Appendix Report

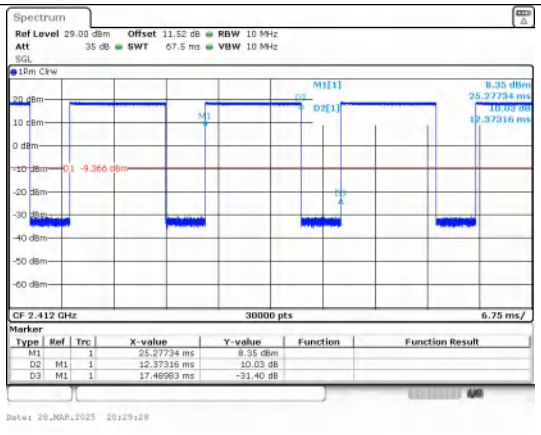
Project No.:	CISR250320172
Test Engineer:	James Wang
Supervised by:	Rory Huang

Duty Cycle

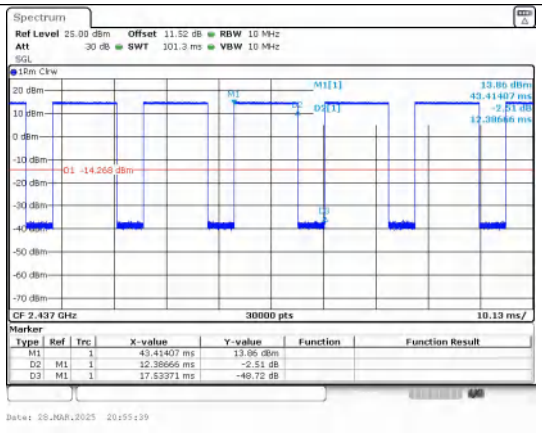
Test Result

Mode	Data rates	Channel	RU & Index	Antenna	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
IEEE 802.11b	1	1	N/A	1	12.373	17.490	70.74	0.7074	1.5033	0.0808
		6			12.387	17.534	70.64	0.7064	1.5095	0.0807
		11			12.373	17.497	70.72	0.7072	1.5046	0.0808
IEEE 802.11g		1			2.068	2.252	91.83	0.9183	0.3702	0.4836
		6			2.079	7.229	28.76	0.2876	5.4121	0.4810
		11			2.072	5.081	40.79	0.4079	3.8945	0.4826
IEEE 802.11n_20	MCS 0	1			2.072	5.076	40.82	0.4082	3.8913	0.4826
		6			2.072	5.065	40.92	0.4092	3.8806	0.4826
		11			2.079	5.076	40.96	0.4096	3.8764	0.4810
IEEE 802.11n_40		3			0.650	0.695	93.54	0.9354	0.29	1.5385
		6			0.650	0.696	93.30	0.9330	0.3012	1.5385
		9			0.650	0.696	93.42	0.9342	0.2956	1.5385
IEEE 802.11ax_20		1	SU		2.072	5.083	40.77	0.4077	3.8966	0.4826
		6			2.076	5.086	40.81	0.4081	3.8923	0.4817
		11			2.072	5.076	40.82	0.4082	3.8913	0.4826

