	-46.19	≤-15.39	PASS
	Ant2	High	2462	4.46	-46.65	≤-15.54	PASS
11G	Ant1	Low	2412	-1.60	-40.1	≤-21.6	PASS
	Ant2	Low	2412	-1.28	-38.91	≤-21.28	PASS
	Ant1	High	2462	-1.84	-46.14	≤-21.84	PASS
	Ant2	High	2462	-2.08	-45.99	≤-22.08	PASS
11N20MIMO	Ant1	Low	2412	-6.67	-43.46	≤-26.67	PASS
	Ant2	Low	2412	-6.68	-43.64	≤-26.68	PASS
	Ant1	High	2462	-6.40	-46.89	≤-26.4	PASS
	Ant2	High	2462	-5.55	-47.13	≤-25.55	PASS
11N40MIMO	Ant1	Low	2422	-7.39	-44.3	≤-27.39	PASS
	Ant2	Low	2422	-7.08	-45.38	≤-27.08	PASS
	Ant1	High	2452	-7.76	-46.79	≤-27.76	PASS
	Ant2	High	2452	-7.45	-46.69	≤-27.45	PASS

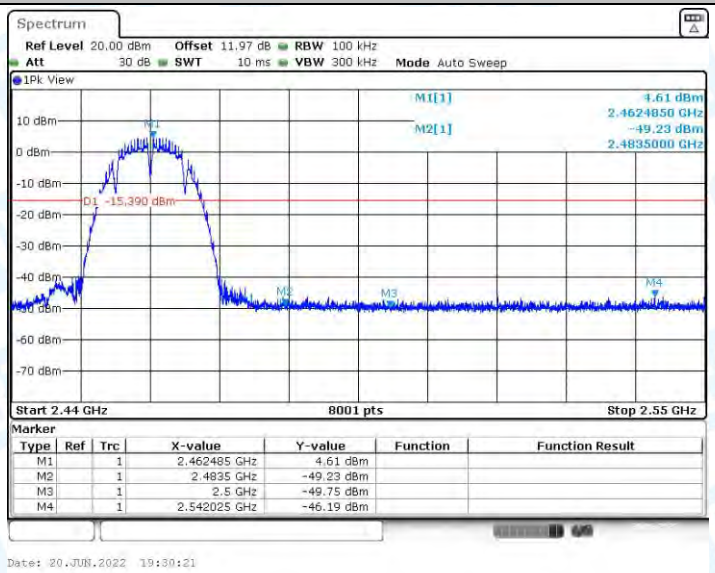
5.2.Test Graphs



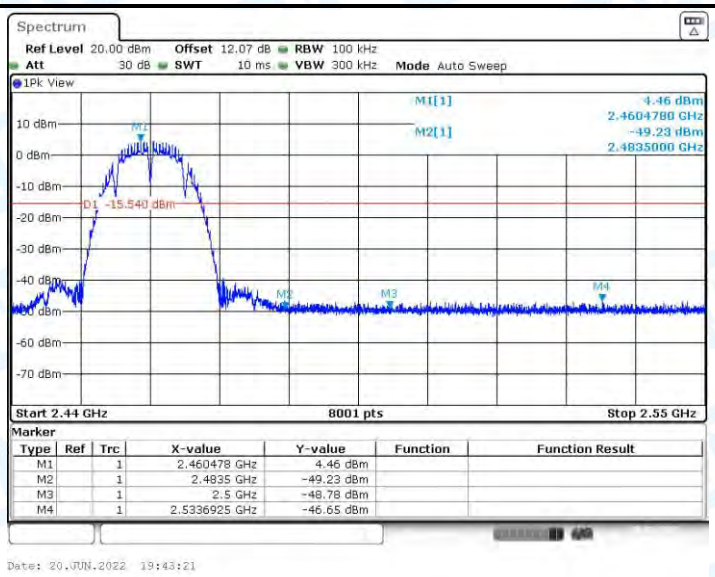
11B_Ant1_Low_2412



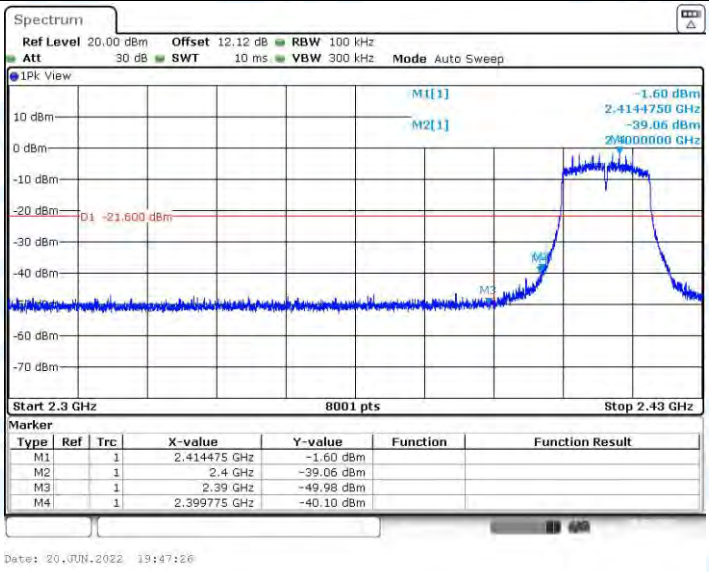
11B_Ant2_Low_2412



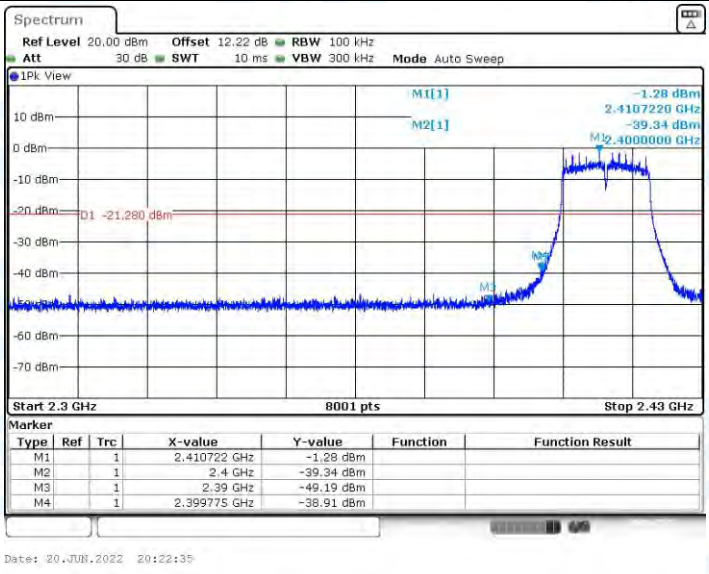
11B_Ant1_High_2462



11B_Ant2_High_2462



11G_Ant1_Low_2412



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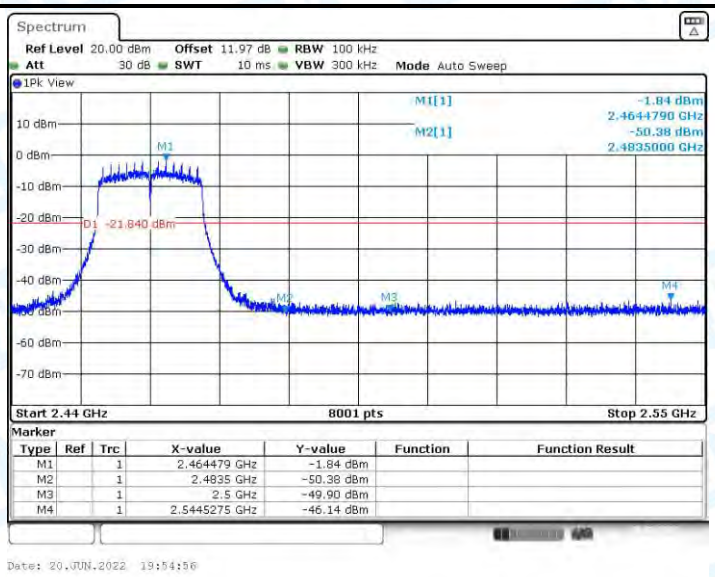
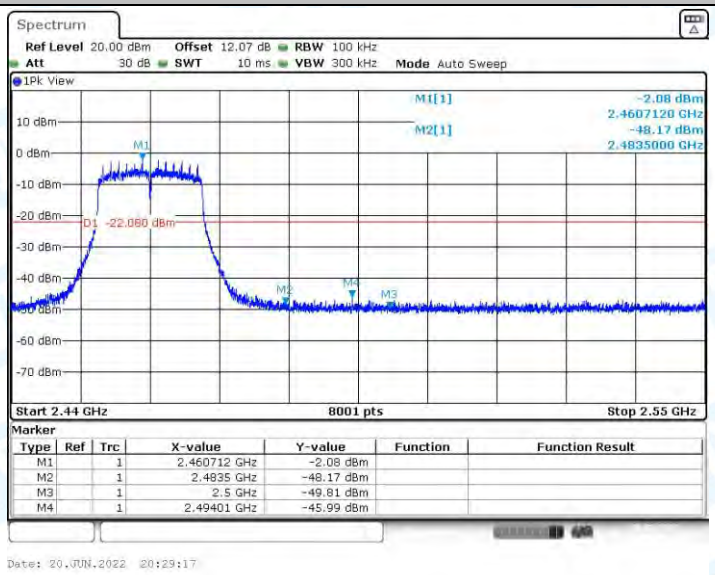
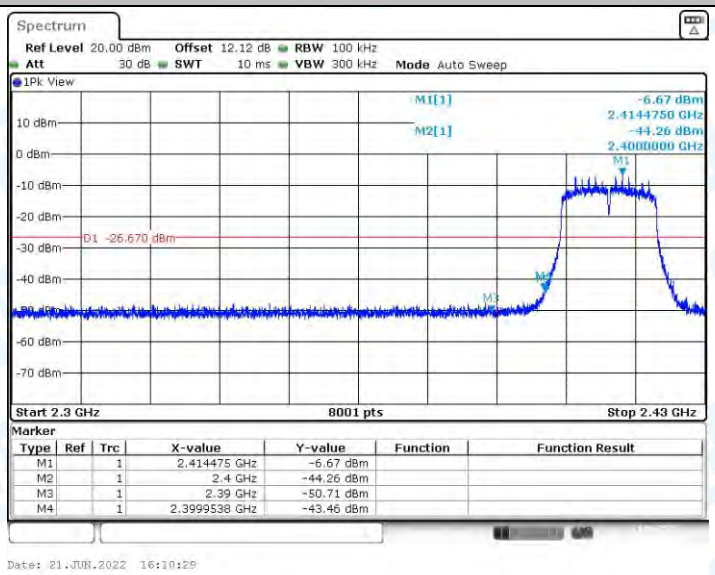


