

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

General Description of EUT	
<b>Product Name:</b>	4G multimode engineering gateway
<b>Test Model:</b>	UX33-US
<b>Sample ID:</b>	202305-0073-2-2#
Environmental Conditions	
<b>Temperature:</b>	25°C
<b>Relative Humidity:</b>	55%
<b>Test Voltage:</b>	DC 5V
<b>Test Engineer:</b>	Zhou zhen
Note: For a more detailed features description, please refer to the report TBR-C-202305-0073-112 The report only show the worst case data.	

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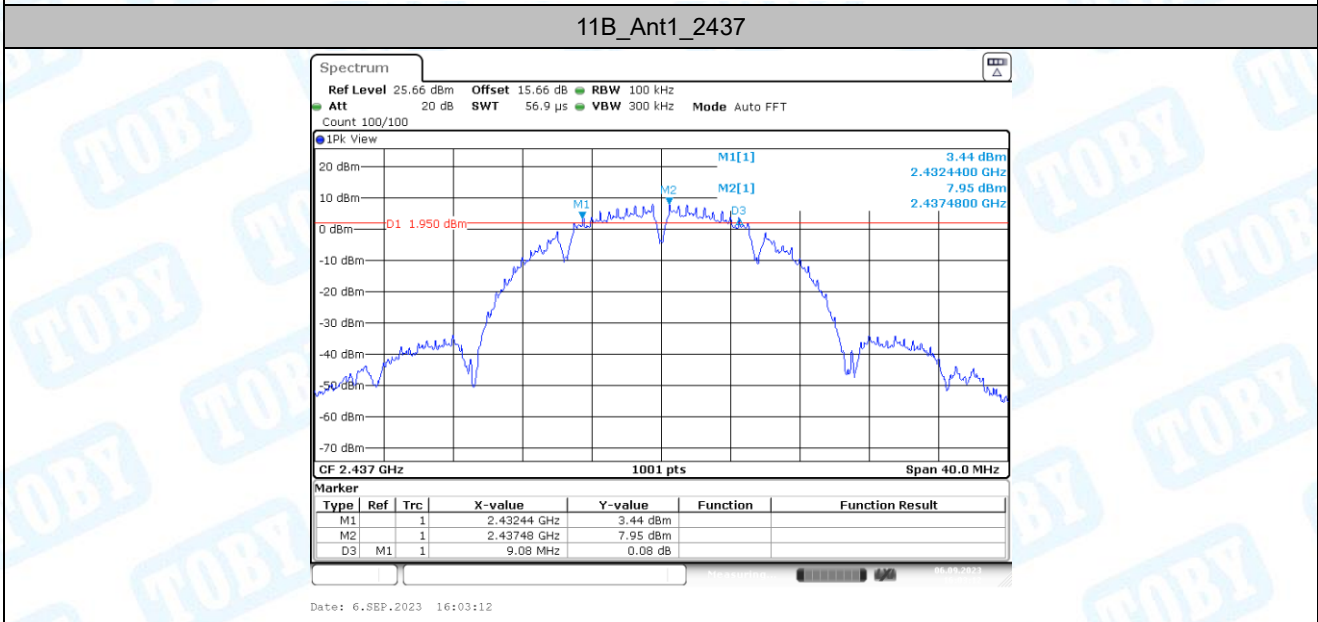
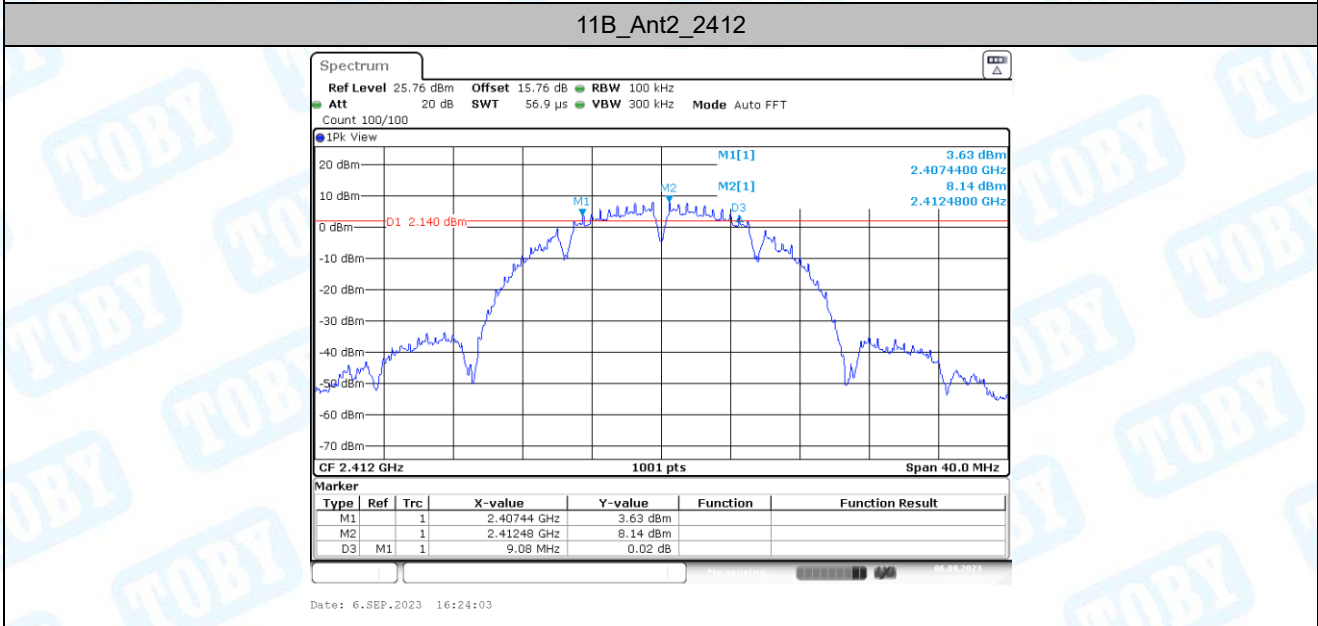
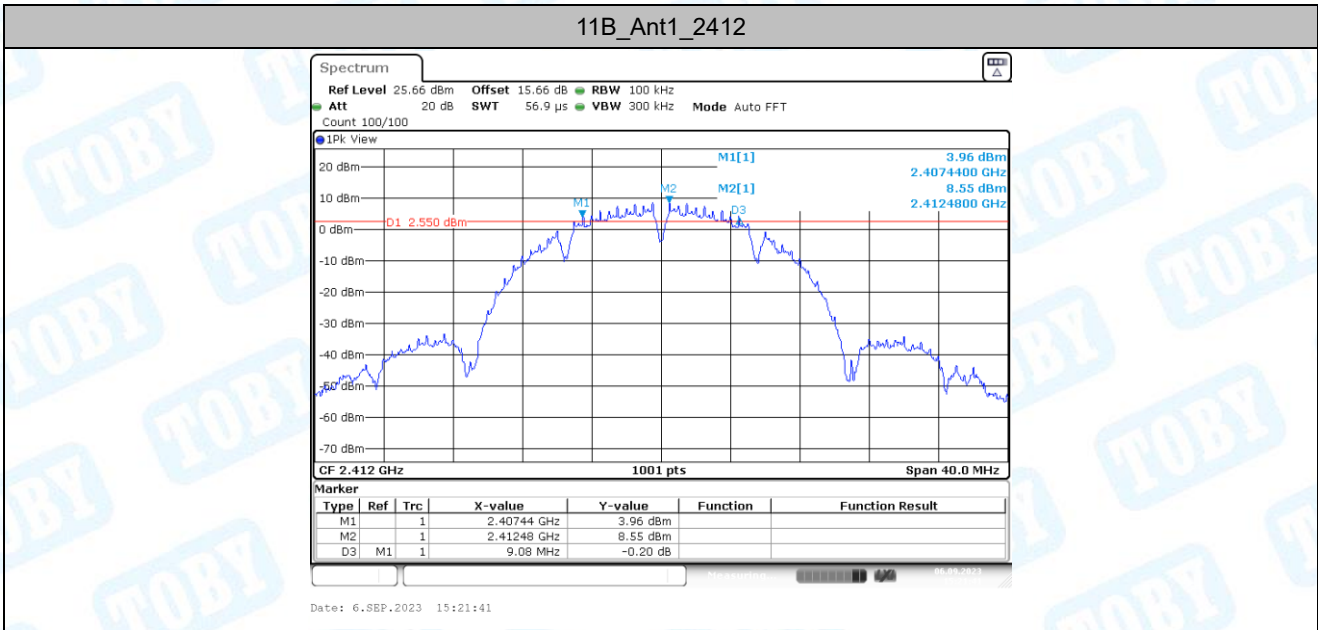


# 1. DTS Bandwidth

## 1.1. Test Result

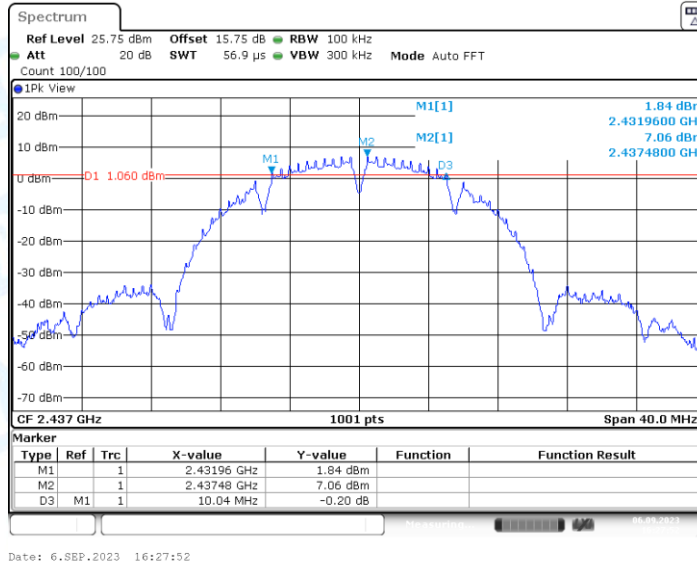
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.08	2407.44	2416.52	0.5	PASS
	Ant2	2412	9.08	2407.44	2416.52	0.5	PASS
	Ant1	2437	9.08	2432.44	2441.52	0.5	PASS
	Ant2	2437	10.04	2431.96	2442.00	0.5	PASS
	Ant1	2462	10.04	2456.96	2467.00	0.5	PASS
	Ant2	2462	10.04	2456.96	2467.00	0.5	PASS
11G	Ant1	2412	16.04	2403.84	2419.88	0.5	PASS
	Ant2	2412	15.80	2404.08	2419.88	0.5	PASS
	Ant1	2437	16.28	2428.84	2445.12	0.5	PASS
	Ant2	2437	16.32	2428.84	2445.16	0.5	PASS
	Ant1	2462	16.28	2453.84	2470.12	0.5	PASS
	Ant2	2462	16.28	2453.84	2470.12	0.5	PASS
11N20MIMO	Ant1	2412	16.88	2403.48	2420.36	0.5	PASS
	Ant2	2412	16.24	2403.84	2420.08	0.5	PASS
	Ant1	2437	16.80	2428.60	2445.40	0.5	PASS
	Ant2	2437	16.28	2428.84	2445.12	0.5	PASS
	Ant1	2462	16.32	2453.80	2470.12	0.5	PASS
	Ant2	2462	16.32	2453.80	2470.12	0.5	PASS
11N40MIMO	Ant1	2422	35.36	2404.24	2439.60	0.5	PASS
	Ant2	2422	36.40	2403.76	2440.16	0.5	PASS
	Ant1	2437	36.32	2418.84	2455.16	0.5	PASS
	Ant2	2437	35.36	2419.24	2454.60	0.5	PASS
	Ant1	2452	35.44	2434.16	2469.60	0.5	PASS
	Ant2	2452	35.28	2434.24	2469.52	0.5	PASS

## 1.2. Test Graphs

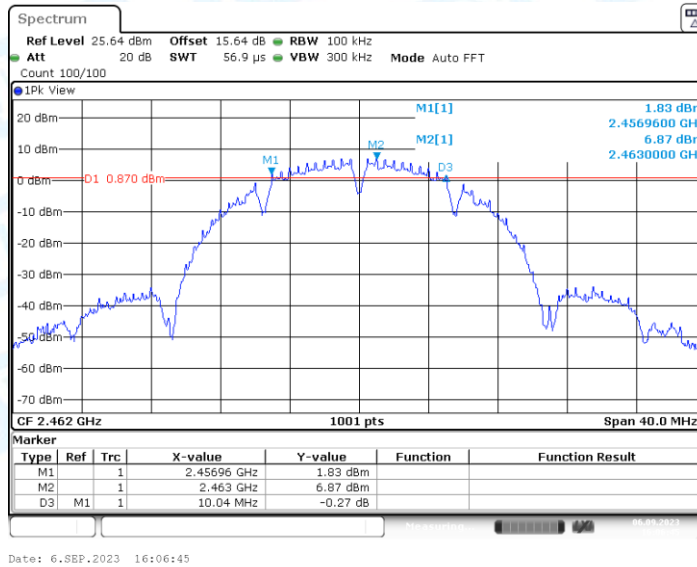




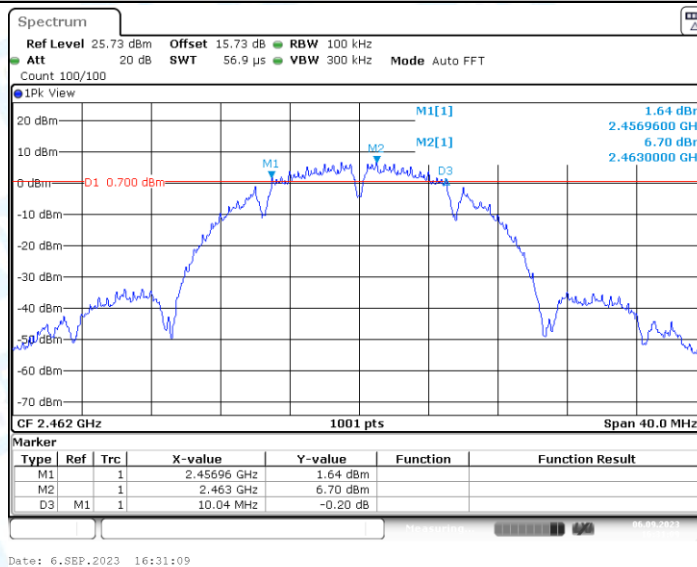
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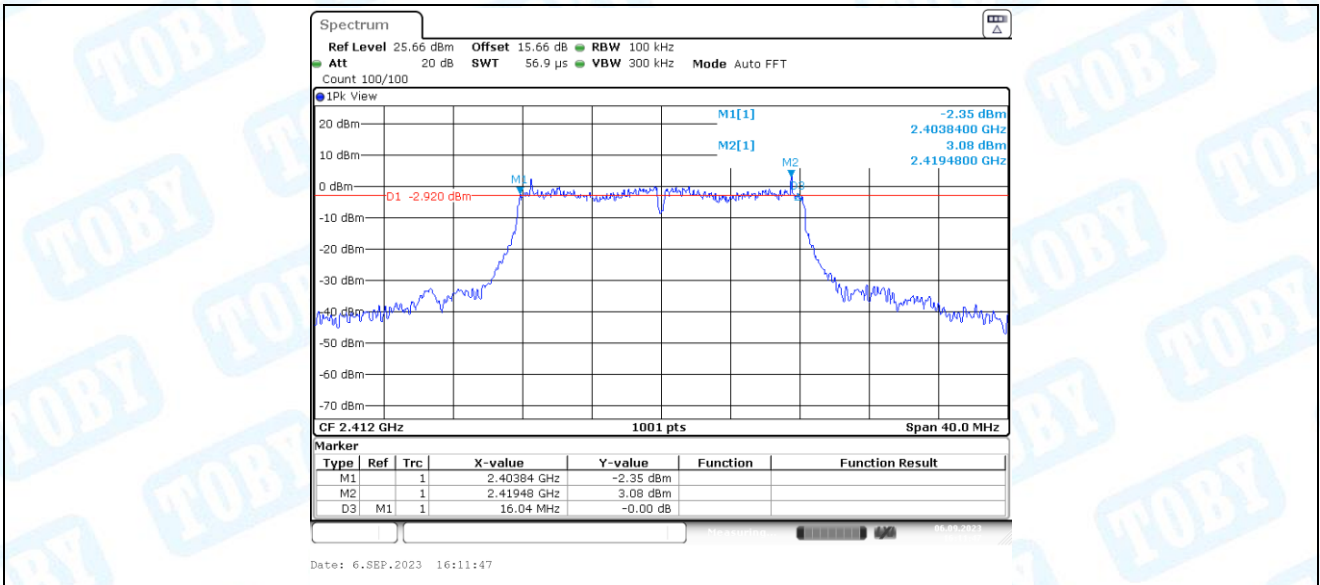
### 11B\_Ant1\_2462



