Appendix Report

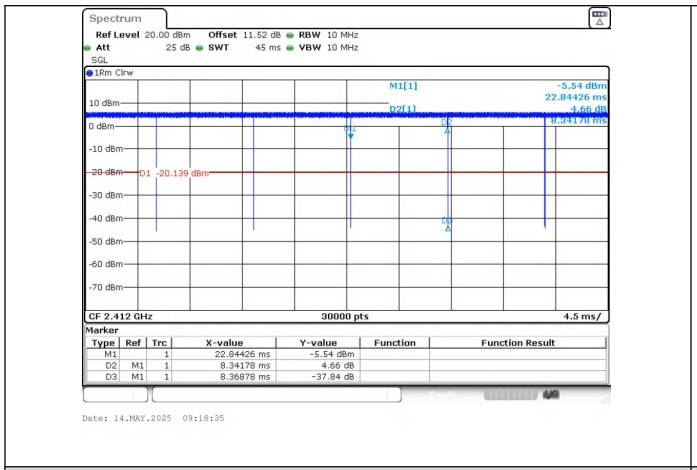
Project No.:	CISR250512038
Test Engineer:	James Wang
Supervised by:	Rory Huang

Duty Cycle

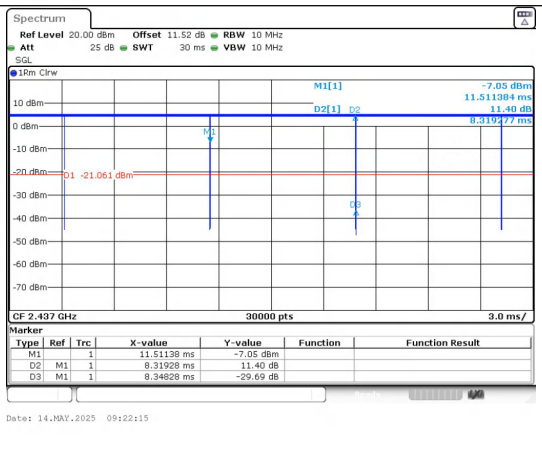
Test Result

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	8.369	99.68	0.9968	0.0139	0.1199
		6		8.319	8.348	99.65	0.9965	0.0152	0.1202
		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		1.396	1.429	97.69	0.9769	0.1015	0.7163
IEEE 802.11n_20	MCS 0	1		1.304	1.337	97.53	0.9753	0.1086	0.7669
		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	94.94	0.9494	0.2255	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

