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

General Description of EUT	
EUT Name:	IEEE 802.11ax/ac/a/b/g/n 2x2 WiFi 6E with Bluetooth5.3 Combo Module
Model:	WNFS-267AXI(BT)
Sample ID:	HC-C-202503-0098-01-01-2#
Test Standard:	FCC Part 15.247
Environmental Conditions	
Ambient Temperature:	25℃
Ambient Humidity:	45%RH
Test Power Supply:	DC 3.3V
Test Engineer:	Rick.chen
Note: For a more detailed features description, please refer to the report TBR-C-202503-0098-132	

Contents

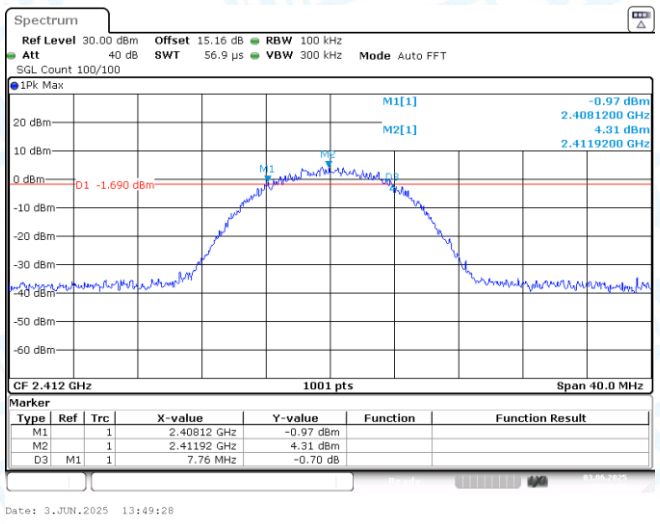
1: DTS Bandwidth

1.1Test Result

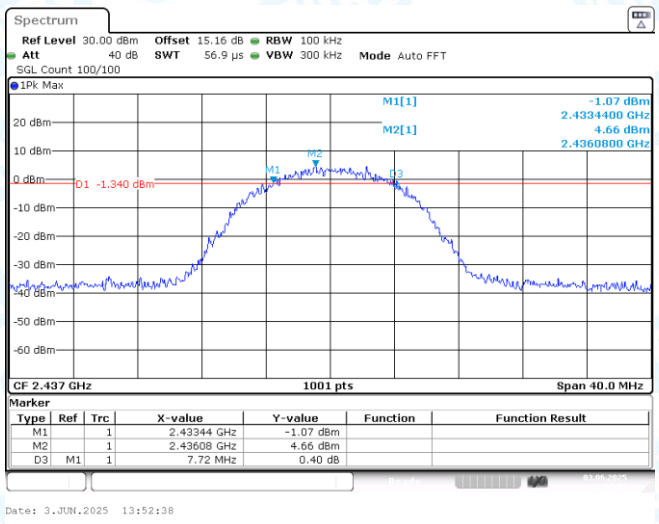
TestMode	Ant.	Frequency [MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	7.76	2408.12	2415.88	0.5	PASS
11B	Ant1	2437	7.72	2433.44	2441.16	0.5	PASS
11B	Ant1	2462	7.48	2458.24	2465.72	0.5	PASS
11G-CDD	Ant1	2412	16.44	2403.80	2420.24	0.5	PASS
11G-CDD	Ant2	2412	16.40	2403.80	2420.20	0.5	PASS
11G-CDD	Ant1	2437	16.56	2428.68	2445.24	0.5	PASS
11G-CDD	Ant2	2437	16.36	2428.80	2445.16	0.5	PASS
11G-CDD	Ant1	2462	16.36	2453.80	2470.16	0.5	PASS
11G-CDD	Ant2	2462	16.36	2453.80	2470.16	0.5	PASS
11N20MIMO	Ant1	2412	17.72	2403.16	2420.88	0.5	PASS
11N20MIMO	Ant2	2412	17.64	2403.16	2420.80	0.5	PASS
11N20MIMO	Ant1	2437	17.60	2428.20	2445.80	0.5	PASS
11N20MIMO	Ant2	2437	17.72	2428.16	2445.88	0.5	PASS
11N20MIMO	Ant1	2462	17.68	2453.20	2470.88	0.5	PASS
11N20MIMO	Ant2	2462	17.72	2453.16	2470.88	0.5	PASS
11AX20MIMO	Ant1	2412	19.08	2402.44	2421.52	0.5	PASS
11AX20MIMO	Ant2	2412	18.88	2402.64	2421.52	0.5	PASS
11AX20MIMO	Ant1	2437	19.16	2427.40	2446.56	0.5	PASS
11AX20MIMO	Ant2	2437	19.04	2427.48	2446.52	0.5	PASS
11AX20MIMO	Ant1	2462	19.00	2452.52	2471.52	0.5	PASS
11AX20MIMO	Ant2	2462	19.04	2452.48	2471.52	0.5	PASS

Note: RF Conducted test Offset= cable loss+ Attenuator(10dB).

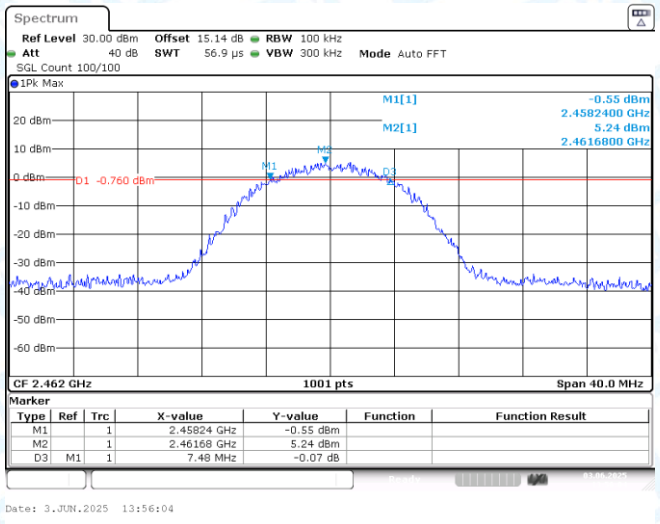
1.2 Test Graphs



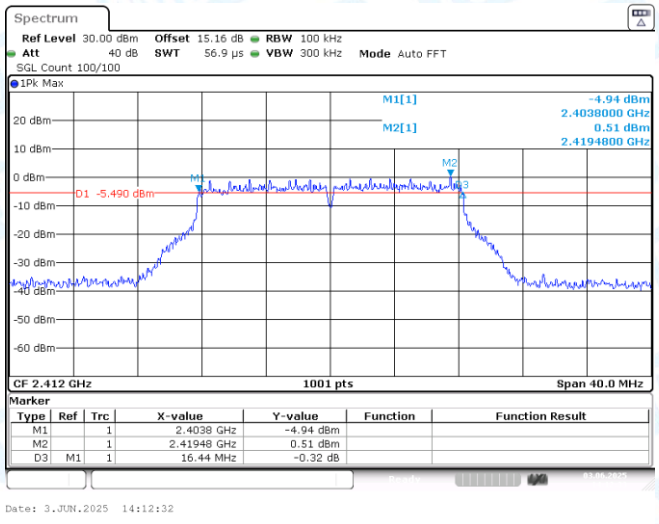
11B-Ant1-2412-PASS



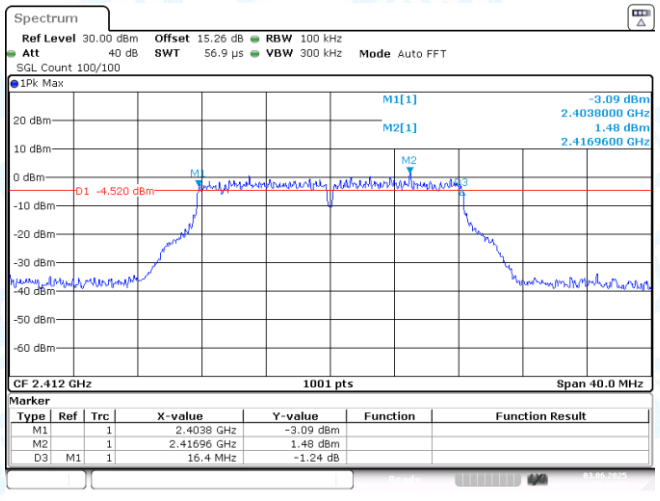
11B-Ant1-2437-PASS



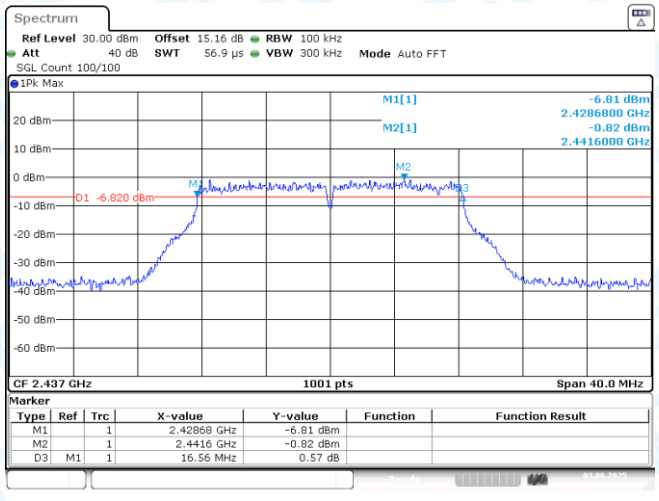
11B-Ant1-2462-PASS



11G-CDD-Ant1-2412-PASS



11G-CDD-Ant2-2412-PASS



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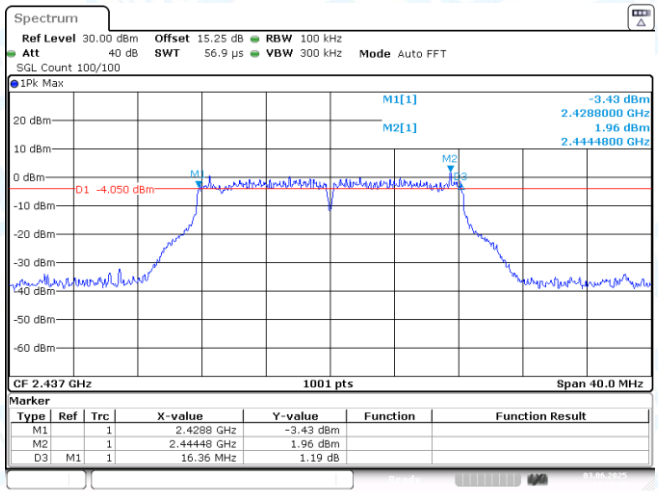