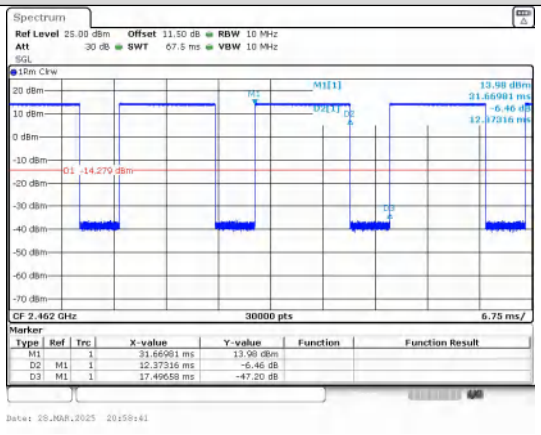
Test Graphs



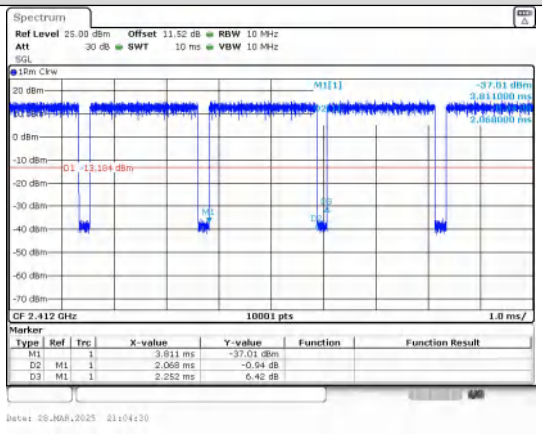
IEEE 802.11b_20MHz_Channel 1



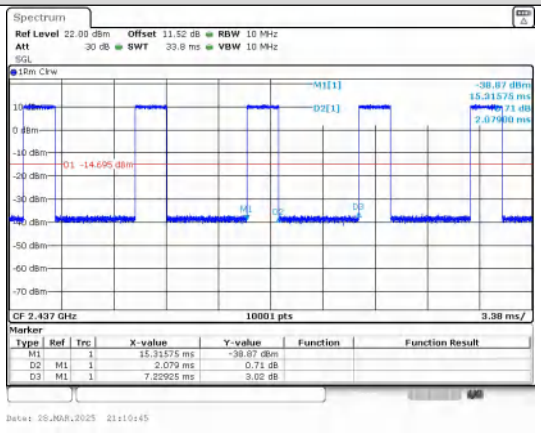
IEEE 802.11b_20MHz_Channel 6



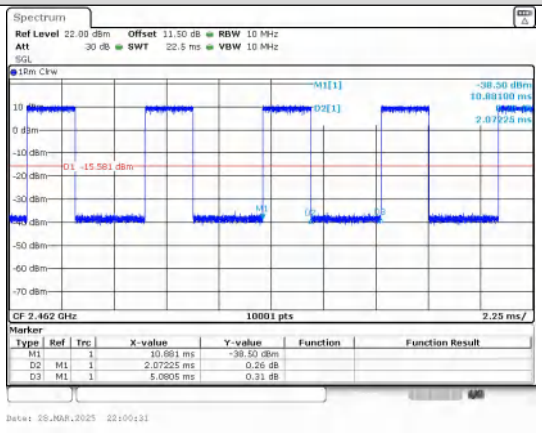
IEEE 802.11b_20MHz_Channel 11



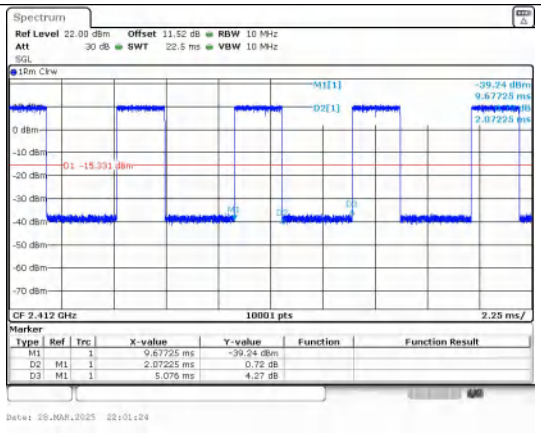
IEEE 802.11g_20MHz_Channel 1



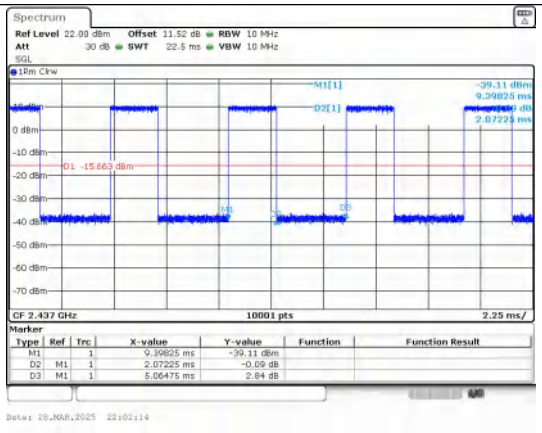
IEEE 802.11g_20MHz_Channel 6



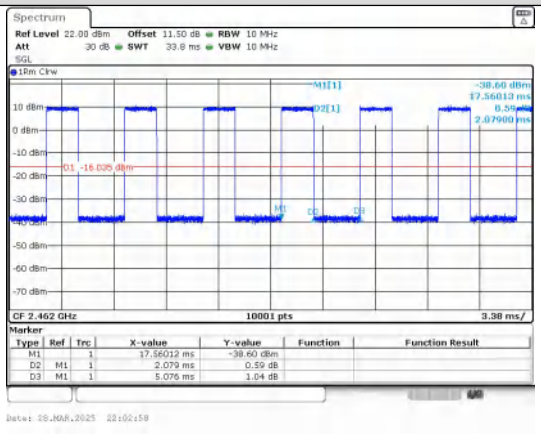
IEEE 802.11g_20MHz_Channel 11



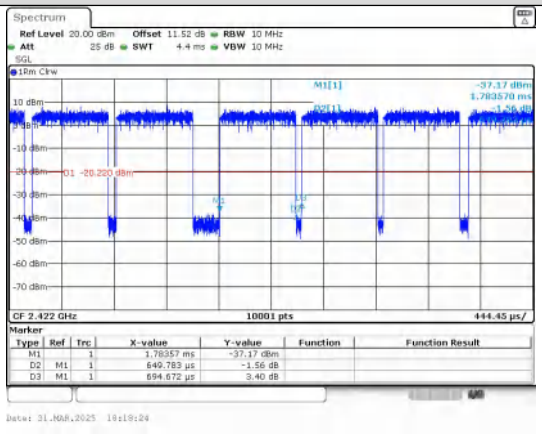
IEEE 802.11n_20MHz_Channel 1



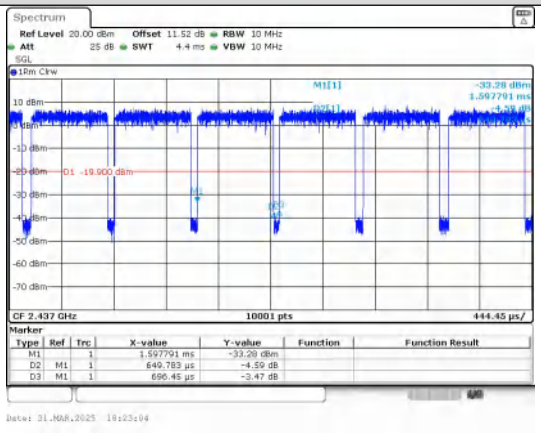
IEEE 802.11n_20MHz_Channel 6



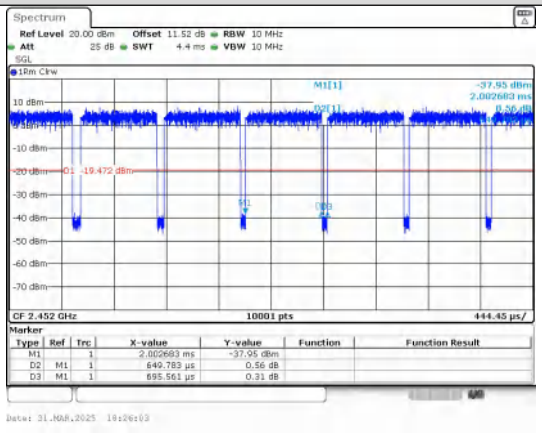
IEEE 802.11n_20MHz_Channel 11



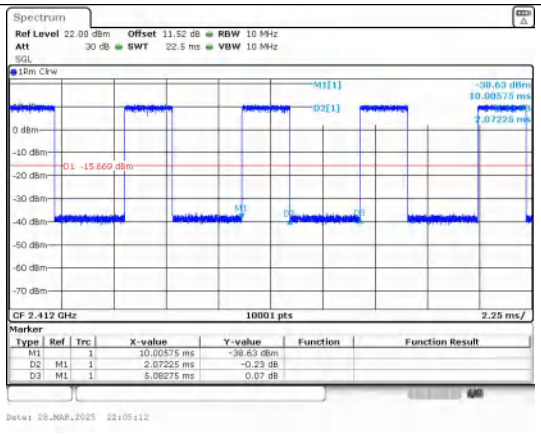
IEEE 802.11n_40MHz_Channel 3



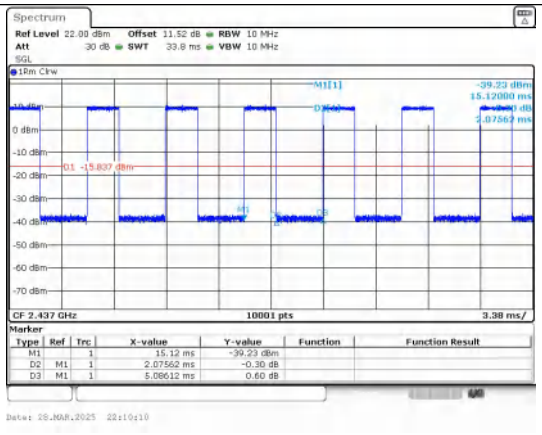
IEEE 802.11n_40MHz_Channel 6



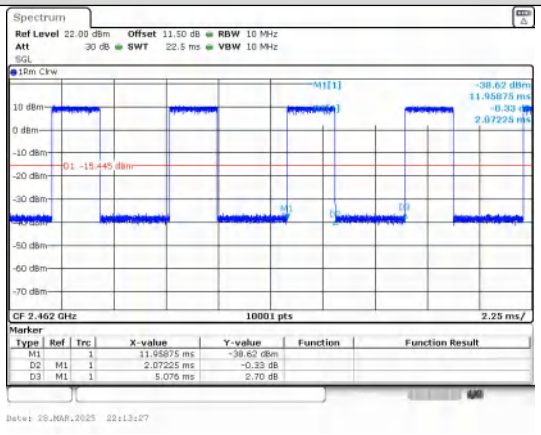
IEEE 802.11n_40MHz_Channel 9



IEEE 802.11ax_20MHz_Channel 1



IEEE 802.11ax_20MHz_Channel 6



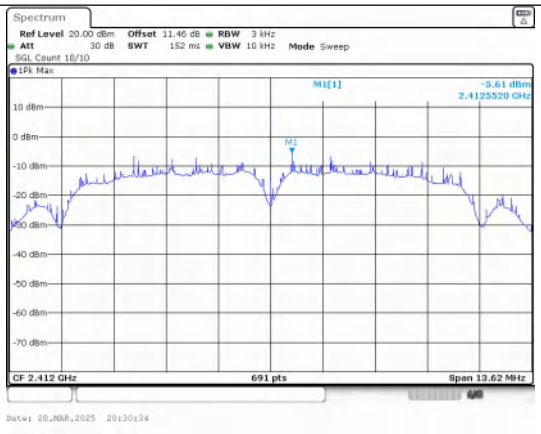
IEEE 802.11ax_20MHz_Channel 11

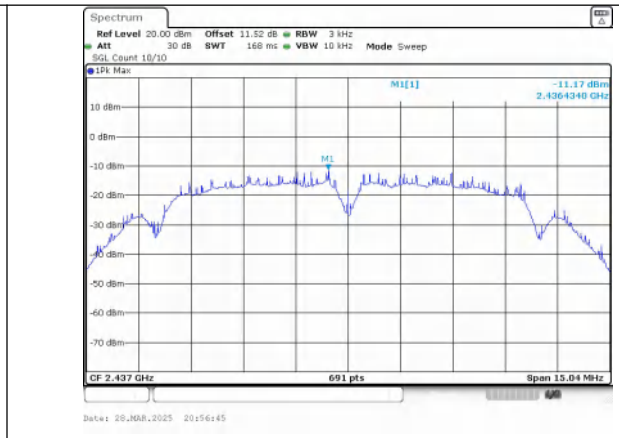
Power Spectral Density

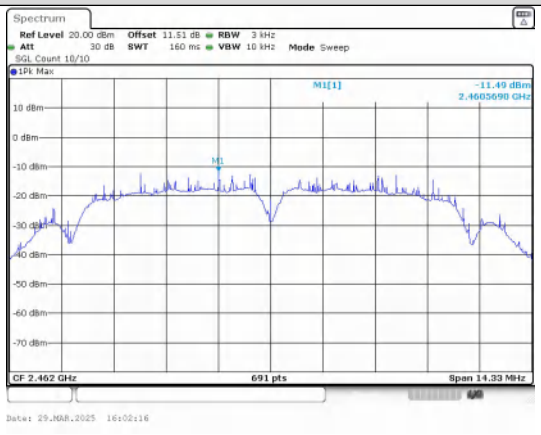
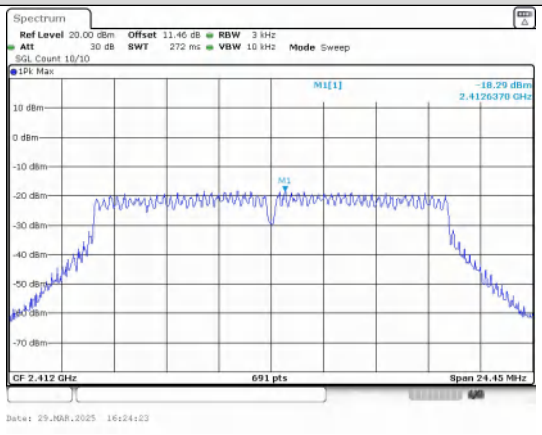
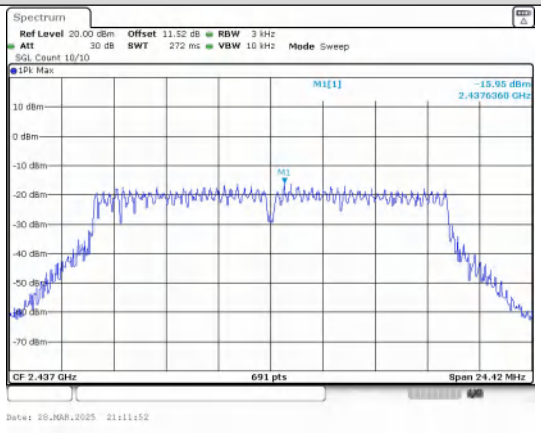
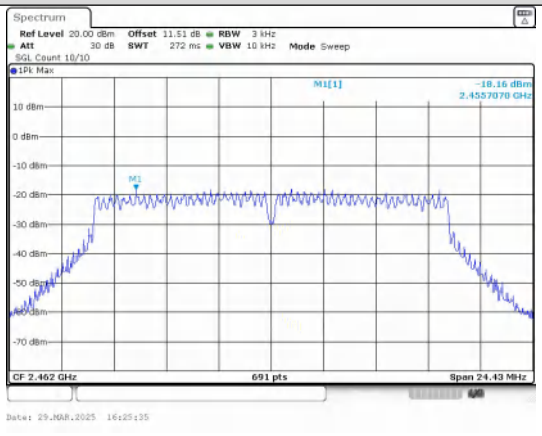
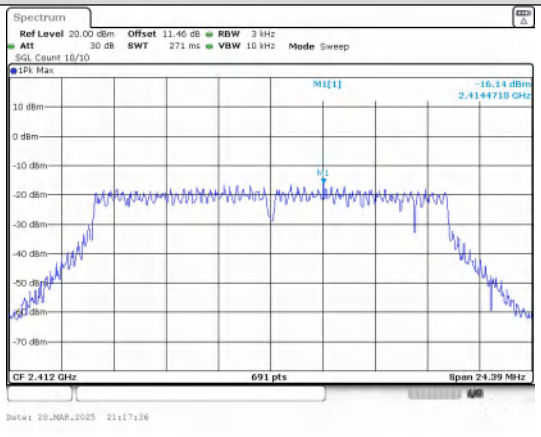
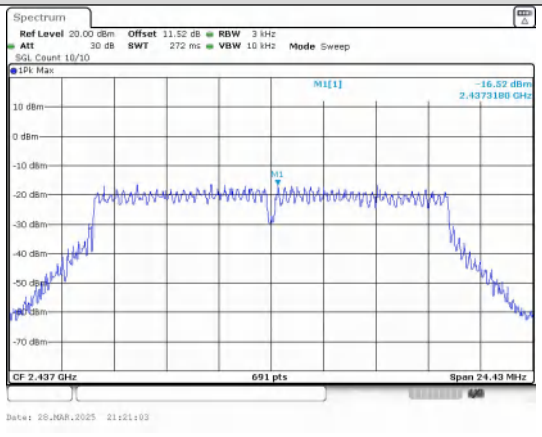
Test Result

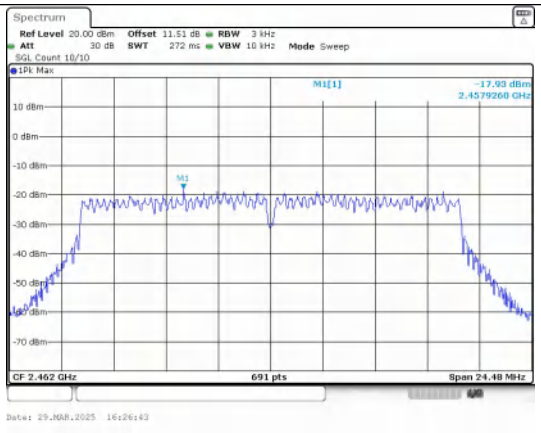
Mode	Channel	RU & Index	PSD (dBm/3kHz) Ant. 0	Limit (dBm/3kHz)	Result
IEEE 802.11b	1	N/A	-5.610	≤8	PASS
	6		-11.170		PASS
	11		-11.490		PASS
IEEE 802.11g	1		-18.290		PASS
	6		-15.950		PASS
	11		-18.160		PASS
IEEE 802.11n_20	1		-16.140		PASS
	6		-16.520		PASS
	11		-17.930		PASS
IEEE 802.11n_40	3		-20.680		PASS
	6		-20.000		PASS
	9		-20.370		PASS
IEEE 802.11ax_20	1	SU	-16.640		PASS
	6		-16.910		PASS
	11		-17.070		PASS

Test Graphs

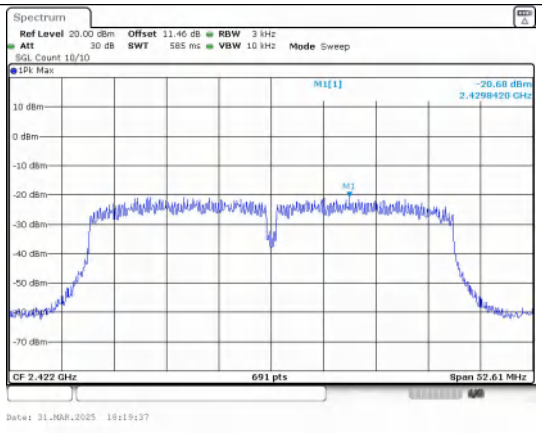




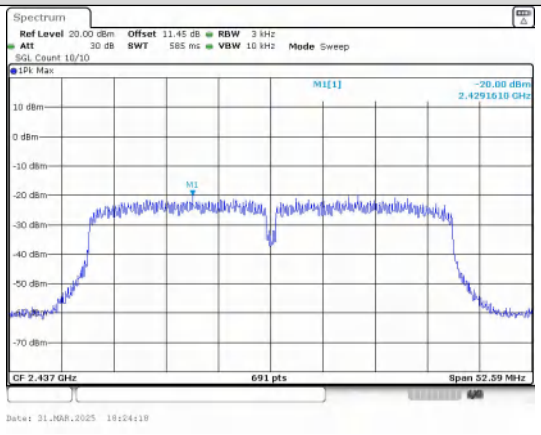
IEEE 802.11b_Channel 1_20MHz_Antenna 0	IEEE 802.11b_Channel 6_20MHz_Antenna 0
	