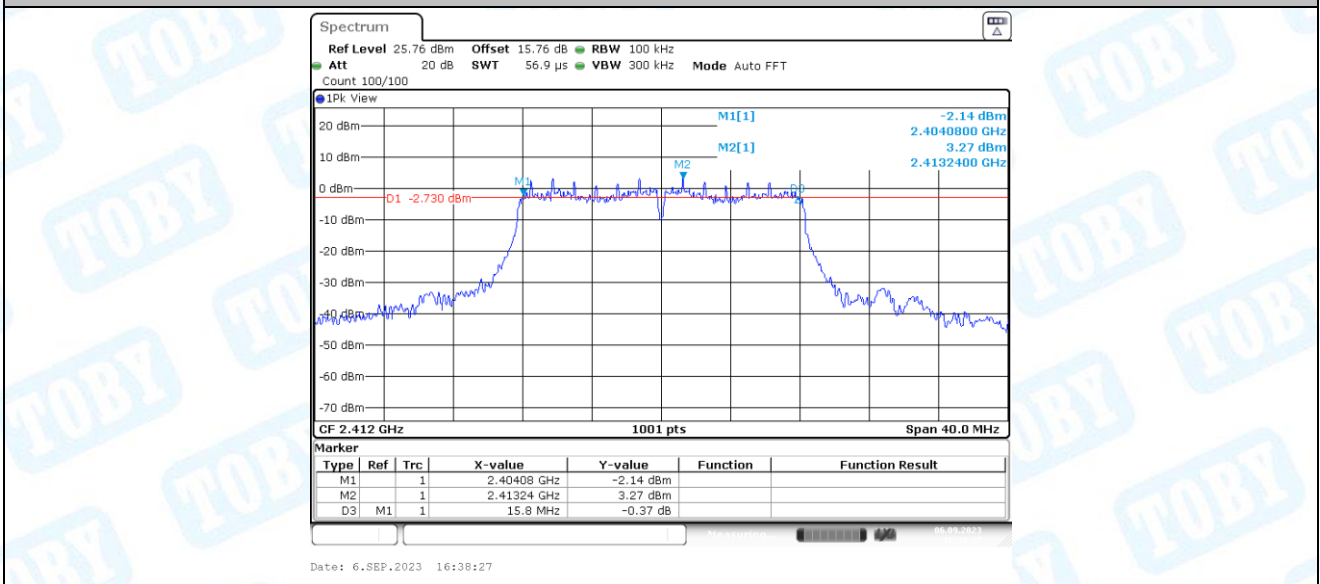
### 11B\_Ant2\_2462



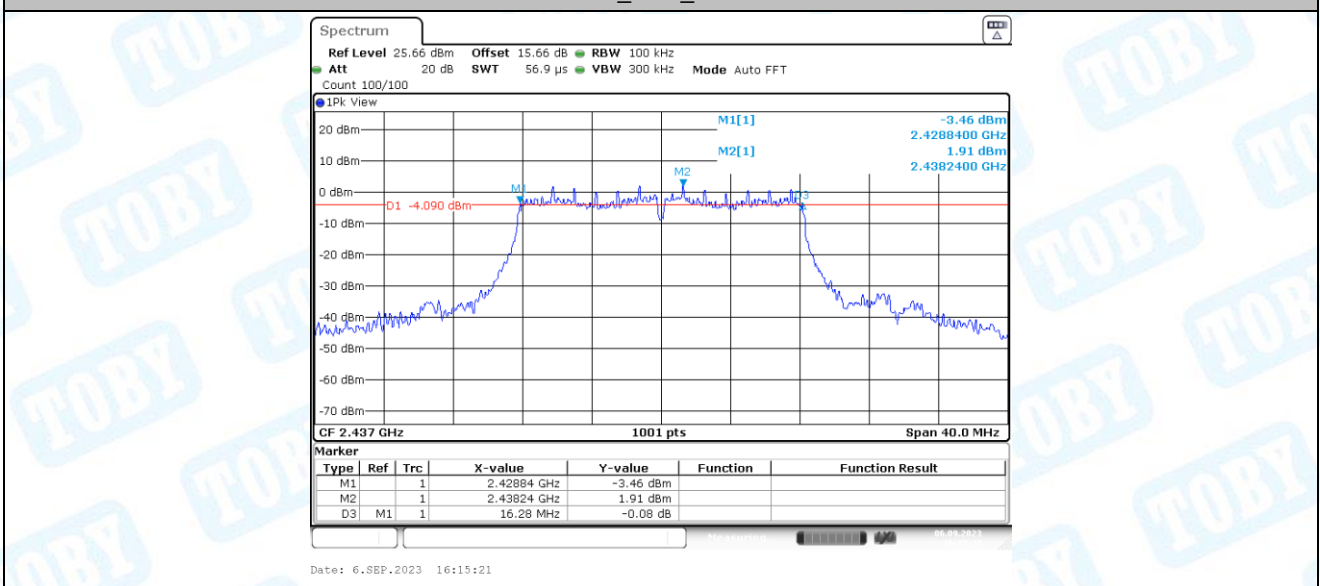
### 11G\_Ant1\_2412



11G\_Ant2\_2412

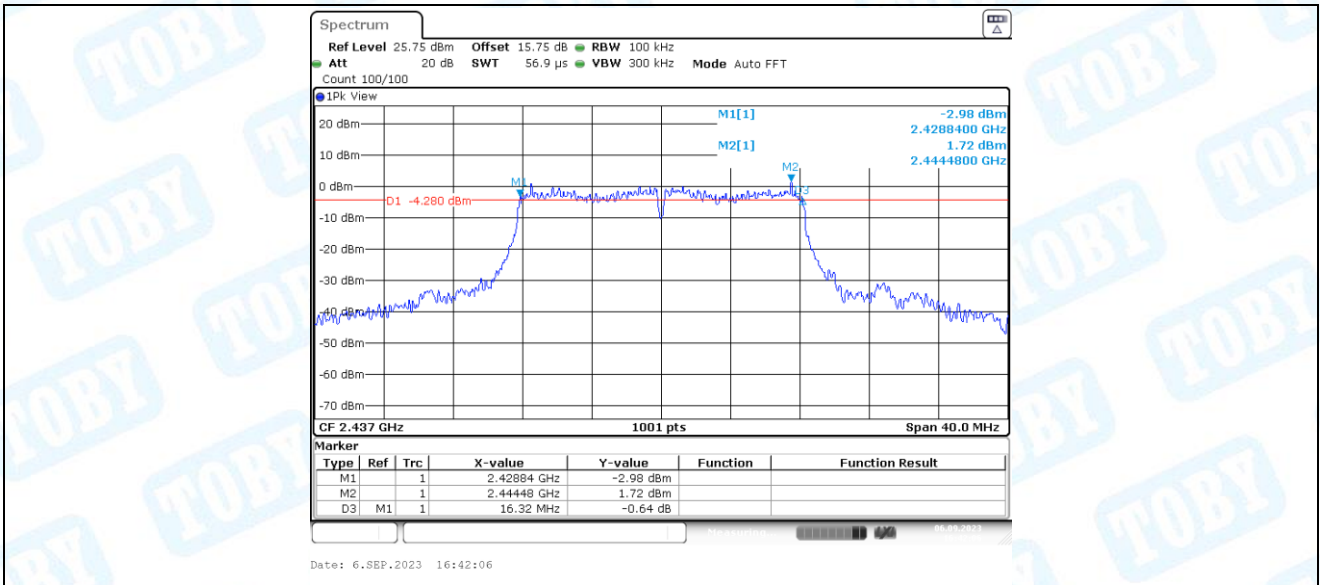


11G\_Ant1\_2437

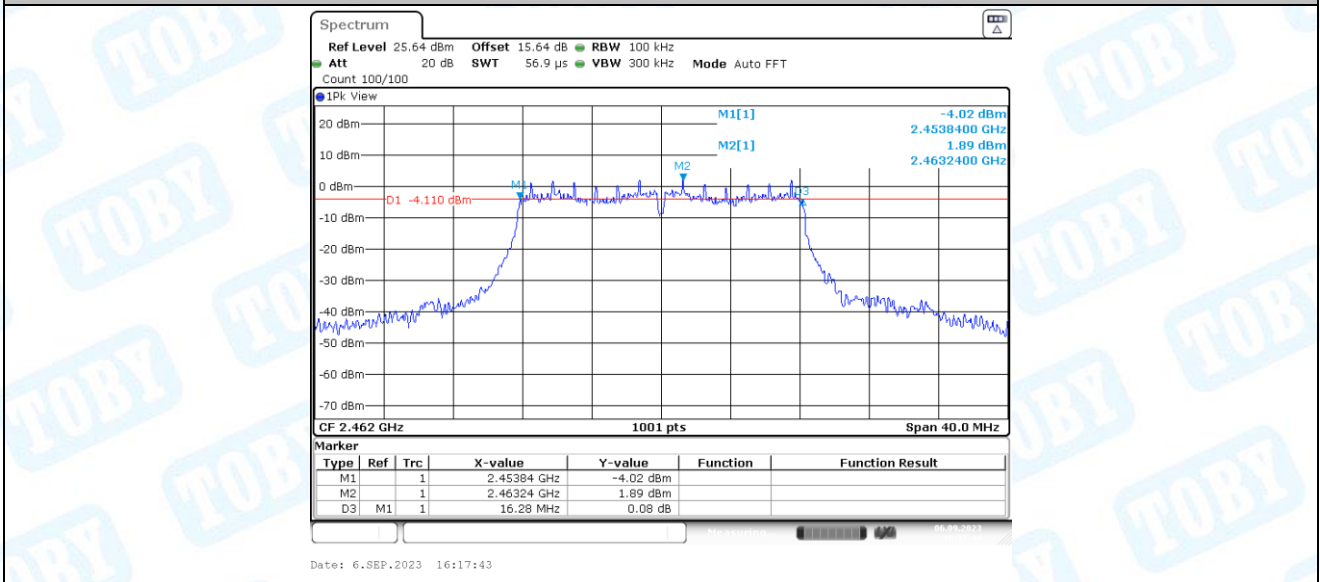


11G\_Ant2\_2437

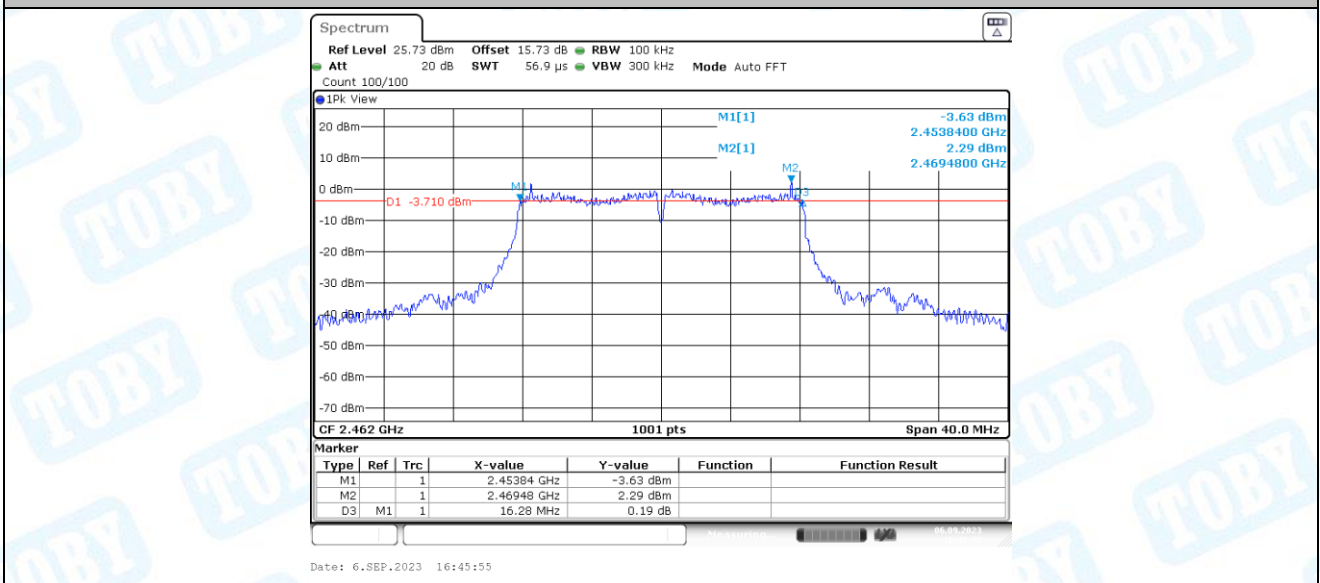




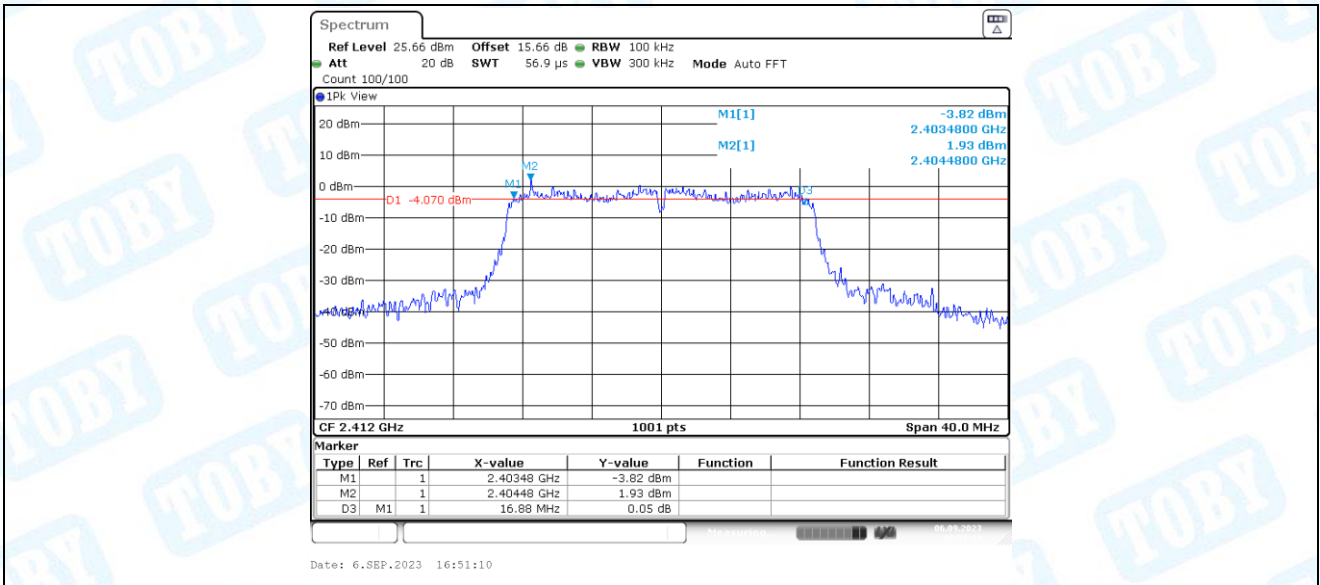
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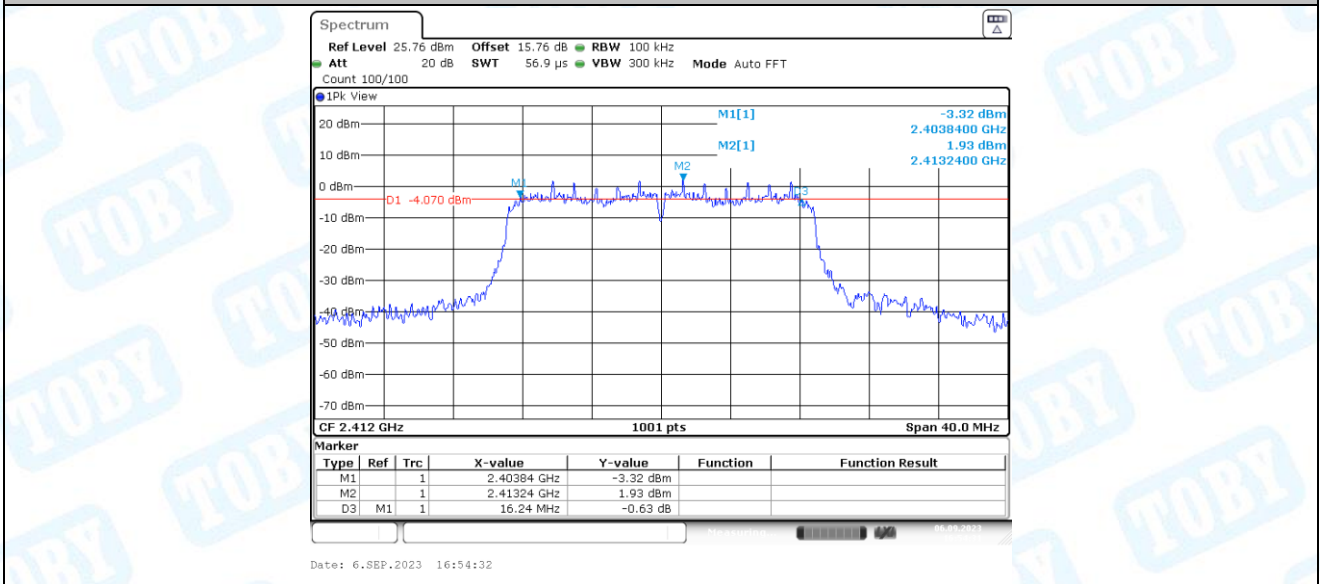
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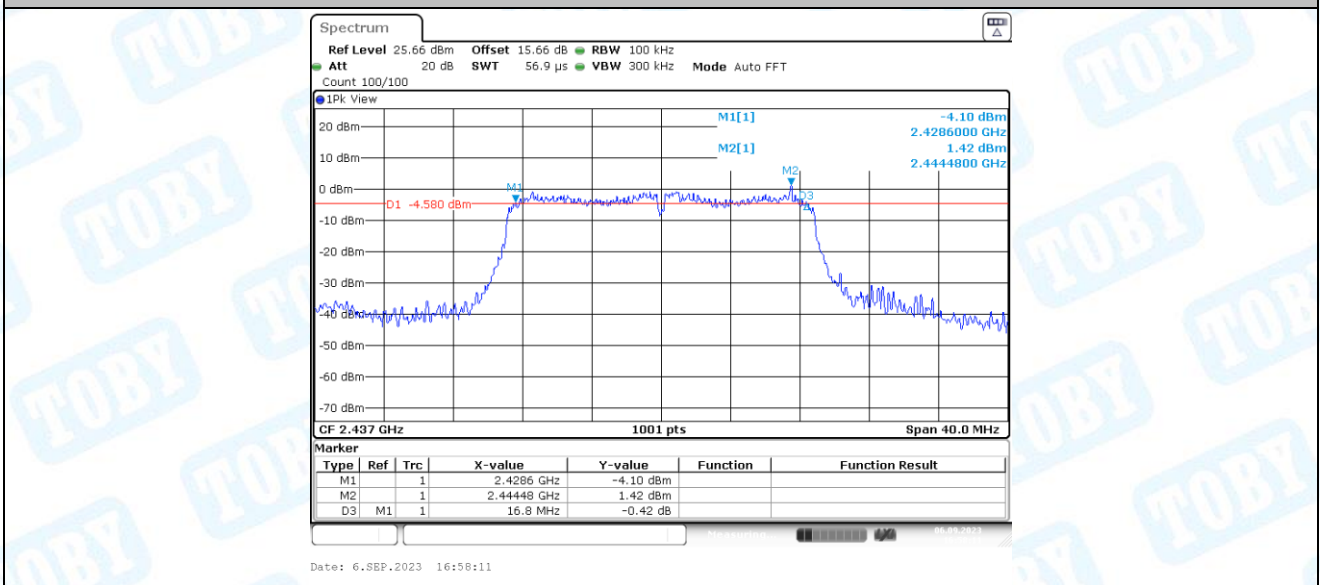
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11N20MIMO\_Ant2\_2412

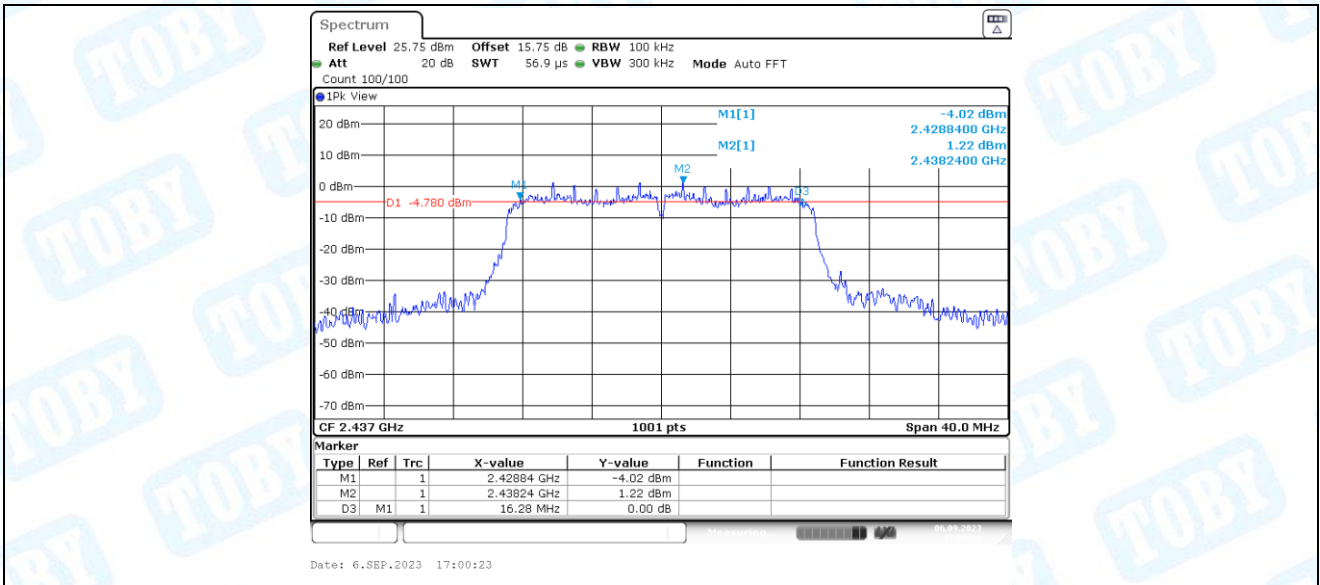


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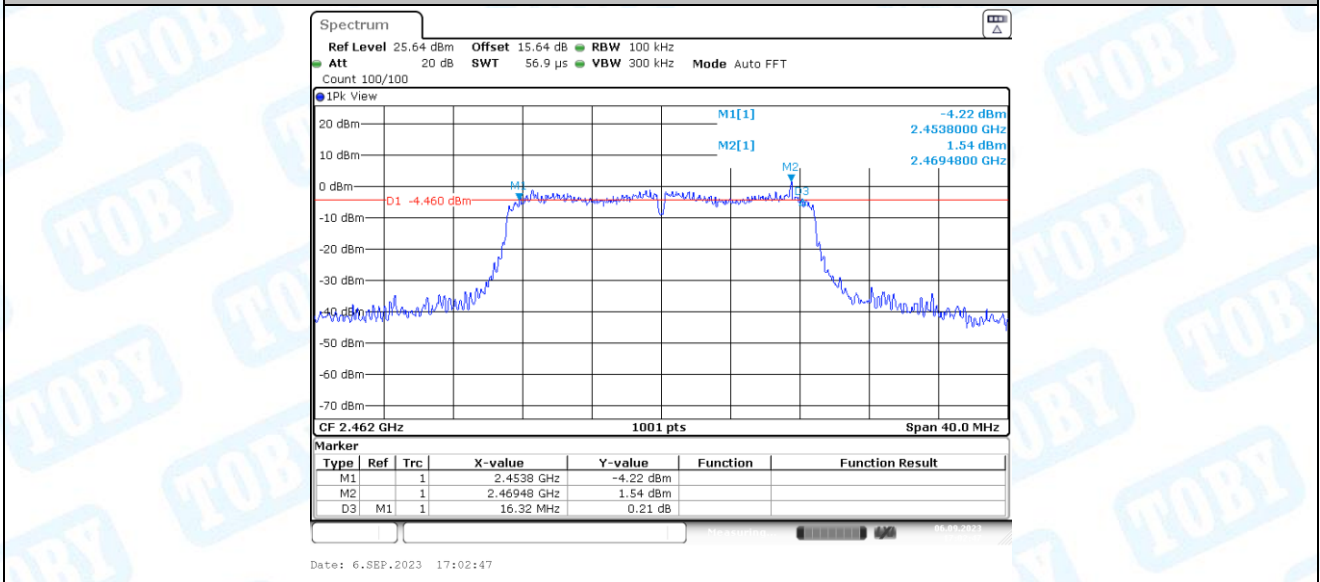


