

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

General Description of EUT	
<b>Product Name:</b>	AC2000 Dual Band WiFi GPON Terminal Dual Band WiFi GPON Terminal
<b>Test Model:</b>	NP2035G
<b>Sample ID:</b>	HC-C-202305-0139-01-02
Environmental Conditions	
<b>Temperature:</b>	23.5°C
<b>Relative Humidity:</b>	48%
<b>Test Voltage:</b>	DC 12V
<b>Test Engineer:</b>	Haiting Zhou
Note: For a more detailed features description, please refer to the report TBR-C-202305-0139-3.	

## Contents

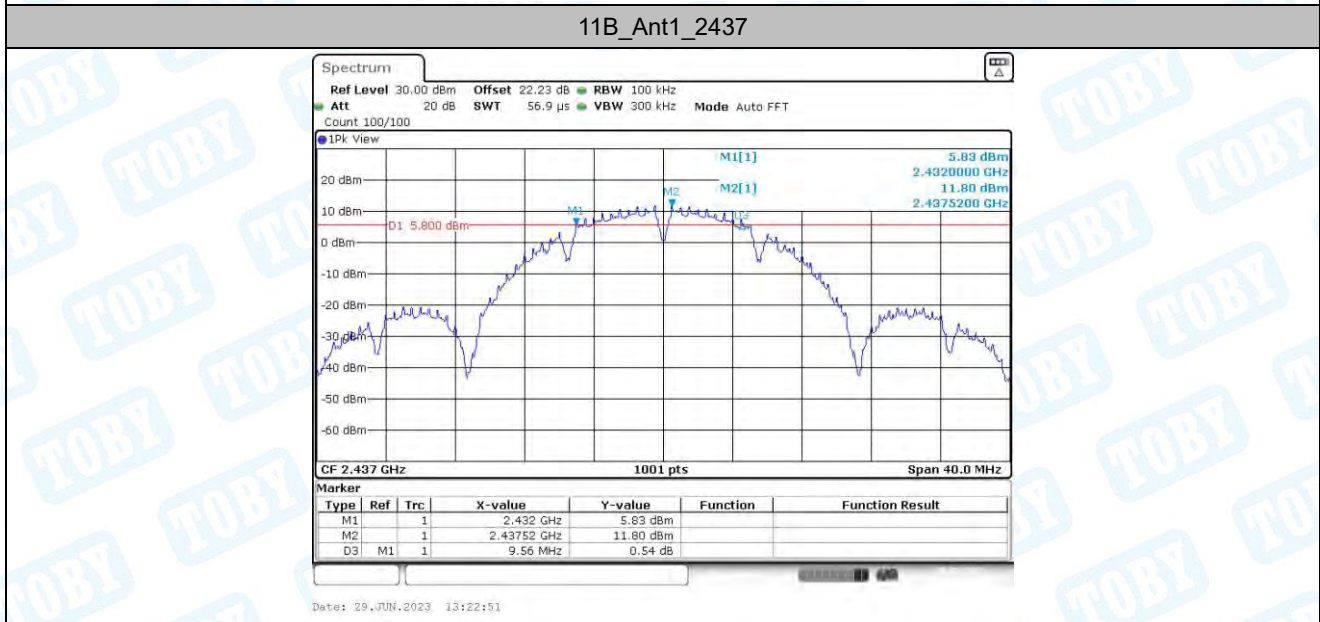
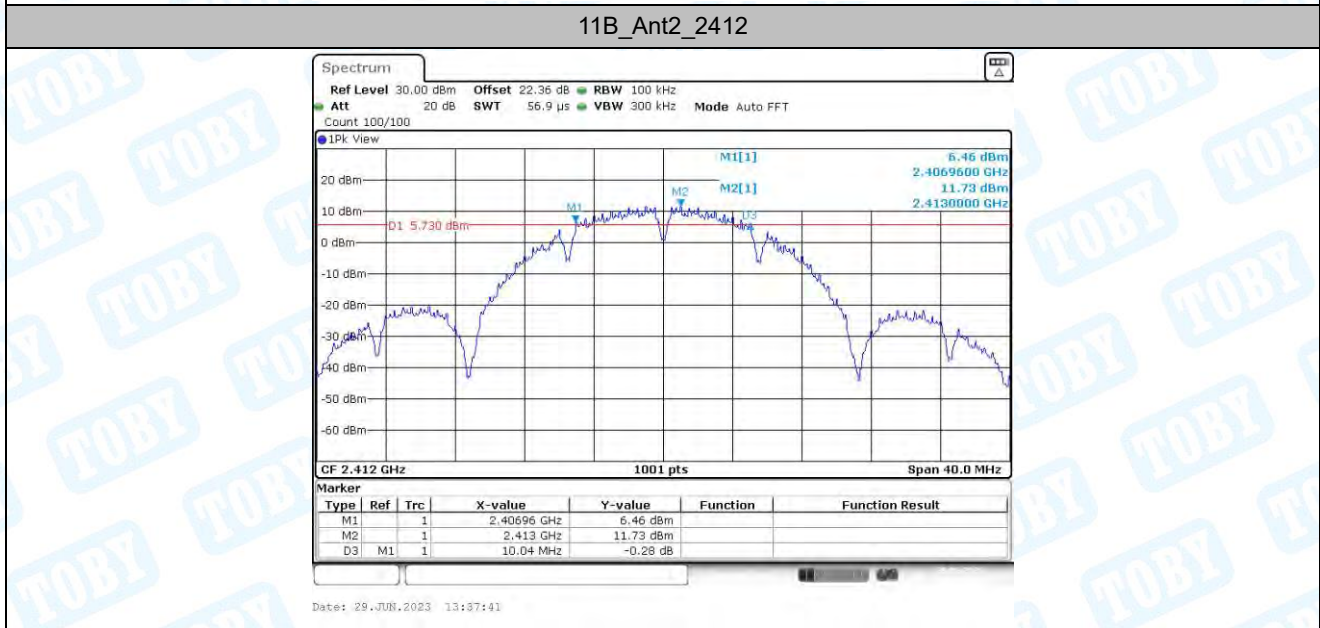
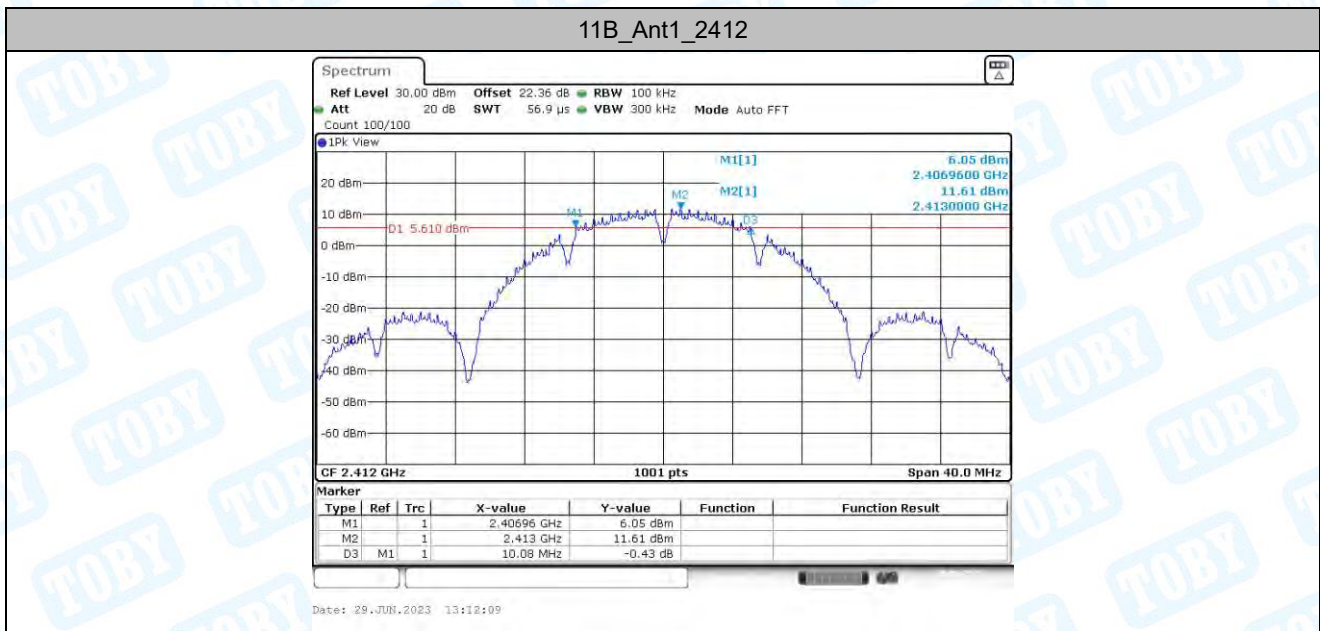
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# 1. DTS Bandwidth

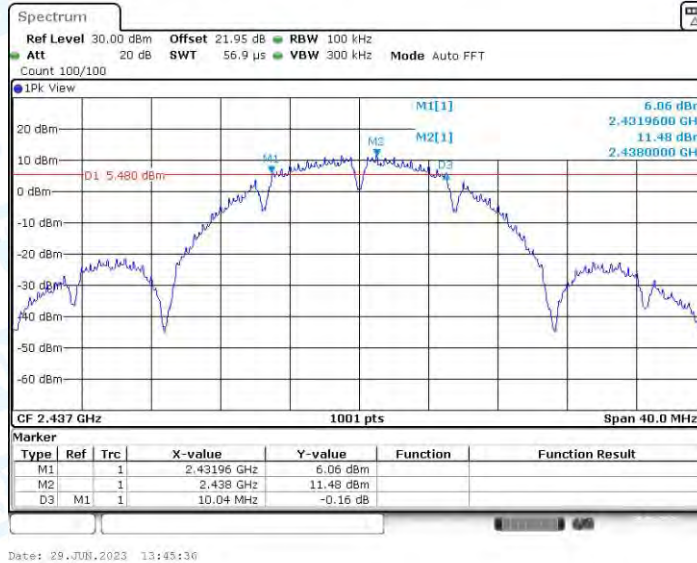
## 1.1. Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B-SISO	Ant1	2412	10.08	2406.96	2417.04	0.5	PASS
	Ant2	2412	10.04	2406.96	2417.00	0.5	PASS
	Ant1	2437	9.56	2432.00	2441.56	0.5	PASS
	Ant2	2437	10.04	2431.96	2442.00	0.5	PASS
	Ant1	2462	10.08	2456.96	2467.04	0.5	PASS
	Ant2	2462	10.04	2456.96	2467.00	0.5	PASS
11G-SISO	Ant1	2412	15.08	2404.48	2419.56	0.5	PASS
	Ant2	2412	15.12	2404.44	2419.56	0.5	PASS
	Ant1	2437	15.76	2429.12	2444.88	0.5	PASS
	Ant2	2437	15.08	2429.44	2444.52	0.5	PASS
	Ant1	2462	16.32	2453.84	2470.16	0.5	PASS
	Ant2	2462	16.32	2453.84	2470.16	0.5	PASS
11B-CDD	Ant1	2412	10.04	2406.96	2417.00	0.5	PASS
	Ant2	2412	10.04	2406.96	2417.00	0.5	PASS
	Ant1	2437	10.04	2431.96	2442.00	0.5	PASS
	Ant2	2437	10.04	2431.96	2442.00	0.5	PASS
	Ant1	2462	9.52	2457.24	2466.76	0.5	PASS
	Ant2	2462	10.04	2456.96	2467.00	0.5	PASS
11G-CDD	Ant1	2412	16.32	2403.84	2420.16	0.5	PASS
	Ant2	2412	15.12	2404.44	2419.56	0.5	PASS
	Ant1	2437	15.12	2429.44	2444.56	0.5	PASS
	Ant2	2437	16.32	2428.84	2445.16	0.5	PASS
	Ant1	2462	15.12	2454.44	2469.56	0.5	PASS
	Ant2	2462	15.12	2454.44	2469.56	0.5	PASS
11N20-CDD	Ant1	2412	15.48	2404.08	2419.56	0.5	PASS
	Ant2	2412	16.92	2403.24	2420.16	0.5	PASS
	Ant1	2437	12.64	2430.68	2443.32	0.5	PASS
	Ant2	2437	15.12	2429.44	2444.56	0.5	PASS
	Ant1	2462	15.08	2454.44	2469.52	0.5	PASS
	Ant2	2462	16.16	2453.60	2469.76	0.5	PASS
11N40-CDD	Ant1	2422	27.52	2406.96	2434.48	0.5	PASS
	Ant2	2422	35.68	2403.84	2439.52	0.5	PASS
	Ant1	2437	35.12	2419.40	2454.52	0.5	PASS
	Ant2	2437	35.04	2419.48	2454.52	0.5	PASS
	Ant1	2452	26.96	2442.56	2469.52	0.5	PASS
	Ant2	2452	30.00	2434.48	2464.48	0.5	PASS