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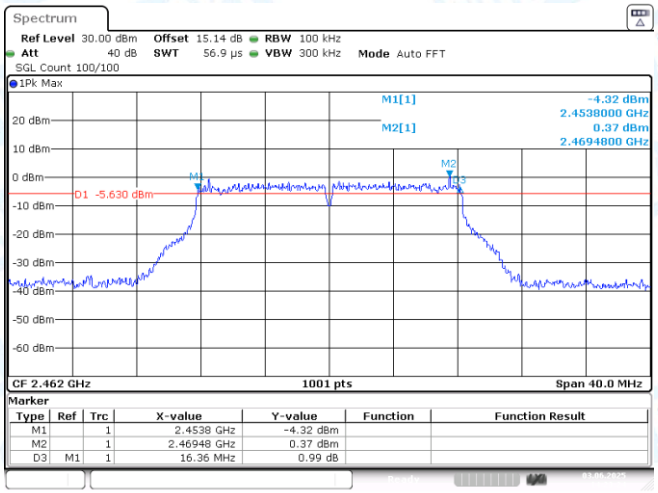
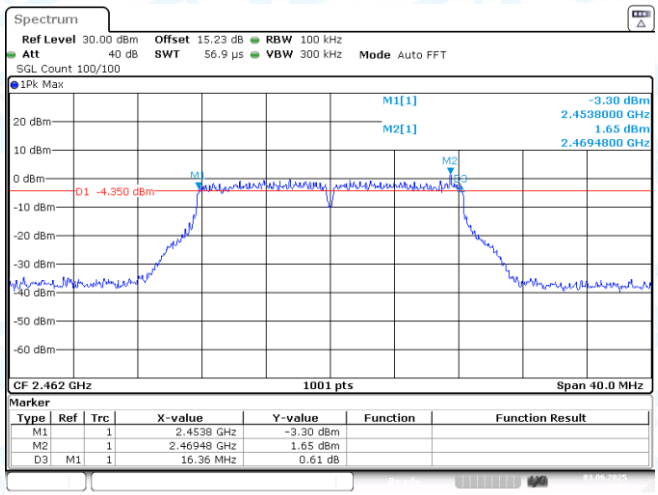
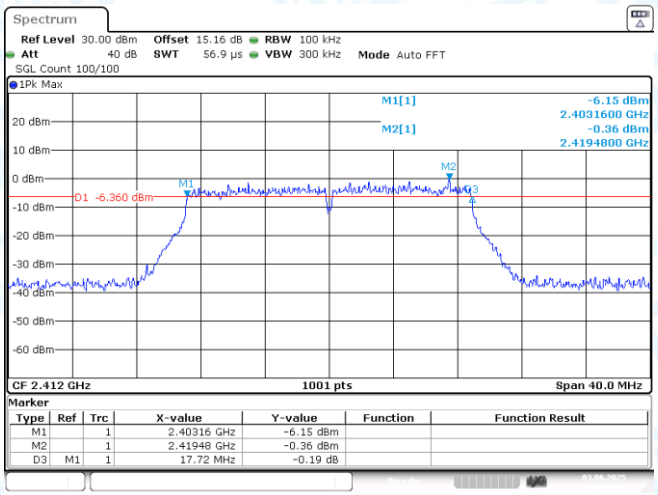


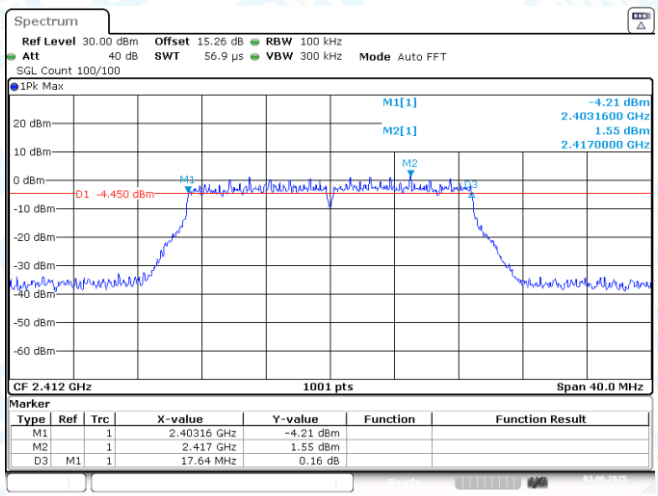
11G-CDD-Ant1-2462-PASS



11G-CDD-Ant2-2462-PASS



11N20MIMO-Ant1-2412-PASS



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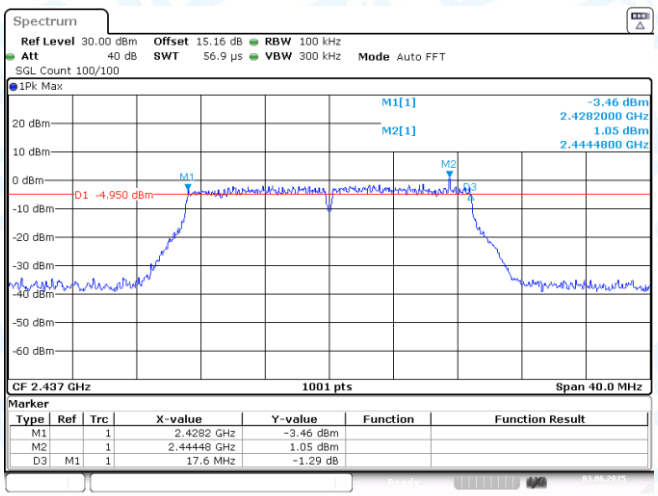

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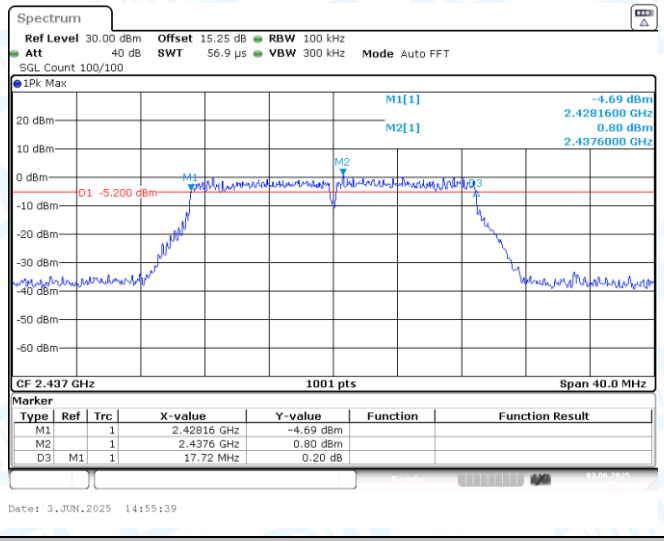
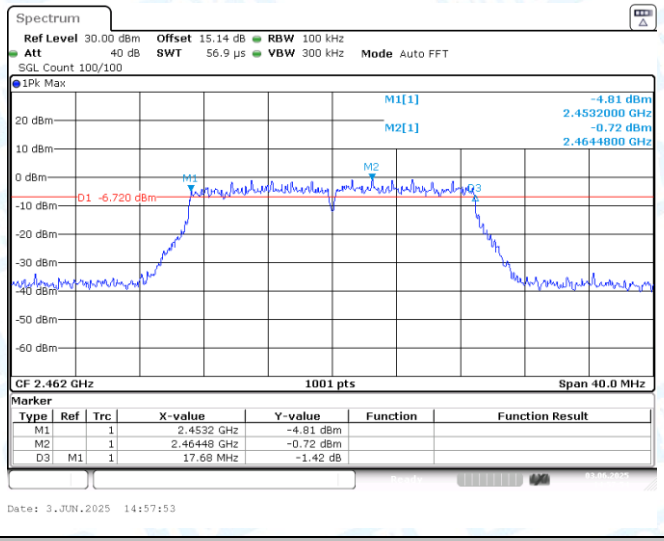
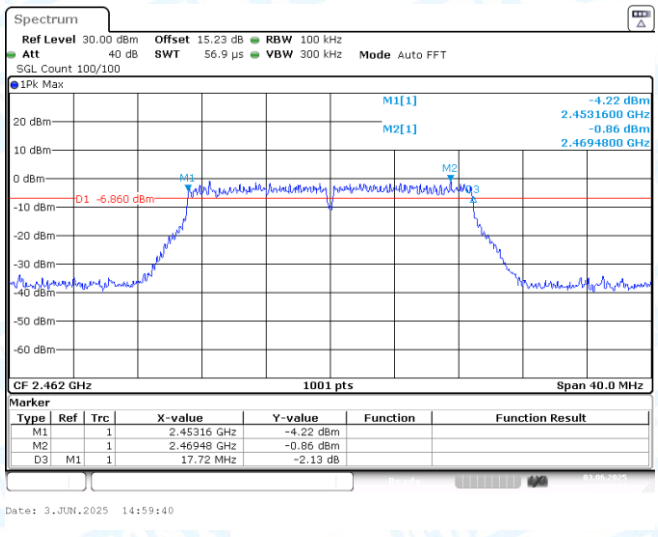


