Appendix Report

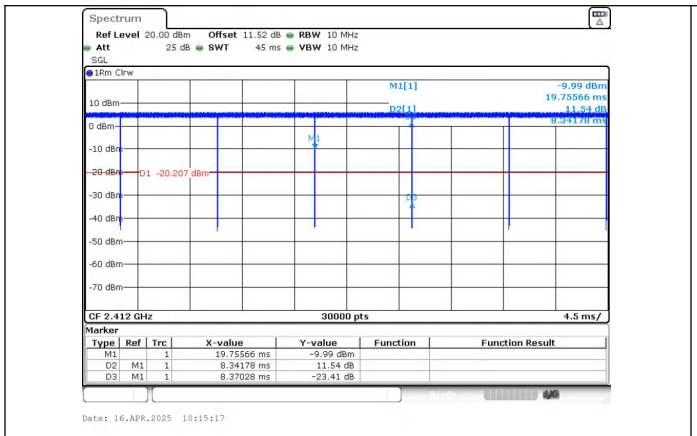
Project No.:	CISR250415136
Test Engineer:	James Wang
Supervised by:	Rory Huang

Duty Cycle

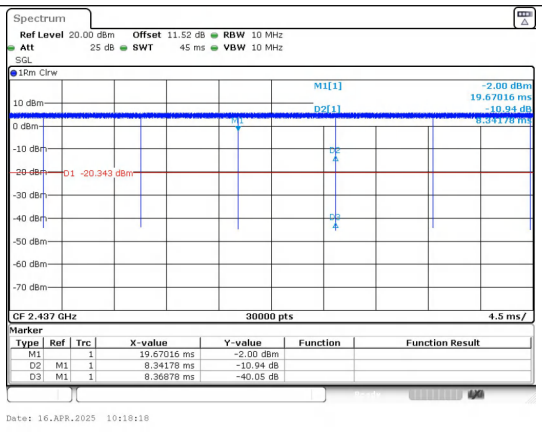
Test Result

Mode	Data rates	Channel	Antenna	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
IEEE 802.11b	1	1	1	8.342	8.370	99.66	0.9966	0.0148	0.1199
		6		8.342	8.369	99.68	0.9968	0.0139	0.1199
		11		8.319	8.347	99.66	0.9966	0.0148	0.1202
IEEE 802.11g		1		1.396	1.429	97.69	0.9769	0.1015	0.7163
		6		1.396	1.429	97.69	0.9769	0.1015	0.7163
		11		1.396	1.429	97.69	0.9769	0.1015	0.7163
IEEE 802.11n_20	MCS 0	1		1.293	1.327	97.44	0.9744	0.1126	0.7734
		6		1.304	1.337	97.53	0.9753	0.1086	0.7669
		11		1.304	1.337	97.53	0.9753	0.1086	0.7669
IEEE 802.11n_40		3		0.650	0.684	95.00	0.9500	0.2228	1.5385
		6		0.650	0.684	95.00	0.9500	0.2228	1.5385
		9		0.650	0.684	95.00	0.9500	0.2228	1.5385