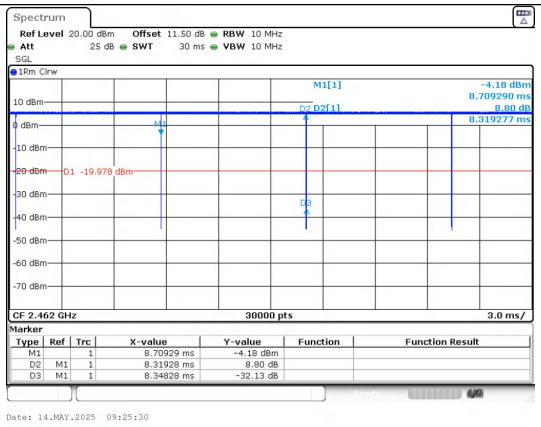
Test Graphs



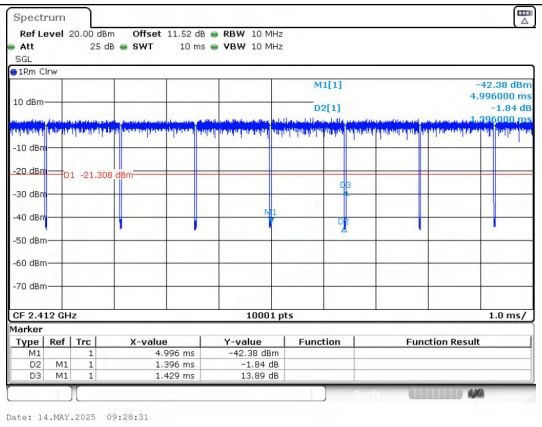
IEEE 802.11b_20MHz_Channel 1



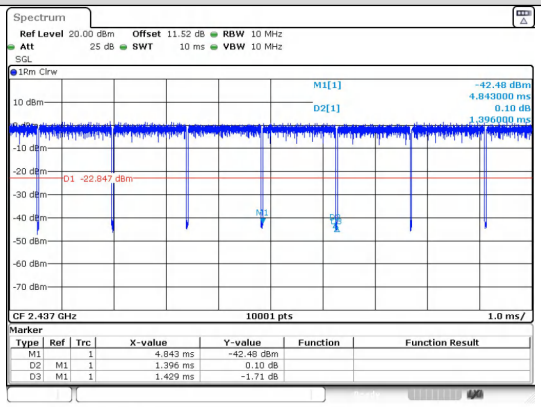
IEEE 802.11b_20MHz_Channel 6



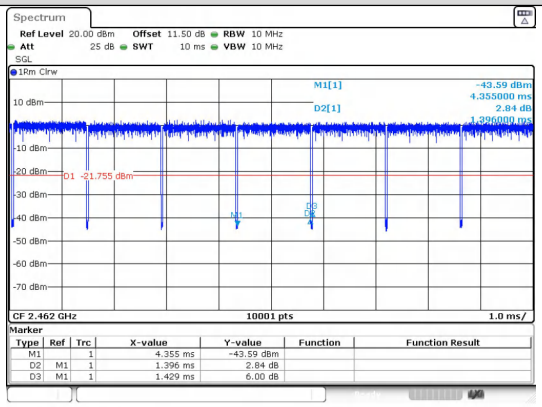
IEEE 802.11b_20MHz_Channel 11



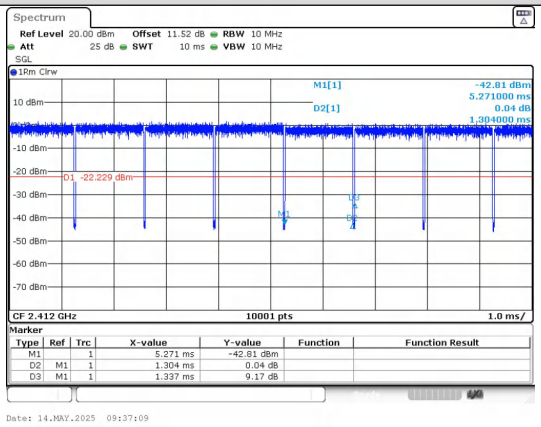
IEEE 802.11g_20MHz_Channel 1



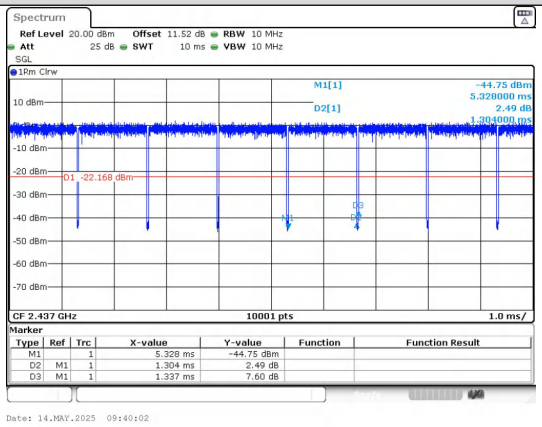
IEEE 802.11g_20MHz_Channel 6



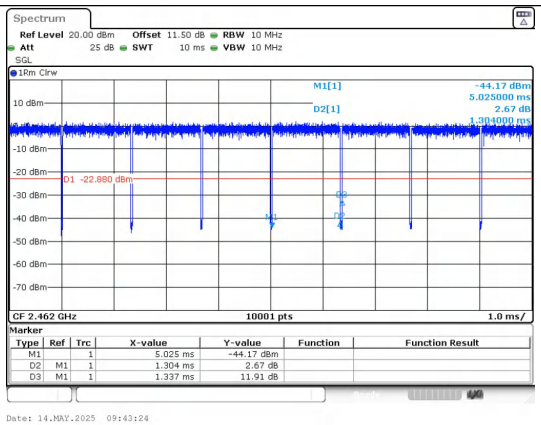
IEEE 802.11g_20MHz_Channel 11



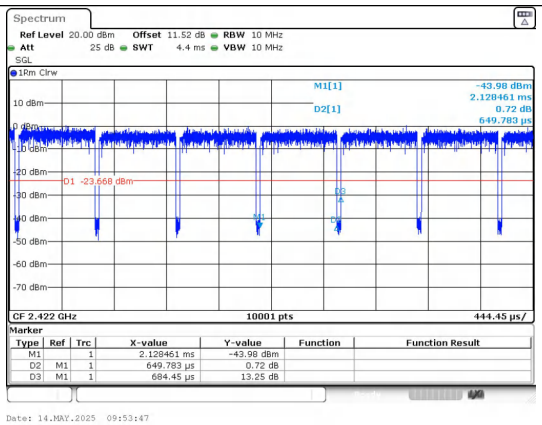
IEEE 802.11n_20MHz_Channel 1



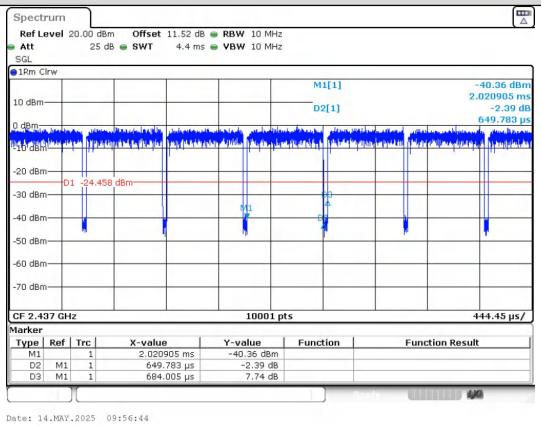
IEEE 802.11n_20MHz_Channel 6



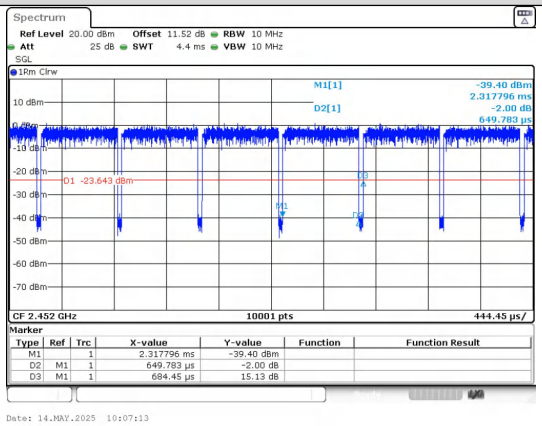
IEEE 802.11n_20MHz_Channel 11



IEEE 802.11n_40MHz_Channel 3



IEEE 802.11n_40MHz_Channel 6



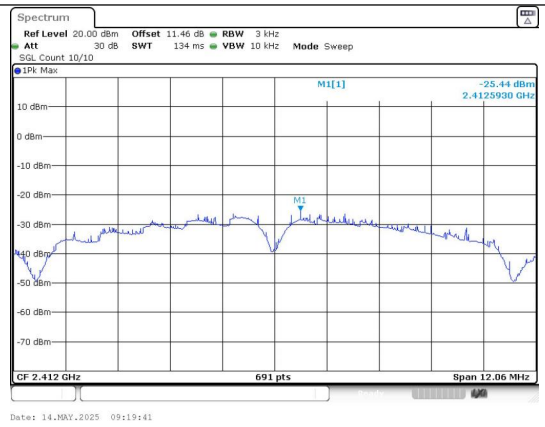
IEEE 802.11n_40MHz_Channel 9

Power Spectral Density

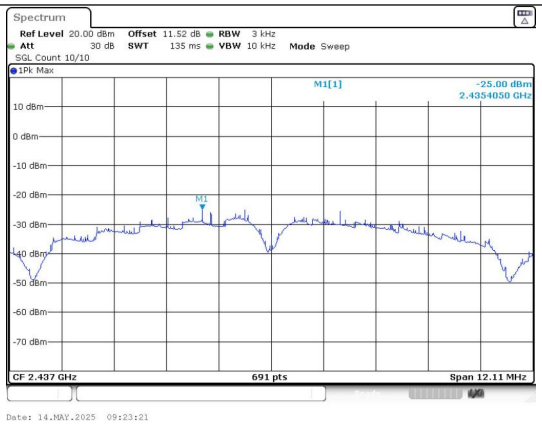
Test Result

Mode	Channel	PSD (dBm/3kHz) Ant. 0	Limit (dBm/3kHz)	Result
IEEE 802.11b	1	-25.440	≤8	PASS
	6	-25.000		PASS
	11	-23.570		PASS
IEEE 802.11g	1	-31.390		PASS
	6	-31.350		PASS
	11	-30.500		PASS
IEEE 802.11n_20	1	-32.160		PASS
	6	-30.870		PASS
	11	-29.600		PASS
IEEE 802.11n_40	3	-31.610		PASS
	6	-33.350		PASS
	9	-31.040		PASS

