Appendix Report

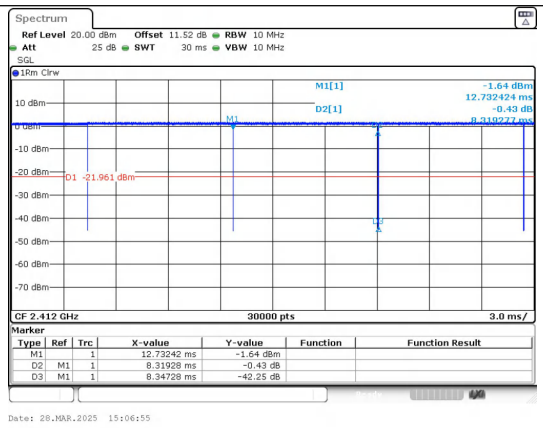
Project No.:	CISR250325224
Test Engineer:	James Wang
Supervised by:	Rory Huang

Duty Cycle

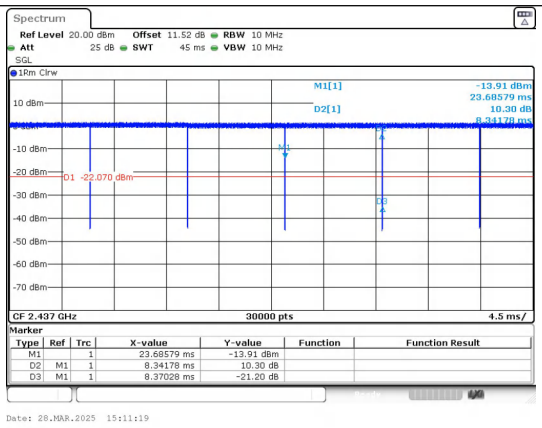
Test Result

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	8.319	8.347	99.66	0.9966	0.0148	0.1202
		6		8.342	8.370	99.66	0.9966	0.0148	0.1199
		11		8.319	8.348	99.65	0.9965	0.0152	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		1.395	1.429	97.62	0.9762	0.1046	0.7168
IEEE 802.11n_20	MCS 0	1		1.304	1.337	97.53	0.9753	0.1086	0.7669
		6		1.293	1.327	97.44	0.9744	0.1126	0.7734
		11		1.304	1.338	97.46	0.9746	0.1117	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	94.94	0.9494	0.2255	1.5385