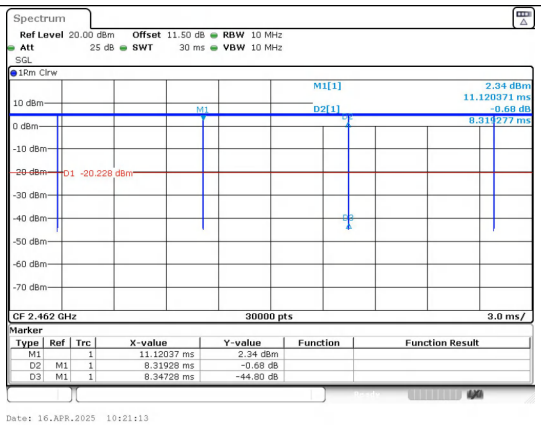
Test Graphs



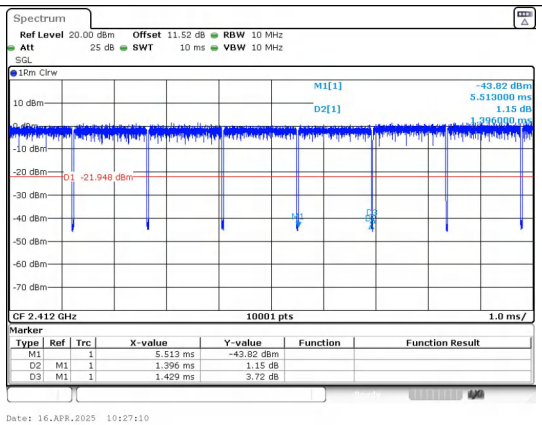
IEEE 802.11b_20MHz_Channel 1



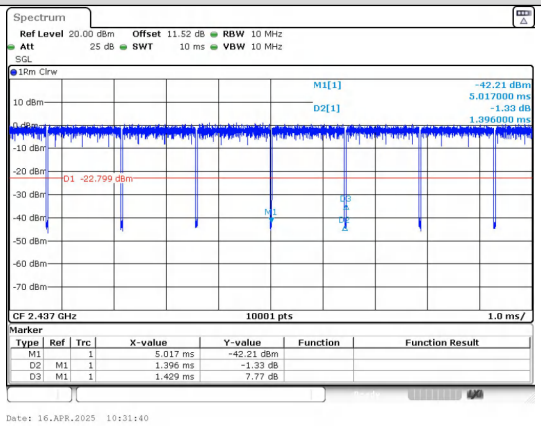
IEEE 802.11b_20MHz_Channel 6



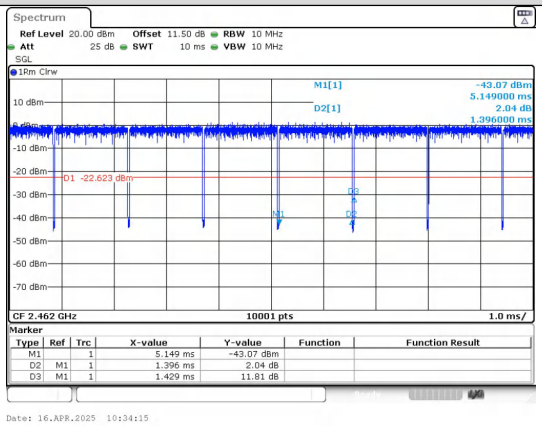
IEEE 802.11b_20MHz_Channel 11



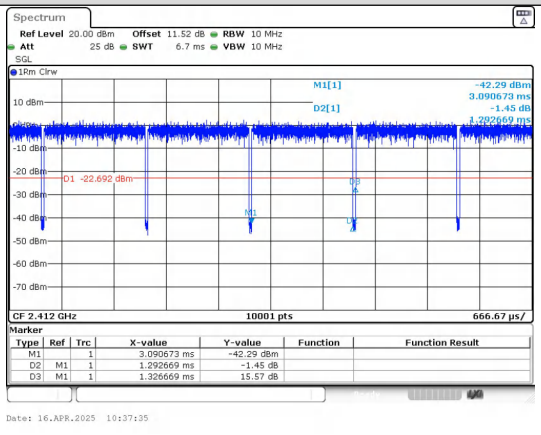
IEEE 802.11g_20MHz_Channel 1



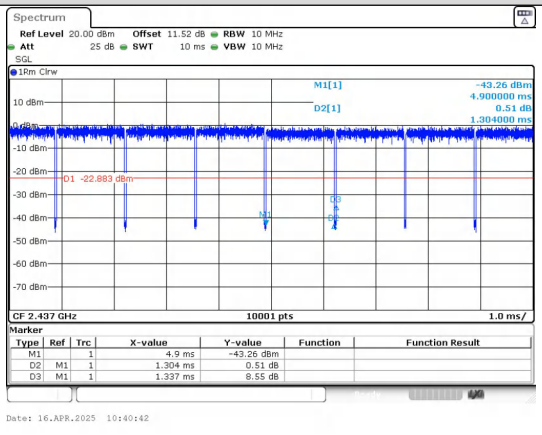
IEEE 802.11g_20MHz_Channel 6



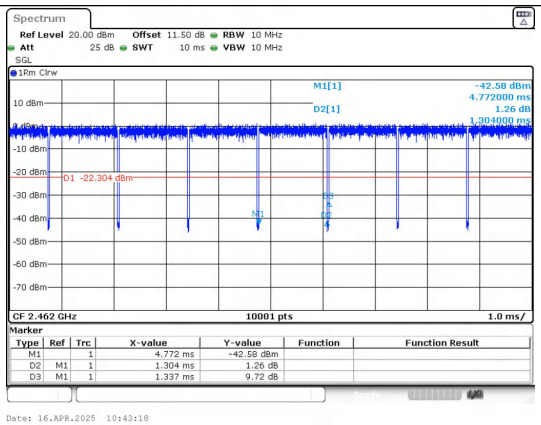
IEEE 802.11g_20MHz_Channel 11



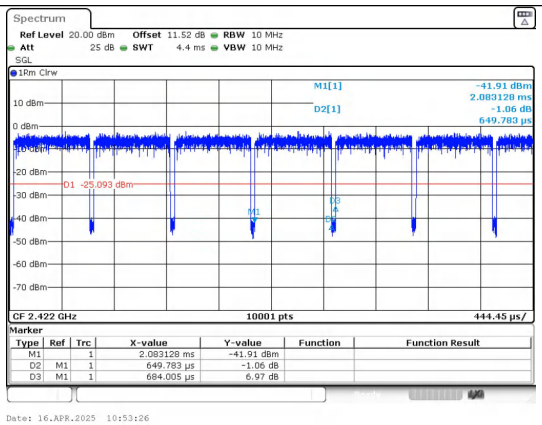
IEEE 802.11n_20MHz_Channel 1



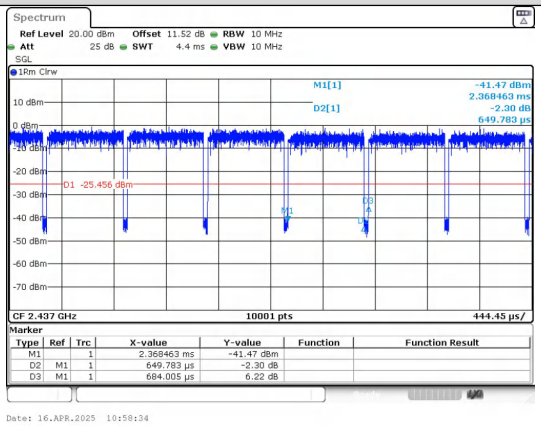
IEEE 802.11n_20MHz_Channel 6



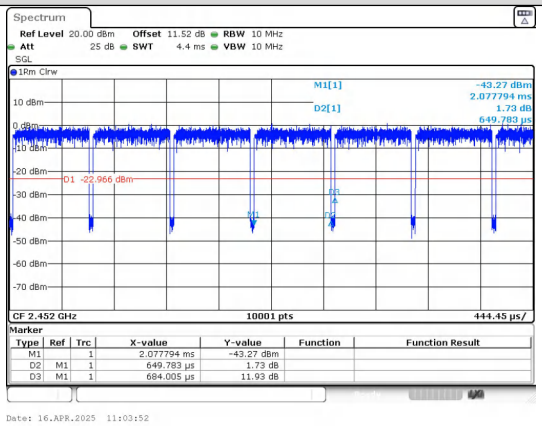
IEEE 802.11n_20MHz_Channel 11



IEEE 802.11n_40MHz_Channel 3



IEEE 802.11n_40MHz_Channel 6



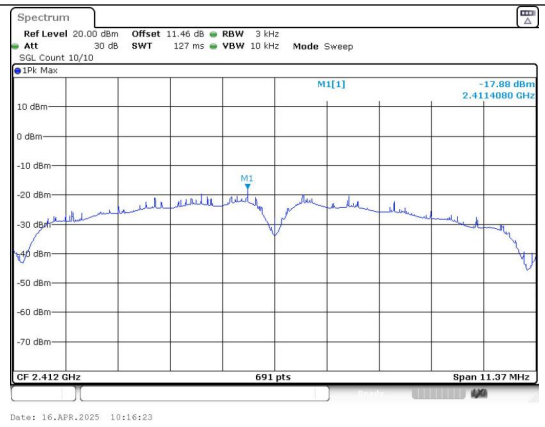
IEEE 802.11n_40MHz_Channel 9

Power Spectral Density

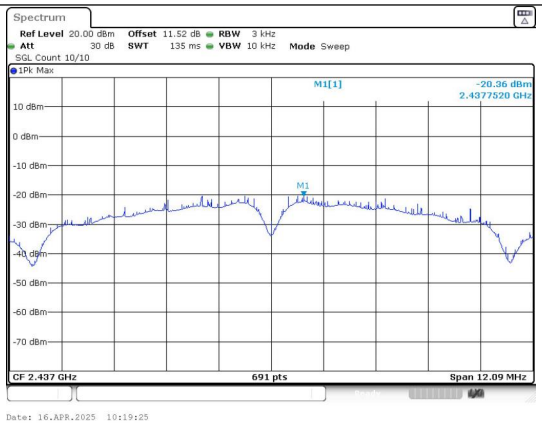
Test Result

Mode	Channel	PSD (dBm/3kHz) Ant. 0	Limit (dBm/3kHz)	Result
IEEE 802.11b	1	-17.880	≤8	PASS
	6	-20.360		PASS
	11	-18.210		PASS
IEEE 802.11g	1	-25.830		PASS
	6	-27.520		PASS
	11	-26.550		PASS
IEEE 802.11n_20	1	-26.260		PASS
	6	-27.450		PASS
	11	-26.560		PASS
IEEE 802.11n_40	3	-29.020		PASS
	6	-29.650		PASS
	9	-27.500		PASS