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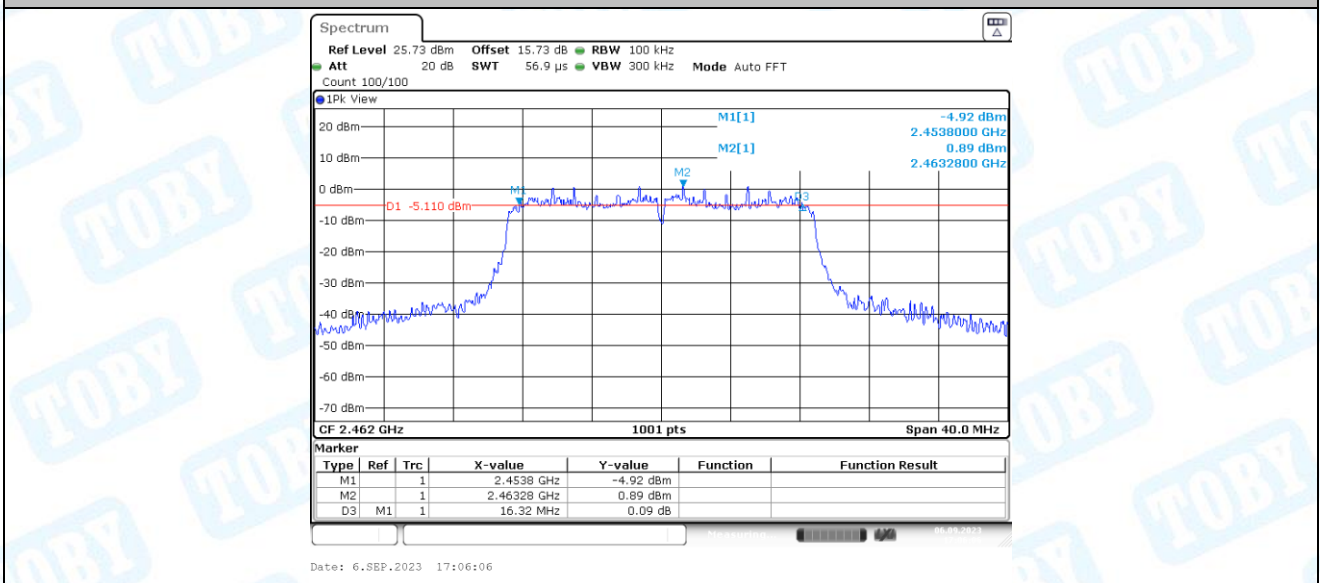




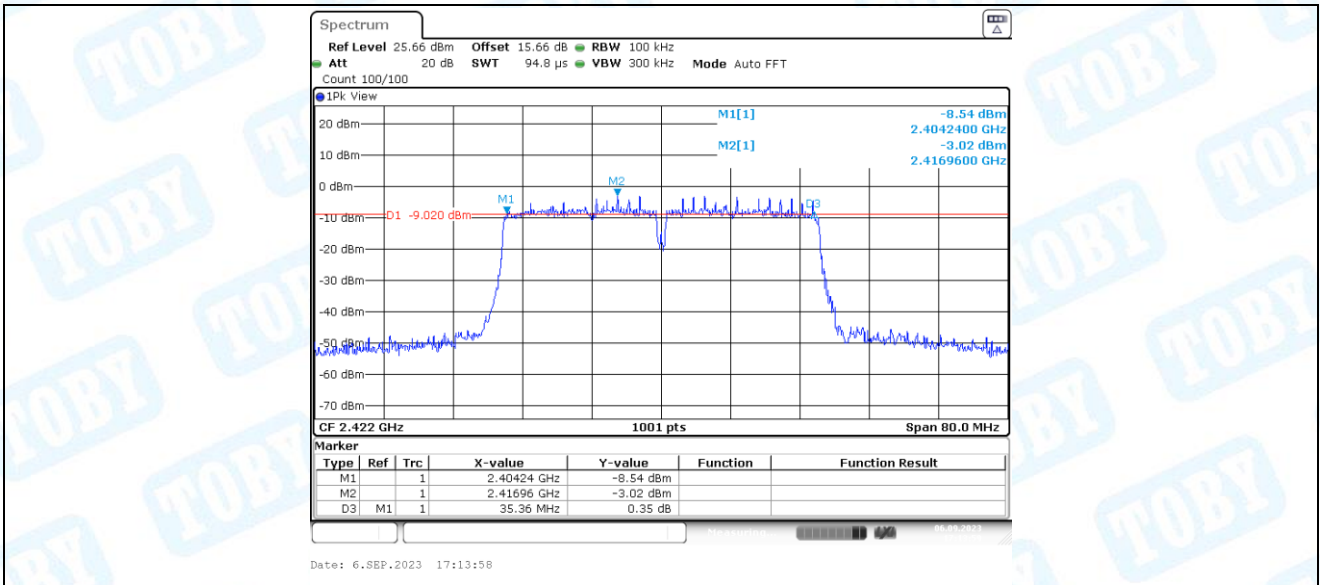
11N20MIMO\_Ant1\_2462



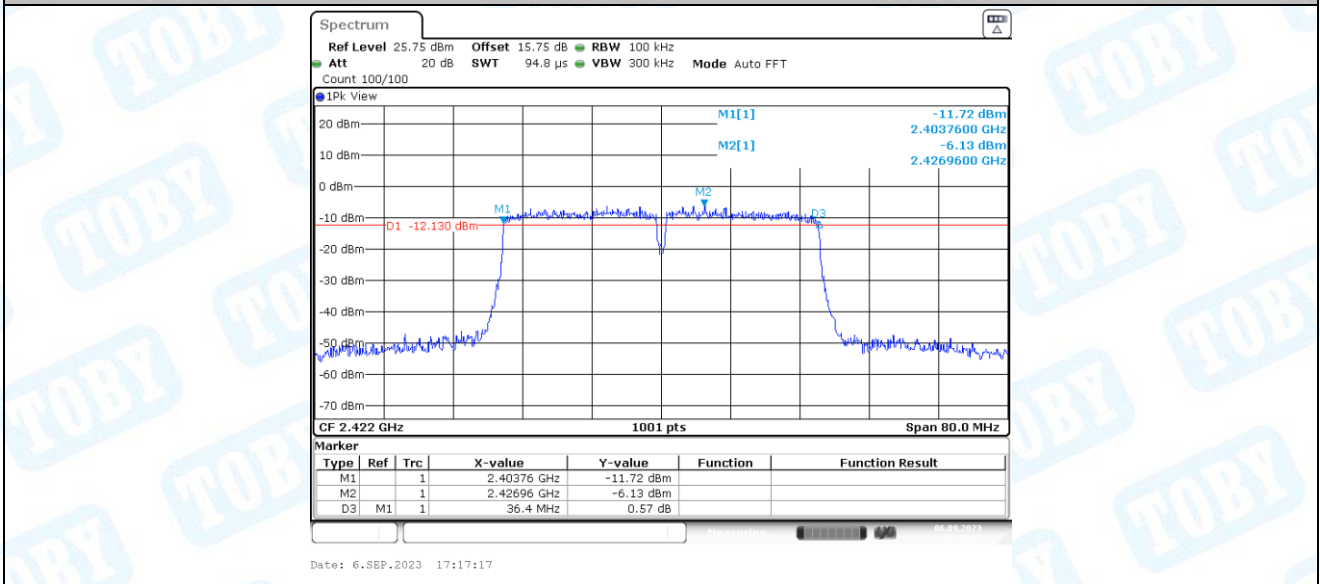
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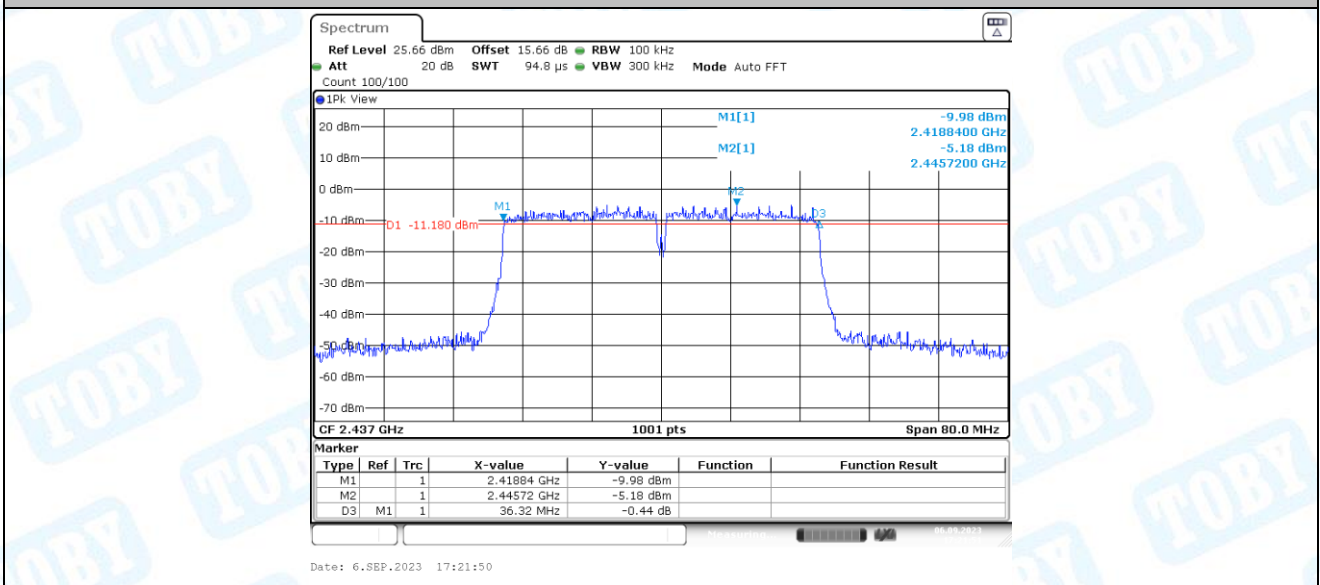
11N40MIMO\_Ant1\_2422



11N40MIMO\_Ant2\_2422

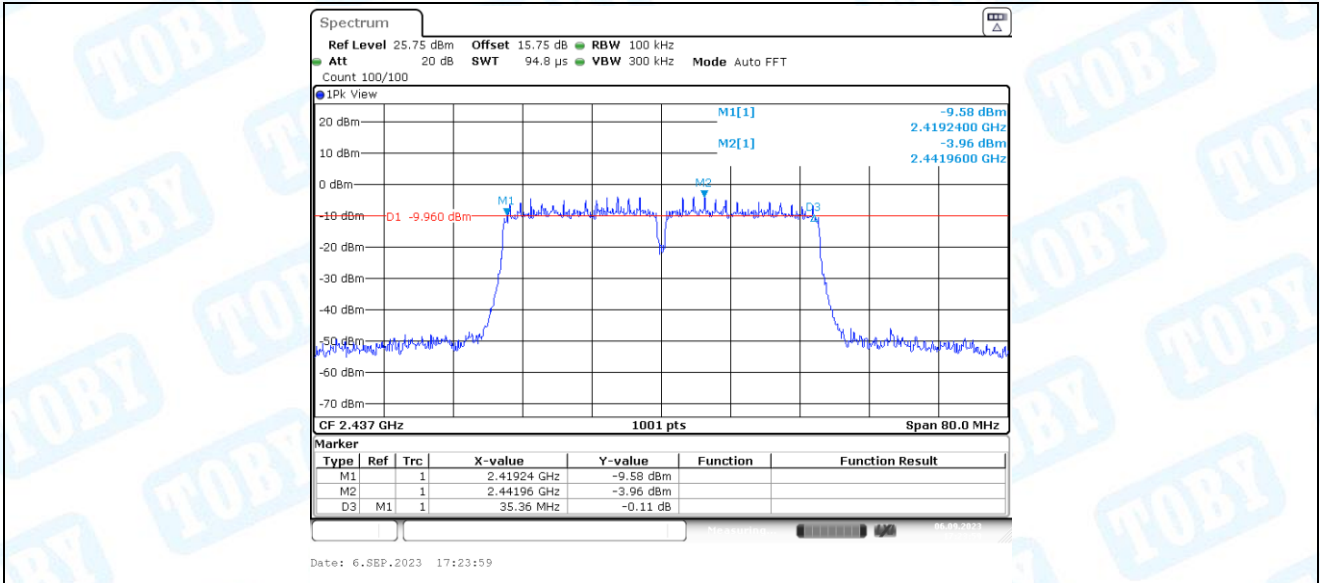


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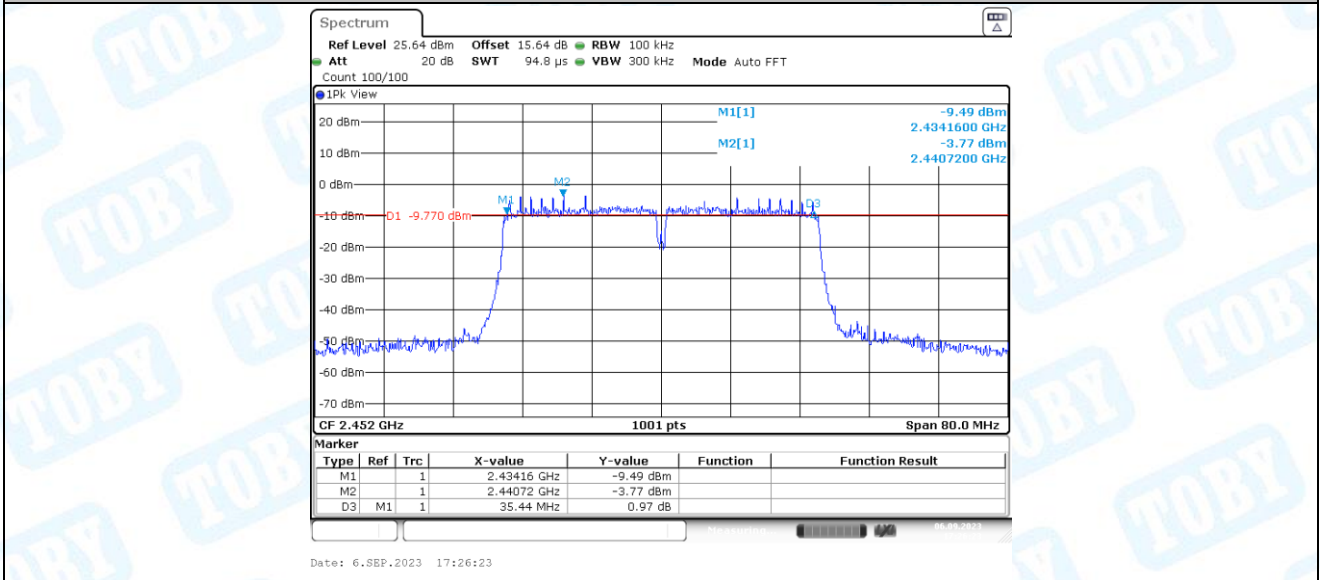


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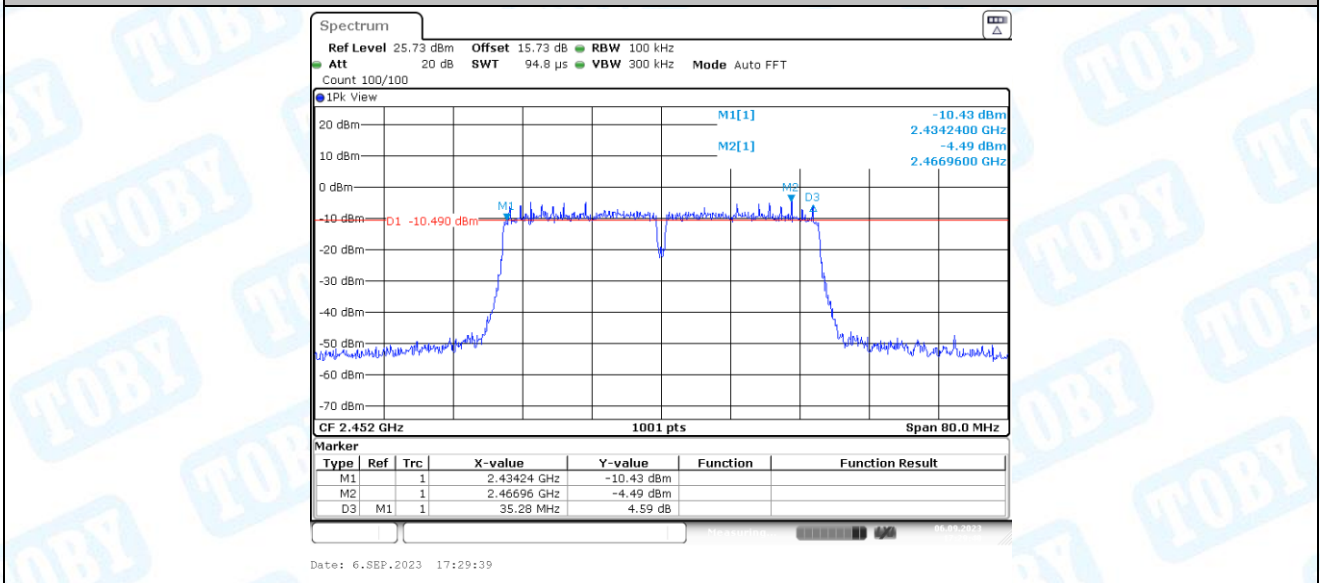




