

Appendix A:Test Results of 2.4G WIFI

Restricted bands

Conducted Output Power

Test Result

Conducted Output Power

Mode	Channel	Ant. 0 (dBm)	Limit (dBm)	Result
IEEE 802.11b	1	7.21	≤30	PASS
	6	6.91	≤30	PASS
	11	6.52	≤30	PASS
IEEE 802.11g	1	6.07	≤30	PASS
	6	6.2	≤30	PASS
	11	5.91	≤30	PASS
IEEE 802.11n_20	1	5.92	≤30	PASS
	6	5.71	≤30	PASS
	11	5.36	≤30	PASS

ISED EIRP

Mode	Channel	Ant. 0 (dBm)	Limit (dBm)	Result
IEEE 802.11b	1	9.06	≤36.02	PASS
	6	8.76	≤36.02	PASS
	11	8.37	≤36.02	PASS
IEEE 802.11g	1	7.92	≤36.02	PASS
	6	8.05	≤36.02	PASS
	11	7.76	≤36.02	PASS
IEEE 802.11n_20	1	7.77	≤36.02	PASS
	6	7.56	≤36.02	PASS
	11	7.21	≤36.02	PASS

Note:

1.ANT Gain: 1.85 dBi, EIRP=Output Power+ANT Gain

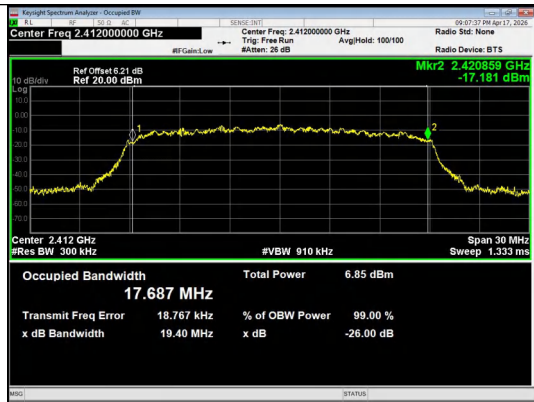
99% Bandwidth

Test Result

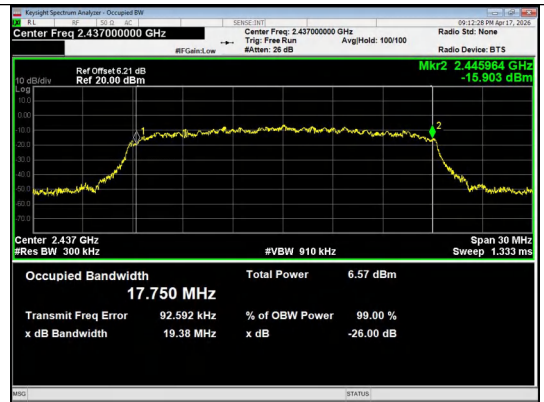
Mode	Channel	Ant.	Center Frequency (MHz)	99% BW (MHz)
IEEE 802.11b	1	0	2412	13.764
	6		2437	13.689
	11		2462	13.882
IEEE 802.11g	1		2412	17.230
	6		2437	17.022
	11		2462	17.208
IEEE 802.11n_20	1		2412	17.687
	6		2437	17.750
	11		2462	17.822