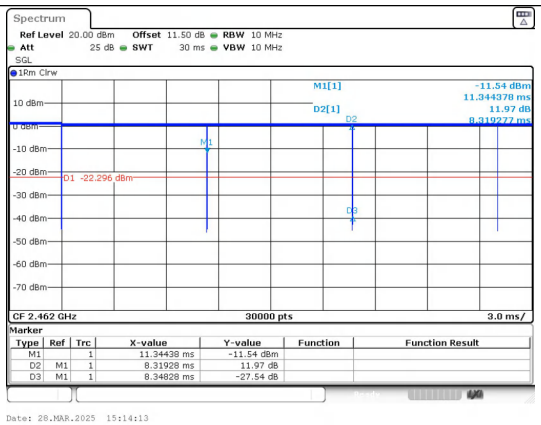
Test Graphs



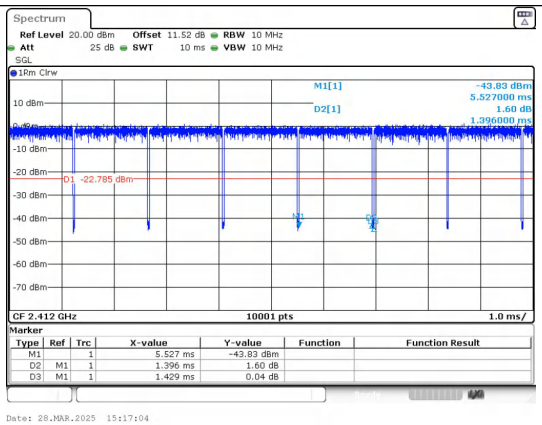
IEEE 802.11b_20MHz_Channel 1



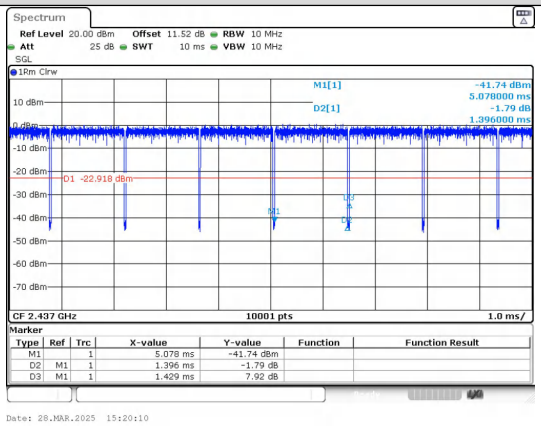
IEEE 802.11b_20MHz_Channel 6



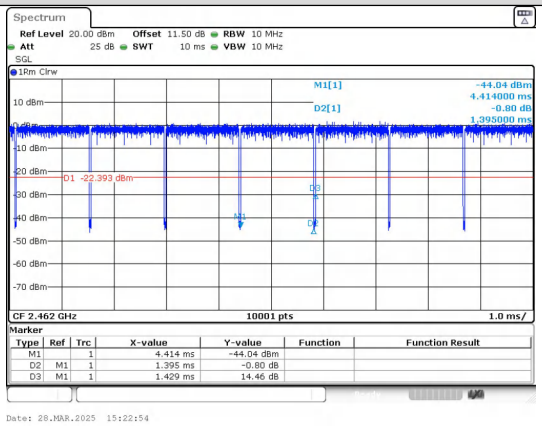
IEEE 802.11b_20MHz_Channel 11



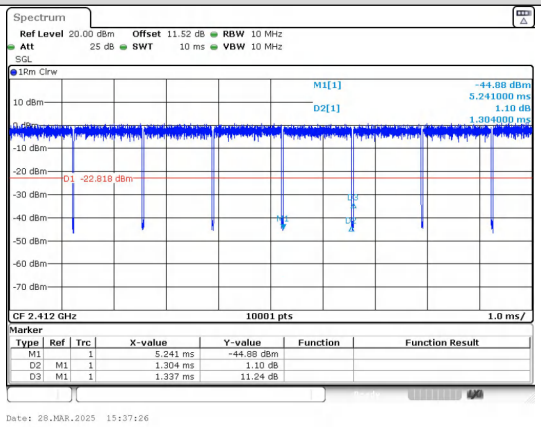
IEEE 802.11g_20MHz_Channel 1



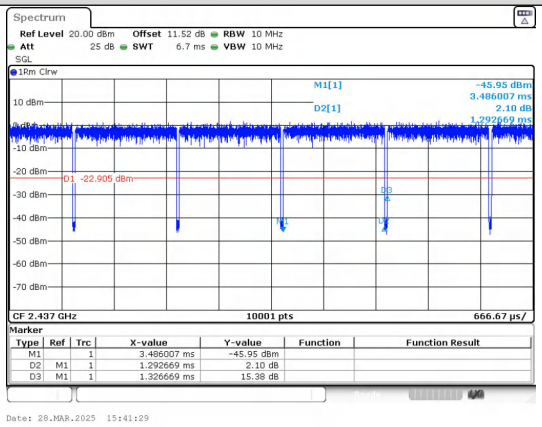
IEEE 802.11g_20MHz_Channel 6



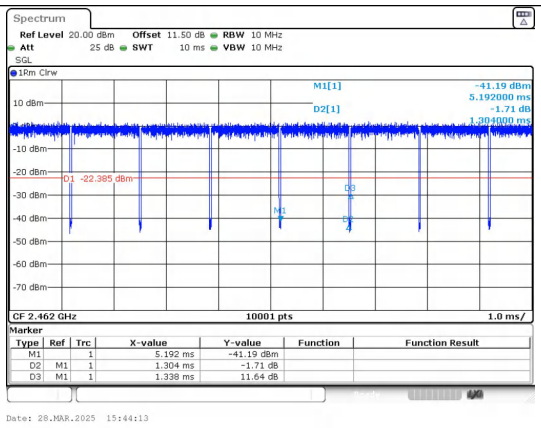
IEEE 802.11g_20MHz_Channel 11



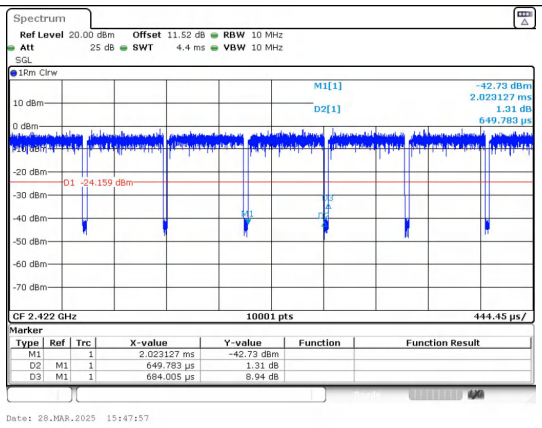
IEEE 802.11n_20MHz_Channel 1



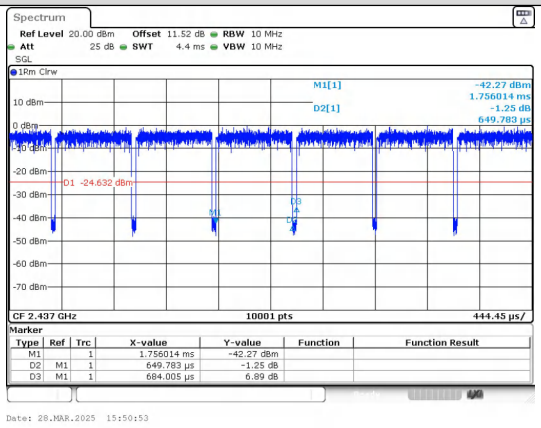
IEEE 802.11n_20MHz_Channel 6



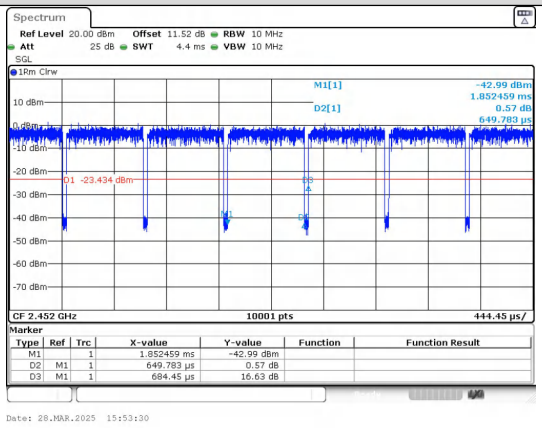
IEEE 802.11n_20MHz_Channel 11



IEEE 802.11n_40MHz_Channel 3



IEEE 802.11n_40MHz_Channel 6



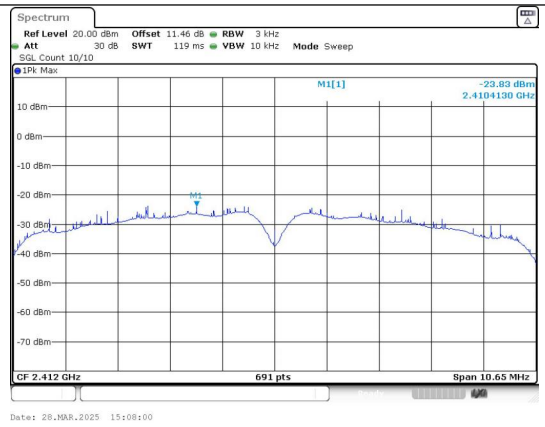
IEEE 802.11n_40MHz_Channel 9

Power Spectral Density

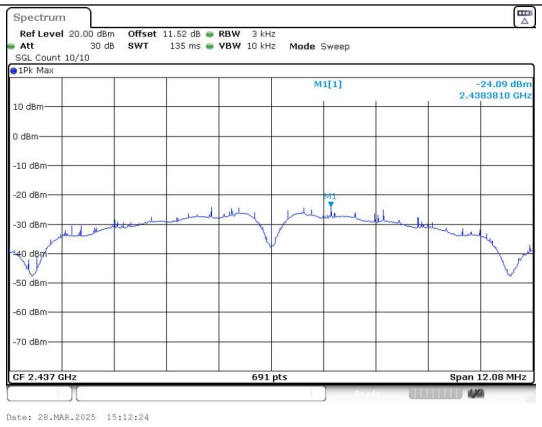
Test Result

Mode	Channel	PSD (dBm/3kHz) Ant. 0	Limit (dBm/3kHz)	Result
IEEE 802.11b	1	-23.830	≤8	PASS
	6	-24.090		PASS
	11	-23.530		PASS
IEEE 802.11g	1	-25.320		PASS
	6	-25.730		PASS
	11	-26.400		PASS
IEEE 802.11n_20	1	-26.310		PASS
	6	-26.290		PASS
	11	-25.310		PASS
IEEE 802.11n_40	3	-28.420		PASS
	6	-29.240		PASS
	9	-26.660		PASS

