



Appendix B. Radiated Spurious Emission

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2335.65	51.23	-22.77	74	52.24	27.1	34.06	5.95	104	280	P	H
		2388.39	39.11	-14.89	54	39.91	27.23	34.04	6.01	104	280	A	H
	*	2412	97.12	-	-	97.84	27.28	34.04	6.04	104	280	P	H
	*	2412	94.8	-	-	95.52	27.28	34.04	6.04	104	280	A	H
													H
													H
		2384.97	51.48	-22.52	74	52.32	27.19	34.04	6.01	109	279	P	V
		2388.3	39.84	-14.16	54	40.64	27.23	34.04	6.01	109	279	A	V
	*	2412	101.59	-	-	102.31	27.28	34.04	6.04	109	279	P	V
	*	2412	99.37	-	-	100.09	27.28	34.04	6.04	109	279	A	V
													V
													V
802.11b CH 06 2437MHz		2327.82	51.11	-22.89	74	52.17	27.05	34.06	5.95	133	280	P	H
		2390.00	38.71	-15.29	54	39.51	27.23	34.04	6.01	133	280	A	H
	*	2437	98.66	-	-	99.28	27.37	34.03	6.04	133	280	P	H
	*	2437	96.42	-	-	97.04	27.37	34.03	6.04	133	280	A	H
		2487.52	52.25	-21.75	74	52.67	27.5	34.01	6.09	133	280	P	H
		2492.76	39.54	-14.46	54	39.95	27.5	34	6.09	133	280	A	H
		2384.7	50.92	-23.08	74	51.76	27.19	34.04	6.01	353	283	P	V
		2381.82	39.53	-14.47	54	40.37	27.19	34.04	6.01	353	283	A	V
	*	2437	103.43	-	-	104.05	27.37	34.03	6.04	353	283	P	V
	*	2437	101.19	-	-	101.81	27.37	34.03	6.04	353	283	A	V
		2486.52	51.87	-22.13	74	52.33	27.46	34.01	6.09	353	283	P	V
		2492.36	40.28	-13.72	54	40.69	27.5	34	6.09	353	283	A	V



802.11b CH 11 2462MHz	*	2462	98.43	-	-	98.97	27.41	34.02	6.07	101	108	P	H
	*	2462	95.99	-	-	96.53	27.41	34.02	6.07	101	108	A	H
		2489.88	51.74	-22.26	74	52.16	27.5	34.01	6.09	101	108	P	H
		2483.64	39.65	-14.35	54	40.11	27.46	34.01	6.09	101	108	A	H
													H
													H
	*	2462	102.42	-	-	102.96	27.41	34.02	6.07	325	354	P	V
	*	2462	100.05	-	-	100.59	27.41	34.02	6.07	325	354	A	V
		2484.88	52.1	-21.9	74	52.56	27.46	34.01	6.09	325	354	P	V
		2486.64	40.09	-13.91	54	40.55	27.46	34.01	6.09	325	354	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		4824	40.07	-33.93	74	33.65	31.32	33.55	8.65	100	0	P	H
													H
													H
													H
		4824	39.47	-34.53	74	33.05	31.32	33.55	8.65	100	0	P	V
													V
													V
													V
802.11b CH 06 2437MHz		4874	40.71	-33.29	74	34.15	31.41	33.54	8.69	100	0	P	H
		7311	46.22	-27.78	74	33.99	36.28	34.44	10.39	100	0	P	H
													H
													H
		4874	40.32	-33.68	74	33.76	31.41	33.54	8.69	100	0	P	V
		7311	44.76	-29.24	74	32.53	36.28	34.44	10.39	100	0	P	V
													V
													V
802.11b CH 11 2462MHz		4924	39.88	-34.12	74	33.14	31.49	33.54	8.79	100	0	P	H
		7386	45.37	-28.63	74	32.9	36.47	34.48	10.48	100	0	P	H
													H
													H
		4924	39.67	-34.33	74	32.93	31.49	33.54	8.79	100	0	P	V
		7386	45.95	-28.05	74	33.48	36.47	34.48	10.48	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		2389.56	66.05	-7.95	74	66.85	27.23	34.04	6.01	100	105	P	H
		2390	51.09	-2.91	54	51.89	27.23	34.04	6.01	100	105	A	H
	*	2410	101.4	-	-	102.12	27.28	34.04	6.04	100	105	P	H
	*	2410	91.84	-	-	92.56	27.28	34.04	6.04	100	105	A	H
													H
													H
		2389.83	69.88	-4.12	74	70.68	27.23	34.04	6.01	100	63	P	V
		2390	52.33	-1.67	54	53.13	27.23	34.04	6.01	100	63	A	V
	*	2414	102.84	-	-	103.56	27.28	34.04	6.04	100	63	P	V
	*	2414	92.35	-	-	93.07	27.28	34.04	6.04	100	63	A	V
													V
													V
802.11g CH 06 2437MHz		2347.53	51.68	-22.32	74	52.68	27.1	34.05	5.95	127	279	P	H
		2384.88	39.97	-14.03	54	40.81	27.19	34.04	6.01	127	279	A	H
	*	2437	100.08	-	-	100.7	27.37	34.03	6.04	127	279	P	H
	*	2437	90.51	-	-	91.13	27.37	34.03	6.04	127	279	A	H
		2489.52	52.58	-21.42	74	53	27.5	34.01	6.09	127	279	P	H
		2489.2	40.85	-13.15	54	41.27	27.5	34.01	6.09	127	279	A	H
		2384.61	52.04	-21.96	74	52.88	27.19	34.04	6.01	370	359	P	V
		2384.88	41.2	-12.8	54	42.04	27.19	34.04	6.01	370	359	A	V
	*	2437	103.53	-	-	104.15	27.37	34.03	6.04	370	359	P	V
	*	2437	94.08	-	-	94.7	27.37	34.03	6.04	370	359	A	V
		2484.56	53.36	-20.64	74	53.82	27.46	34.01	6.09	370	359	P	V
		2489.08	41.98	-12.02	54	42.4	27.5	34.01	6.09	370	359	A	V