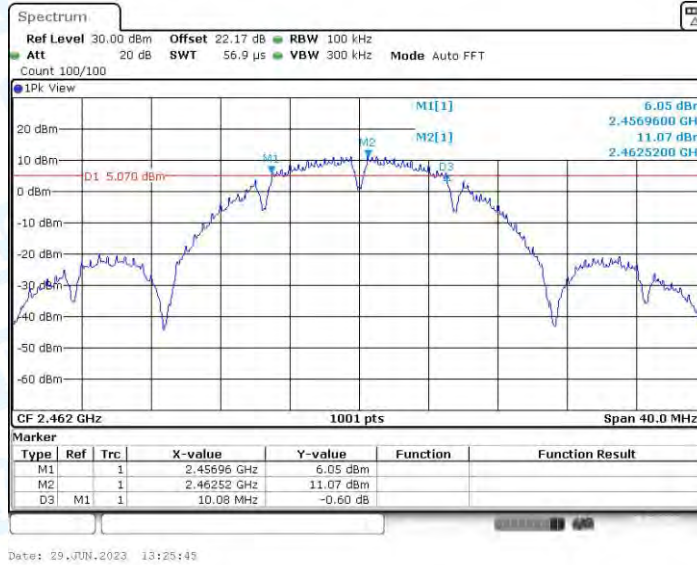
## 1.2. Test Graphs



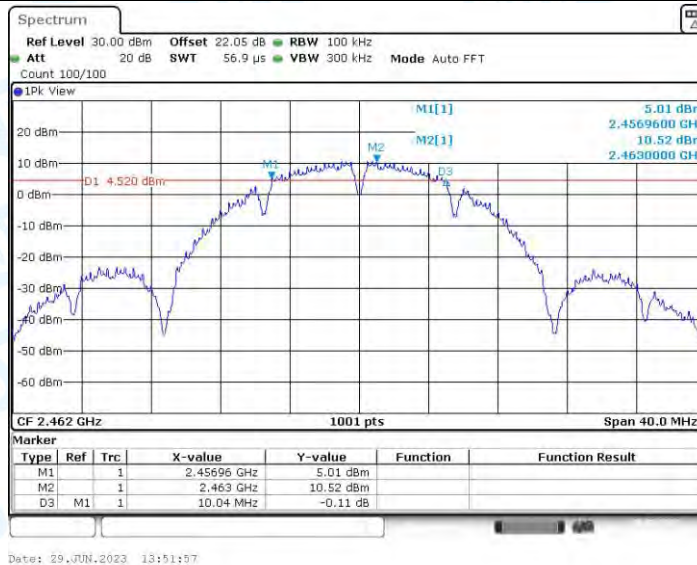
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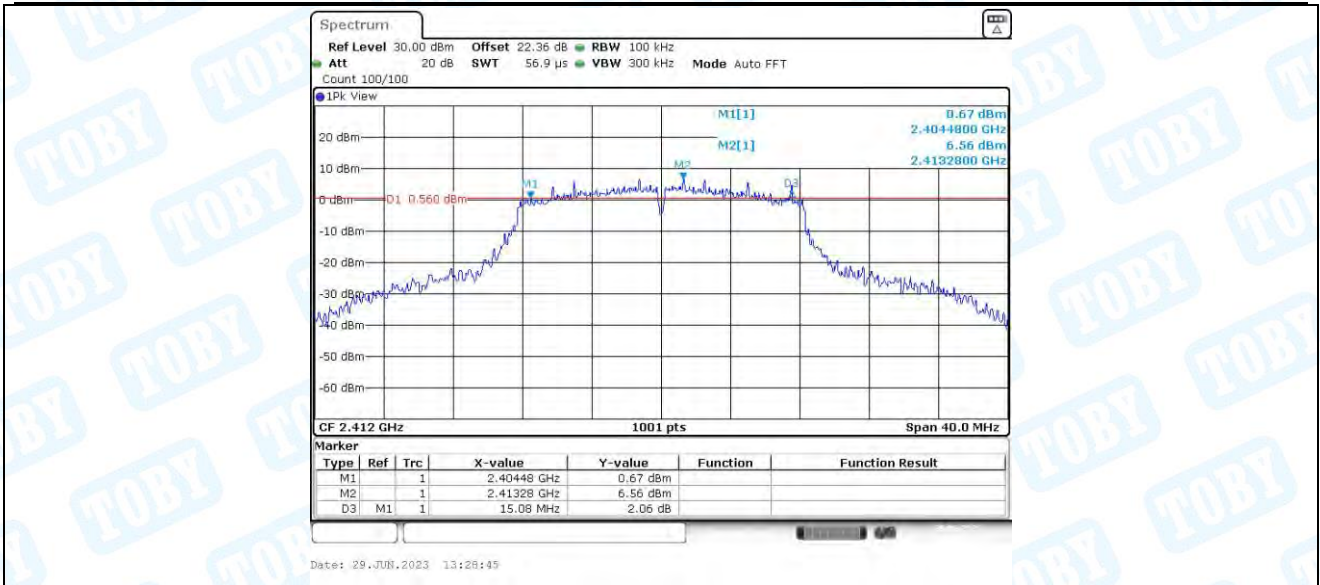
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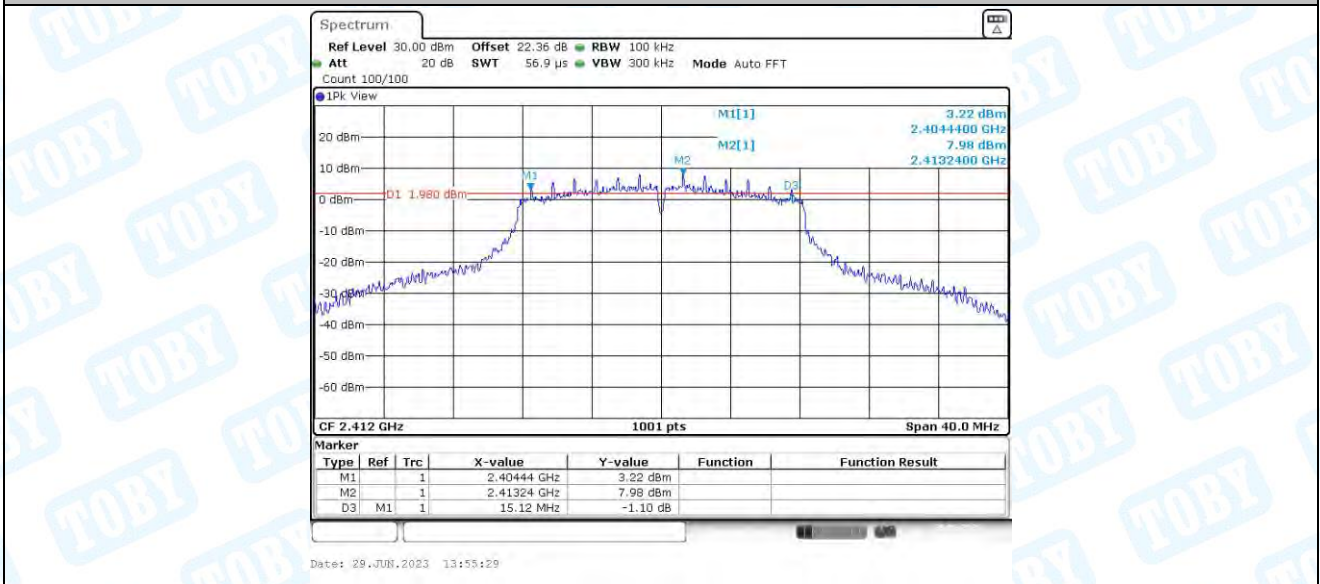
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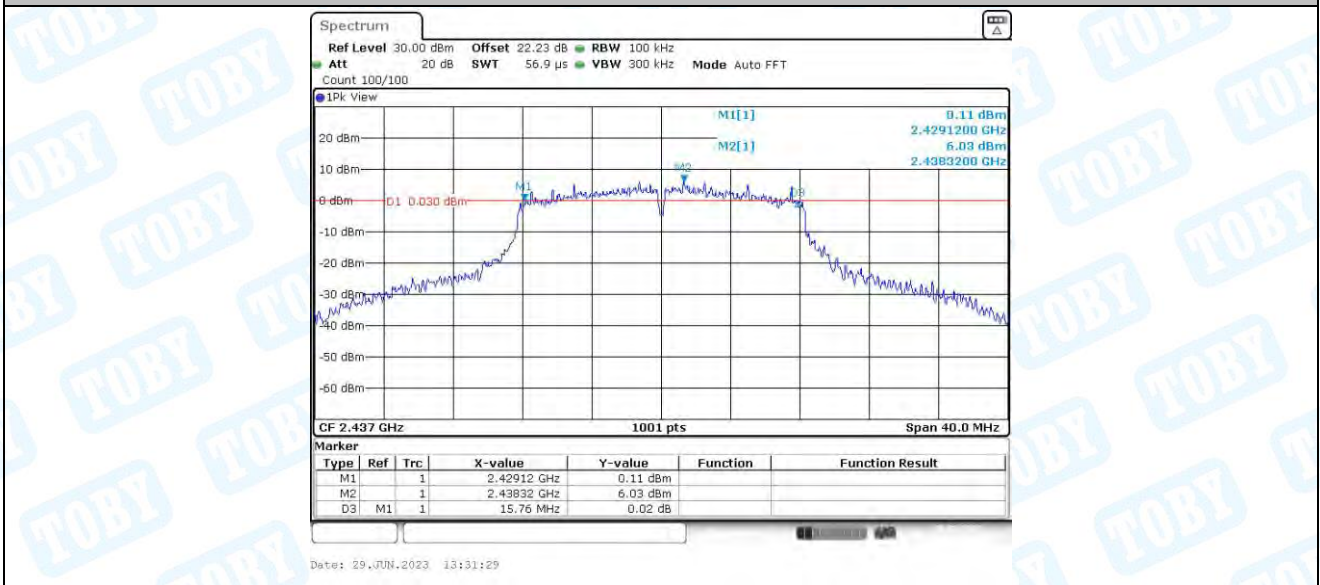
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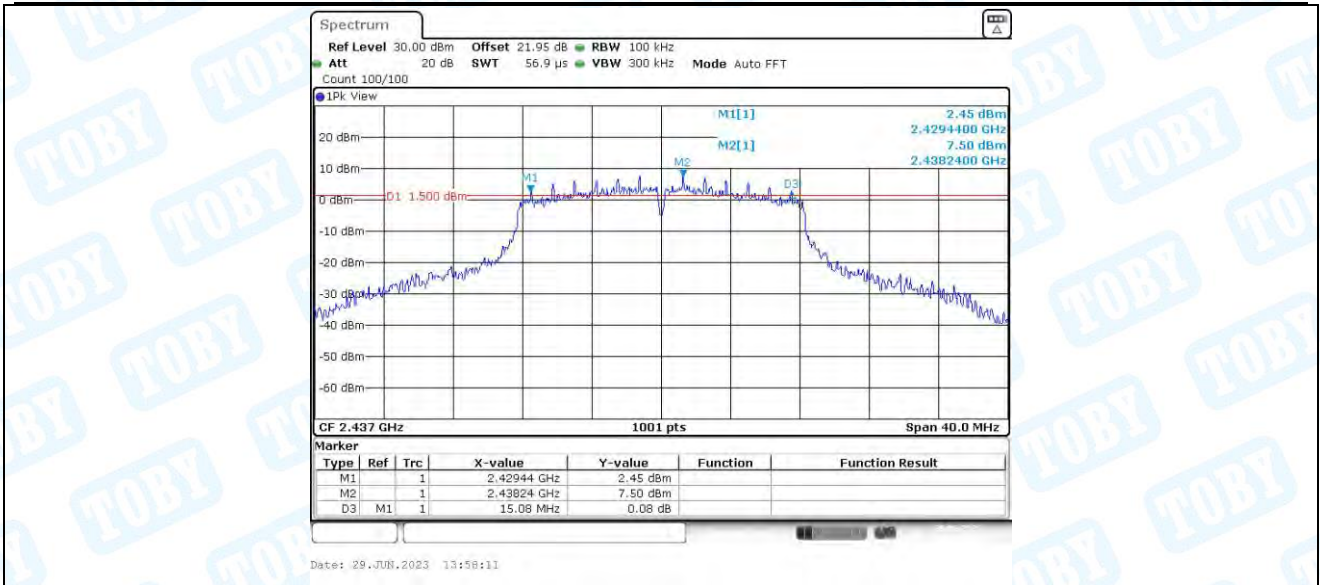
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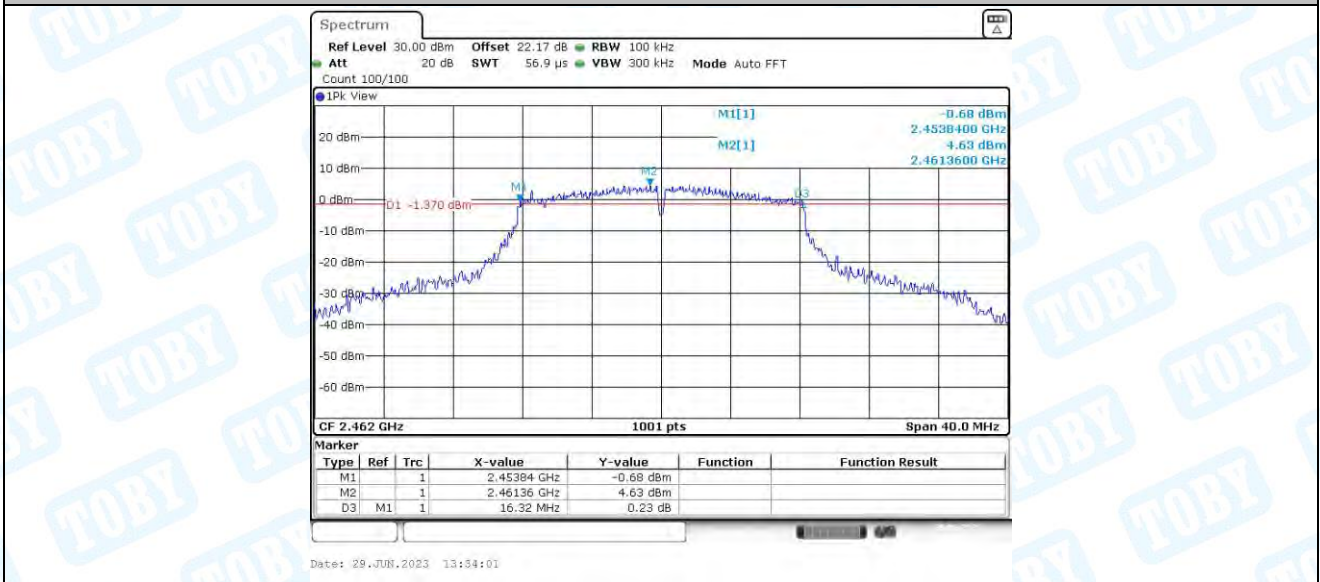
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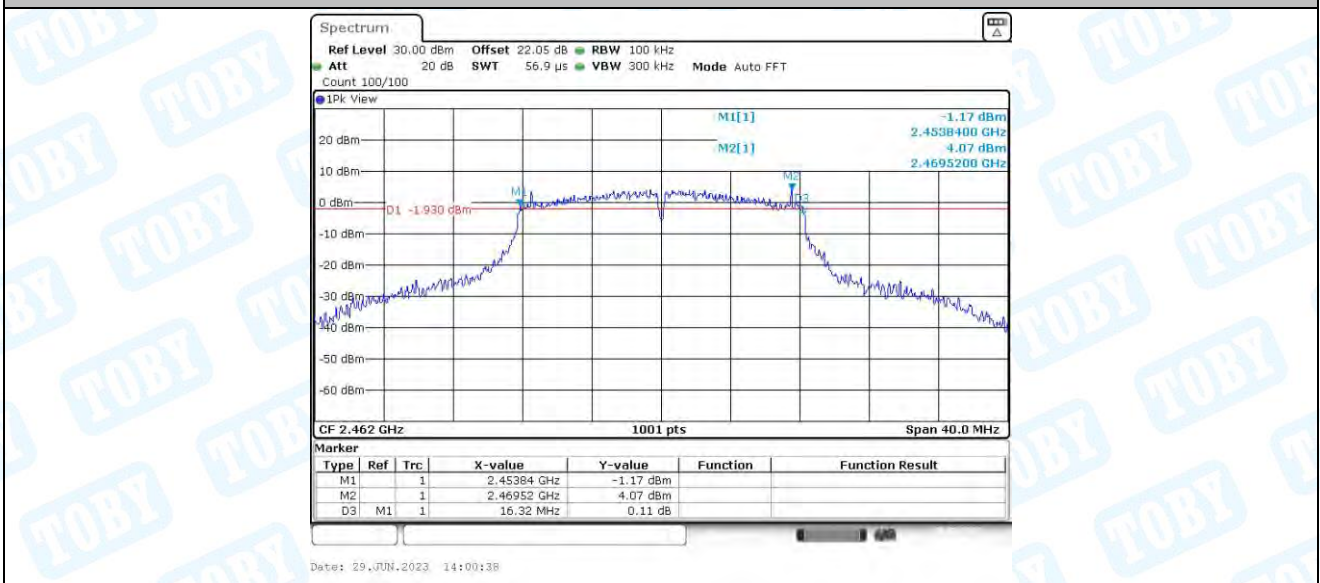
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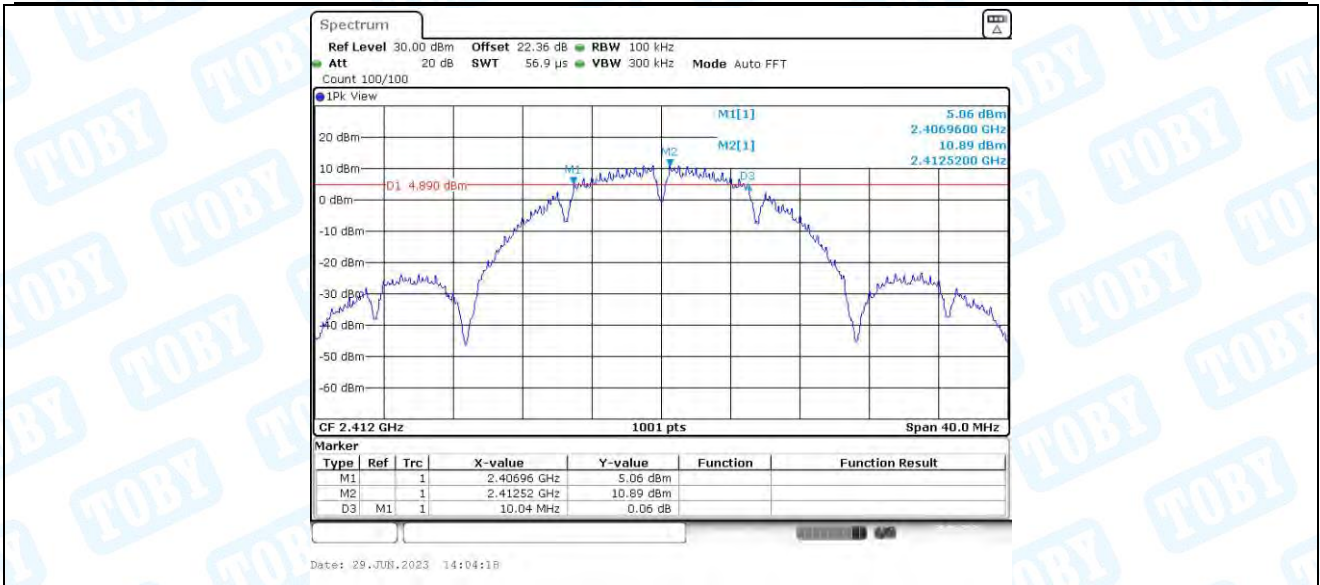
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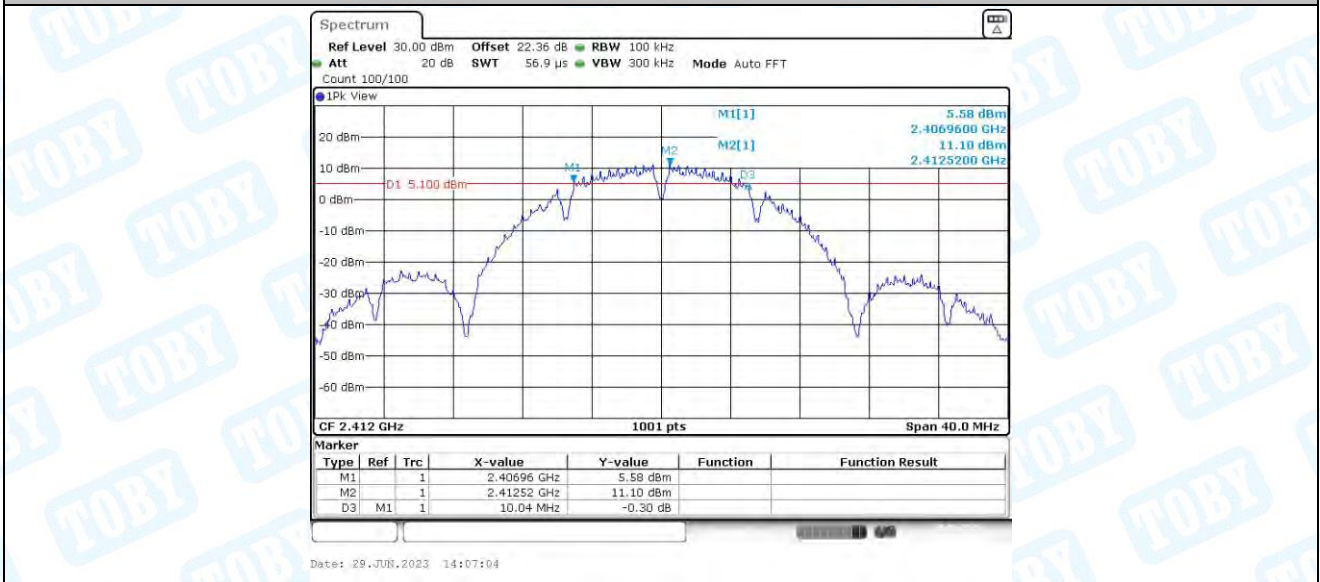
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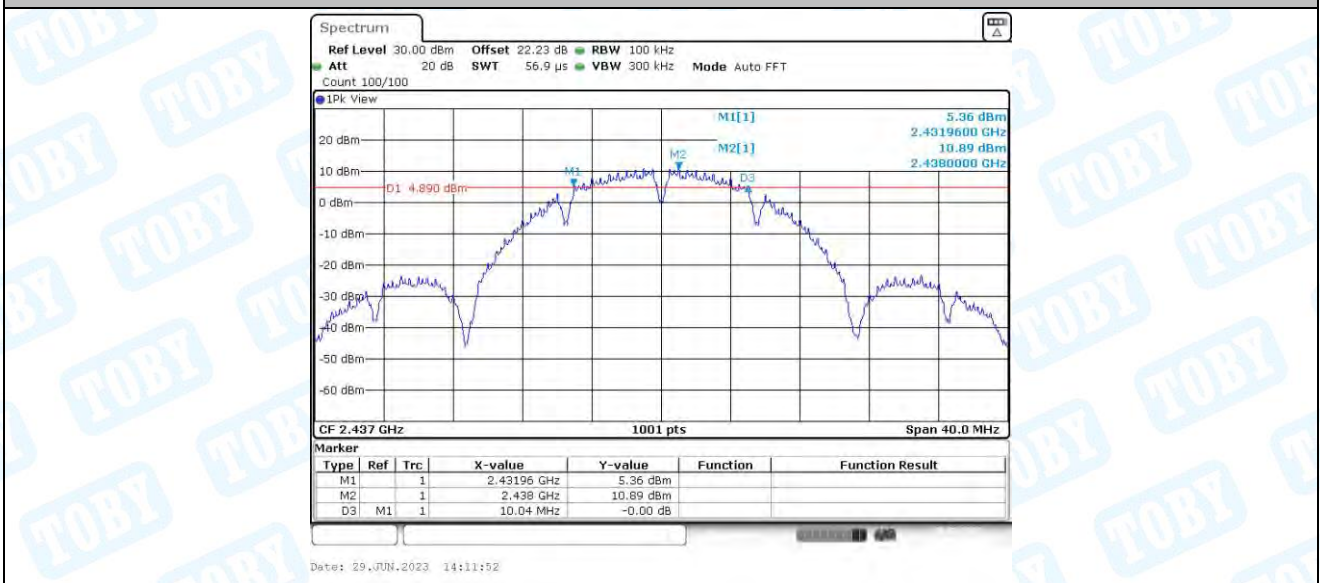
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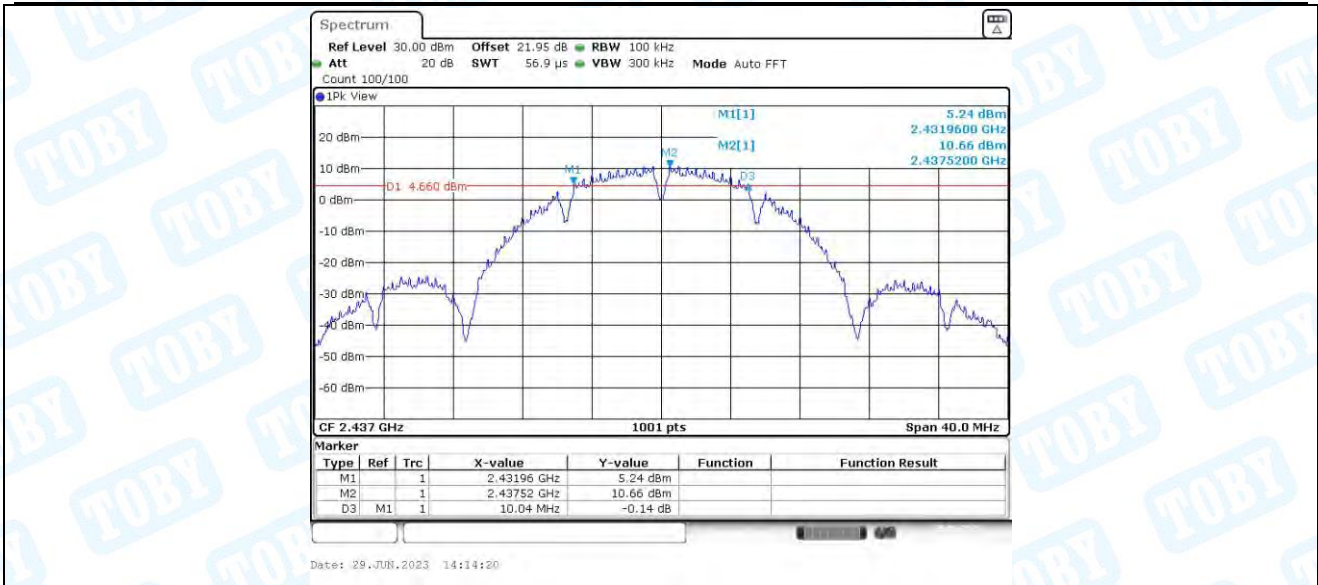


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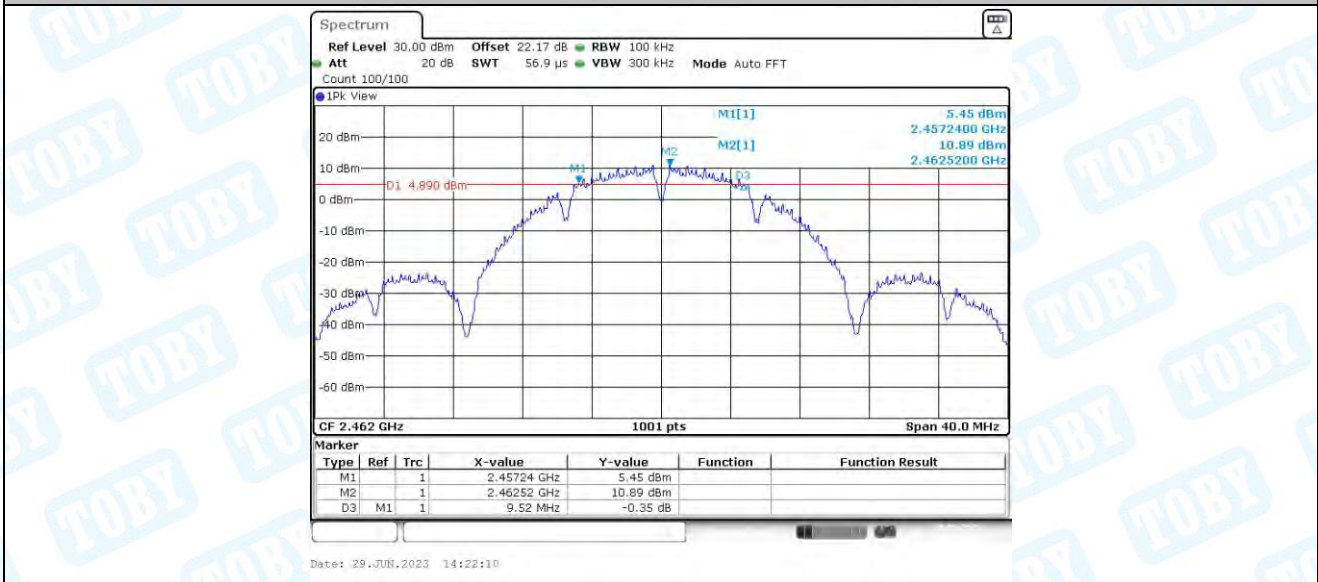


