



## Appendix A. Radiated Spurious Emission

<b>Test Engineer :</b>	Derreck Chen, Ken Wu, and Nick Yu	<b>Temperature :</b>	23~25°C
		<b>Relative Humidity :</b>	48~51%

15C 2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge @ 3m)

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)	
802.11g CH 11 2462MHz	*	2455.11	101.82	-	-	96.12	32.26	7.83	34.39	116	357	P	H	
	*	2455.194	91.39	-	-	85.69	32.26	7.83	34.39	116	357	A	H	
		2483.52	64.93	-9.07	74	59.17	32.28	7.91	34.43	116	357	P	H	
		2483.6	47.21	-6.79	54	41.45	32.28	7.91	34.43	116	357	A	H	
													H	
														H
	*	2455.444	96.17	-	-	90.47	32.26	7.83	34.39	117	3	P	V	
	*	2455.862	85.99	-	-	80.29	32.26	7.83	34.39	117	3	A	V	
		2491.96	58.5	-15.5	74	52.77	32.3	7.91	34.48	117	3	P	V	
		2483.56	45.18	-8.82	54	39.42	32.28	7.91	34.43	117	3	A	V	
														V
														V
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



15C 2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

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)
802.11g CH 11 2462MHz		4924	44.91	-29.09	74	58.03	34.34	11.27	58.73	100	0	P	H
		7386	47.36	-26.64	74	54.42	35.6	15.14	57.8	100	0	P	H
													H
													H
		4924	45.35	-28.65	74	58.47	34.34	11.27	58.73	100	0	P	V
		7386	42.84	-31.16	74	49.9	35.6	15.14	57.8	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15C Emission below 1GHz

2.4GHz WIFI 802.11g (LF)

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)	
2.4GHz 802.11g LF		70.5	29.03	-10.97	40	51.77	6.48	2.06	31.28	-	-	P	H	
		158.25	34.72	-8.78	43.5	52.72	10.58	2.61	31.19	-	-	P	H	
		240.06	38.82	-7.18	46	55.46	11.4	2.96	31	102	196	P	H	
		384	36.06	-9.94	46	48.26	15.26	3.52	30.98	-	-	P	H	
		563.9	37.07	-8.93	46	43.91	19.89	4.01	30.74	-	-	P	H	
		899.2	29.62	-16.38	46	32.09	23.17	4.66	30.3	-	-	P	H	
														H
														H
														H
														H
														H
														H
														H
			56.46	37.8	-2.2	40	60.93	6.32	1.77	31.22	112	32	P	V
			192	32.02	-11.48	43.5	51.57	8.86	2.69	31.1	-	-	P	V
			262.47	27.31	-18.69	46	41.48	13.67	3.16	31	-	-	P	V
			335.7	33.89	-12.11	46	47.65	13.96	3.28	31	-	-	P	V
			566	40.09	-5.91	46	47	19.81	4.01	30.73	-	-	P	V
			960.1	32.92	-21.08	54	33.64	24.7	4.94	30.36	-	-	P	V
														V
													V	
													V	
													V	
													V	
													V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.													



**Note symbol**

*	<b>Fundamental Frequency</b> which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency per 15.209(c).
!	Test result is <b>over limit</b> line.
P/A	<b>Peak</b> or <b>Average</b>
H/V	<b>Horizontal</b> or <b>Vertical</b>



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+2		( 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

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

**For Peak Limit @ 2390MHz:**

- 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)
- Over Limit(dB)  
= Level(dBμV/m) – Limit Line(dBμV/m)  
= 55.45(dBμV/m) – 74(dBμV/m)  
= -18.55(dB)

**For Average Limit @ 2390MHz:**

- 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)
- 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”.