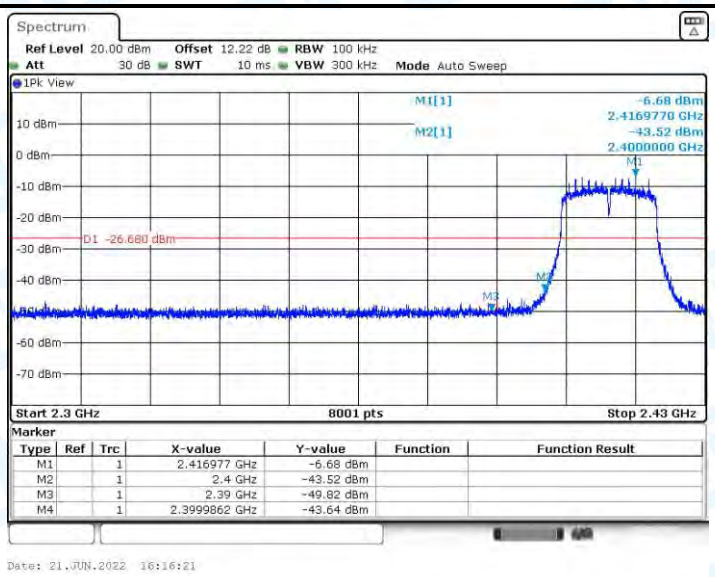
11G_Ant1_High_2462



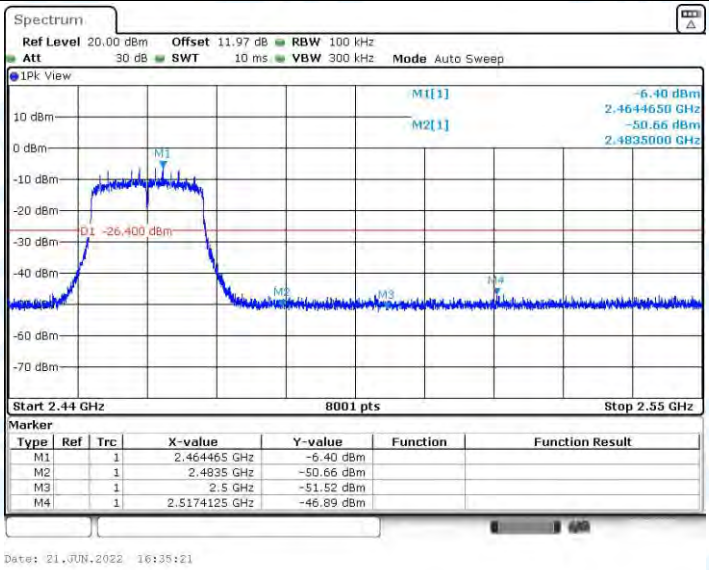
11G_Ant2_High_2462



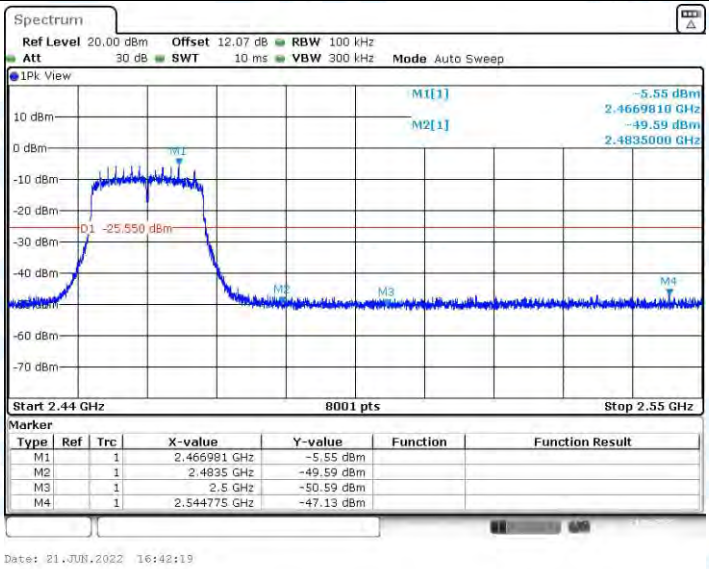
11N20MIMO_Ant1_Low_2412



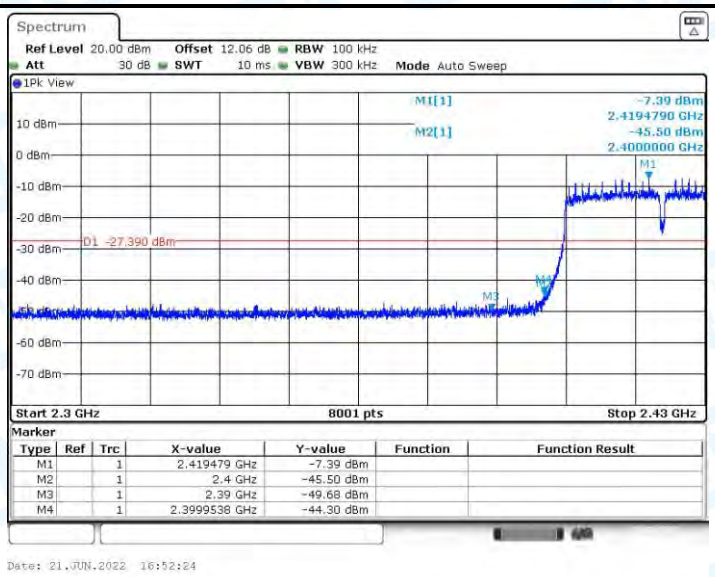
11N20MIMO_Ant2_Low_2412



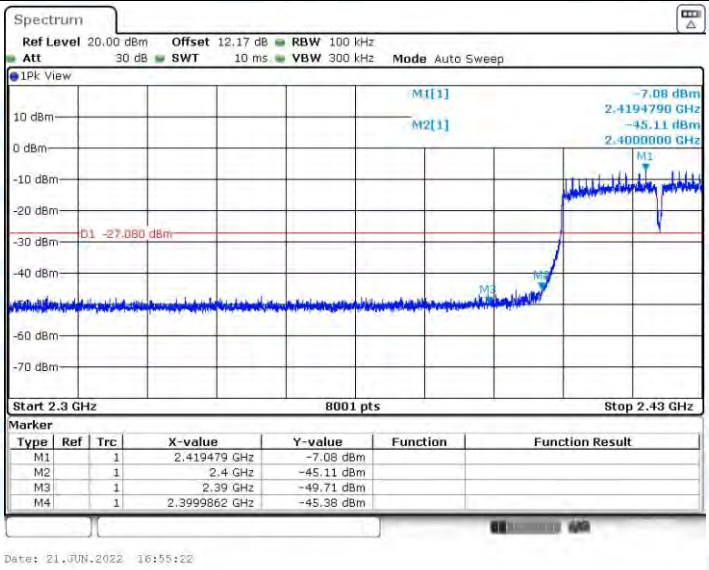
11N20MIMO_Ant1_High_2462



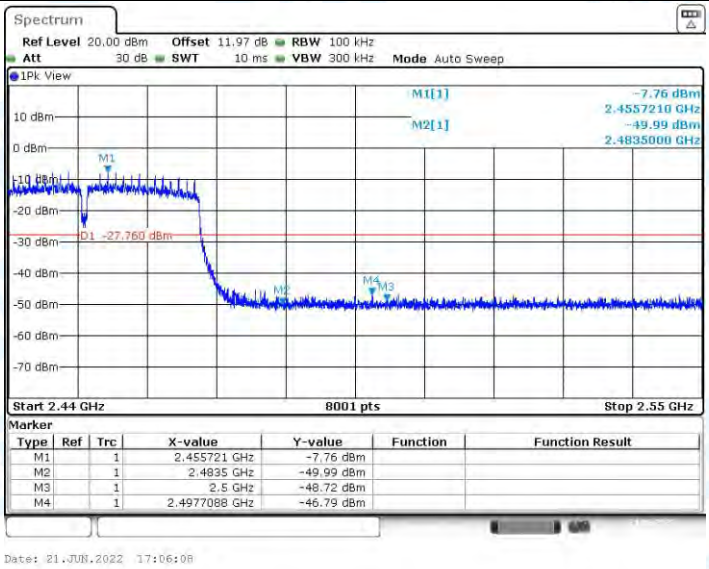
11N20MIMO_Ant2_High_2462



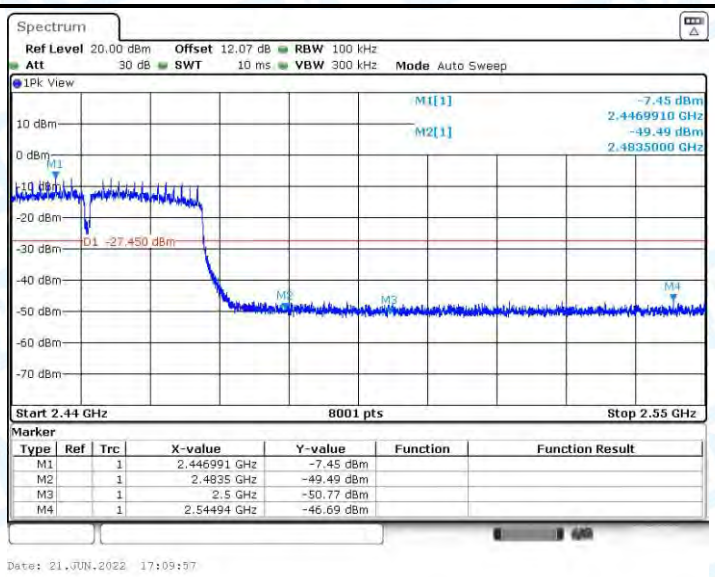
11N40MIMO_Ant1_Low_2422



11N40MIMO_Ant2_Low_2422



11N40MIMO_Ant1_High_2452



11N40MIMO_Ant2_High_2452

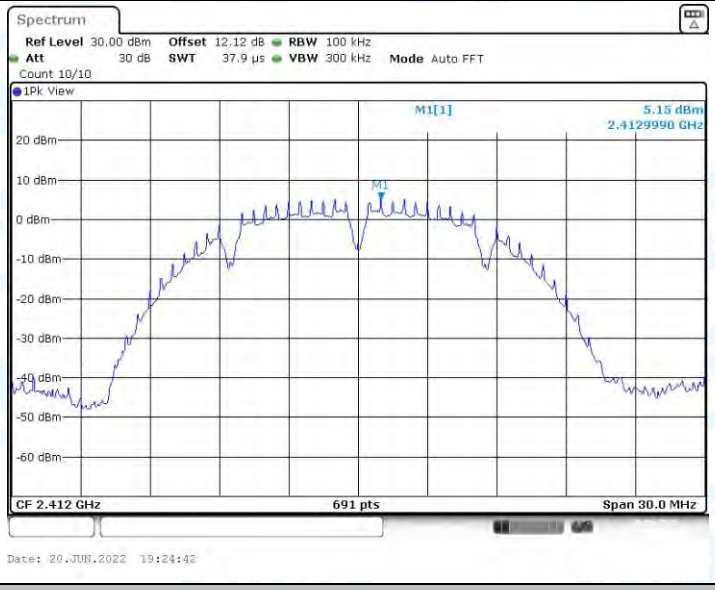
6. Conducted Spurious Emission

6.1.Test Result

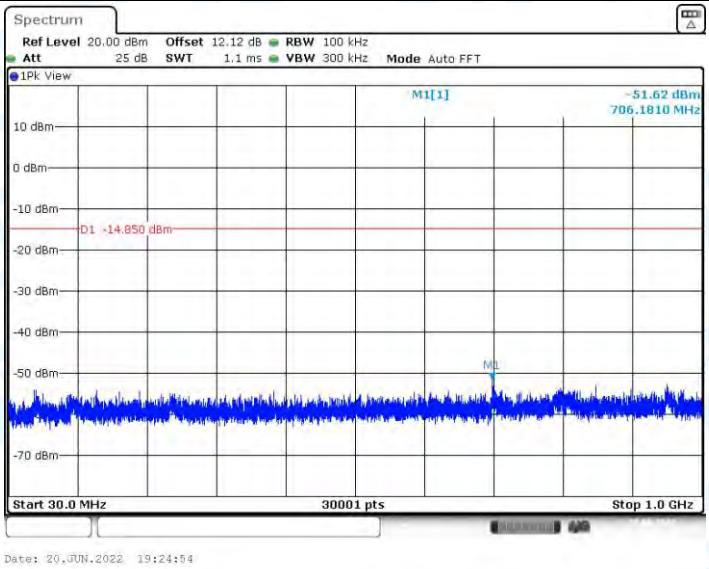
TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	5.15	5.15	---	PASS
			30~1000	5.15	-51.62	≤-14.85	PASS
			1000~26500	5.15	-46.03	≤-14.85	PASS
	Ant2	2412	Reference	4.71	4.71	---	PASS
			30~1000	4.71	-52.41	≤-15.29	PASS
			1000~26500	4.71	-46.2	≤-15.29	PASS
	Ant1	2437	Reference	4.38	4.38	---	PASS
			30~1000	4.38	-51.56	≤-15.62	PASS
			1000~26500	4.38	-46.87	≤-15.62	PASS
	Ant2	2437	Reference	5.07	5.07	---	PASS
			30~1000	5.07	-53.26	≤-14.93	PASS
			1000~26500	5.07	-45.91	≤-14.93	PASS
	Ant1	2462	Reference	4.55	4.55	---	PASS
			30~1000	4.55	-51.89	≤-15.45	PASS
			1000~26500	4.55	-46.23	≤-15.45	PASS
	Ant2	2462	Reference	4.61	4.61	---	PASS
			30~1000	4.61	-52.82	≤-15.39	PASS
			1000~26500	4.61	-46.18	≤-15.39	PASS
11G	Ant1	2412	Reference	-1.91	-1.91	---	PASS
			30~1000	-1.91	-52.89	≤-21.91	PASS
			1000~26500	-1.91	-46.78	≤-21.91	PASS
	Ant2	2412	Reference	-1.03	-1.03	---	PASS
			30~1000	-1.03	-51.25	≤-21.03	PASS
			1000~26500	-1.03	-45.16	≤-21.03	PASS
	Ant1	2437	Reference	-1.91	-1.91	---	PASS
			30~1000	-1.91	-52.71	≤-21.91	PASS
			1000~26500	-1.91	-47.01	≤-21.91	PASS
	Ant2	2437	Reference	-1.58	-1.58	---	PASS
			30~1000	-1.58	-52.14	≤-21.58	PASS
			1000~26500	-1.58	-46.81	≤-21.58	PASS
	Ant1	2462	Reference	-1.87	-1.87	---	PASS
			30~1000	-1.87	-52.22	≤-21.87	PASS
			1000~26500	-1.87	-44.86	≤-21.87	PASS
	Ant2	2462	Reference	-1.80	-1.80	---	PASS
			30~1000	-1.80	-52.44	≤-21.8	PASS
			1000~26500	-1.80	-46.47	≤-21.8	PASS
11N20MIMO	Ant1	2412	Reference	-6.60	-6.60	---	PASS
			30~1000	-6.60	-52.88	≤-26.6	PASS
			1000~26500	-6.60	-46.56	≤-26.6	PASS
	Ant2	2412	Reference	-6.64	-6.64	---	PASS
			30~1000	-6.64	-51.92	≤-26.64	PASS