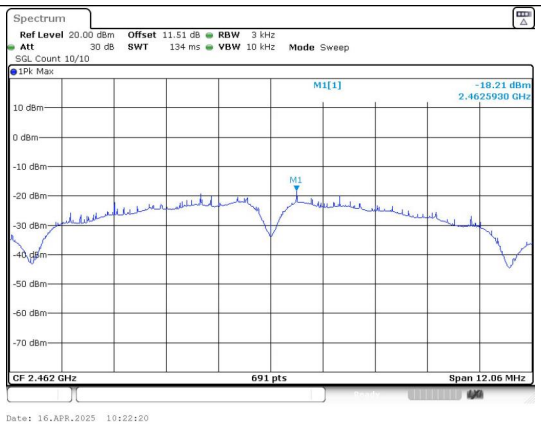
Test Graphs



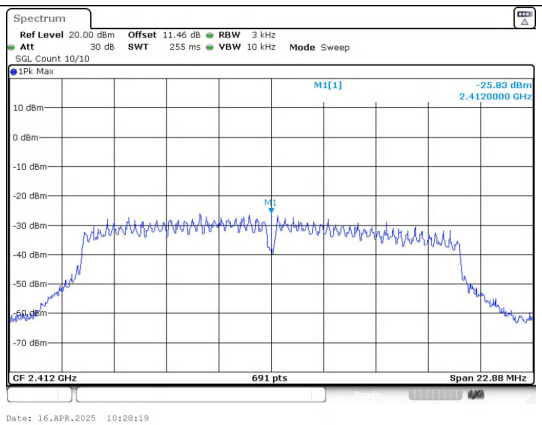
IEEE 802.11b_Channel 1_20MHz_Antenna 0



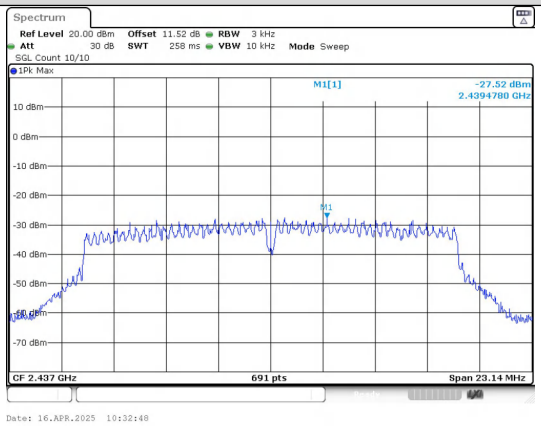
IEEE 802.11b_Channel 6_20MHz_Antenna 0



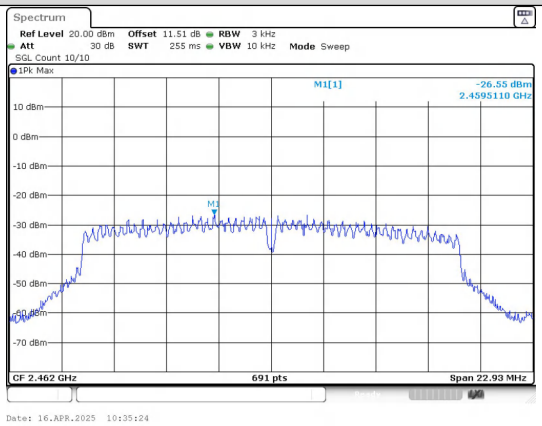
IEEE 802.11b_Channel 11_20MHz_Antenna 0



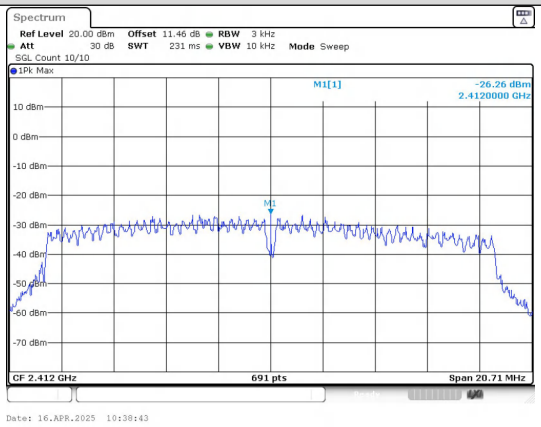
IEEE 802.11g_Channel 1_20MHz_Antenna 0



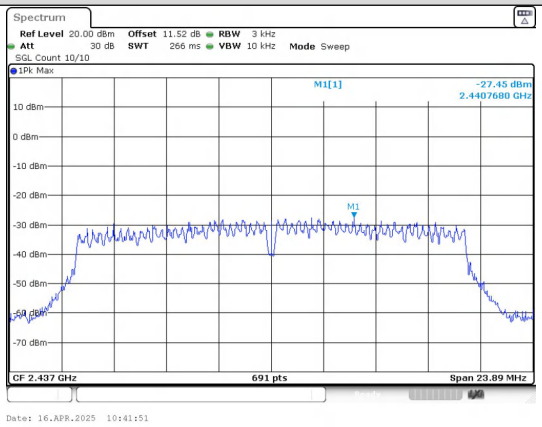
IEEE 802.11g_Channel 6_20MHz_Antenna 0



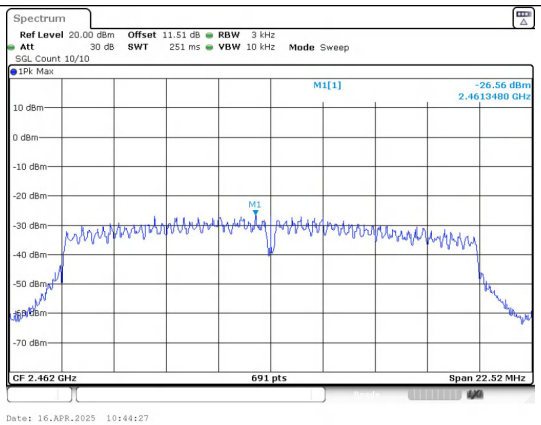
IEEE 802.11g_Channel 11_20MHz_Antenna 0



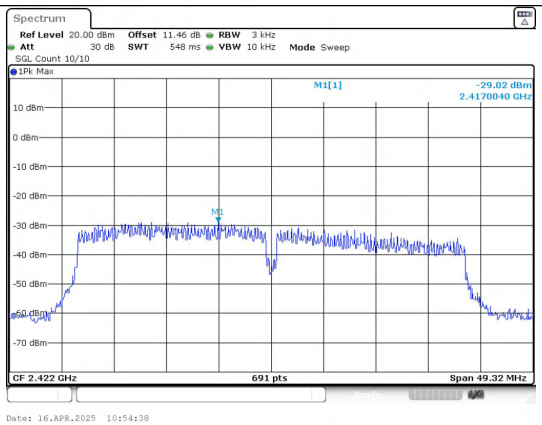
IEEE 802.11n_Channel 1_20MHz_Antenna 0



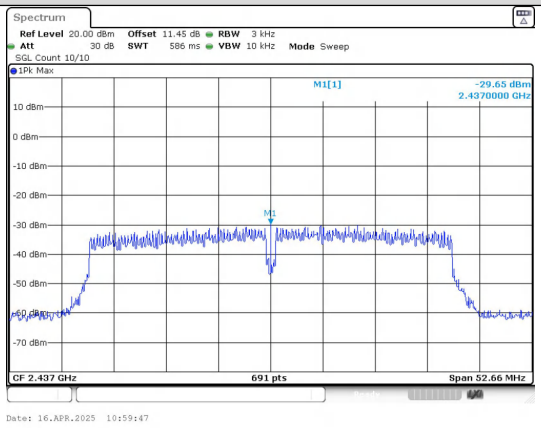
IEEE 802.11n_Channel 6_20MHz_Antenna 0



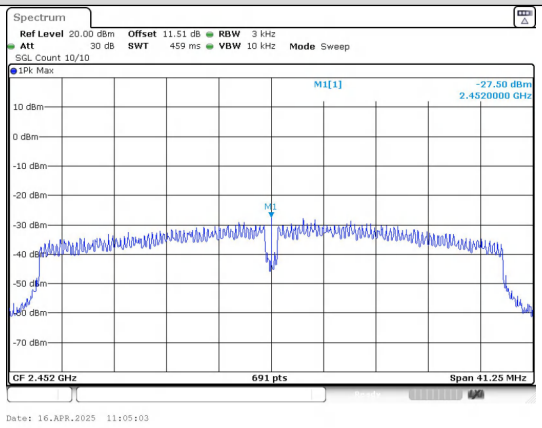
IEEE 802.11n_Channel 11_20MHz_Antenna 0



IEEE 802.11n_Channel 3_40MHz_Antenna 0



IEEE 802.11n_Channel 6_40MHz_Antenna 0



IEEE 802.11n_Channel 9_40MHz_Antenna 0

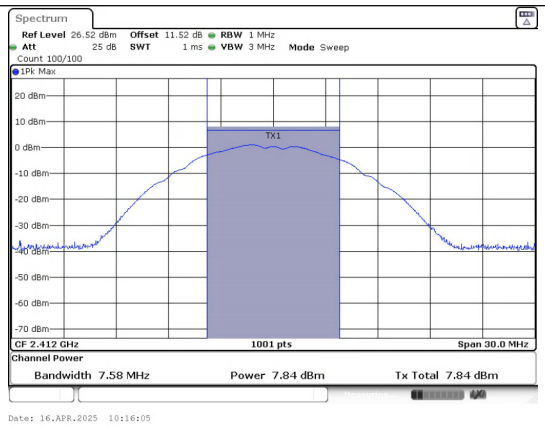
Conducted Output Power

Test Result

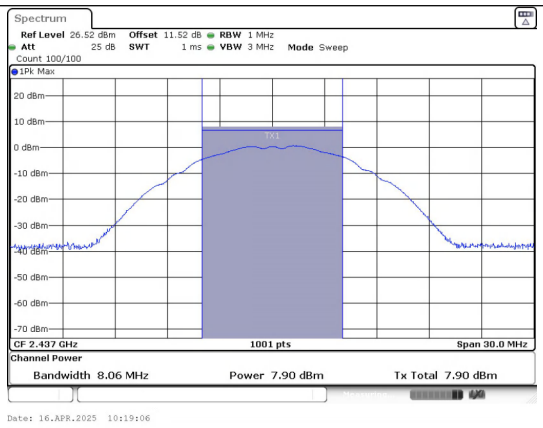
Conducted Output Power

Mode	Channel	Ant. 0 (dBm)	Total (dBm)	Limit (dBm)	Result
IEEE 802.11b	1	7.84	N/A	≤30	PASS
	6	7.90	N/A	≤30	PASS
	11	8.23	N/A	≤30	PASS
IEEE 802.11g	1	7.49	N/A	≤30	PASS
	6	7.29	N/A	≤30	PASS
	11	8.15	N/A	≤30	PASS
IEEE 802.11n_20	1	7.27	N/A	≤30	PASS
	6	7.25	N/A	≤30	PASS
	11	7.94	N/A	≤30	PASS
IEEE 802.11n_40	3	7.06	N/A	≤30	PASS
	6	7.31	N/A	≤30	PASS
	9	7.50	N/A	≤30	PASS

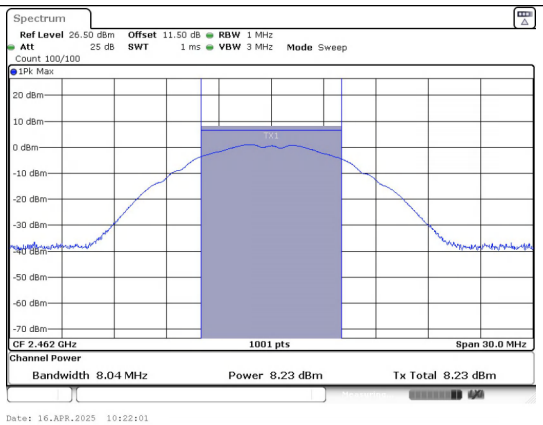
Test Graphs



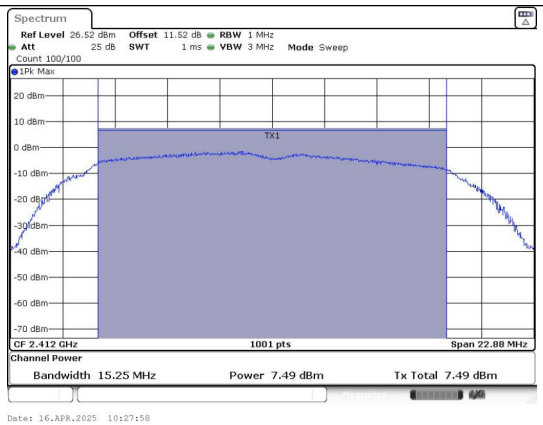
Conducted Output Power
IEEE 802.11b_Channel 1_Antenna 0



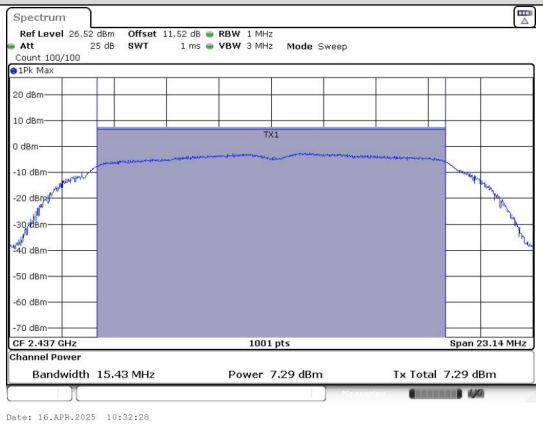
Conducted Output Power
IEEE 802.11b_Channel 6_Antenna 0



