Appendix A. Radiated Spurious Emission

Test Engineer :	Eric Shih	Temperature :	21~23°C
		Relative Humidity :	47~49%

Band 1 - 5150~5250MHz

WIFI 802.11a (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)
802.11a CH 36 5180MHz		5148.8	57.56	-16.44	74	46.3	34.61	9.14	32.49	151	14	P	H
		5150	45.27	-8.73	54	34.01	34.61	9.14	32.49	151	14	A	H
	*	5182	110.01	-	-	98.74	34.66	9.13	32.52	151	14	P	H
	*	5182	99.84	-	-	88.57	34.66	9.13	32.52	151	14	A	H
		5150	57.06	-16.94	74	45.8	34.61	9.14	32.49	140	227	P	V
		5149.85	44.08	-9.92	54	32.82	34.61	9.14	32.49	140	227	A	V
	*	5182	106.6	-	-	95.33	34.66	9.13	32.52	140	227	P	V
	*	5182	96.92	-	-	85.65	34.66	9.13	32.52	140	227	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 1 5150~5250MHz

WIFI 802.11a (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)
802.11a CH 36 5180MHz		10362	52.81	-21.19	74	60.58	37.22	13.88	58.87	100	0	P	H
		15540	68.85	-5.15	74	70.47	40.34	15.53	57.49	100	293	P	H
		15540	52.03	-1.97	54	53.65	40.34	15.53	57.49	100	293	A	H
		10362	47.68	-26.32	74	55.45	37.22	13.88	58.87	100	0	P	V
		15542	65.88	-8.12	74	67.5	40.34	15.53	57.49	100	210	P	V
		15542	49.15	-4.85	54	50.77	40.34	15.53	57.49	100	210	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

WIFI 802.11a (LF @ 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)
802.11a LF		31.62	33.45	-6.55	40	46.56	17.76	0.55	31.42	107	142	P	H
		93.18	27.19	-16.31	43.5	48.33	9	0.96	31.1			P	H
		284.61	28.69	-17.31	46	45.09	12.92	1.66	30.98			P	H
		302.8	28.14	-17.86	46	44.13	13.23	1.78	31			P	H
		620.6	26.61	-19.39	46	34.2	20.22	2.75	30.56			P	H
		750.1	35.69	-10.31	46	40.93	22.1	3.06	30.4			P	H
		31.35	33.05	-6.95	40	45.65	18.28	0.54	31.42	114	82	P	V
		95.88	21.48	-22.02	43.5	42.16	9.44	0.98	31.1			P	V
		275.43	28.65	-17.35	46	45.11	12.85	1.64	30.95			P	V
		412	17.89	-28.11	46	30.25	16.3	2.18	30.84			P	V
		566	23.38	-22.62	46	31.7	19.81	2.6	30.73			P	V
		750.1	33.27	-12.73	46	38.51	22.1	3.06	30.4			P	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	**P**eak or **A**verage
H/V	**H**orizontal or **V**ertical

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 CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		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".