			1000~26500	-6.64	-45.19	≤-26.64	PASS
	Ant1	2437	Reference	-6.03	-6.03	---	PASS
			30~1000	-6.03	-52.02	≤-26.03	PASS
			1000~26500	-6.03	-46.03	≤-26.03	PASS
	Ant2	2437	Reference	-5.80	-5.80	---	PASS
			30~1000	-5.80	-52.36	≤-25.8	PASS
			1000~26500	-5.80	-46.24	≤-25.8	PASS
	Ant1	2462	Reference	-6.82	-6.82	---	PASS
			30~1000	-6.82	-53.41	≤-26.82	PASS
			1000~26500	-6.82	-46.78	≤-26.82	PASS
	Ant2	2462	Reference	-5.19	-5.19	---	PASS
			30~1000	-5.19	-51.9	≤-25.19	PASS
			1000~26500	-5.19	-46	≤-25.19	PASS
11N40MIMO	Ant1	2422	Reference	-7.38	-7.38	---	PASS
			30~1000	-7.38	-53.25	≤-27.38	PASS
			1000~26500	-7.38	-46.44	≤-27.38	PASS
	Ant2	2422	Reference	-7.38	-7.38	---	PASS
			30~1000	-7.38	-52.89	≤-27.38	PASS
			1000~26500	-7.38	-46.15	≤-27.38	PASS
	Ant1	2437	Reference	-7.30	-7.30	---	PASS
			30~1000	-7.30	-52.72	≤-27.3	PASS
			1000~26500	-7.30	-46.86	≤-27.3	PASS
	Ant2	2437	Reference	-6.71	-6.71	---	PASS
			30~1000	-6.71	-52.33	≤-26.71	PASS
			1000~26500	-6.71	-46.62	≤-26.71	PASS
	Ant1	2452	Reference	-7.80	-7.80	---	PASS
			30~1000	-7.80	-52.52	≤-27.8	PASS
			1000~26500	-7.80	-46.22	≤-27.8	PASS
	Ant2	2452	Reference	-7.16	-7.16	---	PASS
			30~1000	-7.16	-52.41	≤-27.16	PASS
			1000~26500	-7.16	-46.46	≤-27.16	PASS

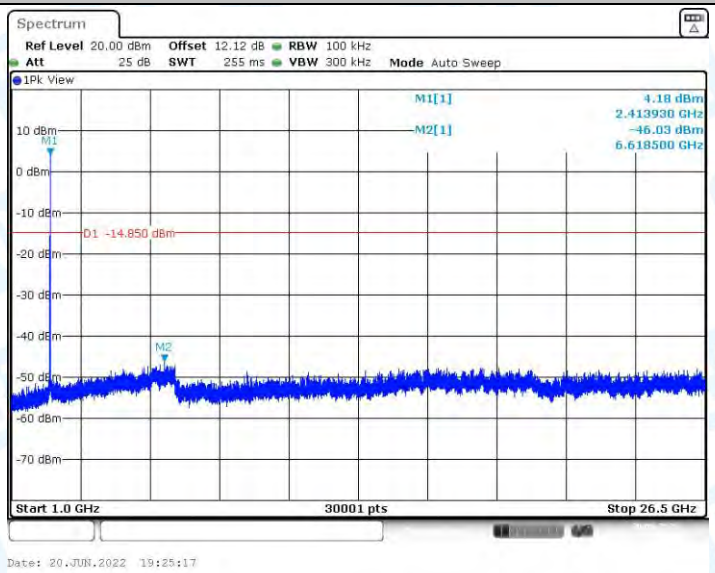
6.2.Test Graphs



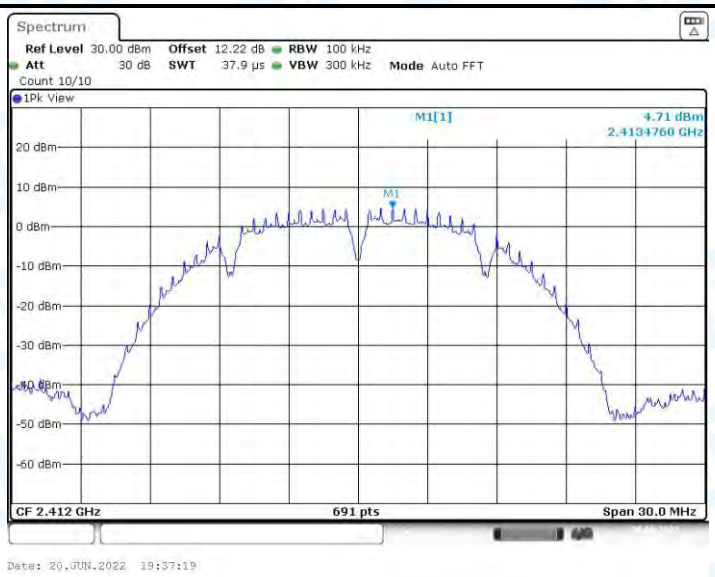
11B_Ant1_2412_0~Reference



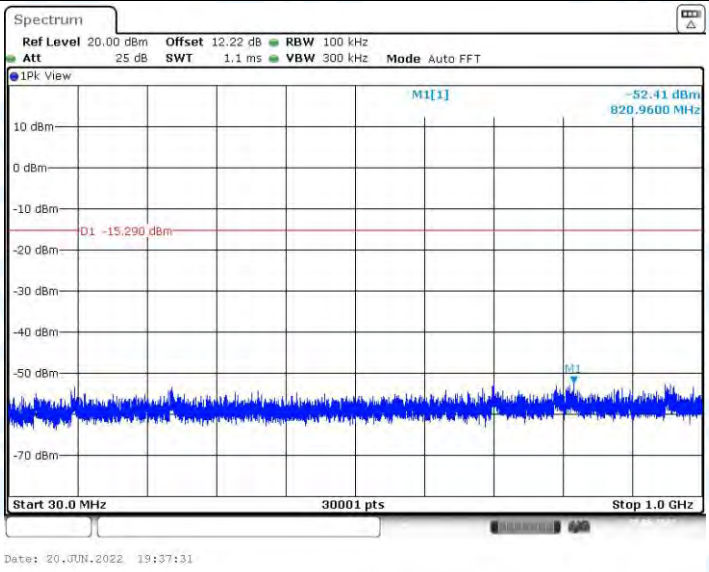
11B_Ant1_2412_30~1000



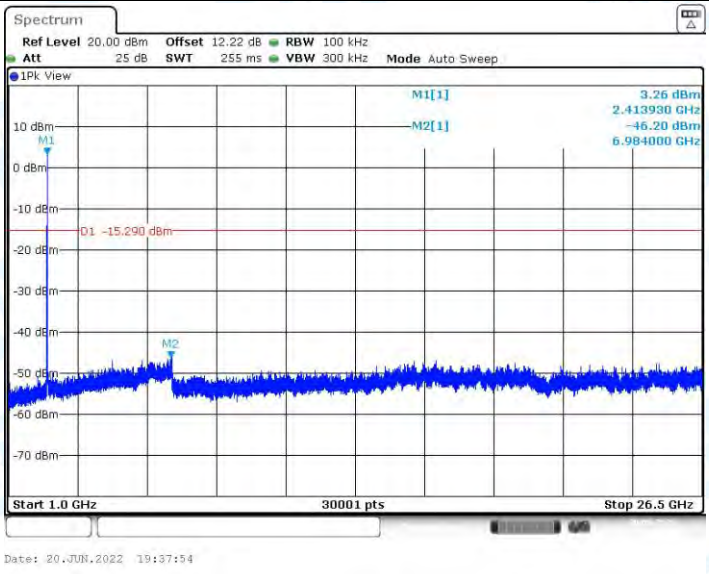
11B_Ant1_2412_1000~26500



11B_Ant2_2412_0~Reference



11B_Ant2_2412_30~1000



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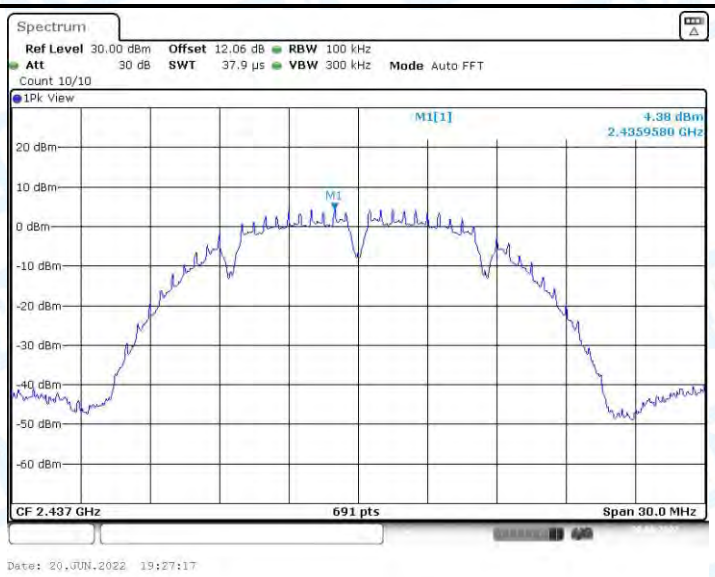

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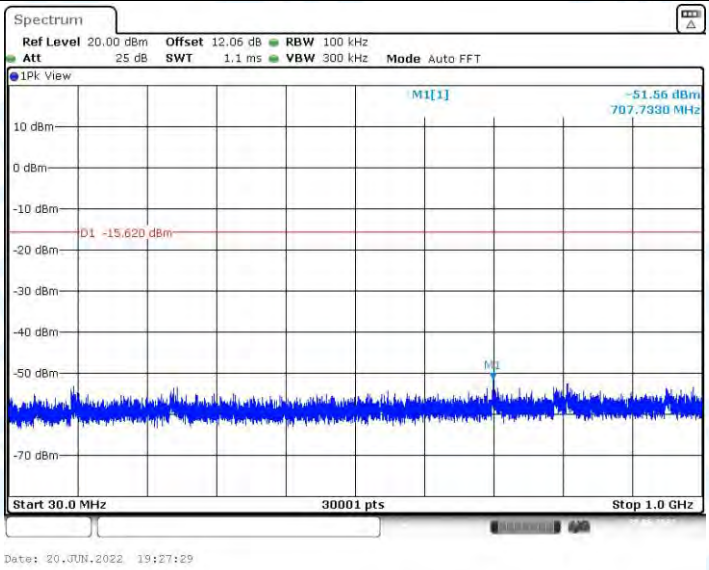
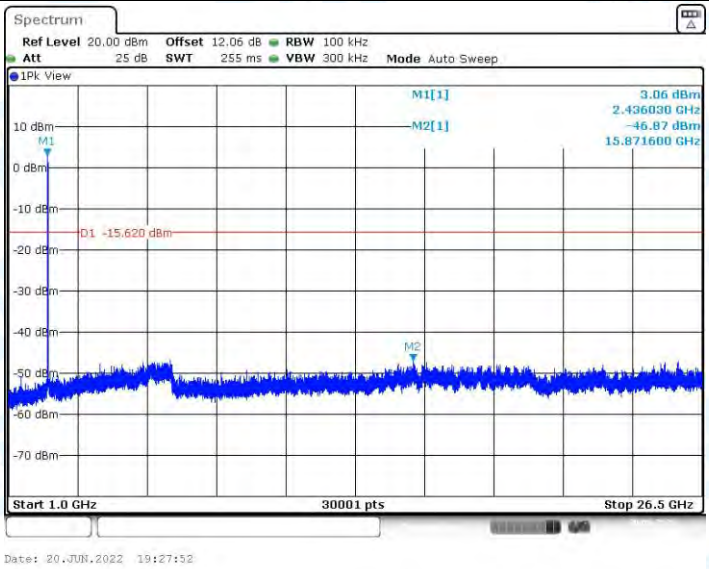
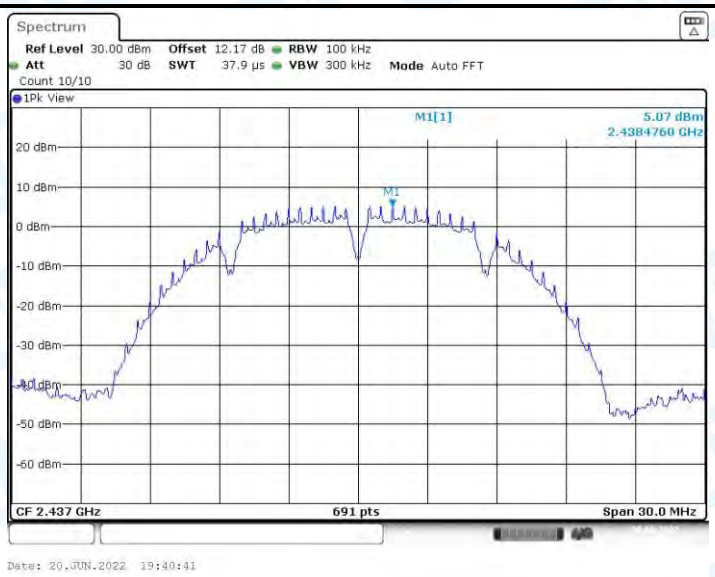