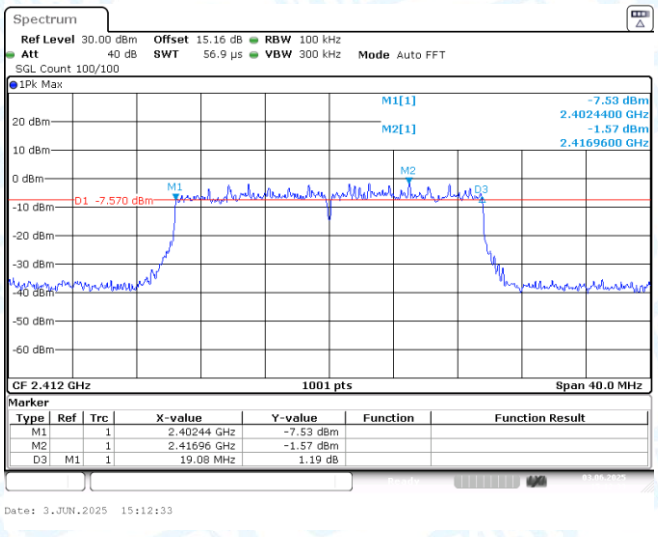
11N20MIMO-Ant2-2437-PASS



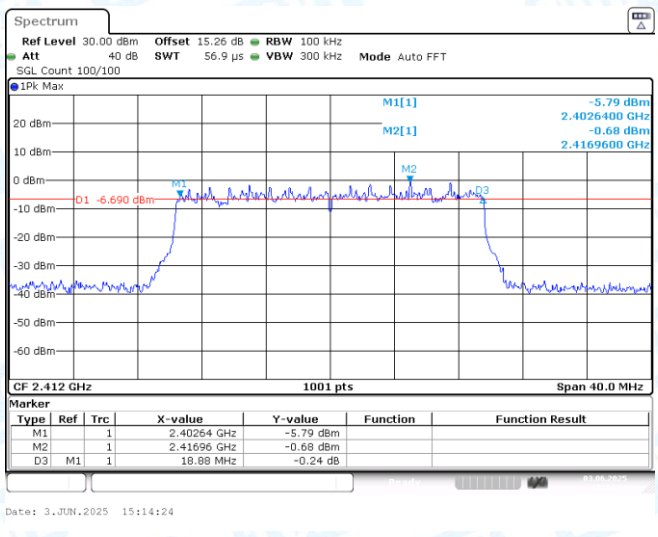
11N20MIMO-Ant1-2462-PASS



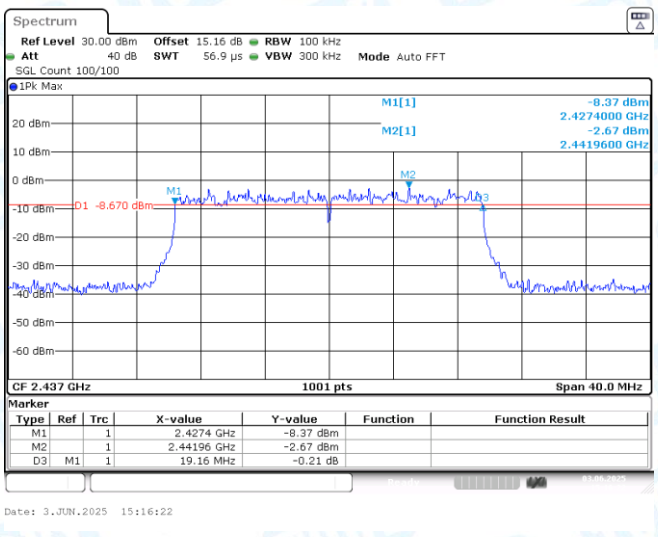
11N20MIMO-Ant2-2462-PASS



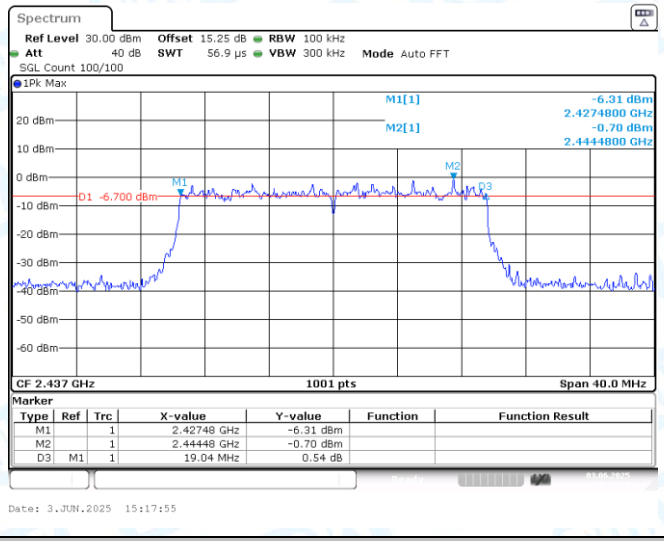
11AX20MIMO-Ant1-2412-PASS



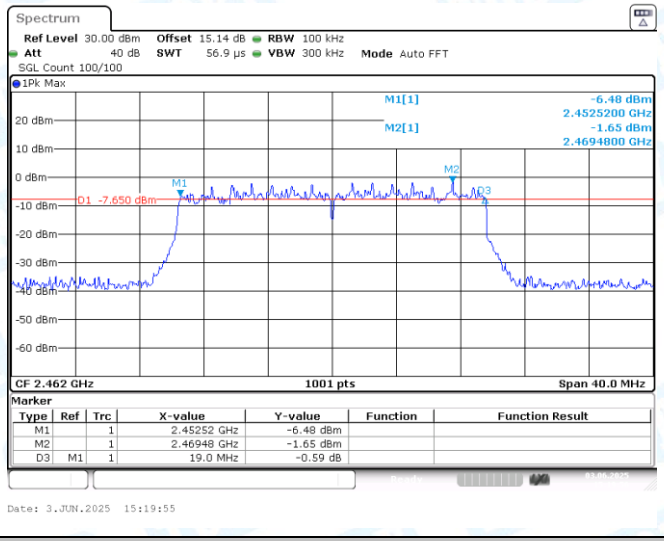
11AX20MIMO-Ant2-2412-PASS



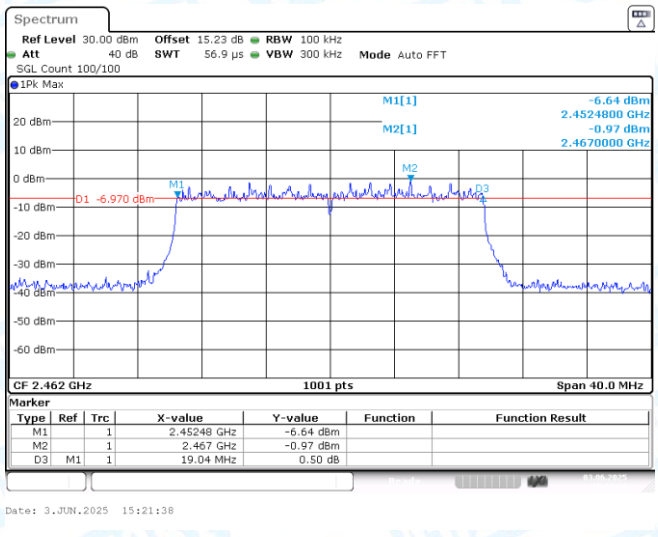
11AX20MIMO-Ant1-2437-PASS



11AX20MIMO-Ant2-2437-PASS



11AX20MIMO-Ant1-2462-PASS



11AX20MIMO-Ant2-2462-PASS

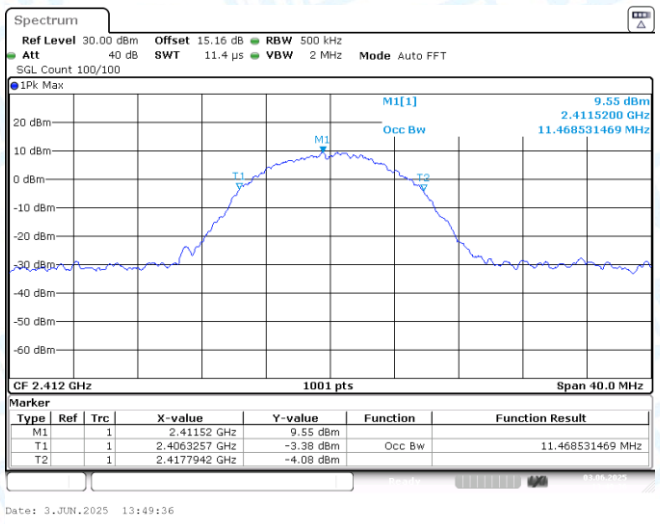
2: Occupied Channel Bandwidth

2.1 Test Result

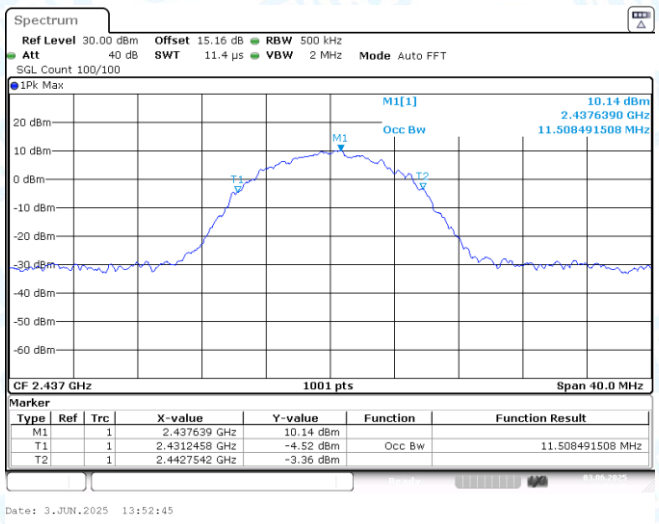
TestMode	Ant.	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	11.469	2406.3257	2417.7942	---	---
11B	Ant1	2437	11.508	2431.2458	2442.7542	---	---
11B	Ant1	2462	11.389	2456.3257	2467.7143	---	---
11G-CDD	Ant1	2412	17.622	2403.1688	2420.7912	---	---
11G-CDD	Ant2	2412	16.903	2403.6084	2420.5115	---	---
11G-CDD	Ant1	2437	17.423	2428.5285	2445.9510	---	---
11G-CDD	Ant2	2437	17.183	2428.4885	2445.6713	---	---
11G-CDD	Ant1	2462	16.943	2453.5285	2470.4715	---	---
11G-CDD	Ant2	2462	17.023	2453.6883	2470.7113	---	---
11N20MIMO	Ant1	2412	18.462	2402.7692	2421.2308	---	---
11N20MIMO	Ant2	2412	18.422	2402.9690	2421.3906	---	---
11N20MIMO	Ant1	2437	18.621	2427.5694	2446.1908	---	---
11N20MIMO	Ant2	2437	17.982	2428.0090	2445.9910	---	---
11N20MIMO	Ant1	2462	18.222	2452.9690	2471.1908	---	---
11N20MIMO	Ant2	2462	18.102	2452.9291	2471.0310	---	---
11AX20MIMO	Ant1	2412	19.141	2402.4496	2421.5904	---	---
11AX20MIMO	Ant2	2412	19.141	2402.4096	2421.5504	---	---
11AX20MIMO	Ant1	2437	19.101	2427.4496	2446.5504	---	---
11AX20MIMO	Ant2	2437	19.181	2427.3696	2446.5504	---	---
11AX20MIMO	Ant1	2462	19.301	2452.3297	2471.6304	---	---
11AX20MIMO	Ant2	2462	19.101	2452.4496	2471.5504	---	---

Note: RF Conducted test Offset= cable loss+ Attenuator(10dB).