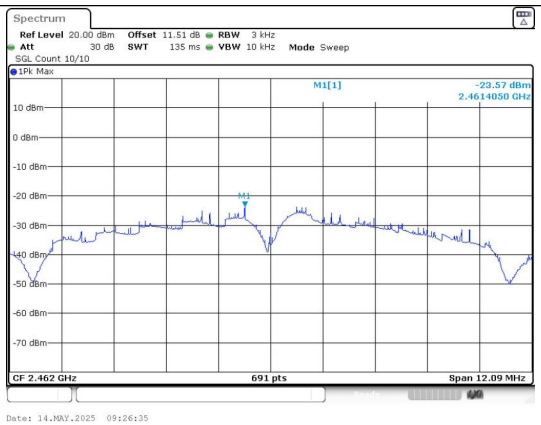
Test Graphs



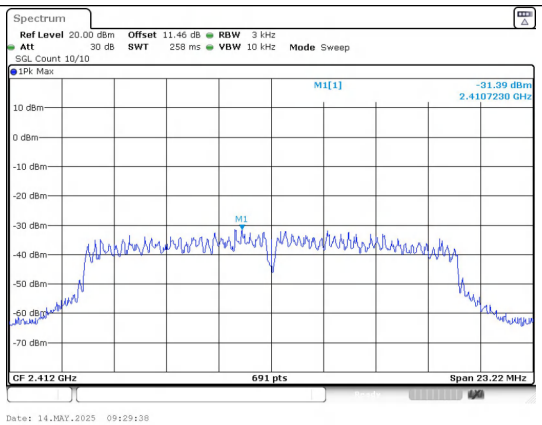
IEEE 802.11b_Channel 1_20MHz_Antenna 0



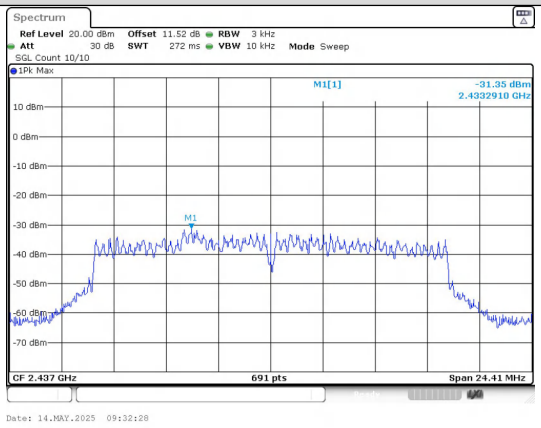
IEEE 802.11b_Channel 6_20MHz_Antenna 0



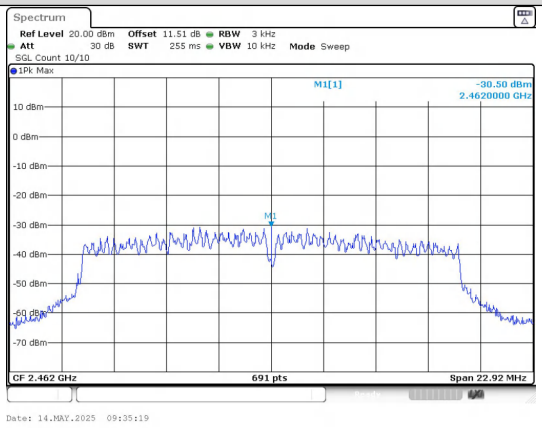
IEEE 802.11b_Channel 11_20MHz_Antenna 0



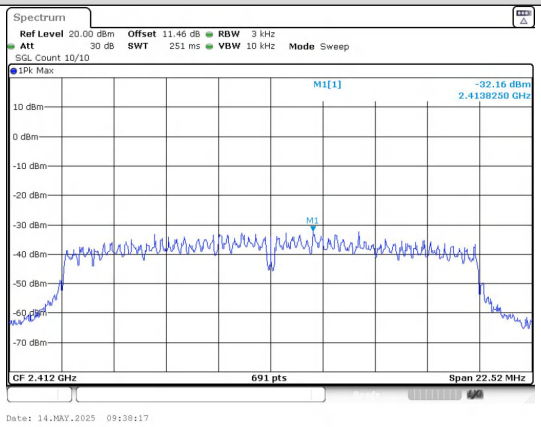
IEEE 802.11g_Channel 1_20MHz_Antenna 0



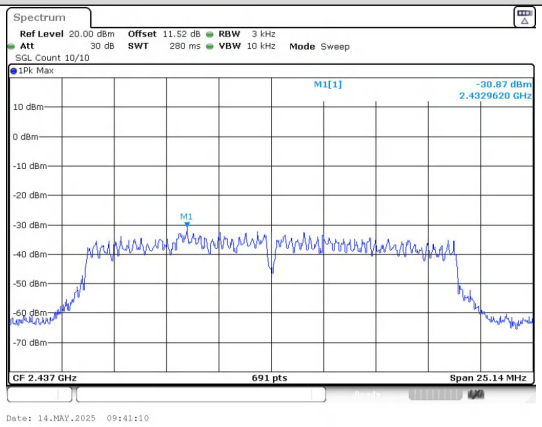
IEEE 802.11g_Channel 6_20MHz_Antenna 0



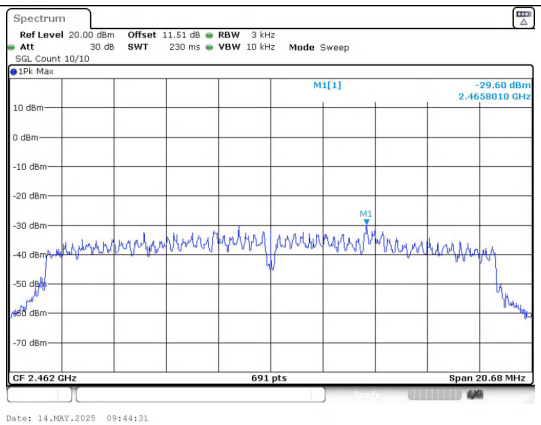
IEEE 802.11g_Channel 11_20MHz_Antenna 0



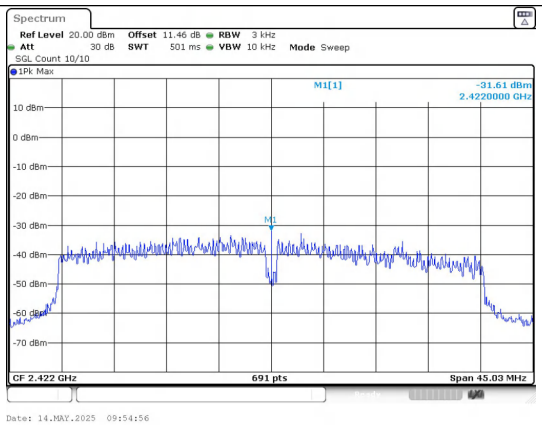
IEEE 802.11n_Channel 1_20MHz_Antenna 0



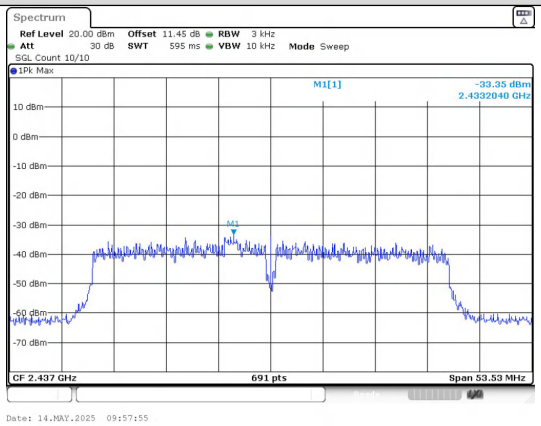
IEEE 802.11n_Channel 6_20MHz_Antenna 0



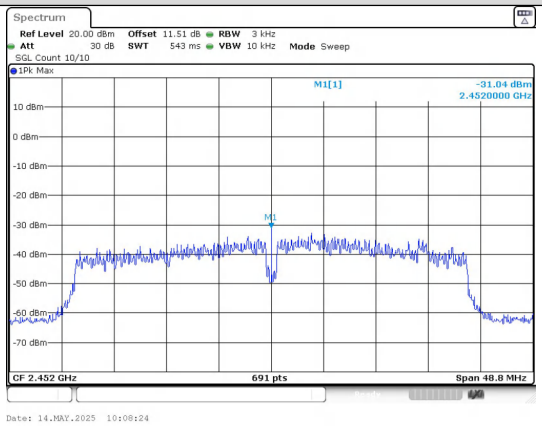
IEEE 802.11n_Channel 11_20MHz_Antenna 0



IEEE 802.11n_Channel 3_40MHz_Antenna 0



IEEE 802.11n_Channel 6_40MHz_Antenna 0



IEEE 802.11n_Channel 9_40MHz_Antenna 0

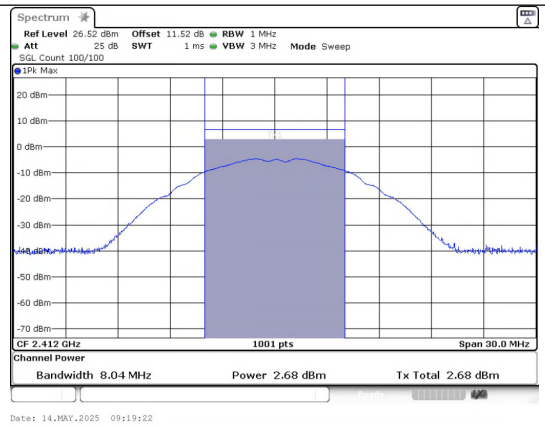
Conducted Output Power

Test Result

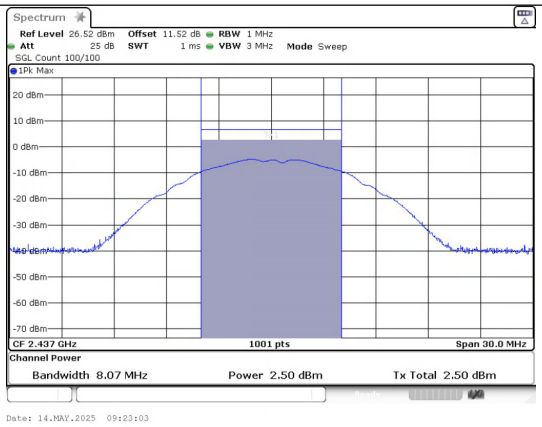
Conducted Output Power

Mode	Channel	Ant. 0 (dBm)	Limit (dBm)	Result
IEEE 802.11b	1	2.68	≤30	PASS
	6	2.50	≤30	PASS
	11	2.94	≤30	PASS
IEEE 802.11g	1	3.08	≤30	PASS
	6	2.58	≤30	PASS
	11	3.65	≤30	PASS
IEEE 802.11n_20	1	2.16	≤30	PASS
	6	2.30	≤30	PASS
	11	2.57	≤30	PASS
IEEE 802.11n_40	3	2.51	≤30	PASS
	6	2.64	≤30	PASS
	9	2.81	≤30	PASS

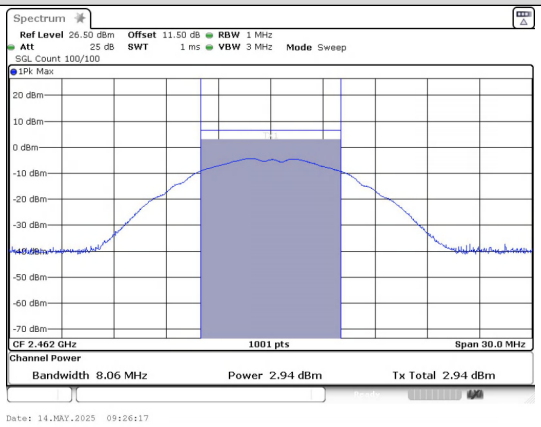
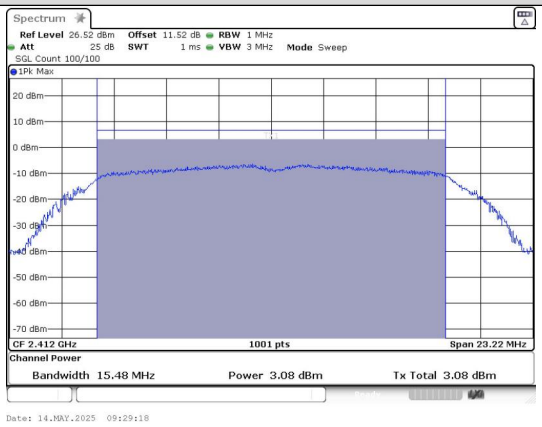
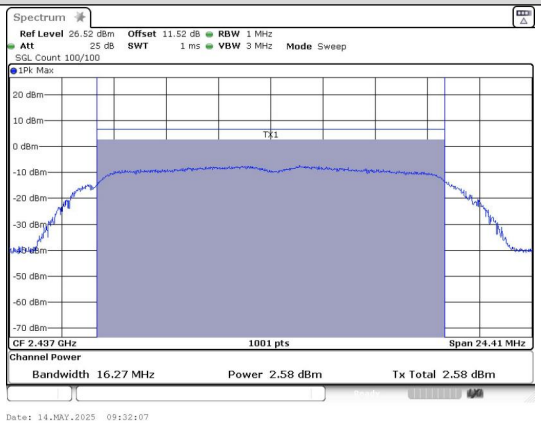
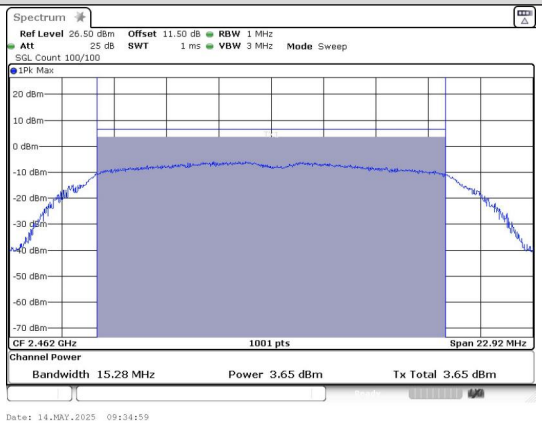
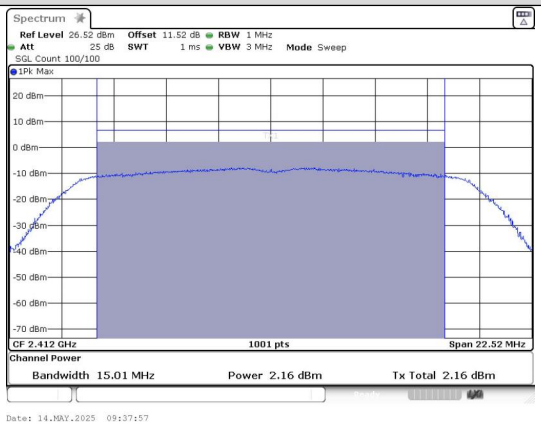
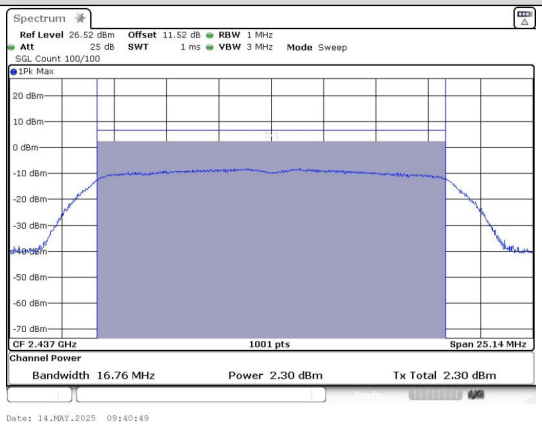
Test Graphs