11B_Ant1_2437_30~1000



11B_Ant1_2437_1000~26500



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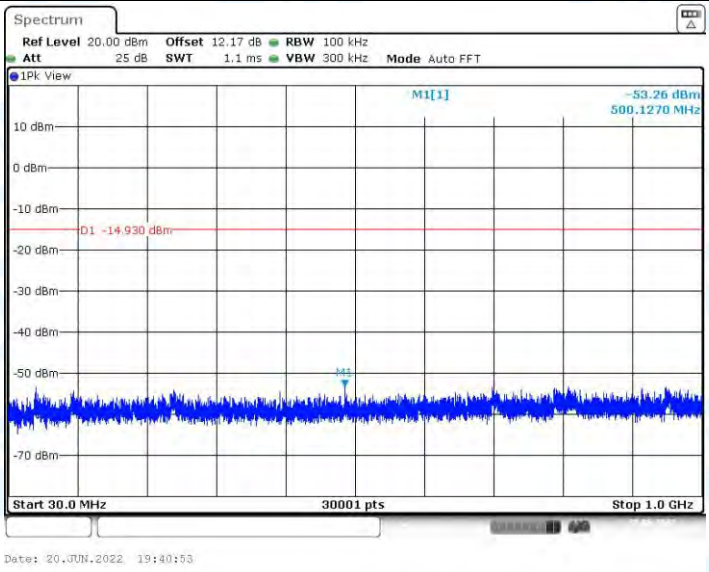

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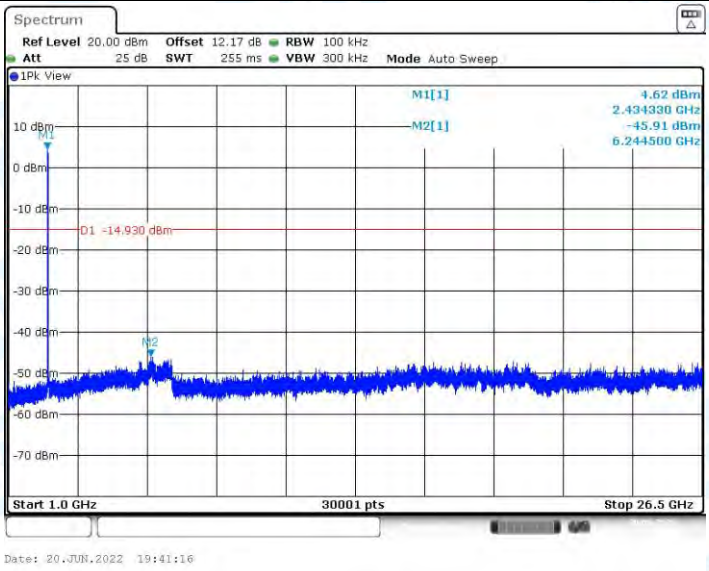

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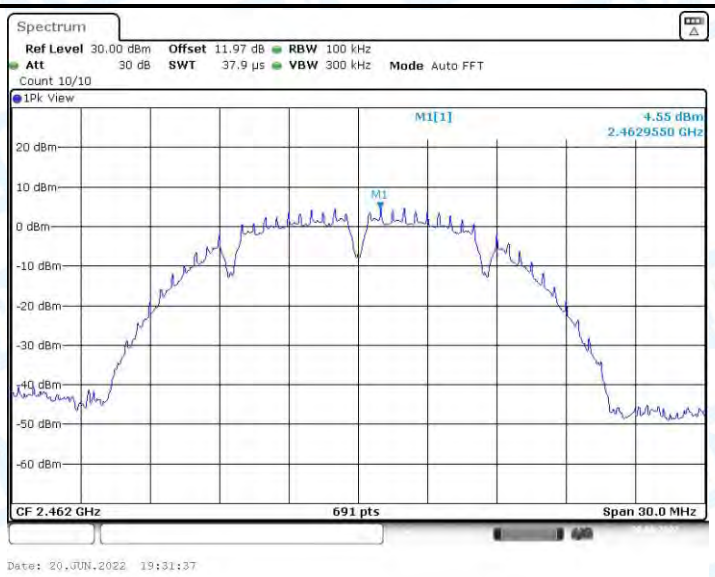

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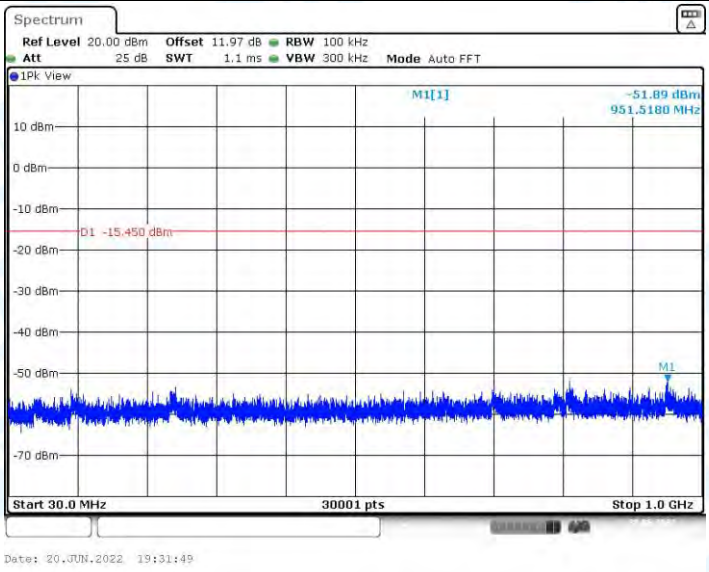

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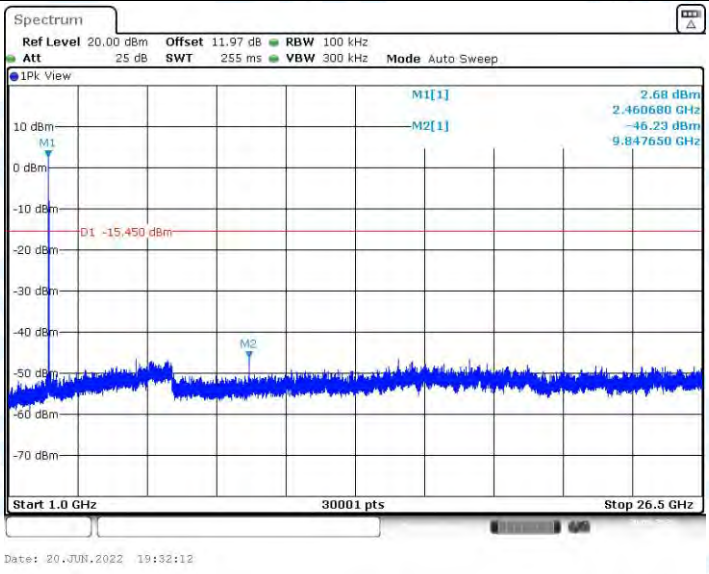
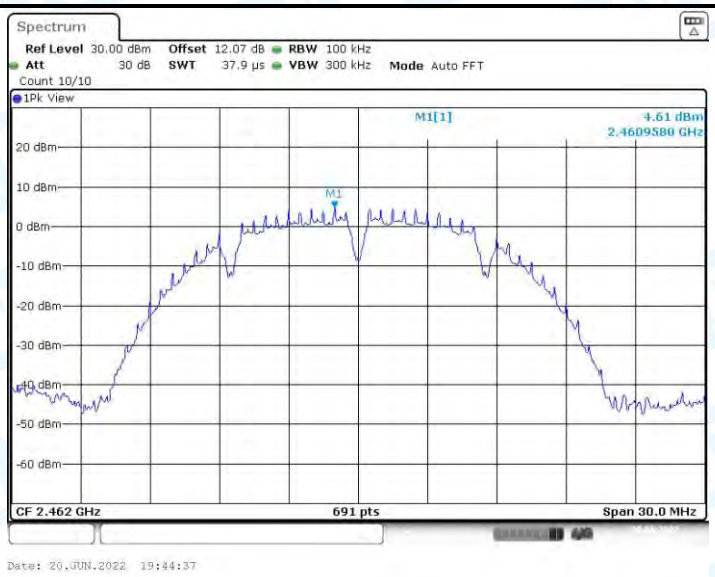


11B_Ant1_2462_1000~26500



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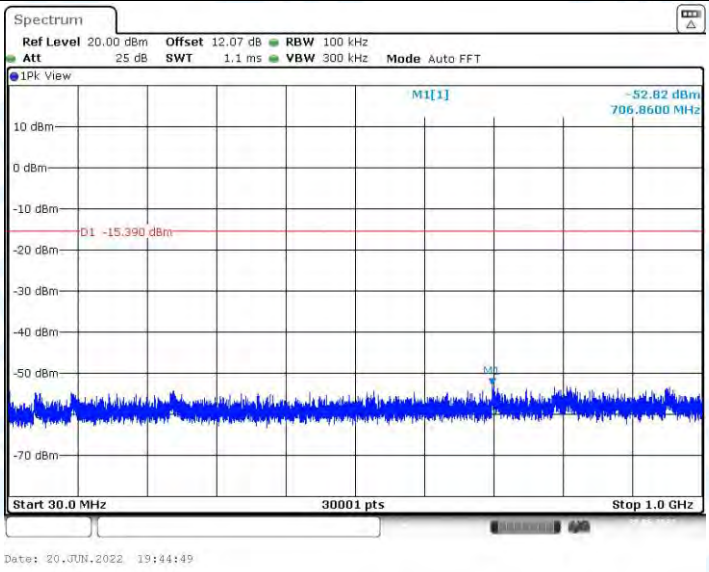