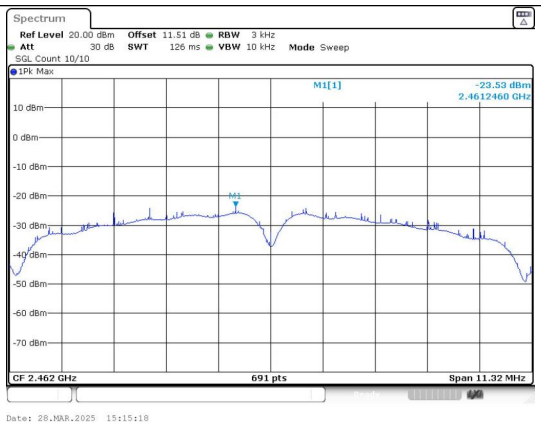
Test Graphs



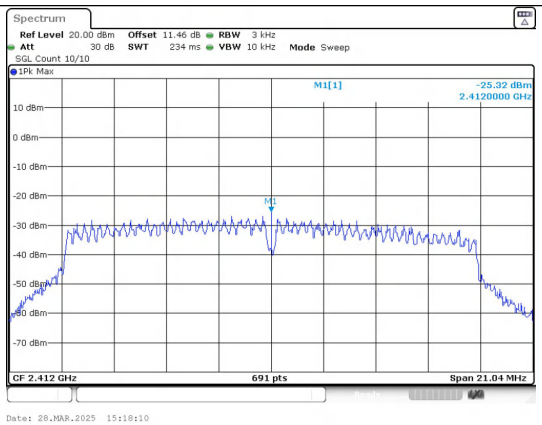
IEEE 802.11b_Channel 1_20MHz_Antenna 0



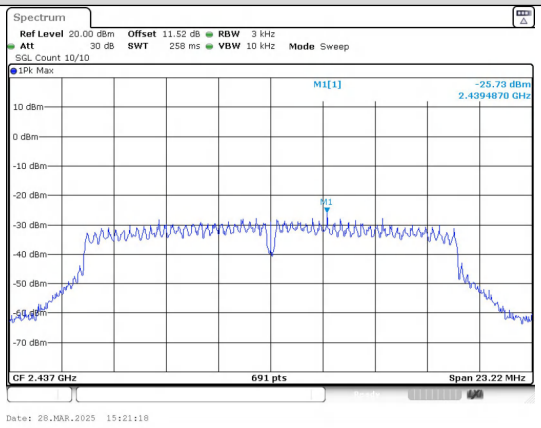
IEEE 802.11b_Channel 6_20MHz_Antenna 0



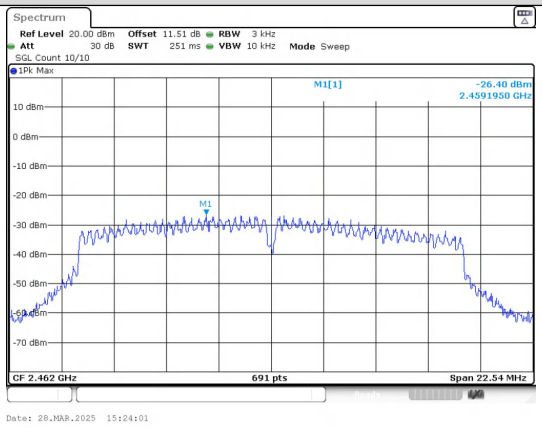
IEEE 802.11b_Channel 11_20MHz_Antenna 0



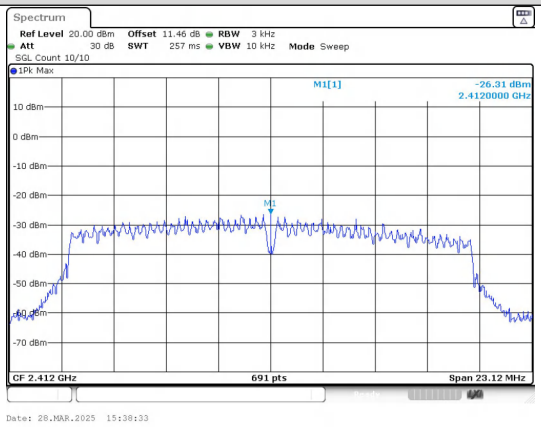
IEEE 802.11g_Channel 1_20MHz_Antenna 0



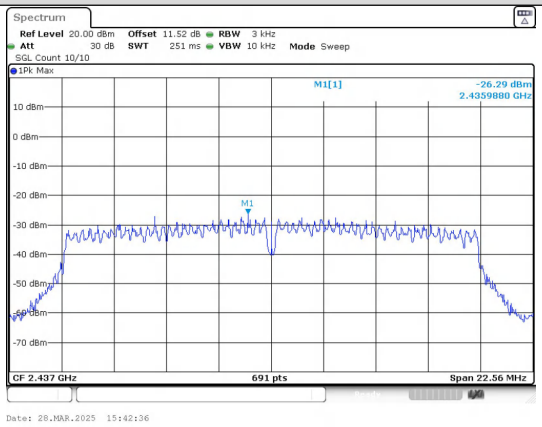
IEEE 802.11g_Channel 6_20MHz_Antenna 0



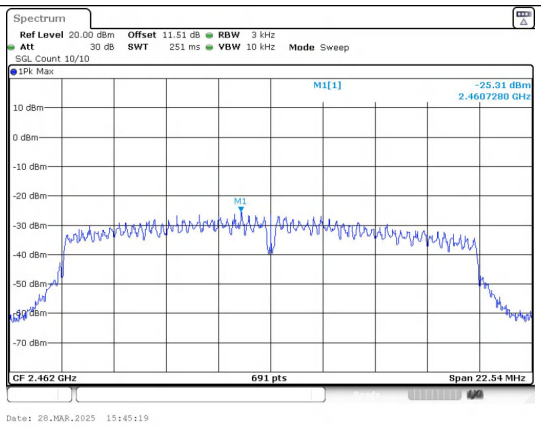
IEEE 802.11g_Channel 11_20MHz_Antenna 0



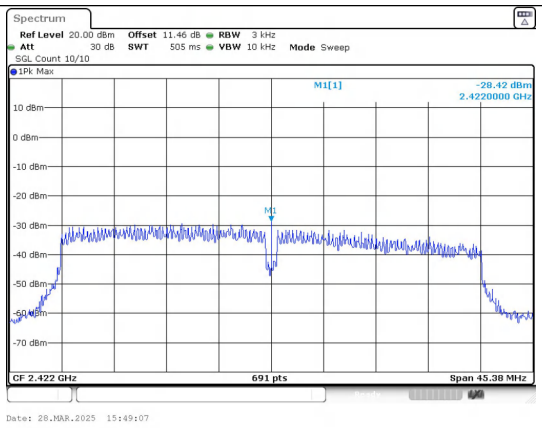
IEEE 802.11n_Channel 1_20MHz_Antenna 0



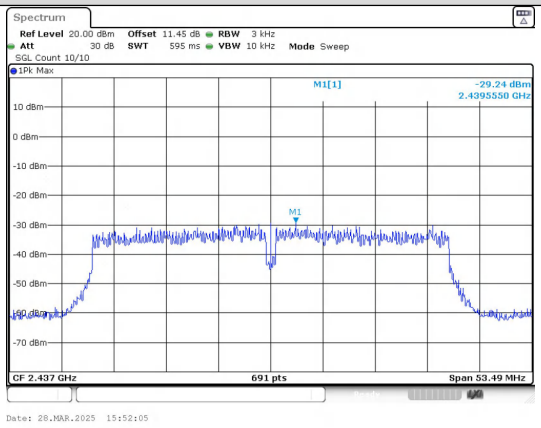
IEEE 802.11n_Channel 6_20MHz_Antenna 0



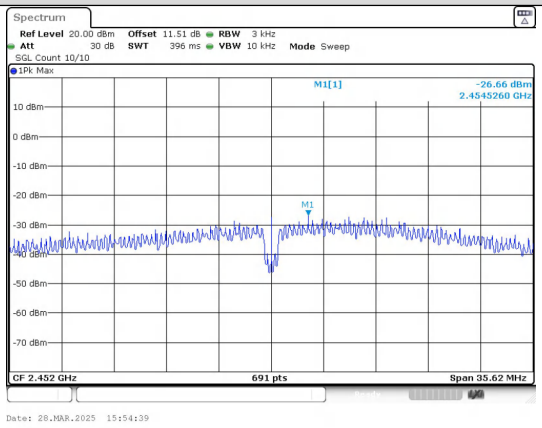
IEEE 802.11n_Channel 11_20MHz_Antenna 0



IEEE 802.11n_Channel 3_40MHz_Antenna 0



IEEE 802.11n_Channel 6_40MHz_Antenna 0



IEEE 802.11n_Channel 9_40MHz_Antenna 0

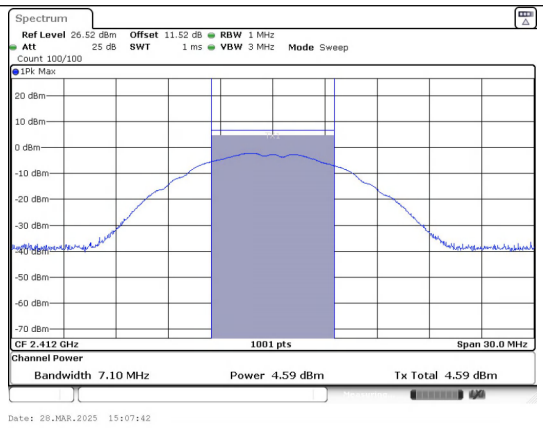
Conducted Output Power

Test Result

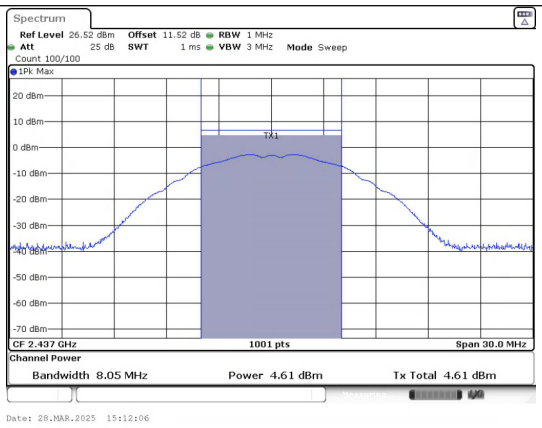
Conducted Output Power

Mode	Channel	Ant. 0 (dBm)	Total (dBm)	Limit (dBm)	Result
IEEE 802.11b	1	4.59	N/A	≤30	PASS
	6	4.61	N/A	≤30	PASS
	11	4.61	N/A	≤30	PASS
IEEE 802.11g	1	7.25	N/A	≤30	PASS
	6	7.07	N/A	≤30	PASS
	11	7.68	N/A	≤30	PASS
IEEE 802.11n_20	1	7.48	N/A	≤30	PASS
	6	7.20	N/A	≤30	PASS
	11	7.62	N/A	≤30	PASS
IEEE 802.11n_40	3	7.00	N/A	≤30	PASS
	6	7.85	N/A	≤30	PASS
	9	7.29	N/A	≤30	PASS

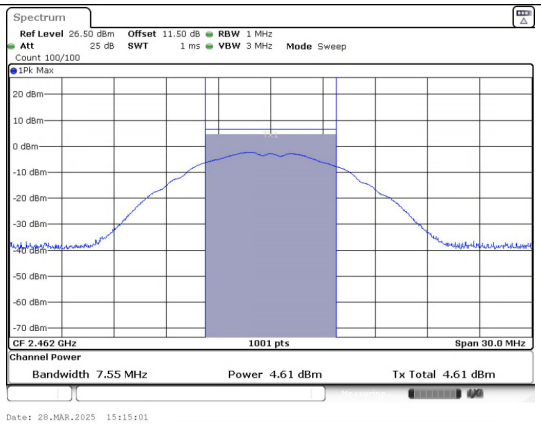
Test Graphs



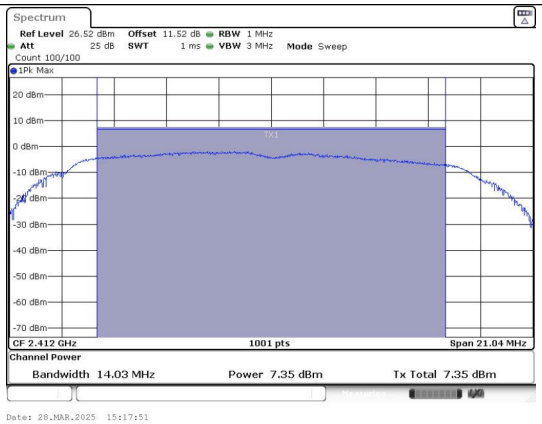
Conducted Output Power
IEEE 802.11b_Channel 1_Antenna 0



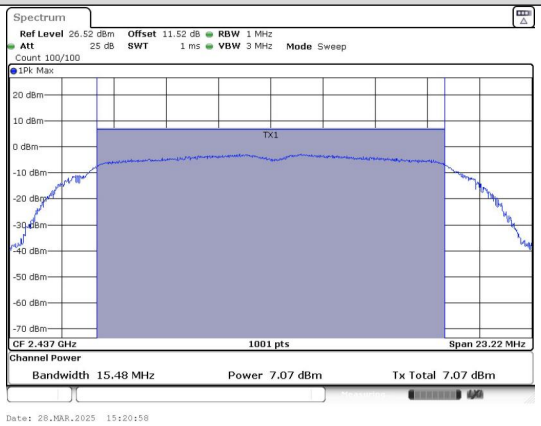
Conducted Output Power
IEEE 802.11b_Channel 6_Antenna 0



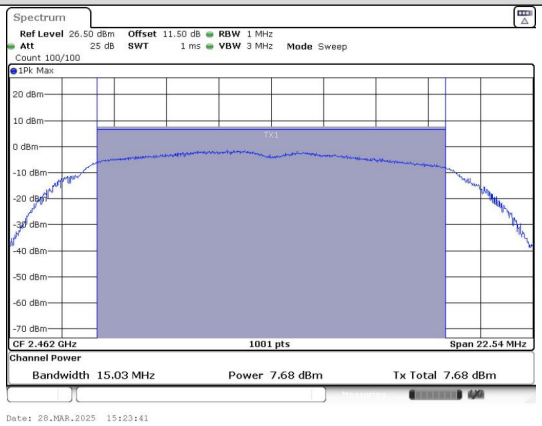
Conducted Output Power
IEEE 802.11b_Channel 11_Antenna 0