Test Graphs

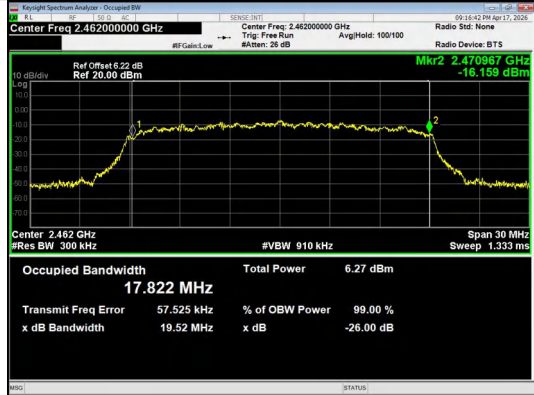
Keyight Spectrum Analyzer - Occupied BW Center Freq: 2.412000000 GHz Ref Offset: 6.21 dB, Ref: 20.00 dBm Mkr2: 2.418789 GHz, -18.919 dBm Center: 2412 GHz, #Res BW: 300 kHz, #VBW: 910 kHz, Span: 30 MHz, Sweep: 1.333 ms Occupied Bandwidth: 13.764 MHz, Total Power: 10.3 dBm Transmit Freq Error: -90.409 kHz, % of OBW Power: 99.00 % x dB Bandwidth: 17.32 MHz, x dB: -26.00 dB	Keyight Spectrum Analyzer - Occupied BW Center Freq: 2.437000000 GHz Ref Offset: 6.21 dB, Ref: 20.00 dBm Mkr2: 2.443945 GHz, -16.782 dBm Center: 2437 GHz, #Res BW: 300 kHz, #VBW: 910 kHz, Span: 30 MHz, Sweep: 1.333 ms Occupied Bandwidth: 13.689 MHz, Total Power: 9.73 dBm Transmit Freq Error: 102.14 kHz, % of OBW Power: 99.00 % x dB Bandwidth: 17.30 MHz, x dB: -26.00 dB
IEEE 802.11b_Channel 1_20MHz_Antenna 0	IEEE 802.11b_Channel 6_20MHz_Antenna 0
Keyight Spectrum Analyzer - Occupied BW Center Freq: 2.462000000 GHz Ref Offset: 6.22 dB, Ref: 20.00 dBm Mkr2: 2.468978 GHz, -16.550 dBm Center: 2462 GHz, #Res BW: 300 kHz, #VBW: 910 kHz, Span: 30 MHz, Sweep: 1.333 ms Occupied Bandwidth: 13.882 MHz, Total Power: 9.32 dBm Transmit Freq Error: 38.099 kHz, % of OBW Power: 99.00 % x dB Bandwidth: 17.69 MHz, x dB: -26.00 dB	Keyight Spectrum Analyzer - Occupied BW Center Freq: 2.412000000 GHz Ref Offset: 6.21 dB, Ref: 20.00 dBm Mkr2: 2.420481 GHz, -15.109 dBm Center: 2412 GHz, #Res BW: 300 kHz, #VBW: 910 kHz, Span: 30 MHz, Sweep: 1.333 ms Occupied Bandwidth: 17.230 MHz, Total Power: 7.04 dBm Transmit Freq Error: -131.66 kHz, % of OBW Power: 99.00 % x dB Bandwidth: 19.55 MHz, x dB: -26.00 dB
IEEE 802.11b_Channel 11_20MHz_Antenna 0	IEEE 802.11g_Channel 1_20MHz_Antenna 0
Keyight Spectrum Analyzer - Occupied BW Center Freq: 2.437000000 GHz Ref Offset: 6.21 dB, Ref: 20.00 dBm Mkr2: 2.445481 GHz, -17.991 dBm Center: 2437 GHz, #Res BW: 300 kHz, #VBW: 910 kHz, Span: 30 MHz, Sweep: 1.333 ms Occupied Bandwidth: 17.022 MHz, Total Power: 6.75 dBm Transmit Freq Error: -28.231 kHz, % of OBW Power: 99.00 % x dB Bandwidth: 19.51 MHz, x dB: -26.00 dB	Keyight Spectrum Analyzer - Occupied BW Center Freq: 2.462000000 GHz Ref Offset: 6.22 dB, Ref: 20.00 dBm Mkr2: 2.470631 GHz, -14.980 dBm Center: 2462 GHz, #Res BW: 300 kHz, #VBW: 910 kHz, Span: 30 MHz, Sweep: 1.333 ms Occupied Bandwidth: 17.208 MHz, Total Power: 6.44 dBm Transmit Freq Error: 28.548 kHz, % of OBW Power: 99.00 % x dB Bandwidth: 19.57 MHz, x dB: -26.00 dB
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



