



Appendix A. Radiated Spurious Emission

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

15C 2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

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)
BT CH00 2402MHz		2316.63	46.93	-27.07	74	41.48	32.07	7.6	34.22	101	360	P	H
		2316.63	22.17	-31.83	54	-	-	-	-	-	-	A	H
	*	2402.04	98.53	-	-	92.9	32.18	7.75	34.3	101	360	P	H
	*	2402.04	73.77	-	-	-	-	-	-	-	-	A	H
													H
													H
		2356.67	46.69	-27.31	74	41.13	32.13	7.68	34.25	117	8	P	V
		2356.67	21.93	-32.07	54	-	-	-	-	-	-	A	V
	*	2402.04	96.97	-	-	91.34	32.18	7.75	34.3	117	8	P	V
	*	2402.04	72.21	-	-	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		2316.84	47.35	-26.65	74	41.9	32.07	7.6	34.22	100	359	P	H
		2316.84	22.59	-31.41	54	-	-	-	-	-	-	A	H
	*	2440.91	98.64	-	-	92.96	32.24	7.83	34.39	100	359	P	H
	*	2440.91	73.88	-	-	-	-	-	-	-	-	A	H
		2490.12	46.05	-27.95	74	40.27	32.3	7.91	34.43	100	359	P	H
		2490.12	21.29	-32.71	54	-	-	-	-	-	-	A	H
		2372.7	46.78	-27.22	74	41.21	32.16	7.68	34.27	252	109	P	V
		2372.7	22.02	-31.98	54	-	-	-	-	-	-	A	V
	*	2441.1	97.67	-	-	91.99	32.24	7.83	34.39	252	109	P	V
	*	2441.1	72.91	-	-	-	-	-	-	-	-	A	V
		2488.41	46.58	-27.42	74	40.8	32.3	7.91	34.43	252	109	P	V
		2488.41	21.82	-32.18	54	-	-	-	-	-	-	A	V



BT CH 78 2480MHz	*	2480.05	97.55	-	-	91.79	32.28	7.91	34.43	122	359	P	H
	*	2480.05	72.79	-	-	-	-	-	-	-	-	A	H
		2485.09	47.63	-26.37	74	41.87	32.28	7.91	34.43	122	359	P	H
		2485.09	22.87	-31.13	54	-	-	-	-	-	-	A	H
													H
													H
	*	2479.98	96.8	-	-	91.04	32.28	7.91	34.43	127	109	P	V
	*	2479.98	72.04	-	-	-	-	-	-	-	-	A	V
		2497.48	47.84	-26.16	74	42.11	32.3	7.91	34.48	127	109	P	V
		2497.48	23.08	-30.92	54	-	-	-	-	-	-	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15C 2.4GHz 2400~2483.5MHz

BT (Harmonic @ 3m)

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)
BT CH 00 2402MHz		4806	47.21	-26.79	74	60.81	34.25	11.11	58.96	100	0	P	H
		4806	22.45	-31.55	54	-	-	-	-	-	-	A	H
													H
													H
		4806	44.79	-29.21	74	58.39	34.25	11.11	58.96	100	0	P	V
		4806	20.03	-33.97	54	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		4884	43.24	-30.76	74	56.56	34.3	11.21	58.83	100	0	P	H
		4884	18.48	-35.52	54	-	-	-	-	-	-	A	H
		7320	44.61	-29.39	74	51.67	35.6	15.08	57.74	100	0	P	H
		7320	19.85	-34.15	54	-	-	-	-	-	-	A	H
		4884	42.26	-31.74	74	55.58	34.3	11.21	58.83	100	0	P	V
		4884	17.5	-36.5	54	-	-	-	-	-	-	A	V
		7320	46.82	-27.18	74	53.88	35.6	15.08	57.74	100	0	P	V
		7320	22.06	-31.94	54	-	-	-	-	-	-	A	V
BT CH 78 2480MHz		4962	44.08	-29.92	74	57.05	34.37	11.32	58.66	100	0	P	H
		4962	19.32	-34.68	54	-	-	-	-	-	-	A	H
		7440	47.44	-26.56	74	54.56	35.6	15.13	57.85	100	0	P	H
		7440	22.68	-31.32	54	-	-	-	-	-	-	A	H
		4962	42.92	-31.08	74	55.89	34.37	11.32	58.66	100	0	P	V
		4962	18.16	-35.84	54	-	-	-	-	-	-	A	V
		7440	48.73	-25.27	74	55.85	35.6	15.13	57.85	100	0	P	V
		7440	23.97	-30.03	54	-	-	-	-	-	-	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

15C Emission below 1GHz

2.4GHz BT (LF)

[illegible]



Note symbol

*	Fundamental Frequency 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 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		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”.