

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: DASH CAM

Trade Mark: Pernis

Test Model: S2

Environmental Conditions

Temperature:	23.4 ° C
Relative Humidity:	55.7%
ATM Pressure:	100.0 kPa
Test Engineer:	<i>Hugh Zhang</i>
Supervised by:	<i>Cherry Chen</i>

A.1 MAXIMUM CONDUCTED OUTPUT POWER

Test Result

Condition	Mode	Frequency (MHz)	RU & Index	Antenna	Maximum peak conducted output power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	N/A	Ant0	12.71	30	Pass
NVNT	b	2437		Ant0	12.47	30	Pass
NVNT	b	2462		Ant0	11.99	30	Pass
NVNT	g	2412		Ant0	13.49	30	Pass
NVNT	g	2437		Ant0	13.07	30	Pass
NVNT	g	2462		Ant0	12.41	30	Pass
NVNT	n20	2412		Ant0	12.92	30	Pass
NVNT	n20	2437		Ant0	12.87	30	Pass
NVNT	n20	2462		Ant0	12.19	30	Pass
NVNT	n40	2422		Ant0	12.84	30	Pass
NVNT	n40	2437		Ant0	13.51	30	Pass
NVNT	n40	2452		Ant0	12.85	30	Pass
NVNT	ax20	2412	Full RU	Ant0	11.61	30	Pass
NVNT	ax20	2437		Ant0	11.44	30	Pass
NVNT	ax20	2462		Ant0	11.95	30	Pass
NVNT	ax40	2422		Ant0	11.93	30	Pass
NVNT	ax40	2437		Ant0	12.07	30	Pass
NVNT	ax40	2452		Ant0	11.89	30	Pass

Partial RU:

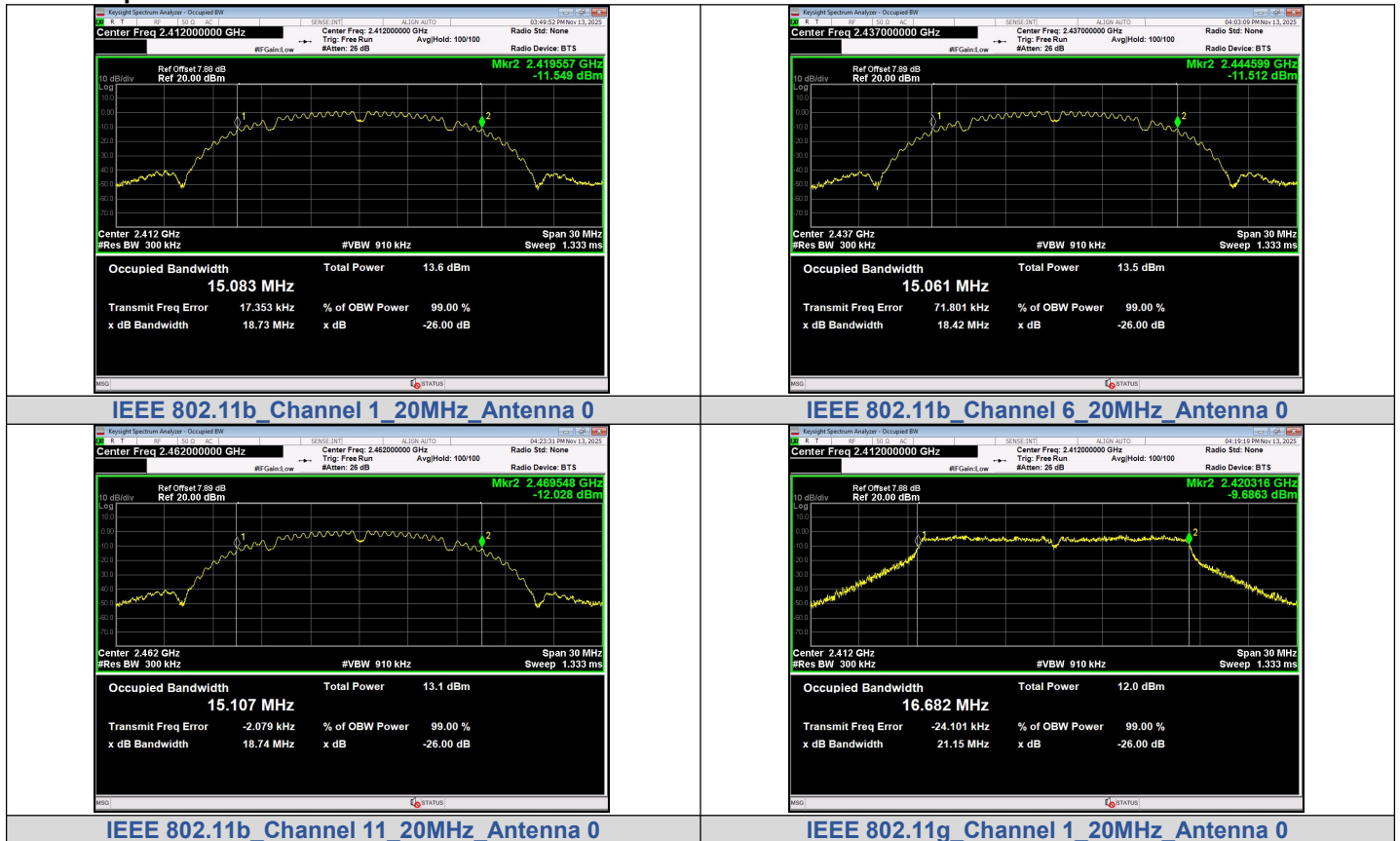
Test Mode	Channel/ Frequency (MHz)	RU configure	Maximum peak conducted output power (dBm)	Limit (dBm)	Verdict
AX20	1 / 2412	26 / 0	6.37	30	Pass
AX20	1 / 2412	52 / 37	6.24	30	Pass
AX20	1 / 2412	106 / 53	6.18	30	Pass
AX20	11 / 2462	26 / 8	6.53	30	Pass
AX20	11 / 2462	52 / 40	6.29	30	Pass
AX20	11 / 2462	106 / 54	6.04	30	Pass