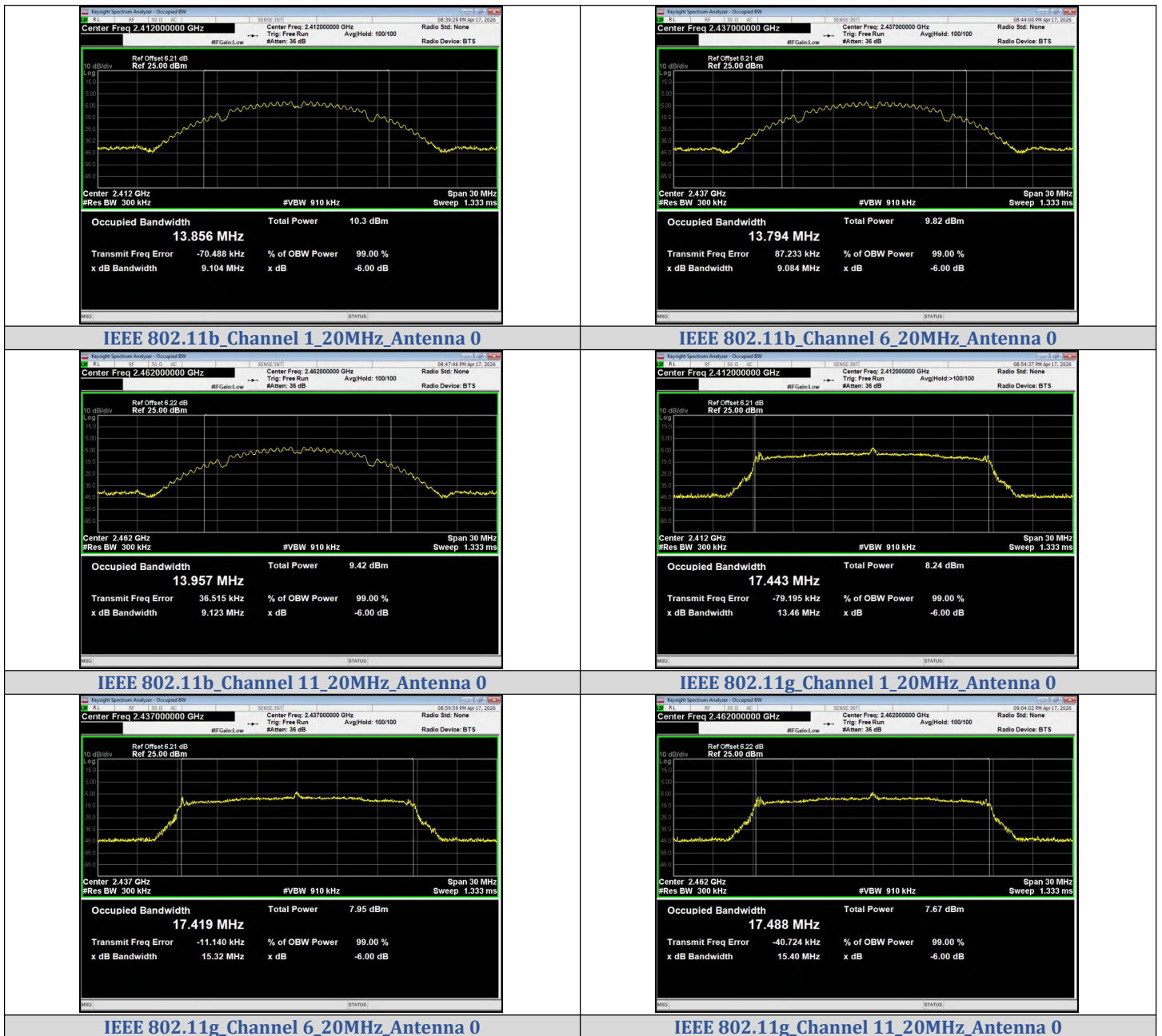
IEEE 802.11n_Channel 11_20MHz_Antenna 0

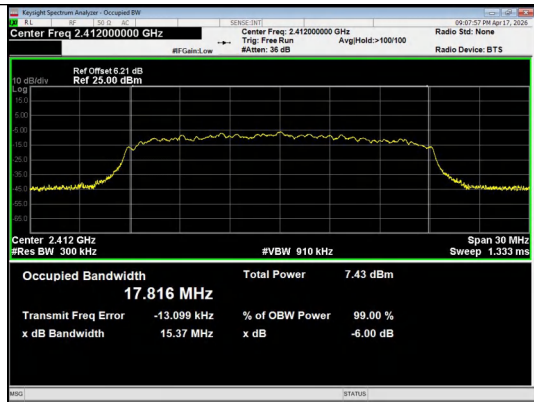
6dB Bandwidth

Test Result

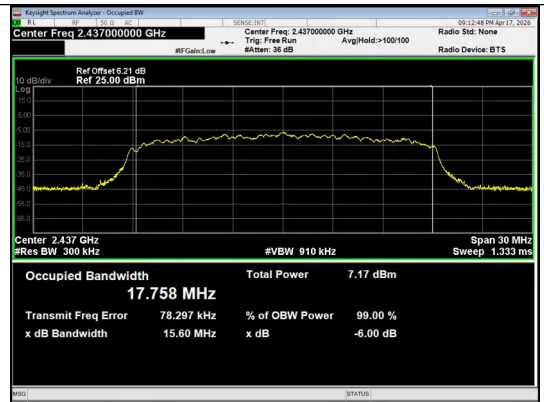
Mode	Channel	Ant.	Center Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11b	1	0	2412	9.104	≥0.5	PASS
	6		2437	9.084		PASS
	11		2462	9.123		PASS
IEEE 802.11g	1		2412	13.46		PASS
	6		2437	15.32		PASS
	11		2462	15.40		PASS
IEEE 802.11n_20	1		2412	15.37		PASS
	6		2437	15.60		PASS
	11		2462	15.72		PASS