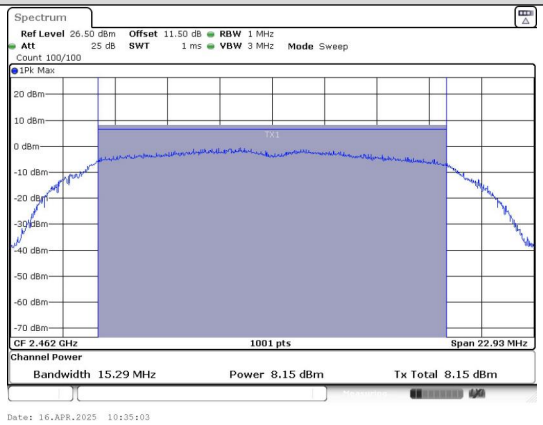
Conducted Output Power
IEEE 802.11b_Channel 11_Antenna 0



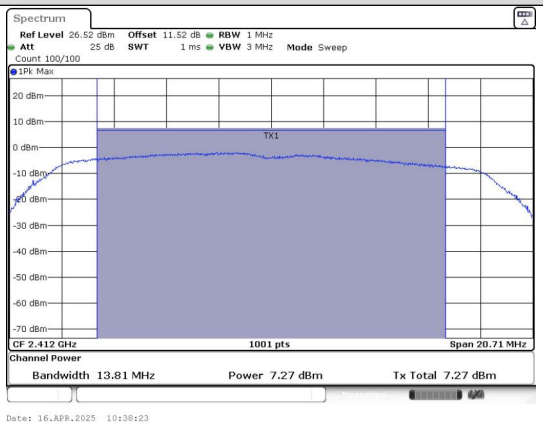
Conducted Output Power
IEEE 802.11g_Channel 1_Antenna 0



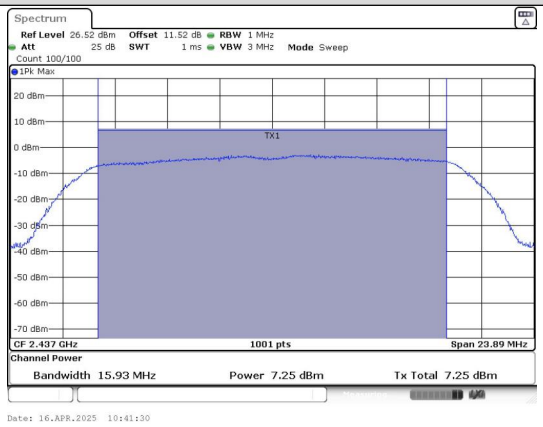
Conducted Output Power
IEEE 802.11g_Channel 6_Antenna 0



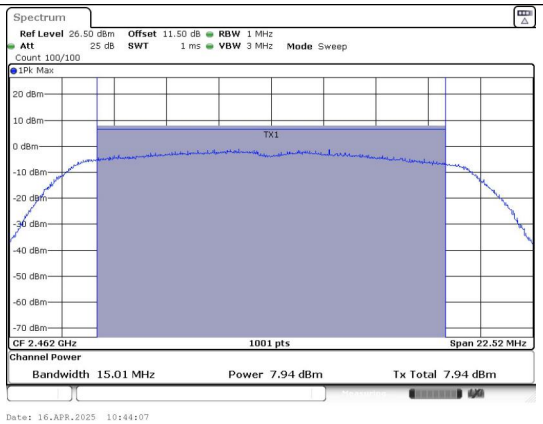
Conducted Output Power
IEEE 802.11g_Channel 11_Antenna 0



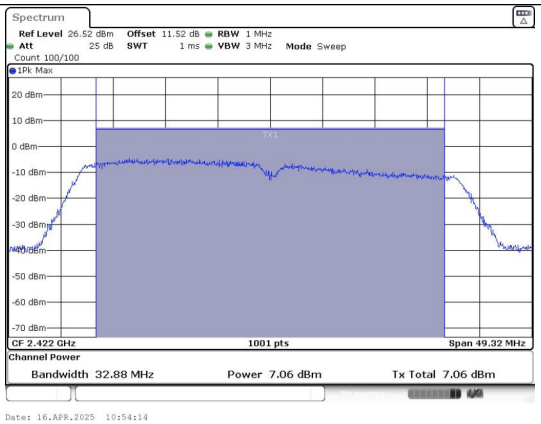
Conducted Output Power
IEEE 802.11n_20_Channel 1_Antenna 0



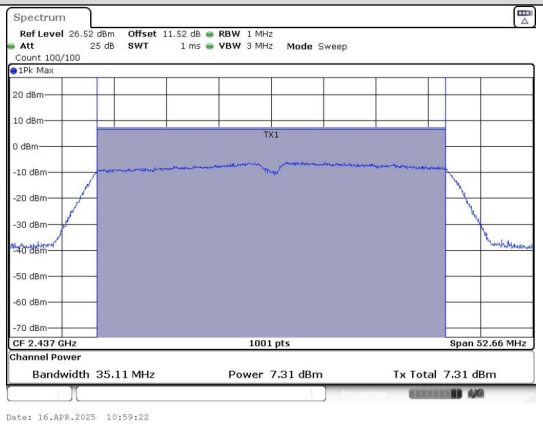
Conducted Output Power
IEEE 802.11n_20_Channel 6_Antenna 0



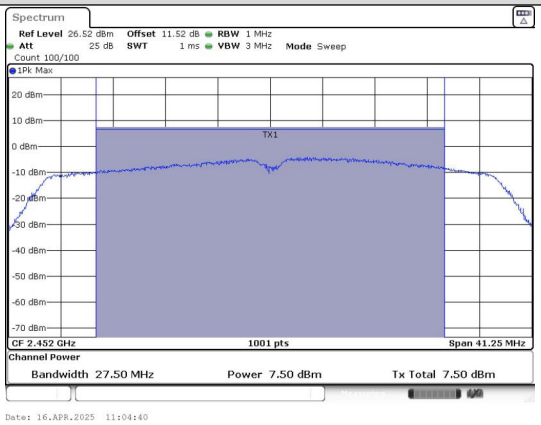
Conducted Output Power
IEEE 802.11n_20_Channel 11_Antenna 0



Conducted Output Power
IEEE 802.11n_40_Channel 3_Antenna 0



Conducted Output Power
IEEE 802.11n_40_Channel 6_Antenna 0



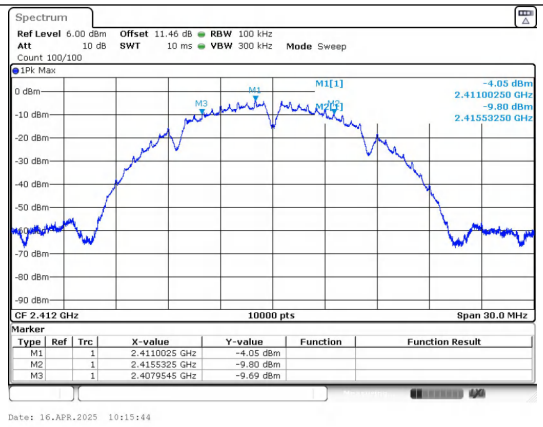
Conducted Output Power
IEEE 802.11n_40_Channel 9_Antenna 0

6dB Bandwidth

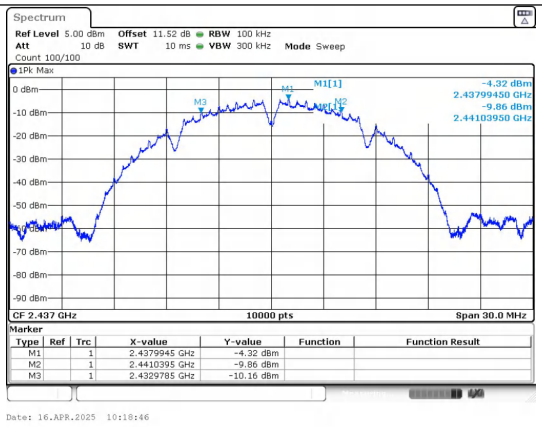
Test Result

Mode	Channel	Ant.	Center Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11b	1	0	2412	7.580	≥0.5	PASS
	6		2437	8.060		PASS
	11		2462	8.040		PASS
IEEE 802.11g	1		2412	15.25		PASS
	6		2437	15.43		PASS
	11		2462	15.29		PASS
IEEE 802.11n_20	1		2412	13.81		PASS
	6		2437	15.93		PASS
	11		2462	15.01		PASS
IEEE 802.11n_40	3		2422	32.88		PASS
	6		2437	35.11		PASS
	9		2452	27.50		PASS