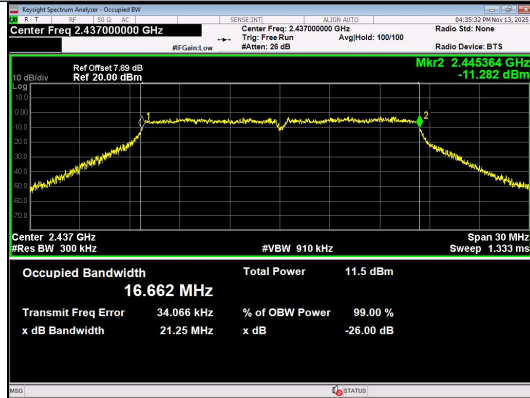
A.2 99% BANDWIDTH

Test Result

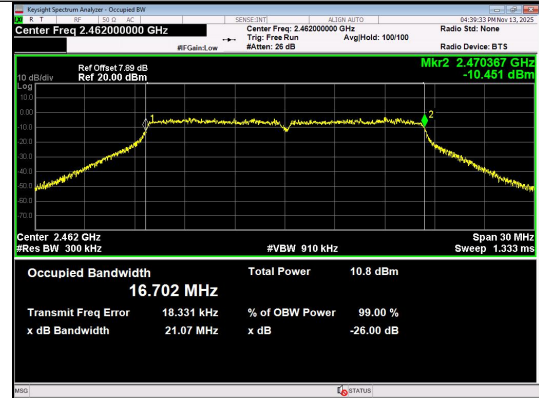
Mode	Channel	RU & Index	Ant.	Center Frequency (MHz)	99% BW (MHz)
IEEE 802.11b	1	N/A	0	2412	15.083
	6			2437	15.061
	11			2462	15.107
IEEE 802.11g	1			2412	16.682
	6			2437	16.662
	11			2462	16.702
IEEE 802.11n_20	1			2412	17.888
	6			2437	17.858
	11			2462	17.888
IEEE 802.11n_40	3			2422	36.471
	6			2437	36.251
	9			2452	36.264
IEEE 802.11ax_20	1	Full RU		2412	17.808
	6			2437	17.815
	11			2462	17.846
IEEE 802.11ax_40	3			2422	36.256
	6			2437	36.373
	9			2452	36.400