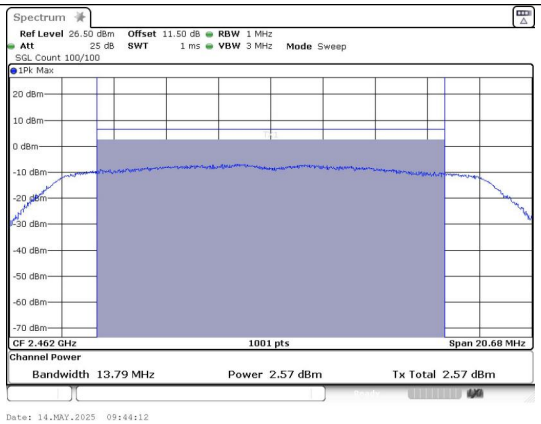


Conducted Output Power

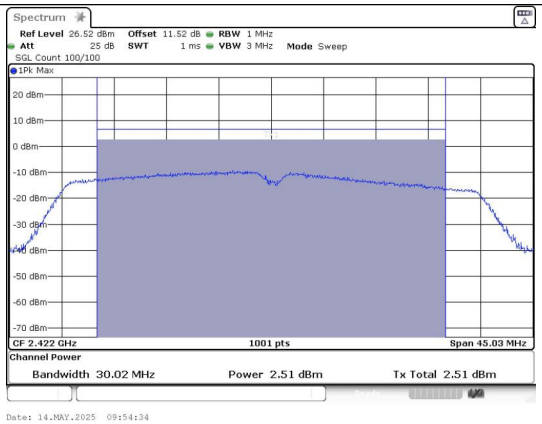


Conducted Output Power

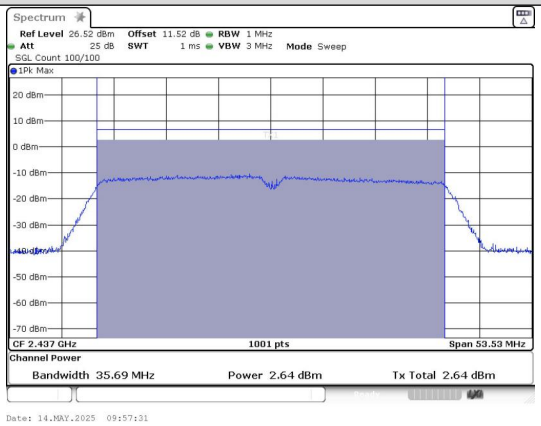
IEEE 802.11b_Channel 1_Antenna 0	IEEE 802.11b_Channel 6_Antenna 0
	
Conducted Output Power IEEE 802.11b_Channel 11_Antenna 0	Conducted Output Power IEEE 802.11g_Channel 1_Antenna 0
	
Conducted Output Power IEEE 802.11g_Channel 6_Antenna 0	Conducted Output Power IEEE 802.11g_Channel 11_Antenna 0
	
Conducted Output Power IEEE 802.11n_20_Channel 1_Antenna 0	Conducted Output Power IEEE 802.11n_20_Channel 6_Antenna 0



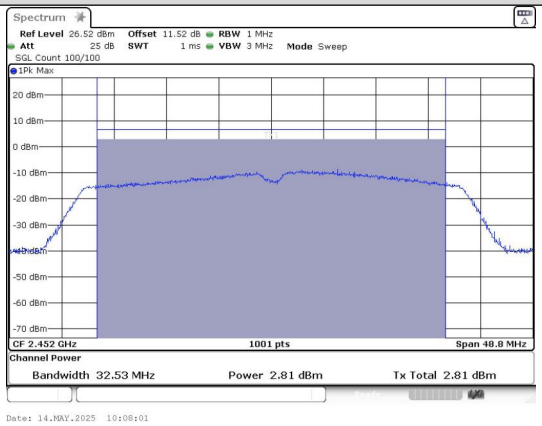
Conducted Output Power
IEEE 802.11n_20_Channel 11_Antenna 0



Conducted Output Power
IEEE 802.11n_40_Channel 3_Antenna 0



Conducted Output Power
IEEE 802.11n_40_Channel 6_Antenna 0



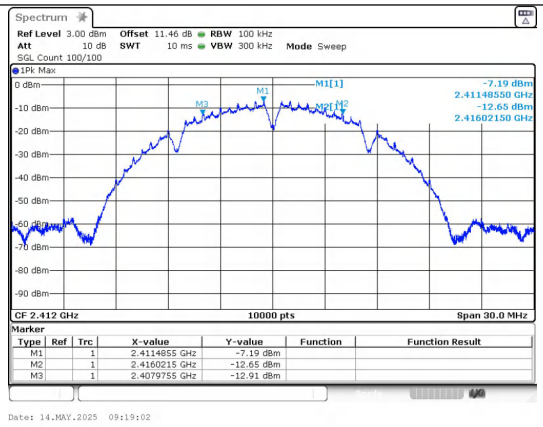
Conducted Output Power
IEEE 802.11n_40_Channel 9_Antenna 0

6dB Bandwidth

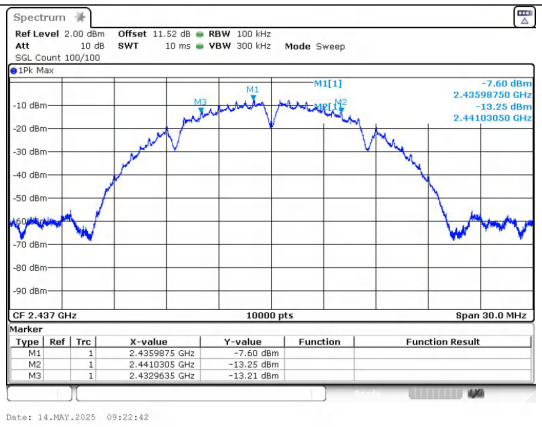
Test Result

Mode	Channel	Ant.	Center Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11b	1	0	2412	8.040	≥0.5	PASS
	6		2437	8.070		PASS
	11		2462	8.060		PASS
IEEE 802.11g	1		2412	15.48		PASS
	6		2437	16.27		PASS
	11		2462	15.28		PASS
IEEE 802.11n_20	1		2412	15.01		PASS
	6		2437	16.76		PASS
	11		2462	13.79		PASS
IEEE 802.11n_40	3		2422	30.02		PASS
	6		2437	35.69		PASS
	9		2452	32.53		PASS