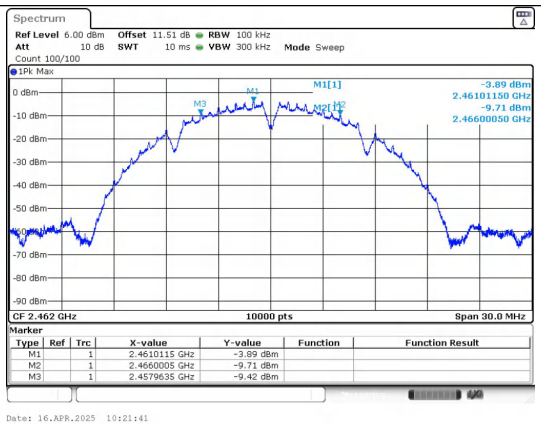
Test Graphs



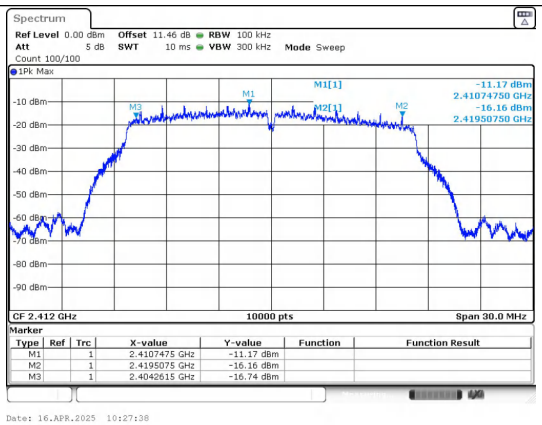
IEEE 802.11b_Channel 1_20MHz_Antenna 0



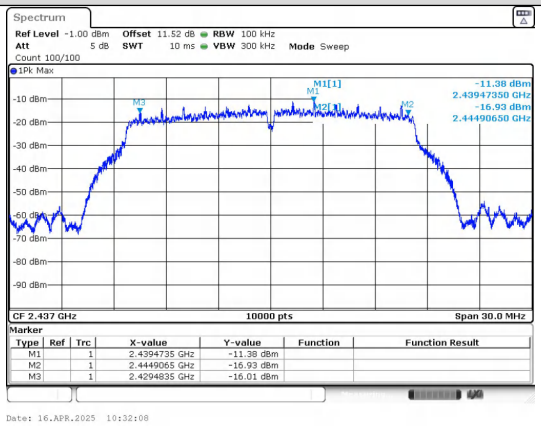
IEEE 802.11b_Channel 6_20MHz_Antenna 0



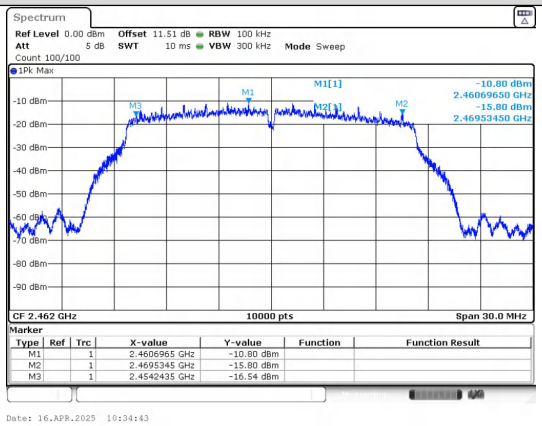
IEEE 802.11b_Channel 11_20MHz_Antenna 0



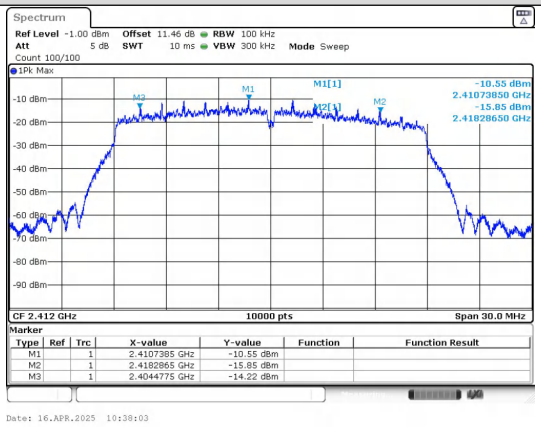
IEEE 802.11g_Channel 1_20MHz_Antenna 0



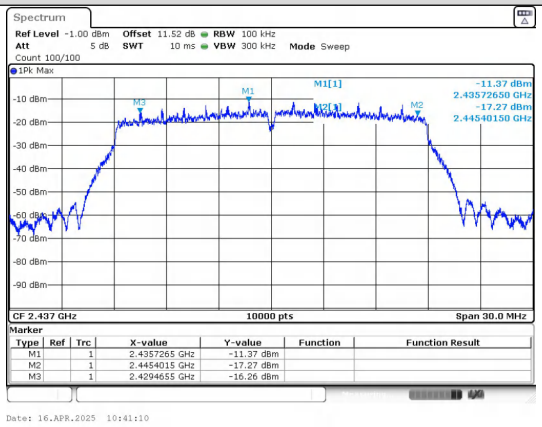
IEEE 802.11g_Channel 6_20MHz_Antenna 0



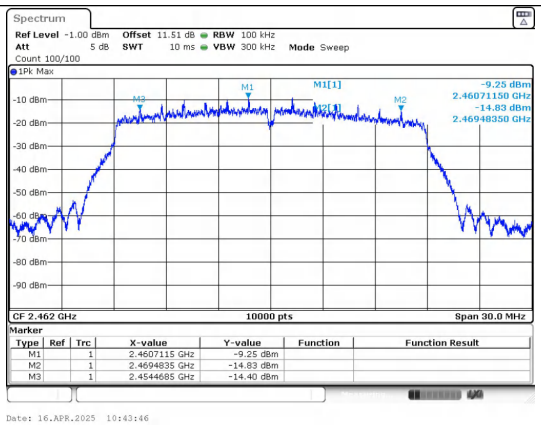
IEEE 802.11g_Channel 11_20MHz_Antenna 0



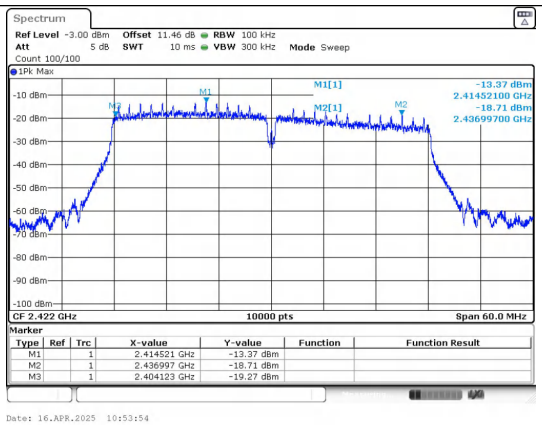
IEEE 802.11n_Channel 1_20MHz_Antenna 0



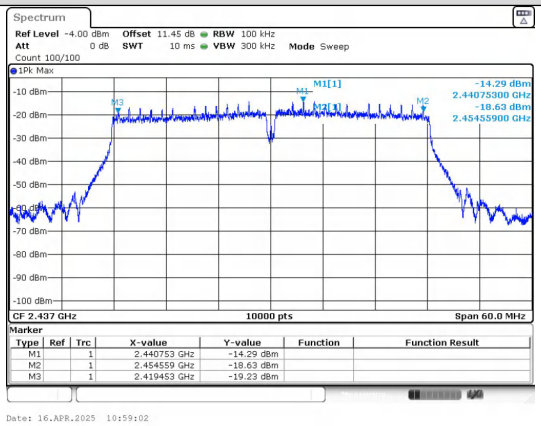
IEEE 802.11n_Channel 6_20MHz_Antenna 0



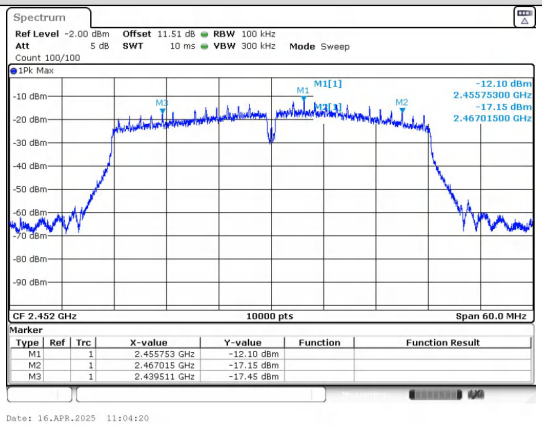
IEEE 802.11n_Channel 11_20MHz_Antenna 0



IEEE 802.11n_Channel 3_40MHz_Antenna 0



IEEE 802.11n_Channel 6_40MHz_Antenna 0



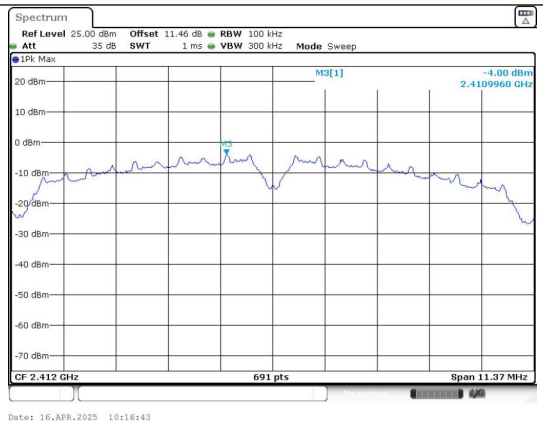
IEEE 802.11n_Channel 9_40MHz_Antenna 0

Conducted Out Of Band Emission

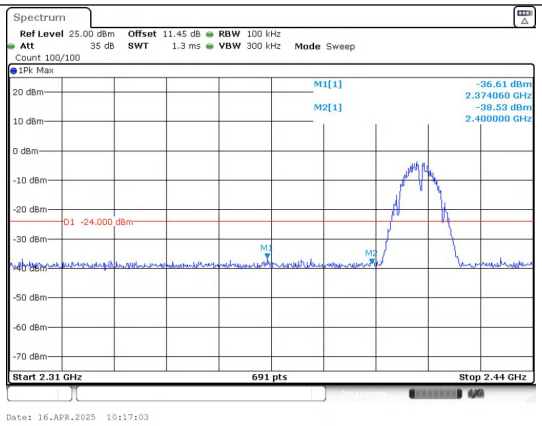
Test Result

Mode	Channel	Ant.	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
IEEE 802.11b	1	0	2374.06	-36.613	-24.0	-12.613	PASS
			2400.00	-38.530	-24.0	-14.530	PASS
			6913.80	-42.527	-24.0	-18.527	PASS
	6		6903.82	-42.525	-24.29	-18.235	PASS
	11		2483.50	-37.910	-23.89	-14.020	PASS
			18201.9	-42.876	-23.89	-18.986	PASS
IEEE 802.11g	1		2340.01	-36.703	-30.73	-5.973	PASS
			2400.00	-37.680	-30.73	-6.950	PASS
			6924.60	-43.634	-30.73	-12.904	PASS