IEEE 802.11b_Channel 11_20MHz_Antenna 0	**IEEE 802.11g_Channel 1_20MHz_Antenna 0**
	
IEEE 802.11g_Channel 6_20MHz_Antenna 0	**IEEE 802.11g_Channel 11_20MHz_Antenna 0**
	
IEEE 802.11n_Channel 1_20MHz_Antenna 0	**IEEE 802.11n_Channel 6_20MHz_Antenna 0**



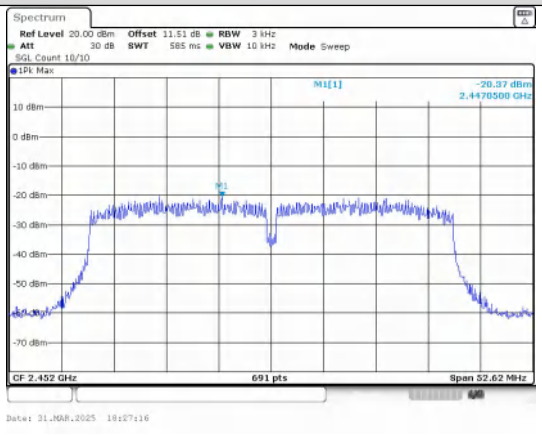
IEEE 802.11n_Channel 11_20MHz_Antenna 0



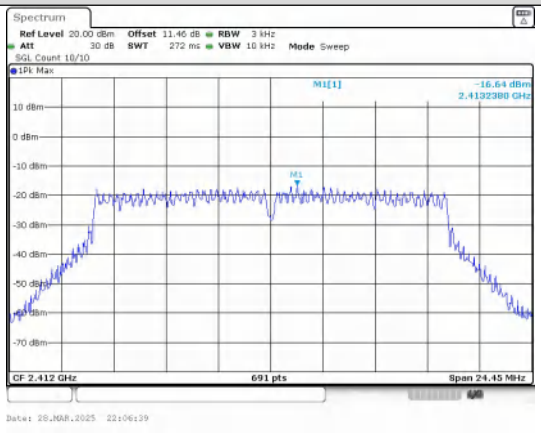
IEEE 802.11n_Channel 3_40MHz_Antenna 0



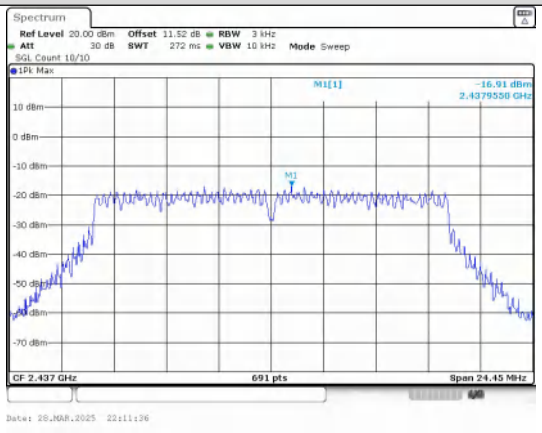
IEEE 802.11n_Channel 6_40MHz_Antenna 0



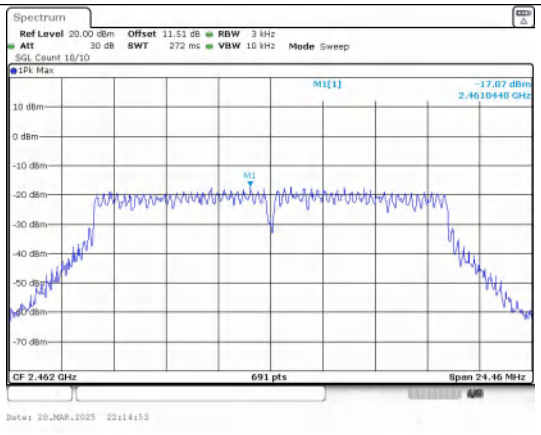
IEEE 802.11n_Channel 9_40MHz_Antenna 0



IEEE 802.11ax_Channel 1_20MHz_Antenna 0_RU&Index SU



IEEE 802.11ax_Channel 6_20MHz_Antenna 0_RU&Index SU



IEEE 802.11ax_Channel 11_20MHz_Antenna 0_RU&Index SU

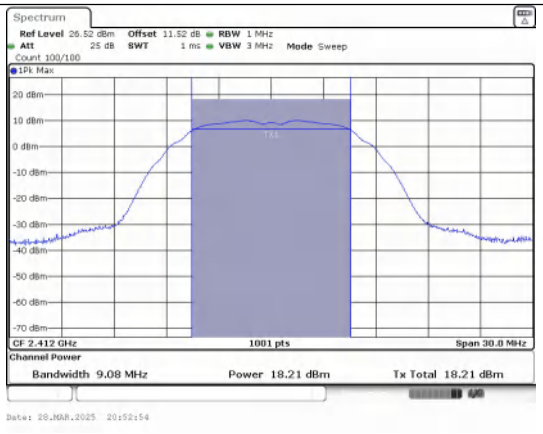
Conducted Output Power

Test Result

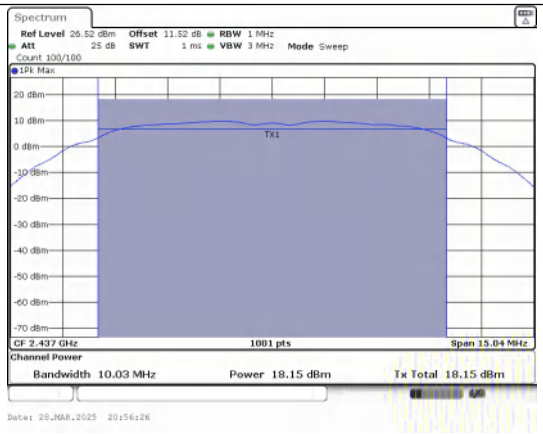
Conducted Output Power

Mode	Channel	Ant. 0 (dBm)	Limit (dBm)	Result
IEEE 802.11b	1	18.21	≤30	PASS
	6	18.15	≤30	PASS
	11	17.63	≤30	PASS
IEEE 802.11g	1	19.38	≤30	PASS
	6	19.53	≤30	PASS
	11	19.19	≤30	PASS
IEEE 802.11n_20	1	19.59	≤30	PASS
	6	19.45	≤30	PASS
	11	18.94	≤30	PASS
IEEE 802.11n_40	3	17.15	≤30	PASS
	6	17.07	≤30	PASS
	9	17.02	≤30	PASS
IEEE 802.11ax_20	1	19.16	≤30	PASS
	6	18.91	≤30	PASS
	11	18.80	≤30	PASS

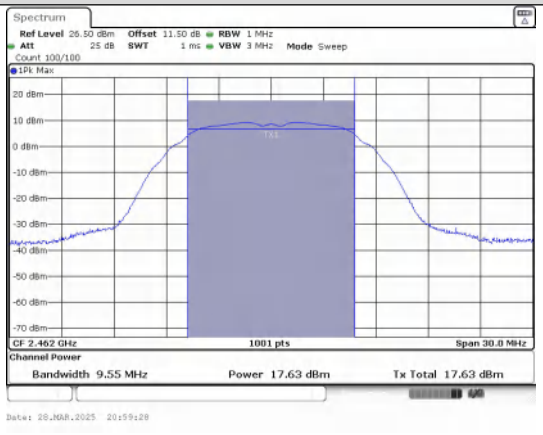
Test Graphs



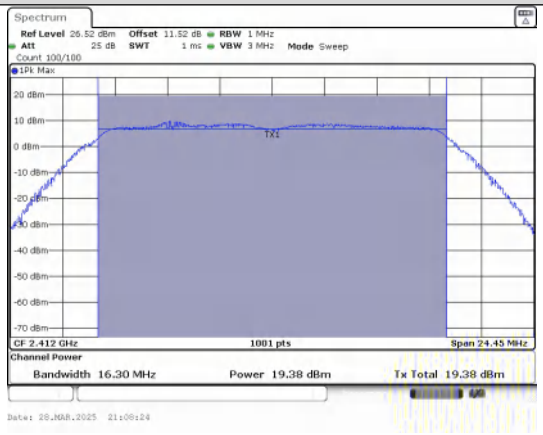
Conducted Output Power
IEEE 802.11b_Channel 1_Antenna 0



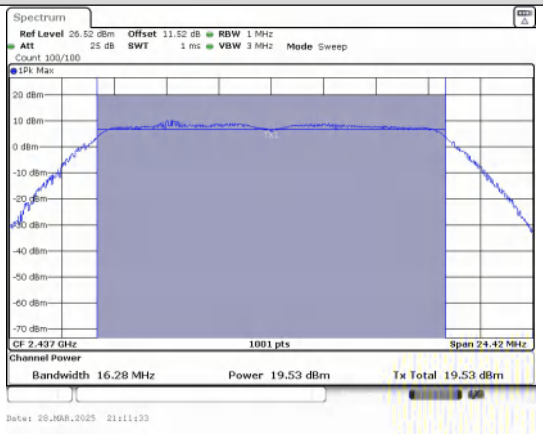
Conducted Output Power
IEEE 802.11b_Channel 6_Antenna 0



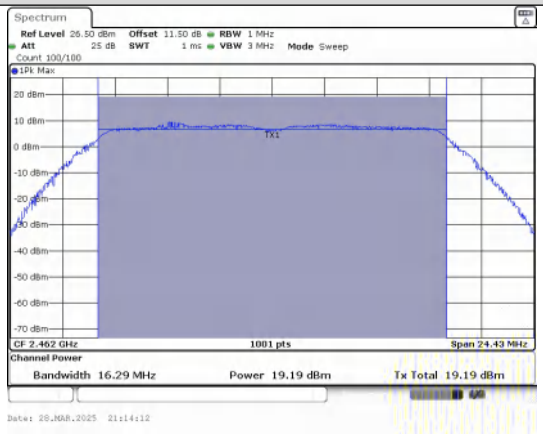
Conducted Output Power
IEEE 802.11b_Channel 11_Antenna 0



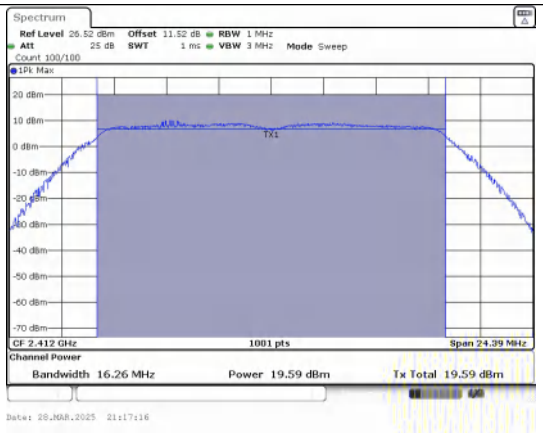
Conducted Output Power
IEEE 802.11g_Channel 1_Antenna 0