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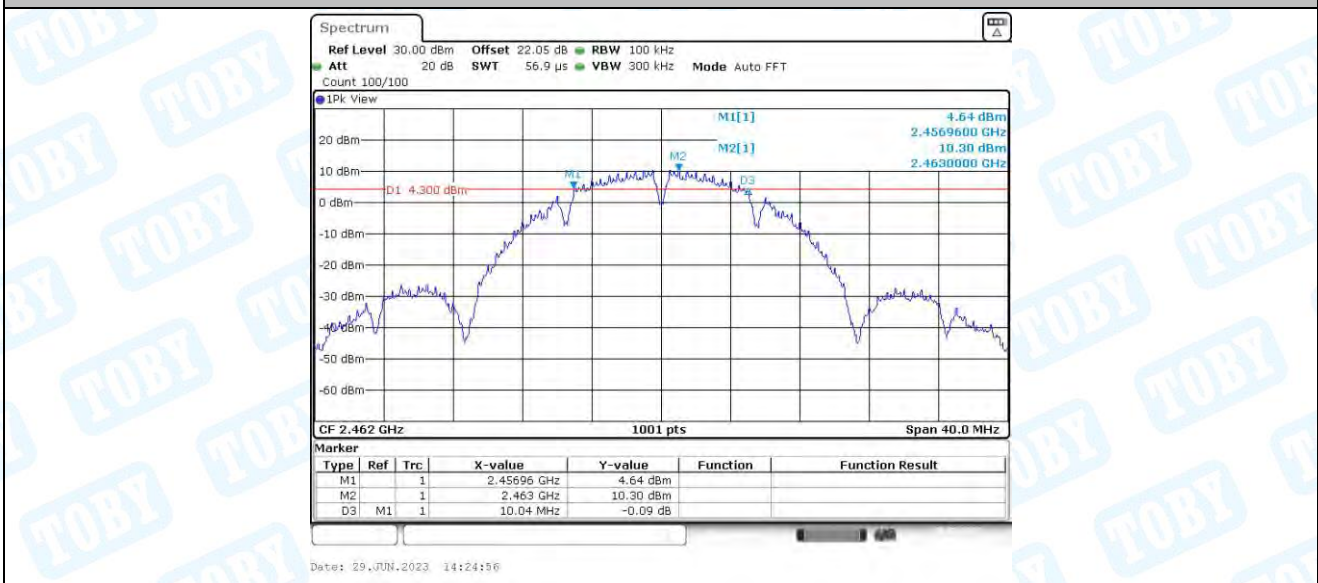




