



Appendix A. Radiated Spurious Emission

Test Engineer :	James Chiu, Ken Wu, Nike Yu, and Luke Chang	Temperature :	20~22°C
		Relative Humidity :	50~55%

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		2385.92	47.85	-26.15	74	48.65	27.23	34.04	6.01	100	301	P	H
		2385.92	23.09	-30.91	54	-	-	-	-	-	-	A	H
	*	2402.04	97.24	-	-	98.04	27.23	34.04	6.01	100	301	P	H
	*	2402.04	72.48	-	-	-	-	-	-	-	-	A	H
													H
													H
		2389.43	44.64	-29.36	74	45.44	27.23	34.04	6.01	387	128	P	V
		2389.43	19.88	-34.12	54	-	-	-	-	-	-	A	V
	*	2402.04	93.5	-	-	94.3	27.23	34.04	6.01	387	128	P	V
	*	2402.04	68.74	-	-	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		2361.11	44.46	-29.54	74	45.42	27.14	34.05	5.95	107	300	P	H
		2361.11	19.7	-34.3	54	-	-	-	-	-	-	A	H
	*	2441.1	99.28	-	-	99.89	27.37	34.02	6.04	107	300	P	H
	*	2441.1	74.52	-	-	-	-	-	-	-	-	A	H
		2500	42.84	-31.16	74	43.25	27.5	34	6.09	107	300	P	H
		2500	18.08	-35.92	54	-	-	-	-	-	-	A	H
		2360.73	43.13	-30.87	74	44.09	27.14	34.05	5.95	368	223	P	V
		2360.73	18.37	-35.63	54	-	-	-	-	-	-	A	V
	*	2441.1	94.85	-	-	95.46	27.37	34.02	6.04	368	223	P	V
	*	2441.1	70.09	-	-	-	-	-	-	-	-	A	V
		2489.36	42.07	-31.93	74	42.49	27.5	34.01	6.09	368	223	P	V
		2489.36	17.31	-36.69	54	-	-	-	-	-	-	A	V



BT CH 78 2480MHz	*	2480.05	101.08	-	-	101.56	27.46	34.01	6.07	100	301	P	H
	*	2480.05	76.32	-	-	-	-	-	-	-	-	A	H
		2485.02	54.8	-19.2	74	55.26	27.46	34.01	6.09	100	301	P	H
		2485.02	30.04	-23.96	54	-	-	-	-	-	-	A	H
													H
													H
	*	2480.05	97.55	-	-	98.03	27.46	34.01	6.07	400	233	P	V
	*	2480.05	72.79	-	-	-	-	-	-	-	-	A	V
		2484.74	51.64	-22.36	74	52.1	27.46	34.01	6.09	400	233	P	V
		2484.74	26.88	-27.12	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	44.19	-29.81	74	37.79	31.3	33.55	8.65	100	0	P	H
		4806	19.43	-34.57	54							A	H
													H
													H
		4806	44.03	-29.97	74	37.63	31.3	33.55	8.65	100	0	P	V
		4806	19.27	-34.73	54							A	V
													V
													V
BT CH 39 2441MHz		4884	45.04	-28.96	74	38.43	31.41	33.54	8.74	100	0	P	H
		4884	20.28	-33.72	54							A	H
		7320	49.68	-24.32	74	37.43	36.32	34.46	10.39	100	0	P	H
		7320	24.92	-29.08	54							A	H
		4884	45.21	-28.79	74	38.6	31.41	33.54	8.74	100	0	P	V
		4884	20.45	-33.55	54							A	V
		7320	49.51	-24.49	74	37.26	36.32	34.46	10.39	100	0	P	V
		7320	24.75	-29.25	54							A	V
BT CH 78 2480MHz		4962	45.36	-28.64	74	38.53	31.54	33.54	8.83	100	0	P	H
		4962	20.6	-33.4	54							A	H
		7440	49.92	-24.08	74	37.33	36.59	34.52	10.52	100	0	P	H
		7440	25.16	-28.84	54							A	H
		4962	44.64	-29.36	74	37.81	31.54	33.54	8.83	100	0	P	V
		4962	19.88	-34.12	54							A	V
		7440	50.8	-23.2	74	38.21	36.59	34.52	10.52	100	0	P	V
		7440	26.04	-27.96	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)

[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”.