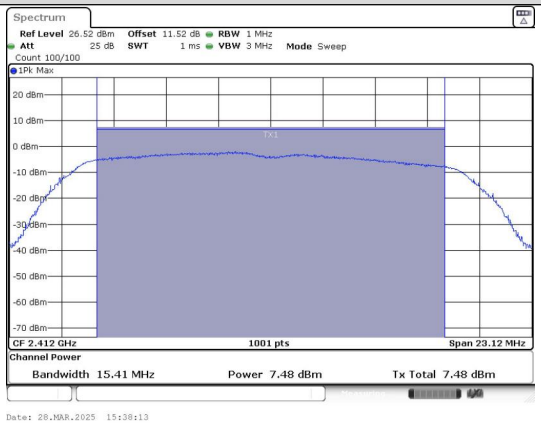
Conducted Output Power
IEEE 802.11g_Channel 1_Antenna 0



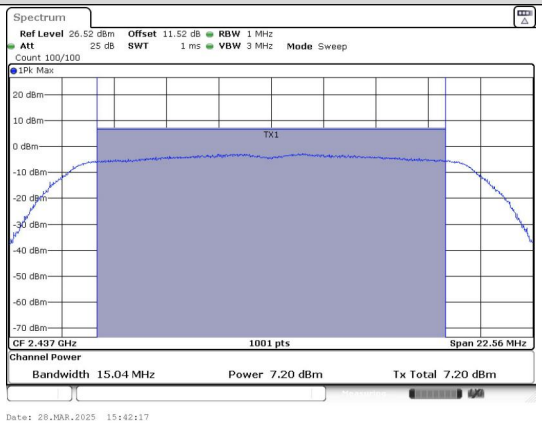
Conducted Output Power
IEEE 802.11g_Channel 6_Antenna 0



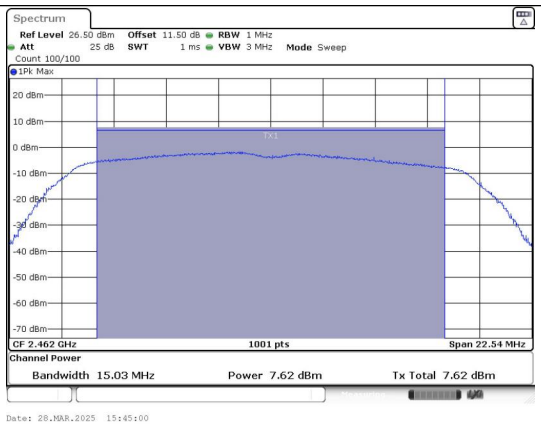
Conducted Output Power
IEEE 802.11g_Channel 11_Antenna 0



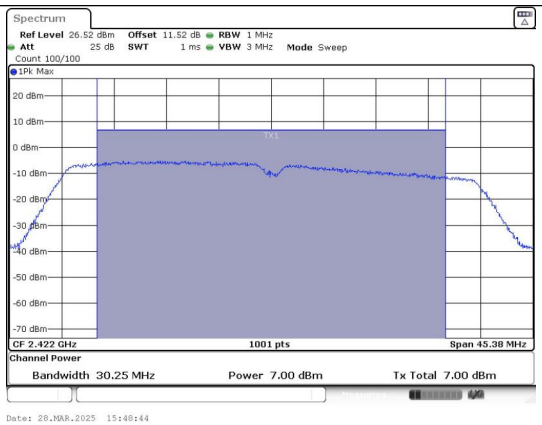
Conducted Output Power
IEEE 802.11n_20_Channel 1_Antenna 0



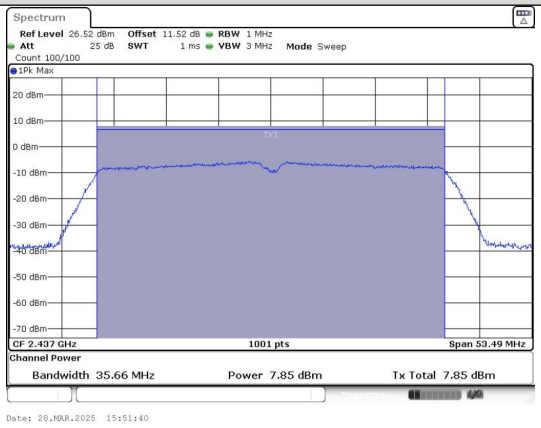
Conducted Output Power
IEEE 802.11n_20_Channel 6_Antenna 0



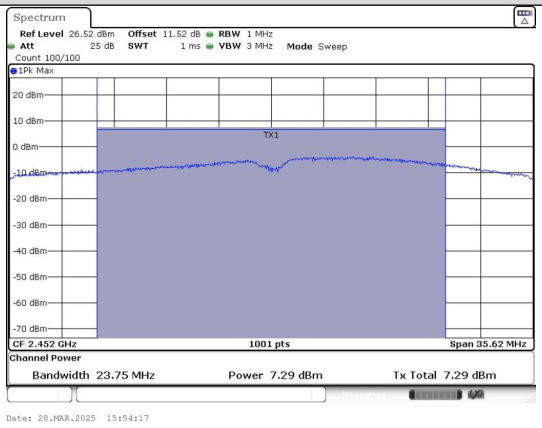
Conducted Output Power
IEEE 802.11n_20_Channel 11_Antenna 0



Conducted Output Power
IEEE 802.11n_40_Channel 3_Antenna 0



Conducted Output Power
IEEE 802.11n_40_Channel 6_Antenna 0



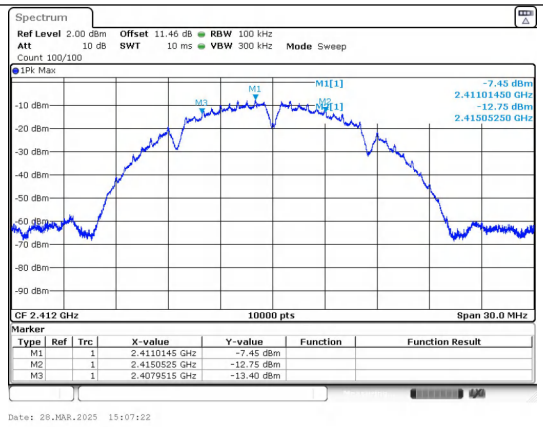
Conducted Output Power
IEEE 802.11n_40_Channel 9_Antenna 0

6dB Bandwidth

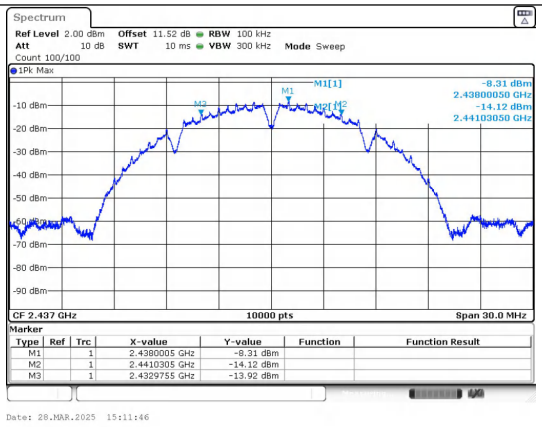
Test Result

Mode	Channel	Ant.	Center Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11b	1	0	2412	7.100	≥0.5	PASS
	6		2437	8.050		PASS
	11		2462	7.550		PASS
IEEE 802.11g	1		2412	14.03		PASS
	6		2437	15.48		PASS
	11		2462	15.03		PASS
IEEE 802.11n_20	1		2412	15.41		PASS
	6		2437	15.04		PASS
	11		2462	15.03		PASS
IEEE 802.11n_40	3		2422	30.25		PASS
	6		2437	35.66		PASS
	9		2452	23.75		PASS