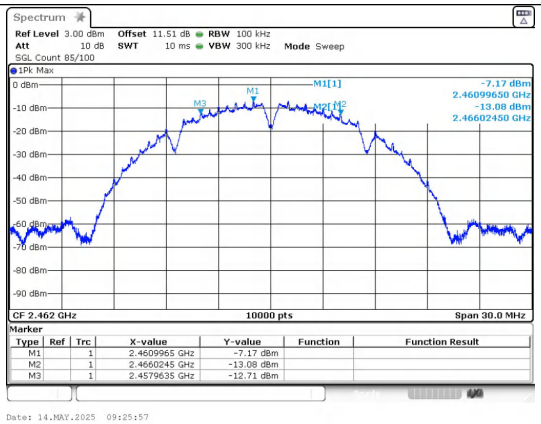
Test Graphs



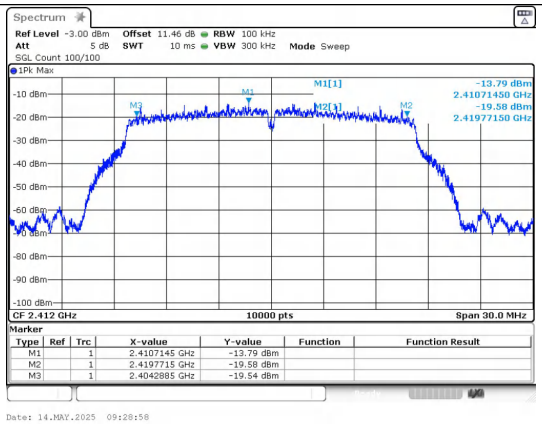
IEEE 802.11b_Channel 1_20MHz_Antenna 0



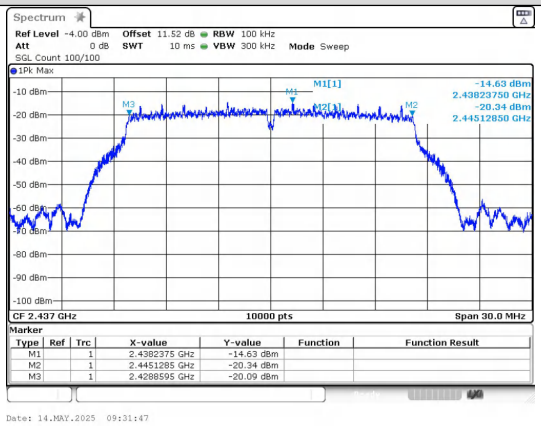
IEEE 802.11b_Channel 6_20MHz_Antenna 0



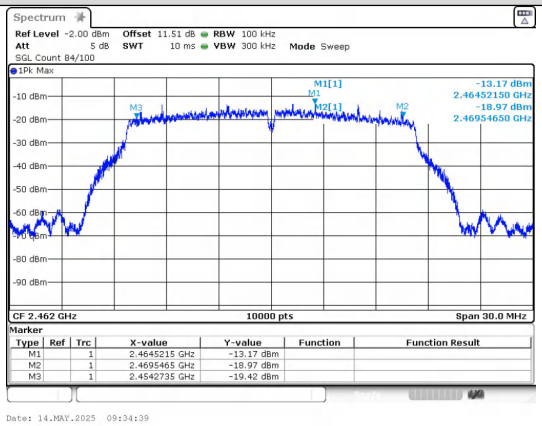
IEEE 802.11b_Channel 11_20MHz_Antenna 0



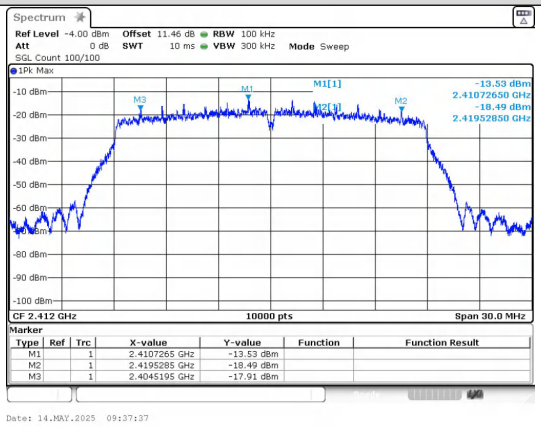
IEEE 802.11g_Channel 1_20MHz_Antenna 0



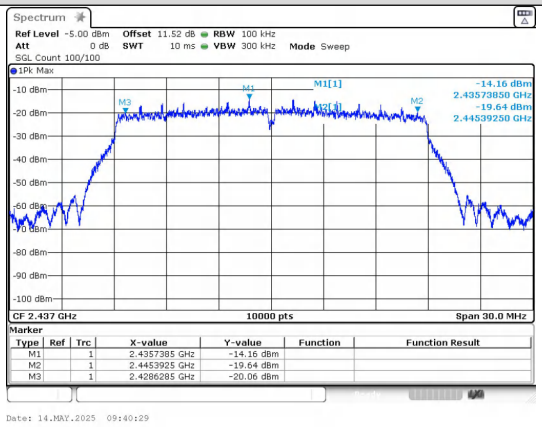
IEEE 802.11g_Channel 6_20MHz_Antenna 0



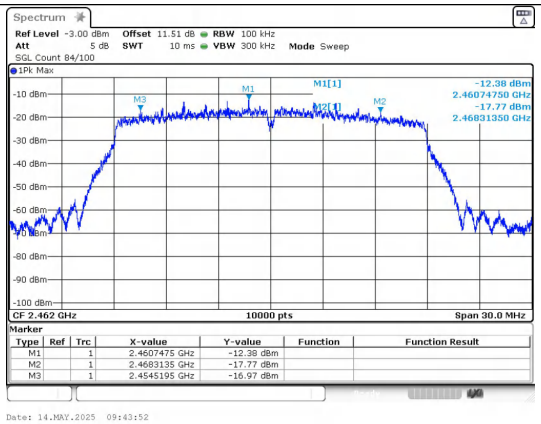
IEEE 802.11g_Channel 11_20MHz_Antenna 0



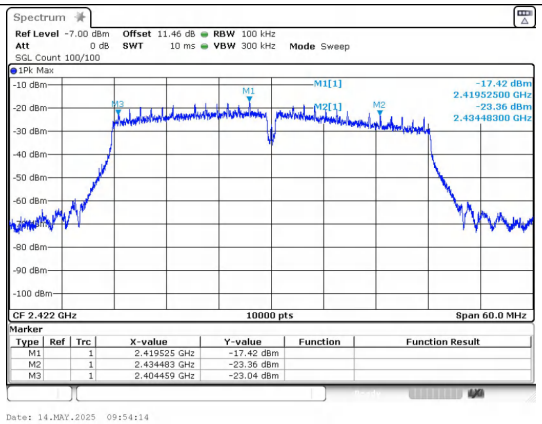
IEEE 802.11n_Channel 1_20MHz_Antenna 0



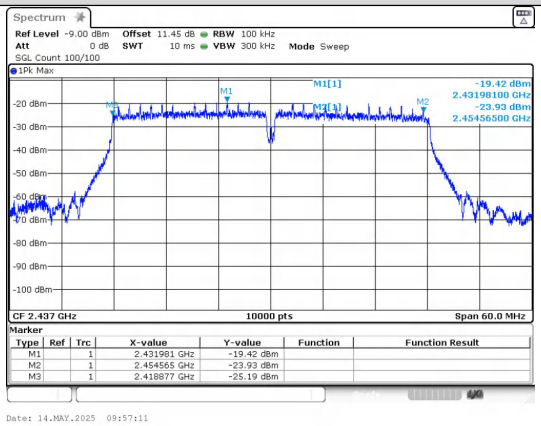
IEEE 802.11n_Channel 6_20MHz_Antenna 0



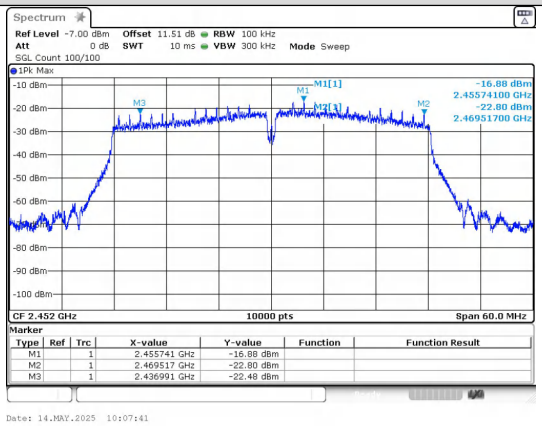
IEEE 802.11n_Channel 11_20MHz_Antenna 0



IEEE 802.11n_Channel 3_40MHz_Antenna 0



IEEE 802.11n_Channel 6_40MHz_Antenna 0



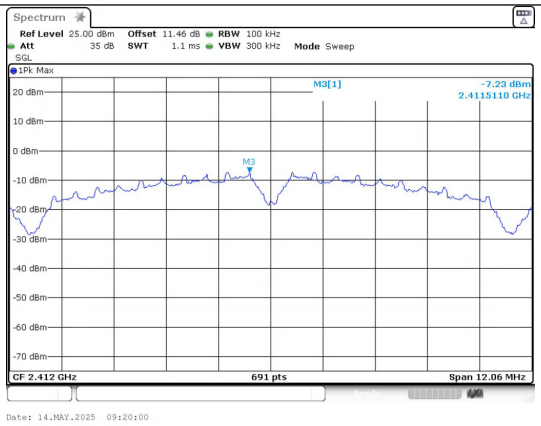
IEEE 802.11n_Channel 9_40MHz_Antenna 0

Conducted Out Of Band Emission

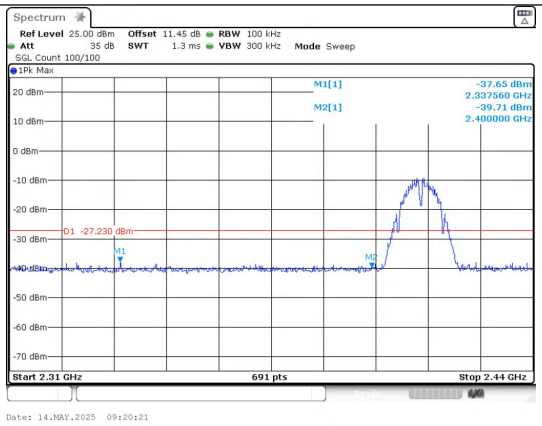
Test Result

Mode	Channel	Ant.	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
IEEE 802.11b	1	0	2337.56	-37.651	-27.23	-10.421	PASS
			2400.00	-39.710	-27.23	-12.480	PASS
			6946.30	-44.841	-27.23	-17.611	PASS
	6		6905.49	-44.305	-27.58	-16.725	PASS
	11		2483.50	-39.210	-27.23	-11.980	PASS
			6940.45	-44.526	-27.23	-17.296	PASS
IEEE 802.11g	1		2384.03	-38.222	-33.08	-5.142	PASS
			2400.00	-40.200	-33.08	-7.120	PASS
			16309.2	-44.493	-33.08	-11.413	PASS