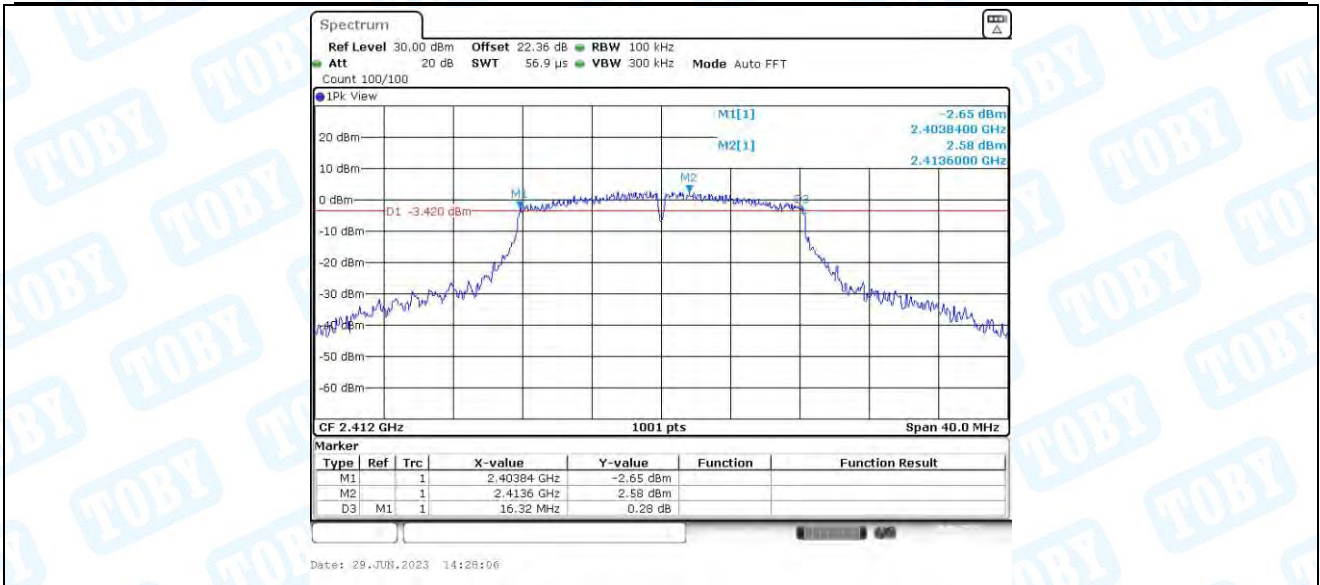
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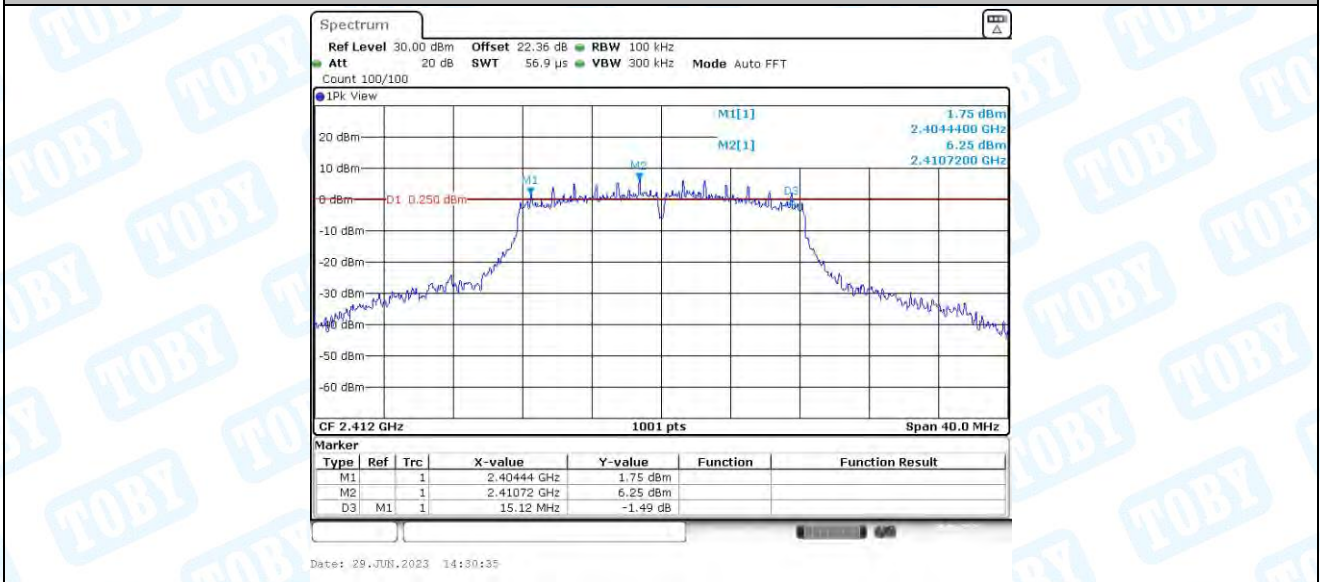
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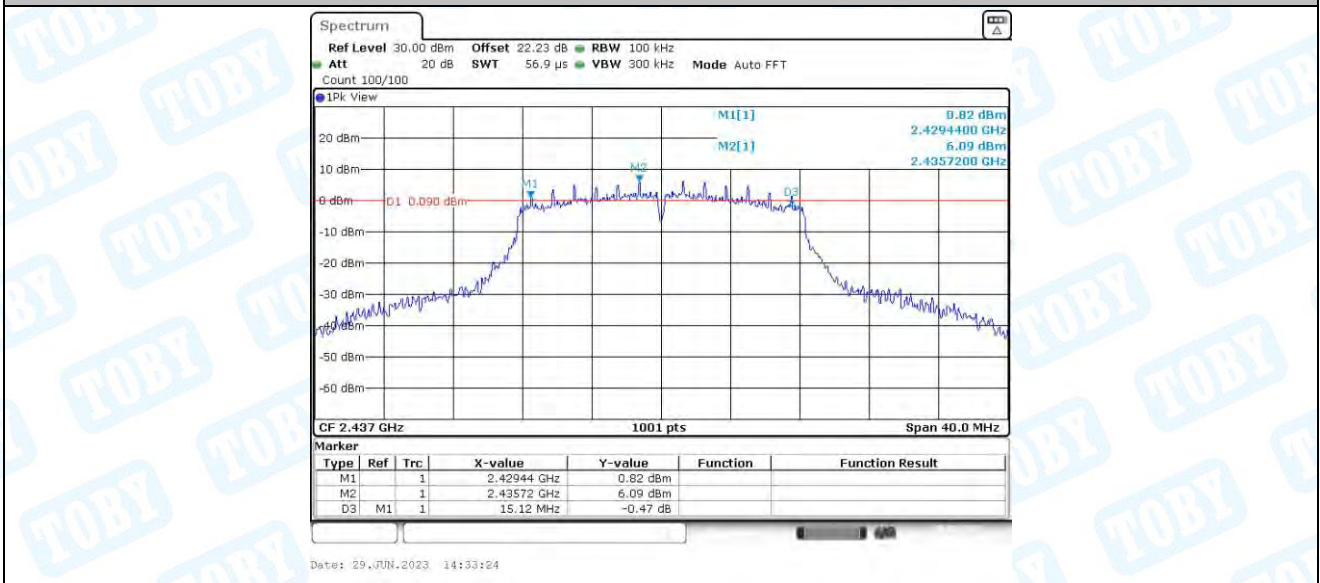
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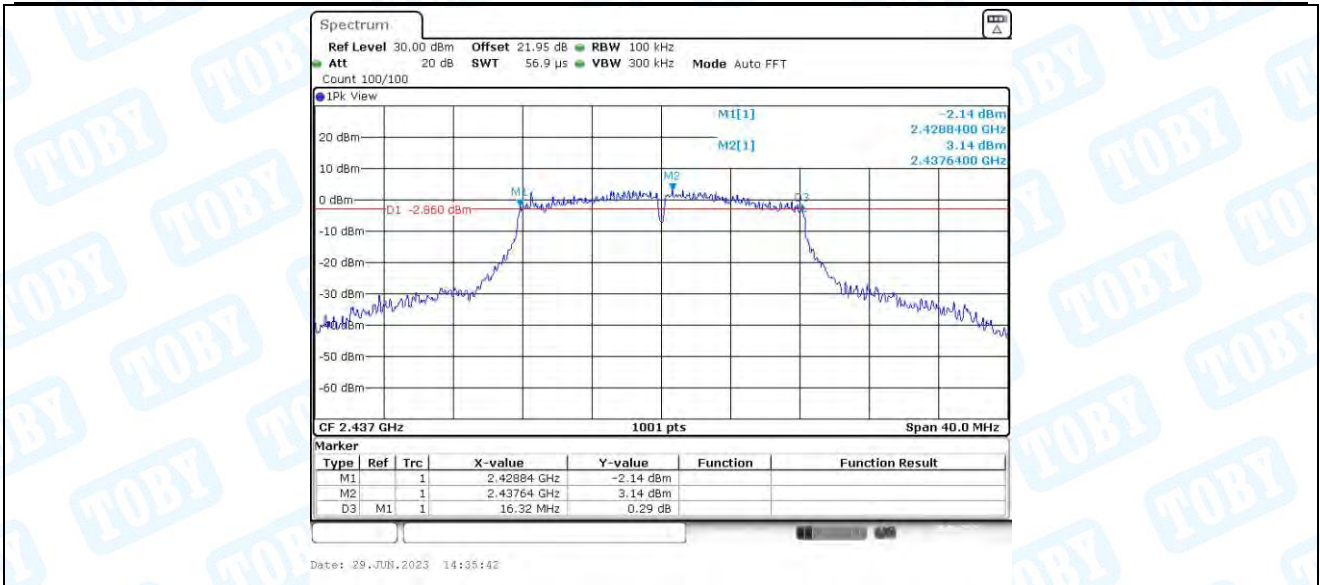
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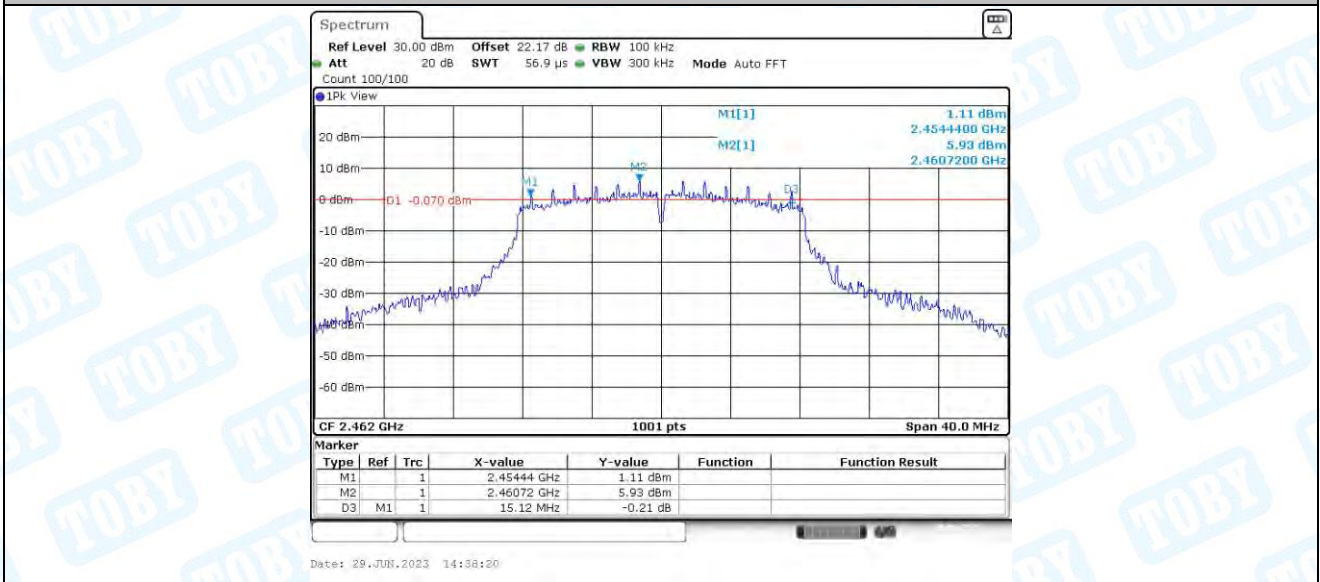
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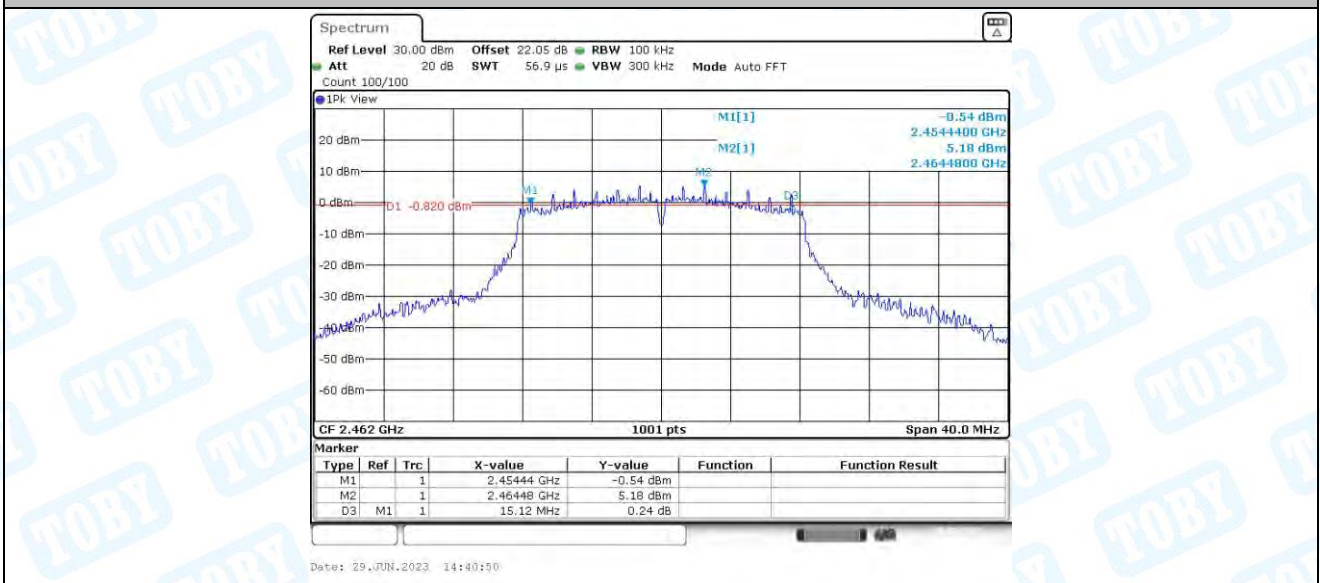
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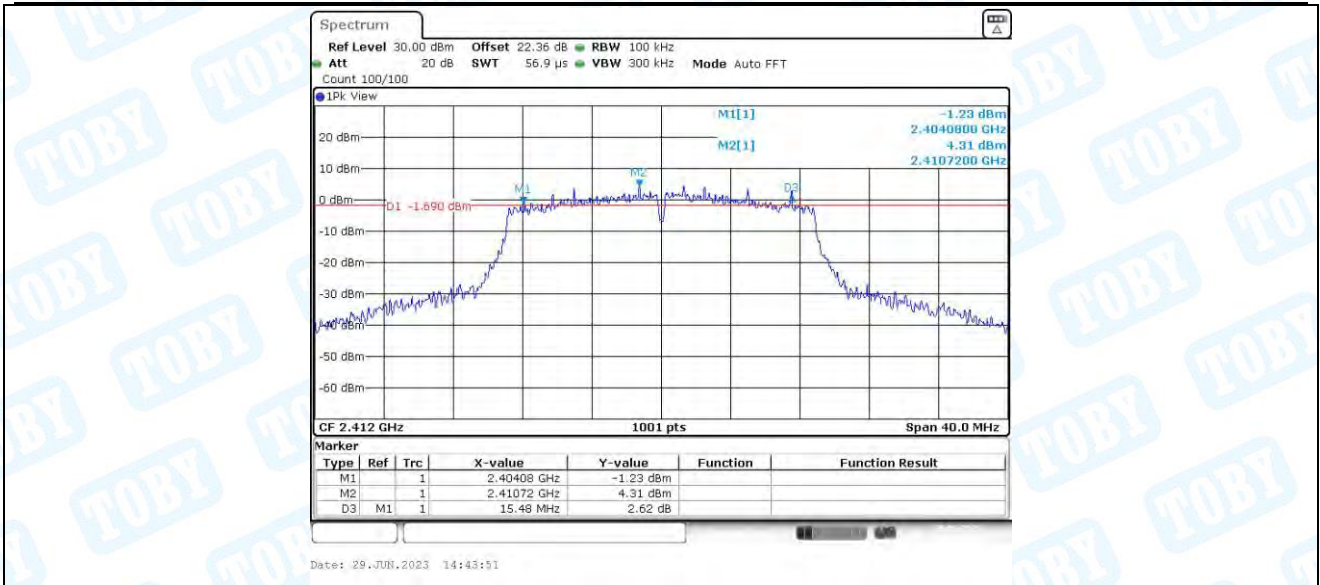
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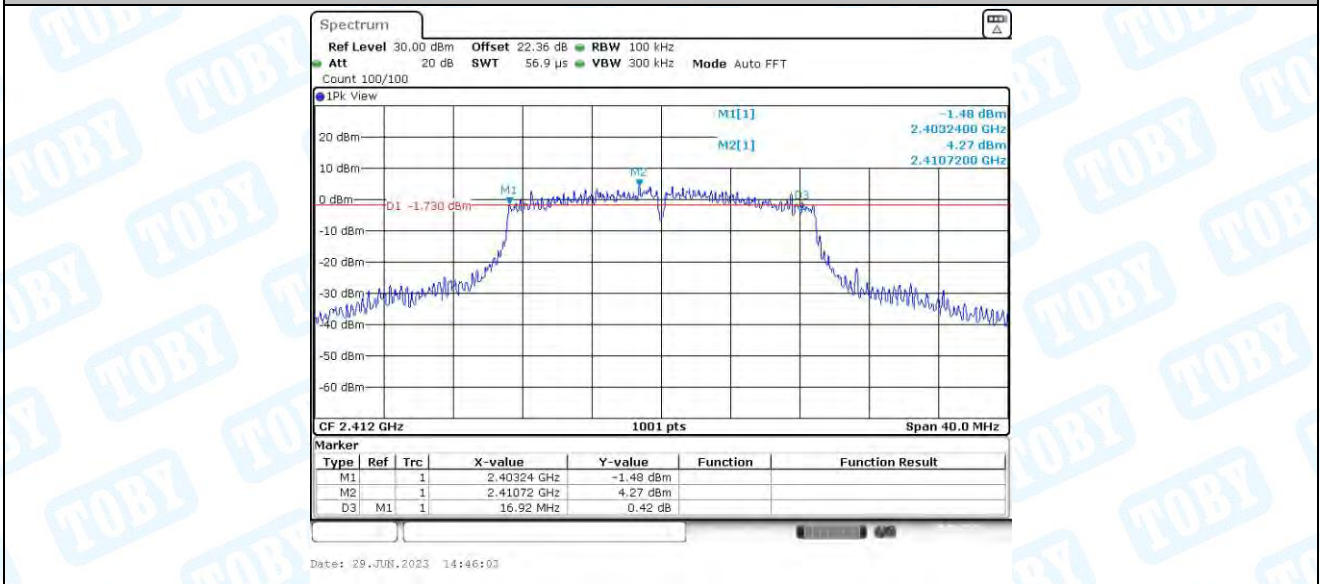
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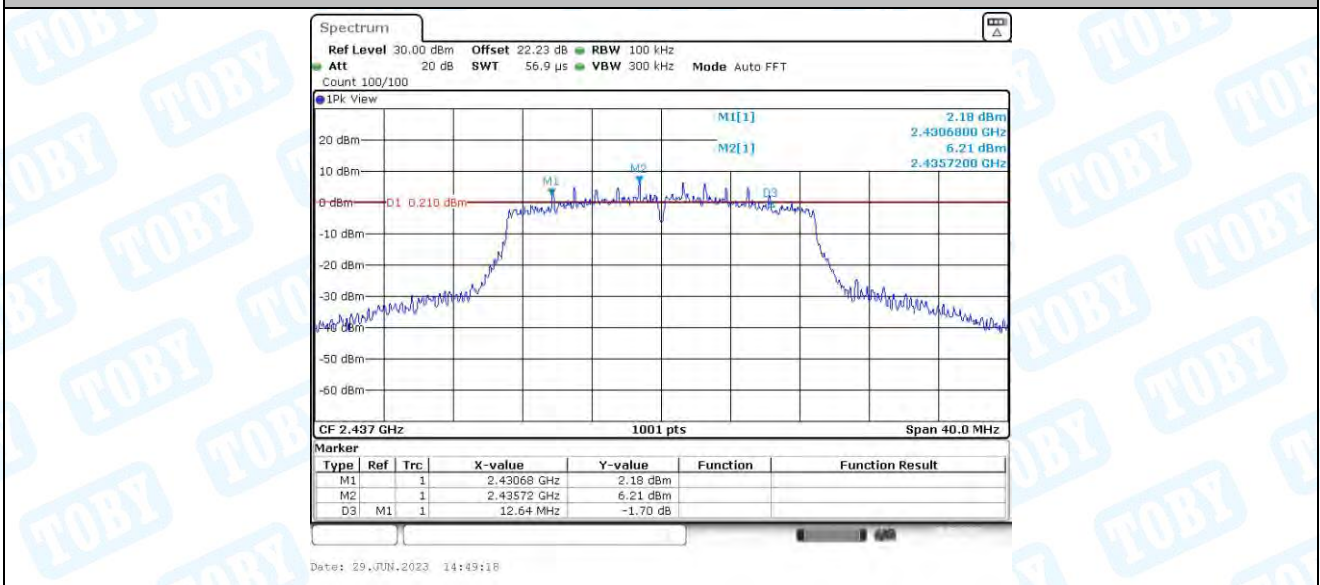
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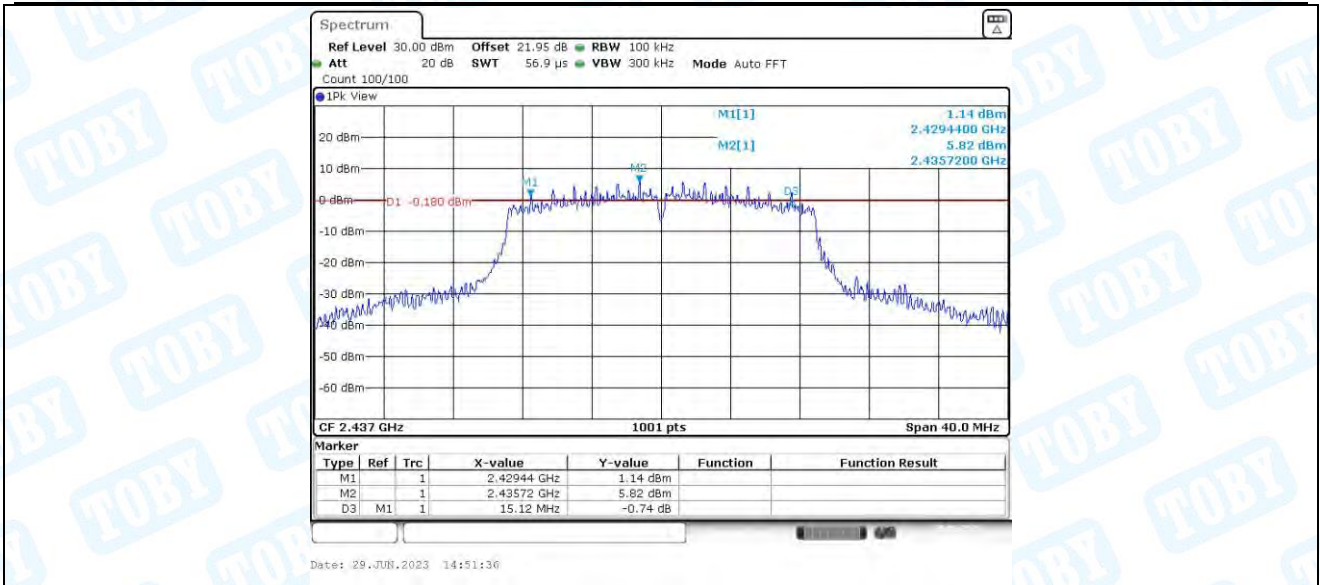
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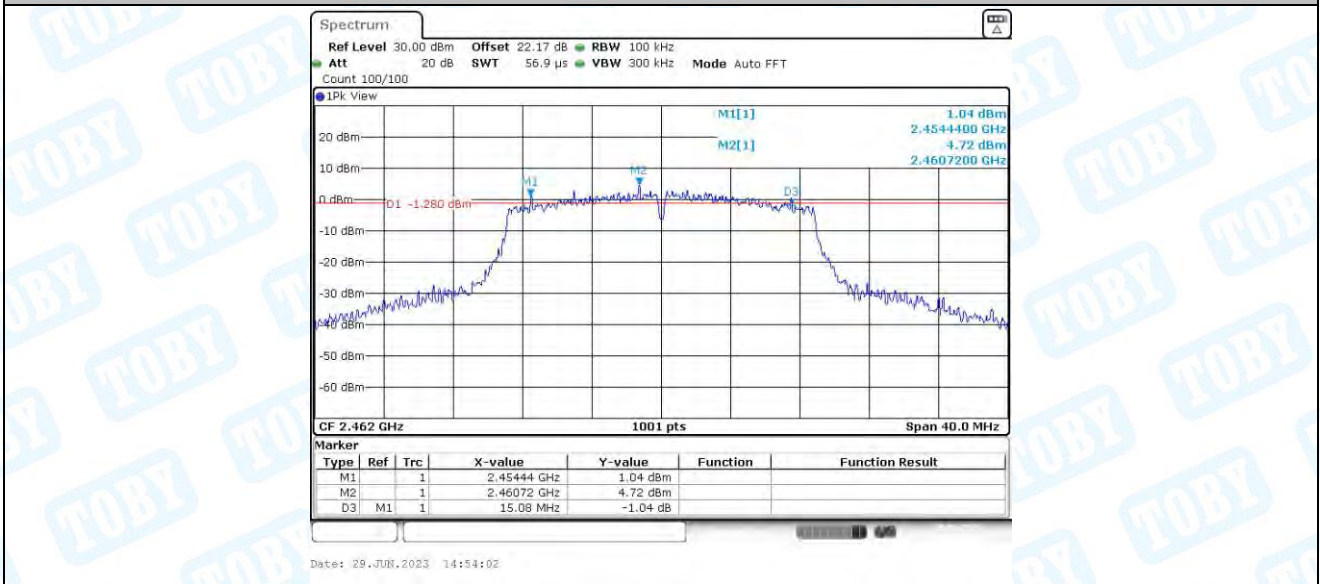
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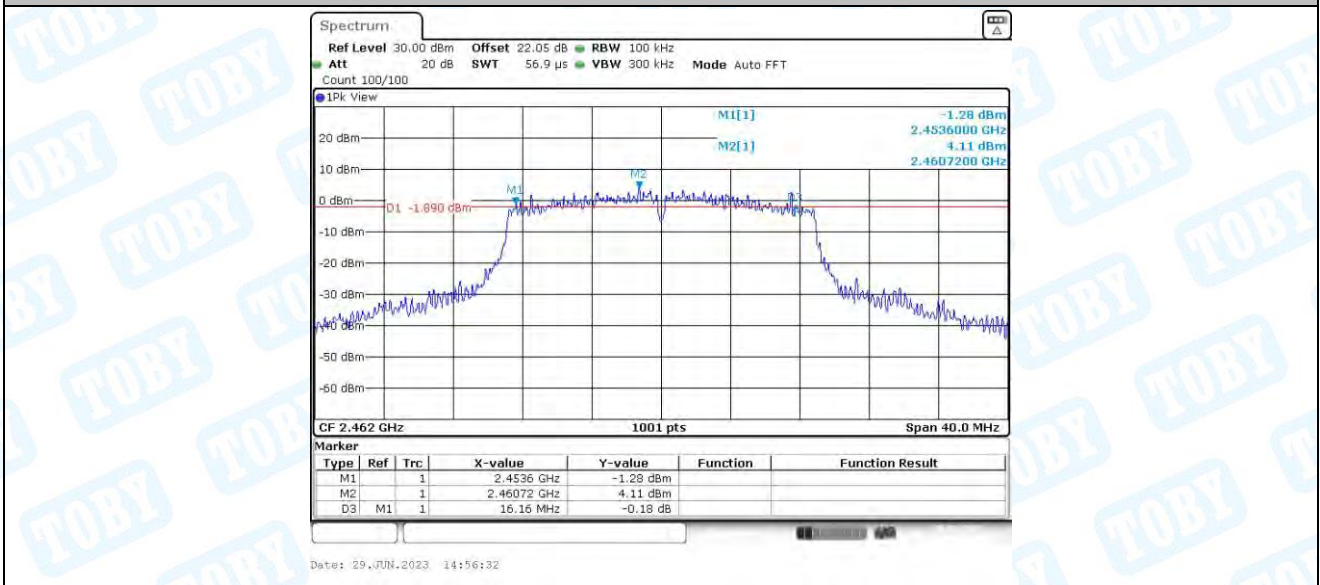
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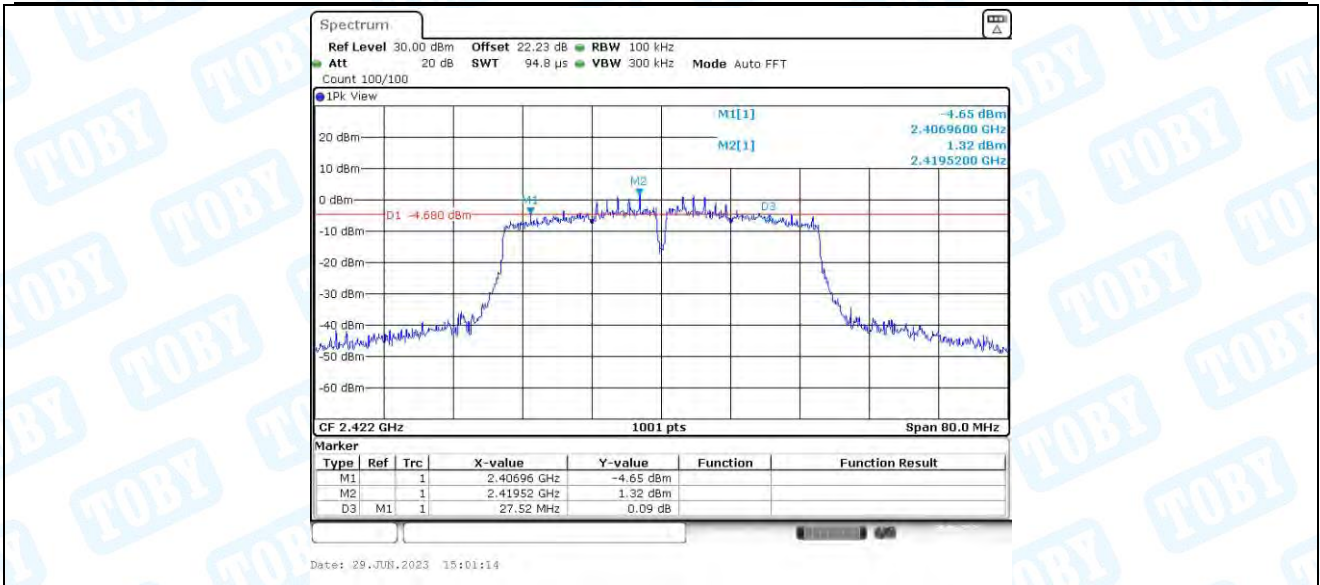
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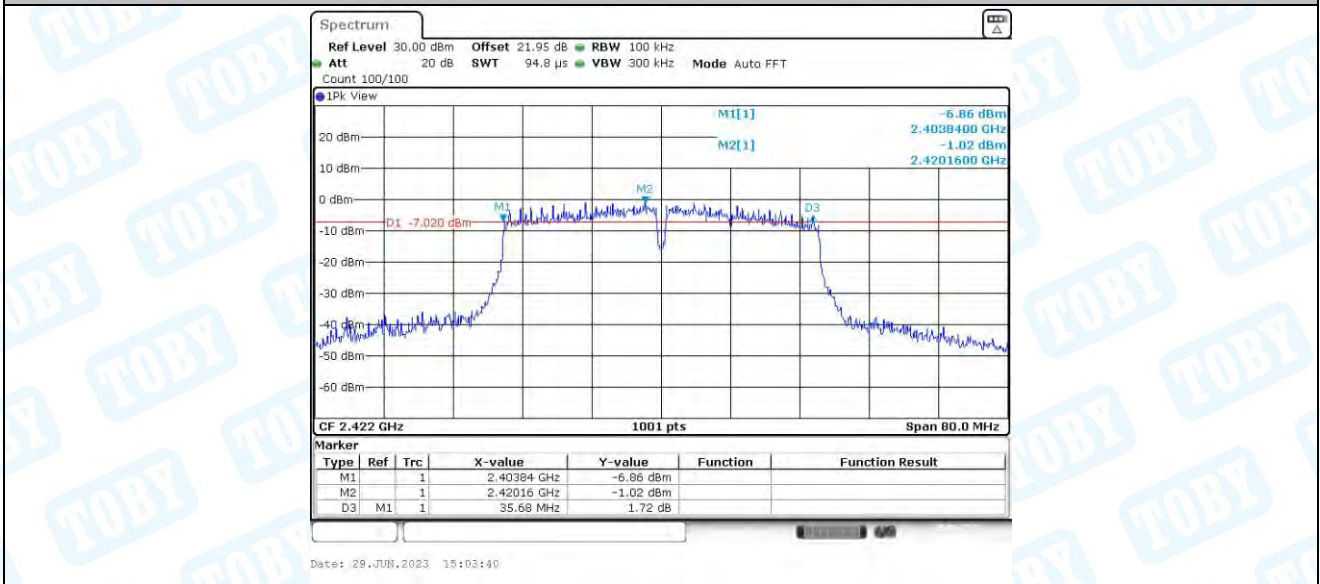
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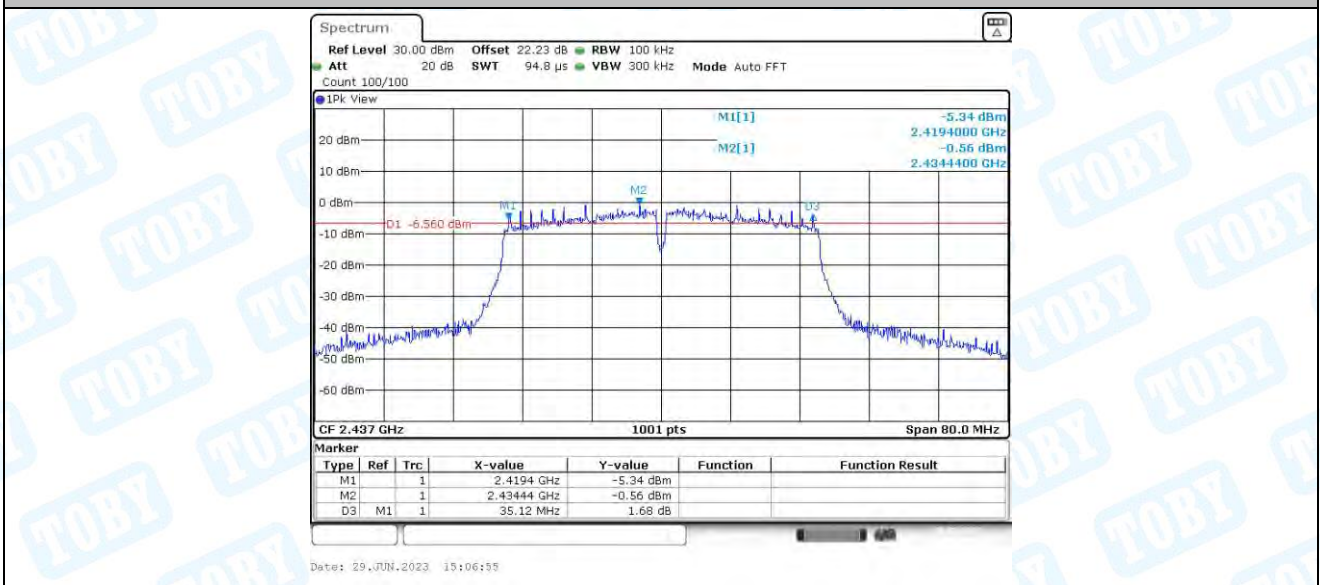
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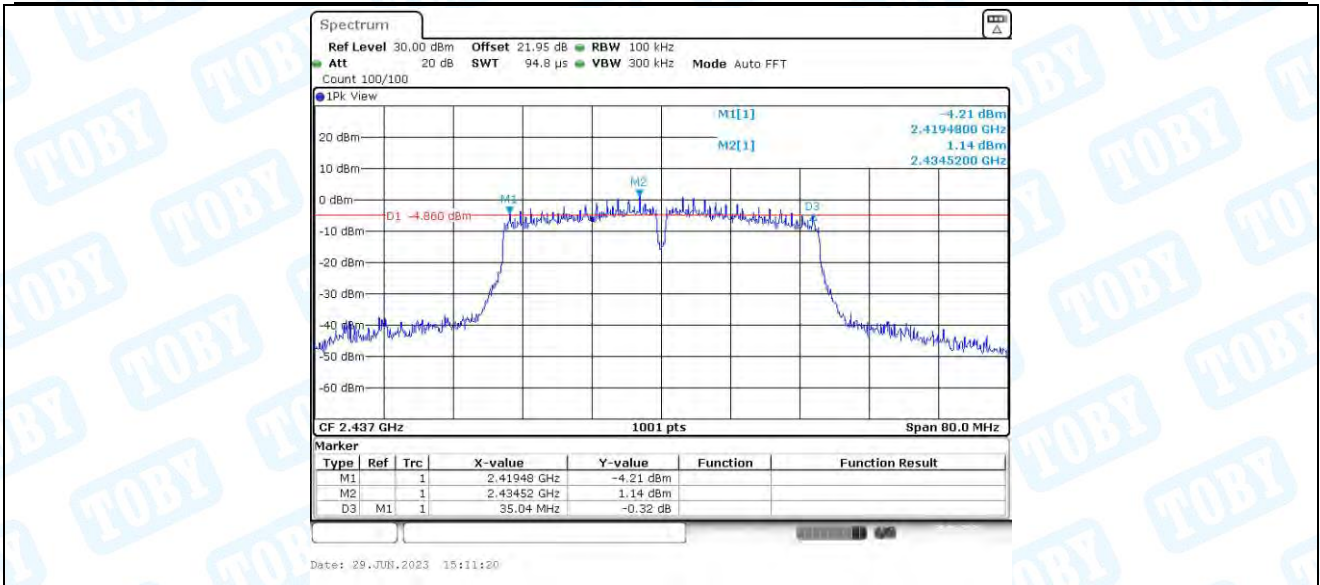
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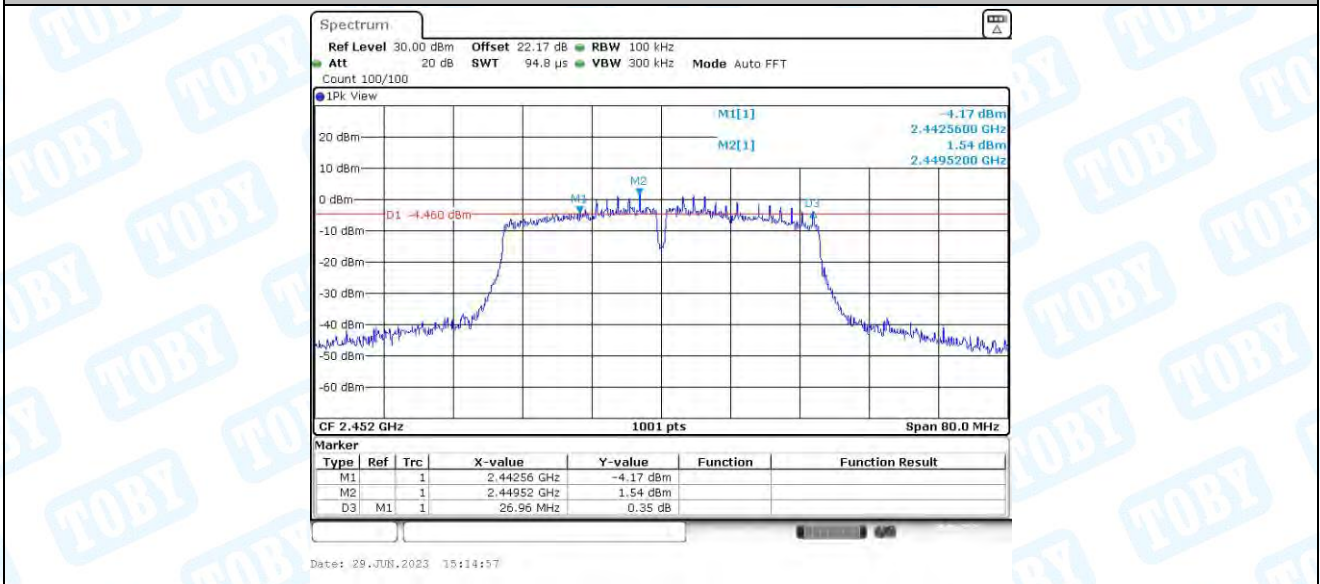
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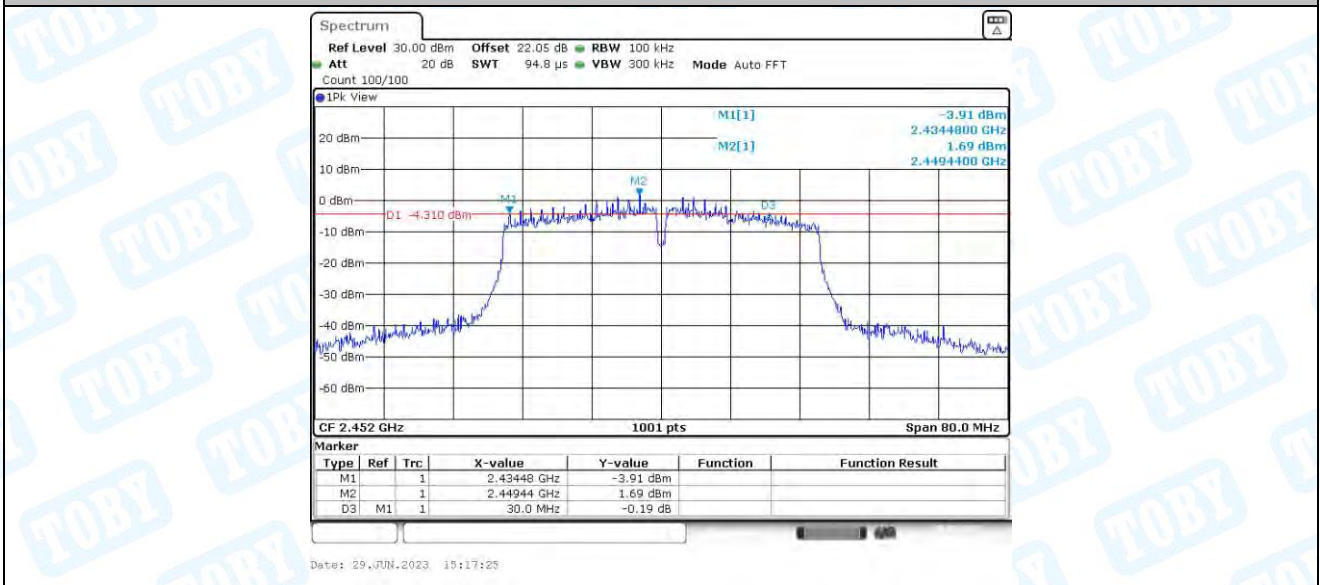
11N40-CDD\_Ant2\_2437