	6		6188.02	-43.300	-31.22	-12.080	PASS
	11		2483.50	-38.560	-29.93	-8.630	PASS
			6953.76	-42.236	-29.93	-12.306	PASS
IEEE 802.11n_20	1		2364.46	-36.172	-30.83	-5.342	PASS
			2400.00	-39.370	-30.83	-8.540	PASS
			6814.80	-42.505	-30.83	-11.675	PASS
	6		21995.7	-42.538	-31.31	-11.228	PASS
	11		2483.50	-38.560	-30.52	-8.040	PASS
			4649.87	-42.823	-30.52	-12.303	PASS
IEEE 802.11n_40	3		2311.60	-36.986	-33.14	-3.846	PASS
			2400.00	-37.570	-33.14	-4.430	PASS
			6942.90	-42.908	-33.14	-9.768	PASS
	6		22019.0	-43.012	-34.13	-8.882	PASS
	9		2483.50	-38.930	-32.17	-6.760	PASS
			6242.12	-43.133	-32.17	-10.963	PASS

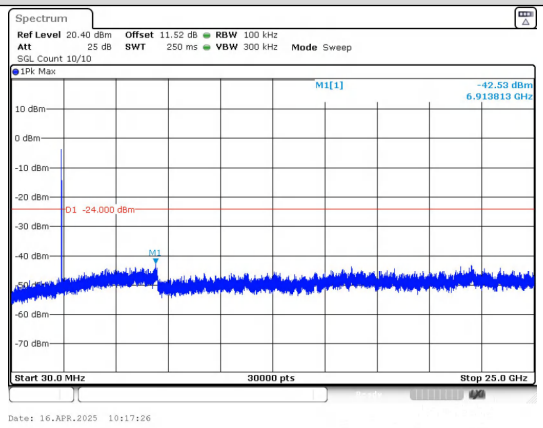
Test Graphs



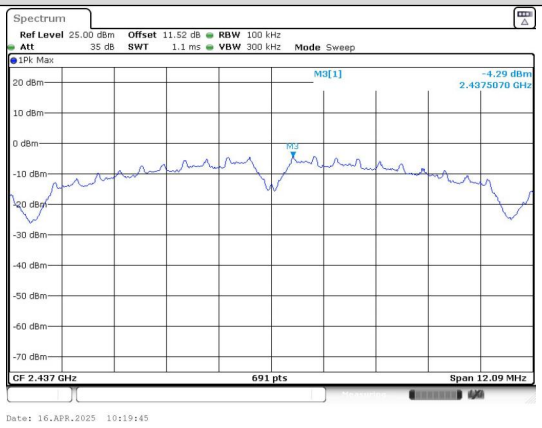
In-Band Reference Level
IEEE 802.11b_Channel 1_20MHz_Antenna 0



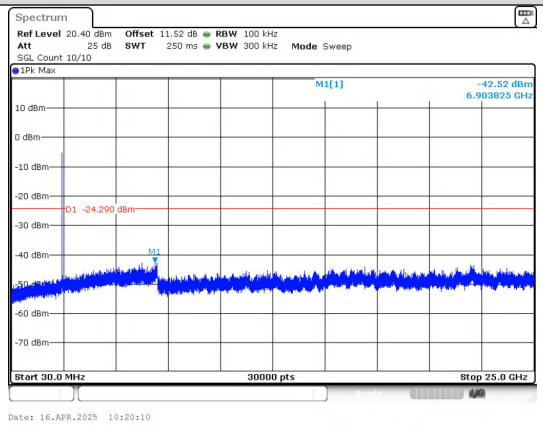
Out Of Band Emission
IEEE 802.11b_Channel 1_20MHz_Antenna 0

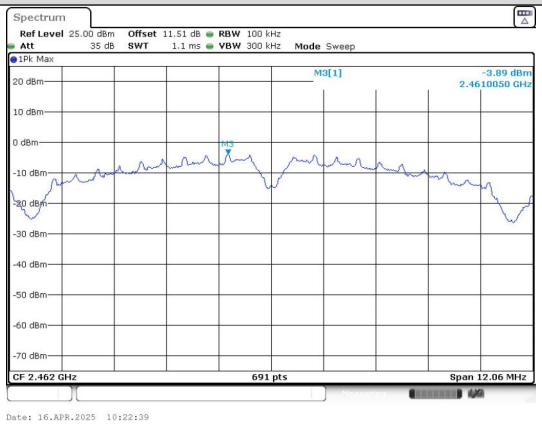


30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 1_20MHz_Antenna 0

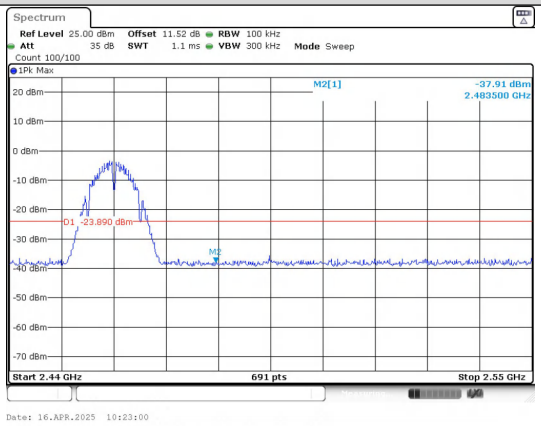


In-Band Reference Level
IEEE 802.11b_Channel 6_20MHz_Antenna 0

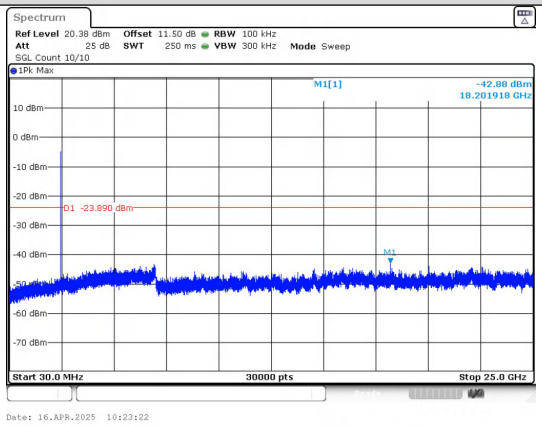




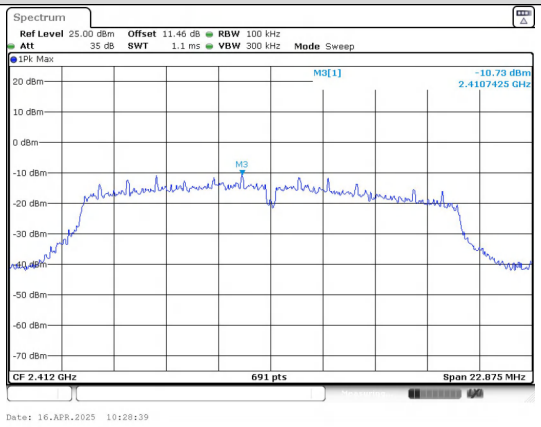
30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 6_20MHz_Antenna 0



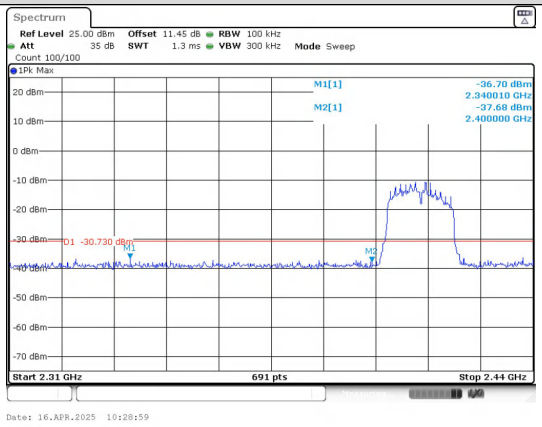
In-Band Reference Level
IEEE 802.11b_Channel 11_20MHz_Antenna 0



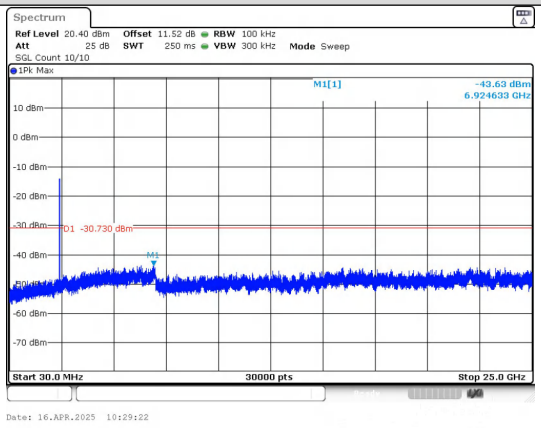
Out Of Band Emission
IEEE 802.11b_Channel 11_20MHz_Antenna 0