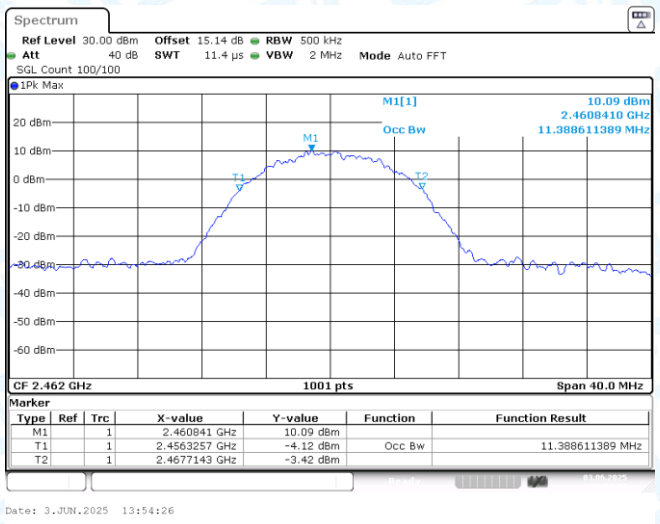
2.2 Test Graphs



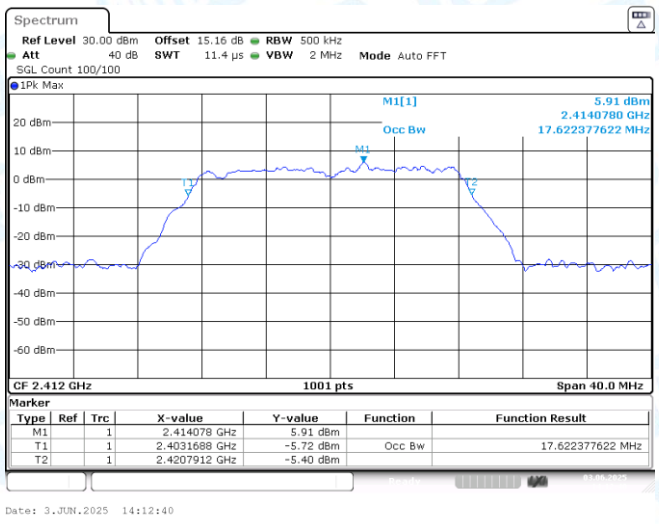
11B-Ant1-2412



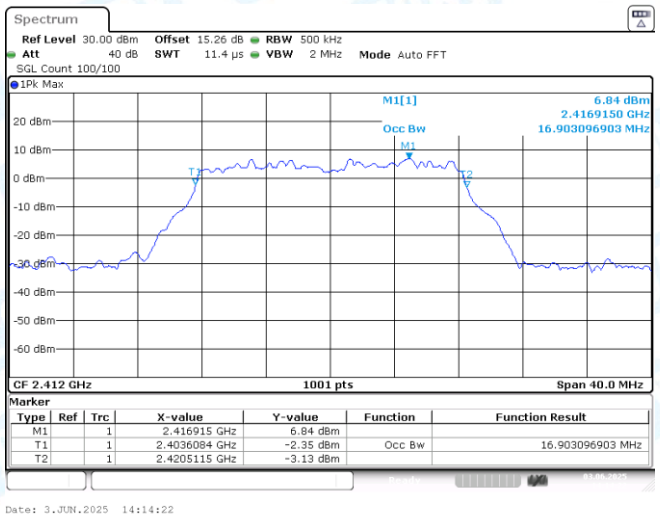
11B-Ant1-2437



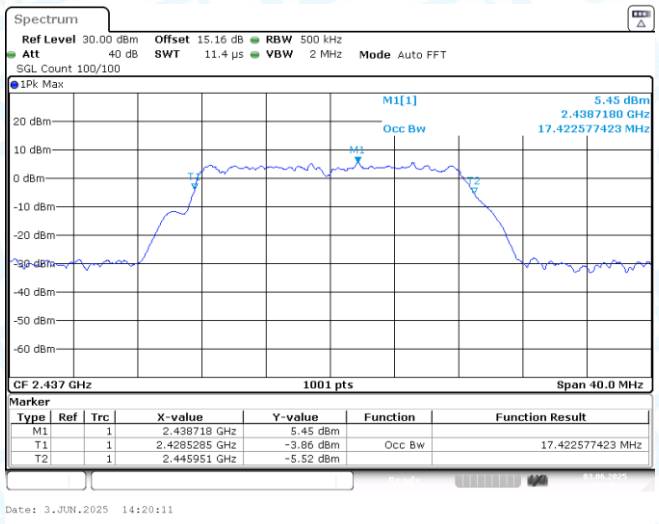
11B-Ant1-2462



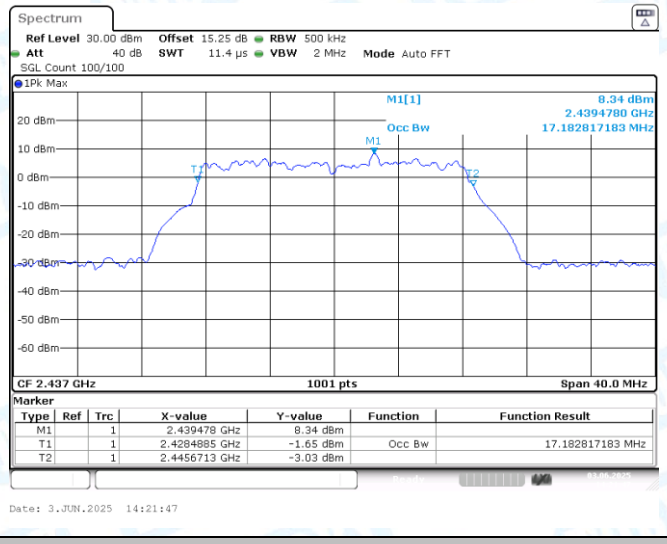
11G-CDD-Ant1-2412



11G-CDD-Ant2-2412



11G-CDD-Ant1-2437



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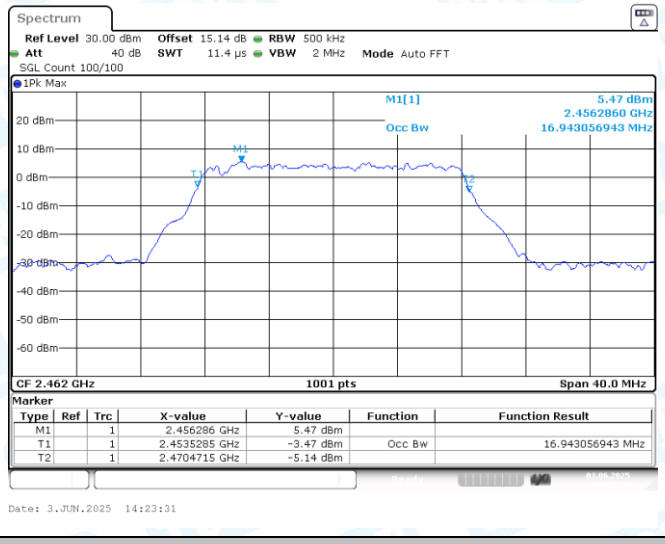
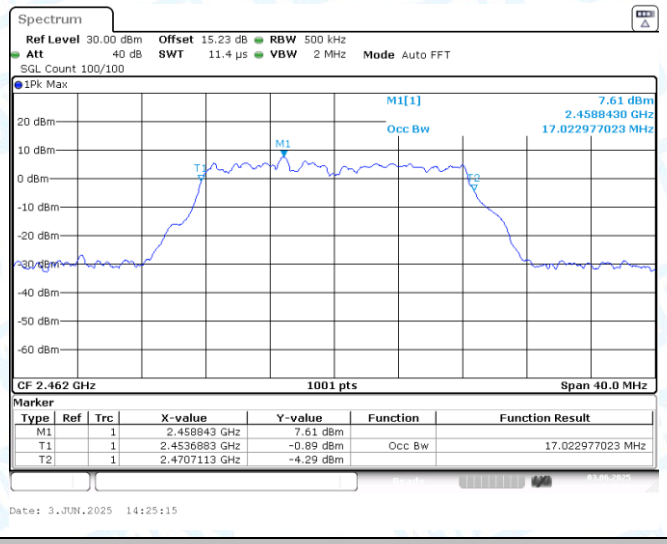
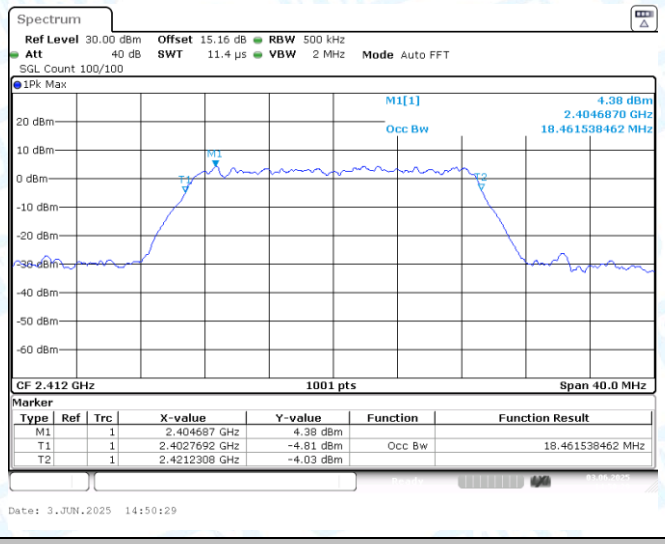