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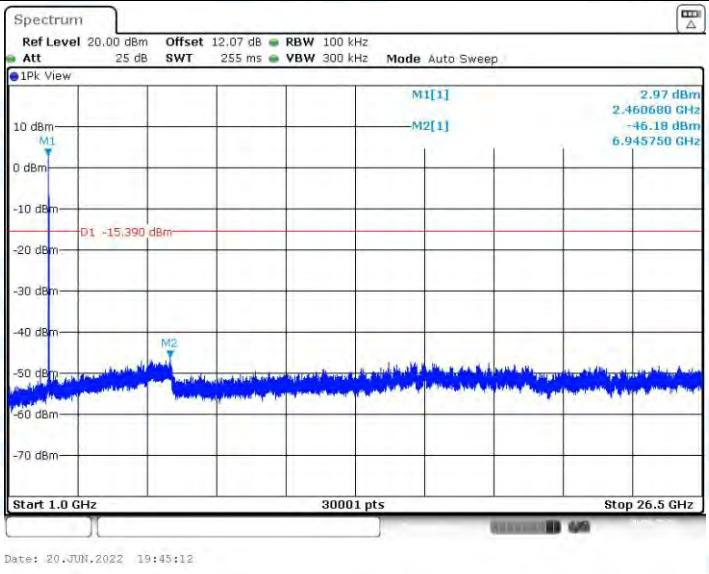
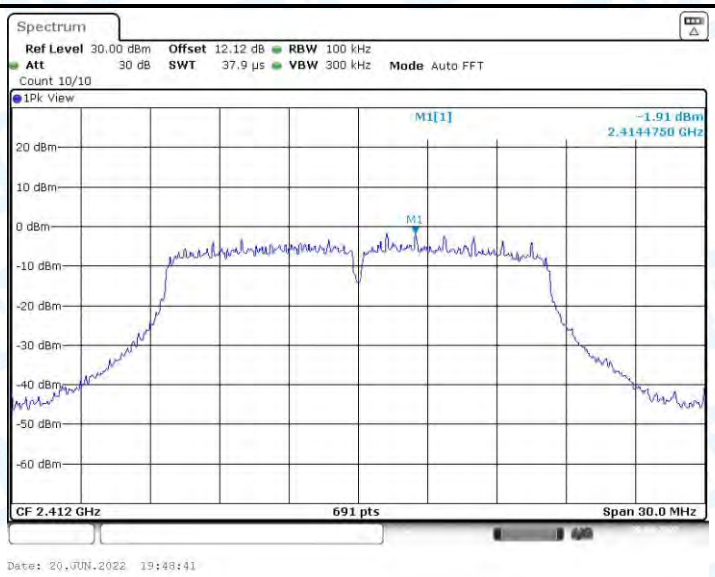
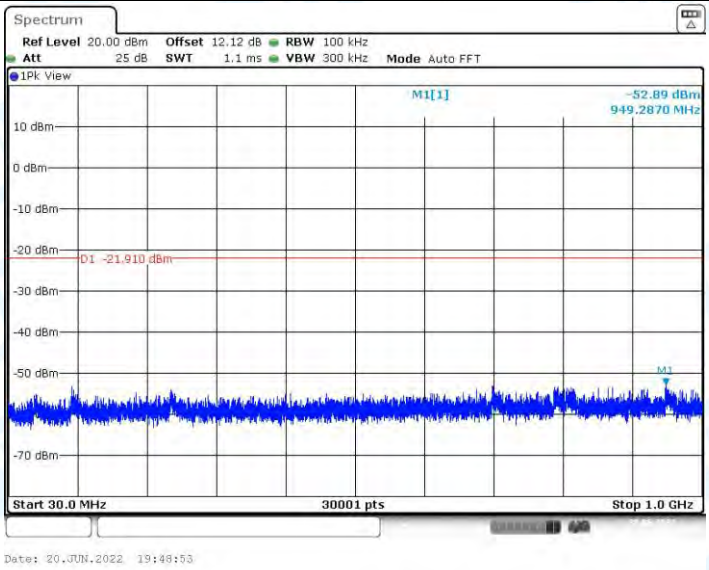


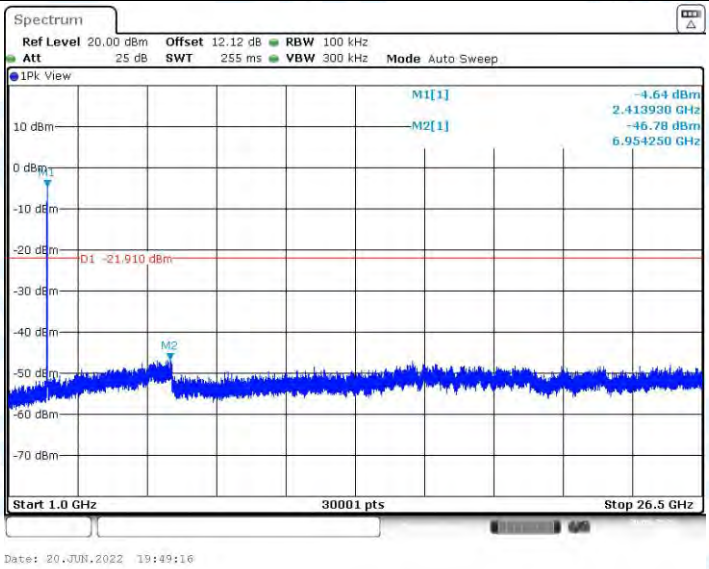
11B_Ant2_2462_1000~26500



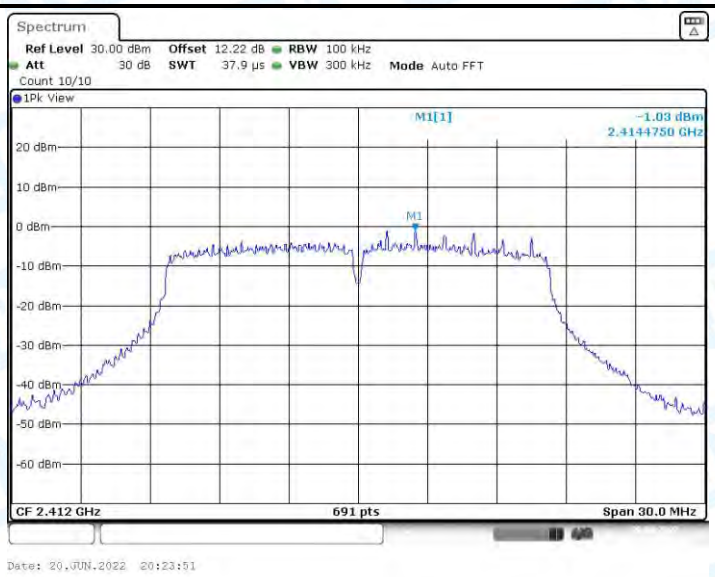
11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000



11G_Ant1_2412_1000~26500



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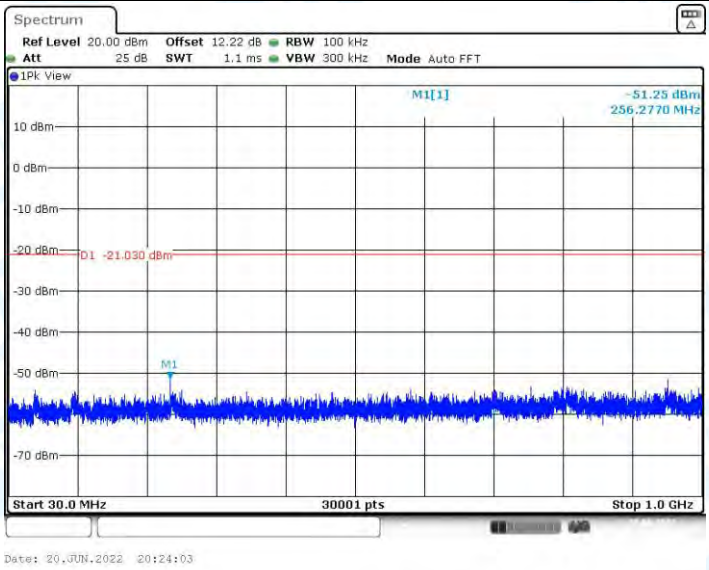

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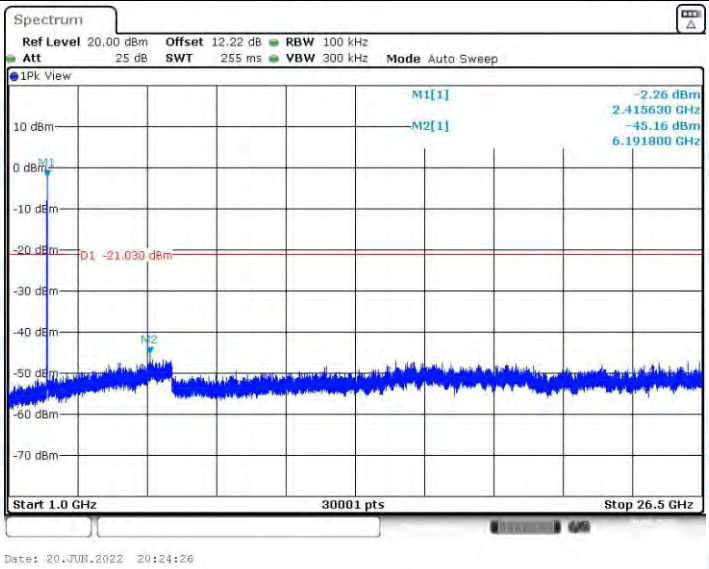
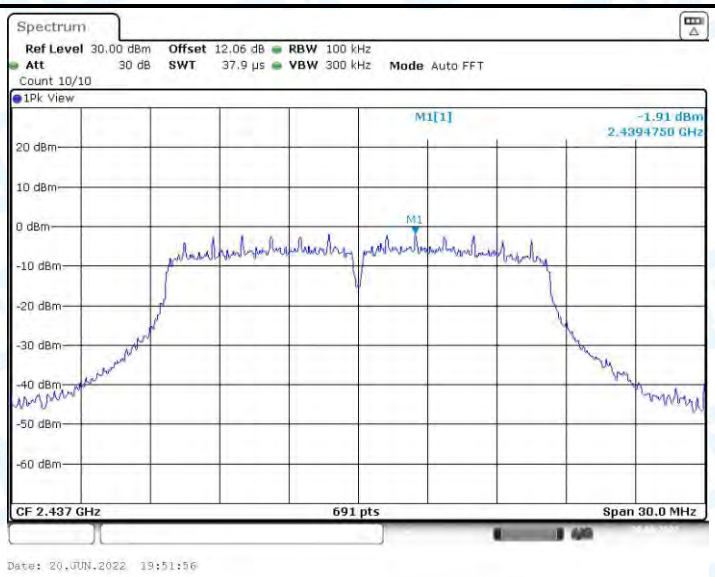


11G_Ant2_2412_1000~26500



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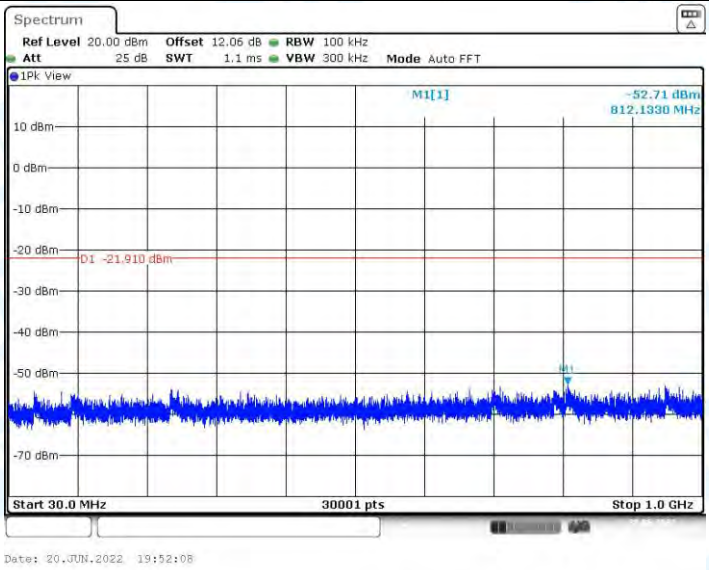
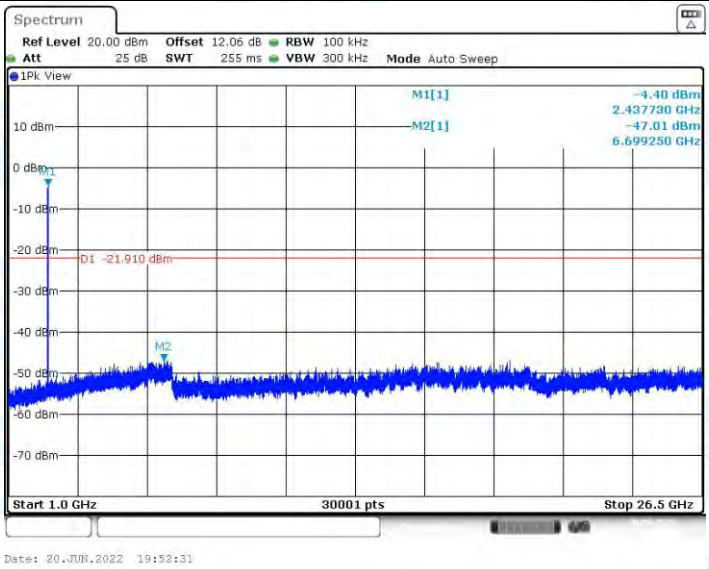
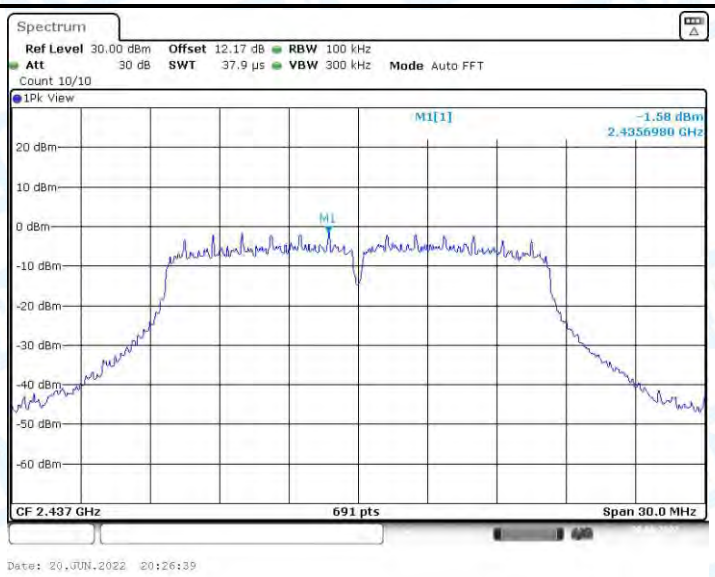