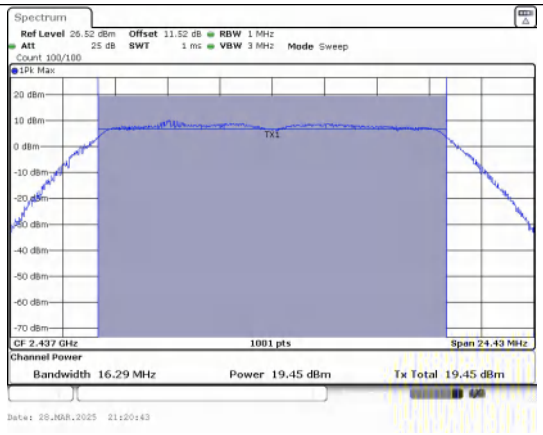
Conducted Output Power
IEEE 802.11g_Channel 6_Antenna 0



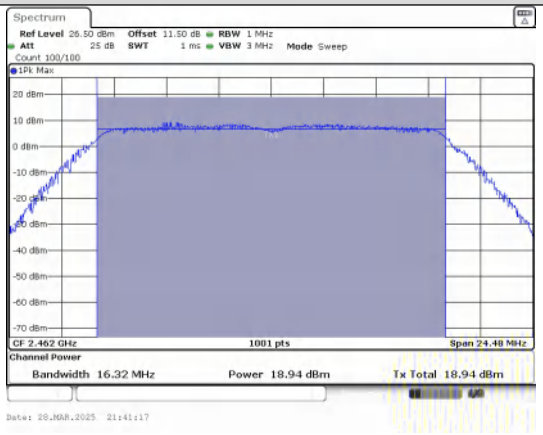
Conducted Output Power
IEEE 802.11g_Channel 11_Antenna 0



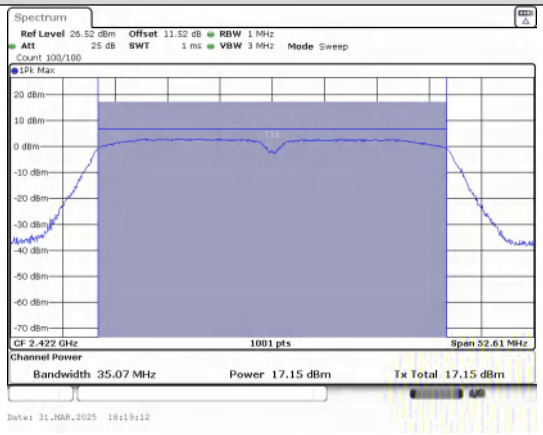
Conducted Output Power
IEEE 802.11n_20_Channel 1_Antenna 0



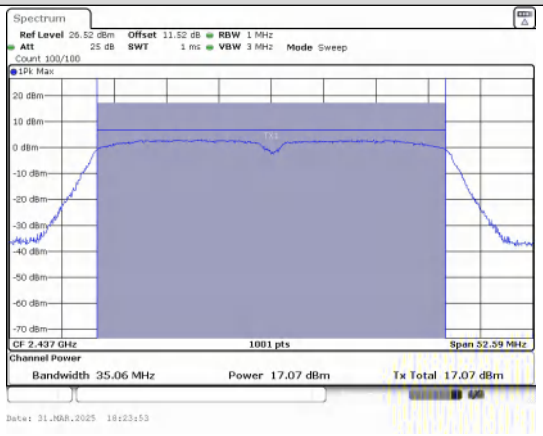
Conducted Output Power
IEEE 802.11n_20_Channel 6_Antenna 0



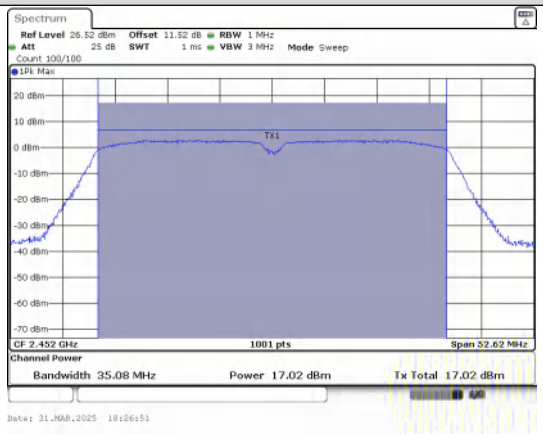
Conducted Output Power
IEEE 802.11n_20_Channel 11_Antenna 0



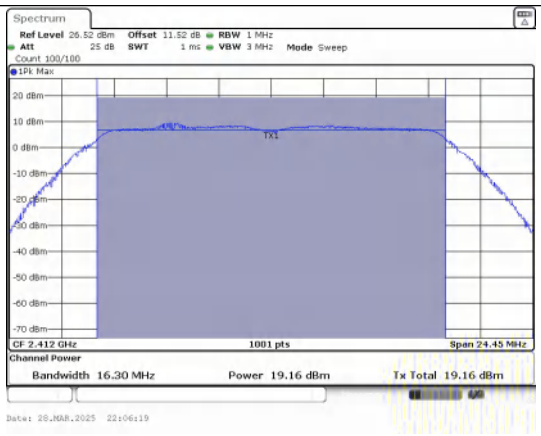
Conducted Output Power
IEEE 802.11n_40_Channel 3_Antenna 0



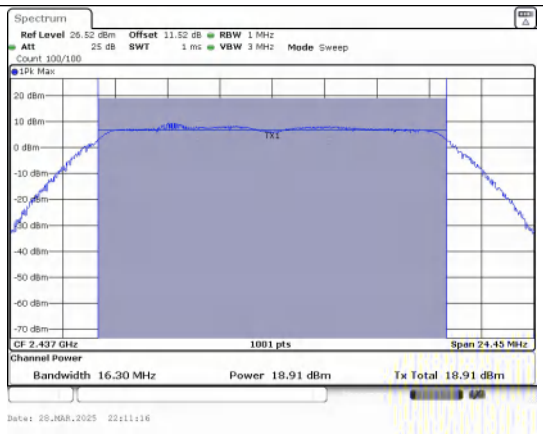
Conducted Output Power
IEEE 802.11n_40_Channel 6_Antenna 0



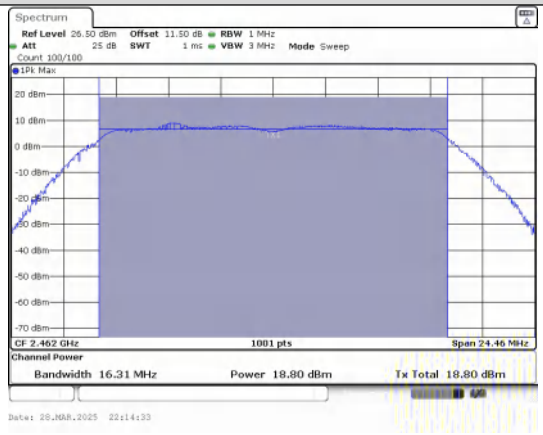
Conducted Output Power
IEEE 802.11n_40_Channel 9_Antenna 0



Conducted Output Power
IEEE 802.11ax_20_Channel 1_Antenna 0_RU&Index SU



Conducted Output Power
IEEE 802.11ax_20_Channel 6_Antenna 0_RU&Index SU



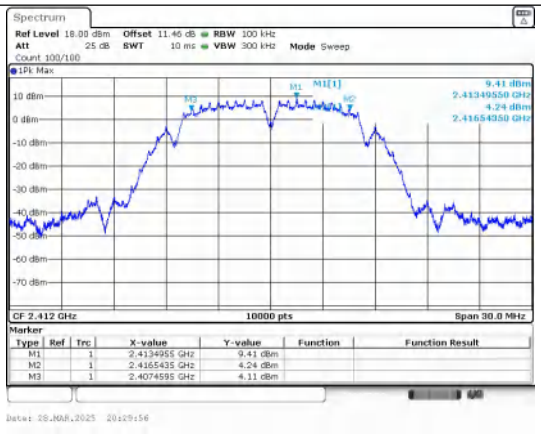
Conducted Output Power
IEEE 802.11ax_20_Channel 11_Antenna 0_RU&Index SU

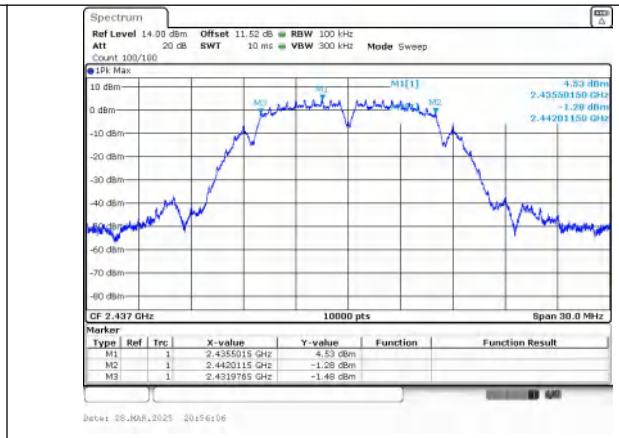
6dB Bandwidth

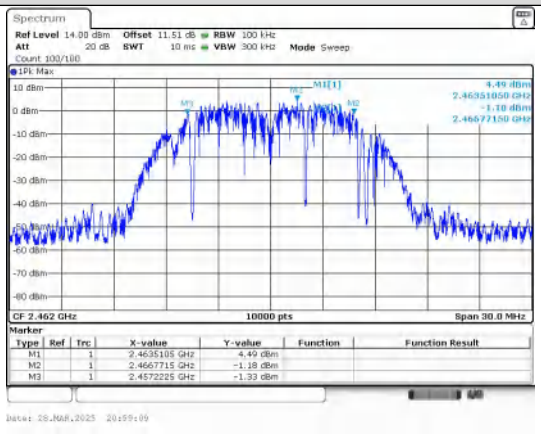
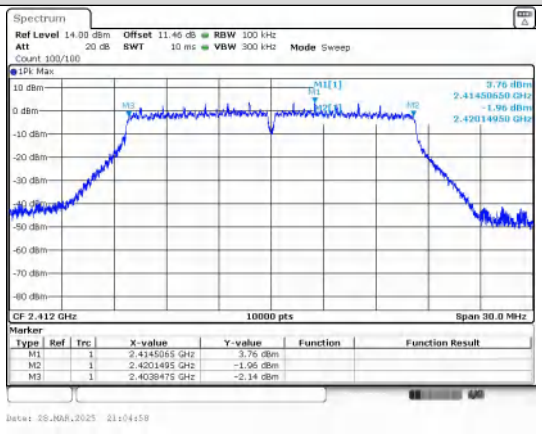
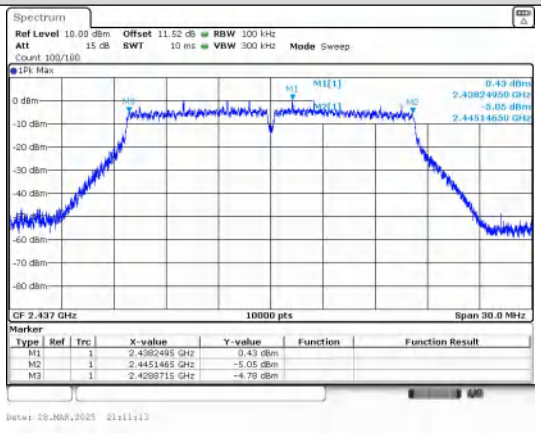
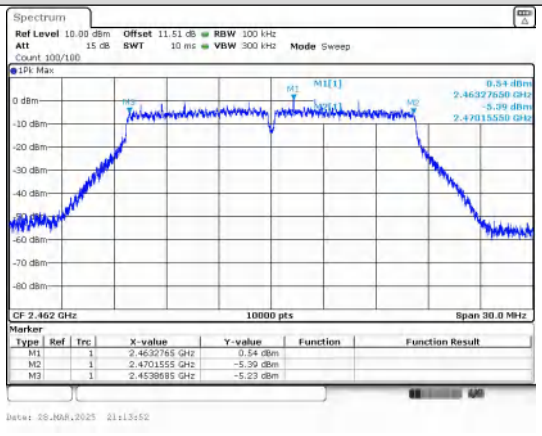
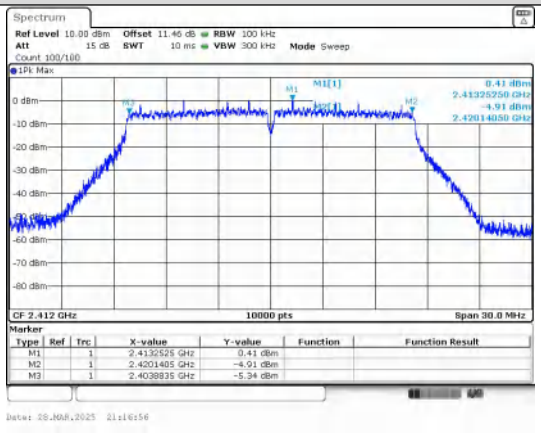
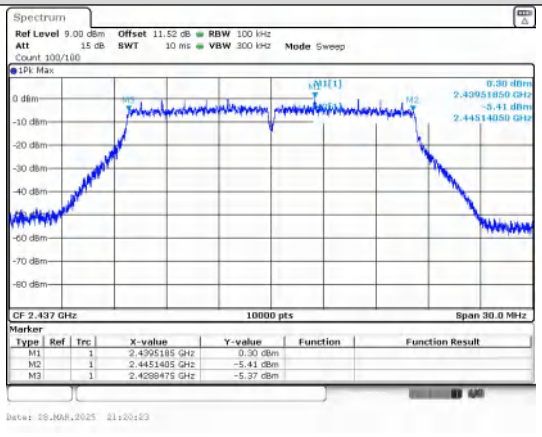
Test Result