Test Graphs

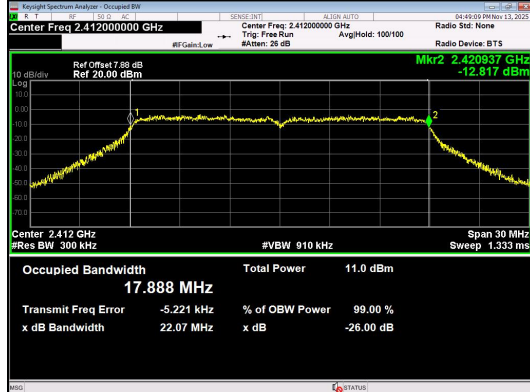




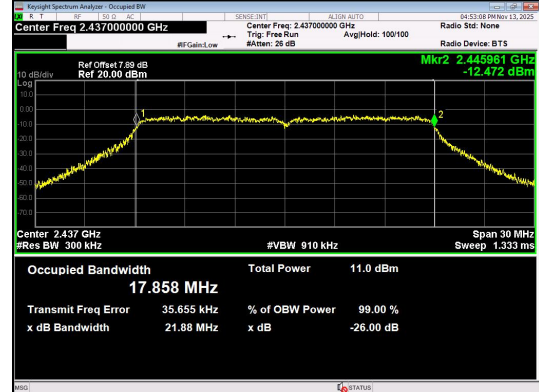
IEEE 802.11g Channel 6 20MHz Antenna 0



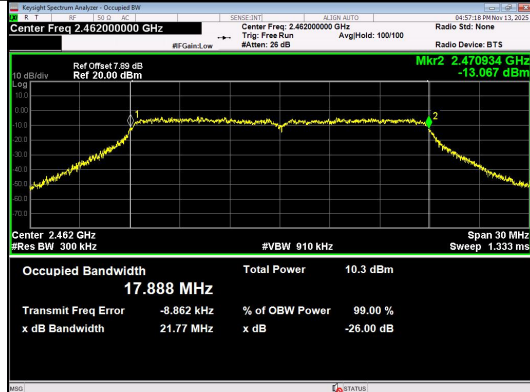
IEEE 802.11g Channel 11 20MHz Antenna 0



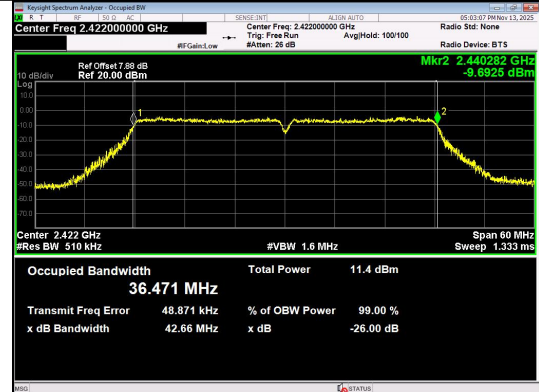
IEEE 802.11n Channel 1 20MHz Antenna 0



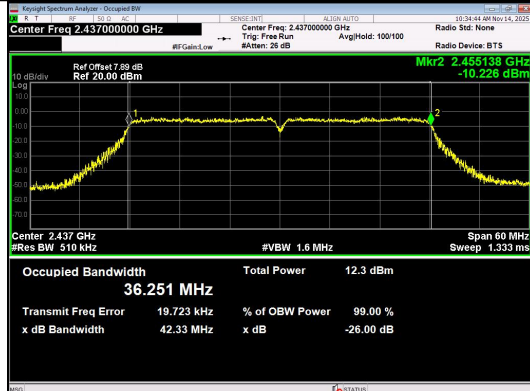
IEEE 802.11n Channel 6 20MHz Antenna 0