Test Graphs

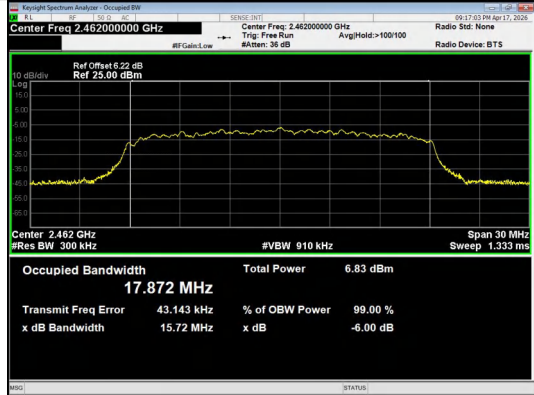




IEEE 802.11n_Channel 1_20MHz_Antenna 0



IEEE 802.11n_Channel 6_20MHz_Antenna 0



IEEE 802.11n_Channel 11_20MHz_Antenna 0

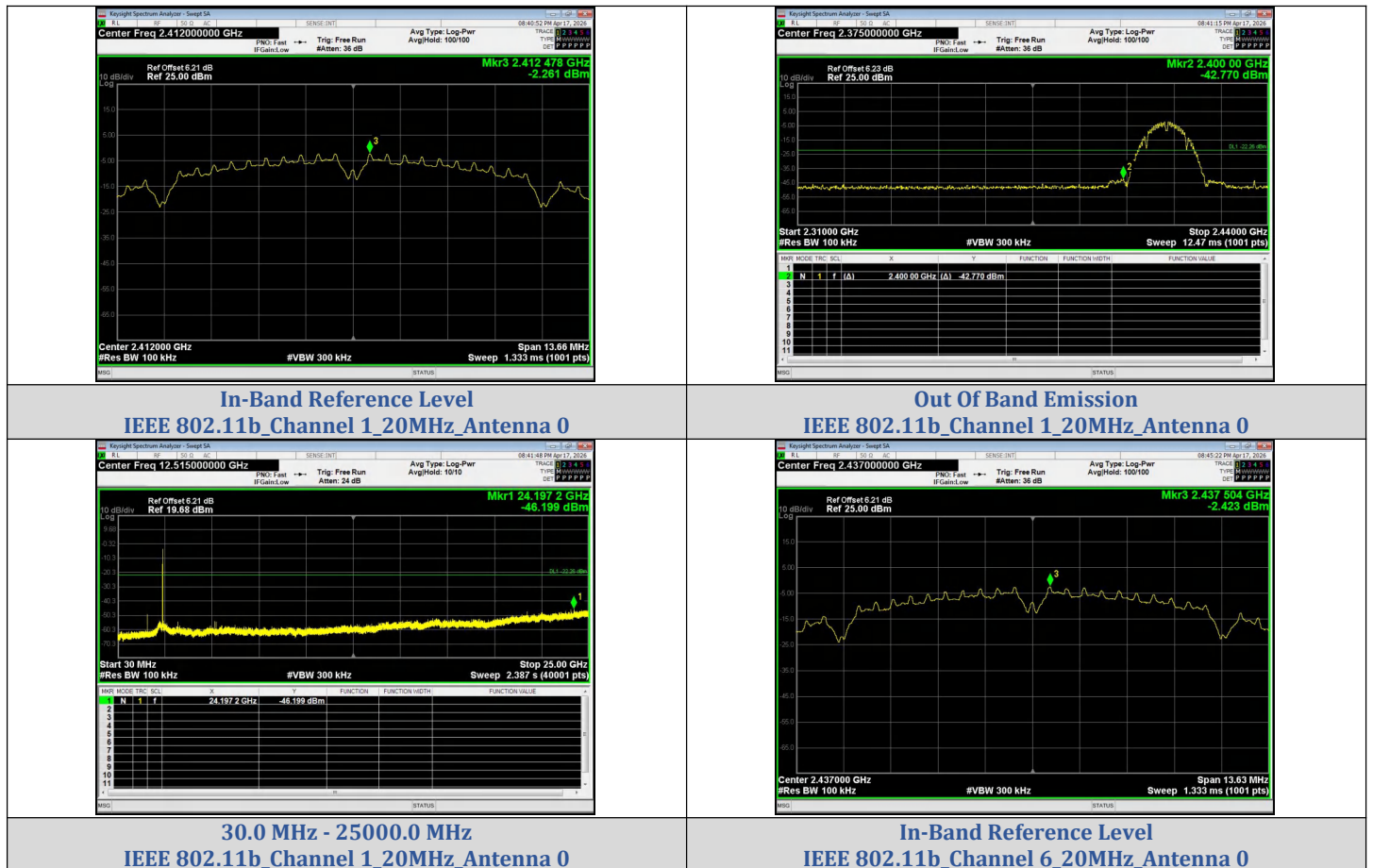
Conducted Spurious & Band Edge Emission

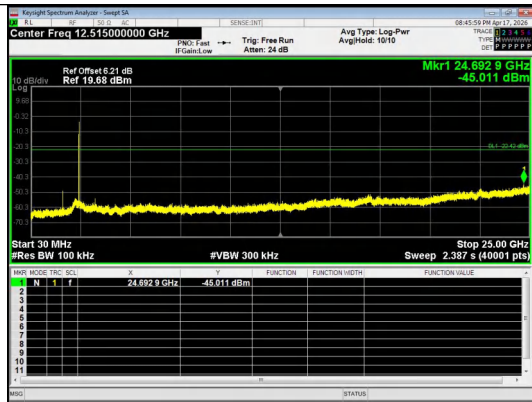
Test Result

Mode	Channel	Ant.	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	
IEEE 802.11b	1	0	2400.00	-42.770	-22.26	-20.510	PASS	
	6		24197.2	-46.199	-22.26	-23.939	PASS	
			24692.9	-45.011	-22.42	-22.591	PASS	
			2483.50	-47.951	-22.83	-25.121	PASS	
			24835.8	-46.265	-22.83	-23.435	PASS	
IEEE 802.11g	1		2333.01	-45.715	-26.39	-19.325	PASS	
			2400.00	-47.351	-26.39	-20.961	PASS	
	6		24650.4	-46.027	-26.39	-19.637	PASS	
			24853.9	-46.440	-27.12	-19.320	PASS	
			11	2483.50	-48.410	-28.26	-20.150	PASS
				24799.0	-46.376	-28.26	-18.116	PASS
IEEE 802.11n_20	1		2393.98	-46.374	-29.09	-17.284	PASS	
			2400.00	-46.670	-29.09	-17.580	PASS	
	6		24689.1	-46.303	-29.09	-17.213	PASS	
			24948.8	-45.278	-29.09	-16.188	PASS	
		11	2483.50	-48.435	-29.52	-18.915	PASS	
			24632.9	-45.819	-29.52	-16.299	PASS	

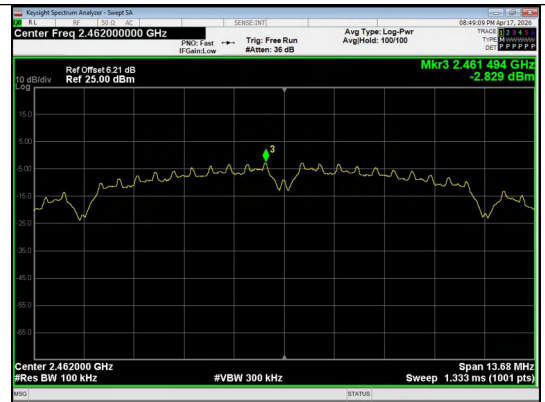
Note: input compensation coefficient (dB)= Cable Loss (dB)