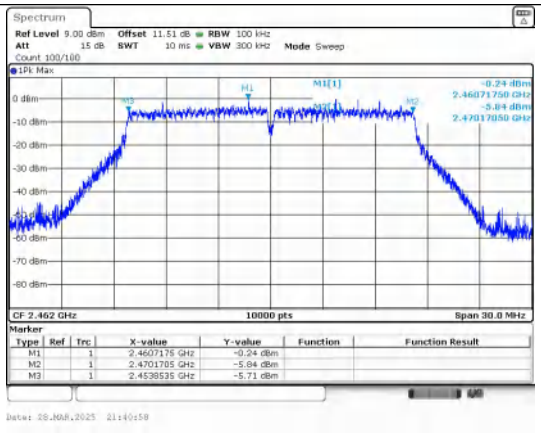
Mode	Channel	RU & Index	Ant.	Center Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11b	1	N/A	0	2412	9.080	≥0.5	PASS
	6			2437	10.03		PASS
	11			2462	9.550		PASS
IEEE 802.11g	1			2412	16.30		PASS
	6			2437	16.28		PASS
	11			2462	16.29		PASS
IEEE 802.11n_20	1			2412	16.26		PASS
	6			2437	16.29		PASS
	11			2462	16.32		PASS
IEEE 802.11n_40	3			2422	35.07		PASS
	6			2437	35.06		PASS
	9			2452	35.08		PASS
IEEE 802.11ax_20	1	SU		2412	16.30		PASS
	6			2437	16.30		PASS
	11			2462	16.31		PASS

Test Graphs

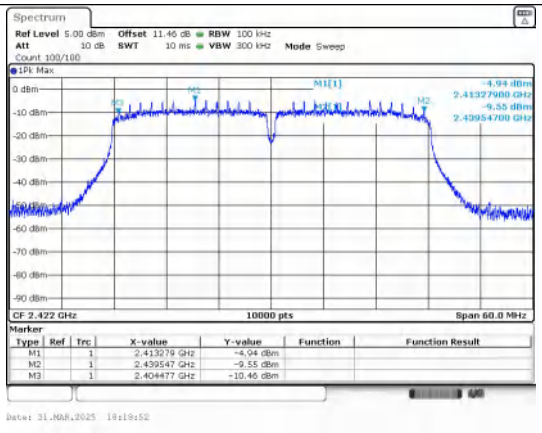




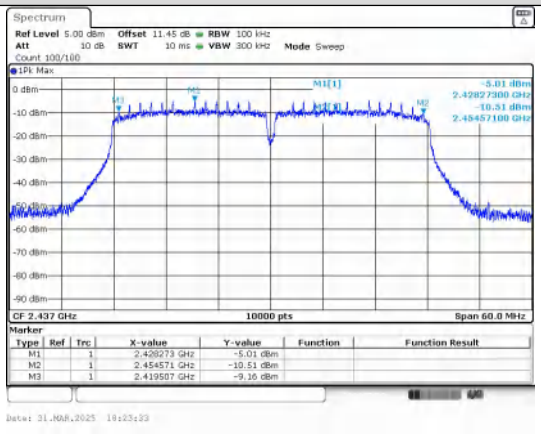
IEEE 802.11b_Channel 1_20MHz_Antenna 0	IEEE 802.11b_Channel 6_20MHz_Antenna 0
	
IEEE 802.11b_Channel 11_20MHz_Antenna 0	**IEEE 802.11g_Channel 1_20MHz_Antenna 0**
	
IEEE 802.11g_Channel 6_20MHz_Antenna 0	**IEEE 802.11g_Channel 11_20MHz_Antenna 0**
	
IEEE 802.11n_Channel 1_20MHz_Antenna 0	**IEEE 802.11n_Channel 6_20MHz_Antenna 0**



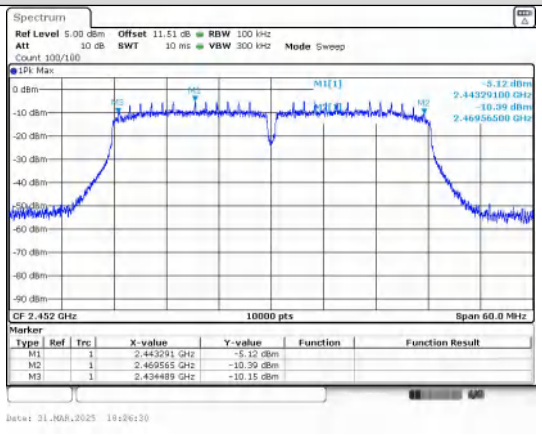
IEEE 802.11n_Channel 11_20MHz_Antenna 0



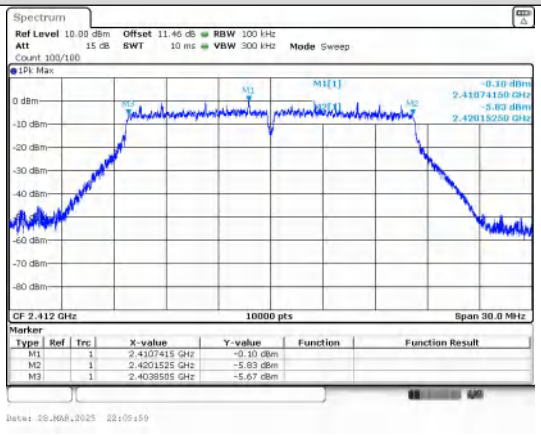
IEEE 802.11n_Channel 3_40MHz_Antenna 0



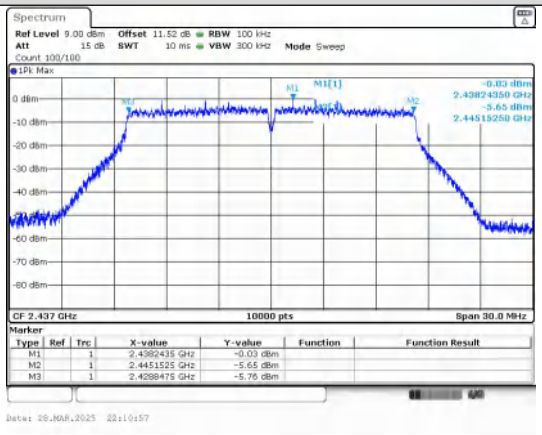
IEEE 802.11n_Channel 6_40MHz_Antenna 0



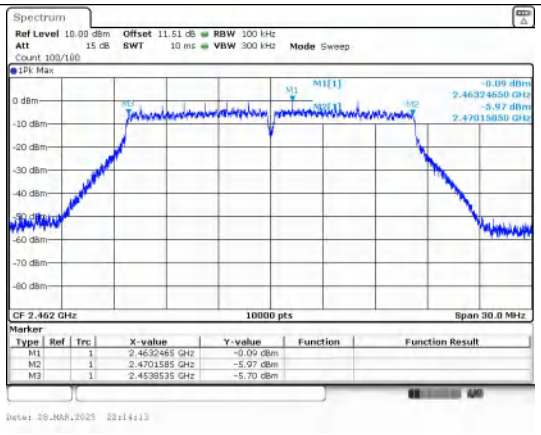
IEEE 802.11n_Channel 9_40MHz_Antenna 0



IEEE 802.11ax_Channel 1_20MHz_Antenna 0_RU&Index SU



IEEE 802.11ax_Channel 6_20MHz_Antenna 0_RU&Index SU



IEEE 802.11ax_Channel 11_20MHz_Antenna 0_RU&Index SU

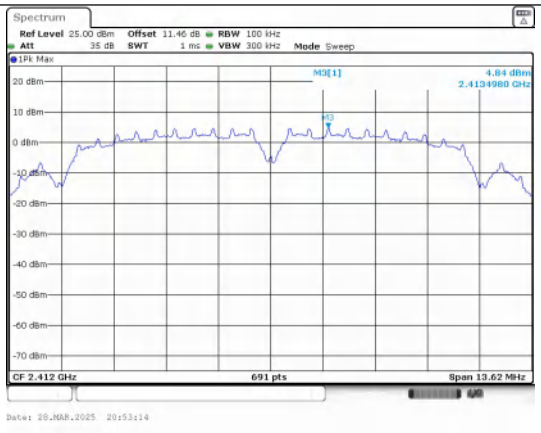
Conducted Out Of Band Emission

Test Result

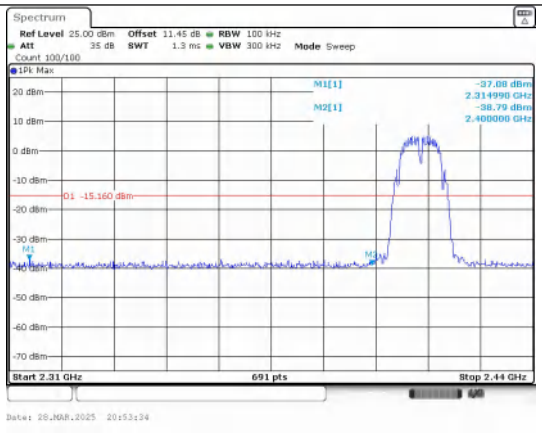
Mode	Channel	RU & Index	Ant.	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
IEEE 802.11b	1	N/A	0	2314.99	-37.084	-15.16	-21.924	PASS
				2400.00	-38.790	-15.16	-23.630	PASS
				6995.40	-43.270	-15.16	-28.110	PASS
	6			6976.24	-42.565	-15.45	-27.115	PASS
	11			2483.50	-38.610	-15.49	-23.120	PASS
				20635.7	-43.618	-15.49	-28.128	PASS
IEEE 802.11g	1			2350.17	-36.732	-21.55	-15.182	PASS
				2400.00	-38.170	-21.55	-16.620	PASS
				6305.40	-43.904	-21.55	-22.354	PASS
	6			23329.9	-43.603	-19.82	-23.783	PASS
	11			2483.50	-37.950	-20.55	-17.400	PASS
				6906.32	-42.740	-20.55	-22.190	PASS
IEEE 802.11n_20	1			2324.20	-36.488	-19.49	-16.998	PASS
				2400.00	-38.950	-19.49	-19.460	PASS
				21989.9	-43.271	-19.49	-23.781	PASS
	6			6908.82	-42.967	-20.24	-22.727	PASS
	11			2483.50	-37.080	-20.47	-16.610	PASS
				6322.86	-42.567	-20.47	-22.097	PASS
IEEE 802.11n_40	3			2367.29	-36.545	-24.76	-11.785	PASS
				2400.00	-38.460	-24.76	-13.700	PASS
				22073.9	-42.859	-24.76	-18.099	PASS
	6			6181.36	-42.435	-24.51	-17.925	PASS
	9			2483.50	-36.670	-24.99	-11.680	PASS
				22079.8	-43.009	-24.99	-18.019	PASS

