



Appendix A. Radiated Spurious Emission

15C 2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

| BT | Note | Frequency | Level | Over | Limit | Read | Antenna | Cable | Preamp | Ant | Table | Peak | Pol. |
|------------------------|---|-----------|------------|--------|-------|----------|----------|--------|--------|--------|---------|---------|---------|
| | | (MHz) | (dBμV/m) | (dB) | Limit | Level | Factor | Loss | Factor | Pos | Pos | Avg. | |
| | | | | | Line | (dBμV) | (dB/m) | (dB) | (dB) | (cm) | (deg) | (P/A) | (H/V) |
| BT CH00 2402MHz | | 2350.56 | 51.49 | -22.51 | 74 | 47.46 | 31.25 | 9.12 | 36.34 | 216 | 305 | P | H |
| | | 2350.56 | 26.7 | -27.3 | 54 | - | - | - | - | - | - | A | H |
| | * | 2401.78 | 77.4 | - | - | 72.96 | 31.3 | 9.22 | 36.08 | 216 | 305 | P | H |
| | * | 2401.78 | 52.61 | - | - | - | - | - | - | - | - | A | H |
| | | 2349.13 | 51.08 | -22.92 | 74 | 47.05 | 31.25 | 9.12 | 36.34 | 214 | 305 | P | V |
| | | 2349.13 | 26.29 | -27.71 | 54 | - | - | - | - | - | - | A | V |
| | * | 2402.04 | 69.54 | - | - | 65.1 | 31.3 | 9.22 | 36.08 | 214 | 305 | P | V |
| | * | 2402.04 | 44.75 | - | - | - | - | - | - | - | - | A | V |
| BT CH 39 2441MHz | * | 2440.91 | 76.55 | - | - | 71.84 | 31.34 | 9.28 | 35.91 | 150 | 330 | P | H |
| | * | 2440.91 | 51.76 | - | - | - | - | - | - | - | - | A | H |
| | * | 2441.1 | 74.36 | - | - | 69.65 | 31.34 | 9.28 | 35.91 | 172 | 267 | P | V |
| | * | 2441.1 | 49.57 | - | - | - | - | - | - | - | - | A | V |
| BT CH 78 2480MHz | * | 2480.05 | 76.72 | - | - | 71.81 | 31.37 | 9.33 | 35.79 | 150 | 330 | P | H |
| | * | 2480.05 | 51.93 | - | - | - | - | - | - | - | - | A | H |
| | | 2491.46 | 50.89 | -23.11 | 74 | 45.91 | 31.39 | 9.33 | 35.74 | 150 | 330 | P | H |
| | | 2491.46 | 26.1 | -27.9 | 54 | - | - | - | - | - | - | A | H |
| | * | 2479.98 | 75.77 | - | - | 70.86 | 31.37 | 9.33 | 35.79 | 168 | 267 | P | V |
| | * | 2479.98 | 50.98 | - | - | - | - | - | - | - | - | A | V |
| | | 2485.86 | 51.99 | -22.01 | 74 | 47.08 | 31.37 | 9.33 | 35.79 | 168 | 267 | P | V |
| | 2485.86 | 27.2 | -26.8 | 54 | - | - | - | - | - | - | A | 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 00 2402MHz | | 4803 | 47.91 | -26.09 | 74 | 37.91 | 34.88 | 11.71 | 36.59 | 214 | 65 | P | H |
| | | 4803 | 23.12 | -30.88 | 54 | - | - | - | - | - | - | A | H |
| | | 4803 | 45.2 | -28.8 | 74 | 35.2 | 34.88 | 11.71 | 36.59 | 214 | 356 | P | V |
| | | 4803 | 20.41 | -33.59 | 54 | - | - | - | - | - | - | A | V |
| BT CH 39 2441MHz | | 4881 | 49.56 | -24.44 | 74 | 39.72 | 34.92 | 11.76 | 36.84 | 197 | 65 | P | H |
| | | 4881 | 24.77 | -29.23 | 54 | - | - | - | - | - | - | A | H |