11N40MIMO\_Ant1\_2452



11N40MIMO\_Ant2\_2452



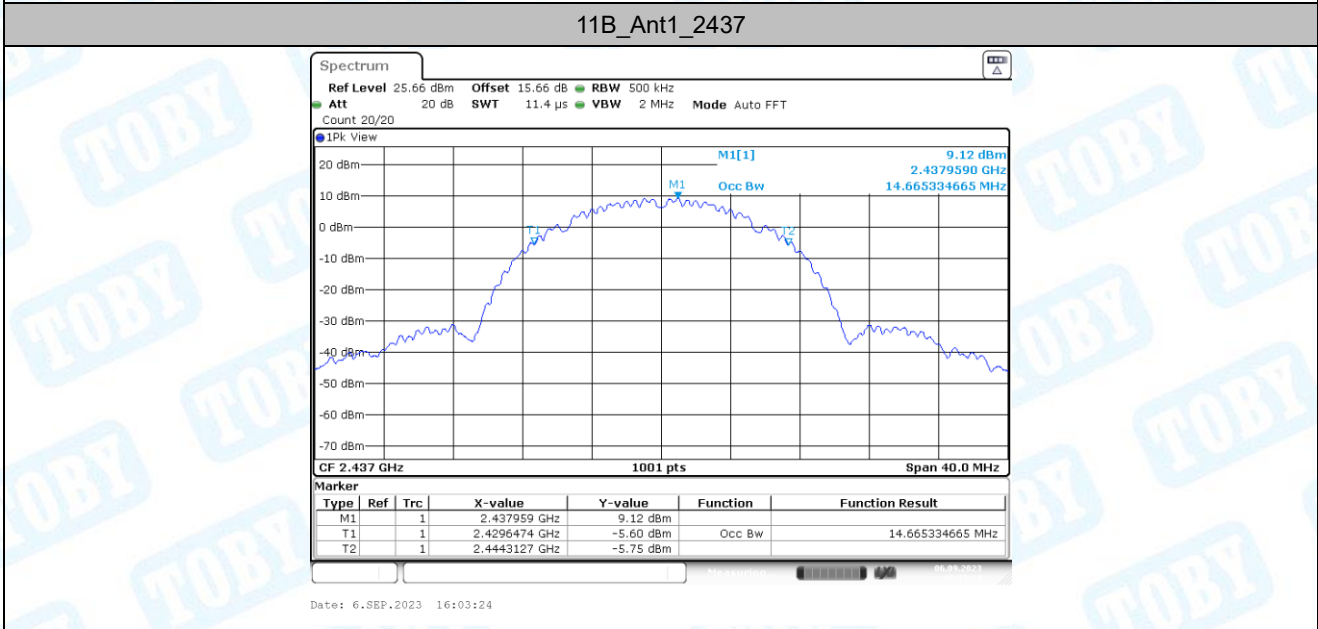
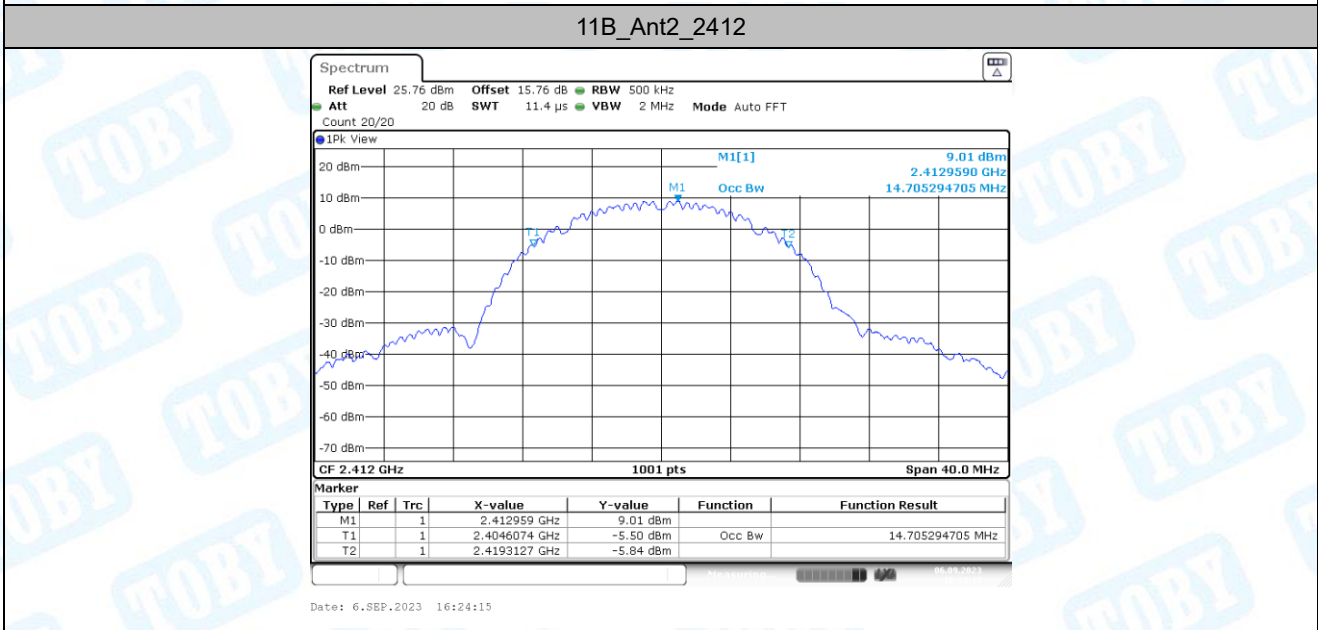
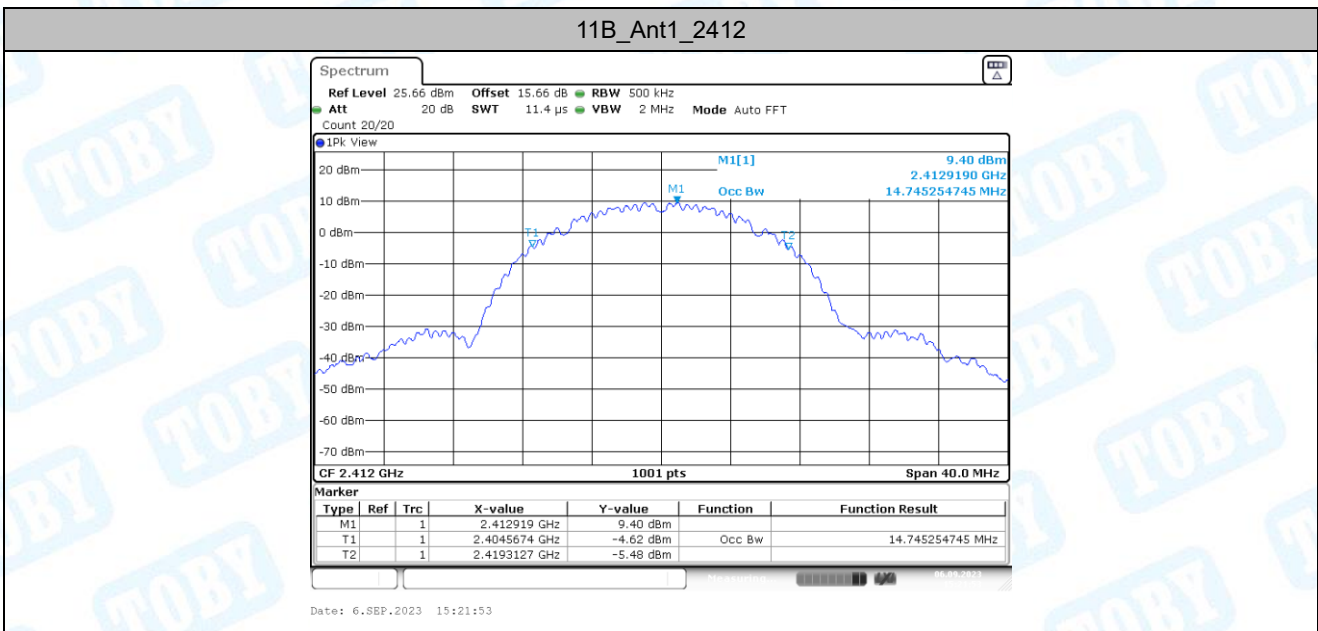
## 2. Occupied Channel Bandwidth

### 2.1. Test Result

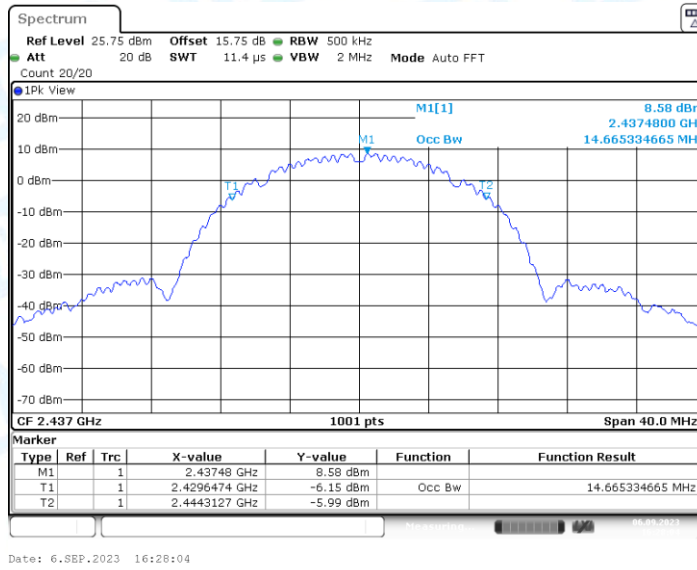
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	14.745	2404.5674	2419.3127	---	---
	Ant2	2412	14.705	2404.6074	2419.3127	---	---
	Ant1	2437	14.665	2429.6474	2444.3127	---	---
	Ant2	2437	14.665	2429.6474	2444.3127	---	---
	Ant1	2462	14.665	2454.6474	2469.3127	---	---
	Ant2	2462	14.705	2454.6074	2469.3127	---	---
11G	Ant1	2412	16.783	2403.5684	2420.3516	---	---
	Ant2	2412	16.783	2403.5684	2420.3516	---	---
	Ant1	2437	16.743	2428.5684	2445.3117	---	---
	Ant2	2437	16.743	2428.6084	2445.3516	---	---
	Ant1	2462	16.903	2453.4086	2470.3117	---	---
	Ant2	2462	16.743	2453.6084	2470.3516	---	---
11N20MIMO	Ant1	2412	17.702	2403.1289	2420.8312	---	---
	Ant2	2412	17.622	2403.1688	2420.7912	---	---
	Ant1	2437	17.662	2428.2088	2445.8711	---	---
	Ant2	2437	17.582	2428.1688	2445.7512	---	---
	Ant1	2462	17.582	2453.2088	2470.7912	---	---
	Ant2	2462	17.622	2453.1688	2470.7912	---	---
11N40MIMO	Ant1	2422	36.044	2403.9381	2439.9820	---	---
	Ant2	2422	36.044	2403.9381	2439.9820	---	---
	Ant1	2437	36.044	2418.9381	2454.9820	---	---
	Ant2	2437	35.964	2419.0180	2454.9820	---	---
	Ant1	2452	36.044	2433.9381	2469.9820	---	---
	Ant2	2452	36.044	2433.9381	2469.9820	---	---



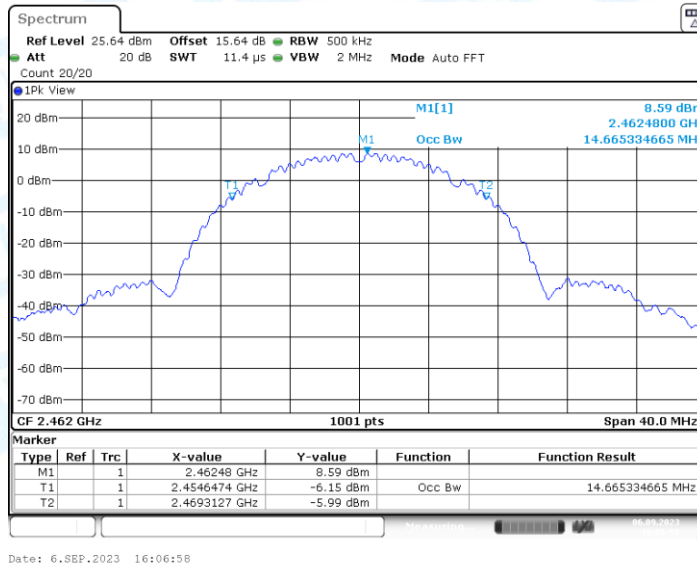
## 2.2. Test Graphs



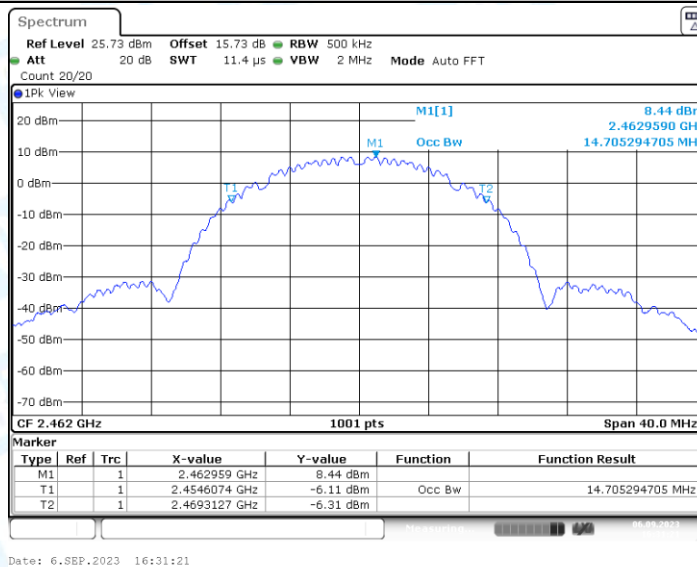
### 11B\_Ant2\_2437



### 11B\_Ant1\_2462

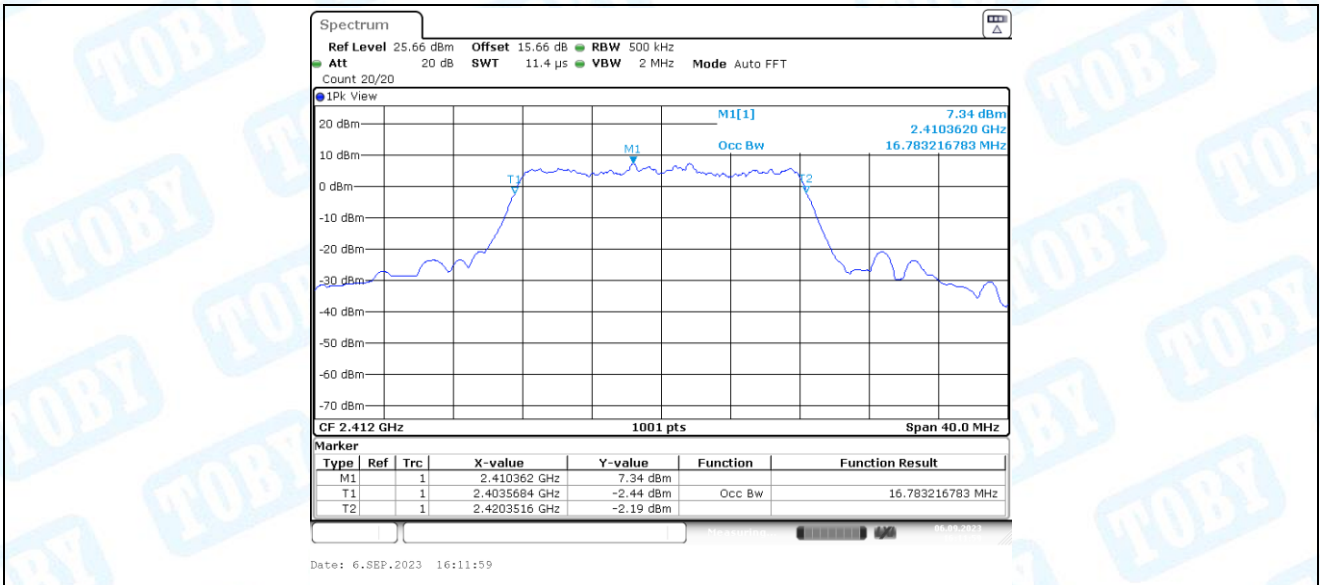


### 11B\_Ant2\_2462

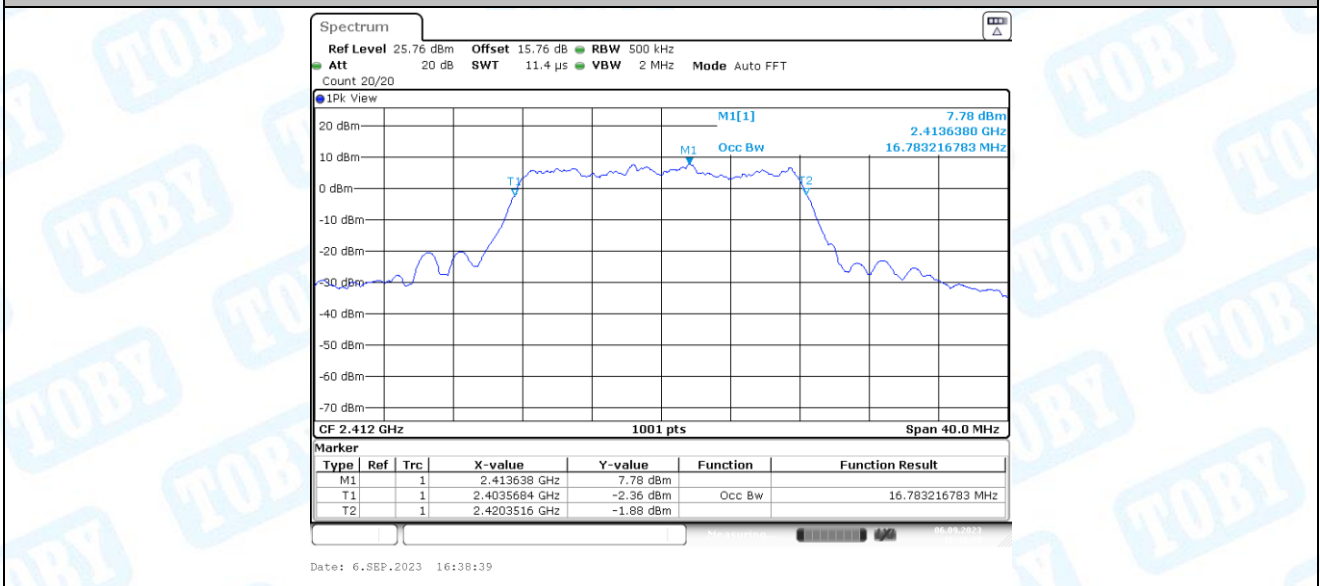


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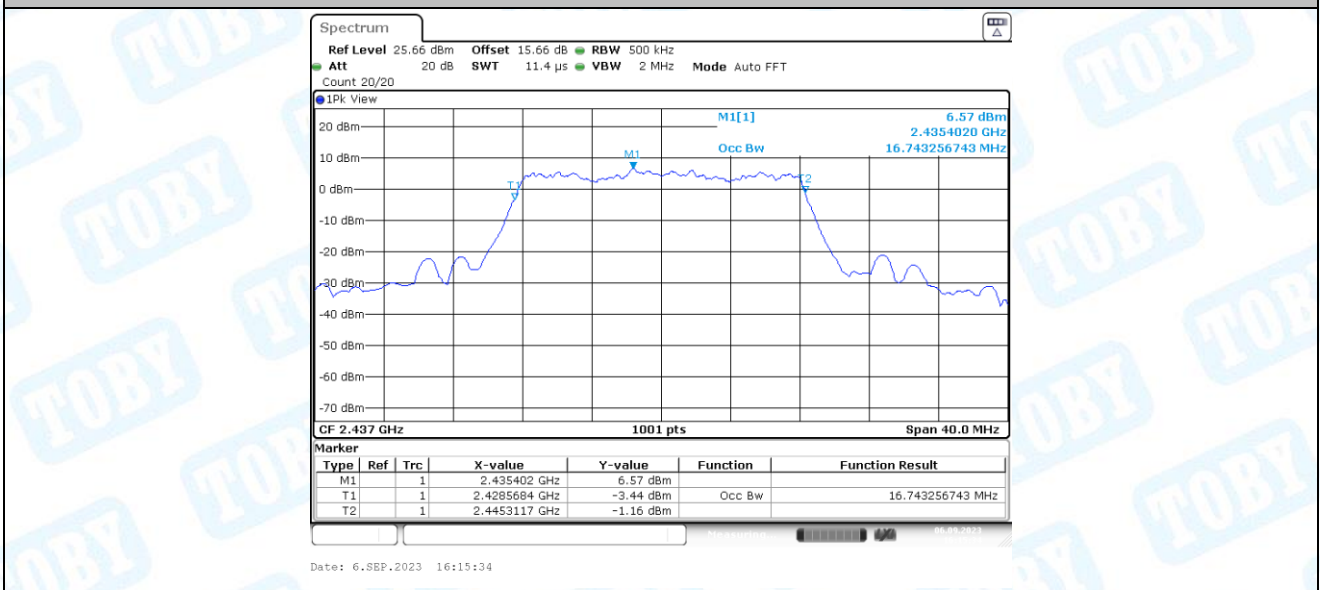