Test Graphs

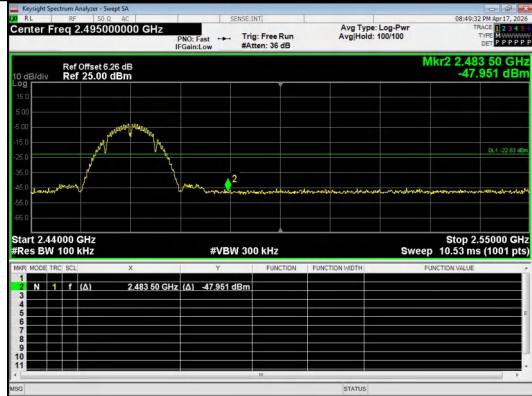




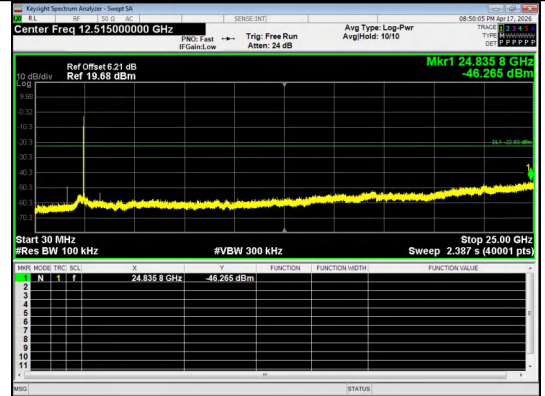
30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 6_20MHz_Antenna 0



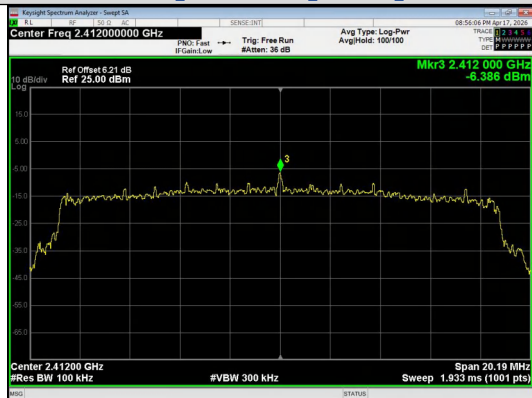
In-Band Reference Level
IEEE 802.11b_Channel 11_20MHz_Antenna 0



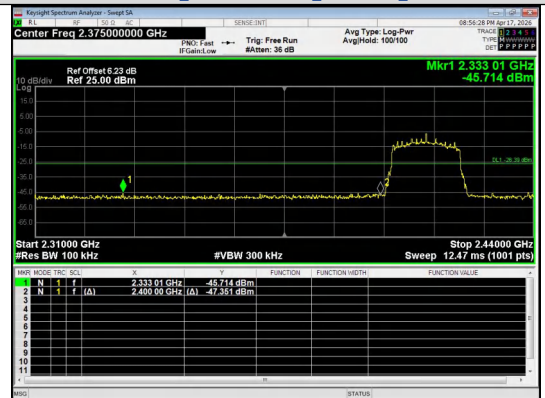
Out Of Band Emission
IEEE 802.11b_Channel 11_20MHz_Antenna 0



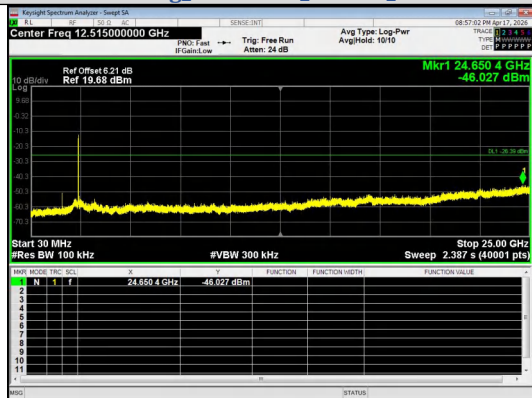
30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 11_20MHz_Antenna 0



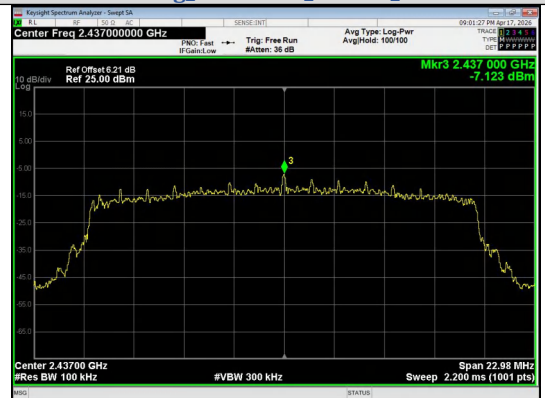
In-Band Reference Level
IEEE 802.11g_Channel 1_20MHz_Antenna 0



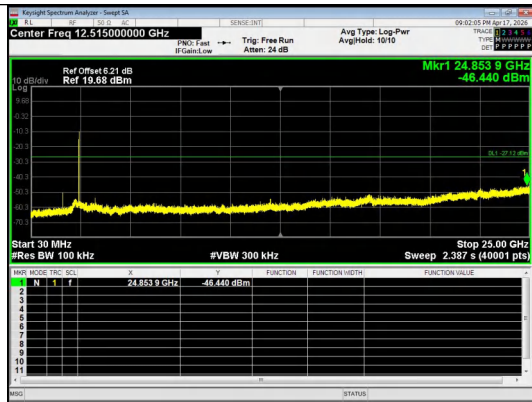
Out Of Band Emission
IEEE 802.11g_Channel 1_20MHz_Antenna 0