IEEE 802.11ax_20	1	SU		2382.15	-37.168	-20.74	-16.428	PASS
				2400.00	-37.420	-20.74	-16.680	PASS
	6			6946.30	-43.253	-20.74	-22.513	PASS
				6976.24	-43.044	-20.39	-22.654	PASS
	11			2483.50	-38.320	-20.38	-17.940	PASS
				6996.21	-42.505	-20.38	-22.125	PASS

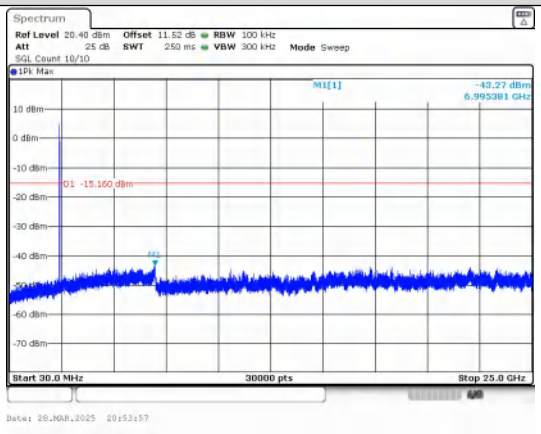
Test Graphs



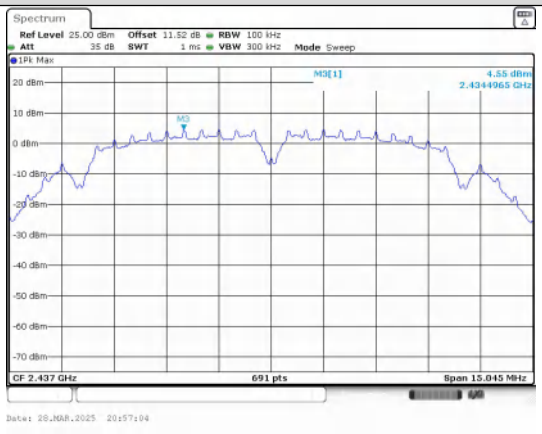
In-Band Reference Level
IEEE 802.11b_Channel 1_20MHz_Antenna 0



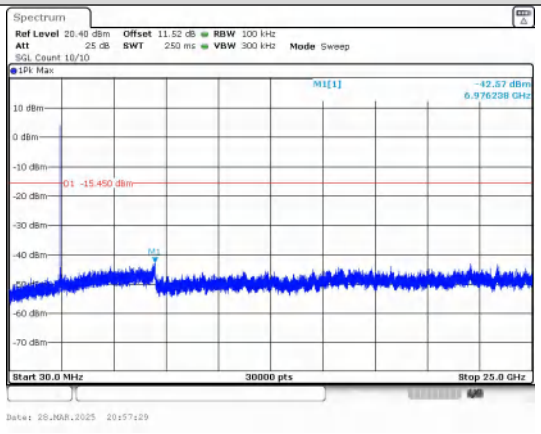
Out Of Band Emission
IEEE 802.11b_Channel 1_20MHz_Antenna 0

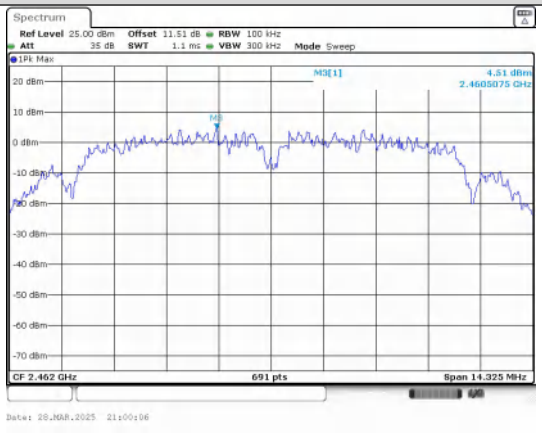


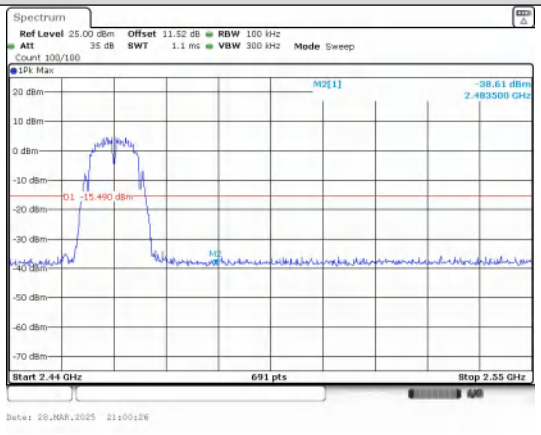
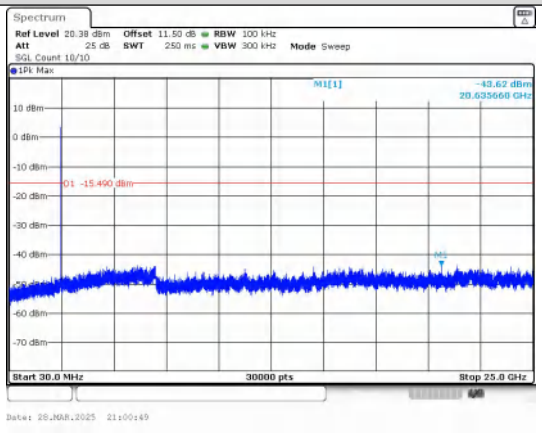
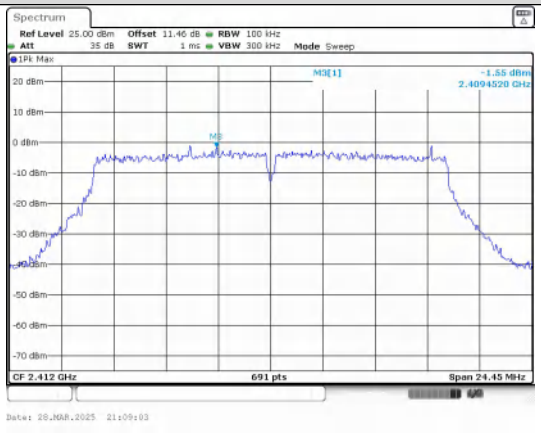
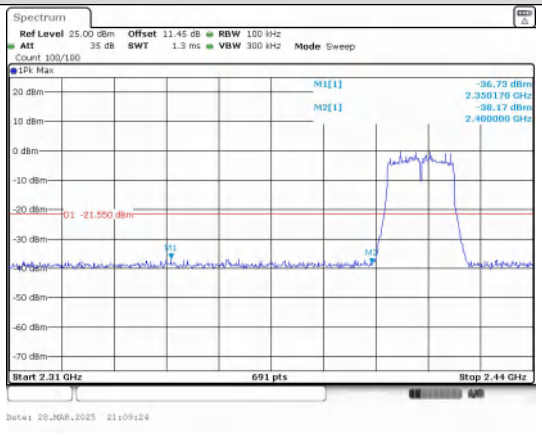
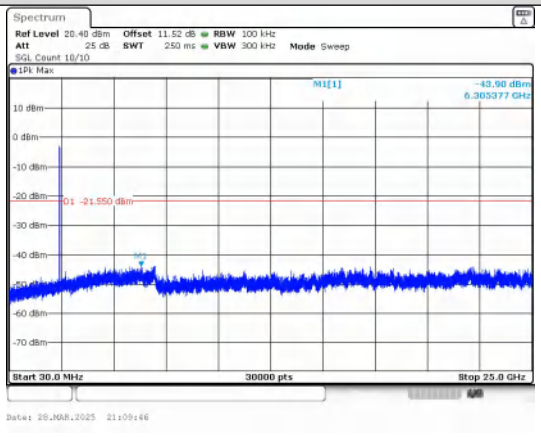
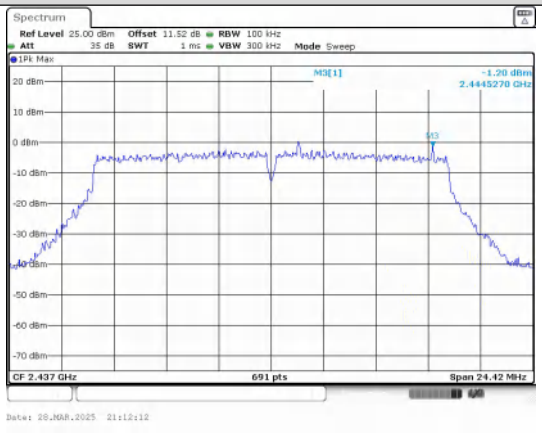
30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 1_20MHz_Antenna 0