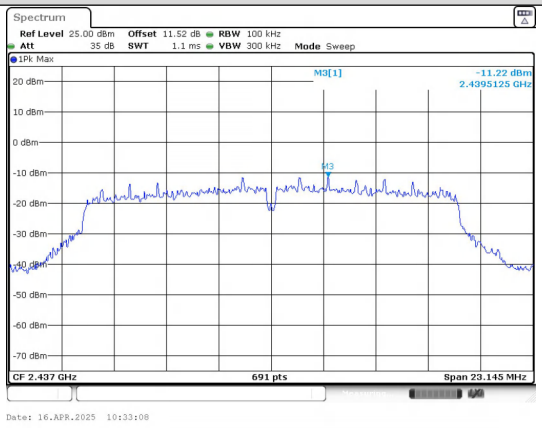
30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 11_20MHz_Antenna 0



In-Band Reference Level
IEEE 802.11g_Channel 1_20MHz_Antenna 0



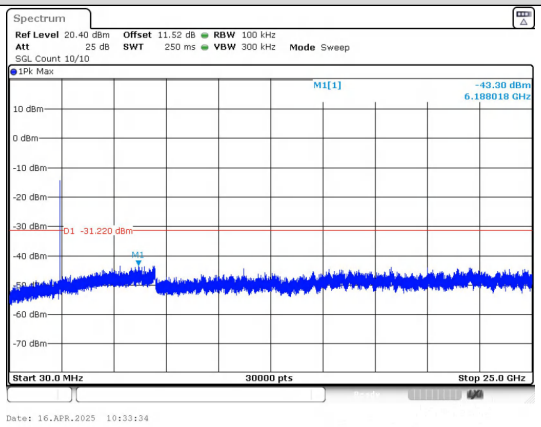
Out Of Band Emission
IEEE 802.11g_Channel 1_20MHz_Antenna 0



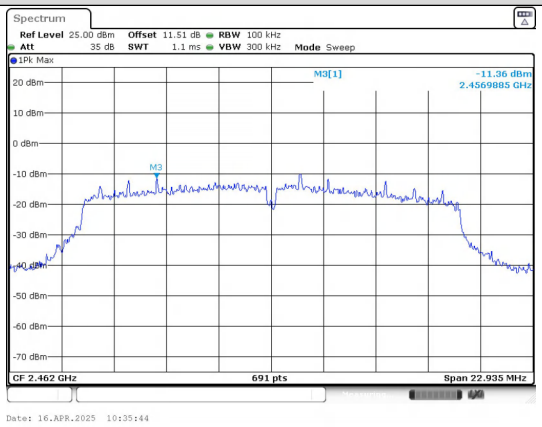
30.0 MHz - 25000.0 MHz

In-Band Reference Level

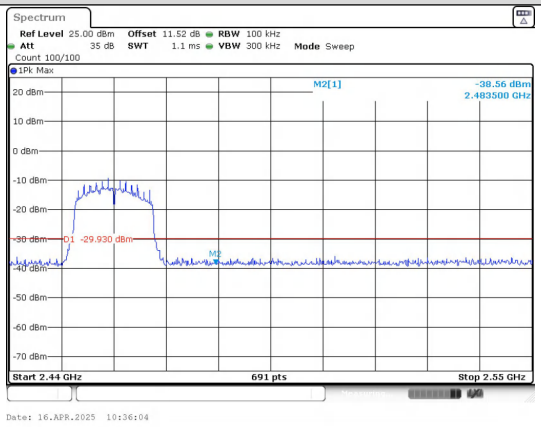
IEEE 802.11g_Channel 1_20MHz_Antenna 0



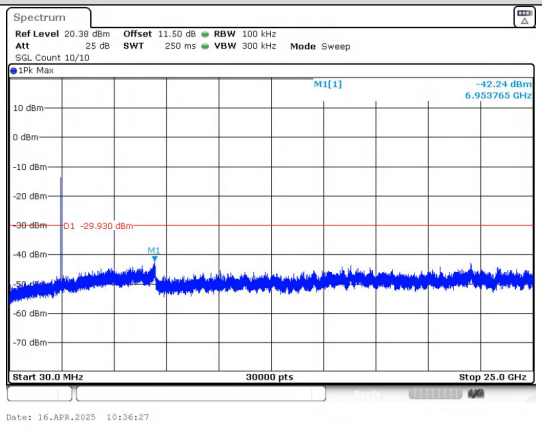
IEEE 802.11g_Channel 6_20MHz_Antenna 0



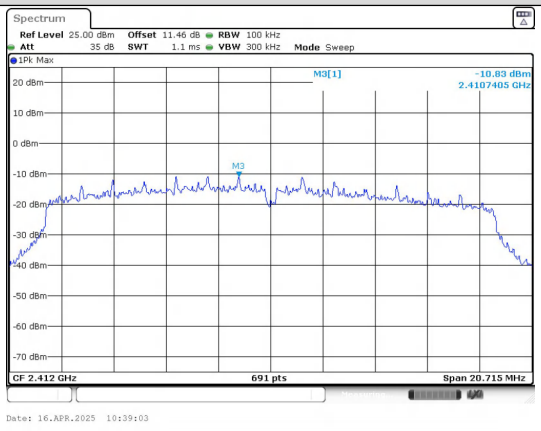
30.0 MHz - 25000.0 MHz
IEEE 802.11g_Channel 6_20MHz_Antenna 0



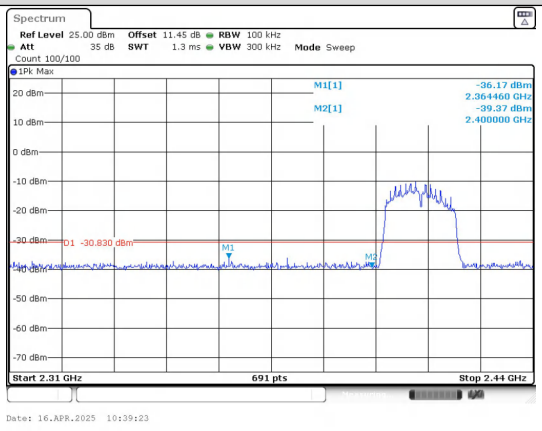
In-Band Reference Level
IEEE 802.11g_Channel 11_20MHz_Antenna 0



Out Of Band Emission
IEEE 802.11g_Channel 11_20MHz_Antenna 0

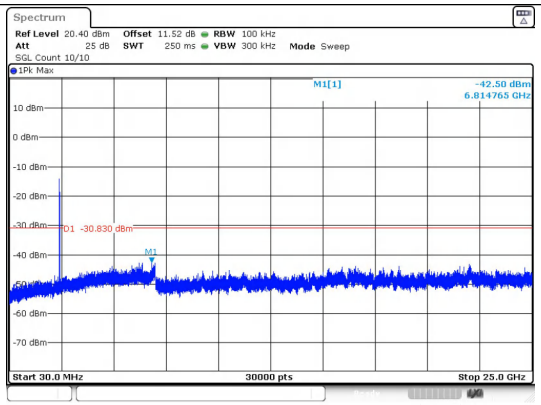


30.0 MHz - 25000.0 MHz
IEEE 802.11g_Channel 11_20MHz_Antenna 0



In-Band Reference Level
IEEE 802.11n_Channel 1_20MHz_Antenna 0

Out Of Band Emission
IEEE 802.11n_Channel 1_20MHz_Antenna 0



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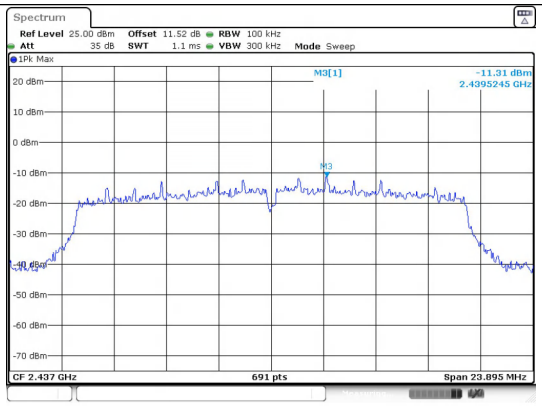
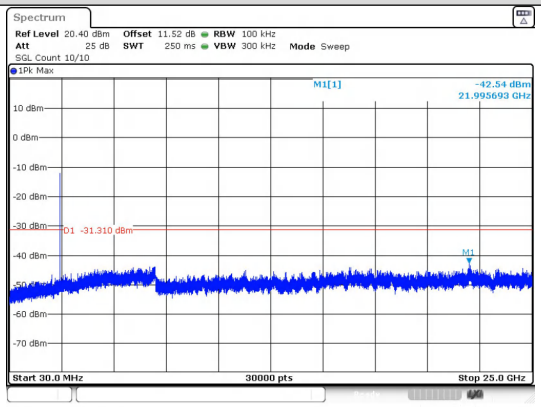
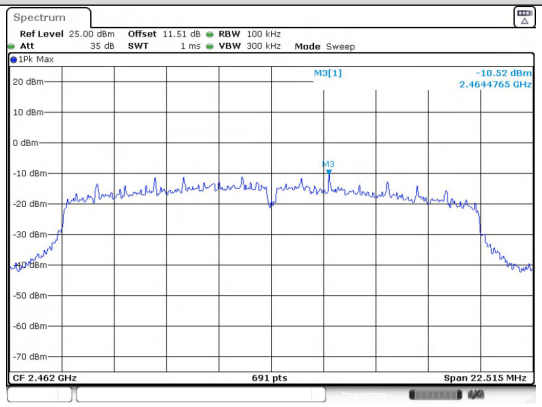
IEEE 802.11n_Channel 1_20MHz_Antenna 0