	6		6917.14	-44.994	-33.75	-11.244	PASS
	11		2483.50	-38.660	-33.26	-5.400	PASS
			6819.76	-44.655	-33.26	-11.395	PASS
IEEE 802.11n_20	1		2383.65	-37.633	-33.82	-3.813	PASS
			2400.00	-40.280	-33.82	-6.460	PASS
			6912.10	-44.125	-33.82	-10.305	PASS
	6		5855.08	-44.438	-34.18	-10.258	PASS
	11		2483.50	-39.710	-33.79	-5.920	PASS
			6916.31	-43.488	-33.79	-9.698	PASS
IEEE 802.11n_40	3		2315.36	-37.752	-34.93	-2.822	PASS
			2400.00	-40.020	-34.93	-5.090	PASS
			22063.1	-44.333	-34.93	-9.403	PASS
	6		6902.16	-43.999	-38.65	-5.349	PASS
	9		2483.50	-39.710	-35.29	-4.420	PASS
			6998.71	-43.499	-35.29	-8.209	PASS

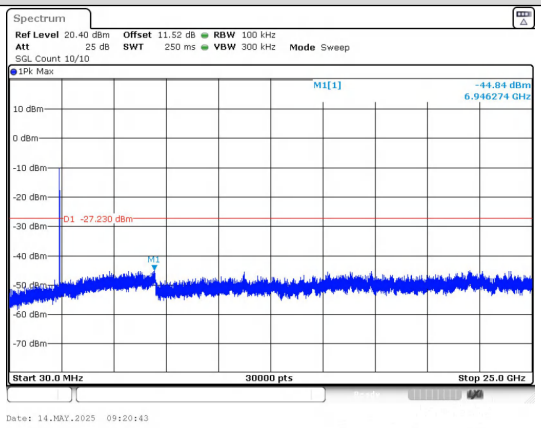
Test Graphs



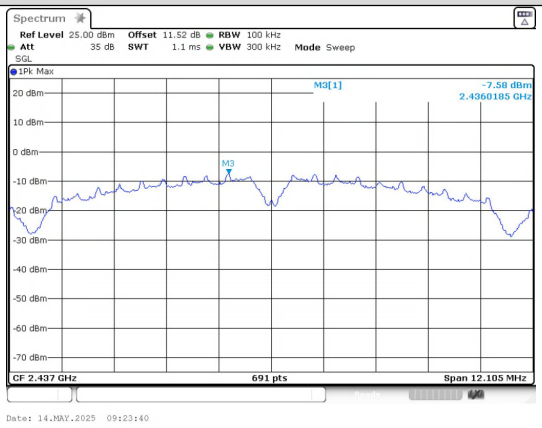
In-Band Reference Level
IEEE 802.11b_Channel 1_20MHz_Antenna 0



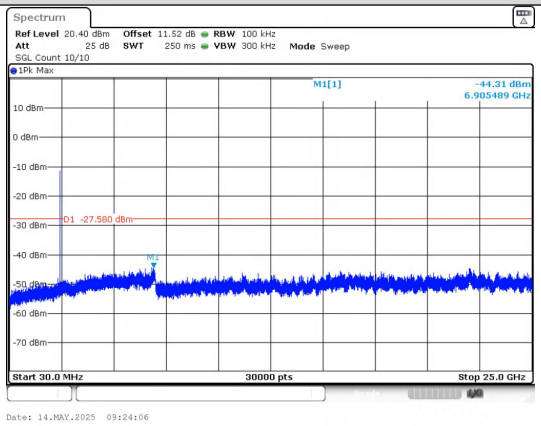
Out Of Band Emission
IEEE 802.11b_Channel 1_20MHz_Antenna 0

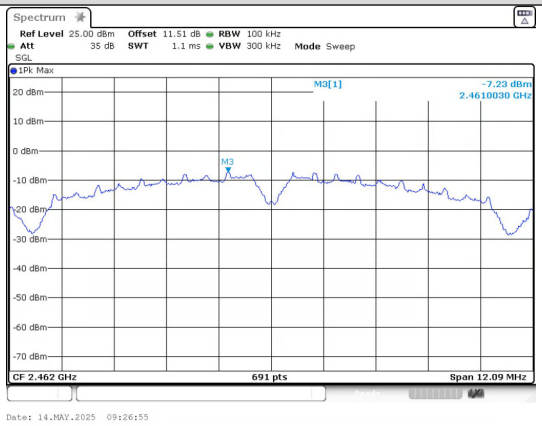


30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 1_20MHz_Antenna 0

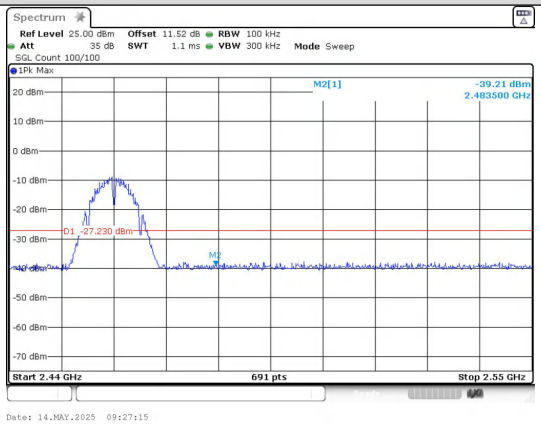


In-Band Reference Level
IEEE 802.11b_Channel 6_20MHz_Antenna 0

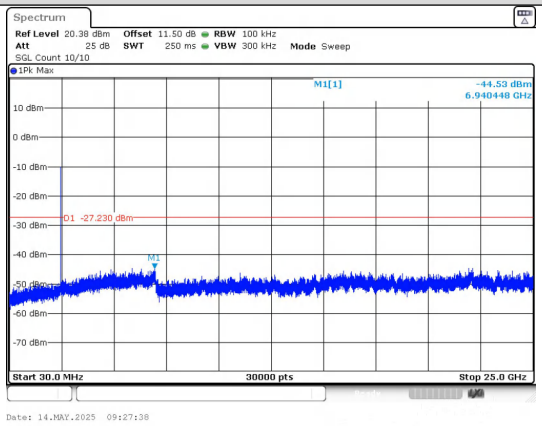




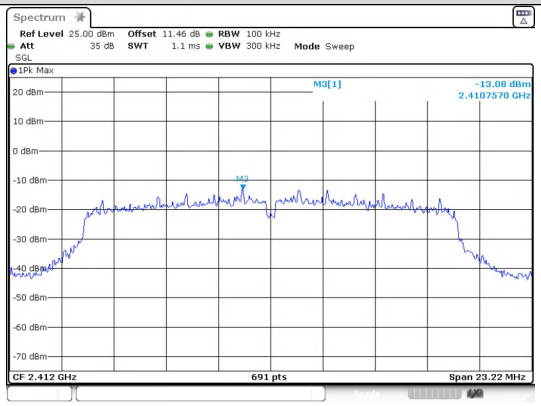
30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 6_20MHz_Antenna 0



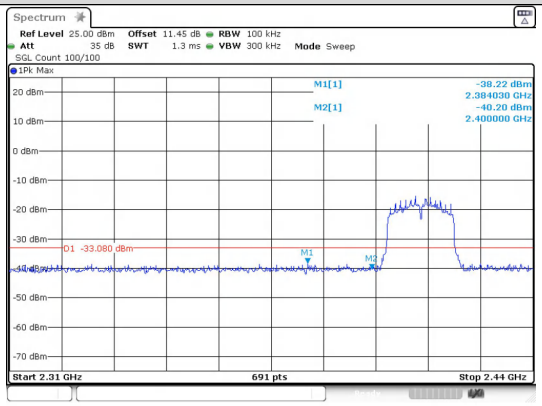
In-Band Reference Level
IEEE 802.11b_Channel 11_20MHz_Antenna 0



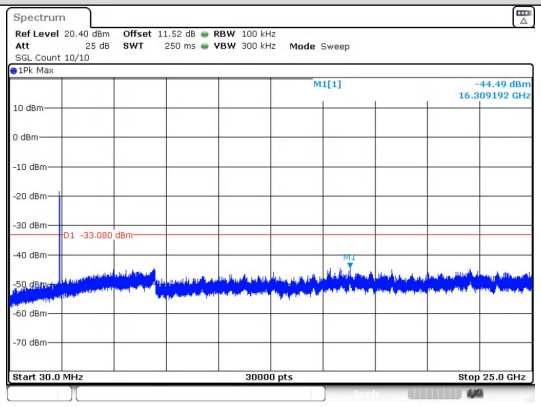
Out Of Band Emission
IEEE 802.11b_Channel 11_20MHz_Antenna 0



