

Appendix-2.4G WiFi

Conducted Test Data

Conducted Output Power

Test Result

Mode	Channel	Peak Output Power (dBm)	Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Result
IEEE 802.11b	1	18.65	≤30	21.46	≤36	PASS
	7	18.33	≤30	21.14	≤36	PASS
	13	18.52	≤30	21.33	≤36	PASS
IEEE 802.11g	1	23.30	≤30	26.11	≤36	PASS
	7	23.41	≤30	26.22	≤36	PASS
	13	22.95	≤30	25.76	≤36	PASS
IEEE 802.11n_20	1	22.69	≤30	25.50	≤36	PASS
	7	22.96	≤30	25.77	≤36	PASS
	13	22.73	≤30	25.54	≤36	PASS
IEEE 802.11n_40	3	23.62	≤30	26.43	≤36	PASS
	7	23.42	≤30	26.23	≤36	PASS
	11	23.39	≤30	26.20	≤36	PASS

Note1: EIRP=Peak Output Power + Antenna gain

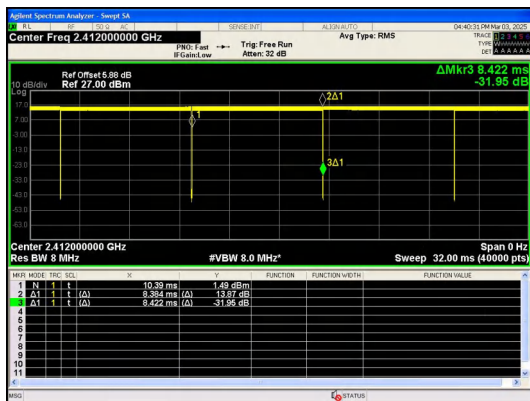
Note2: Antenna gain = 2.81 dBi.

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	8.384	8.422	99.55	0.9955	0.0196	0.1193
		7		8.384	8.421	99.56	0.9956	0.0192	0.1193
		13		8.384	8.421	99.56	0.9956	0.0192	0.1193
IEEE 802.11g	6	1		1.396	1.437	97.15	0.9715	0.1256	0.7163
		7		1.396	1.437	97.15	0.9715	0.1256	0.7163
		13		1.396	1.437	97.15	0.9715	0.1256	0.7163
IEEE 802.11n_20	MCS 0	1		1.303	1.346	96.86	0.9686	0.1386	0.7675
		7		1.304	1.346	96.88	0.9688	0.1377	0.7669
		13		1.304	1.346	96.88	0.9688	0.1377	0.7669
IEEE 802.11n_40		3		0.650	0.693	93.86	0.9386	0.2752	1.5385
		7		0.650	0.693	93.87	0.9387	0.2747	1.5385
		11		0.650	0.692	93.86	0.9386	0.2752	1.5385