802.11g CH 11 2462MHz	*	2464	101.61	-	-	102.15	27.41	34.02	6.07	230	101	P	H
	*	2464	92.75	-	-	93.29	27.41	34.02	6.07	230	101	A	H
		2483.92	69.24	-4.76	74	69.7	27.46	34.01	6.09	230	101	P	H
		2483.76	51.38	-2.62	54	51.84	27.46	34.01	6.09	230	101	A	H
													H
													H
	*	2464	104.3	-	-	104.84	27.41	34.02	6.07	259	356	P	V
	*	2464	93.59	-	-	94.13	27.41	34.02	6.07	259	356	A	V
		2483.8	69.68	-4.32	74	70.14	27.46	34.01	6.09	259	356	P	V
		2483.52	53.51	-0.49	54	53.97	27.46	34.01	6.09	259	356	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		4824	41.19	-32.81	74	34.77	31.32	33.55	8.65	100	0	P	H
													H
													H
													H
		4824	38.91	-35.09	74	32.49	31.32	33.55	8.65	100	0	P	V
													V
													V
													V
802.11g CH 06 2437MHz		4874	40.39	-33.61	74	33.83	31.41	33.54	8.69	100	0	P	H
		7311	45.51	-28.49	74	33.28	36.28	34.44	10.39	100	0	P	H
													H
													H
		4874	39.94	-34.06	74	33.38	31.41	33.54	8.69	100	0	P	V
		7311	45.92	-28.08	74	33.69	36.28	34.44	10.39	100	0	P	V
													V
													V
802.11g CH 11 2462MHz		4924	40.31	-33.69	74	33.57	31.49	33.54	8.79	100	0	P	H
		7386	46.08	-27.92	74	33.61	36.47	34.48	10.48	100	0	P	H
													H
													H
		4924	40.19	-33.81	74	33.45	31.49	33.54	8.79	100	0	P	V
		7386	45.25	-28.75	74	32.78	36.47	34.48	10.48	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		2390	61.55	-12.45	74	62.35	27.23	34.04	6.01	227	63	P	H
		2390	44.98	-9.02	54	45.78	27.23	34.04	6.01	227	63	A	H
	*	2412	96.72	-	-	97.44	27.28	34.04	6.04	227	63	P	H
	*	2412	87.64	-	-	88.36	27.28	34.04	6.04	227	63	A	H
													H
													H
		2389.92	63.95	-10.05	74	64.75	27.23	34.04	6.01	370	358	P	V
		2390	47.59	-6.41	54	48.39	27.23	34.04	6.01	370	358	A	V
	*	2412	100.06	-	-	100.78	27.28	34.04	6.04	370	358	P	V
	*	2412	90.91	-	-	91.63	27.28	34.04	6.04	370	358	A	V
													V
													V
802.11n HT20 CH 06 2437MHz		2376.87	50.72	-23.28	74	51.56	27.19	34.04	6.01	226	101	P	H
		2385.15	39.29	-14.71	54	40.13	27.19	34.04	6.01	226	101	A	H
	*	2437	97.32	-	-	97.94	27.37	34.03	6.04	226	101	P	H
	*	2437	87.3	-	-	87.92	27.37	34.03	6.04	226	101	A	H
		2489.12	51.94	-22.06	74	52.36	27.5	34.01	6.09	226	101	P	H
		2488.96	39.79	-14.21	54	40.21	27.5	34.01	6.09	226	101	A	H
		2385.15	52.72	-21.28	74	53.56	27.19	34.04	6.01	371	354	P	V
		2385.15	40.79	-13.21	54	41.63	27.19	34.04	6.01	371	354	A	V
	*	2437	101.29	-	-	101.91	27.37	34.03	6.04	371	354	P	V
	*	2437	92.29	-	-	92.91	27.37	34.03	6.04	371	354	A	V
		2488.96	52.82	-21.18	74	53.24	27.5	34.01	6.09	371	354	P	V
		2489.16	41.72	-12.28	54	42.14	27.5	34.01	6.09	371	354	A	V



