Appendix A. Radiated Spurious Emission

Test Engineer :	Nick Yu, Ken Wu, and James Chiu	Temperature :	23~24°C
		Relative Humidity :	56~60%

2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

BT	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)
BT CH00 2402MHz		2330.54	48.04	-25.96	74	42.57	32.09	7.6	34.22	100	19	P	H
		2330.54	23.28	-30.72	54	-	-	-	-	-	-	A	H
	*	2402.04	101.44	-	-	95.81	32.18	7.75	34.3	100	19	P	H
	*	2402.04	76.68	-	-	-	-	-	-	-	-	A	H
													H
													H
		2354.72	47.43	-26.57	74	41.87	32.13	7.68	34.25	300	78	P	V
		2354.72	22.67	-31.33	54	-	-	-	-	-	-	A	V
	*	2402.04	94.63	-	-	89	32.18	7.75	34.3	300	78	P	V
	*	2402.04	69.87	-	-	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		2372.51	47.77	-26.23	74	42.2	32.16	7.68	34.27	100	19	P	H
		2372.51	23.01	-30.99	54	-	-	-	-	-	-	A	H
	*	2441.1	101.85	-	-	96.17	32.24	7.83	34.39	100	19	P	H
	*	2441.1	77.09	-	-	-	-	-	-	-	-	A	H
		2487.27	47.05	-26.95	74	41.29	32.28	7.91	34.43	100	19	P	H
		2487.27	22.29	-31.71	54	-	-	-	-	-	-	A	H
		2357.5	47.66	-26.34	74	42.1	32.13	7.68	34.25	308	57	P	V
		2357.5	22.9	-31.1	54	-	-	-	-	-	-	A	V
	*	2441.1	97.99	-	-	92.31	32.24	7.83	34.39	308	57	P	V
	*	2441.1	73.23	-	-	-	-	-	-	-	-	A	V
		2489.55	47.26	-26.74	74	41.48	32.3	7.91	34.43	308	57	P	V
		2489.55	22.5	-31.5	54	-	-	-	-	-	-	A	V

BT CH 78 2480MHz	*	2479.98	100.02	-	-	94.26	32.28	7.91	34.43	100	18	P	H
	*	2479.98	75.26	-	-	-	-	-	-	-	-	A	H
		2483.76	51.02	-22.98	74	45.26	32.28	7.91	34.43	100	18	P	H
		2483.76	26.26	-27.74	54	-	-	-	-	-	-	A	H
													H
													H
	*	2479.98	97.35	-	-	91.59	32.28	7.91	34.43	313	57	P	V
	*	2479.98	72.59	-	-	-	-	-	-	-	-	A	V
		2491.74	48.39	-25.61	74	42.61	32.3	7.91	34.43	313	57	P	V
		2491.74	23.63	-30.37	54	-	-	-	-	-	-	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

BT (Harmonic @ 3m)

BT	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)
BT CH 00 2402MHz		4804	43.4	-30.6	74	57.71	34.25	11.11	59.67	100	0	P	H
		4804	18.64	-35.36	54	-	-	-	-	-	-	A	H
													H
													H
		4804	43.41	-30.59	74	57.72	34.25	11.11	59.67	100	0	P	V
		4804	18.65	-35.35	54	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		4882	40.2	-33.8	74	54.26	34.3	11.21	59.57	100	0	P	H
		4882	15.44	-38.56	54	-	-	-	-	-	-	A	H
		7323	42.15	-31.85	74	49.96	35.6	15.08	58.49	100	0	P	H
		7323	17.39	-36.61	54	-	-	-	-	-	-	A	H
		4882	40.87	-33.13	74	54.93	34.3	11.21	59.57	100	0	P	V
		4882	16.11	-37.89	54	-	-	-	-	-	-	A	V
		7323	42.62	-31.38	74	50.43	35.6	15.08	58.49	100	0	P	V
		7323	17.86	-36.14	54	-	-	-	-	-	-	A	V
BT CH 78 2480MHz		4962	40.55	-33.45	74	54.31	34.37	11.32	59.45	100	0	P	H
		4962	15.79	-38.21	54	-	-	-	-	-	-	A	H
		7440	41.8	-32.2	74	49.71	35.6	15.13	58.64	100	0	P	H
		7440	17.04	-36.96	54	-	-	-	-	-	-	A	H
		4962	41.51	-32.49	74	55.27	34.37	11.32	59.45	100	0	P	V
		4962	16.75	-37.25	54	-	-	-	-	-	-	A	V
		7440	42.13	-31.87	74	50.04	35.6	15.13	58.64	100	0	P	V
		7440	17.37	-36.63	54	-	-	-	-	-	-	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz BT (LF)

BT	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)
2.4GHz BT LF		49.71	24.49	-15.51	40	45.17	8.75	1.77	31.2	135	95	P	H
		136.11	23.04	-20.46	43.5	40.26	11.5	2.38	31.1	-	-	P	H
		224.13	22.84	-23.16	46	41.26	9.62	2.96	31	-	-	P	H
		448.4	24.57	-21.43	46	34.44	17.24	3.63	30.74	-	-	P	H
		766.2	26.26	-19.74	46	30.05	22.1	4.48	30.37	-	-	P	H
		985.3	29.41	-24.59	54	29.75	24.89	5.03	30.26	-	-	P	H
													H
													H
													H
													H
													H
													H
		54.03	26.18	-13.82	40	48.81	6.8	1.77	31.2	100	164	P	V
		147.99	13.09	-30.41	43.5	30.5	11.08	2.61	31.1	-	-	P	V
		258.96	16.11	-29.89	46	30.31	13.84	2.96	31	-	-	P	V
		448.4	21.9	-24.1	46	31.77	17.24	3.63	30.74	-	-	P	V
		647.2	25.95	-20.05	46	31.84	20.4	4.22	30.51	-	-	P	V
		860	27.43	-18.57	46	29.91	23.2	4.7	30.38	-	-	P	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	**P**eak or **A**verage
H/V	**H**orizontal or **V**ertical

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

WIFI Ant. 1+2	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		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".