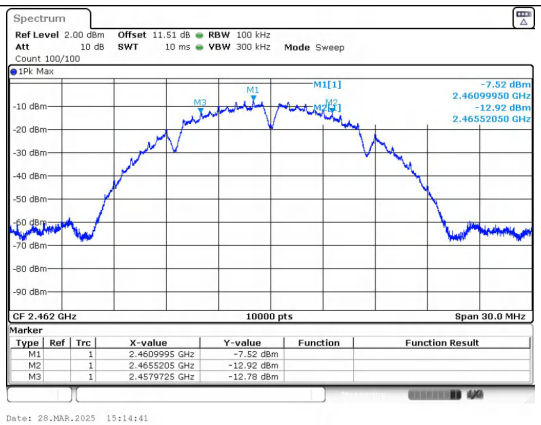
Test Graphs



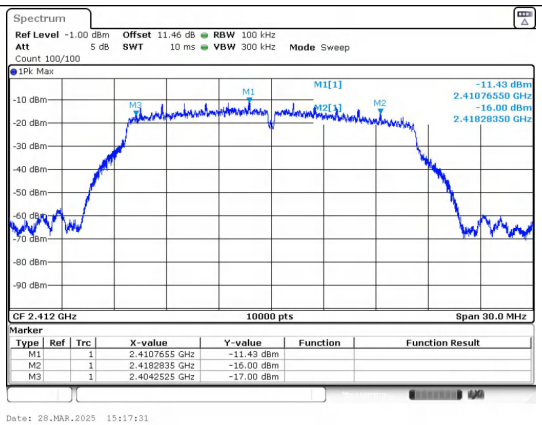
IEEE 802.11b_Channel 1_20MHz_Antenna 0



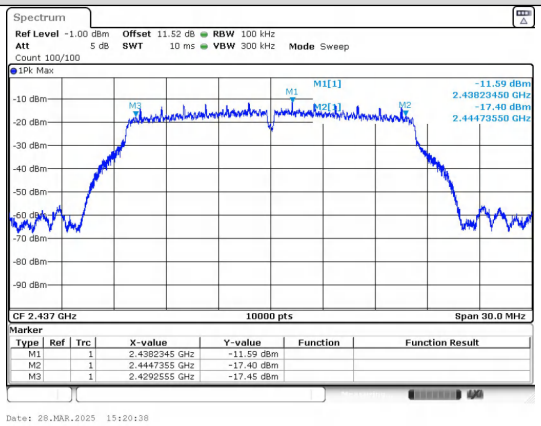
IEEE 802.11b_Channel 6_20MHz_Antenna 0



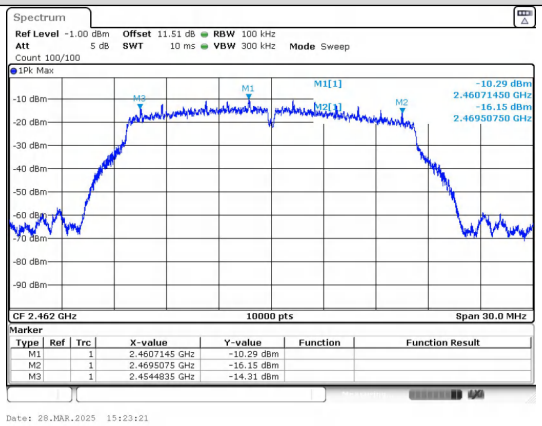
IEEE 802.11b_Channel 11_20MHz_Antenna 0



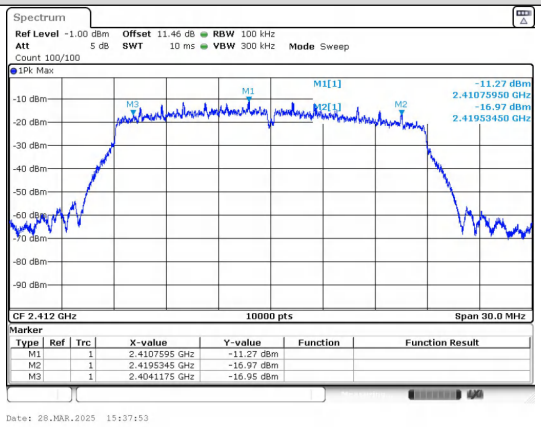
IEEE 802.11g_Channel 1_20MHz_Antenna 0



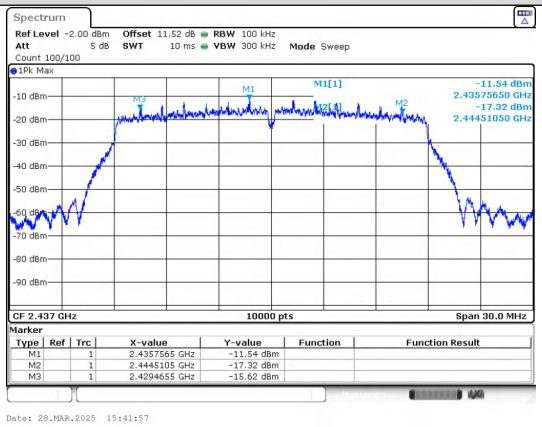
IEEE 802.11g_Channel 6_20MHz_Antenna 0



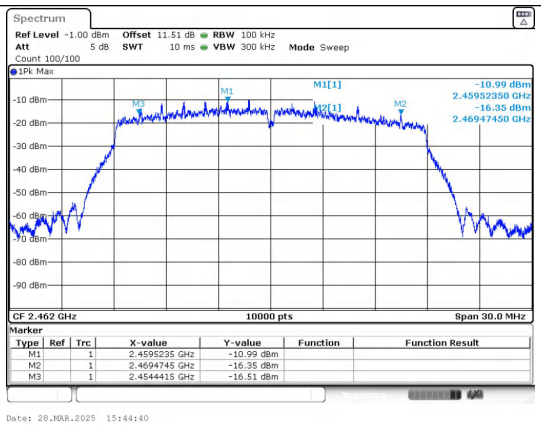
IEEE 802.11g_Channel 11_20MHz_Antenna 0



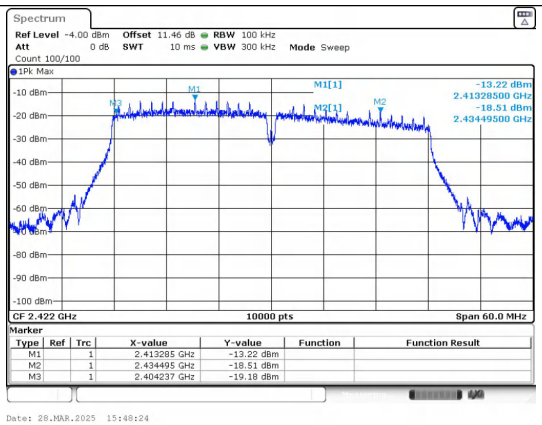
IEEE 802.11n_Channel 1_20MHz_Antenna 0



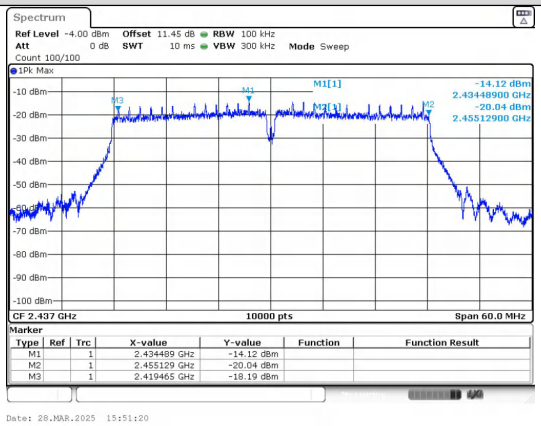
IEEE 802.11n_Channel 6_20MHz_Antenna 0



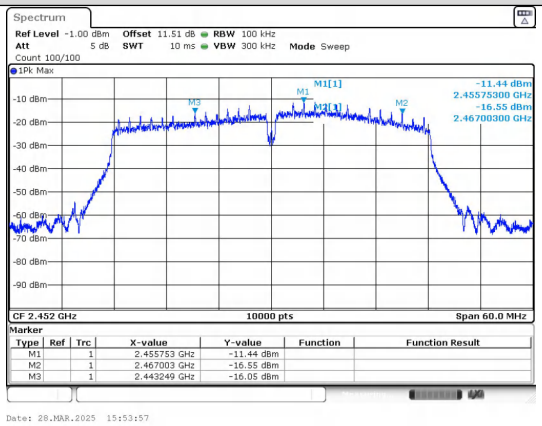
IEEE 802.11n_Channel 11_20MHz_Antenna 0



IEEE 802.11n_Channel 3_40MHz_Antenna 0



IEEE 802.11n_Channel 6_40MHz_Antenna 0



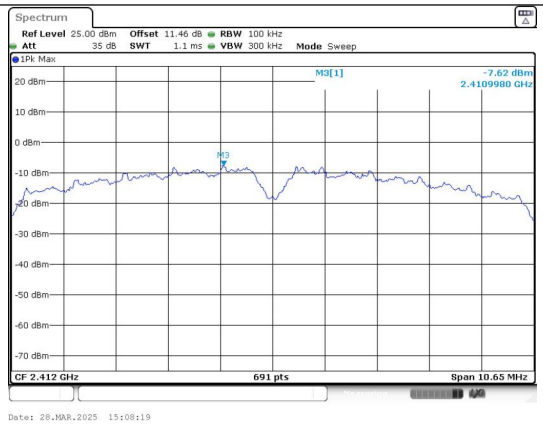
IEEE 802.11n_Channel 9_40MHz_Antenna 0

Conducted Out Of Band Emission

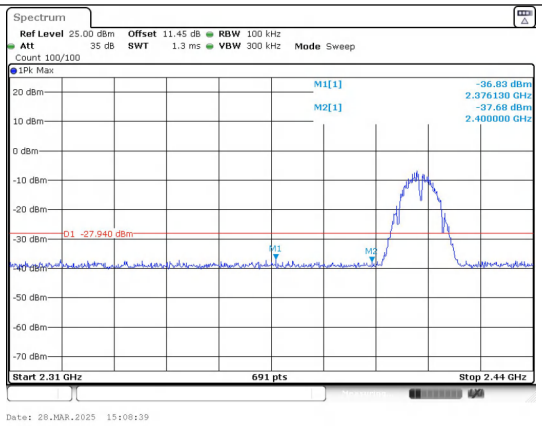
Test Result

Mode	Channel	Ant.	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
IEEE 802.11b	1	0	2376.13	-36.834	-27.94	-8.894	PASS
			2400.00	-37.680	-27.94	-9.740	PASS
			4578.30	-43.676	-27.94	-15.736	PASS
	6		5760.20	-42.583	-28.3	-14.283	PASS
	11		2483.50	-37.650	-27.49	-10.160	PASS
			6929.63	-42.546	-27.49	-15.056	PASS
IEEE 802.11g	1		2391.93	-36.655	-30.69	-5.965	PASS
			2400.00	-37.830	-30.69	-7.140	PASS
			6896.30	-41.852	-30.69	-11.162	PASS