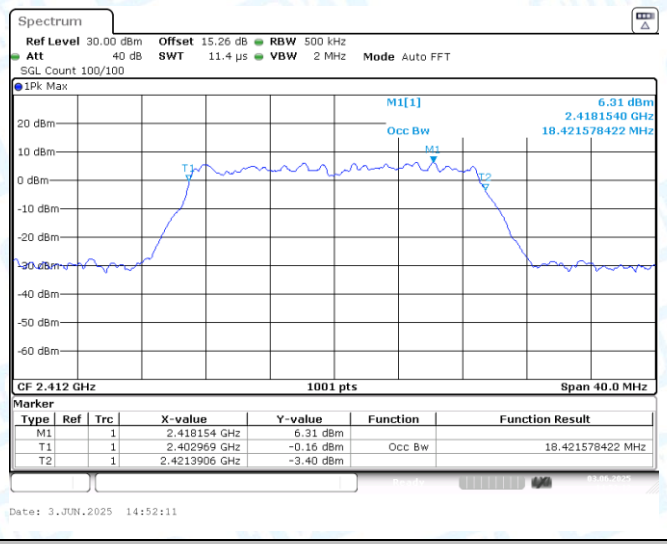
11G-CDD-Ant1-2462



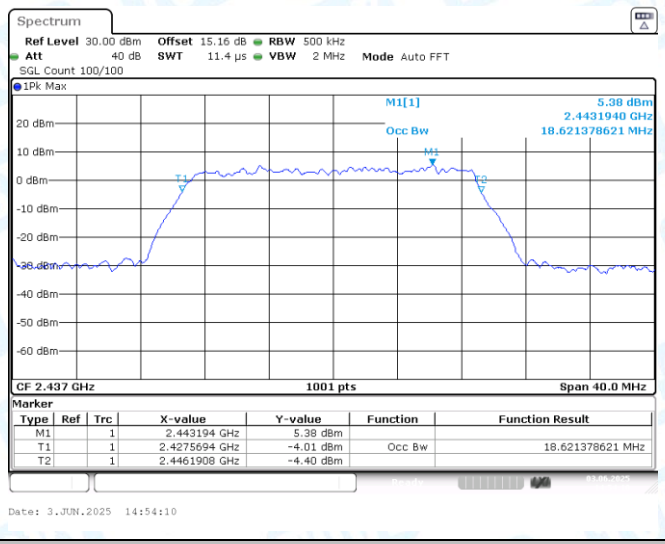
11G-CDD-Ant2-2462



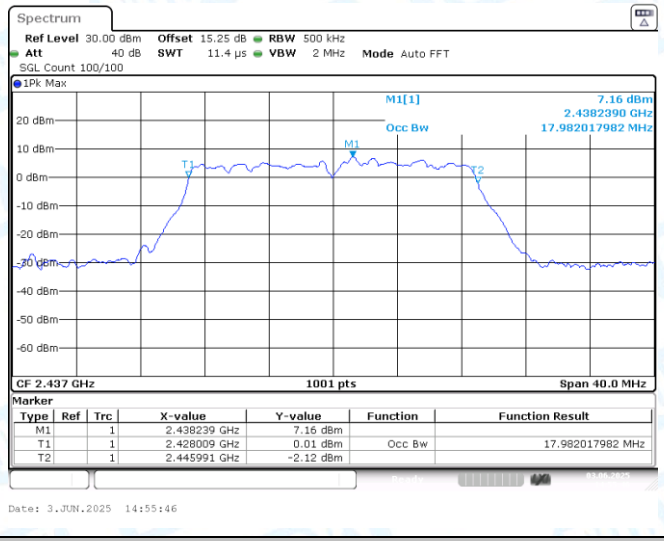
11N20MIMO-Ant1-2412



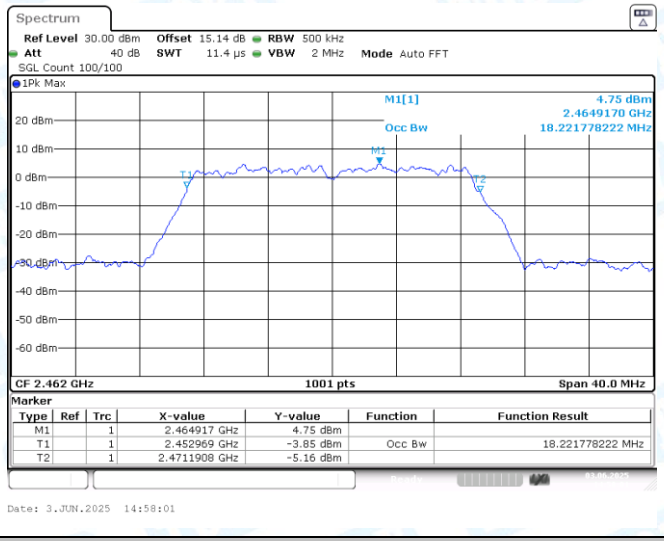
11N20MIMO-Ant2-2412



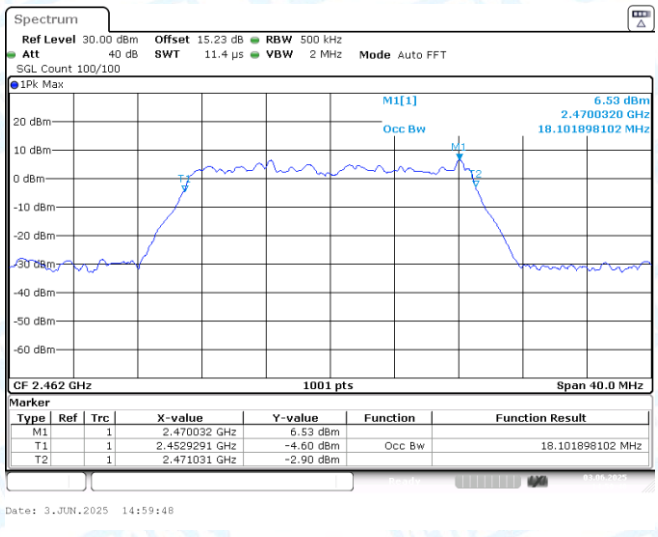
11N20MIMO-Ant1-2437



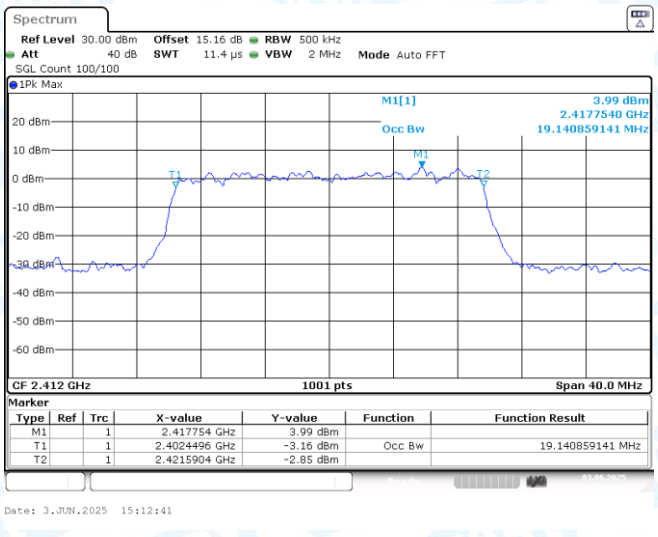
11N20MIMO-Ant2-2437



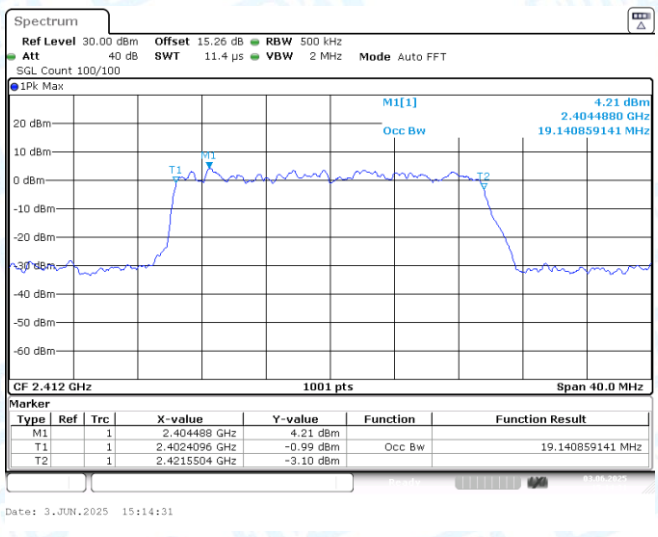
11N20MIMO-Ant1-2462



11N20MIMO-Ant2-2462



11AX20MIMO-Ant1-2412



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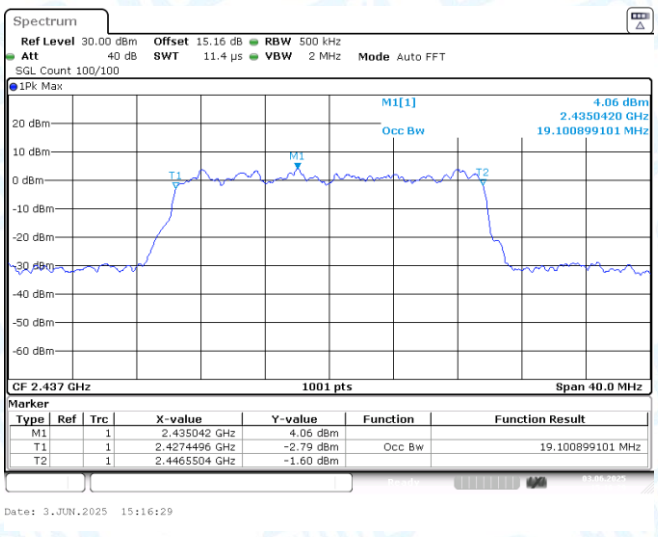
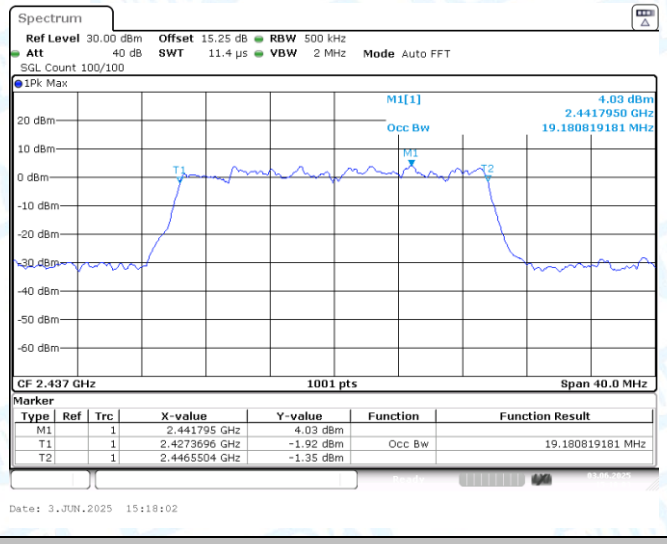
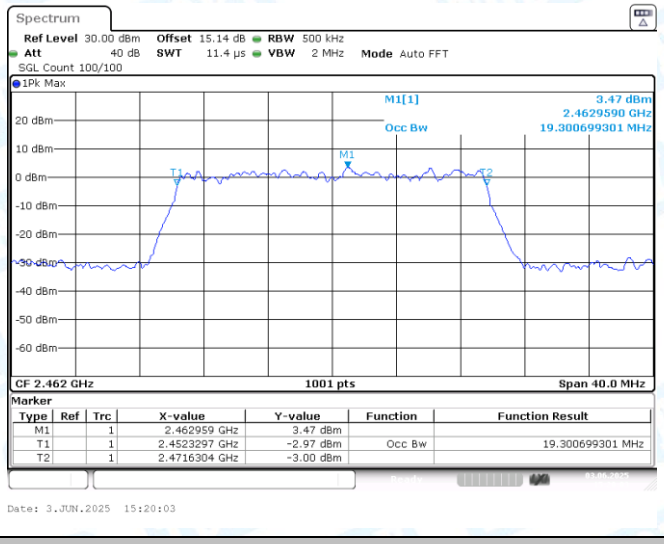


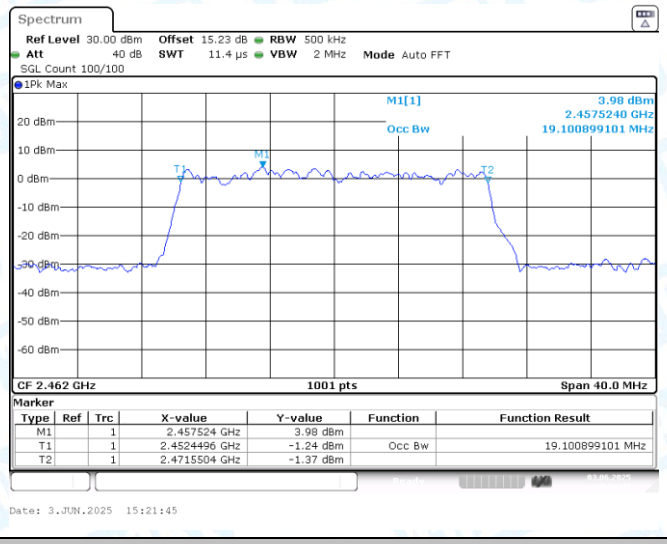
11AX20MIMO-Ant1-2437



11AX20MIMO-Ant2-2437



11AX20MIMO-Ant1-2462



11AX20MIMO-Ant2-2462

3: Maximum conducted output power

3.1 Test Result Average

Test Mode	Ant.	Frequency [MHz]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	13.37	≤30.00	PASS
11B	Ant1	2437	13.93	≤30.00	PASS
11B	Ant1	2462	14.21	≤30.00	PASS
11G-CDD	Ant1	2412	12.74	≤30.00	PASS
11G-CDD	Ant2	2412	13.73	≤30.00	PASS
11G-CDD	total	2412	16.27	≤30.00	PASS
11G-CDD	Ant1	2437	13.16	≤30.00	PASS
11G-CDD	Ant2	2437	13.84	≤30.00	PASS
11G-CDD	total	2437	16.52	≤30.00	PASS
11G-CDD	Ant1	2462	13.17	≤30.00	PASS
11G-CDD	Ant2	2462	14.11	≤30.00	PASS
11G-CDD	total	2462	16.68	≤30.00	PASS
11N20MIMO	Ant1	2412	12.74	≤30.00	PASS
11N20MIMO	Ant2	2412	13.61	≤30.00	PASS
11N20MIMO	**total**	**2412**	**16.21**	**≤27.03**	**PASS**
11N20MIMO	Ant1	2437	12.91	≤30.00	PASS
11N20MIMO	Ant2	2437	13.93	≤30.00	PASS
11N20MIMO	**total**	**2437**	**16.46**	**≤27.03**	**PASS**
11N20MIMO	Ant1	2462	12.42	≤30.00	PASS
11N20MIMO	Ant2	2462	12.93	≤30.00	PASS
11N20MIMO	**total**	**2462**	**15.69**	**≤27.03**	**PASS**
11AX20MIMO	Ant1	2412	10.76	≤30.00	PASS
11AX20MIMO	Ant2	2412	11.32	≤30.00	PASS
11AX20MIMO	**total**	**2412**	**14.06**	**≤27.03**	**PASS**
11AX20MIMO	Ant1	2437	11.01	≤30.00	PASS
11AX20MIMO	Ant2	2437	11.45	≤30.00	PASS
11AX20MIMO	**total**	**2437**	**14.25**	**≤27.03**	**PASS**
11AX20MIMO	Ant1	2462	11.09	≤30.00	PASS
11AX20MIMO	Ant2	2462	11.75	≤30.00	PASS
11AX20MIMO	**total**	**2462**	**14.44**	**≤27.03**	**PASS**

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two antennas for transmitting and receiving.
When ANT.1 and ANT. 2 transmitting simultaneously, and the Directional Gain=8.97dBi>6dBi. (Ant.1: 5.96dBi; Ant.2: 5.96dBi)
So Pout = Plimit-(GTX-6)]=(30.00-2.97)dBm=27.03dBm

Directional Gain=ANT. Gain+10*LOG(NANT)
The Duty Cycle Factor is compensated in the graph.
RF Conducted test Offset= cable loss+ Attenuator(10dB).

4: Maximum power spectral density

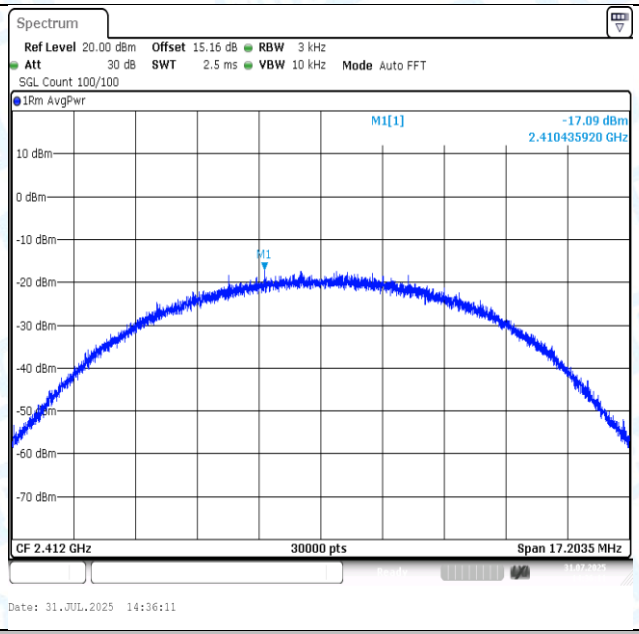
4.1 Test Result

TestMode	Ant.	Frequency[MHz]	RawData [dBm/3kHz]	DC Factory	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-17.09	0.07	-17.02	≤8.00	PASS
11B	Ant1	2437	-16.89	0.11	-16.78	≤8.00	PASS
11B	Ant1	2462	-16.84	0.07	-16.77	≤8.00	PASS
11G-CDD	Ant1	2412	-17.67	0.27	-17.40	≤8.00	PASS
11G-CDD	Ant2	2412	-18.15	0.27	-17.88	≤8.00	PASS
11G-CDD	**total**	**2412**	**---**	**---**	**-14.62**	**≤5.03**	**PASS**
11G-CDD	Ant1	2437	-17.85	0.27	-17.58	≤8.00	PASS
11G-CDD	Ant2	2437	-17.88	0.30	-17.58	≤8.00	PASS
11G-CDD	**total**	**2437**	**---**	**---**	**-14.57**	**≤5.03**	**PASS**
11G-CDD	Ant1	2462	-19.37	0.29	-19.08	≤8.00	PASS
11G-CDD	Ant2	2462	-18.62	0.29	-18.33	≤8.00	PASS
11G-CDD	**total**	**2462**	**---**	**---**	**-15.68**	**≤5.03**	**PASS**
11N20MIMO	Ant1	2412	-22.1	0.04	-22.06	≤8.00	PASS
11N20MIMO	Ant2	2412	-21.93	0.04	-21.89	≤8.00	PASS
11N20MIMO	**total**	**2412**	**---**	**---**	**-18.96**	**≤5.03**	**PASS**
11N20MIMO	Ant1	2437	-21.6	0.02	-21.58	≤8.00	PASS
11N20MIMO	Ant2	2437	-21.64	0.05	-21.59	≤8.00	PASS
11N20MIMO	**total**	**2437**	**---**	**---**	**-18.57**	**≤5.03**	**PASS**
11N20MIMO	Ant1	2462	-22.89	0.04	-22.85	≤8.00	PASS
11N20MIMO	Ant2	2462	-22.55	0.02	-22.53	≤8.00	PASS
11N20MIMO	**total**	**2462**	**---**	**---**	**-19.68**	**≤5.03**	**PASS**
11AX20MIMO	Ant1	2412	-20.49	2.81	-17.68	≤8.00	PASS
11AX20MIMO	Ant2	2412	-21.01	2.81	-18.20	≤8.00	PASS
11AX20MIMO	**total**	**2412**	**---**	**---**	**-14.92**	**≤5.03**	**PASS**
11AX20MIMO	Ant1	2437	-20.68	3.01	-17.67	≤8.00	PASS
11AX20MIMO	Ant2	2437	-20.74	2.81	-17.93	≤8.00	PASS
11AX20MIMO	**total**	**2437**	**---**	**---**	**-14.79**	**≤5.03**	**PASS**
11AX20MIMO	Ant1	2462	-20.91	3.01	-17.90	≤8.00	PASS
11AX20MIMO	Ant2	2462	-20.49	3.01	-17.48	≤8.00	PASS
11AX20MIMO	**total**	**2462**	**---**	**---**	**-14.67**	**≤5.03**	**PASS**