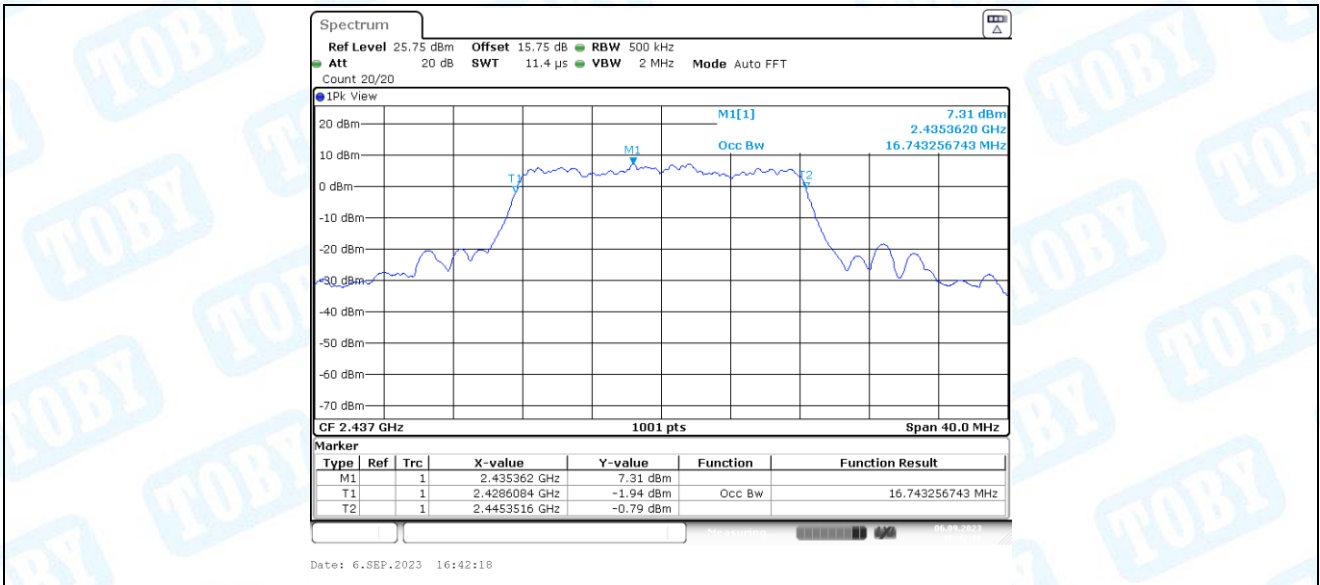
11G\_Ant2\_2412



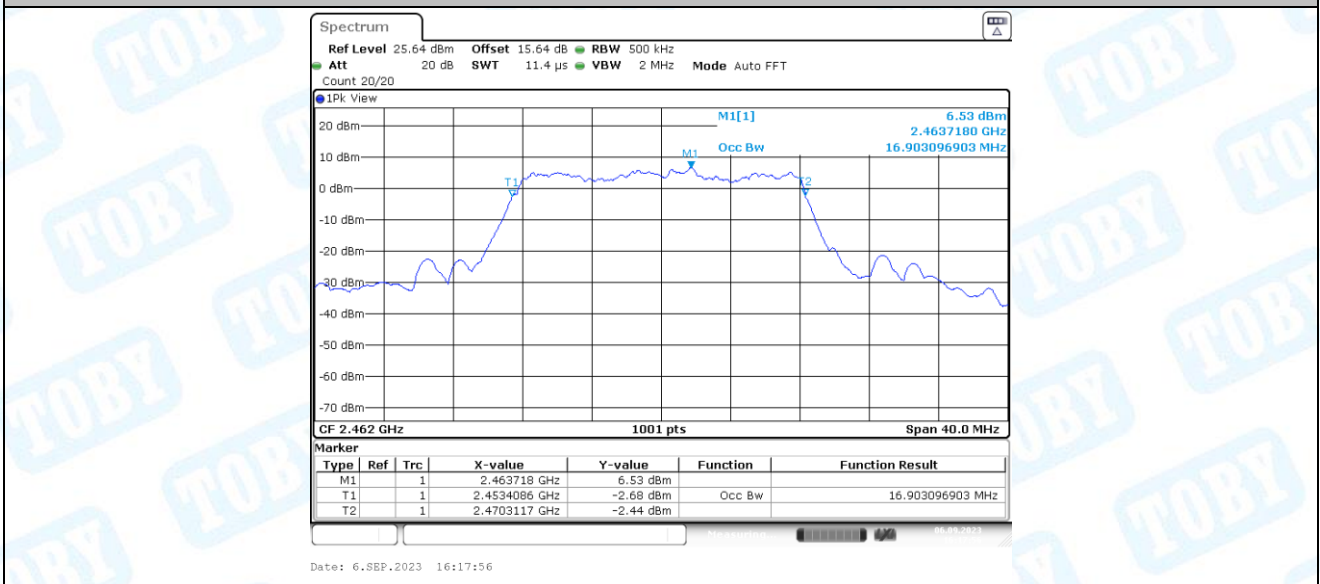
11G\_Ant1\_2437



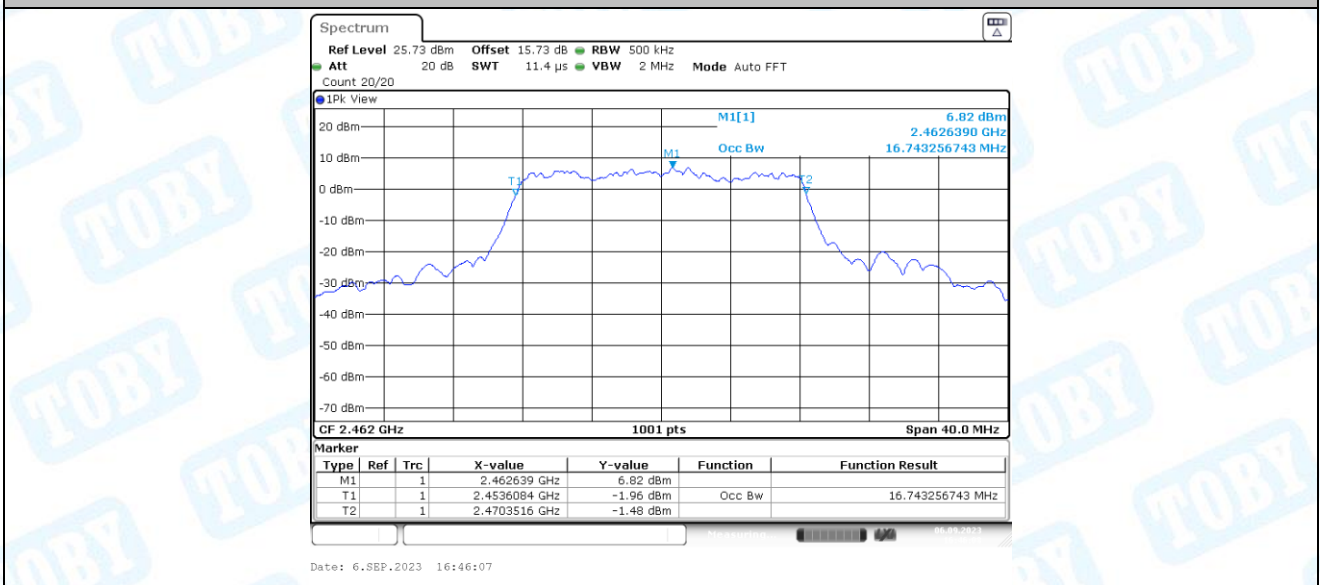
11G\_Ant2\_2437



11G\_Ant1\_2462

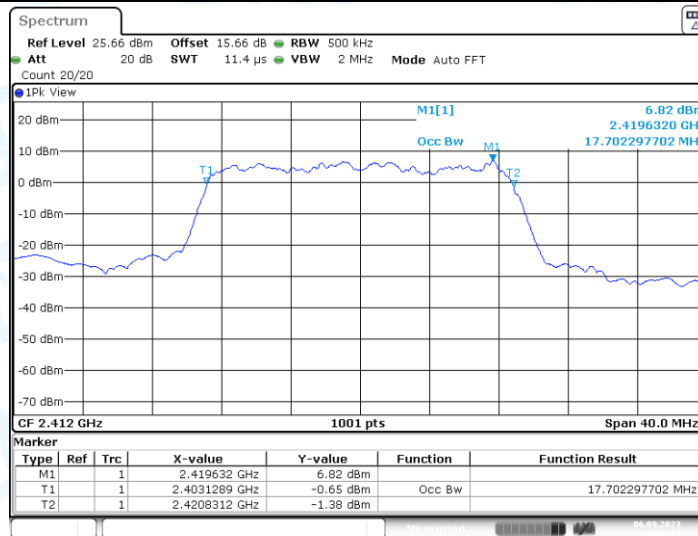


11G\_Ant2\_2462



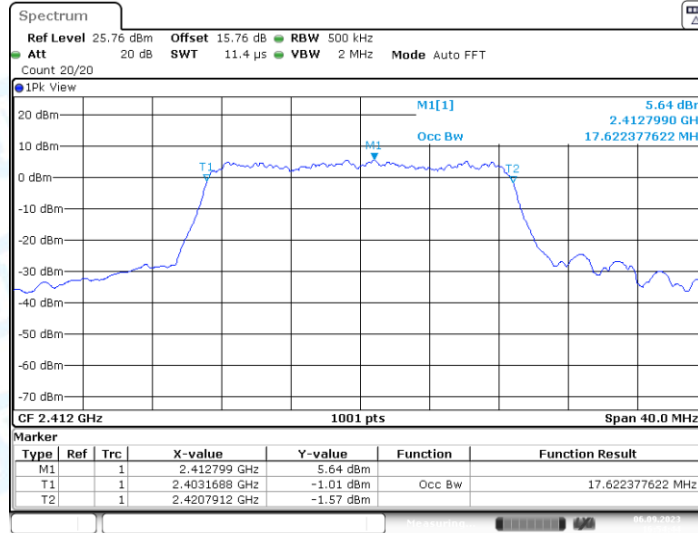
11N20MIMO\_Ant1\_2412





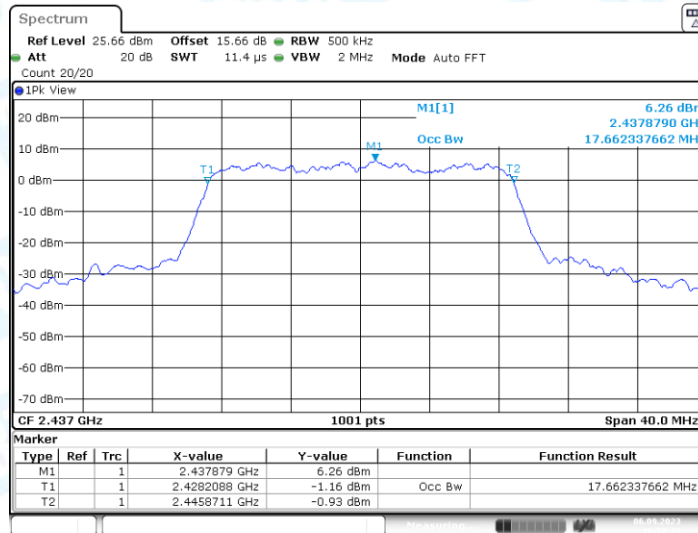
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11N20MIMO\_Ant2\_2412