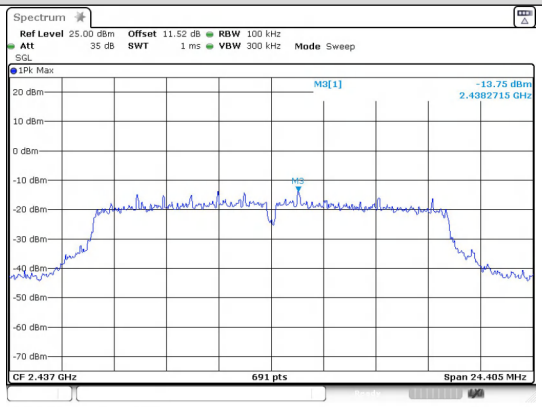
30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 11_20MHz_Antenna 0



In-Band Reference Level
IEEE 802.11g_Channel 1_20MHz_Antenna 0



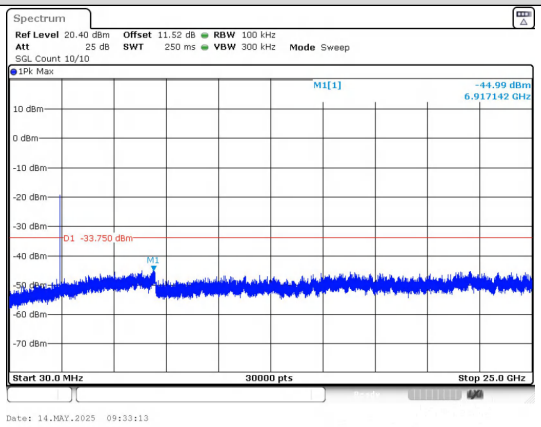
Out Of Band Emission
IEEE 802.11g_Channel 1_20MHz_Antenna 0



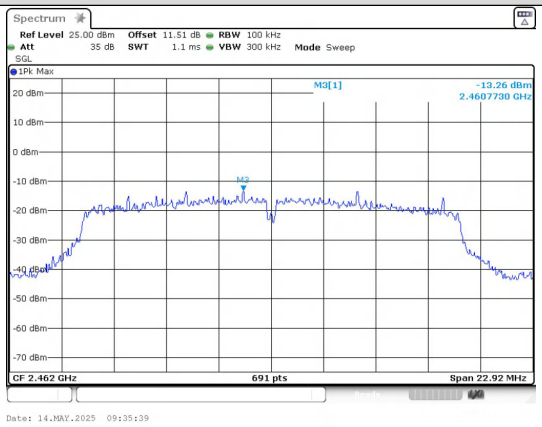
30.0 MHz - 25000.0 MHz

In-Band Reference Level

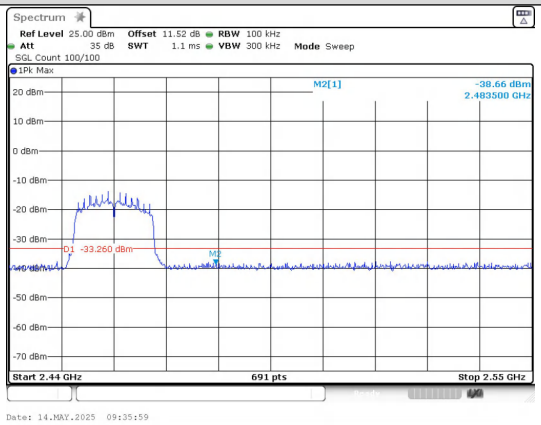
IEEE 802.11g_Channel 1_20MHz_Antenna 0



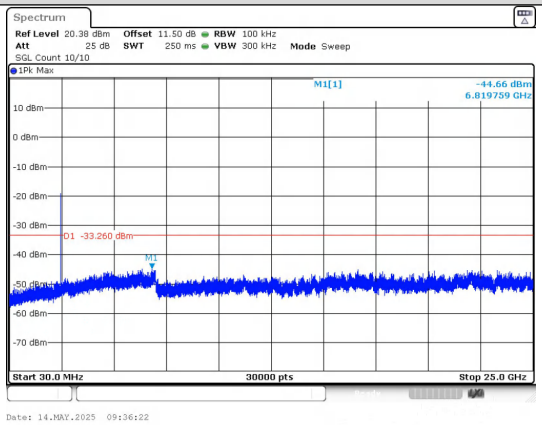
IEEE 802.11g_Channel 6_20MHz_Antenna 0



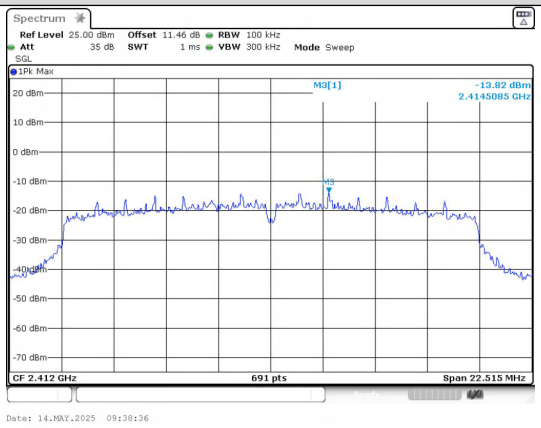
30.0 MHz - 25000.0 MHz
IEEE 802.11g_Channel 6_20MHz_Antenna 0



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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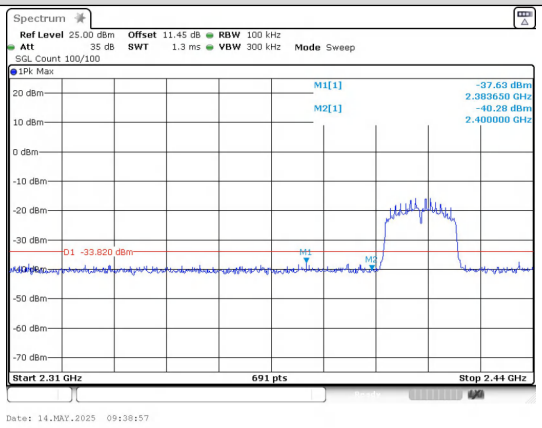
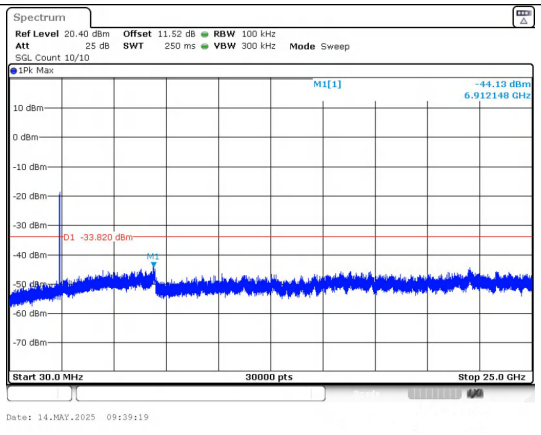
IEEE 802.11g_Channel 11_20MHz_Antenna 0



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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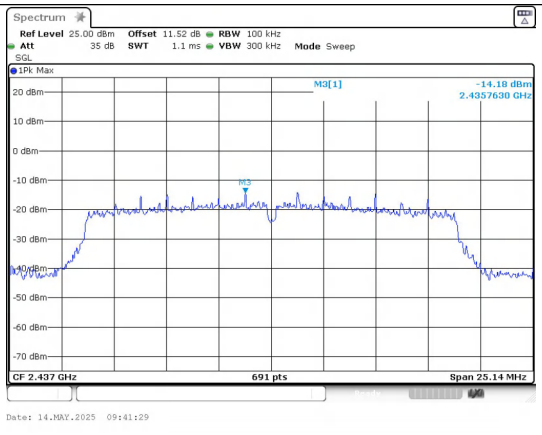
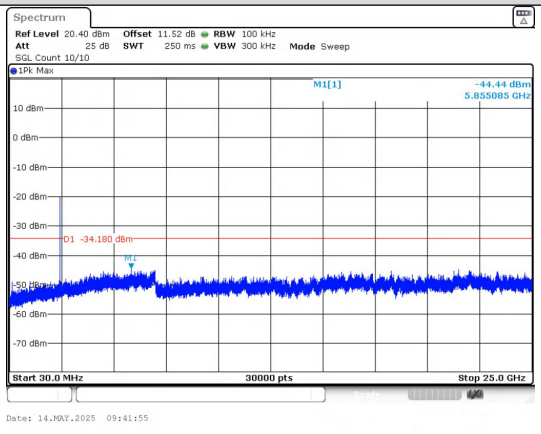
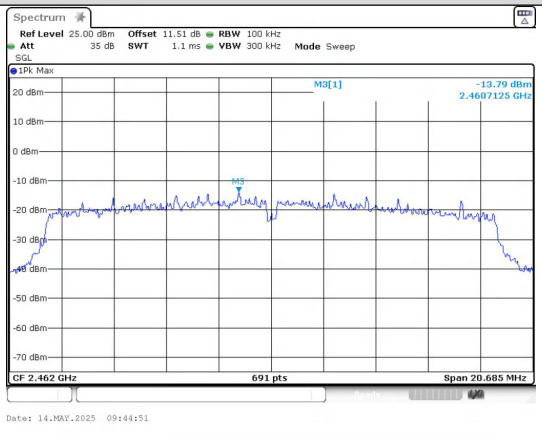
IEEE 802.11n_Channel 1_20MHz_Antenna 0