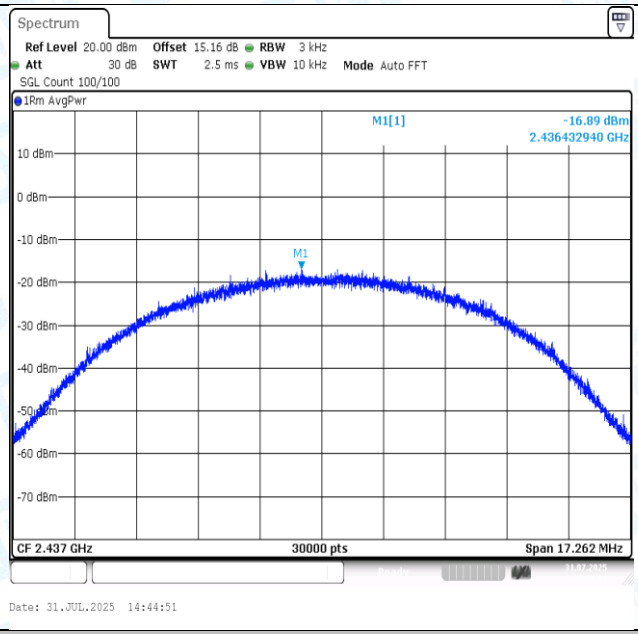
Note: The EUT incorporates a CDD&MIMO function. Physically, the EUT provides two antennas for transmitting and receiving.
When ANT.1 and ANT. 2 transmitting simultaneously, and the Directional Gain=8.97dBi>6dBi. (Ant.1: 5.96dBi; Ant.2: 5.96dBi)
So PSDout = PSDlimit-(GTX-6)]=(8-2.97)dBm=5.03dBm

Directional Gain=ANT. Gain+10*LOG(NANT)
RF Conducted test Offset= cable loss+ Attenuator(10dB).