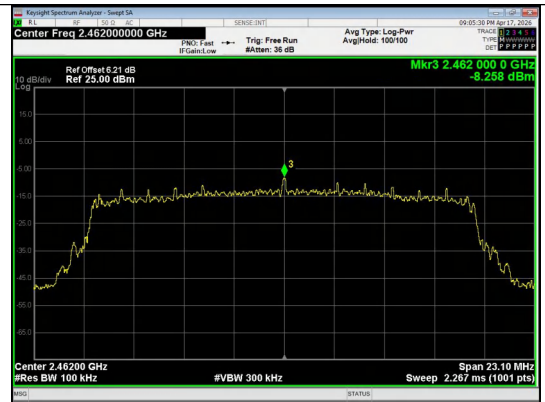
30.0 MHz - 25000.0 MHz
IEEE 802.11g_Channel 1_20MHz_Antenna 0



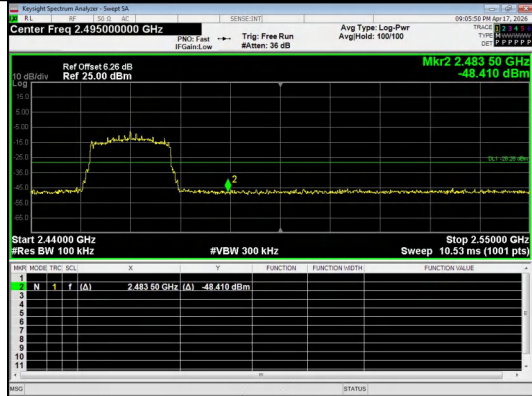
In-Band Reference Level
IEEE 802.11g_Channel 6_20MHz_Antenna 0



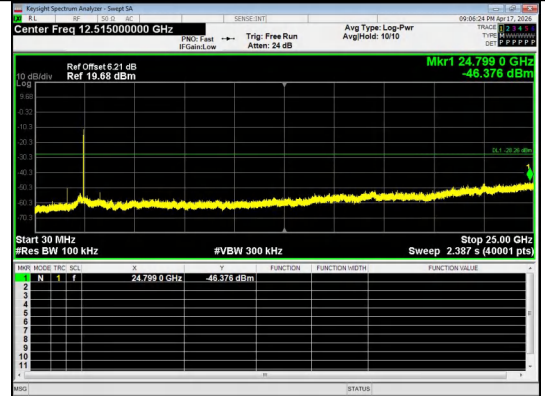
30.0 MHz - 25000.0 MHz
IEEE 802.11g_Channel 6_20MHz_Antenna 0



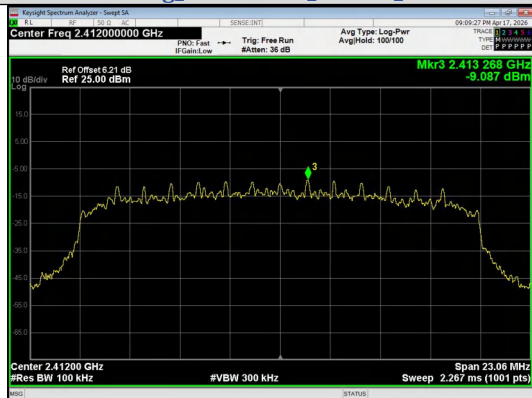
In-Band Reference Level
IEEE 802.11g_Channel 11_20MHz_Antenna 0



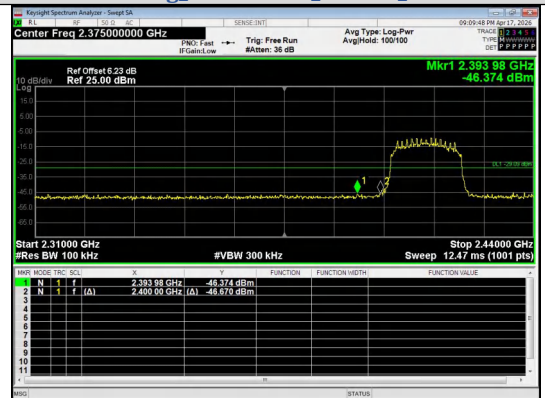
Out Of Band Emission
IEEE 802.11g_Channel 11_20MHz_Antenna 0



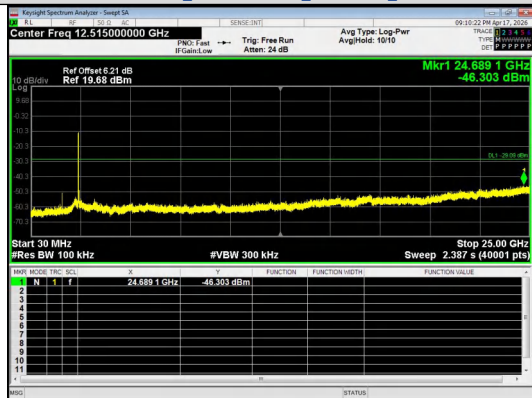
30.0 MHz - 25000.0 MHz
IEEE 802.11g_Channel 11_20MHz_Antenna 0