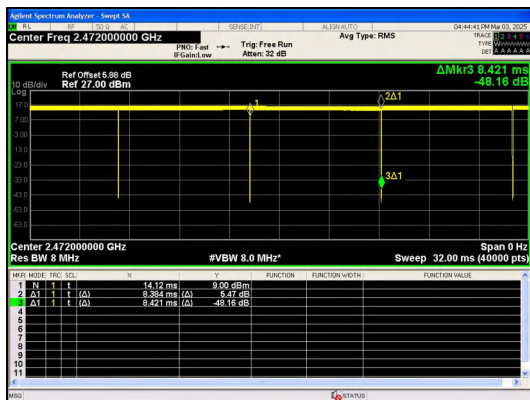
Test Graphs



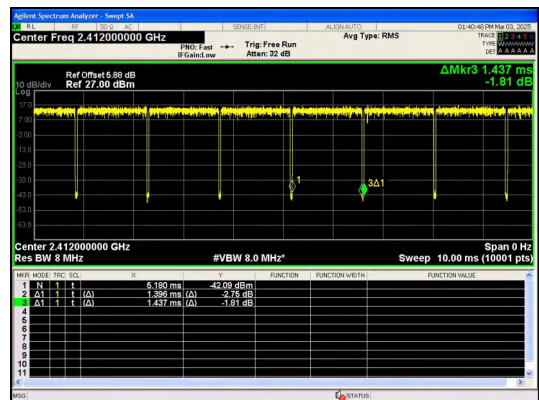
IEEE 802.11b_20MHz_Channel 1



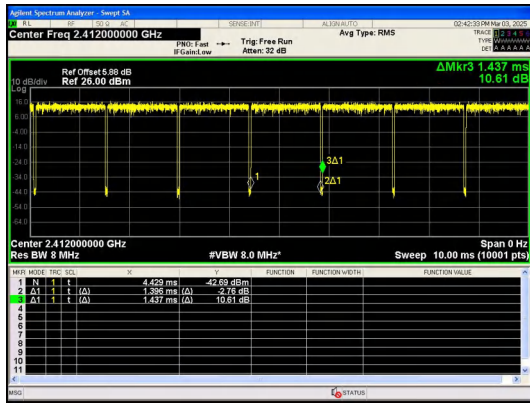
IEEE 802.11b_20MHz_Channel 7



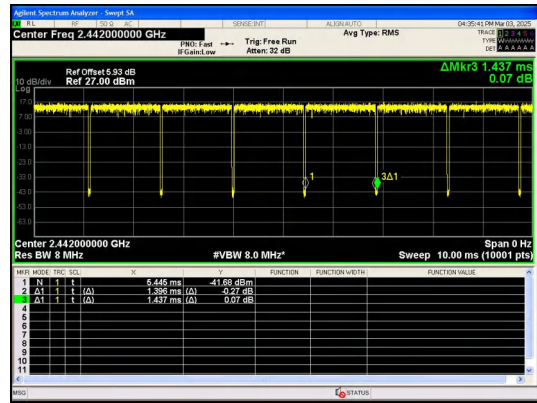
IEEE 802.11b_20MHz_Channel 13



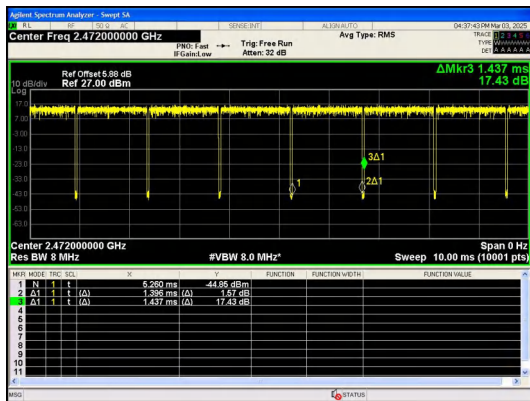
IEEE 802.11g_20MHz_Channel 1



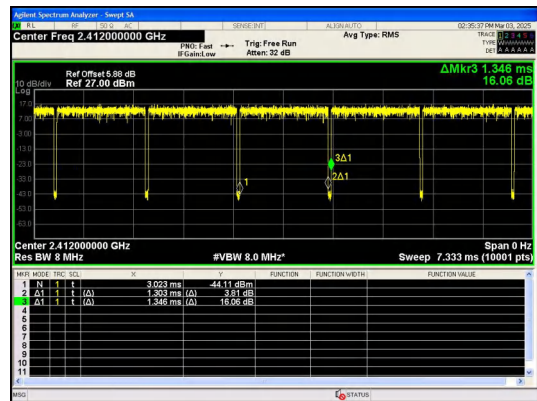
IEEE 802.11g_20MHz_Channel 1



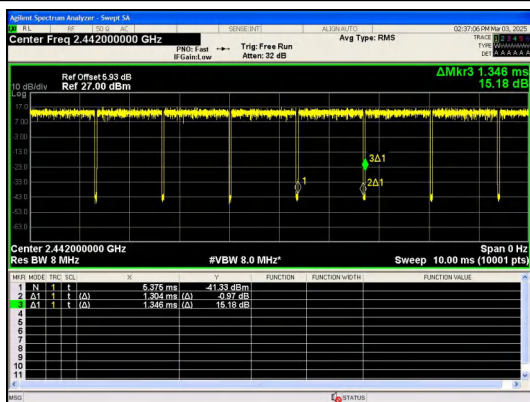
IEEE 802.11g_20MHz_Channel 7



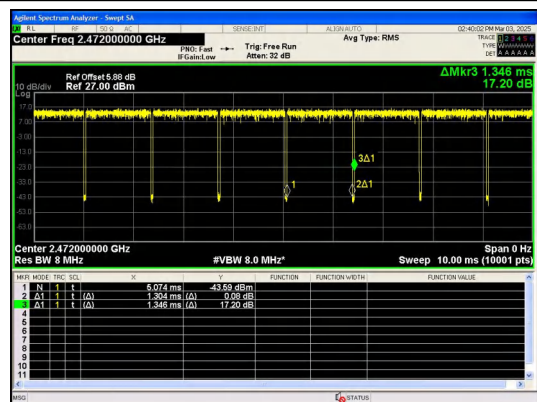
IEEE 802.11g_20MHz_Channel 13



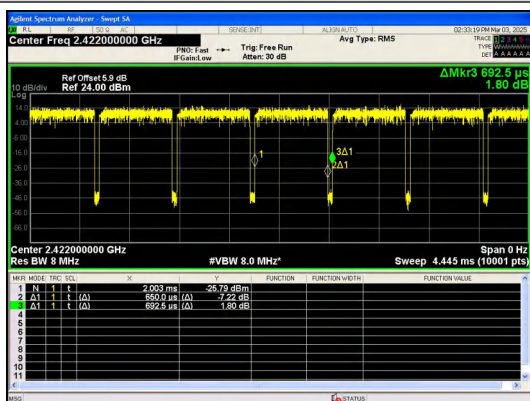
IEEE 802.11n_20MHz_Channel 1



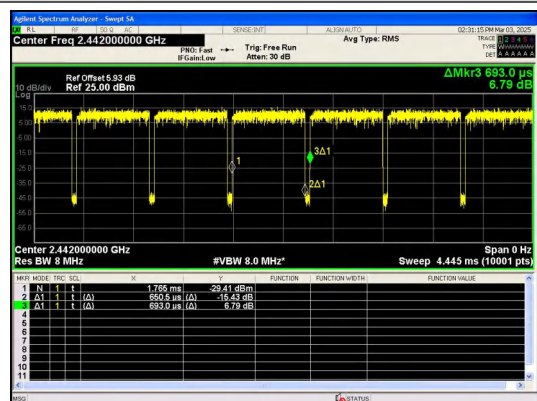
IEEE 802.11n_20MHz_Channel 7



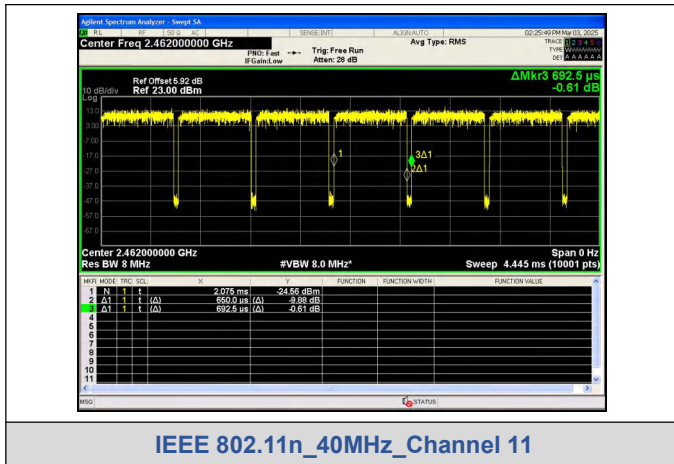
IEEE 802.11n_20MHz_Channel 13



IEEE 802.11n_40MHz_Channel 3



IEEE 802.11n_40MHz_Channel 7

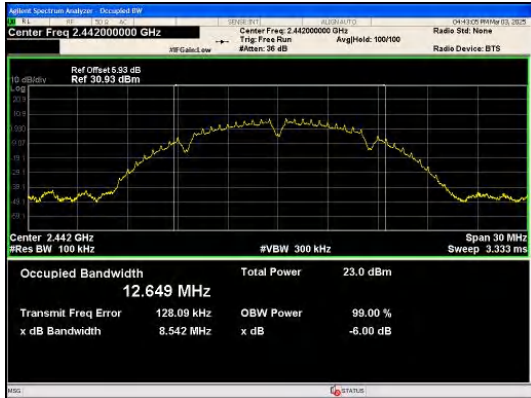
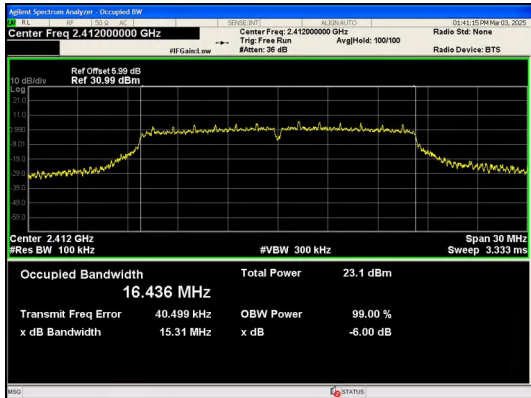