11N40-CDD\_Ant1\_2452



11N40-CDD\_Ant2\_2452



## 2. Maximum conducted output power

### 2.1. Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	21.93	≤30.00	PASS
	Ant2	2412	22.27	≤30.00	PASS
	Ant1	2437	21.93	≤30.00	PASS
	Ant2	2437	22.04	≤30.00	PASS
	Ant1	2462	21.86	≤30.00	PASS
	Ant2	2462	21.62	≤30.00	PASS
11G	Ant1	2412	18.34	≤30.00	PASS
	Ant2	2412	18.67	≤30.00	PASS
	Ant1	2437	18.23	≤30.00	PASS
	Ant2	2437	18.66	≤30.00	PASS
	Ant1	2462	18.22	≤30.00	PASS
	Ant2	2462	17.94	≤30.00	PASS
11B-CDD	Ant1	2412	21.29	≤30.00	PASS
	Ant2	2412	21.53	≤30.00	PASS
	total	2412	24.42	≤30.00	PASS
	Ant1	2437	21.15	≤30.00	PASS
	Ant2	2437	21.31	≤30.00	PASS
	total	2437	24.24	≤30.00	PASS
	Ant1	2462	21.12	≤30.00	PASS
	Ant2	2462	20.86	≤30.00	PASS
total	2462	24.00	≤30.00	PASS	
11G-CDD	Ant1	2412	16.78	≤30.00	PASS
	Ant2	2412	16.85	≤30.00	PASS
	total	2412	19.83	≤30.00	PASS
	Ant1	2437	16.83	≤30.00	PASS
	Ant2	2437	16.91	≤30.00	PASS
	total	2437	19.88	≤30.00	PASS
	Ant1	2462	16.72	≤30.00	PASS
	Ant2	2462	16.31	≤30.00	PASS
	total	2462	19.53	≤30.00	PASS
	total	2412	16.57	≤30.00	PASS
11N20-CDD	Ant2	2412	16.78	≤30.00	PASS
	total	2412	19.69	≤30.00	PASS
	Ant1	2437	16.68	≤30.00	PASS
	Ant2	2437	16.87	≤30.00	PASS
	total	2437	19.79	≤30.00	PASS
	Ant1	2462	16.32	≤30.00	PASS
	Ant2	2462	16.35	≤30.00	PASS
	total	2462	19.35	≤30.00	PASS
	Ant1	2422	14.67	≤30.00	PASS
	Ant2	2422	14.56	≤30.00	PASS
11N40-CDD	total	2422	17.63	≤30.00	PASS
	Ant1	2437	14.29	≤30.00	PASS
	Ant2	2437	14.95	≤30.00	PASS
	total	2437	17.64	≤30.00	PASS
	Ant1	2452	14.97	≤30.00	PASS
	Ant2	2452	14.99	≤30.00	PASS
	total	2452	17.99	≤30.00	PASS

Note: For CDD Mode, Directional gain =  $G_{ANT} + \text{Array Gain}$ , Array Gain = 0 dB (i.e., no array gain) for  $N_{ANT} \leq 4$ ;  $G_{ANT1}=4.45\text{dBi}$ ;  $G_{ANT2}=4.02\text{dBi}$ ; and the Directional gain  $< 6\text{dBi}$ , So the  $P_{limit}=30\text{dBm}$ .



### 3. Maximum power spectral density

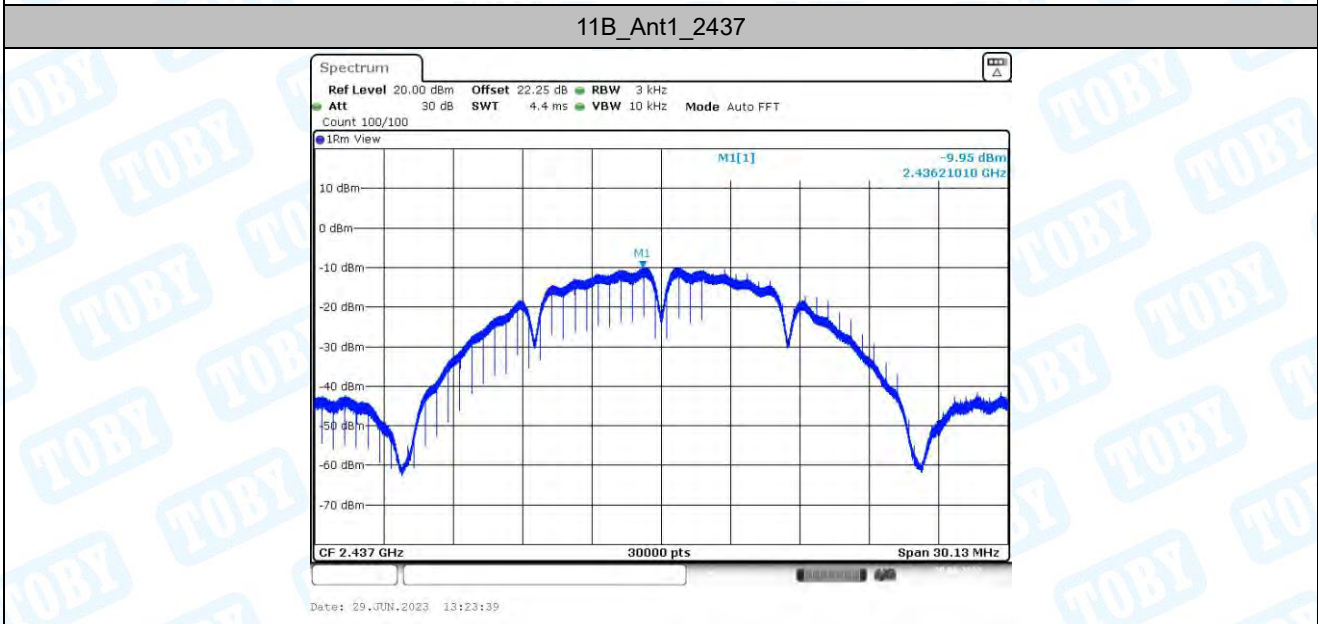
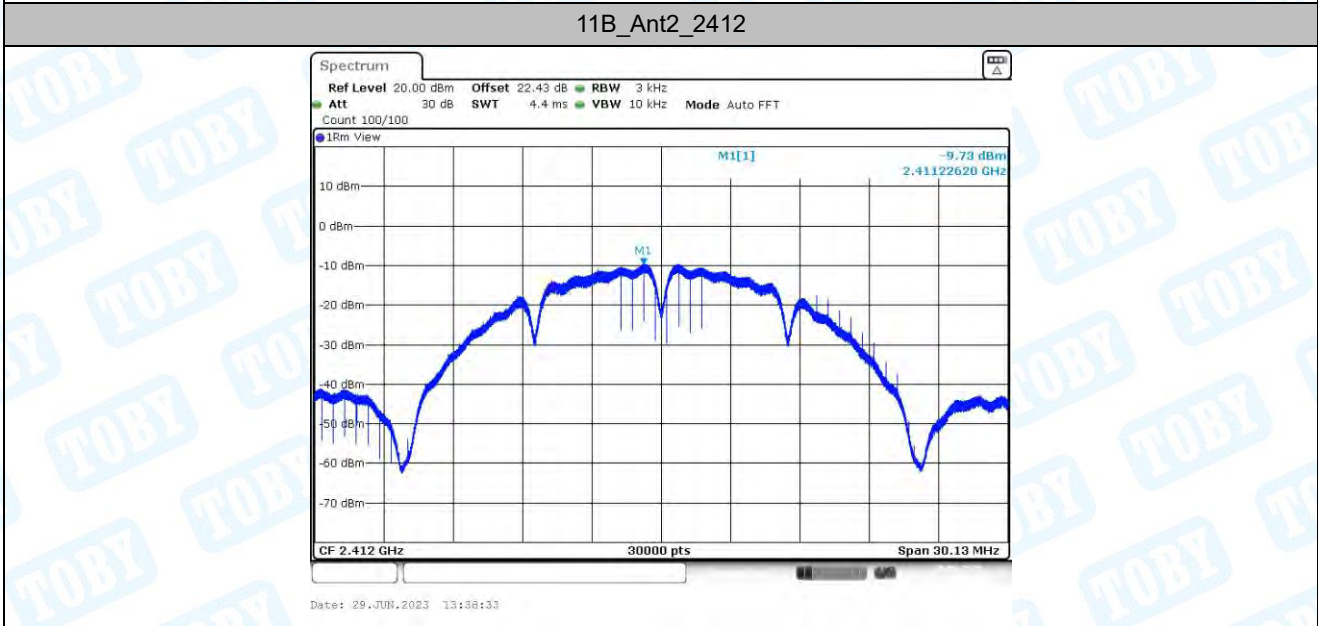
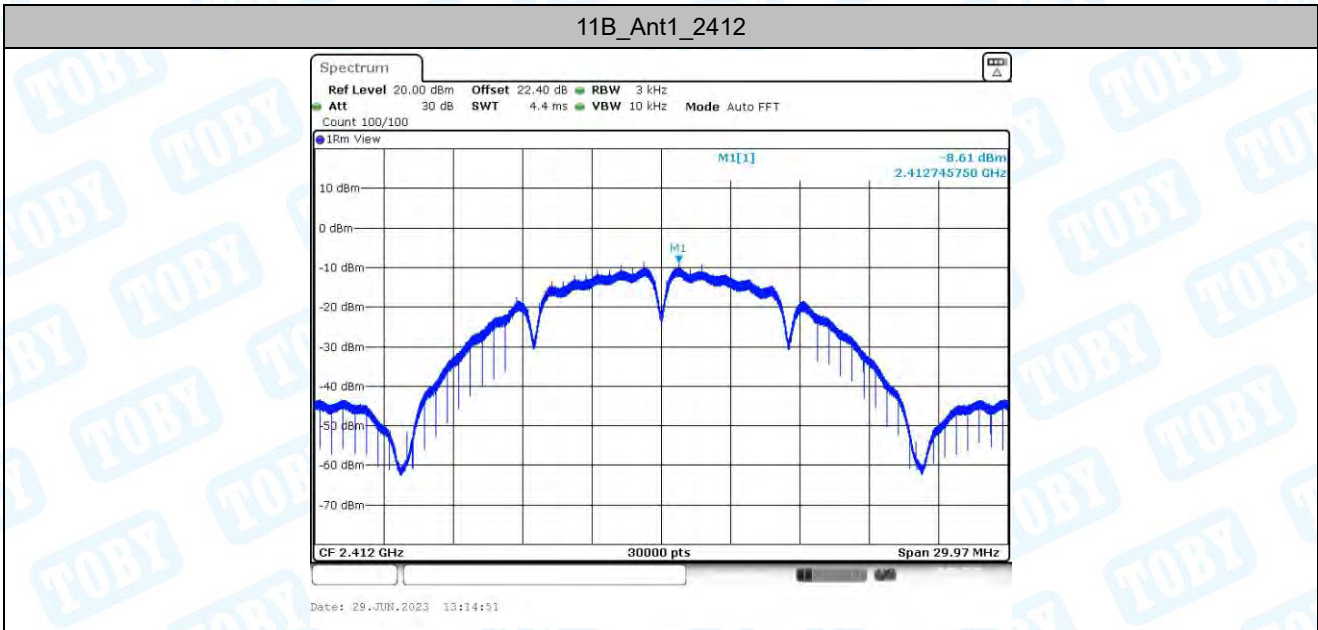
#### 3.1. Test Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B-SISO	Ant1	2412	-8.61	≤8.00	PASS
	Ant2	2412	-9.73	≤8.00	PASS
	Ant1	2437	-9.95	≤8.00	PASS
	Ant2	2437	-5.7	≤8.00	PASS
	Ant1	2462	-5.49	≤8.00	PASS
	Ant2	2462	-9.4	≤8.00	PASS
11G-SISO	Ant1	2412	-12.72	≤8.00	PASS
	Ant2	2412	-13.01	≤8.00	PASS
	Ant1	2437	-13.12	≤8.00	PASS
	Ant2	2437	-13.02	≤8.00	PASS
	Ant1	2462	-13.07	≤8.00	PASS
	Ant2	2462	-13.28	≤8.00	PASS
11B-CDD	Ant1	2412	-8.14	≤8.00	PASS
	Ant2	2412	-7.51	≤8.00	PASS
	total	2412	-4.80	≤6.75	PASS
	Ant1	2437	-10.56	≤8.00	PASS
	Ant2	2437	-10.63	≤8.00	PASS
	total	2437	-7.58	≤6.75	PASS
	Ant1	2462	-10.73	≤8.00	PASS
	Ant2	2462	-11.09	≤8.00	PASS
	total	2462	-7.90	≤6.75	PASS
11G-CDD	Ant1	2412	-14.52	≤8.00	PASS
	Ant2	2412	-14.77	≤8.00	PASS
	total	2412	-11.63	≤6.75	PASS
	Ant1	2437	-14.63	≤8.00	PASS
	Ant2	2437	-14.81	≤8.00	PASS
	total	2437	-11.71	≤6.75	PASS
	Ant1	2462	-14.8	≤8.00	PASS
	Ant2	2462	-15.35	≤8.00	PASS
	total	2462	-12.06	≤6.75	PASS
11N20-CDD	Ant1	2412	-15.88	≤8.00	PASS
	Ant2	2412	-14.92	≤8.00	PASS
	total	2412	-12.36	≤6.75	PASS
	Ant1	2437	-15.49	≤8.00	PASS
	Ant2	2437	-15.41	≤8.00	PASS
	total	2437	-12.44	≤6.75	PASS
	Ant1	2462	-15.98	≤8.00	PASS
	Ant2	2462	-15.96	≤8.00	PASS
	total	2462	-12.96	≤6.75	PASS
11N40-CDD	Ant1	2422	-20.37	≤8.00	PASS
	Ant2	2422	-20.63	≤8.00	PASS
	total	2422	-17.49	≤6.75	PASS
	Ant1	2437	-19.74	≤8.00	PASS
	Ant2	2437	-20.12	≤8.00	PASS
	total	2437	-16.92	≤6.75	PASS
	Ant1	2452	-19.1	≤8.00	PASS
	Ant2	2452	-19.8	≤8.00	PASS
	total	2452	-16.43	≤6.75	PASS

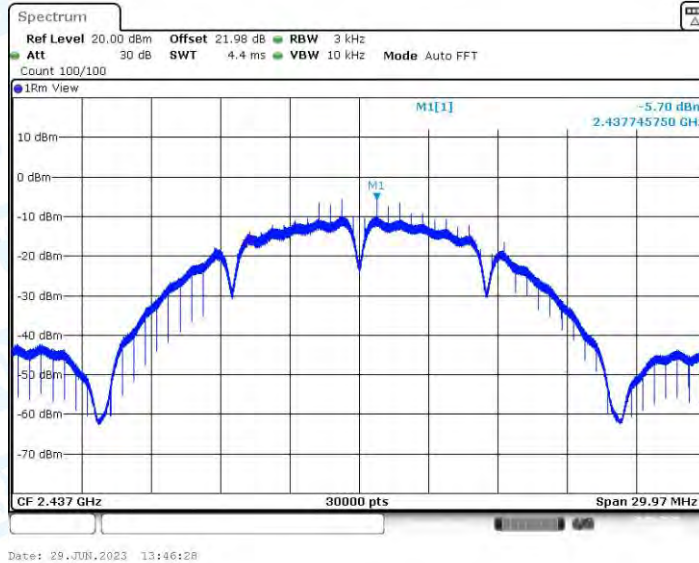
Note: For CDD Mode, Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2]$ ,

$G_{ANT1}=4.45\text{dBi}$ ;  $G_{ANT2}=4.02\text{dBi}$ ; and the Directional gain= $7.25\text{dBi} > 6\text{dBi}$ , So the  $P_{\text{limit}}=8-(7.25-6)\text{dBm}=6.75\text{dBm}/3\text{kHz}$ .