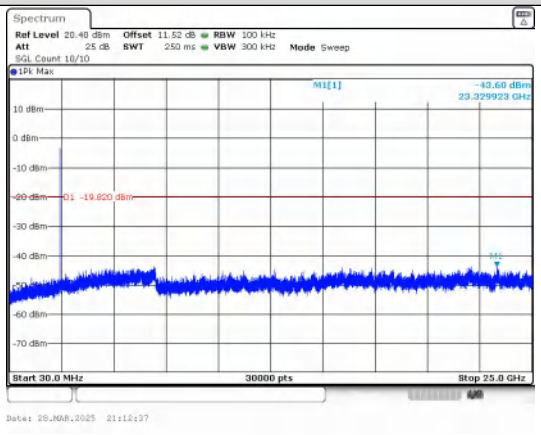
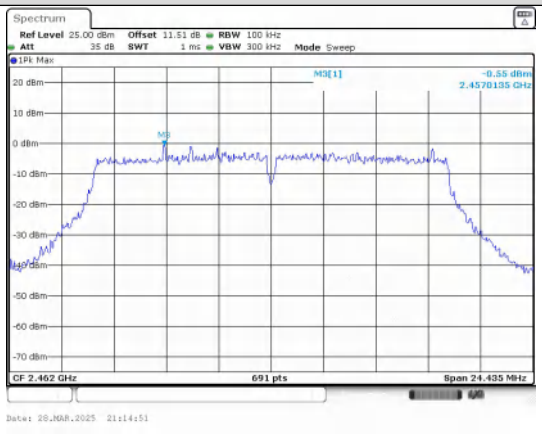
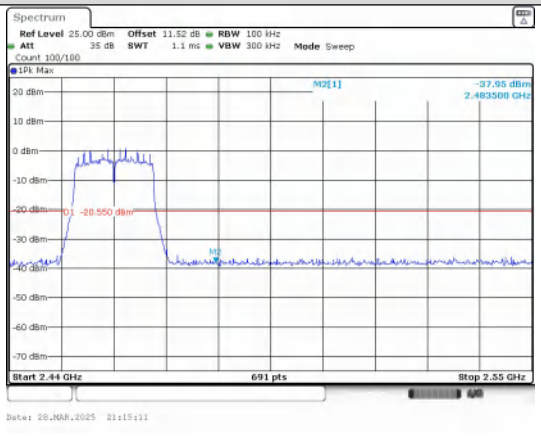
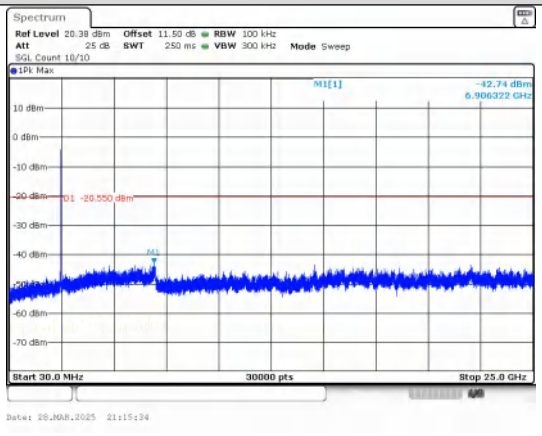
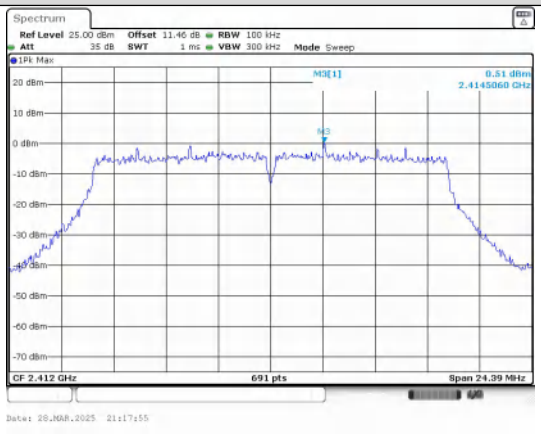
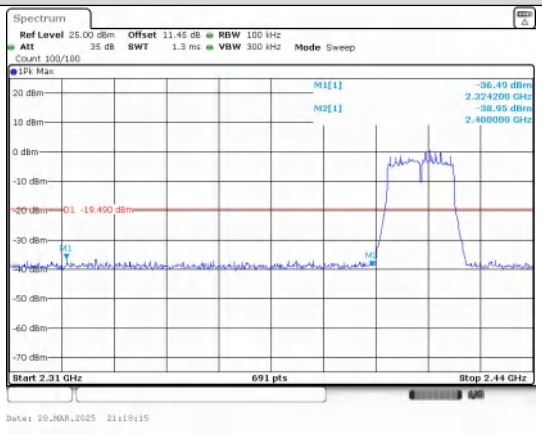


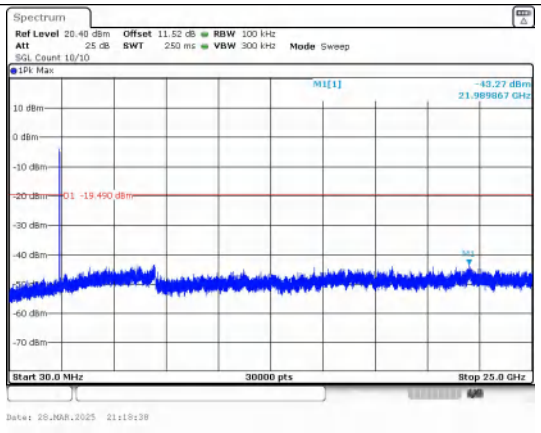
In-Band Reference Level
IEEE 802.11b_Channel 6_20MHz_Antenna 0



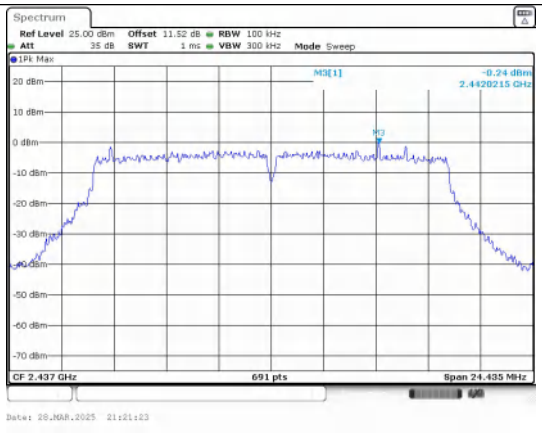


30.0 MHz - 25000.0 MHz IEEE 802.11b_Channel 6_20MHz_Antenna 0	In-Band Reference Level IEEE 802.11b_Channel 11_20MHz_Antenna 0
	
Out Of Band Emission IEEE 802.11b_Channel 11_20MHz_Antenna 0	**30.0 MHz - 25000.0 MHz IEEE 802.11b_Channel 11_20MHz_Antenna 0**
	
In-Band Reference Level IEEE 802.11g_Channel 1_20MHz_Antenna 0	**Out Of Band Emission IEEE 802.11g_Channel 1_20MHz_Antenna 0**
	
30.0 MHz - 25000.0 MHz	**In-Band Reference Level**

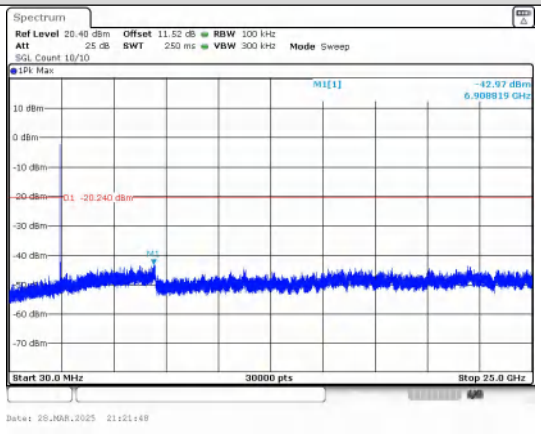
IEEE 802.11g_Channel 1_20MHz_Antenna 0	IEEE 802.11g_Channel 6_20MHz_Antenna 0
	
30.0 MHz - 25000.0 MHz IEEE 802.11g_Channel 6_20MHz_Antenna 0	**In-Band Reference Level IEEE 802.11g_Channel 11_20MHz_Antenna 0**
	
Out Of Band Emission IEEE 802.11g_Channel 11_20MHz_Antenna 0	**30.0 MHz - 25000.0 MHz IEEE 802.11g_Channel 11_20MHz_Antenna 0**
	
In-Band Reference Level IEEE 802.11n_Channel 1_20MHz_Antenna 0	**Out Of Band Emission IEEE 802.11n_Channel 1_20MHz_Antenna 0**



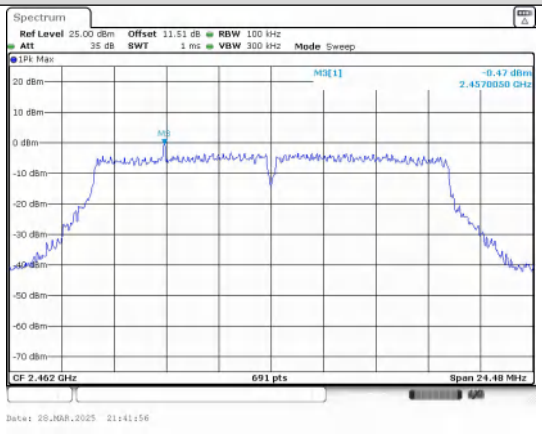
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 1_20MHz_Antenna 0



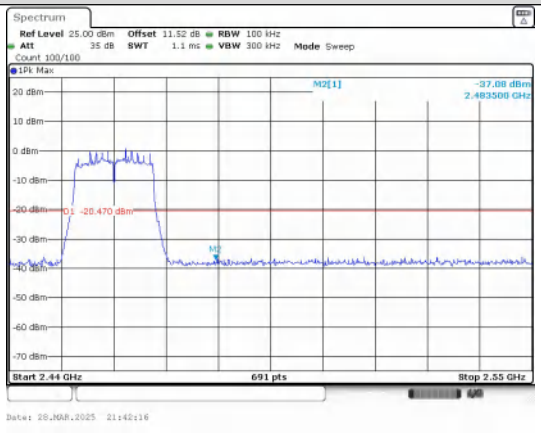
In-Band Reference Level
IEEE 802.11n_Channel 6_20MHz_Antenna 0



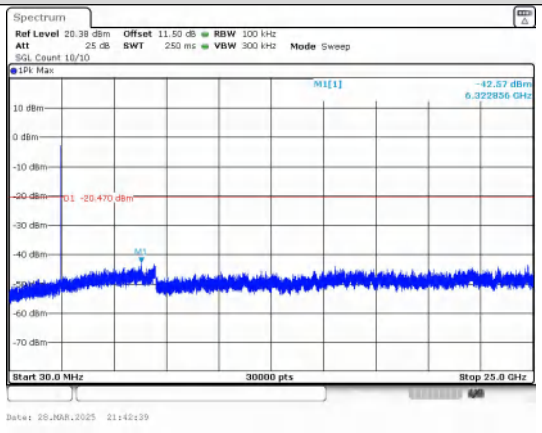
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 6_20MHz_Antenna 0



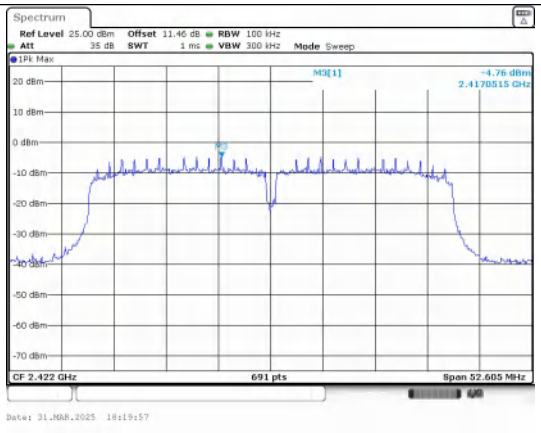
In-Band Reference Level
IEEE 802.11n_Channel 11_20MHz_Antenna 0



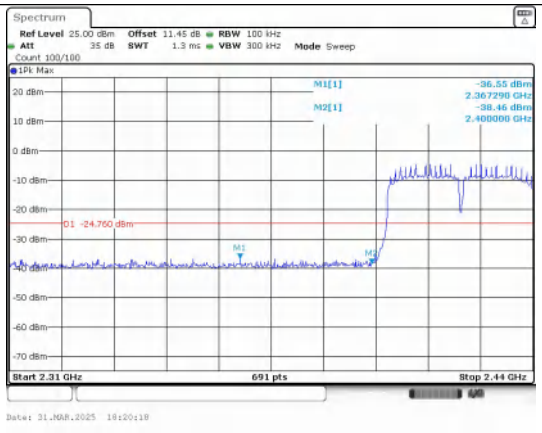
Out Of Band Emission
IEEE 802.11n_Channel 11_20MHz_Antenna 0



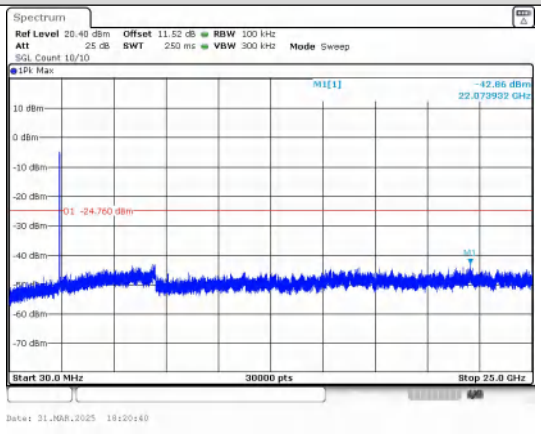
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 11_20MHz_Antenna 0