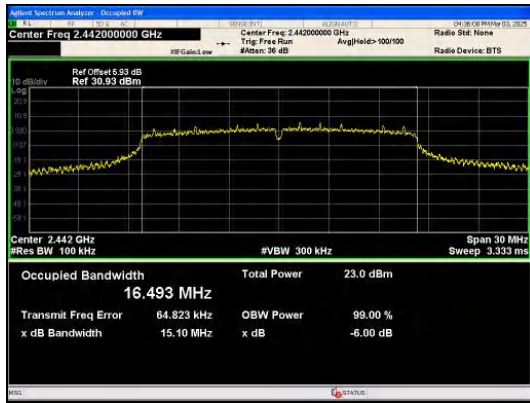
6dB Bandwidth

Test Result

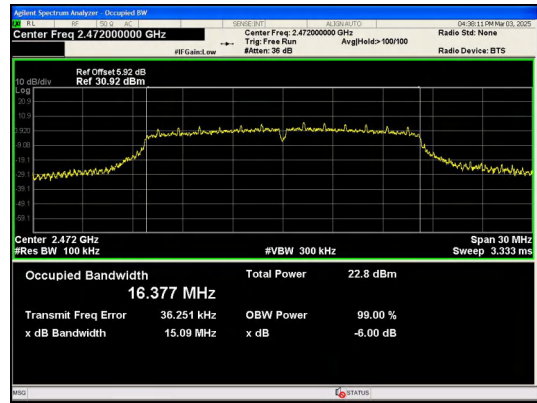
Mode	Channel	Ant.	Center Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11b	1	0	2412	8.056	≥0.5	PASS
	7		2442	8.542		PASS
	13		2472	8.049		PASS
IEEE 802.11g	1		2412	15.31		PASS
	7		2442	15.10		PASS
	13		2472	15.09		PASS
IEEE 802.11n_20	1		2412	15.94		PASS
	7		2442	15.10		PASS
	13		2472	15.43		PASS
IEEE 802.11n_40	3		2422	35.10		PASS
	7		2442	35.09		PASS
	11		2462	35.14		PASS

Test Graphs

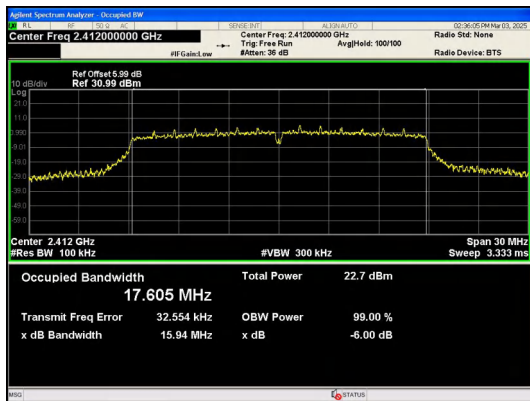
 IEEE 802.11b_Channel 1_20MHz_Antenna 0	 IEEE 802.11b_Channel 7_20MHz_Antenna 0
 IEEE 802.11b_Channel 13_20MHz_Antenna 0	 IEEE 802.11g_Channel 1_20MHz_Antenna 0



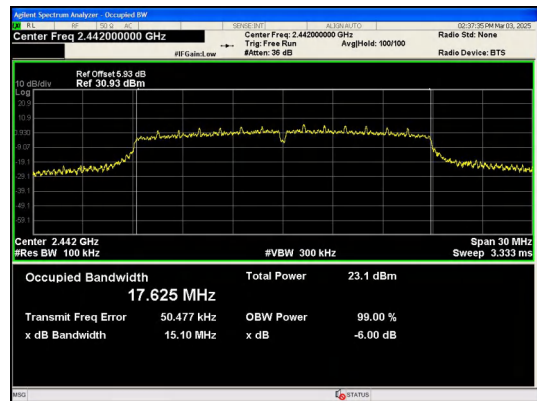
IEEE 802.11g_Channel 7_20MHz_Antenna 0



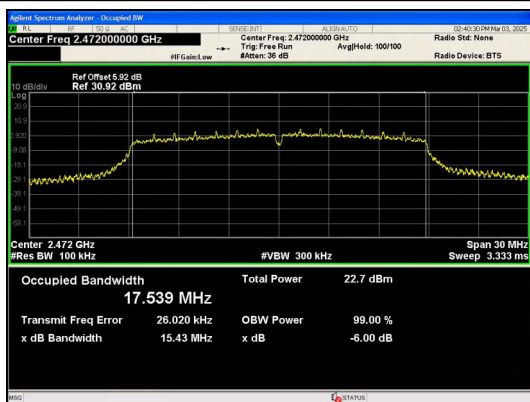
IEEE 802.11g_Channel 13_20MHz_Antenna 0



IEEE 802.11n_Channel 1_20MHz_Antenna 0



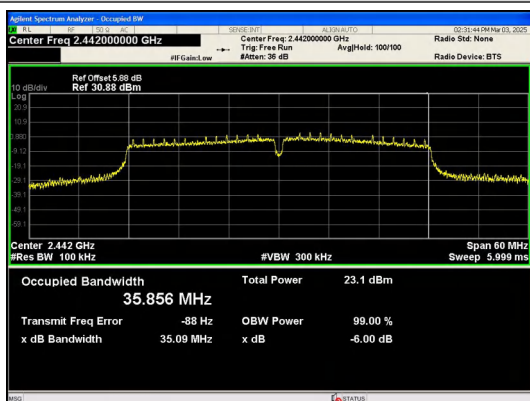
IEEE 802.11n_Channel 7_20MHz_Antenna 0



IEEE 802.11n_Channel 13_20MHz_Antenna 0



IEEE 802.11n_Channel 3_40MHz_Antenna 0



IEEE 802.11n_Channel 7_40MHz_Antenna 0



IEEE 802.11n_Channel 11_40MHz_Antenna 0

99% Bandwidth

Test Result

Mode	Channel	Ant.	Center Frequency (MHz)	99% BW (MHz)
IEEE 802.11b	1	0	2412	12.812
	7		2442	12.615
	13		2472	12.605
IEEE 802.11g	1		2412	16.644
	7		2442	16.792
	13		2472	16.581
IEEE 802.11n_20	1		2412	17.769
	7		2442	17.758
	13		2472	17.669
IEEE 802.11n_40	3		2422	36.124
	7		2442	36.149
	11		2462	36.231