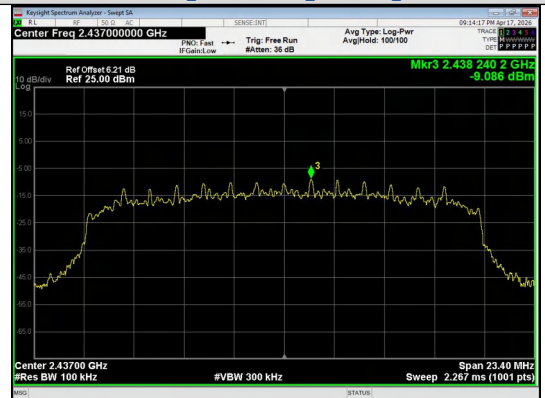
In-Band Reference Level
IEEE 802.11n_Channel 1_20MHz_Antenna 0



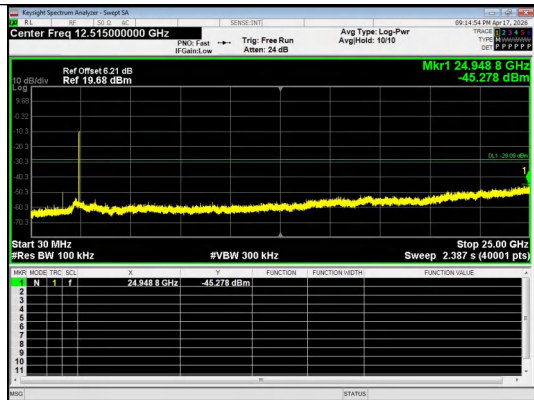
Out Of Band Emission
IEEE 802.11n_Channel 1_20MHz_Antenna 0



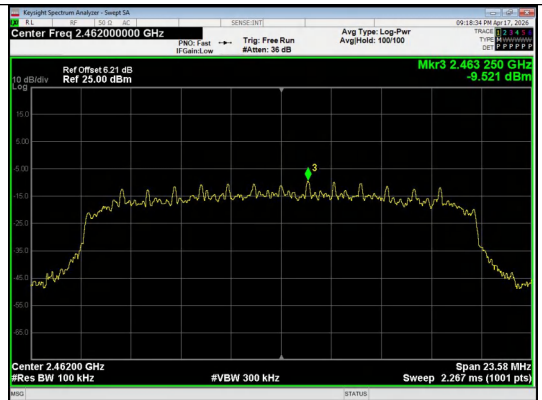
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 1_20MHz_Antenna 0



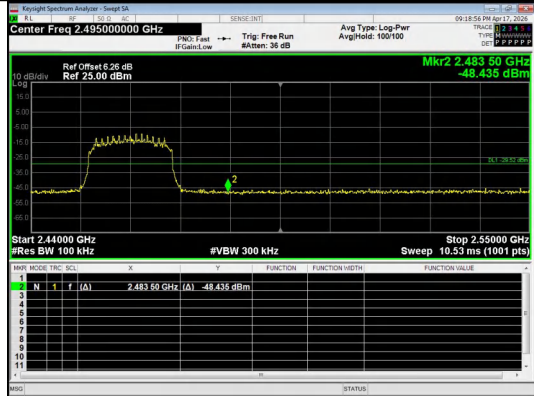
In-Band Reference Level
IEEE 802.11n_Channel 6_20MHz_Antenna 0



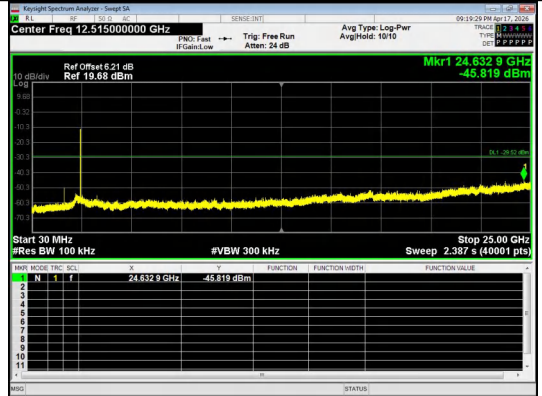
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 6_20MHz_Antenna 0