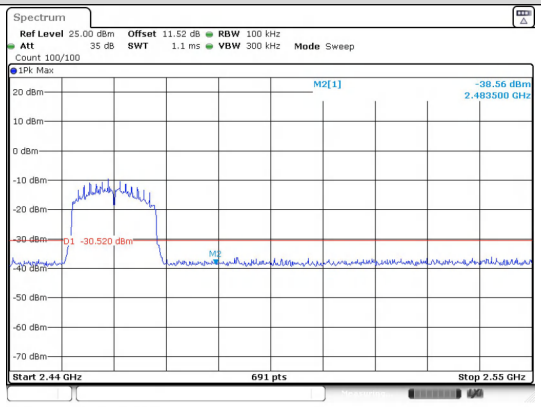
In-Band Reference Level
IEEE 802.11n_Channel 6_20MHz_Antenna 0



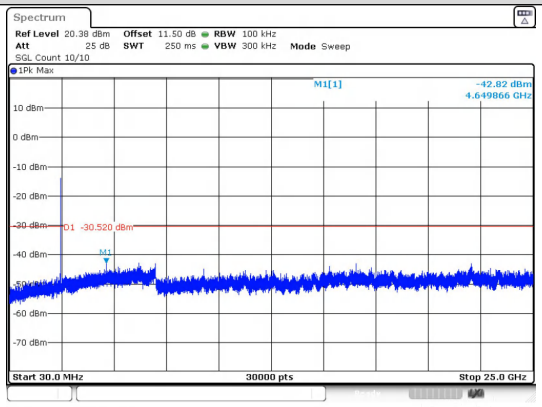
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 6_20MHz_Antenna 0



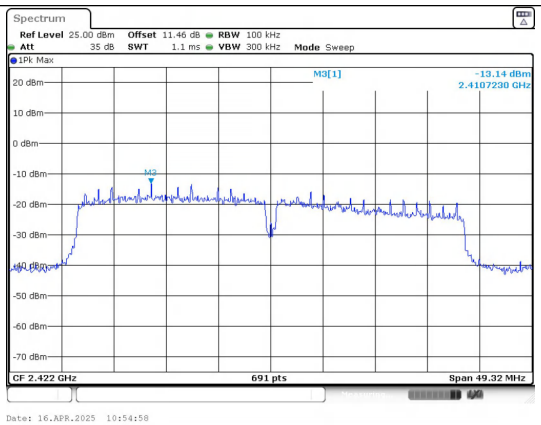
In-Band Reference Level
IEEE 802.11n_Channel 11_20MHz_Antenna 0



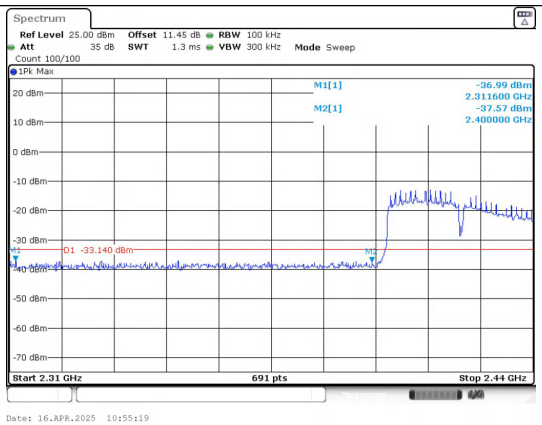
Out Of Band Emission
IEEE 802.11n_Channel 11_20MHz_Antenna 0



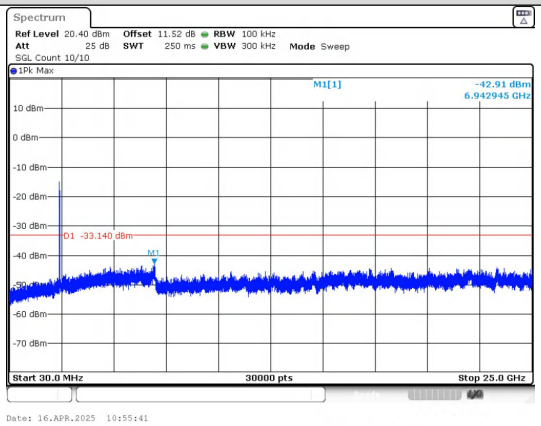
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 11_20MHz_Antenna 0



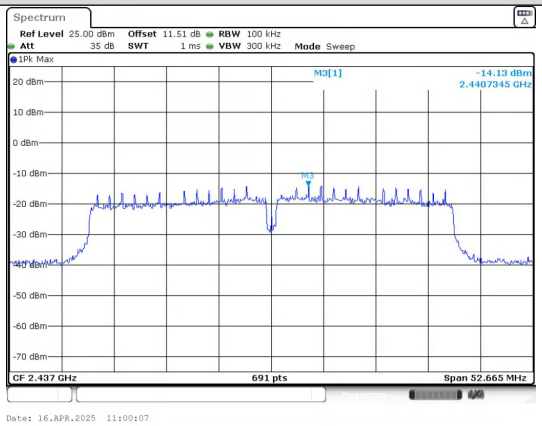
In-Band Reference Level
IEEE 802.11n_Channel 3_40MHz_Antenna 0



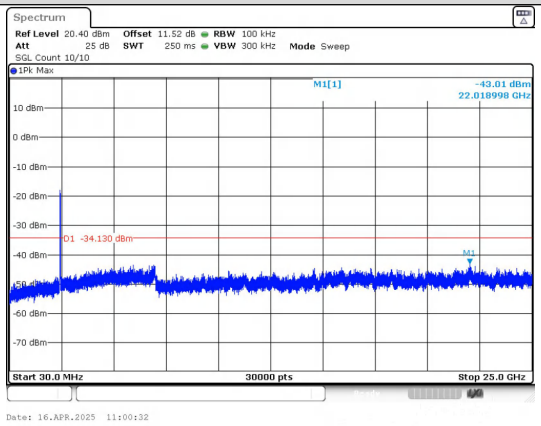
Out Of Band Emission
IEEE 802.11n_Channel 3_40MHz_Antenna 0



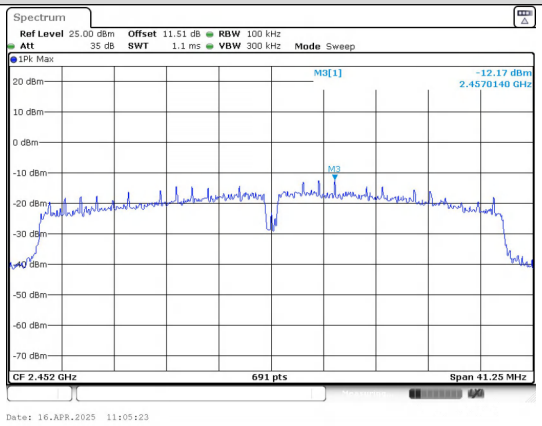
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 3_40MHz_Antenna 0



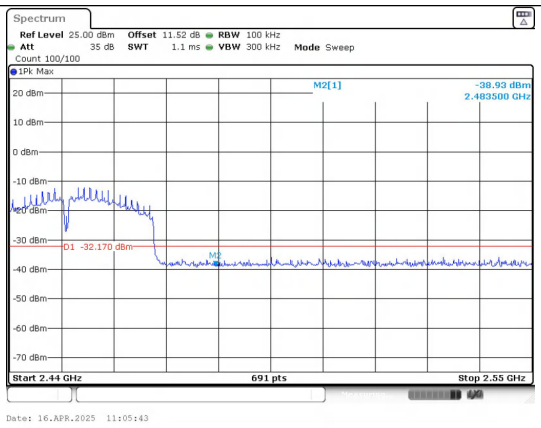
In-Band Reference Level
IEEE 802.11n_Channel 6_40MHz_Antenna 0



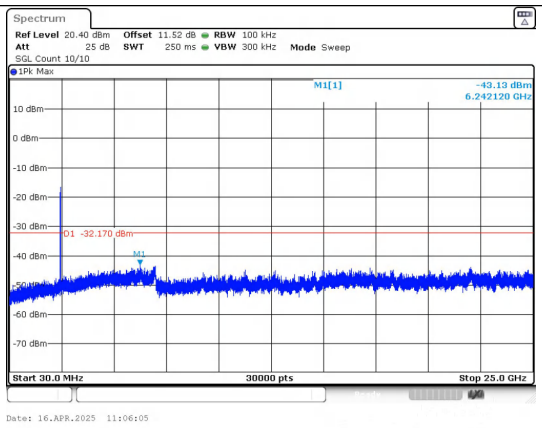
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 6_40MHz_Antenna 0



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

------End of the report-----