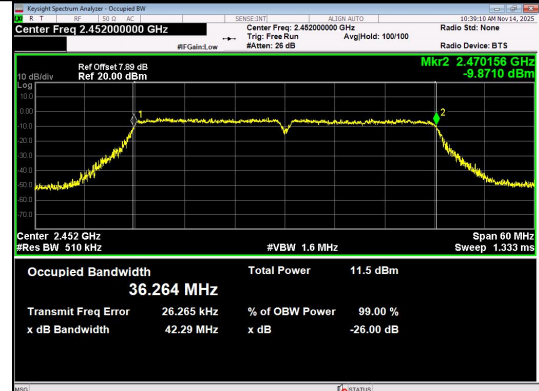
IEEE 802.11n Channel 11 20MHz Antenna 0



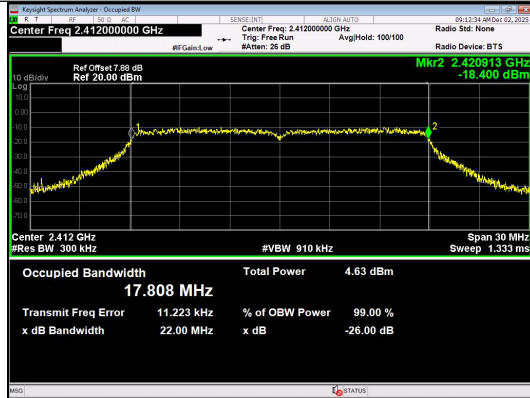
IEEE 802.11n Channel 3 40MHz Antenna 0



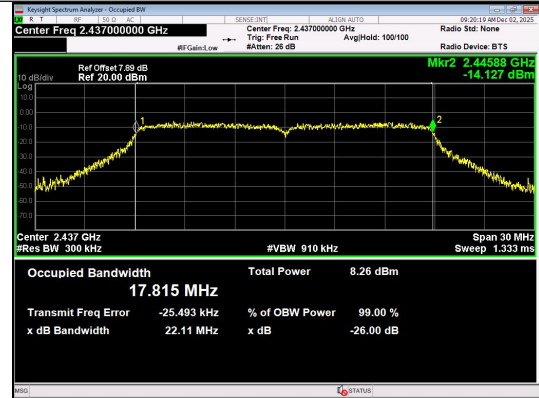
IEEE 802.11n Channel 6 40MHz Antenna 0



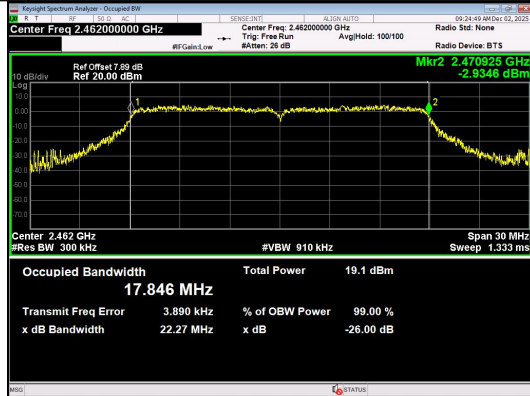
IEEE 802.11n Channel 9 40MHz Antenna 0



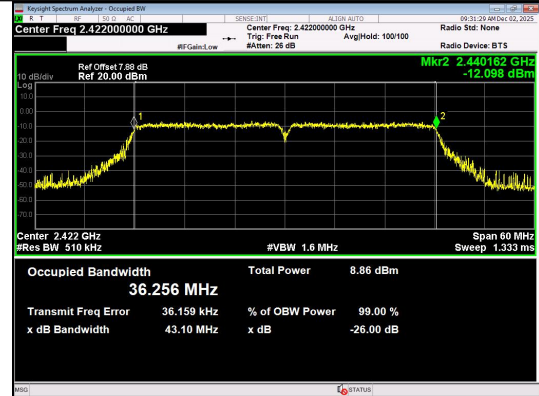
IEEE 802.11ax Channel 1 20MHz Antenna 0 Full RU



