



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 CH 78 2480MHz	*	2480.05	97.23	-	-	91.47	32.28	7.91	34.43	158	353	P	H
	*	2480.05	72.47	-	-	-	-	-	-	-	-	A	H
		2486.35	47.76	-26.24	74	42	32.28	7.91	34.43	158	353	P	H
		2486.35	23	-31	54	-	-	-	-	-	-	A	H
													H
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	*	2480.05	90.99	-	-	85.23	32.28	7.91	34.43	345	360	P	V
	*	2480.05	66.23	-	-	-	-	-	-	-	-	A	V
		2497.69	47.05	-26.95	74	41.32	32.3	7.91	34.48	345	360	P	V
		2497.69	22.29	-31.71	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 78 2480MHz		4962	47.07	-26.93	74	60.04	34.37	11.32	58.66	100	0	P	H
		4962	22.31	-31.69	54	-	-	-	-	-	-	A	H
		7440	44.4	-29.6	74	51.52	35.6	15.13	57.85	100	0	P	H
		7440	19.64	-34.36	54	-	-	-	-	-	-	A	H
		4962	43.57	-30.43	74	56.54	34.37	11.32	58.66	100	0	P	V
		4962	18.81	-35.19	54	-	-	-	-	-	-	A	V
		7440	43.72	-30.28	74	50.84	35.6	15.13	57.85	100	0	P	V
		7440	18.96	-35.04	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)

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		69.42	30.48	-9.52	40	53.32	6.4	2.06	31.3	-	-	P	H
		149.61	37.03	-6.47	43.5	54.58	10.94	2.61	31.1	-	-	P	H
		240.06	34.04	-11.96	46	50.68	11.4	2.96	31	-	-	P	H
		421.1	41.65	-4.35	46	52.1	16.72	3.63	30.8	132	211	P	H
		624.8	38.16	-7.84	46	44.2	20.29	4.22	30.55	-	-	P	H
		833.4	36.22	-9.78	46	38.97	22.92	4.7	30.37	-	-	P	H
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		69.42	36.87	-3.13	40	59.71	6.4	2.06	31.3	147	154	P	V
		149.34	31.59	-11.91	43.5	49.14	10.94	2.61	31.1	-	-	P	V
		240.06	27.34	-18.66	46	43.98	11.4	2.96	31	-	-	P	V
		416.2	37.7	-8.3	46	48.5	16.5	3.52	30.82	-	-	P	V
		764.1	32.4	-13.6	46	36.19	22.1	4.48	30.37	-	-	P	V
		902.7	32.67	-13.33	46	34.89	23.29	4.8	30.31	-	-	P	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 per 15.209(c).
!	Test result is over limit line.
P/A	Peak or Average
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”.