	6		6161.38	-43.676	-31.23	-12.446	PASS
	11		2483.50	-38.360	-30.62	-7.740	PASS
			6274.58	-42.294	-30.62	-11.674	PASS
IEEE 802.11n_20	1		2390.43	-36.358	-30.41	-5.948	PASS
			2400.00	-38.780	-30.41	-8.370	PASS
			6903.00	-43.353	-30.41	-12.943	PASS
	6		6967.08	-43.618	-31.08	-12.538	PASS
	11		2483.50	-39.030	-30.1	-8.930	PASS
			22006.5	-42.748	-30.1	-12.648	PASS
IEEE 802.11n_40	3		2324.58	-36.242	-33.09	-3.152	PASS
			2400.00	-38.850	-33.09	-5.760	PASS
			6976.20	-43.420	-33.09	-10.330	PASS
	6		6894.67	-42.939	-33.58	-9.359	PASS
	9		2483.50	-38.060	-31.81	-6.250	PASS
			22006.5	-43.121	-31.81	-11.311	PASS

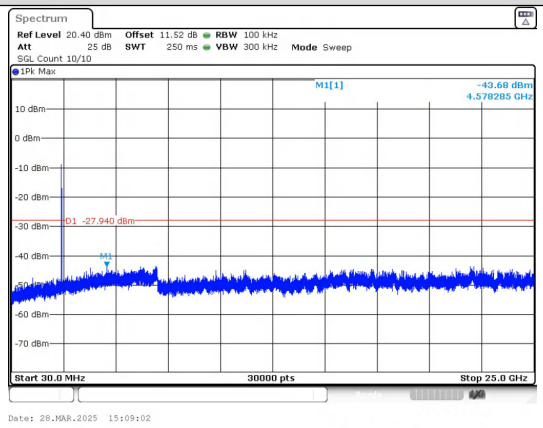
Test Graphs



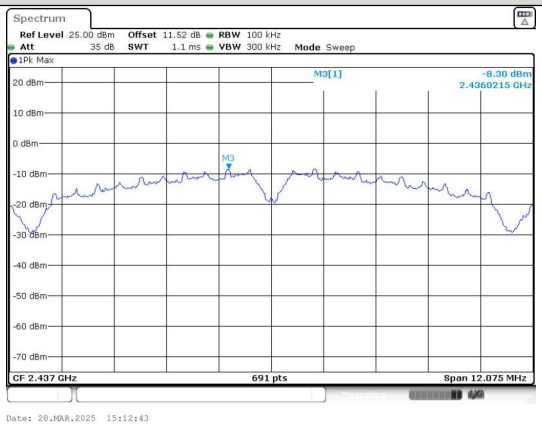
In-Band Reference Level
IEEE 802.11b_Channel 1_20MHz_Antenna 0



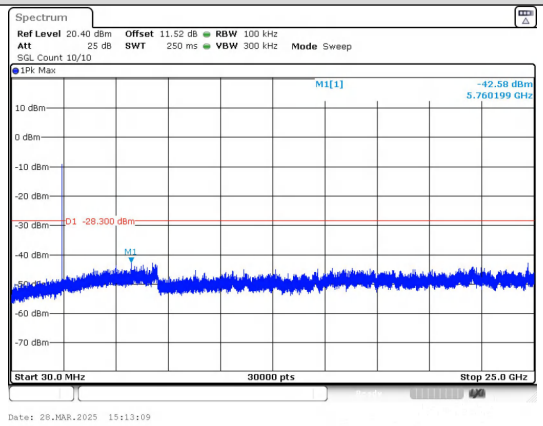
Out Of Band Emission
IEEE 802.11b_Channel 1_20MHz_Antenna 0

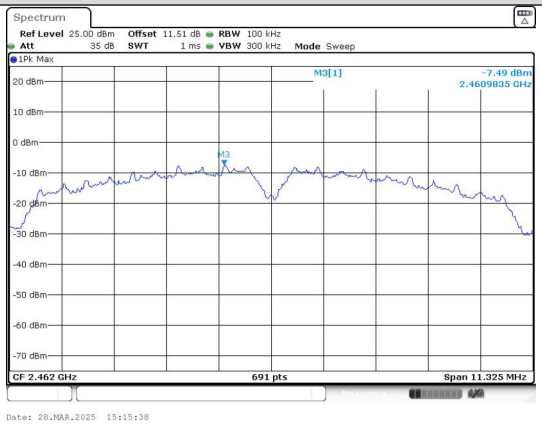


30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 1_20MHz_Antenna 0

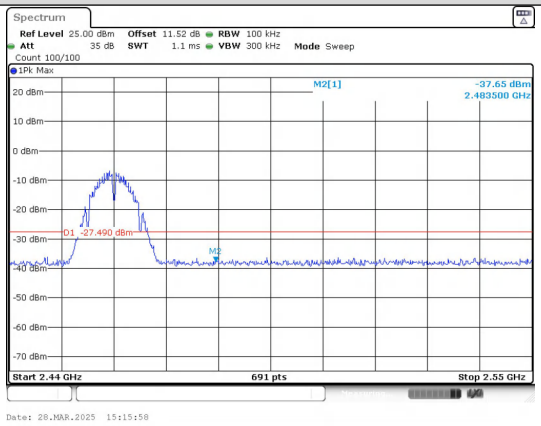


In-Band Reference Level
IEEE 802.11b_Channel 6_20MHz_Antenna 0

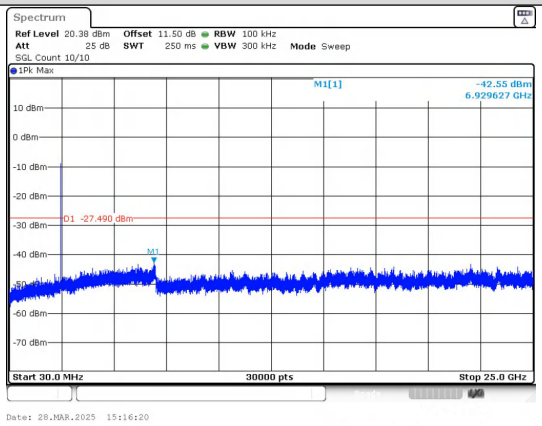




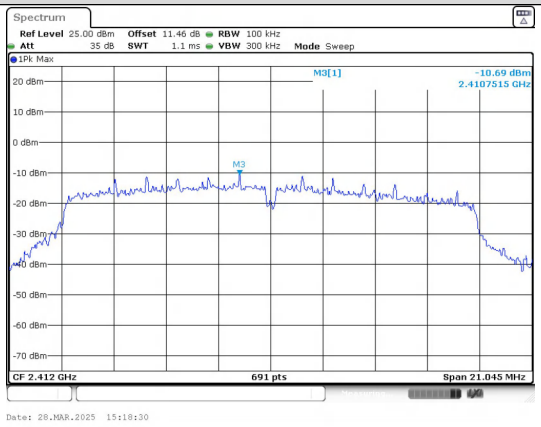
30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 6_20MHz_Antenna 0



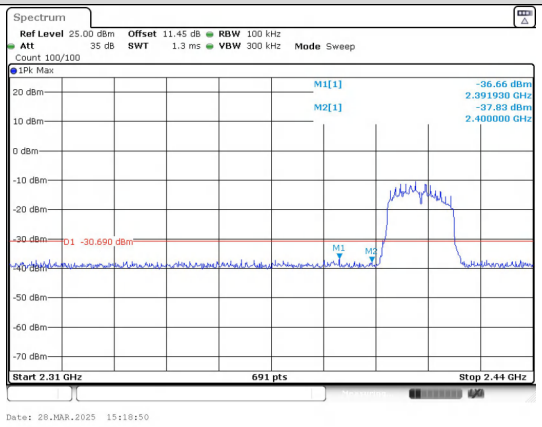
In-Band Reference Level
IEEE 802.11b_Channel 11_20MHz_Antenna 0



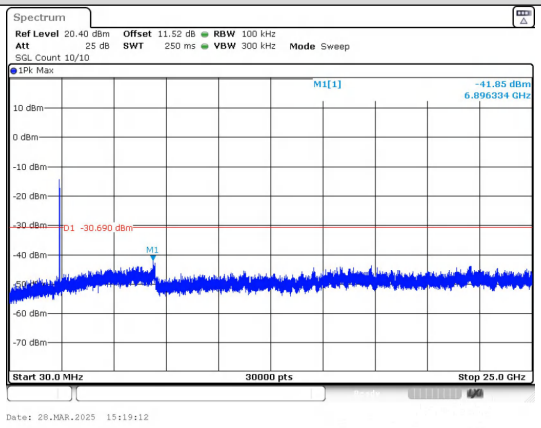
Out Of Band Emission
IEEE 802.11b_Channel 11_20MHz_Antenna 0