Test Graphs



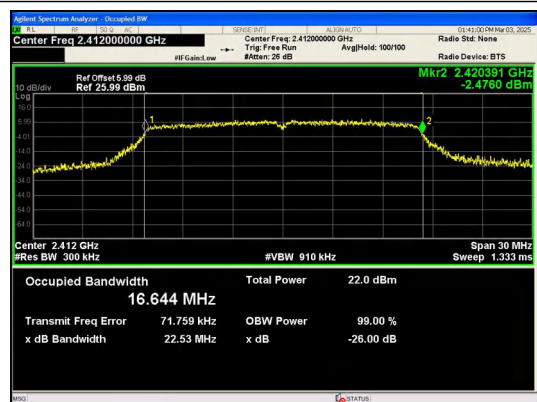
IEEE 802.11b_Channel 1_20MHz_Antenna 0



IEEE 802.11b_Channel 7_20MHz_Antenna 0



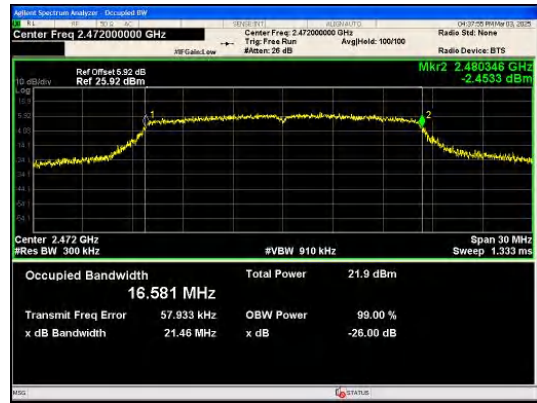
IEEE 802.11b_Channel 13_20MHz_Antenna 0



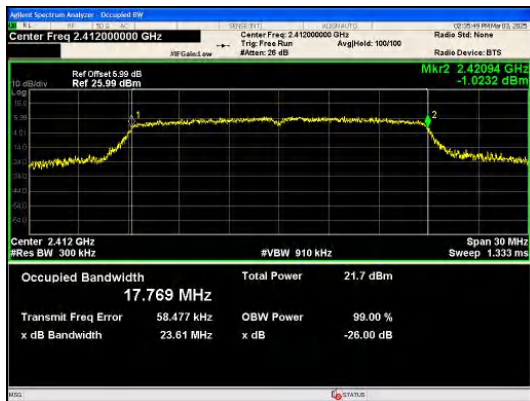
IEEE 802.11g_Channel 1_20MHz_Antenna 0



IEEE 802.11g_Channel 7_20MHz_Antenna 0



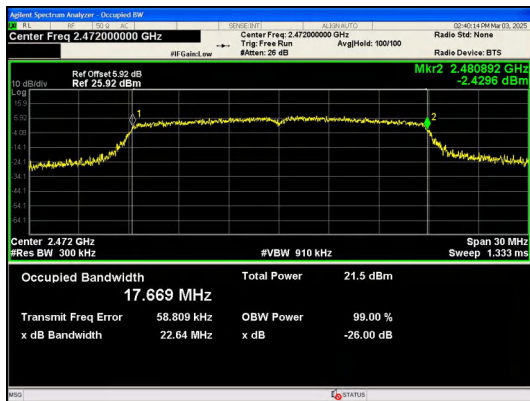
IEEE 802.11g_Channel 13_20MHz_Antenna 0



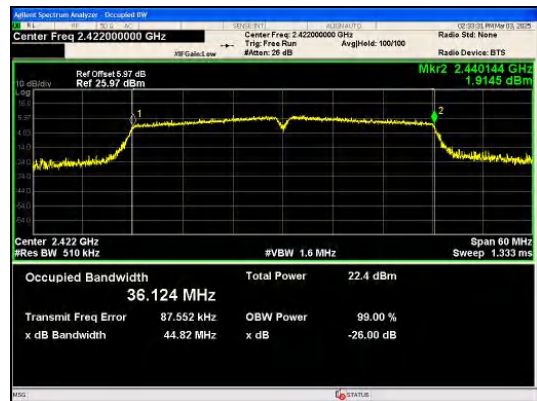
IEEE 802.11n_Channel 1_20MHz_Antenna 0



IEEE 802.11n_Channel 7_20MHz_Antenna 0



IEEE 802.11n_Channel 13_20MHz_Antenna 0



IEEE 802.11n_Channel 3_40MHz_Antenna 0



IEEE 802.11n_Channel 7_40MHz_Antenna 0



IEEE 802.11n_Channel 11_40MHz_Antenna 0

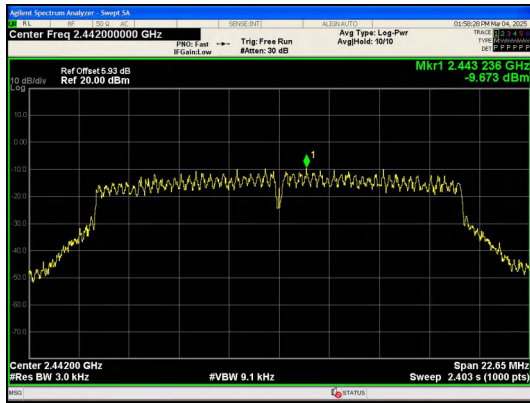
Power Spectral Density

Test Result

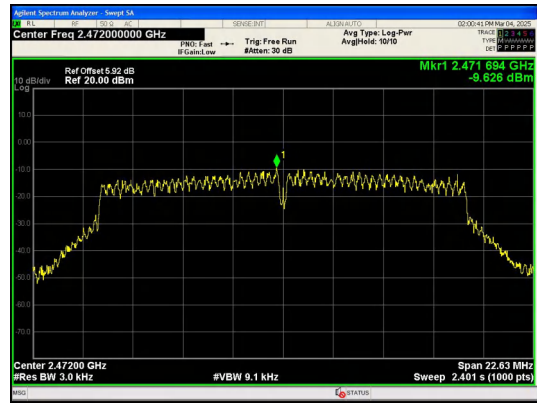
Mode	Channel	PSD (dBm/3kHz) Ant. 0	Limit (dBm/3kHz)	Result
IEEE 802.11b	1	-7.766	≤8	PASS
	7	-7.892		PASS
	13	-6.825		PASS
IEEE 802.11g	1	-9.845		PASS
	7	-9.673		PASS
	13	-9.626		PASS
IEEE 802.11n_20	1	-9.924		PASS
	7	-8.679		PASS
	13	-10.071		PASS
IEEE 802.11n_40	3	-12.245		PASS
	7	-12.668		PASS
	11	-13.045		PASS