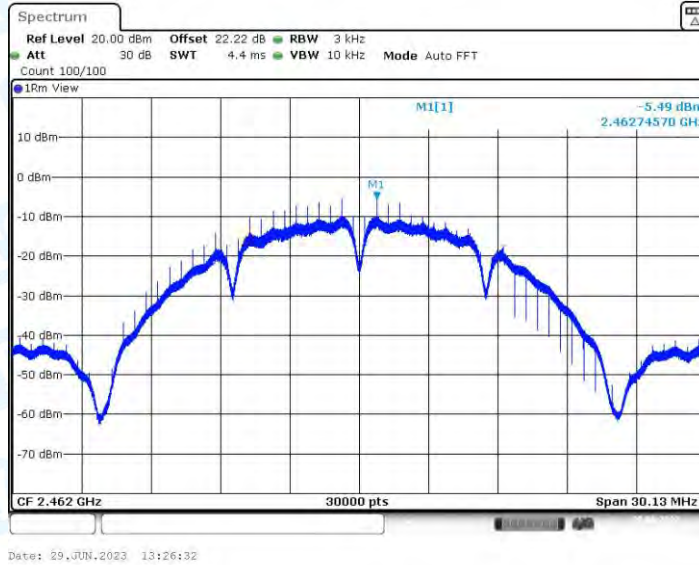
### 3.2. Test Graphs



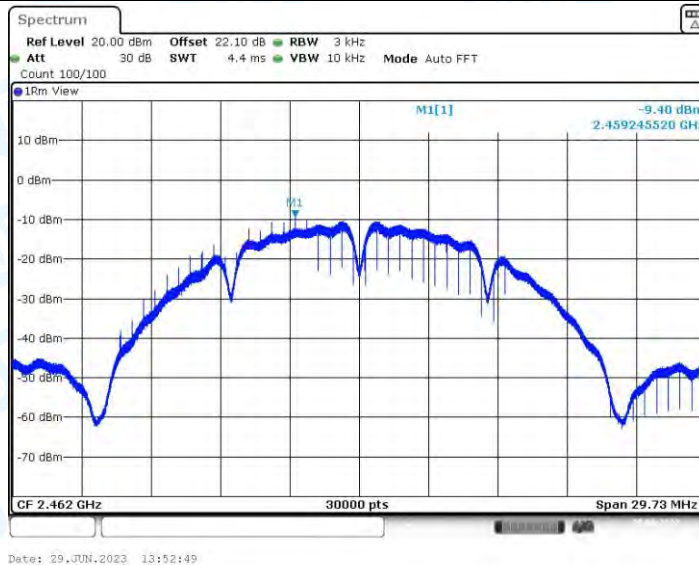
11B\_Ant2\_2437



11B\_Ant1\_2462

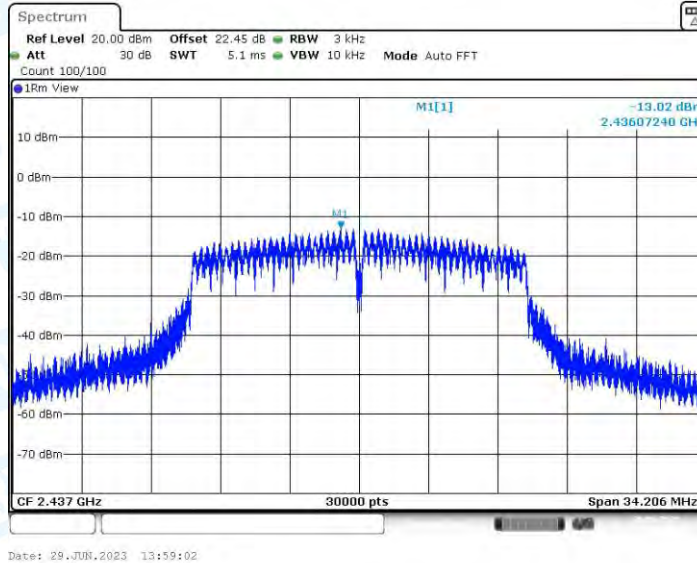


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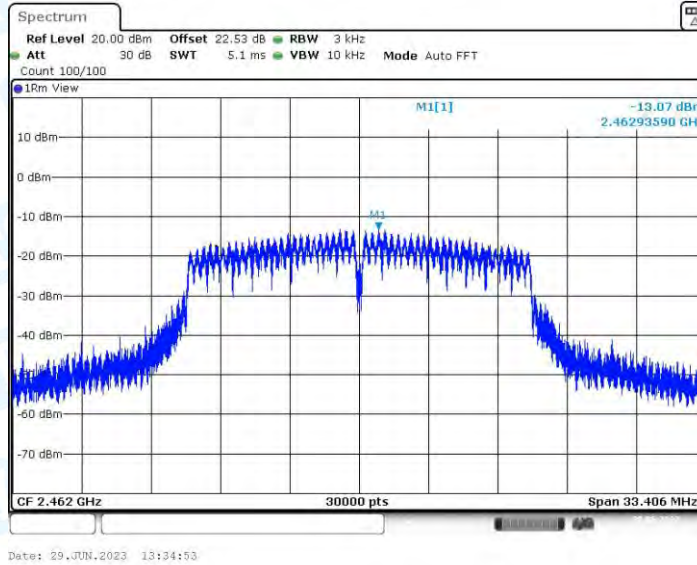




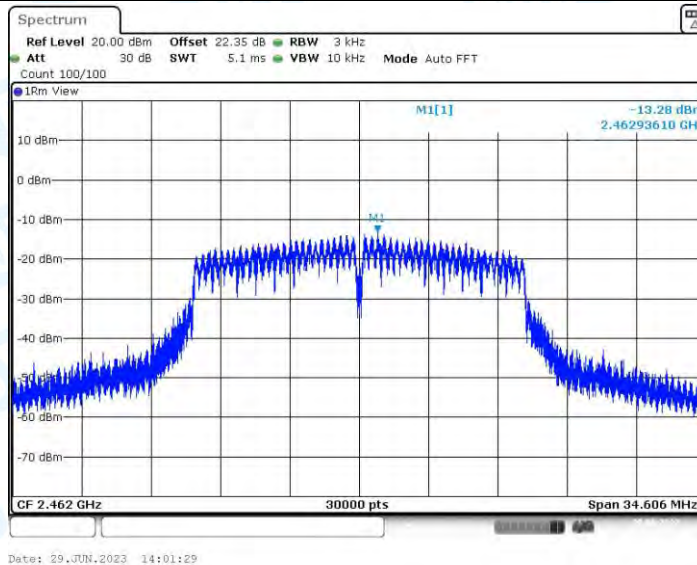
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### 11G\_Ant1\_2462



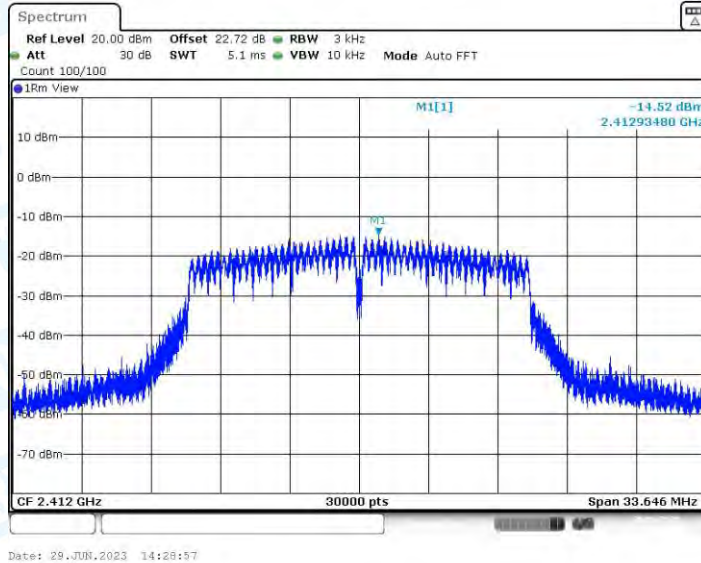
### 11G\_Ant2\_2462



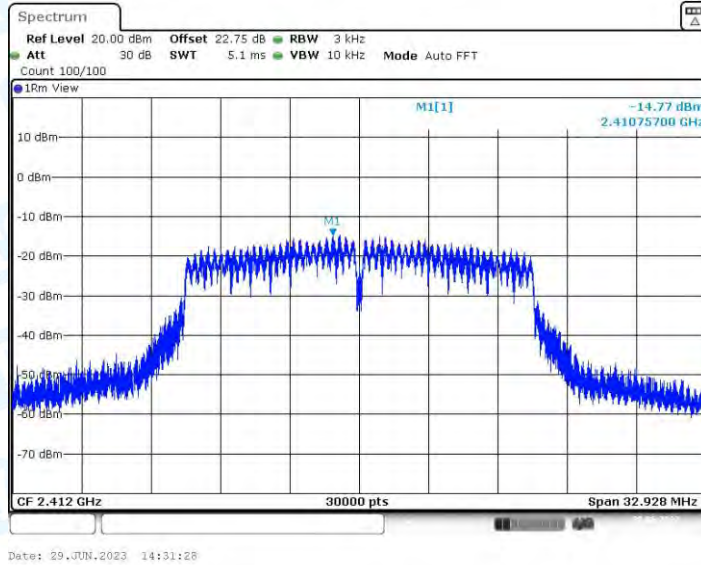




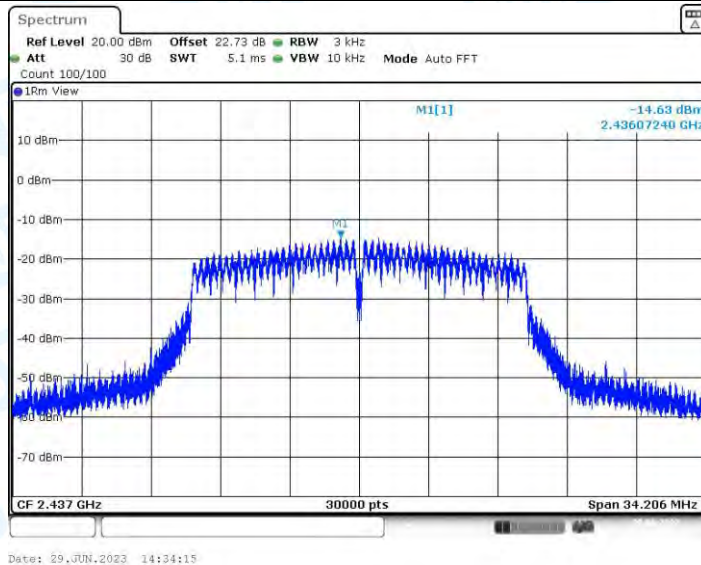
11G-CDD\_Ant1\_2412



11G-CDD\_Ant2\_2412

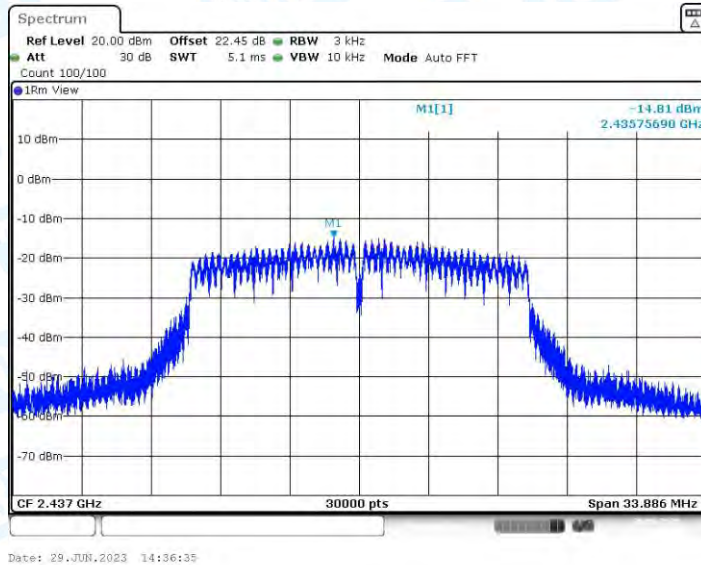


11G-CDD\_Ant1\_2437

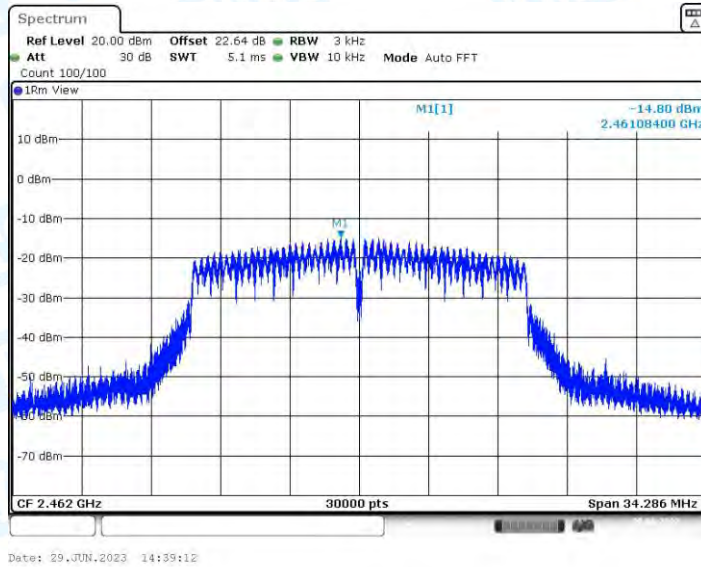




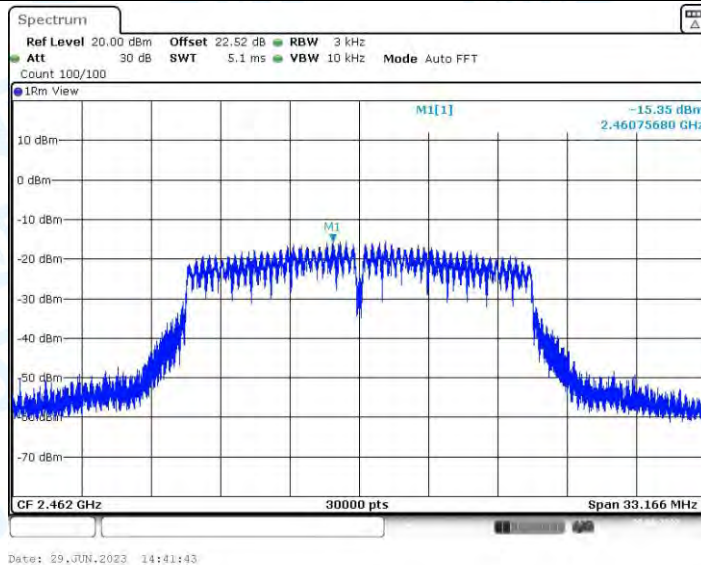
11G-CDD\_Ant2\_2437



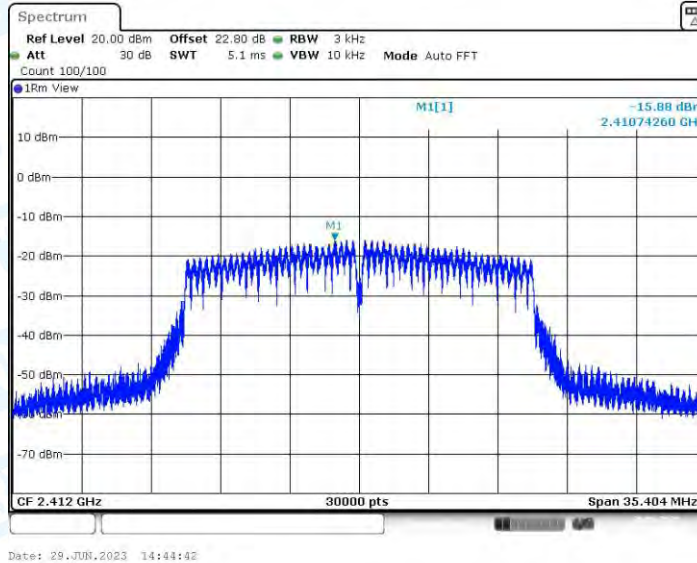
11G-CDD\_Ant1\_2462



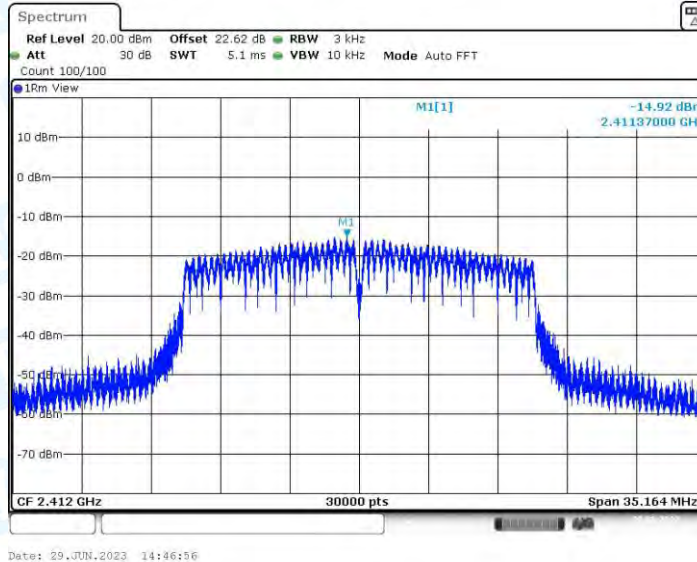
11G-CDD\_Ant2\_2462



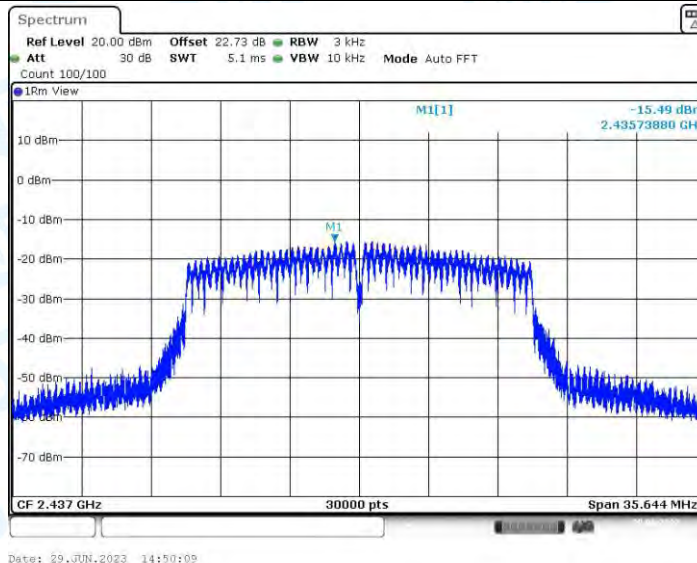
11N20-CDD\_Ant1\_2412



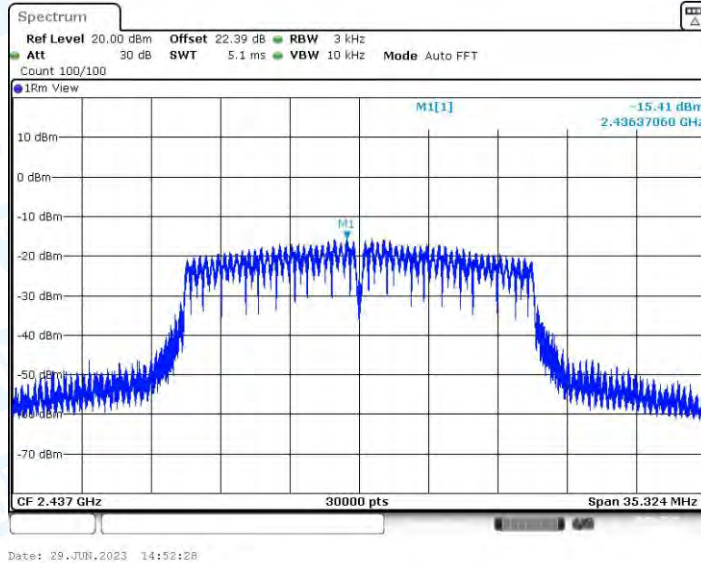
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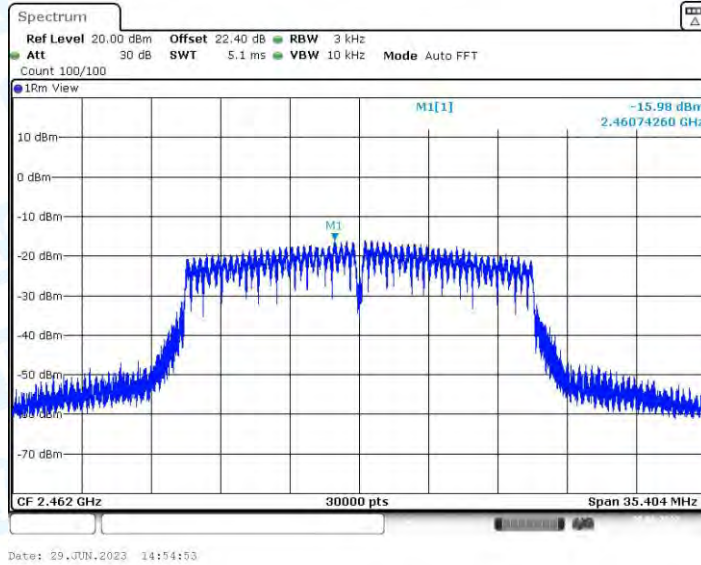
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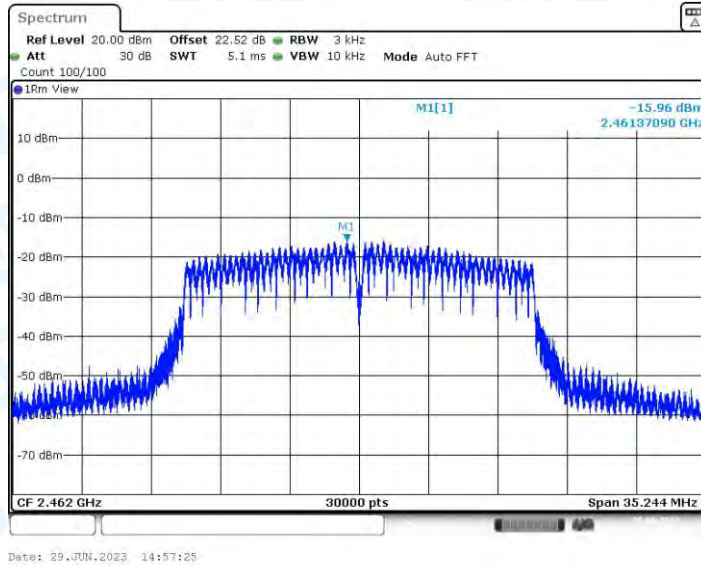
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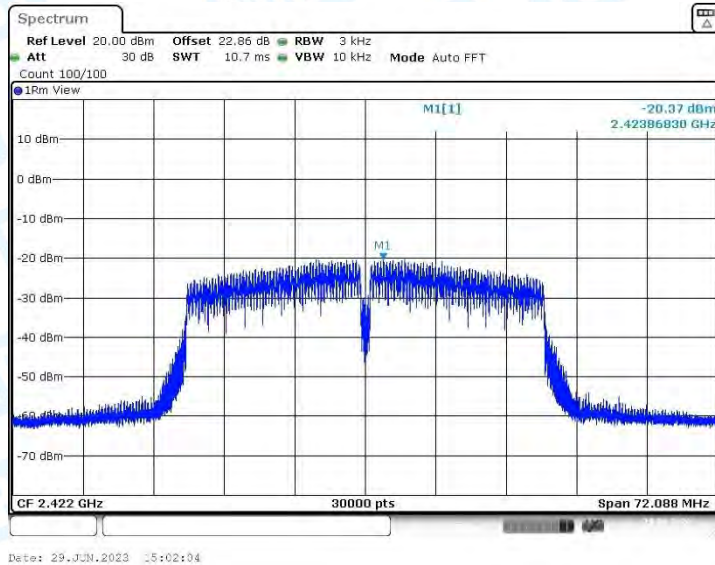
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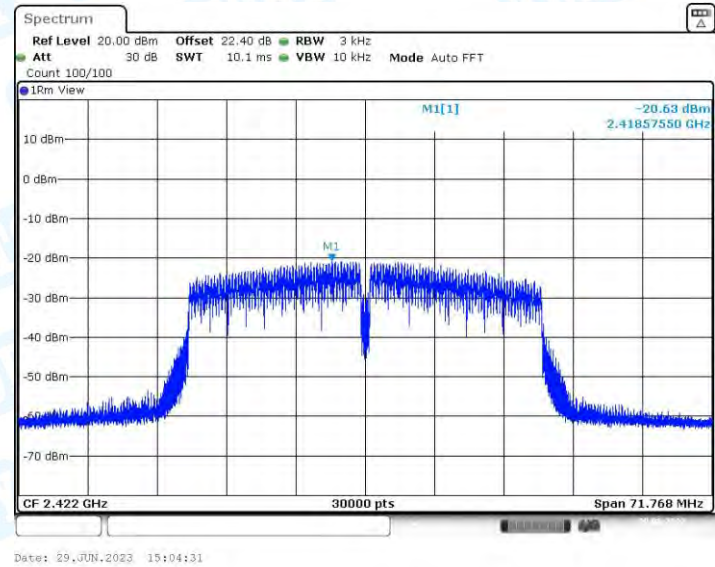
11N20-CDD\_Ant2\_2462