11G_Ant1_2437_30~1000



11G_Ant1_2437_1000~26500



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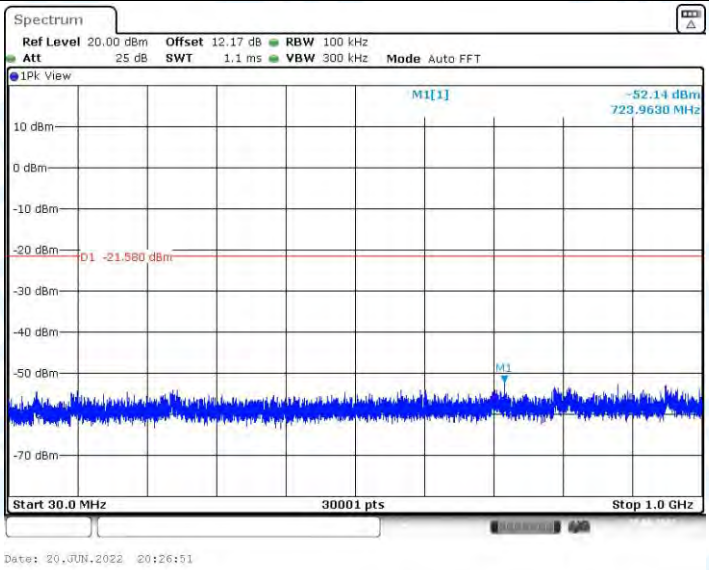
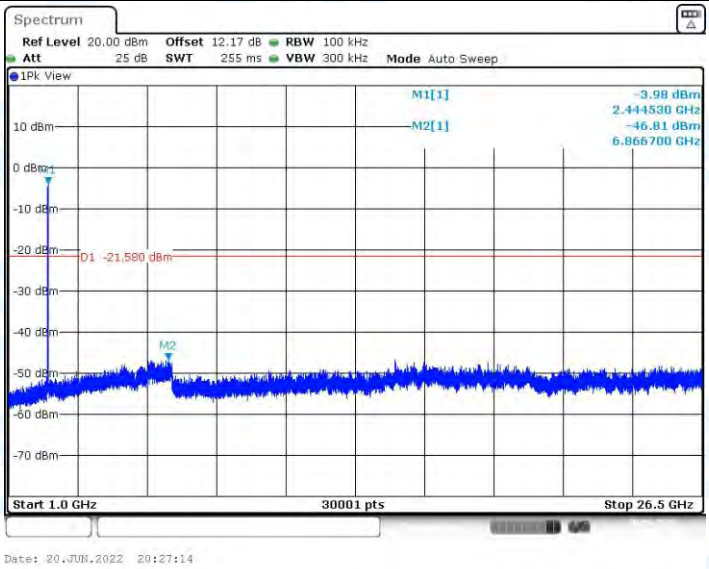
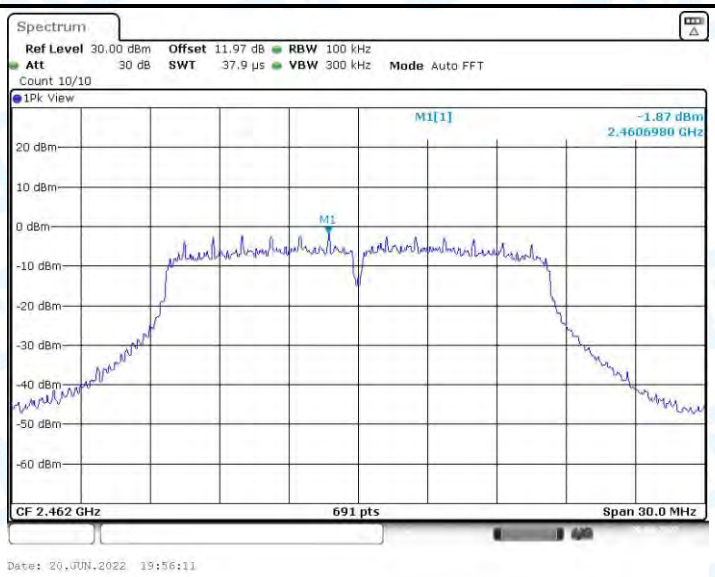


11G_Ant2_2437_30~1000



11G_Ant2_2437_1000~26500



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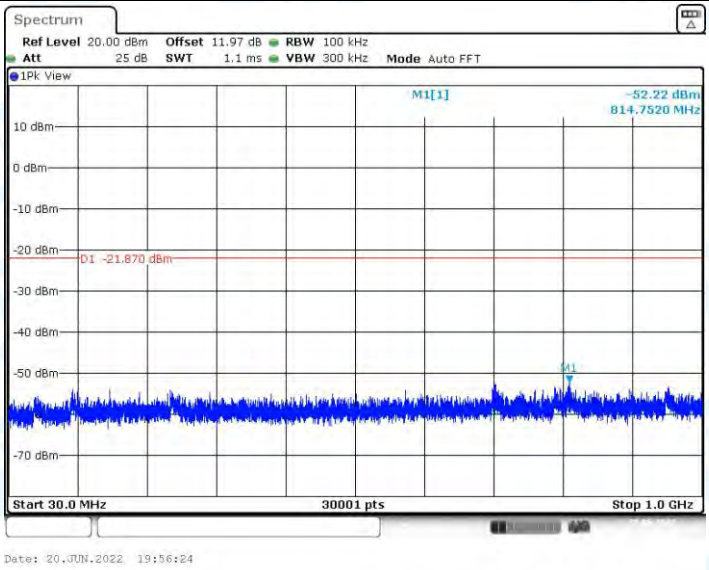
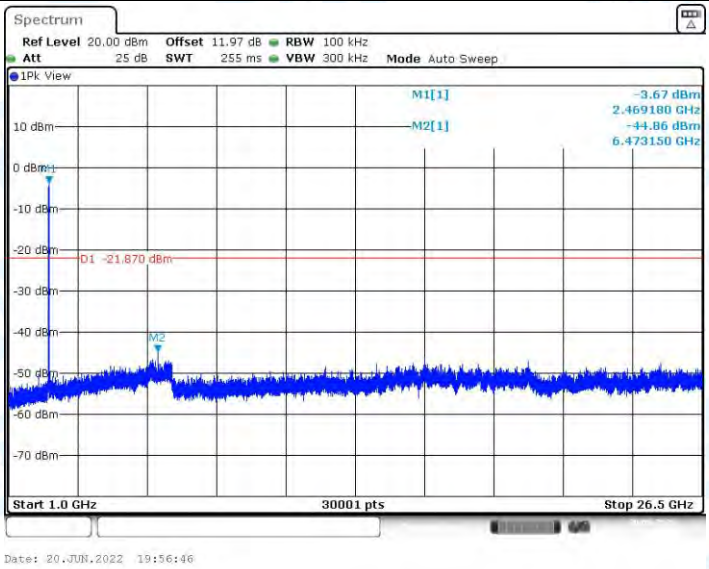
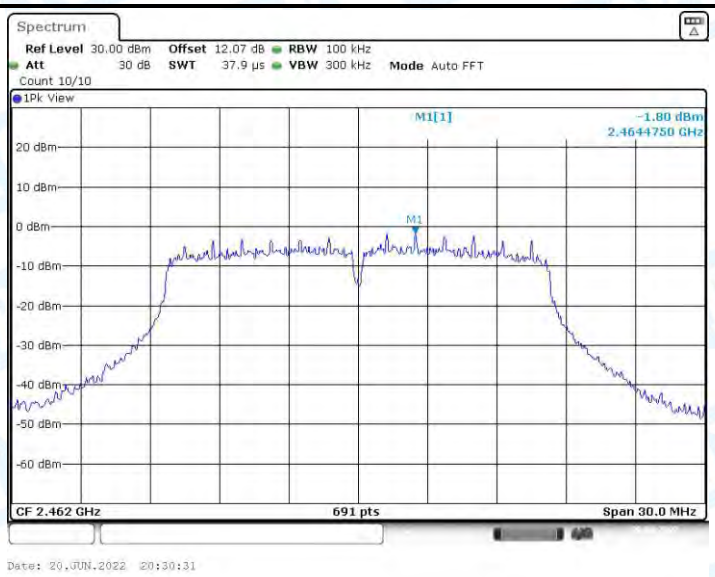