Test Graphs

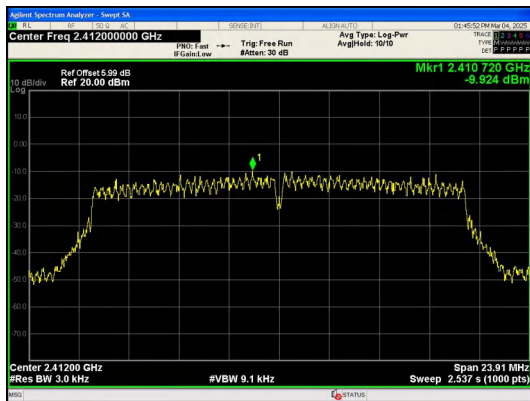




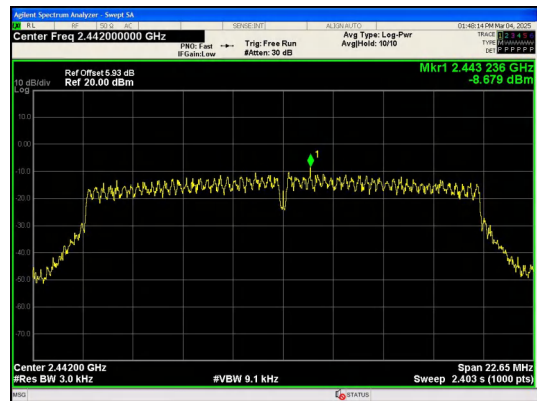
IEEE 802.11g_Channel 7_20MHz_Antenna 0



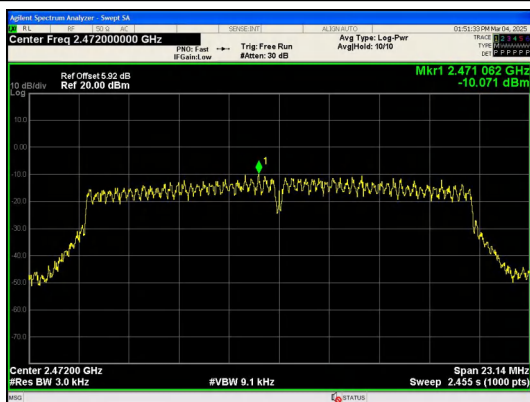
IEEE 802.11g_Channel 13_20MHz_Antenna 0



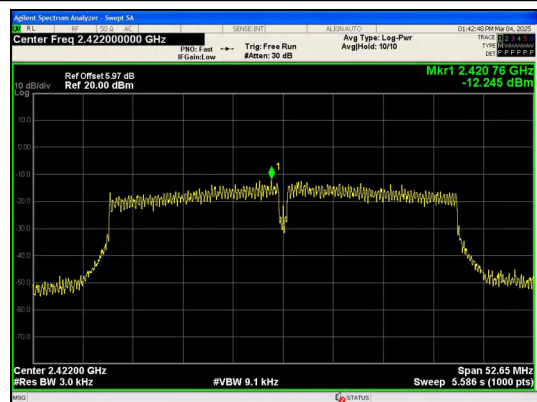
IEEE 802.11n_Channel 1_20MHz_Antenna 0



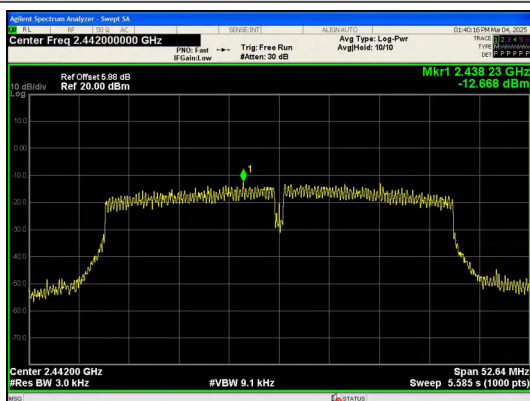
IEEE 802.11n_Channel 7_20MHz_Antenna 0



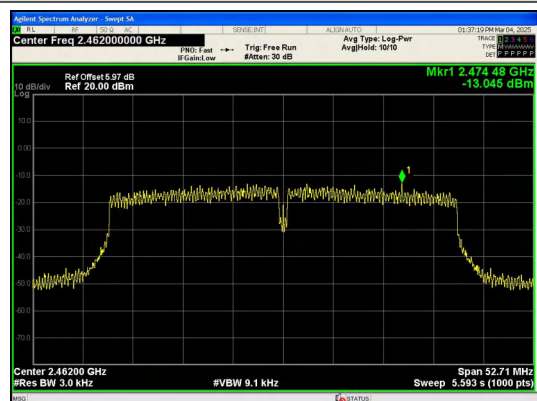
IEEE 802.11n_Channel 13_20MHz_Antenna 0



IEEE 802.11n_Channel 3_40MHz_Antenna 0



IEEE 802.11n_Channel 7_40MHz_Antenna 0



IEEE 802.11n_Channel 11_40MHz_Antenna 0

Conducted Out Of Band Emission

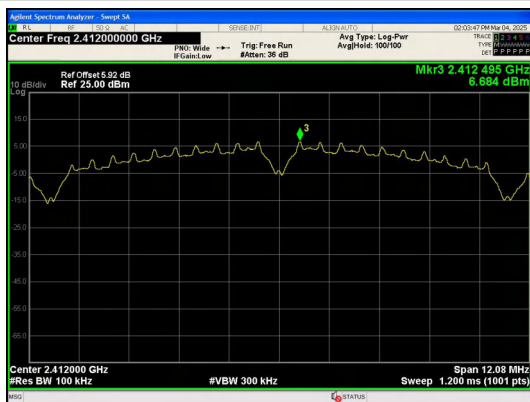
Note:The maximum loss of the test system for testing at 30MHz-26.5GHz is 17.2dB. The offset on the test chart is the offset of the main frequency, and the margin is sufficient to offset the difference between the maximum loss of the system and the offset of the main frequency.

Test Result

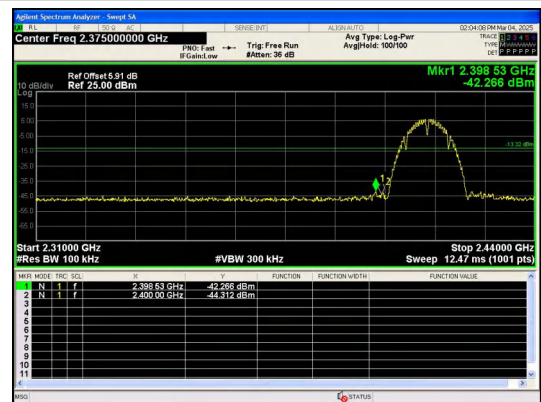
Mode	Channel	Ant.	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
IEEE 802.11b	1	0	2398.53	-42.266	-13.32	-28.946	PASS
			2400.00	-44.312	-13.32	-30.992	PASS
			4824.20	-45.229	-13.32	-31.909	PASS
			7245.10	-54.707	-13.32	-41.387	PASS
			9631.00	-55.227	-13.32	-41.907	PASS
			24600.5	-44.164	-13.32	-30.844	PASS
	7		4884.17	-46.584	-13.15	-33.434	PASS
			7336.22	-54.619	-13.15	-41.469	PASS
			9782.03	-55.947	-13.15	-42.797	PASS
			24616.1	-44.334	-13.15	-31.184	PASS
	13		2483.50	-42.311	-13.14	-29.171	PASS
			4944.10	-44.466	-13.14	-31.326	PASS
			7396.77	-54.361	-13.14	-41.221	PASS
			9875.05	-56.432	-13.14	-43.292	PASS
			24722.8	-43.571	-13.14	-30.431	PASS
IEEE 802.11g	1		2398.14	-30.270	-15.5	-14.770	PASS
			2400.00	-31.934	-15.5	-16.434	PASS
			4826.70	-54.622	-15.5	-39.122	PASS
			7235.10	-54.908	-15.5	-39.408	PASS
			9650.90	-55.274	-15.5	-39.774	PASS
			24638.6	-44.254	-15.5	-28.754	PASS
	7		4886.66	-54.048	-15.24	-38.808	PASS
			7317.49	-55.640	-15.24	-40.400	PASS
			9787.03	-55.487	-15.24	-40.247	PASS
			24627.3	-43.692	-15.24	-28.452	PASS
	13		2483.50	-28.147	-15.29	-12.857	PASS
			4942.22	-52.520	-15.29	-37.230	PASS
			7422.99	-55.069	-15.29	-39.779	PASS
			9872.55	-56.208	-15.29	-40.918	PASS
			24887.6	-43.994	-15.29	-28.704	PASS
IEEE 802.11n_20	1		2397.62	-28.573	-15.83	-12.743	PASS
			2400.00	-30.121	-15.83	-14.291	PASS
			4833.60	-54.567	-15.83	-38.737	PASS