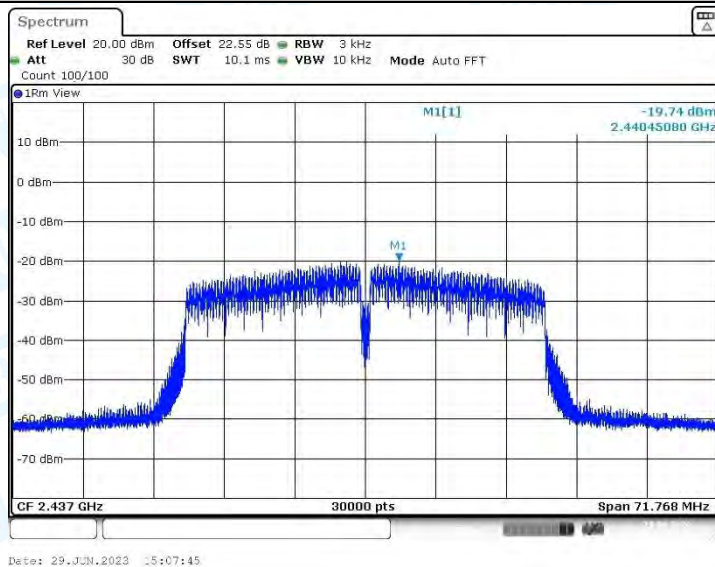
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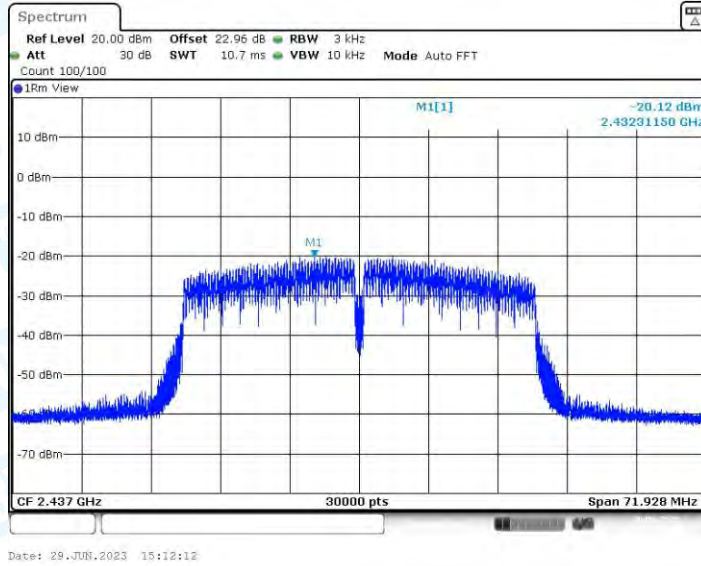
11N40-CDD\_Ant2\_2422



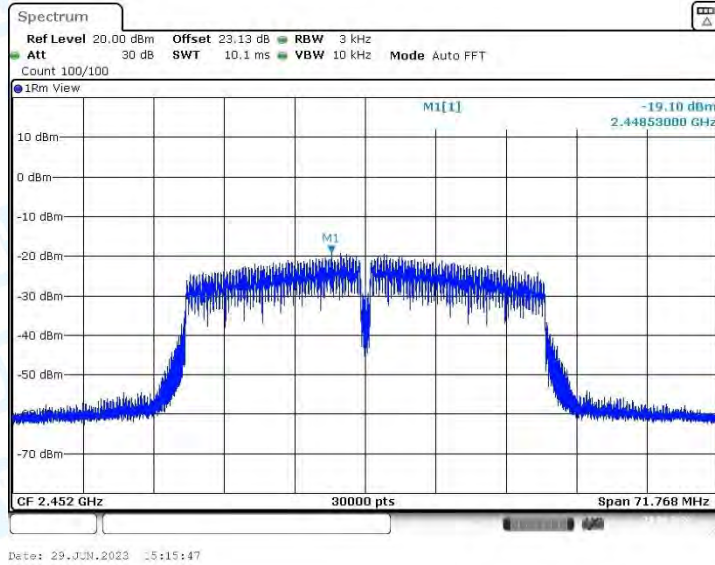
11N40-CDD\_Ant1\_2437



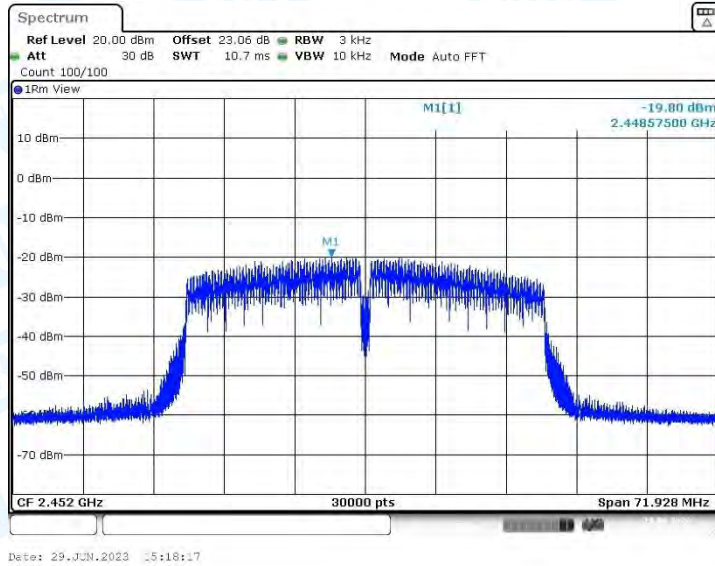
11N40-CDD\_Ant2\_2437



11N40-CDD\_Ant1\_2452



11N40-CDD\_Ant2\_2452

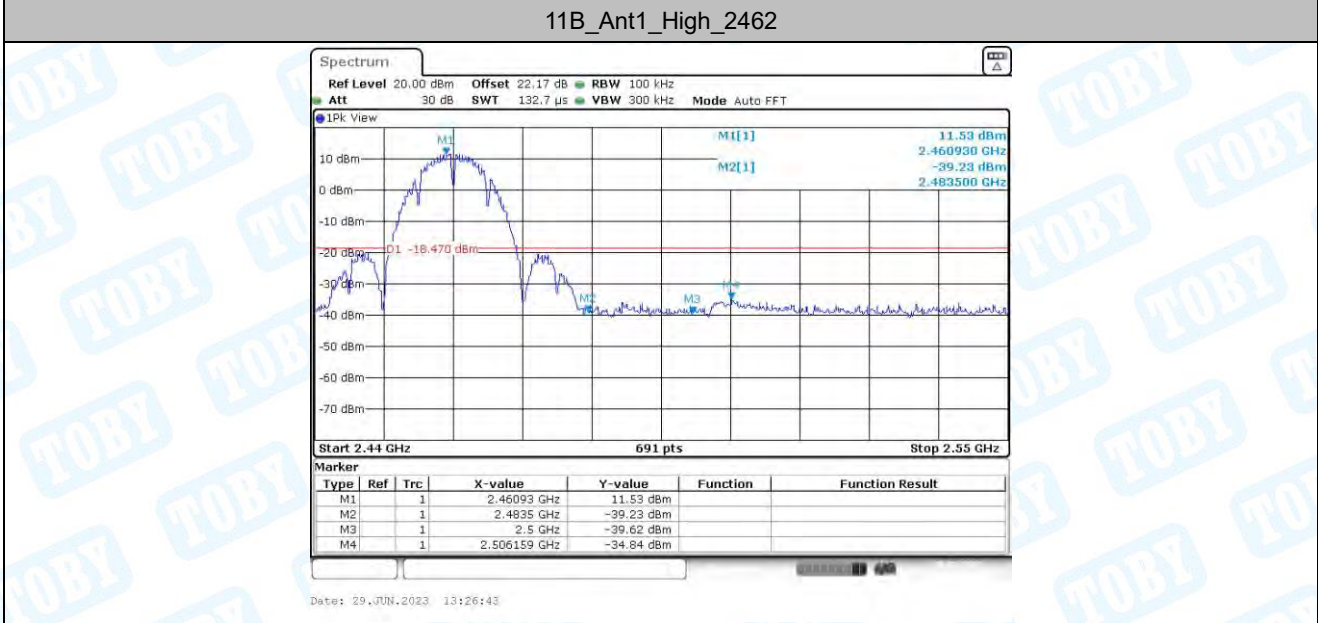
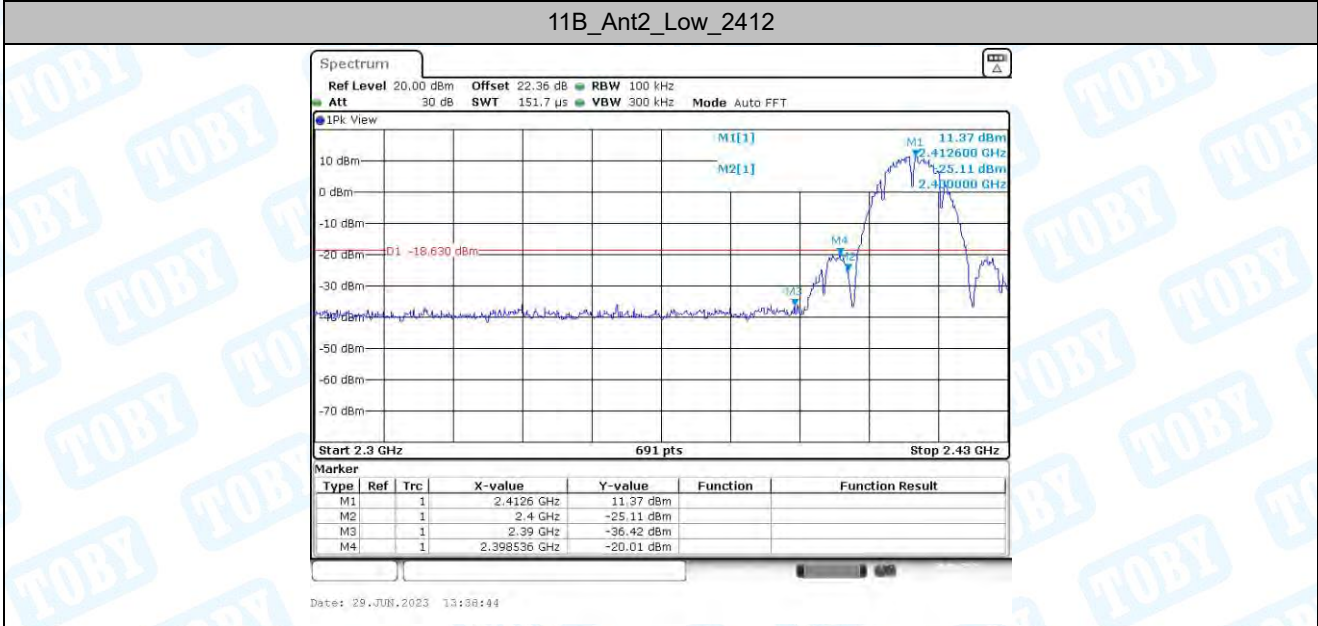
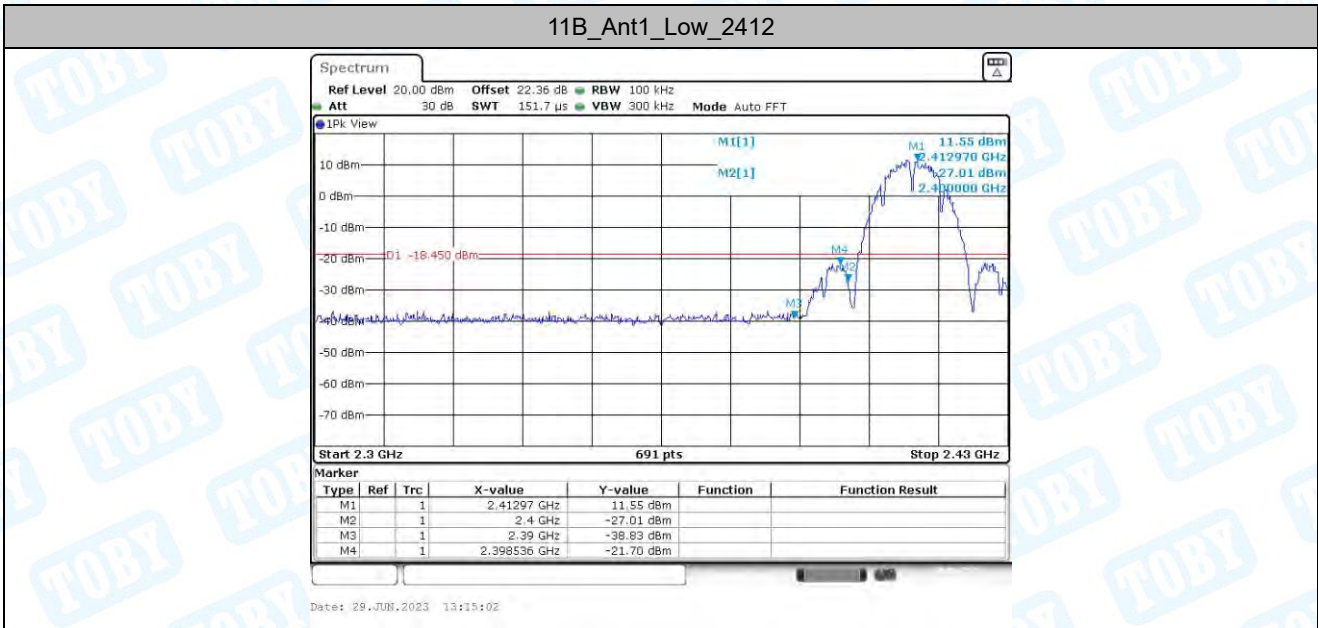


## 4. Band edge measurements

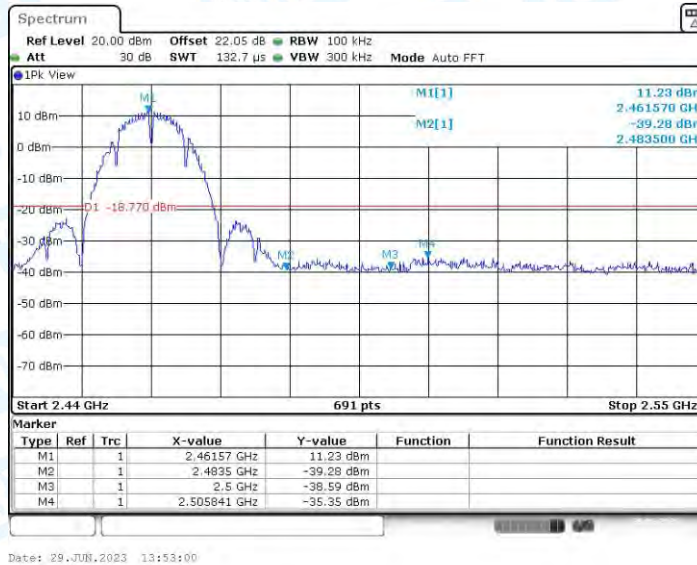
### 4.1. Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B-SISO	Ant1	Low	2412	11.55	-21.70	≤-18.45	PASS
	Ant2	Low	2412	11.37	-20.01	≤-18.63	PASS
	Ant1	High	2462	11.53	-34.84	≤-18.47	PASS
	Ant2	High	2462	11.23	-35.35	≤-18.77	PASS
11G-SISO	Ant1	Low	2412	7.16	-23.62	≤-22.84	PASS
	Ant2	Low	2412	7.48	-22.80	≤-22.52	PASS
	Ant1	High	2462	6.80	-33.26	≤-23.20	PASS
	Ant2	High	2462	4.45	-35.07	≤-25.55	PASS
11B-CDD	Ant1	Low	2412	10.82	-23.81	≤-19.18	PASS
	Ant2	Low	2412	11.10	-22.68	≤-18.90	PASS
	Ant1	High	2462	10.83	-34.79	≤-19.17	PASS
	Ant2	High	2462	10.44	-35.06	≤-19.56	PASS
11G-CDD	Ant1	Low	2412	5.94	-28.75	≤-24.06	PASS
	Ant2	Low	2412	6.07	-24.41	≤-23.93	PASS
	Ant1	High	2462	3.14	-35.07	≤-26.86	PASS
	Ant2	High	2462	5.03	-34.14	≤-24.97	PASS
11N20-CDD	Ant1	Low	2412	5.60	-28.71	≤-24.40	PASS
	Ant2	Low	2412	6.25	-26.27	≤-23.75	PASS
	Ant1	High	2462	6.06	-35.00	≤-23.94	PASS
	Ant2	High	2462	3.17	-35.47	≤-26.83	PASS
11N40-CDD	Ant1	Low	2422	-1.93	-34.15	≤-31.93	PASS
	Ant2	Low	2422	-0.01	-32.96	≤-30.01	PASS
	Ant1	High	2452	1.15	-34.26	≤-28.85	PASS
	Ant2	High	2452	1.64	-35.17	≤-28.36	PASS

