



Appendix A. Radiated Spurious Emission

Test Engineer :	Derreck Chen and Jesse Wang	Temperature :	22~23°C
		Relative Humidity :	45~47%

2.4GHz 2400~2483.5MHz

BT (Band Edge @ 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 CH00 2402MHz		2379.03	45.28	-28.72	74	46.17	27.09	7.32	35.3	175	153	P	H
		2379.03	20.49	-33.51	54	-	-	-	-	-	-	A	H
	*	2402	100.05	-	-	100.9	27.13	7.32	35.3	175	153	P	H
	*	2402	75.26	-	-	-	-	-	-	-	-	A	H
													H
													H
		2335.74	44.42	-29.58	74	45.44	27	7.26	35.28	100	33	P	V
		2335.74	19.63	-34.37	54	-	-	-	-	-	-	A	V
	*	2402	95.65	-	-	96.5	27.13	7.32	35.3	100	33	P	V
	*	2402	70.86	-	-	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		2367.76	44.67	-29.33	74	45.67	27.04	7.26	35.3	253	153	P	H
		2367.76	19.88	-34.12	54	-	-	-	-	-	-	A	H
	*	2441	102.17	-	-	102.86	27.27	7.36	35.32	253	153	P	H
	*	2441	77.38	-	-	-	-	-	-	-	-	A	H
		2487.27	46.85	-27.15	74	47.4	27.36	7.41	35.32	253	153	P	H
		2487.27	22.06	-31.94	54	-	-	-	-	-	-	A	H
		2364.72	44.79	-29.21	74	45.79	27.04	7.26	35.3	112	262	P	V
		2364.72	20	-34	54	-	-	-	-	-	-	A	V
	*	2440	97.3	-	-	97.98	27.27	7.36	35.31	112	262	P	V
	*	2440	72.51	-	-	-	-	-	-	-	-	A	V
		2493.35	44.8	-29.2	74	45.28	27.4	7.45	35.33	112	262	P	V
		2493.35	20.01	-33.99	54	-	-	-	-	-	-	A	V



BT CH 78 2480MHz	*	2480	102.15	-	-	102.7	27.36	7.41	35.32	102	152	P	H
	*	2480	77.36	-	-	-	-	-	-	-	-	A	H
		2483.5	58.71	-15.29	74	59.26	27.36	7.41	35.32	102	152	P	H
		2483.5	33.92	-20.08	54							A	H
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	*	2480	97.09	-	-	97.64	27.36	7.41	35.32	254	257	P	V
	*	2480	72.3	-	-	-	-	-	-	-	-	A	V
		2483.5	53.52	-20.48	74	54.07	27.36	7.41	35.32	254	257	P	V
		2483.5	28.73	-25.27	54	-	-	-	-	-	-	A	V
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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		4803	47.7	-26.3	74	41.23	31.3	10.56	35.39	100	0	P	H
		4803	22.91	-31.09	54	-	-	-	-	-	-	A	H
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		4803	44.64	-29.36	74	38.17	31.3	10.56	35.39	100	0	P	V
		4803	19.85	-34.15	54	-	-	-	-	-	-	A	V
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													V
BT CH 39 2441MHz		4881	47.81	-26.19	74	41.05	31.41	10.72	35.37	100	0	P	H
		4881	23.02	-30.98	54	-	-	-	-	-	-	A	H
		7323	47.32	-26.68	74	32.74	36.26	14.11	35.79	100	0	P	H
		7323	22.53	-31.47	54	-	-	-	-	-	-	A	H
		4881	47.61	-26.39	74	40.85	31.41	10.72	35.37	100	0	P	V
		4881	22.82	-31.18	54	-	-	-	-	-	-	A	V
		7323	48.34	-25.66	74	33.76	36.26	14.11	35.79	100	0	P	V
		7323	23.55	-30.45	54	-	-	-	-	-	-	A	V
BT CH 78 2480MHz		4947	48.28	-25.72	74	41.25	31.52	10.87	35.36	100	0	P	H
		4947	23.49	-30.51	54	-	-	-	-	-	-	A	H
		7440	49.6	-24.4	74	34.95	36.5	13.97	35.82	100	0	P	H
		7440	24.81	-29.19	54	-	-	-	-	-	-	A	H
		4947	45.45	-28.55	74	38.42	31.52	10.87	35.36	100	0	P	V
		4947	20.66	-33.34	54	-	-	-	-	-	-	A	V
		7440	47.33	-26.67	74	32.68	36.5	13.97	35.82	100	0	P	V
		7440	22.54	-31.46	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 (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)
2.4GHz BT LF		81.3	18.73	-21.27	40	40.99	8.29	1.29	31.84	-	-	P	H
		162.3	24.32	-19.18	43.5	43.01	11.28	1.83	31.8	-	-	P	H
		203.88	20.67	-22.83	43.5	40.25	10.15	2.05	31.78	-	-	P	H
		482.7	28.93	-17.07	46	39.73	17.95	3.09	31.84	141	57	P	H
		666.1	24.17	-21.83	46	32.15	20.33	3.67	31.98	-	-	P	H
		875.4	22.58	-23.42	46	26.96	22.86	4.23	31.47	-	-	P	H
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		98.58	25.32	-18.18	43.5	45.38	10.18	1.58	31.82	-	-	P	V
		183.9	32.79	-10.71	43.5	53.33	9.2	2.05	31.79	100	157	P	V
		243.84	32.6	-13.4	46	50.01	12.16	2.17	31.74	-	-	P	V
		503.7	26.42	-19.58	46	36.76	18.32	3.2	31.86	-	-	P	V
		664.7	25.37	-20.63	46	33.36	20.32	3.67	31.98	-	-	P	V
		910.4	26.35	-19.65	46	30.1	23.17	4.36	31.28	-	-	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.
!	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 Ant. 1+2	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)
802.11b CH 01		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
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)