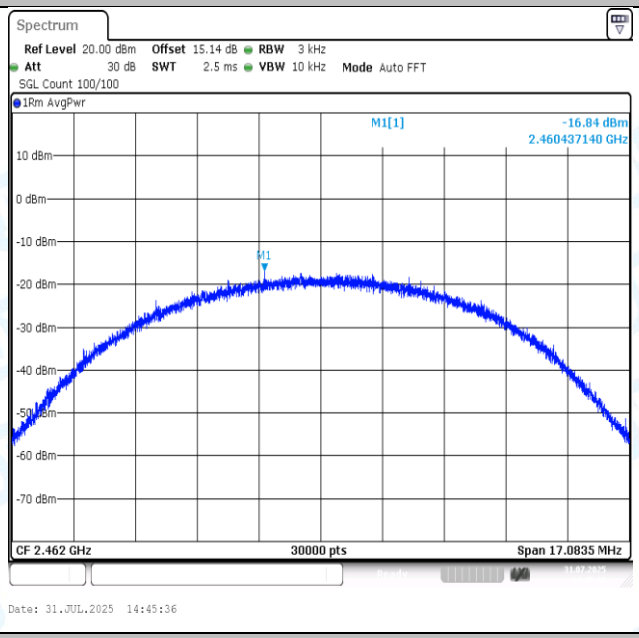
4.2 Test Graphs



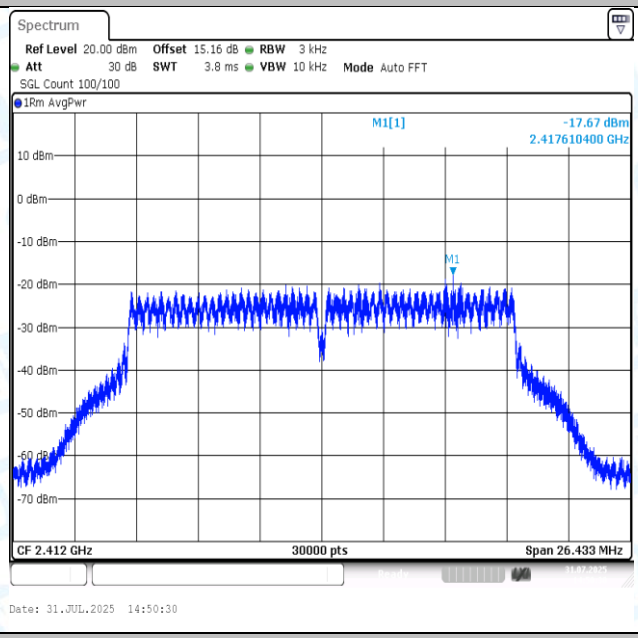
11B-Ant1-2412-PASS



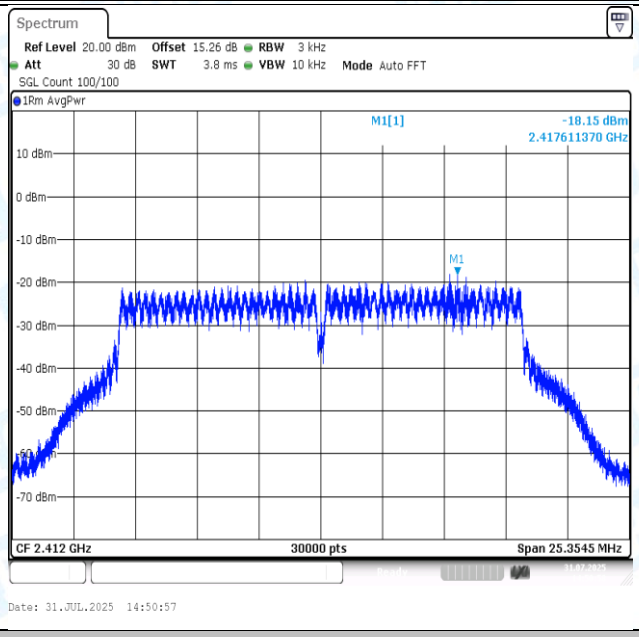
11B-Ant1-2437-PASS



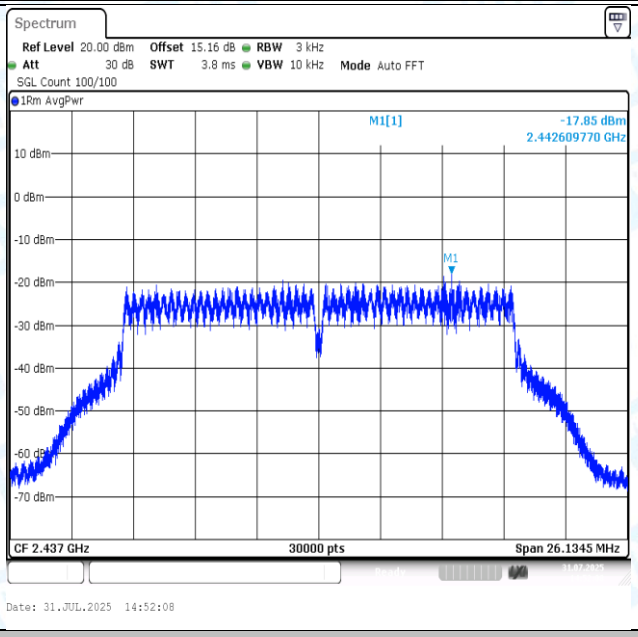
11B-Ant1-2462-PASS



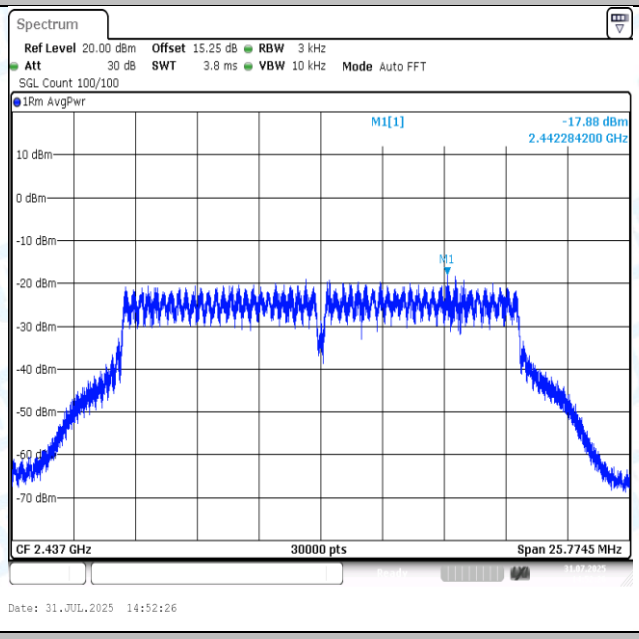
11G-CDD-Ant1-2412-PASS



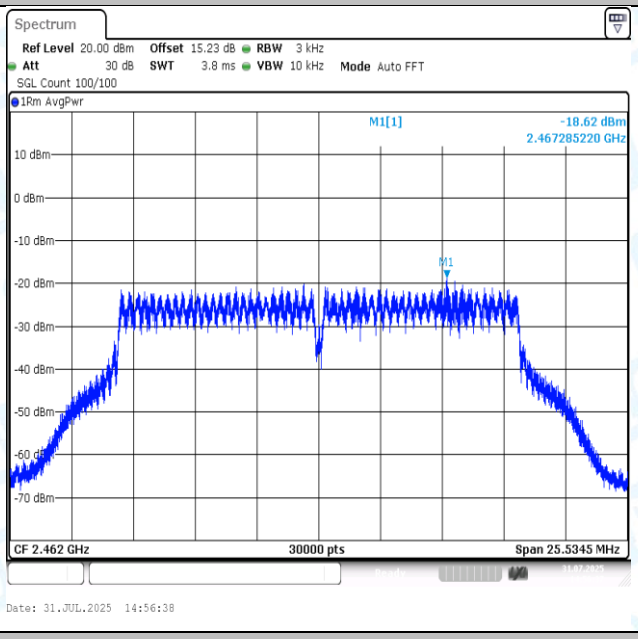
11G-CDD-Ant2-2412-PASS



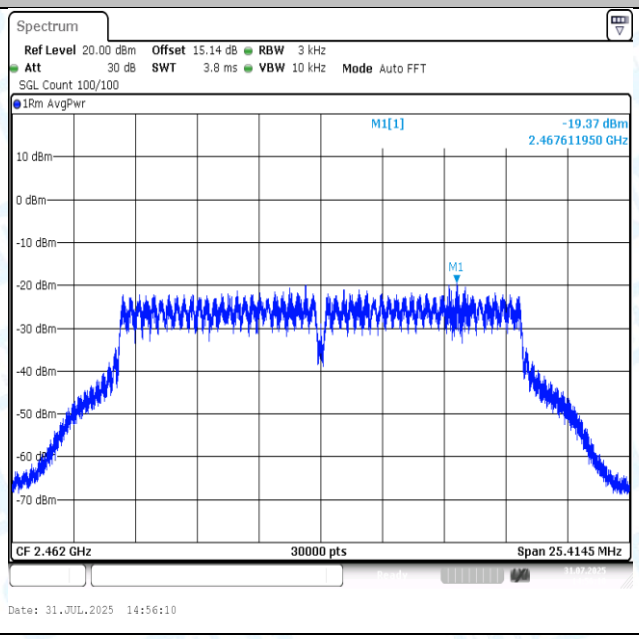
11G-CDD-Ant1-2437-PASS

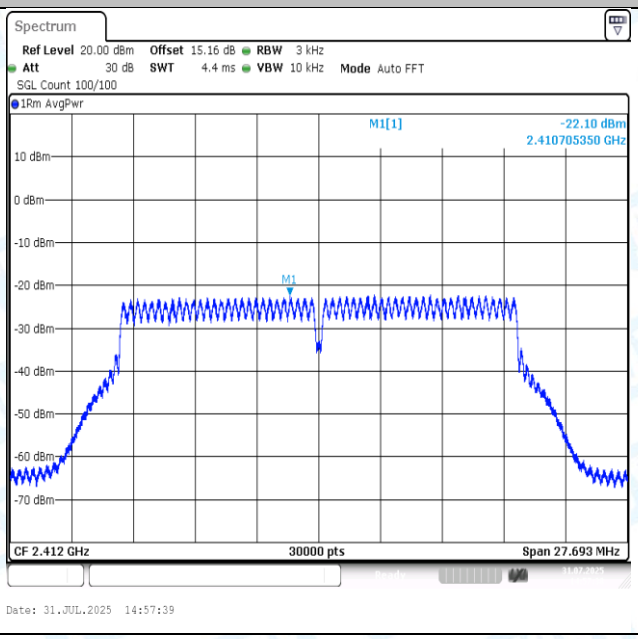


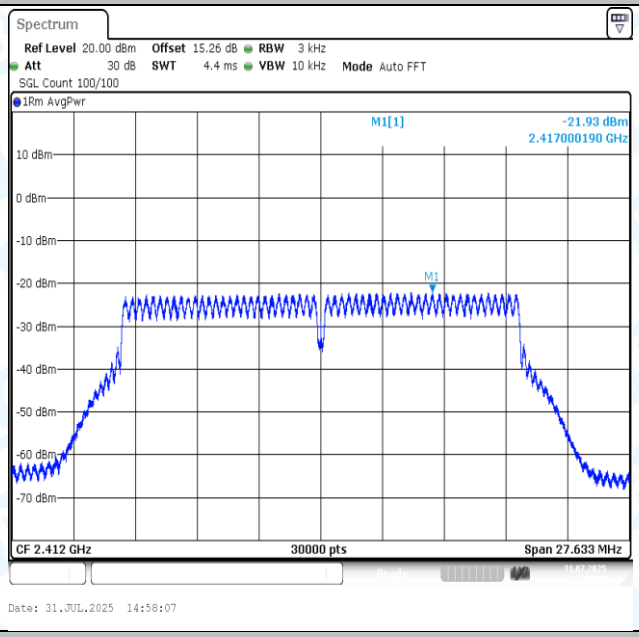
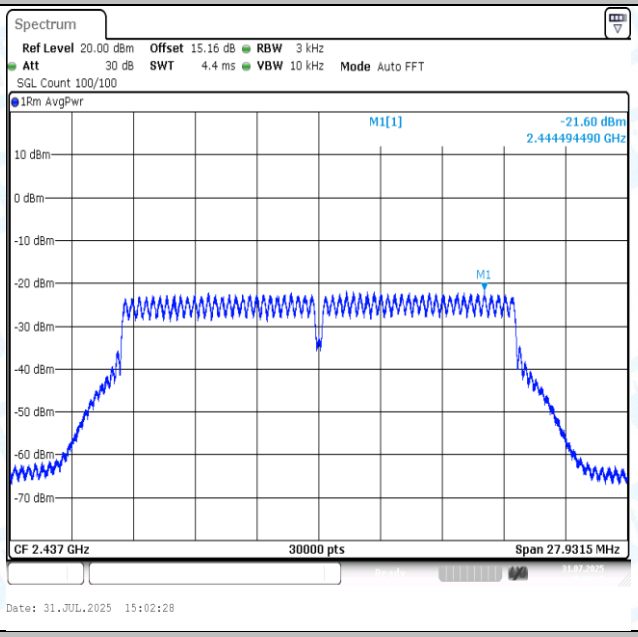
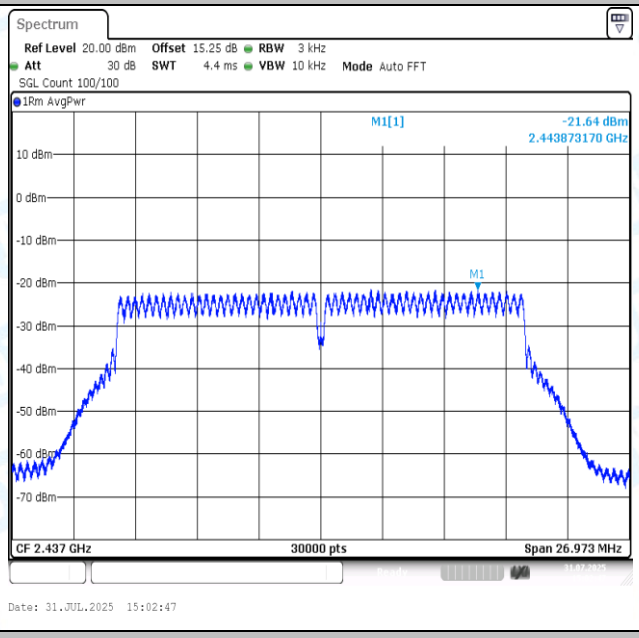
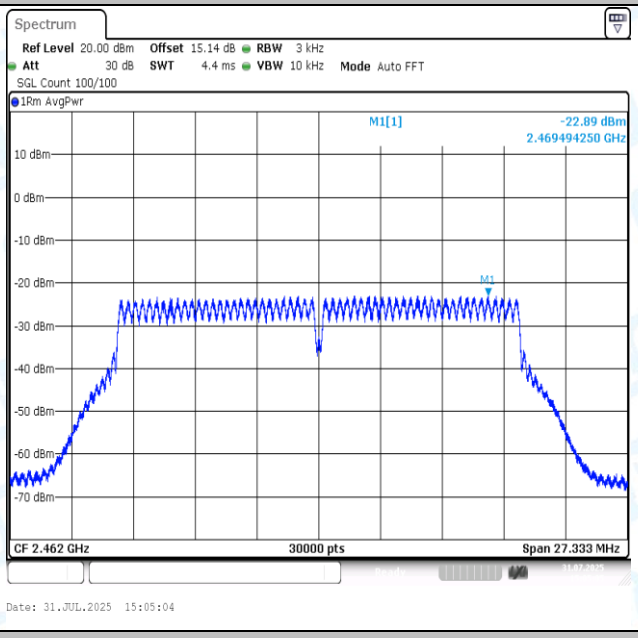
11G-CDD-Ant2-2437-PASS

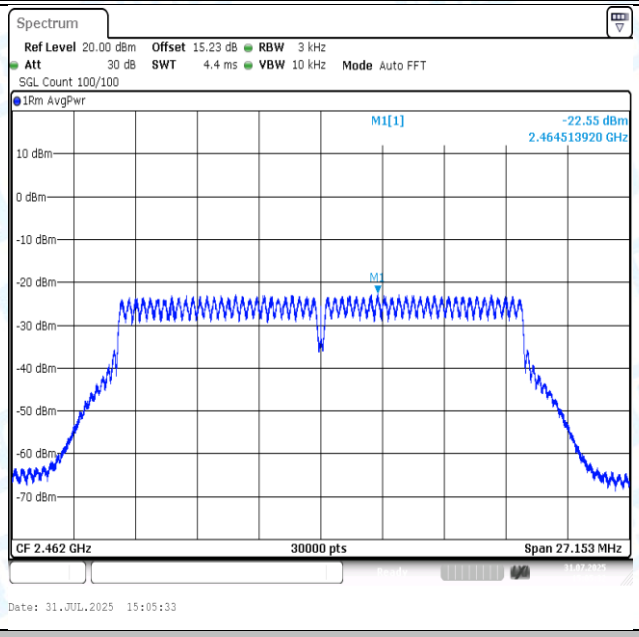


11G-CDD-Ant2-2462-PASS

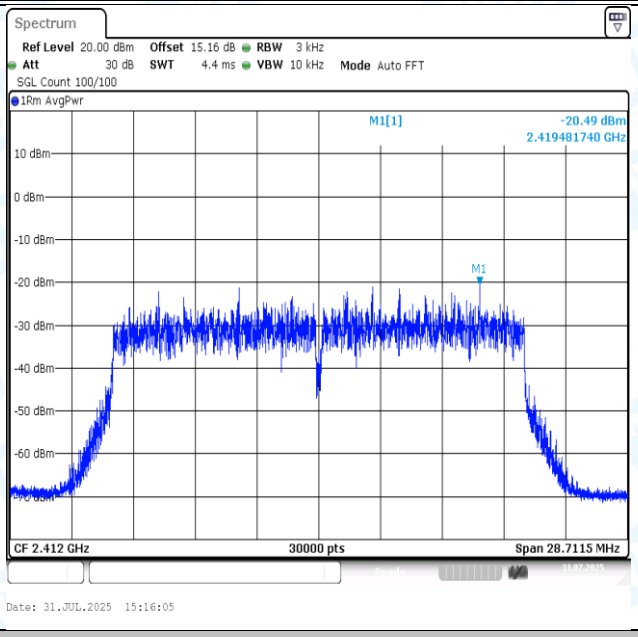




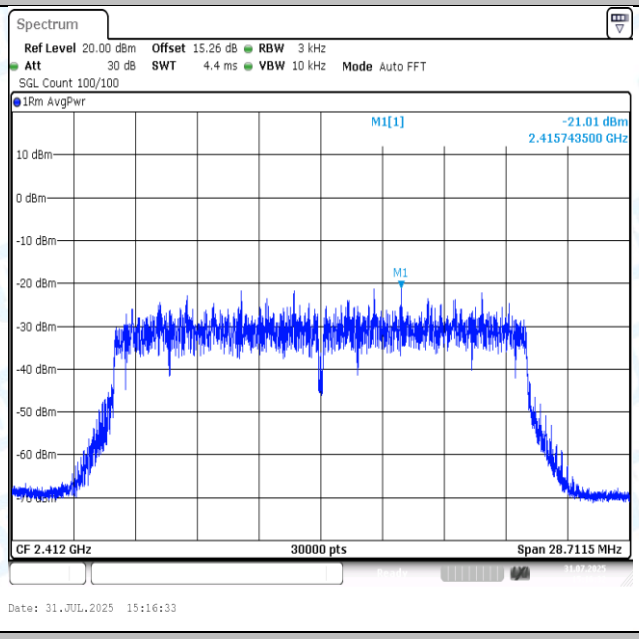
11G-CDD-Ant1-2462-PASS	11N20MIMO-Ant1-2412-PASS
	