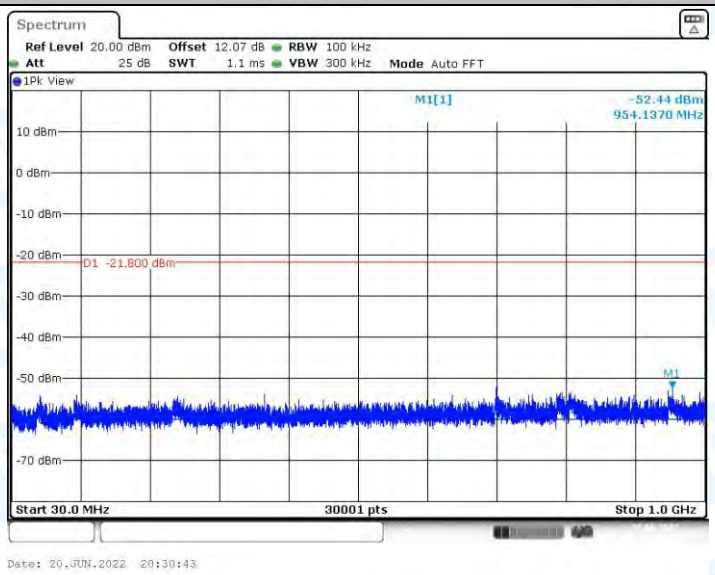
11G_Ant1_2462_30~1000



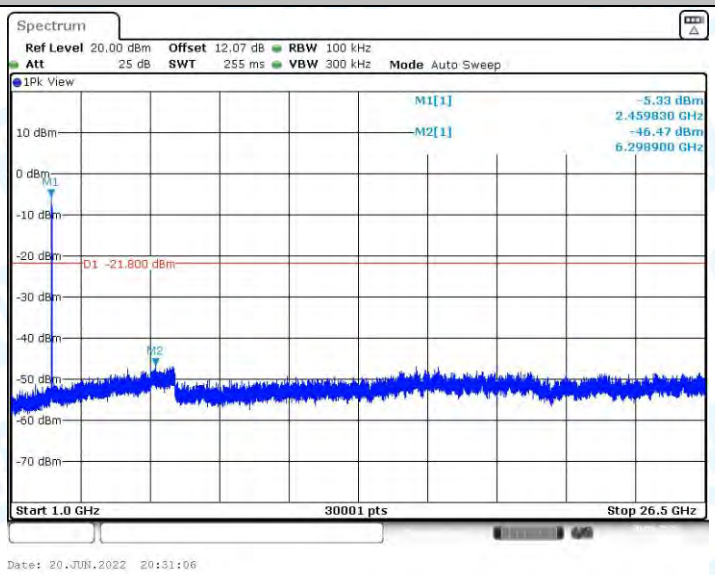
11G_Ant1_2462_1000~26500



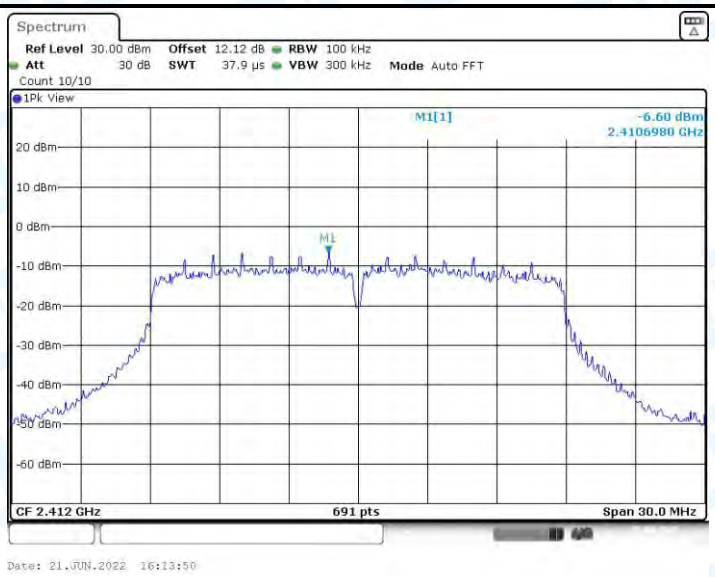
11G_Ant2_2462_0~Reference



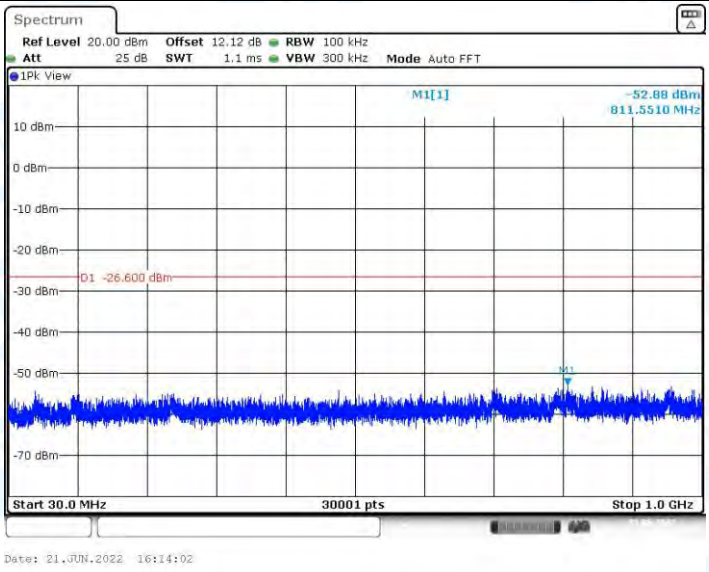
11G_Ant2_2462_30~1000



11G_Ant2_2462_1000~26500



11N20MIMO_Ant1_2412_0~Reference



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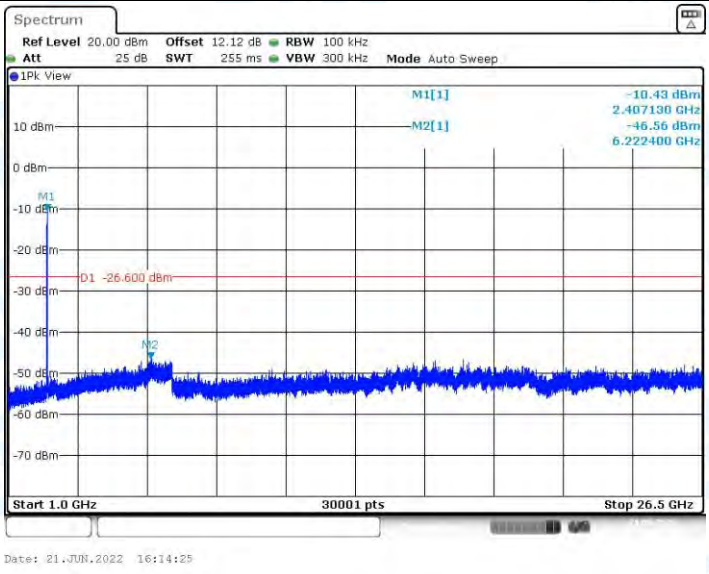

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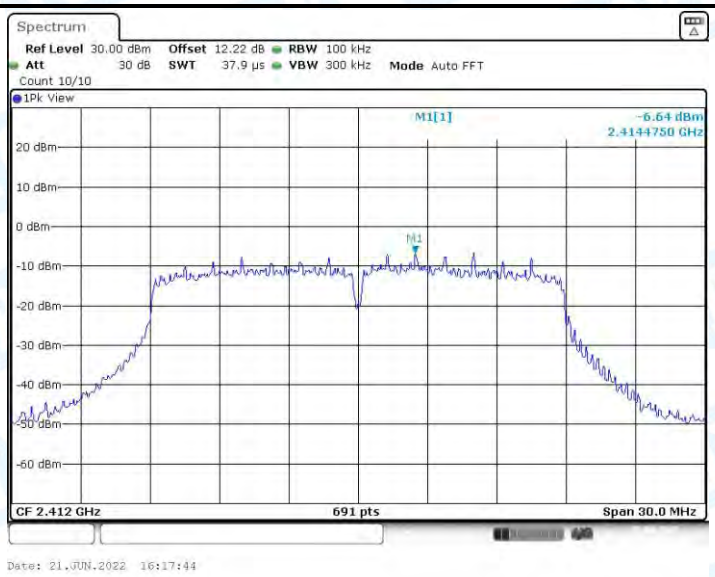

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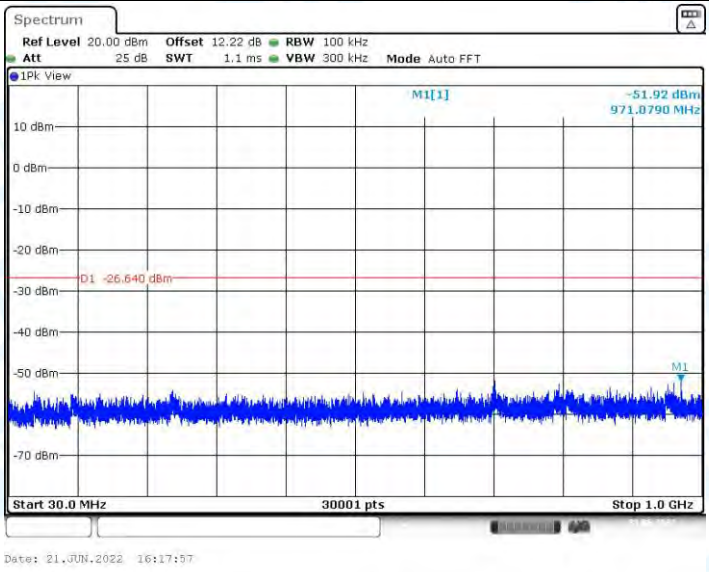

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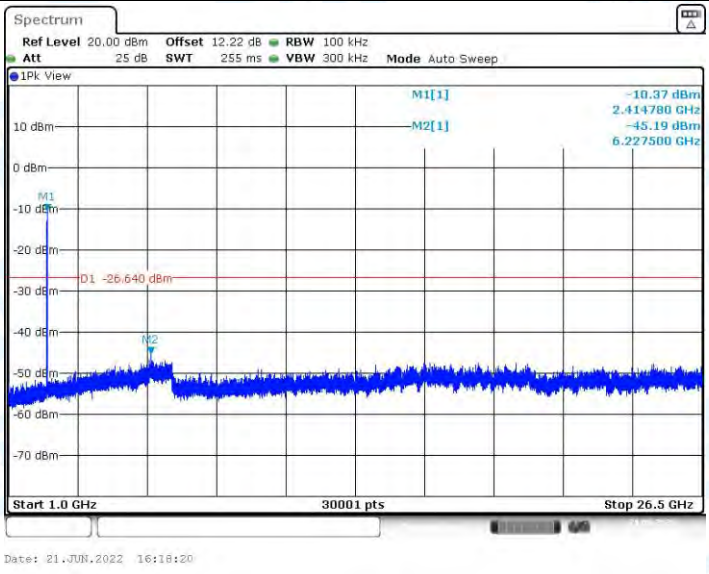
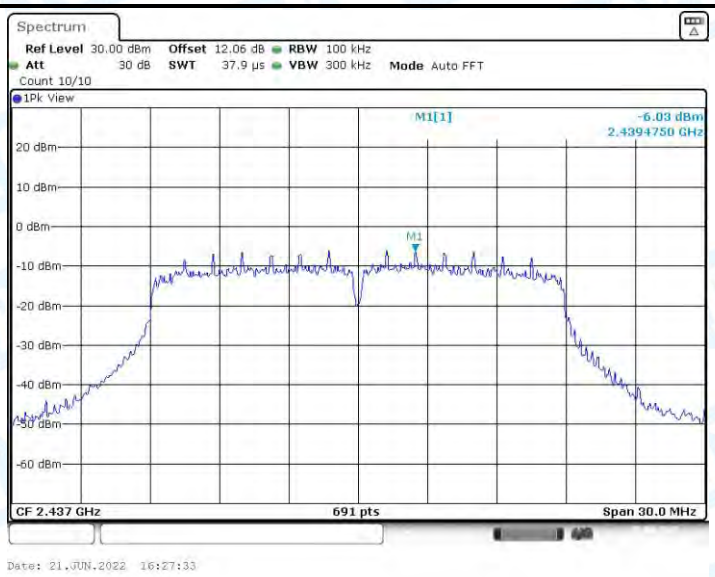
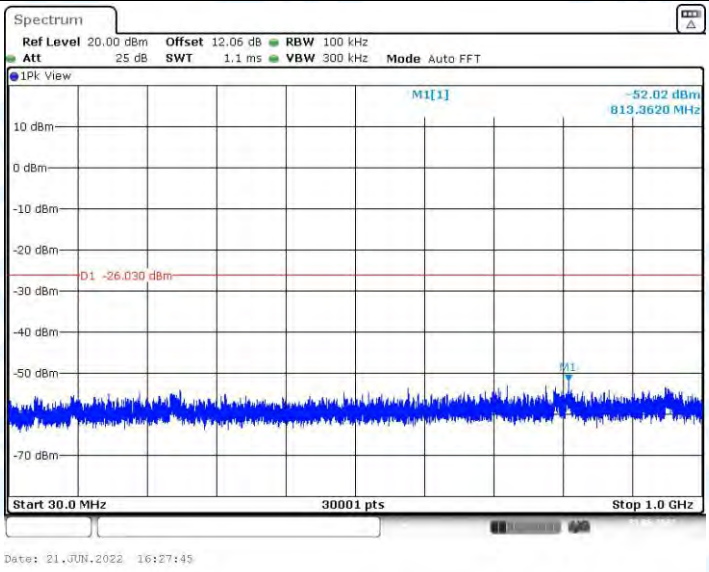


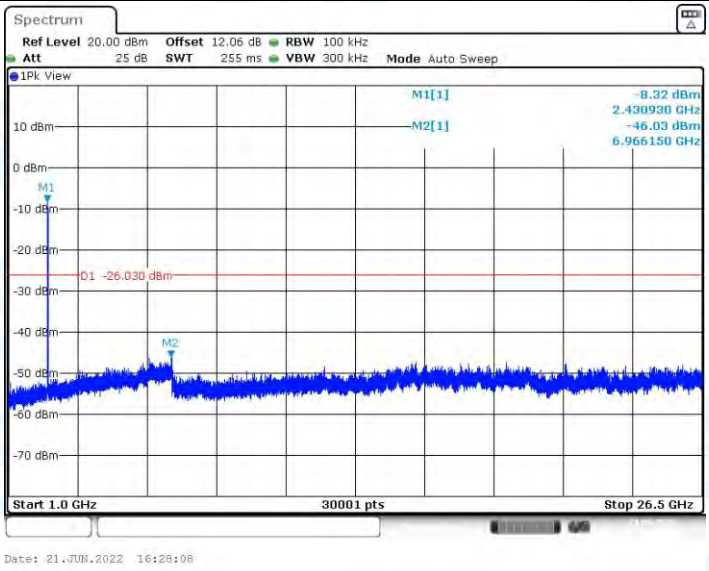
11N20MIMO_Ant2_2412_1000~26500



11N20MIMO_Ant1_2437_0~Reference



11N20MIMO_Ant1_2437_30~1000



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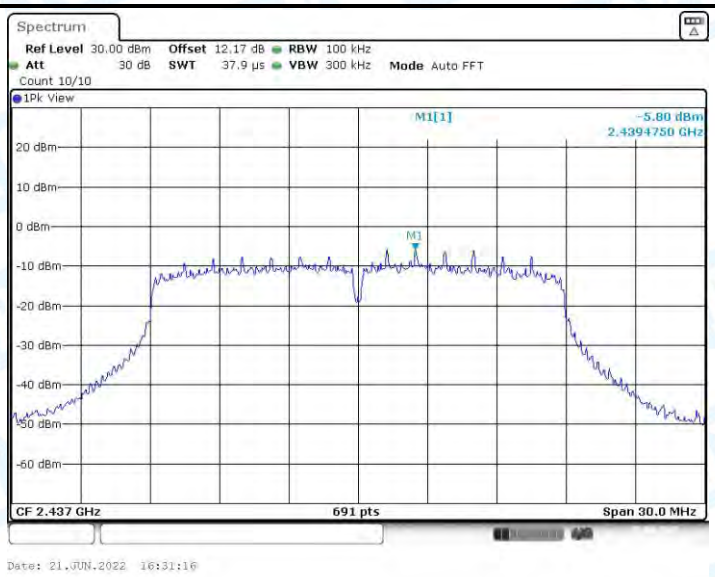