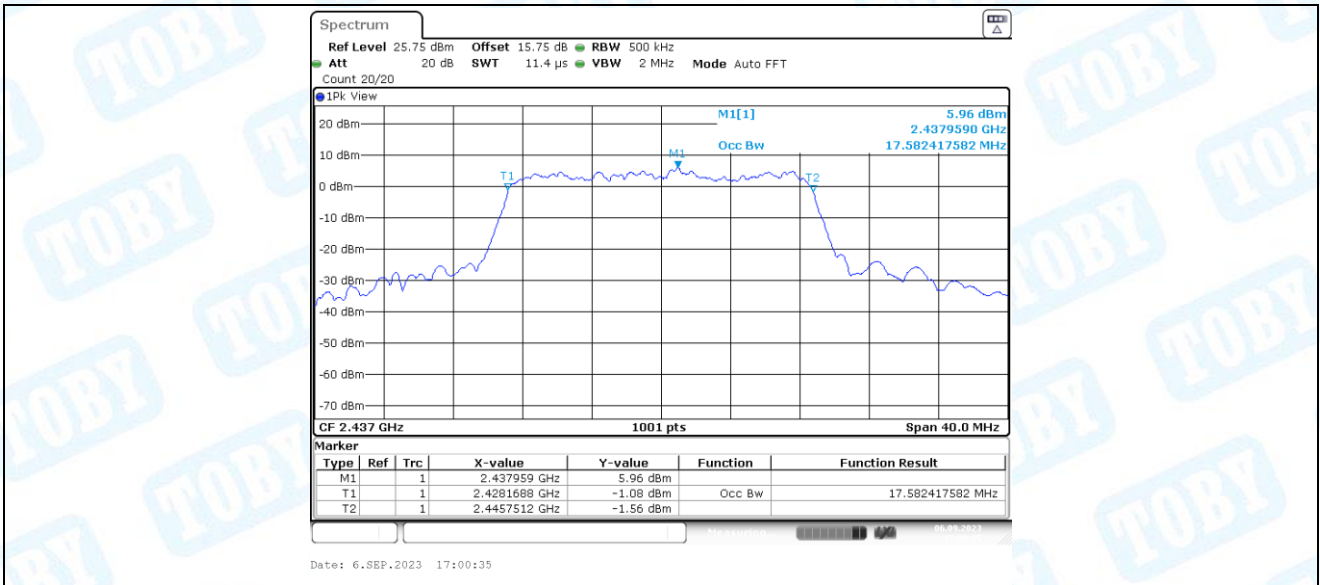
Date: 6.SEP.2023 16:54:44

11N20MIMO\_Ant1\_2437

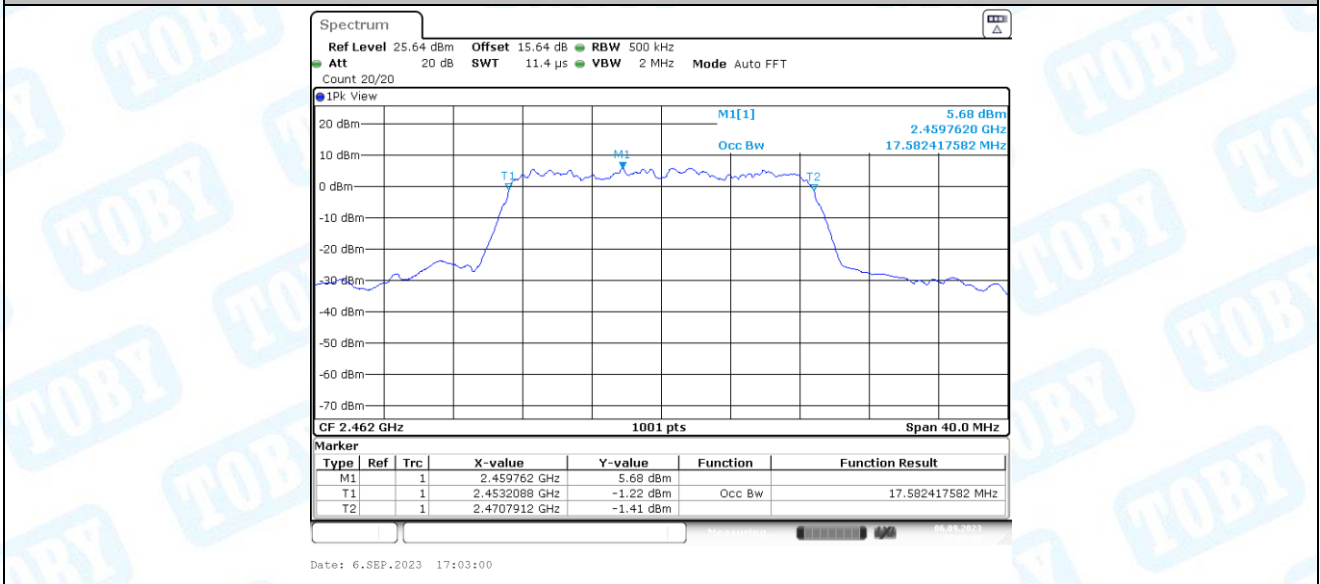


Date: 6.SEP.2023 16:58:23

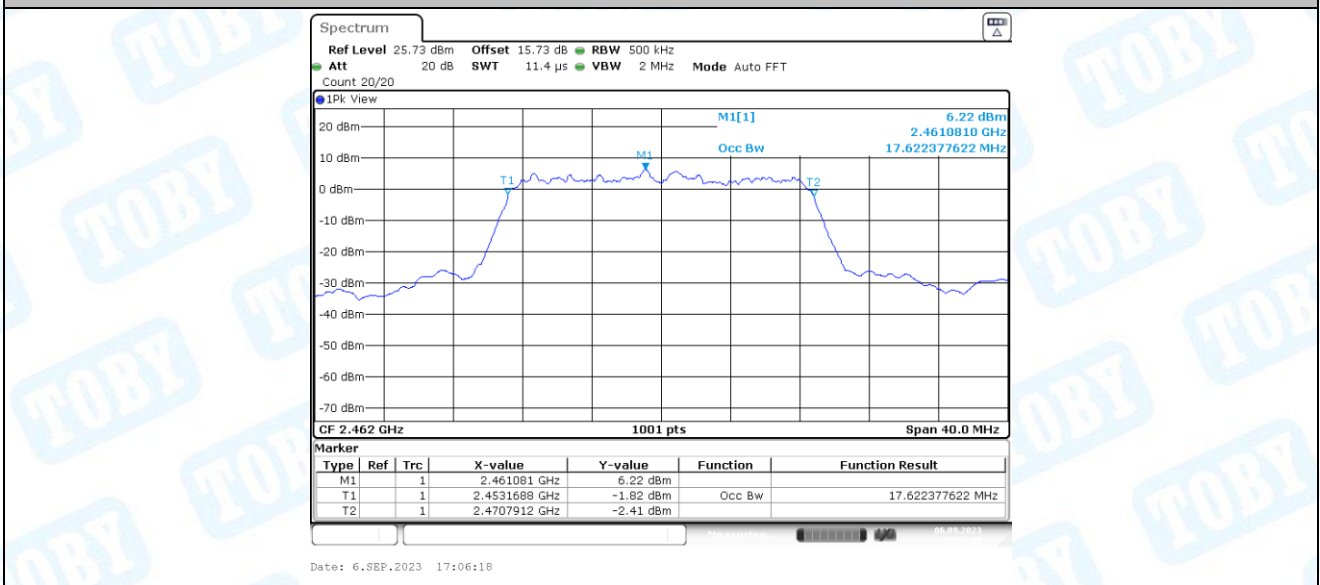
11N20MIMO\_Ant2\_2437



11N20MIMO\_Ant1\_2462

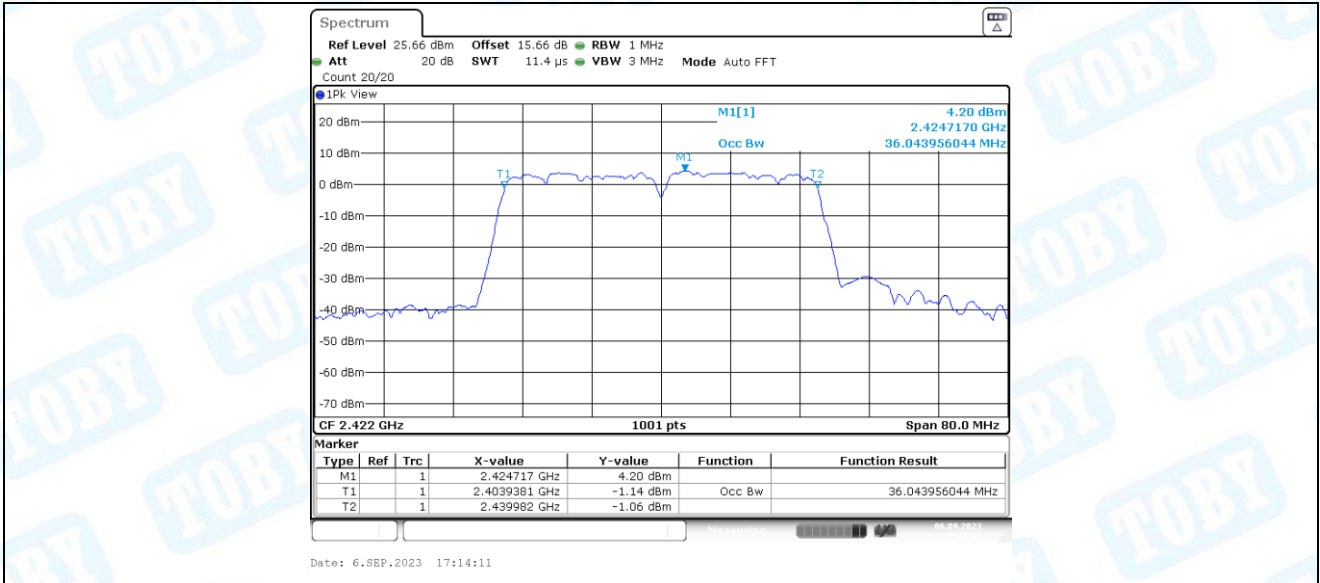


11N20MIMO\_Ant2\_2462

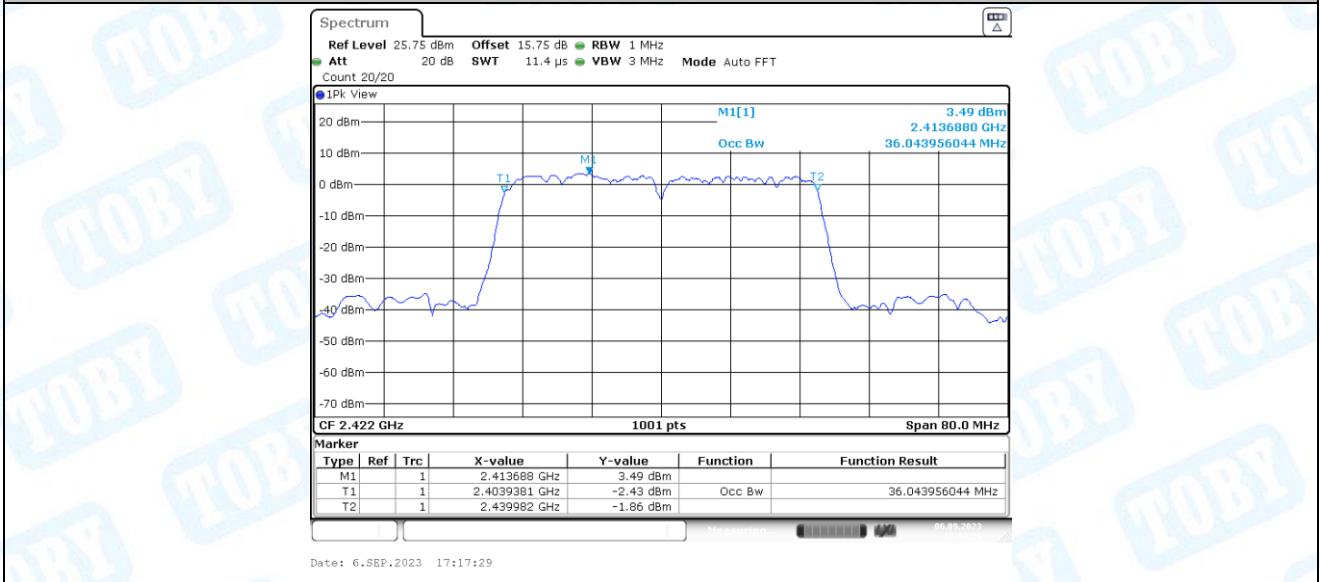


11N40MIMO\_Ant1\_2422

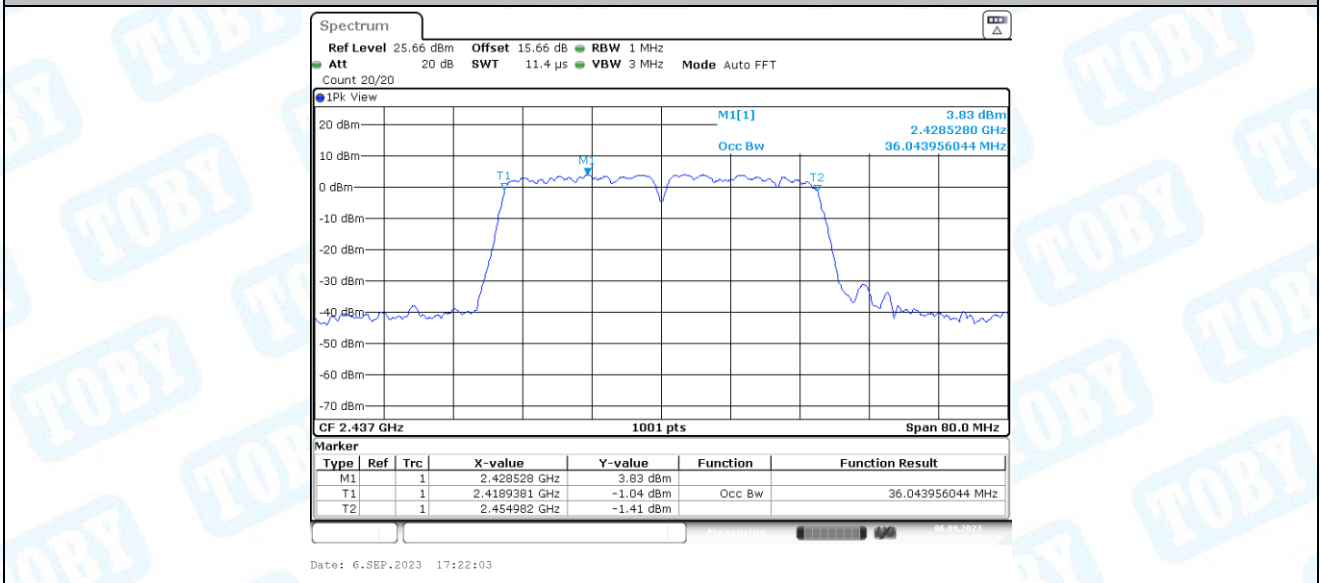




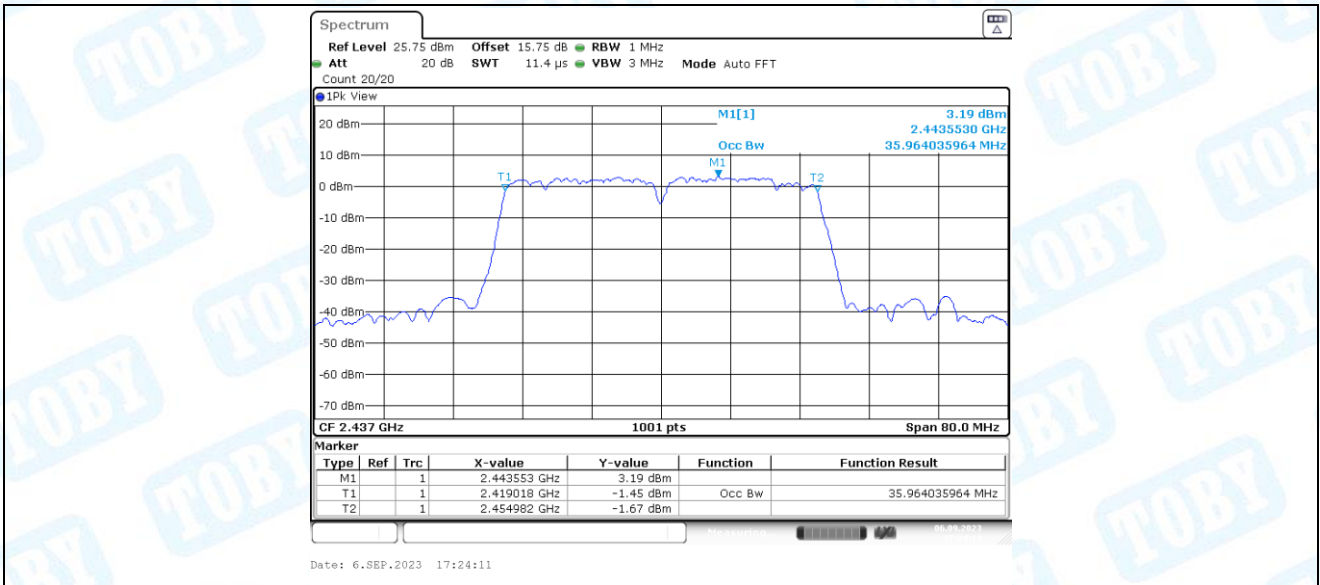
11N40MIMO\_Ant2\_2422



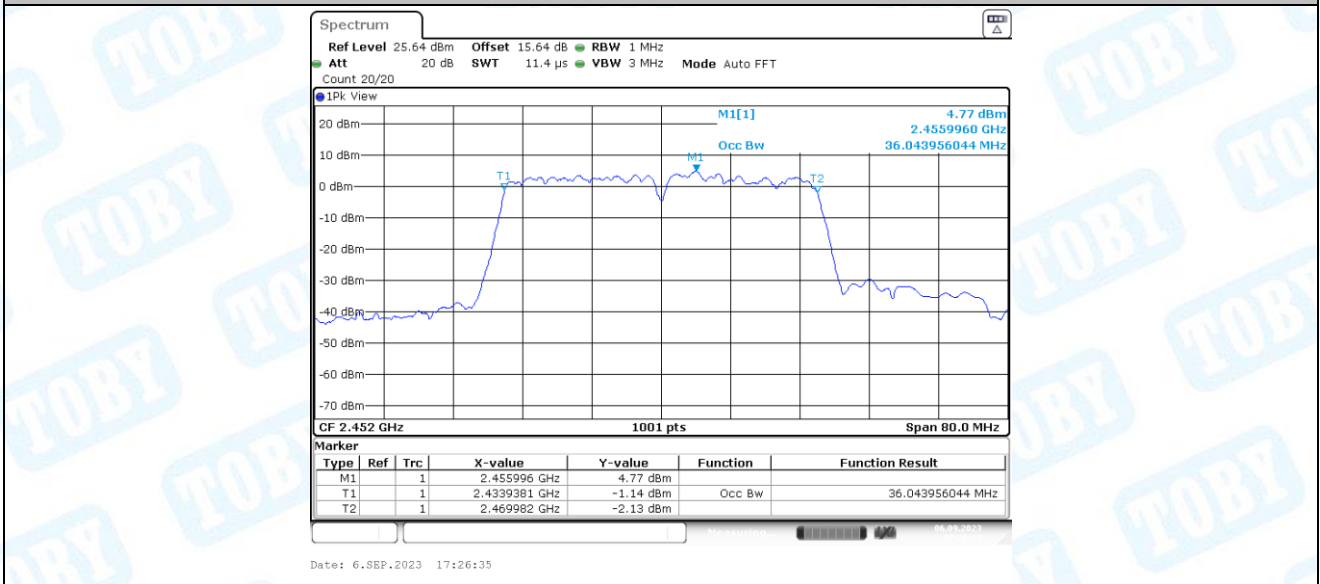
11N40MIMO\_Ant1\_2437



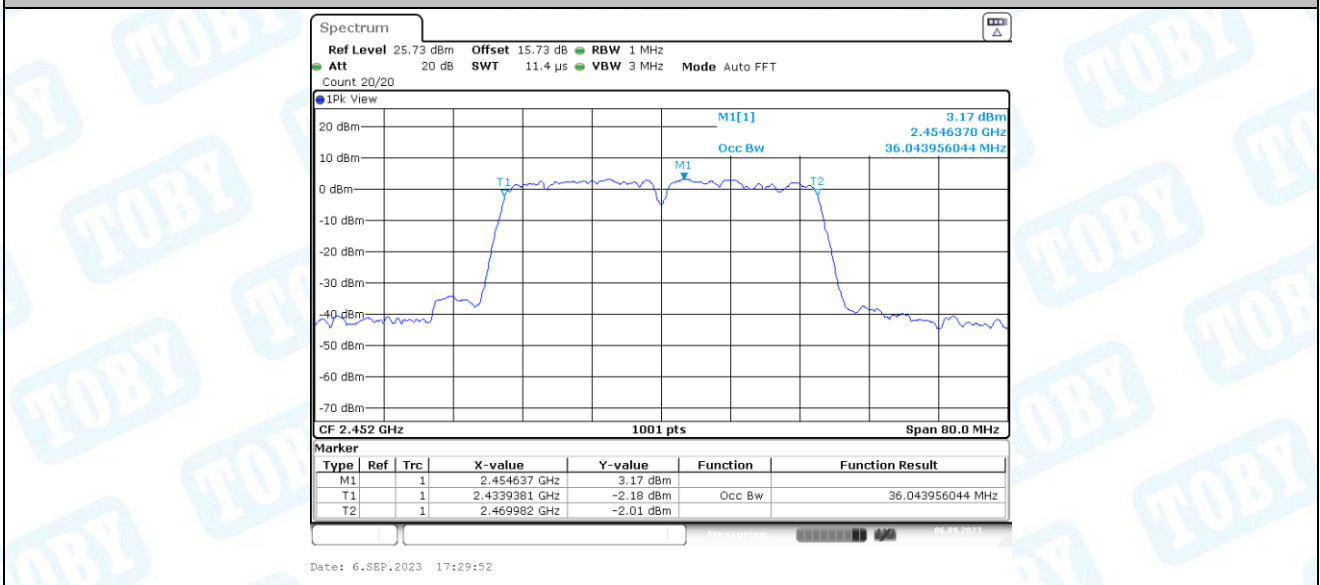
11N40MIMO\_Ant2\_2437



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	18.03	≤30.00	PASS
	Ant2	2412	18.64	≤30.00	PASS
	Ant1	2437	17.81	≤30.00	PASS
	Ant2	2437	17.52	≤30.00	PASS
	Ant1	2462	17.51	≤30.00	PASS
	Ant2	2462	17.86	≤30.00	PASS
11G	Ant1	2412	16.10	≤30.00	PASS
	Ant2	2412	14.51	≤30.00	PASS
	Ant1	2437	13.66	≤30.00	PASS
	Ant2	2437	14.29	≤30.00	PASS
	Ant1	2462	13.66	≤30.00	PASS
	Ant2	2462	14.22	≤30.00	PASS
11N20MIMO	Ant1	2412	14.31	≤30.00	PASS
	Ant2	2412	13.35	≤30.00	PASS
	total	2412	16.87	≤30.00	PASS
	Ant1	2437	13.64	≤30.00	PASS
	Ant2	2437	12.85	≤30.00	PASS
	total	2437	16.27	≤30.00	PASS
	Ant1	2462	13.34	≤30.00	PASS
	Ant2	2462	12.64	≤30.00	PASS
total	2462	16.01	≤30.00	PASS	
11N40MIMO	Ant1	2422	12.17	≤30.00	PASS
	Ant2	2422	11.50	≤30.00	PASS
	total	2422	14.86	≤30.00	PASS
	Ant1	2437	11.78	≤30.00	PASS
	Ant2	2437	11.20	≤30.00	PASS
	total	2437	14.51	≤30.00	PASS
	Ant1	2452	12.04	≤30.00	PASS
	Ant2	2452	10.89	≤30.00	PASS
	total	2452	14.51	≤30.00	PASS

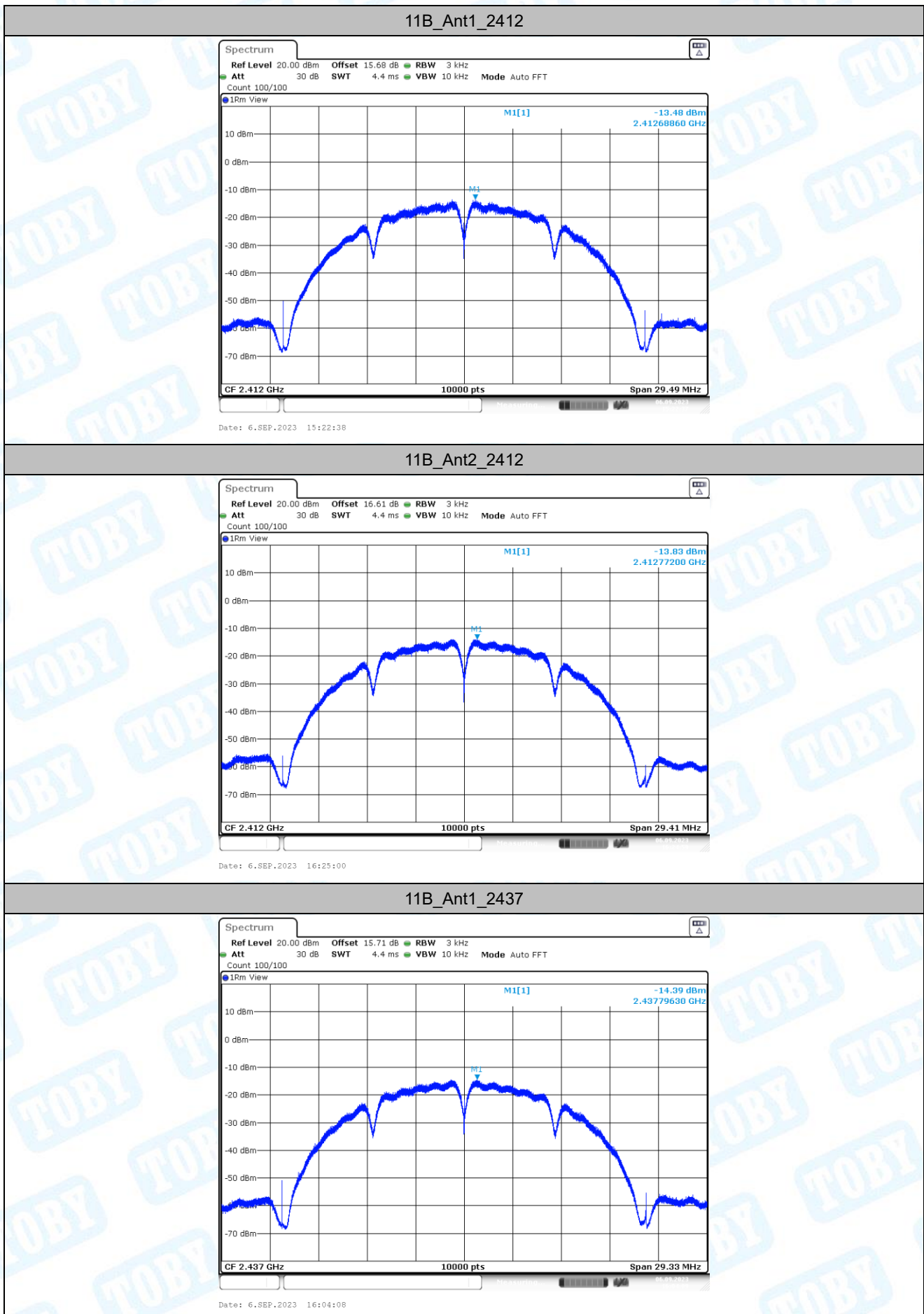
## 4. Maximum power spectral density

### 4.1. Test Result

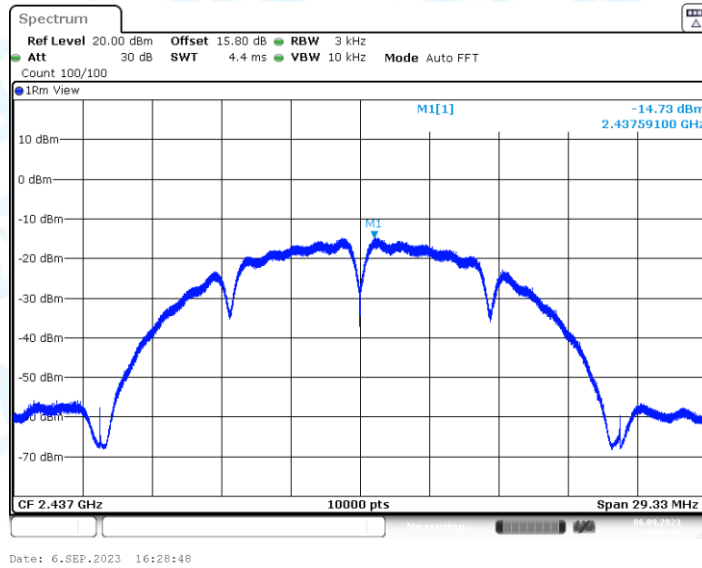
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-13.48	≤8.00	PASS
	Ant2	2412	-13.83	≤8.00	PASS
	Ant1	2437	-14.39	≤8.00	PASS
	Ant2	2437	-14.73	≤8.00	PASS
	Ant1	2462	-14.45	≤8.00	PASS
	Ant2	2462	-14.39	≤8.00	PASS
11G	Ant1	2412	-16.68	≤8.00	PASS
	Ant2	2412	-17.68	≤8.00	PASS
	Ant1	2437	-19.29	≤8.00	PASS
	Ant2	2437	-18.72	≤8.00	PASS
	Ant1	2462	-19.21	≤8.00	PASS
	Ant2	2462	-18.69	≤8.00	PASS
11N20MIMO	Ant1	2412	-19.37	≤8.00	PASS
	Ant2	2412	-19.73	≤8.00	PASS
	total	2412	-16.54	≤8.00	PASS
	Ant1	2437	-19.60	≤8.00	PASS
	Ant2	2437	-21.15	≤8.00	PASS
	total	2437	-17.30	≤8.00	PASS
	Ant1	2462	-20.56	≤8.00	PASS
	Ant2	2462	-20.85	≤8.00	PASS
	total	2462	-17.69	≤8.00	PASS
11N40MIMO	Ant1	2422	-21.95	≤8.00	PASS
	Ant2	2422	-24.64	≤8.00	PASS
	total	2422	-20.08	≤8.00	PASS
	Ant1	2437	-22.31	≤8.00	PASS
	Ant2	2437	-24.34	≤8.00	PASS
	total	2437	-20.20	≤8.00	PASS
	Ant1	2452	-22.52	≤8.00	PASS
	Ant2	2452	-24.73	≤8.00	PASS
	total	2452	-20.48	≤8.00	PASS