11N20MIMO-Ant2-2412-PASS	11N20MIMO-Ant1-2437-PASS
	
11N20MIMO-Ant2-2437-PASS	11N20MIMO-Ant1-2462-PASS



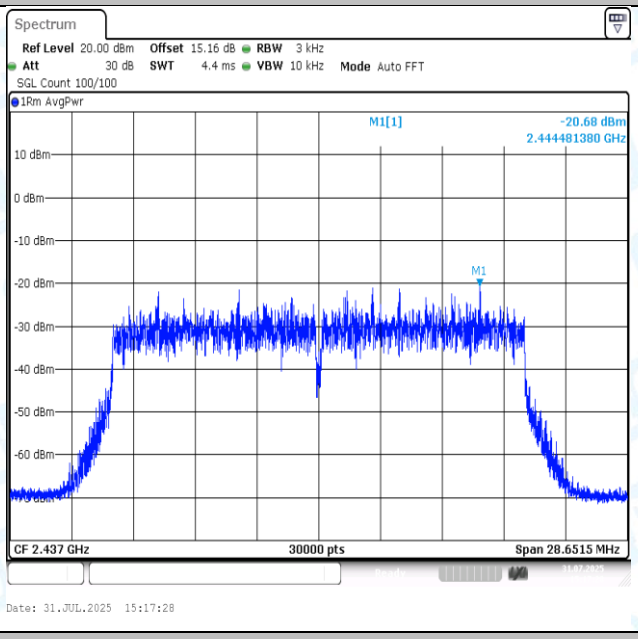
11N20MIMO-Ant2-2462-PASS



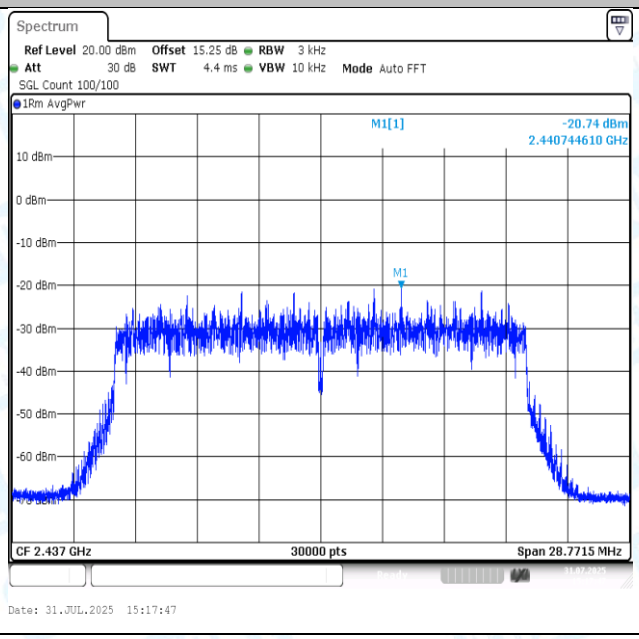
11AX20MIMO-Ant1-2412-PASS

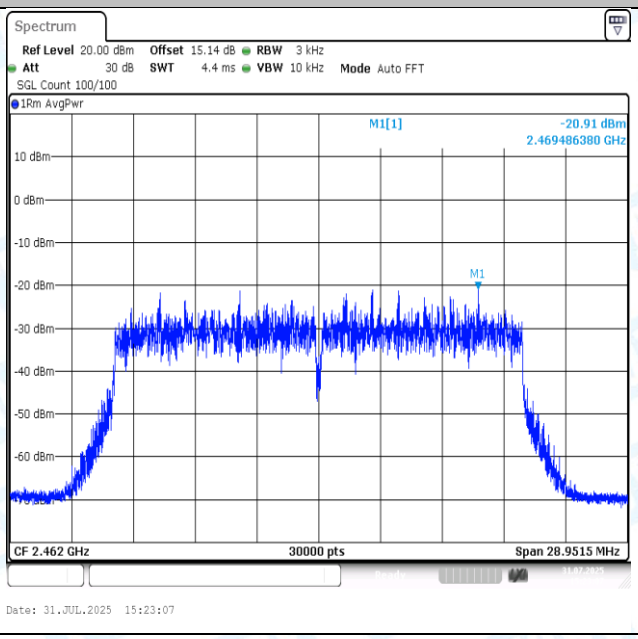


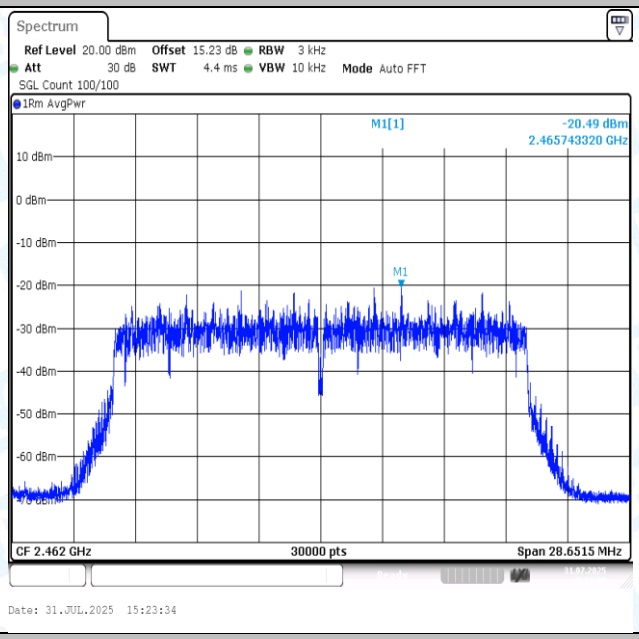
11AX20MIMO-Ant2-2412-PASS



11AX20MIMO-Ant1-2437-PASS





11AX20MIMO-Ant2-2437-PASS	11AX20MIMO-Ant1-2462-PASS
	
11AX20MIMO-Ant2-2462-PASS	

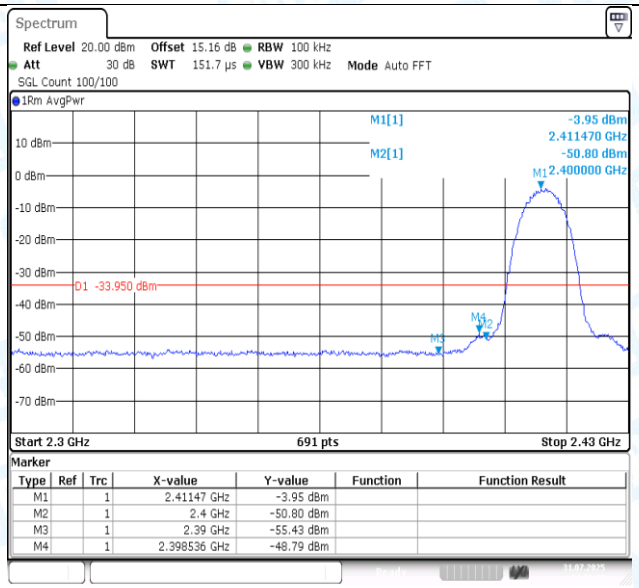
5: Band edge measurements

5.1 Test Result

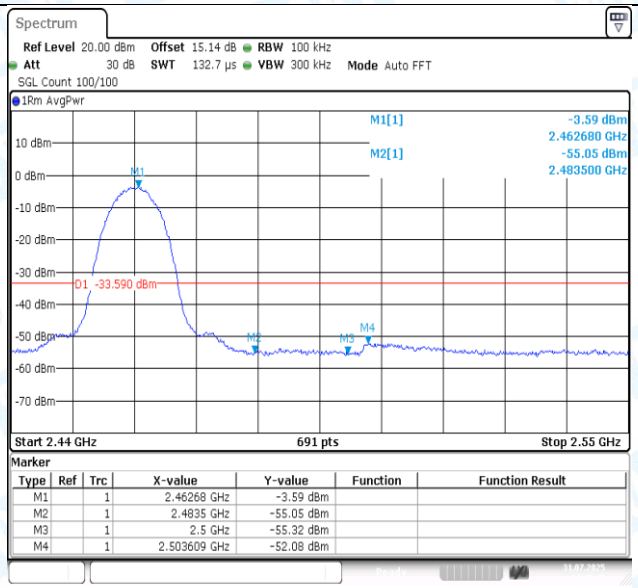
TestMode	Ant.	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	-3.95	-48.79	≤-33.95	PASS
11B	Ant1	High	2462	-3.59	-52.08	≤-33.59	PASS
11G-CDD	Ant1	Low	2412	-8.54	-48.02	≤-38.54	PASS
11G-CDD	Ant2	Low	2412	-8.34	-47.53	≤-38.34	PASS
11G-CDD	Ant1	High	2462	-9.29	-52	≤-39.29	PASS
11G-CDD	Ant2	High	2462	-9.03	-51.79	≤-39.03	PASS
11N20MIMO	Ant1	Low	2412	-8.56	-47.37	≤-38.56	PASS
11N20MIMO	Ant2	Low	2412	-8.29	-47.47	≤-38.29	PASS
11N20MIMO	Ant1	High	2462	-9.47	-51.7	≤-39.47	PASS
11N20MIMO	Ant2	High	2462	-8.73	-52.04	≤-38.73	PASS
11AX20MIMO	Ant1	Low	2412	-12.65	-52.83	≤-42.65	PASS
11AX20MIMO	Ant2	Low	2412	-10.97	-52.84	≤-40.97	PASS
11AX20MIMO	Ant1	High	2462	-12.52	-51.75	≤-42.52	PASS
11AX20MIMO	Ant2	High	2462	-11.93	-52.08	≤-41.93	PASS

Note: RF Conducted test Offset= cable loss+ Attenuator(10dB).

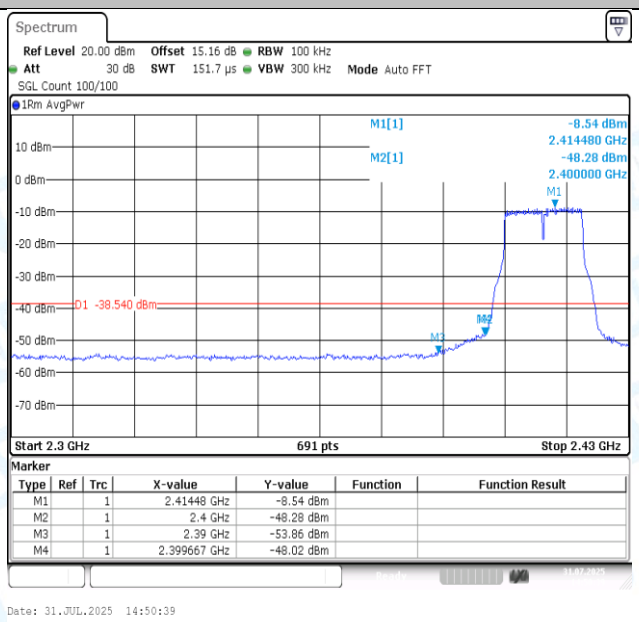
5.2 Test Graphs



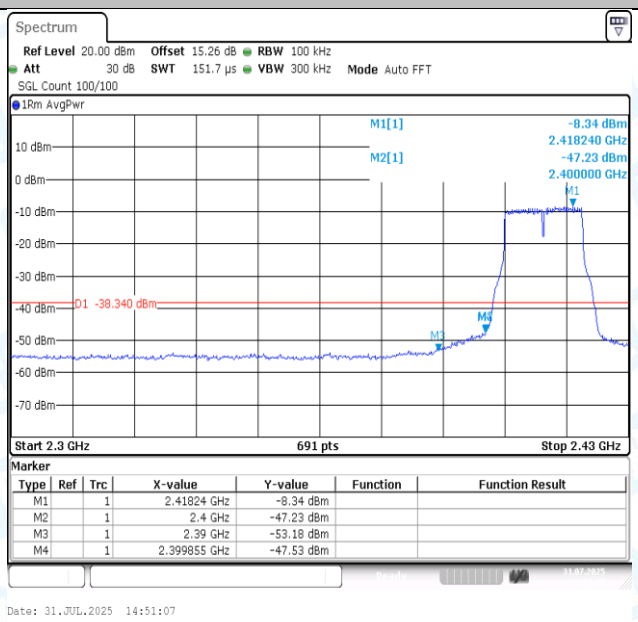
11B-Ant1-2412-PASS



11B-Ant1-2462-PASS



11G-CDD-Ant1-2412-PASS



11G-CDD-Ant2-2412-PASS