| | | 7323 | 50.29 | -23.71 | 74 | 39.8 | 35.57 | 13.84 | 38.92 | 214 | 0 | P | H |
| | | 7323 | 25.5 | -28.5 | 54 | - | - | - | - | - | - | A | H |
| | | 4881 | 49.97 | -24.03 | 74 | 40.13 | 34.92 | 11.76 | 36.84 | 214 | 356 | P | V |
| | | 4881 | 25.18 | -28.82 | 54 | - | - | - | - | - | - | A | V |
| | | 7323 | 50.38 | -23.62 | 74 | 39.89 | 35.57 | 13.84 | 38.92 | 214 | 16 | P | V |
| | | 7323 | 25.59 | -28.41 | 54 | - | - | - | - | - | - | A | V |
| BT CH 78 2480MHz | | 4959 | 50.1 | -23.9 | 74 | 40.47 | 34.97 | 11.81 | 37.15 | 197 | 65 | P | H |
| | | 4959 | 25.31 | -28.69 | 54 | - | - | - | - | - | - | A | H |
| | | 7440 | 50.79 | -23.21 | 74 | 40.19 | 35.59 | 13.92 | 38.91 | 214 | 167 | P | H |
| | | 7440 | 26 | -28 | 54 | - | - | - | - | - | - | A | H |
| | | 4959 | 49.24 | -24.76 | 74 | 39.61 | 34.97 | 11.81 | 37.15 | 214 | 137 | P | V |
| | | 4959 | 24.45 | -29.55 | 54 | - | - | - | - | - | - | A | V |
| | | 7440 | 50.68 | -23.32 | 74 | 40.08 | 35.59 | 13.92 | 38.91 | 169 | 360 | P | V |
| | | 7440 | 25.89 | -28.11 | 54 | - | - | - | - | - | - | A | V |
| Remark | <ol style="list-style-type: none"> No other spurious found. 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. |
|--------------------|--|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
| | | (MHz) | (dBμV/m) | (dB) | (dBμV/m) | (dBμV) | (dB/m) | (dB) | (dB) | (cm) | (deg) | Avg. | |
| | | | | | Limit | Level | Factor | Loss | Factor | Pos | Pos | (P/A) | (H/V) |
| 2.4GHz BT LF | | 30 | 30.42 | -9.58 | 40 | 40.09 | 19.2 | 3.79 | 32.66 | 100 | 0 | P | H |
| | | 56.19 | 19.22 | -20.78 | 40 | 40.89 | 7.14 | 3.79 | 32.6 | | | P | H |
| | | 98.87 | 20.8 | -22.7 | 43.5 | 38.2 | 11.19 | 4.04 | 32.63 | | | P | H |
| | | 122.15 | 25.05 | -18.45 | 43.5 | 41.98 | 11.48 | 4.23 | 32.64 | | | P | H |
| | | 169.68 | 21.03 | -22.47 | 43.5 | 38.15 | 10.95 | 4.44 | 32.51 | | | P | H |
| | | 669.23 | 28.33 | -17.67 | 46 | 34.6 | 19.63 | 6.05 | 31.95 | | | P | H |
| | | 30 | 30.39 | -9.61 | 40 | 40.06 | 19.2 | 3.79 | 32.66 | 100 | 109 | P | V |
| | | 36.79 | 27.38 | -12.62 | 40 | 40.43 | 15.77 | 3.79 | 32.61 | | | P | V |
| | | 53.28 | 21.52 | -18.48 | 40 | 42.42 | 7.92 | 3.79 | 32.61 | | | P | V |
| | | 99.84 | 16.98 | -26.52 | 43.5 | 34.27 | 11.3 | 4.04 | 32.63 | | | P | V |
| | | 119.24 | 18.67 | -24.83 | 43.5 | 35.63 | 11.45 | 4.23 | 32.64 | | | P | V |
| | | 223.03 | 18.68 | -27.32 | 46 | 35.7 | 10.86 | 4.61 | 32.49 | | | P | V |
| 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 | 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 | | 2390 | 43.54 | -10.46 | 54 | 42.6 | 32.22 | 4.58 | 35.86 | 103 | 308 | A | H |
| 2412MHz | | | | | | | | | | | | | |

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”.