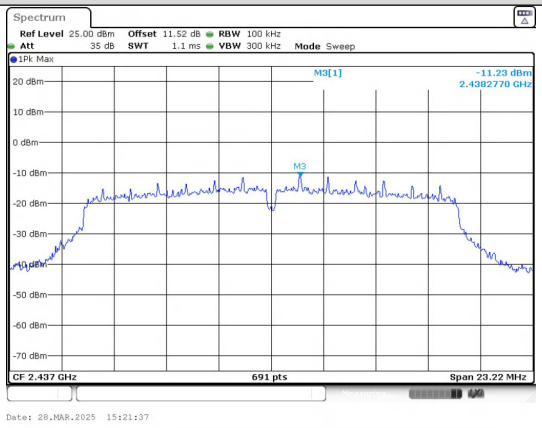
30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 11_20MHz_Antenna 0



In-Band Reference Level
IEEE 802.11g_Channel 1_20MHz_Antenna 0



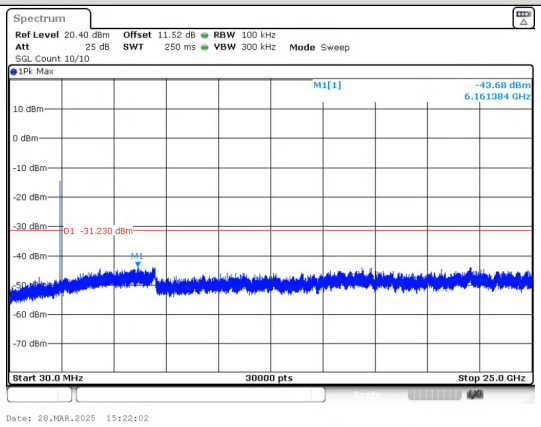
Out Of Band Emission
IEEE 802.11g_Channel 1_20MHz_Antenna 0



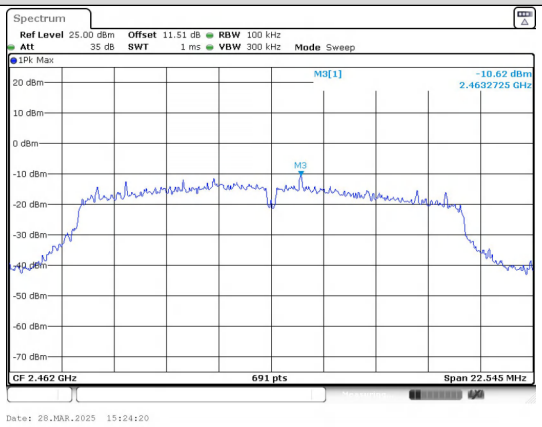
30.0 MHz - 25000.0 MHz

In-Band Reference Level

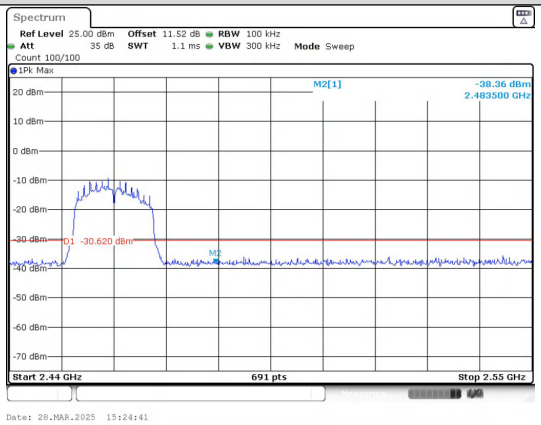
IEEE 802.11g_Channel 1_20MHz_Antenna 0



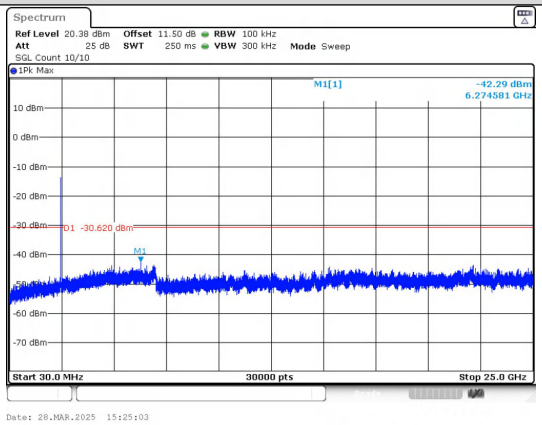
IEEE 802.11g_Channel 6_20MHz_Antenna 0



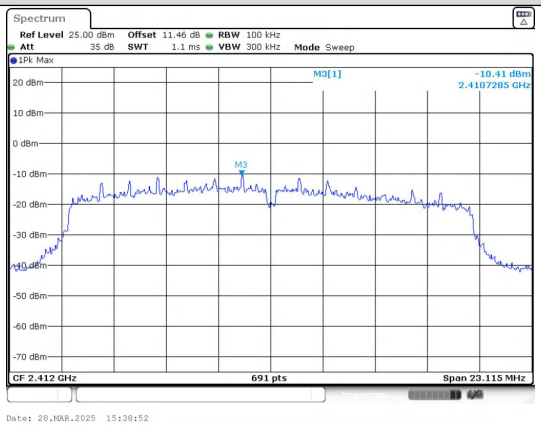
30.0 MHz - 25000.0 MHz
IEEE 802.11g_Channel 6_20MHz_Antenna 0



In-Band Reference Level
IEEE 802.11g_Channel 11_20MHz_Antenna 0



Out Of Band Emission
IEEE 802.11g_Channel 11_20MHz_Antenna 0



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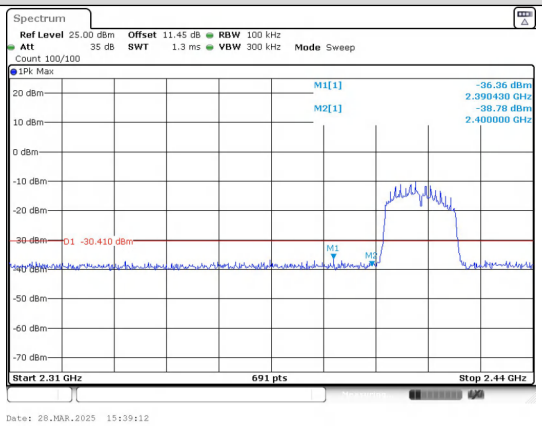
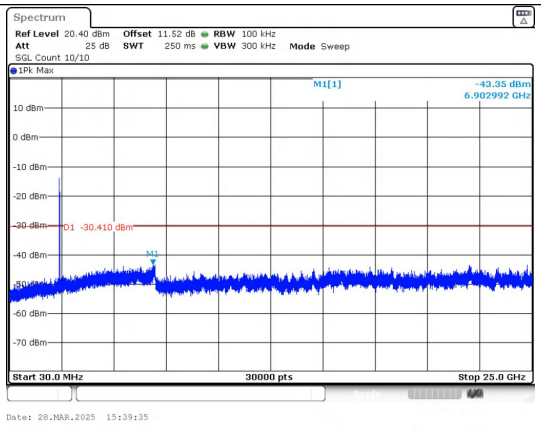
IEEE 802.11g_Channel 11_20MHz_Antenna 0



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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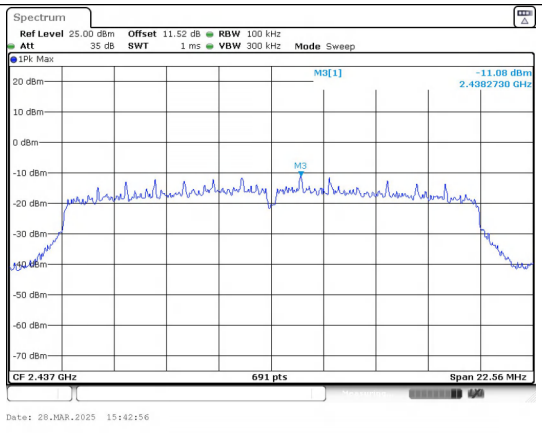
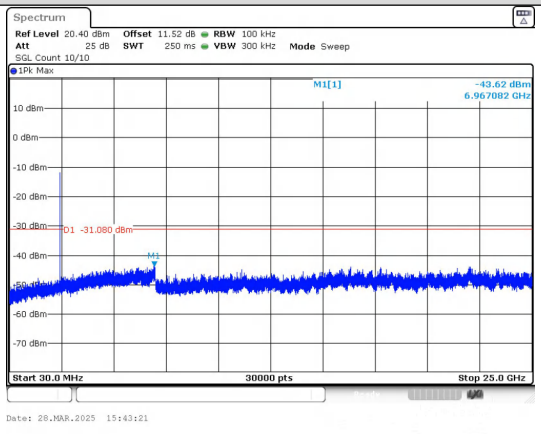
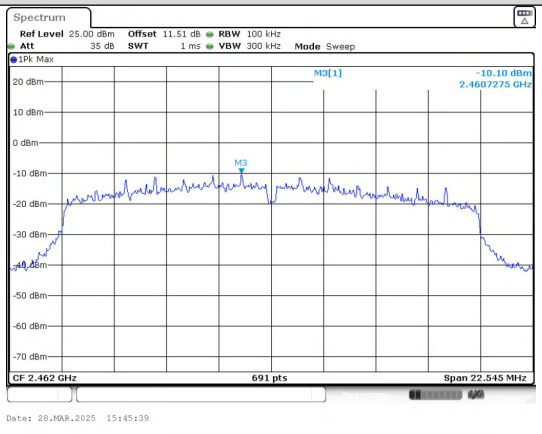
IEEE 802.11n_Channel 1_20MHz_Antenna 0