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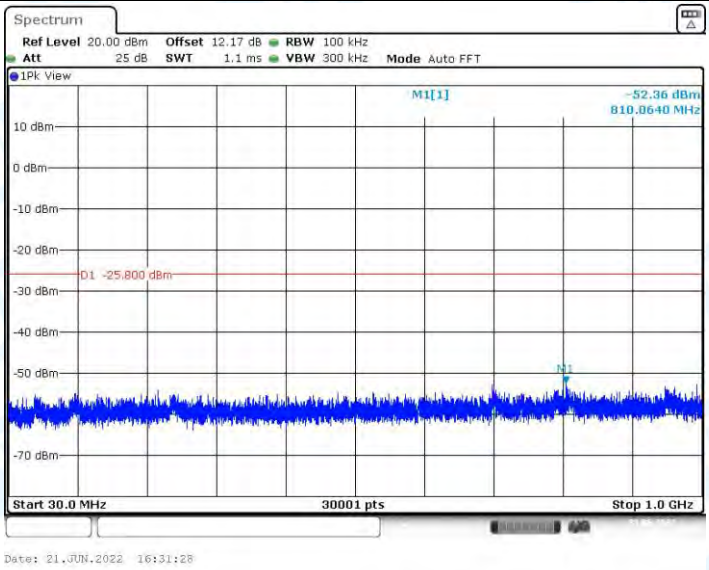
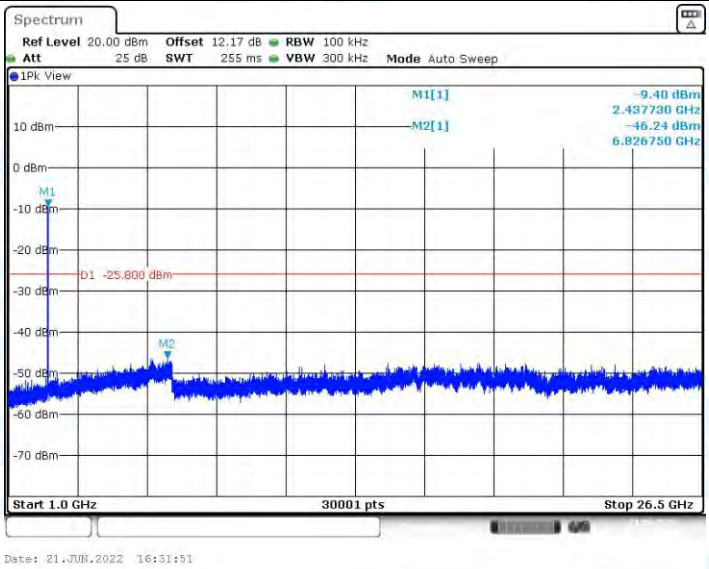


11N20MIMO_Ant2_2437_30~1000



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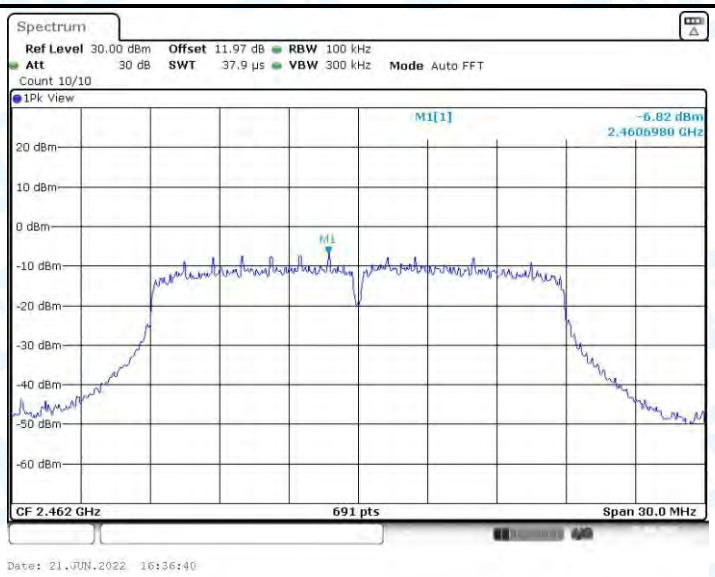
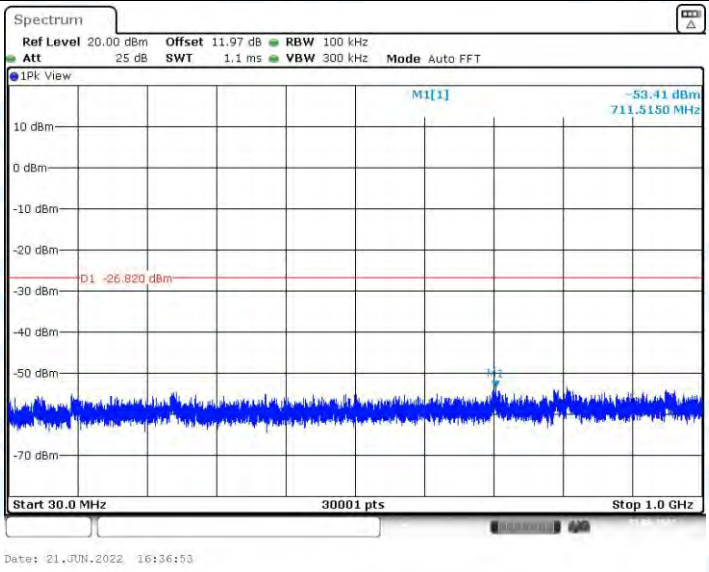
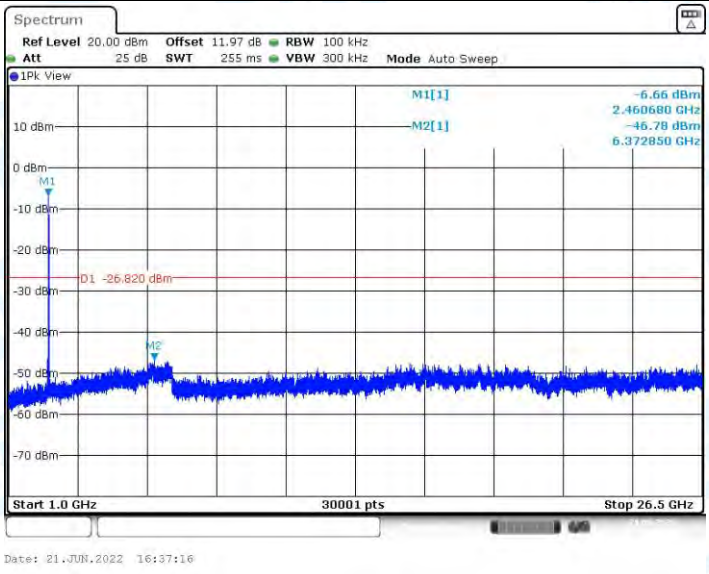


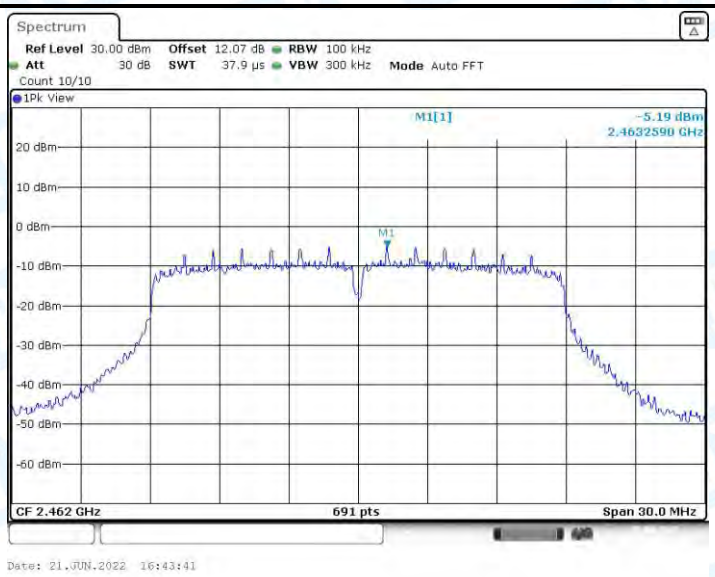
11N20MIMO_Ant1_2462_0~Reference



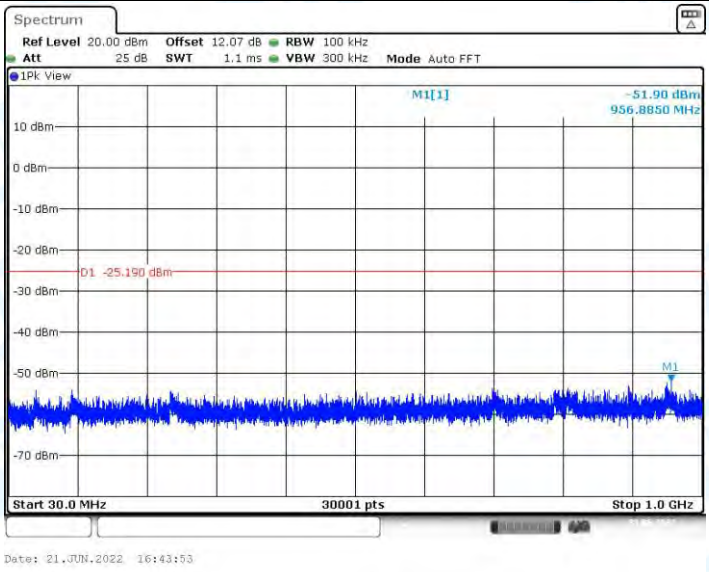
11N20MIMO_Ant1_2462_30~1000



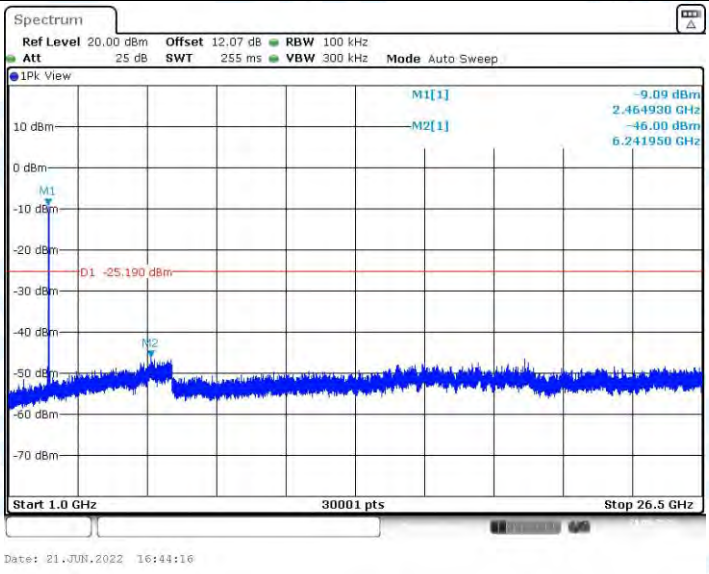
11N20MIMO_Ant1_2462_1000~26500



11N20MIMO_Ant2_2462_0~Reference



11N20MIMO_Ant2_2462_30~1000



11N20MIMO_Ant2_2462_1000~26500