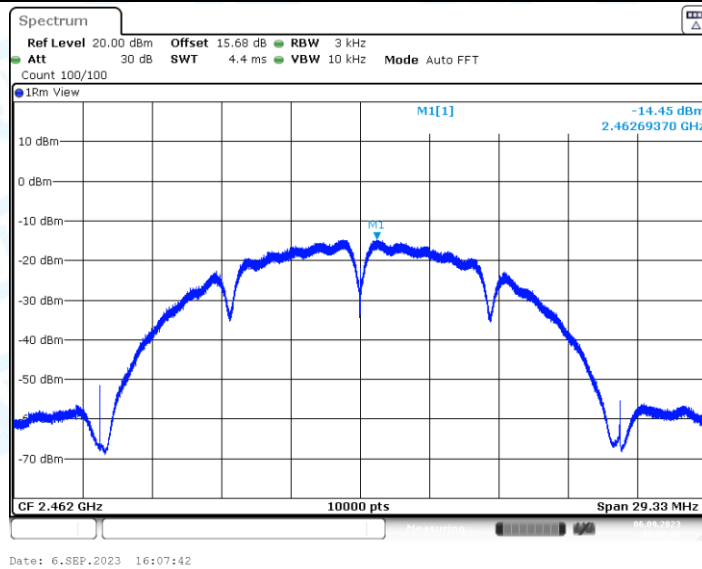
## 4.2. Test Graphs



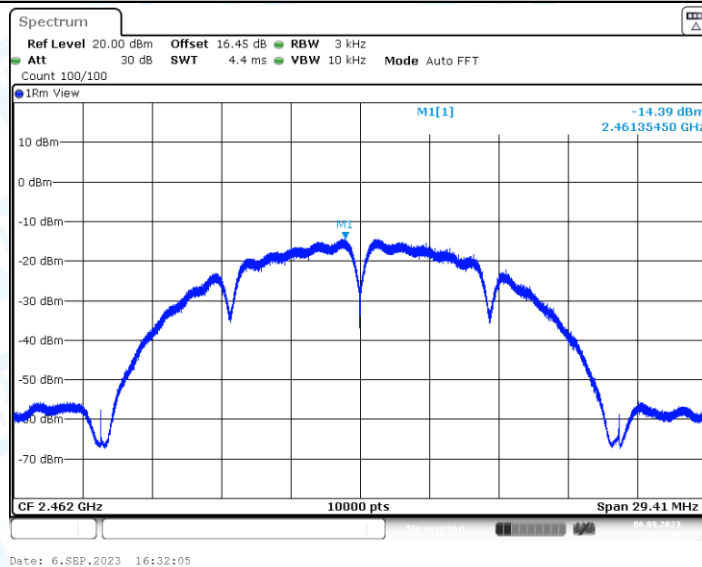
11B\_Ant2\_2437



11B\_Ant1\_2462

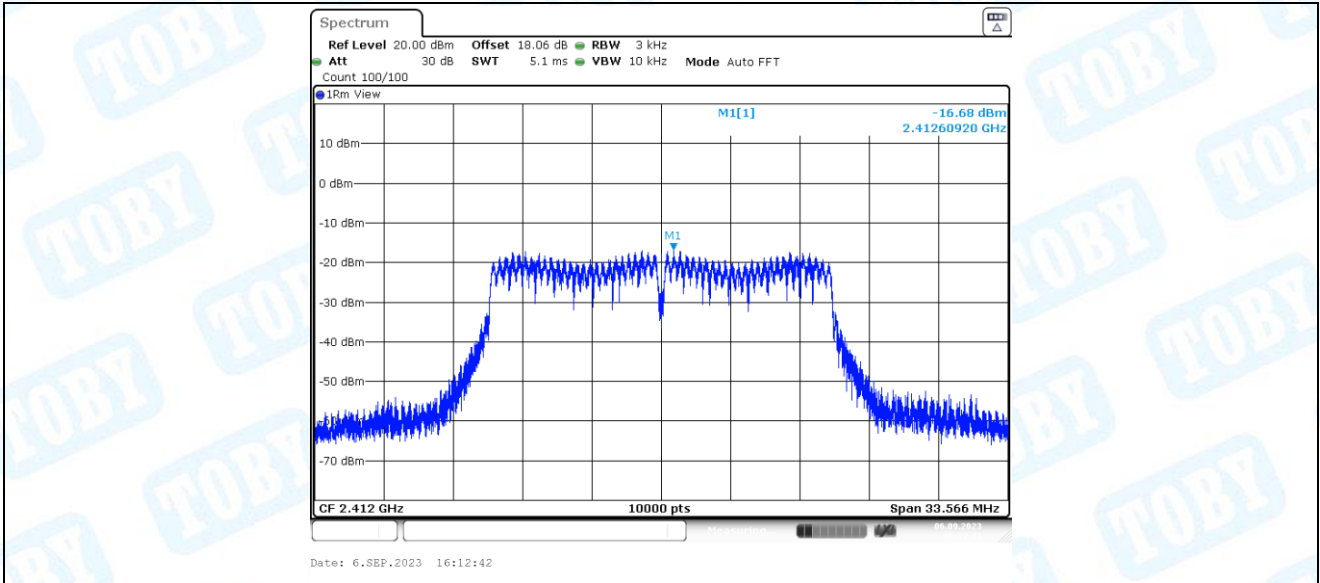


11B\_Ant2\_2462

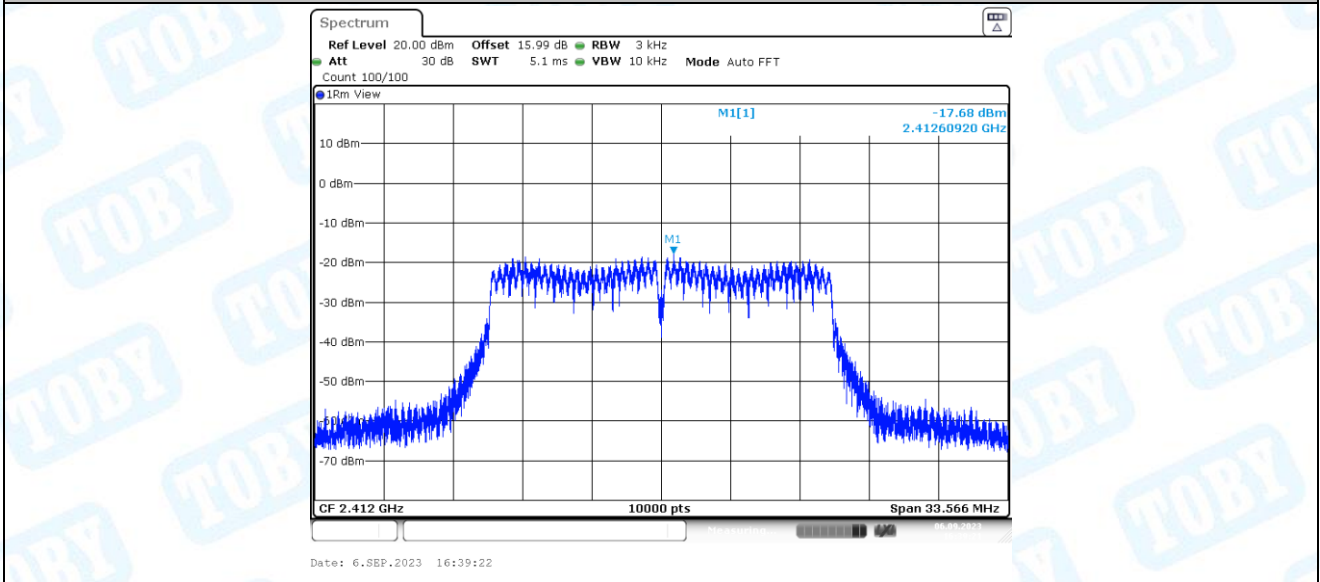


11G\_Ant1\_2412

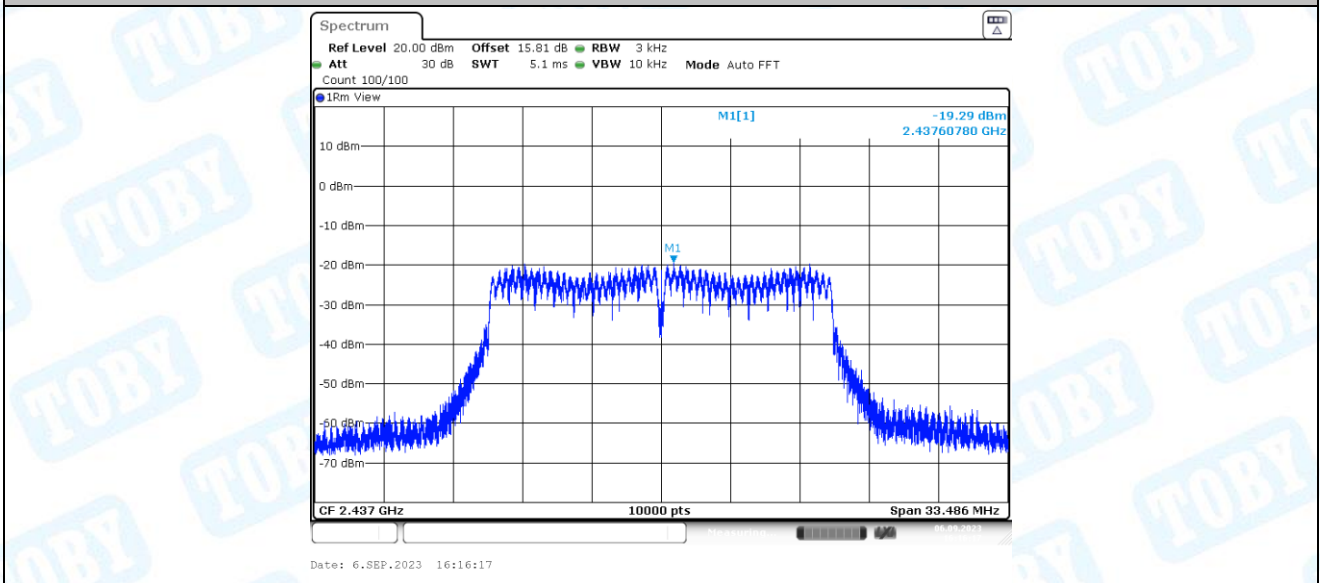




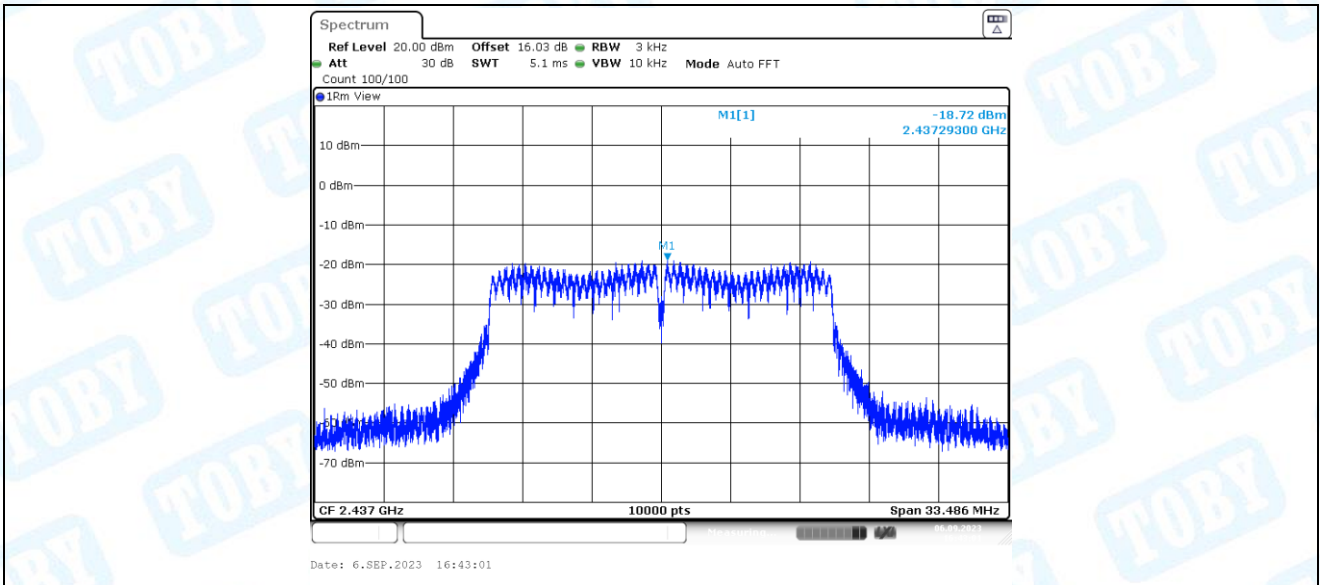
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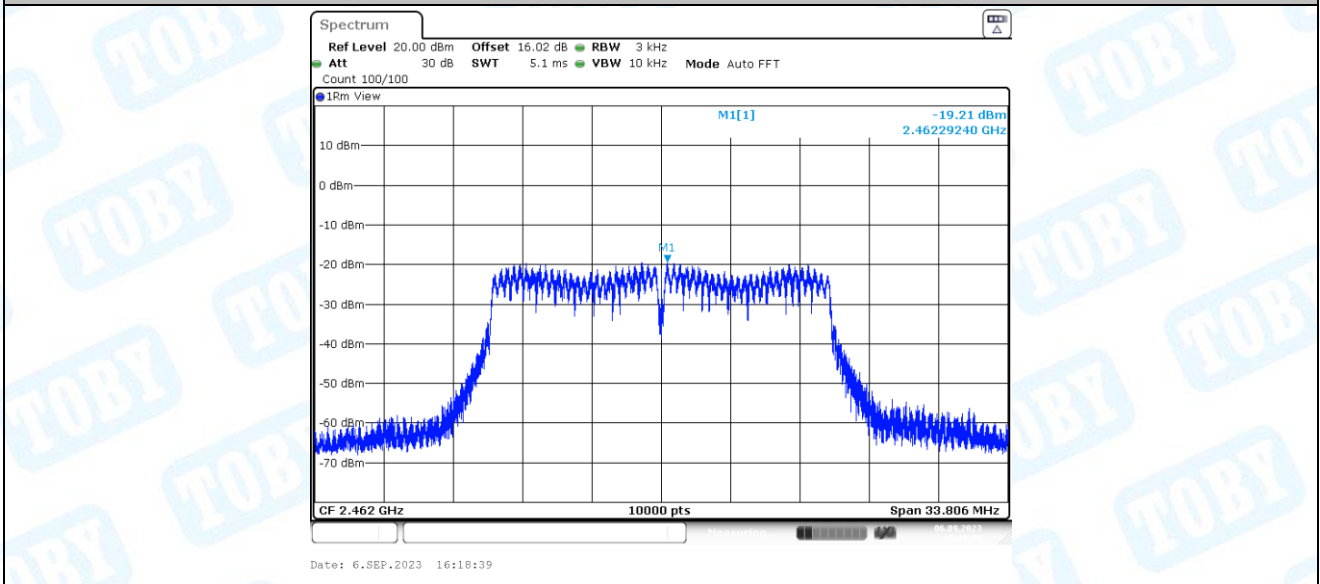
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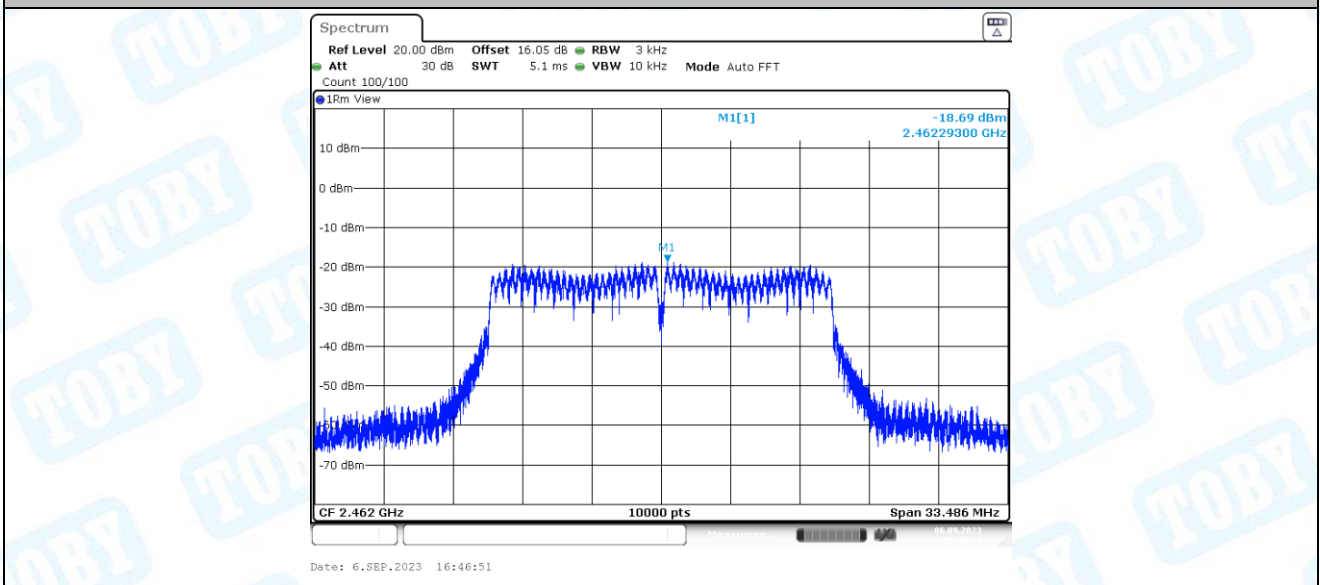
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11G\_Ant1\_2462

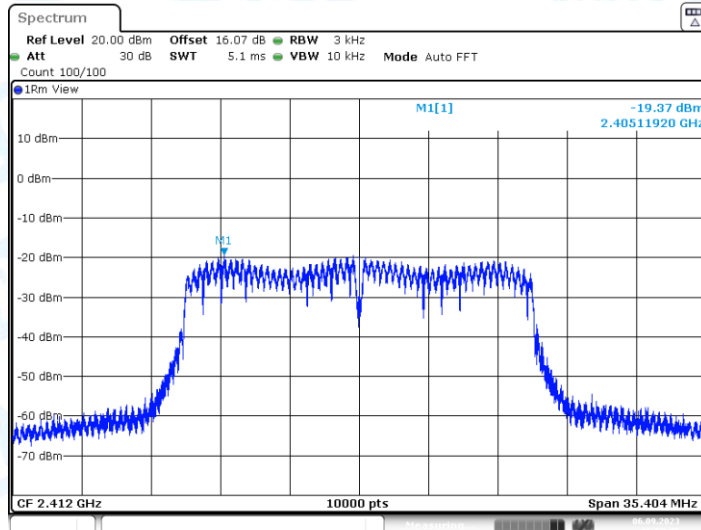


11G\_Ant2\_2462



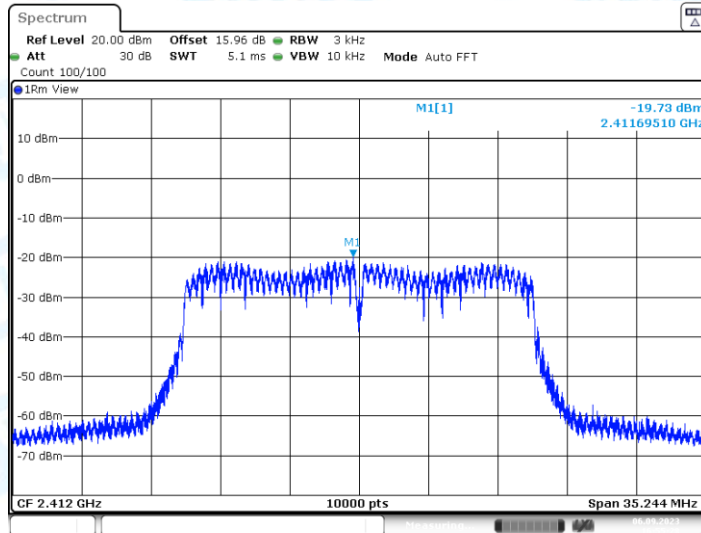
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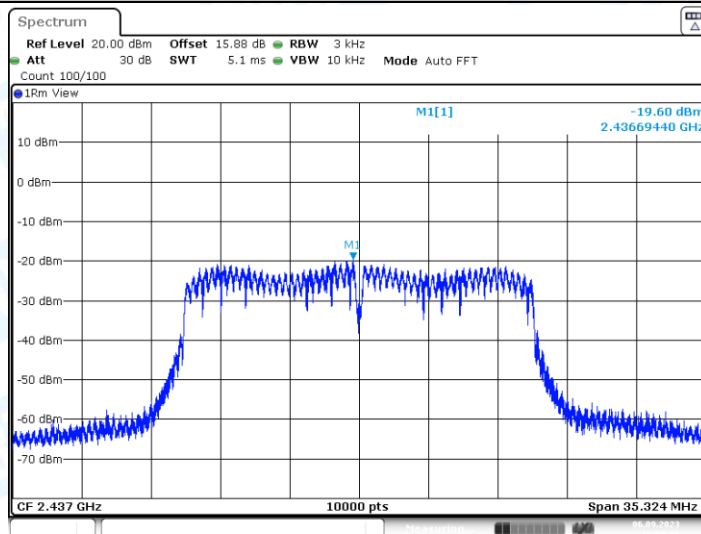
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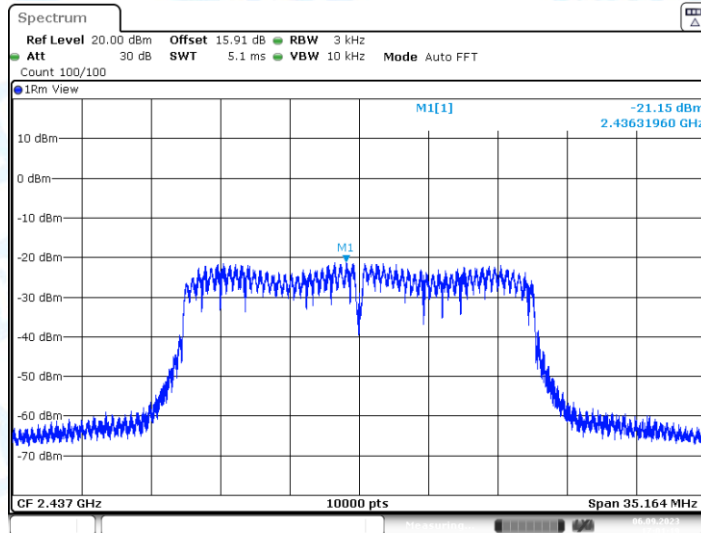
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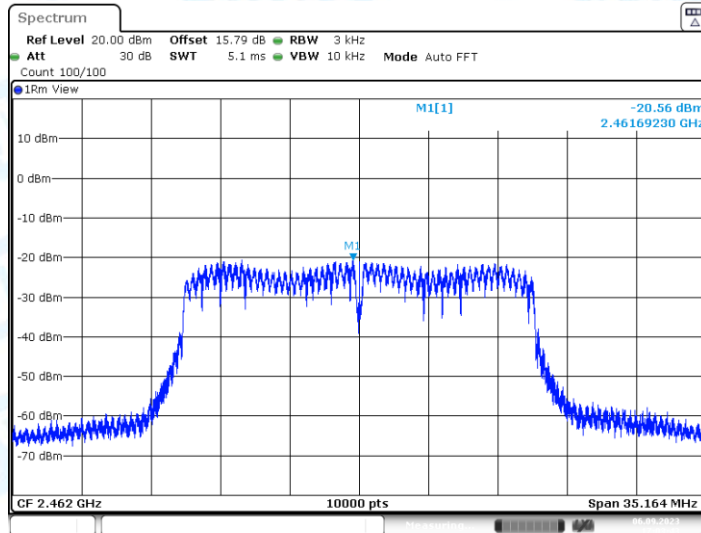


