Appendix A. Radiated Spurious Emission

Test Engineer :	Luke Chang, Ricky Su, and Nick Yu	Temperature :	20~24°C
		Relative Humidity :	50~54%

2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

BT	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BT CH00 2402MHz		2326.51	47.27	-26.73	74	47.01	26.95	7.24	33.93	259	42	P	H
		2326.51	22.48	-31.52	54	-	-	-	-	-	-	A	H
	*	2402.17	99.06	-	-	98.55	27.13	7.38	34	259	42	P	H
	*	2402.17	74.27	-	-	-	-	-	-	-	-	A	H
													H
													H
		2389.17	47.15	-26.85	74	46.64	27.13	7.38	34	100	88	P	V
		2389.17	22.36	-31.64	54	-	-	-	-	-	-	A	V
	*	2402.17	95.5	-	-	94.99	27.13	7.38	34	100	88	P	V
	*	2402.17	70.71	-	-	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		2331.28	46.51	-27.49	74	46.18	26.95	7.31	33.93	229	45	P	H
		2331.28	21.72	-32.28	54	-	-	-	-	-	-	A	H
	*	2440.91	103.22	-	-	102.56	27.27	7.44	34.05	229	45	P	H
	*	2440.91	78.43	-	-	-	-	-	-	-	-	A	H
		2496.58	46.77	-27.23	74	45.91	27.4	7.56	34.1	229	45	P	H
		2496.58	21.98	-32.02	54	-	-	-	-	-	-	A	H
		2360.16	46.91	-27.09	74	46.52	27.04	7.31	33.96	114	88	P	V
		2360.16	22.12	-31.88	54	-	-	-	-	-	-	A	V
	*	2440.91	99.62	-	-	98.96	27.27	7.44	34.05	114	88	P	V
	*	2440.91	74.83	-	-	-	-	-	-	-	-	A	V
		2496.96	46.9	-27.1	74	46.04	27.4	7.56	34.1	114	88	P	V
		2496.96	22.11	-31.89	54	-	-	-	-	-	-	A	V

BT CH 78 2480MHz	*	2479.91	100.8	-	-	100.02	27.36	7.5	34.08	194	42	P	H
	*	2479.91	76.01	-	-	-	-	-	-	-	-	A	H
		2483.51	57.5	-16.5	74	56.72	27.36	7.5	34.08	194	42	P	H
		2483.51	32.71	-21.29	54	-	-	-	-	-	-	A	H
													H
													H
	*	2479.91	98.8	-	-	98.02	27.36	7.5	34.08	100	89	P	V
	*	2479.91	74.01	-	-	-	-	-	-	-	-	A	V
		2483.51	55.48	-18.52	74	54.7	27.36	7.5	34.08	100	89	P	V
		2483.51	30.69	-23.31	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		4806	45.65	-28.35	74	59.27	31.23	10.63	55.48	100	0	P	H
		4806	20.86	-33.14	54	-	-	-	-	-	-	A	H
													H
													H
		4806	46.04	-27.96	74	59.66	31.23	10.63	55.48	100	0	P	V
		4806	21.25	-32.75	54	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		4884	46.32	-27.68	74	59.85	31.33	10.68	55.54	100	0	P	H
		4884	21.53	-32.47	54	-	-	-	-	-	-	A	H
		7320	50.55	-23.45	74	57.19	36.12	13.28	56.04	100	0	P	H
		7320	25.76	-28.24	54	-	-	-	-	-	-	A	H
		4884	45.76	-28.24	74	59.29	31.33	10.68	55.54	100	0	P	V
		4884	20.97	-33.03	54	-	-	-	-	-	-	A	V
		7320	50.58	-23.42	74	57.22	36.12	13.28	56.04	100	0	P	V
		7320	25.79	-28.21	54	-	-	-	-	-	-	A	V
BT CH 78 2480MHz		4962	45.74	-28.26	74	59.14	31.45	10.73	55.58	100	0	P	H
		4962	20.95	-33.05	54	-	-	-	-	-	-	A	H
		7440	50.89	-23.11	74	56.98	36.46	13.39	55.94	100	0	P	H
		7440	26.1	-27.9	54	-	-	-	-	-	-	A	H
		4962	46.34	-27.66	74	59.74	31.45	10.73	55.58	100	0	P	V
		4962	21.55	-32.45	54	-	-	-	-	-	-	A	V
		7440	50.96	-23.04	74	57.05	36.46	13.39	55.94	100	0	P	V
		7440	26.17	-27.83	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	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz BT LF		111.27	29.78	-13.72	43.5	47.42	11.12	1.64	30.4			P	H
		156.09	31.92	-11.58	43.5	49.5	10.88	1.89	30.35			P	H
		195.51	32.76	-10.74	43.5	51.97	9.01	2.09	30.31	110	236	P	H
		321.7	27.77	-18.23	46	41.85	13.48	2.56	30.12			P	H
		505.8	29.73	-16.27	46	38.3	17.92	3.31	29.8			P	H
		734	29.28	-16.72	46	33.02	21.68	4.05	29.47			P	H
													H
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													H
													H
													H
		91.02	35.74	-7.76	43.5	55.5	9.02	1.64	30.42			P	V
		117.48	37.59	-5.91	43.5	54.97	11.37	1.64	30.39	100	149	P	V
		180.39	34.67	-8.83	43.5	53.75	9.15	2.09	30.32			P	V
		307	29.7	-16.3	46	44.02	13.26	2.56	30.14			P	V
		319.6	24.25	-21.75	46	38.4	13.42	2.56	30.13			P	V
		596.8	30.02	-15.98	46	36.38	19.64	3.66	29.66			P	V
													V
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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".