	7	7239.50	-55.100	-15.83	-39.270	PASS
		9631.00	-56.142	-15.83	-40.312	PASS
		24563.6	-44.322	-15.83	-28.492	PASS
		4884.17	-54.245	-15.28	-38.965	PASS
		7324.36	-55.114	-15.28	-39.834	PASS
		9748.95	-55.713	-15.28	-40.433	PASS
	13	24536.2	-44.431	-15.28	-29.151	PASS
		2483.50	-28.570	-15.37	-13.200	PASS
		4941.60	-53.979	-15.37	-38.609	PASS
		7430.48	-55.005	-15.37	-39.635	PASS
		9897.52	-56.321	-15.37	-40.951	PASS
		24696.6	-43.822	-15.37	-28.453	PASS
IEEE 802.11n_40	3	2397.36	-32.341	-17.79	-14.551	PASS
		2400.00	-33.751	-17.79	-15.961	PASS
		4855.50	-53.898	-17.79	-36.108	PASS
		7230.70	-53.908	-17.79	-36.118	PASS
		9716.50	-55.364	-17.79	-37.574	PASS
		24679.8	-44.099	-17.79	-26.309	PASS
	7	4892.91	-54.694	-17.95	-36.744	PASS
		7290.03	-55.299	-17.95	-37.349	PASS
		9796.39	-56.223	-17.95	-38.273	PASS
		24702.2	-44.481	-17.95	-26.531	PASS
		2483.50	-31.322	-18.55	-12.772	PASS
		4937.85	-53.873	-18.55	-35.323	PASS
	11	7417.37	-55.652	-18.55	-37.102	PASS
		9824.48	-55.239	-18.55	-36.689	PASS
		24775.3	-44.385	-18.55	-25.835	PASS