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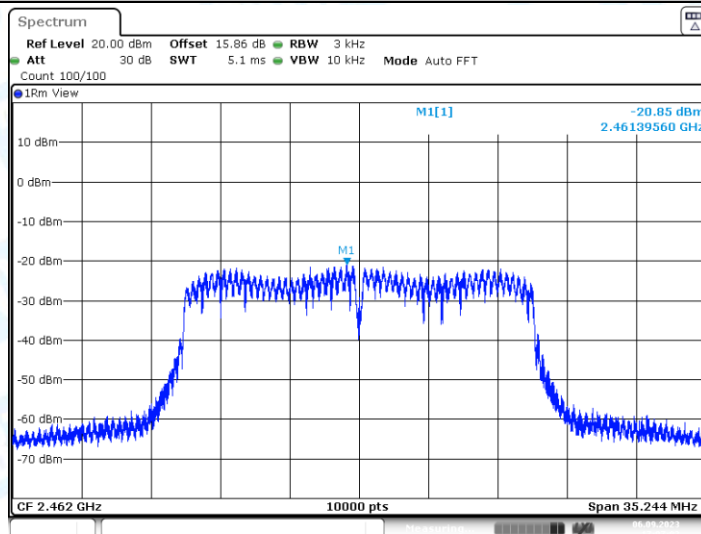
11N20MIMO\_Ant2\_2437



11N20MIMO\_Ant1\_2462

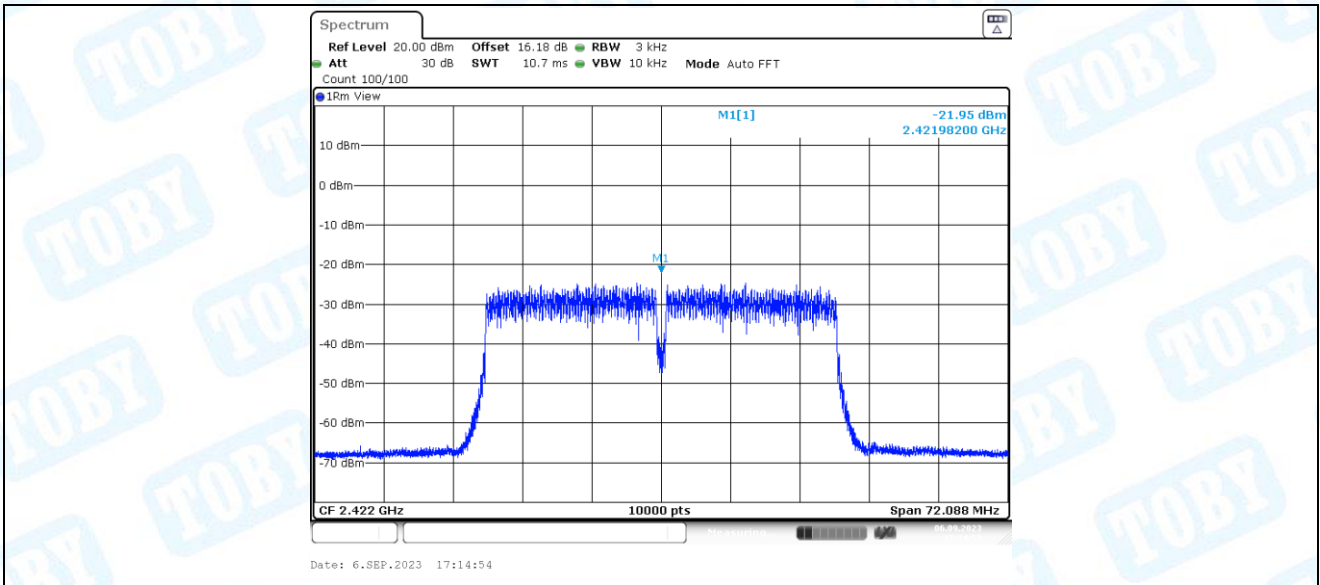


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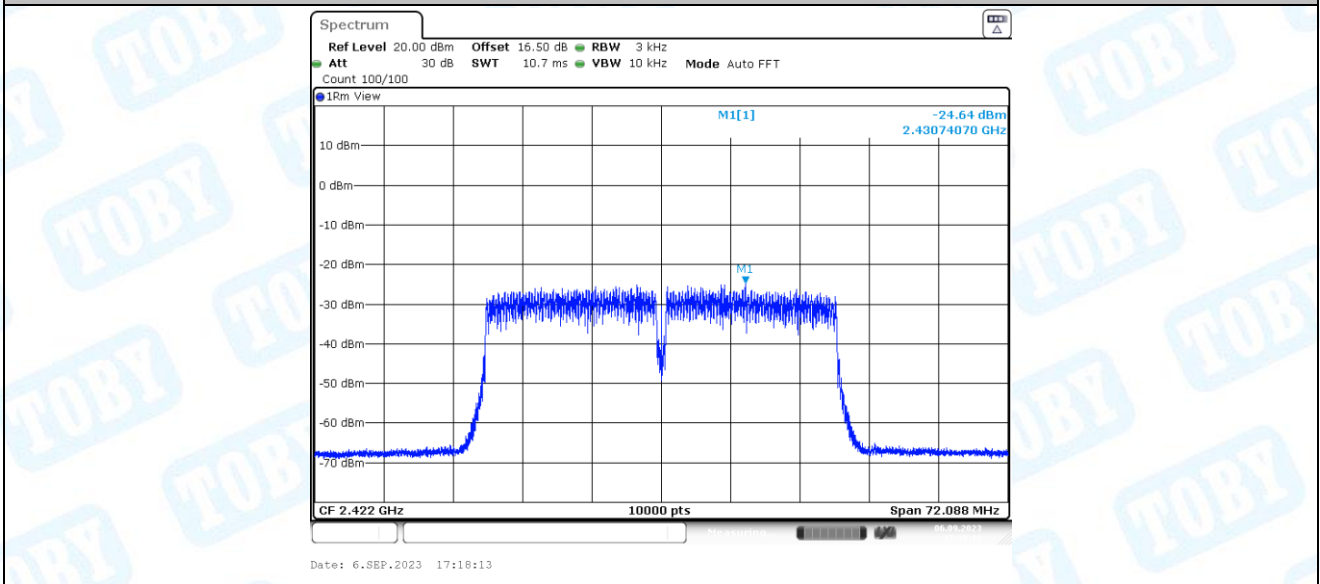


11N40MIMO\_Ant1\_2422

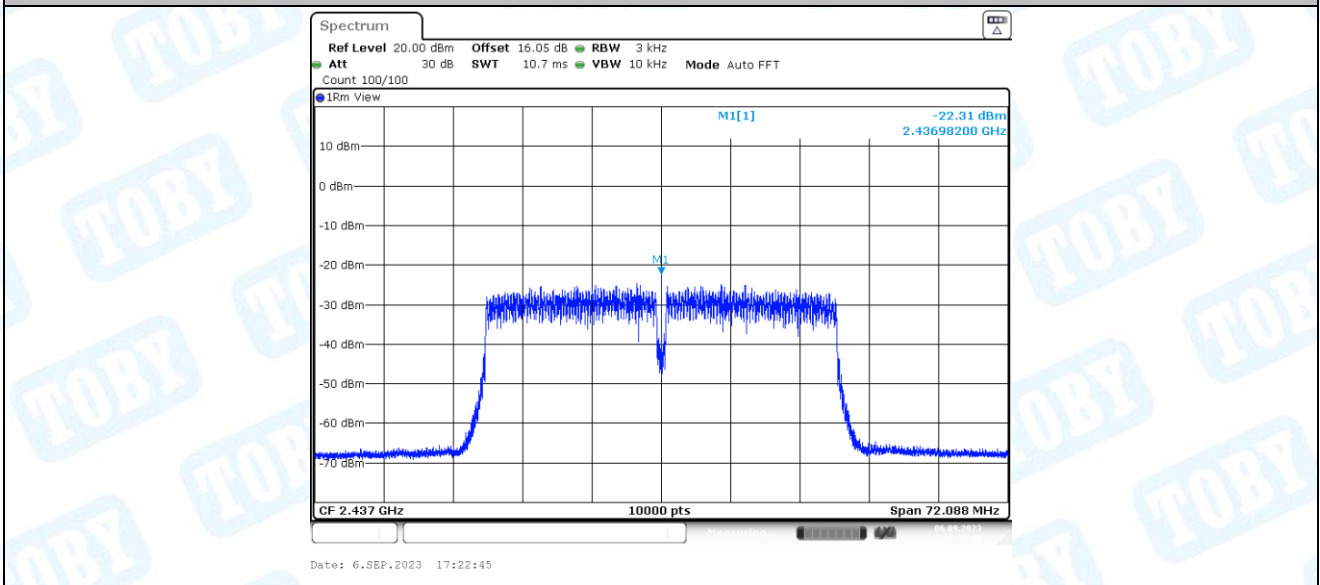




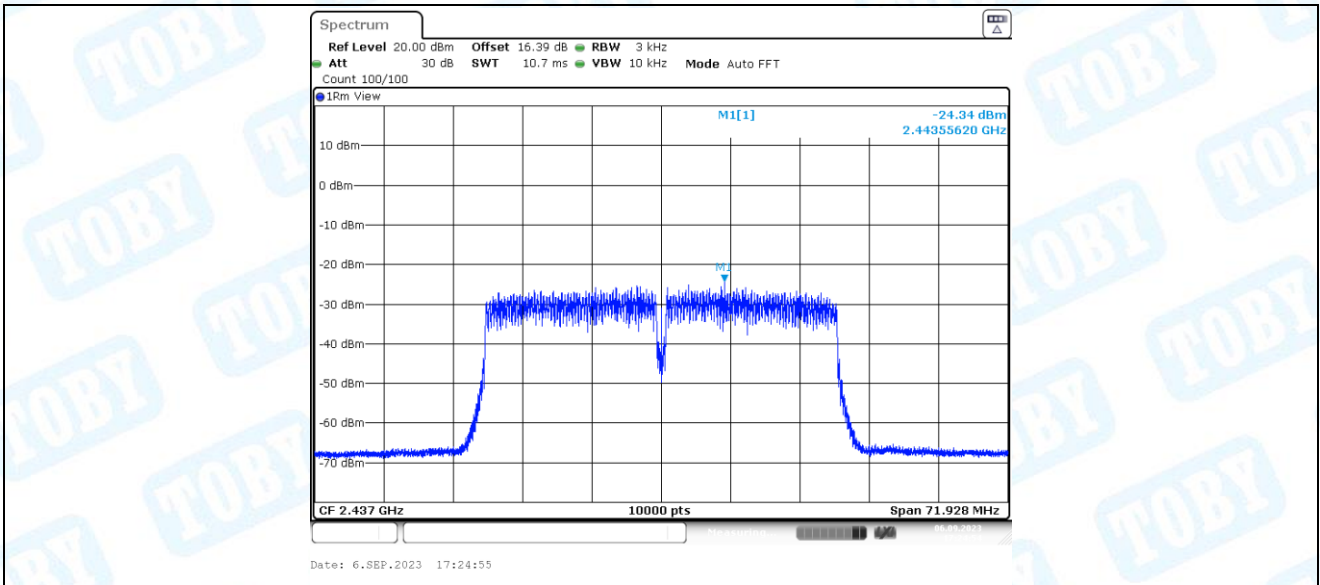
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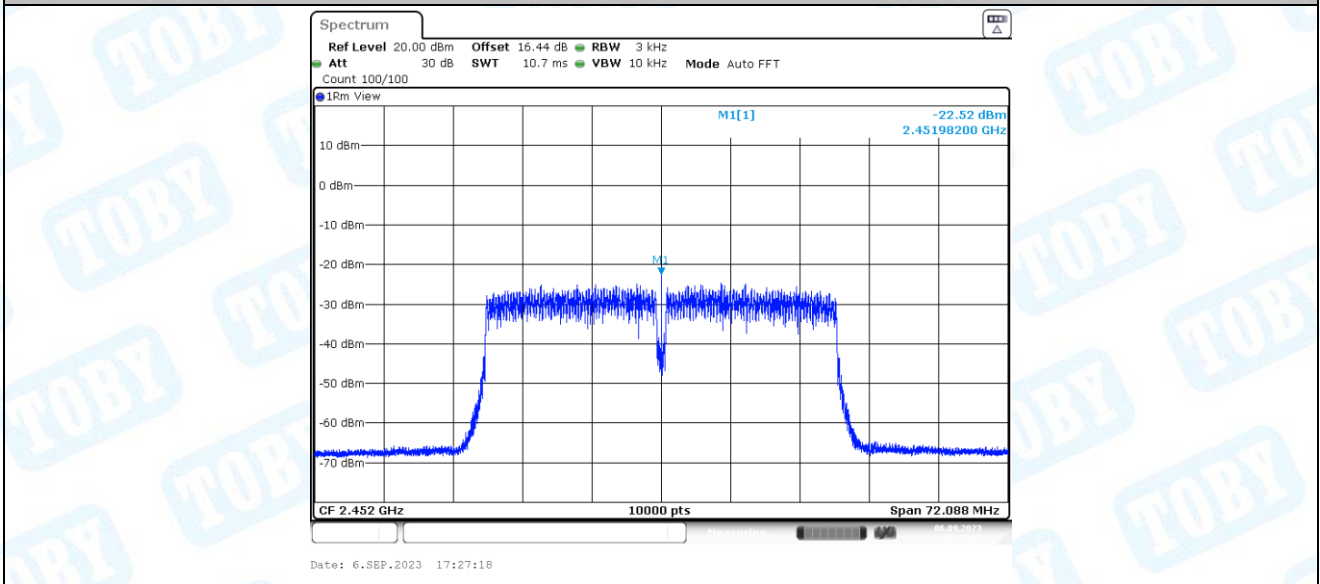
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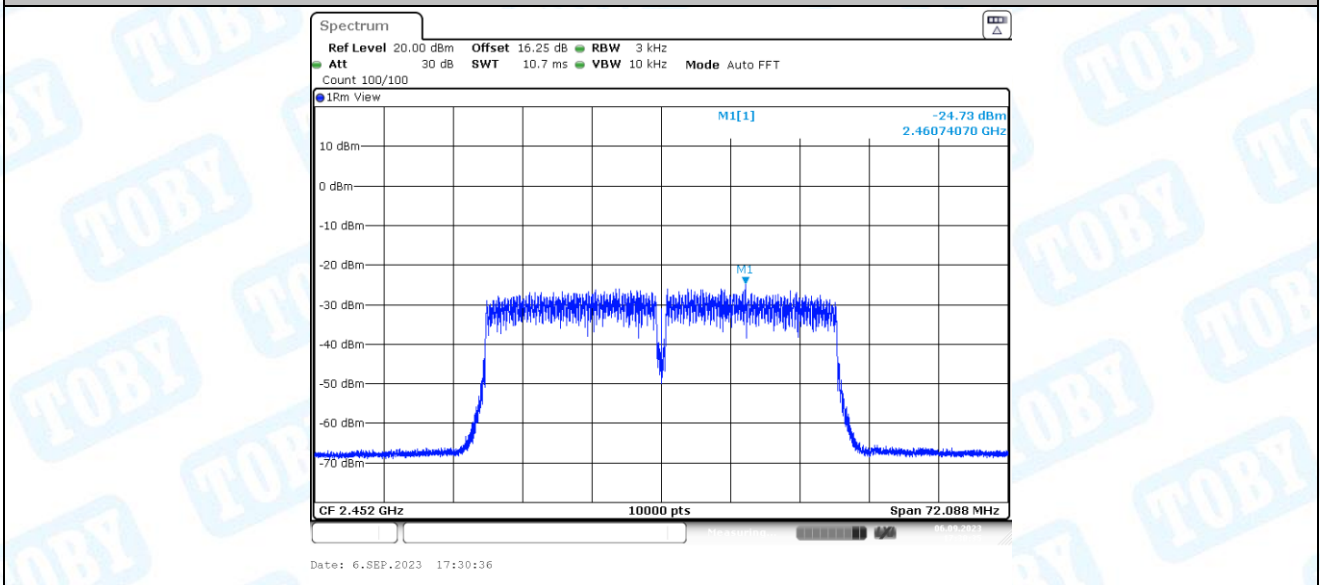
11N40MIMO\_Ant2\_2437



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	7.50	-33.93	≤-22.5	PASS
	Ant2	Low	2412	7.31	-34.01	≤-22.69	PASS
	Ant1	High	2462	7.66	-40.16	≤-22.34	PASS
	Ant2	High	2462	7.25	-41.33	≤-22.75	PASS
11G	Ant1	Low	2412	-0.38	-35.03	≤-30.38	PASS
	Ant2	Low	2412	-0.08	-32.56	≤-30.08	PASS
	Ant1	High	2462	-1.12	-41.77	≤-31.12	PASS
	Ant2	High	2462	1.57	-40.73	≤-28.43	PASS
11N20MIMO	Ant1	Low	2412	0.29	-32.85	≤-29.71	PASS
	Ant2	Low	2412	1.99	-34.41	≤-28.01	PASS
	Ant1	High	2462	0.42	-40.93	≤-29.58	PASS
	Ant2	High	2462	1.40	-39.36	≤-28.6	PASS
11N40MIMO	Ant1	Low	2422	-3.60	-41.43	≤-33.6	PASS
	Ant2	Low	2422	-3.06	-42.48	≤-33.06	PASS
	Ant1	High	2452	-3.38	-41.86	≤-33.38	PASS
	Ant2	High	2452	-4.30	-41.14	≤-34.3	PASS