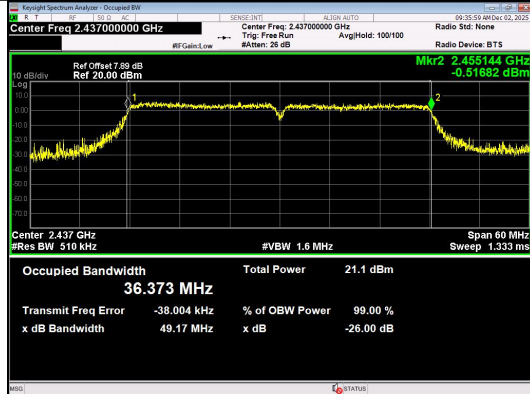
IEEE 802.11ax Channel 6 20MHz Antenna 0 Full RU



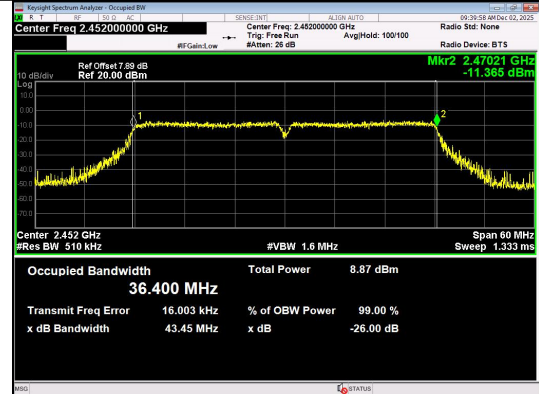
IEEE 802.11ax Channel 11 20MHz Antenna 0 Full RU



IEEE 802.11ax Channel 3 40MHz Antenna 0 Full RU



IEEE 802.11ax Channel 6 40MHz Antenna 0 Full RU



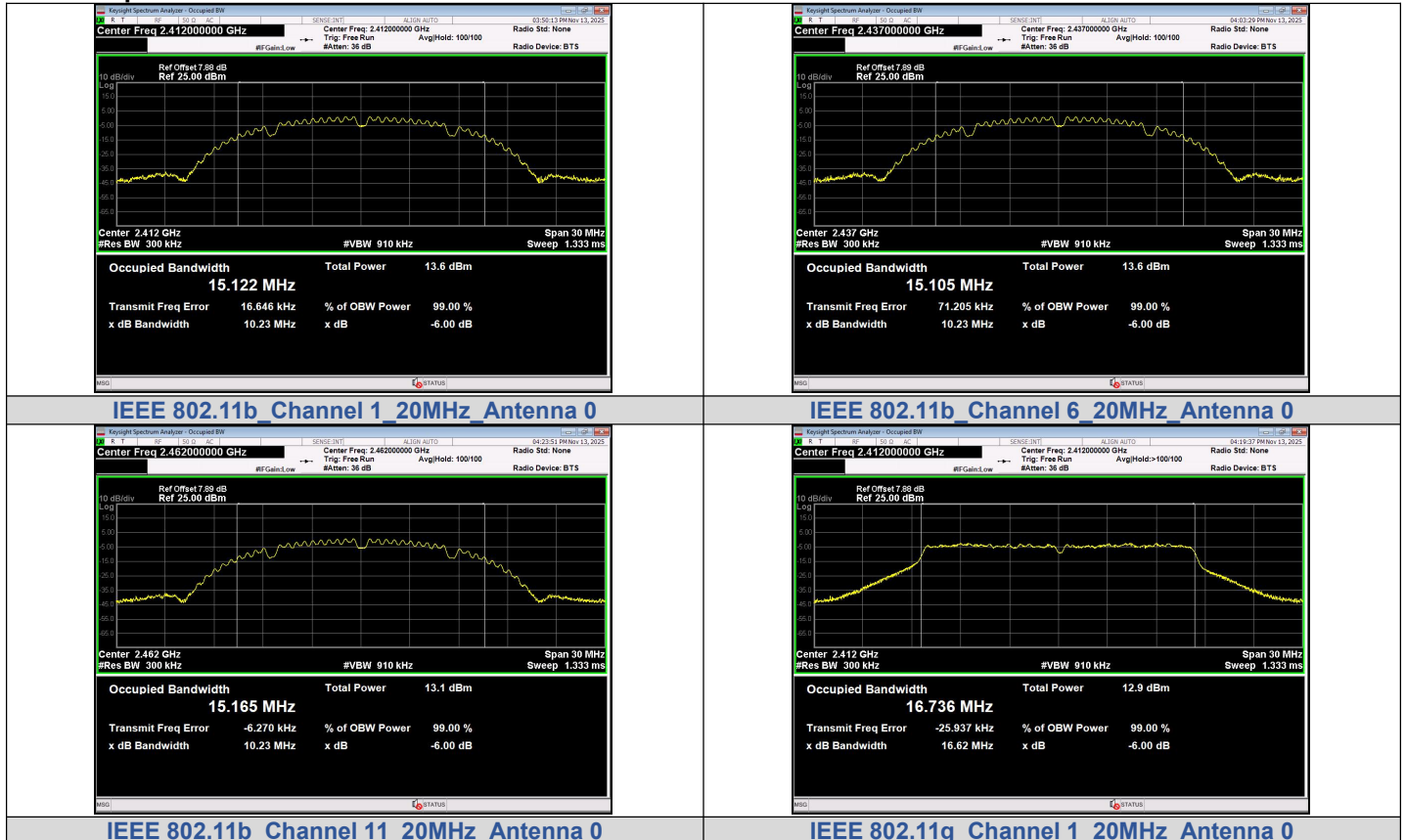
IEEE 802.11ax Channel 9 40MHz Antenna 0 Full RU