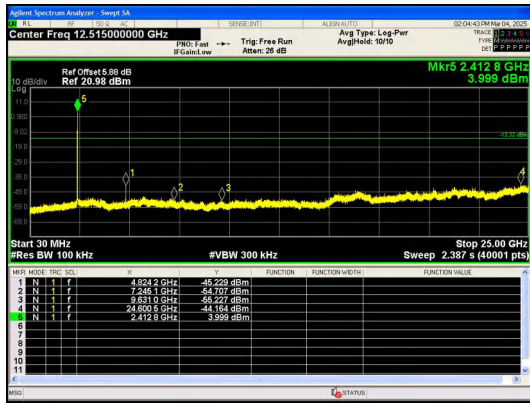
Test Graphs



In-Band Reference Level
IEEE 802.11b_Channel 1_20MHz_Antenna 0

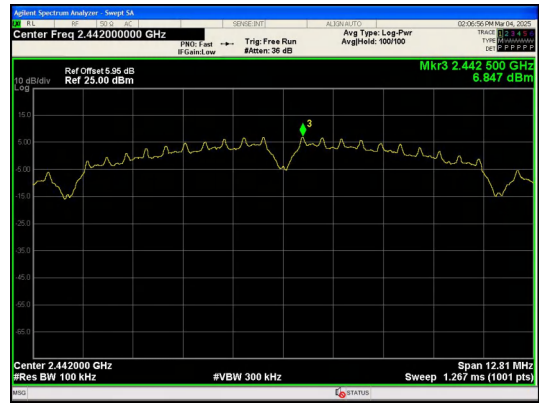


Out Of Band Emission
IEEE 802.11b_Channel 1_20MHz_Antenna 0



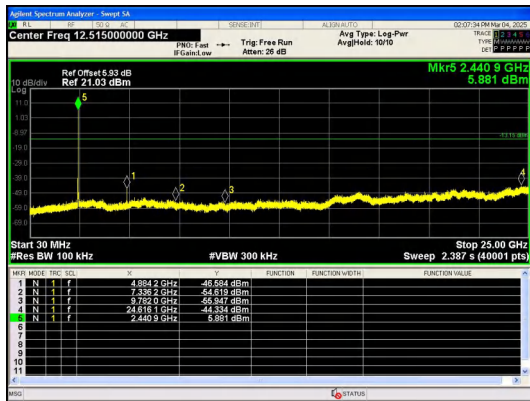
30.0 MHz - 25000.0 MHz

IEEE 802.11b_Channel 1_20MHz_Antenna 0



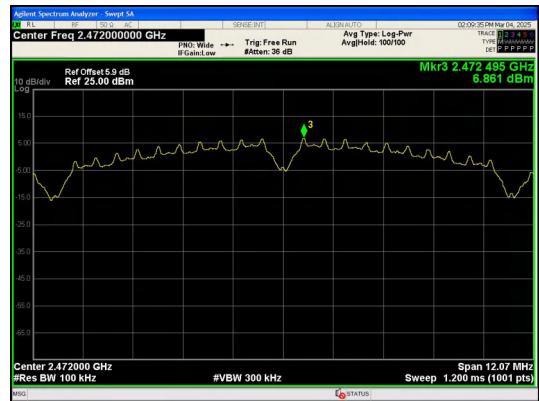
In-Band Reference Level

IEEE 802.11b_Channel 7_20MHz_Antenna 0



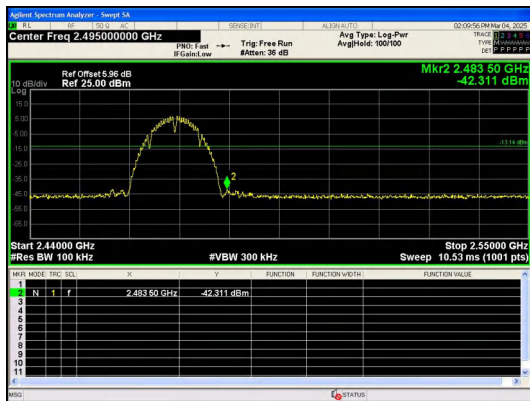
30.0 MHz - 25000.0 MHz

IEEE 802.11b_Channel 7_20MHz_Antenna 0



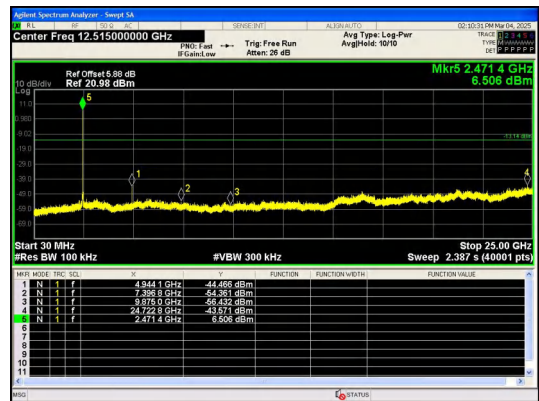
In-Band Reference Level

IEEE 802.11b_Channel 13_20MHz_Antenna 0



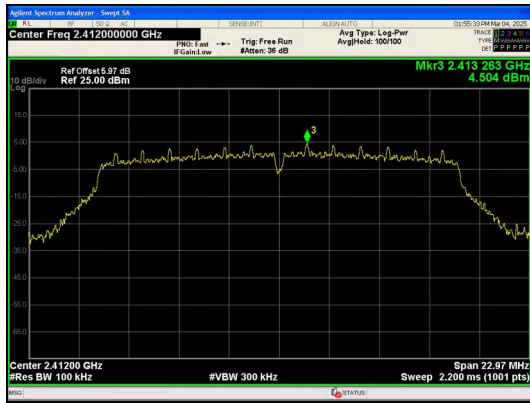
Out Of Band Emission

IEEE 802.11b_Channel 13_20MHz_Antenna 0

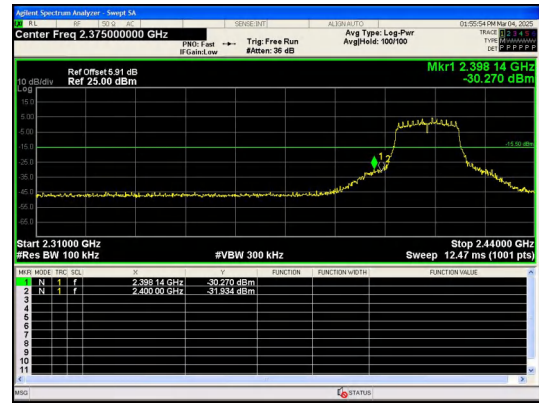


30.0 MHz - 25000.0 MHz

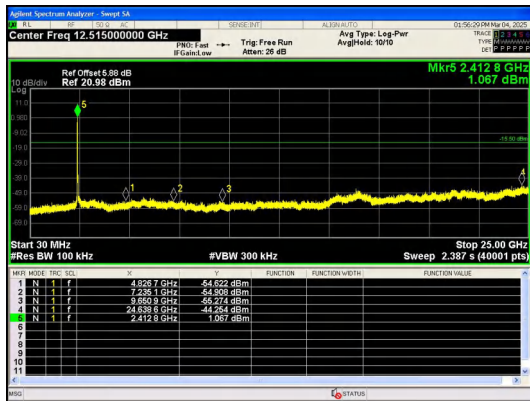
IEEE 802.11b_Channel 13_20MHz_Antenna 0



In-Band Reference Level
IEEE 802.11g_Channel 1_20MHz_Antenna 0



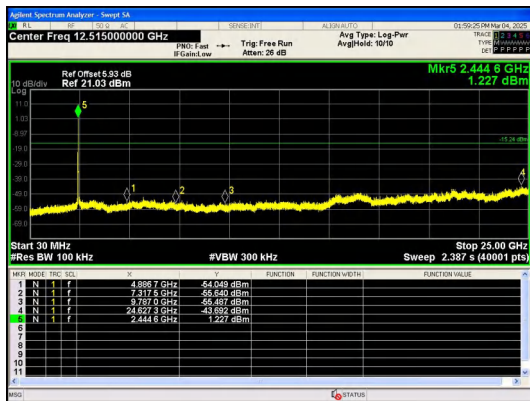
Out Of Band Emission
IEEE 802.11g_Channel 1_20MHz_Antenna 0



30.0 MHz - 25000.0 MHz
IEEE 802.11g_Channel 1_20MHz_Antenna 0



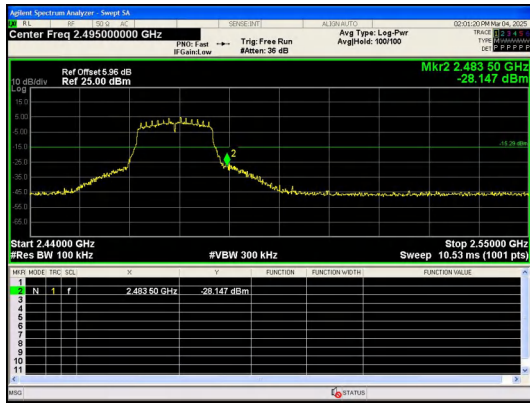
In-Band Reference Level
IEEE 802.11g_Channel 7_20MHz_Antenna 0



30.0 MHz - 25000.0 MHz
IEEE 802.11g_Channel 7_20MHz_Antenna 0

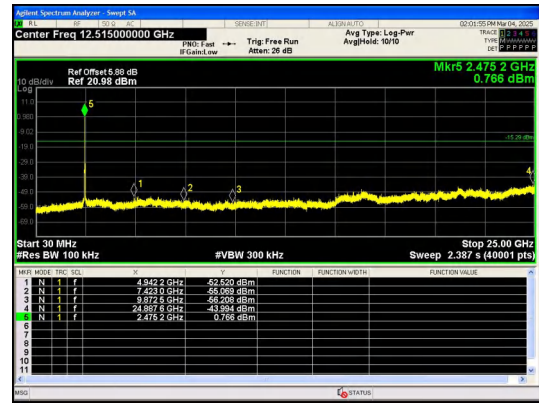


In-Band Reference Level
IEEE 802.11g_Channel 13_20MHz_Antenna 0



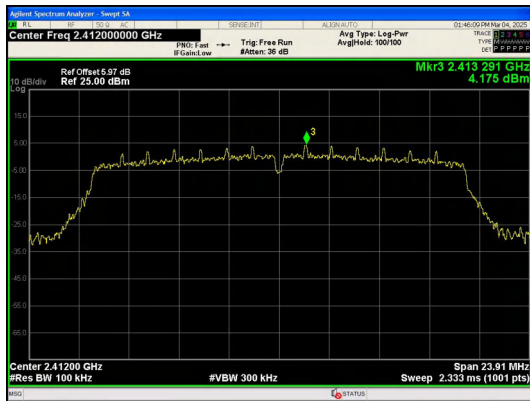
Out Of Band Emission

IEEE 802.11g_Channel 13_20MHz_Antenna 0



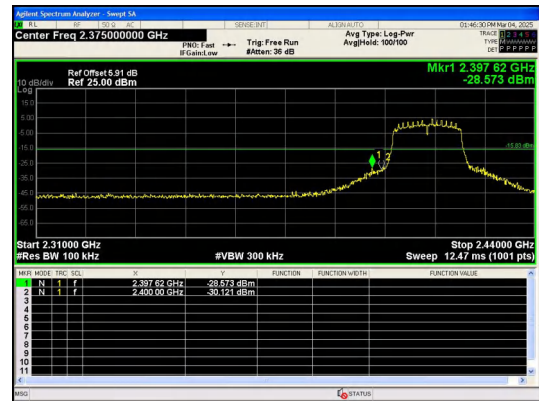
30.0 MHz - 25000.0 MHz

IEEE 802.11g_Channel 13_20MHz_Antenna 0



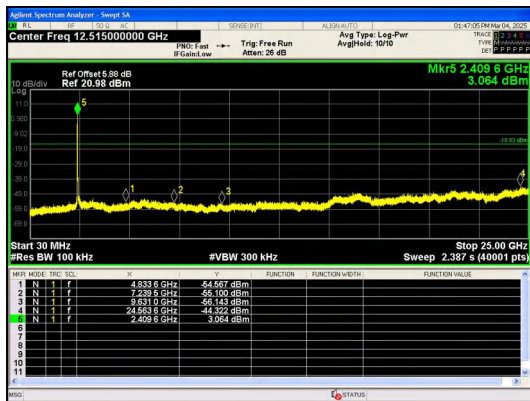
In-Band Reference Level

IEEE 802.11n_Channel 1_20MHz_Antenna 0



Out Of Band Emission

IEEE 802.11n_Channel 1_20MHz_Antenna 0



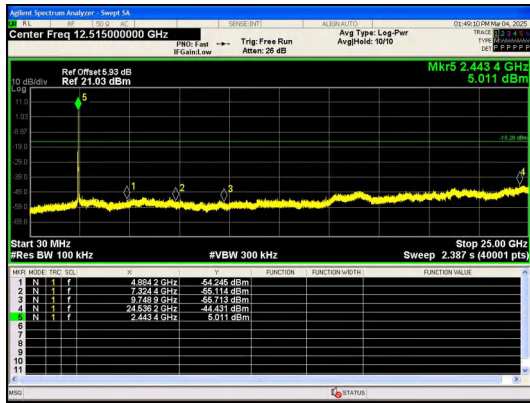
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IEEE 802.11n_Channel 1_20MHz_Antenna 0