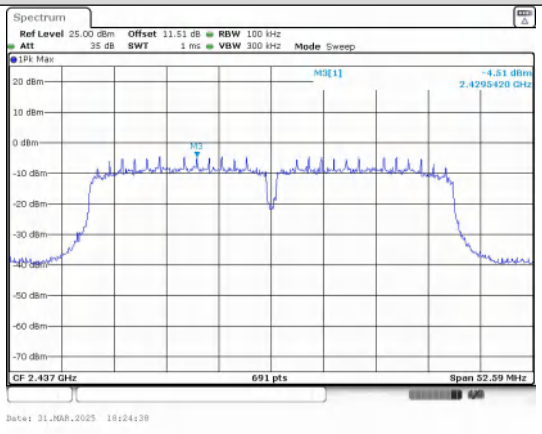
In-Band Reference Level
IEEE 802.11n_Channel 3_40MHz_Antenna 0



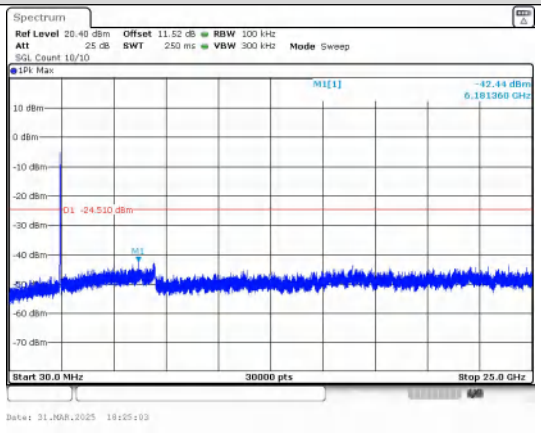
Out Of Band Emission
IEEE 802.11n_Channel 3_40MHz_Antenna 0



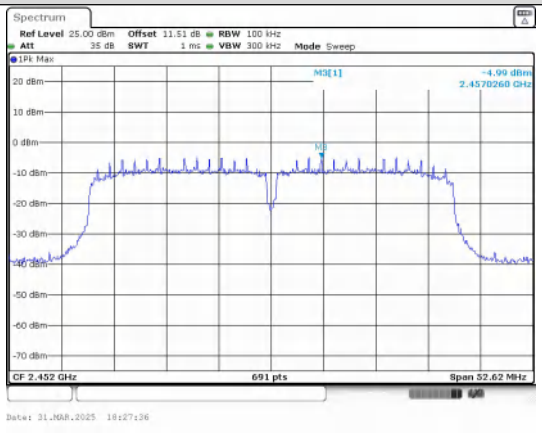
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 3_40MHz_Antenna 0



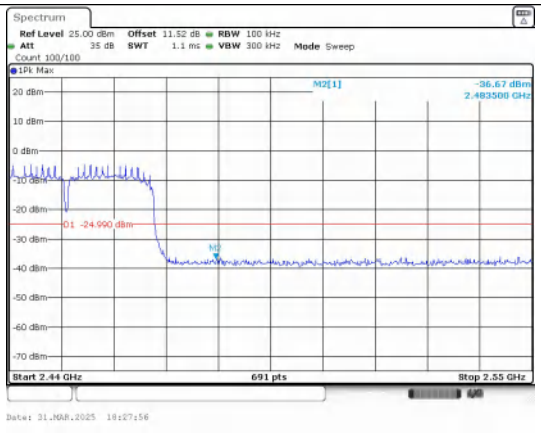
In-Band Reference Level
IEEE 802.11n_Channel 6_40MHz_Antenna 0



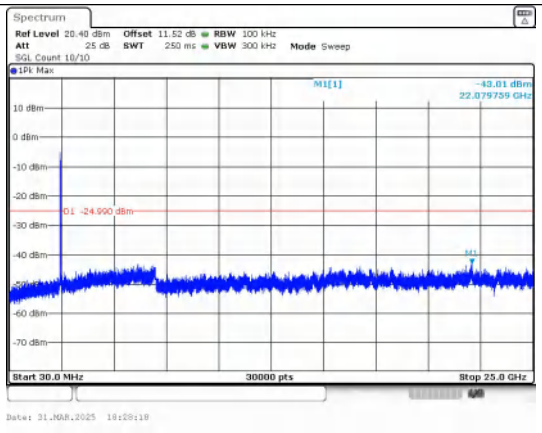
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 6_40MHz_Antenna 0



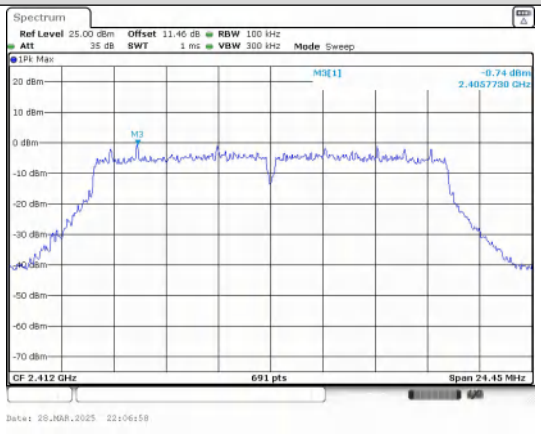
In-Band Reference Level
IEEE 802.11n_Channel 9_40MHz_Antenna 0



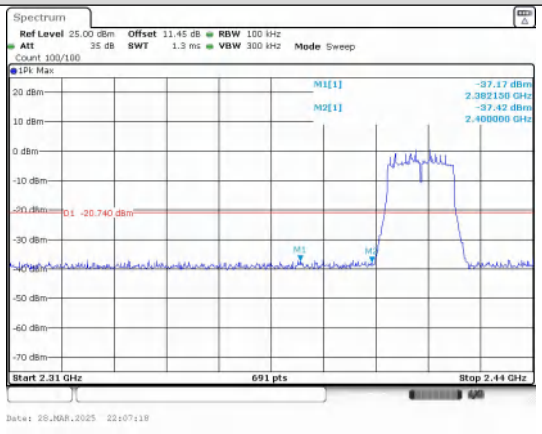
Out Of Band Emission
IEEE 802.11n_Channel 9_40MHz_Antenna 0



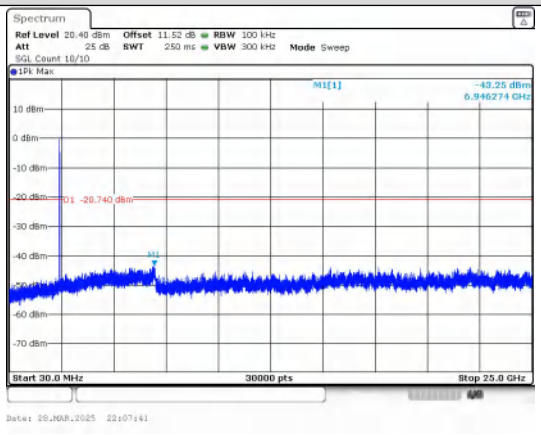
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 9_40MHz_Antenna 0



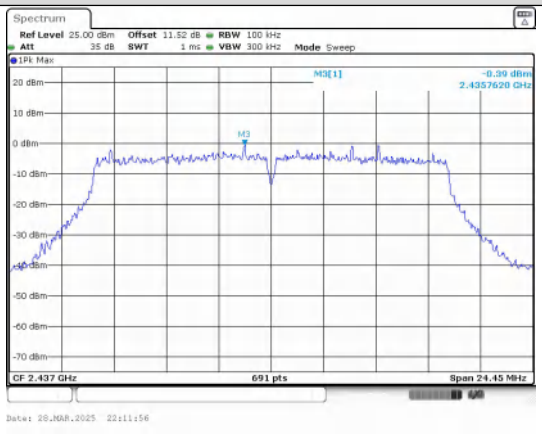
In-Band Reference Level
IEEE 802.11ax_Channel 1_20MHz_Antenna 0_RU&Index SU



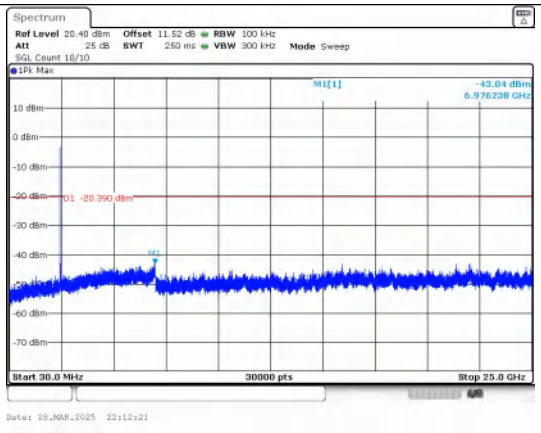
Out Of Band Emission
IEEE 802.11ax_Channel 1_20MHz_Antenna 0_RU&Index SU



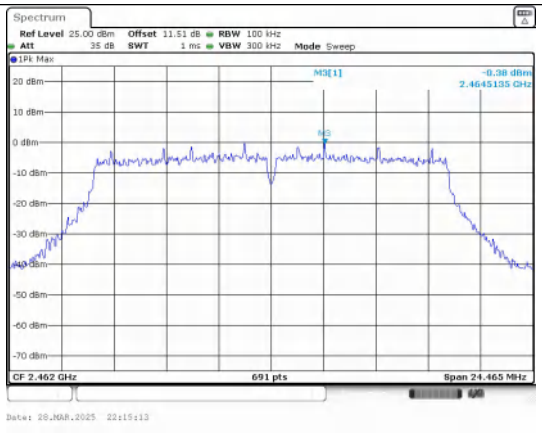
30.0 MHz - 25000.0 MHz
IEEE 802.11ax_Channel 1_20MHz_Antenna 0_RU&Index SU



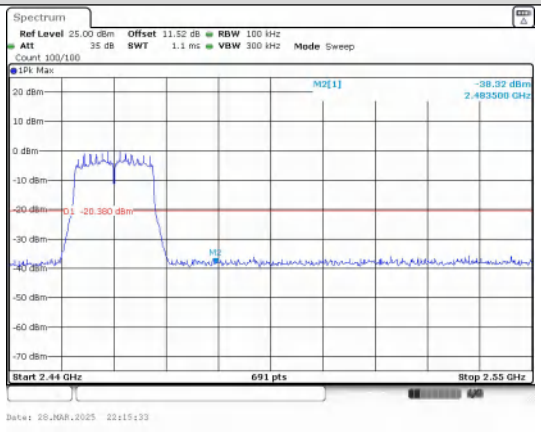
In-Band Reference Level
IEEE 802.11ax_Channel 6_20MHz_Antenna 0_RU&Index SU



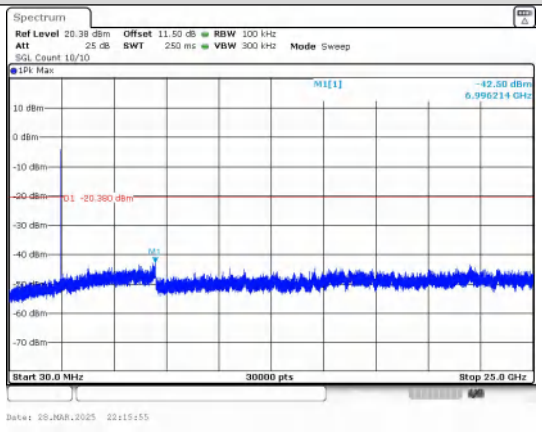
30.0 MHz - 25000.0 MHz
IEEE 802.11ax_Channel 6_20MHz_Antenna 0_RU&Index SU



In-Band Reference Level
IEEE 802.11ax_Channel 11_20MHz_Antenna 0_RU&Index SU



Out Of Band Emission
IEEE 802.11ax_Channel 11_20MHz_Antenna 0_RU&Index SU



30.0 MHz - 25000.0 MHz
IEEE 802.11ax_Channel 11_20MHz_Antenna 0_RU&Index SU

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