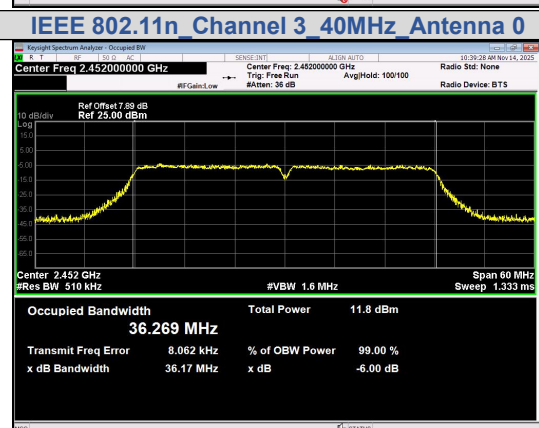
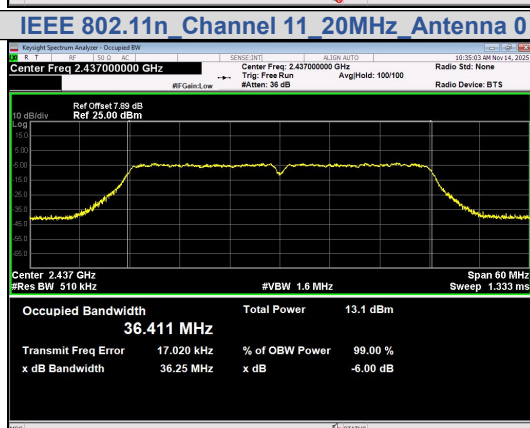
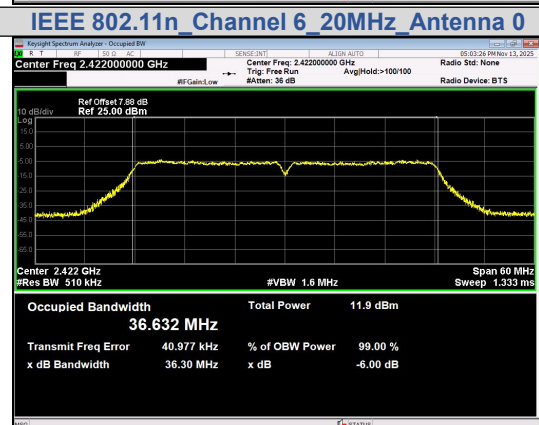
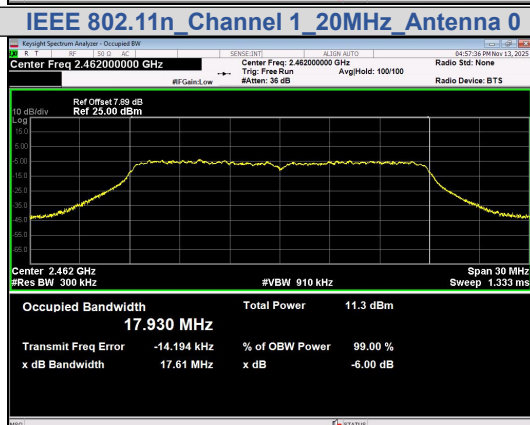
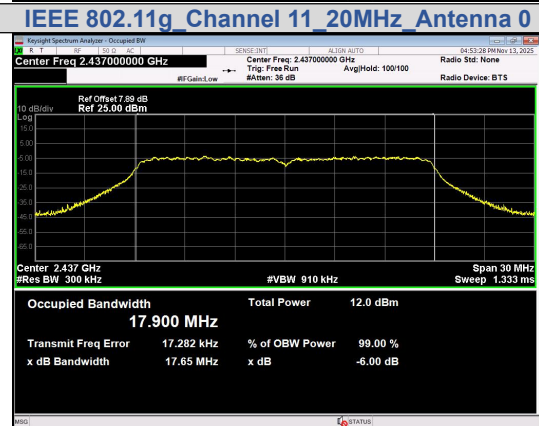
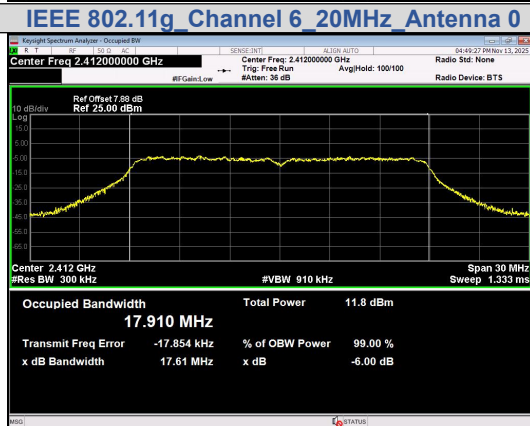
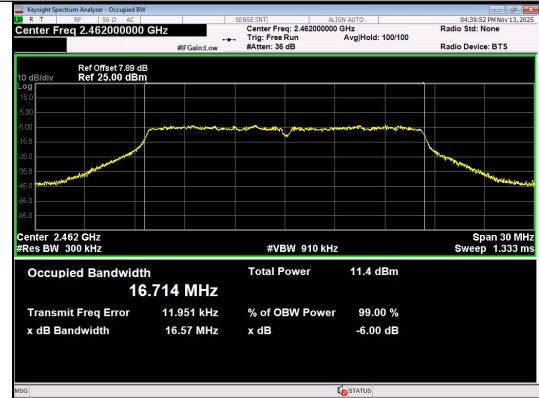
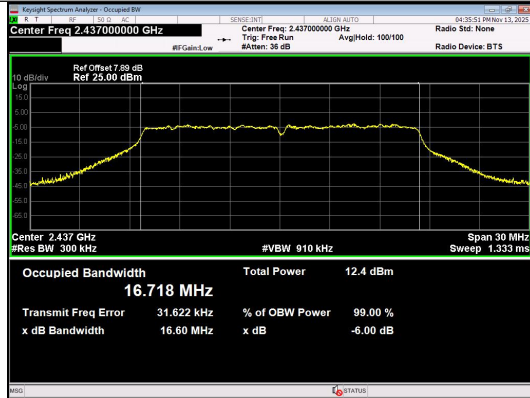
A.3 6DB BANDWIDTH