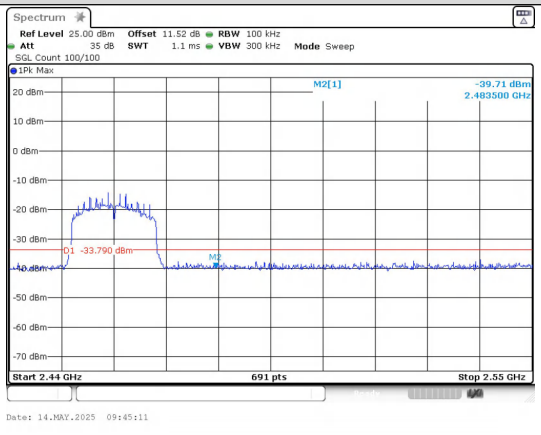
In-Band Reference Level
IEEE 802.11n_Channel 6_20MHz_Antenna 0



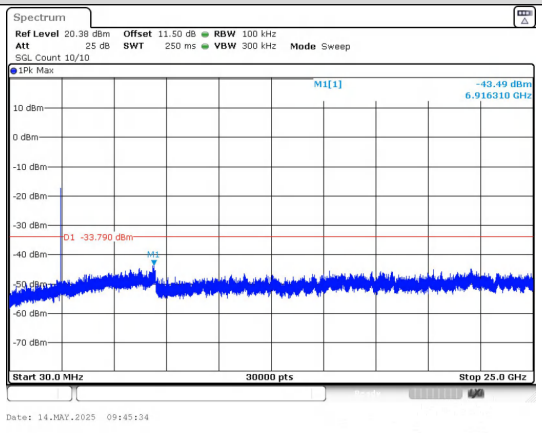
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 6_20MHz_Antenna 0



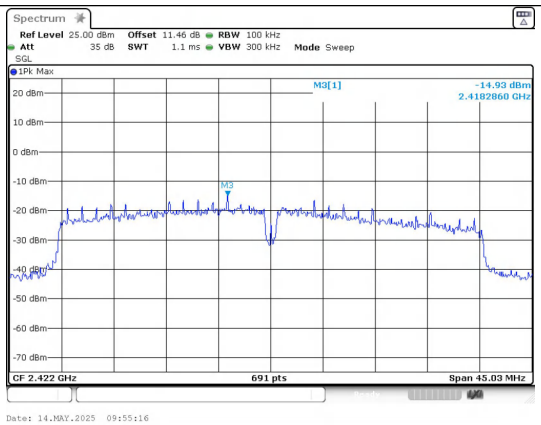
In-Band Reference Level
IEEE 802.11n_Channel 11_20MHz_Antenna 0



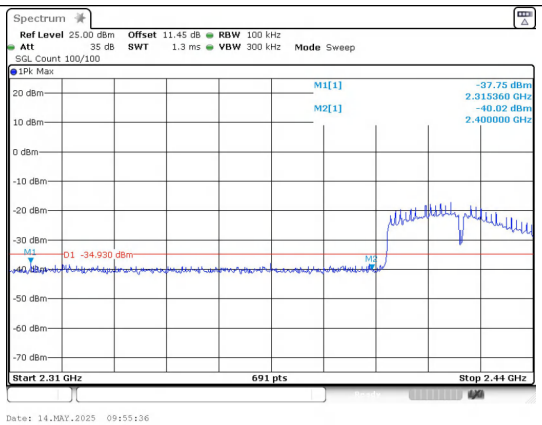
Out Of Band Emission
IEEE 802.11n_Channel 11_20MHz_Antenna 0



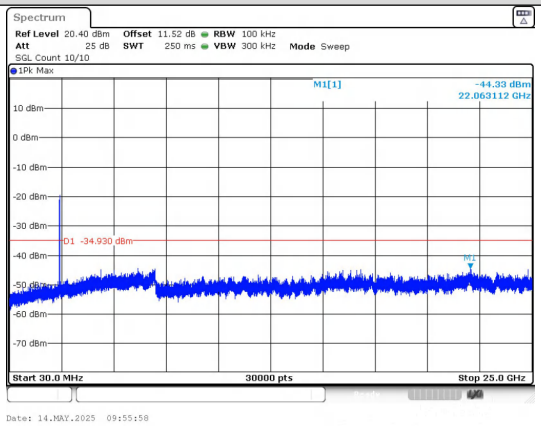
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 11_20MHz_Antenna 0



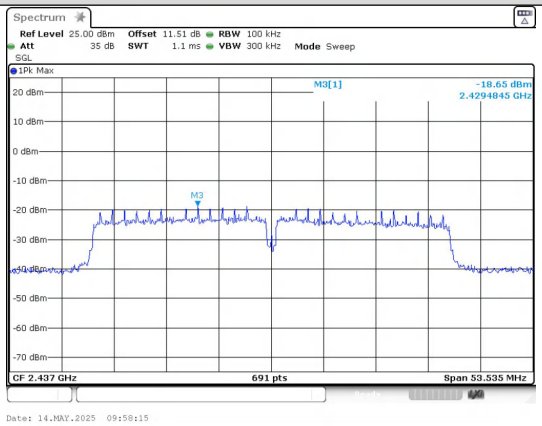
In-Band Reference Level
IEEE 802.11n_Channel 3_40MHz_Antenna 0



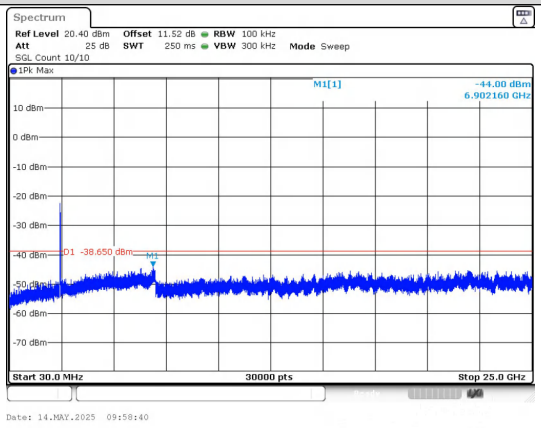
Out Of Band Emission
IEEE 802.11n_Channel 3_40MHz_Antenna 0



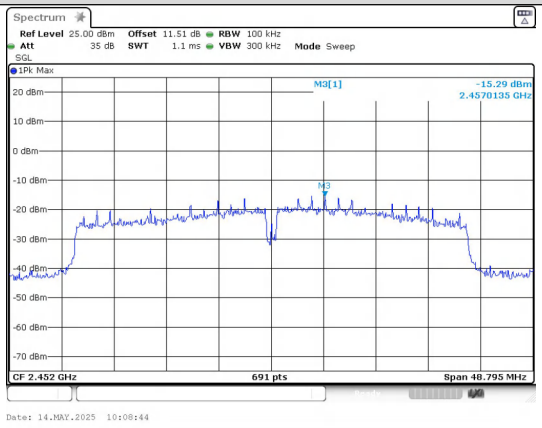
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 3_40MHz_Antenna 0



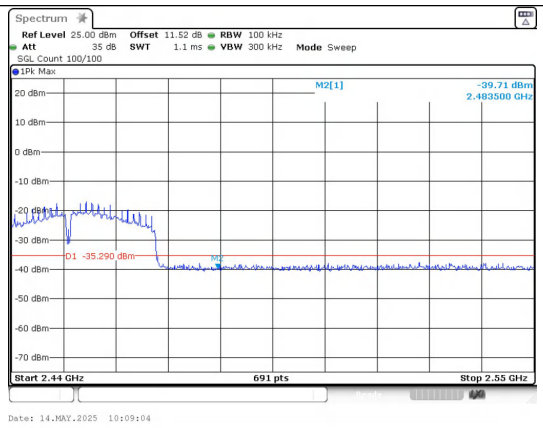
In-Band Reference Level
IEEE 802.11n_Channel 6_40MHz_Antenna 0



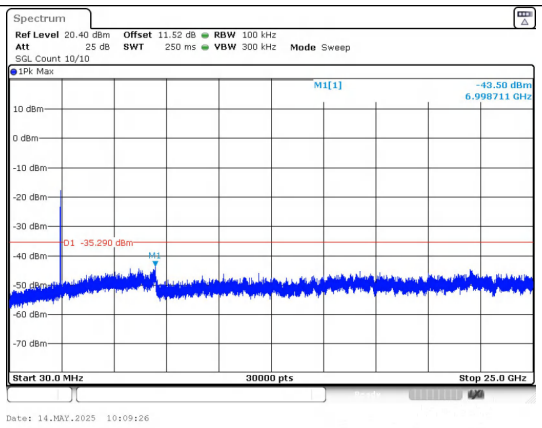
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 6_40MHz_Antenna 0



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-----