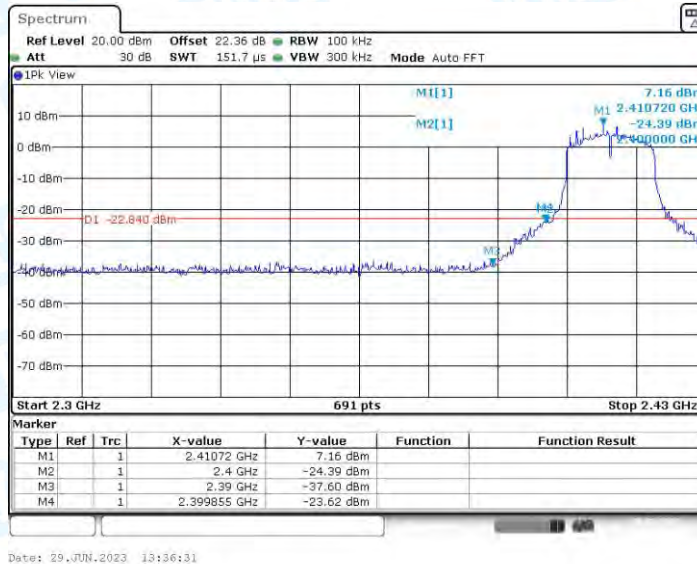
## 4.2. Test Graphs



11B\_Ant2\_High\_2462



11G\_Ant1\_Low\_2412

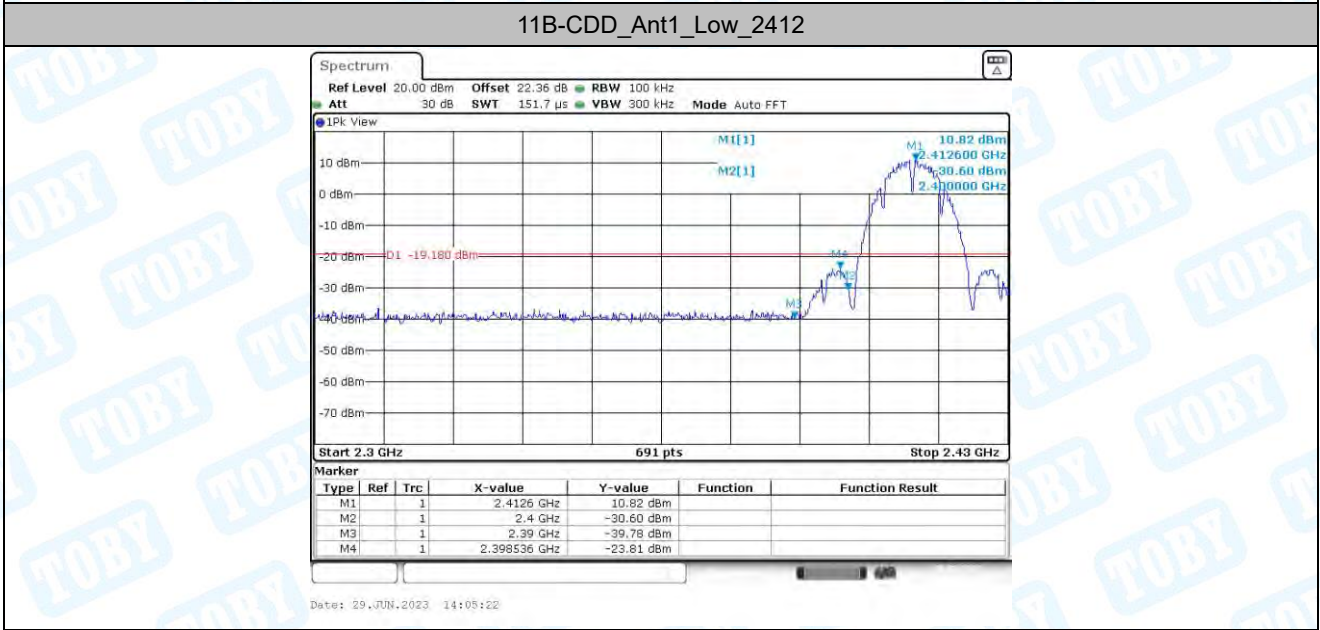
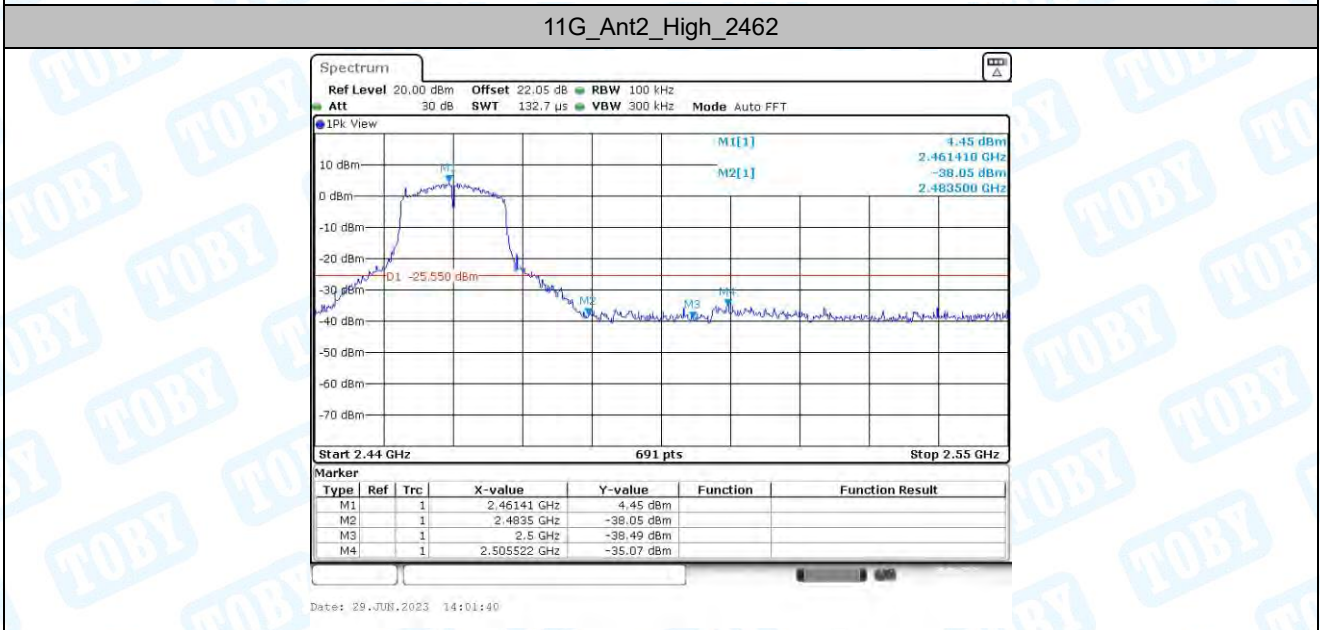
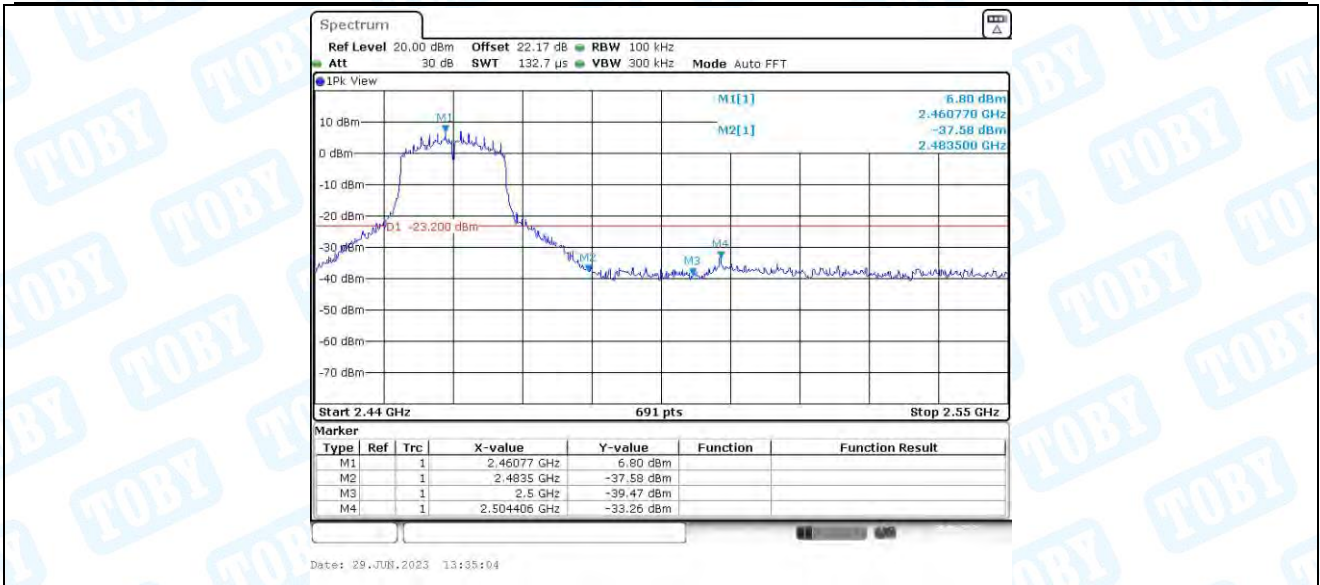


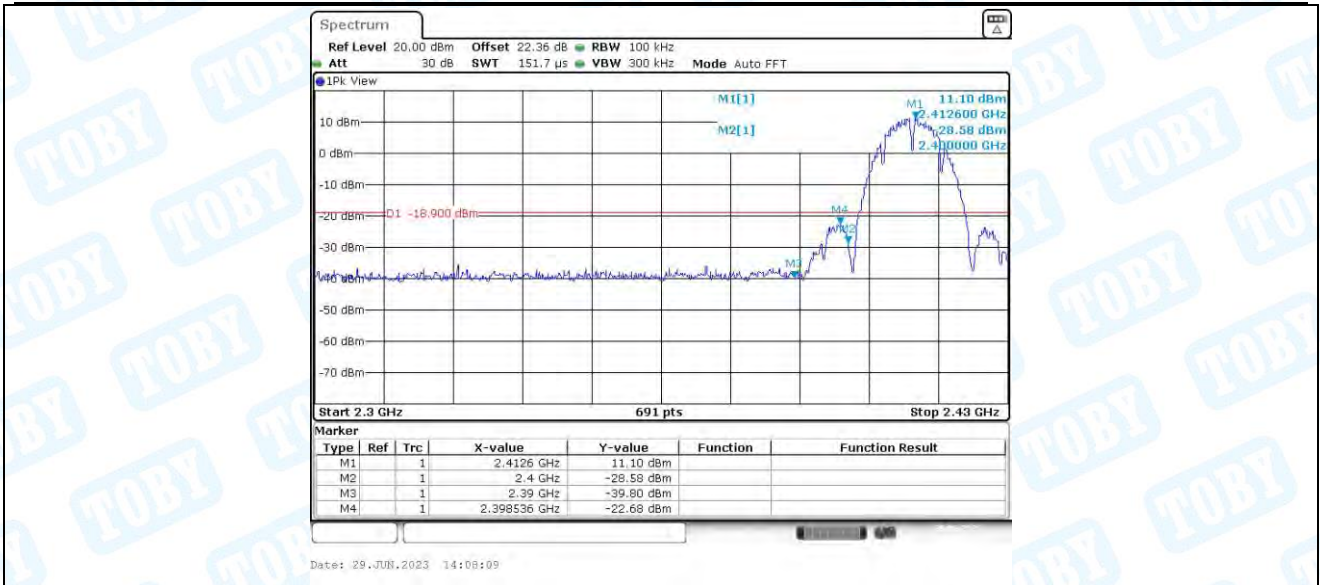
11G\_Ant2\_Low\_2412



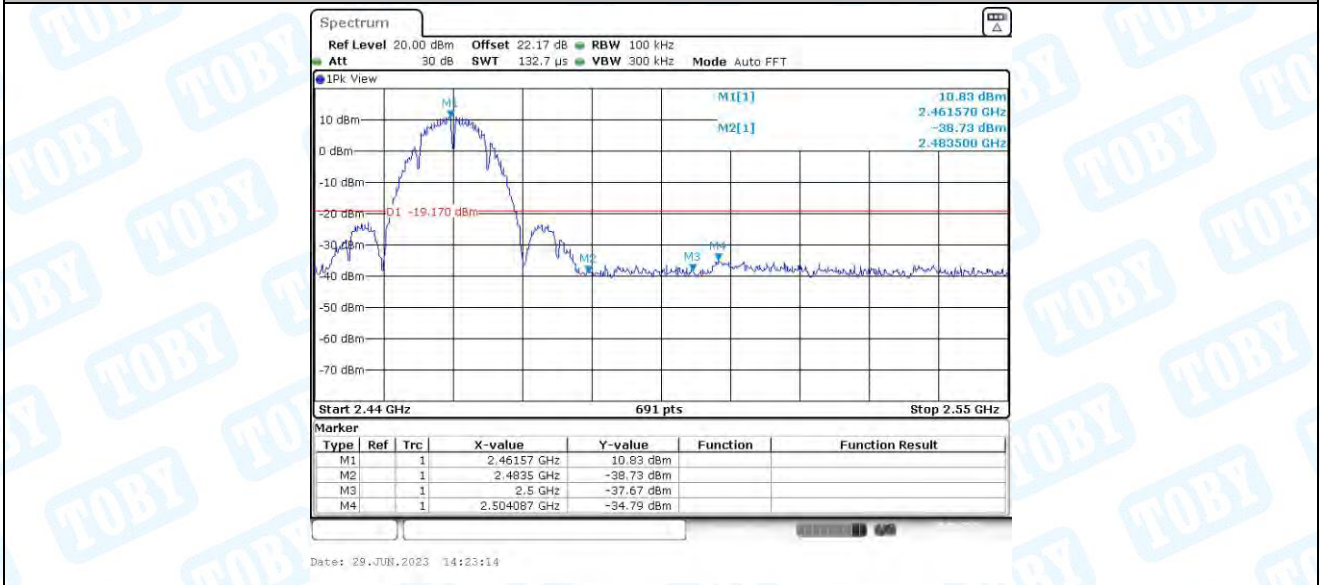
11G\_Ant1\_High\_2462



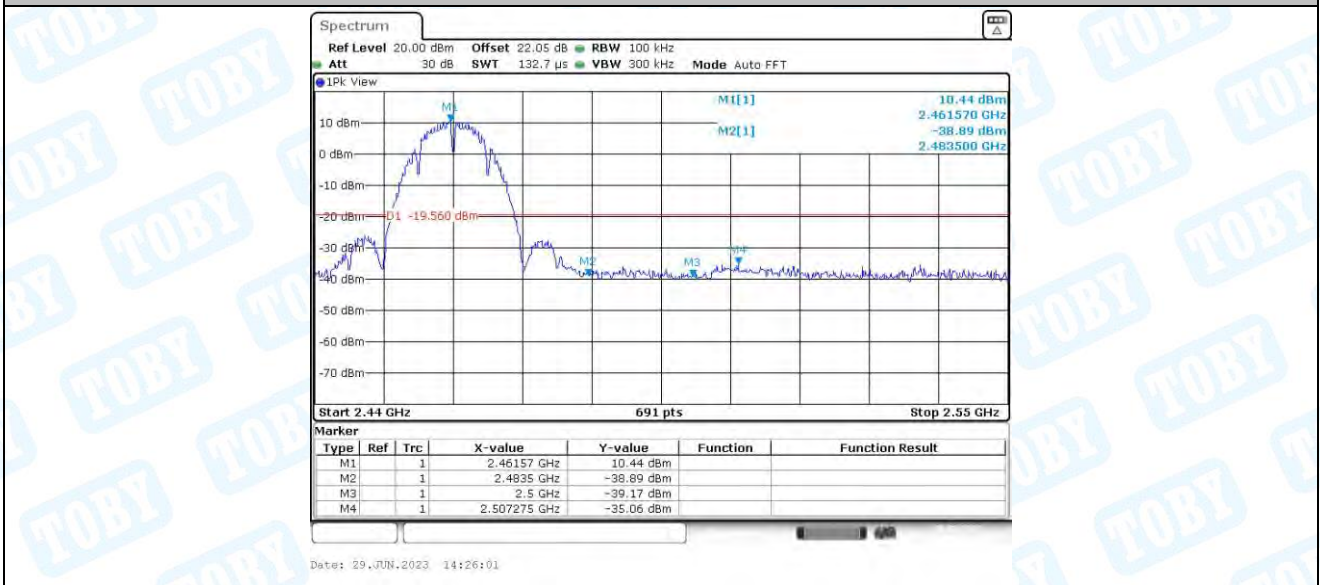




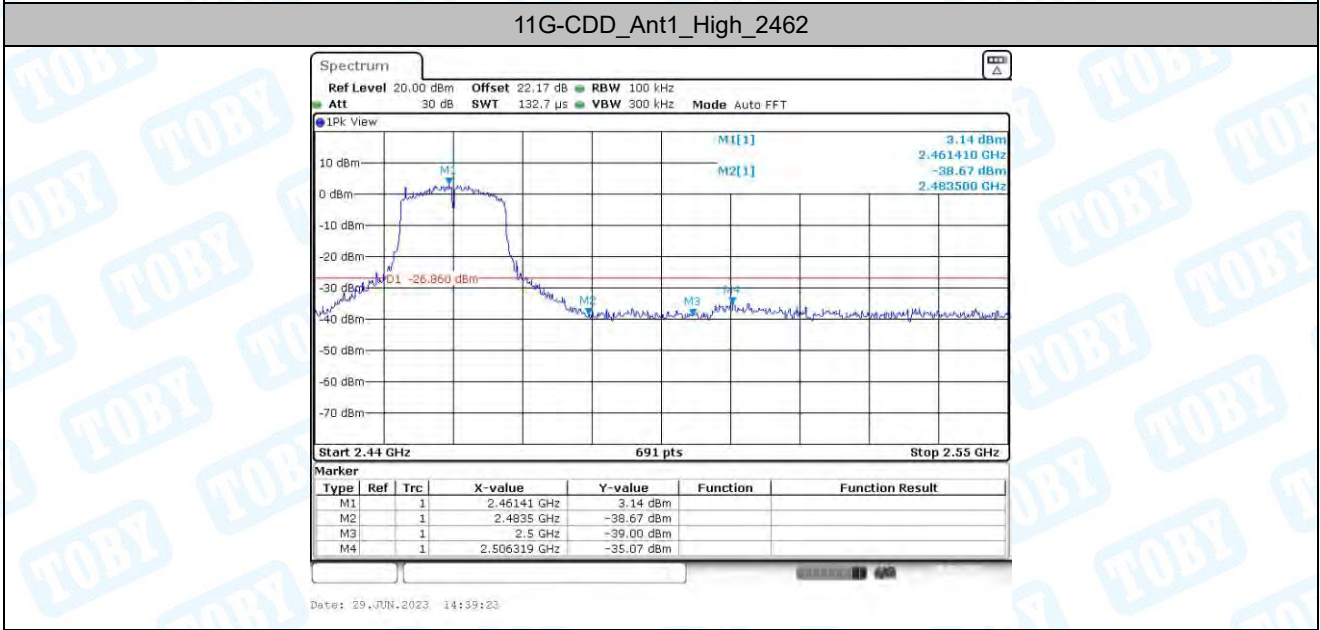
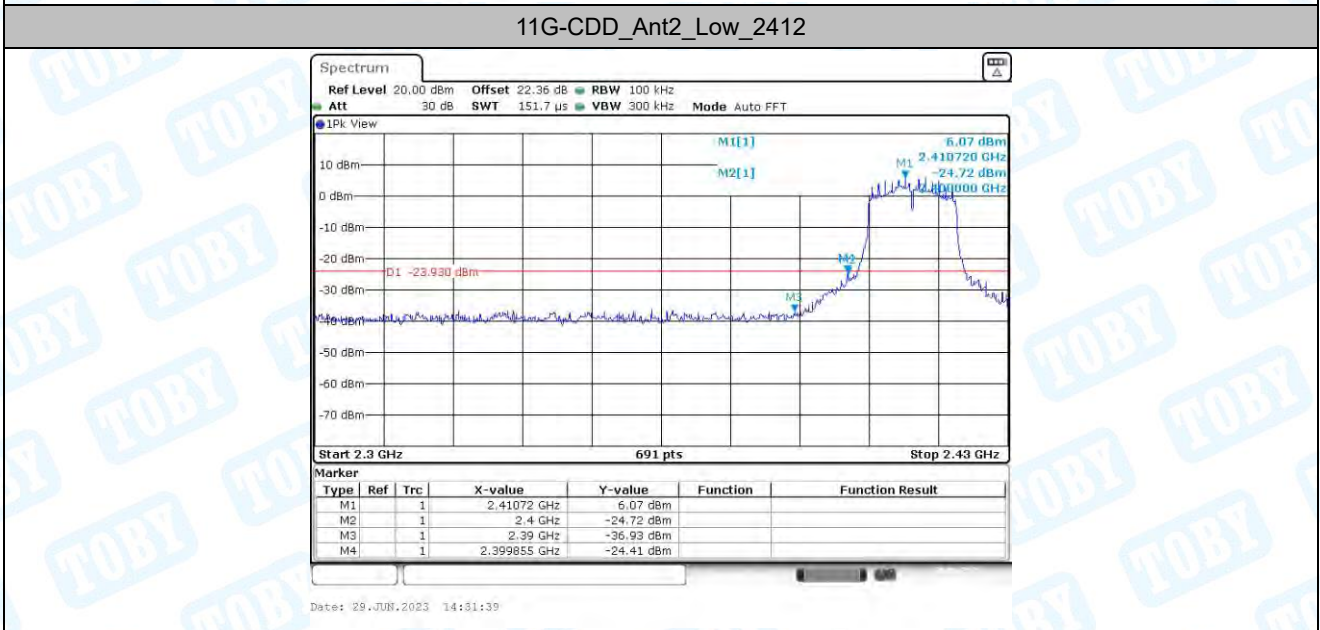
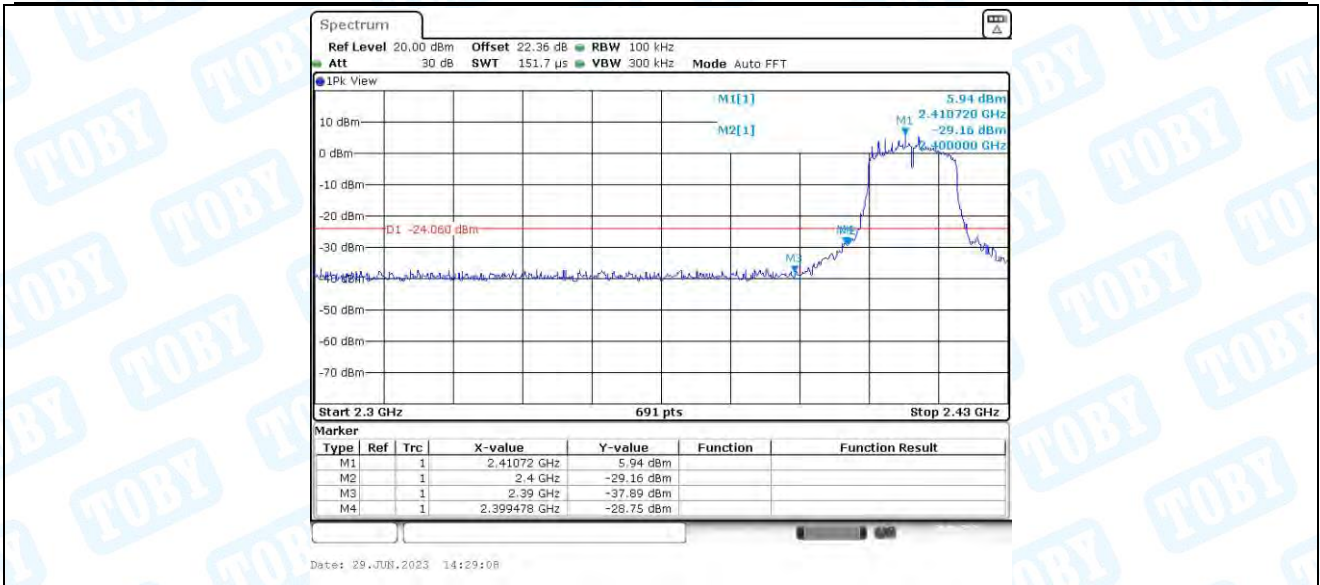
11B-CDD\_Ant1\_High\_2462



11B-CDD\_Ant2\_High\_2462



11G-CDD\_Ant1\_Low\_2412



**11G-CDD\_Ant2\_High\_2462**