802.11n HT20 CH 11 2462MHz	*	2464	99.48	-	-	100.02	27.41	34.02	6.07	148	110	P	H
	*	2464	90.15	-	-	90.69	27.41	34.02	6.07	148	110	A	H
		2484.16	66.27	-7.73	74	66.73	27.46	34.01	6.09	148	110	P	H
		2483.6	48.39	-5.61	54	48.85	27.46	34.01	6.09	148	110	A	H
													H
													H
	*	2464	100.2	-	-	100.74	27.41	34.02	6.07	100	61	P	V
	*	2464	90.61	-	-	91.15	27.41	34.02	6.07	100	61	A	V
		2484.84	67.68	-6.32	74	68.14	27.46	34.01	6.09	100	61	P	V
		2483.52	49.33	-4.67	54	49.79	27.46	34.01	6.09	100	61	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		4824	40	-34	74	33.58	31.32	33.55	8.65	100	0	P	H
													H
													H
													H
		4824	39.68	-34.32	74	33.26	31.32	33.55	8.65	100	0	P	V
													V
													V
													V
802.11n HT20 CH 06 2437MHz		4874	39.9	-34.1	74	33.34	31.41	33.54	8.69	100	0	P	H
		7311	45.57	-28.43	74	33.34	36.28	34.44	10.39	100	0	P	H
													H
													H
		4874	39.94	-34.06	74	33.38	31.41	33.54	8.69	100	0	P	V
		7311	45.47	-28.53	74	33.24	36.28	34.44	10.39	100	0	P	V
													V
													V
802.11n HT20 CH 11 2462MHz		4924	40.79	-33.21	74	34.05	31.49	33.54	8.79	100	0	P	H
		7386	46.09	-27.91	74	33.62	36.47	34.48	10.48	100	0	P	H
													H
													H
		4924	40.64	-33.36	74	33.9	31.49	33.54	8.79	100	0	P	V
		7386	45.38	-28.62	74	32.91	36.47	34.48	10.48	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

Emission below 1GHz

2.4GHz WIFI 802.11g (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.		(MHz)	(dBμV/m)	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1				(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11g LF		69.69	17.68	-22.32	40	43.26	5.17	31.79	1.04			P	H
		149.88	11.94	-31.56	43.5	32.25	10.01	31.78	1.46			P	H
		245.73	19.42	-26.58	46	37.76	11.49	31.77	1.94			P	H
		378.4	18.54	-27.46	46	33.13	14.88	31.79	2.32			P	H
		650.7	23.02	-22.98	46	32.95	19.09	32.04	3.02			P	H
		913.2	23.85	-22.15	46	31.5	20.13	31.33	3.55	105	62	P	H
													H
													H
													H
													H
													H
													H
		48.36	24.12	-15.88	40	46.61	8.27	31.8	1.04	129	114	P	V
		115.59	18.34	-25.16	43.5	37.53	11.31	31.78	1.28			P	V
		231.96	13.26	-32.74	46	33.5	9.74	31.77	1.79			P	V
		422.5	18.85	-27.15	46	31.61	16.65	31.82	2.41			P	V
		646.5	21.69	-24.31	46	31.61	19.1	32.04	3.02			P	V
		912.5	23.52	-22.48	46	31.19	20.12	31.34	3.55			P	V
													V
													V
												V	
												V	
												V	
												V	
												V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	Peak or Average
H/V	Horizontal or Vertical



A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.