



Appendix A. Radiated Spurious Emission

Test Engineer :	Derreck Chen	Temperature :	21~23°C
		Relative Humidity :	44~46%

15C 2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

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)
BT CH00 2402MHz		2351.08	41.87	-32.13	74	42.87	27.1	5.95	34.05	220	153	P	H
		2351.08	17.08	-36.92	54	-	-	-	-	-	-	A	H
	*	2402	103.6	-	-	104.4	27.23	6.01	34.04	220	153	P	H
	*	2402	78.81	-	-	-	-	-	-	-	-	A	H
													H
													H
		2385.14	42.07	-31.93	74	42.91	27.19	6.01	34.04	224	80	P	V
		2385.14	17.28	-36.72	54	-	-	-	-	-	-	A	V
	*	2402	101.61	-	-	102.41	27.23	6.01	34.04	224	80	P	V
	*	2402	76.82	-	-	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		2382	41.66	-32.34	74	42.5	27.19	6.01	34.04	244	154	P	H
		2382	16.87	-37.13	54	-	-	-	-	-	-	A	H
	*	2441	105.03	-	-	105.64	27.37	6.04	34.02	244	154	P	H
	*	2441	80.24	-	-	-	-	-	-	-	-	A	H
		2491.45	41.99	-32.01	74	42.41	27.5	6.09	34.01	244	154	P	H
		2491.45	17.2	-36.8	54	-	-	-	-	-	-	A	H
		2386.57	41.64	-32.36	74	42.44	27.23	6.01	34.04	107	13	P	V
		2386.57	16.85	-37.15	54	-	-	-	-	-	-	A	V
	*	2441	103.14	-	-	103.75	27.37	6.04	34.02	107	13	P	V
	*	2441	78.35	-	-	-	-	-	-	-	-	A	V
		2490.69	41.99	-32.01	74	42.41	27.5	6.09	34.01	107	13	P	V
		2490.69	17.2	-36.8	54	-	-	-	-	-	-	A	V

BT CH 78 2480MHz	*	2480	105.06	-	-	105.54	27.46	6.07	34.01	153	154	P	H
	*	2480	80.27	-	-	-	-	-	-	-	-	A	H
		2483.55	52.29	-21.71	74	52.75	27.46	6.09	34.01	153	154	P	H
		2483.55	27.5	-26.5	54	-	-	-	-	-	-	A	H
													H
													H
	*	2480	104.22	-	-	104.7	27.46	6.07	34.01	126	14	P	V
	*	2480	79.43	-	-	-	-	-	-	-	-	A	V
		2483.62	50.11	-23.89	74	50.57	27.46	6.09	34.01	126	14	P	V
		2483.62	25.32	-28.68	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

WIFI 802.11b (Harmonic @ 3m)

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)
BT CH 00 2402MHz		4804	43.94	-30.06	74	37.54	31.3	8.65	33.55	150	0	P	H
		4804	19.15	-34.85	54	-	-	-	-	-	-	A	H
													H
													H
		4804	44.86	-29.14	74	38.46	31.3	8.65	33.55	150	0	P	V
		4804	20.07	-33.93	54	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		4882	44.86	-29.14	74	38.25	31.41	8.74	33.54	150	0	P	H
		4882	20.07	-33.93	54	-	-	-	-	-	-	A	H
		7323	49.9	-24.1	74	37.6	36.32	10.44	34.46	150	0	P	H
		7323	25.11	-28.89	54	-	-	-	-	-	-	A	H
		4882	44.82	-29.18	74	38.21	31.41	8.74	33.54	150	0	P	V
		4882	20.03	-33.97	54	-	-	-	-	-	-	A	V
		7323	49.53	-24.47	74	37.23	36.32	10.44	34.46	150	0	P	V
		7323	24.74	-29.26	54	-	-	-	-	-	-	A	V
BT CH 78 2480MHz		4960	44.77	-29.23	74	37.98	31.54	8.79	33.54	150	0	P	H
		4960	19.98	-34.02	54	-	-	-	-	-	-	A	H
		7440	50.68	-23.32	74	38.09	36.59	10.52	34.52	150	0	P	H
		7440	25.89	-28.11	54	-	-	-	-	-	-	A	H
		4960	45.82	-28.18	74	39.03	31.54	8.79	33.54	150	0	P	V
		4960	21.03	-32.97	54	-	-	-	-	-	-	A	V
		7440	49.79	-24.21	74	37.2	36.59	10.52	34.52	150	0	P	V
		7440	25	-29	54	-	-	-	-	-	-	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz BT

(LF @ 3m)

[illegible]

Note symbol for Part 15C rule

15C 2.4GHz 2400~2483.5MHz

*	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.
@	Frequency falls in non-restricted band is passed and tested by conducted band edges and spurious emission measurement in the test report.
#	Peak measured value is under 20dB and complies with the average limit, so it is unnecessary to perform an average measurement per clause 6.5.4.2 of ANSI C63.10.
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 CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		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”.