# Appendix A. Radiated Spurious Emission

### 15C 2.4GHz 2400~2483.5MHz

### BLE (Band Edge @ 3m)

BLE	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)
	*	2480.327	104.08	-	-	99.23	32.28	7	34.43	125	0	Р	Н
	*	2479.993	103.37	ı	1	98.52	32.28	7	34.43	125	0	Α	Н
51.5		2483.56	48.5	-25.5	74	43.65	32.28	7	34.43	125	0	Р	Н
BLE CH 39		2483.6	35.91	-18.09	54	31.06	32.28	7	34.43	125	0	Α	Н
2480MHz	*	2480.327	98.2	-	-	93.35	32.28	7	34.43	164	207	Р	V
240011112	*	2479.993	97.36	-	-	92.51	32.28	7	34.43	164	207	Α	V
		2495.2	48.04	-25.96	74	43.22	32.3	7	34.48	164	207	Р	V
		2499.8	36.22	-17.78	54	31.4	32.3	7	34.48	164	207	Α	V
Remark	1. No	o other spurious	s found.										
	2. AI	l results are PA	SS against F	eak and	Average lim	it line.							

### 15C 2.4GHz 2400~2483.5MHz

## BLE (Harmonic @ 3m)

BLE (Harmonic @ 3m)													
BLE	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)
BLE		4962	41.67	-32.33	74	56.87	34.37	9.09	58.66	100	0	Р	Н
		7440	41.55	-32.45	74	52.68	35.6	11.12	57.85	100	0	Р	Н
													Н
													Н
CH 39 2480MHz		4962	41.53	-32.47	74	56.73	34.37	9.09	58.66	100	0	Р	V
2400WII 12		7440	42.13	-31.87	74	53.26	35.6	11.12	57.85	100	0	Р	V
													V
													٧
Domark	1. N	o other spuriou	s found.				•					•	
Remark	2. A	I results are PA	.SS against F	eak and	l Average lim	it line.							

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# 15C Emission below 1GHz 2.4GHz BLE (LF)

BLE	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
		95.88	28.93	-14.57	43.5	49.61	9.44	0.98	31.1	-	-	Р	Н
		159.87	14.74	-28.76	43.5	34.22	10.5	1.22	31.2	-	-	Р	Н
		280.02	21.43	-24.57	46	37.89	12.8	1.64	30.9	-	-	Р	Н
		447.7	21.32	-24.68	46	32.52	17.24	2.3	30.74	-	-	Р	Н
		599.6	28.74	-17.26	46	37.06	19.59	2.69	30.6	-	-	Р	Н
		750.1	36.47	-9.53	46	41.71	22.1	3.06	30.4	102	47	Р	Н
													Н
													Н
													Н
													Н
2.4GHz													Н
BLE													Н
LF		93.18	21.41	-22.09	43.5	42.55	9	0.96	31.1	-	-	Р	V
		136.11	21.46	-22.04	43.5	39.88	11.5	1.18	31.1	-	-	Р	V
		280.02	18.46	-27.54	46	34.92	12.8	1.64	30.9	-	-	Р	V
		449.8	19.18	-26.82	46	30.33	17.3	2.3	30.75	-	-	Р	V
		615	24.81	-21.19	46	32.6	20.05	2.73	30.57	-	-	Р	V
		750.1	34.06	-11.94	46	39.3	22.1	3.06	30.4	162	83	Р	V
													V
													V
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													V
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2. All results are PASS against limit line.

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### 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 <b>over limit</b> line.
P/A	Peak or Average
H/V	Horizontal or Vertical

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### A calculation example for radiated spurious emission is shown as below:

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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 )	(dB <sub>µ</sub> V)	( 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	Р	Н
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	Α	Н

1. Level( $dB\mu V/m$ ) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBµV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dB $\mu$ V/m) – Limit Line(dB $\mu$ V/m)

#### For Peak Limit @ 2390MHz:

- Level(dBµV/m)
- = Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBµV) Preamp Factor(dB)
- $= 32.22(dB/m) + 4.58(dB) + 54.51(dB\mu V) 35.86 (dB)$
- $= 55.45 (dB\mu V/m)$
- 2. Over Limit(dB)
- = Level(dBµV/m) Limit Line(dBµV/m)
- $= 55.45(dB\mu V/m) 74(dB\mu V/m)$
- = -18.55(dB)

### For Average Limit @ 2390MHz:

- Level(dBµV/m)
- = Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBµV) Preamp Factor(dB)
- $= 32.22(dB/m) + 4.58(dB) + 42.6(dB\mu V) 35.86 (dB)$
- $= 43.54 (dB\mu V/m)$
- 2. Over Limit(dB)
- = Level( $dB\mu V/m$ ) Limit Line( $dB\mu V/m$ )
- $= 43.54(dB\mu V/m) 54(dB\mu V/m)$
- = -10.46(dB)

Both peak and average measured complies with the limit line, so test result is "PASS".

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