In-Band Reference Level

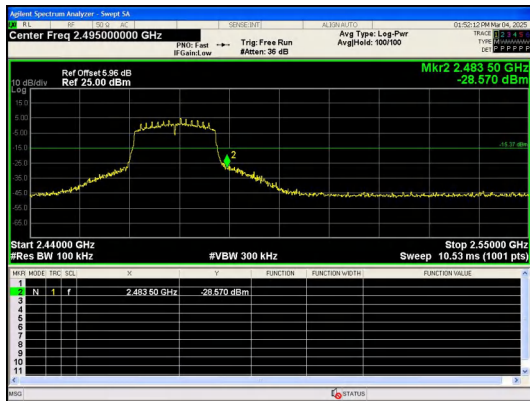
IEEE 802.11n_Channel 7_20MHz_Antenna 0



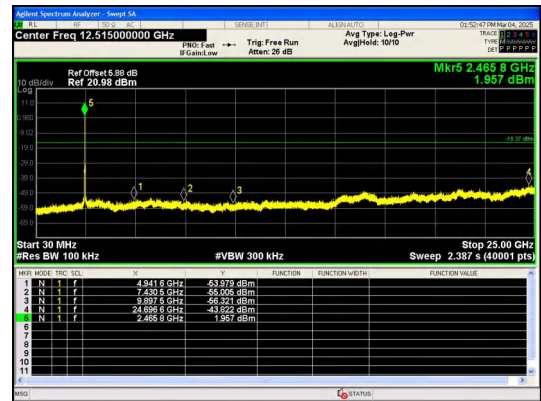
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 7_20MHz_Antenna 0



In-Band Reference Level
IEEE 802.11n_Channel 13_20MHz_Antenna 0



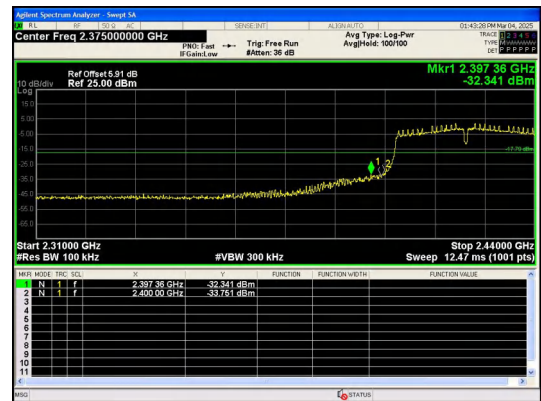
Out Of Band Emission
IEEE 802.11n_Channel 13_20MHz_Antenna 0



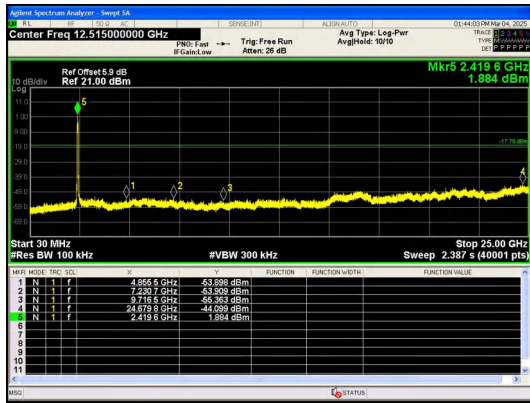
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 13_20MHz_Antenna 0



In-Band Reference Level
IEEE 802.11n_Channel 3_40MHz_Antenna 0



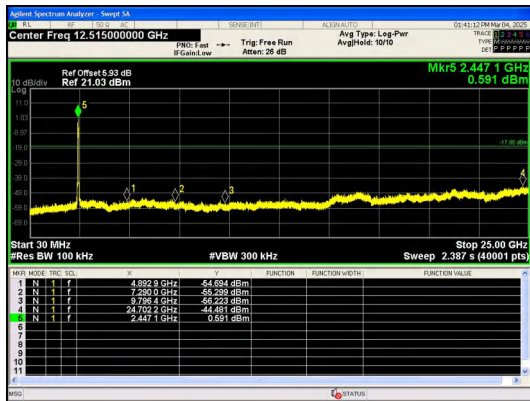
Out Of Band Emission
IEEE 802.11n_Channel 3_40MHz_Antenna 0



30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 3_40MHz_Antenna 0



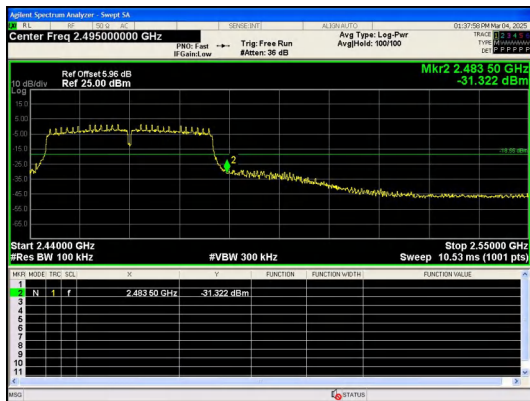
In-Band Reference Level
IEEE 802.11n_Channel 7_40MHz_Antenna 0



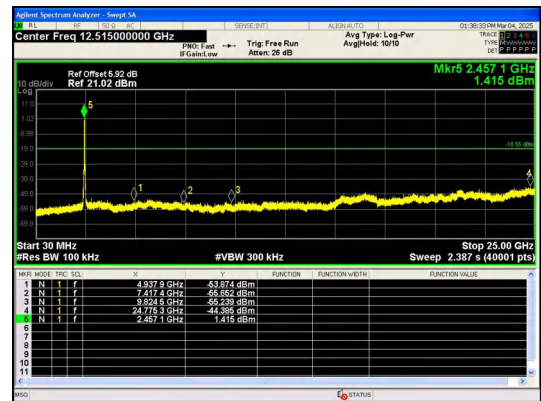
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 7_40MHz_Antenna 0



In-Band Reference Level
IEEE 802.11n_Channel 11_40MHz_Antenna 0



Out Of Band Emission
IEEE 802.11n_Channel 11_40MHz_Antenna 0



30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 11_40MHz_Antenna 0