Test Result

Mode	Channel	RU & Index	Ant.	Center Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11b	1	N/A	0	2412	10.23	≥0.5	PASS
	6			2437	10.23		PASS
	11			2462	10.23		PASS
IEEE 802.11g	1			2412	16.62		PASS
	6			2437	16.60		PASS
	11			2462	16.57		PASS
IEEE 802.11n_20	1			2412	17.61		PASS
	6			2437	17.65		PASS
	11			2462	17.61		PASS
IEEE 802.11n_40	3	2422		36.30	PASS		
	6	2437		36.25	PASS		
	9	2452		36.17	PASS		
IEEE 802.11ax_20	1	Full RU		2412	17.61		PASS
	6			2437	17.65		PASS
	11			2462	17.61		PASS
IEEE 802.11ax_40	3			2422	36.30		PASS
	6			2437	36.25		PASS
	9			2452	36.17		PASS

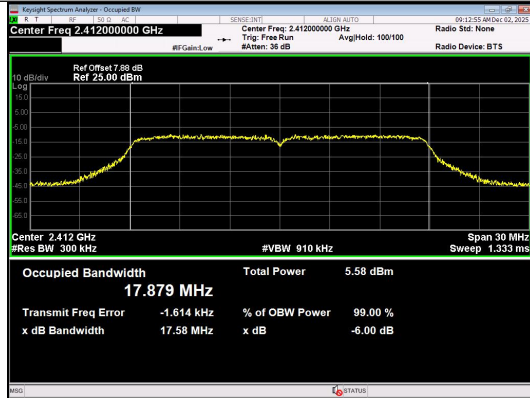
Test Graphs



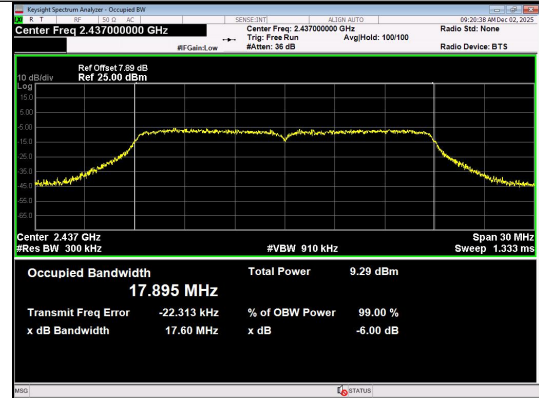


IEEE 802.11n Channel 6 40MHz Antenna 0

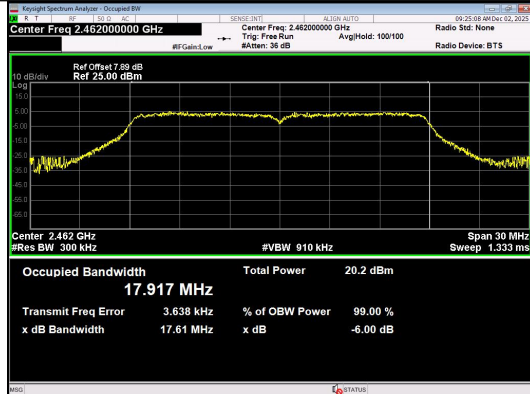
IEEE 802.11n Channel 9 40MHz Antenna 0



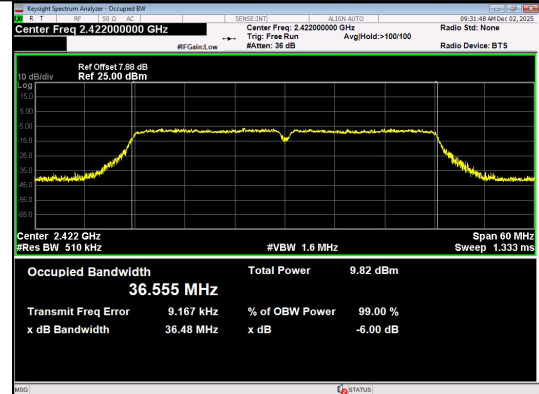
IEEE 802.11ax Channel 1 20MHz Antenna 0 Full RU



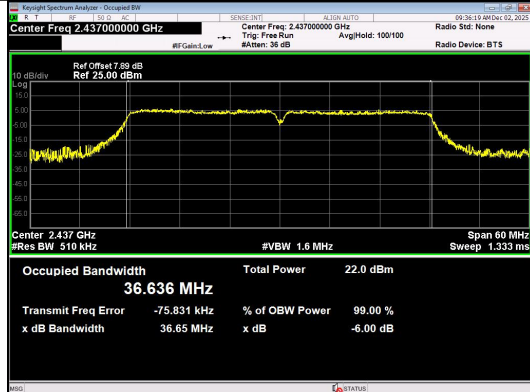
IEEE 802.11ax Channel 6 20MHz Antenna 0 Full RU



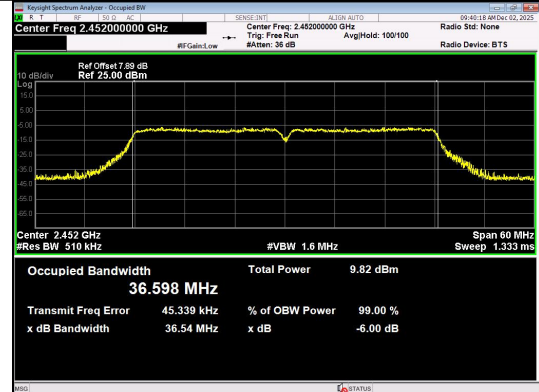
IEEE 802.11ax Channel 11 20MHz Antenna 0 Full RU



