



Appendix A. Radiated Spurious Emission

Test Engineer :	James Chiu and Jesse Wang	Temperature :	21~23°C
		Relative Humidity :	46~49%

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		2367.85	47.56	-26.44	74	42.02	32.13	7.68	34.27	101	61	P	H
		2367.85	22.77	-31.23	54	-	-	-	-	-	-	A	H
	*	2402	97.51	-	-	91.88	32.18	7.75	34.3	101	61	P	H
	*	2402	72.72	-	-	-	-	-	-	-	-	A	H
													H
													H
		2369.54	47.86	-26.14	74	42.29	32.16	7.68	34.27	100	91	P	V
		2369.54	23.07	-30.93	54	-	-	-	-	-	-	A	V
	*	2402	98.98	-	-	93.35	32.18	7.75	34.3	100	91	P	V
	*	2402	74.19	-	-	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		2372.32	47.45	-26.55	74	41.88	32.16	7.68	34.27	100	64	P	H
		2372.32	22.66	-31.34	54	-	-	-	-	-	-	A	H
	*	2441	96.42	-	-	90.74	32.24	7.83	34.39	100	64	P	H
	*	2441	71.63	-	-	-	-	-	-	-	-	A	H
		2483.52	46.96	-27.04	74	41.2	32.28	7.91	34.43	100	64	P	H
		2483.52	22.17	-31.83	54	-	-	-	-	-	-	A	H
		2321.02	47.14	-26.86	74	41.67	32.09	7.6	34.22	100	91	P	V
		2321.02	22.35	-31.65	54	-	-	-	-	-	-	A	V
	*	2441	100.21	-	-	94.53	32.24	7.83	34.39	100	91	P	V
	*	2441	75.42	-	-	-	-	-	-	-	-	A	V
		2483.52	48.01	-25.99	74	42.25	32.28	7.91	34.43	100	91	P	V
		2483.52	23.22	-30.78	54	-	-	-	-	-	-	A	V



BT CH 78 2480MHz	*	2479.98	96.08	-	-	90.32	32.28	7.91	34.43	100	64	P	H
	*	2479.98	71.29	-	-	-	-	-	-	-	-	A	H
		2487.33	47.51	-26.49	74	41.75	32.28	7.91	34.43	100	64	P	H
		2487.33	22.72	-31.28	54	-	-	-	-	-	-	A	H
													H
													H
	*	2480.19	97.75	-	-	91.99	32.28	7.91	34.43	104	91	P	V
	*	2480.19	72.96	-	-	-	-	-	-	-	-	A	V
		2490.13	47.95	-26.05	74	42.17	32.3	7.91	34.43	104	91	P	V
		2490.13	23.16	-30.84	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		4804	41.35	-32.65	74	55.66	34.25	11.11	59.67	100	0	P	H
		4804	16.56	-37.44	54	-	-	-	-	-	-	A	H
													H
													H
		4804	39.62	-34.38	74	53.93	34.25	11.11	59.67	100	0	P	V
		4804	14.83	-39.17	54	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		4882	39.67	-34.33	74	53.73	34.3	11.21	59.57	100	0	P	H
		4882	14.88	-39.12	54	-	-	-	-	-	-	A	H
		7323	41.73	-32.27	74	49.54	35.6	15.08	58.49	100	0	P	H
		7323	16.94	-37.06	54	-	-	-	-	-	-	A	H
		4882	40.12	-33.88	74	54.18	34.3	11.21	59.57	100	0	P	V
		4882	15.33	-38.67	54	-	-	-	-	-	-	A	V
		7323	41.26	-32.74	74	49.07	35.6	15.08	58.49	100	0	P	V
		7323	16.47	-37.53	54	-	-	-	-	-	-	A	V
BT CH 78 2480MHz		4960	40.69	-33.31	74	54.45	34.37	11.32	59.45	100	0	P	H
		4960	15.9	-38.1	54	-	-	-	-	-	-	A	H
		7440	41.97	-32.03	74	49.88	35.6	15.13	58.64	100	0	P	H
		7440	17.18	-36.82	54	-	-	-	-	-	-	A	H
		4960	40.84	-33.16	74	54.6	34.37	11.32	59.45	100	0	P	V
		4960	16.05	-37.95	54	-	-	-	-	-	-	A	V
		7440	42.3	-31.7	74	50.21	35.6	15.13	58.64	100	0	P	V
		7440	17.51	-36.49	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.
!	Test result is over limit line.
P/A	Peak or Average
H/V	Horizontal or Vertical



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”.