In-Band Reference Level
IEEE 802.11n_Channel 11_20MHz_Antenna 0



Out Of Band Emission
IEEE 802.11n_Channel 11_20MHz_Antenna 0



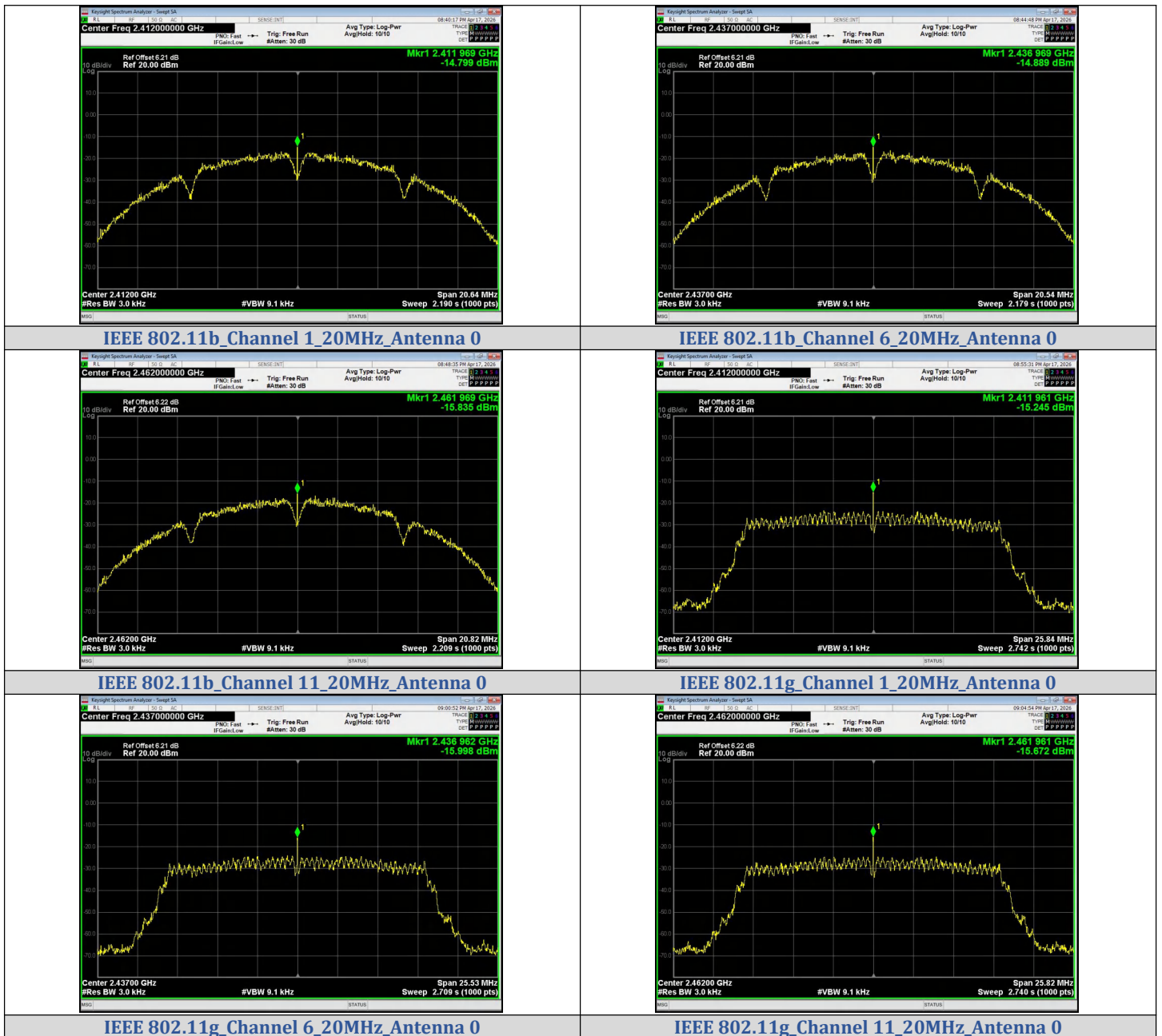
30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 11_20MHz_Antenna 0

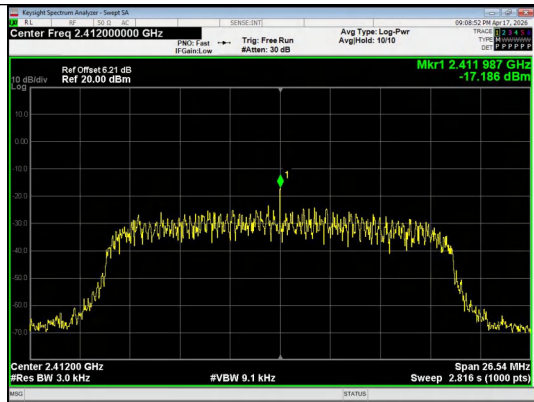
Power Spectral Density

Test Result

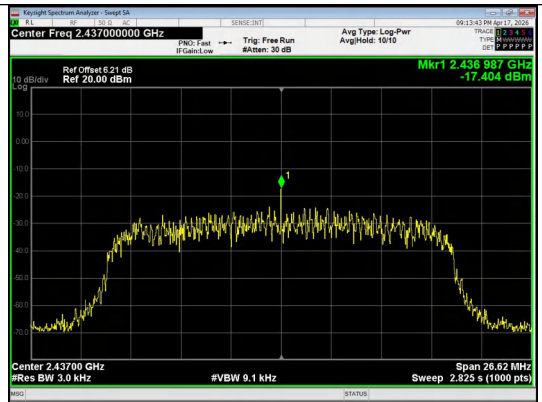
Mode	Channel	PSD (dBm/3kHz) Ant. 0	Limit (dBm/3kHz)	Result
IEEE 802.11b	1	-14.800	≤8	PASS
	6	-14.890		PASS
	11	-15.840		PASS
IEEE 802.11g	1	-15.240		PASS
	6	-16.000		PASS
	11	-15.670		PASS
IEEE 802.11n_20	1	-17.190		PASS
	6	-17.400		PASS
	11	-17.770		PASS

Test Graphs

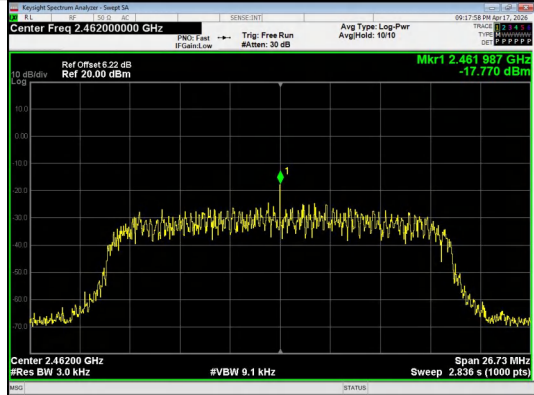




IEEE 802.11n_Channel 1_20MHz_Antenna 0



IEEE 802.11n_Channel 6_20MHz_Antenna 0



IEEE 802.11n_Channel 11_20MHz_Antenna 0