IEEE 802.11ax Channel 3 40MHz Antenna 0 Full RU



IEEE 802.11ax Channel 6 40MHz Antenna 0 Full RU



IEEE 802.11ax Channel 9 40MHz Antenna 0 Full RU

A.4 CONDUCTED OUT OF BAND EMISSION

Test Result

Mode	Channel	RU & Index	Ant.	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
IEEE 802.11b	1	N/A	0	2400.00	-41.176	-20.13	-21.046	PASS
				4810.51	-53.590	-20.13	-33.460	PASS
				7249.45	-54.087	-20.13	-33.957	PASS
				9629.09	-55.250	-20.13	-35.120	PASS
	21479.9			-42.486	-20.13	-22.356	PASS	
	6			4858.57	-52.778	-20.28	-32.498	PASS
				7322.49	-54.378	-20.28	-34.098	PASS
				9734.59	-55.171	-20.28	-34.891	PASS
				21127.8	-42.865	-20.28	-22.585	PASS
	11			2483.50	-46.828	-20.52	-26.308	PASS
				4912.26	-53.667	-20.52	-33.147	PASS
				7388.66	-55.658	-20.52	-35.138	PASS
				9866.93	-54.121	-20.52	-33.601	PASS
				21583.5	-42.675	-20.52	-22.155	PASS
2400.00				-39.545	-25.36	-14.185	PASS	
IEEE 802.11g	1			4837.97	-54.187	-25.36	-28.827	PASS
				7235.72	-55.270	-25.36	-29.910	PASS
				9637.21	-56.097	-25.36	-30.737	PASS
				21145.9	-42.791	-25.36	-17.431	PASS
	6			4892.91	-53.225	-26.4	-26.825	PASS
				7311.25	-54.299	-26.4	-27.899	PASS
				9752.07	-55.786	-26.4	-29.386	PASS
				21150.3	-41.395	-26.4	-14.995	PASS
	11			2483.50	-46.652	-26.82	-19.832	PASS
				4911.64	-53.910	-26.82	-27.090	PASS
				7399.27	-55.296	-26.82	-28.476	PASS
				9861.31	-54.698	-26.82	-27.878	PASS
				21563.5	-41.675	-26.82	-14.855	PASS
				2400.00	-40.049	-27.89	-12.159	PASS
IEEE 802.11n_20	1			4843.59	-53.639	-27.89	-25.749	PASS
				7235.09	-54.787	-27.89	-26.897	PASS
				9629.72	-55.553	-27.89	-27.663	PASS
				21594.7	-41.917	-27.89	-14.027	PASS
	6			4873.56	-53.476	-28.12	-25.356	PASS
				7318.12	-55.369	-28.12	-27.249	PASS
				9755.19	-56.296	-28.12	-28.176	PASS
				21160.9	-42.515	-28.12	-14.395	PASS
	11			2483.50	-47.280	-28.24	-19.040	PASS
				4927.87	-53.204	-28.24	-24.964	PASS
				7369.31	-55.458	-28.24	-27.218	PASS
				9854.45	-54.608	-28.24	-26.369	PASS
				21132.8	-42.767	-28.24	-14.527	PASS
				2400.00	-41.012	-31.23	-9.782	PASS
IEEE 802.11n_40	3			4866.06	-52.416	-31.23	-21.186	PASS
				7243.83	-54.518	-31.23	-23.288	PASS
				9685.90	-55.132	-31.23	-23.902	PASS
				21159.6	-41.887	-31.23	-10.657	PASS
	6			4896.65	-53.027	-29.88	-23.147	PASS
				7288.15	-54.963	-29.88	-25.083	PASS
				9780.78	-55.248	-29.88	-25.368	PASS
				24519.3	-42.405	-29.88	-12.525	PASS
	9			2483.50	-47.237	-31.02	-16.217	PASS
				4865.44	-53.224	-31.02	-22.204	PASS
				7376.80	-55.577	-31.02	-24.557	PASS
				9768.92	-54.962	-31.02	-23.942	PASS
				21163.4	-43.040	-31.02	-12.020	PASS
		2365.90		-44.447	-31.62	-12.827	PASS	
IEEE 802.11ax_20	1	Full RU		2400.00	-44.968	-31.62	-13.348	PASS
				4841.70	-53.275	-31.62	-21.655	PASS
				7250.70	-54.956	-31.62	-23.336	PASS

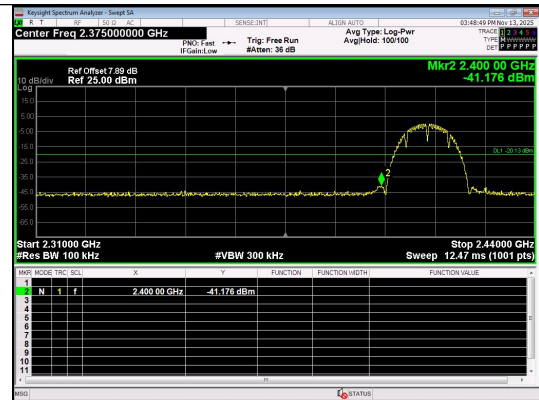
	6		9645.90	-55.385	-31.62	-23.765	PASS
			21572.9	-42.016	-31.62	-10.396	PASS
	11		4861.07	-53.569	-27.65	-25.919	PASS
			7323.11	-55.333	-27.65	-27.683	PASS
			9757.06	-55.875	-27.65	-28.225	PASS
			21200.8	-43.051	-27.65	-15.401	PASS
			2483.50	-39.376	-16.67	-22.706	PASS
			4939.10	-52.450	-16.67	-35.780	PASS
			7385.54	-55.687	-16.67	-39.017	PASS
			9846.96	-54.976	-16.67	-38.306	PASS
	3		21583.5	-42.525	-16.67	-25.855	PASS
			2400.00	-42.101	-29.36	-12.741	PASS
			4878.55	-52.694	-29.36	-23.334	PASS
			7303.14	-54.789	-29.36	-25.429	PASS
			9702.13	-55.284	-29.36	-25.924	PASS
			21587.2	-42.578	-29.36	-13.218	PASS
	6		4884.17	-52.796	-16.23	-36.566	PASS
			7311.25	-54.502	-16.23	-38.272	PASS
			9745.83	-55.777	-16.23	-39.547	PASS
			21152.1	-42.886	-16.23	-26.656	PASS
			2483.50	-46.124	-29.37	-16.754	PASS
			4894.78	-52.848	-29.37	-23.478	PASS
	9		7318.74	-55.357	-29.37	-25.987	PASS
			9795.77	-53.959	-29.37	-24.589	PASS

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

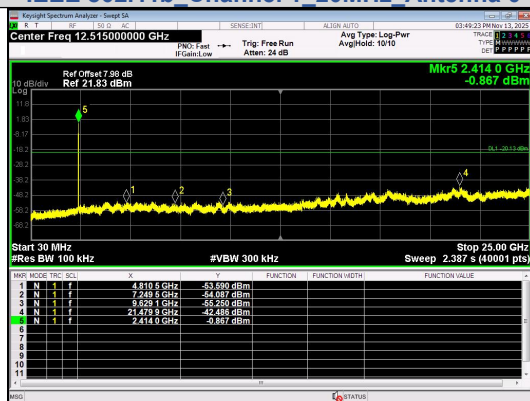
Test Graphs



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