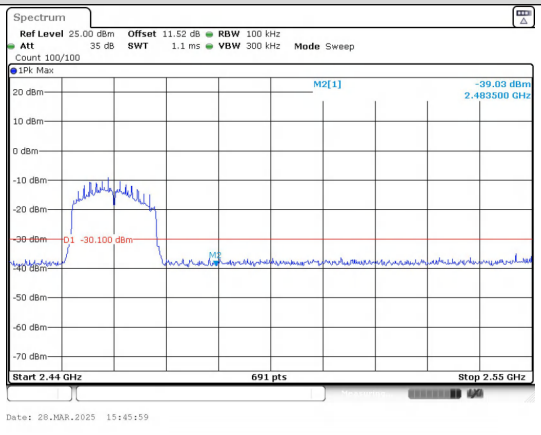
In-Band Reference Level
IEEE 802.11n_Channel 6_20MHz_Antenna 0



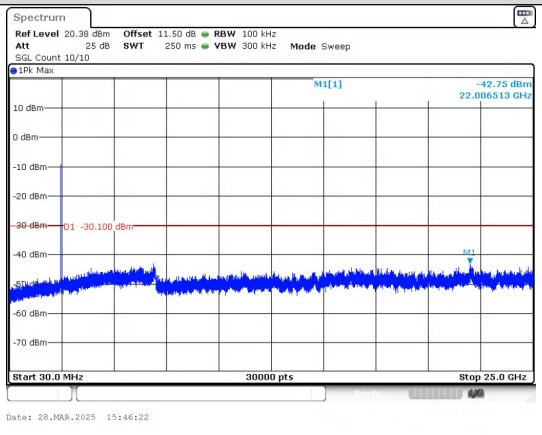
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 6_20MHz_Antenna 0



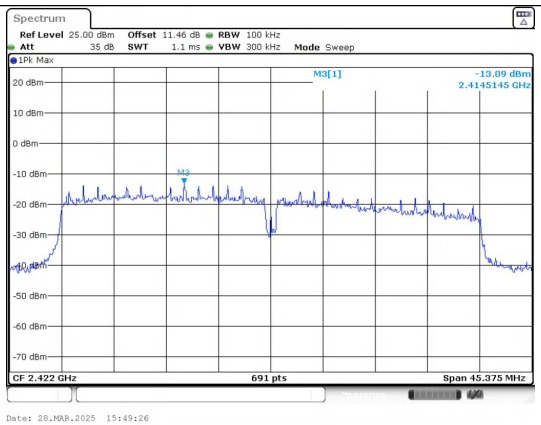
In-Band Reference Level
IEEE 802.11n_Channel 11_20MHz_Antenna 0



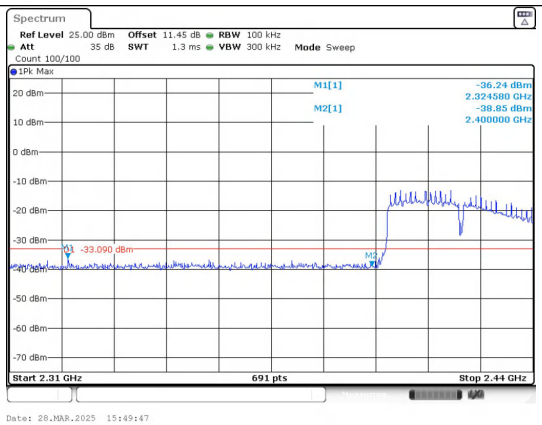
Out Of Band Emission
IEEE 802.11n_Channel 11_20MHz_Antenna 0



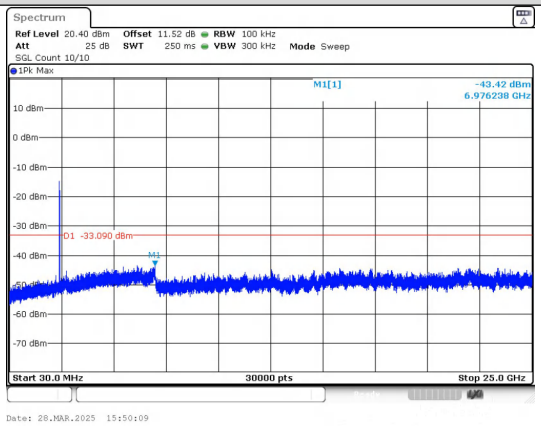
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 11_20MHz_Antenna 0



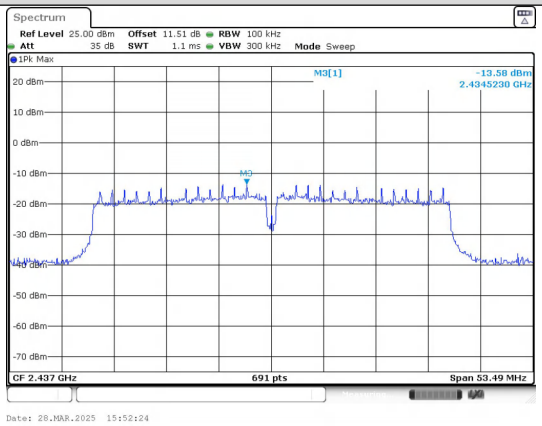
In-Band Reference Level
IEEE 802.11n_Channel 3_40MHz_Antenna 0



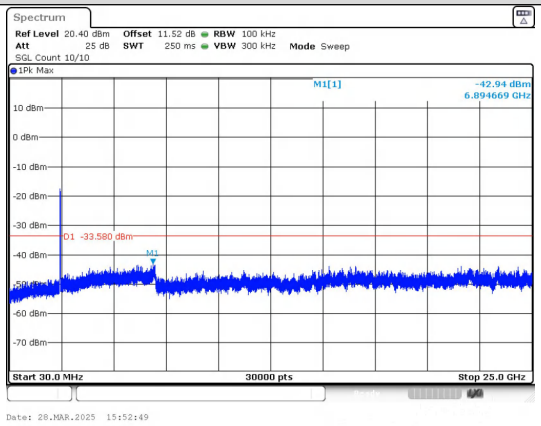
Out Of Band Emission
IEEE 802.11n_Channel 3_40MHz_Antenna 0



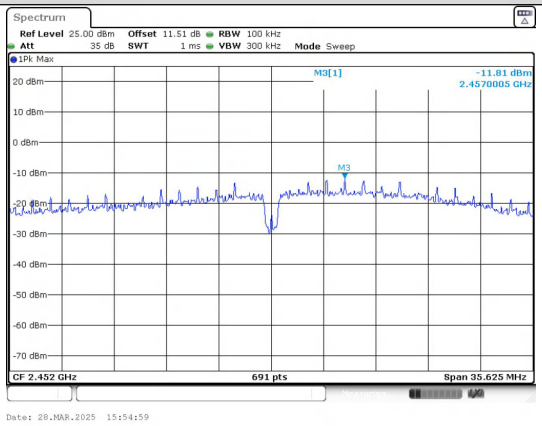
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 3_40MHz_Antenna 0



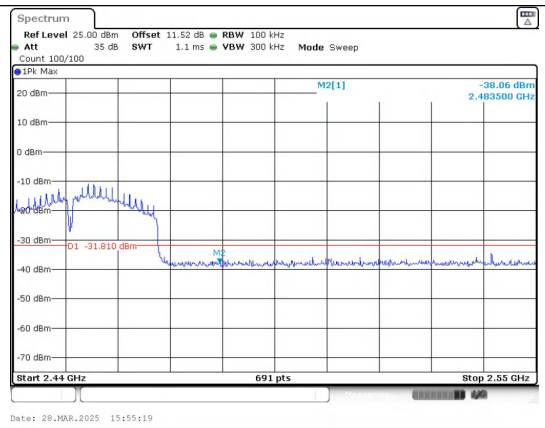
In-Band Reference Level
IEEE 802.11n_Channel 6_40MHz_Antenna 0



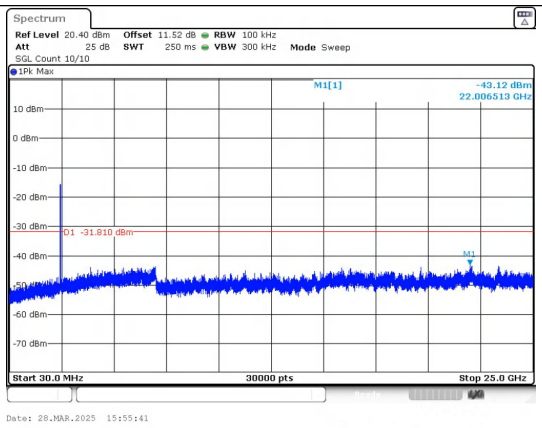
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 6_40MHz_Antenna 0



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-----